



U S Shop Tools



MACHINE SHOP TOOLS & SUPPLIES

Direct!

Your *First Call* For Metalworking Tools & Shop Supplies!



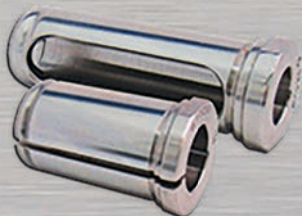
Starting At:
\$72.61 set



Starting At:
\$22.95 set



Starting At:
\$245.75 set



Starting At:
\$38.33 ea



Starting At:
\$8.75 ea



Starting At:
\$15.20 ea



Starting At:
\$49.95 ea

BALANCED!

• Lathe Workholding
Chuck Jaws
Pages 5-118

• Mill Workholding
Vises
Pages 119-150

• Retention Knobs
& Collets
Pages 151-177

• Milling Toolholders
& Tapping
Pages 178-236

• Indexable Cutting
Tools & Inserts
Pages 237-329

• Endmills, Drills
Taps & Reamers
Pages 330-421

• Machine Tools
& Accessories
Pages 422-436

• Measuring &
Inspection Tools
Pages 437-464

• Abrasives, Grinding
Wheels & Deburring
Pages 465-483

• Coolant, Storage
& Shop Supplies
Pages 484-539

• Product/Vendor
Index, Reference
Pages 540-572

2019/20 MASTER CATALOG

SALES: **800-243-7701**

FAX: **800-342-3311**

www.usshoptools.com

Sales: 800-243-7701 Fax: 800-342-3311 www.usshoptools.com

U S SHOP TOOLS

2019/20

Your One-Stop Tooling Source! We Carry The Brands You Know and Trust!



ORDERING IS EASY!

Sales:

800-243-7701

Fax:

800-342-3311

Online:

www.usshoptools.com

Email:

sales@usshoptools.com

Customer Number:

Please write customer number here

Now Shipping From 2 Locations!
Anaheim, CA • Warren, MI

U S Shop Tools

1340 S. Allec Street
Anaheim, CA 92805
Office: 800-243-7701
714-772-9011
Fax: 800-342-3311
714-772-1270

www.usshoptools.com

Welcome To Our 2019/20 U S Shop Tools Master Catalog!

THE ITEMS YOU NEED MOST AT EVERYDAY LOW PRICES!

We offer over 80,000 items for all of your everyday metalworking and shop supply needs. From lathe and mill workholding, toolholding, cutting tools, measuring tools, abrasives, materials, and shop supplies, we are sure to have what you need, priced right! We use our buying power to get the best possible price and we pass the savings on to you!

SAME DAY SHIPPING ON ALL IN-STOCK ITEMS

All orders for in-stock items placed Monday through Friday before 7:30pm EST will ship the same day. We do not require a minimum order- We'll get you what you need, when you need it!

FRIENDLY AND KNOWLEDGEABLE CUSTOMER SERVICE

Our experienced sales associates will go out of their way to make sure you get the right product for your needs. We offer technical assistance and support for all of our items. If we do not carry an item that you are looking for, please let us know and we'll locate the product for you!

**VISIT OUR WEBSITE-SHOP AT YOUR CONVENIENCE
OUR CATALOG AT YOUR FINGERTIPS!**

Visit our website to quickly find the item you are looking for! You can find our complete Master Catalog, as well as informative videos, special promotions and product details at www.usshoptools.com. You can shop online at www.usstexpress.com.

FAST AND ECONOMICAL SHIPPING

We will ship with your choice of UPS, FedEx or Truck. With fulfillment centers in California and Michigan, most regular ground shipments will reach your door within 1 to 3 days! If you need it sooner, we offer your choice of several express shipping methods. Ask about our low rates on Priority Overnight shipments from FedEx!



PRICING, WARRANTY, & RESPONSIBILITY

While it is always our desire to provide you with the lowest prices and minimize price changes after the catalog has been printed, we may be forced to change prices as our vendors or the current market mandates. Prices are subject to change without notice. We encourage you to check prices and availability and help us be your low price supplier by keeping us informed of market conditions as you see them. Specifications and descriptions are subject to change without notice. Images are general representations of the offered items. Misprints and mistakes do occur, and are subject to correction. We apologize in advance for any inconvenience. For detailed terms and conditions, please see page 541.

Shop Online at www.usstexpress.com

Table Of Contents



1

LATHE WORKHOLDING Jaw Boring Tools • Lathe Stops • Chuck Jaws-Soft, Round & Hard • Jaw Nuts • Collet Pads & Top Jaws • CNC & Manual Lathe Chucks • Live & Dead Centers • Bar Pullers • 5C, 3J & 16C Workholding Collets • Machinable Collets For ID & OD Holding • Lathe Toolholder Bushings

5-118

2

MILL WORKHOLDING Tooling Columns • 5 Axis Workholding • Workshop & Machine Vises • Vise Jaws • Vise Accessories • Clamping Products • Tooling Components • Angle Plates • Clamps • Mill & Rotary Tables • 5C Collet Fixtures

119-150

3

TOOLHOLDING FOR MILLS ER, TG & DA Collets • Straight Shank Collet Holders • Retention Knobs • Toolholder Accessories • CAT, BT, HSK, R8 & NMTB Toolholders • R8 Tooling • Drill Chucks & Arbors • Quick Change Tap Collets & Holders • Tapping Arms

151-236

4

INDEXABLE CUTTING TOOLS Indexable Drills • Spade Drills & Inserts • Boring Bars • OD Turning Holders • Carbide Turning Inserts • Part Off/Cut-Off Tools • Milling Cutters & Inserts • Solid & Indexable Threading & Grooving

237-329

5

ENDMILLS, DRILLS & CUTTERS Endmills • Micro 100 Solid Carbide Tools • Keyseat & Milling Cutters • Slitting Saws & Arbors • HSS, Cobalt & Carbide Drills • Countersinks • Spotting & Centering Drills • Taps • Carbide, Cobalt & HSS Reamers • Welded-To-Length Bandsaw Blades • Knurling Tools • Broaching

330-421

6

MACHINES & ACCESSORIES Grinders & Stands • Finishing Machines • Band Saws • Drill Presses • Vertical Milling Machines • Manual Lathes • Machine Mounts • Material Support Stands • Power Feeds & Drawbars • Quick Change Tool Posts

422-436

7

PRECISION TOOLS & ABRASIVES Calipers & Micrometers • Measuring Tools • Tool Setters & Height Gages • Parallels • Comparators • Grinding Wheels • Abrasive Sheets • Deburring Wheels • Buff & Blend Discs & Rolls • Hand Deburring Tools

437-483

8

MRO, SAFETY & TOOL STORAGE Coolant & Coolant Maintenance • Lubricants & Cutting Fluids • Safety Mats • Eye & Hand Protection • Hand & Air Tools • Hex & Torx® Wrenches • Tool Storage • Reference & Machinist's Aids • Machine Guards

485-539

9

CATALOG INDEX Decimal Equivalent Conversion Chart • Terms & Conditions • Easy Jaw Finder • Special Order Forms For Chuck Jaws & Retention Knobs • Manufacturers' Index • Catalog Index

540-572



LOOK FOR THESE HOT ITEMS IN OUR 2019/20 CATALOG!

POWER CHUCKS

Strong



- STRONG® N200 Series Chucks Are Interchangeable With Kitagawa® B-200 Series Chucks
- Over 30 years of innovative manufacturing experience
- ISO 9002 and MCS certification
- Rigid inspection process to ensure quality
- 2, 3 & 4 jaw and Extra Large Bore chucks
- Replacement parts available-master jaws plunger nuts, chip covers & more!

IN STOCK & READY TO SHIP!

See Pages 66-68 For More Information!
*Kitagawa is a trademark of Kitagawa Northtech

MASTER JAW SYSTEM

Use 5C or 16C Collets On Your 3-Jaw CNC Power Chuck!

CONVERT YOUR CNC LATHE CHUCK INTO A PRECISION-LENGTH COLLET SYSTEM!



- Available for 6", 8", 10" & 12" CNC lathe chucks
- Allows you to use your 5C or 16C collets
- Easy Installation! As fast and simple as changing over a set of soft jaws
- Quick changeover to different stock size & shape
- Eliminates the need to bore soft jaws
- TIR runout average of .0008 – .0015"
- Saves you time and money!
- **MADE IN THE USA**

See Page 89 For More Information!

Accu-Collets™ ER COLLETS



- PRECISION Collets 0.0005" TIR
- ULTRA PRECISION: 0.0002" TIR
- TRUE INCH and metric sizes
- Crafted from high quality European spring steel
- Fractional Collets manufactured specifically for US shop requirements
- INDIVIDUALLY TESTED for quality and accuracy!
- Accu-Collets improve tool life, part finish and reduces spindle wear
- 100% Satisfaction Guarantee!

PRICES REDUCED ON ER COLLETS & SETS!

See Pages 152-158 For More Information!

EDGE TECHNOLOGY PRODUCTIVITY TOOLS



NEW ITEM!

- Workstops
- Touch-Off Tools
- Vise Stops
- 5C Collet Stops
- Many more lathe & mill productivity tools available!

See Pages 133-136 For More Information!

TMX TOOL SOLUTIONS

EUROPEAN PRECISION & QUALITY



- Lathe Workholding
- Machine Vises
- Indexable Cutting Tools
- Solid Cutting Tools
- Saws & Cutters
- Rotary Tool Holders

Tungaloy CUTTING TOOLS

Member IMC Group



Milling • Turning
Drilling • Grooving

SBM MACHINED VISE JAWS



NEW ITEM!

- Fits Kurt™ Dx6, D688, D675 and similar precision machine vises
- Machined for better locating and precise positioning
- Parallel-no need to "true-up" jaws prior to machining part!
- Chamfered for accurate fit between vise bed and vise jaw
- Machinable-customize to your desired shape
- Reusable- Save time and money!
- **MADE IN THE USA!**

See Page 129 For More Information!

It Gets Into Spaces That Others Tools Can't! CENTER DRILL HOLDER



- Locates in the turret like on OD turning tool
- It's not limited to combined drills alone! Center/spotting drills, counter sinks, drills, and boring bars may be used in the holder
- Frees up drill chucks and collet holders on your tool turret
- Allows you to utilize unused turning tool pockets on your tool turret
- Increases tooling arrangement flexibility
- Can be used on manual and CNC tool room lathes
- 6" OAL
- **MADE IN THE USA**

NEW ITEM!

See Page 395 For More Information!

Your *First Call* For Machine Tools & Supplies!

JAW BORING TOOLS

JAW BORING RINGS

For Boring Round & Soft Chuck Jaws

No need to look all over the shop for a setup piece and waste time. Our jaw boring ring is essential for boring soft jaws and round jaws.

FEATURES:

- Ideal for machining soft jaws
- Attaches quickly without tools
- Applies equal pressure on all jaws
- Attaches to front of jaws, compensating for "jaw lift"
- Since no discs or bungs are used to clamp jaws, through boring of jaws is possible



Save Set-Up Time!

How to install:

1. Place the jaw boring ring over your chuck and locate the boring ring pins in the counterbore of your chuck jaws.
2. Turn the jaw boring ring until snug.
3. Activate your jaws.

The jaw boring ring will apply equal pressure on all jaws, allowing for a consistent bore.



LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Jaw Boring Ring (comes complete with 3 pin assemblies)

Chuck Dia	ID Inch	OD Inch	Pin Depth	Pin Dia	Part Number	Price Each
4"	1.335	4.500	0.350"	0.510"	JBR-04	\$162.00
5"	2.335	5.500	0.350"	0.510"	JBR-05	\$162.00
6"	3.250	6.825	0.350"	0.512"	JBR-06	\$184.25
8"	3.500	8.450	0.350"	0.562"	JBR-08	\$226.48
10"	5.900	10.150	0.350"	0.709"	JBR-10	\$255.67
12"	7.475	12.075	0.400"	0.709"	JBR-12	\$284.23
15"	8.900	15.230	0.600"	0.938"	JBR-15	\$427.06

Extra Pin Assemblies

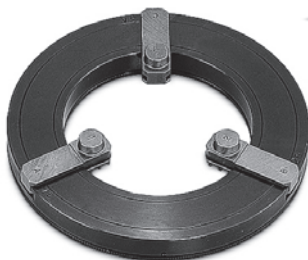
Pin Depth Inch	Pin Dia. Inch	Indiv. Pins Part Number	Price Each	Pin Sets (3) Part Number	Price Each
0.350"	0.510"	JBR-PIN-04	\$21.83	JBR-PIN-04-SET3	\$65.48
0.350"	0.510"	JBR-PIN-05	\$21.83	JBR-PIN-05-SET3	\$65.48
0.350"	0.512"	JBR-PIN-06	\$21.83	JBR-PIN-06-SET3	\$65.48
0.350"	0.562"	JBR-PIN-08	\$21.83	JBR-PIN-08-SET3	\$65.48
0.350"	0.709"	JBR-PIN-10	\$21.83	JBR-PIN-10-SET3	\$65.48
0.400"	0.709"	JBR-PIN-12	\$21.83	JBR-PIN-12-SET3	\$65.48
0.600"	0.938"	JBR-PIN-15	\$21.83	JBR-PIN-15-SET3	\$65.48

Additional Pin Diameters Available. Please Call For More Information.

ADJUSTABLE JAW BORING RINGS

For Boring Round & Soft Chuck Jaws

- Quickly bore jaws in a single operation with no plugs or rings
- Suitable for CNC lathes
- Easy to attach-no tools needed!
- Jaws are bored at same clamping pressure used to hold part for higher accuracy
- Economical-3 jaw boring rings cover chucks sizes from 5"-12"!



Directions:

- 1) Set jaws to correct position
- 2) Adjust jaw boring ring to fit bolt holes
- 3) Lock the chuck to clamp jaw boring ring
- 4) Machine desired size
- 5) Unlock chuck and remove jaw boring ring



Chuck Size	ID	OD	Jaw Stroke	Max RPM	Part Number	Price Each
5,6,8"	3.94	6.70	7.40	800	JBR-TL5-8	\$379.00
6,8,10"	4.92	7.90	7.40	700	JBR-TL6-10	\$439.00
8,10,12"	6.30	9.80	8.50	600	JBR-TL8-12	\$519.00

BORING STARS



FEATURES:

- Save set-up time
- Obtain any diameter easily and quickly
- Reduces soft jaw costs
- Allows straight through boring of soft jaws

Description	Part Number	Set Price
Jaw Boring Stars-Set of 4	JBT-100	\$30.00



ANTI-BACKLASH RING SET



A valuable time saver for your lathes and turning centers! Every ring you will ever need for boring out your soft jaws on one convenient wooden rack.



Size	Description	Part Number	Price Each
Standard Set	48 Rings, 1" to 3 15/16" in 1/16 increments	AI-220-00	\$331.17
Short Stack	16 Rings, 1" to 1 15/16" in 1/16 increments	AI-220-10	\$105.00

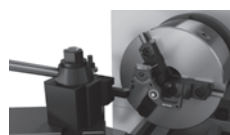
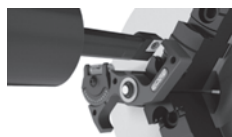


CNC LATHE GAGE



Used to set lathe tools on the spindle axis for optimum cutting conditions. It can be used to set tools on the spindle axis and eliminate the nub left after cutting. Designed with a large amount of angular adjustability, allowing it to be used with any slant bed or Swiss style CNC lathe. Two different contact faces allows it to work with both upward and downward facing cutting tools.

- Set turning, boring, and facing tools on spindle axis for optimum cutting conditions
- Eliminate the "nub" left by poorly set tools.
- Precision glass vial level with 30/2mm sensitivity
- Angular adjustability of +/- 60°
- Ground steel shaft supported by dual ball bearings
- Made from high strength aluminum



Lathe Gage
Part # EDGE-13000
\$44.99 ea

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

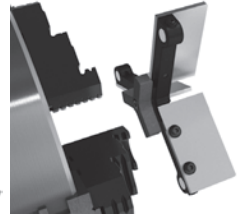
CHUCK/LATHE STOPS

CHUCK STOP SET

For 3 Jaw Chucks 6" & Larger



Designed to locate shorter parts beyond the chuck jaws to provide clearance for facing operations. The Chuck Stop includes 10 sets of different height parallel bars to achieve the required spacing. A centering plug is used to keep the unit centered to the ID of the chuck and strong neodymium magnets secure it to the face of the chuck.



Accurately Locate Parts Beyond The Chuck Jaws To Provide Clearance For Facing Operations!

- 10 sets of hardened parallel bars with case. 0.0002" parallelism accuracy
- Parallel bar heights from 1/2" to 1-5/8" in 1/8" increments
- Strong neodymium magnets secure the stop to the chuck face
- A centering plug fits the ID of the chuck and keeps the Chuck Stop centered
- Included centering plug diameters are 1.4", 2.0", 2.5", 3.0", 3.5", and 4.0"
- The Chuck Stop is 6.0" in diameter
- Designed for 3 jaw chucks only
- For use on 6" diameter chucks and larger



Set Includes:

- Chuck stop
- 10 parallels-1/8" to 1-5/8" x 1/8" increments
- 6 center plugs

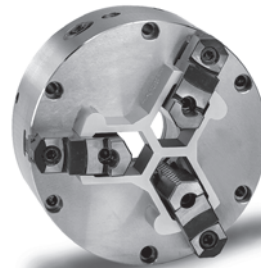
CHUCK STOP SET

Part # **EDGE-30000**

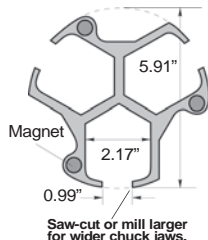
\$149.99 ea

CHUCK STOPS

This product is so useful and simple, you'll wonder why you never thought of it. The Royal chuck stop is a precision machined aluminum extrusion which mounts squarely against the face of almost any 3 jaw lathe chuck, providing a fixed reference surface for workpieces to locate against.



Easily Locate Short Parts In A 3-Jaw Chuck!



FEATURES:

- Allows short parts to project past the chuck jaws, providing clearance for facing operations.
- Eliminates the need to bore soft jaws, reducing setup time.
- Front and rear locating surfaces are parallel within ± 0.0004 ".
- 25mm slot width can be milled larger for chucks with wider jaws.
- Interlocking design coupled with three strong magnets holds stop securely in place-much safer than using parallels which can be thrown out by centrifugal force.
- Anodized aluminum finish provides good wear-resistance.

Accommodates Chuck Jaws Up To 2 1/8" Wide!



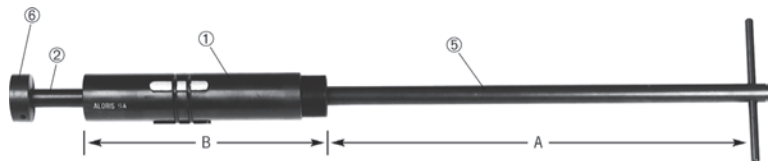
Description	Part Number	Set Price
Standard Set: 15, 20 & 25mm stops	ROY-25200	\$289.10
Deluxe Set: 15, 20, 25, 30 & 35mm stops	ROY-25210	\$502.74

UNIVERSAL LATHE SPINDLE & COLLET STOPS

For CNC, Manual Lathes & Indexing Heads

Cut time dramatically on jobs where the part must be registered in machine more than one time or where more than one part is to be machined. Just slide the body into the spindle of the machine, rotate the T-handle wrench which expands 3 keys, locking the body securely into position. When the chuck is opened and the next piece is loaded into machine all distances from the stop will repeat exactly.

Fully Adjustable To Fit A Wide Variety Of Applications!



- Completely self-centering
- Installs in seconds!
- Greater rigidity insures duplication
- Cannot vibrate or change position once it is locked
- Rejections cut to a minimum

A	B	C	Spindle Size	Part Number	Price
12-1/4"	4-1/2"	6"	1" - 1-1/4"	ALOR-S1	\$339.00
19"	6-7/16"	6-1/2"	1-5/16" - 1-11/16"	ALOR-S2	\$418.00
21-1/2"	7-7/8"	10-1/2"	1-3/4" - 2-7/16"	ALOR-S3	\$497.00
22-1/4"	9-1/4"	10-1/2"	2-1/2" - 3-1/2"	ALOR-S4	\$751.00



Call Us Today For All Of Your Machine Tool Needs!

LATHE/CHUCK STOPS

ACCU-STOP

Customizable Precision Stop For CNC Lathes

Precise. Versatile. Safe.

The Accu-Stop spindle stop provides a solid, precise stopping surface for work pieces. Its modular assembly allows you to stop parts from anywhere outside the chuck's bore to nearly the entire length of the draw tube.

How Accu-Stop Works

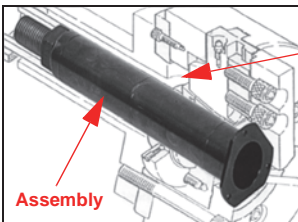
Accu-Stop bolts to the front of your CNC lathe's chuck, allowing the work piece and the stop to turn together to eliminate friction, gouging, and damage to the work piece. Modular assembly makes it easy to configure along the draw tube to accommodate a wide range of work piece lengths.

The Accu-Stop spindle stop is made of low-carbon steel that is coated with zinc oxide for durability. The standard assembly includes: faceplate and sub-faceplate, three extension tubes, end cap, threaded rod, and lock nut.

All that is needed to order is the make / model of your chuck and an actual measured ID of your drawtube.



- Assembly Includes:**
 -Face Plate
 -Sub Face Plate
 -3 extension tubes
 -End Cap
 -Threaded rod & lock nut
Package Includes:
 -Complete assembly
 -Rigid strap wrench
 -Accu-stop vise



Adjust length by adding or removing tube section and adjusting rod.

ORDERING INFORMATION:
 To Order, We Will Need:
 1. Make/Model of lathe
 2. Date manufactured
 3. Make/Model of chuck
 4. Inside diameter of the draw tube.



- Ensures accuracy/repeatability within .0005"
- Heavy duty and highly accurate
- Replaces inaccurate and expensive stopping mechanisms
- Customize to precisely fit your needs
- For Big Bore chucks, use next larger size up (ex: BB-208 will use AS-3000)
- Made in the USA



Chuck Size	Description	Part Number	Price Each
6"	Assembly 16.5"	AS-1000	\$554.80
	Accu-Stop Package	AS-P1000	\$893.95
	Extra Tube (5" Long)	AS-1003	\$65.00
	Tubing stop option*	AS-TSO1000	\$85.00
8"	Assembly 16.5"	AS-2000	\$554.80
	Accu-Stop Package	AS-P2000	\$893.95
	Extra Tube (5" Long)	AS-2003	\$65.00
	Tubing stop option*	AS-TSO2000	\$85.00
10"	Assembly 16.5"	AS-3000	\$649.80
	Accu-Stop Package	AS-P3000	\$988.95
	Extra Tube (5" Long)	AS-3003	\$79.00
	Tubing stop option*	AS-TSO3000	\$98.00
12"	Assembly 20.25" (under 3" dia drawtube)	AS-4000SB	\$934.80
	Assembly 20.25" (under 3" dia drawtube)	AS-4000LB	\$944.30
	Package (under 3" dia drawtube)	AS-P4000SB	\$1,273.95
	Package (over 3" dia drawtube)	AS-P4000LB	\$1,283.45
	Extra Tube (6" Long)	AS-4003SB	\$79.00
	Tubing stop option*	AS-TSO4000	\$115.00

-For Big Bore Chucks, Please Order The Next Larger Size-Ex: BB-208 will use AS-3000 series
 *If machining tubing, you may need the tubing stop option

TAILSTOCK ALIGNMENT BAR

The Tailstock Alignment Bar is used to align the tailstock to the headstock. Accurate alignment is critical to eliminate any taper in work pieces that are supported by the tail stock. It makes the process of tailstock alignment fast, easy and accurate.



Tailstock Alignment Bar
 Part # EDGE-27000
\$49.99 ea

- Hardened steel bar ends are precision ground after assembly for superior accuracy
- Bar end diameters are equal within 0.0001"
- Bar made from high strength aluminum
- Durable anodized finish

POWER CHUCK LUBRICANT



CHUCK-EEZ® ensures long chuck life, machine accuracy and operator safety. Formulated with a high percentage of molybdenum disulfide to reduce seizing, galling, fretting wear and lower friction under conditions of extreme pressure. Rust and oxidation inhibitors incorporated to maximize complete rust protection. Able to withstand pressures up to 500,000 pounds per square inch!

- Double to triple clamping pressure
- Keeps work piece clamped in place
- Provides boundary lubrication protection
- Lowers friction and wear
- Assists in wear-in of new chucks
- Lowers maintenance costs
- High resistance to centrifuge force
- For optimum performance, it is highly recommended that you grease your chuck once per shift
- **QUANTITY DISCOUNTS!**

Quantity Discounts	
12-23	Save 10%
24-35	Save 12%
36 +	Save 15%



LOWER FRICTION & INCREASE GRIPPING FORCE!

Container Size	Case Qty	Part Number	Price Each
4 Oz Cartridge	24	EZ-21471	\$5.86
4 Oz Cartridge w/ grease gun	1	EZ-OKIT-21471	\$31.93
16 Oz Cartridge	12	EZ-21478	\$17.93
10 Lb Pail	1	EZ-21444	\$146.98
40 Lb Pail	1	EZ-21445	\$561.04
135 Lb Keg	1	EZ-21446	\$1,848.83
450 Lb Drum	1	EZ-21448	\$5,894.85

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

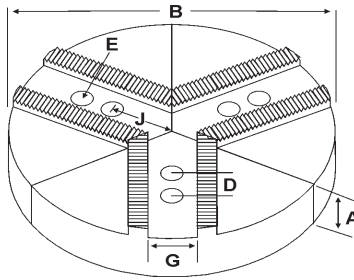
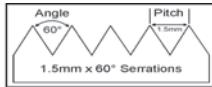
CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

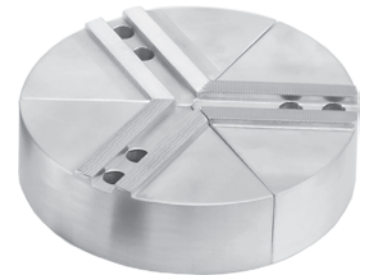
COOLANT/FLUIDS
TOOL STORAGE

ROUND JAWS- 1.5 mm x 60° Serrations

FOR USE ON: **Kitagawa®, Samchully®, Strong, MMK, SMW Autoblok, Howa & Hitachi-Seiki Chucks**



- 1.5mm x 60° serrations
- Round Jaws allow for complete gripping of workpiece
- Oversized jaws available
- Ideal for thin-walled or irregular shaped workpieces.
- Can be machined to fit workpiece
- Special "J" dimensions available
- Available in Aluminum, Cast Iron & Steel
- Aluminum round jaws made from solid extruded aluminum (up to 15" dia)
- Made in the USA



Group
K1



2

3

4

5

Group No.	Chuck Size	Critical Dimensions						Industry Ref #	ALUMINUM		CAST IRON		STEEL	
		Groove Width G	Screw Size E	Hole Space D	Hole to Front J	Pie Dia B	Height Inch A		Part Number	Price Set of 3	Part Number	Price Set of 3	Part Number	Price Set of 3
K1-08-15	4	0.315 (8mm)	6mm	0.590 (15mm)	1.000	6	2.00	KTT-4P	6-RKT-4200A	\$83.92	6-RKT-4200CI	\$135.12	6-RKT-4200S	\$212.08
		0.314		0.591			4.00	KTT4P1	6-RKT-4300A	\$106.73	-	-	-	-
		0.314		0.591			4.00	KTT4P1	6-RKT-4400A	\$131.58	-	-	-	-
K1-10-14	4	0.394 (10mm)	8mm	0.551 (14mm)	1.000	6	2.00	-	6-RKT-4205A	\$83.92	6-RKT-4205CI	\$144.31	6-RKT-4205S	\$202.43
							4.00	KW4P1	6-RKT-4405A*	\$167.85	-	-	-	-
K1-10-17	5	0.394 (10mm)	8mm	0.709 (18mm)	1.688 (1-11/16)	6	2.00	HAR5MSHP	6-RHA-5200A	\$83.92	-	-	-	-
							4.00	HAR5MSHP1	6-RHA-5400A	\$131.58	-	-	-	-
K1-10-18	5	0.394 (10mm)	8mm	0.713 (18mm)	1.250	6	2.00	KTT5P	6-RKT-5203A	\$76.06	6-RKT-5203CI	\$144.31	6-RKT-5203S	\$201.57
							4.00	KTT5P1	6-RKT-5403A	\$131.58	-	-	-	-
K1-10-19	5	0.394 (10mm)	8mm	0.748 (19mm)	1.250	6	2.00	HOW5P	6-RKT-5200A	\$81.36	6-RKT-5200CI	\$144.31	6-RKT-5200S	\$202.43
							3.00	-	6-RKT-5300A	\$114.33	6-RKT-5300CI	\$226.75	6-RKT-5300S	\$257.66
							4.00	HOW5P1	6-RKT-5400A	\$131.58	-	-	-	-
K1-11-17	5	0.433 (11mm)	8mm	0.669 (17mm)	1.844 (1-27/32)	6	2.00	SUG5PSTS	6-RSG-5200A	\$83.92	-	-	-	-

Round Jaw Material: ALUMINUM-6061-T6 Bar Stock, CAST IRON-Gray, STEEL-1018

For complete list of applicable chucks, see pages 542-554.

* denotes non-stock item. Please allow 1 week manufacturing time.

How To Order Soft Jaws, Round Jaws, Hard Jaws and Jaw Nuts

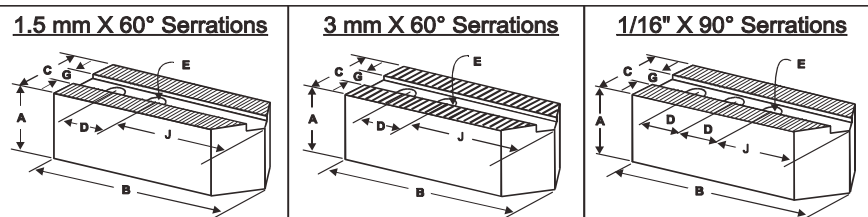
Using the "Critical Dimensions" Method:

1. Identify the type of jaw from the pictures below.
2. Find the proper chuck size on the left side of the table.
3. Check your Critical Dimensions against the table. Make sure that they match your requirements.
4. Choose your desired jaw height ("A" dimension).
5. Choose the material you require. (Aluminum, Steel, Cast Iron)
6. Use the Part Number shown on the right end of the table. Jaws are sold in sets of 3 pieces.

- **Part Numbers are for Flat Nose Jaws.** If you would like your jaws to be pointed, replace the "F" on the end of the part number with a "P". Example: KT-6200F will be KT-6200P. There is an additional charge for pointing.
- **If you cannot find the jaws you are looking for** or you require special jaws, please call us so that you may fill out a special jaw order form, located on pages 555-560.
- **If you know your chuck make and model:** See pages 542-554 for our extensive Easy Jaw Finder.
- **Call your distributor-** we can convert any jaw supplier part number

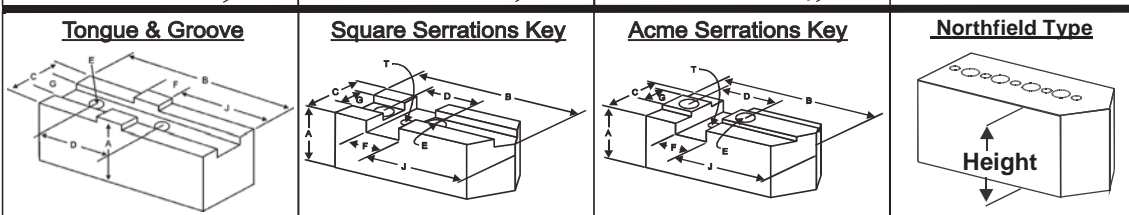
6

Need Help Finding The Correct Chuck Jaws? See Our "Easy Jaw Finder" On Page 542!



1

*Kitagawa® is a registered trademark of Kitagawa NorthTech. Kitagawa®, Strong®, Samchully®, Bison®, TMX®, Buck®, MMK®, SMW Autoblock®, Howa®, Hitachi-Seiki®, Rohm® Pratt Burnerd®, BTC®, Cushman®, Amestra® and all chucks listed are all registered trademarks of their respective companies.

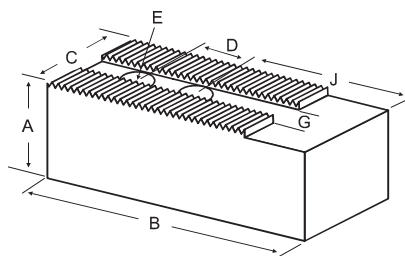


Call Us Today For All Of Your Machine Tool Needs!

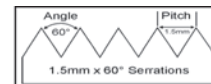
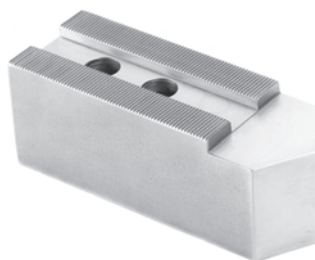
SOFT JAWS- 1.5 mm x 60° Serrations

C

FOR USE ON: **Kitagawa®, Samchully®, Strong®, MMK, SMW Autoblok, Howa & Hitachi-Seiki Chucks**



- 1.5mm x 60° serrations
- Supplies maximum concentricity on finish turning operations
- Can be bored or turned to fit workpiece
- Steel jaws can be hardened
- Available flat ended or pointed for smaller diameter parts
- Special orders available
- Available in Aluminum, Steel & Aircraft Aluminum (where noted)



Group
K1

QUANTITY DISCOUNTS!
Order **5 SETS OR MORE** of the same part number soft jaw and receive a **5% DISCOUNT!**

Group No.	Chuck Size	Critical Dimensions								ALUMINUM		STEEL	
		Groove Width G	Screw Size E	Hole Space D	Hght Inch A	Hole to Front J	Width Inch C	Length Inch B	No. of Holes	FLAT END Part Number	Price Set Of 3	FLAT END Part Number	Price Set Of 3
K1-08-15	4"	0.315 (8mm)	6mm	0.590 (15mm)	1.000	1.000	0.750	2.000	2	KT-4100AF	\$37.11	KT-4100F	\$41.71
B-04,BT-04					2.000	1.000	0.750	2.000	2	KT-4200AF	\$45.65	KT-4200F	\$51.19
K1-10-12	4"	0.394 (10mm)	6mm	0.470 (12mm)	1.000	1.000	0.750	2.000	2	KT-4103AF	\$37.11	KT-4103F	\$41.71
					2.000	1.000	0.750	2.000	2	KT-4203AF	\$45.63	KT-4203F	\$51.19
K1-10-14	4 & 4"	0.394 (10mm)	8mm	0.551 (14mm)	1.000	1.000	1.000	2.000	2	KT-4105AF	\$36.61	KT-4105F	\$41.11
B-204,B-205					2.000	1.000	1.000	2.000	2	KT-4205AF	\$30.53	KT-4205F	\$21.93
K1-10-18	5"	0.394 (10mm)	8mm	0.713 (18mm)	1.500	1.250	1.000	2.375	2	KT-5153AF	\$37.28	KT-5153F	\$41.71
B-05, BT-05, HOB-5, HOBT-5					2.000	1.250	1.000	2.375	2	KT-5203AF	\$30.42	KT-5203F	\$45.94
					2.500	1.250	1.000	2.375	2	KT-5253AF	\$55.49	KT-5253F	\$62.56
					3.000	1.250	1.500	2.375	2	KT-5303AF	\$64.75	KT-5303F	\$72.05
					4.000	1.900	1.250	3.000	2	KT-5403AF	\$76.82	KT-5403F	\$85.30
K1-10-19	5"	0.394 (10mm)	8mm	0.748 (19mm)	1.500	1.250	1.000	2.375	2	KT-5150AF	\$37.28	KT-5150F	\$41.71
N-05, NT-05					2.500	1.250	1.500	2.375	2	KT-5250AF	\$45.88	KT-5250F	\$51.19
					3.000	1.250	1.500	2.375	2	KT-5300AF	\$64.75	KT-5300F	\$72.05
K1-11-17	5"	0.433 (11mm)	8mm	0.669 (17mm)	1.500	1.270	1.000	2.375	2	NK-5150AF*	\$37.28	NK-5150F*	\$41.71
Nikko 5"					2.000	1.270	1.000	2.375	2	NK-5200AF*	\$47.48	NK-5200F*	\$53.09

For "Pointed" Soft Jaws, please substitute "P" for "F" in the part number. Example: KT-4100AF will be KT-4100AP. Add \$4.00 For Pointed Jaws
Soft Jaw Material: ALUMINUM-6061-T6 Bar Stock, STEEL-1018 or 1050, "B" JAWS-7075-T6 Aircraft Aluminum
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

HARD JAWS-1 STEP

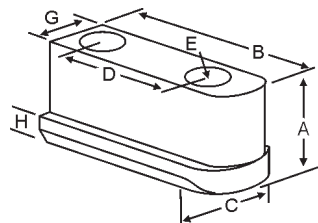
Group Number	Chuck Size	Critical Dimensions											Part Number	Price Per Set	Style	Code
		Groove Width G	Screw Size E	Hole Space D	Width Inch C	OAL Inch B	Height Inch A	No. of Holes	No. of Steps	Top Step Ht S1	Mid Step Ht S2	Bot Step Ht S3				
K1-10-14	4/5	0.394 (10mm)	8mm	0.551 (25mm)	0.906	2.087	1.083	3	1	0.394	-	0.672	KT-50HJ1-B	\$281.53	OEM Style	E

Please See Page 51 For Dimensional Diagram

JAW NUTS & SCREWS



MADE IN THE
USA



USST

Kitagawa	MMK Matsumoto	Chuck Size	Critical Dimensions					2 Screws Included With Each Jaw Nut						
			Heel Height H	Groove Width G	Screw Size Pitch & Length E	Hole Space D	Hght Inch A	Width Inch C	Length Inch B	Jaw Nut Part Number	Price Each	Screw Part Number	Price Each	
B-04,BT-04, HOB-4		4	0.220	0.312 (8mm)	M6-1.00x25mm	0.590 (15mm)	0.531	0.453	0.965	KT-40JN	\$37.14	M0610025	\$2.25	
NL-04,AS-04,AT-04, HJ-4,N-04,NT-04	H-4(HPC),H4 (NAK),HH-4	4	0.220	0.392 (10mm)	M8-1.25x30mm	0.551 (14mm)	0.710	0.590	1.030	KT-45JN	\$37.14	M0812530	\$2.25	
B-204, B-205 N204/205, HS05		4/5	.220	0.394 (10mm)	M8-1.25x25mm	0.551 (14mm)	0.590	0.590	1.026	KT-204JN	\$28.20	M0812525	\$2.25	
HOBT-5,B-05, BT-05,HOB-5		5	0.220	0.392 (10mm)	M8-1.25x25mm	0.713 (18mm)	0.612	0.550	1.180	KT-53JN	\$37.14	M0812525	\$2.25	
HJ-5,N-05, NT-05		4	0.220	0.392 (10mm)	M8-1.25x25mm	0.748 (19mm)	0.612	0.550	1.180	KT-50JN	\$37.14	M0812525	\$2.25	

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

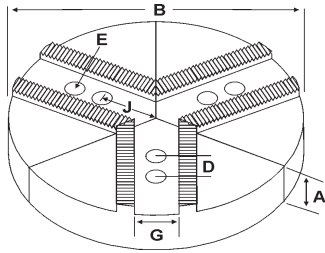
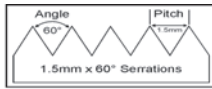
CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

ROUND JAWS- 1.5 mm x 60° Serrations

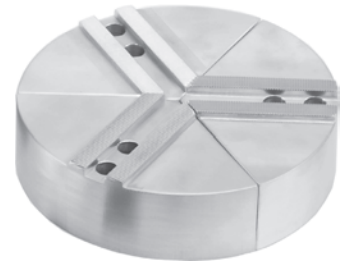
FOR USE ON: **Kitagawa®, Samchully®, Strong®, MMK, SMW Autoblok, Howa & Hitachi-Seiki Chucks**



Group



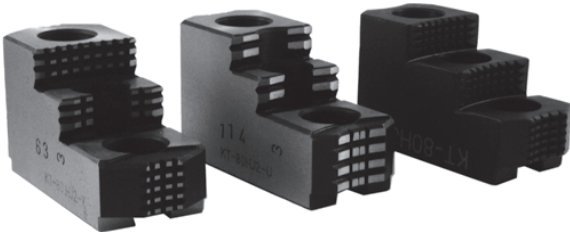
- 1.5mm x 60° serrations
- Round Jaws allow for complete gripping of workpiece
- Oversized jaws available
- Ideal for thin-walled or irregular shaped workpieces.
- Can be machined to fit workpiece
- Special "J" dimensions available
- Available in Aluminum, Cast Iron & Steel
- Aluminum round jaws made from solid extruded aluminum (up to 15" dia)
- **Made in the USA**



Group No.	Chuck Size	Critical Dimensions			Hole to Front J	Pie Dia B	Height Inch A	Industry Ref #	ALUMINUM		CAST IRON		STEEL	
		Groove Width G	Screw Size E	Hole Space D					Part Number	Price Set of 3	Part Number	Price Set of 3	Part Number	Price Set of 3
K1-11-20	6"	0.433 (11mm)	10mm	0.787 (20mm)	1.625	6	2.00	-	RHO-6200A	\$83.92	RHO-6200CI	\$144.31	RHO-6200S	\$202.43
							3.00	-	RHO-6300A	\$114.33	RHO-6300CI	\$226.75	RHO-6300S	\$257.66
							4.00	-	RHO-6400A	\$131.58	RHO-6400CI*	\$224.88	RHO-6400S	\$312.86
							8	2.00	-	8-RHO-6200A	\$126.29	8-RHO-6200CI	\$185.53	-
K1-11-25	6"	0.433 (11mm)	8mm	0.985 (25mm)	1.625	6	2.00	SUG6PSTS	RSG-6200A	\$77.72	RSG-6200CI	\$144.31	RSG-6200S*	\$202.43
							3.00	-	RSG-6300A	\$114.33	RSG-6300CI	\$226.75	RSG-6300S	\$257.66
							4.00	SUG6P1STS	RSG-6400A	\$120.84	-	-	RSG-6400S	\$312.86
							8	2.00	-	8-RSG-6200A	\$126.29	8-RSG-6200CI	\$185.53	8-RSG-6200S
K1-12-20	6"	0.472 (12mm)	10mm	0.787 (20mm)	1.625	6	2.00	AKT6FG	RKT-6200A	\$72.61	RKT-6200CI	\$144.31	RKT-6200S	\$169.12
							3.00	AKT6MHFG	RKT-6300A	\$104.86	RKT-6300CI	\$226.75	RKT-6300S	\$257.66
							4.00	KTT6P1	RKT-6400A	\$118.88	-	-	RKT-6400S	\$312.86
							8	2.00	KTT8-6P	8-RKT-6200A	\$91.39	8-RKT-6200CI	\$185.53	8-RKT-6200S
K1-14-20	6"	0.551 (14mm)	10mm	0.790 (20mm)	1.625	6	2.00	-	RNK-6200A	\$83.92	RNK-6200CI	\$144.31	RNK-6200S	\$202.43
							3.00	-	RNK-6300A	\$114.33	RNK-6300CI	\$226.75	RNK-6300S	\$213.37
							4.00	-	RNK-6400A	\$131.58	-	-	RNK-6400S	\$259.09
							10	2.00	-	10-RSG-6200A	\$165.73	-	-	-

Round Jaw Material: ALUMINUM-6061-T6 Bar Stock, CAST IRON-Gray, STEEL-1018. For complete list of applicable chucks, see pages 542-554.
* denotes non-stock item. Please allow 1 week manufacturing time.

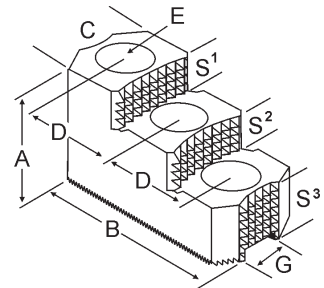
HARD JAWS



XTRA BITE (-X) GRIP-RITE/OEM Style SHARK JAW

FEATURES:

- Designed for first operation roughing, expect standard runout between 0.005-0.010
- Reversible-suitable for OD & ID workholding.
- **XTRA BITE** -very aggressive bite. Conical teeth for extra gripping power and ground body to provide improved runout.
- **GRIP-RITE/OEM Style** hard jaws have ground tips and provide better runout.
- **SHARK JAWS** have conical teeth for extra gripping power and black oxide for long life. Ideal for castings and scaly material. Made in the USA.
- 1 & 2 step jaws available.



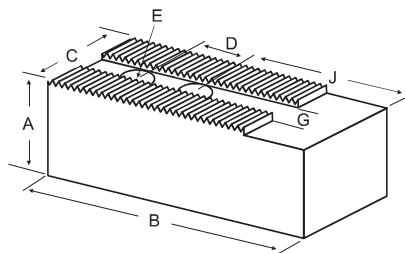
Group Number	Chuck Size	Critical Dimensions			Width Inch C	OAL Inch B	Height Inch A	No. of Holes	No. of Steps	Top Step Ht S1	Mid Step Ht S2	Bot Step Ht S3	Part Number	Price Per Set	Style	Code
		Groove Width G	Screw Size E	Hole Space D												
K1-11-20	6"	0.433 (11mm)	10mm	0.787 (20mm)	1.250	2.900	2.000	3	2	0.500	0.500	1.000	HO-60HJ2	\$431.70	Shark Jaws	D
K1-11-25	6"	0.433 (11mm)	8mm	0.985 (25mm)	1.250	3.000	1.969	3	2	0.500	0.500	0.969	SG-60HJ2-X	\$307.80	Xtra-bite	E
K1-12-20	6"	0.472 (12mm)	10mm	0.787 (20mm)	1.220	2.900	2.000	3	1	0.500	-	1.000	KT-60HJ1	\$355.56	Shark Jaws	D
					1.220	2.646	1.423	3	1	0.359	-	1.064	KT-60HJ1-U	\$273.18	OEM Style	E
					1.250	3.000	1.969	3	1	1.000	-	0.969	KT-60HJ1-X	\$287.55	Xtra-bite	E
					1.220	2.900	2.000	3	2	0.500	0.500	1.000	KT-60HJ2	\$355.56	Shark Jaws	D
					1.220	2.728	1.740	3	2	0.402	0.402	0.936	KT-60HJ2-U	\$245.75	OEM Style	E
					1.250	3.000	1.969	3	2	0.500	0.500	0.969	KT-60HJ2-X	\$256.55	Xtra-bite	E

Call Us Today For All Of Your Machine Tool Needs!

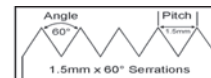
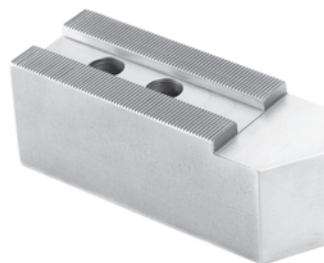
SOFT JAWS- 1.5 mm x 60° Serrations

C

FOR USE ON: **Kitagawa®**, **Samchully®**, **Strong®**, **MMK**, **SMW Autoblok**, **Howa & Hitachi-Seiki Chucks**



- 1.5mm x 60° serrations
- Supplies maximum concentricity on finish turning operations
- All jaws have 2 holes
- Can be bored or turned to fit workpiece
- Steel jaws can be hardened
- Available flat ended or pointed for smaller diameter parts
- Special orders available
- Available in Aluminum, Steel & Aircraft Aluminum (where noted)



Group
(K1)

QUANTITY DISCOUNTS!
Order **5 SETS OR MORE** of the same part number soft jaw and receive a **5% DISCOUNT!**

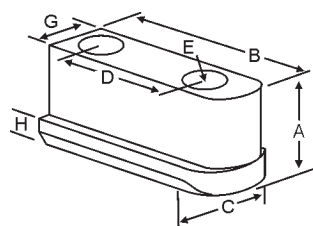
Group No.	Chuck Size	Critical Dimensions			ALUMINUM						STEEL						
		Groove Width G	Screw Size E	Hole Space D	Hght Inch A	Hole to Front J	Width Inch C	Length Inch B	No. of Holes	FLAT END Part Number	Price Set Of 3	FLAT END Part Number	Price Set Of 3				
K1-11-20	6"	0.433 (11mm)	10mm	0.787 (20mm)	1.500	1.625	1.250	3.000	2	HO-6150AF	\$39.97	HO-6150F	\$44.57				
2.000					1.625	1.250	3.000	2	HO-6200AF	\$46.02	HO-6200F	\$51.19					
2.500					1.625	1.250	3.000	2	HO-6250AF	\$55.40	HO-6250F	\$61.60					
3.000					1.625	1.250	3.000	2	HO-6300AF	\$65.66	HO-6300F	\$73.00					
K1-11-25	6"	0.433 (11mm)	8mm	0.985 (25mm)	1.500	1.625	1.000	3.000	2	SG-6150AF	\$39.87	SG-6150F	\$41.58				
1.625					1.250	1.000	3.000	2	SG-6152AF	\$44.86	SG-6152F	\$50.06					
2.500					1.625	1.000	3.000	2	SG-6250AF	\$49.69	SG-6250F	\$51.63					
1.625					1.250	1.000	3.000	2	SG-6252AF	\$60.31	SG-6252F	\$67.13					
K1-12-20	6"	0.472 (12mm)	10mm	0.787 (20mm)	1.000	1.625	1.250	3.000	2	KT-6100AF	\$37.84	KT-6100F	\$42.34				
1.625					1.250	1.250	3.000	2	KT-6150AF	\$26.55	KT-6150F	\$22.95					
1.625					1.250	1.250	3.000	2	KT-6150BF	Call	-	-					
1.625					2.000	1.250	3.000	2	KT-6152AF	\$74.18	KT-6152F	\$82.83					
2.125					1.250	1.250	3.500	2	KT-6151AF	\$47.07	KT-6151F	\$52.47					
1.625					1.250	1.250	3.000	2	KT-6200AF	\$31.59	KT-6200F	\$34.37					
1.625					1.250	1.250	3.000	2	KT-6200BF	Call	-	-					
2.500					1.625	1.250	3.000	2	KT-6250AF	\$49.69	KT-6250F	\$39.69					
1.625					1.250	1.250	3.000	2	KT-6300AF	\$41.12	KT-6300F	\$44.99					
1.625					1.250	1.250	3.000	2	KT-6300BF	Call	-	-					
1.625					2.000	1.250	3.000	2	KT-6302AF	\$86.34	KT-6302F	\$95.71					
3.500					1.625	1.250	3.000	2	KT-6350AF	\$78.43	KT-6350F	\$51.51					
4.000					1.625	1.250	3.000	2	KT-6400AF	\$86.08	KT-6400F	\$95.71					
5.000					1.625	1.250	3.000	2	KT-6500AF*	\$174.75	KT-6500F*	\$197.02					
K1-14-20					6"	0.551 (14mm)	10mm	0.790 (20mm)	1.500	1.625	1.250	3.000	2	NK-6150AF	\$39.97	NK-6150F	\$44.57
2.500									1.625	1.250	3.000	2	NK-6250AF	\$55.40	NK-6250F	\$61.60	

For "Pointed" Soft Jaws, please substitute "P" for "F" in the part number. Example: HO-6200AF will be HO-6200AP. Add \$4.00 For Pointed Jaws
Soft Jaw Material: ALUMINUM-6061-T6 Bar Stock, STEEL-1018 or 1050, "B" JAWS-7075-T6 Aircraft Aluminum
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

JAW NUTS & SCREWS



MADE IN THE
USA



USST

Chuck Make & Model	Chuck Size	Critical Dimensions						2 Screws Included With Each Jaw Nut					
		Heel Height H	Groove Width G	Screw Size Pitch & Length E	Hole Space D	Hght Inch A	Width Inch C	Length Inch B	Jaw Nut Part Number	Price Each	Screw Part Number	Price Each	
-	6	0.295	0.432 (11mm)	M10-1.60x30mm	0.787 (20mm)	0.847	0.669	1.460	HO-62JN	\$33.42	M1016030	\$2.25	
MMK: Z-6,ZA5-6-0, ZA5-6B,ZJA5-6	6	0.295	0.432 (11mm)	M8-1.25x30mm	0.984 (25mm)	0.790	0.690	1.570	SG-60JN	\$30.96	M0812530	\$2.25	
Kitagawa: B-206,BT-206,BB-06,B-07 Strong: N206 Samchully: HS-06 MMK:PC-6-46	6	0.295	0.472 (12mm)	M10-1.60x30mm	0.787 (20mm)	0.728	0.689	1.417	KT-60JN	\$34.92	M1016030	\$2.25	
Kitagawa: B-06	6	0.295	0.472 (12mm)	M10-1.60x30mm	0.787 (20mm)	0.885	0.689	1.440	KT-61JN	\$33.42	M1016030	\$2.25	

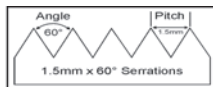
Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

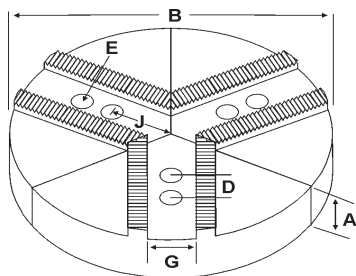
LATHE CHUCKS
LIVE CENTERS
VISE JAWS
VISE ACCESSORIES
STRAIGHT SHANK
COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

ROUND JAWS- 1.5 mm x 60° Serrations

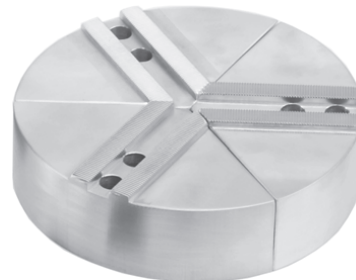
FOR USE ON: **Kitagawa®, Samchully®, Strong®, MMK, SMW Autoblok, Howa & Seom Chucks**



Group
K1



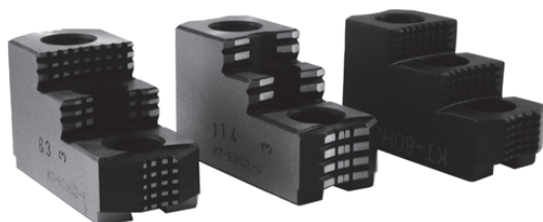
- 1.5mm x 60° serrations
- Round Jaws allow for complete gripping of workpiece
- Oversized jaws available
- Ideal for thin-walled or irregular shaped workpieces.
- Can be machined to fit workpiece
- Max. length of serrations: 5.75"
- All jaws have 2 holes
- Special "J" dimensions available
- Available in Aluminum, Cast Iron & Steel
- Aluminum round jaws made from solid extruded aluminum (up to 15" dia)
- Made in the USA



Group No.	Chuck Size	Critical Dimensions			Hole to Front J	Pie Dia B	Height Inch A	Industry Ref #	ALUMINUM		CAST IRON		STEEL	
		Groove Width G	Screw Size E	Hole Space D					Part Number	Price Set of 3	Part Number	Price Set of 3	Part Number	Price Set of 3
K1-14-25	8"	0.551 (14mm)	12mm	0.984 (25mm)	1.325	6	2.00	-	6-RKT-8200A	\$83.92	6-RKT-8200CI	\$144.31	-	-
3.00							-	6-RKT-8300A*	\$114.33	-	-	-	-	
2.250					8	2.00	KTT8P	RKT-8200A	\$85.36	RKT-8200CI	\$185.53	RKT-8200S	\$239.60	
						3.00	AKT8MHFG	RKT-8300A	\$134.30	-	-	RKT-8300S	\$404.87	
						4.00	KTT8P1	RKT-8400A	\$159.83	RKT-8400CI	\$350.44	RKT-8400S	\$478.49	
						6.00	-	RKT-8600A	\$303.09	-	-	-	-	
2.266					8	2.00	HAR8MSHP	RHA-8200A	\$126.29	-	-	-	-	
						4.00	HAR8MSHP1	RHA-8400A	\$176.81	-	-	-	-	
2.250					10	2.00	KTT10-8P	10-RKT-8200A	\$135.37	10-RKT-8200CI*	\$278.30	10-RKT-8200S	\$423.27	
						3.00	-	10-RKT-8300A	\$194.66	-	-	-	-	
						4.00	KTT10-8P1	10-RKT-8400A	\$227.62	10-RKT-8400CI	\$494.74	-	-	
						6.00	-	10-RKT-8600A*	\$475.52	-	-	-	-	
2.250					12	2.00	KTT12-8P	12-RKT-8200A	\$171.26	-	-	-	-	
						3.00	-	12-RKT-8300A	\$355.20	-	-	-	-	
						4.00	KTT12-8P1	12-RKT-8400A	\$427.41	-	-	-	-	
2.250					15	2.50	-	15-RKT-8250A	\$494.11	-	-	-	-	
						4.00	-	15-RKT-8400A	\$564.72	-	-	-	-	

Round Jaw Material: ALUMINUM-6061-T6 Bar Stock, CAST IRON-Gray, STEEL-1018
For complete list of applicable chucks, see pages 542-554.* denotes non-stock item. Please allow 1 week manufacturing time.

HARD CHUCK JAWS 1 & 2 STEPS



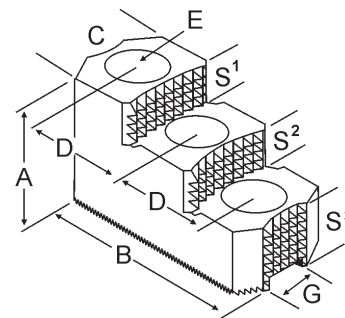
Xtra Bite

OEM Style

Shark Jaws

FEATURES:

- Designed for first operation roughing, expect standard runout between 0.005-0.010
- Reversible-suitable for OD & ID working.
- XTRA BITE -very aggressive bite. Conical teeth for extra gripping power and ground body to provide improved runout.
- GRIP-RITE/OEM Style hard jaws have ground tips and provide better runout.
- SHARK JAWS have conical teeth for extra gripping power and black oxide for long life. Ideal for castings and scaly material. Made in the USA.
- Bison jaws feature enhanced serrations on gripping surface
- 1 & 2 step jaws available.



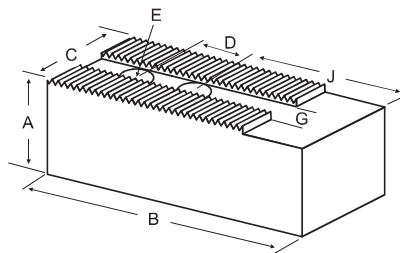
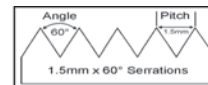
Group Number	Chuck Size	Critical Dimensions			Width C	OAL B	Height A	No. of Holes	No. of Steps	Top Step Ht S1	Mid Step Ht S2	Bot Step Ht S3	Part Number	Price Per Set	Style	Code
		Groove Width G	Screw Size E	Hole Space D												
K1-14-25	8	0.551 (14mm)	12mm	0.984 (25mm)	1.500	3.300	2.000	3	1	0.500	-	1.000	KT-80HJ1	\$420.66	Shark Jaws	D
1.382					3.402	1.669	3	1	0.591	-	1.078	KT-80HJ1-U	\$323.19	OEM Style	E	
1.500					3.500	1.969	3	1	1.030	-	0.938	KT-80HJ1-X	\$340.20	XTRA-BITE	E	
1.500					3.300	2.000	3	2	0.500	0.500	1.000	KT-80HJ2	\$420.66	Shark Jaws	D	
1.382					3.409	2.000	3	2	0.465	0.465	1.070	KT-80HJ2-U	\$294.53	OEM Style	E	
1.500					3.500	1.969	3	2	0.530	0.530	0.909	KT-80HJ2-X	\$312.71	XTRA-BITE	E	

Call Us Today For All Of Your Machine Tool Needs!

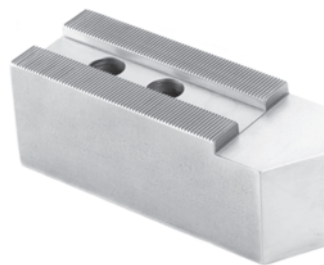
SOFT JAWS- 1.5 mm x 60° Serrations

C

FOR USE ON: **Kitagawa®**, **Samchully®**, **Strong®**, **MMK**, **SMW Autoblok** & **Howa Chucks**



- 1.5mm x 60° serrations
- Supplies maximum concentricity on finish turning operations
- Can be bored or turned to fit workpiece
- Steel jaws can be hardened
- All jaws have 2 holes
- Available flat ended or pointed for smaller diameter parts
- Special orders available
- Available in Aluminum, Steel & Aircraft Aluminum (where noted)



Group

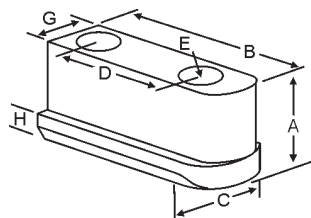
K1

QUANTITY DISCOUNTS!
Order **5 SETS OR MORE** of the same part number soft jaw and receive a **5% DISCOUNT!**

Group No.	Chuck Size	Critical Dimensions			Hght Inch A	Hole to Front J	Length Inch B	Width Inch C	Industry Reference	ALUMINUM		STEEL				
		Groove Width G	Screw Size E	Hole Space D						FLAT END Part Number	Price Set Of 3	FLAT END Part Number	Price Set Of 3			
K1-14-25	8"	0.551 (14mm)	12mm	0.984 (25mm)	1.500	2.000	3.750	1.500	-	KT-8150AF	\$33.35	KT-8150F	\$36.52			
Kitagawa B-08, B-208, BB08, BB208						2.4690	4.250	1.500	HR-149-1.5-O or OP	KT-8150-24AF	\$52.46	KT-8150-24F	\$60.09			
Samchully HS-08, HC-08, HCH-08						1.719	3.500	1.500	HR149-2.0	KT-8200-17AF	\$52.35	KT-8200-17F	\$60.74			
						2.000	3.750	1.500	-	KT-8200AF	\$38.56	KT-8200F	\$40.70			
						2.000	3.750	1.500	-	KT-8200BF	Call	-	-			
						2.016	3.750	1.500	KT-8/KT-8P	-	-	KT-8	\$53.19			
Strong N208, NB208, NT208, NIT208, V208					2.250	4.000	1.500	-	KT-8201AF	\$46.63	KT-8201F	\$46.86				
					2.250	4.000	1.500	-	KT-8201BF	\$71.41	-	-				
					2.266	4.000	1.500	KT-8PL	-	-	KT-8PL	\$84.74				
MMK PC-8-52, ZA6-8, HA6-8, HH-8, HHJ-8					3.000	2.4690	4.250	1.500	1.7190	3.500	1.500	HR-149-2.0-O or OP	KT-8200-25AF	\$52.35	KT-8200-25F	\$60.09
									1.7190	3.500	1.500	HR-149-2.5	KT-8250-17AF	\$47.90	KT-8250-17F	\$60.74
									2.4690	4.250	1.500	HR-149-2.5-O or OP	KT-8250-25AF	\$54.30	KT-8250-25F	\$68.92
									2.000	3.750	1.500	-	KT-8300AF	\$50.90	KT-8300F	\$46.82
									2.000	3.750	1.500	-	KT-8300BF	Call	-	-
									2.016	3.750	1.500	KT-8MH/KT-8MHP	-	-	KT-8MH	\$88.82
HOWA H3KT8, HO15M8, HO7MA8					3.500	1.7190	3.500	1.500	1.7190	3.500	1.500	HR-149-3.5	KT-8350-17AF	\$66.84	KT-8350-17F	\$85.26
									2.4690	4.250	1.500	HR-149-3.5-O or OP	KT-8350-25AF	\$76.97	KT-8350-25F	\$96.94
									2.000	3.750	1.500	-	KT-8400AF	\$62.11	KT-8400F	\$61.00
SMW Autoblok BBM-210, BHM-210					4.000	2.016	3.750	1.500	2.016	3.750	1.500	KT-8EH/KT-8EHP	-	-	KT-8EH	\$101.25
									2.250	4.000	1.500	-	KT-8401AF	\$69.47	KT-8401F	\$77.70
									2.266	4.000	1.500	KT-8EHPL	-	-	KT-8EHPL	\$121.52
									1.7190	3.500	1.500	HR-149-5.0	KT-8500-17AF	\$128.10	KT-8500-17F	\$128.48
5.000					2.000	3.750	1.500	-	KT-8500AF	\$132.85	KT-8500F	\$138.52				
					2.4690	4.250	1.500	HR-149-5.0-O or OP	KT-8500-25AF	\$150.38	KT-8500-25F	\$146.00				
	2.000	3.750	1.500	-	KT-8600AF	\$214.93	KT-8600F	\$204.71								
6.000	2.250	4.000	1.500	-	KT-8601AF	\$233.14	KT-8601F	\$262.85								

For "Pointed" Soft Jaws, please substitute "P" for "F" in the part number. Example: KT-8150AF will be KT-8150AP. Add \$4.00 For Pointed Jaws
"Huron Equivalent" jaws are pointed. Soft Jaw Material: ALUMINUM-6061-T6 Bar Stock, STEEL-1018 or 1050, "B" JAWS-7075-T6 Aircraft Aluminum
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

JAW NUTS AND SCREWS



USST

MADE IN THE USA

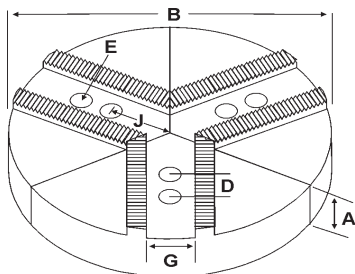
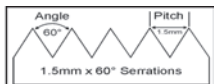
Chuck Make & Model	Chuck Size	Heel Height H	Groove Width G	Screw Size Pitch & Length E	Hole Space D	Hght Inch A	Width Inch C	Length Inch B	2 Screws Included With Each Jaw Nut			
									Jaw Nut Part Number	Price Each	Screw Part Number	Price Each
MMK: ZA6-8	8	0.335	0.549 (14mm)	M12-1.75x35mm	0.984 (25mm)	0.895	0.807	1.840	KT-82JN	\$36.30	M1217535	\$2.25
Kitagawa: BB-08, B-208 Strong: N208 Samchully: HS-08 MMK: PC-8-52	8	0.335	0.549 (14mm)	M12-1.75x30mm	0.984 (25mm)	0.807	0.807	1.880	KT-81JN	\$37.30	M1217530	\$2.25
Kitagawa: NT-08, B-08, BT-08, HOB-8	8	0.374	0.549 (14mm)	M12-1.75x35mm	0.984 (25mm)	1.000	0.807	1.880	KT-80JN	\$28.31	M1217535	\$2.25

Call Us Or Visit Our Website For Our Complete Selection!

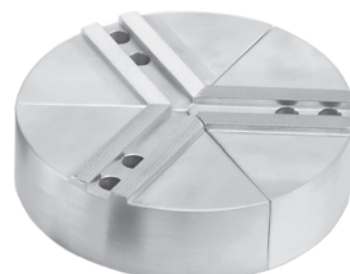
LATHE CHUCKS
LIVE CENTERS
VISE JAWS
VISE ACCESSORIES
STRAIGHT SHANK
COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

ROUND JAWS- 1.5 mm x 60° Serrations

FOR USE ON: **SMW Autoblok, Howa, Suga & Hitachi-Seiki Chucks**



- 1.5mm x 60° serrations
- Round Jaws allow for complete gripping of workpiece
- Oversized jaws available
- Ideal for thin-walled or irregular shaped workpieces.
- Can be machined to fit workpiece
- Max. length of serrations: 5.75"
- All jaws have 2 holes
- Special "J" dimensions available
- Available in Aluminum, Cast Iron & Steel
- Aluminum round jaws made from solid extruded aluminum (up to 15" dia)
- Made in the USA



Group
K1



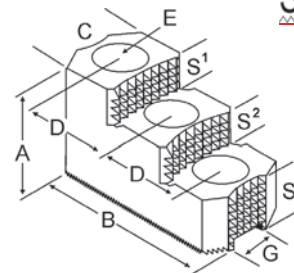
Group No.	Chuck Size	Critical Dimensions			Hole to Front J	Pie Dia B	Height Inch A	Industry Ref #	ALUMINUM		CAST IRON		STEEL					
		Groove Width G	Screw Size E	Hole Space D					Part Number	Price Set of 3	Part Number	Price Set of 3	Part Number	Price Set of 3				
K1-14-30	8"	0.551 (14mm)	10mm	1.181 (30mm)	2.250	8	2.00	SUG8PSTS	RSG-8200A	\$126.29	RSG-8200CI	\$185.53	RSG-8200S	\$294.45				
							3.00	-	RSG-8300A	\$154.01	-	-	RSG-8300S	\$404.87				
							4.00	SUG8P1STS	RSG-8400A	\$176.81	RSG-8400CI	\$350.44	-	-				
							2.00	-	10-RSG-8200A	\$165.73	-	-	-	-				
							4.00	-	10-RSG-8400A	\$255.63	-	-	-	-				
2.250	12	2.00	-	12-RSG-8200A	\$215.37	-	-	-	-	-	-	-						
K1-16-25 HOWA HO15M10, HO22M8, HO24M8, HO27M8, HO34M8	8"	0.630 (16mm)	12mm	0.984 (25mm)	2.250	8	2.00	HOW27M88P	RHO-8200A	\$111.13	RHO-8200CI	\$185.53	RHO-8200S	\$294.45				
							3.00	-	RHO-8300A	\$146.96	-	-	RHO-8300S	\$404.87				
							4.00	HOW27M88P1	RHO-8400A	\$154.24	RHO-8400CI	\$350.44	-	-				
							2.00	-	10-RHO-8200A	\$146.68	-	-	-	-				
							4.00	-	10-RHO-8400A	\$227.62	-	-	-	-				
							2.250	10	2.00	-	12-RHO-8200A	\$215.37	-	-	-	-	-	-
							4.00	-	12-RHO-8400A	\$427.41	-	-	-	-				
							2.250	12	2.00	-	-	-	-	-	-	-	-	-
K1-17-23	8"	0.669 (17mm)	12mm	0.906 (23mm)	2.250	8	2.00	-	RAB-8200A	\$126.29	RAB-8200CI	\$185.53	RAB-8200S	\$294.45				
							2.500	8	2.00	AUTOBHM8P	RAB-8200A4	\$126.29	-	-	-	-		
							3.00	-	RAB-8300A	\$154.01	-	-	RAB-8300S	\$335.29				
							4.00	-	RAB-8400A	\$176.81	RAB-8400CI	\$350.44	-	-				
							2.500	8	4.00	AUTOBHM8P1	RAB-8400A4	\$154.01	-	-	-	-		

Round Jaw Material: ALUMINUM-6061-T6 Bar Stock, CAST IRON-Gray, STEEL-1018
For complete list of applicable chucks, see pages 542-554.* denotes non-stock item. Please allow 1 week manufacturing time.

HARD JAWS



- Designed for first operation roughing, expect standard runout between 0.005-0.010
- Reversible-suitable for OD & ID workholding.
- SHARK JAWS have conical teeth for extra gripping power and black oxide for long life.
- Ideal for castings and scaly material.
- Made in the USA.



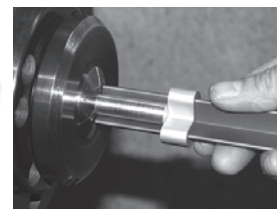
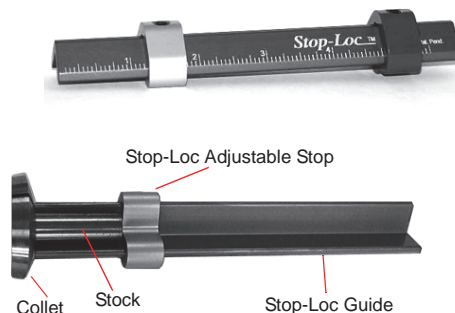
SHARK JAWS

Group Number	Chuck Size	Critical Dimensions			Width C	OAL B	Height A	No. of Holes	No. of Steps	Top Step Ht S1	Mid Step Ht S2	Bot Step Ht S3	Part Number	Price Per Set	Style	Code
		Groove Width G	Screw Size E	Hole Space D												
K1-16-25	8	0.630 (16mm)	12mm	0.984 (25mm)	1.500	3.300	2.000	3	2	0.500	0.500	1.000	HO-80HJ2	\$439.53	Shark Jaws	D

CHUCK/COLLET STOP

Handheld Lathe & Mill Vise Tool

- Adjustable Precision-Gage lengths up to 5-1/2" long holding +/- .005
- Save Money! No more fixed length dedicated shop-made front collet stops for each job
- Versatile-For use on CNC or manual lathes whether you are running a bar manually or using a bar puller
- Consistency-Unique design incorporates self-centering, unobstructed viewing and contrasting colors to give user confidence
- Dimensions: 6" L x 3/4" H x 3/4" W
- Made in USA



Stop-Loc
Pat.Pend.



Graduations	Part Number	Price
Inch	STOPLOC	\$16.00
Inch/Metric	STOPLOC-THSMM	\$18.00
Metric	STOPLOC-MM	\$18.00

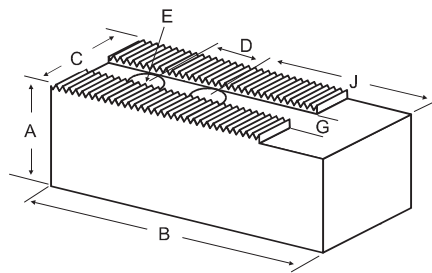
Call Us Today For All Of Your Machine Tool Needs!

2019-20 MASTER CATALOG

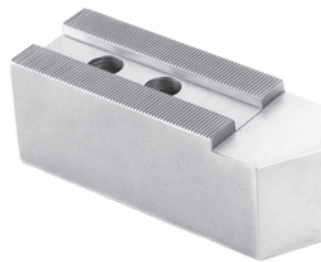
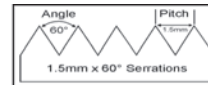
SOFT JAWS- 1.5 mm x 60° Serrations

C

FOR USE ON: **SMW Autoblok, Howa, Suga & Hitachi-Seiki Chucks**



- 1.5mm x 60° serrations
- Supplies maximum concentricity on finish turning operations
- All jaws have 2 holes
- Can be bored or turned to fit workpiece
- Steel jaws can be hardened
- Available flat ended or pointed for smaller diameter parts
- Special orders available
- Available in Aluminum & Steel



Group

K1

QUANTITY DISCOUNTS!

Order **5 SETS OR MORE** of the same part number soft jaw and receive a **5% DISCOUNT!**

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

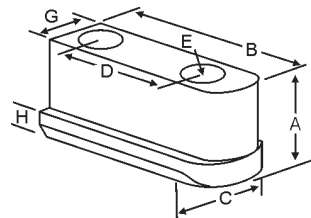
PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Group No.	Chuck Size	Critical Dimensions				ALUMINUM					STEEL		
		Groove Width G	Screw Size E	Hole Space D	Hght Inch A	Hole to Front J	Width Inch C	Length Inch B	No. of Holes	FLAT END Part Number	Price Set Of 3	FLAT END Part Number	Price Set Of 3
K1-14-30 Suga 8"	8"	0.551 (14mm)	10mm	1.181 (30mm)	2.000	1.970	1.500	3.750	2	SG-8200AF	\$56.39	SG-8200F	\$62.56
					3.000	1.970	1.500	3.750	2	SG-8300AF	\$71.99	SG-8300F	\$79.63
					4.000	1.970	1.500	3.750	2	SG-8400AF	\$83.47	SG-8400F	\$92.06
K1-16-25 HOWA HO15M10, HO22M8, HO24M8, HO27M8, HO34M8	8"	0.630 (16mm)	12mm	0.984 (25mm)	2.000	2.000	1.500	3.750	2	HO-8200AF	\$56.39	HO-8200F	\$44.99
						2.250	1.500	4.000	2	HO-8201AF	\$53.84	HO-8201F	\$55.95
					3.000	2.000	1.500	3.750	2	HO-8300AF	\$71.99	HO-8300F	\$81.82
					4.000	2.000	1.500	3.750	2	HO-8400AF	\$74.28	HO-8400F	\$84.55
					6.000	2.000	1.500	3.750	2	HO-8600AF	\$231.26	HO-8600F	\$257.66
K1-17-23 SMW 200, SMW 210	8"	0.669 (17mm)	12mm	0.905 (23mm)	2.000	2.000	1.500	3.750	2	AB-8200AF	\$56.39	AB-8200F	\$62.56
					3.000	2.000	1.500	3.750	2	AB-8300AF	\$71.99	AB-8300F	\$79.63
					4.000	2.000	1.500	3.750	2	AB-8400AF	\$83.47	AB-8400F	\$92.06
K1-17-25	8"	0.669 (17mm)	12mm	0.984 (25mm)	2.000	2.000	1.500	3.750	2	AB-8205AF	\$56.39	AB-8205F	\$62.56

For "Pointed" Soft Jaws, please substitute "P" for "F" in the part number. Example: KT-8150AF will be KT-8150AP. Add \$4.00 For Pointed Jaws "Huron Equivalent" jaws are pointed. Soft Jaw Material: ALUMINUM-6061-T6 Bar Stock, STEEL-1018 or 1050, "B" JAWS-7075-T6 Aircraft Aluminum For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

JAW NUTS AND SCREWS



USST

MADE IN THE USA

Chuck Make & Model	Chuck Size	Critical Dimensions							2 Screws Included With Each Jaw Nut			
		Heel Height H	Groove Width G	Screw Size Pitch & Length E	Hole Space D	Hght Inch A	Width Inch C	Length Inch B	Jaw Nut Part Number	Price Each	Screw Part Number	Price Each
Howa: HO15M10,HO22M10,HO24M10	8	0.335	0.629 (16mm)	M12-1.75x40mm	0.984 (25mm)	1.040	0.807	1.830	HO-80JN	\$35.30	M1217540	\$2.25

JAW BORING RINGS

No need to look all over the shop for a setup piece and waste time. Our jaw boring ring is essential for boring soft jaws and round jaws.

FEATURES:

- Ideal for machining soft jaws.
- Attaches quickly without tools.
- Applies equal pressure on all jaws.
- Attaches to front of jaws, compensating for "jaw lift."
- Since no discs or bungs are used to clamp jaws, through boring of jaws is possible.



Save Set-Up Time!

USST

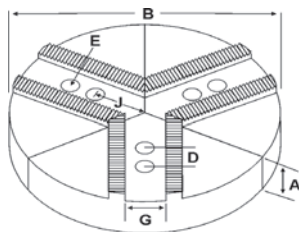
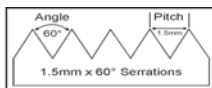
Jaw Boring Ring (comes complete with 3 pin assemblies)

Chuck Dia	ID Inch	OD Inch	Pin Depth	Pin Dia	Part Number	Price Each
4"	1.335	4.500	0.350"	0.510"	JBR-04	\$162.00
5"	2.335	5.500	0.350"	0.510"	JBR-05	\$162.00
6"	3.250	6.825	0.350"	0.512"	JBR-06	\$184.25
8"	3.500	8.450	0.350"	0.562"	JBR-08	\$226.48
10"	5.900	10.150	0.350"	0.709"	JBR-10	\$255.67
12"	7.475	12.075	0.400"	0.709"	JBR-12	\$284.23
15"	8.900	15.230	0.600"	0.938"	JBR-15	\$427.06

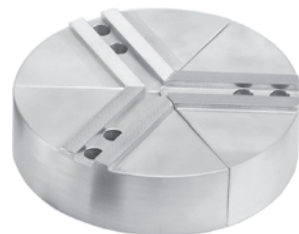
Call Us Or Visit Our Website For Our Complete Selection!

ROUND JAWS- 1.5 mm x 60° Serrations

FOR USE ON: **Kitagawa®, Samchully®, Strong®, MMK, SMW Autoblok, Howa & Seoam Chucks**



- 1.5mm x 60° serrations
- Round Jaws allow for complete gripping of workpiece
- Oversized jaws available
- Ideal for thin-walled or irregular shaped workpieces.
- Can be machined to fit workpiece
- Max. length of serrations: 5.75"
- All jaws have 2 holes
- Special "J" dimensions available
- Available in Aluminum, Cast Iron & Steel
- **Made in the USA**



Group

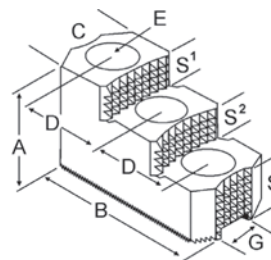


Group No.	Chuck Size	Critical Dimensions			Hole to Front J	Pie Dia B	Height Inch A	Industry Ref #	ALUMINUM		CAST IRON		STEEL	
		Groove Width G	Screw Size E	Hole Space D					Part Number	Price Set of 3	Part Number	Price Set of 3	Part Number	Price Set of 3
K1-16-30	10"	0.630 (16mm)	12mm	1.181 (30mm)	2.155	8	2.00	-	8-RKT-10200A	\$97.41	-	-	-	-
2.375					10	2.00	-	RKT-10200A	\$126.28	RKT-10200CI	\$278.30	RKT-10200S	\$303.96	
2.500†					10	2.00	KTT10P	RKT-10200A4	\$146.68	-	-	-	-	
2.650†					10	2.00	AKT10FG	RKT-10200A5	\$146.68	-	-	-	-	
2.750†					10	2.00	HAR10MSHP	RHA-10200A	\$146.68	-	-	-	-	
2.375					10	2.50	-	RKT-10250A	\$173.60	-	-	-	-	
					10	3.00	-	RKT-10300A	\$162.89	-	-	RKT-10300S	\$552.10	
2.650†					10	3.00	AKT10MHFG	RKT-10300A5	\$173.60	-	-	-	-	
2.375					10	4.00	-	RKT-10400A	\$193.60	RKT-10400CI	\$494.74	RKT-10400S	\$723.69	
2.500†					10	4.00	KTT10P1	RKT-10400A4	\$227.62	-	-	-	-	
2.650†					10	3.00	AKT10EHFG	RKT-10400A5	\$227.62	-	-	-	-	
2.750†					10	4.00	HAR10MSHP1	RHA-10400A	\$227.62	-	-	-	-	
					10	5.00	-	RKT-10500A	\$340.12	-	-	-	-	
					10	6.00	-	RKT-10600A	\$439.41	-	-	RKT-10600S	\$1,010.88	
					10	8.00	-	RKT-10800A	\$658.27	-	-	-	-	
2.500†					10	6.00	KTT10P6	RKT-10600A4	\$439.41	-	-	-	-	
2.375					12	2.00	-	12-RKT-10200A	\$171.15	12-RKT-10200CI	\$410.50	-	-	
2.500†					12	2.00	KTT12-10P	12-RKT-10200A4	\$184.94	-	-	-	-	
2.375					12	2.50	-	12-RKT-10250A	\$214.25	-	-	-	-	
					12	4.00	-	12-RKT-10400A	\$372.23	-	-	-	-	
2.500†					12	4.00	KTT12-10P1	12-RKT-10400A4	\$372.23	-	-	-	-	
2.375					15	2.50	-	15-RKT-10250A	\$494.11	15-RKT-10250CI	\$721.49	-	-	
2.500†					15	3.00	KTT15-10P	15-RKT-10300A4	\$516.17	-	-	-	-	
2.375					15	4.00	-	15-RKT-10400A	\$607.05	-	-	-	-	
2.500†					15	4.00	KTT15-10P1	15-RKT-10400A4	\$585.38	-	-	-	-	
					15	6.00	-	15-RKT-10600A*	\$1,147.36	-	-	-	-	
					18	2.50	-	18-RKT-10250A	\$630.49	-	-	-	-	
2.500†					18	3.00	KTT18-10P	18-RKT-10300A4	\$710.55	-	-	-	-	
2.375					18	4.00	-	18-RKT-10400A	\$851.69	-	-	-	-	
2.500†					18	4.00	KTT18-10P1	18-RKT-10400A4	\$835.46	-	-	-	-	
	21	3.00	KTT21-10P	21-RKT-10300A4	\$933.38	-	-	-	-					
2.375	21	4.00	-	21-RKT-10400A	\$1,135.76	-	-	-	-					
2.500†	21	4.00	KTT21-10P1	21-RKT-10400A4	\$1,114.13	-	-	-	-					
2.375	24	4.00	-	24-RKT-10400A*	\$1,550.55	-	-	-	-					

Round Jaw Material: ALUMINUM-6061-T6 Bar Stock, CAST IRON-Gray, STEEL-1018. 18" & Larger- Aluminum Casting T6 For complete list of applicable chucks, see pages 542-554.
* denotes non-stock item. Please allow 1 week manufacturing time. † -for big bore chucks.

HARD CHUCK JAWS

- Designed for first operation roughing, expect standard runout between 0.005-0.010
- Reversible-suitable for OD & ID workholding.
- **XTRA BITE** -very aggressive bite. Has conical teeth for extra gripping power and ground body to provide improved runout.
- **GRIP-RITE/OEM Style** hard jaws have ground tips and provide better runout.
- **SHARK JAWS** have conical teeth for extra gripping power and black oxide for long life. Ideal for castings and scaly material. Made in the USA.
- 1 & 2 step jaws available.



Group Number	Chuck Size	Critical Dimensions			Width Inch C	OAL Inch B	Height Inch A	No. of Holes	No. of Steps	Top Step Ht S1	Mid Step Ht S2	Bot Step Ht S3	Part Number	Price Per Set	Style	Code
		Groove Width G	Screw Size E	Hole Space D												
K1-16-30	10	0.630 (16mm)	12mm	1.181 (30mm)	1.750	4.000	2.000	3	1	0.750	-	1.250	KT-100HJ1	\$500.80	Shark Jaws	D
1.579					3.980	1.737	3	1	0.635	-	1.102	KT-100HJ1-U	\$384.75	OEM Style	E	
1.750					4.000	2.500	3	2	0.650	0.500	1.350	KT-100HJ2	\$500.80	Shark Jaws	D	
1.579					3.980	2.130	3	2	0.520	0.520	1.090	KT-100HJ2-U	\$336.60	OEM Style	E	
1.750					4.250	2.469	3	2	0.650	0.650	1.169	KT-100HJ2-X	\$370.44	XTRA-BITE	E	

Call Us Today For All Of Your Machine Tool Needs!

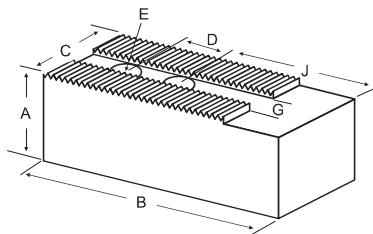
2019-20 MASTER CATALOG

SOFT JAWS- 1.5 mm x 60° Serrations

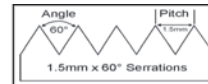
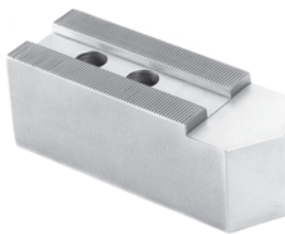
C

LATHE CHUCKS
LIVE CENTERS

FOR USE ON: **Kitagawa®, Samchully®, Strong®, MMK, SMW Autoblok, Howa & Seoam Chucks**



- 1.5mm x 60° serrations
- Supplies maximum concentricity on finish turning operations
- All jaws have 2 holes
- Can be bored or turned to fit workpiece
- Steel jaws can be hardened
- Available flat ended or pointed for smaller diameter parts
- Special orders available
- Available in Aluminum, Steel & Aircraft Aluminum (where noted)



Group

(K1)

QUANTITY DISCOUNTS!
Order **5 SETS OR MORE** of the same part number soft jaw and receive a **5% DISCOUNT!**

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

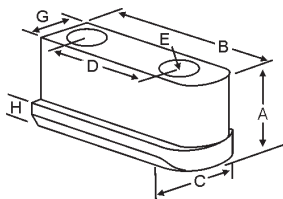
Group No.	Chuck Size	Critical Dimensions			Height A	Hole To Front J	Length B	Width C	Industry Reference #	ALUMINUM		STEEL	
		Groove Width G	Screw Size E	Hole Space D						Flat End Part Number	Price Set of 3 Jaws	Flat End Part Number	Price Set of 3 Jaws
K1-16-30	10"	0.630 (16mm)	12mm	1.181 (30mm)	2.000	2.169	4.000	1.750	HR-82-2.0	KT-10200-21AF	\$53.47	KT-10200-21F	\$38.56
KITAGAWA B-10, B-210, BL-210, BLT-210 Big-Bore BB210†						2.375	4.500	1.500	-	KT-10200AF	\$46.66	KT-10200F	\$45.84
						2.375	4.500	1.500	-	KT-10200BF	Call	-	-
						2.375	4.500	2.000	-	KT-10202AF	\$43.55	KT-10202F	\$58.85
						2.404	4.750	1.750	KT-10/KT-10P	-	-	KT-10	\$55.29
						2.654	5.000	1.750	KT-10PL	-	-	KT-10PL	\$71.10
						2.875	5.000	1.500	-	KT-10201AF	\$62.74	KT-10201F	\$54.04
						2.875	5.000	1.500	-	KT-10201BF	Call	-	-
						2.875	5.250	2.000	-	KT-10205AF	\$73.98	KT-10205F	\$81.51
						2.875	5.250	2.000	-	KT-10205BF	Call	-	-
						3.169	5.000	1.750	HR-82-2.0-O or OP	KT-10200-31AF	\$66.84	KT-10200-31F	\$67.74
						Samchully HS10, HC10 HH210 HCH10	2.169	4.000	1.750	HR-82-2.5	KT-10250-21AF	\$66.84	KT-10250-21F
					3.169		5.000	1.750	HR-82-2.5-O or OP	KT-10250-31AF	\$83.54	KT-10250-31F	\$91.10
STRONG N210 NB210 NIT210 V210					2.375		4.500	1.500	-	KT-10300AF	\$56.71	KT-10300F	\$66.29
					2.375		4.500	1.500	-	KT-10300BF	Call	-	-
					2.404		4.750	1.750	KT-10MH/KT-10MHP	-	-	KT-10MH	\$71.26
					2.654		5.000	1.750	KT-10MHPL	-	-	KT-10MHPL	\$84.85
MMK PC-10-78-A6 PC-10-78-A8 HA 8-11, HA6-10, HA8-10					2.875	5.000	1.500	-	KT-10301AF	\$81.79	KT-10301F	\$73.88	
					2.875	5.250	2.000	-	KT-10305AF	\$89.96	KT-10305F	\$98.57	
					HOWA H3KT10	2.169	4.000	1.750	HR-82-3.5	KT-10350-21AF	\$83.54	KT-10350-21F	\$92.28
						3.169	5.000	1.750	HR-82-3.5-O or OP	KT-10350-31AF	\$94.69	KT-10350-31F	\$101.51
SMW Autoblok ANM 250, BBM-250, BHM-250					2.375	4.500	1.500	-	KT-10400AF	\$67.46	KT-10400F	\$76.14	
					2.375	4.500	1.500	-	KT-10400BF	Call	-	-	
					2.404	4.750	1.750	KT-10EH/KT-10EHP	-	-	KT-10EH	\$83.77	
					2.654	5.000	1.750	KT-10EHPL	-	-	KT-10EHPL	\$96.11	
					2.875	5.000	1.500	-	KT-10401AF	\$93.82	KT-10401F	\$93.50	
					2.875	5.250	2.000	-	KT-10405AF	\$104.25	KT-10405F	\$113.74	
5.000					2.169	4.000	1.750	HR-82-5.0	KT-10500-21AF	\$120.30	KT-10500-21F	\$128.48	
					2.375	4.500	1.500	K1-16-30	KT-10500AF	\$198.60	KT-10500F	\$182.53	
					3.169	5.000	1.750	HR-82-5.0-O or OP	KT-10500-31AF	\$150.38	KT-10500-31F	\$151.84	
6.000	2.375	4.500	1.500	-	KT-10600AF	\$248.12	KT-10600F	\$218.90					

For "Pointed" Soft Jaws, please substitute "P" for "F" in the part number. Example: KT-10200AF will be KT-10200AP. Add \$4.00 For Pointed Jaws

Soft Jaw Material: ALUMINUM-6061-T6 Bar Stock, STEEL-1018 or 1050, "B" JAWS-7075-T6 Aircraft Aluminum

For complete list of applicable chucks, see pages 542-554. * Denotes non-stock item-Please allow 1 week manufacturing time.

JAW NUTS & SCREWS



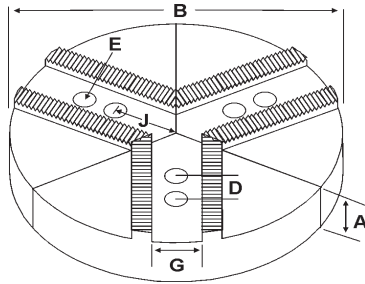
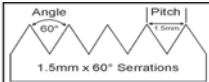
Chuck Make & Model	Chuck Size	Critical Dimensions				2 Screws Included With Each Jaw Nut							
		Heel Height H	Groove Width G	Screw Size Pitch & Length E	Hole Space D	Hght Inch A	Width Inch C	Length Inch B	Jaw Nut Part Number	Price Each	Screw Order Number	Price Each	
Kitagawa: B-210,BT-210 Strong: N210 MMK:H-10,HA8-11 Samchully: HS-10	10	0.335	0.628 (16mm)	M12-1.75x30mm	1.181 (30mm)	0.846	0.886	1.981	KT-100JN	\$31.58	M1217530	\$2.25	
Kitagawa:B-10,HOB-10	10	0.374	0.628 (16mm)	M12-1.75x35mm	1.181 (30mm)	1.000	0.886	2.160	KT-101JN	\$38.14	M1217535	\$2.25	
MMK:ZA_-10, PC-10-78	10	0.315	0.628 (16mm)	M12-1.75x35mm	1.181 (30mm)	0.906	0.906	1.971	MT-101JN	\$50.37	M1217535	\$2.25	

Call Us Or Visit Our Website For Our Complete Selection!

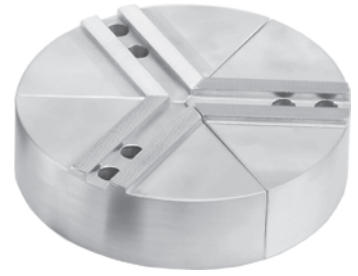
2019-20 MASTER CATALOG

ROUND JAWS- 1.5 mm x 60° Serrations

FOR USE ON: Kitagawa®, Samchully®, Strong®, MMK, SMW Autoblok, Howa & Hitachi-Seiki Chucks



- 1.5mm x 60° serrations
- Round Jaws allow for complete gripping of workpiece
- Oversized jaws available
- Ideal for thin-walled or irregular shaped workpieces.
- Can be machined to fit workpiece
- Max. length of serrations: 5.75"
- All jaws have 2 holes
- Special "J" dimensions available
- Available in Aluminum, Cast Iron & Steel
- Aluminum round jaws made from solid extruded aluminum (up to 15" dia)
- Made in the USA



Group
(K1)



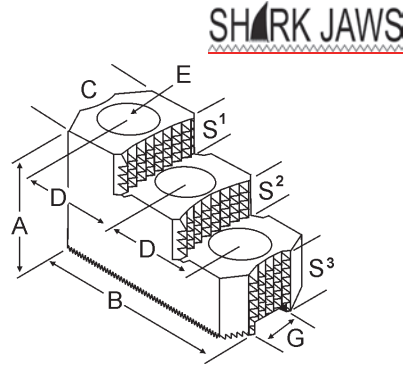
Group No.	Chuck Size	Critical Dimensions							ALUMINUM		CAST IRON		STEEL		
		Groove Width G	Screw Size E	Hole Space D	Hole to Front J	Pie Dia B	Height Inch A	Industry Ref #	Part Number	Price Set of 3	Part Number	Price Set of 3	Part Number	Price Set of 3	
K1-16-32	10"	0.630 (16mm)	12mm	1.250	2.375	10	2.00	-	RMT-10200A	\$146.68	RMT-10200CI	\$278.30	RMT-10200S	\$423.27	
				1.260	2.875	10	2.00	MTT10P	RMT-10200A4	\$146.68	-	-	-	-	
				1.250 (32mm)	2.375	10	2.50	-	-	RMT-10250A	\$212.91	-	-	-	-
							3.00	-	-	RMT-10300A	\$194.66	-	-	RMT-10300S	\$552.10
							4.00	-	-	RMT-10400A	\$226.51	RMT-10400CI	\$494.74	-	-
				1.260	2.875	10	4.00	MTT10P1	RMT-10400A4	\$227.62	-	-	-	-	
									RMT-10500A	\$340.12	-	-	-	-	
				1.250 (32mm)	2.375	10	5.00	-	RMT-10500A	\$340.12	-	-	-	-	
								6.00	-	RMT-10600A	\$474.07	-	-	-	-
								2.00	-	12-RMT-10200A	\$215.37	-	-	-	-
								4.00	-	12-RMT-10400A	\$372.23	-	-	-	-
								15	2.50	-	15-RMT-10250A	\$494.11	-	-	-
18	4.00	-	18-RMT-10400A*					\$851.69	-	-	-	-			

Round Jaw Material: ALUMINUM-6061-T6 Bar Stock, CAST IRON-Gray, STEEL-1018. 18" & Larger- Aluminum Casting T6
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

HARD JAWS

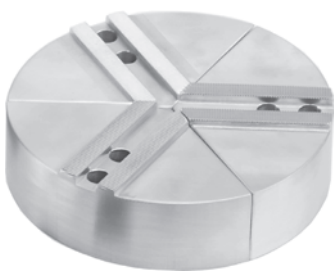


- Designed for first operation roughing, expect standard runout between 0.005-0.010
- Reversible-suitable for OD & ID workholding.
- SHARK JAWS have conical teeth for extra gripping power and black oxide for long life.
- Ideal for castings and scaly material.
- Made in the USA.



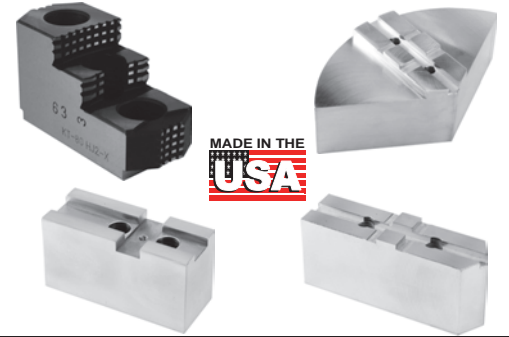
Group Number	Chuck Size	Critical Dimensions				Width Inch C	OAL Inch B	Height Inch A	No. of Holes	No. of Steps	Top Step Ht S1	Mid Step Ht S2	Bot Step Ht S3	Part Number	Price Per Set	Style	Code
		Groove Width G	Screw Size E	Hole Space D	Hole Space D												
K1-16-32	10	0.630 (16mm)	12mm	1.266 (32mm)	1.500	4.125	2.000	3	2	0.650	0.500	1.350	MT-100HJ2	\$486.63	Shark Jaws	D	

SPECIAL ORDER JAWS AVAILABLE!



- Super Quick Turnaround Time- 3 Days Or Less In Most Cases!
- Special Order Round Jaws Up To 32" dia!
- Special Order Soft Jaws Up To 8" Height!
- Soft Jaws Available In Any Length-Steel Or Aluminum
- Tongue And Groove, Square Serrated & Acme Serrated Jaws Up To 8" Height!
- Made Per Your Special Specifications In The USA! Please See Our Special Order Forms On Pages 555-560.

Please Call Today For A Quote!

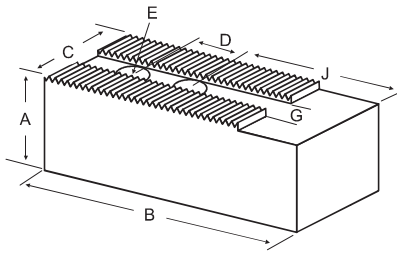


Call Us Today For All Of Your Machine Tool Needs!

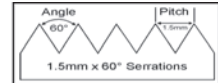
SOFT JAWS- 1.5 mm x 60° Serrations

C

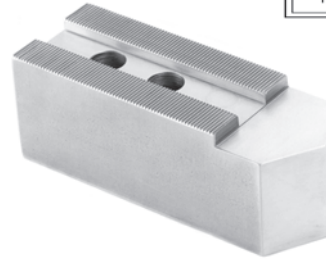
FOR USE ON: **Kitagawa®, Samchully®, Strong®, MMK, SMW Autoblok, Howa & Hitachi-Seiki Chucks**



- 1.5mm x 60° serrations
- Supplies maximum concentricity on finish turning operations
- Can be bored or turned to fit workpiece
- Steel jaws can be hardened
- Available flat ended or pointed for smaller diameter parts
- Special orders available
- Available in Aluminum, Steel & Aircraft Aluminum (where noted)



Group
(K1)



QUANTITY DISCOUNTS!

Order **5 SETS OR MORE** of the same part number soft jaw and receive a **5% DISCOUNT!**

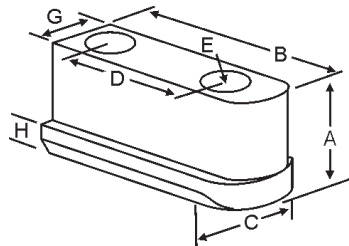
Group No.	Chuck Size	Critical Dimensions			Hght Inch A	Hole to Front J	Width Inch C	Length Inch B	No. of Holes	ALUMINUM		STEEL	
		Groove Width G	Screw Size E	Hole Space D						FLAT END Part Number	Price Set Of 3	FLAT END Part Number	Price Set Of 3
K1-16-32 For Hitachi-Seiki ZA_-10, HA_-10	10"	0.630 (16mm)	12mm	1.250 (32mm)	2.000	2.375	1.500	4.500	2	MT-10200AF	\$61.62	MT-10200F	\$68.26
					3.000	2.875	1.500	5.000	2	MT-10201AF	\$66.52	MT-10201F	\$73.62
						2.375	1.500	4.500	2	MT-10300AF	\$75.62	MT-10300F	\$83.41
					4.000	2.875	1.500	5.000	2	MT-10301AF	\$81.79	MT-10301F	\$90.20
						2.375	1.500	4.500	2	MT-10400AF	\$88.69	MT-10400F	\$87.63
5.000	2.875	1.500	5.000	2	MT-10401AF	\$93.82	MT-10401F	\$103.05					
					2.375	1.500	4.500	2	MT-10500AF	\$198.60	MT-10500F	\$220.85	

For "Pointed" Soft Jaws, please substitute "P" for "F" in the part number. Example: KT-10200AF will be KT-10200AP. Add \$4.00 For Pointed Jaws

Soft Jaw Material: ALUMINUM-6061-T6 Bar Stock, STEEL-1018 or 1050, "B" JAWS-7075-T6 Aircraft Aluminum

For complete list of applicable chucks, see pages 542-554. * denotes non-stock item-Please allow 1 week manufacturing time.

JAW NUTS & SCREWS



USST

Chuck Make & Model	Chuck Size	Critical Dimensions					2 Screws Included With Each Jaw Nut						
		Heel Height H	Groove Width G	Screw Size Pitch & Length E	Hole Space D	Hght Inch A	Width Inch C	Length Inch B	Jaw Nut Part Number	Price Each	Screw Order Number	Price Each	
Hitachi-Seiki ZA/ZA_-10	10	0.315	0.628 (16mm)	M12-1.75x35mm	1.259 (32mm)	0.906	0.906	2.050	MT-100JN	\$37.14	M1217535	\$2.25	
MMK: ZA_-10	10	0.315	0.628 (16mm)	M12-1.75x35mm	1.181 (30mm)	0.906	0.906	1.971	MT-101JN	\$50.37	M1217535	\$2.25	
Howa: HO15M12,HO22M12	10	0.374	0.708 (18mm)	M14-2.00x40mm	1.181 (30mm)	1.083	0.945	2.360	HO-100JN	\$37.14	M1420040	\$2.25	

POWER CHUCK LUBRICANT

LOWER FRICTION & INCREASE GRIPPING FORCE!

CHUCK-EEZ



CHUCK-EEZ® ensures long chuck life, machine accuracy and operator safety. Formulated with a high percentage of molybdenum disulfide to reduce seizing, galling, fretting wear and lower friction under conditions of extreme pressure. Rust and oxidation inhibitors incorporated to maximize complete rust protection. Able to withstand pressures up to 500,000 pounds per square inch!

- Double to triple clamping pressure
- Keeps work piece clamped in place
- Provides boundary lubrication protection
- Lowers friction and wear
- Assists in wear-in of new chucks
- Lowers maintenance costs
- High resistance to centrifuge force
- Greasing chuck once per shift is recommended
- **QUANTITY DISCOUNTS!**



Container Size	Case Qty	Part Number	Price Each
4 Oz Cartridge	24	EZ-21471	\$5.86
4 Oz Cartridge w/ grease gun	1	EZ-OKIT-21471	\$31.93
16 Oz Cartridge	12	EZ-21478	\$17.93
10 Lb Pail	1	EZ-21444	\$146.98
40 Lb Pail	1	EZ-21445	\$561.04
135 Lb Keg	1	EZ-21446	\$1,848.83
450 Lb Drum	1	EZ-21448	\$5,894.85

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

19

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

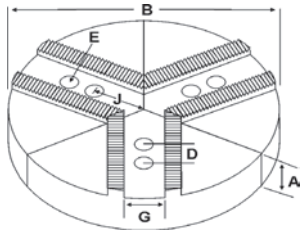
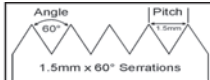
CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

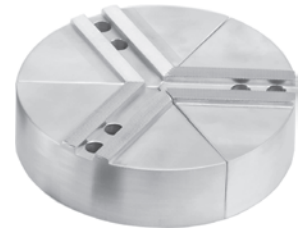
COOLANT/FLUIDS
TOOL STORAGE

ROUND JAWS- 1.5 mm x 60° Serrations

FOR USE ON: **Kitagawa®, Samchully®, Strong®, MMK, SMW Autoblok, Howa & Hitachi-Seiki Chucks**



- 1.5mm x 60° serrations
- Round Jaws allow for complete gripping of workpiece
- Oversized jaws available
- Ideal for thin-walled or irregular shaped workpieces.
- Can be machined to fit workpiece
- Max. length of serrations: 5.75"
- All jaws have 2 holes
- Special "J" dimensions available
- Available in Aluminum, Cast Iron & Steel
- Made in the USA



Group



Group No.	Chuck Size	Critical Dimensions			Hole to Front J	Pie Dia B	Height Inch A	Industry Ref #	ALUMINUM		CAST IRON/STEEL			
		Groove Width G	Screw Size E	Hole Space D					Part Number	Price Set of 3	Part Number	Price Set of 3		
K1-18-30	12"	0.709 (18mm)	14mm	1.181 (30mm)	2.375°	10	2.00	-	RHO-10200A	\$165.73	RHO-10200CI	\$278.30		
KITAGAWA B-12, BT-12, HO-12, HOB-12, HOH-12					3.000	10	2.00	HOW27M10P	RHO-10200A4	\$165.73	-	RHO-10200S	\$423.27	
SAMCHULLY HAH12, HCH12					2.375°	10	2.50	-	RHO-10250A	\$212.91	-	-	-	
							3.00	-	RHO-10300A	\$240.33	-	-	-	
							3.00	-	-	-	RHO-10300S	\$552.10	-	-
							4.00	-	RHO-10400A	\$255.63	RHO-10400CI	\$494.74		
MMK H-12, HA8-12, ZA8-12, ZJA8-12					3.000	10	4.00	HOW27M10P1	RHO-10400A4	\$255.63	-	-	-	
							5.00	-	RHO-10500A	\$340.12	-	-	-	
							6.00	-	RHO-10600A*	\$475.52	-	-	-	
							2.00	-	12-RHO-10200A	\$215.37	-	-	-	
HOWA HO15M12, HO22M10, HO24M10, HO27M10					2.375°	12	3.00	-	12-RHO-10300A*	\$355.20	-	-	-	
							4.00	-	12-RHO-10400A	\$427.41	-	-	-	
							2.50	-	15-RHO-10250A*	\$494.11	-	-	-	
							4.00	-	15-RHO-10400A*	\$607.05	-	-	-	
2.125°					8	2.00	-	8-RKT-12200A	\$102.20	-	-	-		
						10	2.00	-	10-RKT-12200A*	\$146.86	-	-		
2.875					12	2.00	-	RKT-12200A	\$184.71	RKT-12200CI	\$431.01			
						12	2.00	-	-	-	RKT-12200S	\$551.12		
3.500					12	2.00	KTT12P	RKT-12200A5	\$170.93	-	-			
2.875					12	2.50	-	RKT-12250A	\$195.49	-	-			
3.290					12	2.50	AKT12FG	RKT-12250A4	\$197.37	-	-			
2.875					12	3.00	-	RKT-12300A	\$245.72	-	-			
						4.00	-	RKT-12400A	\$330.34	RKT-12400S	\$1,061.42			
3.500					12	4.00	KTT12P1	RKT-12400A5	\$312.53	-	-			
2.875					12	5.00	-	RKT-12500A	\$476.58	-	-			
3.290					12	5.00	AKT12EHFG	RKT-12500A4	\$476.58	-	-			
2.875					12	6.00	-	RKT-12600A	\$627.94	RKT-12600S	\$1,484.51			
2.875					15	2.50	-	15-RKT-12250A	\$494.11	15-RKT-12250CI	\$721.49			
3.500					15	3.00	KTT15-12P	15-RKT-12300A5	\$516.17	-	-			
2.875					15	4.00	-	15-RKT-12400A	\$607.05	-	-			
3.500					15	4.00	KTT15-12P1	15-RKT-12400A4	\$576.89	-	-			
2.875					18	2.50	-	18-RKT-12250A	\$630.49	-	-			
3.500					18	3.00	KTT18-12P	18-RKT-12300A5	\$710.55	-	-			
2.875					18	4.00	-	18-RKT-12400A	\$851.69	-	-			
3.500					18	4.00	KTT18-12P1	18-RKT-12400A5	\$835.46	-	-			
2.875					21	2.50	-	21-RKT-12250A	\$908.07	-	-			
3.500					21	3.00	KTT21-12P	21-RKT-12300A5	\$933.38	-	-			
2.875					21	4.00	-	21-RKT-12400A	\$1,135.76	-	-			
3.500					21	4.00	KTT21-12P1	21-RKT-12400A5	\$1,114.13	-	-			
2.875					24	2.50	-	24-RKT-12250A	\$1,094.92	-	-			
	4.00	-	24-RKT-12400A*	\$1,550.55		-	-							

Round Jaw Material: ALUMINUM-6061-T6 Bar Stock, CAST IRON-Gray, STEEL-1018. 18" & Larger- Aluminum Casting T6
For complete list of applicable chucks, see pages 542-554.* denotes non-stock item. Please allow 1 week manufacturing time.
° Will not reach center of a 12" chuck

HARD JAWS

Please See Page 51 For Dimensional Diagrams

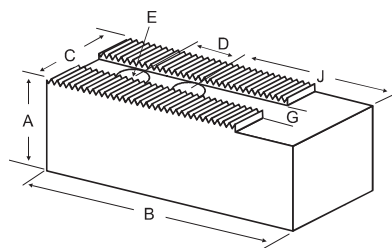
Group Number	Chuck Size	Critical Dimensions			Width Inch C	OAL Inch B	Height Inch A	No. of Holes	No. of Steps	Top Step Ht S1	Mid Step Ht S2	Bot Step Ht S3	Part Number	Price Per Set	Style	Code
		Groove Width G	Screw Size E	Hole Space D												
K1-18-30	12	0.709 (18mm)	14mm	1.181 (30mm)	1.750	4.600	2.000	3	1	0.750	-	1.250	KT-120HJ1	\$540.84	Shark Jaws	D
B-12, BT-12, HA8-12, MMK-12, ZA8-12					1.969	4.091	2.051	3	1	0.669	-	1.382	KT-120HJ1-U	\$415.53	OEM Style	E
					2.000	4.875	2.469	3	1	1.300	-	1.168	KT-120HJ1-X	\$437.40	XTRA-BITE	E
B-12, BT-12, HA8-12, MMK-12, ZA8-12					1.750	4.600	2.500	3	2	0.650	0.500	1.350	KT-120HJ2	\$540.84	Shark Jaws	D
					2.000	4.042	2.480	3	2	0.543	0.442	1.495	KT-120HJ2-U	\$391.99	OEM Style	E
					2.000	4.875	2.469	3	2	0.650	0.650	1.169	KT-120HJ2-X	\$415.42	XTRA-BITE	E

Call Us Today For All Of Your Machine Tool Needs!

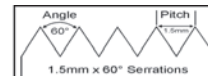
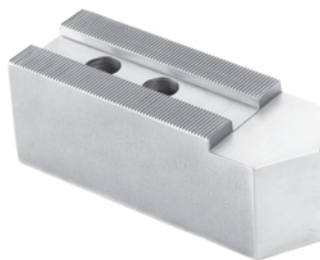
SOFT JAWS- 1.5 mm x 60° Serrations

C

FOR USE ON: **Kitagawa®, Samchully®, Strong®, MMK, SMW Autoblok, Howa & Hitachi-Seiki Chucks**



- 1.5mm x 60° serrations
- Supplies maximum concentricity on finish turning operations
- Can be bored or turned to fit workpiece
- Steel jaws can be hardened
- All jaws have 2 holes
- Available flat ended or pointed for smaller diameter parts
- Special orders available
- Available in Aluminum, Steel & Aircraft Aluminum (where noted)



Group

(K1)

QUANTITY DISCOUNTS!
Order **5 SETS OR MORE** of the same part number soft jaw and receive a **5% DISCOUNT!**

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

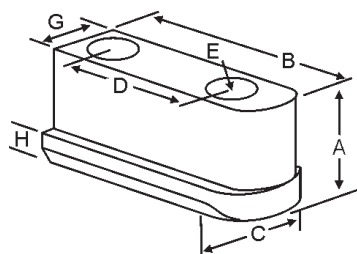
Group No.	Chuck Size	Critical Dimensions								ALUMINUM		STEEL	
		Groove Width G	Screw Size E	Hole Space D	Height A	Hole To Front J	Length B	Width C	Industry Reference #	Flat End Part Number	Price Set of 3 Jaws	Flat End Part Number	Price Set of 3 Jaws
K1-18-30	10" & 12"	0.709 (18mm)	14mm	1.181 (30mm)	2.000	2.375	4.500	1.500	-	HO-10200AF	\$61.62	HO-10200F	\$68.26
					3.000	2.375	4.500	1.500	-	HO-10300AF	\$75.62	HO-10300F	\$83.41
KITAGAWA B-12, BT-12, HO-12, HOB-12, HOH-12	12"	0.709 (18mm)	14mm	1.181 (30mm)	2.000	2.881	5.250	2.000	HR-108-2.0	KT-12200-28AF	\$74.05	KT-12200-28F	\$70.63
						3.125	5.500	2.000	-	KT-12200AF	\$74.05	KT-12200F	\$72.00
						3.125	5.500	2.000	-	KT-12200BF	Call	-	-
						3.625	6.000	2.000	-	KT-12201AF	\$78.80	KT-12201F	\$87.03
SAMCHULLY HAH12, HCH12	12"	0.709 (18mm)	14mm	1.181 (30mm)	2.500	3.881	6.250	2.000	HR-108-2.0-O or OP	KT-12200-38AF	\$80.21	KT-12200-38F	\$95.78
						2.785	5.500	2.000	KT-12/KT-12P	-	-	KT-12	\$72.51
STRONG V212	12"	0.709 (18mm)	14mm	1.181 (30mm)	2.500	2.881	5.250	2.000	HR-108-2.5	KT-12250-28AF	\$78.80	KT-12250-28F	\$87.99
						3.125	5.500	2.000	-	KT-12250AF	\$77.93	KT-12250F	\$91.70
MMK PC-12-93-01 H-12, HA8-12, ZA8-12, ZJA8-12	12"	0.709 (18mm)	14mm	1.181 (30mm)	2.500	3.285	6.000	2.000	KT-12PL	-	-	KT-12PL	\$90.52
						3.881	6.250	2.000	HR-108-2.5-O or OP	KT-12250-38AF	\$90.23	KT-12250-38F	\$93.81
						3.125	5.500	2.000	-	KT-12300AF	\$90.10	KT-12300F	\$107.96
HOWA HO15M12, HO22M10, HO24M10, HO27M10	12"	0.709 (18mm)	14mm	1.181 (30mm)	3.000	3.125	5.500	2.000	-	KT-12300BF	Call	-	-
						3.625	6.000	2.000	-	KT-12301AF	\$95.21	KT-12301F	\$104.10
					3.250	2.785	5.500	2.000	KT-12MH/KT-12MHP	-	-	KT-12MH	\$90.02
						3.285	6.000	2.000	KT-12MHPL	-	-	KT-12MHPL	\$128.47
3.500	2.881	5.250	2.000	HR-108-3.5	KT-12350-28AF	\$100.26	KT-12350-28F	\$99.28					
	3.881	6.250	2.000	HR-108-3.5-O or P	KT-12350-38AF	\$126.99	KT-12350-38F	\$119.14					
4.000	2.785	5.500	2.000	KT-12EH/KT-12EHP	-	-	KT-12EH	\$96.27					
	3.125	5.500	2.000	-	KT-12400AF	\$94.76	KT-12400F	\$124.39					
	3.125	5.500	2.000	-	KT-12400BF	Call	-	-					
	3.285	6.000	2.000	KT-12EHPL	-	-	KT-12EHPL	\$135.66					
5.000	3.625	6.000	2.000	-	KT-12401AF	\$109.85	KT-12401F	\$119.25					
	2.881	5.250	2.000	HR-108-5.0	KT-12500-28AF	\$144.82	KT-12500-28F	\$142.50					
	3.881	6.250	2.000	HR-108-5.0-O or OP	KT-12500-38AF	\$172.66	KT-12500-38F	\$170.53					
6.000	3.125	5.500	2.000	-	KT-12600AF	\$282.78	KT-12600F	\$312.86					

For "Pointed" Soft Jaws, please substitute "P" for "F" in the part number. Example: KT-10200AF will be KT-10200AP. Add \$4.00 For Pointed Jaws
Soft Jaw Material: ALUMINUM-6061-T6 Bar Stock, STEEL-1018 or 1050, "B" JAWS-7075-T6 Aircraft Aluminum
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item-Please allow 1 week manufacturing time.

JAW NUTS & SCREWS



MADE IN THE USA



USST

Kitagawa	Chuck Size	Critical Dimensions							2 Screws Included With Each Jaw Nut			
		Heel Height H	Groove Width G	Screw Size Pitch & Length E	Hole Space D	Hght Inch A	Width Inch C	Length Inch B	Jaw Nut Part Number	Price Each	Screw Part Number	Price Each
Kitagawa:B-12,HOB-12 MMK:HH-12,HHL-12	12	0.531	0.708 (18mm)	M14-2.00 x 45mm	1.181 (30mm)	1.318	1.040	2.185	KT-120JN	\$39.92	M1420045	\$2.25
					1.488 (38mm)	1.318	1.040	2.185	KT-124JN	\$39.00	M1420045	\$2.25

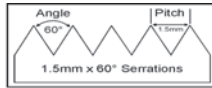
Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

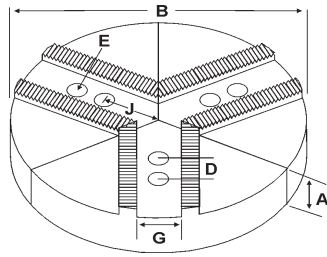
21

ROUND JAWS- 1.5 mm x 60° Serrations

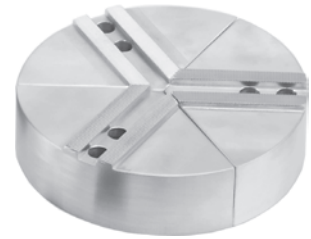
FOR USE ON: **Kitagawa®, Samchully®, Strong®, MMK, SMW Autoblok, Howa & Hitachi-Seiki Chucks**



Group
(K1)



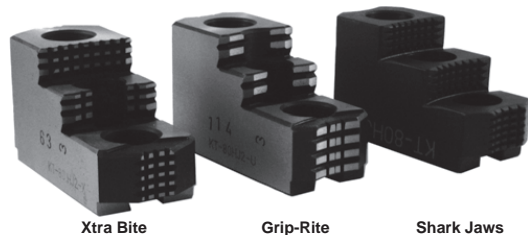
- 1.5mm x 60° serrations
- Round Jaws allow for complete gripping of workpiece
- Oversized jaws available
- Ideal for thin-walled or irregular shaped workpieces.
- Can be machined to fit workpiece
- Max. length of serrations: 5.75"
- All jaws have 2 holes
- Special "J" dimensions available
- Available in Aluminum, Cast Iron & Steel
- Aluminum round jaws made from solid extruded aluminum (up to 15" dia)
- Made in the USA



Group No.	Chuck Size	Critical Dimensions							ALUMINUM		CAST IRON	
		Groove Width G	Screw Size E	Hole Space D	Hole to Front J	Pie Dia B	Height Inch A	Industry Ref #	Part Number	Price Set of 3	Part Number	Price Set of 3
K1-21-30	12"	0.827 (21mm)	16mm	1.181 (30mm)	2.875	10	2.00	-	10-RKT-12208A	\$146.86	-	-
KITAGAWA B-212, BL-212, BT-212 Big Bore BB-212†					3.000	10	2.00	AUTO10P	10-RKT-12208A4	\$146.86	-	-
					2.875	12	2.00	-	RKT-12208A	\$184.71	RKT-12208CI	\$431.01
12						2.00	-	-	-	-	RKT-12208S	\$551.12
SAMCHULLY HS12, HST12 MH-212†					3.500†	12	2.00	KTTB212P	RKT-12208A4	\$171.04	-	-
					4.000†	12	2.50	AKT212FG	RKT-12258A5	\$197.23	-	-
STRONG N212					2.875	12	3.00	-	RKT-12308A	\$278.56	-	-
					12	4.00	-	-	RKT-12408A	\$330.34	-	-
HOWA H3KT12					3.500†	12	4.00	KTTB212P1	RKT-12408A4	\$328.15	-	-
					4.000†	12	4.00	AKT212MHFG	RKT-12408A5	\$372.23	-	-
SMW Autoblok BBM-305/ 315, BHM-305/315					2.875	12	5.00	-	RKT-12508A	\$476.58	-	-
					4.000†	12	5.00	AKT212EHFG	RKT-12508A5	\$476.58	-	-
SEOAM CAH-12					12	6.00	-	-	RKT-12608A	\$706.20	-	-
					2.875	15	2.00	-	15-RKT-12208A	\$343.73	-	-
MMK PC12-93-02					15	2.50	-	-	15-RKT-12258A	\$494.11	15-RKT-12258CI	\$721.49
					3.500†	15	3.00	KTT15B212P	15-RKT-12308A4	\$516.17	-	-
2.875					15	4.00	-	-	15-RKT-12408A	\$607.05	-	-
					3.500†	15	4.00	KTT15B212P1	15-RKT-12408A4	\$585.38	-	-
2.875					18	2.50	-	-	18-RKT-12258A	\$630.49	-	-
					3.500†	18	3.00	KTT18B212P	18-RKT-12308A4	\$674.05	-	-
2.875					18	4.00	-	-	18-RKT-12408A*	\$851.69	-	-
					3.500†	18	4.00	KTT18B212P1	18-RKT-12408A4	\$835.46	-	-
2.875					21	4.00	-	-	21-RKT-12408A	\$1,135.76	-	-
					3.500†	24	2.00	KTT24B212P2	24-RKT-12208A4	\$1,064.85	-	-

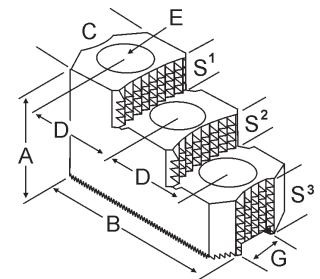
Round Jaw Material: ALUMINUM-6061-T6 Bar Stock, CAST IRON-Gray, STEEL-1018. 18" & Larger- Aluminum Casting T6
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.
† - for big bore chucks.

HARD JAWS



FEATURES:

- Designed for first operation roughing, expect standard runout between 0.005-0.010
- Reversible-suitable for OD & ID workholding.
- XTRA BITE -very aggressive bite. Conical teeth for extra gripping power and ground body to provide improved runout.
- GRIP-RITE/OEM Style hard jaws have ground tips and provide better runout.
- SHARK JAWS have conical teeth for extra gripping power and black oxide for long life. Ideal for castings and scaly material. Made in the USA.
- Bison jaws feature enhanced serrations on gripping surface
- 1 & 2 step jaws available.



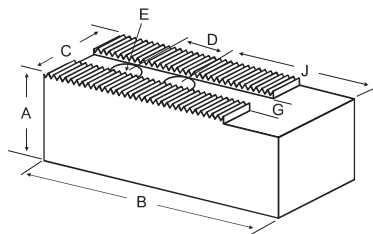
Group Number	Chuck Size	Critical Dimensions										Part Number	Price Per Set	Style	Code	
		Groove Width G	Screw Size E	Hole Space D	Width Inch C	OAL Inch B	Height Inch A	No. of Holes	No. of Steps	Top Step Ht S1	Mid Step Ht S2					Bot Step Ht S3
K1-21-30	12	0.827 (21mm)	16mm	1.181 (30mm)	2.000	4.042	2.480	3	1	0.543	-	1.937	KT-128HJ1-U	\$393.39	OEM Style	E
B-212 BT-212					1.750	4.600	2.500	3	2	0.650	0.500	1.350	KT-128HJ2	\$540.84	Shark Jaws	D
					2.000	4.042	2.480	3	2	0.543	0.442	1.495	KT-128HJ2-U	\$390.92	OEM Style	E
					2.000	4.875	2.469	3	2	0.650	0.650	1.169	KT-128HJ2-X	\$416.29	XTRA-BITE	E

Call Us Today For All Of Your Machine Tool Needs!

SOFT JAWS- 1.5 mm x 60° Serrations

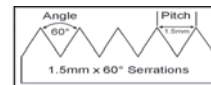
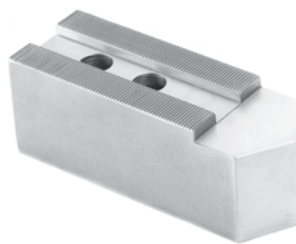
C

FOR USE ON: **Kitagawa®, Samchully®, Strong®, MMK, SMW Autoblok, Howa & Hitachi-Seiki Chucks**



• Max. length of serrations: 5.75"

- 1.5mm x 60° serrations
- Supplies maximum concentricity on finish turning operations
- All jaws have 2 holes
- Can be bored or turned to fit workpiece
- Steel jaws can be hardened
- Available flat ended or pointed for smaller diameter parts
- Special orders available
- Available in Aluminum, Steel & Aircraft Aluminum (where noted)



Group

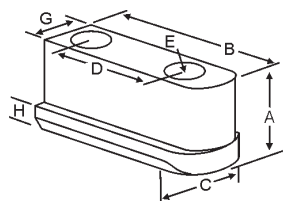
K1

QUANTITY DISCOUNTS!
Order **5 SETS OR MORE** of the same part number soft jaw and receive a **5% DISCOUNT!**

Group No.	Chuck Size	Critical Dimensions				ALUMINUM				STEEL			
		Groove Width G	Screw Size E	Hole Space D	Height A	Hole To Front J	Length B	Width C	Industry Reference #	Flat End Part Number	Price Set of 3 Jaws	Flat End Part Number	Price Set of 3 Jaws
K1-21-30	12"	0.827 (21mm)	16mm	1.181 (30mm)	2.000	3.125	5.500	2.000	-	KT-12208AF	\$74.05	KT-12208F	\$72.00
KITAGAWA B-212, BB-212, BL-212, BT-212					2.000	3.125	5.500	2.000	-	KT-12208BF	Call	-	-
SAMCHULLY HS12, HST12 MH-212†					2.500	2.881	5.250	2.000	HR-112-2.5	KT-12258-28AF	\$78.80	KT-12258-28F	\$87.99
					2.500	3.125	5.500	2.000	-	KT-12258AF	\$78.80	KT-12258F	\$91.70
					2.500	3.492	5.500	2.000	KT-212 or KT-212P	-	-	KT-212	\$76.13
					2.500	3.881	6.250	2.000	HR-112-2.5-O or OP	KT-12258-38AF	\$90.23	KT-12258-38F	\$93.44
STRONG N212 NT212 NIT212 NB212					2.500	3.992	6.000	2.000	KT-212PL	-	-	KT-212PL	\$82.99
					3.000	3.125	5.500	2.000	-	KT-12308AF	\$90.10	KT-12308F	\$107.96
HOWA H3KT12					3.000	3.125	5.500	2.000	-	KT-12308BF	Call	-	-
					3.250	3.492	5.500	2.000	KT-212MH or MHP	-	-	KT-212MH	\$90.02
SEOAM CAH-12					3.250	3.992	6.000	2.000	KT-212MHPL	-	-	KT-212MHPL	\$128.47
					3.500	2.881	5.250	2.000	HR-112-3.5	KT-12358-28AF	\$100.26	KT-12358-28F	\$99.28
MMK PC12-93-02					3.500	3.881	6.250	2.000	HR-112-3.5-O/OP	KT-12358-38AF	\$126.99	KT-12358-38F	\$119.14
					4.000	3.125	5.500	2.000	-	KT-12408AF	\$92.04	KT-12408F	\$130.41
MMK PC12-93-02					4.000	3.125	5.500	2.000	-	KT-12408BF	Call	-	-
					4.000	3.492	5.500	2.000	KT-212EH or EHP	-	-	KT-212EH	\$101.08
					4.000	3.992	6.000	2.000	KT-212EHPL	-	-	KT-212EHPL	\$128.14
					5.000	2.881	5.250	2.000	HR-112-5.0	KT-12508-28AF	\$144.82	KT-12508-28F	\$142.50
MMK PC12-93-02					5.000	3.881	6.250	2.000	HR-112-5.0-O or OP	KT-12508-38AF	\$172.66	KT-12508-38F	\$170.53
					6.000	3.125	5.500	2.000	-	KT-12608AF	\$282.78	KT-12608F	\$312.86

For "Pointed" Soft Jaws, please substitute "P" for "F" in the part number. Example: KT-12200AF will be KT-12200AP. Pointed Jaws add \$7.00
Soft Jaw Material: ALUMINUM-6061-T6 Bar Stock, STEEL-1018, "B" JAWS-7075-T6 Aircraft Aluminum
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

JAW NUTS & SCREWS



USST

Chuck Make & Model	Chuck Size	Critical Dimensions						2 Screws Included With Each Jaw Nut				
		Heel Height H	Groove Width G	Screw Size Pitch & Length E	Hole Space D	Hght Inch A	Width Inch C	Length Inch B	Jaw Nut Part Number	Price Each	Screw Part Number	Price Each
B212, HS12, N212	12"	0.453	0.827 (21mm)	M16-2.00x40mm	1.181 (30mm)	1.090	1.160	2.565	KT-128JN	\$39.79	M1620040	\$2.25
Kitagawa: BB212		0.453	0.827 (21mm)	M16-2.00x40mm	1.181 (30mm)	0.896	1.161	2.215	KT-BB212JN	\$42.97	M1620040	\$2.25
-		0.531	0.787 (20mm)	M12-1.75x45mm	1.375 (35mm)	1.320	1.040	2.190	SG-120JN	\$41.54	M1217545	\$2.25
-		0.453	0.827 (21mm)	M16-2.00x40mm	1.378 (35mm)	1.140	1.060	2.429	HO-120JN	\$39.00	M1620040	\$2.25

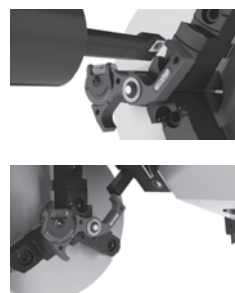
CNC LATHE GAGE



NEW ITEM!

Used to set lathe tools on the spindle axis for optimum cutting conditions. It can be used to set tools on the spindle axis and eliminate the nub left after cutting. Designed with a large amount of angular adjustability, allowing it to be used with any slant bed or Swiss style CNC lathe. Two different contact faces allows it to work with both upward and downward facing cutting tools.

- Set turning, boring, and facing tools on spindle axis for optimum cutting conditions
- Eliminate the "nub" left by poorly set tools.
- Precision glass vial level with 30/2mm sensitivity
- Angular adjustability of +/- 60°
- Ground steel shaft supported by dual ball bearings
- Made from high strength aluminum



Lathe Gage
Part # EDGE-13000
\$44.99 ea

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

23

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

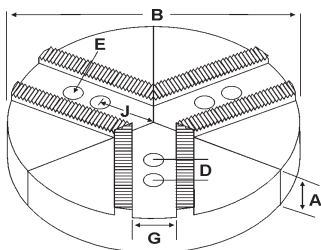
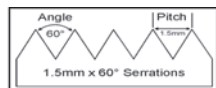
CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

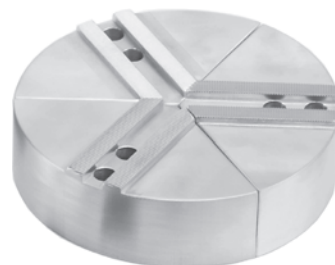
COOLANT/FLUIDS
TOOL STORAGE

ROUND JAWS- 1.5 mm x 60° Serrations

FOR USE ON: **Kitagawa®, Samchully®, Strong®, MMK, SMW Autoblok, Howa & Hitachi-Seiki Chucks**



- 1.5mm x 60° serrations
- Round Jaws allow for complete gripping of workpiece
- Oversized jaws available
- Ideal for thin-walled or irregular shaped workpieces.
- Can be machined to fit workpiece
- Max. length of serrations: 5.75"
- All jaws have 2 holes
- Special "J" dimensions available
- Available in Aluminum, Cast Iron & Steel
- **Made in the USA**



Group
(K1)



Group No.	Chuck Size	Critical Dimensions			Hole to Front J	Pie Dia B	Height Inch A	Industry Reference #	ALUMINUM		CAST IRON/STEEL		
		Groove Width G	Screw Size E	Hole Space D					Part Number	Price Set of 3	Part Number	Price Set of 3	
K1-18-32	12	0.710 (18mm)	14mm	1.260 (32mm)	2.875	12	2.00	-	RMT-12200A	\$203.54	-	-	
							2.50	-	RMT-12250A	\$209.50	-	-	
							3.00	-	RMT-12300A	\$355.20	-	-	
K1-18-38	12	0.709 (18mm)	14mm	1.488 (38mm)	2.875	12	2.00	-	RKT-12204A	\$184.71	RKT-12204CI	\$431.01	
							4.00	-	RKT-12404A	\$427.41	-	-	
K1-20-35	12	0.788 (20mm)	12mm	1.377 (35mm)	2.875	10	2.00	-	10-RSG-12200A	\$165.73	-	-	
							4.00	-	10-RSG-12400A*	\$255.63	-	-	
						12	2.00	-	RSG-12200A	\$215.37	RSG-12200CI	\$431.01	
							3.438	12	2.00	SUG12PSTM	RSG-12200A4	\$215.37	-
						12	3.00	-	RSG-12300A	\$355.20	-	-	
							4.00	-	RSG-12400A	\$427.41	-	-	
K1-21-35	12	0.827 (21mm)	16mm	1.378 (35mm)	2.875	12	2.00	-	RHO-12200A	\$215.37	RHO-12200CI	\$431.01	
							4.00	-	RHO-12400A	\$427.41	-	-	
						15	2.50	-	15-RHO-12250A	\$494.11	-	-	
						18	2.50	-	18-RHO-12250A*	\$618.48	-	-	

Round Jaw Material: ALUMINUM-6061-T6 Bar Stock, CAST IRON-Gray, STEEL-1018. 18" & Larger- Aluminum Casting T6 Aluminum round jaws made from solid extruded aluminum (up to 15" dia)
For complete list of applicable chucks, see pages 542-554.* denotes non-stock item. Please allow 1 week manufacturing time.

ACCU-STOP

Customizable Precision Stop For CNC Lathes

Precise. Versatile. Safe.

The Accu-Stop spindle stop provides a solid, precise stopping surface for work pieces. Its modular assembly allows you to stop parts from anywhere outside the chuck's bore to nearly the entire length of the draw tube.

How Accu-Stop Works

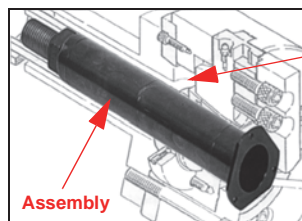
Accu-Stop bolts to the front of your CNC lathe's chuck, allowing the work piece and the stop to turn together to eliminate friction, gouging, and damage to the work piece. Modular assembly makes it easy to configure along the draw tube to accommodate a wide range of work piece lengths.

The Accu-Stop spindle stop is made of low-carbon steel that is coated with zinc oxide for durability. The standard assembly includes: faceplate and sub-faceplate three extension tubes end cap threaded rod and lock nut.

All that is needed to order is the make / model of your chuck and an actual measured ID of your drawtube.

Assembly Includes:

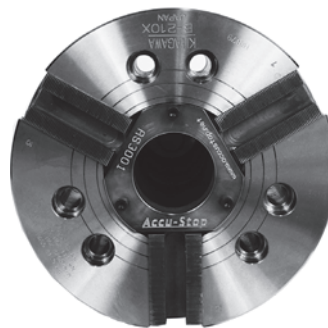
- Face Plate
 - Sub Face Plate
 - 3 extension tubes
 - End Cap
 - Threaded rod & lock nut
- Package Includes:**
- Complete assembly
 - Rigid strap wrench
 - Accu-stop vise



Adjust length by adding or removing tube section and adjusting rod.

ORDERING INFORMATION:

- To Order, We Will Need:
1. Make/Model of lathe
 2. Date manufactured
 3. Make/Model of chuck
 4. Inside diameter of the draw tube.



- Ensures accuracy/repeatability within .0005"
- Heavy duty and highly accurate
- Replaces inaccurate and expensive stopping mechanisms
- Customize to precisely fit your needs
- For Big Bore chucks, use next larger size up (ex: BB-208 will use AS-3000)
- Made in the USA



Chuck Size	Description	Part Number	Price Each
6"	Assembly 16.5"	AS-1000	\$554.80
	Accu-Stop Package	AS-P1000	\$893.95
	Tubing stop option*	AS-TSO1000	\$85.00
8"	Assembly 16.5"	AS-2000	\$554.80
	Accu-Stop Package	AS-P2000	\$893.95
	Tubing stop option*	AS-TSO2000	\$85.00
10"	Assembly 16.5"	AS-3000	\$649.80
	Accu-Stop Package	AS-P3000	\$988.95
	Tubing stop option*	AS-TSO3000	\$98.00
12"	Assembly 20.25" (under 3" dia drawtube)	AS-4000SB	\$934.80
	Assembly 20.25" (under 3" dia drawtube)	AS-4000LB	\$944.30
	Package (under 3" dia drawtube)	AS-P4000SB	\$1,273.95
	Package (over 3" dia drawtube)	AS-P4000LB	\$1,283.45
	Extra Tube (6" Long)	AS-4003SB	\$79.00
	Tubing stop option*	AS-TSO4000	\$115.00

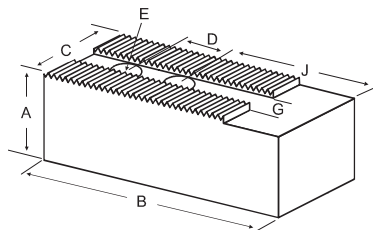
*For Big Bore Chucks, Please Order The Next Larger Size-Ex: BB-208 will use AS-3000 series
*If machining tubing, you may need the tubing stop option

Call Us Today For All Of Your Machine Tool Needs!

SOFT JAWS- 1.5 mm x 60° Serrations

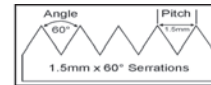
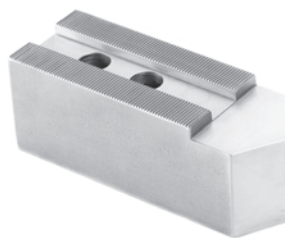
C

FOR USE ON: **Kitagawa®, Samchully®, Strong®, MMK, SMW Autoblok, Howa & Hitachi-Seiki Chucks**



• Max. length of serrations: 5.75"

- 1.5mm x 60° serrations
- Supplies maximum concentricity on finish turning operations
- All jaws have 2 holes
- Can be bored or turned to fit workpiece
- Steel jaws can be hardened
- Available flat ended or pointed for smaller diameter parts
- Special orders available
- Available in Aluminum, Steel & Aircraft Aluminum (where noted)



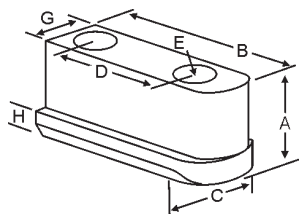
QUANTITY DISCOUNTS!
Order **5 SETS OR MORE** of the same part number soft jaw and receive a **5% DISCOUNT!**

Group **K1**

Group No.	Chuck Size	Critical Dimensions			ALUMINUM					STEEL			
		Groove Width G	Screw Size E	Hole Space D	Hght Inch A	Hole to Front J	Width Inch C	Length Inch B	No. of Holes	FLAT END Part Number	Price Set Of 3	FLAT END Part Number	Price Set Of 3
K1-20-35	12	0.788 (20mm)	12mm	1.378 (35mm)	2.000	3.125	2.000	5.500	2	SG-12200AF	\$74.05	SG-12200F	\$81.51
					4.000	3.125	2.000	5.500	2	SG-12400AF	\$104.42	SG-12400F	\$113.74
K1-18-32	12	0.710 (18mm)	14mm	1.260 (32mm)	2.000	3.125	2.000	5.500	2	MT-12200AF	\$74.05	MT-12200F	\$81.49
					3.000	3.125	2.000	5.500	2	MT-12300AF	\$85.94	MT-12300F	\$98.29
					4.000	3.125	2.000	5.500	2	MT-12400AF	\$104.41	MT-12400F	\$113.74
K1-18-38	12	0.709 (18mm)	14mm	1.488 (38mm)	2.000	3.125	2.000	5.500	2	KT-12204AF	\$74.26	KT-12204F	\$81.87
					4.000	3.125	2.000	5.500	2	KT-12404AF	\$104.42	KT-12404F	\$113.74
K1-21-35 HOWA HO27M12, HO34M12, HO37M12	12	0.827 (21mm)	16mm	1.378 (35mm)	2.000	3.125	2.000	5.500	2	HO-12200AF	\$74.05	HO-12200F	\$81.51
					2.500	3.125	2.000	5.500	2	HO-12250AF	\$86.26	HO-12250F	\$94.77
					3.440	2.000	5.500	-	-	-	HO-27M12	\$99.56	
					3.931	2.000	6.000	-	-	-	HO-27M12PL	\$109.62	
					3.000	3.125	2.000	5.500	2	HO-12300AF	\$83.27	HO-12300F	\$93.87
K1-21-40	12	0.826	16mm	1.562	2.500	3.000	2.000	5.750	2	JP-15250AF	\$87.09	JP-15250F	\$96.75
					4.000	3.000	2.000	5.750	2	JP-15400AF	\$104.41	JP-15400F	\$113.74
					2.500	2.040	1-3/4	4.813	2	HH-10250AF*	\$69.44	HH-10250F*	\$76.77
K1-21-40 10" Howa Hollow	10	0.827 (21mm)	3/4	1.578 (40mm)	3.500	2.040	1-3/4	4.813	2	HH-10350AF*	\$97.19	HH-10350F*	\$84.43
					5.000	2.040	1-3/4	4.813	2	HH-10500AF*	\$138.86	HH-10500F*	\$97.17

For "Pointed" Soft Jaws, please substitute "P" for "F" in the part number. Example: KT-10200AF will be KT-10200AP. Add \$4.00 For Pointed Jaws
Soft Jaw Material: ALUMINUM-6061-T6 Bar Stock, STEEL-1018 or 1050, "B" JAWS-7075-T6 Aircraft Aluminum
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item-Please allow 1 week manufacturing time.

JAW NUTS & SCREWS

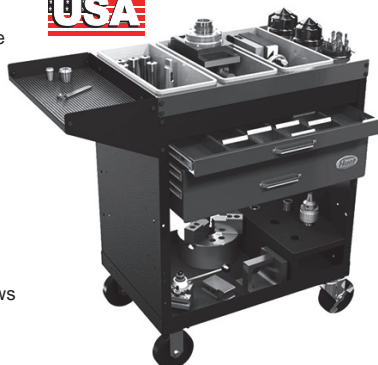


Chuck Make & Model	Chuck Size	Critical Dimensions					2 Screws Included With Each Jaw Nut					
		Heel Height H	Groove Width G	Screw Size Pitch & Length E	Hole Space D	Hght Inch A	Width Inch C	Length Inch B	Jaw Nut Part Number	Price Each	Screw Part Number	Price Each
-	12"	0.531	0.787 (20mm)	M12-1.75x45mm	1.375 (35mm)	1.320	1.040	2.190	SG-120JN	\$41.54	M1217545	\$2.25
-		0.453	0.827 (21mm)	M16-2.00x40mm	1.378 (35mm)	1.140	1.060	2.429	HO-120JN	\$39.00	M1620040	\$2.25

LATHESCOOT

Store and organize your turning tools! Chances are, your turning tooling is scattered all over the shop. Here's a storage and organization solution to increase your shop's efficiency.

- Top drawer utilizes welded columns with dividers for tool organization. Comes with 24 adjustable dividers
- Large 6" deep drawer for storing live tooling heads and other large tools
- Two removable top bins store and organize set up tools (See optional divider kit # HU-77030 sold separately)
- Side tray for optional collet racks, presetters, or other items
- Welded frame for rigidity requires no assembly
- Live center shelf holds 3MT and 4MT taper centers
- Open area for collet chucks, 3 jaw chucks, hard and soft jaws
- Blue and black paint combination
- Dimensions: 41" L x 35.25" H x 18" D
- Shipping weight is 92 lbs-ships via truck



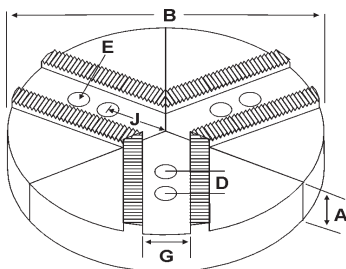
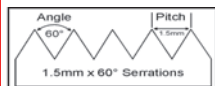
HUOT LATHESCOOT
Part #: HU-77300
\$749.00

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS
VISE JAWS
VISE ACCESSORIES
STRAIGHT SHANK
COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

ROUND JAWS- 1.5 mm x 60° Serrations

FOR USE ON: **Kitagawa®, Samchully®, Strong®, MMK, SMW Autoblok, Howa & Hitachi-Seiki Chucks**



- 1.5mm x 60° serrations
- Round Jaws allow for complete gripping of workpiece
- Oversized jaws available
- Ideal for thin-walled or irregular shaped workpieces.
- Can be machined to fit workpiece
- Max. length of serrations: 5.75"
- All jaws have 2 holes
- Special "J" dimensions available
- Available in Aluminum & Cast Iron
- Made in the USA



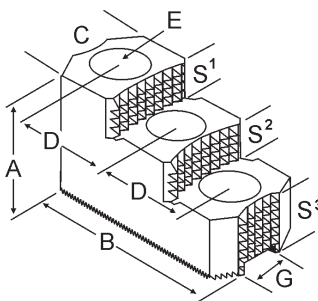
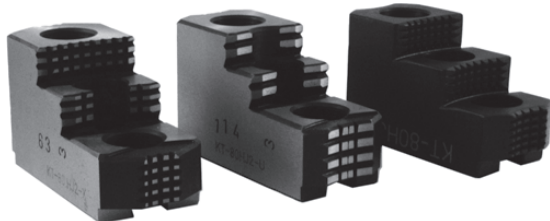
Group
K1



Group No.	Chuck Size	Critical Dimensions				Hole to Front J	Pie Dia B	Height Inch A	Industry Reference #	ALUMINUM		CAST IRON/STEEL	
		Groove Width G	Screw Size E	Hole Space D	Part Number					Price Set of 3	Part Number	Price Set of 3	
K1-22-43	15" & UP	0.866 (22mm)	20mm	1.690 (43mm)	3.750	12	4.00	-	12-RKT-15400A*	\$372.23	-	-	
KITAGAWA BT-15, B-15,B-18 HOB-15, HOB-18, HOH-15, HOH-18						15	2.50	-	RKT-15250A	\$494.11	RKT-15250CI	\$721.49	
							2.50	-	-	-	RKT-15250S	\$938.95	
							4.00	-	RKT-15400A	\$499.60	RKT-15400S	\$1,521.63	
							5.00	-	RKT-15500A	\$948.92	-	-	
SAMCHULLY HAH/HCH 15 HAH/HCH 18						18	6.00	-	RKT-15600A*	\$1,049.83	RKT-15600S	\$2,171.09	
							2.50	-	18-RKT-15250A	\$630.49	-	-	
MMK ZA8-15-120						21	4.00	-	18-RKT-15400A	\$851.69	-	-	
							2.50	-	21-RKT-15250A	\$908.07	-	-	
							4.00	-	21-RKT-15400A*	\$1,135.76	-	-	
							2.50	-	24-RKT-15250A*	\$1,094.92	-	-	
						24	4.00	-	24-RKT-15400A	\$1,580.65	-	-	

Round Jaw Material: ALUMINUM-6061-T6 Bar Stock, CAST IRON-Gray, STEEL-1018, 18" & Larger- Alum A319 6061-T6
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

HARD JAWS- 2 STEP

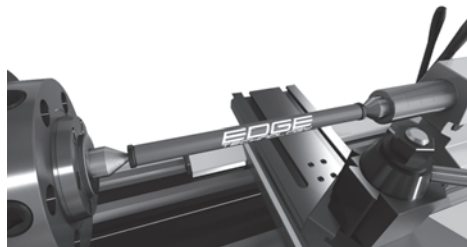


- Designed for first operation roughing, expect standard runoff between **0.005-0.010**
- Reversible-suitable for OD & ID workholding.
- **XTRA BITE** -very aggressive bite. Has conical teeth for extra gripping power and ground body to provide improved runoff.
- **GRIP-RITE/OEM Style** hard jaws have ground tips and provide better runoff.
- **SHARK JAWS** have conical teeth for extra gripping power and black oxide for long life. Ideal for castings and scaly material. Made in the USA.
- 1 & 2 step jaws available.

Group Number	Chuck Size	Critical Dimensions				Width C	OAL B	Height A	No. of Holes	No. of Steps	Top Step Ht S1	Mid Step Ht S2	Bot Step Ht S3	Part Number	Price Per Set	Style	Code
		Groove Width G	Screw Size E	Hole Space D													
K1-22-43	15 & 18	0.866 (22mm)	20mm	1.693 (43mm)	2.500	5.400	3.000	3	2	0.730	0.730	1.540	KT-150HJ2	\$701.09	Shark Jaws	D	
B-15, B-18, N215/18 HAH/HCH 15					2.448	5.850	3.385	3	2	0.827	0.827	1.731	KT-150HJ2-U	\$504.90	OEM Style	E	
					2.500	5.500	3.500	3	2	0.950	0.950	1.600	KT-150HJ2-X	\$554.85	XTRA-BITE	E	

TAILSTOCK ALIGNMENT BAR

The Tailstock Alignment Bar is used to align the tailstock to the headstock. Accurate alignment is critical to eliminate any taper in work pieces that are supported by the tail stock. It makes the process of tailstock alignment fast, easy and accurate.



Tailstock Alignment Bar
Part # EDGE-27000
\$49.99 ea

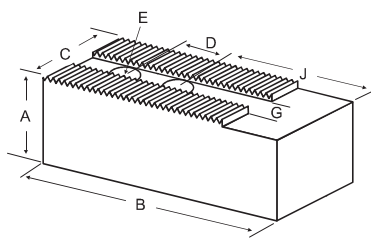
- Hardened steel bar ends are precision ground after assembly for superior accuracy
- Bar end diameters are equal within 0.0001"
- Bar made from high strength aluminum
- Durable anodized finish

Call Us Today For All Of Your Machine Tool Needs!

SOFT JAWS- 1.5 mm x 60° Serrations

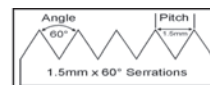
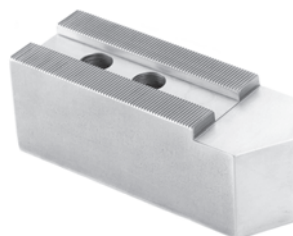
C

FOR USE ON: **Kitagawa®, Samchully®, Strong®, MMK, SMW Autoblok, Howa & Hitachi-Seiki Chucks**



• Max. length of serrations: 5.75"

- 1.5mm x 60° serrations
- Supplies maximum concentricity on finish turning operations
- Can be bored or turned to fit workpiece
- Steel jaws can be hardened
- Available flat ended or pointed for smaller diameter parts
- Special orders available
- Available in Aluminum, Steel & Aircraft Aluminum (where noted)



Group

K1

QUANTITY DISCOUNTS!
Order **5 SETS OR MORE** of the same part number soft jaw and receive a **5% DISCOUNT!**

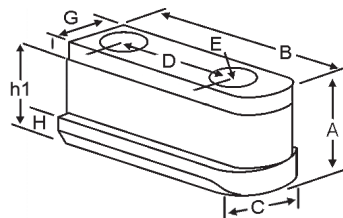
Group No.	Chuck Size	Critical Dimensions			Hght Inch A	Hole to Front J	Width Inch C	Length Inch B	Industry Reference #	ALUMINUM		STEEL																	
		Groove Width G	Screw Size E	Hole Space D						FLAT END Part Number	Price Set Of 3	FLAT END Part Number	Price Set Of 3																
K1-22-43	15" & 18"	0.866 (22mm)	20mm	1.690 (43mm)	2.500	3.410	2.500	6.500	HR-155-2.5	KT-15250-34AF	\$112.54	KT-15250-34F	\$121.79																
						3.437	2.500	6.500	-	KT-15250AF	\$112.54	KT-15250F	\$122.69																
						3.437	2.500	6.500	-	KT-15250BF	Call	-	-																
						4.410	2.500	7.500	HR-155-2.5-O or OP	KT-15250-44AF	\$130.34	KT-15250-44F	\$146.00																
					3.000	0.866 (22mm)	20mm	1.690 (43mm)	3.000	4.437	2.500	7.500	-	KT-15255AF	\$121.30	KT-15255F	\$132.52												
										3.437	2.500	6.500	-	KT-15300AF	\$128.86	KT-15300F	\$150.97												
					3.500				0.866 (22mm)	20mm	1.690 (43mm)	3.500	4.410	2.500	7.500	-	KT-15305AF	\$144.82	KT-15305F	\$157.68									
													3.410	2.500	6.500	HR-155-3.5	KT-15350-34AF	\$144.82	KT-15350-34F	\$157.68									
					4.000							0.866 (22mm)	20mm	1.690 (43mm)	4.000	4.410	2.500	7.500	HR-155-3.5-O or OP	KT-15350-44AF	\$156.16	KT-15350-44F	\$169.36						
																3.437	2.500	6.500	-	KT-15400AF	\$148.14	KT-15400F	\$179.85						
					5.000										0.866 (22mm)	20mm	1.690 (43mm)	5.000	4.437	2.500	7.500	-	KT-15405AF	\$161.10	KT-15405F	\$189.85			
																			3.410	2.500	6.500	HR-155-5.0	KT-15500-34AF	\$241.25	KT-15500-34F	\$206.12			
					6.000													0.866 (22mm)	20mm	1.690 (43mm)	6.000	3.437	2.500	6.500	-	KT-15500AF	\$241.25	KT-15500F	\$223.31
																						4.410	2.500	7.500	HR-155-5.0-O or OP	KT-15500-44AF	\$279.60	KT-15500-44F	\$251.12
		0.866 (22mm)	20mm	1.690 (43mm)																	3.437	2.500	6.500	-	KT-15600AF	\$333.84	KT-15600F	\$364.66	

For "Pointed" Soft Jaws, please substitute "P" for "F" in the part number. Example: NK-14250AF will be NK-14250AP. Pointed Jaws add **\$7.00**.

Soft Jaw Material: ALUMINUM-6061-T6 Bar Stock, STEEL-1018, "B" JAWS-7075-T6 Aircraft Aluminum

For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

JAW NUTS & SCREWS



MADE IN THE USA



USST

Chuck Make & Model	Chuck Size	Critical Dimensions					Hght Inch A	h1	Ledge Height I	Width Inch C	Length Inch B	2 Screws Included With Each Jaw Nut		
		Heel Height H	Groove Width G	Screw Size Pitch & Length E	Hole Space D	Jaw Nut Part Number						Price Each	Screw Part Number	Price Each
-	15	0.649	0.864 (22mm)	M20-2.50x55mm	1.690 (43mm)	1.790	-	-	1.318	3.149	KT-150JN	\$56.83	M2025055	\$3.25
-	15	0.649	0.864 (22mm)	M20-2.50x55mm	2.360 (60mm)	1.798	-	-	1.320	3.820	KT-152JN	\$53.87	M2025055	\$3.25
Kitagawa: B-15, BT-15, B-18	15	0.636	0.861 (22mm)	M20-2.50x50mm	1.690 (43mm)	1.779	1.459	.320	1.317	3.149	KT-153JN	\$52.96	M2025050	\$3.25

ADJUSTABLE JAW BORING RINGS

For Boring Round & Soft Chuck Jaws



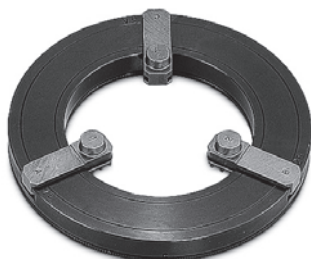
Directions:

- 1) Set jaws to correct position
- 2) Adjust jaw boring ring to fit bolt holes
- 3) Lock the chuck to clamp jaw boring ring
- 4) Machine desired size
- 5) Unlock chuck and remove jaw boring ring

USST

E

- Quickly bore jaws in a single operation with no plugs or rings
- Suitable for CNC lathes
- Easy to attach-no tools needed!
- Jaws are bored at same clamping pressure used to hold part for higher accuracy
- Economical-3 jaw boring rings cover chucks sizes from 5"-12"!



Chuck Size	ID	OD	Jaw Stroke	Max RPM	Part Number	Price Each
5,6,8"	3.94	6.70	7.40	800	JBR-TL5-8	\$379.00
6,8,10"	4.92	7.90	7.40	700	JBR-TL6-10	\$439.00
8,10,12"	6.30	9.80	8.50	600	JBR-TL8-12	\$519.00

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

27

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

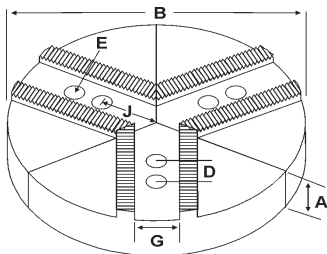
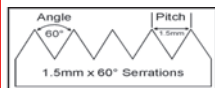
CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

ROUND JAWS- 1.5 mm x 60° Serrations

FOR USE ON: Kitagawa®, Samchully®, Strong®, MMK, SMW Autoblok, Howa & Hitachi-Seiki Chucks



- 1.5mm x 60° serrations
- Round Jaws allow for complete gripping of workpiece
- Oversized jaws available
- Ideal for thin-walled or irregular shaped workpieces.
- Can be machined to fit workpiece
- Max. length of serrations: 5.75"
- All jaws have 2 holes
- Special "J" dimensions available
- Available in Aluminum & Cast Iron
- Made in the USA



Group

K1



MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

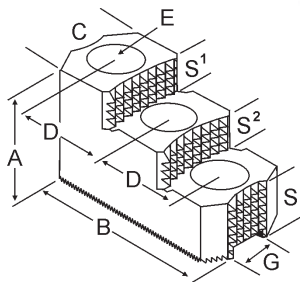
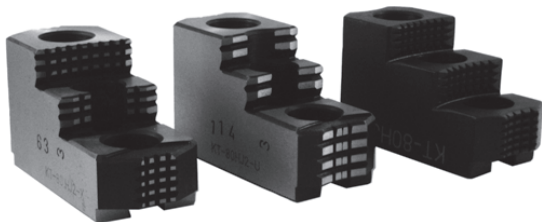
TOOLHOLDERS
TAP HOLDERS

Group No.	Chuck Size	Critical Dimensions							ALUMINUM			CAST IRON/STEEL			
		Groove Width G	Screw Size E	Hole Space D	Hole to Front J	Pie Dia B	Height Inch A	Industry Reference #	Part Number	Price Set of 3	Part Number	Price Set of 3			
K1-26-43 KITAGAWA B-215, N15, N18, BB-218 Samchully HC-15	15" & UP	1.005 (25.5mm) (some mfg's refer to this as 1.004)	20mm	1.690 (43mm)	3.750	12	3.00	-	12-RKT-15301A	\$355.20	-	-			
									15	2.50	-	RKT-15251A	\$494.11	RKT-15251CI	\$721.49
									15	2.50	-	-	-	RKT-15251S	\$938.95
					4.313 (4-5/16)	15	2.00	KTTB215P2	RKT-15201A4	\$394.72	-	-			
									3.00	KTTB215P	RKT-15301A4	\$516.17	-	-	
									4.00	KTTB215P1	RKT-15401A4	\$499.70	-	-	
				3.750	15	5.00	-	RKT-15501A	\$948.92	-	-				
								18	2.50	-	18-RKT-15251A	\$630.49	-	-	
									4.00	-	18-RKT-15401A	\$851.69	-	-	
				4.313 (4-5/16)	18	3.00	KTT18B215P	18-RKT-15301A4	\$674.05	-	-				
								4.00	KTT18B215P1	18-RKT-15401A4	\$835.46	-	-		
								3.00	KTT21B215P	21-RKT-15301A4	\$933.38	-	-		
3.750	21	4.00	-	21-RKT-15401A	\$1,135.76	-	-								
				24	2.50	-	24-RKT-15251A	\$1,094.92	-	-					
					4.00	-	24-RKT-15401A	\$1,550.55	-	-					

Round Jaw Material: ALUMINUM-6061-T6 Bar Stock, CAST IRON-Gray, STEEL-1018. 18" & Larger- Alum A319 6061-T6
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

INDEXABLE DRILLS
TURNING & BORING

HARD JAWS- 2 STEP



- Designed for first operation roughing, expect standard runout between 0.005-0.010
- Reversible-suitable for OD & ID workholding.
- XTRA BITE -very aggressive bite. Has conical teeth for extra gripping power and ground body to provide improved runout.
- GRIP-RITE-OEM Style hard jaws have ground tips and provide better runout.
- SHARK JAWS have conical teeth for extra gripping power and black oxide for long life. Ideal for castings and scaly material. Made in the USA.
- Bison hard jaws feature enhanced serrations on gripping surfaces
- 1 & 2 step jaws available.

Group Number	Chuck Size	Critical Dimensions											Part Number	Price Per Set	Style	Code
		Groove Width G	Screw Size E	Hole Space D	Width C	OAL B	Height A	No. of Holes	No. of Steps	Top Step Ht S1	Mid Step Ht S2	Bot Step Ht S3				
K1-26-43 B-215 N18, N15	15 & 18	1.005 (25.5mm)	20mm	1.690	2.500	5.400	3.000	3	2	0.730	0.730	1.540	KT-151HJ2	\$701.09	Shark Jaws	D
				1.693 (43mm)	2.448	5.850	3.385	3	2	0.827	0.827	1.731	KT-151HJ2-U	\$538.65	OEM Style	E
				2.500	5.500	3.500	3	2	0.950	0.950	1.600	KT-151HJ2-X	\$554.85	XTRA-BITE	E	

ENDMILLS, DRILLS
TAPS & REAMERS

DENIM SHOP APRONS



- 100% blue cotton denim
- "5" version includes 2 large waist pockets, 2 big pencil pockets and 1 long waist pocket
- One size fits all
- 35" length x 28" wide

Description	Part Number	Price
Denim w/ 5 Pockets	SHOP-APRON-5	\$14.99



VENTURE II® SAFETY GLASSES



- Nose buds secure the glass and prevent slipping while providing a pillow soft fit
- Temples adjust to four different lengths
- Lenses are coated for superior scratch resistance
- Lenses provide 99% protection against harmful UV rays
- Exceeds ANSI Z87.1-2003 standards

Frame Color	Lens Color	Part Number	Price Each
Black	Clear	PYR-SB1810S	\$4.39
	Gray	PYR-SB1820S	\$4.99
	Blue	PYR-SB1860S	\$4.99

ABRASIVES
MEASURING TOOLS

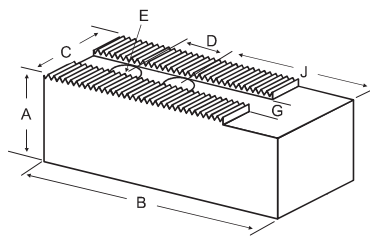
MRO & SAFETY
FLAT STOCK/DRILL ROD

Call Us Today For All Of Your Machine Tool Needs!

SOFT JAWS- 1.5 mm x 60° Serrations

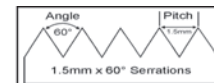
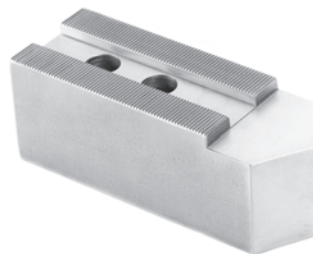
C

FOR USE ON: **Kitagawa®, Samchully®, Strong®, MMK, SMW Autoblok, Howa & Hitachi-Seiki Chucks**



• Max. length of serrations: 5.75"

- 1.5mm x 60° serrations
- Supplies maximum concentricity on finish turning operations
- Can be bored or turned to fit workpiece
- Steel jaws can be hardened
- Available flat ended or pointed for smaller diameter parts
- Special orders available
- Available in Aluminum, Steel & Aircraft Aluminum (where noted)



Group

(K1)

QUANTITY DISCOUNTS!
Order **5 SETS OR MORE** of the same part number soft jaw and receive a **5% DISCOUNT!**

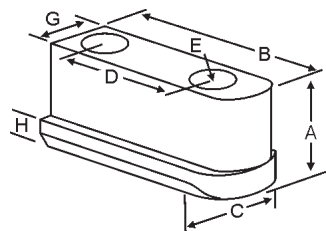
Group No.	Chuck Size	Critical Dimensions			ALUMINUM					STEEL				
		Groove Width G	Screw Size E	Hole Space D	Hght Inch A	Hole to Front J	Width Inch C	Length Inch B	Industry Reference #	FLAT END Part Number	Price Set Of 3	FLAT END Part Number	Price Set Of 3	
K1-26-43 KITAGAWA B215, N15, N18 BB-218	15 & UP	1.005 (25.5mm)	20mm	1.690 (43mm)	2.500	3.437	2.500	6.500	HR-115-2.5	KT-15251AF	\$112.54	KT-15251F	\$122.68	
					2.500	3.437	2.500	6.500	-	-	KT-15251BF	\$161.41		
					2.500	4.437	2.500	7.500	HR-115-2.5-O or OP	KT-15256AF	\$121.30	KT-15256F	\$132.52	
					3.000	3.437	2.500	6.500	-	-	KT-15301AF	\$137.79	KT-15301F	\$150.97
					3.500	3.410	2.500	6.500	HR-115-3.5	KT-15351-34AF	\$144.82	KT-15351-34F	\$157.68	
					3.500	4.410	2.500	7.500	HR-115-3.5-O or OP	KT-15351-44AF	\$155.95	KT-15351-44F	\$169.36	
					4.000	3.437	2.500	6.500	-	-	KT-15401AF	\$148.35	KT-15401F	\$179.98
					4.000	4.437	2.500	7.500	-	-	KT-15406AF	\$161.31	KT-15406F	\$189.85
					5.000	3.437	2.500	6.500	HR-115-5.0	KT-15501AF	\$241.45	KT-15501F	\$223.31	
					5.000	4.410	2.500	7.500	HR-115-5.0-O or OP	KT-15501-44AF	\$279.60	KT-15501-44F	\$251.12	
				6.000	3.437	2.500	6.500	-	-	KT-15601AF	\$318.16	KT-15601F	\$364.66	

For "Pointed" Soft Jaws, please substitute "P" for "F" in the part number. Example: NK-14250AF will be NK-14250AP. Pointed Jaws add \$7.00.

Soft Jaw Material: ALUMINUM-6061-T6 Bar Stock, STEEL-1018, "B" JAWS-7075-T6 Aircraft Aluminum

For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

JAW NUTS & SCREWS



USST

Chuck Make & Model	Chuck Size	Critical Dimensions					2 Screws Included With Each Jaw Nut					
		Heel Height H	Groove Width G	Screw Size Pitch & Length E	Hole Space D	Hght Inch A	Width Inch C	Length Inch B	Jaw Nut Part Number	Price Each	Screw Part Number	Price Each
Kitagawa: B-215	15	0.758	1.003 (25.5mm)	M20-2.50x50mm	1.690 (43mm)	1.550	1.375	3.149	KT-151JN	\$54.83	M2025050	\$3.25

LATHE TOOLHOLDER BUSHINGS



- FEATURES:**
- Increased step diameter for easy and perfect sealing.
 - Concentric ground and diamond polished OD & ID resulting in a mirror smooth finish.
 - "Easy Entry" feature on OD for quick insertion
 - Wrench flats for easy removal
 - Step relief for easy removal and gripping on Z style bushings
 - Type and size clearly marked on surface of head diameter for easy identification
 - 100% Satisfaction Guaranteed

Please See Pages 114-118 For More Information!



Bush Rite

SPECIFICATIONS:
Material: ALLOY STEEL 8620
Hardness Data: Rc 55-57 for longer tool life
Case Hardened and Ground Concentric OD & ID
Axial Concentricity: OD & ID -0.002"
Tolerance: H6 & g6 in grinding the OD & ID

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

29

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

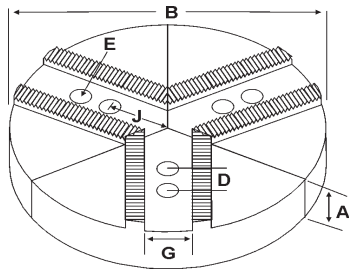
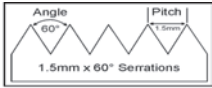
CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

ROUND JAWS- 1.5 mm x 60° Serrations

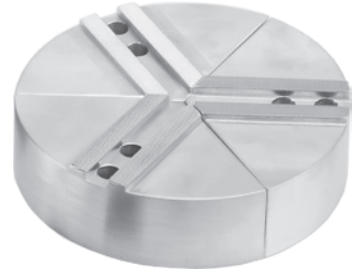
FOR USE ON: **Kitagawa®, Samchully®, Strong®, MMK, SMW Autoblok, Howa & Hitachi-Seiki Chucks**



Group
(K1)



- 1.5mm x 60° serrations
- Round Jaws allow for complete gripping of workpiece
- Oversized jaws available
- Ideal for thin-walled or irregular shaped workpieces.
- Can be machined to fit workpiece
- Max. length of serrations: 5.75"
- All jaws have 2 holes
- Special "J" dimensions available
- Available in Aluminum & Cast Iron
- **Made in the USA**



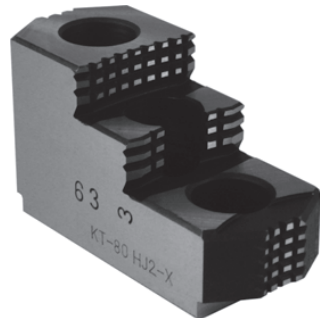
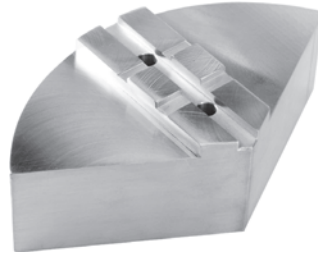
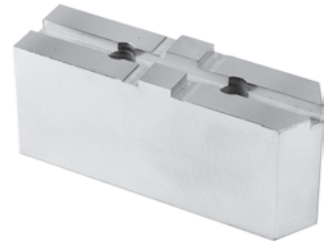
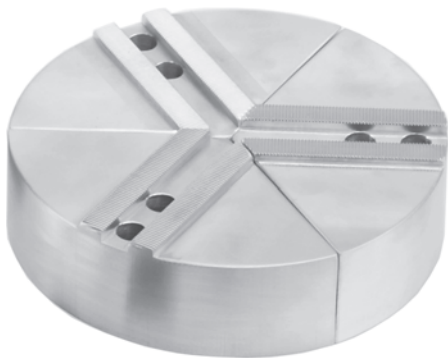
Group No.	Chuck Size	Critical Dimensions			Hole to Front J	Pie Dia B	Height Inch A	Industry Reference #	ALUMINUM		CAST IRON/STEEL	
		Groove Width G	Screw Size E	Hole Space D					Part Number	Price Set of 3	Part Number	Price Set of 3
K1-22-60	15" & UP	0.866 (22mm)	20mm	2.360 (60mm)	3.750	15	2.50	-	RKT-15252A	\$494.11	RKT-15252CI	\$721.49
					3.188	15	3.00	KTT15P-2.36	RKT-15302A2	\$516.17	-	-
					3.750	15	4.00	-	RKT-15402A	\$607.05	-	-
						18	2.50	-	18-RKT-15252A	\$630.49	-	-
							4.00	-	18-RKT-15402A	\$851.69	-	-
						21	4.00	-	21-RKT-15402A	\$1,135.76	-	-
24	4.00	-	24-RKT-15402A	\$1,550.55	-	-						

Round Jaw Material: ALUMINUM-6061-T6 Bar Stock, CAST IRON-Gray, STEEL-1018. 18" & Larger- Alum A319 6061-T6
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

SPECIAL ORDER JAWS AVAILABLE!

Special Orders Are Our Specialty!

Do you need a special dimension that is not listed in our catalog? No problem! We can supply you with customized chuck jaws to fit your specifications. Whether you need a special height, width, diameter or step height, call us for all of your customized workholding needs!



- Super Quick Turnaround Time- 3 Days Or Less In Most Cases!
- **Special Order Round Jaws Up To 32" dia!**
- Special Order Soft Jaws Up To 8" Height!
- Soft Jaws Available In Any Length-Steel Or Aluminum
- Tongue And Groove, Square Serrated & Acme Serrated Jaws Up To 8" Height!
- Made Per Your Special Specifications In The USA! Please See Our Special Order Forms On Pages 555-560.



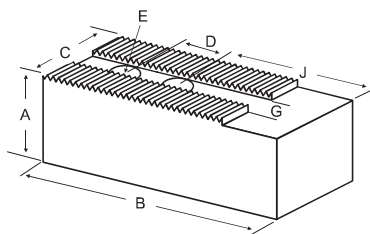
Please Call Today For A Quote!

Call Us Today For All Of Your Machine Tool Needs!

SOFT JAWS- 1.5 mm x 60° Serrations

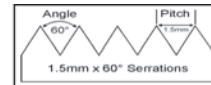
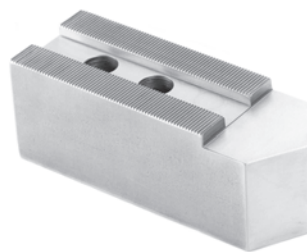
C

FOR USE ON: **Kitagawa®, Samchully®, Strong®, MMK, SMW Autoblok, Howa & Hitachi-Seiki Chucks**



• Max. length of serrations: 5.75"

- 1.5mm x 60° serrations
- Supplies maximum concentricity on finish turning operations
- Can be bored or turned to fit workpiece
- Steel jaws can be hardened
- Available flat ended or pointed for smaller diameter parts
- Special orders available
- Available in Aluminum & Steel
- **Made in the USA**



Group

(K1)

QUANTITY DISCOUNTS!

Order **5 SETS OR MORE** of the same part number soft jaw and receive a **5% DISCOUNT!**

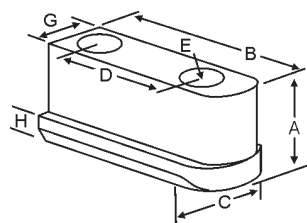
Group No.	Chuck Size	Critical Dimensions				ALUMINUM					STEEL		
		Groove Width G	Screw Size E	Hole Space D	Hght Inch A	Hole to Front J	Width Inch C	Length Inch B	No. of Holes	FLAT END Part Number	Price Set Of 3	FLAT END Part Number	Price Set Of 3
K1-21-45	14 or 16	0.827 (21mm)	16mm	1.771 (45mm)	2.500	2.980	2.000	6.250	2	NK-14250AF*	\$73.96	NK-14250F*	\$76.52
						3.980	2.000	7.250	2	NK-14257AF*	\$85.82	NK-14257F*	\$87.43
					3.500	2.980	2.000	6.250	2	NK-14350AF*	\$103.58	NK-14350F*	\$92.46
						3.980	2.000	7.250	2	NK-14357AF*	\$120.06	NK-14357F*	\$105.64
K1-22-60	15 & Up	0.866 (22mm)	20mm	2.360 (60mm)	2.500	2.750	2.500	6.500	2	KT-15252AF	\$112.54	KT-15252F	\$119.21
						3.750	2.500	7.500	2	KT-15257AF	\$121.30	KT-15257F	\$132.89
					3.000	2.750	2.500	6.500	2	KT-15302AF	\$130.20	KT-15302F	\$142.17
						2.750	2.500	6.500	2	KT-15402AF	\$148.14	KT-15402F	\$161.48
					4.000	3.750	2.500	7.500	2	KT-15407AF	\$161.10	KT-15407F	\$174.85
						6.000	2.750	2.500	6.500	2	KT-15602AF	\$317.95	KT-15602F
K1-26-38	16	1.003 (25.5mm)	20mm	1.496 (38mm)	2.500	2.940	2.500	5.500	2	AB-16250AF*	\$95.24	AB-16250F*	\$103.80
					3.500	2.940	2.500	5.500	2	AB-16350AF*	\$133.35	AB-16350F*	\$145.34
					5.000	2.940	2.500	5.500	2	AB-16500AF*	\$190.48	AB-16500F*	\$172.03
					2.500	3.940	2.500	6.500	2	AB-16257AF*	\$112.54	AB-16257F*	\$122.68
					3.500	3.940	2.500	6.500	2	AB-16357AF*	\$157.56	AB-16357F*	\$171.77
					5.000	3.940	2.500	6.500	2	AB-16507AF*	\$225.11	AB-16507F*	\$203.31

For "Pointed" Soft Jaws, please substitute "P" for "F" in the part number. Example: NK-14250AF will be NK-14250AP. Pointed Jaws add \$7.00.

Soft Jaw Material: ALUMINUM-6061-T6 Bar Stock, STEEL-1018, "B" JAWS-7075-T6 Aircraft Aluminum

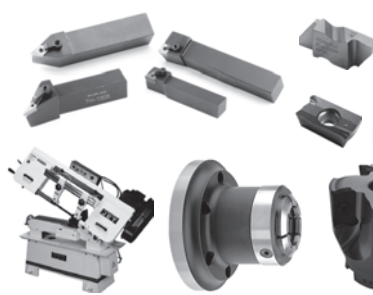
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

JAW NUTS & SCREWS



Chuck Make & Model	Chuck Size	Critical Dimensions					2 Screws Included With Each Jaw Nut					
		Heel Height H	Groove Width G	Screw Size Pitch & Length E	Hole Space D	Hght Inch A	Width Inch C	Length Inch B	Jaw Nut Part Number	Price Each	Screw Part Number	Price Each
-	15	0.649	0.864 (22mm)	M20-2.50x55mm	1.690 (43mm)	1.790	1.318	3.149	KT-150JN	\$56.83	M2025055	\$3.25
-	15	0.649	0.864 (22mm)	M20-2.50x55mm	2.360 (60mm)	1.798	1.320	3.820	KT-152JN	\$53.87	M2025055	\$3.25
UVE-800LB	24	0.414	0.985	M20-2.50x50mm	3.152	1.241	1.418	4.728	KT-241JN	\$75.08	M2025050	\$3.25
HJ-24, HJA11-24	24	0.748	0.985	M20-2.50x50mm	3.152	2.127	1.576	4.728	KT-242JN	\$75.08	M2025050	\$3.25

WE'VE GOT THE ITEMS YOU NEED!



- Chuck Jaws
- Lathe & Collet Chucks
- Lathe Tooling
- Machine Vises
- Milling Toolholders
- ER, TG & DA Collets
- Carbide Inserts
- Drills, Taps & Reamers
- Threading & Grooving
- Indexable Cutting Tools
- Abrasives
- Cutting Fluids
- Measuring Tools
- MRO & Safety

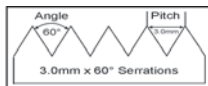
Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

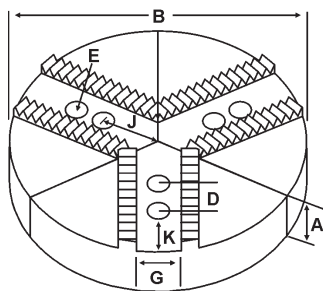
LATHE CHUCKS
LIVE CENTERS
VISE JAWS
VISE ACCESSORIES
STRAIGHT SHANK
COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

ROUND JAWS- 3.0 mm x 60° Serrations

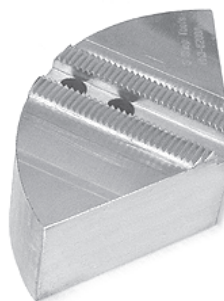
FOR USE ON: **MMK Matsumoto, Howa & Other Chucks**



Group



- **3.0mm x 60° serrations**
- Round Jaws allow for complete gripping of workpiece
- Oversized jaws available
- Ideal for thin-walled or irregular shaped workpieces.
- Can be machined to fit workpiece
- Max. length of serrations: 5.75"
- All jaws have 2 holes
- Special "J" dimensions available
- Available in Aluminum & Cast Iron
- **Made in the USA**



Group No.	Chuck Size	Critical Dimensions						Industry Ref #	ALUMINUM		CAST IRON		STEEL	
		Groove Width G	Screw Size E	Hole Space D	Hole to Front J	Pie Dia B	Height Inch A		Part Number	Price Set of 3	Part Number	Price Set of 3	Part Number	Price Set of 3
K3-12-20	6	0.472 (12mm)	10mm	0.787 (20mm)	1.375	6	2.00	-	RH3-6200A	\$83.92	RH3-6200CI	\$144.31	RH3-6200S	\$202.43
							4.00	-	RH3-6400A	\$131.58	-	-	-	-
K3-14-25	8	0.551 (14mm)	12mm	0.985 (25mm)	2.250	8	2.00	HOW8P	RH3-8200A	\$116.99	RH3-8200CI	\$185.53	RH3-8200S	\$294.45
							4.00	HOW8P1	RH3-8400A	\$158.83	RH3-8400CI	\$350.44	-	-
							2.00	-	10-RH3-8200A	\$165.73	-	-	-	-
							2.00	-	12-RH3-8200A*	\$215.37	-	-	-	-
K3-15-30	10	0.591 (15mm)	12mm	1.181 (30mm)	2.625	12	2.00	-	RH3-10204A	\$165.73	RH3-10204CI	\$278.30	-	-
						10	4.00	-	RH3-10404A	\$255.63	-	-	-	-
K3-16-30	10	0.630 (16mm)	12mm	1.181 (30mm)	2.375	10	2.00	-	RH3-10200A	\$146.68	RH3-10200CI	\$278.30	RH3-10200S	\$423.27
						10	2.00	HOW10P	RH3-10200A4	\$146.68	-	-	-	-
						10	4.00	-	RH3-10400A	\$227.62	-	-	-	-
						10	4.00	HOW10P1	RH3-10400A4	\$227.62	-	-	-	-
						10	5.00	-	RH3-10500A*	\$340.12	-	-	-	-
						12	2.50	-	12-RH3-10250A*	\$267.98	-	-	-	-
						12	4.00	-	12-RH3-10400A*	\$427.41	-	-	-	-
						15	2.50	-	15-RH3-10250A*	\$494.11	-	-	-	-
						15	4.00	-	15-RH3-10400A*	\$607.05	-	-	-	-
						21	2.50	-	21-RH3-10250A*	\$890.80	-	-	-	-
K3-18-30	12	0.709 (18mm)	14mm	1.181 (30mm)	2.875	12	2.00	HOW12P	RH3-12200A	\$215.37	RH3-12200CI	\$431.01	-	-
						12	2.50	-	RH3-12250A	\$267.98	-	-	-	-
						12	3.00	-	RH3-12300A	\$300.55	-	-	-	-
						12	4.00	HOW12P1	RH3-12400A	\$372.23	-	-	-	-
						12	5.00	-	RH3-12500A	\$476.58	-	-	-	-
						15	2.50	-	15-RH3-12250A	\$494.11	-	-	-	-
						15	3.00	HOW15-12P	15-RH3-12300A	\$516.17	-	-	-	-
						18	3.00	HOW18-12P	18-RH3-12300A	\$710.55	-	-	-	-

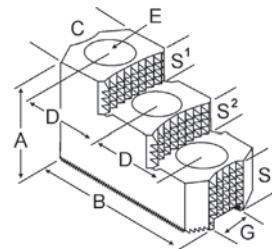
Round Jaw Material: ALUMINUM-6061-T6 Bar Stock, CAST IRON-Gray, STEEL-1018. 18" & Larger- Aluminum Casting T6
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

HARD JAWS-2 STEP 3.0mm x 60° Serrations



FEATURES:

- Designed for first operation roughing, expect standard runoff between **0.005-0.010**
- Reversible-suitable for OD & ID workholding.
- **XTRA BITE** - very aggressive bite. Has conical teeth for extra gripping power and ground body to provide improved runoff.
- 1 & 2 step jaws available.



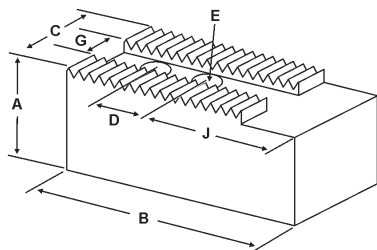
Group Number	Chuck Size	Critical Dimensions						No. of Holes	No. of Steps	Top Step Ht S1	Mid Step Ht S2	Bot Step Ht S3	Part Number	Price Per Set
		Groove Width G	Screw Size E	Hole Space D	Width Inch C	OAL Inch B	Height Inch A							
K3-16-30	10	0.630 (16mm)	12mm	1.181 (30mm)	1.750	4.250	2.500	3	2	0.650	0.650	1.200	H3-100HJ2-X	\$700.25
K3-18-30	12	0.710 (18mm)	14mm	1.181 (30mm)	1.750	4.875	2.469	3	2	0.650	0.650	1.169	H3-120HJ2-X	\$754.11
	15-20	1.023 (26mm)	20mm	1.969 (50mm)	2.500	6.500	3.469	3	2	0.950	0.950	1.569	H3-150HJ2-X	\$897.75

Call Us Today For All Of Your Machine Tool Needs!

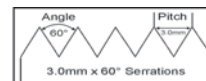
SOFT JAWS- 3.0 mm x 60° Serrations

C

FOR USE ON: **MMK Matsumoto, Howa & Other Chucks**



- 3.0mm x 60° serrations
- Supplies maximum concentricity on finish turning operations
- Can be bored or turned to fit workpiece
- Steel jaws can be hardened
- Available flat ended or pointed for smaller diameter parts
- Special orders available
- Available in Aluminum, Steel & Aircraft Aluminum (where noted)
- **Made in the USA**

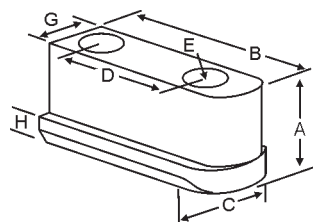


QUANTITY DISCOUNTS!
Order **5 SETS OR MORE** of the same part number soft jaw and receive a **5% DISCOUNT!**

Group No.	Chuck Size	Critical Dimensions				ALUMINUM					STEEL		
		Groove Width G	Screw Size E	Hole Space D	Hght Inch A	Hole to Front J	Width Inch C	Length Inch B	No. of Holes	FLAT END Part Number	Price Set Of 3	FLAT END Part Number	Price Set Of 3
K3-12-20 H-6,HA5-6 HO1MA6	6	0.472 (12mm)	10mm	0.787 (20mm)	1.50	1.375	1.250	2.750	2	H3-6150AF	\$45.40	H3-6150F	\$50.74
					2.50	1.375	1.250	2.750	2	H3-6250AF	\$62.67	H3-6250F	\$69.87
K3-14-25 HJ-08 HO1MA8	8	0.551 (14mm)	12mm	0.985 (25mm)	2.00	2.000	1.500	3.750	2	H3-8200AF	\$60.32	H3-8200F	\$66.99
					4.00	2.000	1.500	3.750	2	H3-8400AF	\$79.89	H3-8400F	\$88.02
K3-15-30	10 to 12	0.591 (15mm)	12mm	1.181 (30mm)	2.00	2.625	1.500	4.750	2	H3-10204AF	\$65.66	H3-10204F	\$72.73
					4.00	2.625	1.500	4.750	2	H3-10404AF	\$87.18	H3-10404F	\$95.71
K3-16-30 HW-10,HW-12 HO1MA10	10 to 12	0.630 (16mm)	12mm	1.181 (30mm)	2.00	2.625	1.500	4.750	2	H3-10200AF	\$65.66	H3-10200F	\$72.73
					4.00	2.625	1.500	4.750	2	H3-10400AF	\$87.18	H3-10400F	\$95.71
K3-18-30 HO1MA12	10 to 14	0.709 (18mm)	14mm	1.181 (30mm)	2.50	3.125	2.000	5.500	2	H3-12250AF	\$87.10	H3-12250F	\$95.71
					4.00	3.125	2.000	5.500	2	H3-12400AF	\$113.90	H3-12400F	\$124.40

For "Pointed" Soft Jaws, please substitute "P" for "F" in the part number. Example: H3-6150AF will be H3-6150AP. Pointed Jaws: Up to 10" add \$4.00. 12" and over add \$7.00
Soft Jaw Material: ALUMINUM-6061-T6 Bar Stock, STEEL-1018. For complete list of applicable chucks, see pages 542-554.
* denotes non-stock item. Please allow 1 week manufacturing time.

JAW NUTS & SCREWS

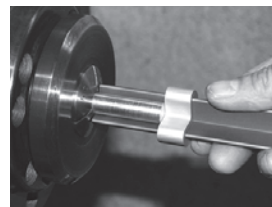
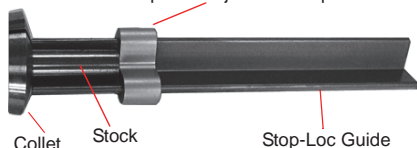


Chuck Make & Model	Critical Dimensions							2 Screws Included With Each Jaw Nut				
	Heel Height H	Groove Width G	Screw Size E	Hole Space D	Hght Inch A	Width Inch C	Length Inch B	Jaw Nut Part Number	Price Each	Screw Part Number	Price Each	
MMK:HO15M6,HO22M6,HO24M6,HO27M6 Howa: HJ-06	0.295	0.472 (12mm)	M10-1.60 x 30mm	0.787 (20mm)	0.847	0.669	1.460	H3-60JN	\$33.42	M1016030	\$2.25	
-	0.340	0.628 (16mm)	M12-1.75 x 35mm	1.181 (30mm)	1.000	0.910	2.000	H3-100JN	\$65.01	M1217535	\$2.25	

CHUCK/COLLET STOP

Handheld Lathe & Mill Vise Tool

- Adjustable Precision-Gage lengths up to 5-1/2" long holding +/- .005
- Save Money! No more fixed length dedicated shop-made front collet stops for each job
- Versatile-For use on CNC or manual lathes whether you are running a bar manually or using a bar puller
- Consistency-Unique design incorporates self-centering, unobstructed viewing and contrasting colors to give user confidence
- Dimensions: 6" L x 3/4" H x 3/4" W
- **Made in USA**



Stop-Loc
Pat.Pend.



Graduations	Part Number	Price
Inch	STOPLOC	\$16.00
Inch/Metric	STOPLOC-THSMM	\$18.00
Metric	STOPLOC-MM	\$18.00

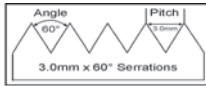
Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

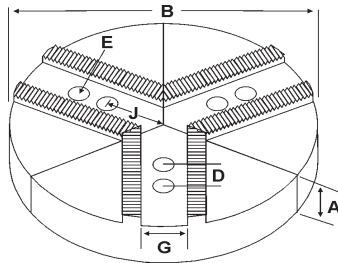
LATHE CHUCKS
LIVE CENTERS
VISE JAWS
VISE ACCESSORIES
STRAIGHT SHANK
COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

ROUND JAWS- 3.0 mm x 60° Serrations

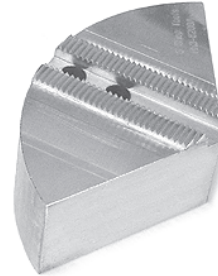
FOR USE ON: **Kitagawa®, Samchully®, MMK Matsumoto, Howa & Other Chucks**



Group
K3



- 3.0mm x 60° serrations
- Round Jaws allow for complete gripping of workpiece
- Oversized jaws available
- Ideal for thin-walled or irregular shaped workpieces.
- Can be machined to fit workpiece
- Max. length of serrations: 5.75"
- All jaws have 2 holes
- Special "J" dimensions available
- Available in Aluminum & Cast Iron
- **Made in the USA**



Group No.	Chuck Size	Critical Dimensions			Hole to Front J	Pie Dia B	Height Inch A	Industry Ref #	ALUMINUM		CAST IRON	
		Groove Width G	Screw Size E	Hole Space D					Part Number	Price Set of 3	Part Number	Price Set of 3
K3-21-40	15	0.827 (21mm)	16mm	1.575 (40mm)	3.187	15	2.50	-	RH3-15258A	\$494.11	RH3-15258CI	\$721.49
					4.125	15	3.00	HOW7MA15P	RH3-15308A4	\$516.17	-	-
					3.187	15	4.00	-	RH3-15408A	\$607.05	-	-
					4.125	15	4.00	HOW7MA15P1	RH3-15408A4	\$585.38	-	-
K3-22-50 MMK HA-18-162, HA11-15, HA11-18, HA8-15 SAMCHULLY MH-218	15-18	0.866 (22mm) (some mfg's refer to this as 0.868)	20mm	1.969 (50mm)	3.750	15	2.50	-	RM3-15250A	\$494.11	RM3-15250CI	\$721.49
					4.125	15	3.00	MTT15P	RM3-15300A4	\$516.17	-	-
					3.750	15	4.00	-	RM3-15400A	\$607.05	-	-
					4.125	15	4.00	MTT15P1	RM3-15400A4	\$585.38	-	-
					3.750	15	6.00	-	RM3-15600A*	\$1,049.83	-	-
					4.125	15	6.00	MTT15P6	RM3-15600A4	\$1,049.83	-	-
					3.750	18	2.50	-	18-RM3-15250A	\$618.48	-	-
					4.125	18	3.00	MTT18-15P	18-RM3-15300A4	\$674.05	-	-
					3.750	18	4.00	-	18-RM3-15400A	\$851.69	-	-
					4.125	18	4.00	MTT18-15P1	18-RM3-15400A4	\$835.46	-	-
					3.750	21	2.50	-	21-RM3-15250A	\$908.09	-	-
					4.125	21	3.00	MTT21-15P	21-RM3-15300A4	\$933.38	-	-
					3.750	21	4.00	-	21-RM3-15400A	\$1,135.76	-	-
					4.125	21	4.00	MTT21-15P1	21-RM3-15400A4	\$1,114.13	-	-
					3.750	24	2.50	-	24-RM3-15250A	\$1,074.06	-	-
					3.750	24	4.00	-	24-RM3-15400A*	\$1,550.55	-	-
K3-25-60 KITAGAWA B-21, B-24 SAMCHULLY HAH/HCH 21 HAH/HCH 24	18-24	0.984 (25mm) (some mfg's refer to this as .985)	20mm	2.360 (60mm)	4.000	15	4.00	-	15-RK3-21400A	\$607.05	-	-
					4.750	18	2.50	-	RK3-18250A	\$618.85	-	-
					4.000	18	4.00	-	RK3-18400A	\$851.69	-	-
					4.750	18	3.00	KTT18-21P	18-RK3-21300A4	\$710.55	-	-
					4.000	21	4.00	KTT18-21P1	18-RK3-21400A4	\$835.46	-	-
					4.000	21	2.50	-	RK3-21250A	\$890.78	-	-
					4.750	21	4.00	-	RK3-21400A	\$1,114.13	-	-
					4.750	21	3.00	KTT21P	RK3-21300A4	\$848.95	-	-
					4.000	24	4.00	KTT21P1	RK3-21400A4	\$1,092.91	-	-
					6.000	24	2.50	-	24-RK3-21250A	\$1,074.06	-	-
					4.750	24	4.00	-	24-RK3-21400A	\$1,550.55	-	-
					4.750	24	2.50	-	24-RK3-21250A6	\$1,053.60	-	-
					7.500	24	3.00	KTT24-21P	24-RK3-21300A4	\$1,178.08	-	-
					4.750	24	4.00	KTT24-21P1	24-RK3-21400A4	\$1,521.01	-	-
K3-25-80	24	0.984 (25mm)	20mm	3.150 (80mm)	4.750	24	3.00	KTT24P	RK3-24300A	\$1,178.08	-	-
					7.500	28	3.00	KTT24P1	RK3-24400A7	\$1,521.01	-	-
					4.750	28	4.00	KTT28-21P	28-RK3-21300A	\$1,699.12	-	-
					7.500	28	4.00	KTT28-21P1	28-RK3-21400A	\$2,416.90	-	-
					4.750	28	3.00	KTT28-24P	28-RK3-24300A	\$1,699.12	-	-
					7.500	28	4.00	KTT28-24P1	28-RK3-24400A	\$2,416.90	-	-
					3.850	24	2.50	-	RK3-24250A	\$1,074.06	-	-
					4.000	24	4.00	-	RK3-24400A	\$1,550.55	-	-
K3-26-42	15	1.023 (26mm)	20mm	1.656 (42mm)	3.437	15	2.50	-	RH3-15254A	\$494.11	RH3-15254CI	\$721.49
					4.313	15	4.00	-	RH3-15404A	\$607.05	-	-
					4.313	15	3.00	HOW27M15P	RH3-15304A4	\$516.17	-	-
K3-26-50	18-20	1.023 (26mm)	20mm	1.969 (50mm)	3.437	15	2.50	-	RH3-15250A	\$494.11	RH3-15250CI	\$721.49
					4.313	15	4.00	HOW15P1	RH3-15400A	\$607.05	-	-
					4.313	24	2.50	-	24-RH3-15250A*	\$1,074.06	-	-

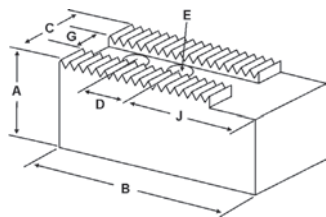
Round Jaw Material: ALUMINUM-6061-T6 Bar Stock, CAST IRON-Gray, STEEL-1018. 18" & Larger- Aluminum Casting T6
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

Call Us Today For All Of Your Machine Tool Needs!

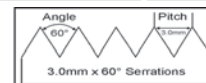
SOFT JAWS- 3.0 mm x 60° Serrations

C

FOR USE ON: **Kitagawa®, Samchully®, MMK Matsumoto, Howa & Other Chucks**



- 3.0mm x 60° serrations
- Supplies maximum concentricity on finish turning operations
- Can be bored or turned to fit workpiece
- Steel jaws can be hardened
- Available flat ended or pointed for smaller diameter parts
- Special orders available
- Available in Aluminum & Steel
- Made in the USA



Group

K3

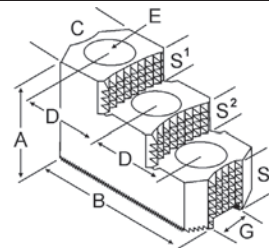
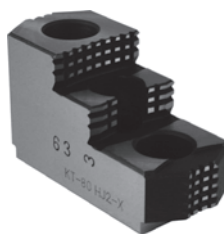
QUANTITY DISCOUNTS!
Order **5 SETS OR MORE** of the same part number soft jaw and receive a **5% DISCOUNT!**

Group No.	Chuck Size	Critical Dimensions								ALUMINUM		STEEL	
		Groove Width G	Screw Size E	Hole Space D	Hght Inch A	Hole to Front J	Width Inch C	Length Inch B	No. of Holes	FLAT END Part Number	Price Set Of 3	FLAT END Part Number	Price Set Of 3
K3-21-40	15	0.827 (21mm)	16mm	1.575 (40mm)	2.50	3.187	2.000	6.000	2	H3-15258AF	\$112.76	H3-15258F	\$124.40
HO15M15, HO 22M12					4.00	3.187	2.000	6.000	2	H3-15408AF*	\$140.81	H3-15408F*	\$153.10
					4.50	3.187	2.000	6.000	2	H3-15458AF	\$139.67	H3-15458F	\$153.10
K3-22-50	15 - 18	0.866 (22mm)	20mm	1.969 (50mm)	2.50	3.187	2.500	6.250	2	M3-15250AF	\$125.37	M3-15250F	\$137.81
MMK HA-18-162, HA11-15, Samchully MH-218					3.00	3.187	2.500	6.250	2	M3-15300AF	\$131.08	M3-15300F	\$143.56
					4.00	3.187	2.500	6.250	2	M3-15400AF	\$157.81	M3-15400F	\$172.25
					5.00	3.187	2.500	6.250	2	M3-15500AF	\$251.09	M3-15500F	\$268.80
					6.00	3.187	2.500	6.250	2	M3-15600AF	\$317.95	M3-15600F	\$319.88
K3-25-51	18 - 21	0.984 (25mm)	20mm	2.000 (51mm)	4.00	5.430	2.50	8.500	2	K3-21403AF*	\$187.72	K3-21403F*	\$211.64
K3-25-60	18 - 21	0.984 (25mm)	20mm	2.360 (60mm)	2.50	3.070	2.500	7.000	2	K3-21250AF	\$137.35	K3-21250F	\$150.94
KITAGAWA B-21, B-24					4.00	3.070	2.500	7.000	2	K3-21400AF	\$165.59	K3-21400F	\$180.36
					6.00	3.070	2.500	7.000	2	K3-21600AF	\$341.28	K3-21600F	\$409.22
K3-25-80	24	0.984 (25mm)	20mm	3.150 (80mm)	2.50	3.850	3.000	8.500	2	K3-24250AF	\$266.29	K3-24250F	\$294.45
UVE-800LB					4.00	3.850	3.000	8.500	2	K3-24400AF	\$350.97	K3-24400F	\$386.46
K3-26-42	15	1.023 (26mm)	20mm	1.656 (42mm)	2.50	2.687	2.000	5.750	2	H3-15254AF	\$95.68	H3-15254F	\$105.26
HO27M15					4.00	2.687	2.000	5.750	2	H3-15404AF	\$122.55	H3-15404F	\$133.99
K3-26-50	18 - 20	1.023 (26mm)	20mm	1.969 (50mm)	2.50	3.187	2.500	6.250	2	H3-15250AF	\$125.37	H3-15250F	\$137.81
HO1MA15					4.00	3.187	2.500	6.250	2	H3-15400AF	\$157.81	H3-15400F	\$172.25
					5.00	3.187	2.500	6.250	2	H3-15500AF	\$218.44	H3-15500F	\$239.24

For "Pointed" Soft Jaws, please substitute "P" for "F" in the part number. Example: H3-15258AF will be H3-15258AP. Pointed Jaws Add \$7.00.
Soft Jaw Material: ALUMINUM-6061-T6 Bar Stock, STEEL-1018, "B" JAWS-7075-T6 Aircraft Aluminum
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

HARD JAWS-2 STEP 3.0mm x 60° Serrations

- Designed for first operation roughing, expect standard runout between 0.005-0.010
- Reversible-suitable for OD & ID workholding.
- XTRA BITE -very aggressive bite. Has conical teeth for extra gripping power and ground body to provide improved runout.
- 1 & 2 step jaws available.



XTRA BITE

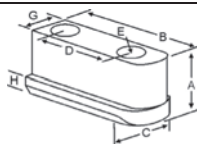
E

Group Number	Chuck Size	Critical Dimensions			Width C	OAL B	Height A	No. of Holes	No. of Steps	Top Step Ht S1	Mid Step Ht S2	Bot Step Ht S3	Part Number	Price Per Set
		Groove Width G	Screw Size E	Hole Space D										
K3-22-50	15	0.866 (22mm)	20mm	1.969 (50mm)	2.500	6.500	3.469	3	2	0.950	0.950	1.569	M3-150HJ2-X	\$897.75
K3-25-49	18-24	0.984 (25mm)	20mm	1.907 (48.5mm)	2.500	6.500	3.469	3	2	0.950	0.950	1.569	K3-240HJ2-X	\$897.75

JAW NUTS & SCREWS



MADE IN THE USA



USST

Chuck Make & Model	Chuck Size	Heel Height H	Groove Width G	Critical Dimensions				2 Screws Included With Each Jaw Nut					
				Screw Size E	Hole Space D	Hght Inch A	Width Inch C	Length Inch B	Jaw Nut Part Number	Price Each	Screw Part Number	Price Each	
MMK: HO15M15	15	0.413	0.826(21mm)	M16-2.00 x 40mm	1.575(40mm)	1.141	1.000	2.560	H3-158JN	\$50.15	M1620040	\$2.25	
Samchully: MH-218	18	0.650	0.866 (22mm)	M20-60mm	1.969 (50mm)	1.791	1.318	3.150	KT-MH-218JN	\$52.85	M20X60	\$2.25	
Kitagawa: B-21,B-24	18 - 24	0.748	0.984(25mm)	M20-2.50 x 50mm	2.362(60mm)	1.772	1.476	3.543	KT-240JN	\$64.00	M2025050	\$3.25	
-	21-24	0.748	0.984(25mm)	M20-2.50 x 50mm	T-Nut	1.772	1.476	1.811	KT-210JN	\$54.83	M2025050	\$3.25	
MMK: HO27M15	15	0.669	1.022(26mm)	M20-2.50 x 50mm	1.654(42mm)	1.570	1.339	2.750	H3-154JN	\$50.15	M2025050	\$3.25	
-	18 - 20	0.669	1.022(26mm)	M20-2.50 x 50mm	1.968(50mm)	1.575	1.339	3.250	H3-150JN	\$71.02	M2025050	\$3.25	

Call Us Or Visit Our Website For Our Complete Selection!

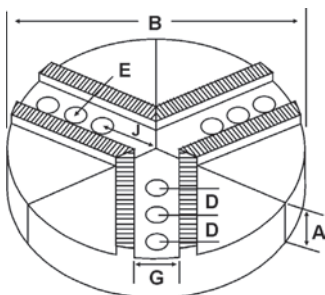
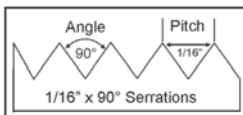
2019-20 MASTER CATALOG

35

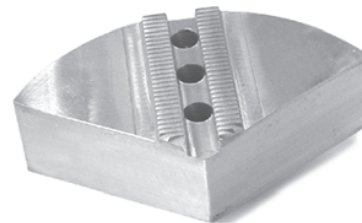
LATHE CHUCKS
LIVE CENTERS
VISE JAWS
VISE ACCESSORIES
STRAIGHT SHANK
COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

ROUND JAWS- 1/16" x 90° Serrations

FOR USE ON: **SMW Autoblok, Rohm, Pratt Burnerd & Other Chucks**



- 1/16" x 90° serrations
- Round Jaws allow for complete gripping of workpiece
- Oversized jaws available
- Ideal for thin-walled or irregular shaped workpieces.
- Can be machined to fit workpiece
- Max. length of serrations: 5.75"
- Special "J" dimensions available
- Available in Aluminum, Cast Iron & Steel
- Made in the USA



Group

11



Critical Dimensions

Group No.	Chuck Size	Critical Dimensions			Holeto Front J	Pie Dia B	Height Inch A	No. of Holes	Industry Ref #	ALUMINUM		CAST IRON		STEEL	
		Groove Width G	Screw Size E	Hole Space D						Part Number	Price Set of 3	Part Number	Price Set of 3	Part Number	Price Set of 3
I1-43-62	5	0.433 (11mm)	5/16	0.625 (16mm)	0.875	6	2.00	3	-	6-RPH-5256A	\$72.80	-	-	6-RPH-5256S	\$192.79
I1-43-71	5-6	0.433 (11mm)	5/16	0.718 (18mm)	1.150	6	2.00	3	-	RPH-6200A	\$82.94	RPH-6200CI	\$144.31	RPH-6200S	\$202.43
						6	3.00	3	-	RPH-6300A	\$114.33	-	-	-	-
						6	4.00	3	-	RPH-6400A	\$123.59	-	-	RPH-6400S	\$312.86
I1-47-59	5-6	0.473 (12mm)	5/16	0.591 (15mm)	0.900	6	2.00	2	-	6-RPH-5200A	\$74.03	-	-	6-RPH-5200S	\$202.43
I1-55-71	5-6	0.551 (14mm)	3/8	0.710 (18mm)	1.050	6	2.00	3	-	RPH-6205A	\$82.94	RPH-6205CI	\$144.31	RPH-6205S	\$202.43
						6	4.00	3	-	RPH-6405A	\$123.59	-	-	RPH-6405S	\$312.86
I1-55-87	5-10	0.551 (14mm)	3/8	0.875 (22mm)	1.650	8	2.00	3	-	8-RPH-6201A	\$123.25	8-RPH-6201CI	\$185.53	8-RPH-6201S	\$280.42
						8	4.00	3	-	8-RPH-6401A	\$176.81	-	-	8-RPH-6401S	\$478.49
						10	2.00	3	-	RPH-10205A	\$163.91	RPH-10205CI	\$278.30	RPH-10205S	\$423.27
I1-55-98	5-6	0.551 (14mm)	3/8	0.984 (25mm)	1.420	6	2.00	2	-	RSM-6200A	\$83.92	RSM-6200CI	\$144.31	RSM-6200S	\$202.43
						6	4.00	2	-	RSM-6400A	\$131.58	-	-	RSM-6400S	\$312.86
						8	2.00	3	-	RPH-8200A	\$123.25	RPH-8200CI	\$185.53	RPH-8200S	\$294.45
I1-66-87	8	0.669 (17mm)	1/2	0.875 (22mm)	1.650	8	2.00	3	-	RPH-8400A	\$176.81	-	-	RPH-8400S	\$478.49
						8	2.00	2	-	RPH-8201A	\$126.29	RPH-8201CI	\$185.53	RPH-8201S	\$294.45
						8	4.00	2	-	RPH-8401A	\$176.81	-	-	RPH-8401S	\$478.49
I1-66-100	8	0.669 (17mm)	1/2	1.000 (25.5mm)	2.250	10	2.00	2	-	10-RPH-8201A	\$165.73	-	-	-	-
						12	2.00	2	-	12-RPH-8201A	\$293.48	-	-	-	-
						8	2.00	3	SMW8P	RSM-8200A	\$126.29	RSM-8200CI	\$185.53	RSM-8200S	\$294.45
I1-66-112	8	0.669 (17mm)	1/2	1.125 (28.5mm)	1.125	8	2.00	3	SMW8P1	RSM-8400A	\$176.81	-	-	RSM-8400S	\$478.49

Round Jaw Material: ALUMINUM-6061-T6 Bar Stock, CAST IRON-Gray, STEEL-1018. 18" & Larger- Aluminum Casting T6
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

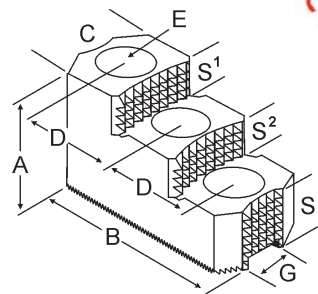
HARD JAWS-2 STEP

1/16" x 90° Serrations



FEATURES:

- Designed for first operation roughing, expect standard runout between 0.005-0.010
- Reversible-suitable for OD & ID workholding.
- XTRA BITE -very aggressive bite. Has conical teeth for extra gripping power and ground body to provide improved runout.



XTRA BITE

E

Critical Dimensions

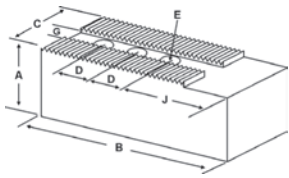
Group Number	Chuck Size	Groove Width G	Screw Size E	Hole Space D	Width Inch C	OAL Inch B	Height Inch A	No. of Holes	No. of Steps	Top Step Ht S1	Mid Step Ht S2	Bot Step Ht S3	Part Number	Price Per Set
I1-43-71	6	0.433 (11mm)	5/16	0.719 (18.5mm)	1.250	3.000	2.000	3	2	0.500	0.500	1.000	PH-60HJ2-X	\$448.87
I1-55-87	6	0.551 (14mm)	3/8	0.875 (22mm)	1.250	3.000	2.000	3	2	0.375	0.375	1.250	PH-61HJ2-X	\$448.87
I1-66-94	8	0.669 (17mm)	1/2	0.945 (24mm)	1.500	3.500	1.969	3	2	0.530	0.530	0.909	PH-80HJ2-X	\$484.79

Call Us Today For All Of Your Machine Tool Needs!

SOFT JAWS- 1/16" x 90° Serrations

C

FOR USE ON: **SMW Autoblok, Rohm, Pratt Burnerd & Other Chucks**

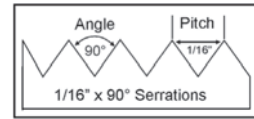


• Max. length of serrations: 5.75"



QUANTITY DISCOUNTS!

Order **5 SETS OR MORE** of the same part number soft jaw and receive a **5% DISCOUNT!**



LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Group No.	Chuck Size	Critical Dimensions			Hght Inch A	Holeto Front J	Width Inch C	Length Inch B	No. of Holes	ALUMINUM		STEEL	
		Groove Width G	Screw Size E	Hole Space D						FLAT END Part Number	Price Set Of 3	FLAT END Part Number	Price Set Of 3
I1-43-62	5	0.433 (11mm)	5/16	0.625 (16mm)	1.50	0.875	1.00	2.500	3	PH-5156AF	\$39.36	PH-5156F	\$44.04
					2.00	0.875	1.00	2.500	3	PH-5256AF	\$45.81	PH-5256F	\$51.19
I1-43-71	5 - 6	0.433 (11mm)	5/16	0.718 (18mm)	1.50	1.250	1.25	3.125	3	PH-6150AF	\$42.91	PH-6150F	\$45.59
					2.00	1.250	1.25	3.125	3	PH-6200AF	\$53.24	PH-6200F	\$59.34
					2.50	1.250	1.25	3.125	3	PH-6250AF	\$55.13	PH-6250F	\$61.26
					3.00	1.250	1.25	3.125	3	PH-6300AF	\$65.69	PH-6300F	\$67.83
I1-47-59	5 - 6	0.473	5/16	0.591	1.50	0.900	1.00	2.500	3	PH-5150AF	\$39.36	PH-5150F	\$44.04
I1-47-63	5 - 6	0.472	8mm	0.630	1.00	0.900	1.00	2.500	3	PH-5100AF	\$39.36	PH-5100F	\$44.04
					2.00	0.900	1.25	2.500	3	PH-5200AF	\$53.24	PH-5200F	\$55.36
I1-55-71	5 - 6	0.551 (14mm)	3/8	0.710 (18mm)	1.50	1.150	1.25	3.000	3	PH-6155AF	\$41.25	PH-6155F	\$46.02
					3.00	1.150	1.25	3.000	3	PH-6305AF	\$53.14	PH-6305F	\$58.91
I1-55-78	5-6	0.551 (14mm)	3/8	0.787	2.00	1.625	1.25	3.000	3	HA-6200AF	\$53.23	HA-6200F	\$55.36
					3.00	1.625	1.25	3.000	3	HA-6300AF	\$60.30	HA-6300F	\$67.83
					4.00	1.625	1.25	3.000	3	HA-6400AF	\$107.34	HA-6400F	\$118.64
I1-55-87	5 - 10	0.551 (14mm)	3/8	0.875 (22mm)	1.50	2.125	1.50	4.375	3	PH-6151AF	\$49.77	PH-6151F	\$55.20
					2.00	2.125	1.50	4.375	3	PH-6201AF	\$58.77	PH-6201F	\$65.08
					2.00	2.325	1.75	4.750	3	PH-10205AF	\$69.24	PH-10205F	\$75.83
					2.50	2.125	1.50	4.375	3	PH-6251AF	\$57.54	PH-6251F	\$68.09
					3.00	2.125	1.50	4.375	3	PH-6301AF	\$78.00	PH-6301F	\$86.14
					3.00	3.575	2.00	6.000	3	PH-10306AF	\$100.83	PH-10306F	\$110.43
					4.00	2.125	1.50	4.375	3	PH-6401AF	\$107.35	PH-6401F	\$118.66
					4.00	2.325	1.75	4.750	3	PH-10405AF	\$96.05	PH-10405F	\$82.39
					4.00	3.575	2.00	6.000	3	PH-10406AF	\$121.38	PH-10406F	\$132.52
					I1-55-98	5 - 6	0.551 (14mm)	3/8	0.984 (25mm)	1.50	1.650	1.25	3.250
3.00	1.650	1.25	3.250	2						SM-6300AF	\$81.79	SM-6300F	\$88.91
I1-59-81	6	0.590	10mm	0.810	2.00	0.750	1.00	2.000	2	PB-6200AF	\$53.19	PB-6200F	\$48.71
I1-66-87	5 - 10	0.669 (17mm)	3/8	0.875 (22mm)	2.00	1.550	1.25	3.250	2	PH-6203AF	\$58.37	PH-6203F	\$65.08
					2.00	2.125	1.50	4.375	3	PH-8200AF	\$57.66	PH-8200F	\$63.81
					3.00	2.125	1.50	4.375	3	PH-8300AF	\$78.00	PH-8300F	\$86.14
I1-66-100	8	0.669 (17mm)	1/2	1.000 (25.5mm)	2.00	1.725	1.50	4.375	3	PH-8201AF*	\$58.78	PH-8201F*	\$65.08
					3.00	1.725	1.50	4.375	3	PH-8301AF*	\$78.00	PH-8301F*	\$86.14
					4.00	1.725	1.50	4.375	3	PH-8401AF*	\$90.18	PH-8401F*	\$101.67
I1-66-112	8	0.669 (17mm)	1/2	1.125 (28.5mm)	2.00	1.750	1.50	3.500	2	SM-8200AF*	\$56.35	SM-8200F*	\$62.57
					3.00	1.750	1.50	3.500	2	SM-8300AF*	\$83.71	SM-8300F*	\$92.97
					5.00	1.750	1.50	3.500	2	SM-8500AF*	\$178.78	SM-8500F*	\$201.57
I1-71-83	8	0.710	12mm	0.830	2.00	0.840	1.75	3.000	2	PB-6201AF	\$58.12	PB-6201F	\$60.68

For "Pointed" Soft Jaws, please substitute "P" for "F" in the part number. Example: PH-5156AF will be PH-5156AP. For Pointed Jaws Add \$4.00.

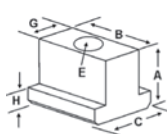
Soft Jaw Material: ALUMINUM-6061-T6 Bar Stock, STEEL-1018, "B" JAWS-7075-T6 Aircraft Aluminum

For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

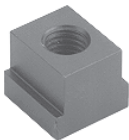
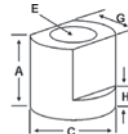
TEE NUTS & SCREWS



PH Style



SM Style



Chuck Size	SMW Autoblok	Critical Dimensions						1 Free Screw Included With Each Jaw Nut			
		Heel Height H	Groove Width G	Screw Size E	Hght Inch A	Width Inch C	Length Inch B	TeeNut Part Number	Price Each	Screw Part Number	Price Each
5	-	0.250	0.433	5/16"-18 x 1.00"	0.590	0.530	0.620	PH-56TN	\$21.23	S5/1618100	\$2.25
5 - 6	HF-KS 13032	0.235	0.433	5/16"-18 x 1.25"	0.780	0.685	0.750	PH-60TN	\$21.23	S5/1618125	\$2.25
5 - 10	-	0.250	0.550	3/8"-16 x 1.00"	0.605	0.750	0.750	PH-61TN	\$21.23	S3/816100	\$2.25
5 - 6	-	0.370	0.550	3/8"-16 x 1.50"	1.040	0.790	0.790	SM-65TN	\$22.93	S3/816150	\$2.25
8	-	0.370	0.668	1/2"-13 x 1.50"	1.080	1.080	0.910	SM-80TN	\$22.93	S1/213150	\$2.25

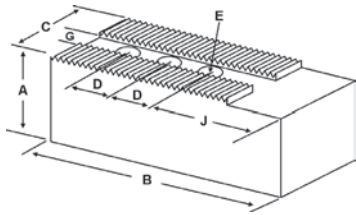
Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

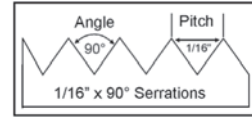
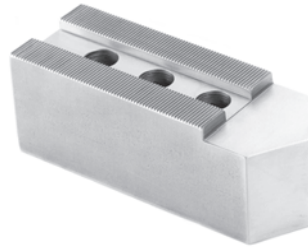
SOFT JAWS- 1/16" x 90° Serrations

C

FOR USE ON: **SMW Autoblok, Rohm, Pratt Burnerd & Other Chucks**



- 1/16" x 90° serrations
- Supplies maximum concentricity on finish turning operations
- Can be bored or turned to fit workpiece
- Steel jaws can be hardened
- Available flat ended or pointed for smaller diameter parts
- Special orders available
- Available in Aluminum & Steel
- Made in the USA



Group

11

QUANTITY DISCOUNTS!
Order **5 SETS OR MORE** of the same part number soft jaw and receive a **5% DISCOUNT!**

Group No.	Chuck Size	Critical Dimensions			ALUMINUM					STEEL			
		Groove Width G	Screw Size E	Hole Space D	Hght Inch A	Hole to Front J	Width Inch C	Length Inch B	No. of Holes	FLAT END Part Number	Price Set Of 3	FLAT END Part Number	Price Set Of 3
I1-78-118	10 - 12	0.787 (20mm)	1/2	1.187 (30mm)	2.50	2.250	1.75	5.250	3	PH-10250AF	\$77.06	PH-10250F	\$69.94
PBA 15					4.00	2.250	1.75	5.250	3	PH-10400AF	\$113.29	PH-10400F	\$96.40
					2.50	2.250	2.00	5.500	3	PH-10252AF	\$82.19	PH-10252F	\$78.89
					4.00	2.250	2.00	5.500	3	PH-10402AF	\$105.54	PH-10402F	\$98.15
I1-82-102	10-12	0.826	16mm	1.102	2.00	2.460	1.75	4.750	2	PB-12200AF	\$70.34	PB-12200F	\$65.90
I1-82-112	11 - 12	0.827 (21mm)	5/8	1.125 (28.5mm)	3.00	2.440	2.00	4.750	2	PH-11300AF*	\$87.61	PH-11300F*	\$57.61
					3.00	2.440	2.00	5.750	2	PH-11307AF*	\$95.21	PH-11307F*	\$65.84
I1-82-117	10 - 12	0.827 (21mm)	1/2	1.187 (30mm)	2.50	2.250	1.75	5.250	3	PH-12250AF	\$63.89	PH-12250F	\$69.94
4.00					2.250	1.75	5.250	3	PH-12400AF	\$89.04	PH-12400F	\$97.05	
2.50					2.875	2.00	5.250	2	SM-12250AF	\$86.98	SM-12250F	\$95.71	
4.00					2.875	2.00	5.250	2	SM-12400AF	\$109.48	SM-12400F	\$119.65	
I1-82-118	8 - 12	0.827 (21mm)	5/8	1.187 (30mm)	2.00	1.963	1.50	3.750	2	PH-8205AF	\$56.41	PH-8205F	\$62.57
					4.00	1.963	1.50	3.750	2	PH-8405AF	\$75.28	PH-8405F	\$82.83
					2.50	2.875	2.00	5.250	2	AT-12250AF	\$86.98	AT-12250F	\$95.71
					4.00	2.875	2.00	5.250	2	AT-12400AF	\$122.21	AT-12400F	\$133.99
I1-82-125	10 - 12	0.827 (21mm)	5/8	1.250 (32mm)	2.50	2.130	1.75	4.000	2	PB-10250AF*	\$57.55	PB-10250F	\$78.92
I1-82-156	14 - 18	0.827 (21mm)	5/8	1.562 (39.5mm)	2.50	2.875	2.00	6.750	3	PB-12250AF*	\$71.28	PB-12250F	\$95.71
					4.00	2.875	2.00	6.750	3	PH-15250AF	\$104.57	PH-15250F	\$114.84
					2.50	2.875	2.50	6.750	3	PH-15400AF	\$131.65	PH-15400F	\$143.56
					4.00	2.875	2.50	6.750	3	PH-16250AF	\$125.82	PH-16250F	\$110.43
I1-100-137	14 - 15	1.003 (25.5mm)	20mm	1.375 (35mm)	3.50	2.940	2.25	5.500	2	PH-15351AF*	\$103.05	PH-15351F*	\$81.28
					3.50	2.940	2.25	6.250	2	PH-153517AF*	\$117.11	PH-153517F*	\$92.88
I1-100-175	16	1.000 (25.5mm)	3/4	1.750 (44.5mm)	3.00	3.500	2.00	6.000	2	PB-16300AF*	\$109.40	PB-16300F*	\$92.41
I1-118-197	18	1.181 (30mm)	20mm	1.970 (50mm)	3.00	3.310	2.50	8.000	3	PH-18300AF*	\$169.60	PH-18300F*	\$185.47
					5.00	3.310	2.50	8.000	3	PH-18500AF*	\$296.92	PH-18500F*	\$324.72

For "Pointed" Soft Jaws, please substitute "P" for "F" in the part number. Ex.: PH-10250AF will be PH-10250AP. Pointed Jaws: Up to 10" add \$4.00, 12" & over add \$7.00.
Soft Jaw Material: ALUMINUM-6061-T6 Bar Stock, STEEL-1018, "B" JAWS-7075-T6 Aircraft Aluminum
For complete list of applicable chucks, see pages 542-554.* denotes non-stock item. Please allow 1 week manufacturing time.

TEE NUTS & SCREWS

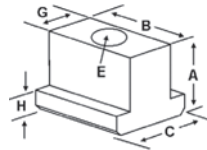
PH Style



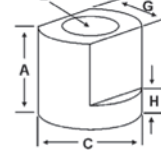
SM Style



PH Style



SM Style



Chuck Size	Heel Height H	Critical Dimensions			Width Inch C	Length Inch B	1 Free Screw Included With Each Tee Nut				
		Groove Width G	Screw Size E	Hght Inch A			Tee Nut Part Number	Price Each	Screw Part Number	Price Each	
10 - 12	0.425	0.825 (21mm)	1/2"-13 x 1.50"	1.168	-	1.100	SM-120TN	\$26.20	S1/213150	\$2.25	
11 - 18	0.325	0.785 (20mm)	1/2"-13 x 1.50"	0.850	1.000	1.000	PH-100TN	\$24.76	S1/213150	\$2.25	
11 - 18	0.430	0.827 (21mm)	5/8"-11 x 1.50"	1.000	1.000	1.115	PH-150TN	\$28.31	S5/811150	\$3.25	

Call Us Or Visit Our Website For Our Complete Selection!

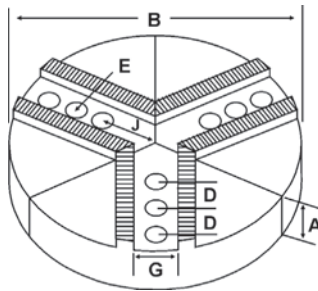
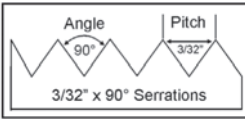
2019-20 MASTER CATALOG

39

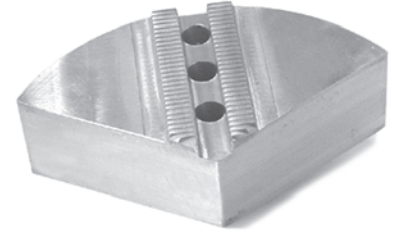
LATHE CHUCKS
LIVE CENTERS
VISE JAWS
VISE ACCESSORIES
STRAIGHT SHANK
COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

ROUND JAWS- 3/32" x 90° Serrations

FOR USE ON: **SMW Autoblok, Forkardt, Rohm, Pratt Burnerd & Other Chucks**



- 3/32" x 90° serrations
- Round Jaws allow for complete gripping of workpiece
- Oversized jaws available
- Ideal for thin-walled or irregular shaped workpieces.
- Can be machined to fit workpiece
- Max. length of serrations: 5.75"
- Special "J" dimensions available
- Available in Aluminum
- Made in the USA



Group

13



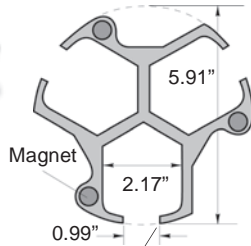
Critical Dimensions

Group No.	Chuck Size	Critical Dimensions							ALUMINUM				
		Groove Width G	Screw Size E	Hole Space D	Hole to Front J	Middle Hole to Front Jm	Pie Dia B	Height Inch A	No. of Holes	Industry Ref #	Part Number	Price Set of 3	
13-100-138	16 to 20	1.004 (25.5mm)	20mm	1.380 (35mm)	3.500	4.880	16	2.500	3	-	RFK-16250A	\$486.91	
								4.000	3	-	RFK-16400A	\$598.65	
13-100-156	16 to 20	1.000 (25.5mm)	3/4	1.562 (39.5mm)	3.250	4.812	16	2.500	3	-	21-RFK-16250A	\$908.09	
								4.000	3	-	RSM-16250A	\$486.91	
13-100-156M	16	1.004 (25.5mm)	20mm	1.562 (39.5mm)	3.313	4.875	15	3.000	3	SMW15-16P	15-RSM-16301A4	\$516.17	
								4.000	3	SMW15-16P1	15-RSM-16401A4	\$547.13	
13-100-156M	20	1.004 (25.5mm)	20mm	1.562 (39.5mm)	4.938	6.500	18	3.000	3	SMW18-20P	18-RSM-16401A4	\$835.46	
								4.000	3	SMW18-20P1	18-RSM-20301A	\$710.55	
								4.000	3	SMW21-20P	21-RSM-20301A	\$933.38	
								4.000	3	SMW21-20P1	21-RSM-20401A	\$1,114.13	
								3.000	3	SMW24-25P	24-RSM-25301A	\$1,205.52	
								4.000	3	SMW24-25P1	24-RSM-25401A	\$1,521.01	
13-118-250	25 to 32	1.181 (30mm)	1.00"	2.500 (63.5mm)	4.250	-	21	4.000	2	-	RSM-21400A	\$1,114.13	
								4.000	2	-	RSM-24400A	\$1,550.55	

Round Jaw Material: ALUMINUM-6061-T6 Bar Stock, CAST IRON-Gray, STEEL-1018. 18" & Larger- Aluminum Casting T6
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

CHUCK STOPS

This product is so useful and simple, you'll wonder why you never thought of it. The Royal chuck stop is a precision machined aluminum extrusion which mounts squarely against the face of almost any 3 jaw lathe chuck, providing a fixed reference surface for workpieces to locate against.



Saw-cut or mill larger for wider chuck jaws.

FEATURES:

- Allows short parts to project past the chuck jaws
- Eliminates the need to bore soft jaws
- Front and rear locating surfaces are parallel within ±0.0004"
- 25mm slot width can be milled larger for chucks with wider jaws.

Accommodates Chuck Jaws Up To 2 1/8" Wide

Description	Part Number	Set Price
Standard Set: 15, 20 & 25mm stops	ROY-25200	\$289.10
Deluxe Set: 15, 20, 25, 30 & 35mm stops	ROY-25210	\$502.74

SPEEDY LATHE GAGE



The Speedy Lathe Gage is used to set lathe tools on the spindle axis for optimum cutting conditions. Poorly set cutting tools will leave a "NUB" at the center of the workpiece after performing a facing cut. This gage can be used to set tools on the spindle axis and eliminate this issue. It also features an adjustable level housing allowing you to correctly set tools even if your lathe is not perfectly leveled.

- Set turning and facing tools on spindle axis for optimum cutting conditions.
- Precision glass vial level with 30/2mm sensitivity.
- Adjustable level mount.
- Made from high strength aluminum.
- Durable anodized finish.



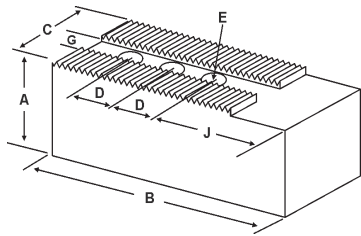
Speedy Lathe Gage
Part # EDGE-08000
\$19.99 ea

Call Us Today For All Of Your Machine Tool Needs!

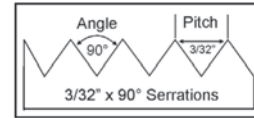
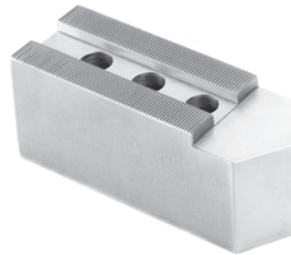
SOFT JAWS- 3/32" x 90° Serrations

C

FOR USE ON: **SMW Autoblok, Forkardt, Rohm, Pratt Burnerd & Other Chucks**



- 3/32" x 90° serrations
- Supplies maximum concentricity on finish turning operations
- Can be bored or turned to fit workpiece
- Steel jaws can be hardened
- Available flat ended or pointed for smaller diameter parts
- Special orders available
- Available in Aluminum & Steel
- **Made in the USA**



Group

13

QUANTITY DISCOUNTS!
Order **5 SETS OR MORE** of the same part number soft jaw and receive a **5% DISCOUNT!**

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Group No.	Critical Dimensions								ALUMINUM		STEEL	
	Groove Width G	Screw Size E	Hole Space D	Hght Inch A	Hole to Front J	Width Inch C	Length Inch B	No. of Holes	FLAT END Part Number	Price Set Of 3	FLAT END Part Number	Price Set Of 3
13-100-138 ROHM KFD 400-500-630	1.004 (25.5mm)	20mm	1.380 (35mm)	2.50	3.500	2.50	6.50	2	FK-16250AF	\$117.53	FK-16250F	\$128.81
				2.50	3.500	2.50	8.00	3	FK-16251AF	\$150.92	FK-16251F	\$165.63
				4.00	3.500	2.50	6.50	2	FK-16400AF	\$168.46	FK-16400F	\$184.04
				4.00	3.500	2.50	8.00	3	FK-16401AF	\$251.27	FK-16401F	\$276.05
13-100-156 SMW Autoblok ALD-400, BB 500-ES, BB 630-ES	1.000 (25.5mm)	3/4	1.562 (39.5mm)	3.00	3.250	2.50	6.50	2	SM-16300AF	\$134.50	SM-16300F	\$147.23
				3.00	3.750	2.50	8.00	3	SM-16301AF	\$184.38	SM-16301F	\$202.43
				4.00	3.250	2.50	6.50	2	SM-16400AF	\$147.69	SM-16400F	\$166.50
				5.00	3.250	2.50	6.50	2	SM-16500AF	\$186.08	SM-16500F	\$202.43
13-100-175	1.000 (25.5mm)	3/4	1.750 (44.5mm)	3.50	7.460	2.50	10.00	2	FK-25350AF*	\$259.81	FK-25350F*	\$284.13
				5.00	7.460	2.50	10.00	2	FK-25500AF*	\$371.16	FK-25500F*	\$405.91
13-110-162	1.102 (28mm)	3/4	1.625 (41.5mm)	3.00	3.630	3.50	6.75	2	SM-20300AF*	\$261.37	SM-20300F*	\$269.67
				3.00	5.880	3.50	9.00	2	SM-20307AF*	\$286.38	SM-20307F*	\$294.75
				5.00	3.630	3.50	6.75	2	SM-20500AF*	\$339.83	SM-20500F*	\$350.60
				5.00	5.880	3.50	9.00	2	SM-20507AF*	\$404.35	SM-20507F*	\$427.10
13-118-250	1.181 (30mm)	1.00	2.500 (63.5mm)	3.00	4.250	3.50	8.00	2	SM-24300AF	\$251.60	SM-24300F	\$276.05
				5.00	4.250	3.50	8.00	2	SM-24500AF	\$419.30	SM-24500F	\$460.08
				3.00	7.000	3.50	11.00	2	SM-24301AF	\$319.40	SM-24301F	\$349.66
				5.00	7.000	3.50	11.00	2	SM-24501AF	\$505.12	SM-24501F	\$746.67
13-118-275	1.181 (30mm)	1.00	2.750 (70mm)	3.50	4.500	3.50	10.00	2	SM-40350AF*	\$366.90	SM-40350F*	\$401.26
				5.00	4.500	3.50	10.00	2	SM-40500AF*	\$524.14	SM-40500F*	\$833.49

For "Pointed" Soft Jaws, please substitute "P" for "F" in the part number. Example: FK-16250AF will be FK-16250AP. For Pointed Jaws add \$7.00.

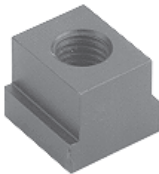
Soft Jaw Material: ALUMINUM-6061-T6 Bar Stock, STEEL-1018, "B" JAWS-7075-T6 Aircraft Aluminum

For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

TEE NUTS & SCREWS



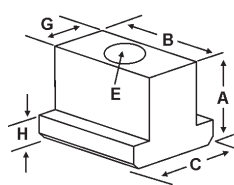
FK Style



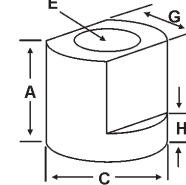
SM Style



FK Style



SM Style

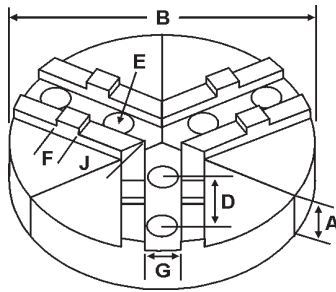


Chuck Size	Forkardt	Gamet	Pratt Burnerd PBA	Critical Dimensions				1 Free Screw Included With Each Tee Nut					
				Heel Height H	Groove Width G	Screw Size E	Hght Inch A	Width Inch C	Length Inch B	Tee Nut Part Number	Price Each	Screw Part Number	Price Each
16 - 20	-	-	-	0.575	0.999 (25.5mm)	3/4" - 10 x 1.75	1.150	1.370	1.370	SM-160TN	\$29.48	S3/410175	\$4.25
15 - 24	KP/T 400-500, KS 500	DE 400	400 HYD. FRONT END	0.433	1.003 (25.5mm)	20mm	1.141	1.417	1.082	FK-160TN	\$75.17	M2025050	\$3.25
25 - 32	-	-	-	0.728	1.180 (30mm)	1" - 8	1.752	1.772	-	SM-240TN	\$56.50	S1008	\$4.25

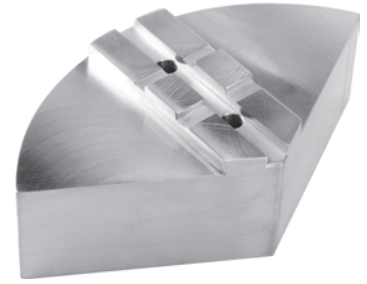
Call Us Or Visit Our Website For Our Complete Selection!

ROUND JAWS- American Standard Tongue & Groove

FOR USE ON: **Bison, Buck, BTC, Cushman, TMX, PBA, Yuasa & Rohm Chucks**



- American Standard Tongue & Groove
- Round Jaws allow for complete gripping of workpiece
- Oversized jaws available
- Ideal for thin-walled or irregular shaped workpieces.
- Can be machined to fit workpiece
- All jaws have 2 holes
- Special "J" dimensions available
- Available in Aluminum, Cast Iron & Steel
- Made in the USA



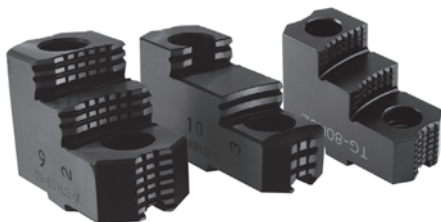
Group



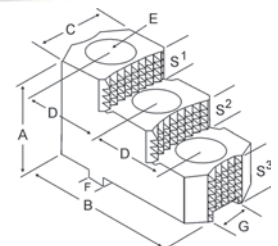
OFF-CENTER TONGUE		Critical Dimensions						ALUMINUM		CAST IRON		STEEL					
Group No.	Chuck Size	Type	Groove Width G	Tongue Width F	Screw Size E	Hole Space D	Tongue to Front J	Pie Dia B	Hght Inch A	Part Number	Price Set Of 3	Part Number	Price Set Of 3	Part Number	Price Set Of 3		
TI-31-5/16-12	5	MEDIUM DUTY	0.313	0.500	5/16	1.250	1.100	6	2.00	6-RTG-5200A	\$83.92	-	-	-	-		
TI-31-3/8-15	6	MEDIUM DUTY	0.313	0.500	3/8	1.500	1.360	6	2.00	RTG-6200A	\$76.66	RTG-6200CI	\$144.31	RTG-6200S*	\$202.43		
3.00									RTG-6300A	\$114.33	RTG-6300CI	\$226.75	-	-			
4.00									RTG-6400A	\$118.88	-	-	-	-			
5.00									RTG-6500A*	\$194.07	-	-	-	-			
6.00									RTG-6600A	\$194.07	-	-	-	-			
TI-31-7/16-15	6	HEAVY DUTY	0.313	0.500	7/16	1.500	1.260	8	2.00	8-RTG-6200A	\$110.52	8-RTG-6200CI*	\$185.53	8-RTG-6200S*	\$294.45		
									4.00	8-RTG-6400A	\$158.83	-	-	-			
									2.00	RTG-6205A	\$79.80	RTG-6205CI	\$144.31	-	-		
TI-31-3/8-17	8	MEDIUM DUTY	0.313	0.500	3/8	1.750	1.200	6	2.00	6-RTG-8200A	\$83.92	-	-	-	-		
									6	4.00	6-RTG-8400A*	\$196.16	-	-	-	-	
									2.150	8	2.00	RTG-8200A	\$103.80	RTG-8200CI	\$185.53	RTG-8200S	\$294.45
3.00	RTG-8300A	\$145.47	-	-	RTG-8300S*	\$508.26											
TI-31-1/2-17	8	HEAVY DUTY	0.313	0.500	1/2	1.750	2.150	10	2.00	10-RTG-8200A	\$146.86	10-RTG-8200CI	\$278.30	10-RTG-8200S	\$423.27		
									3.00	10-RTG-8300A	\$240.33	-	-	-	-		
									4.00	10-RTG-8400A	\$227.62	-	-	-	-		
									2.150	12	2.00	12-RTG-8200A	\$184.94	-	-	-	-
											2.50	12-RTG-8250A*	\$267.98	-	-	-	-
											4.00	12-RTG-8400A*	\$427.41	-	-	-	-
8	10	2.00	12-RTG-8500A*	\$476.58	-	-	-	-									
		2.00	RTG-8205A	\$120.11	RTG-8205CI	\$185.53	-	-									
		4.00	RTG-8405A	\$161.96	RTG-8405CI	\$350.44	-	-									
10	4.00	10-RTG-8205A	\$146.86	-	-	-	-										
		10-RTG-8405A	\$243.27	-	-	-	-										

Round Jaw Material: ALUMINUM-6061-T6 Bar Stock, CAST IRON-Gray, STEEL-1018. 18" & Larger- Aluminum Casting T6
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

AMERICAN STANDARD TONGUE & GROOVE HARD JAWS



- Designed for first operation roughing, expect standard runout between 0.005-0.010
- Reversible-suitable for OD & ID workholding.
- XTRA BITE (-X) -very aggressive bite. Has conical teeth for extra gripping power and ground body to provide improved runout.
- GRIP-RITE-OEM Style (-U) hard jaws have ground tips and provide better runout.
- SHARK JAWS have conical teeth for extra gripping power and black oxide for long life. Ideal for castings and scaly material. Made in the USA.



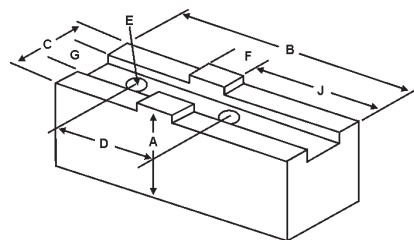
		Critical Dimensions															
Group	Chuck Size	Type	Groove Width G	Tongue Width F	Screw Size E	Hole Space D	Width Inch C	OAL Inch B	Height Inch A	No. of Holes	No. of Steps	Top Step Ht S1	Mid Step Ht S2	Bot Step Ht S3	Part Number	Price Per Set	Code
TI-31-3/8-15	6	-	0.313	0.500	3/8	1.500	1.035	2.834	1.511	2	2	0.354	0.354	0.803	TG-60HJ2-U	\$282.80	E
							1.500	2.780	1.969	2	2	0.530	0.530	0.909	TG-60HJ2-X	\$297.68	E
TI-31-3/8-17	8	-	0.313	0.500	3/8	1.750	1.250	3.550	2.000	2	2	0.600	0.360	1.040	TG-80HJ2	\$359.60	D
							1.114	3.227	1.629	2	2	0.394	0.394	0.843	TG-80HJ2-U	\$307.03	E
							1.500	3.287	1.969	2	2	0.530	0.530	0.909	TG-80HJ2-X	\$323.19	E

Call Us Today For All Of Your Machine Tool Needs!

SOFT JAWS- American Standard Tongue & Groove

C

FOR USE ON: **Bison, Buck, BTC, Cushman, TMX, PBA, Yuasa & Rohm Chucks**



- American Standard Tongue & Groove
- Supplies maximum concentricity on finish turning operations
- Can be bored or turned to fit workpiece
- Steel jaws can be hardened
- Available flat ended or pointed for smaller diameter parts
- Special orders available
- Available in Aluminum, Steel
- **Made in the USA**



Group



QUANTITY DISCOUNTS!

Order **5 SETS OR MORE** of the same part number soft jaw and receive a **5% DISCOUNT!**

LATHE CHUCKS
LIVE CENTERS
VISE JAWS
VISE ACCESSORIES
STRAIGHT SHANK
COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

Group No.	Chuck Size	Type	Critical Dimensions				ALUMINUM					STEEL			
			Groove Width G	Tongue Width F	Screw Size E	Hole Space D	Height Inch A	Tongue to Front J	Tongue Position	Length Inch B	Width Inch C	Flat End Part Number	Price Set of 3	Flat End Part Number	Price Set Of 3
TI-25-1/4-11	4	MED. DUTY	0.250	0.437	1/4	1.188	1.250	0.880	Offset	2.000	0.625	TG-4120AF	\$43.85	TG-4120F	\$49.30
TI-31-5/16-12	5	MEDIUM DUTY	0.313	0.500	5/16	1.250	1.500	1.100	Offset	2.375	0.750	TG-5150AF	\$37.11	TG-5150F	\$41.60
							2.000	1.100	Offset	2.375	0.750	TG-5200AF	\$44.00	TG-5200F	\$49.30
TI-31-3/8-15	6	MEDIUM DUTY	0.313	0.500	3/8	1.500	1.500	1.350	Centered	3.200	1.000	TG-6153AF	\$43.90	TG-6153F	\$49.08
							1.500	1.360	Offset	2.750	1.000	TG-6150AF	\$37.34	TG-6150F	\$30.95
							1.500	1.610	Offset	3.000	1.000	TG-6151AF	\$37.34	TG-6151F	\$36.81
							1.500	1.813	Offset	3.250	1.000	TG-6151-18AF	\$38.99	TG-6151-18F	\$37.47
							2.000	1.350	Centered	3.200	1.000	TG-6203AF	\$50.77	TG-6203F	\$55.02
							2.000	1.360	Offset	2.750	1.000	TG-6200AF	\$36.38	TG-6200F	\$41.64
							2.500	1.350	Centered	3.200	1.000	TG-6253AF	\$53.23	TG-6253F	\$55.32
							2.500	1.690	Offset	3.250	1.500	TG-6252AF	\$54.79	TG-6252F	\$60.67
							2.500	1.360	Offset	2.750	1.000	TG-6250AF	\$52.94	TG-6250F	\$55.02
							3.000	1.350	Centered	3.200	1.000	TG-6303AF	\$53.84	TG-6303F	\$55.95
							3.500	1.350	Centered	3.200	1.000	TG-6353AF	\$66.84	TG-6353F	\$72.68
							3.000	1.360	Offset	2.750	1.000	TG-6300AF	\$47.73	TG-6300F	\$50.99
TI-31-7/16-15	6	HEAVY DUTY	0.313	0.500	7/16	1.500	1.500	1.260	Offset	2.750	1.250	TG-6155AF	\$37.40	TG-6155F	\$41.71
							1.500	Center	Centered	2.813	1.500	TG-6158AF	\$72.48	TG-6158F	\$41.71
							2.000	1.260	Offset	2.750	1.500	TG-6205AF	\$44.36	TG-6205F	\$49.30
							2.500	1.260	Offset	2.750	1.500	TG-6255AF	\$54.87	TG-6255F	\$60.89
							2.500	1.750	Offset	3.250	1.500	TG-6256AF	\$58.04	TG-6256F	\$64.34
							3.000	1.260	Offset	2.750	1.500	TG-6305AF	\$55.32	TG-6305F	\$61.26
TI-31-3/8-17	8	MEDIUM DUTY	0.313	0.500	3/8	1.750	2.000	2.000	Offset	3.750	1.250	TG-8200AF	\$40.82	TG-8200F	\$32.15
							2.000	2.000	Offset	3.750	1.250	TG-8200BF	\$64.68	-	-
							2.000	2.000	Centered	4.500	1.250	TG-8203AF	\$57.77	TG-8203F	\$52.57
							2.500	2.000	Offset	3.750	1.250	TG-8250AF	\$53.07	TG-8250F	\$58.78
							2.500	2.000	Centered	4.500	1.250	TG-8253AF	\$64.71	TG-8253F	\$71.70
							3.000	2.000	Offset	3.750	1.250	TG-8300AF	\$54.91	TG-8300F	\$64.44
							3.000	2.000	Offset	3.750	1.250	TG-8300BF	\$83.50	-	-
							3.000	2.000	Centered	4.500	1.250	TG-8303AF	\$71.68	TG-8303F	\$79.28
							4.000	2.000	Offset	3.750	1.250	TG-8400AF	\$79.04	TG-8400F	\$83.28
							4.000	2.000	Centered	4.500	1.250	TG-8403AF	\$89.13	TG-8403F	\$87.63
	5.000	2.000	Offset	3.750	1.250	TG-8500AF	\$178.78	TG-8500F	\$201.57						
	6.000	2.000	Offset	3.750	1.250	TG-8600AF	\$194.31	TG-8600F	\$219.09						
TI-31-1/2-17	8	HEAVY DUTY	0.313	0.500	1/2	1.750	2.000	2.000	Offset	3.750	1.500	TG-8205AF	\$51.25	TG-8205F	\$50.84
							2.000	Center	Centered	3.313	1.500	TG-8208AF	\$56.39	TG-8208F	\$80.10
							3.000	2.000	Offset	3.750	1.500	TG-8305AF	\$65.13	TG-8305F	\$70.99
							3.500	Center	Centered	3.313	1.500	TG-8358AF	\$90.40	TG-8358F	\$88.45
							4.000	2.000	Offset	3.750	1.500	TG-8405AF	\$82.70	TG-8405F	\$91.12
							6.000	2.000	Offset	3.750	1.500	TG-8605AF	\$204.04	TG-8605F	\$230.04
TI-31-1/2-17	8	8" W & S	0.313	0.500	1/2	1.750	2.500	1.813	Offset	3.500	1.250	TG-8259AF	\$49.52	TG-8259F	\$54.86
							3.000	1.813	Offset	3.500	1.250	TG-8309AF	\$80.28	TG-8309F	\$89.33

For "Pointed" Soft Jaws, please substitute "P" for "F" in the part number. Example: TG-4120AF will be TG-4120AP. For Pointed Jaws add \$4.00.

Soft Jaw Material: ALUMINUM-6061-T6 Bar Stock, STEEL-1018, "B" JAWS-7075-T6 Aircraft Aluminum

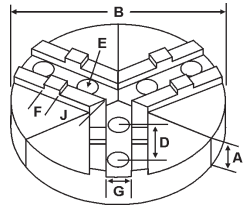
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

Call Us Or Visit Our Website For Our Complete Selection!

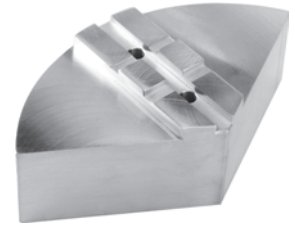
2019-20 MASTER CATALOG

ROUND JAWS- American Standard Tongue & Groove

FOR USE ON: **Bison, Buck, BTC, Cushman, TMX, PBA, Yuasa & Rohm Chucks**



- American Standard Tongue & Groove
- Round Jaws allow for complete gripping of workpiece
- Oversized jaws available
- Ideal for thin-walled or irregular shaped workpieces.
- Can be machined to fit workpiece
- Special "J" dimensions available
- Available in Aluminum & Cast Iron
- Made in the USA



OFF-CENTER TONGUE			Critical Dimensions							ALUMINUM		CAST IRON		STEEL											
Group No.	Chuck Size	Type	Groove Width G	Tongue Width F	Screw Size E	Hole Space D	Tongue to Front J	Pie Dia B	Hght Inch A	Part Number	Price Set Of 3	Part Number	Price Set Of 3	Part Number	Price Set Of 3										
TI-50-1/2-21	10	MED. DUTY	0.500	0.750	1/2	2.125	2.200	12	5.00	12-RTG-10500A*	\$476.58	-	-	-	-										
									4.00	18-RTG-10400A*	\$851.69	-	-	-	-										
									1.900	8	4.00	8-RTG-10400A	\$176.81	-	-	-	-								
											6.00	8-RTG-10600A	\$280.91	-	-	-	-								
									2.125	2.200	10	2.00	RTG-10200A	\$136.22	RTG-10200CI	\$278.30	RTG-10200S	\$423.27							
												3.00	RTG-10300A	\$184.94	-	-	-	-							
												4.00	RTG-10400A	\$219.77	RTG-10400CI	\$494.74	RTG-10400S	\$723.69							
												5.00	RTG-10500A	\$340.12	-	-	-	-							
												6.00	-	-	-	-	RTG-10600S	\$1,010.88							
												-	-	-	-	-	-	-							
									TI-50-5/8-21	10	HEAVY DUTY	0.500	0.750	5/8	2.125	2.200	10	2.00	RTG-10205A	\$160.78	RTG-10205CI	\$278.30	-	-	
																		3.00	RTG-10305A*	\$240.33	-	-	-	-	
4.00	RTG-10405A	\$243.27	RTG-10405CI	\$494.74	-	-																			
5.00	RTG-10505A*	\$340.12	-	-	-	-																			
12	12	2.00	12-RTG-10205A	\$184.94	-	-	-																		
		4.00	12-RTG-10405A	\$403.54	-	-	-																		
15	15	2.50	15-RTG-10250A	\$494.11	-	-	-																		
		4.00	15-RTG-10400A	\$607.05	-	-	-																		
TI-50-1/2-25	12	MED. DUTY	0.500	0.750	1/2	2.500	1.770	8										4.00	8-RTG-12400A	\$176.81	-	-	-	-	
																		6.00	8-RTG-12600A	\$303.09	-	-	-	-	
																		2.425	10	2.00	10-RTG-12200A	\$146.86	-	-	-
																				4.00	10-RTG-12400A	\$255.63	-	-	-
									3.370	12	2.00	RTG-12200A	\$184.59	RTG-12200CI	\$431.01	-	-								
											2.50	RTG-12250A	\$197.37	-	-	-									
											3.00	RTG-12300A	\$300.55	-	-	-									
											4.00	RTG-12400A	\$330.34	-	-	RTG-12400S	\$964.93								
											5.00	RTG-12500A	\$476.58	-	-	-									
											-	-	-	-	-	-	-								
									18	18	2.50	15-RTG-12250A	\$494.11	15-RTG-12250CI	\$721.49	-	-								
											4.00	15-RTG-12400A	\$607.05	-	-	-									
2.50	18-RTG-12250A	\$630.87	-	-	-																				
4.00	18-RTG-12400A	\$851.69	-	-	-																				
2.50	21-RTG-12250A*	\$890.80	-	-	-																				
2.50	24-RTG-12250A	\$1,094.92	-	-	-																				
TI-50-5/8-25	12	HEAVY DUTY	0.500	0.750	5/8	2.500	3.370	12	2.00	RTG-12205A	\$184.59	RTG-12205CI	\$431.01	-	-										
									2.50	RTG-12255A	\$234.58	-	-	-	-										
									4.00	RTG-12405A	\$403.54	-	-	-	-										
									5.00	RTG-12505A	\$476.58	-	-	-	-										
									3.350	15	2.50	15-RTG-12255A	\$494.11	15-RTG-12255CI	\$721.49	-	-								
											4.00	15-RTG-12405A	\$607.05	-	-	-									
									18	18	2.50	18-RTG-12255A	\$630.87	-	-	-									
											4.00	18-RTG-12405A	\$851.69	-	-	-									
									3.100	21	4.00	21-RTG-12405A*	\$1,135.76	-	-	-									

Round Jaw Material: ALUMINUM-6061-T6 Bar Stock, CAST IRON-Gray, STEEL-1018, 18" & Larger- Aluminum Casting T6
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

HARD JAWS



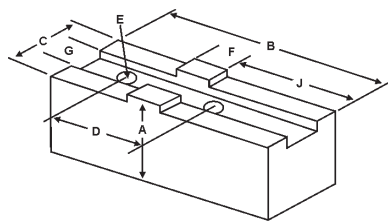
			Critical Dimensions														
Group	Chuck Size	Type	Groove Width G	Tongue Width F	Screw Size E	Hole Space D	Width Inch C	OAL Inch B	Height Inch A	No. of Holes	No. of Steps	Top Step Ht S1	Mid Step Ht S2	Bot Step Ht S3	Part Number	Price Per Set	Code
TI-50-1/2-21	10	MEDIUM DUTY	0.500	0.750	1/2	2.125	1.750	3.770	2.500	2	2	0.688	0.440	1.380	TG-100HJ2	\$378.53	D
							1.389	4.034	2.063	2	2	0.551	0.551	0.961	TG-100HJ2-U	\$323.19	E
							1.750	3.920	2.469	2	2	0.650	0.650	1.169	TG-100HJ2-X	\$340.20	E
TI-50-1/2-25	12	MEDIUM DUTY	0.500	0.750	1/2	2.500	1.750	4.500	2.500	2	2	0.680	0.440	1.380	TG-120HJ2	\$511.01	D
							1.586	4.585	2.063	2	2	0.591	0.591	0.882	TG-120HJ2-U	\$436.31	E
							1.750	4.550	2.500	2	2	0.650	0.650	1.200	TG-120HJ2-X	\$459.27	E
TI-50-5/8-25		HVY DTY	0.500	0.750	5/8	2.500	1.750	4.550	2.500	2	2	0.650	0.650	1.200	TG-125HJ2-X	\$493.29	E

Call Us Today For All Of Your Machine Tool Needs!

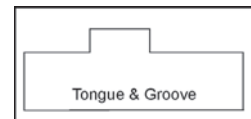
SOFT JAWS- American Standard Tongue & Groove

C

FOR USE ON: **Bison, Buck, BTC, Cushman, TMX, PBA, Yuasa & Rohm Chucks**



- American Standard Tongue & Groove
- Supplies maximum concentricity on finish turning operations
- Can be bored or turned to fit workpiece
- Steel jaws can be hardened
- Available flat ended or pointed for smaller diameter parts
- Special orders available
- Available in Aluminum & Steel
- Made in the USA



QUANTITY DISCOUNTS!
Order **5 SETS OR MORE** of the same part number soft jaw and receive a **5% DISCOUNT!**

Group



Group No.	Chuck Size	Type	Critical Dimensions				ALUMINUM					STEEL			
			Groove Width G	Tongue Width F	Screw Size E	Hole Space D	Height Inch A	Tongue to Front J	Tongue Position	Length Inch B	Width Inch C	Flat End Part Number	Price Set of 3	Flat End Part Number	Price Set of 3
TI-50-1/2-21	10	MEDIUM DUTY	0.500	0.750	1/2	2.125	2.00	2.300	Offset	4.500	1.500	TG-10200AF	\$48.95	TG-10200F	\$33.83
							2.00	2.300	Offset	4.500	1.500	TG-10200BF	\$74.04	-	-
							2.00	2.300	Offset	4.500	2.000	TG-10202AF	\$62.26	TG-10202F	\$64.69
							2.00	2.625	Centered	6.000	2.000	TG-10203AF	\$90.07	TG-10203F	\$56.95
							2.50	2.300	Offset	4.500	1.500	TG-10250AF	\$58.53	TG-10250F	\$64.44
							3.00	2.300	Offset	4.500	1.500	TG-10300AF	\$65.00	TG-10300F	\$72.05
							3.00	2.300	Offset	4.500	2.000	TG-10302AF	\$78.74	TG-10302F	\$86.36
							3.00	2.625	Centered	6.000	2.000	TG-10303AF	\$98.70	TG-10303F	\$108.06
							4.00	2.300	Offset	4.500	1.500	TG-10400AF	\$72.48	TG-10400F	\$75.33
4.00	2.625	Centered	6.000	2.000	TG-10403AF	\$133.30	TG-10403F	\$87.63							
TI-50-5/8-21	10	HEAVY DUTY	0.500	0.750	5/8	2.125	2.00	2.300	Offset	4.500	1.750	TG-10205AF	\$54.97	TG-10205F	\$60.57
							2.00	Center	Centered	3.938	1.750	TG-10208AF	\$47.76	TG-10208F	\$50.76
							2.50	2.300	Offset	4.500	1.750	TG-10255AF	\$63.45	TG-10255F	\$69.75
							3.00	2.300	Offset	4.500	1.750	TG-10305AF	\$69.04	TG-10305F	\$75.71
							4.00	2.300	Offset	4.500	1.750	TG-10405AF	\$83.13	TG-10405F	\$90.89
							4.00	Center	Centered	3.938	1.750	TG-10408AF	\$104.24	TG-10408F	\$99.52
							2.50	2.125	Offset	4.250	1.750	TG-10259AF	\$62.41	TG-10259F	\$56.63
							3.50	2.125	Offset	4.250	1.750	TG-10359AF	\$87.34	TG-10359F	\$79.24
							2.00	2.900	Offset	5.250	1.750	TG-12200AF	\$62.00	TG-12200F	\$54.75
TI-50-1/2-25	12	MEDIUM DUTY	0.500	0.750	1/2	2.500	2.00	2.900	Centered	6.550	1.750	TG-12203AF	\$88.15	TG-12203F	\$70.11
							2.50	2.900	Offset	5.250	1.750	TG-12250AF	\$69.81	TG-12250F	\$72.22
							2.50	2.900	Centered	6.550	1.750	TG-12253AF	\$103.74	TG-12253F	\$114.39
							2.50	3.670	Offset	6.000	2.000	TG-12252AF	\$89.83	TG-12252F	\$76.79
							2.50	Center	Centered	4.500	2.000	TG-12258AF	\$71.28	TG-12258F	\$82.04
							3.00	2.900	Offset	5.250	1.750	TG-12300AF	\$79.56	TG-12300F	\$87.22
							3.00	2.900	Centered	6.550	1.750	TG-12303AF	\$121.03	TG-12303F	\$133.33
							4.00	2.900	Offset	5.250	1.750	TG-12400AF	\$93.72	TG-12400F	\$102.35
							4.00	2.900	Centered	6.550	1.750	TG-12403AF	\$138.76	TG-12403F	\$145.94
							4.00	3.670	Offset	6.000	2.000	TG-12402AF	\$133.30	TG-12402F	\$145.98
							4.00	Center	Centered	4.500	2.000	TG-12408AF	\$85.44	TG-12408F	\$93.08
							6.00	2.900	Offset	5.250	1.750	TG-12600AF	\$216.83	TG-12600F	\$239.24
							6.00	3.670	Offset	6.000	2.000	TG-12602AF	\$292.29	TG-12602F	\$312.86
TI-50-5/8-25	12	12" W & S	0.500	0.750	5/8	2.500	2.50	2.500	Offset	4.875	1.750	TG-12259AF	\$69.66	TG-12259F	\$74.88
TI-50-5/8-25	12	HEAVY DUTY	0.500	0.750	5/8	2.500	2.00	2.900	Offset	5.250	2.000	TG-12205AF	\$65.38	TG-12205F	\$71.83
							2.50	2.900	Offset	5.250	2.000	TG-12255AF	\$73.03	TG-12255F	\$76.14
							2.50	3.670	Offset	6.000	2.000	TG-12256AF	\$94.95	TG-12256F	\$104.72
							3.00	2.900	Offset	5.250	2.000	TG-12305AF	\$87.61	TG-12305F	\$95.93
							4.00	2.900	Offset	5.250	2.000	TG-12405AF	\$96.05	TG-12405F	\$104.25
							4.00	3.670	Offset	6.000	2.000	TG-12406AF	\$133.30	TG-12406F	\$145.98

For "Pointed" Soft Jaws, please substitute "P" for "F" in the part number. Example: TG-10200AF will be TG-10200AP. Pointed Jaws: Up to 10" add \$4.00, 12" & over add \$7.00.
Soft Jaw Material: ALUMINUM-6061-T6 Bar Stock, STEEL-1018, "B" JAWS-7075-T6 Aircraft Aluminum
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

OEM HARD TOP JAWS

American Standard Tongue & Groove Jaws



Chuck Dia	Groove Width	Tongue Width	OAL	Height	3-Jaw Chucks		4-Jaw Chucks	
					Part Number	Price Per Set	Part Number	Price Per Set
5"	0.313	0.500	2.205	1.516	TG-50HJ2-BI	\$188.10	TG-50HJ2-4-BI	\$300.60
6"	0.313	0.500	2.638	1.634	TG-60HJ2-BI	\$230.40	TG-60HJ2-4-BI	\$306.90
8"	0.313	0.500	3.347	1.713	TG-80HJ2-BI	\$232.20	TG-80HJ2-4-BI	\$364.50
10"	0.500	0.750	3.740	2.023	TG-100HJ2-BI	\$271.80	TG-100HJ2-4-BI	\$380.70
12"	0.500	0.750	4.331	2.165	TG-120HJ2-BI	\$334.80	TG-120HJ2-4-BI	\$468.00
15-3/4"	0.500	0.750	5.000	2.539	TG-150HJ2-BI	\$456.30	TG-150HJ2-4-BI	\$639.00

Call Us Or Visit Our Website For Our Complete Selection!

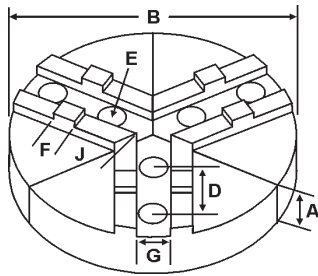
2019-20 MASTER CATALOG

45

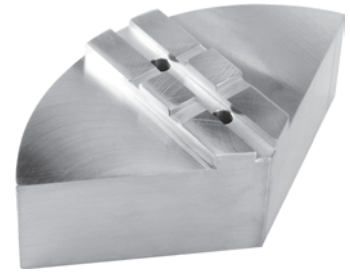
LATHE CHUCKS
LIVE CENTERS
VISE JAWS
VISE ACCESSORIES
STRAIGHT SHANK
COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

ROUND JAWS- American Standard Tongue & Groove

FOR USE ON: **Bison, Buck, BTC, Cushman, TMX, PBA, Yuasa & Rohm Chucks**



- American Standard Tongue & Groove
- Round Jaws allow for complete gripping of workpiece
- Oversized jaws available
- Ideal for thin-walled or irregular shaped workpieces.
- Can be machined to fit workpiece
- All jaws have 2 holes
- Special "J" dimensions available
- Available in Aluminum & Cast Iron
- **Made in the USA**

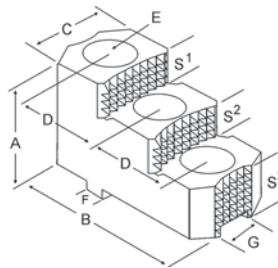
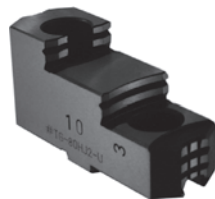
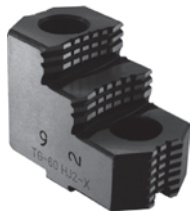


OFF-CENTER TONGUE

Group No.	Chuck Size	Type	Critical Dimensions				Tongue to Front J	Pie Dia B	Hght Inch A	ALUMINUM		CAST IRON/STEEL	
			Groove Width G	Tongue Width F	Screw Size E	Hole Space D				Part Number	Price Set Of 3	Part Number	Price Set Of 3
TI-50-5/8-30	15	MEDIUM DUTY	0.500	0.750	5/8	3.000	3.370	12	2.00	12-RTG-15200A	\$215.37	-	-
									4.00	12-RTG-15400A	\$427.41	-	-
							3.785	15	2.50	RTG-15250A	\$494.11	RTG-15250CI	\$721.49
									4.00	RTG-15400A	\$607.05	RTG-15400S	\$1,521.63
									5.00	RTG-15500A*	\$948.92	-	-
							4.100	18	2.50	18-RTG-15250A	\$618.85	-	-
									4.00	18-RTG-15400A	\$851.69	-	-
							4.550	21	2.50	21-RTG-15250A	\$908.09	-	-
									4.00	21-RTG-15400A	\$1,135.76	-	-
							3.825	24	2.50	24-RTG-15250A	\$1,074.06	-	-
4.00	24-RTG-15400A	\$1,550.55	-	-									
TI-50-3/4-30	15	HEAVY DUTY	0.500	0.750	3/4	3.000	3.785	15	2.50	RTG-15255A	\$494.11	RTG-15255CI	\$721.49
									4.00	RTG-15405A	\$607.05	-	-
							4.100	18	2.50	18-RTG-15255A	\$618.85	-	-
									4.00	18-RTG-15405A	\$851.69	-	-
									5.00	RTG-15505A*	\$948.92	-	-
							4.550	21	2.50	21-RTG-15255A	\$908.09	-	-
									4.00	21-RTG-15405A	\$1,135.76	-	-
							3.785	24	2.50	24-RTG-15255A	\$1,074.06	-	-
									4.00	24-RTG-15405A	\$1,550.55	-	-
							TI-50-7/8-30	18 & Up	HEAVY DUTY	0.500	0.750	7/8	3.000
6.00	12-RTG-18600A*	\$627.94	-	-									
5.100	18	2.50	RTG-18250A	\$618.85	-	-							
		4.00	RTG-18400A	\$851.69	-	-							
5.100	21	2.50	21-RTG-18250A	\$908.09	-	-							
		4.00	21-RTG-18400A	\$1,135.76	-	-							
5.100	24	2.50	24-RTG-18250A	\$1,074.06	-	-							
		4.00	24-RTG-18400A	\$1,550.55	-	-							
5.000	24	4.00	RTG-24400A	\$1,550.55	-	-							

Round Jaw Material: ALUMINUM-6061-T6 Bar Stock, CAST IRON-Gray, STEEL-1018, 18" & Larger- Aluminum Casting T6
For complete list of applicable chucks, see pages 542-554.* denotes non-stock item. Please allow 1 week manufacturing time.

HARD JAWS-2 STEP



FEATURES:

- Designed for first operation roughing, expect standard runoff between **0.005-0.010**
- Reversible-suitable for OD & ID workholding.
- **GRIP-RITE-OEM** style hard jaws have ground tips and provide better runoff.
- **XTRA BITE** -very aggressive bite. Has conical teeth for extra gripping power and ground body to provide improved runoff.

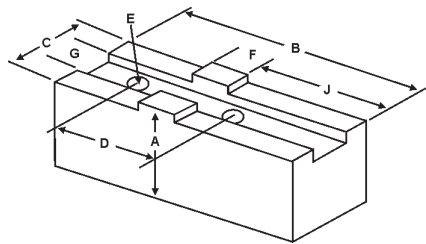
Group	Chuck Size	Type	Critical Dimensions				Width Inch C	OAL Inch B	Height Inch A	No. of Holes	No. of Steps	Top Step Ht S1	Mid Step Ht S2	Bot Step Ht S3	Part Number	Price Per Set	Code
			Groove Width G	Tongue Width F	Screw Size E	Hole Space D											
TI-50-5/8-30	15 & UP	MEDIUM DUTY	0.500	0.750	5/8	3.000	1.980	5.392	2.613	2	2	0.551	0.551	1.511	TG-150HJ2-U	\$533.26	E
							2.500	5.350	3.469	2	2	0.950	0.950	1.569	TG-150HJ2-X	\$561.33	E
TI-50-3/4-30	15 & UP	HEAVY DUTY	0.500	0.750	3/4	3.000	2.500	5.350	3.469	2	2	0.950	0.950	1.569	TG-155HJ2-X	\$623.70	E

Call Us Today For All Of Your Machine Tool Needs!

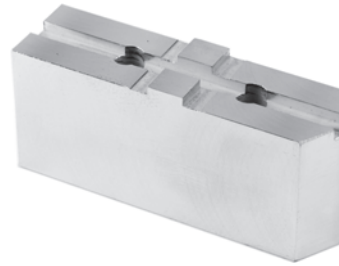
SOFT JAWS- American Standard Tongue & Groove

C

FOR USE ON: **Bison, Buck, BTC, Cushman, TMX, PBA, Yuasa & Rohm Chucks**



- American Standard Tongue & Groove
- Supplies maximum concentricity on finish turning operations
- Can be bored or turned to fit workpiece
- Steel jaws can be hardened
- Available flat ended or pointed for smaller diameter parts
- Special orders available
- Available in Aluminum & Steel
- Made in the USA



QUANTITY DISCOUNTS!
Order **5 SETS OR MORE** of the same part number soft jaw and receive a **5% DISCOUNT!**

Critical Dimensions

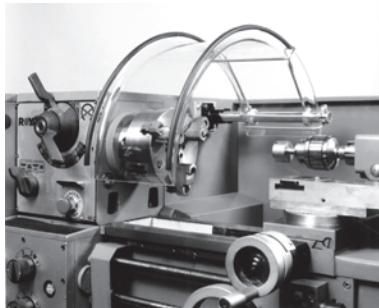
Group No.	Chuck Size	Type	Critical Dimensions				ALUMINUM					STEEL			
			Groove Width G	Tongue Width F	Screw Size E	Hole Space D	Height Inch A	Tongue to Front J	Tongue Position	Length Inch B	Width Inch C	Flat End Part Number	Price Set of 3	Flat End Part Number	Price Set of 3
TI-50-5/8-30	15	MEDIUM DUTY	0.500	0.750	5/8	3.000	1.50	2.900	Offset	5.750	1.750	TG-15150AF	\$97.24	TG-15150F	\$108.29
							2.00	2.900	Offset	5.750	1.750	TG-15200AF	\$68.87	TG-15200F	\$75.83
							2.50	2.900	Offset	5.750	1.750	TG-15250AF	\$79.35	TG-15250F	\$87.22
							2.50	2.900	Offset	6.250	2.000	TG-15252AF	\$94.99	TG-15252F	\$104.25
							2.50	Center	Centered	5.188	2.500	TG-15258AF	\$90.92	TG-15258F	\$97.51
							3.00	2.900	Offset	5.750	1.750	TG-15300AF	\$93.22	TG-15300F	\$102.35
							4.00	2.900	Offset	5.750	1.750	TG-15400AF	\$104.09	TG-15400F	\$113.74
							4.00	3.350	Offset	6.250	2.000	TG-15402AF	\$130.11	TG-15402F	\$142.17
TI-50-3/4-30	15	15" W&S	0.500	0.750	3/4	3.000	3.50	3.000	Offset	5.750	2.000	TG-15359AF	\$112.74	TG-15359F	\$123.47
							5.00	3.000	Offset	5.750	2.000	TG-15509AF	\$161.06	TG-15509F	\$176.39
TI-50-3/4-30	15	HEAVY DUTY	0.500	0.750	3/4	3.000	2.50	2.900	Offset	5.750	1.750	TG-15255AF	\$82.72	TG-15255F	\$90.98
							2.50	3.200	Offset	6.000	2.500	TG-15256AF	\$95.46	TG-15256F	\$104.25
							3.00	2.900	Offset	5.750	1.750	TG-15305AF	\$86.48	TG-15305F	\$97.49
							4.00	2.900	Offset	5.750	1.750	TG-15405AF	\$107.46	TG-15405F	\$117.53
TI-50-3/4-30	18	HEAVY DUTY	0.500	0.750	3/4	3.000	4.00	3.200	Offset	6.000	2.500	TG-15406AF	\$130.89	TG-15406F	\$142.17
							2.50	3.660	Offset	6.500	2.250	TG-18250AF	\$103.80	TG-18250F	\$113.74
							2.50	3.660	Offset	6.500	2.500	TG-18252AF	\$129.34	TG-18252F	\$142.17
							2.50	3.660	Offset	6.500	3.000	TG-18256AF	\$137.76	TG-18256F	\$151.64
							3.00	CENTER	Centered	5.188	3.000	TG-18308AF	\$200.87	TG-18308F	\$222.22
							4.00	3.660	Offset	6.500	2.250	TG-18400AF	\$139.19	TG-18400F	\$151.64
							4.00	3.660	Offset	6.500	2.500	TG-18402AF	\$139.30	TG-18402F	\$157.06
							5.00	3.660	Offset	6.500	2.250	TG-18500AF	\$126.09	TG-18500F	\$208.37
							5.00	3.660	Offset	6.500	2.500	TG-18502AF	\$251.09	TG-18502F	\$226.11
							5.00	3.660	Offset	6.500	3.000	TG-18506AF	\$191.46	TG-18506F	\$294.45
TI-50-3/4-30	18	18" W&S	0.500	0.750	3/4	3.000	3.50	3.000	Offset	6.000	2.500	TG-18359AF	\$168.72	TG-18359F	\$185.49
							5.00	3.000	Offset	6.000	2.500	TG-18509AF	\$241.04	TG-18509F	\$265.02
TI-50-7/8-30	24	HEAVY DUTY	0.500	0.750	7/8	3.000	3.000	4.500	Offset	7.500	3.000	TG-24300AF	\$288.48	TG-24300F	\$291.15
							5.000	4.500	Offset	7.500	3.000	TG-24500AF	\$380.68	TG-24500F	\$384.07

For "Pointed" Soft Jaws, please substitute "P" for "F" in the part number. Example: TG-15150AF will be TG-15150AP. For Pointed Jaws add \$7.00.

Soft Jaw Material: ALUMINUM-6061-T6 Bar Stock, STEEL-1018, "B" JAWS-7075-T6 Aircraft Aluminum

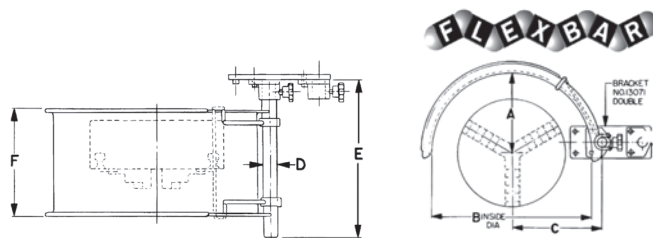
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

LATHEGUARDS



- Clear LEXAN, Semi-Circular wrap-a-round guards
- Heavy Duty Chrome-plated extension tube and hardware
- Ready to mount; all you do is affix mounting bracket with screws
- Back of shield is reinforced with plated wire-form housing
- Accepts 3 or 4-Jaw Chucks
- Included mounting bracket

Full Line Available!
Please call for more information.



Lathe Size	Cnt Ht. (Shield Height)	For Use With Chucks Up To (A)	Shield Width F	Shield Length B	Tube Length E	Part Number	Price
Small	3.9"	6" Dia	6 1/4"	7.8"	10"	FXB-12999	\$139.50
6 to 12	6"	8" Dia	6 1/4"	11.8"	10"	FXB-13060	\$156.00
12 to 16	8"	12" Dia	8"	15.8"	11 1/2"	FXB-13061	\$175.00
16 to 20	10"	16" Dia	8"	19.70"	13"	FXB-13062	\$189.00
20 to 24	13"	20" Dia	8"	23.6"	13"	FXB-13064	\$225.00

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

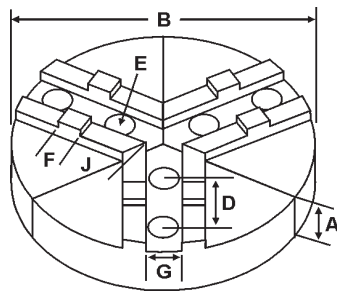
CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

ROUND JAWS- Metric Tongue & Groove

FOR USE ON: **SMW Autoblok KNCS, SMW Systems, Schunk, Rohm Chucks Using GBK Master Base Jaws**



Group



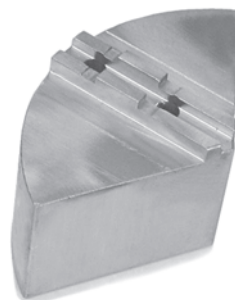
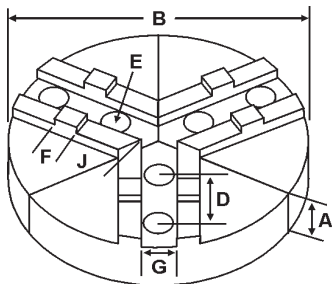
OFF CENTER TONGUE

- Metric Tongue & Groove
- Round Jaws allow for complete gripping of workpiece
- Oversized jaws available
- Ideal for thin-walled or irregular shaped workpieces.
- Can be machined to fit workpiece
- All jaws have 2 holes
- Special "J" dimensions available
- Available in Aluminum & Steel
- Made in the USA

Group No.	Chuck Size	Critical Dimensions						ALUMINUM			STEEL		
		Groove Width G	Tongue Width F	Screw Size E	Hole Space D	Tongue to Front J	Pie Dia B	Hght Inch A	Part Number	Price Set Of 3	Part Number	Price Set Of 3	
TK-08-08-32	5 1/2 to 6	0.315 (8mm)	0.709	8mm	1.260 (32mm)	1.380	6	2.00	6-RWK-5200A	\$83.92	6-RWK-5200S	\$192.79	
								3.00	6-RWK-5300A	\$114.33	6-RWK-5300S	\$245.37	
								2.00	RWK-6200A	\$83.92	RWK-6200S	\$192.79	
								3.00	RWK-6300A	\$114.33	RWK-6300S	\$213.37	
TK-10-08-40	8	0.393 (10mm)	0.787	8mm	1.575 (40mm)	1.360	8	2.00	RWK-8200A	\$126.29	RWK-8200S	\$294.45	
								3.00	RWK-8300A	\$154.01	RWK-8300S	\$404.87	
TK-12-12-40	10	0.472 (12mm)	0.787	12mm	1.575 (40mm)	2.050	10	2.00	RWK-10200A	\$165.73	RWK-10200S	\$423.27	
								3.00	RWK-10300A	\$194.32	RWK-10300S	\$552.10	
								4.00	RWK-10400A*	\$227.12	-	-	
								12	12-RWK-10300A	\$299.99	-	-	
								12	12-RWK-10400A	\$378.93	-	-	
								15	15-RWK-10250A	\$494.17	-	-	
TK-12-12-54	12 to 16	0.472 (12mm)	1.023	12mm	2.126 (54mm)	2.950	12	2.00	RWK-12200A	\$215.37	-	-	
								3.00	RWK-12300A	\$299.99	-	-	
								18	2.50	18-RWK-10400A*	\$851.69	-	-
									2.50	18-RWK-12250A*	\$606.70	-	-

Round Jaw Material: ALUMINUM-6061-T6 Bar Stock, CAST IRON-Gray, STEEL-1018. 18" & Larger- Aluminum Casting T6
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

FOR USE ON: **Forkardt, Rohm & SMW Chucks**



- Metric Tongue & Groove
- Round Jaws allow for complete gripping of workpiece
- Oversized jaws available
- Ideal for thin-walled or irregular shaped workpieces.
- Can be machined to fit workpiece
- All jaws have 2 holes
- Special "J" dimensions available
- Available in Aluminum & Steel
- Made in the USA

Group No.	Chuck Size	Critical Dimensions						ALUMINUM			STEEL	
		Groove Width G	Tongue Width F	Screw Size E	Hole Space D	Tongue to Front J	Pie Dia B	Hght Inch A	Part Number	Price Set Of 3	Part Number	Price Set Of 3
TK-08-5/16-32	6	0.315 (8mm)	0.708	5/16	1.260 (32mm)	1.380	6	2.00	RSW-6200A	\$83.92	RSW-6200S	\$167.64
								3.00	RSW-6300A	\$114.33	RSW-6300S	\$213.37
TK-10-5/16-40	8	0.393 (10mm)	0.787	5/16	1.575 (40mm)	2.000	8	2.00	RSW-8200A	\$126.29	RSW-8200S	\$294.45
								3.00	RSW-8300A	\$154.01	RSW-8300S	\$404.87
TK-12-1/2-40	10	0.472 (12mm)	0.787	1/2	1.575 (40mm)	2.400	10	2.00	RSW-10200A	\$165.73	RSW-10200S	\$350.53
								3.00	RSW-10300A	\$204.03	RSW-10300S	\$457.22
TK-12-1/2-54	12	0.472 (12mm)	1.023	1/2	2.126 (54mm)	2.950	12	2.00	RSW-12200A	\$215.37	-	-
								3.00	RSW-12300A	\$299.99	-	-

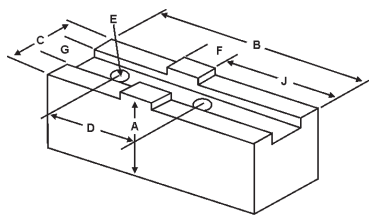
Round Jaw Material: ALUMINUM-6061-T6 Bar Stock, CAST IRON-Gray, STEEL-1018
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

Call Us Today For All Of Your Machine Tool Needs!

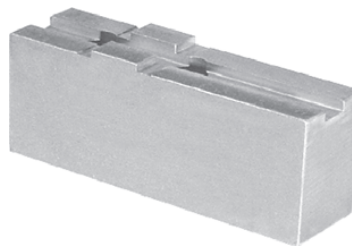
SOFT JAWS- Metric Tongue & Groove

C

FOR USE ON: **SMW Autoblok KNCS, SMW Systems, Schunk, Rohm Chucks**
Using GBK Master Base Jaws



- Metric tongue & groove
- Supplies maximum concentricity on finish turning operations
- Can be bored or turned to fit workpiece
- Steel jaws can be hardened
- Available flat ended or pointed for smaller diameter parts
- Special orders available
- Available in Aluminum & Steel
- Made in the USA



Group



QUANTITY DISCOUNTS!
Order **5 SETS OR MORE** of the same part number soft jaw and receive a **5% DISCOUNT!**

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

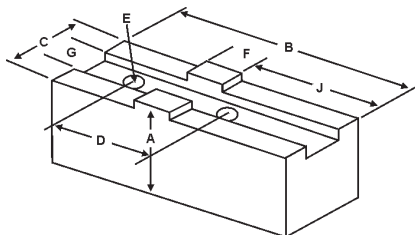
COOLANT/FLUIDS
TOOL STORAGE

CENTERED & OFFSET TONGUE

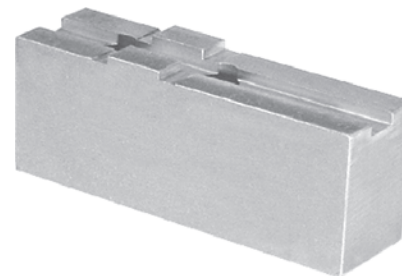
Group No.	Chuck Size	Critical Dimensions				ALUMINUM					STEEL			
		Groove Width G	Tongue Width F	Screw Size E	Hole Space D	Hght Inch A	Tongue to Front J	Tongue Position	Width Inch C	Length Inch B	FLAT END Part Number	Price Set Of 3	FLAT END Part Number	Price Set Of 3
TK-08-08-32	5-1/2	0.315 (8mm)	0.709	8mm	1.260 (32mm)	1.50	1.380	Offset	0.750	2.750	WK-5150AF	\$42.81	WK-5150F	\$48.01
						1.50	0.895	Centered	1.500	2.500	WK-5152AF	\$64.26	WK-5152F	\$72.03
						1.50	1.380	Offset	0.750	2.750	WK-6150AF	\$42.81	WK-6150F	\$48.01
	6	0.315 (8mm)	0.709	8mm	1.260 (32mm)	1.50	0.895	Centered	1.500	2.500	WK-6152AF	\$64.26	WK-6152F	\$72.03
						2.00	1.380	Offset	0.750	2.750	WK-6200AF*	\$74.34	-	-
						1.50	1.670	Offset	0.750	3.375	WK-7150AF	\$49.97	WK-7150F	\$56.02
7	0.315 (8mm)	0.709	8mm	1.260 (32mm)	1.50	1.000	Offset	1.500	2.500	WK-7152AF	\$64.26	WK-7152F	\$72.03	
					2.00	0.920	Offset	1.000	4.125	WK-8200AF	\$64.46	WK-8200F	\$72.03	
TK-10-08-40	8	0.393 (10mm)	0.787	8mm	1.575 (40mm)	2.00	0.980	Centered	1.750	2.750	WK-8202AF	\$71.65	WK-8202F	\$80.02
						2.50	1.500	Offset	2.250	3.500	WK-10252AF	\$93.64	WK-10252F	\$104.03
TK-12-12-40	10	0.472 (12mm)	0.787	12mm	1.575 (40mm)	2.00	3.125	Offset	1.250	5.000	WK-10200AF	\$71.83	WK-10200F	\$80.02
						2.50	1.990	Centered	1.250	5.000	WK-12200AF	\$71.83	WK-12200F	\$80.02
TK-12-12-54	12 - 16	0.472 (12mm)	1.023	12mm	2.126 (54mm)	2.25	3.230	Offset	1.500	5.750	WK-16220AF	\$97.88	WK-16220F	\$108.82
						2.50	1.400	Offset	3.000	3.500	WK-12252AF	\$122.48	WK-12252F	\$136.04
						3.00	1.750	Offset	3.000	4.000	WK-16302AF	\$133.09	WK-16302F	\$147.23
						3.00	3.000	Offset	1.750	7.000	WK-24300AF*	\$103.18	-	-
TK-18-16-60	18 - 24	0.708 (18mm)	1.180	16mm	2.362 (60mm)	3.00	3.000	Offset	4.000	6.000	WK-24302AF*	\$266.17	-	-
						3.00	3.000	Offset	4.000	6.000	WK-24302AF*	\$266.17	-	-

For "Pointed" Soft Jaws, please substitute "P" for "F" in the part number. Example: WK-5150AF will be WK-5150AP. Pointed Jaws: Up to 10" add \$4.00, 12" & over add \$7.00.
Soft Jaw Material: ALUMINUM-6061-T6 Bar Stock, STEEL-1018, "B" JAWS-7075-T6 Aircraft Aluminum
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

FOR USE ON: Forkardt, Rohm & SMW Chucks



QUANTITY DISCOUNTS!
Order **5 SETS OR MORE** of the same part number soft jaw and receive a **5% DISCOUNT!**



OFF-CENTERED TONGUE

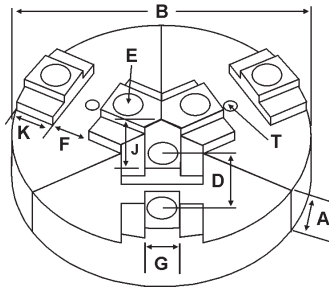
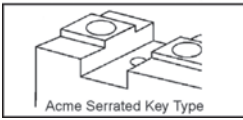
Group No.	Chuck Size	Critical Dimensions				ALUMINUM					STEEL			
		Groove Width G	Tongue Width F	Screw Size E	Hole Space D	Hght Inch A	Tongue to Front J	Tongue Position	Width Inch C	Length Inch B	FLAT END Part Number	Price Set Of 3	FLAT END Part Number	Price Set Of 3
TK-08-5/16-32	6	0.315 (8mm)	0.708	5/16	1.260 (32mm)	1.50	1.660	Offset	0.750	3.375	SW-6150AF	\$37.17	SW-6150F	\$41.62
						3.00	1.660	Offset	0.750	3.375	SW-6300AF	\$51.62	SW-6300F	\$57.62
TK-10-5/16-40	8	0.393 (10mm)	0.787	5/16	1.575 (40mm)	2.00	1.970	Offset	1.250	4.125	SW-8200AF	\$51.83	SW-8200F	\$57.62
						4.00	1.970	Offset	1.250	4.125	SW-8400AF	\$69.58	SW-8400F	\$76.82
TK-12-1/2-40	10	0.472 (12mm)	0.787	1/2	1.575 (40mm)	2.00	2.750	Offset	1.500	5.000	SW-10200AF	\$64.92	SW-10200F	\$72.03
						4.00	2.750	Offset	1.500	5.000	SW-10400AF	\$81.57	SW-10400F	\$89.61
TK-12-1/2-54	12	0.472 (12mm)	1.023	1/2	2.126 (54mm)	2.00	2.937	Offset	1.750	5.750	SW-12200AF	\$69.55	SW-12200F	\$76.82
						4.00	2.937	Offset	1.750	5.750	SW-12400AF	\$87.96	SW-12400F	\$96.01
TK-18-5/8-60	16	0.708 (18mm)	1.181	5/8	2.362 (60mm)	3.00	3.937	Offset	2.000	7.250	SW-16300AF	\$109.49	SW-16300F	\$120.03
						5.00	3.937	Offset	2.000	7.250	SW-16500AF	\$132.79	SW-16500F	\$144.03

For "Pointed" Soft Jaws, please substitute "P" for "F" in the part number. Example: SW-6150AF will be SW-6150AP. Pointed Jaws: Up to 10" add \$4.00, 12" & over add \$7.00.
Soft Jaw Material: ALUMINUM-6061-T6 Bar Stock, STEEL-1018, "B" JAWS-7075-T6 Aircraft Aluminum
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

Call Us Or Visit Our Website For Our Complete Selection!

ROUND JAWS- Acme Serrated Key Type

FOR USE ON: **Cushman, Logansport, Howa, Autoblok, PBA & Other Chucks**



- **Acme Serrated Key Type**
- Round Jaws allow for complete gripping of workpiece
- Oversized jaws available
- Ideal for thin-walled or irregular shaped workpieces.
- Can be machined to fit workpiece
- All jaws have 2 holes
- Special "J" dimensions available
- Available in Aluminum & Cast Iron
- **Made in the USA**



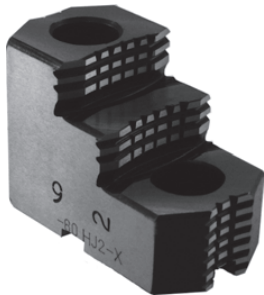
Group
AI



Group No.	Chuck Size	Tap Hole T	Key to Front J	Critical Dimensions				Pie Dia B	Hght Inch A	ALUMINUM		CAST IRON	
				Groove Width G	Key Width F	Screw Size E	Hole Space D			Part Number	Price Set Of 3	Part Number	Price Set Of 3
AI-06-1/2-12	8	10-24	2.000	0.670	0.601	1/2	1.25	8	2.00	RAC-8200A	\$126.29	RAC-8200CI	\$185.53
									4.00	RAC-8400A	\$176.81	RAC-8400CI	\$350.44
AI-07-1/2-17	10	5/16-18	2.750	0.750	1.031	1/2	1.75	10	2.00	RAC-10200A	\$165.73	RAC-10200CI	\$278.30
									4.00	RAC-10400A	\$255.63	RAC-10400CI	\$494.74
									2.00	12-RAC-10200A	\$215.37	-	-
AI-08-5/8-20	12	5/16-18	3.250	0.875	1.031	5/8	2.00	12	4.00	15-RAC-10400A*	\$612.78	-	-
									2.00	RAC-12200A	\$215.37	RAC-12200CI	\$431.01
AI-10-3/4-25	15 to 18	3/8-16	4.250	1.000	1.531	3/4	2.50	15	2.50	RAC-12400A	\$427.41	-	-
									4.00	RAC-15250A	\$494.11	RAC-15250CI	\$721.49
AI-10-3/4-25	15 to 18	3/8-16	4.250	1.000	1.531	3/4	2.50	15	5.00	RAC-15400A	\$607.05	-	-
									4.00	RAC-15500A	\$948.92	-	-
									4.00	18-RAC-15400A*	\$851.69	-	-
AI-12-7/8-30	21- 24	3/8-16	4.550	1.250	1.531	7/8	3.00	18	4.00	18-RAC-21400A	\$851.69	-	-
			6.650	1.250	1.531	7/8	3.00	21	4.00	RAC-21400A	\$1,114.13	-	-

Round Jaw Material: ALUMINUM-6061-T6 Bar Stock, CAST IRON-Gray, STEEL-1018. 18" & Larger- Aluminum Casting T6
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

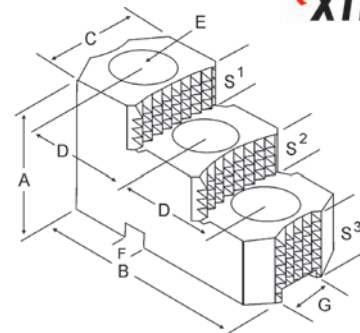
ACME KEY SERRATED HARD JAWS



- Designed for first operation roughing, expect standard runout between **0.005-0.010**
- Reversible-suitable for OD & ID workholding.
- **XTRA BITE (-X)** -very aggressive bite. Has conical teeth for extra gripping power and ground body to provide improved runout.



XTRA BITE (-X)
Very aggressive grip, ground body and sides for improved runout.



GROUP	Chuck Size	Groove Width G	Tongue Width F	Screw Size E	Hole Space D	Tap Hole	Width Inch C	OAL Inch B	Height Inch A	No. of Holes	No. of Steps	Top Step Ht S1	Mid Step Ht S2	Bot Step Ht S3	Part Number	Price Per Set
AI-07-1/2-17	10	0.750	1.031	1/2	1.750	5/16-18	1.750	4.250	2.480	2	2	0.600	0.600	1.280	AC-100HJ2-X	\$665.39
AI-08-5/8-20	12	0.875	1.031	5/8	2.000	5/16-18	1.750	4.875	2.469	2	2	0.550	0.550	1.369	AC-120HJ2-X	\$855.50
AI-10-3/4-25	15 & UP	1.000	1.531	3/4	2.500	3/8-16	2.500	5.500	3.469	2	2	0.950	0.950	1.569	AC-150HJ2-X	\$1,007.60

DIAMOND PLATE™ ANTI-FATIGUE MATS

- Offers excellent durability following exposure to many organic and inorganic industrial chemicals
- Closed cell polymeric sponge base produces incredibly soft and resilient rebound properties
- Heavy duty style is 9/16" thick and Super Duty is a full 1" thick
- Also available in full roll lengths
- **3 year warranty**

BEST SELLER!
Ideal For Heavily Trafficked Areas!



Full Line Available!
Please call for more information.



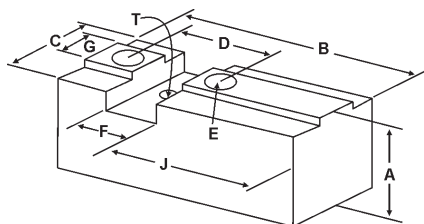
Size	Thickness	Color	Part Number	Price Each
2' X 3'	9/16"	Black	RH-DTT2436-B	\$49.67
		Black/Yellow	RH-DTT2436-BY2	\$56.67
3' X 5'	9/16"	Black	RH-DTT3660-B	\$120.83
		Black/Yellow	RH-DTT3660-BY2	\$130.42

Call Us Today For All Of Your Machine Tool Needs!

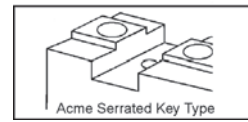
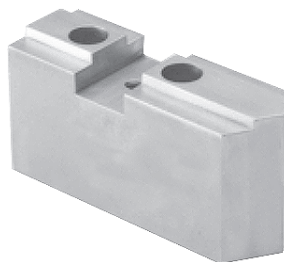
SOFT JAWS- Acme Serrated Key Type

C

FOR USE ON: **Cushman, Logansport, Howa, Autoblok, PBA & Other Chucks**



- **Acme Serrated Key Type**
- Supplies maximum concentricity on finish turning operations
- Can be bored or turned to fit workpiece
- Steel jaws can be hardened
- Available flat ended or pointed for smaller diameter parts
- Special orders available
- Available in Aluminum & Steel
- **Made in the USA**



Group



QUANTITY DISCOUNTS!

Order **5 SETS OR MORE** of the same part number soft jaw and receive a **5% DISCOUNT!**

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

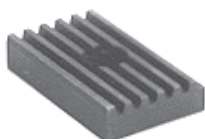
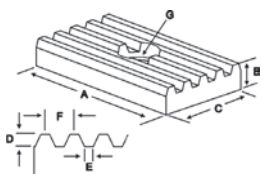
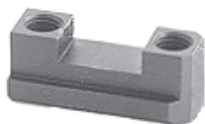
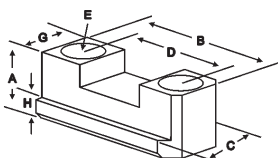
PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Group No.	Chuck Size	Tap Hole T	Critical Dimensions				ALUMINUM				STEEL			
			Groove Width G	Key Width F	Screw Size E	Hole Space D	Hght Inch A	Key to Front J	Width Inch C	Length Inch B	FLAT END Part Number	Price Set Of 3	FLAT END Part Number	Price Set Of 3
AI-06-1/2-12	8	10-24	0.670	0.601	1/2	1.250	2.00	2.000	1.50	3.75	AC-8200AF	\$68.81	AC-8200F	\$76.57
	9	10-24	0.670	0.601	1/2	1.250	4.00	2.000	1.50	3.75	AC-8400AF	\$97.00	AC-8400F	\$109.37
AI-07-1/2-17	10	5/16-18	0.750	1.031	1/2	1.750	2.50	2.250	1.75	4.25	AC-10250AF	\$77.90	AC-10250F	\$86.14
							4.00	2.250	1.75	4.25	AC-10400AF	\$104.24	AC-10400F	\$114.84
			0.750	1.031	1/2	1.750	2.50	3.425	1.75	5.50	AC-10251AF*	\$84.88	AC-10251F*	\$95.71
							4.00	3.425	1.75	5.50	AC-10401AF*	\$110.19	AC-10401F*	\$124.23
AI-08-5/8-20	12	5/16-18	0.875	1.031	5/8	2.000	2.50	3.125	1.75	5.25	AC-12250AF	\$86.73	AC-12250F	\$95.71
							3.00	3.125	1.75	5.25	AC-12300AF	\$114.55	AC-12300F	\$126.64
							4.00	3.125	1.75	5.25	AC-12400AF	\$113.28	AC-12400F	\$124.40
							5.00	3.125	1.75	5.25	AC-12500AF	\$173.12	AC-12500F	\$191.07
							2.50	3.000	2.00	6.25	AC-15250AF	\$104.35	AC-15250F	\$114.84
AI-10-3/4-25	15 - 18	3/8-16	1.000	1.531	3/4	2.500	2.50	3.000	2.00	6.25	AC-15400AF	\$131.33	AC-15400F	\$143.56
							4.00	3.000	2.00	6.25	AC-18250AF	\$130.58	AC-18250F	\$143.56
							2.50	3.400	2.50	6.25	AC-18400AF	\$158.62	AC-18400F	\$161.96
							5.00	3.400	2.50	6.25	AC-18500AF	\$202.09	AC-18500F	\$227.84
AI-12-7/8-30	21 - 24	3/8-16	1.250	1.531	7/8	3.000	4.00	2.625	2.50	6.50	AC-21400AF	\$158.62	AC-21400F	\$173.00
							5.00	2.625	2.50	6.50	AC-21500AF	\$218.44	AC-21500F	\$239.24

For "Pointed" Soft Jaws, please substitute "P" for "F" in the part number. Example: AC-8200AF will be AC-8200AP. Pointed Jaws: Up to 10" add \$4.00, 12" & over add \$7.00.
Soft Jaw Material: ALUMINUM-6061-T6 Bar Stock, STEEL-1018, "B" JAWS-7075-T6 Aircraft Aluminum
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

JAW NUTS & MASTER KEYS



Chuck Size	Heel Height H	Groove Width G	Screw Size E	Holes Space D	Hght Inch A	Width Inch C	Length Inch B	2 Screws Included With Each Jaw Nut			
								Jaw Nut Part Number	Price Each	Screw Part Number	Price Each
8	0.440	0.667	1/2-13	1.250	1.000	1.030	2.00	AC-80JN	\$61.66	S1/213150	\$2.25
10	0.380	0.677	1/2-13	1.750	0.641	0.940	2.50	AC-100JN	\$55.92	S1/213150	\$2.25
12	0.440	0.801	5/8-11	2.000	0.744	1.060	3.00	AC-125JN	\$58.49	S5/811150	\$3.25
15 - 18	0.550	0.933	3/4-10	2.500	0.930	1.250	3.50	AC-155JN	\$61.66	S3/410175	\$4.25
21 - 24	0.684	1.158	7/8-9	3.000	1.185	1.554	4.25	AC-215JN	\$77.06	S7/809175	\$5.75

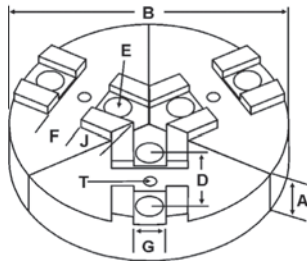
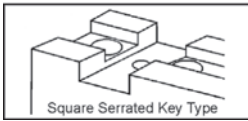
Chuck Size	Critical Dimensions				Width Inch C	Height Inch B	Length Inch A	Master Key Part Number	Price Each
	Screw Size G	Pitch F	Slot E	Depth D					
8	10-24	0.156	0.093	0.130	0.600	3/8"	1.500	AC-80AK	\$36.90
10-12	5/16	0.250	0.093	0.130	1.030	1/2"	1.687	AC-120AK	\$39.99
10-12	3/8	0.250	0.093	0.130	1.187	1/2"	2.000	AC-125AK	\$46.14
15-18	3/8	0.250	0.093	0.130	1.530	1/2"	2.000	AC-150AK	\$49.21
15-18	3/8	0.250	0.093	0.130	1.530	1/2"	2.437	AC-180AK	\$49.21
21-24	3/8	0.250	0.093	0.130	1.530	1/2"	2.875	AC-210AK	\$50.75



Call Us Or Visit Our Website For Our Complete Selection!

ROUND JAWS- Square Serrated Key Type

FOR USE ON: **S.P., Pratt Burnerd, Warner & Swasey & Other Chucks**



- **Square Serrated Key Type**
- Round Jaws allow for complete gripping of workpiece
- Oversized jaws available
- Ideal for thin-walled or irregular shaped workpieces.
- Can be machined to fit workpiece
- All jaws have 2 holes
- Special "J" dimensions available
- Available in Aluminum & Cast Iron
- **Made in the USA**



Group



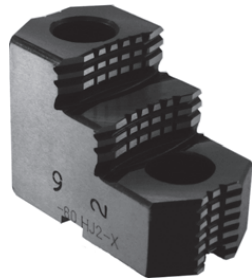
Group No.	Chuck Size	Tap Hole T	Critical Dimensions					Key to Front J	Pie Dia B	Hght Inch A	ALUMINUM		CAST IRON		STEEL	
			Groove Width G	Key Width F	Screw Size E	Hole Space D	Part Number				Price Set Of 3	Part Number	Price Set Of 3	Part Number	Price Set Of 3	
SI-07-5/16-16	6	NONE	0.738	0.377	5/16	1.688	1.40	6	2.00	RSP-6200A*	\$77.72	RSP-6200CI*	\$144.31	-	-	
									4.00	RSP-6400A*	\$131.58	-	-	-	-	
									8	8-RSP-6200A*	\$126.29	-	-	-	-	
SI-05-3/8-14	8	1/4-20	0.501	0.745	3/8	1.438	2.00	8	2.00	RSP-8200A	\$126.29	RSP-8200CI	\$185.53	-	-	
									4.00	RSP-8400A	\$176.81	RSP-8400CI	\$350.44	-	-	
									12	12-RSP-8200A*	\$215.37	-	-	-	-	
SI-06-1/2-12	8	10-32	0.670	0.601	1/2	1.250	2.00	8	2.00	-	-	RSP-8202CI	\$185.53	-	-	
									4.00	RSP-8205A	\$126.29	RSP-8205CI	\$185.53	-	-	
SI-07-1/2-14	8	1/4-20	0.751	0.745	1/2	1.438	2.00	8	4.00	RSP-8405A	\$176.81	RSP-8405CI	\$350.44	-	-	
									2.00	RSP-10200A	\$165.73	RSP-10200CI	\$278.30	RSP-10200S	\$423.27	
SI-07-1/2-17	10 to 12	5/16-18	0.751	0.994	1/2	1.750	2.50	10	2.00	RSP-10200A	\$165.73	RSP-10200CI	\$278.30	RSP-10200S	\$423.27	
									4.00	RSP-10400A	\$255.63	RSP-10400CI	\$494.74	-	-	
									2.00	RSP-12200A	\$215.37	RSP-12200CI	\$431.01	-	-	
									4.00	RSP-12400A	\$427.41	-	-	-	-	
SI-07-5/8-17	10 to 12	5/16-18	0.751	0.994	5/8	1.750	3.75	12	2.00	RSP-12205A	\$215.37	RSP-12205CI	\$431.01	-	-	
									4.00	RSP-12405A	\$427.41	-	-	-	-	
									4.00	15-RSP-12405A	\$564.72	-	-	-	-	
									2.00	12-RSP-15200A	\$215.37	-	-	-	-	
SI-10-3/4-25	15 to 18	3/8-16	1.001	1.488	3/4	2.500	3.10	12	2.00	RSP-15200A	\$215.37	-	-	-	-	
									2.50	RSP-15250A	\$462.21	-	-	-	-	
									4.00	RSP-15400A	\$609.00	-	-	-	-	

Round Jaw Material: ALUMINUM-6061-T6 Bar Stock, CAST IRON-Gray, STEEL-1018. 18" & Larger- Aluminum Casting T6
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

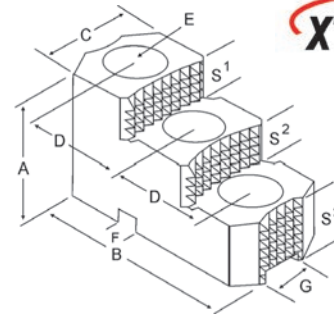
SQUARE KEY SERRATED HARD JAWS

FEATURES:

- Designed for first operation roughing, expect standard runout between **0.005-0.010**
- Reversible-suitable for OD & ID workholding.
- **XTRA BITE** -very aggressive bite. Has conical teeth for extra gripping power and ground body to provide improved runout.



XTRA BITE (-X)
Very aggressive grip, ground body and sides for improved runout.



GROUP	Chuck Size	Critical Dimensions											Part Number	Price Per Set		
		Groove Width G	Tongue Width F	Screw Size E	Hole Space D	Tap Hole	Width Inch C	OAL Inch B	Height Inch A	No. of Holes	No. of Steps	Top Step Ht S1			Mid Step Ht S2	Bot Step Ht S3
SI-07-1/2-17	12	0.750	0.994	1/2	1.750	5/16-18	1.750	4.875	2.469	2	2	0.650	0.650	1.169	SP-120HJ2-X	\$665.39
SI-07-5/8-17	12	0.750	0.994	5/8	1.750	5/16-18	1.750	4.875	2.469	2	2	0.650	0.650	1.169	SP-125HJ2-X	\$665.39
SI-10-3/4-25	15 & UP	1.000	1.488	3/4	2.500	3/8-16	2.500	5.500	3.469	2	2	0.950	0.950	1.569	SP-150HJ2-X	\$950.56

THE TOOLS YOU NEED AT COMPETITIVE PRICES!



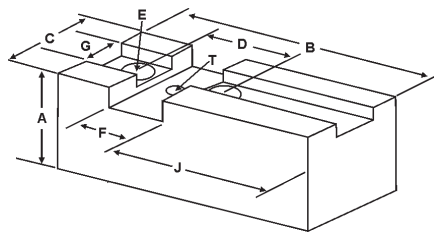
- Chuck Jaws
- Lathe & Collet Chucks
- Lathe Tooling
- Machine Vises
- Milling Toolholders
- ER, TG & DA Collets
- Carbide Inserts
- Drills, Taps & Reamers
- Threading & Grooving
- Indexable Cutting Tools
- Abrasives
- Cutting Fluids
- Measuring Tools
- MRO & Safety

Call Us Today For All Of Your Machine Tool Needs!

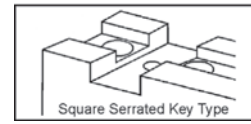
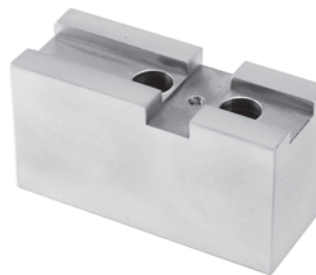
SOFT JAWS- Square Serrated Key Type

C

FOR USE ON: **Buck & Bison 6" Chucks, S.P., Pratt Burnerd & Other Chucks**



- **Square Serrated Key Type**
- Supplies maximum concentricity on finish turning operations
- Can be bored or turned to fit workpiece
- Steel jaws can be hardened
- Available flat ended or pointed for smaller diameter parts
- Special orders available
- Available in Aluminum & Steel
- **Made in the USA**



Group



QUANTITY DISCOUNTS!
Order **5 SETS OR MORE** of the same part number soft jaw and receive a **5% DISCOUNT!**

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

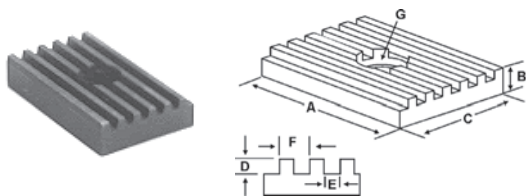
PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Group No.	Chuck Size	Tap Hole T	Critical Dimensions				ALUMINUM				STEEL			
			Groove Width G	Key Width F	Screw Size E	Hole Space D	Hght Inch A	Key to Front J	Width Inch C	Length Inch B	FLAT END Part Number	Price Set Of 3	FLAT END Part Number	Price Set Of 3
SI-07-5/16-16	6	NONE	0.738	0.377	5/16	1.688	1.50	1.500	1.00	3.00	SP-6150AF	\$41.21	SP-6150F	\$42.82
							2.00	1.500	1.00	3.00	SP-6200AF	\$61.60	SP-6200F	\$68.92
							2.50	1.500	1.00	3.00	SP-6250AF	\$52.63	SP-6250F	\$54.29
							4.00	1.500	1.00	3.00	SP-6400AF	\$96.23	SP-6400F	\$108.51
SI-05-3/8-14	8	1/4-20	0.501	0.745	3/8	1.438	2.00	1.250	1.25	3.00	SP-8200AF	\$56.64	SP-8200F	\$63.16
							3.00	1.250	1.25	3.00	SP-8300AF	\$68.81	SP-8300F	\$76.57
SI-06-1/2-12	8	10-32	0.670	0.601	1/2	1.250	2.00	2.000	1.50	3.75	SP-8202AF	\$60.48	SP-8202F	\$67.19
							3.00	2.000	1.50	3.75	SP-8302AF	\$73.48	SP-8302F	\$82.83
SI-07-1/2-14	8	1/4-20	0.751	0.745	1/2	1.438	2.00	1.875	1.50	3.50	SP-8205AF	\$68.72	SP-8205F	\$76.57
							3.00	1.875	1.50	3.50	SP-8305AF	\$64.67	SP-8305F	\$72.93
							4.00	1.875	1.50	3.375	SP-8405AF*	\$101.85	SP-8405F*	\$114.84
SI-07-1/2-17	10 to 12	5/16-18	0.751	0.994	1/2	1.750	2.50	1.625	1.75	4.00	SP-10250AF	\$64.21	SP-10250F	\$70.81
							4.00	1.625	1.75	4.00	SP-10400AF	\$90.51	SP-10400F	\$99.52
							2.50	2.750	1.75	4.75	SP-12250AF	\$67.88	SP-12250F	\$74.68
SI-07-5/8-17	10 to 12	5/16-18	0.751	0.994	5/8	1.750	4.00	2.750	1.75	4.75	SP-12400AF	\$104.50	SP-12400F	\$114.84
							2.50	2.000	1.75	5.50	SP-12256AF	\$76.19	SP-12256F	\$83.76
							2.50	2.500	1.75	5.50	SP-12257AF	\$76.19	SP-12257F	\$83.76
SI-10-3/4-25	15 to 18	3/8-16	1.001	1.488	3/4	2.500	2.50	2.750	1.75	4.75	SP-12255AF	\$67.88	SP-12255F	\$74.68
							4.00	2.750	1.75	4.75	SP-12405AF	\$104.50	SP-12405F	\$114.84
							2.50	3.250	2.50	6.25	SP-15250AF	\$96.49	SP-15250F	\$105.26
							3.00	3.250	2.50	6.25	SP-15300AF	\$147.69	SP-15300F	\$166.50
SI-10-3/4-30	20-24	3/8-16	1.001	1.488	3/4	3.000	4.00	3.250	2.50	6.25	SP-15400AF	\$132.33	SP-15400F	\$173.00
							4.00	3.250	3.00	6.25	SP-15403AF*	\$179.56	SP-15403F	\$202.43
							2.50	3.250	3.00	6.25	SP-15253AF*	\$130.59	SP-15253F*	\$147.23
							2.50	3.250	2.50	6.25	SP-20250AF*	\$96.49	SP-20250F*	\$105.26
							4.50	3.250	2.50	6.25	SP-20400AF	\$132.94	SP-20400F	\$143.56

For "Pointed" Soft Jaws, please substitute "P" for "F" in the part number. Example: SP-8200AF will be SP-8200AP. Pointed Jaws: Up to 10" add \$4.00, 12" & over add \$7.00.
Soft Jaw Material: ALUMINUM-6061-T6 Bar Stock, STEEL-1018, "B" JAWS-7075-T6 Aircraft Aluminum
For complete list of applicable chucks, see pages 542-554. * denotes non-stock item. Please allow 1 week manufacturing time.

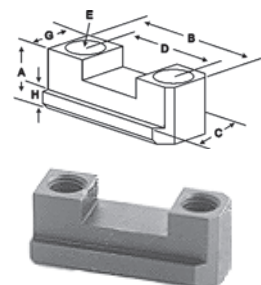
MASTER KEYS



Chuck Size	Critical Dimensions					Width Inch C	Hght Inch B	Length Inch A	Master Key Part Number	Price Each
	Screw Size G	Pitch F	Slot E	Depth D	Width Inch C					
8	1/4	0.200	0.098	0.101	0.744	0.375	1.313	SP-80SQK	\$29.48	
10 - 12	5/16	0.250	0.124	0.130	.993	0.500	1.688	SP-120SQK	\$28.48	
15 - 18	3/8	0.250	0.124	0.130	1.487	0.500	2.000	SP-150SQK	\$36.84	
15 - 18	3/8	0.250	0.124	0.130	1.487	0.500	2.250	SP-180SQK	\$32.75	
20 - 24	3/8	0.250	0.124	0.130	1.487	0.500	2.500	SP-210SQK	\$40.93	



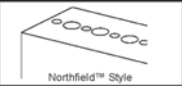
JAW NUTS



Chuck Size	Critical Dimensions						2 Screws Included With Each Jaw Nut					
	Heel Height H	Groove Width G	Screw Size E	Hole Space D	Hght Inch A	Width Inch C	Length Inch B	Jaw Nut Part Number	Price Each	Screw Part Number	Price Each	
8	0.375	0.498	3/8-16	1.438	0.995	0.875	2.125	SP-80JN	\$58.45	S3/816100	\$2.25	
8	0.375	0.748	1/2-13	1.438	0.995	0.993	2.125	SP-85JN	\$58.45	S1/213150	\$2.25	
10 - 12	0.375	0.748	1/2-13	1.750	1.000	1.000	2.438	SP-100JN	\$55.04	S1/213150	\$2.25	
10 - 12	0.375	0.748	5/8-11	1.750	1.000	1.000	2.500	SP-125JN	\$55.04	S5/811150	\$3.25	
15 - 18	0.438	1.000	3/4-10	2.500	1.250	1.250	3.750	SP-155JN	\$60.20	S3/410175	\$4.25	
20 - 24	0.438	1.000	3/4-10	3.000	1.250	1.250	4.500	SP-215JN	\$63.62	S3/410175	\$4.25	

Call Us Or Visit Our Website For Our Complete Selection!

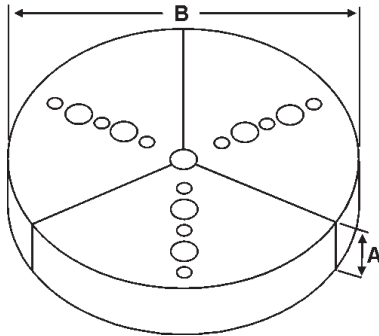
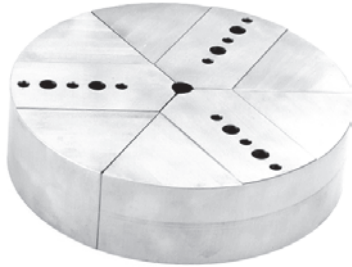
CHUCK JAWS FOR NORTHFIELD® TYPE CHUCKS



For Northfield® Type Chucks



ROUND JAWS



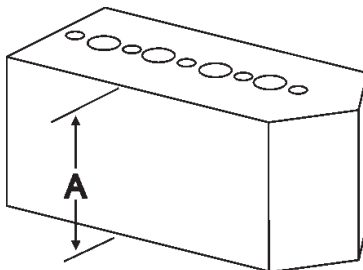
Chuck Dia. Inch	Jaw Dia. B	Hght Inch A	No. of Holes	No. of Pins	ALUMINUM			STEEL		
					Northfield Part Number	Part Number	Price Set Of 3	Northfield Part Number	Part Number	Price Set Of 3
3" (300)	3"	0.75	1	2	AL-3-3-3/4	RNF-3075A	\$85.67	ST-3-3-3/4	RNF-3075S	\$132.84
		1.00	1	2	AL-3-3-1	RNF-3100A	\$104.67	ST-3-3-1	RNF-3100S	\$156.45
		1.50	1	2	AL-3-3-1-1/2	RNF-3150A	\$112.49	ST-3-3-1-1/2	RNF-3150S	\$153.03
4" (400)	4"	1.00	2	3	AL-3-4-1	RNF-4100A	\$80.79	ST-3-4-1	RNF-4100S	\$165.63
		2.00	2	3	AL-3-4-2	RNF-4200A	\$101.24	ST-3-4-2	RNF-4200S	\$176.41
		3.00	2	3	AL-3-4-3	RNF-4300A	\$115.55	ST-3-4-3	RNF-4300S	\$234.85
6" (600)	6"	1.00	4	5	AL-3-6-1	RNF-6100A	\$103.23	ST-3-6-1	RNF-6100S	\$202.43
		2.00	4	5	AL-3-6-2	RNF-6200A	\$117.69	ST-3-6-2	RNF-6200S	\$230.61
		3.00	4	5	AL-3-6-3	RNF-6300A	\$136.28	ST-3-6-3	RNF-6300S	\$276.30
7" (700)	7"	2.00	2	2	AL-3-7-2	RNF-7200A	\$206.44	ST-3-7-2	RNF-7200S	\$275.18
		3.00	2	2	AL-3-7-3	RNF-7300A	\$252.85	ST-3-7-3	RNF-7300S	\$349.66
		4.00	2	2	AL-3-7-4	RNF-7400A	\$336.85	ST-3-7-4	RNF-7400S	\$441.67
8" (800)	8"	2.00	2	3	AL-3-8-2	RNF-8200A	\$266.36	ST-3-8-2	RNF-8200S	\$368.06
		3.00	2	3	AL-3-8-3	RNF-8300A	\$366.58	ST-3-8-3	RNF-8300S	\$515.29
		4.00	2	3	AL-3-8-4	RNF-8400A	\$417.37	ST-3-8-4	RNF-8400S	\$625.72
10" (1000)	10"	6.00	2	3	-	RNF-8600A	\$667.24	-	-	-
		2.00	3	4	AL-3-10-2	RNF-10200A	\$383.22	ST-3-10-2	RNF-10200S	\$552.10
		3.00	3	4	AL-3-10-3	RNF-10300A	\$459.50	ST-3-10-3	RNF-10300S	\$690.12
		4.00	3	4	AL-3-10-4	RNF-10400A	\$568.70	ST-3-10-4	RNF-10400S	\$782.13

Round Jaw Material: ALUMINUM-6061-T6 Bar Stock, CAST IRON-Gray, STEEL-1018
* denotes non-stock item. Please allow 1 week manufacturing time.

SOFT JAWS



QUANTITY DISCOUNTS!
Order **5 SETS OR MORE** of the same part number soft jaw and receive a **5% DISCOUNT!**



Chuck Dia. Inch	Hght Inch A	No. of Holes	No. of Pins	ALUMINUM			STEEL		
				Northfield Part Number	Part Number	Price Set Of 3	Northfield Part Number	Part Number	Price Set Of 3
3" (300)	0.75	1	2	AL-1-3-3/4	NF-3075AP	\$44.52	ST-1-3-3/4	NF-3075P	\$51.24
	1.00	1	2	AL-1-3-1	NF-3100AP	\$52.76	ST-1-3-1	NF-3100P	\$56.95
	1.50	1	2	AL-1-3-1 1/2	NF-3150AP	\$62.75	ST-1-3-1 1/2	NF-3150P	\$70.57
	2.00	1	2	AL-1-3-2	NF-3200AP	\$65.86	ST-1-3-2	NF-3200P	\$73.86
4" (400)	0.75	2	3	AL-1-4-3/4	NF-4075AP	\$37.92	ST-1-4-3/4	NF-4075P	\$48.06
	1.00	2	3	AL-1-4-1	NF-4100AP	\$67.39	ST-1-4-1	NF-4100P	\$67.20
	1.50	2	3	AL-1-4-1 1/2	NF-4150AP	\$46.39	ST-1-4-1 1/2	NF-4150P	\$60.47
	2.00	2	3	AL-1-4-2	NF-4200AP	\$59.39	ST-1-4-2	NF-4200P	\$67.75
	3.00	2	3	AL-1-4-3	NF-4300AP	\$67.15	ST-1-4-3	NF-4300P	\$76.38
6" (600)	1.00	4	5	AL-1-6-1	NF-6100AP	\$46.39	ST-1-6-1	NF-6100P	\$63.06
	1.50	4	5	AL-1-6-1 1/2	NF-6150AP	\$66.25	ST-1-6-1 1/2	NF-6150P	\$79.64
	2.00	4	5	AL-1-6-2	NF-6200AP	\$75.97	ST-1-6-2	NF-6200P	\$84.85
	3.00	4	5	AL-1-6-3	NF-6300AP	\$71.66	ST-1-6-3	NF-6300P	\$98.75
7" (700)	4.00	4	5	AL-1-6-4	NF-6400AP	\$140.29	ST-1-6-4	NF-6400P	\$165.87
	2.00	2	2	AL-1-7-2	NF-7200AP	\$92.77	ST-1-7-2	NF-7200P	\$104.01
	3.00	2	2	AL-1-7-3	NF-7300AP	\$98.43	ST-1-7-3	NF-7300P	\$103.26
	4.00	2	2	AL-1-7-4	NF-7400AP	\$109.74	ST-1-7-4	NF-7400P	\$123.26
8" (800)	2.00	2	3	AL-1-8-2	NF-8200AP	\$109.08	ST-1-8-2	NF-8200P	\$124.95
	3.00	2	3	AL-1-8-3	NF-8300AP	\$122.37	ST-1-8-3	NF-8300P	\$149.46
	4.00	2	3	AL-1-8-4	NF-8400AP	\$137.35	ST-1-8-4	NF-8400P	\$156.52
10" (1000)	2.00	3	4	AL-1-10-2	NF-10200AP	\$111.36	ST-1-10-2	NF-10200P	\$123.53
	3.00	3	4	AL-1-10-3	NF-10300AP	\$125.20	ST-1-10-3	NF-10300P	\$138.27
	4.00	3	4	AL-1-10-4	NF-10400AP	\$139.08	ST-1-10-4	NF-10400P	\$153.00

"Northfield Style" jaws are pointed. Soft Jaw Material: ALUMINUM-6061-T6 Bar Stock, STEEL-1018,

*Northfield is a trademark of Northfield Precision Instrument Corp.

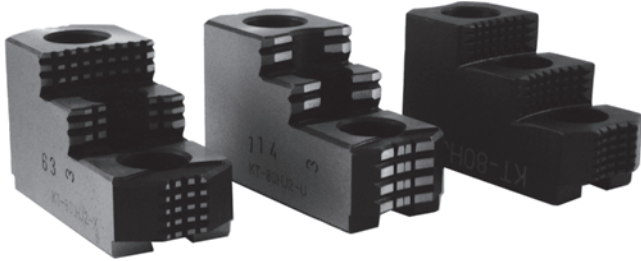
Call Us Today For All Of Your Machine Tool Needs!

2019-20 MASTER CATALOG

HARD JAWS-1.5mm X 60° Serrations

1.5mm x 60° Serration Hard Jaws

For Kitagawa®, Samchully® Strong®, MMK & Howa Chucks



FEATURES:

- Designed for first operation roughing, expect standard runout between **0.005-0.010**
- Reversible-suitable for OD & ID workholding.
- **GRIP-RITE/OEM Style** hard jaws have ground tips and provide better runout.
- **XTRA BITE** -very aggressive bite. They have conical teeth for extra gripping power and ground body to provide improved runout.
- **SHARK JAWS** have conical teeth for extra gripping power and black oxide for long life. Ideal for castings! Made in the USA.
- 1 & 2 step jaws available.

Need Help Finding The Correct Chuck Jaws? See Our "Easy Jaw Finder" On Pages 622-634

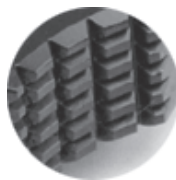
We offer one of the largest selections of Hard Jaws in the USA. For your convenience, we offer 3 unique styles of hard jaws. Choose the best fit for your application!



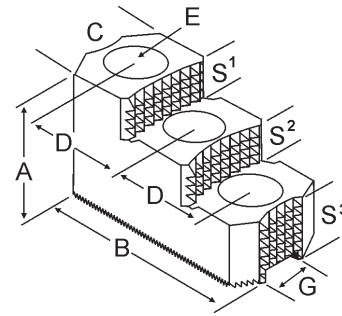
XTRA BITE (-X)
Very aggressive grip, ground body and sides for improved runout.



GRIP-RITE (-U/OEM STYLE)
with ground tips and sides for improved runout.



SHARK JAW
Conical teeth for gripping, black oxide for long life. Ideal for castings and scaly material. Made in the USA.



Critical Dimensions

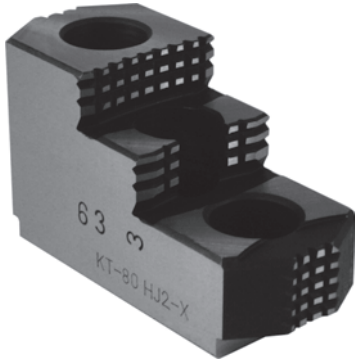
Group Number	Chuck Size	Groove Width G	Screw Size E	Hole Space D	Width Inch C	OAL Inch B	Height Inch A	No. of Holes	No. of Steps	Top Step Ht S1	Mid Step Ht S2	Bot Step Ht S3	Part Number	Price Per Set	Style	Code
K1-11-25	6	0.433 (11mm)	8mm	0.985 (25mm)	1.250	3.000	1.969	3	2	0.500	0.500	0.969	SG-60HJ2-X	\$307.80	XTRA-BITE	E
K1-12-20	6	0.472 (12mm)	10mm	0.787 (20mm)	1.220	2.900	2.000	3	1	0.500	-	1.000	KT-60HJ1	\$355.56	Shark Jaws	D
1.220					2.646	1.423	3	1	0.359	-	1.064	KT-60HJ1-U	\$273.18	OEM Style	E	
1.220					2.900	2.000	3	2	0.500	0.500	1.000	KT-60HJ2	\$355.56	Shark Jaws	D	
1.220					2.728	1.740	3	2	0.402	0.402	0.936	KT-60HJ2-U	\$245.75	OEM Style	E	
1.250					3.000	1.969	3	2	0.500	0.500	0.969	KT-60HJ2-X	\$256.55	XTRA-BITE	E	
K1-14-25	8	0.551 (14mm)	12mm	0.984 (25mm)	1.500	3.300	2.000	3	1	0.500	-	1.000	KT-80HJ1	\$420.66	Shark Jaws	D
1.382					3.402	1.669	3	1	0.591	-	1.078	KT-80HJ1-U	\$323.19	OEM Style	E	
1.500					3.300	2.000	3	2	0.500	0.500	1.000	KT-80HJ2	\$420.66	Shark Jaws	D	
1.382					3.409	2.000	3	2	0.465	0.465	1.070	KT-80HJ2-U	\$294.53	OEM Style	E	
1.500					3.500	1.969	3	2	0.530	0.530	0.909	KT-80HJ2-X	\$312.71	XTRA-BITE	E	
K1-16-25	8	0.630 (16mm)	12mm	0.984 (25mm)	1.500	3.300	2.000	3	2	0.500	0.500	1.000	HO-80HJ2	\$439.53	Shark Jaws	D
K1-16-30	10	0.630 (16mm)	12mm	1.181 (30mm)	1.750	4.000	2.000	3	1	0.750	-	1.250	KT-100HJ1	\$500.80	Shark Jaws	D
1.579					3.980	1.737	3	1	0.635	-	1.102	KT-100HJ1-U	\$384.75	OEM Style	E	
1.750					4.250	2.469	3	1	1.250	-	1.219	KT-100HJ1-X	\$405.00	XTRA-BITE	E	
1.750					4.000	2.500	3	2	0.650	0.500	1.350	KT-100HJ2	\$500.80	Shark Jaws	D	
1.579					3.980	2.130	3	2	0.520	0.520	1.090	KT-100HJ2-U	\$336.60	OEM Style	E	
1.750					4.250	2.469	3	2	0.650	0.650	1.169	KT-100HJ2-X	\$370.44	XTRA-BITE	E	
K1-16-32	10	0.630 (16mm)	12mm	1.266 (32mm)	1.500	4.125	2.000	3	2	0.650	0.500	1.350	MT-100HJ2	\$486.63	Shark Jaws	D
K1-18-30	12	0.709 (18mm)	14mm	1.181 (30mm)	1.750	4.600	2.000	3	1	0.750	-	1.250	KT-120HJ1	\$540.84	Shark Jaws	D
1.969					4.091	2.051	3	1	0.669	-	1.382	KT-120HJ1-U	\$415.53	OEM Style	E	
2.000					4.875	2.469	3	1	1.300	-	1.168	KT-120HJ1-X	\$437.40	XTRA-BITE	E	
1.750					4.600	2.500	3	2	0.650	0.500	1.350	KT-120HJ2	\$540.84	Shark Jaws	D	
2.000					4.042	2.480	3	2	0.543	0.442	1.495	KT-120HJ2-U	\$391.99	OEM Style	E	
2.000					4.875	2.469	3	2	0.650	0.650	1.169	KT-120HJ2-X	\$415.42	XTRA-BITE	E	
1.750					4.600	2.500	3	2	0.650	0.500	1.350	KT-128HJ2	\$540.84	Shark Jaws	D	
K1-21-30	12	0.827 (21mm)	16mm	1.181 (30mm)	2.000	4.042	2.480	3	2	0.543	0.442	1.495	KT-128HJ2-U	\$390.92	OEM Style	E
2.000					4.875	2.469	3	2	0.650	0.650	1.169	KT-128HJ2-X	\$416.29	XTRA-BITE	E	
1.750					4.600	2.500	3	2	0.650	0.500	1.350	KT-128HJ2	\$540.84	Shark Jaws	D	
K1-22-43	15 & 18	0.866 (22mm)	20mm	1.693 (43mm)	2.500	5.400	3.000	3	2	0.730	0.730	1.540	KT-150HJ2	\$701.09	Shark Jaws	D
2.448					5.850	3.385	3	2	0.827	0.827	1.731	KT-150HJ2-U	\$504.90	OEM Style	E	
2.500					5.500	3.500	3	2	0.950	0.950	1.600	KT-150HJ2-X	\$554.85	XTRA-BITE	E	
K1-26-43	15 & 18	1.005 (25.5mm)	20mm	1.693 (43mm)	2.500	5.400	3.000	3	2	0.730	0.730	1.540	KT-151HJ2	\$701.09	Shark Jaws	D
2.448					5.850	3.385	3	2	0.827	0.827	1.731	KT-151HJ2-U	\$538.65	OEM Style	E	
2.500					5.500	3.500	3	2	0.950	0.950	1.600	KT-151HJ2-X	\$554.85	XTRA-BITE	E	

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS
VISE JAWS
VISE ACCESSORIES
STRAIGHT SHANK
COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

HARD JAWS-3.0mm x 60° & 1/16" x 90° Serrations

HARD JAWS 3.0mm x 60° & 1/16" x 90° Serrations

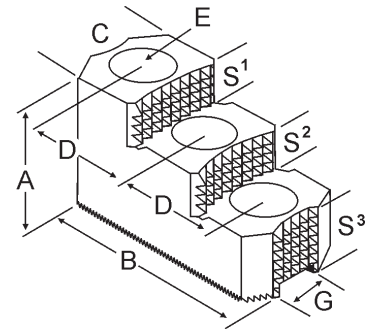


FEATURES:

- Designed for first operation roughing, expect standard runout between **0.005-0.010**
- Reversible-suitable for OD & ID workholding.
- **XTRA BITE** -very aggressive bite. Has conical teeth for extra gripping power and ground body to provide improved runout.



XTRA BITE (-X)
Very aggressive grip, ground body and sides for improved runout.



3.0mm x 60° Serrations Hard Jaws-For Kitagawa, MMK, Howa & Other Chucks

Critical Dimensions														
Group Number	Chuck Size	Groove Width G	Screw Size E	Hole Space D	Width Inch C	OAL Inch B	Height Inch A	No. of Holes	No. of Steps	Top Step Ht S1	Mid Step Ht S2	Bot Step Ht S3	Part Number	Price Per Set
K3-16-30	10	0.630 (16mm)	12mm	1.181 (30mm)	1.750	4.250	2.500	3	2	0.650	0.650	1.200	H3-100HJ2-X	\$700.25
K3-18-30	12	0.710 (18mm)	14mm	1.181 (30mm)	1.750	4.875	2.469	3	2	0.650	0.650	1.169	H3-120HJ2-X	\$754.11
	15-20	1.023 (26mm)	20mm	1.969 (50mm)	2.500	6.500	3.469	3	2	0.950	0.950	1.569	H3-150HJ2-X	\$897.75
K3-22-50	15	0.866 (22mm)	20mm	1.969 (50mm)	2.500	6.500	3.469	3	2	0.950	0.950	1.569	M3-150HJ2-X	\$897.75
K3-25-49	18-24	0.984 (25mm)	20mm	1.907 (48.5mm)	2.500	6.500	3.469	3	2	0.950	0.950	1.569	K3-240HJ2-X	\$897.75

1/16" x 90° Serrations Hard Jaws- For SMW Autoblok, Rohm, Pratt Burnerd & Other Chucks

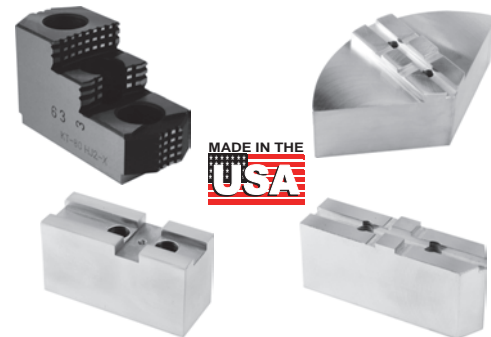
Critical Dimensions														
Group Number	Chuck Size	Groove Width G	Screw Size E	Hole Space D	Width Inch C	OAL Inch B	Height Inch A	No. of Holes	No. of Steps	Top Step Ht S1	Mid Step Ht S2	Bot Step Ht S3	Part Number	Price Per Set
I1-43-71	6	0.433 (11mm)	5/16	0.719 (18.5mm)	1.250	3.000	2.000	3	2	0.500	0.500	1.000	PH-60HJ2-X	\$448.87
I1-55-87	6	0.551 (14mm)	3/8	0.875 (22mm)	1.250	3.000	2.000	3	2	0.375	0.375	1.250	PH-61HJ2-X	\$448.87
I1-66-94	8	0.669 (17mm)	1/2	0.945 (24mm)	1.500	3.500	1.969	3	2	0.530	0.530	0.909	PH-80HJ2-X	\$484.79
I1-78-118	10 & 12	0.787 (20mm)	1/2	1.181 (30mm)	1.750	4.250	2.469	3	2	0.650	0.650	1.169	PH-100HJ2-X	\$628.43
I1-82-117	10 & 12	0.827 (21mm)	1/2	1.181 (30mm)	1.750	4.875	2.469	3	2	0.650	0.650	1.169	PH-120HJ2-X	\$628.43
I1-82-156	14-18	0.827 (21mm)	5/8	1.562 (39.5mm)	1.750	4.875	2.469	3	2	0.650	0.650	1.169	PH-150HJ2-X	\$923.40

SPECIAL ORDER JAWS AVAILABLE!



- Super Quick Turnaround Time- 3 Days Or Less In Most Cases!
- **Special Order Round Jaws Up To 32" dia!**
- Special Order Soft Jaws Up To 8" Height!
- Soft Jaws Available In Any Length-Steel Or Aluminum
- Tongue And Groove, Square Serrated & Acme Serrated Jaws Up To 8" Height!
- Made Per Your Special Specifications In The USA! Please See Our Special Order Forms On Pages 555-560.

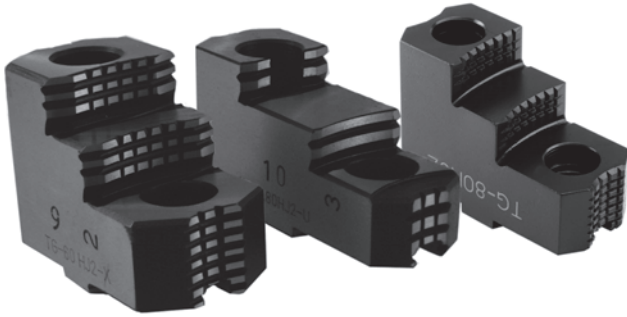
Please Call Today For A Quote!



Call Us Today For All Of Your Machine Tool Needs!

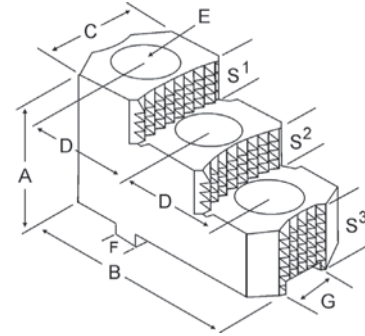
HARD JAWS-American Standard Tongue & Groove

HARD JAWS AMERICAN STANDARD TONGUE & GROOVE



FEATURES:

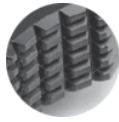
- Designed for first operation roughing, expect standard runout between 0.005-0.010
- Reversible-suitable for OD & ID workholding.
- **GRIP-RITE-OEM** style hard jaws have ground tips and provide better runout.
- **XTRA BITE** -very aggressive bite. Has conical teeth for extra gripping power and ground body to provide improved runout.
- **SHARK JAWS** have conical teeth for extra gripping power and black oxide for long life. Ideal for castings and scaly material. Made in the USA.



XTRA BITE (-X)
Very aggressive grip, ground body and sides for improved runout.



GRIP-RITE (-U)
OEM Style with ground tips and sides for improved runout.



SHARK JAWS
Conical teeth for gripping, black oxide for long life. Made in the USA.

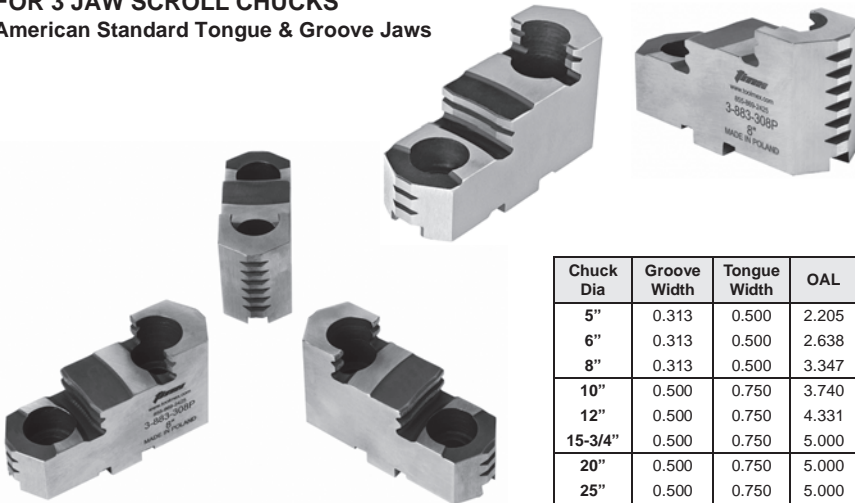
Critical Dimensions

Group	Chuck Size	Type	Groove Width G	Tongue Width F	Screw Size E	Hole Space D	Width Inch C	OAL Inch B	Height Inch A	No. of Holes	No. of Steps	Top Step Ht S1	Mid Step Ht S2	Bot Step Ht S3	Part Number	Price Per Set	Code
TI-31-3/8-15	6	MEDIUM DUTY	0.312	0.500	3/8	1.500	1.035	2.834	1.511	2	2	0.354	0.354	0.803	TG-60HJ2-U	\$282.80	E
							1.500	2.780	1.969	2	2	0.530	0.530	0.909	TG-60HJ2-X	\$297.68	E
TI-31-3/8-17	8	MEDIUM DUTY	0.312	0.500	3/8	1.750	1.250	2.875	2.000	2	2	0.600	0.360	1.040	TG-80HJ2	\$359.60	D
							1.114	3.227	1.629	2	2	0.394	0.394	0.843	TG-80HJ2-U	\$307.03	E
							1.500	3.287	1.969	2	2	0.530	0.530	0.909	TG-80HJ2-X	\$323.19	E
TI-50-1/2-21	10	MEDIUM DUTY	0.500	0.750	1/2	2.125	1.750	3.770	2.500	2	2	0.688	0.440	1.380	TG-100HJ2	\$378.53	D
							1.389	4.034	2.063	2	2	0.551	0.551	0.961	TG-100HJ2-U	\$323.19	E
							1.750	3.920	2.469	2	2	0.650	0.650	1.169	TG-100HJ2-X	\$340.20	E
TI-50-1/2-25	12	MEDIUM DUTY	0.500	0.750	1/2	2.500	1.750	4.500	2.500	2	2	0.680	0.440	1.380	TG-120HJ2	\$511.01	D
							1.586	4.585	2.063	2	2	0.591	0.591	0.882	TG-120HJ2-U	\$436.31	E
		1.750					4.550	2.500	2	2	0.650	0.650	1.200	TG-120HJ2-X	\$459.27	E	
TI-50-5/8-25		HEAVY DUTY	0.500	0.750	5/8	2.500	1.750	4.550	2.500	2	2	0.650	0.650	1.200	TG-125HJ2-X	\$493.29	E
TI-50-5/8-30	15 & UP	MEDIUM DUTY	0.500	0.750	5/8	3.000	1.980	5.392	2.613	2	2	0.551	0.551	1.511	TG-150HJ2-U	\$533.26	E
							2.500	5.350	3.469	2	2	0.950	0.950	1.569	TG-150HJ2-X	\$561.33	E
TI-50-3/4-30	15 & UP	HEAVY DUTY	0.500	0.750	3/4	3.000	2.500	5.350	3.469	2	2	0.950	0.950	1.569	TG-155HJ2-X	\$623.70	E

OEM HARD TOP JAWS

FOR 3 JAW SCROLL CHUCKS

American Standard Tongue & Groove Jaws



Hard Jaws For 4 & 6 Jaw Chucks Also Available!

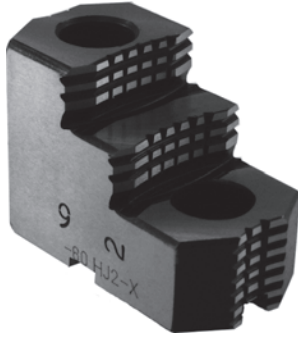


Chuck Dia	Groove Width	Tongue Width	OAL	Height	BISON		TMX	
					Part Number	Price Per Set	Part Number	Price Per Set
5"	0.313	0.500	2.205	1.516	TG-50HJ2-BI	\$188.10	TG-50HJ2-T	\$159.98
6"	0.313	0.500	2.638	1.634	TG-60HJ2-BI	\$230.40	TG-60HJ2-T	\$158.82
8"	0.313	0.500	3.347	1.713	TG-80HJ2-BI	\$232.20	TG-80HJ2-T	\$176.71
10"	0.500	0.750	3.740	2.023	TG-100HJ2-BI	\$271.80	TG-100HJ2-T	\$200.44
12"	0.500	0.750	4.331	2.165	TG-120HJ2-BI	\$334.80	TG-120HJ2-T	\$246.25
15-3/4"	0.500	0.750	5.000	2.539	TG-150HJ2-BI	\$456.30	TG-150HJ2-T	\$329.97
20"	0.500	0.750	5.000	2.933	TG-200HJ2-BI	\$761.40	TG-200HJ2-T	\$602.97
25"	0.500	0.750	5.000	3.228	TG-250HJ2-BI	\$907.20	-	-
32"	0.500	0.750	5.000	3.228	TG-250HJ2-BI	\$907.20	-	-

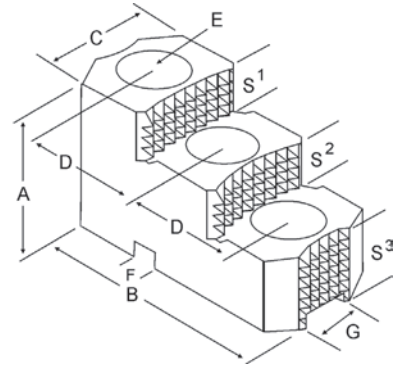
Call Us Or Visit Our Website For Our Complete Selection!

HARD JAWS-Acme & Square Key Serrated

HARD JAWS ACME & SQUARE KEY SERRATED



- FEATURES:**
- Designed for first operation roughing, expect standard runout between **0.005-0.010**
 - Reversible-suitable for OD & ID workholding.
 - **XTRA BITE** -very aggressive bite. Has conical teeth for extra gripping power and ground body to provide improved runout.



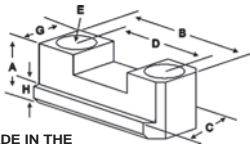
Acme Key Serrated Hard Jaws

GROUP	Chuck Size	Critical Dimensions											Part Number	Price Per Set		
		Groove Width G	Tongue Width F	Screw Size E	Hole Space D	Tap Hole	Width Inch C	OAL Inch B	Height Inch A	No. of Holes	No. of Steps	Top Step Ht S1			Mid Step Ht S2	Bot Step Ht S3
AI-07-1/2-17	10	0.750	1.031	1/2	1.750	5/16-18	1.750	4.250	2.480	2	2	0.600	0.600	1.280	AC-100HJ2-X	\$665.39
AI-08-5/8-20	12	0.875	1.031	5/8	2.000	5/16-18	1.750	4.875	2.469	2	2	0.550	0.550	1.369	AC-120HJ2-X	\$855.50
AI-10-3/4-25	15 & UP	1.000	1.531	3/4	2.500	3/8-16	2.500	5.500	3.469	2	2	0.950	0.950	1.569	AC-150HJ2-X	\$1,007.60

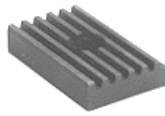
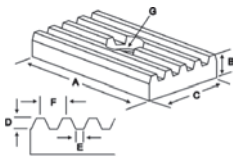
Square Key Serrated Hard Jaws

GROUP	Chuck Size	Critical Dimensions											Part Number	Price Per Set		
		Groove Width G	Tongue Width F	Screw Size E	Hole Space D	Tap Hole	Width Inch C	OAL Inch B	Height Inch A	No. of Holes	No. of Steps	Top Step Ht S1			Mid Step Ht S2	Bot Step Ht S3
SI-07-1/2-17	12	0.750	0.994	1/2	1.750	5/16-18	1.750	4.875	2.469	2	2	0.650	0.650	1.169	SP-120HJ2-X	\$665.39
SI-07-5/8-17	12	0.750	0.994	5/8	1.750	5/16-18	1.750	4.875	2.469	2	2	0.650	0.650	1.169	SP-125HJ2-X	\$665.39
SI-10-3/4-25	15 & UP	1.000	1.488	3/4	2.500	3/8-16	2.500	5.500	3.469	2	2	0.950	0.950	1.569	SP-150HJ2-X	\$950.56

ACME SERRATED KEY TYPE JAW NUTS & MASTER KEYS

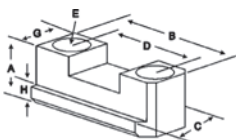


Chuck Size	Critical Dimensions						2 Screws Included With Each Jaw Nut				
	Heel Height H	Groove Width G	Screw Size E	Holes Space D	Hght Inch A	Width Inch C	Length Inch B	Jaw Nut Part Number	Price Each	Screw Part Number	Price Each
10	0.380	0.677	1/2-13	1.750	0.641	0.940	2.50	AC-100JN	\$55.92	S1/213150	\$2.25
12	0.440	0.801	5/8-11	2.000	0.744	1.060	3.00	AC-125JN	\$58.49	S5/811150	\$3.25
15 - 18	0.550	0.933	3/4-10	2.500	0.930	1.250	3.50	AC-155JN	\$61.66	S3/410175	\$4.25

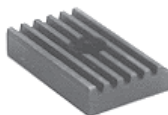
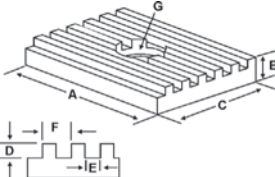


Chuck Size	Critical Dimensions				Width Inch C	Height Inch B	Length Inch A	Master Key Part Number	Price Each
	Screw Size G	Pitch F	Slot E	Depth D					
10-12	5/16	0.250	0.093	0.130	1.030	1/2"	1.687	AC-120AK	\$39.99
10-12	3/8	0.250	0.093	0.130	1.187	1/2"	2.000	AC-125AK	\$46.14
15-18	3/8	0.250	0.093	0.130	1.530	1/2"	2.000	AC-150AK	\$49.21
15-18	3/8	0.250	0.093	0.130	1.530	1/2"	2.437	AC-180AK	\$49.21

SQUARE SERRATED KEY TYPE JAW NUTS & MASTER KEYS



Chuck Size	Critical Dimensions						2 Screws Included With Each Jaw Nut				
	Heel Height H	Groove Width G	Screw Size E	Hole Space D	Hght Inch A	Width Inch C	Length Inch B	Jaw Nut Part Number	Price Each	Screw Part Number	Price Each
10 - 12	0.375	0.748	1/2-13	1.750	1.000	1.000	2.438	SP-100JN	\$55.04	S1/213150	\$2.25
10 - 12	0.375	0.748	5/8-11	1.750	1.000	1.000	2.500	SP-125JN	\$55.04	S5/811150	\$3.25
15 - 18	0.438	1.000	3/4-10	2.500	1.250	1.250	3.750	SP-155JN	\$60.20	S3/410175	\$4.25



Chuck Size	Critical Dimensions				Width Inch C	Hght Inch B	Length Inch A	Master Key Part Number	Price Each
	Screw Size G	Pitch F	Slot E	Depth D					
10 - 12	5/16	0.250	0.124	0.130	.993	0.500	1.688	SP-120SQK	\$28.48
15 - 18	3/8	0.250	0.124	0.130	1.487	0.500	2.000	SP-150SQK	\$36.84
15 - 18	3/8	0.250	0.124	0.130	1.487	0.500	2.250	SP-180SQK	\$32.75

Call Us Today For All Of Your Machine Tool Needs!

CHUCK JAWS- Quick Jaw Change Style

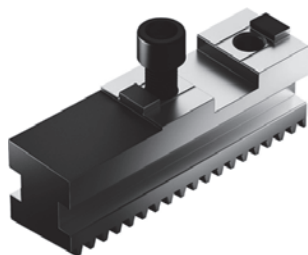
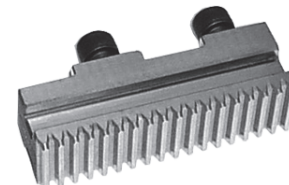
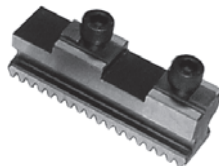
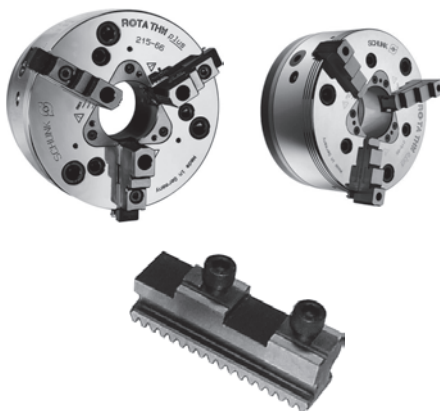
JAWS FOR QUICK JAW CHANGE CHUCKS

Base, Monoblock and Hard Jaws for:

- SMW Autoblok KNCS-N Series
- Schunk ROTA-G & THW PLUS Series
- SMW Systems/Schunk THW Series Quick Change Chucks



FOR QUICK CHANGE CHUCKS!



BASE JAWS

				SCHUNK		EINS	
SMW Autoblok	SchUNK ROTA	SchUNK THW	SchUNK Or SMW Systems	Base Jaws Part Number	Set Price	Base Jaws Part Number	Set Price
KNCS-N 140	-	-	-	GBK-140-S	\$252.70	-	-
KNCS-N 170	ROTA-G 160	THW PLUS	THW-165 R	GBK-160-S	\$267.90	-	-
KNCS-N 210/225	ROTA-G 200	THW PLUS 215	THW-210 R	GBK-200-S	\$335.00	GBK-200-E	\$242.78
KNCS-N 260	ROTA-G 250	THW PLUS 260	THW-250/265 R	GBK-250-S	\$379.00	GBK-250-E	\$274.75
KNCS-N 315	ROTA-G 315	THW PLUS 315	THW-315 R	GBK-315-S	\$466.00	GBK-315-E	\$338.69
KNCS-N 400	ROTA-G 400	-	THW-400 R	GBK-400-S	\$495.00	-	-
KNCS-N 500	ROTA-G 500	-	THW-500-128 R	GBK-500-S	\$879.13	GBK-500-E	\$697.25
KNCS-N 630	-	-	THW-630-160 R	GBK-630-S	\$1,120.00	GBK-630-E	\$816.48

SOFT MONOBLOCK JAWS-Machinable (Dimensions in mm)

							SCHUNK		EINS	
SMW Autoblok	SchUNK ROTA	SchUNK/SMW Systems THW	Width	Total Height	Mach. Length	OAL	Part Number	Set Price	Part Number	Set Price
KNCS-N 170	ROTA-G160	THW PLUS165/185 THW-165R	20	55.5	35	65	UVB-160-S	\$310.85	-	-
KNCS-N 210/225	ROTA-G200	THW PLUS215 THW-210R	22	64.5	40	84	UVB-200-S	\$368.00	UVB-200-E	\$277.34
KNCS-N 260	ROTA-G250	THW PLUS260 THW-250/265R	26	84	55	99	UVB-250-S	\$372.81	UVB-250-E	\$299.81
KNCS-N 315	ROTA-G315	THW PLUS315 THW-315R	32	90	56	121	UVB-315-S	\$486.00	UVB-315-E	\$364.61
KNCS-N 400	ROTA-G400	THW-400R	32	100	66	148	UVB-400-S	\$541.00	-	-
KNCS-N 500	ROTA-G500	THW-500-128R	45	124	77	175	UVB-500-S	\$950.00	UVB-500-E	\$803.52
KNCS-N 630	-	-	45	134	87	230	UVB-630-S	\$1140.95	UVB-630-E	\$966.82

2 STEP MONOBLOCK HARD JAWS (Dimensions in mm)

								SCHUNK		
SMW Autoblok	SchUNK ROTA	SchUNK THW	SchUNK Or SMW Systems	Width	Total Height	Top Step Height	Usable Height	Part Number	Set Price	
KNCS-N 140	-	-	-	20	44	7	22	GST-140-S	\$514.00	
KNCS-N 170	ROTA-G160	THWPLUS165/185	THW-165R	20	46	7	24	GST-170-S	\$514.00	
KNCS-N 210/225	ROTA-G200	THWPLUS215	THW-210R	22	54	8	29	GST-201-S	\$754.00	
KNCS-N 260	ROTA-G250	THWPLUS260	THW-250/265R	26	65	10	36	GST-251-S	\$833.00	
KNCS-N 315	ROTA-G315	THWPLUS315	THW-315R	32	66	11	32	GST-315-S	\$980.00	
KNCS-N 400	ROTA-G400	-	THW-400R	32	70	11	36	GST-400-S	\$1084.00	
KNCS-N 500	ROTA-G500	-	THW-500-128R	45	93	20	46	GST-500-S	\$1530.00	
KNCS-N 630	-	-	THW-630-160R	45	93	20	46	GST-500-S	\$1530.00	

1 STEP HARD JAWS- Tongue & Groove With Base Jaws (Dimensions in mm)

								SCHUNK		
SMW Autoblok	SchUNK ROTA	SchUNK THW	SchUNK Or SMW Systems	Width	Total Height	Top Step Height	OAL	Part Number	Set Price	
KNCS-N 140	-	-	-	20	36.5	7.5	63	SHF-160-S	\$184.00	
KNCS-N 170	ROTA-G160	THWPLUS165/185	THW-165R	20	36.5	7.5	63	SHF-160-S	\$184.00	
KNCS-N 210/225	ROTA-G200	THW PLUS 215	THW-210R	22	38	10	72	SHF-200-S	\$233.00	
KNCS-N 260	ROTA-G250	THWPLUS260	THW-250/265R	30	50	14	90	SHF-250-S	\$264.00	
KNCS-N 315	ROTA-G315	THWPLUS315	THW-315R	30	50	14	90	SHF-250-S	\$264.00	
KNCS-N 400	ROTA-G400	-	THW-400R	36	56	15	105	SHF-315-S	\$325.00	
KNCS-N 500	ROTA-G500	-	THW-500-128R	45	75	20	130	SHF-400-S	\$657.00	
KNCS-N 630	-	-	THW-630-160R	45	75	20	150	SHF-400-S	\$657.00	

Call Us Or Visit Our Website For Our Complete Selection!

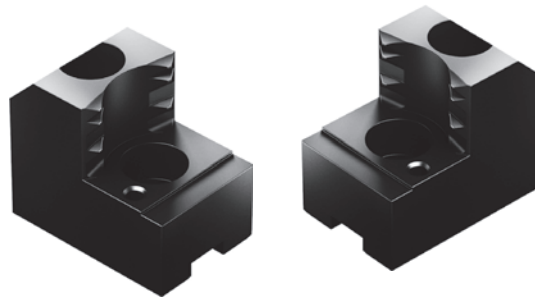
LIGHTWEIGHT CLAW JAWS

HARD CLAW JAWS Very Aggressive Bite Hard Jaws

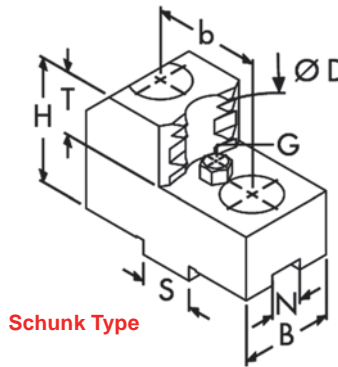
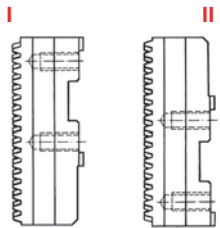


Benefits:

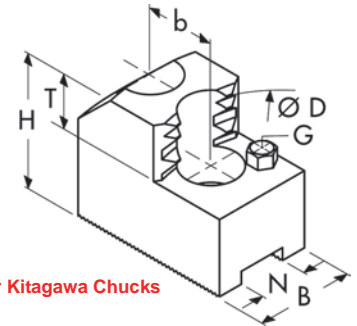
- Optimized clamping contour for maximum clamping force of the whole clamping range
- Transmission of high RPMs for economic cutting at high cutting speeds
- High speeds at a low centrifugal force resulting in higher clamping forces due to a low weight
- Highly versatile clamping ranges leads to significantly lower investment costs
- Form-fit clamping of the workpiece at a high machining performance and optimum clamping force
- Additional third row of teeth allows for higher cutting data during "on-the-fly processing"
- Highest flexibility through standardization
- Extensive product range for I.D., O.D. and bar clamping
- Case-hardened for less wear at the teeth



Position of Base Jaw



SchUNK Type



For Kitagawa Chucks



For Quick Jaw Change Schunk Chucks

Schunk Chuck Type	Clamping Range mm	Position of Base Jaw		Swing Dia mm	Groove Width N	Hole to Hole b	Tongue Width S	Width B	Height H	Gripping Face Ht T	Work Stop Thread G	Part Number	Set Price	Mfg. Model No
		I	II											

8" (200mm, 210mm, 215mm) Size Chucks (Group TK-10-08-40)

THW 210-R	28-82	•		248	10mm	40mm	20mm	26mm	45mm	25mm	M 6	WK-080-CO-10-S	\$463.60	SZKA 212
THW 210-R	66-119		•	250				30mm	45mm	25mm	M 6	WK-080-CO-20-S	\$463.60	SZKA 213
THW 210-R	103-157	•		248				30mm	45mm	25mm	M 6	WK-080-CO-20-S	\$463.60	SZKA 213
THW 210-R	138-192	•		254				30mm	45mm	25mm	M 6	WK-080-CO-30-S	\$463.60	SZKA 216

10" (250mm, 260mm) Size Chucks (Group TK-12-12-40)

THW 250-R	31-86		•	297	12mm	40mm	20mm	30mm	50mm	25mm	M 6	WK-100-CO-10-S	\$503.13	SZKA 263
THW 250-R	82-143		•	297				40mm	50mm	25mm	M 6	WK-100-CO-20-S	\$503.13	SZKA 266
THW 250-R	144-207	•		301				40mm	50mm	25mm	M 6	WK-100-CO-20-S	\$503.13	SZKA 266
THW 250-R	177-240	•		315				40mm	50mm	25mm	M 6	WK-100-CO-30-S	\$503.13	SZKA 268

12" (315mm) Size Chucks (Group TK-12-12-40)

THW 315-R	31-112		•	346	12mm	40mm	20mm	30mm	50mm	25mm	M 6	WK-100-CO-10-S	\$503.13	SZKA 263
THW 315-R	86-170		•	346				40mm	50mm	25mm	M 6	WK-100-CO-20-S	\$503.13	SZKA 266
THW 315-R	119-204		•	346				40mm	50mm	25mm	M 6	WK-100-CO-30-S	\$503.13	SZKA 268
THW 315-R	206-291	•		366				40mm	50mm	25mm	M 6	WK-100-CO-30-S	\$503.13	SZKA 268

FOR KITAGAWA® CHUCKS

Kitagawa Chuck Type	Clamping Range mm	Swing Dia mm	Groove Width N	Hole to Hole b	Screw Size	Width B	Height H	Gripping Face Ht T	Workstop Thread G	Part Number	Set Price	Mfg. Model No
---------------------	-------------------	--------------	----------------	----------------	------------	---------	----------	--------------------	-------------------	-------------	-----------	---------------

6" (165mm) Size Chucks (Group K1-12-20)

B 206, HOH 6/206	31-52	172	12mm	20mm	M10	30mm	47mm	20mm	M6	KT-060-COD-10-S	\$353.58	SZAJ 16-6
N 160; N 6	32-47	166										
B 206, HOH 6/206	42-67	172	12mm	20mm	M10	30mm	47mm	20mm	M6	KT-060-COD-20-S	\$353.58	SZAJ 16-7
B 160; B 6	32-65	170										
N 160; N 6	47-63	166	12mm	20mm	M10	30mm	47mm	20mm	M6	KT-060-COD-30-S	\$353.58	SZAJ 16-8
B 206	58-81	172										
B 160; B 6	47-81	170	12mm	20mm	M10	30mm	47mm	20mm	M6	KT-060-COD-40-S	\$353.58	SZAJ 16-9
HOH 6/206	58-83	172										
N 160; N 6	63-77	166	12mm	20mm	M10	35mm	47mm	20mm	M6	KT-060-COD-50-S	\$353.58	SZAJ 16-10
B 206, HOH 6/206	72-97	172										
B 160; B 6	61-95	170	12mm	20mm	M10	40mm	47mm	20mm	M6	KT-060-COD-50-S	\$353.58	SZAJ 16-10
N 160; N 6	77-93	166										
B 206, HOH 6/206	88-113	172	12mm	20mm	M10	40mm	47mm	20mm	M6	KT-060-COD-50-S	\$353.58	SZAJ 16-10
B 160; B 6	77-111	170										
N 160; N 6	93-107	166										

See Following Page For Claw Jaws for 8", 10" & 12" Kitagawa Chucks

Call Us Today For All Of Your Machine Tool Needs!

HARD CLAW JAWS-For Kitagawa® Chucks (continued)



LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Kitagawa Chuck Model	Clamping Range mm	Swing Dia mm	Groove Width N	Hole to Hole b	Screw	Width B	Height H	Gripping Face Ht T	Workstop Thread G	Part Number	Set Price	Mfg. Model No
----------------------	-------------------	--------------	----------------	----------------	-------	---------	----------	--------------------	-------------------	-------------	-----------	---------------

8" (210mm) Size Chucks-Group K1-14-25

B 208, HOH 8/208	35-64	211	14mm	25mm	M12	35mm	53mm	25mm	M6	KT-080-CO-10-S	\$400.58	SZAJ 20-1
B 200, B 8	33-61	208										
N 200, N 8	42-68	212										
B 208, HOH 8, HOH 208	62-92	211	14mm	25mm	M12	35mm	53mm	25mm	M6	KT-080-CO-20-S	\$400.58	SZAJ 20-2
B 200, B 8	47-89	208										
N 200, N 8	68-96	216										
B 208, HOH 8/208	92-122	211	14mm	25mm	M12	40mm	53mm	25mm	M6	KT-080-CO-30-S	\$400.58	SZAJ 20-3
B 200, B 8	77-119	208										
N 200, N 8	98-128	217										
B 208, HOH 8/208	122-153	211	14mm	25mm	M12	40mm	53mm	25mm	M6	KT-080-CO-40-S	\$400.58	SZAJ 20-4
B 200, B 8	113-150	208										
N 200, N 8	128-153	212										
B 208, HOH 8/208	144-173	229	14mm	25mm	M12	40mm	53mm	25mm	M6	KT-080-CO-50-S	\$400.58	SZAJ 20-16
B 200, B 8	135-170	226										
N 200, N 8	153-173	230										

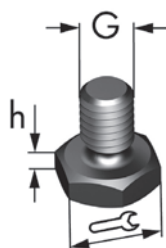
10" (254mm) Size Chucks-Group K1-16-30

B 210	43-84	260	16mm	30mm	M12	40mm	58mm	25mm	M6	KT-100-CO-10-S	\$487.00	SZAJ 25-1
B 250, B 10	40-81	258										
HOH 10 K, HOH 250	38-79	255										
N 250, N 10	37-78	255										
B 210	84-128	260	16mm	30mm	M12	40mm	58mm	25mm	M6	KT-100-CO-20-S	\$487.00	SZAJ 25-2
B 250, B 10	76-123	258										
HOH 10K, HOH 250	79-123	255										
N 250, N 10	78-122	257										
B 210	128-173	264	16mm	30mm	M12	40mm	58mm	25mm	M6	KT-100-CO-30-S	\$487.00	SZAJ 25-3
B 250, B 10	120-167	262										
HOH 10 K, HOH 250	123-168	259										
N 250, N 10	122-167	263										
B 210	173-214	280	16mm	30mm	M12	40mm	58mm	25mm	M6	KT-100-CO-40-S	\$487.00	SZAJ 25-4
B 250, B 10	165-212	278										
HOH 10K, HOH 250	168-209	275										
N 250, N 10	167-208	274										

12" (300mm, 304mm) Size Chucks-Group K1-18-30

B 300, B 12	45-108	320	18mm	30mm	M14	50mm	65mm	25mm	M8	KT-120-CO-10-S	\$585.00	SZAJ 30-1
HOH 12 K, HOH 300	45-110	322										
N 300, N 12	42-116	328										
B 300, B 12	93-168	334	18mm	30mm	M14	50mm	65mm	25mm	M8	KT-120-CO-20-S	\$585.00	SZAJ 30-2
HOH 12 K, HOH 300	99-170	336										
N 300, N 12	102-176	342										
B 300, B 12	158-234	325	18mm	30mm	M14	50mm	65mm	25mm	M8	KT-120-CO-30-S	\$585.00	SZAJ 30-3
HOH 12 K, HOH 300	163-236	327										
N 300, N 12	166-242	333										
B 300, B 12	227-299	370	18mm	30mm	M14	50mm	65mm	25mm	M8	KT-120-CO-40-S	\$585.00	SZAJ 30-4
HOH 12 K, HOH 300	228-301	372										
N 300, N 12	231-307	378										
B 212	45-111	323	21mm	30mm	M16	50mm	65mm	25mm	M8	KT-128-CO-10-S	\$585.00	SZAJ 30-5
B 212	108-173	337								KT-128-CO-20-S		SZAJ 30-6
B 212	173-238	328								KT-128-CO-30-S		SZAJ 30-7
B 212	238-302	373								KT-128-CO-40-S		SZAJ 30-8

SCREWS FOR WORKSTOP

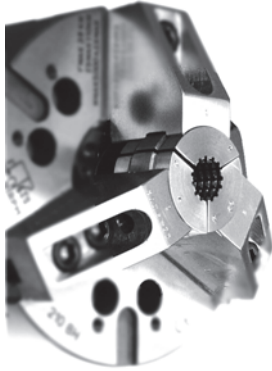


Screw Head Height h	Wrench Size	Workstop Screw Thread G	Part Number	Price	MFG Id.-No.	Screw Head Height h	Wrench Size	Workstop Screw Thread G	Part Number	Price	MFG Id.-No.
5	8	M 5	SCH-AB55	\$7.00	122 171	25	10	M 6	SCH-AB256	\$9.00	122 169
10	8	M 5	SCH-AB105	\$7.00	122 172	5	14	M 8	SCH-AB58	\$7.00	122 161
15	8	M 5	SCH-AB155	\$7.00	122 173	10	14	M 8	SCH-AB108	\$7.00	122 163
5	10	M 6	SCH-AB56	\$7.00	122 160	15	14	M 8	SCH-AB158	\$7.00	122 165
10	10	M 6	SCH-AB106	\$7.00	122 162	20	14	M 8	SCH-AB208	\$9.00	122 167
15	10	M 6	SCH-AB156	\$7.00	122 164	25	14	M 8	SCH-AB258	\$9.00	122 168
20	10	M 6	SCH-AB206	\$9.00	122 166	30	14	M 8	SCH-AB308	\$9.00	122 170

Call Us Or Visit Our Website For Our Complete Selection!

COLLET PADS & TOP JAWS

COLLET PADS & TOP JAWS FOR JAW CHUCKS - Collet Pads for Warner Swasey and "S" Style Collet Chucks



Collet Pads were originally used on Turret lathes - these days they can be adapted to be used on all common jaw chucks. The way they work is as follows:

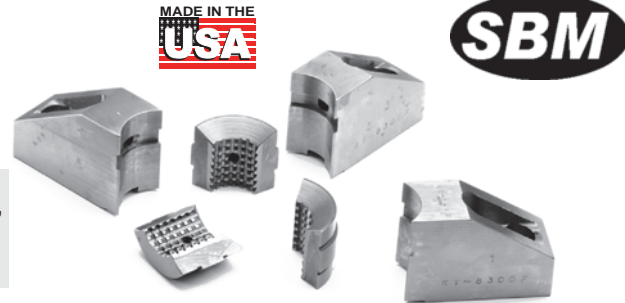
- Replace your existing jaws with a set of special collet pad top jaws made specifically for your particular chuck. These special jaws are made to hold Warner Swasey style turret lathe pads. They have a screw hole bored through them so that you can easily change pads from one size to another without having to remove the jaws.
- Depending on the size of your workpiece or the bar that you need to run through your machine you can purchase various sizes and shapes of collet pads. Collet pads are available with the inside bore Round, with smooth or serrated inside surface; Square, with smooth or serrated inside surface and Hex, with smooth or serrated inside surface.
- Emergency Pads are also available - these are very popular - because they are soft and can be bored by the machinist to the desired shape and size.

TOP JAWS FOR COLLET PADS

For precision workholding, Top Jaws for collet pads are designed to mount directly onto your power or manual chuck. Using Top Jaws offers an economical, convenient way to increase your chuck capacity. Top Jaws are Quick Change, mounting in minutes.



Collet Pad Top Jaws can be configured to fit most 3 jaw chucks that use soft top jaws, regardless of the lock type (Serrated or American Standard). Please call if you do not see your chuck listed below.



Helpful Hint:
A fine boring cut of 0.030", when collet pad top jaws are installed for the first time on your jaw chuck, easily prepares the collet pad top jaws for high concentricity operation for years to come when loaded on the same master jaws.

Chuck Size	Chuck Make & Model	Critical Dimensions			Warner Swasey Collet Pad #	Max Round Collet Pad Capacity	Collet Pad Top Jaws Part Number	Price Per Set of 3 Jaws
		Groove Width	Screw Size	Hole Space				
6"	KITAGAWA - B-206, B-06; HOWA 6	0.472	M10	0.787	3	1.5"	CPJ-KT0600WS3-U	\$452.00
	MMK (Matsumoto) - HA_-6, ZA_-6	0.433	M8	0.985	3	1.5"	CPJ-SG0600WS3-U	\$452.00
8"	KITAGAWA - B-208, B-08; STRONG N208 MMK (Matsumoto) - ZA_-8, HA_-8	0.551	M12	0.984	3	1.5"	CPJ-KT0800WS3-U	\$452.00
					4	2"	CPJ-KT0800WS4-U	\$452.00
					5	2.5"	CPJ-KT0800WS5-U	\$452.00
	8" NIKKO	0.551	M10	1.181	3	1.5"	CPJ-SG0800WS3-U	\$452.00
					4	2"	CPJ-SG0800WS4-U	\$452.00
10"	KITAGAWA - B210, B10; STRONG N210 MMK (Matsumoto) - ZA_-10, HA_-10	0.630	M12	1.181	3	1.5"	CPJ-KT1000WS3-U	\$483.00
					4	2"	CPJ-KT1000WS4-U	\$483.00
					5	2.5"	CPJ-KT1000WS5-U	\$483.00
					6	3"	CPJ-KT1000WS6-U	\$483.00
	10" MMK (Matsumoto) ON HITACHI SEIKI CNC	0.630	M12	1.250	3	1.5"	CPJ-SE1000WS3-U	\$483.00
					4	2"	CPJ-SE1000WS4-U	\$483.00
					5	2.5"	CPJ-SE1000WS5-U	\$483.00
12"	KITAGAWA - B-12, HO-12; MMK (Matsumoto) - ZA_-12, HA_-12; HOWA - HO15M12	0.709	M14	1.181	3	1.5"	CPJ-KT1200WS3-U	\$512.00
					4	2"	CPJ-KT1200WS4-U	\$512.00
					5	2.5"	CPJ-KT1200WS5-U	\$512.00
	KITAGAWA - B-212	0.827	M16	1.181	6	3"	CPJ-KT1200WS6-U	\$512.00
					3	1.5"	CPJ-KT1208WS3-U	\$512.00
					4	2"	CPJ-KT1208WS4-U	\$512.00
15"	KITAGAWA - B-15	0.866	M20	1.690	5	2.5"	CPJ-KT1208WS5-U	\$512.00
					6	3"	CPJ-KT1208WS6-U	\$512.00
					3	1.5"	CPJ-KT1500WS3-U	\$532.00
	KITAGAWA - B-215	1.005	M20	1.690	4	2"	CPJ-KT1500WS4-U	\$532.00
					5	2.5"	CPJ-KT1500WS5-U	\$532.00
					6	3"	CPJ-KT1500WS6-U	\$532.00
					3	1.5"	CPJ-KT1508WS3-U	\$532.00
					4	2"	CPJ-KT1508WS4-U	\$532.00
					5	2.5"	CPJ-KT1508WS5-U	\$532.00
6	3"	CPJ-KT1508WS6-U	\$532.00					

Call Us Today For All Of Your Machine Tool Needs!

WARNER & SWASEY COLLET PADS

Convert Your 3 Jaw Chuck Into A Precision Collet Chuck. For Warner & Swasey And Jaw Chuck Lathes.

Collet Pads provide high concentricity, uniformity of gripping power and ease of change for various sizes of bar type work with OD holding. Originally designed for use with Warner & Swasey and other screw machines, master collets have been adapted for use with Jaw Chucks by using collet pad top jaws.



How To Order:

1. Select collet type, shape and surface.
2. Find your desired range of bore in 1/16 increments.
3. Add the decimal equivalent to the end of part number.

Ordering Example:

For a #3 W&S Machine, 1/4" serrated round ID, the part number would be: **CP-WS3RE02500**
For decimal equivalents, please see the table on page 65.

Warner & Swasey Machine Number	Used On Warner & Swasey Master Collets	Capacity of Master (ID)	Inside Diameter Shape	Inside Surface	Desired Range Of Bore (1/16 inc.)	Part Number (add bore of collet pad)	Price Per Set	Screw				
#3	461-1002, 462-1024, 1369-1008	1-1/2	Round	Soft Emergency		Blank	CP-WS3BLANK-U	\$36.63	\$3.00 ea			
				Smooth	1/4 to 5/16	CP-WS3RM	\$53.74					
					3/8 to 1-1/2	CP-WS3RM	\$41.34					
				Serrated	1/4 to 5/16	CP-WS3RE	\$70.41					
					3/8 to 15/16	CP-WS3RE	\$58.01					
				1 to 1-1/2	CP-WS3RE	\$58.01						
		1-5/16	Hex	Smooth	1/4 to 5/16	CP-WS3HM	\$69.47					
					3/8 to 1-5/16	CP-WS3HM	\$53.44					
				Serrated	1/4 to 5/16	CP-WS3HE	\$94.47					
					3/8-1-5/16	CP-WS3HE	\$78.44					
				Smooth	1/4 to 5/16	CP-WS3SM	\$69.47					
					3/8 to 1-1/16	CP-WS3SM	\$53.44					
1/4 to 5/16	CP-WS3SE	\$94.47										
#4	1129-1102, 1369-113	2	Round	Soft Emergency		Blank	CP-WS4BLANK-U	\$45.38	\$3.00 ea			
				Smooth	1/4 to 5/16	CP-WS4RM	\$64.23					
					3/8 to 2	CP-WS4RM	\$49.41					
				Serrated	1/4 to 5/16	CP-WS4RE	\$80.90					
					3/8 to 15/16	CP-WS4RE	\$66.08					
				1 to 2	CP-WS4RE	\$66.08						
		1-3/4	Hex	Smooth	1/4 to 5/16	CP-WS4HM	\$79.66					
					3/8 to 1-3/4	CP-WS4HM	\$61.51					
				Serrated	1/4 to 5/16	CP-WS4HE	\$104.96					
					3/8 to 1-3/4	CP-WS4HE	\$86.51					
				Smooth	1/4 to 5/16	CP-WS4SM	\$79.66					
					3/8 to 1-3/8	CP-WS4SM	\$61.51					
		1/4 to 5/16	CP-WS4SE	\$104.96								
		5/16 to 1-3/8	CP-WS4SE	\$86.51								
		#5	471-1001	2-1/2	Round	Soft Emergency		Blank		CP-WS5BLANK-U	\$52.43	\$3.00 ea
						Smooth	1/4 to 5/16	CP-WS5RM		\$78.65		
							3/8 to 2-1/2	CP-WS5RM		\$60.50		
						Serrated	1/4 to 5/16	CP-WS5RE		\$95.32		
3/8 to 15/16	CP-WS5RE						\$77.17					
1 to 2-1/2	CP-WS5RE					\$77.17						
2-3/16	Hex			Smooth	1/4 to 5/16	CP-WS5HM	\$94.38					
					3/8 to 2-3/16	CP-WS5HM	\$72.60					
				Serrated	1/4 to 5/16	CP-WS5HE	\$119.38					
					3/8 to 2-3/16	CP-WS5HE	\$97.60					
				Smooth	1/4 to 5/16	CP-WS5SM	\$94.38					
					3/8 to 1-3/4	CP-WS5SM	\$72.60					
1/4 to 5/16	CP-WS5SE			\$119.38								
3/8 to 1-3/4	CP-WS5SE			\$97.60								
#6	4669-1001			3	Round	Soft Emergency		Blank	CP-WS6BLANK-U	\$95.79	\$3.00 ea	
						Smooth	1/4 to 5/16	CP-WS6RM	\$150.75			
							3/8 to 3	CP-WS6RM	\$115.96			
						Serrated	1/4 to 5/16	CP-WS6RE	\$167.41			
		3/8 to 15/16	CP-WS6RE				\$132.63					
		1 to 3	CP-WS6RE			\$132.63						
		2-5/8	Hex	Smooth	1/4 to 5/16	CP-WS6HM	\$199.25					
					3/8 to 2-5/8	CP-WS6HM	\$153.27					
				Serrated	1/4 to 5/16	CP-WS6HE	\$224.25					
					3/8 to 2-5/8	CP-WS6HE	\$178.27					
				Smooth	1/4 to 5/16	CP-WS6SM	\$199.25					
					3/8 to 2-1/8	CP-WS6SM	\$153.27					
		1/4 to 5/16	CP-WS6SE	\$224.25								
		3/8 to 2-1/8	CP-WS6SE	\$178.27								

Call Us Or Visit Our Website For Our Complete Selection!

COLLET PADS-WARNER & SWASEY & "S" STYLE

"S" STYLE COLLET PADS



- Available hardened & ground for round, hex or square work shapes with the inside pad surface smooth, square or serrated
- Also available as soft pads to machine to size (called emergency collet pads)
- S12, S16, S20 & S22 series pads are 3 split
- S26, S30 & S40 are 4 split
- Clamp screws also available, please see following page



How To Order:

1. Select collet type, shape and surface.
2. Find your desired range of bore in 1/16 increments.
3. Add the decimal equivalent to the end of part number.

Ordering Example:

For S16 collet pads, 1/4" serrated round ID, the part number would be: **CP-S16RE02500**
For decimal equivalents, please see following page.

Type	ID Shape	Inside Surface	Desired Bore Range (1/16 inc.)	Part Number (add bore of collet pad)	Price Per Set
S12	Soft Emergency			CP-S12BLANK-U	\$40.99
	Round	Smooth	1/4 - 5/16	CP-S12RM _____-Y	\$54.60
			3/8 to 1-1/4	CP-S12RM _____-Y	\$42.00
		Serrated	1/4 to 5/16	CP-S12RE _____-Y	\$71.27
			3/8 to 1-3/16	CP-S12RE _____-Y	\$58.67
	Hex	Smooth	1/4 to 5/16	CP-S12HM _____-Y	\$74.26
			3/8 to 1-1/16	CP-S12HM _____-Y	\$57.13
		Serrated	1/4 to 5/16	CP-S12HE _____-Y	\$99.26
			3/8 to 1-1/16	CP-S12HE _____-Y	\$82.13
	Square	Smooth	1/4 to 5/16	CP-S12SM _____-Y	\$74.26
			3/8 to 7/8	CP-S12SM _____-Y	\$57.13
		Serrated	1/4 to 5/16	CP-S12SE _____-Y	\$99.26
3/8 to 7/8			CP-S12SE _____-Y	\$82.13	
S16	Soft Emergency			CP-S16BLANK-U	\$52.08
	Round	Smooth	1/4 to 5/16	CP-S16RM _____-Y	\$67.94
			3/8 to 1-5/8	CP-S16RM _____-Y	\$52.26
		Serrated	1/4 to 5/16	CP-S16RE _____-Y	\$84.60
			3/8 to 1-5/8	CP-S16RE _____-Y	\$68.93
	Hex	Smooth	1/4 to 5/16	CP-S16HM _____-Y	\$95.24
			3/8 to 1-5/16	CP-S16HM _____-Y	\$73.26
		Serrated	1/4 to 5/16	CP-S16HE _____-Y	\$120.24
			3/8 to 1-5/16	CP-S16HE _____-Y	\$98.26
	Square	Smooth	1/4 to 5/16	CP-S16SM _____-Y	\$95.24
			3/8 to 1-1/8	CP-S16SM _____-Y	\$73.26
		Serrated	1/4 to 5/16	CP-S16SE _____-Y	\$120.24
3/8 to 1-1/8			CP-S16SE _____-Y	\$98.26	
S20	Soft Emergency			CP-S20BLANK-U	\$51.08
	Round	Smooth	1/4 to 5/16	CP-S20RM _____-Y	\$67.71
			3/8 to 2	CP-S20RM _____-Y	\$52.08
		Serrated	1/4 to 5/16	CP-S20RE _____-Y	\$84.38
			3/8 to 2	CP-S20RE _____-Y	\$68.75
	Hex	Smooth	1/4 to 5/16	CP-S20HM _____-Y	\$87.37
			3/8 to 1-5/8	CP-S20HM _____-Y	\$67.21
		Serrated	1/4 to 5/16	CP-S20HE _____-Y	\$112.37
			3/8 to 1-5/8	CP-S20HE _____-Y	\$92.21
	Square	Smooth	1/4 to 5/16	CP-S20SM _____-Y	\$87.37
			3/8 to 1-3/8	CP-S20SM _____-Y	\$67.21
		Serrated	1/4 to 5/16	CP-S20SE _____-Y	\$112.37
3/8 to 1-3/8			CP-S20SE _____-Y	\$92.21	
S22	Soft Emergency			CP-S22BLANK-U	\$62.17
	Round	Smooth	1/4 to 5/16	CP-S22RM _____-Y	\$82.13
			3/8 to 2-1/4	CP-S22RM _____-Y	\$63.18
		Serrated	1/4 to 5/16	CP-S22RE _____-Y	\$98.79
			3/8 to 2-1/4	CP-S22RE _____-Y	\$79.84
	Hex	Smooth	1/4 to 5/16	CP-S22HM _____-Y	\$109.66
			3/8 to 1-15/16	CP-S22HM _____-Y	\$84.35
		Serrated	1/4 to 5/16	CP-S22HE _____-Y	\$134.65
			3/8 to 1-15/16	CP-S22HE _____-Y	\$109.64
	Square	Smooth	1/4 to 5/16	CP-S22SM _____-Y	\$109.66
			3/8 to 1-9/16	CP-S22SM _____-Y	\$84.35
		Serrated	1/4 to 5/16	CP-S22SE _____-Y	\$134.66
3/8 to 1-9/16			CP-S22SE _____-Y	\$109.35	

Type	ID Shape	Inside Surface	Desired Bore Range (1/16 inc.)	Part Number (add bore of collet pad)	Price Per Set
S26	Soft Emergency			CP-S26BLANK-U	\$67.21
	Round	Smooth	1/4 to 5/16	CP-S26RM _____-Y	\$88.68
			3/8 to 2-5/8	CP-S26RM _____-Y	\$68.22
		Serrated	1/4 to 5/16	CP-S26RE _____-Y	\$105.35
			3/8 to 2-5/8	CP-S26RE _____-Y	\$84.88
	Hex	Smooth	1/4 to 5/16	CP-S26HM _____-Y	\$116.21
			3/8 to 2-1/4	CP-S26HM _____-Y	\$89.39
		Serrated	1/4 to 5/16	CP-S26HE _____-Y	\$112.97
			3/8 to 2-1/4	CP-S26HE _____-Y	\$114.39
	Square	Smooth	1/4 to 5/16	CP-S26SM _____-Y	\$116.21
			3/8 to 1-13/16	CP-S26SM _____-Y	\$89.39
		Serrated	1/4 to 5/16	CP-S26SE _____-Y	\$141.21
3/8 to 1-13/16			CP-S26SE _____-Y	\$114.39	
S30	Soft Emergency			CP-S30BLANK-U	\$113.30
	Round	Smooth	1/4 to 5/16	CP-S30RM _____-Y	\$133.25
			3/8 to 3	CP-S30RM _____-Y	\$102.50
		Serrated	1/4 to 5/16	CP-S30RE _____-Y	\$149.22
			3/8 to 3	CP-S30RE _____-Y	\$119.17
	Hex	Smooth	1/4 to 5/16	CP-S30HM _____-Y	\$172.58
			3/8 to 2-9/16	CP-S30HM _____-Y	\$132.75
		Serrated	1/4 to 5/16	CP-S30HE _____-Y	\$197.58
			3/8 to 2-9/16	CP-S30HE _____-Y	\$157.75
	Square	Smooth	1/4 to 5/16	CP-S30SM _____-Y	\$172.58
			3/8 to 2-1/16	CP-S30SM _____-Y	\$132.75
		Serrated	1/4 to 5/16	CP-S30SE _____-Y	\$197.58
3/8 to 2-1/16			CP-S30SE _____-Y	\$157.75	
S35	Soft Emergency			CP-S35BLANK-U	\$104.42
	Round	Smooth	1/4 to 5/16	CP-S35RM _____-Y	\$152.91
			3/8 to 3-1/2	CP-S35RM _____-Y	\$117.63
		Serrated	1/4 to 5/16	CP-S35RE _____-Y	\$169.58
			3/8 to 3-1/2	CP-S35RE _____-Y	\$134.29
	Hex	Smooth	1/4 to 5/16	CP-S35HM _____-Y	\$170.41
			3/8 to 2-15/16	CP-S35HM _____-Y	\$131.08
		Serrated	1/4 to 5/16	CP-S35HE _____-Y	\$195.41
			3/8 to 2-15/16	CP-S35HE _____-Y	\$156.08
	Square	Smooth	1/4 to 5/16	CP-S35SM _____-Y	\$170.41
			3/8 to 2-7/16	CP-S35SM _____-Y	\$131.08
		Serrated	1/4 to 5/16	CP-S35SE _____-Y	\$195.41
3/8 to 2-7/16			CP-S35SE _____-Y	\$156.08	
S40	Soft Emergency			CP-S40BLANK-U	\$318.28
	Round	Smooth	1/4 to 5/16	CP-S40RM _____-Y	\$415.08
			3/8 to 4	CP-S40RM _____-Y	\$319.29
		Serrated	1/4 to 5/16	CP-S40RE _____-Y	\$431.75
			3/8 to 3-15/16	CP-S40RE _____-Y	\$335.96
	Hex	Smooth	1/4 to 5/16	CP-S40HM _____-Y	\$454.40
			3/8 to 3-7/16	CP-S40HM _____-Y	\$349.54
		Serrated	1/4 to 5/16	CP-S40HE _____-Y	\$479.40
			3/8 to 3-7/16	CP-S40HE _____-Y	\$374.54
	Square	Smooth	1/4 to 5/16	CP-S40SM _____-Y	\$454.50
			3/8 to 2-13/16	CP-S40SM _____-Y	\$349.54
		Serrated	1/4 to 5/16	CP-S40SE _____-Y	\$479.40
3/8 to 2-13/16			CP-S40SE _____-Y	\$374.54	

Call Us Today For All Of Your Machine Tool Needs!

EMERGENCY SOFT PRE-BORED COLLET PADS



- Pre-bored to save time
- Sold by the set
- Additional collet pad pre-bored sizes and styles available- please call for more information
- Made in USA



Collet Pad Series	Prebored To:	Part Number	Price Each
WS4	0.950	CP-WS4BL10000-U	\$55.00
WS4	1.450	CP-WS4BL15000-U	\$55.00
WS5	0.950	CP-WS5BL10000-U	\$62.00
S30	0.450	CP-S30BL05000-U	\$123.00
S30	0.950	CP-S30BL10000-U	\$123.00
S30	1.450	CP-S30BL15000-U	\$123.00
S30	1.950	CP-S30BL20000-U	\$123.00
S30	2.450	CP-S30BL25000-U	\$123.00

CLAMP SCREWS FOR "S" STYLE COLLET PADS



- Assembly includes 1 clamp and 1 screw
- Sold by each
- Made in USA



For Collet Pad Series	Part Number	Price Each
S12, S15, S16, S20 & S26	CP-SCLMPSCRW1-S	\$11.00
S22, S30, S35, S40 & S50	CP-SCLMPSCRW2-S	\$11.00

PART NUMBER SUFFIX CHART

For Collet Pads



Use the table to customize your part number. For example, a #3 W & S collet pad, round shape, serrated inside surface with a 1/4" ID, the part number would be:

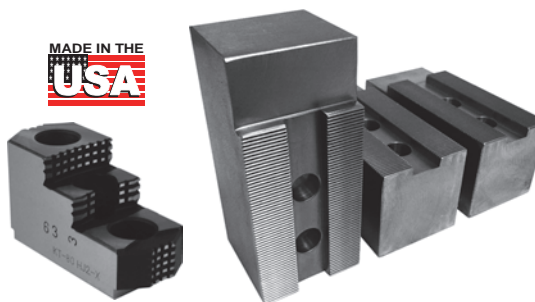
CP-WS3RE02500

Frac.	Dec.	Part No. Suffix	Frac.	Dec.	Part No. Suffix	Frac.	Dec.	Part No. Suffix	Frac.	Dec.	Part No. Suffix
1/4	0.2500	02500	1-3/16	1.1875	11875	2-1/8	2.1250	21250	3-1/16	3.0625	30625
5/16	0.3125	03125	1-1/4	1.2500	12500	2-3/16	2.1875	21875	3-1/8	3.1250	31250
3/8	0.3750	03750	1-5/16	1.3125	13125	2-1/4	2.2500	22500	3-3/16	3.1875	31875
7/16	0.4375	04375	1-3/8	1.3750	13750	2-5/16	2.3125	23125	3-1/4	3.2500	32500
1/2	0.5000	05000	1-7/16	1.4375	14375	2-3/8	2.3750	23750	3-5/16	3.3125	33125
9/16	0.5625	05625	1-1/2	1.5000	15000	2-7/16	2.4375	24375	3-3/8	3.3750	33750
5/8	0.6250	06250	1-9/16	1.5625	15625	2-1/2	2.5000	25000	3-7/16	3.4375	34375
11/16	0.6875	06875	1-5/8	1.6250	16250	2-9/16	2.5625	25625	3-1/2	3.5000	35000
3/4	0.7500	07500	1-11/16	1.6875	16875	2-5/8	2.6250	26250	3-9/16	3.5625	35625
13/16	0.8125	08125	1-3/4	1.7500	17500	2-11/16	2.6875	26875	3-5/8	3.6250	36250
7/8	0.8750	08750	1-13/16	1.8125	18125	2-3/4	2.7500	27500	3-11/16	3.6875	36875
15/16	0.9375	09375	1-7/8	1.8750	18750	2-13/16	2.8125	28125	3-3/4	3.7500	37500
1	1.0000	10000	1-15/16	1.9375	19375	2-7/8	2.8750	28750	3-13/16	3.8125	38125
1-1/16	1.0625	10625	2	2.0000	20000	2-15/16	2.9375	29375	3-7/8	3.8750	38750
1-1/8	1.1250	11250	2-1/16	2.0625	20625	3	3.0000	30000	3-15/16	3.9375	39375

SPECIAL ORDER JAWS AVAILABLE!



- Super Quick Turnaround Time- 5 Days Or Less In Most Cases!
- **Special Order Round Jaws Up To 32" dia!**
- Special Order Soft Jaws Up To 8" Height!
- Soft Jaws Available In Any Length-Steel Or Aluminum
- Tongue And Groove, Square Serrated & Acme Serrated Jaws Up To 8" Height!
- Made Per Your Special Specifications In The USA! Please See Our Special Order Forms On Pages 635-640.



Special Order Chuck Jaws Available! Please Call Today For A Quote!

POWER CHUCK LUBRICANT

LOWER FRICTION & INCREASE GRIPPING FORCE!

CHUCK-EEZ

B



CHUCK-EEZ® ensures long chuck life, machine accuracy and operator safety. Formulated with a high percentage of molybdenum disulfide to reduce seizing, galling, fretting wear and lower friction under conditions of extreme pressure. Rust and oxidation inhibitors incorporated to maximize complete rust protection. Able to withstand pressures up to 500,000 pounds per square inch!

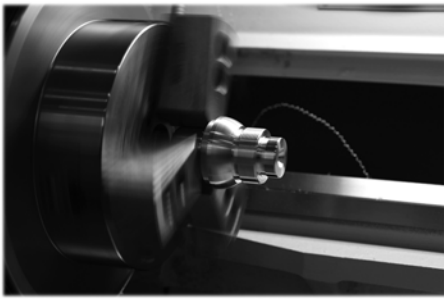
- Double to triple clamping pressure
- Keeps work piece clamped in place
- Provides boundary lubrication protection
- Lowers friction and wear
- Assists in wear-in of new chucks
- Lowers maintenance costs
- High resistance to centrifuge force
- Greasing chuck once per shift is recommended
- **QUANTITY DISCOUNTS!**



Container Size	Case Qty	Part Number	Price Each
4 Oz Cartridge	24	EZ-21471	\$5.86
4 Oz Cartridge w/ grease gun	1	EZ-OKIT-21471	\$31.93
16 Oz Cartridge	12	EZ-21478	\$17.93
10 Lb Pail	1	EZ-21444	\$146.98
40 Lb Pail	1	EZ-21445	\$561.04
135 Lb Keg	1	EZ-21446	\$1,848.83
450 Lb Drum	1	EZ-21448	\$5,894.85

Call Us Or Visit Our Website For Our Complete Selection!

LATHE WORKHOLDING



IN THIS SECTION:

CNC Lathe Chucks.....66-72
 Hydraulic Cylinders.....73
 Manual/Scroll Chucks.....74-86
 Collet Chucks.....87-92
 Live & Dead Centers.....93-101
 Bar Pullers.....102-105
 3J/16C/5C Collets.....106-109
 ID Workholding.....110-113
 Lathe Bushings.....114-118

N-200A SERIES CHUCKS-3 JAW 1.5mm x 60° Serrations Power Chucks With Adaptor Plate



- **STRONG® N-200 Series Chucks Are Interchangeable with Kitagawa® B-200 Series Chucks**
- Over 30 years of innovative manufacturing experience
- ISO 9002 and MCS certification
- Rigid inspection process to ensure finished product quality
- 2, 3 & 4 jaw and Extra Large Bore chucks
- OEM on Victor, Okuma, & Leadwell and many other turning centers
- Higher gripping force and larger bore compared to standard chucks
- **STRONG®** Hydraulic cylinders, master jaws, chip covers, wedge plungers, threaded drawnuts, chuck wrenches and adapter plates are available and interchange with Kitagawa® B-200 Series chucks

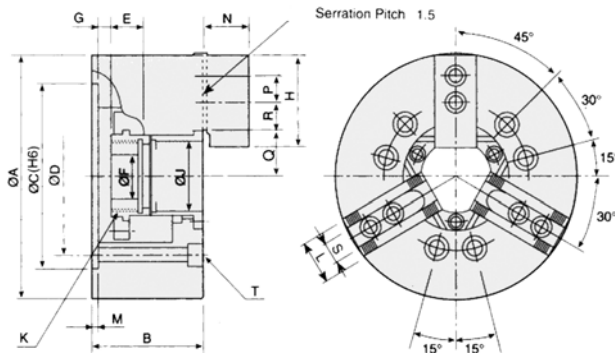
FEATURES:

- Approx. 20% higher speed, higher gripping force and larger bore compared with usual chucks
- Model N-200A chucks are assembled with adapter for ASA B5.9 type A spindles
- Model N-200A chucks are manufactured from high grade alloy steel
- All sliding surfaces are hardened and ground for accuracy and repeatability
- Chucks include all mounting hardware
- Additional charge for threaded drawnut

Strong N Series Chucks Are Interchangeable With Kitagawa® B200 Series Chucks!

Chucks Includes:
 1.5mm x 60° Master Jaws
 Blank Drawnut • Soft Top Jaws
 T-Nuts • Mounting Bolts • Wrench

Chuck Size	Chuck Model	Chuck Dia.	Thru-hole Dia.	Mount	Part Number	Price Each	Chuck Cross Reference
5"	N205	5.315"	1.299"	Flatback	K-205-N-B	\$1,592.00	B-205, HS-05
				A2-4	K-205A04-N-B	\$1,752.00	
				A2-5	K-205A05-N-B	\$1,752.00	
6"	N206	6.654"	1.772"	Flatback	K-206-N-B	\$1,592.00	B206, ATL6, HS-06
				A2-4	K-206A04-N-B	\$1,781.00	
				A2-5	K-206A05-N-B	\$1,781.00	
8"	N208	8.268"	2.047"	Flatback	K-208-N-B	\$1,905.00	B208, ATL8, HS-08
				A2-5	K-208A05-N-B	\$2,040.00	
				A2-6	K-208A06-N-B	\$2,040.00	
10"	N210	10.000"	2.953"	Flatback	K-210-N-B	\$2,387.00	B210, ATL10, HS-10
				A2-6	K-210A06-N-B	\$2,678.00	
				A2-8	K-210A08-N-B	\$2,678.00	
12"	N212	11.969"	3.585"	A2-6	K-212A06-N-B	\$3,600.00	B212, ATL12, HS-12
				A2-8	K-212A08-N-B	\$3,600.00	
15"	N215	15.000"	4.626"	A2-8	K-215A08-N-B	\$4,839.00	B15
				A2-11	K-215A11-N-B	\$4,839.00	
18"	N218	17.717"	4.626"	A2-8	K-218A08-N-B	\$7,012.00	B18
				A2-11	K-218A11-N-B	\$7,012.00	



Full Line Available!
Please call for more information

Specifications	N205	N206	N208	N210	N212	N215	N218
Through-Hole (mm)	Ø33	Ø45	Ø52	Ø75	Ø91	Ø117.5	Ø117.5
Plunger Stroke (mm)	10	12	16	19	23	23	23
Jaw Stroke (mm)	5.4	5.5	7.4	8.8	10.6	10.6	10.6
Max. Draw Bar Pull Force (kgf)	1700	2200	3400	4300	5500	7240	7240
Max. Gripping Force (kgf)	3600	5700	8800	11000	14300	18355	18355
kgf/cm2	29.6	28.5	26.5	27.5	27.5	23.5	23.5
Max. Speed (r.p.m.)	7000	6000	4900	4200	3300	2500	2000

*Kitagawa is a registered trademark of Kitagawa NorthTech

Call Us Today For All Of Your Machine Tool Needs!

NB-200 SERIES 3 JAW EXTRA LARGE BORE CHUCKS



1.5mm x 60° Serrations Power Chucks

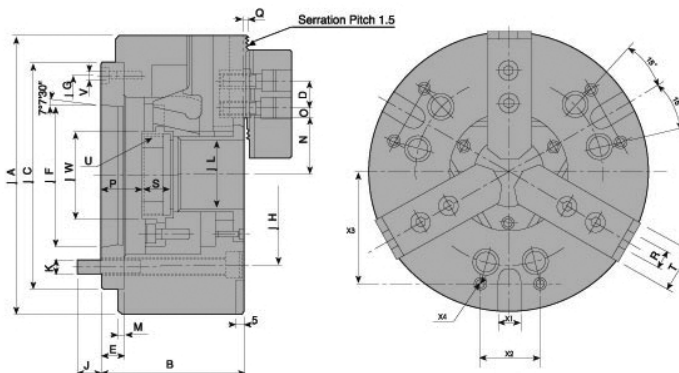


Chucks Includes:
 1.5mm x 60° Master Jaws
 Blank Drawnut • Soft Top Jaws
 T-Nuts • Mounting Bolts • Wrench

Chuck Size	Chuck Model	Chuck Dia.	Thru-hole Dia.	Mount	Part Number	Price Each	Chuck Cross Reference
6"	NB-206	6.654"	2.047"	A2-5	K-206A05-NB-B	\$2,060.00	BB206, MH-206
8"	NB-208	8.268"	2.598"	A2-6	K-208A06-NB-B	\$2,542.00	BB208, MH-208
10"	NB-210	10.000"	3.070"	A2-8	K-210A08-NB-B	\$2,918.00	BB210, MH-210
12"	NB-212	11.969"	4.803"	A2-8	K-212A08-NB-B	\$4,220.00	BB212, MH-212

FEATURES:

- Extra large bore
- Higher speed, gripping force and larger bore compared to other chucks
- Includes adapter plate
- Manufactured from high grade alloy steel
- All sliding surfaces are hardened and ground for accuracy and repeatability
- Chucks include all mounting hardware
- Additional charge for threaded drawnut



Model	Thru-hole (mm)	Plunger Stroke (mm)	Jaw Stroke (mm)	Max. Draw Bar Pull (kgf)	Max Gripping Force (kgf)	Max. Operating Pressure (kgf/cm ²)	Max Speed (RPM)	Matching Cylinder	A	B	C	D	E	J	L	M
NB-206A05	52	12	5.4	2200	5700	18.4	6000	M1552	170	97	140	20	22	16	52	5
NB-208A06	66	16	7.4	3500	8973	20.5	4600	M1868	210	103	170	25	17	19.5	66	5
NB-210A08	78	19	8.8	4300	11000	27.5	4200	M1878	254	113	220	30	18	24	78	5
NB-212A11	122	23	10.6	5800	15000	20.5	3200	M2511	315	134	300	30	22	28	122	5

VA-200 SERIES 3 JAW CLOSED CENTER CHUCKS



1.5mm x 60° Serrations Power Chucks



Full Line Available!
 Please call for more information.

Chuck Size	Chuck Model	Chuck Dia.	Mount	Part Number	Price Each	Chuck Cross Reference
6"	V206	6.654"	Flatback	K-206-V-B	\$1,128.60	N06, HC-06
			A2-4	K-206A05-V-B	\$1,326.60	
			A2-5	K-206A06-V-B	\$1,326.60	
8"	V208	8.268"	Flatback	K-208-V-B	\$1,480.05	N08, HC-08
			A2-5	K-208A05-V-B	\$1,727.55	
			A2-6	K-208A06-V-B	\$1,727.55	
10"	V210	10.000"	Flatback	K-210A-V-B	\$1,866.15	N10, HC-10
			A2-6	K-210A06-V-B	\$2,217.60	
			A2-8	K-210A08-V-B	\$2,217.60	
12"	V212	11.969"	A2-6	K-212A06-V-B	\$3,088.80	HC-12
			A2-8	K-212A08-V-B	\$3,088.80	
15"	V215	15.000"	A2-8	K-215A08-V-B	\$6,534.00	
			A2-11	K-215A11-V-B	\$5,671.00	

Model	Jaw Stroke (mm)	Plunger Stroke (mm)	Max. Pull Force (kgf)	Max. Gripping Force (kgf)	Max. Oper. Pressure (kgf/cm ²)	Max. Speed	Weight (kg)	Moment of Inertia (kg?m ²)	Matching Cylinder	Gripping O.D. Range (mm)
V-206	9.2	20	1835	5353	26.5	5200	12	0.045	MS105C	Ø18-Ø165
V-208	9.7	21	2549	7648	25.5	4500	23	0.137	MS125C	Ø26-Ø210
V-210	8.8	25	2957	11013	28.6	4000	34.5	0.3	MS125C	Ø26-Ø254
V-212	10.5	30	4181	15907	27.5	3300	59.5	0.725	MS150C	Ø26-Ø304
V-215	16	35	8362	25391	32.6	3000	101	1.8	MS200C	Ø68-Ø381
V-218	16	35	8362	25391	32.6	2700	116	2.9	MS200C	Ø130-Ø450
V-221	16	35	8362	27838	32.6	1940	181	6.2	MS200C	Ø65-Ø530
V-224	16	35	8362	27838	32.6	1760	216	7	MS200C	Ø152-Ø610
V-232	18.6	35	8362	27838	32.6	600	365	27.3	MS200C	Ø100-Ø810

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
 LIVE CENTERS
 VISE ACCESSORIES
 VISE JAWS
 STRAIGHT SHANK COLLET HOLDERS
 TAP HOLDERS
 DRILL CHUCKS
 CARBIDE INSERTS
 THREADING/GROOVING
 CUTTING TOOLS
 MACHINERY
 PRECISION TOOLS
 DEBURRING
 COOLANT/FLUIDS
 TOOL STORAGE

POWER CHUCKS



NT-200 SERIES CHUCKS-2 JAW 1.5mm x 60° Serrations Power Chucks



Chuck Size	Chuck Model	Chuck Dia.	Thru-hole Dia.	Mount	Part Number	Price Each
5"	NT205	5.315"	1.299"	A2-4	K-T205A04-NT-B	\$2,024.00
				A2-5	K-T205A05-NT-B	
6"	NT206	6.654"	1.772"	A2-4	K-T206A04-NT-B	\$2,060.00
				A2-5	K-T206A05-NT-B	
8"	NT208	8.268"	2.047"	A2-5	K-T208A05-NT-B	\$2,478.00
				A2-6	K-T208A06-NT-B	
10"	NT210	10.000"	2.953"	A2-6	K-T210A06-NT-B	\$3,042.00
				A2-8	K-T210A08-NT-B	
12"	NT212	11.969"	3.585"	A2-6	K-T212A06-NT-B	\$3,774.00
				A2-8	K-T212A08-NT-B	

Full Line Available!
Please call for more information.

Chucks Includes:
1.5mm x 60° Master Jaws
Blank Drawnut • Soft Top Jaws
T-Nuts • Mounting Bolts • Wrench

Model	Thru-hole (mm)	Plunger Stroke (mm)	Jaw Stroke (mm)	Max. Draw Bar Pull (kgf)	Max Gripping Force (kgf)	Max. Operating Pressure (kgf/cm)	Max Speed (RPM)	Matching Cylinder
NT-205	33	10	5.4	1189	2447	19.5	7000	M1036
NT-206	45	12	5.5	1495	3875	18.9	6000	M1246
NT-208	52	16	7.4	2366	5975	18.4	5000	M1552
NT-210	75	19	8.8	2927	7546	18.4	4200	M1875
NT-212	91	23	10.6	3875	9789	18.4	3300	M2091

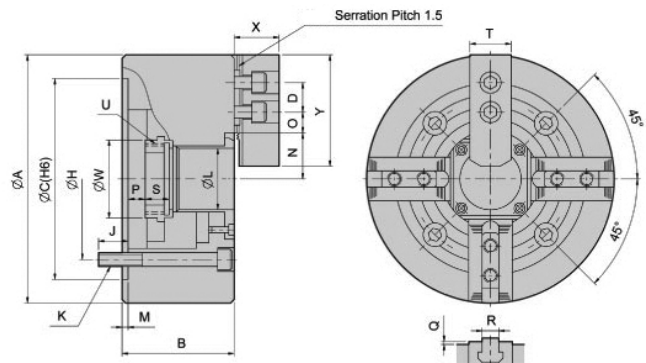
NIT-200 SERIES CHUCKS-4 JAW 1.5mm x 60° Serrations Power Chucks



Chucks Includes:
1.5mm x 60° Master Jaws
Blank Drawnut • Soft Top Jaws
T-Nuts • Mounting Bolts • Wrench

Full Line Available!
Please call for more information.

Chuck Size	Chuck Model	Chuck Dia.	Thru-hole Dia.	Mount	Part Number	Price Each
6"	NIT206	6.653"	1.772"	A2-5	K-F206A5-NIT-B	\$2,397.00
				A2-6	K-F206A06-NIT-B	
8"	NIT208	8.268"	2.047"	A2-5	K-F208A05-NIT-B	\$3,187.00
				A2-6	K-F208A06-NIT-B	
10"	NIT210	10.000"	2.953"	A2-6	K-F210A06-NIT-B	\$3,624.00
				A2-8	K-F210A08-NIT-B	
12"	NIT212	11.969"	3.585"	A2-6	K-F212A06-NIT-B	\$4,426.00
				A2-8	K-F212A08-NIT-B	



Model	Thru-hole (mm)	Plunger Stroke (mm)	Jaw Stroke (mm)	Max. Draw Bar Pull (kgf)	Max Gripping Force (kgf)	Max. Operating Pressure (kgf/cm)	Max Speed (RPM)	Matching Cylinder
NIT-206	45	12	5.5	2243	5812	28.5	4500	M1246
NIT-208	52	16	7.4	3558	9075	26.5	3600	M1552
NIT-210	75	19	8.8	4385	11319	27.5	3200	M1875
NIT-212	91	23	10.6	5812	14990	27.5	2700	M2091

Model	A	B	C (H6)	D	H	J	K	L	M	N max.	O max.	O min.	P max.	P min.	Q	R	S	T	U max.	W	X	Y
NIT-206	169	81	140	20	104.78	16	4-M10x80	45	5	32	22.75	9.25	11	-1	2	12	19	31	M55X2	60	37	73
NIT-208	210	91	170	25	133.35	20	4-M12x90	52	5	38.7	29.75	14.75	14.5	-1	2	14	20.5	35	M60X2	66	38	95
NIT-210	254	100	220	30	171.45	22	4-M16x100	75	6	51	33.75	14.25	8.5	-10.5	2	16	25	40	M85X2	94	43	110
NIT-212	304	110	220	30	171.45	23	4-M16x110	91	6	61.3	45.75	15.75	8	-15	2	21	28	50	M100X2	108	51	130
NIT-215	381	133	300	43	235	35	4-M20x135	117.5	6	82	45.25	16.75	7	-16	5	22	43	62	M130X2	139	66	165

Call Us Today For All Of Your Machine Tool Needs!

SAMCHULLY HS SERIES

Standard 3-Jaw High Speed Open Center Chucks



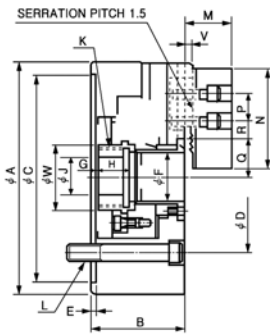
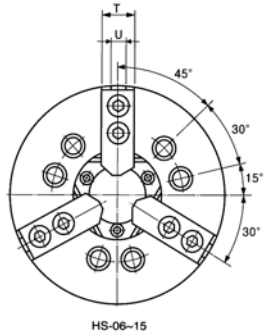
Known worldwide for excellent quality, **Samchully** produces power chucks, hydraulic cylinders and scroll chucks. Samchully Machinery Co., Ltd. has achieved and maintains its' ISO 9001, and CE Mark certifications. Power chucks and hydraulic cylinders for CNC lathes manufactured by Samchully are standard equipment in products made by **Hyundai-KIA** and **Doosan** (Korea's top machine tools manufacturers). Samchully is also a major supplier of chuck systems to **HAAS Automation, Inc.**

- **Samchully HS** series chucks are interchangeable with Kitagawa® B200 series chucks
- **Samchully HCH** series chucks are interchangeable with Kitagawa® B series chucks
- **Samchully MH** and Kitagawa® BB (Large Bore) series share the same specifications
- **Samchully HT** series chucks are interchangeable with Kitagawa® BT series chucks

FEATURES:

- 3-jaw, wedge-type chuck with large bore
- Powerful gripping force and high turning speed
- Manufactured from high grade alloy steel
- All sliding surfaces are hardened and ground for accuracy and repeatability
- 2 & 4 jaw and Mega Bore chucks also available
- Large variety of replacement parts in stock

Chuck Size	Chuck Model	Thru-hole Dia	Mount	Part Number	Price	Chuck Cross Reference
5"	HS-05	1.290" (33mm)	Flatback	K-205-HS-H	CALL	B-205, N205 HS-05
			A2-5	K-205A5-HS-H	CALL	
6"	HS-06	1.77" (46mm)	Flatback	K-206-HS-H	CALL	B206, N206 ATL6, HS-06
			A2-5	K-206A05-HS-H	CALL	
8"	HS-08	2.047" (52mm)	Flatback	K-208-HS-H	CALL	B208, N208 ATL8, HS-08
			A2-6	K-208A06-HS-H	CALL	
10"	HS-10	2.952" (77mm)	Flatback	K-210-HS-H	CALL	B210, N210 ATL10, HS-10
			A2-6	K-210A06-HS-H	CALL	
			A2-8	K-210A08-HS-H	CALL	
12"	HS-12	3.583" (91mm)	Flatback	K-212-HS-H	CALL	B212, N212 ATL12, HS-12
			A2-6	K-212A06-HS-H	CALL	
			A2-8	K-212A08-HS-H	CALL	



Model	A	B	C (H6)	D	E	F	G max.	G min.	H	J	K max.
HS-05	135	60	110	82.6	4	33	1	-9	20	12	M40X1.5
HS-06	169	81	140	104.8	5	46	11	-1	19	20	M55X2.0
HS-08	210	91	170	133.4	5	52	14.5	-1.5	20.5	30	M60X2.0
HS-10	254	100	220	171.4	5	77	8.5	-10.5	25	45	M85X2.0
HS-12	304	110	220	171.4	6	91	8	-15	28	50	M100X2.0

Model	L	M	N	P	O max.	Q min.	R max.	R min.	T	U	V	W
HS-05	3-M10X60	26	54	14	26.5	23.8	19.75	7.75	23	10	2	45
HS-06	6-M10X95	29	72	20	32	29.25	22.75	9.25	31	12	2	60
HS-08	6-M12X105	39	95	25	38.7	35	29.75	14.75	35	14	2	66
HS-10	6-M16X120	43	110	30	51	46.6	33.75	14.25	40	16	2	94
HS-12	6-M16X130	51	111	30	61.3	56	45.75	15.75	49	21	2	108

SAMCHULLY HCH SERIES

Standard 3-Jaw, Wedge-Type Open Center Chucks



- 3-jaw, wedge-type chuck with large bore
- Powerful gripping force and high turning speed
- Manufactured from high grade alloy steel
- All sliding surfaces are hardened and ground for accuracy and repeatability
- 2 & 4 jaw and Mega Bore chucks also available
- Large variety of replacement parts in stock

Chuck Size	Chuck Model	Thru-hole Dia	Mount	Part Number	Price	Chuck Cross Reference
6"	HCH-06	1.300 33mm	Flatback	K-06-HCH-H	CALL	B-06
			A2-5	K-06A05-HCH-H	CALL	
8"	HCH-08	1.811 46mm	Flatback	K-08-HCH-H	CALL	B-08
			A2-6	K-08A06-HCH-H	CALL	
10"	HCH-10	2.559 65mm	Flatback	K-10-HCH-H	CALL	B-10
			A2-6	K-10A06-HCH-H	CALL	
12"	HCH-12	3.070 78mm	Flatback	K-12-HCH-H	CALL	B-12
			A2-8	K-12A08-HCH-H	CALL	
15"	HCH-15	4.626 117.5mm	Flatback	K-15-HCH-H	CALL	B-15
			A2-11	K-15A11-HCH-H	CALL	
18"	HCH-18	4.626 117.5mm	Flatback	K-18-HCH-H	CALL	B-18
			A2-11	K-18A11-HCH-H	CALL	
21"	HCH-21	5.511 140mm	Flatback	K-21-HCH-H	CALL	B-21
			A2-11	K-21A11-HCH-H	CALL	
24"	HCH-24	6.496 165mm	Flatback	K-24-HCH-H	CALL	B-24
			A2-15	K-24A11-HCH-H	CALL	
32"	HCH-32	9.448 240mm	Flatback	K-32-HCH-H	CALL	-
			A2-15	K-32A15-HCH-H	CALL	

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

POWER CHUCKS

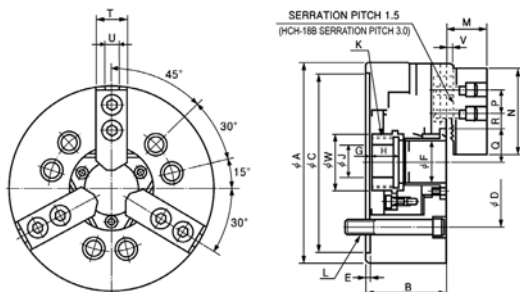
SAMCHULLY MH SERIES

Mega Bore 3-Jaw High Speed Open Center Chucks



Chuck Size	Chuck Model	Thru-hole Dia	Mount	Part Number	Price	Chuck Cross Reference
6"	MH-206	2.047 52mm	Flatback	K-206-MH-H	CALL	BB-206
			A2-5	K-206A05-MH-H	CALL	
			A2-6	K-206A06-MH-H	CALL	
8"	MH-208	2.598 66mm	Flatback	K-208-MH-H	CALL	BB-208
			A2-5	K-208A05-MH-H	CALL	
			A2-6	K-208A06-MH-H	CALL	
10"	MH-210	3.228 82mm	Flatback	K-210-MH-H	CALL	BB-210
			A2-6	K-210A06-MH-H	CALL	
			A2-8	K-210A08-MH-H	CALL	
12"	MH-212	4.055 103mm	Flatback	K-212-MH-H	CALL	BB-212
			A2-8	K-212A08-MH-H	CALL	

- 3-jaw, wedge-type, large bore, open center chuck
- Powerful gripping force and high turning speed
- Manufactured from high grade alloy steel
- All sliding surfaces are hardened and ground for accuracy and repeatability



MODEL	A	B	C(H6)	D	E	F	G max	G min	H	J	K max
HH-206	175	81	140	104.8	5	56	14	-1	17.5	20	M60X2.0
HH-208	210	91	170	133.4	5	66	7.5	-10	27	30	M75X2.0
HH-210	254	100	220	171.4	5	82	8.5	-11	25	52	M90X2.0
HH-212	315	110	300	235	6	103	8	-15	28	66	M112X2.0

MODEL	L	M	N	P	Q max	Q min	R max	R min	T	U	V	W
HH-206	3-M10X95	33	72	20	38	34.8	21.75	10.25	31	12	2	65
HH-208	6-M12X115	39	95	25	45.7	42	23.75	11.75	35	14	2	80
HH-210	6-M16X120	43	110	30	54.5	50.1	32.25	14.25	40	16	2	101
HH-212	6-M20X130	51	111	30	67.3	62	45.75	15.75	49	21	2	124

SAMCHULLY HST SERIES

Standard 2-Jaw High Speed Open Center Chucks



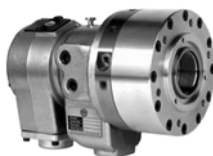
Chuck Size	Chuck Model	Thru-hole Dia	Mount	Part Number	Price	Chuck Cross Reference
6"	HST-06	46mm	Flatback	K-T206-HST-H	CALL	BT-206, NT206, HST06
			A2-5	K-T206A05-HST-H	CALL	
8"	HST-08	52mm	Flatback	K-T208-HST-H	CALL	BT-208, NT208, HST08
			A2-8	K-T208A08-HST-H	CALL	
10"	HST-10	77mm	Flatback	K-T210-HST-H	CALL	BT-210, NT210, HST-10
			A2-6	K-T210A06-HST-H	CALL	
12"	HST-12	91mm	Flatback	K-T212-HST-H	CALL	BT-212, NT212, HST12
			A2-8	K-T212-A08-HST-H	CALL	

- 2-jaw, wedge-type open center chuck
- Powerful gripping force and super-high turning speed
- Manufactured from high grade alloy steel
- All sliding surfaces are hardened and ground for accuracy and repeatability



COMPLETE WORKHOLDING SOLUTIONS!

- Open and closed center chucks
- Extra large thru-hole chucks
- Draw down chucks
- Swing lock chucks
- Adapter plates
- Threaded drawnuts-standard and extended length
- Hydraulic cylinders



PLEASE CALL FOR MORE INFORMATION!

Call Us Today For All Of Your Machine Tool Needs!

B200 SERIES 3-JAW POWER CHUCKS

KITAGAWA

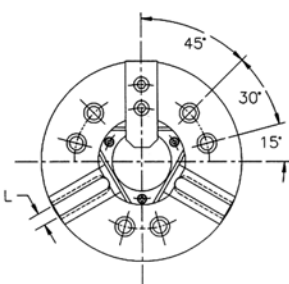
Full Line Available!
Please call for more information.

Kitagawa® power chucks deliver up to 20% more speed, gripping force and bore size when compared to conventional chucks. The B200 Series delivers consistent accuracy and repetitive chucking. B200 and BT200 Series Chucks are manufactured from high grade alloy steel. All sliding surfaces are hardened and ground to assure consistent accuracy and performance.



Chuck Size	Chuck Model	Thru-hole Dia	Mount	Part Number	Price	Chuck Cross Reference
4"	B-204	1.023" (26mm)	Flatback	K-204-B-K	PLEASE CALL FOR CURRENT PRICING	-
5"	B-205	1.290" (33mm)	Flatback	K-205-B-K		N205 HS-05
6"	B-206	1.771" (45mm)	Flatback	K-206-B-K		N206 ATL6, HS-06
8"	B-208	2.047" (52mm)	Flatback	K-208-B-K		N208 ATL8, HS-08
10"	B-210	2.952" (75mm)	Flatback	K-210-B-K		N210 ATL10, HS-10
12"	B-212	3.583" (91mm)	Flatback	K-212-B-K		N212 ATL12, HS-12

*Adapter Plates Sold Separately



Model	B204	B205	B206	B208	B210	B210	B212
Spindle Nose	3.346	4.331	A2-5	A2-6	A2-6	A2-8	A2-6
Thru - Hole	in 1.024	1.299	1.772	2.047	2.953	2.953	3.583
Jaw Stroke (dia)	in 0.213	0.213	0.217	0.291	0.346	0.346	0.417
Plunger Stroke	in 0.394	0.394	0.472	0.63	0.748	0.748	0.906
Max Draw Bar Pull Force	lbs 3142	3590	4846	7808	9471	9471	12115
Max Gripping Force	lbs 6393	8076	12555	19292	24449	24449	31718
Max Speed	rpm 8000	7000	6000	5000	4200	4200	3300
Net Weight	lbs 8.8	14.7	27.1	48.5	81.1	75.1	122.9
Accuracy - T.I.R.	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008
Matching Cylinder	S1036	S1036	S1246	S1552	S1875	S1875	S2091

BB-200 SERIES SUPER LARGE BORE 3 JAW POWER CHUCKS

KITAGAWA



Chuck Size	Chuck Model	Chuck Dia.	Thru-hole Dia.	Mount	Part Number	Price Each
6"	BB206	6.693"	2.087" (53mm)	Flatback	K-206-BB-K	PLEASE CALL FOR CURRENT PRICING
8"	BB208	8.268"	2.598" (66mm)	Flatback	K-208-BB-K	
10"	BB210	10.000"	3.189" (81mm)	Flatback	K-210-BB-K	
12"	BB212	12.402"	4.173" (106mm)	Flatback	K-212-BB-K	

*Adapter Plates Sold Separately

BT-200 SERIES 2-JAW POWER CHUCKS

KITAGAWA



Chuck Size	Chuck Model	Chuck Dia.	Thru-hole Dia.	Mount	Part Number	Price Each
4"	BT204	4.331"	1.024"	Flatback	K-T204-BT-K	PLEASE CALL FOR CURRENT PRICING
5"	BT205	5.315"	1.299"	Flatback	K-T204-BT-K	
6"	BT206	6.654"	1.772" (45mm)	Flatback	K-T206-BT-K	
8"	BT208	8.268"	2.047" (52mm)	Flatback	K-T208-BT-K	
10"	BT210	10.000"	2.953" (75mm)	Flatback	K-T210-BT-K	
12"	BT212	11.969"	3.583" (91mm)	Flatback	K-T212-BT-K	

*Adapter Plates Sold Separately

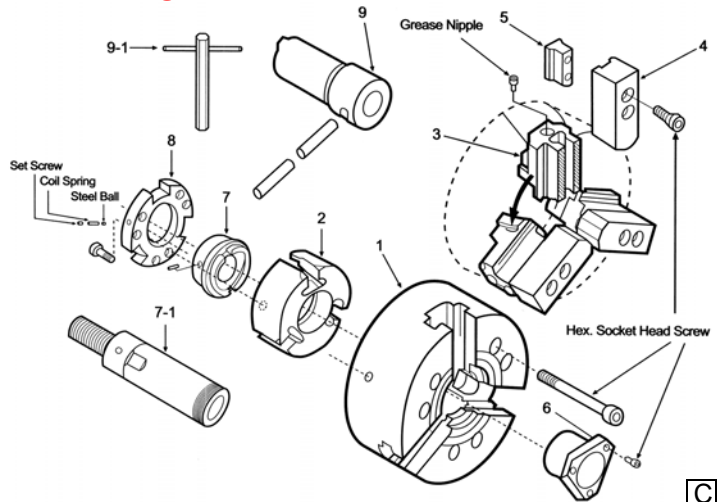
Call Us Or Visit Our Website For Our Complete Selection!

POWER CHUCK ACCESSORIES

CHUCK ACCESSORIES AND REPLACEMENT PARTS

STRONG® replacement parts and accessories are interchangeable with Kitagawa® B200 series chucks. Samchully replacement parts also available.

1. Chuck body
2. Wedge plunger
3. Master jaws
4. Soft top jaws
5. T-nuts
6. Chip cover
7. Drawnut
- 7-1. Drawtube
8. Plunger nut
- 9/9-1 Chuck wrench w/ handle



Strong KITAGAWA

For Kitagawa® and Strong® Power Chucks

Kitagawa® or Strong Chuck Model	Strong N204 *For Strong Chucks Only*		Strong N205 *For Strong Chucks Only*		Kitagawa® B206 Strong N206		Kitagawa® B208 Strong N208	
Item	Part Number	Price Each	Part Number	Price Each	Part Number	Price Each	Part Number	Price Each
Wedge Plunger (2)	K-WP204-N-B	\$256.80	K-WP205-N-B	\$256.80	K-WP206-N-B	\$285.00	K-WP208-N-B	\$342.00
Blank Drawnut (7)	K-D204BLN-B	\$75.00	K-D205BLN-B	\$75.00	K-D206BLN-B	\$85.00	K-D208BLN-B	\$100.00
Master Jaws Set (3)	K-MJ204-N-B	\$851.00	K-MJ205-N-B	\$851.00	K-MJ206-N-B	\$904.00	K-MJ208-N-B	\$1,017.00
Plunger Nut (8)	K-PN204-N-B	\$188.10	K-PN205-N-B	\$188.10	K-PN206-N-B	\$128.00	K-PN208-N-B	\$257.00
Chip Cover (6)	K-CP204-N-B	\$132.00	K-CP205-N-B	\$132.00	K-CP206-N-B	\$100.00	K-CP208-N-B	\$120.00
Chuck Wrench (9)	K-CW204-N-B	\$159.50	K-CW205-N-B	\$155.00	K-CW206-N-B	\$141.00	K-CW208-N-B	\$168.00

Kitagawa® or Strong Chuck Model	Kitagawa® B210 Strong N210		Kitagawa® B212 Strong N212		Kitagawa® B15 Strong N215		Kitagawa® B18 Strong N218	
Item	Part Number	Price Each	Part Number	Price Each	Part Number	Price Each	Part Number	Price Each
Wedge Plunger (2)	K-WP210-N-B	\$375.00	K-WP212-N-B	\$592.00	K-WP215-N-B	\$992.00	K-WP218-N-B	\$992.00
Blank Drawnut (7)	K-D210BLN-B	\$125.00	K-D212BLN-B	\$161.00	K-D215BLN-B	\$161.00	K-D218BLN-B	\$161.00
Master Jaws Set (3)	K-MJ210-N-B	\$1,172.00	K-MJ212-N-B	\$1,493.00	K-MJ215-N-B	\$1,601.00	K-MJ218-N-B	\$2,410.00
Plunger Nut (8)	K-PN210-N-B	\$326.00	K-PN212-N-B	\$262.00	K-PN215-N-B	\$375.00	K-PN218-N-B	\$375.00
Chip Cover (6)	K-CP210-N-B	\$175.00	K-CP212-N-B	\$175.00	K-CP215-N-B	\$375.00	K-CP218-N-B	\$375.00
Chuck Wrench (9)	K-CW210-N-B	\$212.00	K-CW212-N-B	\$191.00	K-CW215-N-B	\$196.00	K-CW218-N-B	\$221.00

SAMCHULLY
MACHINERY CO. LTD.

REPLACEMENT PARTS FOR SAMCHULLY CHUCKS ALSO AVAILABLE-PLEASE CALL!

*Kitagawa is a registered trademark of Kitagawa NorthTech. Samchully is a registered trademark of Samchully Workholding

THREADED DRAWNUTS

Standard generic threaded drawnnuts are available for Strong N200, Samchully HS08 and Kitagawa® B200 Series Chucks. Please note- the thread on your drawnut may be different - **YOU MUST MEASURE THE THREADS ON YOUR MACHINES DRAWNUT BEFORE REPLACING.** Total Drawnut length is 1". Extended length standard threaded drawnnuts are available. Please call for Samchully® threaded and blank drawnnuts. Special threaded drawnnuts also available-please call for a quote.



Additional Thread Sizes Available-In Stock! Please Call for More Information

*Kitagawa is a registered trademark of Kitagawa NorthTech. Samchully is a registered trademark of Samchully Workholding

Chuck Series	Threads on Drawnut	Part Number	Price Each
B205, N205	M40 x 1.5mm	K-D2054015N-B	\$268.00
B206 N206	M42 x 1.5mm	K-D2064215N-B	\$268.00
	M55 x 2.0mm	K-D2065520N-B	\$268.00
B208 N208	M50 x 2.0mm	K-D2085020N-B	\$268.00
	M55 x 2.0mm	K-D2085520N-B	\$268.00
	M60 x 2.0mm	K-D2086020N-B	\$268.00
B210, N210	M55 x 2.0mm	K-D2105520N-B	\$268.00
	M60 x 2.0mm	K-D2106020N-B	\$268.00
	M75 x 2.0mm	K-D2107520N-B	\$268.00
	M85 x 2.0mm	K-D2108520N-B	\$268.00
B212, N212	M75 x 2.0mm	K-D2127520N-B	\$268.00
	M85 x 2.0mm	K-D2128520N-B	\$268.00
	M88 x 2.0mm	K-D2128820N-B	\$268.00
	M100 x 2.0mm	K-D21210020N-B	\$268.00
B15, N215	M100 x 2.0mm	K-D21510020N-B	\$268.00
	M130 x 2.0mm	K-D21513020N-B	\$268.00
B18, N218	M130 x 2.0mm	K-D21813020N-B	\$268.00

Call Us Today For All Of Your Machine Tool Needs!

HYDRAULIC CYLINDERS

ROTARY HYDRAULIC CYLINDERS

Super High Speed Through Hole

Strong large thru-hole, high speed rotary hydraulic cylinders are for use with all thru-hole power chucks with speeds up to 7000RPM. All cylinders come with hydraulic pressure lock system and a built-in check valve.



Strong

F

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

MODEL	Piston Area			Draw Bar Pull Force		Max Op. Pressure	Max RPM	Moment Inertia	Weight	Total Leakage	Part Number	Price	
	Piston Dia	Push Side	Pull side	Piston Stroke	Push Side								Pull Side
M1036	105	71	68.5	15	24.8(2529)	24(2447)	40.8	8000	0.011	8.6	3.0	K-CYM1036-B	\$1,969.00
M1236	125	100	89	15	38(3875)	33(3365)	40.8	7000	0.019	13.0	3.0	K-CYM1236-B	\$2,001.00
M1246	125	100	89	15	38(3875)	33(3365)	40.8	7000	0.019	12.0	3.0	K-CYM1246-B	\$2,001.00
M1546	155	161	150	22	60(6118)	56(5710)	40.8	6200	0.052	18.0	3.9	K-CYM1546-B	\$2,638.00
M1552	155	161	150	22	60(6118)	56(5710)	40.8	6200	0.052	16.8	3.9	K-CYM1552-B	\$2,638.00
M1868	180	198	183	25	75(7546)	69(7036)	40.8	4700	0.095	28.0	4.2	K-CYM1868-B	\$3,274.00
M1875	180	198	183	25	75(7546)	69(7036)	40.8	4700	0.095	26.0	4.2	K-CYM1875-B	\$3,274.00
M2091	205	252	234	30	94(9585)	94(9585)	40.8	3800	0.15	37.0	4.5	K-CYM2091-B	\$4,093.00
M2511	250	348	336	23	124(12644)	120(12236)	40.8	2800	0.45	57.0	7.0	K-CYM2511-B	\$6,548.00

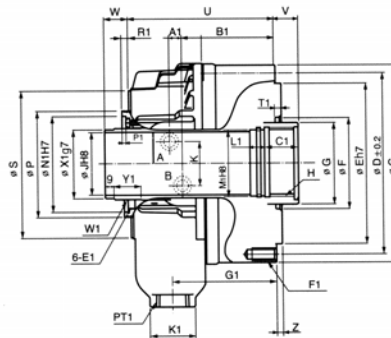
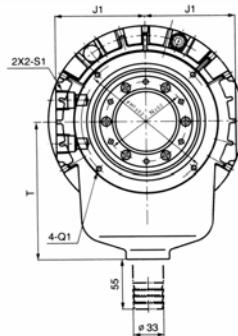
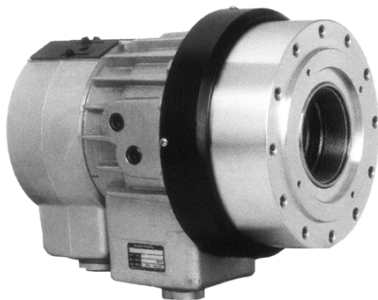
ROTARY HYDRAULIC CYLINDERS

SYH Series-Standard Open-Center Cylinder

High Speed Open-centered Hydraulic Cylinders
With Built In Lock And Relief Valves

SAMCHULLY
MACHINERY CO., LTD.

B



Available I.D.	Cylinder Dia (mm)	Piston Stroke (mm)	Piston Force		Max. Oper. Pressure	Max RPM	GD N·m²(kgf)	Weight (kgf)	Total Leakage	Industry Model #	Part Number	Price
			Push KN(kgf)	Pull KN(kgf)								
36	105	15	25(2549)	24(2447)	4.0(40.8)	8000	0.43(0.044)	8.6	3.0	S-1036	K-CYSYH-1036-H	\$2,500.00
36,39,40,40,43,45,46	125	15	38(3875)	33(3365)	4.0(40.8)	7000	0.76(0.078)	12.0	3.0	S-1246	K-CYSYH-1246-H	\$2,750.00
46,52,69	155	22	60(6118)	56(5710)	4.0(40.8)	6200	2.06(0.21)	16.8	3.9	S-1552	K-CYSYH-1552-H	\$2,900.00
68,69,75,77	180	25	74(7546)	69(7036)	4.0(40.8)	4700	3.73(0.83)	26.0	4.2	S-1875	K-CYSYH-1877-H	\$3,600.00
78,91	205	30	94(9585)	88(8973)	4.0(40.8)	3800	5.98(0.61)	33.0	4.5	S-2091	K-CYSYH-2091-H	\$4,500.00

Dimensions

Model	B1	C1	E1	F1	G1	H1	J1	K1	L1	M1	N1	P1	Q1	R1	S1	T1	U1	V1	G	X1
SYH-1036	102.5	25	M5x11	6-M10x17	98	88	73	47	15	38	64	4	M5x10	5	PT 3/8	6	158	28	48	42
SYH-1246	126.5	30	M6x9	12-M10x20	135	98	76	47	15	50	76	4	M5x10	6	PT 1/2	6	200	46	65	50
SYH-1552	136	30	M6x9	12-M10x20	145	110	86	47	15	55	85	4	M6x12	7	PT 1/2	6	220	51	70	56
SYH-1877	153.5	35	M6x9	12-M10x20	166.5	155	101	47	15	80	108	4	M6x12	7	PT 1/2	6	242	58	95	81
SYH-2091	168	35	M6x14	12-M12x24	183	165	110	47	15	95	120	4	M6x12	7	PT 1/2	6	267	66	110	96

C	D	E	Hmax.	W1	F	J	K	M	N	P	Q	S	T	U	Vmax.	Vmin	Wmax.	Wmin	Z	A1
135	115	100	M42x1.5	M44x1.5	65	36	30	44.6	55	73	45	104	115	156	15	0	40	25	5	11
155	130	100	M52x2.0	M52x1.5	80	46	36	52.9	64	85	51.5	118	115	184	15	0	40	25	5	11.5
190	170	130	M60x2.0	M58x1.5	85	52	36	59.6	73	96	57	137	130	191	22	0	47	25	5	12
215	190	160	M85x2.0	M84x2.0	120	75	36	84.6	98	121	70	166	160	230	25	0	50	25	5	17.5
240	215	180	M100x2.0	M99x2.0	140	91	34	99.6	108	138	79	182	185	253	30	0	55	25	5	21

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

73

SPINDLE ADAPTER SELECTION GUIDE

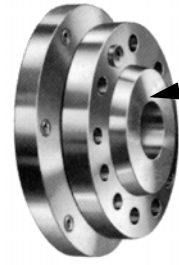
DETERMINING SPINDLE TYPE & SIZE

Spindle Type A1 and A2

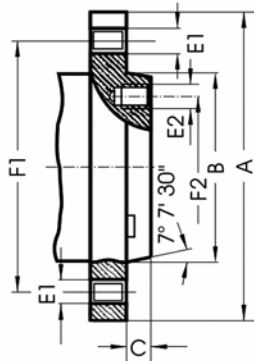
Chucks with A2 mounts can be installed on either A1 or A2 spindle nose.



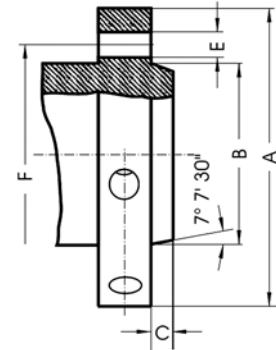
Type A1 has tapped holes on both inner and outer bolt circles



Type A2 **DOES NOT** have tapped holes on inner circle



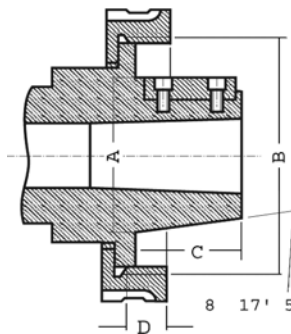
Spindle Nose	F1	F2	B	Cmax	ThreadE1=E2UNC-3B
A-4	3.2500	-	2.5005+.0005	.4375	7/16-14
A-5	4.1250	2.4374	3.2505+.0005	.5625	7/16-14
A-6	5.2500	3.2500	4.1880+.0005	.6250	1/2-13
A-8	6.7500	4.37500	5.50075+.0005	.6875	5/8-11
A-11	9.2500	6.5000	7.75075+.0005	.7500	3/4-10
A-15	13.0000	9.7500	11.251+.001	.8125	7/8-9
A-20	18.2500	14.5000	16.251+.001	.8750	1-8
A-28	25.5000	20.8750	23.001+.001	1.000	1 1/4-7



Spindle Nose	A	F	B	Cmax	E	Number of Holes	Camlock Stud Dia
D1-3	3.622	2.7820	2.1250+.00025	.4375	.5937	3	9/16
D1-4	4.606	3.2500	2.5005+.0005	.4375	.6562		5/8
D1-5	5.748	4.1250	3.2505+.0005	.5000	.8750	6	3/4
D1-6	7.126	5.2500	4.1880+.0005	.5625	1.000		7/8
D1-8	8.858	6.7500	5.50075+.0005	.6250	1.125		1
D1-11	11.732	9.2520	7.75075+.0005	.6875	1.250		13/16
D1-15	15.866	13.000	11.251+.001	.7500	1.375	13/8	

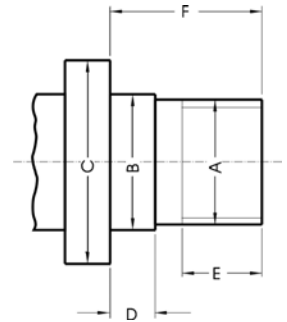


Spindle Type L Long Taper Key Drive



Spindle Nose	ThreadB	C	Key	A
L00	33/4"-6"	2	3/8x3/8x11/2	2.75
L0	41/2"-6"	23/8	3/8x3/8x13/4	3.250
L1	6"-6"	27/8	5/8x5/8x23/8	4.125
L2	73/4"-5"	33/8	3/4x3/4x27/8	5.250
L3	103/8"-4"	37/8	1x1x31/4	6.500

Threaded Spindle



Spindle Nose A	B	F	D	E
1"-10" UNS-2B	1.015	1.500	.4375	1.000
1-1/2"-8" UN-2B	1.515	1.500	.4375	1.000
2-3/16"-10" UN-2B	2.2025	1.750	.5625	1.125
2-1/4"-8" UN-2B	2.260	1.750	.5625	1.125
2-3/16"-6" UN-2B	2.2025	1.750	.5625	1.125
2-3/4"-8" UN-2B	2.760	2.0625	.6875	1.3125



Images and diagrams provided by Toolmex Corporation. Toolmex, Bison, Bison-bial and TMX are all registered trademarks of Toolmex Corporation.



Call Us Today For All Of Your Machine Tool Needs!

2019-20 MASTER CATALOG

3, 4 & 6 JAW SET-TRU SCROLL CHUCKS

With Fine Adjustment, 0.0004" T.I.R.
Forged Steel Body, Two-Piece Top Reversible Jaws



SET-TRU Scroll Chucks can be used for all machining operations where universal chucks are used, along with applications where universal scroll chucks require tighter tolerances. Outstanding accuracy, versatility and long life makes Bison SET-TRU chucks invaluable in the workshop and indispensable in the toolroom.

SET-TRU Chuck Features and Benefits:

- Fine adjustment, 3 pinion design
- Forged steel body
- 4 micro adjustment screws provide .0004" T.I.R. repeatability
- Two piece top and master jaws are American Standard tongue and groove
- Scrolls are forged and fully hardened, thread flanks ground on both sides, then precisely balanced for longer life and higher accuracy
- Each scroll is precisely balanced
- Jaw teeth and guides on both sides are fully hardened and ground.
- Each chuck is balanced within fine limits



3 Jaw Set-Tru Chucks					4 Jaw Set-Tru Chucks			6 Jaw Set-Tru Chucks		
Chuck Size	Thru Hole	Max RPM	Part Number	Price	Max RPM	Part Number	Price	Max RPM	Part Number	Price
5"	1.378"	3800	BI-7866-0500	\$840.60	-	-	-	3000	BI-7868-0500	\$1,133.10
6"	1.654"	3500	BI-7866-0600	\$881.10	2500	BI-7847-0600	\$1,551.60	2500	BI-7868-0600	\$1,313.10
8"	2.165"	3100	BI-7866-0800	\$1,094.40	2200	BI-7847-0800	\$1,778.40	2200	BI-7868-0800	\$1,677.60
10"	2.992"	2700	BI-7866-1000	\$1,419.30	1900	BI-7847-1000	\$2,357.10	1900	BI-7868-1000	\$2,027.70
12"	4.055"	2200	BI-7866-1200	\$2,053.80	1500	BI-7847-1200	\$2,927.70	1500	BI-7868-1200	\$2,940.30
15"	5.354"	1800	BI-7866-1600	\$3,564.00	-	-	-	1300	BI-7868-1600	\$5,274.00

BACKPLATES FOR SET-TRU® CHUCKS

- Fully machined steel backplates for Set-Tru® Chucks
- Threaded backplates also available



Fully Machined Type A

Chuck Size	Spindle	Part Number	Price
5"	A4	BI-7874-054	\$217.80
	A5	BI-7874-055	\$217.80
	A6	BI-7874-056	\$217.80
6"	A5	BI-7874-065	\$237.60
	A6	BI-7874-066	\$243.90
8"	A5	BI-7874-085	\$256.50
	A6	BI-7874-086	\$266.40
10"	A5	BI-7874-105	\$316.80
	A6	BI-7874-106	\$316.80
	A8	BI-7874-108	\$325.80
12"	A6	BI-7874-126	\$490.50
	A8	BI-7874-128	\$501.30
	A11	BI-7874-129	\$514.80
15"	A6	BI-7874-166	\$760.50
	A8	BI-7874-168	\$760.50
	A11	BI-7874-169	\$760.50

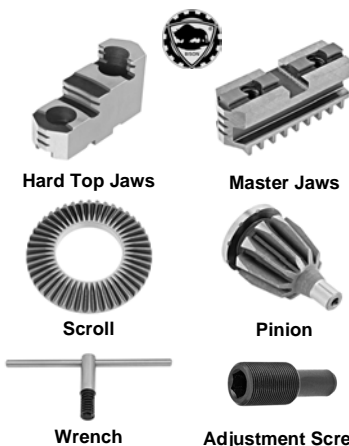
Fully Machined Type D

Chuck Size	Spindle	Part Number	Price
5"	D1-3	BI-7875-053	\$305.10
	D1-4	BI-7875-054	\$327.60
	D1-5	BI-7875-055	\$352.80
6"	D1-6	BI-7875-056	\$359.10
	D1-4	BI-7875-064	\$393.30
	D1-5	BI-7875-065	\$393.30
8"	D1-6	BI-7875-066	\$394.20
	D1-4	BI-7875-084	\$412.20
	D1-5	BI-7875-085	\$423.90
10"	D1-6	BI-7875-086	\$415.80
	D1-8	BI-7875-088	\$499.50
	D1-5	BI-7875-105	\$580.50
12"	D1-6	BI-7875-106	\$604.80
	D1-8	BI-7875-108	\$622.80
	D1-6	BI-7875-126	\$824.40
15"	D1-8	BI-7875-128	\$831.60
	D1-11	BI-7875-129	\$831.60
	D1-8	BI-7875-168	\$1,106.10
D1-11	BI-7875-169	\$1,106.10	

Fully Machined Type L

Chuck Size	Taper	Part Number	Price
5"	L00	BI-7879-9051	\$227.70
	L0	BI-7879-9062	\$246.60
6"	L00	BI-7879-9081	\$255.60
	L1	BI-7879-9083	\$257.40
8"	L00	BI-7879-9101	\$324.90
	L0	BI-7879-9102	\$324.90
	L1	BI-7879-9103	\$324.90
10"	L0	BI-7879-9122	\$534.60
	L1	BI-7879-9123	\$534.60
	L2	BI-7879-9124	\$577.80
15"	L1	BI-7879-9163	\$977.40
	L2	BI-7879-9164	\$1,033.20
	L3	BI-7879-9165	\$1,056.60

REPLACEMENT PARTS FOR SET-TRU® CHUCKS



Chuck Size	Hard Top Jaw Set		Master Jaw Set	
	Part Number	Price	Part Number	Price
3 Jaw Chucks				
5"	TG-50HJ2-BI	\$188.10	BI-7885-305	\$152.10
6"	TG-60HJ2-BI	\$230.40	BI-7885-306	\$157.50
8"	TG-80HJ2-BI	\$232.20	BI-7885-308	\$172.80
10"	TG-100HJ2-BI	\$271.80	BI-7885-310	\$221.40
12"	TG-120HJ2-BI	\$334.80	BI-7885-312	\$306.90
15"	TG-150HJ2-BI	\$456.30	BI-7885-316	\$405.00
6 Jaw Chucks				
5"	TG-50HJ2-6-BI	\$396.90	BI-7885-605	\$382.50
6"	TG-60HJ2-6-BI	\$452.70	BI-7885-606	\$324.90
8"	TG-80HJ2-6-BI	\$548.10	BI-7885-608	\$396.00
10"	TG-100HJ2-6-BI	\$644.40	BI-7885-610	\$474.30
12"	TG-120HJ2-6-BI	\$792.00	BI-7885-612	\$682.20
15"	TG-150HJ2-6-BI	\$1,141.20	BI-7885-616	\$880.20

Chuck Size	Scroll		Pinion		
	Part Number	Price	Part Number	Price	
5"	BI-7887-505	\$194.40	BI-7886-505	\$42.30	
6"	BI-7887-506	\$233.10	BI-7886-506	\$45.00	
8"	BI-7887-508	\$284.40	BI-7886-508	\$54.00	
10"	BI-7887-510	\$387.00	BI-7886-510	\$64.80	
12"	BI-7887-512	\$510.30	BI-7886-512	\$81.00	
15"	BI-7887-516	\$1,254.60	BI-7886-516	\$109.80	
		Wrench		Fine Adjustment Screw	
	Part Number	Price	Part Number	Price	
5"	BI-7889-005	\$42.30	BI-7897-6051	\$13.50	
6"	BI-7889-008	\$45.00	BI-7897-6061	\$17.10	
8"	BI-7889-008	\$45.00	BI-7897-6081	\$17.10	
10"	BI-7889-012	\$55.80	BI-7897-6101	\$17.10	
12"	BI-7889-012	\$55.80	BI-7897-6121	\$17.10	
15"	BI-7889-016	\$81.00	BI-7897-6161	\$17.10	

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS
VISE JAWS
VISE ACCESSORIES
STRAIGHT SHANK
COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

MANUAL CHUCKS

FORGED STEEL BODY SCROLL CHUCKS

Model ATSC- Hardened Reversible Top Jaws



BUCK CHUCK is continuously striving to make its products better so that your production can be more efficient! Buck has engineered and built some of the finest chucks in the world for over 75 years. Replacement parts and accessories also available.

Full Line Available!
Please call for more information.



FEATURES:

- *Ajust-Tru*- the original, renowned adjustment mechanism
- Forged Steel Body
- Hardened and ground scroll and jaws
- 3 Jaw Model Recommended for general O.D. or I.D. workholding. These chucks remain accurate throughout the life of the chuck using the *Ajust-Tru* feature.
- 6 Jaw Model is Ideal for thin wall and second operation machining. Eliminates the need for collets as a 6" chuck can handle the work of more than 100 separate collets.
- Chucks supplied with jaws, wrench and mounting screws

Chuck Size	Thru Hole	3 Jaw Chucks			4 Jaw Chucks			6 Jaw Chucks		
		Max RPM	Part Number	Price Each	Max RPM	Part Number	Price Each	Max RPM	Part Number	Price Each
6"	1.780"	4,600	BK-B8063	\$960.00	4,600	BK-B8064	\$1,305.00	3,450	BK-B8066	\$1,401.00
8"	2.370"	4,000	BK-B8083	\$1,257.00	4,000	BK-B8084	\$1,409.00	3,000	BK-B8086	\$1,700.00
10"	3.230"	3,000	BK-B8103	\$1,573.00	3,000	BK-B8104	\$2,023.00	2,250	BK-B8106	\$2,151.00
12"	4.140"	2,300	BK-B8123	\$2,264.00	2,300	BK-B8124	\$2,902.00	1,725	BK-B8126	\$2,911.00
15"	5.510"	1,800	BK-B8153	\$4,200.00	-	-	-	1,350	BK-B8156	\$5,388.00

D1 CAMLOCK MOUNTING PLATES



Chuck Size	Spindle	Part Number	Price
6"	D-4	BK-A5-D4	\$400.00
6"	D-5	BK-A6-D5	\$500.00
8"	D-5	BK-A8-D5	\$525.00
8"	D-6	BK-A8-D6	\$469.00
10"	D-6	BK-A10-D6	\$625.00
10"	D-8	BK-A10-D8	\$685.00
12"	D-6	BK-A12-D6	\$650.00
12"	D-8	BK-A12-D8	\$685.00

A STYLE MOUNTING PLATES



Chuck Size	Spindle	Part Number	Price
6"	A-4	BK-A6-A4	\$450.00
6"	A-5	BK-A6-A5	\$425.00
8"	A-5	BK-A8-A5	\$475.00
8"	A-6	BK-A8-A6	\$500.00
10"	A-6	BK-A10-A6	\$600.00
10"	A-8	BK-A10-A8	\$650.00
12"	A-8	BK-A12-A8	\$700.00
12"	A-11	BK-A12-A11	\$1,100.00

SEMI-STEEL BODY SCROLL CHUCKS

Model AT- Hardened Reversible Top Jaws



FEATURES:

- .001" TIR repeatability
- Cast iron body allows for more affordable, yet high quality chuck
- Hardened and ground scroll is balanced
- Ships complete with master and hardened top reversible jaws, spring loaded T-wrench and mounting bolts



Chuck Size	Thru Hole	3 Jaw Chucks			6 Jaw Chucks		
		Max. RPM	Part Number	Price Each	Max. RPM	Part Number	Price Each
6"	1.540"	3,000	BK-AT063RC	\$695.00	2,500	BK-AT066RC	\$1,110.00
8"	2.346"	2,500	BK-AT083RC	\$829.00	2,000	BK-AT086RC	\$1,324.00
10"	2.860"	2,000	BK-AT103RC	\$1,321.00	1,600	BK-AT106RC	\$1,882.00
12"	3.285"	1,500	BK-AT123RC	\$1,981.00	1,100	BK-AT126RC	\$2,746.00

D1 CAMLOCK MOUNTING PLATES



Chuck Size	Spindle	Part Number	Price
6"	D-4	BK-B6-D4	\$194.00
6"	D-5	BK-B6-D5	\$193.00
8"	D-5	BK-B8-D5	\$224.00
8"	D-6	BK-B8-D6	\$224.00
10"	D-6	BK-B10-D6	\$263.00
10"	D-8	BK-B10-D8	\$263.00
12"	D-6	BK-B12-D6	\$338.00
12"	D-8	BK-B12-D8	\$338.00

A STYLE MOUNTING PLATES



Chuck Size	Spindle	Part Number	Price
6"	A-4	BK-B6-A4	\$290.00
6"	A-5	BK-B6-A5	\$171.00
8"	A-5	BK-B8-A5	\$229.00
8"	A-6	BK-B8-A6	\$224.00
10"	A-6	BK-B10-A6	\$271.00
10"	A-8	BK-B10-A8	\$271.00
12"	A-6	BK-B12-A6	\$338.00
12"	A-8	BK-B12-A8	\$338.00

Call Us Today For All Of Your Machine Tool Needs!

SET-TRU SCROLL CHUCKS

With Fine Adjustment, 0.0006" T.I.R.
Forged Steel Body, Two-Piece Top Reversible Jaws



TMX SET-TRU Scroll Chucks can be used for all machining operations where universal chucks are used, along with applications where universal scroll chucks require tighter tolerances.

SET-TRU Chuck Features and Benefits:

- Fine adjustment, 0.0006" TIR
- Forged steel body
- 3 pinion design
- 4 micro adjustment screws provide .0004" T.I.R. repeatability
- Two piece top and master jaws are American Standard tongue and groove
- Scrolls are forged and fully hardened with thread flanks ground on both sides, then precisely balanced for longer life and higher accuracy
- Jaw teeth and guides on both sides are fully hardened and ground.
- Plain back chuck- mounting plates required.



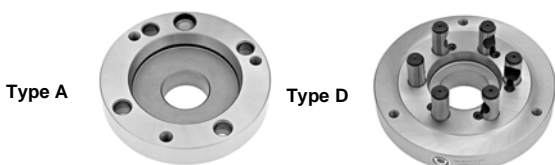
		3 Jaw Set-Tru Chucks			4 Jaw Set-Tru Chucks			6 Jaw Set-Tru Chucks		
Chuck Size	Thru Hole	Max RPM	Part Number	Price	Max RPM	Part Number	Price	Max RPM	Part Number	Price
5"	1.378"	3800	BI-3866-0500P	\$588.12	-	-	-	5500	BI-3868-0500P	\$821.74
6"	1.654"	4600	BI-3866-0600P	\$677.21	4600	BI-3847-0600P	\$1,008.08	4600	BI-3868-0600P	\$987.17
8"	2.165"	4000	BI-3866-0800P	\$809.92	4000	BI-3847-0800P	\$1,155.34	4000	BI-3868-0800P	\$1,211.70
10"	2.992"	3500	BI-3866-1000P	\$1,119.89	3500	BI-3847-1000P	\$1,531.67	2400	BI-3868-1000P	\$1,371.68
12"	4.055"	2800	BI-3866-1200P	\$1,438.04	2800	BI-3847-1200P	\$1,903.45	1900	BI-3868-1200P	\$1,876.18
15"	5.354"	2000	BI-3866-1600P	\$2,746.09	2000	BI-3847-1600P	\$3,013.34	2000	BI-3868-1600P	\$3,624.18

Each chuck is provided with:

- 1 Set of hard master jaws
- 1 Set of hard top reversible jaws
- 1 Chuck wrench
- 1 Set of mounting bolts
- 1 Set of fine adjustment screws
- Eye bolts (16" only)

BACKPLATES FOR SET-TRU® CHUCKS

- Fully machined steel backplates for precision accuracy TMX Set-Tru® Chucks



Type A

Chuck Size	Spindle	Part Number	Price
6"	A5	BI-3874-065P	\$171.55
8"	A5	BI-3874-085P	\$181.73
	A6	BI-3874-086P	\$181.73
10"	A5	BI-3874-105P	\$215.58
	A6	BI-3874-106P	\$215.58
12"	A6	BI-3874-126P	\$336.73
	A8	BI-3874-128P	\$336.73
15"	A11	BI-3874-129P	\$357.35
	A8	BI-3874-168P	\$537.04
	A11	BI-3874-169P	\$537.04

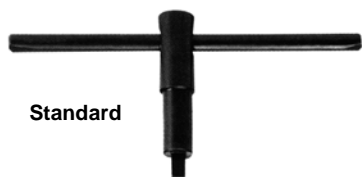
Type D

Chuck Size	Spindle	Part Number	Price
5"	D1-4	BI-3875-054P	\$223.47
6"	D1-3	BI-3875-063P	\$265.98
	D1-4	BI-3875-064P	\$265.98
8"	D1-4	BI-3875-084P	\$290.92
	D1-5	BI-3875-085P	\$290.92
10"	D1-6	BI-3875-086P	\$301.10
	D1-6	BI-3875-106P	\$420.47
12"	D1-8	BI-3875-108P	\$441.85
	D1-6	BI-3875-126P	\$561.47
16"	D1-8	BI-3875-128P	\$586.93
	D1-11	BI-3875-169P	\$712.40

CHUCK KEYS



- Crafted from high quality tool steel
- Available in standard and self-ejecting models
- Sizes available from 1/4" to 9/16" square head size



LATHE CHUCK SAFETY WRENCHES

- Spring-load sleeve ejects the wrench from the chuck after each use
- Chamfered end for easy entry
- Designed to provide proper loads for self-removal of the wrench weight
- High visibility yellow handle
- Helps prevent accidents



Square Head Size	Standard		Self-Eject	
	Part Number	Price	Part Number	Price
1/4"	A-3900-4865	\$11.00	-	-
5/16"	A-3900-4866	\$11.00	A-3900-4857	\$18.00
3/8"	A-3900-4867	\$11.00	A-3900-4853	\$20.00
7/16"	A-3900-4868	\$11.50	-	-
1/2"	A-3900-4869	\$12.50	A-3900-4855	\$21.00
9/16"	A-3900-4870	\$12.50	-	-

Nominal Size	Actual Size	Bar Dia	Overall Dia	Engagement Length	Part Number	Price
9/32" SQ	.271"	3/4"	1.050"	3/4"	FXB-15470	\$114.37
5/16" SQ	.303"	3/4"	1.050"	3/4"	FXB-15471	\$114.37
3/8" SQ	.365"	3/4"	1.050"	3/4"	FXB-15472	\$114.37
7/16" SQ	.427"	3/4"	1.050"	3/4"	FXB-15473	\$114.37
1/2" SQ	.490"	3/4"	1.050"	3/4"	FXB-15474	\$114.37
9/16" SQ	.552"	15/16"	1.315"	3/4"	FXB-15477	\$126.44
5/8" SQ	.615"	15/16"	1.315"	3/4"	FXB-15478	\$126.44
3/4" SQ	.740"	15/16"	1.315"	3/4"	FXB-15480	\$126.44

Call Us Or Visit Our Website For Our Complete Selection!

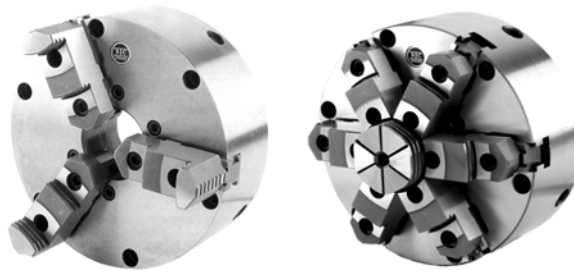
ZERO-SET MANUAL CHUCKS

3 JAW SCROLL CHUCKS-ZERO SET

With Top Reversible Jaws

FEATURES:

- High precision-.0004" TIR repeatability on duplicated parts
- Forged steel body
- 2-piece reversible jaws for OD and ID work
- Scroll and jaws hardened and ground for increased life and gripping force
- Must be used with "Zero-Set" backplates from BTC



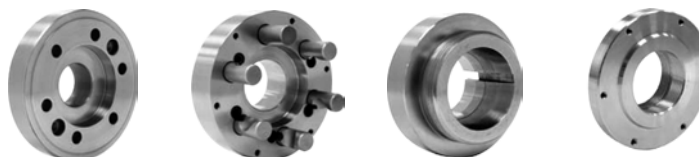
Package Includes:
Chuck, Master Jaws,
Top Jaws, T-Wrench
& Mounting Screws

Chuck Dia	Thru Hole	3-Jaw Zero Set Chucks				6-Jaw Zero Set Chucks			
		Max RPM	Weight (lbs)	Part Number	Price	Max RPM	Weight (lbs)	Part Number	Price
6"	1.535"	3,700	22	BT-S1063R	\$810.00	2,700	27	BT-S1066R	\$1,055.00
8"	2.264"	3,300	52	BT-S1083R	\$995.00	2,300	57	BT-S1086R	\$1,665.00
10"	2.835"	2,900	73	BT-S1103R	\$1,260.00	2,000	78	BT-S1106R	\$1,995.00
12"	3.268"	2,300	120	BT-S1123R	\$1,695.00	1,600	146	BT-S1126R	\$2,550.00
15"	4.252"	1,900	200	BT-S1153R	\$2,525.00	1,500	240	BT-S1156R	\$4,250.00

ZERO SET MOUNTING PLATES

FEATURES:

- Designed for easy installation
- Minimizes overhang by virtue of recessed design
- Fully finished mounting plates



A-MOUNT BACKPLATES

Chuck Size	Spindle	Part Number	Price
5"	A2-4	BT-AS-304	\$148.50
	A2-5	BT-AS-305	\$148.50
6"	A2-5	BT-AS-302	\$148.50
	A2-6	BT-AS-303	\$171.00
8"	A2-5	BT-AS-307	\$180.00
	A2-6	BT-AS-308	\$180.00
	A2-8	BT-AS-309	\$265.50
10"	A2-5	BT-AS-311	\$216.00
	A2-6	BT-AS-312	\$216.00
	A2-8	BT-AS-313	\$220.50
12"	A2-6	BT-AS-315	\$283.00
	A2-8	BT-AS-316	\$283.00
15"	A2-8	BT-AS-344	\$490.50
	A2-11	BT-AS-349	\$490.50

D-MOUNT BACKPLATES

Chuck Size	Spindle	Part Number	Price
5"	D-3	BT-CD-205	\$171.00
	D-4	BT-CD-221	\$171.00
6"	D-3	BT-CD-203	\$171.00
	D-4	BT-CD-201	\$171.00
	D-5	BT-CD-202	\$171.00
	D-6	BT-CD-206	\$220.50
8"	D-4	BT-CD-204	\$211.50
	D-5	BT-CD-208	\$211.50
	D-6	BT-CD-209	\$220.50
	D-8	BT-CD-207	\$270.00
10"	D-5	BT-CD-210	\$265.50
	D-6	BT-CD-211	\$265.50
	D-8	BT-CD-212	\$315.00
	D-8	BT-CD-214	\$310.50
12"	D-6	BT-CD-215	\$324.00
	D-8	BT-CD-215	\$324.00
15"	D-8	BT-CD-267	\$571.50
	D-11	BT-CD-266	\$675.00

L-MOUNT BACKPLATES

Chuck Size	Spindle	Part Number	Price
5"	L-00	BT-LT-103	\$180.00
	L-0	BT-LT-104	\$180.00
6"	L-00	BT-LT-100	\$180.00
	L-0	BT-LT-101	\$180.00
8"	L-00	BT-LT-108	\$202.50
	L-0	BT-LT-109	\$202.50
10"	L-1	BT-LT-110	\$211.50
	L-00	BT-LT-111	\$256.50
12"	L-0	BT-LT-112	\$256.50
	L-1	BT-LT-113	\$265.50
15"	L-0	BT-LT-115	\$337.50
	L-1	BT-LT-116	\$337.50
15"	L-0	BT-LT-175	\$405.00
	L-1	BT-LT-176	\$405.00
15"	L-2	BT-LT-177	\$454.50

THREADED MOUNT BACKPLATES

Chuck Size	Spindle	Part Number	Price
5"	1-1/2-8	BT-TH-903	\$175.50
	1-3/4-8"	BT-TH-904	\$175.50
6"	1-1/2-8	BT-TH-950	\$157.50
	1-3/4-8"	BT-TH-951	\$157.50
	2-1/4-8"	BT-TH-955	\$157.50
8"	2-3/8-6"	BT-TH-958	\$157.50
	2-1/4-8"	BT-TH-985	\$238.50
10"	2-3/8-6"	BT-TH-986	\$288.00
	1-3/4-8"	BT-TH-994	\$247.50
12"	2-1/4-8"	BT-TH-995	\$247.50
	2-3/8-6"	BT-TH-989	\$247.50
12"	2-3/8-6"	BT-TH-997	\$517.50
	2-3/4-8"	BT-TH-999	\$517.50

REPLACEMENT PARTS FOR ZERO SET CHUCKS



Hard Top Jaws



Master Jaws



Chuck Body (2 piece)



Scroll

Chuck Size	Model	Hard Top Jaw Set		Master Jaw Set		Chuck Body (2 Pc)		Chuck Scroll	
		Part Number	Set Price	Part Number	Set Price	Part Number	Price Each	Part Number	Price Each
3 Jaw Zero Set Chucks									
5"	1053R	BT-530-7	\$155.00	BT-530-6	\$165.00	BT-530-8	\$265.00	BT-530-1	\$105.00
6"	1063R	BT-630-7	\$165.00	BT-630-6	\$175.00	BT-630-8	\$315.00	BT-630-1	\$210.00
8"	1083R	BT-830-7	\$195.00	BT-830-6	\$205.00	BT-830-8	\$350.00	BT-830-1	\$250.00
10"	1103R	BT-103-7	\$265.00	BT-103-6	\$295.00	BT-103-8	\$450.00	BT-103-1	\$315.00
12"	1123R	BT-123-7	\$325.00	BT-123-6	\$335.00	BT-123-8	\$550.00	BT-123-1	\$350.00
15"	1153R	BT-153-7	\$450.00	BT-153-6	\$555.00	BT-153-8	\$850.00	BT-153-1	\$425.00
6 Jaw Zero Set Chucks									
6"	1066R	BT-660-7	\$265.00	BT-660-6	\$275.00	BT-660-8	\$415.00	BT-660-1	\$210.00
8"	1086R	BT-860-7	\$365.00	BT-860-6	\$375.00	BT-860-8	\$475.00	BT-860-1	\$250.00
10"	1106R	BT-106-7	\$485.00	BT-106-6	\$495.00	BT-106-8	\$595.00	BT-106-1	\$315.00
12"	1126R	BT-126-7	\$565.00	BT-126-6	\$575.00	BT-126-8	\$695.00	BT-126-1	\$350.00
15"	1156R	BT-156-7	\$725.00	BT-156-6	\$795.00	BT-156-8	\$1,395.00	BT-156-1	\$965.00

Additional Replacement Parts Also Available. Please Call For More Information.

Call Us Today For All Of Your Machine Tool Needs!

3 JAW SELF-CENTERING SCROLL CHUCKS

Forged Steel & Semi-Steel Body
Plain Back Chuck-Backplates Required

Extremely accurate and guaranteed to maintain exceptional accuracy for an extended period of time, these chucks have a modern and compact design. For use whenever high precision machining is needed

- Forged or semi-steel body
- All bearing surfaces are carefully hardened and precisely machined
- Scroll is made of fine quality alloy steel and carefully case hardened
- Thread flanks are ground on both sides
- Each scroll is balanced
- Teeth and guides are hardened and fully ground on both sides
- 3 pinion design
- Hardened and ground pinions



Back View

Two-Piece Reversible Jaw Chucks are provided with:

- 1 set of hard master jaws
- 1 set of hard top reversible jaws
- 1 chuck wrench
- 1 set of mounting bolts
- 2 hex keys
- Eye bolts for chucks 15" & larger

Solid Jaw Style Chucks are provided with:

- 1 set of hard solid ID jaws
- 1 set of hard solid OD jaws
- 1 chuck wrench
- 1 set of mounting bolts
- 1 hex key
- Eye bolts for chucks 15" & larger



Two-Piece Jaw Style



Solid Jaw Style

Forged Steel Body

With Two-Piece Reversible Jaws-Type 3505

Chuck Size	Thru Hole	Max RPM	Weight lbs	Part Number	Price
5"	1.398	4800	11	BI-7820-0500	\$700.20
6"	1.654	4500	22	BI-7820-0600	\$799.20
8"	2.165	4000	39	BI-7820-0800	\$999.00
10"	2.992	3500	55	BI-7820-1000	\$1,277.10
12"	4.055	2800	110	BI-7820-1200	\$1,825.20
15"	5.354	2000	187	BI-7820-1600	\$3,076.20
20"	7.480	1200	320	BI-7820-2000	\$8,190.00
25"	9.921	1000	551	BI-7820-2500	\$11,277.00

With Solid Hard Jaws-Type 3504

Max RPM	Weight lbs	Part Number	Price
4800	11	BI-7829-0500	\$628.20
4500	22	BI-7829-0600	\$734.40
4000	39	BI-7829-0800	\$905.40
3500	55	BI-7829-1000	\$1,162.80
2800	110	BI-7829-1200	\$1,726.20

Semi Steel Body

With Two-Piece Reversible Jaws-Type 3205

Chuck Size	Thru Hole	Max RPM	Weight	Part Number	Price
5"	1.260	3200	11	BI-7800-0500	\$484.20
6"	1.654	3000	22	BI-7800-0600	\$516.60
8"	2.166	2500	39	BI-7800-0800	\$620.10
10"	2.992	2000	55	BI-7800-1000	\$877.50
12"	4.055	1500	110	BI-7800-1200	\$1,292.40
15"	5.354	1000	187	BI-7800-1600	\$2,129.40
20"	7.480	700	320	BI-7800-2000	\$5,652.00
25"	9.921	500	551	BI-7800-2500	\$8,757.00

With Solid Hard Jaws-Type 3204

Max RPM	Weight lbs	Part Number	Price
3200	11	BI-7810-0500	\$435.60
3000	22	BI-7810-0600	\$481.50
2500	39	BI-7810-0800	\$576.00
2000	55	BI-7810-1000	\$733.50
1500	110	BI-7810-1200	\$1,098.90
1000	187	BI-7810-1600	\$1,947.60
700	320	BI-7810-2000	\$5,157.00
500	551	BI-7810-2500	\$7,965.00

BACKPLATES FOR SELF-CENTERING SCROLL CHUCKS

- Fits 3 and 4 jaw self-centering scroll chucks
- Machined backplates for plain back chucks
- May require additional machining to fit
- Threaded backplates also available

Type A



Type D



Type L



A1/A2 Semi-Machined Backplate

Chuck Size	Spindle	Part Number	Price
5"	A6	BI-7873-056	\$150.30
	A8	BI-7873-058	\$194.40
6"	A5	BI-7873-065	\$162.90
8"	A5	BI-7873-085	\$191.70
	A6	BI-7873-086	\$191.70
10"	A6	BI-7873-106	\$250.20
	A8	BI-7873-108	\$265.50
12"	A6	BI-7873-126	\$333.90
	A8	BI-7873-128	\$362.70
15"	A8	BI-7873-168	\$561.60
	A11	BI-7873-169	\$561.60
20"	A2-11	BI-7873-209	\$864.00
25"	A2-11	BI-7873-259	\$1,430.10
	A15	BI-7873-2595	\$1,564.20
	A2-20	BI-7873-2598	\$1,589.40

Fully Machined D1 Backplates

Chuck Size	Spindle	Part Number	Price
4"	D1-4	BI-7878-044F	\$191.70
		BI-7878-053F	\$218.70
5"	D1-4	BI-7878-054F	\$218.70
		BI-7878-064F	\$259.20
6"	D1-5	BI-7878-065F	\$259.20
		BI-7878-066F	\$259.20
		BI-7878-084F	\$295.20
8"	D1-6	BI-7878-085F	\$295.20
		BI-7878-086F	\$297.90
		BI-7878-105F	\$384.30
10"	D1-8	BI-7878-106F	\$378.90
		BI-7878-108F	\$383.40
		BI-7878-126F	\$490.50
12"	D1-8	BI-7878-128F	\$548.10
		BI-7878-129F	\$528.30
		BI-7878-166F	\$702.00
15"	D1-11	BI-7878-168F	\$819.00
		BI-7878-169F	\$902.70

Fully Machined Type L Backplates

Chuck Size	Taper	Part Number	Price
5"	L00	BI-7879-051	\$176.40
		BI-7879-061	\$189.90
6"	L0	BI-7879-062	\$189.90
		BI-7879-081	\$207.00
8"	L0	BI-7879-082	\$207.00
		BI-7879-083	\$225.90
		BI-7879-101	\$262.80
10"	L0	BI-7879-102	\$262.80
		BI-7879-103	\$276.30
		BI-7879-122	\$395.10
12"	L1	BI-7879-123	\$395.10
		BI-7879-124	\$477.90
		BI-7879-163	\$607.50
15"	L2	BI-7879-164	\$634.50
		BI-7879-165	\$674.10

Call Us Or Visit Our Website For Our Complete Selection!



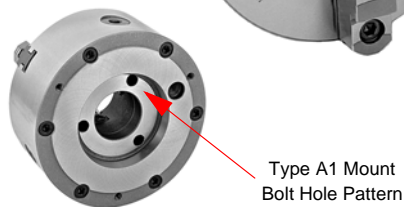
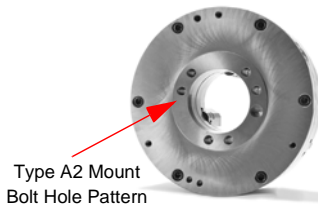
BISON™ DIRECT MOUNT CHUCKS

3 JAW SELF-CENTERING SCROLL CHUCKS

Type A1 And A2 Direct Mount

With Two-Piece Hard Reversible Jaws

- Type 3215
- Type A1 & A2 direct mount chucks
- Two piece "master jaw" style jaws
- Semi-steel body
- Type A1 spindles have a 2 bolt hole patterns, inside and outside the taper.
- Either an A1 or A2 chuck will fit
- Type A2 spindles have a 1 bolt pattern outside the taper-only an A2 chuck will fit
- Hardened and ground pinions



A1/A2 Direct Mount Chucks-Type 3215

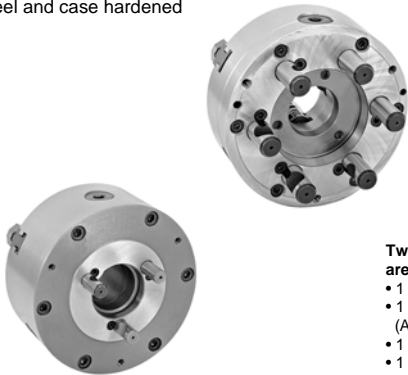
Chuck Size	Spindle	Thru Hole	Part Number	Price
6"	A1-5	1.654	BI-7801-0615	\$862.20
8"	A1-5	1.654	BI-7801-0815	\$998.10
	A1-6	2.165	BI-7801-0816	\$998.10
10"	A2-5	2.992	BI-7801-1015	\$1,267.20
	A1-6	2.164	BI-7801-1016	\$1,267.20
	A1-8	2.992	BI-7801-1018	\$1,267.20
12"	A2-6	4.055	BI-7801-1216	\$1,875.60
	A1-8	3.150	BI-7801-1218	\$1,875.60
15-3/4"	A2-6	4.055	BI-7801-1616	\$3,244.50
	A2-8	5.354	BI-7801-1618	\$3,244.50
	A1-11	5.118	BI-7801-1619	\$3,244.50
20"	A2-11	7.591	BI-7801-2029	\$7,641.00
	A2-11	7.480	BI-7801-2511	\$10,026.00
25"	A2-11	7.480	BI-7801-2511	\$10,026.00
	A2-15	7.480	BI-7801-2515	\$10,026.00
32"	A2-20	12.598	BI-7801-3220	\$16,551.00

3 JAW SELF-CENTERING SCROLL CHUCKS

Camlock Type D1, Direct Mount

With Two-Piece Hard Reversible Jaws

- Type 3245
- Camlock type D1 direct mount chuck
- Two piece "master jaw" style jaws
- Semi-steel body
- Hardened and ground pinions
- Scroll is drop forged of alloy steel and case hardened



Two-Piece Reversible Jaw Chucks are provided with:

- 1 set of hard master jaws
- 1 set of hard top reversible jaws (American Std Tongue & Groove)
- 1 chuck wrench
- 1 set of mounting bolts
- 2 hex keys

Camlock Type D1 Direct Mount Chucks-Type 3245

Chuck Size	Spindle	Thru Hole	Part Number	Price
5"	D1-4	1.260	BI-7803-0534	\$710.10
6"	D1-3	1.654	BI-7803-0633	\$810.90
	D1-4	1.654	BI-7803-0634	\$810.90
8"	D1-4	2.028	BI-7803-0834	\$963.00
	D1-5	2.165	BI-7803-0835	\$963.00
	D1-6	2.165	BI-7803-0836	\$963.00
	D1-5	2.165	BI-7803-1035	\$1,318.50
10"	D1-6	2.992	BI-7803-1036	\$1,318.50
	D1-8	2.992	BI-7803-1038	\$1,318.50
12"	D1-6	2.992	BI-7803-1236	\$2,027.70
	D1-8	4.055	BI-7803-1238	\$2,027.70
	D1-11	4.055	BI-7803-1239	\$2,027.70
15-3/4"	D1-6	4.055	BI-7803-1636	\$3,650.40
	D1-8	5.354	BI-7803-1638	\$3,650.40
	D1-11	5.354	BI-7803-1639	\$3,650.40
20"	D1-8	5.354	BI-7803-2038	\$7,587.00
	D1-11	7.598	BI-7803-2039	\$7,587.00
25"	D1-11	7.598	BI-7803-2539	\$10,323.00



3 JAW SELF-CENTERING SCROLL CHUCKS

Type L Direct Mount, With Two-Piece Hard Reversible Jaws



Chuck Size	Spindle	Thru Hole	Part Number	Price
6"	L00	1.654	BI-7804-0641	\$774.00
	L0	1.654	BI-7804-0642	\$774.00
8"	L00	2.165	BI-7804-0841	\$911.70
	L1	2.165	BI-7804-0842	\$911.70
10"	L0	2.992	BI-7804-1042	\$1,314.90
	L1	2.992	BI-7804-1043	\$1,314.90
	L2	2.992	BI-7804-1044	\$1,314.90
12"	L0	4.055	BI-7804-1242	\$1,808.10
	L1	4.055	BI-7804-1243	\$1,808.10
	L2	4.055	BI-7804-1244	\$1,808.10
15-3/4"	L1	4.055	BI-7804-1643	\$2,980.80
	L2	4.055	BI-7804-1644	\$2,980.80

3 JAW SELF-CENTERING SCROLL CHUCKS

Threaded Direct Mount, With Two-Piece Hard Reversible Jaws



Threaded Direct Mount Chucks-Type 3285/3284

Chuck Size	Spindle	Thru Hole	Part Number	Price
4"	1-10	0.787	BI-7805-0451	\$599.40
	1-1/2-8	0.787	BI-7805-0452	\$599.40
5"	1-10	1.260	BI-7805-0551	\$693.90
	1-1/2-8	1.260	BI-7805-0552	\$693.90
6"	1-1/2-8	1.575	BI-7805-0652	\$748.80
	2-1/4-8	1.575	BI-7805-0653	\$748.80
8"	1-1/2-8	2.165	BI-7805-0852	\$879.30
	2-1/4-8	2.165	BI-7805-0853	\$879.30
	2-3/8-6	2.165	BI-7805-0854	\$879.30
10"	2-1/4-8	2.992	BI-7805-1053	\$1,183.50



Call Us Today For All Of Your Machine Tool Needs!

3 JAW SCROLL CHUCKS

B

3-JAW UNIVERSAL SCROLL CHUCKS

Plain Back • Forged Steel Body • 2-Piece Reversible Jaws



- Designed to handle precision or heavy duty machining demands
- Two piece, master jaw style top jaws
- Each scroll chuck is statically balanced for longer life and higher accuracy
- All bearing surfaces carefully machined and hardened
- Chuck bodies are drop forged and hardened to 28 HRC



Package Includes:
Chuck, Master Jaws,
Top Jaws, T-Wrench
& Mounting Screws

Chuck Dia	Hole Dia	Max RPM	Wt lbs	Part Number	Price
6"	1.653	4600	22	BI-3820-0600P	\$619.47
8"	2.165	4000	39	BI-3820-0800P	\$761.67
10"	2.992	3500	64	BI-3820-1000P	\$1,114.83
12"	4.055	2800	111	BI-3820-1200P	\$1,460.34
16"	5.354	2000	189	BI-3820-1600P	\$2,555.10
20"	7.480	1300	322	BI-3820-2000P	\$6,077.07
25"	9.921	1000	556	BI-3820-2500P	\$7,920.99

3-JAW UNIVERSAL SCROLL CHUCKS

D-1 Direct Mount Type • 2-Piece Reversible Jaws



- Direct mount camlock type D1-no backplates required
- Designed to handle precision or heavy duty machining demands
- Two piece, master jaw style top jaws
- Each scroll chuck is statically balanced for longer life and higher accuracy
- All bearing surfaces carefully machined and hardened
- Chuck bodies are drop forged and hardened to 28 HRC



D1 Direct Mount

Chuck Dia	Spindle	Hole Dia	Max RPM	Wt lbs	Part Number	Price
8"	D1-6	2.165	4000	52	BI-3823-0836P	\$956.43
10"	D1-6	2.992	3500	88	BI-3823-1036P	\$1,317.15
10"	D1-8	2.992	3500	88	BI-3823-1038P	\$1,317.15
12"	D1-6	4.173	2800	150	BI-3823-1236P	\$1,692.56
12"	D1-8	4.173	2800	150	BI-3823-1238P	\$1,692.56
16"	D1-8	5.354	2000	261	BI-3823-1638P	\$3,097.26
16"	D1-11	5.354	2000	261	BI-3823-1639P	\$3,097.26
20"	D1-11	7.480	1300	424	BI-3823-2039P	\$6,571.44
25"	D1-11	7.480	1000	748	BI-3823-2539P	\$8,380.08

3 JAW SCROLL CHUCKS

D-1 Direct Mount Type • 2-Piece Reversible Jaws

FEATURES:

- 2-piece master jaw style jaws with top reversible jaws for ID and OD workholding
- Semi-steel body
- Scroll and jaws hardened and ground



Package Includes:
Chuck, Master Jaws,
Top Jaws, T-Wrench
& Mounting Screws

Size	Spindle	Thru Hole	Weight (lbs)	Part Number	Price Each
6"	D1-4	1.575"	32	BT-6063D4	\$368.00
	D1-5	1.575"	32	BT-6063D5	\$368.00
8"	D1-5	1.969"	47	BT-6083D5	\$460.00
	D1-6	1.969"	47	BT-6083D6	\$460.00
10"	D1-6	2.756"	74	BT-6103D6	\$607.75
	D1-8	3.150"	74	BT-6103D8	\$607.75
12"	D1-6	3.937"	142	BT-6123D6	\$790.50
	D1-8	3.937"	142	BT-6123D8	\$790.50
15"	D1-8	5.118"	155	BT-6153D8	\$1,275.00
	D1-11	5.315"	155	BT-6153D11	\$1,275.00
20"	D1-11	7.480"	320	BT-6203D11	\$2,885.75
	D1-15	8.268"	320	BT-6203D15	\$2,885.75

3 JAW SCROLL CHUCKS

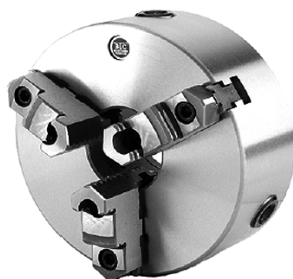
Plain Back • 2-Piece Reversible Jaws



FEATURES:

- 2-piece master jaw style jaws with top reversible jaws for ID and OD workholding
- 0.003" TIR repeatability
- Meets ASA specifications on duplicate parts for chucks through 12" diameter
- Semi-steel body
- Scroll and jaws hardened and ground

Package Includes:
Chuck, Master Jaws,
Top Jaws, T-Wrench
& Mounting Screws

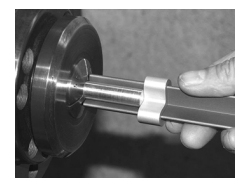
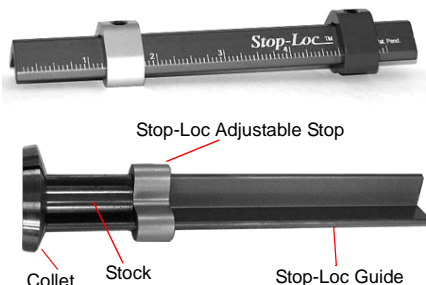


Chuck Size	Thru Hole	Weight (lbs)	Part Number	Price
6"	1.575"	21	BT-3063R	\$304.00
8"	2.559"	39	BT-3083R	\$392.00
10"	3.150"	56	BT-3103R	\$452.00
12"	3.937"	99	BT-3123R	\$580.00
15"	5.315"	122	BT-3153R	\$1,080.00
20"	8.268"	320	BT-3203R	\$2,590.00
25"	10.236"	510	BT-3253R	\$4,444.00

CHUCK/COLLET STOP

Handheld Lathe & Mill Vise Tool

- Adjustable Precision-Gage lengths up to 5-1/2" long holding +/- .005
- Save Money! No more fixed length dedicated shop-made front collet stops for each job
- Versatile-For use on CNC or manual lathes whether you are running a bar manually or using a bar puller
- Consistency-Unique design incorporates self-centering & unobstructed viewing
- Dimensions: 6" L x 3/4" H x 3/4" W
- Made in USA



Stop-Loc
Pat.Pend.



Graduations	Part Number	Price
Inch	STOPLOC	\$16.00
Inch/Metric	STOPLOC-THSMM	\$18.00
Metric	STOPLOC-MM	\$18.00

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

81

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

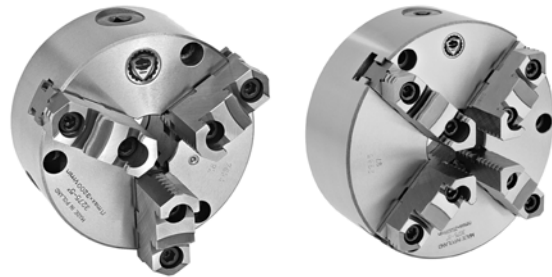
FRONT MOUNTING/LOW PROFILE CHUCKS

B

3 & 4 JAW FRONT MOUNTING SELF-CENTERING SCROLL CHUCKS

With Top Reversible Jaws

- For use with applications where back mounting chucks cannot be used
- 2-piece master jaw style jaws with top reversible jaws for ID and OD workholding
- Semi-steel body
- Also available in forged steel body



3 Jaw Chuck

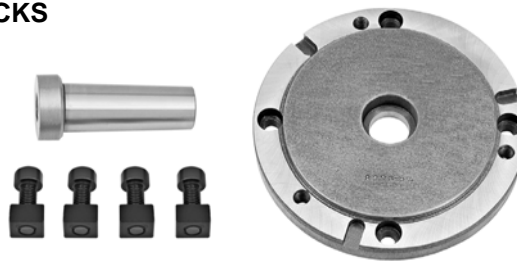
Chuck Size	Thru Hole	Weight (lbs)	Part Number	Price	Mounting Bolts	
					Thread	Number of Bolts
5"	1.260"	10	BI-7812-0500	\$542.70	5/16-18 x 2-1/4	3
6"	1.654"	17	BI-7812-0600	\$608.40	3/18-16 x 2-3/4	3
8"	2.165"	32	BI-7812-0800	\$699.30	3/18-16 x 3-1/4	6
10"	2.992"	52	BI-7812-1000	\$937.80	1/2-13 x 3-1/2	6
12"	4.055"	87	BI-7812-1200	\$1,495.80	5/8-11 x 4	6
15-3/4"	5.354"	163	BI-7812-1600	\$2,357.10	5/8-11 x 4-1/2	6

4 Jaw Chuck

Chuck Size	Thru Hole	Weight (lbs)	Part Number	Price	Mounting Bolts	
					Thread	Number of Bolts
5"	1.260"	10	BI-7814-0500	\$682.20	5/16-18 x 2-1/4	3
6"	1.654"	17	BI-7814-0600	\$735.30	3/18-16 x 2-3/4	3
8"	2.165"	32	BI-7814-0800	\$862.20	3/18-16 x 3-1/4	6
10"	2.992"	52	BI-7814-1000	\$1,115.10	1/2-13 x 3-1/2	6
12"	4.055"	87	BI-7814-1200	\$1,733.40	5/8-11 x 4	6
15-3/4"	5.354"	163	BI-7814-1600	\$2,947.50	5/8-11 x 4-1/2	6

BASE PLATES FOR FRONT MOUNTING CHUCKS

- Designed for use with BISON 3 and 4 jaw front mounting self-centering lathe chucks
- Ideal for use on milling and drilling machines as well as on rotary tables with 3/6 and 4/8 slots
- Base plates are supplied with four mounting bolts with t-nuts and one MT pin

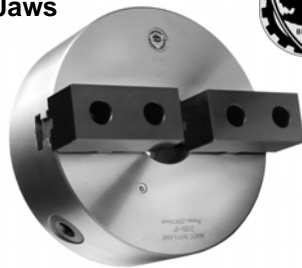


Chuck Size	MT Pin	Part Number	Price
5"	2	BI-7872-305	\$242.10
6"	3	BI-7872-306	\$239.40
8"	3	BI-7872-308	\$306.00
10"	3	BI-7872-310	\$336.60
12-1/2"	4	BI-7872-312	\$538.20
15-3/4"	5	BI-7872-316	\$674.10



2-JAW SCROLL CHUCKS With Soft Top Reversible Jaws

- Type 3105
- Semi-steel body
- Self-centering
- Plain back chuck-backplates required
- Includes 1 set of hard master jaws, 1 set of soft top jaws, chuck wrench, 1 set of mounting bolts, 2 hex keys



Chuck Dia	Thru Hole	Max RPM	Wt. (lbs)	Part Number	Price
6"	1.654	3000	22	BI-7830-0600	\$558.00
8"	2.165	2500	39	BI-7830-0800	\$608.40
10"	2.992	2000	55	BI-7830-1000	\$710.10
12"	4.055	1500	110	BI-7830-1200	\$1,090.80
15-3/4"	5.354	1000	187	BI-7830-1600	\$2,051.10

2-JAW SCROLL CHUCKS With Soft Top Reversible Jaws



- Forged steel body
- Two jaw chuck with two-piece hard reversible jaws
- Plain back- adapter plate sold separately
- Made In Poland

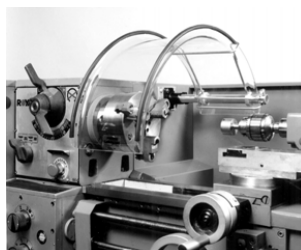
Chuck Dia	Thru Hole	Max RPM	Wt. (lbs)	Part Number	Price
6"	1.654	4600	22	BI-3831-0600P	\$558.36
8"	2.165	4000	39	BI-3831-0800P	\$617.40
10"	2.992	3500	65	BI-3831-1000P	\$742.59
12"	4.055	2800	111	BI-3831-1200P	\$1,170.18
15-3/4"	5.354	2000	189	BI-3831-1600P	\$2,186.73

LATHEGUARDS

Prevent Accidents In The Workplace!



- Clear LEXAN, Semi-Circular wrap-a-round guards
- Heavy Duty Chrome-plated extension tube and hardware
- Ready to mount; simply affix mounting bracket with two screws.
- Back of shield is reinforced with wire-form housing
- Locks in swing away or functional positions
- Accepts 3 or 4-Jaw Chucks
- Included mounting bracket



Lathe Size	Cnt Ht. (Shield Height)	For Use W/ Chucks Up To (A)	Shield Width	Shield Length	Tube Length	Part Number	Price
Small	3.9"	6" Dia	6 1/4"	7.8"	10"	FXB-12999	\$143.68
6 to 12	6"	8" Dia	6 1/4"	11.8"	10"	FXB-13060	\$159.77
12 to 16	8"	12" Dia	8"	15.8"	11 1/2"	FXB-13061	\$182.76
16 to 20	10"	16" Dia	8"	19.70"	13"	FXB-13062	\$198.85
20 to 24	13"	20" Dia	8"	23.6"	13"	FXB-13064	\$227.59

Call Us Today For All Of Your Machine Tool Needs!



4 JAW SELF-CENTERING SCROLL CHUCKS

Semi-Steel Body Plain Back Chuck-Backplates Required

Two-Piece or Solid Jaw Style

- Semi-steel body
- All bearing surfaces are carefully hardened and precisely machined
- Scroll is made of fine quality alloy steel and carefully case hardened
- Thread flanks are ground on both sides
- Teeth and guides are hardened and fully ground on both sides
- 3 pinion design
- See page 68 for backplates



Back View



Chuck Size	Thru Hole	Max RPM	Wt (lbs)	Master Jaw Style Type 3605		Solid Jaw Style Type 3604	
				Part Number	Price	Part Number	Price
5"	1.260	3200	11	BI-7840-0500	\$634.50	BI-7845-0500	\$495.00
6"	1.654	3000	22	BI-7840-0600	\$719.10	BI-7845-0600	\$549.00
8"	2.165	2500	39	BI-7840-0800	\$816.30	BI-7845-0800	\$655.20
10"	2.992	2000	55	BI-7840-1000	\$963.00	BI-7845-1000	\$845.10
12"	4.055	1500	110	BI-7840-1200	\$1,419.30	BI-7845-1200	\$1,286.10
15-3/4"	5.354	1000	187	BI-7840-1600	\$2,357.10	BI-7845-1600	\$2,277.00
20"	7.480	700	320	BI-7840-2000	\$6,228.00	-	-
25"	9.921	500	551	BI-7840-2500	\$9,180.00	-	-

Two-Piece Reversible Jaw Chucks are provided with:

- 1 set of hard master jaws
- 1 set of hard top reversible jaws
- 1 chuck wrench
- 1 set of mounting bolts
- 2 hex keys
- Eye bolts for chucks 15" & larger

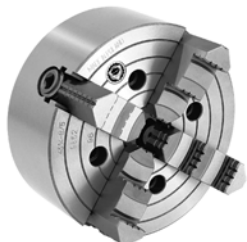
Solid Jaw Style Chucks are provided with:

- 1 set of hard solid ID jaws
- 1 set of hard solid OD jaws
- 1 chuck wrench
- 1 set of mounting bolts
- 1 hex key
- Eye bolts for chucks 15" & larger

4 JAW INDEPENDENT CHUCKS

Semi-Steel Body, Type A1/A2 Direct Mount With Hard Solid Jaws

- Semi-steel body
- Solid jaws are made of high quality carbon steel and hardened
- Designed to grip round or odd shaped work
- Type A1 spindle has a 2 bolt hole pattern, inside and outside the taper. Either an A1 or A2 chuck will fit
- Type A2 spindles have 1 bolt pattern outside the taper-only an A2 chuck will fit



Solid Jaw Style Chucks are provided with:

- 1 set of hard solid reversible jaws
- 1 wrench
- 1 set of clamping bolts

Type 4314

Chuck Size	Spindle	Thru Hole	Max RPM	Wt (lbs)	Part Number	Price
8"	A2-5	1.969	1800	38	BI-7851-0815	\$739.80
	A2-6	1.969	1800	38	BI-7851-0816	\$739.80
10"	A2-5	2.559	1500	56	BI-7851-1025	\$882.90
	A2-6	2.559	1500	56	BI-7851-1016	\$882.90
	A2-8	2.559	1500	56	BI-7851-1018	\$882.90
12"	A2-5	3.150	1200	88	BI-7851-1215	\$1,114.20
	A2-6	3.150	1200	88	BI-7851-1226	\$1,114.20
	A2-8	3.150	1200	88	BI-7851-1218	\$1,114.20
15-3/4"	A2-6	3.937	800	143	BI-7851-1626	\$1,645.20
	A2-8	3.937	800	143	BI-7851-1628	\$1,645.20
	A2-11	3.937	800	143	BI-7851-1619	\$1,645.20
20"	A2-11	4.921	500	251	BI-7851-2019	\$2,645.10
25"	A2-11	6.299	400	364	BI-7851-2519	\$3,435.30
32"	A2-11	6.299	300	672	BI-7851-3219	\$6,579.00

4 JAW INDEPENDENT CHUCKS

Semi-Steel Body, Type D1 Direct Mount With Hard Solid Jaws

- Semi-steel body
- Type D1 direct mount
- Solid jaws are made of high quality carbon steel and hardened
- Designed to grip round or odd shaped work



Type 4344

Chuck Size	Spindle	Thru Hole	Wt (lbs)	Part Number	Price
8"	D1-4	1.9685	37	BI-7853-0834	\$735.30
	D1-5	1.9685	37	BI-7853-0835	\$761.40
10"	D1-4	2.3622	61	BI-7853-1034	\$891.00
	D1-5	2.5591	61	BI-7853-1035	\$910.80
	D1-6	2.5591	61	BI-7853-1036	\$910.80
12"	D1-6	3.1496	87	BI-7853-1236	\$1,157.40
	D1-8	3.1496	87	BI-7853-1238	\$1,197.00
15-3/4"	D1-6	3.937	132	BI-7853-1636	\$1,564.20
	D1-8	3.937	132	BI-7853-1638	\$1,564.20
	D1-11	3.937	132	BI-7853-1639	\$1,564.20
20"	D1-8	4.9213	211	BI-7853-2038	\$2,393.10
	D1-11	4.9213	211	BI-7853-2039	\$2,479.50
25"	D1-11	6.2992	364	BI-7853-2539	\$3,364.20

4 JAW CHUCKS

Forged Steel Body With 2 Piece Jaws



- 2 Piece "master jaw" style jaws
- Forged steel body
- Plain back
- Designed to grip round or odd shaped work



Solid Jaw Chucks are provided with:

- 1 set of hard solid reversible jaws
- 1 self-ejecting chuck wrench
- 1 set of mounting bolts
- 1 hex key
- Eye bolts with 12" to 20" chucks

Chuck Dia	Thru Hole	Max RPM	Wt Lbs	Part Number	Price
6"	1.653	4600	22	BI-3841-0600P	\$772.20
8"	2.165	4000	39	BI-3841-0800P	\$959.31
10"	2.992	3500	64	BI-3841-1000P	\$1,175.95
12"	4.055	2800	111	BI-3841-1200P	\$1,723.77
16"	5.354	2000	189	BI-3841-1600P	\$2,846.25
20"	7.480	1300	322	BI-3841-2000P	\$6,534.18

Call Us Or Visit Our Website For Our Complete Selection!

MANUAL CHUCKS

FOUR JAW INDEPENDENT CHUCKS SOLID JAWS OR TOP REVERSIBLE JAWS FLATBACK

These chucks have jaws that are operated individually to allow solid gripping of oddly shaped and square work pieces. Semi-steel body.



Package Includes:
Chuck, Master Jaws,
Top Jaws, T-Wrench
& Mounting Screws

FOUR JAW INDEPENDENT CHUCKS SOLID JAWS OR TOP REVERSIBLE JAWS DIRECT MOUNT TYPE D

These chucks have jaws that are operated individually to allow solid gripping of oddly shaped and square work pieces. Semi-steel body. Chucks above 16" have 1 piece solid reversible jaws.



Package Includes:
Chuck, Master Jaws,
Top Jaws, T-Wrench
& Mounting Screws

Chuck Size	Thru Hole	Weight (lbs)	Part Number	Price
6"	1.772"	22	BT-4064	\$250.75
	1.772"	22	BT-4064R	\$312.00
8"	2.205"	35	BT-4084	\$264.00
	2.205"	35	BT-4084R	\$396.00
10"	2.953"	51	BT-4104	\$352.00
	2.953"	51	BT-4104R	\$468.00
12"	3.740"	100	BT-4124	\$484.00
	3.740"	100	BT-4124R	\$596.00
14"	3.740"	110	BT-4144	\$524.00
	3.740"	110	BT-4144R	\$684.00
16"	4.921"	139	BT-4164	\$660.00
	4.921"	139	BT-4164R	\$860.00
20"	6.300"	227	BT-4204	\$992.00
25"	7.087"	350	BT-4254	\$2,155.50
32"	8.268"	570	BT-4324	\$4,950.00
40"	10.236"	930	BT-4404	\$6,475.50

D

"R" Designates Top Reversible Jaws

Chuck Size	Spindle	Thru Hole	Solid Jaw Part Number	Price Each	Reversible Part Number	Price Each
6"	D1-3	1.772"	BT-4064D3	\$301.75	BT-4064D3R	\$382.50
	D1-4	2.205"	BT-4084D4	\$403.75	BT-4084D4R	\$505.75
8"	D1-6	2.205"	BT-4084D6	\$403.75	BT-4084D6R	\$505.75
	D1-5	2.953"	BT-4104D5	\$505.75	BT-4104D5R	\$663.00
10"	D1-6	2.953"	BT-4104D6	\$505.75	BT-4104D6R	\$663.00
	D1-6	3.740"	BT-4124D6	\$748.00	BT-4124D6R	\$807.50
12"	D1-8	3.740"	BT-4124D8	\$748.00	BT-4124D8R	\$807.50
	D1-6	3.740"	BT-4144D6	\$867.00	BT-4144D6R	\$1,015.75
14"	D1-8	3.740"	BT-4144D8	\$867.00	BT-4144D8R	\$1,015.75
	D1-8	4.921"	BT-4164D8	\$1,156.50	BT-4164D8R	\$1,255.50
16"	D1-11	4.921"	BT-4164D11	\$1,156.50	BT-4164D11R	\$1,255.50
	D1-8	5.354"	BT-4204D8	\$1,399.50	BT-4204D8R	\$1,552.50
20"	D1-11	6.300"	BT-4204D11	\$1,507.50	BT-4204D11R	\$1,642.50
	D1-15	6.300"	BT-4204D15	\$1,507.50	BT-4204D15R	\$1,642.50
25"	D1-11	7.087"	BT-4254D11	\$2,695.50	BT-4254D11R	\$2,857.50
	D1-15	7.087"	BT-4254D15	\$2,695.50	BT-4254D15R	\$2,857.50

4 JAW SQUARE CHUCK

Low Profile, Super Thin

- Universal scroll chuck design
- Super thin design allows greater Z-axis machining
- Designed for fast and easy positioning on worktable
- Ideal for pallet applications, standard mills, vertical machining centers, angle plates and tombstones
- Master jaw style chuck. Accepts American standard tongue and groove top jaws



3 JAW ROUND CHUCK

Low Profile, Super Thin

- Three operating pinions positioned at a 45° angle for easier operation
- Easy installation with flange type mounting
- Accuracy: .001" repeatability on duplicate parts using the nominated pinion
- Ideal for pallet applications, standard mills, vertical machining centers, angle plates and tombstones
- Master jaw style chuck. Accepts American standard tongue and groove top jaws



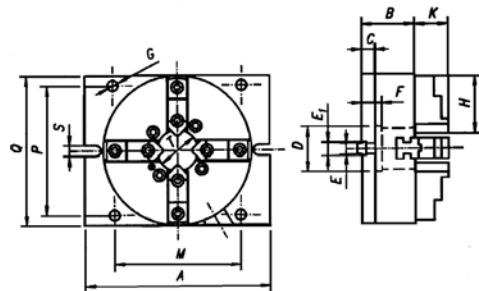
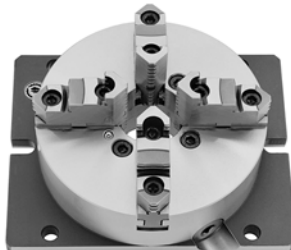
Chuck Size	Base Dimensions	Thru-hole	Weight (lbs)	Part Number	Price
6"	8.46" x 6.50"	1.57"	31	PBA-MCA6	\$1,075.00
8"	9.84" x 7.87"	2.17"	46	PBA-MCA8	\$1,375.00
10"	12.20" x 9.84"	2.76"	70	PBA-MCA10	\$1,795.00
12"	14.96" x 12.20"	3.94"	124	PBA-MCA12	\$2,350.00

Chuck Size	Base Dia.	Thru-hole	Weight (lbs)	Part Number	Price
6"	8.66"	1.77"	24	PBA-NBK6	\$1,150.00
8"	10.63"	2.36"	40	PBA-NBK8	\$1,475.00
10"	12.40"	3.15"	62	PBA-NBK10	\$1,875.00
12"	14.57"	4.13"	95	PBA-NBK12	\$1,995.00

4 JAW MACHINE FIXTURE

Low Profile, Self-Centering Forged Steel Body

- Forged steel body with rectangular base
- Ideal for all types of milling, grinding, drilling and tapping operations on vertical and horizontal CNC machines as well as conventional milling and grinding machines
- All surfaces are hardened and precision ground, square and parallel to an accuracy of 0.0008"
- Repeatability within 0.0004" TIR
- Ideal for pallet applications
- Comes with 1 set of two-piece reversible jaws (hard top and hard master jaws), 1 ratchet wrench, 1 angled wrench and 1 set of 2 mounting bolts with T-nuts and two T-slot keys



Dia	A	Q	B	K	C	D	E	E1	F	G	H	M=P	S	T	Clamping Range		Part Number	Price
															OD	ID		
6"	8.46	6.50	2.48	1.69	.709	1.772	.551	.709	.980	.433	2.64	5.669	.55	1.65	.1181-6.30	1.65-5.75	BI-7640-006	\$1,420.20
8"	9.84	7.87	2.84	1.77	.709	2.362	.551	.709	1.06	.551	3.15	6.850	.55	2.17	.1575-7.48	1.97-7.84	BI-7640-008	\$1,795.50
10"	12.2	9.84	3.27	2.05	.846	3.150	.709	.709	1.25	.630	3.74	8.583	.71	2.99	.1968-9.84	2.28-9.25	BI-7640-010	\$2,076.30

Call Us Today For All Of Your Machine Tool Needs!

REPLACEMENT PARTS FOR BISON CHUCKS



HARD TOP JAWS-OEM STYLE

American Standard Tongue & Groove Jaws

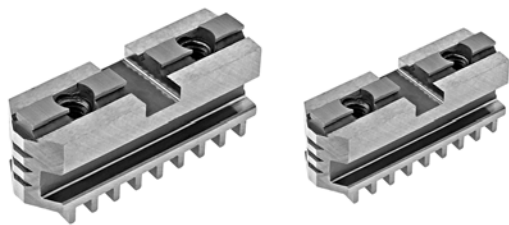


Chuck Dia	Groove Width	Tongue Width	OAL	Height	3-Jaw Chucks		4-Jaw Chucks		6-Jaw Chucks	
					Part Number	Price Per Set	Part Number	Price Per Set	Part Number	Price Per Set
5"	0.313	0.500	2.205	1.516	TG-50HJ2-BI	\$188.10	TG-50HJ2-4-BI	\$300.60	TG-50HJ2-6-BI	\$396.90
6"	0.313	0.500	2.638	1.634	TG-60HJ2-BI	\$230.40	TG-60HJ2-4-BI	\$306.90	TG-60HJ2-6-BI	\$452.70
8"	0.313	0.500	3.347	1.713	TG-80HJ2-BI	\$232.20	TG-80HJ2-4-BI	\$364.50	TG-80HJ2-6-BI	\$548.10
10"	0.500	0.750	3.740	2.023	TG-100HJ2-BI	\$271.80	TG-100HJ2-4-BI	\$380.70	TG-100HJ2-6-BI	\$644.40
12"	0.500	0.750	4.331	2.165	TG-120HJ2-BI	\$334.80	TG-120HJ2-4-BI	\$468.00	TG-120HJ2-6-BI	\$792.00
15-3/4"	0.500	0.750	5.000	2.539	TG-150HJ2-BI	\$456.30	TG-150HJ2-4-BI	\$639.00	TG-150HJ2-6-BI	\$1,141.20
20"	0.500	0.750	5.000	2.933	TG-200HJ2-BI	\$761.40	TG-200HJ2-4-BI	\$1,055.70	TG-200HJ2-6-BI	\$2,153.70
25"	0.500	0.750	5.000	3.228	TG-250HJ2-BI	\$907.20	TG-250HJ2-4-BI	\$1,269.90	TG-250HJ2-6-BI	\$2,100.60
32"	0.500	0.750	5.000	3.228	TG-250HJ2-BI	\$907.20	TG-250HJ2-4-BI	\$1,269.90	-	-

HARD MASTER JAWS

FOR 2, 3 & 4-JAW SELF-CENTERING SCROLL CHUCKS

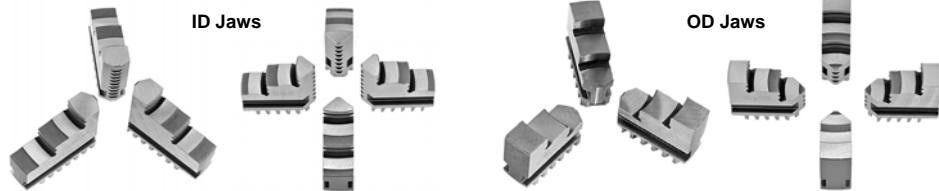
American Standard Tongue & Groove Jaws



Chuck Dia	2-Jaw Chucks		3-Jaw Chucks		4-Jaw Chucks	
	Part Number	Price	Part Number	Price	Part Number	Price
5"	-	-	BI-7885-305	\$152.10	BI-7885-405	\$216.00
6"	BI-7885-206	\$122.40	BI-7885-306	\$157.50	BI-7885-406	\$239.40
8"	BI-7885-208	\$148.50	BI-7885-308	\$172.80	BI-7885-408	\$261.90
10"	BI-7885-210	\$184.50	BI-7885-310	\$221.40	BI-7885-410	\$320.40
12"	BI-7885-212	\$239.40	BI-7885-312	\$306.90	BI-7885-412	\$477.00
15-3/4"	BI-7885-216	\$270.00	BI-7885-316	\$405.00	BI-7885-416	\$601.20
20"	-	-	BI-7885-320	\$743.40	BI-7885-420	\$1,183.50
25"	-	-	BI-7885-325	\$924.30	BI-7885-425	\$1,449.90
32"	-	-	BI-7885-332	\$1,246.50	-	-

ID & OD HARD SOLID JAWS

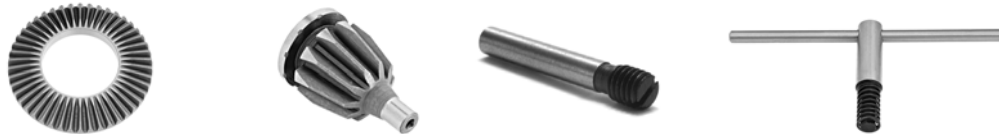
FOR 3 & 4-JAW SCROLL CHUCKS



Chuck Dia	Height	OAL	ID Solid Hard Jaws				OD Solid Hard Jaws			
			For 3-Jaw Chucks	Price Per Set	For 4-Jaw Chucks	Price Per Set	For 3-Jaw Chucks	Price Per Set	For 4-Jaw Chucks	Price Per Set
5"	1.575	2.0079	BI-7881-305	\$128.70	BI-7881-405	\$203.40	BI-7880-305	\$128.70	BI-7880-405	\$203.40
6"	2.087	2.7559	BI-7881-306	\$147.60	BI-7881-406	\$233.10	BI-7880-306	\$147.60	BI-7880-406	\$233.10
8"	2.126	3.3459	BI-7881-308	\$156.60	BI-7881-408	\$248.40	BI-7880-308	\$156.60	BI-7880-408	\$248.40
10"	2.480	4.1339	BI-7881-310	\$194.40	BI-7881-410	\$306.90	BI-7880-310	\$194.40	BI-7880-410	\$306.90
12"	2.953	4.9213	BI-7881-312	\$319.50	BI-7881-412	\$504.00	BI-7880-312	\$319.50	BI-7880-412	\$504.00
15-3/4"	3.622	5.7087	BI-7881-316	\$393.30	BI-7881-416	\$558.00	BI-7880-316	\$393.30	BI-7880-416	\$558.00
20"	3.937	7.0866	BI-7881-320	\$962.10	BI-7881-420	\$1,283.40	BI-7880-320	\$962.10	BI-7880-420	\$1,193.40
25"	4.331	8.8583	BI-7881-325	\$1,154.70	BI-7881-425	\$1,485.00	BI-7880-325	\$1,154.70	BI-7880-425	\$1,431.90

SPARE PARTS FOR 2, 3 & 4-JAW CHUCKS

For Bison Chucks With Semi-Steel Body Only



Chuck Dia	Scroll			Pinion			Pinion Screw		Chuck Wrenches			
	OD	Part Number	Price	OAL	Part Number	Price	Part Number	Price	Square Size	Length	Part Number	Price
5"	3.70	BI-7887-305	\$179.10	1.63	BI-7886-305	\$40.50	BI-7888-906	\$4.50	0.354	3.15	BI-7889-005	\$42.30
6"	4.88	BI-7887-306	\$212.40	1.87	BI-7886-306	\$42.30	BI-7888-906	\$4.50	0.433	3.94	BI-7889-008	\$45.00
8"	6.26	BI-7887-308	\$260.10	2.30	BI-7886-308	\$51.30	BI-7888-910	\$9.00	0.433	3.94	BI-7889-008	\$45.00
10"	7.84	BI-7887-310	\$351.00	2.72	BI-7886-310	\$63.00	BI-7888-910	\$9.00	0.551	4.72	BI-7889-012	\$55.80
12"	10.10	BI-7887-312	\$465.30	3.60	BI-7886-312	\$75.60	BI-7888-910	\$9.00	0.551	4.72	BI-7889-012	\$55.80
15-3/4"	12.90	BI-7887-316	\$1,141.20	4.41	BI-7886-316	\$107.10	BI-7888-920	\$11.70	0.669	5.51	BI-7889-016	\$81.00
20"	16.40	BI-7887-320	\$2,459.70	5.30	BI-7886-320	\$311.40	BI-7888-920	\$11.70	0.748	5.51	BI-7889-025	\$124.20

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS
VISE ACCESSORIES
VISE JAWS
STRAIGHT SHANK COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

OIL COUNTRY CHUCKS

4 JAW INDEPENDENT CHUCKS

Extra Heavy Duty-Forged Steel Body
Extra Large Thru-Hole

- Forged steel body
- Two-piece "master jaw" style
- Includes mounting bolts, wrench eye bolts and 2 Allen keys



Chuck Size	Mount	Thru Hole	Max RPM	Wt (lbs)	Part Number	Price
15-3/4"	A2-8	5.30	1200	320	BI-7859-1620	\$5,661.00
	A2-11	6.50	1200	302	BI-7859-1625	\$5,661.00
	D1-8	5.30	1200	300	BI-7859-6150	\$5,796.00
	D1-11	6.50	1200	282	BI-7859-6153	\$5,805.00
20"	A2-11	6.50	1000	450	BI-7859-2033	\$6,912.00
	A2-15	8.00	1000	414	BI-7859-2043	\$6,912.00
	D1-8	5.30	1000	468	BI-7859-6200	\$7,524.00
	D1-11	6.50	1000	452	BI-7859-6203	\$7,128.00
25"	A2-15	10.50	850	684	BI-7859-2543	\$10,593.00
	A2-20	12.55	850	662	BI-7859-2555	\$10,593.00
28"	A2-15	10.50	750	915	BI-7859-2845	\$15,363.00
	A2-20	12.55	750	873	BI-7859-2853	\$15,363.00
	D1-11	7.50	750	993	BI-7859-6839	\$15,363.00
32"	A2-15	10.50	750	1290	BI-7859-3243	\$17,631.00
	A2-20	12.55	600	1246	BI-7859-3255	\$17,631.00
	A2-20	14.5	600	1246	BI-7859-3257	\$17,631.00
40"	A2-28	20.86	430	1687	BI-7859-4063	\$29,079.00

3-JAW OIL COUNTRY CHUCKS

Self-Centering, Extra Heavy Duty

- Two-piece master jaw style chuck
- Forged steel body
- Large thru-hole
- Direct and indirect mounting
- Includes two-piece reversible hard jaws, wrench, mounting bolts and eye bolt



Chuck Size	Mount	Thru Hole	Max RPM	Wt (lbs)	Part Number	Price
15-3/4"	A2-8*	5.34	1400	336	BI-7825-1608	\$8,226.00
	A2-11*	5.12	1400	336	BI-7825-1611	\$8,226.00
20"	A2-11	7.48	1000	560	BI-7825-2011	\$11,907.00
	A2-15*	8.00	1000	530	BI-7825-2025	\$12,672.00
25"	A2-15	10.75	850	615	BI-7825-2515	\$17,838.00
	A2-20*	12.55	850	555	BI-7825-2520	\$18,090.00
32"	A2-15	10.75	600	1108	BI-7825-3215	\$25,974.00
	A2-20	12.55	600	1080	BI-7825-3220	\$25,974.00

*Indirect mount. All indirect mount chucks come with fully machined backplate.

LARGE BORE OIL COUNTRY CHUCKS

25" Diameter, 3 & 4 Reversible Jaws
Extra Large Thru-hole

- Solid or semi steel body available
- Extra large thru hole
- Scroll and master jaws ground and hardened

Package Includes:
Chuck, Master Jaws,
Top Jaws, T-Wrench
& Mounting Screws



D



Chuck Size	Thru Hole	Spindle	Body Type	Weight (lbs)	Part Number	Price
3 JAW CHUCKS						
25"	7.500"	A2-11	Semi-Steel	530	BT-2-253A211R	\$7,375.00
25"	10.512"	A2-15	Steel	678	BT-1-253A215R	\$7,375.00
25"	12.52"	A1-20	Steel	618	BT-1-253A120R	\$7,375.00
4 JAW CHUCKS						
25"	7.500"	A2-11	Semi-Steel	385	BT-2-254A211R	\$4,165.00
25"	10.512"	A2-15	Steel	569	BT-1-254A215R	\$4,165.00
25"	12.520"	A2-20	Steel	506	BT-1-254A220R	\$4,165.00



COMPLETE WORKHOLDING SOLUTIONS!

- Manual and CNC chucks
- Collet chucks
- Replacement parts
- Swing lock chucks
- Adapter plates
- Threaded drawnuts-standard and extended length
- Hydraulic cylinders



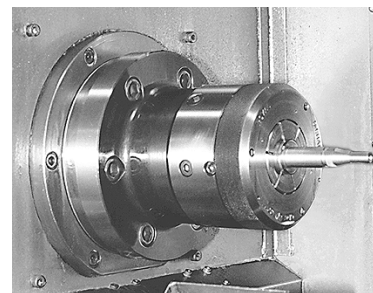
PLEASE CALL FOR MORE INFORMATION!

Call Us Today For All Of Your Machine Tool Needs!

WHY BUY A COLLET CHUCK?

Collet chucks can be easily installed on almost any CNC lathe, whether it is new or old. They can be interchanged with 3 jaw chucks or installed permanently, depending on the jobs required. Here are some other advantages of a collet chuck:

- Gripping force is spread over the entire circumference of the workpiece instead of being concentrated at just three points.
- Jobs can be run at higher RPMs because collet chucks are not as vulnerable to the negative effects of centrifugal force.
- Collet chucks offer better tool clearance and easier access to workpiece.
- Collet changeover time is usually faster than changing chuck jaws.
- No boring of jaws is required.
- Collet chucks usually have much less mass than 3 jaw chucks, reducing wear on machine tool spindle bearings and allowing for quicker starts and stops.
- Collets are readily available.



Collet Chuck Applications:

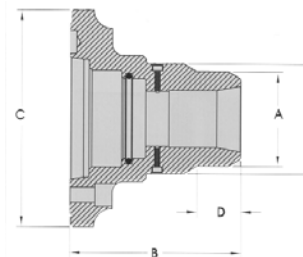
Bar feeding/Bar pulling • Slug work • Small diameter work less than 3"
Twin or subspindle machines • Delicate thin-walled parts
High RPM applications • Parts that require extra tool clearance for machining

CNC PULLBACK COLLET CHUCKS

For 5C, 16C & 3J Collets

FEATURES:

- A simple, low-cost method for utilizing collets on all CNC lathes and turning centers.
- Pullback design.
- 0.0003" TIR guaranteed.
- Body hardened to Rc61-63 for rigidity
- Accepts 5C, 16C & 3J collets and tooling.



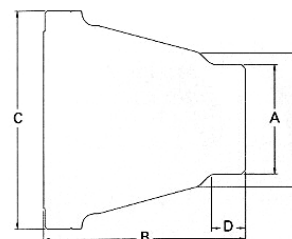
Collet Type	Spindle	Cap.	Threaded Nose	A	B	C	D	E	Max Drawbar Force (lbs.)	Max Clamping Force (lbs.)	Max RPM	Part Number	Price
5C	A2-5	1-1/16	N	2.63	5.00	6.45	1.05	3.14	4,490	15,750	6,000	ROY-42053	\$1,166.20
	A2-5	1-1/16	Y	2.187-10	5.00	6.45	1.22	3.14	4,490	15,750	6,000	ROY-42054	\$1,303.40
	A2-6	1-1/16	N	2.63	5.00	7.45	1.05	3.14	4,490	15,750	6,000	ROY-42055	\$1,372.00
	A2-6	1-1/16	N	2.63	6.00	7.45	1.05	3.14	4,490	15,750	6,000	ROY-42057	\$1,528.80
	A2-6	1-1/16	Y	2.187-10	6.00	7.45	1.22	3.14	4,490	15,750	6,000	ROY-42058	\$1,646.40
	A2-8	1-1/16	N	2.63	6.00	9.45	1.05	3.14	4,490	15,750	4,500	ROY-42059	\$1,685.60
16C	A2-5	1-5/8	N	3.00	6.00	6.45	1.85	3.31	5,390	19,800	6,000	ROY-42067	\$1,450.40
	A2-6	1-5/8	N	3.25	6.00	7.45	1.54	3.78	5,390	19,800	6,000	ROY-42069	\$1,528.80
	A2-8	1-5/8	N	3.25	6.00	9.45	1.54	3.78	5,390	19,800	4,500	ROY-42071	\$1,675.80
3J	A2-5	1-3/4	N	3.08	6.00	6.45	1.16	3.33	5,390	19,800	6,000	ROY-42061	\$1,489.60
	A2-6	1-3/4	N	3.25	6.00	7.45	1.05	3.87	5,390	19,800	6,000	ROY-42063	\$1,617.00

CNC ACCU-LENGTH COLLET CHUCKS

For 5C, 16C & 3J Collets

FEATURES:

- Exclusive Accu-Length™ system eliminates part pullback.
- Guaranteed max. closing sleeve runout relative to mounting recess is 0.00025".
- Patented floating collet retainer improves concentricity.
- Accepts all standard 5C and 16C accessories & tooling.
- Ideal for sub-spindle applications.
- Collet wrench and oiler included with chuck.



Collet Type	Spindle Type	Cap.	A	B	C	D	E	Max Drawbar Force (lbs)	Max Clamping Force (lbs)	Max RPM	Part Number	Price
5C	A2-5	1-1/16"	2.43	5.75	6.45	1.00	4.00	4,000	13,600	6,000	ROY-42330	\$4,037.60
	A2-6	1-1/16"	2.43	5.75	7.45	1.00	4.00	4,000	13,600	6,000	ROY-42332	\$4,223.80
16C	A2-5	1-5/8"	3.25	6.25	6.45	1.03	3.90	5,400	18,300	6,000	ROY-42338	\$4,419.80
	A2-6	1-5/8"	3.25	7.00	7.95	1.03	4.48	5,400	18,300	6,000	ROY-42340	\$4,576.60
	A2-8	1-5/8"	3.25	7.75	9.45	1.03	4.48	5,400	18,300	4,500	ROY-42342	\$4,713.80
3J	A2-5	1-3/4"	3.25	6.00	6.45	1.03	3.97	5,400	26,300	6,000	ROY-42344	\$4,576.60
	A2-6	1-3/4"	3.25	6.50	7.95	1.03	4.48	5,400	26,300	6,000	ROY-42346	\$4,713.80
	A2-8	1-3/4"	3.25	7.25	9.45	1.03	4.48	5,400	26,300	4,500	ROY-42348	\$4,880.40

Call Us Or Visit Our Website For Our Complete Selection!

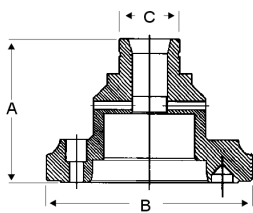
COLLET CHUCKS

CNC PULLBACK COLLET CHUCKS

For 16C, 3J & 5C Collets



- 5C collets readily available.
- 16C collet chucks are popular due to their capacity (1.625").
- 5C and 16C systems available with step chuck capability.
- Step chuck capacities range from 2" to 6" in diameter.



WARNING: Do not use manual jaw chucks, fixture mounting plates or face plates on ATS 5C threaded nose. Cast iron step chuck closers are not recommended for speeds greater than 4000 RPM or draw bar forces over 5,000 lbs.

Description	Spindle	OAL A	B	C	Cap.	Part Number	Price
-------------	---------	-------	---	---	------	-------------	-------

16C (Utilizes standard 16C collets)

A5-16C	A2-5	6.250	6.450	3.400	1.625	ATS-1650-B05	\$1,390.00
A6-16C	A2-6	6.250	7.450	4.000	1.625	ATS-1660A-D01	\$1,490.00
A8-16C	A2-8	6.500	9.450	5.375	1.625	ATS-1680A-A17	\$1,590.00

5C (Utilizes standard 5C collets)

A5-5CB	A2-5	5.000	6.450	2.180	1.062	ATS-5050-B01	\$1,290.00
A5-5CA	A2-5	3.500	6.450	2.180	1.062	ATS-5050-B03	\$1,290.00
A6-5C1	A2-6	5.000 (1)	7.450	2.250	1.062	ATS-5060A-A05	\$1,290.00
A6-5CA	A2-6	5.000	7.450	2.180	1.062	ATS-5060A-C01	\$1,390.00
AB-5C1	A2-8	6.000 (1)	9.450	2.250	1.062	ATS-5080A-A14	\$1,490.00
AB-5C	A2-8	6.000	9.450	2.180	1.062	ATS-5080A-A13	\$1,590.00

3J (Utilizes standard 3J collets)

A5-3J	A2-5	5.750	6.450	3.400	1.750	ATS-3050-B07	\$1,390.00
A6-3J	A2-6	6.000	7.450	4.000	1.750	ATS-3060A-D03	\$1,490.00
A8-3J	A2-8	6.000	9.450	5.370	1.750	ATS-3080A-F17	\$1,790.00

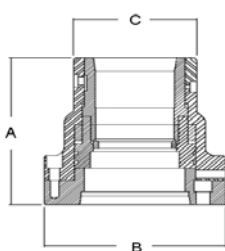
(1) - Non Threaded Nose S/C - Step Chuck Capability

LOW PROFILE TRUE LENGTH COLLET CHUCKS

For 5C, 16C & 3J Collets



- Adjustable feature for T.I.R. and concentricity.
- Fixed collet position increases linear precision.
- Ideal for secondary operations, sub-spindle applications and part transfers.
- Small body design provides for greater tool clearance, Z-axis travel and rigidity.



Description	Spindle	OAL A	B	C	Cap.	Part Number	Price
-------------	---------	-------	---	---	------	-------------	-------

5C (Utilizes standard 5C collets)

750AG05-50 A5-5CTL	A2-5	5.740	6.450	2.500	1.062	ATS-750AG0550	\$3,630.50
750AG5-60 A6-5CTL	A2-6	5.750	7.450	2.500	1.062	ATS-750AG560	\$3,990.00
750AG05-80 A8-5CTL	A2-8	7.000	8.450	2.500	1.062	ATS-750AG0580	\$4,090.00

16C (Utilizes standard 16C collets)

716AK40-60 A6-16CTL	A6	7.000	7.000	3.250	1.625	ATS-716AK4060	\$4,290.00
716AK40-80 A8-16CTL	A8	7.750	8.450	3.250	1.625	ATS-716AK4080	\$4,390.00

3J (Utilizes standard 3J collets)

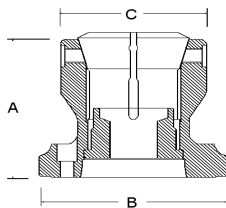
730AH05-60 A6-3JTL	A2-6	6.500	7.000	3.250	1.750	ATS-730AH0560	\$4,390.00
730AH05-80 A8-3JTL	A2-8	7.250	8.450	3.250	1.750	ATS-730AH0580	\$4,590.00

CNC PULLBACK COLLET CHUCKS

For "S" Style Collets



- "S" style is common in automatic screw and turret type machines.
- Utilizes standard "S" style collet pads-see page 64.



Collet Series	Spindle	OAL		Flange		Nose		Cap.	Part Number	Price
		A	B	B	C	C	C			
S-20	A2-6	5.575	7.450	7.450	4.400	2.000	2.000	ATS-42060A-D05	\$3,390.00	
S-20	A2-6	6.750	7.450	7.450	4.400	2.000	2.000	ATS-42060A-D07	\$3,390.00	
S-22	A2-6	7.250	7.450	7.450	5.000	2.250	2.250	ATS-42260-E06	\$3,590.00	
S-26	A2-6	5.750	7.450	7.450	5.750	2.625	2.625	ATS-42660B-E03	\$3,690.00	
S-26	A2-8	7.000	9.450	9.450	5.750	2.625	2.625	ATS-42680B-D16	\$3,690.00	
S-30	A2-6	6.375	7.450	7.450	5.750	3.000	3.000	ATS-43060-E08	\$4,090.00	
S-30	A2-8	6.525	9.450	9.450	5.750	3.000	3.000	ATS-43080A-E15	\$4,090.00	
S-30	A2-8	7.675	9.450	9.450	5.750	3.000	3.000	ATS-43080A-K05	\$4,190.00	

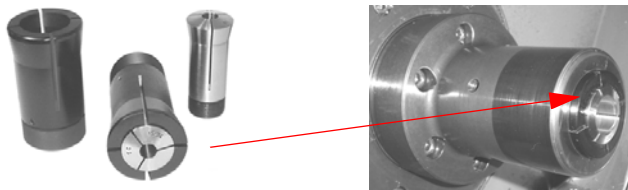
H - Hardinge HS - Hardinge (Short)

UNIVERSAL COLLET ADAPTER

16C, 3J & 2J to 5C Adapters

Allows you to use 5C collets on your 16C, 3J or 2J Chucks!

- Available to adapt 5C collets for use in 16C, 3J & 2J collet chucks
- Manufactured from 1144 Steel
- TIR 0.0005
- Made in the USA



Description	Part Number	Price
16C to 5C Adapter	VIC-16CTO5C	\$219.00
3J to 5C Adapter	VIC-3JTO5C	
2J to 5C Adapter	VIC-2JTO5C	

D

Call Us Today For All Of Your Machine Tool Needs!

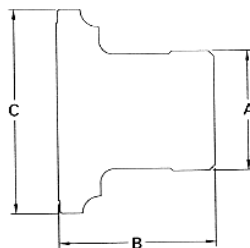
"S" STYLE COLLET CHUCKS

A

CNC PULLBACK COLLET CHUCKS

For S-Style Collets

- Simply change collet pads to hold different part diameters
- Collet pads also available-see pages 64
- S-Type collet chucks include master collet, wrench, mounting hardware and custom-machined drawtube adapter

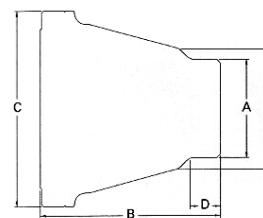


Collet Type	Spindle	Cap.	A	B	C	Chuck Weight	Max Drawbar Force (Lbs.)	Max Gripping Force(Lbs.)	Max RPM	Part Number	Price
S-20 Master	A2-6	2"	4.40	5.57	7.45	17 lbs	6,000	14,700	6,000	ROY-45110	\$3,596.60
S-26 Master	A2-6	2-5/8"	5.75	6.25	7.45	21 lbs	6,500	15,925	6,000	ROY-45112	\$3,861.20
S-26 Master	A2-8	2-5/8"	5.75	6.25	9.45	42 lbs	6,500	15,925	4,500	ROY-45114	\$4,018.00
S-30 Master	A2-8	3"	5.75	6.53	9.45	53 lbs	7,000	17,150	4,500	ROY-45116	\$4,165.00

CNC ACCU-LENGTH COLLET CHUCKS

For "S" Style Collets

- Exclusive Accu-Length™ system eliminates part pullback
- Guaranteed max. closing sleeve runout relative to mounting recess is 0.00025"
- Patented floating collet retainer improves concentricity.
- Ideal for sub-spindle applications
- Collet wrench and oiler included with chuck
- Master collet included on S-Type collet chucks



Collet Type	Spindle Type	Capacity	A	B	C	D	E	Max Drawbar Force (lbs)	Max Clamping Force (lbs)	Max RPM	Part Number	Price
S-20	A2-5	2"	4.81	6.38	7.95	1.30	6.25	6,000	29,300	6,000	ROY-42360	\$5,076.40
	A2-6	2"	4.81	6.75	7.95	1.30	6.25	6,000	29,300	6,000	ROY-42362	\$5,448.80
S-26	A2-6	2-5/8"	5.50	7.00	7.95	1.50	6.75	8,000	39,100	6,000	ROY-42364	\$5,595.80
S-30	A2-6	3"	6.06	6.62	7.95	1.50	6.75	10,000	48,800	6,000	ROY-42368	\$6,095.60
	A2-8	3"	6.06	6.62	9.45	1.50	6.75	10,000	48,800	4,500	ROY-42370	\$6,095.60

MASTER JAW COLLET SYSTEM

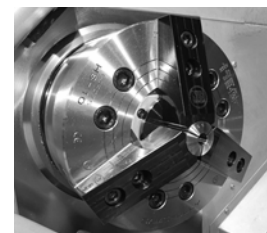
Use 5C Or 16C Collets On Your 3 Jaw Chuck



Convert Your CNC Lathe Chuck Into A Precision-Length Collet System!



The Master Jaw System is available for 6, 8, 10 and 12 inch CNC power chucks. A cost effective and efficient alternative to a standard collet chuck that eliminates the need to remove your chuck from the machine. This system provides a positive stop-dead length for repeatable part lengths. Installation is as fast and easy as installing a set of soft jaws. The ability to go from working with standard jaws to running collets in just minutes will sky rocket your shop's productivity. A TIR runout average of .0008 - .0015 in. can be expected above your collet's factory tolerances and is dependent on the condition of your chuck and the quality of your collets. This amazing system is completely made in the USA from high grade materials. The collet housing is made from US heat treated 4140 alloy steel and the jaws are US 1018 CR steel that can be case hardened. The system comes with a black oxide finish.



- Available for 6", 8", 10" & 12" CNC lathe chucks
- Allows you to use your 5C or 16C collets
- Easy Installation! As fast and simple as changing over a set of soft jaws
- Quick changeover to different stock sizes & shapes
- Eliminates the need to bore soft jaws
- TIR runout average of .0008 - .0015"
- Saves you time and money!
- **MADE IN THE USA**

MASTER JAW SYSTEM

Includes:

- 1 set of 3 master jaws
- 1 collet sleeve
- 1 anti-backlash plug
- Setup instructions

Fits Chuck Make/Model	Chuck Size	Serrations	Groove Width	Hole Spacing	Chuck Thru-Hole	Part Number	Price Each
-----------------------	------------	------------	--------------	--------------	-----------------	-------------	------------

For 5C Collets

Kitagawa B206, Strong N206,	6"	1.5mm x 60°	0.472	0.787	45mm	ED-MJSK6LA	\$783.75
Samchully HS06	6"		0.472	0.787	46mm	ED-MJSK6HA	\$783.75
Kitagawa B208, Strong N208, Samchully HS08	8"		0.551	0.984	52mm	ED-MJSK8LA	\$783.75
Kitagawa B210, Strong N210	10"		0.630	1.181	75mm	ED-MJSK10LA	\$783.75
Samchully HS10	10"		0.630	1.181	77mm	ED-MJSK10HA	\$783.75
Kit B212, Strong N212, Samchully HS12	12"		0.827	1.181	91mm	ED-MJSK12LA	\$855.00

For 16C Collets

Kitagawa BB206	6"	1.5mm x 60°	0.472	0.787	53mm	ED-MJSK6B-16	\$12.25
Kitagawa B208, Strong N208, Samchully HS08	8"		0.551	0.984	52mm	ED-MJSK8LA-16	\$812.25
Kitagawa B210, Strong N210	10"		0.630	1.181	75mm	ED-MJSK10LA-16	\$812.25
Samchully HS10	10"		0.630	1.181	77mm	ED-MJSK10HA-16	\$812.25

*Additional systems available, allow 7-10 working days to manufacture. Please call for more information.

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

89

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

QUICK-GRIP™ COLLET CHUCKS



QUICK-GRIP™ COLLET CHUCKS

10-SECOND COLLET CHANGES!

- **10-Second Collet Changes!** A unique hook and groove design for securing collets is used instead of traditional threads
- **Widest Collet Gripping Range!** Royal Quick-Grip™ collets have a .062" gripping range (+/-0.031"), allowing them to accommodate undersized and oversized bar stock
- **Ultra-Compact Design-**Quick-grip™ CNC collet chucks have smaller nose diameters than other quick-change collet chucks for superior tool clearance
- Royal Quick-Grip™ collet chucks are balanced by design for high-speed operation, and can often be run at higher speeds than conventional 3-jaw chucks because they are less affected by centrifugal force
- **Extremely Accurate-**Runout on the closing angle is guaranteed to be within 0.0002" TIR
- Quick-Grip™ collet chucks can also utilize MicroCentric™ and Hainbuch™ Quick-change collets
- Available in Accu-Length or Pullback styles
- **Made in the USA**



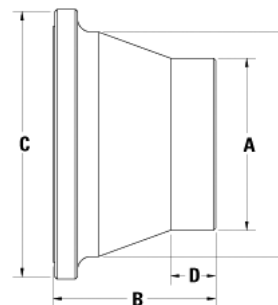
Exclusive "Bolt & Go" Mounting Advantage On All Royal Collet Chucks!

Many Royal chuck models mount directly to the lathe spindle without the need for an adapter plate. However, for models that do use a plate, a precision-ground tapered fit between the plate's male pilot and chuck body's female recess ensures a consistent, near-perfect fit without the need for any adjustment. Knock 30 minutes off your setup time with Royal bolt & Go™!



QUICK-GRIP™ ACCU-LENGTH™ CNC COLLET CHUCKS

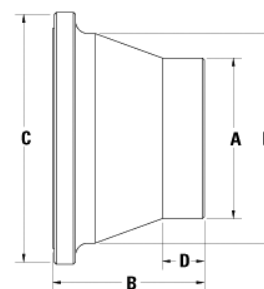
Royal Accu-Length™ CNC collet chucks incorporate dead-length operation to eliminate part pullback. With this design, a tapered sleeve pushes forward over the collet to compress it, resulting in precise z-axis positioning.



Spindle Type	Collet Series	Cap.	A	B	C	D	E	Chuck Weight	Max. Drawbar Force	Max Clamping Force	Max RPM	Part Number	Price
A2-5	QG-42	1-5/8	3.86	4.60	6.45	0.98	5.70	15	7,865	14,160	6,000	ROY-44055	\$3,260.00
A2-6	QG-42	1-5/8	3.86	4.45	7.25	0.98	6.20	17	7,865	14,160	6,000	ROY-44053	\$3,260.00
A2-5	QG-65	2-5/8	4.69	4.80	7.25	1.00	6.45	19	10,115	23,600	6,000	ROY-44065	\$3,680.00
A2-6	QG-65	2-5/8	4.69	5.33	7.25	1.00	6.45	23	10,115	23,600	6,000	ROY-44067	\$3,680.00
A2-8	QG-65	2-5/8	4.69	5.50	9.45	1.00	8.00	37	10,115	23,600	6,000	ROY-44068	\$4,160.00

QUICK-GRIP™ PULL-TO-A-STOP CNC COLLET CHUCKS

Royal Pullback CNC collet chucks provide a simple, low-cost method for utilizing Quick-Grip™ collets on all CNC lathes and turning centers



- Traditional pullback design-collet is pulled into chuck to close, pushed out to open
- No collet stop capability-**this chuck style is typically used only on jobs where holding precise axial position is not critical**
- 0.0002" TIR accuracy on closing angle
- Compact dimensions for superior clearance

Spindle Type	Collet Series	Cap.	A	B	C	D	E	Chuck Weight	Max. Drawbar Force	Max Clamping Force	Max RPM	Part Number	Price
A2-5	QG-42	1-5/8	4.11	4.45	6.45	3.50	5.25	11	7,865	14,160	6,000	ROY-44020	\$1,999.20
A2-6	QG-42	1-5/8	4.11	4.35	7.45	1.50	4.38	13	7,865	14,160	6,000	ROY-44022	\$2,146.20
A2-5	QG-65	2-5/8	4.88	4.30	6.45	1.50	6.45	19	10,115	18,205	6,000	ROY-44028	\$2,273.60
A2-6	QG-65	2-5/8	4.88	4.85	7.45	1.50	5.25	17	10,115	18,205	6,000	ROY-44030	\$2,273.60
A2-8	QG-65	2-5/8	4.88	5.00	9.45	1.50	5.72	26	10,115	18,205	6,000	ROY-44032	\$2,812.60

Please See Following Page For Quick-Grip™ Collets And Accessories

Call Us Today For All Of Your Machine Tool Needs!



Royal Quick-Grip™ Collets Are Fully Compatible With MicroCentric™ & Hainbuch™ Quick-Change Collets!



QUICK-GRIP™ COLLETS

- For use with Royal Quick-Grip™ Collet Chucks
- Precision ground to nominal size, with a gripping range of +/- .031". For example, a 1/2" collet can hold any part ranging in size from 0.531" diameter down to 0.469" diameter
- Extremely accurate-total system accuracy (chuck and collet) of 0.0004" TIR or better
- Available with smooth or serrated ID. Hex, square and custom sizes also available, please call
- Vulcanized rubber between collet segments provide excellent sealing protection against coolant penetration

QG-42 Collets \$234.22 Each

Diameter	Smooth Bore	Serrated Bore
3/16	ROY-44101	-
7/32	ROY-44102	-
1/4	ROY-44103	-
9/32	ROY-44104	-
5/16	ROY-44105	-
11/32	ROY-44106	ROY-44155
3/8	ROY-44107	ROY-44156
13/32	ROY-44108	ROY-44157
7/16	ROY-44109	ROY-44158
15/32	ROY-44110	ROY-44159
1/2	ROY-44111	ROY-44160
17/32	ROY-44112	ROY-44161
9/16	ROY-44113	ROY-44162
19/32	ROY-44114	ROY-44163
5/8	ROY-44115	ROY-44164
21/32	ROY-44116	ROY-44165

Diameter	Smooth Bore	Serrated Bore
11/16	ROY-44117	ROY-44166
23/32	ROY-44118	ROY-44167
3/4	ROY-44119	ROY-44168
25/32	ROY-44120	ROY-44169
13/16	ROY-44121	ROY-44170
27/32	ROY-44122	ROY-44171
7/8	ROY-44123	ROY-44172
29/32	ROY-44124	ROY-44173
15/16	ROY-44125	ROY-44174
31/32	ROY-44126	ROY-44175
1	ROY-44127	ROY-44176
1-1/32	ROY-44128	-
1-1/16	ROY-44129	ROY-44177
1-3/32	ROY-44130	-
1-1/8	ROY-44131	ROY-44178
1-5/32	ROY-44132	-

Diameter	Smooth Bore	Serrated Bore
1-3/16	ROY-44133	ROY-44179
1-7/32	ROY-44134	-
1-1/4	ROY-44135	ROY-44180
1-9/32	ROY-44136	-
1-5/16	ROY-44137	ROY-44181
1-11/32	ROY-44138	-
1-3/8	ROY-44139	ROY-44182
1-13/32	ROY-44140	-
1-7/16	ROY-44141	ROY-44183
1-15/32	ROY-44142	-
1-1/2	ROY-44143	ROY-44184
1-17/32	ROY-44144	-
1-9/16	ROY-44145	ROY-44185
1-19/32	ROY-44146	-
1-5/8	ROY-44147	ROY-44186

QG-65 Collets \$287.14 Each

Diameter	Smooth Bore	Serrated Bore
3/16	ROY-44201	-
7/32	ROY-44202	-
1/4	ROY-44203	-
9/32	ROY-44204	-
5/16	ROY-44205	-
11/32	ROY-44206	ROY-44306
3/8	ROY-44207	ROY-44307
13/32	ROY-44208	ROY-44308
7/16	ROY-44209	ROY-44309
15/32	ROY-44210	ROY-44310
1/2	ROY-44211	ROY-44311
17/32	ROY-44212	ROY-44312
9/16	ROY-44213	ROY-44313
19/32	ROY-44214	ROY-44314
5/8	ROY-44215	ROY-44315
21/32	ROY-44216	ROY-44316
11/16	ROY-44217	ROY-44317
23/32	ROY-44218	ROY-44318
3/4	ROY-44219	ROY-44319
25/32	ROY-44220	ROY-44320
13/16	ROY-44221	ROY-44321
27/32	ROY-44222	ROY-44322
7/8	ROY-44223	ROY-44323
29/32	ROY-44224	ROY-44324
15/16	ROY-44225	ROY-44325
31/32	ROY-44226	ROY-44326
1	ROY-44227	ROY-44327

Diameter	Smooth Bore	Serrated Bore
1-1/32	ROY-44228	-
1-1/16	ROY-44229	ROY-44328
1-3/32	ROY-44230	-
1-1/8	ROY-44231	ROY-44329
1-5/32	ROY-44232	-
1-3/16	ROY-44233	ROY-44330
1-7/32	ROY-44234	-
1-1/4	ROY-44235	ROY-44331
1-9/32	ROY-44236	-
1-5/16	ROY-44237	ROY-44332
1-11/32	ROY-44238	-
1-3/8	ROY-44239	ROY-44333
1-13/32	ROY-44240	-
1-7/16	ROY-44241	ROY-44334
1-15/32	ROY-44242	-
1-1/2	ROY-44243	ROY-44335
1-17/32	ROY-44244	-
1-9/16	ROY-44245	ROY-44336
1-19/32	ROY-44246	-
1-5/8	ROY-44247	ROY-44337
1-21/32	ROY-44248	-
1-11/16	ROY-44249	ROY-44338
1-23/32	ROY-44250	-
1-3/4	ROY-44251	ROY-44339
1-25/32	ROY-44252	-
1-13/16	ROY-44253	ROY-44340
1-27/32	ROY-44254	-

Diameter	Smooth Bore	Serrated Bore
1-7/8	ROY-44255	ROY-44341
1-29/32	ROY-44256	-
1-15/16	ROY-44257	ROY-44342
1-31/32	ROY-44279	-
2	ROY-44258	ROY-44343
2-1/32	ROY-44259	-
2-1/16	ROY-44260	ROY-44344
2-3/32	ROY-44261	-
2-1/8	ROY-44262	ROY-44345
2-5/32	ROY-44263	-
2-3/16	ROY-44264	ROY-44346
2-7/32	ROY-44265	-
2-1/4	ROY-44266	ROY-44347
2-9/32	ROY-44267	-
2-5/16	ROY-44268	ROY-44348
2-11/32	ROY-44269	-
2-3/8	ROY-44270	ROY-44349
2-13/32	ROY-44271	-
2-7/16	ROY-44272	ROY-44350
2-15/32	ROY-44273	-
2-1/2	ROY-44274	ROY-44351
2-17/32	ROY-44275	-
2-9/16	ROY-44276	ROY-44352
2-19/32	ROY-44277	-
2-5/8	ROY-44278	-

COLLET INSTALLATION TOOL

- Easy to use tool enables collets to be changed in seconds
- Simply insert the steel pins into the collet face holes and squeeze main trigger to collapse collet
- Once collet is positioned within the chuck, squeeze the trigger lock to expand and release
- Heavy -duty construction for durability

Collet Series	Part Number	Price
QG-42	ROY-44097	\$550.00
QG-65	ROY-44098	\$539.00



Call Us Or Visit Our Website For Our Complete Selection!

COLLET CHUCKS & ACCESSORIES



5C COLLET CHUCK

For Mounting With Adapter Plate
6,000 RPM, 0.0004" T.I.R.

- Designed for use with 5C collets
- High quality forged steel body
- For turning, facing, boring, grinding and milling operations on center lathes and grinding machines
- Key operated scroll provides uniform, distortion-free clamping
- Scroll and pinions are hardened and ground for precision and long life

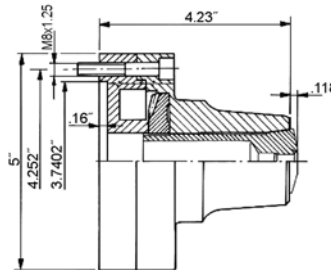
Low Profile & Lightweight Design!



5C Collet Chucks-5" Diameter

Spindle	Part Number	Price
Plain Back	BI-7862-0501	\$487.80
D1-4	BI-7862-0511	\$868.50
D1-5	BI-7862-0512	\$869.40
Plain Back TL*	BI-7862-0503	\$984.60

*Tru-Length: No workpiece movement



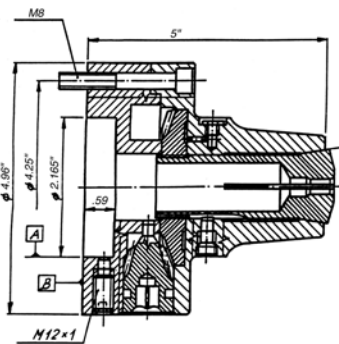
5" Machined Adapter Plates For Plain Back Chucks

Spindle	Part Number	Price
A-6	BI-7877-056	\$219.60
A-8	BI-7877-058	\$218.70
D1-4	BI-7878-054F	\$218.70
D1-5	BI-7878-055F	\$218.70
D1-6	BI-7878-056F	\$218.70
2-3/16-10	BI-7922-053	\$123.30

SUPER PRECISION 5C SET TRU COLLET CHUCK

With Fine Adjustment-For Mounting With Adapter Plate
6,000 RPM, 0.0004" T.I.R.

- Designed for use with 5C collets
- High quality forged steel body
- For turning, facing, boring, grinding and milling operations on center lathes and grinding machines
- Key operated scroll provides uniform, distortion-free clamping
- Four fine adjustment screws are used to set up the chuck on it's mounting plate to get precision within 0.0004" TIR



5" Machined Adapter Plates

Spindle	Part Number	Price
A-4	BI-7874-054	\$217.80
A-5	BI-7874-055	\$217.80
A-6	BI-7874-056	\$217.80
D1-4	BI-7875-054	\$327.60
D1-5	BI-7875-055	\$352.80
D1-6	BI-7875-056	\$359.10
2-3/16x10	BI-7876-054	\$169.20

5C COLLET CHUCKS



- Made in Poland
- All forged steel bodies
- 5" diameter
- Plain back
- Max speed: 6,000 RPM
- Tru-Length type features fixed collet position for fast and accurate workpiece changes

Description	Part Number	Price
Plain Back	BI-3862-0501P	\$390.42
Plain Back TL*	BI-3862-0503P	\$689.13

5C COLLET CHUCKS

Hold O.D. In Power/Manual Chucks



For short runs using a 5C collet, chuck this collet holder and you're ready to go! Lock, 1/2 turn and release at the front: heavy-duty, all-steel, hardened and ground. Saves you time! Drilled and tapped holes at rear of collet chuck for mounting to a plate. Has a thru-hole and can be used with a collet stop screwed onto the ID threads of collet.

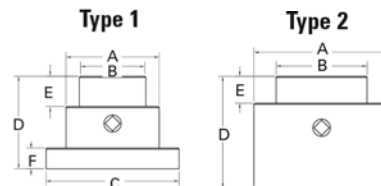


Description	OD	Weight	Part Number	Price
5C Collet Chuck	3"	6 lbs	KAL-1CC	\$399.00

5C, 16C & 3J MANUAL COLLET FIXTURES



- Opened and closed via an internal cam mechanism
- Accu-Length™ operation – collet and workpiece position remains fixed for precise length control
- Can be used in stationary and rotary table applications, not for use on lathes or grinders above 5 RPM!
- All models configured for both four and six-slot mounting - 4.125" bolt circle diameter
- All models include cam wrench



Collet Type	Cap.	A	B	C	D	E	F	Type	Part Number	Price
5C	1-1/16"	3.37	2.50	4.95	3.50	1.15	0.75	1	ROY-62002	\$713.79
16C	1-5/8"	4.95	3.35	-	4.63	1.50	-	2	ROY-62006	\$1,076.35
3J	1-3/4"	4.95	3.35	-	4.13	1.00	-	2	ROY-62008	\$1,076.35



Call Us Today For All Of Your Machine Tool Needs!

2019-20 MASTER CATALOG

LIVE CENTERS/REVOLVING CENTERS

We Offer A Large Selection of Live & Dead Centers For All Applications:
CNC Lathe-High RPM Live and Dead centers for precision turning applications
Turning and Grinding-Live centers for a large variety of maximum workpiece weights
Precision Grinding-High accuracy live centers and a broad selection of Dead centers
Large Bore-Centers for large bore parts, pipe, tubing and other thinner-wall workpieces

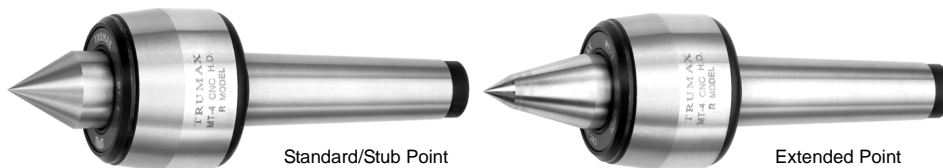
Please Call Us For More Information!



PRECISION LIVE CENTERS

- Capable of withstanding very high RPM at high loads
- Suitable for CNC and other high speed turning centers
- Bearings made in Germany
- Bearings lubricated for life
- German seals used to bearing from dirt and coolant
- Available in standard/stub point and extended point for clearance

European Quality-Value Priced!



F

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

STANDARD POINT

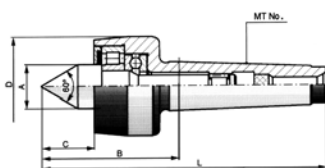
Taper	Description	Proj. Len.	Accuracy	Point Dia	Point Ext.	Body Dia	Body Width	Max RPM	W.P. Weight lbs	Part Number	Price Each
MT 1	Std/Stub Point	2.58	0.0006	0.710	1.02	1.42	1.56	4,000	110	L-M1S-D11H40A-T	\$35.00
MT 2	Std/Stub Point	3.41	0.0006	0.910	1.18	1.81	2.22	3,000	220	L-M2S-D22H30A-T	\$41.25
MT 2	Std/Stub Point Slimline	2.50	0.0003	0.590	0.75	1.34	1.75	7,000	441	L-M2S-D44H70A-T	\$115.00
MT 3	Std/Stub Point	3.66	0.0006	1.100	1.340	2.010	2.32	2,500	550	L-M3S-D55H25A-T	\$52.50
MT 3	Std/Stub Point Heavy Duty	3.72	0.0003	1.100	1.340	2.440	2.38	5,000	1100	L-M3S-H11H50A-T	\$188.95
MT 3	Std/Stub Point Slimline	2.99	0.0003	0.790	1.020	1.650	1.97	5,500	1100	L-M3S-H11H55A-T	\$120.00
MT 4	Std/Stub Point	4.39	0.0006	1.180	1.500	2.440	2.890	2,200	1,320	L-M4S-H13H22A-T	\$60.00
MT 4	Std/Stub Point Heavy Duty	4.01	0.0003	1.260	1.610	2.680	2.400	3,800	1,760	L-M4S-H17H38A-T	\$212.20
MT 4	Std/Stub Point Slimline	3.92	0.0003	0.940	1.260	2.130	2.660	4,750	1,980	L-M4S-H20H47A-T	\$125.00
MT 5	Std/Stub Point	4.72	0.0006	1.340	1.65	2.68	3.07	1,500	1,870	L-M5S-H19H15A-T	\$110.00
MT 5	Std/Stub Point Heavy Duty	5.12	0.0003	1.500	2.01	3.43	3.11	3,000	4,400	L-M5S-H44H30A-T	\$319.75
MT 5	Std/Stub Point Slimline	4.57	0.0006	1.260	1.61	2.68	2.95	3,500	4,400	L-M5S-H44H35A-T	\$225.00
MT 6	Std/Stub Point	5.81	0.0006	1.970	2.20	4.02	3.60	1,000	3,300	L-M6S-H33H10A-T	\$350.00
MT 6	Std/Stub Point Heavy Duty	6.10	0.0006	1.970	2.26	4.02	3.84	2,600	8,360	L-M6S-H83H26A-T	\$410.00

EXTENDED POINT

Taper	Description	Proj. Len.	Accuracy	Point Dia	Ext. Pt	Point Ext.	Body Dia	Body Width	Max RPM	W.P. Weight lbs	Part Number	Price Each
MT 2	Extended Point Slimline	2.89	0.0003	0.590	0.39	1.14	1.34	1.75	7,000	375	L-M2E-D37H70A-T	\$115.00
MT 3	Extended Point Heavy Duty	4.27	0.0003	1.100	0.470	1.850	2.440	2.38	5,000	880	L-M3E-D88H50A-T	\$188.95
MT 3	Extended Point Slimline	3.46	0.0003	0.790	0.430	1.500	1.650	1.97	5,500	880	L-M3E-D88H55A-T	\$120.00
MT 4	Extended Point Heavy Duty	4.54	0.0003	1.260	0.55	2.240	2.680	2.400	3,800	1,100	L-M4E-H11H38A-T	\$212.20
MT 4	Extended Point Slimline	4.39	0.0003	0.940	0.51	1.730	2.130	2.660	4,750	1,760	L-M4E-H17H47A-T	\$125.00
MT 5	Extended Point Heavy Duty	5.67	0.0003	1.500	0.63	2.56	3.43	3.11	3,000	2,640	L-M5E-H26H30A-T	\$319.75
MT 5	Extended Point Slimline	5.04	0.0006	1.260	0.55	2.09	2.68	2.95	3,500	3,300	L-M5E-H33H35A-T	\$225.00
MT 6	Extended Point Heavy Duty	6.91	0.0006	1.970	0.71	3.07	4.02	3.84	2,600	5,500	L-M6E-H55H26A-T	\$410.00

PRECISION & SUPER PRECISION LIVE CENTERS

- Each center hardened and ground from one single piece of forging
- Spindles are made of high quality alloy steel, heat treated to RC 60-62
- Each Live center provided with 3 heavy duty precision bearings
- Each bearing is specifically protected against dust and coolant



Morse Taper	D	A	L	C	B	Max RPM	Max Wt of Workpiece	Precision TIR 0.0003		Super Precision TIR 0.0001	
								Part Number	Price	Part Number	Price
1	1.50	.59	4.07	.70	1.97	5000	220 lbs	BI-3565-001P	\$103.78	BI-3565-101P	\$114.14
2	1.57	.70	4.74	.87	2.22	5000	460 lbs	BI-3565-002P	\$114.86	BI-3565-102P	\$124.20
3	2.20	.98	6.14	1.12	2.95	4000	925 lbs	BI-3565-003P	\$133.82	BI-3565-103P	\$147.24
4	2.52	1.10	7.24	1.24	3.21	3000	1850 lbs	BI-3565-004P	\$156.93	BI-3565-104P	\$199.33
5	3.35	1.61	9.33	1.77	4.23	2500	4400 lbs	BI-3565-005P	\$255.97	BI-3565-105P	\$281.62
6	5.12	2.48	13.13	2.52	5.96	2000	7700 lbs	BI-3565-006P	\$488.97	BI-3565-106P	\$507.43

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

LIVE CENTERS

SPINDLE TYPE LIVE CENTERS

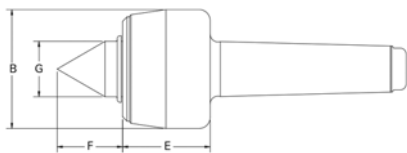
For CNC Lathes-Heavy Duty



**EXCLUSIVE ROYAL
ROTO-SHIELD™
TECHNOLOGY**



Standard Point



- +/- 0.00005" TIR guaranteed
- Standard point angle is 60°
- High capacity thrust bearing enables this center to handle extreme axial loads
- Thick, rigid point extends into the shank, supported by a large needle bearing for increased strength and vibration dampening

- Body and point are hardened and ground for strength and durability
- Bearing life is significantly extended with the exclusive Royal Roto-Shield™ coolant slinger and a long-life, spring-loaded seal
- Precision, double-row angular-contact bearing provides high workpiece weight ratings for turning large, heavy parts.

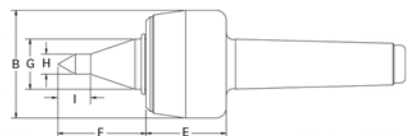
STANDARD POINT

Taper	B	E	F	G	Max RPM	Weight of WP (lbs)	Thrust Load (lbs)	Part Number	Price Each
2 MT	1.75	1.47	1.01	0.88	6,000	725	2,360	ROY-10102	\$558.60
3 MT	2.33	1.75	1.22	1.00	5,000	970	3,900	ROY-10103	\$558.60
4 MT	2.68	1.98	1.48	1.25	4,500	1,720	4,050	ROY-10104	\$728.14
5 MT	3.45	2.81	1.84	1.50	3,500	3,260	5,700	ROY-10105	\$1,003.52
6 MT	4.00	3.15	2.31	2.00	3,500	4,080	6,000	ROY-10106	\$1,875.72

* Max. recommended operating limit. Operating above this speed could result in heat build-up and accelerated bearing wear.



CNC Point



CNC POINT-FOR EXTRA CLEARANCE

Taper	B	E	F	G	H	I	RPM	Weight of WP (lbs)	Thrust Load (lbs)	Part Number	Price Each
2 MT	1.75	1.47	1.35	0.88	0.38	0.63	6,000	375	2,360	ROY-10212	\$588.00
3 MT	2.33	1.75	1.86	1.00	0.38	0.63	5,000	740	3,900	ROY-10213	\$588.00
4 MT	2.68	1.98	2.18	1.25	0.50	0.81	4,500	1,120	4,050	ROY-10214	\$738.92
5 MT	3.45	2.81	2.58	1.50	0.50	0.81	3,500	1,930	5,700	ROY-10215	\$1,003.52
6 MT	4.00	3.15	3.00	2.00	0.75	1.28	3,500	2,420	6,000	ROY-10216	\$1,938.44

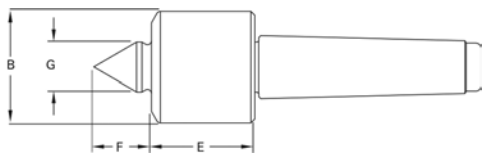
VALUE-TURN® LIVE CENTERS

For Manual & CNC Lathes



- +/- 0.00005" TIR guaranteed
- Standard point angle is 60°
- Rotating point is hardened for wear resistance
- Sturdy, low cost, American made center for light/medium-duty work

- Two precision radial bearings allow for high operating speeds
- Sealed rear bearing protects assembly from chips and coolant



Taper	B	E	F	G	Max RPM	Weight of WP (lbs)	Thrust Load (lbs)	Part Number	Price Each
1 MT	1.68	1.56	0.88	0.75	5,000	390	3,730	ROY-10851	\$278.32
2 MT	1.68	1.56	0.88	0.75	5,000	390	3,730	ROY-10852	\$257.74
3 MT	1.68	1.56	0.88	0.75	5,000	390	3,730	ROY-10853	\$277.34
4 MT	2.45	2.03	1.20	1.13	4,500	750	4,990	ROY-10854	\$336.14
5 MT	2.45	2.03	1.20	1.13	4,500	750	4,990	ROY-10855	\$377.30

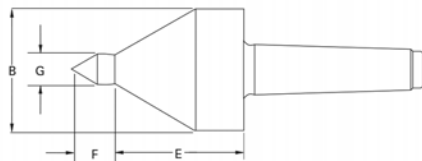
VERSA-TURN LIVE CENTERS

Multi-Purpose Live Center



- +/- 0.00005" TIR guaranteed
- Standard point angle is 60°
- Extended front section of point provides excellent tool clearance
- Rear bull-head section ideal for tubes and parts with large holes

- Two precision radial bearings allow for high operating speeds
- Close-fitting head eliminates contact seal, resulting in an extremely free turning center
- Great for thin parts



Taper	B	E	F	G	Max RPM	Weight of WP (lbs)	Thrust Load (lbs)	Part Number	Price Each
2 MT	2.13	2.22	0.74	0.50	5,000	330	2,160	ROY-10831	\$423.36
3 MT	2.13	2.22	0.74	0.50	5,000	330	2,160	ROY-10832	\$418.46
3 MT HD	2.50	2.60	0.93	0.63	4,000	685	5,000	ROY-10833	\$472.36
4 MT	2.50	2.60	0.93	0.63	4,000	685	5,000	ROY-10834	\$486.08
4 MT HD	3.38	3.15	1.12	0.75	3,500	1,165	5,700	ROY-10835	\$660.52
5 MT	3.38	3.15	1.12	0.75	3,500	1,165	5,700	ROY-10836	\$694.82

Call Us Today For All Of Your Machine Tool Needs!

2019-20 MASTER CATALOG

HIGH-PRECISION QUAD-BEARING LIVE CENTERS

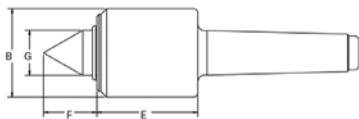
For CNC & Manual Lathes



LATHE CHUCKS
LIVE CENTERS



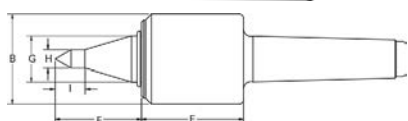
Standard Point



EXCLUSIVE ROYAL ROTO-SHIELD™ TECHNOLOGY



CNC Point



- +/- 0.00005" TIR guaranteed
- Standard point angle is 60°
- Three precision angular-contact bearings are secured to the point with a locknut to form a rigid, preloaded assembly
- Point extends into body and supported by needle roller bearing for increased rigidity and vibration dampening

- Body and point are hardened and ground for strength and durability
- Bearing life is significantly extended with the exclusive Royal Roto-Shield™ coolant slinger and a long-life, spring-loaded seal
- Precision bearing assembly provides exception rigidity and accuracy

STANDARD POINT

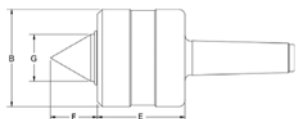
Taper	B	E	F	G	Max RPM	Weight of WP (lbs)	Thrust Load (lbs)	Part Number	Price Each
2 MT	1.70	2.12	1.07	0.88	6,000	885	1,270	ROY-10412	\$604.66
3 MT	1.70	2.12	1.07	0.88	6,000	885	1,270	ROY-10413	\$624.26
4 MT	2.45	2.78	1.47	1.25	5,000	2,240	2,150	ROY-10414	\$778.12
5 MT	2.45	2.78	1.47	1.25	5,000	2,240	2,150	ROY-10415	\$820.26
5 MT HD	3.82	3.89	2.31	2.00	3,000	5,240	5,300	ROY-10445	\$1,645.42
6 MT HD	3.82	3.89	2.31	2.00	3,000	5,240	5,300	ROY-10446	\$2,022.72

CNC POINT-FOR EXTRA CLEARANCE

Taper	B	E	F	G	H	I	Max RPM	Weight of WP (lbs)	Thrust Load (lbs)	Part Number	Price Each
2 MT	1.70	2.12	1.75	0.88	0.38	0.63	6,000	465	1,270	ROY-10662	\$604.66
3 MT	1.70	2.12	1.75	0.88	0.38	0.63	6,000	465	1,270	ROY-10663	\$624.26
4 MT	2.45	2.78	2.35	1.25	0.50	0.81	5,000	1,230	2,150	ROY-10664	\$778.12
5 MT	2.45	2.78	2.35	1.25	0.50	0.81	5,000	1,230	2,150	ROY-10665	\$820.26
5 MT HD	3.82	3.89	3.34	2.00	0.75	1.28	3,000	2,210	5,300	ROY-10475	\$1,645.42
6 MT HD	3.82	3.89	3.34	2.00	0.75	1.28	3,000	2,210	5,300	ROY-10476	\$2,022.72

SUPER-QUAD EXTRA HEAVY-DUTY LIVE CENTERS

For Very Heavy Parts



EXCLUSIVE ROYAL ROTO-SHIELD™ TECHNOLOGY

- +/- 0.00005" TIR guaranteed
- Standard point angle is 60°
- Sturdy, heavy duty point extends into shank for increased rigidity
- Three precision angular-contact bearings are secured to the point with a locknut to form a rigid, preloaded assembly

Taper	B	E	F	G	Max RPM	Weight of WP (lbs)	Thrust Load (lbs)	Part Number	Price Each
4 MT	3.70	3.31	1.77	1.63	4,000	3,325	4800	ROY-10364	\$2,141.30
5 MT	4.94	4.45	2.39	2.38	3,000	10,650	13220	ROY-10365	\$3,003.70
6 MT	4.94	4.33	2.39	2.38	3,000	10,650	13,220	ROY-10368	\$3,192.84



VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

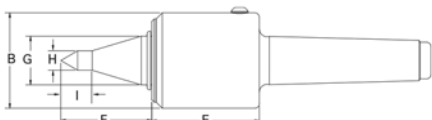
CARBIDE INSERTS
THREADING/GROOVING

HIGH-SPEED PRECISION LIVE CENTERS

With Steel Point



EXCLUSIVE ROYAL ROTO-SHIELD™ TECHNOLOGY



- +/- 0.00005" TIR guaranteed
- Standard point angle is 60°
- A true high-speed Live center: up to 12,000 RPM
- Low-profile head and extended point provide exceptional tool clearance
- Lubricated with spindle oil instead of grease for reduced turning resistance and lower operating temperatures
- Three precision angular-contact bearings are secured to the point with a locknut to form a rigid, preloaded assembly

- Point extends into body and supported by needle roller bearing for increased rigidity and vibration dampening
- Body and point are hardened and ground for strength and durability
- Bearing life is significantly extended with the exclusive Royal Roto-Shield™ coolant slinger and a long-life, spring-loaded seal
- Precision bearing assembly provides exception rigidity and accuracy

Taper	B	E	F	G	H	I	Max RPM	Weight of WP (lbs)	Thrust Load (lbs)	Part Number	Price Each
2 MT	1.70	2.12	1.75	0.88	0.38	0.63	12,000	180	650	ROY-10682	\$832.02
3 MT	1.70	2.12	1.75	0.88	0.38	0.63	12,000	180	650	ROY-10683	\$863.38
4 MT	2.45	2.78	2.35	1.25	0.50	0.81	12,000	525	1,380	ROY-10684	\$1,028.02
5 MT	2.45	2.78	2.35	1.25	0.50	0.81	12,000	525	1,380	ROY-10685	\$1,070.16



CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

ROTO-SHIELD™ TECHNOLOGY-ONLY AVAILABLE ON ROYAL LIVE CENTERS!

Royal Roto-Shield™ represents a breakthrough in Live center technology, significantly increasing operating life!

- A Live center point machined from a solid bar which incorporates a specially-shaped steel coolant slinger
- A long-life, spring-loaded seal that is resistant to abrasion, high temperatures and virtually all metalworking fluids
- Coolant is deflected, keeping it from penetrating the center
- Bearings are protected from harmful fines and dust
- Lubricating grease lasts longer and retains consistency
- Seal wear is minimized



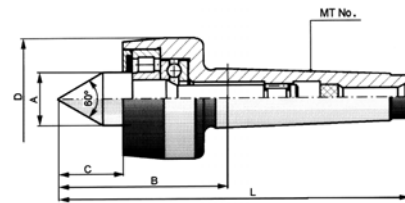
Call Us Or Visit Our Website For Our Complete Selection!



LIVE & DEAD CENTERS

PRECISION & SUPER PRECISION LIVE CENTERS

- Machined from one piece of forging, hardened and precisely ground
- Three precision high-quality bearings are protected by a special steel shield and neoprene seal
- Live centers are lubricated with a special grease and do not require any additional lubrication

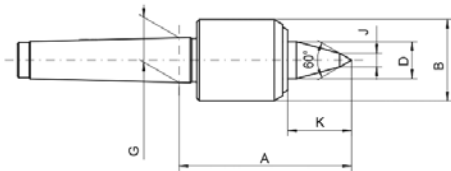


Morse Taper	D	A	L	C	B	Max RPM	Max Wt of Workpiece	Precision			Super Precision		
								TIR	Part Number	Price	TIR	Part Number	Price
1	1.50	.59	4.07	.70	1.97	5000	220 lbs	0.0003	BI-7565-001	\$103.50	0.0002	BI-7565-101	\$113.40
2	1.57	.70	4.74	.87	2.22	5000	460 lbs	0.0003	BI-7565-002	\$117.90	0.0001	BI-7565-102	\$126.90
3	2.20	.98	6.14	1.12	2.95	4000	925 lbs	0.0003	BI-7565-003	\$142.20	0.0001	BI-7565-103	\$145.80
4	2.52	1.10	7.24	1.24	3.21	3000	1850 lbs	0.0003	BI-7565-004	\$160.20	0.0001	BI-7565-104	\$203.40
5	3.35	1.61	9.33	1.77	4.23	2500	4400 lbs	0.0004	BI-7565-005	\$253.80	0.0002	BI-7565-105	\$288.00
6	5.12	2.48	13.13	2.52	5.96	2000	7700 lbs	0.0004	BI-7565-006	\$484.20	0.0002	BI-7565-106	\$503.10

HEAVY DUTY PRECISION LIVE CENTERS

Slim Body

- Bison Type 8813R
- Extended 60° point
- Small body diameter
- Machined from one piece of forging, hardened and precisely ground
- Provided with three selected heavy-duty ultra precision bearings
- Bearings are protected against dust and coolant

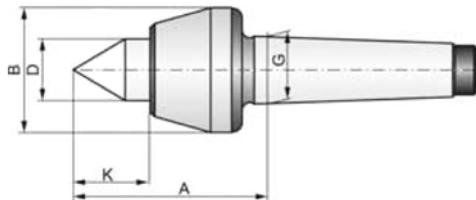


Morse Taper	Max. Wt. Workpiece	Max RPM	A	B	D	G	K	J	Accuracy TIR	Part Number	Price Each
2	374 lbs	7,000	2.87	1.26	0.59	0.70	1.14	0.39	0.0003	BI-7562-002	\$126.90
3	748 lbs	7,000	2.91	1.34	0.59	0.94	1.18	0.43	0.0003	BI-7562-003	\$144.90
4	1540 lbs	6,300	3.48	1.65	0.79	1.23	1.50	0.51	0.0003	BI-7562-004	\$202.50
5	3080 lbs	4,300	4.69	2.28	1.18	1.75	1.93	0.55	0.0004	BI-7562-005	\$286.20
6	6600 lbs	3,000	6.46	3.15	1.65	2.49	2.76	0.71	0.0008	BI-7562-006	\$487.80

HEAVY DUTY SUPER PRECISION LIVE CENTERS

0.0002" TIR

- Bison Type 8811R
- Machined from one piece of forging, hardened and precisely ground
- Provided with three selected heavy-duty ultra precision bearings
- Bearings are protected against dust and coolant

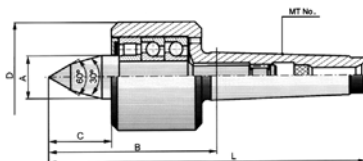


Morse Taper	Max. Wt. Of Workpiece	Max RPM	A	B	D	G	K	Part Number	Price Each
1	220	7000	2.382	1.417	0.591	0.475	0.670	BI-7568-001	\$139.50
2	441	7000	2.539	1.772	0.787	0.700	0.925	BI-7568-002	\$106.20
3	1102	5000	3.110	2.362	0.984	0.938	1.201	BI-7568-003	\$133.20
4	1764	3800	3.996	2.756	1.260	1.231	1.575	BI-7568-004	\$225.00
5	4409	3000	5.039	3.543	1.575	1.748	1.929	BI-7568-005	\$282.60

NC QUAD-BEARING LIVE CENTERS

0.0002" TIR

- Heavy duty, quad-bearing
- High speed-7000 to 6000 RPM
- Type 8814NC

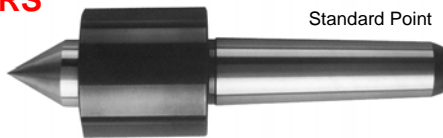


Morse Taper	Max. Wt. Of Workpiece	Max RPM	A	B	C	D	L	Part Number	Price Each
4	2200	7000	1.10	4.58	1.91	2.76	8.62	BI-7566-004	\$259.20
5	4400	6000	1.57	5.87	2.64	3.47	11.0	BI-7566-005	\$404.10

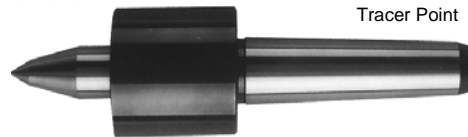
Call Us Today For All Of Your Machine Tool Needs!

ECONO TRI-BEARING LIVE CENTERS

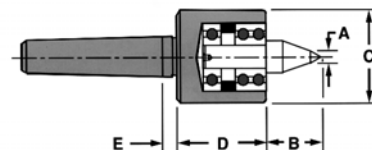
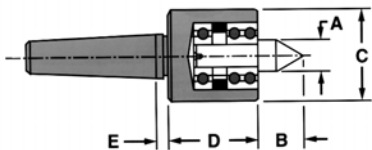
- Accuracy guaranteed to +/- .0002
- Three rows of bearings
- Points through-hardened to 61-63 Rc
- Sealed bearings lubricated for life, protected from contaminants and coolant
- Made in the USA



Standard Point



Tracer Point



Morse Taper - Standard Point

Morse Taper	A	B	C	D	E	Max RPM	W.P. Weight	Part Number	Price Each
2	9/16	13/16	15/8	1-5/8	1/4	2500	300	RI-44102	\$171.00
3	13/16	1	2	1-15/16	1/4	2500	500	RI-44103	\$176.70
4	1	1-1/4	2-3/8	2-1/4	1/4	2500	1100	RI-44104	\$235.60
5	1	1-1/4	2-3/8	2-1/4	1/4	2500	1100	RI-44105	\$319.20

Morse Taper - Tracer Point

Morse Taper	A	B	C	D	E	Max RPM	W.P. Weight	Part Number	Price Each
2	3/8	1-1/4	1-5/8	1-5/8	1/4	2500	300	RI-44902	\$171.00
3	3/8	1-1/2	2	1-15/16	1/4	2500	300	RI-44903	\$176.70
4	1/2	2	2-3/8	2-1/4	1/4	2500	900	RI-44904	\$235.60
5	1/2	2	2-3/8	2-1/4	1/4	2500	900	RI-44905	\$319.20

REGAL LIVE CENTERS

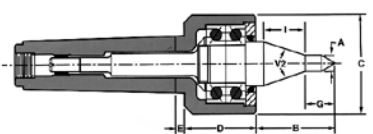
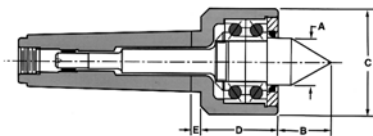
- Accuracy guaranteed to +/- .00005
- Two angular contact bearings for superior performance
- Points through-hardened to 61-63 Rc
- Full length spindle for extra rigidity
- Body heat-treated for additional strength
- Made in the USA



Standard Point



Long Point



Morse Taper - Standard Point

Morse Taper	A	B	C	D	E	Max RPM	W.P. Weight	Part Number	Price Each
2	1	1-1/4	2-3/8	1-3/4	1/4	4000	440	RI-48602	\$258.40
3	1	1-1/4	2-3/8	1-3/4	1/4	4000	1100	RI-48603	\$296.40
4	1-3/8	1-1/2	3	1-31/32	3/8	4000	2100	RI-48604	\$385.70
5	1-3/8	1-13/16	3-1/16	2-9/32	9/32	5000	2800	RI-48605	\$530.10

Morse Taper-Long Point

Morse Taper	A	B	C	D	E	G	V2	I	Max RPM	W.P. Weight	Part Number	Price Each
2	3/8	1-7/8	2-3/8	13/4	1/4	5/8	34°	1-21/32	4000	310	RI-48102	\$258.40
3	3/8	1-7/8	2-3/8	13/4	1/4	5/8	34°	1-21/32	4000	640	RI-48103	\$296.40
4	1/2	2-7/32	3	1-31/32	3/8	13/16	34°	2	4000	1100	RI-48104	\$385.70
5	1/2	2-1/2	3-1/16	2-9/32	9/32	15/16	44°	2	5000	1100	RI-48105	\$530.10

ADVANTAGE LIVE CENTERS

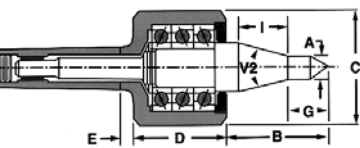
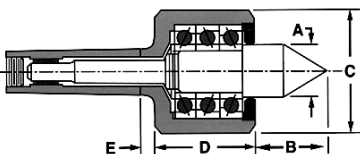
- Accuracy guaranteed to +/- .00005
- Four bearing design for superior performance
- Points through-hardened to 61-63 Rc
- Full length spindle for extra rigidity
- Also available in Tracer Point
- Made in the USA



Standard Point



Long Point



Morse Taper - Standard Point

Morse Taper	A	B	C	D	E	Max RPM	W.P. Weight	Part Number	Price Each
2	7/8	1-1/8	1-3/4	2-5/8	3/8	5000	880	RI-51602	\$399.00
3	7/8	1-1/8	1-3/4	2-5/8	3/8	5000	920	RI-51603	\$410.40
4	1-1/8	2	2-7/8	3-3/16	1/2	4200	2200	RI-51604	\$511.10
5	1-1/8	2	2-7/8	3-3/16	1/2	4200	4400	RI-51605	\$562.00
6	1-7/8	2-1/4	3-3/4	3-27/32	1/2	4000	14000	RI-51606	\$1,322.40

Morse Taper - Long Point

Morse Taper	A	B	C	D	E	G	V2	I	Max RPM	W.P. Weight	Part Number	Price Each
2	3/8	2	1-3/4	2-5/8	3/8	3/4	30°	1-11/16	5000	310	RI-51102	\$399.00
3	3/8	2	1-3/4	2-5/8	3/8	3/4	30°	1-11/16	5000	310	RI-51103	\$410.40
4	1/2	2-1/2	2-7/8	3-3/16	1/2	15/16	30°	2-1/16	4200	1100	RI-51104	\$511.10
5	1/2	2-1/2	2-7/8	3-3/16	1/2	15/16	30°	2-1/16	4200	1100	RI-51105	\$562.00

Call Us Or Visit Our Website For Our Complete Selection!

LIVE CENTERS

HEAVY DUTY LIVE CENTERS

- 60° standard point angle
- The rotating spindle is extended right through the tapered shank
- Two specially designed adjustable needle-roller bearings carry all radial loads
- Heavy duty ball thrust bearing takes all axial thrust
- Complete protection of bearings from coolant, dirt or swarf

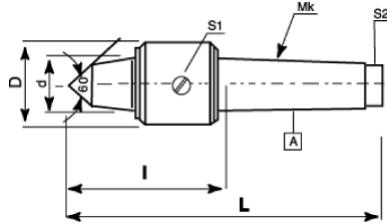


Morse Taper	Point Dia	Body Dia	Body Length	Weight of WP (lbs)	Part Number	Price Each
1	5/8	1-3/8	4-3/8	200	SK-310-105	\$102.60
2	7/8	1-1/2	5	600	SK-310-110	\$153.00
3	1-1/8	1-7/8	6-1/4	900	SK-310-115	\$191.30
4	1-1/2	2-3/16	7-1/2	1800	SK-310-120	\$242.50
5	1-3/4	2-3/4	9-1/2	3000	SK-310-125	\$335.90
6	2-3/8	3-1/2	12-3/4	7500	SK-310-130	\$582.20



PRECISION CNC LIVE CENTERS

- Designed for NC lathes.
- Face parts are formed to allow easy access of the tool to the workpiece
- Special ring sets the radial clearance of the center and prevents cutting lubricant from leaking into the center bearing space
- Spindle-like point extends into shank where it is supported by a needle bearing, increasing rigidity, reducing point deflection and dampening vibration

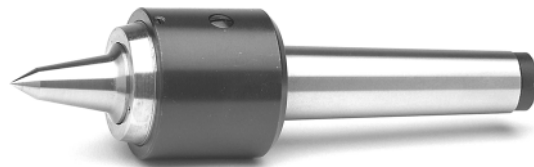
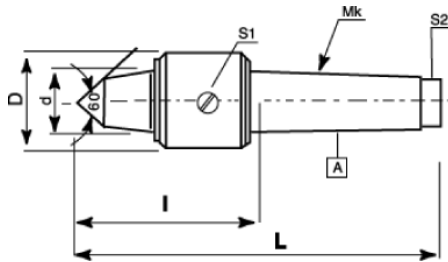


Morse Taper	D	d	L	I	Load (lbs)	Part Number	Price Each
2	1.50	0.695	5.25	2.65	1300	SK-310-010	\$304.50
3	1.85	0.750	6.75	3.50	1550	SK-310-015	\$322.90
4	2.20	1.125	8.15	3.95	4840	SK-310-020	\$376.40
5	3.10	1.375	10.50	4.85	7750	SK-310-025	\$473.60



EXTENDED POINT LIVE CENTERS

- Designed to keep dust, chips and coolant from coming inside the bearings
- Hardened and ground to 61-65 Rockwell
- Concentricity within .0002"

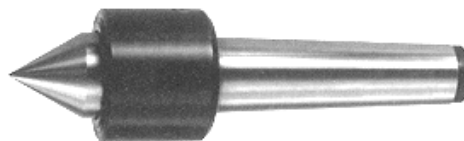
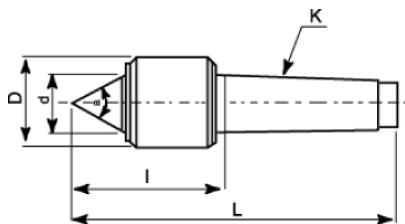


Morse Taper	D	d	L	I	Load Kg	Part Number	Price Each
2	1.417	0.866	5.059	2.560	594	SK-310-160	\$168.40
3	1.850	1.181	6.575	3.386	704	SK-310-165	\$199.70
4	2.165	1.378	8.169	4.094	2200	SK-310-170	\$251.00
5	2.736	1.772	10.197	5.078	3960	SK-310-175	\$346.60
6	3.504	2.362	13.425	6.316	12600	SK-310-180	\$610.50



EXTRA HEAVY DUTY LIVE CENTERS

- 60° standard point angle
- The rigid structure and seating of the turning part is characterized by long service life
- The model is commonly used for work at grinding machines
- The Live centers are provided with shanks according to DIN 228 and ISO 296 (without clamping thread)



Morse Taper	D	d	I	L	Load (lbs)	Part Number	Price Each
4	2.15	1.20	4.10	7.85	3300	SK-310-920	\$1,104.00
5	2.40	1.70	5.60	9.48	5500	SK-310-925	\$1,361.80
6	4.92	2.16	6.42	13.38	11000	SK-310-930	\$2,576.40
7	5.70	2.56	7.80	15.25	17600	SK-310-935	\$4,479.60



Call Us Today For All Of Your Machine Tool Needs!

BULL HEAD LIVE CENTERS

B

BULL HEAD LIVE CENTERS

For Pipes, Tubes & Parts With Large Center Holes

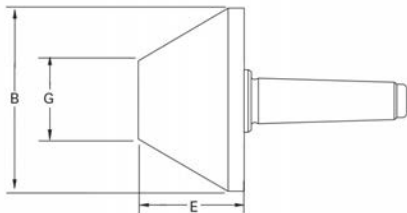
- Accuracy: +/-0.00005" TIR
- Head angle ground to 60°
- Head OD is 1/8" larger than nominal size to cover a wider range of workpieces
- Body and head are hardened for strength and durability
- Two matched angular contact bearings provide good thrust and radial load ratings
- Steel shield and neoprene seal protect bearing assembly from coolant and chips

ROYAL
PRODUCTS
Optimize everything

A



MADE IN THE
USA



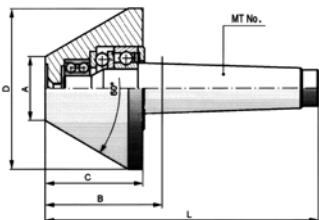
Taper	B	E	G	Max RPM	Weight of WP (lbs)	Thrust Load (lbs)	Part Number	Price Each
3 MT	3.15	2.52	1.00	5,000	615	1,780	ROY-10902	\$788.90
4 MT	4.15	3.01	1.25	4,500	860	2,550	ROY-10904	\$978.04
5 MT	4.15	3.01	1.25	4,500	860	2,550	ROY-10905	\$978.04
5 MT	5.15	3.17	2.00	4,000	1,145	3,450	ROY-10907	\$1,219.12
5 MT	6.15	3.60	2.50	3,500	1,450	4,500	ROY-10909	\$1,684.62

BULL HEAD LIVE CENTERS



- Triple bearing design
- Three matched bearings are preloaded at the factory
- Good thrust and radial capabilities
- Bearings are protected by a special seal
- Head is made of alloy steel and heat treated to RC 61-63
- 60° head angle
- Designed to hold pipe and hollow work

NEW ITEM!



Morse Taper	TIR	D	A	B	C	L	Max Wt Of Workpiece	Max RPM	Part Number	Price Each
2	.0003	2.36	1.18	1.60	1.38	4.11	400	5000	BI-7575-020	\$109.80
2	.0003	3.15	1.18	2.32	2.09	4.84	660	4500	BI-7575-021	\$168.30
3	.0003	3.15	1.18	2.32	2.09	5.51	770	4500	BI-7575-030	\$171.00
3	.0003	3.93	1.57	2.64	2.40	5.83	1210	3000	BI-7575-031	\$241.20
4	.0003	3.93	1.57	2.70	2.40	6.73	1320	3000	BI-7575-040	\$238.50
4	.0004	5.51	2.76	3.05	2.76	7.09	1540	3000	BI-7575-042	\$266.40
5	.0008	6.69	3.94	3.05	2.76	8.15	1653	2000	BI-7575-051	\$333.00
6	0.002	11.50	7.09	4.57	4.21	11.73	4400	1000	BI-7575-060	\$1,306.80

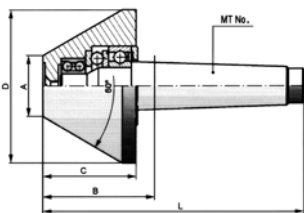
BULL HEAD LIVE CENTERS



- Designed to hold pipe and hollow work
- Triple bearing design
- Includes three preloaded matched bearings
- Bearings are protected by a special seal
- Head is made of alloy steel and heat treated to RC 61-63
- Good thrust and radial capabilities
- 60° head angle

tmx
EUROPEAN PRECISION & QUALITY

NEW ITEM!



Morse Taper	TIR	D	A	B	C	L	Max Wt Of Workpiece	Max RPM	Part Number	Price Each
1	.0003	1.97	.79	1.56	1.38	3.66	220	5000	BI-3575-010P	\$98.46
2	.0003	2.30	1.18	1.60	1.38	4.11	400	5000	BI-3575-020P	\$115.83
2	.0003	3.15	1.18	2.32	2.09	4.84	660	4500	BI-3575-021P	\$178.47
3	.0003	3.15	1.18	2.32	2.09	5.51	770	4500	BI-3575-030P	\$181.26
3	.0003	3.98	1.57	2.64	2.40	5.83	1210	3000	BI-3575-031P	\$255.24
4	.0003	3.98	1.57	2.70	2.40	6.73	1320	3000	BI-3575-040P	\$244.98
4	.0004	5.51	2.76	3.05	2.76	7.09	1540	3000	BI-3575-042P	\$281.97
5	.0008	6.61	3.94	3.05	2.76	8.15	1653	2000	BI-3575-051P	\$352.80

ROYAL
PRODUCTS
Optimize everything
Riten



FULL LINES AVAILABLE!

We Offer The **COMPLETE LINE** Of Products From Our Vendors!
If you need an item from our vendors that is not listed in our catalog, simply let us know and we will get the item for you!

TRUMAX

SKODA

tmx
EUROPEAN PRECISION & QUALITY

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

99

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

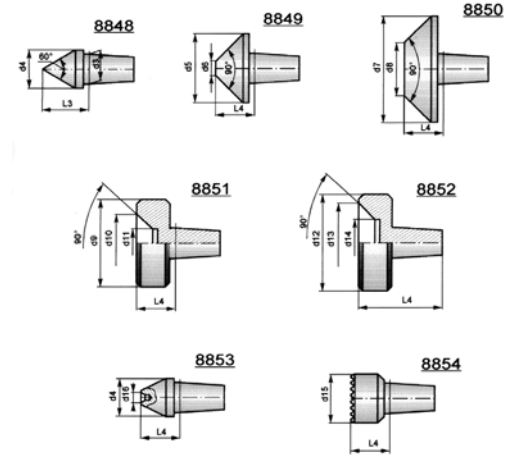
LIVE CENTERS SETS

LIVE CENTERS WITH INTERCHANGEABLE INSERTS



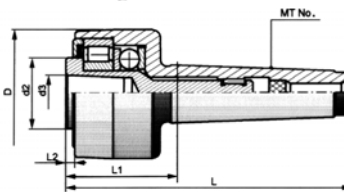
7 Centers In 1!

- Body of Live centers and inserts are made of forgings, hardened and precisely ground
- Sets are provided with the main body and seven different style inserts in a wooden case
- Precision high quality bearings
- Special sealing ring protects the bearings from coolant and dust
- Inserts are easily interchangeable



Live Center Body Dimensions

MT	L	L1	L2	D	d2	d3
2	4.055	1.54	.177	1.57	.71	.28
3	5.217	2.03	.197	2.20	.98	.47
4	6.220	2.19	.217	2.52	1.10	.59
5	7.815	2.72	.256	3.35	1.61	.87
6	10.846	3.70	.256	5.12	2.48	1.89



Morse Taper	Max RPM	Max. Wt. Of Workpiece	Part Number	Set Price
2	5000	220	BI-7570-002	\$362.70
3	4000	440	BI-7570-003	\$405.90
4	3000	880	BI-7570-004	\$536.40
5	2500	1770	BI-7570-005	\$707.40
6	2000	3550	BI-7570-006	\$1,147.50

Interchangeable Insert Dimensions (see diagram above right)

MT	8848			8849			8850				8851				8852				8853				8854	
	L3	d3	d4	L4	d5	d6	L4	d7	d8	L4	d9	d10	d11	L4	d12	d13	d14	L4	d16	d4	L4	d15		
2	.75	.28	.59	.51	.87	.12	.51	1.50	.71	.51	.87	.71	.31	.51	1.18	.98	.59	.51	.049	.59	.51	.71		
3	.98	.47	.79	.79	1.42	.24	.79	2.48	1.30	.79	1.42	1.10	.47	.79	1.77	1.50	.87	.79	.049	.79	.79	.98		
4	1.18	.79	.98	.91	1.77	.39	.91	2.76	1.38	.91	1.77	1.46	.67	.91	2.48	2.09	1.18	-	-	-	.91	1.26		
5	1.46	.87	1.26	1.10	2.20	.55	1.10	3.15	1.50	1.10	2.20	1.73	.79	-	-	-	-	1.10	.098	1.26	1.10	1.77		
6	1.73	1.89	1.42	1.34	2.76	.70	1.34	3.94	1.97	1.34	2.76	2.28	.94	1.34	3.94	3.46	2.13	1.34	.157	1.42	1.34	2.20		

TOOLMAKER'S LIVE CENTER SET

- Royal Toolmaker's Set Includes: changeable-point Live center, all five point styles and one additional #3 standard 60° male point.
- Wooden case provides a convenient way to store and protect the center and points when not in use.
- All points in the set are ground and serialized to the same live center.



Taper	Part Number	Set Price
MT2	ROY-10306	\$1,522.92
MT3	ROY-10307	\$1,596.42
MT4	ROY-10308	\$2,191.28
MT5	ROY-10309	\$2,260.86

LIVE CENTER SETS

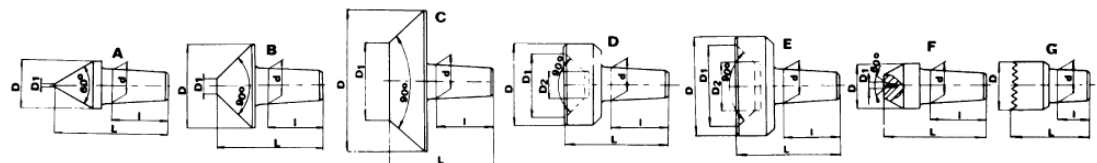


- Rotating spindle is extended right through the tapered shank.
- Two specially designed adjustable needle-roller bearings carry all radial loads.
- Heavy duty ball thrust bearing takes all axial thrust.
- Built-in oil seal protects bearings from coolant and dirt and also prevents loss of lubricant.

Morse Taper	Reference Number	Part Number	Price
MT3	243326	SK-310-705	\$679.23
MT4	243326	SK-310-710	\$802.91
MT5	243326	SK-310-715	\$1,173.25
MT6	243326	SK-310-720	\$1,690.50



C



Morse Taper	d	I	A	B-G		A		B		C			D		E		F		G
				L	D	D1	D	D1	D	D1	D	D1	D2	D	D1	D2	D	D1	D
3	.590	.984	1.968	1.771	.787	.019	1.417	.236	2.480	1.299	1.417	1.102	.472	1.771	1.496	.866	.787	.098	.984
4	.784	1.181	2.362	2.086	.984	.019	1.771	.393	2.755	1.378	1.771	1.456	.669	2.480	2.086	1.181	.984	.196	1.259
5	.984	1.496	2.874	2.559	1.259	.039	2.204	.551	3.149	1.496	2.204	1.732	.787	2.775	2.362	1.417	1.259	.196	1.771
6	1.181	1.811	3.543	3.149	1.417	.039	2.755	.708	3.937	1.968	2.755	2.283	.950	3.937	3.464	2.126	1.417	.315	2.204

Call Us Today For All Of Your Machine Tool Needs!

DEAD CENTERS

DEAD CENTERS Steel and Carbide Point

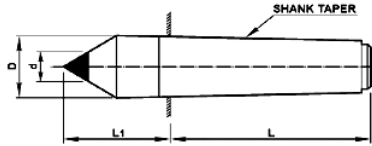


European Quality At A Value Price!

F



- Available with plain steel or carbide tip
- Crafted from bearing steel EN-31
- Hardened to 60 HRC.
- Precision Ground. Point run out within 0.015mm max



Point Type	Morse Taper	L	L1	D	d	Part Number	Price Each
Plain	MT1	2.11	1.04	0.48	-	D-M1S-05-10NA-T	\$16.00
	MT2	2.52	1.42	0.71	-	D-M2S-07-14NA-T	\$21.00
	MT3	3.19	1.73	0.95	-	D-M3S-09-17NA-T	\$31.00
	MT4	4.04	2.26	1.24	-	D-M4S-12-23NA-T	\$41.00
	MT5	5.10	2.78	1.76	-	D-M5S-17-28NA-T	\$51.00
	MT6	7.17	3.46	2.51	-	D-M6S-25-35NA-T	\$81.00
Carbide	MT1	2.11	1.04	0.48	0.20	D-M1S-02-10NC-T	\$21.00
	MT2	2.52	1.42	0.71	0.31	D-M2S-03-14NC-T	\$28.00
	MT3	3.19	1.73	0.95	0.43	D-M3S-04-17NC-T	\$35.00
	MT4	4.04	2.26	1.24	0.55	D-M4S-05-23NC-T	\$53.00
	MT5	5.10	2.78	1.76	0.71	D-M5S-07-28NC-T	\$71.00
	MT6	7.17	3.46	2.51	0.71	D-M6S-07-35NC-T	\$153.00

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

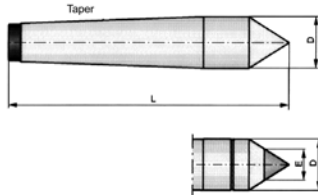
STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

FULL DEAD CENTERS

Steel & Carbide Tipped

- Accuracy: +/-0.0001" TIR
- Designed for use wherever high accuracy is required
- Case hardened to 61-63 HRC
- Carbide tipped offers longer tool life and requires less re-grinding



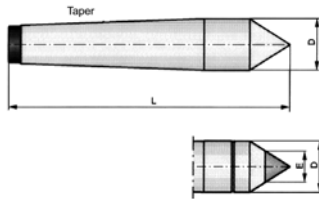
B

Taper	L	D	Steel Point Type 8712		E	Carbide Tipped Type 8711	
			Part Number	Price		Part Number	Price
1MT	3.15	0.48	BI-7555-005	\$13.50	0.28	BI-7550-005	\$28.80
2MT	3.94	0.71	BI-7555-010	\$16.20	0.28	BI-7550-010	\$28.80
3MT	4.92	0.95	BI-7555-015	\$20.70	0.43	BI-7550-015	\$42.30
4MT	6.30	1.24	BI-7555-020	\$32.40	0.55	BI-7550-020	\$61.20
5MT	7.87	1.76	BI-7555-025	\$58.50	0.71	BI-7550-025	\$83.70

FULL DEAD CENTERS

Steel & Carbide Tipped

- Accuracy: +/-0.0002" TIR
- Case hardened to 61-63 HRC



B

Taper	L	D	Steel Point		E	Carbide Tipped	
			Part Number	Price		Part Number	Price
1MT	3.15	0.48	BI-3555-005P	\$13.86	0.28	BI-3550-005P	\$29.79
2MT	3.94	0.71	BI-3555-010P	\$16.47	0.28	BI-3550-010P	\$28.44
3MT	4.92	0.95	BI-3555-015P	\$21.87	0.43	BI-3550-015P	\$44.82
4MT	6.30	1.24	BI-3555-020P	\$34.02	0.55	BI-3550-020P	\$64.17
5MT	7.87	1.76	BI-3555-025P	\$61.74	0.71	BI-3550-025P	\$86.13

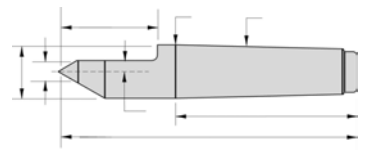
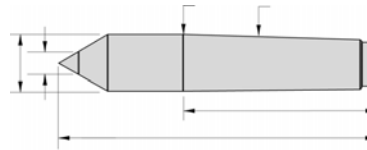
DEAD CENTERS

Steel and Carbide Point

- Accuracy: +/-0.00005" TIR
- Ground to an angle of 60°
- Used for grinding but can be used in high-precision turning applications
- Solid dead centers are made from ball bearing steel and are hardened to Rc 61-63
- Carbide-tipped feature carbide blank brazed into a close-tolerance socket for maximum strength and rigidity



A



Taper	B	C	D	E	F	G	H	Steel Point		Carbide Tipped		1/2 Center-Carbide Tipped	
								Part Number	Price	Part Number	Price	Part Number	Price
2MT	4-3/16"	2-9/16"	.700"	.700"	3/8"	3/16"	1-3/8"	ROY-11011	\$109.76	ROY-11012	\$145.04	ROY-11014	\$170.52
3MT	5-1/4"	3-3/16"	.938"	.938"	1/2"	7/32"	1-11/16"	ROY-11021	\$170.52	ROY-11022	\$197.96	ROY-11024	\$223.44
4MT	6-3/4"	4-1/16"	1.231"	1.231"	1/2"	1/4"	2-1/4"	ROY-11031	\$244.02	ROY-11032	\$259.70	ROY-11034	\$285.18
5MT	8-1/2"	5-3/16"	1.748"	1.748"	5/8"	3/8"	2-3/4"	ROY-11041	\$365.54	ROY-11042	\$402.78	ROY-11044	\$424.34

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

BAR PULLERS FOR CNC LATHES

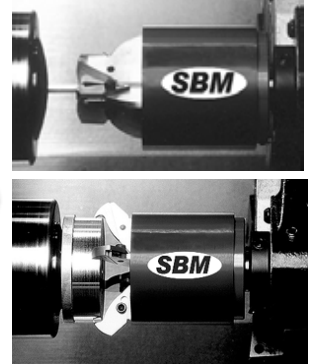
SBM BAR PULLERS

Coolant or Air Actuated
2, 3 & 4 Finger Models

An Inexpensive And Simple Way To Automate Your CNC Lathe- Automatically Pulls And Precisely Positions Bar Stock Through The Chuck, Eliminating Manual Loading And Unloading Of Each And Every Part!



No Down Time-machine continues to run, freeing operator to work other jobs.
Self Adjusting & Self Releasing-After initial setting, no adjustment required for different sizes, and needs only 1/4" of bar length to pull bar!
2, 3 & 4 Finger Design-Holds round and square parts. Can also hold hex and flat parts with 2 fingers.
Pull Threaded or Delicate Material-Simply use the optional soft steel, aluminum, brass or delrin fingers.
Bar Can Be Pulled and Positioned Multiple Times for machining various sections of the part before cutoff.
Great for Sub-Spindle Lathes- use as a "pick and place" device for finished parts.
Quick Installation- comes complete with fingers and bar support collar...be "up and running" within 1 hour!



Increase your PROFITS by \$50,000-\$100,000 per year!

RISK FREE GUARANTEE!
Use the SBM Bar Puller for 30 Days, and if you are not Completely Satisfied, you can return it for your money back... No Questions Asked!



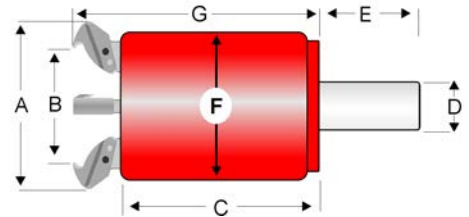
3 Finger Model 2 Finger Model

Shank Type	# of Fingers	Part Number	Price
MINI BAR PULLER-1/8" to 1-1/8" Capacity			
5/8" Round	4	BU-MGA010	\$359.00
16mm Round	4	BU-MGAR16MM	\$489.00
LARGE BAR PULLER-1/8" to 3-1/8" Capacity			
1" Round Shank	2	BU-GA1000-2	\$475.00
	3	BU-GA1000-3F	\$395.00
	4	BU-GA1000	\$395.00
VDI 30	4	BU-GA1000VDI-30	\$599.00
VDI 40	4	BU-GA1000VDI-40	\$599.00

CLEARANCE DIMENSIONS

Size	Gripping Range	A	B	C	D	E	F
Large Puller	1/8" to 2 -1/2" 1st setting	3 5/8"	2 1/2"	2 7/8"	Shank	1 3/4"	2 3/4"
	3/4" to 3- 1/8" 2nd setting	4"	3 1/8"	2 7/8"	Shank	1 3/4"	2 3/4"
Mini Puller	1/8" to 1 1/8"	1 5/8"	1 1/8"	1 7/8"	Shank	1 3/4"	1 5/8"

SBM Bar Pullers are shipped complete with 1 set of hard steel fingers and 1 bar support collar. (Mini Puller comes with 1.25" collar, Large Puller comes with 3" collar)



BAR PULLER ACCESSORIES

Save Time-Stock Up on Additional Collars!



Made from self-lubricating UHMW polyethylene!



Replacement Fingers are 100% compatible with "Omni" bar pullers!



Replacement Fingers (Set of 4)

Finger Type	Large Puller	Mini Puller	Price
Hard Steel	BU-GAFHS4	BU-MGAFHS4	\$69.00
Soft Steel	BU-GAFSS4	BU-MGAFSS4	\$69.00
Aluminum	BU-GAFAL4	BU-MGAFAL4	\$69.00
Brass	BU-GAFBR4	BU-MGAFBR4	\$69.00
Delrin	BU-GAFDL4	BU-MGAFDL4	\$69.00

INSTALLATION



- Place bar support collar around barstock. Tighten set screw.
- Place barstock in drawtube.
- Place SBM Bar Puller in tool station.
- Coolant or Air externally or internally actuated.
- Program machine.

NOTE: It is important that under no circumstances should any length of bar be left sticking outside the drawtube. This can result in damage to the machine and injury to the operator.

Call Us Today For All Of Your Machine Tool Needs!

Automate Any CNC Lathe!

Bar pullers provide a simple, inexpensive method for automating any CNC lathe. Bar Pullers cost much less than a bar feed and do not use up valuable floor space. Providing a maintenance-free operation, bar pullers are very easy to set up and use- no electrical interface is required. A wide gripping range is obtained from a compact design and they can be easily moved from one machine to another.

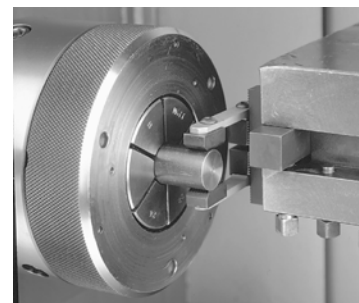
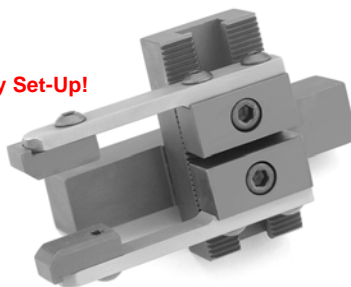
CNC COMPACT BAR PULLER

Extremely compact - Designed for small CNC machines where tool interference is a problem.

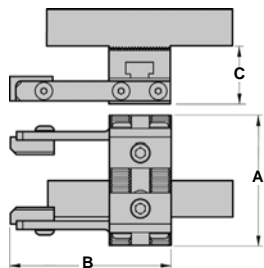
FEATURES:

- Eliminates the need for expensive bar feeds.
- Gripping range from 1/8" - 4".
- Flexible heat-treated steel fingers provide strong gripping force.
- Also available in VDI shank styles.
- Standard jaws have a serrated gripping surface for increased holding power (smooth jaws available).
- Unit easily handles round, square, and hex stock.
- Finger holders and racks are serrated to provide positive location.
- All wear subjected parts are hardened for strength and long life.
- Comes with one set of standard jaws and one blank spindle bushing.

Easy Set-Up!



Full Line Available!
Please call for more information.



Shank Size	Gripping Range	A	B	C	Part Number	Price Each
1/2" SQ	1/8" - 1 5/8"	2 1/8	3 3/4	1 3/16	ROY-43300	\$769.30
3/4" SQ	1/8" - 2 1/4"	2 5/8	3 3/4	1 3/16	ROY-43302	\$769.30
1" SQ	1/8" - 2 1/4"	2 5/8	3 3/4	1 3/16	ROY-43304	\$769.30
1" SQ	1/8" - 3"	3 5/8	3 3/4	1 3/16	ROY-43306	\$819.28

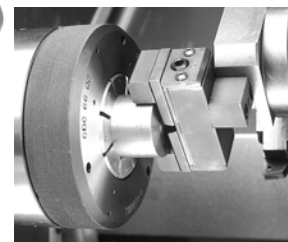
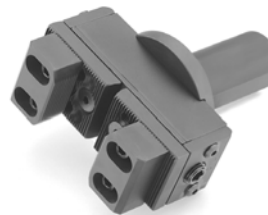
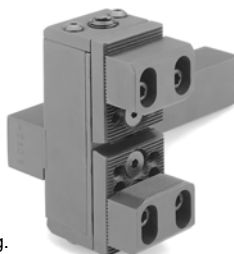
Compact Model Replacement Parts

Description	Part Number	Price Per Set
Spring Fingers	ROY-43505	\$96.04
Serrated Jaws	ROY-43500	\$138.18
Smooth Jaws	ROY-43502	\$168.56

CNC HEAVY DUTY BAR PULLER

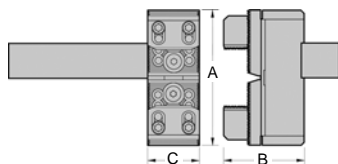
- Gripping range from 1/8" to 6-1/2".
- Gripping force is easily adjusted by altering spring pressure.
- Available in square, round, and VDI shank styles.
- Jaws have two gripping surfaces:
Serrated for increased gripping power.
Smooth to help prevent marking.
- Unit easily handles round, square, and hex stock.
- Jaws and racks are serrated to provide positive location.
- All wear subjected parts are hardened for strength and long life.
- Eliminates the need for expensive bar feeds.
- Comes with one set of standard jaws and one blank spindle bushing.

Round Shank



Square Shank

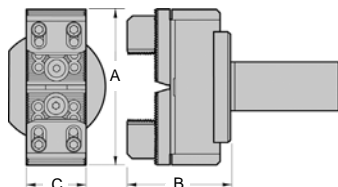
Square Shank



Gripping Range

Square Shank	Standard Jaws	Extra Cap. Jaws	A	B	C	Right Hand Part Number	Price Each
3/4" SQ	1/8" - 2-1/4"	1-7/8" - 3-3/4"	3-7/8"	2- 9/16"	1-1/2"	ROY-43360	\$1,151.50
1" SQ	1/8" - 2-1/4"	1-7/8" - 3-3/4"	3-7/8"	2- 9/16"	1-1/2"	ROY-43366	\$1,224.02
1" SQ	1/8" - 3-1/2"	1-7/8" - 5-3/8"	4-3/4"	2- 9/16"	1-1/2"	ROY-43370	\$1,277.92
1" SQ	1/8" - 3-5/8"	1-7/8" - 5-1/2"	5"	2-3/4"	1-3/4"	ROY-43372	\$1,318.10
1" SQ	1/8" - 4-7/8"	1-7/8" - 6-1/2"	6-3/4"	2-3/4"	1-3/4"	ROY-43376	\$1,474.90

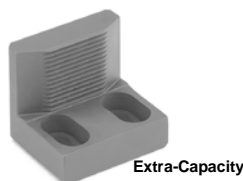
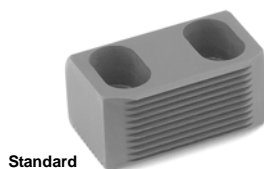
Round Shank



Gripping Range

Round Shank	Standard Jaws	Extra Cap. Jaws	A	B	C	Part Number	Price Each
1" dia.	1/8" - 2-1/4"	1-7/8" - 3-3/4"	3-7/8"	2 -5/16"	1-1/2"	ROY-43400	\$1,461.18
1-1/4" dia	1/8" - 2-1/4"	1-7/8" - 3-3/4"	3-7/8"	2 -5/16"	1-1/2"	ROY-43402	\$1,461.18
1-1/4" dia	1/8" - 3-1/2"	1-7/8" - 5-3/8"	5-3/8"	2 -5/16"	1-1/2"	ROY-43404	\$1,526.84

REPLACEMENT JAWS



Description	Part Number	Price Per Set
Standard	ROY-43510	\$189.14
Extra-Capacity	ROY-43512	\$219.52

Call Us Or Visit Our Website For Our Complete Selection!

BAR PULLERS FOR CNC LATHES

GRIPPEX COOLANT ACTUATED BAR PULLERS

Model 20L

The patented Grippex 20L CNC Bar Puller is actuated by a CNC lathe's coolant system. As coolant is fed through the unit, it pushes a piston forward which causes the fingers to close down on the bar stock. When the coolant is turned off, the fingers automatically spring open. With this bar puller, no adjustment by the operator is necessary - the fingers simply close down until they contact the bar. This feature is especially useful for making multiple pulls on the same workpiece, even after the OD has been turned.

The Grippex Coolant Actuated Bar Puller is also useful as a part loader/unloader. When fitted with special jaws, this tool can:

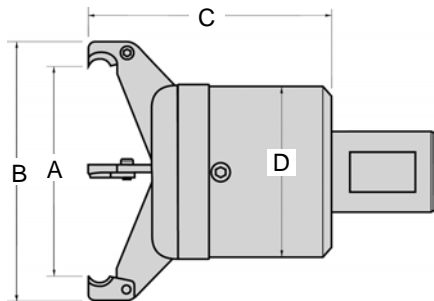
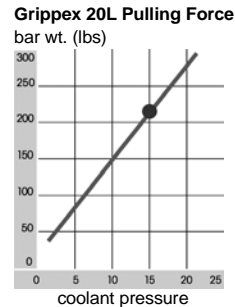
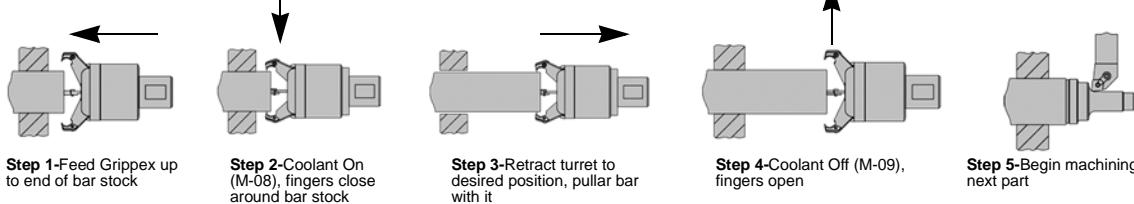
- Remove finished parts from a machine's subspindle and place them into the parts catcher, eliminating the need for unreliable ejectors and enables the subspindle to swallow longer parts.
- Remove a bar remnant and drop it in the parts catcher for disposal, preventing the remnant from falling into the chip conveyor where it could become jammed and cause damage to the conveyer.

The Grippex Bar Puller achieves very high gripping force through a patented finger mechanism that pivots on roller bearings. As little as 15 psi of coolant pressure is enough to enable the Grippex to pull a 210 lb. bar! Unit can also be operated by air pressure for custom applications.

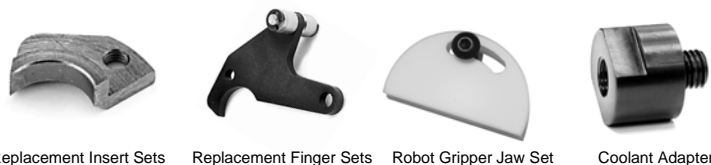


Can Be Operated By Coolant Or Compressed Air-Only 15 PSI is enough to pull a 210 lb bar!

Here's How It Works:



Shank Size	Gripping Range	A	B	C	D	Part Number	Price
1"	1/8" - 2-3/8"	2-3/8	3-1/4	3-1/2	2-11/16	ROY-43140	\$1,462.16
1-1/4"	1/8" - 3-1/8"	3-1/8	4	3-11/16	2-11/16	ROY-43145	\$1,462.16
1-1/2"	1/8" - 4-1/8"	4-1/8	5-1/16	4-1/4	2-11/16	ROY-43150	\$1,462.16



Grippex Bar Puller Accessories

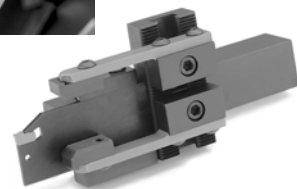
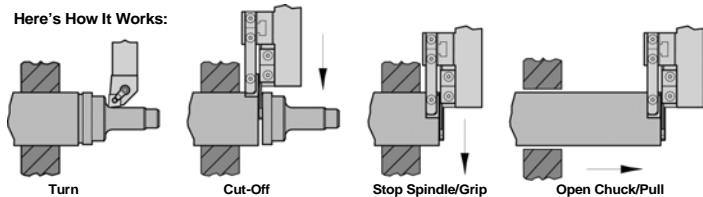
Description	Capacity	Part Number	Set Price
Replacement Fingers	1/8" - 2-3/8"	ROY-43170	\$162.68
	1/8" - 3-1/8" (std)	ROY-43175	\$177.38
	5/16" - 4-1/8"	ROY-43180	\$332.22
Replacement Inserts		ROY-43185	\$119.56
Coolant Adapter		ROY-43190	\$119.56
Robot Gripper Jaw Set-for removing finished parts from a subspindle or remnants from main spindle		ROY-43106	\$209.72

COMBINATION CNC BAR PULLER WITH CUT-OFF TOOL

Eliminates the need to index between cut-off and pulling operations because both tools occupy the same turret location.

- Reduced Indexing Time, Set-up Time and Cycle Time
- Compact design - good for small CNC machines where tool interference is a problem.
- Gripping range from 1/8" - 4", and handles round, square and hex stock.
- Flexible heat-treated steel fingers provide strong gripping force.
- Standard jaws have a serrated gripping surface for increased holding power

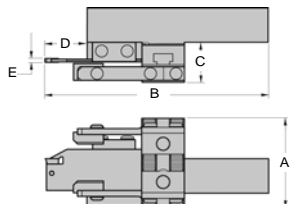
Here's How It Works:



Inserts & holder not included.

Compatibility Chart

Brand	1/2" or 3/4" Shank	1" Shank
Carboloy	150.10-20-3	150.10-25-3
Iscar	SGFH26-3	SGFH32-3
Kennametal	DSB4-340-105	DSB5-340-110
Sandvik	151.2-21-30	151.2-25-30
Valenite	VH101 26 3	VH101 32 3



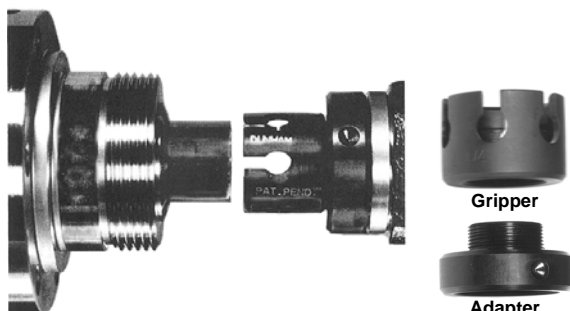
Shank Size	Gripping Range	A	B	C	D1	E	Right Hand Part Number	Price
1/2" SQ	1/8-1 5/8	2 1/8	4 11/16	1-3/16	7/8	0.125	ROY-43452	\$1,000.58
3/4" SQ	1/8-2 1/4	2 5/8	4 3/4	1-3/16	7/8	0.125	ROY-43456	\$1,027.04
1" SQ	1/8-2 1/4	2 5/8	6 3/8	1-3/16	1-1/4	0.125	ROY-43460	\$1,042.72
1" SQ	1/8-3	3 5/8	6 3/8	1-3/16	1-1/4	0.125	ROY-43464	\$1,078.00
1" SQ	1/8-4	3 5/8	6 3/8	1-3/16	1-1/4	0.125	ROY-43468	\$1,225.98

Call Us Today For All Of Your Machine Tool Needs!



BAR STOCK PULLER FOR CNC LATHES

The lightweight Dunham Bar-Pull, designed for CNC lathes, is self-activating with no moving parts. It does not interfere with other tools or cause turret imbalance, and installs easily in minutes. It uses a shank (available in 7 diameters from 1/2" to 1-1/2") that is clamped in the turret lathe like a boring bar. The grippers are hand turned onto the shank thread or onto adapters that attach to the shank to accept smaller diameter grippers. The grippers are slotted like standard collets and as they advance over the bar, are forced open to firmly grasp the bar for pulling out of the spindle to the programmed length. The gripping and release of the bar is automatic, and the Bar-Pull needs only 1/4" of the bar to engage.



Gripper

Adapter

Shank

How it works:

- Mount shank in turret, screw on adapter (if required) and gripper.
- Insert bar through back of spindle and clamp with collet or chuck.
- Face off minimum 1/4" projection using parting-off command in CNC program.
- Index turret to Bar-Pull and traverse turret toward spindle for programmed distance, sliding gripper over stock.
- Release clamping pressure on bar.
- Retract turret programmed distance.
- Reclamp bar.
- Retract turret to clear gripper from bar.
- Begin programmed machining cycle.
- Repeat until all bar is used.

FEATURES:

- Pulls bar to last usable part length
- Pull/positions bar $\pm 0.001"$
- Eliminates expensive bar feeds
- Works close to chuck or collet nose
- Does not interfere with adjacent tools or turret movement
- Metric grippers also available from 3mm to 34mm! Please call for more information

ADAPTER

Adaptor Size	Part Number	Price Each
5/8"	DTC-APB0625	\$55.00
1"	DTC-APB1000	

SHANKS

Shank Size	Part Number	Price Each
1/2"	DTC-PB0500	
5/8"	DTC-PB0625	\$68.00
3/4"	DTC-PB0750	
7/8"	DTC-PB0875	
1"	DTC-PB1000	
1-1/4"	DTC-PB1250	\$68.00
1-1/2"	DTC-PB1500	

GRIPPERS

Grip Size	Part Number	Price Each
For Use With DTC-APB0625 Adapter		
3/16"	DTC-PBG0187	
1/4"	DTC-PBG0250	
5/16"	DTC-PBG0312	\$55.00
3/8"	DTC-PBG0375	
7/16"	DTC-PBG0437	
1/2"	DTC-PBG0500	
9/16"	DTC-PBG0562	
5/8"	DTC-PBG0625	\$55.00
11/16"	DTC-PBG0687	
3/4"	DTC-PBG0750	

For Use With DTC-APB1000 Adaptor		
13/16"	DTC-PBG0812	
7/8"	DTC-PBG0875	\$55.00
15/16"	DTC-PBG0937	
1"	DTC-PBG1000	
1-1/8"	DTC-PBG1125	\$55.00
1-1/4"	DTC-PBG1250	

Direct Mount Grippers

1-5/16"	DTC-PBG1312	
1-3/8"	DTC-PBG1375	
1-7/16"	DTC-PBG1437	\$55.00
1-1/2"	DTC-PBG1500	
1-9/16"	DTC-PBG1562	
1-5/8"	DTC-PBG1625	
1-11/16"	DTC-PBG1687	
1-3/4"	DTC-PBG1750	
1-13/16"	DTC-PBG1812	\$88.00
1-7/8"	DTC-PBG1875	
1-15/16"	DTC-PBG1937	
2"	DTC-PBG2000	

BAR PULLER KITS

Save time and money by ordering a bar puller kit. Shank must be ordered separately at an additional cost. Kit for gang tool CNC lathes also available please call for more information.



Bar Puller Kits-(Please Order Shank Separately)

Description	Part Number	Kit Price
11 Grippers (1/4" to 1-1/2" in 1/8" increments) plus 5/8" and 1" adapters.	DTC-BPKIT1	\$443.00
4 Grippers (1 5/8" to 2" in 1/8" increments) plus 1" adapter.	DTC-BPKIT2	\$355.00
6 Grippers (3/16" to 1/2" in 1/16" increments) plus 5/8" adapter.	DTC-BPKIT3	\$218.00
8 Grippers (9/16" to 1" in 1/16" increments) plus 5/8" and 1" adapter.	DTC-BPKIT4	\$348.00
4 Grippers (1 1/8" to 1-1/2" in 1/8" increments) plus 1" adapter.	DTC-BPKIT5	\$260.00
14 Grippers (3/16" to 1" x 1/16" inc.) plus 8 grippers (1-1/8" to 2" x 1/8" inc) plus 5/8" and 1" adapter.	DTC-BPKIT6	\$896.00



TURRETGANG™ FOR TURRET LATHES

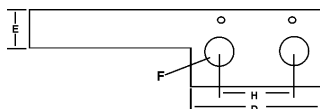
For Gang Style Rapid Tool Change



Wherever You Can Mount
An OD Toolholder,
You Can Mount A Turretgang!



- More tools available in your turret
- Immediately reduces manufacturing cycle time
- Mounts in your OD tool holder location on turret
- Right hand design
- Reduces the need for second operations
- Coolant Thru toolholder design



Turret Style	Shank Size E	Head Ext. D	No. Of Tool Loc.	Tool Loc. Size F	Location Spacing H	Part Number	Price Each
Channel	.750	3.50"	3	.750	1.200"	FA-1C35-3CGR	\$324.48
	1.000	2.30"	2	.625	1.200"	FA-1E23-2BGR	\$307.89
	1.000	3.50"	3		1.200"	FA-1E35-3CGR	\$324.48

3J& 16C COLLET RACKS

BEST VALUE



FEATURES:

- Protects & organizes your valuable collets
- Sturdy steel construction
- Available for 3J & 16C collets
- 25 holes

Description	Part Number	Price Each
3J Collet Tray	TRAY-125-3J	\$65.00
16C Collet Tray	TRAY-125-16C	\$65.00

Call Us Or Visit Our Website For Our Complete Selection!

16C & 3J ROUND COLLETS

16C COLLETS-ROUND, SQUARE & HEX

With Internal Threads



- Manufactured to exacting standards from alloy steel
- Heat treated threads and spring tempered body ensure accuracy and long life
- Size range: 1/16" to 1-5/8" x 64ths
- Collets feature precision internal threads for threaded collet stops



16C SQUARE- \$74.00 EA

Size	Part Number
1/4	16C-SI16-PH
5/16	16C-SI20-PH
3/8	16C-SI24-PH
7/16	16C-SI28-PH
1/2	16C-SI32-PH
9/16	16C-SI36-PH
5/8	16C-SI40-PH
11/16	16C-SI44-PH
3/4	16C-SI48-PH
13/16	16C-SI52-PH
7/8	16C-SI56-PH
15/16	16C-SI60-PH
1"	16C-SI64-PH
1-1/16	16C-SI68-PH
1-1/8	16C-SI72-PH

16C HEX- \$69.00 EA

Size	Part Number
1/4	16C-HI16-PH
5/16	16C-HI20-PH
3/8	16C-HI24-PH
7/16	16C-HI28-PH
1/2	16C-HI32-PH
9/16	16C-HI36-PH
5/8	16C-HI40-PH
11/16	16C-HI44-PH
3/4	16C-HI48-PH
13/16	16C-HI52-PH
7/8	16C-HI56-PH
15/16	16C-HI60-PH
1"	16C-HI64-PH
1-1/16	16C-HI68-PH
1-1/8	16C-HI72-PH
1-3/16	16C-HI76-PH
1-1/4	16C-HI80-PH
1-5/16	16C-HI84-PH
1-3/8	16C-HI88-PH

16C Round Collets- \$59.00 each

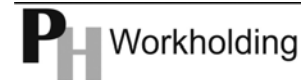
Size	Part Number	Size	Part Number	Size	Part Number
1/16	16C-RI04-PH	7/16	16C-RI28-PH	13/16	16C-RI52-PH
5/64	16C-RI05-PH	29/64	16C-RI29-PH	53/64	16C-RI53-PH
3/32	16C-RI06-PH	15/32	16C-RI30-PH	27/32	16C-RI54-PH
7/64	16C-RI07-PH	31/64	16C-RI31-PH	55/64	16C-RI55-PH
1/8	16C-RI08-PH	1/2	16C-RI32-PH	7/8	16C-RI56-PH
9/64	16C-RI09-PH	33/64	16C-RI33-PH	57/64	16C-RI57-PH
5/32	16C-RI10-PH	17/32	16C-RI34-PH	29/32	16C-RI58-PH
11/64	16C-RI11-PH	35/64	16C-RI35-PH	59/64	16C-RI59-PH
3/16	16C-RI12-PH	9/16	16C-RI36-PH	15/16	16C-RI60-PH
13/64	16C-RI13-PH	37/64	16C-RI37-PH	61/64	16C-RI61-PH
7/32	16C-RI14-PH	19/32	16C-RI38-PH	31/32	16C-RI62-PH
15/64	16C-RI15-PH	39/64	16C-RI39-PH	63/64	16C-RI63-PH
1/4	16C-RI16-PH	5/8	16C-RI40-PH	1"	16C-RI64-PH
17/64	16C-RI17-PH	41/64	16C-RI41-PH	1-1/16	16C-RI68-PH
9/32	16C-RI18-PH	21/32	16C-RI42-PH	1-1/8	16C-RI72-PH
19/64	16C-RI19-PH	43/64	16C-RI43-PH	1-3/16	16C-RI76-PH
5/16	16C-RI20-PH	11/16	16C-RI44-PH	1-1/4	16C-RI80-PH
21/64	16C-RI21-PH	45/64	16C-RI45-PH	1-5/16	16C-RI84-PH
11/32	16C-RI22-PH	23/32	16C-RI46-PH	1-3/8	16C-RI88-PH
23/64	16C-RI23-PH	47/64	16C-RI47-PH	1-7/16	16C-RI92-PH
3/8	16C-RI24-PH	3/4	16C-RI48-PH	1-1/2	16C-RI96-PH
25/64	16C-RI25-PH	49/64	16C-RI49-PH	1-9/16	16C-RI100-
13/32	16C-RI26-PH	25/32	16C-RI50-PH	1-5/8	16C-RI104-
27/64	16C-RI27-PH	51/64	16C-RI51-PH	Emergency	166-001S-PH

3J COLLETS-ROUND, SQUARE & HEX

With Internal Threads



- Manufactured to exacting standards from alloy steel
- Heat treated threads and spring tempered body ensure accuracy and long life
- Size range: 1/16" to 1-3/4" x 64ths
- Collets feature precision internal threads for threaded collet stops



3J SQUARE- \$74.00 EA

Size	Part Number
1/4"	3J-SI16-PH
5/16	3J-SI20-PH
3/8	3J-SI24-PH
7/16	3J-SI28-PH
1/2	3J-SI32-PH
9/16	3J-SI36-PH
5/8	3J-SI40-PH
11/16	3J-SI44-PH
3/4	3J-SI48-PH
13/16	3J-SI52-PH
7/8	3J-SI56-PH
15/16	3J-SI60-PH
1"	3J-SI64-PH
1-1/16	3J-SI68-PH
1-1/8	3J-SI72-PH
1-1/4	3J-SI80-PH

3J HEX- \$69.00 EA

Size	Part Number
1/4"	3J-HI16-PH
5/16	3J-HI20-PH
3/8	3J-HI24-PH
7/16	3J-HI28-PH
1/2	3J-HI32-PH
9/16	3J-HI36-PH
5/8	3J-HI40-PH
11/16	3J-HI44-PH
3/4	3J-HI48-PH
13/16	3J-HI52-PH
7/8	3J-HI56-PH
15/16	3J-HI60-PH
1"	3J-HI64-PH
1-1/16	3J-HI68-PH
1-1/8	3J-HI72-PH
1-3/16	3J-HI76-PH
1-1/4	3J-HI80-PH
1-5/16	3J-HI84-PH
1-3/8	3J-HI88-PH
1-7/16	3J-HI92-PH
1-1/2	3J-HI96-PH

3J Round Smooth Collets- \$59.00 each

Size	Part Number	Size	Part Number	Size	Part Number
1/16"	3J-RI04-PH	29/64	3J-RI29-PH	27/32	3J-RI54-PH
5/64"	3J-RI05-PH	15/32	3J-RI30-PH	55/64	3J-RI55-PH
3/32"	3J-RI06-PH	31/64	3J-RI31-PH	7/8	3J-RI56-PH
7/64"	3J-RI07-PH	1/2	3J-RI32-PH	57/64	3J-RI57-PH
1/8"	3J-RI08-PH	33/64	3J-RI33-PH	29/32	3J-RI58-PH
9/64"	3J-RI09-PH	17/32	3J-RI34-PH	59/64	3J-RI59-PH
5/32"	3J-RI10-PH	35/64	3J-RI35-PH	15/16	3J-RI60-PH
11/64"	3J-RI11-PH	9/16	3J-RI36-PH	61/64	3J-RI61-PH
3/16"	3J-RI12-PH	37/64	3J-RI37-PH	31/32	3J-RI62-PH
13/64"	3J-RI13-PH	19/32	3J-RI38-PH	63/64	3J-RI63-PH
7/32"	3J-RI14-PH	39/64	3J-RI39-PH	1"	3J-RI64-PH
15/64"	3J-RI15-PH	5/8	3J-RI40-PH	1-1/16	3J-RI68-PH
1/4"	3J-RI16-PH	41/64	3J-RI41-PH	1-1/8	3J-RI72-PH
17/64"	3J-RI17-PH	21/32	3J-RI42-PH	1-3/16	3J-RI76-PH
9/32"	3J-RI18-PH	43/64	3J-RI43-PH	1-1/4	3J-RI80-PH
19/64"	3J-RI19-PH	11/16	3J-RI44-PH	1-5/16	3J-RI84-PH
5/16"	3J-RI20-PH	45/64	3J-RI45-PH	1-3/8	3J-RI88-PH
21/64"	3J-RI21-PH	23/32	3J-RI46-PH	1-7/16	3J-RI92-PH
11/32"	3J-RI22-PH	47/64	3J-RI47-PH	1-1/2	3J-RI96-PH
23/64"	3J-RI23-PH	3/4	3J-RI48-PH	1-9/16	3J-RI100-PH
3/8"	3J-RI24-PH	49/64	3J-RI49-PH	1-5/8	3J-RI104-PH
25/64"	3J-RI25-PH	25/32	3J-RI50-PH	1-11/16	3J-RI108-PH
13/32"	3J-RI26-PH	51/64	3J-RI51-PH	1-3/4	3J-RI112-PH
27/64"	3J-RI27-PH	13/16	3J-RI52-PH	Emergency	360-001S-PH
7/16"	3J-RI28-PH	53/64	3J-RI53-PH		

Call Us Today For All Of Your Machine Tool Needs!

5C COLLET SETS

- Made of high grade steel
- Hardened and precision ground
- Internal and external threads



BEST VALUE

No. of Collets	Range	Brand	Part Number	Set Price
15	1/8" to 1" x 16ths	BEST VALUE	5C-SET15	\$135.00
33	1/16" to 1-1/16" x 32nds	BEST VALUE	5C-SET33	\$234.00
69	1/8" to 1-1/8" x 64ths	BEST VALUE	5C-SET69	\$460.00
8	1/8" to 1" x 1/8	CRAWFORD	5C-SET-RI-08-CR	\$172.80
17	1/16" to 1-1/16" x 16ths	CRAWFORD	5C-SET-RI-17-CR	\$367.20
33	1/16" to 1-1/16" x 32nds	CRAWFORD	5C-SET-RI-33-CR	\$712.80
65	1/16" to 1-1/16" x 64ths	CRAWFORD	5C-SET-RI-65-CR	\$1,422.00

No. of Collets	Range	Inc.	Part Number	Set Price
8	1/8" to 1"	1/8"	510-008-LY	\$148.96
9	1/8" to 1-1/8"	1/8"	510-009-LY	\$171.15
9	1/16" + 1/8" to 1"	1/8"	510-009S-LY	\$171.15
15	1/8" to 1"	1/16"	510-015-LY	\$279.30
16	1/8" to 1-1/16"	1/16"	510-016-LY	\$301.49
16	1/16" to 1"	1/16"	510-016S-LY	\$301.49
17	1/16" to 1-1/16"	1/16"	510-017-LY	\$323.68
18	1/16" to 1-1/8"	1/16"	510-018-LY	\$345.87
29	1/8" to 1"	1/32"	510-029-LY	\$539.98
31	1/8" to 1-1/16"	1/32"	510-031-LY	\$584.36
31	1/16" to 1"	1/32"	510-031S-LY	\$584.36
33	1/16" to 1-1/16"	1/32"	510-033-LY	\$628.74
35	1/16" to 1-1/8"	1/32"	510-035-LY	\$673.12
61	1/8" to 1-1/16"	1/64"	510-061-LY	\$1,150.10
61	1/16" to 1"	1/64"	510-061S-LY	\$1,150.10

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

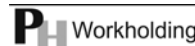
EMERGENCY COLLETS

Especially well-suited for holding soft or delicate work pieces without marring the surface.



Material	BEST VALUE	Price	LYNDEX	Price	PH Workholding	Price
1/16" Steel	5C-911SI	\$13.95	560-001S-LY	\$25.76	560-001S-PH	\$16.00
1/16" Brass	5C-911BI	\$29.02	LY-560-001B	\$33.04	-	-
1/16" Nylon	5C-911NI	\$18.50	-	-	-	-

5C STEP COLLETS



- For OD workholding
- Soft face for easy machining
- Hardened bodies have no internal threads
- Allows for large diameter parts to be held in 5C collets

Head Dia	Part Number	Price
2"	550-002-PH	\$45.16
3"	550-003-PH	\$52.42
4"	550-004-PH	\$76.40
5"	550-005-PH	\$109.90
6"	550-006-PH	\$128.34

5C COLLET STOP



- Fits standard 5C collets with internal threads
- 6 hardened steel stop rods included-1/16", 1/8", 3/16", 1/4", 3/8", 3/4"
- 3/4" stop rod keeps parts square to spindle axis
- Proprietary locking system prevents the possibility of the stop rod slipping in the body
- Body is red anodized 6061-T6 aluminum
- Body fits a 7/8" wrench



5C COLLET STOP
Part # EDGE-45000
\$29.99 ea

COLLET RACKS

- Organize Your Collets
- No More Ruined Collets
- Made From Hi-impact Plastic



Collet Type	No. of Holes	Material	Manufacturer	Part Number	Price Each
5C	76	Hi-Impact Plastic	Sierra American	SIE-5C-76	\$30.67
R8	52	Plastic	Sierra American	SIE-R8-52	\$29.50
5C	30	Steel	Huot	HU-14600	\$32.40
R8	16	Steel	Huot	HU-14625	\$32.40

5C COLLET WRENCH



Sierra American Part Number	Price Each
SIE-CW-5C	\$17.19



Lyndex Part Number	Price Each
LY-5C-WRENCH	\$39.41

5C COLLET BLOCKS



Description	Part Number	Price
Hex Block*	LY-570-HEX	\$55.93
Square Block*	LY-570-SQUARE	\$55.93
Quick Closer	LY-570-CLOSE	\$55.93
Set (All of the Above)	LY-570-BLOCK	\$167.79
Tightening Ring	LY-570-RING	\$8.54

*Comes w/ tightening ring

5C COLLET STOPS



Description	Part Number	Price Each
Adjustable Threaded Collet Stop	LY-570-ADJ	\$16.52
Universal Collet Stop	LY-570-UNI	\$38.99

BEST VALUE

Rod	Length	Part Number	Price
1/2"	4"	ST-1	\$7.48

Call Us Or Visit Our Website For Our Complete Selection!

INTERNAL WORKHOLDING FOR LATHES

PRECISION EXPANDING MINI-COLLETS

Machinable to .062"

For 5C, 16C, 2J & 3J Collet Chucks
Tapered Stem



Why Use Our Precision Expanding Mini-Collets?

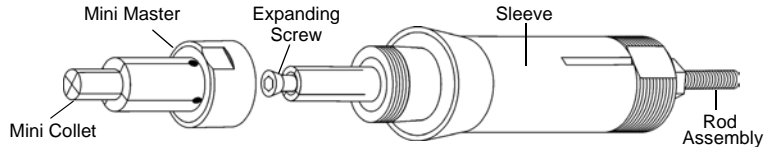
- **Low Cost-** Replacement collets keeps future costs to a minimum when you replace only the machinable collet.
- **Rigid Design-** Long taper fit increases rigidity, allowing for heavier cuts.
- **Interchangeable-** Adapter sleeves allow you to use the same expanding collet in different spindle sizes.
- **Precise-** Concentricity of .0002 T.I.R. and lengths of ± .0002 obtainable for parts with closely held bores. Reassembly concentricity is excellent.
- **Miniature Work Holding-** Mini Collets can grip bores down to 1/16" for light cuts.
- **Made in USA!**

Features:

- Miniature workholding in 5C, 2J, 3J and 16C spindle sizes.
- Holds 3/8" to 1/16" diameter bores.
- Machinable to .062"

Mini Collet Assembly Consists Of:

- 1-Mini Master
- 1-Expanding Screw
- 1-Mini Collet
- 1-Sleeve
- 1-Rod Assembly



How to use the Mini Collet System:

1. **Mini Collet set up requires five parts:**
(A) Mini Collet (B) Mini Master (C) Sleeve (D) Rod Assembly (E) RV-572 Expanding Screw
2. Clean taper of Mini Master and inside taper of Sleeve and install Mini Master securely into Sleeve.
3. Install Rod Assembly into the Sleeve and let it project into the Mini Master.
4. Insert Expanding Screw through front of Mini Master into the Rod Assembly. Hand tighten only.
5. Loosen Lock Nut and adjust Collet Nut so Rod Assembly will travel about 1/8" to 3/16".
6. Tighten Lock Nut and then lightly tighten Expanding Screw.
7. Slide Mini Collet over the Mini Master and rotate until the slots line up. Screw on the Locking Collar and tighten.
8. Insert the assembly into machine. Adjust the collet closer until Mini Collet expands slightly and machine to desired diameter.



MINI MASTER	
Part Number	Price
RV-500	\$62.77



EXPANDING SCREW	
Part Number	Price
RV-572	\$5.35



MINI COLLETS			
Dia	Lgth	Part Number	Price Each
7/16"	1/4"	RV-505	\$36.72
	9/16"	RV-506	\$53.43
	3/4"	RV-507	\$69.45

SLEEVE		
Spindle	Part Number	Price Each
5C	RV-590	\$62.11
16C	RV-591	\$110.19
2J	RV-592	\$95.50
3J	RV-593	\$110.19

ROD ASSEMBLY		
Spindle	Part Number	Price Each
5C	RV-583	\$36.72
16C	RV-584	\$54.10
2J	RV-585	\$46.74
3J	RV-585-3	\$54.10

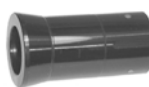
EXPANDING COLLET ASSEMBLIES

-2 Collets, Machinable Down to .375"
For 5C, 16C, 2J and 3J Collets



-2 COLLET

Machinable Down to .375"				Replacement Screws		
Dia.	Length	Part Number	Price Each	Uses Rod Assembly Series:	Part Number	Price Each
1"	1"	RV-521	\$30.72	1-2	RV-572	\$5.35
	2"	RV-522	\$34.06	2-2	RV-576	\$6.67
	3"	RV-523	\$41.41	2-2		
1-1/4"	1"	RV-524	\$32.71	1-2	RV-572	\$5.35
1-1/2"	1"	RV-526	\$34.06	1-2	RV-576	\$6.67
	2"	RV-527	\$36.72	2-2		
2"	1"	RV-528	\$36.72	1-2	RV-572	\$5.35



-2 SLEEVE		
Spindle	Part No.	Price
5C	RV-590	\$62.11
16C	RV-591	\$110.19
2J	RV-592	\$95.50
3J	RV-593	\$110.19

-2 ROD ASSEMBLY

Spindle	Series 1-2		Series 2-2	
	Part Number	Price Each	Part Number	Price Each
5C	RV-583	\$36.72	RV-583L	\$40.73
16C	RV-584	\$54.10	RV-584L	\$55.44
2J	RV-585	\$46.74	RV-585L	\$49.42
3J	RV-585-3	\$54.10	RV-585-3L	\$55.44

Call Us Today For All Of Your Machine Tool Needs!

EXPANDING COLLET ASSEMBLIES

-4 Collets, Machinable Down to .500"



-4 COLLETS

Replacement Screws

Machinable Down to .500"				Uses Rod Assembly Series:	Replacement Screws	
Dia.	Length	Part Number	Price Each		Part Number	Price Each
1-1/2"	1-1/2"	RV-541	\$33.39	-4 -1	RV-573	\$6.67
	2"	RV-542	\$38.73	-4 -1		
	3"	RV-543	\$47.42	-4 -2		
	4"	RV-543A	\$61.44	-4 -3		
2"	1-1/2"	RV-544	\$42.74	-4 -1	RV-573	\$6.67
	2"	RV-545	\$48.08	-4 -1		
	3"	RV-546	\$57.43	-4 -2		
	4"	RV-547	\$72.12	-4 -3		
	5"	RV-547A	\$114.86	-4 -4		
2-1/2"	1-1/2"	RV-548	\$51.43	-4 -1	RV-573	\$6.67
	2"	RV-549	\$60.76	-4 -1		
	3"	RV-550	\$73.46	-4 -2		
	4"	RV-551	\$88.15	-4 -3		
3"	1-1/2"	RV-552	\$62.11	-4 -1	RV-573	\$6.67
	2"	RV-553	\$72.12	-4 -1		
	3"	RV-554	\$95.50	-4 -2		
3-1/2"	1-1/2"	RV-555	\$76.79	-4 -1	RV-573	\$6.67
	3"	RV-556	\$106.19	-4 -2		
4"	1-1/2"	RV-557	\$94.17	-4 -1	RV-573	\$6.67
	3"	RV-557A	\$138.24	-4 -2		
4-1/2"	1-1/2"	RV-558	\$117.54	-4 -1	RV-573	\$6.67
5-1/4"	1-1/2"	RV-559	\$157.60	-4 -1		
6"	1-1/2"	RV-560	\$207.69	-4 -1		



Rod Assembly



Sleeve



Collet



Expanding Screw

Expanding Collet Assembly Consists Of:
 1-Collet
 1-Expanding Screw
 1-Sleeve
 1-Rod Assembly

ROD ASSEMBLY (INCLUDES SCREW)

Spindle Type	Series -4 -1		Series -4 -2	
	Screw and 4-1/2" Rod	Price Each	Long Screw and 4-1/2" ROD	Price Each
5C	RV-586	\$40.73	RV-586L	\$43.42
16C	RV-587	\$56.10	RV-587L	\$57.43
2J	RV-588	\$46.74	RV-588L	\$58.10
3J	RV-589	\$56.10	RV-589L	\$58.10

SLEEVE

Spindle Type	Part Number	Price Each
5C	RV-596	\$62.11
16C	RV-597	\$110.19
2J	RV-598	\$95.50
3J	RV-599	\$110.19

Spindle Type	Series -4 -3		Series -4 -4	
	Long Screw and 5-3/4" ROD	Price Each	Long Screw and 8-3/4" ROD	Price Each
5C	RV-586XL	\$43.42	RV-586XXL	\$48.74
16C	RV-587XL	\$62.11	RV-587XXL	\$64.11
2J	RV-588XL	\$62.77	RV-588XXL	\$64.11
3J	RV-589XL	\$62.77	-	-

-8 COLLETS

Machinable Down to .500"



-26 COLLETS

Machinable Down to .250"



-8 COLLETS

Machinable Down to .500"				Uses Rod Assembly Series:	Replacement Screws	
Dia.	Length	Part Number	Price Each		Part Number	Price Each
2"	2"	RV-822	\$64.77	-8-1	RV-ES38L	\$24.04
	3"	RV-823	\$76.79	-8-1		
	4"	RV-824	\$112.19	-8-1		
	5"	RV-825*	\$117.54	-8-2		
	6"	RV-826*	\$124.87	-8-2		
2-1/2"	2"	RV-82.52	\$76.79	-8-1	RV-ES38XL	\$33.39
	3"	RV-82.53	\$88.15	-8-1		
	4"	RV-82.54	\$95.50	-8-1		
3"	2"	RV-832	\$88.15	-8-1	RV-ES38L	\$24.04
	3"	RV-833	\$104.84	-8-1		
3-1/2"	2"	RV-83.52	\$104.84	-8-1	RV-ES38L	\$24.04
	3"	RV-83.53	\$116.20	-8-1		
4"	2"	RV-842	\$116.20	-8-1	RV-ES38L	\$24.04
	3"	RV-843	\$132.22	-8-1		
4-1/2"	2"	RV-84.52	\$131.57	-8-1	RV-ES38L	\$24.04
	3"	RV-84.53	\$155.61	-8-1		
5-1/4"	2"	RV-85.252	\$183.65	-8-1	RV-ES38L	\$24.04
6"	1-1/2"	RV-862	\$227.05	-8-1	RV-ES38L	\$24.04



Rod Assembly



Sleeve



Collet



Expanding Screw

-26 COLLETS

Machinable Down to .250"				Replacement Screws	
Dia.	Length	Part No.	Price	Part No.	Price
1/2"	1"	RV-510	\$30.72	RV-571	\$5.35
1"	1"	RV-511	\$30.72		

Spindle	Sleeve		Rod Assembly	
	Part No.	Price	Part No.	Price
5C	RV-590	\$62.11	RV-580	\$36.72
16C	RV-591	\$110.19	RV-581	\$54.10
2J	RV-592	\$95.50	RV-582	\$45.41
3J	RV-593	\$110.19	RV-582-3	\$54.10

ACCESSORIES



NUTS

Part Number	Price Each
RV-16C	\$39.00
RV-2J	\$39.00
RV-3J	\$39.00
RV-5C	\$39.00

COLLET SEPARATORS

Part Number	Price Each
RV-CS-16C	\$58.76
RV-CS-3J	\$58.76
RV-CS-5C	\$80.79

THREADED RODS

All Rods have 3/8" threads



Collet Series	Rod Length	Part Number	Price Each
-26	4"	RV-R6	\$13.36
	5"	RV-R6L	\$13.36
-2	4 1/2"	RV-R10	\$14.69
	5 3/4"	RV-R10L	\$14.69
-4	4-1/2"	RV-R25	\$21.37
	5-3/4"	RV-R25L	\$21.37
	8-3/4"	RV-R25XL	\$21.37



-8 SLEEVES

Spindle Type	Part Number	Price Each
16C	RV-SL8-16C	\$110.19
3J	RV-SL8-3J	\$110.19

-8 ROD ASSEMBLY

Series -8-1		Series -8-2	
Part Number	Price Each	Part Number	Price Each
RV-RA38L-16C	\$62.77	RV-RA38XL-16C	\$69.45
RV-RA38L-3J	\$60.10	RV-RA38XL-3J	\$69.45

Call Us Or Visit Our Website For Our Complete Selection!

INTERNAL WORKHOLDING FOR LATHES

EXPANDING COLLET SYSTEM For 5C, 16C, 2J & 3J Collets

All Collets In This Section Are Compatible
With Collets Sold By J.F.K.® Company



- Suited for ID Holding
- Complete system consists of:
 - Expanding Collet
 - Adapter
 - Expanding Screw
- Machinable collet
- Made in USA



② Select Adapter based on your spindle type



Ordering is as easy as 1-2-3!

① Select Collet based on workpiece diameter and machinable length



ADAPTER

Type	Part No.	Price
5C	JK-698	\$62.20
16C	JK-699	\$115.11
2J	JK-695	\$96.50
3J	JK-696	\$115.11

③ Select Expanding Screw based on Collet Part Number in Step 1



COLLETS

Collet Range (diameter)	5/8" Length		1" Length		1-3/4" Length	
	Part No.	Price	Part No.	Price	Part No.	Price
5/16" to 9/16"	JK-601	\$29.20	-	-	-	-
1/2" to 1"	-	-	JK-602	\$29.63	JK-612	\$31.74
1/2" to 1-1/2"	-	-	JK-603	\$31.74	JK-614	\$36.83
1/2" to 2"	-	-	JK-604	\$35.56	JK-616	\$41.90
1/2" to 2-1/2"	-	-	JK-605	\$41.90	JK-618	\$48.26
1/2" to 3"	-	-	JK-606	\$49.52	-	-
1/2" to 4"	-	-	JK-607	\$57.14	-	-
1/2" to 5"	-	-	JK-608	\$64.75	-	-

EXPANDING SCREWS

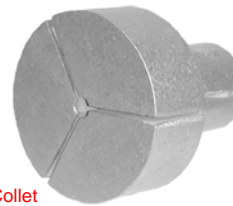
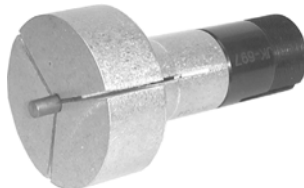
Using Collet Part Number	Part Number	Screw Price
JK-602 to JK-608	JK-1005	\$5.12
JK-612 to JK-618	JK-1006	\$5.12
JK-601*	JK-1009	\$6.49
Bolt for JK-1009	JK-1007	\$3.44
Stud for JK-1008	JK-1008	\$3.07

Above Collets Come With Expanding Screw

*JK-1009 consists of Bolt (JK-1007) & Stud (JK-1008)

5C OVERSIZE COLLETS Standard Stem

- Perfect for OD Holding
- Available in Steel and Aluminum
- Standard or extra thickness
- Assembly consists of collet and adapter



STANDARD THICKNESS

Head Dia	Head Lgth	Steel	Aluminum	Price Each
2"	3/4"	JK-633	JK-733	\$33.02
2-1/2"	1"	JK-634	JK-734	\$36.83
3"	1"	JK-635	JK-735	\$39.36
4"	1"	JK-636	JK-736	\$49.52

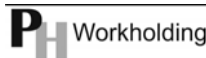
EXTRA THICK

Head Dia	Head Lgth	Steel	Aluminum	Price Each
1-1/2"	7/8"	JK-641	JK-741	\$27.94
2"	1-1/4"	JK-642	JK-742	\$36.83
2-1/2"	1-1/2"	JK-643	JK-743	\$39.36
3"	1-5/8"	JK-644	JK-744	\$44.45

5C ADAPTER

Part Number	Price
JK-697	\$25.20

5C STEP COLLETS For O.D. Workholding



- For OD workholding
- Hardened bodies have no internal threads
- Allows for large diameter parts to be held in 5C collets
- Soft face for easy machining
- Diameters from 2" to 6"

Head Dia	PH WORKHOLDING		LYNDEX	
	Part Number	Price Each	Part Number	Price Each
2"	550-002-PH	\$45.16	LY-550-002	\$53.13
3"	550-003-PH	\$52.42	LY-550-003	\$61.67
4"	550-004-PH	\$76.40	LY-550-004	\$89.88
5"	550-005-PH	\$109.90	LY-550-005	\$129.29
6"	550-006-PH	\$128.34	LY-550-006	\$150.99

OVERSIZE 5C COLLETS



- FEATURES:
- Perfect for OD holding
 - Black oxide coating to ensure long life
 - Machinable steel
 - Made in USA

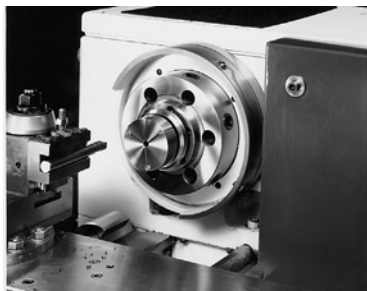


Head Dia	Head Lgth	Part Number	Price Each
1-1/2"	1-1/4"	JK-621	\$44.16
2"	1-1/4"	JK-622	\$49.69
2-1/2"	1-1/4"	JK-623	\$51.89

Call Us Today For All Of Your Machine Tool Needs!

5C WORKHOLDING FOR LATHES

5C STEP COLLETS For O.D. Workholding



- 5C Step Collets allow large diameter parts to be held in a 5C collet.
- The head can be easily bored out to the desired size.
- 1-1/4" head thickness allows for a 1" bore depth.
- Made from 1144 steel-can be hardened

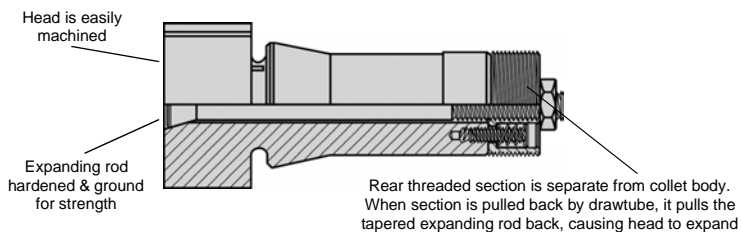
ROYAL
PRODUCTS
Optimize everything

A

Head Dia	Pilot Dia	Pin Dia	Part Number	Price Each
2"	1/4"	1/8"	ROY-20020	\$163.00
3"	5/16"	1/4"	ROY-20022	\$210.70
4"	5/16"	1/4"	ROY-20024	\$329.28
5"	5/16"	1/4"	ROY-20025	\$426.30
6"	5/16"	1/4"	ROY-20026	\$523.32

5C INTERNAL EXPANDING COLLETS For ID Workholding

5C Internal Expanding Collets grip on the inside diameter of a workpiece, enabling the complete OD to be turned. The accu-length design ensures precise workpiece positioning - no z-axis movement. The collet head is easily turned to the required size, and can be re-machined as necessary. Concentricities of 0.0002" can typically be achieved using Royal 5C Expanding Collets. These collets are manufactured from 1144 steel that can be hardened after machining for wear resistance.



A

Replacement Expanding Rods

Head Dia	Head Length	Part Number	Price Each
3/4"	1"	ROY-20135	\$41.80
1"	1"	ROY-20136	\$38.00
1-1/2"- 6"	1"	ROY-20130	\$29.45
1-1/2"- 6"	1-1/2"	ROY-20131	\$30.40
1-1/2"- 6"	2"	ROY-20132	\$31.35

Nom. Head Dia	Head Length	Mach Range Min-Max	Part Number	Price Each
3/4"	1"	1/4" - 11/16"	ROY-20100	\$176.40
1"	1"	7/16" - 15/16"	ROY-20101	\$176.40
1-1/2"	1"	3/4" - 1-7/16"	ROY-20102	\$167.58
1-1/2"	1-1/2"	3/4" - 1-7/16"	ROY-20103	\$184.24
1-1/2"	2"	3/4" - 1-7/16"	ROY-20104	\$185.22
2"	1"	3/4" - 1-15/16"	ROY-20107	\$193.06
2"	1-1/2"	3/4" - 1-15/16"	ROY-20108	\$204.82
2"	2"	3/4" - 1-15/16"	ROY-20109	\$234.22
2-1/2"	1"	3/4" - 2-7/16"	ROY-20112	\$237.16
3"	1"	3/4" - 2-15/16"	ROY-20117	\$259.70
5"	2"	3/4" - 4-15/16"	ROY-20127	\$499.80
6"	2"	3/4" - 5-15/16"	ROY-20128	\$556.64

5C EXPANDING COLLETS



MADE IN THE
USA

For I.D. Workholding



Dia	Min. Length	Mach. Dia	Part Number	Price Each
SET- Includes 1 ea of below			AI-51-5C-001	\$176.70

Replacement Collets

Dia	Min. Length	Mach. Dia	Part Number	Price Each
1/2"	1"	.250"	AI-51-5C-0500-1	\$51.20
1"	1"	.437"	AI-51-5C-1000-1	\$51.20
1-1/2"	1"	.750"	AI-51-5C-1500-1	\$51.20
2"	1"	.750"	AI-51-5C-2000-1	\$92.90

EXPANDING ARBORS

Machinable

An effective and economical means for internal chucking. Easy machinability and operation. The 8 piece set includes a wooden stand.

MADE IN THE
USA

EAGLE ROCK

For I.D. Workholding



Dia	Mach. Dia	b	c	d	e	Part Number	Price Each
1/4	.135	3	1/4	-	-	AI-52-0250	\$18.90
3/8	.200	3	1/2	-	-	AI-52-0375	\$18.90
1/2	.200	3	1/2	-	-	AI-52-0500	\$18.90
5/8	.250	3	7/8	-	-	AI-52-0625	\$22.50
3/4	.250	4	7/8			AI-52-0750	\$26.20
7/8	.360	4	1-1/4			AI-52-0875	\$26.20
1	.360	4	1-1/4			AI-52-1000	\$29.30
1-1/4	.360	4	1-1/4	1	1-1/2	AI-52-1250	\$36.60
1-1/2	.360	4	1-1/4	1	1-1/2	AI-52-1500	\$56.90
1-3/4	.360	4	1-1/4	1	1-1/2	AI-52-1750	\$71.20
2	.360	4	1-1/4	1	1-1/2	AI-52-2000	\$74.10
2-1/2	.360	4	1-1/4	1	1-1/2	AI-52-2500	\$119.42
8 Pc Set		1/8 thru 1 1/4				AI-52-0001	\$125.20
3 Pc Set		1 1/2, 1 3/4, 2				AI-52-0002	\$203.70

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

113

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

LATHE TOOLHOLDER BUSHINGS



LATHE TOOLHOLDER BUSHINGS

Bush-Rite lathe bushings have quickly become a popular choice in machine shops throughout North America due to their high standards for accuracy, quality and performance. Bush-Rite products are 100% guaranteed to be free from defect in workmanship and material. Bush-Rite offers a large variety of bushings including Types C, CS (short), J, Z, B, DD, LB, LBF and boring bar sleeves.



FEATURES:

- Increased step diameter for easy and perfect sealing.
- Concentric ground and diamond polished OD & ID resulting in a mirror smooth chrome-like finish
- "Easy Entry" feature on OD for quick insertion
- Wrench flats for easy removal
- Step relief for easy removal and gripping on Z style
- Type and size clearly marked on surface of head diameter for easy identification
- 100% Satisfaction Guaranteed!

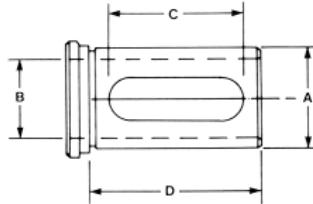
TYPE C BUSHINGS

Designed for universal use on all CNC turning machines. To adapt a wide variety of boring bars, drills, reamers and shank type tools.



SPECIFICATIONS:

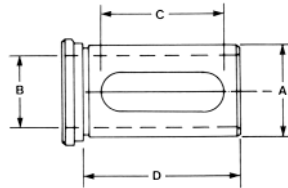
Material: ALLOY STEEL 8620
Hardness Data: Rc 55-57 for longer tool life
Case Hardened and Ground Concentric OD & ID
Axial Concentricity: OD & ID- 0.002"
Tolerance: H6 & g6 in grinding the OD & ID



A O.D.	C Slot Length	D Length Under Head	B I.D.	Part Number	Price Each
3/4"	1-7/8"	2-1/4"	1/4"	TBC-07-0250-B	\$50.43
			5/16"	TBC-07-0312-B	
			3/8"	TBC-07-0375-B	
			1/2"	TBC-07-0500-B	
1"	2-3/8"	2-3/4"	1/4"	TBC-10-0250-B	\$55.86
			5/16"	TBC-10-0312-B	\$50.96
			3/8"	TBC-10-0375-B	\$50.96
			1/2"	TBC-10-0500-B	\$50.96
			5/8"	TBC-10-0625-B	\$50.96
1-1/4"	2-7/8"	3-1/4"	3/4"	TBC-10-0750-B	\$55.86
			3/8"	TBC-12-0375-B	\$54.88
			1/2"	TBC-12-0500-B	
			5/8"	TBC-12-0625-B	
			3/4"	TBC-12-0750-B	
7/8"	TBC-12-0875-B				
1"	TBC-12-1000-B				

A O.D.	C Slot Length	D Length Under Head	B I.D.	Part Number	Price Each
1-1/2"	3"	3-3/8"	3/8"	TBC-15-0375-B	\$59.80
			1/2"	TBC-15-0500-B	
			5/8"	TBC-15-0625-B	
			3/4"	TBC-15-0750-B	
			7/8"	TBC-15-0875-B	
1-3/4"	3-1/8"	3-1/2"	1"	TBC-15-1000-B	\$68.59
			1/1/4"	TBC-15-1250-B	
			1/2"	TBC-17-0500-B	
			5/8"	TBC-17-0625-B	
			3/4"	TBC-17-0750-B	
2"	3-5/8"	4"	7/8"	TBC-17-0875-B	\$69.58
			1"	TBC-17-1000-B	
			1-1/4"	TBC-17-1250-B	
			1-1/2"	TBC-17-1500-B	
			1-3/4"	TBC-20-0500-B	
2"	3-5/8"	4"	1/2"	TBC-20-0500-B	\$69.58
			5/8"	TBC-20-0625-B	
			3/4"	TBC-20-0750-B	
			1"	TBC-20-1000-B	
			1-1/4"	TBC-20-1250-B	
1-1/2"	TBC-20-1500-B				
1-3/4"	TBC-20-1750-B				

TYPE CS SHORT SERIES BUSHINGS



Similar to the "C" Style bushing, but with a shorter overall length. Designed for universal use on all CNC turning machines. To adapt a wide variety of boring bars, drills, reamers and shank type tools.

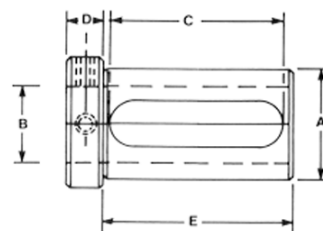
A O.D.	C Slot Length	D Length Under Head	B I.D.	Part Number	Price Each
3/4"	1-1/8"	1-1/2"	1/4"	TBCS-07-0250-B	\$44.38
			5/16"	TBCS-07-0312-B	
			3/8"	TBCS-07-0375-B	
			1/2"	TBCS-07-0500-B	
1"	1-3/8"	1-3/4"	1/4"	TBCS-10-0250-B	\$50.96
			5/16"	TBCS-10-0312-B	
			3/8"	TBCS-10-0375-B	
			1/2"	TBCS-10-0500-B	
			5/8"	TBCS-10-0625-B	
3/4"	TBCS-10-0750-B				

A O.D.	C Slot Length	D Length Under Head	B I.D.	Part Number	Price Each
1-1/4"	1-3/4"	2-1/8"	3/8"	TBCS-12-0375-B	\$53.90
			1/2"	TBCS-12-0500-B	
			5/8"	TBCS-12-0625-B	
			3/4"	TBCS-12-0750-B	
1-1/2"	2-1/8"	2-1/2"	7/8"	TBCS-12-0875-B	\$57.82
			1"	TBCS-12-1000-B	
			3/8"	TBCS-15-0375-B	
			1/2"	TBCS-15-0500-B	
			5/8"	TBCS-15-0625-B	
1-1/2"	2-1/8"	2-1/2"	3/4"	TBCS-15-0750-B	\$57.82
			7/8"	TBCS-15-0875-B	
			1"	TBCS-15-1000-B	
1-1/4"	TBCS-15-1250-B				

Call Us Today For All Of Your Machine Tool Needs!

TYPE Z BUSHINGS

The most flexible toolholder bushing for all types of N/C-CNC turning centers, turret lathes and chucks. Elongated slot give the user a complete interchangeability with all brands of equipment.



FEATURES:

- Increased step diameter for easy and perfect sealing.
- Concentric ground and diamond polished OD & ID resulting in a mirror smooth finish
- "Easy Entry" feature on OD for quick insertion
- Wrench flats for easy removal
- Step relief for easy removal and gripping on Z style bushings
- Type and size clearly marked on surface of head diameter for easy identification
- 100% Satisfaction Guaranteed!

A O.D.	E Length Under Head	D Head Thick.	C Slot Length	B I.D.	Part Number	Price Each
3/4"				1/4"	TBZ-07-0250-B	\$60.52
				5/16"	TBZ-07-0312-B	
				3/8"	TBZ-07-0375-B	
1"	2-3/4"	1/2"	2-3/8"	1/4"	TBZ-10-0250-B	\$72.80
				5/16"	TBZ-10-0312-B	
				3/8"	TBZ-10-0375-B	
1-1/4"	3"	5/8"	2-5/8"	1/2"	TBZ-10-0500-B	\$82.32
				5/8"	TBZ-10-0625-B	
				3/4"	TBZ-10-0750-B	
				3/8"	TBZ-12-0375-B	
				1/2"	TBZ-12-0500-B	

A O.D.	E Length Under Head	D Head Thick.	C Slot Length	B I.D.	Part Number	Price Each
1-1/2"	3-1/4"	3/4"	2-7/8"	3/8"	TBZ-15-0375-B	\$87.22
				1/2"	TBZ-15-0500-B	
				5/8"	TBZ-15-0625-B	
				3/4"	TBZ-15-0750-B	
				7/8"	TBZ-15-0875-B	
1-3/4"	3-1/2"	3/4"	3-1/8"	1"	TBZ-15-1000-B	\$92.30
				1-1/4"	TBZ-15-1250-B	
				1/2"	TBZ-17-0500-B	
				5/8"	TBZ-17-0625-B	
				3/4"	TBZ-17-0750-B	
2"	3-3/4"	3/4"	3-3/8"	7/8"	TBZ-17-0875-B	\$98.90
				1"	TBZ-17-1000-B	
				1-1/4"	TBZ-17-1250-B	
				1-1/2"	TBZ-17-1500-B	
				1/2"	TBZ-20-0500-B	
				5/8"	TBZ-20-0625-B	
				3/4"	TBZ-20-0750-B	
7/8"	TBZ-20-0875-B					
1-1/4"	TBZ-20-1250-B	\$98.90				
1-1/2"	TBZ-20-1500-B					
1-3/4"	TBZ-20-1750-B					

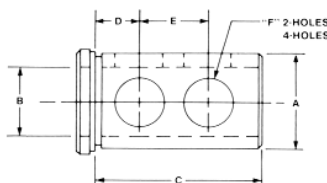
TYPE J BUSHINGS

Type J bushings have clearance holes so that you can clamp directly on the tool with set screws for positive alignment of the cutting edge of the tool.



FEATURES:

- Increased step diameter for easy and perfect sealing.
- Concentric ground and diamond polished on OD & ID resulting in a mirror smooth finish
- "Easy Entry" feature on OD for quick insertion



A O.D.	C	E	D	F	B I.D.	Part Number	Price Each
3/4"	1-1/2"	13/16"	3/8"	3/8"	1/4"	TBJ-07-0250-B	\$38.33
					5/16"	TBJ-07-0312-B	
					3/8"	TBJ-07-0375-B	
1"	1-3/4"	7/8"	7/16"	5/8"	1/2"	TBJ-07-0500-B	\$42.37
					3/8"	TBJ-10-0375-B	
					1/2"	TBJ-10-0500-B	
1-1/4"	2-1/8"	1"	5/8"	5/8"	5/8"	TBJ-10-0625-B	\$45.56
					3/4"	TBJ-10-0750-B	
					3/8"	TBJ-12-0375-B	
					1/2"	TBJ-12-0500-B	
					5/8"	TBJ-12-0625-B	

A O.D.	C	E	D	F	B I.D.	Part Number	Price Each
1-1/2"	2-1/2"	1-1/8"	11/16"	7/8"	3/8"	TBJ-15-0375-B	\$49.98
					1/2"	TBJ-15-0500-B	\$49.98
					5/8"	TBJ-15-0625-B	\$51.11
					3/4"	TBJ-15-0750-B	\$49.98
					7/8"	TBJ-15-0875-B	\$49.98
1-3/4"	3"	1-1/4"	3/4"	7/8"	1"	TBJ-15-1000-B	\$51.11
					1-1/4"	TBJ-15-1250-B	\$51.11
					1/2"	TBJ-17-0500-B	\$60.52
					5/8"	TBJ-17-0625-B	
					3/4"	TBJ-17-0750-B	
7/8"	TBJ-17-0875-B						
1"	TBJ-17-1000-B						
2"	3-1/2"	1-1/2"	3/4"	1"	1-1/4"	TBJ-17-1250-B	\$64.55
					1-1/2"	TBJ-17-1500-B	
					1/2"	TBJ-20-0500-B	
					5/8"	TBJ-20-0625-B	
					3/4"	TBJ-20-0750-B	
					7/8"	TBJ-20-0875-B	
					1"	TBJ-20-1000-B	
1-1/4"	TBJ-20-1250-B	\$64.55					
1-1/2"	TBJ-20-1500-B						
1-3/4"	TBJ-20-1750-B						

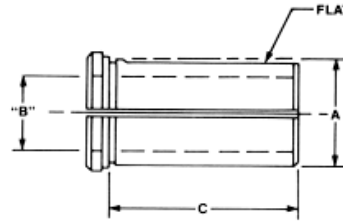
Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS
VISE ACCESSORIES
VISE JAWS
STRAIGHT SHANK COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

LATHE TOOLHOLDER BUSHINGS

TYPE B BUSHINGS

These split bushings are made with flexible manufacturing systems for all types and sizes of NC and CNC lathes and chucks. Used to adapt drills, boring bars and other shank tools, these bushings are heat treated and precision ground concentric.



FEATURES:

- Increased step diameter for easy and perfect sealing.
- Concentric ground and diamond polished OD & ID resulting in a mirror smooth finish
- "Easy Entry" feature on OD for quick insertion
- Wrench flats for easy removal
- Step relief for easy removal and gripping on Z style bushings
- Type and size clearly marked on surface of head diameter for easy identification
- 100% Satisfaction Guaranteed!

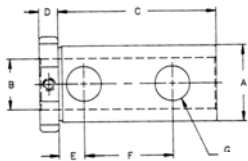
A OD	C	B ID	Part Number	Price Each
3/4	1-1/2	1/4	TBB-07-0250-B	\$44.83
		5/16	TBB-07-0312-B	
		3/8	TBB-07-0375-B	
1	1-3/4	1/2	TBB-07-0500-B	\$49.31
		3/8	TBB-10-0375-B	
		1/2	TBB-10-0500-B	
		5/8	TBB-10-0625-B	
1-1/4	2-1/8	3/4	TBB-10-0750-B	\$53.79
		3/8	TBB-12-0375-B	
		1/2	TBB-12-0500-B	
		5/8	TBB-12-0625-B	
		3/4	TBB-12-0750-B	
		7/8	TBB-12-0875-B	
1	TBB-12-1000-B			

A OD	C	B ID	Part Number	Price Each
1-1/2	2-1/2	3/8	TBB-15-0375-B	\$58.27
		1/2	TBB-15-0500-B	
		5/8	TBB-15-0625-B	
		3/4	TBB-15-0750-B	
		7/8	TBB-15-0875-B	
		1	TBB-15-1000-B	
1-3/4	3	1-1/4	TBB-15-1250-B	\$71.45
		1/2	TBB-17-0500-B	
		5/8	TBB-17-0625	
		3/4	TBB-17-0750	
		7/8	TBB-17-0875	
		1	TBB-17-1000	
		1-1/4	TBB-17-1250	
1-1/2	TBB-17-1500			

TYPE LB BUSHINGS

This long solid body bushing has four clearance holes so that you can clamp directly on the tool with set screws for positive alignment of the cutting edge of the tool. Manufactured to include clearance notches for coolant. Hardened and precision ground concentric.

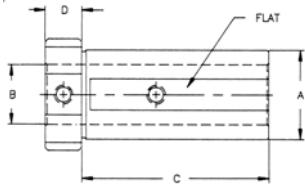
FOR OKUMA
LB-15 LATHES



A O.D.	C	D	E	F	B I.D.	Part Number	Price Each
1-1/2"	3-1/8"	3/8"	1/2"	1-3/4"	1/4"	TBLB-15-0250-B	\$93.10
					3/8"	TBLB-15-0375-B	
					1/2"	TBLB-15-0500-B	
					5/8"	TBLB-15-0625-B	
					3/4"	TBLB-15-0750-B	
					7/8"	TBLB-15-0875-B	
					1"	TBLB-15-1000-B	
					1-1/4"	TBLB-15-1250-B	

TYPE LBF BUSHINGS

Manufactured with a flat for clamping the toolholder and two set screws for clamping a variety of drill, boring bars and other shank tools. Equipped with two clearance notches for coolant. Heat treated and precision ground concentric.

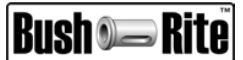


A OD	C	D	B ID	Part Number	Price Each
1-1/2"	3-5/32"	5/8"	1/4"	TBLBF-15-0250-B	\$89.98
			3/8"	TBLBF-15-0375-B	
			1/2"	TBLBF-15-0500-B	
			5/8"	TBLBF-15-0625-B	
			3/4"	TBLBF-15-0750-B	
			7/8"	TBLBF-15-0875-B	
			1"	TBLBF-15-1000-B	
1-1/4"	TBLBF-15-1250-B				

5C COLLET TOOL HOLDER

FEATURES:

- Inexpensive way to hold tooling in CNC and conventional lathes and chuck turrets
- Reduce need for separate sleeves and tool holders for different boring bar sizes
- Made in USA
- Collets sold separately



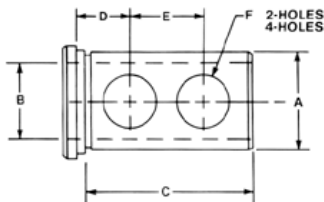
Buy The Set And Save 10%!

OD	Part Number	Price Each
1-1/2"	CH150	\$50.00
1-3/4"	CH175	\$65.00
2"	CH200	\$70.00
Buy 1 Of Each-SAVE 10%!		

Call Us Today For All Of Your Machine Tool Needs!

TYPE DD BUSHINGS

Combination of the industry standard "B" style split bushing and "J" set screw clearance bushing design. This bushing has clearance holes and a split milled flat, can be used as a conventional "B" style or "J" style bushing.



ALSO AVAILABLE!

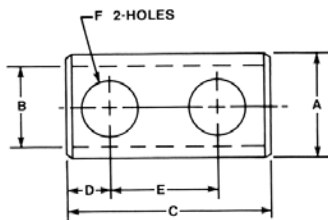
Okuma, Mori-Seiki, Mazak & Haas Tool Blocks



A Outside Dia	C Length Under Head	D	E	F Hole Size	No. of Holes	B Inside Dia.	Part Number	Price Each
1-1/2	2-1/2	11/16	1-1/8	7/8	2	3/8	TBDD-15-0375	\$67.75
						1/2	TBDD-15-0500	
						5/8	TBDD-15-0625	
						3/4	TBDD-15-0750	
						7/8	TBDD-15-0875	
						1	TBDD-15-1000	
1-3/4	3	3/4	1-1/4	7/8	2	1-1/4	TBDD-15-1250	\$73.64
						1/2	TBDD-17-0500	
						5/8	TBDD-17-0625	
						3/4	TBDD-17-0750	
						7/8	TBDD-17-0875	
						1	TBDD-17-1000	
2	3 1/2	3/4	1-1/2	1	2	1-1/2	TBDD-17-1500	\$81.50
						1/2	TBDD-20-0500	
						5/8	TBDD-20-0625	
						3/4	TBDD-20-0750	
						7/8	TBDD-20-0875	
						1	TBDD-20-1000	
2-1/2	4	7/8	1-3/4	1-1/4	2	1-1/2	TBDD-20-1250	\$95.24
						1/2	TBDD-20-1500	
						5/8	TBDD-20-1750	
						3/4	TBDD-20-2000	
						7/8	TBDD-20-2250	
						1	TBDD-20-2500	
3	4-1/2	1	2	1-1/4	4	1-1/4	TBDD-25-0500	\$114.87
						1-1/4	TBDD-25-0625	
						1-1/2	TBDD-25-0750	
						1-3/4	TBDD-25-0875	
						2	TBDD-25-1000	
						2-1/4	TBDD-25-1250	
3-1/2	5-1/4	1-1/4	2-1/2	1-1/4	4	1-3/4	TBDD-25-1500	\$144.33
						2	TBDD-25-1750	
						2-1/4	TBDD-25-2000	
						2-1/2	TBDD-25-2250	
						2-1/2	TBDD-25-2500	
						2-1/4	TBDD-25-2750	

TYPE L BUSHINGS

"L" style bushings are used to adapt drill, boring bars and shank tools to any size in a standard turret or toolholder. All "L" style bushings have set screw clearance holes opposite the slot and have a split with a flat on the O.D.



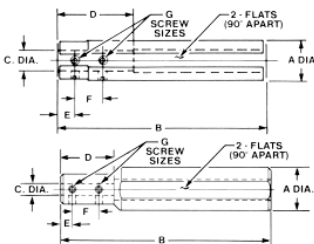
A O D	C OAL	D	E	F	No Of Holes	B I D	Part Number	Price Each
1-1/2	3	3/4	1-5/8	7/8	2	3/8	TBL-15-0375	\$68.73
						1/2	TBL-15-0500	
						5/8	TBL-15-0625	
						3/4	TBL-15-0750	
						1	TBL-15-1000	
						1-1/4	TBL-15-1250	

A O D	C OAL	D	E	F	No Of Holes	B I D	Part Number	Price Each
1-3/4	3	3/4	1-5/8	7/8	2	1/2	TBL-17-0500	\$75.60
						5/8	TBL-17-0625	
						3/4	TBL-17-0750	
						1	TBL-17-1000	
						1-1/4	TBL-17-1250	
						1-1/2	TBL-17-1500	
2-1/4	4-1/2	7/8	2	1	2	5/8	TBL-22-0625	\$83.46
						3/4	TBL-22-0750	
						1	TBL-22-1000	
						1-1/4	TBL-22-1250	
						1-1/2	TBL-22-1500	
						1-3/4	TBL-22-1750	
2-3/4	4-1/2	7/8	2	1	2	2	TBL-22-2000	\$99.16
						3/4	TBL-27-0750	
						1	TBL-27-1000	
						1-1/4	TBL-27-1250	
						1-1/2	TBL-27-1500	
						1-3/4	TBL-27-1750	

Call Us Or Visit Our Website For Our Complete Selection!

LATHE TOOLHOLDER BUSHINGS

BORING BAR SLEEVES



Boring bar sleeves are used to adapt all boring bar or shank type tools to any CNC turning machine or machining center for extensions or hard to reach areas. They are hardened, precision ground concentric. "B" sleeves are diamond polished, while sleeves 1-3/4 OD and larger are black oxidized. Innovative design on the 1-1/2 OD boring bar sleeves helps the tools stay cool longer by projecting the coolant directly on the cutting edge.

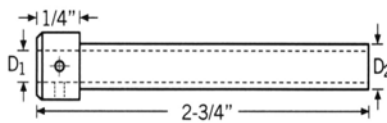
A	B	Scw Size	E	F	D	C	Part Number	Price Each [F]	
3/4	5	10-32	5/16	5/8	1-1/2	1/4	TBBS-07-0250-B*	\$80.05	
					1-1/2	5/16	TBBS-07-0312-B		
					1-1/2	3/8	TBBS-07-0375-B		
1	6	1/4-28	7/16	5/8	3	1/2	TBBS-07-0500-B	\$82.32	
					1-3/4	3/16	TBBS-10-0187-B*		
					1-3/4	1/4	TBBS-10-0250-B*		
1-3/4	6-1/2	1/4-28	7/16	5/8	1-3/4	5/16	TBBS-10-0312-B*	\$97.12	
					1-3/4	3/8	TBBS-10-0375-B*		
					2	1/2	TBBS-10-0500-B		
1-1/4	6-1/2	1/4-28	7/16	5/8	1-1/2	3/8	TBBS-12-0375-B*	\$100.33	
					5/8	2-1/4	1/2		TBBS-12-0625-B*
					3/4	2-1/4	5/8		TBBS-12-0625-B
1-1/4	6-1/2	10-32	7/16	5/8	3/4	3	TBBS-12-0750-B	\$100.33	
					3/4	4	7/8		TBBS-12-0875-B
					3/4	4	1		TBBS-12-1000-B
1-1/2	7	5/16-24	7/16	5/8	2	3/8	TBBS-15-0375-B*	\$100.33	
					11/16	2-1/4	1/2		TBBS-15-0500-B*
					3/4	2-1/4	5/8		TBBS-15-0625-B*
1-1/2	8	1/4-28	7/16	5/8	3/4	2-1/2	3/4	TBBS-15-0750-B*	\$100.33
					3/4	3	7/8	TBBS-15-0875-B	
					7/8	4	1	TBBS-15-1000-B	

*Reduced nose diameter

A	B	Scw Size	E	F	D	C	Part Number	Price Each [D]		
1-3/4	8	5/16-24	5/16	5/8	2-1/2	1/2	TBBS-17-0500	\$106.06		
		5/16-24	7/16	1	2-1/2	5/8	TBBS-17-0625			
		3/8-24	7/16	1	2-1/2	7/8	TBBS-17-0875			
2	9	7/16-20	7/16	1	2-1/2	1	TBBS-17-1000	\$117.18		
					2	5/8	TBBS-20-0625			
					2-3/4	3/4	TBBS-20-0750			
2-1/2	10	1/2-20	7/16	1	2	7/8	TBBS-20-0875	\$137.46		
					3-1/2	5/8	TBBS-20-1000			
					5/8	1	3		1-1/4	TBBS-20-1250
2-1/2	10	1/2-20	7/16	1	3-1/2	5/8	TBBS-25-0625	\$175.00		
					3-1/2	3/4	TBBS-25-0750			
					4	1	TBBS-25-1000			
3	11-1/2	1/2-20	1/2	1	4	1	TBBS-25-1250	\$175.00		
					3-1/2	1-1/4	TBBS-25-1500			
					4	1	TBBS-30-1000			
3	11-1/2	1/2-20	1/2	1	3-1/2	1-1/4	TBBS-30-1250	\$175.00		
					4-1/2	1-1/2	TBBS-30-1500			
					3-3/4	1-3/4	TBBS-30-1750			
4	14	5/8-18	1/2	1	4-1/2	2	TBBS-30-2000	\$304.00		
					19/32	1-7/8	3-3/4		1-1/2	TBBS-40-1500
					5/8	1-7/8	3-3/4		1-3/4	TBBS-40-1750
4	14	5/8-18	1/2	1	19/32	1-3/4	3-3/4	2	TBBS-40-2000	\$304.00
					5/8	2	4	2-1/2	TBBS-40-2500	
					3/4	1-1/4	4	3	TBBS-40-3000	

TYPE H BORING BAR SLEEVES

SHORT LENGTH-Ideal For Solid Carbide Boring, Grooving And Threading Tools

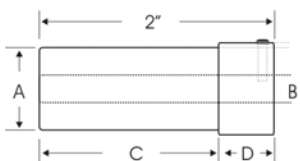


OD D2	OAL	Head Thick.	ID D1	Industry Reference #	FLATTED SHANK Part Number	ROUND SHANK Part Number	Price Each	Screw Size
1/2"	2-3/4"	1/4"	1/8	MI-TH84	TBH-05-0125-FB	TBH-05-0125-B	\$27.53	6-40 UNF x 1/4
				MI-TH85	TBH-05-0187-FB	TBH-05-0187-B		6-40 UNF x 3/16
				MI-TH86	TBH-05-0250-FB	TBH-05-0250-B		6-40 x 1/8
				MI-TH87	TBH-05-0312-FB	TBH-05-0312-B		
				MI-TH88	TBH-05-0375-FB	TBH-05-0375-B		
5/8"	2-3/4"	1/4"	1/8	MI-TH104	TBH-06-0125-FB	TBH-06-0125-B	\$27.53	6-40 UNF x 5/16
				MI-TH105	TBH-06-0187-FB	TBH-06-0187-B		6-40 UNF x 1/4
				MI-TH106	TBH-06-0250-FB	TBH-06-0250-B		6-40 x 3/16
				MI-TH107	TBH-06-0312-FB	TBH-06-0312-B		
				MI-TH108	TBH-06-0375-FB	TBH-06-0375-B		
3/4"	2-3/4"	1/4"	1/8	MI-TH204	TBH-07-0125-FB	TBH-07-0125-B	\$34.27	6-40 UNF x 3/8
				MI-TH205	TBH-07-0187-FB	TBH-07-0187-B		6-40 UNF x 5/16
				MI-TH206	TBH-07-0250-FB	TBH-07-0250-B		6-40 x 1/4
				MI-TH207	TBH-07-0312-FB	TBH-07-0312-B		
				MI-TH208	TBH-07-0375-FB	TBH-07-0375-B		

TYPE G BUSHINGS

For Gang Tools

- 3/4" Long head helps equalize the tool length compared to collet chuck and OD tool holders.
- Set screw helps preset the tools flat on the bushing for ease of clamping
- Ground concentric



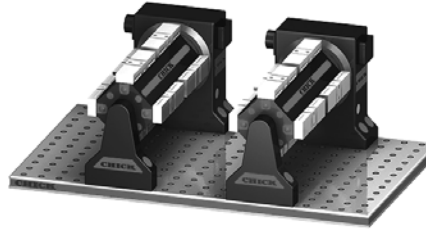
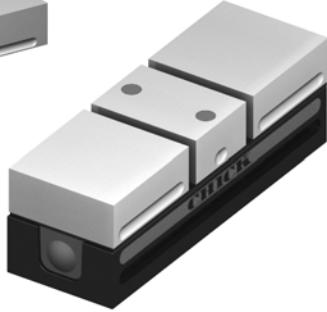
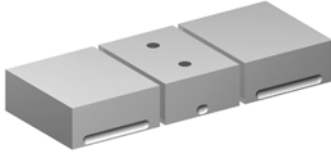
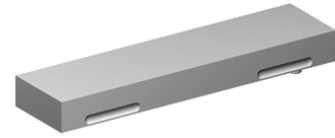
A OD	C Length Under Head	D Head Thickness	Clearance Groove	Head Dia. Nominal	B ID	Part Number	Price Each	Screw Size
Part Stop/ Plug								
3/4	1-1/4	3/4	0.04	7/8	-	TBG-07-PLUG-B	\$28.08	-
Bushings								
3/4	1-1/4	3/4	0.04	7/8	1/8	TBG-07-0125-B	\$33.65	6-40 x 3/8
					3/16	TBG-07-0187-B		6-40 x 3/8
					1/4	TBG-07-0250-B		1/4 x 5/16
					5/16	TBG-07-0312-B		1/4 x 5/16
					3/8	TBG-07-0375-B		1/4 x 5/16
					1/2	TBG-07-0500-B		1/4 x 3/16

Buy All 7 And Save 10% From Individual Prices

Call Us Today For All Of Your Machine Tool Needs!

CHICK WORKHOLDING SYSTEMS
Efficiency Through Workholding Innovation

- Replacement Jaws, Faceplates & Accessories
- Qwik-Lok Dual Station
- One-Lok™ Vises
- Indexer Subsystems
- Workholding Packages



Please Call For More Information!

AUTHORIZED DISTRIBUTOR
California, Arizona & Nevada
Call Us For All Of Your
CHICK Workholding Needs!

LATHE CHUCKS
LIVE CENTERS

VISE JAWS
VISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS



DX6™ CROSSOVER™ 6" VISE



New stationary jaw
4 bolt stationary design reduces lift.

Anglock® design
Spherical segment creates all-directional alignment.

Redesigned nut
Lighter weight and new brush seal design.

Bearing pack
Larger, stronger and more durable than the D688 vise

Pull-type design
Thrust bearing creates pulling force across body to reduce bending.

Chip evacuation
Straight through the body on sides and ends. Chosen to maintain body strength.

Bed height
Same as the D688 vise

- 6" vise, full 9" opening
- AngLock® design- spherical segment creates all-directional alignment and reduces jaw lift
- Narrower body style allows for more vises on the machine
- Recessed pocket for easier lifting
- Thru-body chip evacuation
- Pull-type design reduces stress on vise body
- Same bed height as D688
- 4 bolt stationary design fastens from the top
- Bearing pack is larger, stronger and more durable than bearing in D688

THE NEW INDUSTRY STANDARD!
FULL 9" OPENING!

DX6 Vise
6" Jaw Width
Part # KURT-DX6
\$569.00

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PinLock MOUNTING SYSTEMS

PLEASE CALL FOR MORE INFORMATION!

FEATURES:

- Extraction assist for side load conditions
- Pins provide stronger holding forces
- Compatible with existing systems
- Material: Shank/Bushing, high strength alloy steel
- Finish: Black Oxide
- Heat Treat: Shanks, RC 46-50
- Bushings, RC 46-50
- Liners, RC 46-50
- Operating Temperature Range: -49° to 400°F



Designed To Reduce Time Spent Accurately Positioning And Clamping Fixture Plates And Sub Plates!
Interchangeable With Competitive Ball Locking Systems!



PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

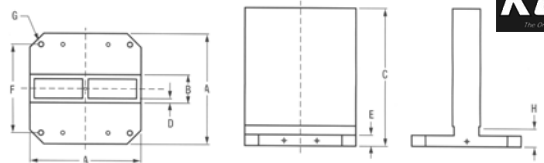
Call Us Or Visit Our Website For Our Complete Selection!

TOMBSTONES/WORKHOLDING SYSTEMS

TOMBSTONES-CAST IRON



The KURT 2 face ToolBox is ideal for mounting vises. Sub-plates (also available) may be bolted and dowelled on either side for quick, easy set-up. All vises or collet chucks may be mounted directly on ToolBox faces. Made of Class-35 cast iron.

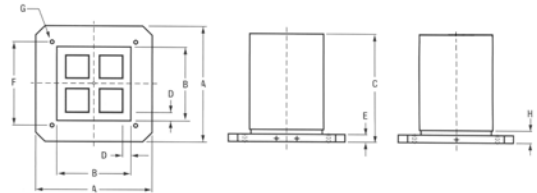


2 Face ToolBox™

A	B	C	D	E	F	G	H	Wght lbs	Part Number	Price
400mm X 400mm	6	26	1.50	1.50	320mm	5/8" or M16	2.25	516	KURT-TB2C40616	\$2,571.00
500mm X 500mm	8	34	1.50	1.75	400mm	5/8" or M16	2.50	908	KURT-TB2C50820	\$3,038.00



The KURT 4 face ToolBox is ideal for mounting vises of any size. Made of Class-35 cast iron.



4 Face ToolBox™

A	B	C	D	E	F	G	H	Wght lbs	Part Number	Price
400mm X 400mm	6	26	1.50	1.50	320mm	5/8" or M16	2.25	282	KURT-TB4C40606	\$1,945.00
400mm X 400mm	8	26	1.50	1.50	320mm	5/8" or M16	2.25	359	KURT-TB4C40808	\$1,876.00
400mm X 400mm	10	26	1.50	1.50	320mm	5/8" or M16	2.25	436	KURT-TB4C41010	\$2,335.00
500mm X 500mm	8	34	1.50	1.75	400mm	5/8" or M16	2.50	522	KURT-TB4C50808	\$2,714.00
500mm X 500mm	10	34	1.50	1.75	400mm	5/8" or M16	2.50	626	KURT-TB4C51010	\$2,850.00
500mm X 500mm	12	34	1.50	1.75	400mm	5/8" or M16	2.50	734	KURT-TB4C51212	\$3,275.00
500mm X 500mm	14	34	1.50	1.75	400mm	5/8" or M16	2.50	970	KURT-TB4C51414	\$3,697.00

SUB-PLATES ALSO AVAILABLE! PLEASE CALL FOR MORE INFORMATION!

RELOCK® DOUBLE STATION VISE

- Body manufactured from 80,000 PSI ductile cast iron
- Ways are flame hardened to 40 R/C maximum
- Includes handle and tool kit (pry wrench and hex wrenches)
- Package includes Double Station Vise and a 3-piece Machinable Soft Jaw Set

Machinable Replacement Jaws Also Available!



Full Line Available!
Please call for more information.



Vise Size	Vise With Soft Jaws			Vise With Hard Jaws		
	Package Contents	Part Number	Pkg Price	Package Contents	Part Number	Pkg Price
4"	1-RWS4002 1-SSJ4000	TECO-RWS4002SJ	\$1,250.00	1-RWS4002 1-SCJ4000 1-SHJ4035	TECO-RWS4002HJ	\$1,498.00
6"	1-RWS6002 1-SSJ6000	TECO-RWS6002SJ	\$1,598.00	1-RWS6002 1-SCJ6000 1-SHJ6035	TECO-RWS6002HJ	\$1,904.00
8"	1-RWS8002 1-SSJ8000	TECO-RWS8002SJ	\$4,253.00	1-RWS8002 1-SCJ8000 1-SHJ8035	TECO-RWS8002HJ	\$4,931.00

RELOCK® EIGHT STATION VISE

FEATURES:

- Body manufactured from 80,000 PSI ductile cast iron.
- Ways are flame hardened to 40 R/C maximum.
- Baseplates are designed to adapt to many machine table sizes.
- Vise columns can be located on a pallet using edge locating with shims or spacers (not included).
- Includes handle and tool kit (pry wrench & hex wrenches)
- **Soft Jaw Package** includes Eight-Station Vise and 4 - 3 piece Machinable Soft Jaw Sets.
- **Hard Jaw Package** includes Eight-Station Vise, 8 Carrier Jaws and 4 - 3 piece Standard Hard Jaw Sets.



Additional Configurations Available! Please Call For More Information!

Full Line Available!
Please call for more information.

Vise Size	Vise With Soft Jaws		Vise With Hard Jaws	
	Part Number	Pkg Price	Part Number	Pkg Price
4"	TECO-RWS4008SJ	\$5,439.00	TECO-RWS4008HJ	\$6,427.00
6"	TECO-RWS6008SJ	\$7,455.00	TECO-RWS6008HJ	\$8,681.00
8"	TECO-RWS8008SJ	\$18,469.00	TECO-RWS8008HJ	\$21,598.00

Call Us Today For All Of Your Machine Tool Needs!

2, 3, 4 & 5 AXIS WORKHOLDING

Simple Design

5th Axis Fixtures are manufactured from hardened alloy steel to exacting standards. Our innovative fixtures are lighter, stronger, and more efficient than any traditional vise on the market. With machining access to 5 surfaces of the work piece, parts can be completed in the least number of operations.

Precise Repeatability

The locating pin repeats within .001", meaning parts can be easily located and removed from the fixture without the worry that parts will be relocated in the wrong position.

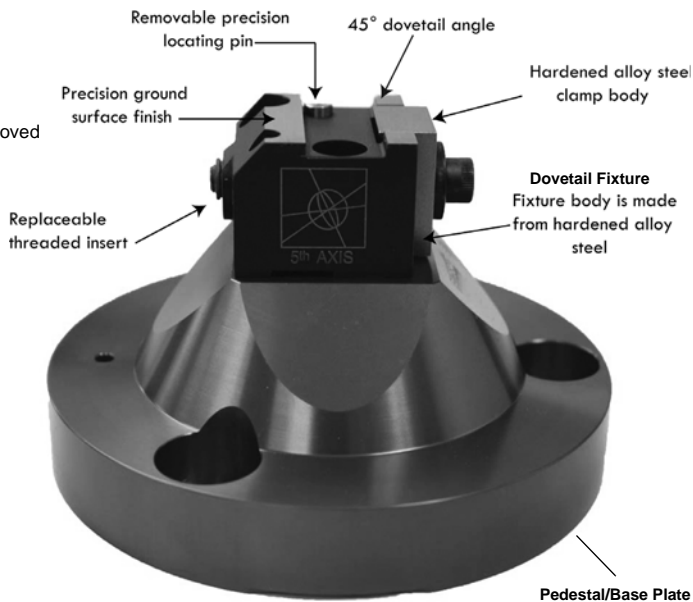
Positive Clamping Force

The 45° gives our fixtures tremendous clamping force, ensuring 1 to 1 positive clamping.

Reduce Material Size and Waste

Our dovetail fixtures hold onto as little as .06" of material. This will reduce your material cost by allowing you to utilize smaller stock sizes and having less material that you need to machine away.

5th AXIS FIXTURES



Innovative Solutions For Your 3, 4, And 5 Axis Machines

Dovetail Fixtures

Length	Width	Height	Stock Size	Part Number	Price Each
1.00	0.70	0.42	.50 to 1.00	5A-D05152WS	\$219.00
1.50	1.00	0.66	1.00 to 3.00	5A-D1151S	\$295.00
2.00	2.00	1.34	2.00 to 4.00	5A-D221M	\$349.00
6.00	3.00	1.94	3.00 and up	5A-D362M	\$495.00

Pedestals and Base Plates

OD	BC	Height	Part Number	Price Each	Number of Screws
4.25	-	2.0	5A-ADPHA5CD115	\$250.00	-
4.95	4.00	1.75	5A-P17534D115	\$249.00	3 - 1/2-13
4.95	7.00	2.50	5A-P2547D221	\$329.00	4 - 1/2-13
2.50	4.00	2.50	5A-P7534D221	\$199.00	3 - 1/2-13



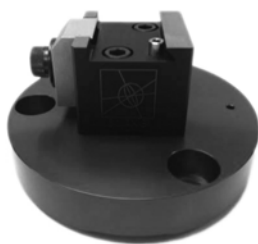
ADPHA5CD115



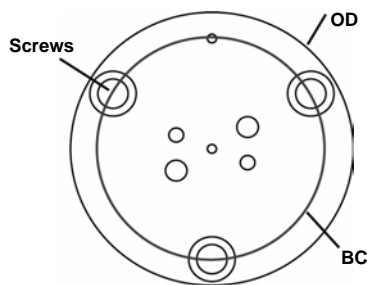
P17534D115



P2547D22



P7534D22



ROUND BAR FIXTURES

The CER40 is a round bar fixture that utilizes an ER40 collet. ER40 collets are available in all sizes and are sold separately. This fixture is the ultimate solution for machining with round stock. Adapter and fixture sold separately.



Round Bar Fixture

Description	Height/OD	Part Number	Price Each
ER 40 Fixture	2.50" Height	5A-CER40	\$295.00
Fixture Base	5.00" OD	5A-P7534CER40	\$199.00

DOVETAIL CUTTER

The DC2253VCMT is a custom indexable cutter that cuts a 45° in your stock. Allow you to replace inserts instead of expensive end mills! Uses standard, V-type inserts.

- Comes with dovetail stock instructions to ensure the stock is prepped correctly
- Includes quality control kit for checking dovetails: Gauge pin set and allen wrench.
- 1" dia shank for set screw, collet, and shrink fit holders.



Dovetail Cutter

Description	Part Number	Price Each
1" Dia, 45° Dovetail Cutter w/ inserts, gauge pin set and allen wrench	5A-DC2253VCMT	\$295.00

Call Us Or Visit Our Website For Our Complete Selection!

5 AXIS WORKHOLDING

DOVELOCK™ DOVETAIL 5 AXIS VISE

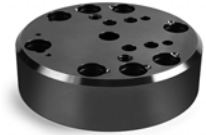
Kurt's DT20 Dovetail 5 Axis Vise is designed for today's aggressive machining needs. Manufactured from 4140 pre-hardened steel, the DoveLock maintains part rigidity and reduces deflection. The DoveLock fits easily into most any machine table with pre-configured hole patterns. An optional riser plate is also available which can be stacked in multiples to achieve the desired clearance from the table.

FEATURES:

- 2.50" tall vise body
- 1.250" thick riser base
- Unique design reduces jaw deflection
- Easy part prep with 0.50" movable jaw stroke
- Movable and stationary jaws are matched pairs
- Lifetime Iron Clad Warranty



Model KURT-DT20



Optional DT20-1 Riser Plate



Dove Lock™ Vise

Jaw Width	Max Jaw Opening	Jaw Height	Clamping Force lbs	Vise Height	Base Height	Base Dia x Height	Overall Stroke	Hex Size	Part Number	Price Each
2.00"	1.668	0.125	up to 4,000	2.50"	1.25"	4.47" x 1.25"	0.500"	0.312	KURT-DT20	\$549.00

Additional Riser Plate

Dia	Height	Weight	Part Number	Price
4.47"	1.250"	5 lbs	KURT-DT20-1	\$137.00



MAXLOCK 5 AXIS ANGLOCK VISE

- Self-centering vise designed for 5-axis machining
- Repeatability within $\pm 0.0002"$
- Reversible, machinable jaws available in aluminum or steel construction
- Users can machine in a step for higher accuracy, eliminating the need for parallels
- Clamp parts on I.D. or O.D.
- Tall jaws provide better spindle clearance
- Flexible mounting options



Optional Riser Kit



Vises

Jaw Width	OAL	Part Number	Price Each
2-1/2"	5.00"	KURT-SCMX250	\$1,465.00
4"	8.00"	KURT-SCMX425	\$1,675.00

Optional Risers

For Use With	Part Number	Price
SCMX250	KURT-SCMX250RK	
SCMX425	KURT-SCMX425RK	

5 AXIS VISE

For 5 Axis Applications & Machines With Smaller Work Envelope

- Small footprint (4" x 4" x 6.5") fits most machine pedestal bases
- Clamping pressures to 6,000 lbs.
- Machinable jaws allow maximum part contact – ensuring a rigid, accurate workholding fixture
- Jaws are available in 4140 steel and aluminum
- Vise repeatability = +/- .0005



Vise Includes 4140 Steel Machinable Jaws And Tool Kit!

Body, Segment & Segment Screw Made From 4140 Hardened Steel For Maximum Rigidity!



Length	Width	Height	Part Number	Price Each
16.000	1.500	4.000	TECO-RWS405X	\$985.00

MAXLOCK MX350 MULTI-AXIS VISE

Specially engineered to hold parts more safely and securely during multi-axis machining by using Kurt's AngLock design to pull the part down. With a 0.625" stroke, this multi-axis vise gives users a wider clamping range before the vise setup must be changed.

The modular design allows for mounting on 2" grid patterns, or, with risers, up to a 100mm grid. Locator bolts are included for quick alignment on 2" grids. When mounted on risers, precision-machined 5/8" holes enable quick alignment using Kurt sine keys. Auxiliary clamping slots for toe clamps allow for even greater mounting flexibility.

- 0.625" stroke allows for a wide range of clamping without changing vise set-up
- Modular design offers a variety of mounting options
- Users can finish machine horizontal surfaces of jaw plates for higher accuracy and to eliminate the need for parallels
- Jaw plates available
- Fully chip-guarded design allows for faster load times and provides smoother operation
- Screw is easy for users to change out, allowing for a broad range of part sizes
- Provides up to 7,000 lbs. of clamping force



Optional Riser



Vise

Jaw Width	Part Number	Price Each
3.50"	KURT-MX350	\$1,780.00

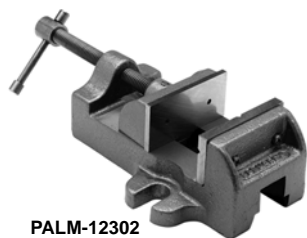
Optional Risers

Slot Width	OAL	Part Number	Price Each
2.95	4.625	KURT-MX350RS	\$782.00
3.97	5.650	KURT-MX350RL	\$865.00

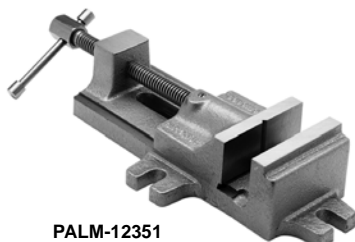
Call Us Today For All Of Your Machine Tool Needs!

DRILL PRESS VISES

General Purpose



PALM-12302



PALM-12351

These General Purpose vises are recommended for use on drill presses, milling machines, grinders, and other machine tools. They have fine thread adjusting screws and ground steel jaws. The fixed jaw is grooved horizontally and vertically for holding round pieces. They feature bolt lugs for mounting on a machine table.

General Purpose Drill Press Vise

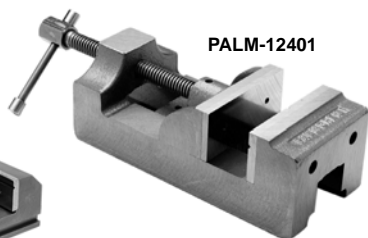
Jaw Width	Jaw Depth	Jaw Opening	Height	Ship Wgt.	Part Number	Price
1-3/4"	1"	1-1/2"	1-7/8"	3 lbs	PALM-12153	\$76.63
3"	1-1/2"	3"	2-5/8"	8 lbs	PALM-12302	\$116.40

Utility Vise

3-1/2"	1-1/2"	4"	2-1/2"	12 lbs	PALM-12351	\$198.85
--------	--------	----	--------	--------	------------	----------

DRILL PRESS VISES

The traditional design for drilling, tapping, reaming and grinding. The rectangular shape allows it to be used laying on its base, sides or end for tremendous flexibility. Machined on five sides, the fixed jaw is grooved.



PALM-12401



PALM-12603

Traditional Drill Press Vises

Jaw Width	Jaw Depth	Jaw Opening	Height	Jaw Type	Ship Wgt.	Part Number	Price
2-3/8"	1-1/2"	2-1/2"	2-1/2"	Grooved	6 lbs	PALM-12253	\$92.15
3"	1-3/4"	3"	3"	Smooth	11 lbs	PALM-12301	\$183.33
4"	1-3/4"	4"	3-1/4"	Grooved	19 lbs	PALM-12401	\$218.25

Industrial Drill Press Vises

4"	1-1/2"	4"	2-11/16"	Grooved Trapezoid	10 lbs	PALM-12352	\$59.17
6"	2"	6"	3-1/2"		26 lbs	PALM-12603	\$129.01

CRADLE ANGLE VISES



The Palmgren cradle-style angle vises are the quickest way to set your work between 0° and 90°. The vise has an alignment pin for rapid set-up and lock at preset angles of 0°, 15°, 30°, 45°, 60°, 75° and 90°. A hand-tightened mechanism allows locking at all other positions. The base has a 0° to 90° vertical scale in 1° graduations for precise angle settings. The fixed jaw is grooved.

Jaw Width	Jaw Depth	Jaw Opening	Height at 0°	Base Size (sq)	Ship Wgt.	Part Number	Price
3"	1-1/8"	3"	4"	6-9/16	13 lbs	PALM-11250	\$70.81
4"	1-1/2"	4"	4-1/2"	7-9/16	20 lbs	PALM-11351	\$100.88



SWIVEL MACHINE VISES



PALM-18402

Base Rotates 360°!



PALM-18422

These durable, general-purpose machine vises are excellent for milling and grinding. The fixed jaw plate has a vertical and a horizontal groove to better hold rounded pieces. Includes a 360° (1° graduations) swivel base. Locking bolts fasten the vise to the base. The Low Profile vise is designed for applications where low overall height is necessary. Including the swivel base, the low profile vise is only 3-1/2" in height.

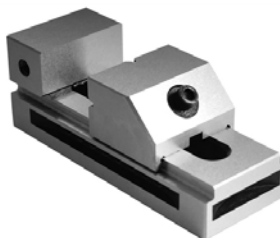
Machine Vise W/Base

Jaw Width	Jaw Depth	Jaw Opening	Height	Base Size	Ship Wgt.	Part Number	Price
4"	1-3/4"	4"	4-3/4"	9" x 7-1/2"	23 lbs	PALM-18402	\$252.85
6"	2"	6"	5-1/2"	12" x 10"	50 lbs	PALM-18602	\$490.71

Low Profile Machine Vise W/Base

4-1/2"	1-1/4"	4"	3-1/2"	9-5/8 x 7-1/8"	25 lbs	PALM-18422	\$336.79
--------	--------	----	--------	----------------	--------	------------	----------

PRECISION SCREWLESS VISES



- Oil hardened
- Precision ground
- Rapid positioning notches
- .00025" square and parallel

Jaw Width	Jaw Depth	Max. Opening	OAL	Part Number	Price Each
1"	3/8"	1"	2-5/8"	A-3900-0020	\$45.00
2"	1-1/4"	3"	6"	A-3900-0022	\$68.00
3"	1-5/8"	4"	7-5/8"	A-3900-0024	\$125.00

PRECISION SINE VISE



- Hardened and precision ground, providing a tolerance of 0.0004" for both parallelism and squareness
- Sine range: 6-60°
- Jaw can be opened or closed without unbolting from work surface



Jaw Width	Jaw Opening	Jaw Depth	Base Size	Part Number	Price Each
2"	2-5/8"	1"	5-3/8" x 2"	A-3900-2603	\$125.00
3"	4"	1-1/4"	7-5/8" x 3"	A-3900-2605	\$192.00

PRECISION TOOLMAKER'S VISE



- All surfaces are hardened and precision ground square and parallel to accuracy of +/- .0002"
- Clamping slots are provided and jaws are easily replaced
- Ground "V" way

Jaw Width	Jaw Opening	Jaw Depth	Part Number	Price
2"	2.5"	1.00"	A-3900-0067	\$105.00
3"	4"	1.38"	A-3900-0251	\$163.00

Call Us Or Visit Our Website For Our Complete Selection!

VICES-WORKSHOP & MILLING

UTILITY WORKSHOP VISE



- Heavy duty 30,000 PSI casting for strength and durability
- Large anvil work surface
- 180° swivel base with lockdown allows for quick and easy positioning
- Powder coat paint resists scratches and provides a tough durable surface
- Built-in pipe jaws handle various pipe sizes
- Ideal for general clamping applications

Jaw Width	Jaw Opening	Throat Depth	Pipe Jaw Capacity	Ship Wgt. Lbs.	Part Number	Price
4 1/2"	4"	2-5/8"	1/8"-2"	19	WI-11126	\$119.99
5 1/2"	5"	3-7/16"	1/8"-2 1/2"	29	WI-11127	\$144.99
6 1/2"	5 1/2"	3-11/16"	1/8"-2 1/2"	41	WI-11128	\$194.99
6	6	4-3/16"	1/8"-3"	63	WI-00191	\$264.99
8	7-1/2"	4-1/2"	1/8"-3"	80	WI-11800	\$369.99

SHOP VISES



- Designed for general duty applications
- 30,000 PSI ductile iron body
- 360° swivel base for quick and easy positioning
- Built in pipe jaws handle various pipe sizes
- Rubber pinch point safety guards
- Replaceable serrated top jaws
- Large anvil work surface

Jaw Width	Max. Opening	Throat Depth	Part Number	Price Each
4"	4"	2-3/4"	WI-63300	\$144.99
5"	5"	3"	WI-63301	\$164.99
6"	6"	3-1/2"	WI-63302	\$244.99
8"	8"	4"	WI-63304	\$339.99

TRADESMAN VISE



FEATURES:

- Designed for general purpose, service or maintenance work.
- Wide jaws provide greater clamping surface
- Precision thrust bearing creates greater clamping pressure and increases longevity
- Top Jaws are reversible-standard serrated jaws for extra grip on sturdy materials or smooth jaws for more delicate pieces
- Large anvil and fully enclosed spindle



Call For Our Promotional Pricing!

Jaw Width	Jaw Opening	Throat Depth	Pipe Jaw Capacity	Ship Wgt. Lbs.	Part Number	Price
4 1/2"	4"	3 1/4"	1/4"-2 1/2"	42	WI-63199	\$544.00
5 1/2"	5"	3 3/4"	1/4"-3"	53	WI-63200	\$663.00
6 1/2"	6 1/2"	4"	1/4"-3 1/2"	73	WI-63201	\$740.00

COMBO BENCH & PIPE VISES



- 65,000 PSI ductile castings
- Sealed construction
- Straight line pull power tunnel design
- Precision fit slide bar to 0.003"
- Replaceable serrated steel jaws
- Large anvil
- 360° swivel base with dual lockdowns
- LIFETIME WARRANTY



Jaw Width	Jaw Opening	Jaw Depth	Pipe Jaw Capacity	Part Number	Price
5"	6"	3.50"	1/4 - 2-1/2"	PALM-29745	\$245.64
6"	7"	3.75"	1/4 - 3-1/2"	PALM-29746	\$303.21
8"	8-1/4"	4.75"	1/4 - 3-1/2"	PALM-29748	\$445.36

PRECISION MACHINE VISES

FEATURES:

- Vises are matched
- 4 jaw plate positions allow extra capacity with the jaw plates in the outside position
- Chip cover protects lead screw from damage
- Compatible with industry standard vise jaws
- Integral key and large fasteners reduce deflection by 50%

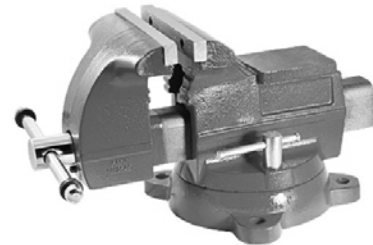


Vise Size	Jaw Opening	Bed Height	OAL	Part Number	Price Each
6"	7.5"	2.875	17.2"	SOWA-327-275	\$561.45
	8.9"	2.875	17.2"	SOWA-327-290	\$592.00
Swivel Base				SOWA-327-280	\$118.88

WORKSHOP BENCH VISES



- 20,000 PSI castings
- Hardened steel face jaws
- Heavily reinforced 4 lug base
- 270° swivel base
- Powder coated finish
- Polished anvil horn for shaping



Jaw Width	Jaw Opening	Part Number	Price
4-1/2"	4"	A-3900-2514	\$82.00
5-1/2"	5"	A-3900-2515	\$105.00
6-1/2"	5.5"	A-3900-2516	\$130.00

PRECISION MILLING VISES



PALM-26604

- Equipped with Dual Force anti-lift mechanism
- Friction reducing needle bearings help increase clamping pressure
- Hardened vise bed and jaw plates
- Semi-hard steel screw
- 60,000 PSI ductile iron castings
- Accepts industry standard vise jaws



Description	Vise Size	Jaw Opening	Jaw Depth	Part Number	Price
w/ swivel base	6"	8.75"	1-3/4"	PALM-26604	\$532.10
stationary base	6"	8.75"	1-3/4"	PALM-26608	\$402.90

Call Us Today For All Of Your Machine Tool Needs!

6" MILLING MACHINE VISE



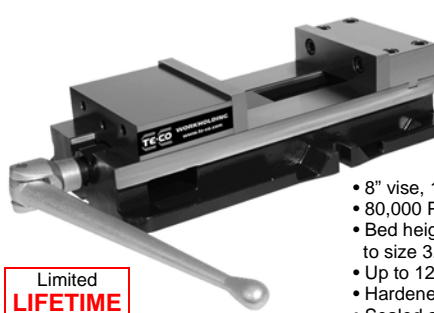
9" OPENING!

- Up to 8,200 lbs of clamping force
- Bed height matched to size 2.875" +/-0.0005"
- Repeatability within .001"
- Hardened vise bed and jaw plates
- Sealed bearing system increases bearing life

Limited **LIFETIME** Warranty

Vise Size	Vise Opening	Bed Height	OAL	Part Number	Price Each
6"	9"	2.875"	17.21"	PWS-6900	\$485.00

8" MILLING MACHINE VISE



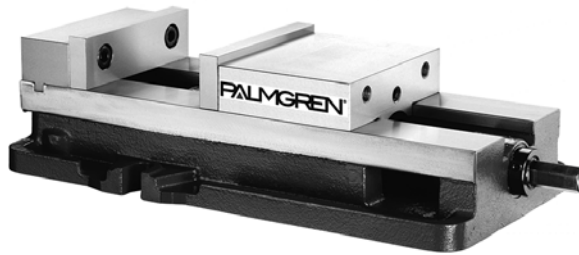
11" OPENING!

- 8" vise, 11" opening
- 80,000 PSI ductile iron body
- Bed height matched to size 3.310" +/-0.0005"
- Up to 12,000lbs of clamping force
- Hardened vise bed and jaw plates
- Sealed and lubricated needle roller thrust bearing for maximum life

Limited **LIFETIME** Warranty

Vise Size	Vise Opening	Bed Height	OAL	Part Number	Price Each
8"	11"	3.310"	21.81"	PWS-8110	\$1,465.00

PRECISION MILLING VISES

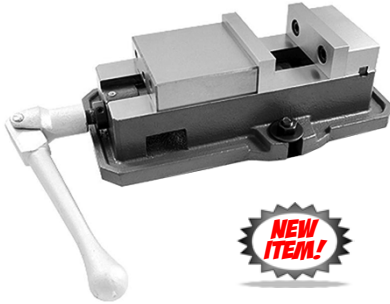


- Equipped with Dual Force anti-lift mechanism
- Friction reducing needle bearings help increase clamping pressure
- Hardened vise bed and jaw plates
- Repeatability within 0.001"
- Bed heights matched to +/-0.0004"
- 80,000 PSI stress relieved ductile iron castings
- Accepts industry standard vise jaws
- Bed height: 6" vise-2.875", 8" vise-3.310"
- LIFETIME GUARANTEE

DUAL FORCE DESIGN
1/2 pound of downward force for every pound of horizontal force.

Model	Vise Size	Jaw Opening	Jaw Depth	Part Number	Price
MPS67	6"	7.50"	1.752"	PALM-25928	\$599.14
MPS68	6"	8.90"	1.752"	PALM-25929	\$625.71
MPS80	8"	10.00"	12.205"	PALM-25930	\$1,302.86

Ultra-Series PRECISION MILLING VISES



- High quality, super precision, ground to accuracy
- Totally enclosed heat treated lead screw
- Smooth operation and high repeatability
- Lock-down type clamping
- Jaws interchangeable with industry standard vise jaws



Jaw Width	Jaw Opening	OAL	Part Number	Price Each
4"	4"	13.50"	A-3900-2204	\$290.00
6"	7.5"	21.00"	A-3900-2206	\$397.00
Optional Swivel Base For 6" Vise			A-3900-2207	\$62.00

PRECISION MACHINE VISES

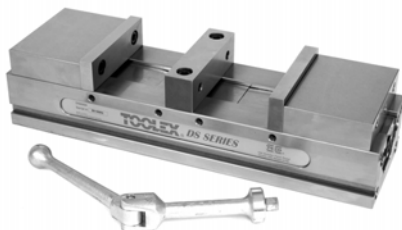


- Body made from high quality ductile Iron hardened to 45RC
- Sealed bearing system allows for increased vise life
- Close tolerance bed heights for excellent accuracy
- Anti-lift mechanism keeps workpiece from lifting
- Chip cover protects lead screw

10 YEAR WARRANTY

Jaw Width	Jaw Opening	Bed Height	Width	OAL	Part Number	Price Each
6"	7.5"	2.88"	9.25"	17.01"	BI-3220-006	\$399.00
6"	9"	2.88"	8.75"	17.20"	BI-3220-0068	\$459.00
8"	10"	3.31"	11.61"	21.85"	BI-3220-0081	\$899.00

DOUBLE STATION MACHINE VISES



- Body manufactured from 80,000 PSI ductile cast iron
- Ways are flame hardened to 40 R/C maximum
- Vise Capacity - 4" jaw opening per side
- Jaw mounting and indexing to accuracies of ±.0005
- Standard Hard Jaw Set made of 1018 steel
- Carrier jaws will accept both AccuSnap and QuickChange master jaws



Vise Size	Bed Height	OAL	Vise Opening	Part Number	Price Each
6"	3.150"	20.50"	4"	TECO-DS6000	\$1,255.00

Call Us Or Visit Our Website For Our Complete Selection!

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES

MACHINE VISES
VISE JAWS

KURT SIDEWINDER VISE

The Kurt SideWinder is a vise that mounts vertically to the back of any Kurt 6" vise with an integral bracket. The bracket includes a stabilization leg that will mount to the table on the movable end of the vise and a workstop to position the height of the part. For doing 2nd operation workholding, allowing the user to hold the part vertically rather than horizontally

- Saves set up time for 2nd op vertical work
- Machining can be done on both vises in the same setup
- Vise is at an elevated position which is more conducive to longer reach machining
- Round nut controls deflection to a greater degree
- Can be mounted to any Kurt industry standard 6" vise
- Stabilizer foot for vibration control
- Does not interfere with the host vise
- Pull type vise
- AngLock design



Jaw Width	Max Jaw Opening	Jaw Height	Clamping Force lbs	Hex Size	Overall Bracket Width	Weight	Part Number	Price Each
2.50"	2.50"	1.060"	up to 2,450 lbs	3/8	14.00"	20 lbs	KURT-SDW25	\$499.00
3.47"	3.75"	1.235"	up to 4,000 lbs	9/16	20.86"	45 lbs	KURT-SDW35	\$799.00

RETENTION KNOBS
ER, DA, TG COLLETS

KURT TOOLROOM VISE

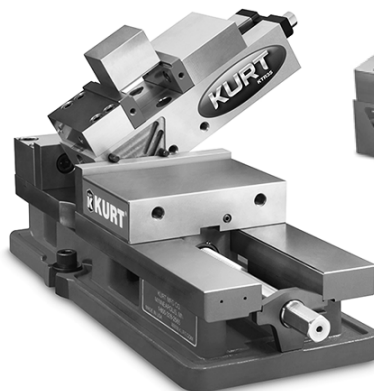
An extremely versatile vise that can fit on the smallest machine tables with ease. The vise is fully chip guarded. Mounting can be accomplished through the body or with outrigger toe clamps mounted to the outside of the body (sold separately). All sides of the vise are ground and can easily be mounted on its side with the toe clamps (sold separately). Four cavities in the ends of the body make mounting this vise with the toe clamps very quick and easy. By using a receiver vise this vise can be used as a sine vise with 30, 45 and 60° angles built into the side of the body on the stationary side. To utilize this feature remove the triangular shaped magnets and place the dowel pins in the proper holes to get the angle you desire.



Optional KTR35-CK Clamp Kit



Optional KTR35-TK Toe Kit



Shown Mounted w/
Optional KTR35-TK Clamp Kit

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING



Optional KTR35-KK Key Kit



Optional Accessories

Description	Part Number	Price
Clamping Kit 3/8"	KURT-KTR35-CK	\$99.00
Toe Kit	KURT-KTR35-TK	\$95.00
Key Kit	KURT-KTR35-KK	\$95.00

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

Toolroom Vise

Jaw Width	Max Jaw Opening	Jaw Height	Jaw Height to Step	Clamping Force lbs	Vise Height	Base Height	OAL	Hex Size	Weight	Part Number	Price Each
3.470"	4.060"	1.235"	1.118"	up to 4,500	2.50"	2.00"	10.125"	0.561	20 lbs	KURT-KTR35	\$799.00

KURT VERSATILE LOCK® SERIES

The Versatile Lock vise is the industry's ultimate single station CNC vise. It offers ultra-precision function through these important design features: The original, time proven Kurt AngLock design prevents parts from lifting upward under heavy clamping loads. The "pull-type" jaw clamping reduces jaw stationary deflection by at least 80%. One piece vise body and stationary jaw provide greater strength while reducing weight.

FEATURES:

- Can be mounted upright or on either side.
- Matched stationary jaw to keyway including the body height ±0.001".
- 0.0005" clamping repeatability.
- Footprint on the short version is 13". Ideal for the smallest machines.
- All air units feature a 1/4" vise stroke.
- Air vise has a precise and repeatable "gentle touch" for delicate parts.



3600V Vise-Standard & Short

Vise Size	Vise Opening	Bed Height	OAL	Weight	Part Number	Price Each
6"	6"	3.187"	15.060"	69 lbs	KURT-3600V	\$835.00
6"	4"	3.187"	12.940"	64 lbs	KURT-3620V	\$942.00

Standard Air Vise

6"	6"	3.187"	15.060"	75 lbs	KURT-3600A	\$2,239.00
----	----	--------	---------	--------	------------	------------



3600A-Standard Air

MRO & SAFETY
FLAT STOCK/DRILL ROD

Call Us Today For All Of Your Machine Tool Needs!



KURT ANGLOCK® D-SERIES VISES

The original Kurt Anglock® D-Series vises are designed for precision part clamping on basic machine tools such as knee-type mills, grinders and machining centers. D-Series vises are ideal for use in running production parts where datums, flatness and parallelism are important.



LATHE CHUCKS
LIVE CENTERS

MODEL DX6



- 6" vise, full 9" opening
- AngLock® design- spherical segment creates all-directional alignment and reduces jaw lift
- Narrower body style allows for more vises on the machine
- Recessed pocket for easier lifting
- Thru-body chip evacuation
- Pull-type design reduces stress on vise body
- Same bed height as D688
- 4 bolt stationary design fastens from the top
- Bearing pack is larger, stronger and more durable than bearing in D688

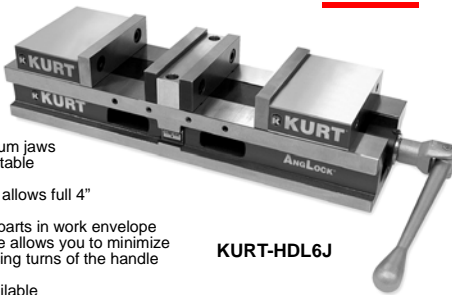


DX6 Vise
6" Jaw Width
Part # **KURT-DX6**
\$569.00

VISE JAWS
VISE ACCESSORIES

HDL DUAL STATION VISE

HDL Anglock Vises are high density long vises with two clamping stations, providing repeatable clamping to 0.001" with heavy duty features. Features a rugged 80,000PSI ductile iron body with steel components to provide strength, rigidity and long term accuracy while absorbing machining vibration.



KURT-HDL6J

FEATURES:

- Also available with aluminum jaws
- 2 Clamping stations-repeatable clamping to 0.001"
- Standard hard jaw system allows full 4" opening in each station
- Maximizes the number of parts in work envelope
- Adjustable pre-load feature allows you to minimize pre-load range, thus reducing turns of the handle to open or close vise
- Hydraulic models also available
- Lifetime Iron Clad™ Warranty

Jaw Width	Max. Opening	Bed Height	OAL	Weight	Part Number	Price
6"	4.00"	3.125"	21.00"	110 lbs	KURT-HDL6J	\$1,993.00

KURT HD690 VISE



- "Pull" Type reduces stress in vise body for more accurate clamping
- Full 9" opening
- Wider stationary jaw is more stable and provides less deflection
- Stationary jaw bolts from the top reduces stress in the body and will lay flatter when assembled
- Narrow body width allows for more vises in the same work envelope
- Taller body design equals less deflection under load
- Bolts and locates on 40mm, 50mm and 2" grid patterns
- Quick change movable jaw allows for use of a machinable jaw for odd shaped parts
- Also available in hydraulic and reverse models



Jaw Width	Max. Opening	Bed Height	OAL	Weight	Part Number	Price
6"	9.00"	3.125"	16.810"	75 lbs	KURT-HD690	\$776.00

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

D810 PRECISION VISE



Features a large 10" jaw opening and provides up to 11,600 lbs. of clamping force. The AngLock® design of the stationary jaw reduces vise deflection by 25% while allowing disassembly of the vise without removing body from the machine table.

- AngLock design assures the movable jaw does not lift
- Standard bed height of +/-0.001"
- Hardened vise bed and jaw plates
- Semi-hard steel screw
- 80,000 PSI ductile iron body



Jaw Width	Max. Opening	Bed Height	Jaw Height	Width	OAL	Weight	Part Number	Price
8"	10.00"	3.31"	2.20"	11.00"	21.81"	158 lbs	KURT-D810	\$1,675.00

CUTTING TOOLS
MACHINERY

SWIVEL BASE

For Kurt Anglock type vise. Allows positioning in increments of 1°.



D688 vise shown mounted on D60-4-SA swivel base

Vise Size	Vise Model	Part Number	Price Each
4"	D40, DX40	KURT-D40-4-SA	\$464.00
6"	D675, D688, DX6	KURT-D60-4-SA	\$419.00
8"	D810	KURT-D80-4-SA	\$1,134.00

ANGLOCK® VISE REPAIR KITS

Anglock® repair kit includes thrust bearings, washers and all wear parts for each specific KURT Anglock® vise.



Vise Model	Description	Part Number	Price
D675	Repair Kit	KURT-D675-KIT	\$37.00
D 688	Rebuild Kit	KURT-D688-KIT	\$37.00
D 810	Rebuild Kit	KURT-D810-KIT	\$40.00
DL 430	Serial #'s <3300	KURT-DL430-KIT1	\$42.00
DL 640	Serial #'s 1000-3734	KURT-DL640-K1	\$57.00
DL 640	Serial #'s 3735-4999	KURT-DL640-K2	\$57.00

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

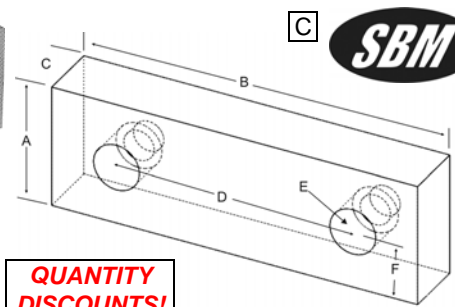
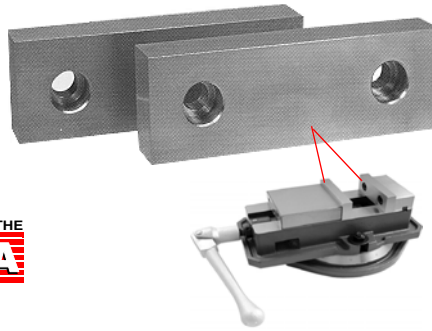
Call Us Or Visit Our Website For Our Complete Selection!

MACHINABLE VISE JAWS

MACHINABLE VISE JAWS ALUMINUM AND STEEL For Precision Machine Vises

FEATURES:

- Fits Kurt™ Anglock™, Te-Co™, Palmgren™ and similar precision machine vises
- Perfect for easy and quick set-ups, reducing down time
- Customize jaws for drill or mill features
- Reusable, saving you time and money!
- Price is for set of 2 jaws
- **QUANTITY DISCOUNTS!** Buy 10 or more sets (mix & match) and receive an additional **10% discount**



QUANTITY DISCOUNTS!

Vise Size	Height Inch	Length Inch	Hole Space	Screw Size	Hole Dist.	Width Inch	STEEL		ALUMINUM	
							Part Number	Price Set of 2	Part Number	Price Set of 2
4"	1-3/4	4	2-1/2	3/8	.687	3/4	VJ-451	\$17.58	VJ-401	\$8.53
	2	4	2-1/2	3/8	.687	1	VJ-452	\$20.64	VJ-402	\$15.47
6"	2	6	3-7/8	1/2	.937	3/4	VJ-651	\$20.97	VJ-601	\$15.52
						1	VJ-652	\$24.31	VJ-602	\$17.23
						1-1/4	VJ-653	\$29.32	VJ-603	\$20.38
						1-1/2	VJ-654	\$37.51	VJ-604	\$25.05
						2	VJ-656	\$42.96	VJ-606	\$28.47
	12	3-7/8	1/2	.937	1	VJ-659	\$51.09	VJ-609	\$31.27	
					1-1/4	VJ-660	\$60.05	VJ-610	\$38.26	
	3	6	3-7/8	1/2	.937	1	VJ-661	\$37.51	VJ-611	\$27.22
						2	VJ-657	\$52.87	VJ-607	\$40.31
	4	6	3-7/8	1/2	.937	1	VJ-662	\$47.46	VJ-612	\$34.84
1-1/2						VJ-655	\$58.71	VJ-605	\$38.10	
8"	2-1/2	8	4-3/4	5/8	1.220	1	VJ-851	\$39.49	VJ-801	\$25.16
						1-1/4	VJ-852	\$49.82	VJ-802	\$34.62

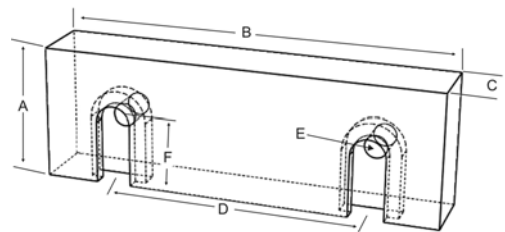
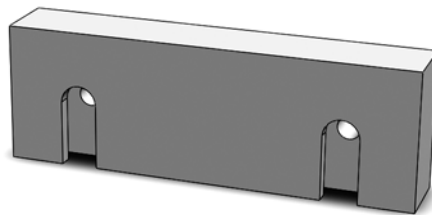
STEEL Vise Jaws are made from C1018 Cold Roll Steel and can be hardened. ALUMINUM Vise Jaws are made from 6061-T6 Bar Stock.

*Kurt is a registered trademark of Kurt Manufacturing. Te-Co and Palmgren are trademarks of their respective companies.

ULTRA QUICK CHANGE MACHINABLE VISE JAWS

FEATURES:

- Available in Steel or Aluminum
- Customize jaws for your desired job specifications
- Quick change style master jaws are compatible with industry standard vise jaws
- Can be heat treated
- Aluminum Jaws are ideal for delicate work
- **QUANTITY DISCOUNTS!** Buy 10 or more sets (mix & match) and receive an additional 10% discount



MOUNTING SCREWS For Quick Change Vise Jaws

- High quality screws are black oxidized for durability and long life
- Low head screws for use on all "quick change" vise jaws
- 4 screws per package



Vise Size	Part Number	Price Per Pack
4"	SN-4LHS-16	\$6.41
6"	SN-6LHS-13	\$8.79
8"	SN-8LHS-11	\$17.34

Vise Size	Height	Length	Hole Space	Screw Size	Hole Dist.	Width	STEEL		ALUMINUM	
							Part Number	Price Set of 2	Part Number	Price Set of 2
4"	1-3/4	4	2-1/2	3/8	.687	3/4	VJ-4QM41707S-U	\$23.29	VJ-4QM41707A-U	\$18.28
	2	4	2-1/2	3/8	.687	1	VJ-4QM42010S-U	\$27.33	VJ-4QM42010A-U	\$20.88
6"	2	6	3-7/8	1/2	.937	3/4	VJ-6QM62007S-U	\$27.76	VJ-6QM62007A-U	\$20.95
						1	VJ-6QM62010S-U	\$32.19	VJ-6QM62010A-U	\$23.27
						1-1/4	VJ-6QM62012S-U	\$37.34	VJ-6QM62012A-U	\$27.51
						1-1/2	VJ-6QM62015S-U	\$44.06	VJ-6QM62015A-U	\$33.81
						2	VJ-6QM62020S-U	\$53.17	VJ-6QM62020A-U	\$39.29
	12	3-7/8	1/2	.937	1	VJ-6QM22010S-U	\$61.15	VJ-6QM22010A-U	\$42.10	
					1-1/4	VJ-6QM22012S-U	\$69.95	VJ-6QM22012A-U	\$49.09	
	3	6	3-7/8	1/2	.937	1	VJ-6QM63010S-U	\$45.38	VJ-6QM63010A-U	\$36.75
						2	VJ-6QM63020S-U	\$62.90	VJ-6QM63020A-U	\$51.14
	4	6	3-7/8	1/2	.937	1	VJ-6QM64010S-U	\$57.60	VJ-6QM64010A-U	\$43.27
1-1/2						VJ-6QM64015S-U	\$68.62	VJ-6QM64015A-U	\$48.93	
8"	2-1/2	8	4-3/4	5/8	1.220	1	VJ-6QM64020S-U	\$79.31	VJ-6QM64020A-U	\$55.65
						2	VJ-6QM64020S-U	\$79.31	VJ-6QM64020A-U	\$55.65

STEEL Vise Jaws are made from C1018 Cold Roll Steel and can be hardened. ALUMINUM Vise Jaws are made from 6061-T6 Bar Stock.

Call Us Today For All Of Your Machine Tool Needs!

MACHINED VISE JAWS

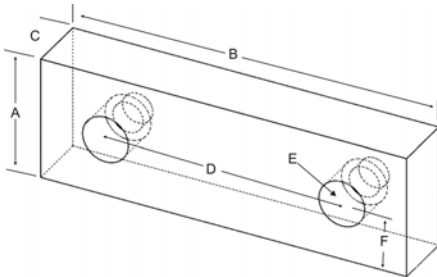
MACHINED ALUMINUM VISE JAWS

For Precision Machine Vises

- Fits Kurt™ Anglock™, Te-Co™, Palmgren™ and similar precision machine vises
- Machined for better locating and precise positioning
- Parallel-no need to “true-up” jaws prior to machining part!
- Chamfered for accurate fit between vise bed and vise jaw
- Machinable-customize to your desired shape
- Reusable, saving you time and money!
- Price is for set of 2 jaws
- **QUANTITY DISCOUNTS!** Buy 10 or more sets (mix & match) and receive an additional 10% DISCOUNT



MACHINED!



	A	B	C	D	E	F			
Vise Size	Height	Length	Width	Hole Spacing	Screw Size	Hole Dist.	ALUMINUM Part Number	Price Per Pair	
4"	1.50	4.00	0.75	2-1/2	3/8	.687	VJ-4A041507MR*	\$9.91	
		5.00	1.00	2-1/2	3/8	.687	VJ-4A051501M	\$9.80	
		4.00	1.50	2-1/2	3/8	.687	VJ-4A041515M	\$12.13	
	2.00	4.00	1.00	2-1/2	3/8	.687	VJ-4A040201M	\$9.47	
		5.00	1.00	2-1/2	3/8	.687	VJ-4A050201M	\$13.03	
		6.00	1.00	2-1/2	3/8	.687	VJ-4A060201M	\$14.91	
2.50	5.00	1.00	2-1/2	3/8	.687	VJ-4A052501M	\$16.37		
6"	2.00	6.00	0.75	3-7/8	1/2	.937	VJ-6A060207M	\$11.11	
			1.00	3-7/8	1/2	.937	VJ-6A060201M	\$13.35	
			1.00	3-7/8	1/2	.937	VJ-6A060201MR*	\$14.45	
		8.00	1.00	3-7/8	1/2	.937	VJ-6A080201M	\$17.14	
		10.00	1.00	3-7/8	1/2	.937	VJ-6A100201M	\$25.49	
		12.00	1.00	3-7/8	1/2	.937	VJ-6A120201M	\$29.94	
	2.00	6.00	1.25	3-7/8	1/2	.937	VJ-6A060212M	\$16.67	
		8.00	1.25	3-7/8	1/2	.937	VJ-6A080212M	\$22.16	
		6.00	1.50	3-7/8	1/2	.937	VJ-6A060215M	\$20.48	
		8.00	1.50	3-7/8	1/2	.937	VJ-6A080215M	\$27.72	
		10.00	1.50	3-7/8	1/2	.937	VJ-6A100215M	\$33.05	
		12.00	1.50	3-7/8	1/2	.937	VJ-6A120215M	\$44.29	
	2.00	6.00	2.00	3-7/8	1/2	.937	VJ-6A060202M	\$24.15	
		10.00	2.00	3-7/8	1/2	.937	VJ-6A100202M	\$44.07	
		12.00	2.00	3-7/8	1/2	.937	VJ-6A120202M	\$52.20	
		16.00	2.00	3-7/8	1/2	.937	VJ-6A160202M	\$69.89	
		2.50	6.00	1.00	3-7/8	1/2	.937	VJ-6A062501M	\$16.68
				1.25	3-7/8	1/2	.937	VJ-6A062512M	\$21.26
	2.00			3-7/8	1/2	.937	VJ-6A062502M	\$34.05	
	3.00	6.00	1.00	3-7/8	1/2	.937	VJ-6A060301M	\$20.48	
		8.00	1.00	3-7/8	1/2	.937	VJ-6A080301M	\$26.60	
		12.00	1.00	3-7/8	1/2	.937	VJ-6A120301M	\$43.07	
		6.00	2.00	3-7/8	1/2	.937	VJ-6A060302M	\$40.85	
	4.00	6.00	1.00	3-7/8	1/2	.937	VJ-6A060401M	\$27.27	
5.00	6.00	1.00	3-7/8	1/2	.937	VJ-6A060501M	\$43.18		
6.00	6.00	1.00	3-7/8	1/2	.937	VJ-6A060601M	\$42.85		
8"	2.50	8.00	2.00	4-3/4	5/8	1.220	VJ-8A082502MR*	\$46.51	

*Kurt is a registered trademark of Kurt Manufacturing. Te-Co and Palmgren are trademarks of their respective companies.

*R=Reversible

10 PACK VISE JAWS

Aluminum- Fits 6" Anglock Type Vises

BUY THE 10 PACK & SAVE EVEN MORE!
****INCLUDES FREE SHIPPING****



- Fits 6" industry standard vises
- Made from 6061 T6 aluminum
- Hole space: 3.875"
- Hole center height: 0.937
- Screw size: 1/2"
- 10 pairs per pack
- Tumbled or machined finish
- Made in the USA
- FREE Ground shipping



Length	Height	Width	Style	Part Number	Package Price	
6"	2"	3/4	Tumbled	VJ-601-10	\$132.70	
		3/4	Machined	VJ-6A060207M-10	\$94.99	
		1	Tumbled	VJ-602-10	\$147.32	
		1	Machined	VJ-6A060201M-10	\$114.14	
		1	Mach./Reversible	VJ-6A060201MR10	\$123.55	
		1-1/4	Tumbled	VJ-603-10	\$174.25	
		1-1/4	Machined	VJ-6A060212M-10	\$142.53	
		1-1/2	Machined	VJ-6A060215M-10	\$175.10	
		2	Machined	VJ-6A060202M-10	\$206.48	
		2-1/2"	1	Machined	VJ-6A062501M-10	\$142.61
		3"	1	Machined	VJ-6A060301M-10	\$175.10

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

129

LATHE CHUCKS
LIVE CENTERS

VISE JAWS
VISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

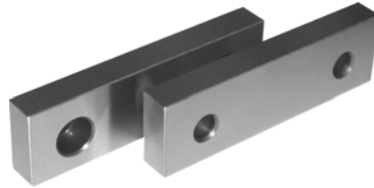
PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

WISE JAWS-HARDENED & QUICK CHANGE

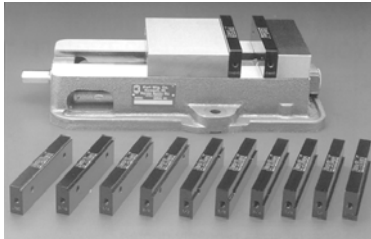
HARDENED VISE JAWS

- Standard individual hardened jaw plates for 4", 6" & 8" vises
- Hardened and ground
- Sold by the piece

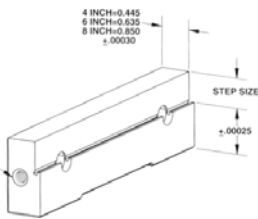


Vise Size	Part Number	Price Each
4"	KURT-D40-7	\$34.00
6"	KURT-D60-7	\$32.00
8"	KURT-D80-7	\$87.00

HARDENED STEP JAWS



Replace Your Parallels With Quick-Change Step Jaws!



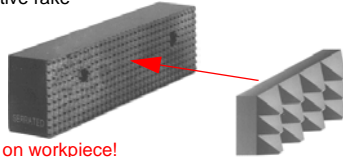
FEATURES:

- Hardened & precision ground to ±.00025.
- Tapped holes in both ends for workstops.
- Low profile for more clamp force.
- Thin ledge to avoid tool interference.
- Black oxide coating and laser-etched with sizes.

Step Size	4 Inch Series		6 Inch Series		8 Inch Series	
	Part Number	Price	Part Number	Price	Part Number	Price
.050 X .050	SN-4HSJ-050	\$118.75	SN-6HSJ-050	\$137.75	-	-
.075 X .075	SN-4HSJ-075	\$118.75	SN-6HSJ-075	\$137.75	-	-
.100 X .100	SN-4HSJ-100	\$114.00	SN-6HSJ-100	\$133.00	-	-
1/8	-	-	SN-6HSJ-115	\$133.00	-	-
0.150	-	-	-	-	SN-8HSJ-150	\$194.75
3/16	SN-4HSJ-177	\$114.00	SN-6HSJ-177	\$133.00	-	-
1/4	SN-4HSJ-240	\$114.00	SN-6HSJ-240	\$133.00	SN-8HSJ-240	\$194.75
1/3	SN-4HSJ-302	\$114.00	SN-6HSJ-302	\$133.00	-	-
3/8	SN-4HSJ-365	\$114.00	SN-6HSJ-365	\$133.00	SN-8HSJ-365	\$194.75
1/2	SN-4HSJ-490	\$133.00	SN-6HSJ-490	\$171.00	SN-8HSJ-490	\$223.25
5/8	SN-4HSJ-615	\$133.00	SN-6HSJ-615	\$171.00	SN-8HSJ-615	\$232.75
3/4	SN-4HSJ-740	\$133.00	SN-6HSJ-740	\$171.00	SN-8HSJ-740	\$232.75
7/8	SN-4HSJ-865	\$152.00	SN-6HSJ-865	\$171.00	SN-8HSJ-865	\$285.00
1	SN-4HSJ-990	\$152.00	SN-6HSJ-990	\$185.25	SN-8HSJ-990	\$285.00
1-1/4	-	-	SN-6HSJ-124	\$199.50	SN-8HSJ-124	\$285.00
1-1/2	-	-	-	-	SN-8HSJ-149	\$285.00
1-3/4	-	-	-	-	SN-8HSJ-174	\$285.00
		Ledge Width .100	Ledge Width .100		Ledge Width .150	

SERRATED JAWS

Great for holding castings or burnouts, the sawtooth serrations have a 2° positive rake on the bottom of each tooth, providing a downward biting motion. The jaws are hardened and ground and supply maximum holding power.



Extra Bite!

CAUTION: May leave "bite marks" on workpiece!

Width x Height	4 Inch Series		6 Inch Series		8 Inch Series	
	Part Number	Price Per Pair	Part Number	Price Per Pair	Part Number	Price Per Pair
3/4 x 1-1/4	SN-4SER-100	\$175.75	---	---	---	---
3/4 x 1-1/2	SN-4SER-150	\$185.25	SN-6SER-150	\$204.25	SN-8SER-200	\$261.25
1 x 2	---	---	SN-6SER-200	\$204.25	SN-8SER-250	\$294.50
1 x 2-1/2	---	---	SN-6SER-250	\$204.25	SN-8SER-300	\$308.75
1 x 3	---	---	SN-6SER-300	\$242.25	---	---

MACHINABLE VISE JAWS

Fast, affordable fixturing! You machine the desired shape.



FEATURES:

- Available in Steel or Aluminum
- Blanchard ground for flatness.
- Tapped hole in both ends for workstops.
- Black oxide coated and laser-etched with sizes.
- Can be heat treated.
- Aluminum Jaws are ideal for delicate work and are anodized.

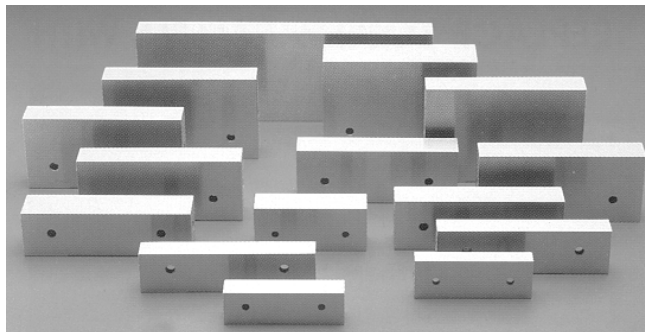
For Economy Vise Jaws, Please See Page 128

Machinable Steel Jaws

Width x Height	4 Inch Series		6 Inch Series		8 Inch Series	
	Part Number	Price Per Pair	Part Number	Price Per Pair	Part Number	Price Per Pair
3/4 x 1-1/4	SN-4MSJ-100	\$57.00	-	-	---	---
3/4 x 1-1/2	SN-4MSJ-150	\$66.50	SN-6MSJ-150	\$42.75	---	---
1 x 1-1/2	SN-4MSJ-160	\$80.75	---	-	---	---
3/4 x 1-3/4	SN-4MSJ-185	\$80.75	SN-6MSJ-175	\$61.75	---	---
1 x 1-3/4	SN-4MSJ-200	\$99.75	SN-6MSJ-185	\$61.75	---	---
3/4 x 2	SN-4MSJ-190	\$99.75	---	-	---	---
1 x 2	SN-4MSJ-210	\$133.00	SN-6MSJ-200	\$61.75	SN-8MSJ-200	\$99.75
1 x 2-1/4	---	---	SN-6MSJ-225	\$90.25	SN-8MSJ-225	\$118.75
1 x 2-1/2	---	---	SN-6MSJ-250	\$90.25	SN-8MSJ-250	\$118.75
1 x 2-3/8	---	---	SN-6MSJ-275	\$90.25	---	---
1 x 3	---	---	SN-6MSJ-300	\$90.25	SN-8MSJ-300	\$142.50
1 x 3-1/2	---	---	SN-6MSJ-350	\$109.25	---	---
1 x 4	---	---	SN-6MSJ-400	\$109.25	---	---
1-1/2 x 1-1/2	---	---	SN-6MSJ-450	\$137.75	---	---
2 x 1-1/2	---	---	SN-6MSJ-475	\$166.25	---	---
1-1/2 x 2-1/2	---	---	SN-6MSJ-500	\$213.75	SN-8MSJ-400	\$223.25
1-1/2 x 3	---	---	---	---	SN-8MSJ-310	\$223.25

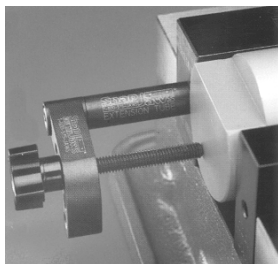
Machinable Aluminum Jaws

Width x Height	4 Inch Series		6 Inch Series		8 Inch Series	
	Part Number	Price Per Pair	Part Number	Price Per Pair	Part Number	Price Per Pair
3/4 x 1-1/2	SN-4MAJ-150	\$42.75	SN-6MAJ-150	\$47.50	---	---
3/4 x 1-3/4	---	---	SN-6MAJ-175	\$47.50	---	---
1 x 1-3/4	---	---	SN-6MAJ-185	\$47.50	---	---
1 x 2	SN-4MAJ-200	\$57.00	SN-6MAJ-200	\$47.50	---	---
1 x 3	---	---	SN-6MAJ-300	\$61.75	---	---
1-1/4 x 2	---	---	---	---	SN-8MAJ-200	\$85.50
1-1/4 x 2-1/2	---	---	SN-6MAJ-250	\$61.75	SN-8MAJ-250	\$85.50
1-1/4 x 3	---	---	---	---	SN-8MAJ-300	\$95.00



Call Us Today For All Of Your Machine Tool Needs!

WORKSTOPS



Fits all Snap Jaws. Workstops accommodate most of your locating and presetting needs. This versatile stop rotates 180° and is reversible for a complete range of applications. Package includes body, stem, extrusion tube and screws. May be used without extension tube.



Description	Part Number	Price
For 6" Vises	SN-6WSP-13	\$47.50



MOUNTING SCREWS

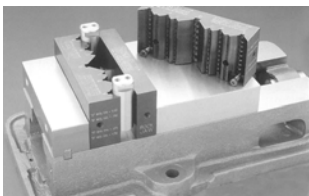
For Quick Change Vise Jaws



- High quality screws are black oxidized for durability and long life
- Low head screws for use on all "quick change" vise jaws
- 4 screws per package

Vise Size	Part Number	Price Per Pack
4"	SN-4LHS-16	\$7.08
6"	SN-6LHS-13	\$9.69
8"	SN-8LHS-11	\$19.00

VERTICAL "VEE" JAWS



The vertical "Vee" jaw has matching "Vees" at opposite ends and one large "V" in the center. This design can double your production by gripping two pieces at a time. Jaws are heat treated (Rc 54/58) and precision ground. Tapped holes in the bottom of the "Vees" accommodates provided end stops.

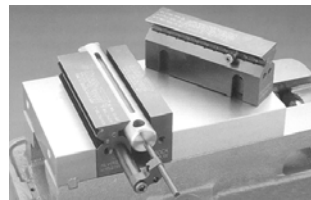
Grip 2 Round Pieces At A Time!



Vise Size	Capacity	Part Number	Price Per Pair
4"	.050" - 1"	SN-4MVJ-250	\$294.50
	3/4" - 4"	SN-4OVV-250	\$294.50
6"	1/8" - 1 1/2"	SN-6MVJ-250	\$351.50
	1" - 6"	SN-6OVV-250	\$351.50
8"	1" - 8"	SN-8MVJ-250	\$589.00



HORIZONTAL "VEE" JAWS



For tool room or production. Heat treated (Rc 54/58) and precision ground, these horizontal "V" jaws are ideal for drilling cross holes and milling keyways. Tapped holes in the bottom of the "Vees" accommodate provided end stops. Additionally, a workstop (pictured) is provided with each set of horizontal "Vee" jaws.

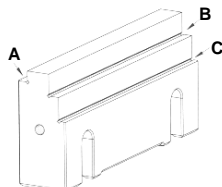
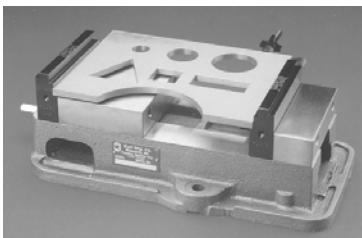


Hold Round Pieces from .060 to 4-1/8"!



Vise Size	Capacity	Part Number	Price Per Pair
4"	.060" - 1 1/8"	SN-4RHJ-150	\$294.50
	3/4" - 2 1/2"	SN-4OHV-150	\$294.50
6"	1/16" - 1 1/8"	SN-6RHJ-150	\$351.50
	1" - 3 1/8"	SN-6OHV-150	\$318.25
8"	1" - 3"	SN-8RHJ-150	\$589.00
	1 1/2" - 4 1/8"	SN-8OHV-150	\$589.00

OVERSIZE PLATE JAWS



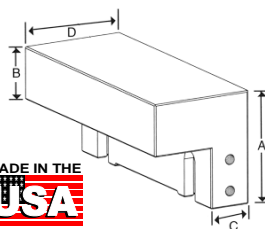
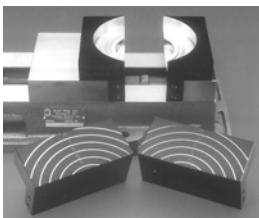
Double your vise capacity! Plate jaws are designed to hold fixtures or oversized plates. They are reversible with 3 different step sizes and can mount on outside positions of Kurt vises. This design allows for 16 different holding positions!

Step	4 Inch	6 Inch	8 Inch
A	3/8 x 1/4	1/4 x 1/4	1/4 x 1/4
B	1/8 x 1/8	1/2 x 1/4	7/16 x 3/16
C	7/16 x 1/8	5/8 x .150	1/2 x 3/16



4 Inch Series		6 Inch Series		8 Inch Series	
Part Number	Price Per Pair	Part Number	Price Per Pair	Part Number	Price Per Pair
SN-4MIJ-250	\$240.35	SN-6MIJ-250	\$323.00	SN-8MIJ-250	\$494.00

MACHINABLE TOP JAWS

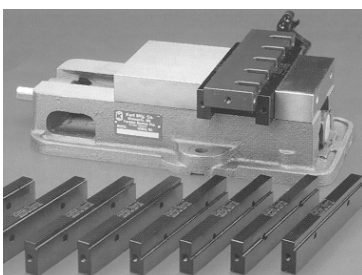


Expand the capacity of your vise! Top Jaws unique "L" shaped design fits over the top of the vise for greater machinable area. You machine the jaws to fit your application. Perfect for odd shapes, delicate rings or disks. Available in steel or aluminum.



Size	A	B	C	D	Material	Part Number	Price Per Pair
6 inch	2 3/4	1 1/4	1.0	2 3/4	Aluminum	SN-6TJA-275	\$266.00
6 inch	2 1/2	1.0	3/4	2 1/2	Steel	SN-6TJS-250	\$266.00

EXTENSION STEP JAWS



Expand Your Vise Capacity!

Extra clamping and support area! Expand your vise capacity! Extension Jaws are 2 inches longer for increased support. Hardened, precision ground and available in 10 different step sizes.

Ledge Width: .100

Step Size	4 Inch Series		6 Inch Series	
	Part Number	Price Per Pair	Part Number	Price Per Pair
nostep	SN-4ESJ-400	\$133.00	SN-6ESJ-600	\$171.00
0.100	SN-4ESJ-100	\$156.75	SN-6ESJ-100	\$185.25
3/16	SN-4ESJ-177	\$156.75	SN-6ESJ-177	\$185.25
1/4	SN-4ESJ-240	\$156.75	SN-6ESJ-240	\$185.25
3/8	SN-4ESJ-365	\$156.75	SN-6ESJ-365	\$185.25
1/2	SN-4ESJ-490	\$175.75	SN-6ESJ-490	\$223.25
5/8	SN-4ESJ-615	\$175.75	SN-6ESJ-615	\$223.25
3/4	SN-4ESJ-740	\$175.75	SN-6ESJ-740	\$223.25
7/8	SN-4ESJ-865	\$175.75	SN-6ESJ-865	\$223.25
1	SN-4ESJ-990	\$171.00	SN-6ESJ-990	\$261.25

Call Us Or Visit Our Website For Our Complete Selection!

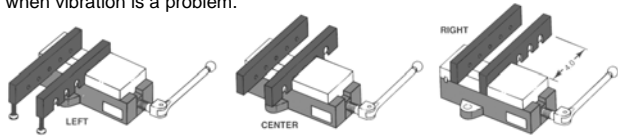
QUICK CHANGE VISE JAWS

EXTENSION SOFT JAWS

Hold Oversize Parts!



Machinable Extension Jaws are ideal for holding oversize parts, castings and plates. This unique design allows extended clamping on the right, left or middle. Jaws can be supported with a support stud when doing heavy cutting, drilling or when vibration is a problem.

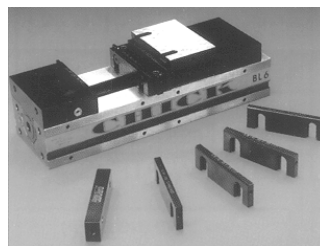


Size	Material	Part Number	Price Per Pair
10 x 1-1/4 x 2-1/2	Soft Steel	SN-6EJS-6	\$304.00
10 x 1 x 2-1/2	Aluminum	SN-6EJA-6	\$304.00

For Use In Center Only:

Series	Dimensions	Material	Part Number	Price Per Pair
6 inch	8 x 1 x 2-1/2	Aluminum	SN-6AEJ-080	\$194.75
6 inch	8 x 1 x 2	Soft Steel	SN-6MEJ-080	\$194.75
6 inch	10 x 1 x 2	Soft Steel	SN-6MEJ-100	\$194.75

SLIMLINE STEP JAWS



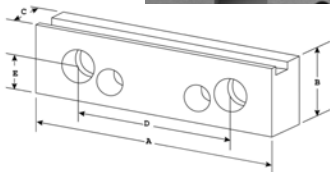
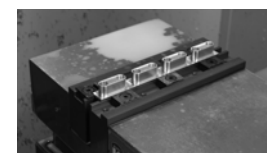
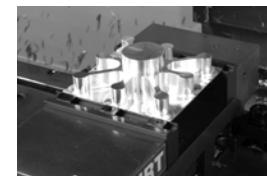
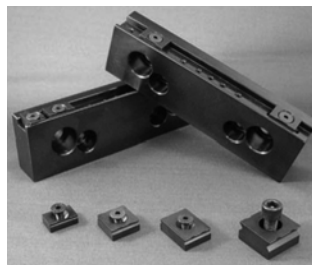
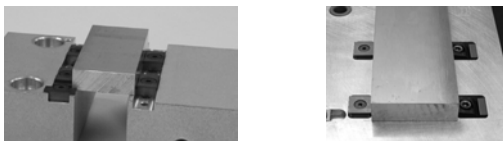
Perfect for **CHICK® Bi-Loc** or **Kurt®** vises. These thin step jaws increase your vise capacity by up to 15%. Slimline step jaws are ideal when you need that little extra capacity.

Size	Width	Dimension	Part Number	Price Per Pair
4 Inch	3/8	No Step	SN-4SLJ-400	\$147.25
4 Inch	.260	.100 x .100 step	SN-4SLJ-100	\$171.00
4 Inch	.175	.177 x .177 step	SN-4SLJ-117	\$171.00
6 inch	3/8	.100 x .100 step	SN-6SLJ-110	\$156.75
6 inch	3/8	.100 x .177 step	SN-6SLJ-117	\$156.75
6 inch	3/8	.100 x .240 step	SN-6SLJ-124	\$156.75
6 inch	3/8	.100 x .312 step	SN-6SLJ-131	\$156.75
6 inch	1/4	.100 x .240 step	SN-6SLJ-224	\$156.75
6 inch	1/4	.100 x .312 step	SN-6SLJ-231	\$156.75



TALON GRIP VISE JAW SYSTEM

This new and innovative product will increase the functionality of your standard 4 and 6 inch vises. TalonGrip™ is a simple bolt on system that will allow you to perform aggressive machining operations while clamping on as little as .060 of an inch. Ideal for small lot sizes, difficult applications or prototype work when building a fixture would not be beneficial. TalonGrips™ are also available individually for fixturing with the Mitee-Bite Pitbull® Clamp or soft jaw applications.

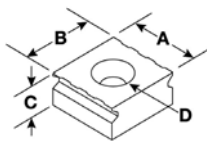


Steel Vise Jaw Set-includes 4 Talongrips™, 1 Stop W/ M5 Screws

Vise	A	B	C	D	E	Part Number	Price
4"	1.0	2.5	.688	4.0	1.49	MITEE-32044	\$142.50
4"/6"	1.0	2.5/3.88	.688/.94	6.0	1.74	MITEE-32066	\$161.50
6"	1.0	3.88	0.94	8.0	1.74	MITEE-32068	\$180.50

Vise Jaw Grips & Stops

Description	A	B	C	D	Rec.Grip Height	Part Number	Price
Extra Grips (2)	0.75	0.5	0.25	10-32	.060-.075	MITEE-32050	\$23.28
Extra Stops (1)	-	-	-	M5	.060-.075	MITEE-33050	\$23.28
	-	-	-	10-32	-	MITEE-32025	\$14.25
	-	-	-	M5	-	MITEE-33025	\$14.25

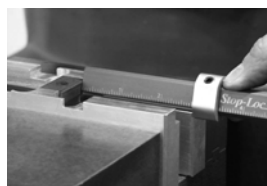
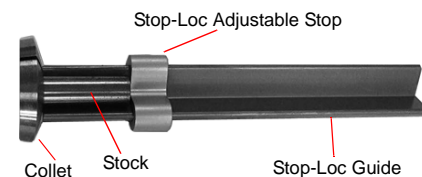
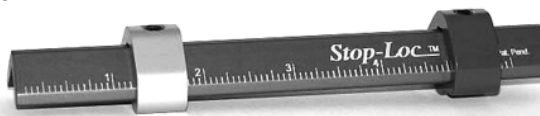


CHUCK/VISE STOP

Handheld Lathe & Mill Vise Tool

Mill Both Sides Of Your Stock Without A Stop In The Way!

- **Adjustable Precision-** Gage lengths up to 5-1/2" long holding +/- .005
- **Save Money!** No more fixed length dedicated shop-made front collet stops for each job
- **Versatile-** For use on CNC or manual lathes whether you are running a bar manually or using a bar puller
- **Consistency-** Unique design incorporates self-centering, unobstructed viewing and contrasting colors to give user confidence
- **Dimensions:** 6" L x 3/4" H x 3/4" W
- **Made in USA**



Graduations	Part Number	Price
Inch (1 side)	STOPLOC	\$16.00
Thousands/Metric	STOPLOC-THSMM	\$18.00
Inch/Metric	STOPLOC-MM	\$18.00

Call Us Today For All Of Your Machine Tool Needs!

PRO VISE STOPS

- Low profile design stays below the top surface of vise jaws for cutter clearance
- Versatile design allows the 1/4" hardened stop rod to be quickly and accurately positioned
- Stop rod stays parallel to milling machine table so workpiece will contact rod face squarely for increased accuracy
- Lever arm can be rotated out of the way for cutter clearance and accurately relocated for repeat setup
- Two sets of mounting holes for added versatility
- Mounting hardware included
- Locate long stock with the included stop rod collar
- Large 1/2"-13" bolt used to rigidly attach lever arm
- Utilizes non-marring 1/4"-20 set screws
- Body made from red anodized 6061-T6 aluminum



Single Side
Part # EDGE-03000
\$49.99 ea



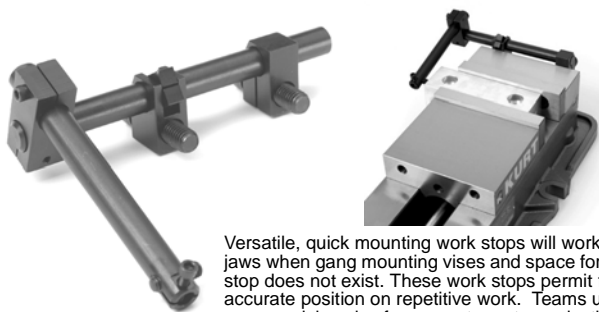
Double Side
Part # EDGE-18000
\$74.99 ea

EDGE TECHNOLOGY

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

ANGLOCK® VISE WORK STOPS



Versatile, quick mounting work stops will work above jaws when gang mounting vises and space for a work-stop does not exist. These work stops permit fast, accurate position on repetitive work. Teams up with your precision vise for accurate parts production.

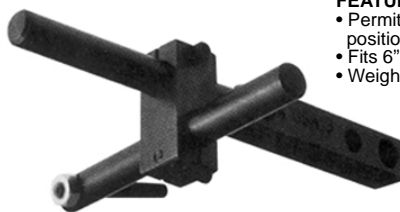
Vise Model	Part Number	Price Each
3-4" Vises	KURT-D30-45	\$110.00
5-6" Vises	KURT-360PWS	\$138.00
8" Vises	KURT-D80WS	\$143.00



WISE WORK STOP

Fits 6" Anglock type vises

BEST VALUE



For 6" Vises

FEATURES:

- Permits Fast, completely accurate positioning of repetitive work.
- Fits 6" vises
- Weight: 0.18 lbs.

Part Number	Price	Code
MVS-600	\$22.95	F

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

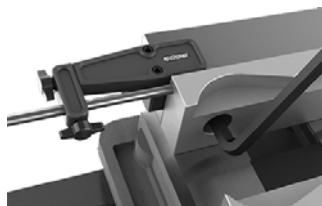
WISE JAW LOCATOR

- Two powerful magnets hold the unit in place
- Adjustable 1/4" stop rod allows compatibility with different width soft jaws
- Fits all milling machine vise widths
- Rotate stop rod holder arm for use with double side vises
- High strength aluminum body
- Durable red anodized finish

EDGE TECHNOLOGY



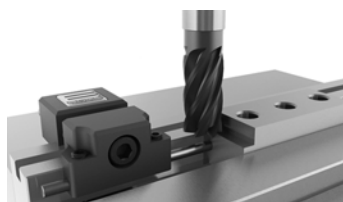
Vise Jaw Locator
Part # EDGE-47000
\$24.99 ea



WISE JAW STOP

EDGE TECHNOLOGY

- Stop pin is positioned completely below the top surface of vise jaw to allow for cutter clearance
- 1/8" x 2" hardened stop pin, adjustable
- Fits all milling machine vises with 1/2" to 7/8" thick jaws and 1/8" minimum protrusion
- 1-1/8" wide body with 2 hardened steel guide pins
- Body made from red anodized aluminum



Vise Jaw Stop
Part # EDGE-14000
\$19.99 ea

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

WISE WORK STOP

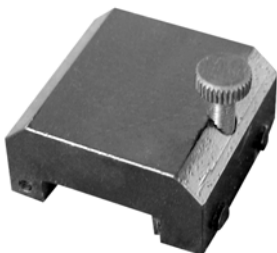
Fits Anglock type vises

BEST VALUE

- Single thumb screw tightens clamp to vise jaw.
- Two ground pins on both sides of clamp.
- Easily mounts to the top of most vise jaws.
- 1 piece clamping screws.

F

Capacity	Part Number	Price
3/4"	VWS-750	\$4.95
7/8"	VWS-875	\$7.95



ADJUSTABLE WORKSTOP

KURT

- Body clamp has 2" adjustment
- 3" long stop pin for fast set-ups
- Versatile and economical!
- Black oxide finish
- Fast accurate positioning of parts
- Short & long spacers available



Description	Part Number	Price Each
Workstop	KURT-6AWS	\$66.00

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

VICE STOPS & ACCESSORIES

PRO MILL STOPS

The Pro Mill Stop can be mounted on any available T-slot anywhere along the milling machine table allowing it to accurately locate a workpiece for any type of setup. It is designed to keep the stop rod square to the work piece throughout the entire range of motion. This configuration provides a more consistent locating surface for increase part accuracy. The base of the unit is also keyed to the T-slot of table for increased consistency. After locating the workpiece the arm of the Pro Mill Stop can be rotated out of the way for total cutter clearance. The arm can then be accurately repositioned for repeat setup.



- 1/4" hardened stop rod
- 5/8" T-slot
- Stop rod stays parallel to milling machine for increased accuracy
- Lever arm can be rotated out of the way for cutter clearance
- Base of unit is keyed to T-slot in table
- 1/2"-13 bolt attached lever arm to base
- T-nut included

Mill Stop-5/8" Slot
Part # EDGE-16000
\$49.99 ea



ULTIMATE 5-AXIS WORK STOP TOOL

Single mount, swivel-action work stop tool for CNC machine centers, milling machines and drill presses.

- Saves time and increases efficiency.
- Fast set-up time.
- Quick and accurate repetitive positioning.
- Locks in rigid.
- Quick/universal machine installation.
- Versatile job applications.

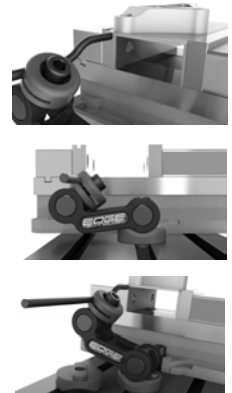


Pivoting/Positioning

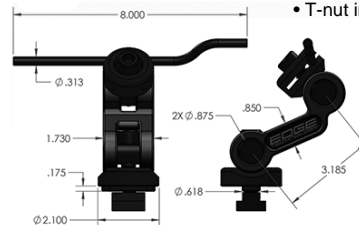
Rigid Locking System

Size	Color	Part Number	Price
6"	Purple	A-1-P6-5A	\$92.00
8"	Red	A-1-R8-5A	\$169.00
10"	Yellow	A-1-Y10-5A	\$199.00

MULTI-AXIS WORKSTOP



- Unique design stays completely below the top surface of vise jaws for cutter clearance
- Stop rod stays parallel to the milling machine table for increased accuracy
- Versatile design allows 5/16" hardened stop rod to be quickly and accurately positioned
- Large 1/2"-13" socket head cap screws rigidly clamp the unit in position after adjustments are made
- Base of unit is keyed to T-slot in table
- T-nut included



MULTI-AXIS STOP
Part # EDGE-48000
\$59.99 ea

ADJUSTABLE UNIVERSAL WORKSTOP

BEST VALUE



- Serves as a rigid stop for milling setups
- For use with vises, angle plates and jigs
- Usable as a versatile holder, as well as a workstop

Specifications:
Column: 3/4" x 6-1/4"
Base: 3/4" x 2" x 4-1/2"
Rod: 3/8" x 10"
Weight: 3.4 lbs



Description	Part Number	Price
Universal Workstop	AUS-600	\$14.95

MAGNETIC JAW PLATES

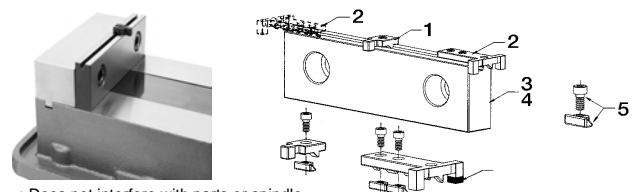


Features powerful earth magnets for holding parallels securely in place, leaving hands free to hold and clamp the workpiece. Perfect for fast and accurate set ups.



Description	Length	Width	Height	Part Number	Price
6" Magnetic Jaw Plate	5.969	.725	1.735	KURT-D60-7-MAG	\$46.00
6" for Groove Lock Workstops	5.969	.725	1.735	KURT-D60-315-MA	\$49.00

GROOVE LOCK WORKSTOP



- Does not interfere with parts or spindle
- Single bolt design used for tightening workstop

See Fig.	Description	Part Number	Price Each
1	Workstop assembly suitable for 2-6" jaw plates	KURT-WSRL46	\$16.00
2	Extended length workstop assembly suitable to use with 4-6" jaw on outside.	KURT-WSRLE46	\$24.00
3	6" GrooveLock Jawplate (not reversible)	KURT-D60-315	\$38.00
4	4" GrooveLock Jawplate (not reversible)	KURT-D40-315	\$39.00
5	Replacement Clamp Assembly	KURT-WSRL4686SA	\$10.00

Call Us Today For All Of Your Machine Tool Needs!

WISE ACCESSORIES

B

PARALLEL KEEPER



PARALLEL KEEPER

Part # SL-EZKEEP

\$24.95 ea

- Reduce set-up time
- Keeps parallels in place
- Magnetic base- tool can be stored on side of vise!
- Compact, narrow & low profile
- Automatically self-adjusts

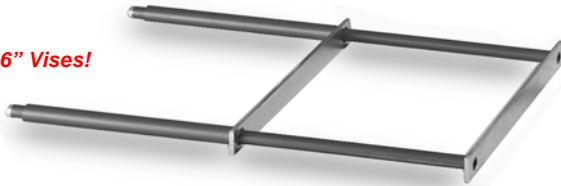
D

PARALLEL KEEPER



Place your parallels in the vise against the jaws. Take the Parallel Keeper, squeeze it together and place it inside the parallels. Release the Parallel Keeper, it will push against the parallels, holding them against the jaws of the vise! Opens to 6 inches and saves part change time!

Fits 6" Vises!



Description	Part Number	Price
Parallel Keeper	KURT-KPS-6000	\$62.00

PARALLEL SETS

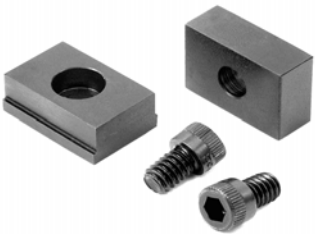


- Made from high quality tool steel
- Stress relieved against distortion
- Precision ground and hardened
- 6" Length
- **1/8" Heights:** 1/2", 5/8", 3/4", 7/8", 1", 1-1/8", 1-1/4", 1-3/8", 1-1/2" and 1-5/8"
- **1/4" Heights:** 3/4", 7/8", 1", 1-1/8", 1-1/4", 1-3/8", 1-1/2", 1-5/8" and 1-3/4"
- Complete with durable fitted plastic case



Description	Length	Part Number	Price
10 Pair Set	1/8" W X 6" L	A-3900-3010	\$54.00
9 Pair Set	1/4" W X 6" L	A-3900-3009	\$90.00

HARDENED VISE KEYS



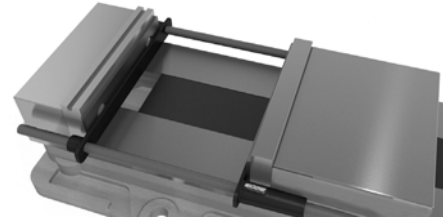
Vise Size	Key Size	Part Number
5-6"	11/16x5/8"	KURT-D50-33A
	11/16x13/16"	KURT-D50-33B
	11/16x3/4"	KURT-D50-33C
	11/16x9/16"	KURT-D50-33D
	11/16x1/2"	KURT-D50-33E
Square Keys (set of 2)		
5-6"	11/16x11/16"	KURT-D50-50

\$28.50 per pair

PARALLEL SEPARATOR



- Strong compression springs are used to expand the unit
- Sized to fit a 6" vise
- Durable metal construction
- Can be disassembled for cleaning



The Parallel Separator is designed to firmly hold the parallel bars against the vise jaws during machining operations. This prevents chips from being lodged between the parallels and the bed of the vise and eliminates the need to clean the bars every time the workpiece is removed from the vise.

PARALLEL SEPARATOR

Part # EDGE-49000

\$49.99 ea

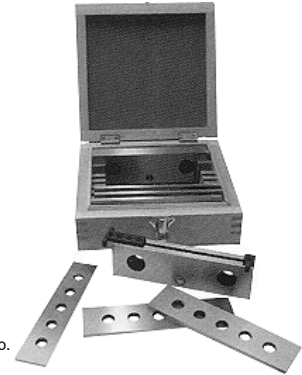
MAGNETIC JAW PLATE AND PARALLEL SET



Fits all Kurt 6 inch vises!

11 Piece Set Includes:

- 2 ea.- 3/16" x 1" x 6" ground steel parallels.
- 2 ea.- 3/16" x 1 1/4" x 6" ground steel parallels.
- 2 ea.- 3/16" x 1 3/4" x 6" ground steel parallels.
- 1 ea.- D60-7-MAG hardened jaw plate with earth magnet.
- 1 ea.- D60-315-MAG hardened Groove Lock jaw plate with earth magnet.
- 1 ea.- WSRLE46 Kurt Groove Lock Workstop.
- 1 ea.- WSRLE46 Kurt Groove Lock extended workstop.
- 1 ea.- Wooden storage box.



Description	Part Number	Price
Magnetic Jaw Plate/Parallel Set	KURT-6PJS	\$131.00

HEX EXTENSIONS



Hex Extensions are useful when the vises are mounted on large machines where extending the hex will allow better access. Hex extensions will also allow a 6" handle to be used on a 4" or 8" vise.

Vise Size	Part Number	Price Each
4" to 6"	KURT-HEX4A6	\$129.00
4" to 4"	KURT-HEX4	\$20.00
6" to 6"	KURT-HEX6	\$48.00
8" to 6"	KURT-HEX8A6	\$88.00

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

135

LATHE CHUCKS
LIVE CENTERS

VISE JAWS
VISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

WISE HANDLES & ACCESSORIES

2 POSITION VISE HANDLE



The 2 Position Vise Handle is a great alternative to the standard handle that comes with most vises. It is smaller, faster and much more ergonomic. Provides the correct amount of leverage for clamping most work pieces. It also has a thumb knob allowing the handle to stay locked to the vise during machining.

- Allows vise to be opened and closed rapidly
- The outer position provides correct amount of leverage for clamping most work pieces
- Durable aluminum construction
- Thumb knob allows the unit to stay locked to the vise during machining operations.
- Strong Neodymium magnet on backside of body allows unit to hang from any metal surface



2 POSITION VISE HANDLE
Part # EDGE-50000
\$19.99 ea

SPEED GUARD HANDLE PROTECTOR



Prolong the life of your speed handle! The Speed Guard evenly distributes torque among the three arms of your handle, reinforcing your handle for added strength and support.



No More Broken Handles!

- Prolongs handle life-evenly distributes torque
- For machine vise and drill press handles or any 3 prong handle that needs support!
- Quick and easy to install
- High visibility safety yellow
- Includes all hardware

Description	Part Number	Price
Speed Guard	PMC-GUARD	\$5.99
Speed Guard w/ Handle	PMC-SPEED-KIT	\$36.56

D

KURT SPEED HANDLE

Spend less time clamping and get a handle on your next job. The Kurt Speed Handles fit the 4" and 6" AngLock vises and opens completely in seconds. It doesn't interfere with the milling machine, giving you rapid part loading and unloading.



Vise Size	Part Number	Price Each
4"	KURT-D40SH	\$95.00
6"	KURT-D60SH	\$132.00

SPEED HANDLE



- Fits 6" Kurt Anglock Vises
- Vises can be completely opened in a few seconds
- Save time & increase production
- 3/4" Hex Hole

BEST VALUE



Hex Size	Part Number	Price Each
3/4"	US-SPEED-6	\$31.05

TORQUE HANDLE



The torque handle has all the benefits of the Speed Handle, yet provides calibration guides for your torquing requirements. Used on 6" vises like the Speed Handle, it doesn't interfere with your milling machines and is made of durable steel, not aluminum, so your hex nut won't strip.



Description	Part Number	Price Each
Torque Handle	KURT-TH-6	\$239.00

ARMLOCK® HANDLE



Fits 6" Vises!

This adjustable lever length handle is designed to allow spinning of the vise screw with the lever in the central position for fast jaw movement and light work clamping. Comfortable, higher torque clamping is possible when lever is in #2 position. By adding an adapter the handle can be used on 4" or 8" vises.

Description	Part Number	Price Each
6" Armlock Handle	KURT-AL6	\$79.00

MILL ORGANIZER TRAY

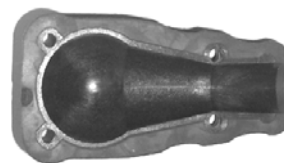


- Designed to fit standard 6" calipers
- Multiple compartments segregate endmills and prevent tool damage
- Mounts w/ T-slot on table front (included)
- Compatible with Bridgeport brand power feed connecting rod
- Mill Caddy can be mounted below to improve organization even further
- Made from durable fiberglass reinforced composite

Mill Organizer Tray
Part # EDGE-29000
\$19.99 ea

CARPAL CUSHION™

Machine Vise Handle Grip



- Quickly mounts on machine vise handle-tapered and ball end
- Cushions impact between hand and handle, reducing the risk of hand injury
- Includes mounting hardware

Description	Part Number	Price Each
Machine Vise Handle Grip	GM-CC-2000	\$19.95

C

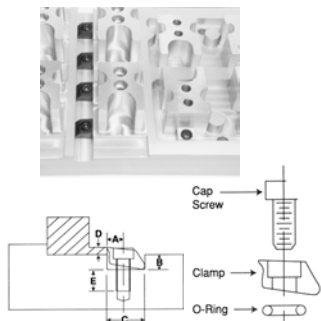
Call Us Today For All Of Your Machine Tool Needs!

PITBULL CLAMPS

The Pitbull™ Clamp is a unique method of holding your workpieces using a low gripping profile, generating both vertical and horizontal clamping forces. For example, the Pitbull™ Clamp which uses a 8-32 screw clamps on only .100 of an inch while generating up to 1500 lbs. of vertical and horizontal clamping forces. It uses a standard cap screw and an oil resistant O-ring, while using only a 1/2" square of your fixture space.

FEATURES:

- Extremely low bite
- Positive down force
- High resistance to rip-out
- Simple, sturdy, high quality design and components



Description	A	B	C	D*	Clamp Width	Screw Size	Max Holding Force (lbs.)	Torque (in./lbs.)	Total Throw	Pkg Qty	Part Number	Price Each
Tool Steel, Knife Edge	.150	.140	.375	.075	.375	4-40	650	16	.0075	8	MITEE-26000	\$70.87
Tool Steel, Blunt Edge	.150	.140	.375	.075	.375	4-40	650	16	.0075	8	MITEE-26010	\$70.87
Brass, Blunt Edge	.150	.140	.375	.075	.375	4-40	200	5	.0075	8	MITEE-26015	\$70.87
Tool Steel, Knife Edge	.200	.187	.500	.100	.500	8-32	1500	50	.016	8	MITEE-26020	\$75.24
Tool Steel, Blunt Edge	.200	.187	.500	.100	.500	8-32	1500	50	.016	8	MITEE-26030	\$75.24
Brass, Blunt Edge	.200	.187	.500	.100	.500	8-32	400	25	.016	8	MITEE-26040	\$75.24
Tool Steel, Knife Edge	.300	.280	.750	.150	.750	1/4-20	3600	200	.024	6	MITEE-26050	\$72.96
Tool Steel, Blunt Edge	.300	.280	.750	.150	.750	1/4-20	3600	200	.024	6	MITEE-26060	\$72.96
Brass, Blunt Edge	.300	.280	.750	.150	.750	1/4-20	950	50	.024	6	MITEE-26065	\$72.96
Tool Steel, Knife Edge	.400	.250	1.00	.250	1.00	3/8-16	6000	360	.050	4	MITEE-26070	\$78.90
Tool Steel, Blunt Edge	.400	.250	1.00	.250	1.00	3/8-16	6000	360	.050	4	MITEE-26075	\$78.90
Tool Steel, Knife Edge	.600	.375	1.50	.375	1.50	1/2-13	12000	1800	.075	2	MITEE-26080	\$69.02
Tool Steel, Blunt Edge	.600	.375	1.50	.375	1.50	1/2-13	12000	1800	.075	2	MITEE-26085	\$69.02

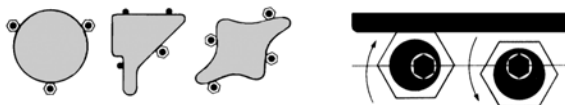
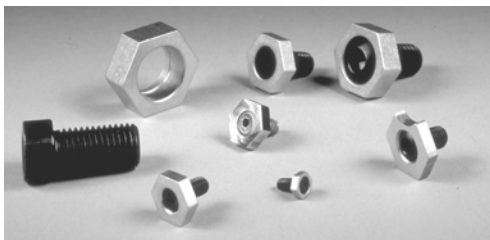
* "D" is clamp height



FIXTURE CLAMPS

The Cam Action Mitee-Bite Fixture Clamp is made up of two simple components: a hardened steel socket cap screw with an offset head and a hexagonal washer.

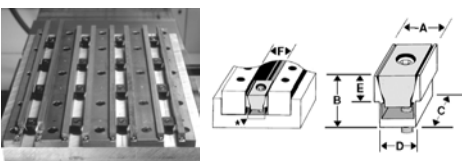
- Low profile makes computer programming easier.
- Small size allows more parts per load.



Screw Size	Thread Length	Hex Size	Hex Height	Drill & Tap Dist.†	Max Hold. Force	Total Throw	Pkg Qty	Part Number	Pkg. Price
8-32	3/8	5/16	.110	.150	205 lbs.	.030	10	MITEE-10202	\$48.17
10-32	3/8	1/2	.160	.250	350 lbs.	.040	10	MITEE-10207	\$50.68
1/4-20	1/2	5/8	.190	.308	800 lbs.	.040	10	MITEE-10204	\$50.68
5/16-24	1/2	13/16	.190	.400	750 lbs.	.040	12	MITEE-10205	\$63.51
5/16-18	1/2	13/16	.190	.400	750 lbs.	.040	12	MITEE-10201	\$63.51
3/8-16	3/4	13/16	.250	.400	2000 lbs.	.050	10	MITEE-10206	\$58.43
1/2-13	1	1	.375	.500	4000 lbs.	.100	8	MITEE-10208	\$63.51
5/8-11	1 1/4	1 3/16	.500	.590	6000 lbs.	.100	4	MITEE-10210	\$48.17

UNIFORCE CLAMP

This compact, economical workholding device enables you to fixture more parts on the machine table. This simple, efficient method of clamping workpieces will decrease your set up time and increase your profits and production.

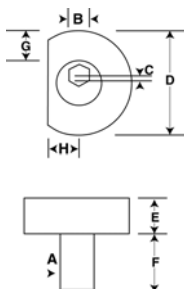


Thread Size	Hex Key Size	Max. Spread	Hold. Force	Pkg Qty	A	B	C	D	E	F	Part Number	Price Per Pkg
2-56	5/64	.265	200 lbs.	6	.240	.27	.320	.210	.140	.250	MITEE-60250	\$59.61
4-40	3/32	.395	310lbs.	6	.360	.38	.470	.310	.185	.375	MITEE-60375	\$59.61
8-32	9/64	.540	500lbs.	8	.485	.57	.625	.410	.220	.500	MITEE-60500	\$59.61
1/4-20	3/16	.800	1500lbs.	6	.735	.77	.940	.635	.375	.750	MITEE-60750	\$60.71
5/16-18	1/4	1.060	2000lbs.	4	.980	1.02	1.250	.820	.500	1.000	MITEE-61000	\$59.61
1/2-13	3/8	1.590	3500lbs.	2	1.470	1.52	1.875	1.215	.750	1.500	MITEE-61500	\$99.28
5/8-11	1/2	2.100	6000lbs.	2	1.960	2.03	2.500	1.625	1.00	2.000	MITEE-62000	\$150.53

MACHINABLE FIXTURE CLAMPS

These clamps with the machinable steel washers provide more flexibility for holding round or unusually shaped parts. Parts can be held directly to the fixture plate surface or elevated for through drilling. A special screw is provided with each package to hold the washer in the proper place during machining.

- Low Profile
- Made of mild steel for machinability
- One machining screw included with each package



A	B	C	D	E	F	G*	H†	Max. Holding Force	Pkg Qty	Part Number	Price Each
1/4-20	1/8	.040	.980	.250	.470	.250	.308	800 lbs.	4	MITEE-10504	\$41.52
3/8-16	3/16	.050	1.23	.350	.710	.275	.400	2000 lbs.	4	MITEE-10506	\$48.30
1/2-13	5/16	.100	1.48	.450	.900	.300	.500	4000 lbs.	4	MITEE-10508	\$56.72
5/8-11	3/8	.100	1.73	.550	1.125	.350	.590	6000 lbs.	4	MITEE-10510	\$69.83

* "G" is the amount of machinable stock. † "H" is the distance from edge of workpiece to drill & tap hole.



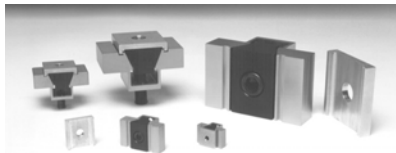
Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS
VISE ACCESSORIES
VISE JAWS
STRAIGHT SHANK COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

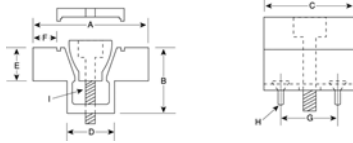
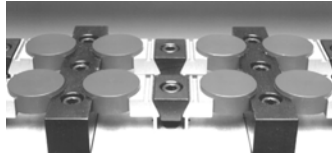
CLAMPING PRODUCTS

MACHINABLE UNIFORM FORCE CLAMPS

Full Line Available!
Please call for more information.



Now you can hold those round and unusually shaped parts with ease. This compact method of workholding will allow more parts per load at a lower price than vise soft jaws. This compact Uniform Force Clamp is available with extra material on the clamping jaws so it can be machined to conform to the shape of your workpiece. A unique locking plate is provided to make the clamp rigid while machining the jaws to your specifications, without vibration.



Description	A*	B	C	D	E	F†	G	H**	I	Part Number	Price Each
Clamp Assembly W/Plate	1.125	.50	.62	.420	.25	.18	.400	2-56	8-32	MITEE-60050	\$20.19
Clamp Assembly, W/Out Plate										MITEE-60055	\$15.87
Clamp Assembly W/Plate	1.50	.75	.94	.632	.37	.26	.625	6-32	1/4-20	MITEE-60075	\$21.38
Clamp Assembly, W/Out Plate										MITEE-60080	\$16.44
Clamp Assembly W/Plate	2.00	1.0	1.25	.820	.50	.39	.812	6-32	5/16-18	MITEE-60100	\$29.50
Clamp Assembly, W/Out Plate										MITEE-60105	\$23.66
Clamp Assembly W/Plate	3.00	1.5	1.87	1.215	.75	.62	1.20	10-32	1/2-13	MITEE-60150	\$81.84
Clamp Assembly, W/Out Plate										MITEE-60153	\$74.20
Clamp Assembly W/Plate	4.00	2.0	2.5	1.625	1.0	.80	1.625	1/4-20	5/8-11	MITEE-60200	\$134.14
Clamp Assembly, W/Out Plate										MITEE-60203	\$121.13

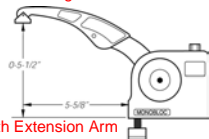
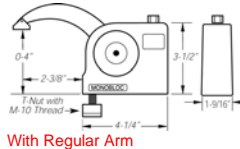
*A: The distance needed between workpieces for clamp clearance, drill and tap mounting holes on the center of "A" dimension.
†F: The amount of machinable stock on jaws. **H: Mounting Screws included.

STANDARD DUTY MONO-BLOC CLAMPS

Ideal for Bridgeport-Type Mills!



One of the fastest and strongest milling clamps available. Modular design: Start with two clamps and build up with risers. Easy set up and tear down, making them ideal for odd-shaped parts and short cycle times. Worm-and-gear design ensures that the clamp will not loosen with use. Up to 12" clamping height with riser blocks.



T-Slot Size	Part Number	Price
9/16"	MITEE-25727	\$772.00
5/8"	MITEE-25729	\$772.00
3/4"	MITEE-25731	\$772.00

Description	Part Number	Price Each
2 Standard-Duty Mono-Blocs w/ 2 5/8" Arm (Includes T-wrench)	MITEE-25705	\$294.15
2 Standard-Duty Riser Blocks	MITEE-25710	\$89.55
1 Extension Arm	MITEE-25540	\$72.30
1 Standard-Duty T-Wrench	MITEE-25720	\$24.55
2 M-10x35mm Screws	MITEE-25730	\$9.85
2 M-10x40mm Screws	MITEE-25733	\$9.85

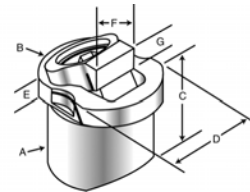
Regular Arm: Clamping Range 0-4". 2400 lbs force
Extension Arm: Clamping Range 0-5 1/2". 1300 lbs force

Kit includes high-impact plastic storage/ carrying case with room to store tools and T-nuts for other size mills.

DYNA-FORCE CLAMP



The majority of the Dyna-Force Clamp is below the surface of the fixture which provides excellent clamp support and makes for a very low profile. The clamp jaw, which is relief cut for maximum contact with the workpiece, slides on an angle for positive downforce. Clamp jaw is available with smooth or serrated faces.



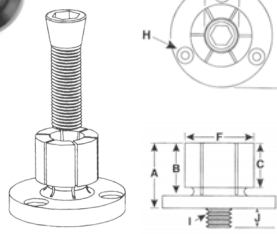
A*	B	C	D	E	F	Min. G	Recom. G	Max G	Clamp Travel	Drive Screw	Key Size	Clamp Jaw & Hardness	Part Number	Price
20.00	24.90	19.00	19.90	4.50	13.50	3.25	5.00	6.75	2.0	6mm	5mm	smooth 34RC	MITEE-28314	\$70.49
												serrated 44RC	MITEE-28318	\$76.33
25.00	29.90	24.00	24.90	5.00	15.00	4.50	6.50	8.35	2.2	8mm	6mm	smooth 34RC	MITEE-28320	\$73.39
												serrated 44RC	MITEE-28322	\$79.28
30.00	37.90	29.00	29.90	7.00	20.00	4.50	7.50	10.75	3.8	10mm	8mm	smooth 34RC	MITEE-28324	\$111.58
												serrated 44RC	MITEE-28328	\$120.37

* "A" is body diameter

† Smooth jaw only will have relief cut.

ID XPANSION CLAMP

Heat Treated Cone & Screw For Long Life!



A	B	C	D	E	F	G†	H*	I	Part Number	Price Each
.86	.63	.59	.23	1.170	.49	.28	6-32 on .825 BHC	8-32	MITEE-31050	\$34.87
.98	.75	.59	.23	1.240	.56	.48	6-32 on .910 BHC	1/4-20	MITEE-31100	\$34.87
.98	.75	.59	.23	1.476	.79	.53	6-32 on 1.140 BHC	5/16-18	MITEE-31150	\$37.10
1.13	.88	.69	.25	1.968	1.06	.79	8-32 on 1.550 BHC	3/8-16	MITEE-31200	\$48.26
1.25	1.0	.81	.25	2.205	1.39	1.00	8-32 on 1.790 BHC	1/2-13	MITEE-31250	\$59.52
1.56	1.25	1.06	.31	2.736	1.65	1.35	10-32 on 2.200 BHC	5/8-11	MITEE-31300	\$76.29
1.56	1.25	1.06	.31	2.972	2.03	1.35	10-32 on 2.515 BHC	5/8-11	MITEE-31350	\$83.70
1.79	1.48	1.27	.31	4.232	3.06	1.35	1/4-20 on 3.646 BHC	5/8-11	MITEE-31400	\$133.1

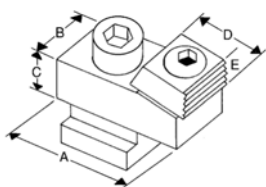
G† - Minimum diameter "F" dimension can be machined H* - (3) Mounting Screws

The ideal way to hold multiple parts on an inside diameter for machining on your VMC or HMC. Ideal for secondary operations and easily machined to size on a lathe or mill, allowing for more parts per workcube or fixture.

Call Us Today For All Of Your Machine Tool Needs!

T-SLOT TOE CLAMP

A low profile cam action clamp with positive downforce. Clamp is mounted in the T-slots of machine tables by sliding the clamp to the workpiece and tightening the locking screw.
Total Distance of Movement - .100



T-Slot Size	A	B	C	D	E	Part Number	Price Each
9/16	1.94	1.12	.62	1.00	.38	MITEE-24128	\$38.19
5/8	1.94	1.12	.62	1.00	.38	MITEE-24148	\$38.19
11/16	1.94	1.12	.62	1.00	.38	MITEE-24168	\$38.19
3/4	1.94	1.12	.62	1.00	.38	MITEE-24188	\$40.42



MITEE-GRIP

The Invisible Clamp!

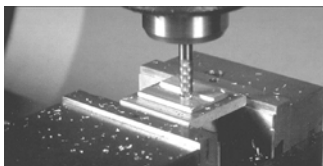


Mitee-Grip™ is a heat activated wax base compound embedded in precision paper, coated on nylon mesh or in a stick form. This holding media maintains parallelism on precision parts. Mitee-Grip™ is very useful when machining thin or hard to hold parts and allows machining on five sides of a workpiece without using a clamp.

From This...



To This In Minutes!!



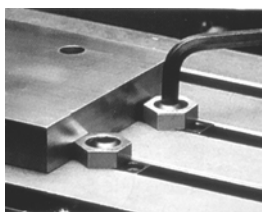
FEATURES:

- Paper product is excellent for holding smooth flat parts and maintaining parallelism.
- The mesh product captures additional wax material in the web and aids in holding irregularly shaped parts.
- Typically additional holding force can be attained with this material.



Description	Part Number	Price Each
12"x5" Paper Roll	MITEE-10240	\$32.30
12"x25" Paper Roll	MITEE-10245	\$120.98
10"x5" Mesh Roll	MITEE-10250	\$39.38
10"x25" Mesh Roll	MITEE-10252	\$141.12
Compound - 1 Stick	MITEE-10230	\$22.18
Compound - 3 Sticks	MITEE-10235	\$58.47

MITEE-BITE T-SLOT KITS



- Locks in machine T-slot for low profile clamping
 - Fast set-ups possible right on the machine table
 - Brass hex follows contour of unusually shaped parts
- All clamps available in metric



CONTENTS:

- 4 Mitee-Bite T-nuts
- 6 Mitee-Bite Cam Clamps
- 2 Hex Keys

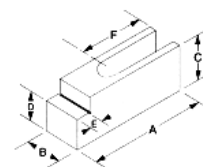
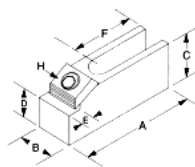
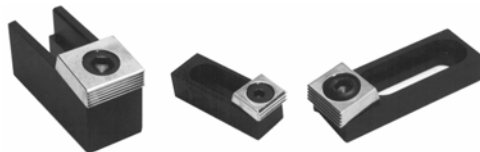


Table Slot	Size & Pitch	Thread Length	Hex Size	Hex Height	Part Number	Price Each
3/8	1/4-20	1/2	5/8	3/16	MITEE-10640	\$97.38
7/16	5/16-18	1/2	13/16	3/16	MITEE-10641	\$97.38
1/2	3/8-16	3/4	13/16	1/4	MITEE-10642	\$97.38
9/16	3/8-16	3/4	13/16	1/4	MITEE-10643	\$97.38
5/8	1/2-13	1	1	3/8	MITEE-10644	\$97.38
11/16	1/2-13	1	1	3/8	MITEE-10646	\$97.38

MULTI-FIXTURE CLAMPS AND STOPS

The MITEE-BITE Multi-Fixture Clamp offers increased versatility through its unique riser clamp design.

- Provides flexible set ups for hard to hold parts
- Works in both plates with tapped hole layouts or T-slot configurations.
- Can be mounted vertically or horizontally.
- Stops locate workpiece for repeat positioning.
- Larger sizes are ideal for mold shop applications.
- Tapered mounting slot prevents movement when clamping pressure is applied.
- Steps, as well as end faces of flat stops, are precision ground.



Item	A	B	C	D +.0000 -.0005	E	F	G	H Cam Screw	Mounting Screw	Slot	Part Number	Price Each
Clamp	2.5	0.75	0.62	0.460	0.31	0.83	0.53	MB-6	5/16	Closed	MITEE-23140	\$46.93
Stop	2.5	0.75	0.75	0.460	0.31	1.11	0.53	NA	5/16	Closed	MITEE-23180	\$39.05
Clamp	3.75	1.12	0.62	0.480	0.37	1.68	0.50	MB-8	1/2	Closed	MITEE-23150	\$51.82
Stop	3.75	1.12	0.87	0.480	0.37	1.68	0.50	NA	1/2	Closed	MITEE-23200	\$46.93
Clamp	2.16	0.75	0.62	NA	NA	0.83	0.53	MB-6	5/16	Closed	MITEE-23145	\$43.65
Stop	2.2	0.75	0.75	NA	NA	1.11	0.53	NA	5/16	Closed	MITEE-23148	\$32.78



T-SLOT CLAMPING KIT



- Quick and easy setting with hex key wrench
- For 5/8" T-slot
- Crafted from hardened tool steel
- Kit Includes: 4 T-nuts, 6 clamps, 2 hex keys and fitted case

Clamping Kit
Part # A-3900-0318
\$62.00 each

MINILOCK CAM ACTION WORKHOLDING SYSTEM



This product employs the same AngLock concept as the world famous Kurt vises. When a quarter turn is applied to the screw, the split clamp jaw is forced both laterally and down, precisely clamping the part and preventing part lift at the same time.



Thread	Hex Dia x Thickness	Pkg Qty	Part Number	Price Each
1/4-20 x .625"	.688 x .188	6	KURT-MT4	\$159.00
5/16-18 x .750"	.875 x .250	6	KURT-MT5	\$138.35
3/8-16 x 1.00"	.938 x .312	6	KURT-MT6	\$189.00
1/2-13 x 1.25"	1.125 x .375	6	KURT-MT8	\$234.75

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

VISE JAWS
VISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

TOOLING COMPONENTS/T-SLOT NUTS

C

MACHINISTS' CLAMP KITS

STEEL STEP BLOCK & CLAMP SETS
52 Piece Clamp Kit For Bridgeport Type Mills



Includes:

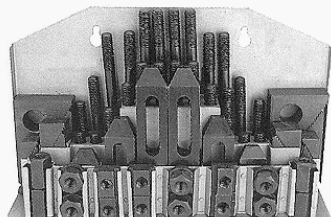
- 4 Coupling Nuts
 - 6 Flange Nuts
 - 6 T-Slot Nuts
 - 1 T-Slot Cleaner
 - 24 Studs - 4 Each of:
3", 4", 5", 6", 7" and 8" long
 - 6 Step Blocks
 - 6 Serrated End Clamps
 - 1 Holder
- Bridgeport type milling machines
use part number **TECO-20402**



Table T-Slot Size	Stud Size	Weight (lbs/kit)	Part Number	Price Each
With 1" Thick Step Blocks				
7/16	3/8-16	18.5	TECO-20412	\$278.00
1/2	3/8-16	18.5	TECO-20413	\$272.00
9/16	3/8-16	18.5	TECO-20414	\$278.00
9/16	1/2-13	24	TECO-20401	\$286.00
5/8	1/2-13	24	TECO-20402	\$252.00
11/16	1/2-13	24	TECO-20403	\$275.00
5/8	1/2-13	24	TECO-20404	\$278.00
11/16	5/8-11	29	TECO-20415	\$355.00
3/4	5/8-11	29	TECO-20416	\$356.00
13/16	5/8-11	29	TECO-20417	\$371.00

MACHINIST CLAMP SET

BEST VALUE



Contents:

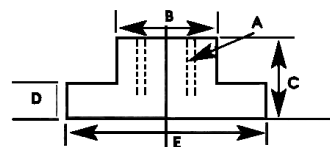
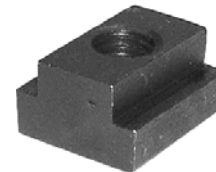
- 24 Studs- 3", 4", 5", 6", 7" & 8" long
- 4 Coupling Units
- 6 Flange Nuts
- 6 Forged Steel step clamps
- 6 T-Nuts
- 12 Steel Step Blocks
- Also includes T-slot cleaner, wrench and wall rack
- **TECO-20402PL** made in USA!

Fits all Bridgeport® type milling machines. This clamping set is made from powdered steel for strength and longer tool life, with all parts heat-treated.

No. Of Pieces	Description	Part Number	Price Each
58	5/8" slot x 1/2-13 bolt	CK-58	\$69.00
	5/8" slot x 1/2-13 bolt	TECO-20402PL	\$89.99
	1/2" slot x 3/8"-16 bolt	CK-58-3/8	\$64.00
	3/4" slot x 5/8"-11 bolt	CK-58-5/8	\$107.00

T-SLOT NUTS

BEST VALUE



FEATURES:

- Heat treated steel
- Black oxide finish to ensure long life
- Case Hardened

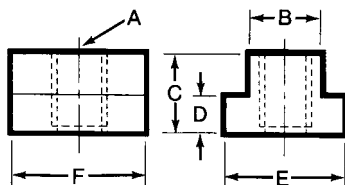
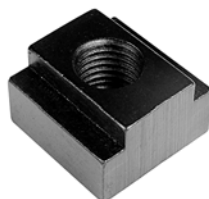
B	A Thread	C	D	E	Length	Part Number	Price Each
3/8	5/16-18	1/2	3/16	5/8	7/8	A-900-0002-01	\$1.48
1/2	3/8-16	1/2	9/32	7/8	7/8	A-900-0002-03	\$1.48
5/8	1/2-13	5/8	11/32	1	1-1/8	A-900-0002-05	\$1.70
3/4	5/8-11	3/4	15/32	1-1/4	1-1/4	A-900-0002-07	\$2.01
7/8	3/4-10	1	9/16	1-1/2	1-1/2	A-900-0002-09	\$2.50
1	7/8-9	1	5/8	1-5/8	1-3/4	A-900-0002-10	\$3.00

T-SLOT NUTS



FEATURES:

- Black Oxide Finish
- Case Hardened- 1018 Material
- The last thread is incomplete on T-Slot Nuts to prevent the stud from turning through the bottom of the nut.
- Many sizes conform to TCAI standards
- Special sizes quoted upon request
- Tapped through T-Slot Nuts are also available
- *T-Slot Nuts are undersized to fit machine table slot.
- ** English T-Slot Nut will fit this size metric machine T-Slot.



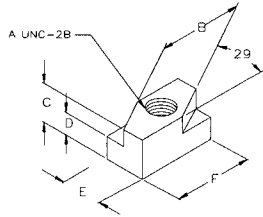
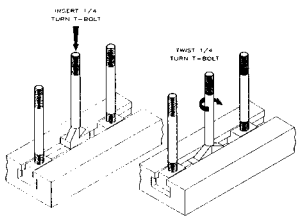
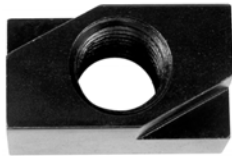
Thread A	English* Table Slot B	Metric** Table Slot	C	D	E	F	Part Number	Price Each
1/4-20	5/16	8MM	1/4	3/16	9/16	9/16	TECO-41401	\$3.40
	3/8	10MM	3/8	15/64	9/16	9/16	TECO-41402	\$3.46
5/16-18	3/8	10MM	3/8	1/4	5/8	7/8	TECO-41403	\$2.83
	7/16	12MM	1/2	7/32	11/16	7/8	TECO-41433	\$2.90
3/8-16	1/2	13MM	1/2	9/32	7/8	7/8	TECO-41434	\$2.90
	7/16	12MM	1/2	7/32	11/16	7/8	TECO-41404	\$2.83
1/2-13	1/2	12MM	1/2	9/32	7/8	7/8	TECO-41405	\$2.83
	9/16	15MM	5/8	11/32	7/8	1-1/8	TECO-41406	\$3.27
	5/8	16MM	3/4	3/8	1-1/8	1-1/8	TECO-41409	\$3.19
5/8-11	5/8	16MM	3/4	3/8	1-1/8	1-1/8	TECO-41410	\$3.63
	11/16	18MM	3/4	7/16	1-1/8	1-1/4	TECO-41411	\$4.80
	3/4	20MM	3/4	15/32	1-1/4	1-1/4	TECO-41412	\$3.89
	13/16	21MM	1	9/16	1-1/4	1-1/2	TECO-41413	\$5.31
3/4-10	11/16	18MM	3/4	7/16	1-1/8	1-1/4	TECO-41415	\$4.11
	3/4	20MM	3/4	15/32	1-1/4	1-1/4	TECO-41416	\$4.31
	13/16	21MM	1	9/16	1-1/4	1-1/2	TECO-41417	\$6.22
	7/8	23MM	1	9/16	1-1/2	1-1/2	TECO-41418	\$6.86
	1	26MM	1	5/8	1-5/8	1-3/4	TECO-41419	\$7.44
1-1/16	1	26MM	1-1/2	3/4	1-3/4	1-3/4	TECO-41420	\$8.44
	1	26MM	1-1/2	3/4	1-3/4	1-3/4	TECO-41421	\$12.66
			1-1/8	11/16	1-5/8	2	TECO-41422	\$9.89

Call Us Today For All Of Your Machine Tool Needs!

QUARTER TURN T-SLOT NUTS

FEATURES:

- Sintered Metal
- The last thread is incomplete on T-Slot Nuts to prevent the stud from turning through the bottom of the nut.
- Special sizes quoted upon request
- *Quarter Turn T-Slot Nuts are undersized to fit machine table slot.



Full Line Available!
Please call for more information.

Prices Reduced!



Thread A	Table Slot B	Metric* Table Slot	C	D	E	F	Part Number	Price Each
3/8-16	7/16	12MM	1/2	0.208	0.438	0.75	TECO-41450	\$3.54
	1/2	12MM	1/2	0.271	0.500	1	TECO-41451	\$3.54
1/2-13	9/16	15MM	5/8	0.333	0.563	0.94	TECO-41452	\$3.96
	5/8	16MM	5/8	0.333	0.625	1.25	TECO-41453	\$4.38
5/8-11	11/16	18MM	3/4	0.427	0.688	1.38	TECO-41454	\$4.86
	3/4	20MM	3/4	0.458	0.750	1.50	TECO-41455	\$5.15
1/2-13	11/16	18MM	3/4	0.427	0.688	1.3	TECO-41456	\$5.72
3/4-10	1	26MM	1	0.615	1	1.75	TECO-41457	\$6.22

T-NUT & STUD KITS

Kit Contains:

- 4 Coupling Nuts
 - 4 Flange Nuts
 - 4 T-Slot Nuts
 - 1 T-Slot Cleaner
 - 24 Studs - 4 ea. of 3", 4", 5", 6", 7" and 8" long
- Versatility expanded when used with Step Block & Clamp Kits.

Prices Reduced!



Table T-Slot Size	Stud Size	Wt. (lbs/kit)	Part Number	Price Each
3/8	5/16-18	8	TECO-20601	\$82.90
7/16	3/8-16	8	TECO-20602	\$84.50
1/2	3/8-16	8	TECO-20603	\$87.70
9/16	3/8-16	8	TECO-20604	\$89.50
9/16	1/2-13	12	TECO-20605	\$95.75
5/8	1/2-13	12	TECO-20606	\$99.00
11/16	1/2-13	13	TECO-20607	\$100.75
11/16	5/8-11	16.3	TECO-20608	\$116.00
3/4	5/8-11	16.3	TECO-20609	\$129.25
13/16	5/8-11	16.3	TECO-20610	\$140.30
13/16	3/4-10	24	TECO-20611	\$186.50
7/8	3/4-10	24	TECO-20612	\$189.80
1	3/4-10	24	TECO-20613	\$194.50
1-1/16	3/4-10	25	TECO-20618	\$360.00



Full Line Available!
Please call for more information.

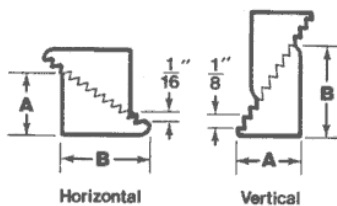
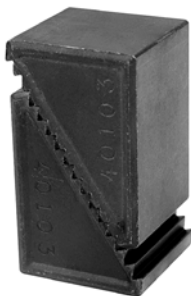
STEP BLOCK KITS

STEEL

FEATURES:

- Larger sizes have chamfered holes for ease of use.
- Blocks work in conjunction with Serrated End clamps.
- Two halves = One Block

Prices Reduced!



Height Adj. Range	A	B	Part Number	Price Each
With 1" Step Blocks				
3/4 to 1-5/8	1-1/16	11/16	TECO-40102	\$6.04
1-1/8 to 2-1/2	1-39/64	1-11/16	TECO-40103	\$8.64
2-1/2 to 6	3-3/4	2-15/32	TECO-40104*	\$20.88
With 1 1/2" Thick Step Blocks				
1-3/4 to 4	2-17/32	1-43/64	TECO-40105	\$14.95
2-1/2 to 6	3-3/4	2-15/32	TECO-40106*	\$29.63
3-1/2 to 9	5-21/64	3-7/16	TECO-40107*	\$53.40
With 2" Thick Step Blocks				
1-3/4 to 4	2-17/32	1-43/64	TECO-40108	\$24.83
2-1/2 to 6	3-3/4	2-15/32	TECO-40109*	\$37.72
3-1/2 to 9	5-21/64	3-7/16	TECO-40110*	\$69.25
4-7/8 to 10-1/2	7-3/8	4-3/4	TECO-40111	\$179.26

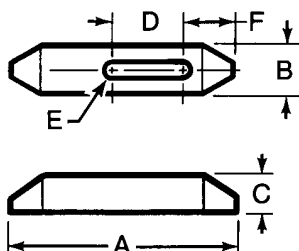
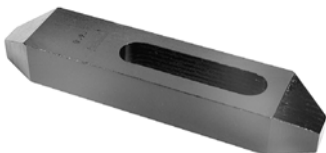
*Indicates chamfered holes



PLAIN CLAMPS

FEATURES:

- Tapered nose allows clamping in small areas.
- Case Hardened
- Black Oxide Finish
- Material: 1018 Steel



A	B	C	D	Stud Size E	F	Part Number	Price Each
2-1/2	1	1/2	13/16	5/16 and 3/8	27/32	TECO-30401	\$10.80
4	1	5/8	1-7/16	5/16 and 3/8	1-1/32	TECO-30402	\$14.50
6	1-1/8	3/4	2-3/16	5/16 and 3/8	1-5/32	TECO-30403	\$18.78
2-1/2	1-1/8	1/2	11/16	1/2	29/32	TECO-30404	\$12.59
4	1-1/4	3/4	1-5/16	1/2	1-5/32	TECO-30405	\$16.87
6	1-1/4	7/8	2-1/16	1/2	1-9/32	TECO-30406	\$20.81
2-1/2	1-1/4	5/8	9/16	5/8	31/32	TECO-30407	\$14.68
4	1-1/2	3/4	1-3/16	5/8	1-9/32	TECO-30408	\$18.44
6	1-1/2	7/8	1-15/16	5/8	1-13/32	TECO-30409	\$23.78
4	1-1/2	3/4	1-11/16	3/4	1-11/32	TECO-30410	\$19.75
6	1-1/2	1	1-15/16	3/4	1-15/32	TECO-30411	\$29.70
8	1-3/4	1-1/8	2-3/16	3/4	1-29/32	TECO-30412	\$39.90

Call Us Or Visit Our Website For Our Complete Selection!

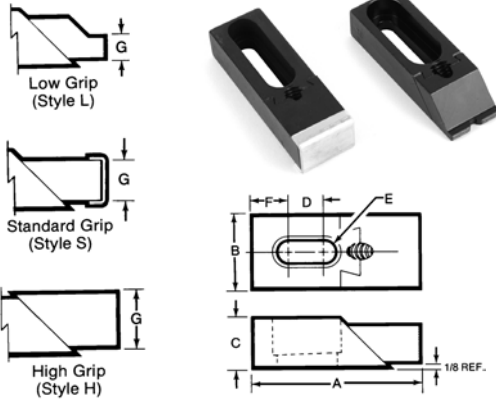
TOOLING COMPONENTS

NUZZLER® EDGE CLAMPS

FEATURES:

- Clamp Material: 1018 Steel
- Black Oxide Finish
- Edge Clamps feature a double action, adjustable nose which exerts clamping pressures both downward and inward through a 45 degree angle.
- Noses have serrations for better gripping of non-finished or semi-finished workpieces.
- Tapered slots prevent clamp from sliding off the workpiece during tightening.
- Length "A" is calculated with nose raised 1/8".
- The Low Profile Nose provides a greater machining clearance.
- Clamp Washer is included with each Edge Clamp.

Prices Reduced!



A	B	C	D	E	F	G	Wrench Size	Nose Style	Part Number	Price Each
1-7/8	1	5/8	1/4	5/16	13/32	1/8	5/32	L	TECO-33817	\$52.14
						5/8	5/32	S	TECO-33818	\$54.11
2-3/8	1	5/8	3/4	5/16	5/16	1/8	5/32	L	TECO-33819	\$54.11
						5/8	5/32	S	TECO-33820	\$59.26
2-7/8	1	5/8	1-1/4	5/16	5/16	1/8	5/32	L	TECO-33821	\$57.48
						5/8	5/32	S	TECO-33822	\$60.91
2-15/16	1-1/4	5/8	3/8	3/8	7/16	1/4	3/16	L	TECO-33801	\$53.40
						5/8	3/16	S	TECO-33802	\$57.48
2-3/4	1-1/4	5/8	13/16	3/8	1/2	1/4	3/16	L	TECO-33890	\$57.48
						5/8	3/16	S	TECO-33891	\$60.91
3-5/16	1-1/2	3/4	3/4	1/2	11/16	3/8	1/4	L	TECO-33805	\$60.71
						3/4	1/4	S	TECO-33806	\$65.12
			5/8	5/8	11/16	3/8	1/4	L	TECO-33710	\$61.88
						3/4	1/4	S	TECO-33711	\$65.12
3-7/8	1-1/2	7/8	1-1/4	1/2	1/2	1/4	1/4	L	TECO-33823	\$57.48
						7/8	1/4	S	TECO-33824	\$62.22
				5/8	1/2	1/4	1/4	L	TECO-33714	\$57.48
						7/8	1/4	S	TECO-33715	\$62.22
4-1/8	1-1/4	5/8	2	3/8	11/16	1/4	3/16	L	TECO-33803	\$59.26
						5/8	3/16	S	TECO-33804	\$62.80
4-11/16	1-1/4	5/8	2-3/16	3/8	15/16	1/4	3/16	L	TECO-33892	\$60.91
						5/8	3/16	S	TECO-33893	\$64.19
5-3/16	1-1/2	3/4	2-1/2	1/2	5/8	3/8	1/4	L	TECO-33807	\$63.86
						3/4	1/4	S	TECO-33808	\$67.09
				5/8	5/8	3/8	1/4	L	TECO-33712	\$63.86
						3/4	1/4	S	TECO-33713	\$67.09

TAPPED END CLAMPS

Prices Reduced!

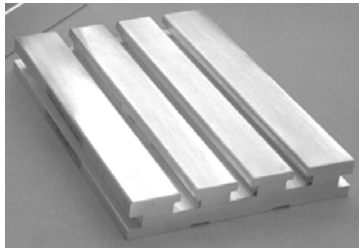


- FEATURES:**
- Material: 1018 Steel
 - Case Hardened
 - Black Oxide Finish

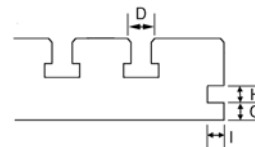
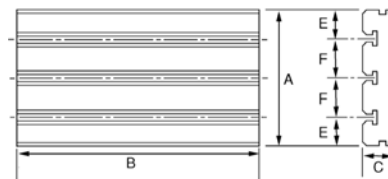
Full Line Available!
Please call for more information.

A	B	C	D	Stud Size E	F	G	Part Number	Price Each
2	5/8	3/8	1/2	1/4	7/16	1/4-20	TECO-30902	\$10.80
2-1/2	5/8	3/8	1/2	1/4	9/16	1/4-20	TECO-30903	\$11.60
2-3/4	1	1/2	7/16	5/16	13/16	5/16-18	TECO-30905	\$13.12
3-1/4	1	1/2	13/16	5/16	7/8	5/16-18	TECO-30906	\$13.44
4	1	1/2	7/8	5/16	15/16	5/16-18	TECO-30907	\$14.24
3	1-1/4	5/8	3/4	3/8	9/16	3/8-16	TECO-30908	\$14.69
4	1-1/4	5/8	1	3/8	3/4	3/8-16	TECO-30909	\$14.83
5	1-1/4	5/8	1-1/2	3/8	3/4	3/8-16	TECO-30910	\$16.60
4	1-1/4	5/8	1	1/2	3/4	1/2-13	TECO-30912	\$16.87
4-1/2	1-1/4	5/8	1-1/2	1/2	13/16	1/2-13	TECO-30913	\$16.99
5	1-1/4	5/8	1-1/2	1/2	1-1/4	1/2-13	TECO-30914	\$17.26
6	1-1/4	5/8	1-1/2	1/2	2-1/4	1/2-13	TECO-30916	\$19.22

ALUMINUM SUB PLATES AND MOUNTING CLAMPS



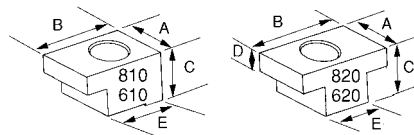
Extruded aluminum sub plates are available in standard sizes as well as special lengths. Plates up to 24" long are machined top and bottom to .005 flatness and parallelism per foot.



A x B x C	D	Slots	E	F	G	H	I	Part Number	Price Each
9.0 x 13.0 x 1.48	5/8	3	2.00	2.50	.50	.50	.50	MITEE-22913	\$218.03
9.0 x 18.0 x 1.48	5/8	3	2.00	2.50	.50	.50	.50	MITEE-22918	\$303.72

MOUNTING CLAMPS

Clamps for mounting sub plates and many types of vises.



Size	A	B	C	D	E	Part Number	Price Each
1/2	1.25	1.50	.87	.35	1.10	MITEE-22810	\$19.33

Call Us Today For All Of Your Machine Tool Needs!

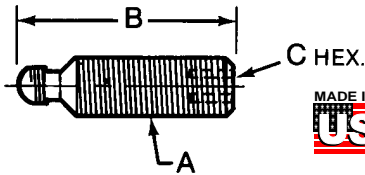
HEX SOCKET HEAD SWIVEL SCREW CLAMPS

For Use When Space Is Limited And Greater Clamping Pressures Are Needed

Full Line Available!
Please call for more information.



- FEATURES:**
- Material: 12L14 Steel on all screw parts
 - Black Oxide Finish
 - Order pads separately



Prices Reduced!

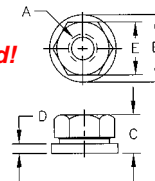
Thread A	B	C	Part Number	Price Each	For Use W/ Small Pad	Small Pad Price	For Use W/ Large Pad	Large Pad Price
1/4-20	15/32	3/32	TECO-31221	\$3.15	TECO-31501	\$1.35	TECO-31601	\$1.31
	23/32	3/32	TECO-31222	\$3.15	TECO-31501	\$1.35	TECO-31601	\$1.31
	31/32	3/32	TECO-31223	\$3.15	TECO-31501	\$1.35	TECO-31601	\$1.31
	1-15/32	3/32	TECO-31224	\$3.43	TECO-31501	\$1.35	TECO-31601	\$1.31
5/16-18	23/32	5/32	TECO-31231	\$3.43	TECO-31502	\$1.48	TECO-31602	\$1.48
	31/32	5/32	TECO-31232	\$3.43	TECO-31502	\$1.48	TECO-31602	\$1.48
	1-15/32	5/32	TECO-31233	\$3.77	TECO-31502	\$1.48	TECO-31602	\$1.48
	1-31/32	5/32	TECO-31234	\$3.77	TECO-31502	\$1.48	TECO-31602	\$1.48
3/8-16	11/16	3/16	TECO-31241	\$3.93	TECO-31503	\$1.55	TECO-31603	\$1.73
	15/16	3/16	TECO-31242	\$3.93	TECO-31503	\$1.55	TECO-31603	\$1.73
	1-7/16	3/16	TECO-31243	\$4.06	TECO-31503	\$1.55	TECO-31603	\$1.73
	1-15/16	3/16	TECO-31244	\$4.33	TECO-31503	\$1.55	TECO-31603	\$1.73
1/2-13	15/16	1/4	TECO-31252	\$4.56	TECO-31504	\$1.61	TECO-31604	\$1.98
	1-7/16	1/4	TECO-31253	\$5.39	TECO-31504	\$1.61	TECO-31604	\$1.98
	2-15/16	1/4	TECO-31255	\$5.39	TECO-31504	\$1.61	TECO-31604	\$1.98

FLANGE NUTS

- FEATURES:**
- Black Oxide Finish
 - Case Hardened
 - 12L14 Material
 - Available in Coarse or Fine Threads
 - Many sizes conform to TCMAI standards
 - Special sizes quoted upon request



Prices Reduced!



UNC Flange Nuts

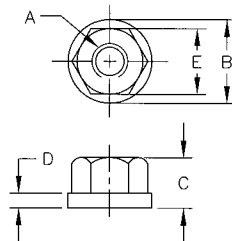
Thread A	B	C	D	E	Part Number	Price Each
1/4-20	5/8	5/16	3/32	1/2	TECO-41601	\$2.04
5/16-18	3/4	3/8	1/8	9/16	TECO-41602	\$2.28
3/8-16	7/8	1/2	1/8	11/16	TECO-41603	\$2.42
7/16-14	1	9/16	5/32	3/4	TECO-41604	\$2.76
1/2-13	1-1/8	11/16	3/16	7/8	TECO-41605	\$2.76
5/8-11	1-3/8	13/16	3/16	1-1/16	TECO-41606	\$3.46
3/4-10	1-5/8	1	1/4	1-1/4	TECO-41607	\$5.23
7/8-9	1-3/4	1-1/8	1/4	1-7/16	TECO-41608	\$7.12
1-8	2	1-1/4	1/4	1-5/8	TECO-41609	\$8.56
1-1/4-7	2-1/2	1-1/4	1/4	1-13/16	TECO-41611	\$17.51

UNF Flange Nuts

Thread A	B	C	D	E	Part Number	Price Each
1/4-28	5/8	5/16	3/32	1/2	TECO-41701	\$2.34
5/16-24	3/4	3/8	1/8	9/16	TECO-41702	\$2.42
3/8-24	7/8	1/2	1/8	11/16	TECO-41703	\$2.47
7/16-20	1	9/16	5/32	3/4	TECO-41704	\$2.83
1/2-20	1-1/8	11/16	3/16	7/8	TECO-41705	\$2.76
5/8-18	1-3/8	13/16	3/16	1-1/16	TECO-41706	\$3.68
3/4-16	1-5/8	1	1/4	1-1/4	TECO-41707	\$5.23
7/8-14	1-3/4	1-1/8	1/4	1-7/16	TECO-41708	\$7.38
1-14	2	1-1/4	1/4	1-5/8	TECO-41709	\$8.64

SWIVEL FLANGE NUTS

- FEATURES:**
- Black Oxide Finish
 - Case Hardened
 - 12L14 Material
 - Head rotates but washer remains stationary upon contact and holds rigidly without marring the workpiece.



Prices Reduced!



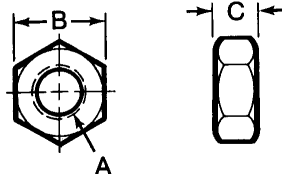
Thread A	B	C	D	E	Part Number	Price Each
1/4-20	5/8	3/8	1/8	1/2	TECO-42001	\$4.17
5/16-18	3/4	7/16	9/64	9/16	TECO-42002	\$4.38
3/8-16	7/8	17/32	5/32	11/16	TECO-42003	\$4.86
1/2-13	1-1/8	23/32	7/32	7/8	TECO-42004	\$5.59
5/8-11	1-3/8	29/32	1/4	1-1/16	TECO-42005	\$6.78
3/4-10	1-5/8	1-1/64	9/32	1-1/4	TECO-42006	\$8.41
7/8-9	1-3/4	1-1/8	7/16	1-7/16	TECO-42007	\$12.07
1-8	2	1-15/64	15/32	1-5/8	TECO-42008	\$15.16

HEAVY HEX NUTS

- FEATURES:**
- Black Oxide Finish
 - Case Hardened
 - High Grade Alloy Steel
 - Will outlast ordinary Hex Nuts when used in repetitive operations.



Prices Reduced!



Thread A	B	C	Pkg Qty	Part Number	Price Each
1/4-20	1/2	15/64	25	TECO-42101	\$0.49
5/16-18	9/16	19/64	25	TECO-42102	\$0.59
3/8-16	11/16	23/64	25	TECO-42103	\$0.61
7/16-14	3/4	27/64	25	TECO-42104	\$0.96
1/2-13	7/8	31/64	25	TECO-42105	\$0.82
5/8-11	1-1/16	39/64	25	TECO-42106	\$1.06
3/4-10	1-1/4	47/64	25	TECO-42107	\$1.63
7/8-9	1-7/16	55/64	25	TECO-42108	\$3.19
1-8	1-5/8	63/64	25	TECO-42109	\$3.32



Call Us Or Visit Our Website For Our Complete Selection!

TOOLING COMPONENTS

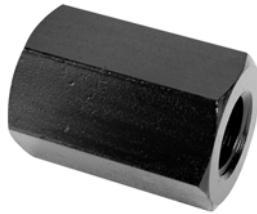
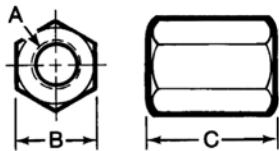
COUPLING (EXTENSION) NUTS

FEATURES:

- Black Oxide Finish
- Case Hardened
- 1117 Material
- Coupling Nuts can be used to join two or more studs for a desired length.
- Many sizes conform to TCMAI standards

Full Line Available!
Please call for more information.

Prices Reduced!



Thread A	B	C	Pkg Qty	Part Number	Price Each
1/4-20	1/2	5/8	25	TECO-41501	\$2.54
5/16-18	9/16	7/8	25	TECO-41502	\$2.76
3/8-16	11/16	1	25	TECO-41503	\$3.04
7/16-14	3/4	1-1/4	25	TECO-41504	\$3.46
1/2-13	7/8	1-1/4	25	TECO-41505	\$3.68
5/8-11	1-1/16	1-5/8	25	TECO-41506	\$5.37
3/4-10	1-1/4	1-7/8	25	TECO-41507	\$7.44
7/8-9	1-7/16	2-1/4	25	TECO-41508	\$11.20
1-8	1-5/8	2-1/2	25	TECO-41509	\$11.60

HEAVY HEX JAM NUTS

FEATURES:

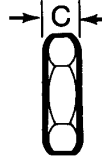
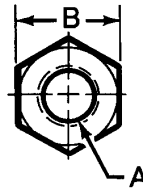
- Black Oxide Finish
- High Grade Alloy Steel
- Will outlast ordinary Hex Jam Nuts when used in repetitive operations



Prices Reduced!



Full Line Available!
Please call for more information.



Thread A	B	C	Pkg Qty	Part Number	Price Each
1/4-20	1/2	11/64	25	TECO-42201	\$0.30
5/16-18	9/16	13/64	25	TECO-42202	\$0.33
3/8-16	11/16	15/64	25	TECO-42203	\$0.39
7/16-14	3/4	17/64	25	TECO-42204	\$0.60
1/2-13	7/8	19/64	25	TECO-42205	\$0.64
5/8-11	1-1/16	23/64	25	TECO-42206	\$0.73
3/4-10	1-1/4	27/64	25	TECO-42207	\$1.21
7/8-9	1-7/16	31/64	25	TECO-42208	\$2.43
1-8	1-5/8	35/64	25	TECO-42209	\$3.17

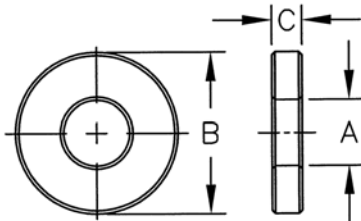
HARDENED FLAT WASHERS

FEATURES:

- Black Oxide Finish
- Case Hardened
- Material: C1010 - Steel
- Many sizes conform to TCMAI standards
- Large Quantities quoted upon request
- Stainless steel washers also available!



Prices Reduced!



Stud Size	A	B	C	Pkg Qty	Part Number	Price Each
3/16	13/64	1/2	3/32	50	TECO-42600	\$0.47
1/4	9/32	5/8	1/8	50	TECO-42601	\$0.50
5/16	11/32	3/4	1/8	50	TECO-42602	\$0.53
3/8	13/32	7/8	1/8	50	TECO-42603	\$0.55
7/16	15/32	1	1/8	50	TECO-42604	\$0.67
1/2	17/32	1-1/8	1/8	50	TECO-42605	\$0.67
5/8	21/32	1-3/8	1/8	50	TECO-42606	\$0.83
3/4	25/32	1-5/8	5/32	50	TECO-42607	\$1.18
7/8	29/32	1-3/4	5/32	50	TECO-42608	\$1.63
1	1-1/32	2	3/16	50	TECO-42609	\$2.19
1-1/8	1-5/32	2-1/4	7/32	50	TECO-42610	\$4.68
1-1/4	1-9/32	2-1/2	9/32	50	TECO-42611	\$4.68
#4	1/8	5/16	5/64	50	TECO-42612	\$0.37
#6	5/32	3/8	5/64	50	TECO-42613	\$0.42
#8	3/16	7/16	5/64	50	TECO-42614	\$0.46

HEAVY DUTY HARDENED FLAT WASHERS

FEATURES:

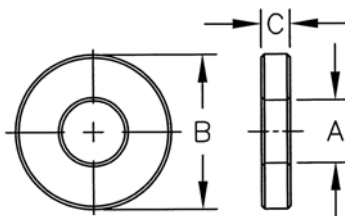
- Black Oxide Finish
- Case Hardened
- C1010 Material
- Large Quantities quoted upon request



Full Line Available!
Please call for more information.



Prices Reduced!



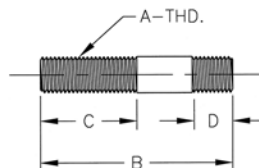
Stud Size	A	B	C	Pkg Qty	Part Number	Price Each
1/4	9/32	5/8	3/16	50	TECO-42619	\$1.18
5/16	11/32	3/4	3/16	50	TECO-42620	\$1.26
3/8	13/32	7/8	3/16	50	TECO-42621	\$1.33
7/16	15/32	1	3/16	50	TECO-42622	\$1.43
1/2	17/32	1-1/8	3/16	50	TECO-42623	\$1.49
5/8	21/32	1-3/8	3/16	50	TECO-42624	\$1.63
3/4	25/32	1-5/8	1/4	50	TECO-42625	\$1.97
7/8	29/32	1-3/4	1/4	50	TECO-42626	\$2.66
1	1-1/32	2	9/32	50	TECO-42627	\$3.50

Call Us Today For All Of Your Machine Tool Needs!

DRIVER STUDS-VARIOUS LENGTHS

- FEATURES:**
- Black Oxide Finish
 - Medium Carbon Steel
 - Special lengths & sizes quoted upon request
 - Metric studs also available

Prices Reduced!



Thread A	B	C	D	Part Number	Price Each
1/4-20	1.50	0.88	0.38	TECO-40350	\$1.86
	2.00	1.00	0.38	TECO-40351	\$1.88
	2.50	1.00	0.38	TECO-40352	\$1.90
	3.00	1.50	0.38	TECO-40353	\$1.91
	4.00	1.75	0.38	TECO-40354	\$1.96
	5.00	1.75	0.38	TECO-40355	\$1.98
	6.00	2.00	0.38	TECO-40356	\$2.00
	7.00	2.00	0.38	TECO-40357	\$2.03
8.00	2.50	0.38	TECO-40358	\$2.09	
5/16-18	1.50	0.75	0.50	TECO-40450	\$2.14
	2.00	1.00	0.50	TECO-40451	\$2.15
	2.50	1.00	0.50	TECO-40452	\$2.16
	3.00	1.50	0.50	TECO-40453	\$2.24
	4.00	1.50	0.50	TECO-40454	\$2.29
	5.00	1.75	0.50	TECO-40455	\$2.36
	6.00	2.00	0.50	TECO-40456	\$2.45
	7.00	2.00	0.50	TECO-40457	\$2.58
8.00	2.50	0.50	TECO-40458	\$2.65	

Thread A	B	C	D	Part Number	Price Each
3/8-16	1.50	0.63	0.63	TECO-40550	\$1.85
	2.00	1.00	0.63	TECO-40551	\$1.85
	3.00	1.50	0.63	TECO-40552	\$1.88
	4.00	1.50	0.63	TECO-40553	\$1.88
	5.00	1.75	0.63	TECO-40554	\$1.93
	6.00	2.00	0.63	TECO-40555	\$1.98
	8.00	2.50	0.63	TECO-40556	\$2.14
1/2-13	1.50	0.63	0.63	TECO-40770	\$1.88
	2.00	1.00	0.63	TECO-40771	\$1.95
	3.00	1.50	0.75	TECO-40772	\$1.95
	4.00	1.50	0.75	TECO-40773	\$2.11
	5.00	1.75	0.75	TECO-40774	\$2.20
	5.50	1.75	0.75	TECO-40775	\$2.20
	6.00	2.00	0.75	TECO-40776	\$2.28
	6.50	2.00	0.75	TECO-40777	\$2.43
	7.00	2.00	0.75	TECO-40778	\$2.51
	8.00	2.50	0.75	TECO-40779	\$2.66
	9.00	2.50	0.75	TECO-40780	\$5.07

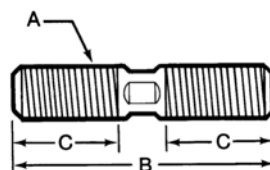
Thread A	B	C	D	Part Number	Price Each
1/2-13	10.0	3.00	0.75	TECO-40781	\$5.72
	12.0	3.00	0.75	TECO-40782	\$6.99
5/8-11	2.00	1.00	0.63	TECO-40850	\$2.43
	2.50	1.00	0.88	TECO-40851	\$2.43
	3.00	1.50	0.88	TECO-40852	\$2.43
	4.00	1.75	0.88	TECO-40853	\$2.59
	5.00	1.75	0.88	TECO-40854	\$2.91
	5.50	2.00	0.88	TECO-40855	\$2.99
	6.00	2.00	0.88	TECO-40856	\$3.15
	6.50	2.00	0.88	TECO-40857	\$3.32
	7.00	2.00	0.88	TECO-40858	\$3.46
	8.00	2.50	0.88	TECO-40859	\$3.72
	9.00	2.50	0.88	TECO-40860	\$6.45
	10.0	2.50	0.88	TECO-40861	\$7.18
	12.0	3.00	0.88	TECO-40862	\$7.92
	14.0	3.00	0.88	TECO-40863	\$9.23

Please See Page 615 for more TE-CO Products

DRIVER STUDS

- FEATURES:**
- Black Oxide Finish
 - Tensile Strength: 125,000 PSI min.
 - Medium Carbon Steel
 - Most studs have wrench flats

Prices Reduced!



Thread A	B	C	Flats	Part Number	Price Each
1/4-20	1-1/2	1/2	NO	TECO-40301	\$1.77
	2	3/4	NO	TECO-40302	\$1.79
	2-1/2	1	NO	TECO-40303	\$1.80
	3	1	NO	TECO-40304	\$1.81
	3-1/2	1	NO	TECO-40305	\$1.86
	4	1	NO	TECO-40306	\$1.90
	4-1/2	1	NO	TECO-40307	\$1.91
	5	1	NO	TECO-40308	\$1.92
	5-1/2	1	NO	TECO-40309	\$1.93
	6	1	NO	TECO-40310	\$1.95
5/16-18	1-1/2	1/2	NO	TECO-40401	\$2.03
	2	3/4	NO	TECO-40402	\$2.04
	2-1/2	1	NO	TECO-40403	\$2.06
	3	1-1/8	NO	TECO-40404	\$2.16
	3-1/2	1-1/8	NO	TECO-40405	\$2.19
	4	1-1/8	NO	TECO-40406	\$2.22
	4-1/2	1-1/8	NO	TECO-40407	\$2.24
	5	1-1/8	NO	TECO-40408	\$2.28
5/16-18	5-1/2	1-1/8	NO	TECO-40409	\$2.31
	6	1-1/8	NO	TECO-40410	\$2.36
	6-1/2	1-1/8	NO	TECO-40411	\$2.44
	7	1-1/8	NO	TECO-40412	\$2.47
	7-1/2	1-1/8	NO	TECO-40413	\$2.52
	8	1-1/8	NO	TECO-40414	\$2.54

Thread A	B	C	Flats	Part Number	Price Each
3/8-16	1-1/2	1/2	NO	TECO-40501	\$1.77
	2	3/4	NO	TECO-40502	\$1.76
	2-1/2	1	NO	TECO-40503	\$1.76
	3	1	YES	TECO-40504	\$1.76
	3-1/2	1-1/4	YES	TECO-40505	\$1.77
	4	1-1/4	YES	TECO-40506	\$1.79
	4-1/2	1-1/4	YES	TECO-40507	\$1.80
	5	1-1/4	YES	TECO-40508	\$1.86
	5-1/2	1-1/4	YES	TECO-40509	\$1.91
	6	1-1/4	YES	TECO-40510	\$1.92
1/2-13	6-1/2	1-1/4	YES	TECO-40511	\$1.96
	7	1-1/4	YES	TECO-40512	\$1.97
	7-1/2	1-1/4	YES	TECO-40513	\$1.99
	8	1-1/4	YES	TECO-40514	\$2.02
	1-1/2	1/2	NO	TECO-40701	\$1.79
	2	3/4	NO	TECO-40702	\$1.88
	2-1/2	1	NO	TECO-40703	\$1.79
	3	1	YES	TECO-40704	\$1.88
	3-1/2	1-1/4	YES	TECO-40705	\$1.95
	4	1-1/2	YES	TECO-40706	\$2.02
	4-1/2	1-1/2	YES	TECO-40707	\$2.02
	5	1-1/2	YES	TECO-40708	\$2.09
1/2-13	5-1/2	1-1/2	YES	TECO-40709	\$2.09
	6	1-1/2	YES	TECO-40710	\$2.19
	6-1/2	1-1/2	YES	TECO-40711	\$2.34
	7	1-1/2	YES	TECO-40712	\$2.42
	7-1/2	1-1/2	YES	TECO-40713	\$2.50
	8	1-1/2	YES	TECO-40714	\$2.57

Thread A	B	C	Flats	Part Number	Price Each
1/2-13	9	1-1/2	YES	TECO-40715	\$4.89
	10	1-1/2	YES	TECO-40716	\$5.53
	12	1-1/2	YES	TECO-40717	\$6.72
	14	1-1/2	YES	TECO-40718	\$7.44
	16	1-1/2	YES	TECO-40719	\$9.49
	5/8-11	1-1/2	1/2	NO	TECO-40801
2		3/4	NO	TECO-40802	\$2.34
2-1/2		1	NO	TECO-40803	\$2.26
3		1	YES	TECO-40804	\$2.34
3-1/2		1-1/4	YES	TECO-40805	\$2.50
4		1-1/2	YES	TECO-40806	\$2.50
4-1/2		1-3/4	YES	TECO-40807	\$2.65
5		1-3/4	YES	TECO-40808	\$2.81
5-1/2		1-3/4	YES	TECO-40809	\$2.87
6		1-3/4	YES	TECO-40810	\$3.03
6-1/2		1-3/4	YES	TECO-40811	\$3.19
7		1-3/4	YES	TECO-40812	\$3.34
7-1/2		1-3/4	YES	TECO-40813	\$3.60
8		1-3/4	YES	TECO-40814	\$3.60
9		1-3/4	YES	TECO-40815	\$6.21
10		1-3/4	YES	TECO-40816	\$6.93
12		1-3/4	YES	TECO-40817	\$7.64
14		1-3/4	YES	TECO-40818	\$8.90
16		1-3/4	YES	TECO-40819	\$10.15
18		1-3/4	YES	TECO-40820	\$11.15
20		1-3/4	YES	TECO-40821	\$12.53
22		1-3/4	YES	TECO-40822	\$14.35
24		1-3/4	YES	TECO-40823	\$15.49

LATHE CHUCKS
LIVE CENTERS

VISE JAWS
VISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

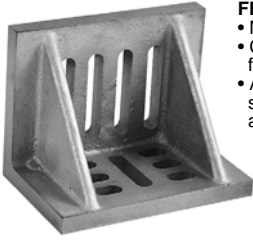
COOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

ANGLE PLATES/CLAMPS

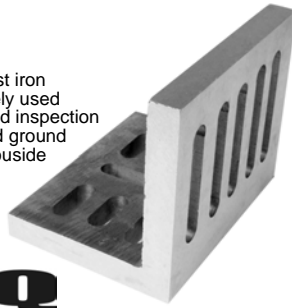
UNIVERSAL SLOTTED ANGLE PLATES

Webbed and Open



FEATURES:

- Made of high tensile cast iron
- Clamping slots are widely used for machining, layout and inspection
- Accurately machined and ground square and parallel on outside and ends



Dimensions W x H x D	Webbed		Open	
	Part Number	Price Each	Part Number	Price Each
4-1/2" x 3-1/2" x 3"	A-3402-0302	\$35.00	-	-
6" x 5" x 4-1/2"	A-3402-0303	\$53.00	A-3402-0203	\$58.00
7" x 5-1/2" x 4-1/2"	A-3402-0305	\$60.00	-	-
8" x 6" x 5"	A-3402-0309	\$90.00	A-3402-0209	\$99.00
9" x 7" x 6"	A-3402-0311	\$110.00	-	-
10" x 8" x 6"	A-3402-0310	\$145.00	A-3402-0210	\$150.00
12" x 9" x 8"	A-3402-0312	\$210.00	A-3402-0212	\$235.00

GIANT SLOTTED ANGLE PLATES

FEATURES:

- Machined on outside faces and with cored slots arranged for maximum clamping versatility
- Made of high grade, close grained cast iron, stress relieved against distortion
- Ships by truck



Dimensions W x H x D	Part Number	Price Each
16" x 12" x 9"	A-3402-0340	\$350.00
20" x 16" x 12"	A-3402-0342	\$740.00
24" x 24" x 18"	A-3402-0344	\$1,500.00

DEEP THROAT C-CLAMPS

Regular Duty

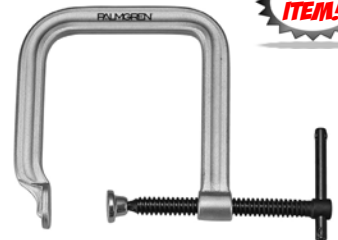


- High strength
- Tempered steel frames
- Black oxide plated spindles
- Nickel and chrome plated finish on body

Cap.	Throat Depth	Spindle Dia	Clamp Pressure	Part Number	Price Each
0-2"	2"	9/16"	2200 lbs	PALM-29112	\$25.32
0-3"	2"	9/16"	2900	PALM-29113	\$28.56
0-4"	2-3/8"	5/8"	3300	PALM-29114	\$37.56
0-6"	3"	3/4"	4000	PALM-29116	\$47.36
0-8"	4"	3/4"	4900	PALM-29118	\$62.88
0-10"	4-1/2"	7/8"	8800	PALM-29120	\$93.12

EXTRA DEEP THROAT C-CLAMPS

Regular Duty

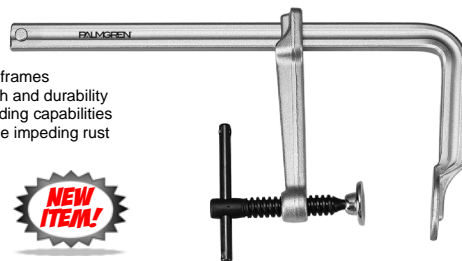


- High strength
- Tempered steel frames
- Black oxide plated spindles
- Nickel and chrome plated finish on body

Cap.	Throat Depth	Spindle Dia	Clamp Pressure	Part Number	Price Each
0-2"	4"	1/2"	1350 lbs	PALM-29222	\$29.40
0-3"	5"	9/16"	1500	PALM-29223	\$33.48
0-4"	6-1/4"	5/8"	1600	PALM-29224	\$43.28
0-6"	9-7/8"	3/4"	1800	PALM-29226	\$80.80
0-8"	13-3/4"	3/4"	2000	PALM-29228	\$115.92
0-10"	15-3/4"	7/8"	2400	PALM-29230	\$142.04

L-CLAMPS

Standard Duty

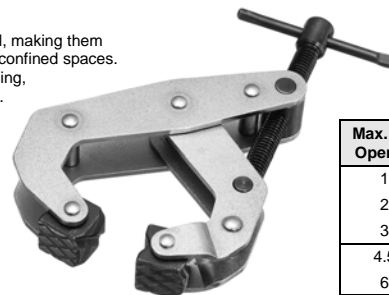


- Innovative spring tempered and hardened steel frames
- Dropped forged sliding clamping arm for strength and durability
- Through hardened steel spindles for greater loading capabilities
- Black-oxide plated spindles that resist wear while impeding rust
- Replaceable swivel pads
- One clamp accommodates a wide variety of sizes and shapes
- Lifetime guarantee against breakage

Cap.	Throat Depth	Spindle Dia	Clamp Pressure	Part Number	Price Each
0-4"	2-3/8"	1/2"	600 lbs	PALM-29304	\$13.80
0-6"	3-5/32"	9/16"	700	PALM-29306	\$16.84
0-8"	3-15/16"	5/8"	1000	PALM-29308	\$24.49
0-10"	3-15/16"	5/8"	1200	PALM-29310	\$29.10
0-12"	3-15/16"	3/4"	1200	PALM-29312	\$36.75
0-16"	3-15/16"	3/4"	1650	PALM-29316	\$41.33

CANTILEVER CLAMPS

Palmgren's cantilever clamps feature floating jaws that always stay parallel, making them ideal in tight spaces. Great for use on small projecting surfaces as well as confined spaces. They work on all types of materials and applications including inside clamping, clamping of unparallel parts or holding round or odd shaped parts securely.



- Pads supply 4 different holding surfaces—smooth, textured, v-block and x-block
- Provides the best features of C-clamps and parallel clamps
- The clamping handle is always outside the work area
- Body plates are made from Chrome-Molybdenum alloy steel
- Floating jaws always stay parallel to the workpiece
- Free floating jaws adjust to non-parallel surfaces
- Will not walk off-center when pressure is applied against the jaw
- Black-oxide plated spindles resist wear and impede rust

Max. Jaw Opening	Throat Depth		Clamp Pressure	Part Number	Price Each
	Open	Closed			
1"	0.059	0.787	300 lbs	PALM-29491	\$16.46
2"	1.300	1.654	800	PALM-29492	\$20.81
3"	1.378	1.929	1500	PALM-29493	\$32.93
4.5"	2.284	3.071	1700	PALM-29494	\$43.61
6"	4.331	5.039	2000	PALM-29496	\$68.89

Call Us Today For All Of Your Machine Tool Needs!

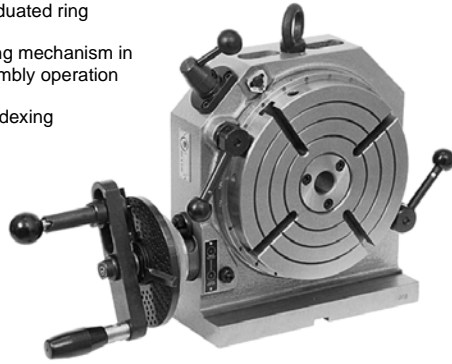
HORIZONTAL / VERTICAL LOW PROFILE ROTARY TABLES

- Tables can be used horizontally and vertically
- Rigid, low profile, compact design provides for three types of dividing
 - **Angular Indexing** can be performed through the graduated ring from 0° to 360° in increments of 1°
 - **Rapid Indexing** is done by means of a special dividing mechanism in divisions 2, 3, 4, 6, 8, 12, and 24 without any disassembly operation
 - **Indexing** with the set of special dividing plates
- Disengageable worm gear permits direct and rapid indexing
- Semi-Steel table body

- Accuracy:**
- Squareness of clamping surface to base: .0008" max
 - Parallelism of clamping surface to base: .0008" max
 - Flatness of clamping surface: .0008" max
 - True running of MT center hole: .0004" max
 - Indexing accuracy: 1

Standard Accessories:

- 2 Mounting bolts with nuts
- Crank wheel
- 3 Dividing plates with one handle



SHIPS BY TRUCK

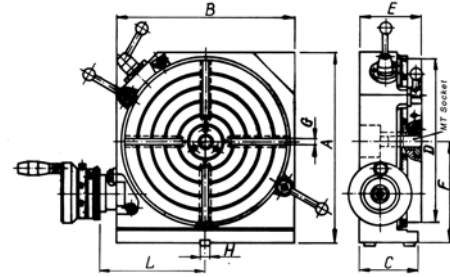


Table Size	A	B	C	D	H	F	G	E	L	Worm Ratio	Thru Holes	Center Hole	Wt lbs	With Dividing Plates	
														Part Number	Price
6-1/4"	8.9	7.9	3.54	6.3	.551	4.92	.394	3.78	5.00	1:60	.827	MT3	44	BI-7621-006	\$3,470.40
8"	10.6	9.5	3.74	7.87	.551	5.91	.394	3.86	5.79	1:60	1.378	MT3	55	BI-7621-008	\$3,771.00
10"	12.5	11.2	4.53	9.84	.709	6.89	.472	4.52	6.89	1:90	1.378	MT3	121	BI-7621-010	\$4,563.00
12"	14.7	13.7	4.53	12.6	.709	7.87	.472	4.72	8.15	1:90	1.417	MT3	176	BI-7621-012	\$5,112.00
16"	18.3	16.9	4.92	15.7	.709	9.84	5.31	5.31	9.76	1:90	1.969	MT4	269	BI-7621-016	\$7,137.00
20"	22.9	21.1	6.69	19.7	.709	12.4	6.3	6.89	12.2	0.125	2.559	MT5	573	BI-7621-020	\$10,467.00

TILTING ROTARY TABLES

Extremely accurate and solidly built for milling, boring and other machining operations. Precision 10 second vernier reading and inclinable reading in minutes provide the needed accuracy for most inspection applications. Completely sealed gears and heavy duty construction assure trouble-free usage. 90:1 gear ratio on both models.

- Table tilting range: 90°
- Extra deep coolant channel
- Dual positive actions locks
- Satin chrome dials
- Gear ratio 90:1
- Low profile
- 10 second vernier reading
- Gear drive immersed in oil
- Accuracy: 45 seconds

SHIPS BY TRUCK



Accuracy	
Clamping Surface Flatness (Concave)	0.0006"
Cylindrical Center Bore Concentricity	0.0008"
Taper Center Bore Concentricity	0.0008"
Surface To Base Parallelism	0.0008"
Surface To Angle Face Squareness	0.0004"
Surface To Center Slot Squareness	0.0008"



Optional Accessories

Description	Price
Adjustable Tailstock for 10" Table PH2-240-001	\$137.00 each
Adjustable Tailstock for 12" Table PH2-240-002	\$168.00 each
Dividing Plates for 10" & 12" Tables PH2-241-101	\$100.00 each

Model	Table Dia	Height	Center Height	Base Dim.	T-slot Width	Locating Key	Center Hole	Center Hole	Weight	Part Number	Price
10"	9.81"	8.07"	5.51"	10.24 x 12.2"	0.47"	0.55"	1.20"	MT3	172 lbs	PH2-222-410	\$1,328.00
12"	12.6"	10.04"	6.89"	13.07 x 14.96"	0.55"	0.71"	1.60"	MT4	293 lbs	PH2-222-412	\$1,675.00

HORIZONTAL/VERTICAL ROTARY TABLE



- 10 second vernier reading
- Gear ratio 90:1
- One rotation of handle equals 4" on collar
- Ships via truck



SHIPS BY TRUCK



Table Size	Height Horiz.	Height Vert.	Center Height	No. of T-Slots	T-Slot Size	Center Hole	Wt lbs	Part Number	Price
6"	3.1	7.8	3.9	3	.43	MT2	28	A-3900-2316	\$375.00
8"	4.1	10.4	5.3	3	.55	MT3	60	A-3900-2328	\$550.00
10"	4.5	12.8	6.5	6	.55	MT3	83	A-3900-2330	\$680.00
12"	5.3	15.3	7.7	6	.63	MT4	134	A-3900-2332	\$895.00

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

INDEXERS/TAIL STOCKS

HORIZONTAL/VERTICAL SUPER SPACERS

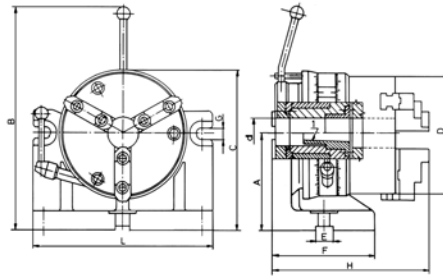
- New improved horizontal and vertical super spacers have quick and easy to change dividing plates
- Designed for milling, drilling, jig boring, and related machining operations
- Fixtures are also used to index parts being inspected
- Significantly increases productivity by reducing the time required to position the workpiece on the machine

- Standard Accessories:**
- 2 Mounting bolts with T-nuts
 - 2 Hex keys
 - 1 Chuck wrench
 - 2 Eye bolts
 - 2 Locating keys

Accuracy:

Maximum total spacing error: 2'
 Squareness of chuck to base: .0008" max
 Parallelism over face: .0008" max
 Chuck concentricity (universal): .0015" T.I.R.max
 Chuck concentricity (SET-TRU): .0015" T.I.R.max
 Center hole concentricity: .0008" T.I.R.max
 Mounting flange concentricity: .0008" T.I.R.max

SHIPS BY TRUCK

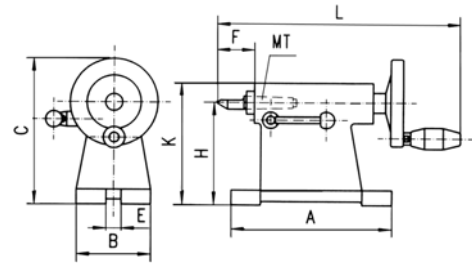


Chuck Dia	A	B	C	D	Thru Hole D	E	F	G	H	L	Wt lbs	With Chuck		Without Chuck	
												Part Number	Price	Part Number	Price
6-1/4"	4.92	11.85	8.27	6.30	1.653	.71	5.51	0.55	8.66	9.65	72	BI-7609-006	\$2,798.10	BI-7609-016	\$1,936.80
8"	6.30	15.04	10.43	7.87	2.165	.71	6.30	0.71	9.72	11.81	127	BI-7609-008	\$3,297.60	BI-7609-018	\$2,183.40
12-1/2"	9.84	21.85	16.24	12.40	4.055	0.71	7.87	0.71	12.24	15.75	317	BI-7609-012	\$7,236.00	BI-7609-022	\$5,337.00

TAIL STOCKS

For Horizontal/Vertical Super Spacers

- Rigid and precision design
- Tailstocks are provided with Precision dead center with .0002" T.I.R. 2 Locating keys 2 Mounting bolts with T-nuts



Size of Super Spacer	H +.002"	K	B	A	F		Key Size E	MT No.	Wt lbs	Tailstock		Dead Center	
					Min	Max				Part Number	Price	Part Number	Price
5"	3.937	5.51	3.15	7.68	1.30	2.48	0.55	2	14	BI-7610-104	\$651.60	BI-7540-002	\$18.90
6-1/4"	4.921	7.01	3.54	7.68	1.54	2.72	0.55	2	16	BI-7610-106	\$695.70	BI-7540-002	\$18.90
8"	6.299	8.39	4.53	9.84	1.89	3.35	0.71	3	28	BI-7610-108	\$818.10	BI-7540-003	\$25.20
12-1/2"	9.843	11.93	5.91	11.02	2.34	3.92	0.71	4	51	BI-7610-112	\$1,261.80	BI-7540-004	\$37.80

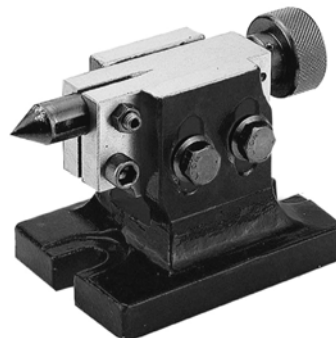
RAPID INDEXER



TAIL STOCK



- Ideal for holding round, irregular or square parts for milling and drilling operations
- 5" self-centering 3 jaw chuck
- Internal or external clamping
- Can be mounted either horizontally or vertically
- Table scale 1° for angular indexing
- Graduated 360° with 24 rapid notches at 15° each
- Locking handle



- Provides precision positioning on round workpieces
- For indexing, slotting and facing operations
- Available for 4" to 16" table sizes



Chuck Size	Table Bore	Clamping Range	Base W x L	Height-Table To Jaws	Part Number	Price Each
5"	1.181"	0.118 - 4"	6.340"	5.590"	PALM-34125	\$577.15

Fits Dia Table Size	Part Number	Price Each
4" & 6"	PALM-34214	\$220.19
8"	PALM-34216	\$281.30
10" & 12"	PALM-34218	\$286.15
16"	PALM-34220	\$311.37

Call Us Today For All Of Your Machine Tool Needs!

ROTARY INDEXING TABLES



These tables can be used in either the horizontal or vertical position. The table top and the vertical and horizontal bases are ground for overall squareness. A key-way and bolt lugs are provided on both mounting surfaces. Smooth worm gear drive provides positive rotary feed. The dial collar on the index shaft of #34105 is graduated in 1 minute readings and #32806 is graduated in 3 minute increments on a vernier dial.

Table Rotates 360°

Table Dia	Height at 0°	Base	Gear Ratio	Wgt.	Part Number	Price
8"	3-7/8"	12" x 9-1/2"	40:1	44 lbs	PALM-32806	\$814.80
10"	3-7/8"	12" x 9-1/2"	40:1	52 lbs	PALM-34105	\$878.82

COMPOUND MILLING TABLE



- Solid cast iron construction
- Features 12" of longitudinal travel and 7-1/2" of transverse travel, adjustable gibs, dovetailed ways, dependable Acme screws, vernier scales and 9/16" T-slots.
- Table height is 5-1/4".
- Footprint is 8 X 10-1/2".
- Mounting slots are 1/2" and 2-1/4" on center
- Weight: 62 lbs.

Table Size	Table Height	T-Slot	X-Travel	Y-Travel	Part Number	Price
18-1/2" x 6"	5-1/4"	9/16"	270mm	120mm	A-3900-2728	\$335.00

MILLING TABLE

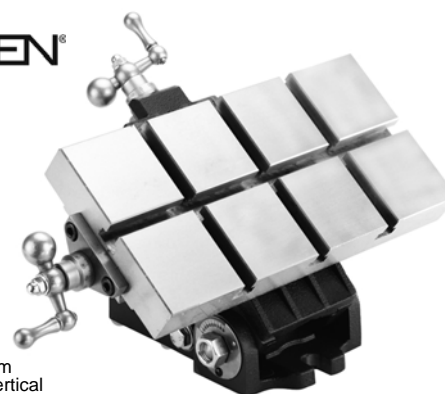


- Dovetailed slides have adjustable steel gibs to compensate for wear
- Hand wheel at each end of the table-top allows positioning from either side
- Dials are graduated in 0.001" inc.
- 2 longitudinal 14mm t-slots
- U-clamp set for clamping workpieces and vises to the table top
- Weight: 69 lbs.



Table Size	Height	Base Size	Table Travel	Part Number	Price
18-5/8" x 6"	5-3/16"	12" x 7-1/8"	12" x 8"	PALM-49181	\$377.33

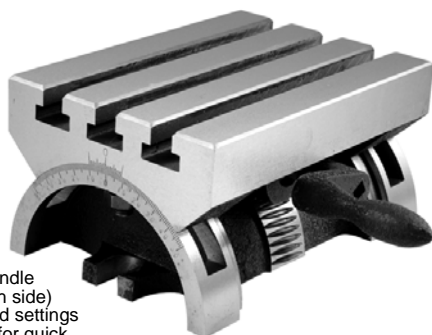
CROSS SLIDE ANGLE TABLE



- Angular inclination from 0° horizontal to 90° vertical
- Angular position indicated in 1° inc.
- Dual axis movement in the "X" (left or right) and "Y" (front to back) direction
- Weight: 48 lbs.

Table Size	Height	Base Size	Table Travel	Part Number	Price
12" x 6"	4-5/8"	9" x 5"	8" x 4"	PALM-37124	\$935.08

HEAVY DUTY TILTING TABLES



- Supplied with crank handle
- Range: 0-90° (45° each side)
- Has 2 screws for locked settings
- Graduated in degrees for quick setting purposes
- Heavy duty casting and precision ground with three T-slots
- Set at any angle with indexer

Table Size	Height	T-Slot	Weight lbs.	Part Number	Price Each
5" x 7"	3-3/4"	1/2"	21	A-3501-0001	\$160.00
7" x 10"	5"	1/2"	50	A-3501-0002	\$305.00
10" x 15"	6-1/2"	1/2"	130	A-3501-0003	\$625.00

CROSS SLIDE TABLES



All Cross Slide Tables have precision-ground tops to 0.001" total indicator reading. Dials are graduated in 0.001" increments and have thumb-screws for easy "0" setting. Counter-balanced solid steel ball crank handles enable smooth movement. To eliminate interference with the machine table, handles do not extend below the base. These tables provide both X and Y axis movement, and have a single longitudinal T-slot with three transverse 3 / 8" T-slots.

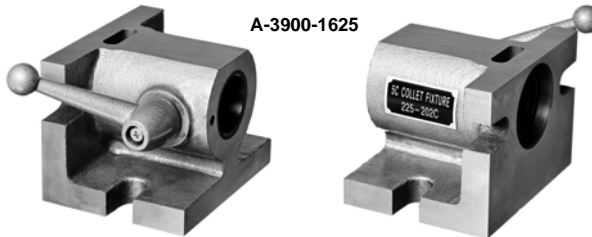
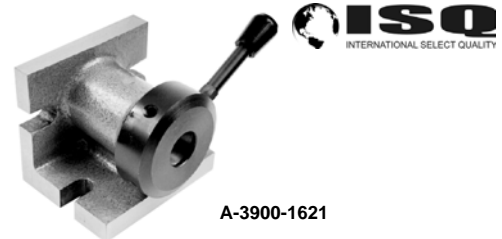
Table Size	Height	Base Size	Table Travel	Wgt.	Part Number	Price
10" x 6"	4-3/8"	7-5/8" x 6-3/8"	6" x 4"	40 lbs	PALM-36103	\$623.71
12" x 6"	4-3/8"		8" x 4"	44 lbs	PALM-37123	\$750.78

Call Us Or Visit Our Website For Our Complete Selection!

5C FIXTURES/INDEXERS

5C HORIZONTAL & VERTICAL COLLET FIXTURE

- For any standard 5C collet up to 1-1/8"
- Can be used in either horizontal or vertical position
- Lever movement to open or close collet



A-3900-1625

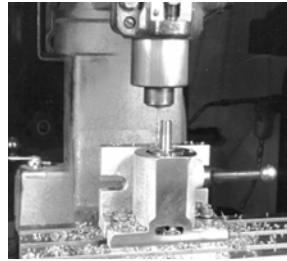
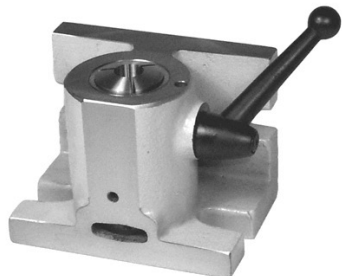
A-3900-1621

Description	Base Size	Height	Part Number	Price Each
5C Hor/Vert Fixture	4-1/4" x 4-1/4"	4-1/4"	A-3900-1621	\$69.00
5C H/V Angle Fixture	5" x 4"	3-3/4"	A-3900-1625	\$80.00

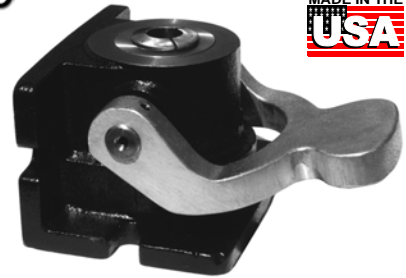
5C COLLET FIXTURE



5C COLLET HOLDING FIXTURE



- Holds 5C collets dead length
- Hardened and ground spindle heavy casting
- Two position-horizontal and vertical
- Lever close
- Made in the USA



Dimensions:
4" H x 6" L x 4.5" W

An indispensable fixture with cam-operated sleeve for opening and closing 5C collets. The collet remains in a fixed position for positive depth control. Spring-loaded handle can be indexed to any desired position for ease of operation while mounted vertically or horizontally.

Size	Cap.	Part Number	Price
5" L x 3-3/4" W x 4" H	1-1/16"	AI-210-5C	\$263.20

Description	Weight	Part Number	Price
Vertical/Horizontal 5C Holding Fixture	18 lbs	KAL-10C	\$295.00

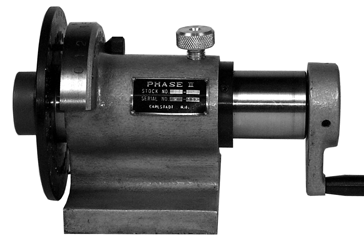
5C INDEXING SPIN JIG FIXTURE

5C SPIN INDEX



- Uses standard 5C collets.
- Indexing fixture for use on milling machines, grinders and inspection equipment
- Hardened and ground spindle
- 0.0004 T.I.R. spindle accuracy
- Direct indexing in ten steps
- Graduated in 5° increments
- Precision ground indexing plate

5C Indexing Spin Jig
Part # A-3900-1604
\$70.00 each



- Hardened and precision ground spindle
- 0.0004" TIR spindle accuracy
- Precision ground 36-position index plate
- Direct indexing in ten steps, graduated in 5° increments
- For use on all milling machines, surface grinders and inspection equipment
- Approximate weight: 18 lbs

5C Spin Index
Part # PH2-225-204
\$95.00 each

5C HORIZONTAL / VERTICAL COLLET INDEX

- For use with 5C collets
- Patented single lever action activates the indexing mechanism
- Precision ground index plate has 24 indexing locations in 15° increments, any of which can be masked for greater versatility
- Spindle accuracy 0.0004"
- Approximate weight: 35 lbs
- Spindle is 2-1/4-8TPI

Optional Tailstock:
• Center Height: Min. 3", Max. 4-1/2"
• Tilt angle: =+/- 11°

Specifications	Max. Variaton
Dividing spindle concentricity	0.0004"
Cylinder center bore (per 1") concentricity	0.0004"
Lateral offset of center slot of dividing spindle	0.0004"
Center slot to dividing spindle concentricity	0.0004"
Spindle Center Line parallelism	0.0004"
Base to face squareness	0.0004"



5C Horizontal/Vertical Collet Index
Part # PH2-225-205
\$349.00 each



Optional Tailstock
Part # PH2-240-003
\$165.00 each

Call Us Today For All Of Your Machine Tool Needs!



RETENTION KNOBS

INDIVIDUALLY Magnetic Particle Tested to Ensure Material Integrity!



QUANTITY DISCOUNTS!
10% OFF 10 or MORE KNOBS

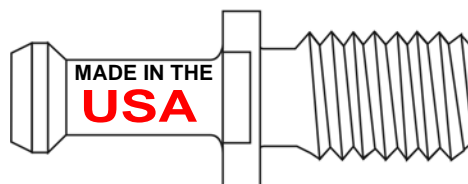
Must Be The Same Part Number

Please See Pages 169-176
For Our Complete Selection!



Why Choose USST Retention Knobs?

- Each retention knob is certified free of cracks after being INDIVIDUALLY Magnetic Particle Tested by an Independent Nationally Certified Laboratory in the U.S. to ensure knob integrity. (ASTM E1444-01)
- Manufacturing date, batch number and part number are all clearly laser marked on each retention knob
- Knobs are made to applicable standards (ANSI, JMTBA, DIN)
- Pilots now standard on a majority of retention knobs for better seating and concentricity
- Coolant holes are left non-carburized
- Made from 8620, heat-treated to RC 56/58
- Stronger threads resulting from thread rolling on a vast majority of the knobs
- High quality black oxide treatment to ensure long life
- **Made in USA**



HAAS®
BT-40 CNC Mills
 Part # B40-4500S

\$19.02 EA

MORI-SEIKI®
BT-40 CNC Mills
 Part # B40-9000S

\$19.02 EA

FADAL® & MAZAK®
CAT-40 CNC Mills
 Part # C40-4500S

\$15.20 EA

HAAS®
CAT-40 CNC Mills
 Part # C40-4501S

\$17.72 EA

MAZAK®
CAT-50 CNC Mills
 Part # C50-4501S

\$21.85 EA

We've Got The Retention Knob For Your Machine! Not Sure Which Knob You Need? Call Us-We Can Help!

Amera-Seiki	DoAll	Holulu	Kondai	Millport	Ooya	Sieber Hegner
Arboga	Dyna-Mite	Howa Kogyo	Kryle	Mitsubishi	Osaka Kiko	Stama
Ashina	Enshu	Huller-Hille	Kuraki	Mi-Val	Roku-Roku	Steinel
Awea	Eumach	Hurco	Leadwell	Miyano	Sachman	Stenzel GMBH
Bridgeport	Excel	Ikegai	Leblond Makino	Moog	Saeilo	Takang
Brother	FADAL	Kashahara	Maho	MORI SEIKI	Sajo	Takisawa
Chiron	HAAS	Kasuga	Maruka Mori	Niigata	Sakazaki	Takita
Cincinnati Milacron	Hamai	Kearney-Treco	Matsura	Nippeï-Toyoma	Santek	Taksan
Comet	Heller	Kia	MAZAK	Nishijima Tekko	Sharnoia	Takumi
Daewoo	Hermele	Kira	Mazda	Okamoto	She Hong	Teknic
Dah Lih	Hitachi-Seiki	Kitamura	MHP	Okum Howa	Shizouka	Toshiba
Deckel	Hitachi-Seiko	Kiwa	Mighty USA	Okuma	Shoda	Toyama

and many more!

*All brands of machines are trademarks of their respective companies.

Please call to verify the correct part number for your machine make/model and verify retention knob dimensions to machine specifications before using

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

ER COLLETS- ER 8, ER 11 & ER 16

Accu-Collets ER COLLETS

Accu-Collets

AccuCollets™ Precision and UltraPrecision Collets DIN 6499-form B (ER) set new standards of accuracy.

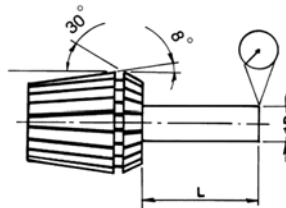
Precision Collets concentricity is 15 microns or 0.0005" TIR or better
Ultra Precision Collets is 6 microns or 0.0002" TIR or better

- Manufactured with Swiss technology
- Crafted from high quality European alloy spring steel
- **TRUE INCH** and metric sizes
- **Fractional Collets** manufactured specifically for US market requirements. Use "on size" collets for best results
- 16 slot construction for rigid clamping and extra concentricity
- Accu-Collets improve tool life, part finish, and reduce spindle wear
- Can be used for drilling, milling, tapping, and reaming



**PRICES
REDUCED!**

Precision ER Collets
0.0005" TIR or better as measured over the entire clamping range per DIN 6499 Standards



Clamping Range		Maximum TIR	
Collet Dia	L	DIN 6499/ISO 15488Form B	Accu-Collets Precision ER
0.039-0.063	0.236	0.0006"	0.0005"
0.063-0.118	0.394		
0.118-0.236	0.630		
0.236-0.394	0.984		
0.394-0.709	1.575	0.0008"	0.0005"
0.709-1.024	1.969		
1.024-1.339	2.362		
		0.0010"	0.0005"

Collapse For ER-16 Collets is .04" For Bore Sizes Above 1.5mm

					ER-8		ER-11		ER-16	
ON SIZE		Nominal Size			Precision	ULTRA PRECISION	Precision	ULTRA PRECISION	Precision	ULTRA PRECISION
Frac	MM	Dec.	Range	Nominal Sizes Covered	\$14.75 ea	\$21.00 ea	\$8.75 ea	\$21.00 ea	\$8.75 ea	\$21.00 ea
-	1.0	0.039	0.039-0.019	-	08-0039-1.0	08-0039-1.0UP	11-0039-1.0	11-0039-1.0UP	16-0039-1.0	16-0039-1.0UP
3/64	-	0.046	0.046-0.026	3/64	08-0046-3/64	08-0046-3/64UP	11-0046-3/64	11-0046-3/64UP	16-0046-3/64	16-0046-3/64UP
-	1.5	0.059	0.059-0.039	3/64	08-0059-1.5	08-0059-1.5UP	11-0059-1.5	11-0059-1.5UP	16-0059-1.5	16-0059-1.5UP
1/16	-	0.062	0.062-0.042	1/16, 3/64	08-0062-1/16	08-0062-1/16UP	11-0062-1/16	11-0062-1/16UP	16-0062-1/16	16-0062-1/16UP
5/64	-	0.078	0.078-0.058	5/64, 1/16	08-0078-5/64	08-0078-5/64UP	11-0078-5/64	11-0078-5/64UP	16-0078-5/64	16-0078-5/64UP
-	2.0	0.079	0.079-0.059	5/64, 1/16	08-0079-2.0	08-0079-2.0UP	11-0079-2.0	11-0079-2.0UP	16-0079-2.0	16-0079-2.0UP
3/32	-	0.093	0.093-0.073	3/32, 5/64	08-0093-3/32	08-0093-3/32UP	11-0093-3/32	11-0093-3/32UP	16-0093-3/32	16-0093-3/32UP
-	2.5	0.098	0.098-0.078	3/32	08-0098-2.5	08-0098-2.5UP	11-0098-2.5	11-0098-2.5UP	16-0098-2.5	16-0098-2.5UP
7/64	-	0.109	0.109-0.089	7/64, 3/32	08-0109-7/64	08-0109-7/64UP	11-0109-7/64	11-0109-7/64UP	16-0109-7/64	16-0109-7/64UP
-	3.0	0.118	0.118-0.098	7/64	08-0118-3.0	08-0118-3.0UP	11-0118-3.0	11-0118-3.0UP	16-0118-3.0	16-0118-3.0UP
1/8	-	0.125	0.125-0.105	1/8, 7/64	08-0125-1/8	08-0125-1/8UP	11-0125-1/8	11-0125-1/8UP	16-0125-1/8	16-0125-1/8UP
-	3.5	0.138	0.138-0.118	1/8	08-0138-3.5	08-0138-3.5UP	11-0138-3.5	11-0138-3.5UP	16-0138-3.5	16-0138-3.5UP
9/64	-	0.140	0.140-0.120	9/64, 1/8	08-0140-9/64	08-0140-9/64UP	11-0140-9/64	11-0140-9/64UP	16-0140-9/64	16-0140-9/64UP
5/32	-	0.156	0.156-0.136	5/32, 9/64	08-0156-5/32	08-0156-5/32UP	11-0156-5/32	11-0156-5/32UP	16-0156-5/32	16-0156-5/32UP
-	4.0	0.157	0.157-0.137	5/32, 9/64	08-0157-4.0	08-0157-4.0UP	11-0157-4.0	11-0157-4.0UP	16-0157-4.0	16-0157-4.0UP
11/64	-	0.171	0.171-0.151	11/64, 5/32	08-0171-11/64	08-0171-11/64UP	11-0171-11/64	11-0171-11/64UP	16-0171-11/64	16-0171-11/64UP
-	4.5	0.177	0.177-0.157	11/64	08-0177-4.5	08-0177-4.5UP	11-0177-4.5	11-0177-4.5UP	16-0177-4.5	16-0177-4.5UP
3/16	-	0.187	0.187-0.167	3/16, 11/64	08-0187-3/16	08-0187-3/16UP	11-0187-3/16	11-0187-3/16UP	16-0187-3/16	16-0187-3/16UP
-	5.0	0.196	0.196-0.176	3/16	08-0196-5.0	08-0196-5.0UP	11-0196-5.0	11-0196-5.0UP	16-0196-5.0	16-0196-5.0UP
13/64	-	0.203	0.203-0.183	13/64, 3/16	-	-	11-0203-13/64	11-0203-13/64UP	16-0203-13/64	16-0203-13/64UP
-	5.5	0.217	0.217-0.197	13/64	-	-	11-0217-5.5	11-0217-5.5UP	16-0217-5.5	16-0217-5.5UP
7/32	-	0.218	0.218-0.198	7/32, 13/64	-	-	11-0218-7/32	11-0218-7/32UP	16-0218-7/32	16-0218-7/32UP
15/64	-	0.234	0.234-0.214	15/64, 7/32	-	-	11-0234-15/64	11-0234-15/64UP	16-0234-15/64	16-0234-15/64UP
-	6.0	0.236	0.236-0.216	15/64, 7/32	-	-	11-0236-6.0	11-0236-6.0UP	16-0236-6.0	16-0236-6.0UP
1/4	-	0.250	0.250-0.230	1/4, 15/64	-	-	11-0250-1/4	11-0250-1/4UP	16-0250-1/4	16-0250-1/4UP
-	6.5	0.256	0.256-0.236	1/4	-	-	11-0256-6.5	11-0256-6.5UP	16-0256-6.5	16-0256-6.5UP
17/64	-	0.265	0.265-0.245	17/64, 1/4	-	-	11-0265-17/64	11-0265-17/64UP	16-0265-17/64	16-0265-17/64UP
-	7.0	0.275	0.275-0.255	17/64	-	-	11-0275-7.0	11-0275-7.0UP	16-0275-7.0	16-0275-7.0UP
9/32	-	0.281	0.281-0.242	9/32, 17/64	-	-	-	-	16-0281-9/32	16-0281-9/32UP
-	7.5	0.295	0.295-0.256	9/32, 17/64	-	-	-	-	16-0295-7.5	16-0295-7.5UP
19/64	-	0.296	0.296-0.257	19/64, 9/32	-	-	-	-	16-0296-19/64	16-0296-19/64UP
5/16	-	0.312	0.312-0.273	5/16, 19/64, 9/32	-	-	-	-	16-0312-5/16	16-0312-5/16UP
-	8.0	0.315	0.315-0.276	5/16, 19/64	-	-	-	-	16-0315-8.0	16-0315-8.0UP
21/64	-	0.328	0.328-0.289	21/64, 5/16, 19/64	-	-	-	-	16-0328-21/64	16-0328-21/64UP
-	8.5	0.335	0.334-0.295	21/64, 5/16	-	-	-	-	16-0334-8.5	16-0334-8.5UP
11/32	-	0.343	0.343-0.304	11/32, 21/64	-	-	-	-	16-0343-11/32	16-0343-11/32UP
-	9.0	0.354	0.354-0.315	11/32, 21/64	-	-	-	-	16-0354-9.0	16-0354-9.0UP
23/64	-	0.359	0.359-0.320	23/64, 11/32	-	-	-	-	16-0359-23/64	16-0359-23/64UP
-	9.5	0.374	0.374-0.335	23/64, 11/32	-	-	-	-	16-0374-9.5	16-0374-9.5UP
3/8	-	0.375	0.375-0.336	3/8, 23/64	-	-	-	-	16-0375-3/8	16-0375-3/8UP
25/64	-	0.390	0.390-0.351	25/64, 3/8, 23/64	-	-	-	-	16-0390-25/64	16-0390-25/64UP
-	10.0	0.394	0.393-0.354	25/64, 3/8	-	-	-	-	16-0393-10.0	16-0393-10.0UP

Call Us Today For All Of Your Machine Tool Needs!

ER COLLETS



- Concentricity is 13 microns or 0.0005" TIR or better
- Manufactured with Swiss technology
- Crafted from high quality European alloy spring steel
- **TRUE INCH** and metric sizes
- **Fractional Collets** manufactured specifically for US market requirements
- 16 slot construction for rigid clamping and extra concentricity
- Accu-Collets improve tool life, part finish, and reduce spindle wear
- Can be used for drilling, milling, tapping, and reaming

**PRICES
REDUCED!**

Accu-Collets

Precision ER Collets
0.0005" TIR or better as
measured over the entire
clamping range
per DIN 6499 Standards

					ER 20		ER 25	
ON SIZE		Nominal Size			Precision	UltraPrecision	Precision	UltraPrecision
Frac	MM	Dec.	Inch Range	Nominal Sizes Covered	\$9.75 ea	\$23.00 ea	\$9.75 ea	\$23.00 ea
-	1.0	0.039	0.039-0.019	13/32	20-0039-1.0	20-0039-1.0UP	-	-
3/64	-	0.046	0.046-0.026	3/64	20-0046-3/64	20-0046-3/64UP	-	-
1/16	-	0.062	0.062-0.042	1/16, 3/64	20-0062-1/16	20-0062-1/16UP	-	-
5/64	-	0.078	0.078-0.058	5/64, 1/16	20-0078-5/64	20-0078-5/64UP	-	-
-	2.0	0.079	0.079-0.040	5/64, 1/16	20-0079-2.0	20-0079-2.0UP	25-0062-1/16	-
3/32	-	0.093	0.093-0.054	3/32, 5/64, 1/16	20-0093-3/32	20-0093-3/32UP	25-0078-5/64	25-0078-5/64UP
7/64	-	0.109	0.109-0.089	7/64, 3/32	20-0109-7/64	20-0109-7/64UP	25-0079-2.0	25-0079-2.0UP
-	3.0	0.118	0.118-0.079	7/64, 3/32	20-0118-3.0	20-0118-3.0UP	25-0093-3/32	25-0093-3/32UP
1/8	-	0.125	0.125-0.086	1/8, 7/64	20-0125-1/8	20-0125-1/8UP	25-0109-7/64	25-0109-7/64UP
9/64	-	0.140	0.140-0.120	9/64, 1/8	20-0140-9/64	20-0140-9/64UP	25-0118-3.0	25-0118-3.0UP
5/32	-	0.156	0.156-0.117	5/32, 9/64, 1/8	20-0156-5/32	20-0156-5/32UP	25-0125-01/8	25-0125-01/8UP
-	4.0	0.157	0.157-0.118	5/32, 9/64	20-0157-4.0	20-0157-4.0UP	25-0140-9/64	25-0140-9/64UP
11/64	-	0.171	0.171-0.151	11/64, 5/32	20-0171-11/64	20-0171-11/64UP	25-0156-5/32	25-0156-5/32UP
3/16	-	0.187	0.187-0.148	3/16, 11/64	20-0187-3/16	20-0187-3/16UP	25-0157-4.0	25-0157-4.0UP
-	5.0	0.196	0.196-0.157	3/16, 11/64	20-0196-5.0	20-0196-5.0UP	25-0171-11/64	25-0171-11/64UP
13/64	-	0.203	0.203-0.183	13/64, 3/16	20-0203-13/64	20-0203-13/64UP	25-0187-3/16	25-0187-3/16UP
7/32	-	0.218	0.218-0.179	7/32, 13/64	20-0218-7/32	20-0218-7/32UP	25-0196-5.0	25-0196-5.0UP
15/64	-	0.234	0.234-0.214	15/64, 7/32	20-0234-15/64	20-0234-15/64UP	25-0203-13/64	25-0203-13/64UP
-	6.0	0.236	0.236-0.197	15/64, 7/32	20-0236-6.0	20-0236-6.0UP	25-0218-7/32	25-0218-7/32UP
1/4	-	0.250	0.250-0.211	1/4, 15/64, 7/32	20-0250-1/4	20-0250-1/4UP	25-0234-15/64	25-0234-15/64UP
17/64	-	0.265	0.265-0.245	17/64, 1/4	20-0265-17/64	20-0265-17/64UP	25-0236-6.0	25-0236-6.0UP
-	7.0	0.275	0.275-0.236	17/64, 1/4	20-0275-7.0	20-0275-7.0UP	25-0250-1/4	25-0250-1/4UP
9/32	-	0.281	0.281-0.242	9/32, 17/64	20-0281-9/32	20-0281-9/32UP	25-0265-17/64	25-0265-17/64UP
19/64	-	0.296	0.296-0.257	19/64, 9/32	20-0296-19/64	20-0296-19/64UP	25-0275-7.0	25-0275-7.0UP
5/16	-	0.312	0.312-0.273	5/16, 19/64, 9/32	20-0312-5/16	20-0312-5/16UP	25-0281-9/32	25-0281-9/32UP
-	8.0	0.315	0.315-0.276	5/16, 19/64	20-0315-8.0	20-0315-8.0UP	25-0296-19/64	25-0296-19/64UP
21/64	-	0.328	0.328-0.289	21/64, 5/16, 19/64	20-0328-21/64	20-0328-21/64UP	25-0312-5/16	25-0312-5/16UP
11/32	-	0.343	0.343-0.304	11/32, 21/64	20-0343-11/32	20-0343-11/32UP	25-0315-8.0	25-0315-8.0UP
-	9.0	0.354	0.354-0.315	11/32, 21/64	20-0354-9.0	20-0354-9.0UP	25-0328-21/64	25-0328-21/64UP
23/64	-	0.359	0.359-0.320	23/64, 11/32	20-0359-23/64	20-0359-23/64UP	25-0343-11/32	25-0343-11/32UP
3/8	-	0.375	0.375-0.336	3/8, 23/64	20-0375-3/8	20-0375-3/8UP	25-0354-9.0	25-0354-9.0UP
25/64	-	0.390	0.390-0.351	25/64, 3/8, 23/64	20-0390-25/64	20-0390-25/64UP	25-0359-23/64	25-0359-23/64UP
-	10.0	0.393	0.393-0.354	25/64, 3/8	20-0393-10.0	20-0393-10.0UP	25-0375-3/8	25-0375-3/8UP
13/32	-	0.406	0.406-0.367	13/32, 25/64, 3/8	20-0406-13/32	20-0406-13/32UP	25-0390-25/64	25-0390-25/64UP
27/64	-	0.421	0.421-0.382	27/64, 13/32	20-0421-27/64	20-0421-27/64UP	25-0393-10.0	25-0393-10.0UP
-	11.0	0.433	0.433-0.394	27/64, 13/32	20-0433-11.0	20-0433-11.0UP	25-0406-13/32	25-0406-13/32UP
7/16	-	0.437	0.437-0.398	7/16, 27/64	20-0437-7/16	20-0437-7/16UP	25-0421-27/64	25-0421-27/64UP
29/64	-	0.453	0.453-0.414	29/64, 7/16	20-0453-29/64	20-0453-29/64UP	25-0433-11.0	25-0433-11.0UP
15/32	-	0.468	0.468-0.429	15/32, 29/64, 7/16	20-0468-15/32	20-0468-15/32UP	25-0437-7/16	25-0437-7/16UP
-	12.0	0.472	0.472-0.433	15/32, 29/64	20-0472-12.0	20-0472-12.0UP	25-0453-29/64	25-0453-29/64UP
31/64	-	0.484	0.484-0.445	31/64, 15/32	20-0484-31/64	20-0484-31/64UP	25-0468-15/32	25-0468-15/32UP
1/2	-	0.500	0.500-0.461	1/2, 31/64	20-0500-1/2	20-0500-1/2UP	25-0472-12.0	25-0472-12.0UP
-	13.0	0.511	0.511-0.472	1/2, 31/64	20-0511-13.0	20-0511-13.0UP	25-0484-31/64	25-0484-31/64UP
33/64	-	0.515	0.515-0.476	33/64, 1/2	-	-	25-0500-1/2	25-0500-1/2UP
17/32	-	0.531	0.531-0.492	17/32, 33/64	-	-	25-0511-13.0	25-0511-13.0UP
35/64	-	0.546	0.546-0.507	35/64, 17/32	-	-	25-0515-33/64	25-0515-33/64UP
-	14.0	0.551	0.551-0.512	35/64, 17/32	-	-	25-0531-17/32	25-0531-17/32UP
9/16	-	0.563	0.562-0.523	9/16, 35/64, 17/32	-	-	25-0546-35/64	25-0546-35/64UP
37/64	-	0.578	0.578-0.539	37/64, 9/16	-	-	25-0551-14.0	25-0551-14.0UP
-	15.0	0.591	0.590-0.551	37/64, 9/16	-	-	25-0562-9/16	25-0562-9/16UP
19/32	-	0.594	0.593-0.554	19/32, 37/64	-	-	25-0578-37/64	25-0578-37/64UP
39/64	-	0.609	0.609-0.570	39/64, 19/32	-	-	25-0590-15.0	25-0590-15.0UP
5/8	-	0.625	0.625-0.586	5/8, 39/64, 19/32	-	-	25-0593-19/32	25-0593-19/32UP
-	16.0	0.630	0.630-0.591	5/8, 39/64	-	-	25-0609-39/64	25-0609-39/64UP
-	-	-	-	-	-	-	25-0625-05/8	25-0625-05/8UP
-	-	-	-	-	-	-	25-0630-16.0	25-0630-16.0UP

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

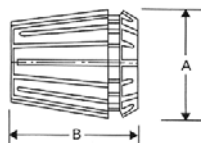
ER COLLETS- ER 32 & ER 40

ER COLLETS

- Concentricity is 13 microns or 0.0005" TIR or better
- Manufactured with Swiss technology
- Crafted from high quality European alloy spring steel
- **TRUE INCH** and metric sizes
- **Fractional Collets** manufactured specifically for US market requirements
- 16 slot construction for rigid clamping and extra concentricity
- Accu-Collets improve tool life, part finish, and reduce spindle wear
- Can be used for drilling, milling, tapping, and reaming



PRICES REDUCED!



ER COLLET DIMENSIONS

Collet Series	A	B
ER 8	8.5mm (.335 in)	13.5mm (.531 in)
ER 11	11.5mm (.453 in)	18mm (.709 in)
ER 16	17mm (.669 in)	27mm (1.063 in)
ER 20	21mm (.827 in)	31mm (1.220 in)
ER 25	26mm (1.024 in)	35mm (1.378 in)
ER 32	33mm (1.299 in)	40mm 1.575 in)
ER 40	41mm (1.614 in)	46mm (1.811 in)

					ER 32	
On Size		Nominal Size			Precision	Ultra Precision
Frac	MM	Dec.	Inch Range	Nominal Sizes Covered	\$10.25 ea	\$24.00 ea
3/64	-	0.047	0.046-0.026	3/64, 1/16, 5/64	32-0047-3/64	-
1/16	-	0.062	0.062-0.042	1/16, 3/64	32-0063-1/16	-
5/64	-	0.078	0.078-0.058	5/64, 3/32, 7/64	32-0078-5/64	-
3/32	-	0.093	0.093-0.054	3/32, 5/64, 1/16	32-0093-3/32	32-0093-3/32UP
-	2.5	0.098	0.098-0.079	7/64, 1/8,	32-0098-2.5	32-0098-2.5UP
7/64	-	0.109	0.109-0.089	7/64, 1/8,	32-0109-7/64	32-0109-7/64UP
-	3.0	0.118	0.118-0.079	7/64, 3/32	32-0118-3.0	32-0118-3.0UP
1/8	-	0.125	0.125-0.085	1/8, 7/64	32-0125-1/8	32-0125-1/8UP
-	3.5	0.138	0.138-0.118	5/32, 11/64	32-0138-3.5	32-0138-3.5UP
9/64	-	0.141	0.140-0.120	5/32, 11/64	32-0140-9/64	32-0140-9/64UP
5/32	-	0.156	0.156-0.117	5/32, 9/64, 1/8	32-0156-5/32	32-0156-5/32UP
-	4.0	0.157	0.157-0.118	5/32, 9/64	32-0157-4.0	32-0157-4.0UP
11/64	-	0.172	0.171-0.151	3/16, 13/64	32-0171-11/64	32-0171-11/64UP
-	4.5	0.177	0.177-0.158	3/16, 13/64	32-0177-4.5	32-0177-4.5UP
3/16	-	0.187	0.187-0.148	3/16, 11/64	32-0187-3/16	32-0187-3/16UP
-	5.0	0.196	0.196-0.157	3/16, 11/64	32-0196-5.0	32-0196-5.0UP
13/64	-	0.203	0.203-0.183	13/64, 7/32, 15/64	32-0203-13/64	32-0203-13/64UP
-	5.5	0.217	0.217-0.197	7/32, 15/64, 1/4	32-0216-5.5	32-0217-5.5UP
7/32	-	0.218	0.218-0.179	7/32, 13/64	32-0218-7/32	32-0218-7/32UP
15/64	-	0.234	0.234-0.214	15/64, 1/4, 17/64	32-0234-15/64	32-0234-15/64UP
-	6.0	0.236	0.236-0.197	15/64, 7/32	32-0236-6.0	32-0236-6.0UP
1/4	-	0.250	0.250-0.211	1/4, 15/64, 7/32	32-0250-1/4	32-0250-1/4UP
-	6.5	0.256	0.256-0.236	17/64, 9/32	32-0256-6.5	32-0256-6.5UP
17/64	-	0.266	0.265-0.245	9/32, 19/64	32-0265-17/64	32-0265-17/64UP
-	7.0	0.275	0.275-0.236	17/64, 1/4	32-0275-7.0	32-0275-7.0UP
9/32	-	0.281	0.281-0.242	9/32, 17/64	32-0281-9/32	32-0281-9/32UP
-	7.5	0.295	0.295-0.256	19/64, 5/16, 21/64	32-0296-7.5	32-0296-7.5UP
19/64	-	0.297	0.296-0.257	5/16, 21/64	32-0296-19/64	32-0296-19/64UP
5/16	-	0.312	0.312-0.273	5/16, 19/64, 9/32	32-0312-5/16	32-0312-5/16UP
-	8.0	0.315	0.315-0.276	5/16, 19/64	32-0315-8.0	32-0315-8.0UP
21/64	-	0.328	0.328-0.289	21/64, 11/32, 23/64	32-0328-21/64	32-0328-21/64UP
-	8.5	0.335	0.335-0.295	11/32, 23/64	32-0334-8.5	32-0334-8.5UP
11/32	-	0.343	0.343-0.304	11/32, 21/64	32-0343-11/32	32-0343-11/32UP
-	9.0	0.354	0.354-0.315	11/32, 21/64	32-0354-9.0	32-0354-9.0UP
23/64	-	0.359	0.359-0.320	23/64, 3/8, 25/64	32-0359-23/64	32-0359-23/64UP
3/8	-	0.375	0.375-0.336	3/8, 23/64	32-0375-3/8	32-0375-3/8UP
25/64	-	0.391	0.390-0.351	13/32, 27/64	32-0390-25/64	32-0390-25/64UP
-	10.0	0.393	0.393-0.354	25/64, 3/8	32-0393-10.0	32-0393-10.0UP
13/32	-	0.406	0.406-0.367	13/32, 25/64, 3/8	32-0406-13/32	32-0406-13/32UP
-	10.5	0.413	0.413-0.374	27/64, 7/16	32-0413-10.5	32-0413-10.5UP
27/64	-	0.422	0.421-0.382	7/16, 29/64	32-0421-27/64	32-0421-27/64UP
-	11.0	0.433	0.433-0.394	27/64, 13/32	32-0433-11.0	32-0433-11.0UP
7/16	-	0.437	0.437-0.398	7/16, 27/64	32-0437-7/16	32-0437-7/16UP
29/64	-	0.453	0.453-0.414	29/64, 15/32, 31/64	32-0453-29/64	32-0453-29/64UP
15/32	-	0.468	0.468-0.429	15/32, 29/64, 7/16	32-0468-15/32	32-0468-15/32UP
-	12.0	0.472	0.472-0.433	15/32, 29/64	32-0472-12.0	32-0472-12.0UP
31/64	-	0.484	0.484-0.445	31/64, 1/2, 33/64	32-0484-31/64	32-0484-31/64UP
-	12.5	0.492	0.492-0.453	1/2, 33/64	32-0492-12.5	32-0492-12.5UP
1/2	-	0.500	0.500-0.461	1/2, 31/64	32-0500-1/2	32-0500-1/2UP
-	13.0	0.511	0.511-0.472	1/2, 31/64	32-0511-13.0	32-0511-13.0UP
33/64	-	0.516	0.515-0.476	17/32, 35/64	32-0515-33/64	32-0515-33/64UP
17/32	-	0.531	0.531-0.492	17/32, 33/64	32-0531-17/32	32-0531-17/32UP

ER 40	
Precision	Ultra Precision
\$11.25 ea	\$26.00 ea
40-0047-3/64	-
40-0063-1/16	-
40-0078-5/64	-
40-0094-3/32	-
40-0098-2.5	-
40-0109-7/64	-
40-0118-3.0	-
40-0125-1/8	40-0125-1/8UP
40-0138-3.5	40-0138-3.5UP
40-0140-9/64	40-0140-9/64UP
40-0156-5/32	40-0156-5/32UP
40-0157-4.0	40-0157-4.0UP
40-0171-11/64	40-0171-11/64UP
40-0177-4.5	40-0177-4.5UP
40-0187-3/16	40-0187-3/16UP
40-0196-5.0	40-0196-5.0UP
40-0203-13/64	40-0203-13/64UP
40-0216-5.5	40-0217-5.5UP
40-0218-7/32	40-0218-7/32UP
40-0234-15/64	40-0234-15/64UP
40-0236-6.0	40-0236-6.0UP
40-0250-1/4	40-0250-1/4UP
32-0256-6.5	40-0256-6.5UP
40-0265-17/64	40-0265-17/64UP
40-0275-7.0	40-0275-7.0UP
40-0281-9/32	40-0281-9/32UP
40-0296-7.5	40-0296-7.5UP
40-0296-19/64	40-0296-19/64UP
40-0312-5/16	40-0312-5/16UP
40-0315-8.0	40-0315-8.0UP
40-0328-21/64	40-0328-21/64UP
40-0334-8.5	40-0334-8.5UP
40-0343-11/32	40-0343-11/32UP
40-0354-9.0	40-0354-9.0UP
40-0359-23/64	40-0359-23/64UP
40-0375-3/8	40-0375-3/8UP
40-0390-25/64	40-0390-25/64UP
40-0393-10.0	40-0393-10.0UP
40-0406-13/32	40-0406-13/32UP
40-0413-10.5	40-0413-10.5UP
40-0421-27/64	40-0421-27/64UP
40-0433-11.0	40-0433-11.0UP
40-0437-7/16	40-0437-7/16UP
40-0453-29/64	40-0453-29/64UP
40-0468-15/32	40-0468-15/32UP
40-0472-12.0	40-0472-12.0UP
40-0484-31/64	40-0484-31/64UP
40-0492-12.5	40-0492-12.5UP
40-0500-1/2	40-0500-1/2UP
40-0511-13.0	40-0511-13.0UP
40-0515-33/64	40-0515-33/64UP
40-0531-17/32	40-0531-17/32UP

35/64 to 26mm ER 32 & 40 Collets Continued on Following Page

Call Us Today For All Of Your Machine Tool Needs!

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

ER COLLETS (continued from previous page)



- Concentricity is 13 microns or 0.0005" TIR or better
- Manufactured with Swiss technology
- Crafted from high quality European alloy spring steel
- **TRUE INCH** and metric sizes
- **Fractional Collets** manufactured specifically for US market requirements
- 16 slot construction for rigid clamping and extra concentricity
- Accu-Collets improve tool life, part finish and reduces spindle wear
- Can be used for drilling, milling, tapping and reaming

**PRICES
REDUCED!**

Accu-Collets

Precision ER Collets
0.0005" TIR or better as measured over the entire clamping range per DIN 6499 Standards

On Size		Nominal Size			ER 32		ER 40	
Frac	MM	Dec.	Inch Range	Nominal Sizes Covered	Precision \$10.25 ea	Ultra Precision \$24.00 ea	Precision \$11.25 ea	Ultra Precision \$26.00 ea
35/64	-	0.547	0.546-0.507	9/16, 37/64	32-0546-35/64	32-0546-35/64UP	40-0546-35/64	40-0546-35/64UP
-	14.0	0.551	0.551-0.512	35/64, 17/32	32-0551-14.0	32-0551-14.0UP	40-0551-14.0	40-0551-14.0UP
9/16	-	0.562	0.562-0.523	9/16, 35/64, 17/32	32-0562-9/16	32-0562-9/16UP	40-0562-9/16	40-0562-9/16UP
-	14.5	0.571	0.571-0.532	37/64, 19/32, 39/64	32-0570-14.5	32-0570-14.5UP	40-0570-14.5	40-0570-14.5UP
37/64	-	0.578	0.578-0.539	37/64, 19/32, 39/64	32-0578-37/64	32-0578-37/64UP	40-0578-37/64	40-0578-37/64UP
-	15.0	0.590	0.590-0.551	37/64, 9/16	32-0590-15.0	32-0590-15.0UP	40-0590-15.0	40-0590-15.0UP
19/32	-	0.593	0.593-0.554	19/32, 37/64	32-0593-19/32	32-0593-19/32UP	40-0593-19/32	40-0593-19/32UP
39/64	-	0.609	0.609-0.570	39/64, 5/8, 41/64	32-0609-39/64	32-0609-39/64UP	40-0609-39/64	40-0609-39/64UP
-	15.5	0.610	0.601-0.571	5/8, 41/64	32-0610-15.5	32-0610-15.5UP	40-0610-15.5	40-0610-15.5UP
5/8	-	0.625	0.625-0.586	5/8, 39/64, 19/32	32-0625-5/8	32-0625-5/8UP	40-0625-5/8	40-0625-5/8UP
-	16.0	0.630	0.630-0.591	5/8, 39/64	32-0630-16.0	32-0630-16.0UP	40-0630-16.0	40-0630-16.0UP
41/64	-	0.641	0.641-0.602	21/32, 43/64	32-0640-41/64	32-0640-41/64UP	40-0640-41/64	40-0640-41/64UP
-	16.5	0.650	0.650-0.610	21/32, 43/64, 11/16	32-0650-16.5	32-0650-16.5UP	40-0650-16.5	40-0650-16.5UP
21/32	-	0.656	0.656-0.617	21/32, 41/64	32-0656-21/32	32-0656-21/32UP	40-0656-21/32	40-0656-21/32UP
-	17.0	0.669	0.669-0.630	21/32, 41/64	32-0669-17.0	32-0669-17.0UP	40-0669-17.0	40-0669-17.0UP
43/64	-	0.672	0.672-0.633	11/16, 46/64	32-0671-43/64	32-0671-43/64UP	40-0671-43/64	40-0671-43/64UP
11/16	-	0.687	0.687-0.648	11/16, 43/64, 21/32	32-0687-11/16	32-0687-11/16UP	40-0687-11/16	40-0687-11/16UP
-	17.5	0.689	0.689-0.650	45/64, 23/32	32-0689-17.5	32-0689-17.5UP	40-0689-17.5	40-0689-17.5UP
45/64	-	0.703	0.703-0.664	45/64, 23/32, 47/64	32-0703-45/64	32-0703-45/64UP	40-0703-45/64	40-0703-45/64UP
-	18.0	0.708	0.708-0.669	45/64, 11/16	32-0708-18.0	32-0708-18.0UP	40-0708-18.0	40-0708-18.0UP
23/32	-	0.718	0.718-0.679	23/32, 45/64	32-0718-23/32	32-0718-23/32UP	40-0718-23/32	40-0718-23/32UP
-	18.5	0.728	0.728-0.689	47/64, 3/4, 49/64	32-0728-18.5	32-0728-18.5UP	40-0728-18.5	40-0728-18.5UP
47/64	-	0.734	0.734-0.695	47/64, 3/4, 49/64	32-0734-47/64	32-0734-47/64UP	40-0734-47/64	40-0734-47/64UP
-	19.0	0.748	0.748-0.709	47/64, 23/32	32-0748-19.0	32-0748-19.0UP	40-0748-19.0	40-0748-19.0UP
3/4	-	0.750	0.750-0.711	3/4, 47/64	32-0750-3/4	32-0750-3/4UP	40-0750-3/4	40-0750-3/4UP
49/64	-	0.766	0.766-0.727	25/32, 51/64	32-0765-49/64	32-0765-49/64UP	40-0765-49/64	40-0765-49/64UP
-	19.5	0.768	0.768-0.728	25/32, 51/64	32-0767-19.5	32-0767-19.5UP	40-0767-19.5	40-0767-19.5UP
25/32	-	0.781	0.781-0.742	25/32, 49/64, 3/4	32-0781-25/32	32-0781-25/32UP	40-0781-25/32	40-0781-25/32UP
-	20.0	0.787	0.787-0.748	25/32, 49/64	32-0787-20.0	32-0787-20.0UP	40-0787-20.0	40-0787-20.0UP
51/64	-	0.797	0.797-0.758	51/64, 13/16, 53/64	32-0796-51/64	32-0796-51/64UP	40-0796-51/64	40-0796-51/64UP
-	20.5	0.807	0.807-0.768	13/16, 53/64, 37/32	32-0807-20.5	32-0807-20.5UP	40-0807-20.5	40-0807-20.5UP
13/16	-	0.813	0.813-0.783	13/16, 53/64, 37/32	32-0812-13/16	32-0812-13/16UP	40-0812-13/16	40-0812-13/16UP
-	21.0	0.826	0.826-0.787	13/16, 51/64	-	-	40-0826-21.0	40-0826-21.0UP
53/64	-	0.828	0.828-0.789	53/64, 37/32, 55/64	-	-	40-0828-53/64	40-0828-53/64UP
27/32	-	0.843	0.843-0.804	27/32, 53/64, 13/16	-	-	40-0843-27/32	40-0843-27/32UP
-	21.5	0.846	0.846-0.807	55/64, 7/8	-	-	40-0846-21.5	40-0846-21.5UP
55/64	-	0.859	0.859-0.820	55/64, 7/8, 57/64	-	-	40-0859-55/64	40-0859-55/64UP
-	22.0	0.866	0.866-0.827	55/64, 27/32	-	-	40-0866-22.0	40-0866-22.0UP
7/8	-	0.875	0.875-0.836	7/8, 55/64	-	-	40-0875-7/8	40-0875-7/8UP
-	22.5	0.886	0.886-0.847	57/64, 29/32	-	-	40-0886-22.5	40-0886-22.5UP
57/64	-	0.891	0.891-0.852	57/64, 29/32, 59/64	-	-	40-0890-57/64	40-0890-57/64UP
-	23.0	0.905	0.905-0.866	57/64, 7/8	-	-	40-0905-23.0	40-0905-23.0UP
29/32	-	0.906	0.906-0.867	29/32, 57/64	-	-	40-0906-29/32	40-0906-29/32UP
59/64	-	0.922	0.922-0.883	59/64, 15/16, 61/64	-	-	40-0921-59/64	40-0921-59/64UP
-	23.5	0.925	0.925-0.886	15/16, 61/64	-	-	40-0925-23.5	40-0925-23.5UP
15/16	-	0.937	0.937-0.898	15/16, 59/64, 29/32	-	-	40-0937-15/16	40-0937-15/16UP
-	24.0	0.944	0.944-0.905	15/16, 59/64	-	-	40-0944-24.0	40-0944-24.0UP
61/64	-	0.953	0.953-0.911	61/64, 31/32, 63/64	-	-	40-0953-61/64	40-0953-61/64UP
-	24.5	0.965	0.965-0.925	31/32, 63/64, 1	-	-	40-0965-24.5	40-0965-24.5UP
31/32	-	0.968	0.968-0.929	31/32, 61/64	-	-	40-0968-31/32	40-0968-31/32UP
-	25.0	0.984	0.984-0.945	31/32, 61/64	-	-	40-0984-25.0	40-0984-25.0UP
63/64	-	0.984	0.984-0.945	63/64, 1, 1-1/64	-	-	40-0985-63/64	40-0985-63/64UP
1"	-	1.000	1.000-0.961	1. 63/64, 31/32	-	-	40-1000-1-IN	40-1000-1-INUP
1-1/64	-	1.016	1.016-0.977	1-1/64, 63/64	-	-	40-1016-1-1/64	40-1016-1-1/64UP
-	26.0	1.024	1.024-0.984	1-1/64	-	-	40-1024-26.0	40-1024-26.0UP

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

ER COLLET SETS/COOLANT COLLETS

ER COLLET SETS INCH & METRIC SIZES

AccuCollets™ Precision Collets DIN 6499-form B (ER) set new standards of accuracy. **Precision Collets** concentricity is 15 microns or 0.0005" TIR or better.

- Available in inch and metric sizes
- Additional combinations and ultra precision sets also available

Accu-Collets

**PRICES
REDUCED!**



Type	Style	Description	No. Of Collets	Part Number	Set Price
ER-8	Metric	1mm to 5mm x .5mm	9	08-SET9	\$118.00
	Inch	1/16"-3/16" x 1/64	9	08-SET9-INCH	\$118.00
ER-11	Metric	1mm to 7mm x .5mm	13	11-SET13	\$105.00
	Inch	1/16"-1/4" x 1/32	7	11-SET7-INCH	\$52.50
	Inch	1/16" - 1/4" x 1/64	13	11-SET13-INCH	\$105.00
ER-16	Metric	1mm to 10mm x 1mm	10	16-SET10	\$78.75
	Inch	1/16" - 3/8" x 1/32"	11	16-SET11-INCH	\$87.50
ER-20	Metric	1mm to 13mm x 1mm	12	20-SET12	\$107.25
	Inch	1/16" - 1/2" x 1/32"	15	20-SET15-INCH	\$136.50
ER-25	Metric	2mm to 16mm x 1mm	15	25-SET15	\$136.50
	Inch	3/32" - 5/8" x 1/32"	18	25-SET18-INCH	\$165.75
ER-32	Metric	3mm to 20mm x 1mm	18	32-SET18	\$174.25
	Inch	1/8"-3/4" x 1/32"	21	32-SET21-INCH	\$205.00
ER-40	Metric	4mm to 26mm x 1mm	23	40-SET23	\$247.50
	Inch	1/8"-1" x 1/16"	15	40-SET15-INCH	\$157.50
	Inch	1/8" - 1" x 1/32"	29	40-SET29-INCH	\$315.00

COLLET TRAYS

- High impact plastic tray will not damage accurate locating surfaces
- Sliding see thru plastic cover
- Up to 40 collets per tray - holds a full set plus special & metric sizes
- Angled seat location to secure collet
- Made in USA



Collet Series	Collet Capacity	Part Number	Price Each
ER-11	40	SIE-SAER-11-40	\$35.65
ER-16	40	SIE-SAER-16-40	\$35.65
ER-20	40	SIE-SAER-20-40	\$38.73
ER-25	40	SIE-SAER-25-40	\$38.73
ER-32	40	SIE-SAER-32-40	\$39.97
ER-40	28	SIE-SAER-40-28	\$39.97

Protect & Organize Your Collets!

ER INCH & METRIC COOLANT COLLETS

- Unique patented design is solid steel construction ensuring longer life
- No discs, plugs or other hardware needed.
- Accu-Collets have rubber plugs
- Maximum pressure of 1000 PSI
- Drill insertion does not need to be longer than the collet length
- Lyndex coolant style ER collets feature a unique patented design which staggers the slots to prevent coolant from reaching the face of the collet



Accu-Collets



Note: ER coolant collets are designed for use with cylindrical shank tools (no flats). Use of coolant collets with tools that are not cylindrical will result in coolant leakage.

Nominal I.D. (OD)		L		Max. Runout	
mm	Inch	mm	Inch	mm	Inch
4 - 6	.1575"-.2362"	16	.6299"	0.010	.0004"
6 - 10	.2362"-.3937"	25	.9842"		
10 - 18	.3937"-.7086"	40	1.5748"	0.015	.0006"
18 - 26	.7086"-1.0236"	50	1.9685"		

Frac	MM	Dec.	ER 11 Coolant Collets		ER 16 Coolant Collets	
			Accu-Collets [E]	Lyndex [B]	Accu-Collets [E]	Lyndex [B]
			\$29.00 ea	\$64.68 ea	\$30.50 ea	\$57.00 ea
-	3.0	0.1180	11-0118-3.0C	-	16-0118-3.0C	-
1/8	-	0.1250	11-0125-1/8C	-	16-0125-1/8C	16-0125-1/8CL
-	3.5	0.1380	11-0138-3.5C	-	16-0138-3.5C	-
9/64	-	0.1400	11-0140-9/64C	-	16-0140-9/64C	16-0140-9/64CL
5/32	-	0.1560	11-0156-5/32C	-	16-0156-5/32C	16-0156-5/32CL
-	4.0	0.1570	11-0157-4.0C	11-0157-4.0CL	16-0157-4.0C	16-0157-4.0CL
11/64	-	0.1710	11-0171-11/64C	-	16-0171-11/64C	-
-	4.5	0.1770	11-0177-4.5C	11-0177-4.5CL	16-0177-4.5C	16-0177-4.5CL
3/16	-	0.1870	11-0187-3/16C	11-0187-3/16CL	16-0187-3/16C	16-0187-3/16CL
-	5.0	0.1960	11-0196-5.0C	11-0196-5.0CL	16-0196-5.0C	16-0196-5.0CL
13/64	-	0.2030	11-0203-13/64C	11-0203-13/64CL	16-0203-13/64C	16-0203-13/64CL
-	5.5	0.2170	11-0217-5.5C	11-0217-5.5CL	16-0217-5.5C	16-0217-5.5CL
7/32	-	0.2180	11-0218-7/32C	11-0218-7/32CL	16-0218-7/32C	16-0218-7/32CL
15/64	-	0.2340	11-0234-15/64C	11-0234-15/64CL	16-0234-15/64C	16-0234-15/64CL
-	6.0	0.2360	11-0236-6.0C	11-0236-6.0CL	16-0236-6.0C	16-0236-6.0CL
1/4	-	0.2500	11-0250-1/4C	11-0250-1/4CL	16-0250-1/4C	16-0250-1/4CL
-	6.5	0.2560	11-0256-6.5C	11-0256-6.5CL	16-0256-6.5C	16-0256-6.5CL
17/64	-	0.2650	11-0265-17/64C	11-0265-17/64CL	16-0265-17/64C	16-0265-17/64CL
-	7.0	0.2750	11-0275-7.0C	11-0275-7.0CL	16-0275-7.0C	16-0275-7.0CL
9/32	-	0.2812	-	-	16-0281-9/32C	16-0281-9/32CL
-	7.5	0.2953	-	-	16-0295-7.5C	16-0295-7.5CL
19/64	-	0.2969	-	-	16-0296-19/64C	16-0296-19/64CL
5/16	-	0.3125	-	-	16-0312-5/16C	16-0312-5/16CL
-	8.0	0.3150	-	-	16-0315-8.0C	16-0315-8.0CL
21/64	-	0.3281	-	-	16-0328-21/64C	16-0328-21/64CL
-	8.5	0.3346	-	-	16-0334-8.5C	16-0334-8.5CL
11/32	-	0.3438	-	-	16-0343-11/32C	16-0343-11/32CL
-	9.0	0.3543	-	-	16-0354-9.0C	16-0354-9.0CL
23/64	-	0.3594	-	-	16-0359-23/64C	16-0359-23/64CL
-	9.5	0.3740	-	-	16-0374-9.5C	16-0374-9.5CL
3/8	-	0.3750	-	-	16-0375-3/8C	16-0375-3/8CL
25/64	-	0.3906	-	-	16-0390-25/64C	16-0390-25/64CL
-	10.0	0.3937	-	-	16-0393-10.0C	16-0393-10.0CL

Call Us Today For All Of Your Machine Tool Needs!

ER COOLANT COLLETS

ER INCH & METRIC COOLANT COLLETS

FEATURES:

- Unique patented design is solid steel construction ensuring longer life
- No discs, plugs or other hardware needed
- Accu-Collets have rubber plugs
- Maximum pressure of 1000 PSI
- Drill insertion does not need to be longer than the collet length
- Lyndex coolant style ER collets feature a unique patented design which staggers the slots to prevent coolant from reaching the face of the collet



Accu-Collets E

LYNDEX B

Note: ER coolant collets are designed for use with cylindrical shank tools (no flats). Use of coolant collets with tools that are not cylindrical will result in coolant leakage.

Frac	MM	Dec.	ER 20 Coolant Collets		ER 25 Coolant Collets		ER 32 Coolant Collets		ER 40 Coolant Collets	
			Accu-Collets	Lyndex	Accu-Collets	Lyndex	Accu-Collets	Lyndex	Accu-Collets	Lyndex
-	3.0	0.1180	20-0118-3.0C	-	25-0118-3.0C	-	32-0118-3.0C	-	-	-
1/8	-	0.1250	20-0125-1/8C	-	25-0125-01/8C	-	32-0125-1/8C	-	-	-
5/32	-	0.1560	20-0156-5/32C	-	25-0156-5/32C	-	32-0156-5/32C	-	40-0156-5/32C	-
-	4.0	0.1570	20-0157-4.0C	-	25-0157-4.0C	-	32-0157-4.0C	-	40-0157-4.0C	-
3/16	-	0.1870	20-0187-3/16C	-	25-0187-3/16C	-	32-0187-3/16C	-	40-0187-3/16C	-
-	5.0	0.1960	20-0196-5.0C	20-0196-5.0CL	25-0196-5.0C	-	32-0196-5.0C	-	40-0196-5.0C	-
7/32	-	0.2180	20-0218-7/32C	20-0218-7/32CL	25-0218-7/32C	25-0218-7/32CL	32-0218-7/32C	-	40-0218-7/32C	-
-	6.0	0.2360	20-0236-6.0C	20-0236-6.0CL	25-0236-6.0C	25-0236-6.0CL	32-0236-6.0C	-	40-0236-6.0C	-
1/4	-	0.2500	20-0250-1/4C	20-0250-1/4CL	25-0250-1/4C	25-0250-1/4CL	32-0250-1/4C	32-0250-1/4CL	40-0250-1/4C	-
-	7.0	0.2750	20-0275-7.0C	20-0275-7.0CL	25-0275-7.0C	25-0275-7.0CL	32-0275-7.0C	-	40-0275-7.0C	-
9/32	-	0.2810	20-0281-9/32C	20-0281-9/32CL	25-0281-9/32C	25-0281-9/32CL	32-0281-9/32C	32-0281-9/32CL	40-0281-9/32C	-
5/16	-	0.3120	20-0312-5/16C	20-0312-5/16CL	25-0312-5/16C	25-0312-5/16CL	32-0312-5/16C	32-0312-5/16CL	40-0312-5/16C	-
-	8.0	0.3150	20-0315-8.0C	20-0315-8.0CL	25-0315-8.0C	25-0315-8.0CL	32-0315-8.0C	-	40-0315-8.0C	-
11/32	-	0.3430	20-0343-11/32C	20-0343-11/32CL	25-0343-11/32C	25-0343-11/32CL	32-0343-11/32C	32-0343-11/32CL	40-0343-11/32C	-
-	9.0	0.3540	20-0354-9.0C	20-0354-9.0CL	25-0354-9.0C	25-0354-9.0CL	32-0354-9.0C	-	40-0354-9.0C	-
3/8	-	0.3750	20-0375-3/8C	20-0375-3/8CL	25-0375-3/8C	25-0375-3/8CL	32-0375-3/8C	32-0375-3/8CL	40-0375-3/8C	-
-	10.0	0.3930	20-0393-10.0C	20-0393-10.0CL	25-0393-10.0C	25-0393-10.0CL	32-0393-10.0C	32-0393-10.0CL	40-0393-10.0C	40-0393-10.0CL
13/32	-	0.4060	20-0406-13/32C	20-0406-13/32CL	25-0406-13/32C	25-0406-13/32CL	32-0406-13/32C	32-0406-13/32CL	40-0406-13/32C	-
-	11.0	0.4330	20-0433-11.0C	20-0433-11.0CL	25-0433-11.0C	25-0433-11.0CL	32-0433-11.0C	32-0433-11.0CL	40-0433-11.0C	40-0433-11.0CL
7/16	-	0.4370	20-0437-7/16C	20-0437-7/16CL	25-0437-7/16C	25-0437-7/16CL	32-0437-7/16C	32-0437-7/16CL	40-0437-7/16C	-
15/32	-	0.4680	20-0468-15/32C	20-0468-15/32CL	25-0468-15/32C	25-0468-15/32CL	32-0468-15/32C	32-0468-15/32CL	40-0468-15/32C	-
-	12.0	0.4720	20-0472-12.0C	20-0472-12.0CL	25-0472-12.0C	25-0472-12.0CL	32-0472-12.0C	32-0472-12.0CL	40-0472-12.0C	40-0472-12.0CL
1/2	-	0.5000	20-0500-1/2C	20-0500-1/2CL	25-0500-1/2C	25-0500-1/2CL	32-0500-1/2C	32-0500-1/2CL	40-0500-1/2C	-
-	13.0	0.5110	20-0511-13.0C	20-0511-13.0CL	25-0511-13.0C	25-0511-13.0CL	32-0511-13.0C	32-0511-13.0CL	40-0511-13.0C	40-0511-13.0CL
17/32	-	0.5310	-	-	25-0531-17/32C	25-0531-17/32CL	32-0531-17/32C	32-0531-17/32CL	40-0531-17/32C	-
-	14.0	0.5510	-	-	25-0551-14.0C	25-0551-14.0CL	32-0551-14.0C	32-0551-14.0CL	40-0551-14.0C	40-0551-14.0CL
9/16	-	0.5620	-	-	25-0562-9/16C	25-0562-9/16CL	32-0562-9/16C	32-0562-9/16CL	40-0562-9/16C	-
-	15.0	0.5900	-	-	25-0590-15.0C	25-0590-15.0CL	32-0590-15.0C	32-0590-15.0CL	40-0590-15.0C	40-0590-15.0CL
19/32	-	0.5930	-	-	25-0593-19/32C	25-0593-19/32CL	32-0593-19/32C	32-0593-19/32CL	40-0593-19/32C	-
5/8	-	0.6250	-	-	25-0625-05/8C	25-0625-05/8CL	32-0625-5/8C	32-0625-5/8CL	40-0625-5/8C	-
-	16.0	0.6300	-	-	25-0630-16.0C	25-0630-16.0CL	32-0630-16.0C	32-0630-16.0CL	40-0630-16.0C	40-0630-16.0CL
21/32	-	0.6560	-	-	-	-	32-0656-21/32C	32-0656-21/32CL	40-0656-21/32C	-
-	17.0	0.6690	-	-	-	-	32-0669-17.0C	32-0669-17.0CL	40-0669-17.0C	40-0669-17.0CL
11/16	-	0.6870	-	-	-	-	32-0687-11/16C	32-0687-11/16CL	40-0687-11/16C	-
-	18.0	0.7080	-	-	-	-	32-0708-18.0C	32-0708-18.0CL	40-0708-18.0C	40-0708-18.0CL
23/32	-	0.7180	-	-	-	-	32-0718-23/32C	32-0718-23/32CL	40-0718-23/32C	-
-	19.0	0.7480	-	-	-	-	32-0748-19.0C	32-0748-19.0CL	40-0748-19.0C	40-0748-19.0CL
3/4	-	0.7500	-	-	-	-	32-0750-3/4C	32-0750-3/4CL	40-0750-3/4C	-
25/32	-	0.7810	-	-	-	-	32-0781-25/32C	32-0781-25/32CL	40-0781-25/32C	-
-	20.0	0.7870	-	-	-	-	32-0787-20.0C	32-0787-20.0CL	40-0787-20.0C	40-0787-20.0CL
13/16	-	0.8120	-	-	-	-	-	-	40-0812-13/16C	-
-	21.0	0.8260	-	-	-	-	-	-	40-0826-21.0C	40-0826-21.0CL
27/32	-	0.8430	-	-	-	-	-	-	40-0843-27/32C	-
-	22.0	0.8660	-	-	-	-	-	-	40-0866-22.0C	40-0866-22.0CL
7/8	-	0.8750	-	-	-	-	-	-	40-0875-7/8C	-
-	23.0	0.9050	-	-	-	-	-	-	40-0905-23.0C	40-0905-23.0CL
29/32	-	0.9060	-	-	-	-	-	-	40-0906-29/32C	-
15/16	-	0.9370	-	-	-	-	-	-	40-0937-15/16C	-
-	24.0	0.9440	-	-	-	-	-	-	40-0944-24.0C	40-0944-24.0CL
31/32	-	0.9680	-	-	-	-	-	-	40-0968-31/32C	-
-	25.0	0.9840	-	-	-	-	-	-	40-0984-25.0C	40-0984-25.0CL
1	-	1.0000	-	-	-	-	-	-	40-1000-1-INCL	-
-	26.0	1.0236	-	-	-	-	-	-	40-1024-26.0C	40-1024-26.0CL

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

ER COOLANT & TAPPING COLLETS

ER COOLANT COLLETS Steel Sealed Precision



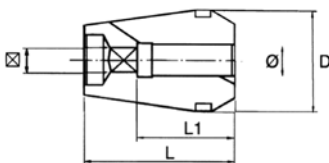
- Designed for use with "on-size" tools
- Sealed to 2000 PSI
- No plugs
- Protects tool holder from contaminants
- Use with standard ER collet nuts
- Metric sizes also available



		ER 16	ER 20	ER 25	ER 32	ER 40
Dia	Dec.	\$44.00 ea	\$49.00 ea	\$49.00 ea	\$44.00 ea	\$44.00 ea
3/32"	0.093	16-0093-3/32C-T	-	-	-	-
1/8"	0.125	16-0125-1/8C-T	-	-	-	-
5/32"	0.156	16-0156-5/32CT	20-0156-5/32CT	-	-	-
3/16"	0.187	16-0187-3/16CT	20-0187-3/16CT	-	-	-
7/32"	0.218	16-0218-7/32CT	20-0218-7/32CT	25-0218-7/32CT	32-0218-7/32CT	-
1/4"	0.250	16-0250-1/4CT	20-0250-1/4CT	25-0250-1/4CT	32-0250-1/4CT	-
9/32"	0.281	16-0281-9/32CT	20-0281-9/32CT	25-0281-9/32CT	32-0281-9/32CT	-
5/16"	0.312	16-0312-5/16CT	20-0312-5/16CT	25-0312-5/16CT	32-0312-5/16CT	-
11/32"	0.343	16-0343-11/32CT	20-0343-11/32CT	25-0343-11/32CT	32-0343-11/32CT	-
3/8"	0.375	16-0375-3/8CT	20-0375-3/8CT	25-0375-3/8CT	32-0375-3/8CT	40-0375-3/8CT
13/32"	0.406	16-0406-13/32CT	20-0406-13/32CT	25-0406-13/32CT	32-0406-13/32CT	40-0406-13/32CT
7/16"	0.437	-	20-0437-7/16CT	25-0437-7/16CT	32-0437-7/16CT	40-0437-7/16CT
15/32"	0.468	-	20-0468-15/32CT	25-0468-15/32CT	32-0468-15/32CT	40-0468-15/32CT
1/2"	0.500	-	20-0500-1/2CT	25-0500-1/2CT	32-0500-1/2CT	40-0500-1/2CT
17/32"	0.531	-	-	25-0531-17/32CT	32-0531-17/32CT	40-0531-17/32CT
9/16"	0.562	-	-	25-0562-9/16CT	32-0562-9/16CT	40-0562-9/16CT
19/32"	0.593	-	-	25-0593-19/32CT	32-0593-19/32CT	40-0593-19/32CT
5/8"	0.625	-	-	25-0625-5/8CT	32-0625-5/8CT	40-0625-5/8CT
21/32"	0.656	-	-	-	32-0656-21/32CT	40-0656-21/32CT
11/16"	0.687	-	-	-	32-0687-11/16CT	40-0687-11/16CT
23/32"	0.718	-	-	-	32-0718-23/32CT	40-0718-23/32CT
3/4"	0.750	-	-	-	32-0750-3/4CT	40-0750-3/4CT
7/8"	0.875	-	-	-	-	40-0875-7/8CT
1.0"	1.000	-	-	-	-	40-1000-1CT

ER TAP COLLETS FOR RIGID TAPPING

These collets feature a unique design that uses an internal square drive with our ER series collets. The square drives match the tap square, providing a tight fit for all rigid tapping applications. Using ER tap collets and a standard ER collet chuck allows you to vary the gage length of your tapping application without the need for special tapholders.



	ER-16	ER-20	ER-25
D	16.0mm	20.0mm	25.0mm
L	27.5mm	31.5mm	34.0mm

	ER-32	ER-40
D	32.0mm	40.0mm
L	40.0mm	46.0mm

ANSI Standard			ER 11	ER 16 Tap Collets		ER 20 Tap Collets	
Tap Size	Shank Size	Square Size	AccuCollets	AccuCollets	Lyndex	AccuCollets	Lyndex
#0 - 6	0.141	0.110	\$33.00 ea	\$33.00 ea	\$74.48 ea	\$33.00 ea	\$81.05 ea
#8	0.168	0.131	11-141-RA-AC	16-141-RA-AC	-	20-141-RA-AC	20-141-RA-LY
#10	0.194	0.152	11-168-RA-AC	16-168-RA-AC	16-168-RA-LY	20-168-RA-AC	20-168-RA-LY
#12	0.220	0.165	11-194-RA-AC	16-194-RA-AC	16-194-RA-LY	20-194-RA-AC	20-194-RA-LY
1/4	0.255	0.191	11-220-RA-AC	16-220-RA-AC	16-220-RA-LY	20-220-RA-AC	20-220-RA-LY
5/16	0.318	0.238	11-255-RA-AC	16-255-RA-AC	16-255-RA-LY	20-255-RA-AC	20-255-RA-LY
3/8	0.381	0.286	-	-	-	20-318-RA-AC	20-318-RA-LY
7/16	0.323	0.242	-	-	-	20-381-RA-AC	20-381-RA-LY
1/2	0.367	0.275	-	-	-	20-323-RA-AC	20-323-RA-LY
						20-367-RA-AC	20-367-RA-LY

ANSI Standard			ER 25 Tap Collets		ER 32 Tap Collets		ER 40 Tap Collets	
Tap Size	Shank Size	Square Size	AccuCollets	Lyndex	AccuCollets	Lyndex	AccuCollets	Lyndex
#0 - 6	0.141	0.110	\$36.50 ea	\$83.79 ea	\$38.50 ea	\$89.77 ea	\$43.50 ea	\$112.70 ea
#8	0.168	0.131	25-141-RA-AC	-	32-141-RA-AC	-	40-141-RA-AC	-
#10	0.194	0.152	25-168-RA-AC	-	32-168-RA-AC	-	40-168-RA-AC	-
#12	0.220	0.165	25-194-RA-AC	25-194-RA-LY	32-194-RA-AC	32-194-RA-LY	40-194-RA-AC	-
1/4	0.255	0.191	25-220-RA-AC	25-220-RA-LY	32-220-RA-AC	32-220-RA-LY	40-220-RA-AC	-
5/16	0.318	0.238	25-255-RA-AC	25-255-RA-LY	32-255-RA-AC	32-255-RA-LY	40-255-RA-AC	40-255-RA-LY
3/8	0.381	0.286	25-318-RA-AC	25-318-RA-LY	32-318-RA-AC	32-318-RA-LY	40-318-RA-AC	40-318-RA-LY
7/16	0.323	0.242	25-381-RA-AC	25-381-RA-LY	32-381-RA-AC	32-381-RA-LY	40-381-RA-AC	40-381-RA-LY
1/2	0.367	0.275	25-323-RA-AC	25-323-RA-LY	32-323-RA-AC	32-323-RA-LY	40-323-RA-AC	40-323-RA-LY
9/16	0.429	0.322	25-367-RA-AC	25-367-RA-LY	32-367-RA-AC	32-367-RA-LY	40-367-RA-AC	40-367-RA-LY
5/8	0.480	0.360	25-429-RA-AC	25-429-RA-LY	32-429-RA-AC	32-429-RA-LY	40-429-RA-AC	40-429-RA-LY
11/16	0.542	0.406	25-480-RA-AC	25-480-RA-LY	32-480-RA-AC	32-480-RA-LY	40-480-RA-AC	40-480-RA-LY
3/4	0.590	0.442	-	-	32-542-RA-AC	32-542-RA-LY	40-542-RA-AC	40-542-RA-LY
13/16	0.652	0.489	-	-	32-590-RA-AC	32-590-RA-LY	40-590-RA-AC	40-590-RA-LY
7/8	0.697	0.523	-	-	32-652-RA-AC	32-652-RA-LY	40-652-RA-AC	40-652-RA-LY
15/16	0.760	0.570	-	-	-	-	40-697-RA-AC	40-697-RA-LY
1"	0.800	0.600	-	-	-	-	40-760-RA-AC	40-760-RA-LY
							40-800-RA-AC	40-800-RA-LY

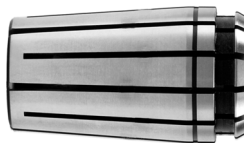
Call Us Today For All Of Your Machine Tool Needs!

TG COLLETS

TG 150 COLLETS Standard & Coolant

FEATURES:

- TG Collets collapse approx. 1/64"
- Machined to exacting standards
- Ideal choice for high speed and high precision milling and drilling operations
- TG Coolant Collets are designed for use with tooling requiring thru spindle coolant
- Tolerance: 0.0003" at collet nose



TG 150 Collets					TG150 Coolant				
BORE SIZE		AccuCollets	LYNDEX	AccuCollets	BORE SIZE		AccuCollets	LYNDEX	AccuCollets
Inch	Dec	\$29.00 ea	\$52.92 ea	\$44.00 ea	Inch	Dec	\$29.00 ea	\$37.24 ea	\$44.00 ea
1/2	0.500	150-032-AC	150-032-LY	150-032S-AC	1"	1.000	150-064-AC	150-064-LY	150-064S-AC
33/64	0.516	150-033-AC	150-033-LY	150-033S-AC	1-1/64	1.016	150-065-AC	150-065-LY	150-065S-AC
17/32	0.531	150-034-AC	150-034-LY	150-034S-AC	1-1/32	1.031	150-066-AC	150-066-LY	150-066S-AC
35/64	0.547	150-035-AC	150-035-LY	150-035S-AC	1-3/64	1.047	150-067-AC	150-067-LY	150-067S-AC
9/16	0.563	150-036-AC	150-036-LY	150-036S-AC	1-1/16	1.063	150-068-AC	150-068-LY	150-068S-AC
37/64	0.578	150-037-AC	150-037-LY	150-037S-AC	1-5/64	1.078	150-069-AC	150-069-LY	150-069S-AC
19/32	0.594	150-038-AC	150-038-LY	150-038S-AC	1-3/32	1.094	150-070-AC	150-070-LY	150-070S-AC
39/64	0.609	150-039-AC	150-039-LY	150-039S-AC	1-7/64	1.109	150-071-AC	150-071-LY	150-071S-AC
5/8	0.625	150-040-AC	150-040-LY	150-040S-AC	1-1/8	1.125	150-072-AC	150-072-LY	150-072S-AC
41/64	0.641	150-041-AC	150-041-LY	150-041S-AC	1-9/64	1.141	150-073-AC	150-073-LY	150-073S-AC
21/32	0.656	150-042-AC	150-042-LY	150-042S-AC	1-5/32	1.156	150-074-AC	150-074-LY	150-074S-AC
43/64	0.672	150-043-AC	150-043-LY	150-043S-AC	1-11/64	1.172	150-075-AC	150-075-LY	150-075S-AC
11/16	0.688	150-044-AC	150-044-LY	150-044S-AC	1-3/16	1.188	150-076-AC	150-076-LY	150-076S-AC
45/64	0.703	150-045-AC	150-045-LY	150-045S-AC	1-13/64	1.203	150-077-AC	150-077-LY	150-077S-AC
23/32	0.719	150-046-AC	150-046-LY	150-046S-AC	1-7/32	1.219	150-078-AC	150-078-LY	150-078S-AC
47/64	0.734	150-047-AC	150-047-LY	150-047S-AC	1-15/64	1.234	150-079-AC	150-079-LY	150-079S-AC
		\$29.00 ea	\$37.24 ea	\$44.00 ea	1-1/4	1.250	150-080-AC	150-080-LY	150-080S-AC
3/4	0.750	150-048-AC	150-048-LY	150-048S-AC	1-17/64	1.266	150-081-AC	150-081-LY	150-081S-AC
49/64	0.766	150-049-AC	150-049-LY	150-049S-AC	1-9/32	1.281	150-082-AC	150-082-LY	150-082S-AC
25/32	0.781	150-050-AC	150-050-LY	150-050S-AC	1-19/64	1.297	150-083-AC	150-083-LY	150-083S-AC
51/64	0.797	150-051-AC	150-051-LY	150-051S-AC	1-5/16	1.313	150-084-AC	150-084-LY	150-084S-AC
13/16	0.813	150-052-AC	150-052-LY	150-052S-AC	1-21/64	1.328	150-085-AC	150-085-LY	150-085S-AC
53/64	0.828	150-053-AC	150-053-LY	150-053S-AC	1-11/32	1.344	150-086-AC	150-086-LY	150-086S-AC
27/32	0.844	150-054-AC	150-054-LY	150-054S-AC	1-23/64	1.359	150-087-AC	150-087-LY	150-087S-AC
55/64	0.859	150-055-AC	150-055-LY	150-055S-AC	1-3/8	1.375	150-088-AC	150-088-LY	150-088S-AC
7/8	0.875	150-056-AC	150-056-LY	150-056S-AC	1-25/64	1.391	150-089-AC	150-089-LY	150-089S-AC
57/64	0.891	150-057-AC	150-057-LY	150-057S-AC	1-13/32	1.406	150-090-AC	150-090-LY	150-090S-AC
29/32	0.906	150-058-AC	150-058-LY	150-058S-AC	1-27/64	1.422	150-091-AC	150-091-LY	150-091S-AC
59/64	0.922	150-059-AC	150-059-LY	150-059S-AC	1-7/16	1.438	150-092-AC	150-092-LY	150-092S-AC
15/16	0.938	150-060-AC	150-060-LY	150-060S-AC	1-29/64	1.453	150-093-AC	150-093-LY	150-093S-AC
61/64	0.953	150-061-AC	150-061-LY	150-061S-AC	1-15/32	1.469	150-094-AC	150-094-LY	150-094S-AC
31/32	0.969	150-062-AC	150-062-LY	150-062S-AC	1-31/64	1.484	150-095-AC	150-095-LY	150-095S-AC
63/64	0.984	150-063-AC	150-063-LY	150-063S-AC	1-1/2	1.500	150-096-AC	150-096-LY	150-096S-AC

METRIC TG 100 COLLETS



TG 100 Metric Collets			
BORE SIZE		Standard	Coolant
MM	Dec.	\$40.67 ea	\$88.79 ea
4.0	0.157	100-204-LY	-
6.0	0.236	100-206-LY	100-206S-LY
8.0	0.315	100-208-LY	100-208S-LY
10.0	0.394	100-210-LY	100-210S-LY
12.0	0.472	100-212-LY	100-212S-LY
14.0	0.551	100-214-LY	100-214S-LY
16.0	0.630	100-216-LY	100-216S-LY
18.0	0.709	100-218-LY	100-218S-LY
20.0	0.787	100-220-LY	100-220S-LY
22.0	0.866	100-222-LY	100-222S-LY
24.0	0.945	100-224-LY	100-224S-LY
25.0	0.984	100-225-LY	100-225S-LY
26.0	1.024	100-226-LY	100-226S-LY

Full Line Available!
Please call for more information.

COLLET RACKS FOR ER/DA & TG COLLETS



Protect, store and organize your valuable collets! Made of heavy 14 gauge steel, finished with durable epoxy, powder paint. All racks conveniently fit in the Toolscoot and Tool Tower storage trays and are mountable on bench top.



Collet Type	No. of Holes	Hole Size	Part Number	Price
ER 11	49	27/64"	HU-14800	
ER 16	49	39/64"	HU-14801	
ER 20	36	49/64"	HU-14802	
ER 25	48	61/64"	HU-14803	\$46.35
ER 32	40	1 13/64"	HU-14804	
ER 40	27	1 1/2"	HU-14805	
ER 50	21	2"	HU-14806	
DA300	49	5/16"	HU-14810	
DA200	49	15/32"	HU-14811	\$46.35
DA180	48	29/32"	HU-14812	
DA100	36	43/64"	HU-14813	
TG75	40	1 1/32"	HU-14820	\$46.35
TG100	27	1 5/16"	HU-14821	
TG150	21	1 59/64"	HU-14822	

TG COLLET SETS

- TG Collets collapse approx. 1/64"
- Machined to exacting standards
- Ideal choice for high speed and high precision milling and drilling operations
- Tolerance: 0.0003" at collet nose
- Sets available in TG 75, 100 & 150



Buy The Set & Save!



Set Qty	Range	Part Number	Price
15	1/8"-1"-16ths	100-SET15	\$285.00
21	3/8"-1"-32nds	100-SET21	\$399.00
30	3/32"-1"-32nds	100-SET30	\$570.00
41	3/8"-1"-64ths	100-SET41	\$779.00
59	3/32"-1"-64ths	100-SET59	\$1,121.00

Call Us Today For All Of Your Machine Tool Needs!

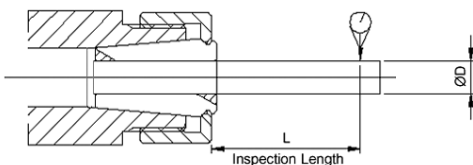
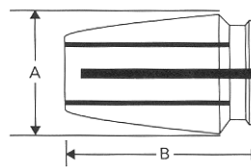
AF COLLETS

AF EXTENDED RANGE COLLETS

Interchangeable With Universal Acura-Flex® Extended Range (AF) Collets

Considered one of the most accurate collet styles available, AF collets are interchangeable with Universal Acura-Flex® style (AF) collets. Collets will collapse 1/64".

- Extended clamping range- .02" - .04"
- 50% more gripping power than any other single taper collet available
- Collet sizes .172 thru 2.000 are guaranteed to .0005 T.I.R. at 2 times the tool diameter, or a maximum one inch from the face of the collet
- Collet sizes .062 thru .172 are guaranteed .0010 T.I.R. at the nose



Collet Type	D Max Dia	L Length
AF 25	0.457	1.000
AF 38	0.581	1.030
AF 50	0.741	1.160
AF 75	1.141	2.020
AF 100	1.462	2.500

Sealed collets are available for internal coolant through application

Runout Accuracy

Diameter-D		Inspection length - L		Run-outaccuracy	
Inch	mm	Inch	mm	Inch	mm
1/16- 11/64	1.5 - 4.5	AT NOSE		0.001	0.025
3/16- 1/2	5.0 - 12.5	2 x D		0.0005	0.013
3/32- 1	13.0 - 25.5	1	25.4		

*Acura-Flex is a registered trademark of Universal Engineering

AF 25 COLLETS- 3/64" TO 1/4" RANGE

Size	Dec.	Part Number	Price Each	Industry Ref. #
3/64	0.046	AF25-046-3/64	\$26.25	AF-00
1.5mm	0.059	AF25-059-1.5	\$26.25	-
1/16	0.062	AF25-062-1/16	\$26.25	AF-0
5/64	0.078	AF25-078-5/64	\$21.50	AF-1
2mm	0.079	AF25-079-2.0	\$21.50	-
3/32	0.093	AF25-093-3/32	\$21.50	AF-2
2.5mm	0.098	AF25-098-2.5	\$21.50	-
7/64	0.109	AF25-109-7/64	\$21.50	AF-3

Size	Dec.	Part Number	Price Each	Industry Ref. #
3mm	0.118	AF25-118-3.0	\$21.50	AF-4
1/8	0.125	AF25-125-1/8	\$14.61	AF-5
3.5mm	0.138	AF25-138-3.5	\$14.61	-
9/64	0.140	AF25-140-9/64	\$14.61	AF-6
5/32	0.156	AF25-156-5/32	\$14.61	AF-7
11/64	0.171	AF25-171-11/64	\$14.61	AF-8
4.5mm	0.177	AF25-177-4.5	\$14.61	-
3/16	0.187	AF25-187-3/16	\$13.43	AF-9

Size	Dec.	Part Number	Price Each	Industry Ref. #
5mm	0.196	AF25-196-5.0	\$13.43	AF-10
13/64	0.203	AF25-203-13/64	\$13.43	AF-11
5.5mm	0.217	AF25-217-5.5	\$13.43	-
7/32	0.218	AF25-218-7/32	\$13.43	AF-12
15/64	0.234	AF25-234-15/64	\$13.43	AF-13
6mm	0.236	AF25-236-6.0	\$13.43	-
1/4	0.250	AF25-250-1/4	\$13.43	AF-14
6.5mm	0.256	AF25-256-6.5	\$13.43	-
AF25 Set (13pc)		AF25-SET13	\$207.15	-

AF 38 COLLETS- 1/16" TO 3/8" RANGE

Size	Dec.	Part Number	Price Each	Industry Ref. #
1.5mm	0.059	AF38-059-1.5	\$21.17	-
1/16	0.062	AF38-062-1/16	\$21.17	-
5/64	0.078	AF38-078-5/64	\$21.17	AF-21
2mm	0.079	AF38-079-2.0	\$21.17	-
3/32	0.093	AF38-093-3/32	\$21.17	AF-22
2.5mm	0.098	AF38-098-2.5	\$21.17	-
7/64	0.109	AF38-109-7/64	\$21.17	AF-23
1/8	0.125	AF38-125-1/8	\$21.17	AF-25
3.5mm	0.138	AF38-138-3.5	\$21.17	-
9/64	0.140	AF38-140-9/64	\$21.17	AF-26
5/32	0.156	AF38-156-5/32	\$15.71	AF-27
4mm	0.157	AF38-157-4.0	\$15.71	-

Size	Dec.	Part Number	Price Each	Industry Ref. #
11/64	0.171	AF38-171-11/64	\$15.71	AF-28
4.5mm	0.177	AF38-177-4.5	\$15.71	-
3/16	0.187	AF38-187-3/16	\$13.43	AF-29
5mm	0.196	AF38-196-5.0	\$13.43	AF-30
13/64	0.203	AF38-203-13/64	\$13.43	AF-31
5.5mm	0.217	AF38-217-5.5	\$13.43	-
7/32	0.218	AF38-218-7/32	\$13.43	AF-32
15/64	0.234	AF38-234-15/64	\$13.43	AF-33
6mm	0.236	AF38-236-6.0	\$13.43	-
1/4	0.250	AF38-250-1/4	\$13.43	AF-34
6.5mm	0.256	AF38-256-6.5	\$13.43	-
17/64	0.265	AF38-265-17/64	\$13.43	AF-35

Size	Dec.	Part Number	Price Each	Industry Ref. #
7mm	0.275	AF38-275-7.0	\$13.43	AF-36
9/32	0.281	AF38-281-9/32	\$13.43	AF-37
19/64	0.296	AF38-296-19/64	\$13.43	AF-38
5/16	0.312	AF38-312-5/16	\$13.43	AF-39
8mm	0.315	AF38-315-8.0	\$13.43	-
21/64	0.328	AF38-328-21/64	\$13.43	AF-40
8.5mm	0.334	AF38-334-8.5	\$13.43	-
11/32	0.343	AF38-343-11/32	\$13.43	AF-41
9mm	0.354	AF38-354-9.0	\$13.43	AF-42
23/64	0.359	AF38-359-23/64	\$13.43	AF-43
3/8	0.375	AF38-375-3/8	\$13.43	AF-44
AF-38 Set (21pc)		AF38-SET21	\$319.00	-

AF 50 COLLETS- 7/64" TO 1/2" RANGE

Size	Dec.	Part Number	Price Each	Industry Ref. #
7/64	0.109	AF50-109-7/64	\$22.83	-
3mm	0.118	AF50-118-3.0	\$22.83	-
1/8	0.125	AF50-125-1/8	\$22.83	AF-55
3.5mm	0.138	AF50-138-3.5	\$22.83	-
9/64	0.140	AF50-140-9/64	\$22.83	AF-56
5/32	0.156	AF50-156-5/32	\$22.83	AF-57
4mm	0.157	AF50-157-4.0	\$22.83	-
11/64	0.171	AF50-171-11/64	\$22.83	AF-58
4.5mm	0.177	AF50-177-4.5	\$22.83	-
3/16	0.187	AF50-187-3/16	\$22.83	AF-59
5mm	0.196	AF50-196-5.0	\$22.83	AF-60
13/64	0.203	AF50-203-13/64	\$22.83	AF-61
5.5mm	0.217	AF50-217-5.5	\$22.83	-
7/32	0.218	AF50-218-7/32	\$22.83	AF-62
15/64	0.234	AF50-234-15/64	\$22.83	AF-63
6mm	0.236	AF50-236-6.0	\$22.83	-

Size	Dec.	Part Number	Price Each	Industry Ref. #
1/4	0.250	AF50-250-1/4	\$14.57	AF-64
6.5mm	0.256	AF50-256-6.5	\$14.57	-
17/64	0.265	AF50-265-17/64	\$14.57	AF-65
7mm	0.275	AF50-275-7.0	\$14.57	AF-66
9/32	0.281	AF50-281-9/32	\$14.57	AF-67
7.5mm	0.295	AF50-295-7.5	\$14.57	-
19/64	0.296	AF50-296-19/64	\$14.57	AF-68
5/16	0.312	AF50-312-5/16	\$14.57	AF-69
8mm	0.315	AF50-315-8.0	\$14.57	-
21/64	0.328	AF50-328-21/64	\$14.57	AF-70
8.5mm	0.334	AF50-334-8.5	\$14.57	-
11/32	0.343	AF50-343-11/32	\$14.57	AF-71
9mm	0.354	AF50-354-9.0	\$14.57	AF-72
23/64	0.359	AF50-359-23/64	\$14.57	AF-73
9.5mm	0.374	AF50-374-9.5	\$14.57	-
3/8	0.375	AF50-375-3/8	\$14.57	AF-74

Size	Dec.	Part Number	Price Each	Industry Ref. #
25/64	0.390	AF50-390-25/64	\$14.57	AF-75
10mm	0.393	AF50-393-10.0	\$14.57	-
13/32	0.406	AF50-406-13/32	\$14.57	AF-76
10.5mm	0.413	AF50-413-10.5	\$14.57	-
27/64	0.421	AF50-421-27/64	\$14.57	AF-77
11mm	0.433	AF50-433-11.0	\$14.57	-
7/16	0.437	AF50-437-7/16	\$14.57	AF-78
11.5mm	0.452	AF50-452-11.5	\$14.57	-
29/64	0.453	AF50-453-29/64	\$14.57	AF-79
15/32	0.468	AF50-468-15/32	\$14.57	AF-80
12mm	0.472	AF50-472-12.0	\$14.57	-
31/64	0.484	AF50-484-31/64	\$14.57	AF-81
12.5mm	0.492	AF50-492-12.5	\$14.57	-
1/2	0.500	AF50-500-1/2	\$14.57	AF-82
AF 50 Set (26pc)		AF50-SET26	\$433.75	-

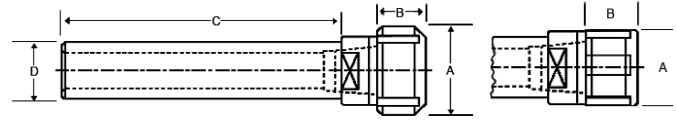
Call Us Today For All Of Your Machine Tool Needs!

COLLET EXTENSIONS/STRAIGHT SHANK HOLDERS

ER STRAIGHT SHANK HOLDERS

ER-8, ER-11 & ER-16 Collet Extensions

- Crafted from heat treated alloy steel
- Available with round or flattened shank
- Supplied with collet nut



Collet Series	Shank Dia D	Shank Length C	Nut Dia A	Nut Length B	Nut Type	Shank Type	Part Number	Price Each	Thread of Nut	Collet Nut Part Number	Wrench Part Number
---------------	-------------	----------------	-----------	--------------	----------	------------	-------------	------------	---------------	------------------------	--------------------

ER 8 STRAIGHT SHANK COLLET HOLDERS

ER08	0.375	2.50	0.48	0.44	Mini	Round	S-E08R03-25N-R	\$83.50	M10X.75	CN-ER08MN-K	WR-ER08MN
ER08	0.375	3.50	0.48	0.44	Mini	Round	S-E08R03-35N-R	\$88.50	M10X.75	CN-ER08MN-K	WR-ER08MN
ER08	0.500	2.50	0.48	0.44	Mini	Round	S-E08R05-25N-R	\$83.50	M10X.75	CN-ER08MN-K	WR-ER08MN
ER08	0.500	2.50	0.48	0.44	Mini	Flatted	S-E08F05-25N-R	\$83.50	M10X.75	CN-ER08MN-K	WR-ER08MN
ER08	0.500	3.70	0.48	0.44	Mini	Round	S-E08R05-37N-R	\$83.50	M10X.75	CN-ER08MN-K	WR-ER08MN
ER08	0.500	3.70	0.48	0.44	Mini	Flatted	S-E08F05-37N-R	\$83.50	M10X.75	CN-ER08MN-K	WR-ER08MN

ER 11 STRAIGHT SHANK COLLET HOLDERS

ER11	0.500	3.00	0.63	0.44	Mini	Round	S-E11R05-30N-R	\$77.06	M13 X .75	CN-ER11MN-K	WR-ER11MN
ER11	0.500	3.00	0.75	0.44	Hex	Round	S-E11R05-30H-R	\$77.06	M14 X .75	CN-ER11H-K	WR-ER11H
ER11	0.500	4.00	0.63	0.44	Mini	Flatted	S-E11F05-40N-R	\$75.06	M13 X .75	CN-ER11MN-K	WR-ER11MN
ER11	0.500	6.00	0.63	0.44	Mini	Round	S-E11R05-60N-R	\$84.38	M13 X .75	CN-ER11MN-K	WR-ER11MN
ER11	0.500	6.00	0.63	0.44	Mini	Flatted	S-E11F05-60N-R	\$84.38	M13 X .75	CN-ER11MN-K	WR-ER11MN
ER11	0.500	6.00	0.75	0.44	Hex	Flatted	S-E11F05-60H-R	\$73.10	M14 X .75	CN-ER11H-K	WR-ER11H
ER11	0.500	6.20	0.75	0.44	Hex	Round	S-E11R05-62H-R	\$73.10	M14 X .75	CN-ER11H-K	WR-ER11H
ER11	0.625	2.00	0.63	0.44	Mini	Round	S-E11R06-20N-R	\$84.38	M13 X .75	CN-ER11MN-K	WR-ER11MN
ER11	0.625	3.00	0.63	0.44	Mini	Round	S-E11R06-30N-R	\$84.38	M13 X .75	CN-ER11MN-K	WR-ER11MN
ER11	0.625	3.00	0.75	0.44	Hex	Round	S-E11R06-30H-R	\$84.38	M14 X .75	CN-ER11H-K	WR-ER11H
ER11	0.625	6.00	0.63	0.44	Mini	Round	S-E11R06-60N-R	\$84.38	M13 X .75	CN-ER11MN-K	WR-ER11MN
ER11	0.625	6.20	0.75	0.44	Hex	Round	S-E11R06-62H-R	\$81.90	M14 X .75	CN-ER11H-K	WR-ER11H

ER 16 STRAIGHT SHANK COLLET HOLDERS

ER16	0.500	6.00	0.87	0.67	Mini	Round	S-E16R05-60N-R	\$99.50	M19X1	CN-ER16MN-K	WR-ER16MN
ER16	0.625	3.00	0.87	0.67	Mini	Round	S-E16R06-30N-R	\$84.38	M19X1	CN-ER16MN-K	WR-ER16MN
ER16	0.625	3.00	1.10	0.67	Hex	Round	S-E16R06-30H-R	\$76.50	M22X1.5	CN-ER16H-K	WR-ER16H
ER16	0.625	3.70	1.10	0.67	Hex	Round	S-E16R06-37H-R	\$77.50	M22X1.5	CN-ER16H-K	WR-ER16H
ER16	0.625	6.00	0.87	0.67	Mini	Round	S-E16R06-60N-R	\$94.83	M19X1	CN-ER16MN-K	WR-ER16MN
ER16	0.625	6.00	0.87	0.67	Mini	Flatted	S-E16F06-60N-R	\$94.83	M19X1	CN-ER16MN-K	WR-ER16MN
ER16	0.750	2.00	1.10	0.67	Hex	Round	S-E16R07-20H-R	\$72.00	M22X1.5	CN-ER16H-K	WR-ER16H
ER16	0.750	2.50	1.10	0.67	Hex	Round	S-E16R07-25H-R	\$72.00	M22X1.5	CN-ER16H-K	WR-ER16H
ER16	0.750	2.50	1.10	0.67	Hex	Flatted	S-E16F07-25H-R	\$72.00	M22X1.5	CN-ER16H-K	WR-ER16H
ER16	0.750	3.00	0.87	0.67	Mini	Round	S-E16R07-30N-R	\$84.38	M19X1	CN-ER16MN-K	WR-ER16MN
ER16	0.750	3.60	1.10	0.67	Hex	Round	S-E16R07-36H-R	\$72.00	M22X1.5	CN-ER16H-K	WR-ER16H
ER16	0.750	4.00	1.10	0.67	Hex	Round	S-E16R07-40H-R	\$77.50	M22X1.5	CN-ER16H-K	WR-ER16H
ER16	0.750	4.00	1.10	0.67	Hex	Flatted	S-E16F07-40H-R	\$77.50	M22X1.5	CN-ER16H-K	WR-ER16H
ER16	0.750	5.20	0.87	0.67	Mini	Round	S-E16R07-52N-R	\$100.05	M19X1	CN-ER16MN-K	WR-ER16MN
ER16	0.750	6.00	0.87	0.67	Mini	Flatted	S-E16F07-52N-R	\$83.50	M19X1	CN-ER16MN-K	WR-ER16MN
ER16	0.750	6.00	1.10	0.67	Hex	Round	S-E16R07-60H-R	\$83.00	M22X1.5	CN-ER16H-K	WR-ER16H
ER16	0.750	2.50	1.10	0.67	Hex	Flatted	S-E16F07-60H-R	\$83.00	M22X1.5	CN-ER16H-K	WR-ER16H
ER16	1.00	2.50	1.10	0.67	Hex	Round	S-E16R10-25H-R	\$72.00	M22X1.5	CN-ER16H-K	WR-ER16H
ER16	1.00	2.50	1.10	0.67	Hex	Flatted	S-E16F10-25H-R	\$70.00	M22X1.5	CN-ER16H-K	WR-ER16H
ER16	1.00	4.00	1.10	0.67	Hex	Round	S-E16R10-40H-R	\$77.50	M22X1.5	CN-ER16H-K	WR-ER16H
ER16	1.00	4.00	1.10	0.67	Hex	Flatted	S-E16F10-40H-R	\$77.50	M22X1.5	CN-ER16H-K	WR-ER16H
ER16	1.00	6.00	1.10	0.67	Hex	Round	S-E16R10-60H-R	\$83.00	M22X1.5	CN-ER16H-K	WR-ER16H

ER 20 STRAIGHT SHANK COLLET HOLDERS

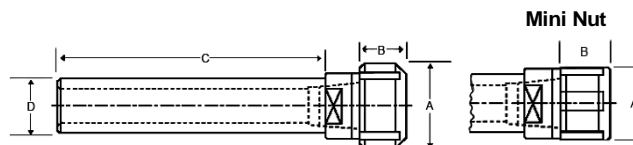
ER20	0.750	2.50	1.10	0.75	Mini	Round	S-E20R07-25N-R	\$83.25	M24X1	CN-ER20MN-K	WR-ER20MN
ER20	0.750	2.50	1.34	0.75	Hex	Round	S-E20R07-25H-R	\$72.00	M25X1.5	CN-ER20H-K	WR-ER20H
ER20	0.750	2.50	1.34	0.75	Hex	Flatted	S-E20F07-25H-R	\$72.00	M25X1.5	CN-ER20H-K	WR-ER20H
ER20	0.750	4.00	1.10	0.75	Mini	Round	S-E20R07-40N-R	\$102.50	M24X1	CN-ER20MN-K	WR-ER20MN
ER20	0.750	4.00	1.34	0.75	Hex	Round	S-E20R07-40H-R	\$77.50	M25X1.5	CN-ER20H-K	WR-ER20H
ER20	0.750	6.00	1.34	0.75	Hex	Round	S-E20R07-60H-R	\$83.00	M25X1.5	CN-ER20H-K	WR-ER20H
ER20	0.750	6.00	1.34	0.75	Hex	Flatted	S-E20F07-60H-R	\$83.00	M25X1.5	CN-ER20H-K	WR-ER20H

Call Us Today For All Of Your Machine Tool Needs!

ER STRAIGHT SHANK HOLDERS

ER Collet Extensions

- Crafted from heat treated alloy steel
- Available with round or flatted shank
- Supplied with collet nut



Collet Series	Shank Dia D	Shank Length C	Nut Dia A	Nut Length B	Nut Type	Shank Type	Part Number	Price Each	Thread of Nut	Collet Nut Part Number	Wrench Part Number
ER 20 STRAIGHT SHANK COLLET HOLDERS (continued from previous page)											
ER20	1.00	2.50	1.34	0.75	Hex	Round	S-E20R10-25H-R	\$72.00	M25X1.5	CN-ER20H-K	WR-ER20H
ER20	1.00	4.00	1.34	0.75	Hex	Round	S-E20R10-40H-R	\$77.50	M25X1.5	CN-ER20H-K	WR-ER20H
ER20	1.00	5.20	1.10	0.75	Mini	Round	S-E20R10-52N-R	\$88.50	M24X1	CN-ER20MN-K	WR-ER20MN
ER20	1.00	6.00	1.34	0.75	Hex	Round	S-E20R10-60H-R	\$83.00	M25X1.5	CN-ER20H-K	WR-ER20H

Collet Series	Shank Dia D	Shank Length C	Nut Dia A	Nut Length B	Nut Type	Shank Type	Part Number	Price Each	Thread of Nut	Collet Nut Part Number	Wrench Part Number
ER 25 STRAIGHT SHANK COLLET HOLDERS											
ER25	0.500	4.00	1.65	0.79	Spanner	Round	S-E25R05-40S-R	\$83.00	M32X1.5	CN-ER25S-K	WR-ER25S
ER25	0.750	2.50	1.65	0.79	Spanner	Round	S-E25R07-25S-R	\$77.50	M32X1.5	CN-ER25S-K	WR-ER25S
ER25	0.750	2.50	1.65	0.79	Spanner	Flatted	S-E25F07-25S-R	\$77.50	M32X1.5	CN-ER25S-K	WR-ER25S
ER25	0.750	4.00	1.65	0.79	Spanner	Round	S-E25R07-40S-R	\$83.00	M32X1.5	CN-ER25S-K	WR-ER25S
ER25	0.750	4.00	1.65	0.79	Spanner	Flatted	S-E25F07-40S-R	\$83.00	M32X1.5	CN-ER25S-K	WR-ER25S
ER25	0.750	6.00	1.65	0.79	Spanner	Round	S-E25R07-60S-R	\$88.50	M32X1.5	CN-ER25S-K	WR-ER25S
ER25	0.750	6.00	1.65	0.79	Spanner	Flatted	S-E25F07-60S-R	\$86.50	M32X1.5	CN-ER25S-K	WR-ER25S
ER25	1.00	2.50	1.65	0.79	Spanner	Round	S-E25R10-25S-R	\$77.50	M32X1.5	CN-ER25S-K	WR-ER25S
ER25	1.00	2.50	1.65	0.79	Spanner	Flatted	S-E25F10-25S-R	\$75.50	M32X1.5	CN-ER25S-K	WR-ER25S
ER25	1.00	2.50	1.38	0.79	Mini	Flatted	S-E25F10-25N-R	\$77.50	M30X1	CN-ER25MN-K	WR-ER25MN
ER25	1.00	4.00	1.38	0.79	Mini	Round	S-E25R10-40N-R	\$102.50	M30X1	CN-ER25MN-K	WR-ER25MN
ER25	1.00	4.00	1.65	0.79	Spanner	Round	S-E25R10-40S-R	\$83.00	M32X1.5	CN-ER25S-K	WR-ER25S
ER25	1.00	4.00	1.65	0.79	Spanner	Flatted	S-E25F10-40S-R	\$83.00	M32X1.5	CN-ER25S-K	WR-ER25S
ER25	1.00	6.00	1.65	0.79	Spanner	Round	S-E25R10-60S-R	\$88.50	M32X1.5	CN-ER25S-K	WR-ER25S
ER25	1.00	6.00	1.65	0.79	Spanner	Flatted	S-E25F10-60S-R	\$88.50	M32X1.5	CN-ER25S-K	WR-ER25S

Collet Series	Shank Dia D	Shank Length C	Nut Dia A	Nut Length B	Nut Type	Shank Type	Part Number	Price Each	Thread of Nut	Collet Nut Part Number	Wrench Part Number
ER 32 STRAIGHT SHANK COLLET HOLDERS											
ER32	1.00	2.00	1.97	0.87	Spanner	Round	S-E32R10-20S-R	\$83.00	M40X1.4	CN-ER32S-K	WR-ER32S
ER32	1.00	2.50	1.97	0.87	Spanner	Round	S-E32R10-25S-R	\$83.00	M40X1.4	CN-ER32S-K	WR-ER32S
ER32	1.00	2.50	1.97	0.87	Spanner	Flatted	S-E32F10-25S-R	\$81.00	M40X1.4	CN-ER32S-K	WR-ER32S
ER32	1.00	4.00	1.97	0.87	Spanner	Round	S-E32R10-40S-R	\$88.50	M40X1.4	CN-ER32S-K	WR-ER32S
ER32	1.00	4.00	1.97	0.87	Spanner	Flatted	S-E32F10-40S-R	\$86.50	M40X1.4	CN-ER32S-K	WR-ER32S
ER32	1.00	6.00	1.97	0.87	Spanner	Round	S-E32R10-60S-R	\$94.00	M40X1.4	CN-ER32S-K	WR-ER32S
ER32	1.00	6.00	1.97	0.87	Spanner	Flatted	S-E32F10-60S-R	\$94.00	M40X1.4	CN-ER32S-K	WR-ER32S
ER32	1.25	2.00	1.97	0.87	Spanner	Round	S-E32R12-20S-R	\$83.00	M40X1.4	CN-ER32S-K	WR-ER32S
ER32	1.25	2.50	1.97	0.87	Spanner	Round	S-E32R12-25S-R	\$83.00	M40X1.4	CN-ER32S-K	WR-ER32S
ER32	1.25	4.00	1.97	0.87	Spanner	Round	S-E32R12-40S-R	\$88.50	M40X1.4	CN-ER32S-K	WR-ER32S
ER32	1.25	4.00	1.97	0.87	Spanner	Flatted	S-E32F12-40S-R	\$86.50	M40X1.4	CN-ER32S-K	WR-ER32S
ER32	1.25	6.00	1.97	0.87	Spanner	Round	S-E32R12-60S-R	\$94.00	M40X1.4	CN-ER32S-K	WR-ER32S

Collet Series	Shank Dia D	Shank Length C	Nut Dia A	Nut Length B	Nut Type	Shank Type	Part Number	Price Each	Thread of Nut	Collet Nut Part Number	Wrench Part Number
ER 40 STRAIGHT SHANK COLLET HOLDERS											
ER40	1.00	2.50	2.48	0.98	Spanner	Round	S-E40R10-25S-R	\$94.00	M50X1.5	CN-ER40S-K	WR-ER40S
ER40	1.00	2.50	2.48	0.98	Spanner	Flatted	S-E40F10-25S-R	\$94.00	M50X1.5	CN-ER40S-K	WR-ER40S
ER40	1.00	4.00	2.48	0.98	Spanner	Round	S-E40R10-40S-R	\$99.50	M50X1.5	CN-ER40S-K	WR-ER40S
ER40	1.00	4.00	2.48	0.98	Spanner	Flatted	S-E40F10-40S-R	\$99.50	M50X1.5	CN-ER40S-K	WR-ER40S
ER40	1.00	6.00	2.48	0.98	Spanner	Round	S-E40R10-60S-R	\$103.50	M50X1.5	CN-ER40S-K	WR-ER40S
ER40	1.25	2.50	2.48	0.98	Spanner	Round	S-E40R12-25S-R	\$94.00	M50X1.5	CN-ER40S-K	WR-ER40S
ER40	1.25	4.00	2.48	0.98	Spanner	Round	S-E40R12-40S-R	\$99.50	M50X1.5	CN-ER40S-K	WR-ER40S
ER40	1.25	4.00	2.48	0.98	Spanner	Flatted	S-E40F12-40S-R	\$99.50	M50X1.5	CN-ER40S-K	WR-ER40S
ER40	1.25	6.00	2.48	0.98	Spanner	Round	S-E40R12-60S-R	\$103.50	M50X1.5	CN-ER40S-K	WR-ER40S
ER40	1.25	6.00	2.48	0.98	Spanner	Flatted	S-E40F12-60S-R	\$103.00	M50X1.5	CN-ER40S-K	WR-ER40S

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS
VISE ACCESSORIES
VISE JAWS
STRAIGHT SHANK COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

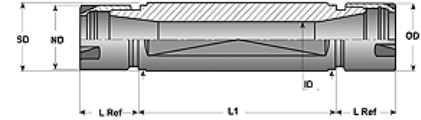
COLLET EXTENSIONS/STRAIGHT SHANK HOLDERS

DOUBLE ENDED STRAIGHT SHANK HOLDERS



ER Series Collet Extensions

- Ideal for Swiss Machines
- Available in Inch and Metric shank sizes
- Comes complete with collet nuts (wrench sold separately)

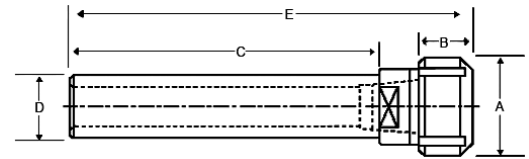


Collet Series	Shank Dia. (SD)	Shank Length (L1)	OAL (mm)	Nut Dia (ND)	Nut Length	Part Number	Price Each	Thread of Nut	Collet Nut Part Number	Wrench Part Number
ER08	5/8"	15mm	45	0.48"	0.44"	D-E08F06-15N-R	\$146.50	M10X.75	CN-EK08MN-K	WR-ER08MN
	5/8"	25mm	55	0.48"	0.44"	D-E08F06-25N-R	\$150.25	M10X.75	CN-EK08MN-V	WR-ER08MN
ER11	16mm	40mm	79	0.63"	0.44"	D-E11F16M40N-R	\$130.75	M13X.75	CN-EK11MN-K	WR-ER11MN
	16mm	50mm	90	0.63"	0.44"	D-E11F16M50N-R	\$152.88	M13X.75	CN-EK11MN-K	WR-ER11MN
	3/4"	25mm	65	0.63"	0.44"	D-E11F07-25N-R	\$126.25	M13X.75	CN-EK11MN-K	WR-ER11MN
	3/4"	40mm	80	0.63"	0.44"	D-E11F07-40N-R	\$126.25	M13X.75	CN-EK11MN-K	WR-ER11MN
	3/4"	70mm	110	0.63"	0.44"	D-E11F07-70N-R	\$126.25	M13X.75	CN-EK11MN-K	WR-ER11MN
	3/4"	90mm	130	0.63"	0.44"	D-E11F07-90N-R	\$126.25	M13X.75	CN-EK11MN-K	WR-ER11MN
	20mm	30mm	70	0.63"	0.44"	D-E11F20M30N-R	\$143.50	M13X.75	CN-EK11MN-K	WR-ER11MN
	20mm	50mm	90	0.63"	0.44"	D-E11F20M50N-R	\$145.00	M13X.75	CN-EK11MN-K	WR-ER11MN
	20mm	70mm	109	0.63"	0.44"	D-E11F20M70N-R	\$153.00	M13X.75	CN-EK11MN-K	WR-ER11MN
	20mm	90mm	128	0.63"	0.44"	D-E11F20M90N-R	\$153.00	M13X.75	CN-EK11MN-K	WR-ER11MN
ER16	3/4"	55mm	107	0.87"	0.67"	D-E16F07-55N-R	\$152.50	M19X1	CN-EK16MN-K	WR-ER16MN
	20mm	30mm	85	0.87"	0.67"	D-E16F20M30N-R	\$152.50	M19X1	CN-EK16MN-K	WR-ER16MN
	20mm	55mm	107	0.87"	0.67"	D-E16F20M55N-R	\$160.75	M19X1	CN-EK16MN-K	WR-ER16MN
	22mm	55mm	111	0.87"	0.67"	D-E16F22M55N-R	\$153.00	M19X1	CN-EK16MN-K	WR-ER16MN
	22mm	75mm	131	0.87"	0.67"	D-E16F22M75N-R	\$155.50	M19X1	CN-EK16MN-K	WR-ER16MN
	25mm	36mm	92	0.87"	0.67"	D-E16F25M36N-R	\$153.00	M19X1	CN-EK16MN-K	WR-ER16MN
	25mm	62mm	118	0.87"	0.67"	D-E16F25M62N-R	\$155.50	M19X1	CN-EK16MN-K	WR-ER16MN
	1"	30mm	85	0.87"	0.67"	D-E16F10-30N-R	\$155.50	M19X1	CN-EK16MN-K	WR-ER16MN
1"	62mm	118	0.87"	0.67"	D-E16F10-62N-R	\$155.50	M19X1	CN-EK16MN-K	WR-ER16MN	
ER20	25mm	36mm	92	1.10"	0.75"	D-E20F25M36N-R	\$129.00	M24X1	CN-EK20MN-K	WR-ER20MN
	25mm	66mm	122	1.10"	0.75"	D-E20F25M66N-R	\$129.00	M24X1	CN-EK20MN-K	WR-ER20MN
	32mm	55mm	111	1.10"	0.75"	D-E20F32M55N-R	\$139.00	M24X1	CN-EK20MN-K	WR-ER20MN
	32mm	75mm	131	1.10"	0.75"	D-E20F32M75N-R	\$139.00	M24X1	CN-EK20MN-K	WR-ER20MN

TG STRAIGHT SHANK HOLDERS

TG Series Collet Extensions

- Crafted from heat treated alloy steel
- Available with round or flattened shank
- Supplied with collet nut



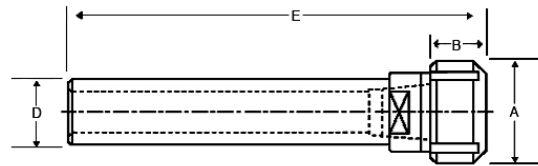
Collet Series	Shank D	C	OAL	Nut Dia	Length of Nut	Type of Nut	Shank Type	Part Number	Price Each	Collet Nut Part Number	Wrench Part Number
TG 75	0.750	2.75	5.79	2.10	2.44	HEX	Flat	S-T75F07-27H-K	\$206.27	CN-TG75-K	WR-TG75-K
TG 75	1.000	2.75	5.79	2.10	2.44	HEX	Flat	S-T75F10-27H-K	\$215.42	CN-TG75-K	WR-TG75-K
TG 75	1.250	3.25	6.30	2.10	2.44	HEX	Flat	S-T75F12-32H-K	\$223.17	CN-TG75-K	WR-TG75-K
TG 75	1.250	6.00	8.50	2.10	2.44	HEX	Round	S-T75R12-60H-K	\$247.50	CN-TG75-K	WR-TG75-K
TG 75	1.500	3.37	6.42	2.10	2.44	HEX	Flat	S-T75F15-33H-K	\$229.86	CN-TG75-K	WR-TG75-K
TG 75	1.500	6.00	7.80	2.10	2.44	HEX	Round	S-T75R15-60H-K	\$258.50	CN-TG75-K	WR-TG75-K
TG 75	1.750	3.50	6.54	2.10	2.44	HEX	Flat	S-T75F17-35H-K	\$231.62	CN-TG75-K	WR-TG75-K
TG 75	2.000	4.00	7.05	2.10	2.44	HEX	Flat	S-T75F20-40H-K	\$237.95	CN-TG75-K	WR-TG75-K
TG 100	0.750	2.75	5.98	2.44	1.41	HEX	Flat	S-T10F07-27H-K	\$206.27	CN-TG100-K	WR-TG100-K
TG 100	1.000	2.75	5.98	2.44	1.41	HEX	Flat	S-T10F10-27H-K	\$215.42	CN-TG100-K	WR-TG100-K
TG 100	1.250	3.25	6.50	2.44	1.41	HEX	Flat	S-T10F12-32H-K	\$223.17	CN-TG100-K	WR-TG100-K
TG 100	1.250	6.00	9.30	2.44	1.41	HEX	Round	S-T10R12-60H-K	\$247.50	CN-TG100-K	WR-TG100-K
TG 100	1.500	3.37	6.61	2.44	1.41	HEX	Flat	S-T10F15-33H-K	\$229.86	CN-TG100-K	WR-TG100-K
TG 100	1.500	6.00	9.30	2.44	1.41	HEX	Round	S-T10R15-60H-K	\$258.50	CN-TG100-K	WR-TG100-K
TG 100	1.750	3.50	6.73	2.44	1.41	HEX	Flat	S-T10F17-35H-K	\$231.62	CN-TG100-K	WR-TG100-K
TG 100	1.750	6.00	8.20	2.44	1.41	HEX	Round	S-T10R17-60H-K	\$269.50	CN-TG100-K	WR-TG100-K
TG 100	2.000	4.00	7.24	2.44	1.41	HEX	Flat	S-T10F20-40H-K	\$237.95	CN-TG100-K	WR-TG100-K
TG 100	2.000	6.00	8.20	2.44	1.41	HEX	Round	S-T10R20-60H-K	\$280.50	CN-TG100-K	WR-TG100-K
TG 150	1.750	8.00	11.70	-	-	HEX	Round	S-T15R17-80H-K	\$297.00	CN-TG150-K	WR-TG150-K
TG 150	2.000	8.00	11.70	-	-	HEX	Round	S-T15R20-80H-K	\$297.00	CN-TG150-K	WR-TG150-K

Call Us Today For All Of Your Machine Tool Needs!

DA STRAIGHT SHANK HOLDERS

DA Series Collet Extensions

- Fits standard double angle (DA) collets
- Crafted from heat treated alloy steel
- Available with round shank
- Supplied with hex collet nut

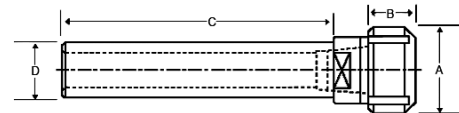


Collet Series	Shank D	C	OAL	Max Dia Thru Shank	Nut Dia	Length of Nut	Part Number	Price Each	Collet Nut Part Number	Wrench Hex Size	Nut Thread
DA 100	1.000	3.00	4.00	9/16	1.06	0.900	S-D10R10-30H-F	\$69.70	CN-DA10S10-F	7/8	-
DA 100	1.000	3.00	4.00	.586	1.43	0.900	S-D10R10-30H-K	\$65.70	CN-DA10S09-K	1-1/4	1"-14
DA 100	1.000	5.62	7.30	9/16	1.06	1.540	S-D10R10-56H-F	\$69.70	CN-DA10E10-F	7/8	-
DA 100	1.000	5.62	7.30	.590	1.43	0.900	S-D10R10-56H-K	\$65.70	CN-DA10S09-K	1-1/4	1"-14
DA 180	1.000	5.00	6.20	3/4	1.56	0.870	S-D18R10-50H-F	\$92.20	CN-DA18S18-F	1-3/8	-
DA 180	1.000	5.00	6.20	.668	1.72	0.900	S-D18R10-50H-K	\$88.20	CN-DA18S09-K	1-1/2	1-1/4"-12
DA 180	1.250	5.00	6.20	3/4	1.56	0.870	S-D18R12-50H-F	\$85.90	CN-DA18S18-F	1-3/8	-
DA 180	1.250	5.00	6.20	.718	1.72	0.900	S-D18R12-50H-K	\$81.90	CN-DA18S09-K	1-1/2	1-1/4"-12
DA 180	1.500	5.00	6.20	3/4	1.56	0.870	S-D18R15-50H-F	\$93.10	CN-DA18S18-F	1-3/8	-
DA 180	1.500	5.00	6.20	.866	1.72	0.900	S-D18R15-50H-K	\$89.10	CN-DA18S09-K	1-1/2	1-1/4"-12
DA 180	1.750	5.00	6.20	3/4	1.56	0.870	S-D18R17-50H-F	\$99.40	CN-DA18S18-F	1-3/8	-
DA 180	1.750	5.00	6.20	.866	1.72	0.900	S-D18R17-50H-K	\$95.40	CN-DA18S09-K	1-1/2	1-1/4"-12
DA 200	0.625	3.00	3.75	3/8	0.75	0.710	S-D20R06-30H-F	\$58.90	CN-DA20S06-F	11/16	-
DA 200	0.625	3.00	3.75	.453	1.14	0.758	S-D20R06-30H-K	\$54.90	CN-DA20S07-K	1"	3/4"-16
DA 200	0.750	3.00	3.80	3/8	0.81	0.710	S-D20R07-30H-F	\$65.20	CN-DA20S07-F	3/4	-
DA 200	0.750	3.00	3.80	.478	1.14	0.758	S-D20R07-30H-K	\$61.20	CN-DA20S07-K	1"	3/4"-16
DA 200	0.750	5.62	7.10	3/8	0.81	1.340	S-D20R07-56H-F	\$65.20	CN-DA20E07-F	11/16	-
DA 200	0.750	5.62	7.10	.478	1.14	0.758	S-D20R07-56H-K	\$61.20	CN-DA20S07-K	1"	3/4"-16
DA 300	0.500	2.75	3.60	1/4	0.56	0.700	S-D30R05-27H-F	\$54.40	CN-DA30S05-F	1/2	-
DA 300	0.500	2.75	3.60	.343	0.76	0.729	S-D30R05-27H-K	\$50.40	CN-DA30S07-K	11/16	9/16"-18
DA 300	0.500	5.62	6.80	1/4	0.56	1.000	S-D30R05-56H-F	\$54.40	CN-DA30E05-F	1/2	-
DA 300	0.500	5.62	6.80	.343	0.76	0.729	S-D30R05-56H-K	\$50.40	CN-DA30S07-K	11/16	9/16"-18
DA 300	0.625	3.20	3.75	1/4	0.56	0.700	S-D30R06-32H-F	\$58.90	CN-DA30S05-F	1/2	-
DA 300	0.625	3.20	3.75	.343	0.76	0.729	S-D30R06-32H-K	\$54.90	CN-DA30S07-K	11/16	9/16"-18

AF STRAIGHT SHANK HOLDERS

AF Series Collet Extensions

- Fits Acura-Flex™ (AF) collets
- Crafted from heat treated alloy steel
- Available with round shank
- Supplied with hex collet nut



Collet Series	Shank D	C	Nut Dia	Length of Nut	Type of Nut	Shank Type	Part Number	Price Each [E]	Collet Nut Part Number	Thread Of Nut	Nut Industry Reference #
AF 25	0.500	5.50	0.73	0.54	HEX	Round	S-A25R05-55H-R	\$103.00	CN-AF25H	9/16-28	C9400022
AF 25	0.750	5.50	0.73	0.54	HEX	Round	S-A25R07-55H-R	\$103.00	CN-AF25H	9/16-28	C9400022
AF 38	0.625	4.00	1.06	0.62	HEX	Round	S-A38R06-40H-R	\$80.50	CN-AF38H	13/16-12	C9400002
AF 38	0.750	4.00	1.06	0.62	HEX	Round	S-A38R07-40H-R	\$89.00	CN-AF38H	13/16-12	C9400002
AF 38	0.750	5.50	1.06	0.62	HEX	Round	S-A38R07-55H-R	\$103.00	CN-AF38H	13/16-12	C9400002
AF 50	0.750	4.00	1.34	0.69	HEX	Round	S-A50R07-40H-R	\$84.00	CN-AF50H	1"-12	C9400020
AF 50	0.750	6.00	1.34	0.69	HEX	Round	S-A50R07-60H-R	\$103.00	CN-AF50H	1"-12	C9400020
AF 50	1.000	4.00	1.34	0.69	HEX	Round	S-A50R10-40H-R	\$79.00	CN-AF50H	1"-12	C9400020
AF 50	1.000	6.00	1.34	0.69	HEX	Round	S-A50R10-60H-R	\$89.00	CN-AF50H	1"-12	C9400020
AF 75	1.000	4.50	1.96	1.06	HEX	Round	S-A75R10-45H-R	\$79.00	CN-AF75H	1-1/2"-12	C900005
AF 75	1.250	5.50	1.96	1.06	HEX	Round	S-A75R12-55H-R	\$114.00	CN-AF75H	1-1/2"-12	C900005
AF 100	1.250	5.00	2.48	1.19	HEX	Round	S-A10R12-50H-R	\$79.00	CN-AF100H	2"-12	C940021
AF 100	1.500	6.50	2.48	1.19	HEX	Round	S-A10R15-65H-R	\$139.00	CN-AF100H	2"-12	C940021

DIAMOND PLATE SPONGECOTE

Anti-Fatigue Mats-No. 415

- For use in dry work areas
- Anti-fatigue
- Nitricell sponge base for unparalleled comfort
- Safety beveled edges
- Slip and wear resistant
- 9/16" thickness
- 3 Year Warranty



Size	Thickness	Color	Part Number	Price
2' x 3'	9/16"	Black	WW-415916-2-3BK	\$55.30
		Blk/Yellow	WW-415916-2-3BY	\$63.02
3' x 5'	9/16"	Black	WW-415916-3-5BK	\$134.47
		Blk/Yellow	WW-415916-3-5BY	\$145.08

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

COLLET ACCESSORIES

ER COLLET NUTS & WRENCHES

- Replacement nuts & wrenches for ER collet holders
- Nuts available in mini, hex & spanner
- For ER Collets, please see pages 152-156



HEX NUT



SPANNER NUT



MINI NUT



HEX WRENCH



SPANNER WRENCH



MINI WRENCH

Collet Series	Nut Type	Nut Dia		Nut Length		Threads	Part Number	Price Each	Ref #	Brand	Collet Wrench	
		mm	Inch	mm	Inch						Part Number	Price Each
ER08	Mini	12.2	.48	11.3	.44	-	CN-ER08MN-K	\$25.00	-	Kingston	WR-ER08MN	\$17.50
ER11	Mini	16	0.63	11.3	.44	M13 X .75	CN-ER11MN-K	\$29.00	CN-111	Kingston	WR-ER11MN	\$17.50
	Hex	19	0.75	11.3	.44	M14 X .75	CN-ER11H-K	\$31.25	CN-110	Kingston	WR-ER11H	\$30.16
ER16	Mini	22	0.87	17	.67	M19 X 1	CN-ER16MN-K	\$32.00	CN-162	Kingston	WR-ER16MN	\$17.50
	Hex	28	1.10	17	.67	M22 X 1.5	CN-ER16H-K	\$31.25	CN-160	Kingston	WR-ER16H	\$30.16
ER20	Mini	28	1.10	19	.75	M24 X 1	CN-ER20MN-K	\$36.00	CN-201	Kingston	WR-ER20MN	\$19.50
	Hex	34	1.34	19	.75	M25 X 1.5	CN-ER20H-K	\$31.25	CN-200	Kingston	WR-ER20H	\$30.16
ER25	Mini	35	1.38	20	.79	M30 X 1	CN-ER25MN-K	\$39.00	-	Kingston	WR-ER25MN	\$20.50
	Spanner	42	1.65	20	.79	M32 X 1.5	CN-ER25S-K	\$33.43	CN-250	Kingston	WR-ER25S-KT	\$28.00
ER32	Spanner	50	1.97	22	.87	M40 X 1.4	CN-ER32S-K	\$33.43	CN-320	Kingston	WR-ER32S	\$30.16
ER40	Spanner	63	2.48	25	.98	M50 X 1.5	CN-ER40S-K	\$47.60	CN-400	Kingston	WR-ER40S	\$30.16

DA, TG & AF COLLET NUTS & WRENCHES



Collet Series	Nut Dia		Nut Length		Threads	Part Number	Price Each	Ref #	Brand	Collet Wrench		
	mm	Inch	mm	Inch						Part Number	Price Each	
TG Series Collet Nuts & Wrenches												
TG75	55.4	2.18	23.1	.91	-	CN-TG075-K	\$32.70	-	Kingston	WR-TG075-K	\$34.00	
TG100	63.0	2.48	32.8	1.29	-	CN-TG100-K	\$39.24	CN-108	Kingston	WR-TG100-K	\$37.00	
TG150	82.6	3.25	44.5	1.75	-	CN-TG150-K	\$54.50	-	Kingston	WR-TG150-K	\$36.00	

AF Series Collet Nuts & Wrenches

AF25	-	0.73	-	0.54	9/16-28	CN-AF25H-K	\$24.30	CN-AF25	Kingston	-	-
AF38	-	1.06	-	0.62	13/16-12	CN-AF38H-K	\$27.98	CN-AF38	Kingston	-	-
AF50	-	1.34	-	0.69	1-12	CN-AF50H-K	\$31.25	CN-AF50	Kingston	-	-
AF75	-	1.96	-	1.06	1-1/2-12	CN-AF75H-K	\$48.69	CN-AF75	Kingston	-	-
AF100	-	2.48	-	1.19	2-12	CN-AF100H-K	\$59.59	-	Kingston	-	-

DA Series Collet Nuts & Wrenches

DA100	-	1.06	-	0.90	-	CN-DA10S10-F	\$21.50	CN-106	Craftsman	-	-
	-	1.06	-	1.54	-	CN-DA10E10-F	\$21.50	CN-105	Craftsman	-	-
	-	1.06	-	1.5	15/16-20	CN-DA10ECN10-P	\$37.00	-	Parlec	WR-ECN10W-P	\$22.70
	-	1.39	-	.910	1-14	CN-DACN100-A	\$29.45	-	Briney	WR-DA10W-A	\$21.00
DA180	-	1.56	-	0.87	-	CN-DA18S18-F	\$21.50	CN-185	Craftsman	-	-
	-	1.44	-	1.6	1 1/4-16	CN-DA18ECN12-P	\$35.00	-	Parlec	WR-ECN12W-P	\$34.00
	-	1.7	-	.85	1 1/4-12	CN-DA18180CN-P	\$55.00	-	Parlec	WR-180CNW-P	\$42.00
	-	1.7	-	.875	1 1/4-12	CN-DACN180-A	\$33.25	-	Briney	WR-DA18W-A	\$22.00
DA200	-	0.75	-	0.71	-	CN-DA20S06-F	\$19.50	CN-213	Craftsman	-	-
	-	0.81	-	0.71	-	CN-DA20S07-F	\$19.50	CN-212	Craftsman	-	-
	-	.81	-	1.38	11/16-20	CN-DA20ECN75-P	\$35.00	-	Parlec	WR-ECN75W-P	\$18.60
	-	1.1	-	.88	3/4-16	CN-DA20CN20-P	\$35.00	-	Parlec	WR-ECN20W-P	\$23.70
	-	1.125	-	.875	3/4-16	CN-DACN200-A	\$27.55	-	Briney	WR-DA20W-A	\$19.00
DA300	-	0.81	-	1.34	-	CN-DA20E07-F	\$19.50	CN-211	Craftsman	-	-
	-	0.56	-	0.70	-	CN-DA30S05-F	\$16.50	CN-306	Craftsman	-	-
	-	0.56	-	1.00	-	CN-DA30E05-F	\$16.50	CN-305	Craftsman	-	-
	-	.56	-	1.1	7/16-32	CN-DA30ECN50-P	\$29.00	-	Parlec	WR-ECN50W-P	\$15.50
	-	.62	-	1.1	1/2-28	CN-DA30CN30-P	\$29.00	-	Parlec	WR-ECN50W-P	\$15.50
	-	.860	-	.7	9/16-18	CN-DACN300-A	\$23.75	-	Briney	WR-DA30W-A	\$17.00

Call Us Today For All Of Your Machine Tool Needs!

RETENTION KNOBS/PULL STUDS

We offer arguably the largest variety of retention knobs in the United States. We offer **USST**, **Lyndex** and **Parlec** knobs in CAT and BT Tapers. If you cannot find the correct retention knob, please call and let us help you locate the correct knob for your machine.



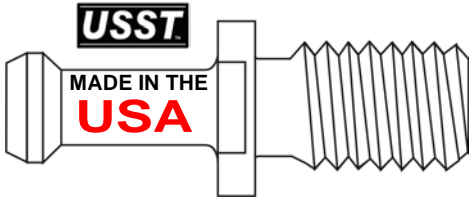
QUANTITY DISCOUNTS!
10% OFF 10 OR MORE KNOBS

USST Knobs-Must Be The Same Part Number



Why Choose USST™ Retention Knobs?

- Each retention knob is certified free of cracks after being INDIVIDUALLY Magnetic Particle Tested by an Independent Nationally Certified Laboratory in the U.S. to ensure knob integrity (ASTM E1444-01)
- Manufacturing date, batch number and part number are all clearly laser marked on each retention knob
- Knobs are made to applicable standards (ANSI, JMTBA, DIN)
- **Pilots now standard on a majority of CAT & BT Taper knobs** for better seating and improved concentricity
- Coolant holes are left non-carburized
- Made from 8620, heat-treated to RC 56/58
- Stronger threads resulting from thread rolling on a vast majority of the knobs
- High quality black oxide treatment to ensure long life
- **Made in USA**



SELECTION OF THE CORRECT KNOB

Machine tool manufacturers use various styles and sizes of retention knobs. They often look similar and appear to be interchangeable, but in reality they are not. It is *very important not to interchange metric retention knobs with inch toolholders*. The use of the incorrect knob, or the incorrect usage of a knob, may result in injury or property damage. To ensure choosing the correct knob, please use the following guidelines:

- 1) Specify the make, model, and spindle size of your machine.
- 2) Make sure that the "critical dimensions" are correct. The retention knob print, usually found in the machine manual, is one of the best tools for selection of the correct knob.
- 3) The part number of previously used retention knobs from any manufacturer can also help us provide you with the correct knob for your machine. Our database contains most manufacturer's part numbers.

We try to insure that we specify the correct knob, however, **it is the responsibility of the end user to check that the supplied knobs are correct for the machine tool and taper type.**

WARNING!

Machining Center manufacturers have increased the draw bar force on retention knobs frequently in recent years. It is now more important than ever to check your retention knobs periodically. Remember to fully tighten the retention knob. Failure to do so may result in the toolholder coming loose during operation.

PREVENTIVE MAINTENANCE AND PERIODIC REPLACEMENT

A machine out of alignment or used beyond capacity can cause failure. Metal fatigue, over time, can also cause failure. Retention knobs should be inspected periodically and replaced. Any signs of wear or damage indicate that the retention knobs should be replaced. Every 2 to 3 years, depending on use, knobs should be removed from the holder and inspected. Any retention knobs showing indications of cracking must be discarded. If your machine has been in a collision, or releases a tool prematurely, this may be an indication that the retention knob fingers, finger guide, Belleville washers or the retention knob itself may be damaged. The machine tool should not be used until inspected by Maintenance or Factory trained personnel. In this case, all of the machine's retention knobs should be checked for cracks or damage immediately.

Over-tightening of the retention knob may result in bulging of the toolholder. Retention knob sockets and torque wrenches are highly recommended to ensure the correct tightness.

Please Call Us And Let Us Help You Select The Correct Retention Knob For Your Machine.

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

169

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

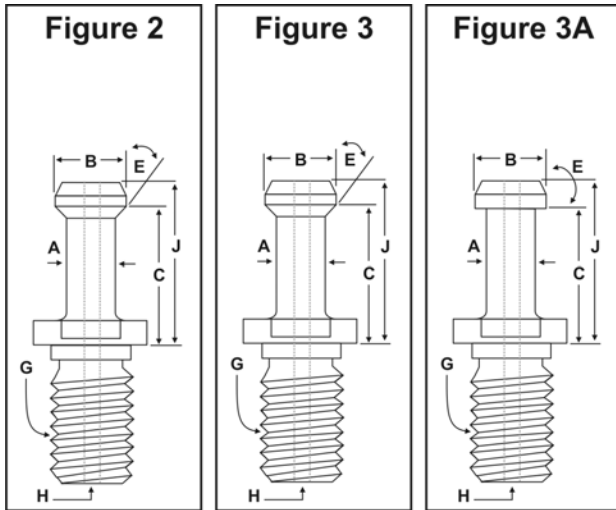
CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

BT STYLE RETENTION KNOBS / PULL STUDS



LEGEND:
 A= Neck Diameter
 B= Head Diameter
 C= Length
 E= Angle
 H= Coolant Hole
 G= Thread
 J= Length to Head



A worn knob is extremely detrimental to the TIR of a toolholder and replacing your retention knob is an easy and inexpensive way to improve the accuracy of the toolholder by up to 10X!

RETENTION KNOBS FOR BT 30 & BT 35 TOOL HOLDERS

Note	Fig.	Head Dia. B	Neck Dia. A	Angle E°	Length C	Length to Head J	Flange Thick	USST [G]		LYNDEX [C]		PARLEC [C]		Max Torque ft / lbs	Knob Socket 1/2" drive [D]
								Part Number	Price Each	Part Number	Price Each	Part Number	Price Each		
BT 30 SHANK HOLDERS (M12 - 1.75 Thread)- MAS 403 Style or JMTBA Style															
P30T I 45°-Pilot	3	0.433 (11mm)	0.276 (7mm)	45°	0.709 (18mm)	0.905 (23mm)	0.197 (5mm)	B30-4500S	\$16.26	LY-B30-4500	\$21.61	P-3003TRK	\$17.85	40	RK-W30M-A \$49.00
P30T I 45°-Pilot	3							B30-4500H	\$21.25	-	-	-	-	40	
P30T II 60°-Pilot	3							B30-6000S	\$16.26	LY-B30-6000	\$21.61	P-3004TRK	\$24.50	40	
P30T III 90°-Pilot	3A							B30-9000S	\$21.25	-	-	-	-	40	
Pilot	3	0.472 (12mm)	0.315 (8mm)	75°	0.724 (18.4mm)	0.921 (23.4mm)	0.200 (5.1mm)	B30-7500H	\$21.25	-	-	-	-	40	-
Chiron No Pilot	2	0.393 (10mm)	0.236 (6mm)	45°	0.630 (16mm)	0.787 (20mm)	-	-	-	-	-	P-3002TRK	\$27.20	40	-

BT 35 SHANK HOLDERS (M12 - 1.75 Thread)- MAS 403 Style or JMTBA Style

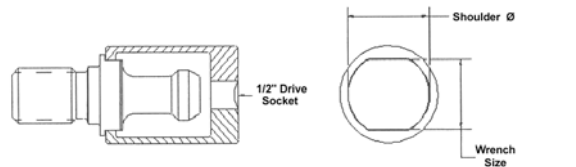
Pilot	3	0.540 (13.7 mm)	0.348 (8.8mm)	45°	0.880 (22.4mm)	1.102 (28mm)	0.157 (4mm)	B35-4500S	\$20.98	-	-	-	-	40	-
Pilot	3			60°	0.880 (22.4mm)	1.102 (28mm)	0.192 (4.9mm)	B35-6000S	\$20.98	-	-	-	-	-	40
Pilot	3A	0.550 (14 mm)	0.310 (7.9mm)	90°	0.788 (20mm)	0.900 (22.9mm)	0.190 (4.8mm)	B35-9001S	\$19.33	-	-	-	-	40	-
Pilot	3A			90°	0.709	0.906	0.200	B35-9000S	\$19.33	-	-	-	-	-	-

RETENTION KNOB SOCKETS



FEATURES:

- Aids in the installation and removal of retention knobs
- Use in conjunction with a torque wrench to uniformly tighten knobs to Manufacturer's standards
- Extends life of retention knob and toolholder- helps to eliminate "rounding off" of knob's corners
- Torque value clearly laser marked on socket
- Sockets have 1/2" drive- For use with Torque Wrench (Part Number RK-WRENCH)



TORQUE WRENCH 1/2" 150 ft/lbs



- For use with retention knob sockets
- Dial-in torque setting up to 150 ft/lbs
- Both ft/lbs marking scales available
- Reversible ratchet
- Supplied with durable plastic case

3/8" Drive: **RK-WRENCH-3/8**
 1/2" Drive: **RK-WRENCH-1/2**

\$39.99 each



Taper	Retention Knob Type	Shoulder		Wrench Size		Part Number	Price Each	Max Torque
		Max Dia Inch	Max Dia mm	Max Flat Inch	Max Flat mm			
30	ANSI	0.655	16.637	0.535	13.589	RK-W30	\$56.70	40ft/lbs
30	JMTBA	0.675	17.145	0.511	12.979	RK-W30M-A	\$49.00	40ft/lbs
30	DIN	0.675	17.145	0.556	14.122	RK-W30D	\$56.70	40ft/lbs
40	ANSI, JMTBA, DIN, ISO	0.944	23.978	0.755	19.177	RK-W40-A	\$49.00	85ft/lbs
40	ISO TYPE B	0.894	22.708	0.711	18.059	RK-W40M	\$61.43	85ft/lbs
45	ANSI	1.205	30.607	1.004	25.502	RK-W45	\$66.15	100ft/lbs
45	JMTBA, ISO, DIN	1.225	31.115	0.950	24.130	RK-W45M	\$66.15	100ft/lbs
50	ANSI	1.450	36.830	1.255	31.877	RK-W50-A	\$59.00	110ft/lbs
50	JMTBA, ISO TYPE A & B	1.500	38.100	1.185	30.099	RK-W50M-A	\$59.00	110ft/lbs

Call Us Today For All Of Your Machine Tool Needs!

BT STYLE RETENTION KNOBS / PULL STUDS

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

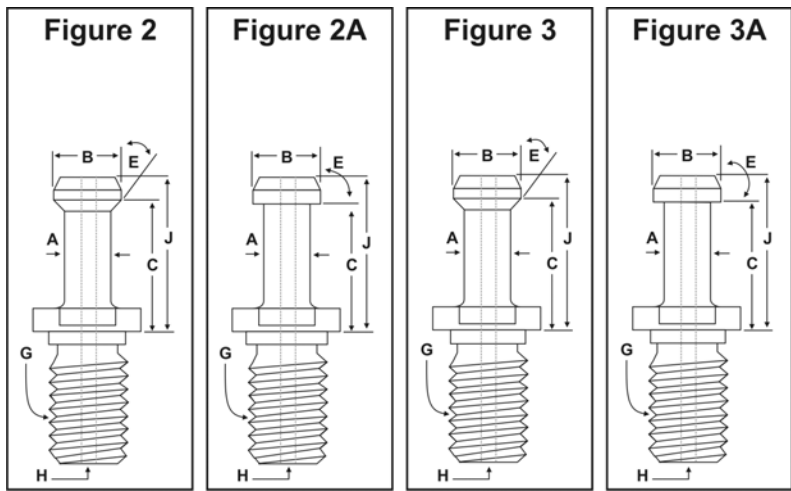
TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE



LEGEND:
A= Neck Diameter
B= Head Diameter
C= Length
E= Angle
H= Coolant Hole
G= Thread
J= Length to Head

Quick-Look Retention Knob Finder

USST Part Number	For Applicable CNC Mills
B40-4501S/H	FADAL (BT Taper)
B40-4500S/H	HAAS (BT Taper)
B40-9000S	MORI SEIKI

HAAS & FADAL make both CAT & BT Taper Toolholders. Please make sure you are using the correct taper retention knob.



RETENTION KNOBS FOR BT 40 TOOL HOLDERS

Note	Fig.	Head Dia. B	Neck Dia. A	Angle E°	Length C	Length to Head J	Flange Thick	USST [G]		LYNDEX [C]		PARLEC [C]		Max Torque ft / lbs	Knob Socket 1/2" drive [D]
								Part Number	Price Each	Part Number	Price Each	Part Number	Price Each		
BT 40 SHANK HOLDERS (M16 - 2.00 Thread)- MAS 403 STYLE or JMTBA Style															
Pilot	2	0.590 (15mm)	0.394 (10mm)	45°	0.989 (25.1mm)	1.265 (32.1mm)	0.242 (6.1mm)	B40-4502S	\$20.27	-	-	-	-	85	RK-W40-A \$49.00
P40T I 45°-Pilot	3				1.102 (28mm)	1.377 (35mm)	0.236 (6mm)	B40-4500H	\$22.80	LY-B40-4500H	\$26.51	P-4003TRKC	\$38.00	85	
P40T I 45°-Pilot	3							B40-4500S	\$19.02	LY-B40-4500	\$24.61	-	-	85	
P40T II 60°-Pilot	3				60°	1.102 (28mm)	1.377 (35mm)	0.236 (6mm)	B40-6000H	\$22.80	LY-B40-6000H	\$24.61	-	-	
P40T II 60°-Pilot	3			B40-6000S					\$19.02	-	-	-	-	85	
P40T III 90°-Pilot	3A			90°	1.102 (2mm)	1.377 (35mm)	0.236 (6mm)	B40-9000H	\$22.80	LY-B40-9000H	\$26.51	-	-	85	
P40T III 90°-Pilot	3A							B40-9000S	\$19.02	-	-	P-4002TRK	\$31.00	85	

BT 40 SHANK HOLDERS (M16 - 2.00 Thread)-U.S. ANSI Style															
ANSI STD-metric-NoPilot	4	0.740 (18.8mm)	0.490 (12.5mm)	45°	0.440 (11.2mm)	0.640 (16.3mm)	0.120 (3mm)	B40-4503H	\$19.20	LY-B40-STD	\$27.46	P-A40TRK	\$34.00	85	RK-W40-A \$49.00
ANSI STD-metric-NoPilot	4				B40-4503S	\$15.20	-	-	-	-	85				
Pilot=0.669	4A				0.550 (14mm)	0.755 (19.2mm)	0.240 (6.1mm)	B40-4501H	\$21.56	-	-	-	-	85	
Pilot=0.669	4A							B40-4501S	\$17.72	LY-B40-FADAL	\$30.40	P-F40TRK	\$40.00	85	

BT 40 SHANK HOLDERS (M16 - 2.00 Thread)- ISO TYPE A Style															
Pilot	6A	0.748 (19mm)	0.551 (14mm)	75°	0.905 (23mm)	1.141 (29mm)	0.275 (7mm)	B40-7500H	\$24.09	LY-B40-1500	\$35.15	-	-	85	RK-W40-A \$49.00
Pilot	6A						0.275 (7mm)	B40-7500S	\$21.25	-	-	-	-	85	
No Pilot	2						-	-	-	-	-	P-4020TRK	\$25.50	85	

BT 40 SHANK HOLDERS (M16 - 2.00 Thread)- DIN 69872 Form A Style															
DIN A Std Pilot	6	0.748 (19mm)	0.551 (14mm)	75°	0.787 (20mm)	1.023 (26mm)	0.157 (4mm)	B40-7501H	\$26.18	LY-B40-1500ISOH	\$43.94	-	-	85	RK-W40-A \$49.00
DIN A Std No Pilot	6							-	-	-	-	-	-	-	

KINGSTON™ BALANCED TOOLHOLDERS **BALANCED TOOLHOLDERS FOR INCREASED SPEED & SPINDLE LIFE**

Kingston Tool offers a complete line of balanced CNC tool holders, manufactured to meet today's machinists need for speed and accuracy at a competitive price. Balanced to 15,000 RPM @ g6.3, Kingston Balanced Toolholders increase spindle and tool life, as well as helping to improve surface finish. See pages 180-215 for our complete selection.

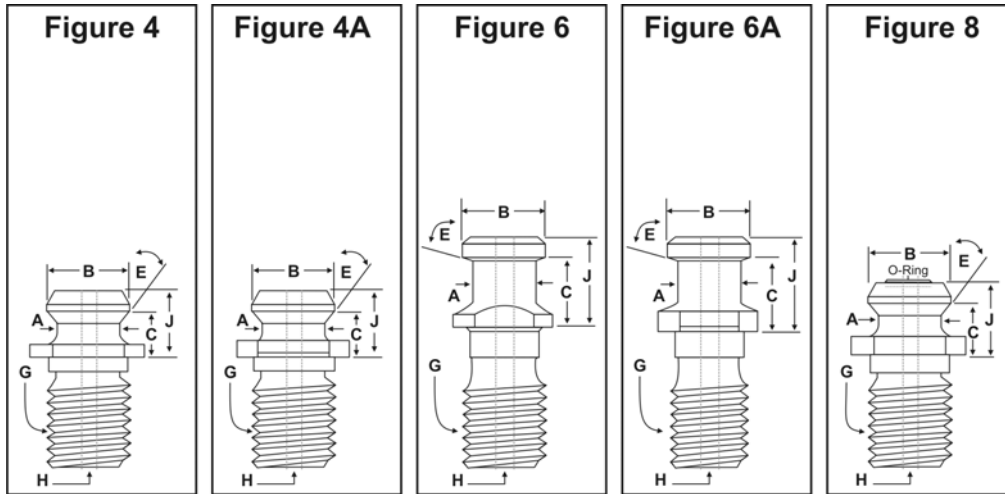


- FEATURES:**
- Balanced to 15,000 RPM @ g6.3
 - Manufactured to the highest degree of technical excellence to ISO9002 quality control standards
 - Certification included with each holder
 - Crafted from SAE 8620 alloy steel
 - AT3 Class Accuracy
 - Balanced holders result in less vibration, chatter and extended tool life.
 - 100% Satisfaction Guaranteed!

Balanced Toolholders
Starting At Only
\$49.95 each

Call Us Or Visit Our Website For Our Complete Selection!

BT STYLE RETENTION KNOBS / PULL STUDS



LEGEND:
A= Neck Diameter
B= Head Diameter
C= Length
E= Angle
H= Coolant Hole
G= Thread
J= Length to Head



QUANTITY DISCOUNTS!
10% OFF 10 OR MORE KNOBS
USST Knobs-Must Be The Same Part Number

RETENTION KNOBS FOR BT45 & BT50 TOOL HOLDERS

Note	Fig.	Head Dia. B	Neck Dia. A	Angle E°	Length C	Length to Head J	Flange Thick	USST [G]		LYNDEX [C]		PARLEC [C]		Max Torque ft / lbs	Knob Socket 1/2" drive [D]
								Part Number	Price Each	Part Number	Price Each	Part Number	Price Each		

BT 45 SHANK HOLDERS (M20 - 2.50 Thread)- MAS 403 Style or JMTBA Style

P45T I 45°-Pilot	3	0.748 (19mm)	0.551 (14mm)	45°	1.22 (31mm)	1.574 (40mm)	0.31 (8mm)	B45-4500S	\$19.19	-	-	-	-	100	RK-W45M \$66.15
P45T II 60°-Pilot	3			60°	1.22 (31mm)	1.574 (40mm)	0.31 (8mm)	B45-6000S	\$24.39	-	-	-	-	100	
P45T III 90°-Pilot	3A			90°	1.22 (31mm)	1.574 (40mm)	0.31 (8mm)	B45-9000S	\$19.19	-	-	-	-	100	

BT 50 SHANK HOLDERS (M24 - 3.00 Thread)- MAS 403 Style or JMTBA Style

P50T I 45°-Pilot	3	0.905 (23mm)	0.669 (17mm)	45°	1.377 (35mm)	1.771 (45mm)	0.394 (10mm)	B50-4500H	\$25.94	LY-B50-4500H	\$30.40	P-5003TRKC	\$40.00	110	RK-W50M-A \$59.00
P50T I 45°-Pilot	3							B50-4500S	\$21.85	LY-B50-4500	\$26.51	P-5003TRK	\$23.80	110	
P50T II 60°-Pilot	3			60°	1.377 (35mm)	1.771 (45mm)	0.394 (10mm)	B50-6000H	\$22.95	LY-B50-6000H	\$31.83	-	-	110	
P50T II 60°-Pilot	3							B50-6000S	\$26.63	LY-B50-6000	\$28.03	P-5004TRK	\$35.00	110	
P50T III 90°-Pilot	3A			90°	1.377 (35mm)	1.771 (45mm)	0.394 (10mm)	B50-9000H	\$28.38	LY-B50-9000H	\$30.45	-	-	110	
P50T III 90°-Pilot	3A							B50-9000S	\$26.63	LY-B50-9000	\$27.55	P-5002TRK	\$35.00	110	

BT 50 SHANK HOLDERS (M24 - 3.00 Thread)- U.S. ANSI Style

No Pilot	8	1.140 (29mm)	0.820 (20.8mm)	45°	0.700 (17.8mm)	1.000 (25.4mm)	-	-	-	-	-	-	-	110	RK-W50-A \$59.00
Std ANSI-metric	4						B50-4509H	\$26.63	-	-	P-A50TRK	\$33.32	110		
Std ANSI-metric	4						B50-4509S	\$22.63	-	-	-	-	110		

BT 50 SHANK HOLDERS (M24 - 3.00 Thread)- DIN 69872 Form A Style

DIN Std. A No Pilot	6	1.101 (28mm)	0.826 (21mm)	75°	0.984 (25mm)	1.338 (34mm)	-	B50-7501S	P.O.R.	-	-	-	-	110	RK-W50M-A \$59.00
DIN Std. A No Pilot	6						B50-7501H	P.O.R.	-	-	-	-	110		
MITSUI No Pilot	2A	0.950 (24.1mm)	-	90°	0.905 (23mm)	1.220 (31mm)	0.200 (5.1mm)	-	-	LY-B50-MITSUI	\$31.35	-	-	110	-

Best Practices for Retention Knob Usage:

- Store unused knobs carefully so the knobs do not get dented, scratched or nicked in storage.
- Use the correct knob for the tool machine and the toolholder.
- Log the installation date.
- Properly tighten the knobs at all times per the machine manufacturer recommendations. Use a torque wrench. Over-tightening or under-tightening are both detrimental.
- Do not use glue or binding compound on the knobs.
- Inspect and clean knobs regularly.
- Unusual wear on the knobs may indicate other problems with gripper or the feed fingers. You should only see a uniform set of slight indentations from your grip fingers.
- Change O-ring on a regular basis.
- Replace the retention knobs regularly every two years, depending on the operation.
- Replace knobs more often for tools used in roughing.



Call Us Today For All Of Your Machine Tool Needs!

CAT STYLE RETENTION KNOBS / PULL STUDS

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

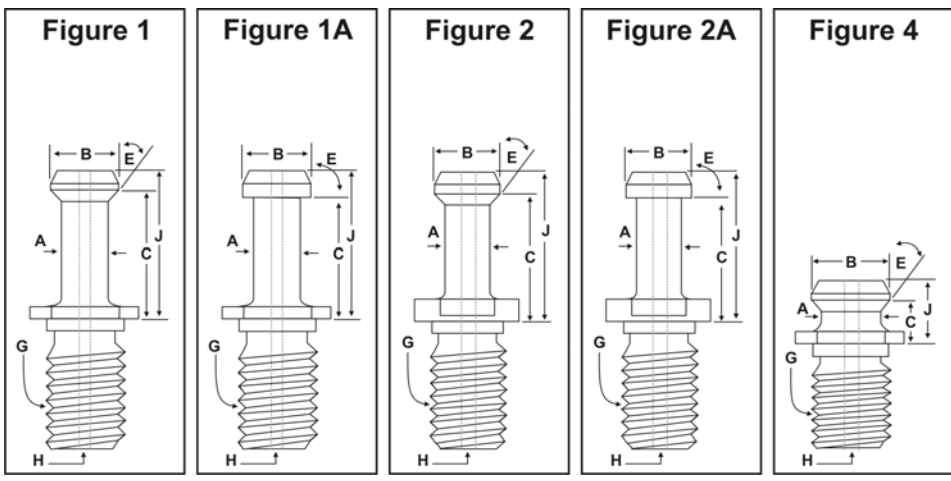
CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE



LEGEND:
A= Neck Diameter
B= Head Diameter
C= Length
E= Angle
H= Coolant Hole
G= Thread
J= Length to Head



Quick-Look Retention Knob Finder

USST Part Number	For Applicable CNC Mills
C40-4500S	FADAL MAZAK
C40-4501S	HAAS KITAMURA OKUMA-HOWA
C40-4503S	CINCINNATI (ARROW-SABER)

HAAS & FADAL make both CAT & BT Taper Toolholders. Please make sure you are using the correct taper retention knobs.

RETENTION KNOBS FOR CAT 30 & CAT 40 TOOL HOLDERS

Note	Fig.	Head Dia. B	Neck Dia. A	Angle E°	Length C	Length to Head J	Flange Thick	USST [G]		LYNDEX [C]		PARLEC [C]		Max Torque ft/lbs	Knob Socket 1/2" drive [D]
								Part Number	Price Each	Part Number	Price Each	Part Number	Price Each		

CAT 30 SHANK HOLDERS (1/2" - 13 Thread)- U.S. ANSI Style

ANSI STD No Pilot	4	0.520 (13.2mm)	0.385 (9.8mm)	45°	0.320 (8.1mm)	0.464 (11.8mm)	0.103 (2.6mm)	C30-4500H	\$15.75	-	-	-	-	40	RK-W30 \$56.70
ANSI STD No Pilot	4							C30-4500S	\$13.83	-	-	-	-	40	
No Pilot	2	0.393 (10mm)	0.236 (6mm)	45°	0.63 (16mm)	0.787 (20mm)	-	C30-CHI-RONINCH	\$14.70	-	-	P-3001TRK	\$22.50	40	

CAT 40 SHANK HOLDERS (5/8" - 11 Thread)- MAS 403 Style or JMTBA Style

No Pilot	2	0.748 (19mm)	0.551 (14mm)	75°	0.905 (23mm)	1.141 (29mm)	-	-	-	-	-	P-4010TRK	\$32.00	85	RK-W40-A \$49.00	
Thin Flange Pilot	1	0.589 (15mm)	0.392 (10mm)	45°	0.989 (25.1mm)	1.265 (32.1mm)	0.125 (3.2mm)	C40-4502H	\$22.80	-	-	P-4005TRKC	\$32.00	85		
Thin Flange Pilot	1							C40-4502S	\$19.02	LY-C40-4500	\$24.61	P-4005TRK	\$25.00	85		
Pilot	2							C40-4501H	\$21.56	-	-	P-4009TRKC	\$32.00	85		
Pilot	2							C40-4501S	\$17.72	LY-C40-4500	\$24.61	P-4009TRK	\$21.25	85		
No Pilot	2							C40-4504S	\$17.72	-	-	-	-	85		
Thin Flange Pilot	1							C40-6006S	\$19.59	LY-C40-6000	\$24.61	-	-	85		
Thin Flange Pilot	1			60°	0.992 (25.2mm)	1.259 (32mm)	0.120 (3mm)	C40-6006H	\$21.44	LY-C40-6000H	\$34.20	-	-	-		85
No Pilot	2							C40-6000H	\$21.56	-	-	P-4014TRKC	\$38.00	85		
Pilot	2							C40-6000S	\$17.72	LY-C40S-6000	\$24.61	P-4014TRK	\$18.75	85		
Thin Flange Pilot	1A			90°	0.992 (25.2mm)	1.259 (32mm)	0.120 (3mm)	C40-9006S	\$15.29	LY-C40-9000	\$24.61	-	-	-		85
Thin Flange No Pilot	1A							C40-9006H	\$18.66	LY-C40-9000H	\$27.55	-	-	85		
Shorter Than other C40	2A							C40-MITSUI	\$17.02	LY-C40-MITSUI	\$27.55	-	-	85		
Pilot	9							C40-9001S	\$17.72	LY-C40-MAZAK	\$26.60	P-M400TRK	\$37.00	85		
Pilot	2A							C40-9000H	\$21.56	-	-	P-4001TRKC	\$38.00	85		
Pilot	2A							C40-9000S	\$17.72	LY-C40S-9000	\$24.61	P-4001TRK	\$25.50	85		
Pilot	1	45°	1.139 (28.9mm)					1.436 (36.5mm)	0.187 (4.8mm)	C40-4503H	\$24.09	-	-	P-C400TRKC	\$35.00	85
No Pilot	1									C40-4503S	\$19.02	-	-	P-C400TRK	\$22.50	85

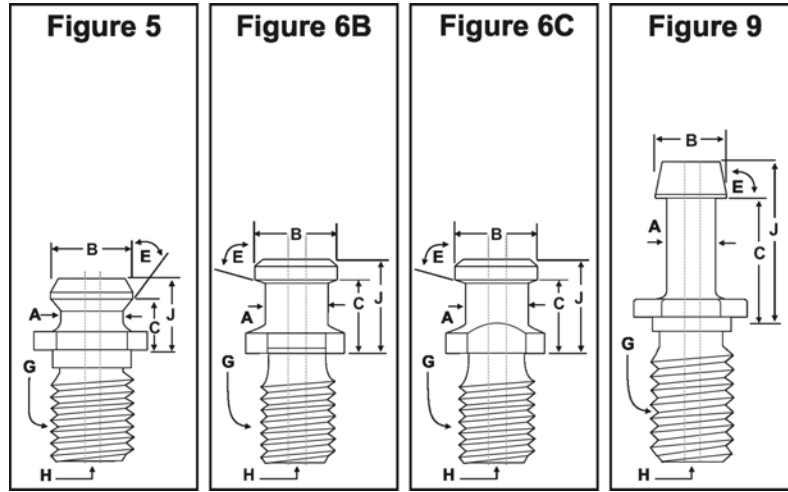
Pilots Now Standard On USST Retention Knobs For Better Seating & Improved Concentricity!

HELPFUL HINT:

A worn knob is extremely detrimental to the TIR of a toolholder and replacing your retention knob is an easy and inexpensive way to improve the accuracy of the toolholder by up to 10X!

Call Us Or Visit Our Website For Our Complete Selection!

CAT STYLE RETENTION KNOBS / PULL STUDS



LEGEND:
 A= Neck Diameter
 B= Head Diameter
 C= Length
 E= Angle
 H= Coolant Hole
 G= Thread
 J= Length to Head



Quick-Look Retention Knob Finder

USST Part Number	For Applicable CNC Mills
C40-4500S	FADAL MAZAK
C40-4501S	HAAS KITAMURA OKUMA-HOWA
C40-4503S	CINCINNATI (ARROW-SABER)

HAAS & FADAL make both CAT & BT Taper Toolholders. Please make sure you are using the correct taper retention knobs.

RETENTION KNOBS FOR CAT 40 & CAT 45 TOOL HOLDERS

Note	Fig.	Head Dia. B	Neck Dia. A	Angle E °	Length C	Length to Head J	Flange Thick	USST [G]		LYNDEX [C]		PARLEC [C]		Max Torque ft / lbs	Knob Socket 1/2" drive [D]
								Part Number	Price Each	Part Number	Price Each	Part Number	Price Each		

CAT 40 SHANK HOLDERS (5/8" - 11 Thread)- MAS 403 Style or JMTBA Style

No Pilot	1	0.590 (15mm)	-	45°	0.992 (25.2mm)	1.259 (32mm)	0.120 (3mm)	-	-	LY-C40-4500B	\$44.89	-	-	85	RK-W40-A \$49.00
No Pilot	-		-	60°	0.992 (25.2mm)	1.259 (32mm)	0.120 (3mm)	-	-	LY-C40-HITACHI	\$137.75	-	-	85	
No Pilot	1		-	90°	0.992 (25.2mm)	1.259 (32mm)	0.120 (3mm)	-	-	LY-C40-6000B	\$48.69	-	-	85	
No Pilot	1A		-	-	-	-	-	-	-	LY-C40-9000B	\$48.69	-	-	85	

CAT 40 SHANK HOLDERS (5/8" - 11 Thread)- U.S. ANSI Style

ANSI STD No Pilot	4	0.740 (18.8mm)	0.490 (12.5mm)	45°	0.440 (11.2mm)	0.640 (16.3mm)	0.120 (3mm)	C40-4500SG	\$14.32	-	-	-	-	85	RK-W40-A \$49.00
ANSI STD Pilot	4							C40-4500H	\$15.75	LY-C40-STD	\$22.80	P-40TRK	\$17.85	85	
ANSI STD Pilot	4							C40-4500S	\$15.20	-	-	P-40NTRK	\$17.85	85	
ANSI PILOT	5							C40-4505H	\$18.02	-	-	-	-	85	
ANSI PILOT	5							C40-4505S	\$17.99	-	-	-	-	85	

CAT 40 SHANK HOLDERS (5/8" - 11 Thread)- ISO TYPE A Style

ISO A -Inch No Pilot	6B	0.747 (19mm)	0.551 (14mm)	75°	0.791 (20.1mm)	1.030 (26.2mm)	0.280 (7.1mm)	C40-7500H	\$22.80	-	-	P-4008 TRKC	\$27.20	85	RK-W40-A \$49.00
ISO A -Inch No Pilot	6B	-	-	-	-	-	-	C40-7500S	\$19.02	LY-C40-1500	\$35.15	P-4008 TRK	\$21.25	85	

CAT 40 SHANK HOLDERS (5/8" - 11 Thread)- DIN 69872 Form A Style

DIN A Std-Inch No Pilot	6C	0.748 (19mm)	0.551 (14mm)	75°	0.787 (20mm)	1.023 (26mm)	0.157 (4mm)	C40-7551H	\$22.80	-	-	-	-	85	RK-W40-A \$49.00
-------------------------	----	-----------------	-----------------	-----	-----------------	-----------------	----------------	-----------	---------	---	---	---	---	----	---------------------

CAT 45 SHANK HOLDERS (3/4" - 10 Thread)- MAS 403 Style or JMTBA Style

No Pilot	2	0.750 (19.1mm)	0.551 (14mm)	45°	1.230 (31.3mm)	1.580 (40.1mm)	0.310 (7.88mm)	C45-4500S	P.O.R.	-	-	-	-	100	RK-W45M \$66.15
No Pilot	2			60°	1.230 (31.3mm)	1.580 (40.1mm)	0.310 (7.88mm)	C45-6000S	P.O.R.	-	-	-	-	100	
No Pilot	2A			90°	1.230 (31.3mm)	1.580 (40.1mm)	0.310 (7.88mm)	C45-9000S	P.O.R.	-	-	-	-	100	

CAT 45 SHANK HOLDERS (3/4" - 10 Thread)- U.S. ANSI Style

-	4	0.940 (23.9mm)	0.605 (15.4mm)	45°	0.578 (14.7mm)	0.820 (20.8mm)	0.160 (4.1mm)	C45-4501H	P.O.R.	-	-	-	-	100	RK-W45
-	4	-	-	-	-	-	-	C45-4501S	P.O.R.	-	-	-	-	100	\$66.15

Pilots Now Standard On USST Retention Knobs For Better Seating & Improved Concentricity!

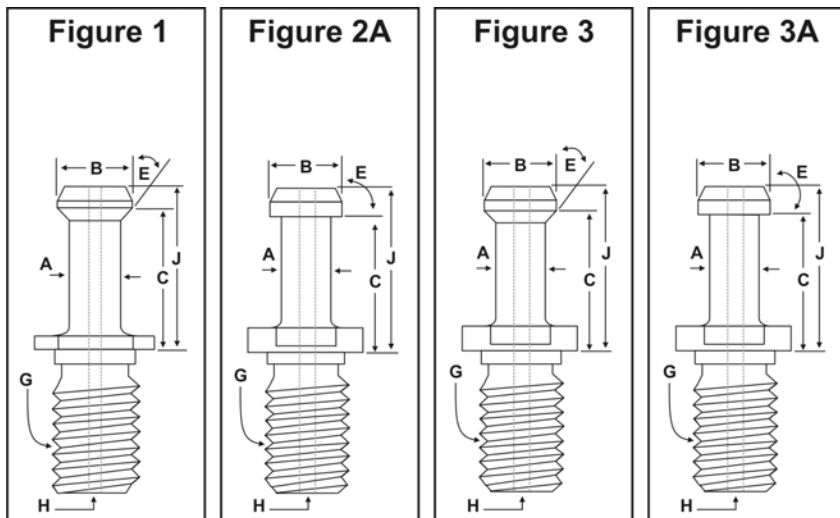
Need Help Finding The Correct Knob For Your Machine?

Please Call Us-We Can Help!

HELPFUL HINT: A worn knob is extremely detrimental to the TIR of a toolholder and replacing your retention knob is an easy and inexpensive way to improve the accuracy of the toolholder by up to 10X!

Call Us Today For All Of Your Machine Tool Needs!

CAT STYLE RETENTION KNOBS / PULL STUDS



QUANTITY DISCOUNTS!
10% OFF 10 OR MORE KNOBS

USST Knobs-Must Be The Same Part Number

LEGEND:
 A= Neck Diameter
 B= Head Diameter
 C= Length
 E= Angle
 H= Coolant Hole
 G= Thread
 J= Length to Head



RETENTION KNOBS FOR CAT 50 TOOL HOLDERS

Note	Fig.	Head Dia. B	Neck Dia. A	Angle E °	Length C	Length to Head J	Flange Thick	USST [G]		LYNDEX [C]		PARLEC [C]		Max Torque ft/ lbs	Knob Socket 1/2" drive [D]
								Part Number	Price Each	Part Number	Price Each	Part Number	Price Each		

CAT 50 SHANK HOLDERS (1" - 8 Thread)- MAS 403 Style or JMTBA Style

P50T I 45°-Inch No Pilot	1	0.747 (19mm)	0.551 (14mm)	45°	0.787 (20mm)	1.026 (26.1mm)	0.201 (5.1mm)	C50-4502H	\$31.16	-	-	-	-	110	RK-W50-A \$59.00
P50T I 45°-Inch Pilot	3	0.905 (23mm)	0.669 (17mm)	45°	1.385 (35.2mm)	1.779 (45.2mm)	0.390 (9.9mm)	C50-4501H	\$25.66	LY-C50-4500H	\$29.45	P-5005 TRKC	\$28.05	110	
P50T I 45°-Inch No Pilot	7							C50-4501R	\$26.63	-	-	-	110		
P50T I 45°-Inch Pilot	3							C50-4501S	\$21.85	LY-C50-4500	\$26.51	P-5005 TRK	\$23.80	110	
P50T II 60°-Inch Pilot	3							C50-6000H	\$25.66	LY-C50-6000H	\$29.45	P-5014 TRKC	\$33.00	110	
P50T II 60°-Inch Pilot	3	0.910 (23.1mm)	0.667 (16.9mm)	90°	1.385 (35.2mm)	1.779 (45.2mm)	0.690 (17.5mm)	-	-	LY-C50-MAZAK	\$47.26	-	-	110	
No Pilot	2A							-	-	-	-	110			
P50T III 90°-Inch-Pilot	3A	0.905 (23mm)	0.669 (17mm)	90°	1.385 (35.2mm)	1.771 (45mm)	0.390 (9.9mm)	C50-9000H	\$25.66	LY-C50-9000H	\$29.45	P-5001 TRKC	\$33.00	110	
P50T III 90°-Inch-Pilot	3A							C50-9000S	\$21.85	LY-C50-9000	\$26.51	P-5001 TRK	\$28.00	110	
P50T I 45°-Inch No Pilot	-	0.900 (22.9mm)	-	45°	1.385 (35.2mm)	1.779 (45.2mm)	0.390 (9.91mm)	-	-	LY-C50-HITACHI	\$148.20	-	-	110	
P50T I 45°-Inch Pilot	3	0.990 (25.2mm)	-	45°	1.385 (35.2 mm)	1.779 (45.2mm)	0.390 (9.91mm)	-	-	LY-C50-4500B	\$56.43	-	-	110	-
P50T II 60°-Inch Pilot	3			60°	1.385 (35.2 mm)	1.779 (45.2mm)	0.390 (9.91mm)	-	-	LY-C50-6000B	\$52.25	-	-	110	-
P50T III 90°-Inch-Pilot	3A			90°	1.385 (35.2 mm)	1.779 (45.2mm)	0.390 (9.91mm)	-	-	LY-C50-9000B	\$56.05	-	-	110	-

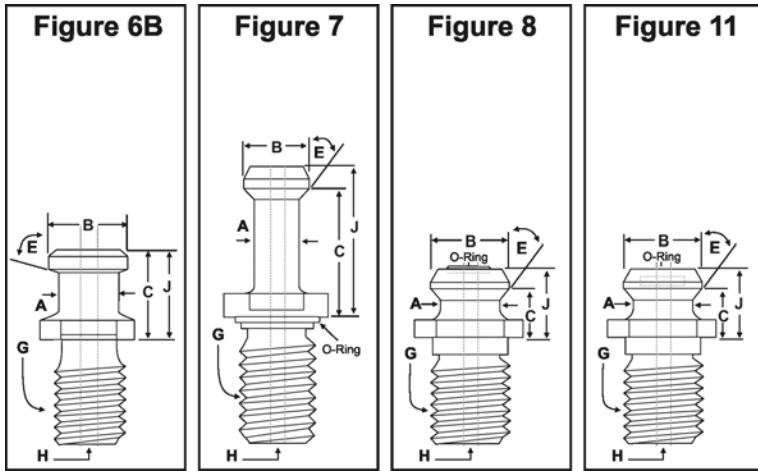
CAT 50 SHANK HOLDERS (1" - 8 Thread)- U.S. ANSI Style

Pilot	11	1.140 (29mm)	0.820 (20.8mm)	45°	0.700 (17.8mm)	1.000 (25.4mm)	0.200 (5.08mm)	C50-4503R	\$27.34	-	-	P-M50 TRK	\$36.26	-	-			
Integrex, Pilot, Ring	8							C50-4506R	\$38.04	-	-	-	110					
Integrex, Pilot, No Ring	8							C50-4506H	\$39.04	-	-	-	110					
ANSI STD No Pilot	4							0.706 (17.9mm)	1.000 (25.4mm)	0.200 (5.1mm)	C50-4500H	\$18.43	LY-C50-STD	\$24.61	P-50 TRK	\$20.40	110	RK-W50-A \$59.00
No Pilot	8							C50-4500R	\$24.09	-	-	P-M50 TRK	\$36.26	110				
ANSI STD No Pilot	4							0.706 (17.9mm)	1.000 (25.4mm)	0.204 (5.2mm)	C50-4500S	\$18.05	-	-	P-50 NTRK	\$20.40	110	
No Pilot	4							0.700 (17.8mm)	1.000 (25.4mm)	0.200 (5.1mm)	-	-	LY-C50-STDB	\$57.95	-	-	110	

Need Help Finding The Correct Knob For Your Machine?
Please Call Us-We Can Help!

Call Us Or Visit Our Website For Our Complete Selection!

CAT STYLE RETENTION KNOBS / PULL STUDS



Best Practices for Retention Knob Usage:

- Store unused knobs carefully so the knobs do not get dented, scratched or nicked in storage.
- Use the correct knob for the tool machine and the toolholder.
- Log the installation date.
- Properly tighten the knobs at all times per the machine manufacturer recommendations. Use a torque wrench. Over-tightening or under-tightening are both detrimental.
- Do not use glue or binding compound on the knobs.
- Inspect and clean knobs regularly.
- Unusual wear on the knobs may indicate other problems with gripper or the feed fingers. You should only see a uniform set of slight indentations from your grip fingers.
- Change O-ring on a regular basis.
- Replace the retention knobs regularly every two years, depending on the operation.
- Replace knobs more often for tools used in roughing.

RETENTION KNOBS FOR CAT 50 AND CAT 60 TOOL HOLDERS

Note	Fig.	Head Dia. B	Neck Dia. A	Angle E °	Length C	Length to Head J	Flange Thick	USST [G]		LYNDEX [C]		PARLEC [C]		Max Torque ft/lbs	Knob Socket 1/2" drive [D]
								Part Number	Price Each	Part Number	Price Each	Part Number	Price Each		
CAT 50 SHANK HOLDERS (1" - 8 Thread)- ISO Std. Type A Style															
ISO Std. A Inch-No Pilot	6B	1.100 (28mm)	0.826 (21mm)	75	0.992 (25.2mm)	1.350 (34.3mm)	0.280 (7.1mm)	C50-7540H	\$36.75	LY-C50-1500	\$35.15	-	-	110	-
CAT 50 SHANK HOLDERS (1" - 8 Thread)- DIN 69872 Form A Style															
DIN Std. A Inch-Pilot	1	1.100 (28mm)	0.826 (21mm)	75	0.977 (24.8mm)	1.338 (34mm)	-	C50-7550H	\$43.05	-	-	P-5030TRK	\$40.00	110	RK-W50-A \$59.00
CAT 50 SHANK HOLDERS (1" - 8 Thread)- MITSUI Style															
MITSUI. No Pilot	1	0.940 (23.9mm)	0.706 (17.9mm)	90	0.903 (22.9mm)	1.218 (30.9mm)	#N/A	-	-	-	-	P-MS5034 TRK	\$23.80	110	-
MITSUI No Pilot	2A	0.940 (23.9mm)	0.708 (18mm)	90	0.905 (23mm)	1.220 (31mm)	0.200 (5.1mm)	-	-	LY-C50-MITSUI	\$29.45	P-5021TRK	\$35.00	110	-

DRAWBAR CLAMPING FORCE GAGE

CNC Machines using pull-studs for tool retention experience a slow but progressive loss of tool holding pressure from the time the machine is new. This little known fact has a major impact on surface finishes, cutting tool life, and on your productivity. Testing a drawbar requires a force gage which simulates a tool being held in the spindle. The **Clamprite Gage** uses a common tool holder as the interface between the gage and machine spindle, eliminating the need for a high-priced precision adapter for each different spindle size (only HSK-type spindles require an adapter).

Prevent Unscheduled Maintenance!
Increase Cutter Life!
Protect Your Spindles!

Low drawbar force can result in:

- Reduced cutter life
- Chatter and rough finishes
- Difficulty with repeatability
- Lower feeds and productivity
- Rapid wear of toolholder and spindle tapers



Patented

The **Clamprite Gage** was designed for accurate spindle tension testing right on the machine. The actual pressure exerted by the spindle drawbar mechanism is read directly on the dial, so there is never a need for any calculations or conversions. Drawbar force checking is made easy using the Clamprite drawbar force gage. Drawbar testing takes less than one minute, so production time is barely affected. Its simple and rugged design requires no batteries, electrical cords or delicate electronic components to pre-set, calibrate or burn out.

FEATURES:

- Test drawbar force in less than one minute
- Reads directly in lbs of force- no calculating
- Rugged, reliable and works on all machines
- Helps to prevent unscheduled maintenance
- HSK models also available
- Made in USA



HSK Models Also Available!

Accuracy Traceable to NIST-Suitable for ISO 9000 Shops!



Clamprite Kit Includes:

- Gage head
- Spindle adapter
- Internal transfer screw coupling
- Foam fitted metal tool box

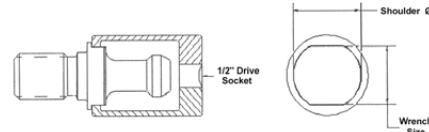
PSI lbs	Taper Adapter Included	Part Number	Kit Price
3,000 Lb.	BT 30 taper	CR-CG3K30B	\$779.00
	BT 40 taper	CR-CG3K40B	\$789.00
	CAT 40 taper	CR-CG3K40C	\$789.00
5,000 Lb.	BT 40 taper	CR-CG5K40B	\$789.00
	CAT 40 taper	CR-CG5K40C	\$789.00
	BT 50 taper	CR-CG5K50B	\$807.00
	CAT 50 taper	CR-CG5K50C	\$807.00
10,000 Lb.	CAT or BT 40 & 50	CR-CG5K40/50	\$940.00
	BT 50 taper	CR-CG10K50B*	\$841.00
	CAT 50 taper	CR-CG10K50C*	\$841.00

*10,000 lb gages only required for EXTRA HEAVY DUTY machines and some HSK's.

Call Us Today For All Of Your Machine Tool Needs!

RETENTION KNOB SOCKETS

Most CNC facilities are unaware of the critical importance of correctly measuring torque when installing retention knobs. Operators often employ adjustable wrenches and similar crude tools that poorly grip the retention knob and fail to measure torque. For optimal performance and safety, retention knobs are designed to be tightened to specific torque settings. Stud Socket allows the operator to safely and correctly torque retention knobs.



FEATURES:

- Aids in the installation and removal of retention knobs
- Use in conjunction with a torque wrench to uniformly tighten knobs to Manufacturer's standards
- Extends life of retention knob and toolholder- helps to eliminate "rounding off" of knob's corners
- Torque value clearly laser marked on socket
- Sockets have 1/2" drive- For use with Torque Wrench (Part Number RK-WRENCH)

USST Retention Knob or Standard	Retention Knob Socket	Price Each	Max Torque ft/lbs
JMTBA Std. PT30-I	RK-W30M-A	\$49.00	40lbs
JMTBA Std. PT30-II	RK-W30M-A		40lbs
B30-4500H	RK-W30M-A		40lbs
B30-4500S	RK-W30M-A		40lbs
B30-6000S	RK-W30M-A		40lbs
B30-9000S	RK-W30M-A		40lbs
B30-7500H	RK-W30M-A	40lbs	
DIN Std. 30	RK-W30D	\$56.70	40lbs
JMTBA Std. PT35-I	RK-W40M	\$61.43	40lbs
JMTBA Std. PT35-II	RK-W40M		40lbs
JMTBA Std. PT40-I	RK-W40-A	\$49.00	85lbs
JMTBA Std. PT40-II	RK-W40-A		85lbs
B40-4502S	RK-W40-A		85lbs
B40-4500H	RK-W40-A		85lbs
B40-4500S	RK-W40-A	\$49.00	85lbs
B40-6000H	RK-W40-A		85lbs
B40-6000S	RK-W40-A		85lbs
B40-9000H	RK-W40-A		85lbs
B40-9000S	RK-W40-A		85lbs
B40-4503H	RK-W40-A		85lbs
B40-4503S	RK-W40-A	\$49.00	85lbs
B40-4501H	RK-W40-A		85lbs
B40-4501S	RK-W40-A		85lbs
ISO Std A 40	RK-W40-A		85lbs
B40-7500H	RK-W40-A	85lbs	
B40-7500S	RK-W40-A	\$49.00	85lbs
DIN Std. 40	RK-W40-A		85lbs
B40-7501H	RK-W40-A		85lbs
JMTBA Std. PT45-I	RK-W45M	\$66.15	100lbs
JMTBA Std. PT45-II	RK-W45M		100lbs
B45-4500S	RK-W45M	\$66.15	100lbs
B45-6000S	RK-W45M		100lbs
B45-9000S	RK-W45M		100lbs

USST Retention Knob or Standard	Retention Knob Socket	Price Each	Max Torque ft/lbs	
ISO Std A 45	RK-W45M	\$66.15	100lbs	
DIN Std. 45	RK-W45M		100lbs	
JMTBA Std. PT50-I	RK-W50M-A	\$59.00	110lbs	
JMTBA Std. PT50-II	RK-W50M-A		110lbs	
B50-4500H	RK-W50M-A	\$59.00	110lbs	
B50-4500S	RK-W50M-A		110lbs	
B50-6000H	RK-W50M-A		110lbs	
B50-6000S	RK-W50M-A		110lbs	
B50-9000H	RK-W50M-A		110lbs	
B50-9000S	RK-W50M-A		110lbs	
B50-4509H-NEW	RK-W50	\$69.30	110lbs	
B50-4509S	RK-W50		110lbs	
ISO Std A 50	RK-W50M-A	\$59.00	110lbs	
DIN Std. 50	RK-W50M-A		110lbs	
B50-7500S-NEW	RK-W50M-A		110lbs	
B50-7500H-NEW	RK-W50M-A	110lbs		
1U.S. Std. ANSI 30	RK-W30	\$56.70	40 lbs	
C30-4500H	RK-W30		40 lb	
C30-4500S	RK-W30		40 lb	
C40-4501H	RK-W40-A	\$49.00	85lbs	
C40-4501S	RK-W40-A		85lbs	
C40-4501SG	RK-W40-A		-	
C40-4502H	RK-W40-A		85lbs	
C40-4502S	RK-W40-A		85lbs	
C40-4504S	RK-W40-A		85lbs	
C40-6006S	RK-W40-A		85lbs	
C40-6006H	RK-W40-A		85lbs	
C40-6000H	RK-W40-A		\$49.00	85lbs
C40-6000S	RK-W40-A		85lbs	
C40-MITSUI	RK-W40-A		85lbs	
C40-9006S	RK-W40-A		\$49.00	85lbs
C40-9006H	RK-W40-A	85lbs		
C40-9001S	RK-W40-A	85lbs		

USST Retention Knob or Standard	Retention Knob Socket	Price Each	Max Torque ft/lbs	
C40-9000H	RK-W40-A	\$49.00	85lbs	
C40-9000S	RK-W40-A		85lbs	
C40-4503H	RK-W40-A		85lbs	
C40-4503S	RK-W40-A	\$49.00	85lbs	
1U.S. Std. ANSI 40	RK-W40-A		85lbs	
C40-4500H	RK-W40-A		85lbs	
C40-4500S	RK-W40-A		85lbs	
C40-4500SG	RK-W40-A		-	
C40-4505H	RK-W40-A		85lbs	
C40-4505S	RK-W40-A	85lbs		
C40-7500H	RK-W40-A	\$49.00	85lbs	
C40-7509S	RK-W40-A		85lbs	
C40-7551H	RK-W40-A		85lbs	
C45-4500S	RK-W45M	\$66.15	100lbs	
C45-6000S	RK-W45M		100lbs	
C45-9000S	RK-W45M		100lbs	
C45-4501H	RK-W45	\$66.15	100lbs	
C45-4501S	RK-W45		100lbs	
1U.S. Std. ANSI 45	RK-W45		100lbs	
C50-4501H	RK-W50-A	\$59.00	110lbs	
C50-4501R	RK-W50-A		110lbs	
C50-4501S	RK-W50-A		110lbs	
C50-6000H	RK-W50-A		110lbs	
C50-6000S	RK-W50-A		110lbs	
C50-9000H	RK-W50-A		110lbs	
C50-9000S	RK-W50-A		110lbs	
1U.S. Std. ANSI 50	RK-W50-A		110lbs	
C50-4500H	RK-W50-A		\$59.00	110lbs
C50-4500R	RK-W50-A		110lbs	
C50-4500S	RK-W50-A		110lbs	
C50-4506H	RK-W50-A		\$59.00	110lbs
C50-4506R	RK-W50-A	110lbs		
C50-7550H	RK-W50-A	110lbs		

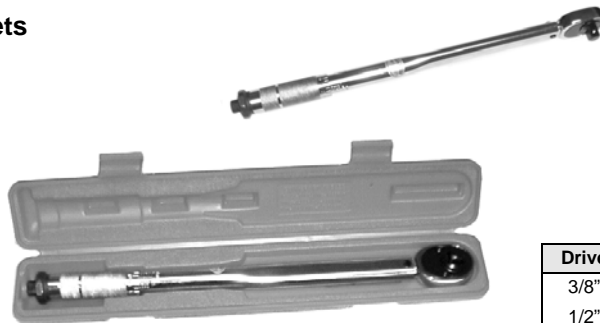
TORQUE WRENCHES

For Use With Retention Knob Sockets



FEATURES:

- For use with retention knob sockets
- Using 1/2" or 3/8" drive wrenches
- Dial-in torque setting up to 150 ft/lbs for 1/2" and 80 ft/lbs for 3/8"
- Both ft/lbs marking scales available
- Reversible ratchet
- Supplied with durable plastic case



Drive	Part Number	Price
3/8"	RK-WRENCH-3/8	\$49.99
1/2"	RK-WRENCH	\$49.99

Call Us Or Visit Our Website For Our Complete Selection!

MILLING TOOLHOLDERS

We offer one of the largest selections of milling toolholders in the USA. From CAT to BT to HSK tapers, we are sure to have the toolholder to fit your application. We are proud to feature KINGSTON and SPIN TRU Balanced Toolholders. Kingston holders are balanced to 15,000 RPM @ g6.3 while Spin Tru holders are balanced to 20,000 RPM @ g2.5, to help prolong tool life and reduce chatter and spindle wear. Both brands are offered at an unbeatable price with a 100% satisfaction guarantee!



CAT 40 TOOLING

Endmill Holders	180-184
ER Collet Chucks	185-187
DA Collet Chucks	188
TG Collet Chucks	189
Jacobs/Morse Taper Holders	190
Shell Mill Holders	191

CAT 50 TOOLING

Endmill Holders	195-198
ER Collet Chucks	199-200
DA Collet Chucks	201
TG Collet Chucks	202
Shell Mill Holders	203
Jacobs/Morse Taper Holders	204

BT 30 TOOLING

Endmill Holders	205
ER Collet Chucks	206
DA Collet Chucks	207
TG Collet Chucks	207

BT 40 TOOLING

Endmill Holders	208-210
ER Collet Chucks	211-212
DA Collet Chucks	213
TG Collet Chucks	213
Shell Mill Holders	214
Jacobs/Morse Taper Holders	215

BT 50 TOOLING

Endmill Holders/Collet Chucks	216
-------------------------------	-----

R8 TOOLING

R8 Collets & Toolholders	219-221
--------------------------	---------

NMTB TAPER

Endmill Holders	222
Collet Chucks	222
Shell Mill Holders	222

HSK TAPER

Endmill Holders	218
Collet Chucks	218

INTEGRAL SHANK DRILL CHUCKS

CAT 40/50, BT40, R8	227
---------------------	-----

TOOLING PACKAGES

179, 194

SHRINK FIT TOOLING

192

TOOLHOLDER ACCESSORIES

178, 193

TOOL TIGHTENING FIXTURES



FEATURES:

- Holds your CAT-40/50 Tool Holders and keeps them from moving while being tightened.
- Universal Handle makes it easy to use in any position.

Taper	Part Number	Price Each
CAT 40	TF-4001-K	\$74.99
CAT 50	TF-5001-K	\$93.50



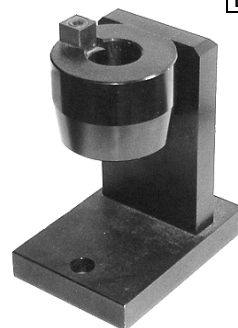
TOOL FIXTURES



BALANCED TOOLHOLDERS

- Constructed from heavy duty steel with a black oxide finish for corrosion resistance.
- Metal stop allows loosening or tightening of tool holder while preventing base rotation.
- Will work with CAT or BT Holders.

Taper	Part Number	Price Each
CAT/BT 40	TF-4000	\$95.00
CAT/BT 50	TF-5000	\$175.00



D

TOOL-SETTER



Left Hand Vertical Right Hand



FEATURES:

- Heavy duty construction
- Quick toolholder setting
- Multi-position, left/right horizontal and vertical
- Holds CAT & BT tapers

Simply rotate the handle to lock the tool. the handle locks the tool in, keeping it firmly in place. To unlock, simply pull the knob of the Tool-Setter!

Description	Tool Size	Part Number	Price Each
DSTSCH-040	CAT/BT 40	DN36001	\$411.76
DSTSCH-050	CAT/BT 50	DN36002	\$491.66

TOOL TIGHTENING FIXTURES



- Designed for maximum protection of tool
- Lightweight & compact design
- Enables strong gripping power in horizontal and vertical positions



Taper	Height	Length	Part Number	Price Each
CAT/BT30	4.25	7.09	BI-8890-0730	\$145.78
CAT/BT40	4.25	7.09	BI-8890-0740	\$150.48
CAT/BT50	5.91	9.84	BI-8890-0750	\$167.41

Call Us Today For All Of Your Machine Tool Needs!

CAT/BT 40 TOOLING PACKAGES

- Featuring **Kingston™ Balanced Toolholders** and **Accu-Collets** brand ER collets
- Save 15% off regular prices by buying the package
- Packages include (9) endmill holders, (1) ER 16 collet chuck, (1) ER 32 collet chuck, (1) shell mill holder, (1) ER 16 and (1) ER 32 collet set and (1) toolholder tightening fixture
- HAAS®, FADAL® & Mori Seiki® packages include 12 USST™ retention knobs (Made in USA)



SAVE 15% OFF
REGULAR PRICES WHEN YOU
BUY THE PACKAGE



CAT 40 TOOLING PACKAGE (Part # C40-PKG)

Pkg Includes	Part Number	Description	Price Each
1	C40-01EM175-K	1/8" CAT 40 1.75" Projection Endmill Holder	\$53.85
1	C40-18EM250-K	3/16" CAT 40 2.50" Projection Endmill Holder	\$53.85
1	C40-25EM250-K	1/4" CAT 40 2.50" Projection Endmill Holder	\$53.85
1	C40-31EM175-K	5/16" CAT 40 1.75" Projection Endmill Holder	\$53.85
1	C40-37EM175-K	3/8" CAT 40 1.75" Projection Endmill Holder	\$53.85
1	C40-50EM175-K	1/2" CAT 40 1.75" Projection Endmill Holder	\$53.85
1	C40-62EM175-K	5/8" CAT 40 1.75" Projection Endmill Holder	\$53.85
1	C40-75EM175-K	3/4" CAT 40 1.75" Projection Endmill Holder	\$53.85
1	C40-10EM200-K	1" CAT 40 2.00" Projection Endmill Holder	\$53.85
1	C40-10SM115-K	1" Arbor CAT 40 Shell Mill Holder 1.15" Proj.	\$65.95
1	C40-16ER250-K	ER16 CAT 40 2.50" Projection Collet Chuck	\$79.95
1	C40-32ER250-K	ER32 CAT 40 2.50" Projection Collet Chuck	\$82.45
1	16-SET11-INCH	11 Piece ER16 Collet Set 1/16" to 3/8" x 32nds	\$87.50
1	32-SET21-INCH	21 Piece ER32 Collet Set 1/8" to 3/4" x 32nds	\$205.00
1	TRAY40-10	CAT 40 Plastic Toolholder Tray-10 Holes	\$29.95
1	TF-4001-K	40 Taper Toolholder Tightening Fixture	\$74.99
Regular Package Price:			\$1,110.39
SPECIAL TOOLING PACKAGE PRICE:			\$943.83
HAAS PACKAGE Part # C40-PKG-HAAS		HAAS CAT 40 Tooling Package (Includes 12 C40-4501S Retention Knobs)	\$1,124.57
FADAL PACKAGE Part # C40-PKG-HAAS		FADAL CAT 40 Tooling Package (Includes 12 C40-4500S Retention Knobs)	\$1,098.87
MORI SEIKI PACKAGE Part # C40-PKG-HAAS		MORI SEIKI CAT 40 Tooling Package (Includes 12 C40-9000S Retention Knobs)	\$1,124.57

BT 40 TOOLING PACKAGE (Part # B40-PKG)

Pkg Includes	Part Number	Description	Price Each
1	B40-01EM250-K	1/8" BT 40 2.50" Projection Endmill Holder	\$58.25
1	B40-18EM250-K	3/16" BT 40 2.50" Projection Endmill Holder	\$58.25
1	B40-25EM225-K	1/4" BT 40 2.25" Projection Endmill Holder	\$58.25
1	B40-31EM250-K	5/16" BT 40 2.50" Projection Endmill Holder	\$58.25
1	B40-37EM225-K	3/8" BT 40 2.25" Projection Endmill Holder	\$58.25
1	B40-50EM175-K	1/2" BT 40 1.75" Projection Endmill Holder	\$58.25
1	B40-62EM175-K	5/8" BT 40 1.75" Projection Endmill Holder	\$58.25
1	B40-75EM175-K	3/4" BT 40 1.75" Projection Endmill Holder	\$58.25
1	B40-10EM175-K	1" BT 40 1.75" Projection Endmill Holder	\$58.25
1	B40-16ER250-K	ER16 BT 40 2.50" Projection Collet Chuck	\$87.95
1	B40-32ER300-K	ER32 BT 40 3.00" Projection Collet Chuck	\$87.95
1	B40-10SM225-K	1" Arbor BT40 Shell Mill Holder 2.25" Proj	\$65.95
1	16-SET11-INCH	11 Piece ER16 Collet Set 1/16" to 3/8" x 32nds	\$87.50
1	32-SET21-INCH	21 Piece ER32 Collet Set 1/8" to 3/4" x 32nds	\$205.00
1	TRAY40-10	BT 40 Plastic Toolholder Tray-10 Holes	\$29.95
1	TF-4001-K	40 Taper Toolholder Tightening Fixture	\$74.99
Regular Package Price:			\$1,163.48
SPECIAL TOOLING PACKAGE PRICE:			\$988.96
HAAS PACKAGE Part # B40-PKG-HAAS		HAAS BT 40 Tooling Package (Includes 12 B40-4500S Retention Knobs)	\$1,182.96

DON'T FORGET RETENTION KNOBS!
Complete Your Tooling Package With USST Retention Knobs. Each Knob Is Individually Magnetic Particle Tested To Ensure Material Integrity. Made in the USA!



View Our Complete Selection On Pages 169-176!

Please Call For Customized Tooling Packages!

CAT 50 Packages Also Available! Please See Page 216

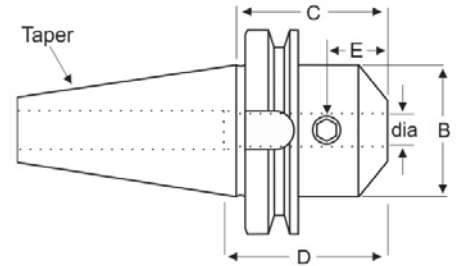
Call Us Or Visit Our Website For Our Complete Selection!

CAT-40 V-FLANGE TOOLHOLDERS

END MILL HOLDERS



- Large selection of end mill holders from nationally recognized manufacturers
- **Kingston Toolholders** are balanced to 15,000 RPM @ g6.3
- **Spin Tru Toolholders** are balanced to 20,000 RPM @ g2.5
- Full line available from all vendors listed-please call for information



CAT 40		ENDMILL HOLDERS									
Dia	C Proj.	B OD	D Max Socket Depth	E	Brand	Part Number	Price Each	Set Screw Size	Set Screw Part Number	MAX RPM Balanced Up to	Code
1/8"	1.38	0.68	-	-	Kingston	C40-01EM138-K	\$49.95	10-32	SSE-10-32-250	15,000G6.3	F
		0.68	-	-	Spin Tru	C40-01EM138-KB	\$69.99	10-32	SSE-10-32-250	20,000G2.5	D
	1.75	-	-	-	Kingston	C40-01EM175-K	\$53.85	10-32	SSE-10-32-250	15,000G6.3	F
		0.69	3.00	0.19	Parlec*	C40-01EM175-P	\$106.20	M10-32	SSE-10-32-250	20,000G2.5	A
	2.36	0.75	0.63	-	Lyndex	C40-01EM236-L	\$115.66	6-32	SSE-06-32-250	-	B
	2.50	-	-	-	Kingston	C40-01EM250-K	\$53.85	10-32	SSE-10-32-250	15,000G6.3	F
		0.69	3.80	0.19	Parlec*	C40-01EM250-P	\$94.50	M10-32	SSE-10-32-250	20,000G2.5	A
	3.00	0.68	-	-	Kingston	C40-01EM300-K	\$53.85	10-32	SSE-10-32-250	15,000G6.3	F
1.00		3.00	0.19	Parlec*	C40-01EM300-P	\$125.55	M10-32	SSE-10-32-250	20,000G2.5	A	
4.00	0.75	0.63	-	Lyndex	C40-01EM400-L	\$128.73	6-32(1)	SSE-06-32-250	-	B	
6.00	0.75	-	-	Techniks	C40-01EM600-T	\$106.20	3/16"-24	SSE-18-24-313	-	B	
3/16"	1.38	0.69	-	-	Kingston	C40-18EM138-K	\$49.95	10-32	SSE-10-32-250	15,000G6.3	F
		0.69	-	-	Spin Tru	C40-18EM138-KB	\$69.99	10-32	SSE-10-32-250	20,000G2.5	D
	1.75	-	-	-	Kingston	C40-18EM175-K	\$53.85	10-32	SSE-10-32-250	15,000G6.3	F
		0.69	3.00	0.44	Parlec*	C40-18EM175-P	\$106.20	M10-32(1)	SSE-10-32-250	20,000G2.5	A
	2.50	0.69	-	-	Kingston	C40-18EM250-K	\$53.85	10-32	SSE-10-32-250	15,000G6.3	F
		0.75	-	-	Spin Tru	C40-18EM250-KB	\$69.99	10-32	SSE-10-32-250	20,000G2.5	D
	2.50	0.75	-	-	Techniks	C40-18EM250-T	\$78.30	1/4"-28	SSE-25-28-313	-	B
		0.75	0.86	-	Lyndex	C40-18EM250-L	\$115.66	8-32(1)	SSE-08-32-250	-	B
3.00	0.69	-	-	Spin Tru	C40-18EM300-KB	\$70.50	10-32	SSE-10-32-250	20,000G2.5	D	
	1.00	3.00	0.44	Parlec*	C40-18EM300-P	\$131.40	M10-32(1)	SSE-10-32-250	-	A	
4.00	0.75	0.86	-	Lyndex	C40-18EM400-L	\$128.73	8-32(1)	SSE-08-32-250	-	B	
1/4"	1.38	-	-	-	Kingston	C40-18EM600-K	\$60.45	10-32	SSE-10-32-250	15,000G6.3	F
		-	-	-	Spin Tru	C40-18EM600-KB	\$74.47	10-32	SSE-10-32-250	20,000G2.5	D
	1.00	3.80	0.44	Parlec*	C40-18EM600-P	\$156.60	M10-32(1)	SSE-10-32-250	-	A	
	1.38	1.00	-	-	Kingston	C40-25EM138-K	\$49.95	1/4"-20	SSE-25-20-250	15,000G6.3	F
		0.79	2.50	0.75	Spin Tru	C40-25EM138-KB	\$69.99	1/4"-20	SSE-25-20-250	20,000G2.5	D
	1.75	-	-	-	Kingston	C40-25EM175-K	\$53.85	1/4"-20	SSE-25-20-250	15,000G6.3	F
		0.88	3.00	0.44	Parlec*	C40-25EM175-P	\$94.50	1/4"-28(1)	SSE-25-28-250	20,000G2.5	A
	2.50	1.00	-	-	Kingston	C40-25EM250-K	\$53.85	1/4"-20	SSE-25-20-250	15,000G6.3	F
0.88		4.21	0.75	Spin Tru	C40-25EM250-KB	\$69.99	1/4"-20	SSE-25-20-250	20,000G2.5	D	
2.50	0.79	3.80	0.44	Parlec*	C40-25EM250-P	\$94.50	1/4"-28(1)	SSE-25-28-250(2)	-	B	
	0.79	1.10	-	Lyndex	C40-25EM250-L	\$107.11	1/4"-28(1)	SSE-25-28-250	-	B	
3.00	0.79	-	-	Sowa	C40-25EM250-GB	\$90.72	1/4"-28	SSE-25-28-250	20,000	C	
	1.00	-	-	Spin Tru	C40-25EM300-KB	\$70.50	1/4"-20	SSE-25-20-250	20,000G2.5	D	
4.00	1.00	3	0.44	Parlec*	C40-25EM300-P	\$94.50	1/4"-28(1)	SSE-25-28-250(2)	-	A	
	-	-	-	Spin Tru	C40-25EM400-KB	\$73.02	1/4"-20	SSE-25-20-250	20,000G2.5	D	
0.79	1.10	-	-	Lyndex	C40-25EM400-L	\$128.73	1/4"-28(1)	SSE-25-28-250	-	B	
6.00	-	-	-	Kingston	C40-25EM600-K	\$60.45	1/4"-20	SSE-25-20-250	15,000G6.3	F	
	-	-	-	Spin Tru	C40-25EM600-KB	\$74.47	1/4"-20	SSE-25-20-250	20,000G2.5	D	
1.00	3.8	0.44	-	Parlec*	C40-25EM600-P	\$117.90	1/4"-28(1)	SSE-25-28-250	-	A	

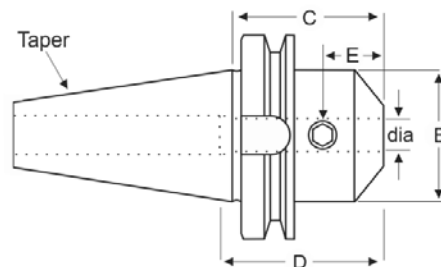
Call Us Today For All Of Your Machine Tool Needs!

CAT-40 V-FLANGE TOOLHOLDERS

END MILL HOLDERS



- Large selection of end mill holders from nationally recognized manufacturers
- **Kingston Toolholders** are balanced to 15,000 RPM @ g6.3
- **Spin Tru Toolholders** are balanced to 20,000 RPM @ g2.5
- Full line available from all vendors listed-please call for information



CAT 40 ENDMILL HOLDERS

Dia	C Proj.	B OD	D Max Socket Depth	E	Brand	Part Number	Price Each	Set Screw Size	Set Screw Part Number	MAX RPM Balanced Up to	Code
5/16"	1.38	1.00	-	-	Kingston	C40-31EM138-K	\$49.95	5/16"-18	SSE-31-18-313	15,000G6.3	F
		1.00	2.50	0.75	Spin Tru	C40-31EM138-KB	\$69.99	5/16"-18	SSE-31-18-313	20,000G2.5	D
		0.87	1.34	-	Lyndex	C40-31EM138-L	\$131.10	5/16"-24(1)	SSE-31-24-250	-	B
	1.75	-	-	-	Kingston	C40-31EM175-K	\$53.85	5/16"-18	SSE-31-18-313	15,000G6.3	F
		1.00	3.00	0.44	Parlec*	C40-31EM175-P	\$100.35	1/4"-28(1)	SSE-25-28-250	-	A
		1.00	-	-	Kingston	C40-31EM250-K	\$53.85	5/16"-18	SSE-31-18-313	15,000G6.3	F
	2.50	1.00	4.21	0.73	Spin Tru	C40-31EM250-KB	\$69.99	5/16"-18	SSE-31-18-313	20,000G2.5	D
		1.00	3.80	0.44	Parlec*	C40-31EM250-P	\$95.40	1/4"-28(1)	SSE-25-28-250(2)	-	A
		0.87	1.26	-	Lyndex	C40-31EM250-L	\$120.41	5/16"-24(1)	SSE-31-24-250	-	B
	3.00	0.87	-	-	Sowa	C40-31EM250-GB	\$98.82	5/16"-24	SSE-31-24-250	20,000	C
		0.98	-	-	Techniks	C40-31EM300-T	\$78.30	5/16"-24	SSE-31-24-313	-	B
		-	-	-	Spin Tru	C40-31EM400-KB	\$73.02	5/16"-18	SSE-31-18-313	20,000G2.5	D
4.00	0.87	1.26	-	Lyndex	C40-31EM400-L	\$141.08	5/16"-24(1)	SSE-31-24-250	-	B	
	0.87	-	-	Sowa	C40-31EM400-GB	\$87.03	5/16"-24	SSE-31-24-250	20,000	C	
	1.00	3.80	0.44	Parlec*	C40-31EM600-P	\$100.35	1/4"-28(1)	SSE-25-28-250	-	A	
3/8"	1.38	1.25	-	-	Kingston	C40-37EM138-K	\$49.95	3/8"-16	SSE-38-16-313	15,000G6.3	F
		1.00	1.80	0.75	Spin Tru	C40-37EM138-KB	\$69.99	3/8"-16	SSE-38-16-313	20,000G2.5	D
		1.00	1.34	-	Lyndex	C40-37EM138-L	\$121.36	3/8"-24(1)	SSE-37-24-313	-	B
	1.75	-	-	-	Kingston	C40-37EM175-K	\$53.85	3/8"-16	SSE-38-16-313	15,000G6.3	F
		1.00	3.00	0.75	Parlec*	C40-37EM175-P	\$95.40	3/8"-24(1)	SSE-38-24-313	-	A
		1.25	-	-	Kingston	C40-37EM250-K	\$53.85	3/8"-16	SSE-38-16-313	15,000G6.3	F
	2.50	1.00	4.21	0.75	Spin Tru	C40-37EM250-KB	\$69.99	3/8"-16	SSE-38-16-313	20,000G2.5	D
		1.00	3.80	0.75	Parlec*	C40-37EM250-P	\$95.40	3/8"-24(1)	SSE-38-24-313(2)	-	B
		1.00	-	-	Sowa	C40-37EM250-GB	\$98.82	3/8"-24	SSE-38-24-313	20,000	C
	3.00	1.25	-	-	Techniks	C40-37EM300-T	\$78.30	3/8"-24	SSE-38-24-375	-	B
		1.00	-	-	Spin Tru	C40-37EM400-KB	\$73.02	3/8"-16	SSE-38-16-313	20,000G2.5	D
		1.00	3.80	0.75	Parlec*	C40-37EM450-P	\$130.50	3/8"-24(1)	SSE-38-24-313	-	A
5.00	-	-	-	Spin Tru	C40-37EM500-KB	\$73.02	3/8"-16	SSE-38-16-313	20,000G2.5	D	
	1.00	1.26	-	Lyndex	C40-37EM500-L	\$152.48	3/8"-24(1)	SSE-37-24-313	-	B	
	1.00	-	-	Sowa	C40-37EM500-GB	\$110.16	3/8"-24	SSE-38-24-313	20,000	C	
6.00	-	-	-	Kingston	C40-37EM600-K	\$60.45	3/8"-16	SSE-38-16-313	15,000G6.3	F	
	1.00	3.80	0.75	Parlec*	C40-37EM600-P	\$160.65	3/8"-24(1)	SSE-38-24-313	-	A	
	1.25	-	-	Kingston	C40-43EM175-K	\$53.85	7/16"-14	SSE-44-14-375	15,000G6.3	F	
7/16"	1.75	1.25	-	-	Spin Tru	C40-43EM175-KB	\$69.99	7/16"-14	SSE-44-14-375	20,000G2.5	D
		1.25	-	-	Spin Tru	C40-43EM250-KB	\$70.50	7/16"-14	SSE-44-14-375	20,000G2.5	D
	2.50	1.25	-	-	Techniks	C40-43EM250-T	\$85.00	7/16"-20	SSE-44-20-375	-	B
		1.38	1.50	-	Lyndex	C40-43EM250-L	\$121.36	7/16"-20(1)	SSE-44-20-375	-	B
	2.62	1.38	-	-	Sowa	C40-43EM250-GB	\$87.03	7/16"-20	SSE-38-24-313	20,000	C
		1.25	3.80	0.75	Parlec*	C40-43EM262-P	\$95.40	3/8"-24(1)	SSE-38-24-313(2)	-	A
1/2"	1.37	-	-	-	Spin Tru	C40-43EM400-KB	\$73.02	7/16"-14	SSE-44-14-375	20,000G2.5	D
		1.38	-	-	Sowa	C40-43EM400-GB	\$87.03	7/16"-20	SSE-38-24-313	20,000	C
	1.37	-	-	-	Kingston	C40-50EM137-K	\$49.95	7/16"-14	SSE-44-14-375	15,000G6.3	F
		1.25	-	-	Spin Tru	C40-50EM138-KB	\$69.99	7/16"-14	SSE-44-14-375	20,000G2.5	D
	1.75	1.25	-	-	Kingston	C40-50EM175-K	\$53.85	7/16"-14	SSE-44-14-375	15,000G6.3	F
		1.38	3	0.88	Spin Tru	C40-50EM175-KB	\$69.99	7/16"-14	SSE-44-14-375	20,000G2.5	D
2.50	1.75	3	0.88	Parlec*	C40-50EM175-P	\$95.40	7/16"-20(1)	SSE-44-20-375	-	A	
	-	-	-	Spin Tru	C40-50EM250-KB	\$70.50	7/16"-14	SSE-44-14-375	20,000G2.5	D	
2.50	1.38	1.50	-	Lyndex	C40-50EM250-L	\$107.11	7/16"-20(1)	SSE-44-20-375	-	B	
	1.38	-	-	Sowa	C40-50EM250-GB	\$99.63	7/16"-20	SSE-44-20-375	20,000	C	

(Additional 1/2" CAT-40 Endmill Holders are located on the following page)

Call Us Or Visit Our Website For Our Complete Selection!

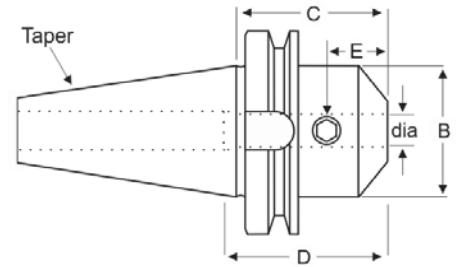
LATHE CHUCKS
LIVE CENTERS
VISE JAWS
VISE ACCESSORIES
STRAIGHT SHANK
COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

CAT-40 V-FLANGE TOOLHOLDERS

END MILL HOLDERS



- Large selection of end mill holders from nationally recognized manufacturers
- **Kingston Toolholders** are balanced to 15,000 RPM @ g6.3
- **Spin Tru Toolholders** are balanced to 20,000 RPM @ g2.5
- Full line available from all vendors listed-please call for information



CAT 40		ENDMILL HOLDERS											
Dia	C Proj.	B OD	D Max Socket Depth	E	Brand	Part Number	Price Each	Set Screw Size	Set Screw Part Number	MAX RPM Balanced Up to	Code		
1/2" (cont.)	2.62	1.25	-	-	Kingston	C40-50EM262-K	\$53.85	7/16"-14	SSE-44-14-375	15,000G6.3	F		
		1.25	3.80	0.88	Parlec*	C40-50EM262-P	\$95.40	7/16"-20(1)	SSE-44-20-375	-	A		
	4.00	1.38	-	-	-	Techniks	C40-50EM300-T	\$78.30	7/16"-20	SSE-44-20-437	-	B	
			-	-	-	Spin Tru	C40-50EM400-KB	\$69.46	7/16"-14	SSE-44-14-375	20,000G2.5	D	
		1.38	-	-	Lyndex	C40-50EM400-L	\$128.73	7/16"-20(1)	SSE-44-20-375	-	B		
	4.62	1.25	3.80	0.88	Parlec*	C40-50EM400-GP	\$99.63	7/16"-20	SSE-44-20-375	20,000	C		
						C40-50EM462-P	\$130.50	7/16"-20(1)	SSE-44-20-375	-	A		
	5.00	1.38	1.50	-	-	Kingston	C40-50EM500-K	\$60.45	7/16"-14	SSE-44-14-375	15,000G6.3	F	
						Spin Tru	C40-50EM500-KB	\$77.98	7/16"-14	SSE-44-14-375	20,000G2.5	D	
		1.38	-	-	-	Lyndex	C40-50EM500-L	\$152.48	7/16"-20(1)	SSE-44-20-375	-	B	
						Sowa	C40-50EM500-GB	\$110.16	7/16"-20	SSE-44-20-375	20,000	C	
	6.00	1.25	3.12	0.88	Parlec*	Kingston	C40-50EM600-K	\$60.45	7/16"-14	SSE-44-14-375	15,000G6.3	F	
Spin Tru						C40-50EM600-P	\$146.25	7/16"-20(1)	SSE-44-20-375	-	A		
1.75		2.18	0.88	-	-	Kingston	C40-56EM175-K	\$53.85	7/16"-14	SSE-44-14-375	15,000G6.3	F	
	Spin Tru					C40-56EM175-KB	\$69.99	7/16"-14	SSE-44-14-375	20,000G2.5	D		
	Parlec					C40-56EM175-P	\$143.10	7/16"-20(1)	SSE-44-20-375	-	A		
5/8"	1.38	1.50	-	-	Kingston	C40-62EM138-K	\$49.95	9/16"-12	SSE-46-12-500	15,000G6.3	F		
		1.50	-	-	Spin Tru	C40-62EM138-KB	\$69.99	9/16"-12	SSE-46-12-500	20,000G2.5	D		
	1.75	1.62	2.38	0.94	-	Kingston	C40-62EM175-K	\$53.85	9/16"-12	SSE-46-12-500	15,000G6.3	F	
						Spin Tru	C40-62EM175-KB	\$69.99	9/16"-12	SSE-46-12-500	20,000G2.5	D	
		1.75	-	-	-	Parlec	C40-62EM175-P	\$95.40	9/16"-18(1)	SSE-56-18-430	-	A	
						Techniks	C40-62EM175-T	\$72.25	1/2"-20	SSE-50-20-500	-	B	
	2.75	1.65	1.61	-	-	Lyndex	C40-62EM175-L	\$121.36	9/16"-18(1)	SSE-56-18-500	-	B	
						Kingston	C40-62EM275-K	\$53.85	9/16"-12	SSE-46-12-500	15,000G6.3	F	
						Kingston	C40-62EM300-K	\$53.85	9/16"-12	SSE-46-12-500	15,000G6.3	F	
	3.00	1.62	3.69	0.94	-	Spin Tru	C40-62EM300-KB	\$69.99	9/16"-12	SSE-46-12-500	20,000G2.5	D	
						Lyndex	C40-62EM300-L	\$115.66	9/16"-18(1)	SSE-56-18-500	-	B	
		1.65	-	-	-	Sowa	C40-62EM300-GB	\$99.63	9/16"-18	SSE-56-18-500	20,000	C	
						Kingston	C40-62EM390-K	\$53.85	9/16"-12	SSE-46-12-500	15,000G6.3	F	
	4.00	1.65	-	-	-	Spin Tru	C40-62EM400-KB	\$73.02	9/16"-12	SSE-46-12-500	20,000G2.5	D	
						Sowa	C40-62EM400-GB	\$99.63	9/16"-18	SSE-56-18-500	20,000	C	
5.50		-	-	-	-	Spin Tru	C40-62EM550-KB	\$73.02	9/16"-12	SSE-46-12-500	20,000G2.5	D	
	Kingston					C40-62EM775-K	\$60.45	9/16"-12	SSE-46-12-500	15,000G6.3	F		
7.75	1.50	-	-	-	Spin Tru	C40-62EM775-KB	\$74.47	9/16"-12	SSE-46-12-500	20,000G2.5	D		
					Kingston	C40-75EM137-K	\$49.95	5/8"-11	SSE-62-11-500	15,000G6.3	F		
	3/4"	1.38	1.75	-	-	Spin Tru	C40-75EM138-KB	\$69.99	5/8"-11	SSE-62-11-500	20,000G2.5	D	
Kingston						C40-75EM175-K	\$53.85	5/8"-11	SSE-62-11-500	15,000G6.3	F		
1.75		1.75	2.5	1	-	Spin Tru	C40-75EM175-KB	\$69.99	5/8"-11	SSE-62-11-500	20,000G2.5	D	
						Parlec	C40-75EM175-P	\$106.20	5/8"-18(1)	SSE-62-18-500	-	A	
		1.75	-	-	-	Techniks	C40-75EM175-T	\$80.75	5/8"-18	SSE-62-18-500	-	B	
						Lyndex	C40-75EM175-L	\$121.36	5/8"-18(1)	SSE-62-18-500	-	B	
3.00		1.75	-	-	-	Kingston	C40-75EM300-K	\$53.85	5/8"-11	SSE-62-11-500	15,000G6.3	F	
						Spin Tru	C40-75EM300-KB	\$69.99	5/8"-11	SSE-62-11-500	20,000G2.5	D	
		1.75	4.06	1	-	-	Lyndex	C40-75EM300-L	\$107.11	5/8"-18(1)	SSE-62-18-500	-	B
							Sowa	C40-75EM300-GB	\$99.63	5/8"-18	SSE-62-18-500	20,000	C
3.50	-	-	-	-	Kingston	C40-75EM350-K	\$53.85	5/8"-11	SSE-62-11-500	15,000G6.3	F		
					Parlec*	C40-75EM350-P	\$95.40	5/8"-18(1)	SSE-62-18-500	-	A		
	3.75	1.75	-	-	-	Kingston	C40-75EM375-K	\$53.85	5/8"-11	SSE-62-11-500	15,000G6.3	F	

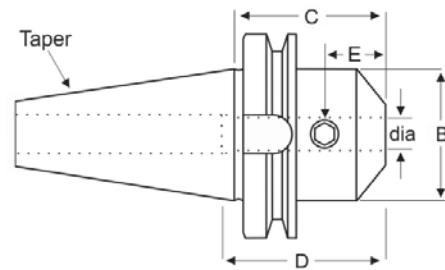
Call Us Today For All Of Your Machine Tool Needs!

CAT-40 V-FLANGE TOOLHOLDERS

END MILL HOLDERS



- Large selection of end mill holders from nationally recognized manufacturers
- **Kingston Toolholders** are balanced to 15,000 RPM @ g6.3
- **Spin Tru Toolholders** are balanced to 20,000 RPM @ g2.5
- Full line available from all vendors listed-please call for information



CAT 40 ENDMILL HOLDERS

Dia	C Proj.	B OD	D Max Socket Depth	E	Brand	Part Number	Price Each	Set Screw Size	Set Screw Part Number	MAX RPM Balanced Up to	Code
3/4"	4.00	—	—	—	Spin Tru	C40-75EM400-KB	\$73.02	5/8"-11	SSE-62-11-500	20,000G2.5	D
		1.75	1.77	—	Lyndex	C40-75EM400-L	\$128.73	5/8"-18(1)	SSE-62-18-500	-	B
		1.75	—	—	Sowa	C40-75EM400-GB	\$99.63	5/8"-18	SSE-62-18-500	20,000	C
	5.50	—	—	—	Spin Tru	C40-75EM550-KB	\$73.02	5/8"-11	SSE-62-11-500	20,000G2.5	D
		1.75	1.77	—	Lyndex	C40-75EM550-L	\$152.48	5/8"-18(1)	SSE-62-18-500	-	B
		1.75	—	—	Kingston	C40-75EM575-K	\$60.45	5/8"-11	SSE-62-11-500	15,000G6.3	F
7/8"	1.37	-	-	-	Kingston	C40-87EM137-K	\$49.95	5/8"-11	SSE-62-11-500	15,000G6.3	F
	1.38	2	-	-	Spin Tru	C40-87EM138-KB	\$69.99	5/8"-11	SSE-62-11-500	20,000G2.5	D
7/8"	1.75	2	-	-	Kingston	C40-87EM175-K	\$53.85	5/8"-11	SSE-62-11-500	15,000G6.3	F
		1.75	2.27	1	Spin Tru	C40-87EM175-KB	\$69.99	5/8"-11	SSE-62-11-500	20,000G2.5	D
	1.94	-	-	-	Sowa	C40-87EM175-GB	\$121.50	5/8"-18	SSE-62-18-500	20,000	C
		2	4.31	1	Spin Tru	C40-87EM350-KB	\$73.02	5/8"-11	SSE-62-11-500	20,000G2.5	D
	3.50	1.75	4.25	1	Parlec*	C40-87EM350-P	\$144.90	5/8"-18	SSE-62-18-500	-	A
		2.05	-	-	Techniks	C40-87EM350-T	\$87.30	5/8"-18	SSE-62-18-500	-	B
	3.75	1.88	4.25	1	Parlec*	C40-87EM375-P	\$106.20	5/8"-18(2)	SSE-62-18-500	-	B
	3.90	-	-	-	Kingston	C40-87EM390-K	\$53.85	5/8"-11	SSE-62-11-500	15,000G6.3	F
	4.00	2	-	-	Spin Tru	C40-87EM400-KB	\$73.02	5/8"-11	SSE-62-11-500	20,000G2.5	D
	6.00	2	-	-	Kingston	C40-87EM600-K	\$60.45	5/8"-11	SSE-62-11-500	15,000G6.3	F
		2	4.31	1	Spin Tru	C40-87EM600-KB	\$74.47	5/8"-11	SSE-62-11-500	20,000G2.5	D
	1.88	4.25	1	Parlec*	C40-87EM600-P	\$144.90	5/8"-18(2)	SSE-62-18-500	-	A	
		2	-	-	Kingston	C40-87EM775-K	\$60.45	5/8"-11	SSE-62-11-500	15,000G6.3	F
	2	-	-	-	Spin Tru	C40-87EM775-KB	\$74.47	5/8"-11	SSE-62-11-500	20,000G2.5	D
	1"	1.37	-	-	-	Kingston	C40-10EM137-K	\$49.95	3/4"-10	SSE-75-10-563	15,000G6.3
1.38		2.38	-	-	Spin Tru	C40-10EM138-KB	\$69.99	3/4"-10	SSE-75-10-563	20,000G2.5	D
1.75		2.38	-	-	Kingston	C40-10EM175-K	\$53.85	3/4"-10	SSE-75-10-563	15,000G6.3	F
		2.38	-	-	Spin Tru	C40-10EM175-KB	\$69.99	3/4"-10	SSE-75-10-563	20,000G2.5	D
2.00		2.00	2.38	1.12	Parlec	C40-10EM175-P	\$104.40	-	SS-029-955-P	-	A
		-	-	-	Kingston	C40-10EM200-K	\$53.85	3/4"-10	SSE-75-10-563	15,000G6.3	F
2.00		-	-	-	Spin Tru	C40-10EM200-KB	\$69.99	3/4"-10	SSE-75-10-563	20,000G2.5	D
		2.25	-	-	Sowa	C40-10EM200-GB	\$98.82	3/4"-16	SSE-75-16-688	20,000	C
2.25		-	-	-	Kingston	C40-10EM225-K	\$53.85	3/4"-10	SSE-75-10-563	15,000G6.3	F
		-	-	-	Spin Tru	C40-10EM225-KB	\$69.99	3/4"-10	SSE-75-10-563	20,000G2.5	D
3.00		2.38	-	-	Kingston	C40-10EM300-K	\$53.85	3/4"-10	SSE-75-10-563	15,000G6.3	F
		2.38	-	-	Spin Tru	C40-10EM300-KB	\$69.99	3/4"-10	SSE-75-10-563	20,000G2.5	D
		2.00	3.00	1.12	Parlec	C40-10EM300-P	\$127.35	5/8"-18(2)	SSE-62-18-500	-	A
4.00		2.38	-	-	Kingston	C40-10EM400-K	\$53.85	3/4"-10	SSE-75-10-563	15,000G6.3	F
		1.75	2.75	1.13	Spin Tru	C40-10EM400-KB	\$69.46	3/4"-10	SSE-75-10-563	20,000G2.5	D
		2.00	4.50	1.12	Parlec*	C40-10EM400-P	\$106.20	3/4"-16(2)	SSE-75-16-500	-	A
		2.36	2.36	-	Lyndex	C40-10EM400-L	\$119.23	3/4"-16(2)	SSE-75-16-688	-	B
		2.36	-	-	Sowa	C40-10EM400-GB	\$99.63	3/4"-16	SSE-75-16-688	20,000	C
6.00	2.38	-	-	Kingston	C40-10EM600-K	\$60.45	3/4"-10	SSE-75-10-563	15,000G6.3	F	
	2.00	4.43	1.13	Spin Tru	C40-10EM600-KB	\$74.47	3/4"-10	SSE-75-10-563	20,000G2.5	D	
	2.36	2.36	-	Lyndex	C40-10EM600-L	\$137.75	3/4"-16(2)	SSE-75-16-688	-	B	
	2.36	-	-	Sowa	C40-10EM600-GB	\$138.06	3/4"-16	SSE-75-16-688	20,000	C	
8.00	2.38	-	-	Kingston	C40-10EM800-K	\$60.45	3/4"-10	SSE-75-10-563	15,000G6.3	F	
	2.38	-	-	Spin Tru	C40-10EM800-KB	\$74.47	3/4"-10	SSE-75-10-563	20,000G2.5	D	

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

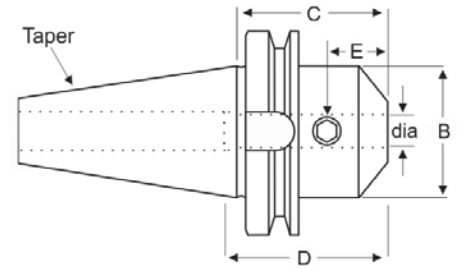
Call Us Or Visit Our Website For Our Complete Selection!

CAT-40 V-FLANGE TOOLHOLDERS

END MILL HOLDERS



- Large selection of end mill holders from nationally recognized manufacturers
- **Kingston Toolholders** are balanced to 15,000 RPM @ g6.3
- **Spin Tru Toolholders** are balanced to 20,000 RPM @ g2.5
- Full line available from all vendors listed-please call for information



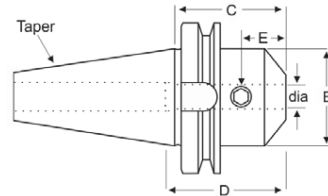
CAT 40 ENDMILL HOLDERS

Dia	C Proj.	B OD	D Max Socket Depth	E	Brand	Part Number	Price Each	Set Screw Size	Set Screw Part Number	MAX RPM Balanced Up to	Code
1-1/4"	2.00	2.50	-	-	Kingston	C40-12EM200-K	\$53.85	3/4"-10	SSE-75-10-500	15,000G6.3	F
		2.25	2.25	1.13	Spin Tru	C40-12EM200-KB	\$69.99	3/4"-10	SSE-75-10-500	20,000G2.5	D
		2.25	2.28	-	Lyndex	C40-12EM200-L	\$144.88	3/4"-16(1)	SSE-75-16-688	-	B
		2.25	-	-	Sowa	C40-12EM200-GB	\$108.00	3/4"-16	SSE-75-16-688	20,000	C
	4.00	-	-	-	Spin Tru	C40-12EM400-KB	\$73.02	3/4"-10	SSE-75-10-500	20,000G2.5	D
		2.25	3.75	1.12	Parlec	C40-12EM400-P	\$117.90	3/4"-16(2)	SSE-75-16-625	-	A
		2.48	2.55	-	Lyndex	C40-12EM400-L	\$136.33	3/4"-16(2)	SSE-75-16-688	-	B
		2.48	-	-	Sowa	C40-12EM400-GB	\$99.63	3/4"-16	SSE-75-16-688	20,000	C
	4.25	2.50	-	-	Kingston	C40-12EM425-K	\$53.85	3/4"-10	SSE-75-10-500	15,000G6.3	F
	4.60	2.75	-	-	Techniks	C40-12EM460-T	\$97.20	3/4"-16	SSE-75-16-625	-	B
	6.00	-	-	-	Kingston	C40-12EM600-K	\$60.45	3/4"-10	SSE-75-10-500	15,000G6.3	F
		-	-	-	Spin Tru	C40-12EM600-KB	\$74.47	3/4"-10	SSE-75-10-500	20,000G2.5	D
2.50		3.75	1.12	Parlec	C40-12EM600-P	\$160.65	3/4"-16(2)	SSE-75-16-625	-	A	
2.50		-	-	Kingston	C40-12EM800-K	\$60.45	3/4"-10	SSE-75-10-500	15,000G6.3	F	
8.00	2.50	-	-	Spin Tru	C40-12EM800-KB	\$74.47	3/4"-10	SSE-75-10-500	20,000G2.5	D	
	2.50	-	-	Kingston	C40-15EM400-K	\$53.85	3/4"-10	SSE-75-10-500	15,000G6.3	F	
1-1/2"	4.00	-	-	-	Kingston	C40-15EM400-K	\$53.85	3/4"-10	SSE-75-10-500	15,000G6.3	F
		2.62	2.38	1.12	Parlec	C40-15EM400-P	\$133.20	3/4"-16(2)	SSE-75-16-625	-	B
	4.35	-	-	-	Kingston	C40-15EM435-K	\$53.85	3/4"-10	SSE-75-10-688	15,000G6.3	F
	4.50	2.99	2.55	-	Lyndex	C40-15EM450-L	\$146.30	3/4"-16(2)	SSE-75-16-688	-	B
		2.99	-	-	Sowa	C40-15EM450-GB	\$119.88	3/4"-16	SSE-75-16-688	20,000	C
	4.62	2.62	2.38	1.12	Parlec	C40-15EM462-P	\$135.45	3/4"-16(2)	SSE-75-16-625	-	A
	6.00	-	-	-	Spin Tru	C40-15EM600-KB	\$75.54	3/4"-10	SSE-75-10-688	20,000G2.5	D
	6.62	2.75	-	-	Kingston	C40-15EM662-K	\$60.45	3/4"-10	SSE-75-10-688	15,000G6.3	F
	8.63	2.75	-	-	Kingston	C40-15EM863-K	\$60.45	3/4"-10	SSE-75-10-688	15,000G6.3	F
		2.75	-	-	Spin Tru	C40-15EM863-KB	\$74.47	3/4"-10	SSE-75-10-688	20,000G2.5	D

CAT 40 METRIC END MILL HOLDERS



- Large selection of end mill holders from nationally recognized manufacturers
- Full line available from all vendors listed-please call for information

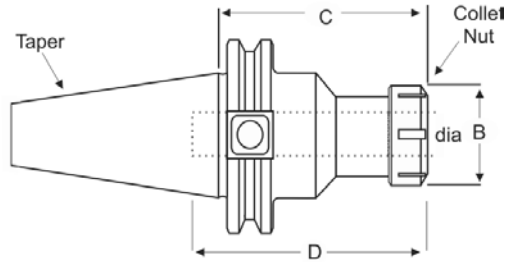


A Dia.	C Proj.	B OD	D Max Socket Depth	Brand	Part Number	Price Each	Set Screw Size	Set Screw Part Number	Code
6MM	2.50	0.78	1.10	Lyndex	C40-M06EM250-L	\$132.53	1/4"-28	SSE-25-28-250	B
8MM	2.50	0.87	1.25	Lyndex	C40-M08EM250-L	\$132.53	5/16"-24	SSE-31-24-250	B
10MM	2.50	1.00	1.25	Lyndex	C40-M10EM250-L	\$132.53	3/8"-24	SSE-37-24-313	B
12MM	2.50	1.38	1.50	Lyndex	C40-M12EM250-L	\$132.53	7/16"-20	SSE-44-20-375	B
	2.62	1.25	3.50	Parlec	C40-M12EM262-P	\$132.30	7/16"-20	SSE-44-20-375	A
14MM	3.00	1.65	1.61	Lyndex	C40-M14EM300-L	\$144.40	9/16"-18	SSE-56-18-500	B
16MM	2.75	1.50	2.13	Parlec	C40-M16EM275-P	\$132.30	9/16"-18	SSE-56-18-430	A
	3.00	1.65	1.61	Lyndex	C40-M16EM300-L	\$132.53	9/16"-18	SSE-56-18-500	B
18MM	3.00	1.75	1.77	Lyndex	C40-M18EM300-L	\$132.53	5/8"-18x1/2	SSE-62-18-500	B
20MM	3.00	1.75	1.77	Lyndex	C40-M20EM300-L	\$132.53	5/8"-18x1/2	SSE-62-18-500	B
	3.50	1.75	2.25	Parlec	C40-M20EM350-P	\$132.30	5/8"-18	SSE-62-18-500	A
25MM	4.00	2.00	3.00	Parlec	C40-M25EM400-P	\$158.85	3/4"-16(2)	SSE-75-16-500	A
	4.00	2.36	2.36	Lyndex	C40-M25EM400-L	\$137.99	3/4"-16(2)	SSE-75-16-688	B
32MM	4.00	2.48	2.36	Lyndex	C40-M32EM400-L	\$153.90	3/4"-16(2)	SSE-75-16-688	B

Call Us Today For All Of Your Machine Tool Needs!

CAT-40 V-FLANGE ER COLLET CHUCKS

ER COLLET CHUCKS



C Proj.	B Nut Dia.	D Socket Depth	Nut Tight. Torque (ft.lbs.)	Brand	Part Number	Price Each	MAX RPM Balanced Up to	Collet Nut	Wrench	Code
ER 8 ER-8 Collet Series- 0.019-0.196 (0.5mm-5mm)										
2.50	0.47	-	-	Lyndex	C40-08ER250-L	\$202.59	-	CN-ER08-L	WR-ER08-L	B

ER 11 ER-11 Collet Series- 0.020-0.275 (0.5mm-7mm)										
2.50	0.75	-	22	KINGSTON	C40-11ER250-K	\$79.95	15,000G6.3	CN-ER11-K	WR-ER11-K	F
	0.75	2.25	22	SPIN TRU	C40-11ER250-KB	\$93.08	20,000G2.5	CN-ER11-K	WR-ER11-K	D
	0.75	2.25	22	Parlec	C40-11ER250-P	\$160.38	-	CN-ER11-P	WR-ER11-P	A
	0.75	-	22	Lyndex	C40-11ER250-L	\$198.64	-	CN-ER11-L	WR-ER11-L	B
2.75	0.63	-	14	Techniks	C40-11ER275M-T	\$152.10	18,000G2.5	CN-ER11MN-T	WR-ER11MN-T	B
4.00	0.75	2.25	22	SPIN TRU	C40-11ER400-KB	\$90.39	20,000G2.5	CN-ER11-K	WR-ER11-K	D
	0.75	-	22	Lyndex	C40-11ER400-L	\$213.99	-	CN-ER11-L	WR-ER11-L	B
6.00	0.75	-	22	KINGSTON	C40-11ER600-K	\$87.95	15,000G6.3	CN-ER11-K	WR-ER11-K	F
	0.75	2.25	22	SPIN TRU	C40-11ER600-KB	\$98.07	20,000G2.5	CN-ER11-K	WR-ER11-K	D
	0.75	-	22	Sowa	C40-11ER600-GB	\$170.91	20000	CN-ER11-G	WR-ER11-G	C

ER 16 ER-16 Collet Series-.020 - 0.393 (0.5mm - 10mm)										
2.25	1.26	-	52	Lyndex	C40-16ER225-L	\$201.40	-	CN-ER16-L	WR-ER16-L	B
2.50	1.10	-	52	KINGSTON	C40-16ER250-K	\$79.95	15,000G6.3	CN-ER16-K	WR-ER16-K	F
	1.10	-	52	SPIN TRU	C40-16ER250-KB	\$93.08	20,000G2.5	CN-ER16-K	WR-ER16-K	D
2.62	1.11	2.55	52	Parlec	C40-16ER262-P	\$189.90	-	CN-ER16PN-P	WR-ER16-P	A
3.12	1.10	-	52	KINGSTON	C40-16ER312-K	\$82.45	15,000G6.3	CN-ER16-K	WR-ER16-K	F
	1.10	-	52	SPIN TRU	C40-16ER312-KB	\$93.08	20,000G2.5	CN-ER16-K	WR-ER16-K	D
	1.11	2.12	52	Parlec	C40-16ER312-P	\$191.70	-	CN-ER16PN-P	WR-ER16-P	A
3.50	1.10	2.76	52	SPIN TRU	C40-16ER350-KB	\$90.39	20,000G2.5	CN-ER16-K	WR-ER16-K	D
	1.26	-	52	Lyndex	C40-16ER350-L	\$190.95	-	CN-ER16-L	WR-ER16-L	B
4.00	1.10	2.76	52	SPIN TRU	C40-16ER400-KB	\$92.49	20,000G2.5	CN-ER16-K	WR-ER16-K	D
	1.26	-	50	Techniks	C40-16ER400-T	\$136.80	18,000G2.5	CN-ER16-T	WR-ER16-T	B
	1.26	-	52	Sowa	C40-16ER400-GB	\$153.90	20000	CN-ER16-G	WR-ER16-G	C
5.00	1.10	-	52	KINGSTON	C40-16ER500-K	\$87.95	15,000G6.3	CN-ER16-K	WR-ER16-K	F
	1.10	-	52	SPIN TRU	C40-16ER500-KB	\$98.07	20,000G2.5	CN-ER16-K	WR-ER16-K	D
5.12	1.11	2.12	52	Parlec	C40-16ER512-P	\$208.35	-	CN-ER16PN-P	WR-ER16-P	A
6.00	1.10	2.76	52	SPIN TRU	C40-16ER600-KB	\$98.07	20,000G2.5	CN-ER16-K	WR-ER16-K	D
	1.26	-	52	Lyndex	C40-16ER600-L	\$213.99	-	CN-ER16-L	WR-ER16-L	B
8.00	1.26	-	50	Techniks	C40-16ER800-T	\$170.10	18,000G2.5	CN-ER16-T	WR-ER16-T	B

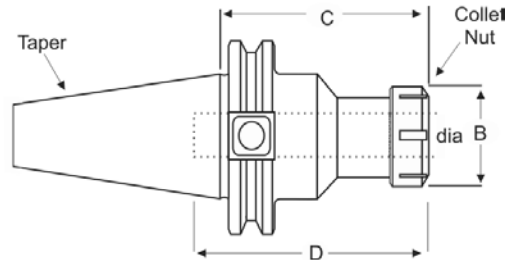
ER 20 ER-20 Collet Series-.020 - 0.500 (0.5mm - 12.7mm)										
2.50	1.34	-	74	KINGSTON	C40-20ER250-K	\$82.45	15,000G6.3	CN-ER20-K	WR-ER20-K	F
	1.34	-	74	SPIN TRU	C40-20ER250-KB	\$93.08	20,000G2.5	CN-ER20-K	WR-ER20-K	D
	1.38	-	74	Lyndex	C40-20ER250-L	\$190.95	-	CN-ER20-L	WR-ER20-L	B
3.12	1.34	-	74	KINGSTON	C40-20ER312-K	\$82.45	15,000G6.3	CN-ER20-K	WR-ER20-K	F
	1.34	-	74	SPIN TRU	C40-20ER312-KB	\$93.08	20,000G2.5	CN-ER20-K	WR-ER20-K	D
4.00	1.34	-	74	KINGSTON	C40-20ER400-K	\$82.45	15,000G6.3	CN-ER20-K	WR-ER20-K	F
	1.34	3.15	74	SPIN TRU	C40-20ER400-KB	\$92.49	20,000G2.5	CN-ER20-K	WR-ER20-K	D
	1.38	-	74	Techniks	C40-20ER400-T	\$136.80	18,000G2.5	CN-ER20-T	WR-ER20-T	B
	1.38	-	74	Sowa	C40-20ER400-GB	\$154.71	20000	CN-ER20-G	WR-ER20-G	C

(Additional ER 20 CAT-40 Collet Chucks are located on the following page)

Call Us Or Visit Our Website For Our Complete Selection!

CAT-40 V-FLANGE ER COLLET CHUCKS

ER COLLET CHUCKS



C Proj.	B Nut Dia.	D Socket Depth	Nut Tight. Torque (ft.lbs.)	Brand	Part Number	Price Each	MAX RPM Balanced Up to	Collet Nut	Wrench	Code
ER 20 ER-20 Collet Series-.020 - 0.500 (0.5mm - 12.7mm)-continued from previous page										
4.12	1.34	4.00	74	Parlec	C40-20ER412-P	\$195.75	-	CN-ER20-P	WR-ER20-P	A
6.00	1.34	-	74	KINGSTON	C40-20ER600-K	\$87.95	12,000G6.3	CN-ER20-K	WR-ER20-K	F
	1.34	-	74	SPIN TRU	C40-20ER600-KB	\$98.07	20,000G2.5	CN-ER20-K	WR-ER20-K	D
8.12	1.34	4.00	74	Parlec	C40-20ER812-P	\$246.60	-	CN-ER20-P	WR-ER20-P	A
ER 25 ER-25 Collet Series-.039 - 0.630 (1mm - 16mm)										
2.50	1.65	-	95	KINGSTON	C40-25ER250-K	\$82.45	15,000G6.3	CN-ER25-K	WR-ER25-K	F
	1.65	-	95	SPIN TRU	C40-25ER250-KB	\$95.48	20,000G2.5	CN-ER25-K	WR-ER25-K	D
	1.65	-	95	Techniks	C40-25ER250-T	\$143.00	18,000G2.5	CN-ER25-T	WR-ER25-T	B
	1.65	-	95	Sowa	C40-25ER250-GB	\$152.28	20000	CN-ER25-G	WR-ER25-G	C
2.62	1.67	2.50	95	Parlec	C40-25ER262-P	\$196.65	-	CN-ER25-P	WR-ER25-P	A
4.00	1.65	-	95	KINGSTON	C40-25ER400-K	\$82.45	15,000G6.3	CN-ER25-K	WR-ER25-K	F
	1.65	-	95	SPIN TRU	C40-25ER400-KB	\$92.49	20,000G2.5	CN-ER25-K	WR-ER25-K	D
	1.65	-	95	Techniks	C40-25ER400-T	\$147.60	18,000G2.5	CN-ER25-T	WR-ER25-T	B
	1.65	-	95	Lyndex	C40-25ER400-L	\$213.99	-	CN-ER25-L	WR-ER25-L	B
	1.65	-	95	Sowa	C40-25ER400-GB	\$165.24	20000	CN-ER25-G	WR-ER25-G	C
6.00	1.65	-	95	KINGSTON	C40-25ER600-K	\$87.95	15,000G6.3	CN-ER25-K	WR-ER25-K	F
	1.65	-	95	SPIN TRU	C40-25ER600-KB	\$98.07	20,000G2.5	CN-ER25-K	WR-ER25-K	D
8.00	1.65	-	95	Techniks	C40-25ER800-T	\$170.10	18,000G2.5	CN-ER25-T	WR-ER25-T	B
ER 32 ER-32 Collet Series-.040 - 0.810 (1mm - 20.6mm)										
1.06	1.97	-	125	SPIN TRU	C40-32ER106-KB	\$88.12	20,000G2.5	CN-ER32-K	WR-ER32-K	D
1.69	1.97	-	125	SPIN TRU	C40-32ER169-KB	\$88.12	20,000G2.5	CN-ER32-K	WR-ER32-K	D
2.50	1.97	-	125	KINGSTON	C40-32ER250-K	\$82.45	15,000G6.3	CN-ER32-K	WR-ER32-K	F
	1.97	3.46	125	SPIN TRU	C40-32ER250-KB	\$93.08	20,000G2.5	CN-ER32-K	WR-ER32-K	D
2.76	1.97	-	125	Techniks	C40-32ER276-T	\$145.80	18,000G2.5	CN-ER32-T	WR-ER32-T	B
3.00	1.97	-	125	KINGSTON	C40-32ER300-K	\$82.45	15,000G6.3	CN-ER32-K	WR-ER32-K	F
3.12	1.97	4.00	125	Parlec	C40-32ER312-P	\$215.10	-	CN-ER32-P	WR-ER32-P	A
3.13	1.97	3.46	125	SPIN TRU	C40-32ER313-KB	\$88.12	20,000G2.5	CN-ER32-K	WR-ER32-K	D
	1.97	-	125	Lyndex	C40-32ER313-L	\$190.95	-	CN-ER32-L	WR-ER32-L	B
	1.97	-	125	Sowa	C40-32ER313-GB	\$170.91	20000	CN-ER32-G	WR-ER32-G	C
4.00	1.97	-	125	KINGSTON	C40-32ER400-K	\$82.45	15,000G6.3	CN-ER32-K	WR-ER32-K	F
	1.97	3.94	125	SPIN TRU	C40-32ER400-KB	\$92.49	20,000G2.5	CN-ER32-K	WR-ER32-K	D
5.00	1.97	3.94	125	SPIN TRU	C40-32ER500-KB	\$92.66	20,000G2.5	CN-ER32-K	WR-ER32-K	D
	1.97	-	125	Lyndex	C40-32ER500-L	\$213.99	-	CN-ER32-L	WR-ER32-L	B
6.00	1.97	-	125	KINGSTON	C40-32ER600-K	\$87.95	15,000G6.3	CN-ER32-K	WR-ER32-K	F
	1.97	-	125	SPIN TRU	C40-32ER600-KB	\$98.07	20,000G2.5	CN-ER32-K	WR-ER32-K	D
8.00	1.97	-	125	Techniks	C40-32ER600-T	\$164.70	18,000G2.5	CN-ER32-T	WR-ER32-T	B
	1.97	-	125	Techniks	C40-32ER800-T	\$185.40	18,000G2.5	CN-ER32-T	WR-ER32-T	B

CNC TOOL TOTE RACKS

- Built-in end handles for comfortable carrying
- Bench mount, hand carry, or mount on top
- Made of heavy gauge steel
- Nylon inserts help protect tooling
- Painted texture black powder coating

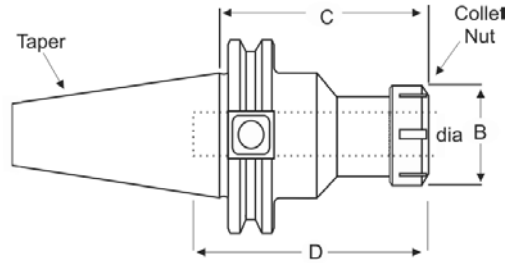


Tool Size	Cap.	Part Number	Price
40 Taper Tools	6	HU-14780	\$68.00
50 Taper Tools	5	HU-14790	\$68.00

Call Us Today For All Of Your Machine Tool Needs!

CAT-40 V-FLANGE ER COLLET CHUCKS

ER COLLET CHUCKS



C Proj.	B Nut Dia.	D Socket Depth	Nut Tight. Torque (ft.lbs.)	Brand	Part Number	Price Each	MAX RPM Balanced Up to	Collet Nut	Wrench	Code	
ER 40 ER-40 Collet Series-.040 - 0.810 (1mm - 20.6mm)											
2.50	2.48	-	140	Kingston	C40-40ER250-K	\$82.45	15,000G6.3	CN-ER40-K	WR-ER40-K	F	
	2.48	3.1	140	Spin Tru	C40-40ER250-KB	\$93.08	20,000G2.5	CN-ER40-K	WR-ER40-K	D	
	2.48	-	140	Sowa	C40-40ER250-GB	\$170.91	20000	CN-ER40-G	WR-ER40-G	C	
3.00	2.48	-	140	Kingston	C40-40ER300-K	\$82.45	15,000G6.3	CN-ER40-K	WR-ER40-K	F	
	2.48	3.10	140	Spin Tru	C40-40ER313-KB	\$88.12	20,000G2.5	CN-ER40-K	WR-ER40-K	D	
	2.48	-	140	Lyndex	C40-40ER313-L	\$197.84	-	CN-ER40-L	WR-ER40-L	B	
3.13	2.48	-	140	Sowa	C40-40ER313-GB	\$170.91	20000	CN-ER40-G	WR-ER40-G	C	
	2.48	-	140	Techniks	C40-40ER315-T	\$152.10	18,000G2.5	CN-ER40-T	WR-ER40-T	B	
	2.48	-	140	Kingston	C40-40ER400-K	\$82.45	15,000G6.3	CN-ER40-K	WR-ER40-K	F	
4.00	2.48	5.91	140	Spin Tru	C40-40ER400-KB	\$92.49	20,000G2.5	CN-ER40-K	WR-ER40-K	D	
	4.12	2.36	4.00	162	Parlec	C40-40ER412-P	\$221.85	-	CN-ER40-P	WR-ER40-P	A
	5.00	2.48	5.91	140	Spin Tru	C40-40ER500-KB	\$92.66	20,000G2.5	CN-ER40-K	WR-ER40-K	D
6.00	2.48	-	140	Lyndex	C40-40ER500-L	\$221.83	-	CN-ER40-L	WR-ER40-L	B	
	2.48	-	140	Kingston	C40-40ER600-K	\$87.95	15,000G6.3	CN-ER40-K	WR-ER40-K	F	
	2.48	-	140	Spin Tru	C40-40ER600-KB	\$98.07	20,000G2.5	CN-ER40-K	WR-ER40-K	D	
	2.48	-	140	Techniks	C40-40ER600-T	\$180.00	18,000G2.5	CN-ER40-T	WR-ER40-T	B	

ER COLLET SETS INCH & METRIC SIZES



- Concentricity is 13 microns or 0.0005" TIR or better
- Manufactured with Swiss technology
- Crafted from high quality European alloy spring steel
- **TRUE INCH** and metric sizes
- **Fractional Collets** manufactured specifically for US market requirements
- 16 slot construction for rigid clamping and extra concentricity
- Accu-Collets improve tool life, part finish and reduces spindle wear
- Can be used for drilling, milling, tapping and reaming



Type	Style	Description	No. Of Collets	Part Number	Set Price
ER-8	Metric	1mm to 5mm x .5mm	9	08-SET9	\$118.00
	Inch	1/16"-3/16" x 1/64	9	08-SET9-INCH	\$118.00
ER-11	Metric	1mm to 7mm x .5mm	13	11-SET13	\$105.00
	Inch	1/16"-1/4" x 1/32	7	11-SET7-INCH	\$52.50
ER-16	Inch	1/16" - 1/4" x 1/64	13	11-SET13-INCH	\$105.00
	Metric	1mm to 10mm x 1mm	10	16-SET10	\$78.75
ER-20	Inch	1/16" - 3/8" x 1/32"	11	16-SET11-INCH	\$87.50
	Metric	1mm to 13mm x 1mm	12	20-SET12	\$107.25
ER-25	Inch	1/16" - 1/2" x 1/32"	15	20-SET15-INCH	\$136.50
	Metric	2mm to 16mm x 1mm	15	25-SET15	\$136.50
ER-32	Inch	3/32" - 5/8" x 1/32"	18	25-SET18-INCH	\$165.75
	Metric	3mm to 20mm x 1mm	18	32-SET18	\$174.25
ER-40	Inch	1/8"-3/4" x 1/32"	21	32-SET21-INCH	\$205.00
	Metric	4mm to 26mm x 1mm	23	40-SET23	\$247.50
	Inch	1/8"-1" x 1/16"	15	40-SET15-INCH	\$157.50
	Inch	1/8" - 1" x 1/32"	29	40-SET29-INCH	\$315.00

TOOL FIXTURES



- FEATURES:**
- Holds your CAT-40/50 Tool Holders and keeps them from moving while being tightened.
 - Universal Handle makes it easy to use in any position.

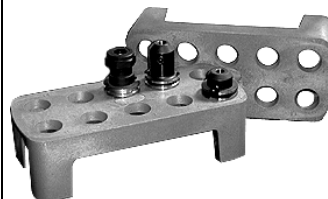
Taper	Part Number	Price Each
CAT 40	TF-4001-K	\$74.99
CAT 50	TF-5001-K	\$93.50



PLASTIC HOLDING TRAYS For CAT or BT Taper Toolholders

BEST VALUE

- Sturdy trays are available for CAT/BT 30, CAT/BT 40 and 50 taper toolholders
- An inexpensive way to organize your tool holders.



Taper Size	No. of Holes	Part Number	Price Each
CAT/BT30	10	TRAY30-10	\$29.95
CAT/BT40	10	TRAY40-10	\$29.95
CAT/BT 50	6	TRAY50-6	\$34.95

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

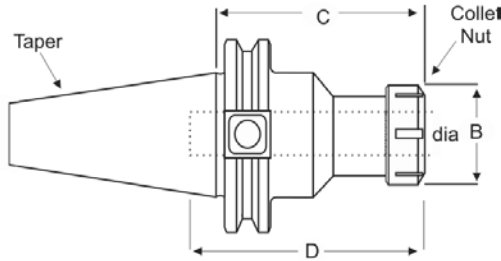
CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

CAT-40 V-FLANGE DA COLLET CHUCKS

DA SERIES COLLET CHUCKS



C Proj.	B Nut Dia.	D Socket Depth	Nut Tight. Torque (ft.lbs.)	Brand	Part Number	Price Each	MAX RPM Balanced Up to	Collet Nut	Wrench	Code
DA 100 DA100 Collet Series-.062 - 0.562 (1.587mm - 14.287mm)										
3.50	-	-	-	Kingston	C40-10DA350-K	\$87.84	15,000G6.3	CN-DA100-K	WR-DA100-K	F
	1.06	-	-	Lyndex	C40-10DA350-L	\$167.20	-	CN-DA100-L	WR-DA100-L	B
6.00	1.06	-	-	Lyndex	C40-10DA600-L	\$188.10	-	CN-DA100-L	WR-DA100-L	B

DA 180 DA180 Collet Series-.031 - 0.750 (.800mm - 19mm)										
2.95	1.44	3.00	40	Parlec	C40-18DA295-P	\$160.65	-	CN-DA180-L-P	WR-DA180-L-P	A
3.00	-	-	-	Kingston	C40-18DA300-K	\$87.84	15,000G6.3	CN-DA180-K	WR-DA180-K	F
4.00	1.44	-	-	Lyndex	C40-18DA400-L	\$167.20	-	CN-DA180-L	WR-DA180-L	B
5.15	-	-	-	Kingston	C40-18DA515-K	\$98.84	15,000G6.3	CN-DA180-K	WR-DA180-K	F
	1.44	4.88	40	Parlec	C40-18DA515-P	\$190.80	-	CN-DA180-L-P	WR-DA180-L-P	A
6.00	1.44	-	-	Lyndex	C40-18DA600-L	\$188.10	-	CN-DA180-L	WR-DA180-L	B

DA 200 DA200 Collet Series-.031 - 0.375 (.800mm - 9.5mm)										
2.73	1.10	2.50	30	Parlec	C40-20DA273-P	\$160.65	-	CN-DA200-P	WR-DA200-P	A
2.75	-	-	-	Kingston	C40-20DA275-K	\$87.84	15,000G6.3	CN-DA200-K	WR-DA200-K	F
3.00	-	-	-	Kingston	C40-20DA300-K	\$87.84	15,000G6.3	CN-DA200-K	WR-DA200-K	F
	0.81	3.00	30	Parlec	C40-20DA300-P	\$169.65	-	CN-DA200-L-P	WR-DA200-L-P	A
	0.86	-	-	Lyndex	C40-20DA300-L	\$169.10	-	CN-DA200-L	WR-DA200-L	B
5.00	-	-	-	Kingston	C40-20DA500-K	\$98.84	15,000G6.3	CN-DA200-K	WR-DA200-K	F
	0.81	5.00	30	Parlec	C40-20DA500-P	\$212.40	-	CN-DA200-L-P	WR-DA200-L-P	A

DA 300 DA300 Collet Series-.031 - 0.250 (.800mm - 6.4mm)										
3.00	0.55	-	-	Lyndex	C40-30DA300-L	\$169.10	-	CN-DA300-L	WR-DA300-L	B
3.38	-	-	-	Kingston	C40-30DA338-K	\$87.84	15,000G6.3	CN-DA300-K	WR-DA300-K	F
	0.62	3.00	25	Parlec	C40-30DA338-P	\$169.65	-	CN-DA300-P	WR-DA300-P	A
5.15	0.62	3.00	25	Parlec	C40-30DA515-P	\$212.40	-	CN-DA300-P	WR-DA300-P	A

DA COLLET SETS



FEATURES:

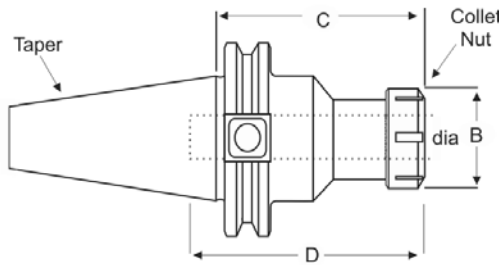
- DA Collets collapse approx. 1/32"
- Machined to exacting standards
- Ideal choice for high speed and high precision drilling operations
- Tolerance: 0.0003" at collet nose
- Customized sets available! Please call for more information

Collet Series	Description	Part Number	Price
DA300	9 Pieces (1/8"-1/4") by 64ths	DA300-SET9	\$99.00
DA200	17 Pieces (1/8"-3/8") by 64ths	DA200-SET17	\$187.00
DA100	29 Pieces (1/8"-9/16") by 64ths	DA100-SET29	\$319.00
DA180	33 Pieces(1/4-3/4) by 64ths	DA180-SET33	\$445.50
DA180	21 Pieces(1/8-3/4) by 32nds	DA180-SET21	\$283.50

Call Us Today For All Of Your Machine Tool Needs!

CAT-40 V-FLANGE TG & AF COLLET CHUCKS

TG SERIES COLLET CHUCKS



C Proj.	B Nut Dia.	D Socket Depth	Nut Tight. Torque (ft.lbs.)	Brand	Part Number	Price Each	MAX RPM Balanced Up to	Collet Nut	Wrench	Code
TG 075 TG-75 Collet Series-3/64 to 3/4 (1.2mm - 19.1mm)										
2.50	1.89	-	60	Lyndex	C40-75TG250-L	\$152.95	-	CN-TG075-L	WR-TG075-L	B
2.75	1.97	-	60	Spin Tru	C40-75TG275-KB	\$83.01	20,000G2.5	CN-TG075-K	WR-TG075-K	D
	1.88	-	100	Techniks	C40-75TG275-T	\$194.40	18,000G2.5	CN-TG075-T	WR-TG075-T	B
3.00	1.97	-	60	Kingston	C40-75TG300-K	\$65.95	15,000G6.3	CN-TG075-K	WR-TG075-K	F
	2.1	3	60	Parlec	C40-75TG300-P	\$139.05	-	CN-TG075-P	WR-TG075-P	A
6.00	1.97	-	60	Kingston	C40-75TG600-K	\$84.65	15,000G6.3	CN-TG075-K	WR-TG075-K	F
	1.97	-	60	Spin Tru	C40-75TG600-KB	\$113.41	20,000G2.5	CN-TG075-K	WR-TG075-K	D
TG 100 TG-100 Collet Series-5/64 to 1" (2mm - 25.4mm)										
2.75	2.50	-	60	Lyndex	C40-10TG275-L	\$152.95	-	CN-TG100-L	WR-TG100-L	B
3.00	2.44	-	60	Kingston	C40-10TG300-K	\$65.95	15,000G6.3	CN-TG100-K	WR-TG100-K	F
	2.44	-	60	Spin Tru	C40-10TG300-KB	\$82.15	20,000G2.5	CN-TG100-K	WR-TG100-K	D
	2.44	3.35	60	Parlec	C40-10TG300-P	\$117.90	-	CN-TG100-P	WR-TG100-P	A
	2.36	-	100	Techniks	C40-10TG300-T	\$99.90	18,000G2.5	CN-TG100-T	WR-TG100-T	B
4.00	2.44	-	60	Kingston	C40-10TG400-K	\$84.65	15,000G6.3	CN-TG100-K	WR-TG100-K	F
	2.44	-	60	Spin Tru	C40-10TG400-KB	\$105.44	20,000G2.5	CN-TG100-K	WR-TG100-K	D
	2.36	-	100	Techniks	C40-10TG400-T	\$104.40	18,000G2.5	CN-TG100-T	WR-TG100-T	B
5.00	2.44	-	60	Kingston	C40-10TG500-K	\$84.65	15,000G6.3	CN-TG100-K	WR-TG100-K	F
	2.44	4.54	60	Parlec	C40-10TG500-P	\$120.60	-	CN-TG100-P	WR-TG100-P	A
5.50	2.44	-	60	Kingston	C40-10TG550-K	\$84.65	15,000G6.3	CN-TG100-K	WR-TG100-K	F
	2.44	-	60	Sowa	C40-10TG550-GB	\$128.79	20000	CN-TG100-G	WR-TG100-G	C
6.00	2.44	-	60	Kingston	C40-10TG600-K	\$84.65	15,000G6.3	CN-TG100-K	WR-TG100-K	F
	2.44	-	60	Spin Tru	C40-10TG600-KB	\$113.41	20,000G2.5	CN-TG100-K	WR-TG100-K	D
6.50	2.44	-	60	Kingston	C40-10TG650-K	\$84.65	15,000G6.3	CN-TG100-K	WR-TG100-K	F
	2.44	6.00	60	Parlec	C40-10TG650-P	\$133.20	-	CN-TG100-P	WR-TG100-P	A
TG 150 TG-150 Collet Series-23/64 to 1-1/2" (9.1mm - 38.1mm)										
4.88	3.50	-	70	Kingston	C40-15TG488-K	\$84.65	15,000G6.3	CN-TG150-K	WR-TG100-K	F
	3.50	-	70	Spin Tru	C40-15TG488-KB	\$105.44	20,000G2.5	CN-TG150-K	WR-TG100-K	D
6.00	3.50	-	70	Lyndex	C40-15TG600-L	\$335.59	-	CN-TG150-L	WR-TG150-L	B

TG COLLET SETS

FEATURES:

- TG Collets collapse approx. 1/64"
- Machined to exacting standards
- Ideal choice for high speed and high precision milling and drilling operations
- Tolerance: 0.0003" at collet nose
- Sets available in TG 75, 100 & 150
- Different set quantities available

Accu-Collets

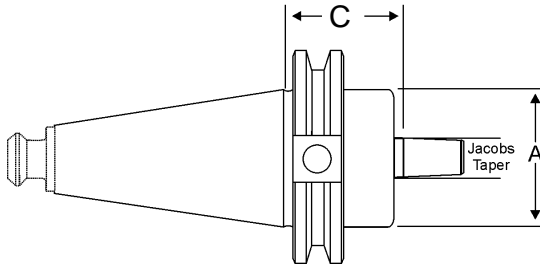


Collet Series	Set Qty	Range	Part Number	Price
TG 75	11	1/8"-3/4"-16ths	075-SET11	\$203.50
	22	1/8"-3/4"-32nds	075-SET22	\$407.00
	43	3/32"-3/4"-64ths	075-SET43	\$795.50
TG 100	59	3/32"-1"-64ths	100-SET59	\$1,121.00
	41	3/8"-1"-64ths	100-SET41	\$779.00
	30	3/32"-1"-32nds	100-SET30	\$570.00
	21	3/8"-1"-32nds	100-SET21	\$399.00
	15	1/8"-1"-16ths	100-SET15	\$285.00
TG 150	33	1/2"-1-1/2" - 32nds	150-SET33	\$1,402.00

Call Us Or Visit Our Website For Our Complete Selection!

CAT-40 JACOBS/MORSE TAPER HOLDERS

JACOBS TAPER HOLDERS



Jacobs Taper	C Proj	A Dia	Brand	Part Number	Price	Code
JT1	2.16	0.39	Kingston	C40-01JT216-K	\$65.95	F
	2.16	0.39	Spin Tru	C40-01JT216-KB	\$65.95	D
JT2	1.50	-	Kingston	C40-02JT150-K	\$65.95	F
	1.50	-	Spin Tru	C40-02JT150-KB	\$65.95	D
	1.50	0.56	Parlec	C40-02JT150-P	\$93.60	A
	2.44	0.56	Kingston	C40-02JT244-K	\$65.95	F
	2.44	0.56	Spin Tru	C40-02JT244-KB	\$65.95	D
JT3	1.50	-	Kingston	C40-03JT150-K	\$65.95	F
	1.50	-	Spin Tru	C40-03JT150-KB	\$65.95	D
	1.50	0.81	Parlec	C40-03JT150-P	\$93.60	A
	2.81	0.81	Kingston	C40-03JT281-K	\$65.95	F
JT4	1.50	-	Kingston	C40-04JT150-K	\$65.95	F
	1.50	-	Spin Tru	C40-04JT150-KB	\$65.95	D
	1.50	1.12	Parlec	C40-04JT150-P	\$120.60	A
	3.25	1.13	Kingston	C40-04JT325-K	\$65.95	F
	3.25	1.13	Spin Tru	C40-04JT325-KB	\$65.95	D
JT6	1.50	-	Kingston	C40-06JT150-K	\$65.95	F
	1.50	-	Spin Tru	C40-06JT150-KB	\$65.95	D
	1.50	0.68	Parlec	C40-06JT150-P	\$93.60	A
	3.25	0.68	Kingston	C40-06JT325-K	\$65.95	F
	3.25	0.68	Spin Tru	C40-06JT325-KB	\$65.95	D
JT33	1.50	-	Kingston	C40-33JT150-K	\$65.95	F
	1.50	-	Spin Tru	C40-33JT150-KB	\$65.95	D
	1.50	0.62	Parlec	C40-33JT150-P	\$93.60	A
	2.56	0.63	Kingston	C40-33JT256-K	\$65.95	F
	2.56	0.63	Spin Tru	C40-33JT256-KB	\$65.95	D

KEYLESS DRILL CHUCKS

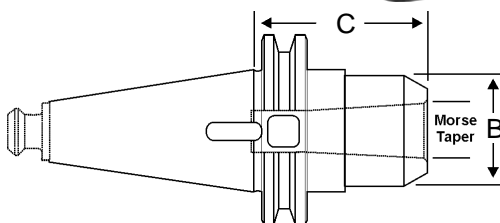
With Integral Shank

- Integral shank precision ball-bearing keyless drill chuck offers greater accuracy and rigidity
- Made of alloy forged steel
- Self-tightening keyless operation
- Maximum TIR: 0.0015"
- Includes wrench



Taper	Capacity	Proj.	BISON Part Number	Price Each	TMX Part Number	Price Each
BT40	1/32"-1/2"	3.74	B40-50DC1-B	\$225.90	TMX-8230-4033	\$217.12
	1/8"-5/8"	3.94	B40-62DC1-B	\$243.90	TMX-8230-4035	\$233.89
CAT40	1/32"-1/2"	4.13	C40-50DC1-B	\$229.50	TMX-8130-4033	\$245.99
	1/8"-5/8"	5.12	C40-62DC1-B	\$246.60	TMX-8130-4035	\$263.93
CAT50	1/32"-1/2"	4.13	C50-50DC1-B	\$273.60	TMX-8130-5063	\$292.76
	1/8"-5/8"	4.33	C50-62DC1-B	\$290.70	TMX-8130-5065	\$310.79

MORSE TAPER HOLDERS

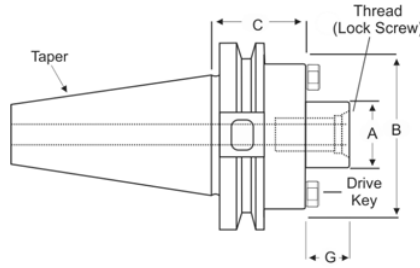


Morse Taper	C Proj	B Face Dia	Brand	Part Number	Price	Code
MT1	1.75	1.00	Kingston	C40-01MT175-K	\$65.95	F
	1.75	1.00	Spin Tru	C40-01MT175-KB	\$65.95	D
	1.75	1.75	Parlec	C40-01MT175-P	\$107.10	A
MT2	1.75	1.25	Kingston	C40-02MT175-K	\$65.95	F
	1.75	1.25	Spin Tru	C40-02MT175-KB	\$65.95	D
	1.75	1.75	Parlec	C40-02MT175-P	\$106.20	A
	2.44	1.25	Kingston	C40-02MT244-K	\$65.95	F
	2.44	1.25	Spin Tru	C40-02MT244-KB	\$65.95	D
MT3	2.50	1.75	Kingston	C40-03MT250-K	\$65.95	F
	2.50	1.75	Spin Tru	C40-03MT250-KB	\$65.95	D
	2.50	1.75	Parlec	C40-03MT250-P	\$119.70	A
	3.00	1.75	Kingston	C40-03MT300-K	\$62.65	F
	3.00	1.75	Spin Tru	C40-03MT300-KB	\$62.65	D
MT4	3.50	2.00	Kingston	C40-04MT350-K	\$62.65	F
	3.50	2.00	Spin Tru	C40-04MT350-KB	\$62.65	D
	3.50	2.00	Parlec	C40-04MT350-P	\$122.85	A
	3.88	2.00	Kingston	C40-04MT388-K	\$65.95	F

Call Us Today For All Of Your Machine Tool Needs!

CAT-40 V-FLANGE SHELL MILL HOLDERS

SHELL MILL HOLDERS



A Pilot dia	B Dia	C Proj	G	Brand	Part Number	Price	Drive Key	Screw Thread	Lock Screw	Arbor Screw	Code
1/2" 0.500	1.75	1.38	-	Kingston	C40-50SM138-K	\$65.95	-	-	-	-	F
	1.75	1.38	-	Spin Tru	C40-50SM138-KB	\$65.95	-	-	-	-	D
	1.38	1.75	0.57	Lyndex	C40-50SM175-L	\$153.90	1/4"	1/4"-28	-	A1/4-28	B
	1.75	3.50	-	Kingston	C40-50SM350-K	\$65.95	-	-	-	-	F
	1.75	3.50	-	Spin Tru	C40-50SM350-KB	\$65.95	-	-	-	-	D
3/4" 0.750	-	1.50	-	Kingston	C40-75SM150-K	\$65.95	-	-	-	-	F
	-	1.50	-	Spin Tru	C40-75SM150-KB	\$65.95	-	-	-	-	D
	1.75	1.50	0.68	Parlec	C40-75SM150-P	\$150.75	75KY	3/8"-24	-	028-192	A
	2.00	1.75	0.67	Lyndex	C40-75SM175-L	\$149.86	5/16"	3/8"-24	-	A3/8-24	B
	1.75	3.50	-	Kingston	C40-75SM350-K	\$65.95	-	-	-	-	F
	1.75	3.50	-	Spin Tru	C40-75SM350-KB	\$65.95	-	-	-	-	D
	-	4.00	-	Kingston	C40-75SM400-K	\$65.95	-	-	-	-	F
	-	4.00	-	Spin Tru	C40-75SM400-KB	\$65.95	-	-	-	-	D
	1.75	4.00	0.68	Parlec	C40-75SM400-P	\$167.40	75KY	3/8"-24	-	028-192	A
1.75	6.00	-	Kingston	C40-75SM600-K	\$71.45	-	-	-	-	F	
1" 1.000	-	1.15	-	Kingston	C40-10SM115-K	\$65.95	-	-	-	-	F
	-	1.15	-	Spin Tru	C40-10SM115-KB	\$65.95	-	-	-	-	D
	-	2.00	-	Kingston	C40-10SM200-K	\$65.95	-	-	-	-	F
	-	2.00	-	Spin Tru	C40-10SM200-KB	\$65.95	-	-	-	-	D
	2.25	2.00	0.68	Parlec	C40-10SM200-P	\$124.65	10KY	1/2"-20	10LS	028-188	A
	2.19	4.00	-	Kingston	C40-10SM400-K	\$65.95	-	-	-	-	F
	2.19	4.00	-	Spin Tru	C40-10SM400-KB	\$65.95	-	-	-	-	D
	2.19	6.00	-	Kingston	C40-10SM600-K	\$71.45	-	-	-	-	F
	2.19	6.00	-	Spin Tru	C40-10SM600-KB	\$71.45	-	-	-	-	D
2.38	4.00	0.67	Lyndex	C40-10SM400-L	\$180.50	3/8"	1/2"-20	-	A1/2-20	B	
1-1/4" 1.250	2.75	1.62	0.68	Parlec	C40-12SM162-P	\$130.50	12KY	5/8"-18	-	028-193	A
	2.88	2.00	0.67	Lyndex	C40-12SM200-L	\$152.10	1/2"	5/8"-18	-	A5/8-18	B
	2.88	2.12	-	Kingston	C40-12SM212-K	\$65.95	-	-	-	-	F
	2.75	2.25	0.68	Parlec	C40-12SM225-P	\$132.30	12KY	5/8"-18	12LS	028-193	A
	2.88	2.50	-	Kingston	C40-12SM250-K	\$65.95	-	-	-	-	F
	2.88	2.50	-	Spin Tru	C40-12SM250-KB	\$65.95	-	-	-	-	D
	2.75	4.00	0.68	Parlec	C40-12SM400-P	\$189.90	12KY	5/8"-18	12LS	028-193	A
	2.88	4.00	-	Kingston	C40-12SM400-K	\$65.95	-	-	-	-	F
	2.88	4.00	-	Spin Tru	C40-12SM400-KB	\$65.95	-	-	-	-	D
2.88	4.00	0.67	Lyndex	C40-12SM400-L	\$189.05	1/2"	5/8"-18	-	A5/8-18	B	
1-1/2" 1.500	3.75	2.40	0.94	Parlec	C40-15SM240-P	\$148.05	15KY	3/4"-16	15LS	15LS	A
	3.38	2.50	-	Kingston	C40-15SM250-K	\$65.95	-	-	-	-	F
	3.38	2.50	-	Spin Tru	C40-15SM250-KB	\$65.95	-	-	-	-	D
	3.38	4.00	-	Kingston	C40-15SM400-K	\$65.95	-	-	-	-	F
	3.38	4.00	-	Spin Tru	C40-15SM400-KB	\$65.95	-	-	-	-	D
	3.80	4.00	0.93	Lyndex	C40-15SM400-L	\$202.35	5/8"	3/4"-16	-	A3/4-16	B

90° MILLING CUTTERS

For Use With APKT/APGT1604 Series Inserts

CALL FOR OUR HOT MILLING SPECIALS!



Dia. D	Arbor Hole d	Key Width a	Flute Length H	No. of Flutes	Part Number	Price Each
2.00	0.750	0.3125	1.75	4	M-SAP16N-2075-4	\$195.00
2.00	0.750	0.3125	1.75	5	M-SAP16N-2075-5	\$195.00
2.50	1.000	0.3750	2.00	5	M-SAP16N-2510-5	\$199.00
3.00	1.000	0.3750	2.00	6	M-SAP16N-3010-6	\$310.00
3.00	1.000	0.3750	2.00	7	M-SAP16N-3010-7	\$310.00

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

191

LATHE CHUCKS
LIVE CENTERS
VISE JAWS
VISE ACCESSORIES
STRAIGHT SHANK
COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

CAT 40 SHRINK FIT HOLDERS

CAT 40 STANDARD SHRINK FIT HOLDERS

If you do high speed, or high torque machining you should seriously consider the benefits of shrink fit technology. Your investment will pay for itself many times over. With shrink fit toolholders vibration is reduced and cutting is noticeably faster and smoother. Manufacturing times can be reduced while maintaining the quality and accuracy demanded by today's competitive markets. Shrink fit uses the expansion and contraction properties of metal to provide extremely powerful tool holding. The bore is slightly smaller than the tool shank, and when heated it expands just enough to allow the tool to be inserted. When it cools, the contraction of the metal holds the cutting tool with 10,000 lbs of force



Benefits of Shrink Fit:

- TIR 0.0002" max
- Permits increased feeds and speeds
- Highest rigidity-permits increased chip load and improves accuracy and repeatability
- Change tools in as little as 6 seconds!
- Increased carbide tool life and reduced tooling costs



Dia d1	OD d2	d3	Proj L1	L2	Part Number	Price
1/8"	0.63	.87	3.50	.79	C40-01SF350-T	\$232.20
3/16"	0.63	.87	3.50	.79	C40-18SF350-T	\$232.20
1/4"	0.71	1.06	3.00	1.42	C40-25SF300-T	\$232.20
	0.71	1.06	3.50	1.42	C40-25SF350-T	\$232.20
5/16"	0.78	1.06	3.50	1.42	C40-31SF350-T	\$232.20
	0.94	1.26	3.00	1.53	C40-37SF300-T	\$232.20
3/8"	0.94	1.26	3.75	1.53	C40-37SF375-T	\$232.20
	1.10	1.34	3.00	1.85	C40-50SF300-T	\$232.20
1/2"	1.10	1.34	3.75	1.85	C40-50SF375-T	\$232.20
	1.26	1.34	3.75	1.97	C40-62SF375-T	\$232.20
5/8"	1.42	1.65	3.00	2.04	C40-75SF300-T	\$255.60
	1.42	1.65	4.00	2.04	C40-75SF400-T	\$232.20
1.00"	1.81	2.09	3.00	2.28	C40-10SF300-T	\$255.60
	1.81	2.09	4.00	2.28	C40-10SF400-T	\$232.20
1-1/4"	1.81	2.09	4.00	2.28	C40-12SF400-T	\$232.20

TECHNOSHRINK II SHRINK-FIT MACHINE



Easy To Use- Simply Align The Induction Head With Your Toolholder, Enter Your Shank Size And Press START!

Features:

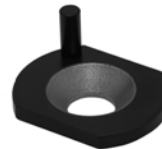
- Microprocessor controlled induction heat changes tools in 30 seconds!
- Automatic cooling using shop air eliminates handling hot tools
- for carbide shank sizes 1/8" to 1-1/8" (works best with h6 shanks)
- The benefits of shrink-fit without the high cost!
- Optional heat sinks reduce cooling cycle time by 50% to only 90 seconds!



Description	Tool Change	Rating	L x D x H	Part Number	Price
TechnoSHRINK II	30 seconds	1 phase, 220v, 20A	16" x 19" x 28"	TECH-00300	\$4,000.00



Toolholder Adapter



Induction Stop Ring



Toolholder Sleeve

Included With TechnoSHRINK II Machine (1 Of Each)

Description	Part Number
Small Induction Head 3-16mm	TECH-00300-021
Large Induction Head 20-32mm	TECH-00300-022
Induction Stop ring 3-5mm	TECH-00165
Induction Stop ring 6-12mm	TECH-00166
Induction Stop ring 14-20mm	TECH-00167
Induction Stop ring 25-32mm	TECH-00168
Toolholder Adapter 30 Taper	TECH-00151

Description	Part Number
Toolholder Adapter 40 Taper	TECH-00152
Toolholder Adapter 50 Taper	TECH-00153
Toolholder Adapter HSK 40 Taper	TECH-00157
Toolholder Adapter HSK 50 Taper	TECH-00158
Toolholder Adapter HSK63 Taper	TECH-00159
Toolholder Sleeve	TECH-00170
Thermal Insulated Glove	TECH-GLOVE



Optional Heat Sinks Reduce Cooling Time By 50%!

Call Us Today For All Of Your Machine Tool Needs!

TOOLHOLDER ACCESSORIES

B

TOOL TIGHTENING FIXTURES



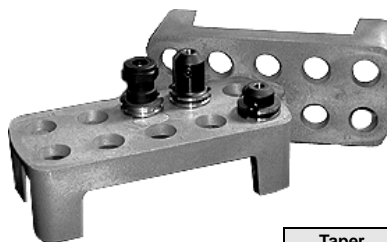
- FEATURES:**
- Holds your CAT-40/50 Tool Holders and keeps them from moving while being tightened.
 - Universal Handle makes it easy to use in any position.

D

Taper	Part Number	Price Each
CAT 40	TF-4001-K	\$74.99
CAT 50	TF-5001-K	\$93.50

STURDY PLASTIC HOLDING TRAYS

For CAT or BT Taper Toolholders



- Sturdy trays are available for CAT/BT 30, CAT/BT 40 and 50 taper toolholders
- An inexpensive way to organize your tool holders.

D

Taper Size	No. of Holes	Part Number	Price Each
CAT/BT30	10	TRAY30-10	\$29.95
CAT/BT40	10	TRAY40-10	\$29.95
CAT/BT 50	6	TRAY50-6	\$34.95

CNC & HSK TOOL CART TOOLSCOOT

Quality and mobility at an affordable price! Durable nylon inserts on both shelves help protect tool holders. Lower shelf angled for quick, easy tool access from either side. Solid, interlocking side panel construction for maximum strength and stability.

Dimensions: 18" W x 35 1/4" L x 35" H
Weight: 75 lbs.



CAT-30, CAT-35 & CAT-45 Toolscoots Also Available!



Tool Size	Total No. of Holes	Part Number	Price Each
40 taper	48	HU-13940	\$465.55
50 taper	36	HU-13950	\$465.55
HSK 63A	48	HU-13970	\$498.75
HSK 100A	36	HU-13980	\$498.75

CNC TOOL TOTE RACKS

- Built-in end handles for comfortable carrying
- Bench mount, hand carry, or mount on top
- Made of heavy gauge steel
- Nylon inserts help protect tooling
- Painted texture black powder coating



Tool Size	Cap.	Part Number	Price
40 Taper Tools	6	HU-14780	\$68.00
50 Taper Tools	5	HU-14790	\$68.00

PRO-TOUCH OFF GAGE

Accurately Establish Tool Length Offsets On CNC Milling Machines!

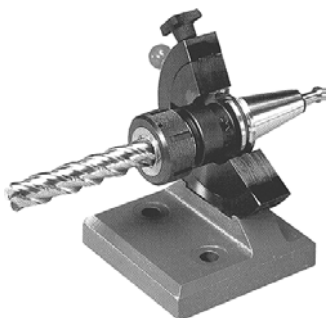
Set tools accurately with the Pro Touch Off Gage. Decrease set up time and eliminate tool path mismatch. Allows you to standardize the way tool offsets are measured in your shop, ensuring every job is setup the same way and runs without issue. To use, simply lower the tool down onto the contact face until the indicator reads zero. Have confidence that the tool tip is exactly 4 inches from the surface the gage is sitting on



- Large 1" dia stainless steel contact face, lightly spring loaded to protect against overrun
- Offset height 4.000" (101.6mm)
- Large 2.2" easy to read indicator face
- Gage graduations 0.001"
- Gage repeatability 0.0002"
- Body made from red anodized 6061-T6 aluminum
- Easy calibration check using 1-2-3 blocks
- Padded case and manual included

Pro Touch Off Gage
Part # EDGE-52000
\$99.99 ea

TOOL TIGHTENING FIXTURE



- FEATURES:**
- Access both ends of your toolholders simultaneously
 - Minimize toolholder handling
 - Speed up your operation
 - Convenient, practical and easy to use

Flange Type	Weight (lbs)	Part Number	Price Each
BT-30	17	LY-B30-TOOLJAW	
BT-40	17	LY-B40-TOOLJAW	\$354.76
CAT-40	17	LY-C40-TOOLJAW	
CAT-50	17	LY-C50-TOOLJAW	\$362.50

SPINDLE WIPERS



D

- Helps maintain contact and spindle accuracy
- Premium knurled handle
- Crafted from sturdy aluminum

Taper Size	Part Number	Price Each
30	WIPER-300	\$24.99
40	WIPER-400	\$24.99
50	WIPER-500	\$29.99

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

193

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

TOOLING PACKAGES/STUB ARBOR HOLDERS

CAT 50 TOOLING VALUE PACKAGES



SAVE 15% OFF
REGULAR PRICES WHEN YOU
BUY THE PACKAGE



- Featuring **Kingston™ Balanced Toolholders** and **Accu-Collets** brand ER collets
- Save by buying the package
- Packages include (9) endmill holders, (1) ER 16 collet chuck, (1) ER 32 collet chuck, (1) shell mill holder, (1) ER 16 and (1) ER 32 collet set and (1) toolholder tightening fixture
- Save 10% on retention knobs! See **page 169-176** for our selection

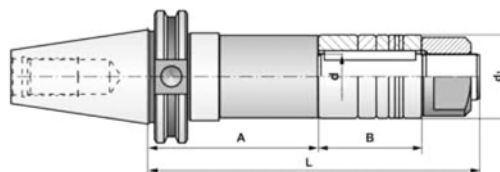
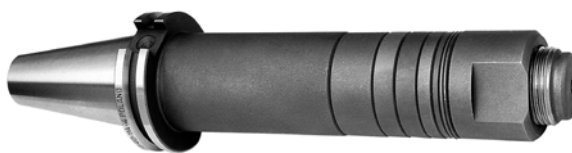
CAT 50 TOOLING PACKAGE (Part # C50-PKG)

Package Includes	Part Number	Description	Price Each
1	C50-25EM250-K	1/4" CAT 50 2.50" Projection Endmill Holder	\$76.95
1	C50-31EM250-K	5/16" CAT 50 2.50" Projection Endmill Holder	\$76.95
1	C50-37EM250-K	3/8" CAT 50 2.50" Projection Endmill Holder	\$76.95
1	C50-50EM263-K	1/2" CAT 50 2.63" Projection Endmill Holder	\$76.95
1	C50-62EM375-K	5/8" CAT 50 3.75" Projection Endmill Holder	\$76.95
1	C50-75EM375-K	3/4" CAT 50 3.75" Projection Endmill Holder	\$76.95
1	C50-10EM262-K	1" CAT 50 2.62" Projection Endmill Holder	\$76.95
1	C50-12EM200-K	1-1/4" CAT 50 2.00" Projection Endmill Holder	\$76.95
1	C50-15EM225-K	1-1/2" CAT 50 2.25" Projection Endmill Holder	\$76.95
1	C50-10SM200-K	1" CAT 50 Shell Mill Holder, 2.00" Projection	\$87.95
1	C50-16ER412-K	ER16 CAT 50 4.12" Projection Collet Chuck	\$126.45
1	C50-32ER394-K	ER32 CAT 50 4.00" Projection Collet Chuck	\$126.45
1	16-SET11-INCH	11 Piece ER16 Collet Set 1/16" to 3/8" x 32nds	\$87.50
1	32-SET21-INCH	21 Piece ER32 Collet Set 1/8" to 3/4" x 32nds	\$205.00
1	TRAY50-6	CAT 50 Taper Toolholder Storage Tray	\$34.95
1	TF-5001-K	50 Taper Toolholder Tightening Fixture	\$93.50
Regular Individual Price:			\$1,454.29
SPECIAL TOOLING PACKAGE PRICE:			\$1,236.15

**PACKAGES INCLUDING RETENTION KNOBS FOR HAAS®, FADAL® & MORI SEIKI® ALSO AVAILABLE!
PLEASE CALL FOR MORE INFORMATION!**

STUB ARBOR HOLDERS

- Face is held perpendicular to centerline within 0.0002"
- Pilot diameter is sized for precision fit with cutter, and keyed for positive drive
- Heavy duty locking right-hand nut and 5 arbor spacers are included: 1/16", 1/8", 1/4", 3/8", and 3/4"
- Retention knobs sold separately
- Draw Bar Threads: CAT 40 5/8"-11 and CAT 50 1"-8



Taper	Arbor Dia d	A	d1	L	B	Part Number	Price	Nut Part Number	Price Ea	1/16" Spacer Part Number	2 Pc Price	1/8" Spacer Part Number	1 Pc Price
CAT40	1.00	4.00	1.50	7.50	2.0	C40-10SA750-B	\$227.60	BI-7030-010R	\$27.90	BI-7020-090	\$10.80	BI-7020-100	\$10.80
	1.25	4.00	1.75	7.75	2.0	C40-12SA775-B	\$250.99	BI-7030-015R	\$36.00	BI-7020-175	\$9.90	BI-7020-185	\$9.90
	1.50	4.00	2.13	8.00	2.0	C40-15SA800-B	\$298.87	BI-7030-020R	\$36.00	BI-7020-260	\$13.50	BI-7020-270	\$13.50
CAT50	1.00	4.00	1.50	7.50	2.0	C50-10SA750-B	\$297.35	BI-7030-010R	\$27.90	BI-7020-090	\$10.80	BI-7020-100	\$10.80
	1.00	6.00	1.50	9.50	2.0	C50-10SA950-B	\$340.72	BI-7030-010R	\$27.90	BI-7020-090	\$10.80	BI-7020-100	\$10.80
	1.25	4.00	1.75	7.75	2.0	C50-12SA775-B	\$309.64	BI-7030-015R	\$36.00	BI-7020-175	\$9.90	BI-7020-185	\$9.90
	1.25	6.00	1.75	9.75	2.0	C50-12SA975-B	\$366.57	BI-7030-015R	\$36.00	BI-7020-175	\$9.90	BI-7020-185	\$9.90
	1.50	4.00	2.13	8.00	2.0	C50-15SA800-B	\$377.65	BI-7030-020R	\$36.00	BI-7020-260	\$13.50	BI-7020-270	\$13.50
	1.50	6.00	2.13	10.00	2.0	C50-15SA1000-B	\$431.06	BI-7030-020R	\$36.00	BI-7020-260	\$13.50	BI-7020-270	\$13.50

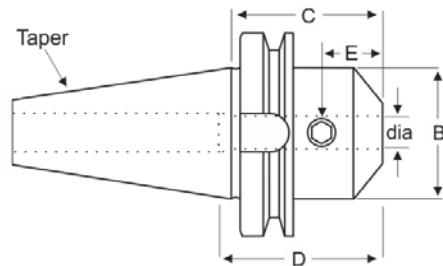
Call Us Today For All Of Your Machine Tool Needs!

CAT-50 V-FLANGE TOOLHOLDERS

END MILL HOLDERS



- Large selection of end mill holders from nationally recognized manufacturers
- **Kingston Toolholders** are balanced to 15,000 RPM @ g6.3
- **Spin Tru Toolholders** are balanced to 15,000 RPM @ g2.5
- Full line available from all vendors listed-please call for information



CAT 50		ENDMILL HOLDERS									
Dia	C Proj.	B OD	D Max Socket Depth	E	Brand	Part Number	Price Each	Set Screw Size	Set Screw Part Number	MAX RPM Balanced Up to	Code
3/16"	2.50	0.68	-	-	Kingston	C50-18EM250-K	\$76.95	10-32	SSE-10-32-250	15,000G6.3	F
		0.68	-	-	Spin Tru	C50-18EM250-KB	\$95.68	10-32	SSE-10-32-250	15,000G2.5	D
	4.50	0.68	-	-	Kingston	C50-18EM450-K	\$82.45	10-32	SSE-10-32-250	15,000G6.3	F
		0.68	-	-	Spin Tru	C50-18EM450-KB	\$102.04	10-32	SSE-10-32-250	15,000G2.5	D
	6.50	0.68	-	-	Kingston	C50-18EM650-K	\$82.45	10-32	SSE-10-32-250	15,000G6.3	F
		0.68	-	-	Spin Tru	C50-18EM650-KB	\$101.56	10-32	SSE-10-32-250	15,000G2.5	D
1/4"	1.38	1	-	-	Kingston	C50-25EM138-K	\$76.95	1/4"-20	SSE-25-20-250	15,000G6.3	F
		0.78	4	0.75	Spin Tru	C50-25EM138-KB	\$95.68	1/4"-20	SSE-25-20-250	15,000G2.5	D
		0.79	-	-	Sowa	C50-25EM138-GB	\$115.02	1/4"-28	SSE-25-28-250	15,000	C
	2.50	1	-	-	Kingston	C50-25EM250-K	\$76.95	1/4"-20	SSE-25-20-250	15,000G6.3	F
		0.78	4	0.75	Spin Tru	C50-25EM250-KB	\$95.68	1/4"-20	SSE-25-20-250	15,000G2.5	D
		0.79	-	-	Sowa	C50-25EM250-GB	\$121.50	1/4"-28	SSE-25-28-250	15,000	C
	4.00	-	-	-	Spin Tru	C50-25EM400-KB	\$100.71	1/4"-20	SSE-25-20-250	15,000G2.5	D
	4.50	1	-	-	Kingston	C50-25EM450-K	\$82.45	1/4"-20	SSE-25-20-250	15,000G6.3	F
	6.00	-	-	-	Spin Tru	C50-25EM600-KB	\$100.71	1/4"-20	SSE-25-20-250	15,000G2.5	D
	6.50	1	-	-	Kingston	C50-25EM650-K	\$82.45	1/4"-20	SSE-25-20-250	15,000G6.3	F
	8.00	-	-	-	Spin Tru	C50-25EM800-KB	\$100.71	1/4"-20	SSE-25-20-250	15,000G2.5	D
		0.79	1.10	-	Lyndex	C50-25EM800-L	\$236.55	1/4"-28(1)	SSE-25-28-250	-	B
5/16"	2.50	1	-	-	Kingston	C50-31EM250-K	\$76.95	5/16"-18	SSE-31-18-313	15,000G6.3	F
		1	4	0.56	Spin Tru	C50-31EM250-KB	\$95.68	5/16"-18	SSE-31-18-313	15,000G2.5	D
		0.87	1.26	-	Lyndex	C50-31EM250-L	\$163.64	5/16"-24(1)	SSE-31-24-250	-	B
	4.00	-	-	-	Spin Tru	C50-31EM400-KB	\$98.20	5/16"-18	SSE-31-18-313	15,000G2.5	D
		0.98	-	-	Techniks	C50-31EM400-T	\$119.70	5/16"-24	SSE-31-24-313	-	B
		0.87	-	-	Sowa	C50-31EM400-GB	\$135.27	5/16"-24	SSE-31-24-250	15,000	C
	4.50	1	-	-	Kingston	C50-31EM450-K	\$82.45	5/16"-18	SSE-31-18-313	15,000G6.3	F
	6.00	-	-	-	Spin Tru	C50-31EM600-KB	\$100.71	5/16"-18	SSE-31-18-313	15,000G2.5	D
	0.87	1.26	-	Lyndex	C50-31EM600-L	\$214.48	5/16"-24(1)	SSE-31-24-250	-	B	
	6.50	1	-	-	Kingston	C50-31EM650-K	\$82.45	5/16"-18	SSE-31-18-313	15,000G6.3	F
3/8"	1.38	1.25	-	-	Kingston	C50-37EM138-K	\$76.95	3/8"-16	SSE-38-16-313	15,000G6.3	F
		1	5.08	0.75	Spin Tru	C50-37EM138-KB	\$95.68	3/8"-16	SSE-38-16-313	15,000G2.5	D
		1	-	-	Sowa	C50-37EM138-GB	\$115.02	3/8"-24	SSE-38-24-313	15,000	C
	2.50	1.25	-	-	Kingston	C50-37EM250-K	\$76.95	3/8"-16	SSE-38-16-313	15,000G6.3	F
		1	5.08	0.75	Spin Tru	C50-37EM250-KB	\$95.68	3/8"-16	SSE-38-16-313	15,000G2.5	D
		1	3	0.75	Parlec*	C50-37EM250-P	\$142.20	3/8"-24(1)	SSE-38-24-313	-	B
	4.00	-	-	-	Spin Tru	C50-37EM400-KB	\$100.71	3/8"-16	SSE-38-16-313	15,000G2.5	D
	4.50	1.25	-	-	Kingston	C50-37EM450-K	\$82.45	3/8"-16	SSE-38-16-313	15,000G6.3	F
	6.00	-	-	-	Spin Tru	C50-37EM600-KB	\$100.71	3/8"-16	SSE-38-16-313	15,000G2.5	D
	1	-	-	-	Sowa	C50-37EM600-GB	\$150.03	3/8"-24	SSE-38-24-313	15,000	C
	6.50	1.25	-	-	Kingston	C50-37EM650-K	\$82.45	3/8"-16	SSE-38-16-313	15,000G6.3	F
		1	3	0.75	Parlec*	C50-37EM650-P	\$184.95	3/8"-24(1)	SSE-38-24-313	-	B
		-	-	-	Spin Tru	C50-37EM800-KB	\$100.71	3/8"-16	SSE-38-16-313	15,000G2.5	D
	8.50	1.25	-	-	Kingston	C50-37EM850-K	\$82.45	3/8"-16	SSE-38-16-313	15,000G6.3	F
		1.25	-	-	Spin Tru	C50-37EM850-KB	\$101.56	3/8"-16	SSE-38-16-313	15,000G2.5	D
7/16"	2.50	1.25	1.50	0.75	Spin Tru	C50-43EM250-KB	\$95.68	7/16"-14	SSE-44-14-375	15,000G2.5	D
	2.62	-	-	-	Kingston	C50-43EM262-K	\$76.95	7/16"-14	SSE-44-14-375	15,000G6.3	F
	4.00	-	-	-	Spin Tru	C50-43EM400-KB	\$98.20	7/16"-14	SSE-44-14-375	15,000G2.5	D
	6.00	-	-	-	Spin Tru	C50-43EM600-KB	\$100.71	7/16"-14	SSE-44-14-375	15,000G2.5	D
	8.00	-	-	-	Spin Tru	C50-43EM800-KB	\$100.71	7/16"-14	SSE-44-14-375	15,000G2.5	D

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

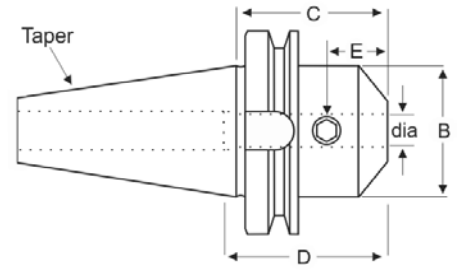
Call Us Or Visit Our Website For Our Complete Selection!

CAT-50 V-FLANGE TOOLHOLDERS

END MILL HOLDERS



- Large selection of end mill holders from nationally recognized manufacturers
- **Kingston Toolholders** are balanced to 15,000 RPM @ g6.3
- **Spin Tru Toolholders** are balanced to 15,000 RPM @ g2.5
- Full line available from all vendors listed-please call for information



CAT 50 ENDMILL HOLDERS

Dia	C Proj.	B OD	D Max Socket Depth	E	Brand	Part Number	Price Each	Set Screw Size	Set Screw Part Number	MAX RPM Balanced Up to	Code
1/2"	1.38	1.25	-	-	Kingston	C50-50EM138-K	\$76.95	7/16"-14	SSE-44-14-375	15,000G6.3	F
		1.25	-	-	Spin Tru	C50-50EM138-KB	\$95.68	7/16"-14	SSE-44-14-375	15,000G2.5	D
	1.75	-	-	-	Spin Tru	C50-50EM175-KB	\$95.68	7/16"-14	SSE-44-14-375	15,000G2.5	D
		1.38	1.50	-	Lyndex	C50-50EM175-L	\$176.42	7/16"-20(1)	SSE-44-20-375	-	B
	2.62	1.38	-	-	Sowa	C50-50EM175-GB	\$115.02	7/16"-20	SSE-44-20-375	15,000	C
		1.25	3	0.88	Parlec	C50-50EM262-P	\$142.20	7/16"-20(1)	SSE-44-20-375	-	B
	2.63	-	-	-	Kingston	C50-50EM263-K	\$76.95	7/16"-14	SSE-44-14-375	15,000G6.3	F
		-	-	-	Spin Tru	C50-50EM263-KB	\$95.68	7/16"-14	SSE-44-14-375	15,000G2.5	D
	4.00	-	-	-	Spin Tru	C50-50EM400-KB	\$100.71	7/16"-14	SSE-44-14-375	15,000G2.5	D
		1.75	-	-	Techniks	C50-50EM400-T	\$119.70	7/16"-20	SSE-44-20-437	-	B
4.62	1.38	-	-	Sowa	C50-50EM400-GB	\$135.27	7/16"-20	SSE-44-20-375	15,000	C	
	1.25	-	-	Kingston	C50-50EM462-K	\$82.45	7/16"-14	SSE-44-14-375	15,000G6.3	F	
6.00	-	-	-	Spin Tru	C50-50EM600-KB	\$100.71	7/16"-14	SSE-44-14-375	15,000G2.5	D	
	1.38	-	-	Sowa	C50-50EM600-GB	\$155.52	7/16"-20	SSE-44-20-375	15,000	C	
6.50	-	-	-	Kingston	C50-50EM650-K	\$82.45	7/16"-14	SSE-44-14-375	15,000G6.3	F	
	-	-	-	Spin Tru	C50-50EM800-KB	\$100.71	7/16"-14	SSE-44-14-375	15,000G2.5	D	
8.00	1.38	1.48	-	Lyndex	C50-50EM800-L	\$229.43	7/16"-20(1)	SSE-44-20-375	-	B	
	1.25	-	-	Kingston	C50-50EM850-K	\$82.45	7/16"-14	SSE-44-14-375	15,000G6.3	F	
9/16"	2.50	-	-	Kingston	C50-56EM250-K	\$76.95	7/16"-14	SSE-44-14-375	15,000G6.3	F	
	3.00	-	-	Kingston	C50-56EM300-K	\$76.95	7/16"-14	SSE-44-14-375	15,000G6.3	F	
5/8"	1.38	1.5	-	-	Kingston	C50-62EM138-K	\$76.95	9/16"-12	SSE-46-12-500	15,000G6.3	F
		1.5	-	-	Spin Tru	C50-62EM138-KB	\$95.68	9/16"-12	SSE-46-12-500	15,000G2.5	D
	1.75	-	-	-	Spin Tru	C50-62EM175-KB	\$95.68	9/16"-12	SSE-46-12-500	15,000G2.5	D
		1.65	1.61	-	Lyndex	C50-62EM175-L	\$182.64	9/16"-18(1)	SSE-56-18-500	-	B
	3.00	1.65	-	-	Sowa	C50-62EM175-GB	\$115.02	9/16"-18	SSE-56-18-500	15,000	C
		-	-	-	Spin Tru	C50-62EM300-KB	\$95.68	9/16"-12	SSE-46-12-500	15,000G2.5	D
	3.75	1.65	-	-	Sowa	C50-62EM300-GB	\$133.02	9/16"-18	SSE-56-18-500	15,000	C
		1.5	-	-	Kingston	C50-62EM375-K	\$76.95	9/16"-12	SSE-46-12-500	15,000G6.3	F
	4.00	1.5	3.5	0.94	Parlec*	C50-62EM375-P	\$144.90	9/16"-18(1)	SSE-56-18-430	-	B
		-	-	-	Spin Tru	C50-62EM400-KB	\$100.71	9/16"-12	SSE-46-12-500	15,000G2.5	D
5.75	1.65	1.61	-	Lyndex	C50-62EM400-L	\$178.60	9/16"-18(1)	SSE-56-18-500	-	B	
	1.5	-	-	Kingston	C50-62EM575-K	\$82.45	9/16"-12	SSE-46-12-500	15,000G6.3	F	
6.00	1.5	3.5	0.94	Parlec*	C50-62EM575-P	\$160.65	9/16"-18(1)	SSE-56-18-430	-	B	
	-	-	-	Spin Tru	C50-62EM600-KB	\$98.20	9/16"-12	SSE-46-12-500	15,000G2.5	D	
7.75	1.5	-	-	Kingston	C50-62EM775-K	\$82.45	9/16"-12	SSE-46-12-500	15,000G6.3	F	
	1.5	3.5	0.94	Parlec*	C50-62EM775-P	\$191.70	9/16"-18(1)	SSE-56-18-430	-	B	
8.00	-	-	-	Spin Tru	C50-62EM800-KB	\$100.71	9/16"-12	SSE-46-12-500	15,000G2.5	D	
	1.65	1.57	-	Lyndex	C50-62EM800-L	\$229.43	9/16"-18(1)	SSE-56-18-500	-	B	
3/4"	1.38	1.75	-	-	Kingston	C50-75EM138-K	\$76.95	5/8"-11	SSE-62-11-500	15,000G6.3	F
		1.75	-	-	Spin Tru	C50-75EM138-KB	\$95.68	5/8"-11	SSE-62-11-500	15,000G2.5	D
	1.75	-	-	-	Spin Tru	C50-75EM175-KB	\$95.68	5/8"-11	SSE-62-11-500	15,000G2.5	D
		1.89	-	-	Sowa	C50-75EM175-GB	\$115.83	5/8"-18	SSE-62-18-500	15,000	C
	3.00	-	-	-	Spin Tru	C50-75EM300-KB	\$95.68	5/8"-11	SSE-62-11-500	15,000G2.5	D
		1.89	1.77	-	Lyndex	C50-75EM300-L	\$154.38	5/8"-18(1)	SSE-62-18-500	-	B
	3.75	1.89	-	-	Sowa	C50-75EM300-GB	\$115.83	5/8"-18	SSE-62-18-500	15,000	C
		1.75	-	-	Kingston	C50-75EM375-K	\$76.95	5/8"-11	SSE-62-11-500	15,000G6.3	F
4.00	1.75	4	1	Parlec	C50-75EM375-P	\$144.90	5/8"-18(1)	SSE-62-18-500	-	B	
4.00	-	-	-	Spin Tru	C50-75EM400-KB	\$100.71	5/8"-11	SSE-62-11-500	15,000G2.5	D	

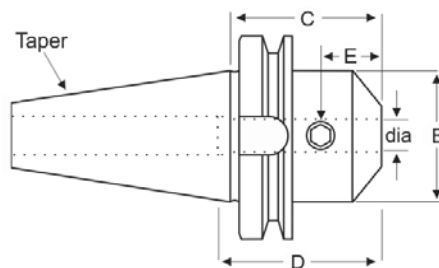
Call Us Today For All Of Your Machine Tool Needs!

CAT-50 V-FLANGE TOOLHOLDERS

END MILL HOLDERS



- Large selection of end mill holders from nationally recognized manufacturers
- **Kingston Toolholders** are balanced to 15,000 RPM @ g6.3
- **Spin Tru Toolholders** are balanced to 15,000 RPM @ g2.5
- Full line available from all vendors listed-please call for information



LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

CAT 50 ENDMILL HOLDERS

Dia	C Proj.	B OD	D Max Socket Depth	E	Brand	Part Number	Price Each	Set Screw Size	Set Screw Part Number	MAX RPM Balanced Up to	Code
3/4"	5.75	1.75	-	-	Kingston	C50-75EM575-K	\$82.45	5/8"-11	SSE-62-11-500	15,000G6.3	F
		1.75	4	1	Parlec*	C50-75EM575-P	\$139.05	5/8"-18(1)	SSE-62-18-500	-	B
	6.00	-	-	-	Spin Tru	C50-75EM600-KB	\$98.20	5/8"-11	SSE-62-11-500	15,000G2.5	D
		1.89	1.77	-	Lyndex	C50-75EM600-L	\$202.35	5/8"-18(1)	SSE-62-18-500	-	B
	7.00	-	-	-	Kingston	C50-75EM700-K	\$82.45	5/8"-11	SSE-62-11-500	15,000G6.3	F
	7.75	1.75	4	1	Parlec*	C50-75EM775-P	\$191.70	5/8"-18(1)	SSE-62-18-500	-	B
	8.00	-	-	-	Spin Tru	C50-75EM800-KB	\$100.71	5/8"-11	SSE-62-11-500	15,000G2.5	D
		1.89	-	-	Sowa	C50-75EM800-GB	\$177.03	5/8"-18	SSE-62-18-500	15,000	C
10.00	1.75	-	-	Kingston	C50-75EM1000-K	\$82.45	5/8"-11	SSE-62-11-500	15,000G6.3	F	
	1.75	-	-	Spin Tru	C50-75EM1000-KB	\$104.10	5/8"-11	SSE-62-11-500	15,000G2.5	D	
7/8"	1.38	2	-	-	Kingston	C50-87EM138-K	\$76.95	5/8"-11	SSE-62-11-500	15,000G6.3	F
		2	-	-	Spin Tru	C50-87EM138-KB	\$95.68	5/8"-11	SSE-62-11-500	15,000G2.5	D
	1.75	-	-	-	Spin Tru	C50-87EM175-KB	\$95.68	5/8"-11	SSE-62-11-500	15,000G2.5	D
		2	-	-	Kingston	C50-87EM375-K	\$76.95	5/8"-11	SSE-62-11-500	15,000G6.3	F
	3.75	2	4.31	1	Spin Tru	C50-87EM375-KB	\$92.79	5/8"-11	SSE-62-11-500	15,000G2.5	D
		2	-	-	Sowa	C50-87EM375-GB	\$135.27	5/8"-18	SSE-62-18-500	15,000	C
	1.88	4.19	1	Parlec*	C50-87EM375-P	\$144.00	5/8"-18(2)	SSE-62-18-500	-	B	
		2	2.08	-	Lyndex	C50-87EM375-L	\$162.45	5/8"-18(2)	SSE-62-18-500	-	B
	4.00	2.05	-	-	Techniks	C50-87EM400-T	\$119.70	5/8"-18	SSE-62-18-500	-	B
	5.75	2	-	-	Kingston	C50-87EM575-K	\$82.45	5/8"-11	SSE-62-11-500	15,000G6.3	F
		1.88	4.19	1	Parlec*	C50-87EM575-P	\$212.40	5/8"-18(2)	SSE-62-18-500	-	B
	6.00	-	-	-	Spin Tru	C50-87EM600-KB	\$98.20	5/8"-11	SSE-62-11-500	15,000G2.5	D
2		-	-	Kingston	C50-87EM775-K	\$82.45	5/8"-11	SSE-62-11-500	15,000G6.3	F	
7.75	2	-	-	Spin Tru	C50-87EM775-KB	\$101.56	5/8"-11	SSE-62-11-500	15,000G2.5	D	
	2	-	-	Kingston	C50-10EM138-K	\$76.95	3/4"-10	SSE-75-10-563	15,000G6.3	F	
1"	1.38	2.38	-	-	Kingston	C50-10EM138-K	\$76.95	3/4"-10	SSE-75-10-563	15,000G6.3	F
		2.38	-	-	Spin Tru	C50-10EM138-KB	\$95.68	3/4"-10	SSE-75-10-563	15,000G2.5	D
	2.00	-	-	-	Spin Tru	C50-10EM200-KB	\$95.68	3/4"-10	SSE-75-10-563	15,000G2.5	D
		2.36	-	-	Sowa	C50-10EM200-GB	\$125.46	3/4"-16	SSE-75-16-688	15,000	C
	2.62	2.38	-	-	Kingston	C50-10EM262-K	\$76.95	3/4"-10	SSE-75-10-563	15,000G6.3	F
		2.38	-	-	Kingston	C50-10EM400-K	\$76.95	3/4"-10	SSE-75-10-563	15,000G6.3	F
	4.00	2.00	4.56	1.13	Spin Tru	C50-10EM400-KB	\$95.24	3/4"-10	SSE-75-10-563	15,000G2.5	D
		2.00	4.44	1.12	Parlec*	C50-10EM400-P	\$144.00	3/4"-16(2)	SSE-75-16-500	-	B
	2.48	-	-	-	Techniks	C50-10EM400-T	\$119.70	3/4"-16	SSE-75-16-500	-	B
		2.38	-	-	Kingston	C50-10EM600-K	\$82.45	3/4"-10	SSE-75-10-563	15,000G6.3	F
	6.00	2.00	4.56	1.13	Spin Tru	C50-10EM600-KB	\$101.56	3/4"-10	SSE-75-10-563	15,000G2.5	D
		2.00	4.44	1.12	Parlec*	C50-10EM600-P	\$150.75	3/4"-16(2)	SSE-75-16-500	-	B
	2.38	-	-	-	Kingston	C50-10EM800-K	\$82.45	3/4"-10	SSE-75-10-563	15,000G6.3	F
		2.00	4.56	1.13	Spin Tru	C50-10EM800-KB	\$101.56	3/4"-10	SSE-75-10-563	15,000G2.5	D
	2.36	2.36	-	-	Lyndex	C50-10EM800-L	\$210.19	3/4"-16(2)	SSE-75-16-688	-	B
		2.38	-	-	Kingston	C50-10EM1000-K	\$82.45	3/4"-10	SSE-75-10-563	15,000G6.3	F
	10.00	2.38	-	-	Spin Tru	C50-10EM1000-KB	\$104.10	3/4"-10	SSE-75-10-563	15,000G2.5	D
		2.50	-	-	Kingston	C50-12EM138-K	\$76.95	3/4"-10	SSE-75-10-500	15,000G6.3	F
1-1/4"	1.38	2.50	-	-	Spin Tru	C50-12EM138-KB	\$95.68	3/4"-10	SSE-75-10-500	15,000G2.5	D
		-	-	-	Kingston	C50-12EM200-K	\$76.95	3/4"-10	SSE-75-10-500	15,000G6.3	F
	2.00	-	-	Spin Tru	C50-12EM200-KB	\$95.68	3/4"-10	SSE-75-10-500	15,000G2.5	D	
2.75	2.55	-	-	Lyndex	C50-12EM200-L	\$189.05	3/4"-16(1)	SSE-75-16-688	-	B	

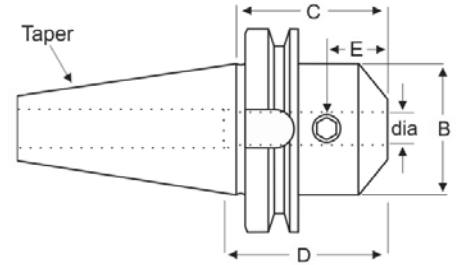
Call Us Or Visit Our Website For Our Complete Selection!

CAT-50 V-FLANGE TOOLHOLDERS

END MILL HOLDERS



- Large selection of end mill holders from nationally recognized manufacturers
- **Kingston Toolholders** are balanced to 15,000 RPM @ g6.3
- **Spin Tru Toolholders** are balanced to 15,000 RPM @ g2.5
- Full line available from all vendors listed-please call for information



CAT 50		ENDMILL HOLDERS									
Dia	C Proj.	B OD	D Max Socket Depth	E	Brand	Part Number	Price Each	Set Screw Size	Set Screw Part Number	MAX RPM Balanced Up to	Code
1-1/4" (cont.)	4.00	2.50	-	-	Kingston	C50-12EM400-K	\$76.95	3/4"-10	SSE-75-10-500	15,000G6.3	F
		2.50	2.52	1.13	Spin Tru	C50-12EM400-KB	\$95.24	3/4"-10	SSE-75-10-500	15,000G2.5	D
		2.50	3.35	1.12	Parlec*	C50-12EM400-P	\$150.75	3/4"-16(2)	SSE-75-16-625	-	B
		2.48	-	-	Sowa	C50-12EM400-GB	\$139.32	3/4"-16	SSE-75-16-688	15,000	C
	4.15	-	-	-	Kingston	C50-12EM415-K	\$82.45	3/4"-10	SSE-75-10-500	15,000G6.3	F
	6.00	2.50	-	-	Kingston	C50-12EM600-K	\$82.45	3/4"-10	SSE-75-10-500	15,000G6.3	F
		2.50	2.52	1.13	Spin Tru	C50-12EM600-KB	\$101.56	3/4"-10	SSE-75-10-500	15,000G2.5	D
		2.50	3.35	1.12	Parlec*	C50-12EM600-P	\$155.70	3/4"-16(2)	SSE-75-16-625	-	B
		2.48	2.55	-	Lyndex	C50-12EM600-L	\$197.84	3/4"-16(2)	SSE-75-16-688	-	B
		2.48	-	-	Sowa	C50-12EM600-GB	\$159.03	3/4"-16	SSE-75-16-688	15,000	C
		2.50	-	-	Kingston	C50-12EM800-K	\$82.45	3/4"-10	SSE-75-10-500	15,000G6.3	F
	8.00	2.50	2.52	1.13	Spin Tru	C50-12EM800-KB	\$101.56	3/4"-10	SSE-75-10-500	15,000G2.5	D
10.00	2.50	-	-	Kingston	C50-12EM1000-K	\$82.45	3/4"-10	SSE-75-10-500	15,000G6.3	F	
	2.50	-	-	Spin Tru	C50-12EM1000-KB	\$104.10	3/4"-10	SSE-75-10-500	15,000G2.5	D	
1-1/2"	2.25	-	-	-	Kingston	C50-15EM225-K	\$76.95	3/4"-10	SSE-75-10-688	15,000G6.3	F
		-	-	-	Spin Tru	C50-15EM225-KB	\$95.68	3/4"-10	SSE-75-10-688	15,000G2.5	D
		2.75	2.83	-	Lyndex	C50-15EM225-L	\$194.75	3/4"-16(1)	SSE-75-16-688	-	B
	4.00	2.75	-	-	Kingston	C50-15EM400-K	\$76.95	3/4"-10	SSE-75-10-688	15,000G6.3	F
		2.75	4.5	1.12	Parlec*	C50-15EM400-P	\$148.95	3/4"-16(2)	SSE-75-16-625	-	B
	4.50	-	-	-	Kingston	C50-15EM450-K	\$82.45	3/4"-10	SSE-75-10-688	15,000G6.3	F
		-	-	-	Spin Tru	C50-15EM450-KB	\$102.04	3/4"-10	SSE-75-10-688	15,000G2.5	D
		2.99	2.83	-	Lyndex	C50-15EM450-L	\$176.42	3/4"-16(2)	SSE-75-16-688	-	B
	6.00	2.75	-	-	Kingston	C50-15EM600-K	\$82.45	3/4"-10	SSE-75-10-688	15,000G6.3	F
		2.75	4.5	1.12	Parlec*	C50-15EM600-P	\$194.85	3/4"-16(2)	SSE-75-16-625	-	B
	7.00	-	-	-	Kingston	C50-15EM700-K	\$82.45	3/4"-10	SSE-75-10-688	15,000G6.3	F
		-	-	-	Spin Tru	C50-15EM700-KB	\$101.56	3/4"-10	SSE-75-10-688	15,000G2.5	D
2.99		-	-	Sowa	C50-15EM700-GB	\$230.04	3/4"-16	SSE-75-16-688	15,000	C	
2.75		4.5	1.12	Parlec*	C50-15EM800-P	\$214.20	3/4"-16(2)	SSE-75-16-625	-	B	
9.00	-	-	-	Kingston	C50-15EM900-K	\$82.45	3/4"-10	SSE-75-10-688	15,000G6.3	F	
	-	-	-	Spin Tru	C50-15EM900-KB	\$101.56	3/4"-10	SSE-75-10-688	15,000G2.5	D	
2"	3.63	3.74	-	-	Sowa	C50-20EM363-GB	\$167.31	1"-14	SSE-100-14-875	15,000	C
	5.37	-	-	-	Spin Tru	C50-20EM537-KB	\$98.20	-	-	15,000G2.5	D
	5.62	3.75	-	-	Kingston	C50-20EM562-K	\$82.45	-	-	15,000G6.3	F
		3.75	3.5	1.41	Parlec	C50-20EM562-P	\$225.90	1"-14(2)	SSE-100-14-875	-	B
	6.00	3.75	-	-	Techniks	C50-20EM600-T	\$155.70	3/4"-16	SSE-75-16-875	-	B
	8.00	-	-	-	Spin Tru	C50-20EM800-KB	\$100.71	-	-	15,000G2.5	D
3.75		-	-	Kingston	C50-20EM962-K	\$142.67	-	-	15,000G6.3	F	
10.00	-	-	-	Spin Tru	C50-20EM1000-KB	\$103.23	-	-	15,000G2.5	D	
	3.74	-	-	Sowa	C50-20EM1000-GB	\$219.06	1"-14	SSE-100-14-875	15,000	C	
2-1/2"	6.00	-	-	-	Spin Tru	C50-250EM600-KB	\$103.23	-	-	15,000G2.5	D
	4.25	-	-	-	Sowa	C50-250EM600-GB	\$237.06	1"-14	SSE-100-14-875	15,000	C
8.00	4	-	-	-	Kingston	C50-250EM800-K	\$129.70	-	-	15,000G6.3	F
	4	-	-	-	Spin Tru	C50-250EM800-KB	\$163.77	-	-	15,000G2.5	D

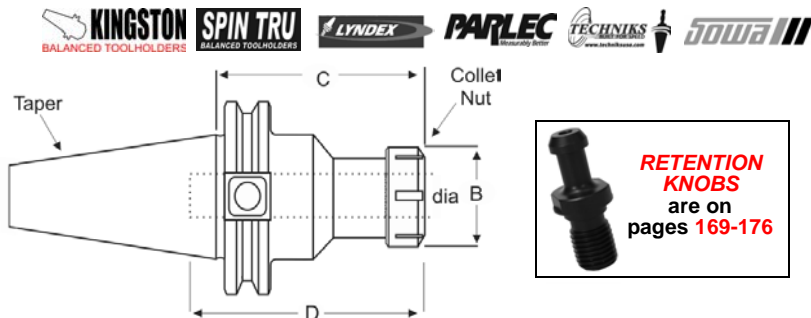
Need Something You Can't Find In Our Catalog?

We Are A Full Line Supplier For All Of The Toolholder Brands Listed. Please Call For More Information!

Call Us Today For All Of Your Machine Tool Needs!

CAT-50 V-FLANGE ER COLLET CHUCKS

ER COLLET CHUCKS



C Proj.	B Nut Dia.	D Socket Depth	Nut Tight. Torque (ft.lbs.)	Brand	Part Number	Price Each	MAX RPM Balanced Up to	Collet Nut	Wrench	Code
ER 16 ER-16 Collet Series-.020 - 0.393 (0.5mm - 10mm)										
4.00	1.26	-	50	Techniks	C50-16ER400-T	\$165.60	18,000G2.5	CN-ER16-T	WR-ER16-T	B
4.12	1.10	-	52	Kingston	C50-16ER412-K	\$126.45	15,000G6.3	CN-ER16-K	WR-ER16-K	F
	1.10	2.76	52	Spin Tru	C50-16ER412-KB	\$133.50	15,000G2.5	CN-ER16-K	WR-ER16-K	D
	1.26	-	52	Sowa	C50-16ER412-GB	\$189.54	15000	CN-ER16-G	WR-ER16-G	C
4.93	1.10	-	52	Kingston	C50-16ER493-K	\$126.45	15,000G6.3	CN-ER16-K	WR-ER16-K	F
6.00	1.10	-	52	Kingston	C50-16ER600-K	\$126.45	15,000G6.3	CN-ER16-K	WR-ER16-K	F
	1.10	-	52	Spin Tru	C50-16ER600-KB	\$133.13	15,000G2.5	CN-ER16-K	WR-ER16-K	D
	1.26	-	52	Lyndex	C50-16ER600-L	\$252.70	-	CN-ER16-L	WR-ER16-L	B
6.12	1.11	2.62	52	Parlec	C50-16ER612-P	\$256.05	-	CN-ER16PN-P	WR-ER16-P	B
8.00	1.10	2.76	52	Spin Tru	C50-16ER800-KB	\$140.50	15,000G2.5	CN-ER16-K	WR-ER16-K	D
	1.26	-	52	Lyndex	C50-16ER800-L	\$273.84	-	CN-ER16-L	WR-ER16-L	B
ER 20 ER-20 Collet Series-.020 - 0.500 (0.5mm - 12.7mm)										
2.50	1.34	-	74	Kingston	C50-20ER250-K	\$126.45	15,000G6.3	CN-ER20-K	WR-ER20-K	F
	1.34	3.15	74	Spin Tru	C50-20ER250-KB	\$122.73	15,000G2.5	CN-ER20-K	WR-ER20-K	D
	1.38	-	74	Lyndex	C50-20ER250-L	\$230.20	-	CN-ER20-L	WR-ER20-L	B
	1.38	-	74	Sowa	C50-20ER250-GB	\$153.09	15000	CN-ER20-G	WR-ER20-G	C
4.00	1.34	-	74	Kingston	C50-20ER400-K	\$126.45	15,000G6.3	CN-ER20-K	WR-ER20-K	F
	1.34	-	74	Spin Tru	C50-20ER400-KB	\$133.50	15,000G2.5	CN-ER20-K	WR-ER20-K	D
	1.38	-	74	Techniks	C50-20ER400-T	\$170.10	18,000G2.5	CN-ER20-T	WR-ER20-T	B
	1.38	-	74	Lyndex	C50-20ER400-L	\$252.70	-	CN-ER20-L	WR-ER20-L	B
6.00	1.34	-	74	Kingston	C50-20ER600-K	\$126.45	15,000G6.3	CN-ER20-K	WR-ER20-K	F
	1.34	-	74	Spin Tru	C50-20ER600-KB	\$135.27	15,000G2.5	CN-ER20-K	WR-ER20-K	D
8.00	1.34	-	74	Kingston	C50-20ER800-K	\$126.45	15,000G6.3	CN-ER20-K	WR-ER20-K	F
	1.34	3.15	74	Spin Tru	C50-20ER800-KB	\$133.13	15,000G2.5	CN-ER20-K	WR-ER20-K	D
	1.38	-	74	Lyndex	C50-20ER800-L	\$308.75	-	CN-ER20-L	WR-ER20-L	B
ER 25 ER-25 Collet Series-.039 - 0.630 (1mm - 16mm)										
2.50	1.65	3.93	95	Spin Tru	C50-25ER250-KB	\$124.63	15,000G2.5	CN-ER25-K	WR-ER25-K	D
	1.65	-	95	Sowa	C50-25ER250-GB	\$186.30	15000	CN-ER25-G	WR-ER25-G	C
4.00	1.65	-	95	Kingston	C50-25ER400-K	\$126.45	15,000G6.3	CN-ER25-K	WR-ER25-K	F
	1.65	-	95	Spin Tru	C50-25ER400-KB	\$133.50	15,000G2.5	CN-ER25-K	WR-ER25-K	D
	1.65	-	95	Lyndex	C50-25ER400-L	\$252.70	-	CN-ER25-L	WR-ER25-L	B
6.00	1.65	-	95	Kingston	C50-25ER600-K	\$126.45	15,000G6.3	CN-ER25-K	WR-ER25-K	F
	1.65	-	95	Spin Tru	C50-25ER600-KB	\$135.27	15,000G2.5	CN-ER25-K	WR-ER25-K	D
	1.65	-	95	Techniks	C50-25ER600-T	\$179.10	18,000G2.5	CN-ER25-T	WR-ER25-T	B
	1.65	-	95	Lyndex	C50-25ER600-L	\$273.84	-	CN-ER25-L	WR-ER25-L	B
8.00	1.65	-	95	Kingston	C50-25ER800-K	\$126.45	15,000G6.3	CN-ER25-K	WR-ER25-K	F
	1.65	-	95	Spin Tru	C50-25ER800-KB	\$133.13	15,000G2.5	CN-ER25-K	WR-ER25-K	D

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE



We Offer The Complete Line of MONSTER Carbide Endmills!

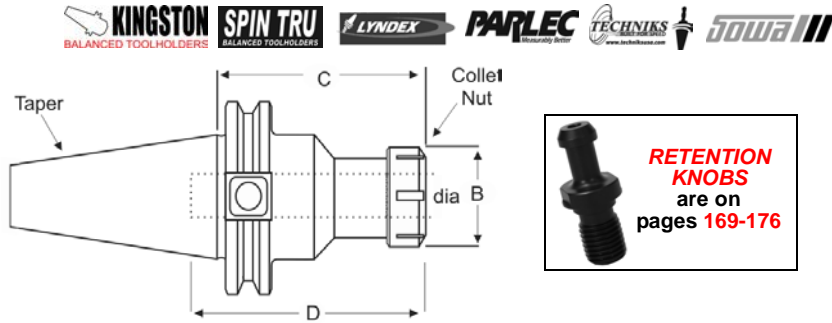
- Top Quality Carbide Endmills At HSS Prices!
- 2, 3 & 4 Flute, Coated and Uncoated
- Square, Ball End, Corner Radius and Rougher/Finishers
- Premium Sub-micron C-2 Carbide With 10% Cobalt
- Micro/Miniature Endmills Available At Unbeatable Prices
- 100% Made In The USA



Call Us Or Visit Our Website For Our Complete Selection!

CAT-50 V-FLANGE ER COLLET CHUCKS

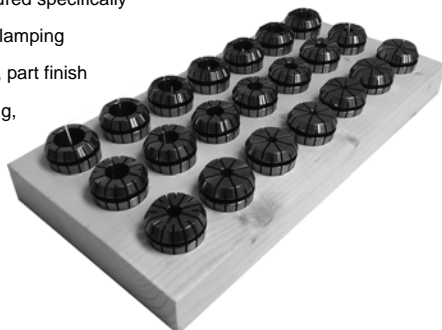
ER COLLET CHUCKS



C Proj.	B Nut Dia.	D Socket Depth	Nut Tight. Torque (ft.lbs.)	Brand	Part Number	Price Each	MAX RPM Balanced Up to	Collet Nut	Wrench	Code
ER 32 ER-32 Collet Series-.040 - 0.810 (1mm - 20.6mm)										
1.06	1.97	-	125	Spin Tru	C50-32ER106-KB	\$124.63	15,000G2.5	CN-ER32-K	WR-ER32-K	D
1.69	1.97	-	125	Spin Tru	C50-32ER169-KB	\$124.63	15,000G2.5	CN-ER32-K	WR-ER32-K	D
4.00	1.97	-	125	Kingston	C50-32ER400-K	\$126.45	15,000G6.3	CN-ER32-K	WR-ER32-K	F
	1.97	-	125	Spin Tru	C50-32ER400-KB	\$133.50	15,000G2.5	CN-ER32-K	WR-ER32-K	D
	1.97	-	125	Techniks	C50-32ER400-T	\$161.10	18,000G2.5	CN-ER32-T	WR-ER32-T	B
	1.97	-	125	Lyndex	C50-32ER400-L	\$232.42	-	CN-ER32-L	WR-ER32-L	B
	1.97	-	125	Sowa	C50-32ER400-GB	\$185.49	15000	CN-ER32-G	WR-ER32-G	C
6.00	1.97	-	125	Kingston	C50-32ER600-K	\$126.45	15,000G6.3	CN-ER32-K	WR-ER32-K	F
	1.97	-	125	Spin Tru	C50-32ER600-KB	\$133.13	15,000G2.5	CN-ER32-K	WR-ER32-K	D
6.12	1.97	3.00	125	Parlec	C50-32ER612-P	\$254.25	-	CN-ER32-P	WR-ER32-P	B
8.00	1.97	3.94	125	Spin Tru	C50-32ER800-KB	\$140.50	15,000G2.5	CN-ER32-K	WR-ER32-K	D
	1.97	-	125	Lyndex	C50-32ER800-L	\$303.76	-	CN-ER32-L	WR-ER32-L	B
ER 40 ER-40 Collet Series-.040 - 0.810 (1mm - 20.6mm)										
1.06	2.48	-	140	Spin Tru	C50-40ER106-KB	\$124.63	15,000G2.5	CN-ER40-K	WR-ER40-K	D
1.69	2.48	-	140	Spin Tru	C50-40ER169-KB	\$124.63	15,000G2.5	CN-ER40-K	WR-ER40-K	D
3.00	2.48	-	140	Kingston	C50-40ER300-K	\$126.45	15,000G6.3	CN-ER40-K	WR-ER40-K	F
	2.48	-	140	Spin Tru	C50-40ER300-KB	\$122.73	15,000G2.5	CN-ER40-K	WR-ER40-K	D
4.00	2.48	-	140	Kingston	C50-40ER400-K	\$126.45	15,000G6.3	CN-ER40-K	WR-ER40-K	F
	2.48	-	140	Spin Tru	C50-40ER400-KB	\$133.50	15,000G2.5	CN-ER40-K	WR-ER40-K	D
	2.48	-	140	Techniks	C50-40ER400-T	\$170.10	18,000G2.5	CN-ER40-T	WR-ER40-T	B
	2.48	-	140	Lyndex	C50-40ER400-L	\$258.35	-	CN-ER40-L	WR-ER40-L	B
4.12	2.48	-	140	Sowa	C50-40ER400-GB	\$196.83	15000	CN-ER40-G	WR-ER40-G	C
	2.36	4.00	162	Parlec	C50-40ER412-P	\$235.80	-	CN-ER40-P	WR-ER40-P	B
6.00	2.48	-	140	Kingston	C50-40ER600-K	\$126.45	15,000G6.3	CN-ER40-K	WR-ER40-K	F
	2.48	-	140	Spin Tru	C50-40ER600-KB	\$133.13	15,000G2.5	CN-ER40-K	WR-ER40-K	D
8.00	2.48	5.91	140	Spin Tru	C50-40ER800-KB	\$140.50	15,000G2.5	CN-ER40-K	WR-ER40-K	D
	2.48	-	140	Lyndex	C50-40ER800-L	\$308.75	-	CN-ER40-L	WR-ER40-L	B

ER COLLET SETS

- Concentricity is 13 microns or 0.0005" TIR or better
- Manufactured with Swiss technology
- Crafted from high quality European alloy spring steel
- **TRUE INCH** and metric sizes
- **Fractional Collets** manufactured specifically for US market requirements
- 16 slot construction for rigid clamping and extra concentricity
- Accu-Collets improve tool life, part finish and reduces spindle wear
- Can be used for drilling, milling, tapping and reaming



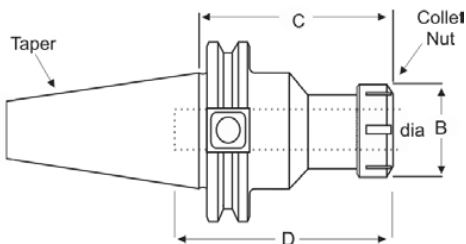
Accu-Collets

Type	Style	Description	No. Of Collets	Part Number	Set Price
ER-8	Metric	1mm to 5mm x .5mm	9	08-SET9	\$118.00
	Inch	1/16"-3/16" x 1/64	9	08-SET9-INCH	\$118.00
ER-11	Metric	1mm to 7mm x .5mm	13	11-SET13	\$105.00
	Inch	1/16"-1/4" x 1/32	7	11-SET7-INCH	\$52.50
ER-16	Metric	1mm to 10mm x 1mm	10	16-SET10	\$78.75
	Inch	1/16" - 3/8" x 1/32"	11	16-SET11-INCH	\$87.50
ER-20	Metric	1mm to 13mm x 1mm	12	20-SET12	\$107.25
	Inch	1/16" - 1/2" x 1/32"	15	20-SET15-INCH	\$136.50
ER-25	Metric	2mm to 16mm x 1mm	15	25-SET15	\$136.50
	Inch	3/32" - 5/8" x 1/32"	18	25-SET18-INCH	\$165.75
ER-32	Metric	3mm to 20mm x 1mm	18	32-SET18	\$174.25
	Inch	1/8"-3/4" x 1/32"	21	32-SET21-INCH	\$205.00
ER-40	Metric	4mm to 26mm x 1mm	23	40-SET23	\$247.50
	Inch	1/8"-1" x 1/16"	15	40-SET15-INCH	\$157.50
	Inch	1/8" - 1" x 1/32"	29	40-SET29-INCH	\$315.00

Call Us Today For All Of Your Machine Tool Needs!

CAT-50 V-FLANGE DA/TG COLLET CHUCKS

DA SERIES COLLET CHUCKS



C Proj.	B Nut Dia.	D Socket Depth	Nut Tight. Torque (ft.lbs.)	Brand	Part Number	Price Each	MAX RPM Balanced Up to	Collet Nut	Wrench	Code
DA 100 DA100 Collet Series-.062 - 0.562 (1.587mm - 14.287mm)										
3.00	-	-	-	Kingston	C50-10DA300-K	\$126.45	15,000G6.3	CN-DA100-K	WR-DA100-K	F
	-	-	-	Spin Tru	C50-10DA300-KB	\$126.45	15,000G2.5	CN-DA100-K	WR-DA100-K	D
6.00	-	-	-	Kingston	C50-10DA600-K	\$126.45	15,000G6.3	CN-DA100-K	WR-DA100-K	F
	-	-	-	Spin Tru	C50-10DA600-KB	\$126.45	15,000G2.5	CN-DA100-K	WR-DA100-K	D
DA 180 DA180 Collet Series-.031 - 0.750 (.800mm - 19mm)										
3.00	-	-	-	Kingston	C50-18DA300-K	\$126.45	15,000G6.3	CN-DA180-K	WR-DA180-K	F
	-	-	-	Spin Tru	C50-18DA300-KB	\$126.45	15,000G2.5	CN-DA180-K	WR-DA180-K	D
3.38	1.44	3.30	40	Parlec	C50-18DA338-P	\$223.20	-	CN-DA180L-P	WR-DA180L-P	B
4.00	1.44	-	-	Lyndex	C50-18DA400-L	\$219.45	-	CN-DA180-L	WR-DA180-L	B
6.00	-	-	-	Kingston	C50-18DA600-K	\$126.45	15,000G6.3	CN-DA180-K	WR-DA180-K	F
	-	-	-	Spin Tru	C50-18DA600-KB	\$126.45	15,000G2.5	CN-DA180-K	WR-DA180-K	D
	1.44	-	-	Lyndex	C50-18DA600-L	\$222.30	-	CN-DA180-L	WR-DA180-L	B
6.15	1.44	6.00	40	Parlec	C50-18DA615-P	\$225.90	-	CN-DA180L-P	WR-DA180L-P	B

DA COLLET SETS

FEATURES:

- DA Collets collapse approx. 1/32"
- Machined to exacting standards
- Ideal choice for high speed and high precision drilling operations
- Tolerance: 0.0003" at collet nose
- Customized sets available! Please call for more information



Collet Series	Description	Part Number	Price
DA300	9 Pieces (1/8"-1/4") by 64ths	DA300-SET9	\$76.50
DA200	17 Pieces (1/8"-3/8") by 64ths	DA200-SET17	\$144.50
DA100	29 Pieces (1/8"-9/16") by 64ths	DA100-SET29	\$246.50
DA180	33 Pieces (1/4"-3/4") by 64ths	DA180-SET33	\$363.00
DA180	21 Pieces (1/8"-3/4") by 32nds	DA180-SET21	\$231.00

TOOL FIXTURES



FEATURES:

- Holds your CAT-40/50 Tool Holders and keeps them from moving while being tightened.
- Universal Handle makes it easy to use in any position.

D

Taper	Part Number	Price Each
CAT 40	TF-4001-K	\$74.99
CAT 50	TF-5001-K	\$93.50

STURDY PLASTIC HOLDING TRAYS

For CAT or BT Taper Toolholders



FEATURES:

- Can be used with CAT or BT Holders.
- Available for 30, 40 & 50 taper tool holders
- An inexpensive way to organize your tool holders.



B

Taper Size	No. of Holes	Part Number	Price Each
CAT/BT30	10	TRAY30-10	\$29.50
CAT/BT40	10	TRAY40-10	\$29.50
CAT/BT50	6	TRAY50-6	\$34.95

SPINDLE WIPERS



Maintain Contact And Spindle Accuracy!

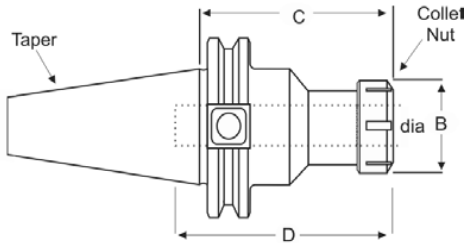
D

Taper Size	Part Number	Price Each
30	WIPER-300	\$24.99
40	WIPER-400	\$24.99
50	WIPER-500	\$29.99

Call Us Or Visit Our Website For Our Complete Selection!

CAT-50 V-FLANGE TG COLLET CHUCKS

TG SERIES COLLET CHUCKS



C Proj.	B Nut Dia.	D Socket Depth	Nut Tight. Torque (ft.lbs.)	Brand	Part Number	Price Each	MAX RPM Balanced Up to	Collet Nut	Wrench	Code
TG 075 TG-75 Collet Series-3/64 to 3/4 (1.2mm - 19.1mm)										
3.00	1.97	-	60	Kingston	C50-75TG300-K	\$109.95	15,000G6.3	CN-TG075-K	WR-TG075-K	F
	1.97	-	60	Spin Tru	C50-75TG300-KB	\$145.68	15,000G2.5	CN-TG075-K	WR-TG075-K	D
3.50	1.89	-	60	Lyndex	C50-75TG350-L	\$214.46	-	CN-TG075-L	WR-TG075-L	B
4.50	1.97	-	60	Kingston	C50-75TG450-K	\$109.95	15,000G6.3	CN-TG075-K	WR-TG075-K	F
	1.97	-	60	Spin Tru	C50-75TG450-KB	\$142.12	15,000G2.5	CN-TG075-K	WR-TG075-K	D
6.00	1.97	-	60	Kingston	C50-75TG600-K	\$109.95	15,000G6.3	CN-TG075-K	WR-TG075-K	F
	1.97	-	60	Spin Tru	C50-75TG600-KB	\$138.74	15,000G2.5	CN-TG075-K	WR-TG075-K	D
TG 100 TG-100 Collet Series-5/64 to 1" (2mm - 25.4mm)										
3.00	2.44	-	60	Kingston	C50-10TG300-K	\$109.95	15,000G6.3	CN-TG100-K	WR-TG100-K	F
	2.44	-	60	Spin Tru	C50-10TG300-KB	\$145.68	15,000G2.5	CN-TG100-K	WR-TG100-K	D
	2.36	-	100	Techniks	C50-10TG300-T	\$136.80	18,000G2.5	CN-TG100-T	WR-TG100-T	B
3.50	2.44	4.25	60	Parlec	C50-10TG350-P	\$155.70	-	CN-TG100-P	WR-TG100-P	B
	2.50	-	60	Lyndex	C50-10TG350-L	\$173.57	-	CN-TG100-L	WR-TG100-L	B
5.50	2.44	-	60	Kingston	C50-10TG550-K	\$109.95	15,000G6.3	CN-TG100-K	WR-TG100-K	F
	2.44	-	60	Spin Tru	C50-10TG550-KB	\$142.12	15,000G2.5	CN-TG100-K	WR-TG100-K	D
	2.44	5.50	60	Parlec	C50-10TG550-P	\$188.10	-	CN-TG100-P	WR-TG100-P	B
	2.44	-	60	Sowa	C50-10TG550-GB	\$209.07	15000	CN-TG100-G	WR-TG100-G	C
6.00	2.36	-	100	Techniks	C50-10TG600-T	\$188.10	18,000G2.5	CN-TG100-T	WR-TG100-T	B
7.50	2.44	-	60	Kingston	C50-10TG750-K	\$109.95	15,000G6.3	CN-TG100-K	WR-TG100-K	F
	2.44	-	60	Spin Tru	C50-10TG750-KB	\$138.74	15,000G2.5	CN-TG100-K	WR-TG100-K	D
TG 150 TG-150 Collet Series-23/64 to 1-1/2" (9.1mm - 38.1mm)										
3.50	3.50	-	70	Kingston	C50-15TG350-K	\$109.95	15,000G6.3	CN-TG150-K	WR-TG100-K	F
	3.50	-	70	Spin Tru	C50-15TG350-KB	\$142.12	15,000G2.5	CN-TG150-K	WR-TG100-K	D
5.50	3.50	-	70	Kingston	C50-15TG550-K	\$109.95	15,000G6.3	CN-TG150-K	WR-TG100-K	F
	3.50	-	70	Spin Tru	C50-15TG550-KB	\$142.12	15,000G2.5	CN-TG150-K	WR-TG100-K	D
6.00	3.50	-	70	Lyndex	C50-15TG600-L	\$268.85	-	CN-TG150-L	WR-TG150-L	B
7.50	3.50	-	70	Kingston	C50-15TG750-K	\$109.95	15,000G6.3	CN-TG150-K	WR-TG100-K	F
	3.50	-	70	Spin Tru	C50-15TG750-KB	\$138.74	15,000G2.5	CN-TG150-K	WR-TG100-K	D

TG COLLET SETS

FEATURES:

- TG Collets collapse approx. 1/64"
- Machined to exacting standards
- Ideal choice for high speed and high precision milling and drilling operations
- Tolerance: 0.0003" at collet nose
- Sets available in TG 75, 100 & 150
- Different set quantities available



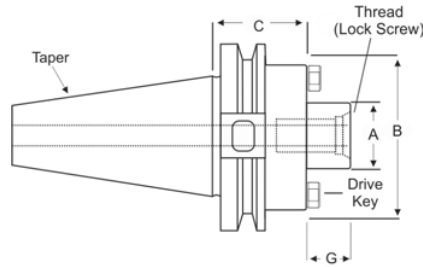
Accu-Collets

Collet Series	Set Qty	Range	Part Number	Price
TG 75	11	1/8"-3/4"-16ths	075-SET11	\$203.50
	22	1/8"-3/4"-32nds	075-SET22	\$407.00
	43	3/32"-3/4"-64ths	075-SET43	\$795.50
TG 100	59	3/32"-1"-64ths	100-SET59	\$1,121.00
	41	3/8"-1"-64ths	100-SET41	\$779.00
	30	3/32"-1"-32nds	100-SET30	\$570.00
	21	3/8"-1"-32nds	100-SET21	\$399.00
	15	1/8"-1"-16ths	100-SET15	\$285.00
TG 150	33	1/2"-1-1/2" - 32nds	150-SET33	\$1,402.00

Call Us Today For All Of Your Machine Tool Needs!

CAT-50 SHELL MILL HOLDERS

SHELL MILL HOLDERS



A Pilot dia	B Dia	C Proj	G	Brand	Part Number	Price	Drive Key	Screw Thread	Lock Screw	Arbor Screw	Code
1/2" 0.500	1.44	5.50	-	Kingston	C50-50SM550-K	\$98.95	-	-	-	-	F
	1.44	5.50	-	Spin Tru	C50-50SM550-KB	\$98.95	-	-	-	-	D
3/4" 0.750	1.75	1.50	-	Kingston	C50-75SM150-K	\$87.95	-	-	-	-	F
	1.75	1.50	-	Spin Tru	C50-75SM150-KB	\$87.95	-	-	-	-	D
	2.00	1.75	0.67	Lyndex	C50-75SM175-L	\$174.09	5/16	3/8"-24	-	A3/8-24	B
	1.75	3.50	-	Kingston	C50-75SM350-K	\$87.95	-	-	-	-	F
	2.00	4.00	0.67	Lyndex	C50-75SM400-L	\$201.40	5/16	3/8"-24	-	A3/8-24	B
	1.75	5.50	-	Kingston	C50-75SM550-K	\$98.95	-	-	-	-	F
	1.75	5.50	-	Spin Tru	C50-75SM550-KB	\$98.95	-	-	-	-	D
	2.00	8.00	0.67	Lyndex	C50-75SM800-L	\$302.81	5/16	3/8"-24	-	A3/8-24	B
1" 1.000"	2.75	1.75	0.69	Lyndex	C50-10SM175-L	\$172.19	3/8"	1/2"-20	-	A1/2-20	B
	2.75	2.00	-	Kingston	C50-10SM200-K	\$87.95	-	-	-	-	F
	2.75	2.00	-	Spin Tru	C50-10SM200-KB	\$87.95	-	-	-	-	D
	2.75	4.00	-	Kingston	C50-10SM400-K	\$87.95	-	-	-	-	F
	2.75	4.00	-	Spin Tru	C50-10SM400-KB	\$87.95	-	-	-	-	D
	2.75	4.00	0.69	Lyndex	C50-10SM400-L	\$201.40	3/8"	1/2"-20	-	A1/2-20	B
	2.75	6.00	-	Kingston	C50-10SM600-K	\$98.95	-	-	-	-	F
	2.75	6.00	-	Spin Tru	C50-10SM600-KB	\$98.95	-	-	-	-	D
1-1/4" 1.250	2.75	1.50	0.68	Parlec	C50-12SM150-P	\$177.30	12KY	5/8"-18	12LS	028-193	B
	2.88	1.50	-	Kingston	C50-12SM150-K	\$87.95	-	-	-	-	F
	2.88	1.50	-	Spin Tru	C50-12SM150-KB	\$87.95	-	-	-	-	D
	2.88	1.75	0.69	Lyndex	C50-12SM175-L	\$175.99	1/2"	5/8"-18	-	A5/8-18	B
	2.88	3.50	-	Kingston	C50-12SM350-K	\$87.95	-	-	-	-	F
	2.88	3.50	-	Spin Tru	C50-12SM350-KB	\$87.95	-	-	-	-	D
	2.88	4.00	0.69	Lyndex	C50-12SM400-L	\$217.55	1/2"	5/8"-18	-	A5/8-18	B
	2.88	5.50	-	Kingston	C50-12SM550-K	\$98.95	-	-	-	-	F
1-1/2" 1.500	2.88	5.50	-	Spin Tru	C50-12SM550-KB	\$98.95	-	-	-	-	D
	3.80	2.00	0.93	Lyndex	C50-15SM200-L	\$191.90	5/8"	3/4"-16	-	A3/4-16	B
	3.81	2.40	-	Spin Tru	C50-15SM240-KB	\$87.95	-	-	-	-	D
	3.38	2.75	-	Kingston	C50-15SM275-K	\$87.95	-	-	-	-	F
	3.80	4.00	0.93	Lyndex	C50-15SM400-L	\$238.69	5/8"	3/4"-16	-	A3/4-16	B
	3.81	4.00	-	Kingston	C50-15SM400-K	\$87.95	-	-	-	-	F
	3.81	4.00	-	Spin Tru	C50-15SM400-KB	\$87.95	-	-	-	-	D
	3.81	6.00	-	Kingston	C50-15SM600-K	\$98.95	-	-	-	-	F
2" 2.000	3.81	6.00	-	Spin Tru	C50-15SM600-KB	\$98.95	-	-	-	-	D
	3.75	6.00	0.94	Parlec	C50-15SM600-P	\$251.10	15KY	3/4"-16	15LS	15LS	B
	4.88	2.75	-	Kingston	C50-20SM275-K	\$87.95	-	-	-	-	F
	4.88	2.75	-	Spin Tru	C50-20SM275-KB	\$87.95	-	-	-	-	D
	4.88	4.00	-	Kingston	C50-20SM400-K	\$87.95	-	-	-	-	F
	4.88	4.00	-	Spin Tru	C50-20SM400-KB	\$87.95	-	-	-	-	D
	4.88	6.00	-	Kingston	C50-20SM600-K	\$98.95	-	-	-	-	F

90° MILLING CUTTERS

For Use With APKT/APGT1604 Series Inserts

CALL FOR OUR HOT MILLING SPECIALS!



Dia. D	Arbor Hole d	Key Width a	Flute Length H	No. of Flutes	Part Number	Price Each
2.00	0.750	0.3125	1.75	4	M-SAP16N-2075-4	\$195.00
2.00	0.750	0.3125	1.75	5	M-SAP16N-2075-5	\$195.00
2.50	1.000	0.3750	2.00	5	M-SAP16N-2510-5	\$199.00
3.00	1.000	0.3750	2.00	6	M-SAP16N-3010-6	\$310.00
3.00	1.000	0.3750	2.00	7	M-SAP16N-3010-7	\$310.00

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

203

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

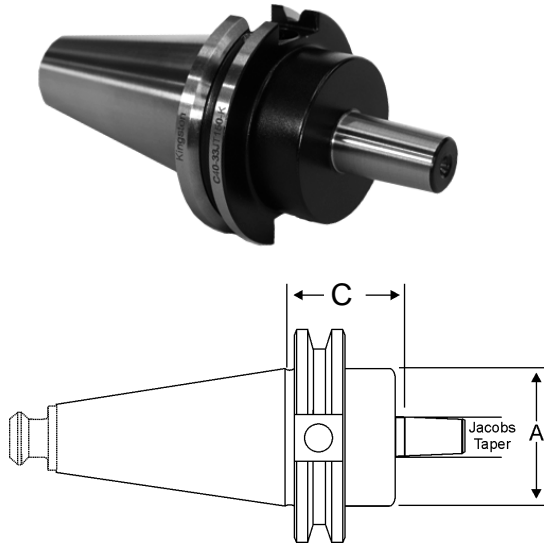
CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

CAT-50 JACOBS/MORSE TAPER HOLDERS

JACOBS TAPER HOLDERS



Jacobs Taper	C Proj	A dia	Brand	Part Number	Price	Code
JT 2	1.50	-	Kingston	C50-02JT150-K	\$82.45	F
	1.50	-	Spin Tru	C50-02JT150-KB	\$82.45	D
	1.50	0.56	Parlec	C50-02JT150-P	\$139.05	B
	2.44	0.56	Kingston	C50-02JT244-K	\$82.45	F
	2.44	0.56	Spin Tru	C50-02JT244-KB	\$82.45	D
JT 3	1.50	-	Kingston	C50-03JT150-K	\$82.45	F
	1.50	0.81	Spin Tru	C50-03JT150-KB	\$82.45	D
	1.50	0.81	Parlec	C50-03JT150-P	\$139.05	B
	2.81	0.81	Kingston	C50-03JT281-K	\$82.45	F
	2.81	0.81	Spin Tru	C50-03JT281-KB	\$82.45	D
JT 4	1.50	-	Kingston	C50-04JT150-K	\$82.45	F
	1.50	-	Spin Tru	C50-04JT150-KB	\$82.45	D
	1.50	1.12	Parlec	C50-04JT150-P	\$139.05	B
	3.25	1.13	Kingston	C50-04JT325-K	\$82.45	F
	3.25	1.13	Spin Tru	C50-04JT325-KB	\$82.45	D
JT 6	1.50	0.68	Parlec	C50-06JT150-P	\$139.05	B
	1.59	-	Kingston	C50-06JT159-K	\$82.45	F
	1.59	-	Spin Tru	C50-06JT159-KB	\$82.45	D
	2.59	0.68	Kingston	C50-06JT259-K	\$82.45	F
	2.59	0.68	Spin Tru	C50-06JT259-KB	\$82.45	D
JT 33	1.50	-	Kingston	C50-33JT150-K	\$82.45	F
	1.50	-	Spin Tru	C50-33JT150-KB	\$82.45	D
	1.50	0.62	Parlec	C50-33JT150-P	\$138.15	B
	2.59	0.63	Kingston	C50-33JT259-K	\$82.45	F
	2.59	0.63	Spin Tru	C50-33JT259-KB	\$82.45	D

KEYLESS DRILL CHUCKS

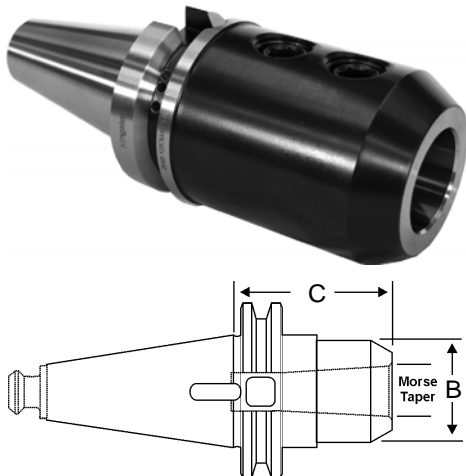
With Integral Shank

- Integral shank precision ball-bearing keyless drill chuck offers greater accuracy and rigidity
- Made of alloy forged steel
- Self-tightening keyless operation
- Maximum TIR: 0.0015"
- Includes wrench



Taper	Capacity	Proj.	BISON Part Number	Price Each	TMX Part Number	Price Each
BT40	1/32"-1/2"	3.74	B40-50DC1-B	\$225.90	TMX-8230-4033	\$217.12
	1/8"-5/8"	3.94	B40-62DC1-B	\$243.90	TMX-8230-4035	\$233.89
CAT40	1/32"-1/2"	4.13	C40-50DC1-B	\$229.50	TMX-8130-4033	\$245.99
	1/8"-5/8"	5.12	C40-62DC1-B	\$246.60	TMX-8130-4035	\$263.93
CAT50	1/32"-1/2"	4.13	C50-50DC1-B	\$273.60	TMX-8130-5063	\$292.76
	1/8"-5/8"	4.33	C50-62DC1-B	\$290.70	TMX-8130-5065	\$310.79

MORSE TAPER HOLDERS



Morse Taper	C Proj	B Face Dia	Brand	Part Number	Price	Code
MT 1	1.50	2.75	Kingston	C50-01MT150-K	\$82.45	F
	1.50	2.75	Spin Tru	C50-01MT150-KB	\$82.45	D
	1.50	2.75	Parlec	C50-01MT150-P	\$225.00	B
MT2	1.50	2.75	Parlec	C50-02MT150-P	\$160.65	B
	2.00	1.25	Kingston	C50-02MT200-K	\$82.45	F
MT 3	2.00	1.25	Spin Tru	C50-02MT200-KB	\$82.45	D
	2.31	2.25	Parlec	C50-03MT231-P	\$160.65	B
	2.31	1.75	Spin Tru	C50-03MT231-KB	\$82.45	D
MT 4	2.5	1.75	Kingston	C50-03MT250-K	\$82.45	F
	3.18	2.00	Kingston	C50-04MT318-K	\$82.45	F
	3.18	2.00	Spin Tru	C50-04MT318-KB	\$82.45	D
MT 5	3.18	2.25	Parlec	C50-04MT318-P	\$163.80	B
	3.75	2.75	Kingston	C50-05MT375-K	\$82.45	F
	3.75	2.75	Spin Tru	C50-05MT375-KB	\$82.45	D
	4.75	2.75	Parlec	C50-05MT475-P	\$189.90	B

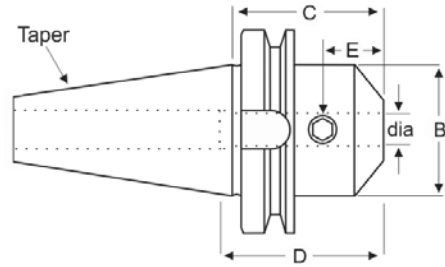
Call Us Today For All Of Your Machine Tool Needs!

BT-30 TAPER TOOLHOLDERS

END MILL HOLDERS



- Large selection of end mill holders from nationally recognized manufacturers
- **Kingston Toolholders** are balanced to 15,000 RPM @ g6.3
- **Spin Tru Toolholders** are balanced to 20,000 RPM @ g2.5
- Full line available from all vendors listed-please call for information



BT 30		ENDMILL HOLDERS									
Dia	C Proj.	B OD	D Max Socket Depth	E	Brand	Part Number	Price Each	Set Screw Size	Set Screw Part Number	MAX RPM Balanced Up to	Code
1/8"	2.36	0.75	0.63	-	Lyndex	B30-01EM236-L	\$122.55	6-32(1)	SSE-06-32-250	-	B
		0.68	-	-	Techniks	B30-01EM236-T	\$75.60			15,000G6.3	B
	2.50	0.68	-	-	Kingston	B30-01EM250-K	\$49.45	10-32	SSE-10-32-250	15,000G6.3	F
		0.68	-	-	Spin Tru	B30-01EM250-KB	\$74.92			10-32	SSE-10-32-250
3/16"	2.36	0.75	0.87	-	Lyndex	B30-18EM236-L	\$110.91	8-32(1)	SSE-08-32-250	-	B
		0.68	-	-	Techniks	B30-18EM236-T	\$75.60			15,000G6.3	B
	2.50	0.69	-	-	Kingston	B30-18EM250-K	\$49.45	10-32	SSE-10-32-250	15,000G6.3	F
		0.69	-	-	Spin Tru	B30-18EM250-KB	\$74.92			10-32	SSE-10-32-250
1/4"	2.36	-	-	-	Spin Tru	B30-25EM236-KB	\$73.02	1/4"-20	SSE-25-20-250	20,000G2.5	D
		0.79	1.10	-	Lyndex	B30-25EM236-L	\$110.91			1/4"-28(1)	SSE-25-28-250
	2.50	0.78	-	-	Techniks	B30-25EM236-T	\$75.60	1/4"-20	SSE-25-20-250	15,000G6.3	B
		1.00	-	-	Kingston	B30-25EM250-K	\$49.45			15,000G6.3	F
5/16"	2.36	-	-	-	Spin Tru	B30-31EM236-KB	\$73.02	5/16"-18	SSE-31-18-313	20,000G2.5	D
		0.88	-	-	Techniks	B30-31EM236-T	\$75.60			15,000G6.3	B
	2.50	0.87	1.26	-	Lyndex	B30-31EM236-L	\$128.25	5/16"-24(1)	SSE-31-24-250	-	B
		1.00	-	-	Kingston	B30-31EM250-K	\$49.45			5/16"-18	SSE-31-18-313
3/8"	2.36	-	-	-	Spin Tru	B30-37EM236-KB	\$73.02	3/8"-16	SSE-38-16-313	20,000G2.5	D
		1.00	1.26	-	Techniks	B30-37EM236-T	\$75.60			15,000G6.3	B
	2.50	1.00	-	-	Lyndex	B30-37EM236-L	\$110.91	3/8"-24(1)	SSE-37-24-313	-	B
		1.25	-	-	Kingston	B30-37EM250-K	\$49.45			3/8"-16	SSE-38-16-313
7/16"	2.36	-	-	-	Spin Tru	B30-43EM236-KB	\$73.02	7/16"-14	SSE-44-14-375	20,000G2.5	D
		1.12	-	-	Techniks	B30-43EM236-T	\$75.60			15,000G6.3	B
	2.50	1.38	1.50	-	Lyndex	B30-43EM236-L	\$128.25	7/16"-20(1)	SSE-44-20-375	-	B
		1.25	-	-	Techniks	B30-50EM236-T	\$75.60			15,000G6.3	B
1/2"	2.36	-	-	-	Spin Tru	B30-50EM236-KB	\$73.02	7/16"-14	SSE-44-14-375	20,000G2.5	D
		1.38	1.50	-	Lyndex	B30-50EM236-L	\$110.91			7/16"-20(1)	SSE-44-20-375
	2.50	1.25	-	-	Kingston	B30-50EM250-K	\$49.45	7/16"-14	SSE-44-14-375	15,000G6.3	F
		1.50	-	-	Techniks	B30-62EM236-T	\$75.60			15,000G6.3	B
5/8"	2.36	1.50	-	-	Kingston	B30-62EM250-K	\$49.45	9/16"-12	SSE-46-12-500	15,000G6.3	F
		1.62	1.85	0.88	Spin Tru	B30-62EM250-KB	\$74.92			9/16"-12	SSE-46-12-500
	2.50	1.65	1.61	-	Lyndex	B30-62EM250-L	\$110.91	9/16"-18(1)	SSE-56-18-500	-	B
		1.75	-	-	Techniks	B30-75EM236-T	\$75.60			15,000G6.3	B
3/4"	2.36	1.75	-	-	Kingston	B30-75EM300-K	\$49.45	5/8"-11	SSE-62-11-500	15,000G6.3	F
		1.75	2.50	0.75	Spin Tru	B30-75EM300-KB	\$74.92			5/8"-11	SSE-62-11-500
	3.00	1.88	1.77	-	Lyndex	B30-75EM300-L	\$110.91	5/8"-18(1)	SSE-62-18-500	-	B
		2.00	-	-	Kingston	B30-87EM300-K	\$49.45			5/8"-11	SSE-62-11-500
7/8"	3.00	-	-	-	Spin Tru	B30-87EM354-KB	\$73.02	5/8"-11	SSE-62-11-500	20,000G2.5	D
		2.00	2.09	-	Lyndex	B30-87EM354-L	\$167.20			5/8"-18(2)	SSE-62-18-500
	3.54	-	-	-	Spin Tru	B30-87EM354-KB	\$73.02	5/8"-11	SSE-62-11-500	20,000G2.5	D
		2.00	2.09	-	Lyndex	B30-87EM354-L	\$167.20			5/8"-18(2)	SSE-62-18-500
1"	2.75	2.38	2.50	1.12	Parlec	B30-10EM275-P	\$123.75	3/4"-16(1)	SSE-75-16-500	-	A
		3.54	-	-	Spin Tru	B30-10EM354-KB	\$73.02			3/4"-10	SSE-75-10-563
	4.00	2.36	2.36	-	Lyndex	B30-10EM354-L	\$119.70	3/4"-16(2)	SSE-75-16-688	-	B
		2.38	-	-	Kingston	B30-10EM400-K	\$49.45			3/4"-10	SSE-75-10-563

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

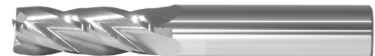
COOLANT/FLUIDS
TOOL STORAGE



We Offer The Complete Line of MONSTER Carbide Endmills!



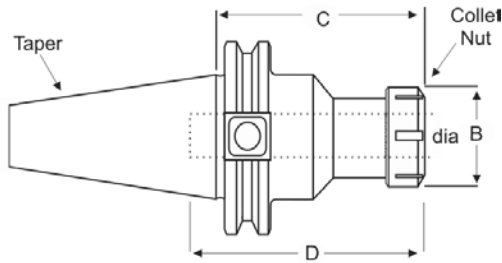
- Top Quality Carbide Endmills At HSS Prices!
- 2, 3 & 4 Flute, Coated and Uncoated
- Square, Ball End, Corner Radius and Rougher/Finishers
- Premium Sub-micron C-2 Carbide With 10% Cobalt
- 100% Made In The USA



Call Us Or Visit Our Website For Our Complete Selection!

BT-30 TAPER ER COLLET CHUCKS

ER COLLET CHUCKS



C Proj.	B Nut Dia.	D Socket Depth	Nut Tight. Torque (ft.lbs.)	Brand	Part Number	Price Each	MAX RPM Balanced Up to	Collet Nut	Wrench	Code
ER 11 ER-11 Collet Series-.020 - 0.275 (0.5mm - 7mm)										
2.00	0.75	1.75	22	Spin Tru	B30-11ER200-KB	\$85.61	30,000G2.5	CN-ER11-K	WR-ER11-K	D
	0.75	-	22	Lyndex	B30-11ER200-L	\$189.05	-	CN-ER11-L	WR-ER11-L	B
4.00	0.75	2.25	22	Spin Tru	B30-11ER400-KB	\$87.75	30,000G2.5	CN-ER11-K	WR-ER11-K	D
	0.75	-	22	Lyndex	B30-11ER400-L	\$209.95	-	CN-ER11-L	WR-ER11-L	B
ER 16 ER-16 Collet Series-.020 - 0.393 (0.5mm - 10mm)										
2.36	1.1	-	52	Kingston	B30-16ER236-K	\$82.45	15,000G6.3	CN-ER16-K	WR-ER16-K	F
	1.1	2.55	52	Spin Tru	B30-16ER236-KB	\$87.60	30,000G2.5	CN-ER16-K	WR-ER16-K	D
	1.26	-	52	Techniks	B30-16ER236-T	\$114.30	25,000G2.5	TECH-41116	TECH-04609	B
3.94	1.08	-	52	Techniks	B30-16ER394-T	\$116.10	25,000G2.5	TECH-41116	TECH-04609	B
4.00	1.1	-	52	Kingston	B30-16ER400-K	\$82.45	15,000G6.3	CN-ER16-K	WR-ER16-K	F
	1.1	2.55	52	Spin Tru	B30-16ER400-KB	\$87.07	30,000G2.5	CN-ER16-K	WR-ER16-K	D
4.72	1.26	-	50	Techniks	B30-16ER472-T	\$123.30	25,000G2.5	TECH-41116	TECH-04609	B
5.00	1.1	2.55	52	Spin Tru	B30-16ER500-KB	\$87.75	30,000G2.5	CN-ER16-K	WR-ER16-K	D
	1.26	-	52	Sowa	B30-16ER500-GB	\$110.97	20000	CN-ER16-G	WR-ER16-G	C
6.00	1.1	2.55	52	Spin Tru	B30-16ER600-KB	\$89.89	30,000G2.5	CN-ER16-K	WR-ER16-K	D
	1.26	-	52	Lyndex	B30-16ER600-L	\$252.70	-	CN-ER16-L	WR-ER16-L	B
ER 20 ER-20 Collet Series-.020 - 0.500 (0.5mm - 12.7mm)										
2.50	1.34	-	74	Kingston	B30-20ER250-K	\$82.45	15,000G6.3	CN-ER20-K	WR-ER20-K	F
	1.34	-	74	Spin Tru	B30-20ER250-KB	\$87.60	30,000G2.5	CN-ER20-K	WR-ER20-K	D
	1.38	-	74	Lyndex	B30-20ER250-L	\$189.05	-	CN-ER20-L	WR-ER20-L	B
2.76	1.34	-	74	Techniks	B30-20ER276-T	\$116.10	25,000G2.5	TECH-41120	TECH-04610	B
4.00	1.34	2.63	74	Spin Tru	B30-20ER400-KB	\$87.75	30,000G2.5	CN-ER20-K	WR-ER20-K	D
ER 25 ER-25 Collet Series-.039 - 0.630 (1mm - 16mm)										
2.00	1.65	2.55	95	Spin Tru	B30-25ER200-KB	\$85.61	30,000G2.5	CN-ER25-K	WR-ER25-K	D
	1.65	-	95	Lyndex	B30-25ER200-L	\$189.05	-	CN-ER25-L	WR-ER25-L	B
2.50	1.65	-	95	Kingston	B30-25ER250-K	\$82.45	15,000G6.3	CN-ER25-K	WR-ER25-K	F
	1.65	-	95	Spin Tru	B30-25ER250-KB	\$87.60	30,000G2.5	CN-ER25-K	WR-ER25-K	D
2.76	1.65	-	95	Techniks	B30-25ER276-T	\$116.10	25,000G2.5	TECH-41925	TECH-04615	B
4.00	1.65	2.55	95	Spin Tru	B30-25ER400-KB	\$87.75	30,000G2.5	CN-ER25-K	WR-ER25-K	D
ER 32 ER-32 Collet Series-.040 - 0.810 (1mm - 20.6mm)										
2.36	1.97	-	125	Techniks	B30-32ER236-T	\$117.90	25,000G2.5	TECH-41932	TECH-04616	B
3.00	1.97	-	125	Kingston	B30-32ER300-K	\$82.45	15,000G6.3	CN-ER32-K	WR-ER32-K	F
	1.97	2.4	125	Spin Tru	B30-32ER300-KB	\$87.60	30,000G2.5	CN-ER32-K	WR-ER32-K	D
3.94	1.97	-	125	Techniks	B30-32ER394-T	\$143.10	25,000G2.5	TECH-41932	TECH-04616	B
5.00	1.97	2.4	125	Spin Tru	B30-32ER500-KB	\$87.75	30,000G2.5	CN-ER32-K	WR-ER32-K	D
	1.97	-	125	Lyndex	B30-32ER500-L	\$209.95	-	CN-ER32-L	WR-ER32-L	B
ER 40 ER-40 Collet Series-.040 - 0.810 (1mm - 20.6mm)										
3.15	2.48	-	140	Techniks	B30-40ER315-T	\$162.90	25,000G2.5	TECH-41940	TECH-04617	B

CNC TOOL TOTE RACKS

- Built-in end handles for comfortable carrying
- Bench mount, hand carry, or mount on top
- Made of heavy gauge steel
- Nylon inserts help protect tooling
- Painted texture black powder coating

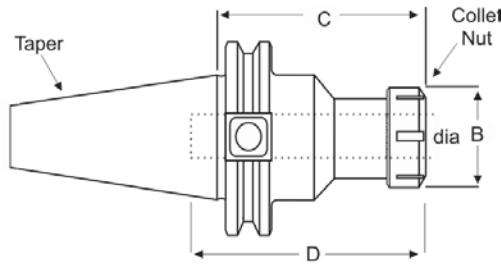


Tool Size	Cap.	Part Number	Price
40 Taper Tools	6	HU-14780	\$68.00
50 Taper Tools	5	HU-14790	\$68.00

Call Us Today For All Of Your Machine Tool Needs!

BT-30 TAPER DA/TG COLLET CHUCKS

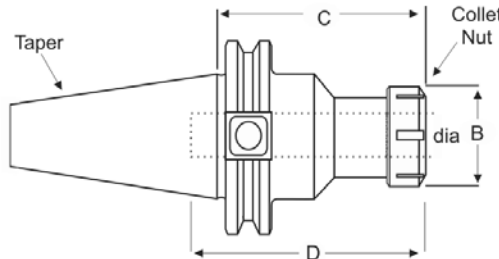
DA SERIES COLLET CHUCKS



DA COLLETS
are on
page 161

C Proj.	B Nut Dia.	D Socket Depth	Nut Tight. Torque (ft.lbs.)	Brand	Part Number	Price Each	MAX RPM Balanced Up to	Collet Nut	Wrench	Code
DA 100 DA100 Collet Series-.062 - 0.562 (1.587mm - 14.287mm)										
3.00	- 1.06	-	-	Kingston Lyndex	B30-10DA300-K B30-10DA300-L	\$87.95 \$138.70	15,000G6.3 -	CN-DA100-K CN-DA100-L	WR-DA100-K WR-DA100-L	F B
DA 180 DA180 Collet Series-.031 - 0.750 (.800mm - 19mm)										
3.00	- 1.44	-	-	Kingston Lyndex	B30-18DA300-K B30-18DA300-L	\$87.95 \$138.70	15,000G6.3 -	CN-DA180-K CN-DA180-L	WR-DA180-K WR-DA180-L	F B
DA 200 DA200 Collet Series-.031 - 0.375 (.800mm - 9.5mm)										
3.00	0.86	-	-	Lyndex	B30-20DA300-L	\$138.70	-	CN-DA200-L	WR-DA200-L	B
DA 300 DA300 Collet Series-.031 - 0.250 (.800mm - 6.4mm)										
3.00	0.55	-	-	Lyndex	B30-30DA300-L	\$138.70	-	CN-DA300-L	WR-DA300-L	B

TG SERIES COLLET CHUCKS



TG COLLETS
are on
pages 159-160

C Proj.	B Nut Dia.	D Socket Depth	Nut Tight. Torque (ft.lbs.)	Brand	Part Number	Price Each	MAX RPM Balanced Up to	Collet Nut	Wrench	Code
TG 075 TG-75 Collet Series-3/64 to 3/4 (1.2mm - 19.1mm)										
2.50	1.89	-	60	Lyndex	B30-75TG250-L	\$141.79	-	CN-TG075-L	WR-TG075-L	B
TG 100 TG-100 Collet Series-5/64 to 1" (2mm - 25.4mm)										
3.94	2.5	-	60	Lyndex	B30-10TG394-L	\$141.79	-	CN-TG100-L	WR-TG100-L	B
4.50	2.44	-	60	Kingston	B30-10TG450-K	\$82.45	15,000G6.3	CN-TG100-K	WR-TG100-K	F
	2.44	-	60	Spin Tru	B30-10TG450-KB	\$70.32	30,000G2.5	CN-TG100-K	WR-TG100-K	D

TG COLLET SETS

- TG Collets collapse approx. 1/64"
- Machined to exacting standards
- Ideal choice for high speed and high precision milling and drilling operations
- Tolerance: 0.0003" at collet nose
- Sets available in TG 75, 100 & 150



Accu-Collets

Collet Series	Set Qty	Range	Part Number	Price
TG 75	11	1/8"-3/4"-16ths	075-SET11	\$203.50
	22	1/8"-3/4"-32nds	075-SET22	\$407.00
	43	3/32"-3/4"-64ths	075-SET43	\$795.50
TG 100	59	3/32"-1" -64ths	100-SET59	\$1,121.00
	41	3/8"-1"-64ths	100-SET41	\$779.00
	30	3/32"-1"-32nds	100-SET30	\$570.00
	21	3/8"-1"-32nds	100-SET21	\$399.00
	15	1/8"-1"-16ths	100-SET15	\$285.00
TG 150	33	1/2"-1-1/2" - 32nds	150-SET33	\$1,402.00

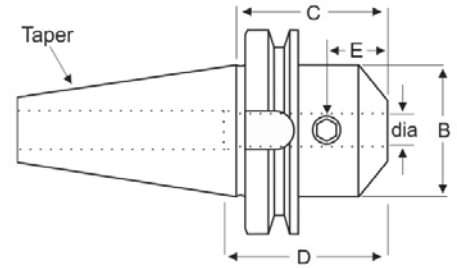
Call Us Or Visit Our Website For Our Complete Selection!

BT-40 TAPER TOOLHOLDERS**END MILL HOLDERS**

- Large selection of end mill holders from nationally recognized manufacturers
- **Kingston Toolholders** are balanced to 15,000 RPM @ g6.3
- **Spin Tru Toolholders** are balanced to 20,000 RPM @ g2.5
- Full line available from all vendors listed-please call for information

KINGSTON
BALANCED TOOLHOLDERS

SPIN TRU
BALANCED TOOLHOLDERS

LYNDEX
PARLEC
TECHNIKS
SOWA


BT 40		ENDMILL HOLDERS									
Dia	C Proj.	B OD	D Max Socket Depth	E	Brand	Part Number	Price Each	Set Screw Size	Set Screw Part Number	MAX RPM Balanced Up to	Code
1/8"	1.38	0.68	-	-	Kingston	B40-01EM138-K	\$58.25	10-32	SSE-10-32-250	12,000G6.3	F
		0.68	-	-	Spin Tru	B40-01EM138-KB	\$70.91	10-32	SSE-10-32-250	20,000G2.5	D
	2.36	0.75	0.63	-	Lyndex	B40-01EM236-L	\$120.41	6-32(1)	SSE-06-32-250	-	B
	2.50	-	-	-	Kingston	B40-01EM250-K	\$58.25	10-32	SSE-10-32-250	12,000G6.3	F
	-	-	-	Spin Tru	B40-01EM250-KB	\$70.91	10-32	SSE-10-32-250	20,000G2.5	D	
	4.00	0.75	0.63	-	Lyndex	B40-01EM400-L	\$133.24	6-32(1)	SSE-06-32-250	-	B
3/16"	1.38	0.69	-	-	Kingston	B40-18EM138-K	\$58.25	10-32	SSE-10-32-250	15,000G6.3	F
		0.69	-	-	Spin Tru	B40-18EM138-KB	\$70.91	10-32	SSE-10-32-250	20,000G2.5	D
	2.25	-	-	-	Kingston	B40-18EM225-K	\$58.25	10-32	SSE-10-32-250	15,000G6.3	F
		-	-	-	Spin Tru	B40-18EM225-KB	\$70.91	10-32	SSE-10-32-250	20,000G2.5	D
		0.69	3	0.44	Parlec*	B40-18EM225-P	\$110.25	1/4"-28(1)	SSE-25-28-250	-	B
	2.50	0.69	-	-	Kingston	B40-18EM250-K	\$58.25	10-32	SSE-10-32-250	15,000G6.3	F
	0.69	-	-	Spin Tru	B40-18EM250-KB	\$70.91	10-32	SSE-10-32-250	20,000G2.5	D	
	0.75	0.86	-	Lyndex	B40-18EM250-L	\$120.41	8-32(1)	SSE-08-32-250	-	B	
	4.00	0.75	0.86	-	Lyndex	B40-18EM400-L	\$133.24	8-32(1)	SSE-08-32-250	-	B
1/4"	1.38	1	-	-	Kingston	B40-25EM138-K	\$58.25	1/4"-20	SSE-25-20-250	15,000G6.3	F
		0.79	1.5	0.56	Spin Tru	B40-25EM138-KB	\$70.91	1/4"-20	SSE-25-20-250	20,000G2.5	D
	2.25	-	-	-	Kingston	B40-25EM225-K	\$58.25	1/4"-20	SSE-25-20-250	15,000G6.3	F
		0.88	3	0.44	Parlec*	B40-25EM225-P	\$110.25	1/4"-28(1)	SSE-25-28-250	-	B
	2.50	0.79	1.5	0.56	Spin Tru	B40-25EM250-KB	\$70.50	1/4"-20	SSE-25-20-250	20,000G2.5	D
		-	-	-	Spin Tru	B40-25EM400-KB	\$73.02	1/4"-20	SSE-25-20-250	20,000G2.5	D
		4.00	0.79	1.10	-	Lyndex	B40-25EM400-L	\$133.24	1/4"-28(1)	SSE-25-28-250	-
	0.79	-	-	Sowa	B40-25EM400-GB	\$133.02	1/4"-28	SSE-25-28-250	20,000	C	
5/16"	1.38	1.00	-	-	Kingston	B40-31EM138-K	\$58.25	5/16"-18	SSE-31-18-313	15,000G6.3	F
		0.87	1.14	0.56	Spin Tru	B40-31EM138-KB	\$70.91	5/16"-18	SSE-31-18-313	20,000G2.5	D
	2.25	-	-	-	Kingston	B40-31EM225-K	\$58.25	5/16"-18	SSE-31-18-313	15,000G6.3	F
		1.00	3.00	0.44	Parlec*	B40-31EM225-P	\$110.25	1/4"-28	SSE-25-28-250	-	B
	2.50	1.00	-	-	Kingston	B40-31EM250-K	\$58.25	5/16"-18	SSE-31-18-313	15,000G6.3	F
		1.00	1.14	0.56	Spin Tru	B40-31EM250-KB	\$70.91	5/16"-18	SSE-31-18-313	20,000G2.5	D
	0.87	1.26	-	Lyndex	B40-31EM250-L	\$137.99	5/16"-24	SSE-31-24-250	-	B	
	4.00	-	-	-	Kingston	B40-31EM400-K	\$58.25	5/16"-18	SSE-31-18-313	15,000G6.3	F
	-	-	-	Spin Tru	B40-31EM400-KB	\$70.38	5/16"-18	SSE-31-18-313	20,000G2.5	D	
3/8"	1.38	1.25	-	-	Kingston	B40-37EM138-K	\$58.25	3/8"-16	SSE-38-16-313	15,000G6.3	F
		1.00	1.53	0.75	Spin Tru	B40-37EM138-KB	\$70.91	3/8"-16	SSE-38-16-313	20,000G2.5	D
	2.25	-	-	-	Kingston	B40-37EM225-K	\$58.25	3/8"-16	SSE-38-16-313	15,000G6.3	F
		1.00	3.00	0.75	Parlec	B40-37EM225-P	\$110.25	3/8"-24	SSE-38-24-313	-	B
	2.50	1.00	1.53	0.75	Spin Tru	B40-37EM250-KB	\$70.50	3/8"-16	SSE-38-16-313	20,000G2.5	D
		1.00	1.26	-	Lyndex	B40-37EM250-L	\$120.41	3/8"-24	SSE-37-24-313	-	B
		-	-	-	Kingston	B40-37EM400-K	\$58.25	3/8"-16	SSE-38-16-313	15,000G6.3	F
	4.00	-	-	Spin Tru	B40-37EM400-KB	\$70.38	3/8"-16	SSE-38-16-313	20,000G2.5	D	
	1.00	4.00	0.75	Parlec	B40-37EM400-P	\$140.40	3/8"-24	SSE-38-24-313	-	B	
	6.50	1.25	-	-	Kingston	B40-37EM650-K	\$64.74	3/8"-16	SSE-38-16-313	15,000G6.3	F
	1.25	-	-	Spin Tru	B40-37EM650-KB	\$74.69	3/8"-16	SSE-38-16-313	20,000G2.5	D	
7/16"	1.75	1.25	-	-	Kingston	B40-43EM175-K	\$58.25	7/16"-14	SSE-44-14-375	15,000G6.3	F
		1.25	-	-	Spin Tru	B40-43EM175-KB	\$70.91	7/16"-14	SSE-44-14-375	20,000G2.5	D
	2.25	-	-	-	Kingston	B40-43EM225-K	\$58.25	7/16"-14	SSE-44-14-375	15,000G6.3	F
		1.25	3.00	0.75	Parlec*	B40-43EM225-P	\$110.25	3/8"-24	SSE-38-24-313	-	B
	2.50	-	-	-	Spin Tru	B40-43EM250-KB	\$70.50	7/16"-14	SSE-44-14-375	20,000G2.5	D
	1.38	1.53	-	-	Lyndex	B40-43EM250-L	\$135.66	7/16"-20	SSE-44-20-375	-	B

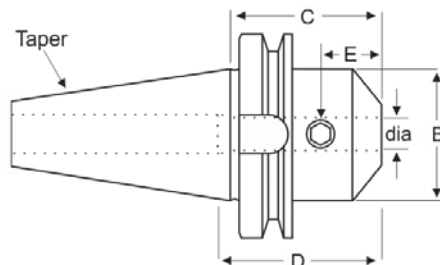
Call Us Today For All Of Your Machine Tool Needs!

BT-40 TAPER TOOLHOLDERS

END MILL HOLDERS



- Large selection of end mill holders from nationally recognized manufacturers
- **Kingston Toolholders** are balanced to 15,000 RPM @ g6.3
- **Spin Tru Toolholders** are balanced to 20,000 RPM @ g2.5
- Full line available from all vendors listed-please call for information



LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBRUING

COOLANT/FLUIDS
TOOL STORAGE

BT 40 ENDMILL HOLDERS

Dia	C Proj.	B OD	D Max Socket Depth	E	Brand	Part Number	Price Each	Set Screw Size	Set Screw Part Number	MAX RPM Balanced Up to	Code
1/2"	1.38	1.25	-	-	Kingston	B40-50EM138-K	\$58.25	7/16"-14	SSE-44-14-375	15,000G6.3	F
		1.25	-	-	Spin Tru	B40-50EM138-KB	\$70.91	7/16"-14	SSE-44-14-375	20,000G2.5	D
	1.75	1.25	-	-	Kingston	B40-50EM175-K	\$58.25	7/16"-14	SSE-44-14-375	15,000G6.3	F
		1.38	1.77	0.88	Spin Tru	B40-50EM175-KB	\$70.91	7/16"-14	SSE-44-14-375	20,000G2.5	D
		1.25	2.75	0.88	Parlec	B40-50EM175-P	\$112.05	7/16"-20	SSE-44-20-375	-	B
		1.38	1.57	-	Lyndex	B40-50EM175-L	\$136.09	7/16"-20	SSE-44-20-375	-	B
	2.25	1.25	3.00	0.88	Parlec*	B40-50EM225-P	\$110.25	7/16"-20	SSE-44-20-375	-	B
	2.50	-	-	-	Kingston	B40-50EM250-K	\$58.25	7/16"-14	SSE-44-14-375	15,000G6.3	F
		-	-	-	Spin Tru	B40-50EM250-KB	\$70.91	7/16"-14	SSE-44-14-375	20,000G2.5	D
		1.38	1.50	-	Lyndex	B40-50EM250-L	\$120.41	7/16"-20	SSE-44-20-375	-	B
		1.38	-	-	Sowa	B40-50EM250-GB	\$147.42	7/16"-20	SSE-44-20-375	20,000	C
	4.00	-	-	-	Kingston	B40-50EM400-K	\$58.25	7/16"-14	SSE-44-14-375	15,000G6.3	F
-		-	-	Spin Tru	B40-50EM400-KB	\$70.38	7/16"-14	SSE-44-14-375	20,000G2.5	D	
6.62	1.25	-	-	Kingston	B40-50EM662-K	\$64.74	7/16"-14	SSE-44-14-375	15,000G6.3	F	
	1.25	-	-	Spin Tru	B40-50EM662-KB	\$74.69	7/16"-14	SSE-44-14-375	20,000G2.5	D	
9/16"	2.25	-	-	-	Kingston	B40-56EM225-K	\$58.25	7/16"-14	SSE-44-14-375	15,000G6.3	F
		-	-	-	Spin Tru	B40-56EM225-KB	\$70.91	7/16"-14	SSE-44-14-375	20,000G2.5	D
5/8"	1.38	1.50	-	-	Kingston	B40-62EM138-K	\$58.25	9/16"-12	SSE-46-12-500	15,000G6.3	F
		1.50	-	-	Spin Tru	B40-62EM138-KB	\$70.91	9/16"-12	SSE-46-12-500	20,000G2.5	D
	1.75	1.50	-	-	Kingston	B40-62EM175-K	\$58.25	9/16"-12	SSE-46-12-500	15,000G6.3	F
		1.62	3.58	0.94	Spin Tru	B40-62EM175-KB	\$70.91	9/16"-12	SSE-46-12-500	20,000G2.5	D
	2.50	-	-	-	Parlec	B40-62EM175-P	\$119.70	9/16"-18	SSE-56-18-430	-	B
		-	-	-	Spin Tru	B40-62EM250-KB	\$70.50	9/16"-12	SSE-46-12-500	20,000G2.5	D
	3.00	1.65	1.61	-	Lyndex	B40-62EM250-L	\$120.41	9/16"-18	SSE-56-18-500	-	B
		1.50	-	-	Kingston	B40-62EM300-K	\$58.25	9/16"-12	SSE-46-12-500	15,000G6.3	F
	4.00	-	-	-	Kingston	B40-62EM400-K	\$58.25	9/16"-12	SSE-46-12-500	15,000G6.3	F
		-	-	-	Spin Tru	B40-62EM400-KB	\$70.38	9/16"-12	SSE-46-12-500	20,000G2.5	D
	5.75	1.65	1.61	-	Lyndex	B40-62EM400-L	\$136.09	9/16"-18	SSE-56-18-500	-	B
		1.50	-	-	Kingston	B40-62EM575-K	\$64.74	9/16"-12	SSE-46-12-500	15,000G6.3	F
6.00	-	-	-	Spin Tru	B40-62EM600-KB	\$75.54	9/16"-12	SSE-46-12-500	20,000G2.5	D	
	1.50	-	-	Kingston	B40-62EM775-K	\$64.74	9/16"-12	SSE-46-12-500	15,000G6.3	F	
7.75	1.50	-	-	Spin Tru	B40-62EM775-KB	\$74.69	9/16"-12	SSE-46-12-500	20,000G2.5	D	
	1.75	-	-	Kingston	B40-75EM138-K	\$58.25	5/8"-11	SSE-62-11-500	15,000G6.3	F	
1.38	1.75	-	-	SpinTru	B40-75EM138-KB	\$70.91	5/8"-11	SSE-62-11-500	20,000G2.5	D	
	1.75	-	-	Kingston	B40-75EM175-K	\$58.25	5/8"-11	SSE-62-11-500	15,000G6.3	F	
1.75	1.68	2.12	1.00	SpinTru	B40-75EM175-KB	\$70.91	5/8"-11	SSE-62-11-500	20,000G2.5	D	
	1.75	2.75	1.00	Parlec	B40-75EM175-P	\$110.25	5/8"-18(1)	SSE-62-18-500	-	B	
2.50	-	-	-	Kingston	B40-75EM250-K	\$58.25	5/8"-11	SSE-62-11-500	15,000G6.3	F	
	-	-	-	SpinTru	B40-75EM250-KB	\$70.91	5/8"-11	SSE-62-11-500	20,000G2.5	D	
1.89	1.77	-	-	Lyndex	B40-75EM250-L	\$120.41	5/8"-18(1)	SSE-62-18-500	-	B	
	-	-	-	Sowa	B40-75EM250-GB	\$105.03	5/8"-18	SSE-62-18-500	20,000	C	
3.38	1.75	2.38	1.00	Parlec*	B40-75EM338-P	\$125.55	5/8"-18(1)	SSE-62-18-500	-	B	
4.00	-	-	-	Kingston	B40-75EM400-K	\$58.25	5/8"-11	SSE-62-11-500	15,000G6.3	F	
	-	-	-	SpinTru	B40-75EM400-KB	\$70.38	5/8"-11	SSE-62-11-500	20,000G2.5	D	
5.75	1.89	1.77	-	Lyndex	B40-75EM400-L	\$136.09	5/8"-18(1)	SSE-62-18-500	-	B	
	1.75	-	-	Kingston	B40-75EM575-K	\$64.74	5/8"-11	SSE-62-11-500	15,000G6.3	F	
6.00	-	-	-	SpinTru	B40-75EM600-KB	\$73.02	5/8"-11	SSE-62-11-500	20,000G2.5	D	
7.75	1.75	-	-	SpinTru	B40-75EM775-KB	\$75.54	5/8"-11	SSE-62-11-500	20,000G2.5	D	

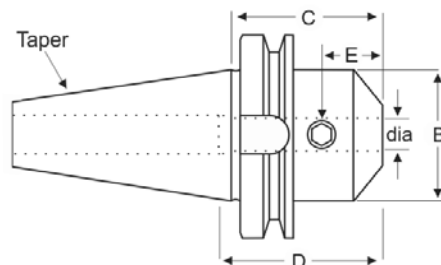
Call Us Or Visit Our Website For Our Complete Selection!

BT-40 TAPER TOOLHOLDERS

END MILL HOLDERS



- Large selection of end mill holders from nationally recognized manufacturers
- **Kingston Toolholders** are balanced to 15,000 RPM @ g6.3
- **Spin Tru Toolholders** are balanced to 20,000 RPM @ g2.5
- Full line available from all vendors listed-please call for information



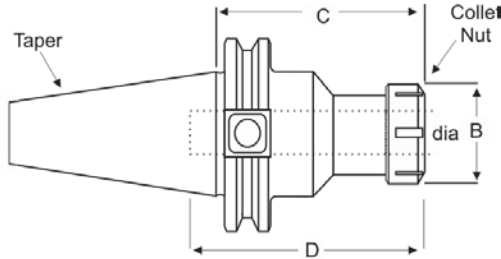
BT 40		ENDMILL HOLDERS									
Dia	C Proj.	B OD	D Max Socket Depth	E	Brand	Part Number	Price Each	Set Screw Size	Set Screw Part Number	MAX RPM Balanced Up to	Code
7/8"	1.38	2.00	-	-	Kingston	B40-87EM138-K	\$58.25	5/8"-11	SSE-62-11-500	15,000G6.3	F
		2.00	-	-	SpinTru	B40-87EM138-KB	\$70.91	5/8"-11	SSE-62-11-500	20,000G2.5	D
	1.75	2.00	-	-	Kingston	B40-87EM175-K	\$58.25	5/8"-11	SSE-62-11-500	15,000G6.3	F
		2.00	-	-	SpinTru	B40-87EM175-KB	\$70.91	5/8"-11	SSE-62-11-500	20,000G2.5	D
	3.38	-	-	-	SpinTru	B40-87EM338-KB	\$73.02	5/8"-11	SSE-62-11-500	20,000G2.5	D
		2.00	2.08	-	Lyndex	B40-87EM338-L	\$137.99	5/8"-18(2)	SSE-62-18-500	-	B
3.75	-	-	-	Kingston	B40-87EM375-K	\$58.25	5/8"-11	SSE-62-11-500	15,000G6.3	F	
6.00	2.00	-	-	Kingston	B40-87EM600-K	\$64.74	5/8"-11	SSE-62-11-500	15,000G6.3	F	
	2.00	4.25	1.00	SpinTru	B40-87EM600-KB	\$74.69	5/8"-11	SSE-62-11-500	20,000G2.5	D	
7.75	2.00	-	-	Kingston	B40-87EM775-K	\$64.74	5/8"-11	SSE-62-11-500	15,000G6.3	F	
	2.00	-	-	SpinTru	B40-87EM775-KB	\$74.69	5/8"-11	SSE-62-11-500	20,000G2.5	D	
1"	1.38	2.38	-	-	Kingston	B40-10EM138-K	\$58.25	3/4"-10	SSE-75-10-563	15,000G6.3	F
		2.38	-	-	Spin Tru	B40-10EM138-KB	\$70.91	3/4"-10	SSE-75-10-563	20,000G2.5	D
	1.75	2.38	-	-	Kingston	B40-10EM175-K	\$58.25	3/4"-10	SSE-75-10-563	15,000G6.3	F
		2.38	-	-	Spin Tru	B40-10EM175-KB	\$70.91	3/4"-10	SSE-75-10-563	20,000G2.5	D
	2.00	2.00	2.38	1.12	Parlec	B40-10EM175-P	\$124.65	3/4"-16	SSE-75-16-500	-	B
		-	-	-	Spin Tru	B40-10EM200-KB	\$70.50	3/4"-10	SSE-75-10-563	20,000G2.5	D
	2.00	2.25	2.28	-	Lyndex	B40-10EM200-L	\$138.94	3/4"-16	SSE-75-16-688	-	B
		2.25	-	-	Sowa	B40-10EM200-GB	\$136.98	3/4"-16	SSE-75-16-688	20,000	C
	3.56	-	-	-	Spin Tru	B40-10EM356-KB	\$73.02	3/4"-10	SSE-75-10-563	20,000G2.5	D
		2.36	-	-	Sowa	B40-10EM356-GB	\$136.98	3/4"-16	SSE-75-16-688	20,000	C
	4.00	2.38	-	-	Kingston	B40-10EM400-K	\$58.25	3/4"-10	SSE-75-10-563	15,000G6.3	F
		2.38	-	-	Spin Tru	B40-10EM400-KB	\$70.38	3/4"-10	SSE-75-10-563	20,000G2.5	D
2.00	4.44	1.12	-	Parlec*	B40-10EM400-P	\$127.35	3/4"-16(2)	SSE-75-16-500	-	B	
	2.38	-	-	Kingston	B40-10EM600-K	\$64.74	3/4"-10	SSE-75-10-563	15,000G6.3	F	
6.00	2.00	4.53	1.13	Spin Tru	B40-10EM600-KB	\$74.69	3/4"-10	SSE-75-10-563	20,000G2.5	D	
	2.36	2.36	-	Lyndex	B40-10EM600-L	\$156.75	3/4"-16(2)	SSE-75-16-688	-	B	
8.00	2.38	-	-	Kingston	B40-10EM800-K	\$64.74	3/4"-10	SSE-75-10-563	15,000G6.3	F	
	2.38	-	-	Spin Tru	B40-10EM800-KB	\$74.69	3/4"-10	SSE-75-10-563	20,000G2.5	D	
1-1/4"	2.00	2.25	-	-	Sowa	B40-12EM200-GB	\$173.34	3/4"-16	SSE-75-16-688	20,000	C
	3.56	-	-	-	Spin Tru	B40-12EM356-KB	\$73.02	3/4"-10	SSE-75-10-500	20,000G2.5	D
	4.00	-	-	-	Kingston	B40-12EM400-K	\$58.25	3/4"-10	SSE-75-10-500	15,000G6.3	F
	6.00	-	-	-	Spin Tru	B40-12EM600-KB	\$75.54	3/4"-10	SSE-75-10-500	20,000G2.5	D
2.48		2.56	-	Lyndex	B40-12EM600-L	\$175.75	3/4"-16(2)	SSE-75-16-688	-	B	
6.25	2.50	-	-	Kingston	B40-12EM625-K	\$64.74	3/4"-10	SSE-75-10-500	15,000G6.3	F	
	8.00	2.50	-	-	Kingston	B40-12EM800-K	\$64.74	3/4"-10	SSE-75-10-500	15,000G6.3	F
2.50		-	-	-	Spin Tru	B40-12EM800-KB	\$74.69	3/4"-10	SSE-75-10-500	20,000G2.5	D
	1-1/2"	4.00	-	-	-	Kingston	B40-15EM400-K	\$58.25	3/4"-10	SSE-75-10-688	15,000G6.3
4.50		2.99	2.83	-	Lyndex	B40-15EM450-L	\$156.28	3/4"-16(2)	SSE-75-16-688	-	B
6.00		-	-	-	Spin Tru	B40-15EM600-KB	\$75.54	3/4"-10	SSE-75-10-688	20,000G2.5	D
6.62		2.75	-	-	Kingston	B40-15EM662-K	\$64.74	3/4"-10	SSE-75-10-688	15,000G6.3	F
8.63		2.75	-	-	-	Kingston	B40-15EM863-K	\$64.74	3/4"-10	SSE-75-10-688	15,000G6.3
	2.75	-	-	-	Spin Tru	B40-15EM863-KB	\$74.69	3/4"-10	SSE-75-10-688	20,000G2.5	D

Need Something You Can't Find In Our Catalog?
We Are A Full Line Supplier For All Of The Toolholder Brands Listed. Please Call For More Information!

Call Us Today For All Of Your Machine Tool Needs!

BT-40 TAPER ER COLLET CHUCKS

ER COLLET CHUCKS



C Proj.	B Nut Dia.	D Socket Depth	Nut Tight. Torque (ft.lbs.)	Brand	Part Number	Price Each	MAX RPM Balanced Up to	Collet Nut	Wrench	Code
ER 11	ER-11 Collet Series-.020 - 0.275 (0.5mm - 7mm)									
2.50	0.75	2.25	22	Spin Tru	B40-11ER250-KB	\$88.55	20,000G2.5	CN-ER11-K	WR-ER11-K	D
	0.75	-	22	Lyndex	B40-11ER250-L	\$211.14	-	CN-ER11-L	WR-ER11-L	B
4.00	0.75	2.25	22	Spin Tru	B40-11ER400-KB	\$90.82	20,000G2.5	CN-ER11-K	WR-ER11-K	D
	0.75	2.25	22	Lyndex	B40-11ER400-L	\$239.16	-	CN-ER11-L	WR-ER11-L	B

ER 16	ER-16 Collet Series-.020 - 0.393 (0.5mm - 10mm)									
2.50	1.10	-	52	Kingston	B40-16ER250-K	\$87.95	15,000G6.3	CN-ER16-K	WR-ER16-K	F
	1.10	-	52	Spin Tru	B40-16ER250-KB	\$99.78	20,000G2.5	CN-ER16-K	WR-ER16-K	D
3.00	1.10	-	52	Kingston	B40-16ER300-K	\$87.95	15,000G6.3	CN-ER16-K	WR-ER16-K	F
	1.11	2.12	52	Parlec	B40-16ER312-P	\$186.75	-	CN-ER16PN-P	WR-ER16-P	B
3.50	1.10	-	52	Kingston	B40-16ER350-K	\$87.95	15,000G6.3	CN-ER16-K	WR-ER16-K	F
	1.10	2.83	52	Spin Tru	B40-16ER350-KB	\$96.66	20,000G2.5	CN-ER16-K	WR-ER16-K	D
	1.26	-	52	Lyndex	B40-16ER350-L	\$190.95	-	CN-ER16-L	WR-ER16-L	B
5.00	1.10	-	52	Kingston	B40-16ER500-K	\$98.84	15,000G6.3	CN-ER16-K	WR-ER16-K	F
	1.10	-	52	Spin Tru	B40-16ER500-KB	\$110.73	20,000G2.5	CN-ER16-K	WR-ER16-K	D
5.12	1.11	2.12	52	Parlec	B40-16ER512-P	\$200.70	-	CN-ER16PN-P	WR-ER16-P	B

ER 20	ER-20 Collet Series-.020 - 0.500 (0.5mm - 12.7mm)									
2.50	1.34	-	74	Kingston	B40-20ER250-K	\$87.95	15,000G6.3	CN-ER20-K	WR-ER20-K	F
	1.34	-	74	Spin Tru	B40-20ER250-KB	\$102.33	20,000G2.5	CN-ER20-K	WR-ER20-K	D
	1.38	-	74	Lyndex	B40-20ER250-L	\$190.95	-	CN-ER20-L	WR-ER20-L	B
2.75	1.34	-	74	Kingston	B40-20ER275-K	\$87.95	15,000G6.3	CN-ER20-K	WR-ER20-K	F
	1.34	3.14	74	Spin Tru	B40-20ER400-KB	\$90.82	20,000G2.5	CN-ER20-K	WR-ER20-K	D
4.00	1.34	4.00	74	Parlec	B40-20ER412-P	\$190.80	-	CN-ER20-P	WR-ER20-P	B
	1.34	-	74	Kingston	B40-20ER600-K	\$98.84	15,000G6.3	CN-ER20-K	WR-ER20-K	F
6.00	1.34	-	74	Spin Tru	B40-20ER600-KB	\$110.73	20,000G2.5	CN-ER20-K	WR-ER20-K	D
	1.38	-	74	Lyndex	B40-20ER600-L	\$245.39	-	CN-ER20-L	WR-ER20-L	B

ER 25	ER-25 Collet Series-.039 - 0.630 (1mm - 16mm)									
2.25	1.65	3.14	95	Spin Tru	B40-25ER225-KB	\$90.82	20,000G2.5	CN-ER25-K	WR-ER25-K	D
	1.65	-	95	Lyndex	B40-25ER225-L	\$204.25	-	CN-ER25-L	WR-ER25-L	B
2.50	1.65	-	95	Kingston	B40-25ER250-K	\$87.95	15,000G6.3	CN-ER25-K	WR-ER25-K	F
	1.65	-	95	Spin Tru	B40-25ER250-KB	\$99.78	20,000G2.5	CN-ER25-K	WR-ER25-K	D
4.00	1.65	-	95	Kingston	B40-25ER400-K	\$87.95	15,000G6.3	CN-ER25-K	WR-ER25-K	F
	1.65	-	95	Spin Tru	B40-25ER400-KB	\$99.13	20,000G2.5	CN-ER25-K	WR-ER25-K	D
	1.65	-	95	Lyndex	B40-25ER400-L	\$221.83	-	CN-ER25-L	WR-ER25-L	B
6.00	1.65	-	95	Kingston	B40-25ER600-K	\$98.84	15,000G6.3	CN-ER25-K	WR-ER25-K	F
	1.65	-	95	Spin Tru	B40-25ER600-KB	\$110.73	20,000G2.5	CN-ER25-K	WR-ER25-K	D
6.00	1.65	-	95	Lyndex	B40-25ER600-L	\$250.80	-	CN-ER25-L	WR-ER25-L	B

CNC TOOL TOTE RACKS

- Built-in end handles for comfortable carrying
- Bench mount, hand carry, or mount on top
- Made of heavy gauge steel
- Nylon inserts help protect tooling
- Painted texture black powder coating

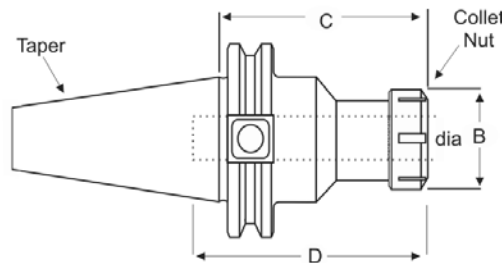


Tool Size	Cap.	Part Number	Price
40 Taper Tools	6	HU-14780	\$68.00
50 Taper Tools	5	HU-14790	\$68.00

Call Us Or Visit Our Website For Our Complete Selection!

BT-40 TAPER ER COLLET CHUCKS

ER COLLET CHUCKS



C Proj.	B Nut Dia.	D Socket Depth	Nut Tight. Torque (ft.lbs.)	Brand	Part Number	Price Each	MAX RPM Balanced Up to	Collet Nut	Wrench	Code
ER 32 ER-32 Collet Series-.040 - 0.810 (1mm - 20.6mm)										
1.38	1.97	-	125	Spin Tru	B40-32ER138-KB	\$88.55	20,000G2.5	CN-ER32-K	WR-ER32-K	D
2.75	1.97	-	125	Spin Tru	B40-32ER275-KB	\$88.55	20,000G2.5	CN-ER32-K	WR-ER32-K	D
3.00	1.97	-	125	Kingston	B40-32ER300-K	\$87.95	15,000G6.3	CN-ER32-K	WR-ER32-K	F
3.13	1.97	2.83	125	Spin Tru	B40-32ER313-KB	\$88.55	20,000G2.5	CN-ER32-K	WR-ER32-K	D
	1.97	-	125	Lyndex	B40-32ER313-L	\$190.95	-	CN-ER32-L	WR-ER32-L	B
4.00	1.97	-	125	Kingston	B40-32ER400-K	\$87.95	15,000G6.3	CN-ER32-K	WR-ER32-K	F
5.00	1.97	3.93	125	Spin Tru	B40-32ER500-KB	\$90.82	20,000G2.5	CN-ER32-K	WR-ER32-K	D
	1.97	-	125	Lyndex	B40-32ER500-L	\$228.43	-	CN-ER32-L	WR-ER32-L	B
	1.97	-	125	Sowa	B40-32ER500-GB	\$141.93	20000	CN-ER32-G	WR-ER32-G	C
6.00	1.97	-	125	Kingston	B40-32ER600-K	\$98.84	15,000G6.3	CN-ER32-K	WR-ER32-K	F
	1.97	-	125	Spin Tru	B40-32ER600-KB	\$110.73	20,000G2.5	CN-ER32-K	WR-ER32-K	D
ER 40 ER-40 Collet Series-.040 - 0.810 (1mm - 20.6mm)										
3.00	2.48	-	140	Kingston	B40-40ER300-K	\$87.95	15,000G6.3	CN-ER40-K	WR-ER40-K	F
3.13	2.48	3.62	140	Spin Tru	B40-40ER313-KB	\$88.55	20,000G2.5	CN-ER40-K	WR-ER40-K	D
	2.48	-	140	Lyndex	B40-40ER313-L	\$204.25	-	CN-ER40-L	WR-ER40-L	B
4.12	2.36	4.00	162	Parlec	B40-40ER412-P	\$214.20	-	CN-ER40-P	WR-ER40-P	B
5.00	2.48	3.93	140	Spin Tru	B40-40ER500-KB	\$90.82	20,000G2.5	CN-ER40-K	WR-ER40-K	D
	2.48	-	140	Lyndex	B40-40ER500-L	\$241.30	-	CN-ER40-L	WR-ER40-L	B
	2.48	-	140	Sowa	B40-40ER500-GB	\$189.00	20000	CN-ER40-G	WR-ER40-G	C
6.00	2.48	-	140	Kingston	B40-40ER600-K	\$98.84	15,000G6.3	CN-ER40-K	WR-ER40-K	F
	2.48	-	140	Spin Tru	B40-40ER600-KB	\$110.73	20,000G2.5	CN-ER40-K	WR-ER40-K	D

ER COLLET SETS

Inch & Metric Sizes

AccuCollets™ Precision Collets DIN 6499-form B (ER) set new standards of accuracy. Precision Collets concentricity is 15 microns or 0.0005" TIR or better.

- Available in inch and metric sizes
- Additional combinations and ultra precision sets also available

PRICES REDUCED!

Accu-Collets

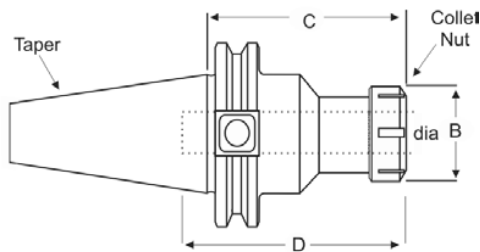


Type	Style	Description	No. Of Collets	Part Number	Set Price
ER-8	Metric	1mm to 5mm x .5mm	9	08-SET9	\$118.00
	Inch	1/16"-3/16" x 1/64	9	08-SET9-INCH	\$118.00
ER-11	Metric	1mm to 7mm x .5mm	13	11-SET13	\$105.00
	Inch	1/16"-1/4" x 1/32	7	11-SET7-INCH	\$52.50
	Inch	1/16" - 1/4" x 1/64	13	11-SET13-INCH	\$105.00
ER-16	Metric	1mm to 10mm x 1mm	10	16-SET10	\$78.75
	Inch	1/16" - 3/8" x 1/32"	11	16-SET11-INCH	\$87.50
ER-20	Metric	1mm to 13mm x 1mm	12	20-SET12	\$107.25
	Inch	1/16" - 1/2" x 1/32"	15	20-SET15-INCH	\$136.50
ER-25	Metric	2mm to 16mm x 1mm	15	25-SET15	\$136.50
	Inch	3/32" - 5/8" x 1/32"	18	25-SET18-INCH	\$165.75
ER-32	Metric	3mm to 20mm x 1mm	18	32-SET18	\$174.25
	Inch	1/8"-3/4" x 1/32"	21	32-SET21-INCH	\$205.00
ER-40	Metric	4mm to 26mm x 1mm	23	40-SET23	\$247.50
	Inch	1/8"-1" x 1/16"	15	40-SET15-INCH	\$157.50
	Inch	1/8" - 1" x 1/32"	29	40-SET29-INCH	\$315.00

Call Us Today For All Of Your Machine Tool Needs!

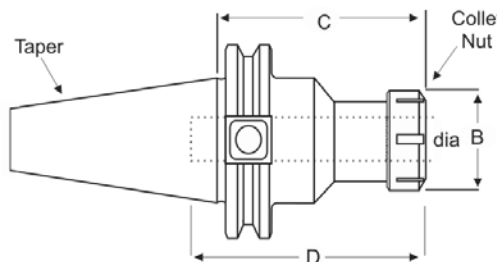
BT-40 TAPER DA & TG COLLET CHUCKS

DA SERIES COLLET CHUCKS



C Proj.	B Nut Dia.	D Socket Depth	Nut Tight. Torque (ft.lbs.)	Brand	Part Number	Price Each	MAX RPM Balanced Up to	Collet Nut	Wrench	Code
DA 100 DA100 Collet Series-.062 - 0.562 (1.587mm - 14.287mm)										
3.00	-	-	-	Kingston	B40-10DA300-K	\$87.95	15,000G6.3	CN-DA100-K	WR-DA100-K	F
6.00	1.06	-	-	Lyndex	B40-10DA600-L	\$210.90	-	CN-DA100-L	WR-DA100-L	B
DA 180 DA180 Collet Series-.031 - 0.750 (.800mm - 19mm)										
3.00	-	-	-	Kingston	B40-18DA300-K	\$87.95	15,000G6.3	CN-DA180-K	WR-DA180-K	F
	1.44	3.25	40	Parlec	B40-18DA300-P	\$172.35	-	CN-DA180L-P	WR-DA180L-P	B
4.00	1.44	-	-	Lyndex	B40-18DA400-L	\$178.60	-	CN-DA180-L	WR-DA180-L	B
DA 200 DA200 Collet Series-.031 - 0.375 (.800mm - 9.5mm)										
2.75	1.10	2.25	30	Parlec	B40-20DA275-P	\$172.35	-	CN-DA200-P	WR-DA200-P	B
3.00	-	-	-	Kingston	B40-20DA300-K	\$87.95	15,000G6.3	CN-DA200-K	WR-DA200-K	F
	0.86	-	-	Lyndex	B40-20DA300-L	\$178.60	-	CN-DA200-L	WR-DA200-L	B
DA 300 DA300 Collet Series-.031 - 0.250 (.800mm - 6.4mm)										
3.00	-	-	-	Kingston	B40-30DA300-K	\$87.95	15,000G6.3	CN-DA300-K	WR-DA300-K	F
	0.62	2.75	25	Parlec	B40-30DA300-P	\$172.35	-	CN-DA300-P	WR-DA300-P	B
	0.55	-	-	Lyndex	B40-30DA300-L	\$178.60	-	CN-DA300-L	WR-DA300-L	B

TG SERIES COLLET CHUCKS



C Proj.	B Nut Dia.	D Socket Depth	Nut Tight. Torque (ft.lbs.)	Brand	Part Number	Price Each	MAX RPM Balanced Up to	Collet Nut	Wrench	Code
TG 075 TG-75 Collet Series-3/64 to 3/4 (1.2mm - 19.1mm)										
2.75	1.97	-	60	Kingston	B40-75TG275-K	\$82.45	15,000G6.3	CN-TG075-K	WR-TG075-K	F
	1.97	-	60	Spin Tru	B40-75TG275-KB	\$87.29	20,000G2.5	CN-TG075-K	WR-TG075-K	D
3.00	1.89	-	60	Lyndex	B40-75TG300-L	\$175.51	-	CN-TG075-L	WR-TG075-L	B
6.00	1.97	-	60	Kingston	B40-75TG600-K	\$84.65	15,000G6.3	CN-TG075-K	WR-TG075-K	F
	1.97	-	60	Spin Tru	B40-75TG600-KB	\$96.40	20,000G2.5	CN-TG075-K	WR-TG075-K	D
TG 100 TG-100 Collet Series-5/64 to 1" (2mm - 25.4mm)										
3.00	2.44	-	60	Kingston	B40-10TG300-K	\$82.45	15,000G6.3	CN-TG100-K	WR-TG100-K	F
	2.44	-	60	Spin Tru	B40-10TG300-KB	\$87.29	20,000G2.5	CN-TG100-K	WR-TG100-K	D
3.50	2.50	-	60	Lyndex	B40-10TG350-L	\$175.51	-	CN-TG100-L	WR-TG100-L	B
4.00	2.44	-	60	Kingston	B40-10TG400-K	\$84.65	15,000G6.3	CN-TG100-K	WR-TG100-K	F
	2.44	-	60	Spin Tru	B40-10TG400-KB	\$89.62	20,000G2.5	CN-TG100-K	WR-TG100-K	D
6.00	2.44	-	60	Kingston	B40-10TG600-K	\$84.65	15,000G6.3	CN-TG100-K	WR-TG100-K	F
	2.44	-	60	Spin Tru	B40-10TG600-KB	\$96.40	20,000G2.5	CN-TG100-K	WR-TG100-K	D
TG 150 TG-150 Collet Series-23/64 to 1-1/2" (9.1mm - 38.1mm)										
4.88	3.50	-	70	Kingston	B40-15TG488-K	\$84.65	15,000G6.3	CN-TG150-K	WR-TG100-K	F
	3.50	-	70	Spin Tru	B40-15TG488-KB	\$89.62	20,000G2.5	CN-TG150-K	WR-TG100-K	D
5.50	3.50	-	70	Lyndex	B40-15TG550-L	\$255.55	-	CN-TG150-L	WR-TG150-L	B

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

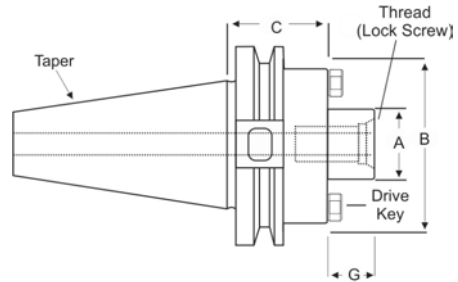
CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

BT-40 TAPER SHELL MILL HOLDERS

SHELL MILL HOLDERS



A Pilot Dia	B Dia	C Proj	G	Brand	Part Number	Price	Drive Key	Screw Thread	Lock Screw	Arbor Screw	Code
1/2" 0.500	1.75	1.38	-	Kingston	B40-50SM138-K	\$65.95	-	-	-	-	F
	1.75	1.38	-	Spin Tru	B40-50SM138-KB	\$65.95	-	-	-	-	D
	1.38	1.75	0.57	Lyndex	B40-50SM175-L	\$163.88	1/4"	1/4"-28	-	A1/4-28	B
	1.75	3.50	-	Kingston	B40-50SM350-K	\$65.95	-	-	-	-	F
	1.75	3.50	-	Spin Tru	B40-50SM350-KB	\$65.95	-	-	-	-	D
3/4" 0.750	2.00	1.75	0.67	Lyndex	B40-75SM175-L	\$152.95	5/16"	3/8"-24	-	A3/8-24	B
	-	1.75	-	Kingston	B40-75SM175-K	\$65.95	-	-	-	-	F
	-	1.75	-	Spin Tru	B40-75SM175-KB	\$65.95	-	-	-	-	D
	1.75	3.50	-	Kingston	B40-75SM350-K	\$65.95	-	-	-	-	F
	1.75	3.50	-	Spin Tru	B40-75SM350-KB	\$65.95	-	-	-	-	D
	1.75	6.00	-	Kingston	B40-75SM600-K	\$71.45	-	-	-	-	F
	1.75	6.00	-	Spin Tru	B40-75SM600-KB	\$71.45	-	-	-	-	D
1" 1.000	2.38	1.75	0.67	Lyndex	B40-10SM175-L	\$152.95	3/8"	1/2"-20	-	A1/2-20	B
	2.25	2.00	0.68	Parlec	B40-10SM200-P	\$144.00	10KY	1/2"-20	10LS	028-188	B
	-	2.25	-	Kingston	B40-10SM225-K	\$65.95	-	-	-	-	F
	-	2.25	-	Spin Tru	B40-10SM225-KB	\$65.95	-	-	-	-	D
	2.19	4.00	-	Kingston	B40-10SM400-K	\$65.95	-	-	-	-	F
	2.19	4.00	-	Spin Tru	B40-10SM400-KB	\$65.95	-	-	-	-	D
	2.19	6.00	-	Kingston	B40-10SM600-K	\$71.45	-	-	-	-	F
2.19	6.00	-	Spin Tru	B40-10SM600-KB	\$71.45	-	-	-	-	D	
1-1/4" 1.25	2.88	2.00	0.67	Lyndex	B40-12SM200-L	\$165.59	1/2"	5/8"-18	-	A5/8-18	B
	2.88	2.12	-	Kingston	B40-12SM212-K	\$65.95	-	-	-	-	F
	2.88	2.12	-	Spin Tru	B40-12SM212-KB	\$65.95	-	-	-	-	D
	2.75	2.25	0.68	Parlec	B40-12SM225-P	\$172.35	12KY	5/8"-18	12LS	028-193	B
	2.88	2.50	-	Kingston	B40-12SM250-K	\$65.95	-	-	-	-	F
	2.88	2.50	-	Spin Tru	B40-12SM250-KB	\$65.95	-	-	-	-	D
	2.88	4.00	-	Kingston	B40-12SM400-K	\$65.95	-	-	-	-	F
2.88	4.00	-	Spin Tru	B40-12SM400-KB	\$65.95	-	-	-	-	D	
1-1/2" 1.500	3.80	2.00	0.92	Lyndex	B40-15SM200-L	\$187.15	5/8"	3/4"-16	-	A3/4-16	B
	3.75	2.25	0.94	Parlec	B40-15SM225-P	\$184.95	15KY	3/4"-16	15LS	15LS	B
	3.38	2.50	-	Kingston	B40-15SM250-K	\$65.95	-	-	-	-	F
	3.38	2.50	-	Spin Tru	B40-15SM250-KB	\$65.95	-	-	-	-	D
	3.38	4.00	-	Kingston	B40-15SM400-K	\$65.95	-	-	-	-	F
	3.38	4.00	-	Spin Tru	B40-15SM400-KB	\$65.95	-	-	-	-	D

90° MILLING CUTTERS

For Use With APKT/APGT1604 Series Inserts



CALL FOR OUR HOT MILLING SPECIALS!

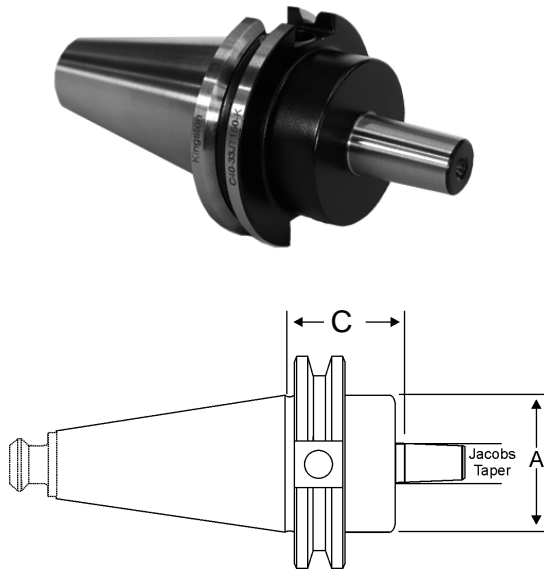


Dia. D	Arbor Hole d	Key Width a	Flute Length H	No. of Flutes	Part Number	Price Each
2.00	0.750	0.3125	1.75	4	M-SAP16N-2075-4	\$195.00
2.00	0.750	0.3125	1.75	5	M-SAP16N-2075-5	\$195.00
2.50	1.000	0.3750	2.00	5	M-SAP16N-2510-5	\$199.00
3.00	1.000	0.3750	2.00	6	M-SAP16N-3010-6	\$310.00
3.00	1.000	0.3750	2.00	7	M-SAP16N-3010-7	\$310.00

Call Us Today For All Of Your Machine Tool Needs!

BT-40 TAPER TOOLHOLDERS

JACOBS TAPER HOLDERS



Jacobs Taper	C Proj	A Dia	Brand	Part Number	Price	Code
JT 1	2.16	0.385	Kingston	B40-01JT216-K	\$62.65	F
	2.16	0.385	Spin Tru	B40-01JT216-KB	\$62.65	D
JT 2	1.18	-	Kingston	B40-02JT118-K	\$62.65	F
	1.18	-	Spin Tru	B40-02JT118-KB	\$62.65	D
	1.18	0.559	Parlec	B40-02JT118-P	\$114.75	B
	2.44	0.560	Kingston	B40-02JT244-K	\$62.65	F
	2.44	0.560	Spin Tru	B40-02JT244-KB	\$62.65	D
JT 3	1.18	-	Kingston	B40-03JT118-K	\$62.65	F
	1.18	-	Spin Tru	B40-03JT118-KB	\$62.65	D
	1.18	0.811	Parlec	B40-03JT118-P	\$118.80	B
	2.81	0.812	Kingston	B40-03JT281-K	\$62.65	F
	2.81	0.812	Spin Tru	B40-03JT281-KB	\$62.65	D
JT 4	1.18	-	Kingston	B40-04JT118-K	\$62.65	F
	1.18	-	Spin Tru	B40-04JT118-KB	\$62.65	D
	3.25	1.125	Kingston	B40-04JT325-K	\$62.65	F
	3.25	1.125	Spin Tru	B40-04JT325-KB	\$62.65	D
JT 6	1.18	-	Kingston	B40-06JT118-K	\$62.65	F
	1.18	-	Spin Tru	B40-06JT118-KB	\$62.65	D
	1.18	0.676	Parlec	B40-06JT118-P	\$114.75	B
	3.25	0.677	Kingston	B40-06JT325-K	\$62.65	F
	3.25	0.677	Spin Tru	B40-06JT325-KB	\$62.65	D
JT 33	1.18	-	Kingston	B40-33JT118-K	\$62.65	F
	1.18	-	Spin Tru	B40-33JT118-KB	\$62.65	D
	1.18	0.624	Parlec	B40-33JT118-P	\$114.75	B
	2.56	0.625	Kingston	B40-33JT256-K	\$62.65	F
	2.56	0.625	Spin Tru	B40-33JT256-KB	\$62.65	D

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

KEYLESS DRILL CHUCKS

With Integral Shank

- Integral shank precision ball-bearing keyless drill chuck offers greater accuracy and rigidity
- Made of alloy forged steel
- Self-tightening keyless operation
- Maximum TIR: 0.0015"
- Includes wrench

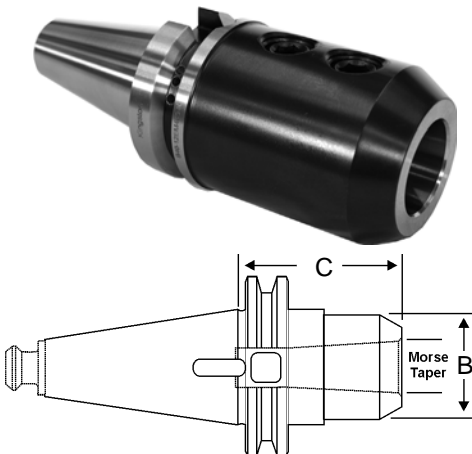


Taper	Capacity	Proj.	BISON Part Number	Price Each	TMX Part Number	Price Each
BT40	1/32"-1/2"	3.74	B40-50DC1-B	\$225.90	TMX-8230-4033	\$217.12
	1/8"-5/8"	3.94	B40-62DC1-B	\$243.90	TMX-8230-4035	\$233.89
CAT40	1/32"-1/2"	4.13	C40-50DC1-B	\$229.50	TMX-8130-4033	\$245.99
	1/8"-5/8"	5.12	C40-62DC1-B	\$246.60	TMX-8130-4035	\$263.93
CAT50	1/32"-1/2"	4.13	C50-50DC1-B	\$273.60	TMX-8130-5063	\$292.76
	1/8"-5/8"	4.33	C50-62DC1-B	\$290.70	TMX-8130-5065	\$310.79

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

MORSE TAPER HOLDERS



Morse Taper	C Proj	B Face Dia	Brand	Part Number	Price	Code
MT 1	1.75	1.00	Kingston	B40-01MT175-K	\$62.65	F
	1.75	1.00	Spin Tru	B40-01MT175-KB	\$62.65	D
MT 2	1.75	1.75	Parlec	B40-02MT175-P	\$121.95	B
	2.44	1.25	Kingston	B40-02MT244-K	\$62.65	F
	2.44	1.25	Spin Tru	B40-02MT244-KB	\$62.65	D
	2.50	1.75	Parlec	B40-03MT250-P	\$118.80	B
MT 3	3.00	1.75	Kingston	B40-03MT300-K	\$62.65	F
	3.00	1.75	Spin Tru	B40-03MT300-KB	\$62.65	D
MT 4	3.88	2	Kingston	B40-04MT388-K	\$62.65	F

PRECISION TOOLS
DEBURRING

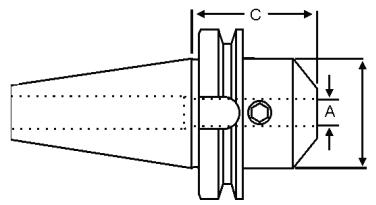
COOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

BT-50 TAPER TOOLHOLDERS

BT 50 TAPER ENDMILL HOLDERS

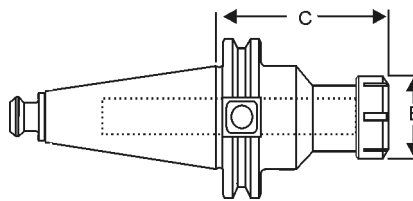
- Balanced to 15,000 RPM @ g6.3
- High precision bore (H5)
- Taper ground to AT3 for maximum spindle contact
- Draw bar threads: M24 x 3



Dia A	Proj C	OD B	Part Number	Price Each	Set Screw
1/4"	3.00	.780	B50-25EM300-T	\$213.30	1/4-28 x 5/16
3/8"	2.75	1.00	B50-37EM275-T	\$213.30	3/8-24 x 5/16
1/2"	3.00	1.25	B50-50EM300-T	\$213.30	7/16-20 x 3/8
5/8"	3.00	1.50	B50-62EM300-T	\$213.30	1/2-20 x 7/16
3/4"	3.00	1.75	B50-75EM300-T	\$213.30	5/8-18 x 1/2
1"	4.50	2.00	B50-10EM450-T	\$213.30	5/8-18 x 1/2
1"	6.00	2.00	B50-10EM600-T	\$324.90	5/8-18 x 1/2
1-1/4"	4.50	2.50	B50-12EM450-T	\$213.30	3/4-16 x 5/8

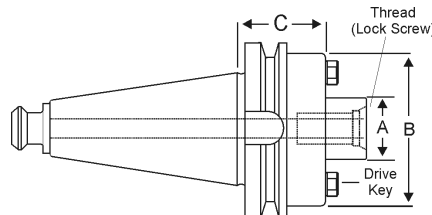
BT 50 TAPER ER COLLET CHUCKS

- T.I.R. 0.0001" measured from taper to collet pocket
- Certified for accuracy and balance. Each holder comes complete with lab report
- Includes PowerCOAT nut for 75% more clamping power
- ER 16 holders have hex nuts
- Balanced to 25,000 RPM @ G2.5
- Draw bar threads: M24 x 3



Collet Series	Proj C	Nut OD B	Max. Shank	Part Number	Price Each	Set Screw	Price Each	Collet Wrench	Price Each
ER 16	2.76"	1.08	.406	B50-16ER276-T	\$176.40	TECH-16083	\$3.00	TECH-04609	\$14.00
ER 16	3.54"	1.08	.406	B50-16ER354-T	\$176.40	TECH-16083	\$3.00	TECH-04609	\$14.00
ER 16	4.13"	1.08	.406	B50-16ER413-T	\$176.40	TECH-16083	\$3.00	TECH-04609	\$14.00
ER 16	5.31"	1.08	.406	B50-16ER531-T	\$176.40	TECH-16083	\$3.00	TECH-04609	\$14.00
ER 16	5.91"	1.08	.406	B50-16ER591-T	\$176.40	TECH-16083	\$3.00	TECH-04609	\$14.00
ER 20	3.54"	1.34	.512	B50-20ER354-T	\$176.40	TECH-16087	\$5.00	TECH-04610	\$21.00
ER 20	4.13"	1.34	.512	B50-20ER413-T	\$176.40	TECH-16087	\$5.00	TECH-04610	\$21.00
ER 20	5.31"	1.34	.512	B50-20ER531-T	\$176.40	TECH-16087	\$5.00	TECH-04610	\$21.00
ER 20	6.50"	1.34	.512	B50-20ER650-T	\$217.80	TECH-16087	\$5.00	TECH-04610	\$21.00
ER 25	4.13"	1.65	.630	B50-25ER413-T	\$176.40	TECH-16089	\$5.00	TECH-04615	\$16.00
ER 25	5.31"	1.65	.630	B50-25ER531-T	\$176.40	TECH-16089	\$5.00	TECH-04615	\$16.00
ER 25	6.50"	1.65	.630	B50-25ER650-T	\$217.80	TECH-16089	\$5.00	TECH-04615	\$16.00
ER 32	3.15"	1.97	.788	B50-32ER315-T	\$176.40	TECH-16089	\$5.00	TECH-04616	\$21.00
ER 32	4.72"	1.97	.788	B50-32ER472-T	\$176.40	TECH-16089	\$5.00	TECH-04616	\$21.00
ER 32	5.91"	1.97	.788	B50-32ER591-T	\$217.80	TECH-16089	\$5.00	TECH-04616	\$21.00
ER 40	3.15"	2.48	1.023	B50-40ER315-T	\$176.40	TECH-16091	\$7.50	TECH-04617	\$25.00
ER 40	5.31"	2.48	1.023	B50-40ER531-T	\$176.40	TECH-16091	\$7.50	TECH-04617	\$25.00

BT 50 SHELL MILL HOLDERS



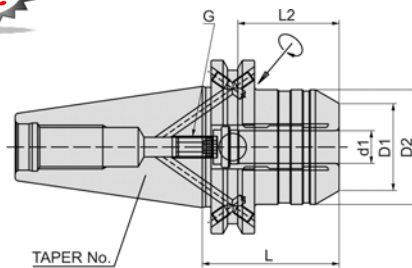
- Compatible with all face mills
- H6 arbor tolerance for less chatter and better tool life
- Taper ground to AT3 tolerance
- Draw bar threads: M24 x 3

Pilot Dia d1	Proj L	l2	d2	d3	Drive Key k2	Part Number	Price	Standard Arbor Screw	Coolant Arbor Screw
1"	1.77	.79	1.19	1.97	3/8	B50-10SM177-T	\$242.10	TECH-WF1	TECH-WFC1-1
1"	3.00	.79	1.19	1.97	3/8	B50-10SM300-T	\$258.30	TECH-WF1	TECH-WFC1-1
1-1/4"	1.77	.87	1.50	2.34	1/2	B50-12SM177-T	\$242.10	TECH-WF125	TECH-WFC1-125
1-1/2"	1.77	.94	1.88	3.80	5/8	B50-15SM177-T	\$204.30	TECH-WF15	TECH-WFC1-15
2"	2.95	.94	3.13	4.88	3/4	B50-20SM295-T	\$292.50	TECH-WF2	TECH-WFC1-2

Call Us Today For All Of Your Machine Tool Needs!

HYDRAULIC CHUCKS

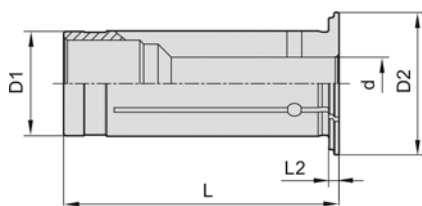
- Balanced to 25,000 RPM @ g2.5
- Delivers uniform pressure allowing it to compress equally around the periphery of the cutting tool
- Concentricity of the hydraulic toolholder delivers runout accuracy of 0.00012 inch or less
- Cutter tool life increases because the chip load on each cutting flute is more uniform
- Rigidity plays an important role in predictable tool life as well as runout
- Thru-spindle coolant AD/B style
- Rapid tool change



Taper	ID d1	D1	D2	Proj L	L2	G	Part Number	Price Each
CAT 40	0.500	1.260	1.654	2.520	1.457	M8x1.0mm	C40-50HC252-Y	\$199.00
	0.625	1.362	1.752	2.520	1.654	M10x1.0mm	C40-62HC252-Y	\$199.00
	0.750	1.512	1.752	2.520	1.654	M10x1.0mm	C40-75HC252-Y	\$199.00
	1.000	2.244	2.598	3.500	1.890	M16x1.0mm	C40-10HC350-Y	\$199.00
CAT 50	0.500	1.879	2.752	3.189	1.457	M8x1.0mm	C50-50HC318-Y	\$299.00
	0.625	1.811	2.752	3.189	1.654	M10x1.0mm	C50-62HC318-Y	\$299.00
	0.750	2.185	2.752	3.189	2.165	M10x1.0mm	C50-75HC318-Y	\$299.00
	1.000	2.185	2.752	3.189	2.165	M16x1.0mm	C50-10HC318-Y	\$299.00
	1.250	2.185	2.752	3.189	2.165	M16x1.0mm	C50-12HC318-Y	\$299.00

HYDRAULIC CHUCK COLLETS

- Reduction sleeve adapts tool shank sizes that cannot be directly clamped in holder
- Increases flexibility of toolholder
- Assemble cutting tool with collet first, then insert collet into hydraulic chuck



TYPE	ID d	OD D1	D2	OAL L	L2	Part Number	Price Each
HK 1/2	1/8	0.500	0.748	1.850	0.079	YG-HC612108	\$124.01
	3/16	0.500	0.748	1.850	0.079	YG-HC612316	\$124.01
	1/4	0.500	0.748	1.850	0.079	YG-HC612104	\$124.01
	5/16	0.500	0.748	1.850	0.079	YG-HC612516	\$124.01
HK 3/4	1/8	0.750	0.945	1.988	0.079	YG-HC625108	\$124.01
	3/16	0.750	0.945	1.988	0.079	YG-HC625316	\$124.01
	1/4	0.750	0.945	1.988	0.079	YG-HC625104	\$124.01
	5/16	0.750	0.945	1.988	0.079	YG-HC625516	\$124.01
	3/8	0.750	0.945	1.988	0.079	YG-HC625308	\$124.01
	1/2	0.750	0.945	1.988	0.079	YG-HC625102	\$124.01
	5/8	0.750	0.945	1.988	0.079	YG-HC625508	\$124.01
	1/8	1.250	1.417	2.382	0.118	YG-HC632108	\$124.01
HK 1-1/4	3/16	1.250	1.417	2.382	0.118	YG-HC632316	\$124.01
	1/4	1.250	1.417	2.382	0.118	YG-HC632104	\$124.01
	5/16	1.250	1.417	2.382	0.118	YG-HC632516	\$124.01
	3/8	1.250	1.417	2.382	0.118	YG-HC632308	\$124.01
	1/2	1.250	1.417	2.382	0.118	YG-HC632102	\$124.01
	5/8	1.250	1.417	2.382	0.118	YG-HC632508	\$124.01
	3/4	1.250	1.417	2.382	0.118	YG-HC632304	\$124.01
	1	1.250	1.417	2.382	0.118	YG-HC632100	\$124.01

PRO-TOUCH OFF GAGE

Accurately Establish Tool Length Offsets On CNC Milling Machines!

Set tools accurately with the Pro Touch Off Gage. Decrease set up time and eliminate tool path mismatch. Allows you to standardize the way tool offsets are measured in your shop, ensuring every job is setup the same way and runs without issue. To use, simply lower the tool down onto the contact face until the indicator reads zero. Have confidence that the tool tip is exactly 4 inches from the surface the gage is sitting on



- Large 1" dia stainless steel contact face, lightly spring loaded to protect against overrun
- Offset height 4.000" (101.6mm)
- Large 2.2" easy to read indicator face
- Gage graduations 0.001"
- Gage repeatability 0.0002"
- Body made from red anodized 6061-T6 aluminum
- Easy calibration check using 1-2-3 blocks
- Padded case and manual included

Pro Touch Off Gage

Part # EDGE-52000

\$99.99 ea

Call Us Or Visit Our Website For Our Complete Selection!

HSK TAPER TOOLHOLDERS

HSK TAPER ENDMILL HOLDERS

- Balanced to 15,000 RPM at g6.3
- Each holder includes lab report
- H5 ID bore tolerance
- Taper ground to AT3 for maximum spindle contact



Taper	Dia d1	d2	Proj L	l1	Part Number	Price Each
HSK 63A	1/2"	1.38	3.00	1.97	H63A-50EM300-T	\$255.00
	5/8"	1.63	3.75	2.09	H63A-62EM375-T	\$255.00
	3/4"	1.75	3.75	2.22	H63A-75EM375-T	\$255.00
	1"	2.00	3.75	2.46	H63A-10EM375-T	\$255.00
	1-1/4"	2.50	4.25	2.51	H63A-12EM425-T	\$255.00
HSK 100A	1/2"	1.38	3.25	1.97	H100A-50EM325-T	\$310.25
	5/8"	1.63	3.75	2.09	H100A-62EM375-T	\$310.25
	3/4"	1.75	3.75	2.22	H100A-75EM375-T	\$310.25
	1"	2.00	4.25	2.46	H100A-10EM425-T	\$310.25
	1-1/4"	2.50	4.25	2.51	H100A-12EM425-T	\$310.25
	1-1/2"	2.75	4.50	2.93	H100A-15EM450-T	\$417.35
	2"	3.75	5.50	3.53	H100A-20EM550-T	\$510.00

HSK TAPER COLLET CHUCKS

- Balanced to 25,000 RPM at g2.5
- Each holder includes lab report
- T.I.R. 0.0001" measured from taper to collet pocket
- PowerCOAT nut included for 75% more clamping power



Taper	Collet Series	l1	l2	D	Nut Type	Part Number	Price Each	Wrench
HSK63A	ER 16	3.15	2.13	1.10	Hex	H63A-16ER315-T	\$240.55	TECH-4609
	ER 16	3.94	2.91	1.10	Hex	H63A-16ER394-T	\$219.30	TECH-4609
	ER 16	6.30	5.28	1.10	Hex	H63A-16ER630-T	\$240.55	TECH-4609
	ER 20	3.15	2.13	1.34	Hex	H63A-20ER315-T	\$212.50	TECH-4610
	ER 20	6.30	5.28	1.34	Hex	H63A-20ER630-T	\$240.55	TECH-4610
	ER 32	3.94	2.91	1.97	Spanner	H63A-32ER394-T	\$240.55	TECH-4616
	ER 40	3.15	2.13	2.48	Spanner	H63A-40ER315-T	\$284.75	TECH-4617
HSK100A	ER 40	4.72	3.70	2.48	Spanner	H63A-40ER472-T	\$341.70	TECH-4617
	ER 16	3.94	2.91	1.10	Hex	H100A-16ER394-T	\$354.45	TECH-4609
	ER 16	6.30	5.28	1.10	Hex	H100A-16ER630-T	\$419.90	TECH-4609
	ER 32	3.94	2.80	1.97	Spanner	H100A-32ER394-T	\$354.45	TECH-4616
	ER 32	6.30	5.28	1.97	Spanner	H100A-32ER630-T	\$380.80	TECH-4616
	ER 40	4.72	3.58	2.48	Spanner	H100A-40ER472-T	\$380.80	TECH-4617

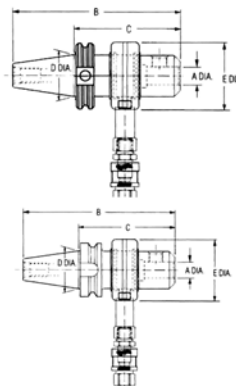
COOLANT INDUCED TOOLHOLDERS

For mounting drills on machine tools & machining centers where there is no provision for feeding coolant through the machine spindle.



FEATURES:

- Add performance and life to cutting tools
- Reduced wear means higher consistency and tighter tolerances
- All holders come complete with coolant connection
- 750 SFM/200 PSI on "O" rings
- Coolant induced collars and replacement parts available



Includes Toolholder and Coolant Collar

CAT V-Flange Shank

Shank	A Hole Size	B Dim	C Proj.	D	E Dia.	Part Number	Price Each
CAT 40	3/4	7.13	4.44	1.75	2.83	C40-75CIH444-C	\$220.41
	1	8.68	6.00	1.75	3.59	C40-10CIH600-C	\$255.60
	1-1/4	8.38	5.69	1.75	3.59	C40-12CIH569-C	\$240.57
CAT 50	3/4	8.56	4.56	2.75	2.83	C50-75CIH456-C	\$325.89
	1	10.00	6.00	2.75	3.59	C50-10CIH600-C	\$384.40
	1-1/4	9.69	5.69	2.75	3.59	C50-12CIH569-C	\$365.13
	1-1/2	9.75	5.75	2.75	3.96	C50-15CIH575-C	\$391.05

BT Shank

Shank	A Hole Size	B Dim	C Proj.	D	E Dia.	Part Number	Price Each
BT30	3/4	6.74	4.56	1.25	2.83	B30-75CIH456-C	\$230.04
BT 40	3/4	7.01	4.44	1.75	2.83	B40-75CIH444-C	\$235.71
	1-1/4	8.26	5.69	1.75	3.59	B40-12CIH569-C	\$250.11
BT 50	3/4	8.57	4.56	2.75	2.83	B50-75CIH456-C	\$330.66
	1-1/4	9.70	5.69	2.75	3.59	B50-12CIH569-C	\$350.73
	1-1/2	9.76	5.75	2.75	3.96	B50-15CIH575-C	\$410.22

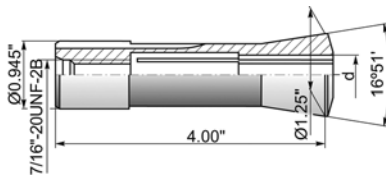
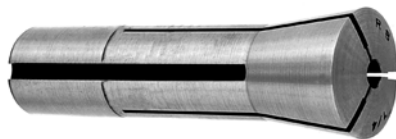
Call Us Today For All Of Your Machine Tool Needs!

R8 COLLETS & ACCESSORIES

C

R8 PRECISION COLLETS

Fractional & Metric- 0.0004" TIR



B

Fractional Sizes

Size	Part Number	Size	Part Number	Size	Part Number
\$14.76 ea		\$13.29 ea		\$13.29 ea	
1/16	BI-8169-005	11/32	BI-8169-034	11/16	BI-8169-068
\$14.76ea		3/8	BI-8169-037	23/32	BI-8169-071
3/32	BI-8169-010	13/32	BI-8169-040	3/4	BI-8169-075
\$13.29 ea		7/16	BI-8169-043	\$24.00 ea	
1/8	BI-8169-012	15/32	BI-8169-046	25/32	BI-8169-078
5/32	BI-8169-015	1/2	BI-8169-050	13/16	BI-8169-081
3/16	BI-8169-018	17/32	BI-8169-053	27/32	BI-8169-084
7/32	BI-8169-021	9/16	BI-8169-056	7/8	BI-8169-087
1/4	BI-8169-025	19/32	BI-8169-059	1	BI-8169-099
9/32	BI-8169-028	5/8	BI-8169-062		
5/16	BI-8169-031	21/32	BI-8169-065		

Metric Sizes

Size	Part Number	Size	Part Number
\$13.29 ea		\$13.29 ea	
3mm	BI-8169-603	12mm	BI-8169-612
4mm	BI-8169-604	13mm	BI-8169-613
5mm	BI-8169-605	14mm	BI-8169-614
6mm	BI-8169-606	15mm	BI-8169-615
7mm	BI-8169-607	16mm	BI-8169-616
8mm	BI-8169-608	17mm	BI-8169-617
9mm	BI-8169-609	18mm	BI-8169-618
10mm	BI-8169-610	19mm	BI-8169-619
11mm	BI-8169-611	20mm	BI-8169-620

R8 PRECISION COLLET SETS

Description	Part Number	Set Price
13 Piece Set- 1/8 to 7/8 x 16ths	BI-7169-113	\$378.00
27 Piece Set- 1/16 to 7/8 x 32nds	BI-7169-127	\$723.00
19 Piece Metric Set- 2mm to 20mm x 1mm	BI-7169-669	\$295.31



BI-7169-113



BI-7169-127

R8 COLLETS

Round Standard



BEST VALUE



LYNDEX

Size	\$7.99 ea	\$21.41 ea	Part Number	Price
1/16	R8-RI04-BV	R8-RI04-CR	R8-RI04-LY	\$22.19
3/32	R8-RI06-BV	R8-RI06-CR	R8-RI06-LY	\$22.19
1/8	R8-RI08-BV	R8-RI08-CR	R8-RI08-LY	\$22.19
5/32	R8-RI10-BV	R8-RI10-CR	R8-RI10-LY	\$18.62
3/16	R8-RI12-BV	R8-RI12-CR	R8-RI12-LY	\$18.62
7/32	R8-RI14-BV	R8-RI14-CR	R8-RI14-LY	\$18.62
1/4	R8-RI16-BV	R8-RI16-CR	R8-RI16-LY	\$18.62
9/32	R8-RI18-BV	R8-RI18-CR	R8-RI18-LY	\$18.62
5/16	R8-RI20-BV	R8-RI20-CR	R8-RI20-LY	\$18.62
11/32	R8-RI22-BV	R8-RI22-CR	R8-RI22-LY	\$18.62
3/8	R8-RI24-BV	R8-RI24-CR	R8-RI24-LY	\$18.62
13/32	R8-RI26-BV	R8-RI26-CR	R8-RI26-LY	\$18.62
7/16	R8-RI28-BV	R8-RI28-CR	R8-RI28-LY	\$18.62
15/32	R8-RI30-BV	R8-RI30-CR	R8-RI30-LY	\$18.62
1/2	R8-RI32-BV	R8-RI32-CR	R8-RI32-LY	\$18.62
17/32	R8-RI34-BV	R8-RI34-CR	R8-RI34-LY	\$18.62
9/16	R8-RI36-BV	R8-RI36-CR	R8-RI36-LY	\$18.62
19/32	R8-RI38-BV	R8-RI38-CR	R8-RI38-LY	\$18.62
5/8	R8-RI40-BV	R8-RI40-CR	R8-RI40-LY	\$18.62
21/32	R8-RI42-BV	R8-RI42-CR	R8-RI42-LY	\$18.62
11/16	R8-RI44-BV	R8-RI44-CR	R8-RI44-LY	\$18.62
23/32	R8-RI46-BV	R8-RI46-CR	R8-RI46-LY	\$18.62
3/4	R8-RI48-BV	R8-RI48-CR	R8-RI48-LY	\$18.62
25/32	R8-RI50-BV	R8-RI50-CR	R8-RI50-LY	\$18.62
13/16	R8-RI52-BV	R8-RI52-CR	R8-RI52-LY	\$18.62
27/32	R8-RI54-BV	R8-RI54-CR	R8-RI54-LY	\$18.62
55/64	R8-RI55-BV	-	R8-RI55-LY	\$18.62
7/8	R8-RI56-BV	-	R8-RI56-LY	\$18.62
1"	R8-RI64-BV	\$16.99	R8-RI57-LY	\$18.62

R8 COLLETS

Round Metric



LYNDEX

Size	\$20.58 ea	\$25.90 ea
2mm	R8-RM02.0-CR	-
3mm	R8-RM03.0-CR	R8-RM03.0-LY
4mm	R8-RM04.0-CR	R8-RM04.0-LY
5mm	R8-RM05.0-CR	R8-RM05.0-LY
6mm	R8-RM06.0-CR	R8-RM06.0-LY
7mm	R8-RM07.0-CR	R8-RM07.0-LY
8mm	R8-RM08.0-CR	R8-RM08.0-LY
9mm	R8-RM09.0-CR	R8-RM09.0-LY
10mm	R8-RM10.0-CR	R8-RM10.0-LY
11mm	R8-RM11.0-CR	R8-RM11.0-LY
12mm	R8-RM12.0-CR	R8-RM12.0-LY
13mm	R8-RM13.0-CR	R8-RM13.0-LY
14mm	R8-RM14.0-CR	R8-RM14.0-LY
15mm	R8-RM15.0-CR	R8-RM15.0-LY
16mm	R8-RM16.0-CR	R8-RM16.0-LY
17mm	R8-RM17.0-CR	R8-RM17.0-LY
18mm	R8-RM18.0-CR	R8-RM18.0-LY
19mm	R8-RM19.0-CR	R8-RM19.0-LY
20mm	R8-RM20.0-CR	R8-RM20.0-LY

R8 COLLET SETS

BEST VALUE



Range	Part Number	Set Price
1/8" to 3/4" x 8ths	R8-SET 6	\$37.00
1/8" to 3/4" x 16ths	R8-SET11	\$65.00
1/8" to 7/8" x 16ths	R8-SET 13	\$118.00
1/16 to 3/4" x 32nds	R8-SET23	\$135.00



CRAWFORD COLLETS
Manufactured in England

Range	Inc.	Part Number	Set Price
1/8" to 3/4"	1/8"	R8-SET-RI-06-CR	\$111.72
	1/16"	R8-SET-RI-11-CR	\$204.82
	1/32"	R8-SET-RI-21-CR	\$391.02



Set Qty	Set Configuration	Inc.	Part Number	Set Price
6	1/8" to 3/4"	1/8"	810-006-LY	\$111.72
8	1/8" to 1"	1/8"	810-008-LY	\$171.92
11	1/8" to 3/4"	1/16"	810-011-LY	\$204.82
12	1/8" to 3/4" + 7/8"	1/16"	810-012-LY	\$223.44
13	1/8" to 7/8"	1/16"	810-013-LY	\$242.06
14	1/16" to 7/8"	1/16"	810-014-LY	\$237.30
21	1/8" to 3/4"	1/32"	810-021-LY	\$367.50
23	1/16" to 3/4"	1/32"	810-023-LY	\$408.10
25	1/8" to 7/8"	1/32"	810-025-LY	\$427.00

R8 EMERGENCY COLLETS

Steel



Pilot Hole	Part Number	Price Each
1/16"	LY-860-001S	\$27.02



Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

219

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

R8 TOOLHOLDERS

R8 END MILL HOLDERS

7/16"-20 Drawbar Thread • Hardened and Ground

- Crafted from alloy forged steel for a long, durable service life
- Hardened and ground to ensure maximum accuracy
- For Bridgeport™ type mills
- Drawbar end thread: 7/16"-20
- Sets also available



Dia D	ENDURANCE [C]		BISON [B]		LYNDEX [B]	
	Part Number	Price Each	Part Number	Price Each	Part Number	Price Each
3/16"	R8-18EM1-E	\$21.00	R8-18EM1-B	\$61.20	-	-
1/4"	R8-25EM1-E	\$23.00	R8-25EM1-B	\$61.20	LY-830-016	\$63.00
3/8"	R8-37EM1-E	\$23.00	R8-37EM1-B	\$63.00	LY-830-024	\$63.00
1/2"	R8-50EM1-E	\$23.00	R8-50EM1-B	\$63.00	LY-830-032	\$63.00
5/8"	R8-62EM1-E	\$24.00	R8-62EM1-B	\$65.70	LY-830-040	\$73.00
3/4"	R8-75EM1-E	\$26.00	R8-75EM1-B	\$72.00	LY-830-048	\$73.00
7/8"	R8-87EM1-E	\$27.00	R8-87EM1-B	\$89.10	LY-830-056	\$74.00
1"	R8-10EM1-E	\$30.00	R8-10EM1-B	\$99.00	LY-830-064	\$74.00
1-1/4"	R8-12EM1-E	\$32.00	R8-12EM1-B	\$99.00	-	-
1-1/2"	R8-15EM1-E	\$36.00	R8-15EM1-B	\$110.70	-	-
5 Pc Set 3/16 - 3/4	R8-SET5	\$105.00	R8-EMSET5-B	\$315.90	-	-
8 Pc Set 3/16 - 1-1/4	R8-SET8	\$175.00	R8-EMSET8-B	\$576.00	-	-

R8 QUICK-CHANGE TOOL SYSTEM

The Royal Easychange R8 Quick-Change Tool System provides a fast method for changing tools on any Bridgeport-style milling machine. Once the R8 tool is installed in the machine spindle, tools can be changed in seconds. Total system run-out is less than 0.0005" TIR.

Easychange operation is simple — with one hand simply depress the brass locking button and rotate the collar to the locked-open position. When a new tool is inserted, it depresses a spring-loaded pin, snapping the collar back into the locked-closed position.

Please note that the Royal Easychange R8 Quick-Change Tool System is designed for light/medium-duty applications where the ability to change tools quickly outweighs the need for extreme rigidity. We do not recommend using this system for heavy milling or high-production applications.

R8 Quick-Change Body

Part # ROY-24100

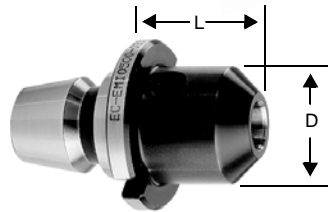
\$829.08 ea



- Very accurate-total system runout is less than 0.0005" TIR
- Short overhang (1-1/8") and two positive-drive keys
- Body can be left in spindle, reducing wear and tear on the spindle
- Tools are easy to install and remove with one hand

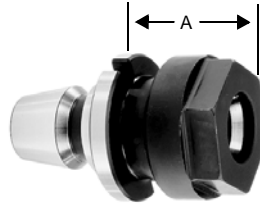
Endmill Tool Holder

Bore Size	D	Proj L	Part Number	Price
1/8"	1/2"	1-3/8"	ROY-24200	\$258.72
3/16"	11/16"	1-3/8"	ROY-24205	\$258.72
1/4"	11/16"	1-3/8"	ROY-24210	\$258.72
3/8"	1-3/16"	1-3/8"	ROY-24215	\$258.72
1/2"	1-3/8"	1-3/8"	ROY-24220	\$258.72
5/8"	1-9/16"	1-5/8"	ROY-24225	\$258.72
3/4"	1-13/16"	2-3/16"	ROY-24230	\$274.40
1"	2"	2-15/16"	ROY-24235	\$304.78



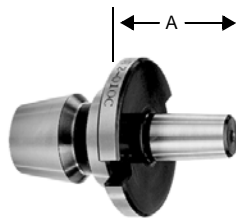
Collet Chuck

Collet Type	Max Collet Cap.	A	Part Number	Price
DA 200	3/8"	1-9/16"	ROY-24260	\$370.44
DA 180	3/4"	1-13/16"	ROY-24265	\$390.04
ER 16	3/8"	1-9/16"	ROY-24266	\$381.22
ER 32	3/4"	1-15/16"	ROY-24268	\$408.66



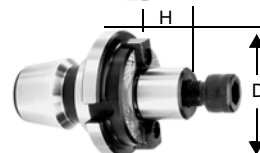
Drill Chuck Holder

Jacobs Taper	L	Part Number	Price
JT 2	13/32"	ROY-24285	\$218.54
JT 3	13/32"	ROY-24290	\$218.54
JT 6	13/32"	ROY-24295	\$218.54
JT 33	13/32"	ROY-24300	\$218.54



Shell Mill Holder

Pilot Dia	D	H	Part Number	Price
1/2"	1-1/4"	19/32"	ROY-24250	\$338.10
3/4"	1-11/16"	23/32"	ROY-24255	\$370.44



Toolholder Stand
Part # ROY-24325

\$99.96 ea

Call Us Today For All Of Your Machine Tool Needs!

R8 TOOLHOLDERS

R8 COLLET CHUCKS

- Hardened and precision ground
- For Bridgeport™ type mills
- For ER series collets



Collet Series	Proj.	Body OD	ENDURANCE [C]		BISON [B]		LYNDEX [B]	
			Part Number	Price Each	Part Number	Price Each	Part Number	Price Each
ER16	1.25"	1.08"	R8-ER16-E	\$89.00	R8-ER16-B	\$127.80	LY-R8007-0016	\$168.00
ER20	2.00"	1.38"	-	-	R8-ER20-B	\$125.10	LY-R8007-0020	\$168.00
ER25	2.00"	1.65"	-	-	R8-ER25-B	\$128.70	LY-R8007-0025	\$168.00
ER32	2.25"	2.00"	R8-ER32-E	\$89.00	R8-ER32-B	\$129.60	-	-
ER40	2.50"	2.48"	R8-ER40-E	\$99.00	R8-ER40-B	\$139.50	-	-
TG100	3.13"	2.50"	-	-	R8-TG10-B	\$145.80	-	-
DA180	2.78"	1.54"	-	-	R8-DA18-B	\$152.10	-	-

R8 SHELL MILL HOLDERS

- Made from alloy forged steel for long service life
- Hardened and precision ground
- For Bridgeport™ type mills
- Draw bar threads: 7/16" - 20

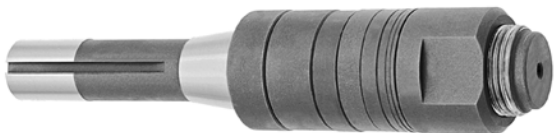


Pilot Dia	Proj.	ENDURANCE [C]		BISON [B]		LYNDEX [B]		
		Part Number	Price Each	Part Number	Price Each	Proj.	Part Number	Price Each
1/2"	1.00"	R8-50SM1-E	\$47.00	R8-50SM1-B	\$69.30	1.00"	LY-850-032	\$96.04
3/4"	1.00"	R8-75SM1-E	\$51.00	R8-75SM1-B	\$71.10	1.00"	LY-850-048	\$96.04
1"	1.00"	R8-10SM1-E	\$55.00	R8-10SM1-B	\$76.50	1.00"	LY-850-064	\$105.84
1-1/4"	1.25"	R8-12SM1-E	\$57.00	R8-12SM1-B	\$87.30	1.00"	LY-850-080	\$105.84
1-1/2"	1.25"	R8-15SM1-E	\$61.00	R8-15SM1-B	\$117.90	1.75"	LY-850-096	\$135.24

R8 STUB MILL HOLDERS

Slitting Saw Stub Mill Arbor

- Hardened and precision ground
- For Bridgeport™ type mills
- Face is held perpendicular to center line
- Pilot diameter is sized for precision fit with cutter-keyed for positive drive



Shank	Arbor Dia	Proj.	ENDURANCE [C]		BISON [B]	
			Part Number	Price Each	Part Number	Price Each
R8	1.00"	2.75"	R8-SA100-E	\$65.00	R8-SA100-B	\$135.90
	1.25"	2.75"	R8-SA125-E	\$72.00	R8-SA125-B	\$146.70

R8 TO JACOBS TAPER ARBORS

- Hardened and precision ground
- Made of high grade tool steel



Description	ENDURANCE [C]		BISON [B]	
	Part Number	Price Each	Part Number	Price Each
R8 to JT33	R8-33JT-E	\$18.50	R8-33JT1-B	\$29.70
R8 to JT2	R8-02JT-E	\$18.50	R8-02JT-B	\$30.60
R8 to JT3	R8-03JT-E	\$18.50	R8-03JT-B	\$30.60
R8 to JT6	R8-06JT-E	\$18.50	R8-06JT-B	\$30.60

R8 TO MORSE TAPER SLEEVES

- Hardened and precision ground
- Made of high grade tool steel
- Thread of drawbar end: R8-7/16"-20



Description	ENDURANCE [C]		BISON [B]	
	Part Number	Price Each	Part Number	Price Each
R8 to MT2	R8-02MT-E	\$21.00	R8-02MT-B	\$46.80
R8 to MT3	R8-03MT-E	\$23.00	R8-03MT-B	\$55.80
R8 to MT4	R8-04MT-E	\$27.00	-	-

R8 INTEGRAL SHANK DRILL CHUCKS

Super Precision Hexagonal Key Lock



- Integrated R8 shank maximizes rigidity and accuracy
- Hexagonal key lock system
- Innovative design
- Max. run-out .0012"



Shank Type	Capacity	Part Number	Price Each
R8	1/32-1/2"	LAM-L40049B	\$468.75
R8	1/8-5/8"	LAM-L40050B	\$523.50

Call Us Or Visit Our Website For Our Complete Selection!

NMTB TAPER TOOLHOLDERS

NMTB TAPER ENDMILL HOLDERS



- For milling machines that have 30/40 standard taper spindles
- Hardened and precision ground
- Accepts single & double end mills (single end mills only for sizes over 7/8")
- Drawbar end:
#30: 1/2"-13
\$40: 5/8"-11



NMTB 30

Dia	Proj	ENDURANCE [C]		LYNDEX [B]		BISON [B]	
		Part Number	Price Each	Part Number	Price Each	Part Number	Price Each
1/8"	1.75	-	-	N30-01EM175-L	\$143.69	-	-
3/16"	1.75	N30-18EM1-E	\$45.00	N30-18EM175-L	\$143.69	N30-18EM200-B	\$64.80
1/4"	1.75	N30-25EM1-E	\$45.00	N30-25EM175-L	\$143.69	N30-25EM200-B	\$77.40
5/16"	1.75	N30-31EM1-E	\$45.00	N30-31EM175-L	\$143.69	-	-
3/8"	1.75	N30-37EM1-E	\$45.00	N30-37EM175-L	\$143.69	N30-37EM200-B	\$64.80
1/2"	1.75	N30-50EM1-E	\$45.00	N30-50EM175-L	\$143.69	N30-50EM200-B	\$63.90
5/8"	1.75	N30-62EM1-E	\$49.00	N30-62EM175-L	\$143.69	N30-62EM250-B	\$67.50
3/4"	2.50	N30-75EM1-E	\$49.00	-	-	N30-75EM250-B	\$69.30
7/8"	2.50	N30-87EM1-E	\$49.00	N30-87EM250-L	\$142.74	N30-87EM400-B	\$89.10
1"	2.69	N30-10EM1-E	\$49.00	N30-10EM269-L	\$142.74	N30-10EM400-B	\$94.50

NMTB 40

Dia	Proj	Part Number	Price Each	Part Number	Price Each	Part Number	Price Each
3/16"	2.00	N40-18EM1-E	\$47.00	N40-18EM200-L	\$70.90	N40-18EM200-B	\$76.50
1/4"	2.31	N40-25EM1-E	\$47.00	N40-25EM231-L	\$144.88	N40-25EM200-B	\$76.50
5/16"	2.31	N40-31EM1-E	\$47.00	N40-31EM231-L	\$144.88	-	-
3/8"	2.31	N40-37EM1-E	\$49.00	N40-37EM231-L	\$144.88	N40-37EM200-B	\$75.60
1/2"	2.31	N40-50EM1-E	\$49.00	N40-50EM231-L	\$144.88	N40-50EM200-B	\$75.60
5/8"	2.31	N40-62EM1-E	\$49.00	N40-62EM231-L	\$144.88	N40-62EM250-B	\$79.20
3/4"	2.50	N40-75EM1-E	\$55.00	-	-	N40-75EM250-B	\$81.00
7/8"	2.94	N40-87EM1-E	\$55.00	N40-87EM294-L	\$159.60	N40-87EM350-B	\$95.40
1"	3.50	N40-10EM1-E	\$55.00	-	-	N40-10EM350-B	\$99.00
1-1/4"	3.69	N40-12EM1-E	\$60.00	N40-12EM369-L	\$173.61	N40-12EM400-B	\$100.80

NMTB - SHELL MILL HOLDERS



Taper	Pilot Dia	ENDURANCE [C]		BISON [B]	
		ENDURANCE Part Number	Price Each	BISON Part Number	Price Each
NMTB 30	3/4"	N30-75SM1-E	\$85.00	-	-
	1"	N30-10SM1-E	\$85.00	N30-10SM1-B	\$103.50
	1 1/4"	N30-12SM1-E	\$89.00	N30-12SM1-B	\$116.10
	1-1/2"	N30-15SM1-E	\$90.00	-	-
NMTB 40	3/4"	N40-75SM1-E	\$87.00	N40-75SM1-B	\$105.30
	1"	N40-10SM1-E	\$87.00	N40-10SM1-B	\$108.00
	1-1/4"	N40-12SM1-E	\$95.00	N40-12SM1-B	\$120.60
	1-1/2"	N40-15SM1-E	\$105.00	N40-15SM1-B	\$161.10

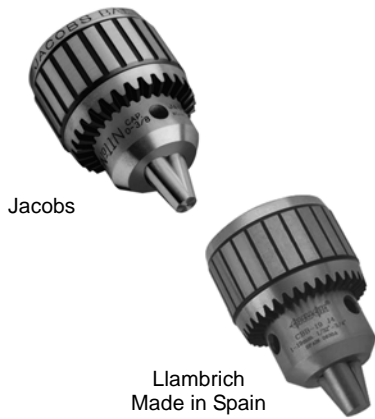
NMTB TAPER COLLET CHUCKS



Taper	Collet Series	Proj.	Nut Dia.	Brand	Part Number	Price Each	Code
NMTB 30	ER 16	2.00	1.26	BISON	N30-16ER200-B	\$82.80	B
	ER 32	2.50	1.97	BISON	N30-32ER250-B	\$97.20	B
	ER 40	3.50	2.48	BISON	N30-40ER350-B	\$102.60	B
	DA 180	3.00	1.54	BISON	N30-18DA300-B	\$117.90	B
	DA300	2.50	0.55	Lyndex	N30-30DA250-L	\$178.60	B
	TG100	3.94	2.50	Lyndex	N30-10TG394-L	\$185.25	B
NMTB 40	ER 16	2.50	1.26	BISON	N40-16ER250-B	\$110.70	B
	ER 32	3.00	1.97	BISON	N40-32ER300-B	\$103.50	B
	ER 40	2.50	2.48	BISON	N40-40ER250-B	\$128.70	B
	DA 180	3.00	1.44	Lyndex	N40-18DA300-L	\$194.75	B
	DA 300	2.50	0.55	Lyndex	N40-30DA250-L	\$194.75	B
	TG 100	3.00	2.50	BISON	N40-10TG300-B	\$231.30	B

Call Us Today For All Of Your Machine Tool Needs!

BALL BEARING KEY DRILL CHUCKS



- FEATURES:**
- Ball bearing construction for maximum gripping force
 - All components hardened and ground for accuracy
 - Fluted sleeve standard
 - Supplied with key

- APPLICATIONS:**
- For heavy duty drilling in tough machining conditions
 - For close tolerance production

			<i>Jacobs</i>			LLAMBRICHUSA		
Chuck Taper	Jacobs Model No.	Uses Key #	Capacity	Part Number	Price Each	Capacity	Part Number	Price Each
2JT	8-1/2N	K30	0 - 1/4"	JAC-30209	\$149.39	1/64 - 5/16"	LAM-L40070B	\$86.60
2JT	11N	K32	0 - 3/8"	JAC-30215	\$166.47	1/32 - 3/8"	LAM-L40071B	\$92.49
3JT	14N	K3	0 - 1/2"	JAC-30221	\$247.26	1/32 - 1/2"	LAM-L40072B	\$134.55
3JT	16N	K4	1/8" - 5/8"	JAC-30227	\$267.13	1/32 - 5/8"	LAM-L40073B	\$151.38
4JT	18N	K4	1/8" - 3/4"	JAC-30233	\$401.77	1/32 - 3/4"	LAM-L40074B	\$227.09
5JT	20N	K5	3/8" - 1"	JAC-30239	\$541.03	3/16 - 1"	LAM-L40075B	\$311.21
6JT	-	K3	-	-	-	1/32 - 1/2"	LAM-L40626B	\$134.55

BALL BEARING CHUCKS

Key Type

- Equipped with a sliding ring
- All components are hardened and ground for accuracy.
- Super holding and friction free movement.
- For heavy duty drilling
- Made in France



Mount	Jacobs Reference	Cap. Inch	Part Number	Price Each
2shJT	8-1/2N	0-5/16	LF-81160	\$82.34
2JT	11N	0-3/8	LF-82556	\$86.60
33JT	-	0-1/2	LF-43977	\$129.69
3JT	14N	0-1/2	LF-83638	\$121.35
3JT	16N	0-5/8	LF-84556	\$141.18
4JT	18N	1/16-3/4	LF-85977	\$197.90
4JT	20N	3/16-1-1/2	LF-85960	\$274.50

PRECISION DRILL CHUCKS

Key Type • Plain & Ball Bearing



- All parts hardened and precision ground
- Plain bearing: .005" TIR
- Ball bearing: .0032" TIR
- Supplied with key
- For heavy duty jobs

Mount	Capacity	Part Number	Price Each
PLAIN BEARING CHUCKS			
JT2	1/32-3/8"	A-3700-0081	\$28.50
JT33	1/32-1/2"	A-3700-0083	\$28.50
JT6	1/32-1/2"	A-3700-0084	\$28.50
JT3	1/8-5/8"	A-3700-0085	\$39.00
JT33	1/8-5/8"	A-3700-0086	\$39.00
JT6	1/8-5/8"	A-3700-0087	\$39.00
JT3	3/16-3/4"	A-3700-0089	\$59.00
BALL BEARING CHUCKS			
JT3	1/32-1/2"	A-3700-1092	\$55.00
JT6	1/32-1/2"	A-3700-1093	\$55.00
JT33	1/32-1/2"	A-3700-1094	\$55.00
JT3	1/32-5/8"	A-3700-1095	\$75.00



PLAIN BEARING KEY TYPE CHUCKS



- Jaws center-ground for absolute straightness and alignment
- One-piece sleeve eliminates crack between driving teeth
- Through-hardened sleeve teeth, hardened nose and keyholes provide outstanding wear resistance
- Each chuck 100% inspected for performance and precision
- T.I.R. .004" Max. at half capacity



MEDIUM DUTY TAPER MOUNTED

Mount	Chuck Model	Capacity	Uses Key #	Part Number	Price Each
0JT	0	0(2)-.156	K0	JAC-6200	\$100.19
1JT	1A	0(1)-.250	K1	JAC-6206	\$81.49
2JT	2A	0(1)-.375	K2	JAC-6214	\$111.76
33JT	33KD(3)	.08-.500	K32	JAC-6281	\$133.36

HEAVY DUTY TAPER MOUNTED

Mount	Chuck Model	Capacity	Uses Key #	Part Number	Price Each
3JT	3A	.125-.625	K3	JAC-6223	\$182.76
3JT	3KD(2)	.125-.625	K3	JAC-6228	\$242.99
3JT	3PD(3)	.125-.625	K3	JAC-6230	\$283.97
2JT	34-02	0(1)-.500	K3	JAC-14442	\$114.77
33JT	34-33	0(1)-.500	K3	JAC-14445	\$129.73
33JT	34-	0(1)-.500	K3	JAC-14451	\$119.87
3JT	36	.180-.800	K4	JAC-6309	\$229.30
3JT	36KD(2)	.180-.800	K4	JAC-14865	\$221.00

(2) Equipped with positive drive slot (3) Equipped with pin type positive drive
(4) Equipped with locking collar- 1-1/16-20 thread, smooth sleeve

KEY TYPE PRECISION CHUCKS

- Plain bearing models
- Precision crafted
- All parts are hardened for maximum tool life
- Heavy duty performance
- Made in France



Mount	Jacobs Equiv.	Cap.	Part Number	Price Each
1JT	1A	0-1/4	LF-81115	\$51.72
2JT	2A	0-3/8	LF-82228	\$60.36
2JT	34-02	0-1/2	LF-43205	\$80.25
33JT	34-33	0-1/2	LF-43335	\$80.25
6JT	34-06	0-1/2	LF-43601	\$80.25
3JT	3A	0-5/8	LF-84635	\$100.26
33JT	33	1/16-1/2	LF-43331	\$75.55
3JT	36	3/16-3/4	LF-45308	\$140.82



Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

DRILL CHUCKS-KEYED & KEYLESS TYPE

PLAIN BEARING DRILL CHUCKS

Keyed • Medium Duty

Manufactured In Spain

LLAMBRICHUSA



- For stationary drilling, turning, milling and wood working machines
- One-piece ring and sleeve eliminates the possibility of the teeth breaking
- Hardened to avoid wear and to lengthen the life of the drill chuck
- Up to 3/4" capacity

Mount	Capacity	OAL	Key	Part Number	Price Ea
0JT	1/32"-5/32"	1.38	K0	LAM-L40129B	\$53.77
1JT	1/32"-1/4"	1.97	CK4	LAM-L40130B	\$45.38
2JT	1/32"-3/8"	2.68	K34	LAM-L40131B	\$61.89
1JT	1/32"-3/8"	2.48	K34	LAM-L40132B	\$68.50
2JT	1/32"-3/8"	2.48	K34	LAM-L40133B	\$71.81
33JT	1/32"-1/2"	3.03	K2	LAM-L40134B	\$70.15

INDUSTRIAL KEYLESS HIGH PRECISION DRILL CHUCKS



Jacobs



Llambrich
Made in Spain

JKP Features:

- T.I.R. 0.0016"
- High precision, keyless operation
- Self-tightening design automatically increases clamping force in proportion to the increase in torque
- Exposed components are hardened

JKT Features:

- Same features as JKP series with the addition of milled wrench flats

APPLICATIONS:

- For high accuracy applications on conventional or CNC equipment
- Ideal for use on drill presses with high accuracy, job bore and milling machines and production drilling machines

The Ultimate In Drill Chuck Accuracy Combined With Keyless Operation!

Mount	Jacobs Reference #	Capacity	Jacobs		LLAMBRICHUSA		
			Part Number	Price Each	Capacity	Part Number	Price Each
HIGH PRECISION KEYLESS							
1JT	JKP65-J1	0-.255	JAC-31121	\$280.76	1/64"-1/4"	LAM-L31121B	\$197.25
J2S	JKP80-J2S	0-.315	JAC-9679	\$280.76	1/64"-5/16"	LAM-L9679B	\$186.00
J2	JKP100-J2	0-.394	JAC-9681	\$300.13	1/32"-3/8"	LAM-L9681B	\$183.75
J33	JKP100-J33	0-.394	JAC-9680	\$300.13	1/32"-3/8"	LAM-L9680B	\$183.75
J2	JKP130-J2	.039-.512	JAC-9683	\$320.81	1/32"-1/2"	LAM-L9683B	\$191.25
J33	JKP130-J33	.039-.512	JAC-9682	\$320.81	1/32"-1/2"	LAM-L9682B	\$191.25
J6	JKP130J6	.039-.512	JAC-9684	\$320.81	1/32"-1/2"	LAM-L9684B	\$191.25
J6	JKP160-J6	.118-.630	JAC-9685	\$370.93	1/8-5/8"	LAM-L9685B	\$226.46
HIGH TORQUE-HIGH PRECISION							
1JT	JKT65-J1	0-.255	JAC-31122	\$310.51	0-1/4"	LAM-L31122B	\$209.25
J2S	JKT80-J2S	-	-	-	0-5/16"	LAM-L30526B	\$202.50
J2	JKT130-J2	.039-.512	JAC-30527	\$372.57	1/32"-1/2"	LAM-L30527B	\$225.00
J33	JKT130-J33	.039-.512	JAC-30528	\$372.57	1/32"-1/2"	LAM-L30528B	\$225.00
J6	JKT130-J6	.039-.512	JAC-30529	\$372.57	1/32"-1/2"	LAM-L30529B	\$225.00
J6	JKT160-J6	.118-.630	JAC-30530	\$445.27	1/8-5/8"	LAM-L30530B	\$265.32

KEYLESS DRILL CHUCKS Heavy Duty & Ultra Precision

- Self-tightening design, no chuck key required
- Solid steel body
- **Heavy Duty** model can be used on a wide variety of machinery
- **Ultra Precision** model is ideal for CNC machines and features closer tolerances to assure excellent runout accuracy



Heavy Duty Keyless Drill Chucks

Taper	Capacity	Part Number	Price
JT2	0-3/8"	A-3700-0204	\$38.00
JT33	0-3/8"	A-3700-0207	\$38.00
JT33	0-1/2"	A-3700-0210	\$50.00
JT2	1/32-1/2"	A-3700-0212	\$50.00
JT6	1/32-1/2"	A-3700-0213	\$50.00
JT6	1/8-5/8"	A-3700-0215	\$55.00

Ultra Precision Keyless Drill Chucks

Taper	Capacity	Part Number	Price
JT2	1/32-3/8"	A-3700-0250	\$56.50
JT33	1/32-3/8"	A-3700-0251	\$56.50
JT2	1/32-1/2"	A-3700-0252	\$75.00
JT33	1/32-1/2"	A-3700-0255	\$75.00
JT6	1/32-3/8"	A-3700-0257	\$75.00
JT6	1/32-5/8"	A-3700-0259	\$95.50



PRECISION KEYLESS CHUCKS

- Self-tightening, hand locking
- Suitable for all drilling applications
- Ball bearing design
- Black oxide for extended life
- Made in France



Jacobs Reference #	Capacity	Mount	Part Number	Price Each
JKP100-J2	0-3/8"	2JT	LF-72021	\$209.00
JKT130-J33	0-1/2"	33JT	LF-73332	\$223.96
JKT130-J6	0-1/2"	6JT	LF-73066	\$223.96
JKT160-J6	1/8-5/8"	6JT	LF-74063	\$223.96

Call Us Today For All Of Your Machine Tool Needs!

CLASSIC HIGH PRECISION KEYLESS DRILL CHUCKS

FEATURES:

- Keyless operation
- Self-tightening design
- Balanced
- Note: run at maximum RPM only with Albrecht arbors or when direct mounting to high-speed spindle



Mount	Chuck Model	Capacity	Max. RPM	Part Number	Price Each
J0	C15-J0	0-1/16	50,000	ALB-70010	\$465.50
J0	C30-J0	0-1/8	35,000	ALB-70020	\$350.84
J1	C30-J1	0-1/8	35,000	ALB-70030	\$350.84
J1	C65-J1	0-1/4	20,000	ALB-70050	\$336.14
J33	C100-J33	0-3/8	12,000	ALB-70070	\$363.58
J2	C100-J2	0-3/8	12,000	ALB-70080	\$363.58
J33	C130-J33	1/32-1/2	7,000	ALB-70090	\$397.88
J2	C130-J2	1/32-1/2	7,000	ALB-70100	\$397.88
J6	C130-J6	1/32-1/2	7,000	ALB-70110	\$397.88
J6	C160-J6	1/8-5/8	4,000	ALB-70120	\$448.84

HEAVY DUTY KEYLESS DRILL CHUCKS High Precision



- Keyless Drill Chucks are precision devices designed for high accuracy applications on either conventional or CNC machines in drilling, boring, and counterboring operations
- Designed to be tightened and released by hand
- Self-tightening feature
- Available in Precision quality, 0.005 T.I.R. and in NC quality, 0.0015 T.I.R.

Capacity	Mount	OAL	Part Number	Price Each
High Precision 0.005 T.I.R.				
1/32-1/2"	JT2	4.30	BI-7051-135	\$150.30
1/32-1/2"	JT33	4.30	BI-7051-137	\$150.30
1/32-1/2"	JT6	4.30	BI-7051-138	\$150.30
1/8-5/8"	JT6	4.65	BI-7051-168	\$177.30
1/8-5/8"	JT33	4.90	BI-7051-169	\$177.30

Capacity	Mount	OAL	Part Number	Price Each
High Precision-High Torque 0.0015 T.I.R.				
1/32-1/2"	JT2	4.30	BI-7051-335	\$150.30
1/32-1/2"	JT33	4.30	BI-7051-337	\$150.30
1/32-1/2"	JT6	4.30	BI-7051-338	\$150.30
1/8-5/8"	JT6	4.65	BI-7051-368	\$177.30
1/8-5/8"	JT33	4.90	BI-7051-369	\$177.30

TOOL POST DRILL CHUCK

Designed to decrease the time it takes to drill a hole on the lathe. Peck drilling can be performed much faster since the drill bit is held at the tool post instead of the tailstock. Hole depths can also be monitored on the carriage DRO during the drilling process.



- Precision 1/32"-1/2" keyless drill chuck included
- Fast and accurate procedure to align drill chuck with spindle
- Precision alignment pin magnetically held in body cavity for convenience
- Mounts in any tool post tool holder
- Body made from high strength aluminum
- Durable anodized finish

Tool Post Drill Chuck
Part # EDGE-41000
\$99.99 ea

SENSITIVE DRILL FEED

- Makes drilling of small holes easy
- Give operator better feel and control of feed rate
- Excellent on large machinery where sensitive feed is necessary
- Smooth, sensitive finger tip control for less drill breakage



*Drill chuck not included.



How To Use:

1. Grasp free-turning knurled ring and feed with gentle finger pressure.
2. Drill feed is spring-loaded and retracts automatically when ring is released.

Shank Dia	Chuck Mount Taper	Brand	Part Number	Price Each
1/2"	Jacobs #0	Sierra American	SIE-AF-22	\$61.75
		Royal	ROY-25300	\$81.34

LATHE CHUCKS
LIVE CENTERS
VISE JAWS
VISE ACCESSORIES
STRAIGHT SHANK COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

DRILL CHUCK ARBORS & KEYS

DRILL CHUCK ARBORS

- Hardened and precision ground
- ISQ is a quality import
- Llambrich made in Spain
- Threaded arbors also available

Straight Shank To Jacobs Taper Arbor



Morse To Jacobs Taper Arbor



R8 (Bridgeport®) Arbor



DRIFT/CENTER KEY EJECTORS

- Used for quickly removing taper shank drills or reamers from sockets or sleeves
- Fully drop-forged



Fits MT	Part Number	Price Each
MT1	A-3900-0261	\$3.49
MT2	A-3900-0262	\$3.79
MT3	A-3900-0263	\$5.49
MT4,5,6	A-3900-0264	\$5.99
Set of 4	A-3900-0265	\$15.99

Shank Dia	Jacobs Taper	ISQ	Price Each	LLAMBRICHUSA	Price Each	Jacobs	Price Each
1/2"	OJT	A-3700-0162	\$9.95	LAM-L40588B	\$15.68	JAC-7348	\$22.32
	1JT	A-3700-0163	\$9.95	LAM-L40589B	\$15.68	JAC-7349	\$21.95
	2JT	A-3700-0164	\$9.95	LAM-L40590B	\$15.68	JAC-7350	\$22.32
	3JT	A-3700-0178	\$9.95	LAM-L40591B	\$15.68	JAC-7351	\$22.32
	6JT	A-3700-0165	\$9.95	LAM-L40594B	\$15.68	JAC-7353	\$28.43
5/8"	33JT	A-3700-0170	\$9.95	LAM-L40592B	\$15.68	JAC-7354	\$20.95
	1JT	-	-	LAM-L40595B	\$19.05	JAC-7355	\$25.54
	2JT	A-3700-0166	\$11.95	LAM-L40596B	\$19.05	JAC-7356	\$27.02
	3JT	A-3700-0187	\$11.95	LAM-L40597B	\$19.05	JAC-7357	\$35.63
	6JT	A-3700-0189	\$11.95	LAM-L40600B	\$19.05	-	-
3/4"	33JT	A-3700-0171	\$11.95	LAM-L40598B	\$19.05	-	-
	2JT	A-3700-0167	\$11.95	LAM-L40601B	\$25.79	JAC-7361	\$37.95
	3JT	A-3700-0168	\$11.95	LAM-L40602B	\$25.79	JAC-7362	\$34.68
	6JT	A-3700-0181	\$11.95	LAM-L40605B	\$25.79	JAC-7364	\$39.06
1"	33JT	A-3700-0172	\$11.95	LAM-L40603B	\$25.79	JAC-7365	\$39.57
	3JT	-	-	LAM-L40607B	\$30.28	JAC-7367	\$39.62
Morse Taper	6JT	-	-	LAM-L40610B	\$30.28	-	-
	Jacobs Taper	ISQ	Price Each	LLAMBRICHUSA	Price Each	Jacobs	Price Each
1 MT	1 JT	A-3700-0112	\$9.95	LAM-LEJ011B	\$14.75	JAC-7299	\$23.60
	2 JT	A-3700-0115	\$9.95	LAM-LEJ012B	\$14.75	JAC-7300	\$26.83
	6 JT	-	-	LAM-LEJ016B	\$14.75	-	-
	33 JT	A-3700-0113	\$9.95	LAM-LEJ133B	\$14.75	-	-
2 MT	1 JT	-	-	LAM-LEJ021B	\$16.32	JAC-7306	\$26.54
	2 JT	A-3700-0151	\$11.95	LAM-LEJ022B	\$16.32	JAC-7307	\$21.86
	3 JT	A-3700-0149	\$11.95	LAM-LEJ023B	\$16.32	JAC-7308	\$21.43
	4 JT	A-3700-0117	\$9.95	-	-	JAC-7309	\$26.48
	6 JT	A-3700-0150	\$11.95	LAM-LEJ026B	\$16.32	-	-
	33 JT	A-3700-0152	\$11.95	LAM-LEJ233B	\$16.32	JAC-7312	\$21.94
3 MT	1 JT	-	-	LAM-LEJ031B	\$21.36	JAC-7313	\$28.38
	JT	A-3700-0154	\$11.95	LAM-LEJ032B	\$21.36	JAC-7314	\$30.54
	3 JT	A-3700-0155	\$11.95	LAM-LEJ033B	\$21.36	JAC-7315	\$29.02
	4 JT	A-3700-0159	\$11.95	LAM-LEJ034B	\$21.36	JAC-7316	\$33.97
	6 JT	A-3700-0156	\$11.95	LAM-LEJ036B	\$21.36	JAC-7318	\$30.02
	33 JT	A-3700-0153	\$11.95	LAM-LEJ333B	\$21.36	-	-
4 MT	2 JT	-	-	LAM-LEJ042B	\$31.44	JAC-7320	\$53.58
	3 JT	A-3700-0160	\$14.95	LAM-LEJ043B	\$31.44	JAC-7321	\$48.68
	4 JT	A-3700-0161	\$14.95	LAM-LEJ044B	\$31.44	JAC-7322	\$47.09
	5 JT	A-3700-0120	\$14.95	LAM-LEJ045B	\$44.04	JAC-7323	\$65.88
Taper	Jacobs Taper	ISQ	Price Each	LLAMBRICHUSA	Price Each	Jacobs	Price Each
	R8	JT2	A-3700-0135	\$19.95	LAM-L40580B	\$83.00	JAC-7339
R8	JT3	A-3700-0138	\$19.95	LAM-L40581B	\$83.00	JAC-7340	\$117.83
	JT33	A-3700-0131	\$19.95	LAM-L40582B	\$83.00	JAC-7341	\$125.05
	JT4	A-3700-0139	\$19.95	LAM-L40583B	\$83.00	JAC-7342	\$125.05
	JT6	A-3700-0140	\$19.95	LAM-L40584B	\$83.00	JAC-7343	\$115.85

CHUCK KEYS

- Nickel thumb grip styles increase leverage and user comfort
- Soft steel handles limit the potential for dangerous fracturing under excessive load
- Self-ejecting styles also available



Thumb Style



T-handle

Jacobs Number	Style	Pilot Size (in.)	For Chuck Models	Jacobs	Price Each	LFA	Price Each
KO	T-Handle	1/8	0 Series	JAC-3637	\$6.51	LF-00309	\$3.06
K1	T-Handle	5/32	1A, 1B	JAC-3641	\$4.60	LF-00316	\$2.59
K2	Thumb	1/4	2A, 2BA	JAC-3649	\$6.49	LF-00323	\$3.06
K3	Thumb	5/16	3,34 Series & 14N	JAC-3651	\$7.72	LF-00163	\$3.65
K3C	Thumb	5/16	34-33c	JAC-3653	\$9.37	LF-00170	\$4.59
K4	Thumb	3/8	36,16,18N	JAC-3655	\$12.80	LF-00392	\$8.55
K5	T-Handle	7/16	20N	JAC-3657	\$28.14	LF-00125	\$13.28
K7	Thumb	7/32	7 Series	JAC-3659	\$5.69	-	-
K30	Thumb	15/64	31 Series & 8-1/2N	JAC-3664	\$6.31	LF-00132	\$2.97
K32	Thumb	1/4	32,33 Series & 11N	JAC-3666	\$6.65	LF-00378	\$3.15
KK	T-Handle	9/32	DC8, SM8, 74K, 22BA, 23BA, 24BA, 26BA, 29-33	JAC-30052	\$5.28	LF-00149	\$2.48

Jacobs LFA

Call Us Today For All Of Your Machine Tool Needs!

DRILL CHUCKS-INTEGRAL SHANK

B

KEYLESS DRILL CHUCKS

With Integral Shank

- Integral shank precision ball-bearing keyless drill chuck offers greater accuracy and rigidity
- Made of alloy forged steel
- Self-tightening keyless operation
- Maximum TIR: 0.0015"



Taper	Capacity	Proj.	Part Number	Price Each	Part Number	Price Each
BT40	1/32"-1/2"	3.74	B40-50DC1-B	\$225.90	TMX-8230-4033	\$217.12
	1/8"-5/8"	3.94	B40-62DC1-B	\$243.90	TMX-8230-4035	\$233.89
CAT40	1/32"-1/2"	4.13	C40-50DC1-B	\$229.50	TMX-8130-4033	\$245.99
	1/8"-5/8"	5.12	C40-62DC1-B	\$246.60	TMX-8130-4035	\$263.93
CAT50	1/32"-1/2"	4.13	C50-50DC1-B	\$273.60	TMX-8130-5063	\$292.76
	1/8"-5/8"	4.33	C50-62DC1-B	\$290.70	TMX-8130-5065	\$310.79

CNC DRILL CHUCKS

Hexagonal Key Lock



CNC DRILL CHUCKS

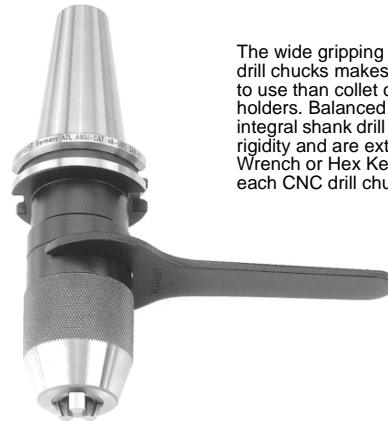
Wrench Or Key Lock



- For high speed CNC machines
- Hexagonal key lock system
- Clockwise and counterclockwise rotation
- Maximum total run-out of 0.0012" guaranteed
- Balanced to 8,000RPM @ g6.3



Capacity	Taper	Proj	Part Number	Price Each
0-3/8"	CAT 40	4.27	LAM-L40016B	\$490.00
	CAT 50	4.04	LAM-L40018B	\$577.50
1/32-1/2"	BT 40	4.37	LAM-L40008B	\$490.00
	CAT 40	4.85	LAM-L40020B	\$490.00
1/8-5/8"	CAT 50	5.04	LAM-L40022B	\$605.50
	BT 40	4.45	LAM-L40012B	\$514.50
1/8-5/8"	CAT 40	5.00	LAM-L40024B	\$514.50
	CAT 50	4.81	LAM-L40026B	\$619.50



The wide gripping range of these CNC drill chucks makes them less expensive to use than collet chucks and solid tool holders. Balanced for precision, these integral shank drill chucks provide greater rigidity and are extremely accurate. Wrench or Hex Key is provided with each CNC drill chuck.

Chuck Model	Capacity	Taper	Max. RPM	Part Number	Price Each
WL/KL130-CAT40	1/32-1/2	CAT 40	6,500	ALB-77100	\$556.64
WL/KL160-CAT40	1/16-5/8	CAT 40	6,500	ALB-77110	\$627.20
WL/KL160-CAT50	1/16-5/8	CAT 50	6,500	ALB-77120	\$730.10
WL/KL130-BT40	1/32-1/2	BT40	6,500	ALB-77160	\$556.64

KEYLESS DRILL CHUCKS WITH INTEGRAL SHANKS



- Integral shank design is more compact than a combined drill chuck and arbor, resulting in greater accuracy, rigidity and larger work envelope
- Keyless operation and balanced, self-tightening design.
- Available in R8, Straight and Morse Taper Shanks



Capacity	Shank	Max. RPM	Part Number	Price Each
1/32-1/2	R8	7,000	ALB-73040	\$486.08
1/8-5/8	R8	4,000	ALB-73090	\$534.10
1/32-1/2	5/8" SS	7,000	ALB-73050	\$440.02
1/32-1/2	2MT	7,000	ALB-73010	\$441.98
1/32-1/2	3MT	7,000	ALB-73020	\$443.94
1/8-5/8	4MT	4,000	ALB-73080	\$518.42

KEY CAD-DE Chuck Keys



4 Built-in Pinions Act As A Master Key For Over 110 Chucks!



Model CD1 Industrial Keys w/ Magnet

Key No.	LFA Series	Jacobs Series
R6 / K3	43, 44, 45, 84, 83S, 84S, 44Z, 43SB	3, 3A, 6A, 6B, 14N, 34, 55, 56, 58, 634, 75
R5 / K32	82, 43b, 43bZ	11N, 32, 33, 3326, MC10, MC33, MC3326
R2 / K2	82	2A, MC5
R13 / K30	81b, 42, 81bS	30, 31B, 8-1/2N, MC4
Part Number LF-CD1M		\$17.98

Model CD2 Hardware/Industrial Keys w/ Magnet

Key No.	LFA Series	Jacobs Series
R1 / K1	81-1A, 81-1B	1A, 1B, 1BS, MC
TB1 / KG1	412, 420, 4200	DC, H1, Mc, U
R4 / K7		7A, 7BA, 7B
RB13 / KK	422, 4220	DC, H, MC, U
Part Number LF-CD2M		\$15.99

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE ACCESSORIES
WISE JAWS

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

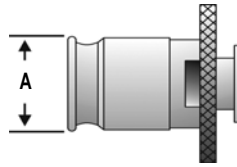
PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

TAP ADAPTERS/COLLETS

TAP ADAPTERS/TAP COLLETS

- Interchangeable with industry standard tapping systems.
- Quick change feature saves you time
- **Torque Controlled** tap adapters are ideal for blind hole tapping to protect your taps and workpieces from tap breakage.
- **Positive Drive** adapters are best suited for through hole tapping applications.
- Quantity discounts!



TAP SIZE	SIZE 0 (A=0.51)				SIZE 1 (A=0.75)			
	POSITIVE DRIVE		TORQUE CONTROLLED		POSITIVE DRIVE		TORQUE CONTROLLED	
	STS [E] \$29.00 ea	BILZ [B] \$38.00 ea	STS [E] \$68.00 ea	BILZ [B] \$85.00 ea	STS [E] \$29.00 ea	BILZ [B] \$32.00 ea	STS [E] \$68.00 ea	BILZ [B] \$82.00 ea
#0-6, M2,M3	BZ00-6P	BZ00-6P-Z	BZ00-6T	BZ00-6T-Z	BZ10-6P	BZ10-6P-Z	BZ10-6T	BZ10-6T-Z
#8, M4	BZ00-8P	BZ00-8P-Z	BZ00-8T	BZ00-8T-Z	BZ10-8P	BZ10-8P-Z	BZ10-8T	BZ10-8T-Z
#10, M4.5,M5	BZ00-10P	BZ00-10P-Z	BZ00-10T	BZ00-10T-Z	BZ10-10P	BZ10-10P-Z	BZ10-10T	BZ10-10T-Z
#12	BZ00-12P	BZ00-12P-Z	BZ00-12T	BZ00-12T-Z	BZ10-12P	BZ10-12P-Z	BZ10-12T	BZ10-12T-Z
1/4", M6	BZ00-025P	BZ00-025P-Z	BZ00-025T	BZ00-025T-Z	BZ10-025P	BZ10-025P-Z	BZ10-025T	BZ10-025T-Z
5/16", M7,M8	BZ00-031P	BZ00-031P-Z	BZ00-031T	BZ00-031T-Z	BZ10-031P	BZ10-031P-Z	BZ10-031T	BZ10-031T-Z
3/8", M10	-	-	-	-	BZ10-037P	BZ10-037P-Z	BZ10-037T	BZ10-037T-Z
7/16"	-	-	-	-	BZ10-043P	BZ10-043P-Z	BZ10-043T	BZ10-043T-Z
1/2", M12	-	-	-	-	BZ10-050P	BZ10-050P-Z	BZ10-050T	BZ10-050T-Z
9/16", M14	-	-	-	-	BZ10-056P	BZ10-056P-Z	BZ10-056T	BZ10-056T-Z
1/16" NPT	-	-	-	-	BZ10-006NP	BZ10-006NP-Z	BZ10-006NT	BZ10-006NT-Z
1/8" NPT	-	-	-	-	BZ10-012NP	BZ10-012NP-Z	BZ10-012NT	BZ10-012NT-Z
SETS	BZ00P-SET6	-	BZ00T-SET6	-	BZ10P-SET12	-	BZ10T-SET12	-
1 of each	\$174.00	-	\$408.00	-	\$348.00	-	\$816.00	-

TAP SIZE	SIZE 2 (A=1.22)				SIZE 3 (A=1.89)	
	POSITIVE DRIVE		TORQUE CONTROLLED		POSITIVE DRIVE	
	STS [E] \$42.00 ea	BILZ [B] \$49.00 ea	STS [E] \$109.00 ea	BILZ [B] \$130.00 ea	STS [E] \$94.00 ea	BILZ [B] \$135.00 ea
#0-6, M2,M3	BZ20-6P	-	-	-	-	-
#8, M4	BZ20-8P	-	-	-	-	-
#10, M4.5,M5	BZ20-10P	-	-	-	-	-
#12	BZ20-12P	-	-	-	-	-
1/4", M6	BZ20-25P	BZ20-25P-Z	-	-	-	-
5/16", M7,M8	BZ20-031P	BZ20-031P-Z	BZ20-031T	BZ20-031T-Z	-	-
3/8", M10	BZ20-037P	BZ20-037P-Z	BZ20-037T	BZ20-037T-Z	-	-
7/16"	BZ20-043P	BZ20-043P-Z	BZ20-043T	BZ20-043T-Z	-	-
1/2", M12	BZ20-050P	BZ20-050P-Z	BZ20-050T	BZ20-050T-Z	-	-
9/16", M14	BZ20-056P	BZ20-056P-Z	BZ20-056T	BZ20-056T-Z	-	-
5/8", M16	BZ20-062P	BZ20-062P-Z	BZ20-062T	BZ20-062T-Z	-	-
11/16", M18	BZ20-068P	BZ20-068P-Z	BZ20-068T	BZ20-068T-Z	-	-
3/4"	BZ20-075P	BZ20-075P-Z	BZ20-075T	BZ20-075T-Z	-	-
13/16", M20	BZ20-081P	BZ20-081P-Z	BZ20-081T	BZ20-081T-Z	BZ30-081P	BZ30-081P-Z
7/8", M22	BZ20-087P	BZ20-087P-Z	BZ20-087T	BZ20-087T-Z	BZ30-087P	BZ30-087P-Z
15/16", M24	-	-	-	-	BZ30-093P	BZ30-093P-Z
1", M25	-	-	-	-	BZ30-100P	BZ30-100P-Z
1-1/8", M27	-	-	-	-	BZ30-112P	BZ30-112P-Z
1-1/4", M30	-	-	-	-	BZ30-125P	BZ30-125P-Z
1-3/8", M33	-	-	-	-	BZ30-137P	BZ30-137P-Z
1/4" NPT	BZ20-025NP	BZ20-025NP-Z	BZ20-025NT	BZ20-025NT-Z	-	-
3/8" NPT	BZ20-037NP	BZ20-037NP-Z	BZ20-037NT	BZ20-037NT-Z	-	-
1/2" NPT	BZ20-050NP	BZ20-050NP-Z	BZ20-050NT	BZ20-050NT-Z	-	\$156.00 ea
3/4" NPT	-	-	-	-	BZ30-075NP	BZ30-075NP-Z
1" NPT	-	-	-	-	BZ30-100NP	BZ30-100NP-Z
SETS	BZ20P-SET18	-	BZ20T-SET13	-	BZ30P-SET9	BZ30P-SET9-Z
1 of each	\$756.00	-	\$1,417.00	-	\$846.00	-



Torque Controlled



STS QTY DISCOUNTS

QUANTITY DISCOUNTS	
5-9 Pcs	5% Off
10+ Pcs	10% Off

Call Us Today For All Of Your Machine Tool Needs!

CAT/BT TAPER QUICK CHANGE TAP HOLDERS

CAT & BT TAPER TAP HOLDERS

Tension/Compression and Rigid Tapping



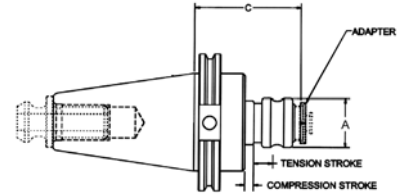
- For use with Industry Standard Quick-Change Tap Collets
- Available for tension/compression or rigid tapping
- Please see our tap collets located on previous page
- Series 3 tap holders also available



Tension/Compression



Rigid



Taper	Adapter Size	Capacity	C Proj	Comp	Tension	A Dia	Brand	Part Number	Price Each	Code
-------	--------------	----------	--------	------	---------	-------	-------	-------------	------------	------

TENSION/COMPRESSION

CAT 40	1	#0 - 9/16" 1/16" & 1/8" NPT	2.360	0.350	0.350	1.500	Techniks	C40-10TA236-T	\$258.40	B
			3.000	0.300	0.300	1.250	STS	C40-10TA300-U	\$199.50	D
		#0 - 9/16" 1/8" NPT	3.960	0.250	0.560	1.390	Parlec	C40-10TA396-P	\$328.00	B
			4.000	0.290	0.290	1.430	Sowa	C40-10TA400-G	\$245.74	C
	2	5/16" - 7/8" 1/4" - 1/2" NPT	3.810	0.492	0.492	1.960	STS	C40-20TA381-U	\$219.00	D
			4.500	0.490	0.490	2.090	Sowa	C40-20TA450-G	\$291.89	C
			3.940	0.590	0.590	2.170	Techniks	C40-20TA394-T	\$294.10	B
	3	13/16" - 1 3/8" 3/4" - 1" NPT	5.430	0.940	0.940	3.110	Techniks	C40-30TA543-T	\$548.25	B
			5.780	0.787	0.787	3.070	STS	C40-30TA578-U	\$393.75	D

RIGID TAPPING

CAT 40	1	#0 - 9/16" 1/8" NPT	2.590	Rigid	Rigid	1.310	Techniks	C40-10FS259-T	\$188.10	B
			3.020	Rigid	Rigid	1.250	Sowa	C40-10FS302-G	\$116.45	C
		#0 - 9/16" 1/16" & 1/8" NPT	3.440	Rigid	Rigid	1.250	STS	C40-10FS344-U	\$170.63	D
			3.960	Rigid	Rigid	1.390	Parlec	C40-10TR396-P	\$299.00	B
	2	5/16" - 7/8" 1/4", 3/8" & 1/2" NPT	3.230	Rigid	Rigid	1.970	Techniks	C40-20FS323-T	\$212.40	B
			3.430	Rigid	Rigid	1.960	STS	C40-20FS343-U	\$183.75	D
			3.660	Rigid	Rigid	2.000	Sowa	C40-20FS366-G	\$138.38	C

Taper	Adapter Size	Capacity	C Proj	Comp	Tension	A Dia	Brand	Part Number	Price Each	Code
-------	--------------	----------	--------	------	---------	-------	-------	-------------	------------	------

TENSION/COMPRESSION

BT 40	1	#0 - 9/16" 1/16" & 1/8" NPT	2.650	0.295	0.295	1.417	STS	B40-10TA265-U	\$210.00	D
			2.680	0.350	0.350	1.500	Techniks	B40-10TA268-T	\$254.15	B
			3.800	0.290	0.290	1.430	Sowa	B40-10TA380-G	\$245.74	C
			4.080	0.250	0.560	1.390	Parlec	B40-10TA408-P	\$325.00	B
	2	5/16" - 7/8" 1/4" - 1/2" NPT	3.660	0.590	0.590	2.170	Techniks	B40-20TA366-T	\$294.10	B
			3.720	0.492	0.492	2.087	STS	B40-20TA372-U	\$262.50	D
			4.500	0.490	0.490	2.090	Sowa	B40-20TA450-G	\$278.72	C

RIGID TAPPING

BT 40	1	#0 - 9/16" 1/8" NPT	2.630	Rigid	Rigid	1.310	Techniks	B40-10FS263-T	\$212.40	B
			3.020	Rigid	Rigid	1.250	Sowa	B40-10FS302-G	\$184.37	C
	2	5/16" - 7/8" 1/4" - 1/2" NPT	3.540	Rigid	Rigid	1.970	Techniks	B40-20FS354-T	\$207.90	B
			3.660	Rigid	Rigid	2.000	Sowa	B40-20FS366-GB	\$195.21	C

Taper	Adapter Size	Capacity	C Proj	Comp	Tension	A Dia	Brand	Part Number	Price Each	Code
-------	--------------	----------	--------	------	---------	-------	-------	-------------	------------	------

TENSION/COMPRESSION

CAT 50	1	#0 - 9/16" 1/16" & 1/8" NPT	2.44	0.350	0.350	1.500	Techniks	C50-10TA244-T	\$345.95	B
			3.15	0.250	0.560	1.390	Parlec	C50-10TA315-P	\$341.00	B
			3.52	0.300	0.300	1.417	STS	C50-10TA352-U	\$225.00	D
			4.00	0.290	0.290	1.430	Sowa	C50-10TA400-G	\$290.19	C
	2	5/16" - 7/8" Hand, 1/4" - 1/2" NPT	5.02	0.390	0.790	1.250	Sowa	C50-10TA502-G	\$304.47	C
			3.93	0.492	0.492	2.080	STS	C50-20TA393-U	\$300.00	D
			3.27	0.590	0.590	2.170	Techniks	C50-20TA327-T	\$382.50	B
			4.25	0.250	0.560	2.180	Parlec	C50-20TA425-P	\$399.00	B
5.66	0.490	0.850	2.000	Sowa	C50-20TA566-G	\$397.38	C			

RIGID TAPPING

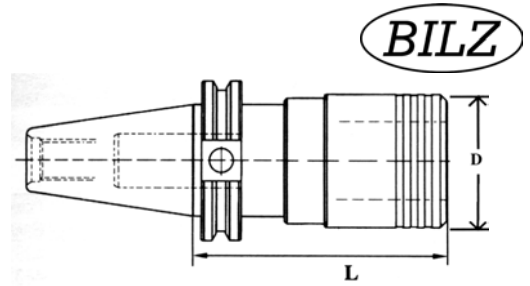
CAT 50	1	#0-9/16" 1/16" & 1/8" NPT	2.950	Rigid	Rigid	1.310	Techniks	C50-10FS295-T	\$260.10	B
			3.020	Rigid	Rigid	1.250	Sowa	C50-10FS302-G	\$195.50	C
			3.440	Rigid	Rigid	1.250	STS	C50-10FS344-U	\$195.00	D
	2	5/16"-7/8" 1/4", 3/8" & 1/2" NPT	3.540	Rigid	Rigid	1.960	STS	C50-20FS354-U	\$235.00	D
			3.860	Rigid	Rigid	1.970	Techniks	C50-20FS386-T	\$279.00	B
			3.910	Rigid	Rigid	2.000	Sowa	C50-20FS391-G	\$206.50	C

Call Us Or Visit Our Website For Our Complete Selection!

BILZ® QUICK CHANGE TAP HOLDERS

QUICK CHANGE TAP HOLDERS Tension/Compression & Rigid Tapping

- For use with industry standard quick change tap collets (see page 228)
- Internal coolant tap holders for Rigid applications
- Coolant thru (50 bar/ 725 psi)
- CAT & BT Tapers
- Holders for Size 3 adapters available



Adapter Size	Tap Range	Comp.	Tension	Dia D	Proj L	Flange Taper	Part Number	Price Each
TENSION/COMPRESSION								
0	0-5/16", M1-M10	0.260	0.260	1.024	2.75	CAT 40	C40-00TA275-MZ	\$355.00
		0.260	0.260	1.024	2.955	CAT 50	C50-00TA295-MZ	\$375.00
1	0- 9/16", M3-M12, 1/8" NPT	0.300	0.300	1.417	2.955	CAT 40	C40-10TA295-MZ	\$327.00
		0.300	0.300	1.417	3.855	CAT 50	C50-10TA385-MZ	\$347.00
		0.300	0.300	1.417	2.642	BT 40	B40-10TA264-MZ	\$334.00
2	1/4"-7/8", M8-M20, 1/8"-1/2" NPT	0.490	0.490	2.087	3.855	CAT 40	C40-20TA385-MZ	\$350.00
		0.490	0.490	2.087	3.855	CAT 50	C50-20TA385-MZ	\$370.00
		0.490	0.490	2.087	3.542	BT 40	B40-20TA354-MZ	\$357.00
3	13/16"-1-3/8"	0.790	0.790	3.071	5.780	CAT 50	C50-30TA578-MZ	\$553.00

Adapter Size	Tap Range	Comp.	Tension	Dia D	Proj L	Flange Taper	Part Number	Price Each
RIGID TAPPING								
1	0- 9/16", M3-M12, 1/8" NPT	Rigid	Rigid	1.260	2.90	CAT 40	C40-10FS290-IZ	\$265.00
		Rigid	Rigid	1.260	2.90	CAT 50	C50-10FS290-IZ	\$290.00
		Rigid	Rigid	1.260	2.90	BT 40	B40-10FS290-IZ	\$265.00
2	1/4"-7/8", M8-M20, 1/8"-1/2" NPT	Rigid	Rigid	1.968	3.50	CAT 40	C40-20FS350-IZ	\$310.00
		Rigid	Rigid	1.968	3.50	CAT 50	C50-20FS350-IZ	\$335.00
		Rigid	Rigid	1.968	3.50	BT 40	B40-20FS350-IZ	\$310.00
3	13/16"-1-3/8"	Rigid	Rigid	2.812	4.81	CAT 50	C50-30FS481-IZ	\$575.00

STRAIGHT SHANK TAP HOLDERS Tension/Compression or Rigid Tapping

Synchronous (Rigid):

Modern machine tools have the capability of synchronizing the spindle rotation and spindle feed. This has made it possible to eliminate the spring compression and tension stroke utilized in traditional tapping heads. The advantage that this brings to threading is the speed by which the cycle can operate.

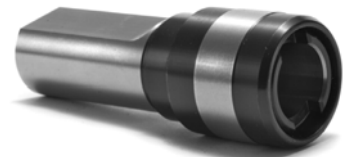
Tension/Compression:

Tension and compression holders have been the mainstay of machine tool tapping for many years.

These holders are for use with Bilz style quick change tapping collets, located on page 228



Tension/Compression



Rigid

Tension Compression Tap Holders

Adapter Size	Tap Size	Shank	Proj. Length	Collar Dia	Comp.	Tens.	Brand	Part Number	Price	Code
#1	0 - 9/16	1"	1.60	1.42	.300	.300	STS	ST-S10-10TA1-U	\$194.25	D
			1.60	1.25	.390	.790	Sowa	ST-S10TA1-G	\$247.38	B
			1.60	1.42	.300	.300	Bilz	ST-S10-10TA1-BZ	\$263.00	B
			1.76	1.61	.350	.350	Techniks	ST-S10-10TA1-T	\$237.60	B
#2	5/16 - 7/8	1"	2.50	2.09	.490	.490	STS	ST-S10-20TA2-U	\$208.95	D
			2.50	2.00	.490	.850	Sowa	ST-S10-20TA2-G	\$280.54	B
			2.52	2.36	.590	.590	Techniks	ST-S10-20TA2-T	\$283.50	B
#3	13/16 - 1 3/8	1-1/2"	3.78	3.08	.790	.790	STS	ST-S15-30TA3-U	\$388.50	D
			3.85	3.38	.940	.940	Techniks	ST-S15-30TA3-T	\$442.80	B

Rigid Tap Holders

Adapter Size	Shank	Proj. Length	Collar Dia	TECHNIKS [B]		STS [D]	
				Part Number	Price	Part Number	Price
#1	1"	1.60	1.42	ST-S10-10FS1-T	\$134.10	ST-S10-10FS1-U	\$131.25
#2	1"	2.50	2.09	ST-S10-20FS2-T	\$187.20	ST-S10-20FS2-U	\$152.25
#3	1-1/2"	3.78	3.08	ST-S15-30FS3-T	\$239.40	ST-S15-30FS3-U	\$215.25

For Use With Quick Change Tap Collets Located On Page 228

Call Us Today For All Of Your Machine Tool Needs!

TAP HOLDERS & ADAPTERS

QUICK CHANGE STRAIGHT SHANK TAP CHUCK & ADAPTER SETS

Rigid or Tension/Compression



Sets Include:
1 Straight Shank Holder
1 Each of the following adapters:
#6, #8, #10, #12, 1/4, 5/16, 3/8,
7/16, 1/2 & 9/16



Description	Part Number	SET Price
Rigid Coolant-Thru: 3/4" Straight Shank w/ 10 Quick Change Adapters WE1-ANSI	BZ-117623-IN	\$395.00
Rigid Coolant-Thru: 3/4" Straight Shank w/ 10 Quick Change Adapters WE1-KP-ANSI	BZ-117623-KPIN	\$545.00
Rigid Coolant-Thru: 1" Straight Shank w/ 10 Quick Change Adapters WE1-ANSI	BZ-117624-IN	\$395.00
Rigid Coolant-Thru: 1" Straight Shank w/ 10 Quick Change Adapters WE1-KP-ANSI	BZ-117624-KPIN	\$545.00
Tension/Compression: 1" Straight Shank w/ 10 Quick Change Adapters WE1-ANSI	BZ-120298-IN	\$495.00
Tension Only: 1" Straight Shank w/ 10 Quick Change Adapters WE1-ANSI	BZ-120486-IN	\$495.00

TENSION TAP HOLDERS

Compact, economical tension tap holders for use on CNC machining centers, screw machines, automatic lathes and chucks, CNC lathes and milling machines. Eliminates tap breakage caused during machine reversal by automatically providing overtravel, and compensating for improper feed rate. Can be used in either rigid or reversing spindles. Easily adapts to any machine with a 3/4" or 1" holder. Order collets separately from table below.



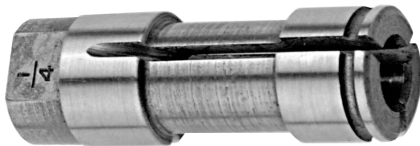
proconier



Cap.	Holding O.D.	Tool Length	Tension Travel	Collet Style	Part Number	Price Each
#0-1/4"	3/4"	3 1/4"	3/8"	1E	PRO-57407	\$191.00
#8-1/2"	1"	4 1/4"	1/2"	2E	PRO-57410	\$221.00
#10-3/4"	1"	4 7/8"	5/8"	3E	PRO-57413	\$267.00

TAP COLLETS

Collets for Tru-Tap and Tru-Grip Tapping attachments for Styles "E" and "F". Also used with Tension Tap Holders on page 155. Lightweight, precision tap and drill holders. Match collet styles in respective tables to collet style in Collet table to find desired collet part number.



Pipe Tap Collets

Tap Size	Style 2E	Style 3E	Style 4F
	\$30.00	\$32.00	\$37.00
1/8" SS	PRO-52845	PRO-53845	PRO-54845
1/8"	-	PRO-53865	PRO-54865
1/4"	-	PRO-53876	PRO-54876
3/8"	-	-	PRO-54887
1/2"	-	-	PRO-54885
3/4"	-	-	PRO-54899

TAP SIZE	Style 1E	Style 2E	Style 3E	Style 4F
	\$32.00	\$34.00	\$36.00	\$41.00
#0-6	PRO-51811	PRO-52811	-	-
#8	PRO-51818	PRO-52818	-	-
#10	PRO-51824	PRO-52824	PRO-53824	-
#12	PRO-51829	PRO-52829	PRO-53829	-
#14	PRO-51835	PRO-52835	PRO-53835	-
1/4"	PRO-51838*	PRO-52838	PRO-53838	PRO-54838
9/32"	-	PRO-52843	PRO-53843	PRO-54843
5/16"	-	PRO-52848	PRO-53848	PRO-54848
3/8"	-	PRO-52859	PRO-53859	PRO-54859
3/8" SS	-	PRO-52839	PRO-53839	PRO-54839
7/16"	-	PRO-52849	PRO-53849	PRO-54849
1/2"	-	PRO-52856	PRO-53856	PRO-54856
9/16"	-	-	PRO-53863	PRO-54863
5/8"	-	-	PRO-53869	PRO-54869
11/16"	-	-	PRO-53874	PRO-54874
3/4"	-	-	PRO-53878	PRO-54878
13/16"	-	-	-	PRO-54883
7/8"	-	-	-	PRO-54886
15/16"	-	-	-	PRO-54891
1	-	-	-	PRO-54894

PRECISION HAND TAPPER

- Precision ground work table and spindle for high accuracy
- 9 tap adapters included: #6, #8, #10, 1/4, 5/16, 3/8, 7/16, 1/2 & 5/8"
- Assures straight perpendicular tapped holes
- Rigid structure made of high grade tool steel
- Equipped with tap guide
- Working Area: 6-1/2" x 10"
- Clearance Height: 7"
- Depth of Throat: 7-1/2"
- Overall Height: 13"



Hand Tapper
Part # A-3900-0250
\$175.00

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

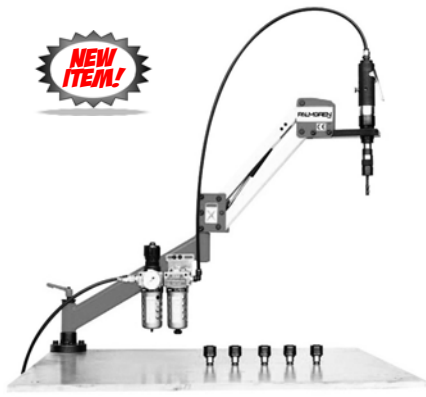
ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

TAPPING ARMS

QUICK TAP TAPPING ARM For Small To Medium Size Taps



Palmgren's Quick-Tap pneumatic tapping machine is suitable for small and medium size taps. The arm is equipped with lubricated for life bearings at all swivel points, provides weightless operation through the use of gas counter balance springs and permits the operator to bring the tap to the hole with ease.

Standard Equipment

- Parallel arm with 4" to 37" reach
- Stationary bench bracket
- Quick change tooling adaptor
- Air preparation unit with lubricator, filter, regulator and pressure gauge
- Vertical motor bracket
- High torque reversible air motor



See Page 228
For Tap Collets

Tap Capacity		Motor RPM	Torque @ 90 psi	Air Cons. (CFM)	Tap Collet Series	Model #	Part Number	Price Each
Mild Steel	Aluminum							
1/2"	9/16"	400	27 ft/lb	24	1	QT400	PALM-80420	\$2,420.00
3/8	1/2"	700	16ft/lb	24	1	QT700	PALM-80421	\$2,420.00

SHOP TAP TAPPING ARM Medium Duty General Purpose



Palmgren's Shop-Tap pneumatic tapping machine is a medium duty general purpose machine suitable for tapping small to medium size taps. The arm is equipped with lubricated for life bearings at all swivel points, provides weightless operation through the use of gas counter balance springs and permits the operator to bring the tap to the hole with ease.

Standard Features

- Parallel arm with 20" to 62" reach
- Stationary bench bracket
- Quick change tooling adaptor
- Air preparation unit with lubricator, filter, regulator and pressure gauge
- Vertical motor bracket
- High torque reversible air motor



See Page 228
For Tap Collets

Tap Capacity		Motor RPM	Torque @ 90 psi	Air Cons. (CFM)	Tap Collet Series	Model #	Part Number	Price Each
Mild Steel	Aluminum							
1/2"	9/16"	400	27 ft/lb	24	1	ST400	PALM-80400	\$2,625.00
3/8	1/2"	700	16ft/lb	24	1	ST700	PALM-80401	\$2,625.00

FlexArm

FLEXIBLE ARM TAPPING MACHINES

Save Money • Save Time • Reduce Tap Breakage

FlexArm

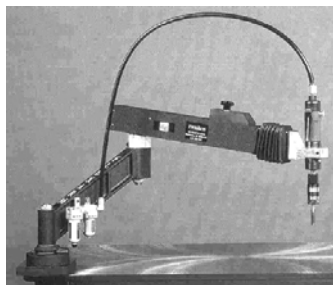


Time & Tap Life

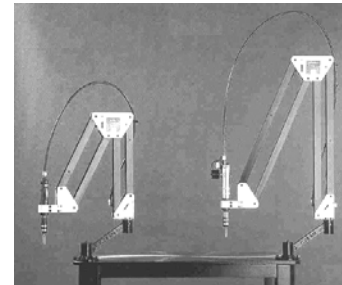
FlexArm's torque clutch holders make tapping blind holes easy. It even taps on parts that can't be easily tapped by other methods. The torque clutch allows the tap to stop turning when it encounters any obstruction that might cause tap breakage and is adjustable for all types of material. FlexArm's quick-change chuck allows you to change from one size tap to another in 3 to 5 seconds. No gears, head height or stops to change. The FlexArm is ideally suited for tapping large and multi-level parts, and can be adjusted to stay where it is positioned or automatically return to the home (folded) position. The result is less operator strain and increased production.

APPLICATIONS:

- Tapping/ Reaming • Chamfer
- Countersink • Deburring
- Drill (soft materials)
- Retap (warped heat-treated holes)



Model A-32



Model S-36

Model M-60

Each FlexArm Tapping Machine Comes Complete With:

- 400 RPM reversible motor with tap capacity up to 9/16"
- Angle mount
- Filter
- Lubricator
- Quick change chuck

Tap Capacity In Steel	Working Range	Motor RPM	Tap Collet Series	Torque (ft.lbs)	Part Number	Price Each
0-80 to 9/16	11" to 34"	400	1	28	FLEX-T4-A32	\$2,895.00
	14" to 51"	400	1	28	FLEX-S36-FX9-110	\$3,600.00
	22" to 76"	400	1	28	FLEX-M60-FX9-110	\$3,800.00

All FlexArm Tapping Machines Include a One Year Limited Warranty on the complete unit. (Does not include tap holders and some motor replacement parts). Repair service also available.

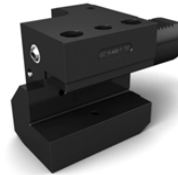
Call Us Today For All Of Your Machine Tool Needs!

What is VDI?

The main principle behind the **VDI System** is a quick-change, cam-operated clamping system for each toolholder within the tool disc. Tool changes can therefore be performed within seconds, rather than within minutes as with the traditional block system. The toolholders can also be preset away from the lathe on a presetter. This quick-change design principle has been employed in Western Europe for many years, but is relatively new to North America. We offer the full range of VDI quick-change precision toolholders for CNC lathes. We offer the largest selection from several suppliers with extensive stock at competitive prices. Shanks from 20 to 80mm are offered. All VDI holders are manufactured to the strictest tolerances and conform to **DIN 69880 and VDI3425**.

Other Features Include:

- Heat-treated steel with approx. 700N/mm2 tensile strength
- Hardened and ground cylindrical shaft
- Ground tool seat faces and shoulder black oxidized to retard oxidation
- Internal coolant supplies with adjustable ball-type nozzles
- square tools can be preset with spring loaded plates

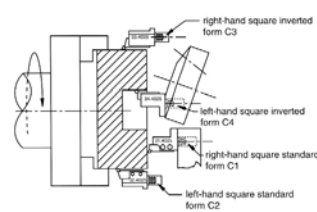
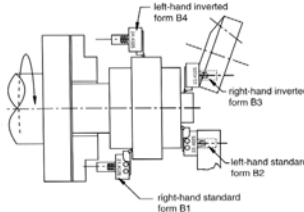
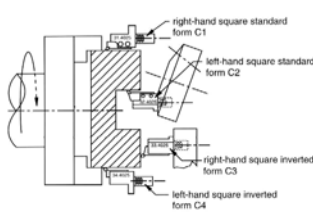
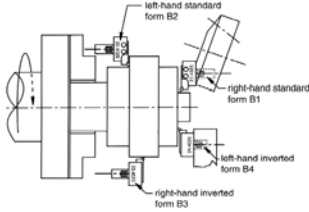


left-hand (clockwise) spindle rotation

left-hand (clockwise) spindle rotation

right-hand (counterclockwise) spindle rotation

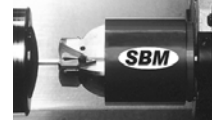
right-hand (counterclockwise) spindle rotation



VDI SHANK BAR PULLERS

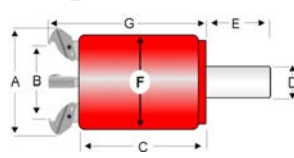
Coolant or Air Actuated

An Inexpensive And Simple Way To Automate Your CNC Lathe- Eliminate Manual Loading And Unloading Of Each And Every Part!



E

- No Down Time**-machine continues to run, freeing operator to work other jobs.
- Self Adjusting & Self Releasing**-After initial setting, no adjustment required for different sizes, and needs only 1/4" of bar length to pull bar!
- 4 Fingers**-Holds round and square parts. Can also hold hex and flat parts with just 2 fingers.
- Pull Threaded or Delicate Material**-Simply use the optional soft steel, aluminum, brass or delrin fingers.
- Bar Can Be Pulled and Positioned Multiple Times** for machining various sections of the part before cutoff.
- Great for Sub-Spindle Lathes**- use as a "pick and place" device for finished parts.
- Quick Installation**- comes complete with fingers and bar support collar...be "up and running" within 1 hour!



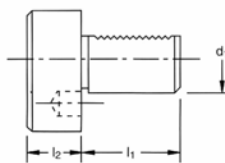
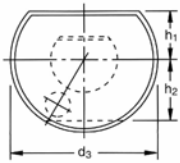
Description	Part Number	Price
VDI 30	BU-GA1000VDI-30	\$599.00
VDI 40	BU-GA1000VDI-40	\$599.00

SBM Bar Pullers are shipped complete with 1 set of hard steel fingers and 1 bar support collar.

Clearance Dimensions

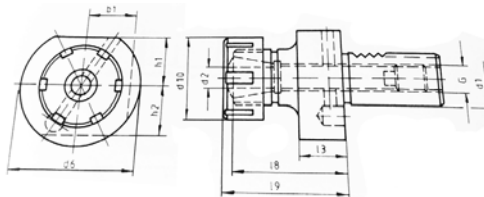
Size	A	B	C	D	E	F
Large Puller	3 5/8"	2 1/2"	2 7/8"	Shank	1 3/4"	2 3/4"
	4"	3 1/8"	2 7/8"	Shank	1 3/4"	2 3/4"

STEEL PLUG FORM Z2



Part Number	Price Each	d1	d2	h1	h2	L1	L2
V-Z23068SG	\$48.57	30	68	28	30	55	16
V-Z23068PG	\$48.57	30	68	28	30	55	16
V-Z24083SG	\$52.14	40	83	32.5	-	63	20
V-Z24083PG	\$52.14	40	83	32.5	-	63	20
V-Z25098SG	\$56.43	50	98	35	-	78	20
V-Z25098PG	\$56.43	50	98	35	-	78	20

COLLET CHUCKS- ER SERIES FORM E3



Part Number	Price Each	Collet Series	d1	d2 in	d2 mm	d6	d10	b1	L3	L8	L9	h1	h2	G
V-E33025-ER25G	\$303.45	ER25	30	1/32-5/8	1-16	68.0	42	30	22	63.0	75.0	28.0	30.0	5/8-18
V-E33032-ER32G	\$303.45	ER32	30	1/6-3/4	2-20	68.0	50	30	22	63.0	75.0	28.0	30.0	5/8-18
V-E33040-ER40G	\$303.45	ER40	30	3/32-1-1/32	3-25	68.0	63	30	22	61.0	75.0	28.0	30.0	5/8-18
V-E34025-ER25G	\$311.95	ER25	40	1/32-5/8	1-16	83.0	42	-	22	63.0	75.0	32.5	-	5/8-18
V-E34032-ER32G	\$311.95	ER32	40	1/16-3/4	2-20	83.0	50	-	22	63.0	75.0	32.5	-	5/8-18
V-E34040-ER40G	\$311.95	ER40	40	3/32-1-1/32	3-25	83.0	63	-	22	61.0	75.0	32.5	-	5/8-18

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

VDI ACCESSORIES
VDI JAWS

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

VDI TOOLING

RADIAL OVERHEAD TURNING TOOLHOLDERS

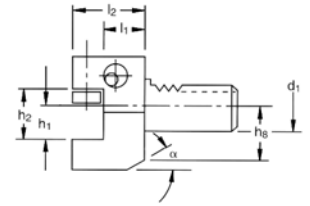
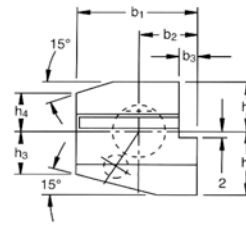
EVERMORE



SHORT STANDARD- FORMS B1 & B2

Form B1 (Right Hand)

Form B2 (Left Hand)



RIGHT HAND (FORM B1)	LEFT HAND (FORM B2)	Manufacturer	Type	Price Each	d1	b1	b2	b3	h1 in	h1 mm	h2	h3	h4	h5	h6	h8	L1	L2	∞
V-B13020-0750RV	V-B23020-0750LV	EVERMORE	Inch	\$131.57	30	70	35.0	10.0	3/4	-	29	26.0	22.0	28.0	38.0	30.0	22	40	25
V-B13020-20MRG	V-B23020-20MRG	USA	Metric	\$164.05	30	70	35.0	10.0	-	20	29	26.0	22.0	28.0	38.0	30.0	22	40	25
V-B13025-1000RG	V-B23025-1000RG	USA	Inch	\$147.05	30	70	35.0	10.0	1	-	34	28.0	26.0	32.0	48.0	43.0	22	47	25
V-B13025-25MRG	V-B23025-25MRG	USA	Metric	\$147.05	30	70	35.0	10.0	-	25	34	28.0	26.0	32.0	48.0	43.0	22	47	25
V-B14025-1000RV	V-B24025-1000LV	EVERMORE	Inch	\$149.50	40	85	42.5	12.5	1	-	34	35.0	30.0	32.5	48.0	42.0	22	47	30
V-B14025-25MRG	V-B24025-25MRG	USA	Metric	\$167.45	40	85	42.5	12.5	-	25	34	35.0	30.0	32.5	48.0	42.0	22	47	30
V-B15025-1000RG	V-B25025-1000RG	USA	Inch	\$211.65	50	100	50.0	16.0	1	-	34	42.0	35.0	35.0	60.0	-	30	55	-

RADIAL OVERHEAD TURNING TOOLHOLDERS

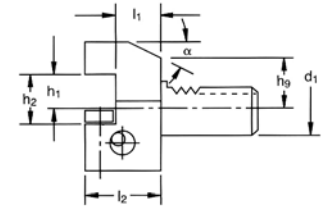
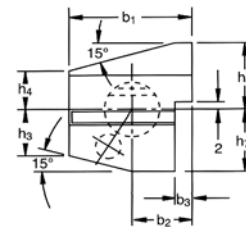
EVERMORE



SHORT INVERTED- FORMS B3 & B4

Form B3 (Right Hand)

Form B4 (Left Hand)



RIGHT HAND FORM B3	LEFT HAND FORM B4	Manufacturer	Type	Price Each	d1	b1	b2	b3	h1 in	h1 mm	h2	h3	h4	h6	h7	h8	L1	L2	∞
V-B33020-0750RV	V-B43020-0750LV	EVERMORE	Inch	\$131.57	30	70	35.0	10.0	3/4	-	29	26.0	22.0	38.0	35.0	28.0	22	40	25
V-B33020-20MRG	V-B43020-20MRG	USA	Metric	\$183.60	30	70	35.0	10.0	-	20	29	26.0	22.0	38.0	35.0	28.0	22	40	25
V-B33025-1000RV	V-B43025-1000LV	EVERMORE	Inch	\$197.36	30	70	35.0	10.0	1	-	34	26.0	28.0	48.0	31.0	38.0	22	47	25
V-B33025-25MRG	V-B43025-25MRG	USA	Metric	\$175.10	30	70	35.0	10.0	-	25	34	26.0	28.0	48.0	31.0	38.0	22	47	25
V-B34025-1000RV	V-B44025-1000LV	EVERMORE	Inch	\$149.50	40	85	42.5	12.5	1	-	34	35.0	30.0	48.0	42.5	32.5	22	47	30
V-B34025-25MRG	V-B44025-25MRG	USA	Metric	\$201.45	40	85	42.5	12.5	-	25	34	35.0	30.0	48.0	42.5	32.5	22	47	30

RADIAL OVERHEAD TURNING TOOLHOLDERS

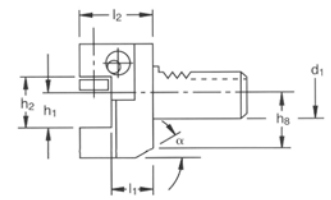
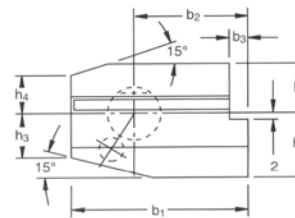
EVERMORE



LONG- FORMS B5 & B6

Form B5 (Right Hand)

Form B6 (Left Hand)



RIGHT HAND FORM B5	LEFT HAND FORM B6	Manufacturer	Type	Price Each	d1	b1	b2	b3	h1 in	h1 mm	h2	h3	h4	h5	h6	h8	L1	L2	∞
V-B53020-0750RV	V-B63020-0750LV	EVERMORE	Inch	\$131.57	30	100	65.0	10.0	3/4	-	29	26.0	22.0	28.0	38.0	30.0	22	40	25
V-B53020-20MRG	V-B63020-20MRG	USA	Metric	\$247.35	30	100	65.0	10.0	-	20	29	26.0	22.0	28.0	38.0	30.0	22	40	25
V-B53025-1000RG	V-B63025-1000RG	USA	Inch	\$238.00	30	100	65.0	10.0	1	-	35	33.0	22.0	28.0	45.0	40.0	22	47	25
V-B53025-25MRG	V-B63025-25MRG	USA	Metric	\$238.00	30	100	65.0	10.0	-	25	35	33.0	22.0	28.0	45.0	40.0	22	47	25
V-B54025-1000RV	V-B64025-1000LV	EVERMORE	Inch	\$239.21	40	118	75.5	12.5	1	-	34	35.0	30.0	32.5	48.0	42.0	22	47	30
V-B54025-25MRG	V-B64025-25MRG	USA	Metric	\$257.55	40	118	75.5	12.5	-	25	34	35.0	30.0	32.5	48.0	42.0	22	47	30

Many More Sizes & Styles Available! Please Call For More Information!

Call Us Today For All Of Your Machine Tool Needs!

RADIAL OVERHEAD TURNING TOOLHOLDERS

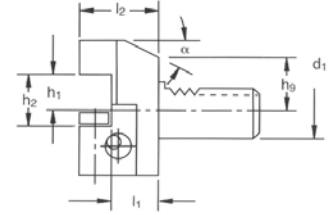
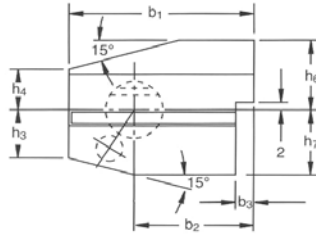
LONG INVERTED- FORMS B7 & B8

EVERMORE



Form B7 (Right Hand)

Form B8 (Left Hand)



RIGHT HAND FORM B7	LEFT HAND FORM B8	Manufacturer	Type	Price Each	d1	b1	b2	b3	h1 in	h1 mm	h2	h3	h4	h6	h7	h9	L1	L2	a
V-B73020-0750RV	V-B83020-0750LV	EVERMORE	Inch	\$209.31	30	100	65.0	10.0	3/4	-	29.0	26.0	22.0	38.0	35.0	28.0	22	40	25
V-B73020-20MRG	V-B83020-20MRG	USA	Metric	\$249.90	30	100	65.0	10.0	-	20	29.0	26.0	22.0	38.0	35.0	28.0	22	40	25
V-B73025-1000RG	V-B83025-1000RG	USA	Inch	\$243.10	30	100	65.0	10.0	1	-	34.0	26.0	28.0	44.0	35.0	40.0	22	47	25
V-B73025-25MRG	V-B83025-25MRG	USA	Metric	\$243.10	30	100	65.0	10.0	-	25	34.0	26.0	28.0	44.0	35.0	40.0	22	47	25
V-B74025-1000RV	V-B84025-1000LV	EVERMORE	Inch	\$239.21	40	118	75.5	12.5	1	-	34.0	35.0	30.0	48.0	42.5	32.5	30	44	30
V-B74025-25MRG	V-B84025-25MRG	USA	Metric	\$266.90	40	118	75.5	12.5	-	25	34.0	35.0	30.0	48.0	42.5	32.5	30	44	30

SQUARE FACING/TURNING AXIAL TOOLHOLDERS

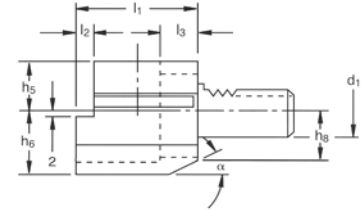
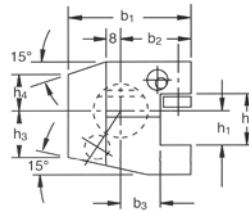
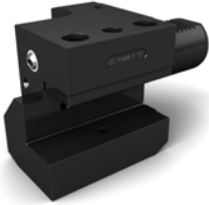
INVERTED- FORMS C1 & C2

EVERMORE



Form C1 (Right Hand)

Form C2 (Left Hand)



RIGHT HAND FORM C1	LEFT HAND FORM C2	Manufacturer	Type	Price Each	d1	b1	b2	b3	h1 in	h1 mm	h2	h3	h4	h5	h6	h8	L1	L2	L3	a
V-C13020-0750RV	V-C23020-0750LV	EVERMORE	Inch	\$167.45	30	70	35.0	17.0	3/4	-	29	26.0	22.0	28.0	38.0	30.0	70	10	30	25
V-C13020-20MRG	V-C23020-20MRG	USA	Metric	\$207.40	30	70	35.0	17.0	-	20	29	26.0	22.0	28.0	38.0	30.0	70	10	30	25
V-C13025-1000RG	-	USA	Inch	\$207.40	30	77	42.0	17.0	1	-	34	32.0	22.0	25.0	48.0	40.0	70	10	30	25
V-C13025-25MRG	-	USA	Metric	\$207.40	30	77	42.0	17.0	-	25	34	32.0	22.0	25.0	48.0	40.0	70	10	30	25
V-C14025-1000RV	V-C24025-1000LV	EVERMORE	Inch	\$197.36	40	85	42.5	20.5	1	-	34	35.0	30.0	32.5	48.0	42.0	85	12.5	30	30
V-C14025-25MRG	V-C24025-25MRG	USA	Metric	\$232.90	40	85	42.5	20.5	-	25	34	35.0	30.0	32.5	48.0	42.0	85	12.5	30	30

SQUARE FACING/TURNING AXIAL TOOLHOLDERS

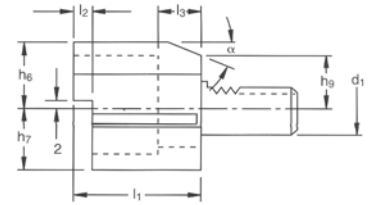
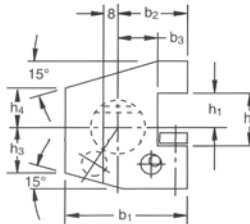
INVERTED- FORMS C3 & C4

EVERMORE



Form C3 (Right Hand)

Form C4 (Left Hand)



RIGHT HAND FORM C3	LEFT HAND FORM C4	Manufacturer	Type	Price Each	d1	b1	b2	b3	h1 in	h1 mm	h2	h3	h4	h6	h7	h9	L1	L2	L3	a
V-C33020-0750RV	V-C43020-0750LV	EVERMORE	Inch	\$167.45	30	70	35.0	17.0	3/4	-	29	26.0	22.0	38.0	35.0	28.0	70	10	30	25
V-C33020-20MRG	V-C43020-20MRG	USA	Metric	\$218.45	30	70	35.0	17.0	-	20	29	26.0	22.0	38.0	35.0	28.0	70	10	30	25
V-C34025-1000RV	V-C44025-1000LV	EVERMORE	Inch	\$197.36	40	85	42.5	20.5	1	-	34	35.0	30.0	48.0	42.5	42.0	85	12.5	30	30
V-C34025-25MRG	V-C44025-25MRG	USA	Metric	\$244.80	40	85	42.5	20.5	-	25	34	35.0	30.0	48.0	42.5	42.0	85	12.5	30	30

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

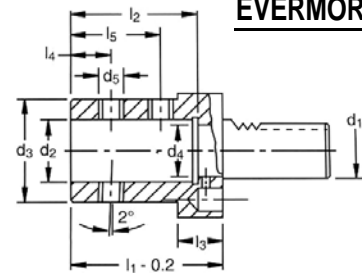
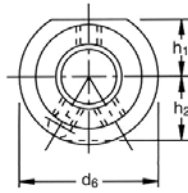
CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

VDI TOOLING

BORING BAR INTERNAL COOLANT FORM E1

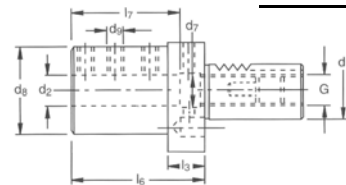
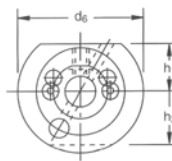


EVERMORE



Form E1 Part Number	Manufacturer	Type	Price Each	D1	D2 in.	D2 mm	D3	D4	D5	D6	H1	H2	L1	L2	L3	L4	L5
V-E13008-031G	USA	Inch	\$147.05	30	5/16	-	46.0	6	1/4-20	68	28.0	30.0	67.0	54.0	22.0	15	34
V-E13012-050G	USA	Inch	\$147.05	30	1/2	-	46.0	10	1/4-20	68	28.0	30.0	67.0	54.0	22.0	15	34
V-E13012-12MG	USA	Metric	\$147.05	30	-	12.0	46.0	10	1/4-20	68	28.0	30.0	67.0	54.0	22.0	15	34
V-E13016-062G	USA	Inch	\$147.05	30	5/8	-	46.0	12	3/8-16	68	28.0	30.0	67.0	54.0	22.0	15	35
V-E13016-16MG	USA	Metric	\$147.05	30	-	16.0	46.0	12	3/8-16	68	28.0	30.0	67.0	54.0	22.0	15	35
V-E13020-075RV	EVERMORE	Inch	\$107.65	30	3/4	-	50.0	12	3/8-16	68	28.0	30.0	67.0	54.0	22.0	15	35
V-E13020-20MG	USA	Metric	\$147.05	30	-	20.0	50.0	12	3/8-16	68	28.0	30.0	67.0	54.0	22.0	15	35
V-E13025-100RV	EVERMORE	Inch	\$107.65	30	1	-	55.0	17	3/8-16	68	28.0	30.0	71.0	59.0	22.0	17	40
V-E13025-25MG	USA	Metric	\$147.05	30	-	25.0	55.0	17	3/8-16	68	28.0	30.0	71.0	59.0	22.0	17	40
V-E13032-125RV	EVERMORE	Inch	\$107.65	30	1-1/4	-	62.0	24	3/8-16	68	28.0	30.0	75.0	63.0	22.0	20	44
V-E13032-32MG	USA	Metric	\$162.35	30	-	32.0	62.0	24	3/8-16	68	28.0	30.0	75.0	63.0	22.0	20	44
V-E13040-150G	USA	Inch	\$162.35	30	1-1/2	-	66.0	32	5/8-11	68	28.0	30.0	90.0	73.0	22.0	22	50
V-E13040-40MG	USA	Metric	\$162.35	30	-	40.0	66.0	32	5/8-11	68	28.0	30.0	90.0	73.0	22.0	22	50
V-E14016-062RV	EVERMORE	Inch	\$137.55	40	5/8	-	54.0	12	3/8-16	83	32.5	-	67.0	54.0	22.0	15	35
V-E14016-16MG	USA	Metric	\$186.15	40	-	16.0	54.0	12	3/8-16	83	32.5	-	67.0	54.0	22.0	15	35
V-E14020-075RV	EVERMORE	Inch	\$137.55	40	3/4	-	54.0	12	3/8-16	83	32.5	-	67.0	54.0	22.0	15	35
V-E14020-20MG	USA	Metric	\$186.15	40	-	20.0	54.0	12	3/8-16	83	32.5	-	67.0	54.0	22.0	15	35
V-E14025-100RV	EVERMORE	Inch	\$137.55	40	1	-	63.0	17	3/8-16	83	32.5	-	75.0	59.0	22.0	17	40
V-E14025-25MG	USA	Metric	\$186.15	40	-	25.0	63.0	17	3/8-16	83	32.5	-	75.0	59.0	22.0	17	40
V-E14032-125RV	EVERMORE	Inch	\$137.55	40	1-1/4	-	69.0	24	3/8-16	83	32.5	-	75.0	63.0	22.0	20	44
V-E14032-32MG	USA	Metric	\$194.65	40	-	32.0	69.0	24	3/8-16	83	32.5	-	75.0	63.0	22.0	20	44
V-E14040-150G	USA	Inch	\$194.65	40	1-1/2	-	76.0	32	5/8-11	83	32.5	-	90.0	73.0	22.0	22	54
V-E14040-40MG	USA	Metric	\$194.65	40	-	40.0	76.0	32	5/8-11	83	32.5	-	90.0	73.0	22.0	22	54
V-E14045-175G	USA	Inch	\$194.65	40	1-3/4	-	83.0	40	5/8-11	83	32.0	-	100.0	83.0	-	24	60
V-E14050-200G	USA	Inch	\$194.65	40	2	-	81.0	32	5/8-11	83	32.5	-	100.0	83.0	22.0	24	60
V-E15020-075G	USA	Inch	\$266.90	50	3/4	-	57.0	12	3/8-16	98	35.0	-	67.0	54.0	30.0	15	35
V-E15040-150G	USA	Inch	\$266.90	50	1-1/2	-	76.0	32	5/8-11	98	35.0	-	100.0	73.0	30.0	22	54

BORING BAR DUAL EXTERNAL COOLANT FORM E2-INCH



EVERMORE



Form E2 Part Number	Manufacturer	Price Each	D1	D2 in.	D6	D7	D8	D9	H1	H2	L3	L6	L7	G
V-E23006-025G	USA	\$155.55	30	1/4	68.0	14	55	10-32	28.0	30.0	22.0	60.0	51.0	5/8-18
V-E23008-031G	USA	\$155.55	30	5/16	68.0	16-1/2	55	1/4-20	28.0	30.0	22.0	60.0	51.0	5/8-11
V-E23010-037G	USA	\$155.55	30	3/8	68.0	16-1/2	55	1/4-20	28.0	30.0	22.0	60.0	51.0	5/8-11
V-E23012-050G	USA	\$155.55	30	1/2	68.0	16-1/2	55	1/4-20	28.0	30.0	22.0	60.0	51.0	5/8-11
V-E23016-062RV	EVERMORE	\$107.65	30	5/8	68.0	16-1/2	55	1/4-20	28.0	30.0	22.0	60.0	51.0	5/8-11
V-E23020-075RV	EVERMORE	\$107.65	30	3/4	68.0	16-1/2	55	1/4-20	28.0	30.0	22.0	60.0	51.0	5/8-11
V-E23025-100RV	EVERMORE	\$107.65	30	1	68.0	16-1/2	55	1/4-20	28.0	30.0	22.0	60.0	51.0	5/8-11
V-E23032-125RV	EVERMORE	\$107.65	30	1-1/4	68.0	16-1/2	68	3/8-16	28.0	30.0	22.0	75.0	61.0	5/8-11
V-E23040-150G	USA	\$194.65	30	1-1/2	83.0	41	74	1/2-13	32.0	30.0	22.0	90.0	74.0	5/8-18
V-E24008-031G	USA	\$194.65	40	5/16	83.0	20-1/2	55	1/4-20	32.5	-	22.0	75.0	61.0	5/8-11
V-E24010-037G	USA	\$194.65	40	3/8	83.0	20-1/2	55	1/4-20	32.5	-	22.0	75.0	61.0	5/8-11
V-E24012-050G	USA	\$194.65	40	1/2	83.0	20-1/2	55	3/8-16	32.5	-	22.0	75.0	61.0	5/8-11
V-E24016-062G	USA	\$194.65	40	5/8	83.0	20-1/2	55	3/8-16	32.5	-	22.0	75.0	61.0	5/8-11
V-E24020-075G	USA	\$194.65	40	3/4	83.0	20-1/2	55	3/8-16	32.5	-	22.0	75.0	61.0	5/8-11
V-E24025-100G	USA	\$194.65	40	1	83.0	20-1/2	55	1/2-13	32.5	-	22.0	75.0	61.0	5/8-11
V-E24032-125G	USA	\$203.15	40	1-1/4	83.0	20-1/2	83	1/2-13	32.5	-	22.0	75.0	61.0	5/8-11

Call Us Today For All Of Your Machine Tool Needs!

COOLANT THRU INDEXABLE DRILLS



TRIDEX™ TRIDEX™ INDEXABLE DRILLS
KOMET™ “Kub-It HD” COMPATIBLE
 Coolant Thru Indexable Drills



ALL SBM TRIDEX™ COOLANT THROUGH INDEXABLE DRILLS ARE :

- **100% Compatible** with inserts for KOMET KUB-IT drills & Kennametal DFT-__ 84° Trigon drill inserts.
- **Black oxide surface** to prevent against rust and corrosion.
- **Length to diameter ratios are kept optimal** tool overhang is minimized and tool rigidity, accuracy and deflection are minimized even in deeper holes.
- **Spiral flutes to improve chip evacuation** while keeping tool strength intact.
- **Insert pockets are precisely positioned** to keep cutting forces low and evenly distributed thus -lower axial pressures are realized. The net result of this is minimal tool deflection which in turn produces straighter holes regardless of whether the surface being drilled is concave, convex or is a low angle surface.
- **Trigon Inserts** - our unique 84° nose angle Trigon inserts provide the strength of a square insert with the versatility of a triangular insert. The 8° positive relief angle provides for easier cutting by using positive cutting action. The 156° angle between cutting edges - provides twofold benefits - eliminates the need for spotfacing or pre-centering before drilling and can be indexed 3 times.
- **100% Guaranteed** against defects and backed by our Industry Famous guarantee.
- **Manufactured from H13 steel for superior tool toughness and strength.**
- **3 Methods Of Coolant Entry:** Rear Entry, coolant supply through the back of the shank. Side entry, coolant supply through the side of the tool. Through the holder, for Mori-Seiki and other machines, coolant supply through the slot on the shank.



DRILLING TIPS

Indexable drills are designed strictly for roughing and as not meant to be used for finishing. Tolerances of +/- .005" and finishes of 250 rms are normal.

FIXTURE RIGIDITY is extremely important when using indexable drills. Workpieces should be of adequate strength – flimsy workpieces will cause drills to be rendered almost ineffective due to high horsepower requirements.

RUNOUT must be checked with the drill in the toolholder. Position the drill such that the inboard station is positioned below center radially. This allows the inboard insert to cut past the center. Using a dial indicator check the drill for location – if the location varies more than .002" at the holder and/or .006" at the cutting edge of the drill then the drill and/holder must be repositioned or the TIR of the holder must be checked/adjusted.

ADEQUATE COOLANT is essential when using indexable drills. Maximum heat is produced in a small area at the bottom of the hole being drilled. In general 10-20gpm at 45psi of coolant is required during drilling. When drilling deeper than 1X drill diameter, coolant through the drill is essential - flood coolant cannot perform satisfactorily at depths beyond 1X drill diameter.

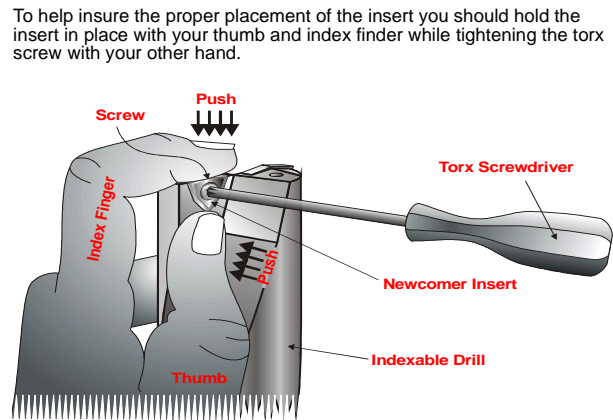
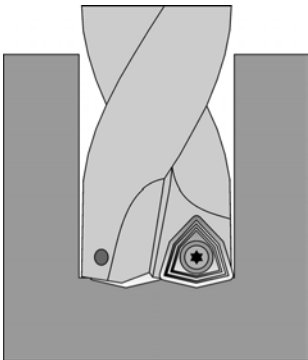
PROPER CHIP CONTROL is absolutely necessary to remove chips, this improves hole tolerance and finish and also improves tool life. Adjust speed and feed to produce "figure 9" chips for optimal chip removal – longer chips will lead to chip buildup in the drill flutes and chip recutting and eventual drill failure. Increase speed (within limits) if chips are too short. If chips are still unsatisfactory, reduce feed. Decrease speed or increase feed if chips are too long.

OFFSETTING DRILLS with 2.5:1 length to diameter ratios, in a positive direction, has proven to be beneficial when using indexable drills on machines with inadequate coolant supply. Offsetting will reduce chatter and improve surface finish. Offsetting is also useful when drilling a slightly oversized hole. This allows for drilling a larger range of hole diameters with a minimum of drill diameter.

HORSEPOWER A machine with at least seven horsepower is required to run an indexable drill.

SBM Indexable drills are not designed to be used with stacked materials or laminates – severe tool damage and loss will occur if used with such materials.

On some CNC machines, the rapid rate of tool positioning does not allow enough time for coolant flow to begin prior to drill contact with the workpiece. If the drill begins cutting without coolant, even for a second or two, insert life can be greatly reduced. Adding a short dwell in the program, to assure coolant flow BEFORE workpiece contact, will considerably increase insert life and drill performance. The slug produced by drilling through a workpiece can sometimes become jammed between the drill and workholding device. To minimize the likelihood of this happening, provide ample clearance in this area.



*KOMET, Kub-It and Kennametal are trademarks of their respective companies.

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

237

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

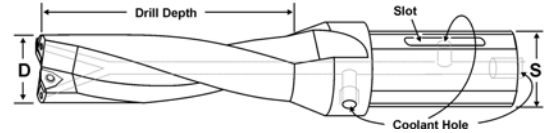
COOLANT THRU INDEXABLE DRILLS

TRIDEX™ INDEXABLE DRILLS KOMET™ “KUB-It™” COMPATIBLE Coolant Thru Indexable Drills

- Premium drills, manufactured from H-13 steel (hardened to Rc 46/50) for greater tool strength, reduced wear and longer tool life
- Compatible with inserts for Komet Kub-It™ and Kennametal DFT- 84° trigon drill inserts
- Spiral flutes to improve chip evacuation
- Insert pockets are precisely positioned to keep cutting forces low and evenly distributed
- 100% Guaranteed against defects
- Black oxide finish for long life
- Additional sizes may be available-please call for more information
- Made in the USA!
- See following page for 84° trigon inserts



Shank Dia: 1.000" to 1.500"
Drill Dia: 1.000" to 3.250"
Drill Depths: 2" to 6"



D	S	Drill Depth 2.00"		Drill Depth 3.00"		Drill Depth 4.00" and Over			
Drill Dia.	Shank Size	Part Number	Price Each	Part Number	Price Each	Flute Len.	Part Number	Price Each	
1.000 - 1.125 Drill Diameter- 0.315 Insert I.C.									
1"	1.000	1.00	DK1000-2010-315	\$285.55	DK1000-3010-315	\$320.83	4"	DK1000-4010-315	\$356.11
1-1/32	1.031	1.00	DK1031-2010-315	\$285.55	DK1031-3010-315	\$320.83	4"	DK1031-4010-315	\$356.11
	1.031	1.25	-	-	DK1031-3012-315	\$320.83	4"	DK1031-4012-315	\$356.11
1-1/8	1.125	1.00	DK1125-2010-315	\$285.55	DK1125-3010-315	\$320.83	4"	DK1125-4010-315	\$293.27
	1.125	1.25	DK1125-2012-315	\$285.55	DK1125-3012-315	\$320.83	4"	DK1125-4012-315	\$293.27
1.187 - 1.750 Drill Diameter- 0.394 Insert I.C.									
1-3/16	1.187	1.00	DK1187-2010-394	\$285.55	DK1187-3010-394	\$320.83	4"	DK1187-4010-394	\$356.11
	1.187	1.25	DK1187-2012-394	\$285.55	DK1187-3012-394	\$320.83	4"	DK1187-4012-394	\$356.11
1-1/4	1.250	1.00	DK1250-2010-394	\$293.27	DK1250-3010-394	\$335.16	4"	DK1250-4010-394	\$362.72
	1.250	1.25	DK1250-2012-394	\$293.27	DK1250-3012-394	\$335.16	4"	DK1250-4012-394	\$362.72
1-5/16	1.312	1.25	DK1312-2012-394	\$293.27	DK1312-3012-394	\$335.16	4"	DK1312-4012-394	\$362.72
	1.375	1.00	DK1375-2010-394	\$293.27	DK1375-3010-394	\$335.16	4"	DK1375-4010-394	\$362.72
1-3/8	1.375	1.25	DK1375-2012-394	\$293.27	DK1375-3012-394	\$335.16	4"	DK1375-4012-394	\$362.72
	1.437	1.25	DK1437-2012-394	\$293.27	DK1437-3012-394	\$335.16	4"	DK1437-4012-394	\$362.72
1-1/2	1.500	1.00	DK1500-2010-394	\$299.88	DK1500-3010-394	\$341.78	4"	DK1500-4010-394	\$369.34
	1.500	1.25	DK1500-2012-394	\$299.88	DK1500-3012-394	\$341.78	4"	DK1500-4012-394	\$369.34
1-5/8	1.625	1.00	-	-	DK1625-3010-394	\$341.78	4"	DK1625-4010-394	\$307.60
	1.625	1.25	DK1625-2012-394	\$306.50	DK1625-3012-394	\$341.78	4"	DK1625-4012-394	\$369.34
1-11/16	1.687	1.00	DK1687-2010-394	\$249.17	-	-	4"	DK1687-4010-394	\$307.60
	1.687	1.25	DK1687-2012-394	\$306.50	DK1687-3012-394	\$341.78	4"	DK1687-4012-394	\$369.34
1-3/4"	1.750	1.00	DK1750-2010-394	\$306.50	DK1750-3010-394	\$285.55	4"	DK1750-4010-394	\$375.95
	1.750	1.25	DK1750-2012-394	\$306.50	DK1750-3012-394	\$348.39	4"	DK1750-4012-394	\$377.06
	1.750	1.25	-	-	-	-	5"	DK1750-5012-394	\$404.62
1.812 - 2.125 Drill Diameter- 0.472 Insert I.C.									
1-7/8	1.875	1.25	DK1875-2012-472	\$306.50	DK1875-3012-472	\$348.39	4"	DK1875-4012-472	\$377.06
1-15/16	1.937	1.25	DK1937-2012-472	\$306.50	DK1937-3012-472	\$348.39	4"	DK1937-4012-472	\$377.06
2"	2.000	1.25	DK2000-2012-472	\$404.62	DK2000-3012-472	\$446.51	4"	DK2000-4012-472	\$488.41
	2.000	1.25	-	-	-	-	5"	DK2000-5012-472	\$515.97
	2.000	1.25	-	-	-	-	6"	DK2000-6012-472	\$543.53
2-1/8	2.125	1.50	DK2125-2015-472	\$404.62	DK2125-3015-472	\$446.51	4"	DK2125-4015-472	\$488.41
2.250 - 2.500 Drill Diameter- 0.590 Insert I.C.									
2-1/4"	2.250	1.50	DK2250-2015-590	\$432.18	DK2250-3015-590	\$480.69	4"	DK2250-4015-590	\$522.59
	2.250	1.50	-	-	-	-	5"	DK2250-5015-590	\$551.25
	2.250	1.50	-	-	-	-	6"	DK2250-6015-590	\$578.81
2-3/8"	2.375	1.50	DK2375-2015-590	\$432.18	DK2375-3015-590	\$480.69	4"	DK2375-4015-590	\$522.59
2-1/2"	2.500	1.50	DK2500-2015-590	\$459.74	DK2500-3015-590	\$515.97	4"	DK2500-4015-590	\$557.87
	2.500	1.50	-	-	-	-	5"	DK2500-5015-590	\$585.43
	2.500	1.50	-	-	-	-	6"	DK2500-6015-590	\$614.09
2.750 - 3.250 Drill Diameter- 0.693 Insert I.C.									
2-3/4"	2.750	1.50	DK2750-2015-693	\$459.74	DK2750-3015-693	\$515.97	4"	DK2750-4015-693	\$557.87
	2.750	1.50	-	-	-	-	5"	DK2750-5015-693	\$585.43
	2.750	1.50	-	-	-	-	6"	DK2750-6015-693	\$614.09
3"	3.000	1.50	DK3000-2015-693	\$509.36	DK3000-3015-693	\$551.25	4"	DK3000-4015-693	\$578.81
	3.000	1.50	-	-	-	-	5"	DK3000-5015-693	\$606.38
	3.000	1.50	-	-	-	-	6"	DK3000-6015-693	\$635.04
3-1/4"	3.250	1.50	DK3250-2015-693	\$509.36	DK3250-3015-693	\$551.25	4"	DK3250-4015-693	\$578.81

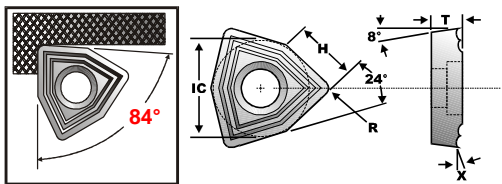
*KOMET, Kub-It and Kennametal are trademarks of their respective companies.

Call Us Today For All Of Your Machine Tool Needs!

INDEXABLE DRILL INSERTS

TRIDEX™ PREMIUM 84° TRIGON COATED INSERTS

- 84° nose angle which combines the strength of a square with the versatility of a triangular insert
- Made in Germany
- KOMET™ brand inserts also available



Made In Germany

Drill Dia	IC	T	H	X	R	Coated Inserts		Uncoated Inserts	Screw	Torx Driver
						Grade SZP40 Coated C2	Grade SBP35 Coated C5	-		
0.562 - 0.781	0.197	0.091	0.126	8°	0.016	TRX-197-SZP40-A \$9.25	TRX-197-SBP35-A \$9.25	NOT NECESSARY	SC-197-06-DK \$1.25	TX-206 \$5.00
0.812 - 0.937	0.250	0.125	0.161	8°	0.016	TRX-250-SZP40-A \$9.25	TRX-250-SBP35-A \$9.25	NOT NECESSARY	SC-250-06-DK \$1.25	TX-206 \$5.00
1.000 - 1.125	0.315	0.146	0.209	12°	0.016	TRX-315-SZP40-A \$9.50	TRX-315-SBP35-A \$9.50	NOT NECESSARY	SC-315-08-DK \$1.25	TX-208 \$5.00
1.187 - 1.750	0.394	0.146	0.260	12°	0.016	TRX-394-SZP40-A \$11.00	TRX-394-SBP35-A \$11.00	NOT NECESSARY	SC-394-10-DK \$1.25	TX-210 \$5.00
1.812 - 2.125	0.472	0.185	0.311	12°	0.016	TRX-472-SZP40-A \$13.25	TRX-472-SBP35-A \$13.25	NOT NECESSARY	SC-472-15-DK \$1.25	TX-215 \$5.00
2.250 - 2.500	0.591	0.205	0.390	12°	0.016	TRX-591-SZP40-A \$18.00	TRX-591-SBP35-A \$18.00	NOT NECESSARY	SC-472-15-DK \$1.25	TX-215 \$5.00
2.750 - 3.250	0.693	0.232	0.457	12°	0.031	TRX-693-SZP40-A \$22.95	TRX-693-SBP35-A \$22.95	NOT NECESSARY	SC-693-20-DK \$1.25	TX-220 \$5.00

TRIDEX™ PREMIUM TRIGON COATED INSERTS

SPEED & FEED INFORMATION



TRIDEX PREMIUM INSERTS			Brinell Hardness- HB	Mach Group	DOC [in] Drill Dia.					SBP 35			SZP 40		
Mat. Group	Workpiece Material									f [in./rev.]			f [in./rev.]		
					.472- .547	.500 - .784	.787 - 0.980	.984 - 1.777	>1.778	.002	.003	.006	.002	.003	.006
P	Unalloyed steel	approx. 0.15% C annealed	125	1	.002	.002	.003	.004	.005	720	660	590	460	430	390
		approx. 0.45% C annealed	190	2	.002	.002	.003	.004	.005	720	660	590	460	430	390
		approx. 0.45% C tempered	250	3	.002	.002	.003	.004	.005	720	660	590	460	430	390
		approx. 0.75% C annealed	270	4	.002	.002	.003	.004	.005	720	660	590	460	430	390
		approx. 0.75% C tempered	300	5	.002	.002	.003	.004	.005	720	660	590	460	430	390
	Low-alloyed steel	annealed	180	6	.002	.003	.003	.004	.006	690	660	560	430	390	360
		tempered	275	7	.002	.003	.003	.004	.006	690	660	560	430	390	360
		tempered	300	8	.002	.003	.003	.004	.006	690	660	560	430	390	360
		tempered	350	9	.002	.003	.003	.004	.006	690	660	560	430	390	360
	High-alloyed steel and high-alloyed tool steel	annealed	200	10	.002	.002	.002	.003	.004	620	560	490	430	390	360
hardened by tempering		325	11	.002	.002	.002	.003	.004	620	560	490	430	390	360	
Stainless steel	ferritic / martensitic, annealed	200	12	.002	.002	.003	.004	.005	520	460	390	430	390	360	
	martensitic, tempered	240	13	.002	.002	.003	.004	.005	520	460	390	430	390	360	
M	Stainless steel	austenitic2, retained	180	14	.002	.002	.003	.004	.005	660	590	520	520	490	460
K	Grey cast iron	pearlitic/ferritic	180	15	.003	.004	.005	.006	.006	460	430	390	390	390	360
		pearlitic (martensitic)	260	16	.003	.004	.005	.006	.006	460	430	390	390	390	360
	Cast iron with spheroidal graphite	ferritic	160	17	.002	.003	.005	.006	.006	390	390	360	360	360	330
		pearlitic	250	18	.002	.003	.005	.006	.006	390	390	360	360	360	330
	Malleable cast iron	ferritic	130	19	.003	.004	.004	.005	.006	460	430	390	390	390	360
		pearlitic	230	20	.003	.004	.004	.005	.006	460	430	390	390	390	360
N	Aluminum malleable alloys	non-age-hardenable	60	21	-	-	-	-	-	-	-	-	-	-	-
		age-hardenable, age-hardened	100	22	-	-	-	-	-	-	-	-	-	-	-
	Aluminum cast alloys	< 12% Si, non-age-hardenable	75	23	-	-	-	-	-	-	-	-	-	-	-
		< 12% Si, age-hardenable, -hardened	90	24	-	-	-	-	-	-	-	-	-	-	-
		> 12% Si, non-age-hardenable	130	25	-	-	-	-	-	-	-	-	-	-	-
Copper and copper alloys (Bronze/brass)	Free cutting alloys, Pb > 1%	110	26	-	-	-	-	-	-	-	-	-	-	-	
	Brass, red brass	90	27	-	-	-	-	-	-	-	-	-	-	-	
	Bronze unleaded & elect. copper	100	28	-	-	-	-	-	-	-	-	-	-	-	
S	Heat-resistant alloys	Fe basis	annealed	200	31	.002	.002	.002	.002	.003	260	230	230	200	200
			age-hardened	280	32	.002	.002	.002	.002	.003	260	230	230	200	200
		Ni or Co basis	annealed	250	33	-	-	.002	.002	.003	160	130	130	130	130
			age-hardened	350	34	-	-	.002	.002	.003	160	130	130	130	130
	Titanium alloys	cast		320	35	-	-	.002	.002	.003	160	130	130	130	130
			Pure titanium	4003	36	-	-	-	-	-	-	-	-	-	-
		Alpha + Beta alloys, age-hardened	10503	37	-	-	-	-	-	-	-	-	-	-	

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS
VISE JAWS
VISE ACCESSORIES
STRAIGHT SHANK
COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

COOLANT THRU INDEXABLE DRILLS

INDEXABLE DRILLS

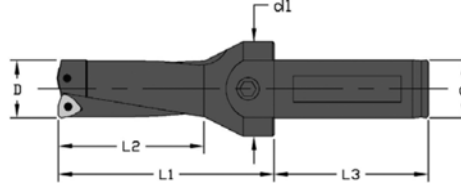
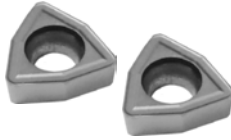
Coolant Thru Using 80° WCMT/WCMX Inserts

ULTRA-DEX USA



FEATURES:

- 2xD, 2.5xD and 4xD indexable drills
- Spiral flutes to improve chip evacuation
- Coolant-thru access located on both shank and side of drill body
- Insert pockets precisely positioned to keep cutting forces low and evenly distributed
- 80° trigon inserts offer 3 cutting edges
- Made in USA



	Workpiece Material	SFM	Inch/Rev.
P	Steel	225-650	.0022-.006
M	Stainless Steel	250-430	.002-.006
K	Cast Iron	300-600	.0025-.009
N	Ferrite Materials	600-1100	.0038-.011
S	Heat-resistant steel	60-150	.0028-.008

Dia D	Sh Dia d	d1	Shank Len L3	L1	FI Length L2	Part Number	Price Each	Insert	Screw	Torx	Insert Series
-------	----------	----	--------------	----	--------------	-------------	------------	--------	-------	------	---------------

2.5X Diameter

7/16"	0.437	0.625	0.970	1.687	2.280	1.280	UD-0437-2D-063	\$124.32	WCMT 1.211	MTS-184	T-6-S	12
15/32"	0.468	0.625	0.970	1.687	2.280	1.310	UD-0468-2D-063	\$124.32	WCMT 1.211	MTS-184	T-6-S	12
1/2"	0.500	0.625	0.970	1.687	2.280	1.340	UD-0500-2D-063	\$124.32	WCMT 1.211	MTS-184	T-6-S	12
17/32"	0.531	0.625	0.970	1.687	2.280	1.370	UD-0531-2D-063	\$124.32	WCMT 1.51.51	MTS-2	T-6-S	15
9/16"	0.562	0.625	0.970	1.687	2.280	1.400	UD-0562-2D-063	\$124.32	WCMT 1.51.51	MTS-2	T-6-S	15
19/32"	0.593	0.625	0.970	1.687	2.280	1.430	UD-0593-2D-063	\$124.32	WCMT 1.51.51	MTS-2	T-6-S	15

2X Diameter

5/8"	0.625	0.625	0.987	1.687	2.280	1.375	UD-0625-2D-063	\$124.32	WCMX 1.81.52	MTS-255	T-7-S	18
11/16"	0.687	0.625	0.987	1.687	2.280	1.437	UD-0687-2D-063	\$124.32	WCMX 1.81.52	MTS-255	T-7-S	18
3/4"	0.750	0.750	1.220	2.000	2.810	1.748	UD-0750-2D-075	\$137.88	WCMX 21.52	MTS-25-DR	T-8-S	21
13/16"	0.812	0.750	1.220	2.000	2.810	1.811	UD-0812-2D-075	\$137.88	WCMX 21.52	MTS-25-DR	T-8-S	21
7/8"	0.875	0.750	1.220	2.000	2.810	1.874	UD-0875-2D-075	\$137.88	WCMX 21.52	MTS-25-DR	T-8-S	21
15/16"	0.937	0.750	1.220	2.000	2.810	1.935	UD-0937-2D-075	\$137.88	WCMX 21.52	MTS-25-DR	T-8-S	21
1"	1.000	1.000	1.450	2.375	3.235	2.345	UD-1000-2D-100	\$151.44	WCMX 2.522	MTS-3-DR	T-9-S	25
1-1/32"	1.031	1.000	1.450	2.375	3.235	2.375	UD-1031-2D-100	\$151.44	WCMX 2.522	MTS-3-DR	T-9-S	25
1-1/16"	1.062	1.000	1.450	2.375	3.235	2.406	UD-1062-2D-100	\$151.44	WCMX 2.522	MTS-3-DR	T-9-S	25
1-7/64"	1.094	1.000	1.450	2.375	3.235	2.438	UD-1094-2D-100	\$151.44	WCMX 2.522	MTS-3-DR	T-9-S	25
1-1/8"	1.125	1.000	1.450	2.375	3.235	2.469	UD-1125-2D-100	\$151.44	WCMX 2.522	MTS-3-DR	T-9-S	25
1-5/32"	1.156	1.000	1.450	2.375	3.235	2.500	UD-1156-2D-100	\$151.44	WCMX 2.522	MTS-3-DR	T-9-S	25
1-3/16"	1.187	1.000	1.450	2.375	3.235	2.532	UD-1187-2D-100	\$151.44	WCMX 2.522	MTS-3-DR	T-9-S	25
1-7/32"	1.219	1.000	1.450	2.375	3.235	2.564	UD-1219-2D-100	\$151.44	WCMX 2.522	MTS-3-DR	T-9-S	25
1-1/4"	1.250	1.250	1.730	2.619	3.886	2.710	UD-1250-2D-125	\$179.70	WCMX 32.52	MTS-35-DR	T-10-S	32
1-5/16"	1.312	1.250	1.730	2.619	3.886	2.771	UD-1312-2D-125	\$179.70	WCMX 32.52	MTS-35-DR	T-10-S	32
1-11/32"	1.343	1.250	1.730	2.619	3.886	2.802	UD-1343-2D-125	\$179.70	WCMX 32.52	MTS-35-DR	T-10-S	32
1-3/8"	1.375	1.250	1.730	2.619	3.886	2.833	UD-1375-2D-125	\$179.70	WCMX 32.52	MTS-35-DR	T-10-S	32
1-7/16"	1.437	1.250	1.730	2.619	3.886	2.896	UD-1437-2D-125	\$179.70	WCMX 32.52	MTS-35-DR	T-10-S	32
1-1/2"	1.500	1.250	1.970	2.619	4.426	3.250	UD-1500-2D-125	\$207.95	WCMX 32.52	MTS-35-DR	T-10-S	32
1-9/16"	1.562	1.250	1.970	2.619	4.426	3.312	UD-1562-2D-125	\$207.95	WCMX 32.52	MTS-35-DR	T-10-S	32
1-5/8"	1.625	1.250	1.970	2.619	4.426	3.375	UD-1625-2D-125	\$222.64	WCMX 32.52	MTS-35-DR	T-10-S	32
1-11/16"	1.687	1.250	1.970	2.619	4.426	3.437	UD-1687-2D-125	\$222.64	WCMX 32.52	MTS-35-DR	T-10-S	32
1-3/4"	1.750	1.500	2.220	2.875	5.025	3.850	UD-1750-2D-150	\$236.21	WCMX 433	MTS-4-DR	T-15-S	43
1-13/16"	1.812	1.500	2.220	2.875	5.025	3.912	UD-1812-2D-150	\$236.21	WCMX 433	MTS-4-DR	T-15-S	43
1-7/8"	1.875	1.500	2.220	2.875	5.025	3.975	UD-1875-2D-150	\$276.89	WCMX 433	MTS-4-DR	T-15-S	43
1-15/16"	1.937	1.500	2.220	2.875	5.025	4.036	UD-1937-2D-150	\$276.89	WCMX 433	MTS-4-DR	T-15-S	43
2"	2.000	1.500	2.470	2.875	5.687	4.469	UD-2000-2D-150	\$305.15	WCMX 433	MTS-4-DR	T-15-S	43
2-1/8"	2.125	1.500	2.470	2.875	5.687	4.593	UD-2125-2D-150	\$333.40	WCMX 433	MTS-4-DR	T-15-S	43
2-1/4"	2.250	1.500	2.470	2.875	5.687	4.717	UD-2250-2D-150	\$361.65	WCMX 433	MTS-4-DR	T-15-S	43
2-3/8"	2.375	1.500	2.470	2.875	5.687	4.840	UD-2375-2D-150	\$388.77	WCMX 433	MTS-4-DR	T-15-S	43

4X Diameter

5/8"	0.625	.625	.987	1.687	3.720	2.815	UD-0625-4D-063	\$178.57	WCMX 1.81.52	MTS-255	T-7-S	18
11/16"	0.687	.625	.987	1.687	3.720	2.878	UD-0687-4D-063	\$178.57	WCMX 1.81.52	MTS-255	T-7-S	18
3/4"	0.750	.750	1.220	2.000	4.763	3.698	UD-0750-4D-075	\$197.78	WCMX 21.52	MTS-25-DR	T-8-S	21
5/8"	0.625	.625	.987	1.687	3.720	2.815	UD-0625-4D-063	\$178.57	WCMX 1.81.52	MTS-255	T-7-S	18
11/16"	0.687	.625	.987	1.687	3.720	2.878	UD-0687-4D-063	\$178.57	WCMX 1.81.52	MTS-255	T-7-S	18
3/4"	0.750	.750	1.220	2.000	4.763	3.698	UD-0750-4D-075	\$197.78	WCMX 21.52	MTS-25-DR	T-8-S	21
13/16"	0.812	.750	1.220	2.000	4.763	3.761	UD-0812-4D-075	\$197.78	WCMX 21.52	MTS-25-DR	T-8-S	21
7/8"	0.875	.750	1.220	2.000	4.763	3.824	UD-0875-4D-075	\$197.78	WCMX 21.52	MTS-25-DR	T-8-S	21
15/16"	0.937	.750	1.220	2.000	4.763	3.885	UD-0937-4D-075	\$197.78	WCMX 21.52	MTS-25-DR	T-8-S	21

Please See Following Page For Additional Sizes

Call Us Today For All Of Your Machine Tool Needs!

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

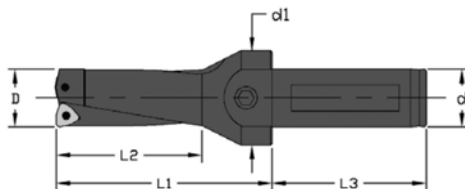
ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

INDEXABLE DRILLS Coolant Thru Using 80° WCMX Inserts

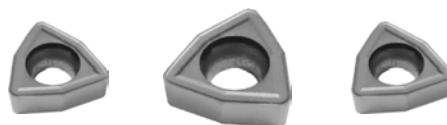
ULTRA-DEX USA



Dia D	Sh Dia d	d1	Shank Len L3	L1	Fl Length L2	Part Number	Price Each	Insert	Screw	Torx	Insert Series	
4X Diameter												
1"	1.000	1.000	1.4500	2.375	5.685	4.635	UD-1000-4D-100	\$218.12	WCMX 2.522	MTS-3-DR	T-9-S	25
1-1/32"	1.031	1.000	1.4500	2.375	5.685	4.666	UD-1031-4D-100	\$218.12	WCMX 2.522	MTS-3-DR	T-9-S	25
1-1/16"	1.062	1.000	1.4500	2.375	5.685	4.696	UD-1062-4D-100	\$218.12	WCMX 2.522	MTS-3-DR	T-9-S	25
1-7/64"	1.094	1.000	1.4500	2.375	5.685	4.728	UD-1094-4D-100	\$218.12	WCMX 2.522	MTS-3-DR	T-9-S	25
1-1/8"	1.125	1.000	1.4500	2.375	5.685	4.760	UD-1125-4D-100	\$218.12	WCMX 2.522	MTS-3-DR	T-9-S	25
1-5/32"	1.156	1.000	1.4500	2.375	5.685	4.792	UD-1156-4D-100	\$218.12	WCMX 2.522	MTS-3-DR	T-9-S	25
1-3/16"	1.187	1.000	1.4500	2.375	5.685	4.822	UD-1187-4D-100	\$218.12	WCMX 2.522	MTS-3-DR	T-9-S	25
1-7/32"	1.219	1.000	1.4500	2.375	5.685	4.864	UD-1219-4D-100	\$218.12	WCMX 2.522	MTS-3-DR	T-9-S	25
1-1/4"	1.250	1.250	1.730	2.619	6.760	5.585	UD-1250-4D-125	\$257.68	WCMX 32.52	MTS-35-DR	T-10-S	32
1-5/16"	1.312	1.250	1.730	2.619	6.760	5.646	UD-1312-4D-125	\$257.68	WCMX 32.52	MTS-35-DR	T-10-S	32
1-3/8"	1.375	1.250	1.730	2.619	6.760	5.708	UD-1375-4D-125	\$257.68	WCMX 32.52	MTS-35-DR	T-10-S	32
1-7/16"	1.437	1.250	1.730	2.619	6.760	5.771	UD-1437-4D-125	\$257.68	WCMX 32.52	MTS-35-DR	T-10-S	32
1-1/2"	1.500	1.250	1.970	2.619	7.800	6.632	UD-1500-4D-125	\$298.36	WCMX 32.52	MTS-35-DR	T-10-S	32
1-9/16"	1.562	1.250	1.970	2.619	7.800	6.695	UD-1562-4D-125	\$298.36	WCMX 32.52	MTS-35-DR	T-10-S	32
1-5/8"	1.625	1.250	1.970	2.619	7.800	6.757	UD-1625-4D-125	\$317.58	WCMX 32.52	MTS-35-DR	T-10-S	32
1-11/16"	1.687	1.250	1.970	2.619	7.800	6.820	UD-1687-4D-125	\$317.58	WCMX 32.52	MTS-35-DR	T-10-S	32
1-3/4"	1.750	1.500	2.220	2.875	8.900	7.724	UD-1750-4D-150	\$337.92	WCMX 433	MTS-4-DR	T-15-S	43
1-13/16"	1.812	1.500	2.220	2.875	8.900	7.786	UD-1812-4D-150	\$337.92	WCMX 433	MTS-4-DR	T-15-S	43
1-7/8"	1.875	1.500	2.220	2.875	8.900	7.849	UD-1875-4D-150	\$397.82	WCMX 433	MTS-4-DR	T-15-S	43
1-15/16"	1.937	1.500	2.220	2.875	8.900	7.911	UD-1937-4D-150	\$397.82	WCMX 433	MTS-4-DR	T-15-S	43
2"	2.000	1.500	2.470	2.875	10.347	9.263	UD-2000-4D-150	\$431.72	WCMX 433	MTS-4-DR	T-15-S	43
2-1/8"	2.125	1.500	2.470	2.875	10.347	9.387	UD-2125-4D-150	\$476.93	WCMX 433	MTS-4-DR	T-15-S	43
2-1/4"	2.250	1.500	2.470	2.875	10.347	9.512	UD-2250-4D-150	\$517.62	WCMX 433	MTS-4-DR	T-15-S	43
2-3/8"	2.375	1.500	2.470	2.875	10.347	9.637	UD-2375-4D-150	\$557.18	WCMX 433	MTS-4-DR	T-15-S	43

INDEXABLE DRILL INSERTS 80° WCMT & WCMX Inserts

ULTRA-DEX USA



Insert Series	Insert Designation	Coated Inserts			Uncoated
		Grade UD51 Steels, SS, CI	Grade UD52 Steels, SS, Alloys	Grade UD32 Steels, SS, Hi-Temp	Grade UD2 Aluminum, Cast Iron
12	WCMT 1.211	UD-WCMT1211UD51 \$12.04	UD-WCMT1211UD52 \$12.95	-	UD-WCMT1211UD2 \$11.24
15	WCMT 1.51.51	UD-WCMT1515UD51 \$12.04	UD-WCMT1515UD52 \$12.95	-	UD-WCMT1515UD2 \$11.24
18	WCMX 1.81.52	UD-WCMX1815UD51 \$7.75	UD-WCMX1815UD52 \$9.50	UD-WCMX1815UD32 \$8.59	UD-WCMX1815UD2 \$7.75
21	WCMX 21.52	UD-WCMX2152UD51 \$7.75	UD-WCMX2152UD52 \$9.50	UD-WCMX2152UD32 \$8.59	UD-WCMX2152UD2 \$7.75
25	WCMX 2.522	UD-WCMX2522UD51 \$7.75	UD-WCMX2522UD52 \$9.50	UD-WCMX2522UD32 \$8.59	UD-WCMX2522UD2 \$7.75
32	WCMX 32.52	UD-WCMX3252UD51 \$8.43	UD-WCMX3252UD52 \$10.18	UD-WCMX3252UD32 \$9.37	UD-WCMX3252UD2 \$8.43
43	WCMX 433	UD-WCMX433UD51 \$8.43	UD-WCMX433UD52 \$10.52	UD-WCMX433UD32 \$9.37	UD-WCMX433UD2 \$8.43

Grade	Description
UD51	General purpose Tin (CVD) coated steel grade - used for roughing and semi-finishing of carbon alloy and stainless steel.
UD52	Tough general purpose steel grade with multi-layer titanium aluminum nitride coating for alloy steel, aluminum alloys, austenitic stainless and carbon steels, copper alloys and exotic alloys.
UD2	Uncoated - For cast iron, aluminum, non-ferrous alloys, non-metals and most high temp alloys. Excellent wear resistance.
UD32	TiAlN coated insert. Used in high speed medium load applications of stainless steel and finishing to semi-finishing of high temperature alloys.

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS
VISE ACCESSORIES
VISE JAWS
STRAIGHT SHANK COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

CARBIDE INSERTS
THREADING/GROOVING

TUNGALOY® INDEXABLE DRILLS & INSERTS

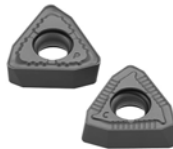
TUNGSIX-DRILL

Using WWMU 6 Cornered Inserts

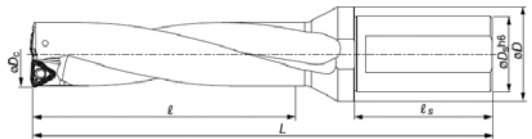
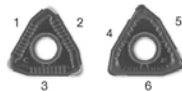
The Most Economical Drilling Solution In The Industry!



- Features double sided 6 cornered insert for drilling with superior performance
- One insert type for both inboard and outboard insert pockets
- Coolant thru design
- Twisted coolant holes improve coolant flow and chip evacuation
- Ideal for plane/slant surface, cross hole, plunging, boring and round surfaces
- Drill can be offset to drill larger diameter hole than drill diameter



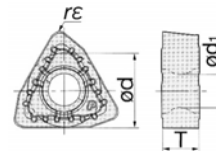
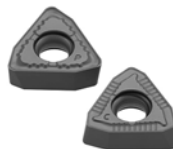
Central Peripheral



L/D	Dia Dc	Shank Ds	D	LOC I	Shank Len Is	OAL L	offset	Part Number	Drill Price	Uses Insert	Screw	Wrench
2xD	0.812	1.000	1.457	1.625	2.205	4.665	0.031	TO-6712015	\$442.10	WWMU05X205R-D	CSPB-2.2	IP-7D
	0.875	1.000	1.457	1.750	2.205	4.831	0.020	TO-6712016	\$466.30	WWMU05X205R-D	CSPB-2.2	IP-7D
	0.937	1.000	1.457	1.875	2.205	4.994	0.047	TO-6712017	\$466.30	WWMU060306R-D	CSPB-2.5	IP-8D
	1.000	1.000	1.457	2.000	2.205	5.161	0.026	TO-6712018	\$525.50	WWMU060306R-D	CSPB-2.5	IP-8D
	1.062	1.250	1.575	2.125	2.342	5.465	0.012	TO-6712019	\$525.50	WWMU060306R-D	CSPB-2.5	IP-8D
3xD	0.812	1.000	1.457	2.438	2.205	5.516	0.031	TO-6712021	\$466.30	WWMU05X205R-D	CSPB-2.2	IP-7D
	0.875	1.000	1.457	2.625	2.205	5.665	0.020	TO-6712022	\$489.20	WWMU05X205R-D	CSPB-2.2	IP-7D
	0.937	1.000	1.457	2.813	2.205	5.894	0.047	TO-6712023	\$489.20	WWMU060306R-D	CSPB-2.5	IP-8D
	1.000	1.000	1.457	3.000	2.205	6.122	0.028	TO-6712024	\$554.40	WWMU060306R-D	CSPB-2.5	IP-8D
	1.062	1.250	1.575	3.186	2.342	6.488	0.012	TO-6712025	\$554.40	WWMU060306R-D	CSPB-2.5	IP-8D

INSERTS FOR TUNGSIX-DRILL

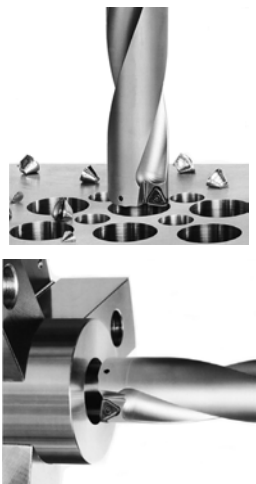
- **AH6030 Grade:** Ideal for Steels, Stainless & Super Alloys
- Smooth insert surface prevents chip adhesion and improves chip control
- New PVD coating prevents fracture caused by chip welding.
- Exclusive carbide substrate with high fracture resistance



Designation	d	T	d1	re	Grade	Part Number	Price EA
WWMU05X205R-DS	0.228	0.094	0.098	0.020	AH6030	TO-6712012	\$13.50
WWMU060306R-DS	0.264	0.114	0.118	0.024	AH6030	TO-6712013	\$14.50

SPEEDS & FEEDS FOR TUNGSIX-DRILL

TUNGSIX-DRILL



ISO	Workpiece Material	Chip breaker	Grade	Cutting Speed Vc (sfm)	Feed: f (ipr) L/D=2,3 Dia: 0.787-1.063
P	Low carbon Steels (C,0.3) 70,1025 etc.	DS	AH6030	525-820	.0015-.004
	Carbon Steels (C>.3) 1045C,1055 etc.	DS	AH6030	260-820	.0015-.005
	Loy Alloy Steels SCM415 etc	DS	AH6030	525-820	.0015-.005
	Alloy steels 4140 etc	DS	AH6030	260-660	.002-.005
M	Stainless steels (Austenitic) 304,316 etc.	DS	AH6030	330-660	.0015-.004
	Stainless steels (Martensitic and ferritic) 430,416 etc.	DS	AH6030	330-660	.0015-.004
	Stainless steels (Precipitation Hardening) S17400 etc.	DS	AH6030	260-400	.0015-.003
K	Gray Cast Irons no. 250b etc.	DS	AH6030	260-660	.002-.005
	Ductile Cast Irons 700etc.	DS	AH6030	260-500	.002-.005
N	Aluminum Alloy	DS	AH6030	660-1310	.004-.007
S	High Temp Alloy Inconel 718 etc	DS	AH6030	60-200	.0015-.007
	Titanium Alloy Ti-6Al-4V etc	DS	AH6030	130-400	.0015-.007
H	Hardened Steel Over 40HRC	DS	AH6030	130-260	.0015-.007

Call Us Today For All Of Your Machine Tool Needs!

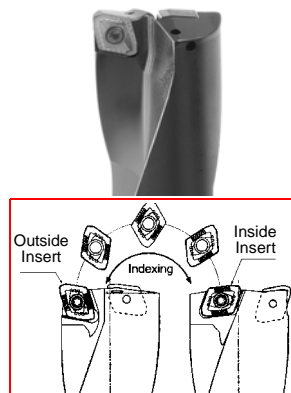
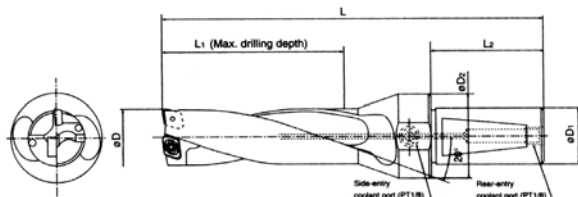
INDEXABLE DRILLS

Coolant Through



FEATURES:

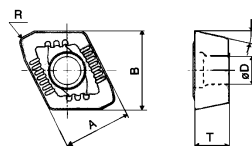
- Extended drilling capability
- Ideally balanced drill design for less vibration and chattering
- Exceptional reliability- Increased insert thickness and new edge honing increases tool life
- Higher tool economy- four cutting edges per insert can be economically utilized by indexing
- Unique chip pocket effectively removes chips from center



Dia D	Shank D1	D2	L1	L2	OAL L	Part Number	Price Each	Tungaloy Drill Ref. #	Applicable Insert	Screw	Wrench
0.500	0.75	1.25	1.500	1.60	4.100	TO-6718512	\$391.60	TDXU-0500FS-03	XPMT040104R	SC-03 \$1.00	TX-06F \$2.00
0.531	0.75	1.25	1.593	1.60	4.224	TO-6718553	\$391.60	TDXU-0531FS-03	XPMT040104R		
0.562	0.75	1.25	1.687	1.60	4.348	TO-6718515	\$391.60	TDXU-0562FS-03	XPMT040104R		
0.625	0.75	1.25	1.875	1.60	4.600	TO-6718518	\$411.10	TDXU-0625FS-03	XPMT050204R	SC-04 \$1.00	TX-06F \$2.00
0.687	1.00	1.457	2.062	2.28	5.622	TO-6718521	\$411.10	TDXU-0687FS-03	XPMT06X308R		
0.075	1.00	1.457	2.250	2.28	5.872	TO-6718525	\$411.10	TDXU-0750FS-03	XPMT06X308R		
0.812	1.00	1.457	2.437	2.28	6.122	TO-6718529	\$457.10	TDXU-0812FS-03	XPMT06X308R	SC-05 \$1.00	TX-07F \$2.00
0.875	1.00	1.457	2.625	2.28	6.372	TO-6718533	\$457.10	TDXU-0875FS-03	XPMT07H308R		
0.937	1.00	1.457	2.812	2.28	6.622	TO-6718536	\$479.60	TDXU-0937FS-03	XPMT07H308R		
1.000	1.00	1.457	3.000	2.28	6.872	TO-6718539	\$479.60	TDXU-1000FS-03	XPMT07H308R	SC-06 \$1.00	TX-08F \$2.00
1.062	1.25	1.575	3.187	2.28	7.121	TO-6718563	\$543.60	TDXU-1062FS-03	XPMT08T308R		
1.125	1.25	1.575	3.375	2.28	7.371	TO-6718542	\$543.60	TDXU-1125FS-03	XPMT08T308R		
1.187	1.25	1.575	3.562	2.28	7.621	TO-6718568	\$543.60	TDXU-1187FS-03	XPMT08T308R	SC-07 \$1.00	TX-09F \$2.00
1.250	1.25	1.575	3.750	2.28	7.871	TO-6718544	\$603.10	TDXU-1250FS-03	XPMT08T308R		
1.312	1.50	1.969	3.936	2.69	8.630	TO-6718547	\$603.10	TDXU-1312FS-03	XPMT110412R		
1.375	1.50	1.969	5.500	2.69	8.800	TO-6718548	\$690.10	TDXU-1375FS-04	XPMT110412R	SC-08 \$1.00	TX-15F \$2.00
1.437	1.50	1.969	4.311	2.69	9.130	TO-6718579	\$640.30	TDXU-1437FS-03	XPMT110412R		
1.500	1.50	1.969	4.500	2.69	9.380	TO-6718549	\$664.20	TDXU-1500FS-03	XPMT110412R		
1.562	1.50	1.969	4.686	2.69	9.630	TO-6718585	\$664.20	TDXU-1562FS-03	XPMT110412R	SC-09 \$1.00	TX-20F \$2.00
1.625	1.50	2.165	4.875	2.69	9.870	TO-6718589	\$677.50	TDXU-1625FS-03	XPMT150512R		
1.687	1.50	2.165	5.061	2.69	10.13	TO-6718593	\$677.50	TDXU-1687FS-03	XPMT150512R		
1.750	1.50	2.165	5.250	2.69	10.38	TO-6718597	\$677.50	TDXU-1750FS-03	XPMT150512R	SC-09 \$1.00	TX-20F \$2.00
1.812	1.50	2.165	5.436	2.69	10.63	TO-6718601	\$758.60	TDXU-1812FS-03	XPMT150512R		
1.875	1.50	2.165	5.625	2.69	10.88	TO-6718605	\$758.60	TDXU-1875FS-03	XPMT150512R		
1.937	1.50	2.165	5.811	2.69	11.13	TO-6718609	\$758.60	TDXU-1937FS-03	XPMT150512R		
2.000	1.50	2.165	6.000	2.69	11.38	TO-6718612	\$758.60	TDXU-2000FS-03	XPMT150512R		

XPMT INSERTS

- High positive XPMT inserts
- Increased insert thickness and new edge honing increases tool life.
- Economical! Four cutting edges per insert!
- 2 grades cut everything!
- Inserts sold in box quantities only



Drill Dia	I. C.	T	Length	Tungaloy Reference No.	AH120/AH6030	AH725	BOX QTY Price Each	Screws \$1.00	Wrench \$2.00
					For non-ferrous, Stainless, Hi Temp Alloys	For Steel, Alloy steel (High Feed, Alum)			
0.500 to 0.562	0.169	0.063	0.177	XPMT040104R	TO-169-AH120	TO-169-AH725	\$8.78	SC-03	TX-06F
0.625	0.203	0.094	0.213	XPMT050204R	TO-203-AH120	TO-203-AH725	\$10.45	SC-04	TX-06F
0.687 to 0.812	0.236	0.118	0.276	XPMT06X308R	TO-236-AH120	TO-236-AH725	\$10.45	SC-05	TX-07F
0.875 to 1.000	0.276	0.142	0.323	XPMT07H308R	TO-276-AH120	TO-276-AH725	\$11.30	SC-06	TX-08F
1.031 to 1.2500	0.335	0.156	0.390	XPMT08T308R	TO-335-AH120	TO-335-AH725	\$15.30	SC-07	TX-09F
1.312 to 1.625	0.441	0.187	0.492	XPMT110412R	TO-441-AH120	TO-441-AH725	\$15.30	SC-08	TX-15F
1.687 to 2.000	0.591	0.219	0.634	XPMT150512R	TO-591-AH120	TO-591-AH725	\$21.30	SC-09	TX-20F

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

TUNGALOY® STYLE INDEXABLE DRILLS

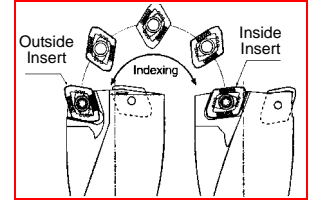
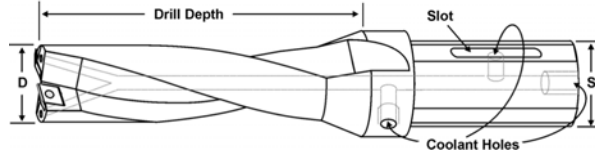
INDEXABLE DRILLS Coolant Through

QUADEX™

- FEATURES:**
- Exceptional reliability
 - Uses high positive XPMT inserts- Produces a great finish!
 - Manufactured from H-13 steel for greater tool strength
 - Economical-4 cutting edges per insert!
 - 3 different coolant ports
 - Reduce inventory- two insert grades cut everything!
 - Made in the USA!



Shank Dia: 0.750" to 1.500"
Drill Dia: 0.687" to 2.000"
Drill Depths: 1" to 6"



D		S		Drill Depth 1.00"		Drill Depth 2.00"		Drill Depth 3.00"		Drill Depth 4.00" and Over		
Drill Dia.	Shank Size	Part Number	Drill Price	Part Number	Drill Price	Part Number	Drill Price	Flute Len.	Part Number	Drill Price		
0.750 - 0.812 Drill Diameter- 0.236 Insert I.C.												
0.750	1.00	TD0750-1010-236	\$232.05	TD0750-2010-236	\$265.65							
0.812	1.00	TD0812-1010-236	\$232.05	TD0812-2010-236	\$265.65							
0.875 - 1.000 Drill Diameter- 0.276 Insert I.C.												
0.875	1.00	TD0875-1010-276	\$232.05	TD0875-2010-276	\$265.65							
0.875	1.25	TD0875-1012-276	\$232.05	-	-							
0.937	1.00	TD0937-1010-276	\$232.05	TD0937-2010-276	\$265.65							
1.000	1.00	TD1000-1010-276	\$239.40	TD1000-2010-276	\$271.95	-	-	4"	TD1000-4010-276	\$339.15		

WHILE SUPPLIES LAST!

1.031 - 1.250 Drill Diameter- 0.335 Insert I.C.												
1.031	1.25	TD1031-1012-335	\$239.40	TD1031-2012-335	\$271.95	TD1031-3012-335	\$305.55	4"	TD1031-4012-335	\$339.15		
1.062	1.25	TD1062-1012-335	\$239.40	TD1062-2012-335	\$271.95	TD1062-3012-335	\$305.55	4"	TD1062-4012-335	\$339.15		
1.125	1.25	TD1125-1012-335	\$239.40	TD1125-2012-335	\$271.95	TD1125-3012-335	\$305.55	4"	TD1125-4012-335	\$339.15		
1.187	1.25	TD1187-1012-335	\$239.40	TD1187-2012-335	\$271.95	TD1187-3012-335	\$305.55	4"	TD1187-4012-335	\$339.15		
1.250	1.25	TD1250-1012-335	\$245.70	TD1250-2012-335	\$279.30	TD1250-3012-335	\$319.20	4"	TD1250-4012-335	\$345.45		

1.312 - 1.625 Drill Diameter- 0.441 Insert I.C.												
1.312	1.25	TD1312-1012-441	\$245.70	TD1312-2012-441	\$279.30	TD1312-3012-441	\$319.20	4"	TD1312-4012-441	\$345.45		
1.375	1.25	TD1375-1012-441	\$245.70	TD1375-2012-441	\$279.30	TD1375-3012-441	\$319.20	4"	TD1375-4012-441	\$345.45		
1.437	1.25	TD1437-1012-441	\$245.70	TD1437-2012-441	\$279.30	TD1437-3012-441	\$319.20	4"	TD1437-4012-441	\$345.45		
1.500	1.25	TD1500-1012-441	\$259.35	TD1500-2012-441	\$285.60	TD1500-3012-441	\$325.50	4"	TD1500-4012-441	\$351.75		
1.562	1.25	TD1562-1012-441	\$259.35	TD1562-2012-441	\$285.60	TD1562-3012-441	\$325.50	4"	TD1562-4012-441	\$351.75		
1.625	1.25	TD1625-1012-441	\$259.35	TD1625-2012-441	\$285.60	TD1625-3012-441	\$325.50	4"	TD1625-4012-441	\$351.75		

1.687 - 2.000 Drill Diameter- 0.591 Insert I.C.												
1.687	1.25	TD1687-1012-591	\$259.35	TD1687-2012-591	\$285.60	TD1687-3012-591	\$325.50	4"	TD1687-4012-591	\$351.75		
1.750	1.25	TD1750-1012-591	\$265.65	TD1750-2012-591	\$291.90	TD1750-3012-591	\$331.80	4"	TD1750-4012-591	\$359.10		
1.750	1.50	-	-	-	-	-	-	4"	TD1750-4015-591	\$359.10		
1.750	1.25	-	-	-	-	-	-	5"	TD1750-5012-591	\$385.35		
1.750	1.50	-	-	-	-	-	-	5"	TD1750-5015-591	\$385.35		
1.812	1.25	TD1812-1012-591	\$265.65	TD1812-2012-591	\$291.90	TD1812-3012-591	\$331.80	4"	TD1812-4012-591	\$359.10		
1.875	1.25	TD1875-1012-591	\$265.65	TD1875-2012-591	\$291.90	TD1875-3012-591	\$331.80	4"	TD1875-4012-591	\$359.10		
1.937	1.25	TD1937-1012-591	\$265.65	TD1937-2012-591	\$291.90	TD1937-3012-591	\$331.80	4"	TD1937-4012-591	\$359.10		
2.000	1.25	TD2000-1012-591	\$339.15	TD2000-2012-591	\$385.35	TD2000-3012-591	\$425.25	4"	TD2000-4012-591	\$465.15		
2.000	1.50	-	-	-	-	-	-	4"	TD2000-4015-591	\$465.15		
2.000	1.25	-	-	-	-	-	-	5"	TD2000-5012-591	\$491.40		
2.000	1.500	-	-	-	-	-	-	5"	TD2000-5015-591	\$491.40		
2.000	1.250	-	-	-	-	-	-	6"	TD2000-6012-591	\$517.65		
2.000	1.500	-	-	-	-	-	-	6"	TD2000-6015-591	\$517.65		

Tungaloy™ is a registered trademark of Tungaloy of America, Inc.

Call Us Today For All Of Your Machine Tool Needs!

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

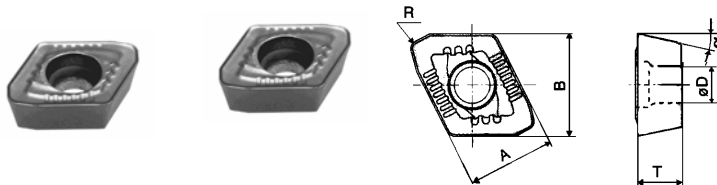
MRO & SAFETY
FLAT STOCK/DRILL ROD

TUNGALOY® STYLE INDEXABLE DRILL INSERTS

XPMT INSERTS

INSERT FEATURES:

- High positive XPMT inserts
- Increased insert thickness and new edge honing increases tool life.
- Economical! Four cutting edges per insert!
- 2 grades cut everything!
- Inserts sold in box quantities only



Drill Dia	I. C.	T	Length	Tungaloy Reference No.	AH120/AH6030	AH725	BOX QTY Price Each	Screws \$1.00	Wrench \$2.00
					For non-ferrous, Stainless, Hi Temp Alloys	For Steel, Alloy steel (High Feed, Alum)			
0.500 to 0.562	0.169	0.063	0.177	XPMT040104R	TO-169-AH120	TO-169-AH725	\$8.78	SC-03	TX-06F
0.625	0.203	0.094	0.213	XPMT050204R	TO-203-AH120	TO-203-AH725	\$10.45	SC-04	TX-06F
0.687 to 0.812	0.236	0.118	0.276	XPMT06X308R	TO-236-AH120	TO-236-AH725	\$10.45	SC-05	TX-07F
0.875 to 1.000	0.276	0.142	0.323	XPMT07H308R	TO-276-AH120	TO-276-AH725	\$11.30	SC-06	TX-08F
1.031 to 1.2500	0.335	0.156	0.390	XPMT08T308R	TO-335-AH120	TO-335-AH725	\$15.30	SC-07	TX-09F
1.312 to 1.625	0.441	0.187	0.492	XPMT110412R	TO-441-AH120	TO-441-AH725	\$15.30	SC-08	TX-15F
1.687 to 2.000	0.591	0.219	0.634	XPMT150512R	TO-591-AH120	TO-591-AH725	\$21.30	SC-09	TX-20F

RECOMMENDED CUTTING CONDITIONS

Tungaloy™ is a registered trademark of Tungaloy of America, Inc.

Work Materials	First Choice	High Feed	High-Speed	Troubleshooting			Cutting Speed Vc (SFM)	Series L/D	Feed (ipr)			
				Break-age	Wear	Surface Finish			0.500 - 0.687	0.750-1.00	1.062-1.250	1.312-2.00
Low Carbon Steels (C<3) JIS SS400,SM490,S25C,etc.	DS AH725	-	-	DW AH725	-	DW AH120	525-1050	2D,3D	.0015-.005	.002-.004	.002-.004	.002-.004
Carbon Steels (C<3) JIS S45C,S55C,etc.	DJ AH725	DW AH725	DS AH120	DW AH725	DJ T1015	DW AH740	250-800	2D,3D	.002-.005	.002-.006	.002-.006	.003-.007
Low alloy steels JIS SCM415,etc.	DS AH725	-	-	DW AH725	-	DW AH725	525-800	2D,3D	.002-.003	.002-.005	.002-.005	.002-.006
Alloy Steels JIS SCM440,SCR420,etc.	DJ AH725	DW AH725	DS AH120	DW AH725	DJ T1015	DW AH725	250-650	2D,3D	.002-.005	.002-.006	.002-.006	.003-.007
Stainless Steels Austenitic JIS SUS304,SUS316,etc.	DS AH725	-	-	DS AH725	-	DW AH120	325-650	2D,3D	.001-.003	.002-.004	.002-.005	.002-.005
Stainless steels Martensitic and Ferritic JIS SUS430,SUS416,etc.	DS AH725	-	-	DS AH725	-	DW AH120	325-725	2D,3D	.0015-.003	.002-.004	.002-.005	.002-.005
Stainless Steels Precipitation Hardening JIS SUS630,etc.	DS AH725	-	-	DS AH725	-	DW A H120	250-400	2D,3D	.002-.003	.002-.003	.002-.004	.002-.004
Gray Cast Irons JIS FC250,etc.	DJ T1015	DJ AH725	-	DJ AH725	-	DW AH740	250-800	2D,3D	.002-.005	.002-.006	.002-.007	.003-.008
Ductile Cast Irons JIS FCD700,etc.	DJ T1015	DJ AH725	-	DJ AH725	-	DW AH740	250-650	2D,3D	.002-.005	.002-.006	.002-.007	.003-.008
Aluminum Alloys JIS A2017,ADC12,etc.	DW AH725	-	-	-	-	-	650-1300	2D,3D	.004-.006	.006-.008	.006-.008	.006-.010
Super Alloys	DS AH120	-	-	-	-	-	100-200	2D,3D	.002-.004	.002-.004	.002-.005	.002-.006
Titanium	DS AH120	-	-	-	-	-	100-200	2D,3D	.002-.004	.002-.004	.002-.004	.002-.004

INDEXABLE DRILL TROUBLESHOOTING TIPS:

Inserts Chipping or Breaking-

- **Inadequate coolant supply-** Check coolant volume and pressure
- **Speeds and feeds being used are incorrect-** Adjust speed and feeds according to tables provided
- **Insert screws may be damaged-** Check screw head and thread for nicks and burrs. Do not overtighten screws
- **Inserts not seating properly-** Make sure the inserts are seated properly in the pocket bottoms. Clean insert pockets whenever inserts are replaced or indexed making sure no nicks or burrs are present.
- **Misaligned drill/offcenter drill-** Check toolholder TIR. Replace or adjust TIR as necessary.
- **Drill not seating properly in tool holder, spindle or turret-** Make sure there are no nicks, burrs or chips in tool shank and/or holder. Use a feeler gauge to check parting line between tool shank and socket.
- **Too much tool deflection or lack of tool rigidity due to too much tool overhang-** Check if tool can be held shorter.



Rough Cutting Action-Tool Makes Rumbling Noise and Deflects-

- **Excessive thrust, Feed rate too high-** Lower feed rate and/or increase speed.
- **Chips being recut-** Add more coolant flow.

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

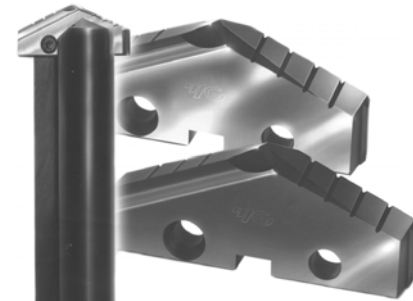
SPADE DRILL BODIES- STRAIGHT SHANK

SPADE DRILL BODIES
Straight Shank, Straight Flute

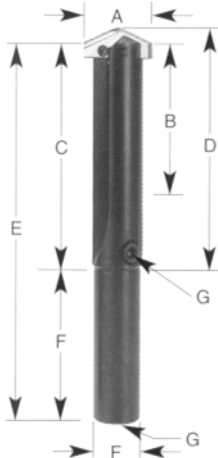
ALLIED® "TA" Series Compatible!



Prices Are
50%
Below Mfg's List!

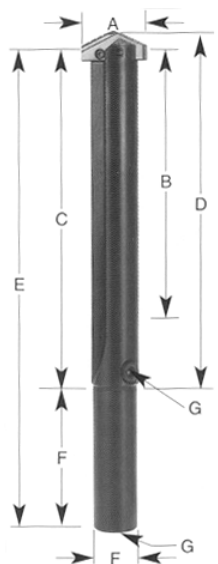


Short Length - Straight Shank Holders, Straight Flute



Series	A Drill Insert Range (inches)	B Max Drill Depth	C Flute Length	D Ref Length	E OAL	F Shank Dia	F Shank Length	G Pipe Tap	Part Number	Price Each
Y	3/8 to 27/64	1 1/4	2-1/32	2 1/8	4 13/32	3/4	2 3/8	1/8	YG-P13Y01	\$159.59
Z	7/16 to 1/2	1 1/4	2-1/32	2 1/8	4 13/32	3/4	2 3/8	1/8	YG-P13Z01	\$159.59
0	33/64 to 11/16	1 3/8	2-3/16	2 19/64	4 9/16	3/4	2 3/8	1/8	YG-P13001	\$159.59
0.5	39/64 to 11/16	1 3/8	2-3/16	2 19/64	4 9/16	3/4	2 3/8	1/8	YG-P13051	\$159.59
1	45/64 to 15/16	2 5/8	3-7/8	4 1/64	6 7/8	3/4 1	3 3	1/8 1/8	YG-P13101 YG-P13102	\$165.66 \$165.66
1.5	66/64 to 15/16	2 5/8	3-7/8	4 1/64	6 7/8	3/4 1	3 3	1/8 1/8	YG-P13151 YG-P13152	\$179.07 \$179.07
2	31/32 to 1 3/8	3 3/8	4-1/2	4 41/64	8	1 1-1/4	3 1/2 3 1/2	1/8 1/8	YG-P13202 YG-P13203	\$179.07 \$179.07
2.5	1 3/16 to 1 3/8	3 3/8	4-1/2	4 41/64	8	1 1-1/4	3 1/2 3 1/2	1/8 1/8	YG-P13252 YG-P13253	\$201.00 \$201.00
3	1 13/32 to 1 7/8	4 3/4	6	6 3/16	10	1-1/4 1-1/2	4 4	1/4 1/4	YG-P13303 YG-P13304	\$203.44 \$203.44
4	1 29/32 to 2 9/16	5 1/8	6-1/2	6 11/16	10 1/2	1-1/2 1-3/4	4 4	1/4 1/4	YG-P13404 YG-P13405	\$233.87 \$247.29
5	2 1/2 to 3 1/2	6 3/4	8-1/2	8 3/4	12 1/2	2	4	1/2	YG-P13506	\$371.51
7-8	3 17/32 to 4 1/2	6 3/4	8-7/8	9 1/8	13 7/8	3	5	1/2	YG-P13708	\$505.51

Standard Length - Straight Shank Holders, Straight Flute



Series	A Drill Insert Range (inches)	B Max Drill Depth	C Flute Length	D Ref Length	E OAL	F Shank Dia	F Shank Length	G Pipe Tap	Part Number	Price Each
Y	3/8 to 27/64	2 3/8	3-5/32	3 1/4	5 17/32	3/4	2 3/8	1/8	YG-P15Y01	\$163.22
Z	7/16 to 1/2	2 3/8	3-5/32	3 1/4	5 17/32	3/4	2 3/8	1/8	YG-P15Z01	\$163.22
0	33/64 to 11/16	2 1/2	3-5/16	3 27/64	5 11/16	3/4	2 3/8	1/8	YG-P15001	\$163.22
0.5	39/64 to 11/16	2 1/2	3 5/16	3 27/64	5 11/16	3/4	2 3/8	1/8	YG-P15051	\$163.22
1	45/64 to 15/16	6 5/8	7-7/8	8 1/64	10 7/8	3/4 1	3 3	1/8 1/8	YG-P15101 YG-P15102	\$179.07 \$179.07
1.5	55/64 to 15/16	6 5/8	7-7/8	8 1/64	10 7/8	3/4 1	3 3	1/8 1/8	YG-P15151 YG-P15152	\$192.46 \$192.46
2	31/32 to 1 3/8	7 3/8	8-1/2	8 41/64	12	1 1-1/4	3 1/2 3 1/2	1/8 1/8	YG-P15202 YG-P15203	\$192.46 \$192.46
2.5	1 3/16 to 1 3/8	7 3/8	8-1/2	8 41/64	12	1 1-1/4	3 1/2 3 1/2	1/8 1/8	YG-P15252 YG-P15253	\$213.15 \$213.15
3	1 13/32 to 1 7/8	8 1/4	9-1/2	9 11/16	13 1/2	1-1/4 1-1/2	4 4	1/4 1/4	YG-P15303 YG-P15304	\$215.61 \$215.61
4	1 29/32 to 2 9/16	9 1/8	10-1/2	10 11/16	14 1/2	1-1/2 1-3/4	4 4	1/4 1/4	YG-P15404 YG-P15405	\$270.42 \$291.11
5	2 1/2 to 3 1/2	10 3/4	12-1/2	12 3/4	16 1/2	2	4	1/2	YG-P15506	\$408.07
7-8	3 17/32 to 4 1/2	10 3/4	12-7/8	13 1/8	17 7/8	3	5	1/2	YG-P15708	\$602.95

ALLIED® is a trademark of Allied Machine and Engineering Corporation.

Call Us Today For All Of Your Machine Tool Needs!

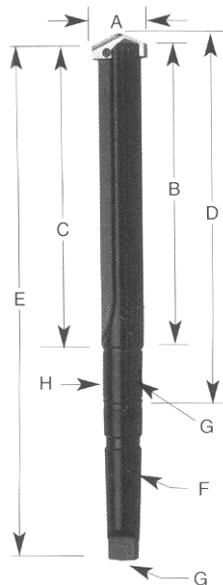
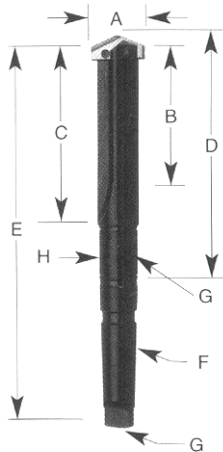
SPADE DRILL BODIES- TAPER SHANK

SPADE DRILL BODIES Morse Taper Shank, Straight Flute

ALLIED® "TA" Series Compatible!



Short Length- Morse Taper Shank, Straight Flute



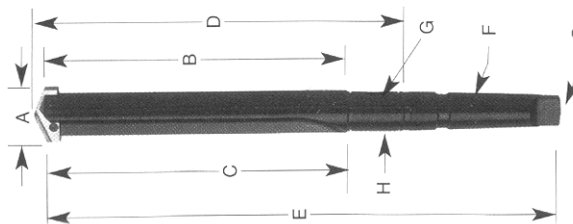
Insert Series	A	B	C	D	E	F	G	Part Number	Price Each	Coolant Inducer
Y	3/8 -27/64	1-1/4	2-1/32	3-15/32	6-5/16	#2	1/16	YG-P01Y02	\$168.95	YG-PR1030
Z	7/16 -1/2	1-1/4	2-1/32	3-15/32	6-5/16	#2	1/16	YG-P01Z02	\$168.95	
0	33/64 -11/16	1-3/8	2-3/16	3-41/64	6-15/32	#2	1/16	YG-P01002	\$168.95	
0.5	39/64 -11/16	1-3/8	2-3/16	3-41/64	6-15/32	#2	1/16	YG-P01052	\$168.95	YG-PR1031
1	45/64 -15/16	2-3/4	3-7/8	5-39/64 5-43/64	9-5/32 10-5/32	#3 #4	1/8 1/8	YG-P01103 YG-P01104	\$184.43 \$189.59	
1.5	55/64 -15/16	2-3/4	3-7/8	5-39/64 5-43/64	9-5/32 10-5/32	#3 #4	1/8 1/8	YG-P01153 YG-P01154	\$198.61 \$205.08	YG-PR1031
2	31/32 -1-3/8	3-3/8	4-1/2	6-15/64 6-19/64	9-25/32 10-25/32	#3 #4	1/8 1/8	YG-P01203 YG-P01204	\$205.08 \$212.82	
2.5	1-3/16 -1-3/8	3-3/8	4-1/2	6-15/64 6-37/64	9-25/32 11-1/16	#3 #4	1/8 1/4	YG-P01253 YG-P01254	\$219.26 \$228.29	YG-PR1031
3	1-13/32 -1-7/8	4-3/4	6	8-1/8	12-9/16	#4	1/4	YG-P01304	\$228.29	YG-PR1042
				8-1/8	13-13/16	#5	1/4	YG-P01305	\$241.18	YG-PR1043
4	1-29/32 -2-9/16	5-1/8	6-1/2	8-5/8	13-1/16	#4	1/4	YG-P01404	\$247.64	YG-PR1042
				8-5/8	14-5/16	#5	1/4	YG-P01405	\$270.84	YG-PR1043
5	2-1/2 -3-1/2	6-3/4	8-1/2	11-5/16	16-15/16	#5	1/2	YG-P01505	\$393.38	YG-PR1054
7	3-17/32 -4-1/2	6-3/4	8-7/8	11-11/16	17-5/16	#5	1/2	YG-P01705	\$535.25	YG-PR1054

Standard Length- Morse Taper Shank, Straight Flute

Insert Series	A	B	C	D	E	F	G	Part Number	Price Each	Coolant Inducer
Y	3/8 - 27/64	2-3/8	3-5/32	4-19/32	7-7/16	#2	1/16	YG-P03Y02	\$172.82	YG-PR1030
Z	7/16 - 1/2	2-3/8	3-5/32	4-19/32	7-7/16	#2	1/16	YG-P03Z02	\$172.82	
0	33/64 - 11/16	2-1/2	3-5/16	4-49/64	7-19/32	#2	1/16	YG-P03002	\$172.82	
0.5	39/64 -11/16	2 1/2	3-5/16	4-49/64	7-19/32	#2	1/16	YG-P03052	\$172.82	YG-PR1031
1	45/64 - 15/16	6-3/4	7-7/8	9-39/64	13-5/32	#3	1/8	YG-P03103	\$197.33	
				9-43/64	14-5/32	#4	1/8	YG-P03104	\$203.77	
1.5	55/64 - 15/16	6-3/4	7-7/8	9-39/64	13-5/32	#3	1/8	YG-P03153	\$211.51	YG-PR1031
				9-43/64	14-5/32	#4	1/8	YG-P03154	\$217.97	
2	31/32 - 1-3/8	7-3/8	8-1/2	10-15/64	13-25/32	#3	1/8	YG-P03203	\$217.97	YG-PR1031
				10-19/64	14-25/32	#4	1/8	YG-P03204	\$224.41	
2.5	1-3/16 - 1-3/8	7-3/8	8-1/2	10-15/64	13-25/32	#3	1/8	YG-P03253	\$232.15	YG-PR1031
				10-37/64	15-1/16	#4	1/4	YG-P03254	\$241.18	
3	1-13/32 - 1-7/8	8-1/4	9-1/2	11-5/8	16-1/16	#4	1/4	YG-P03304	\$248.92	YG-PR1042
				11-5/8	17-5/16	#5	1/4	YG-P03305	\$268.26	
4	1-29/32 - 2-9/16	9-1/8	10-1/2	12-5/8	17-1/16	#4	1/4	YG-P03404	\$286.33	YG-PR1042
				12-5/8	18-5/16	#5	1/4	YG-P03405	\$308.25	
5	2-1/2 - 3-1/2	10-3/4	12-1/2	15-5/16	20-5/16	#5	1/2	YG-P03505	\$432.08	YG-PR1054
7	3-17/32 - 4-1/2	10-3/4	12-7/8	15-11/16	21-5/16	#5	1/2	YG-P03705	\$638.43	

Coolant Inducers Are Located On Page 273

INTERMEDIATE LENGTH HOLDERS



Intermediate Length Straight Shank Holder- Straight Flute

Series	Allied Ref. Number	A	B	C	D	E	Shank	Pipe Tap	Part Number	Price Each	
1	23010S - 100L	45/64" - 15/16	4-5/8	5-7/8	6-1/64	8-7/8	1	3	1/8	YG-P14102	\$189.16
1.5	23015S - 100L	55/64" - 15/16	4-5/8	5-7/8	6-1/64	8-7/8	1	3	1/8	YG-P14152	\$206.36
2	23020S - 125L	31/32" - 1-3/8	5-3/8	6-1/2	6-41/64	10	1-1/4	3-1/2	1/8	YG-P14203	\$206.36
2.5	23025S - 125L	1-3/16" - 1-3/8	5-3/8	6-1/2	6-41/64	10	1-1/4	3-1/2	1/8	YG-P14253	\$229.29
3	23030S - 150L	1-13/32" - 1-7/8	6-1/2	7-3/4	7-15/16	11-3/4	1-1/2	4	1/4	YG-P14304	\$243.62

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

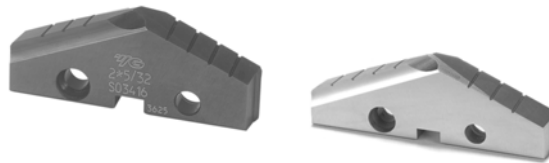
CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

SPADE DRILL INSERTS-COBALT & CARBIDE

“THROW AWAY” SPADE DRILL INSERTS Super HSS Cobalt & Carbide



Super Cobalt HSS M-4:

- Loose machines
- Manual machines
- If T-15 breaks
- Cross hole drilling

Super Cobalt HSS T-15:

- On CNC machines
- When M-4 life needs to be extended
- Abrasive drilling

Carbide:

- C5: Steels
- C3: Cast Iron
- C2: Stainless steel, aluminum, exotic alloys, ductile iron

ALLIED® “TA” Series Compatible!

Prices Are
50%
Below Mfg's List!

			SUPER COBALT HSS		CARBIDE INSERTS			
SERIES Y INSERTS			T15 TiN	T15 TiAlN	TiN C2	TiAlN C2	TiN C5	TiAlN C5
Series Y	Dia	Dec.	\$20.72 ea	\$24.89 ea	\$35.69 ea	\$38.45 ea	\$35.69 ea	\$38.45 ea
3/32” Thickness	9.5mm	0.3740	YG-S06Y01	YG-S08Y01	YG-S21Y01	YG-S23Y01	YG-S26Y01	YG-S28Y01
	25/64	0.3906	YG-S06Y02	YG-S08Y02	YG-S21Y02	YG-S23Y02	YG-S26Y02	YG-S28Y02
0.374 to 0.4331	10.0mm	0.3937	YG-S06Y04	YG-S08Y04	YG-S21Y04	YG-S23Y04	YG-S26Y04	YG-S28Y04
	13/32	0.4063	YG-S06Y05	YG-S08Y05	YG-S21Y05	YG-S23Y05	YG-S26Y05	YG-S28Y05
to 0.4331	10.5mm	0.4134	YG-S06Y07	YG-S08Y07	YG-S21Y07	YG-S23Y07	YG-S26Y07	YG-S28Y07
	27/64	0.4219	YG-S06Y08	YG-S08Y08	YG-S21Y08	YG-S23Y08	YG-S26Y08	YG-S28Y08
	11.0mm	0.4331	YG-S06Y09	YG-S08Y09	YG-S21Y09	YG-S23Y09	YG-S26Y09	YG-S28Y09
	11.0mm	0.4331	YG-S06Y11	YG-S08Y11	YG-S21Y11	YG-S23Y11	YG-S26Y11	YG-S28Y11
SERIES Z INSERTS			T15 TiN	T15 TiAlN	TiN C2	TiAlN C2	TiN C5	TiAlN C5
Series Z	Dia	Dec.	\$20.72 ea	\$24.89 ea	\$35.69 ea	\$38.45 ea	\$35.69 ea	\$38.45 ea
3/32” Thickness	7/16	0.4375	YG-S06Z01	YG-S08Z01	YG-S21Z01	YG-S23Z01	YG-S26Z01	YG-S28Z01
	11.50mm	0.4528	YG-S06Z02	YG-S08Z02	YG-S21Z02	YG-S23Z02	YG-S26Z02	YG-S28Z02
0.4375 to 0.5000	29/64	0.4531	YG-S06Z03	YG-S08Z03	YG-S21Z03	YG-S23Z03	YG-S26Z03	YG-S28Z03
	15/32	0.4688	YG-S06Z04	YG-S08Z04	YG-S21Z04	YG-S23Z04	YG-S26Z04	YG-S28Z04
to 0.5000	12.0mm	0.4724	YG-S06Z05	YG-S08Z05	YG-S21Z05	YG-S23Z05	YG-S26Z05	YG-S28Z05
	31/64	0.4844	YG-S06Z06	YG-S08Z06	YG-S21Z06	YG-S23Z06	YG-S26Z06	YG-S28Z06
	12.5mm	0.4921	YG-S06Z07	YG-S08Z07	YG-S21Z07	YG-S23Z07	YG-S26Z07	YG-S28Z07
	1/2	0.5000	YG-S06Z08	YG-S08Z08	YG-S21Z08	YG-S23Z08	YG-S26Z08	YG-S28Z08
SERIES 0 INSERTS			T15 TiN	T15 TiAlN	TiN C2	TiAlN C2	TiN C5	TiAlN C5
Series 0	Dia	Dec.	\$22.34 ea	\$26.82 ea	\$39.56 ea	\$42.59 ea	\$39.56 ea	\$42.59 ea
13.0mm 33/64 17/32 13.5mm	13.0mm	0.5118	YG-S06001	YG-S08001	YG-S21001	YG-S23001	YG-S26001	YG-S28001
	33/64	0.5156	YG-S06002	YG-S08002	YG-S21002	YG-S23002	YG-S26002	YG-S28002
	17/32	0.5313	YG-S06003	YG-S08003	YG-S21003	YG-S23003	YG-S26003	YG-S28003
	13.5mm	0.5315	YG-S06004	YG-S08004	YG-S21004	YG-S23004	YG-S26004	YG-S28004
35/64 14.0mm 9/16 14.5mm	35/64	0.5469	YG-S06060	YG-S08060	YG-S21060	YG-S23060	YG-S26060	YG-S28060
	14.0mm	0.5512	YG-S06005	YG-S08005	YG-S21005	YG-S23005	YG-S26005	YG-S28005
	9/16	0.5625	YG-S06006	YG-S08006	YG-S21006	YG-S23006	YG-S26006	YG-S28006
1/8” Thickness	14.5mm	0.5709	YG-S06007	YG-S08007	YG-S21007	YG-S23007	YG-S26007	YG-S28007
	37/64	0.5781	YG-S06008	YG-S08008	YG-S21008	YG-S23008	YG-S26008	YG-S28008
	15.0mm	0.5906	YG-S06009	YG-S08009	YG-S21009	YG-S23009	YG-S26009	YG-S28009
	19/32	0.5938	YG-S06010	YG-S08010	YG-S21010	YG-S23010	YG-S26010	YG-S28010
0.5118 to 0.6890	39/64	0.6094	YG-S06061	YG-S08061	YG-S21061	YG-S23061	YG-S26061	YG-S28061
	15.5mm	0.6102	YG-S06011	YG-S08011	YG-S21011	YG-S23011	YG-S26011	YG-S28011
	5/8	0.6250	YG-S06012	YG-S08012	YG-S21012	YG-S23012	YG-S26012	YG-S28012
	16.0mm	0.6299	YG-S06013	YG-S08013	YG-S21013	YG-S23013	YG-S26013	YG-S28013
to 0.6890	41/64	0.6406	YG-S06062	YG-S08062	YG-S21062	YG-S23062	YG-S26062	YG-S28062
	16.5mm	0.6496	YG-S06014	YG-S08014	YG-S21014	YG-S23014	YG-S26014	YG-S28014
	21/32	0.6563	YG-S06015	YG-S08015	YG-S21015	YG-S23015	YG-S26015	YG-S28015
	17.0mm	0.6693	YG-S06016	YG-S08016	YG-S21016	YG-S23016	YG-S26016	YG-S28016
43/64 11/16 17.5mm	43/64	0.6719	YG-S06063	YG-S08063	YG-S21063	YG-S23063	YG-S26063	YG-S28063
	11/16	0.6875	YG-S06017	YG-S08017	YG-S21017	YG-S23017	YG-S26017	YG-S28017
	17.5mm	0.6890	YG-S06018	YG-S08018	YG-S21018	YG-S23018	YG-S26018	YG-S28018

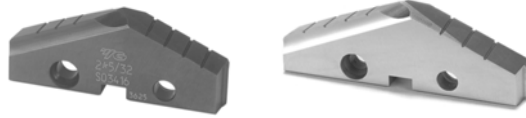
Call Us Today For All Of Your Machine Tool Needs!

SPADE DRILL INSERTS-COBALT & CARBIDE

"THROW AWAY"
SPADE DRILL INSERTS
 Super Cobalt HSS & Carbide

ALLIED® "TA" Series Compatible!

Prices Are
50%
 Below Mfg's List!



LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

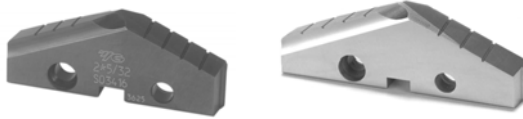
SERIES 1 INSERTS			SUPER COBALT HSS				CARBIDE INSERTS			
			T15 TiN	T15 TiAlN	M4 TiN	M4 TiAlN	TiN C2	TiAlN C2	TiN C5	TiAlN C5
Series 1 5/32" Thickness 0.7031 to 0.9449	Dia	Dec.	\$25.15ea	\$29.81 ea	\$22.34 ea	\$26.82 ea	\$45.09 ea	\$48.68 ea	\$45.09 ea	\$48.68 ea
	45/64	0.7031	YG-S06101	YG-S08101	YG-S01101	YG-S03101	YG-S21101	YG-S23101	YG-S26101	YG-S28101
	18mm	0.7087	YG-S06102	YG-S08102	YG-S01102	YG-S03102	YG-S21102	YG-S23102	YG-S26102	YG-S28102
	23/32	0.7188	YG-S06103	YG-S08103	YG-S01103	YG-S03103	YG-S21103	YG-S23103	YG-S26103	YG-S28103
	18.5mm	0.7283	YG-S06104	YG-S08104	YG-S01104	YG-S03104	YG-S21104	YG-S23104	YG-S26104	YG-S28104
	47/64	0.7344	YG-S06105	YG-S08105	YG-S01105	YG-S03105	YG-S21105	YG-S23105	YG-S26105	YG-S28105
	19.0mm	0.7480	YG-S06106	YG-S08106	YG-S01106	YG-S03106	YG-S21106	YG-S23106	YG-S26106	YG-S28106
	3/4	0.7500	YG-S06107	YG-S08107	YG-S01107	YG-S03107	YG-S21107	YG-S23107	YG-S26107	YG-S28107
	49/64	0.7656	YG-S06108	YG-S08108	YG-S01108	YG-S03108	YG-S21108	YG-S23108	YG-S26108	YG-S28108
	19.5mm	0.7677	YG-S06109	YG-S08109	YG-S01109	YG-S03109	YG-S21109	YG-S23109	YG-S26109	YG-S28109
	25/32	0.7813	YG-S06110	YG-S08110	YG-S01110	YG-S03110	YG-S21110	YG-S23110	YG-S26110	YG-S28110
	20.0mm	0.7874	YG-S06111	YG-S08111	YG-S01111	YG-S03111	YG-S21111	YG-S23111	YG-S26111	YG-S28111
	51/64	0.7969	YG-S06160	YG-S08160	YG-S01160	YG-S03160	YG-S21160	YG-S23160	YG-S26160	YG-S28160
	20.5mm	0.8071	YG-S06112	YG-S08112	YG-S01112	YG-S03112	YG-S21112	YG-S23112	YG-S26112	YG-S28112
	13/16	0.8125	YG-S06113	YG-S08113	YG-S01113	YG-S03113	YG-S21113	YG-S23113	YG-S26113	YG-S28113
	21.0mm	0.8268	YG-S06114	YG-S08114	YG-S01114	YG-S03114	YG-S21114	YG-S23114	YG-S26114	YG-S28114
	27/32	0.8438	YG-S06115	YG-S08115	YG-S01115	YG-S03115	YG-S21115	YG-S23115	YG-S26115	YG-S28115
	55/64	0.8594	YG-S06161	YG-S08161	YG-S01161	YG-S03161	YG-S21161	YG-S23161	YG-S26161	YG-S28161
	22.0mm	0.8661	YG-S06116	YG-S08116	YG-S01116	YG-S03116	YG-S21116	YG-S23116	YG-S26116	YG-S28116
	7/8	0.8750	YG-S06117	YG-S08117	YG-S01117	YG-S03117	YG-S21117	YG-S23117	YG-S26117	YG-S28117
	57/64	0.8906	YG-S06162	YG-S08162	YG-S01162	YG-S03162	YG-S21162	YG-S23162	YG-S26162	YG-S28162
	23.0mm	0.9055	YG-S06118	YG-S08118	YG-S01118	YG-S03118	YG-S21118	YG-S23118	YG-S26118	YG-S28118
	29/32	0.9063	YG-S06119	YG-S08119	YG-S01119	YG-S03119	YG-S21119	YG-S23119	YG-S26119	YG-S28119
	59/64	0.9219	YG-S06120	YG-S08120	YG-S01120	YG-S03120	YG-S21120	YG-S23120	YG-S26120	YG-S28120
15/16	0.9375	YG-S06121	YG-S08121	YG-S01121	YG-S03121	YG-S21121	YG-S23121	YG-S26121	YG-S28121	
24.0mm	0.9449	YG-S06122	YG-S08122	YG-S01122	YG-S03122	YG-S21122	YG-S23122	YG-S26122	YG-S28122	
SERIES 2 INSERTS			T15 TiN	T15 TiAlN	M4 TiN	M4 TiAlN	TiN C2	TiAlN C2	TiN C5	TiAlN C5
Series 2 3/16" Thickness 0.9688 to 1.3780	Dia	Dec.	\$29.62 ea	\$35.15 ea	\$26.29 ea	\$31.50 ea	\$53.37 ea	\$57.54 ea	\$53.37 ea	\$57.54 ea
	31/32	0.9688	YG-S06201	YG-S08201	YG-S01201	YG-S03201	YG-S21201	YG-S23201	YG-S26201	YG-S28201
	63/64	0.9844	YG-S06202	YG-S08202	YG-S01202	YG-S03202	YG-S21202	YG-S23202	YG-S26202	YG-S28202
	1"	1.0000	YG-S06203	YG-S08203	YG-S01203	YG-S03203	YG-S21203	YG-S23203	YG-S26203	YG-S28203
	1-1/64	1.1667	YG-S06204	YG-S08204	YG-S01204	YG-S03204	YG-S21204	YG-S23204	YG-S26204	YG-S28204
	26.0mm	1.0236	YG-S06205	YG-S08205	YG-S01205	YG-S03205	YG-S21205	YG-S23205	YG-S26205	YG-S28205
	1-1/32	1.0313	YG-S06206	YG-S08206	YG-S01206	YG-S03206	YG-S21206	YG-S23206	YG-S26206	YG-S28206
	1-3/64	1.0469	YG-S06260	YG-S08260	YG-S01260	YG-S03260	YG-S21260	YG-S23260	YG-S26260	YG-S28260
	1-1/16	1.0625	YG-S06207	YG-S08207	YG-S01207	YG-S03207	YG-S21207	YG-S23207	YG-S26207	YG-S28207
	27.0mm	1.0630	YG-S06208	YG-S08208	YG-S01208	YG-S03208	YG-S21208	YG-S23208	YG-S26208	YG-S28208
	1-3/32	1.0938	YG-S06209	YG-S08209	YG-S01209	YG-S03209	YG-S21209	YG-S23209	YG-S26209	YG-S28209
	28.0mm	1.1024	YG-S06210	YG-S08210	YG-S01210	YG-S03210	YG-S21210	YG-S23210	YG-S26210	YG-S28210
	1-7/64	1.1094	YG-S06261	YG-S08261	YG-S01261	YG-S03261	YG-S21261	YG-S23261	YG-S26261	YG-S28261
	1-1/8	1.1250	YG-S06211	YG-S08211	YG-S01211	YG-S03211	YG-S21211	YG-S23211	YG-S26211	YG-S28211
	29.0mm	1.1417	YG-S06212	YG-S08212	YG-S01212	YG-S03212	YG-S21212	YG-S23212	YG-S26212	YG-S28212
	1-5/32	1.1563	YG-S06213	YG-S08213	YG-S01213	YG-S03213	YG-S21213	YG-S23213	YG-S26213	YG-S28213
	30.0mm	1.1811	YG-S06214	YG-S08214	YG-S01214	YG-S03214	YG-S21214	YG-S23214	YG-S26214	YG-S28214
	1-3/16	1.1875	YG-S06215	YG-S08215	YG-S01215	YG-S03215	YG-S21215	YG-S23215	YG-S26215	YG-S28215
	1-7/32	1.2188	YG-S06216	YG-S08216	YG-S01216	YG-S03216	YG-S21216	YG-S23216	YG-S26216	YG-S28216
	31.0mm	1.2205	YG-S06217	YG-S08217	YG-S01217	YG-S03217	YG-S21217	YG-S23217	YG-S26217	YG-S28217
	1-1/4	1.2500	YG-S06218	YG-S08218	YG-S01218	YG-S03218	YG-S21218	YG-S23218	YG-S26218	YG-S28218
	32.0mm	1.2598	YG-S06219	YG-S08219	YG-S01219	YG-S03219	YG-S21219	YG-S23219	YG-S26219	YG-S28219
	1-9/32	1.2813	YG-S06220	YG-S08220	YG-S01220	YG-S03220	YG-S21220	YG-S23220	YG-S26220	YG-S28220
	33.0mm	1.2992	YG-S06221	YG-S08221	YG-S01221	YG-S03221	YG-S21221	YG-S23221	YG-S26221	YG-S28221
	1-5/16	1.3125	YG-S06222	YG-S08222	YG-S01222	YG-S03222	YG-S21222	YG-S23222	YG-S26222	YG-S28222
	1-1/32	1.3333	YG-S06206	YG-S08206	YG-S01206	YG-S03206	YG-S21206	YG-S23206	YG-S26206	YG-S28206
	34.0mm	1.3386	YG-S06223	YG-S08223	YG-S01223	YG-S03223	YG-S21223	YG-S23223	YG-S26223	YG-S28223
	1-11/32	1.3438	YG-S06224	YG-S08224	YG-S01224	YG-S03224	YG-S21224	YG-S23224	YG-S26224	YG-S28224
	1-3/8	1.3750	YG-S06225	YG-S08225	YG-S01225	YG-S03225	YG-S21225	YG-S23225	YG-S26225	YG-S28225
	35.0mm	1.3780	YG-S06226	YG-S08226	YG-S01225	YG-S03226	YG-S21226	YG-S23226	YG-S26226	YG-S28226

Call Us Or Visit Our Website For Our Complete Selection!

SPADE DRILL INSERTS-COBALT & CARBIDE

**“THROW AWAY”
SPADE DRILL INSERTS**
Super Cobalt HSS & Carbide

ALLIED® “TA” Series Compatible!



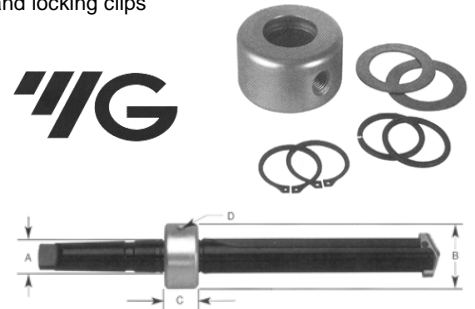
Prices Are
50%
Below Mfg's List!



SERIES 3 INSERTS			SUPER COBALT HSS				CARBIDE INSERTS			
Dia	Dec.	T15 TiN	T15 TiAlN	M4 TiN	M4 TiAlN	TiN C2	TiAlN C2	TiN C5	TiAlN C5	
		\$37.60 ea	\$45.09 ea	\$32.63 ea	\$39.27 ea	\$83.01 ea	\$87.42 ea	\$83.01 ea	\$87.42 ea	
1/4" Thickness	1-13/32	1.4063	YG-S06301	YG-S08301	YG-S01301	YG-S03301	YG-S21301	YG-S23301	YG-S26301	YG-S28301
	36.0mm	1.4173	YG-S06302	YG-S08302	YG-S01302	YG-S03302	YG-S21302	YG-S23302	YG-S26302	YG-S28302
	1-7/16	1.4375	YG-S06303	YG-S08303	YG-S01303	YG-S03303	YG-S21303	YG-S23303	YG-S26303	YG-S28303
	37.0mm	1.4567	YG-S06304	YG-S08304	YG-S01304	YG-S03304	YG-S21304	YG-S23304	YG-S26304	YG-S28304
	1-15/32	1.4688	YG-S06305	YG-S08305	YG-S01305	YG-S03305	YG-S21305	YG-S23305	YG-S26305	YG-S28305
	38.0mm	1.4961	YG-S06306	YG-S08306	YG-S01306	YG-S03306	YG-S21306	YG-S23306	YG-S26306	YG-S28306
	1-1/2	1.5000	YG-S06307	YG-S08307	YG-S01307	YG-S03307	YG-S21307	YG-S23307	YG-S26307	YG-S28307
	1-17/32	1.5313	YG-S06308	YG-S08308	YG-S01308	YG-S03308	YG-S21308	YG-S23308	YG-S26308	YG-S28308
	39.0mm	1.5354	YG-S06309	YG-S08309	YG-S01309	YG-S03309	YG-S21309	YG-S23309	YG-S26309	YG-S28309
	1-9/16	1.5625	YG-S06310	YG-S08310	YG-S01310	YG-S03310	YG-S21310	YG-S23310	YG-S26310	YG-S28310
	40.0mm	1.5748	YG-S06311	YG-S08311	YG-S01311	YG-S03311	YG-S21311	YG-S23311	YG-S26311	YG-S28311
	1-19/32	1.5938	YG-S06312	YG-S08312	YG-S01312	YG-S03312	YG-S21312	YG-S23312	YG-S26312	YG-S28312
	41.0mm	1.6142	YG-S06313	YG-S08313	YG-S01313	YG-S03313	YG-S21313	YG-S23313	YG-S26313	YG-S28313
	1-5/8	1.6250	YG-S06314	YG-S08314	YG-S01314	YG-S03314	YG-S21314	YG-S23314	YG-S26314	YG-S28314
	42.0mm	1.6535	YG-S06315	YG-S08315	YG-S01315	YG-S03315	YG-S21315	YG-S23315	YG-S26315	YG-S28315
	1-21/32	1.6563	YG-S06316	YG-S08316	YG-S01316	YG-S03316	YG-S21316	YG-S23316	YG-S26316	YG-S28316
	1-11/16	1.6875	YG-S06317	YG-S08317	YG-S01317	YG-S03317	YG-S21317	YG-S23317	YG-S26317	YG-S28317
	43.0mm	1.6929	YG-S06318	YG-S08318	YG-S01318	YG-S03318	YG-S21318	YG-S23318	YG-S26318	YG-S28318
	1-23/32	1.7188	YG-S06319	YG-S08319	YG-S01319	YG-S03319	YG-S21319	YG-S23319	YG-S26319	YG-S28319
	44.0mm	1.7323	YG-S06320	YG-S08320	YG-S01320	YG-S03320	YG-S21320	YG-S23320	YG-S26320	YG-S28320
1-3/4	1.7500	YG-S06321	YG-S08321	YG-S01321	YG-S03321	YG-S21321	YG-S23321	YG-S26321	YG-S28321	
45.0mm	1.7717	YG-S06322	YG-S08322	YG-S01322	YG-S03322	YG-S21322	YG-S23322	YG-S26322	YG-S28322	
1-25/32	1.7813	YG-S06323	YG-S08323	YG-S01323	YG-S03323	YG-S21323	YG-S23323	YG-S26323	YG-S28323	
46.0mm	1.8110	YG-S06324	YG-S08324	YG-S01324	YG-S03324	YG-S21324	YG-S23324	YG-S26324	YG-S28324	
1-13/16	1.8125	YG-S06325	YG-S08325	YG-S01325	YG-S03325	YG-S21325	YG-S23325	YG-S26325	YG-S28325	
1-27/32	1.8438	YG-S06326	YG-S08326	YG-S01326	YG-S03326	YG-S21326	YG-S23326	YG-S26326	YG-S28326	
47.0mm	1.8504	YG-S06327	YG-S08327	YG-S01327	YG-S03327	YG-S21327	YG-S23327	YG-S26327	YG-S28327	
1-7/8	1.8750	YG-S06328	YG-S08328	YG-S01328	YG-S03328	YG-S21328	YG-S23328	YG-S26328	YG-S28328	
SERIES 4 INSERTS			T15 TiN	T15 TiAlN	M4 TiN	M4 TiAlN				
Dia	Dec.	\$47.58 ea	\$56.99 ea	\$38.74 ea	\$46.46 ea					
5/16" Thickness	1-29/32	1.9063	YG-S06402	YG-S08402	YG-S01402	YG-S03402				
	1-15/16	1.9375	YG-S06404	YG-S08404	YG-S01404	YG-S03404				
	1-31/32	1.9688	YG-S06406	YG-S08406	YG-S01406	YG-S03406				
	2"	2.000	YG-S06407	YG-S08407	YG-S01407	YG-S03407				
	2-1/32	2.0313	YG-S06409	YG-S08409	YG-S01409	YG-S03409				
	2-3/64	2.0469	YG-S06410	YG-S08410	YG-S01410	YG-S03410				
	2-1/16	2.0625	YG-S06411	YG-S08411	YG-S01411	YG-S03411				
	2-3/32	2.0938	YG-S06413	YG-S08413	YG-S01413	YG-S03413				
	2-1/8	2.1250	YG-S06414	YG-S08414	YG-S01414	YG-S03414				
	2-5/32	2.1563	YG-S06416	YG-S08416	YG-S01416	YG-S03416				
	2-3/16	2.1875	YG-S06418	YG-S08418	YG-S01418	YG-S03418				
	2-7/32	2.2188	YG-S06420	YG-S08420	YG-S01420	YG-S03420				
	2-1/4	2.2500	YG-S06422	YG-S08422	YG-S01422	YG-S03422				
	2-9/32	2.2813	YG-S06423	YG-S08423	YG-S01423	YG-S03423				
	2-5/16	2.3125	YG-S06425	YG-S08425	YG-S01425	YG-S03425				
	2-11/32	2.3438	YG-S06427	YG-S08427	YG-S01427	YG-S03427				
	2-3/8	2.3750	YG-S06429	YG-S08429	YG-S01429	YG-S03429				
	2-13/32	2.4063	YG-S06431	YG-S08431	YG-S01431	YG-S03431				
	2-7/16	2.4375	YG-S06432	YG-S08432	YG-S01432	YG-S03432				
	2-15/32	2.4688	YG-S06434	YG-S08434	YG-S01434	YG-S03434				
2-1/2	2.5000	YG-S06436	YG-S08436	YG-S01436	YG-S03436					
2-17/32	2.5313	YG-S06438	YG-S08438	YG-S01438	YG-S03438					
2-9/16	2.5625	YG-S06440	YG-S08440	YG-S01440	YG-S03440					

COOLANT INDUCERS FOR MORSE TAPER DRILLS

Complete with "O" rings, flat washers and locking clips



A	B	C	E		
I.D.	Pipe O.D.	Len.	Pipe Tap	Part Number	Price Each
3/4	1-3/4	7/8	1/8	YG-PR1030	\$44.09
1	2-1/8	1-1/8	1/8	YG-PR1031	\$48.72
1-1/4	2-1/2	1-3/8	1/4	YG-PR1042	\$59.70
1-3/4	3	1-3/8	1/4	YG-PR1043	\$68.21
2-1/4	3-3/4	1-3/4	1/2	YG-PR1054	\$82.84

Call Us Today For All Of Your Machine Tool Needs!

SPADE DRILL INSERTS-FLAT BOTTOM

FLAT BOTTOM SPADE DRILL INSERTS SUPER COBALT T-15



Prices Are
50%
Below Mfg's List!

Series Min-Max	Inch Dia	Dec. Dia	TiN Coated Part Number	Price Each	TiAlN Coated Part Number	Price Each
Y .374" to .436" 3/32" thick	3/8	.3750	YG-SF05024	\$36.69	YG-SF15024	\$41.01
	13/32	.4063	YG-SF05026	\$36.69	YG-SF15026	\$41.01
	7/16	.4375	YG-SF05028	\$36.69	YG-SF15028	\$41.01
Z .437" to .510" 3/32" thick	15/32	.4688	YG-SF05030	\$36.69	YG-SF15030	\$41.01
	1/2	.5000	YG-SF05032	\$36.69	YG-SF15032	\$41.01
0 .511" to .695" 1/8" thick	17/32	.5313	YG-SF05034	\$40.07	YG-SF15034	\$44.54
	9/16	.5625	YG-SF05036	\$40.07	YG-SF15036	\$44.54
	19/32	.5938	YG-SF05038	\$40.07	YG-SF15038	\$44.54
	5/8	.6250	YG-SF05040	\$40.07	YG-SF15040	\$44.54
	21/32	.6563	YG-SF05042	\$40.07	YG-SF15042	\$44.54
1 .690" to .960" 5/32" thick	11/16	.6875	YG-SF05044	\$40.07	YG-SF15044	\$44.54
	23/32	.7188	YG-SF05046	\$44.67	YG-SF15046	\$49.56
	3/4	.7500	YG-SF05048	\$44.67	YG-SF15048	\$49.56
	25/32	.7813	YG-SF05050	\$44.67	YG-SF15050	\$49.56
	13/16	.8125	YG-SF05052	\$44.67	YG-SF15052	\$49.56
	27/32	.8438	YG-SF05054	\$44.67	YG-SF15054	\$49.56
	7/8	.8750	YG-SF05056	\$44.67	YG-SF15056	\$49.56
2 .961" to 1.380" 3/16" Thick	29/32	.9063	YG-SF05058	\$44.67	YG-SF15058	\$49.56
	15/16	.9375	YG-SF05060	\$44.67	YG-SF15060	\$49.56
	31/32	.9688	YG-SF05062	\$51.53	YG-SF15062	\$58.08
2 .961" to 1.380" 3/16" Thick	1	1.0000	YG-SF05100	\$51.53	YG-SF15100	\$58.08
	1-1/32	1.0313	YG-SF05102	\$51.53	YG-SF15102	\$58.08
	1-1/16	1.0625	YG-SF05104	\$51.53	YG-SF15104	\$58.08
	1-3/32	1.0938	YG-SF05106	\$51.53	YG-SF15106	\$58.08
	1-1/8	1.1250	YG-SF05108	\$51.53	YG-SF15108	\$58.08
	1-5/32	1.1563	YG-SF05110	\$51.53	YG-SF15110	\$58.08
	1-3/16	1.1875	YG-SF05112	\$51.53	YG-SF15112	\$58.08
	1-7/32	1.2188	YG-SF05114	\$51.53	YG-SF15114	\$58.08
	1-1/4	1.2500	YG-SF05116	\$51.53	YG-SF15116	\$58.08
	1-9/32	1.2813	YG-SF05118	\$51.53	YG-SF15118	\$58.08
	1-5/16	1.3125	YG-SF05120	\$51.53	YG-SF15120	\$58.08
	1-11/32	1.3438	YG-SF05122	\$51.53	YG-SF15122	\$58.08
	1-3/8	1.3750	YG-SF05124	\$51.53	YG-SF15124	\$58.08

SPEED & FEEDS

CUTTING CONDITIONS FOR T-15 FLAT BOTTOM SPADE DRILL INSERTS



Material	Material Hardness (Bhn)	Speed (SFM)		Feed			
		Tin	TiAlN	3/8-1/2	33/64-11/16	45/64-15/16	31/32-1-3/8
Free Machining Steel	100-150	165	220	0.005	0.007	0.010	0.013
1213, 12L13, 1215	150-200	150	215	0.005	0.007	0.010	0.013
12L14, 1118	200-250	135	190	0.004	0.007	0.010	0.012
Low Carbon Steel	85-125	140	195	0.005	0.007	0.009	0.012
1015, 1020, 1140	125-175	135	190	0.005	0.007	0.009	0.012
1025	175-225	125	180	0.004	0.006	0.008	0.011
	225-275	115	175	0.004	0.006	0.008	0.011
Medium Carbon	125-175	135	195	0.004	0.007	0.009	0.011
1035, 1050, 1045	175-225	125	180	0.004	0.006	0.007	0.011
1055, 1140	225-275	115	165	0.004	0.006	0.007	0.011
	275-325	105	150	0.003	0.005	0.007	0.009
Structural Steel	100-150	115	165	0.004	0.007	0.009	0.011
A36, A516	150-250	100	140	0.004	0.007	0.008	0.009
A182	250-350	80	115	0.003	0.006	0.007	0.008
Cast Iron/SG Iron	120-150	145	215	0.005	0.010	0.014	0.016
A48-76 GR30/GR45	150-200	130	190	0.005	0.008	0.011	0.016
A536-72 60-40-18	200-220	110	165	0.005	0.008	0.010	0.014
A220-76 GR40010	220-260	95	150	0.004	0.006	0.008	0.010
	260-320	80	120	0.004	0.005	0.006	0.008

Material	Material Hardness (Bhn)	Speed (SFM)		Feed			
		Tin	TiAlN	3/8-1/2	33/64-11/16	45/64-15/16	31/32-1-3/8
Alloy Steel	125-175	125	165	0.005	0.006	0.008	0.011
8620, 4130, 4137	175-225	115	150	0.004	0.006	0.008	0.011
4140, 6150	225-275	105	145	0.004	0.005	0.007	0.011
	275-325	100	140	0.003	0.005	0.007	0.009
	325-375	90	120	0.003	0.005	0.007	0.009
Tool Steel	150-200	65	90	0.003	0.005	0.006	0.008
H13, H21, A2, S1	200-250	45	75	0.003	0.005	0.006	0.008
High Temp. Alloy	140-220	20	30	0.003	0.005	0.006	0.008
Hastelloy B, Inconel	220-310	15	25	0.003	0.004	0.006	0.006
High Strength Alloys	225-300	65	90	0.004	0.006	0.007	0.008
9840, 4340	300-350	45	70	0.003	0.006	0.007	0.008
4330V etc	350-400	40	60	0.003	0.005	0.006	0.007
Aluminum	30	520	700	0.007	0.011	0.014	0.017
2014, 6061, 7075	180	255	390	0.007	0.011	0.014	0.016
Stainless Steel	135-185	60	90	0.005	0.007	0.008	0.009
310, 316, 410, 330	185-275	50	80	0.004	0.006	0.007	0.009

The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points. Speed and feed reductions (20% reduction in speed and 10% reduction in feed) are recommended.

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

SPADE DRILL ACCESSORIES

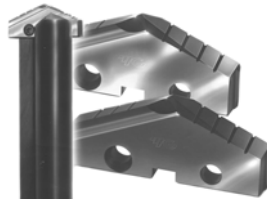
TORX SCREWS & DRIVERS

Screws sold in packages of 10



Series	Torx Screw			Torx Screw (Nylon Locking)			Premium Torx Driver			Inch/Metric Drill Range	
	Item	Part Number	Price Per Pkg	Item	Part Number	Price Per Pkg	Item	Part Number	Price Each		
Y	2XT7	YG-J7Y001	\$18.09	2XT7N	YG-J7Y006	\$20.94	T7	YG-J5Y007	\$6.97	3/8 to 27/64	9 to 11
Z	2LXT7	YG-J7Z011	\$16.05	2LXT7N	YG-J7Z016	\$20.94	T7	YG-J5Y007	\$6.97	7/16 to 1/2	11.5 to 12.5
0	2.5XT8	YG-J80021	\$14.99	2.5XT8N	YG-J80026	\$19.65	T8	YG-J50008	\$6.97	33/64 to 11/16	13.0 to 17.5
0.5	2.5LXT8	YG-J80531	\$14.99	2.5LXT8N	YG-J80536	\$20.68	T8	YG-J50008	\$6.97	39/64 to 11/16	15.5 to 17.5
1	3XT9	YG-J91041	\$15.53	3XT9N	YG-J91046	\$19.65	T9	YG-J51009	\$6.97	45/64 to 15/16	18.0 to 24.0
1.5	3LXT9	YG-J91551	\$15.53	3LXT9N	YG-J91556	\$20.68	T9	YG-J51009	\$6.97	66/64 to 15/16	22.0 to 24.0
2	4XT15	YG-JB2061	\$14.99	4XT15N	YG-JB2066	\$20.68	T15	YG-J52015	\$6.97	31/32 to 1 3/8	25.0 to 35.0
2.5	4XT15	YG-JB2061	\$14.99	4XT15N	YG-JB2066	\$20.68	T15	YG-J52015	\$6.97	1 3/16 to 1 3/8	30.0 to 35.0
3 - 4	5XT20	YG-JC3081	\$14.99	5XT20N	YG-JC3086	\$20.68	T20	YG-J53020	\$6.97	1 13/32 to 2 9/16	36.0 to 65.0
5 - 8	6XT25	YG-JD5091	\$20.17	6XT25N	YG-JD5096	\$23.45	T25	YG-J55025	\$8.48	2 1/2 to 3 1/2	64.0 to 114.0

SPEEDS/FEEDS AND COATING RECOMMENDATIONS



Material	Material Hardness (BHN)	Coating	SFM	Feed (IPR)						
				3/8" to 1/2"	33/64" to 11/16"	45/64" to 15/16"	31/32" to 1-3/8"	1-13/32" to 1-7/8"	1-29/32" to 2-9/16"	2-19/32" to 4-1/2"
Free Machining Steel 1118, 1215, 12L14, etc.	100-150	Super TiN Hardslick	280	.007	.010	.013	.016	.020	.023	.028
	150-200		260	.007	.010	.013	.016	.020	.023	.028
	200-250		240	.007	.010	.013	.016	.020	.023	.028
Low & Medium Carbon Steel 1018, 1040, 1140, etc.	125-175	Super TiALN Super TiN Hardslick	240	.006	.009	.012	.015	.019	.023	.027
	175-225		225	.005	.008	.010	.014	.018	.021	.024
	225-275		210	.005	.008	.010	.014	.018	.021	.024
Alloy Steel 4140, 5140, 8640, etc.	275-325	Super TiALN Super TiN	195	.004	.007	.009	.012	.016	.019	.022
	125-175		210	.006	.008	.010	.014	.017	.019	.022
	175-225		195	.005	.008	.010	.014	.017	.019	.022
	225-275		180	.005	.007	.010	.014	.017	.019	.022
High Strength Alloy Steel 4340, 4330V, 300M, etc.	275-325	Super TiALN	170	.004	.006	.009	.012	.015	.017	.020
	325-375		155	.003	.006	.009	.012	.015	.017	.020
	225-300		110	.005	.007	.009	.010	.014	.017	.020
Structural Steel A36, A285, A516, etc.	300-350	Super TiALN	85	.004	.007	.009	.010	.014	.017	.020
	350-400		70	.003	.006	.008	.009	.012	.015	.018
	100-150		200	.006	.010	.012	.014	.018	.021	.026
High Temp. Alloy Hastelloy B, Inconel 600, etc.	150-250	Super TiN	170	.005	.009	.010	.012	.016	.019	.024
	250-350		140	.004	.008	.009	.010	.014	.017	.020
	140-220		40	.003	.006	.007	.008	.010	.012	.015
Stainless Steel 303, 416, 420, 17-4 PH, etc.	220-310	Super TiALN Super TiN Hardslick	35	.003	.006	.007	.008	.010	.012	.015
	135-185		105	.006	.008	.009	.011	.014	.016	.020
Tool Steel H-13, H021, A04, O-2, S-3, etc.	185-275	Hardslick	90	.005	.007	.008	.010	.012	.014	.018
	150-200		110	.004	.006	.008	.010	.012	.015	.017
Aluminum	200-250	Super TiALN	90	.004	.006	.008	.010	.012	.015	.017
	30		850	.008	.013	.016	.020	.022	.025	.025
Cast Iron Gray, Ductile, Nodular	180	Hardslick	450	.008	.013	.016	.018	.022	.025	.025
	120-150		250	.007	.012	.016	.020	.024	.027	.030
	150-200		225	.006	.011	.014	.018	.022	.025	.028
	200-220		195	.006	.009	.012	.016	.018	.021	.024
	220-260		165	.005	.007	.009	.012	.014	.017	.020
260-320	135	.004	.006	.007	.009	.012	.014	.016		

Note: On many materials two or sometimes all three coatings will interchange with excellent performance.

Call Us Today For All Of Your Machine Tool Needs!



BORING BARS - STEEL, HEAVY METAL & CARBIDE & INSERTS Page Number

SWLOR Boring Bars & WCMT (80° Trigon) Inserts	254
CIRCLE Style Mini Boring Bars - Min Bore .180-.360 & CDCD (80° Diamond) inserts	255-256
CIRCLE Style Mini Boring Bars - Min Bore .270-.360 & TDAB (60° Triangle) inserts	257
SCLPR Boring Bars & CPMT (80° Diamond) inserts	258
STUPR & STFPR Bars & TPMT (60° Triangle) inserts	259
SCLCR/L Boring Bars & CCMT (80° Diamond) inserts	260-261
SDUCR Boring Bars & DCMT/DCGT (55° Diamond) inserts	262-263
STFCR/STUCR Boring Bars & TCMT (60° Triangle) inserts	264-265
STJOR Boring Bars & TBGP/TPGP/TPGG (60° Triangle) Inserts	266
SCLOR Boring Bars & CPGP/CPGM (80° Diamond) Inserts	267
SVUCR/L, SWUCR/L, CTFPR Boring Bars-TMX®	268
Micro 100 Coolant Thru Boring Bars	269
Big Boring Bars - Industry Standard - SI-MVUNR/L, SI-MWLNRL, SI-MTUNR/L	270-271
BACKFACING Bars using DCMT Inserts DCMT (55° Diamond) inserts	272

OD TURNING HOLDERS

OD Turning Holders - MCLNR, ACLNR	273
OD Turning Holders - MCRNR, MDPNN, MSDNN	274
OD Turning Holders - MDJNR, ADJNR/L, MTANR/L	275
OD Turning Holders - MTENNS, MTFNR/L, MTGNR/L	276
OD Turning Holders - ATGNR/L, MTJNR/L, MVJNR/L	277
OD Turning Holders - MWLNRL, AWLNRL	278
SWISS Style - OD Turning Holders	279
MICRO 100 Chrome Nickel Turning Holders	280
OD Toolholder Parts	281

CARBIDE & CERMET TURNING & BORING INSERTS

TUNGALOY Insert Grades and Chipbreakers	282
CNMG Inserts	283-284
DNMG Inserts	285
SNMG Inserts	286
TNMG Inserts	286
VNMG & VNGG Inserts	287
WNMG Inserts	288
CCMT Inserts	289
CPMT & CCGT Inserts	290
DCMT & DCGT Inserts	291
TCMT & VBMT Inserts	292
KORLOY® Inserts for ALUMINUM	293

CUT-OFF/PART-OFF BLADES, HOLDERS & INSERTS

Tool Bits	294
Cut-Off/Part-Off Blades, Holders & Inserts	294-297

*Circle, Korloy, Dorian, Tungaloy, Micro 100 and TMX are trademarks of their respective companies.

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

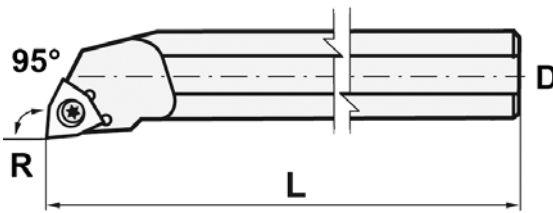
COOLANT/FLUIDS
TOOL STORAGE

SWLOR_ BORING BARS

SWLOR_ BORING BARS

Using "WCMT" Inserts

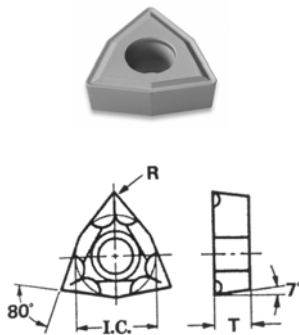
- Uses WCMT type inserts
- Shanks have locating flats for easy set-up
- Available in steel, heavy metal or carbide shanks
- See following page for inserts
- **Made in the USA**



Using "WCMT" Inserts

Insert	Reference Number	Shank "D"	Steel Shank-4xD			Heavy Metal-6xD			Carbide Shank-8xD			Screw \$1.00	Torx Wrench
			Min Bore	L	Part Number	Min Bore	L	Part Number	Min Bore	L	Part Number		
WCMT -0201	_SWLOR-055	0.188	0.228	5.0	BBM-1000R \$55.00	0.228	4.0	BBM-3000R \$110.00	0.228	4.0	BBM-5000R \$129.00	SC-22	TX-206 \$6.50
	_SWLOR-065	0.250	0.312	5.0	BBM-1010R-E \$69.00	0.300	4.0	BBM-3010R \$120.00	0.300	4.0	BBM-5010R \$151.00	SC-21	
	_SWL0502RS	0.312	0.228	5.0	BBM-1020R-E \$69.00	0.362	4.0	BBM-3020R \$133.00	0.362	4.0	BBM-5020R \$162.00	SC-22	
WCMT -S032	_SWLOR-066	0.312	0.375	5.0	BBM-1030R-E \$69.00	0.362	4.0	BBM-3030R \$133.00	0.375	5.0	BBM-5030R \$162.00	SC-21	
WCMT -0402	_SWL0504R	0.312	0.406	5.0	BBM-1040R-E \$69.00	0.362	4.0	BBM-3040R \$133.00	0.406	5.0	BBM-5040R \$162.00	SC-23	TX-208 \$6.50
	_SWLOR-062	0.375	0.500	5.0	BBM-1050R-E \$69.00	0.425	4.0	BBM-3050R \$146.00	0.500	5.0	BBM-5050R \$166.00		
	_SWLOR-070	0.375	0.438	5.0	BBM-1060R-E \$69.00	0.425	4.0	-	0.438	5.0	BBM-5060R \$166.00		
	_SWLOR-082	0.500	0.625	5.0	BBM-1070R-E \$76.00	0.550	6.0	BBM-3070R \$259.00	0.625	6.0	BBM-5070R \$220.00		
WCMT -06T3	_SWLOR-103	0.625	0.750	7.0	BBM-1080R-E \$77.00	0.675	6.0	BBM-3080R \$326.00	0.750	6.0	BBM-5080R \$333.00	SC-24	TX-215 \$8.00
	_SWLOR-123	0.750	1.000	7.0	BBM-1090R-E \$81.00	0.800	8.0	BBM-3090R \$573.00	1.000	9.0	BBM-5090R \$507.00		

WCMT/WCGT INSERTS



GRADE US-735
for continuous & interrupted cutting of steels & stainless steels.

TL120 TiAlN Coated
For high temp alloys and stainless steel.

*Mitsubishi is a trademark of Mitsubishi Materials U.S.A. Corporation

Bars Using	IC	T	R	Reference Number	Grade	Part Number	Price Each	Brand
WCMT/WCGT -0201	5/32 .156	1/16	.008 (1/128)	WCMT020102	US-735	MB-501	\$9.95	Mitsubishi
				WCGT020102	TL120	US-901	\$10.00	USST
				WCMT020104	US-735	MB-511	\$9.95	Mitsubishi
				WCGT020104	TL120	US-902	\$10.00	USST
WCMT/WCGT -S302	3/16 .187	3/32	.008 (1/128)	WCMTS30202	US-735	MB-521	\$9.95	Mitsubishi
				WCGTS30202	TL120	US-903	\$10.00	USST
				WCMTS30204	US-735	MB-531	\$9.95	Mitsubishi
				WCGTS30204	TL120	US-904	\$10.00	USST
WCMT/WCGT -0402	1/4 .250	3/32	.008 (1/128)	WCMT040202	US-735	MB-541	\$9.95	Mitsubishi
				WCGT040202	TL120	US-905	\$10.00	USST
				WCMT040204	US-735	MB-551	\$9.95	Mitsubishi
				WCGT040204	TL120	US-906	\$10.00	USST
WCMT/WCGT -06T3	3/8 .375	5/32	.008 (1/64)	WCGT06T302	TL120	US-909	\$15.00	USST
				WCMT06T304	US-735	MB-561	\$11.25	Mitsubishi
				WCGT06T304	TL120	US-907	\$15.00	USST
				WCMT06T308	US-735	MB-571	\$11.25	Mitsubishi
			.032 (1/32)	WCGT06T308	TL120	US-908	\$13.00	USST

VENTURE II® SAFETY GLASSES



- 9.75 base curved lens provides full side protection without distracting seams or traditional type side shields
- Nose buds secure the glass and prevent slipping while providing a pillow soft fit
- Temples adjust to four different lengths
- Lenses are coated for superior scratch resistance
- Lenses provide 99% protection against harmful UV rays
- Exceeds ANSI Z87.1-2003 standards
- CE EN166 and CAN/CSA Z94.3-07 certified



Frame Color	Lens Color	Part Number	Price Each
Black	Clear	PYR-SB1810S	\$4.39
	Gray	PYR-SB1820S	\$4.99
	Blue	PYR-SB1860S	\$4.99
	Amber	PYR-SB1830S	\$4.99

Call Us Today For All Of Your Machine Tool Needs!

REDUCED NECK MINI BORING BARS

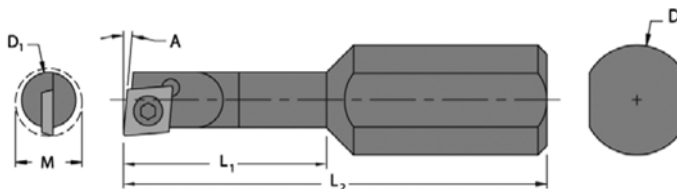
D

REDUCED NECK BORING BARS

Using Diamond Shaped CDCD Inserts



- Minimum bore:
 - .290 - 7° lead angle
 - .208 - 5° lead angle
 - .230 - 5° lead angle
- Uses CDCD type inserts
- Shanks have locating flats for easy set-up
- Available in steel, heavy metal or carbide shanks
- See following page for inserts
- **Made in the USA**



LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Min Bore	Shank Dia D2	Boring Depth L1	OAL L2	Steel Shank-4xD		Heavy Metal-6xD		Carbide Shank-8xD		Screws	Wrench
				Part Number	Price	Part Number	Price	Part Number	Price		
.180	0.156	-	4.00	-	-	BBC-3000R	\$135.00	-	-	19501 \$3.00	TX-206 \$6.50
	0.187	0.500	2.50	BBC-1010R	\$72.00	-	-	-	-		
	0.500	0.500	2.50	BBC-1015R	\$72.00	-	-	-	-		
	0.625	0.500	2.50	BBC-1020R	\$72.00	-	-	-	-		
	0.500	1.000	2.50	-	-	BBC-3025R	\$156.00	-	-		
	0.625	1.000	2.50	-	-	BBC-3030R	\$178.00	-	-		
.208	0.187	-	2.50	BBC-1045R	\$72.00	-	-	-	-		
			4.00	-	-	BBC-3050R	\$110.00	BBC-5050R	\$129.00		
	0.375	0.500	2.50	BBC-1060R	\$72.00	-	-	-	-		
	0.500	0.500	2.75	BBC-1065R	\$72.00	-	-	-	-		
	0.625	0.500	2.75	BBC-1070R	\$72.00	-	-	-	-		
	0.375	1.000	2.50	BBC-1075R	\$72.00	-	-	-	-		
	0.500	1.000	2.75	BBC-1080R	\$72.00	-	-	-	-		
	0.625	1.000	2.75	BBC-1085R	\$72.00	-	-	-	-		
	0.500	1.250	4.00	-	-	BBC-3090R	\$203.00	-	-		
	0.625	1.250	4.00	-	-	BBC-3095R	\$203.00	-	-		
.230	0.187	-	2.50	BBC-1110R	\$72.00	-	-	-	-		
			4.00	-	-	BBC-3115R	\$110.00	BBC-5115R	\$129.00		
	0.375	0.500	2.50	BBC-1125R	\$72.00	-	-	-	-		
	0.500	0.500	2.75	BBC-1130R	\$72.00	-	-	-	-		
	0.625	0.500	2.75	BBC-1135R	\$72.00	-	-	-	-		
	0.375	1.000	2.50	BBC-1140R	\$72.00	-	-	-	-		
	0.500	1.000	2.75	BBC-1145R	\$72.00	-	-	-	-		
	0.625	1.000	2.75	BBC-1150R	\$72.00	-	-	-	-		
	0.500	1.500	4.00	-	-	BBC-3155R	\$203.00	-	-		
	0.625	1.500	4.00	-	-	BBC-3160R	\$303.00	-	-		
	0.500	2.000	5.00	-	-	-	-	BBC-5165R	\$191.00		
	0.625	2.000	5.00	-	-	-	-	BBC-5170R	\$199.00		

*Circle is a registered trademark of Circle Machine Company

HEX WRENCH SETS



Full Line Available!
Please call for more information.



Type	No. Of Pieces	Hex Wrench Set Includes	Part Number	Price Each
Inch	12	.050, 1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 3/16, 7/32, 1 / 4, 5/16	BO-12136	\$7.56
Inch	13	.050, 1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 3/16, 7/32, 1 / 4, 5/16, 3/8"	BO-12137	\$8.61
Metric	9	1.5, 2, 2.5, 3, 4, 5, 6, 8, 10mm	BO-12199	\$8.15
Combo Pack	13 & 9	Inch & Metric Set	BO-22199	\$15.88

Call Us Or Visit Our Website For Our Complete Selection!

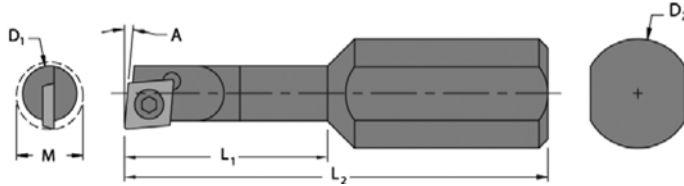
REDUCED NECK MINI BORING BARS

D

REDUCED NECK BORING BARS Using Diamond Shaped CDCD Inserts



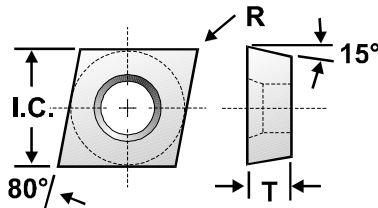
- Lead angle: 5°
- Minimum bore: .290
- Uses CDCD type inserts
- Shanks have locating flats for easy set-up
- Available in steel, heavy metal or carbide shanks
- See bottom of page for inserts
- **Made in the USA**



Min Bore	Shank Dia D2	Boring Depth L1	OAL L2	Steel Shank-4xD		Heavy Metal-6xD		Carbide Shank-8xD		Screws \$3.00	Wrench
				Part Number	Price	Part Number	Price	Part Number	Price		
.290	0.250	-	3.000	BBC-1175R	\$72.00	-	-	-	-	19501	TX-206 \$6.50
			4.000	-	-	BBC-3180R	\$117.00	BBC-5180R	\$129.00		
	0.375	0.500	2.500	BBC-1200R	\$72.00	-	-	-	-		
	0.375	0.750	2.500	BBC-1205R	\$72.00	-	-	-	-		
	0.500		2.750	BBC-1210R	\$72.00	-	-	-	-		
	0.375	1.000	2.500	BBC-1215R	\$72.00	-	-	-	-		
	0.375	1.250	2.500	BBC-1220R	\$72.00	-	-	-	-		
	0.500		2.750	BBC-1225R	\$72.00	-	-	-	-		
	0.500	1.750	4.000	-	-	BBC-3230R	\$203.00	-	-		
	0.625		4.000	-	-	BBC-3235R	\$257.00	-	-		
	0.500	2.500	5.000	-	-	-	-	BBC-5240R	\$191.00		
	0.625		5.000	-	-	-	-	BBC-5245R	\$199.00		

*Circle is a registered trademark of Circle Machine Company

CDCD INSERTS



I.C.	T	R	Uncoated CM2 C1/C2	Coated CVM2 C1/C2	Uncoated CS7 C6/C7	Coated CV7 C6/C7	Coated TL120
			\$9.00 ea	\$10.00 ea	\$9.00 ea	\$10.00 ea	\$11.50 ea
.156	.040	.002	US-701	US-711	US-706	US-721	US-731
		.007	US-702	US-712	US-707	US-722	US-732
		.015	US-703	US-713	US-708	US-723	US-733

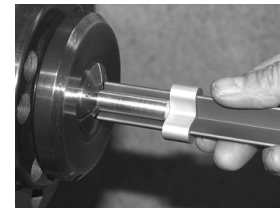
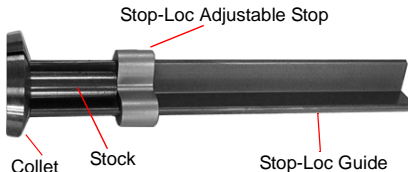
GRADE SELECTION CHART

Grade	Coating	Material	Operation
CM2	Uncoated	Non Ferrous Alloys, High Strength Steel Alloys	Finish
CVM2	TiN Coated	Non Ferrous materials, Stainless Steels	Semi-finish, Finish
CS7	UnCoated	Carbon Steels, Alloy Steels, Tool Steels	Semi-finish
CV7	TiN Coated	Steels, Stainless Steels	Semi Finish, Finish
TL120	TiAlN Coated	High Temp Alloys, Stainless Steels	Semi Finish, Finish

CHUCK/COLLET STOP

Handheld Lathe & Mill Vise Tool

- Adjustable Precision-Gage lengths up to 5-1/2" long holding +/- .005
- Save Money! No more fixed length dedicated shop-made front collet stops for each job
- Versatile-For use on CNC or manual lathes whether you are running a bar manually or using a bar puller
- Consistency-Unique design incorporates self-centering, unobstructed viewing and contrasting colors to give user confidence
- Dimensions: 6" L x 3/4" H x 3/4" W
- **Made in USA**



Stop-Loc
Pat.Pend.



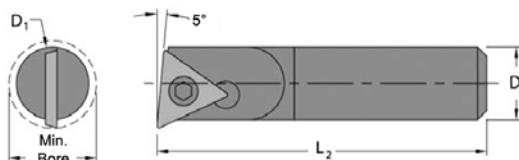
Graduations	Part Number	Price
Inch	STOPLOC	\$16.00
Inch/Metric	STOPLOC-THSMM	\$18.00
Metric	STOPLOC-MM	\$18.00

Call Us Today For All Of Your Machine Tool Needs!

REDUCED NECK BORING BARS

Using Triangle Shaped TDAB Inserts

- Minimum bore: .270 to .360
- Uses TDAB type inserts
- Shanks have locating flats for easy set-up
- Available in steel, heavy metal or carbide shanks
- See bottom of page for inserts
- Made in the USA



LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

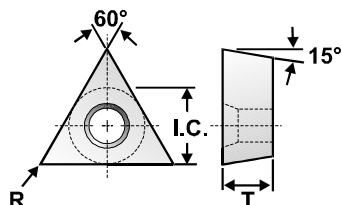
PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Min Bore	B Shank Dia	A Boring Depth	C OAL	Steel Shank-4xD		Heavy Metal-6xD		Carbide Shank-8xD		Screws \$3.00	Wrench
				Part Number	Price	Part Number	Price	Part Number	Price		
.270	0.187	-	3.500	BBC-1300R	\$72.00	-	-	-	-	19502	TX-206 \$6.50
			4.000	-	-	BBC-3305R	\$110.00	-	-		
	0.500	0.500	3.000	BBC-1315R	\$72.00	-	-	-	-		
			3.000	BBC-1320R	\$72.00	-	-	-	-		
	0.500	1.00	4.000	BBC-1330R	\$72.00	-	-	-	-		
			4.000	BBC-1335R	\$72.00	-	-	-	-		
	0.500	1.625	4.000	-	-	BBC-3340R	\$203.00	-	-		
			4.000	-	-	BBC-3345R	\$203.00	-	-		
	0.500	2.250	5.000	-	-	-	-	BBC-5350R	\$191.00		
5.000			-	-	-	-	BBC-5355R	\$199.00			
.300	0.250	-	4.000	BBC-1360R	\$72.00	BBC-3360R	\$117.00	-	-		
			3.000	BBC-1370R	\$72.00	-	-	-	-		
	0.500	0.750	4.000	BBC-1375R	\$72.00	-	-	-	-		
			3.000	BBC-1380R	\$72.00	-	-	-	-		
	0.500	1.250	4.000	BBC-1385R	\$72.00	-	-	-	-		
			4.000	-	-	BBC-3390R	\$203.00	-	-		
	0.500	1.875	4.000	-	-	BBC-3395R	\$203.00	-	-		
			5.000	-	-	-	-	BBC-5400R	\$191.00		
	0.500	2.500	5.000	-	-	-	-	BBC-5405R	\$199.00		
5.000			-	-	-	-	-	-			
.360	0.312	-	4.000	BBC-1410R	\$72.00	BBC-3410R	\$135.00	BBC-5415R	\$188.00		
			3.000	BBC-1420R	\$72.00	-	-	-	-		
	0.500	1.000	3.000	BBC-1425R	\$72.00	-	-	-	-		
			3.000	BBC-1430R	\$72.00	-	-	-	-		
	0.500	1.500	4.000	BBC-1435R	\$72.00	-	-	-	-		
			5.000	-	-	BBC-3440R	\$199.00	-	-		
	0.500	2.250	5.000	-	-	BBC-3445R	\$235.00	-	-		
			5.000	-	-	-	-	BBC-5450R	\$191.00		
	0.500	3.125	5.000	-	-	-	-	BBC-5455R	\$199.00		
5.000			-	-	-	-	-	-			

*Circle is a registered trademark of Circle Machine Company

TDAB TYPE INSERTS



I.C.	T	R	Uncoated CM2 C1/C2	Coated CVM2 C1/C2	Uncoated CS7 C6/C7	Coated CV7 C6/C7	Coated TL120
			\$9.00 ea	\$10.00 ea	\$9.00 ea	\$10.00 ea	\$11.50 ea
.160	.047	.002	US-751	US-761	US-756	US-771	US-781
		.007	US-752	US-762	US-757	US-772	US-782
		.015	US-753	US-763	US-758	US-773	US-783

GRADE SELECTION CHART

Grade	Coating	Material	Operation
CM2	Uncoated	Non Ferrous Alloys, High Strength Steel Alloys	Finish
CVM2	TiN Coated	Non Ferrous materials, Stainless Steels	Semi-finish, Finish
CS7	UnCoated	Carbon Steels, Alloy Steels, Tool Steels	Semi-finish
CV7	TiN Coated	Steels, Stainless Steels	Semi Finish, Finish
TL120	TiAlN Coated	High Temp Alloys, Stainless Steels	Semi Finish, Finish

Call Us Or Visit Our Website For Our Complete Selection!

SCLPR BORING BARS USING CPMT INSERTS



SCLPR BORING BARS

Using CPMT Inserts

- Industry standard SCLPR type
- Uses CPMT type inserts
- Shanks have locating flats for easy set-up
- Compatible with same style Kennametal® SCLPR boring bars
- Available in steel, heavy metal or carbide shanks
- See bottom of page for inserts
- **Made in the USA**

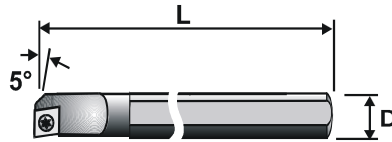


Fig 1



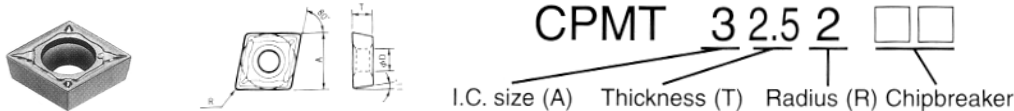
Insert	Industry Reference	Shank "D"	Fig #	Steel Shank-4xD			Heavy Metal-6xD			Carbide Shank-8xD			Screw \$ 1.00	Wrench
				Min Bore	L	Part Number	Min Bore	L	Part Number	Min Bore	L	Part Number		
CPMT 21.5_	_06-SCLPR-2	.375 (3/8)	1	0.480	5.0	BBK-1010R-E \$67.00	0.425	4.0	BBK-3010R \$146.00	0.480	6.0	BBK-5010R \$193.00	SC-31	TX-207 \$6.50
	_08-SCLPR-2	.500 (1/2)	1	0.600	5.0	BBK-1020R-E \$73.00	0.550	6.0	BBK-3020R \$259.00	0.600	8.0	BBK-5020R \$220.00		
	_10-SCLPR-2	.625 (5/8)	1	0.770	7.0	BBK-1030R-E \$73.00	0.675	6.0	BBK-3030R \$326.00	0.770	10.0	BBK-5030R \$333.00		
CPMT 32.5_	_08-SCLPR-3	.500 (1/2)	1	0.600	5.0	BBK-1040R-E \$72.00	-	-	-	0.600	8.0	BBK-5040R \$220.00	SC-32	TX-215 \$8.00
	_10-SCLPR-3	.625 (5/8)	1	0.770	7.0	BBK-1050R-E \$72.00	0.675	6.0	BBK-3050R \$326.00	0.770	10.0	BBK-5050R \$333.00		
	_12-SCLPR-3	.750 (3/4)	1	0.930	7.0	BBK-1060R-E \$100.00	0.800	8.0	BBK-3060R \$573.00	0.930	10.0	BBK-5060R \$507.00		
	_16-SCLPR-3	1.000	1	1.200	7.0	BBK-1070R-E \$125.00	1.050	10.0	BBK-3070R \$777.00	1.200	12.0	BBK-5070R \$730.00		

Kennametal® is a registered trademark of Kennametal Inc.

CPMT INSERTS FOR STEELS & STAINLESS

80° Diamond, 11° Relief Angle

Buy In Box Quantities & Save!



ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
CPMT21.50.5	CPMT060202	1/4	3/32	0.004 1/256	Cont	Finish To Medium Boring	PS	NS530	TO-6998452	\$6.48	\$4.75
					Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-6864996	\$9.09	\$6.67
CPMT21.51	CPMT060204	1/4	3/32	0.016 1/64	Cont	Finish To Medium Boring	PS	NS530	TO-6998453	\$6.48	\$4.75
					Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-6865012	\$9.09	\$6.67
CPMT32.51	CPMT09T304	3/8	5/32	0.016	Cont	Finish To Medium Boring	PS	NS530	TO-6727480	\$7.92	\$5.81
CPMT32.52	CPMT09T308	3/8	5/32	0.031	Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-6863673	\$9.72	\$7.13

L-WRENCH SETS



- Patented handle design makes every job faster and easier
- Gorillagrip handle is stronger than normal steel handles



Type	No. Of Pieces	Hex Wrench Set Includes	Part Number	Price Each
Inch	12	.050, 1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 3/16, 7/32, 1 / 4, 5/16	BO-12136	\$7.94
Inch	13	.050, 1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 3/16, 7/32, 1 / 4, 5/16, 3/8"	BO-12137	\$9.04
Metric	9	1.5, 2, 2.5, 3, 4, 5, 6, 8, 10mm	BO-12199	\$8.56
Torx®	8	T6,T7,T8,T9,T10,T15,T20,T25	BO-31832	\$16.09
Combo Pack	13 & 9	Inch & Metric Set	BO-22199	\$16.67

Call Us Today For All Of Your Machine Tool Needs!

STUPR & STFPR BORING BARS

Using TPMT Style Inserts

- Industry standard STUPR & STFPR type
- STUPR: 3° lead angle, STFPR: 0°
- Uses TPMT type inserts
- Shanks have locating flats
- Available in steel, heavy metal or carbide shanks
- Compatible with same style Kennametal® STUPR/STFPR boring bars
- Please see following page for inserts
- **Made in the USA**

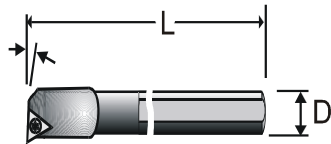


Fig 1



LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

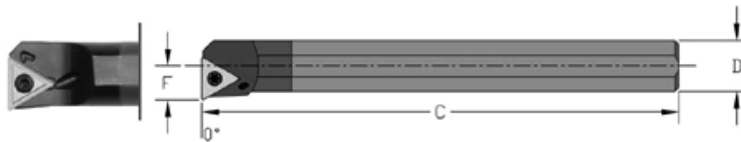
COOLANT/FLUIDS
TOOL STORAGE

Insert	Kennametal Reference	Shank "D"	Fig #	Heavy Metal				Carbide Shank				Screw	Wrench
				6 x Shank Diameter				8 x Shank Diameter					
				Min Bore	L	Part Number	Price	Min Bore	L	Part Number	Price		
TPMT 21.5_	_06-STUPR-2	.375	1	0.425	4	BBK-3260R	\$146.00	0.480	6	BBK-5260R	\$177.00	SC-31	TX-207 \$6.50
	_08-STUPR-2	.500	1	0.550	6	BBK-3270R	\$259.00	0.600	8	BBK-5270R	\$220.00		
	_10-STUPR-2	.625	2	0.675	6	BBK-3280R	\$326.00	0.770	8	BBK-5280R	\$333.00		
	_06-STFPR-2	.375	1	-	-	-	-	0.480	6	BBK-5200R	\$177.00		
	_08-STFPR-2	.500	1	-	-	-	-	0.600	8	BBK-5210R	\$220.00		
	_10-STFPR-2	.625	2	-	-	-	-	0.770	8	BBK-5220R	\$333.00		
TPMT 32.5_	_12-STFPR-3	.750	2	0.800	8	BBK-3230R	\$5673.00	0.930	10	BBK-5230R	\$507.00	SC-32	TX-215 \$8.00

Kennametal® is a registered trademark of Kennametal Inc.

STFPR BORING BARS

Using TPMT Style Inserts



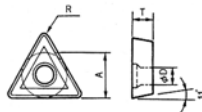
B

Insert	Tungaloy Reference#	Shank "D"	Min Bore	Carbide Shank		Carbide w/ Hole		Screw	Wrench
				L	Part Number	L	Part Number		
TPMT21.5_	06-STFPR-2	.375	0.450	6.0	UD-C06MSTFPR2 \$163.50	6.0	UD-E06MSTFPR2 \$179.95	SC-31 \$1.00	TX-207 \$6.50
	08-STFPR-2	.500	0.570	8.0	UD-C08RSTFPR2 \$211.77	8.0	UD-E08RSTFPR2 \$228.23	SC-31 \$1.00	TX-207 \$6.50
	10-STFPR-2	.625	0.730	-	-	7.0	UD-E10QSTFPR2 \$284.19	SC-31 \$1.00	TX-207 \$6.50
TPMT32.5_	12-STFPR-3	.750	0.930	-	-	7.0	UD-E12QSTFPR3 \$356.61	SC-32 \$1.00	TX-215 \$8.00

TPMT INSERTS FOR STAINLESS STEELS

60° Triangle, 11° Relief Angle

Buy In Box Quantities & Save!



TPMT 2 1.5 2
 I.C. size (A) Thickness (T) Radius (R) Chipbreaker

ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
TPMT21.50	TPMT110202	1/4	3/32	0.004	Cont	Finish To Medium Boring	PS	AT9530	TO-6998369	\$8.01	\$5.87
					Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-6865420	\$8.10	\$5.94
TPMT21.51	TPMT110204	1/4	3/32	0.016	Cont	Finish To Medium Boring	PS	NS530	TO-6998546	\$5.94	\$4.36
					Cont	Finish To Medium Boring	PS	AT9530	TO-6998370	\$8.01	\$5.87
					Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-6865209	\$8.10	\$5.94
					Cont	Finish To Medium Boring	PS	AT9530	TO-6998371	\$8.01	\$5.87
TPMT21.52	TPMT110208	1/4	3/32	0.031	Cont	Finish To Medium Boring	PS	T9125	TO-6865421	\$8.10	\$5.94
					Cont & Int Turning	Finish To Medium Boring	PS	AT9530	TO-6998377	\$12.24	\$8.98
TPMT32.51	TPMT16T304	3/8	5/32	0.016	Cont	Finish To Medium Boring	PS	AT9530	TO-6998377	\$12.24	\$8.98
					Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-6865078	\$11.88	\$8.71
TPMT32.52	TPMT16T308	3/8	5/32	0.031	Cont	Finish To Medium Boring	PS	AT9530	TO-6998378	\$12.24	\$8.98
					Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-6865288	\$11.88	\$8.71

Call Us Or Visit Our Website For Our Complete Selection!

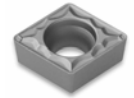
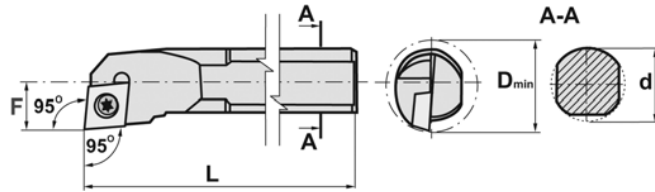
SCLCR BORING BARS USING CCMT/CCGT INSERTS

SCLCR/L BORING BARS

Steel



- Industry standard SCLCR type
- Uses CCMT or CCGT type inserts
- Available in solid steel or coolant thru
- Shanks have locating flats for easy set up
- Please see following page for inserts



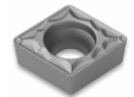
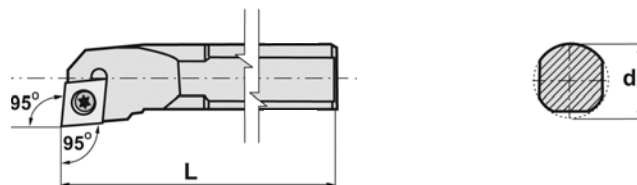
Using CCMT/CCGT Inserts

Insert Series	Industry Reference	Shank Dia d	Min Bore D	F Dim	OAL L	Right Hand Part Number	Left Hand Part Number	Price Each
SOLID								
CC_T - 21.5_	05-SCLCR/L-2	0.313	0.354	0.177	4.00	B-SCLCR2-S05H-S	B-SCLCL2-S05H-S	\$41.80
	06-SCLCR/L-2	0.375	0.406	0.203	5.00	B-SCLCR2-S06K-S	B-SCLCL2-S06K-S	\$46.55
	08-SCLCR/L-2	0.500	0.562	0.281	6.00	B-SCLCR2-S08M-S	B-SCLCL2-S08M-S	\$51.73
	10-SCLCR/L-2	0.625	0.812	0.406	7.00	B-SCLCR2-S10Q-S	B-SCLCL2-S10Q-S	\$63.95
CC_T - 32.5_	08-SCLCR/L-3	0.500	0.688	0.344	6.00	B-SCLCR3-S08M-S	B-SCLCL3-S08M-S	\$51.73
	10-SCLCR/L-3	0.625	0.812	0.406	7.00	B-SCLCR3-S10Q-S	B-SCLCL3-S10Q-S	\$63.95
	12-SCLCR/L-3	0.750	1.000	0.500	7.00	B-SCLCR3-S12Q-S	B-SCLCL3-S12Q-S	\$73.36
	16-SCLCR/L-3	1.000	1.250	0.625	8.00	B-SCLCR3-S16R-S	B-SCLCL3-S16R-S	\$101.57
COOLANT-THRU								
CC_T - 21.5_	A04-SCLCR/L-2	0.250	0.330	0.177	4.00	B-SCLCR2-A04H-S	B-SCLCL2-A04H-S	\$57.00
	A05-SCLCR/L-2	0.313	0.354	0.177	4.00	B-SCLCR2-A05K-S	B-SCLCL2-A05K-S	\$57.00
	A06-SCLCR/L-2	0.375	0.406	0.203	5.00	B-SCLCR2-A06K-S	B-SCLCL2-A06K-S	\$61.75
	A08-SCLCR/L-2	0.500	0.562	0.281	6.00	B-SCLCR2-A08M-S	B-SCLCL2-A08M-S	\$67.45
	A08-SCLCR/L-2	0.625	0.812	0.406	7.00	B-SCLCR2-A10Q-S	B-SCLCL2-A10Q-S	\$74.55
CC_T - 32.5_	A08-SCLCR/L-3	0.500	0.688	0.344	6.00	B-SCLCR3-A08M-S	B-SCLCL3-A08M-S	\$67.45
	A10-SCLCR/L-3	0.625	0.812	0.406	7.00	B-SCLCR3-A10Q-S	B-SCLCL3-A10Q-S	\$77.28
	A12-SCLCR/L-3	0.750	1.000	0.500	7.00	B-SCLCR3-A12Q-S	B-SCLCL3-A12Q-S	\$84.21
	A16-SCLCR/L-3	1.000	1.250	0.625	8.00	B-SCLCR3-A16R-S	B-SCLCL3-A16R-S	\$128.25

SCLCR BORING BARS

Heavy Metal & Carbide

- Industry standard SCLCR type
- Uses CCMT or CCGT type inserts
- Shanks have locating flats
- Made in the USA



Using CCMT/CCGT Inserts

Insert	Industry Reference	Shank	Heavy Metal-6xD				Carbide Shank-8xD				Screw \$1.00	Wrench
			Min Bore	L	Part Number	Price	Min Bore	L	Part Number	Price		
CC_21.5_	_05-SCLCR-2	0.312	0.362	4.0	BBS-3000R	\$133.00	0.438	6.0	BBS-5000R	\$162.00	SC-76	TX-207 \$6.50
	_06-SCLCR-2	0.375	0.425	4.0	BBS-3010R	\$146.00	0.500	6.0	BBS-5010R	\$166.00		
	_08-SCLCR-2	0.500	0.550	6.0	BBS-3020R	\$259.00	0.630	8.0	BBS-5020R	\$220.00		
	_10-SCLCR-2	0.625	0.675	6.0	BBS-3040R	\$326.00	0.810	8.0	BBS-5040R	\$333.00		
CC_32.5_	_08-SCLCR-3	0.500	-	-	-	-	0.630	8.0	BBS-5030R	\$220.00	SC-77	TX-215 \$8.00
	_10-SCLCR-3	0.625	0.675	6.0	BBS-3050R	\$326.00	0.810	8.0	BBS-5050R	\$333.00		
	_12-SCLCR-3	0.750	0.800	8.0	BBS-3060R	\$573.00	1.000	10.0	BBS-5060R	\$507.00		
	_16-SCLCR-3	1.000	1.050	8.0	BBS-3070R	\$777.00	1.280	12.0	BBS-5070R	\$730.00		

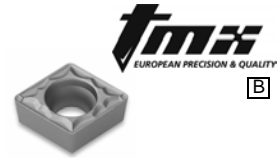
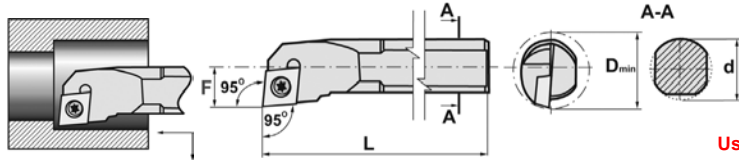
Call Us Today For All Of Your Machine Tool Needs!

SCLCR/L BORING BARS & CCMT/CCGT INSERTS

SCLCR/L BORING BARS

Steel

- Industry standard SCLCR/L type
- Steel shank
- Uses CCMT or CCGT inserts
- Shanks have locating flats
- 3° side & end cutting edge angle



Using CCMT/CCGT Inserts

Uses Insert	Style	Shank Size d	Min Bore D	OAL L	F	Right Hand Part Number	Left Hand Part Number	Price Each	SPARE PARTS	
									Screw Part Number	Hex/Torx Key Part Number
CC_T-21.5_	SI-SCLCR/L4-2	.312	.354	4	.1875	BI-6870-042R	BI-6870-042L	\$48.64	BI-6998-2506 \$0.72	BI-6998-007 \$4.99
	SI-SCLCR/L6-2	.375	.468	6	.250	BI-6870-062R	BI-6870-062L	\$48.64		
	SI-SCLCR/L8-2	.500	.560	7	.290	BI-6870-082R	BI-6870-082L	\$48.64		
	SI-SCLCR/L10-2	.625	.810	8	.405	BI-6870-085R	BI-6870-085L	\$64.95		
CC_T-32.5_	SI-SCLCR/L8-3	.500	.625	7	.312	BI-6870-093R	BI-6870-093L	\$48.96	BI-6998-4008T \$0.72	BI-6998-015 \$4.99
	SI-SCLCR/L10-3	.625	.812	8	.406	BI-6870-103R	BI-6870-103L	\$57.08		
	SI-SCLCR/L12-3	.750	1	10	.500	BI-6870-123R	BI-6870-123L	\$61.37		
	SI-SCLCR/L16-3	1	1.120	12	.6094	BI-6870-163R	BI-6870-163L	\$78.02		

CCMT INSERTS

80° Diamond, 7° Relief Angle



Buy In Box Quantities & Save!



ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
For STEELS											
CCMT21.50	CCMT060202	1/4	3/32	0.004 1/256	Cont	Finish To Medium Boring	PS	GT9530	TO-6998297	\$7.74	\$5.68
					Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-6864994	\$9.09	\$6.67
CCMT21.51	CCMT060204	1/4	3/32	0.016 1/64	Cont	Finish To Medium Boring	PS	NS9530	TO-6997711	\$7.20	\$5.28
					Cont	Finish To Medium Boring	PS	GT9530	TO-6998298	\$7.74	\$5.68
					Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-6865010	\$9.09	\$6.67
CCMT21.52	CCMT060208	1/4	3/32	0.031 1/32	Cont	Finish To Medium Boring	PS	NS9530	TO-6998433	\$7.20	\$5.28
					Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-6864937	\$9.09	\$6.67
CCMT32.50	CCMT09T302	3/8	5/32	0.004 1/256	Cont	Finish To Medium Boring	PS	GT9530	TO-6998300	\$9.63	\$7.06
					Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-6865282	\$10.89	\$7.99
CCMT32.51	CCMT09T304	3/8	5/32	0.016 1/64	Cont	Finish To Medium Boring	PS	NS9530	TO-6997713	\$8.28	\$6.07
					Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-6865204	\$10.89	\$7.99
CCMT32.52	CCMT09T308	3/8	5/32	0.031 1/32	Cont	Finish To Medium Boring	PS	GT9530	TO-6998302	\$9.63	\$7.06
					Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-6865415	\$10.89	\$7.99

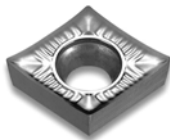
For STAINLESS STEEL

CCMT21.50.5	CCMT060202	1/4	3/32	0.004	Cont	Finish To Medium	PS	GT9530	TO-6998297	\$7.74	\$5.68
CCMT21.51	CCMT060204	1/4	3/32	0.0156 1/64	Cont	Finish To Medium	PS	NS9530	TO-6997711	\$7.20	\$5.28
					Cont - Gen. Purp.	Finish	PF	T6120	TO-6712226	\$8.73	\$6.40
					Cont - Gen. Purp.	Medium To Rough	PM	T6120	TO-6994859	\$9.09	\$6.67
CCMT21.52	CCMT060208	1/4	3/32	0.0312 1/32	Cont	Finish To Medium	PS	GT9530	TO-6998299	\$7.74	\$5.68
					Cont - Gen. Purp.	Medium To Rough	PM	T6120	TO-6994860	\$9.09	\$6.67
					Rough & Hvy Boring	Medium To Rough	PM	T6130	TO-6994900	\$9.09	\$6.67
CCMT32.50.5	CCMT09T302	3/8	5/32	0.004 1/256	Cont	Finish To Medium	PS	GT9530	TO-6998300	\$9.63	\$7.06
					Rough & Hvy Boring	Finish To Medium	PS	T6130	TO-6994700	\$10.89	\$7.99
CCMT32.51	CCMT09T304	3/8	5/32	0.0156 1/64	Cont	Finish To Medium	PS	NS9530	TO-6997713	\$8.28	\$6.07
					Cont - Gen. Purp.	Finish	PF	T6120	TO-6712228	\$10.89	\$7.99
					Rough & Hvy Boring	Medium To Rough	PM	T6130	TO-6994901	\$10.89	\$7.99
CCMT32.52	CCMT09T308	3/8	5/32	0.0312 1/32	Cont	Finish To Medium	PS	GT9530	TO-6998302	\$9.63	\$7.06
					Cont - Gen. Purp.	Medium To Rough	PM	T6120	TO-6994862	\$10.89	\$7.99
					Rough & Hvy Boring	Medium To Rough	PM	T6130	TO-6994901	\$10.89	\$7.99

CCGT INSERTS

For Machining Aluminum

- Grade H01 -Uncoated grade for aluminum
- Sharp positive HA chipbreaker is ideal for aluminum
- For continuous non ferrous turning



IC	Thickness	Radius	Grade	Description	Part Number	Price Each
1/4	3/32	0.008 1/64	H01	CCGT 21.50.5 AK H01	KOY-1024	\$7.87
			H01	CCGT 21.51 AK H01	KOY-1026	\$7.87
3/8	5/32	0.008 1/64	H01	CCGT 32.50.5 AK H01	KOY-1028	\$9.22
			H01	CCGT 32.51 AK H01	KOY-1030	\$9.22
			H01	CCGT 32.52 AK H01	KOY-1032	\$9.22
1/2	3/16	1/64 1/32	H01	CCGT 431 AK H01	KOY-1034	\$10.68
			H01	CCGT 432 AK H01	KOY-1036	\$10.68



Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

261

LATHE CHUCKS
LIVE CENTERS

WISE ACCESSORIES
WISE JAWS

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

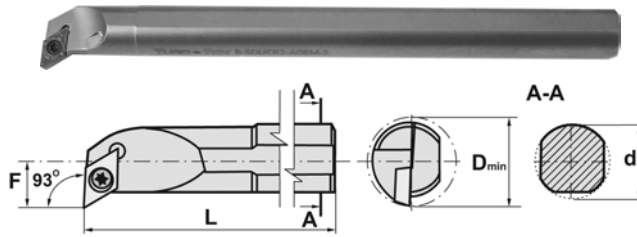
COOLANT/FLUIDS
TOOL STORAGE

SDUCR BORING BARS USING DCMT/DCGT INSERTS

SDUCR/L BORING BARS

Solid & Coolant Thru

- Industry standard SDUCR type
- Uses DCMT type inserts
- Shanks have locating flats for easy set-up
- Steel shank
- See following page for inserts

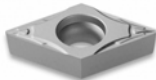


Using DCMT/DCGT Inserts

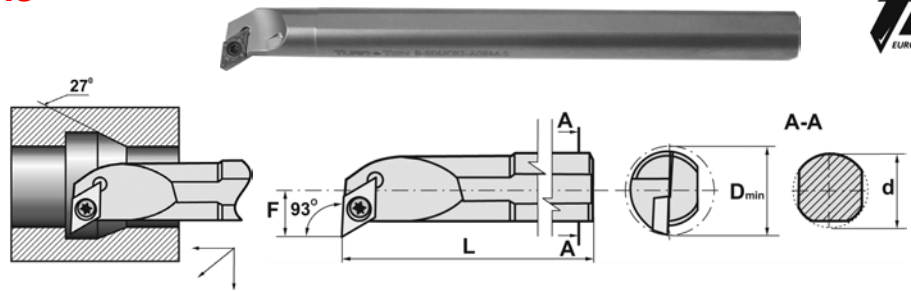
Insert Series		Shank Dia	Min Bore	F Dim	OAL	Right Hand Part Number	Left Hand Part Number	Price Each
Solid								
DC_T - 21.5_	SDUCR/L06-2	0.375	0.750	0.375	6.00	B-SDUCR2-S06M-S	B-SDUCL2-S06M-S	\$56.43
DC_T - 21.5_	SDUCR/L08-2	0.500	0.874	0.437	6.00	B-SDUCR2-S08M-S	B-SDUCL2-S08M-S	\$63.95
DC_T - 21.5_	SDUCR/L10-2	0.625	1.000	0.500	8.00	B-SDUCR2-S10R-S	B-SDUCL2-S10L-S	\$78.07
DC_T - 32.5_	SDUCR/L12-3	0.750	1.124	0.562	10.00	B-SDUCR3-S12S-S	B-SDUCL3-S12S-S	\$88.41
DC_T - 32.5_	SDUCR/L16-3	1.000	1.500	0.750	12.00	B-SDUCR3-S16T-S	B-SDUCL3-S16T-S	\$119.45
DC_T - 32.5_	SDUCR/L20-3	1.250	1.750	0.875	14.00	B-SDUCR3-S20U-S	B-SDUCL3-S20U-S	\$132.72
Coolant-Thru								
DC_T - 21.5_	SDUCR/L05-2	0.313	0.355	0.197	4.00	B-SDUCR2-A05H-S	B-SDUCL2-A05H-S	\$63.07
DC_T - 21.5_	SDUCR/L06-2	0.375	0.750	0.375	6.00	B-SDUCR2-A06M-S	B-SDUCL2-A06M-S	\$65.30
DC_T - 21.5_	SDUCR/L08-2	0.500	0.874	0.437	6.00	B-SDUCR2-A08M-S	B-SDUCL2-A08M-S	\$69.20
DC_T - 21.5_	SDUCR/L10-2	0.625	1.000	0.500	8.00	B-SDUCR2-A10R-S	B-SDUCL2-A10R-S	\$69.39
DC_T - 32.5_	SDUCR/L12-3	0.750	1.124	0.562	10.00	B-SDUCR3-A12A-S	B-SDUCL3-A12A-S	\$102.52
DC_T - 32.5_	SDUCR/L16-3	1.000	1.500	0.750	12.00	B-SDUCR3-A16T-S	B-SDUCL3-A16T-S	\$133.55
DC_T - 32.5_	SDUCR/L20-3	1.250	1.750	0.875	14.00	B-SDUCR3-A20U-S	B-SDUCL3-A20U-S	\$148.39

SDUCR/L BORING BARS

- Industry standard SDUCR type
- Uses DCMT or DCGT inserts
- 3° end cutting edge angle
- Shanks have locating flats for easy set-up
- Steel shank
- See following page for inserts



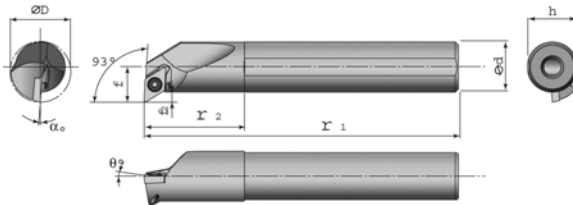
Using DCMT/DCGT Inserts



Uses Insert	Style	Shank Size d	Min Bore D	OAL L	F	Right Hand Part Number	Left Hand Part Number	Price Each	SPARE PARTS	
									Screw Part Number	Hex/Torx Key Part Number
DC_T-21.5_	SI-SDUCR/L06-2	3/8	.625	6	.375	BI-6875-006R	BI-6875-006L	\$47.76	BI-6998-2506 \$0.72	BI-6998-007 \$4.99
	SI-SDUCR/L08-2	1/2	.780	6	.437	BI-6875-008R	BI-6875-008L	\$50.18		
	SI-SDUCR/L10-2	5/8	.840	8	.500	BI-6875-010R	BI-6875-010L	\$53.68		
DC_T-32.5_	SI-SDUCR/L12-3	3/4	1.125	10	.562	BI-6875-012R	BI-6875-012L	\$56.09	BI-6998-4008T \$0.72	BI-6998-015 \$4.99
	SI-SDUCR/L16-3	1	1.500	12	.750	BI-6875-016R	BI-6875-016L	\$61.28		
	SI-SDUCR/L20-3	1-1/4	1.750	14	.875	BI-6875-020R	BI-6875-020L	\$94.29		

SDUCR BORING BARS

Using "DCMT/DCGT" Inserts
Solid Carbide With Coolant Hole



Uses Insert	Industry Reference	Shank "D"	Min Bore	L	Part Number	Price Each	Accessories	
							Screw \$1.00	Wrench \$2.94
DC__21.5_	06-SDUCR-2	0.375	0.600	5.00	TO-6850438	\$269.80	TO-CSTB25	WIHA-37022
	08-SDUCR-2	0.500	0.730	5.00	TO-6850443	\$322.00	TO-CSTB25	WIHA-37022
	10-SDUCR-2	0.625	0.850	7.00	TO-6850525	\$457.00	TO-CSTB25	WIHA-37022
DC__32.5_	12-SDUCR-3	0.750	0.980	7.00	TO-6862409	\$685.80	TO-CSTB4S	WIHA-37032

Call Us Today For All Of Your Machine Tool Needs!

DCMT/DCGT BORING INSERTS

DCMT INSERTS FOR STEELS

55° Diamond, 7° Relief Angle



DCMT 2 1.5 1
 I.C. size (A) Thickness (T) Radius (R) Chipbreaker

Buy In Box Quantities & Save!

ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
------	-----	-----------	----------	----------	--------------------	------------------------	--------------	-------	-------------	---------------	-----------

For STEELS

DCMT21.51	DCMT070204	1/4	3/32	0.016	Cont & Int Turning	Medium To Rough Boring	PM	T9125	TO-6865425	\$9.27	\$6.80
DCMT21.52	DCMT070208	1/4	3/32	0.031	Cont & Int Turning	Medium To Rough Boring	PM	T9125	TO-6865020	\$9.27	\$6.80
DCMT32.51	DCMT11T304	3/8	5/32	0.016	Cont & Int Turning	Medium To Rough Boring	PM	T9125	TO-6865007	\$13.05	\$9.57
DCMT32.52	DCMT11T308	3/8	5/32	0.031	Cont & Int Turning	Medium To Rough Boring	PM	T9125	TO-6865021	\$13.05	\$9.57

For STAINLESS STEELS

DCMT21.51	DCMT070204	1/4	3/32	0.015625	Cont - Gen. Purp.	Medium To Rough	PM	T6120	TO-6994870	\$9.27	\$6.80
DCMT21.52	DCMT070208	1/4	3/32	0.03125	Rough & Hvy Boring	Medium To Rough	PM	T6130	TO-6994910	\$9.27	\$6.80
DCMT32.51	DCMT11T304	3/8	5/32	0.0156	Cont - Gen. Purp.	Finish	PF	T6120	TO-6712245	\$13.05	\$9.57
					Rough & Hvy Boring	Medium To Rough	PM	T6130	TO-6712244	\$13.05	\$9.57
DCMT32.52	DCMT11T308	3/8	5/32	0.03125	Cont - Gen. Purp.	Finish	PF	T6120	TO-6712245	\$13.05	\$9.57
					Rough & Hvy Boring	Medium To Rough	PM	T6130	TO-6994913	\$13.05	\$9.57

For SUPER ALLOYS

DCMT21.51	DCMT070204	1/4	3/32	0.016	Cont & Int Turning	Medium To Rough Boring	PM	AH120	TO-6818535	\$9.27	\$6.80
DCMT32.51	DCMT11T304	3/8	5/32	0.016	Cont & Int Turning	Medium To Rough Boring	PM	AH120	TO-6818552	\$13.05	\$9.57
DCMT32.52	DCMT11T308	3/8	5/32	0.031	Cont	Medium To Rough Boring	PM	AH110	TO-6818558	\$13.05	\$9.57
					Cont & Int Turning	Medium To Rough Boring	PM	AH120	TO-6818559	\$13.05	\$9.57

TUNGALOY INSERT GRADE INFORMATION

Grade	Features	Applications
T6130	-Ti + AlOxide; tough substrate with new advanced coating	- For rough and heavy turning of stainless steels
T6120	-Ti + AlOxide; tough substrate with new advanced coating	-For general purpose turning of steels and stainless steels
T9125	- TiAlOxide coating - wear resistant substrate plus multiple coated layers	- Low to medium speed turning and boring of steels and stainless steels
AH110	-TiAlN coating: heat resistant coating and extremely hard substrate allows excellent wear resistance	-Turning of super (hi-temp) alloys and non-ferrous metals
AH120	-TiAlN coating: heat resistant coating and extremely hard substrate allows highest wear resistance	- Turning of super (hi-temp) alloys, steels, stainless steels. Great all purpose grade

DCGT INSERTS

For Machining Aluminum



- Grade H01-Uncoated grade for aluminum
- Sharp positive HA chipbreaker is ideal for aluminum
- For continuous non ferrous turning

IC	Thickness	Radius	Grade	Description	Part Number	Price Each
----	-----------	--------	-------	-------------	-------------	------------

DCGT Inserts

1/4	3/32	0.008	H01	DCGT 21.50.5 AK H01	KOY-1199	\$7.87
		1/64	H01	DCGT 21.51 AK H01	KOY-1201	\$7.87
3/8	5/32	0.008	H01	DCGT 32.50.5 AK H01	KOY-1203	\$9.22
		1/64	H01	DCGT 32.51 AK H01	KOY-1205	\$9.22
		1/32	H01	DCGT 32.52 AK H01	KOY-1207	\$9.22

ACCURIST® SAFETY GLASSES



- Sporty design for on and off the job
- Inner foam padding is flame resistant
- Built-in rubber nosepiece
- Durable frame features dual-injected straightback temples
- Anti-fog lenses
- Scratch resistant polycarbonate lens provides 99% UVA/B/C protection



Lens Color	Frame Color	Part Number	Price Each
Clear	Black	PYR-SB8710DTP	\$7.99
Clear	Black/Red	PYR-SBR8710DTP	\$8.99
Gray	Black	PYR-SB8720DTP	\$7.99

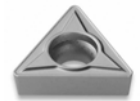
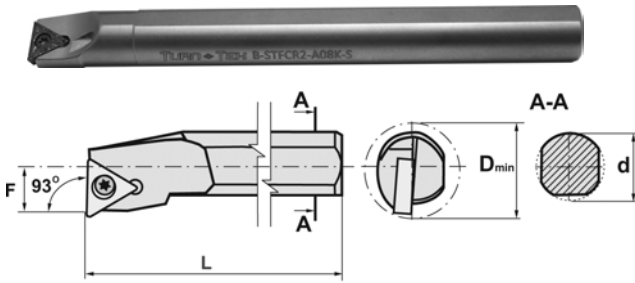
Call Us Or Visit Our Website For Our Complete Selection!

STFCR/STUCR BORING BARS USING TCMT/TCGT INSERTS



STUCR BORING BARS Using TCMT/TCGT Inserts

- Industry standard STUCR/L type
- STUCR: 3° lead angle, STFCR: 0°
- Steel shank
- Uses TCMT or TCGT inserts
- Shanks have locating flats
- 3° end cutting edge angle



Using TCMT Inserts

Insert Series	Industry Reference	Shank Dia	Min Bore	F Dim	OAL	Right Hand Part Number	Left Hand Part Number	Price Each
---------------	--------------------	-----------	----------	-------	-----	------------------------	-----------------------	------------

SOLID STFCR Series Boring Bars

TC_T-21.5_	06-STFCR/L-2	0.375	0.406	0.203	5.00	B-STFCR2-S06K-S	B-STFCL2-S06K-S	\$46.09
	08-STFCR/L-2	0.500	0.562	0.281	5.00	B-STFCR2-S08K-S	B-STFCL2-S08K-S	\$51.73
	10-STFCR/L-2	0.625	0.812	0.406	7.00	B-STFCR2-S10Q-S	B-STFCL2-S10Q-S	\$63.95
	12-STFCR/L-2	0.750	0.950	0.475	7.00	B-STFCR2-S12Q-S	B-STFCL2-S12Q-S	\$73.36
	12-STFCR/L-3	0.750	0.950	0.475	7.00	B-STFCR3-S12Q-S	B-STFCL3-S12Q-S	\$73.36

SOLID STUCR Series Boring Bars

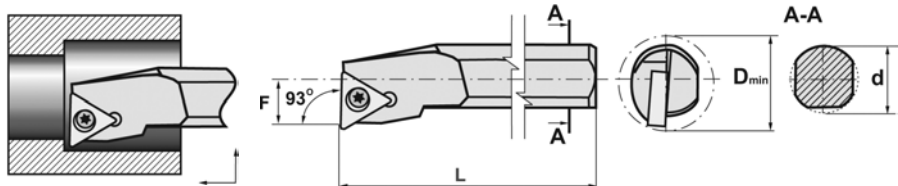
TC_T-21.5_	06-STUCR/L-2	0.375	0.406	0.203	5.00	B-STUCR2-S06K-S	B-STUCL2-S06K-S	\$46.09
	08-STUCR/L-2	0.500	0.562	0.281	5.00	B-STUCR2-S08K-S	B-STUCL2-S08K-S	\$51.73
	10-STUCR/L-2	0.625	0.812	0.406	7.00	B-STUCR2-S10Q-S	B-STUCL2-S10Q-S	\$63.95
TC_T-32.5_	12-STUCR/L-3	0.750	1.000	0.500	7.00	B-STUCR3-S12Q-S	B-STUCL3-S12Q-S	\$73.36

COOLANT-THRU STFCR/STUCR Series Boring Bars

TC_T-21.5_	06-STFCR/L-2	0.375	0.406	0.203	5.00	B-STFCR2-A06K-S	B-STFCL2-A06K-S	\$61.14
	06-STUCR/L-2	0.375	0.406	0.203	5.00	B-STUCR2-A06K-S	B-STUCL2-A06K-S	\$61.14
	08-STFCR/L-2	0.500	0.562	0.281	5.00	B-STFCR2-A08K-S	B-STFCL2-A08K-S	\$66.78
TC_T-21.5_	08-STUCR/L-2	0.500	0.562	0.281	5.00	B-STUCR2-A08K-S	B-STUCL2-A08K-S	\$66.78
	10-STFCR/L-2	0.625	0.812	0.406	7.00	B-STFCR2-A10Q-S	B-STFCL2-A10Q-S	\$70.01
	10-STUCR/L-2	0.625	0.812	0.406	7.00	B-STUCR2-A10Q-S	B-STUCL2-A10Q-S	\$81.83
TC_T-32.5_	12-STFCR/L-2	0.750	0.950	0.475	7.00	B-STFCR2-A12Q-S	B-STFCL2-A12Q-S	\$95.93
	12-STUCR/L-3	0.750	1.000	0.500	7.00	B-STFCR3-A12Q-S	B-STFCL3-A12Q-S	\$95.93

STUCR BORING BARS Using TCMT/TCGT Inserts

- Industry standard STUCR/L type
- Steel shank
- Uses TCMT or TCGT inserts
- Shanks have locating flats
- 3° end cutting edge angle



Ⓜ

Uses Insert	Style	Shank Size d	Min Bore D	OAL L	F	Right Hand Part Number	Left Hand Part Number	Price Each	SPARE PARTS	
									Screw Part Number	Hex/Torx Key Part Number
TC_T-21.5_	SI-STUCR06-2	3/8	.500	5	.208	BI-6884-006R	BI-6884-006L	\$48.57	BI-6998-2506 \$0.72	BI-6998-007 \$4.99
	SI-STUCR08-2	1/2	.590	6	.287	BI-6884-008R	BI-6884-008L	\$54.35		
	SI-STUCR10-2	5/8	.750	8	.350	BI-6884-010R	BI-6884-010L	\$55.13		
TC_T-32.5_	SI-STUCR12-3	3/4	.845	10	.422	BI-6884-012R	BI-6884-012L	\$58.23	BI-6998-4008T \$0.72	BI-6998-015 \$4.99
	SI-STUCR16-3	1	1.115	12	.555	BI-6884-016R	BI-6884-016L	\$62.82		
	SI-STUCR20-3	1-1/4	1.370	12	.682	BI-6884-020R	BI-6884-020L	\$71.53		
	SI-STUCR24-3	1-1/2	1.680	12	.840	BI-6884-024R	BI-6884-024L	\$89.24		



We Are A Full Line Supplier For Tungaloy!

**Carbide Inserts • Boring • Turning
Milling • Drilling • Part-Off**

Please Call For More Information!

Call Us Today For All Of Your Machine Tool Needs!

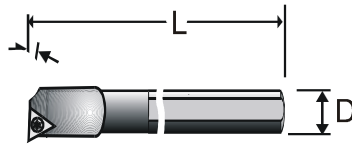
TCMT/TCGT INSERTS

STFCR/STUCR BORING BARS

Heavy Metal & Carbide Shank



- Industry standard STFCR/STUCR type
- STUCR: 3° lead angle, STFCR: 0°
- Uses TCMT/TCGT type inserts
- Shanks have locating flats for easy set-up
- Made in the USA

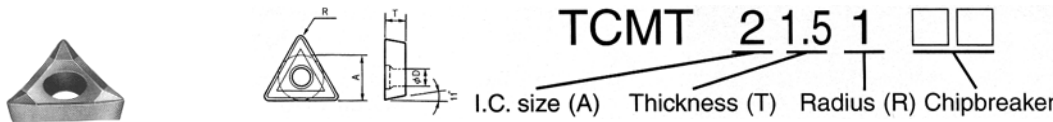


Insert	Industry Reference	Shank "D"	Heavy Metal-6xD				Carbide Shank-8xD				Screw \$1.00	Wrench
			Min Bore	L	Part Number	Price Each	Min Bore	L	Part Number	Price Each		
TC_T 21.5_	_06-STFCR-2	0.375	0.425	4.0	BBS-3200R	\$133.00	0.500	6.0	BBS-5200R	\$166.00	SC-76	TX-207 \$6.50
	_08-STFCR-2	0.500	0.550	6.0	BBS-3210R	\$258.00	0.630	8.0	BBS-5210R	\$220.00		
	_10-STFCR-2	0.625	0.675	6.0	BBS-3220R	\$326.00	0.810	8.0	BBS-5220R	\$333.00		
	_12-STFCR-2	0.750	0.800	8.0	BBS-3230R	\$573.00	1.000	10.0	BBS-5230R	\$495.00		
TC_T 32.5_	_12-STFCR-3	0.750	0.800	8.0	BBS-3240R	\$573.00	1.000	10.0	BBS-5240R	\$495.00	SC-77	TX-215
TC_T 21.5_	_06-STUCR-2	0.375	0.425	4.0	BBS-3250R	\$133.00	0.500	6.0	BBS-5250R	\$166.00	SC-76	TX-207 \$6.50
	_08-STUCR-2	0.500	0.550	6.0	BBS-3260R	\$258.00	0.630	8.0	BBS-5260R	\$228.00		
	_10-STUCR-2	0.625	0.675	6.0	BBS-3270R	\$326.00	0.810	8.0	BBS-5270R	\$333.00		
TC_T 32.5_	_12-STUCR-3	0.750	0.800	8.0	BBS-3290R	\$573.00	1.000	10.0	BBS-5290R	\$507.00	SC-77	TX-215

TCMT INSERTS FOR STEELS

60° Triangle, 7° Relief Angle

Buy In Box Quantities & Save!



ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
For STEELS											
TCMT21.50	TCMT110202	1/4	3/32	0.008	Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-6865207	\$8.10	\$5.94
TCMT21.51	TCMT110204	1/4	3/32	0.016	Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-6865033	\$8.10	\$5.94
TCMT21.52	TCMT110208	1/4	3/32	0.031	Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-6865024	\$8.10	\$5.94
TCMT32.52	TCMT16T308	3/8	5/32	0.031	Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-6865035	\$11.88	\$8.71
For STAINLESS STEELS											
TCMT21.50	TCMT110202	1/4	3/32	0.008	Rough & Heavy Bor-	Finish To Medium	PS	T6130	TO-6994719	\$8.10	\$5.94
TCMT21.51	TCMT110204	1/4	3/32	0.016	Rough & Heavy Bor-	Finish To Medium	PS	T6130	TO-6994720	\$8.10	\$5.94

TUNGALOY INSERT GRADE INFORMATION

Grade	Features	Applications
T6130	-Ti + AlOxide; tough substrate with new advanced coating	- For rough and heavy turning of stainless steels
T6120	-Ti + AlOxide; tough substrate with new advanced coating	-For general purpose turning of steels and stainless steels
T9125	- TiAlOxide coating - wear resistant substrate plus multiple coated layers	- Low to medium speed turning and boring of steels and stainless steels
AH110	-TiAlN coating; heat resistant coating and extremely hard substrate allows excellent wear resistance	-Turning of super (hi-temp) alloys and non-ferrous metals
AH120	-TiAlN coating; heat resistant coating and extremely hard substrate allows highest wear resistance	- Turning of super (hi-temp) alloys, steels, stainless steels. Great all purpose grade

THE TOOLS YOU NEED AT COMPETITIVE PRICES!



- Chuck Jaws
- Lathe & Collet Chucks
- Lathe Tooling
- Machine Vises
- Milling Toolholders
- ER, TG & DA Collets
- Carbide Inserts
- Drills, Taps & Reamers
- Threading & Grooving
- Indexable Cutting Tools
- Abrasives
- Cutting Fluids
- Measuring Tools
- MRO & Safety

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS
VISE JAWS
VISE ACCESSORIES
STRAIGHT SHANK
COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

SUMITOMO® STYLE BORING BARS

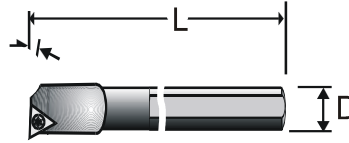
D

STJOR_ BORING BARS

Using TPGP/TPGG Inserts



- Uses TBGP/TPGP/TPGG triangle type inserts
- Shanks have locating flats for easy set-up
- Available in steel, heavy metal or carbide shanks
- See bottom of page for inserts



TURN-TEK® STEEL BORING BARS

Uses Insert	Industry Reference	Shank Size d	Min Bore D	OAL L	Right Hand Part Number	Price Each	SPARE PARTS	
							Screw Part Number	Hex/Torx Key Part Number
TPGP-63	SI-STJOR-066	3/8	.375	5	B-S06K-STJOR6-M	\$45.00	SC-89 \$1.00	TX-207 \$6.50
TPGG-22	SI-STJOR-082	1/2	.625	6	B-S08K-STJOR2-M	\$52.00		
TPGG-22	SI-STJOR-102	5/8	.750	6	B-S10K-STJOR2-M	\$64.00		

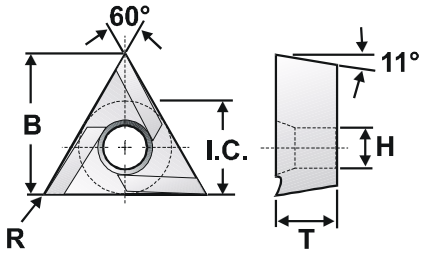


USST® BORING BARS

Insert	Industry Reference	Shank "D"	Heavy Metal-6xD			Carbide Shank-8xD			Screw \$1.00
			Min Bore	L	Part Number	Min Bore	L	Part Number	
TBGP-52	_STJOR-065	0.375	-	-	-	0.312	4.0	BBT-5000 \$166.00	SC-88
TPGP-63	_STJOR-066	0.375	0.375	4.0	BBT-3005 \$133.00	-	-	-	SC-89
TPGG-22	_STJOR-062	0.375	0.425	4.0	BBT-3010 \$133.00	0.500	5.0	BBT-5010 \$166.00	SC-83
TPGG-22	_STJOR-082	0.500	0.550	6.0	BBT-3015 \$259.00	0.625	7.0	BBT-5015 \$220.00	SC-84
TPGG-22	_STJOR-102	0.625	0.700	6.0	BBT-3020 \$326.00	0.750	8.0	BBT-5020 \$333.00	
TPGG-33	_STJOR-123	0.750	0.800	8.0	BBT-3025 \$573.00	1.000	9.0	BBT-5025 \$507.00	SC-85
TPGG-33	_STJOR-163	1.000	1.050	10.0	BBT-3030 \$795.00	1.125	11.0	BBT-5030 \$686.00	

INSERTS

SUMITOMO™



Left Hand Shown

Bars Using	I.C.	T	R	Sumitomo Reference	Grade T220A	Grade G10E	Grade AC10/AC2000	Grade AC830P
TBGP-52	5/32"	1/16"	1/128	TBGT-520.5L	SU-621 \$7.55	SU-641 \$7.93	-	-
			1/64	TBGT-521L	SU-622 \$7.81	-	-	-
TPGP-63	3/16"	3/32"	1/128	TPGP-630.5L	SU-623 \$8.62	SU-643 \$9.05	-	-
			1/64	TPGP-631L	SU-624 \$8.62	-	-	-
TPGG-22	1/4"	1/8"	1/128	TPGG-220.5L	SU-625 \$9.09	SU-645 \$11.75	-	-
			1/64	TPGG-221L	SU-626 \$9.09	SU-646 \$9.54	-	-
				TPMN-221ENF	-	-	-	SU-656 \$7.10
			1/32	TPGG-222L	SU-627 \$9.83	SU-647 \$9.54	-	-
TPGG-33	3/8	3/16	1/128	TPMT-222ENF	-	-	SU-637 \$7.79	SU-657 \$7.79
				TPGG-330.5L	SU-628 \$13.94	-	-	-
			1/64	TPGG-331L	SU-629 \$13.53	SU-649 \$12.51	-	-
				TPMT-331ENF	-	-	SU-639 \$9.58	SU-659 \$9.58
1/32	TPGG-332L	SU-630 \$12.51	SU-650 \$13.53	-	-			
	TPMT-332ENF	-	-	SU-640 \$9.58	SU-660 \$9.58			

SUMITOMO INSERT GRADES

Grade	T12A, T220A	G10E	AC10, AC2000	AC830P
Insert Type	Cermet	Uncoated Carbide	Coated Carbide	Coated Carbide
Material	Steels, Stainless Steel	Cast Iron, Non-ferrous	Steels, Stainless Steel	Steels, Stainless Steel
Cutting Conditions	Finishing	Finish to Medium	General Purpose	Interrupted Roughing

Call Us Today For All Of Your Machine Tool Needs!

SCLOR STYLE BORING BARS

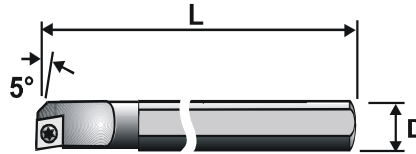
D

SCLOR BORING BARS

Using CPGT/CPGM Inserts



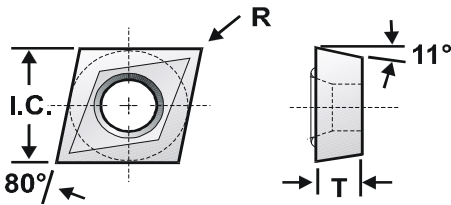
- Uses CPGT/CPGM diamond type inserts
- Shanks have locating flats for easy set-up
- Available in steel, heavy metal or carbide shanks
- See bottom of page for inserts
- **Made in the USA**



Insert	Sumitomo Reference	Shank "D"	Heavy Metal-6xD			Carbide Shank-8xD			Screw \$1.00
			Min Bore	L	Part Number	Min Bore	L	Part Number	
CPGP-03	_SCLOR-062	0.375	0.425	4.0	BBT-3035 \$133.00	0.500	5.0	BBT-5035 \$166.00	SC-83
CPGP-03	_SCLOR-082	0.500	0.550	6.0	BBT-3040 \$259.00	0.625	6.0	BBT-5040 \$220.00	
CPGM-32	_SCLOR-103	0.625	0.725	6.0	BBT-3045 \$333.00	0.750	10.0	BBT-5045 \$333.00	SC-86
CPGM-32	_SCLOR-123	0.750	0.800	8.0	BBT-3050 \$573.00	1.000	9.0	BBT-5050 \$507.00	
CPGM-43	_SCLOR-164	1.000	1.050	10.0	BBT-3055 \$795.00	1.125	11.0	BBT-5055 \$686.00	SC-87

INSERTS

SUMITOMO®



Bars Using	I.C.	T	R	Industry Reference No.	Grade T220A Part Number	Price Each
CPGT0802 2.51.5	5/16	3/32	1/128	CPGP-030	SU-661	\$14.99
			1/64	CPGP-031	SU-662	\$13.46
			1/32	CPGP-032	SU-663	\$13.46
CPGM0903	3/8	1/8	1/32	CPGM-322	SU-666	\$14.99
CPGT-43 CPGT1204	1/2	3/16	1/128	CPGM-430	SU-667	\$17.73
			1/32	CPGM-432	SU-669	\$17.73

SUMITOMO® INSERT GRADES

Grade	T220A	G10E	AC10, AC3000	AC-25
Insert Type	Cermet	Uncoated Carbide	Coated Carbide	Coated Carbide
Material	Steels, Stainless Steel	Cast Iron, Non-ferrous	Steels, Stainless Steel	Soft Steels, Stainless Steel
Cutting Conditions	Finishing	Finish to Medium	Gen. Purpose to Roughing	Roughing to Semi-Finishing

LATHE TOOLHOLDER BUSHINGS

Please See Pages 114-118 For More Information!



FEATURES:

- Increased step diameter for easy and perfect sealing.
- Concentric ground and diamond polished OD & ID resulting in a mirror smooth finish
- "Easy Entry" feature on OD for quick insertion
- Wrench flats for easy removal
- Step relief for easy removal and gripping on Z style bushings
- Type and size clearly marked on surface of head diameter for easy identification
- 100% Satisfaction Guaranteed



SPECIFICATIONS:

Material: ALLOY STEEL 8620
 Hardness Data: Rc 55-57 for longer tool life
 Case Hardened and Ground Concentric OD & ID
 Axial Concentricity: OD & ID- 0.0002"
 Tolerance: H6 & g6 in grinding the OD & ID

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

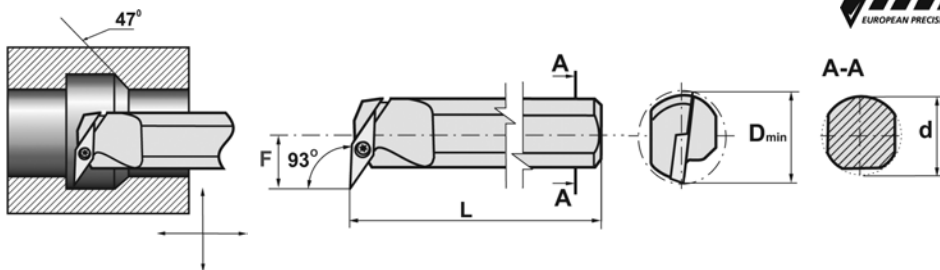
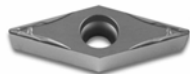
COOLANT/FLUIDS
TOOL STORAGE

SVUCR/L, SWUCR/L & CTFPR BORING BARS



SVUCR/L BORING BARS

- Industry standard SVUCR/L type
- Steel shank
- Uses VCMT or VCGT inserts
- Shanks have locating flats
- 3° end cutting edge angle

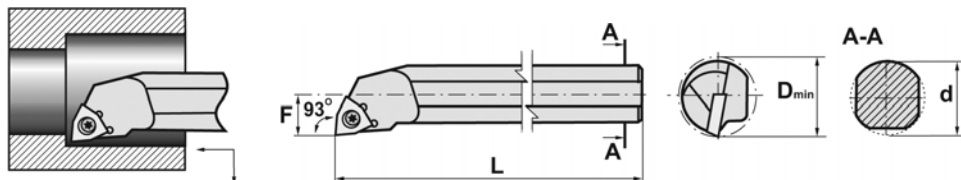
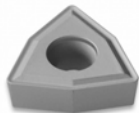


Uses Insert	Style	Shank Size d	Min Bore D	OAL L	F	Right Hand Part Number	Left Hand Part Number	Price Each	SPARE PARTS	
									Screw Part Number	Hex/Torx Key Part Number
VC_T-22_	SI-SVUCR/L12-2	3/4	1.125	10	.625	BI-6887-122R	BI-6887-122L	\$77.62	BI-6998-2506	BI-6998-007
	SI-SVUCR/L16-2	1	1.500	12	.750	BI-6887-162R	BI-6887-162L	\$79.91	\$0.72	\$4.99
VC_T-33_	SI-SVUCR/L16-3	1	2	12	.750	BI-6887-163R	BI-6887-163L	\$75.20	BI-6998-3509	BI-6998-150
	SI-SVUCR/L20-3	1-1/4	2.250	14	1	BI-6887-203R	BI-6887-203L	\$89.46	\$6.60	\$4.99

SWUCR/L BORING BARS



- Industry standard SWUCR/L type
- Steel shank
- Uses WCMT or WCGT inserts
- Shanks have locating flats
- 3° end cutting edge angle

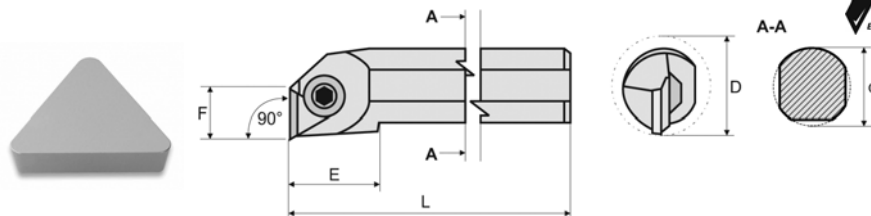
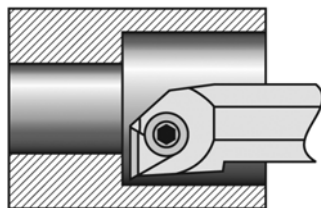


Uses Insert	Style	Shank Size d	Min Bore D	OAL L	F	Right Hand Part Number	Left Hand Part Number	Price Each	SPARE PARTS	
									Screw Part Number	Hex/Torx Key Part Number
WC_T 32.5_	SI-SWUCR/L08-3	1/2	.625	6	.311	BI-6889-083R	BI-6889-083L	\$57.54	BI-6998-4008T	BI-6998-015
	SI-SWUCR/L10-3	5/8	.812	8	.405	BI-6889-103R	BI-6889-103L	\$61.35		
	SI-SWUCR/L12-3	3/4	1	10	.500	BI-6889-123R	BI-6889-123L	\$66.78		

CTFPR BORING BARS



- Industry standard CTFPR type
- Steel shank
- Uses TPU inserts
- Shanks have locating flats
- 3° end cutting edge angle



Style	Inserts	Shank Size d	Min Bore D	OAL L	C	E	Right Hand Part Number	Price Each
SI-CTFPR	TPU-21_	5/8	0.827	8.250	.709	1.181	BI-6939-172	\$72.57
	TPU-32_	3/4	1.063	9.875	.925	1.378	BI-6939-173	\$76.42
	TPU-32_	1	1.339	11.750	1.201	1.575	BI-6939-174	\$83.57
	TPU-32_	1-1/4	1.693	14.0	1.516	1.772	BI-6939-175	\$108.44
	TPU-32_	1-1/2	2.086	15.0	1.889	1.968	BI-6939-176	\$139.96
	TPU-43_	2	2.559	16.0	2.362	1.968	BI-6939-178	\$165.04

REPLACEMENT PARTS FOR CTFPR BORING BARS

Inserts	For Boring Bar Part Number	Shim	Price Each	Shim Screw	Price Each	Lock Screw	Price Each	Hex Key	Price Each
TPU-21_	BI-6939-172	-	-	-	-	BI-6999-265	\$4.88	BI-6999-583	\$1.00
TPU-32_	BI-6939-173	-	-	-	-	BI-6999-271	\$5.36	BI-6999-584	\$1.00
TPU-32_	BI-6939-174	-	-	-	-	BI-6999-271	\$5.36	BI-6999-584	\$1.00
TPU-32_	BI-6939-175	BI-6999-391	\$15.80	BI-6999-400	\$2.97	BI-6999-271	\$5.36	BI-6999-584	\$1.00
TPU-32_	BI-6939-176	BI-6999-394	\$3.63	BI-6999-400	\$2.97	BI-6999-275	\$11.50	BI-6999-582	\$1.00
TPU-43_	BI-6939-178	BI-6999-394	\$3.63	BI-6999-400	\$2.97	BI-6999-275	\$11.50	BI-6999-582	\$1.00

Call Us Today For All Of Your Machine Tool Needs!

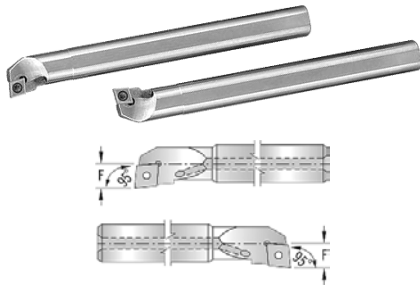
COOLANT-THRU BORING BARS

MI00 DEX

- FEATURES:**
- Durable and unique chrome nickel toolholder
 - Positive chip control
 - Coolant-thru hole design
 - Each holder includes torx screw and torx key

MICRO 100®

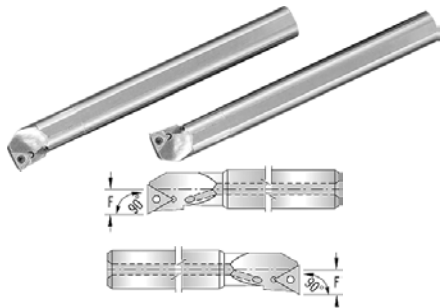
90° Boring & Facing/95° Approach



Uses CCMT 21.51 Inserts (not included)

Toolholder Nomenclature	Shank Dia	OAL	F Over Insert	Min. Bore	Right Hand Part Number	Left Hand Part Number	Price Each
A04F SCLCR 2	1/4	3	.177	.330	MI-200821	MI-200822	\$69.65
A05H SCLCR 2	5/16	4	.197	.380	MI-200823	MI-200824	\$71.50
A06J SCLCR 2	3/8	4 1/2	.275	.490	MI-200825	MI-200826	\$71.50
A08K SCLCR 2	1/2	5	.354	.630	MI-200827	MI-200828	\$77.75
A10M SCLCR 2	5/8	6	.433	.775	MI-200829	MI-200830	\$77.75

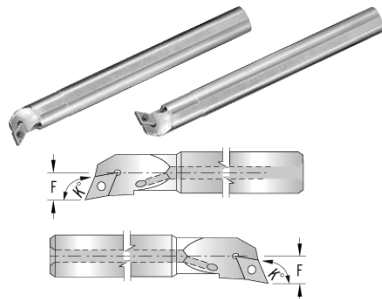
For Blind Holes Using 90° Insert Face



Uses TCMT 21.51 Inserts (not included)

Toolholder Nomenclature	Shank Dia	OAL	F Over Insert	Min. Bore	Right Hand Part Number	Left Hand Part Number	Price Each
A06J STFRCR 2	3/8	4 1/2	.275	.490	MI-201031	MI-201032	\$68.25
A08K STFRCR 2	1/2	5	.354	.605	MI-201033	MI-201034	\$72.25
A10M STFRCR 2	5/8	6	.433	.775	MI-201035	MI-201036	\$73.20

Profile Boring & Facing



MI00 DEX

Uses DCMT 21.51 Inserts (not included)

Toolholder Nomenclature	Shank Dia	OAL	F Over Insert	Min. Bore	K Angle	Right Hand Part Number	Left Hand Part Number	Price Each
A05H SDQCR 2	5/16	4	.197	.355	107.5°	MI-200901	MI-200902	\$98.00
A06J SDUCR 2	3/8	4 1/2	.275	.490	93°	MI-200931	MI-200932	\$72.80
A08K SDUCR 2	1/2	5	.354	.605	93°	MI-200933	MI-200934	\$71.73
A10M SDUCR 2	5/8	6	.433	.775	93°	MI-200935	MI-200936	\$72.68

COOLANT-THRU BORING BAR SETS

MI00 DEX

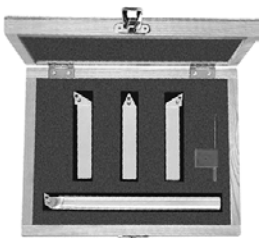
All sets come complete with carbide insert, torx screw and torx key.



Shank Diameters	Description	Part Number	Set Price
1/4, 5/16, 3/8, 1/2	Set of 4 pcs. SCLCR with CCMT 21.51 insert	MI-400100	\$275.00
3/8, 1/2, 5/8	Set of 3 pcs. SDUCR with DCMT 21.51 insert	MI-402400	\$235.00
3/8, 1/2, 5/8	Set of 3 pcs. STFRCR with TCMT 2151 insert	MI-402100	\$235.00

MULTI-PURPOSE SETS

4 Piece Multi-Purpose Set



7 Piece Multi-Purpose Set



Description	Shank Sizes		Part Number	Set Price
	Square 3 PCS.	Round 1 PC.		
4 Piece Multi-Purpose Set 1 ea. SDJCR, SDJCL, SDNCN, SDQCR	5/16	5/16	MI-407200	\$202.05
	3/8	3/8	MI-407201	\$223.75
	1/2	1/2	MI-407202	\$247.35
	5/8	5/8	MI-407203	\$304.60

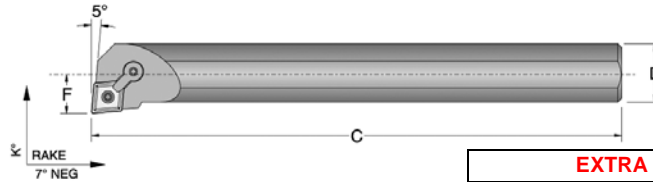
Description	Square 6 PCS.	Round 1 PC.	Part Number	Set Price
	1/4	1/4		
	5/16	1/4	MI-407102	\$254.85
	3/8	5/16	MI-407103	\$267.25
	1/2	3/8	MI-407104	\$285.95
5/8	1/2	MI-407105	\$385.40	

Call Us Or Visit Our Website For Our Complete Selection!

BORING BARS-MCLNR/L, SI-MDUNR/L, SI-MTFNR/L

SI-MCLNR/L BORING BARS

- -5° Side & End Cutting
- Solid Steel
- Negative Rake
- Using CNMG, CNMA & CNM_ type inserts



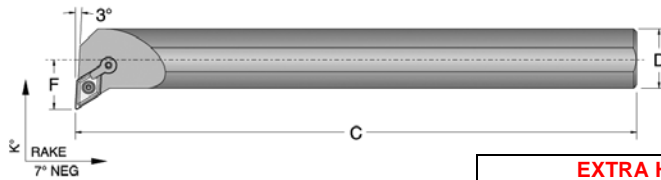
CNMG Inserts on Pages 283-284

Industry Reference	Uses Insert	Min Bore	C OAL	D Shank	F	Right Hand Part Number	Left Hand Part Number	Price
SI-MCLNR/L-164	CNMG-43	1.280	12	1	1.25	TH-1805	TH-2805	\$182.85
SI-MCLNR/L-204	CNMG-43	1.530	14	1-1/4	14	TH-1810	TH-2810	\$241.70
SI-MCLNR/L-244	CNMG-43	1.780	14	1-1/2	14	TH-1815	TH-2815	\$260.00
SI-MCLNR/L-284	CNMG-43	2.030	14	1-3/4	12	TH-1820	TH-2820	\$219.00
SI-MCLNR/L-325	CNMG-54	2.562	16	2	12	TH-1825	TH-2825	\$215.00

EXTRA HARDWARE			
Seat	Lock Pin	Clamp	Clamp Screw
-	NL-44 \$1.90	CL-20 \$2.98	XNS-47 \$0.74
ICSN -432 \$2.76	NL-46 \$1.90		
ICSN 533 \$3.38	NL-58 \$1.90	CL-12 \$2.98	XNS-510 \$0.74

SI-MDUNR/L BORING BARS

- -3° Side Cutting
- Solid Steel
- Negative Rake
- Using DNMG, DNMA & DNG_ type inserts



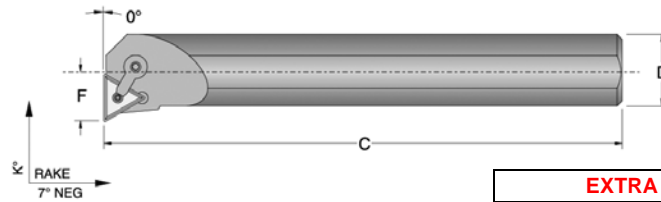
DNMG Inserts on Pages 285

Industry Reference	Uses Insert	Min Bore	C OAL	D Shank	R	Right Hand Part Number	Left Hand Part Number	Price
SI-MDUNR/L-204	DNMG-43	2.000	14	1 1/4	10	TH-1830	TH-2830	\$209.08
SI-MDUNR/L-244	DNMG-43	2.250	14	1 1/2	10	TH-1835	TH-2835	\$230.00
SI-MDUNR/L-324	DNMG-43	3.000	16	2	10	TH-1840	TH-2840	\$270.45

EXTRA HARDWARE			
Seat	Lock Pin	Clamp	Clamp Screw
IDSN-433 \$2.50	NL-46 \$1.90	CL-20 \$2.98	XNS-59 \$0.74

SI-MTFNR/L BORING BARS

- 0° Side Cutting
- Offset Shank
- Negative Rake
- Using TNMG, TNMP, TNG_ & TNM_ type inserts



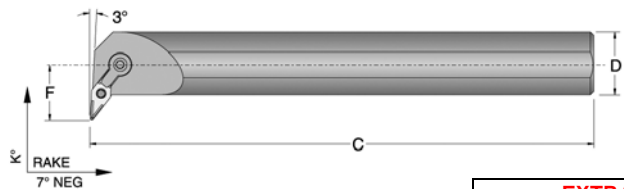
TNMG Inserts on Pages 286

Industry Reference	Uses Insert	Min Bore	C OAL	D Shank	R	Right Hand Part Number	Left Hand Part Number	Price
SI-MTFNR/L-163	TNMG-33	1.280	12	1	12	TH-1925	TH-2925	\$172.50
SI-MTFNR/L-203	TNMG-33	1.530	14	1 1/4	12	TH-1930	TH-2930	\$184.21
SI-MTFNR/L-244	TNMG-43	2.062	14	1 1/2	10	TH-1935	TH-2935	\$202.31

EXTRA HARDWARE			
Seat	Lock Pin	Clamp	Clamp Screw
-	NL-33L \$1.90	CL-7 \$2.98	XNS-35 \$0.74
ITSN-433 \$3.10	NL-46 \$1.90	CL-9 \$2.98	XNS-59 \$0.74

SI-MVUNR/L BORING BARS

- -3° Side Cutting
- Steel Shank
- Negative Rake
- Using VNGA, VNMA, VNMG & VNM_ type inserts



VNMG Inserts on Page 287

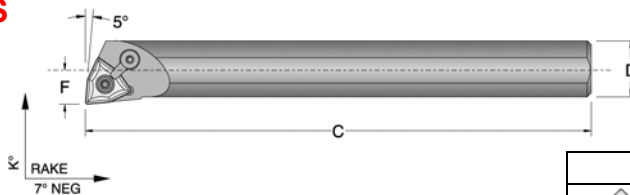
Industry Reference	Uses Insert	Min Bore	C OAL	D Shank	R	Right Hand Part Number	Left Hand Part Number	Price
SI-MVUNR-203	VNMG-33	2.250	14	1 1/4	12	TH-1860	TH-2860	\$219.61
SI-MVUNR-243	VNMG-33	2.500	14	1 1/2	12	TH-1865	TH-2865	\$240.49

EXTRA HARDWARE			
Seat	Lock Pin	Clamp	Clamp Screw
IVSN-324 \$2.24	NL-34L \$1.90	CL-30 \$5.28	XNS-510 \$0.74

Call Us Today For All Of Your Machine Tool Needs!

SI-MWLNR/L BORING BARS

- -5° Side & End Cutting
- Offset Shank Negative Rake
- Using WNGG, WNMA, WNMG type inserts



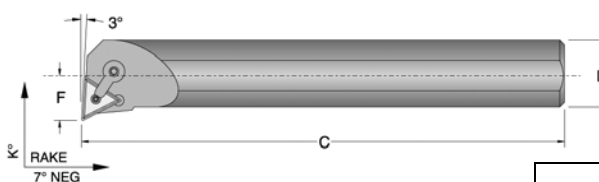
WNMG Inserts on Pages 288

Industry Reference	Uses Insert	Min Bore	C OAL	D Shank	R	Right Hand Part Number	Left Hand Part Number	Price
SI-MWLNR/L-123	WNMG-33	0.930	10	3/4	14	TH-1870	TH-2870	\$137.36
SI-MWLNR/L-163	WNMG-33	1.200	12	1	14	TH-1875	TH-2875	\$172.50
SI-MWLNR/L-203	WNMG-33	1.470	14	1 1/4	14	TH-1880	TH-2880	\$184.21
SI-MWLNR/L-164	WNMG-43	1.280	12	1	14	TH-1885	TH-2885	\$172.50
SI-MWLNR/L-204	WNMG-43	1.530	14	1 1/4	14	TH-1890	TH-2890	\$184.21

EXTRA HARDWARE			
Seat	Lock Pin	Clamp	Clamp Screw
-	NL-33L	CL-6	XNS-36
-	\$1.90	\$2.98	\$0.74
IWSN-323	NL-34L	CL-6	XNS-36
\$2.52	\$1.90	\$2.98	\$0.74
-	NL-44	CL-20	XNS-47
-	\$1.90	\$2.98	\$0.74
IWSN-433	NL-46		
\$3.40	\$1.90		

SI-MTUNR/L BORING BARS

- -3° End Cutting
- Solid Steel Bar
- Negative Rake
- Using TNMG, TNMA, TNG_ & TNM_ type inserts



TNMG Inserts on Pages 286

Industry Reference	Uses Insert	Min Bore	C OAL	D Shank	R	Right Hand Part Number	Left Hand Part Number	Price
S12S-MTUNR/L-3	TNMG-32	1.000	10	3/4	14	TH-1895	TH-2895	\$137.36
S16T-MTUNR/L-3	TNMG-33	1.280	12	1	14	TH-1900	TH-2900	\$172.50
S20U-MTUNR/L-4	TNMG-43	1.530	14	1 1/4	14	TH-1905	TH-2905	\$184.21
S24U-MTUNR/L-4	TNMG-43	2.060	14	1 1/2	11	TH-1910	TH-2910	\$202.31

EXTRA HARDWARE			
Seat	Lock Pin	Clamp	Clamp Screw
-	NL-33	CL-7	XNS-35
-	\$1.90	\$2.98	\$0.74
ITSN-322	NL-34L		
\$1.90	\$1.90		
ITSN-432	NL-46	CL-9	XNS-59
\$3.10	\$1.90	\$2.98	\$0.74



TRIDEX™ INDEXABLE DRILLS

- 100% Compatible with inserts for KOMET® KUB-IT drills & Kennametal® DFT-__ 84° Trigon drill inserts
- Crafted from H13 steel for superior toughness and strength
- Black oxide surface to prevent against rust and corrosion
- Length to diameter ratios are kept optimal tool overhang is minimized and tool rigidity, accuracy and deflection are minimized even in deeper holes.
- Spiral flutes to improve chip evacuation
- Uses 84° Trigon Inserts - 84° nose angle provides the strength of a square insert with the versatility of a triangular insert
- 100% Guaranteed against defects
- 3 Methods Of Coolant Entry: Rear entry, side entry and through the end of the holder



Please See Pages 237-239 For More Information!

*Komet & Kennametal are registered trademarks of their respective companies

Coolant Thru Indexable Drills Crafted From H13 For Superior Toughness & Strength!

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS
VISE JAWS
VISE ACCESSORIES
STRAIGHT SHANK
COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

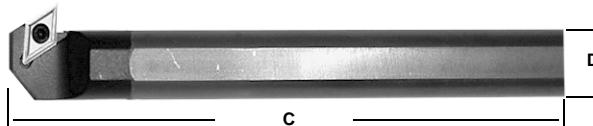
BACKFACING BARS USING DCMT INSERTS

B

BACKSPOTFACING BARS

Available With Coolant Hole

- Carbide & Steel Shanks
- Min. Bores from .600 to 1.300
- Right and left handed available
- Coolant Thru
- Made in USA

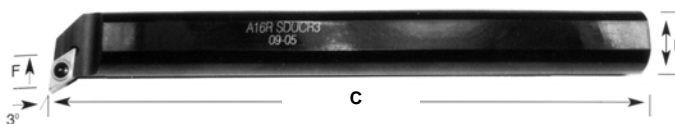


Min Bore	Shank Dia D	OAL C	F	Shank Material	Coolant Thru	Insert Used	Right Handed Bar Part Number	Left Handed Bar Part Number	Price Each	Screw	Wrench
0.600	0.375	5.680	0.375	Carbide	No	DCMT 21.5_	UD-C06M-SDXCR2	UD-C06M-SDXCL2	\$181.00	MTS 255	TX-207
0.600	0.375	5.680	0.375	Carbide	Yes	DCMT 21.5_	UD-E06M-SDXCR2	UD-E06M-SDXCL2	\$206.00	MTS 255	TX-207
0.600	0.375	4.500	0.375	Steel	No	DCMT 21.5_	UD-S06J-SDXCR2	UD-S06J-SDXCL2	\$66.00	MTS 255	TX-207
0.600	0.375	4.500	0.375	Steel	Yes	DCMT 21.5_	UD-A06J-SDXCR2	UD-A06J-SDXCL2	\$79.00	MTS 255	TX-207
0.730	0.500	7.700	0.437	Carbide	No	DCMT 21.5_	UD-C08R-SDXCR2	UD-C08R-SDXCL2	\$206.00	MTS 255	TX-207
0.730	0.500	7.700	0.437	Carbide	Yes	DCMT 21.5_	UD-E08R-SDXCR2	UD-E08R-SDXCL2	\$219.00	MTS 255	TX-207
0.730	0.500	5.500	0.437	Steel	No	DCMT 21.5_	UD-S08M-SDXCR2	UD-S08M-SDXCL2	\$70.00	MTS 255	TX-207
0.730	0.500	5.500	0.437	Steel	Yes	DCMT 21.5_	UD-A08M-SDXCR2	UD-A08M-SDXCL2	\$83.00	MTS 255	TX-207
0.850	0.625	6.500	0.500	Carbide	Yes	DCMT 21.5_	UD-E10Q-SDXCR2	UD-E10Q-SDXCL2	\$245.00	MTS 255	TX-207
0.850	0.625	9.500	0.500	Carbide	Yes	DCMT 21.5_	UD-E10S-SDXCR2	UD-E10S-SDXCL2	\$297.00	MTS 255	TX-207
0.850	0.625	6.500	0.500	Steel	No	DCMT 21.5_	UD-S10M-SDXCR2	UD-S10M-SDXCL2	\$90.00	MTS 255	TX-207
0.850	0.625	6.500	0.500	Steel	Yes	DCMT 21.5_	UD-A10M-SDXCR2	UD-A10M-SDXCL2	\$103.00	MTS 255	TX-207
0.980	0.750	6.500	0.625	Carbide	Yes	DCMT 32.5_	UD-E12Q-SDXCR3	UD-E12Q-SDXCL3	\$310.00	MTS 35	TX-215
0.980	0.750	9.500	0.625	Carbide	Yes	DCMT 32.5_	UD-E12S-SDXCR3	UD-E12S-SDXCL3	\$356.00	MTS 35	TX-215
0.980	0.750	6.750	0.625	Steel	No	DCMT 32.5_	UD-S12Q-SDXCR3	UD-S12Q-SDXCL3	\$103.00	MTS 35	TX-215
0.980	0.750	6.750	0.625	Steel	Yes	DCMT 32.5_	UD-A12Q-SDXCR3	UD-A12Q-SDXCL3	\$116.00	MTS 35	TX-215
1.300	1.000	9.620	0.750	Carbide	Yes	DCMT 32.5_	UD-E16X-SDXCR3	UD-E16X-SDXCL3	\$479.00	MTS 35	TX-215
1.300	1.000	11.620	0.750	Carbide	Yes	DCMT 32.5_	UD-E16Z-SDXCR3	UD-E16Z-SDXCL3	\$557.00	MTS 35	TX-215
1.300	1.000	8.000	0.750	Steel	No	DCMT 32.5_	UD-S16X-SDXCR3	UD-S16X-SDXCL3	\$142.00	MTS 35	TX-215
1.300	1.000	8.000	0.750	Steel	Yes	DCMT 32.5_	UD-A16X-SDXCR3	UD-A16X-SDXCL3	\$155.00	MTS 35	TX-215

PROFILING BARS

Available With Coolant Hole

- Carbide & Steel Shanks
- Min. Bores from .600 to 1.300
- Right and left handed available
- Coolant Thru
- Made in USA



Min Bore	Shank Dia D	OAL C	F	Shank Material	Coolant Thru	Insert Used	Right Handed Bar Part Number	Left Handed Bar Part Number	Price Each	Screw	Wrench
0.600	0.375	6.00	0.375	Carbide	No	DCMT 21.51	UD-C06M-SDUCR2	UD-C06M-SDUCL2	\$164.00	MTS 255	TX-207
0.730	0.500	8.00	0.437	Carbide	Yes	DCMT 21.51	UD-C08R-SDUCR2	UD-C08R-SDUCL2	\$187.00	MTS 255	TX-207
0.600	0.375	6.00	0.375	Carbide	Yes	DCMT 21.51	UD-E06M-SDUCR2	UD-E06M-SDUCL2	\$187.00	MTS 255	TX-207
0.730	0.500	8.00	0.437	Carbide	Yes	DCMT 21.51	UD-E08R-SDUCR2	UD-E08R-SDUCL2	\$199.00	MTS 255	TX-207
0.850	0.625	7.00	0.500	Carbide	Yes	DCMT 21.51	UD-E10Q-SDUCR2	UD-E10Q-SDUCL2	\$222.00	MTS 255	TX-207
0.850	0.625	10.00	0.500	Carbide	Yes	DCMT 21.51	UD-E10S-SDUCR2	UD-E10S-SDUCL2	\$269.00	MTS 255	TX-207
0.980	0.750	7.00	0.625	Carbide	Yes	DCMT 32.52	UD-E12Q-SDUCR3	UD-E12Q-SDUCL3	\$281.00	MTS 35	TX-215
0.980	0.750	10.00	0.625	Carbide	Yes	DCMT 32.52	UD-E12S-SDUCR3	UD-E12S-SDUCL3	\$322.00	MTS 35	TX-215
1.300	1.000	8.00	0.750	Carbide	Yes	DCMT 32.52	UD-E16R-SDUCR3	UD-E16R-SDUCL3	\$434.00	MTS 35	TX-215
1.300	1.000	12.00	0.750	Carbide	Yes	DCMT 32.52	UD-E16T-SDUCR3	UD-E16T-SDUCL3	\$505.00	MTS 35	TX-215
0.600	0.375	5.00	0.375	Steel	No	DCMT 21.51	UD-S06K-SDUCR2	UD-S06K-SDUCL2	\$60.00	MTS 255	TX-207
0.730	0.500	6.00	0.437	Steel	No	DCMT 21.51	UD-S08M-SDUCR2	UD-S08M-SDUCL2	\$64.00	MTS 255	TX-207
0.850	0.625	7.00	0.500	Steel	No	DCMT 21.51	UD-S10Q-SDUCR2	UD-S10Q-SDUCL2	\$81.00	MTS 255	TX-207
0.980	0.750	7.00	0.625	Steel	No	DCMT 32.52	UD-S12Q-SDUCR3	UD-S12Q-SDUCL3	\$93.00	MTS 35	TX-215
1.300	1.000	8.00	0.750	Steel	No	DCMT 32.52	UD-S16R-SDUCR3	UD-S16R-SDUCL3	\$128.00	MTS 35	TX-215
0.600	0.375	5.00	0.375	Steel	Yes	DCMT 21.51	UD-A06K-SDUCR2	UD-A06K-SDUCL2	\$72.00	MTS 255	TX-207
0.730	0.500	6.00	0.437	Steel	Yes	DCMT 21.51	UD-A08M-SDUCR2	UD-A08M-SDUCL2	\$75.00	MTS 255	TX-207
0.850	0.625	7.00	0.500	Steel	Yes	DCMT 21.51	UD-A10Q-SDUCR2	UD-A10Q-SDUCL2	\$93.00	MTS 255	-
0.980	0.750	7.00	0.625	Steel	Yes	DCMT 32.52	UD-A12Q-SDUCR3	UD-A12Q-SDUCL3	\$105.00	MTS 35	TX-215
1.300	1.000	8.00	0.750	Steel	Yes	DCMT 32.52	UD-A16R-SDUCR3	UD-A16R-SDUCL3	\$140.00	MTS 35	TX-215

Call Us Today For All Of Your Machine Tool Needs!

OD TURNING TOOLHOLDER INDEX



LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

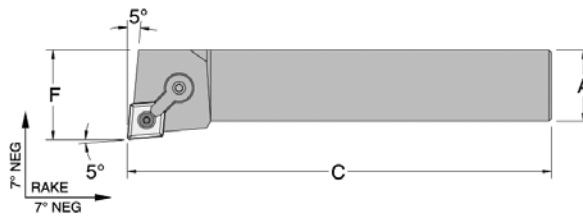
CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

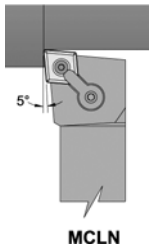
COOLANT/FLUIDS
TOOL STORAGE

MCLNR/L

- -5° Side & End Cutting
- Offset Shank
- Negative Rake
- Using CNMG, CNMA, CNG_ & CNM_ type inserts



CNMG Inserts on Pages 283-284

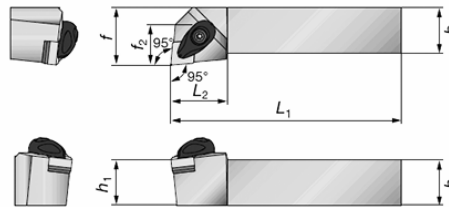


Industry Reference	Shank A	OAL C	Right Hand Model	Left Hand Model	Price
MCLNR/L-124B	3/4" SQ	5	TH-1105	TH-2105	\$58.63
MCLNR/L-164C	1" SQ	5	TH-1110	TH-2110	\$60.46
MCLNR/L-164D	1" SQ	6	TH-1115	TH-2115	\$60.46
MCLNR/L-204D	1-1/4" SQ	6	TH-1120	TH-2120	\$66.41
MCLNR/L-854D	1" X 1-1/4"	6	TH-1125	TH-2125	\$79.70

EXTRA HARDWARE				
Inserts	Seat	Lock Pin	Clamp	Clamp Screw
CNMG-43	ICSN-433 \$3.90	NL-46 \$1.84	CL-20 \$3.56	XNS-48 \$1.00
CNMG-43	ICSN-433 \$3.90	NL-46 \$1.84	CL-20 \$3.56	XNS-48 \$1.00
CNMG-43	ICSN-433 \$3.90	NL-46 \$1.84	CL-20 \$3.56	XNS-48 \$1.00
CNMG-43	ICSN-433 \$3.90	NL-46 \$1.84	CL-20 \$3.56	XNS-48 \$1.00
CNMG-43	ICSN-433 \$3.90	NL-46 \$1.84	CL-20 \$3.56	XNS-48 \$1.00

ACLNR/L TOOLHOLDERS

- For use with 80° negative inserts
- One action double clamping
- Strong and positive clamping power
- Fewer parts
- High accuracy



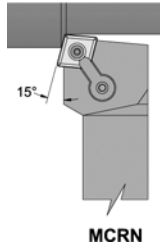
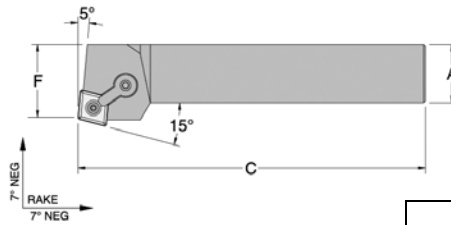
Industry Reference	h	b	L1	L2	h1	f	f2	r?*	Insert	Torque*	RIGHT HAND Part Number	LEFT HAND Part Number	Price Each
ACLNR/L124-A	0.750	0.750	4.500	1.000	0.750	1.000	0.750	0.031	CN**43...	2.2	TO-6853102	TO-6853103	\$90.20
ACLNR/L164-A	1.000	1.000	6.000	1.250	1.000	1.250	0.875	0.031	CN**43...	2.2	TO-6853106	TO-6853101	\$99.60
ACLNR/L205-A	1.250	1.250	7.000	1.500	1.250	1.500	1.000	0.047	CN**54...	4.7	TO-6990748	TO-6990749	\$185.30
ACLNR/L245-A	1.500	1.500	8.000	1.500	1.500	1.750	1.125	0.047	CN**54...	4.7	TO-6990750	TO-6990751	\$259.40
ACLNR/L206-A	1.250	1.250	7.000	1.500	1.250	1.500	1.000	0.047	CN**64...	4.7	TO-6990752	TO-6990753	\$185.30
ACLNR/L246-A	1.500	1.500	8.000	1.500	1.500	1.750	1.125	0.047	CN**64...	4.7	TO-6990754	TO-6990755	\$259.40

Call Us Or Visit Our Website For Our Complete Selection!

OD TURNING HOLDERS-MCLNR/L, MDPNN, MSDNN

MCRNR/L

- 15° Side Cutting,
- Offset Shank
- Negative Rake
- Using CNMG, CNMA, CNG_ & CNM_ type inserts



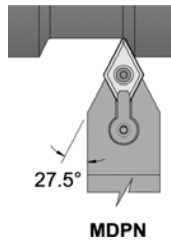
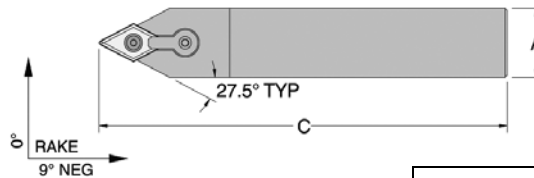
CNMG Inserts on Pages 283-284

Industry Reference	Shank A	OAL C	Right Hand Model	Left Hand Model	Price
MCRNR/L-124B	3/4"SQ	5	TH-1130	TH-2130	\$56.83
MCRNR/L-164D	1"SQ	6	TH-1135	TH-2135	\$60.46
MCRNR/L-165D	1"SQ	6	TH-1140	TH-2140	\$72.55
MCRNR/L-205D	1-1/4"SQ	6	TH-1145	TH-2145	\$79.70

EXTRA HARDWARE				
Uses Inserts	Seat	Lock Pin	Clamp	Clamp Screw
CNMG-43	ICSN-433 \$3.90	NL-46 \$1.84	CL-9 \$3.56	XNS-58 \$1.00
CNMG-43	ICSN-433 \$3.90	NL-46 \$1.84	CL-9 \$3.56	XNS-58 \$1.00
CNMG-54	ICSN-533 \$4.82	NL-58 \$2.00	CL-9 \$3.56	XNS-510 \$1.00
CNMG-54	ICSN-533 \$4.82	NL-58 \$2.00	CL-9 \$3.56	XNS-510 \$1.00

MDPNN

- 27.5° Side Cutting
- Straight Shank
- Negative Rake
- Using DNMG, DNMA, DNG_ & DNM_ type inserts



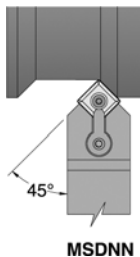
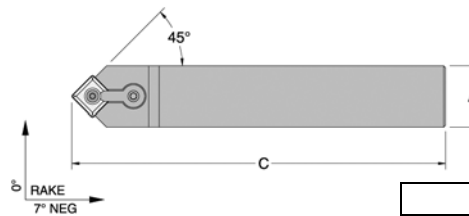
DNMG Inserts on Pages 285

Industry Reference	Shank A	OAL C	Neutral Hand Model	Price
MDPNN-164D	1" SQ	6	TH-1170	\$90.20
MDPNN-165D	1" SQ	6	TH-1175	\$108.24
MDPNN-204D	1-1/4" SQ	6	TH-1180	\$99.89
MDPNN-205D	1-1/4" SQ	6	TH-1185	\$119.86
MDPNN-855D	1" X 1-1/4"	6	TH-1190	\$99.00

EXTRA HARDWARE				
Inserts	Seat	Lock Pin	Clamp	Clamp Screw
DNMG-43	IDSN-433 \$3.56	NL-46 \$1.84	CL-6 \$3.56	XNS-36 \$1.00
DNMG-54	IDSN-533 \$5.38	NL-58 \$2.00	CL-12 \$3.56	XNS-510 \$1.00
DNMG-43	IDSN-433 \$3.56	NL-46 \$1.84	CL-12 \$3.56	XNS-510 \$1.00
DNMG-54	IDSN-533 \$5.38	NL-58 \$2.00	CL-12 \$3.56	XNS-510 \$1.00
DNMG-54	IDSN-533 \$5.38	NL-58 \$2.00	CL-12 \$3.56	XNS-510 \$1.00

MSDNN

- 45° Side Cutting
- Straight Shank
- Negative Rake
- Using SNMG, SNGA, SNMA & SNM_ type inserts



SNMG Inserts on Pages 286

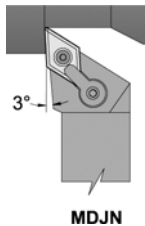
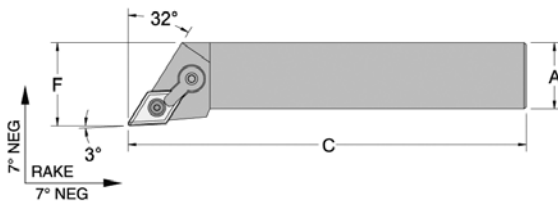
Industry Reference	Shank A	OAL C	Neutral Hand Model	Price
MSDNN-103B	5/8"SQ	5	TH-1195	\$49.94
MSDNN-123B	3/4"SQ	5	TH-1200	\$56.83
MSDNN-124B	3/4"SQ	5	TH-1205	\$56.83
MSDNN-164D	1"SQ	6	TH-1210	\$60.46
MSDNN-165D	1"SQ	6	TH-1215	\$72.55

EXTRA HARDWARE				
Inserts	Seat	Lock Pin	Clamp	Clamp Screw
SNMG-33	ISSN-322 \$2.42	NL-34 \$2.00	CL-6 \$3.56	XNS-36 \$1.00
SNMG-33	ISSN-322 \$2.42	NL-34 \$2.00	CL-6 \$3.56	XNS-36 \$1.00
SNMG-43	ISSN-433 \$3.84	NL-46 \$1.84	CL-9 \$3.56	XNS-59 \$1.00
SNMG-43	ISSN-433 \$3.84	NL-46 \$1.84	CL-9 \$3.56	XNS-59 \$1.00
SNMG-54	ISSN-533 \$4.56	NL-58 \$2.00	CL-12 \$3.56	XNS-510 \$1.00

Call Us Today For All Of Your Machine Tool Needs!

MDJNR/L

- -3° Side Cutting
- Offset Shank
- Negative Rake
- Using DNMG, DNMA, DNG_ & DNM_ type inserts



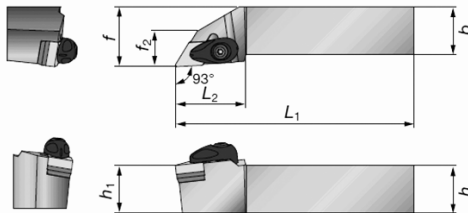
DNMG Inserts on Pages 285

Industry Reference	Shank A	OAL C	Right Hand Model	Left Hand Model	Price
MDJNR/L-124B	3/4" SQ	5	TH-1150	TH-2150	\$88.10
MDJNR/L-164D	1" SQ	6	TH-1155	TH-2155	\$90.20
MDJNR/L-204D	1-1/4" SQ	6	TH-1160	TH-2160	\$99.89
MDJNR/L-854D	1" X 1-1/4"	6	TH-1165	TH-2165	\$95.00

EXTRA HARDWARE				
Inserts	Seat	Lock Pin	Clamp	Clamp Screw
DNMG-43	IDSN-433 \$3.56	NL-46 \$1.84	CL-6 \$3.56	XNS-36 \$1.00
DNMG-43	IDSN-433 \$3.56	NL-46 \$1.84	CL-20 \$3.56	XNS-48 \$1.00
DNMG-43	IDSN-433 \$3.56	NL-46 \$1.84	CL-20 \$3.56	XNS-48 \$1.00
DNMG-43	IDSN-433 \$3.56	NL-46 \$1.84	CL-20 \$3.56	XNS-48 \$1.00

ADJNR/L TOOLHOLDERS

- For use with negative 55° inserts
- One action double clamping
- Strong and positive clamping power
- Fewer parts
- High accuracy



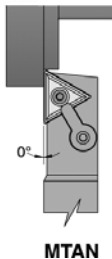
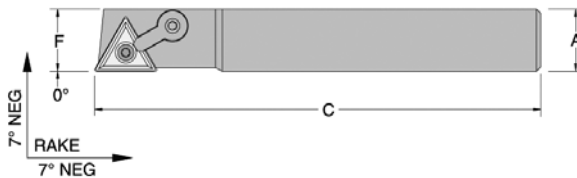
A



Industry Reference	h	b	L1	L2	h1	f	f2	r?*	Insert	Torque*	RIGHT HAND Part Number	LEFT HAND Part Number	Price Each
ADJNR/L124-A	0.750	0.750	4.500	1.500	0.750	1.000	0.750	0.031	DN**43...	2.2	TO-6853104	TO-6853105	\$92.50
ADJNR/L164-A	1.000	1.000	6.000	1.500	1.000	1.250	0.750	0.031	DN**43...	2.2	TO-6853108	TO-6853107	\$99.60
ADJNR/L204-A	1.250	1.250	7.000	1.500	1.250	1.500	1.000	0.031	DN**43...	2.2	TO-6985989	TO-6985991	\$185.30

MTANR/L

- 0° Side Cutting
- Straight Shank
- Negative Rake
- Using TNMG, TNMP, TNG_ & TNM_ type inserts



TNMG Inserts on Pages 286

Industry Reference	Shank A	OAL C	Right Hand Model	Left Hand Model	Price
MTANR/L-123B	3/4" SQ	4	TH-1220	TH-2220	\$56.83
MTANR/L-164D	1" SQ	6	TH-1225	TH-2225	\$60.46

EXTRA HARDWARE				
Inserts	Seat	Lock Pin	Clamp	Clamp Screw
TNMG-33	ITSN-322 \$2.72	NL-34L \$2.00	CL-6 \$3.56	XNS-36 \$1.00
TNMG-43	ITSN-433 \$4.40	NL-34 \$2.00	CL-9 \$3.56	XNS-59 \$1.00



We Are A Full Line Supplier For Tungaloy!
Carbide Inserts • Boring • Turning
Milling • Drilling • Part-Off
Please Call For More Information!

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

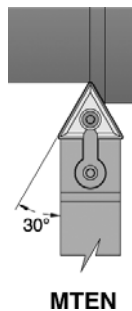
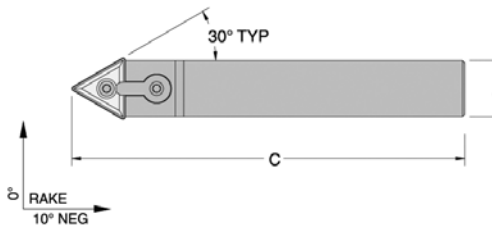
COOLANT/FLUIDS
TOOL STORAGE

OD TURNING HOLDERS-MTENNS, MTFNR/L, MTGNR/L



MTENN

- 30° Side Cutting
- Straight Shank
- Negative Rake
- Using TNMG, TNMA, TNG_ & TNM_ type inserts



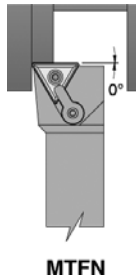
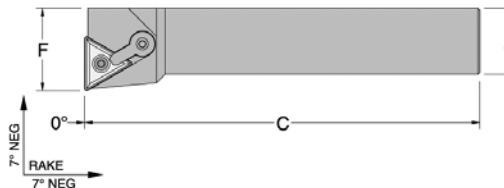
TNMG Inserts on Pages 286

Industry Reference	Shank A	OAL C	Neutral Hand Model	Price
MTENN-103B	5/8" SQ	4	TH-1230	\$49.94
MTENN-123B	3/4" SQ	4	TH-1235	\$56.83
MTENN-124B	3/4" SQ	4	TH-1240	\$56.83
MTENN-164D	1" SQ	6	TH-1245	\$60.46
MTENN-853C	1 x 1-1/4"	6	TH-1250	\$65.00

EXTRA HARDWARE				
Inserts	Seat	Lock Pin	Clamp	Clamp Screw
TNMG-33	ITSN-323 \$2.72	NL-34L \$2.00	CL-6 \$3.56	XNS-36 \$1.00
TNMG-33	ITSN-323 \$2.72	NL-34L \$2.00	CL-6 \$3.56	XNS-36 \$1.00
TNMG-43	ITSN-433 \$4.40	NL-46 \$1.84	CL-9 \$3.56	XNS-59 \$1.00
TNMG-43	ITSN-433 \$4.40	NL-46 \$1.84	CL-9 \$3.56	XNS-59 \$1.00
TNMG-33	ITSN-323 \$2.72	NL-34L \$2.00	CL-6 \$3.56	XNS-36 \$1.00

MTFNR/L

- 0° End Cutting
- Solid Steel Bar
- Negative Rake
- Using TNMG, TNMA, TNG_ & TNM_ type inserts



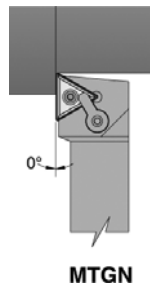
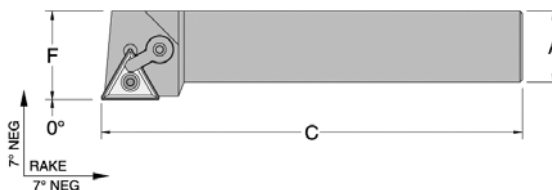
TNMG Inserts on Pages 286

Industry Reference	Shank A	OAL C	Right Hand Model	Left Hand Model	Price
MTFNR/L-123B	3/4" SQ	5	TH-1255	TH-2255	\$56.83
MTFNR/L-163C	1" SQ	5	TH-1260	TH-2260	\$54.12
MTFNR/L-164D	1" SQ	6	TH-1265	TH-2265	\$60.46

EXTRA HARDWARE				
Inserts	Seat	Lock Pin	Clamp	Clamp Screw
TNMG-33	ITSN-323 \$2.72	NL-34L \$2.00	CL-6 \$3.56	XNS-36 \$1.00
TNMG-33	ITSN-323 \$2.72	NL-34L \$2.00	CL-6 \$3.56	XNS-36 \$1.00
TNMG-43	ITSN-433 \$4.40	NL-46 \$1.84	CL-9 \$3.56	XNS-510 \$1.00

MTGNR/L

- 0° Side Cutting
- Offset Shank
- Negative Rake
- Using TNMG, TNMA, TNG_ & TNM_ type inserts



TNMG Inserts on Pages 286

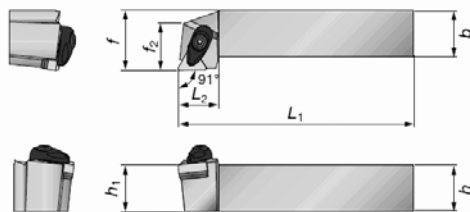
Industry Reference	Shank A	OAL C	Right Hand Model	Left Hand Model	Price
MTGNR/L-123B	3/4" SQ	5	TH-1270	TH-2270	\$56.83
MTGNR/L-163C	1" SQ	5	TH-1275	TH-2275	\$54.12
MTGNR/L-164D	1" SQ	6	TH-1280	TH-2280	\$60.46

EXTRA HARDWARE				
Inserts	Seat	Lock Pin	Clamp	Clamp Screw
TNMG-33	ITSN-323 \$2.72	NL-34L \$2.00	CL-6 \$3.56	XNS-36 \$1.00
TNMG-33	ITSN-323 \$2.72	NL-34L \$2.00	CL-6 \$3.56	XNS-36 \$1.00
TNMG-43	ITSN-433 \$4.40	NL-46 \$1.84	CL-9 \$3.56	XNS-510 \$1.00

Call Us Today For All Of Your Machine Tool Needs!

ATGNR/L TOOLHOLDERS

- For use with negative triangle inserts
- One action double clamping
- Strong and positive clamping power
- Fewer parts
- High accuracy

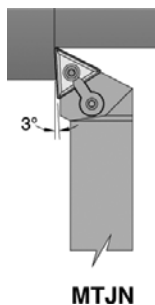
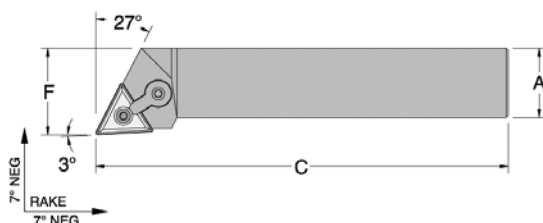


A

Industry Reference	h	b	L1	L2	h1	f	f2	r?*	Insert	Torque*	RIGHT HAND Part Number	LEFT HAND Part Number	Price Each
ATGNR/L163-A	1.000	1.000	6.000	0.875	1.000	1.250	1.000	0.031	TN**33...	2.2	TO-6853122	TO-6853125	\$105.00
ATGNR/L123-A	0.750	0.750	4.500	0.875	0.750	1.000	0.875	0.031	TN**33...	2.2	TO-6853128	TO-6853129	\$92.50
ATGNR/L164-A	1.000	1.000	6.000	1.000	1.000	1.250	1.000	0.031	TN**43...	2.2	TO-6807855	TO-6856827	\$105.00

MTJNR/L

- -3° Side Cutting
- Offset Shank
- Negative Rake
- Using TNMG, TNMA, TNG_ & TNM_ type inserts



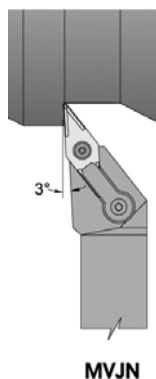
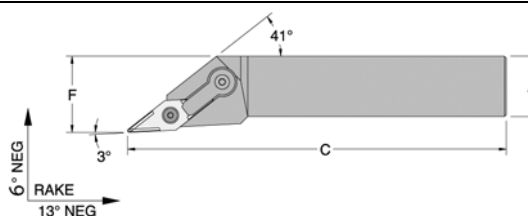
TNMG Inserts on Pages 286

Industry Reference	Shank A	OAL C	Right Hand Model	Left Hand Model	Price
MTJNR/L-123B	3/4" SQ	5	TH-1285	TH-2285	\$56.83
MTJNR/L-164D	1" SQ	6	TH-1290	TH-2290	\$60.46
MTJNR/L-204D	1-1/4" SQ	7	TH-1295	TH-2295	\$66.41

EXTRA HARDWARE				
Inserts	Seat	Lock Pin	Clamp	Clamp Screw
TNMG-33	ITSN-323 \$2.72	NL-34L \$2.00	CL-6 \$3.56	XNS-36 \$1.00
TNMG-43	ITSN-433 \$4.40	NL-46 \$1.84	CL-9 \$3.56	XNS-510 \$1.00
TNMG-43	ITSN-433 \$4.40	NL-46 \$1.84	CL-9 \$3.56	XNS-510 \$1.00

MVJNR/L

- -3° Side Cutting
- Offset Shank
- Negative Rake
- Using VNMG, VNMA, VNG_ & VNM_ type inserts



VNMG Inserts on Page 287

Industry Reference	Shank A	OAL C	Right Hand Model	Left Hand Model	Price
MVJNR/L-123B	3/4" SQ	5	TH-1300	TH-2300	\$92.94
MVJNR/L-163C	1" SQ	5	TH-1305	TH-2305	\$94.73
MVJNR/L-164D	1" SQ	6	TH-1310	TH-2310	\$94.73
MVJNR/L-203D	1-1/4" SQ	6	TH-1315	TH-2315	\$105.04
MVJNR/L-204D	1-1/4" SQ	6	TH-1320	TH-2320	\$94.73

EXTRA HARDWARE				
Inserts	Seat	Lock Pin	Clamp	Clamp Screw
VNMG-33	IVSN-323 \$3.16	NL-34L \$2.00	CL-30 \$6.28	XNS-510 \$1.00
VNMG-33	IVSN-323 \$3.16	NL-34L \$2.00	CL-30 \$6.28	XNS-510 \$1.00
VNMG-43	IVSN-433 \$4.22	NL-46 \$1.84	CL-30 \$6.28	XNS-510 \$1.00
VNMG-33	IVSN-323 \$3.16	NL-34L \$2.00	CL-30 \$6.28	XNS-510 \$1.00
VNMG-43	IVSN-433 \$4.22	NL-46 \$1.84	CL-30 \$6.28	XNS-510 \$1.00

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

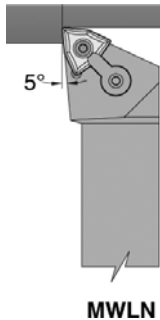
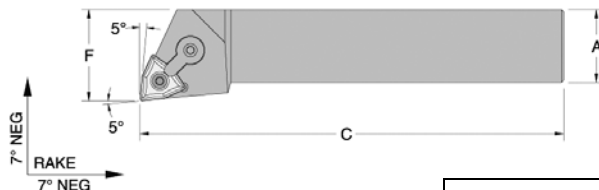
PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

OD TURNING HOLDERS-MWLNR/L, AWLNR/L

MWLNR/L

- -5° Side & End Cutting
- Offset Shank
- Negative Rake
- Using WNGG, WNMA, & WNMG type inserts



MWLNR

WNMG Inserts on Pages 288

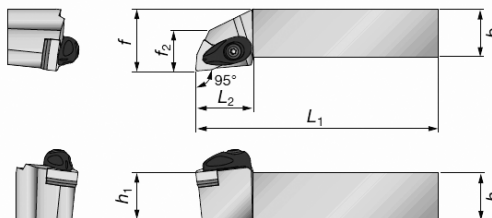
Industry Reference	Shank A	OAL C	Right Hand Model	Left Hand Model	Price
MWLNR/L-123B	3/4" SQ	5	TH-1325	TH-2325	\$56.83
MWLNR/L-124B	3/4" SQ	5	TH-1330	TH-2330	\$56.83
MWLNR/L-163C	1" SQ	6	TH-1335	TH-2335	\$60.46
MWLNR/L-164D	1" SQ	6	TH-1340	TH-2340	\$60.46
MWLNR/L-204D	1-1/4" SQ	6	TH-1350	TH-2350	\$66.41

EXTRA HARDWARE

Inserts	Seat	Lock Pin	Clamp	Clamp Screw
WNMG-33	IWSN-323 \$3.58	NL-34L \$2.00	CL-6 \$3.56	XNS-36 \$1.00
WNMG-43	IWSN-433 \$4.84	NL-46 \$1.84	CL-9 \$3.56	XNS-59 \$1.00
WNMG-33	IWSN-323 \$3.58	NL-34L \$2.00	CL-6 \$3.56	XNS-36 \$1.00
WNMG-43	IWSN-433 \$4.84	NL-46 \$1.84	CL-9 \$3.56	XNS-59 \$1.00
WNMG-43	IWSN-433 \$4.84	NL-46 \$1.84	CL-9 \$3.56	XNS-59 \$1.00

AWLNR/L TOOLHOLDERS

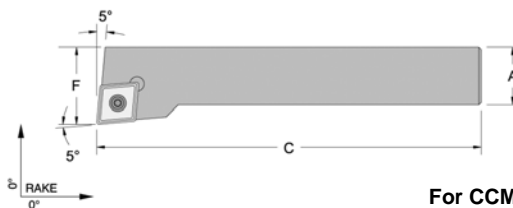
- For use with negative trigon inserts
- One action double clamping
- Strong and positive clamping power
- Fewer parts
- High accuracy



Industry Reference	h	b	L1	L2	h1	f	f2	r?*	Insert	Torque*	RIGHT HAND Part Number	LEFT HAND Part Number	Price Each
AWLNR/L123-A	0.750	0.750	4.500	1.125	0.750	1.000	0.625	0.031	WN**33...	2.2	TO-6864837	TO-6864819	\$90.20
AWLNR/L163-A	1.000	1.000	6.000	1.125	1.000	1.250	0.875	0.031	WN**33...	2.2	TO-6864784	TO-6864785	\$99.60
AWLNR/L164-A	1.000	1.000	6.000	1.250	1.000	1.250	0.875	0.031	WN**43...	2.2	TO-6853124	TO-6853121	\$99.60
AWLNR/L124-A	0.750	0.750	4.500	1.250	0.750	1.000	0.764	0.031	WN**43...	2.2	TO-6853120	TO-6853115	\$90.20
AWLNR/L204-A	1.250	1.250	7.000	1.250	1.250	1.500	1.000	0.031	WN**43...	2.2	TO-6864820	TO-6864838	\$185.30

SCLCR/L

- -5° Side & End Cutting,
- Offset Shank
- 7° Relief Angle, S-Lock
- Using CCMT type inserts



For CCMT Inserts, Please See Page 289

Industry Reference	Shank A	OAL C	F	Right Hand Model	Left Hand Model	Price	Uses Inserts	Torx Key	Insert Screw
SCLCR/L L06-2J	3/8 SQ	3.5	0.500	TH-1505	TH-2505	\$48.34	CCMT-21.5	T-7	TS-25.45-6M1
SCLCR/L L08-3A	1/2 SQ	4.0	0.625	TH-1510	TH-2510	\$48.34	CCMT-32.5	T-15	TS-4.7-10M1
SCLCR/L L10-3B	5/8 SQ	4.5	0.750	TH-1515	TH-2515	\$49.48	CCMT-32.5	T-15	TS-4.7-10M1
SCLCR/L L12-3B	3/4 SQ	4.5	1.000	TH-1520	TH-2520	\$58.83	CCMT-32.5	T-15	TS-4.7-10M1
SCLCR/L L16-3D	1 SQ	6.0	1.250	TH-1525	TH-2525	\$62.72	CCMT-32.5	T-15	TS-4.7-10M1



We Are A Full Line Supplier For Tungaloy!

**Carbide Inserts • Boring • Turning
Milling • Drilling • Part-Off**

Please Call For More Information!

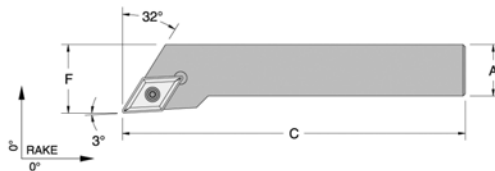
Call Us Today For All Of Your Machine Tool Needs!

SWISS STYLE - OD TURNING HOLDERS

B

SDJCR/L

- -3° Side Cutting, Offset Shank
- 11° Relief Angle, Screw Down
- Using DCMT type inserts



Industry Reference	Shank A	OAL C	F	Right Hand Model	Left Hand Model	Price	Uses Inserts	Torx Key	Insert Screw
SDJCR/L L06-2J	3/8 SQ	3.5	0.500	TH-1530	TH-2530	\$59.15	DCMT-21.5	T-7	TS-25.45-6M1
SDJCR/L L08-2A	1/2 SQ	4.0	0.625	TH-1535	TH-2535	\$59.15	DCMT-21.5	T-7	TS-25.45-6M1
SDJCR/L L08-3A	1/2 SQ	4.0	0.625	TH-1540	TH-2540	\$59.15	DCMT-32.5	T-15	TS-4.7-10M1
SDJCR/L L10-3B	5/8 SQ	4.5	0.750	TH-1545	TH-2545	\$61.38	DCMT-32.5	T-15	TS-4.7-10M1
SDJCR/L L12-3B	3/4 SQ	4.5	1.000	TH-1550	TH-2550	\$76.72	DCMT-32.5	T-15	TS-4.7-10M1
SDJCR/L L16-3D	1 SQ	6.0	1.250	TH-1555	TH-2555	\$79.55	DCMT-32.5	T-15	TS-4.7-10M1

SSDCN

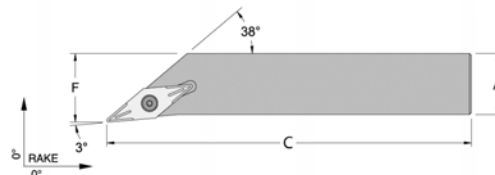
- 45° Side Cutting
- Straight Shank
- 7° Relief Angle, S-Lock
- Using SCMT type inserts



Industry Reference	Shank A	OAL C	Neutral Hand Model	Price	Uses Inserts	Torx Key	Insert Screw
SSDCN08-3A	1/2 SQ	4.0	TH-1560	\$48.34	SCMT-32.5	T-15	TS-4.7-10M1
SSDCN10-3B	5/8 SQ	4.5	TH-1565	\$49.48	SCMT-32.5	T-15	TS-4.7-10M1
SSDCN12-3B	3/4 SQ	4.5	TH-1570	\$58.83	SCMT-32.5	T-15	TS-4.7-10M1

SVJCR/L

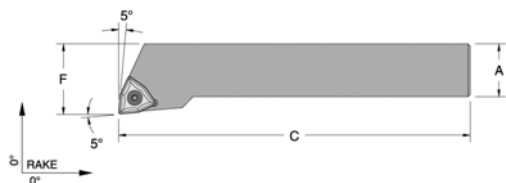
- -3° Side Cutting
- Offset Shank
- 5° Relief Angle, S-Lock
- Using VCMT type inserts



Industry Reference	Shank A	OAL C	F	Right Hand Model	Left Hand Model	Price	Uses Inserts	Torx Key	Insert Screw
SVJCR/L L12-3B	3/4	4.5	1.00	TH-1575	TH-2575	\$85.98	VCMT-33	T-15	TS-4.7-10M1
SVJCR/L L16-3D	1	6.0	1.25	TH-1580	TH-2580	\$88.02	VCMT-33	T-15	TS-4.7-10M1

SWLCR/L

- -5° Side & End Cutting
- Offset Shank
- 7° Relief Angle, S-Lock
- Using WCMT type inserts



Industry Reference	Shank A	OAL C	F	Right Hand Model	Left Hand Model	Price	Uses Inserts	Torx Key	Insert Screw
SWLCR/L L06-2J	3/8	3.5	0.500	TH-1605	TH-2605	\$48.34	WCMT-21.5	T-7	TS-25.45-6M1
SWLCR/L L08-3A	1/2	4.0	0.625	TH-1590	TH-2590	\$48.34	WCMT-32.5	T-15	TS-4.7-10M1
SWLCR/L L10-3B	5/8	4.5	0.750	TH-1595	TH-2595	\$49.48	WCMT-32.5	T-15	TS-4.7-10M1
SWLCR-L L12-3B	3/4	4.5	1.000	TH-1610	TH-2610	\$58.83	WCMT-32.5	T-15	TS-4.7-10M1

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

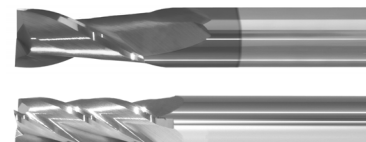
PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE



We Offer The Complete Line of MONSTER Carbide Endmills!

- Top Quality Carbide Endmills At HSS Prices!
- 2, 3 & 4 Flute, Coated and Uncoated
- Square, Ball End, Corner Radius and Rougher/Finishers
- Premium Sub-micron C-2 Carbide With 10% Cobalt
- Micro/Miniature Endmills Available At Unbeatable Prices
- 100% Made In The USA



Call Us Or Visit Our Website For Our Complete Selection!

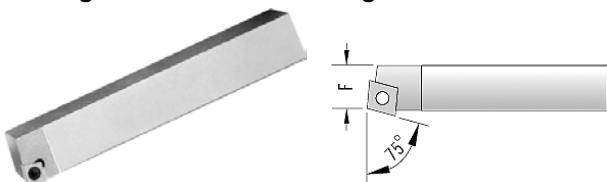
MICRO 100 INDEXABLE TOOLS

INDEXABLE INSERT HOLDERS CHROME NICKEL TOOLHOLDERS



75° THRU-TURNING

Utilizing 100° Unused RH Cutting Corner



FEATURES:

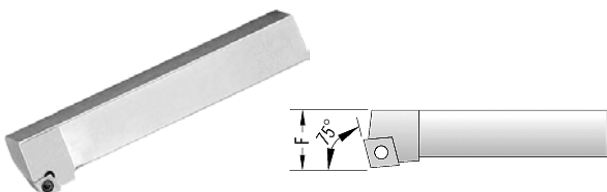
- Durable and unique chrome nickel toolholder
- Positive chip control
- Coolant-thru hole design
- Each holder includes torx screw and torx key

75° THRU-TURNING TOOLS-Uses CCMT 21.51 Inserts (not included)

Toolholder Nomenclature	Square Shank	OAL	F Over Insert	Part Number	Price Each
SCBCR 0404 D2	1/4	2 1/2	.267	MI-103151	\$34.95
SCBCR 0505 D2	5/16	2 1/2	.267	MI-103153	\$37.90
SCBCR 0606 E2	3/8	2 3/4	.330	MI-103155	\$42.60
SCBCR 0808 F2	1/2	3	.460	MI-103157	\$46.60
SCBCR 1010 H2	5/8	4	.574	MI-103159	\$51.65

75° THRU-FACING

Utilizing 100° Unused LH Cutting Corner

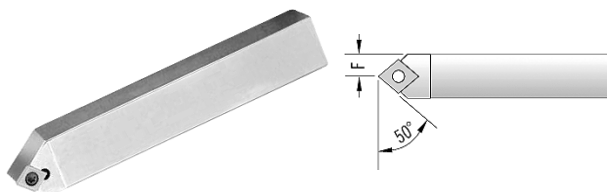


75° THRU-FACING TOOLS-Uses CCMT 21.51 Inserts (not included)

Toolholder Nomenclature	Square Shank	OAL	F Over Insert	Part Number	Price Each
SCKCR 0404 D2	1/4	2 1/2	.394	MI-103211	\$34.95
SCKCR 0505 D2	5/16	2 1/2	.394	MI-103212	\$37.90
SCKCR 0606 E2	3/8	2 3/4	.472	MI-103213	\$42.60
SCKCR 0808 F2	1/2	3	.630	MI-103215	\$46.60
SCKCR 1010 H2	5/8	4	.787	MI-103217	\$51.65

TURNING & CHAMFERING

50° Right Hand & Left Hand

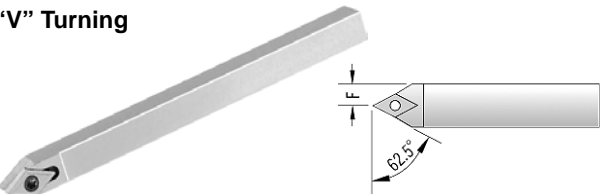


TURNING & CHAMFERING TOOLS-Uses CCMT 21.51 Inserts (not included)

Toolholder Nomenclature	Square Shank	OAL	F Over Insert	Part Number	Price Each
SCMCN 0404 D2	1/4	2 1/2	.157	MI-103311	\$34.95
SCMCN 0505 D2	5/16	2 1/2	.157	MI-103312	\$37.90
SCMCN 0606 E2	3/8	2 3/4	.189	MI-103313	\$42.60
SCMCN 0808 F2	1/2	3	.250	MI-103314	\$46.60
SCMCN 1010 H2	5/8	4	.315	MI-103315	\$51.65

55° THREADING

"V" Turning



"V" THREADING TOOLS-Uses DCMT 21.51 Inserts (not included)

Toolholder Nomenclature	Square Shank	OAL	F Over Insert	Part Number	Price Each
SDNCN 0505 H2	5/16	4	.157	MI-103761	\$42.60
SDNCN 0606 H2	3/8	4	.189	MI-103762	\$49.90
SDNCN 0808 H2	1/2	4	.250	MI-103763	\$52.50
SDNCN 1010 H2	5/8	4	.313	MI-103764	\$58.25

INDEXABLE INSERT HOLDERS TURNING & FACING TOOLS

FEATURES:

- Durable and unique chrome nickel toolholder
- Positive chip control
- Coolant-thru hole design
- Each holder includes torx screw and torx key



90° TURNING & FACING-95° APPROACH- Uses CCMT 21.51 Inserts (not included)

Toolholder Nomenclature	Square Shank	OAL	F Over Insert	Right Hand Part Number	Left Hand Part Number	Price Each
SCLCR/L 0404 D2	1/4	2 1/2	.394	MI-103231	MI-103232	\$34.95
SCLCR/L 0505 D2	5/16	2 1/2	.394	MI-103233	MI-103234	\$37.90
SCLCR/L 0606 E2	3/8	2 3/4	.472	MI-103235	MI-103236	\$42.60
SCLCR/L 0808 F2	1/2	3	.629	MI-103237	MI-103238	\$46.60
SCLCR/L 1010 H2	5/8	4	.787	MI-103241	MI-103242	\$51.65

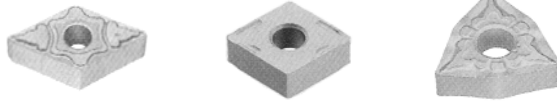
60° TURNING & FACING- Uses DCMT 21.51 Inserts (not included)

Toolholder Nomenclature	Square Shank	OAL	F Over Insert	Right Hand Part Number	Left Hand Part Number	Price Each
SDJCR/L 0505 H2	5/16	4	.394	MI-103641	MI-103642	\$42.60
SDJCR/L 0606 H2	3/8	4	.472	MI-103651	MI-103652	\$49.90
SDJCR/L 0808 H2	1/2	4	.629	MI-103653	MI-103654	\$52.50
SDJCR/L 1010 H2	5/8	4	.787	MI-103615	MI-103616	\$58.25

Call Us Today For All Of Your Machine Tool Needs!

TUNGALOY® INSERT GRADES & CHIPBREAKERS

TUNGALOY INSERT GRADES



Featuring AH120-The Super Grade!
Special PVD TiAlN coated carbide combined with super tough substrate. Ideal for general turning of steels, stainless and super alloys!



CERMET GRADES

Cermet	Properties	Application
NS9530	Has high wear resistant and excellent thermal and mechanical shock resistance. Performs well in wet cutting	General purpose grade covering a wide range of cutting conditions from low to high speeds for various steels
GT9530	TiAlN coated cermet. Provides superior resistance to flank wear and adhesive wear	Suitable for high speed turning of steels and stainless steels requiring better surface roughness and longer tool life

COATED CARBIDE GRADES

Coated Carbide	Properties	Application
T9105	Ti + AlOxide; DISK Technology substrate with advanced coating	High speed cutting of steels and cast irons
T9115	Ti + AlOxide; DISK Technology substrate with advanced coating	For general purpose turning of steels and stainless steels
T9125	Ti + AlOxide; DISK Technology substrate with advanced coating	For general purpose turning of steels and stainless steels including interrupted and heavy cutting
T9135	Ti + AlOxide; DISK Technology substrate with advanced coating	For general purpose turning of steels and stainless steels including severely interrupted and heavy cutting of steels
T6120	Ti + AlOxide; tough substrate with new advanced coating	For general purpose turning of steels and stainless steels
T6130	Ti + AlOxide; extra tough substrate with advanced coating	For rough and heavy turning of stainless steels
T5020	Ti + AlOxide; well balanced wear resistance and toughness	Roughing and interrupted turning of cast irons
SH730	Coated carbide with advanced coating	Ideal for stainless steels
AH110	TiAlN coating; heat resistant coating and hard substrate allows excellent wear resistance	Turning of super (high temp) alloys and Non ferrous metals
AH120	TiAlN coating; heat resistant coating and extremely hard substrate allows highest wear resistance	Turning and Milling of super (high temp) alloys, steels, stainless steels - great all purpose grade.
GH330	TiCnO Coated carbide	General milling and turning of steels

UNCOATED CARBIDE GRADES

Uncoated Carbide	Properties	Application
KS05F	Uncoated carbide with good overall wear resistance	Ideal for Aluminum
TH10	K10(C2) type uncoated carbide - good overall wear resistance	General turning of Non Ferrous materials
H10T	Used for positive (boring) inserts; K10(C2) type uncoated carbide - good overall wear resistance and toughness	General boring of Non Ferrous materials

TUNGALOY INSERT CHIPBREAKERS



Chip Breakers	Descriptions
TS	For Finishing - landless sharp cutting edges and large rake angle; excellent all round chipbreaker for finishing Steels
TM	For Medium cutting - unique breaker geometry with sharp cutting edges and large rake angle assures free cutting action in a wide range of cutting conditions - excellent for medium cutting of steels and super (high temp) alloys
TH	For Heavy cutting Double sided 3 dimensional chipbreaker with a wide land and broad groove used for medium to heavy cutting including interrupted cuts and in poor conditions - excellent for heavy and interrupted cutting of steels, stainless and super (high temp) alloys
SS	For finishing - 3 dimensional chipbreaker with a large rake angle; very free cutting and most suitable for stainless steels and mild steels
SM	For Medium cutting - 3 dimensional chipbreaker offers low cutting forces over a wide range of cutting conditions - especially suited for medium cutting of stainless steels and mild steels
SA	For finishing - designed to reduce contact area between tool and chip, preventing the insert from raising temperature during cutting - designed especially for medium cutting of stainless steels and super (high temp) alloys
P	For non ferrous metals - very sharp cutting edges
PM	3 dimensional chipbreaker - has positive yet strong edge, provides good chip control for medium to rough cutting.
PP	For general boring of Non Ferrous metals - high positive rake and very sharp cutting edges - low cutting forces and no chatter
PS	For finish to medium boring on positive inserts - steels, stainless steels
28	For general turning of Non ferrous metals - high positive rake angle for low cutting forces and excellent shearing ability - also effective for stainless steels and super (high temp) alloys

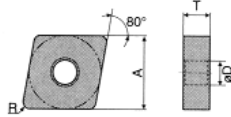
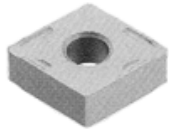
Call Us Today For All Of Your Machine Tool Needs!

CNMG 80° DIAMOND TURNING INSERTS

CNMG INSERTS FOR STEELS

80° Diamond

Buy In Box Quantities & Save!



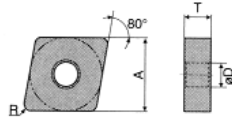
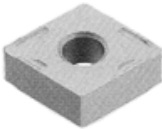
CNMG 4 3 2
I.C. size (A) Thickness (T) Radius (R) Chipbreaker

ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
CNMG431	CNMG120404	1/2	3/16	0.016 1/64	Cont	Semi Finish	TS	NS9530	TO-6997695	\$9.45	\$6.93
					Cont	Semi Finish		AT9530	TO-6998061	\$10.89	\$7.99
					Cont - GP	Semi Finish		T9115	TO-6985223	\$11.61	\$8.51
					Cont & Int	Semi Finish	TM	T9125	TO-3517	\$11.61	\$8.51
					Cont - GP	Medium		T9115	TO-3513	\$11.61	\$8.51
					Cont & Int	Medium		T9125	TO-3514	\$11.61	\$8.51
Severely Int & Heavy Cutting	Medium	T9135	TO-3515	\$11.61	\$8.51						
CNMG432	CNMG120408	1/2	3/16	0.031 1/32	Cont - GP	Semi Finish	TS	T9115	TO-3527	\$11.61	\$8.51
					Cont & Int	Semi Finish		T9125	TO-3528	\$11.61	\$8.51
					Cont - GP	Medium	TM	T9115	TO-3524	\$11.61	\$8.51
					Cont & Int	Medium		T9125	TO-3525	\$11.61	\$8.51
					Severely Int & Heavy Cutting	Medium		T9135	TO-3526	\$11.61	\$8.51
					Cont - GP	Heavy	TH	T9115	TO-3520	\$11.61	\$8.51
					Cont & Int	Heavy		T9125	TO-3521	\$11.61	\$8.51
					Severely Int & Heavy Cutting	Heavy		T9135	TO-3522	\$11.61	\$8.51

CNMG INSERTS FOR STAINLESS STEELS

80° Diamond

Buy In Box Quantities & Save!



CNMG 4 3 2
I.C. size (A) Thickness (T) Radius (R) Chipbreaker

ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
CNMG431	CNMG120404	1/2	3/16	0.016 1/64	Cont - General Purpose	Finish Turning	SS	T6120	TO-6994008	\$11.61	\$8.51
					Rough & Heavy Turning	Finish Turning	SS	T6130	TO-6994032	\$11.61	\$8.51
					Cont - General Purpose	Medium Turning	SM	T6120	TO-6805408	\$11.61	\$8.51
					Rough & Heavy Turning	Medium Turning	SM	T6130	TO-6805415	\$11.61	\$8.51
CNMG432	CNMG120408	1/2	3/16	0.031 1/32	Cont - General Purpose	Finish Turning	SS	T6120	TO-6994009	\$11.61	\$8.51
					Rough & Heavy Turning	Finish Turning	SS	T6130	TO-6994033	\$11.61	\$8.51
					Cont - General Purpose	Medium Turning	SM	T6120	TO-6805422	\$11.61	\$8.51
					Rough & Heavy Turning	Medium Turning	SM	T6130	TO-6805424	\$11.61	\$8.51
CNMG433	CNMG120412	1/2	3/16	0.047 3/64	Rough & Heavy Turning	Heavy Turning	TH	T6130	TO-6712235	\$11.61	\$8.51
					Rough & Heavy Turning	Finish Turning	SS	T6130	TO-6994034	\$11.61	\$8.51
					Rough & Heavy Turning	Medium Turning	SM	T6130	TO-6827243	\$11.61	\$8.51

CNMG INSERTS

For Machining Aluminum



- Grade H01 - Uncoated grade for aluminum
- Sharp positive HA chipbreaker is ideal for aluminum
- For continuous non ferrous turning



Designation METRIC	Designation INCH	I.C	Thickness	Radius	Part Number	Price Each
CNMG Inserts with HA Chipbreaker Grade H01						
CNMG120404	CNMG431	1/2	3/16	0.016 (1/64)	KOY-2144	\$6.29
CNMG120408	CNMG432	1/2	3/16	0.031 (1/32)	KOY-2145	\$6.29

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

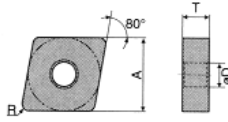
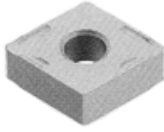
COOLANT/FLUIDS
TOOL STORAGE

CNMG 80° DIAMOND TURNING INSERTS

CNMG INSERTS FOR SUPER ALLOYS

80° Diamond

Buy In Box Quantities & Save!



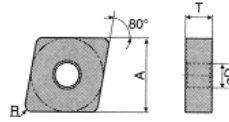
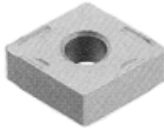
CNMG 4 3 2
 I.C. size (A) Thickness (T) Radius (R) Chipbreaker

ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
CNMG431	CNMG120404	1/2	3/16	0.016 1/64	Cont	Finish Turning	SA	AH110	TO-1265	\$11.61	\$8.51
					Cont & Int Turning	Finish Turning	SA	AH120	TO-1266	\$11.61	\$8.51
					Cont	Medium Turning	TM	AH110	TO-1284	\$11.61	\$8.51
					Cont & Int Turning	Medium Turning	TM	AH120	TO-1285	\$11.61	\$8.51
CNMG432	CNMG120408	1/2	3/16	0.031 1/32	Cont	Finish Turning	SA	AH110	TO-1330	\$11.61	\$8.51
					Cont & Int Turning	Finish Turning	SA	AH120	TO-1331	\$11.61	\$8.51
					Cont	Medium Turning	TM	AH110	TO-1363	\$11.61	\$8.51
					Cont & Int Turning	Medium Turning	TM	AH120	TO-1364	\$11.61	\$8.51
CNMG433	CNMG120412	1/2	3/16	0.047 3/64	Cont & Int Turning	Heavy Turning	TH	AH120	TO-1352	\$11.61	\$8.51
					Cont & Int Turning	Medium Turning	TM	AH120	TO-1435	\$11.61	\$8.51
CNMG543	CNMG160612	5/8	1/4	0.047	Cont & Int Turning	Heavy Turning	TH	AH120	TO-1425	\$11.61	\$8.51
					Cont & Int Turning	Heavy Turning	TH	AH120	TO-1477	\$19.89	\$14.59

CNMG/CNGG INSERTS FOR ALUMINUM

80° Diamond

Buy In Box Quantities & Save!



CNMG 4 3 2
 I.C. size (A) Thickness (T) Radius (R) Chipbreaker

ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Coating	Cutting Conditions	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
CNMG431	CNMG120404	1/2	3/16	0.016 1/64	Tialn Coated Carbide	Cont	28	AH110	TO-1302	\$11.61	\$8.51
					Tialn Coated Carbide	Cont & Int Turning	28	AH120	TO-1303	\$11.61	\$8.51
CNMG432	CNMG120408	1/2	3/16	0.031 1/32	Tialn Coated Carbide	Cont	28	AH110	TO-1381	\$11.61	\$8.51
					Tialn Coated Carbide	Cont & Int Turning	28	AH120	TO-1382	\$11.61	\$8.51
CNMG433	CNMG120412	1/2	3/16	0.047 3/64	Tialn Coated Carbide	Cont	28	AH110	TO-1434	\$11.61	\$8.51
CNGG431	CNGG120404	1/2	3/16	0.016 1/64	Uncoated Carbide	Cont	LP	TH10	TO-1205	\$19.62	\$14.39
CNGG432	CNGG120408	1/2	3/16	0.031 1/32	Uncoated Carbide	Cont	LP	TH10	TO-1208	\$19.62	\$14.39

GRADES & CHIPBREAKERS

TUNGALOY CHIPBREAKERS

Breaker	Operation
TS	Semi Finish Turning
TM	Medium Turning
TH	Heavy Turning
SS	Finish Turning
SM	Medium Turning
SA	Finish Turning
P	Very sharp cutting edge
PM	Medium To Rough Boring
PP	General Purpose Boring
PS	Finish To Medium Boring
28	General Turning



TUNGALOY GRADES

Grade	Coating/ Carbide Or Cermet	Cutting Conditions
NS530	Uncoated Cermet	Cont
AT530	Tialn Coated Cermet	Cont
T9105	Tic+n+al Oxide Coated Carbide	Cont - High Speed Turning
T9115	Tic+n+al Oxide Coated Carbide	Cont - General Purpose Turning
T9125	Tic+n+al Oxide Coated Carbide	Cont & Int Turning
T9135	Tic+n+al Oxide Coated Carbide	Severely Int & Heavy Cutting
T6020	Tic+n+al Oxide Coated Carbide	Cont - General Purpose Turning
T6030	Tic+n+al Oxide Coated Carbide	Rough & Heavy Turning
T5020	Tin Coated Carbide	Rough & Int Turning
AH110	Tialn Coated Carbide	Cont
AH120	Tialn Coated Carbide	Cont & Int Turning
TH10	Uncoated Carbide	Cont
H10T	Uncoated Carbide	Cont

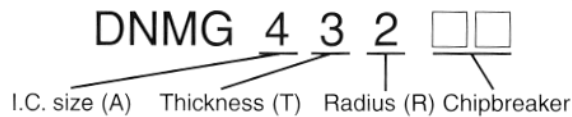
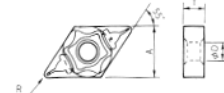
Call Us Today For All Of Your Machine Tool Needs!

DNMG 55° DIAMOND TURNING INSERTS

DNMG INSERTS FOR STEELS

55° Diamond

Buy In Box Quantities & Save!



ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
DNMG431	DNMG150404	1/2	3/16	0.016 1/64	Cont	Semi Finish Turning	TS	NS9530	TO-6997697	\$13.05	\$9.57
					Cont	Semi Finish Turning	TS	AT9530	TO-6998077	\$16.20	\$11.88
					Cont - General Purpose	Semi Finish Turning	TS	T9115	TO-6985455	\$15.93	\$11.68
					Cont & Int Turning	Semi Finish Turning	TS	T9125	TO-3580	\$15.93	\$11.68
					Cont - General Purpose	Medium Turning	TM	T9115	TO-3576	\$15.93	\$11.68
					Cont & Int Turning	Medium Turning	TM	T9125	TO-6864516	\$15.93	\$11.68
DNMG432	DNMG150408	1/2	3/16	0.031 1/32	Cont	Semi Finish Turning	TS	NS9530	TO-6998152	\$13.05	\$9.57
					Cont	Semi Finish Turning	TS	AT9530	TO-6998078	\$16.20	\$11.88
					Cont - General Purpose	Semi Finish Turning	TS	T9115	TO-6862467	\$15.93	\$11.68
					Cont & Int Turning	Semi Finish Turning	TS	T9125	TO-6985213	\$15.93	\$11.68
					Cont - General Purpose	Medium Turning	TM	T9115	TO-6862429	\$15.93	\$11.68
					Cont & Int Turning	Medium Turning	TM	T9125	TO-6864602	\$15.93	\$11.68
DNMG433	DNMG150412	1/2	3/16	0.047 3/64	Cont & Int Turning	Medium Turning	TM	T9125	TO-6864428	\$15.93	\$11.68
					Cont & Int Turning	Heavy Turning	TH	T9125	TO-6864610	\$15.93	\$11.68
					Severely Int & Heavy Cutting	Heavy Turning	TH	T9135	TO-6985127	\$15.93	\$11.68

DNMG INSERTS FOR STAINLESS STEELS

55° Diamond

Buy In Box Quantities & Save!



ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
DNMG431	DNMG150404	1/2	3/16	0.016 1/64	Cont - General Purpose	Finish Turning	SS	T6120	TO-6994011	\$15.93	\$11.68
					Rough & Heavy Turning	Finish Turning	SS	T6130	TO-6994035	\$15.93	\$11.68
					Cont - General Purpose	Medium Turning	SM	T6120	TO-6827246	\$15.93	\$11.68
					Rough & Heavy Turning	Medium Turning	SM	T6130	TO-6827247	\$15.93	\$11.68
DNMG432	DNMG150408	1/2	3/16	0.031 1/32	Cont - General Purpose	Finish Turning	SS	T6120	TO-6994012	\$15.93	\$11.68
					Rough & Heavy Turning	Finish Turning	SS	T6130	TO-6994036	\$15.93	\$11.68
					Cont - General Purpose	Medium Turning	SM	T6120	TO-6805430	\$15.93	\$11.68
					Rough & Heavy Turning	Medium Turning	SM	T6130	TO-6805431	\$15.93	\$11.68
DNMG433	DNMG150412	1/2	3/16	0.047	Rough & Heavy Turning	Heavy Turning	TH	T6130	TO-6712249	\$15.93	\$11.68

DNMG INSERTS FOR SUPER ALLOYS

55° Diamond

Buy In Box Quantities & Save!



ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
DNMG431	DNMG150404	1/2	3/16	0.016 1/64	Cont & Int Turning	Finish Turning	SA	AH120	TO-1690	\$15.93	\$11.68
					Cont & Int Turning	Medium Turning	TM	AH120	TO-1709	\$15.21	\$11.15
DNMG432	DNMG150408	1/2	3/16	0.031 1/32	Cont & Int Turning	Finish Turning	SA	AH120	TO-1747	\$15.93	\$11.68
					Cont & Int Turning	Medium Turning	TM	AH120	TO-1774	\$15.21	\$11.15
					Cont & Int Turning	Heavy Turning	TH	AH120	TO-1764	\$15.21	\$11.15
DNMG433	DNMG150412	1/2	3/16	0.047	Cont & Int Turning	Medium Turning	TM	AH120	TO-1834	\$15.21	\$11.15

DNMG/DNGG INSERTS FOR ALUMINUM

55° Diamond

Buy In Box Quantities & Save!



ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Coating	Cutting Conditions	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
DNMG431	DNMG150404	1/2	3/16	0.016 1/64	Tialn Coated Carbide	Cont	28	AH110	TO-1726	\$15.93	\$11.68
					Tialn Coated Carbide	Cont & Int Turning	28	AH120	TO-1727	\$15.93	\$11.68
DNMG432	DNMG150408	1/2	3/16	0.031 1/32	Tialn Coated Carbide	Cont	28	AH110	TO-1791	\$15.93	\$11.68
					Tialn Coated Carbide	Cont & Int Turning	28	AH120	TO-1792	\$15.93	\$11.68
DNGG431	DNGG150404	1/2	3/16	0.016 1/64	Uncoated Carbide	Cont	LP	TH10	TO-1655	\$17.10	\$12.54

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

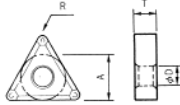
COOLANT/FLUIDS
TOOL STORAGE


TNMG & SNMG TURNING INSERTS

TNMG INSERTS FOR STEELS

60° Triangle

Buy In Box Quantities & Save!



TNMG 3 3 2 
I.C. size (A) Thickness (T) Radius (R) Chipbreaker

ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
TNMG331	TNMG160404	3/8	3/16	0.016	Cont & Int Turning	Medium Turning	TM	T9125	TO-6864384	\$8.73	\$6.40
TNMG332	TNMG160408	3/8	3/16	0.031 1/32	Cont & Int Turning	Medium Turning	TM	T9125	TO-6864324	\$8.73	\$6.40
					Severely Int & Heavy Cutting	Medium Turning	TM	T9135	TO-6831017	\$8.73	\$6.40
TNMG333	TNMG160412	3/8	3/16	0.047	Cont - General Purpose	Medium Turning	TM	T9115	TO-6862450	\$8.73	\$6.40
TNMG432	TNMG220408	1/2	3/16	0.031 1/32	Cont & Int Turning	Medium Turning	TM	T9125	TO-6864520	\$12.60	\$9.24
					Severely Int & Heavy Cutting	Medium Turning	TM	T9135	TO-6886243	\$12.60	\$9.24
					Cont - General Purpose	Heavy Turning	TH	T9115	TO-6863463	\$12.60	\$9.24
					Cont & Int Turning	Heavy Turning	TH	T9125	TO-6864613	\$12.60	\$9.24
					Severely Int & Heavy Cutting	Heavy Turning	TH	T9135	TO-6985156	\$12.60	\$9.24
TNMG433	TNMG220412	1/2	3/16	0.047 3/64	Cont & Int Turning	Medium Turning	TM	T9125	TO-6864481	\$12.60	\$9.24
					Severely Int & Heavy Cutting	Medium Turning	TM	T9135	TO-6886246	\$12.60	\$9.24

TNMG INSERTS FOR STAINLESS STEELS

60° Triangle

Buy In Box Quantities & Save!



ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
TNMG331	TNMG160404	3/8	3/16	0.016 1/64	Cont - General Purpose	Finish Turning	SS	T6120	TO-6994020	\$8.73	\$6.40
					Cont - General Purpose	Medium Turning	SM	T6120	TO-6827288	\$8.73	\$6.40
					Rough & Heavy Turning	Medium Turning	SM	T6130	TO-6827289	\$8.73	\$6.40
TNMG332	TNMG160408	3/8	3/16	0.031 1/32	Cont - General Purpose	Medium Turning	SM	T6120	TO-6827293	\$8.73	\$6.40
					Rough & Heavy Turning	Medium Turning	SM	T6130	TO-6827296	\$8.73	\$6.40
TNMG431	TNMG220404	1/2	3/16	0.016 1/64	Cont - General Purpose	Finish Turning	SS	T6120	TO-6994023	\$12.60	\$9.24
					Rough & Heavy Turning	Finish Turning	SS	T6130	TO-6994047	\$12.60	\$9.24
TNMG432	TNMG220408	1/2	3/16	0.031	Cont - General Purpose	Finish Turning	SS	T6120	TO-6994024	\$12.60	\$9.24

TNMG INSERTS FOR SUPER ALLOYS

60° Triangle

Buy In Box Quantities & Save!

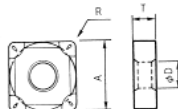



ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
TNMG331	TNMG160404	3/8	3/16	0.016 1/64	Cont & Int Turning	Finish Turning	SA	AH120	TO-2698	\$8.73	\$6.40
					Cont & Int Turning	Medium Turning	TM	AH120	TO-2716	\$8.73	\$6.40
TNMG332	TNMG160408	3/8	3/16	0.031 1/32	Cont	Medium Turning	TM	AH110	TO-2768	\$8.73	\$6.40
					Cont & Int Turning	Medium Turning	TM	AH120	TO-2769	\$8.73	\$6.40
TNMG431	TNMG220404	1/2	3/16	0.016 1/64	Cont & Int Turning	Medium Turning	TM	AH120	TO-2833	\$12.60	\$9.24
TNMG432	TNMG220408	1/2	3/16	0.031 1/32	Cont & Int Turning	Finish Turning	SA	AH120	TO-2844	\$12.60	\$9.24
					Cont & Int Turning	Medium Turning	TM	AH120	TO-2868	\$12.60	\$9.24
					Cont & Int Turning	Heavy Turning	TH	AH120	TO-2859	\$12.60	\$9.24
TNMG433	TNMG220412	1/2	3/16	0.047	Cont & Int Turning	Finish Turning	SA	AH120	TO-2888	\$12.60	\$9.24

SNMG INSERTS FOR SUPER ALLOYS

90° Square

Buy In Box Quantities & Save!



SNMG 4 3 2 
I.C. size (A) Thickness (T) Radius (R) Chipbreaker



ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
SNMG431	SNMG120404	1/2	3/16	0.016	Cont & Int Turning	Medium Turning	TM	AH120	TO-2247	\$11.16	\$8.18
SNMG432	SNMG120408	1/2	3/16	0.031 1/32	Cont & Int Turning	Finish Turning	SA	AH120	TO-2269	\$11.16	\$8.18
					Cont & Int Turning	Heavy Turning	TH	AH120	TO-2284	\$11.16	\$8.18
SNMG433	SNMG120412	1/2	3/16	0.047 3/64	Cont & Int Turning	Finish Turning	SA	AH120	TO-2313	\$11.16	\$8.18
					Cont & Int Turning	Heavy Turning	TH	AH120	TO-2323	\$11.16	\$8.18
SNMG543	SNMG150612	5/8	1/4	0.047	Cont & Int Turning	Heavy Turning	TH	AH120	TO-2349	\$18.63	\$13.66

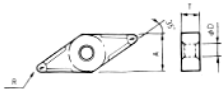
Call Us Today For All Of Your Machine Tool Needs!

VNMG DIAMOND/SNMG SQUARE TURNING INSERTS

VNMG INSERTS FOR STEELS

35° Diamond

Buy In Box Quantities & Save!



VNMG 3 3 2

I.C. size (A) Thickness (T) Radius (R) Chipbreaker

ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
VNMG331	VNMG160404	3/8	3/16	0.016 1/64	Cont	Semi Finish Turning	TS	NS9530	TO-6998226	\$12.87	\$9.44
					Cont	Semi Finish Turning	TS	AT9530	TO-6998108	\$16.02	\$11.75
					Cont & Int Turning	Semi Finish Turning	TS	T9125	TO-6886221	\$15.57	\$11.42
					Cont - General Purpose	Medium Turning	TM	T9115	TO-6862454	\$15.57	\$11.42
					Cont & Int Turning	Medium Turning	TM	T9125	TO-6864606	\$15.57	\$11.42
					Severely Int & Heavy Cutting	Medium Turning	TM	T9135	TO-6985158	\$15.57	\$11.42
VNMG332	VNMG160408	3/8	3/16	0.031 1/32	Cont	Semi Finish Turning	TS	NS9530	TO-6997707	\$12.87	\$9.44
					Cont	Semi Finish Turning	TS	AT9530	TO-6998109	\$16.02	\$11.75
					Cont & Int Turning	Semi Finish Turning	TS	T9125	TO-6886221	\$15.57	\$11.42
					Cont - General Purpose	Medium Turning	TM	T9115	TO-6862455	\$15.57	\$11.42
					Cont & Int Turning	Medium Turning	TM	T9125	TO-6864232	\$15.57	\$11.42
					Severely Int & Heavy Cutting	Medium Turning	TM	T9135	TO-6867044	\$15.57	\$11.42
VNMG333	VNMG160412	3/8	3/16	0.047	Cont & Int Turning	Medium Turning	TM	T9125	TO-6864564	\$15.57	\$11.42

VNMG INSERTS FOR STAINLESS STEELS

35° Diamond

Buy In Box Quantities & Save!



ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
VNMG331	VNMG160404	3/8	3/16	0.016 1/64	Cont - General Purpose	Finish Turning	SS	T6120	TO-6994029	\$15.57	\$11.42
					Rough & Heavy Turning	Finish Turning	SS	T6130	TO-6994053	\$15.57	\$11.42
VNMG332	VNMG160408	3/8	3/16	0.031 1/32	Cont - General Purpose	Finish Turning	SS	T6120	TO-6994030	\$15.57	\$11.42
					Rough & Heavy Turning	Finish Turning	SS	T6130	TO-6994054	\$15.57	\$11.42

VNMG INSERTS FOR SUPER ALLOYS

35° Diamond

Buy In Box Quantities & Save!



ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
VNMG331	VNMG160404	3/8	3/16	0.016 1/64	Cont	Medium Turning	TM	AH110	TO-3161	\$15.03	\$11.02
					Cont & Int Turning	Medium Turning	TM	AH120	TO-3162	\$15.03	\$11.02
VNMG332	VNMG160408	3/8	3/16	0.031 1/32	Cont	Medium Turning	TM	AH110	TO-3193	\$15.03	\$11.02
					Cont & Int Turning	Medium Turning	TM	AH120	TO-3194	\$15.03	\$11.02

VNMG INSERTS

For Machining Aluminum



- Grade H01 - Uncoated grade for aluminum
- Sharp positive HA chipbreaker is ideal for aluminum
- For continuous non ferrous turning

Designation METRIC	Designation INCH	I.C	Thickness	Radius	Part Number	Price Each
VNMG Inserts with HA Chipbreaker Grade H01						
VNMG160404	VNMG331	3/8	3/16	0.016 (1/64)	KOY-2142	\$7.92
VNMG160408	VNMG332	3/8	3/16	0.031 (1/32)	KOY-2149	\$7.92

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS
VISE JAWS
VISE ACCESSORIES
STRAIGHT SHANK
COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

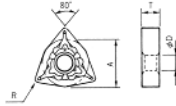
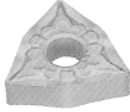
WNMG 80° TRIGON TURNING INSERTS



WNMG INSERTS FOR STEELS

80° Trigon

Buy In Box Quantities & Save!



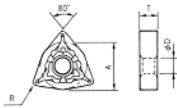
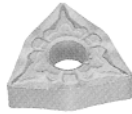
WNMG 4 3 2 □ □
I.C. size (A) Thickness (T) Radius (R) Chipbreaker

ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
WNMG331	WNMG060404	3/8	3/16	0.016	Cont & Int Turning	Medium Turning	TM	T9125	TO-6864325	\$9.18	\$6.73
WNMG332	WNMG060408	3/8	3/16	0.031	Cont & Int Turning	Medium Turning	TM	T9125	TO-6864565	\$9.18	\$6.73
WNMG431	WNMG080404	1/2	3/16	0.016 1/64	Cont	Semi Finish Turning	TS	NS9530	TO-6997708	\$9.45	\$6.93
					Cont	Semi Finish Turning	TS	AT9530	TO-6998114	\$10.89	\$7.99
					Cont - General Purpose	Medium Turning	TM	T9115	TO-6862459	\$11.61	\$8.51
					Cont & Int Turning	Medium Turning	TM	T9125	TO-6864521	\$11.61	\$8.51
WNMG432	WNMG080408	1/2	3/16	0.031 1/32	Cont	Semi Finish Turning	TS	NS9530	TO-6997710	\$9.45	\$6.93
					Cont & Int Turning	Semi Finish Turning	TS	T9125	TO-6886224	\$11.61	\$8.51
					Cont - General Purpose	Medium Turning	TM	T9115	TO-6862460	\$11.61	\$8.51
					Cont & Int Turning	Medium Turning	TM	T9125	TO-6864482	\$11.61	\$8.51
					Severely Int & Heavy Cutting	Medium Turning	TM	T9135	TO-6831018	\$11.61	\$8.51
					Cont - High Speed Turning	Heavy Turning	TH	T9105	TO-6886194	\$11.61	\$8.51
					Cont & Int Turning	Heavy Turning	TH	T9125	TO-6863464	\$11.61	\$8.51
					Severely Int & Heavy Cutting	Heavy Turning	TH	T9135	TO-6882782	\$11.61	\$8.51
WNMG433	WNMG080412	1/2	3/16	0.047 3/64	Cont - General Purpose	Medium Turning	TM	T9115	TO-6862461	\$11.61	\$8.51
					Cont & Int Turning	Medium Turning	TM	T9125	TO-6864483	\$11.61	\$8.51
					Cont & Int Turning	Heavy Turning	TH	T9125	TO-6863465	\$11.61	\$8.51
WNMG434	WNMG080416	1/2	3/16	0.063	Cont & Int Turning	Medium Turning	TM	T9125	TO-6864522	\$11.61	\$8.51

WNMG INSERTS FOR STAINLESS STEELS

80° Trigon

Buy In Box Quantities & Save!



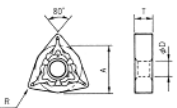
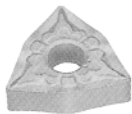
WNMG 4 3 2 □ □
I.C. size (A) Thickness (T) Radius (R) Chipbreaker

ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
WNMG431	WNMG080404	1/2	3/16	0.016 1/64	Cont - General Purpose	Finish Turning	SS	T6120	TO-6994050	\$11.61	\$8.51
					Rough & Heavy Turning	Medium Turning	SM	T6130	TO-6827354	\$11.61	\$8.51
WNMG432	WNMG080408	1/2	3/16	0.031 1/32	Cont - General Purpose	Finish Turning	SS	T6120	TO-6994027	\$11.61	\$8.51
					Cont - General Purpose	Finish Turning	SS	T6120	TO-6994051	\$11.61	\$8.51
					Cont - General Purpose	Medium Turning	SM	T6120	TO-6805440	\$11.61	\$8.51
					Rough & Heavy Turning	Medium Turning	SM	T6130	TO-6805441	\$11.61	\$8.51
					Rough & Heavy Turning	Heavy Turning	TH	T6130	TO-6712272	\$11.61	\$8.51
WNMG433	WNMG080412	1/2	3/16	0.047 3/64	Cont - General Purpose	Medium Turning	SM	T6120	TO-6827371	\$11.61	\$8.51
					Rough & Heavy Turning	Medium Turning	SM	T6130	TO-6827372	\$11.61	\$8.51

WNMG INSERTS FOR SUPER ALLOYS

80° Trigon

Buy In Box Quantities & Save!



WNMG 4 3 2 □ □
I.C. size (A) Thickness (T) Radius (R) Chipbreaker

ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
WNMG431	WNMG080404	1/2	3/16	0.016 1/64	Cont	Medium Turning	TM	AH110	TO-3276	\$11.61	\$8.51
					Cont & Int Turning	Medium Turning	TM	AH120	TO-3277	\$11.61	\$8.51
WNMG432	WNMG080408	1/2	3/16	0.031 1/32	Cont	Finish Turning	SA	AH110	TO-3310	\$11.61	\$8.51
					Cont & Int Turning	Finish Turning	SA	AH120	TO-3311	\$11.61	\$8.51
					Cont	Medium Turning	TM	AH110	TO-3337	\$11.61	\$8.51
					Cont & Int Turning	Medium Turning	TM	AH120	TO-3338	\$11.61	\$8.51
					Cont & Int Turning	Heavy Turning	TH	AH120	TO-3329	\$11.61	\$8.51
WNMG433	WNMG080412	1/2	3/16	0.047 3/64	Cont & Int Turning	Medium Turning	TM	AH120	TO-3391	\$11.61	\$8.51
					Cont & Int Turning	Heavy Turning	TH	AH120	TO-3383	\$11.61	\$8.51

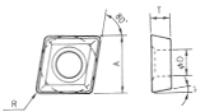
Call Us Today For All Of Your Machine Tool Needs!

CCMT BORING INSERTS

CCMT INSERTS FOR STEELS

80° Diamond, 7° Relief Angle

Buy In Box Quantities & Save!



CCMT 3 2.5 2

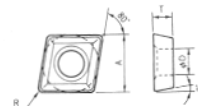
I.C. size (A) Thickness (T) Radius (R) Chipbreaker

ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
CCMT21.50	CCMT060202	1/4	3/32	0.004 1/256	Cont	Finish To Medium Boring	PS	AT9530	TO-6998297	\$7.74	\$5.68
					Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-3500	\$9.09	\$6.67
CCMT21.51	CCMT060204	1/4	3/32	0.016 1/64	Cont	Finish To Medium Boring	PS	NS9530	TO-6997711	\$7.20	\$5.28
					Cont	Finish To Medium Boring	PS	AT9530	TO-6998298	\$7.74	\$5.68
CCMT21.52	CCMT060208	1/4	3/32	0.031 1/32	Cont	Finish To Medium Boring	PS	T9125	TO-3501	\$9.09	\$6.67
					Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-3502	\$9.09	\$6.67
CCMT32.50	CCMT09T302	3/8	5/32	0.004 1/256	Cont	Finish To Medium Boring	PS	NS9530	TO-6998433	\$7.20	\$5.28
					Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-3500	\$9.09	\$6.67
CCMT32.51	CCMT09T304	3/8	5/32	0.016 1/64	Cont	Finish To Medium Boring	PS	AT9530	TO-1157	\$10.89	\$7.99
					Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-3503	\$10.89	\$7.99
CCMT32.52	CCMT09T308	3/8	5/32	0.031 1/32	Cont	Finish To Medium Boring	PS	NS9530	TO-6997713	\$8.28	\$6.07
					Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-3505	\$10.89	\$7.99

CCMT INSERTS FOR STAINLESS STEELS

55° Diamond

Buy In Box Quantities & Save!



CCMT 3 2.5 2

I.C. size (A) Thickness (T) Radius (R) Chipbreaker

ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
CCMT21.50.5	CCMT060202	1/4	3/32	0.004	Cont	Finish To Medium	PS	AT9530	TO-6998297	\$7.74	\$5.68
CCMT21.51	CCMT060204	1/4	3/32	0.0156 1/64	Cont	Finish To Medium	PS	NS9530	TO-6997711	\$7.20	\$5.28
					Cont	Finish To Medium	PS	AT9530	TO-6998298	\$7.74	\$5.68
					Cont - General Purpose	Finish	PF	T6120	TO-6712226	\$8.73	\$6.40
					Rough & Heavy Boring	Finish	PF	T6130	TO-6712227	\$9.09	\$6.67
					Cont - General Purpose	Medium To Rough	PM	T6120	TO-6994859	\$9.09	\$6.67
CCMT21.52	CCMT060208	1/4	3/32	0.0312 1/32	Rough & Heavy Boring	Medium To Rough	PM	T6130	TO-6994899	\$9.09	\$6.67
					Cont	Finish To Medium	PS	NS9530	TO-6998433	\$7.20	\$5.28
CCMT21.52	CCMT060208	1/4	3/32	0.0312 1/32	Cont	Finish To Medium	PS	AT9530	TO-6998299	\$7.74	\$5.68
					Cont - General Purpose	Medium To Rough	PM	T6120	TO-6994860	\$9.09	\$6.67
					Rough & Heavy Boring	Medium To Rough	PM	T6130	TO-6994900	\$9.09	\$6.67
CCMT32.50.5	CCMT09T302	3/8	5/32	0.004 1/256	Cont	Finish To Medium	PS	AT9530	TO-6998300	\$9.63	\$7.06
					Rough & Heavy Boring	Finish To Medium	PS	T6130	TO-6994700	\$10.89	\$7.99
CCMT32.51	CCMT09T304	3/8	5/32	0.0156 1/64	Cont	Finish To Medium	PS	NS9530	TO-6997713	\$8.28	\$6.07
					Cont	Finish To Medium	PS	AT9530	TO-6998301	\$9.63	\$7.06
					Cont - General Purpose	Finish	PF	T6120	TO-6712228	\$10.89	\$7.99
					Rough & Heavy Boring	Finish	PF	T6130	TO-6712229	\$10.89	\$7.99
					Cont - General Purpose	Medium To Rough	PM	T6120	TO-6994861	\$10.89	\$7.99
CCMT32.52	CCMT09T308	3/8	5/32	0.0312 1/32	Rough & Heavy Boring	Medium To Rough	PM	T6130	TO-6994901	\$10.89	\$7.99
					Cont	Finish To Medium	PS	AT9530	TO-6998302	\$9.63	\$7.06



We Are A Full Line Supplier For Tungaloy!

Carbide Inserts • Boring • Turning

Milling • Drilling • Part-Off

Please Call For More Information!

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

289

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

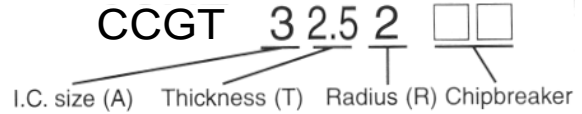
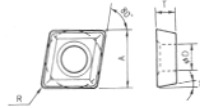
COOLANT/FLUIDS
TOOL STORAGE

CCGT/CPMT BORING INSERTS

CCGT INSERTS FOR NON-FERROUS METALS

80° Diamond, 7° Relief Angle

Buy In Box Quantities & Save!



ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
CCGT21.50.5	CCGT060202	1/4	3/32	0.004	Cont	Non Ferrous Boring	PP	H10T	TO-1112	\$12.33	\$9.04
CCGT21.51	CCGT060204	1/4	3/32	0.016	Cont	Non Ferrous Boring	PP	H10T	TO-1114	\$12.33	\$9.04
CCGT32.51	CCGT09T304	3/8	5/32	0.016	Cont	Non Ferrous Boring	PP	H10T	TO-1117	\$13.95	\$10.23

CCGT INSERTS

For Machining Aluminum

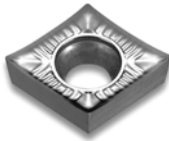


- Grade H01-Uncoated grade for aluminum
- Sharp positive HA chipbreaker is ideal for aluminum
- For continuous non ferrous turning

IC	Thickness	Radius	Grade	Description	Part Number	Price Each
----	-----------	--------	-------	-------------	-------------	------------

CCGT Inserts

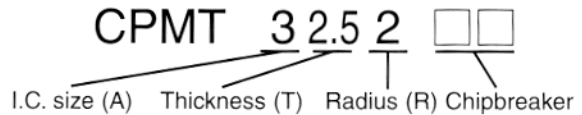
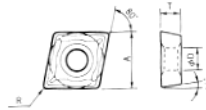
1/4	3/32	0.008	H01	CCGT 21.50.5 AK H01	KOY-1024	\$7.87
		1/64	H01	CCGT 21.51 AK H01	KOY-1026	\$7.87
3/8	5/32	0.008	H01	CCGT 32.50.5 AK H01	KOY-1028	\$9.22
		1/64	H01	CCGT 32.51 AK H01	KOY-1030	\$9.22
		1/32	H01	CCGT 32.52 AK H01	KOY-1032	\$9.22
1/2	3/16	1/64	H01	CCGT 431 AK H01	KOY-1034	\$10.68
		1/32	H01	CCGT 432 AK H01	KOY-1036	\$10.68



CPMT INSERTS FOR STEELS

80° Diamond, 11° Relief Angle

Buy In Box Quantities & Save!

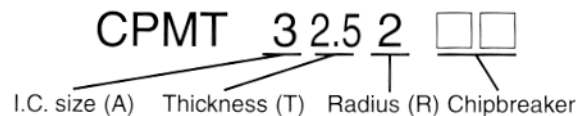
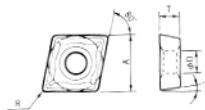
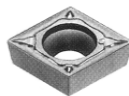


ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
CPMT21.50.5	CPMT060202	1/4	3/32	0.004	Cont	Finish To Medium Boring	PS	NS9530	TO-6998452	\$6.48	\$4.75
					Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-6864996	\$9.09	\$6.67
CPMT21.51	CPMT060204	1/4	3/32	0.016	Cont	Finish To Medium Boring	PS	NS9530	TO-6998453	\$6.48	\$4.75
					Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-6865012	\$9.09	\$6.67
CPMT32.51	CPMT09T304	3/8	5/32	0.016	Cont	Finish To Medium Boring	PS	NS9530	TO-6727480	\$7.92	\$5.81
CPMT32.52	CPMT09T308	3/8	5/32	0.031	Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-6863673	\$9.72	\$7.13

CPMT INSERTS FOR STAINLESS STEELS

80° Diamond, 11° Relief Angle

Buy In Box Quantities & Save!



ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
CPMT21.50.5	CPMT060202	1/4	3/32	0.004	Cont	Finish To Medium	PS	NS9530	TO-6998452	\$6.48	\$4.75
CPMT21.51	CPMT060204	1/4	3/32	0.016	Cont	Finish To Medium	PS	NS9530	TO-6998453	\$6.48	\$4.75
CPMT32.51	CPMT09T304	3/8	5/32	0.016	Cont	Finish To Medium	PS	NS9530	TO-6727480	\$7.92	\$5.81

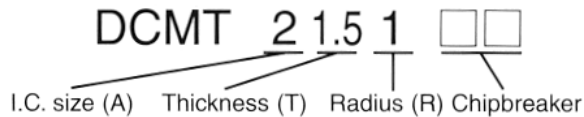
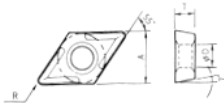
Call Us Today For All Of Your Machine Tool Needs!

DCMT/DCGT BORING INSERTS

DCMT INSERTS FOR STEELS

55° Diamond, 7° Relief Angle

Buy In Box Quantities & Save!

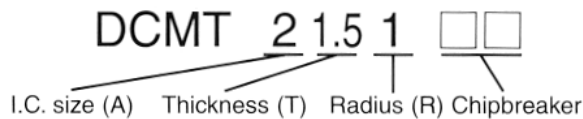
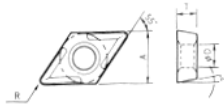


ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
DCMT21.51	DCMT070204	1/4	3/32	0.016 1/64	Cont & Int Turning	Medium To Rough Boring	PM	T9125	TO-6865425	\$9.27	\$6.80
DCMT21.52	DCMT070208	1/4	3/32	0.031 1/32	Cont & Int Turning	Medium To Rough Boring	PM	T9125	TO-6865020	\$9.27	\$6.80
DCMT32.51	DCMT11T304	3/8	5/32	0.016 1/64	Cont & Int Turning	Medium To Rough Boring	PM	T9125	TO-6865007	\$13.05	\$9.57
DCMT32.52	DCMT11T308	3/8	5/32	0.031 1/32	Cont & Int Turning	Medium To Rough Boring	PM	T9125	TO-6865021	\$13.05	\$9.57

DCMT INSERTS FOR STAINLESS STEELS

55° Diamond, 7° Relief Angle

Buy In Box Quantities & Save!

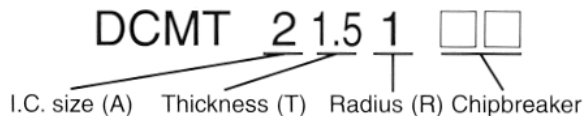
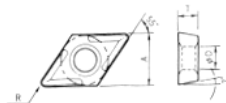


ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
DCMT21.51	DCMT070204	1/4	3/32	0.01562	Cont - General Purpose	Medium To Rough	PM	T6120	TO-6994870	\$9.27	\$6.80
DCMT21.52	DCMT070208	1/4	3/32	0.03125	Rough & Heavy Boring	Medium To Rough	PM	T6130	TO-6994910	\$9.27	\$6.80
DCMT32.51	DCMT11T304	3/8	5/32	0.0156 1/64	Cont - General Purpose	Finish	PF	T6120	TO-6712245	\$13.05	\$9.57
					Rough & Heavy Boring	Medium To Rough	PM	T6130	TO-6712244	\$13.05	\$9.57
DCMT32.52	DCMT11T308	3/8	5/32	0.03125 1/32	Cont - General Purpose	Finish	PF	T6120	TO-6712245	\$13.05	\$9.57
					Rough & Heavy Boring	Medium To Rough	PM	T6130	TO-6994913	\$13.05	\$9.57

DCMT INSERTS FOR SUPER ALLOYS

55° Diamond, 7° Relief Angle

Buy In Box Quantities & Save!



ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
DCMT21.51	DCMT070204	1/4	3/32	0.016 1/64	Cont & Int Turning	Medium To Rough Boring	PM	AH120	TO-3851	\$9.27	\$6.80
DCMT32.51	DCMT11T304	3/8	5/32	0.016 1/64	Cont & Int Turning	Medium To Rough Boring	PM	AH120	TO-3871	\$13.05	\$9.57
DCMT32.52	DCMT11T308	3/8	5/32	0.031 1/32	Cont	Medium To Rough Boring	PM	AH110	TO-3881	\$13.05	\$9.57
					Cont & Int Turning	Medium To Rough Boring	PM	AH120	TO-6818559	\$13.05	\$9.57

DCGT INSERTS

For Machining Aluminum



- Grade H01-Uncoated grade for aluminum
- Sharp positive HA chipbreaker is ideal for aluminum
- For continuous non ferrous turning



IC	Thickness	Radius	Grade	Description	Part Number	Price Each
DCGT Inserts						
1/4	3/32	0.008 1/64	H01	DCGT 21.50.5 AK H01	KOY-1199	\$7.87
			H01	DCGT 21.51 AK H01	KOY-1201	\$7.87
3/8	5/32	0.008 1/64	H01	DCGT 32.50.5 AK H01	KOY-1203	\$9.22
			H01	DCGT 32.51 AK H01	KOY-1205	\$9.22
			H01	DCGT 32.52 AK H01	KOY-1207	\$9.22

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

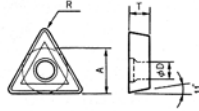
COOLANT/FLUIDS
TOOL STORAGE

TCMT/TPMT BORING INSERTS

TCMT INSERTS FOR STEELS

60° Triangle, 7° Relief Angle

Buy In Box Quantities & Save!



TCMT 2 1.5 1

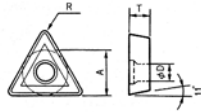
I.C. size (A) Thickness (T) Radius (R) Chipbreaker

ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
TCMT21.50	TCMT110202	1/4	3/32	0.008	Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-6865207	\$8.10	\$5.94
TCMT21.51	TCMT110204	1/4	3/32	0.016	Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-6865033	\$8.10	\$5.94
TCMT21.52	TCMT110208	1/4	3/32	0.031	Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-6865024	\$8.10	\$5.94
TCMT32.52	TCMT16T308	3/8	5/32	0.031	Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-6865035	\$11.88	\$8.71

TCMT INSERTS FOR STAINLESS STEELS

60° Triangle, 7° Relief Angle

Buy In Box Quantities & Save!



TCMT 2 1.5 1

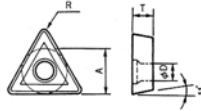
I.C. size (A) Thickness (T) Radius (R) Chipbreaker

ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
TCMT21.50	TCMT110202	1/4	3/32	0.008	Rough & Heavy Boring	Finish To Medium	PS	T6130	TO-6994719	\$8.10	\$5.94
TCMT21.51	TCMT110204	1/4	3/32	0.016	Rough & Heavy Boring	Finish To Medium	PS	T6130	TO-6994720	\$8.10	\$5.94

TPMT INSERTS FOR STAINLESS STEELS

60° Triangle, 11° Relief Angle

Buy In Box Quantities & Save!



TPMT 2 1.5 2

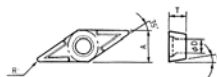
I.C. size (A) Thickness (T) Radius (R) Chipbreaker

ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
TPMT21.51	TPMT110204	1/4	3/32	0.016	Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-6865209	\$8.10	\$5.94
TPMT21.52	TPMT110208	1/4	3/32	0.031	Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-6865421	\$8.10	\$5.94
TPMT32.52	TPMT16T308	3/8	5/32	0.031	Cont	Finish To Medium Boring	PS	AT9530	TO-6998378	\$11.88	\$8.71
					Cont & Int Turning	Finish To Medium Boring	PS	T9125	TO-6865288	\$11.88	\$8.71

VBMT INSERTS FOR STAINLESS STEELS

35° Diamond, 5° Relief Angle

Buy In Box Quantities & Save!



VBMT 3 3 1

I.C. size (A) Thickness (T) Radius (R) Chipbreaker

ANSI	ISO	IC (Inch)	T (Inch)	R (Inch)	Cutting Conditions	Operation/ Application	Chip Breaker	Grade	Part Number	Price 1-9 Pcs	Box Price
VBMT220	VBMT110302	1/4	1/8	0.004	Cont	Finish To Medium Boring	PS	AT9530	TO-6998395	\$16.65	\$12.21
VBMT221	VBMT110304	1/4	1/8	0.016	Cont	Finish To Medium Boring	PS	AT9530	TO-6998396	\$16.65	\$12.21
VBMT222	VBMT110308	1/4	1/8	0.031	Cont	Finish To Medium Boring	PS	AT9530	TO-6998397	\$16.65	\$12.21
VBMT331	VBMT160404	3/8	3/16	0.016	Cont	Finish To Medium Boring	PS	AT9530	TO-6998399	\$21.42	\$15.71
VBMT332	VBMT160408	3/8	3/16	0.031	Cont	Finish To Medium Boring	PS	AT9530	TO-6998400	\$21.42	\$15.71

Call Us Today For All Of Your Machine Tool Needs!

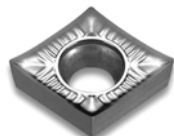
KORLOY INSERTS For Machining Aluminum



- Grade H01-Uncoated grade for aluminum
- Sharp positive HA chipbreaker is ideal for aluminum
- For continuous non ferrous turning



Designation METRIC	Designation INCH	I.C	Thickness	Radius	Part Number	Price Each
CNMG Inserts with HA Chipbreaker Grade H01						
CNMG120404	CNMG431	1/2	3/16	0.016 (1/64)	KOY-2144	\$6.29
CNMG120408	CNMG432	1/2	3/16	0.031 (1/32)	KOY-2145	\$6.29
DNMG Inserts with HA Chipbreaker Grade H01						
DNMG150404	DNMG431	1/2	3/16	0.016 (1/64)	KOY-2141	\$7.66
DNMG150408	DNMG432	1/2	3/16	0.031 (1/32)	KOY-2146	\$7.66
VNMG Inserts with HA Chipbreaker Grade H01						
VNMG160404	VNMG331	3/8	3/16	0.016 (1/64)	KOY-2142	\$7.92
VNMG160408	VNMG332	3/8	3/16	0.031 (1/32)	KOY-2149	\$7.92
WNMG Inserts with HA Chipbreaker Grade H01						
WNMG080404	WNMG431	1/2	3/16	0.016 (1/64)	KOY-2143	\$6.07
WNMG080408	WNMG432	1/2	3/16	0.031 (1/32)	KOY-2147	\$6.07



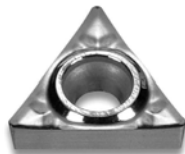
CCGT



DCGT



SCGT



TCGT



VCGT

IC	Thickness	Radius	Grade	Description	Part Number	Price Each
CCGT Inserts						
1/4	3/32	0.008 1/64	H01	CCGT 21.50.5 AK H01	KOY-1024	\$7.87
			H01	CCGT 21.51 AK H01	KOY-1026	\$7.87
3/8	5/32	0.008 1/64 1/32	H01	CCGT 32.50.5 AK H01	KOY-1028	\$9.22
			H01	CCGT 32.51 AK H01	KOY-1030	\$9.22
			H01	CCGT 32.52 AK H01	KOY-1032	\$9.22
			H01	CCGT 431 AK H01	KOY-1034	\$10.68
1/2	3/16	1/64 1/32	H01	CCGT 432 AK H01	KOY-1036	\$10.68
			H01	CCGT 432 AK H01	KOY-1036	\$10.68
DCGT Inserts						
1/4	3/32	0.008 1/64	H01	DCGT 21.50.5 AK H01	KOY-1199	\$7.87
			H01	DCGT 21.51 AK H01	KOY-1201	\$7.87
3/8	5/32	0.008 1/64 1/32	H01	DCGT 32.50.5 AK H01	KOY-1203	\$9.22
			H01	DCGT 32.51 AK H01	KOY-1205	\$9.22
			H01	DCGT 32.52 AK H01	KOY-1207	\$9.22
			H01	DCGT 32.52 AK H01	KOY-1207	\$9.22
SCGT Inserts						
3/8	5/32	0.008 1/64 1/32	H01	SCGT 32.50.5 AK H01	KOY-1304	\$9.62
			H01	SCGT 32.51 AK H01	KOY-1305	\$9.62
			H01	SCGT 32.52 AK H01	KOY-1307	\$9.62
1/2	3/16	1/64 1/32	H01	SCGT 431 AK H01	KOY-1308	\$10.68
			H01	SCGT 432 AK H01	KOY-1309	\$10.68
TCGT Inserts						
1/4	3/32	0.008 1/64 1/32	H01	TCGT 21.50.5 AK H01	KOY-1456	\$8.02
			H01	TCGT 21.51 AK H01	KOY-1458	\$8.02
			H01	TCGT 21.52 AK H01	KOY-1460	\$8.02
3/8	5/32	0.008 1/64 1/32	H01	TCGT 32.50.5 AK H01	KOY-1462	\$10.14
			H01	TCGT 32.51 AK H01	KOY-1464	\$10.14
			H01	TCGT 32.52 AK H01	KOY-1466	\$10.14
			H01	TCGT 32.52 AK H01	KOY-1466	\$10.14
VCGT Inserts						
1/4	1/8	0.008 1/64 1/32	H01	VCGT 220.5 AK H01	KOY-1632	\$9.67
			H01	VCGT 221 AK H01	KOY-1634	\$9.67
			H01	VCGT 222 AK H01	KOY-1636	\$9.67
3/8	3/16	0.008 1/64 1/32	H01	VCGT 330.5 AK H01	KOY-1638	\$11.04
			H01	VCGT 331 AK H01	KOY-1640	\$11.04
			H01	VCGT 332 AK H01	KOY-1642	\$11.04
			H01	VCGT 332 AK H01	KOY-1642	\$11.04

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS
VISE JAWS
VISE ACCESSORIES
STRAIGHT SHANK
COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

TOOL BITS/CUT-OFF BLADES

B

SQUARE TOOL BITS High Speed Steel or Cobalt

BEST VALUE



- Applications:**
- **HSS** is ideal for mild steel, alloys and tool steels-makes a superior finishing tool
 - **COBALT** performs well where high heat is present-used for heavy cuts in hard materials

REGULAR LENGTH

Square Size	OAL	HSS		M42 8% Cobalt	
		Part Number	Price Each	Part Number	Price Each
1/8	2-1/2"	A-2000-0001	\$1.15	A-2000-0041	\$2.97
3/16	2-1/2"	A-2000-0002	\$1.15	A-2000-0042	\$2.97
1/4	2-1/2"	A-2000-0003	\$1.68	A-2000-0043	\$3.14
5/16	2-1/2"	A-2000-0004	\$2.17	A-2000-0044	\$4.40
3/8	3"	A-2000-0005	\$3.66	A-2000-0045	\$7.66
7/16	3-1/2"	A-2000-0006	\$5.21	A-2000-0046	\$9.90
1/2	4"	A-2000-0007	\$7.10	A-2000-0047	\$14.85
5/8	4-1/2"	A-2000-0008	\$11.98	A-2000-0048	\$24.22
3/4	5"	A-2000-0009	\$19.50	A-2000-0049	\$37.13
1"	7"	A-2000-0011	\$42.24	A-2000-0051	\$90.28

EXTRA LONG LENGTH

Square Size	OAL	HSS		M35 5% COBALT	
		Part Number	Price Each	Part Number	Price Each
1/4	4"	A-2000-0071	\$1.90	A-2000-0020	\$3.50
1/4	6"	A-2000-0072	\$3.40	A-2000-0021	\$6.20
1/4	8"	A-2000-0073	\$4.50	A-2000-0022	\$8.68
5/16	6"	A-2000-0075	\$4.49	A-2000-0025	\$7.59
3/8	4"	A-2000-0077	\$4.65	A-2000-0027	\$7.92
3/8	6"	A-2000-0078	\$6.47	A-2000-0028	\$8.97
3/8	8"	A-2000-0079	\$8.80	A-2000-0029	\$15.31
1/2	6"	A-2000-0083	\$10.30	A-2000-0060	\$20.43

ROUND TOOL BITS High Speed Steel

BEST VALUE



Size	Part Number	Price Each
1/8 x 2-3/4"	A-2000-0331	\$1.19
3/16 x 3-1/2"	A-2000-0353	\$1.39
1/4 x 4"	A-2000-0377	\$1.99
3/8 x 5"	A-2000-0385	\$3.30
1/2 x 6"	A-2000-0389	\$9.99

RECTANGULAR TOOL BITS High Speed Steel

BEST VALUE



- Applications:**
- **HSS** is ideal for mild steel, alloys and tool steels-makes a superior finishing tool

Size H x W	OAL	Part Number	Price Each
1/4 x 3/8	3"	A-2000-0203	\$2.63
1/4 x 1/2	4"	A-2000-0220	\$4.19
1/4 x 3/4	5"	A-2000-0235	\$8.37
3/8 x 3/4	5"	A-2000-0248	\$10.26
3/8 x 1-1/4	6"	A-2000-0252	\$20.90
1/2 x 3/4	5"	A-2000-0257	\$12.06
1/2 x 1-1/2	7"	A-2000-0261	\$41.00
5/8 x 1-1/2	7"	A-2000-0270	\$42.50
3/4 x 1-1/2	7"	A-2000-0276	\$45.09

CUT-OFF BLADES

MICRO 100

Carbide Tipped

- Double ended for double performance
- Hardened and precision ground steel blades
- Tips are hollow ground all over for longer tool life
- "T" styled over entire blade length to fit all "T" type holders
- Also available with V-groove



B

Width	Height	OAL	Standard		With V-Groove	
			Part Number	Price Each	Part Number	Price Each
1/16"	1/2"	4-1/2"	MI-T100	\$47.90	MI-T100V	\$53.92
5/64"			MI-T101	\$47.90	MI-T101V	\$53.92
3/32"			MI-T102	\$46.10	MI-T102V	\$52.70
1/8"			MI-T103	\$46.10	MI-T103V	\$52.70
3/32"	11/16"	5"	MI-T104	\$51.45	MI-T104V	\$57.06
1/8"			MI-T105			
5/32"			MI-T106			
3/16"			MI-T107			
1/8"	3/4"	5"	MI-T108	\$55.65	MI-T108V	\$59.22
5/32"			MI-T109			
3/16"			MI-T110			
1/8"	7/8"	6"	MI-T111	\$55.65	MI-T111V	\$61.28
5/32"			MI-T112			
3/16"			MI-T113			

FLYCUTTER HEADS

- Vibra-core design with 1/2 tool bit capacity
- Uses larger 1/2 and 3/8 tool bits for larger cuts
- Larger 1/4- 20 set screws
- Heat treated and balanced
- Sizes available: 1-1/2", 2" and 2-1/2" diameter



MADE IN THE
USA

SIERRA AMERICAN
MULTI-SYSTEMS

Size	Part Number	Price
1-1/2"	SIE-FC-1.5	\$36.58
2"	SIE-FC-2.0	\$41.20
2-1/2"	SIE-FC-2.5	\$44.46
Set	SIE-FC-3S	\$114.39

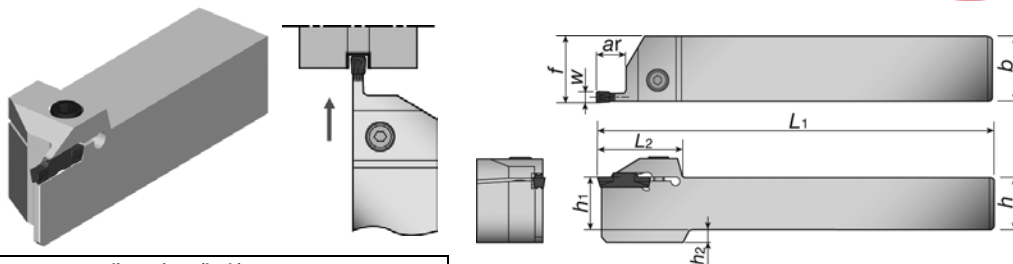
Call Us Today For All Of Your Machine Tool Needs!

EXTERNAL GROOVING TOOLHOLDERS



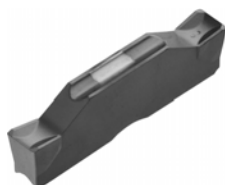
Mono Block Type

- Mono block style toolholder offers high rigidity
- Multi-functional! Groove and turn with the same holder
- Available in right and left hand (right hand shown)
- When depth is deeper than insert length, 1 corner type is recommended



Tungaloy Ref #	Max Groove Depth (ar)	dimensions (Inch)								Insert Seat Size	RIGHT HAND Part Number	LEFT HAND Part Number	Price Each	Clamping Screw
		h1	b	h	L1	f(2)	W	h2	L2					
CTER/L10-2T08	0.315	0.625	0.625	0.625	4.50	0.629	0.079	0.157	1.299	2	TO-6880617	TO-6880618	\$122.00	
CTER/L12-2T08	0.315	0.750	0.750	0.750	5.00	0.754	0.079	-	1.299	2	TO-6880619	TO-6880620	\$137.80	CM5x0.8x20-A
CTER/L16-2T08	0.315	1.000	1.000	1.000	6.00	1.004	0.079	-	1.299	2	TO-6880621	TO-6880622	\$144.00	CM5x0.8x25-A
CTER/L10-2T12	0.472	0.625	0.625	0.625	4.50	0.629	0.079	0.157	1.260	2	TO-6880623	TO-6880624	\$122.00	CM5x0.8x16-A
CTER/L12-2T12	0.472	0.750	0.750	0.750	5.00	0.754	0.079	-	1.260	2	TO-6880625	TO-6880626	\$137.80	CM5x0.8x20-A
CTER/L16-2T12	0.472	1.000	1.000	1.000	6.00	1.004	0.079	-	1.260	2	TO-6880627	TO-6880628	\$146.30	CM5x0.8x25-A
CTER/L10-2T17	0.669	0.625	0.625	0.625	4.50	0.629	0.079	0.157	1.457	2	TO-6880629	TO-6880630	\$126.80	CM5x0.8x16-A
CTER/L12-2T17	0.669	0.750	0.750	0.750	5.00	0.774	0.079	-	1.457	2	TO-6880631	TO-6880632	\$144.00	CM5x0.8x20-A
CTER/L16-2T17	0.669	1.000	1.000	1.000	6.00	1.024	0.079	-	1.457	2	TO-6880633	TO-6880634	\$152.40	CM5x0.8x25-A
CTER/L10-3T09	0.354	0.625	0.625	0.625	4.50	0.637	0.118	0.157	1.260	3	TO-6880635	TO-6880636	\$122.00	CM5x0.8x16-A
CTER/L12-3T09	0.354	0.750	0.750	0.750	5.00	0.762	0.118	-	1.260	3	TO-6880637	TO-6880638	\$137.80	CM5x0.8x20-A
CTER/L16-3T09	0.354	1.000	1.000	1.000	6.00	1.012	0.118	-	1.260	3	TO-6880639	TO-6880640	\$146.30	CM5x0.8x25-A
CTER/L10-3T20	0.787	0.625	0.625	0.625	4.50	0.637	0.118	0.157	1.516	3	TO-6880641	TO-6880642	\$126.80	CM5x0.8x16-A
CTER/L12-3T20	0.787	0.750	0.750	0.750	5.00	0.762	0.118	-	1.516	3	TO-6880643	TO-6880644	\$144.00	CM5x0.8x20-A
CTER/L16-3T20	0.787	1.000	1.000	1.000	6.00	1.012	0.118	-	1.516	3	TO-6880645	TO-6880646	\$152.40	CM5x0.8x25-A
CTER/L16-3T25	0.984	1.000	1.000	1.000	6.00	1.012	0.118	-	1.752	3	TO-6880647	TO-6880648	\$152.40	CM5x0.8x25-A
CTER/L10-4T10	0.394	0.625	0.625	0.625	4.50	0.645	0.157	0.157	1.260	4	TO-6880649	TO-6880650	\$122.00	CM6x1x16-A
CTER/L12-4T10	0.394	0.750	0.750	0.750	5.00	0.770	0.157	-	1.260	4	TO-6880651	TO-6880652	\$137.80	CM6x1x20-A
CTER/L16-4T10	0.394	1.000	1.000	1.000	6.00	1.020	0.157	-	1.260	4	TO-6880653	TO-6880654	\$146.30	CM6x1x25-A
CTER/L10-4T25	0.984	0.625	0.625	0.625	4.50	0.645	0.157	0.157	1.772	4	TO-6880655	TO-6880656	\$126.80	CM6x1x16-A
CTER/L12-4T25	0.984	0.750	0.750	0.750	5.00	0.770	0.157	-	1.772	4	TO-6880657	TO-6880658	\$144.00	CM6x1x20-A
CTER/L16-4T25	0.984	1.000	1.000	1.000	6.00	1.020	0.157	-	1.772	4	TO-6880659	TO-6880660	\$152.40	CM6x1x25-A
CTER/L20-4T25	0.984	1.250	1.250	1.250	7.00	1.270	0.157	-	1.772	4	TO-6880661	TO-6880662	\$167.70	CM6x1x25-A

EXTERNAL GROOVING & PART-OFF INSERTS



DGM Type: External grooving & parting off, 2 corner

SGM Type: External deep grooving and parting off, 1 corner

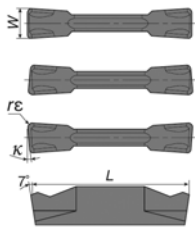


• Please match "Insert Seat Size" from the table above to select the proper insert

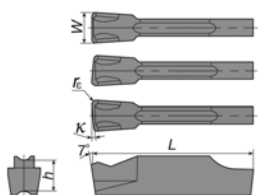
• **Grade AH725** is ideal for steels, stainless steels and titanium alloys. An all-around grade for most materials.

• **Grade GH130** is suited for steels, stainless, cast irons and titanium alloys. Best used for interrupted or tough cutting.

L=0.787
h=0.197



DGM Type



SGM Type

Insert Seat Size	W +-.002	re	k	Grade AH725		Grade GH130		Price Each	Box Price (10)	Tungaloy Ref #
				RIGHT HAND Part Number	LEFT HAND Part Number	RIGHT HAND Part Number	LEFT HAND Part Number			
2	0.079	0.008	-	TO-6860478	TO-6860478	TO-6860385	TO-6860385	\$25.20	\$21.42	DGM2-020
	0.079	0.008	6°	TO-6860332	TO-6860549	TO-6860386	TO-6860435	\$25.20	\$21.42	DGM2-020-6R/L
	0.079	0.008	8°	TO-6860733	TO-6860333	TO-6860281	TO-6860591	\$25.20	\$21.42	DGM2-020-8R/L
	0.079	0.008	15°	TO-6860434	TO-6860479	TO-6860548	TO-6860732	\$25.20	\$21.42	DGM2-020-15R/L
	0.079	0.0008	15°	TO-6861530	TO-6861582	TO-6861516	TO-6861515	\$26.40	\$22.44	DGM2-002-15R/L
3	0.118	0.008	-	TO-6860388	TO-6860388	TO-6860436	TO-6860436	\$25.20	\$21.42	DGM3-020
	0.118	0.008	6°	TO-6860389	TO-6860594	TO-6860335	TO-6860334	\$25.20	\$21.42	DGM3-020-6R/L
	0.118	0.0008	6°	TO-6860592	TO-6860387	TO-6860481	TO-6860480	\$26.40	\$22.44	DGM3-002-6R/L
4	0.157	0.008	15°	TO-6860551	TO-6860437	TO-6860593	TO-6860550	\$25.20	\$21.42	DGM3-020-15R/L
	0.157	0.012	-	TO-6860438	TO-6860438	TO-6860552	TO-6860552	\$27.20	\$23.12	DGM4-030
	0.157	0.012	4°	TO-6860391	TO-6860595	TO-6860338	TO-6860337	\$27.20	\$23.12	DGM4-030-4R/L
2	0.079	0.012	15°	TO-6860336	TO-6860553	TO-6860390	TO-6860439	\$27.20	\$23.12	DGM4-030-15R/L
	0.079	0.008	-	TO-6860411	TO-6860411	TO-6860502	TO-6860502	\$14.40	\$12.24	SGM2-020
	0.079	0.008	6°	TO-6860305	TO-6860503	TO-6860755	TO-6860615	\$14.40	\$12.24	SGM2-020-6R/L
3	0.118	0.008	-	TO-6860306	TO-6860306	TO-6860756	TO-6860756	\$15.00	\$12.75	SGM3-020
	0.118	0.008	6°	TO-6860574	TO-6860461	TO-6860617	TO-6860573	\$15.00	\$12.75	SGM3-020-6R/L
	0.118	0.008	15°	TO-6860616	TO-6860412	TO-6860362	TO-6860361	\$15.00	\$12.75	SGM3-020-15R/L
4	0.157	0.012	-	TO-6860363	TO-6860363	TO-6860413	TO-6860413	\$16.00	\$13.60	SGM4-030
	0.157	0.012	4°	TO-6860757	TO-6860364	TO-6860308	TO-6860307	\$16.00	\$13.60	SGM4-030-4R/L

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

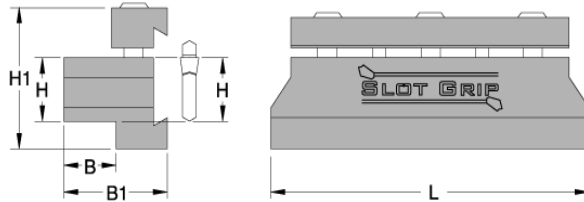
PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

TOOL BLOCKS FOR PART-OFF BLADES

CUT-OFF TOOL BLOCKS

Slot Grip block toolholders are designed to hold Slot Grip and competitive cut-off blades firm and secure using a wedge locking system. Center height of the cutting edge and shank height are equal to allow easy set-up. Block toolholders are available in a wide range of sizes and are available in either a two piece design for versatility or one piece design for economy.



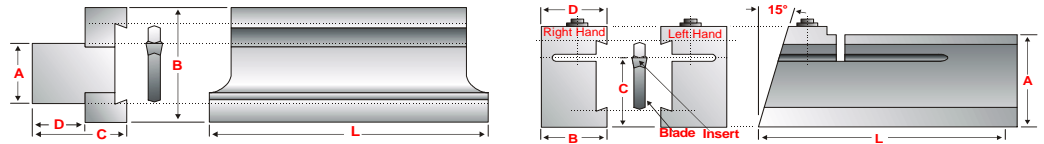
- For manual lathes
- For CNC turning centers
- Wedge locking system



Blade and Inserts Sold Separately

Description	H	H1	B	B1	L	Part Number	Price	Blade Used	Screw Used
SGTBN12,7-2	0.500	1.375	0.500	1.000	3.00	DN62970	\$145.45	_GIH19-2	A40467 10-24 x 1.0
SGTBN16-2	0.625	1.375	0.625	1.000	3.00	DN62971	\$145.45		
SGTBN16-5	0.625	1.750	0.625	1.250	3.50	DN62972	\$145.45	_GIH26-2	A40468
SGTBN19-5	0.750	2.000	0.750	1.375	3.50	DN62973	\$150.62	Thru SGIH26-6	1/4-20 x 1-1/4
SGTBN19-6	0.750	2.000	0.750	1.375	4.50	DN62974	\$153.26		
SGTBN25,4-6	1.000	2.125	0.875	1.500	4.50	DN62975	\$155.18	_GIH32-3	A40469
SGTBN31,8-6	1.250	2.375	1.125	1.750	4.50	DN62976	\$162.20	Thru SGIH32-9	1/4-20 x 1-1/2
SGTBN38,1-6	1.500	2.875	1.625	2.250	4.50	DN62977	\$217.56		

CUT-OFF TOOL BLOCKS



- Compatible with blades from Dorian, Ceratizit and other industry standard _GIH type blades
- Please see following page for inserts

NGTBN

A	B	C	D	L	Use Blade	Brand	Part Number	Price Each
5/8"	1-1/2"	1-5/16"	5/8"	3-7/16"	_GIH 26-2,3,4,5,6	CERATIZIT	NGTBN-16-5	\$110.98
3/4"	1-1/2"	1-7/16"	3/4"	3-7/16"	_GIH 26-2,3,4,5,6	USST	UGTBN-19-5	\$48.00
1"	1-7/8"	1-15/32"	25/32"	4-5/16"	_GIH 32-3,4,5,6	USST	UGTBN-25-6	\$62.00
1-1/4"	1-7/8"	1-13/16"	1-1/8"	4-5/16"	_GIH 32-3,4,5,6,R/L-9	CERATIZIT	NGTBN-32-6	\$141.02
1-1/2"	1-7/8"	2-27/64"	1-5/8"	4-5/16"	_GIH 32-9	CERATIZIT	NGTBN-38-6	\$148.44

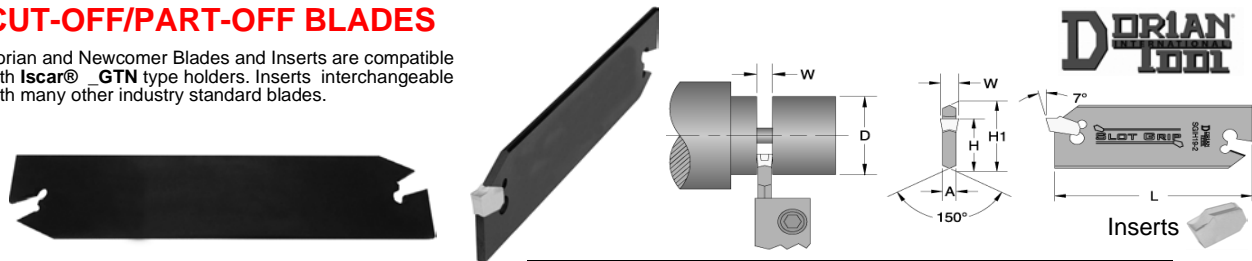


NGTBR/L

A	B	C	D	L	Use Blade	Right or Left	Brand	Part Number	Price Each
1"	3/4"	3/4"	43/64"	3-7/16"	_GIH 19-2	Right Left	CERATIZIT CERATIZIT	NGTBR-19-2 NGTBL-19-2	\$139.23 \$139.23
1-1/4"	25/32"	1"	19/32"	4-3/4"	_GIH 26-2,3,4,5,6	Right Left	CERATIZIT CERATIZIT	NGTBR-25-6 NGTBL-25-6	\$182.86 \$182.86

CUT-OFF/PART-OFF BLADES

Dorian and Newcomer Blades and Inserts are compatible with Iscar® _GTN type holders. Inserts interchangeable with many other industry standard blades.



Industry Reference #	W Inch	W mm	A	L	H	DORIAN			CERATIZIT			Insert Reference #
						Max Work Dia	Positive Stop Part Number	Price Each	Max Work Dia	Positive Stop Part Number	Price Each	
_GIH19-2	0.087	2	0.063	3.38	0.618	1.57"	DN62950	\$61.19	1.5"	NGIH-19-2-PS	\$105.80	_GT(NR/L)-2
_GIH26-2	0.087	2	0.063	4.33	0.842	2.00"	DN62951	\$72.89	3.0"	NGIH-26-2-PS	\$101.26	_GT(NR/L)-2
_GIH26-3	0.122	3	0.094	4.33	0.842	3.00"	DN62952	\$72.89	3.0"	NGIH-26-3-PS	\$74.60	_GT(NR/L)-3
_GIH26-4	0.161	4	0.125	4.33	0.842	3.15"	DN62953	\$72.89	3.0"	NGIH-26-4-PS	\$102.28	_GT(NR/L)-4
_GIH26-5	0.201	5	0.156	4.33	0.842	3.15"	DN62954	\$72.89	3.0"	NGIH-26-5-PS	\$87.18	_GT(NR/L)-5
_GIH26-6	0.252	6	0.203	4.33	0.842	3.15"	DN62955	\$72.89	3.0"	NGIH-26-6-PS	\$66.96	_GT(NR/L)-6
_GIH32-3	0.122	3	0.094	5.90	0.984	3.94"	DN62956	\$84.31	4.0"	NGIH-32-3-PS	\$82.99	_GT(NR/L)-3
_GIH32-4	0.161	4	0.125	5.90	0.984	3.94"	DN62957	\$84.31	4.0"	NGIH-32-4-PS	\$95.68	_GT(NR/L)-4
_GIH32-5	0.201	5	0.156	5.90	0.984	4.71"	DN62958	\$84.31	5.0"	NGIH-32-5-PS	\$109.08	_GT(NR/L)-5
_GIH32-6	0.252	6	0.203	5.90	0.984	4.72"	DN62959	\$84.31	5.0"	NGIH-32-6-PS	\$107.75	_GT(NR/L)-6
_GIH32-8	0.315	8	0.268	5.90	0.984	5.51"	DN62960	\$124.93	5.0"	NGIH-32-8-PS	\$96.42	_GT(NR/L)-8
_GIH32-9	0.378	9	0.312	5.90	0.984	5.51"	DN62961	\$124.93	5.0"	NGIH-32-9-PS	\$99.27	_GT(NR/L)-9

Call Us Today For All Of Your Machine Tool Needs!

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

CUT-OFF INSERTS



Insert Ref#	Insert Size	W width ±.004"	W width mm.	L Lead Angle	Newcomer Inserts					Dorian Tools Inserts						
					UnCoated C2	Price each	Uncoated C5	Price each	Coated C5	Price each	Uncoated C2	Price each	Uncoated C5	Price each	Coated C5-C6	Price each
_GTN-2	2	0.087	2mm	0°	CI-201	\$5.67	CI-301	\$6.24	CI-401	\$8.09	DN82220	\$7.03	DN82221	\$7.03	DN82222	\$9.59
_GTR-2-8	2	0.087	2mm	8°	-	-	CI-304	\$7.20	-	-	DN82248	\$7.03	DN82249	\$7.03	DN82250	\$9.59
_GTL-2-8	2	0.087	2mm	8°	CI-205	\$6.53	CI-305	\$7.20	CI-405	\$8.90	DN82276	\$7.03	DN82277	\$7.03	DN82278	\$9.59
_GTN-2.4	2	0.093	2mm	0°	CI-208	\$5.67	CI-308	\$6.24	CI-408	\$8.09	-	-	-	-	-	-
_GTR-2.4-8	2	0.093	2mm	8°	CI-211	\$6.53	CI-311	\$7.20	CI-411	\$8.90	-	-	-	-	-	-
_GTL-2.4-8	2	0.093	2mm	8°	CI-212	\$6.53	CI-312	\$7.20	CI-412	\$8.90	-	-	-	-	-	-
_GTN-3	3	0.12	3mm	0°	CI-215	\$5.67	CI-315	\$6.24	CI-415	\$8.09	DN82224	\$7.03	DN82225	\$7.03	DN82226	\$9.59
_GTR-3-8	3	0.12	3mm	8°	CI-218	\$6.53	-	-	-	-	DN82252	\$7.03	DN82253	\$7.03	DN82254	\$9.59
_GTL-3-8	3	0.12	3mm	8°	-	-	CI-319	\$7.20	-	-	DN82280	\$7.03	DN82281	\$7.03	DN82282	\$9.59
_GTN-4	4	0.16	4mm	0°	CI-222	\$6.77	CI-322	\$7.47	CI-422	\$9.18	DN82228	\$7.74	DN82229	\$7.74	DN82230	\$9.90
_GTR-4-8	4	0.16	4mm	8°	CI-225	\$7.59	CI-325	\$8.36	-	-	DN82256	\$7.74	DN82257	\$7.74	DN82258	\$9.90
_GTL-4-8	4	0.16	4mm	8°	CI-226	\$7.59	CI-326	\$8.36	CI-426	\$10.19	DN82284	\$7.74	DN82285	\$7.74	DN82286	\$9.90
_GTN-4.8	4	0.187	4mm	0°	CI-229	\$7.59	CI-329	\$8.31	CI-429	\$9.72	-	-	-	-	-	-
_GTR-4.8-8	4	0.187	4mm	8°	CI-232	\$8.29	CI-332	\$9.13	CI-432	\$10.59	-	-	-	-	-	-
_GTL-4.8-8	4	0.187	4mm	8°	CI-233	\$8.29	CI-333	\$9.13	CI-433	\$10.59	-	-	-	-	-	-
_GTN-5	5	0.2	5mm	0°	CI-238	\$8.29	CI-338	\$8.31	CI-438	\$9.72	DN82232	\$8.47	DN82233	\$8.47	DN82234	\$9.91
_GTR-5-8	5	0.2	5mm	8°	CI-239	\$8.29	CI-339	\$9.13	CI-439	\$10.59	DN82260	\$8.47	DN82261	\$8.47	DN82262	\$9.91
_GTL-5-8	5	0.2	5mm	8°	CI-240	\$8.29	CI-340	\$9.13	CI-440	\$10.59	DN82288	\$8.47	DN82289	\$8.47	DN82290	\$9.91
_GTN-6	6	0.25	6mm	0°	CI-243	\$8.65	CI-343	\$9.53	CI-443	\$11.20	DN82236	\$9.34	DN82237	\$9.34	DN82238	\$12.54
_GTR-6-8	6	0.25	6mm	8°	CI-246	\$9.44	CI-346	\$10.41	CI-446	\$12.07	DN82264	\$9.34	DN82265	\$9.34	DN82266	\$12.54
_GTL-6-8	6	0.25	6mm	8°	CI-247	\$9.44	CI-347	\$10.41	CI-447	\$12.07	DN82292	\$9.34	DN82293	\$9.34	DN82294	\$12.54
_GTN-8	8	0.315	8mm	0°	CI-250	\$12.36	CI-350	\$13.60	CI-450	\$15.71	DN82240	\$14.67	DN82241	\$14.67	DN82242	\$18.57
_GTR-8-4	8	0.315	8mm	4°	CI-251	\$13.21	CI-351	\$14.54	CI-451	\$16.59	DN82268	\$14.67	DN82269	\$14.67	DN82270	\$18.57
_GTL-8-4	8	0.315	8mm	4°	CI-252	\$13.21	CI-352	\$14.54	CI-452	\$16.59	DN82296	\$14.67	DN82297	\$14.67	DN82298	\$18.57
_GTN-9	9	0.375	9mm	0°	CI-257	\$16.15	CI-357	\$17.79	CI-457	\$20.20	DN82244	\$16.68	DN82245	\$16.68	DN82246	\$19.24
_GTR-9-4	9	0.375	9mm	4°	CI-258	\$16.99	CI-358	\$18.74	CI-458	\$21.12	DN82272	\$16.68	DN82273	\$16.68	DN82274	\$19.24
_GTL-9-4	9	0.375	9mm	4°	CI-259	\$16.99	CI-359	\$18.69	CI-459	\$21.12	DN82300	\$16.68	DN82301	\$16.68	DN82302	\$19.24

CUT-OFF TOOL KITS

Each kit consists of a tool block, a blade and 10 N52 or PV52 carbide inserts. A New-Grip wrench is also included for removing inserts from the blade and an Allen wrench for positioning and removing the blade from the block.



B



#2 New-Grip Starter Kit

- 1 ea NGTBN-16-5 (5/8") Block
- 1 ea NGIH-26-2 Blade
- 10 ea NGTN-2-N52 Inserts
- 1ea New-Grip Wrench
- 1 ea Allen Wrench

Part # NEW-KIT2
\$300.76

#4 New-Grip Starter Kit

- 1 ea NGTBN-16-5 (5/8") Block
- 1 ea NGIH-26-3-PS Blade
- 10 ea NGTN-3-PV52 Inserts
- 1ea New-Grip Wrench
- 1 ea Allen Wrench

Part # NEW-KIT4
\$330.26

#3 New-Grip Starter Kit

- 1 ea NGTBN-19-5 (3/4") Block
- 1 ea NGIH-26-3 Blade
- 10 ea NGTN-3-N52 Inserts
- 1ea New-Grip Wrench
- 1 ea Allen Wrench

Part # NEW-KIT3
\$282.63

#5 New-Grip Starter Kit

- 1 ea NGTBN-25-6 (1") Block
- 1 ea NGIH-32-3-PS Blade
- 10 ea NGTN-3-PV52 Inserts
- 1ea New-Grip Wrench
- 1 ea Allen Wrench

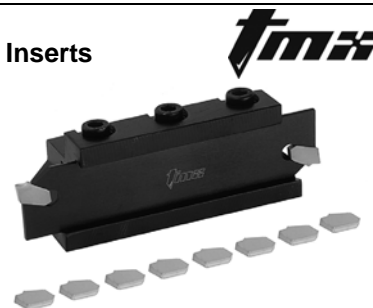
Part # NEW-KIT5
\$346.97

PART-OFF TOOL SETS

Includes Tool Block, Blade & Inserts



- Buy the kit and save time and money!
- Compatible with industry standard brands
- Sets include tool block, part off blade and (10) CVD coated general purpose carbide inserts, suitable for steels/stainless with 0° lead angle



BLADE & (10) INSERTS SET

Blade Size	Blade Reference #	Insert Size	Insert Width	Blade + Inserts Set Part Number	Set Price
1.02" 26mm	26-2	GTN-2	0.087	BI-6895-722	\$106.92
	26-3	GTN-3	0.122	BI-6895-723	\$106.92
1.26" 32mm	32-4	GTN-4	0.161	BI-6895-734	\$116.33
	32-5	GTN-5	0.201	BI-6895-735	\$123.26

TOOL BLOCK, BLADE & (10) INSERTS SET

Blade Size	Blade Reference #	Insert Size	Block Reference #	Complete Set Part Number	Set Price
1.02" 26mm	26-3	GTN-3	19-5 3/4" shank	BI-6895-903	\$185.63
	26-4	GTN-4		BI-6895-904	\$188.10
	26-5	GTN-5		BI-6895-905	\$194.54
1.26" 32mm	32-3	GTN-3	19-6 3/4" shank	BI-6895-913	\$196.02
	32-4	GTN-4		BI-6895-914	\$198.50
1.26" 32mm	32-3	GTN-3	25-6 1" shank	BI-6895-923	\$196.02
	32-4	GTN-4		BI-6895-924	\$198.50
	32-5	GTN-5		BI-6895-925	\$205.43

Call Us Or Visit Our Website For Our Complete Selection!

MILLING CUTTERS & INSERTS

MULTI-MATERIAL GRADE CARBIDE MILLING INSERTS

One Grade Offers Outstanding Performance On All Materials

- YG-1's special coating works on any material-Always have the correct grade available and reduce machine idle time!
- Only one grade is needed for all materials, reducing inventory and costs
- YG-1 inserts offer competitive quality that can perform as good as, if not better, than dedicated insert grades of competitors
- Easier to use! Less grades means less confusion for machinists. Exact cutting data is printed on each box!
- ADKT 1505 inserts suited for Iscar® Heli-Mills
- LAMINA'S LT30 grade and YG-1's YG-602 excel in stainless steels and high temp alloys!



One Grade Does It All!

- Steel
- Stainless Steel
- Cast Iron
- Super Alloys

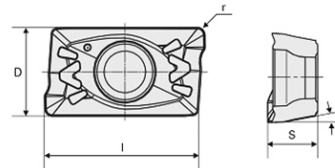
CALL FOR OUR HOT MILLING SPECIALS & QUANTITY DISCOUNTS!



APKT

SDKT

SEKN



Insert Designation	Grade	Clearance Angle	Cutting Edge Length L	Thick S	Radius	Lead Angle	Relief Angle	Geometry	Part Number	Price Each
--------------------	-------	-----------------	-----------------------	---------	--------	------------	--------------	----------	-------------	------------

ADKT__ Inserts-Right Hand Direction

ADKT1505PDTR	LT30	15°	15mm	0.22	-	90°	15°	85° Parallelogram	ADKT1505PDTR-LA	\$10.70
APKT1003PDTR	YG-602	11°	10mm	0.125	0.031	90°	15°		APKT100308PD-YG	\$10.70
APKT160404PDTR	YG-602	11°	16mm	0.187	0.016	90°	15°		APKT160404PD-YG	\$10.70
APKT1604PDTR	YG-602	11°	16mm	0.187	0.031	90°	15°		APKT1604PDTR-YG	\$10.70
APKT160412PDTR	YG-602	11°	16mm	0.187	0.047	90°	15°		APKT160412PD-YG	\$10.70
APKT160416PDTR	YG-602	11°	16mm	0.187	0.063	90°	15°		APKT160416PD-YG	\$10.70

SDKT__ Inserts-Neutral-Chamfered (0.031 Corner Edge)

SDKT1204AETN	LT30	15°	12mm	0.187	0.031 chamfer	45°	20°	Square	SDKT1204AETN-LA	\$10.70
--------------	------	-----	------	-------	---------------	-----	-----	--------	-----------------	---------

SEKN__ Inserts-Neutral-Chamfered (0.031 Corner Edge)

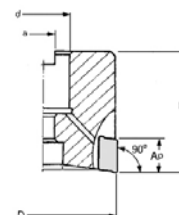
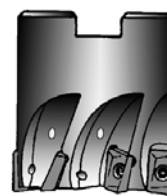
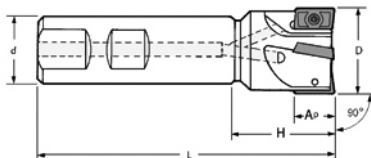
SEKN1204AFTN	LT30	20°	12mm	0.187	0.031 chamfer	45°	25°	Square	SEKN1204AFTN-LA	\$10.70
--------------	------	-----	------	-------	---------------	-----	-----	--------	-----------------	---------

Iscar® is a registered trademark of IMC Group

90° SQUARE SHOULDER MILLING CUTTERS

For Use With APKT 10 Series Inserts

CALL FOR OUR HOT MILLING SPECIALS!



END MILLS

Dia D	Shank Dia d	OAL L	Flute Length H	No. of Flutes	AP	Part Number	Price Each	Insert Screws \$2.50 each	Torx Wrench [C]
0.500	0.625	3.25	1.00	1	0.354	M-EAP10N-5062S1	\$106.00	M-SC-AP10-1	TX-208 \$6.50
0.625	0.625	3.25	1.00	2	0.354	M-EAP10N-6262S2	\$106.00	M-SC-AP10-1	
0.625	0.625	6.00	1.00	2	0.354	M-EAP10N-6262L2	\$118.00	M-SC-AP10-2	
0.750	0.750	3.50	1.25	3	0.354	M-EAP10N-7575S3	\$119.00	M-SC-AP10-2	
0.750	0.750	8.00	1.25	3	0.354	M-EAP10N-7575L3	\$132.00	M-SC-AP10-2	
1.000	1.000	3.50	1.25	4	0.354	M-EAP10N-1010S4	\$128.00	M-SC-AP10-2	
1.000	1.000	8.00	1.25	4	0.354	M-EAP10N-1010L4	\$134.00	M-SC-AP10-2	
1.250	1.000	3.75	1.25	5	0.354	M-EAP10N-1210S5	\$139.00	M-SC-AP10-2	
1.250	1.000	10.00	1.25	5	0.354	M-EAP10N-1210L5	\$149.00	M-SC-AP10-2	
1.500	1.250	4.00	1.25	6	0.354	M-EAP10N-1512S6	\$139.00	M-SC-AP10-2	
1.500	1.250	10.00	1.25	6	0.354	M-EAP10N-1512L6	\$145.00	M-SC-AP10-2	

SHELL MILLS

Dia. D	Arbor Hole d	Key Width a	Flute Length H	No. of flutes	AP	Part Number	Price Each	Insert Screws \$2.50 each	Torx Wrench
2.00	0.750	0.3125	1.75	7	0.354	M-SAP10N-2075-7	\$175.00	M-SC-AP10-2	TX-208

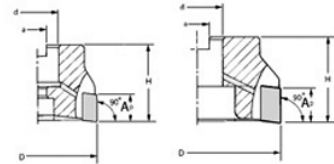
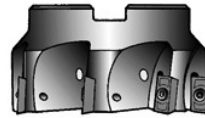
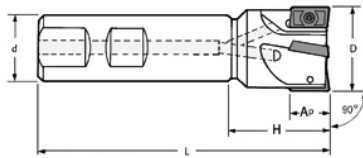
Call Us Today For All Of Your Machine Tool Needs!

MILLING CUTTERS & INSERTS

90° SQUARE SHOULDERMILLING CUTTERS

For Use With APKT 16 Series Inserts

CALL FOR OUR HOT MILLING SPECIALS!



END MILLS

Dia D	Shank d	OAL L	Flute Length H	No. of Flutes	AP	Part Number	Price Each	Insert Screws \$2.50 each	Torx Wrench [C]
1.00	1.00	3.50	1.25	2	0.59	M-EAP16N-1010S2	\$128.00	M-SC-AP16	TX-208 \$6.50
1.00	1.00	8.00	1.25	2	0.59	M-EAP16N-1010L2	\$162.00		
1.25	1.00	3.75	1.25	3	0.59	M-EAP16N-1210S3	\$139.00		
1.25	1.00	10.00	1.25	3	0.59	M-EAP16N-1210L3	\$182.00		
1.50	1.25	4.00	1.25	4	0.59	M-EAP16N-1512S4	\$139.00		
1.50	1.25	10.00	1.25	4	0.59	M-EAP16N-1512L4	\$192.00		

SHELL MILLS

Dia. D	Arbor Hole d	Key Width a	Flute Length H	No. of Flutes	AP	Part Number	Price Each	Insert Screws \$2.50 each	Torx Wrench [C]
2.00	0.750	0.3125	1.75	4	0.59	M-SAP16N-2075-4	\$195.00	M-SC-AP16	TX-208 \$6.50
2.00	0.750	0.3125	1.75	5	0.59	M-SAP16N-2075-5	\$195.00		
2.50	1.000	0.3750	2.00	5	0.59	M-SAP16N-2510-5	\$199.00		
3.00	1.000	0.3750	2.00	6	0.59	M-SAP16N-3010-6	\$310.00		
3.00	1.000	0.3750	2.00	7	0.59	M-SAP16N-3010-7	\$310.00		
4.00	1.250	0.5000	2.00	7	0.59	M-SAP16N-4012-7	\$419.00		
5.00	1.500	0.6250	2.00	8	0.59	M-SAP16N-5015-8	\$542.00		

INDEXABLE MILLING CUTTERS

FEATURES:

- Uses APKT 1003 PDR Inserts (see previous page)
- Durable and unique chrome nickel coated holder
- Positive chip control

MI-313224



MI-302424



M100 DEX MICRO 100

INDEXABLE MILLING CUTTERS

Nomenclature	Cutter Dia	Shank Dia	OAL	DOC	No. Of Flutes	Part Number	Price Each
BAAP 1216 2	3/8	1/2	3	1 1/2	1	MI-311216	\$105.75
BAAP 1616 2	1/2	1/2	3	1 1/2	1	MI-311616	\$118.15
BAAP 1816 2	5/8	1/2	3	1 1/2	2	MI-311816	\$130.60
BAAP 2424 2	3/4	3/4	4 3/8	2	3	MI-312424	\$180.30
BAAP 3224 2	1	3/4	4 3/8	2	4	MI-313224	\$192.70
BAAP 4024 2	1 1/4	3/4	4 3/8	2	5	MI-314024	\$287.15

Uses APKT 1003 PDR Inserts

INDEXABLE COOLANT-THRU MILLING CUTTERS

Nomenclature	Cutter Dia	Shank Dia	OAL	DOC	No. Of Flutes	Part Number	Price Each
AAAP 1216 2	3/8	1/2	3	1 1/2	1	MI-301216	\$130.60
AAAP 1616 2	1/2	1/2	3	1 1/2	1	MI-301616	\$142.95
AAAP 1816 2	5/8	1/2	3	1 1/2	2	MI-301816	\$156.05
AAAP 2424 2	3/4	3/4	4 3/8	2	3	MI-302424	\$183.80
AAAP 3224 2	1	3/4	4 3/8	2	4	MI-303224	\$294.60
AAAP 4024 2	1 1/4	3/4	4 3/8	2	5	MI-304024	\$315.75

Uses APKT 1003 PDR Inserts

3 PIECE COOLANT-THRU MILLING SET

Shank Dia	Cutter Dia	No. Of Flutes	Description	Part Number	Set Price
1/2	3/8	1	Set of 3 pcs. AAAP with APKT 1003 PDR Insert, Torx Screw & Torx Key	MI-603003	\$304.60
	1/2	1			
	5/8	2			

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

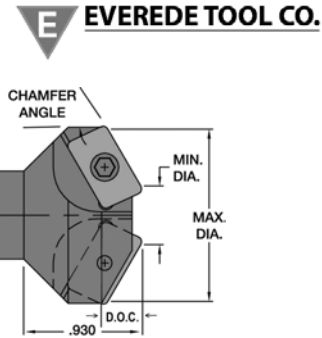
PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

MILLING CUTTERS/CHAMFER MILLS

INDEXABLE CHAMFER MILLS

- Can be used for countersinking, ID chamfering and facing, as well as exterior chamfering
- Features Weldon shank
- Metric sizes also available
- 16mm parallelogram insert provides for extra length of cut
- All holders use same insert (Insert sold separately)



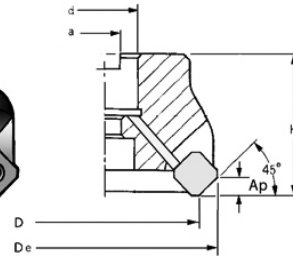
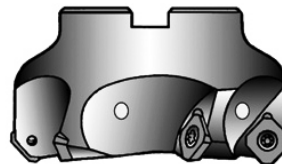
Min Dia	Max. Dia.	Weldon Shank	Chamfer Angle	Included Angle	No. of Flutes	Depth of Cut	Chamfer Mill Part Number	Price Each	Insert For Steels/Stainless	Screw	Torx Wrench
0.750	1.303	3/4	30°	60°	2	0.479	CHM-750-30-ET	\$101.05	APKT1604PDTR-YG \$10.70 EACH	19043 \$2.50 ea	19555 \$4.25 ea
0.688	1.414	3/4	41°	82°	2	0.418	CHM-688-41-ET	\$101.05			
0.688	1.471	3/4	45°	90°	2	0.391	CHM-688-45-ET	\$101.05			
0.500	1.458	3/4	60°	120°	2	0.277	CHM-500-60-ET	\$101.05			
1.000	1.553	1	30°	60°	3	0.479	CHM1000-30-ET	\$110.35			
0.938	1.664	1	41°	82°	3	0.418	CHM-938-41-ET	\$110.35			
0.938	1.721	1	45°	90°	3	0.391	CHM-938-45-ET	\$110.35			
0.750	1.708	1	60°	120°	3	0.277	CHM-750-60-ET	\$110.35			
1.250	1.803	1-1/4	30°	60°	3	0.479	CHM-1250-30-ET	\$135.10			
1.188	1.914	1-1/4	41°	82°	3	0.418	CHM-1188-41-ET	\$135.10			
1.188	1.971	1-1/4	45°	90°	3	0.391	CHM-1188-45-ET	\$135.10			
1.000	1.958	1-1/4	60°	120°	3	0.277	CHM-1000-60-ET	\$135.10			
1.500	2.053	1-1/2	30°	60°	3	0.479	CHM-1500-30-ET	\$173.20			
1.438	2.164	1-1/2	41°	82°	3	0.418	CHM-1438-41-ET	\$173.20			
1.428	2.221	1-1/2	45°	90°	3	0.391	CHM-1438-45-ET	\$173.20			
1.250	2.208	1-1/2	60°	120°	3	0.277	CHM-1250-60-ET	\$173.20			

45° LEAD HIGH POSITIVE SHELL MILLS

For Use With SDKT1204 Series Inserts



CALL FOR OUR HOT MILLING SPECIALS!



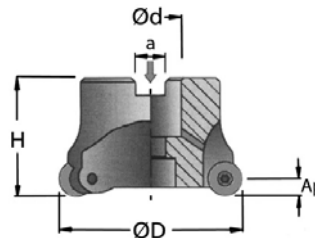
Dia D	Arbor Hole d	Key Width a	Flute Length H	No. of Flutes	AP	Part Number	Price Each	Insert Screw	Torx Wrench [C]
2.00	0.750	0.3125	1.75	4	0.236	M-SSD12F-2075-4	\$195.00	M-SC-AP16 \$2.50	TX-208 \$6.50
2.00	0.750	0.3125	1.75	5	0.236	M-SSD12F-2075-5	\$195.00		
3.00	1.000	0.3750	2	5	0.236	M-SSD12F-3010-5	\$310.00		
4.00	1.250	0.5000	2	6	0.236	M-SSD12F-4012-6	\$419.00		
5.00	1.500	0.6250	2	7	0.236	M-SSD12F-5015-7	\$542.00		

BUTTON INSERT SHELL MILLS

For Use With RDMT1204 Series Inserts



CALL FOR OUR HOT MILLING SPECIALS!



Dia D	Arbor Hole d	Key Width a	Flute Length H	No. of Flutes	AP	Part Number	Price Each	Insert Screw	Torx Wrench [C]
2.00	0.750	0.3125	1.75	4	0.236	M-SRD12-2075-4	\$174.00	M-SC-AP16 \$2.50	TX-208 \$6.50
3.00	1.000	0.375	2	6	0.236	M-SRD12-3010-6	\$310.00		
4.00	1.250	0.5	2	7	0.236	M-SRD12-4012-7	\$419.00		

Call Us Today For All Of Your Machine Tool Needs!

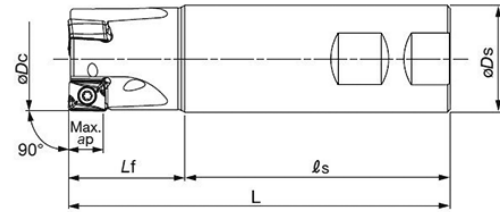
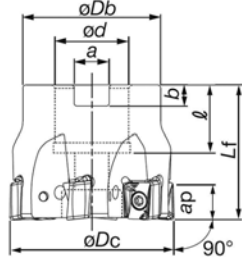
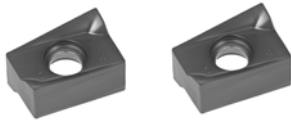
TUNGALOY® MILLING CUTTERS & INSERTS

DOREC

HIGH PERFORMANCE MILLING CUTTERS

• HIGH PRODUCTIVITY Shoulder Milling

- Highly rigid cutter body
- Ideal for general shoulder milling at high feed
- High performance levels with a diverse range of applications
- Uses double sided square insert
- Insert has high level of sharpness and incorporates effective wiper edges
- Thicker insert for rigidity
- Low cutting forces due to large rake angle
- Excellent surface finish



No of Flutes	Cutt Dia ϕDc	ϕDb	ϕd	l	L_f	b	a	Part Number	Price Each	Center Bolt	Insert Series
--------------	--------------------	-----------	----------	---	-------	---	---	-------------	------------	-------------	---------------

Shell Mills-TPQ11R & TPQ18R SERIES SQUARE SHOULDER SHELL MILLS

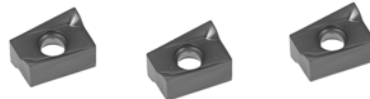
6	2.00	1.70	0.750	0.750	1.58	0.197	0.315	TO-6861287	\$500.40	C0.375x1.125H	LQMU11...
7	2.50	1.70	0.750	0.750	1.58	0.197	0.315	TO-6861294	\$595.97	C0.375 x1.125H	LQMU11...
10	3.00	1.97	1.00	1.030	1.97	0.236	0.375	TO-6861313	\$842.60	C0.500 x1.375H	LQMU11...
12	4.00	3.15	1.50	1.380	1.97	0.394	0.625	TO-6861300	\$991.07	-	LQMU11...
3	2.00	1.69	0.750	0.750	1.58	0.197	0.315	TO-6861295	\$433.00	C0.375x1.125H	LQMU18...
4	2.50	1.69	0.750	0.750	1.58	0.197	0.315	TO-6861296	\$540.60	C0.375 x1.125H	LQMU18...
5	3.00	1.97	1.00	1.030	1.97	0.236	0.375	TO-6861312	\$701.40	C0.500 x1.375H	LQMU18...
6	4.00	3.15	1.50	1.380	1.97	0.394	0.625	TO-6861306	\$839.90	-	LQMU18...
8	5.00	3.15	1.50	1.500	2.48	0.394	0.625	TO-6861284	\$1,079.70	-	LQMU18...
9	6.00	4.00	2.00	1.500	2.48	0.433	0.752	TO-6861316	\$1,350.60	-	LQMU18...

Endmills-EPQ11R SERIES SQUARE SHOULDER ENDMILLS

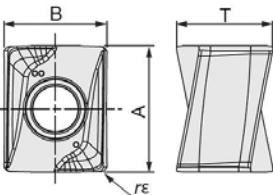
2	1.00	1.00	2.28	1.22	3.50	-	-	TO-6861292	\$317.20	-	LQMU11...
3	1.25	1.25	2.50	1.50	4.00	-	-	TO-6861317	\$377.50	-	LQMU11...
4	1.50	1.25	2.25	1.75	4.00	-	-	TO-6861305	\$411.20	-	LQMU11...

INSERTS FOR DOREC MILLING CUTTERS

- AH725 Grade:** Low & high carbon, alloy and tool steel
AH120 Grade: Grey & ductile cast iron, Superalloys
AH140 Grade: Stainless steel



DOREC



Description	Cutter Type	A	T	R	Grade AH725 Part Number	Grade AH120 Part Number	Grade AH140 Part Number	Price Each
LQMU110704PNER-MJ	EPQ11/TPQ11	0.433	0.327	0.016	TO-6861478	TO-6861234	TO-6861254	\$20.70
LQMU110708PNER-MJ		0.433	0.327	0.031	TO-6861477	TO-6861235	TO-6861242	\$20.70
LQMU110716PNER-MJ		0.433	0.327	0.063	TO-6861479	TO-6861228	TO-6861229	\$20.70
LQMU180804PNER-MJ	TPQ18	0.689	0.433	0.016	TO-6861480	TO-6861280	TO-6861263	\$24.60
LQMU180808PNER-MJ		0.689	0.433	0.031	TO-6861481	TO-6861271	TO-6861255	\$24.60
LQMU180816PNER-MJ		0.689	0.433	0.063	TO-6861524	TO-6861248	TO-6861243	\$24.60
LQMU180824PNER-MJ		0.689	0.433	0.094	TO-6861542	TO-6861249	TO-6861230	\$24.60

SPEEDS & FEEDS

Tips:

- To remove excessive chip accumulation use an air blast.
- When cutting interrupted surfaces like a casting skin, the cutting feed (fz) should be set below the values shown in the above table.
- Tool overhang should be minimized. When machining with long overhang applications the tool tends to chatter. Please reduce the feed rate fz.
- Cutting conditions limited by machine power and material rigidity. When cutting width or depth is large, set Vc and fz below the recommended values and check the machine vibration and spindle load.

Work Material	Hardness HB	Grades	Cutting Speed Vc (SFM)	Feed Per Tooth fz (ipt)
Low carbon steel (1018, 8620 etc.)	~ 200	AH725	330 - 800	.004 - .010
High carbon steel (1045, 1055 etc.)	200 - 300		330 - 750	.004 - .008
Alloyed steel (4140, 4340 etc.)	500 - 980			
Tool steel (H13, D2 etc.)	~ 300		330 - 600	
Stainless steel (304, 316 etc.)	-	AH140	300 - 600	.004 - .010
Grey cast iron (CLASS 25-40 etc.)	500 - 800	AH120	450 - 800	.004 - .010
Ductile cast iron (65-45-12 etc.)				
Heat-resisting alloy (Ti-6AL-4V, Inconel 718 etc.)	-	AH725	65 - 160	.003 - .008

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

301

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

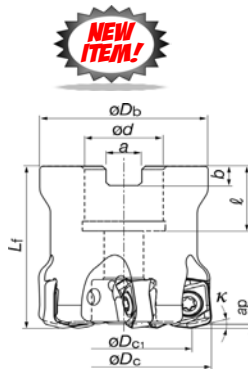
COOLANT/FLUIDS
TOOL STORAGE

TUNGALOY® MILLING CUTTERS & INSERTS

DOFEED

SUPER HIGH FEED MILLING CUTTERS

- For face milling, slotting pocketing & general shoulder milling
- Cutters feature air hole
- Highly rigid cutter body
- Ideal for general shoulder milling at high feed
- High performance levels with a diverse range of applications
- Thicker insert for rigidity
- Low cutting forces
- Excellent surface finish



TXN03R SERIES SHELL MILL STYLE

No of Flutes	ϕD_c	ϕD_{c1}	ϕD_b	ϕd	?	L_f	b	a	K°	Part Number	Price Each	Using Insert Series
COARSE PITCH												
5	1.5	1.25	1.461	0.500	0.750	1.574	0.197	0.315	17°	TO-6743508	\$441.90	LNMU03--
5	2.0	1.718	1.693	0.750	0.750	1.969	0.197	0.315	17°	TO-6715174	\$533.60	LNMU03--
CLOSE PITCH												
6	1.5	1.25	1.461	0.500	0.750	1.969	0.197	0.315	17°	TO-6736729	\$490.40	LNMU03--
8	2.0	1.718	1.693	0.750	0.750	1.969	0.197	0.315	17°	TO-6988406	\$647.30	LNMU03--
10	2.0	1.718	1.693	0.750	0.750	1.969	0.197	0.315	17°	TO-6683960	\$977.25	LNMU03--

TXN06R SERIES SHELL MILL STYLE

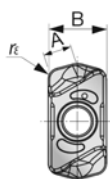
No of Flutes	ϕD_c	ϕD_{c1}	ϕD_b	ϕd	?	L_f	b	a	K°	Part Number	Price Each	Insert
COARSE PITCH												
4	2.0	1.513	1.85	0.750	0.750	1.969	0.197	0.315	15°	TO-6993972	\$480.90	LNMU06--
4	2.5	2.012	2.323	0.750	0.750	1.969	0.197	0.315	15°	TO-6705804	\$524.70	LNMU06--
5	3.0	2.512	2.835	1.00	1.024	2.48	0.236	0.374	15°	TO-6993973	\$605.20	LNMU06--
6	4.0	3.512	3.819	1.50	1.457	2.48	0.394	0.626	15°	TO-6710722	\$715.80	LNMU06--
8	5.0	4.512	3.819	1.50	1.457	2.48	0.394	0.626	15°	TO-6710723	\$960.10	LNMU06--
10	6.0	5.512	4.331	2.00	1.496	2.48	0.433	0.748	15°	TO-6710724	\$1,233.60	LNMU06--
CLOSE PITCH												
5	2.0	1.513	1.85	0.750	0.750	1.969	0.197	0.315	15°	TO-6879571	\$533.00	LNMU06--
6	2.5	2.012	2.323	0.750	0.750	1.969	0.197	0.315	15°	TO-6995674	\$635.00	LNMU06--
7	3.0	2.512	2.835	1.00	1.024	2.50	0.236	0.374	15°	TO-6879572	\$732.30	LNMU06--
10	4.0	3.512	3.819	1.50	1.457	2.48	0.394	0.626	15°	TO-6710726	\$951.20	LNMU06--
12	5.0	4.512	3.819	1.50	1.457	2.48	0.394	0.626	15°	TO-6710727	\$1,118.80	LNMU06--
14	6.0	5.512	4.331	2.00	1.496	2.48	0.433	0.748	15°	TO-6710728	\$1,485.70	LNMU06--

LNMU MILLING INSERTS

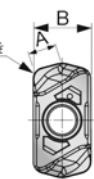


LNMU03 Type Inserts

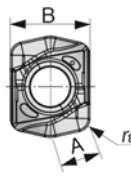
LNMU06 Type Inserts



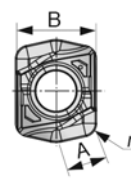
MJ (for general purpose)



ML (for low cutting force)



MJ (for general purpose)



ML (for low cutting force)

Description	A	B	T	re	Grade AH725	Grade AH130	Grade AH120	Grade AH3035	Price Each
LNMU0303ZER-MJ	0.456	0.236	0.169	0.047	TO-6864162	TO-6864164	-	TO-6707135	\$16.90
LNMU0303ZER-ML	0.456	0.236	0.169	0.047	TO-6864165	TO-6864163	-	TO-6707136	\$16.90
LNMU06X5ZER-MJ	0.591	0.472	0.276	0.079	TO-6869924	TO-6869923	TO-6881593	TO-6995912	\$20.40
LNMU06X5ZER-ML	0.591	0.472	0.276	0.079	TO-6885143	TO-6885144	TO-6881594	TO-6995913	\$20.40

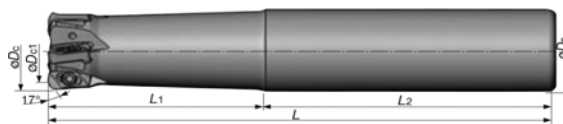
Call Us Today For All Of Your Machine Tool Needs!

SUPER HIGH FEED MILLING CUTTERS

DOFEED

SUPER HIGH FEED MILLING CUTTERS

- For face milling, slotting pocketing & general shoulder milling
- Cutters feature air hole
- Highly rigid cutter body
- Ideal for general shoulder milling at high feed
- High performance levels with a diverse range of applications
- Thicker insert for rigidity
- Low cutting forces
- Excellent surface finish



Cutter Description	No of Flutes	øDc	øDs	øDc1	L	L1	L2	Part Number	Price Each	Uses Insert Series	Clamping screw	Wrench
Coarse Pitch												
EXN03R062U0062-02	2	0.625	0.625	0.374	4.00	1.25	2.75	TO-6865490	\$185.50	LNMU 03	CSPB-2.5	IP-8D
EXN03R068U0062-02	2	0.688	0.625	0.433	4.00	1.25	2.75	TO-6865371	\$185.50		CSPB-2.5	IP-8D
EXN03R075U0075-02	2	0.750	0.750	0.496	5.00	2.00	3.00	TO-6715182	\$222.80		CSPB-2.5	IP-8D
EXN03R087U0075-02	2	0.875	0.750	0.634	5.00	2.00	3.00	TO-6715183	\$222.80		CSPB-2.5	IP-8D
EXN03R100U0100-04	4	1.000	1.000	0.756	5.50	2.50	3.00	TO-6715184	\$339.60		CSPB-2.5	IP-8D
EXN03R112U0100-04	4	1.125	1.000	0.882	5.50	2.50	3.00	TO-6715185	\$339.60		CSPB-2.5	IP-8D
EXN03R125U0125-05	5	1.250	1.250	1.010	6.00	3.00	3.00	TO-6715186	\$383.60		CSPB-2.5	IP-8D

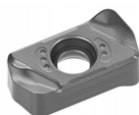
Close Pitch												
EXN03R075U0075-03	3	0.750	0.750	0.496	5.00	2.00	3.00	TO-6864898	\$247.50	LNMU 03	CSPB-2.5	IP-8D
EXN03R087U0075-03	3	0.875	0.750	0.634	5.00	2.00	3.00	TO-6864956	\$247.50		CSPB-2.5	IP-8D
EXN03R100U0100-05	5	1.000	1.000	0.756	5.50	2.50	3.00	TO-6864930	\$377.00		CSPB-2.5	IP-8D
EXN03R112U0100-05	5	1.125	1.000	0.882	5.50	2.50	3.00	TO-6865373	\$377.00		CSPB-2.5	IP-8D
EXN03R125U0125-06	6	1.250	1.250	1.010	6.00	3.00	3.00	TO-6864901	\$399.60		CSPB-2.5	IP-8D

Long												
EXN03R062U0062-02L	2	0.625	0.625	0.374	6.00	2.00	4.00	TO-6864929	\$231.10	LNMU 03	CSPB-2.5	IP-8D
EXN03R068U0062-02L	2	0.688	0.625	0.433	6.00	1.00	5.00	TO-6865372	\$231.10		CSPB-2.5	IP-8D
EXN03R075U0075-03L	3	0.750	0.750	0.496	6.50	3.50	3.00	TO-6864899	\$308.20		CSPB-2.5	IP-8D
EXN03R087U0075-03L	3	0.875	0.750	0.634	6.50	1.25	5.25	TO-6864957	\$308.20		CSPB-2.5	IP-8D
EXN03R100U0100-04L	4	1.000	1.000	0.756	7.00	4.00	3.00	TO-6864873	\$393.50		CSPB-2.5	IP-8D
EXN03R112U0100-04L	4	1.125	1.000	0.882	7.00	1.50	5.50	TO-6864874	\$399.40		CSPB-2.5	IP-8D
EXN03R125U0125-05L	5	1.250	1.250	1.010	8.00	5.00	3.00	TO-6864900	\$421.80		CSPB-2.5	IP-8D

Cutter Description	No of Flutes	øDc	øDs	øDc1	L	L1	L2	Part Number	Price Each	Uses Insert Series	Clamping screw	Wrench
Coarse Pitch												
EXN06R125U0125W02	2	1.250	1.250	0.766	5.00	3.00	2.00	TO-6879573	\$319.60	LNMU 06	CSPB-5	IP-20D
EXN06R150U0125W03	3	1.500	1.250	1.014	6.00	3.50	2.50	TO-6879576	\$383.40		CSPB-5	IP-20D

Long Type												
EXN06R125U0125-02L	2	1.250	1.250	0.766	8.00	5.00	3.00	TO-6879574	\$351.50	LNMU 06	CSPB-5	IP-20D
EXN06R150U0125-03L	3	1.500	1.250	1.014	10.00	2.00	8.00	TO-6879577	\$421.70		CSPB-5	IP-20D

LNMU MILLING INSERTS



Description	A	B	T	re	Grade AH725	Grade AH130	Grade AH120	Grade AH3035	Price Each
LNMU0303ZER-MJ	0.456	0.236	0.169	0.047	TO-6864162	TO-6864164	-	TO-6707135	\$16.90
LNMU0303ZER-ML	0.456	0.236	0.169	0.047	TO-6864165	TO-6864163	-	TO-6707136	\$16.90
LNMU06X5ZER-MJ	0.591	0.472	0.276	0.079	TO-6869924	TO-6869923	TO-6881593	TO-6995912	\$20.40
LNMU06X5ZER-ML	0.591	0.472	0.276	0.079	TO-6885143	TO-6885144	TO-6881594	TO-6995913	\$20.40

Grade	Material	Description
AH725	P,K,S,H	Well Balanced Wear and Chipping Resistance, Suitable for steels and cast Irons
AH130	M P	Excellent Balance between Hardness and toughness, suitable for stainless steels
AH3035	P	High Surface resistance, Suitable for Heavy Interrupted Cutting
AH120	P,K,S	Tough Substrate with high reliability, Outstanding wear resistance, Ideal for cast Iron milling

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

303

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

THREADING & GROOVING

TOOLFLO GROOVING & THREADING



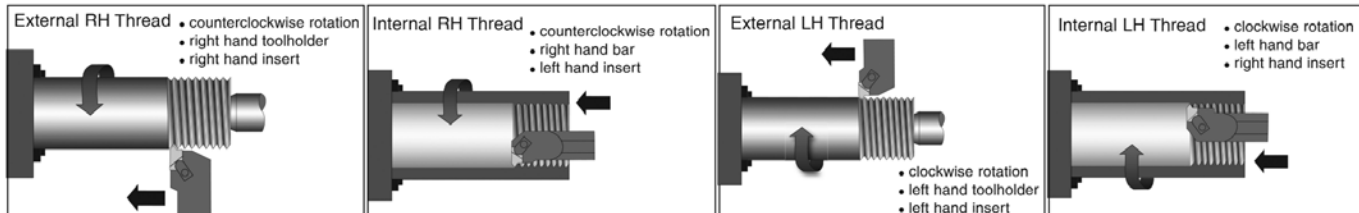
TOOLFLO INSERT GRADES & CHIPBREAKER INFORMATION

Grade	Class	Application
GP4	C1/C5	TiN Coated Sub Micron - For Aluminum, Cast Iron, 300/400 Stainless Steel, Non Metals, Carbon/Alloy Steel, Ductile Iron
GP22	C1	Tin Coated - For Aluminum, Cast Iron, 300 Series Stainless Steel, Non Metals
C3	C2-C3	Uncoated, Aluminum, Non Ferrous metals, Plastics
GP3	C2-C3	TiN Coated Sub Micron - High Temp Alloys, 300 Series Stainless
AC3	C3	TiAlN Coated Sub Micron - Best grade for High Temp Alloys and 300 Series stainless
GP50	C5	TiN Coated Sub Micron - For Carbon/Alloy Steels, 400 Series Stainless steels, Ductile Cast Iron
AC50	C5	TiAlN Coated - For Carbon/Alloy Steels, 400 Series Stainless steels, Ductile Cast Iron

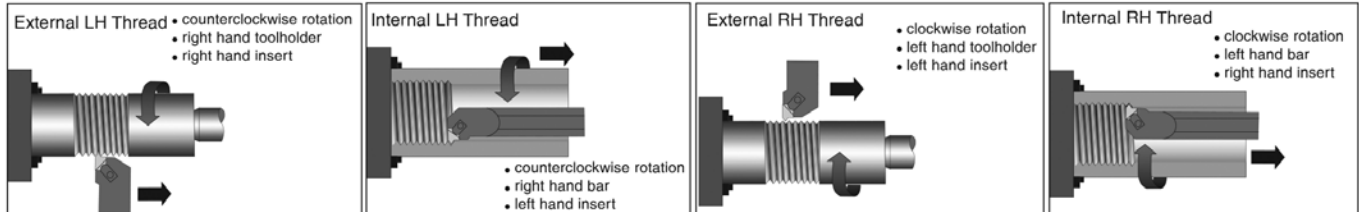
Chipbreaker	Operation
HCB	General Purpose
CB	Fine Finish
FCB	Ultra Fine Finish



Feed direction towards the chuck



Feed direction towards the tailstock



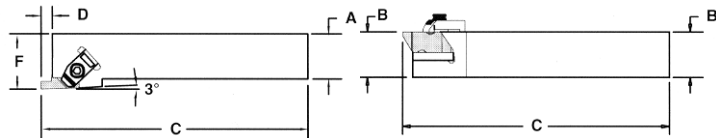
COMPLETE LINE AVAILABLE!

Call Us Or Visit Our Website
For Additional Items
& Technical Information!

Call Us Today For All Of Your Machine Tool Needs!

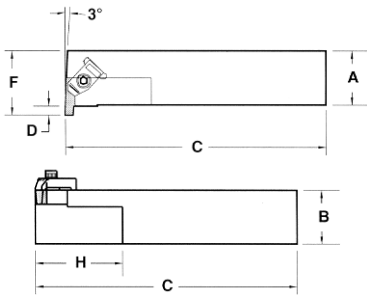
EXTERNAL THREADING/GROOVING SQUARE SHANK HOLDERS

Full Line Available!
Please call for more information.



Style	For Use With Insert Hand	A	B	C	D	F	ToolFlo Part Number	Price Each	Dorian Part Number	Price Each	Canela Part Number	Price Each
GT-2	RIGHT	0.500	0.500	3.500	0.138	0.750	T-FLSR-82V	\$75.01	-	-	-	-
	RIGHT	0.625	0.625	4.500	0.138	0.875	-	-	DN-NSR10-2B	\$86.99	-	-
	LEFT	0.625	0.625	4.500	0.138	0.875	-	-	DN-NSL10-2B	\$86.99	-	-
	RIGHT	0.750	0.750	4.500	0.138	1.000	T-FLSR-122B	\$76.32	DN-NSR12-2B	\$91.03	-	-
GT-3	LEFT	0.750	0.750	4.500	0.138	1.000	T-FLSL-122B	\$77.64	DN-NSL12-2B	\$91.03	-	-
	RIGHT	0.750	0.750	4.000	0.210	1.000	-	-	DN-NSR12-3A	\$91.03	-	-
	LEFT	0.750	0.750	4.000	0.210	1.000	T-FLSR-123B	\$77.64	DN-NSL12-3A	\$91.03	CA-CLSR12-3B	\$86.00
GT-2	RIGHT	0.750	0.750	4.500	0.210	1.000	T-FLSL-123B	\$77.64	DN-NSR12-3B	\$91.03	CA-CLSL12-3B	\$86.00
	RIGHT	1.000	1.000	5.000	0.138	1.250	T-FLSR-162C	\$78.95	DN-NSR16-2C	\$108.79	-	-
	LEFT	1.000	1.000	5.000	0.138	1.250	T-FLSL-162C	\$78.95	DN-NSL16-2C	\$92.36	-	-
GT-3	RIGHT	1.000	1.000	5.000	0.210	1.250	T-FLSR-163C	\$78.95	DN-NSR16-3C	\$92.36	-	-
	LEFT	1.000	1.000	5.000	0.210	1.250	T-FLSL-163C	\$78.95	DN-NSL16-3C	\$92.36	-	-
	RIGHT	1.000	1.000	6.000	0.210	1.250	T-FLSR-163D	\$78.95	DN-NSR16-3D	\$92.36	CA-CLSR16-3D	\$87.34
	LEFT	1.000	1.000	6.000	0.210	1.250	T-FLSL-163D	\$78.95	DN-NSL16-3D	\$92.36	CA-CLSL16-3D	\$87.34
GT-4	RIGHT	1.000	1.000	5.000	0.294	1.250	-	-	DN-NSR16-4C	\$92.36	-	-
	LEFT	1.000	1.000	5.000	0.294	1.250	-	-	DN-NSL16-4C	\$92.36	-	-
	RIGHT	1.000	1.000	6.000	0.294	1.250	T-FLSR-164D	\$78.95	DN-NSR16-4D	\$92.36	CA-CLSR16-4D	\$87.34
	LEFT	1.000	1.000	6.000	0.294	1.250	T-FLSL-164D	\$78.95	DN-NSL16-4D	\$92.36	CA-CLSL16-4D	\$87.34
GT-3	RIGHT	1.250	1.250	6.000	0.210	1.500	T-FLSR-203D	\$86.83	-	-	CA-CLSR20-3D	\$99.43
	LEFT	1.250	1.250	6.000	0.210	1.500	T-FLSL-203D	\$86.83	-	-	CA-CLSL20-3D	\$99.43
GT-4	RIGHT	1.250	1.250	6.000	0.294	1.500	T-FLSR-204D	\$86.83	DN-NSR20-4D	\$105.51	CA-CLSR20-4D	\$99.43
	LEFT	1.250	1.250	6.000	0.294	1.500	T-FLSL-204D	\$86.83	DN-NSL20-4D	\$105.51	CA-CLSL20-4D	\$99.43
GT-5	RIGHT	1.250	1.250	6.000	0.400	1.500	T-FLSR-205D	\$86.83	-	-	-	-
	LEFT	1.250	1.250	6.000	0.400	1.500	T-FLSL-205D	\$86.83	-	-	-	-

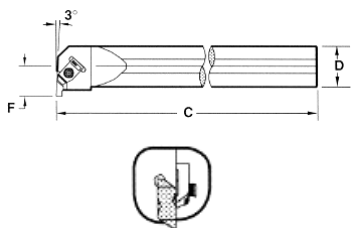
EXTERNAL THREADING/GROOVING SQUARE SHANK HOLDERS



Uses opposite hand inserts. Right hand holder uses left hand inserts.

Style	Left or Right	A	B	C	D	F	H	ToolFlo Part Number	Price Each	Dorian Part Number	Price Each
GT-2	RIGHT	1.000	1.000	5.000	0.140	1.250	1.000	T-FLER-162C	\$78.95	-	-
	LEFT	1.000	1.000	5.000	0.140	1.250	1.000	T-FLEL-162C	\$78.95	-	-
GT-3	RIGHT	0.750	0.750	4.500	0.210	1.125	2.000	T-FLER-123B	\$77.64	DN-NER12-3B	\$91.03
	LEFT	0.750	0.750	4.500	0.210	1.125	2.000	T-FLEL-123B	\$77.64	DN-NEL12-3B	\$91.03
	RIGHT	1.000	1.000	6.000	0.210	1.250	2.000	T-FLER-163D	\$78.95	DN-NER16-3D	\$92.36
	LEFT	1.000	1.000	6.000	0.210	1.250	2.000	T-FLEL-163D	\$78.95	DN-NEL16-3D	\$92.36
	RIGHT	1.250	1.250	6.000	0.210	1.500	2.000	T-FLER-203D	\$86.83	-	-
	LEFT	1.250	1.250	6.000	0.210	1.500	2.000	T-FLEL-203D	\$86.83	-	-
GT-4	RIGHT	1.000	1.000	6.000	0.290	1.375	2.000	T-FLER-164D	\$78.95	DN-NER16-4D	\$92.36
	LEFT	1.000	1.000	6.000	0.290	1.375	2.000	T-FLEL-164D	\$78.95	DN-NEL16-4D	\$92.36
	RIGHT	1.250	1.250	6.000	0.290	1.625	2.000	T-FLER-204D	\$86.83	-	-
	LEFT	1.250	1.250	6.000	0.290	1.625	2.000	T-FLEL-204D	\$86.83	-	-

INTERNAL THREADING/GROOVING BORING BARS



Uses opposite hand inserts. Right hand bar uses left hand inserts.



Style	Left or Right	Min. Bore	C	D	F	ToolFlo Part Number	Price Each	Dorian Part Number	Price Each	Canela Part Number	Price Each
GT-2	RIGHT	1.000	10	.625	.500	T-A10-FLER2	\$135.48	DN-S10S-NER-2	\$110.41	-	-
	LEFT	1.000	10	.625	.500	T-A10-FLEL2	\$135.48	DN-S10S-NEL-2	\$110.41	-	-
	RIGHT	1.125	10	.750	.562	T-A12-FLER2	\$164.72	DN-S12S-NER-2	\$133.48	-	-
	LEFT	1.125	10	.750	.562	T-A12-FLEL2	\$164.72	DN-S12S-NEL-2	\$157.20	-	-
	RIGHT	1.375	12	1.00	.688	T-A16-FLER2	\$214.85	-	-	-	-
	LEFT	1.375	12	1.00	.688	T-A16-FLEL2	\$214.85	-	-	-	-
GT-3	RIGHT	1.375	12	1.00	.688	T-A16-FLER3	\$214.85	DN-S16T-NER-3	\$170.44	CA-A16T-CLER3	\$168.63
	LEFT	1.375	12	1.00	.688	T-A16-FLEL3	\$214.85	DN-S16T-NEL-3	\$200.73	CA-A16T-CLEL3	\$168.63
	RIGHT	1.750	14	1.25	.875	T-A20-FLER3	\$228.76	DN-S20U-NER-3	\$180.73	CA-A20U-CLER3	\$178.98
	LEFT	1.750	14	1.25	.875	T-A20-FLEL3	\$228.76	DN-S20U-NEL-3	\$180.73	CA-A20U-CLEL3	\$178.98
	RIGHT	2.000	14	1.50	1.000	T-A24-FLER3	\$269.15	DN-S24U-NER-3	\$217.26	-	-
	LEFT	2.000	14	1.50	1.000	T-A24-FLEL3	\$269.15	DN-S24U-NEL-3	\$217.26	-	-
	RIGHT	2.250	14	1.75	1.125	T-A28-FLER3	\$295.59	-	-	CA-A28U-CLER3	\$226.58
	LEFT	2.250	14	1.75	1.125	-	-	-	CA-A28U-CLEL3	\$226.58	
	RIGHT	2.500	16	2.00	1.250	T-A32-FLER3	\$317.88	-	-	CA-A32V-CLER3	\$260.71
	LEFT	2.500	16	2.00	1.250	T-A32-FLEL3	\$317.88	-	-	CA-A32V-CLEL3	\$260.71
GT-4	RIGHT	2.500	14	1.75	1.125	-	-	DN-S28U-NER-4	\$227.65	CA-A28U-CLER4	\$226.58
	LEFT	2.500	14	1.75	1.125	-	-	DN-S28U-NEL-4	\$227.65	CA-A28U-CLEL4	\$226.58
	RIGHT	2.750	16	2.00	1.296	T-A32-FLER4	\$317.88	DN-S32V-NER-4	\$261.95	CA-A32V-CLER4	\$260.71
	LEFT	2.750	16	2.00	1.296	T-A32-FLEL4	\$317.88	DN-S32V-NEL-4	\$261.95	CA-A32V-CLEL4	\$260.71

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

TOP NOTCH™ COMPATIBLE GROOVING INSERTS

B

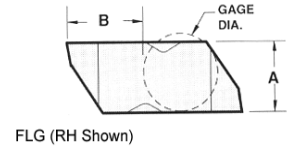
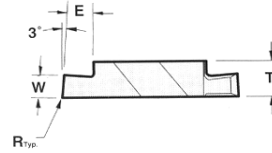
STANDARD GROOVING-DOUBLE ENDED INSERTS

Gage Diameter-Series 2 Inserts: 0.1875

All Others: 0.375



Full Line Available!
Please call for more information.



FLG (RH Shown)

W Inch	W mm	E	T	A	B	Tooholder/ Boring Bar	Left or Right Hand	Grade AC50		Grades AC3		Grade GP50	
								TiAlN C5 Coated Part Number	Price Each	TiAlN C2-C3 Coated Part Number	Price Each	C5 TiN Coated Part Number	Price Each
0.031	0.79	0.05	0.15	0.219	0.27	GT-2	RIGHT	T-FLG2031RA5	\$17.60	T-FLG2031RA3	\$17.60	T-FLG2031RG5	\$15.41
	0.79	0.05	0.15	0.219	0.27	GT-2	LEFT	T-FLG2031LA5	\$17.60	T-FLG2031LA3	\$17.60	T-FLG2031LG5	\$15.41
0.041	1.04	0.05	0.15	0.219	0.27	GT-2	RIGHT	T-FLG2041RA5	\$17.60	T-FLG2041RA3	\$17.60	T-FLG2041RG5	\$15.41
	1.04	0.05	0.15	0.219	0.27	GT-2	LEFT	T-FLG2041LA5	\$17.60	T-FLG2041LA3	\$17.60	T-FLG2041LG5	\$15.41
0.047	1.19	0.05	0.15	0.219	0.27	GT-2	RIGHT	T-FLG2047RA5	\$17.60	T-FLG2047RA3	\$17.60	T-FLG2047RG5	\$15.41
	1.19	0.05	0.15	0.219	0.27	GT-2	LEFT	T-FLG2047LA5	\$17.60	T-FLG2047LA3	\$17.60	T-FLG2047LG5	\$15.41
0.058	1.47	0.05	0.15	0.219	0.27	GT-2	RIGHT	T-FLG2058RA5	\$17.60	T-FLG2058RA3	\$17.60	T-FLG2058RG5	\$15.41
	1.47	0.05	0.15	0.219	0.27	GT-2	LEFT	T-FLG2058LA5	\$17.60	T-FLG2058LA3	\$17.60	T-FLG2058LG5	\$15.41
0.062	1.57	0.11	0.15	0.219	0.27	GT-2	RIGHT	T-FLG2062RA5	\$17.60	T-FLG2062RA3	\$17.60	T-FLG2062RG5	\$15.41
	1.57	0.11	0.15	0.219	0.27	GT-2	LEFT	T-FLG2062LA5	\$17.60	T-FLG2062LA3	\$17.60	T-FLG2062LG5	\$15.41
0.094	2.39	0.11	0.15	0.219	0.27	GT-2	RIGHT	T-FLG2094RA5	\$17.60	T-FLG2094RA3	\$17.60	T-FLG2094RG5	\$15.41
	2.39	0.11	0.15	0.219	0.27	GT-2	LEFT	T-FLG2094LA5	\$17.60	T-FLG2094LA3	\$17.60	T-FLG2094LG5	\$15.41
0.125	3.18	0.11	0.15	0.219	0.27	GT-2	RIGHT	T-FLG2125RA5	\$17.60	T-FLG2125RA3	\$17.60	T-FLG2125RG5	\$15.41
	3.18	0.11	0.15	0.219	0.27	GT-2	LEFT	T-FLG2125LA5	\$17.60	T-FLG2125LA3	\$17.60	T-FLG2125LG5	\$15.41
0.031	0.79	0.05	0.195	0.344	0.405	GT-3	RIGHT	T-FLG3031RA5	\$17.60	T-FLG3031RA3	\$17.60	T-FLG3031RG5	\$15.41
	0.79	0.05	0.195	0.344	0.405	GT-3	LEFT	T-FLG3031LA5	\$17.60	T-FLG3031LA3	\$17.60	T-FLG3031LG5	\$15.41
0.047	1.19	0.075	0.195	0.344	0.405	GT-3	RIGHT	T-FLG3047RA5	\$17.60	T-FLG3047RA3	\$17.60	T-FLG3047RG5	\$15.41
	1.19	0.075	0.195	0.344	0.405	GT-3	LEFT	T-FLG3047LA5	\$17.60	T-FLG3047LA3	\$17.60	T-FLG3047LG5	\$15.41
0.062	1.57	0.12	0.195	0.344	0.405	GT-3	RIGHT	T-FLG3062RA5	\$17.60	T-FLG3062RA3	\$17.60	T-FLG3062RG5	\$15.41
	1.57	0.12	0.195	0.344	0.405	GT-3	LEFT	T-FLG3062LA5	\$17.60	T-FLG3062LA3	\$17.60	T-FLG3062LG5	\$15.41
0.072	1.83	0.12	0.195	0.344	0.405	GT-3	RIGHT	T-FLG3072RA5	\$17.60	T-FLG3072RA3	\$17.60	T-FLG3072RG5	\$15.41
	1.83	0.12	0.195	0.344	0.405	GT-3	LEFT	T-FLG3072LA5	\$17.60	T-FLG3072LA3	\$17.60	T-FLG3072LG5	\$15.41
0.078	1.98	0.12	0.195	0.344	0.405	GT-3	RIGHT	T-FLG3078RA5	\$17.60	T-FLG3078RA3	\$17.60	T-FLG3078RG5	\$15.41
	1.98	0.12	0.195	0.344	0.405	GT-3	LEFT	T-FLG3078LA5	\$17.60	T-FLG3078LA3	\$17.60	T-FLG3078LG5	\$15.41
0.088	2.24	0.12	0.195	0.344	0.405	GT-3	RIGHT	T-FLG3088RA5	\$17.60	T-FLG3088RA3	\$17.60	T-FLG3088RG5	\$15.41
	2.24	0.12	0.195	0.344	0.405	GT-3	LEFT	T-FLG3088LA5	\$17.60	T-FLG3088LA3	\$17.60	T-FLG3088LG5	\$15.41
0.094	2.39	0.18	0.195	0.344	0.405	GT-3	RIGHT	T-FLG3094RA5	\$17.60	T-FLG3094RA3	\$17.60	T-FLG3094RG5	\$15.41
	2.39	0.18	0.195	0.344	0.405	GT-3	LEFT	T-FLG3094LA5	\$17.60	T-FLG3094LA3	\$17.60	T-FLG3094LG5	\$15.41
0.097	2.46	0.18	0.195	0.344	0.405	GT-3	RIGHT	T-FLG3097RA5	\$17.60	T-FLG3097RA3	\$17.60	T-FLG3097RG5	\$15.41
	2.46	0.18	0.195	0.344	0.405	GT-3	LEFT	T-FLG3097LA5	\$17.60	T-FLG3097LA3	\$17.60	T-FLG3097LG5	\$15.41
0.105	2.67	0.18	0.195	0.344	0.405	GT-3	RIGHT	T-FLG3105RA5	\$17.60	T-FLG3105RA3	\$17.60	T-FLG3105RG5	\$15.41
	2.67	0.18	0.195	0.344	0.405	GT-3	LEFT	T-FLG3105LA5	\$17.60	T-FLG3105LA3	\$17.60	T-FLG3105LG5	\$15.41
0.110	2.79	0.18	0.195	0.344	0.405	GT-3	RIGHT	T-FLG3110RA5	\$17.60	T-FLG3110RA3	\$17.60	T-FLG3110RG5	\$15.41
	2.79	0.18	0.195	0.344	0.405	GT-3	LEFT	T-FLG3110LA5	\$17.60	T-FLG3110LA3	\$17.60	T-FLG3110LG5	\$15.41
0.122	3.10	0.18	0.195	0.344	0.405	GT-3	RIGHT	T-FLG3122RA5	\$17.60	T-FLG3122RA3	\$17.60	T-FLG3122RG5	\$15.41
	3.10	0.18	0.195	0.344	0.405	GT-3	LEFT	T-FLG3122LA5	\$17.60	T-FLG3122LA3	\$17.60	T-FLG3122LG5	\$15.41
0.125	3.18	0.18	0.195	0.344	0.405	GT-3	RIGHT	T-FLG3125RA5	\$17.60	T-FLG3125RA3	\$17.60	T-FLG3125RG5	\$15.41
	3.18	0.18	0.195	0.344	0.405	GT-3	LEFT	T-FLG3125LA5	\$17.60	T-FLG3125LA3	\$17.60	T-FLG3125LG5	\$15.41
0.142	3.61	0.18	0.195	0.344	0.405	GT-3	RIGHT	T-FLG3142RA5	\$17.60	T-FLG3142RA3	\$17.60	T-FLG3142RG5	\$15.41
	3.61	0.18	0.195	0.344	0.405	GT-3	LEFT	T-FLG3142LA5	\$17.60	T-FLG3142LA3	\$17.60	T-FLG3142LG5	\$15.41
0.156	3.96	0.18	0.195	0.344	0.405	GT-3	RIGHT	T-FLG3156RA5	\$17.60	T-FLG3156RA3	\$17.60	T-FLG3156RG5	\$15.41
	3.96	0.18	0.195	0.344	0.405	GT-3	LEFT	T-FLG3156LA5	\$17.60	T-FLG3156LA3	\$17.60	T-FLG3156LG5	\$15.41
0.178	4.52	0.18	0.195	0.344	0.405	GT-3	RIGHT	T-FLG3178RA5	\$17.60	T-FLG3178RA3	\$17.60	T-FLG3178RG5	\$15.41
	4.52	0.18	0.195	0.344	0.405	GT-3	LEFT	T-FLG3178LA5	\$17.60	T-FLG3178LA3	\$17.60	T-FLG3178LG5	\$15.41

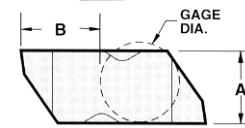
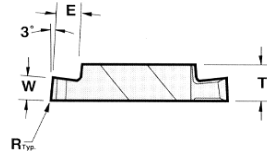
Larger Groove Widths & Series 4 & 6 Top Notch Also Available. Please Call For More Information.



Call Us Today For All Of Your Machine Tool Needs!

STANDARD GROOVING-DOUBLE ENDED INSERTS

With Patented Chipbreaker
Gage Diameter-Series 2 Inserts: 0.1875
All Others: 0.375



MADE IN THE USA

FLG-K (RH Shown)

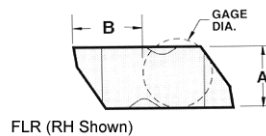
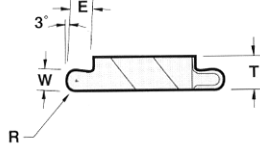
Full Line Available!
Please call for more information.

W Inch	W mm	E	T	A	B	Toolholder/ Boring Bar	Left or Right	Grades AC3 Part Number	Price Each	Grade AC50 Part Number	Price Each	Grade GP50 Part Number	Price Each
0.062	1.57	0.11	0.15	0.219	0.27	GT-2	RIGHT	T-FLG2062RCBA3*	\$18.52	T-FLG2062RCBA5	\$18.52	T-FLG2062RCBG5	\$17.32
							LEFT	T-FLG2062LCBA3	\$18.52	T-FLG2062LCBA5	\$18.52	T-FLG2062LCBG5	\$17.32
0.094	2.39	0.11	0.15	0.219	0.27	GT-2	RIGHT	T-FLG2094RCBA3	\$18.52	T-FLG2094RCBA5	\$18.52	T-FLG2094RCBG5	\$17.32
							LEFT	T-FLG2094LCBA3	\$18.52	T-FLG2094LCBA5	\$18.52	T-FLG2094LCBG5	\$17.32
0.125	3.18	0.11	0.15	0.219	0.27	GT-2	RIGHT	T-FLG2125RCBA3	\$18.52	T-FLG2125RCBA5	\$18.52	T-FLG2125RCBG5	\$17.32
							LEFT	T-FLG2125LCBA3	\$18.52	T-FLG2125LCBA5	\$18.52	T-FLG2125LCBG5	\$17.32
0.062	1.57	0.125	0.195	0.344	0.405	GT-3	RIGHT	T-FLG3062RCBA3*	\$18.52	T-FLG3062RCBA5	\$18.52	T-FLG3062RCBG5	\$17.32
							LEFT	T-FLG3062LCBA3	\$18.52	T-FLG3062LCBA5	\$18.52	T-FLG3062LCBG5	\$17.32
0.072	1.83	0.125	0.195	0.344	0.405	GT-3	RIGHT	T-FLG3072RCBA3	\$18.52	T-FLG3072RCBA5	\$18.52	T-FLG3072RCBG5	\$17.32
							LEFT	T-FLG3072LCBA3	\$18.52	T-FLG3072LCBA5	\$18.52	T-FLG3072LCBG5	\$17.32
0.078	1.98	0.125	0.195	0.344	0.405	GT-3	RIGHT	T-FLG3078RCBA3	\$18.52	T-FLG3078RCBA5	\$18.52	T-FLG3078RCBG5	\$17.32
							LEFT	T-FLG3078LCBA3	\$18.52	T-FLG3078LCBA5	\$18.52	T-FLG3078LCBG5	\$17.32
0.094	2.39	0.18	0.195	0.344	0.405	GT-3	RIGHT	T-FLG3094RCBA3	\$18.52	T-FLG3094RCBA5	\$18.52	T-FLG3094RCBG5	\$17.32
							LEFT	T-FLG3094LCBA3	\$18.52	T-FLG3094LCBA5	\$18.52	T-FLG3094LCBG5	\$17.32
0.125	3.18	0.18	0.195	0.344	0.405	GT-3	RIGHT	T-FLG3125RCBA3*	\$18.52	T-FLG3125RCBA5	\$18.52	T-FLG3125RCBG5	\$17.32
							LEFT	T-FLG3125LCBA3*	\$18.52	T-FLG3125LCBA5	\$18.52	T-FLG3125LCBG5	\$17.32
0.189	4.8	0.18	0.195	0.344	0.405	GT-3	RIGHT	T-FLG3189RCBA3	\$18.52	T-FLG3189RCBA5	\$18.52	T-FLG3189RCBG5	\$17.32
							LEFT	T-FLG3189LCBA3	\$18.52	T-FLG3189LCBA5	\$18.52	T-FLG3189LCBG5	\$17.32
0.125	3.18	0.25	0.255	0.453	0.636	GT-4	RIGHT	T-FLG4125RCBA3	\$26.68	T-FLG4125RCBA5	\$26.68	T-FLG4125RCBG5	\$24.98
							LEFT	T-FLG4125LCBA3	\$26.68	T-FLG4125LCBA5	\$26.68	T-FLG4125LCBG5	\$24.98
0.189	4.8	0.25	0.255	0.453	0.636	GT-4	RIGHT	T-FLG4189RCBA3	\$26.68	T-FLG4189RCBA5	\$26.68	T-FLG4189RCBG5	\$24.98
							LEFT	T-FLG4189LCBA3	\$26.68	T-FLG4189LCBA5	\$26.68	T-FLG4189LCBG5	\$24.98
0.25	6.35	0.25	0.255	0.453	0.636	GT-4	RIGHT	T-FLG4250RCBA3	\$26.68	T-FLG4250RCBA5	\$26.68	T-FLG4250RCBG5	\$24.98
							LEFT	T-FLG4250LCBA3	\$26.68	T-FLG4250LCBA5	\$26.68	T-FLG4250LCBG5	\$24.98

*Available in C3 uncoated grade. Please call for pricing.

STANDARD GROOVING-DOUBLE ENDED INSERTS-FULL NOSE RADIUS

Gage Diameter-Series 2 Inserts: 0.1875
All Others: 0.375



FLR (RH Shown)

W Inch	W mm	E	T	A	B	Toolholder/ Boring Bar	Left or Right Hand	Grade AC50 Part Number	Price Each	Grade GP3 Part Number	Price Each	Grade GP50 Part Number	Price Each
0.062	1.57	0.11	0.15	0.219	0.2683	GT-2	RIGHT	T-FLR2031RA5	\$17.60	T-FLR2031RG3	\$16.45	T-FLR2031RG5	\$16.45
							LEFT	T-FLR2031LA5	\$17.60	T-FLR2031LG3	\$16.45	T-FLR2031LG5	\$16.45
0.094	2.39	0.11	0.15	0.219	0.2675	GT-2	RIGHT	T-FLR2047RA5	\$17.60	T-FLR2047RG3	\$16.45	T-FLR2047RG5	\$16.45
							LEFT	T-FLR2047LA5	\$17.60	T-FLR2047LG3	\$16.45	T-FLR2047LG5	\$16.45
0.125	3.18	0.11	0.15	0.219	0.2667	GT-2	RIGHT	T-FLR2062RA5	\$17.60	T-FLR2062RG3	\$16.45	T-FLR2062RG5	\$16.45
							LEFT	T-FLR2062LA5	\$17.60	T-FLR2062LG3	\$16.45	T-FLR2062LG5	\$16.45
0.062	1.57	0.125	0.195	0.344	0.4033	GT-3	RIGHT	T-FLR3031RA5	\$17.60	T-FLR3031RG3	\$16.45	T-FLR3031RG5	\$16.45
							LEFT	T-FLR3031LA5	\$17.60	T-FLR3031LG3	\$16.45	T-FLR3031LG5	\$16.45
0.094	2.39	0.18	0.195	0.344	0.4025	GT-3	RIGHT	T-FLR3047RA5	\$17.60	T-FLR3047RG3	\$16.45	T-FLR3047RG5	\$16.45
							LEFT	T-FLR3047LA5	\$17.60	T-FLR3047LG3	\$16.45	T-FLR3047LG5	\$16.45
0.125	3.18	0.18	0.195	0.344	0.4017	GT-3	RIGHT	T-FLR3062RA5	\$17.60	T-FLR3062RG3	\$16.45	T-FLR3062RG5	\$16.45
							LEFT	T-FLR3062LA5	\$17.60	T-FLR3062LG3	\$16.45	T-FLR3062LG5	\$16.45
0.156	3.96	0.18	0.195	0.344	0.4008	GT-3	RIGHT	T-FLR3078RA5	\$17.60	T-FLR3078RG3	\$16.45	T-FLR3078RG5	\$16.45
							LEFT	T-FLR3078LA5	\$17.60	T-FLR3078LG3	\$16.45	T-FLR3078LG5	\$16.45
0.189	4.80	0.18	0.195	0.344	0.4	GT-3	RIGHT	T-FLR3094RA5	\$17.60	T-FLR3094RG3	\$16.45	T-FLR3094RG5	\$16.45
							LEFT	T-FLR3094LA5	\$17.60	T-FLR3094LG3	\$16.45	T-FLR3094LG5	\$16.45
0.125	3.18	0.25	0.255	0.453	0.6327	GT-4	RIGHT	-	-	T-FLR4062RG3	\$23.73	T-FLR4062RG5	\$23.73
							LEFT	-	-	T-FLR4062LG3	\$23.73	T-FLR4062LG5	\$23.73
0.189	4.80	0.25	0.255	0.453	0.631	GT-4	RIGHT	-	-	T-FLR4094RG3	\$23.73	T-FLR4094RG5	\$23.73
							LEFT	-	-	T-FLR4094LG3	\$23.73	T-FLR4094LG5	\$23.73
0.25	6.35	0.25	0.255	0.453	0.6293	GT-4	RIGHT	-	-	T-FLR4125RG3	\$23.73	T-FLR4125RG5	\$23.73
							LEFT	-	-	T-FLR4125LG3	\$23.73	T-FLR4125LG5	\$23.73

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

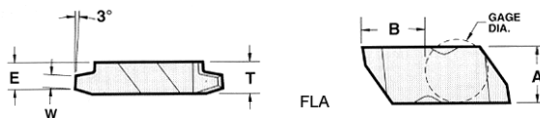
COOLANT/FLUIDS
TOOL STORAGE

TOP NOTCH™ COMPATIBLE THREADING INSERTS

THREADING-DOUBLE ENDED INSERTS ACME Threading



Full Line Available!
Please call for more information.



TPI IF THREADING		W Inches	E	T	A	B	Toolholder/ Boring Bar	Left or Right	Grade AC3 Part Number	Price Each	Grade AC50 Part Number	Price Each
Internal	External											
16	16	0.0206	0.149	0.195	0.344	0.4026	GT-3	RIGHT LEFT	- -	- -	T-FLA3R16A5 T-FLA3L16A5	\$17.60 \$17.60
14	14	0.0239	0.149	0.195	0.344	0.4026	GT-3	RIGHT LEFT	- -	- -	T-FLA3R14A5 T-FLA3L14A5	\$17.60 \$17.60
12	12	0.0283	0.149	0.195	0.344	0.4026	GT-3	RIGHT LEFT	T-FLA3R12A3 T-FLA3L12A3	\$17.60 \$17.60	T-FLA3R12A5 T-FLA3L12A5	\$17.60 \$17.60
10	10	0.0319	0.149	0.195	0.344	0.4026	GT-3	RIGHT LEFT	T-FLA3R10A3 T-FLA3L10A3	\$17.60 \$17.60	T-FLA3L10A5	\$17.60
8	8	0.0411	0.149	0.195	0.344	0.4026	GT-3	RIGHT LEFT	T-FLA3R8A3 T-FLA3L8A3	\$17.60 \$17.60	T-FLA3R8A5 T-FLA3L8A5	\$17.60 \$17.60
6	6	0.0566	0.149	0.195	0.344	0.4026	GT-3	RIGHT LEFT	T-FLA3R6A3 T-FLA3L6A3	\$17.60 \$17.60	T-FLA3R6A5 T-FLA3L6A5	\$17.60 \$17.60
5	5	0.0689	0.149	0.195	0.344	0.4026	GT-3	RIGHT LEFT	T-FLA3R5A3 T-FLA3L5A3	\$17.60 \$17.60	T-FLA3R5A5 T-FLA3L5A5	\$17.60 \$17.60
4	4	0.0875	0.133	0.195	0.344	0.4018	GT-3	RIGHT LEFT	T-FLA3R4A3 T-FLA3L4A3	\$17.60 \$17.60	T-FLA3R4A5 T-FLA3L4A5	\$17.60 \$17.60
5	5	0.0689	0.202	0.255	0.453	0.6332	GT-4	RIGHT LEFT	- -	- -	T-FLA4R5A5 T-FLA4L5A5	\$25.35 \$25.35
4	4	0.0875	0.202	0.255	0.453	0.6332	GT-4	RIGHT LEFT	- -	- -	T-FLA4R4A5 T-FLA4L4A5	\$25.35 \$25.35
3	3	0.1184	0.283	0.383	0.453	0.6308	GT-6	RIGHT LEFT	- -	- -	T-FLA6R3A5 T-FLA6L3A5	\$34.68 \$34.68
2	2	0.1802	0.283	0.383	0.453	0.6308	GT-6	RIGHT LEFT	- -	- -	T-FLA6R2A5 T-FLA6L2A5	\$34.68 \$34.68

THREADING-DOUBLE ENDED INSERTS ACME Stub Threading Gage Diameter: 0.375

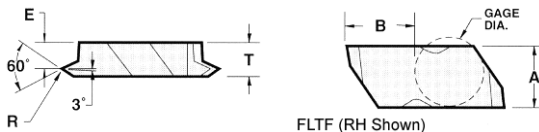


Full Line Available!
Please call for more information.



TPI		W Inch	E	T	A	B	Toolholder/ Boring Bar	Left or Right Hand	Grade AC50 Part Number	Price Each
Internal	External									
12	12	0.0326	0.149	0.195	0.344	0.4026	GT-3	RIGHT LEFT	T-FLAS3R12A5 T-FLAS3L12A5	\$17.60 \$17.60
10	10	0.037	0.149	0.195	0.344	0.4026	GT-3	RIGHT LEFT	T-FLAS3R10A5 T-FLAS3L10A5	\$17.60 \$17.60
8	8	0.0476	0.149	0.195	0.344	0.4026	GT-3	RIGHT LEFT	T-FLAS3R8A5 T-FLAS3L8A5	\$17.60 \$17.60
6	6	0.0652	0.149	0.195	0.344	0.4026	GT-3	RIGHT LEFT	T-FLAS3R6A5 T-FLAS3L6A5	\$17.60 \$17.60
5	5	0.0793	0.149	0.195	0.344	0.4026	GT-3	RIGHT LEFT	T-FLAS3R5A5 T-FLAS3L5A5	\$17.60 \$17.60
4	4	0.1004	0.149	0.195	0.344	0.4026	GT-3	RIGHT LEFT	T-FLAS3R4A5 T-FLAS3L4A5	\$17.60 \$17.60

60° V-THREADING-DOUBLE ENDED INSERTS



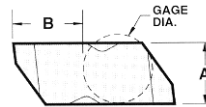
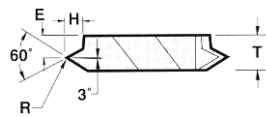
TPI		E	T	A	B	Toolholder/ Boring Bar	Left or Right Hand	Grade AC3 Part Number	Price Each	Grade AC50 Part Number	Price Each
Internal	External										
12-24	14-44	.110	.150	.219	.2679	GT-2	RIGHT LEFT	T-FLTF2RA3 T-FLTF2LA3	\$15.35 \$15.35	T-FLTF2RA5 T-FLTF2LA5	\$15.35 \$15.35
9-24	10-44	.141	.195	.344	.4022	GT-3	RIGHT LEFT	T-FLTF3RA3 T-FLTF3LA3	\$15.93 \$15.93	T-FLTF3RA5 T-FLTF3LA5	\$15.93 \$15.93
9-24	10-44	.201	.255	.453	.6322	GT-4	RIGHT LEFT	T-FLTF4RA3 T-FLTF4LA3	\$20.65 \$20.65	T-FLTF4RA5 T-FLTF4LA5	\$20.65 \$20.65

Call Us Today For All Of Your Machine Tool Needs!

THREADING-DOUBLE ENDED INSERTS

UN Crest Topping Threading

Gage Diameter: 0.375



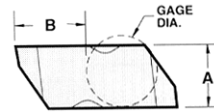
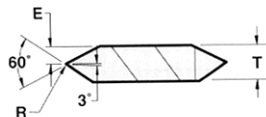
FLTC (RH Shown)



TPI		E	R	T	A	B	Toolholder/ Boring Bar	Left/Right Hand	Grade AC3 Part Number	Price Each	Grade AC50 Part Number	Price Each
Internal	External											
7	7	0.107	0.017	0.195	0.344	0.4004	GT-3	RIGHT	T-FLTC3R7EA3	\$16.52	T-FLTC3R7EA5	\$16.52
8	8	0.107	0.015	0.195	0.344	0.4004	GT-3	RIGHT	T-FLTC3R8EA3	\$16.52	T-FLTC3R8EA5	\$16.52
8	8	0.107	0.007	0.195	0.344	0.4004	GT-3	LEFT	T-FLTC3L8EA3	\$16.52	T-FLTC3L8EA5	\$16.52
8	8	0.107	0.007	0.195	0.344	0.4004	GT-3	RIGHT	T-FLTC3R8IA3	\$16.52	T-FLTC3R8IA5	\$16.52
8	8	0.107	0.007	0.195	0.344	0.4004	GT-3	LEFT	T-FLTC3L8IA3	\$16.52	T-FLTC3L8IA5	\$16.52
9	9	0.107	0.013	0.195	0.344	0.4004	GT-3	RIGHT	T-FLTC3R9EA3	\$16.52	T-FLTC3R9EA5	\$16.52
10	10	0.107	0.012	0.195	0.344	0.4004	GT-3	RIGHT	T-FLTC3R10EA3	\$16.52	T-FLTC3R10EA5	\$16.52
10	10	0.107	0.012	0.195	0.344	0.4004	GT-3	LEFT	T-FLTC3L10EA3	\$16.52	T-FLTC3L10EA5	\$16.52
10	10	0.107	0.005	0.195	0.344	0.4004	GT-3	RIGHT	T-FLTC3R10IA3	\$16.52	T-FLTC3R10IA5	\$16.52
10	10	0.107	0.005	0.195	0.344	0.4004	GT-3	LEFT	T-FLTC3L10IA3	\$16.52	T-FLTC3L10IA5	\$16.52
11	11	0.107	0.011	0.195	0.344	0.4004	GT-3	RIGHT	T-FLTC3R11EA3	\$16.52	T-FLTC3R11EA5	\$16.52
12	12	0.148	0.01	0.195	0.344	0.4025	GT-3	RIGHT	T-FLTC3R12EA3	\$16.52	T-FLTC3R12EA5	\$16.52
12	12	0.148	0.01	0.195	0.344	0.4025	GT-3	LEFT	T-FLTC3L12EA3	\$16.52	T-FLTC3L12EA5	\$16.52
12	12	0.148	0.004	0.195	0.344	0.4025	GT-3	RIGHT	T-FLTC3R12IA3	\$16.52	T-FLTC3R12IA5	\$16.52
12	12	0.148	0.004	0.195	0.344	0.4025	GT-3	LEFT	T-FLTC3L12IA3	\$16.52	T-FLTC3L12IA5	\$16.52
14	14	0.148	0.009	0.195	0.344	0.4025	GT-3	RIGHT	T-FLTC3R14EA3	\$16.52	T-FLTC3R14EA5	\$16.52
14	14	0.148	0.009	0.195	0.344	0.4025	GT-3	LEFT	T-FLTC3L14EA3	\$16.52	T-FLTC3L14EA5	\$16.52
14	14	0.148	0.003	0.195	0.344	0.4025	GT-3	RIGHT	T-FLTC3R14IA3	\$16.52	T-FLTC3R14IA5	\$16.52
14	14	0.148	0.003	0.195	0.344	0.4025	GT-3	LEFT	T-FLTC3L14IA3	\$16.52	T-FLTC3L14IA5	\$16.52
16	16	0.148	0.008	0.195	0.344	0.4025	GT-3	RIGHT	T-FLTC3R16EA3	\$16.52	T-FLTC3R16EA5	\$16.52
16	16	0.148	0.008	0.195	0.344	0.4025	GT-3	LEFT	T-FLTC3L16EA3	\$16.52	T-FLTC3L16EA5	\$16.52
16	16	0.148	0.003	0.195	0.344	0.4025	GT-3	RIGHT	T-FLTC3R16IA3	\$16.52	T-FLTC3R16IA5	\$16.52
16	16	0.148	0.003	0.195	0.344	0.4025	GT-3	LEFT	T-FLTC3L16IA3	\$16.52	T-FLTC3L16IA5	\$16.52
18	18	0.148	0.007	0.195	0.344	0.4025	GT-3	RIGHT	T-FLTC3R18EA3	\$16.52	T-FLTC3R18EA5	\$16.52
18	18	0.148	0.007	0.195	0.344	0.4025	GT-3	LEFT	T-FLTC3L18EA3	\$16.52	T-FLTC3L18EA5	\$16.52
20	20	0.148	0.006	0.195	0.344	0.4025	GT-3	RIGHT	T-FLTC3R20EA3	\$16.52	T-FLTC3R20EA5	\$16.52
20	20	0.148	0.006	0.195	0.344	0.4025	GT-3	LEFT	T-FLTC3L20EA3	\$16.52	T-FLTC3L20EA5	\$16.52
20	20	0.148	0.003	0.195	0.344	0.4025	GT-3	RIGHT	T-FLTC3R20IA3	\$16.52	T-FLTC3R20IA5	\$16.52
20	20	0.148	0.003	0.195	0.344	0.4025	GT-3	LEFT	T-FLTC3L20IA3	\$16.52	T-FLTC3L20IA5	\$16.52
24	24	0.148	0.005	0.195	0.344	0.4025	GT-3	RIGHT	T-FLTC3R24EA3	\$16.52	T-FLTC3R24EA5	\$16.52
24	24	0.148	0.005	0.195	0.344	0.4025	GT-3	LEFT	T-FLTC3L24EA3	\$16.52	T-FLTC3L24EA5	\$16.52

60° V-THREADING

Double Ended Inserts



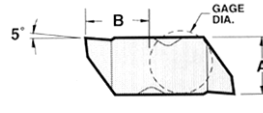
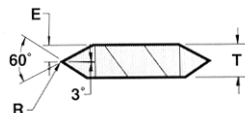
FLT (RH Shown)



Internal	Ext.	E	T	A	B	Toolholder/ Boring Bar	Left or Right Hand	Grade AC3 Part Number	Price Each	Grade AC50 Part Number	Price Each	Grade GP3 Part Number	Price Each	Grade GP50 Part Number	Price Each
7-20	8-36	0.075	0.15	0.219	0.266	GT-2	RIGHT	T-FLT2RA3	\$14.77	T-FLT2RA5	\$14.77	T-FLT2RG3	\$13.67	T-FLT2RG5	\$13.67
	8-36	0.075	0.15	0.219	0.266	GT-2	LEFT	T-FLT2LA3	\$14.77	T-FLT2LA5	\$14.77	T-FLT2LG3	\$13.67	T-FLT2LG5	\$13.67
5-12	6-20	0.098	0.195	0.344	0.399	GT-3	RIGHT	T-FLT3RA3	\$15.33	T-FLT3RA5	\$15.33	T-FLT3RG3	\$14.23	T-FLT3RG5	\$14.23
	6-20	0.098	0.195	0.344	0.399	GT-3	LEFT	T-FLT3LA3	\$15.33	T-FLT3LA5	\$15.33	T-FLT3LG3	\$14.23	T-FLT3LG5	\$14.23
4-12	4-20	0.128	0.255	0.453	0.629	GT-4	RIGHT	T-FLT4RA3	\$19.18	T-FLT4RA5	\$19.18	T-FLT4RG3	\$17.68	T-FLT4RG5	\$17.68
	4-20	0.128	0.255	0.453	0.629	GT-4	LEFT	T-FLT4LA3	\$19.18	T-FLT4LA5	\$19.18	T-FLT4LG3	\$17.68	T-FLT4LG5	\$17.68

60° V THREADING

Double Ended • Positive Rake



FLTP (RH Shown)



TPI		E	T	A	B	Toolholder/ Boring Bar	Left or Right Hand	Grade AC3 Part Number	Price Each	Grade AC50 Part Number	Price Each	Grade GP3 Part Number	Price Each	Grade GP50 Part Number	Price Each
Internal	External														
7-20	8-36	.075	.150	.219	.2661	GT-2	RIGHT	T-FLTP2RA3	\$15.32	T-FLTP2RA5	\$15.32	T-FLTP2RA3	\$15.32	T-FLTP2RA5	\$15.32
7-20	8-36	.075	.150	.219	.2661	GT-2	LEFT	T-FLTP2LA3	\$15.32	T-FLTP2LA5	\$15.32	T-FLTP2LA3	\$15.32	T-FLTP2LA5	\$15.32
5-12	6-20	.098	.195	.344	.3999	GT-3	RIGHT	T-FLTP3RA3	\$15.93	T-FLTP3RA5	\$15.93	T-FLTP3RA3	\$15.93	T-FLTP3RA5	\$15.93
							LEFT	T-FLTP3LA3	\$15.93	T-FLTP3LA5	\$15.93	T-FLTP3LA3	\$15.93	T-FLTP3LA5	\$15.93
4-12	4-20	.128	.255	.453	.6293	GT-4	RIGHT	T-FLTP4RA3	\$20.65	T-FLTP4RA5	\$20.65	T-FLTP4RA3	\$20.65	T-FLTP4RA5	\$20.65
							LEFT	T-FLTP4LA3	\$20.65	T-FLTP4LA5	\$20.65	T-FLTP4LA3	\$20.65	T-FLTP4LA5	\$20.65

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

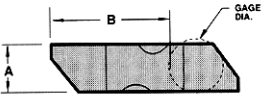
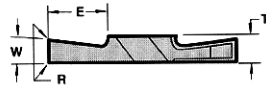
COOLANT/FLUIDS
TOOL STORAGE

TOP NOTCH™ COMPATIBLE GROOVING INSERTS

DEEP GROOVING-DOUBLE ENDED INSERTS

Gage Diameter 0.375

External Grooving Only



FLGT (RH Shown)

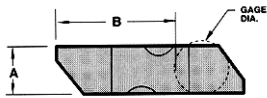
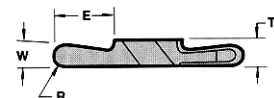
W Inch	W mm	E	T	A	B	Left or Right	Grade GP3 Part Number	Price Each	Grade GP50 Part Number	Price Each
0.094	2.39	0.275	0.195	0.344	0.855	RIGHT LEFT	T-FLGT3094RG3 T-FLGT3094LG3	\$22.45 \$22.45	T-FLGT3094RG5 T-FLGT3094LG5	\$22.45 \$22.45
0.125	3.18	0.437	0.195	0.344	0.855	RIGHT LEFT	T-FLGT3125RG3 T-FLGT3125LG3	\$22.45 \$22.45	T-FLGT3125RG5 T-FLGT3125LG5	\$22.45 \$22.45
0.189	4.8	0.437	0.195	0.344	0.855	RIGHT LEFT	T-FLGT3189RG3 T-FLGT3189LG3	\$22.45 \$22.45	T-FLGT3189RG5 T-FLGT3189LG5	\$22.45 \$22.45
0.125	3.18	0.55	0.255	0.453	1.136	RIGHT LEFT	T-FLGT4125RG3 T-FLGT4125LG3	\$26.68 \$26.68	T-FLGT4125RG5 T-FLGT4125LG5	\$26.68 \$26.68
0.189	4.8	0.55	0.255	0.453	1.136	RIGHT LEFT	T-FLGT4189RG3 T-FLGT4189LG3	\$26.68 \$26.68	T-FLGT4189RG5 T-FLGT4189LG5	\$26.68 \$26.68
0.25	6.35	0.55	0.255	0.453	1.136	RIGHT LEFT	T-FLGT4250RG3 T-FLGT4250LG3	\$26.68 \$26.68	T-FLGT4250RG5 T-FLGT4250LG5	\$26.68 \$26.68

DEEP GROOVING-DOUBLE ENDED INSERTS

Full Nose Radius-Gage Diameter 0.375



External Grooving Only

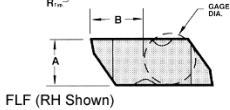
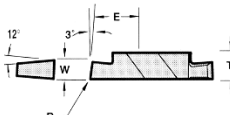


FLRT (RH Shown)

W Inch	W mm	E	T	A	B	Left or Right Hand	Grade GP50 Part Number	Price Each
0.125	3.18	0.437	0.195	0.344	0.855	RIGHT LEFT	T-FLRT3062RG5 T-FLRT3062LG5	\$22.45 \$22.45
0.189	4.8	0.437	0.195	0.344	0.855	RIGHT LEFT	T-FLRT3094RG5 T-FLRT3094LG5	\$22.45 \$22.45
0.125	3.18	0.55	0.255	0.453	1.136	RIGHT LEFT	T-FLRT4062RG5 T-FLRT4062LG5	\$26.70 \$26.70
0.189	4.8	0.55	0.255	0.453	1.136	RIGHT LEFT	T-FLRT4094RG5 T-FLRT4094LG5	\$26.70 \$26.70
0.25	6.35	0.55	0.255	0.453	1.136	RIGHT LEFT	T-FLRT4125RG5 T-FLRT4125LG5	\$26.70 \$26.70

FACE GROOVING-DOUBLE ENDED INSERTS

Gage Diameter 0.375



FLF (RH Shown)

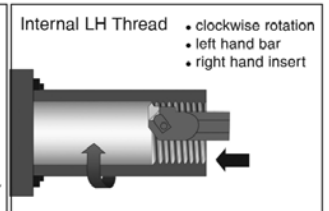
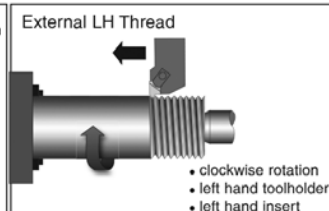
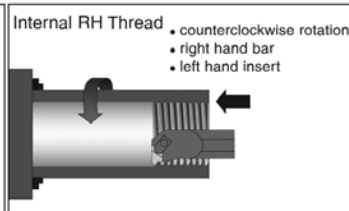
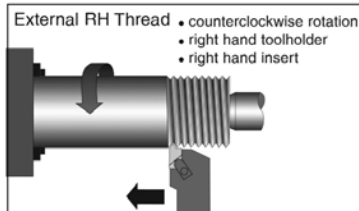
W Inch	W mm	E	T	A	B	Toolholder/ Boring Bar	Left or Right	Grade GP3 Part Number	Price Each	Grade GP50 Part Number	Price Each
0.125	3.18	0.18	0.195	0.344	0.405	GT-3	RIGHT LEFT	T-FLF3125RG3 T-FLF3125LG3	\$16.45 \$16.45	T-FLF3125RG5 T-FLF3125LG5	\$16.45 \$16.45
0.156	3.96	0.18	0.195	0.344	0.405	GT-3	RIGHT LEFT	T-FLF3156RG3 T-FLF3156LG3	\$16.45 \$16.45	T-FLF3156RG5 T-FLF3156LG5	\$16.45 \$16.45
0.188	4.77	0.18	0.195	0.344	0.405	GT-3	RIGHT LEFT	T-FLF3188RG3 T-FLF3188LG3	\$16.45 \$16.45	T-FLF3188RG5 T-FLF3188LG5	\$16.45 \$16.45

LAYDOWN TECHNICAL INFORMATION

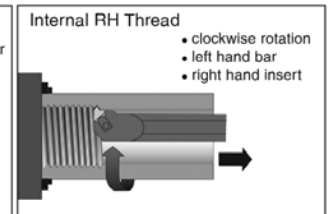
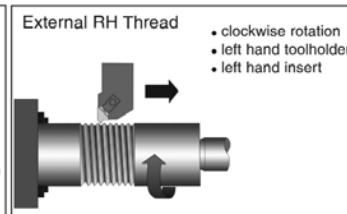
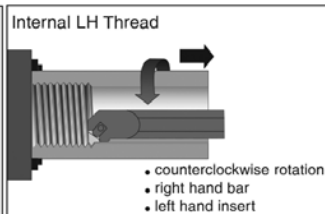
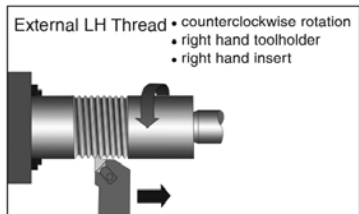
Full Line Available!
Please call for more information.



Feed direction towards the chuck



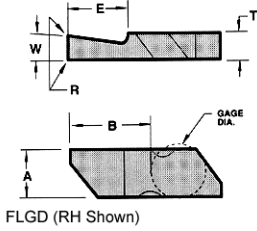
Feed direction towards the tailstock



Call Us Today For All Of Your Machine Tool Needs!

DEEP GROOVING-SINGLE ENDED INSERTS

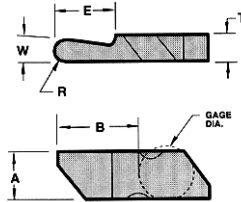
Gage Diameter 0.375



W Inch	W mm	E	T	A	B	Toolholder/ Boring Bar	Left or Right Hand	Grade GP3 Part Number	Price Each	Grade GP50 Part Number	Price Each
0.094	2.39	0.250	0.195	0.344	0.505	GT-3	RIGHT LEFT	T-FLGD3094RG3 T-FLGD3094LG3	\$13.10 \$13.10	T-FLGD3094RG5 T-FLGD3094LG5	\$13.10 \$13.10
0.125	3.18	0.250	0.195	0.344	0.505	GT-3	RIGHT LEFT	T-FLGD3125RG3 T-FLGD3125LG3	\$13.10 \$13.10	T-FLGD3125RG5 T-FLGD3125LG5	\$13.10 \$13.10
0.189	4.80	0.250	0.195	0.344	0.505	GT-3	RIGHT LEFT	T-FLGD3189RG3 T-FLGD3189LG3	\$13.10 \$13.10	T-FLGD3189RG5 T-FLGD3189LG5	\$13.10 \$13.10
0.125	3.18	0.250	0.255	0.453	0.636	GT-4	RIGHT LEFT	T-FLGD4125RG3 T-FLGD4125LG3	\$23.73 \$23.73	T-FLGD4125RG5 T-FLGD4125LG5	\$23.73 \$23.73
0.189	4.80	0.375	0.255	0.453	0.886	GT-4	RIGHT LEFT	T-FLGD4189RG3 T-FLGD4189LG3	\$16.52 \$16.52	T-FLGD4189RG5 T-FLGD4189LG5	\$16.52 \$16.52
0.250	6.35	0.500	0.255	0.453	0.886	GT-4	RIGHT LEFT	T-FLGD4250RG3 T-FLGD4250LG3	\$16.52 \$16.52	T-FLGD4250RG5 T-FLGD4250LG5	\$16.52 \$16.52

DEEP GROOVING-SINGLE ENDED INSERTS

Full Nose Radius-Gage Diameter 0.375



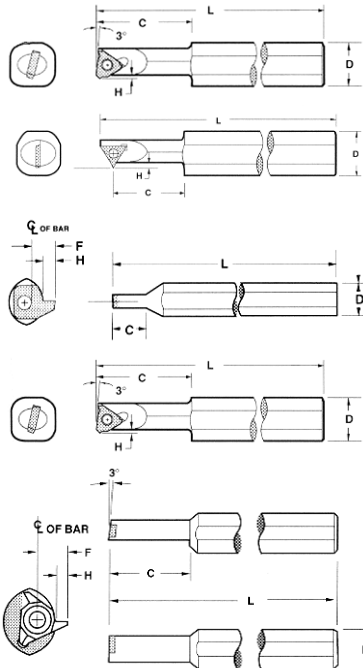
Full Line Available!
Please call for more information.



FLRD (RH Shown)

W Inch	W mm	E	T	A	B	Toolholder/ Boring Bar	Left or Right	Grade AC3 Part Number	Price Each	Grade GP3 Part Number	Price Each	Grade GP50 Part Number	Price Each
0.125	3.18	0.25	0.195	0.344	0.5016	GT-3	RIGHT LEFT	T-FLRD3062RA3 T-FLRD3062LA3	\$14.40 \$14.40	T-FLRD3062RG3 T-FLRD3062LG3	\$13.10 \$13.10	T-FLRD3062RG5 T-FLRD3062LG5	\$13.10 \$13.10
0.189	4.8	0.25	0.195	0.344	0.5016	GT-3	RIGHT LEFT	T-FLRD3094RA3 T-FLRD3094LA3	\$14.40 \$14.40	T-FLRD3094RG3 T-FLRD3094LG3	\$13.10 \$13.10	T-FLRD3094RG5 T-FLRD3094LG5	\$13.10 \$13.10
0.189	4.8	0.5	0.255	0.453	0.375	GT-4	RIGHT LEFT	- T-FLRD4094LA3	- \$17.67	T-FLRD4094RG3 T-FLRD4094LG3	\$16.52 \$16.52	T-FLRD4094RG5 T-FLRD4094LG5	\$16.52 \$16.52
0.25	6.35	0.5	0.255	0.453	0.375	GT-4	RIGHT LEFT	T-FLRD4125RA3 T-FLRD4125LA3	\$17.67 \$17.67	T-FLRD4125RG3 T-FLRD4125LG3	\$16.52 \$16.52	T-FLRD4125RG5 T-FLRD4125LG5	\$16.52 \$16.52

SMALL HOLE THREADING & GROOVING BARS



Full Line Available!
Please call for more information.

Boring Bar Type	Material	Coolant Port	Min Bore	L	D	C	F	H	Part Number	Price Each
BFR3	Steel	N	0.312	5	0.5	1	-	0.045	T-BFR-312S	\$158.51
		Y	0.312	5	0.5	1	-	0.045	T-BFR-312SC	\$292.12
BFR3	Heavy Metal	N	0.312	5	0.5	1.25	-	0.045	T-BFR-312HM	\$267.83
		Y	0.312	5	0.5	1.25	-	0.045	T-BFR-312HMC	\$392.84
BHR3	Steel	N	0.312	4	0.5	0.75	-	0.060	T-BHR-312S	\$159.86
		N	0.312	4	0.5	1	-	0.060	T-BHR-312HM	\$267.83
BB	Steel	N	0.312	5	0.5	0.75	0.156	0.070	T-BB-312S	\$159.86
		N	0.344	5	0.5	0.75	0.152	0.070	T-BB-344S	\$161.22
		N	0.375	5	0.5	0.75	0.1625	0.070	T-BB-375S	\$162.56
	Heavy Metal	N	0.44	5	0.5	1	0.1900	0.070	T-BB-440S	\$163.91
		N	0.312	5	0.5	1	0.1560	0.070	T-BB-312HM	\$267.83
		N	0.344	5	0.5	1	0.1520	0.070	T-BB-344HM	\$271.88
Carbide	N	0.375	5	0.5	1.25	0.1625	0.070	T-BB-375HM	\$282.81	
	N	0.44	5	0.5	1.5	0.1900	0.070	T-BB-440HM	\$279.97	
BFR4	Steel	N	0.312	5	0.5	1.25	0.1560	0.070	T-BB-312C	\$281.06
		N	0.44	5	0.5	1.5	0.1900	0.070	T-BB-440C	\$299.72
BTR	Steel	N	0.4	5	0.5	1	-	0.050	T-BFR-400S	\$162.56
		N	0.4	5	0.5	1.25	-	0.050	T-BFR-400HM	\$285.60
BTR	Heavy Metal	N	0.5	5	0.5	1.25	0.2250	0.075	T-BTR-500S	\$186.85
		N	0.5	5	0.5	1.5	0.2250	0.075	T-BTR-500HM	\$302.92

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

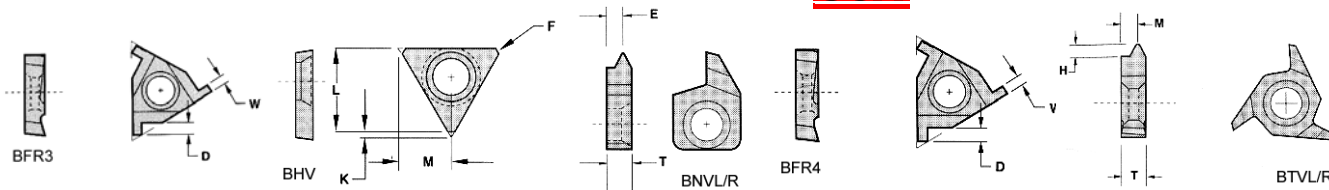
CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

SMALL HOLE GROOVING & THREADING

SMALL HOLE 60° V THREADING INSERTS

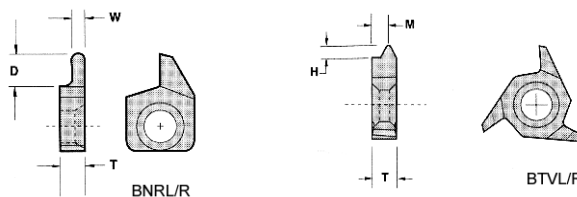


Min Bore	Boring Bar Type	Left or Right	TPI	A Angle	M	F	E	H	T	Grade GP22 Part Number	Price Each	Grade GP4 Part Number	Price Each
0.312	BFR3	RIGHT	27-48	60	0.031	-	-	-	-	T-BFR360VGP22	\$17.63	-	-
	BHR3	RIGHT	16-48	-	-	0.002	-	-	-	T-BHV002GP22	\$15.94	T-BHV002GP4	\$15.94
	BB	RIGHT	18-40	-	-	-	0.095	0.06	0.137	T-BNVR60GP22	\$16.17	T-BNVR60GP4	\$16.17
	BB	LEFT	18-40	-	-	-	0.095	0.06	0.137	T-BNVL60GP22	\$16.17	T-BNVL60GP4	\$16.17
0.400	BFR3	RIGHT	14-48	60	0.043	-	-	-	-	T-BFR460VGP22	\$17.63	T-BFR460VGP4	\$17.63
0.500	BTR	RIGHT	8-40	-	0.047	-	-	0.075	0.130	-	-	T-BTRV60GP4	\$20.57

SMALL HOLE- FULL NOSE RADIUS GROOVING INSERTS

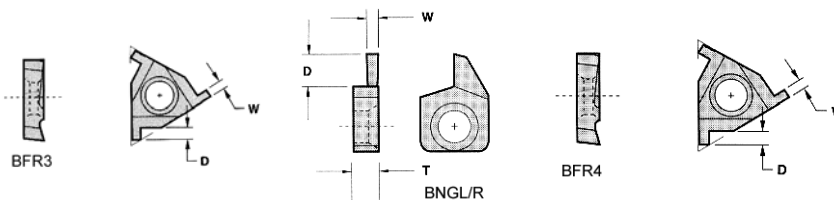


Full Line Available!
Please call for more information.



Min Bore	Boring Bar Type	Left or Right	W	D	T	Grade GP22 Part Number	Price Each	Grade GP4 Part Number	Price Each
0.312	BB	RIGHT	0.031	0.0155	0.137	T-BNRR031WGP22	\$16.52	T-BNRR031WGP4	\$16.52
			0.047	0.0235	0.137	T-BNRR047WGP22	\$16.52	T-BNRR047WGP4	\$16.52
			0.062	0.031	0.137	T-BNRR062WGP22	\$16.52	T-BNRR062WGP4	\$16.52
			0.094	0.047	0.137	T-BNRR094WGP22	\$16.52	T-BNRR094WGP4	\$16.52
			0.125	0.0625	0.137	T-BNRR125WGP22	\$16.52	T-BNRR125WGP4	\$16.52
0.500	BTR	RIGHT	0.062	0.075	0.13	-	-	T-BTRR062WGP4	\$20.57
			0.094	0.075	0.13	-	-	T-BTRR094WGP4	\$20.57
			0.125	0.075	0.13	-	-	T-BTRR125WGP4	\$20.57

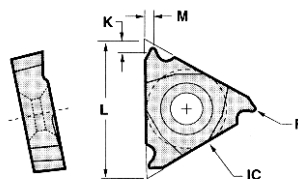
SMALL HOLE- STANDARD GROOVING INSERTS



Min Bore	Boring Bar Type	Left or Right	W	D	T	Grade GP22 Part Number	Price Each	Grade GP4 Part Number	Price Each
0.312	BB	RIGHT	0.031	0.035	-	T-BFR3031WGP22	\$18.72	-	-
		RIGHT	0.031	0.05	0.137	T-BNGR031WGP22	\$16.52	T-BNGR031WGP4	\$16.52
		LEFT	0.031	0.05	0.137	-	-	-	-
		RIGHT	0.047	0.07	0.137	T-BNGR047WGP22	\$16.52	T-BNGR047WGP4	\$16.52
		LEFT	0.047	0.07	0.137	-	-	-	-
		RIGHT	0.062	0.07	0.137	T-BNGR062WGP22	\$16.52	T-BNGR062WGP4	\$16.52
		LEFT	0.062	0.07	0.137	-	-	-	-
		RIGHT	0.094	0.07	0.137	T-BNGR094WGP22	\$16.52	T-BNGR094WGP4	\$16.52
		RIGHT	0.125	0.07	0.137	T-BNGR125WGP22	\$16.52	T-BNGR125WGP4	\$16.52
0.400	BFR3	RIGHT	0.031	0.035	-	T-BFR4031WGP22	\$16.42	-	-
0.500	BTR	RIGHT	0.062	0.075	0.13	-	-	T-BTGR062WGP4	\$20.57
			0.094	0.075	0.13	-	-	T-BTGR094WGP4	\$20.57
			0.125	0.075	0.13	-	-	T-BTGR125WGP4	\$20.57

Call Us Today For All Of Your Machine Tool Needs!

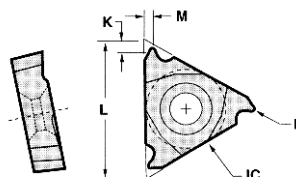
T SERIES LAYDOWN - EXTERNAL THREADING INSERTS



Full Line Available!
Please call for more information.

TPI If Threading	IC Both Threading & Grooving	L Both Threading & Grooving	IF THREADING			For Use With Holder	Left or Right	Grade AT22 Part Number	Price Each	Grade GP22 Part Number	Price Each	Grade GP50 Part Number	Price Each
			M	K	R								
16-48	3/8	0.65	0.031	0.024	0.003	16ER	RIGHT	T-16ERA60A2	\$13.65	T-16ERA60G22	\$13.65	T-16ERA60G50	\$13.65
						16EL	LEFT	T-16ELA60A2	\$13.65	-	-	-	
8-48	3/8	0.65	0.059	0.043	0.003	16ER	RIGHT	T-16ERAG60A2	\$13.65	T-16ERAG60G22	\$13.65	T-16ERAG60G50	\$13.65
						16EL	LEFT	T-16ELAG60A2	\$13.65	-	-	-	
8-14	3/8	0.65	0.059	0.043	0.007	16EL	LEFT	T-16ELG60A2	\$13.65	-	-	-	-
5-7	1/2	0.87	0.098	0.067	0.016	22ER	RIGHT	-	-	-	-	-	-

T SERIES LAYDOWN - INTERNAL THREADING INSERTS



Full Line Available!
Please call for more information.

TPI If Threading	IC Both Threading & Grooving	L Both Threading & Grooving	IF THREADING			For Use With Holder	Left or Right	Grade AT22 Part Number	Price Each	Grade GP22 Part Number	Price Each	Grade GP50 Part Number	Price Each
			M	K	R								
16-48	3/8	0.65	0.031	0.024	0.003	16NR	RIGHT	-	-	-	-	T-16NRA60G50	\$13.65
						16NL	LEFT	-	-	-	-	T-16NLA60G50	\$11.57
8-48	3/8	0.65	0.059	0.043	0.003	16NR	RIGHT	T-16NRAG60A2	\$13.65	T-16NRAG60G22	\$13.65	T-16NRAG60G50	\$13.65
						16NL	LEFT	-	-	-	-	T-16NLAG60G50	\$13.65
8-14	3/8	0.65	0.059	0.043	0.007	16NR	RIGHT	-	-	T-16NRG60G22	\$13.65	T-16NRG60G50	\$13.65
						16NL	LEFT	-	-	-	-	T-16NLG60G50	\$13.65
5-7	1/2	0.87	0.098	0.067	0.01	16NR	RIGHT	-	-	T-22NRN60G22	\$19.05	T-22NRN60G50	\$19.05
						16NL	LEFT	-	-	-	-	T-22NLN60G50	\$19.05

GRADE INFORMATION



Full Line Available!
Please call for more information.

Grade	Class	Description	Material	Application
GP4	C1/C5A K30/P30	Coated - Sub-Micron	Aluminum, Cast Iron, 300/400 Stainless Steel, Non-Metals, Carbon/Alloy Steel, Ductile Iron, Chrome	Extremely tough grades that perform well at very slow SFPM with minimal breakage or chipping.
GP22	C1 K30	Coated - Sub-Micron	Aluminum, Cast Iron, 300 Stainless Steel, High Temp Alloys, Non-Metals, Chrome	Extremely tough grades that perform well at very slow SFPM with minimal breakage or chipping.
GP3	C3	Coated - Sub-Micron	High Temp Alloys, 300 Stainless Steel	Versatile grades that combine high hardness with toughness
AC3	K15-K25 M05-M20	Coated - Sub-Micron	TiAlN Coated For High Temp Alloys & 300 Series Stainless Steel	-
GP50	C5	Coated	Carbon/Alloy Steel, 400 Stainless Steel, Ductile Iron	General purpose grades, coated grades can normally be ran at higher SFPM
AC50	P20-P35 M15-M30	Coated	TiAlN Coated For 400 Series Stainless Steel & Ductile Cast Iron	-
C3	C2-C3	Coated	Non Ferrous Metals, Plastics	-

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

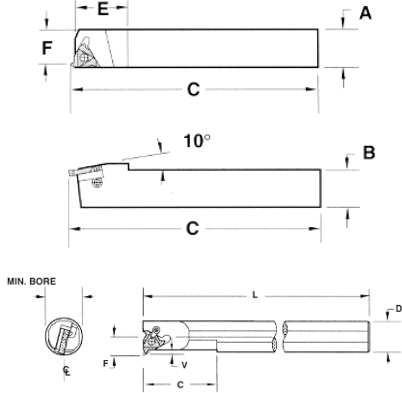
CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

T-SERIES LAYDOWN THREADING HOLDERS

INTERNAL & EXTERNAL THREADING HOLDERS



T SERIES LAYDOWN EXTERNAL THREADING HOLDERS

For Use With Holder	Left or Right	A	B	C	E	F	Part Number	Price Each
16ER	RIGHT	0.75	0.75	5	1.20	0.75	T-AL075-3R	\$92.19
	RIGHT	1.00	1.00	6	1.20	1.00	T-AL100-3R	\$93.63
22ER	RIGHT	1.00	1.00	6	1.42	1.00	T-AL100-4R	\$93.63
22EL	LEFT	1.00	1.00	6	1.42	1.00	T-AL100-4L	\$93.63
27ER	RIGHT	1.25	1.25	7	1.57	1.25	T-AL125-5R	\$105.06

T SERIES LAYDOWN INTERNAL THREADING HOLDERS

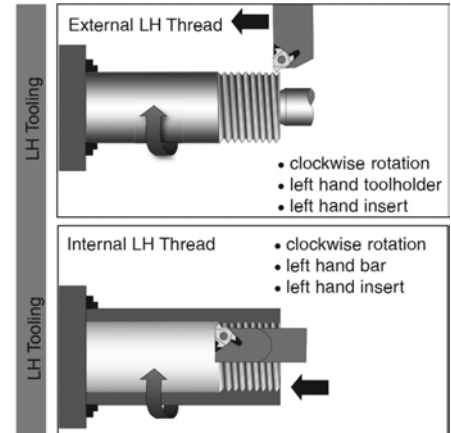
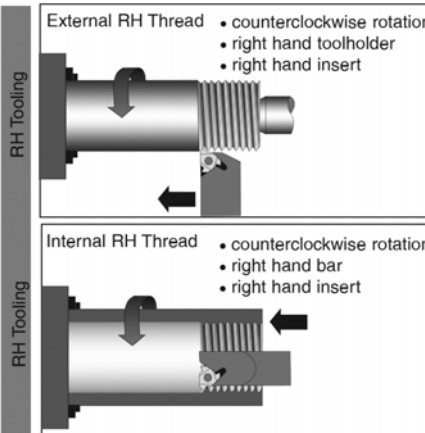
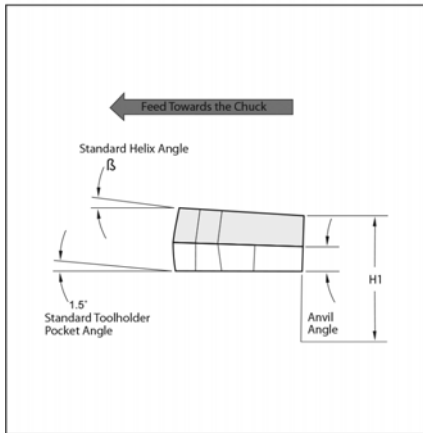
For Use With Holder	Left or Right	Min Bore For Boring Bars	C	D	F	L	Part Number	Price Each
16NR	RIGHT	0.625	2.50	0.63	0.312	7	T-NVR625-3R	\$107.83
	RIGHT	0.95	2.75	0.75	0.51	7	T-AVR750-3R	\$125.09
	RIGHT	1.15	3.00	1.00	0.64	10	T-AVR100-3R	\$158.00
	RIGHT	1.40	3.00	1.25	0.77	10	T-AVR125-3R	\$165.15
	RIGHT	1.70	3.00	1.50	0.90	12	T-AVR150-3R	\$223.81
22NR	RIGHT	1.10	2.75	0.75	0.61	7	T-NVR750-4R	\$107.83
	RIGHT	1.20	3.00	1.00	0.71	10	T-AVR100-4R	\$158.00

LAYDOWN TECHNICAL INFORMATION

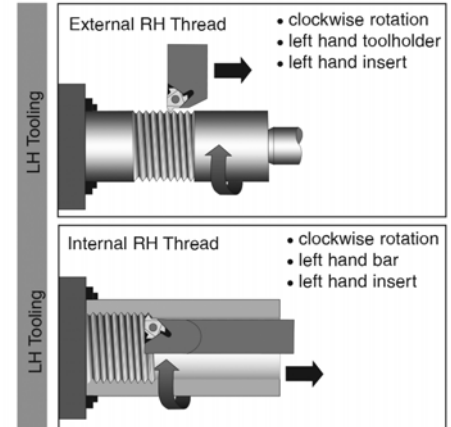
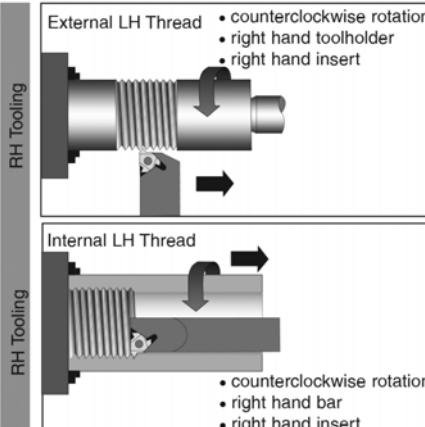
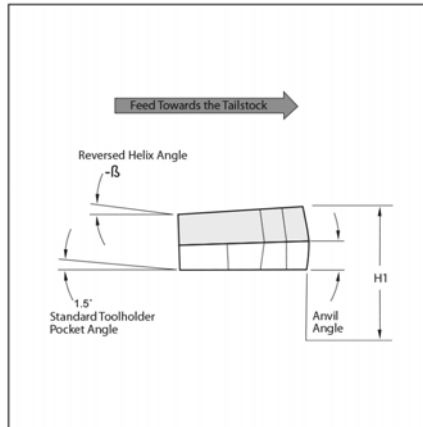
Full Line Available!
Please call for more information



Feed direction towards the chuck



Feed direction towards the tailstock

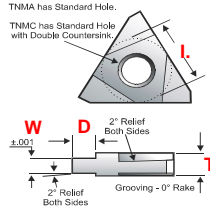


Call Us Today For All Of Your Machine Tool Needs!

ON EDGE GROOVING/ THREADING INSERTS

B

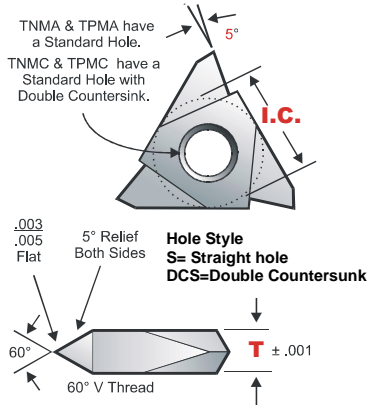
ON EDGE GROOVING INSERTS



Full Line Available!
Please call for more information.

I.C.	T	D	W	Industry Number (for reference only)	STANDARD HOLE			DOUBLE COUNTERSUNK HOLE				
					Coated GP3 Grade	Price Each	Coated GP-50 Grade	Price Each	Industry Number (for reference only)	Coated GP3 Grade	Price Each	Coated GP-50 Grade
3/8	1/8	.120	.062	TNMA-32-NGL.062	-	\$16.45	-	\$14.84	-	\$14.84	GV-751	\$17.51
				TNMA-32-NGR-.062	-		GV-702		-		GV-752	
		TNMA-32-NGL.094	-	GV-704	-		GV-753					
		TNMA-32-NGR-.094	GV-604	GV-705	-		GV-754					
1/2	3/16	.120	.062	TNMA-32-NGC.125	GV-605	\$17.51	GV-706	\$17.51	TNMC-32-NGC.125	GV-655	\$17.51	GV-755
				TNMA-43-NGL.062	GV-606		TNMC-32-NGR-.062		GV-652	GV-756		
		TNMA-43-NGR-.062	GV-607	TNMC-32-NGL.094	GV-653		GV-757					
		TNMA-43-NGL.094	GV-608	TNMC-32-NGR-.094	GV-654		GV-758					
		TNMA-43-NGR-.094	GV-609	TNMC-32-NGC.125	GV-655		GV-759					
		TNMA-43-NGL.125	GV-610	TNMC-32-NGL.062	GV-656		GV-760					
		TNMA-43-NGR-.125	GV-611	TNMC-32-NGR-.062	GV-657		GV-761					
		TNMA-43-NGC-.125	GV-612	TNMC-32-NGL.094	GV-658		GV-762					
		TNMA-43-NGL-.156	-	TNMC-32-NGR-.094	GV-659		GV-763					
		TNMA-43-NGR-.156	-	TNMC-32-NGC.125	GV-660		GV-764					
		TNMA-43-NGL-.188	-	TNMC-32-NGL.125	GV-661		GV-765					
		TNMA-43-NGR-.188	GV-615	TNMC-32-NGR-.125	GV-662		-					
-	-	TNMC-32-NGL.156	GV-663	-								
-	-	TNMC-32-NGR-.156	GV-664	-								
-	-	TNMC-32-NGC-.188	GV-665	-								
-	-	GV-715	-	-								

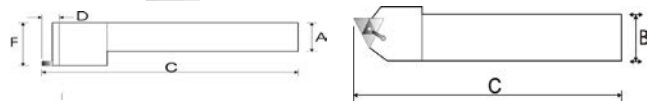
60° V ON EDGE THREADING INSERTS



TPI	IC	T	R	Hole Style	Rake	Industry Number	Coated GP3	Price Each	Coated GP50	Price Each
8-36	3/8	.127	.003/.005	S	NEG	TNMA-32NV	VT-601	\$16.45	VT-701	\$16.45
5-24	1/2	.189	.003/.005	S	NEG	TNMA-43NV	VT-602	\$16.45	VT-702	\$17.86
4-20	5/8	.252	.008/.010	S	NEG	TNMA-54NV	VT-603	\$25.20	VT-703	\$25.20
8-36	3/8	.127	.003/.005	S	POS	TPMA-32NV	VT-604	\$15.75	VT-704	\$15.75
5-24	1/2	.189	.003/.005	S	POS	TPMA-43NV	VT-605	\$18.53	VT-705	\$18.53
4-20	5/8	.252	.008/.010	S	POS	TPMA-54NV	VT-606	\$23.15	VT-706	\$23.15
8-36	3/8	.127	.003/.005	DCS	NEG	TNMC-32NV	VT-607	\$16.45	VT-707	\$16.45
5-24	1/2	.189	.003/.005	DCS	NEG	TNMC-43NV	VT-608	\$16.45	VT-708	\$16.45
4-20	5/8	.252	.008/.010	DCS	NEG	TNMC-54NV	VT-609	\$25.20	VT-709	\$25.20
8-36	3/8	.127	.003/.005	DCS	POS	TPMC-32NV	VT-610	\$15.75	VT-710	\$15.75
5-24	1/2	.189	.003/.005	DCS	POS	TPMC-43NV	VT-611	\$18.53	VT-711	\$18.53
4-20	5/8	.252	.008/.010	DCS	POS	TPMC-54NV	VT-612	\$23.15	VT-712	\$23.15

HOLDERS FOR EXTERNAL GROOVING & THREADING

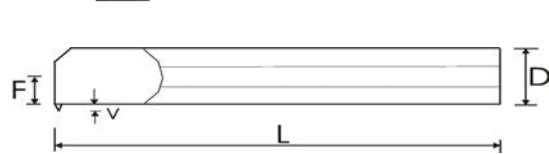
From either of the two insert tables above match the **IC of the insert** to the holders in the table below to get matched Inserts and Holders for your needs.



Left/Right	Insert IC	A	B	C	D	E	F	Holder Part Number	Price Each
R	3/8	3/4	3/4	4-1/2	.15	1.08	1.00	T-MTVOR123	\$83.55
L	3/8	3/4	3/4	4-1/2	.15	1.08	1.00	T-MTVOL123	\$83.55
R	3/8	1	1	6	.15	1.08	1.25	T-MTVOR163	\$86.94
L	3/8	1	1	6	.15	1.08	1.25	T-MTVOL163	\$86.94
R	1/2	3/4	3/4	4-1/2	.23	1.23	1.00	T-MTVOR124	\$83.55
L	1/2	3/4	3/4	4-1/2	.23	1.23	1.00	T-MTVOL124	\$83.55
R	1/2	1	1	6	.23	1.23	1.25	T-MTVOR164	\$86.94
L	1/2	1	1	6	.23	1.23	1.25	T-MTVOL164	\$86.94
R	1/2	1-1/4	1-1/4	7	.23	1.23	1.5	T-MTVOR204	\$102.43
R	5/8	1	1	6	.29	1.43	1.25	T-MTVOR165	\$86.94
L	5/8	1	1	6	.29	1.43	1.25	T-MTVOL165	\$86.94
R	5/8	1-1/4	1-1/4	7	.29	1.43	1.5	T-MTVOR205	\$102.43

BARS FOR INTERNAL GROOVING & THREADING

From either of the two insert tables above match the **IC of the insert** to the holders in the table below to get matched Inserts and Holders for your needs.



Left/Right	Insert IC	Min Bore	D	L	F	V	Bar Part Number	Price Each
R	3/8	1.383	1.000	14	.687	.120	T-SIMTHOR163	\$237.39
L	3/8	1.383	1.000	14	.687	.120	T-SIMTHOL163	\$248.19
R	1/2	1.815	1.25	14	.875	.190	T-SIMTHOR204	\$295.42
L	1/2	1.815	1.25	14	.875	.190	T-SIMTHOL204	\$306.22
R	1/2	1.892	1.50	14	1.000	.190	T-SIMTHOR244	\$299.46
L	1/2	1.892	1.50	14	1.000	.190	T-SIMTHOL244	\$310.27
R	5/8	2.125	1.500	14	1.073	.220	T-SIMTHOR245	\$249.74
L	5/8	2.125	1.500	14	1.073	.220	T-SIMTHOL245	\$310.27
R	5/8	2.75	2.000	14	1.323	.320	T-SIMTHOR325	\$362.89

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

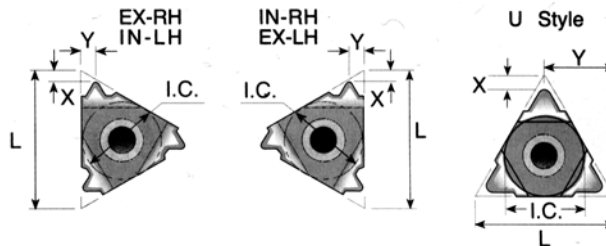
COOLANT/FLUIDS
TOOL STORAGE

THREAD TURNING INSERTS

PARTIAL PROFILE 60° INSERTS

For Unified (UN-American) and Metric (ISO) Thread Forms

Carmex
Precision Tools Ltd.

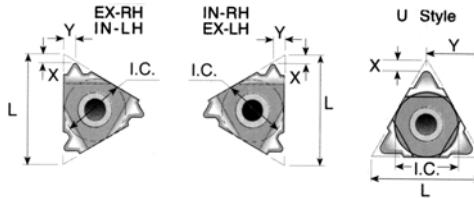


Insert Series	I.C.	Pitch Range				EXTERNAL		INTERNAL		Price Each
		TPI	MM	X	Y	Right Hand Part Number	Left Hand Part Number	Right Hand Part Number	Left Hand Part Number	
6	5/32	48-20	0.5-1.25	.02	.02	-	-	T-C06IRA60__	T-C06ILA60__	\$13.98
8	3/16	48-16	0.5-1.5	.02	.03	-	-	T-C08IRA60__	T-C08ILA60__	\$13.98
8U	3/16U	14-11	1.75-2.0	.03	.16	-	-	T-C08IRLU60__	T-C08IRLU60__	\$13.98
11	1/4	48-16	0.5-1.5	.03	.04	T-C11ERA60__	T-C11ELA60__	T-C11IRA60__	T-C11ILA60__	\$13.98
16	3/8	48-16	0.5-1.5	.03	.04	T-C16ERA60__	T-C16ELA60__	T-C16IRA60__	T-C16ILA60__	\$13.98
	3/8	14-8	1.75-3.0	.05	.07	T-C16ERG60__	T-C16ELG60__	T-C16IRG60__	T-C16ILG60__	\$13.98
	3/8	48-8	0.5-3.0	.05	.07	T-C16ERAG60__	T-C16ELAG60__	T-C16IRAG60__	T-C16ILAG60__	\$13.98
22	1/2	7-5	3.5-5.0	.07	.10	T-C22ERN60__	T-C22ELN60__	T-C22IRN60__	T-C22ILN60__	\$16.45
22U	1/2U	4.5-3.25	5.5-8.0	.02	.43	T-C22UEIRLU60__	T-C22UEIRLU60__	T-C22UEIRLU60__	T-C22UEIRLU60__	\$20.54
27	5/8	4.5-4	5.5-6.0	.08	.12	T-C27ERQ60__	T-C27ELQ60__	T-C27IRQ60__	T-C27ILQ60__	\$26.33
27U	5/8U	4-2.75	6.5-9.0	.04	.54	T-C27UEIRLU60__	T-C27UEIRLU60__	T-C27UEIRLU60__	T-C27UEIRLU60__	\$26.33

Partial Profile 60° - W/ Sintered Chipbreaker

Insert Series	I.C.	TPI	MM	X	Y	Right Hand Part Number	Left Hand Part Number	Right Hand Part Number	Left Hand Part Number	Price Each
16	3/8	48-16	0.5-1.5	.03	.04	T-C16ERBA60__	T-C16ELBA60__	T-C16IRBA60__	T-C16ILBA60__	\$13.98
	3/8	14-8	1.75-3.0	.05	.07	T-C16ERBG60__	T-C16ELBG60__	T-C16IRBG60__	T-C16ILBG60__	\$13.98
	3/8	48-8	0.5-3.0	.05	.07	T-C16ERBAG60__	T-C16ELBAG60__	T-C16IRBAG60__	T-C16ILBAG60__	\$13.98

PARTIAL PROFILE 55° INSERTS



Carmex
Precision Tools Ltd.

Full Line Available!
Please call for more information.

INSERT SERIES	I.C.	Pitch Range				EXTERNAL		INTERNAL		Price Each
		TPI	MM	X	Y	Right Hand Part Number	Left Hand Part Number	Right Hand Part Number	Left Hand Part Number	
6	5/32	48-20	0.5-1.25	.02	.02	-	-	T-C06IRA55__	T-C06ILA55__	\$13.98
8	3/16	48-16	0.5-1.5	.02	.03	-	-	T-C08IRA55__	T-C08ILA55__	\$13.98
8U	3/16U	14-11	1.75-2.0	.04	.16	-	-	T-C08IRLU55__	T-C08IRLU55__	\$13.98
11	1/4	48-16	0.5-1.5	.03	.04	T-C11ERA55__	T-C11ELA55__	T-C11IRA55__	T-C11ILA55__	\$13.98
16	3/8	48-16	0.5-1.5	.03	.04	T-C16ERA55__	T-C16ELA55__	T-C16IRA55__	T-C16ILA55__	\$13.98
	3/8	14-8	1.75-3.0	.05	.07	T-C16ERG55__	T-C16ELG55__	T-C16IRG55__	T-C16ILG55__	\$13.98
	3/8	48-8	0.5-3.0	.05	.07	T-C16ERAG55__	T-C16ELAG55__	T-C16IRAG55__	T-C16ILAG55__	\$13.98
22	1/2	7-5	3.5-5.0	.07	.10	T-C22ERN55__	T-C22ELN55__	T-C22IRN55__	T-C22ILN55__	\$16.45
22U	1/2U	4.5-3.25	5.5-8.0	.04	.43	T-C22UEIRLU55__	T-C22UEIRLU55__	T-C22UEIRLU55__	T-C22UEIRLU55__	\$16.45
27	5/8	4.5-4	5.5-6.0	.08	.11	T-C27ERQ55__	T-C27ELQ55__	T-C27IRQ55__	T-C27ILQ55__	\$26.33
27U	5/8U	4-2.75	6.5-9.0	.05	.54	T-C27UEIRLU55__	T-C27UEIRLU55__	T-C27UEIRLU55__	T-C27UEIRLU55__	\$26.33

Partial Profile 55° W/ Chipbreaker

INSERT SERIES	I.C.	TPI	MM	X	Y	Right Hand Part Number	Left Hand Part Number	Right Hand Part Number	Left Hand Part Number	Price Each
16	3/8	14-8	1.75-3.0	.05	.07	T-C16ERBG55__	T-C16ELBG55__	T-C16IRBG55__	T-C16ILBG55__	\$13.98
	3/8	48-8	0.5-3.0	.05	.07	T-C16ERBAG55__	T-C16ELBAG55__	T-C16IRBAG55__	T-C16ILBAG55__	\$13.98

CARMEX GRADE INFORMATION

Carmex Grade	USST Grade	Carbide ANSI	Coating	Materials
P25C	P5	C5	TIN	Hard Steels
MXC	M2	C2-C3	TIN	Soft Steels, Stainless Steels, Cast Iron
BMA	B4	C3-C4	TIALN	Superalloys, Stainless Steels
K20	K2	C2	UNCOATED	Aluminum, Non Ferrous

How To Order:

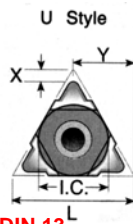
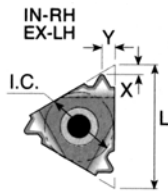
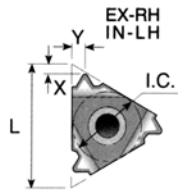
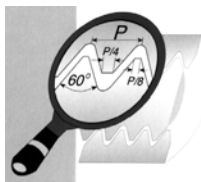
- 1) Pick the required insert from table above eg: **T-C11ERA60__**
- 2) Pick a Carbide grade from the Grades table below - eg. B4 for superalloys and stainless steels
- 3) Order Part Number **T-C11ERA60B4**
- 4) Pick toolholder (ext) or boring bar (int) from pages 322-323

Call Us Today For All Of Your Machine Tool Needs!

ISO METRIC FULL PROFILE INSERTS

For Metric Threads, ISO 262, DIN 13

Carmex
Precision Tools Ltd.



How To Order:

- 1) Pick the required insert from table above eg: T-C11ERA60__
- 2) Pick a Carbide grade from the Grades table
B4 for superalloys and stainless steels
- 3) Order Part Number T-C11ERA60B4
- 4) Pick toolholder (ext) or boring bar (int) from pages 322-323

ISO METRIC - Full Profile For Metric Threads, ISO 262, DIN 13

INSERT SERIES	I.C.	Pitch MM	EXTERNAL				INTERNAL				Price Each
			X	Y	Right Hand Part Number	Left Hand Part Number	X	Y	Right Hand Part Number	Left Hand Part Number	
6	5/32	0.5	-	-	-	-	.04	.02	T-C06IR05M__	T-C06IL05M__	\$13.98
	5/32	0.75	-	-	-	-	.03	.02	T-C06IR075M__	T-C06IL075M__	\$13.98
	5/32	1.0	-	-	-	-	.03	.02	T-C06IR10M__	T-C06IL10M__	\$13.98
	5/32	1.25	-	-	-	-	.02	.02	T-C06IR125M__	T-C06IL125M__	\$13.98
8	3/16	0.5	-	-	-	-	.02	.02	T-C08IR05M__	T-C08IL05M__	\$13.98
	3/16	0.75	-	-	-	-	.02	.02	T-C08IR075M__	T-C08IL075M__	\$13.98
	3/16	1.0	-	-	-	-	.02	.02	T-C08IR10M__	T-C08IL10M__	\$13.98
	3/16	1.25	-	-	-	-	.02	.03	T-C08IR125M__	T-C08IL125M__	\$13.98
	3/16	1.5	-	-	-	-	.02	.03	T-C08IR15M__	T-C08IL15M__	\$13.98
	3/16	1.75	-	-	-	-	.02	.03	T-C08IR175M__	T-C08IL175M__	\$13.98
11	1/4	0.35	.03	.02	T-C11ER035M__	T-C11EL035M__	.03	.01	T-C11IR035M__	T-C11IL035M__	\$13.98
	1/4	0.4	.03	.02	T-C11ER04M__	T-C11EL04M__	.03	.02	T-C11IR04M__	T-C11IL04M__	\$13.98
	1/4	0.45	.03	.02	T-C11ER045M__	T-C11EL045M__	.03	.02	T-C11IR045M__	T-C11IL045M__	\$13.98
	1/4	0.5	.02	.02	T-C11ER05M__	T-C11EL05M__	.02	.02	T-C11IR05M__	T-C11IL05M__	\$13.98
	1/4	0.6	.02	.02	T-C11ER06M__	T-C11EL06M__	.02	.02	T-C11IR06M__	T-C11IL06M__	\$13.98
	1/4	0.7	.02	.02	T-C11ER07M__	T-C11EL07M__	.02	.02	T-C11IR07M__	T-C11IL07M__	\$13.98
	1/4	0.75	.02	.02	T-C11ER075M__	T-C11EL075M__	.02	.02	T-C11IR075M__	T-C11IL075M__	\$13.98
	1/4	0.8	.02	.02	T-C11ER08M__	T-C11EL08M__	.02	.02	T-C11IR08M__	T-C11IL08M__	\$13.98
	1/4	1.0	.03	.03	T-C11ER10M__	T-C11EL10M__	.02	.03	T-C11IR10M__	T-C11IL10M__	\$13.98
	1/4	1.25	.03	.04	T-C11ER125M__	T-C11EL125M__	.03	.03	T-C11IR125M__	T-C11IL125M__	\$13.98
16	3/8	0.35	.03	.02	T-C16ER035M__	T-C16EL035M__	.03	.01	T-C16IR035M__	T-C16IL035M__	\$13.98
	3/8	0.4	.03	.02	T-C16ER04M__	T-C16EL04M__	.03	.02	T-C16IR04M__	T-C16IL04M__	\$13.98
	3/8	0.45	.03	.02	T-C16ER045M__	T-C16EL045M__	.03	.02	T-C16IR045M__	T-C16IL045M__	\$13.98
	3/8	0.5	.02	.02	T-C16ER05M__	T-C16EL05M__	.02	.02	T-C16IR05M__	T-C16IL05M__	\$13.98
	3/8	0.6	.02	.02	T-C16ER06M__	T-C16EL06M__	.02	.02	T-C16IR06M__	T-C16IL06M__	\$13.98
	3/8	0.7	.02	.02	T-C16ER07M__	T-C16EL07M__	.02	.02	T-C16IR07M__	T-C16IL07M__	\$13.98
	3/8	0.75	.02	.02	T-C16ER075M__	T-C16EL075M__	.02	.02	T-C16IR075M__	T-C16IL075M__	\$13.98
	3/8	0.8	.02	.02	T-C16ER08M__	T-C16EL08M__	.02	.02	T-C16IR08M__	T-C16IL08M__	\$13.98
	3/8	1.0	.03	.03	T-C16ER10M__	T-C16EL10M__	.02	.03	T-C16IR10M__	T-C16IL10M__	\$13.98
	3/8	1.25	.03	.04	T-C16ER125M__	T-C16EL125M__	.03	.03	T-C16IR125M__	T-C16IL125M__	\$13.98
	3/8	1.5	.03	.04	T-C16ER15M__	T-C16EL15M__	.03	.04	T-C16IR15M__	T-C16IL15M__	\$13.98
	3/8	1.75	.04	.05	T-C16ER175M__	T-C16EL175M__	.04	.05	T-C16IR175M__	T-C16IL175M__	\$13.98
	3/8	2.0	.04	.05	T-C16ER20M__	T-C16EL20M__	.04	.05	T-C16IR20M__	T-C16IL20M__	\$13.98
	3/8	2.5	.04	.06	T-C16ER25M__	T-C16EL25M__	.04	.06	T-C16IR25M__	T-C16IL25M__	\$13.98
3/8	3.0	.05	.06	T-C16ER30M__	T-C16EL30M__	.04	.06	T-C16IR30M__	T-C16IL30M__	\$13.98	
22	1/2	3.5	.06	.09	T-C22ER35M__	T-C22EL35M__	.06	.09	T-C22IR35M__	T-C22IL35M__	\$16.45
	1/2	4.0	.06	.09	T-C22ER40M__	T-C22EL40M__	.06	.09	T-C22IR40M__	T-C22IL40M__	\$16.45
	1/2	4.5	.07	.09	T-C22ER45M__	T-C22EL45M__	.06	.09	T-C22IR45M__	T-C22IL45M__	\$16.45
	1/2	5.0	.07	.10	T-C22ER50M__	T-C22EL50M__	.06	.09	T-C22IR50M__	T-C22IL50M__	\$16.45
22U	1/2U	5.5	.09	.43	T-C22UERL55M__	T-C22UERL55M__	.09	.43	T-C22UIRL55M__	T-C22UIRL55M__	\$16.45
	1/2U	6.0	.10	.43	T-C22UERL60M__	T-C22UERL60M__	.08	.43	T-C22UIRL60M__	T-C22UIRL60M__	\$16.45
27	5/8	5.5	.07	.11	T-C27ER55M__	T-C27EL55M__	.06	.09	T-C27IR55M__	T-C27IL55M__	\$26.33
	5/8	6.0	.08	.11	T-C27ER60M__	T-C27EL60M__	.07	.10	T-C27IR60M__	T-C27IL60M__	\$26.33
27U	5/8U	8.0	.09	.54	T-C27UERL80M__	T-C27UERL80M__	.09	.54	T-C27UIRL80M__	T-C27UIRL80M__	\$26.33

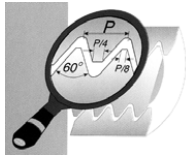
ISO METRIC - Full Profile W/SINTERED CHIPBREAKER

16	3/8	0.8	.02	.02	T-C16ERB08M__	T-C16ELB08M__	-	-	-	-	-
	3/8	1.0	.03	.03	T-C16ERB10M__	T-C16ELB10M__	.02	.03	T-C16IRB10M__	T-C16ILB10M__	\$13.98
	3/8	1.25	.03	.04	T-C16ERB125M__	T-C16ELB125M__	.03	.03	T-C16IRB125M__	T-C16ILB125M__	\$13.98
	3/8	1.5	.03	.04	T-C16ERB15M__	T-C16ELB15M__	.03	.04	T-C16IRB15M__	T-C16ILB15M__	\$13.98
	3/8	1.75	.04	.05	T-C16ERB175M__	T-C16ELB175M__	.04	.05	T-C16IRB175M__	T-C16ILB175M__	\$13.98
	3/8	2.0	.04	.05	T-C16ERB20M__	T-C16ELB20M__	.04	.05	T-C16IRB20M__	T-C16ILB20M__	\$13.98
	3/8	2.5	.04	.06	T-C16ERB25M__	T-C16ELB25M__	.04	.06	T-C16IRB25M__	T-C16ILB25M__	\$13.98
	3/8	3.0	.05	.06	T-C16ERB30M__	T-C16ELB30M__	.04	.06	T-C16IRB30M__	T-C16ILB30M__	\$13.98

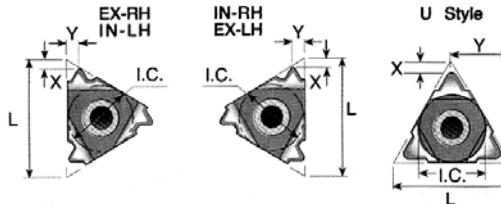
Call Us Or Visit Our Website For Our Complete Selection!

LAYDOWN THREAD TURNING INSERTS

UN FULL PROFILE INSERTS
For American Unified 60° Threads
ANSI B1.1:74



Full Line Available!
Please call for more information.



Carmex
Precision Tools Ltd.

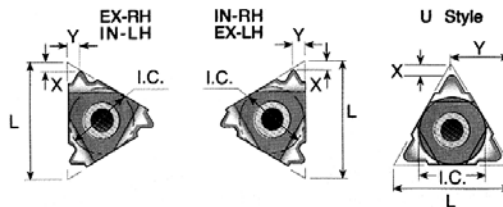
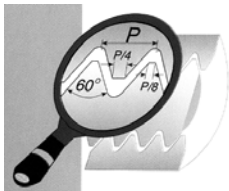
INSERT SERIES	I.C.	Pitch TPI	EXTERNAL				INTERNAL				Price Each
			X	Y	Right Hand Part Number	Left Hand Part Number	X	Y	Right Hand Part Number	Left Hand Part Number	
6	5/32	32	-	-	-	-	.03	.02	T-C06IR32UN	T-C06IL32UN	\$13.98
	5/32	28	-	-	-	-	.03	.02	T-C06IR28UN	T-C06IL28UN	\$13.98
	5/32	24	-	-	-	-	.03	.02	T-C06IR24UN	T-C06IL24UN	\$13.98
	5/32	20	-	-	-	-	.02	.02	T-C06IR20UN	T-C06IL20UN	\$13.98
	5/32	18	-	-	-	-	.02	.03	T-C06IR18UN	T-C06IL18UN	\$13.98
8	3/16	32	-	-	-	-	.02	.02	T-C08IR32UN	T-C08IL32UN	\$13.98
	3/16	28	-	-	-	-	.02	.02	T-C08IR28UN	T-C08IL28UN	\$13.98
	3/16	24	-	-	-	-	.02	.02	T-C08IR24UN	T-C08IL24UN	\$13.98
	3/16	20	-	-	-	-	.02	.03	T-C08IR20UN	T-C08IL20UN	\$13.98
	3/16	18	-	-	-	-	.02	.03	T-C08IR18UN	T-C08IL18UN	\$13.98
	3/16	16	-	-	-	-	.02	.03	T-C08IR16UN	T-C08IL16UN	\$13.98
	3/16	14	-	-	-	-	.02	.03	T-C08IR14UN	T-C08IL14UN	\$13.98
8U	3/16U	13	-	-	-	-	.04	.16	T-C08UIRL13UN	T-C08UIRL13UN	\$15.68
	3/16U	12	-	-	-	-	.04	.16	T-C08UIRL12UN	T-C08UIRL12UN	\$15.68
	3/16U	11	-	-	-	-	.04	.16	T-C08UIRL11UN	T-C08UIRL11UN	\$15.68
11	1/4	72	.03	.02	T-C11ER72UN	T-C11EL72UN	.03	.01	T-C11IR72UN	T-C11IL72UN	\$13.98
	1/4	64	.03	.02	T-C11ER64UN	T-C11EL64UN	.03	.02	T-C11IR64UN	T-C11IL64UN	\$13.98
	1/4	56	.03	.02	T-C11ER56UN	T-C11EL56UN	.03	.02	T-C11IR56UN	T-C11IL56UN	\$13.98
	1/4	48	.02	.02	T-C11ER48UN	T-C11EL48UN	.02	.02	T-C11IR48UN	T-C11IL48UN	\$13.98
	1/4	44	.02	.02	T-C11ER44UN	T-C11EL44UN	.02	.02	T-C11IR44UN	T-C11IL44UN	\$13.98
	1/4	40	.02	.02	T-C11ER40UN	T-C11EL40UN	.02	.02	T-C11IR40UN	T-C11IL40UN	\$13.98
	1/4	36	.02	.02	T-C11ER36UN	T-C11EL36UN	.02	.02	T-C11IR36UN	T-C11IL36UN	\$13.98
	1/4	32	.02	.02	T-C11ER32UN	T-C11EL32UN	.02	.02	T-C11IR32UN	T-C11IL32UN	\$13.98
	1/4	28	.02	.03	T-C11ER28UN	T-C11EL28UN	.02	.03	T-C11IR28UN	T-C11IL28UN	\$13.98
	1/4	27	.03	.03	T-C11ER27UN	T-C11EL27UN	.03	.03	T-C11IR27UN	T-C11IL27UN	\$13.98
	1/4	24	.03	.03	T-C11ER24UN	T-C11EL24UN	.03	.03	T-C11IR24UN	T-C11IL24UN	\$13.98
	1/4	20	.03	.04	T-C11ER20UN	T-C11EL20UN	.03	.04	T-C11IR20UN	T-C11IL20UN	\$13.98
	1/4	18	.03	.04	T-C11ER18UN	T-C11EL18UN	.03	.04	T-C11IR18UN	T-C11IL18UN	\$13.98
	1/4	16	.04	.04	T-C11ER16UN	T-C11EL16UN	.04	.04	T-C11IR16UN	T-C11IL16UN	\$13.98
	1/4	14	.04	.04	T-C11ER14UN	T-C11EL14UN	.04	.04	T-C11IR14UN	T-C11IL14UN	\$13.98
1/4	13	-	-	-	-	.03	.04	T-C11IR13UN	T-C11IL13UN	\$13.98	
1/4	12	-	-	-	-	.04	.04	T-C11IR12UN	T-C11IL12UN	\$13.98	
1/4	11	-	-	-	-	.03	.04	T-C11IR11UN	T-C11IL11UN	\$13.98	
16	3/8	72	.03	.02	T-C16ER72UN	T-C16EL72UN	.03	.01	T-C16IR72UN	T-C16IL72UN	\$13.98
	3/8	64	.03	.02	T-C16ER64UN	T-C16EL64UN	.03	.02	T-C16IR64UN	T-C16IL64UN	\$13.98
	3/8	56	.03	.02	T-C16ER56UN	T-C16EL56UN	.03	.02	T-C16IR56UN	T-C16IL56UN	\$13.98
	3/8	48	.02	.02	T-C16ER48UN	T-C16EL48UN	.02	.02	T-C16IR48UN	T-C16IL48UN	\$13.98
	3/8	44	.02	.02	T-C16ER44UN	T-C16EL44UN	.02	.02	T-C16IR44UN	T-C16IL44UN	\$13.98
	3/8	40	.02	.02	T-C16ER40UN	T-C16EL40UN	.02	.02	T-C16IR40UN	T-C16IL40UN	\$13.98
	3/8	36	.02	.02	T-C16ER36UN	T-C16EL36UN	.02	.02	T-C16IR36UN	T-C16IL36UN	\$13.98
	3/8	32	.02	.02	T-C16ER32UN	T-C16EL32UN	.02	.02	T-C16IR32UN	T-C16IL32UN	\$13.98
	3/8	28	.02	.03	T-C16ER28UN	T-C16EL28UN	.02	.03	T-C16IR28UN	T-C16IL28UN	\$13.98
	3/8	27	.03	.03	T-C16ER27UN	T-C16EL27UN	.03	.03	T-C16IR27UN	T-C16IL27UN	\$13.98
	3/8	24	.03	.03	T-C16ER24UN	T-C16EL24UN	.03	.03	T-C16IR24UN	T-C16IL24UN	\$13.98
	3/8	20	.03	.04	T-C16ER20UN	T-C16EL20UN	.03	.04	T-C16IR20UN	T-C16IL20UN	\$13.98
	3/8	18	.03	.04	T-C16ER18UN	T-C16EL18UN	.03	.04	T-C16IR18UN	T-C16IL18UN	\$13.98
	3/8	16	.04	.04	T-C16ER16UN	T-C16EL16UN	.04	.04	T-C16IR16UN	T-C16IL16UN	\$13.98
	3/8	14	.04	.05	T-C16ER14UN	T-C16EL14UN	.04	.05	T-C16IR14UN	T-C16IL14UN	\$13.98
3/8	13	.04	.05	T-C16ER13UN	T-C16EL13UN	.04	.05	T-C16IR13UN	T-C16IL13UN	\$13.98	
3/8	12	.04	.06	T-C16ER12UN	T-C16EL12UN	.04	.06	T-C16IR12UN	T-C16IL12UN	\$13.98	
3/8	11.5	.04	.06	T-C16ER11.5UN	T-C16EL11.5UN	.04	.06	T-C16IR11.5UN	T-C16IL11.5UN	\$13.98	
3/8	11	.04	.06	T-C16ER11UN	T-C16EL11UN	.04	.06	T-C16IR11UN	T-C16IL11UN	\$13.98	
3/8	10	.04	.06	T-C16ER10UN	T-C16EL10UN	.04	.06	T-C16IR10UN	T-C16IL10UN	\$13.98	
3/8	9	.05	.07	T-C16ER9UN	T-C16EL9UN	.05	.07	T-C16IR9UN	T-C16IL9UN	\$13.98	
3/8	8	.05	.06	T-C16ER8UN	T-C16EL8UN	.04	.06	T-C16IR8UN	T-C16IL8UN	\$13.98	
22	1/2	7	.06	.09	T-C22ER7UN	T-C22EL7UN	.06	.09	T-C22IR7UN	T-C22IL7UN	\$16.45
	1/2	6	.06	.09	T-C22ER6UN	T-C22EL6UN	.06	.09	T-C22IR6UN	T-C22IL6UN	\$16.45
	1/2	5	.07	.10	T-C22ER5UN	T-C22EL5UN	.06	.09	T-C22IR5UN	T-C22IL5UN	\$16.45
22U	1/2U	4.5	.08	.43	T-C22UERL45UN	T-C22UERL45UN	.09	.43	T-C22UIRL45UN	T-C22UIRL45UN	\$16.45
	1/2U	4	.08	.43	T-C22UERL4UN	T-C22UERL4UN	.09	.43	T-C22UIRL4UN	T-C22UIRL4UN	\$16.45
27	5/8	4.5	.07	.11	T-C27ER45UN	T-C27EL45UN	.07	.09	T-C27IR45UN	T-C27IL45UN	\$26.33
	5/8	4	.08	.12	T-C27ER4UN	T-C27EL4UN	.07	.11	T-C27IR4UN	T-C27IL4UN	\$26.33
27U	5/8U	3	.10	.54	T-C27UERL3UN	T-C27UERL3UN	.11	.54	T-C27UIRL3UN	T-C27UIRL3UN	\$26.33

Call Us Today For All Of Your Machine Tool Needs!

UN FULL PROFILE INSERTS

With Sintered Chipbreaker
For American Unified 60° Threads
ANSI B1.1:74

Carmex
Precision Tools Ltd.

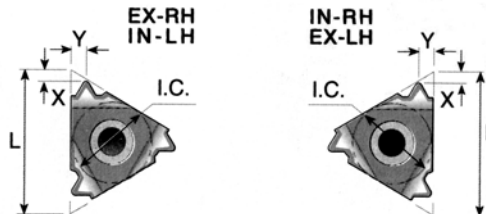
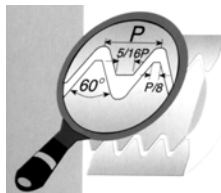


INSERT SERIES	I.C.	PITCH TPI	X	Y	EXTERNAL		X	Y	INTERNAL		Price Each
					Right Hand Part Number	Left Hand Part Number			Right Hand Part Number	Left Hand Part Number	
16	3/8	24	.03	.03	T-C16ERB24UN	T-C16ELB24UN	.03	.03	T-C16IRB24UN	T-C16ILB24UN	\$13.98
	3/8	20	.03	.04	T-C16ERB20UN	T-C16ELB20UN	.03	.04	T-C16IRB20UN	T-C16ILB20UN	\$13.98
	3/8	18	.03	.04	T-C16ERB18UN	T-C16ELB18UN	.03	.04	T-C16IRB18UN	T-C16ILB18UN	\$13.98
	3/8	16	.04	.04	T-C16ERB16UN	T-C16ELB16UN	.04	.04	T-C16IRB16UN	T-C16ILB16UN	\$13.98
	3/8	14	.04	.05	T-C16ERB14UN	T-C16ELB14UN	.04	.05	T-C16IRB14UN	T-C16ILB14UN	\$13.98
	3/8	13	.04	.05	T-C16ERB13UN	T-C16ELB13UN	-	-	-	-	\$13.98
	3/8	12	.04	.06	T-C16ERB12UN	T-C16ELB12UN	.04	.06	T-C16IRB12UN	T-C16ILB12UN	\$13.98
	3/8	11	.04	.06	T-C16ERB11UN	T-C16ELB11UN	-	-	-	-	\$13.98
	3/8	10	.04	.06	T-C16ERB10UN	T-C16ELB10UN	.04	.06	T-C16IRB10UN	T-C16ILB10UN	\$13.98
	3/8	9	.05	.07	T-C16ERB9UN	T-C16ELB9UN	-	-	-	-	\$13.98
3/8	8	.05	.06	T-C16ERB8UN	T-C16ELB8UN	.04	.06	T-C16IRB8UN	T-C16ILB8UN	\$13.98	

UNJ, UNJC, UNJF, UNJEF, UNJS INSERTS

Aerospace Threads-Controlled Root Radius

Carmex
Precision Tools Ltd.



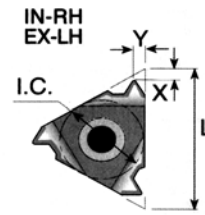
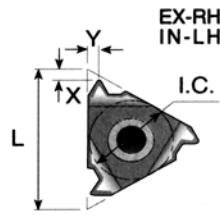
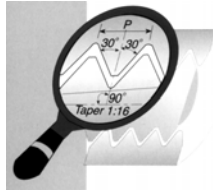
INSERT SERIES	I.C.	PITCH TPI	X	Y	EXTERNAL		INTERNAL		Price Each
					Right Hand Part Number	Left Hand Part Number	Right Hand Part Number	Left Hand Part Number	
11	1/4	48	.02	.02	T-C11ER48UNJ	T-C11EL48UNJ	T-C11IR48UNJ	T-C11IL48UNJ	\$16.45
	1/4	44	.02	.02	T-C11ER44UNJ	T-C11EL44UNJ	T-C11IR44UNJ	T-C11IL44UNJ	\$16.45
	1/4	40	.02	.02	T-C11ER40UNJ	T-C11EL40UNJ	T-C11IR40UNJ	T-C11IL40UNJ	\$16.45
	1/4	36	.02	.02	T-C11ER36UNJ	T-C11EL36UNJ	T-C11IR36UNJ	T-C11IL36UNJ	\$16.45
	1/4	32	.02	.02	T-C11ER32UNJ	T-C11EL32UNJ	T-C11IR32UNJ	T-C11IL32UNJ	\$16.45
	1/4	28	.02	.02	T-C11ER28UNJ	T-C11EL28UNJ	T-C11IR28UNJ	T-C11IL28UNJ	\$16.45
	1/4	24	.03	.03	T-C11ER24UNJ	T-C11EL24UNJ	T-C11IR24UNJ	T-C11IL24UNJ	\$16.45
	1/4	20	.03	.04	T-C11ER20UNJ	T-C11EL20UNJ	T-C11IR20UNJ	T-C11IL20UNJ	\$16.45
	1/4	18	.03	.04	T-C11ER18UNJ	T-C11EL18UNJ	T-C11IR18UNJ	T-C11IL18UNJ	\$16.45
	1/4	16	.03	.04	T-C11ER16UNJ	T-C11EL16UNJ	T-C11IR16UNJ	T-C11IL16UNJ	\$16.45
1/4	14	.04	.04	T-C11ER14UNJ	T-C11EL14UNJ	T-C11IR14UNJ	T-C11IL14UNJ	\$16.45	
16	3/8	48	.02	.02	T-C16ER48UNJ	T-C16EL48UNJ	T-C16IR48UNJ	T-C16IL48UNJ	\$16.45
	3/8	44	.02	.02	T-C16ER44UNJ	T-C16EL44UNJ	T-C16IR44UNJ	T-C16IL44UNJ	\$16.45
	3/8	40	.02	.02	T-C16ER40UNJ	T-C16EL40UNJ	T-C16IR40UNJ	T-C16IL40UNJ	\$16.45
	3/8	36	.02	.02	T-C16ER36UNJ	T-C16EL36UNJ	T-C16IR36UNJ	T-C16IL36UNJ	\$16.45
	3/8	32	.02	.02	T-C16ER32UNJ	T-C16EL32UNJ	T-C16IR32UNJ	T-C16IL32UNJ	\$16.45
	3/8	28	.02	.02	T-C16ER28UNJ	T-C16EL28UNJ	T-C16IR28UNJ	T-C16IL28UNJ	\$16.45
	3/8	24	.03	.03	T-C16ER24UNJ	T-C16EL24UNJ	T-C16IR24UNJ	T-C16IL24UNJ	\$16.45
	3/8	20	.03	.04	T-C16ER20UNJ	T-C16EL20UNJ	T-C16IR20UNJ	T-C16IL20UNJ	\$16.45
	3/8	18	.03	.04	T-C16ER18UNJ	T-C16EL18UNJ	T-C16IR18UNJ	T-C16IL18UNJ	\$16.45
	3/8	16	.03	.04	T-C16ER16UNJ	T-C16EL16UNJ	T-C16IR16UNJ	T-C16IL16UNJ	\$16.45
	3/8	14	.04	.05	T-C16ER14UNJ	T-C16EL14UNJ	T-C16IR14UNJ	T-C16IL14UNJ	\$16.45
	3/8	13	.04	.05	T-C16ER13UNJ	T-C16EL13UNJ	T-C16IR13UNJ	T-C16IL13UNJ	\$16.45
	3/8	12	.04	.06	T-C16ER12UNJ	T-C16EL12UNJ	T-C16IR12UNJ	T-C16IL12UNJ	\$16.45
	3/8	11	.04	.06	T-C16ER11UNJ	T-C16EL11UNJ	T-C16IR11UNJ	T-C16IL11UNJ	\$16.45
3/8	10	.04	.06	T-C16ER10UNJ	T-C16EL10UNJ	T-C16IR10UNJ	T-C16IL10UNJ	\$16.45	
3/8	9	.05	.06	T-C16ER9UNJ	T-C16EL9UNJ	T-C16IR9UNJ	T-C16IL9UNJ	\$16.45	
3/8	8	.05	.06	T-C16ER8UNJ	T-C16EL8UNJ	T-C16IR8UNJ	T-C16IL8UNJ	\$16.45	

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS
VISE ACCESSORIES
VISE JAWS
STRAIGHT SHANK COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

LAYDOWN THREAD TURNING INSERTS

NPT-USAS B2.1:1968 INSERTS



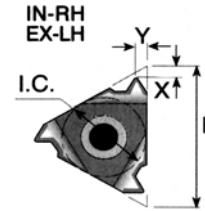
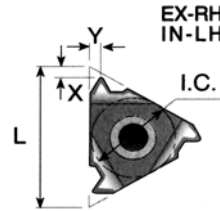
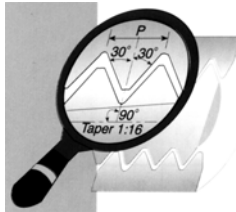
Carmex
Precision Tools Ltd.

INSERT SERIES	I.C.	PITCH TPI	X	Y	EXTERNAL		INTERNAL		Price Each
					Right Hand Part Number	Left Hand Part Number	Right Hand Part Number	Left Hand Part Number	
6	5/32	27	.02	.02	-	-	T-C06IR27NPT__	T-C06IL27NPT__	\$13.98
		18	.02	.02	-	-	T-C08IR27NPT__	T-C08IL27NPT__	\$13.98
8	3/16	18	.02	.02	-	-	T-C08IR18NPT__	T-C08IL18NPT__	\$13.98
		27	.03	.03	T-C11ER27NPT__	T-C11EL27NPT__	T-C11IR27NPT__	T-C11IL27NPT__	\$13.98
		18	.03	.04	T-C11ER18NPT__	T-C11EL18NPT__	T-C11IR18NPT__	T-C11IL18NPT__	\$13.98
11	1/4	14	.03	.04	T-C11ER14NPT__	T-C11EL14NPT__	T-C11IR14NPT__	T-C11IL14NPT__	\$13.98
		27	.03	.03	T-C16ER27NPT__	T-C16EL27NPT__	T-C16IR27NPT__	T-C16IL27NPT__	\$13.98
		18	.03	.04	T-C16ER18NPT__	T-C16EL18NPT__	T-C16IR18NPT__	T-C16IL18NPT__	\$13.98
		14	.04	.05	T-C16ER14NPT__	T-C16EL14NPT__	T-C16IR14NPT__	T-C16IL14NPT__	\$13.98
16	3/8	11.5	.04	.06	T-C16ER11.5NPT__	T-C16EL11.5NPT__	T-C16IR11.5NPT__	T-C16IL11.5NPT__	\$13.98
		8	.05	.07	T-C16ER8NPT__	T-C16EL8NPT__	T-C16IR8NPT__	T-C16IL8NPT__	\$13.98

NPT / W CHIPBREAKER

16	3/8	18	.03	.04	T-C16ERB18NPT__	T-C16ELB18NPT__	-	-	\$13.98
		14	.04	.05	T-C16ERB14NPT__	T-C16ELB14NPT__	T-C16IRB14NPT__	T-C16ILB14NPT__	\$13.98
		11.5	.04	.06	T-C16ERB11.5NPT__	T-C16ELB11.5NPT__	T-C16IRB11.5NPT__	T-C16ILB11.5NPT__	\$13.98
		8	.05	.07	T-C16ERB8NPT__	T-C16ELB8NPT__	T-C16IRB8NPT__	T-C16ILB8NPT__	\$13.98

NPTF DRYSEAL INSERTS ANSI B1.20.3-1976



Carmex
Precision Tools Ltd.

INSERT SERIES	I.C.	PITCH TPI	X	Y	EXTERNAL		INTERNAL		Price Each
					Right Hand Part Number	Left Hand Part Number	Right Hand Part Number	Left Hand Part Number	
6	5/32	27	.03	.02	-	-	T-C06IR27NPF__	T-C06IL27NPF__	\$13.98
8	3/16	27	.02	.02	-	-	T-C08IR27NPF__	T-C08IL27NPF__	\$13.98
		18	.02	.02	-	-	T-C08IR18NPF__	T-C08IL18NPF__	\$13.98
11	1/4	27	.03	.03	T-C11ER27NPF__	T-C11EL27NPF__	T-C11IR27NPF__	T-C11IL27NPF__	\$13.98
		18	.03	.04	T-C11ER18NPF__	T-C11EL18NPF__	T-C11IR18NPF__	T-C11IL18NPF__	\$13.98
		14	.03	.04	T-C11ER14NPF__	T-C11EL14NPF__	T-C11IR14NPF__	T-C11IL14NPF__	\$13.98
16	3/8	27	.03	.03	T-C16ER27NPF__	T-C16EL27NPF__	T-C16IR27NPF__	T-C16IL27NPF__	\$13.98
		18	.03	.04	T-C16ER18NPF__	T-C16EL18NPF__	T-C16IR18NPF__	T-C16IL18NPF__	\$13.98
		14	.04	.05	T-C16ER14NPF__	T-C16EL14NPF__	T-C16IR14NPF__	T-C16IL14NPF__	\$13.98
		11.5	.04	.06	T-C16ER11.5NPF__	T-C16EL11.5NPF__	T-C16IR11.5NPF__	T-C16IL11.5NPF__	\$13.98
	8	.05	.07	T-C16ER8NPF__	T-C16EL8NPF__	T-C16IR8NPF__	T-C16IL8NPF__	\$13.98	

GRADE INFORMATION

Carmex
Precision Tools Ltd.

CARMEX GRADE INFORMATION

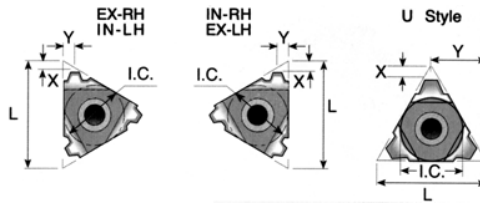
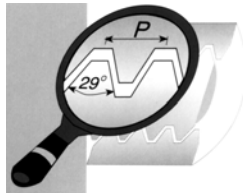
Carmex Grade	USST Grade	Carbide ANSI	Coating	Materials
P25C	P5	C5	TIN	Hard Steels
MXC	M2	C2-C3	TIN	Soft Steels, Stainless Steels, Cast Iron
BMA	B4	C3-C4	TIALN	Superalloys, Stainless Steels
K20	K2	C2	UNCOATED	Aluminum, Non Ferrous

How To Order:

- 1) Pick the required insert from table above eg: T-C11ERA60__
- 2) Pick a Carbide grade from the Grades table below - eg. B4 for superalloys and stainless steels
- 3) Order Part Number T-C11ERA60B4
- 4) Pick toolholder (ext) or boring bar (int) from pages 322-323

Call Us Today For All Of Your Machine Tool Needs!

ACME 29° THREAD INSERTS

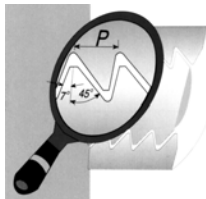


INSERT SERIES	I.C.	PITCH TPI	X	Y	EXTERNAL		INTERNAL		Price Each
					Right Hand Part Number	Left Hand Part Number	Right Hand Part Number	Left Hand Part Number	
8	3/16	16	.02	.02	-	-	T-C08IR16ACM	T-C08IL16ACM	\$16.45
8U	3/16U	14	.03	.16	-	-	T-C08UIRL14ACM	T-C08UIRL14ACM	\$16.45
	3/16U	12	.03	.16	-	-	T-C08UIRL12ACM	T-C08UIRL12ACM	\$16.45
	3/16U	10	.03	.16	-	-	T-C08UIRL10ACM	T-C08UIRL10ACM	\$16.45
11	1/4	16	.04	.04	T-C11ER16ACM	T-C11EL16ACM	-	-	\$16.45
16	3/8	16	.04	.04	T-C16ER16ACM	T-C16EL16ACM	-	-	\$16.45
	3/8	14	.04	.05	T-C16ER14ACM	T-C16EL14ACM	T-C16IR14ACM	T-C16IL14ACM	\$16.45
	3/8	12	.04	.05	T-C16ER12ACM	T-C16EL12ACM	T-C16IR12ACM	T-C16IL12ACM	\$16.45
	3/8	10	.05	.05	T-C16ER10ACM	T-C16EL10ACM	T-C16IR10ACM	T-C16IL10ACM	\$16.45
	3/8	8	.06	.06	T-C16ER8ACM	T-C16EL8ACM	T-C16IR8ACM	T-C16IL8ACM	\$16.45
22	1/2	6	.07	.08	T-C22ER6ACM	T-C22EL6ACM	T-C22IR6ACM	T-C22IL6ACM	\$20.57
	1/2	5	.08	.09	T-C22ER5ACM	T-C22EL5ACM	T-C22IR5ACM	T-C22IL5ACM	\$20.57
22U	1/2U	4	.09	.43	T-C22UERL4ACM	T-C22UERL4ACM	T-C22UIRL4ACM	T-C22UIRL4ACM	\$20.57
27	5/8	4	.09	.11	T-C27ER4ACM	T-C27EL4ACM	T-C27IR4ACM	T-C27IL4ACM	\$27.15
27U	5/8U	3	.11	.54	T-C27UERL3ACM	T-C27UERL3ACM	T-C27UIRL3ACM	T-C27UIRL3ACM	\$27.15
33U	3/4U	2	.17	.67	T-C33UERL2ACM	T-C33UERL2ACM	T-C33UIRL2ACM	T-C33UIRL2ACM	\$111.86

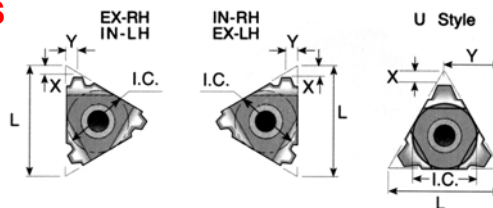
STUB ACME 29° THREAD INSERTS

INSERT SERIES	I.C.	PITCH TPI	X	Y	EXTERNAL		INTERNAL		Price Each
					Right Hand Part Number	Left Hand Part Number	Right Hand Part Number	Left Hand Part Number	
8	3/16	16	.02	.02	-	-	T-C08IR16SAC	T-C08IL16SAC	\$16.45
8U	3/16U	14	.03	.16	-	-	T-C08UIR/L14SAC	T-C08UIR/L14SAC	\$16.45
	3/16U	12	.04	.16	-	-	T-C08UIR/L12SAC	T-C08UIR/L12SAC	\$16.45
	3/16U	10	.04	.16	-	-	T-C08UIR/L10SAC	T-C08UIR/L10SAC	\$16.45
11	1/4	16	.04	.04	T-C11ER16SAC	T-C11EL16SAC	-	-	\$16.45
16	3/8	16	.04	.04	T-C16ER16SAC	T-C16EL16SAC	-	-	\$16.45
	3/8	14	.04	.04	T-C16ER14SAC	T-C16EL14SAC	T-C16IR14SAC	T-C16IL14SAC	\$16.45
	3/8	12	.05	.05	T-C16ER12SAC	T-C16EL12SAC	T-C16IR12SAC	T-C16IL12SAC	\$16.45
	3/8	10	.05	.05	T-C16ER10SAC	T-C16EL10SAC	T-C16IR10SAC	T-C16IL10SAC	\$16.45
	3/8	8	.06	.06	T-C16ER8SAC	T-C16EL8SAC	T-C16IR8SAC	T-C16IL8SAC	\$16.45
3/8	6	.07	.07	T-C16ER6SAC	T-C16EL6SAC	T-C16IR6SAC	T-C16IL6SAC	\$16.45	
22	1/2	5	.08	.09	T-C22ER5SAC	T-C22EL5SAC	T-C22IR5SAC	T-C22IL5SAC	\$20.57
22U	1/2U	4	.10	.43	T-C22UER/L4SAC	T-C22UER/L4SAC	T-C22UIR/L4SAC	T-C22UIR/L4SAC	\$20.57
	1/2U	3	.13	.43	T-C22UER/L3SAC	T-C22UER/L3SAC	T-C22UIR/L3SAC	T-C22UIR/L3SAC	\$20.57
27	5/8	4	.09	.09	T-C27ER4SAC	T-C27EL4SAC	T-C27IR4SAC	T-C27IL4SAC	\$27.15
	5/8	3	.11	.11	T-C27ER3SAC	T-C27EL3SAC	T-C27IR3SAC	T-C27IL3SAC	\$27.15
33U	3/4U	2	.20	.67	T-C33UER/L2SAC	T-C33UER/L2SAC	T-C33UIR/L2SAC	T-C33UIR/L2SAC	\$111.86

AMERICAN BUTTRESS THREAD INSERTS



Full Line Available!
Please call for more information.



INSERT SERIES	I.C.	PITCH TPI	X	Y	EXTERNAL		INTERNAL		Price Each
					Right Hand Part Number	Left Hand Part Number	Right Hand Part Number	Left Hand Part Number	
11	1/4	20	.04	.05	T-C11ER20ABUT	T-C11EL20ABUT	T-C11IR20ABUT	T-C11IL20ABUT	\$16.45
	1/4	16	.04	.06	T-C11ER16ABUT	T-C11EL16ABUT	T-C11IR16ABUT	T-C11IL16ABUT	\$16.45
16	3/8	20	.04	.05	T-C16ER20ABUT	T-C16EL20ABUT	T-C16IR20ABUT	T-C16IL20ABUT	\$16.45
	3/8	16	.04	.06	T-C16ER16ABUT	T-C16EL16ABUT	T-C16IR16ABUT	T-C16IL16ABUT	\$16.45
	3/8	12	.06	.08	T-C16ER12ABUT	T-C16EL12ABUT	T-C16IR12ABUT	T-C16IL12ABUT	\$16.45
	3/8	10	.06	.09	T-C16ER10ABUT	T-C16EL10ABUT	T-C16IR10ABUT	T-C16IL10ABUT	\$16.45
22	1/2	8	.08	.13	T-C22ER8ABUT	T-C22EL8ABUT	T-C22IR8ABUT	T-C22IL8ABUT	\$20.57
	1/2	6	.08	.13	T-C22ER6ABUT	T-C22EL6ABUT	T-C22IR6ABUT	T-C22IL6ABUT	\$20.57
22U	1/2U	4	.09	.37	T-C22UER4ABUT	T-C22UEL4ABUT	T-C22UIR4ABUT	T-C22UIL4ABUT	\$20.57
27U	5/8U	3	.12	.46	T-C27UER3ABUT	T-C27UEL3ABUT	T-C27UIR3ABUT	T-C27UIL3ABUT	\$27.15

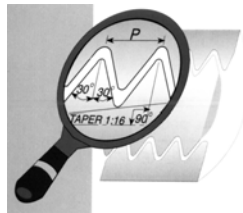
Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS
VISE ACCESSORIES
VISE JAWS
STRAIGHT SHANK COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

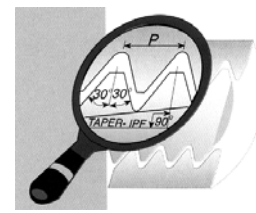
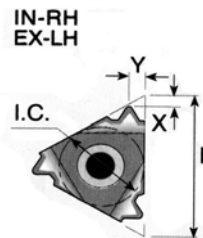
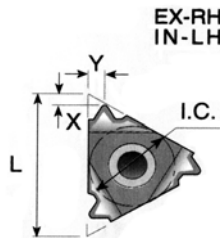
LAYDOWN THREAD TURNING INSERTS & HOLDERS

OIL THREAD INSERTS

Carmex
Precision Tools Ltd.



API Round

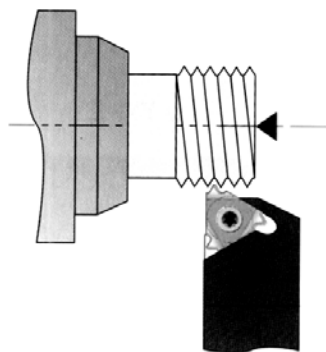
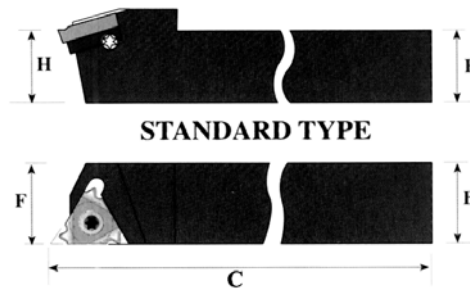


Oil V40

INSERT SERIES	I.C.	PITCH TPI	X	Y	CONNECTION No.or Size	TAPER IPF	EXTERNAL		INTERNAL		Price Each
							Right Hand Part Number	Left Hand Part Number	Right Hand Part Number	Left Hand Part Number	
API ROUND											
16	3/8	10	.06	.06	-	0.75	T-C16ER10APR__	T-C16EL10APR__	T-C16IR10APR__	T-C16IL10APR__	\$16.45
	3/8	8	.05	.06	-	0.75	T-C16ER8APR__	T-C16EL8APR__	T-C16IR8APR__	T-C16IL8APR__	\$16.45
APIV-0.040											
22	1/2	5	.07	.10	23/8 - 41/2 REG	3	T-C22ER5AP403__	T-C22EL5AP403__	T-C22IR5AP403__	T-C22IL5AP403__	\$23.45
APIV-0.038R											
27	5/8	4	.08	.08	NC23-NC50	2	T-C27ER4AP382__	T-C27EL4AP382__	T-C27IR4AP382__	T-C27IL4AP382__	\$27.15
	5/8	4	.08	.11	NC56-NC77	3	T-C27ER4AP383__	T-C27EL4AP383__	T-C27IR4AP383__	T-C27IL4AP383__	\$27.15
APIV-0.050R											
27	5/8	4	.08	.12	65/8 REG	2	T-C27ER4AP502__	T-C27EL4AP502__	T-C27IR4AP502__	T-C27IL4AP502__	\$27.15
	5/8	4	.08	.12	51/2, 75/8, 85/8 REG	3	T-C27ER4AP503__	T-C27EL4AP503__	T-C27IR4AP503__	T-C27IL4AP503__	\$27.15

TOOLHOLDERS FOR EXTERNAL LAYDOWN THREAD TURNING

Carmex
Precision Tools Ltd.



HOLDER SERIES	B=H in	C in OAL	F in	EXTERNAL		Price Each
				Right Handed Part Number	Left Handed Part Number	
11	0.380	4.000	0.430	T-CMSER0375H11	T-CMSEL0375H11	\$82.50
16	0.380	2.500	0.630	T-CMSER0375D16	T-CMSEL0375D16	\$82.50
	0.500	3.250	0.630	T-CMSER0500F16	T-CMSEL0500F16	\$82.50
	0.630	4.000	0.630	T-CMSER0625H16	T-CMSEL0625H16	\$82.50
	0.750	5.000	0.750	T-CMSER0750K16	T-CMSEL0750K16	\$82.50
	1.000	6.000	1.000	T-CMSER1000M16	T-CMSEL1000M16	\$82.50
	1.250	7.000	1.250	T-CMSER1250P16	T-CMSEL1250P16	\$110.00
22	1.000	6.000	1.000	T-CMSER1000M22	T-CMSEL1000M22	\$105.42
	1.250	7.000	1.250	T-CMSER1250P22	T-CMSEL1250P22	\$115.50
	1.500	8.000	1.500	T-CMSER1500R22	T-CMSEL1500R22	\$160.42
22U	1.000	6.000	1.100	T-CMSER1000M22U	T-CMSEL1000M22U	\$105.42
	1.250	7.000	1.250	T-CMSER1250P22U	T-CMSEL1250P22U	\$115.50
27	1.000	6.000	1.250	T-CMSER1000M27	T-CMSEL1000M27	\$115.50
	1.250	7.000	1.250	T-CMSER1250P27	T-CMSEL1250P27	\$134.75
27U	1.000	6.000	1.250	T-CMSER1000M27U	T-CMSEL1000M27U	\$134.75
	1.250	7.000	1.250	T-CMSER1250P27U	T-CMSEL1250P27U	\$134.75
	1.500	8.000	1.500	T-CMSER1500R27U	T-CMSEL1500R27U	\$160.42
33U	1.250	7.000	1.450	T-CMSER1250P33U	T-CMSEL1250P33U	\$183.33

Full Line Available!
Please call for more information.

Important Notes: Use External Right Handed Holders with External Right Handed Laydown Inserts of the same Insert Series only. Similarly for Left Handed Holders and Inserts. Do not interchange insert series or insert hands.

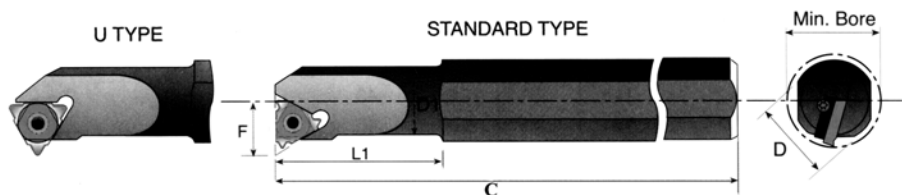
Call Us Today For All Of Your Machine Tool Needs!

LAYDOWN INTERNAL THREADING BORING BARS

B

BORING BARS FOR LAYDOWN INTERNAL THREADING

Carmex
Precision Tools Ltd.



HOLDER SERIES	Min Bore in.	SHANK	Shank D in.	D1 in.	C (OAL) in.	L1 in.	F in.	ANVIL USED	COOLANT THROUGH	INTERNAL		Price Each
										Right Handed Part Number	Left Handed Part Number	
6	0.240	Steel	0.500	0.200	4.000	0.470	0.170	NO	NO	T-CMSIR0205H06	T-CMSIL0205H06	\$125.58
8	0.310	Steel	0.620	0.260	5.000	0.700	0.210	NO	NO	T-CMSIR0265K08	T-CMSIL0265K08	\$115.50
8U	0.350	Steel	0.620	0.290	5.000	0.830	0.260	NO	NO	T-CMSIR0310K08U	T-CMSIL0310K08U	\$125.58
11	0.470	Steel	0.380	0.380	4.000	-	0.280	NO	NO	T-CMSIR0375H11	T-CMSIL0375H11	\$82.50
	0.470	Steel	0.620	0.380	5.000	1.000	0.280	NO	NO	T-CMSIR0375K11	T-CMSIL0375K11	\$82.50
	0.470	Steel	0.620	0.380	5.000	0.980	0.280	YES	YES	T-CMSIR0375K11B	T-CMSIL0375K11B	\$96.25
	0.580	Steel	0.620	0.500	5.500	1.250	0.340	NO	NO	T-CMSIR0500L11	T-CMSIL0500L11	\$82.50
	0.580	Carbide	0.500	0.500	7.000	-	0.340	NO	YES	T-CMSIR0500P11C	T-CMSIL0500P11C	\$357.50
16	0.640	Steel	0.620	0.500	6.000	1.250	0.390	NO	NO	T-CMSIR0500M16	T-CMSIL0500M16	\$91.67
	0.640	Steel	0.620	0.500	6.000	1.260	0.390	YES	YES	T-CMSIR0500M16B	T-CMSIL0500M16B	\$105.42
	0.750	Steel	0.750	0.620	7.000	1.570	0.450	NO	NO	T-CMSIR0625P16	T-CMSIL0625P16	\$91.67
	0.750	Steel	0.750	0.630	7.000	1.570	0.450	YES	YES	T-CMSIR0625P16B	T-CMSIL0625P16B	\$105.42
	0.900	Steel	0.750	0.750	7.000	-	0.510	YES	NO	T-CMSIR0750P16	T-CMSIL0750P16	\$91.67
	0.900	Steel	0.750	0.750	7.000	-	0.900	YES	YES	T-CMSIR0750P16B	T-CMSIL0750P16B	\$115.50
	1.160	Steel	1.000	1.000	8.000	-	0.650	YES	NO	T-CMSIR1000R16	T-CMSIL1000R16	\$128.33
	1.160	Steel	1.000	0.980	8.000	-	0.650	YES	YES	T-CMSIR1000R16B	T-CMSIL1000R16B	\$134.75
22	1.400	Steel	1.250	1.250	10.000	-	0.770	YES	NO	T-CMSIR1250S16	T-CMSIL1250S16	\$128.33
	1.650	Steel	1.500	1.500	12.000	-	0.900	YES	NO	T-CMSIR1500T16	T-CMSIL1500T16	\$155.83
	0.900	Steel	0.750	0.750	7.000	-	0.590	NO	NO	T-CMSIR0750P22	T-CMSIL0750P22	\$91.67
	1.160	Steel	1.000	1.000	8.000	-	0.710	YES	NO	T-CMSIR1000R22	T-CMSIL1000R22	\$134.75
22u	1.500	Steel	1.250	1.250	10.000	-	0.850	YES	NO	T-CMSIR1250S22	T-CMSIL1250S22	\$134.75
	1.750	Steel	1.500	1.500	12.000	-	0.980	YES	NO	T-CMSIR1500T22	T-CMSIL1500T22	\$165.00
	1.500	Steel	1.250	1.250	10.000	-	0.950	YES	NO	T-CMSIR1250S22U	T-CMSIL1250S22U	\$134.75
27	1.750	Steel	1.500	1.500	12.000	-	1.080	YES	NO	T-CMSIR1500T22U	T-CMSIL1500T22U	\$165.00
	1.560	Steel	1.250	1.250	10.000	-	0.880	YES	NO	T-CMSIR1250S27	T-CMSIL1250S27	\$165.00
27u	1.800	Steel	1.500	1.500	12.000	-	1.000	YES	NO	T-CMSIR1500T27	T-CMSIL1500T27	\$165.00
	2.300	Steel	2.000	2.000	14.000	-	1.250	YES	NO	T-CMSIR2000U27	T-CMSIL2000U27	\$261.25
	1.560	Steel	1.250	1.250	10.000	-	1.000	YES	NO	T-CMSIR1250S27U	T-CMSIL1250S27U	\$165.00
	1.800	Steel	1.500	1.500	12.000	-	1.130	YES	NO	T-CMSIR1500T27U	T-CMSIL1500T27U	\$174.17
	2.300	Steel	2.000	2.000	14.000	-	1.370	YES	NO	T-CMSIR2000U27U	T-CMSIL2000U27U	\$261.25
2.800	Steel	2.500	2.500	16.000	-	1.610	YES	NO	T-CMSIR2500V27U	T-CMSIL2500V27U	\$270.42	
33u	2.500	Steel	2.000	2.000	14.000	-	1.500	YES	NO	T-CMSIR2000U33U	T-CMSIL2000U33U	\$357.50

Important Notes: Use Internal Right Handed Holders With Internal Right Handed Laydown Inserts Of The Same Insert Series Only. Similarly For Left Handed Holders And Inserts. Do Not Interchange Insert Series Or Insert Hands.

Carmex
Precision Tools Ltd.

CARMEX GRADE INFORMATION



How To Order CARMEX Inserts:

- 1) Pick the required insert from table ex: T-C11ERA60_ _
- 2) Pick a Carbide grade from the Grades table below - eg. B4 for superalloys and stainless steels
- 3) Order Part Number T-C11ERA60B4
- 4) Pick toolholder (ext) or boring bar (int) from pages 370-371

CARMEX GRADE INFORMATION

Carmex Grade	USST Grade Suffix	Carbide ANSI	Coating	Materials
P25C	P5	C5	TIN	Hard Steels
MXC	M2	C2-C3	TIN	Soft Steels, Stainless Steels, Cast Iron
BMA	B4	C3-C4	TIALN	Superalloys, Stainless Steels
K20	K2	C2	UNCOATED	Aluminum, Non Ferrous

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

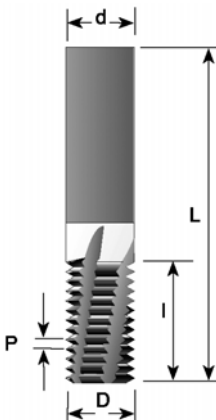
THREADMILLS

SOLID CARBIDE THREADMILLS UN-AMERICAN UNIFIED 60°

Free Programming Help!
Please Call For More Information.

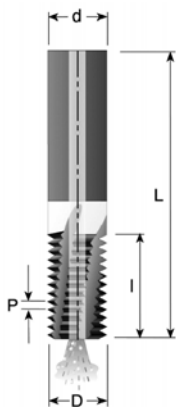
Carmex
Precision Tools Ltd.

Full Line Available!
Please call for more information.



TPI	UNC	UNF	UNEF	d	D	No. of flutes	I	L	Part Number	Price Each
NO COOLANT PASSAGE										
40	5			1/4	.098	3	.24	2.5	T-CT40UN-200	\$168.30
32	8			1/4	.126	3	.27	2.5	T-CT32UN-205	\$168.30
28				1/4	.157	3	.45	2.5	T-CT28UN-210	\$168.30
28			7/16-1/2	1/4	.236	3	.57	2.5	T-CT28UN-215	\$168.30
24		5/16-3/8		1/4	.197	3	.56	2.5	T-CT24UN-220	\$168.30
24			9/16-5/8	5/16	.276	3	.81	2.5	T-CT24UN-225	\$188.10
20	1/4			1/4	.177	3	.48	2.5	T-CT20UN-230	\$168.30
20		7/16-1/2		5/16	.276	3	.83	2.5	T-CT20UN-235	\$188.10
20			3/4-1	1/2	.472	5	1.08	3.0	T-CT20UN-240	\$217.80
18	5/16			1/4	.197	3	.58	2.5	T-CT18UN-245	\$168.30
18		9/16-5/8	11/8-15/8	3/8	.375	4	1.03	3.0	T-CT18UN-250	\$198.00
16	3/8			1/4	.236	3	.66	2.5	T-CT16UN-255	\$168.30
16		3/4		1/2	.472	4	1.22	3.0	T-CT16UN-260	\$217.80
14	7/16			5/16	.276	3	.82	2.5	T-CT14UN-265	\$188.10
14		7/8		5/8	.591	5	1.46	4.0	T-CT14UN-270	\$297.00
13	1/2			5/16	.313	3	.88	2.5	T-CT13UN-275	\$188.10
12	9/16			3/8	.375	3	1.04	3.0	T-CT12UN-280	\$198.00
12		1-11/2		5/8	.625	5	1.63	4.0	T-CT12UN-285	\$297.00
11	5/8			3/8	.375	3	1.14	3.0	T-CT11UN-290	\$198.00
10	3/4			1/2	.472	3	1.35	3.0	T-CT10UN-295	\$217.80
9	7/8			5/8	.591	3	1.50	4.0	T-CT9UN-300	\$297.00
8	1			5/8	.625	3	1.69	4.0	T-CT8UN-305	\$297.00
7	11/8-11/4			3/4	.750	4	1.78	4.0	T-CT7UN-310	\$405.90

WITH THRU COOLANT HOLE

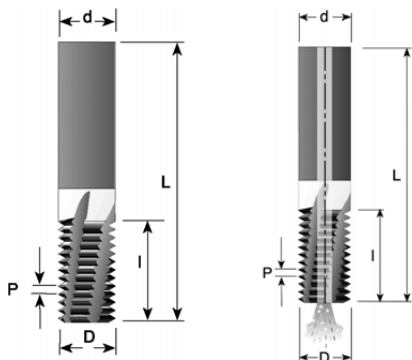


32	8	10	12	1/4	.126	3	.27	2.5	T-CT32UN-315C	\$168.30
28		1/4		1/4	.197	3	.44	2.5	T-CT28UN-320C	\$168.30
28			7/16-1/2	1/4	.250	3	.56	2.5	T-CT28UN-325C	\$168.30
24		5/16		5/16	.260	3	.56	2.5	T-CT24UN-330C	\$188.10
24			3/8-5/8	5/16	.312	4	.81	2.5	T-CT24UN-335C	\$188.10
20	1/4			1/4	.185	3	.48	2.5	T-CT20UN-340C	\$168.30
20		7/16		5/16	.312	3	.83	2.5	T-CT20UN-345C	\$188.10
20		1/2		3/8	.375	4	.88	3.0	T-CT20UN-350C	\$198.00
20			3/4-1	1/2	.500	5	1.07	4.0	T-CT20UN-355C	\$217.80
18	5/16			1/4	.220	3	.58	2.5	T-CT18UN-360C	\$168.30
18		9/16-5/8	11/8-15/8	1/2	.445	4	1.03	4.0	T-CT18UN-365C	\$217.80
16	3/8			5/16	.264	3	.66	2.5	T-CT16UN-370C	\$188.10
16		3/4		1/2	.500	4	1.22	4.0	T-CT16UN-375C	\$217.80
14	7/16			5/16	.303	3	.82	2.5	T-CT14UN-380C	\$188.10
14		7/8		5/8	.625	5	1.46	4.0	T-CT14UN-385C	\$297.00
13	1/2			3/8	.362	3	.89	3.0	T-CT13UN-390C	\$198.00
12	9/16			1/2	.413	3	1.04	4.0	T-CT12UN-395C	\$217.80
12		1-11/2		5/8	.625	5	1.63	4.0	T-CT12UN-400C	\$297.00
11	5/8			1/2	.449	3	1.14	4.0	T-CT11UN-405C	\$217.80
10	3/4			5/8	.567	4	1.35	4.0	T-CT10UN-410C	\$297.00
9	7/8			5/8	.625	3	1.50	4.0	T-CT9UN-415C	\$297.00

SOLID CARBIDE THREADMILLS NPT

Full Line Available!
Please call for more information.

Carmex
Precision Tools Ltd.



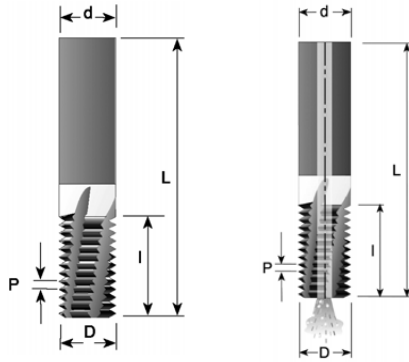
TPI	Standard	d	D	No. Of Flutes	I	L	Part Number	Price Each
NO COOLANT PASSAGE								
27	1/8	1/4	.250	3	.39	2.5	T-CT27NPT-100	\$168.30
18	1/4-3/8	5/16	.312	3	.58	2.5	T-CT18NPT-105	\$188.10
14	1/2-3/4	1/2	.500	4	.82	3.0	T-CT14NPT-110	\$217.80
11.5	1-2	5/8	.625	4	1.09	4.0	T-CT115NPT-115	\$297.00
8	>21/2	3/4	.750	4	1.56	4.0	T-CT8NPT-120	\$405.90
With Thru Coolant Hole								
27	1/8	5/16	.299	3	.43	2.5	T-CT27NPT-125C	\$188.10
18	1/4-3/8	3/8	.375	4	.64	3.0	T-CT18NPT-130C	\$198.00
14	1/2-3/4	5/8	.610	4	.89	4.0	T-CT14NPT-135C	\$297.00
11.5	1-2	3/4	.750	4	1.17	4.0	T-CT115NPT-140C	\$405.90

Call Us Today For All Of Your Machine Tool Needs!

SOLID CARBIDE THREADMILLS DRYSEAL

Free Programming Help!
Please Call For More Information.

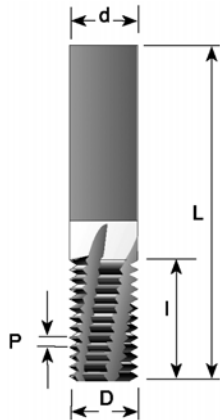
Carmex
Precision Tools Ltd.



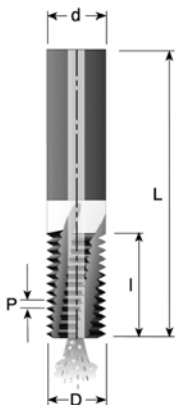
TPI	Standard	d	D	No. Of Flutes	I	L	Part Number	Price Each
No Coolant Passage								
27	1/8	1/4	.250	3	0.39	2.5	T-CT27NPTF-145	\$168.30
18	1/4-3/8	5/16	.312	3	0.58	2.5	T-CT18NPTF-150	\$188.10
14	1/2-3/4	1/2	.500	4	0.82	3.0	T-CT14NPTF-155	\$217.80
11.5	1-2	5/8	.625	4	1.09	4.0	T-CT115NPTF-160	\$297.00
8	>21/2	3/4	.750	4	1.56	4.0	T-CT8NPTF-165	\$405.90
With Thru Coolant Hole								
27	1/8	5/16	.299	3	0.43	2.5	T-CT27NPTF-170C	\$188.10
18	1/4-3/8	3/8	.375	4	0.64	3.0	T-CT18NPTF-175C	\$198.00
14	1/2-3/4	5/8	.610	4	0.89	4.0	T-CT14NPTF-180C	\$297.00
11.5	1-2	3/4	.750	4	1.17	4.0	T-CT115NPTF-185C	\$405.90

SOLID CARBIDE THREADMILLS ISO METRIC 360°

Carmex
Precision Tools Ltd.



Full Line Available!
Please call for more information.



Pitch mm	Metric Coarse	Metric Fine	d	D	No. of flutes	I	L	Part Number	Price Each
No Coolant Passage									
0.5	M3	ø>=.16	1/4	.087	3	.21	2.5	T-CT0.5M-500	\$168.30
0.5	-	ø>=.20	1/4	.150	3	.41	2.5	T-CT0.5M-505	\$168.30
0.7	M4	ø>=.20	1/4	.122	3	.29	2.5	T-CT0.7M-510	\$168.30
0.75	-	ø>=.24	1/4	.177	3	.40	2.5	T-CT0.75M-515	\$168.30
0.8	M5	ø>=.24	1/4	.142	3	.36	2.5	T-CT0.8M-520	\$168.30
1.0	M6	ø>=.28	1/4	.157	3	.41	2.5	T-CT1.0M-525	\$168.30
1.0	M6	ø>=.28	1/4	.157	3	.57	2.5	T-CT1.0M-530	\$168.30
1.0	-	ø>=.35	1/4	.236	3	.49	2.5	T-CT1.0M-535	\$168.30
1.0	-	ø>=.39	5/16	.313	4	.65	2.5	T-CT1.0M-540	\$188.10
1.25	M8	ø>=.39	1/4	.197	3	.57	2.5	T-CT1.25M-545	\$168.30
1.25	M8	ø>=.39	1/4	.197	3	.76	2.5	T-CT1.25M-550	\$168.30
1.5	M10	ø>=.47	5/16	.276	3	.68	2.5	T-CT1.5M-555	\$188.10
1.5	M10	ø>=.47	5/16	.276	3	.98	2.5	T-CT1.5M-560	\$188.10
1.5	-	ø>=.55	3/8	.375	4	.86	3.0	T-CT1.5M-565	\$198.00
1.5	-	ø>=.79	5/8	.625	6	1.33	4.0	T-CT1.5M-570	\$297.00
1.75	M12	ø>=.55	5/16	.313	3	.79	2.5	T-CT1.75M-575	\$188.10
1.75	M12	ø>=.55	5/16	.313	3	1.14	2.5	T-CT1.75M-580	\$188.10
2.0	M16	ø>=.67	3/8	.375	3	1.06	3.0	T-CT2.0M-585	\$198.00
2.0	M16	ø>=.67	3/8	.375	3	1.54	3.0	T-CT2.0M-590	\$198.00
2.0	-	ø>=.71	1/2	.472	4	1.06	3.0	T-CT2.0M-595	\$217.80
2.0	-	ø>=1.02	3/4	.750	6	1.61	4.0	T-CT2.0M-600	\$405.90
2.5	M20	ø>=.87	5/8	.551	4	1.33	4.0	T-CT2.5M-605	\$297.00
2.5	M20	ø>=.87	5/8	.551	4	1.92	4.0	T-CT2.5M-610	\$297.00
3.0	M24	ø>=.98	5/8	.625	3	1.59	4.0	T-CT3.0M-615	\$297.00
3.0	M24	ø>=.98	5/8	.625	3	2.31	4.0	T-CT3.0M-620	\$297.00
3.0	M28	ø>=1.10	3/4	.750	4	1.71	4.0	T-CT3.0M-625	\$405.90
With Thru Coolant Hole									
0.5	-	ø>=.20	1/4	.150	3	.41	2.5	T-CT0.5M-630C	\$168.30
0.7	M4	ø>=.20	1/4	.122	3	.29	2.5	T-CT0.7M-635C	\$168.30
0.75	-	ø>=.24	1/4	.177	3	.40	2.5	T-CT0.75M-640C	\$168.30
0.8	M5	ø>=.24	1/4	.150	3	.36	2.5	T-CT0.8M-645C	\$168.30
1.0	M6	ø>=.28	1/4	.181	3	.41	2.5	T-CT1.0M-650C	\$168.30
1.0	M6	ø>=.28	1/4	.181	3	.60	2.5	T-CT1.0M-655C	\$168.30
1.0	-	ø>=.35	1/4	.250	3	.50	2.5	T-CT1.0M-660C	\$168.30
1.0	-	ø>=.39	5/16	.312	4	.65	2.5	T-CT1.0M-665C	\$188.10
1.25	M8	ø>=.39	1/4	.250	3	.57	2.5	T-CT1.25M-670C	\$168.30
1.25	M8	ø>=.39	1/4	.250	3	.76	2.5	T-CT1.25M-675C	\$168.30
1.5	M10	ø>=.47	5/16	.307	3	.67	2.5	T-CT1.5M-680C	\$188.10
1.5	M10	ø>=.47	5/16	.307	3	.98	2.5	T-CT1.5M-685C	\$188.10
1.5	-	ø>=.55	3/8	.375	4	.86	3.0	T-CT1.5M-690C	\$198.00
1.5	-	ø>=.79	5/8	.625	6	1.33	4.0	T-CT1.5M-695C	\$297.00
1.75	M12	ø>=.47	3/8	.354	3	.79	3.0	T-CT1.75M-700C	\$198.00
1.75	M12	ø>=.47	3/8	.354	3	1.14	3.0	T-CT1.75M-705C	\$198.00
2.0	M14	ø>=.59	3/8	.375	3	1.06	3.0	T-CT2.0M-710C	\$198.00
2.0	M16	ø>=.67	1/2	.465	4	1.06	4.0	T-CT2.0M-715C	\$217.80
2.0	M16	ø>=.67	1/2	.465	4	1.54	4.0	T-CT2.0M-720C	\$217.80
2.0	-	ø>=.94	3/4	.750	6	1.61	4.0	T-CT2.0M-725C	\$405.90

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

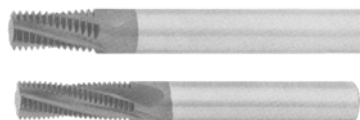
CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

THREADMILLS

HELICAL FLUTE THREAD MILLS UN, NPT & NPTF THREADS SOLID CARBIDE-AITiN Coated

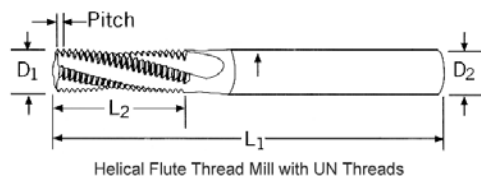
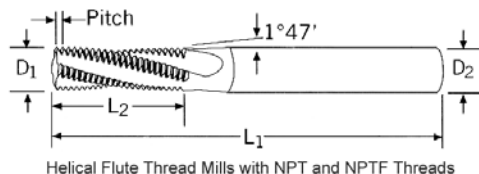


FEATURES:

- Completely CNC ground
- Helical flute design for reduced cutting forces, smoother cuts, longest tool life and maximum thread milling performance
- 100% thread form for superior threads compared to tapping
- Cuts right and left hand threads
- Suitable for all types of materials, including heat treated and difficult to machine workpieces.
- Supplied with AITiN coating. Uncoated thread mills also available, please call for more information

HELICAL FLUTE THREAD MILLS- NPT, NPTF THREADS

Minimum Thread	Pitch	Cut. Dia D1	Shank Dia D2	OAL L1	LOC L2	No. Of Flutes	Part Number	Price Each
1/16 & 1/8 NPT	27	.245	1/4	2-1/2	0.437	3	MI-TM27NPTX	\$200.40
1/4 & 3/8 NPT	18	.305	5/16	2-1/2	0.625	4	MI-TM18NPTX	\$215.10
1/2 & 3/4 NPT	14	.495	1/2	4	0.875	4	MI-TM14NPTX	\$236.25
1" & 2" NPT	11.5	.620	5/8	4	1.125	4	MI-TM11NPTX	\$310.80
1/16 & 1/8 NPTF	27	.245	1/4	2-1/2	0.437	3	MI-TM27NPTFX	\$212.85
1/4 & 3/8 NPTF	18	.305	5/16	2-1/2	0.625	4	MI-TM18NPTFX	\$242.90
1/2 & 3/4 NPTF	14	.495	1/2	4	0.875	4	MI-TM14NPTFX	\$269.25
1" & 2" NPTF	11.5	.620	5/8	4	1.125	4	MI-TM11NPTFX	\$353.80



Full Line Available!
Please call for more information.

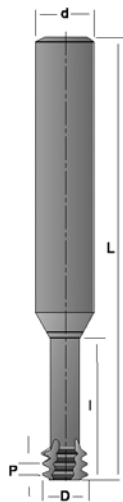
Shank Diameter	-.0001 to -.0003"
Cutter Diameter	± .0005"
Length of Cut	+.050 to .000"
Overall Length	± .015"
T.I.R. Maximum	.0005"

HELICAL FLUTE THREAD MILLS- UN THREADS

Minimum Thread & Pitch	Cut. Dia D1	Shank Dia D2	OAL L1	LOC L2	No. Of Flutes	Part Number	Price Each
4-40	.080	1/4	2	3/16	2	MI-TM11240X	\$155.75
6-32	.100	1/4	2	1/4	2	MI-TM13832X	\$155.75
8-32	.115	1/4	2	1/4	3	MI-TM16432X	\$155.75
10-24	.120	1/4	2	5/16	3	MI-TM19024X	\$163.20
10-28	.120	1/4	2	5/16	3	MI-TM19028X	\$163.20
10-32	.120	1/4	2	5/16	3	MI-TM19032X	\$163.20
1/4-20	.180	1/4	2-1/2	1/2	3	MI-TM25020X	\$171.75
1/4-28	.180	1/4	2-1/2	1/2	3	MI-TM25028X	\$171.75
5/16-18	.235	1/4	2-1/2	5/8	3	MI-TM31218X	\$187.40
5/16-24	.235	1/4	2-1/2	5/8	3	MI-TM31224X	\$187.40
3/8-16	.285	5/16	2-1/2	3/4	4	MI-TM37516X	\$227.85
3/8-24	.285	5/16	2-1/2	3/4	4	MI-TM37524X	\$227.85
7/16-14	.305	5/16	2-1/2	3/4	4	MI-TM43714X	\$227.85
7/16-20	.335	3/8	3	7/8	4	MI-TM43720X	\$238.95
1/2-13	.350	3/8	3	7/8	4	MI-TM50013X	\$238.95
9/16-12	.370	3/8	3	7/8	4	MI-TM5622X	\$238.95
9/16-18	.370	3/8	3	7/8	4	MI-TM56218X	\$238.95
5/8-11	.470	1/2	4	1-1/4	4	MI-TM62511X	\$278.00
3/4-10	.495	1/2	4	1-1/4	4	MI-TM75010X	\$278.00
3/4-12	.495	1/2	4	1-1/4	4	MI-TM75012X	\$278.00
3/4-16	.495	1/2	4	1-1/4	4	MI-TM75016X	\$278.00
7/8-9	.620	5/8	4	1-3/8	4	MI-TM87509X	\$300.00
7/8-14	.490	1/2	4	1-1/4	4	MI-TM87514X	\$278.00
1"-8	.620	5/8	4	1-3/8	4	MI-TM00108X	\$300.00

SOLID CARBIDE MINI THREADMILLS UN-UNIFIED AMERICAN 60° General Purpose For All Materials

Free Programming Help!
Please Call For More Information.



TPI	UNC	UNF	d	D	No of Flutes	I	L	Part Number	Price Each
-----	-----	-----	---	---	--------------	---	---	-------------	------------

For Thread Depth Up To 2xD

72	-	1	1/4	.057	3	.15	2.5	T-CMST72UN-800	\$126.00
64	1	2	1/4	.055	3	.15	2.5	T-CMST64UN-805	\$138.60
56	2	3	1/4	.065	3	.17	2.5	T-CMST56UN-810	\$138.60
48	3	4	1/4	.075	3	.20	2.5	T-CMST48UN-815	\$138.60
40	4	-	1/4	.083	3	.25	2.5	T-CMST40UN-820	\$138.60
40	5	6	1/4	.096	3	.28	2.5	T-CMST40UN-825	\$138.60
36	-	8	1/4	.130	3	.35	2.5	T-CMST36UN-830	\$138.60
32	6	-	1/4	.100	3	.28	2.5	T-CMST32UN-835	\$138.60
32	8	10	1/4	.126	3	.37	2.5	T-CMST32UN-840	\$138.60
28	-	1/4	1/4	.197	3	.57	2.5	T-CMST28UN-845	\$138.60
24	10, 12	-	1/4	.138	3	.42	2.5	T-CMST24UN-850	\$138.60
24	-	5/16	5/16	.260	3	.67	2.5	T-CMST24UN-855	\$148.50
20	1/4	-	1/4	.187	3	.55	2.5	T-CMST20UN-860	\$138.60

For Thread Depth Up To 3xD

40	5	6	1/4	.096	3	.38	2.5	T-CMST40UN-865	\$138.60
32	8	10	1/4	.126	3	.49	2.5	T-CMST32UN-870	\$138.60
28	-	1/4	1/4	.197	3	.75	2.5	T-CMST28UN-875	\$138.60
24	-	5/16	5/16	.260	3	.94	2.5	T-CMST24UN-880	\$148.50
20	1/4	-	1/4	.187	3	.75	2.5	T-CMST20UN-885	\$138.60

Call Us Today For All Of Your Machine Tool Needs!

THREAD MILL INSERTS FOR THREADING ON CNC MILLING MACHINES USING HELICAL INTERPOLATION PROGRAMS

Carmex
Precision Tools Ltd.

Free Programming Help!
Please Call For More Information.



ADVANTAGES OF MILL THREAD TOOLS

- Same toolholder and insert can produce right and left-hand threads
- A single insert & toolholder can produce a given thread on many diameters (external & internal)
- Most inserts are double sided, having two cutting edges.
- Thread is produced in one tool pass.
- Mill Thread tools are capable of producing taper threads.
- Improved productivity thanks to increased cutting speeds and multitooth type carbide inserts
- Threading to one pitch of a shoulder in a blind hole.
- Longer tool life thanks to special multilayer coating process
- Lower tooling costs, considerably less expensive than using taps and dies
- Since lower machine power required, smaller machine can produce larger threads in single operation with less idle time and tool changes.

Inserts are compatible with Kennametal, Stellram, Xactform & Iscar Holders!

GRADE MT7 - Sub micron TiAlN multi layer coated grade general purpose for all materials

Please See Following Page For Holders

FOR ISO METRIC THREADS

INSERT SIZE "A"	Pitch mm	INTERNAL		EXTERNAL	
		Part Number	Price Each	Part Number	Price Each
12	0.50	T-CT12 I 0.5M	\$31.35	-	-
	0.75	T-CT12 I 0.75M	\$31.35	-	-
	1.00	T-CT12 I 1.0M	\$31.35	-	-
	1.25	T-CT12 I 1.25M	\$31.35	-	-
14	1.50	T-CT12 I 1.5M	\$31.35	-	-
	0.50	T-CT14 I 0.5M	\$31.35	-	-
	0.75	T-CT14 I 0.75M	\$31.35	T-CT14 E 0.75M	\$31.35
	1.00	T-CT14 I 1.0M	\$31.35	T-CT14 E 1.0M	\$31.35
	1.25	T-CT14 I 1.25M	\$31.35	T-CT14 E 1.25M	\$31.35
	1.50	T-CT14 I 1.5M	\$31.35	T-CT14 E 1.5M	\$31.35
	1.75	T-CT14 I 1.75M	\$31.35	T-CT14 E 1.75M	\$31.35
	2.00	T-CT14 I 2.0M	\$31.35	T-CT14 E 2.0M	\$31.35
21	2.50	T-CT14 I 2.5M	\$31.35	T-CT14 E 2.5M	\$31.35
	1.00	T-CT21 I 1.0M	\$47.03	T-CT21 E 1.0M	\$47.03
	1.50	T-CT21 I 1.5M	\$47.03	T-CT21 E 1.5M	\$47.03
	1.75	T-CT21 I 1.75M	\$47.03	-	-
	2.00	T-CT21 I 2.0M	\$47.03	T-CT21 E 2.0M	\$47.03
	2.50	T-CT21 I 2.5M	\$47.03	T-CT21 E 2.5M	\$47.03
	3.00	T-CT21 I 3.0M	\$47.03	T-CT21 E 3.0M	\$47.03
30	3.50	T-CT21 I 3.5M	\$47.03	-	-
	1.50	T-CT30 I 1.5M	\$67.93	T-CT30 E 1.5M	\$67.93
	2.00	T-CT30 I 2.0M	\$67.93	T-CT30 E 2.0M	\$67.93
	3.00	T-CT30 I 3.0M	\$67.93	T-CT30 E 3.0M	\$67.93
	3.50	T-CT30 I 3.5M	\$67.93	T-CT30 E 3.5M	\$67.93
	4.00	T-CT30 I 4.0M	\$67.93	T-CT30 E 4.0M	\$67.93
40	4.50	T-CT30 I 4.5M	\$67.93	T-CT30 E 4.5M	\$67.93
	1.50	T-CT40 I 1.5M	\$104.50	T-CT40 E 1.5M	\$104.50
	2.00	T-CT40 I 2.0M	\$104.50	T-CT40 E 2.0M	\$104.50
	3.00	T-CT40 I 3.0M	\$104.50	T-CT40 E 3.0M	\$104.50
	3.50	T-CT40 I 3.5M	\$104.50	-	-
	4.00	T-CT40 I 4.0M	\$104.50	T-CT40 E 4.0M	\$104.50
	4.50	T-CT40 I 4.5M	\$104.50	-	-
	5.00	T-CT40 I 5.0M	\$104.50	T-CT40 E 5.0M	\$104.50
5.50	T-CT40 I 5.5M	\$104.50	-	-	
6.00	T-CT40 I 6.0M	\$104.50	T-CT40 E 6.0M	\$104.50	

FOR UN AMERICAN UNIFIED THREADS

INSERT SIZE "A"	TPI	INTERNAL		EXTERNAL	
		Part Number	Price Each	Part Number	Price Each
12	32	T-CT12 I 32UN	\$28.50	-	-
	28	T-CT12 I 28UN	\$28.50	-	-
	24	T-CT12 I 24UN	\$31.35	-	-
	20	T-CT12 I 20UN	\$31.35	-	-
	18	T-CT12 I 18UN	\$31.35	-	-
	16	T-CT12 I 16UN	\$31.35	-	-
14	32	T-CT14 I 32UN	\$31.35	T-CT14 E 32UN	\$31.35
	28	T-CT14 I 28UN	\$31.35	T-CT14 E 28UN	\$31.35
	27	T-CT14 I 27UN	\$31.35	-	-
	24	T-CT14 I 24UN	\$31.35	T-CT14 E 24UN	\$31.35
	20	T-CT14 I 20UN	\$31.35	T-CT14 E 20UN	\$31.35
	18	T-CT14 I 18UN	\$31.35	T-CT14 E 18UN	\$31.35
	16	T-CT14 I 16UN	\$31.35	T-CT14 E 16UN	\$31.35
	14	T-CT14 I 14UN	\$31.35	T-CT14 E 14UN	\$31.35
	12	T-CT14 I 12UN	\$31.35	T-CT14 E 12UN	\$31.35
	21	24	T-CT21 I 24UN	\$47.03	T-CT21 E 24UN
20		T-CT21 I 20UN	\$47.03	T-CT21 E 20UN	\$47.03
18		T-CT21 I 18UN	\$47.03	T-CT21 E 18UN	\$47.03
16		T-CT21 I 16UN	\$47.03	T-CT21 E 16UN	\$47.03
14		T-CT21 I 14UN	\$47.03	T-CT21 E 14UN	\$47.03
12		T-CT21 I 12UN	\$47.03	T-CT21 E 12UN	\$47.03
10		T-CT21 I 10UN	\$47.03	T-CT21 E 10UN	\$47.03
8		T-CT21 I 8UN	\$47.03	-	-
20		T-CT30 I 20UN	\$67.93	T-CT30 E 20UN	\$67.93
18		T-CT30 I 18UN	\$67.93	T-CT30 E 18UN	\$67.93
30	16	T-CT30 I 16UN	\$67.93	T-CT30 E 16UN	\$67.93
	14	T-CT30 I 14UN	\$67.93	T-CT30 E 14UN	\$67.93
	12	T-CT30 I 12UN	\$67.93	T-CT30 E 12UN	\$67.93
	10	T-CT30 I 10UN	\$67.93	T-CT30 E 10UN	\$67.93
	8	T-CT30 I 8UN	\$67.93	T-CT30 E 8UN	\$67.93
	6	T-CT30 I 6UN	\$67.93	T-CT30 E 6UN	\$67.93
	16	T-CT40 I 16UN	\$104.50	T-CT40 E 20UN	\$104.50
	14	T-CT40 I 14UN	\$104.50	T-CT40 E 18UN	\$104.50
40	12	T-CT40 I 12UN	\$104.50	T-CT40 E 16UN	\$104.50
	10	T-CT40 I 10UN	\$104.50	T-CT40 E 14UN	\$104.50
	8	T-CT40 I 8UN	\$104.50	T-CT40 E 12UN	\$104.50
	6	T-CT40 I 6UN	\$104.50	T-CT40 E 10UN	\$104.50
	4.5	T-CT40 I 4.5UN	\$104.50	T-CT40 E 8UN	\$104.50
	4	T-CT40 I 4UN	\$104.50	T-CT40 E 6UN	\$104.50

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS
VISE JAWS
VISE ACCESSORIES
STRAIGHT SHANK
COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

THREADMILLS INSERTS/HOLDERS

THREAD MILL INSERTS (continued) FOR THREADING ON CNC MILLING MACHINES Using Helical Interpolation Programs

Free Programming Help!
Please Call For More Information.

Carmex
Precision Tools Ltd.

For NPT Threads

INSERT SIZE "A"	TPI	INTERNAL/EXTERNAL	
		Part Number	Price Each
12	18	T-CT12 IE 18NPT	\$31.35
14	18	T-CT14 IE 18NPT	\$31.35
14	14	T-CT14 IE 14NPT	\$31.35
21	14	T-CT21 IE 14NPT	\$47.03
21	11.5	T-CT21 IE 11.5NP	\$47.03
30	11.5	T-CT30 IE 11.5NP	\$67.93
30	8	T-CT30 IE 8NPT	\$67.93
40	11.5	T-CT40 IE 11.5NP	\$104.50
40	8	T-CT40 IE 8NPT	\$104.50

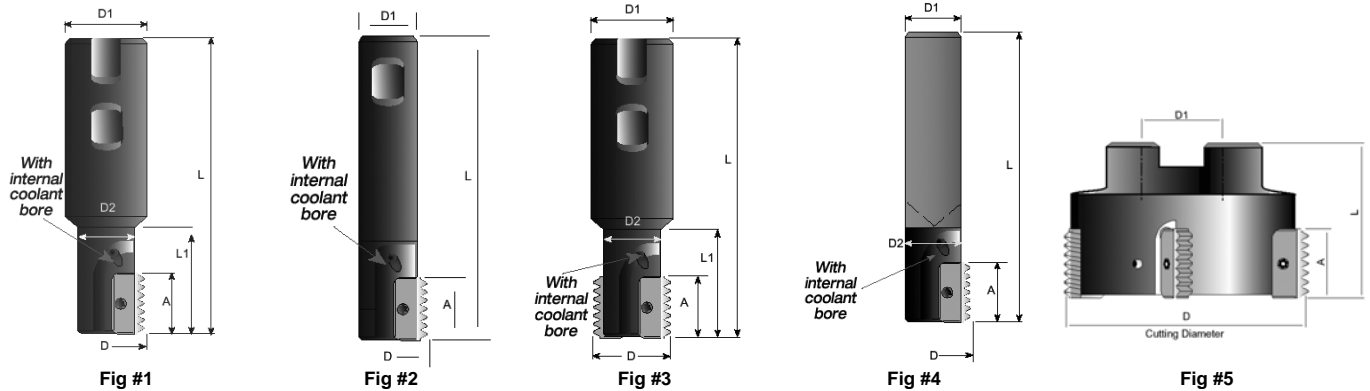
For NPTF DRYSEAL Threads

INSERT SIZE "A"	TPI	INTERNAL/EXTERNAL	
		Part Number	Price Each
12	18	T-CT12 IE 18NPF	\$31.35
14	18	T-CT14 IE 18NPF	\$31.35
14	14	T-CT14 IE 14NPF	\$31.35
21	14	T-CT21 IE 14NPF	\$47.03
21	11.5	T-CT21 IE 11.5NP	\$47.03
30	8	T-CT30 IE 8NPF	\$67.93
40	8	T-CT40 IE 8NPF	\$104.50

THREAD MILL INSERTS HOLDERS FOR THREADING ON CNC MILLING MACHINES Using Helical Interpolation Programs

Full Line Available!
Please call for more information.

Carmex
Precision Tools Ltd.



Style	Figure No.	For Insert Size "A"	D	D1	D2	L	L1	No Of Inserts	Coolant Thru	Shank Material	Part Number	Price Each	Insert	Torx
Std Length	1	12	0.37	0.75	0.3	3.35	0.51	1	Yes	Steel	T-CTSR0375H12	\$161.50	S12	K12
		12	0.39	0.75	0.3	3.35	0.51	1	Yes	Steel	T-CTSR0390H12	\$161.50	S12	K12
		14	0.5	0.75	0.37	2.95	0.70	1	Yes	Steel	T-CTSR0500F14	\$161.50	S14	K14
		14	0.54	0.75	0.38	2.98	0.77	1	Yes	Steel	T-CTSR0540F14	\$161.50	S14	K14
		14	0.57	0.75	0.41	3.20	1.00	1	Yes	Steel	T-CTSR0570H14	\$161.50	S14	K14
		14	0.67	0.75	0.53	3.35	1.18	1	Yes	Steel	T-CTSR0670H14	\$161.50	S14	K14
Long Shnk	2	21	0.79	0.75	0.61	3.70	1.57	1	Yes	Steel	T-CTSR0790H21	\$180.50	S21	K21
		30	1.14	1.00	0.91	4.27	1.85	1	Yes	Steel	T-CTSR1140J30	\$229.90	S30	K30
		40	1.73	1.50	1.38	6.02	3.19	1	Yes	Steel	T-CTSR1730M40	\$285.00	S40	K40
Std Length	3	14	0.79	0.75	0.63	3.66	1.57	2	Yes	Steel	T-CTSR0790H14-2	\$294.50	S14	K14
		21	1.18	1.00	0.95	4.25	1.97	2	Yes	Steel	T-CTSR1180J21-2	\$323.00	S21	K21
		30	1.57	1.25	1.18	5.12	2.80	2	Yes	Steel	T-CTSR1580L30-2	\$375.25	S30	K30
		40	1.97	1.50	1.49	6.02	3.35	2	Yes	Steel	T-CTSR1970M40-2	\$418.00	S40	K40
Long Shnk	4	12	0.39	0.312	0.312	5.00	-	1	Yes	Carbide	T-CTSR0390K12C	\$337.25	S12	K12
		14	0.50	0.375	0.375	6.00	-	1	Yes	Carbide	T-CTSR0500J14C	\$337.25	S14	K14
		14	0.62	0.500	0.500	7.00	-	1	Yes	Carbide	T-CTSR0620K14C	\$365.75	S14	K14
		21	0.82	0.625	0.625	8.00	-	1	Yes	Carbide	T-CTSR0820M21C	\$551.00	S21	K21
Shell Mill	5	21	2.48	0.750	1.970			5	No	n/a	T-CTSR2480C21-5	\$665.00	S21	K21
		30	2.48	0.750	1.970			4	No	n/a	T-CTSR2480C30-4	\$665.00	S30	K30
		30	3.15	1.000	2.160			4	No	n/a	T-CTSR3150D30-4	\$688.75	S30	K30
		30	3.94	1.250	2.360	n/a	n/a	4	No	n/a	T-CTSR3940D30-4	\$712.50	S30	K30
		40	3.15	1.000	2.560			4	No	n/a	T-CTSR3150D40-4	\$688.75	S40	K40
		40	3.94	1.250	2.760			4	No	n/a	T-CTSR3940E40-4	\$712.50	S40	K40

Call Us Today For All Of Your Machine Tool Needs!



Carmex Precision Tools LLC.

The Complete Solution

YOUR ONE STOP SOURCE

Lay Down Threading • Solid Carbide Thread Mills • Indexable Thread Mills • Tiny Tools
Grooving Tools • Free Programming • Application Specialists • Extended Tool Life



THREE THREAD MILLS AVAILABLE:
- Solid Carbide Helical - Thru Hole Coolant - Coolant Thru Flute

MINI CHAMFER OPTIMAL
for Milling, Deburring & Back Chamfering

LAY DOWN THREADING

TINY TOOLS

MINI MILL THREAD
with Internal Coolant thru Flute

SPIRAL FLUTE
INDEXABLE MILL THREADS

INDEXABLE
THREAD MILLS

EXTERNAL MULTI-INSERT
THREAD MILL

MILL-THREAD SOLID CARBIDE
for Threading & Grooving Deep Parts



NEW
from
Carmex

DMT 3 IN 1
Drill, Thread, Chamfer

D-THREAD
Mill-Thread Inserts
& Toolholders for
Machining Deep Threads

**MTQ - MILL THREAD
SOLID CARBIDE**
With Relieved Neck and Internal Coolant Bore

**VERTICAL MILL
THREAD**

Excellent Cutting Performance • Competitively Priced • ISO 9001:2000

WWW.CARMEX.COM



Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

ENDMILLS



A Large Variety Of Endmills For All Of Your Cutting Needs!

We offer endmills designed for maximum performance in all types of materials. Endmill designs for general purpose machining are available in a wide range of materials and flute variety.



2 FLUTE SQUARE END
For Aluminum, Non-ferrous & Plastic
Pages 331-333



3 FLUTE SQUARE END
For Finishing Non-ferrous & Hard Alloys
Pages 334



4 FLUTE SQUARE END
For Steels & Stainless Steels
Pages 335-337



HIGH PERFORMANCE ENDMILLS
For Steels & Stainless Steels up to 40 Hrc
Page 338-339



VARIABLE HELIX
Unequal Index
Pages 340



CORNER ROUNDING
HSS, Cobalt & Carbide
Pages 341



2 & 4 FLUTE CORNER RADIUS
Solid Carbide-MONSTER
Page 342



2 & 4 FLUTE BALL END
Carbide, High Speed Steel & Cobalt
Pages 343-345



ROUGHERS & FINISHERS
Coarse & Fine Pitch
Page 346-348



CARBIDE BURRS
With 1/4" Shanks
Pages 349



DRILL POINT/DRILL MILLS
60°, 82°, 90°, 100°, & 120°
Pages 350



MINIATURE/MICRO ENDMILLS
Carbide Square & Ball End
Page 351-352



MICRO 100 VARIABLE HELIX
Solid Carbide-MONSTER
Page 337



METRIC ENDMILLS
2 & 4 Flute HSS
Page 336



ECONOMY HSS ENDMILLS
Uncoated 2 & 4 Flutes
Page 380

SINGLE FLUTE ROUTERS FOR ALUMINUM SOLID CARBIDE

- High speed, solid carbide routers for aluminum and non-ferrous cutting applications
- Optimized rake and clearance angles produce highest material removal rates and improved surface finishes
- Innovative single flute end mill geometry avoids chip melting and chip re-welding problems



Dia.	Shank Dia.	OAL	Flute Length	Part Number	Price
1/16	1/8	1-1/2	1/4	MI-SFA06222	\$26.45
1/16	1/4	2	1/4	MI-SFA06242	\$31.10
1/8	1/8	1-1/2	1/4	MI-SFA12522	\$23.35
1/8	1/4	2	1/4	MI-SFA12542	\$27.20
1/8	1/4	2	1/2	MI-SFA12544	\$27.20
5/32	1/4	2	5/8	MI-SFA15645	\$27.20
3/16	3/16	2	1/2	MI-SFA18733	\$25.80
3/16	1/4	2	1/2	MI-SFA18744	\$27.20
3/16	1/4	2	5/8	MI-SFA18745	\$27.20
7/32	1/4	2-1/2	3/4	MI-SFA21846	\$27.20
1/4	1/4	2-1/2	3/8	MI-SFA25043	\$27.20
3/8	3/8	3	1-1/8	MI-SFA37569	\$40.75
1/2	1/2	3	1	MI-SFA50088	\$67.50

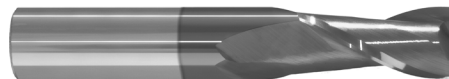
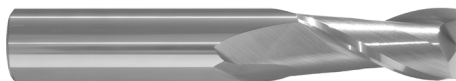
Call Us Today For All Of Your Machine Tool Needs!

2 FLUTE SOLID CARBIDE ENDMILLS

C

SOLID CARBIDE ENDMILLS 2 FLUTE, SQUARE END

American Made Carbide End Mills
At High Speed Steel Prices!



- Premium sub-micron C-2 carbide with 10% cobalt
- 30° helix, right hand spiral, right hand cut
- Available uncoated, Tin coated and TiAIN coated
- Tolerances:
Cutting Dia: +.000/- .002"
Shank Dia: +.0000/- .0005"

Applications:
Slotting, pocketing and plunging

Materials:
Cast Iron, non-ferrous metals, plastics and abrasive materials

Dia.	LOC	Shank Dia.	OAL	UNCOATED		TiN Coated		TiAIN Coated	
				Part Number	Price Each	Part Number	Price Each	Part Number	Price Each
1/64	3/64	1/8	1-1/2	MO-EM001000-2	\$13.60	MO-EM000995-2	\$18.00	MO-EM000997-2	\$18.00
1/32	1/8	1/8	1-1/2	MO-EM001001-2	\$7.20	MO-EM001002-2	\$8.40	MO-EM001005-2	\$9.20
3/64	1/8	1/8	1-1/2	MO-EM001010-2	\$7.20	MO-EM001011-2	\$8.40	MO-EM001013-2	\$9.20
1/16	1/4	1/8	1-1/2	MO-EM001020-2	\$5.80	MO-EM001021-2	\$7.20	MO-EM001023-2	\$7.60
5/64	1/4	1/8	1-1/2	MO-EM001030-2	\$5.80	MO-EM001032-2	\$7.20	MO-EM001036-2	\$7.60
3/32	3/8	1/8	1-1/2	MO-EM001040-2	\$5.80	MO-EM001041-2	\$7.20	MO-EM001043-2	\$7.60
7/64	3/8	1/8	1-1/2	MO-EM001050-2	\$5.80	MO-EM001052-2	\$7.20	MO-EM001055-2	\$7.60
1/8	1/2	1/8	1-1/2	MO-EM001060-2	\$5.40	MO-EM001061-2	\$6.60	MO-EM001063-2	\$7.40
1/8	3/4	1/8	2-1/4	MO-EM001001-2	\$8.45	MO-EM001002-2	\$11.86	MO-EM001004-2	\$12.22
9/64	9/16	3/16	2	MO-EM001070-2	\$9.62	MO-EM001072-2	\$12.42	MO-EM001074-2	\$12.81
5/32	9/16	3/16	2	MO-EM001080-2	\$9.21	MO-EM001081-2	\$11.54	MO-EM001084-2	\$11.90
5/32	3/4	3/16	2-1/2	MO-EM001005-2	\$14.32	MO-EM001006-2	\$18.31	MO-EM001008-2	\$18.87
11/64	9/16	3/16	2	MO-EM001090-2	\$9.62	MO-EM001092-2	\$12.00	MO-EM001094-2	\$12.38
3/16	5/8	3/16	2	MO-EM001100-2	\$8.71	MO-EM001101-2	\$10.80	MO-EM001104-2	\$11.35
3/16	3/4	3/16	2-1/2	MO-EM001012-2	\$11.98	MO-EM001013-2	\$16.04	MO-EM001014-2	\$16.53
13/64	5/8	1/4	2-1/2	MO-EM001110-2	\$11.94	MO-EM001112-2	\$14.88	MO-EM001114-2	\$16.76
7/32	5/8	1/4	2-1/2	MO-EM001120-2	\$10.54	MO-EM001121-2	\$12.87	MO-EM001124-2	\$15.26
15/64	3/4	1/4	2-1/2	MO-EM001125-2	\$11.94	MO-EM001127-2	\$14.88	MO-EM001129-2	\$16.54
1/4	3/4	1/4	2-1/2	MO-EM001130-2	\$9.16	MO-EM001131-2	\$13.48	MO-EM001134-2	\$14.19
1/4	1-1/8	1/4	3	MO-EM001020-2	\$14.73	MO-EM001021-2	\$18.41	MO-EM001023-2	\$18.98
17/64	3/4	5/16	2-1/2	MO-EM001135-2	\$14.29	MO-EM001137-2	\$18.40	MO-EM001139-2	\$20.21
9/32	3/4	5/16	2-1/2	MO-EM001140-2	\$13.07	MO-EM001141-2	\$15.71	MO-EM001144-2	\$18.81
19/64	13/16	5/16	2-1/2	MO-EM001145-2	\$14.29	MO-EM001148-2	\$18.60	MO-EM001145-2	\$19.54
5/16	13/16	5/16	2-1/2	MO-EM001150-2	\$11.65	MO-EM001151-2	\$16.68	MO-EM001153-2	\$18.30
5/16	1-1/8	5/16	3	MO-EM001030-2	\$18.97	MO-EM001031-2	\$24.89	MO-EM001033-2	\$25.66
21/64	1	3/8	2-1/2	MO-EM001154-2	\$17.57	MO-EM001157-2	\$22.80	MO-EM001154-2	\$25.70
11/32	1	3/8	2-1/2	MO-EM001160-2	\$16.17	MO-EM001162-2	\$19.40	MO-EM001164-2	\$23.24
23/64	1	3/8	2-1/2	MO-EM001165-2	\$17.57	MO-EM001166-2	\$22.20	MO-EM001165-2	\$23.44
3/8	1	3/8	2-1/2	MO-EM001170-2	\$15.11	MO-EM001171-2	\$19.28	MO-EM001173-2	\$21.90
3/8	1-1/8	3/8	3	MO-EM001040-2	\$22.65	MO-EM001009-2	\$28.46	MO-EM001010-2	\$29.34
25/64	1	7/16	2-3/4	MO-EM001175-2	\$25.84	MO-EM001178-2	\$31.92	MO-EM001175-2	\$32.43
13/32	1	7/16	2-3/4	MO-EM001180-2	\$25.33	MO-EM001182-2	\$31.41	MO-EM001184-2	\$31.92
27/64	1	7/16	2-3/4	MO-EM001185-2	\$24.32	MO-EM001187-2	\$30.40	MO-EM001185-2	\$30.60
7/16	1	7/16	2-3/4	MO-EM001190-2	\$21.96	MO-EM001191-2	\$31.37	MO-EM001198-2	\$31.77
7/16	2	7/16	4	MO-EM001050-2	\$38.90	MO-EM001051-2	\$49.52	MO-EM001052-2	\$51.05
29/64	1	1/2	3	MO-EM001192-2	\$28.58	MO-EM001194-2	\$36.80	MO-EM001192-2	\$38.40
15/32	1	1/2	3	MO-EM001193-2	\$27.87	MO-EM001197-2	\$34.33	MO-EM001196-2	\$38.00
31/64	1	1/2	3	MO-EM001195-2	\$26.85	MO-EM001199-2	\$36.36	MO-EM001195-2	\$37.49
1/2	1	1/2	3	MO-EM001200-2	\$25.87	MO-EM001201-2	\$31.25	MO-EM001205-2	\$35.58
1/2	1-1/4	1/2	3	MO-EM001200A-2	\$27.94	-	-	MO-EM001205A-2	\$37.65
1/2	2	1/2	4	MO-EM001060-2	\$42.65	MO-EM001061-2	\$52.58	MO-EM001064-2	\$54.21
33/64	1-1/4	9/16	3-1/2	MO-EM001206-2	\$57.05	-	-	-	-
17/32	1-1/4	9/16	3-1/2	MO-EM001207-2	\$56.64	-	-	-	-
9/16	1-1/4	9/16	3-1/2	MO-EM001210-2	\$49.65	MO-EM001209-2	\$59.08	MO-EM001212-2	\$64.49
5/8	1-1/4	5/8	3-1/2	MO-EM001220-2	\$51.68	MO-EM001222-2	\$59.74	MO-EM001224-2	\$66.51
5/8	2-1/4	5/8	5	MO-EM001070-2	\$82.90	MO-EM001071-2	\$96.62	MO-EM001073-2	\$99.61
11/16	1-1/2	3/4	4	MO-EM001230-2	\$79.77	MO-EM001231-2	\$103.16	MO-EM001232-2	\$104.35
3/4	1-1/2	3/4	4	MO-EM001240-2	\$71.95	MO-EM001241-2	\$83.90	MO-EM001242-2	\$88.89
3/4	2-1/4	3/4	5	MO-EM001080-2	\$114.22	MO-EM001081-2	\$131.48	MO-EM001083-2	\$135.55
7/8	1-1/2	7/8	4	MO-EM001250-2	\$127.68	MO-EM001251-2	\$142.47	MO-EM001253-2	\$157.33
1	1-1/2	1	4	MO-EM001260-2	\$132.46	MO-EM001261-2	\$147.57	MO-EM001263-2	\$162.75
1	2-1/4	1	5	MO-EM001090-2	\$177.16	MO-EM001091-2	\$200.46	MO-EM001093-2	\$206.66

LATHE CHUCKS
LIVE CENTERS
VISE JAWS
VISE ACCESSORIES
STRAIGHT SHANK
COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

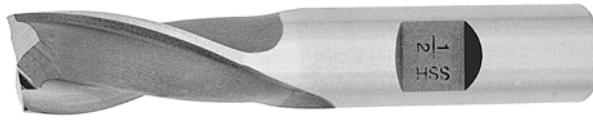
2 FLUTE HSS & COBALT ENDMILLS

2 FLUTE END MILLS

Single End, Regular Length, Center Cutting



- High speed steel and 8% Cobalt M-42
- Single end, center cutting
- Right hand cut
- Ball nose, metric and double end also available



Mill Dia	Shank Dia	LOC	OAL	HSS		Cobalt M-42		Mill Dia	Shank Dia	LOC	OAL	HSS		Cobalt M-42	
				Part Number	Price Each	Part Number	Price Each					Part Number	Price Each	Part Number	Price Each
1/8	3/8	3/8	2-5/16	BI-5300-005	\$6.21	BI-5301-005	\$7.34	7/8	1/2	1-1/2	3-5/8	BI-5300-100	\$24.37	BI-5301-100	\$36.43
5/32	3/8	7/16	2-5/16	BI-5300-010	\$6.21	BI-5301-010	\$7.34	7/8	5/8	1-1/2	3-5/8	BI-5300-135	\$24.37	-	-
3/16	3/8	7/16	2-5/16	BI-5300-015	\$6.21	BI-5301-015	\$7.34	7/8	3/4	1-1/2	3-3/4	BI-5300-165	\$24.37	BI-5301-165	\$36.43
7/32	3/8	1/2	2-5/16	BI-5300-020	\$6.21	BI-5301-020	\$7.34	7/8	7/8	1-1/2	3-3/4	BI-5300-210	\$25.07	-	-
1/4	3/8	1/2	2-5/16	BI-5300-025	\$6.21	BI-5301-025	\$7.31	15/16	1/2	1-1/2	3-5/8	BI-5300-105	\$28.15	-	-
9/32	3/8	9/16	2-5/16	BI-5300-030	\$6.21	BI-5301-030	\$8.08	15/16	5/8	1-1/2	3-5/8	BI-5300-140	\$28.15	BI-5301-140	\$39.44
5/16	3/8	9/16	2-5/16	BI-5300-035	\$6.21	-	-	1	1/2	1-1/2	3-5/8	BI-5300-110	\$28.85	BI-5301-110	\$39.44
11/32	3/8	9/16	2-5/16	BI-5300-040	\$6.21	BI-5301-040	\$8.08	1	5/8	1-1/2	3-5/8	BI-5300-145	\$28.85	BI-5301-145	\$39.44
3/8	3/8	9/16	2-5/16	BI-5300-045	\$6.21	BI-5301-045	\$8.08	1	3/4	1-1/2	3-3/4	BI-5300-175	\$28.85	BI-5301-175	\$39.44
13/32	3/8	13/16	2-1/2	BI-5300-050	\$7.96	BI-5301-050	\$10.83	1	1	1-5/8	4-1/8	BI-5300-235	\$31.06	BI-5301-235	\$40.43
7/16	3/8	13/16	2-1/2	BI-5300-055	\$7.96	BI-5301-055	\$10.83	1-1/16	5/8	1-5/8	3-7/8	BI-5300-150	\$42.59	-	-
15/32	3/8	13/16	2-1/2	BI-5300-060	\$7.96	-	-	1-1/8	3/4	1-5/8	3-7/8	BI-5300-185	\$42.59	BI-5301-185	\$61.65
1/2	3/8	13/16	2-1/2	BI-5300-065	\$7.96	BI-5301-065	\$10.83	1-1/8	7/8	1-5/8	3-7/8	BI-5300-225	\$42.59	-	-
1/2	1/2	1	3	BI-5300-070	\$8.37	BI-5301-070	\$10.83	1-1/8	1	1-5/8	4-1/8	BI-5300-240	\$45.42	-	-
9/16	1/2	1-1/8	3-1/8	BI-5300-075	\$12.74	BI-5301-075	\$16.76	1-1/4	3/4	1-5/8	3-7/8	BI-5300-190	\$46.99	BI-5301-190	\$71.61
5/8	1/2	1-1/8	3-1/8	BI-5300-080	\$14.57	BI-5301-080	\$19.89	1-1/4	1	1-5/8	4-1/8	BI-5300-245	\$48.54	BI-5301-245	\$71.61
5/8	5/8	1-5/16	3-7/16	BI-5300-115	\$15.87	BI-5301-115	\$19.89	1-1/4	1-1/4	1-5/8	4-1/8	BI-5300-260	\$48.54	-	-
11/16	1/2	1-5/16	3-1/16	BI-5300-085	\$17.43	BI-5301-085	\$26.67	1-3/16	3/4	1-5/8	3-7/8	BI-5300-195	\$46.99	-	-
11/16	5/8	1-5/16	3-7/16	BI-5300-120	\$17.53	BI-5301-120	\$23.83	1-1/2	3/4	1-5/8	3-7/8	BI-5300-205	\$57.64	-	-
3/4	1/2	1-5/16	3-1/16	BI-5300-090	\$17.43	BI-5301-090	\$26.67	1-1/2	1	1-5/8	4-1/8	BI-5300-255	\$59.09	-	-
3/4	5/8	1-5/16	3-7/16	BI-5300-125	\$18.32	BI-5301-125	\$26.67	1-1/2	1-1/4	1-5/8	4-1/8	BI-5300-265	\$59.09	-	-
3/4	3/4	1-5/16	3-7/16	BI-5300-155	\$18.32	BI-5301-155	\$26.67	1-5/8	1-1/4	1-5/8	4-1/8	BI-5300-270	\$65.13	-	-
13/16	5/8	1-1/2	3-5/8	BI-5300-130	\$22.90	BI-5301-130	\$36.43	1-3/4	1-1/4	1-5/8	4-1/8	BI-5300-275	\$74.34	-	-
13/16	3/4	1-1/2	3-3/4	BI-5300-160	\$23.54	BI-5301-160	\$27.90	2	1-1/4	1-5/8	4-1/8	BI-5300-285	\$87.09	-	-

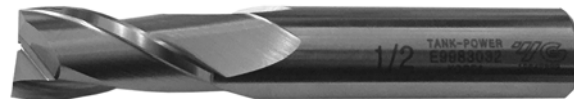
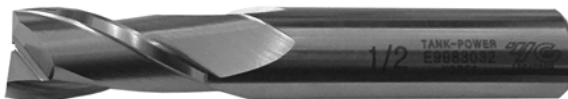
2 FLUTE END MILLS

Single End, Regular Length

Faster Feeds & Speeds Than HSS or Cobalt!



- Powdered HSS
- 30° helix
- For hardened steels up to Rc 45
- Single end, right hand cut
- Flat on shank
- Tank Power coating ideal for applications where cobalt wears rapidly, carbide chips or breaks, or when higher feed rates are desired



Dia	Shank	LOC	OAL	UNCOATED		Tank-Power Coated	
				Part Number	Price	Part Number	Price
1/8	3/8	3/8	2-5/16	YG-EME9983008	\$11.82	YG-EME9983008TF	\$21.23
3/16	3/8	7/16	2-5/16	YG-EME9983012	\$11.82	YG-EME9983012TF	\$21.23
1/4	3/8	1/2	2-5/16	YG-EME9983016	\$11.82	YG-EME9983016TF	\$21.23
5/16	3/8	9/16	2-5/16	YG-EME9983020	\$11.82	YG-EME9983020TF	\$21.23
3/8	3/8	9/16	2-5/16	YG-EME9983024	\$11.82	YG-EME9983024TF	\$21.23
1/2	1/2	1	3	YG-EME9983032	\$16.98	YG-EME9983032TF	\$27.73
5/8	5/8	1-5/16	3-7/16	YG-EME9983040	\$27.80	YG-EME9983040TF	\$42.38
3/4	3/4	1-5/16	3-7/16	YG-EME9983048	\$31.17	YG-EME9983048TF	\$47.38
7/8	7/8	1-1/2	3-3/4	YG-EME9983056	\$39.98	YG-EME9983056TF	\$62.47
1	1	1-5/8	4-1/8	YG-EME9983064	\$49.70	YG-EME9983064TF	\$71.00

Call Us Today For All Of Your Machine Tool Needs!

SQUARE NOSE END MILLS

Center Cutting • M42 Cobalt • Uncoated

- M42 cobalt HSS
- 30° helix
- For general purpose machining
- Single (SE) or double end (DE)
- Center cutting
- For materials up to 48 Rc
- Flats on shanks (except where noted with *)
- Additional sizes available



Dia	LOC	Shank	OAL	Type	Part Number	Price Each
3/64*	9/64	3/16	2-1/4	DE	ME-B-601-1/2	\$17.31
1/16	3/16	3/16	1-1/2	SE	ME-A-602	\$10.14
1/16*	3/16	3/16	2-1/4	DE	ME-B-602	\$15.11
1/16*	7/32	3/16	2-1/2	DE	ME-B-602-L	\$20.45
5/64	15/64	3/16	1-1/2	SE	ME-A-602-1/2	\$10.14
5/64*	15/64	3/16	2-1/4	DE	ME-B-602-1/2	\$15.11
3/32	9/32	3/16	1-1/2	SE	ME-A-603	\$10.14
3/32*	9/32	3/16	2-1/4	DE	ME-B-603	\$15.11
1/8*	3/8	3/16	2-1/4	DE	ME-B-604	\$15.11
1/8	3/8	3/8	2-5/16	SE	ME-A-1204	\$13.21
1/8	3/4	3/8	2-5/8	SE	ME-A-1204-L	\$17.65
9/64*	13/32	3/16	2-1/4	DE	ME-B-604-1/2	\$15.11
3/16	3/16	3/8	2-1/16	SE	ME-AS-1206	\$12.23
3/16	7/16	3/8	2-5/16	SE	ME-A-1206	\$12.23
3/16	1/2	3/8	2-11/16	SE	ME-AN-1206	\$16.08
9/32	9/16	3/8	3-1/8	DE	ME-B-1209	\$20.95
5/16	9/16	3/8	2-5/16	SE	ME-A-1210	\$12.42
5/16	3/4	3/8	3-5/16	SE	ME-AN-1210	\$16.40
3/8	9/16	3/8	2-5/16	SE	ME-A-1212	\$12.42
3/8	3/4	3/8	3-5/16	SE	ME-AN-1212	\$16.31
3/8	2-1/2	3/8	4-1/4	SE	ME-A-1212-E	\$25.89
7/16	13/16	1/2	3-3/4	DE	ME-B-1614	\$31.89

*No Flats on Shank

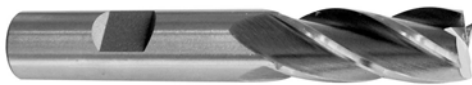
Dia	LOC	Shank	OAL	Type	Part Number	Price Each
1/2	1	1/2	4	SE	ME-AN-1616	\$22.98
1/2	1-1/2	1/2	3-1/2	SE	ME-A-1616-M	\$25.21
1/2	2	1/2	4	SE	ME-A-1616-L	\$26.02
1/2	3	1/2	5	SE	ME-A-1616-E	\$32.55
17/32	1-1/8	1/2	3-1/8	SE	ME-A-1617	\$26.04
9/16	1-1/8	1/2	3-1/8	SE	ME-A-1618	\$23.35
5/8	5/8	1/2	2-3/4	SE	ME-AS-1620	\$26.25
5/8	1-3/8	5/8	4-5/8	SE	ME-AN-2020	\$34.65
11/16	1-5/16	5/8	3-7/16	SE	ME-A-2022	\$32.58
3/4	1-5/16	5/8	3-7/16	SE	ME-A-2024	\$33.09
3/4	1-5/16	3/4	3-9/16	SE	ME-A-2424	\$30.30
3/4	1-5/8	3/4	5-3/8	SE	ME-AN-2424	\$44.78
3/4	2-1/4	3/4	4-1/2	SE	ME-A-2424-M	\$43.54
3/4	3	3/4	5-1/4	SE	ME-A-2424-L	\$56.55
13/16	1-1/2	5/8	3-5/8	SE	ME-A-2026	\$42.39
13/16	1-1/2	3/4	3-3/4	SE	ME-A-2426	\$43.80
13/16	1-9/16	7/8	5-1/2	DE	ME-B-2826	\$79.51
7/8	5/8	1/2	2-5/8	SE	ME-AS-1628	\$43.46
7/8	1-1/2	3/4	3-3/4	SE	ME-A-2428	\$43.61
7/8	1-9/16	7/8	5-1/2	DE	ME-B-2828	\$79.51
1	1-1/2	7/8	3-3/4	SE	ME-A-2832	\$54.74
1	1-5/8	1	4-1/8	SE	ME-A-3232	\$53.72

SQUARE NOSE END MILLS

HSS • 2 & 4 Flutes



- Uncoated high speed steel
- For general purpose machining on ferrous and non-ferrous materials
- Single end
- Center cutting
- Ground from solid
- TiN Coated and M42 Cobalt also available



Dia	Shank	LOC	OAL	2 FLUTE		4 FLUTE	
				2 flute	Price Each	4 flute	Price Each
1/8	3/8	3/8	2-5/16	A-5801-0125	\$5.27	A-5802-0125	\$5.24
3/16	3/8	7/16	2-5/16	A-5801-0187	\$5.27	A-5802-0187	\$5.08
1/4	3/8	1/2	2-5/16	A-5801-0250	\$5.27	A-5802-0250	\$5.08
5/16	3/8	9/16	2-5/16	A-5801-0312	\$5.27	A-5802-0312	\$5.24
3/8	3/8	9/16	2-5/16	A-5801-0375	\$5.27	A-5802-0375	\$5.43
7/16	3/8	13/16	2-1/2	A-5801-0437	\$6.96	A-5802-0437	\$6.62
1/2	3/8	1	3	A-5801-0500	\$8.07	A-5802-0500	\$7.47
1/2	1/2	1	3	A-5801-0501	\$8.07	A-5802-0501	\$9.42
9/16	1/2	1-1/8	3-1/8	A-5801-0562	\$10.77	A-5802-0562	\$12.54
5/8	1/2	1-1/8	3-1/8	A-5801-0625	\$10.45	A-5802-0625	\$11.03
5/8	5/8	1-5/16	3-7/16	A-5801-0626	\$10.45	A-5802-0626	\$12.88
3/4	1/2	1-5/16	3-5/16	A-5801-0750	\$14.58	A-5802-0750	\$15.84
3/4	5/8	1-5/16	3-7/16	A-5801-0751	\$14.58	A-5802-0751	\$15.84
3/4	3/4	1-5/16	3-9/16	A-5801-0753	\$13.65	A-5802-0753	\$17.07
1	1/2	1-1/2	3-5/8	A-5801-1000	\$23.22	A-5802-1000	\$28.54
1	3/4	1-1/2	3-3/4	A-5801-1001	\$25.04	A-5802-1001	\$33.39
1	1	1-5/8	4-1/8	A-5801-1002	\$24.93	A-5802-1002	\$31.40
1-1/8	3/4	1-5/8	3-7/8	A-5801-1125	\$33.00		
1-1/4	3/4	1-5/8	3-7/8	A-5801-1250	\$45.70		
1-1/2	3/4	1-5/8	4-1/8	A-5801-1500	\$50.37		

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

3 FLUTE ENDMILLS-COBALT & CARBIDE

3 FLUTE, SQUARE END

Cobalt • Center Cutting



- M42 cobalt HSS
- 30° helix
- For general purpose machining
- Single end
- Center cutting
- For materials up to 48 Rc
- Flats on shanks
- Additional sizes available

Dia	LOC	Shank	OAL	Part Number	Price Each	Dia	LOC	Shank	OAL	Part Number	Price Each
1/8	3/8	3/8	2-5/16	ME-E-1204	\$15.17	9/16	1-3/8	1/2	3-3/8	ME-E-1618	\$31.63
3/16	1/2	3/8	2-3/8	ME-E-1206	\$15.17	5/8	1-3/8	1/2	3-3/8	ME-E-1620	\$31.63
1/4	5/8	3/8	2-7/16	ME-E-1208	\$15.57	11/16	1-5/8	1/2	3-5/8	ME-E-1622	\$42.80
5/16	3/4	3/8	2-1/2	ME-E-1210	\$15.57	3/4	1-5/8	1/2	3-5/8	ME-E-1624	\$38.95
3/8	3/4	3/8	2-1/2	ME-E-1212	\$15.57	13/16	1-5/8	1/2	3-5/8	ME-E-1626	\$48.56
7/16	1	3/8	2-11/16	ME-E-1214	\$20.73	7/8	1-5/8	1/2	3-5/8	ME-E-1628	\$50.79
1/2	1	3/8	2-11/16	ME-E-1216	\$20.73	1	1-7/8	3/4	4-1/8	ME-E-2432	\$60.71

3 FLUTE, SQUARE END

Solid Carbide Endmills



American Made Carbide End Mills
At High Speed Steel Prices!



- For slotting and pocketing in ferrous materials including stainless steel and high temperature alloys
- Premium sub-micron C-2 carbide with 10% cobalt
- 30° helix, right hand spiral, right hand cut
- Center cutting
- Tolerances:
Cutting Dia: +.000/- .002"
Shank Dia: +.0000/- .0005"

Dia	LOC	Shank	OAL	UNCOATED		TIAIN COATED	
				Part Number	Price Each	Part Number	Price Each
1/32	1/8	1/8	1-1/2	MO-205-001001	\$7.20	MO-205-001004	\$9.20
3/64	1/8	1/8	1-1/2	MO-205-001020	\$7.20	MO-205-001023	\$9.20
1/16	1/4	1/8	1-1/2	MO-205-001030	\$5.80	MO-205-001033	\$7.60
5/64	1/4	1/8	1-1/2	MO-205-001040	\$5.80	MO-205-001043	\$7.60
3/32	3/8	1/8	1-1/2	MO-205-001050	\$5.80	MO-205-001053	\$7.60
7/64	3/8	1/8	1-1/2	MO-205-001060	\$5.80	MO-205-001063	\$7.60
1/8	1/2	1/8	1-1/2	MO-205-001070	\$5.40	MO-205-001073	\$7.40
5/32	9/16	3/16	2	MO-205-001090	\$9.21	MO-205-001093	\$11.90
3/16	5/8	3/16	2	MO-205-001110	\$8.71	MO-205-001113	\$11.35
7/32	5/8	1/4	2-1/2	MO-205-001130	\$10.54	MO-205-001133	\$15.26
1/4	3/4	1/4	2-1/2	MO-205-001140	\$9.16	MO-205-031140	\$14.19
9/32	3/4	5/16	2-1/2	MO-205-001150	\$13.07	-	-
5/16	13/16	5/16	2-1/2	MO-205-001160	\$11.65	MO-205-001163	\$18.30
3/8	1	3/8	2-1/2	MO-205-001180	\$15.11	MO-205-001186	\$21.90
25/64	1	7/16	2-3/4	MO-205-001188	\$25.84	-	-
7/16	1	7/16	2-3/4	MO-205-001200	\$21.96	MO-205-001203	\$31.77
1/2	1	1/2	3	MO-205-001210	\$25.87	MO-205-001216	\$35.58
9/16	1-1/4	9/16	3-1/2	MO-205-001220	\$49.65	-	-
5/8	1-1/4	5/8	3-1/2	MO-205-001230	\$51.68	MO-205-001233	\$66.51
3/4	1-1/2	3/4	4	MO-205-001250	\$71.95	MO-205-001253	\$88.89
1	1-1/2	1	4	MO-205-001270	\$132.46	MO-205-001273	\$162.75

3 FLUTE, BALL NOSE

Solid Carbide Endmills



American Made Carbide End Mills
At High Speed Steel Prices!



- For slotting and pocketing in ferrous materials including stainless steel and high temperature alloys
- Premium sub-micron C-2 carbide with 10% cobalt
- 30° helix, right hand spiral, right hand cut
- Center cutting
- Tolerances:
Cutting Dia: +.000/- .002"
Shank Dia: +.0000/- .0005"

Dia	LOC	Shank	OAL	UNCOATED		TIAIN COATED	
				Part Number	Price Each	Part Number	Price Each
1/32	1/8	1/8	1-1/2	MO-222-001001	\$10.70	MO-222-001004	\$12.90
3/64	1/8	1/8	1-1/2	MO-222-001020	\$10.80	MO-222-001023	\$12.90
1/16	1/4	1/8	1-1/2	MO-222-001030	\$9.10	MO-222-001033	\$11.60
5/64	1/4	1/8	1-1/2	MO-222-001040	\$9.60	MO-222-001043	\$11.00
3/32	3/8	1/8	1-1/2	MO-222-001050	\$9.10	MO-222-001053	\$11.60
7/64	3/8	1/8	1-1/2	MO-222-001060	\$9.60	MO-222-001063	\$11.00
1/8	1/2	1/8	1-1/2	MO-222-001070	\$7.70	MO-222-001073	\$9.80
5/32	9/16	3/16	2	MO-222-001090	\$11.58	MO-222-001093	\$14.38
3/16	5/8	3/16	2	MO-222-001110	\$11.13	MO-222-001113	\$13.93
7/32	5/8	1/4	2-1/2	MO-222-001130	\$14.20	MO-222-001133	\$18.80
1/4	3/4	1/4	2-1/2	MO-222-001140	\$12.80	MO-222-001143	\$16.80
9/32	3/4	5/16	2-1/2	MO-222-001150	\$18.74	-	-
5/16	13/16	5/16	2-1/2	MO-222-001160	\$16.66	MO-222-001163	\$21.65
3/8	1	3/8	2-1/2	MO-222-001180	\$19.72	MO-222-001183	\$26.61
7/16	1	7/16	2-3/4	MO-222-001200	\$29.54	MO-222-001203	\$37.92
1/2	1	1/2	3	MO-222-001210	\$32.85	MO-222-001213	\$39.51
9/16	1-1/4	9/16	3-1/2	MO-222-001220	\$63.21	-	-
5/8	1-1/4	5/8	3-1/2	MO-222-001230	\$59.53	MO-222-001233	\$75.21
3/4	1-1/2	3/4	4	MO-222-001250	\$90.75	MO-222-001253	\$104.19
1	1-1/2	1	4	MO-222-001270	\$162.52	MO-222-001273	\$183.52

Call Us Today For All Of Your Machine Tool Needs!

4 FLUTE SOLID CARBIDE END MILLS

C

SOLID CARBIDE ENDMILLS 4 FLUTE, SQUARE END

American Made Carbide End Mills
At High Speed Steel Prices!



- Premium sub-micron C-2 carbide with 10% cobalt
- 30° helix, right hand spiral, right hand cut
- Center cutting
- Increased core strength
- Available uncoated, Tin coated and TiAlN coated
- Tolerances:
Cutting Dia: +.000/- .002"
Shank Dia: +.0000/- .0005"

Materials:
Ferrous materials including stainless steel and high temperature alloys



Dia.	LOC	Shank Dia.	OAL	UNCOATED		TiN Coated		TiAlN Coated	
				Part Number	Price Each	Part Number	Price Each	Part Number	Price Each
1/64	3/64	1/8	1-1/2	MO-EM001000-4	\$13.60	MO-EM000995-4	\$18.00	MO-EM000997-4	\$18.00
1/32	1/8	1/8	1-1/2	MO-EM001001-4	\$7.20	MO-EM001002-4	\$8.40	MO-EM001005-4	\$9.20
3/64	1/8	1/8	1-1/2	MO-EM001010-4	\$7.20	MO-EM001011-4	\$8.40	MO-EM001015-4	\$9.20
1/16	1/4	1/8	1-1/2	MO-EM001020-4	\$5.80	MO-EM001021-4	\$7.20	MO-EM001027-4	\$7.60
5/64	1/4	1/8	1-1/2	MO-EM001030-4	\$5.80	MO-EM001031-4	\$7.20	MO-EM001036-4	\$7.60
3/32	3/8	1/8	1-1/2	MO-EM001040-4	\$5.80	MO-EM001041-4	\$7.20	MO-EM001044-4	\$7.60
7/64	3/8	1/8	1-1/2	MO-EM001050-4	\$5.80	MO-EM001051-4	\$7.20	MO-EM001053-4	\$7.60
1/8	1/2	1/8	1-1/2	MO-EM001060-4	\$5.40	MO-EM001061-4	\$6.60	MO-EM001067-4	\$7.40
1/8	3/4	1/8	2-1/4	MO-EM001001-4	\$8.45	MO-EM001002-4	\$11.86	MO-EM001004-4	\$12.22
1/8	1	1/8	3	MO-EM001001-4	\$12.59	MO-EM001002-4	\$14.74	MO-EM001004-4	\$15.04
9/64	9/16	3/16	2	MO-EM001070-4	\$9.62	MO-EM001071-4	\$12.42	MO-EM001073-4	\$12.81
5/32	9/16	3/16	2	MO-EM001080-4	\$9.21	MO-EM001081-4	\$11.54	MO-EM001083-4	\$11.90
5/32	3/4	3/16	2-1/2	MO-EM001005-4	\$14.32	MO-EM001006-4	\$18.31	MO-EM001008-4	\$18.87
11/64	9/16	3/16	2	MO-EM001090-4	\$9.62	MO-EM001091-4	\$12.00	MO-EM001093-4	\$12.38
3/16	5/8	3/16	2	MO-EM001100-4	\$8.71	MO-EM001101-4	\$10.80	MO-EM001107-4	\$11.35
13/64	5/8	1/4	2-1/2	MO-EM001110-4	\$11.94	MO-EM001111-4	\$14.88	MO-EM001113-4	\$16.76
7/32	5/8	1/4	2-1/2	MO-EM001120-4	\$10.54	MO-EM001121-4	\$12.87	MO-EM001123-4	\$15.26
15/64	3/4	1/4	2-1/2	MO-EM001125-4	\$11.94	MO-EM001126-4	\$14.88	MO-EM001128-4	\$16.54
1/4	3/4	1/4	2-1/2	MO-EM001130-4	\$9.16	MO-EM001131-4	\$13.48	MO-EM001137-4	\$14.19
1/4	1-1/2	1/4	4	MO-EM001020-4	\$17.23	MO-EM001021-4	\$22.68	MO-EM001023-4	\$22.45
17/64	3/4	5/16	2-1/2	MO-EM001133-4	\$14.29	MO-EM001135-4	\$18.40	MO-EM001136-4	\$20.21
9/32	3/4	5/16	2-1/2	MO-EM001140-4	\$13.07	MO-EM001142-4	\$15.71	MO-EM001144-4	\$18.81
19/64	13/16	5/16	2-1/2	MO-EM001147-4	\$14.29	MO-EM001145-4	\$18.60	MO-EM001147-4	\$19.54
5/16	13/16	5/16	2-1/2	MO-EM001150-4	\$11.65	MO-EM001151-4	\$16.68	MO-EM001153-4	\$18.30
5/16	1-1/8	5/16	3	MO-EM001030-4	\$18.97	MO-EM001033-4	\$24.89	MO-EM001028-4	\$25.66
21/64	1	3/8	2-1/2	MO-EM001154-4	\$17.57	MO-EM001157-4	\$22.80	MO-EM001154-4	\$25.70
11/32	1	3/8	2-1/2	MO-EM001160-4	\$16.17	MO-EM001161-4	\$19.40	MO-EM001163-4	\$23.24
23/64	1	3/8	2-1/2	MO-EM001169-4	\$17.57	MO-EM001165-4	\$22.20	MO-EM001169-4	\$23.44
3/8	1	3/8	2-1/2	MO-EM001170-4	\$15.11	MO-EM001171-4	\$19.28	MO-EM001177-4	\$21.90
3/8	1-1/8	3/8	3	MO-EM001040-4	\$22.65	MO-EM001041-4	\$28.46	MO-EM001043-4	\$29.34
3/8	1-3/4	3/8	4	MO-EM001040-4	\$27.87	MO-EM001039-4	\$34.56	MO-EM001038-4	\$35.26
25/64	1	7/16	2-3/4	MO-EM001175-4	\$25.84	MO-EM001178-4	\$31.92	MO-EM001175-4	\$32.43
13/32	1	7/16	2-3/4	MO-EM001180-4	\$25.33	MO-EM001181-4	\$31.41	MO-EM001183-4	\$31.92
27/64	1	7/16	2-3/4	MO-EM001185-4	\$24.32	MO-EM001187-4	\$30.40	MO-EM001185-4	\$30.60
7/16	1	7/16	2-3/4	MO-EM001190-4	\$21.96	MO-EM001191-4	\$31.37	MO-EM001193-4	\$31.77
29/64	1	1/2	3	MO-EM001195-4	\$28.58	MO-EM001194-4	\$36.80	MO-EM001195-4	\$38.40
15/32	1	1/2	3	MO-EM001198-4	\$27.87	MO-EM001196-4	\$34.33	MO-EM001206-4	\$38.00
1/2	1	1/2	3	MO-EM001200-4	\$25.87	MO-EM001201-4	\$31.25	MO-EM001207-4	\$35.58
1/2	1-1/2	1/2	4	MO-EM001059-4	\$41.47	MO-EM001058-4	\$51.44	MO-EM001056-4	\$53.03
1/2	2	1/2	4	MO-EM001060-4	\$42.65	MO-EM001063-4	\$52.58	MO-EM001067-4	\$54.21
17/32	1-1/4	9/16	3-1/2	MO-EM001209-4	\$56.64	-	-	MO-EM001219-4	\$80.66
9/16	1-1/4	9/16	3-1/2	MO-EM001210-4	\$49.65	MO-EM001211-4	\$59.08	MO-EM001213-4	\$64.49
19/32	1-1/4	5/8	3-1/2	MO-EM001217-4	\$56.75	-	-	MO-EM001217B-4	\$76.16
5/8	1-1/4	5/8	3-1/2	MO-EM001220-4	\$51.68	MO-EM001221-4	\$59.74	MO-EM001226-4	\$66.51
5/8	1-1/2	5/8	6	MO-EM001074-4	\$89.17	MO-EM001075-4	\$107.75	MO-EM001074A-4	\$109.95
5/8	2-1/4	5/8	5	MO-EM001070-4	\$82.90	MO-EM001071-4	\$96.62	MO-EM001073-4	\$99.61
21/32	1-1/2	3/4	4	MO-EM001228-4	\$86.13	-	-	MO-EM001228B-4	\$100.72
11/16	1-1/2	3/4	4	MO-EM001230-4	\$79.77	MO-EM001231-4	\$103.16	MO-EM001233-4	\$104.35
3/4	1	3/4	4	MO-EM001238-4	\$71.95	-	-	MO-EM001238B-4	\$88.99
3/4	1-1/2	3/4	4	MO-EM001239-4	\$71.95	MO-EM001241-4	\$83.90	MO-EM001244-4	\$88.89
3/4	2-1/4	3/4	5	MO-EM001080-4	\$114.22	MO-EM001081-4	\$131.48	MO-EM001083-4	\$135.55
13/16	1-1/2	7/8	4	MO-EM001245-4	\$142.13	-	-	MO-EM001246-4	\$158.38
7/8	1-1/2	7/8	4	MO-EM001250-4	\$127.68	MO-EM001251-4	\$142.47	MO-EM001254-4	\$157.33
15/16	1-1/2	1	4	MO-EM001255-4	\$142.68	-	-	MO-EM001256-4	\$178.34
1	1	1	4	MO-EM001259-4	\$132.46	-	-	MO-EM001259B-4	\$162.75
1	1-1/2	1	4	MO-EM001260-4	\$132.46	MO-EM001261-4	\$147.57	MO-EM001264-4	\$162.75
1	2-1/4	1	5	MO-EM001090-4	\$177.16	MO-EM001091-4	\$200.46	MO-EM001093-4	\$206.66
1-1/4	2	1-1/4	4-1/2	MO-EM001266-4	\$446.19	-	-	-	-

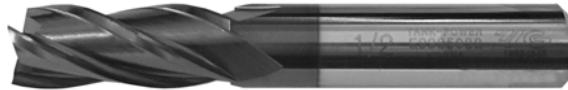
LATHE CHUCKS
LIVE CENTERS
VISE JAWS
VISE ACCESSORIES
STRAIGHT SHANK
COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

4 FLUTE HSS & COBALT ENDMILLS

4 FLUTE END MILLS

Single End, Regular Length



- Powdered HSS
- 30° helix
- For hardened steels up to Rc 45
- Single end, right hand cut
- Flat on shank
- Tank Power coating ideal for applications where cobalt wears rapidly, carbide chips or breaks, or when higher feed rates are desired

Faster Feeds & Speeds Than HSS or Cobalt!

Dia	Shank	LOC	OAL	UNCOATED		Tank-Power Coated	
				Part Number	Price	Part Number	Price
1/8	3/8	3/8	2-5/16	YG-EME9985008	\$13.78	YG-EME9985008TF	\$22.77
3/16	3/8	1/2	2-3/8	YG-EME9985012	\$13.78	YG-EME9985012TF	\$22.77
1/4	3/8	5/8	2-7/16	YG-EME9985016	\$13.78	YG-EME9985016TF	\$22.77
5/16	3/8	3/4	2-1/2	YG-EME9985020	\$13.78	YG-EME9985020TF	\$22.77
3/8	3/8	3/4	2-1/2	YG-EME9985024	\$13.78	YG-EME9985024TF	\$22.77
1/2	1/2	1-1/4	3-1/4	YG-EME9985032	\$20.68	YG-EME9985032TF	\$33.33
5/8	5/8	1-5/8	3-3/4	YG-EME9985040	\$32.94	YG-EME9985040TF	\$46.18
3/4	3/4	1-5/8	3-7/8	YG-EME9985048	\$38.93	YG-EME9985048TF	\$53.56
7/8	7/8	1-7/8	4-1/8	YG-EME9985056	\$48.91	YG-EME9985056TF	\$72.87
1	1	2	4-1/2	YG-EME9985064	\$58.96	YG-EME9985064TF	\$81.56

MULTI-FLUTE END MILLS

Single End, Regular Length, Center Cutting

- High speed steel and 8% Cobalt M-42
- Single end, center cutting
- Right hand cut
- 4 flutes, except where noted
- 6 flute endmills marked with *



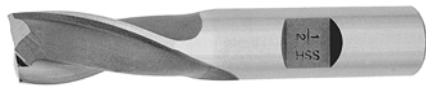
Mill Dia	Shank Dia	LOC	OAL	HSS		Cobalt M-42		Mill Dia	Shank Dia	LOC	OAL	HSS		Cobalt M-42	
				Part Number	Price Each	Part Number	Price Each					Part Number	Price Each	Part Number	Price Each
1/8	3/8	3/8	2-5/16	BI-5304-005	\$6.57	BI-5306-005	\$8.20	11/16	1/2	1-5/8	3-5/8	-	-	BI-5306-090	\$25.49
5/32	3/8	3/8	2-5/16	BI-5304-010	\$6.57	BI-5306-010	\$8.20	11/16	5/8	1-5/8	3-3/4	BI-5304-130	\$19.39	BI-5306-130	\$25.49
3/16	3/8	1/2	2-3/8	BI-5304-015	\$6.57	BI-5306-015	\$8.20	3/4	1/2	1-5/8	3-5/8	BI-5304-095	\$20.21	BI-5306-095	\$28.40
7/32	3/8	5/8	2-7/16	BI-5304-020	\$6.57	BI-5306-020	\$8.20	3/4	5/8	1-5/8	3-3/4	BI-5304-135	\$20.21	BI-5306-135	\$28.40
1/4	3/8	5/8	2-7/16	BI-5304-025	\$6.57	BI-5306-025	\$8.20	3/4	3/4	1-5/8	3-3/4	BI-5304-170	\$20.21	BI-5306-170	\$28.40
9/32	3/8	3/4	2-1/2	BI-5304-030	\$6.57	BI-5306-030	\$8.20	13/16	1/2	1-7/8	4	BI-5304-100	\$24.87	BI-5306-100	\$32.75
5/16	3/8	3/4	2-1/2	BI-5304-035	\$6.57	BI-5306-035	\$9.29	7/8	3/4	1-7/8	4-1/8	BI-5304-185	\$26.72	BI-5306-185	\$32.73
11/32	3/8	3/4	2-1/2	BI-5304-040	\$6.57	BI-5306-040	\$9.29	15/16	3/4	1-7/8	4-1/8	BI-5304-195	\$30.73	-	-
3/8	3/8	3/4	2-1/2	BI-5304-045	\$6.57	BI-5306-045	\$9.16	1	1/2	1-7/8	4	BI-5304-115	\$31.50	-	-
13/32	3/8	1	2-11/16	BI-5304-050	\$10.20	BI-5306-050	\$11.03	1	5/8	1-7/8	4	BI-5304-160	\$30.82	BI-5306-160	\$43.16
7/16	3/8	1	2-11/16	BI-5304-055	\$10.20	BI-5306-055	\$11.64	1	3/4	1-7/8	4-1/8	BI-5304-200	\$31.69	BI-5306-200	\$43.16
15/32	3/8	1	2-11/16	-	-	BI-5306-060	\$11.64	1-1/16	3/4	2	4-1/4	-	-	BI-5306-208	\$74.69
1/2	3/8	1	2-11/16	BI-5304-065	\$10.20	BI-5306-065	\$15.63	1-1/8*	3/4	2	4-1/4	BI-5304-215	\$45.96	BI-5306-215	\$74.69
1/2	1/2	1-1/4	3-1/4	BI-5304-070	\$10.20	BI-5306-070	\$13.10	1-3/16*	3/4	2	4-1/4	BI-5304-220	\$50.81	BI-5306-220	\$78.66
9/16	1/2	1-3/8	3-3/8	BI-5304-080	\$15.72	BI-5306-080	\$21.83	1-1/4*	3/4	2	4-1/4	BI-5304-225	\$50.81	BI-5306-225	\$78.66
5/8	1/2	1-3/8	3-3/8	BI-5304-085	\$17.58	BI-5306-085	\$21.83	1-5/16*	3/4	2	4-1/2	BI-5304-227	\$55.04	BI-5306-227	\$94.27
5/8	5/8	1-5/8	3-3/4	BI-5304-125	\$17.58	BI-5306-125	\$21.83	1-3/8*	3/4	2	4-1/2	BI-5304-230	\$55.04	BI-5306-230	\$94.27

All endmills are 4 flute except *, which are 6 flute

All endmills are 4 flute except *, which are 6 flute

METRIC ENDMILLS

HSS Square End-Regular Length



- High speed steel
- Center cutting
- Single end
- 2 & 4 flutes
- Additional sizes available- please call for more information

2 FLUTE

Dia	Shank Dia	LOC	OAL	Part Number	Price Each
3MM	3/8	3/8	2-5/16	BI-5302-003	\$8.46
4MM	3/8	7/16	2-5/16	BI-5302-004	\$8.46
5MM	3/8	1/2	2-5/16	BI-5302-005	\$8.46
6MM	3/8	1/2	2-5/16	BI-5302-006	\$8.46
7MM	3/8	9/16	2-5/16	BI-5302-007	\$9.38
8MM	3/8	9/16	2-5/16	BI-5302-008	\$9.38
9MM	3/8	9/16	2-5/16	BI-5302-009	\$9.38
10MM	3/8	13/16	2-1/2	BI-5302-010	\$9.38
11MM	3/8	13/16	2-1/2	BI-5302-011	\$12.01
12MM	1/2	1-1/8	3-1/8	BI-5302-112	\$12.01
13MM	1/2	1-1/8	3-1/8	BI-5302-113	\$12.55
14MM	1/2	1-1/8	3-1/8	BI-5302-114	\$12.55
15MM	1/2	1-1/8	3-1/8	BI-5302-115	\$17.16
16MM	1/2	1-1/8	3-1/8	BI-5302-116	\$18.70
18MM	1/2	1-5/16	3-7/16	BI-5302-118	\$20.60
20MM	5/8	1-1/2	3-3/4	BI-5302-220	\$26.90
22MM	3/4	1-1/2	3-3/4	BI-5302-322	\$28.15
24MM	1/2	2	4-1/2	BI-5302-124	\$30.08

4 FLUTE

Dia	Shank Dia	LOC	OAL	Part Number	Price Each
3MM	3/8	3/8	2-5/16	BI-5307-003	\$8.62
4MM	3/8	1/2	2-3/8	BI-5307-004	\$8.62
5MM	3/8	9/16	2-1/2	BI-5307-005	\$8.62
6MM	3/8	5/8	2-1/2	BI-5307-006	\$8.62
7MM	3/8	3/4	2-1/2	BI-5307-007	\$8.62
8MM	3/8	3/4	2-1/2	BI-5307-008	\$9.45
9MM	3/8	3/4	2-1/2	BI-5307-009	\$9.45
10MM	3/8	1	2-11/16	BI-5307-010	\$10.83
11MM	3/8	1	2-11/16	BI-5307-011	\$10.83
12MM	3/8	1	2-11/16	BI-5307-012	\$10.83
13MM	1/2	1-1/4	3-1/4	BI-5307-113	\$11.33
14MM	1/2	1-1/4	3-1/4	BI-5307-114	\$16.82
15MM	1/2	1-3/8	3-3/8	BI-5307-115	\$17.92
16MM	5/8	1-5/8	3-3/4	BI-5307-216	\$18.70
18MM	5/8	1-5/8	3-3/4	BI-5307-218	\$19.74
20MM	5/8	1-7/8	4-1/8	BI-5307-220	\$26.61
22MM	3/4	1-7/8	4-1/8	BI-5307-322	\$29.14
24MM	3/4	2	4-1/2	BI-5307-324	\$32.97

Call Us Today For All Of Your Machine Tool Needs!

4 FLUTE COBALT ENDMILLS

B

4 FLUTE COBALT END MILLS

Square End • Center Cutting

- M42 cobalt HSS
- 30° helix
- For general purpose machining
- Single (SE) or double end (DE)
- Uncoated
- Center cutting (except where noted *)
- For materials up to 48 Rc
- Flats on shanks where noted
- Additional sizes available



LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

Dia	LOC	Shank	OAL	Type	Flats	Part Number	Price Each
1/16*	3/16	3/16	1-1/2	SE	No	ME-C-602	\$10.27
1/16*	3/16	3/16	2-1/4	DE	No	ME-D-602	\$15.11
5/64*	1/4	3/16	1-1/2	SE	No	ME-C-602-1/2	\$10.27
3/32*	9/32	3/16	2-1/4	DE	No	ME-D-603	\$15.11
7/64*	5/32	3/16	2	DE	No	ME-DS-603-1/2	\$14.12
1/8*	3/8	3/16	2-1/4	DE	No	ME-D-604	\$15.11
1/8	1/2	3/8	3-1/4	DE	Yes	ME-DD-1204-M	\$22.37
1/8	5/8	3/8	3-9/16	DE	Yes	ME-DD-1204-L	\$23.88
9/64*	27/64	3/16	2-1/4	DE	No	ME-D-604-1/2	\$15.11
5/32	7/16	3/8	2-5/16	SE	Yes	ME-CC-1205	\$13.01
5/32	3/4	3/8	2-5/8	SE	Yes	ME-CC-1205-L	\$18.45
3/16	3/4	3/8	2-5/8	SE	Yes	ME-CC-1206-L	\$18.45
3/16	1-1/4	3/8	3-1/8	SE	Yes	ME-CC-1206-E	\$21.54
7/32	1/2	3/8	2-3/8	SE	Yes	ME-CC-1207	\$13.01
7/32	1-1/4	3/8	3-1/8	SE	Yes	ME-CC-1207-L	\$18.45
1/4	7/8	3/8	2-11/16	SE	Yes	ME-CC-1208-M	\$17.82
1/4	1-3/4	3/8	3-9/16	SE	Yes	ME-CC-1208-E	\$20.91
9/32	1	3/8	2-3/4	SE	Yes	ME-CC-1209-M	\$18.45
9/32	1-3/4	3/8	3-5/8	SE	Yes	ME-CC-1209-E	\$23.23
5/16	1-3/8	3/8	3-1/8	SE	Yes	ME-CC-1210-L	\$17.50
5/16	2	3/8	3-3/4	SE	Yes	ME-CC-1210-E	\$22.77
11/32	1	3/8	2-3/4	SE	Yes	ME-CC-1211-M	\$17.82
3/8	3/8	3/8	2-1/8	SE	Yes	ME-CCS-1212	\$13.33
3/8	1	3/8	2-3/4	SE	Yes	ME-CC-1212-M	\$17.00
13/32	1	3/8	2-11/16	SE	Yes	ME-CC-1213	\$18.57
7/16	1	3/8	2-11/16	SE	Yes	ME-CC-1214	\$18.57
7/16	1-3/4	1/2	3-3/4	SE	Yes	ME-CC-1614-L	\$31.29

* Non Center-Cutting

Dia	LOC	Shank	OAL	Type	Flats	Part Number	Price Each
15/32	1-1/4	1/2	3-1/4	SE	Yes	ME-CC-1615	\$21.32
1/2	1	3/8	2-11/16	SE	Yes	ME-CC-1216	\$18.57
1/2	1-1/4	1/2	3-1/4	SE	Yes	ME-CC-1616	\$17.83
1/2	1-5/8	1/2	3-5/8	SE	Yes	ME-CC-1616-M	\$24.51
1/2	2	1/2	4	SE	Yes	ME-CC-1616-L	\$23.90
17/32	1-3/8	1/2	3-3/8	SE	Yes	ME-CC-1617	\$25.84
17/32	1-3/8	5/8	5	DE	Yes	ME-DD-2017	\$46.71
9/16	1-3/8	1/2	3-3/8	SE	Yes	ME-CC-1618	\$25.84
9/16	2-1/2	1/2	4-1/2	SE	Yes	ME-CC-1618-L	\$36.34
5/8	1-3/8	1/2	3-3/8	SE	Yes	ME-CC-1620	\$27.32
5/8	2	5/8	4-1/8	SE	Yes	ME-CC-2020-M	\$34.63
5/8	2-1/2	5/8	4-5/8	SE	Yes	ME-CC-2020-L	\$35.94
3/4	1-5/8	3/4	3-7/8	SE	Yes	ME-CC-2424	\$38.14
3/4	2-1/4	3/4	4-1/2	SE	Yes	ME-CC-2424-M	\$44.54
3/4	4	3/4	6-1/4	SE	Yes	ME-CC-2424-E	\$65.56
3/4	6	3/4	8-1/4	SE	Yes	ME-CC-2424-EE	\$87.31
13/16	1-7/8	3/4	4-1/8	SE	Yes	ME-CC-2426	\$45.13
7/8	1-7/8	7/8	4-1/8	SE	Yes	ME-CC-2828	\$50.39
7/8	5	7/8	7-1/4	SE	Yes	ME-CC-2828-E	\$89.75
15/16	1-7/8	7/8	4-1/8	SE	Yes	ME-CC-2830	\$56.46
1	3	1	5-1/2	SE	Yes	ME-CC-3232-M	\$80.23
1	4	1	6-1/2	SE	Yes	ME-CC-3232-L	\$88.53
1-1/8	2	1	4-1/2	SE	Yes	ME-CC-3236	\$83.68
1-1/4	4	1-1/4	6-1/2	SE	Yes	ME-CC-4040-L	\$122.13
1-1/2	4	1-1/4	6-1/2	SE	Yes	ME-CC-4048-L	\$160.36
2	4	1-1/4	6-1/2	SE	Yes	ME-CCP-4064-L	\$304.80

VARIABLE HELIX ENDMILLS

4 Flutes • AlTiN Coated Carbide



- Regular length
- Variable pitch- Ideal for high production and high speed milling
- Corner radius
- Excellent surface finishes
- Offset flute design eliminates chatter and reduces machine vibration
- All tools 3/8" and over have Weldon flats



Dia	Shank Dia	OAL	Flute Length	Corner Radius	Part Number	Price
1/8	1/8	1-1/2	1/2	.010	MI-VHM1254X	\$14.95
3/16	3/16	2	5/8	.010	MI-VHM1874X	\$24.35
1/4	1/4	2-1/2	3/4	.020	MI-VHM2504X	\$30.35
5/16	5/16	2-1/2	13/16	.020	MI-VHM3124X	\$36.80
3/8	3/8	2-1/2	3/4	.020	MI-VHM3754X	\$40.85
7/16	7/16	2-1/2	1	.020	MI-VHM4374X	\$61.85
1/2	1/2	3	1	.030	MI-VHM5004X	\$67.75
5/8	5/8	3-1/2	1-1/4	.030	MI-VHM6254X	\$124.55
3/4	3/4	4	1-1/2	.030	MI-VHM7504X	\$185.95
1	1	4	1-1/2	.030	MI-VHM0014X	\$281.00

VARIABLE HELIX ENDMILLS

4 Flutes • AlTiN Coated Carbide



- Long length
- Variable pitch- Ideal for high production and high speed milling
- Corner radius
- Excellent surface finishes
- Offset flute design eliminates chatter and reduces machine vibration
- All tools 3/8" and over have Weldon flats



Dia	Shank Dia	OAL	Flute Length	Corner Radius	Part Number	Price
3/16	3/16	2-1/2	3/4	.010	MI-VLM1874X	\$29.90
1/4	1/4	3	1-1/8	.020	MI-VLM2504X	\$37.60
5/16	5/16	3	1-1/8	.020	MI-VLM3124X	\$43.40
3/8	3/8	3	1-1/4	.020	MI-VLM3754X	\$50.45
1/2	1/2	4-1/2	2-1/4	.030	MI-VLM5004X	\$91.65
5/8	5/8	5	2-1/4	.030	MI-VLM6254X	\$157.55
3/4	3/4	5	2-1/2	.030	MI-VLM7504X	\$236.90

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

HIGH PERFORMANCE ENDMILLS

C

HIGH PERFORMANCE CARBIDE ENDMILLS**HIGH PERFORMANCE
CARBIDE ENDMILLS
FOR STEEL, CAST IRON
& STAINLESS STEEL**

The **V7 Plus^A** is ideal for Stainless Steels, Mild Steels, Cast Iron, Low/Medium hardness materials under HRc40, has a unique design that maximizes chip removal and improves productivity in slotting and heavy profiling operations. Advanced geometry reduces chatter for increased tool life.

FEATURES:

- Corner geometries include chamfer and various corner radii sizes
- Unequal indexing
- Premium grade C10 carbide substrate

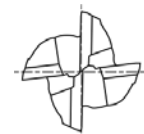
BENEFITS:

- Reduced chatter and harmonics for improved stability and better finishing
- Designed flute geometry for optimal chip formation and chip evacuation
- Enhanced corner geometry for longer tool life
- Engineered coating for reduced wear and superior heat resistance

SAVE OVER 35% OFF MFG'S LIST!**4 FLUTE-VARIABLE HELIX
High Grade C10 Micrograin Carbide**

Ideal For Slotting, Side Milling & Pocketing In:
Stainless Steels, Mild Steels, Cast Iron &
Low/Medium Hard Steels up to 40Hrc

- Variable helix reduces chatter and harmonics for improved stability and finish
- Flute geometry designed for optimal chip formation and evacuation
- Enhanced corner geometry for longer tool life
- Engineered coating for reduced wear and superior heat resistance

**Variable Helix Reduces Vibration
And Chatter And Allows For Maximum
Material Removal And Feed Rates!**

Cut Dia	LOC	Shank	OAL	Part Number	Price Each
1/8	1/8	1/8	1-1/2	YG-EMUGMF68008	\$12.32
1/8	3/8	1/8	1-1/2	YG-EMUGMF68901	\$13.12
5/32	3/16	3/16	2	YG-EMUGMF68010	\$18.15
5/32	7/16	3/16	2	YG-EMUGMF68902	\$19.38
3/16	3/16	3/16	2	YG-EMUGMF68012	\$17.23
3/16	7/16	3/16	2	YG-EMUGMF68903	\$18.34
7/32	1/4	1/4	2	YG-EMUGMF68014	\$21.93
7/32	7/16	1/4	2-1/2	YG-EMUGMF68904	\$24.41
1/4	3/8	1/4	2	YG-EMUGMF68016	\$20.07
1/4	3/4	1/4	2-1/2	YG-EMUGMF68905	\$22.41
9/32	5/8	5/16	2-1/2	YG-EMUGMF68018	\$30.73
5/16	7/16	5/16	2	YG-EMUGMF68020	\$27.67
5/16	13/16	5/16	2-1/2	YG-EMUGMF68906	\$30.73
11/32	1/2	3/8	2-1/2	YG-EMUGMF68022	\$32.80

Cut Dia	LOC	Shank	OAL	Part Number	Price Each
3/8	1/2	3/8	2-1/2	YG-EMUGMF68024	\$32.80
3/8	7/8	3/8	2-1/2	YG-EMUGMF68907	\$36.92
7/16	5/8	7/16	2-1/2	YG-EMUGMF68028	\$44.01
7/16	1	7/16	2-3/4	YG-EMUGMF68908	\$47.26
1/2	5/8	1/2	2-1/2	YG-EMUGMF68032	\$48.94
1/2	1	1/2	3	YG-EMUGMF68909	\$56.72
1/2	1-1/4	1/2	3-1/2	YG-EMUGMF68910	\$72.21
5/8	3/4	5/8	3	YG-EMUGMF68040	\$87.91
5/8	1-1/4	5/8	3-1/2	YG-EMUGMF68911	\$114.53
3/4	3/4	3/4	3	YG-EMUGMF68048	\$145.70
3/4	1-1/2	3/4	4	YG-EMUGMF68912	\$168.72
1	1	1	4	YG-EMUGMF68064	\$255.55
1	1-1/2	1	4	YG-EMUGMF68913	\$264.96
1	2	1	5	YG-EMUGMF68914	\$376.49

Also Available with corner radius-see following page

Call Us Today For All Of Your Machine Tool Needs!

HIGH PERFORMANCE ENDMILLS

C

HIGH PERFORMANCE CARBIDE ENDMILLS

With Corner Radius

- High grade C10 micrograin carbide
- Variable helix reduces chatter and harmonics for improved stability and finish
- Flute geometry designed for optimal chip formation and evacuation
- Enhanced corner geometry for longer tool life
- Engineered coating for reduced wear and superior heat resistance



Cut Dia	Corner Radius	Shank Dia	LOC	OAL	Part Number	Price Each
1/8	R.010	1/8	1/8	1-1/2	YG-EMUGMF70008	\$14.04
1/8	R.010	1/8	3/8	1-1/2	YG-EMUGMF70901	\$15.01
1/8	R.030	1/8	3/8	1-1/2	YG-EMUGMF70902	\$15.01
3/16	R.010	3/16	3/16	2	YG-EMUGMF70012	\$19.43
3/16	R.010	3/16	7/16	2	YG-EMUGMF70903	\$20.78
3/16	R.030	3/16	7/16	2	YG-EMUGMF70904	\$20.78
1/4	R.010	1/4	3/8	2	YG-EMUGMF70016	\$22.36
1/4	R.030	1/4	3/8	2	YG-EMUGMF70905	\$22.36
1/4	R.060	1/4	3/8	2	YG-EMUGMF70906	\$22.36
1/4	R.010	1/4	3/4	2-1/2	YG-EMUGMF70907	\$25.10
1/4	R.015	1/4	3/4	2-1/2	YG-EMUGMF70908	\$25.10
1/4	R.030	1/4	3/4	2-1/2	YG-EMUGMF70909	\$25.10
5/16	R.030	5/16	7/16	2	YG-EMUGMF70020	\$30.42
5/16	R.010	5/16	13/16	2-1/2	YG-EMUGMF70910	\$34.03
5/16	R.030	5/16	13/16	2-1/2	YG-EMUGMF70911	\$34.03
5/16	R.060	5/16	13/16	2-1/2	YG-EMUGMF70912	\$34.03
3/8	R.010	3/8	1/2	2-1/2	YG-EMUGMF70024	\$35.43
3/8	R.030	3/8	1/2	2-1/2	YG-EMUGMF70913	\$35.43
3/8	R.060	3/8	1/2	2-1/2	YG-EMUGMF70914	\$35.43
3/8	R.010	3/8	7/8	2-1/2	YG-EMUGMF70915	\$40.27
3/8	R.030	3/8	7/8	2-1/2	YG-EMUGMF70916	\$40.27
3/8	R.060	3/8	7/8	2-1/2	YG-EMUGMF70917	\$40.27
7/16	R.015	7/16	5/8	2-1/2	YG-EMUGMF70028	\$44.94
7/16	R.030	7/16	5/8	2-1/2	YG-EMUGMF70918	\$44.94
7/16	R.010	7/16	1	2-3/4	YG-EMUGMF70919	\$50.23
7/16	R.030	7/16	1	2-3/4	YG-EMUGMF70920	\$50.23
7/16	R.060	7/16	1	2-3/4	YG-EMUGMF70921	\$50.23
1/2	R.010	1/2	5/8	2-1/2	YG-EMUGMF70032	\$52.98
1/2	R.015	1/2	5/8	2-1/2	YG-EMUGMF70922	\$52.98
1/2	R.030	1/2	5/8	2-1/2	YG-EMUGMF70923	\$52.98
1/2	R.060	1/2	5/8	2-1/2	YG-EMUGMF70924	\$52.98
1/2	R.010	1/2	1	3	YG-EMUGMF70925	\$61.17

Cut Dia	Corner Radius	Shank Dia	LOC	OAL	Part Number	Price Each
1/2	R.030	1/2	1	3	YG-EMUGMF70926	\$61.17
1/2	R.060	1/2	1	3	YG-EMUGMF70927	\$61.17
1/2	R.125	1/2	1	3	YG-EMUGMF70928	\$61.17
1/2	R.010	1/2	1-1/4	3-1/2	YG-EMUGMF70929	\$77.71
1/2	R.015	1/2	1-1/4	3-1/2	YG-EMUGMF70930	\$77.71
1/2	R.030	1/2	1-1/4	3-1/2	YG-EMUGMF70931	\$77.71
1/2	R.060	1/2	1-1/4	3-1/2	YG-EMUGMF70932	\$77.71
1/2	R.125	1/2	1-1/4	3-1/2	YG-EMUGMF70933	\$77.71
5/8	R.010	5/8	3/4	3	YG-EMUGMF70040	\$94.94
5/8	R.030	5/8	3/4	3	YG-EMUGMF70934	\$94.94
5/8	R.060	5/8	3/4	3	YG-EMUGMF70935	\$94.94
5/8	R.010	5/8	1-1/4	3-1/2	YG-EMUGMF70936	\$123.63
5/8	R.015	5/8	1-1/4	3-1/2	YG-EMUGMF70937	\$123.63
5/8	R.030	5/8	1-1/4	3-1/2	YG-EMUGMF70938	\$123.63
5/8	R.060	5/8	1-1/4	3-1/2	YG-EMUGMF70939	\$123.63
5/8	R.125	5/8	1-1/4	3-1/2	YG-EMUGMF70940	\$123.63
3/4	R.030	3/4	3/4	3	YG-EMUGMF70048	\$155.87
3/4	R.060	3/4	3/4	3	YG-EMUGMF70941	\$155.87
3/4	R.015	3/4	1-1/2	4	YG-EMUGMF70942	\$183.30
3/4	R.030	3/4	1-1/2	4	YG-EMUGMF70943	\$183.30
3/4	R.060	3/4	1-1/2	4	YG-EMUGMF70944	\$183.30
3/4	R.125	3/4	1-1/2	4	YG-EMUGMF70945	\$183.30
1	R.015	1	1	4	YG-EMUGMF70064	\$273.98
1	R.030	1	1	4	YG-EMUGMF70946	\$273.98
1	R.060	1	1	4	YG-EMUGMF70947	\$273.98
1	R.015	1	1-1/2	4	YG-EMUGMF70948	\$285.24
1	R.030	1	1-1/2	4	YG-EMUGMF70949	\$285.24
1	R.060	1	1-1/2	4	YG-EMUGMF70950	\$285.24
1	R.125	1	1-1/2	4	YG-EMUGMF70951	\$285.24
1	R.015	1	2	5	YG-EMUGMF70952	\$403.73
1	R.030	1	2	5	YG-EMUGMF70953	\$403.73
1	R.060	1	2	5	YG-EMUGMF70954	\$403.73

3 & 4 FLUTE 60° HELIX ENDMILLS

Faster Feeds & Speeds Than HSS or Cobalt!

Powdered Metal

- Powdered HSS
- 60° helix
- For hardened steels up to Rc 45
- Single end, right hand cut
- Flat on shank
- Tank Power coating ideal for applications where cobalt wears rapidly, carbide chips or breaks, or when higher feed rates are desired



Dia	Shank	LOC	OAL	No. Flutes	UNCOATED		Tank-Power Coated	
					Part Number	Price	Part Number	Price
1/4	3/8	5/8	2-7/16	3	YG-EME9988016	\$19.60	YG-EME9988016TF	\$28.34
5/16	3/8	3/4	2-1/2	3	YG-EME9988020	\$19.60	YG-EME9988020TF	\$28.34
3/8	3/8	3/4	2-1/2	3	YG-EME9988024	\$19.60	YG-EME9988024TF	\$28.34
7/16	3/8	1	2-11/16	3	YG-EME9988028	\$25.53	YG-EME9988028TF	\$33.79
1/2	1/2	1-1/4	3-1/4	3	YG-EME9988032	\$28.52	YG-EME9988032TF	\$40.88
5/8	5/8	1-5/8	3-3/4	3	YG-EME9988040	\$42.98	YG-EME9988040TF	\$55.57
3/4	3/4	1-5/8	3-7/8	3	YG-EME9988048	\$56.91	YG-EME9988048TF	\$70.07
7/8	3/4	1-7/8	4-1/8	4	YG-EME9988901	\$74.15	YG-EME9988901TF	\$94.67
7/8	7/8	1-7/8	4-1/8	4	YG-EME9988056	\$74.15	YG-EME9988056TF	\$94.67
1	1	2	4-1/2	4	YG-EME9988064	\$88.56	YG-EME9988064TF	\$107.10

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

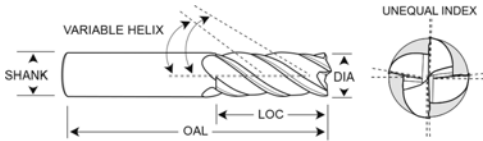
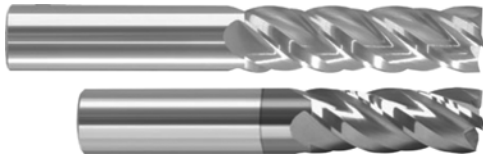
ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

SOLID CARBIDE END MILLS

VARIABLE HELIX, UNEQUAL INDEX
SOLID CARBIDE ENDMILLS
4 FLUTE, SQUARE END



- Specifically designed for superior productivity for all general purpose milling of ferrous materials including stainless steel and high temperature alloys
- Advanced geometry allows for increased speeds and feeds while eliminating chatter and reducing harmonics
- Next generation of MLT coating allows for maximum hardness and wear resistance while maintaining excellent temperature stability
- Premium sub-micron C-2 carbide with 10% cobalt
- Variable helix, right hand spiral, right hand cut
- Available uncoated and MLT coated
- Tolerances:
Cutting Dia: +.000/-0.002"
Shank Dia: +.0000/-0.0004"

Cut Dia	LOC	Shank	OAL	UNCOATED		MLT Coated	
				Part Number	Price Each	Part Number	Price Each
1/8	1/4	1/8	1-1/2	MO-284-000058	\$5.61	MO-284-000059	\$7.36
1/8	1/2	1/8	1-1/2	MO-284-000060	\$5.61	MO-284-000061	\$7.36
1/8	3/4	1/8	2-1/4	MO-284-000062	\$8.41	MO-284-000063	\$10.17
1/8	1	1/8	3	MO-284-000064	\$10.08	MO-284-000065	\$11.83
3/16	3/8	3/16	2	MO-284-000088	\$7.15	MO-284-000089	\$8.82
3/16	5/8	3/16	2	MO-284-000090	\$7.14	MO-284-000091	\$8.83
3/16	3/4	3/16	2-1/2	MO-284-000092	\$10.71	MO-284-000093	\$13.36
3/16	1-1/8	3/16	3	MO-284-000094	\$12.87	MO-284-000095	\$15.51
1/4	1/2	1/4	2-1/2	MO-284-000118	\$9.32	MO-284-000119	\$11.96
1/4	3/4	1/4	2-1/2	MO-284-000120	\$9.59	MO-284-000121	\$12.15
1/4	1-1/8	1/4	3	MO-284-000122	\$15.04	MO-284-000123	\$19.05
1/4	1-1/2	1/4	4	MO-284-000124	\$21.79	MO-284-000125	\$27.16
5/16	1/2	5/16	2-1/2	MO-284-000148	\$13.18	MO-284-000149	\$17.88
5/16	13/16	5/16	2-1/2	MO-284-000150	\$13.34	MO-284-000151	\$18.05
5/16	1-1/8	5/16	3	MO-284-000152	\$18.13	MO-284-000153	\$25.53
5/16	1-5/8	5/16	4	MO-284-000154	\$23.76	MO-284-000155	\$33.02
3/8	5/8	3/8	2-1/2	MO-284-000178	\$15.87	MO-284-000179	\$20.71
3/8	1	3/8	2-1/2	MO-284-000180	\$16.28	MO-284-000181	\$20.99
3/8	1-1/8	3/8	3	MO-284-000182	\$20.68	MO-284-000183	\$29.52
3/8	1-3/4	3/8	4	MO-284-000184	\$28.03	MO-284-000185	\$38.77
7/16	1	7/16	2-3/4	MO-284-000210	\$22.74	MO-284-000211	\$28.63
7/16	2	7/16	4	MO-284-000212	\$33.71	MO-284-000213	\$44.44
7/16	3	7/16	6	MO-284-000214	\$51.38	MO-284-000215	\$63.88
1/2	5/8	1/2	3	MO-284-000238	\$27.15	MO-284-000239	\$33.08
1/2	1	1/2	3	MO-284-000240	\$27.79	MO-284-000241	\$33.68
1/2	1-1/4	1/2	3	MO-284-000242	\$28.51	MO-284-000243	\$34.41
1/2	1-1/2	1/2	4	MO-284-000244	\$38.90	MO-284-000245	\$49.64
1/2	2	1/2	4	MO-284-000246	\$39.80	MO-284-000247	\$50.54
1/2	3	1/2	6	MO-284-000248	\$63.66	MO-284-000249	\$76.16
5/8	3/4	5/8	3-1/2	MO-284-000268	\$50.78	MO-284-000269	\$60.29
5/8	1-1/4	5/8	3-1/2	MO-284-000270	\$51.67	MO-284-000271	\$61.17
5/8	2-1/4	5/8	5	MO-284-000272	\$80.89	MO-284-000273	\$101.43
5/8	3	5/8	6	MO-284-000274	\$105.02	MO-284-000275	\$128.17
3/4	1	3/4	4	MO-284-000298	\$78.08	MO-284-000299	\$89.48
3/4	1-1/2	3/4	4	MO-284-000300	\$79.19	MO-284-000301	\$90.50
3/4	2-1/4	3/4	5	MO-284-000302	\$105.01	MO-284-000303	\$128.02
3/4	3	3/4	6	MO-284-000304	\$130.70	MO-284-000305	\$158.35
3/4	4	3/4	7	MO-284-000306	\$159.83	MO-284-000307	\$187.48
1"	1-1/2	1	4	MO-284-000330	\$128.35	MO-284-000331	\$144.65
1"	2-1/4	1	5	MO-284-000332	\$171.63	MO-284-000333	\$196.48
1"	3	1	6	MO-284-000334	\$214.82	MO-284-000335	\$250.49
1"	4	1	7	MO-284-000336	\$249.54	MO-284-000337	\$285.21

LONG LENGTH END MILLS Solid Carbide



- 2 & 4 flute
- Long length
- 30° helix
- Center cutting
- Solid micrograin carbide

Dia	Shank Dia	OAL	Flute Length	2-Flute Part Number	4-Flute Part Number	Price Each
3/16	3/16	3	1-1/8	MI-GEL1872	MI-GEL1874	\$28.15
1/4	1/4	4	1-1/2	MI-GEL2502	MI-GEL2504	\$33.85
3/8	3/8	4	1-3/4	MI-GEL3752	MI-GEL3754	\$44.90
1/2	1/2	6	3	MI-GEL5002	MI-GEL5004	\$80.85

5 FLUTE END MILLS Solid Carbide



- 5 flute
- Stub length
- 45° helix
- Center cutting
- Solid micrograin carbide

Cutter Dia	Shank Dia	OAL	Flute Length	Part Number	Price Each
3/16	3/16	1-1/2	3/8	MI-ASM1875	\$20.80
1/4	1/4	2	1/2	MI-ASM2505	\$24.50
5/16	5/16	2	1/2	MI-ASM3125	\$28.75
3/8	3/8	2	5/8	MI-ASM3755	\$35.75
1/2	1/2	2-1/2	5/8	MI-ASM5005	\$56.20

Call Us Today For All Of Your Machine Tool Needs!

CORNER ROUNDING ENDMILLS

B

CORNER ROUNDING ENDMILLS

High Speed Steel



- Used for rounding corners
- HSS, right hand cut
- Weldon shank
- Form relieved- can be re-sharpened many times without changing contour

Radius	Shank Dia	Cutter Dia	OAL	Part Number	Price Each
1/16	3/8	7/16	2-1/2	BI-5550-005	\$26.06
3/32	3/8	1/2	2-1/2	BI-5550-010	\$26.49
1/8	3/8	5/8	2-1/2	BI-5550-014	\$32.04
1/8	1/2	5/8	3	BI-5550-015	\$33.00
5/32	1/2	3/4	3	BI-5550-020	\$34.52
3/16	1/2	7/8	3	BI-5550-025	\$39.77
1/4	1/2	1	3	BI-5550-035	\$44.08
1/4	3/4	1	3-1/4	BI-5550-040	\$46.57
5/16	1/2	1-1/8	3-1/4	BI-5550-045	\$53.88
5/16	5/8	1-1/8	3-1/2	BI-5550-046	\$68.58
5/16	3/4	1-1/8	3-1/4	BI-5550-047	\$65.82
3/8	1/2	1-1/4	3-1/2	BI-5550-055	\$60.35

Radius	Shank Dia	Cutter Dia	OAL	Part Number	Price Each
3/8	3/4	1-1/4	3-1/2	BI-5550-057	\$61.32
3/8	7/8	1-1/4	3-3/4	BI-5550-060	\$73.78
7/16	3/4	1-3/8	3-3/4	BI-5550-062	\$78.61
7/16	1	1-3/8	4	BI-5550-065	\$86.27
1/2	3/4	1-1/2	3-7/8	BI-5550-067	\$87.72
1/2	1	1-1/2	4-1/8	BI-5550-070	\$92.18
5/8	3/4	1-5/8	4	BI-5550-073	\$119.75
5/8	1	1-5/8	4	BI-5550-075	\$144.31
3/4	3/4	1-7/8	4	BI-5550-083	\$170.04
3/4	1	1-7/8	4	BI-5550-085	\$171.26
1	3/4	2-9/16	4	BI-5550-097	\$252.28
1	1	2-9/16	4	BI-5550-098	\$271.36



CORNER ROUNDING ENDMILLS

Single End
3 Flute, Cobalt M-42
Tolerance +.001/-.001"

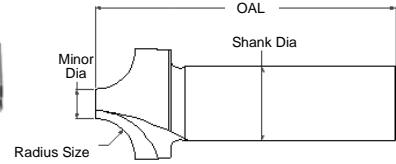
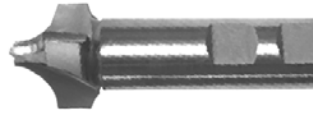


Rad	Shank Dia	Flute Length	OAL	Part Number	Price Each
1/16	3/8	7/16	2-1/2	ME-R-1202	\$35.37
1/16	1/2	1/2	2-5/8	ME-R-1602	\$42.58
3/32	3/8	1/2	2-1/2	ME-R-1203	\$37.96
3/32	1/2	1/2	2-5/8	ME-R-1603	\$42.58
1/8	1/2	5/8	2-7/8	ME-R-1604	\$49.71
5/32	1/2	5/8	2-7/8	ME-R-1605	\$54.21
3/16	1/2	3/4	3	ME-R-1606	\$60.85
7/32	1/2	7/8	3	ME-R-1607	\$76.57
1/4	1/2	7/8	3	ME-R-1608	\$68.23
1/4	3/4	7/8	3-1/4	ME-R-2408	\$68.23
5/16	1/2	1	3	ME-R-1610	\$69.19
3/8	1/2	1-1/8	3-1/4	ME-R-1612	\$90.95
3/8	3/4	1-1/8	3-1/2	ME-R-2412	\$96.50
7/16	1/2	1-1/4	3-1/2	ME-R-1614	\$100.83

CORNER ROUNDING END MILLS

Carbide Tipped

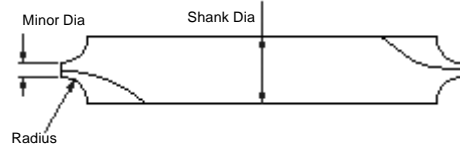
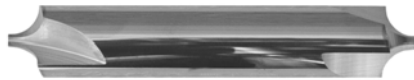
INTERNAL TOOL



Shank Dia	Radius	Minor Dia	OAL	Part Number	Price Each
3/4	.3125	.400	3-1/2	IT-68-1375	\$161.18
	.343	.400	3-1/2	IT-68-1380	\$165.39
7/8	.375	.400	3-1/2	IT-68-1385	\$185.02
	.437	.400	3-1/2	IT-68-1390	\$187.82
1	.468	.400	4	IT-68-1395	\$271.87
	.500	.400	4	IT-68-1405	\$271.87

CORNER ROUNDING ENDMILLS

Double End, 3 Flute
Solid Micrograin Carbide



INTERNAL TOOL

Shank Dia	Radius	Minor Dia	OAL	Part Number	Price Each
1/8	0.010	0.100	2	IT-68-1200	\$21.73
	.0156 (1/64)	0.090	2	IT-68-1205	
	0.020	0.080	2	IT-68-1210	
	0.025	0.070	2	IT-68-1215	
	.0312 (1/32)	0.060	2	IT-68-1220	
3/16	.0156 (1/64)	0.040	2	IT-68-1221	\$23.49
	.0312 (1/32)	0.040	2	IT-68-1222	
	.0625 (1/16)	0.060	2	IT-68-1223	
1/4	0.010	0.140	2-1/2	IT-68-1225	\$30.20
	.0156 (1/64)	0.140	2-1/2	IT-68-1230	
	0.020	0.140	2-1/2	IT-68-1235	
	0.025	0.140	2-1/2	IT-68-1240	
	.0312 (1/32)	0.140	2-1/2	IT-68-1245	
	0.035	0.140	2-1/2	IT-68-1250	
	.0394 (1 MM)	0.140	2-1/2	IT-68-1255	
	.0469 (3/64)	0.140	2-1/2	IT-68-1260	
	0.050	0.140	2-1/2	IT-68-1265	
	0.055	0.090	2-1/2	IT-68-1270	
	.0625 (1/16)	0.090	2-1/2	IT-68-1280	
	0.070	0.090	2-1/2	IT-68-1285	
	0.075	0.090	2-1/2	IT-68-1290	

Shank Dia	Radius	Minor Dia	OAL	Part Number	Price Each
3/8	.0781 (5/64)	0.115	2-1/2	IT-68-1295	\$50.35
	.0787 (2MM)	0.115	2-1/2	IT-68-1297	
	.0938 (3/32)	0.115	2-1/2	IT-68-1300	
	.0984 (2.5MM)	0.115	2-1/2	IT-68-1302	
	.1094 (7/64)	0.115	2-1/2	IT-68-1305	
	.1181 (3MM)	0.115	2-1/2	IT-68-1307	
1/2	.125 (1/8)	0.115	2-1/2	IT-68-1310	\$78.70
	.140 (9/64)	0.120	3	IT-68-1312	
	.1562 (5/32)	0.120	3	IT-68-1315	
	.1575 (4MM)	0.120	3	IT-68-1317	
	.1718 (11/64)	0.120	3	IT-68-1320	
	.1875 (3/16)	0.120	3	IT-68-1325	
5/8	.1969 (5MM)	0.120	3-1/2	IT-68-1327	\$90.10
	.2031 (13/64)	0.120	3-1/2	IT-68-1330	
	.2188 (7/32)	0.120	3-1/2	IT-68-1335	
	.2344 (15/64)	0.120	3-1/2	IT-68-1340	
	.2362 (6MM)	0.120	3-1/2	IT-68-1342	
	.250 (1/4)	0.120	3-1/2	IT-68-1345	
3/4	.2812 (9/32)	0.120	4	IT-68-1350	\$120.14
	.2969 (19/64)	0.120	4	IT-68-1352	
	.3125 (5/16)	0.120	4	IT-68-1355	

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

CORNER RADIUS ENDMILLS-SOLID CARBIDE

C

CORNER RADIUS ENDMILLS SOLID CARBIDE 2 & 4 FLUTE, SINGLE END



- 30° helix, right hand spiral, right hand cut
- Center cutting
- Used for generating corner radius on work piece
- Corner radius promotes additional strength for longer tool life, resulting in greater productivity
- Use coated tools for increased tool life
- **Tolerances:**
Cutting Dia: +.000"/-.002"
Shank Dia: +.0000" /-.0005"
- **Materials:** Cast iron, non-ferrous metals, plastics and abrasive materials



2 FLUTE RADIUS ENDMILLS

Mill Dia	LOC	Shank	OAL	Corner Radius	Uncoated		TiAIN Coated	
					Part Number	Price Each	Part Number	Price Each
1/8	1/2	1/8	1-1/2	.010R	MO-EM602300-2	\$8.04	MO-EM602303-2	\$10.07
1/8	1/2	1/8	1-1/2	.030R	MO-EM602318-2	\$8.04	MO-EM602321-2	\$10.07
3/16	5/8	3/16	2	.010R	MO-EM602424-2	\$12.69	MO-EM602427-2	\$14.72
3/16	5/8	3/16	2	.030R	MO-EM602442-2	\$12.69	MO-EM602445-2	\$14.72
1/4	3/4	1/4	2-1/2	.015R	MO-EM602551-2	\$16.62	MO-EM602554-2	\$19.70
1/4	3/4	1/4	2-1/2	.030R	MO-EM602569-2	\$16.62	MO-EM602572-2	\$19.70
1/4	3/4	1/4	2-1/2	.060R	MO-EM602581-2	\$16.62	MO-EM602584-2	\$19.70
5/16	13/16	5/16	2-1/2	.015R	MO-EM602684-2	\$19.40	MO-EM602687-2	\$25.10
5/16	13/16	5/16	2-1/2	.030R	MO-EM602702-2	\$19.40	MO-EM602705-2	\$25.10
5/16	13/16	5/16	2-1/2	.060R	MO-EM602714-2	\$19.40	MO-EM602717-2	\$25.10
3/8	1	3/8	2-1/2	.015R	MO-EM602820-2	\$23.84	MO-EM602823-2	\$29.54
3/8	1	3/8	2-1/2	.030R	MO-EM602838-2	\$23.84	MO-EM602841-2	\$29.54
3/8	1	3/8	2-1/2	.060R	MO-EM602850-2	\$23.84	MO-EM602853-2	\$29.54
7/16	1	7/16	2-3/4	.015R	MO-EM602961-2	\$32.79	MO-EM602964-2	\$39.91
7/16	1	7/16	2-3/4	.030R	MO-EM602980-2	\$32.79	MO-EM602983-2	\$39.91
7/16	1	7/16	2-3/4	.060R	MO-EM602992-2	\$32.79	MO-EM602995-2	\$39.91
1/2	1	1/2	3	.015R	MO-EM603003-2	\$41.10	MO-EM603006-2	\$48.23
1/2	1	1/2	3	.030R	MO-EM603021-2	\$41.10	MO-EM603024-2	\$48.23
1/2	1	1/2	3	.060R	MO-EM603033-2	\$41.10	MO-EM603036-2	\$48.23
1/2	1	1/2	3	.125R	MO-EM603045-2	\$41.10	MO-EM603048-2	\$48.23
5/8	1-1/4	5/8	3-1/2	.015R	MO-EM603150-2	\$69.91	MO-EM603153-2	\$81.40
5/8	1-1/4	5/8	3-1/2	.030R	MO-EM603168-2	\$69.91	MO-EM603171-2	\$81.40
5/8	1-1/4	5/8	3-1/2	.060R	MO-EM603180-2	\$69.91	MO-EM603183-2	\$81.40
3/4	1-1/2	3/4	4	.020R	MO-EM603303-2	\$108.06	MO-EM603306-2	\$121.75
3/4	1-1/2	3/4	4	.045R	MO-EM603321-2	\$108.06	MO-EM603324-2	\$121.75
3/4	1-1/2	3/4	4	.090R	MO-EM603333-2	\$108.06	MO-EM603336-2	\$121.75
1	1-1/2	1	4	.020R	MO-EM603456-2	\$169.98	MO-EM603459-2	\$189.71
1	1-1/2	1	4	.045R	MO-EM603474-2	\$169.98	MO-EM603477-2	\$189.71
1	1-1/2	1	4	.090R	MO-EM603486-2	\$169.98	MO-EM603489-2	\$189.71

4 FLUTE RADIUS ENDMILLS

Mill Dia	LOC	Shank	OAL	Corner Radius	Uncoated		TiAIN Coated	
					Part Number	Price Each	Part Number	Price Each
1/8	1/2	1/8	1-1/2	.015R	MO-EM602306-4	\$8.04	MO-EM602309-4	\$10.07
1/8	1/2	1/8	1-1/2	.030R	MO-EM602318-4	\$8.04	MO-EM602321-4	\$10.07
3/16	5/8	3/16	2	.015R	MO-EM602430-4	\$12.69	MO-EM602433-4	\$14.72
3/16	5/8	3/16	2	.030R	MO-EM602442-4	\$12.69	MO-EM602445-4	\$14.72
1/4	3/4	1/4	2-1/2	.020R	MO-EM602557-4	\$16.62	MO-EM602560-4	\$19.70
1/4	3/4	1/4	2-1/2	.030R	MO-EM602569-4	\$16.62	MO-EM602572-4	\$19.70
5/16	13/16	5/16	2-1/2	.020R	MO-EM602690-4	\$19.40	MO-EM602693-4	\$25.10
5/16	13/16	5/16	2-1/2	.030R	MO-EM602702-4	\$19.40	MO-EM602705-4	\$25.10
3/8	1	3/8	2-1/2	.015R	MO-EM602820-4	\$23.84	MO-EM602823-4	\$29.54
3/8	1	3/8	2-1/2	.030R	MO-EM602838-4	\$23.84	MO-EM602841-4	\$29.54
3/8	1	3/8	2-1/2	.060R	MO-EM602850-4	\$23.84	MO-EM602853-4	\$29.54
7/16	1	7/16	2-3/4	.015R	MO-EM602961-4	\$32.79	MO-EM602964-4	\$39.91
7/16	1	7/16	2-3/4	.030R	MO-EM602980-4	\$32.79	MO-EM602983-4	\$39.91
7/16	1	7/16	2-3/4	.060R	MO-EM602992-4	\$32.79	MO-EM602995-4	\$39.91
1/2	1	1/2	3	.015R	MO-EM603003-4	\$41.10	MO-EM603006-4	\$48.23
1/2	1	1/2	3	.030R	MO-EM603021-4	\$41.10	MO-EM603024-4	\$48.23
1/2	1	1/2	3	.045R	MO-EM603027-4	\$41.10	MO-EM603030-4	\$48.23
1/2	1	1/2	3	.060R	MO-EM603033-4	\$41.10	MO-EM603036-4	\$48.23
1/2	1	1/2	3	.125R	MO-EM603045-4	\$41.10	MO-EM603048-4	\$48.23
5/8	1-1/4	5/8	3-1/2	.015R	MO-EM603150-4	\$69.91	MO-EM603153-4	\$81.40
5/8	1-1/4	5/8	3-1/2	.030R	MO-EM603168-4	\$69.91	MO-EM603171-4	\$81.40
5/8	1-1/4	5/8	3-1/2	.060R	MO-EM603180-4	\$69.91	MO-EM603183-4	\$81.40
5/8	1-1/4	5/8	3-1/2	.125R	MO-EM603192-4	\$69.91	MO-EM603195-4	\$81.40
3/4	1-1/2	3/4	4	.020R	MO-EM603303-4	\$108.06	MO-EM603306-4	\$121.75
3/4	1-1/2	3/4	4	.030R	MO-EM603315-4	\$108.06	MO-EM603318-4	\$121.75
3/4	1-1/2	3/4	4	.060R	MO-EM603327-4	\$108.06	MO-EM603330-4	\$121.75
3/4	1-1/2	3/4	4	.125R	MO-EM603339-4	\$108.06	MO-EM603342-4	\$121.75
1	1-1/2	1	4	.020R	MO-EM603456-4	\$169.98	MO-EM603459-4	\$189.71
1	1-1/2	1	4	.030R	MO-EM603468-4	\$169.98	MO-EM603471-4	\$189.71
1	1-1/2	1	4	.060R	MO-EM603480-4	\$169.98	MO-EM603483-4	\$189.71
1	1-1/2	1	4	.125R	MO-EM603492-4	\$169.98	MO-EM603495-4	\$189.71

**Additional Radii & Coatings Available!
Please Call For More Information!**

Call Us Today For All Of Your Machine Tool Needs!

CARBIDE BALL ENDMILLS

C

SOLID CARBIDE ENDMILLS 2 FLUTE, BALL END



American Made Carbide End Mills
At High Speed Steel Prices!

- Premium sub-micron C-2 carbide with 10% cobalt
- Ball end allows for three axis contour slotting and contour finishing
- Available uncoated, Tin coated and TiAIN coated
- Tolerances:
Cutting Dia: +.000/- .002"
Shank Dia: +.0000/- .0005"

Applications:
Slotting and pocketing

Materials:
Uncoated: General purpose milling of all materials
TIN Coated (gold): Increased tool life in milling of all ferrous materials
TiAIN Coated (dark gray): Increased tool life in milling of steels, alloy steels and hardened steels

Full Line Available!
Please call for more information.

Dia.	LOC	Shank Dia.	OAL	Uncoated		TiN Coated		TiAIN Coated	
				Part Number	Price Each	Part Number	Price Each	Part Number	Price Each
1/64	3/64	1/8	1-1/2	MO-BEM001000-2	\$16.36	-	-	-	-
1/32	1/8	1/8	1-1/2	MO-BEM001005-2	\$9.51	MO-BEM001006-2	\$10.59	MO-BEM001016-2	\$11.54
3/64	1/8	1/8	1-1/2	MO-BEM001007-2	\$9.16	MO-BEM001004-2	\$10.24	MO-BEM001013-2	\$11.19
1/16	1/4	1/8	1-1/2	MO-BEM001008AA-2	\$7.75	MO-BEM001002-2	\$8.83	MO-BEM001003-2	\$9.79
5/64	1/4	1/8	1-1/2	MO-BEM001009-2	\$7.75	MO-BEM001008-2	\$8.83	MO-BEM001018-2	\$9.79
3/32	3/8	1/8	1-1/2	MO-BEM001010-2	\$7.75	MO-BEM001011-2	\$8.83	MO-BEM001019-2	\$9.79
7/64	3/8	1/8	1-1/2	MO-BEM001014-2	\$7.75	MO-BEM001015-2	\$8.83	MO-BEM001017-2	\$9.79
1/8	1/2	1/8	1-1/2	MO-BEM001020-2	\$7.46	MO-BEM001021-2	\$8.54	MO-BEM001023-2	\$9.50
9/64	9/16	3/16	2	MO-BEM001024-2	\$10.94	MO-BEM001025-2	\$12.50	MO-BEM001027-2	\$12.98
5/32	9/16	3/16	2	MO-BEM001030-2	\$10.94	MO-BEM001031-2	\$12.50	MO-BEM001033-2	\$12.98
3/16	5/8	3/16	2	MO-BEM001040-2	\$10.13	MO-BEM001041-2	\$11.69	MO-BEM001043-2	\$12.16
7/32	5/8	1/4	2-1/2	MO-BEM001050-2	\$15.27	MO-BEM001051-2	\$18.00	MO-BEM001053-2	\$18.35
1/4	3/4	1/4	2-1/2	MO-BEM001060-2	\$14.34	MO-BEM001061-2	\$17.08	MO-BEM001062-2	\$17.43
9/32	3/4	5/16	2-1/2	MO-BEM001070-2	\$21.26	MO-BEM001071-2	\$24.70	MO-BEM001073-2	\$26.97
5/16	13/16	5/16	2-1/2	MO-BEM001080-2	\$19.53	MO-BEM001081-2	\$22.97	MO-BEM001079-2	\$25.23
11/32	1	3/8	2-1/2	MO-BEM001085-2	\$25.81	MO-BEM001086-2	\$29.25	MO-BEM001087-2	\$31.51
3/8	1	3/8	2-1/2	MO-BEM001090-2	\$26.27	MO-BEM001095-2	\$29.71	MO-BEM001091-2	\$31.97
13/32	1	7/16	2-3/4	MO-BEM001096-2	\$34.55	MO-BEM001097-2	\$40.09	MO-BEM001118-2	\$41.68
7/16	1	7/16	2-3/4	MO-BEM001100-2	\$32.79	MO-BEM001101-2	\$38.32	MO-BEM001119-2	\$39.91
15/32	1	1/2	3	MO-BEM001105-2	\$41.50	MO-BEM001106-2	\$47.03	MO-BEM001123-2	\$48.62
1/2	1	1/2	3	MO-BEM001110-2	\$40.45	MO-BEM001115-2	\$45.98	MO-BEM001117-2	\$47.57
9/16	1-1/4	9/16	3-1/2	MO-BEM001120-2	\$58.98	MO-BEM001121-2	\$67.60	MO-BEM001124-2	\$70.47
5/8	1-1/4	5/8	3-1/2	MO-BEM001130-2	\$70.13	MO-BEM001131-2	\$78.75	MO-BEM001134-2	\$81.61
11/16	1-1/2	3/4	4	MO-BEM001140-2	\$114.53	MO-BEM001141-2	\$124.39	MO-BEM001140-2	\$128.21
3/4	1-1/2	3/4	4	MO-BEM001150-2	\$106.01	MO-BEM001151-2	\$115.87	MO-BEM001154-2	\$119.69
7/8	1-1/2	7/8	4	MO-BEM001155-2	\$158.24	MO-BEM001156-2	\$170.30	MO-BEM001158-2	\$174.97
1	1-1/2	1	4	MO-BEM001160-2	\$169.11	MO-BEM001161-2	\$186.35	MO-BEM001164-2	\$188.83

SOLID CARBIDE ENDMILLS 4 FLUTE, BALL END



American Made Carbide End Mills
At High Speed Steel Prices!



- Premium sub-micron C-2 carbide with 10% cobalt
- Ball end allows for three axis contour slotting and contour finishing
- Available uncoated, Tin coated and TiAIN coated
- Tolerances:
Cutting Dia: +.000/- .002"
Shank Dia: +.0000/- .0005"



Dia.	LOC	Shank Dia.	OAL	Uncoated		TiN Coated		TiAIN Coated	
				Part Number	Price Each	Part Number	Price Each	Part Number	Price Each
1/64	3/64	1/8	1-1/2	MO-BEM000998-4	\$16.36	-	-	-	-
1/32	1/8	1/8	1-1/2	MO-BEM000999-4	\$9.51	MO-BEM001003-4	\$10.59	MO-BEM001009-4	\$11.54
3/64	1/8	1/8	1-1/2	MO-BEM001000-4	\$9.16	MO-BEM001004-4	\$10.24	MO-BEM001014-4	\$11.19
1/16	1/4	1/8	1-1/2	MO-BEM001001-4	\$7.75	MO-BEM001002-4	\$9.79	MO-BEM001016-4	\$9.79
5/64	1/4	1/8	1-1/2	MO-BEM001005-4	\$7.75	MO-BEM001006-4	\$8.83	MO-BEM001019-4	\$9.79
3/32	3/8	1/8	1-1/2	MO-BEM001010-4	\$7.75	MO-BEM001011-4	\$8.83	MO-BEM001013-4	\$9.79
7/64	3/8	1/8	1-1/2	MO-BEM001017-4	\$7.75	MO-BEM001052-4	\$8.83	MO-BEM001039-4	\$9.79
1/8	1/2	1/8	1-1/2	MO-BEM001020-4	\$7.46	MO-BEM001021-4	\$8.54	MO-BEM001028-4	\$9.50
9/64	9/16	3/16	2	MO-BEM001025-4	\$10.94	MO-BEM001026-4	\$12.50	MO-BEM001029-4	\$12.98
5/32	9/16	3/16	2	MO-BEM001030-4	\$10.94	MO-BEM001031-4	\$12.50	MO-BEM001032-4	\$12.98
3/16	5/8	3/16	2	MO-BEM001040-4	\$10.13	MO-BEM001041-4	\$11.69	MO-BEM001034-4	\$12.16
7/32	5/8	1/4	2-1/2	MO-BEM001050-4	\$15.27	MO-BEM001056-4	\$18.00	MO-BEM001036-4	\$18.35
1/4	3/4	1/4	2-1/2	MO-BEM001060-4	\$14.34	MO-BEM001062-4	\$17.08	MO-BEM001066-4	\$17.43
9/32	3/4	5/16	2-1/2	MO-BEM001070-4	\$21.26	MO-BEM001065-4	\$24.70	MO-BEM001068-4	\$26.96
5/16	13/16	5/16	2-1/2	MO-BEM001080-4	\$19.53	MO-BEM001082-4	\$22.97	MO-BEM001073-4	\$25.23
11/32	1	3/8	2-1/2	MO-BEM001086-4	\$25.81	MO-BEM001087-4	\$29.25	MO-BEM001115-4	\$31.51
3/8	1	3/8	2-1/2	MO-BEM001090-4	\$26.27	MO-BEM001092-4	\$29.71	MO-BEM001116-4	\$31.97
13/32	1	7/16	2-3/4	MO-BEM001095-4	\$34.55	MO-BEM001097-4	\$40.09	MO-BEM001117-4	\$41.68
7/16	1	7/16	2-3/4	MO-BEM001100-4	\$32.79	MO-BEM001101-4	\$38.32	MO-BEM001118-4	\$39.91
15/32	1	1/2	3	MO-BEM001105-4	\$41.50	MO-BEM001107-4	\$47.03	MO-BEM001119-4	\$48.62
1/2	1	1/2	3	MO-BEM001110-4	\$40.45	MO-BEM001111-4	\$45.98	MO-BEM001114-4	\$47.57
9/16	1-1/4	9/16	3-1/2	MO-BEM001120-4	\$58.98	MO-BEM001125-4	\$67.60	MO-BEM001127-4	\$70.47
5/8	1-1/4	5/8	3-1/2	MO-BEM001130-4	\$70.13	MO-BEM001131-4	\$78.75	MO-BEM001135-4	\$81.61
11/16	1-1/2	3/4	4	MO-BEM001140-4	\$114.53	MO-BEM001155-4	\$124.39	MO-BEM001167-4	\$128.21
3/4	1-1/2	3/4	4	MO-BEM001150-4	\$106.01	MO-BEM001151-4	\$115.87	MO-BEM001154-4	\$119.69
7/8	1-1/2	7/8	4	MO-BEM001157-4	\$158.24	MO-BEM001159-4	\$170.30	MO-BEM001165-4	\$174.97
1	1-1/2	1	4	MO-BEM001160-4	\$169.11	MO-BEM001161-4	\$186.35	MO-BEM001163-4	\$188.83

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS
VISE ACCESSORIES
STRAIGHT SHANK COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

HSS/COBALT BALL ENDMILLS

2 FLUTE BALL NOSE END MILLS

Single End, Regular Length

Faster Feeds & Speeds Than HSS or Cobalt!



- Powdered HSS
- 30° helix with full radius
- For hardened steels up to Rc 45
- Single end, right hand cut
- Flat on shank
- Tank Power coating ideal for applications where cobalt wears rapidly, carbide chips or breaks, or when higher feed rates are desired

R +/- .001	Dia	Shank	LOC	OAL	Uncoated		Tank-Power Coated	
					Part Number	Price	Part Number	Price
R1/16	1/8	3/8	3/8	2-5/16	YG-EME9992008	\$15.87	YG-EME9992008TF	\$24.91
R3/32	3/16	3/8	1/2	2-3/8	YG-EME9992012	\$15.87	YG-EME9992012TF	\$24.91
R1/8	1/4	3/8	5/8	2-7/16	YG-EME9992016	\$15.87	YG-EME9992016TF	\$24.91
R5/32	5/16	3/8	3/4	2-1/2	YG-EME9992020	\$15.87	YG-EME9992020TF	\$24.91
R3/16	3/8	3/8	3/4	2-1/2	YG-EME9992024	\$15.87	YG-EME9992024TF	\$24.91
R1/4	1/2	1/2	1	3	YG-EME9992032	\$25.81	YG-EME9992032TF	\$35.83
R5/16	5/8	5/8	1-3/8	3-1/2	YG-EME9992040	\$39.43	YG-EME9992040TF	\$52.43
R3/8	3/4	3/4	1-5/8	3-7/8	YG-EME9992048	\$51.99	YG-EME9992048TF	\$65.73
R7/16	7/8	7/8	2	4-1/4	YG-EME9992056	\$71.84	YG-EME9992056TF	\$94.11
R1/2	1	1	2-1/4	4-3/4	YG-EME9992064	\$83.14	YG-EME9992064TF	\$103.83

2 FLUTE BALL NOSE END MILLS

Single End, Regular Length



- Single end
- Right hand cut
- Center cutting
- Available in high speed steel or 8% Cobalt M-42



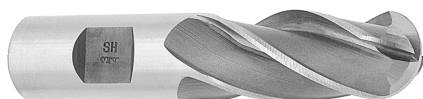
Mill Dia	Shank Dia	LOC	OAL	HSS		Cobalt M-42	
				Part Number	Price Each	Part Number	Price Each
1/8	3/8	3/8	2-5/16	BI-5220-005	\$10.24	-	-
3/16	3/8	1/2	2-3/8	BI-5220-010	\$9.74	BI-5221-010	\$14.72
1/4	3/8	5/8	2-7/16	BI-5220-015	\$9.74	BI-5221-015	\$14.72
5/16	3/8	3/4	2-1/2	BI-5220-020	\$11.52	BI-5221-020	\$16.15
3/8	3/8	3/4	2-1/2	BI-5220-025	\$11.52	BI-5221-025	\$16.15
7/16	1/2	1	3	BI-5220-030	\$15.13	BI-5221-030	\$22.99
1/2	1/2	1	3	BI-5220-035	\$15.13	BI-5221-035	\$24.84
9/16	1/2	1-1/8	3-1/8	BI-5220-040	\$20.66	-	-
5/8	5/8	1-3/8	3-1/2	BI-5220-050	\$23.11	BI-5221-050	\$37.22
3/4	3/4	1-5/8	3-7/8	BI-5220-055	\$27.44	BI-5221-055	\$41.81
13/16	3/4	2	4-1/4	BI-5220-057	\$37.41	BI-5221-057	\$41.81
7/8	7/8	2	4-1/4	BI-5220-060	\$37.41	BI-5221-060	\$42.43
15/16	3/4	2-1/4	4-1/2	BI-5220-065	\$45.82	-	-
1	1	2-1/4	4-3/4	BI-5220-080	\$54.56	BI-5221-080	\$66.78
1-1/8	1	2-1/4	4-3/4	BI-5220-090	\$68.41	BI-5221-090	\$81.58
1-1/4	1-1/4	2-1/2	5	BI-5220-100	\$68.41	-	-
1-3/8	1-1/4	2-1/2	5	BI-5220-105	\$81.58	-	-
1-1/2	1-1/4	2-1/2	5	BI-5220-110	\$85.28	-	-
2	1-1/4	2-1/2	5	BI-5220-120	\$102.65	-	-

MULTI-FLUTE BALL NOSE END MILLS

Single End, Regular Length



- Single end
- Right hand cut
- Available in high speed steel or 8% Cobalt M-42



Mill Dia	Shank Dia	LOC	OAL	No. Of Flutes	HSS		Cobalt M-42	
					Part Number	Price Each	Part Number	Price Each
1/8	3/8	3/8	2-5/16	4	BI-5225-003	\$15.88	BI-5226-003	\$21.15
3/16	3/8	1/2	2-3/8	4	BI-5225-005	\$15.88	BI-5226-005	\$20.78
1/4	3/8	5/8	2-7/16	4	BI-5225-010	\$15.88	BI-5226-010	\$20.78
5/16	3/8	3/4	2-1/2	4	BI-5225-012	\$15.88	BI-5226-012	\$20.78
3/8	3/8	3/4	2-1/2	4	BI-5225-015	\$15.88	BI-5226-015	\$22.80
7/16	3/8	1	2-11/16	4	BI-5225-0181	\$16.78	-	-
1/2	1/2	1-1/4	3-1/4	4	BI-5225-020	\$20.83	BI-5226-020	\$35.40
5/8	5/8	1-5/8	3-3/4	4	BI-5225-025	\$30.84	BI-5226-025	\$47.73
3/4	3/4	1-5/8	3-7/8	4	BI-5225-030	\$50.06	BI-5226-030	\$53.11
7/8	7/8	1-7/8	4-1/8	4	BI-5225-035	\$57.55	-	-
1	1	2	4-1/2	4	BI-5225-040	\$69.57	BI-5226-040	\$90.28
1-1/4	1-1/4	2	4-1/2	6	BI-5225-045	\$82.49	-	-
1-1/2	1-1/4	2	4-1/2	6	-	-	BI-5226-050	\$177.57

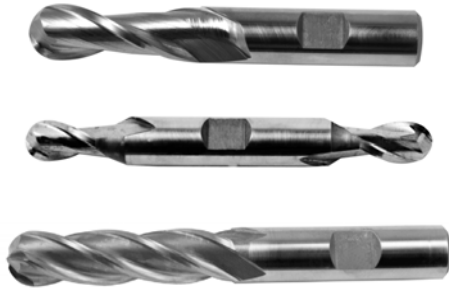
Call Us Today For All Of Your Machine Tool Needs!



BALL NOSE END MILLS

2, 3 & 4 Flute • Cobalt & Carbide

- M42 cobalt or carbide
- 30° helix with full radius
- For general purpose machining
- Single (SE) or double end (DE)
- Uncoated
- Center cutting
- For materials up to 48 Rc
- Additional sizes available



General Information for Endmill Usage:

The Following factors should be kept in mind when using the recommended starting feed per tooth.

Use Higher Feeds For:

- Heavy, roughing cuts
- Rigid set-ups
- Easy to machine work materials
- Rugged cutters
- Slab milling cuts
- Low tensile strength materials
- Coarse tooth cutters
- Abrasive materials

Use Lower Feeds For:

- Light, and finishing cuts
- Frail set-ups
- Hard to machine work materials
- Frail and small cutters
- Deep slots
- High tensile strength materials
- Fine tooth cutters

To Calculate	Given	Formula
Surface Speed in Feet per Minute = SFM	Tool Dia (inches) = D	SFM = (D x 3.1416 x RPM) / 12
	Revolutions per Minute = RPM	
Revolutions per Minute = RPM	Tool Dia (inches) = D	RPM = (SFM x 12) / (D x 3.1416)
	Surface Speed in Feet per Minute = SFM	
Feed Per Revolution in inches = FR	Feed in Inches per Minute = FM	FR = FM / RPM
	Revolutions per Minute = RPM	
Feed in Inches per Minute = FM	Feed Per Revolution in inches = FR	FM = FR x RPM
	Revolutions per Minute = RPM	
Number of Cutting Teeth per Minute = TM	Number of Teeth in Tool = T	TM = T x RPM
	Revolutions per Minute = RPM	
Feed Per Tooth = FT	Number of Teeth in Tool = T	FT = FR / T
	Feed Per Revolution in inches = FR	
Feed Per Tooth = FT	Number of Teeth in Tool = T	FT = FM / (T x RPM)
	Feed in Inches per Minute = FM	
	Revolutions per Minute = RPM	

2 FLUTE BALL NOSE

Dia	LOC	Shank	OAL	Material	Type	Part Number	Price Each
1/32	3/32	3/16	2-1/4	COB	DE	ME-B-601-B	\$25.65
3/64	9/64	3/16	2-1/4	COB	DE	ME-B-601-1/2-B	\$25.65
1/16	3/16	3/16	2-1/4	COB	DE	ME-B-602-B	\$23.80
5/64	15/64	3/16	2-1/4	COB	DE	ME-B-602-1/2-B	\$23.80
1/8	3/8	3/8	3-1/16	CAR	DE	ME-BMG-1204-B	\$39.94
3/16	5/8	3/16	2	CAR	SE	ME-AMG-606-B	\$13.83
3/16	7/16	3/8	3-1/8	COB	DE	ME-B-1206-B	\$29.66
3/16	1/2	3/8	2-3/8	COB	SE	ME-A-1206-B	\$16.61
1/4	5/8	3/8	3-1/2	CAR	DE	ME-BMG-1208-B	\$46.63
1/4	1/2	3/8	3-1/8	COB	DE	ME-B-1208-B	\$30.58
5/16	3/4	3/8	3-1/2	CAR	DE	ME-BMG-1210-B	\$50.10
3/8	3/4	3/8	3-1/2	CAR	DE	ME-BMG-1212-B	\$51.36
3/8	1	3/8	2-1/2	CAR	SE	ME-AMG-1212-B	\$26.52
7/16	1	7/16	2-3/4	CAR	SE	ME-AMG-1414-B	\$38.73
1/2	1	1/2	3	CAR	SE	ME-AMG-1616-B	\$46.24
9/16	1-1/4	9/16	3-1/2	CAR	SE	ME-AMG-1818-B	\$79.48
5/8	1-1/8	1/2	3-1/8	COB	SE	ME-A-1620-B	\$38.56
5/8	1-3/8	5/8	3-1/2	COB	SE	ME-A-2020-B	\$38.56
5/8	2	5/8	4-1/8	COB	SE	ME-A-2020-MB	\$52.33
11/16	1-5/16	1/2	3-5/16	COB	SE	ME-A-1622-B	\$50.46
3/4	1-5/16	5/8	3-7/16	COB	SE	ME-A-2024-B	\$46.35
3/4	1-5/8	3/4	3-7/8	COB	SE	ME-A-2424-B	\$47.70
13/16	1-1/2	1/2	3-1/2	COB	SE	ME-A-1626-B	\$65.26
7/8	1-1/2	1/2	3-1/2	COB	SE	ME-A-1628-B	\$62.41
15/16	1-1/2	1/2	3-1/2	COB	SE	ME-A-1630-B	\$78.94
1	2-1/4	3/4	4-1/2	COB	SE	ME-A-2432-B	\$75.28
1	3	1	5-1/2	COB	SE	ME-A-3232-MB	\$89.02

3 FLUTE BALLNOSE

Dia	LOC	Shank	OAL	Material	Type	Part Number	Price Each
1/16	1/8	1/8	1-1/2	CAR	SE	ME-EMGS-402-B	\$9.05
1/8	1/2	1/8	1-1/2	CAR	SE	ME-EMG-404-B	\$9.59
1/8	3/8	3/8	2-5/16	COB	SE	ME-E-1204-B	\$21.38
3/16	5/16	3/16	1-1/2	CAR	SE	ME-EMGS-606-B	\$11.99
1/4	1/2	1/4	2	CAR	SE	ME-EMGS-808-B	\$14.13
1/4	3/4	1/4	2-1/2	CAR	SE	ME-EMG-808-B	\$17.45
5/16	3/4	3/8	2-1/2	COB	SE	ME-E-1210-B	\$24.04
3/8	3/4	3/8	2-1/2	COB	SE	ME-E-1212-B	\$24.20
7/16	1-3/4	1/2	3-3/4	COB	SE	ME-E-1614-LB	\$41.22
1/2	1-1/4	1/2	3-1/4	COB	SE	ME-E-1616-B	\$36.67
5/8	1-5/8	5/8	3-3/4	COB	SE	ME-E-2020-B	\$52.13
3/4	1-5/8	1/2	3-5/8	COB	SE	ME-E-1624-B	\$60.42
1	1-7/8	3/4	4-1/8	COB	SE	ME-E-2432-B	\$91.48

4 FLUTE BALLNOSE- WITH FLATTED SHANK

Dia	LOC	Shank	OAL	Material	Type	Part Number	Price Each
1/8	3/8	3/8	2-5/16	COB	SE	ME-CC-1204-B	\$25.31
3/16	1/2	3/8	2-3/8	COB	SE	ME-CC-1206-B	\$25.31
1/4	3/4	3/8	2-9/16	COB	SE	ME-CC-1208-B	\$25.31
5/16	1	3/8	2-3/4	COB	SE	ME-CC-1210-B	\$25.31
3/8	1	3/8	2-3/4	COB	SE	ME-CC-1212-B	\$27.27
7/16	1	3/8	2-11/16	COB	SE	ME-CC-1214-B	\$35.83
1/2	1	3/8	2-11/16	COB	SE	ME-CC-1216-B	\$35.83
5/8	1-5/8	5/8	3-3/4	COB	SE	ME-CC-2020-B	\$45.82
3/4	1-5/8	3/4	3-7/8	COB	SE	ME-CC-2424-B	\$59.61
7/8	1-7/8	7/8	4-1/8	COB	SE	ME-CC-2828-B	\$85.18
1	2	1	4-1/2	COB	SE	ME-CC-3232-B	\$101.99

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

ROUGHER/FINISHER ENDMILLS

3 FLUTE ROUGHING ENDMILLS 35° High Helix • Coarse Pitch

- 35° high helix for aluminum
- HSS Cobalt M42
- Uncoated
- Coarse pitch
- Square end with chamfer corner



Mill Dia	LOC	Shank	OAL	Part Number	Price Each
1/4	5/8	3/8	2-7/16	ME-ERP-1208	\$20.68
	1-1/8	3/8	2-15/16	ME-ERP-1208-L	\$22.42
5/16	3/4	3/8	2-1/2	ME-ERP-1210	\$21.76
3/8	1-1/2	3/8	3-1/4	ME-ERP-1212-L	\$25.81
7/16	1	3/8	2-11/16	ME-ERP-1214	\$27.44
1/2	1/2	1/2	2-9/16	ME-ERPS-1616-2	\$25.01
	1-5/8	1/2	3-5/8	ME-ERP-1616-M	\$30.03

Mill Dia	LOC	Shank	OAL	Part Number	Price Each
5/8	3/4	5/8	2-7/8	ME-ERPS-2020	\$27.84
	3/4	3/4	3	ME-ERPS-2424	\$38.27
3/4	3	3/4	5-1/4	ME-ERP-2424-L	\$52.68
	1-1/8	3/4	3-3/8	ME-ERPS-2432	\$53.29
1"	2	1	4-1/2	ME-ERP-3232	\$63.46
	3	1	5-1/2	ME-ERP-3232-M	\$66.66

MULTIPLE FLUTE ROUGHING ENDMILLS Coarse & Fine Pitch

- HSS Cobalt M42
- Uncoated
- Center cutting except where noted
- Square end with chamfer corner
- 4 flutes except 1" (5 flutes) and 1-1/4" (6 flutes)



Mill Dia	LOC	Shank	OAL	Pitch	Part Number	Price Each
1/4	5/8	3/8	2-7/16	Coarse	ME-CCRP-1208	\$21.97
	5/8	3/8	2-7/16	Fine	ME-CCFP-1208	\$21.97
	1-1/8	3/8	2-15/16	Coarse	ME-CCRP-1208-L	\$23.83
	1-1/8	3/8	2-15/16	Fine	ME-CCFP-1208-L	\$23.83
5/16	3/4	3/8	2-1/2	Coarse	ME-CCRP-1210	\$23.12
	3/4	3/8	2-1/2	Fine	ME-CCFP-1210	\$23.12
	1-3/8	3/8	3-1/8	Coarse	ME-CCRP-1210-L	\$28.53
	1-3/8	3/8	3-1/8	Fine	ME-CCFP-1210-L	\$28.53
3/8	3/8	3/8	2-1/8	Fine	ME-CCFPS-1212	\$26.18
	3/4	3/8	2-1/2	Coarse	ME-CCRP-1212	\$23.89
	3/4	3/8	2-1/2	Fine	ME-CCFP-1212	\$23.89
	1-1/2	3/8	3-1/4	Coarse	ME-CCRP-1212-L	\$27.44
7/16	1	3/8	2-11/16	Coarse	ME-CCRP-1214	\$27.44
	1	3/8	2-11/16	Fine	ME-CCFP-1214	\$27.44
1/2	1/2	1/2	2-1/2	Fine	ME-CCFPS-1616	\$26.99
	5/8	1/2	2-5/8	Coarse	ME-CCRP-1616-2	\$26.99
	5/8	1/2	2-5/8	Fine	ME-CCFP-1616-2	\$26.99
	1	1/2	3	Coarse	ME-CCRPS-1616	\$26.99

Mill Dia	LOC	Shank	OAL	Pitch	Part Number	Price Each
1/2	1-1/4	1/2	3-1/4	Fine	ME-CCFP-1616	\$28.92
	1-5/8	1/2	3-5/8	Coarse	ME-CCRP-1616-M	\$31.62
	1-5/8	1/2	3-5/8	Fine	ME-CCFP-1616-M	\$31.62
	2	1/2	4	Coarse	ME-CCRP-1616-L	\$40.29
	2	1/2	4	Fine	ME-CCFP-1616-L	\$40.29
9/16	1-3/8	1/2	3-3/8	Fine/ Non-CC	ME-CCFP-1618	\$30.03
5/8	5/8	5/8	2-3/4	Fine	ME-CCFPS-2020	\$29.30
	1-5/8	5/8	3-3/4	Coarse	ME-CCRP-2020	\$35.80
	1-5/8	5/8	3-3/4	Fine	ME-CCFP-2020	\$35.80
	2-1/2	5/8	4-5/8	Coarse	ME-CCRP-2020-L	\$47.87
3/4	2-1/2	5/8	4-5/8	Fine	ME-CCFP-2020-L	\$47.87
	3/4	3/4	3	Fine	ME-CCFPS-2424	\$48.78
	1-5/8	3/4	3-7/8	Fine	ME-CCFP-2424	\$43.63
	2-1/4	3/4	4-5/8	Coarse	ME-CCRP-2424-M	\$47.22
3/4	2-1/4	3/4	4-5/8	Fine	ME-CCFP-2424-M	\$47.22
	3	3/4	5-1/4	Coarse	ME-CCRP-2424-L	\$55.45
	3	3/4	5-1/4	Fine	ME-CCFP-2424-L	\$55.45
1	2	1	4-1/2	Coarse	ME-CCRP-3232	\$62.32
1-1/4	2	1-1/4	4-1/2	Coarse	ME-CCRP-4040	\$81.47

4 FLUTE ROUGHING ENDMILLS Solid Carbide • Fine Pitch



- Center cutting geometry
- For carbon, alloy and hard steel, stainless and nickel/inconel alloys
- Designed for increased chip removal rate
- Capable of slotting, profiling, and plunging operations
- Premium sub micrograin Carbide
- Form relieved
- Small corner radius for strength



Dia	Shank Dia	LOC	OAL	Uncoated		TiAlN Coated	
				Part Number	Price Each	Part Number	Price Each
1/4"	1/4"	3/4"	2-1/2"	BI-1160-40252	\$26.37	BI-1161-40252	\$31.38
5/16"	5/16"	11/32"	2-1/2"	BI-1160-40312	\$31.38	BI-1161-40312	\$37.66
3/8"	3/8"	7/8"	2-1/2"	BI-1160-40372	\$37.03	BI-1161-40382	\$43.94
7/16"	7/16"	1"	2-3/4"	BI-1160-40442	\$48.96	BI-1161-40442	\$59.01
1/2"	1/2"	1-1/4"	3"	BI-1160-40503	\$58.38	BI-1161-40503	\$66.54
9/16"	9/16"	1-1/4"	3-1/2"	BI-1160-40563	\$62.77	BI-1161-40563	\$77.83
5/8"	5/8"	1-1/4"	3-1/2"	BI-1160-40623	\$97.29	BI-1161-40623	\$109.85
3/4"	3/4"	1-1/2"	4"	BI-1160-40754	\$134.95	BI-1161-40754	\$153.78
1"	1"	1-1/2"	4"	BI-1160-41004	\$235.38	BI-1161-41004	\$257.35

4 FLUTE ROUGHING ENDMILLS Solid Carbide

- AlTiN Coated
- Ideal for alloy steels, stainless tool steels, nickel alloys and titanium
- 38° helix
- Designed to generate the maximum metal removal rates in most applications
- All tools 3/8" and over have Weldon flats



Dia.	Shank Dia.	OAL	Flute Length	Part Number	Price
1/4	1/4	2-1/2	3/4	MI-SHR2504X	\$40.55
5/16	5/16	2-1/2	13/16	MI-SHR3124X	\$46.70
3/8	3/8	2-1/2	7/8	MI-SHR3754X	\$57.30
1/2	1/2	3	1	MI-SHR5004X	\$82.45
5/8	5/8	3-1/2	1-1/4	MI-SHR6254X	\$144.10
3/4	3/4	4	1-1/4	MI-SHR7504X	\$199.65
1	1	4	1-1/4	MI-SHR0014X	\$272.10

Call Us Today For All Of Your Machine Tool Needs!

ROUGHING ENDMILLS-FINE PITCH

C

MULTI FLUTE FINE PITCH ROUGHING END MILLS

Single End, Regular Length



**Faster Feeds & Speeds
Than HSS or Cobalt!**

- Powdered HSS
- 30° helix
- For high production metal removal in a wide range of materials
- Single end, right hand cut
- Flat on shank
- Tank Power coating ideal for applications where cobalt wears rapidly, carbide chips or breaks, or when higher feed rates are desired

Dia	Shank	LOC	OAL	No. Flutes	Uncoated		Tank-Power Coated	
					Part Number	Price	Part Number	Price
1/4	3/8	5/8	2-7/16	3	YG-EME9990016	\$23.35	YG-EME9990016TF	\$28.62
1/4	3/8	1-1/8	2-15/16	3	YG-EME9990907	\$28.08	YG-EME9990907TF	\$34.38
5/16	3/8	3/4	2-1/2	3	YG-EME9990020	\$23.35	YG-EME9990020TF	\$28.62
3/8	3/8	3/4	2-1/2	4	YG-EME9990024	\$23.35	YG-EME9990024TF	\$28.62
7/16	3/8	1	2-11/16	4	YG-EME9990028	\$32.13	YG-EME9990028TF	\$41.14
1/2	1/2	1-1/4	3-1/4	4	YG-EME9990032	\$32.13	YG-EME9990032TF	\$41.14
1/2	1/2	1-5/8	3-5/8	4	YG-EME9990908	\$37.75	YG-EME9990908TF	\$45.05
9/16	1/2	1-3/8	3-3/8	4	YG-EME9990036	\$41.35	YG-EME9990036TF	\$49.35
5/8	5/8	1-5/8	3-3/4	4	YG-EME9990040	\$41.35	YG-EME9990040TF	\$49.35
3/4	3/4	1-5/8	3-7/8	4	YG-EME9990048	\$51.42	YG-EME9990048TF	\$60.28
3/4	5/8	1-5/8	3-7/8	4	YG-EME9990948	\$51.42	YG-EME9990948TF	\$60.28
3/4	3/4	2-1/2	4-3/4	4	YG-EME9990909	\$62.32	YG-EME9990909TF	\$73.07
7/8	7/8	1-7/8	4-1/8	5	YG-EME9990056	\$67.42	YG-EME9990056TF	\$76.36
7/8	3/4	1-7/8	4-1/8	5	YG-EME9990901	\$67.42	YG-EME9990901TF	\$76.36
1	1	2	4-1/2	5	YG-EME9990064	\$75.82	YG-EME9990064TF	\$91.66
1	1	3	5-1/2	5	YG-EME9990905	\$83.46	YG-EME9990905TF	\$98.23
1-1/8	1	2	4-1/2	6	YG-EME9990108	\$100.06	YG-EME9990108TF	\$117.80
1-1/4	1-1/4	2	4-1/2	6	YG-EME9990116	\$114.67	YG-EME9990116TF	\$141.46
1-1/4	1-1/4	3	5-1/2	6	YG-EME9990906	\$127.76	YG-EME9990906TF	\$157.57

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

MULTI FLUTE FINE PITCH ROUGHING END MILLS

Single End, Long Length



**Faster Feeds & Speeds
Than HSS or Cobalt!**

- Powdered HSS
- 30° helix
- For high production metal removal in a wide range of materials
- Single end, right hand cut
- Flat on shank
- Tank Power coating ideal for applications where cobalt wears rapidly, carbide chips or breaks, or when higher feed rates are desired

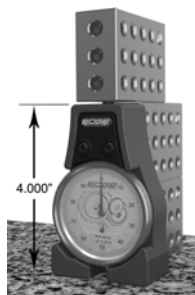
Dia	Shank	LOC	OAL	No. Flutes	Uncoated		Tank-Power Coated	
					Part Number	Price	Part Number	Price
5/16	3/8	1-3/8	3-3/16	3	YG-EME9A86020	\$36.76	YG-EME9A86020TF	\$44.10
3/8	3/8	1-1/2	3-1/4	4	YG-EME9A86024	\$36.76	YG-EME9A86024TF	\$44.10
3/8	3/8	1-1/2	4	4	YG-EME9A86924	\$36.76	YG-EME9A86924TF	\$44.10
1/2	1/2	2	4	4	YG-EME9A86032	\$41.73	YG-EME9A86032TF	\$50.07
5/8	5/8	2-1/2	4-5/8	4	YG-EME9A86040	\$59.67	YG-EME9A86040TF	\$71.60
3/4	5/8	3	5-1/8	4	YG-EME9A86048	\$66.71	YG-EME9A86048TF	\$76.70
3/4	3/4	3	5-1/4	4	YG-EME9990902	\$66.71	YG-EME9990902TF	\$76.70
7/8	3/4	3-1/2	5-3/4	5	YG-EME9A86056	\$82.56	YG-EME9A86056TF	\$93.13
7/8	7/8	3-1/2	5-3/4	5	YG-EME9A86956	\$82.56	YG-EME9A86956TF	\$93.13
1	1	4	6-1/2	5	YG-EME9990903	\$86.07	YG-EME9990903TF	\$97.09
1-1/4	3/4	4	6-1/4	6	YG-EME9A86116	\$148.86	YG-EME9A86116TF	\$168.61
1-1/4	1-1/4	4	6-1/2	6	YG-EME9990904	\$148.86	YG-EME9990904TF	\$168.61

CARBIDE INSERTS
THREADING/GROOVING

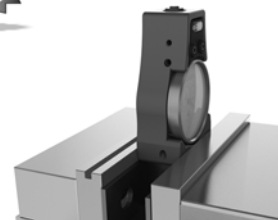
CUTTING TOOLS
MACHINERY

TOUCH OFF GAGE

Set tools accurately! Dramatically decrease set up time and eliminate tool path mismatch. Allows you to standardize the way tool offsets are measured in your shop, ensuring every job is setup the same way and runs without issue. Just lower the tool down onto the contact face until the indicator reads zero. At that point, you can be confident that the tool tip is exactly 4 inches from the surface the gage is sitting on.



- Accurately establishes tool length offsets for CNC milling machines
- The contact face is lightly spring loaded
- Contact face diameter is 0.250"
- Rectangular base and recessed indicator face allows fit between vise jaws on a pair of parallels
- Offset height 4.000 in (101.6mm)
- Large 2.2" easy to read indicator face
- Easy calibration check using 1-2-3 blocks
- Gage graduations 0.001"-repeatability 0.0002"
- Body and contact face are red anodized 6061-T6 aluminum
- Base: 2.4" wide x 1.3" depth x 4" height
- Padded case and manual included



TOUCH OFF GAGE
Part # EDGE-52000
\$99.99 ea

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

ROUGHING ENDMILLS-COARSE PITCH

MULTI FLUTE COARSE PITCH ROUGHING END MILLS

Single End, Regular Length



- Powdered HSS
- 30° helix
- For high production metal removal in a wide range of materials
- Single end, right hand cut
- Flat on shank
- Tank Power coating ideal for applications where cobalt wears rapidly, carbide chips or breaks, or when higher feed rates are desired

**Faster Feeds & Speeds
Than HSS or Cobalt!**

Dia	Shank	LOC	OAL	No. Flutes	Uncoated		Tank-Power Coated	
					Part Number	Price	Part Number	Price
1/4	3/8	5/8	2-7/16	3	YG-EME9991016	\$19.67	YG-EME9991016TF	\$26.79
1/4	3/8	1-1/8	2-15/16	3	YG-EME9991902	\$23.59	YG-EME9991902TF	\$32.14
5/16	3/8	3/4	2-1/2	3	YG-EME9991020	\$19.67	YG-EME9991020TF	\$26.79
3/8	3/8	3/4	2-1/2	4	YG-EME9991024	\$20.05	YG-EME9991024TF	\$26.79
7/16	3/8	1	2-11/16	4	YG-EME9991028	\$27.94	YG-EME9991028TF	\$39.00
1/2	1/2	1-1/4	3-1/4	4	YG-EME9991032	\$27.94	YG-EME9991032TF	\$39.00
1/2	1/2	1-5/8	3-5/8	4	YG-EME9991903	\$32.34	YG-EME9991903TF	\$42.21
9/16	1/2	1-3/8	3-3/8	4	YG-EME9991036	\$35.46	YG-EME9991036TF	\$46.28
5/8	5/8	1-5/8	3-3/4	4	YG-EME9991040	\$35.46	YG-EME9991040TF	\$46.28
3/4	3/4	1-5/8	3-7/8	4	YG-EME9991048	\$44.10	YG-EME9991048TF	\$53.76
3/4	5/8	1-5/8	3-7/8	4	YG-EME9991948	\$44.10	YG-EME9991948TF	\$53.76
3/4	3/4	2-1/2	4-3/4	4	YG-EME9991904	\$53.38	YG-EME9991904TF	\$67.28
7/8	7/8	1-7/8	4-1/8	5	YG-EME9991056	\$56.71	YG-EME9991056TF	\$71.44
7/8	3/4	1-7/8	4-1/8	5	YG-EME9991901	\$56.71	YG-EME9991901TF	\$71.44
1	1	2	4-1/2	5	YG-EME9991064	\$63.81	YG-EME9991064TF	\$86.13
1	1	3	5-1/2	5	YG-EME9991905	\$76.93	YG-EME9991905TF	\$94.33
1-1/8	1	2	4-1/2	6	YG-EME9991108	\$82.36	YG-EME9991108TF	\$101.02
1-1/4	1-1/4	2	4-1/2	6	YG-EME9991116	\$106.51	YG-EME9991116TF	\$130.61
1-1/4	1-1/4	3	5-1/2	6	YG-EME9991906	\$118.68	YG-EME9991906TF	\$145.53

MULTI FLUTE COARSE PITCH ROUGHING END MILLS

Single End, Long Length



- Powdered HSS
- 30° helix
- For high production metal removal in a wide range of materials
- Single end, right hand cut
- Flat on shank
- Tank Power coating ideal for applications where cobalt wears rapidly, carbide chips or breaks, or when higher feed rates are desired

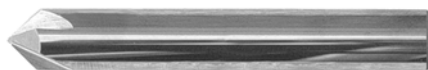
**Faster Feeds & Speeds
Than HSS or Cobalt!**

Dia	Shank	LOC	OAL	No. Flutes	Uncoated		Tank-Power Coated	
					Part Number	Price	Part Number	Price
5/16	3/8	1-3/8	3-3/16	3	YG-EME9A87020	\$30.70	YG-EME9A87020TF	\$36.84
3/8	3/8	1-1/2	3-1/4	4	YG-EME9A87024	\$31.29	YG-EME9A87024TF	\$36.84
3/8	3/8	1-1/2	4	4	YG-EME9A87924	\$30.70	YG-EME9A87924TF	\$36.84
1/2	1/2	2	4	4	YG-EME9A87032	\$34.86	YG-EME9A87032TF	\$43.59
5/8	5/8	2-1/2	4-5/8	4	YG-EME9A87040	\$49.88	YG-EME9A87040TF	\$59.86
3/4	5/8	3	5-1/8	4	YG-EME9A87048	\$55.75	YG-EME9A87048TF	\$69.66
3/4	3/4	3	5-1/4	4	YG-EME9A87948	\$55.75	YG-EME9A87948TF	\$69.66
7/8	3/4	3-1/2	5-3/4	5	YG-EME9A87056	\$69.01	YG-EME9A87056TF	\$81.22
7/8	7/8	3-1/2	5-3/4	5	YG-EME9A87956	\$69.01	YG-EME9A87956TF	\$81.22
1	1	4	6-1/2	5	YG-EME9A87064	\$81.76	YG-EME9A87064TF	\$92.25
1-1/4	3/4	4	6-1/4	6	YG-EME9A87116	\$145.18	YG-EME9A87116TF	\$163.77
1-1/4	1-1/4	4	6-1/2	6	YG-EME9A87917	\$145.18	YG-EME9A87917TF	\$163.77

CHAMFER MILLS

Carbide 4 Flute-Single End

INTERNAL TOOL



Included Angle	Shank Dia	OAL	Angle Length	Part Number	Price Each
120° 4 flute	3/16	2-1/2	0.050	IT-64-4800	\$25.16
	1/4	2-1/2	0.060	IT-64-4810	\$26.29
	5/16	2-1/2	0.090	IT-64-4820	\$30.43
	3/8	2-1/2	0.105	IT-64-4830	\$38.33
	1/2	3	0.140	IT-64-4840	\$56.30
90° 4 flute	3/16	2-1/2	0.090	IT-64-4850	\$25.16
	1/4	2-1/2	0.125	IT-64-4860	\$26.29
	5/16	2-1/2	0.156	IT-64-4870	\$30.43
	3/8	2-1/2	0.187	IT-64-4880	\$38.33
	1/2	3	0.250	IT-64-4890	\$56.30
60° 4 flute	3/16	2-1/2	0.160	IT-64-4900	\$25.16
	1/4	2-1/2	0.200	IT-64-4910	\$26.29
	5/16	2-1/2	0.270	IT-64-4920	\$30.43
	3/8	2-1/2	0.312	IT-64-4930	\$38.33
	1/2	3	0.420	IT-64-4940	\$56.30

Call Us Today For All Of Your Machine Tool Needs!

SOLID CARBIDE BURRS With 1/4" Shanks

Standard Cut- For a general purpose cut when stock removal rates and finish requirements are average. Ideal for soft ferrous materials

Double Cut- For roughing or high stock removal. Ideal for extra tough materials needing a good finish.



Cylindrical Flat End

Tool Ref.	Dia	LOC	Standard Cut Part Number	Double Cut Part Number	Price Each
SA-11	1/8	1/2	MO-001005C	MO-002005C	\$8.33
SA-13	5/32	5/8	MO-001009	MO-002009C	\$8.33
SA-14	3/16	5/8	MO-001012C	MO-002012C	\$8.33
SA-1	1/4	5/8	MO-001017C	MO-002017C	\$7.81
SA-2	5/16	3/4	MO-001018	MO-002018	\$9.07
SA-3	3/8	3/4	MO-001019	MO-002019	\$9.10
SA-4	7/16	1	MO-001020	MO-002020	\$12.30
SA-5	1/2	1	MO-001021	MO-002021	\$13.85
SA-6	5/8	1	MO-001022	MO-002022	\$24.08
SA-16	3/4	3/4	MO-001024	MO-002024	\$35.15
SA-7	3/4	1	MO-001025	MO-002025	\$38.44
SA-9	1	1	MO-001026	MO-002026	\$54.79



Cylindrical Flat End- End Cut

Tool Ref.	Dia	LOC	Standard Cut Part Number	Double Cut Part Number	Price Each
SB-11	1/8	1/2	MO-001034C	MO-002034C	\$8.58
SB-14	3/16	5/8	MO-001041	MO-002041	\$8.58
SB-1	1/4	5/8	MO-001046C	MO-002046C	\$8.58
SB-2	5/16	3/4	MO-001047	MO-002047	\$9.59
SB-3	3/8	3/4	MO-001048	MO-002048	\$9.51
SB-4	7/16	1	MO-001049	MO-002049	\$13.46
SB-5	1/2	1	MO-001055	MO-002055	\$14.94
SB-6	5/8	1	MO-001050	MO-002050	\$26.07
SB-16	3/4	3/4	MO-001052	MO-002052	\$38.58
SB-7	3/4	1	MO-001053	MO-002053	\$40.89
SB-9	1	1	MO-001054	MO-002054	\$61.44



Cylindrical Radius End

Tool Ref.	Dia	LOC	Standard Cut Part Number	Double Cut Part Number	Price Each
SC-11	1/8	1/2	MO-001062C	MO-002062C	\$8.45
SC-13	5/32	5/8	MO-001065C	MO-002065C	\$8.45
SC-14	3/16	5/8	MO-001068C	MO-002068C	\$8.45
SC-1	1/4	5/8	MO-001071C	MO-002072C	\$6.88
SC-2	5/16	3/4	MO-001072	MO-002072	\$9.36
SC-3	3/8	3/4	MO-001073	MO-002073	\$10.12
SC-4	7/16	1	MO-001074	MO-002074	\$14.00
SC-5	1/2	1	MO-001075	MO-002075	\$15.17
SC-6	5/8	1	MO-001076	MO-002076	\$24.71
SC-7	3/4	1	MO-001077	MO-002077	\$40.62
SC-9	1	1	MO-001079	MO-002078	\$58.10



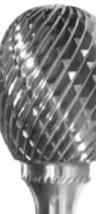
Spherical/Ball Shape

Tool Ref.	Dia	LOC	Standard Cut Part Number	Double Cut Part Number	Price Each
SD-11	1/8	3/32	MO-001083C	MO-002083C	\$8.21
SD-14	3/16	1/8	MO-001086C	MO-002086C	\$8.21
SD-1	1/4	7/32	MO-001089C	MO-002089C	\$7.81
SD-2	5/16	1/4	MO-001090	MO-002090	\$7.77
SD-3	3/8	5/16	MO-001091	MO-002091	\$8.37
SD-5	1/2	7/16	MO-001093	MO-002093	\$11.93
SD-6	5/8	9/16	MO-001094	MO-002094	\$18.27
SD-7	3/4	11/16	MO-001095	MO-002095	\$26.67
SD-9	1	15/16	MO-001096	MO-002096	\$45.79



Oval Shape

Tool Ref.	Dia	LOC	Standard Cut Part Number	Double Cut Part Number	Price Each
SE-11	3/16	5/16	MO-004127	MO-004128	\$9.33
SE-1	1/4	3/8	MO-001105C	MO-002105C	\$8.12
SE-3	3/8	5/8	MO-001106	MO-002106	\$9.76
SE-5	1/2	7/8	MO-001107	MO-002107	\$14.22
SE-6	5/8	1	MO-001108	MO-002108	\$24.79
SE-7	3/4	1	MO-001109	MO-002109	\$36.37



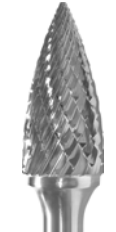
Tree Shape-Radius End

Tool Ref.	Dia	LOC	Standard Cut Part Number	Double Cut Part Number	Price Each
SF-11	1/8	1/2	MO-001112C	MO-002112C	\$8.58
SF-1	1/4	3/4	MO-001117C	MO-002117C	\$8.02
SF-3	3/8	3/4	MO-001118	MO-002118	\$10.11
SF-4	7/16	1	MO-001119	MO-002119	\$12.84
SF-5	1/2	1	MO-001121	MO-002121	\$13.36
SF-6	5/8	1	MO-001122	MO-002122	\$24.38
SF-7	3/4	1	MO-001123	MO-002123	\$35.66
SF-15	3/4	1-1/2	MO-001125	MO-002125	\$47.89



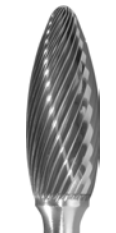
Tree Shape-Pointed End

Tool Ref.	Dia	LOC	Standard Cut Part Number	Double Cut Part Number	Price Each
SG-1	1/4	5/8	MO-001137C	MO-002137C	\$8.02
SG-2	5/16	3/4	MO-001138	MO-002138	\$8.74
SG-3	3/8	3/4	MO-001139	MO-002139	\$9.77
SG-5	1/2	1	MO-001141	MO-002141	\$13.38
SG-6	5/8	1	MO-001142	MO-002142	\$24.19
SG-7	3/4	1	MO-001143	MO-002143	\$34.39
SG-15	3/4	1-1/2	MO-001144	MO-002144	\$44.17



Flame

Tool Ref.	Dia	LOC	Standard Cut Part Number	Double Cut Part Number	Price Each
SH-1	1/4	5/8	MO-001157C	MO-002157C	\$8.62
SH-2	5/16	3/4	MO-001153	MO-002153	\$9.79
SH-5	1/2	1-1/4	MO-001154	MO-002154	\$17.51
SH-6	5/8	1-7/16	MO-001155	MO-002155	\$34.75
SH-7	3/4	1-5/8	MO-001156	MO-002156	\$45.10



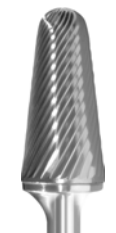
60° Cone Shape

Tool Ref.	Dia	LOC	Standard Cut Part Number	Double Cut Part Number	Price Each
SJ-1	1/4	3/16	MO-001162	MO-002162	\$8.02
SJ-5	1/2	7/16	MO-001164	MO-002164	\$11.47
SJ-6	5/8	9/16	MO-001165	MO-002165	\$21.16
SJ-7	3/4	11/16	MO-001166	MO-002166	\$26.09
SJ-9	1	15/16	MO-001167	MO-002167	\$43.82



90° Cone Shape

Tool Ref.	Dia	LOC	Standard Cut Part Number	Double Cut Part Number	Price Each
SK-1	1/4	1/8	MO-001172	MO-002172C	\$8.02
SK-5	1/2	1/4	MO-001174	MO-002174	\$11.83
SK-6	5/8	5/16	MO-002175	MO-002175	\$20.39
SK-7	3/4	3/8	MO-002176	MO-002176	\$26.43
SK-9	1	1/2	MO-001177C	MO-002177	\$46.64



Conical Radius End

Tool Ref.	Dia	LOC	Standard Cut Part Number	Double Cut Part Number	Price Each
SL-1	1/4	5/8	MO-001184	MO-002184	\$8.29
SL-3	3/8	1-1/16	MO-001186	MO-002186	\$12.46
SL-4	1/2	1-1/8	MO-001187	MO-002187	\$15.13
SL-6	5/8	1-5/16	MO-001179	MO-002179	\$38.83
SL-7	3/4	1-1/2	MO-001189	MO-002189	\$50.66



Conical

Tool Ref.	Dia	LOC	Standard Cut Part Number	Price Each
SM-3	1/4	1	MO-002200	\$8.69
SM-4	3/8	1/2	MO-002201	\$11.75
SM-5	1/2	7/8	MO-002202	\$15.82
SM-6	5/8	1	MO-002203	\$23.10



Inverted Cone

Tool Ref.	Dia	LOC	Standard Cut Part Number	Price Each
SN-1	1/4	5/16	MO-002227	\$8.34
SN-2	3/8	3/8	MO-002231	\$10.38
SN-4	1/2	1/2	MO-002228	\$14.67
SN-6	5/8	3/4	MO-002229	\$23.79
SN-7	3/4	5/8	MO-002230	\$35.68

LATH CHUCKS
LIVE CENTERSVISE JAWS
VISE ACCESSORIESSTRAIGHT SHANK
COLLET HOLDERSTAP HOLDERS
DRILL CHUCKSCARBIDE INSERTS
THREADING/GROOVINGCUTTING TOOLS
MACHINERYPRECISION TOOLS
DEBURRINGCOOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

ENDMILLS-DRILL POINT

SOLID CARBIDE DRILL MILLS

Chamfer, Countersink, Drill, Side Mill & Spot Drill
ALL WITH THE SAME TOOL!

- The 5-in-1 Tool!
- Premium sub-micron C-2 carbide
- Ideal for chamfering, countersinking, drilling, side milling and spotting
- Made in the USA



2 FLUTE				Uncoated		Price Each	TiAIN Coated		Price Each
Mill Dia	LOC	Shank	OAL	60° Part Number	90° Part Number		60° Part Number	90° Part Number	
1/8	1/2	1/8	1-1/2	MO-DM621250-60	MO-DM000125-90	\$11.15	MO-DM621253-60	MO-DM010125-90	\$13.51
3/16	5/8	3/16	2	MO-DM621870-60	MO-DM000187-90	\$14.63	MO-DM621873-60	MO-DM010187-90	\$16.99
1/4	3/4	1/4	2-1/2	MO-DM622500-60	MO-DM000250-90	\$19.76	MO-DM622503-60	MO-DM010250-90	\$23.33
5/16	13/16	5/16	2-1/2	MO-DM623120-60	MO-DM000312-90	\$26.14	MO-DM623123-60	MO-DM010312-90	\$32.73
3/8	1	3/8	2-1/2	MO-DM623750-60	MO-DM000375-90	\$31.26	MO-DM623753-60	MO-DM010375-90	\$37.85
7/16	1	7/16	2-3/4	MO-DM624370-60	MO-DM000437-90	\$43.76	MO-DM624373-60	MO-DM010437-90	\$52.01
1/2	1	1/2	3	MO-DM625000-60	MO-DM000500-90	\$56.17	MO-DM625003-60	MO-DM010500-90	\$64.42
5/8	1-1/4	5/8	3-1/2	MO-DM626250-60	MO-DM000625-90	\$88.99	MO-DM626253-60	MO-DM010625-90	\$102.29
3/4	1-1/2	3/4	4	MO-DM627500-60	MO-DM000750-90	\$138.09	MO-DM627503-60	MO-DM010750-90	\$153.93

4 FLUTE				Uncoated		Price Each	TiAIN Coated		Price Each
Mill Dia	LOC	Shank	OAL	60° Part Number	90° Part Number		60° Part Number	90° Part Number	
1/8	1/2	1/8	1-1/2	MO-DM641250-60	MO-DM400125-90	\$11.15	MO-DM641253-60	MO-DM420125-90	\$13.51
3/16	5/8	3/16	2	MO-DM641870-60	MO-DM400187-90	\$14.63	MO-DM641873-60	MO-DM420187-90	\$16.99
1/4	3/4	1/4	2-1/2	MO-DM642500-60	MO-DM400250-90	\$19.76	MO-DM642503-60	MO-DM420250-90	\$23.33
5/16	13/16	5/16	2-1/2	MO-DM643120-60	MO-DM400312-90	\$26.14	MO-DM643123-60	MO-DM420312-90	\$32.73
3/8	1	3/8	2-1/2	MO-DM643750-60	MO-DM400375-90	\$31.26	MO-DM643753-60	MO-DM420375-90	\$37.85
7/16	1	7/16	2-3/4	MO-DM644370-60	MO-DM400437-90	\$43.76	MO-DM644373-60	MO-DM420437-90	\$52.01
1/2	1	1/2	3	MO-DM645000-60	MO-DM400500-90	\$56.17	MO-DM645003-60	MO-DM420500-90	\$64.42
5/8	1-1/4	5/8	3-1/2	MO-DM646250-60	MO-DM400625-90	\$88.99	MO-DM646253-60	MO-DM420625-90	\$102.29
3/4	1-1/2	3/4	4	MO-DM647500-60	MO-DM400750-90	\$138.09	MO-DM647503-60	MO-DM420750-90	\$153.93

DRILL POINT ENDMILLS & DRILL MILLS

Center Cutting, Single End Cobalt -Uncoated
60°, 82°, 90°, 100° & 120°

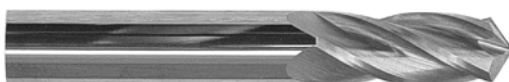


Mill Dia	LOC	Shank	OAL	Drill Point	Part Number	Price Each
1/8"	3/8	3/8	2-5/16	60°	ME-A1204DP60	\$15.28
	3/8	3/8	2-5/16	82°	ME-A1204DP82	\$15.28
	3/8	3/8	2-5/16	90°	ME-A1204DP	\$15.28
3/16"	7/16	3/8	2-5/16	60°	ME-A1206DP60	\$15.28
	7/16	3/8	2-5/16	82°	ME-A1206DP82	\$15.28
	7/16	3/8	2-5/16	90°	ME-A1206DP	\$15.28
1/4"	5/8	3/8	2-7/16	60°	ME-A1208DP60	\$16.68
	5/8	3/8	2-7/16	82°	ME-A1208DP82	\$13.09
	5/8	3/8	2-7/16	90°	ME-A1208DP	\$13.09
5/16"	23/32	3/8	2-15/32	60°	ME-A1210DP60	\$16.68
	23/32	3/8	2-15/32	82°	ME-A1210DP82	\$16.68
	23/32	3/8	2-15/32	90°	ME-A1210DP	\$16.68
3/8"	3/4	3/8	2-1/2	60°	ME-A1212DP60	\$16.68
	3/4	3/8	2-1/2	82°	ME-A1212DP82	\$13.09
	3/4	3/8	2-1/2	90°	ME-A1212DP	\$13.09
7/16"	1-1/32	3/8	2-23/32	82°	ME-A1214DP82	\$20.03
	1-1/32	3/8	2-23/32	90°	ME-A1214DP	\$20.03

Mill Dia	LOC	Shank	OAL	Drill Point	Part Number	Price Each
1/2"	1-1/4	1/2	3-1/4	60°	ME-A1616DP60	\$24.00
	1-1/4	1/2	3-1/4	82°	ME-A1616DP82	\$19.18
	1-1/4	1/2	3-1/4	90°	ME-A1616DP	\$18.97
9/16"	1-13/32	1/2	3-13/32	82°	ME-A1618DP82	\$25.27
	1-13/32	1/2	3-13/32	90°	ME-A1618DP	\$25.27
	1-5/8	5/8	3-3/4	60°	ME-A2020DP60	\$35.35
5/8"	1-5/8	5/8	3-3/4	82°	ME-A2020DP82	\$28.14
	1-5/8	5/8	3-3/4	90°	ME-A2020DP	\$28.14
	1-11/16	3/4	3-15/16	60°	ME-A2424DP60	\$42.75
3/4"	1-11/16	3/4	3-15/16	90°	ME-A2424DP	\$32.34
	1-11/16	3/4	3-15/16	120°	ME-A2424DP120	\$35.97
	1-15/16	3/4	4-3/16	60°	ME-A2428DP60	\$54.29
7/8"	1-15/16	3/4	4-3/16	90°	ME-A2428DP	\$42.58
	2	3/4	4-1/4	60°	ME-A2432DP60	\$63.66
	2	3/4	4-1/4	90°	ME-A2432DP	\$49.94
1"	2	3/4	4-1/4	120°	ME-A2432DP120	\$57.43

CARBIDE DRILL-MILLS

INTERNAL TOOL



- Solid carbide
- Center cutting
- 30° right hand helix
- 120° included angle
- Economical- drill and mill with one tool!

Drill & Mill With One Tool!

Size	Length of Cut	OAL	Shank Dia	Part Number	Price Each
1/8	5/8	2"	1/8	IT-49-1000	\$12.56
3/16	3/4	2-1/2	3/16	IT-49-1050	\$12.82
7/32	3/4	2-1/2	1/4	IT-49-1100	\$16.09
1/4	1"	2-1/2	1/4	IT-49-1150	\$16.09
9/32	1"	2-1/2	5/16	IT-49-1200	\$19.63
5/16	1"	3"	5/16	IT-49-1250	\$19.63
11/32	1"	3"	3/8	IT-49-1300	\$24.42
3/8	1"	3"	3/8	IT-49-1350	\$24.42
13/32	1"	3"	7/16	IT-49-1400	\$33.10
7/16	1"	3"	7/16	IT-49-1450	\$33.10
15/32	1"	3"	1/2	IT-49-1500	\$41.17
1/2	1"	3"	1/2	IT-49-1550	\$41.17

Call Us Today For All Of Your Machine Tool Needs!

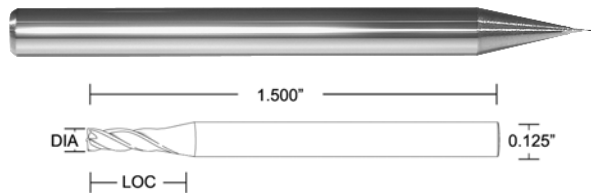
MINIATURE ENDMILLS-SOLID CARBIDE

C

SQUARE END-2 & 4 FLUTE

Center Cutting • 30° Helix

1/8" Shank • 1-1/2" Oal



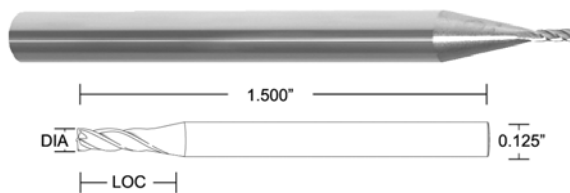
- Manufactured from the highest quality carbide material with 10% cobalt
- Sinter Hipped- C2 grade, micrograin carbide
- Miniature and subminiature

		2 Flute	4 Flute			2 Flute	4 Flute			2 Flute	4 Flute			
Cutting Dia	LOC	Part Number	Part Number	Price Each	Cutting Dia	LOC	Part Number	Part Number	Price Each	Cutting Dia	LOC	Part Number	Part Number	Price Each
.005	0.0150	MO-100010	MO-100410	\$21.54	.030	0.0900	MO-100110	MO-100510	\$13.44	.055	0.1650	MO-100210	MO-100610	\$11.29
.006	0.0180	MO-200110	MO-205110	\$21.54	.031	0.0930	MO-200360	MO-205360	\$13.44	.056	0.1680	MO-200610	MO-205610	\$11.29
.007	0.0210	MO-200120	MO-205120	\$20.83	.032	0.0960	MO-200370	MO-205370	\$13.44	.057	0.1710	MO-200620	MO-205620	\$11.29
.008	0.0240	MO-200130	MO-205130	\$20.83	.033	0.0990	MO-200380	MO-205380	\$13.44	.058	0.1740	MO-200630	MO-205630	\$11.29
.009	0.0270	MO-200140	MO-205140	\$20.83	.034	0.1020	MO-200390	MO-205390	\$13.44	.059	0.1770	MO-200640	MO-205640	\$11.29
.010	0.0300	MO-100030	MO-100430	\$17.30	.035	0.1050	MO-100130	MO-100530	\$11.29	.060	0.1800	MO-100230	MO-100630	\$10.00
.011	0.0330	MO-200160	MO-205160	\$17.30	.036	0.1080	MO-200410	MO-205410	\$11.29	.061	0.1830	MO-200660	MO-205660	\$10.00
.012	0.0360	MO-200170	MO-205170	\$17.30	.037	0.1110	MO-200420	MO-205420	\$11.29	.062	0.1860	MO-200670	MO-205670	\$10.00
.013	0.0390	MO-200180	MO-205180	\$17.30	.038	0.1140	MO-200430	MO-205430	\$11.29	.063	0.1890	MO-200680	MO-205680	\$10.00
.014	0.0420	MO-200190	MO-205190	\$17.30	.039	0.1170	MO-200440	MO-205440	\$11.29	.064	0.1920	MO-200690	MO-205690	\$10.00
.015	0.0450	MO-100050	MO-100450	\$15.31	.040	0.1200	MO-100150	MO-100550	\$11.29	.065	0.1950	MO-100250	MO-100650	\$10.00
.016	0.0480	MO-200210	MO-205210	\$15.31	.041	0.1230	MO-200460	MO-205460	\$11.29	.070	0.2100	MO-100270	MO-100670	\$10.00
.017	0.0510	MO-200220	MO-205220	\$15.31	.042	0.1260	MO-200470	MO-205470	\$11.29	.075	0.2250	MO-100290	MO-100690	\$10.00
.018	0.0540	MO-200230	MO-205230	\$15.31	.043	0.1290	MO-200480	MO-205480	\$11.29	.080	0.2400	MO-100310	MO-100710	\$10.00
.019	0.0570	MO-200240	MO-205240	\$15.31	.044	0.1320	MO-200490	MO-205490	\$11.29	.085	0.2550	MO-100330	MO-100730	\$10.00
.020	0.0600	MO-100070	MO-100470	\$14.61	.045	0.1350	MO-100170	MO-100570	\$11.29	.090	0.2700	MO-100350	MO-100750	\$10.00
.021	0.0630	MO-200260	MO-205260	\$14.61	.046	0.1380	MO-200510	MO-205510	\$11.29	.095	0.2850	MO-100370	MO-100770	\$10.00
.022	0.0660	MO-200270	MO-205270	\$14.61	.047	0.1410	MO-200520	MO-205520	\$11.29	.100	0.3000	MO-100390	MO-100790	\$10.00
.023	0.0690	MO-200280	MO-205280	\$14.61	.048	0.1440	MO-200530	MO-205530	\$11.29	.105	0.3150	MO-100401	MO-100801	\$10.00
.024	0.0720	MO-200290	MO-205290	\$14.61	.049	0.1470	MO-200540	MO-205540	\$11.29	.110	0.3300	MO-100403	MO-100803	\$10.00
.025	0.0750	MO-100090	MO-100490	\$13.44	.050	0.1500	MO-100190	MO-100590	\$11.29	.115	0.3450	MO-100406	MO-100805	\$10.00
.026	0.0780	MO-200310	MO-205310	\$13.44	.051	0.1530	MO-200560	MO-205560	\$11.29	.120	0.3600	MO-100408	MO-100807	\$10.00
.027	0.0810	MO-200320	MO-205320	\$13.44	.052	0.1560	MO-200570	MO-205570	\$11.29					
.028	0.0840	MO-200330	MO-205330	\$13.44	.053	0.1590	MO-200580	MO-205580	\$11.29					
.029	0.0870	MO-200340	MO-205340	\$13.44	.054	0.1620	MO-200590	MO-205590	\$11.29					

BALL END-2 & 4 FLUTE

Center Cutting • 30° Helix

1/8" Shank • 1-1/2" Oal



- Manufactured from the highest quality carbide material with 10% cobalt
- Sinter Hipped- C2 grade, micrograin carbide
- Miniature and subminiature

		2 Flute	4 Flute			2 Flute	4 Flute			2 Flute	4 Flute			
Cutting Dia	LOC	Part Number	Part Number	Price Each	Cutting Dia	LOC	Part Number	Part Number	Price Each	Cutting Dia	LOC	Part Number	Part Number	Price Each
.010	0.0300	MO-320010	MO-340010	\$26.22	.035	0.1050	MO-320035	MO-340035	\$15.44	.060	0.1800	MO-320060	MO-340060	\$15.06
.011	0.0330	MO-320011	MO-340011	\$26.22	.036	0.1080	MO-320036	MO-340036	\$15.44	.061	0.1830	MO-320061	MO-340061	\$15.06
.012	0.0360	MO-320012	MO-340012	\$26.22	.037	0.1110	MO-320037	MO-340037	\$15.44	.062	0.1860	MO-320062	MO-340062	\$15.06
.013	0.0390	MO-320013	MO-340013	\$26.22	.038	0.1140	MO-320038	MO-340038	\$15.44	.063	0.1890	MO-320063	MO-340063	\$15.06
.014	0.0420	MO-320014	MO-340014	\$26.22	.039	0.1170	MO-320039	MO-340039	\$15.44	.064	0.1920	MO-320064	MO-340064	\$15.06
.015	0.0450	MO-320015	MO-340015	\$20.91	.040	0.1200	MO-320040	MO-340040	\$15.44	.065	0.1950	MO-320065	MO-340065	\$15.06
.016	0.0480	MO-320016	MO-340016	\$20.91	.041	0.1230	MO-320041	MO-340041	\$15.44	.070	0.2100	MO-320070	MO-340070	\$15.06
.017	0.0510	MO-320017	MO-340017	\$20.91	.042	0.1260	MO-320042	MO-340042	\$15.44	.075	0.2250	MO-320075	MO-340075	\$15.06
.018	0.0540	MO-320018	MO-340018	\$20.91	.043	0.1290	MO-320043	MO-340043	\$15.44	.080	0.2400	MO-320080	MO-340080	\$15.06
.019	0.0570	MO-320019	MO-340019	\$20.91	.044	0.1320	MO-320044	MO-340044	\$15.44	.085	0.2550	MO-320085	MO-340085	\$15.06
.020	0.0600	MO-320020	MO-340020	\$20.13	.045	0.1350	MO-320045	MO-340045	\$15.44	.090	0.2700	MO-320090	MO-340090	\$15.06
.021	0.0630	MO-320021	MO-340021	\$20.13	.046	0.1380	MO-320046	MO-340046	\$15.44	.095	0.2850	MO-320100	MO-340095	\$15.06
.022	0.0660	MO-320022	MO-340022	\$20.13	.047	0.1410	MO-320047	MO-340047	\$15.44	.100	0.3000	MO-320110	MO-340100	\$15.06
.023	0.0690	MO-320023	MO-340023	\$20.13	.048	0.1440	MO-320048	MO-340048	\$15.44	.105	0.3150	MO-320105	MO-340105	\$15.06
.024	0.0720	MO-320024	MO-340024	\$20.13	.049	0.1470	MO-320049	MO-340049	\$15.44	.110	0.3300	MO-320110	MO-340110	\$15.06
.025	0.0750	MO-320025	MO-340025	\$18.22	.050	0.1500	MO-320050	MO-340050	\$15.44	.115	0.3450	MO-320115	MO-340115	\$15.06
.026	0.0780	MO-320026	MO-340026	\$18.22	.051	0.1530	MO-320051	MO-340051	\$15.44	.120	0.3600	MO-320120	MO-340120	\$15.06
.027	0.0810	MO-320027	MO-340027	\$18.22	.052	0.1560	MO-320052	MO-340052	\$15.44					
.028	0.0840	MO-320028	MO-340028	\$18.22	.053	0.1590	MO-320053	MO-340053	\$15.44					
.029	0.0870	MO-320029	MO-340029	\$18.22	.054	0.1620	MO-320054	MO-340054	\$15.44					
.030	0.0900	MO-320030	MO-340030	\$16.43	.055	0.1650	MO-320055	MO-340055	\$15.44					
.031	0.0930	MO-320031	MO-340031	\$16.43	.056	0.1680	MO-320056	MO-340056	\$15.44					
.032	0.0960	MO-320032	MO-340032	\$16.43	.057	0.1710	MO-320057	MO-340057	\$15.44					
.033	0.0990	MO-320033	MO-340033	\$16.43	.058	0.1740	MO-320058	MO-340058	\$15.44					
.034	0.1020	MO-320034	MO-340034	\$16.43	.059	0.1770	MO-320059	MO-340059	\$15.44					

Full Line Available!
Please call for more information.

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

351

LATHE CHUCKS
LIVE CENTERS
VISE ACCESSORIES
VISE JAWS
STRAIGHT SHANK COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

MINIATURE ENDMILLS-SOLID CARBIDE

MINIATURE BALL END MILLS

2 Flute - Center Cutting - 30° Helix



Cutter Dia	Shank	OAL	LOC	Part Number	Price Each
0.010	1/8	1-1/2	0.030	MI-BMR0102	\$40.15
0.011			0.033	MI-BMR0112	\$36.45
0.012			0.036	MI-BMR0122	\$36.45
0.013			0.039	MI-BMR0132	\$31.00
0.014			0.042	MI-BMR0142	\$31.00
0.015	1/8	1-1/2	0.045	MI-BMR0152	\$24.50
0.016			0.048	MI-BMR0162	\$24.50
0.017			0.051	MI-BMR0172	\$24.50
0.018			0.054	MI-BMR0182	\$24.50
0.019			0.057	MI-BMR0192	\$24.50
0.020	1/8	1-1/2	0.060	MI-BMR0202	\$22.75
0.021			0.063	MI-BMR0212	\$22.75
0.022			0.066	MI-BMR0222	\$22.75
0.023			0.069	MI-BMR0232	\$22.75
0.024			0.072	MI-BMR0242	\$22.75
0.025	1/8	1-1/2	0.075	MI-BMR0252	\$22.75
0.026			0.078	MI-BMR0262	\$20.70
0.027			0.081	MI-BMR0272	\$20.70
0.028			0.084	MI-BMR0282	\$20.70
0.029			0.087	MI-BMR0292	\$20.70
0.030	0.090	MI-BMR0302	\$20.70		

MINIATURE END MILLS

2 Flute - Center Cutting - 30° Helix



Cutter Dia	Shank	OAL	LOC	Part Number	Price Each
0.010	1/8	1-1/2	0.03	MI-RME0102	\$34.95
0.011			0.033	MI-RME0112	\$31.65
0.012			0.036	MI-RME0122	\$31.65
0.013			0.039	MI-RME0132	\$26.90
0.014			0.042	MI-RME0142	\$26.90
0.015	1/8	1-1/2	0.045	MI-RME0152	\$21.35
0.016			0.048	MI-RME0162	\$21.35
0.017			0.051	MI-RME0172	\$21.35
0.018			0.054	MI-RME0182	\$21.35
0.019			0.057	MI-RME0192	\$21.35
0.020	1/8	1-1/2	0.060	MI-RME0202	\$19.70
0.021			0.063	MI-RME0212	\$19.70
0.022			0.066	MI-RME0222	\$19.70
0.023			0.069	MI-RME0232	\$19.70
0.024			0.072	MI-RME0242	\$19.70
0.025	1/8	1-1/2	0.075	MI-RME0252	\$19.70
0.026			0.078	MI-RME0262	\$16.65
0.027			0.081	MI-RME0272	\$16.65
0.028			0.084	MI-RME0282	\$16.65
0.029			0.087	MI-RME0292	\$16.65
0.030	0.090	MI-RME0302	\$16.65		

MINIATURE STUB BALL END MILLS

2 Flute - Center Cutting - 30° Helix



Cutter Dia	Shank	OAL	LOC	Part Number	Price Each
0.010	1/8	1-1/2	0.015	MI-BMS0102	\$38.45
0.011			0.016	MI-BMS0112	\$34.75
0.012			0.018	MI-BMS0122	\$34.75
0.013			0.019	MI-BMS0132	\$29.55
0.014			0.021	MI-BMS0142	\$29.55
0.015	1/8	1-1/2	0.022	MI-BMS0152	\$23.60
0.016			0.024	MI-BMS0162	\$23.60
0.017			0.025	MI-BMS0172	\$23.60
0.018			0.027	MI-BMS0182	\$23.60
0.019			0.028	MI-BMS0192	\$23.60
0.020	1/8	1-1/2	0.030	MI-BMS0202	\$21.70
0.021			0.031	MI-BMS0212	\$21.70
0.022			0.033	MI-BMS0222	\$21.70
0.023			0.034	MI-BMS0232	\$21.70
0.024			0.036	MI-BMS0242	\$21.70
0.025	1/8	1-1/2	0.037	MI-BMS0252	\$21.70
0.026			0.039	MI-BMS0262	\$19.75
0.027			0.040	MI-BMS0272	\$19.75
0.028			0.042	MI-BMS0282	\$19.75
0.029			0.043	MI-BMS0292	\$19.75
0.030	0.045	MI-BMS0302	\$19.75		

MINIATURE STUB END MILLS

2 Flute Center Cutting - 30° Helix



Cutter Dia	Shank	OAL	LOC	Part Number	Price Each
0.005	1/8	1-1/2	0.007	MI-SME0052	\$43.40
0.006			0.009	MI-SME0062	\$43.40
0.007			0.010	MI-SME0072	\$36.80
0.008			0.012	MI-SME0082	\$36.80
0.009			0.013	MI-SME0092	\$33.45
0.010	1/8	1-1/2	0.015	MI-SME0102	\$33.45
0.011			0.016	MI-SME0112	\$30.25
0.012			0.018	MI-SME0122	\$30.25
0.013			0.019	MI-SME0132	\$25.70
0.014			0.021	MI-SME0142	\$25.70
0.015	1/8	1-1/2	0.022	MI-SME0152	\$20.45
0.016			0.024	MI-SME0162	\$20.45
0.017			0.025	MI-SME0172	\$20.45
0.018			0.027	MI-SME0182	\$20.45
0.019			0.028	MI-SME0192	\$20.45
0.020	1/8	1-1/2	0.030	MI-SME0202	\$18.85
0.021			0.031	MI-SME0212	\$18.85
0.022			0.033	MI-SME0222	\$18.85
0.023			0.034	MI-SME0232	\$18.85
0.024			0.036	MI-SME0242	\$18.85
0.025	1/8	1-1/2	0.037	MI-SME0252	\$18.85
0.026			0.039	MI-SME0262	\$16.55
0.027			0.040	MI-SME0272	\$16.55
0.028			0.042	MI-SME0282	\$16.55
0.029			0.043	MI-SME0292	\$16.55
0.030	0.045	MI-SME0302	\$16.55		

Call Us Today For All Of Your Machine Tool Needs!

HELICAL BACK RAKE BORING TOOLS

Neck is centered to shank for use in jig boring machines. The helical grind provides an ideal top rake for better chip control. Left-hand boring tools also available.



N/C GENERATION

Shank Diameter -.0001 to -.0003"
 Minimum Bore Dia. +.001 -.000"
 Maximum Bore Depth +.030 -.000"
 Overall Length ±1/64

Shank Dia. D2	OAL L1	Bore Dia. D1	Bore Depth L2	Neck Dia. N	Part Number	Price Each	
1/8	1-1/2	0.020	1/16	0.015	MI-HBB020062	\$31.90	
		0.025	1/8	0.020	MI-HBB025125		
		0.030	3/16	0.025	MI-HBB030187		
		0.035	1/8	0.030	MI-HBB035125		
		0.040	3/16	0.035	MI-HBB040187		
		0.040	1/4	0.035	MI-HBB040250		
	1/8	1-1/2	0.050	5/16	0.040	MI-HBB050312	\$24.60
			0.060	3/8	0.050	MI-HBB060375	
			0.070	7/16	0.060	MI-HBB070437	
			0.080	1/2	0.070	MI-HBB080500	
			0.090	1/2	0.080	MI-HBB090500	
			0.100	9/16	0.090	MI-HBB100562	
3/16	2	0.135	3/4	0.110	MI-HBB135750	\$26.35	
		0.150	1	0.130	MI-HBB1501000		
		0.150	1-1/4	0.130	MI-HBB1501250		
		0.180	1	0.160	MI-HBB1801000		
		0.180	1-1/4	0.160	MI-HBB1801250		
		0.180	1-1/2	0.160	MI-HBB1801500		
1/4	2-1/2	0.210	1	0.185	MI-HBB2101000	\$28.55	
		0.210	1-1/4	0.185	MI-HBB2101250		
		0.210	1-1/2	0.185	MI-HBB2101500		
		0.240	1	0.215	MI-HBB2401000		
0.240	1-1/2	0.215	MI-HBB2401500				

Shank Dia. D2	OAL L1	Bore Dia. D1	Bore Depth L2	Neck Dia. N	Part Number	Price Each
3/16	2	0.135	3/4	0.110	MI-HBB135750	\$26.35
		0.150	1	0.130	MI-HBB1501000	
		0.150	1-1/4	0.130	MI-HBB1501250	
		0.180	1-1/4	0.160	MI-HBB1801000	
1/4	2-1/2	0.210	1	0.185	MI-HBB2101000	\$28.55
		0.210	1-1/4	0.185	MI-HBB2101250	
		0.210	1-1/2	0.185	MI-HBB2101500	
		0.240	1-1/2	0.215	MI-HBB2401500	
5/16	2-1/2	0.300	1	0.250	MI-HBB3001000	\$39.05
		0.300	1-1/2	0.250	MI-HBB3001500	
		0.300	1-3/4	0.250	MI-HBB3001750	
		0.360	1	0.320	MI-HBB3601000	
3/8	2-1/2	0.360	1-1/2	0.320	MI-HBB3601500	\$54.20
		0.360	1-3/4	0.320	MI-HBB3601750	
		0.360	2	0.320	MI-HBB3602000	
		0.360	2-1/4	0.320	MI-HBB3602250	
1/2	3	0.480	1-1/2	0.440	MI-HBB4801500	\$76.25
		0.480	2	0.440	MI-HBB4802000	
		0.480	2-1/2	0.440	MI-HBB4802500	
		0.480	3	0.440	MI-HBB4803000	
1/2	6	0.480	3-1/2	0.440	MI-HBB4803500	\$83.70
		0.480	4	0.440	MI-HBB4804000	
		0.480	4-1/2	0.440	MI-HBB4804500	
		0.480	4	0.440	MI-HBB4804500	

BORING TOOLS

TiAIN Coated
 Ground w/ Helical Rake



- Max-Bore has a special helical flute for maximum shearing action with a better finish
- Elliptical neck for greater strength
- 0.007" radius
- Tools up to .490 minimum bore also available

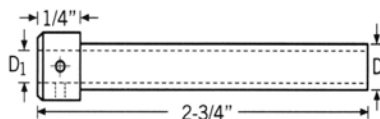
Min Bore	Shank	OAL	Max Depth	Part Number	Price Each
.120	1/8	2	0.375	IT-11-1300	\$25.52
			0.500	IT-11-1305	
			0.750	IT-11-1310	
.140	3/16	2-1/2	0.500	IT-11-1311	\$27.30
			0.750	IT-11-1312	
.160	3/16	2-1/2	0.500	IT-11-1313	\$27.30
			0.750	IT-11-1314	
			1.000	IT-11-1316	

Min Bore	Shank	OAL	Max Depth	Part Number	Price Each
.180	3/16	2-1/2	0.375	IT-11-1315	\$27.30
			0.500	IT-11-1320	
			0.750	IT-11-1325	
.200	1/4	2-1/2	1.000	IT-11-1330	\$29.57
			0.375	IT-11-1331	
			0.500	IT-11-1332	
			0.750	IT-11-1333	
			1.000	IT-11-1334	

STEEL SHANK TOOLHOLDERS



- Precision ground heat treated steel shanks
- Ideal for solid carbide boring, grooving and threading tools
- Two lockdown screws at 90° for secure fastening, except TH-84, TH-104 and TH-204, which have one lockdown screw
- Lockdown screws are 8-32 x 1/4
- Tolerance: .002" maximum TIR



Shank D2	OAL	Head Thick.	Head Dia.	ID D1	Part Number	Price Each
1/2"	2-3/4"	1/4"	5/8"	1/8	MI-TH84	\$31.00
				3/16	MI-TH85	
				1/4	MI-TH86	
				5/16	MI-TH87	
5/8"	2-3/4"	1/4"	3/4"	3/8	MI-TH88	\$31.00
				1/8	MI-TH104	
				3/16	MI-TH105	
				1/4	MI-TH106	
3/4"	2-3/4"	1/4"	7/8"	5/16	MI-TH107	\$36.00
				3/8	MI-TH108	
				1/8	MI-TH204	
				3/16	MI-TH205	
				1/4	MI-TH206	
				5/16	MI-TH207	
				3/8	MI-TH208	

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
 LIVE CENTERS
 VISE ACCESSORIES
 VISE JAWS
 STRAIGHT SHANK COLLET HOLDERS
 TAP HOLDERS
 DRILL CHUCKS
 CARBIDE INSERTS
 THREADING/GROOVING
 CUTTING TOOLS
 MACHINERY
 PRECISION TOOLS
 DEBURRING
 COOLANT/FLUIDS
 TOOL STORAGE

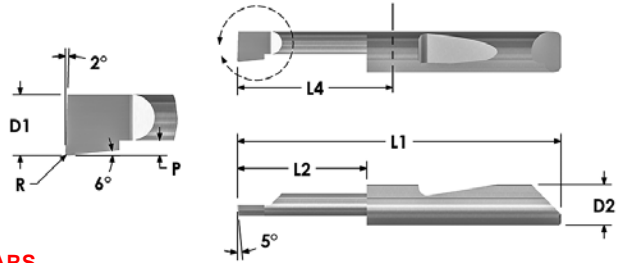
MICRO-QUIK™ QUICK CHANGE TOOLING



Full Line Available!
Please call for more information.



Boring Bar With Quick Change Toolholder



BORING BARS

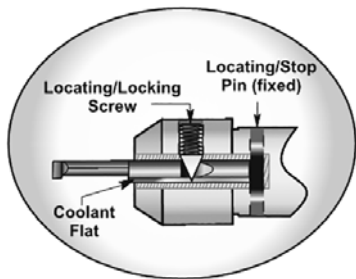
Min. Bore Dia D1	Shank Dia D2	OAL L1	Max. Bore Depth L2	Overhang L4	Part Number	Price
.050	3/16	1-1/2	.150	.590	MI-QBB050150	\$27.75
.050	3/16	1-1/2	.400	.590	MI-QBB050400	\$27.75
.060	3/16	1-1/2	.300	.590	MI-QBB060300	\$27.75
.080	3/16	1-1/2	.300	.590	MI-QBB080300	\$27.75
.100	3/16	1-1/2	.300	.590	MI-QBB100300	\$29.35
.110	3/16	1-1/2	.500	.590	MI-QBB110500	\$29.35
.120	3/16	1-1/2	.250	.590	MI-QBB120250	\$29.35
.120	3/16	1-1/2	.350	.590	MI-QBB120350	\$29.35
.120	3/16	1-1/2	.500	.590	MI-QBB120500	\$29.35
.120	3/16	2	.800	1.090	MI-QBB120800	\$29.35
.140	3/16	1-1/2	.400	.590	MI-QBB140400	\$29.35
.160	3/16	1-1/2	.400	.590	MI-QBB160400	\$29.35
.160	3/16	2	.750	1.090	MI-QBB160750	\$29.35
.160	3/16	2	1.000	1.090	MI-QBB1601000	\$29.35
.180	1/4	2	.500	.853	MI-QBB180500	\$31.70
.180	1/4	2	.750	.853	MI-QBB180750	\$31.70
.180	1/4	2-1/2	1.000	1.353	MI-QBB1801000	\$31.70
.180	1/4	3	1.500	1.853	MI-QBB1801500	\$37.20
.200	1/4	2	.500	.853	MI-QBB200500	\$31.70
.200	1/4	2	.750	.853	MI-QBB200750	\$31.70
.200	1/4	2-1/2	1.2000	1.353	MI-QBB2001200	\$31.70
.230	5/16	2	.500	.853	MI-QBB230500	\$42.55
.230	5/16	2	.750	.853	MI-QBB230750	\$42.55
.230	5/16	2-1/2	1.000	1.353	MI-QBB2301000	\$42.55
.230	5/16	3	1.500	1.853	MI-QBB2301500	\$48.95
.320	3/8	2-1/2	1.000	1.353	MI-QBB3201000	\$58.08
.360	3/8	2-1/2	1.250	1.353	MI-QBB3601250	\$58.05

FEATURES & BENEFITS

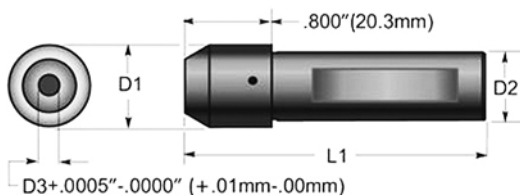
- Reduces machine setup, downtime and tooling costs
- Ensures high degree of tool length repeatability
- Toolholder features unique "3 point" locking/locating system ensures tool to tool change repeats +/-0.0005" from centerline
- Distance from tip of tool to this registration point is controlled to +/- .001"
- Ideal for cutting aluminum, brass, copper, stainless steels, high temperature alloys and composites

TOOL INFORMATION:

- Micro 100 Super Carbide Tools will not chip or break under normal machining conditions
- Shank dia tolerance: -.0001" to -.0003"
- Min. bore dia tolerance: +/- .0005"
- Minimum bore diameter range: 0.015" to 0.490"
- Maximum bore depth range: 0.050" to 1.750"
- Tool radius: .003"
- Shank sizes available: 3/16", 1/4", 5/16", 3/8" & 1/2"



Rotation of Locking Screw pushes tool downwards and back against the locating pin for rigidity and centerline repeatability



QUICK CHANGE TOOLHOLDERS

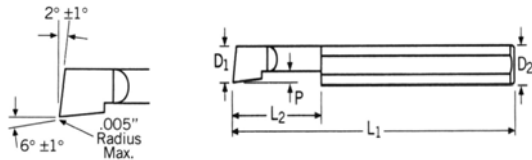
OD D2	ID D3	Head Dia D1	OAL L1	Part Number	Price Each
1/2	3/16	1/2	2-3/4	MI-QTH85	\$95.00
1/2	1/4	1/2	2-3/4	MI-QTH86	\$95.00
5/8	3/16	5/8	2-3/4	MI-QTH105	\$95.00
5/8	1/4	5/8	2-3/4	MI-QTH106	\$95.00
5/8	5/16	5/8	2-3/4	MI-QTH107	\$95.00
5/8	3/8	5/8	2-3/4	MI-QTH108	\$95.00
3/4	3/16	3/4	2-3/4	MI-QTH205	\$95.00
3/4	1/4	3/4	3/4	MI-QTH206	\$95.00
3/4	5/16	3/4	3/4	MI-QTH207	\$95.00
3/4	3/8	3/4	3/4	MI-QTH208	\$95.00
3/4	1/2	3/4	3/4	MI-QTH210	\$95.00
1	3/16	1	1	MI-QTH405	\$95.00
1	1/4	1	1	MI-QTH406	\$95.00
1	5/16	1	1	MI-QTH407	\$95.00
1	3/8	1	1	MI-QTH408	\$95.00
1	1/2	1	1	MI-QTH410	\$95.00

Call Us Or Visit Our Website For Our Complete Selection!

SOLID CARBIDE BORING BARS

SOLID CARBIDE BORING TOOLS

Lockdown flat automatically locates tool on center.



Full Line Available!
Please call for more information.

Min. Bore D1	Shank Dia. D2	OAL L1	Proj. P	MAX. Bore L2	Right Hand Part Number	Left Hand Part Number	Price Each	
.050	1/8	1-1/2	.013	.150	MI-BB050150	MI-BBL050150	\$25.10	
				.200	MI-BB050200	MI-BBL050200		
				.300	MI-BB050300	MI-BBL050300		
				.400	MI-BB050400	MI-BBL050400		
.060	1/8	1-1/2	.015	.150	MI-BB060150	MI-BBL060150	\$25.10	
				.200	MI-BB060200	MI-BBL060200		
				.300	MI-BB060300	MI-BBL060300		
				.400	MI-BB060400	MI-BBL060400		
				.500	MI-BB060500	MI-BBL060500		
.080	1/8	1-1/2	.020	.150	MI-BB080150	MI-BBL080150	\$25.10	
				.200	MI-BB080200	MI-BBL080200		
				.300	MI-BB080300	MI-BBL080300		
				.400	MI-BB080400	MI-BBL080400		
				.500	MI-BB080500	MI-BBL080500		
				.600	MI-BB080600	MI-BBL080600		
.100	1/8	1-1/2	.025	.150	MI-BB100150	MI-BBL100150	\$25.10	
				.200	MI-BB100200	MI-BBL100200		
				.300	MI-BB100300	MI-BBL100300		
				.400	MI-BB100400	MI-BBL100400		
				.500	MI-BB100500	MI-BBL100500		
				.600	MI-BB100600	MI-BBL100600		
				.700	MI-BB100700	MI-BBL100700		
.110	1/8	1-1/2	.028	.150	MI-BB110150	MI-BBL110150	\$25.10	
				.200	MI-BB110200	MI-BBL110200		
				.300	MI-BB110300	MI-BBL110300		
				.400	MI-BB110400	MI-BBL110400		
				.500	MI-BB110500	MI-BBL110500		
				.600	MI-BB110600	MI-BBL110600		
				.700	MI-BB110700	MI-BBL110700		
.120	3/16	2	.030	.250	MI-BB120250	MI-BBL120250	\$26.65	
				.350	MI-BB120350	MI-BBL120350		
				.500	MI-BB120500	MI-BBL120500		
				.600	MI-BB120600	MI-BBL120600		
				.700	MI-BB120700	MI-BBL120700		
				.800	MI-BB120800	MI-BBL120800		
				.250	MI-BB140250	MI-BBL140250		\$26.65
.400	MI-BB140400	MI-BBL140400						
.500	MI-BB140500	MI-BBL140500						
.600	MI-BB140600	MI-BBL140600						
.700	MI-BB140700	MI-BBL140700						
.750	MI-BB140750	MI-BBL140750						
.800	MI-BB140800	MI-BBL140800						
.160	3/16	2	.040	.250	MI-BB160250	MI-BBL160250	\$26.65	
				.400	MI-BB160400	MI-BBL160400		
				.500	MI-BB160500	MI-BBL160500		
				.600	MI-BB160600	MI-BBL160600		
				.750	MI-BB160750	MI-BBL160750		
				.900	MI-BB160900	MI-BBL160900		
				1.000	MI-BB1601000	MI-BBL1601000		
				.350	MI-BB180350	MI-BBL180350		\$28.80
				.500	MI-BB180500	MI-BBL180500		
				.600	MI-BB180600	MI-BBL180600		
.750	MI-BB180750	MI-BBL180750						
.900	MI-BB180900	MI-BBL180900						
.200	1/4	2-1/2	.050	1.000	MI-BB1801000	MI-BBL1801000	\$28.80	
				1.100	MI-BB1801100	MI-BBL1801100		
				.400	MI-BB200400	MI-BBL200400		
				.500	MI-BB200500	MI-BBL200500		
				.600	MI-BB200600	MI-BBL200600		
				.700	MI-BB200700	MI-BBL200700		
				.800	MI-BB200800	MI-BBL200800		
				.900	MI-BB200900	MI-BBL200900		
				1.000	MI-BB2001000	MI-BBL2001000		
				1.100	MI-BB2001100	MI-BBL2001100		
1.200	MI-BB2001200	MI-BBL2001200						
1.300	MI-BB2001300	MI-BBL2001300						

Min Bore D1	Shank Dia. D2	OAL L1	Proj. P	Max Bore L2	Right Hand Part Number	Left Hand Part Number	Price Each	
.230	5/16	2-1/2	.058	.400	MI-BB230400	MI-BBL230400	\$38.65	
				.500	MI-BB230500	MI-BBL230500		
				.600	MI-BB230600	MI-BBL230600		
				.700	MI-BB230700	MI-BBL230700		
				.800	MI-BB230800	MI-BBL230800		
				.900	MI-BB230900	MI-BBL230900		
				1.000	MI-BB2301000	MI-BBL2301000		
.230	5/16	2-1/2	.058	1.100	MI-BB2301100	MI-BBL2301100	\$38.65	
				1.150	MI-BB2301150	MI-BBL2301150		
				1.200	MI-BB2301200	MI-BBL2301200		
				1.250	MI-BB2301250	MI-BBL2301250		
				1.400	MI-BB2301400	MI-BBL2301400		
				1.500	MI-BB2301500	MI-BBL2301500		
				1.600	MI-BB2301600	MI-BBL2301600		
				.500	MI-BB290500	MI-BBL290500		\$38.65
				.600	MI-BB290600	MI-BBL290600		
				.750	MI-BB290750	MI-BBL290750		
.900	MI-BB290900	MI-BBL290900						
1.000	MI-BB2901000	MI-BBL2901000						
1.100	MI-BB2901100	MI-BBL2901100						
1.250	MI-BB2901250	MI-BBL2901250						
1.350	MI-BB2901350	MI-BBL2901350						
1.500	MI-BB2901500	MI-BBL2901500						
1.600	MI-BB2901600	MI-BBL2901600						
1.750	MI-BB2901750	MI-BBL2901750						
.320	3/8	2-1/2	.080	.500	MI-BB320500	MI-BBL320500	\$52.75	
				.600	MI-BB320600	MI-BBL320600		
				.750	MI-BB320750	MI-BBL320750		
				.900	MI-BB320900	MI-BBL320900		
				1.000	MI-BB3201000	MI-BBL3201000		
				1.100	MI-BB3201100	MI-BBL3201100		
				1.250	MI-BB3201250	MI-BBL3201250		
				1.500	MI-BB3201500	MI-BBL3201500		
				1.600	MI-BB3201600	MI-BBL3201600		
				1.800	MI-BB3201800	MI-BBL3201800		
.320	3/8	4	.080	2.000	MI-BB3202000	MI-BBL3202000	\$67.45	
				2.500	MI-BB3202500	MI-BBL3202500		
				3.000	MI-BB3203000	MI-BBL3203000		
				.500	MI-BB360500	MI-BBL360500		\$52.75
				.600	MI-BB360600	MI-BBL360600		
.750	MI-BB360750	MI-BBL360750						
.900	MI-BB360900	MI-BBL360900						
1.000	MI-BB3601000	MI-BBL3601000						
.360	3/8	2-1/2	.090	1.150	MI-BB3601150	MI-BBL3601150	\$52.75	
				1.250	MI-BB3601250	MI-BBL3601250		
				1.500	MI-BB3601500	MI-BBL3601500		
				1.600	MI-BB3601600	MI-BBL3601600		
				1.800	MI-BB3601800	MI-BBL3601800		
.360	3/8	4	.090	2.000	MI-BB3602000	MI-BBL3602000	\$67.45	
				2.500	MI-BB3602500	MI-BBL3602500		
				3.000	MI-BB3603000	MI-BBL3603000		
.490	1/2	3	.123	.750	MI-BB490750	MI-BBL490750	\$73.50	
				1.000	MI-BB4901000	MI-BBL4901000		
				1.250	MI-BB4901250	MI-BBL4901250		
				1.500	MI-BB4901500	MI-BBL4901500		
				2.000	MI-BB4902000	MI-BBL4902000		
.490	1/2	4	.123	2.500	MI-BB4902500	MI-BBL4902500	\$80.60	
				2.600	MI-BB4902600	MI-BBL4902600		
				2.750	MI-BB4902750	MI-BBL4902750		
				3.000	MI-BB4903000	MI-BBL4903000		
				3.500	MI-BB4903500	MI-BBL4903500		
.490	1/2	6	.123	4.000	MI-BB4904000	MI-BBL4904000	\$101.15	
				4.500	MI-BB4904500	MI-BBL4904500		

Additional sizes also available.

Call Us Today For All Of Your Machine Tool Needs!

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

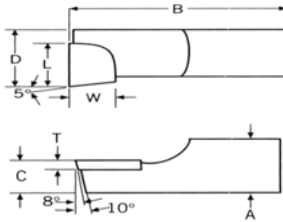
ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

BORING HEAD/BORING BARS

BRAZED BORING BARS



BORING BAR SETS

Five Boring Bars:
1/4", 3/8", 1/2",
5/8" and 3/4"
RH Part #- MI-TBB-5
LH Part #- MI-TBBL-5
Set Price: **\$130.70**

Shank				Tip			Right Hand	Left Hand	Price Each
A	B	C	D	T	W	L			
1/4	4	1/8	0.320	1/16	3/16	1/4	MI-TBB250	MI-TBBL250	\$23.45
5/16	5	5/32	0.413	1/16	1/4	5/16	MI-TBB312	MI-TBBL312	\$24.25
3/8	6	3/16	0.463	1/16	1/4	5/16	MI-TBB375	MI-TBBL375	\$25.85
1/2	7	1/4	0.625	1/8	1/4	1/2	MI-TBB500	MI-TBBL500	\$31.65
5/8	8	5/16	0.795	1/8	1/4	5/8	MI-TBB625	MI-TBBL625	\$33.20
3/4	9	3/8	0.935	1/8	1/4	5/8	MI-TBB750	MI-TBBL750	\$34.75
1	10	1/2	1.233	3/16	7/16	13/16	MI-TBB001	MI-TBBL001	\$36.55

3 PIECE BORING TOOL SET

Head Features:

- Bar holder moves freely and smoothly.
- Design assures superior rigidity for chatter-free boring and precise hole size accuracy
- Hardened and ground adjusting screw designed for long lasting and trouble free use.

Set includes:

- Boring head,
- R8 boring shank and
- C-6 carbide tipped boring

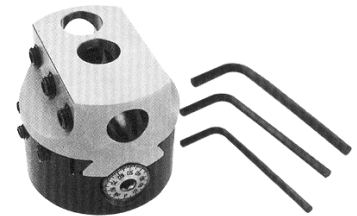


Head Size	Shank	Boring Bar	Boring Bar Qty	Tool Capacity	Part Number	Set Price
2"	7/8-20	1/2"	9 pcs	Up to 1/2"	A-1001-0106	\$73.00
3"	1 1/2-18	3/4"	12 pcs	Up to 3/4"	A-1001-0107	\$105.00

BORING HEADS

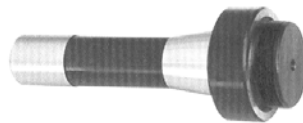


- Bar holder moves freely and smoothly
- Design assures superior rigidity for chatter-free boring and precise hole size accuracy
- Hardened and ground adjusting screw designed for long lasting and trouble free use



Head Size	Threads	Tool Cap	Part Number	Price Each
2"	1-1/2"-18	Up to 1/2"	A-1001-0101	\$65.00
2"	7/8"-20	Up to 1/2"	A-1001-0101-01	\$65.00
3"	1-1/2"-18	Up to 3/4"	A-1001-0102	\$89.00
4"	1-1/2"-18	Up to 1"	A-1001-0103	\$170.00

BORING HEAD SHANKS



- Made of high grade tool steel
- Hardened and ground
- R8, Morse Taper and Straight shanks

Taper Of Shank	End Type	7/8" -20 Thread		1-1/2" -18 Thread	
		Part Number	Price Each	Part Number	Price Each
R8	-	A-1001-0090	\$19.00	A-1001-0089	\$19.00
MT2	Draw Bar	A-1001-0080	\$19.00	A-1001-0081	\$20.00
MT2	Tang End	A-1001-0041	\$19.00	-	-
MT3	Tang End	A-1001-0043	\$20.00	A-1001-0086	\$20.00
MT3	Draw Bar	A-1001-0043-1	\$25.00	-	-
MT4	Tang End	A-1001-0045	\$25.00	A-1001-0066	\$25.00
# 30	Draw Bar	A-1001-0050	\$21.00	A-1001-0068	\$21.00
# 40	Draw Bar	A-1001-0052	\$27.00	A-1001-0069	\$27.00
1/2" SS	-	A-1001-0056	\$19.00	-	-
3/4" SS	-	A-1001-0058	\$19.00	A-1001-0074	\$19.00
1" SS	-	A-1001-0060	\$20.00	A-1001-0076	\$20.00
1-1/4" SS	-	A-1001-0062	\$21.00	A-1001-0077	\$21.00
1-1/2" SS	-	-	-	A-1001-0078	\$24.00

PRECISION BORING HEADS



FEATURES:

- Heavy duty construction offers smooth, chatter-free operation.
- Precision hardened steel with black oxide finish.
- .001" direct diameter reading micrometer dial.

Head Dia.	Shank	Part Number	Price
2"	Head Only	BHD-200	\$59.99
2-1/2"	R8	BHD-R8250	\$60.00
2-1/2"	3/4" SS	BHD-SS250	\$60.00
3"	R8	BHD-R8300	\$60.00

Call Us Today For All Of Your Machine Tool Needs!

CARBIDE TURNING TOOLS

A

TURNING, FORMING & CUT-OFF

- Right & Left Hand
- All tools are ground with the required clearance angles.
- Carbide profusion=3 times thickness specified
- Tolerance on thickness ±.000-.010"



Full Line Available!
Please call for more information.

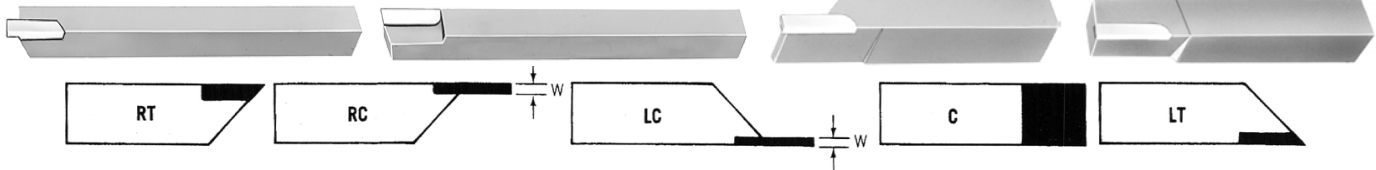


Style LC

Style LT

Style RC

Style RT



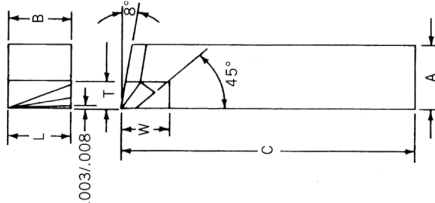
Type	Width	1/4" Square Shank 6" OAL \$13.70 Ea.		9/32" Square Shank 6" OAL \$14.30 Ea.		5/16" Square Shank 6" OAL \$14.30 Ea.		3/8" Square Shank 6" OAL \$14.50 Ea.	
		Right Hand Part Number	Left Hand Part Number	Right Hand Part Number	Left Hand Part Number	Right Hand Part Number	Left Hand Part Number	Right Hand Part Number	Left Hand Part Number
Turning	-	MI-RT250	MI-LT250	MI-RT281	MI-LT281	MI-RT312	MI-LT312	MI-RT375	MI-LT375
Forming	-	MI-C250	MI-C 250	MI-C 281	MI-C 281	MI-C312	MI-C312	MI-C375	MI-C375
Cut-off	.040"	MI-RC250040	MI-LC250040	MI-RC281040	MI-LC281040	MI-RC312040	MI-LC312040	MI-RC375040	MI-LC375040
Cut-off	.060"	MI-RC250060	MI-LC250060	MI-RC281060	MI-LC281060	MI-RC312060	MI-LC312060	MI-RC375060	MI-LC375060
Cut-off	.080"	-	-	MI-RC281080	MI-LC281080	MI-RC312080	MI-LC312080	MI-RC375080	MI-LC375080
Cut-off	.100"	-	-	MI-RC281100	MI-LC281100	MI-RC312100	MI-LC312100	MI-RC375100	MI-LC375100
Cut-off	.120"	-	-	-	-	-	-	MI-RC 375120	MI-LC375120

*Ground to 6mm square shank.

Type	Width	7/16" Square Shank 6" OAL \$18.05 Ea.		1/2" Square Shank 6" OAL \$18.55 Ea.		5/8" Square Shank 4" OAL \$24.20 Ea.		3/4" Square Shank 4" OAL \$28.20 Ea.	
		Right Hand Part Number	Left Hand Part Number	Right Hand Part Number	Left Hand Part Number	Right Hand Part Number	Left Hand Part Number	Right Hand Part Number	Left Hand Part Number
Turning	-	MI-RT437	MI-LT437	MI-RT500	MI-LT500	MI-RT 625	MI-LT 625	MI-RT750	MI-LT750
Forming	-	MI-C437	MI-C 437	MI-C500	MI-C500	MI-C625	MI-C625	MI-C750	MI-C750
Cut-off	.060"	MI-RC437060	MI-LC437060	MI-RC500060	MI-LC500060	MI-RC625060	MI-LC625060	MI-RC750060	MI-LC750060
Cut-off	.080"	MI-RC437080	MI-LC437080	MI-RC500080	MI-LC500080	MI-RC625080	MI-LC625080	MI-RC750080	MI-LC750080
Cut-off	.100"	MI-RC437100	MI-LC437100	MI-RC500100	MI-LC500100	MI-RC625100	MI-LC625100	MI-RC750100	MI-LC750100
Cut-off	.120"	MI-RC437120	MI-LC437120	MI-RC500120	MI-LC500120	-	-	-	-
Cut-off	.125"	-	-	-	-	MI-RC625125	MI-LC625125	MI-RC750125	MI-LC750125
Cut-off	.187"	-	-	-	-	MI-RC625187	MI-LC625187	MI-RC750187	MI-LC750187

BRAZED BOX TURNING TOOLS

For Box-Turning Up To 5/8" Depth Per Pass



Shank A	Shank B	Shank C	Tip T	Tip		Right Hand	Left Hand	Price Each
				W	L			
1/4	1/4	1-1/2	1/8	3/16	1/4	MI-BT4	MI-BTL4	\$26.00
5/16	5/16	1-3/4	1/8	3/16	5/16	MI-BT5	MI-BTL5	\$27.95
3/8	3/8	2	3/16	5/16	3/8	MI-BT6	MI-BTL6	\$30.20
7/16	7/16	2-1/4	3/16	3/8	7/16	MI-BT7	MI-BTL7	\$31.55
1/2	1/2	2-1/2	3/16	3/8	1/2	MI-BT8	MI-BTL8	\$34.55
9/16	9/16	2-3/4	1/4	1/2	9/16	MI-BT9	MI-BTL9	\$38.10
5/8	5/8	3	1/4	1/2	5/8	MI-BT10	MI-BTL10	\$39.20

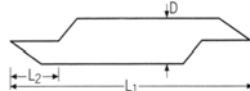
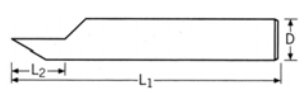
SPLIT-END ENGRAVING TOOLS

30°, 60° or 90° Included Angle • Relieved For Right Hand



One End Split

Two End Splits



Shank D	OAL L1	Split L2	30° Part Number	60° Part Number	90° Part Number	Price Each
1/8	1-1/2	3/8	MI-RTC1251	MI-RSC1251	MI-RNC1251	\$20.25
3/16	2	3/8	MI-RTC1871	MI-RSC1871	MI-RNC1871	\$24.00
1/4	2-1/2	3/8	MI-RTC2501	MI-RSC2501	MI-RNC2501	\$27.75
5/16	2-1/2	1/2	MI-RTC3121	MI-RSC3121	MI-RNC3121	\$40.95
3/8	2-1/2	1/2	MI-RTC3751	MI-RSC3751	MI-RNC3751	\$52.80
1/2	3	5/8	MI-RTC5001	MI-RSC5001	MI-RNC5001	\$77.75

Shank D	OAL L1	Split L2	30° Part Number	60° Part Number	90° Part Number	Price Each
1/8	1-1/2	3/8	MI-RTC1252	MI-RSC1252	MI-RNC1252	\$24.35
3/16	2	3/8	MI-RTC1872	MI-RSC1872	MI-RNC1872	\$29.35
1/4	2-1/2	3/8	MI-RTC2502	MI-RSC2502	MI-RNC2502	\$34.70
5/16	2-1/2	1/2	MI-RTC3122	MI-RSC3122	MI-RNC3122	\$51.45
3/8	2-1/2	1/2	MI-RTC3752	MI-RSC3752	MI-RNC3752	\$65.90
1/2	3	5/8	MI-RTC5002	MI-RSC5002	MI-RNC5002	\$93.95

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

CARBIDE TIPPED TOOL BITS

CARBIDE TIPPED BRAZED TOOL BITS

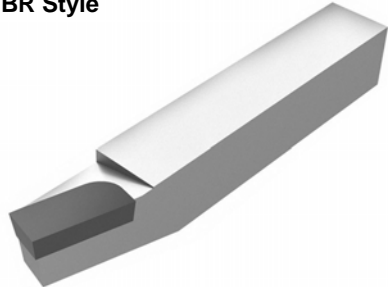
Single Point



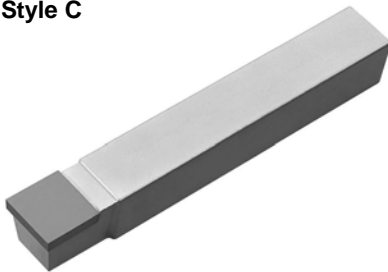
AR Style



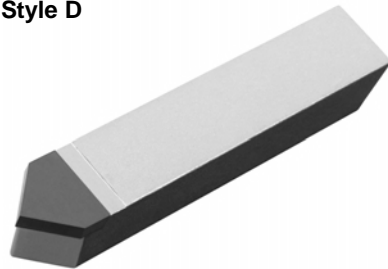
BR Style



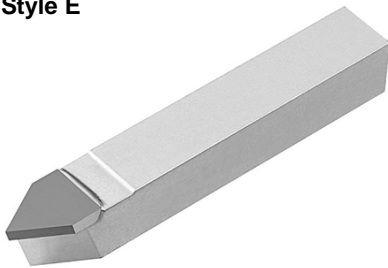
Style C



Style D



Style E



STYLE A-RIGHT HAND

Tool Style	Size	OAL	C2 Grade TMX Part # [B]	Price Each	C5 Grade TMX Part # [B]	Price Each	MICRO 100 Part Number	Price Each
AR4	1/4	2	BI-6082-004	\$2.67	BI-6085-004	\$2.67	MI-AR4	\$12.25
AR5	5/16	2-1/4	BI-6082-005	\$2.87	BI-6085-005	\$2.87	MI-AR5	\$12.45
AR6	3/8	2-1/2	BI-6082-006	\$3.02	BI-6085-006	\$3.02	MI-AR6	\$13.00
AR7	7/16	3	-	-	BI-6085-007	\$3.28	MI-AR7	\$13.45
AR8	1/2	3-1/2	BI-6082-008	\$4.43	BI-6085-008	\$4.43	MI-AR8	\$13.70
AR10	5/8	4	BI-6082-010	\$6.93	BI-6085-010	\$6.93	MI-AR10	\$22.40
AR12	3/4	4-1/2	BI-6082-012	\$14.74	BI-6085-012	\$18.56	MI-AR12	\$29.85

STYLE A-LEFT HAND

Tool Style	Size	OAL	C2 Grade TMX Part # [B]	Price Each	C5 Grade TMX Part # [B]	Price Each	MICRO 100 Part Number	Price Each
AL4	1/4	2	BI-6082-104	\$2.67	BI-6085-104	\$2.67	MI-AL4	\$12.25
AL5	5/16	2-1/4	BI-6082-105	\$2.87	BI-6085-105	\$2.87	MI-AL5	\$12.45
AL6	3/8	2-1/2	BI-6082-106	\$3.02	BI-6085-106	\$3.02	MI-AL6	\$13.00
AL7	7/16	3	BI-6082-107	\$3.05	BI-6085-107	\$3.28	MI-AL7	\$13.45
AL8	1/2	3-1/2	BI-6082-108	\$4.43	BI-6085-108	\$4.43	MI-AL8	\$13.70
AL10	5/8	4	BI-6082-110	\$6.93	BI-6085-110	\$6.93	MI-AL10	\$22.40
AL12	3/4	4-1/2	BI-6082-112	\$14.74	BI-6085-112	\$18.56	MI-AL12	\$29.85

STYLE B-RIGHT HAND

Tool Style	Size	OAL	C2 Grade TMX Part # [B]	Price Each	C5 Grade TMX Part # [B]	Price Each	MICRO 100 Part Number	Price Each
BR6	3/8	2-1/2	BI-6082-206	\$3.02	BI-6085-206	\$3.02	MI-BR6	\$13.15
BR7	7/16	3	BI-6082-207	\$3.13	BI-6085-207	\$3.13	MI-BR7	\$13.70
BR8	1/2	3-1/2	BI-6082-208	\$4.43	BI-6085-208	\$4.43	MI-BR8	\$14.30
BR10	5/8	4	BI-6082-210	\$6.93	BI-6085-210	\$6.93	MI-BR10	\$22.95
BR12	3/4	4-1/2	BI-6082-212	\$18.56	BI-6085-212	\$18.56	MI-BR12	\$30.10

STYLE B-LEFT HAND

Tool Style	Size	OAL	C2 Grade TMX Part # [B]	Price Each	C5 Grade TMX Part # [B]	Price Each	MICRO 100 Part Number	Price Each
BL6	3/8	2-1/2	BI-6082-306	\$3.02	BI-6085-306	\$3.02	MI-BL6	\$13.15
BL7	7/16	3	BI-6082-307	\$3.13	-	-	MI-BL7	\$13.70
BL8	1/2	3-1/2	BI-6082-308	\$4.43	BI-6085-308	\$4.43	MI-BL8	\$14.30
BL10	5/8	4	BI-6082-310	\$6.93	BI-6085-310	\$6.93	MI-BL10	\$22.95
BL12	3/4	4-1/2	BI-6082-312	\$18.56	BI-6085-312	\$18.56	MI-BL12	\$30.10

STYLE C-TURNING & FACING

Tool Style	Size	OAL	C2 Grade TMX Part # [B]	Price Each	C5 Grade TMX Part # [B]	Price Each	MICRO 100 Part Number	Price Each
C4	1/4	2	BI-6082-404	\$2.67	BI-6085-404	\$2.67	MI-C4	\$12.45
C5	5/16	2-1/4	BI-6082-405	\$2.87	BI-6085-405	\$2.87	MI-C5	\$13.15
C6	3/8	2-1/2	BI-6082-406	\$3.02	BI-6085-406	\$3.02	MI-C6	\$13.55
C7	7/16	3	BI-6082-407	\$3.28	BI-6085-407	\$3.28	MI-C7	\$13.70
C8	1/2	3-1/2	BI-6082-408	\$4.43	BI-6085-408	\$4.43	MI-C8	\$14.20
C10	5/8	4	BI-6082-410	\$6.93	BI-6085-410	\$6.93	MI-C10	\$25.00
C12	3/4	4-1/2	BI-6082-412	\$18.56	BI-6085-412	\$18.56	MI-C12	\$30.90

Style D-Chamfering

Tool Style	Size	OAL	C2 Grade TMX Part # [B]	Price Each	C5 Grade TMX Part # [B]	Price Each	MICRO 100 Part Number	Price Each
D4	1/4	2	BI-6082-504	\$2.67	BI-6085-504	\$2.67	MI-D4	\$12.25
D5	5/16	2-1/4	BI-6082-505	\$2.87	BI-6085-505	\$2.87	MI-D5	\$12.70
D6	3/8	2-1/2	BI-6082-506	\$3.02	BI-6085-506	\$3.02	MI-D6	\$13.25
D7	7/16	3	BI-6082-507	\$3.28	BI-6085-507	\$3.28	MI-D7	\$13.50
D8	1/2	3-1/2	BI-6082-508	\$4.43	BI-6085-508	\$4.43	MI-D8	\$13.70
D10	5/8	4	BI-6082-510	\$6.93	BI-6085-510	\$6.93	MI-D10	\$22.35
D12	3/4	4-1/2	BI-6082-512	\$18.56	BI-6085-512	\$18.56	MI-D12	\$28.90

Style E-Threading

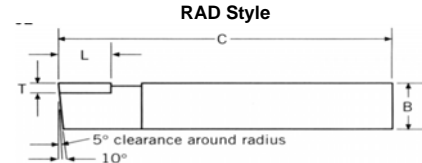
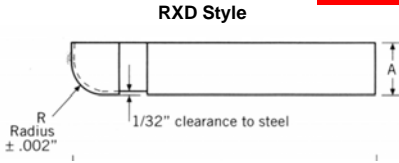
Tool Style	Size	OAL	C2 Grade TMX Part # [B]	Price Each	C5 Grade TMX Part # [B]	Price Each	MICRO 100 Part Number	Price Each
E5	5/16	2-1/4	BI-6082-605	\$2.87	BI-6085-605	\$2.87	MI-E5	\$12.70
E6	3/8	2-1/2	BI-6082-606	\$3.02	BI-6085-606	\$3.02	MI-E6	\$13.25
E8	1/2	3-1/2	BI-6082-608	\$4.43	BI-6085-608	\$4.43	MI-E8	\$13.75
E10	5/8	4	BI-6082-610	\$6.93	BI-6085-610	\$6.93	MI-E10	\$22.35
E12	3/4	4-1/2	BI-6082-612	\$18.56	BI-6085-612	\$18.56	MI-E12	\$27.65

Call Us Today For All Of Your Machine Tool Needs!

CONVEX & CONCAVE RADIUS TOOLS



RXD Style



RAD Style

SHANK			TIP		RXD STYLE		RAD STYLE		Price Each		
A	B	C	T	L	Right Hand	Left Hand	Right Hand	Left Hand			
3/8	3/8	2-1/2	3/32	3/8	1/32	MI-RXD1	MI-RXL1	MI-RAD1	MI-RAL1	\$37.45	
					1/16	MI-RXD2	MI-RXL2	MI-RAD2	MI-RAL2	\$37.45	
					3/32	MI-RXD3	MI-RXL3	MI-RAD3	MI-RAL3	\$37.45	
					1/8	MI-RXD4	MI-RXL4	MI-RAD4	MI-RAL4	\$37.45	
					5/32	MI-RXD5	MI-RXL5	MI-RAD5	MI-RAL5	\$37.45	
					3/16	MI-RXD6	MI-RXL6	MI-RAD6	MI-RAL6	\$37.45	
1/2	1/2	3-1/2	1/8	1/2	7/32	MI-RXD7	MI-RXL7	MI-RAD7	MI-RAL7	\$37.45	
					1/4	MI-RXD8	MI-RXL8	MI-RAD8	MI-RAL8	\$37.45	
					9/32	MI-RXD9	MI-RXL9	MI-RAD9	MI-RAL9	\$40.70	
					5/16	MI-RXD10	MI-RXL10	MI-RAD10	MI-RAL10	\$40.70	
					11/32	MI-RXD11	MI-RXL11	MI-RAD11	MI-RAL11	\$40.70	
					3/8	MI-RXD12	MI-RXL12	MI-RAD12	MI-RAL12	\$40.70	
3/4	3/4	4-1/2	3/16	3/4	13/32	MI-RXD13	MI-RXL13	MI-RAD13	MI-RAL13	\$45.85	
					7/16	MI-RXD14	MI-RXL14	MI-RAD14	MI-RAL14	\$45.85	
					15/32	MI-RXD15	MI-RXL15	MI-RAD15	MI-RAL15	\$45.85	
					1/2	MI-RXD16	MI-RXL16	MI-RAD16	MI-RAL16	\$45.85	
					Set of 4: 1/16, 1/8, 1/4, 3/8 radius		MI-RXD21	MI-RXL21	MI-RAD21	MI-RAL21	\$144.90
					*Set of 8: 1/32 to 1/4 radius in 1/32 increments		MI-RXD22	MI-RXL22	MI-RAD22	MI-RAL22	\$282.65
Set of 8: 1/16 to 1/2 radius in 1/16 increments		MI-RXD23	MI-RXL23	MI-RAD23	MI-RAL23	\$295.60					
Set of 16: 1/32 to 1/2 radius in 1/32 increments		MI-RXD24	MI-RXL24	MI-RAD24	MI-RAL24	\$578.25					

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

SPLIT- END RADIUS TOOLS

- Micrograin carbide
- Full radius
- Relieved for right hand cut



One End Split



Two Ends Split



Shank	OAL	Split Length	ONE SPLIT END		TWO SPLIT ENDS	
			Part Number	Price Each	Part Number	Price Each
1/8	1-1/2	3/8	MI-RSF1251	\$20.25	MI-RSF1252	\$25.10
3/16	2	3/8	MI-RSF1871	\$24.35	MI-RSF1872	\$30.35
1/4	2-1/2	3/8	MI-RSF2501	\$28.05	MI-RSF2502	\$36.10
5/16	2-1/2	1/2	MI-RSF3121	\$41.50	MI-RSF3122	\$53.45
3/8	2-1/2	1/2	MI-RSF3751	\$53.45	MI-RSF3752	\$68.70
1/2	3	5/8	MI-RSF5001	\$78.95	MI-RSF5002	\$97.90

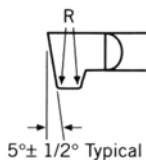
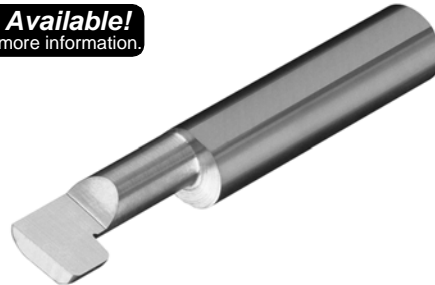
GROOVE TOOLS FOR "O" RING GROOVES



N/C GENERATION

- Shank Diameter: -.0001 to -.0003"
- Minimum Hole Dia.: +.000 - .005"
- Depth: +.050 - .000"
- Overall Length: ±1/64"

Full Line Available!
Please call for more information.



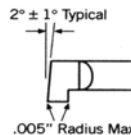
Bore D1	Shank D2	OAL L1	Depth L2	Proj. P	Radius R	Width W	Part Number	Price Each
.250	1/4	2-1/2	1/2	.100	.010/.020	.096/.098	MI-OR0968	\$33.60
			9/16		.035/.045	.141/.143	MI-OR1419	
			5/8		.035/.045	.144/.146	MI-OR14410	
.375	3/8	2-1/2	3/4		.010/.020	.174/.176	MI-OR17412	\$55.15
			13/16		.035/.045	.208/.210	MI-OR20813	
			15/16		.035/.045	.241/.243	MI-OR24115	

Call Us Or Visit Our Website For Our Complete Selection!

SOLID CARBIDE GROOVE TOOLS

SOLID CARBIDE GROOVE TOOLS

MICRO 100



- For retaining ring grooves
- Lockdown flat automatically locates tool on center
- Micrograin carbide
- Made in USA

N/C GENERATION

Shank Diameter -.0001 to -.0003"
 Minimum Hole Dia. +.000 - .005"
 Maximum Hole Depth +.050 - .000"
 Overall Length +1/64"

Full Line Available!
 Please call for more information.

Left-hand groove tools and other sizes also available.

Min. Bore D1	Shank Dia. D2	OAL L1	Proj. P	Tool Width W	Max. Depth L2	Part Number	Price Each
.250	1/4	2-1/2	.050	.017/.018	1/4	MI-RR0174	\$33.60
					3/8	MI-RR0176	
					1/2	MI-RR0178	
					5/8	MI-RR01710	
.250	1/4	2-1/2	.050	.025/.026	1/4	MI-RR0254	\$33.60
					3/8	MI-RR0256	
					1/2	MI-RR0258	
					5/8	MI-RR02510	
.250	1/4	2-1/2	.050	.030/.031	1/4	MI-RR0304	\$33.60
					3/8	MI-RR0306	
					1/2	MI-RR0308	
					5/8	MI-RR03010	
.312	5/16	2-1/2	.100	.033/.034	1/4	MI-RR0334	\$41.90
					3/8	MI-RR0336	
					1/2	MI-RR0338	
					3/4	MI-RR03312	
.312	5/16	2-1/2	.100	.038/.039	1/4	MI-RR0384	\$41.90
					3/8	MI-RR0386	
					1/2	MI-RR0388	
					3/4	MI-RR03812	
.375	3/8	2-1/2	.100	.039/.041	1/4	MI-RR0394	\$54.60
					3/8	MI-RR0396	
					1/2	MI-RR0398	
					3/4	MI-RR03912	
					1	MI-RR03916	
.375	3/8	2-1/2	.100	.046/.048	1-1/4	MI-RR03920	\$54.60
					1/4	MI-RR0464	
					3/8	MI-RR0466	
					1/2	MI-RR0468	
					3/4	MI-RR04612	
.375	3/8	2-1/2	.100	.046/.048	1	MI-RR04616	\$54.60
					1-1/4	MI-RR04620	

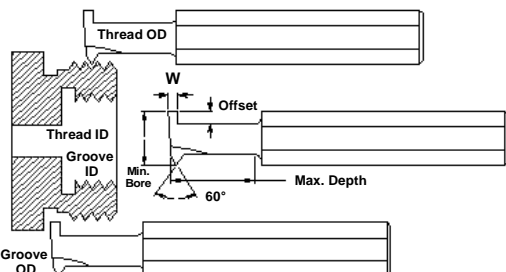
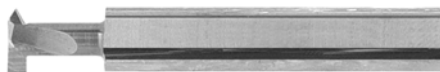
Min. Bore D1	Shank Dia. D2	OAL L1	Proj. P	Tool Width W	Max. Depth L2	Part Number	Price Each
.375	3/8	2-1/2	.100	.055/.057	1/4	MI-RR0554	\$54.60
					3/8	MI-RR0556	
					1/2	MI-RR0558	
					3/4	MI-RR05512	
					1	MI-RR05516	
.375	3/8	2-1/2	.100	.062/.064	1-1/4	MI-RR05520	\$54.60
					1/4	MI-RR0624	
					3/8	MI-RR0626	
					1/2	MI-RR0628	
					3/4	MI-RR06212	
.375	3/8	2-1/2	.100	.069/.071	1	MI-RR06216	\$54.60
					1-1/4	MI-RR06220	
					1/4	MI-RR0694	
					3/8	MI-RR0696	
					1/2	MI-RR0698	
.375	3/8	2-1/2	.100	.087/.089	3/4	MI-RR06912	\$54.60
					1	MI-RR06916	
					1-1/4	MI-RR06920	
					1/4	MI-RR0874	
					3/8	MI-RR0876	
.375	3/8	2-1/2	.100	.087/.089	1/2	MI-RR0878	\$54.60
					3/4	MI-RR08712	
					1	MI-RR08716	
					1-1/4	MI-RR08720	
					1/2	MI-RR0938	
.500	1/2	3	.150	.093/.095	3/4	MI-RR09312	\$76.55
					1	MI-RR09316	
					1-1/4	MI-RR09320	
					1-1/2	MI-RR09324	
					1/2	MI-RR1258	
.500	1/2	3	.150	.125/.127	3/4	MI-RR12512	\$76.55
					1	MI-RR12516	
					1-1/4	MI-RR12520	
					1-1/2	MI-RR12524	
					1/2	MI-RR1568	
.500	1/2	3	.150	.156/.158	3/4	MI-RR15612	\$76.55
					1	MI-RR15616	
					1-1/4	MI-RR15620	
					1-1/2	MI-RR15624	
					1/2	MI-RR1878	
.500	1/2	3	.150	.187/.189	3/4	MI-RR18712	\$76.55
					1	MI-RR18716	
					1-1/4	MI-RR18720	
					1-1/2	MI-RR18724	
					1/2	MI-RR2508	
.500	1/2	3	.150	.250/.252	1	MI-RR25012	\$76.55
					1-1/4	MI-RR25016	
					1-1/2	MI-RR25020	
					1-1/2	MI-RR25024	

COMBINATION THREAD & GROOVE TOOL

Save Tool Change Time!

IT INTERNAL TOOL

- Thread and groove with the same tool!
- Micrograin carbide
 - Right hand cutting
 - Please specify groove width when ordering



Tool ID No.	Max Depth	Groove W	Min Bore	Offset	Shank	OAL	Part Number	Price Each
TG-240-500	.500	3/32 max	1/4	.050	1/4	2-1/2	IT-52-1100	\$58.05
TG-240-750	.750							
TG-240-1000	1.000							
TG-310-500	.500	1/8 max	5/16	.060	5/16	2-1/2	IT-52-1115	\$72.65
TG-310-750	.750							
TG-310-1000	1.000							
TG-360-500	.500	5/32 max	3/8	.080	3/8	2-1/2	IT-52-1130	\$89.05
TG-360-750	.750							
TG-360-1000	1.000							

Call Us Today For All Of Your Machine Tool Needs!

MICRO-QUIK™ QUICK CHANGE TOOLING INTERNAL THREADING TOOLS

Full Line Available!
Please call for more information.

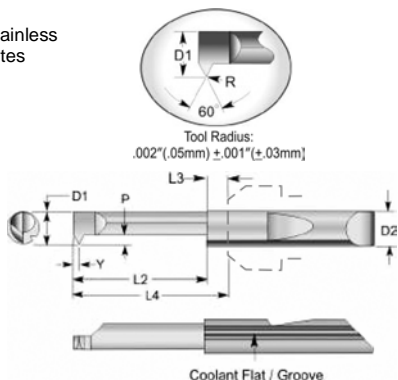
MICRO 100™

FEATURES & BENEFITS

- Reduces machine setup, downtime and tooling costs
- Ensures high degree of tool length repeatability
- Toolholder features unique "3 point" locking/locating system ensures tool to tool change repeats +/-0.0005" from centerline
- Distance from tip of tool to this registration point is controlled to +/--.001"
- Ideal for cutting aluminum, brass, copper, stainless steels, high temperature alloys and composites

TOOL INFORMATION:

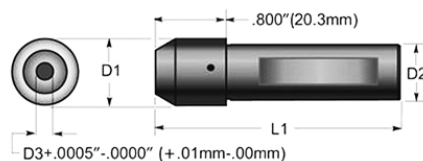
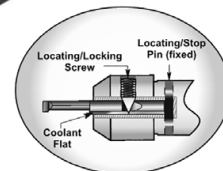
- Micro 100 Super Carbide Tools will not chip or break under normal machining conditions
- Shank dia tolerance: -.0001" to -.0003"
- Min. bore dia tolerance: +/--.0005"
- Minimum bore diameter range: 0.035" to 0.490"
- Maximum bore depth range: 0.075" to 2.000"
- Point radius: .002"
- Shank sizes available: 3/16", 1/4", 5/16", 3/8" & 1/2"



Threading Tool



Threading Tool w/ Holder



INTERNAL THREADING TOOLS

Min.Hole Dia D1	Shank Dia D2	OAL L1	Depth L2	Proj. P	Offset Point Y	Part Number	Price Each
.080	3/16	1-1/2	.350	.020	.012	QIT-080350	\$36.50
.080	3/16	1-1/2	.500	.020	.012	QIT-080500	\$36.50
.160	3/16	2	1.000	.040	.023	QIT-1601000	\$36.50
.180	1/4	2	.350	.040	.023	QIT-180350	\$39.00
.180	1/4	2	.500	.040	.023	QIT-180500	\$39.00
.180	1/4	2-1/2	1.000	.040	.023	QIT-1801000	\$39.00
.200	1/4	2	.750	.045	.026	QIT-200750	\$39.00
.230	5/16	2	.400	.055	.032	QIT230400	\$48.80
.230	5/16	2	.600	.055	.032	QIT-230600	\$48.80
.230	5/16	2	.750	.055	.032	QIT230750	\$48.80
.290	5/16	2	.500	.070	.040	QIT-290500	\$48.80
.290	5/16	2	.750	.070	.040	QIT-290750	\$48.80
.360	3/8	2	.750	.085	.049	QIT-360750	\$63.55
.360	3/8	2-1/12	1.000	.085	.049	QIT-3601000	\$63.55
.360	3/8	2-1/2	1.250	.085	.049	QIT-3601250	\$63.55
.360	3/8	3	1.800	.085	.049	QIT-3601800	\$70.00
.490	1/2	2-1/2	.750	.120	.069	QIT-490750	\$89.10
.490	1/2	3-1/2	2.000	.120	.069	QIT-4902000	\$97.20

QUICK CHANGE TOOLHOLDERS

OD D2	ID D3	Head Dia D1	OAL L1	Part Number	Price Each
1/2	3/16	1/2	2-3/4	MI-QTH85	\$95.00
1/2	1/4	1/2	2-3/4	MI-QTH86	\$95.00
5/8	3/16	5/8	2-3/4	MI-QTH105	\$95.00
5/8	1/4	5/8	2-3/4	MI-QTH106	\$95.00
5/8	5/16	5/8	2-3/4	MI-QTH107	\$95.00
5/8	3/8	5/8	2-3/4	MI-QTH108	\$95.00
3/4	3/16	3/4	2-3/4	MI-QTH205	\$95.00
3/4	1/4	3/4	3/4	MI-QTH206	\$95.00
3/4	5/16	3/4	3/4	MI-QTH207	\$95.00
3/4	3/8	3/4	3/4	MI-QTH208	\$95.00
3/4	1/2	3/4	3/4	MI-QTH210	\$95.00
1	3/16	1	1	MI-QTH405	\$95.00
1	1/4	1	1	MI-QTH406	\$95.00
1	5/16	1	1	MI-QTH407	\$95.00
1	3/8	1	1	MI-QTH408	\$95.00
1	1/2	1	1	MI-QTH410	\$95.00

*Additional tool sizes available. Please call for more information.

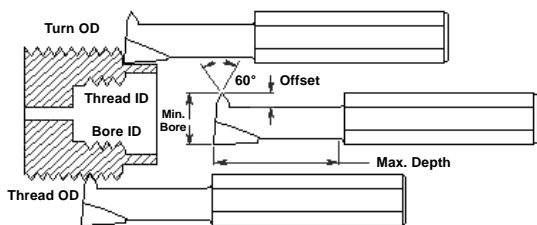
COMBINATION BORE & THREAD TOOL

- Bore and thread with the same tool!
- Micrograin carbide
- Right hand cutting
- Made in USA



INTERNAL TOOL

Save a Tool Position!



Max Depth	Thread Width	Min Bore	Offset	Shank	OAL	Part Number	Price Each
.500	.055	1/4	.050	1/4	2-1/2	IT-50-1100	\$51.87
.750	.055	1/4	.050	1/4	2-1/2	IT-50-1105	\$51.87
1.000	.055	1/4	.050	1/4	2-1/2	IT-50-1110	\$51.87
.500	.065	5/16	.060	5/16	2-1/2	IT-50-1115	\$68.54
.750	.065	5/16	.060	5/16	2-1/2	IT-50-1120	\$68.54
1.000	.065	5/16	.060	5/16	2-1/2	IT-50-1125	\$68.54
.500	.090	3/8	.080	3/8	2-1/2	IT-50-1130	\$86.47
.750	.090	3/8	.080	3/8	2-1/2	IT-50-1135	\$86.47
1.000	.090	3/8	.080	3/8	2-1/2	IT-50-1140	\$86.47

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

60° LEFT HAND & EXTERNAL THREADING TOOLS

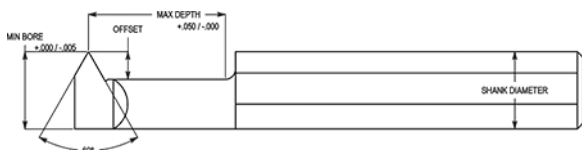
INTERNAL TOOL

Left Hand

- Solid micrograin carbide
- All shanks have lockdown flat for faster setups
- For threading all types of material
- No tip radius
- For turning external or left hand threads



Min Bore	Max Depth	Offset	Shank Dia	OAL	LEFT HAND Part Number	Price Each
0.180	0.500	0.040	0.250	2.50	IT-31-1200	\$28.18
	0.750	0.040	0.250	2.50	IT-31-1205	\$28.18
	1.000	0.040	0.250	2.50	IT-31-1210	\$28.18
0.200	0.500	0.045	0.250	2.50	IT-31-1215	\$28.18
	0.750	0.045	0.250	2.50	IT-31-1220	\$28.18
	1.000	0.045	0.250	2.50	IT-31-1225	\$28.18
0.230	0.500	0.055	0.312	2.50	IT-31-1230	\$35.36
	0.750	0.055	0.312	2.50	IT-31-1235	\$35.36
	1.000	0.055	0.312	2.50	IT-31-1240	\$35.36
0.290	0.500	0.070	0.312	2.50	IT-31-1245	\$35.36
	0.750	0.070	0.312	2.50	IT-31-1250	\$35.36
	1.000	0.070	0.312	2.50	IT-31-1255	\$35.36
0.320	0.500	0.075	0.375	2.50	IT-31-1260	\$46.07
	0.750	0.075	0.375	2.50	IT-31-1265	\$46.07
	1.000	0.075	0.375	2.50	IT-31-1270	\$46.07
0.360	0.500	0.085	0.375	2.50	IT-31-1275	\$46.07
	0.750	0.085	0.375	2.50	IT-31-1280	\$46.07
	1.000	0.085	0.375	2.50	IT-31-1285	\$46.07

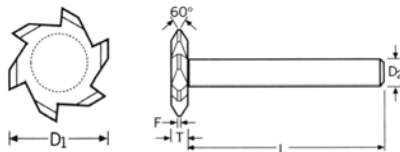


BRAZED THREAD MILLS

- Designed for milling precision I.D. and O.D. threads in all types of steels, non-ferrous metals and exotic materials
- Equally effective in composites used in the aircraft industry
- Thread form generated is American Standard thread
- Minimum pitch listed is for an internal thread
- Solid carbide head and shank for maximum rigidity



MICRO 100



Cutter D1	Shank D2	Flat F	Len. L	Thick T	No. of Flutes	Min. Pitch	Part Number	Price Each
3/8	1/4	.002	2-1/2	.093	4	.031	MI-TM375	\$67.40
1/2	5/16	.0035	2-1/2	.125	5	.050	MI-TM500	\$85.80
3/4	3/8	.0045	2-1/2	.156	6	.062	MI-TM750	\$106.45
1	1/2	.009	3	.187	7	.125	MI-TM001	\$133.00

SOLID CARBIDE THREAD MILLS

INTERNAL TOOL

AlTiN Coated

- Solid micrograin carbide
- AlTiN coated
- Mill internal or external threads in one pass
- Eliminate special taps by cutting any size, pitch, or taper
- Thread blind holes to the bottom with minimal lead
- 60° Included angle



Size	Cutting Dia	LOC	No. of Flutes	Shank Dia	Shank Length	Part Number	Price Each
6-32	.1150	0.2180	3	.1250	2.00	IT-89-1200	\$91.19
8-32	.1150	0.2500	3	.1250	2.00	IT-89-1205	\$91.19
8-36	.1150	0.2500	3	.1250	2.00	IT-89-1210	\$91.19
10-24	.1200	0.3120	3	.1250	2.00	IT-89-1215	\$91.19
10-32	.1200	0.3120	3	.1250	2.00	IT-89-1220	\$91.19
1/4-20	.1800	0.5000	3	.1870	2.50	IT-89-1225	\$103.13
1/4-28	.1800	0.5000	3	.1870	2.50	IT-89-1230	\$103.13
5/16-18	.2400	0.6250	3	.1870	2.50	IT-89-1235	\$121.37
5/16-24	.2400	0.6250	3	.1870	2.50	IT-89-1240	\$121.37
3/8-16	.2900	0.7500	4	.2500	3.00	IT-89-1245	\$151.95
3/8-24	.2900	0.7500	4	.2500	3.00	IT-89-1250	\$151.95
7/16-14	.3400	0.8750	4	.3120	3.00	IT-89-1255	\$163.93
7/16-20	.3400	0.8750	4	.3120	3.00	IT-89-1260	\$163.93
1/2-13	.3500	0.8750	4	.3750	3.50	IT-89-1265	\$163.93
1/2-20	.3500	0.8750	4	.3750	3.50	IT-89-1270	\$163.93
9/16-12	.3700	0.8750	4	.3750	3.50	IT-89-1275	\$205.22
9/16-18	.3700	0.8750	4	.3750	3.50	IT-89-1280	\$205.22
5/8-11	.4700	1.2500	5	.5000	3.50	IT-89-1285	\$205.22
5/8-18	.4700	1.2500	5	.5000	3.50	IT-89-1290	\$205.22
3/4-10	.4950	1.2500	5	.5000	3.50	IT-89-1295	\$205.22
3/4-16	.4950	1.2500	5	.5000	3.50	IT-89-1300	\$205.22
7/8-9	.6200	1.2500	5	.6250	3.50	IT-89-1305	\$244.00
7/8-14	.6200	1.2500	5	.6250	3.50	IT-89-1310	\$244.00
1"-8	.6200	1.3750	5	.7500	4.00	IT-89-1315	\$244.00
1"-12	.6200	1.3750	5	.7500	4.00	IT-89-1320	\$244.00

Call Us Or Visit Our Website For Our Complete Selection!

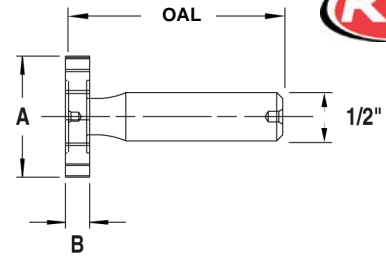
LATHE CHUCKS
LIVE CENTERS
VISE ACCESSORIES
VISE JAWS
STRAIGHT SHANK COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

KEYSEAT CUTTERS

WOODRUFF KEYSEAT CUTTERS

Shank Type- HSS & M35 Cobalt

KEO woodruff keyseat cutters are extremely versatile profile milling cutters. Although originally designed to mill standard woodruff keyseat, they satisfy a variety of applications from milling slots to milling threads. Available in straight and stagger tooth models.



1/2" Straight Shank

Amer. Std. #	Head Dia.	Face Width	OAL	HSS				COBALT				Number of Teeth	
				Straight Tooth Part Number	Price Each	Stagger Tooth Part Number	Price Each	Straight Tooth Part Number	Price Each	Stagger Tooth Part Number	Price Each	Straight	Stagger
202	1/4	1/16	2-1/16	KEO-62010	\$26.30	KEO-62015	\$34.32	KEO-93932	\$31.95	KEO-93933	\$39.72	8	6
2021/2	5/16	1/16	2-1/16	KEO-62020	\$26.30	KEO-62025	\$34.32	KEO-93938	\$31.95	KEO-93939	\$39.72	8	6
3021/2	5/16	3/32	2-3/32	KEO-63020	\$26.30	KEO-63025	\$34.32	KEO-93944	\$31.95	KEO-93945	\$39.72	8	6
203	3/8	1/16	2-1/16	KEO-62030	\$26.30	KEO-62035	\$34.32	KEO-93950	\$31.95	KEO-93951	\$39.72	8	6
303	3/8	3/32	2-3/32	KEO-63030	\$26.30	KEO-63035	\$34.32	KEO-93956	\$31.95	KEO-93957	\$39.72	8	6
403	3/8	1/8	2-1/8	KEO-64030	\$26.30	KEO-64035	\$34.32	KEO-93962	\$31.95	KEO-93963	\$39.72	8	6
204	1/2	1/16	2-1/16	KEO-62040	\$26.30	KEO-62045	\$34.32	KEO-93968	\$31.95	KEO-93969	\$39.72	10	8
304	1/2	3/32	2-3/32	KEO-63040	\$26.30	KEO-63045	\$34.32	KEO-93974	\$31.95	KEO-93975	\$39.72	10	8
404	1/2	1/8	2-1/8	KEO-64040	\$26.30	KEO-64045	\$34.32	KEO-93986	\$31.95	KEO-93987	\$40.01	10	8
305	5/8	3/32	2-3/32	KEO-63050	\$26.56	KEO-63055	\$34.56	KEO-93980	\$32.28	KEO-93981	\$40.01	10	8
405	5/8	1/8	2-1/8	KEO-64050	\$26.56	KEO-64055	\$34.56	KEO-93992	\$32.28	KEO-93993	\$40.01	10	8
505	5/8	5/32	2-5/32	KEO-65050	\$26.56	KEO-65055	\$34.56	KEO-94004	\$32.28	KEO-94005	\$40.01	10	8
605	5/8	3/16	2-3/16	KEO-66050	\$26.56	KEO-66055	\$34.56	KEO-94010	\$32.28	KEO-94011	\$40.01	10	8
406	3/4	1/8	2-1/8	KEO-64060	\$27.83	KEO-64065	\$35.67	KEO-93998	\$33.82	KEO-93999	\$41.37	10	8
506	3/4	5/32	2-5/32	KEO-65060	\$27.83	KEO-65065	\$35.67	KEO-94016	\$33.82	KEO-94017	\$41.37	10	8
606	3/4	3/16	2-3/16	KEO-66060	\$27.83	KEO-66065	\$35.67	KEO-94034	\$33.82	KEO-94035	\$41.37	10	8
806	3/4	1/4	2-1/4	KEO-68060	\$27.83	KEO-68065	\$35.67	KEO-94022	\$33.82	KEO-94023	\$41.37	10	8
507	7/8	5/32	2-5/32	KEO-65070	\$30.36	KEO-65075	\$39.05	KEO-94028	\$36.90	KEO-94029	\$45.28	12	10
607	7/8	3/16	2-3/16	KEO-66070	\$30.36	KEO-66075	\$39.05	KEO-94040	\$36.90	KEO-94041	\$45.28	12	10
707	7/8	7/32	2-7/32	KEO-67070	\$30.91	KEO-67075	\$39.05	KEO-94046	\$37.59	KEO-94047	\$45.41	12	10
807	7/8	1/4	2-1/4	KEO-68070	\$30.91	KEO-68075	\$39.05	KEO-94076	\$37.59	KEO-94077	\$41.49	12	10
608	1	3/16	2-3/16	KEO-66080	\$33.24	KEO-66085	\$43.67	KEO-94052	\$40.40	KEO-94053	\$50.48	12	10
708	1	7/32	2-7/32	KEO-67080	\$33.54	KEO-67085	\$43.97	KEO-94058	\$40.78	KEO-94059	\$50.85	12	10
808	1	1/4	2-1/4	KEO-68080	\$33.54	KEO-68085	\$43.97	KEO-94082	\$40.78	KEO-94083	\$50.85	12	10
1008	1	5/16	2-5/16	KEO-60080	\$34.47	KEO-60085	\$44.60	KEO-94130	\$41.89	KEO-94131	\$51.68	12	10
1208	1	3/8	2-3/8	KEO-62080	\$34.47	KEO-62085	\$44.60	KEO-94064	\$41.89	KEO-94065	\$51.68	12	10
609	1-1/8	3/16	2-3/16	KEO-66090	\$37.36	KEO-66095	\$50.59	KEO-94070	\$45.41	KEO-94071	\$58.24	12	10
709	1-1/8	7/32	2-7/32	KEO-67090	\$37.36	KEO-67095	\$50.59	KEO-94088	\$45.41	KEO-94089	\$58.24	12	10
809	1-1/8	1/4	2-1/4	KEO-68090	\$38.07	KEO-68095	\$50.59	KEO-94094	\$46.27	KEO-94095	\$58.40	12	10
1009	1-1/8	5/16	2-5/16	KEO-60090	\$39.93	KEO-60095	\$51.49	KEO-94136	\$48.53	KEO-94137	\$59.69	12	10
610	1-1/4	3/16	2-3/16	KEO-66100	\$41.70	KEO-66105	\$52.60	KEO-94100	\$50.68	KEO-94101	\$61.19	14	12
710	1-1/4	7/32	2-7/32	KEO-67100	\$41.70	KEO-67105	\$52.60	KEO-94106	\$50.68	KEO-94107	\$61.19	14	12
810	1-1/4	1/4	2-1/4	KEO-68100	\$43.08	KEO-68105	\$55.55	KEO-94112	\$52.36	KEO-94113	\$64.40	14	12
1010	1-1/4	5/16	2-5/16	KEO-60010	\$44.81	KEO-60015	\$56.94	KEO-94142	\$54.47	KEO-94143	\$66.13	14	12
1210	1-1/4	3/8	2-3/8	KEO-62100	\$44.81	KEO-62105	\$56.94	KEO-94160	\$54.47	KEO-94161	\$66.13	14	12
811	1-3/8	1/4	2-1/4	KEO-68110	\$48.29	KEO-68115	\$61.86	KEO-94118	\$58.70	KEO-94119	\$71.79	14	12
1011	1-3/8	5/16	2-5/16	KEO-60110	\$48.29	KEO-60115	\$61.86	KEO-94148	\$58.70	KEO-94149	\$71.79	14	12
1211	1-3/8	3/8	2-3/8	KEO-62110	\$49.16	KEO-62115	\$62.70	KEO-94166	\$59.74	KEO-94167	\$72.80	14	12
812	1-1/2	1/4	2-1/4	KEO-68120	\$49.98	KEO-68125	\$66.14	KEO-94124	\$60.76	KEO-94125	\$76.41	16	14
1012	1-1/2	5/16	2-5/16	KEO-60120	\$51.73	KEO-60125	\$66.14	KEO-94154	\$62.88	KEO-94155	\$76.77	16	14
1212	1-1/2	3/8	2-3/8	KEO-62120	\$53.45	KEO-62125	\$69.67	KEO-94172	\$64.96	KEO-94173	\$80.64	16	14

WOODRUFF KEYSEAT CUTTER SETS

Shank Type- HSS & M35 Cobalt



Teeth Type	# of Pieces	Includes	Part Number	Price
Straight	10	43,204,404,305,505,406,	KEO-60100	\$308.96
Staggered	10	606,806,608,808	KEO-60105	\$397.05
Straight	41	1 Each of All American	KEO-60000	\$1,517.85
Staggered	41	Std Sizes	KEO-60005	\$1,950.36

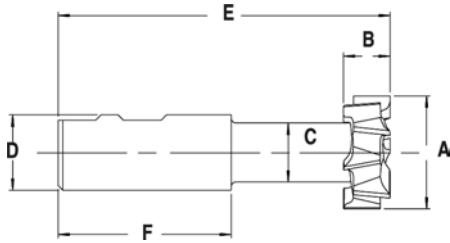
Call Us Today For All Of Your Machine Tool Needs!

DOVETAIL & T-SLOT CUTTERS

T-SLOT MILLING CUTTERS

Shank Type- HSS & M35 Cobalt

KEO T-slot milling cutters have staggered teeth on the circumferential surface and teeth on both sides. The side teeth alternate to provide maximum chip clearance and stability to permit rapid milling of T-slots with lower risk of breakage.

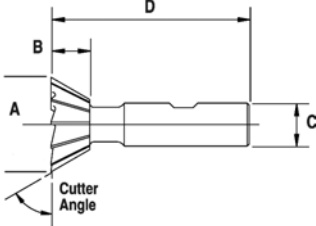


	A	B	C	D	E	F		
Bolt Size	Head Dia.	Head Width	Neck Dia.	Shank Dia.	OAL	Shank Length	Part Number	Price Each
1/4	9/16	15/64	17/64	1/2	2-19/32	1-25/32	KEO-70140	\$86.85
5/16	21/32	17/64	21/64	1/2	2-11/16	1-25/32	KEO-70560	\$93.41
3/8	25/32	21/64	13/32	3/4	3-1/4	2-1/32	KEO-70380	\$137.75
1/2	31/32	25/64	17/32	3/4	3-7/16	2-1/32	KEO-70120	\$156.42
5/8	1-1/4	31/64	21/32	1	3-15/16	2-9/32	KEO-70580	\$212.47
3/4	1-15/32	5/8	25/32	1	4-7/16	2-9/32	KEO-70340	\$248.62
1	1-27/32	53/64	1-1/32	1-1/4	4-13/16	2-9/32	KEO-71000	\$420.71
1-1/4	2-7/32	1-3/32	1-7/32	1-1/4	5-3/8	2-9/32	KEO-71140	\$555.23
1-1/2	2-21/32	1-11/32	1-17/32	1-1/4	5-29/32	2-9/32	KEO-71120	\$719.09

DOVETAIL CUTTERS

Shank Type- HSS & M35 Cobalt

- Ideal tool for milling dovetails
- Available in 45° and 60° angles
- HSS or Cobalt
- Made in the USA



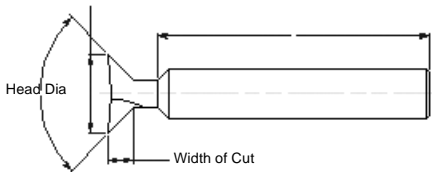
Dia A	Cutter Width B		Shank Dia C	OAL D	HSS			COBALT		
	45°	60°			45° Angle Part Number	60° Angle Part Number	Price Each	45° Angle Part Number	60° Angle Part Number	Price Each
3/8	1/8	3/16	3/8	2-1/8	KEO-75034	KEO-75036	\$49.69	KEO-76034	KEO-76036	\$59.49
1/2	1/8	7/32	3/8	2-1/8	KEO-75044	KEO-75046	\$53.80	KEO-76044	KEO-76046	\$64.40
3/4	3/16	5/16	3/8	2-1/8	KEO-75064	KEO-75066	\$62.91	KEO-76064	KEO-76066	\$75.30
1	1/4	7/16	1/2	2-1/2	KEO-75084	KEO-75086	\$77.89	KEO-76084	KEO-76086	\$93.23
1-3/8	3/8	9/16	5/8	2-7/8	KEO-75114	KEO-75116	\$98.21	KEO-76114	KEO-76116	\$117.55
1-7/8	1/2	13/16	7/8	3-1/4	KEO-75154	KEO-75156	\$213.99	KEO-76154	KEO-76156	\$256.15
2-1/4	11/16	1-1/16	1	3-3/4	KEO-75184	KEO-75186	\$255.09	KEO-76184	KEO-76186	\$305.36
2-1/2	3/4	1-1/8	1	3-3/4	KEO-75204	KEO-75206	\$301.76	KEO-76204	KEO-76206	\$361.19

DOVETAIL CUTTERS

Carbide Head on Hardened Steel Shank
Head Dia: +.000/-.010



DOVETAIL CUTTER WITH STEEL SHANK



Head Dia	Width of Cut	Neck Dia	Tool ID #	Shank Dia	No. Of Teeth	OAL	Neck Length	Included Angle	Part Number	Price Each
3/8	0.187	0.160	DH-375-60	1/2	5				IT-86-1200	\$66.69
1/2	0.250	0.210	DH-500-60	1/2	6	3-1/8	1/4	60°	IT-86-1205	\$73.15
3/4	0.312	0.350	DH-750-60	1/2	5				IT-86-1210	\$102.60
3/8	0.125	0.125	DH-375-90	1/2	4				IT-86-1215	\$62.67
1/2	0.156	0.185	DH-500-90	1/2	4	3-1/8	1/4	90°	IT-86-1220	\$73.15
3/4	0.250	0.250	DH-750-90	1/2	5				IT-86-1225	\$87.68

15° DOVETAIL CUTTERS

Head Dia	Width of Cut	Neck Dia	Tool ID #	Shank Dia	No. Of Teeth	OAL	Neck Length	Part Number	Price Each
3/16	0.125	0.110	DS-187-30	3/16	4	2-1/2	1/4	IT-86-1000	\$47.06
1/4	0.160	0.150	DS-250-30	1/4	4	2-1/2	1/4	IT-86-1005	\$50.10
5/16	0.190	0.200	DS-312-30	5/16	4	2-1/2	1/4	IT-86-1010	\$53.91
3/8	0.250	0.230	DS-375-30	3/8	4	2-1/2	1/4	IT-86-1015	\$53.91
1/2	0.320	0.320	DS-500-30	1/2	6	3	1/4	IT-86-1020	\$66.24
5/8	0.500	0.345	DS-625-30	5/8	6	3-1/2	1/4	IT-86-1025	\$86.31

45° DOVETAIL CUTTERS

Head Dia	Width of Cut	Neck Dia	Tool ID #	Shank Dia	No. Of Teeth	OAL	Neck Length	Part Number	Price Each
3/16	0.045	0.090	DS-187-90	3/16	3	2-1/2	1/4	IT-86-1120	\$47.06
1/4	0.060	0.115	DS-250-90	1/4	3	2-1/2	1/4	IT-86-1125	\$50.10
5/16	0.080	0.150	DS-312-90	5/16	4	2-1/2	1/4	IT-86-1127	\$52.40
3/8	0.110	0.125	DS-375-90	3/8	4	2-1/2	1/4	IT-86-1130	\$53.91
1/2	0.150	0.185	DS-500-90	1/2	4	3	1/4	IT-86-1135	\$66.24
5/8	0.190	0.245	DS-625-90	5/8	6	3-1/2	1/4	IT-86-1137	\$86.31

Call Us Today For All Of Your Machine Tool Needs!

MILLING CUTTERS

B

CONVEX & CONCAVE MILLING CUTTERS

High Speed Steel, Shank Type



Full Line Available!
Please call for more information.

Concave Shank Type						
Radius	Shank Dia	OAL	Cutter Dia	No. of Flutes	Part Number	Price Each
1/32	1/2	3	3/4	6	BI-5693-005	\$59.04
1/16	1/2	3	3/4	6	BI-5693-010	\$53.13
3/32	1/2	3	3/4	6	BI-5693-015	\$47.38
1/8	3/4	3-1/2	1	6	BI-5693-020	\$64.77
5/32	3/4	3-1/2	1	6	BI-5693-025	\$72.26
3/16	3/4	3-1/2	1	6	BI-5693-030	\$68.00
1/4	3/4	4	1-1/4	4	BI-5693-035	\$86.22
5/16	3/4	4	1-1/4	4	BI-5693-040	\$107.47
3/8	3/4	4-3/16	1-1/2	4	BI-5693-045	\$121.18

Convex Shank type				
OAL	Cutter Dia	No. of Flutes	Part Number	Price Each
3	3/4	6	BI-5690-005	\$45.97
3	3/4	6	BI-5690-010	\$39.11
3	7/8	6	BI-5690-015	\$41.53
3-1/2	1-1/4	6	BI-5690-020	\$61.86
3-1/2	1-5/16	6	BI-5690-025	\$68.19
3-1/2	1-3/8	6	BI-5690-030	\$71.52
4	1-1/2	6	BI-5690-035	\$83.16
4	1-5/8	6	BI-5690-040	\$113.17
4	1-3/4	6	BI-5690-045	\$121.92

SINGLE ANGLE CHAMFERING CUTTERS

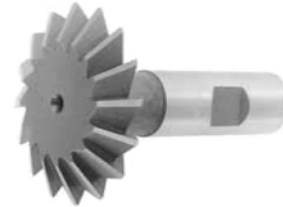
High Speed Steel, RH Cut, Shank Type



Cutter Dia	Width	Shank Dia	OAL	Angle	Part Number	Price Each
1/2	1/8	3/8	2-1/8	45°	BI-5680-001	\$33.98
3/4	3/16	3/8	2-1/8	45°	BI-5680-002	\$44.24
1	5/16	1/2	2-1/2	45°	BI-5680-003	\$51.48
1-1/2	1/2	3/4	2-3/4	45°	BI-5680-004	\$83.03
1/2	7/32	3/8	2-1/8	60°	BI-5680-005	\$33.98
3/4	5/16	3/8	2-1/8	60°	BI-5680-006	\$44.24
1	7/16	1/2	2-1/2	60°	BI-5680-007	\$51.48
1-1/2	5/8	3/4	2-3/4	60°	BI-5680-008	\$83.03

DOUBLE ANGLE MILLING CUTTERS

High Speed Steel, RH Cut, Shank Type



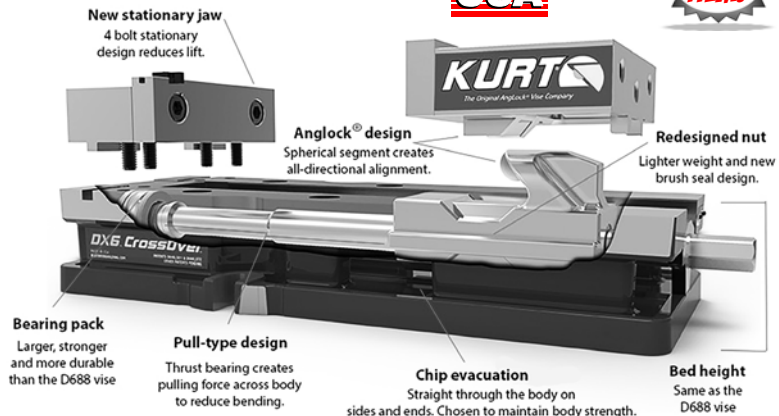
Included Angle	Cutter Dia	Shank Dia	OAL	Cutter Thickness	Part Number	Price Each
60°	3/4	3/8	2-3/8	3/16	BI-5682-010	\$34.81
60°	1	1/2	2-27/32	5/16	BI-5682-020	\$53.35
60°	1-3/8	5/8	3-7/32	7/16	BI-5682-040	\$70.20
60°	1-1/2	5/8	3-3/8	1/2	BI-5682-060	\$86.58
60°	1-7/8	3/4	3-25/32	5/8	BI-5682-080	\$112.03
90°	3/4	3/8	2-7/16	1/4	BI-5682-110	\$34.81
90°	1	1/2	2-29/32	3/8	BI-5682-120	\$53.35
90°	1-3/8	5/8	3-9/32	1/2	BI-5682-140	\$70.20
90°	1-1/2	5/8	3-7/16	9/16	BI-5682-160	\$86.58
90°	1-7/8	3/4	3-25/32	5/8	BI-5682-180	\$112.03



DX6™ CROSSOVER™ 6" VISE



- 6" vise, full 9" opening
- AngLock® design- spherical segment creates all-directional alignment and reduces jaw lift
- Narrower body style allows for more vises on the machine
- Recessed pocket for easier lifting
- Thru-body chip evacuation
- Pull-type design reduces stress on vise body
- Same bed height as D688
- 4 bolt stationary design fastens from the top
- Bearing pack is larger, stronger and more durable than bearing in D688



THE NEW INDUSTRY STANDARD!

FULL 9" OPENING!

DX6 Vise
6" Jaw Width
Part # KURT-DX6
\$569.00

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

369

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

SAW ARBORS



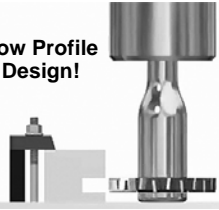
SIDE MILLING SAW ARBORS With Quad Key Drive Assist

FEATURES:

- The only SEMI-FLUSH keyed (removable) arbor for cutter with or without a drive key
- .0004" TIR
- Made from domestic 4340 aircraft alloy steel with targeted heat treat for maximum performance and less cutter vibration
- Unique body design engineered to eliminate common stress points found on typical milling arbors
- "Quad Drive Support Cap" extends deep into the body for extra cutter support and smoother cutter performance at higher RPM's
- Additional 360° of even torque (square drive) for cutter without a key slot
- Made in USA



Low Profile Design!



BENEFITS:

- 30 second cutter size changes-from .001" thick to .312" thick (model QSMA-1250)
- Square drive allows cutter to run in either direction
- Extra long square drive for deep cutter support and a smoother cut
- No bushings or extra spacers needed, saving you money

Shank Dia.	Cutter I.D.	Cutter Width	Body Length	OAL	Cap Flange	Part Number	Price Each
.500	0.500	0-.093	3.09	3.18	3/32	GIL-QSMA-500	\$209.00
	0.625	0-.150	3.31	3.44	1/8	GIL-QSMA-625	\$227.05
.750	0.875	0-.187	4.18	4.36	3/16	GIL-QSMA-875	\$274.55
	1.000	0-.250	4.82	5.03	1/4	GIL-QSMA-1000	\$296.40
1.000	1.000	0-.281	4.87	5.12	1/4	GIL-QSMA-1000-1	\$296.40
	1.250	0-.312	5.25	5.53	9/32	GIL-QSMA-1250	\$307.80

SAW ARBORS

"STANDARD PRECISION" For Slitting / Sawing Applications
"GOLD SERIES" For Grinding/ Slitting/ Sawing Applications

Buy The Set & Save!!!



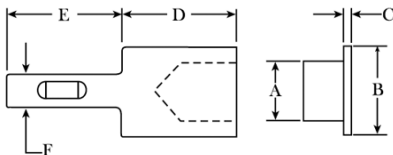
"Standard Precision" Features:

- General purpose arbor
- Vibra-core Design
- Lowest Profile Caps
- Accurate general purpose arbor
- Hardened and ground
- Deep sleeve design gives extra support and less cutter slippage
- Low profile caps and longer reaches
- Weldon shanks
- Wooden stand



"Gold Series" Features:

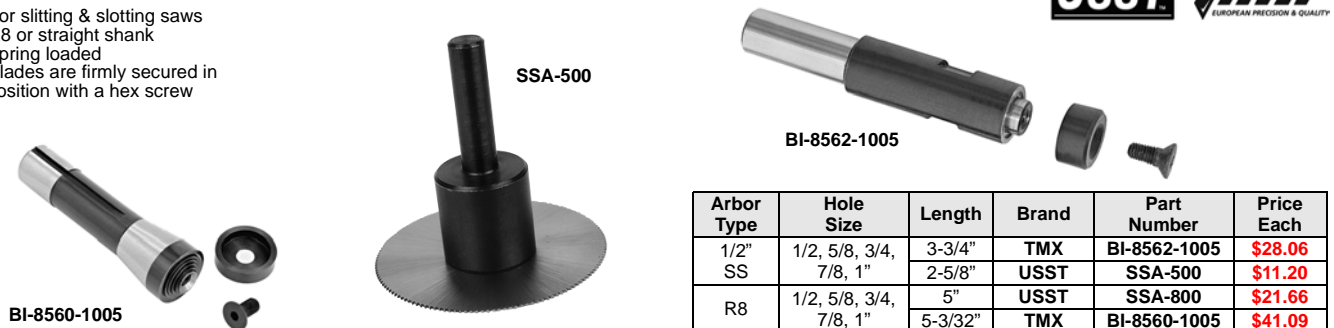
- Ultra precision arbor
- Engineered for carbide cutters
- Higher RPM'S & accuracy
- Vibra-core* design
- Deep low profile caps gives extra support and less vibration
- Heat treated and ground to .0004" concentricity and square



Shank F	A	B	C	D	E	Standard Precision Arbors	Price Each	Gold Series Arbors	Price Each
.500	.250	.500	.080	1.000		SIE-SA-250	\$39.98	SIE-GSSA-250	\$130.99
	.375	.625	.080	1.180	1.700	SIE-SA-375	\$41.84	SIE-GSSA-375	\$156.86
	.500	.750	.095	1.370		SIE-SA-500	\$44.52	SIE-GSSA-500	\$169.01
.750	.625	1.000	.122	1.500		SIE-SA-625	\$48.56	SIE-GSSA-625	\$179.58
	1.000	1.500	.160	1.750	2.030	SIE-SA-1000	\$56.44	SIE-GSSA-1000	\$210.43
	1.250	1.750	.220	2.000		SIE-SA-1250	\$57.00	SIE-GSSA-1250	\$220.69

SLITTING & SLOTING SAW ARBORS

- For slitting & slotting saws
- R8 or straight shank
- Spring loaded
- Blades are firmly secured in position with a hex screw



Arbor Type	Hole Size	Length	Brand	Part Number	Price Each
1/2" SS	1/2, 5/8, 3/4, 7/8, 1"	3-3/4"	TMX	BI-8562-1005	\$28.06
		2-5/8"	USST	SSA-500	\$11.20
R8	1/2, 5/8, 3/4, 7/8, 1"	5"	USST	SSA-800	\$21.66
		5-3/32"	TMX	BI-8560-1005	\$41.09

Call Us Today For All Of Your Machine Tool Needs!

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

STRAIGHT TOOTH SIDE MILLING CUTTERS

- High speed steel
- Plain teeth
- Staggered tooth side milling cutters also available.



Full Line Available!
Please call for more information.

Dia	Hole Size	Number of Teeth	Width of Face	Depth of Cut	Part Number	Price Each
2	1/2	14	3/16	.527	BI-5706-005	\$30.98
2	1/2	14	1/4	.527	BI-5706-010	\$32.48
2	1/2	14	3/8	.527	BI-5706-015	\$35.10
2	5/8	14	3/16	.488	BI-5706-020	\$30.89
2	5/8	14	1/4	.488	BI-5706-025	\$31.82
2	5/8	14	5/16	.488	BI-5706-028	\$33.79
2	5/8	14	3/8	.488	BI-5706-030	\$35.29
2	7/8	14	1/4	.370	BI-5706-031	\$32.67
2	7/8	14	5/16	.370	BI-5706-032	\$34.16
2	7/8	14	3/8	.370	BI-5706-033	\$35.66
2	7/8	14	7/16	.370	BI-5706-034	\$37.25
2-1/2	7/8	16	3/16	.581	BI-5706-035	\$36.41
2-1/2	7/8	16	1/4	.581	BI-5706-040	\$37.91
2-1/2	7/8	16	5/16	.581	BI-5706-045	\$40.63
2-1/2	7/8	16	3/8	.581	BI-5706-050	\$42.50
2-1/2	7/8	16	7/16	.581	BI-5706-055	\$44.55
2-1/2	7/8	16	1/2	.581	BI-5706-060	\$46.42
2-1/2	1	16	3/16	.502	BI-5706-064	\$36.13
2-1/2	1	16	1/4	.502	BI-5706-065	\$38.10
2-1/2	1	16	5/16	.502	BI-5706-070	\$40.06
2-1/2	1	16	3/8	.502	BI-5706-075	\$42.03
2-1/2	1	16	7/16	.502	BI-5706-077	\$44.08
2-1/2	1	16	1/2	.502	BI-5706-080	\$45.95
2-1/2	1	16	5/8	.502	BI-5706-085	\$50.27
3	1	18	3/16	.712	BI-5706-090	\$37.72
3	1	18	7/32	.712	BI-5706-095	\$38.84
3	1	18	1/4	.712	BI-5706-100	\$40.34
3	1	18	9/32	.712	BI-5706-105	\$40.63
3	1	18	5/16	.712	BI-5706-110	\$42.03
3	1	18	11/32	.712	BI-5706-115	\$43.15
3	1	18	3/8	.712	BI-5706-120	\$44.65
3	1	18	13/32	.712	BI-5706-121	\$46.14
3	1	18	7/16	.712	BI-5706-125	\$47.27
3	1	18	1/2	.712	BI-5706-130	\$48.29
3	1	18	9/16	.712	BI-5706-135	\$52.61
3	1	18	5/8	.712	BI-5706-140	\$54.48
3	1	18	11/16	.712	BI-5706-145	\$56.91
3	1	18	3/4	.712	BI-5706-150	\$60.09
3	1	18	13/16	.712	BI-5706-155	\$62.99
3	1	18	7/8	.712	BI-5706-160	\$65.80
3	1	18	1	.712	BI-5706-170	\$80.31
3	1-1/4	18	3/16	.633	BI-5706-173	\$37.72
3	1-1/4	18	1/4	.633	BI-5706-175	\$40.53
3	1-1/4	18	5/16	.633	BI-5706-180	\$42.03
3	1-1/4	18	3/8	.633	BI-5706-185	\$44.46
3	1-1/4	18	1/2	.633	BI-5706-195	\$48.95
3	1-1/4	18	3/4	.633	BI-5706-205	\$60.56
3-1/2	1	20	3/16	.962	BI-5706-211	\$48.29
3-1/2	1	20	1/4	.962	BI-5706-212	\$49.80

Dia	Hole Size	Number of Teeth	Width of Face	Depth of Cut	Part Number	Price Each
3-1/2	1	20	5/16	.962	BI-5706-215	\$53.54
3-1/2	1	20	3/8	.962	BI-5706-220	\$55.50
3-1/2	1	20	1/2	.962	BI-5706-226	\$63.56
3-1/2	1	20	5/8	.962	BI-5706-228	\$73.67
4	1	22	3/16	1.212	BI-5706-229	\$54.95
4	1	22	7/32	1.212	BI-5706-230	\$56.25
4	1	22	1/4	1.212	BI-5706-235	\$58.88
4	1	22	9/32	1.212	BI-5706-240	\$58.50
4	1	22	5/16	1.212	BI-5706-245	\$61.12
4	1	22	11/32	1.212	BI-5706-250	\$62.52
4	1	22	3/8	1.212	BI-5706-255	\$64.40
4	1	22	7/16	1.212	BI-5706-260	\$70.58
4	1	22	13/32	1.212	BI-5706-265	\$68.80
4	1	22	1/2	1.212	BI-5706-270	\$75.16
4	1	22	9/16	1.212	BI-5706-275	\$82.46
4	1	22	5/8	1.212	BI-5706-280	\$85.83
4	1	22	11/16	1.212	BI-5706-285	\$91.17
4	1	22	3/4	1.212	BI-5706-290	\$95.94
4	1	22	13/16	1.212	BI-5706-295	\$101.09
4	1	22	7/8	1.212	BI-5706-300	\$108.11
4	1	22	1	1.212	BI-5706-310	\$117.47
4	1	22	1-1/8	1.212	BI-5706-311	\$129.64
4	1-1/4	22	3/16	1.074	BI-5706-314	\$54.95
4	1-1/4	22	7/32	1.074	BI-5706-315	\$56.16
4	1-1/4	22	1/4	1.074	BI-5706-320	\$60.09
4	1-1/4	22	5/16	1.074	BI-5706-330	\$61.22
4	1-1/4	22	11/32	1.074	BI-5706-335	\$62.43
4	1-1/4	22	3/8	1.074	BI-5706-340	\$65.52
4	1-1/4	22	7/16	1.074	BI-5706-345	\$70.58
4	1-1/4	22	1/2	1.074	BI-5706-355	\$75.26
4	1-1/4	22	9/16	1.074	BI-5706-360	\$82.46
4	1-1/4	22	5/8	1.074	BI-5706-365	\$86.20
4	1-1/4	22	3/4	1.074	BI-5706-375	\$95.94
4	1-1/4	22	7/8	1.074	BI-5706-385	\$107.17
4	1-1/4	22	1	1.074	BI-5706-395	\$117.00
4	1-1/4	22	1-1/8	1.074	BI-5706-400	\$128.23
4	1-1/4	22	1-1/4	1.074	BI-5706-405	\$139.00
4-1/2	1-1/4	24	3/8	1.305	BI-5706-408	\$85.83
4-1/2	1-1/4	24	1/2	1.305	BI-5706-410	\$85.83
5	1	24	1/4	1.712	BI-5706-415	\$82.75
5	1	24	9/32	1.712	BI-5706-420	\$82.75
5	1	24	5/16	1.712	BI-5706-425	\$82.75
5	1	24	3/8	1.712	BI-5706-435	\$85.83
5	1	24	7/16	1.712	BI-5706-445	\$98.75
5	1	24	1/2	1.712	BI-5706-450	\$105.77
5	1	24	5/8	1.712	BI-5706-460	\$123.08
5	1	24	3/4	1.712	BI-5706-470	\$139.00
5	1-1/4	24	1/4	1.555	BI-5706-495	\$82.75
5	1-1/4	24	9/32	1.555	BI-5706-497	\$82.75

Staggered Tooth Side Milling Cutters Also Available! Please Call For More Information!

Call Us Or Visit Our Website For Our Complete Selection!

SLITTING SAWS

PLAIN METAL SLITTING SAWS



- HSS
- For general slotting or cut-off operations
- Tolerances:
OD: +.015" Width: +.001"
Hole Dia: +.001"
- Additional sizes available

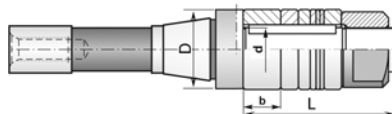
Dia	Face Width	Hole Size	# of Teeth	Part Number	Price Each
1-3/4	1/32	1/2	28	BI-5747-002	\$16.33
2	1/16	1/2	28	BI-5747-005	\$14.45
2	3/32	1/2	28	BI-5747-007	\$16.33
2	1/8	1/2	28	BI-5747-010	\$16.33
2-1/2	3/64	3/8	28	BI-5747-012	\$16.33
2-1/2	1/32	3/8	28	BI-5747-013	\$16.33
2-1/2	1/32	7/8	28	BI-5747-015	\$16.33
2-1/2	3/64	7/8	28	BI-5747-020	\$16.33
2-1/2	1-1/16	7/8	28	BI-5747-025	\$16.33
2-1/2	3/32	7/8	28	BI-5747-030	\$16.33
2-1/2	1/8	7/8	28	BI-5747-035	\$16.33
2-1/2	1/16	1	28	BI-5747-038	\$16.33
3	1/64	1	30	BI-5747-040	\$30.43
3	1/32	1	30	BI-5747-045	\$17.87
3	3/64	1	30	BI-5747-050	\$17.87
3	1/16	1	30	BI-5747-055	\$18.96
3	5/64	1	30	BI-5747-060	\$18.96
3	3/32	1	30	BI-5747-065	\$18.96
3	7/64	1	30	BI-5747-070	\$19.51
3	1/8	1	30	BI-5747-075	\$19.51
3	9/64	1	30	BI-5747-080	\$20.30
3	5/32	1	30	BI-5747-085	\$20.30
3	3/16	1	30	BI-5747-087	\$21.95
3-1/2	1/32	1	30	BI-5747-090	\$25.36
3-1/2	3/64	1	30	BI-5747-095	\$26.25
3-1/2	1/16	1	30	BI-5747-100	\$26.25
3-1/2	3/32	1	30	BI-5747-105	\$27.68
3-1/2	1/8	1	30	BI-5747-109	\$29.22
3-1/2	1/8	1	30	BI-5747-110	\$29.22
3-1/2	9/64	1	30	BI-5747-111	\$31.99
3-1/2	5/32	1	30	BI-5747-112	\$31.99
3-1/2	3/16	1	30	BI-5747-113	\$31.99
3-1/2	3/16	1	36	BI-5747-114	\$31.99
4	1/64	1	36	BI-5747-115	\$41.46
4	1/32	1	36	BI-5747-120	\$25.36
4	3/64	1	36	BI-5747-125	\$26.25
4	1/16	1	36	BI-5747-130	\$26.25
4	5/64	1	36	BI-5747-135	\$27.68
4	3/32	1	36	BI-5747-140	\$27.68
4	7/64	1	36	BI-5747-145	\$29.22
4	1/8	1	36	BI-5747-150	\$29.22
4	9/64	1	36	BI-5747-155	\$30.33
4	5/32	1	36	BI-5747-160	\$30.33
4	3/16	1	36	BI-5747-165	\$31.99

Dia	Face Width	Hole Size	# of Teeth	Part Number	Price Each
4-1/2	1/32	1	36	BI-5747-170	\$41.46
4-1/2	3/64	1	36	BI-5747-175	\$35.06
4-1/2	1/16	1	36	BI-5747-180	\$35.06
4-1/2	3/32	1	36	BI-5747-185	\$38.28
4-1/2	1/8	1	36	BI-5747-190	\$39.92
5	3/64	1	40	BI-5747-195	\$35.06
5	1/16	1	40	BI-5747-200	\$35.06
5	5/64	1	40	BI-5747-205	\$37.16
5	3/32	1	40	BI-5747-210	\$38.28
5	7/64	1	40	BI-5747-215	\$39.92
5	1/8	1	40	BI-5747-220	\$39.92
5	9/64	1	40	BI-5747-225	\$42.35
5	5/32	1	40	BI-5747-230	\$42.35
5	3/16	1	40	BI-5747-235	\$44.88
5	1/16	1-1/4	40	BI-5747-201	\$35.06
5	3/32	1-1/4	40	BI-5747-211	\$38.28
5	1/8	1-1/4	40	BI-5747-240	\$39.92
5	5/32	1-1/4	40	BI-5747-231	\$42.35
5	3/16	1-1/4	40	BI-5747-236	\$44.88
6	3/64	1	42	BI-5747-245	\$52.16
6	1/16	1	42	BI-5747-250	\$45.87
6	5/64	1	42	BI-5747-255	\$48.74
6	3/32	1	42	BI-5747-260	\$53.06
6	7/64	1	42	BI-5747-265	\$56.31
6	1/8	1	42	BI-5747-270	\$54.81
6	9/64	1	42	BI-5747-275	\$58.45
6	5/32	1	42	BI-5747-276	\$63.86
6	3/16	1	42	BI-5747-280	\$65.51
6	1/16	1-1/4	42	BI-5747-283	\$45.87
6	3/32	1-1/4	42	BI-5747-284	\$52.93
6	1/8	1-1/4	42	BI-5747-285	\$54.81
6	5/32	1-1/4	42	BI-5747-287	\$63.63
8	3/32	1	48	BI-5747-292	\$103.22
8	1/8	1	48	BI-5747-295	\$115.25
8	3/16	1	48	BI-5747-297	\$129.58
8	3/32	1-1/4	48	BI-5747-293	\$103.22
8	1/8	1-1/4	48	BI-5747-300	\$115.25
8	3/16	1-1/4	48	BI-5747-305	\$129.58
8	1/4	1-1/4	48	BI-5747-307	\$135.65
10	3/32	1-1/4	56	BI-5747-318	\$170.38
10	1/8	1-1/4	56	BI-5747-320	\$170.38
10	3/16	1-1/4	56	BI-5747-335	\$205.68
10	1/4	1-1/4	62	BI-5747-340	\$205.68

SLITTING SAW STUB MILL ARBORS

With R8 Shank

- Made of Alloy Forged Steel for long durable service life
- Hardened to RC 56-60 and ground to ensure maximum accuracy
- Face is held perpendicular to center line within 0.0004"
- Pilot diameter is sized for precision fit with cutter and is keyed for positive drive
- Heavy duty locking LH nut and set of arbor spacers are included
- Draw Bar Thread 7/16" x 20



Arbor Type	Arbor Dia	D	Wrench Size S	L	Part Number	Price Each
R-8	1"	1.50	1.25	2.00	BI-7070-005	\$147.60
	1-1/4"	1.75	1.50	2.00	BI-7070-010	\$159.94



Call Us Today For All Of Your Machine Tool Needs!

SCREW SLOTING SAWS



- Designed for shallow cuts such as slotting screw and bolt heads
- Concave ground sides insure proper side relief
- Saws have standard keyways
- Tolerances:
 Outside diameter: +.015"
 Hole diameter: +.001"
 Width: +.001"
- High Speed Steel



Dia	Face Width	Hole Size	# of Teeth	Part Number	Price Each	Dia	Face Width	Hole Size	# of Teeth	Part Number	Price Each
1-3/4	0.010	1/2	90	BI-5745-006	\$10.04	2-3/4	0.072	1	56	BI-5745-530	\$11.13
1-3/4	0.013	1/2	90	BI-5745-014	\$9.04	2-3/4	0.081	1	56	BI-5745-535	\$12.91
1-3/4	0.020	1/2	90	BI-5745-031	\$6.68	2-3/4	0.091	1	56	BI-5745-540	\$14.00
1-3/4	0.008	5/8	90	BI-5745-004	\$10.70	2-3/4	0.102	1	56	BI-5745-545	\$14.66
1-3/4	0.010	5/8	90	BI-5745-005	\$10.04	2-3/4	0.114	1	56	BI-5745-550	\$15.11
1-3/4	0.012	5/8	90	BI-5745-010	\$9.04	2-3/4	0.128	1	56	BI-5745-555	\$15.55
1-3/4	0.014	5/8	90	BI-5745-015	\$7.34	2-3/4	0.144	1	56	BI-5745-560	\$17.87
1-3/4	0.016	5/8	90	BI-5745-020	\$7.16	2-3/4	0.162	1	56	BI-5745-565	\$19.51
1-3/4	0.018	5/8	90	BI-5745-025	\$6.96	2-3/4	0.010	3/4	72	BI-5745-185	\$17.87
1-3/4	0.020	5/8	90	BI-5745-030	\$6.68	2-3/4	0.016	3/4	72	BI-5745-200	\$14.23
1-3/4	0.023	5/8	90	BI-5745-035	\$6.68	2-3/4	0.020	3/4	72	BI-5745-210	\$9.27
1-3/4	0.025	5/8	90	BI-5745-040	\$6.68	2-3/4	0.023	3/4	72	BI-5745-215	\$9.27
1-3/4	0.028	5/8	90	BI-5745-045	\$6.68	2-3/4	0.025	3/4	72	BI-5745-220	\$9.27
1-3/4	0.032	5/8	90	BI-5745-050	\$6.68	2-3/4	0.028	3/4	72	BI-5745-225	\$9.27
1-3/4	0.036	5/8	90	BI-5745-055	\$6.96	2-3/4	0.032	3/4	72	BI-5745-230	\$9.27
1-3/4	0.040	5/8	90	BI-5745-060	\$6.96	2-3/4	0.036	3/4	72	BI-5745-235	\$9.27
1-3/4	0.045	5/8	90	BI-5745-065	\$6.96	2-3/4	0.040	3/4	72	BI-5745-240	\$9.27
1-3/4	0.051	5/8	90	BI-5745-070	\$6.96	2-3/4	0.051	3/4	72	BI-5745-250	\$11.13
1-3/4	0.057	5/8	90	BI-5745-075	\$7.34	2-3/4	0.057	3/4	72	BI-5745-255	\$11.13
1-3/4	0.064	5/8	90	BI-5745-080	\$7.82	2-3/4	0.064	3/4	72	BI-5745-260	\$11.13
1-3/4	0.072	5/8	90	BI-5745-082	\$7.82	2-3/4	0.072	3/4	72	BI-5745-265	\$11.13
2-1/4	0.008	5/8	60	BI-5745-084	\$20.87	2-3/4	0.081	3/4	72	BI-5745-270	\$12.91
2-1/4	0.010	5/8	60	BI-5745-085	\$14.78	2-3/4	0.091	3/4	72	BI-5745-275	\$14.00
2-1/4	0.014	5/8	60	BI-5745-095	\$10.65	2-3/4	0.102	3/4	72	BI-5745-280	\$14.66
2-1/4	0.016	5/8	60	BI-5745-100	\$10.65	2-3/4	0.114	3/4	72	BI-5745-285	\$15.11
2-1/4	0.018	5/8	60	BI-5745-105	\$8.82	2-3/4	0.128	3/4	72	BI-5745-290	\$15.55
2-1/4	0.020	5/8	60	BI-5745-110	\$8.82	2-3/4	0.162	3/4	72	BI-5745-291	\$19.51
2-1/4	0.023	5/8	60	BI-5745-115	\$8.82	2-3/4	0.182	3/4	72	BI-5745-292	\$22.94
2-1/4	0.025	5/8	60	BI-5745-120	\$8.82	2-3/4	0.010	1	72	BI-5745-295	\$17.87
2-1/4	0.028	5/8	60	BI-5745-125	\$8.33	2-3/4	0.012	1	72	BI-5745-300	\$16.33
2-1/4	0.032	5/8	60	BI-5745-130	\$8.33	2-3/4	0.013	1	72	BI-5745-301	\$16.33
2-1/4	0.035	5/8	60	BI-5745-134	\$8.33	2-3/4	0.014	1	72	BI-5745-305	\$15.34
2-1/4	0.036	5/8	60	BI-5745-135	\$8.33	2-3/4	0.016	1	72	BI-5745-310	\$14.23
2-1/4	0.040	5/8	60	BI-5745-140	\$8.82	2-3/4	0.018	1	72	BI-5745-315	\$13.46
2-1/4	0.045	5/8	60	BI-5745-145	\$9.27	2-3/4	0.020	1	72	BI-5745-320	\$9.27
2-1/4	0.051	5/8	60	BI-5745-150	\$9.27	2-3/4	0.023	1	72	BI-5745-325	\$9.27
2-1/4	0.057	5/8	60	BI-5745-155	\$9.27	2-3/4	0.025	1	72	BI-5745-330	\$9.27
2-1/4	0.064	5/8	60	BI-5745-160	\$9.27	2-3/4	0.028	1	72	BI-5745-335	\$9.27
2-1/4	0.072	5/8	60	BI-5745-165	\$9.27	2-3/4	0.032	1	72	BI-5745-340	\$9.27
2-1/4	0.081	5/8	60	BI-5745-170	\$9.93	2-3/4	0.035	1	72	BI-5745-343	\$9.27
2-1/4	0.091	5/8	60	BI-5745-175	\$10.70	2-3/4	0.036	1	72	BI-5745-345	\$9.27
2-1/4	0.102	5/8	60	BI-5745-180	\$11.59	2-3/4	0.040	1	72	BI-5745-350	\$9.27
2-3/4	0.014	1	56	BI-5745-460	\$15.34	2-3/4	0.045	1	72	BI-5745-355	\$11.13
2-3/4	0.016	1	56	BI-5745-465	\$14.23	2-3/4	0.051	1	72	BI-5745-360	\$11.13
2-3/4	0.018	1	56	BI-5745-470	\$13.46	2-3/4	0.057	1	72	BI-5745-365	\$11.13
2-3/4	0.020	1	56	BI-5745-475	\$9.27	2-3/4	0.064	1	72	BI-5745-370	\$11.13
2-3/4	0.023	1	56	BI-5745-480	\$9.27	2-3/4	0.072	1	72	BI-5745-375	\$11.13
2-3/4	0.025	1	56	BI-5745-485	\$9.27	2-3/4	0.074	1	72	BI-5745-377	\$12.46
2-3/4	0.028	1	56	BI-5745-490	\$9.27	2-3/4	0.081	1	72	BI-5745-380	\$12.91
2-3/4	0.032	1	56	BI-5745-495	\$9.27	2-3/4	0.091	1	72	BI-5745-385	\$14.00
2-3/4	0.036	1	56	BI-5745-500	\$9.27	2-3/4	0.102	1	72	BI-5745-390	\$14.66
2-3/4	0.040	1	56	BI-5745-505	\$9.27	2-3/4	0.114	1	72	BI-5745-395	\$15.11
2-3/4	0.045	1	56	BI-5745-510	\$11.13	2-3/4	0.128	1	72	BI-5745-400	\$15.55
2-3/4	0.051	1	56	BI-5745-515	\$11.13	2-3/4	0.144	1	72	BI-5745-405	\$17.87
2-3/4	0.057	1	56	BI-5745-520	\$11.13	2-3/4	0.162	1	72	BI-5745-410	\$19.51
2-3/4	0.064	1	56	BI-5745-525	\$11.13	2-3/4	0.182	1	72	BI-5745-415	\$22.94

LATHE CHUCKS
 LIVE CENTERS
 VISE ACCESSORIES
 STRAIGHT SHANK COLLET HOLDERS
 TAP HOLDERS
 DRILL CHUCKS
 CARBIDE INSERTS
 THREADING/GROOVING
 CUTTING TOOLS
 MACHINERY
 PRECISION TOOLS
 DEBURRING
 COOLANT/FLUIDS
 TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

SLOTTING SAWS

JEWELER'S SLOTTING SAWS



- HSS
- Used in slotting, sheeting and tubing
- For cutting thin tubing, wire and similar items, as well as for slotting very thin materials
- ANSI/ASME B94.19
- Tolerances:
OD: +.015" Width: +.001"
Hole Dia: +.001"
- Additional sizes available

Dia	Thick-ness	No. of Teeth	3/8" Arbor Hole		1/2" Arbor Hole	
			Part Number	Price Each	Part Number	Price Each
1"	0.008	99	BI-5746-003	\$7.56	BI-5746-004	\$7.56
1"	0.010	99	BI-5746-005	\$5.84	BI-5746-008	\$5.84
1"	0.012	99	BI-5746-010	\$5.84	BI-5746-013	\$5.84
1"	0.014	75	BI-5746-015	\$5.38	BI-5746-018	\$5.38
1"	0.016	75	BI-5746-020	\$5.15	BI-5746-023	\$5.15
1"	0.018	75	BI-5746-025	\$4.63	-	-
1"	0.020	75	BI-5746-030	\$4.63	BI-5746-033	\$4.63
1"	0.023	75	BI-5746-035	\$4.22	BI-5746-038	\$4.22
1"	0.025	75	BI-5746-040	\$4.22	BI-5746-042	\$4.22
1"	0.028	75	BI-5746-045	\$5.15	BI-5746-046	\$5.15
1"	0.032	75	BI-5746-050	\$5.15	BI-5746-049	\$5.15
1-1/4"	0.008	120	BI-5746-052	\$8.94	BI-5746-053	\$8.94
1-1/4"	0.010	120	BI-5746-055	\$8.15	BI-5746-056	\$8.15
1-1/4"	0.012	120	BI-5746-060	\$6.57	BI-5746-061	\$6.57
1-1/4"	0.014	99	BI-5746-065	\$6.35	BI-5746-066	\$6.35
1-1/4"	0.016	99	BI-5746-070	\$5.84	BI-5746-071	\$5.84
1-1/4"	0.020	99	BI-5746-080	\$5.38	BI-5746-081	\$5.38
1-1/4"	0.023	99	BI-5746-085	\$5.15	-	-
1-1/4"	0.025	99	BI-5746-090	\$5.15	-	-
1-1/4"	0.028	99	BI-5746-095	\$5.38	BI-5746-096	\$5.38
1-1/4"	0.032	99	BI-5746-100	\$5.38	BI-5746-101	\$5.38
1-1/2"	0.008	140	BI-5746-102	\$11.03	BI-5746-103	\$11.03
1-1/2"	0.010	140	BI-5746-104	\$10.65	BI-5746-105	\$10.65
1-1/2"	0.012	140	BI-5746-109	\$7.56	BI-5746-110	\$7.56
1-1/2"	0.014	110	BI-5746-114	\$7.01	BI-5746-115	\$7.01
1-1/2"	0.016	110	BI-5746-119	\$6.57	BI-5746-120	\$6.57
1-1/2"	0.018	110	BI-5746-124	\$6.35	BI-5746-125	\$6.35
1-1/2"	0.020	110	BI-5746-129	\$5.84	BI-5746-130	\$5.84
1-1/2"	0.025	110	BI-5746-139	\$5.84	BI-5746-140	\$5.84
1-1/2"	0.028	110	BI-5746-144	\$5.84	BI-5746-145	\$5.84
1-1/2"	0.032	110	BI-5746-149	\$6.68	BI-5746-150	\$6.68
1-3/4"	0.008	160	-	-	BI-5746-153	\$11.92
1-3/4"	0.010	160	BI-5746-154	\$11.03	-	-
1-3/4"	0.012	160	-	-	BI-5746-160	\$10.83
1-3/4"	0.014	132	BI-5746-164	\$7.82	BI-5746-165	\$7.82
1-3/4"	0.016	132	-	-	BI-5746-170	\$7.56
1-3/4"	0.018	132	BI-5746-174	\$7.01	BI-5746-175	\$7.01
1-3/4"	0.020	132	BI-5746-179	\$6.57	BI-5746-180	\$6.57
1-3/4"	0.025	132	BI-5746-189	\$5.84	BI-5746-190	\$5.84
1-3/4"	0.032	132	BI-5746-199	\$6.35	BI-5746-200	\$6.35
2"	0.008	190	BI-5746-202	\$13.67	BI-5746-203	\$13.67
2"	0.010	190	BI-5746-204	\$13.24	BI-5746-205	\$13.24
2"	0.012	190	-	-	BI-5746-210	\$12.35
2"	0.014	152	BI-5746-214	\$9.70	BI-5746-215	\$9.70
2"	0.016	152	BI-5746-219	\$8.99	BI-5746-220	\$8.99
2"	0.018	152	BI-5746-224	\$8.05	BI-5746-225	\$8.05
2"	0.020	152	BI-5746-229	\$7.56	BI-5746-230	\$7.56
2"	0.023	152	-	-	BI-5746-235	\$7.01
2"	0.025	152	BI-5746-239	\$7.56	BI-5746-240	\$7.56
2"	0.028	152	BI-5746-244	\$7.56	BI-5746-245	\$7.56

Dia	Thick-ness	No. of Teeth	3/8" Arbor Hole		1/2" Arbor Hole	
			Part Number	Price Each	Part Number	Price Each
2"	0.032	110	BI-5746-249	\$7.56	BI-5746-250	\$7.56
2"	0.035	110	BI-5746-254	\$7.56	BI-5746-255	\$7.56
2"	0.036	110	-	-	BI-5746-258	\$12.02
2"	0.040	110	BI-5746-259	\$8.05	BI-5746-260	\$8.05
2"	0.045	110	BI-5746-264	\$8.05	BI-5746-265	\$8.05
2"	0.051	110	BI-5746-269	\$8.99	BI-5746-270	\$8.99
2"	0.057	110	BI-5746-274	\$8.99	BI-5746-275	\$8.99
2-1/4"	0.010	210	-	-	BI-5746-277	\$16.66
2-1/4"	0.014	210	-	-	BI-5746-279	\$16.66
2-1/2"	0.010	240	-	-	BI-5746-280	\$16.66
2-1/2"	0.012	240	-	-	BI-5746-285	\$14.56
2-1/2"	0.014	190	-	-	BI-5746-290	\$13.24
2-1/2"	0.016	190	-	-	BI-5746-295	\$10.87
2-1/2"	0.018	190	-	-	BI-5746-300	\$9.27
2-1/2"	0.020	190	-	-	BI-5746-305	\$8.67
2-1/2"	0.023	190	-	-	BI-5746-310	\$8.05
2-1/2"	0.025	190	-	-	BI-5746-315	\$8.05
2-1/2"	0.028	190	-	-	BI-5746-320	\$8.99
2-1/2"	0.032	140	-	-	BI-5746-325	\$8.99
2-1/2"	0.035	140	-	-	BI-5746-330	\$9.70
2-1/2"	0.040	140	-	-	BI-5746-335	\$10.21
2-1/2"	0.045	140	-	-	BI-5746-340	\$10.21
2-1/2"	0.051	140	-	-	BI-5746-345	\$10.87
2-1/2"	0.057	140	-	-	BI-5746-350	\$10.87

Dia	Thick-ness	No. of Teeth	1/2" Arbor Hole		1" Arbor Hole	
			Part Number	Price Each	Part Number	Price Each
3"	0.010	280	BI-5746-355	\$19.08	BI-5746-505	\$19.08
3"	0.012	280	BI-5746-360	\$16.98	BI-5746-510	\$16.98
3"	0.014	230	BI-5746-365	\$16.98	BI-5746-515	\$16.98
3"	0.016	230	BI-5746-370	\$14.56	BI-5746-520	\$14.56
3"	0.018	230	BI-5746-375	\$12.91	BI-5746-525	\$12.91
3"	0.020	230	BI-5746-380	\$10.70	BI-5746-530	\$10.70
3"	0.023	230	-	-	BI-5746-535	\$10.70
3"	0.025	230	BI-5746-390	\$9.70	BI-5746-540	\$10.70
3"	0.028	230	BI-5746-395	\$10.87	BI-5746-545	\$10.87
3"	0.032	168	BI-5746-400	\$10.87	BI-5746-550	\$10.87
3"	0.035	168	BI-5746-405	\$12.02	BI-5746-555	\$12.02
3"	0.040	168	BI-5746-410	\$12.02	BI-5746-560	\$12.02
3"	0.045	168	BI-5746-415	\$12.02	BI-5746-565	\$12.02
3"	0.051	168	BI-5746-420	\$12.79	BI-5746-570	\$12.79
3"	0.057	168	BI-5746-425	\$12.79	BI-5746-575	\$12.79
4"	0.016	310	BI-5746-580	\$23.72	-	-
4"	0.018	310	BI-5746-585	\$23.27	BI-5746-715	\$23.27
4"	0.020	310	BI-5746-590	\$22.05	BI-5746-720	\$22.05
4"	0.023	310	BI-5746-595	\$17.65	BI-5746-725	\$17.65
4"	0.025	310	BI-5746-600	\$16.21	BI-5746-730	\$16.21
4"	0.028	310	BI-5746-605	\$16.21	BI-5746-735	\$16.21
4"	0.032	220	BI-5746-610	\$17.65	BI-5746-740	\$17.65
4"	0.035	220	BI-5746-615	\$18.31	BI-5746-745	\$18.31
4"	0.040	220	BI-5746-620	\$18.31	BI-5746-750	\$18.31
4"	0.051	220	BI-5746-630	\$20.30	BI-5746-760	\$20.30
4"	0.057	220	BI-5746-635	\$20.74	BI-5746-765	\$20.74
4"	0.064	220	BI-5746-640	\$20.74	BI-5746-770	\$20.74
5"	0.025	280	BI-5746-785	\$29.56	BI-5746-840	\$29.56
5"	0.028	280	BI-5746-790	\$29.56	BI-5746-845	\$29.56
5"	0.032	280	BI-5746-795	\$24.93	BI-5746-850	\$24.93
5"	0.035	280	BI-5746-800	\$24.93	BI-5746-855	\$24.93
5"	0.040	280	BI-5746-805	\$24.93	BI-5746-860	\$24.93
5"	0.045	280	BI-5746-810	\$28.02	BI-5746-865	\$28.02
5"	0.051	280	BI-5746-815	\$28.02	BI-5746-870	\$28.02
5"	0.057	280	BI-5746-820	\$28.88	BI-5746-875	\$28.88
5"	0.064	280	BI-5746-825	\$28.88	BI-5746-880	\$28.88

Additional Diameters & Arbor Hole Combinations Available. Please Call For More Information.

Call Us Today For All Of Your Machine Tool Needs!

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

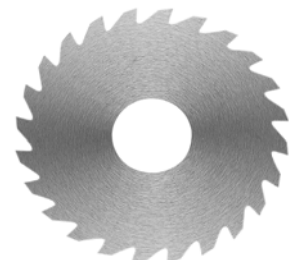
INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

SOLID CARBIDE SAWS



Thickness	3/4" dia 1/4" Hole 10 or 20 teeth		1" dia 3/8" Hole 12 or 24 Teeth		1 1/4" dia 1/2" Hole 16 or 36 teeth		1 1/2" dia 1/2" Hole 16 or 36 teeth		1 3/4" dia 1/2", 5/8" or 7/8" Hole 24 or 36 teeth	
	Part Number	Price	Part Number	Price	Part Number	Price	Part Number	Price	Part Number	Price
.0020	ROB-C07002	\$142.10	ROB-C10002	\$142.10	ROB-C12002	\$184.00	ROB-C15002	\$210.25	ROB-C17002	\$236.35
.0040	ROB-C07004	\$113.50	ROB-C10004	\$113.50	ROB-C12004	\$147.10	ROB-C15004	\$168.35	ROB-C17004	\$189.10
.0060	ROB-C07006	\$90.80	ROB-C10006	\$75.80	ROB-C12006	\$98.30	ROB-C15006	\$112.10	ROB-C17006	\$126.35
.0080	ROB-C07008	\$60.60	ROB-C10008	\$68.00	ROB-C12008	\$79.25	ROB-C15008	\$90.50	ROB-C17008	\$101.75
.0100	ROB-C07010	\$52.55	ROB-C10010	\$68.00	ROB-C12010	\$79.25	ROB-C15010	\$90.50	ROB-C17010	\$101.75
.0120	ROB-C07012	\$51.65	ROB-C10012	\$53.40	ROB-C12012	\$61.10	ROB-C15012	\$77.85	ROB-C17012	\$88.75
.0140	ROB-C07014	\$40.80	ROB-C10014	\$53.40	ROB-C12014	\$61.10	ROB-C15014	\$77.85	ROB-C17014	\$88.75
.0156	ROB-C07016	\$40.80	ROB-C10016	\$53.40	ROB-C12016	\$61.10	ROB-C15016	\$77.85	ROB-C17016	\$88.75
.0180	ROB-C07018	\$40.80	ROB-C10018	\$53.40	ROB-C12018	\$61.10	ROB-C15018	\$77.85	ROB-C17018	\$88.75
.0200	ROB-C07020	\$40.80	ROB-C10020	\$45.20	ROB-C12020	\$54.00	ROB-C15020	\$63.55	ROB-C17020	\$82.40
.0230	ROB-C07023	\$35.55	ROB-C10023	\$45.20	ROB-C12023	\$54.00	ROB-C15023	\$63.55	ROB-C17023	\$82.40
.0250	ROB-C07025	\$35.55	ROB-C10025	\$45.20	ROB-C12025	\$54.00	ROB-C15025	\$63.55	ROB-C17025	\$82.40
.0280	ROB-C07028	\$35.55	ROB-C10028	\$45.20	ROB-C12028	\$54.00	ROB-C15028	\$63.55	ROB-C17028	\$82.40
.0312	ROB-C07032	\$29.65	ROB-C10032	\$41.45	ROB-C12032	\$41.90	ROB-C15032	\$55.55	ROB-C17032	\$71.90
.0350	ROB-C07035	\$29.65	ROB-C10035	\$41.45	ROB-C12035	\$41.90	ROB-C15035	\$55.55	ROB-C17035	\$71.90
.0400	ROB-C07040	\$29.65	ROB-C10040	\$41.45	ROB-C12040	\$41.90	ROB-C15040	\$55.55	ROB-C17040	\$71.90
.0468	ROB-C07045	\$35.60	ROB-C10045	\$45.05	ROB-C12045	\$45.35	ROB-C15045	\$57.60	ROB-C17045	\$75.80
.0510	ROB-C07051	\$35.60	ROB-C10051	\$45.05	ROB-C12051	\$45.35	ROB-C15051	\$57.60	ROB-C17051	\$75.80
.0625	ROB-C07062	\$35.60	ROB-C10062	\$45.05	ROB-C12062	\$45.35	ROB-C15062	\$57.60	ROB-C17062	\$75.80
.0781	ROB-C07078	\$46.35	ROB-C10078	\$56.75	ROB-C12078	\$55.50	ROB-C15078	\$69.80	ROB-C17078	\$84.95
.0937	ROB-C07092	\$51.50	ROB-C10092	\$62.95	ROB-C12092	\$67.65	ROB-C15092	\$79.45	ROB-C17092	\$84.95
.1250	ROB-C07125	\$67.35	ROB-C10125	\$84.15	ROB-C12125	\$86.70	ROB-C15125	\$89.00	ROB-C17125	\$108.25
.1562	ROB-C07156	\$90.50	ROB-C10156	\$100.40	ROB-C12156	\$106.55	ROB-C15156	\$113.90	ROB-C17156	\$116.45
.1875	ROB-C07187	\$95.90	ROB-C10187	\$104.75	ROB-C12187	\$110.65	ROB-C15187	\$117.05	ROB-C17187	\$138.85
.2500	ROB-C07250	\$119.45	ROB-C10250	\$121.05	ROB-C12250	\$137.35	ROB-C15250	\$137.90	ROB-C17250	\$168.50

APPLICATION GUIDELINES

- If depth of cut exceeds 3 times saw thickness double standard concavity is recommended.
- If depth of cut exceeds 5 times saw thickness alternate tooth chamfer is recommended.
- Saw diameter concentricity should be within .001" when assembled on arbor.
- When using more than one saw at a time, a flat and parallel hub should be used to ensure proper spacing.
- If steel flanges are used, select the largest diameter possible.
- Keyways (generally not used with solid carbide slitting saws) also available.

CUSTOM CARBIDE SAWS

- Please call for special orders.
- Special Cutting Diameters
 - Special Thicknesses
 - Special Arbor Hole Sizes and Keyways
 - Special Chamfers, Angles or Radii
 - Special Tooth Configurations/Pitches

Thickness	2" dia 1/2" or 1" Hole 24 or 48 teeth		2 1/4" dia 5/8" Hole 28 or 56 teeth		2 1/2" dia 1" Hole 28 or 56 teeth		2 3/4" dia 1" Hole 30 or 60 teeth		3" dia 1" Hole 30 or 60 Teeth	
	Part Number	Price	Part Number	Price	Part Number	Price	Part Number	Price	Part Number	Price
.0020	ROB-C20002	\$269.40	ROB-C22002	\$282.30	ROB-C25002	\$295.15	ROB-C27002	\$326.35	ROB-C30002	\$339.80
.0040	ROB-C20004	\$215.60	ROB-C22004	\$225.85	ROB-C25004	\$235.95	ROB-C27004	\$261.35	ROB-C30004	\$271.90
.0060	ROB-C20006	\$143.90	ROB-C22006	\$150.80	ROB-C25006	\$157.65	ROB-C27006	\$174.25	ROB-C30006	\$181.55
.0080	ROB-C20008	\$116.15	ROB-C22008	\$121.05	ROB-C25008	\$127.25	ROB-C27008	\$140.55	ROB-C30008	\$146.50
.0100	ROB-C20010	\$116.15	ROB-C22010	\$121.05	ROB-C25010	\$127.25	ROB-C27010	\$140.55	ROB-C30010	\$146.50
.0120	ROB-C20012	\$96.10	ROB-C22012	\$104.50	ROB-C25012	\$114.00	ROB-C27012	\$131.35	ROB-C30012	\$138.00
.0140	ROB-C20014	\$96.10	ROB-C22014	\$104.50	ROB-C25014	\$114.00	ROB-C27014	\$131.35	ROB-C30014	\$138.00
.0156	ROB-C20016	\$96.10	ROB-C22016	\$104.50	ROB-C25016	\$114.00	ROB-C27016	\$131.35	ROB-C30016	\$138.00
.0180	ROB-C20018	\$96.10	ROB-C22018	\$104.50	ROB-C25018	\$114.00	ROB-C27018	\$131.35	ROB-C30018	\$138.00
.0200	ROB-C20020	\$88.15	ROB-C22020	\$95.80	ROB-C25020	\$104.35	ROB-C27020	\$119.95	ROB-C30020	\$133.55
.0230	ROB-C20023	\$88.15	ROB-C22023	\$95.80	ROB-C25023	\$104.35	ROB-C27023	\$119.95	ROB-C30023	\$133.55
.0250	ROB-C20025	\$88.15	ROB-C22025	\$95.80	ROB-C25025	\$104.35	ROB-C27025	\$119.95	ROB-C30025	\$133.55
.0280	ROB-C20028	\$88.15	ROB-C22028	\$95.80	ROB-C25028	\$104.35	ROB-C27028	\$119.95	ROB-C30028	\$133.55
.0312	ROB-C20032	\$76.90	ROB-C22032	\$88.45	ROB-C25032	\$100.90	ROB-C27032	\$115.75	ROB-C30032	\$130.75
.0350	ROB-C20035	\$76.90	ROB-C22035	\$88.45	ROB-C25035	\$100.90	ROB-C27035	\$115.75	ROB-C30035	\$130.75
.0400	ROB-C20040	\$76.90	ROB-C22040	\$88.45	ROB-C25040	\$100.90	ROB-C27040	\$115.75	ROB-C30040	\$130.75
.0468	ROB-C20045	\$79.35	ROB-C22045	\$93.20	ROB-C25045	\$107.95	ROB-C27045	\$124.00	ROB-C30045	\$138.30
.0510	ROB-C20051	\$79.35	ROB-C22051	\$93.20	ROB-C25051	\$107.95	ROB-C27051	\$124.00	ROB-C30051	\$138.30
.0625	ROB-C20062	\$79.35	ROB-C22062	\$93.20	ROB-C25062	\$107.95	ROB-C27062	\$124.00	ROB-C30062	\$138.30
.0781	ROB-C20078	\$89.80	ROB-C22078	\$109.55	ROB-C25078	\$130.45	ROB-C27078	\$150.35	ROB-C30078	\$168.30
.0937	ROB-C20092	\$96.75	ROB-C22092	\$116.65	ROB-C25092	\$137.45	ROB-C27092	\$159.90	ROB-C30092	\$181.25
.1250	ROB-C20125	\$113.15	ROB-C22125	\$131.55	ROB-C25125	\$151.15	ROB-C27125	\$193.35	ROB-C30125	\$230.55
.1562	ROB-C20156	\$130.95	ROB-C22156	\$157.55	ROB-C25156	\$185.50	ROB-C27156	\$230.90	ROB-C30156	\$255.75
.1875	ROB-C20187	\$163.75	ROB-C22187	\$187.70	ROB-C25187	\$203.60	ROB-C27187	\$256.50	ROB-C30187	\$276.50
.2500	ROB-C20250	\$193.95	ROB-C22250	\$225.60	ROB-C25250	\$247.05	ROB-C27250	\$293.15	ROB-C30250	\$330.20

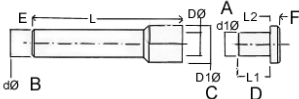
PRICING FOR SPECIAL DECIMAL THICKNESSES

- Find the price of the closest thicker standard saw
- To this, add \$5.00 for one of a size
- Add \$3.50 for two to six of a size
- For 7 or more, there is no additional charge above the base price
- Quantity discounts apply to special thicknesses
- Saws made for gangs with special tolerances are priced on application

SAW ARBORS

TOLERANCES

- DØ - +.0002" / -.0003"
- D1Ø - +/- .003"
- dØ - -.0001" / -.0002"
- L - +/- .060"
- d1Ø - +.0000" / -.0002"
- L1 - +.060" / -.000"
- L2 - +.060" / -.000"



DØ	dØ	D1Ø	L1	L	L2	Part Number	Set Price
1/4	1/2	1/2	3/8	2- 7/8	3/16	ROB-AB250	\$145.75
3/8	1/2	5/8	3/8	2- 7/8	1/4	ROB-AB375	\$165.05
1/2	1/2	3/4	1/2	2- 7/8	3/16	ROB-AB500	\$184.55
5/8	3/4	1	7/8	4	1/4	ROB-AB625	\$184.55
7/8	3/4	1-1/4	1	4	1/4	ROB-AB875	\$287.95
1	3/4	1-1/2	1	4	1/4	ROB-AB1000	\$262.45
1-1/4	1	1-3/4	1- 3/8	5	1/4	ROB-AB1250	\$392.90

- Total thickness of saws/ spacers should not exceed 50% of L1 dimension.
- Arbor caps with longer L1 dimension available.

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS
VISE ACCESSORIES
VISE JAWS
STRAIGHT SHANK
COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

BANDSAW BLADES-WELDED TO LENGTH

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

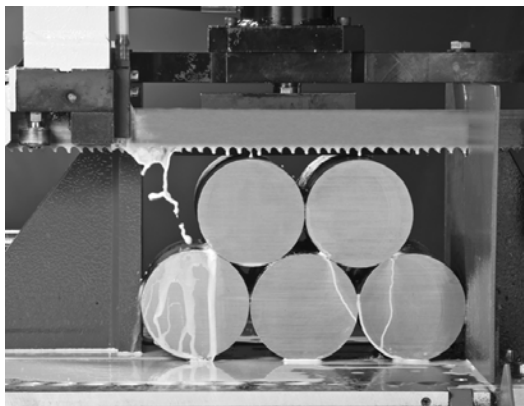
TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

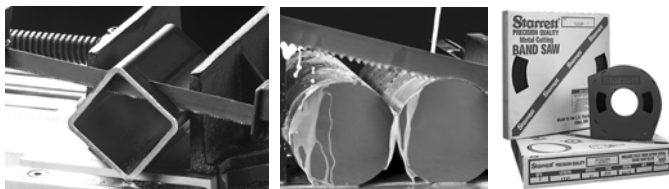
ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD



Starrett bandsaw blades aim to satisfy your diverse metal-cutting needs with four qualities which will overcome the common-place as well as more unusual industrial applications, while reducing operating costs. Count on Starrett blades to provide accurate cutting tools of the highest quality!



Tooth Types:
Regular= General purpose for cutting and contouring a majority of ferrous and nonferrous metals



Hook= 10° positive rake for fast cutting and reduced feed rates. For cutting non-ferrous and tough alloys 3" and larger



Variant= Gullets and tooth size vary over set intervals, with each tooth achieving a slightly different cutting angle. For interrupted cutting and high production cutting of solids

Coolant Is The Key To Saw Blade Life!

The number one reason that band saws break is coolant. Whether it is bad coolant, no coolant or coolant mixed wrong, coolant is essential in sawing, as there is much less room for the chip compared to milling. Without proper cutting fluid the chip may become welded to the tooth of the blade, resulting in an unbalanced blade and crooked cut. In addition, chips may wedge in the cut, resulting in a crooked cut and dull blade.

POWERBAND M42 Bi-Metal High Speed Steel WELDED TO LENGTH BANDSAW BLADES

- Ideal for general purpose cutting operations across a wide range of metals
- This bi-metal material has a high speed steel cutting edge (contains 8% cobalt) welded to an alloy steel back
- Resists heat, abrasion and shock which allows faster cutting rates over a wide range of materials
- Can be used on horizontal machines and light-duty vertical machines equally well
- Ideal for contour cutting and general purpose cutting

WELDED TO LENGTH!

****WELDED TO LENGTH****
DON'T SEE YOUR SIZE?
Please Call For
Part Number & Price!

Tooth Set:
P= Positive Rake-For cutting of solids
S= Straight (0°) Rake-For all material shapes
W= Wavy Set (0° Rake)-Light duty for tubing, pipe and light duty sawing applications



Length	Width	Thick-ness	TPI	Part Number	Price Each
7ft. 9"	3/4"	0.035	5-8/S	SR-PM4299198-79	\$48.42
9ft. 11"	1"	0.035	5-8/S	SR-PM4299297-911	\$66.60
10ft. 5"	3/4"	0.035	4-6/S	SR-PM4299195-105	\$61.02
10ft. 5"	3/4"	0.035	5-8/S	SR-PM4299198-105	\$61.02
10ft. 10-1/2"	3/4"	0.035	5-8/S	SR-PM4299198-101	\$63.54
10ft. 10-1/2"	1"	0.035	4-6/S	SR-PM4299307-101	\$72.36
10ft. 10-1/2"	1"	0.035	5-8/S	SR-PM4299297-101	\$72.36
11ft.	3/4"	0.035	4-6/S	SR-PM4299195-11	\$63.54
11ft.	3/4"	0.035	5-8/S	SR-PM4299198-11	\$63.54
11ft.	1"	0.035	4-6/S	SR-PM4299307-11	\$72.36
11ft.	1"	0.035	5-8/S	SR-PM4299297-11	\$72.36
11ft. 3	1"	0.035	4-6/S	SR-PM4299307-113	\$75.24
11ft. 5	3/4"	0.035	5-8/S	SR-PM4299198-115	\$66.06
11ft. 5	1"	0.035	5-8/S	SR-PM4299297-115	\$75.24
11ft. 6	3/4"	0.035	4-6/S	SR-PM4299195-116	\$66.06
11ft. 6	3/4"	0.035	5-8/S	SR-PM4299198-116	\$66.06
11ft. 6	1"	0.035	4-6/S	SR-PM4299307-116	\$75.24
11ft. 6	1"	0.035	5-8/S	SR-PM4299297-116	\$75.24
11ft. 6	1-1/4"	0.042	4-6/S	SR-PM4299430-116	\$87.98
11ft. 6	1-1/4"	0.042	5-8/S	SR-PM4299434-116	\$87.98
12ft.	1"	0.035	3-4/S	SR-PM4299282-12	\$78.12
12ft.	1"	0.035	4-6/S	SR-PM4299307-12	\$78.12
12ft.	1"	0.035	5-8/S	SR-PM4299297-12	\$78.12
12ft.	1-1/4"	0.042	3-4/S	SR-PM4299423-12	\$91.35
12ft.	1-1/4"	0.042	4-6/S	SR-PM4299430-12	\$91.35
12ft.	1-1/4"	0.042	5-8/S	SR-PM4299434-12	\$91.35

Length	Width	Thick-ness	TPI	Part Number	Price Each
12ft. 6"	1"	0.035	3-4/S	SR-PM4299282-126	\$81.00
12ft. 6"	1"	0.035	4-6/S	SR-PM4299307-126	\$81.00
12ft. 6"	1"	0.035	5-8/S	SR-PM4299297-126	\$81.00
12ft. 6"	1-1/4"	0.042	4-6/S	SR-PM4299430-126	\$94.73
12ft. 10"	1"	0.035	4-6/S	SR-PM4299307-121	\$83.88
13ft.	1"	0.035	4-6/S	SR-PM4299307-13	\$83.88
13ft. 6"	1"	0.035	3-4/S	SR-PM4299282-136	\$86.76
13ft. 6"	1"	0.035	4-6/S	SR-PM4299307-136	\$86.76
13ft. 6"	1"	0.035	5-8/S	SR-PM4299297-136	\$86.76
13ft. 6"	1-1/4"	0.042	3-4/S	SR-PM4299423-136	\$101.48
13ft. 6"	1-1/4"	0.042	4-6/S	SR-PM4299430-136	\$101.48
13ft. 6"	1-1/4"	0.042"	5-8/S	SR-PM4299434-136	\$101.48
14ft. 6"	1"	0.035	3-4/S	SR-PM4299282-146	\$92.52
14ft. 6"	1"	0.035	4-6/S	SR-PM4299307-146	\$92.52
14ft. 6"	1"	0.035	5-8/S	SR-PM4299297-146	\$92.52
14ft. 6"	1-1/4"	0.042	3-4/S	SR-PM4299423-146	\$108.23
14ft. 6"	1-1/4"	0.042	4-6/S	SR-PM4299430-146	\$108.23
14ft. 8"	3/4"	0.035	4-6/S	SR-PM4299195-148	\$83.70
14ft. 8"	3/4"	0.035	5-8/S	SR-PM4299198-148	\$83.70
15ft.	1-1/4"	0.042	3-4/S	SR-PM4299423-15	\$111.60
15ft.	1-1/4"	0.042	4-6/S	SR-PM4299430-15	\$111.60
15ft.	1-1/4"	0.042	5-8/S	SR-PM4299434-15	\$111.60
15ft. 6"	1"	0.035	4-6/S	SR-PM4299307-156	\$98.28
15ft. 6"	1-1/4"	0.042	3-4/S	SR-PM4299423-156	\$114.98
15ft. 6"	1-1/4"	0.042	4-6/S	SR-PM4299430-156	\$114.98
15ft. 6"	1-1/4"	0.042	5-8/S	SR-PM4299434-156	\$114.98
15ft. 8"	1-1/4"	"0.042	4-6/S	SR-PM4299430-158	\$118.35
15ft. 8"	1-1/4"	"0.042	5-8/S	SR-PM4299434-158	\$118.35
16ft. 2"	1-1/4"	"0.042	4-6/S	SR-PM4299430-162	\$121.73

Call Us Today For All Of Your Machine Tool Needs!

BANDSAW BLADES-WELDED TO LENGTH

C

DURATEC™ SFB

Carbon Steel With Flexible Back WELDED TO LENGTH BANDSAW BLADES

****WELDED TO LENGTH****
DON'T SEE YOUR SIZE?
Please Call For
Part Number & Price!



Ideal For Economical Cutting On Easy-to-Machine
Ferrous Or Non-ferrous Metal And Wood

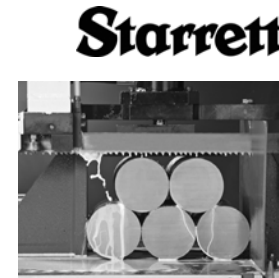
- Flexible carbon steel back
- Economical general purpose cutting
- Ideal for both contour and straight cutting
- For non-ferrous and low alloy metals, wood and plastics

Length	Width	Thick-ness	Tooth Shape	TPI	Part Number	Price Each
7ft. 9"	1/2"	0.025	Skip	4/S	SR-HEFB91340-79	\$15.34
7ft. 9"	1/2"	0.025	Regular	6/S	SR-HEFB91361-79	\$15.34
7ft. 9"	1/2"	0.025	Regular	14/W	SR-HEFB91411-79	\$15.34
7ft. 9"	1/2"	0.025	Regular	18/W	SR-HEFB91420-79	\$15.34
7ft. 9"	5/8"	0.032	Regular	10/S	SR-HEFB91450-79	\$17.78
7ft. 9"	5/8"	0.032	Regular	14/S	SR-HEFB91471-79	\$17.78
7ft. 9"	3/4"	0.032	Regular	6/S	SR-HEFB91531-79	\$18.65
7ft. 9"	3/4"	0.032	Regular	10/S	SR-HEFB91570-79	\$18.65
7ft. 9"	3/4"	0.032	Regular	14/S	SR-HEFB91621-79	\$18.65
7ft. 9-1/2"	3/8"	0.025	Regular	14/S	SR-HEFB91291-79	\$15.19
7ft. 9-1/2"	1/2"	0.025	Skip	4/S	SR-HEFB91340-795	\$15.34
7ft. 9-1/2"	1/2"	0.025	Regular	6/S	SR-HEFB91361-79	\$15.34
7ft. 9-1/2"	1/2"	0.025	Regular	10/S	SR-HEFB91380-79	\$15.34
7ft. 9-1/2"	1/2"	0.025	Regular	14/S	SR-HEFB91401-79	\$15.34
8ft. 2-1/2"	5/8"	0.032	Regular	10/S	SR-HEFB91450-82	\$18.45
8ft. 2-1/2"	5/8"	0.032	Regular	14/S	SR-HEFB91471-82	\$18.45
8ft. 10"	3/4"	0.032	Regular	10/S	SR-HEFB91570-81	\$20.08
8ft. 10"	3/4"	0.032	Regular	14/S	SR-HEFB91621-81	\$20.08
8ft. 11"	3/4"	0.032	Regular	10/S	SR-HEFB91570-811	\$20.08
8ft. 11"	3/4"	0.032	Regular	14/S	SR-HEFB91621-811	\$20.08
9ft.	3/4"	0.032	Regular	8/S	SR-HEFB91550-9	\$20.08
9ft.	3/4"	0.032	Regular	10/S	SR-HEFB91570-9	\$20.08
9ft.	3/4"	0.032	Regular	14/S	SR-HEFB91621-9	\$20.08
9ft. 6"	1/2"	0.025	Regular	14/S	SR-HEFB91401-96	\$17.37
10ft.	1/4"	0.025	Regular	14/S	SR-HEFB91181-10	\$16.83
10ft.	1/2"	0.025	Regular	10/S	SR-HEFB91380-10	\$17.37
10ft.	1/2"	0.025	Regular	14/S	SR-HEFB91401-10	\$17.37
10ft.	3/4"	0.032	Regular	10/S	SR-HEFB91570-10	\$21.51
10ft.	3/4"	0.032	Regular	14/S	SR-HEFB91621-10	\$21.51

Length	Width	Thick-ness	Tooth Shape	TPI	Part Number	Price Each
10ft. 10-1/2"	3/4"	0.032	Regular	14/S	SR-HEFB91621-101	\$22.94
10ft. 10-1/2"	1"	0.035	Regular	6/S	SR-HEFB91701-101	\$26.56
10ft. 10-1/2"	1"	0.035	Regular	10/S	SR-HEFB91730-101	\$26.56
10ft. 10-1/2"	1"	0.035	Regular	14/S	SR-HEFB91761-101	\$26.56
11ft. 6"	3/4"	0.032	Regular	14/S	SR-HEFB91621-116	\$24.37
11ft. 6"	1"	0.035	Regular	6/S	SR-HEFB91701-116	\$28.28
11ft. 6"	1"	0.035	Regular	8/S	SR-HEFB91720-116	\$28.28
11ft. 6"	1"	0.035	Regular	10/S	SR-HEFB91730-116	\$28.28
11ft. 6"	1"	0.035	Regular	14/S	SR-HEFB91761-116	\$28.28
12ft.	1/2"	0.025	Regular	14/S	SR-HEFB91401-12	\$19.40
12ft.	1"	0.035	Regular	6/S	SR-HEFB91701-12	\$28.28
12ft.	1"	0.035	Regular	10/S	SR-HEFB91730-12	\$28.28
12ft. 6"	3/4"	0.032	Regular	10/S	SR-HEFB91570-121	\$25.09
12ft. 6"	1/4"	0.025	Regular	14/S	SR-HEFB91181-126	\$19.72
12ft. 6"	3/8"	0.025	Skip	4/S	SR-HEFB91240-126	\$20.19
12ft. 6"	3/8"	0.025	Regular	6/S	SR-HEFB91261-126	\$20.19
12ft. 6"	3/8"	0.025	Regular	14/S	SR-HEFB91291-126	\$20.19
12ft. 6"	1/2"	0.025	Hook	4/H	SR-HEFB91350-126	\$20.42
12ft. 6"	1/2"	0.025	Skip	4/S	SR-HEFB91340-126	\$20.42
12ft. 6"	1/2"	0.025	Regular	6/S	SR-HEFB91361-126	\$20.42
12ft. 6"	1/2"	0.025	Regular	10/S	SR-HEFB91380-126	\$20.42
12ft. 6"	1/2"	0.025	Regular	14/W	SR-HEFB91390-126	\$20.42
12ft. 6"	1/2"	0.025	Regular	18/W	SR-HEFB91420-126	\$20.42
12ft. 6"	3/4"	0.032	Regular	10/S	SR-HEFB91570-126	\$25.80
12ft. 6"	1"	0.035	Regular	6/S	SR-HEFB91701-126	\$30.00
12ft. 6"	1"	0.035	Regular	8/S	SR-HEFB91720-126	\$30.00
12ft. 6"	1"	0.035	Regular	10/S	SR-HEFB91730-126	\$30.00
12ft. 6"	1"	0.035	Regular	14/S	SR-HEFB91761-126	\$30.00
12ft. 10"	1/2"	0.025	Regular	10/S	SR-HEFB91380-121	\$20.42

INTENS™ PRO Triple Tempered M-42 Cobalt HSS WELDED TO LENGTH BANDSAW BLADES

****WELDED TO LENGTH****
DON'T SEE YOUR SIZE?
Please Call For
Part Number & Price!



For intensive production cutting operations across a wide range of metals

- Positive rake angle for optimum cutting efficiency in high-production cutting operations
- Triple tempered M-42 cobalt high speed steel teeth
- Production cutting of steels up to HRC 45, tool and stainless steels, nickel based and nonferrous alloys
- Easy penetration, excellent chip clearance and reduced noise levels
- High quality surface finish, faster and straighter cuts

Length	Width	Thick-ness	TPI	Part Number	Price Each
7ft. 9"	3/4"	0.035	6-10/P	SR-IP99206-79	\$49.32
7ft. 9"	3/4"	0.035	8-12/P	SR-IP99222-79	\$49.32
7ft. 9"	3/4"	0.035	10-14/P	SR-IP99234-79	\$49.32
8ft. 10"	3/4"	0.035	10-14/P	SR-IP99206-810	\$54.36
8ft. 10"	1"	0.035	6-10/P	SR-IP99206-810	\$54.36
9ft.	3/4"	0.035	8-12/P	SR-IP99222-9	\$54.36
10ft.	3/4"	0.035	6-10/P	SR-IP99206-10	\$59.40
10ft.	3/4"	0.035	8-12/P	SR-IP99222-10	\$59.40
10ft. 10-1/2"	3/4"	0.035	6-10/P	SR-IP99206-101	\$64.44
10ft. 10-1/2"	3/4"	0.035	10-14/P	SR-IP99234-101	\$64.44
11ft.	1"	0.035	6-10/P	SR-IP99318-11	\$72.36
11ft.	1"	0.035	8-12/P	SR-IP99329-11	\$72.36
11ft. 5"	1"	0.035	8-12/P	SR-IP99329-115	\$75.24
11ft. 6"	3/4"	0.035	10-14/P	SR-IP99334-116	\$75.24
11ft. 6"	1"	0.035	3-4/P	SR-IP99906-116	\$75.24

Length	Width	Thick-ness	TPI	Part Number	Price Each
12ft. 6"	1"	0.035	4-6/P	SR-IP99907-126	\$81.00
12ft. 6"	1"	0.035	8-12/P	SR-IP99329-126	\$81.00
12ft. 6"	1"	0.035	10-14/P	SR-IP99334-126	\$81.00
13ft. 6"	1"	0.035	4-6/P	SR-IP99907-136	\$86.76
13ft. 6"	1"	0.035	5-8/P	SR-IP99908-136	\$86.76
13ft. 6"	1"	0.035	6-10/P	SR-IP99318-136	\$86.76
13ft. 6"	1-1/4"	0.042	3-4/P	SR-IP99913-136	\$107.55
13ft. 6"	1-1/4"	0.042	4-6/P	SR-IP99914-136	\$107.55
13ft. 6"	1-1/4"	0.042	5-8/P	SR-IP99915-136	\$107.55
14ft. 6"	1"	0.035	6-10/P	SR-IP99318-146	\$93.87
14ft. 6"	1"	0.035	8-12/P	SR-IP99329-146	\$93.87
14ft. 6"	1"	0.035	10-14/P	SR-IP99334-146	\$93.87
14ft. 6"	1-1/4"	0.042	3-4/P	SR-IP99913-146	\$114.75
14ft. 6"	1-1/4"	0.042	4-6/P	SR-IP99914-146	\$114.75
14ft. 6"	1-1/4"	0.042	5-8/P	SR-IP99915-146	\$114.75

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

377

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

DRILL SETS-JOBBER, STUB, SILVER & DEMING



JOBBER DRILL SETS

13 Piece Set-1/16 - 1/4" x 64ths

Material	Drill Point	Finish	Brand	Part Number	Price
HSS	118°	Bright	Michigan Drill	MH-307GB	\$19.54
HSS	118°	Black Oxide	Precision Twist Drill	PTD-099979	\$23.40
M42 Cobalt	135°	Bronze Oxide	Precision Twist Drill	PTD-099944	\$39.02

15 Piece Set-1/16 - 1/2 x 32nds

Material	Drill Point	Finish	Brand	Part Number	Price
HSS	118°	Black Oxide	Precision Twist Drill	PTD-099978	\$62.10
HSS	118°	Bright	Michigan Drill	MH-307RB	\$51.05
Cobalt	135°	Bright	TMX	BI-5158-905	\$81.18

21 Piece Sets-1/16 - 3/8 x 64ths

Material	Drill Point	Finish	Brand	Part Number	Price
HSS	118°	Black Oxide	Precision Twist Drill	PTD-099980	\$57.60
M42 Cobalt	135°	Bronze Oxide	Precision Twist Drill	PTD-099701	\$98.55

29 Piece Sets-1/16 - 1/2 x 64ths

Material	Drill Point	Finish	Brand	Part Number	Price
HSS	118°	Bright	Precision Twist Drill	PTD-090162	\$112.95
HSS	118°	Black Oxide	Precision Twist Drill	PTD-099977	\$112.95
HSS	118°	Black Oxide	TMX	BI-5160-705	\$78.42
HSS	118°	Bright	Michigan Drill Import	MH-X307FB	\$65.43
HSS	118°	Black Oxide	Michigan Drill	MH-307F	\$95.04
HSS Heavy Duty	135°	TiN Coated	TMX	BI-5141-705	\$88.20
M42 Cobalt	135°	Bronze Oxide	Precision Twist Drill	PTD-090290	\$203.40
Cobalt	135°	Bright	TMX	BI-5158-705	\$124.54

A-Z Letter Sizes-26 Piece Set

Material	Drill Point	Finish	Brand	Part Number	Price
HSS	118°	Black Oxide	Michigan Drill	MH-307L	\$109.67
HSS	118°	Bright	Precision Twist Drill	PTD-090173	\$127.80
M42 Cobalt	135°	Bronze Oxide	Precision Twist Drill	PTD-099961	\$211.95

#1-60 Piece Wire Sizes-60 Piece Set

Material	Drill Point	Finish	Brand	Part Number	Price
HSS	118°	Bright	Precision Twist Drill	PTD-090174	\$99.45
HSS	118°	Black Oxide	Michigan Drill	MH-307W	\$78.45
HSS	118°	TiN Coated	TMX	BI-5132-505	\$51.30
M42 Cobalt	135°	Bronze Oxide	Precision Twist Drill	PTD-099960	\$144.45
Cobalt	135°	Bright	TMX	BI-5175-505	\$81.18

Combo Sets-115 Pieces 1/16-1/2" x 64ths, A-Z, #1-60

Material	Drill Point	Finish	Brand	Part Number	Price
HSS	118°	TiN Coated	ISQ (Import)	A-5000-0003	\$125.00
HSS	118°	Black Oxide	TMX	BI-5199-005	\$192.81
HSS	118°	Bright	Michigan Drill	MH-307XB	\$280.09

Metric Sets-19 Pieces 1mm - 10mm By .5mm Increments

Material	Drill Point	Finish	Brand	Part Number	Price
HSS	118°	Black Oxide	TMX	BI-5161-605	\$36.90
Cobalt	135°	Bright	TMX	BI-5174-605	\$57.20

SCREW MACHINE SETS

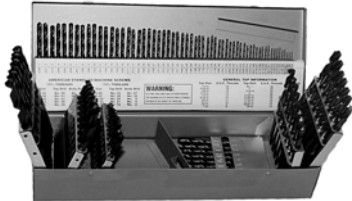
1/16 - 1/2 X 64THS 29 Piece Set

Material	Drill Point	Finish	Brand	Part Number	Price
HSS	135°	Black Oxide	Michigan Drill	MH-607F	\$101.41
HSS	135°	Bright	Precision Twist Drill	PTD-090170	\$113.40
M42 Cobalt	135°	Bronze Oxide	Precision Twist Drill	PTD-099962	\$187.20

SILVER & DEMING SETS

1/2" Diameter Shank-6" OAL, 3" Flute Length

Description	Material	Brand	Part Number	Price
5 Pc Set: 1", 1-1/8", 1-1/4", 1-3/8" & 1-1/2"	HSS	TMX	BI-5166-510	\$206.35
	Cobalt	TMX	BI-5169-510	\$385.44
8 Pc Set: 9/16", 5/8", 11/16", 3/4", 13/16", 7/8", 15/16", 1"	HSS	TMX	BI-5166-502	\$158.63
	Cobalt	TMX	BI-5169-502	\$294.30
	Cobalt	PTD	PTD-090328	\$360.45
13 Pc Set: 17/32", 9/16", 19/32", 5/8", 21/32", 11/16", 23/32", 3/4", 13/16", 7/8", 15/16", 1"	HSS	TMX	BI-5166-505	\$260.86
	Cobalt	TMX	BI-5169-505	\$455.53



Call Us Today For All Of Your Machine Tool Needs!

JOBBER LENGTH DRILLS-HSS/COBALT

C

JOBBER LENGTH DRILLS

General Purpose
118° Point On HSS & TiN Coated
135° Self-Centering Split Point On
Cobalt HSS

- YG-1 Features:**
- 135° Point
 - Cobalt HSS
 - Sold In Package Quantities-
1/64 to 17/64: 10 per pack
9/32 to 1/2: 5 per pack
Over 1/2": 1 per pack
 - Wire Gage: 10 per pack
 - Letter- A to I: 10 per pack
J to Z: 5 per pack



YG-1 Drills Sold In
Package Quantities



Fractional Sizes			Bright Finish 118° Point		Black Oxide 118° Point		Cobalt HSS 135° Split Point		Cobalt HSS 135° Point		
Dia.	Dec Equiv	OAL	Part Number	Price Each	Part Number	Price Each	Part Number	Price Each	Part Number	YG-1 Pkg Qty	Price Each
1/64	.0156	3/4	PTD-1/64-JHRN	\$2.13	PTD-1/64-JHBN	\$2.13	PTD-1/64-JCGS	\$3.34	-	-	-
1/32	.0312	1-3/8	PTD-1/32-JHRN	\$1.29	PTD-1/32-JHBN	\$1.29	PTD-1/32-JCGS	\$2.75	-	-	-
3/64	.0469	1-3/4	PTD-3/64-JHRN	\$1.30	PTD-3/64-JHBN	\$1.29	PTD-3/64-JCGS	\$1.97	YG-3/64-JCGS	10	\$1.14
1/16	.0625	1-7/8	PTD-1/16-JHRN	\$1.19	PTD-1/16-JHBN	\$1.19	PTD-1/16-JCGS	\$1.80	YG-1/16-JCGS	10	\$1.14
5/64	.0781	2	PTD-5/64-JHRN	\$1.20	PTD-5/64-JHBN	\$1.20	PTD-5/64-JCGS	\$1.80	YG-5/64-JCGS	10	\$1.14
3/32	.0938	2-1/4	PTD-3/32-JHRN	\$1.20	PTD-3/32-JHBN	\$1.20	PTD-3/32-JCGS	\$1.80	YG-3/32-JCGS	10	\$1.14
7/64	.1094	2-5/8	PTD-7/64-JHRN	\$1.27	PTD-7/64-JHBN	\$1.27	PTD-7/64-JCGS	\$1.89	YG-7/64-JCGS	10	\$1.20
1/8	.1250	2-3/4	PTD-1/8-JHRN	\$1.23	PTD-1/8-JHBN	\$1.23	PTD-1/8-JCGS	\$2.29	YG-1/8-JCGS	10	\$1.44
9/64	.1406	2-7/8	PTD-9/64-JHRN	\$1.36	PTD-9/64-JHBN	\$1.36	PTD-9/64-JCGS	\$2.31	YG-9/64-JCGS	10	\$1.44
5/32	.1562	3-1/8	PTD-5/32-JHRN	\$1.39	PTD-5/32-JHBN	\$1.39	PTD-5/32-JCGS	\$2.59	YG-5/32-JCGS	10	\$1.66
11/64	.1719	3-1/4	PTD-11/64-JHRN	\$1.51	PTD-11/64-JHBN	\$1.52	PTD-11/64-JCGS	\$2.75	YG-11/64-JCGS	10	\$1.74
3/16	.1875	3-1/2	PTD-3/16-JHRN	\$1.68	PTD-3/16-JHBN	\$1.68	PTD-3/16-JCGS	\$3.05	YG-3/16-JCGS	10	\$1.88
13/64	.2031	3-5/8	PTD-13/64-JHRN	\$1.86	PTD-13/64-JHBN	\$1.86	PTD-13/64-JCGS	\$3.68	YG-13/64-JCGS	10	\$2.33
7/32	.2188	3-3/4	PTD-7/32-JHRN	\$2.05	PTD-7/32-JHBN	\$2.05	PTD-7/32-JCGS	\$4.04	YG-7/32-JCGS	10	\$2.53
15/64	.2344	3-7/8	PTD-15/64-JHRN	\$2.23	PTD-15/64-JHBN	\$2.24	PTD-15/64-JCGS	\$4.29	YG-15/64-JCGS	10	\$2.74
1/4	.2500	4	PTD-1/4-JHRN	\$2.34	PTD-1/4-JHBN	\$2.34	PTD-1/4-JCGS	\$4.52	YG-1/4-JCGS	10	\$2.88
17/64	.2656	4-1/8	PTD-17/64-JHRN	\$2.84	PTD-17/64-JHBN	\$2.85	PTD-17/64-JCGS	\$5.18	YG-17/64-JCGS	10	\$3.24
9/32	.2812	4-1/4	PTD-9/32-JHRN	\$2.93	PTD-9/32-JHBN	\$2.93	PTD-9/32-JCGS	\$5.42	YG-9/32-JCGS	10	\$3.45
19/64	.2969	4-3/8	PTD-19/64-JHRN	\$3.41	PTD-19/64-JHBN	\$3.41	PTD-19/64-JCGS	\$6.64	YG-19/64-JCGS	10	\$4.09
5/16	.3125	4-1/2	PTD-5/16-JHRN	\$3.76	PTD-5/16-JHBN	\$3.76	PTD-5/16-JCGS	\$7.04	YG-5/16-JCGS	10	\$4.34
21/64	.3281	4-5/8	PTD-21/64-JHRN	\$4.19	PTD-21/64-JHBN	\$4.19	PTD-21/64-JCGS	\$7.81	YG-21/64-JCGS	5	\$4.86
11/32	.3438	4-3/4	PTD-11/32-JHRN	\$4.64	PTD-11/32-JHBN	\$4.66	PTD-11/32-JCGS	\$8.51	YG-11/32-JCGS	5	\$5.21
23/64	.3594	4-7/8	PTD-23/64-JHRN	\$5.24	PTD-23/64-JHBN	\$5.22	PTD-23/64-JCGS	\$9.88	YG-23/64-JCGS	1	\$5.94
3/8	.3750	5	PTD-3/8-JHRN	\$5.33	PTD-3/8-JHBN	\$5.33	PTD-3/8-JCGS	\$9.72	YG-3/8-JCGS	1	\$5.94
25/64	.3906	5-1/8	PTD-25/64-JHRN	\$6.12	PTD-25/64-JHBN	\$6.12	PTD-25/64-JCGS	\$11.18	YG-25/64-JCGS	1	\$6.67
13/32	.4062	5-1/4	PTD-13/32-JHRN	\$6.28	PTD-13/32-JHBN	\$6.32	PTD-13/32-JCGS	\$11.61	YG-13/32-JCGS	1	\$7.03
27/64	.4219	5-3/8	PTD-27/64-JHRN	\$6.95	PTD-27/64-JHBN	\$7.02	PTD-27/64-JCGS	\$12.87	YG-27/64-JCGS	1	\$7.73
7/16	.4375	5-1/2	PTD-7/16-JHRN	\$7.29	PTD-7/16-JHBN	\$7.29	PTD-7/16-JCGS	\$13.14	YG-7/16-JCGS	1	\$8.09
29/64	.4531	5-5/8	PTD-29/64-JHRN	\$8.17	PTD-29/64-JHBN	\$8.15	PTD-29/64-JCGS	\$15.89	YG-29/64-JCGS	1	\$9.51
15/32	.4688	5-3/4	PTD-15/32-JHRN	\$8.62	PTD-15/32-JHBN	\$8.57	PTD-15/32-JCGS	\$16.16	YG-15/32-JCGS	1	\$9.66
31/64	.4844	5-7/8	PTD-31/64-JHRN	\$9.14	PTD-31/64-JHBN	\$9.09	PTD-31/64-JCGS	\$16.67	YG-31/64-JCGS	1	\$10.06
1/2	.5000	6	PTD-1/2-JHRN	\$9.07	PTD-1/2-JHBN	\$9.11	PTD-1/2-JCGS	\$16.38	YG-1/2-JCGS	1	\$10.38
33/64	.5156	6-5/8	PTD-33/64-JHRN	\$16.45	PTD-33/64-JHBN	\$16.45	PTD-33/64-JCGS	\$31.64	-	-	-
17/32	.5312	6-5/8	PTD-17/32-JHRN	\$16.99	PTD-17/32-JHBN	\$16.99	PTD-17/32-JCGS	\$33.21	-	-	-
35/64	.5469	6-5/8	PTD-35/64-JHRN	\$18.72	PTD-35/64-JHBN	\$18.72	PTD-35/64-JCGS	\$35.91	-	-	-
9/16	.5625	6-5/8	PTD-9/16-JHRN	\$19.22	PTD-9/16-JHBN	\$19.22	PTD-9/16-JCGS	\$37.58	-	-	-
37/64	.5781	6-5/8	PTD-37/64-JHRN	\$19.62	PTD-37/64-JHBN	\$20.18	PTD-37/64-JCGS	\$37.62	-	-	-
19/32	.5938	7-1/8	PTD-19/32-JHRN	\$20.18	PTD-19/32-JHBN	\$20.18	PTD-19/32-JCGS	\$38.66	-	-	-
39/64	.6094	7-1/8	PTD-39/64-JHRN	\$21.60	PTD-39/64-JHBN	\$21.60	PTD-39/64-JCGS	\$41.45	-	-	-
5/8	.6250	7-1/8	PTD-5/8-JHRN	\$21.17	PTD-5/8-JHBN	\$21.17	PTD-5/8-JCGS	\$41.45	-	-	-
41/64	.6406	7-1/8	-	-	PTD-41/64-JHBN	\$23.90	PTD-41/64-JCGS	\$44.37	-	-	-
21/32	.6562	7-1/8	PTD-21/32-JHRN	\$25.07	PTD-21/32-JHBN	\$25.07	PTD-21/32-JCGS	\$46.35	-	-	-
43/64	.6719	7-5/8	PTD-43/64-JHRN	\$27.05	PTD-43/64-JHBN	\$27.05	PTD-43/64-JCGS	\$50.85	-	-	-
11/16	.6875	7-5/8	PTD-11/16-JHRN	\$27.05	PTD-11/16-JHBN	\$27.05	PTD-11/16-JCGS	\$50.85	-	-	-

DRILL INDEXES



Holds and organizes your
jobber length fractional, letter
and wire gauge drills

Drill Type	Description	Cap.	Part Number	Price
Letter	A to Z drill index	26	HU-10500	\$12.60
Jobber	1/16" to 1/2" x 32nds drill index	15	HU-10350	\$11.03
Jobber	1/16" to 1/2" x 64ths drill index	29	HU-10550	\$11.03
Wire Gage	#1 to 60 wire gage drill index	60	HU-10600	\$10.80
Wire Gage	#1 to 80 wire gage	80	HU-10700	\$32.40
Combo	29 Frac., 26 Letter & 60 wire Gage	115	HU-11700	\$40.50

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

379

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

JOBBER LENGTH DRILLS-HSS/COBALT

JOBBER LENGTH DRILLS

General Purpose
118° Point On HSS & TiN Coated
135° Self-Centering Split Point On
Cobalt HSS



YG-1 Features:

- 135° Point
- Cobalt HSS
- Sold In Package Quantities-
Wire Gage: 10 per pack

YG-1 Drills Sold In
Package Quantities



Wire Sizes			Bright Finish 118° Point		Black Oxide 118° Point		Cobalt HSS 135° Split Point		Cobalt HSS 135° Point		
Dia.	Dec Equiv	OAL	Part Number	Price Each	Part Number	Price Each	Part Number	Price Each	Part Number	YG-1 Pkg Qty	Price Each
1	.2280	3/8	PTD-1-JHRN	\$2.50	PTD-1-JHBN	\$2.49	PTD-1-JCGS	\$4.91	YG-1-JCGS	10	\$2.94
2	.2210	3-7/8	PTD-2-JHRN	\$2.52	PTD-2-JHBN	\$2.51	PTD-2-JCGS	\$4.91	YG-2-JCGS	10	\$2.94
3	.2130	3-3/4	PTD-3-JHRN	\$2.27	PTD-3-JHBN	\$2.26	PTD-3-JCGS	\$4.59	YG-3-JCGS	10	\$2.74
4	.2090	3-3/4	PTD-4-JHRN	\$2.29	PTD-4-JHBN	\$2.28	PTD-4-JCGS	\$4.61	YG-4-JCGS	10	\$2.74
5	.2055	3-3/4	PTD-5-JHRN	\$2.29	PTD-5-JHBN	\$2.28	PTD-5-JCGS	\$4.61	YG-5-JCGS	10	\$2.74
6	.2040	3-3/4	PTD-6-JHRN	\$2.29	PTD-6-JHBN	\$2.28	PTD-6-JCGS	\$4.61	YG-6-JCGS	10	\$2.21
7	.2010	3-5/8	PTD-7-JHRN	\$1.98	PTD-7-JHBN	\$1.97	PTD-7-JCGS	\$3.57	YG-7-JCGS	10	\$2.21
8	.1990	3-5/8	PTD-8-JHRN	\$2.03	PTD-8-JHBN	\$2.02	PTD-8-JCGS	\$3.57	YG-8-JCGS	10	\$2.21
9	.1960	3-5/8	PTD-9-JHRN	\$2.02	PTD-9-JHBN	\$2.02	PTD-9-JCGS	\$3.57	YG-9-JCGS	10	\$2.21
10	.1935	3-5/8	PTD-10-JHRN	\$1.99	PTD-10-JHBN	\$1.99	PTD-10-JCGS	\$3.57	YG-10-JCGS	10	\$2.12
11	.1910	3-1/2	PTD-11-JHRN	\$1.85	PTD-11-JHBN	\$1.85	PTD-11-JCGS	\$3.57	YG-11-JCGS	10	\$2.12
12	.1890	3-1/2	PTD-12-JHRN	\$1.88	PTD-12-JHBN	\$1.87	PTD-12-JCGS	\$3.57	YG-12-JCGS	10	\$2.12
13	.1850	3-1/2	PTD-13-JHRN	\$1.84	PTD-13-JHBN	\$1.83	PTD-13-JCGS	\$3.42	YG-13-JCGS	10	\$2.01
14	.1820	3-3/8	PTD-14-JHRN	\$1.84	PTD-14-JHBN	\$1.84	PTD-14-JCGS	\$3.44	YG-14-JCGS	10	\$2.01
15	.1800	3-3/8	PTD-15-JHRN	\$1.84	PTD-15-JHBN	\$1.84	PTD-15-JCGS	\$3.44	YG-15-JCGS	10	\$2.01
16	.1770	3-3/8	PTD-16-JHRN	\$1.84	PTD-16-JHBN	\$1.83	PTD-16-JCGS	\$3.19	YG-16-JCGS	10	\$1.91
17	.1730	3-3/8	PTD-17-JHRN	\$1.84	PTD-17-JHBN	\$1.83	PTD-17-JCGS	\$3.14	YG-17-JCGS	10	\$1.85
18	.1695	3-1/4	PTD-18-JHRN	\$1.53	PTD-18-JHBN	\$1.52	PTD-18-JCGS	\$2.85	YG-18-JCGS	10	\$1.74
19	.1660	3-1/4	PTD-19-JHRN	\$1.51	PTD-19-JHBN	\$1.51	PTD-19-JCGS	\$2.77	YG-19-JCGS	10	\$1.70
20	.1610	3-1/4	PTD-20-JHRN	\$1.50	PTD-20-JHBN	\$1.51	PTD-20-JCGS	\$2.77	YG-20-JCGS	10	\$1.70
21	.1590	3-1/4	PTD-21-JHRN	\$1.39	PTD-21-JHBN	\$1.39	PTD-21-JCGS	\$2.76	YG-21-JCGS	10	\$1.70
22	.1570	3-1/8	PTD-22-JHRN	\$1.40	PTD-22-JHBN	\$1.40	PTD-22-JCGS	\$2.77	YG-22-JCGS	10	\$1.70
23	.1540	3-1/8	PTD-23-JHRN	\$1.40	PTD-23-JHBN	\$1.40	PTD-23-JCGS	\$2.77	YG-23-JCGS	10	\$1.66
24	.1520	3-1/8	PTD-24-JHRN	\$1.40	PTD-24-JHBN	\$1.40	PTD-24-JCGS	\$2.76	YG-24-JCGS	10	\$1.66
25	.1495	3	PTD-25-JHRN	\$1.33	PTD-25-JHBN	\$1.33	PTD-25-JCGS	\$2.51	YG-25-JCGS	10	\$1.50
26	.1470	3	PTD-26-JHRN	\$1.34	PTD-26-JHBN	\$1.33	PTD-26-JCGS	\$2.50	YG-26-JCGS	10	\$1.50
27	.1440	3	PTD-27-JHRN	\$1.33	PTD-27-JHBN	\$1.33	PTD-27-JCGS	\$2.49	YG-27-JCGS	10	\$1.50
28	.1405	2-7/8	PTD-28-JHRN	\$1.25	PTD-28-JHBN	\$1.24	PTD-28-JCGS	\$2.33	YG-28-JCGS	10	\$1.44
29	.1360	2-7/8	PTD-29-JHRN	\$1.21	PTD-29-JHBN	\$1.21	PTD-29-JCGS	\$2.27	YG-29-JCGS	10	\$1.38
30	.1285	2-3/4	PTD-30-JHRN	\$1.21	PTD-30-JHBN	\$1.21	PTD-30-JCGS	\$2.12	YG-30-JCGS	10	\$1.29
31	.1200	2-3/4	PTD-31-JHRN	\$1.20	PTD-31-JHBN	\$1.20	PTD-31-JCGS	\$2.10	YG-31-JCGS	10	\$1.29
32	.1160	2-3/4	PTD-32-JHRN	\$1.21	PTD-32-JHBN	\$1.20	PTD-32-JCGS	\$2.06	YG-32-JCGS	10	\$1.29
33	.1130	2-5/8	PTD-33-JHRN	\$1.21	PTD-33-JHBN	\$1.20	PTD-33-JCGS	\$1.97	YG-33-JCGS	10	\$1.24
34	.1110	2-5/8	PTD-34-JHRN	\$1.21	PTD-34-JHBN	\$1.20	PTD-34-JCGS	\$1.98	YG-34-JCGS	10	\$1.24
35	.1100	2-5/8	PTD-35-JHRN	\$1.21	PTD-35-JHBN	\$1.20	PTD-35-JCGS	\$1.97	YG-35-JCGS	10	\$1.24
36	.1065	2-1/2	PTD-36-JHRN	\$1.19	PTD-36-JHBN	\$1.19	PTD-36-JCGS	\$1.94	YG-36-JCGS	10	\$1.20
37	.1040	2-1/2	PTD-37-JHRN	\$1.21	PTD-37-JHBN	\$1.20	PTD-37-JCGS	\$1.94	YG-37-JCGS	10	\$1.20
38	.1015	2-1/2	PTD-38-JHRN	\$1.21	PTD-38-JHBN	\$1.20	PTD-38-JCGS	\$1.83	YG-38-JCGS	10	\$1.13
39	.0995	2-3/8	PTD-39-JHRN	\$1.21	PTD-39-JHBN	\$1.20	PTD-39-JCGS	\$1.83	YG-39-JCGS	10	\$1.13
40	.0980	2-3/8	PTD-40-JHRN	\$1.19	PTD-40-JHBN	\$1.19	PTD-40-JCGS	\$1.83	YG-40-JCGS	10	\$1.13
41	.0960	2-3/8	PTD-41-JHRN	\$1.21	PTD-41-JHBN	\$1.20	PTD-41-JCGS	\$1.80	YG-41-JCGS	10	\$1.13
42	.0935	2-1/4	PTD-42-JHRN	\$1.21	PTD-42-JHBN	\$1.20	PTD-42-JCGS	\$1.78	YG-42-JCGS	10	\$1.13
43	.0890	2-1/4	PTD-43-JHRN	\$1.19	PTD-43-JHBN	\$1.20	PTD-43-JCGS	\$1.78	YG-43-JCGS	10	\$1.13
44	.0860	2-1/8	PTD-44-JHRN	\$1.19	PTD-44-JHBN	\$1.20	PTD-44-JCGS	\$1.78	YG-44-JCGS	10	\$1.13
45	.0820	2-1/8	PTD-45-JHRN	\$1.21	PTD-45-JHBN	\$1.20	PTD-45-JCGS	\$1.78	YG-45-JCGS	10	\$1.13
46	.0810	2-1/8	PTD-46-JHRN	\$1.21	PTD-46-JHBN	\$1.20	PTD-46-JCGS	\$1.78	YG-46-JCGS	10	\$1.13
47	.0785	2	PTD-47-JHRN	\$1.21	PTD-47-JHBN	\$1.20	PTD-47-JCGS	\$1.78	YG-47-JCGS	10	\$1.13
48	.0760	2	PTD-48-JHRN	\$1.21	PTD-48-JHBN	\$1.21	PTD-48-JCGS	\$1.78	YG-48-JCGS	10	\$1.13
49	.0730	2	PTD-49-JHRN	\$1.21	PTD-49-JHBN	\$1.21	PTD-49-JCGS	\$1.78	YG-49-JCGS	10	\$1.13
50	.0700	2	PTD-50-JHRN	\$1.20	PTD-50-JHBN	\$1.20	PTD-50-JCGS	\$1.78	YG-50-JCGS	10	\$1.13
51	.0670	2	PTD-51-JHRN	\$1.21	PTD-51-JHBN	\$1.20	PTD-51-JCGS	\$1.78	YG-51-JCGS	10	\$1.13
52	.0635	1-7/8	PTD-52-JHRN	\$1.20	PTD-52-JHBN	\$1.20	PTD-52-JCGS	\$1.78	YG-52-JCGS	10	\$1.13
53	.0595	1-7/8	PTD-53-JHRN	\$1.20	PTD-53-JHBN	\$1.28	PTD-53-JCGS	\$1.98	YG-53-JCGS	10	\$1.20
54	.0550	1-7/8	PTD-54-JHRN	\$1.20	PTD-54-JHBN	\$1.28	PTD-54-JCGS	\$1.98	YG-54-JCGS	10	\$1.20
55	.0520	1-7/8	PTD-55-JHRN	\$1.20	PTD-55-JHBN	\$1.28	PTD-55-JCGS	\$1.98	YG-55-JCGS	10	\$1.20
56	.0465	1-3/4	PTD-56-JHRN	\$1.21	PTD-56-JHBN	\$1.28	PTD-56-JCGS	\$2.25	YG-56-JCGS	10	\$1.31
57	.0430	1-3/4	PTD-57-JHRN	\$1.20	PTD-57-JHBN	\$1.28	PTD-57-JCGS	\$2.25	-	-	-
58	.0420	1-5/8	PTD-58-JHRN	\$1.25	PTD-58-JHBN	\$1.28	PTD-58-JCGS	\$2.25	-	-	-
59	.0410	1-5/8	PTD-59-JHRN	\$1.25	PTD-59-JHBN	\$1.29	PTD-59-JCGS	\$2.25	-	-	-
60	.0400	1-5/8	PTD-60-JHRN	\$1.24	PTD-60-JHBN	\$1.28	PTD-60-JCGS	\$2.25	-	-	-

Call Us Today For All Of Your Machine Tool Needs!

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

JOBBER LENGTH DRILLS

General Purpose
 118° Point On HSS & TiN Coated
 135° Self-Centering Split Point On
 Cobalt HSS



YG-1 Features:

- 135° Point
- Cobalt HSS
- Sold In Package Quantities-
 Letter- A to I: 10 per pack
 J to Z: 5 per pack

YG-1 Drills Sold In
 Package Quantities



Letter Sizes			Bright Finish 118° Point		Black Oxide 118° Point		Cobalt HSS 135° Split Point		Cobalt HSS 135° Point		
Dia.	Dec Equiv	OAL	Part Number	Price Each	Part Number	Price Each	Part Number	Price Each	Part Number	YG-1 Pkg Qty	Price Each
A	.2340	3-7/8	PTD-A-JHRN	\$2.84	PTD-A-JHBN	\$2.84	PTD-A-JCGS	\$4.95	YG-A-JCGS	10	\$2.78
B	.2380	4	PTD-B-JHRN	\$2.84	PTD-B-JHBN	\$2.84	PTD-B-JCGS	\$5.76	YG-B-JCGS	10	\$3.24
C	.2420	4	PTD-C-JHRN	\$2.84	PTD-C-JHBN	\$2.84	PTD-C-JCGS	\$5.76	YG-C-JCGS	10	\$3.24
D	.2460	4	PTD-D-JHRN	\$2.84	PTD-D-JHBN	\$2.84	PTD-D-JCGS	\$6.46	YG-D-JCGS	10	\$3.55
E	.2500	4	PTD-E-JHRN	\$2.64	PTD-E-JHBN	\$2.63	PTD-E-JCGS	\$5.02	YG-E-JCGS	10	\$2.94
F	.2570	4-1/8	PTD-F-JHRN	\$3.02	PTD-F-JHBN	\$3.02	PTD-F-JCGS	\$5.67	YG-F-JCGS	10	\$3.24
G	.2610	4-1/8	PTD-G-JHRN	\$3.41	PTD-G-JHBN	\$3.39	PTD-G-JCGS	\$5.76	YG-G-JCGS	10	\$3.24
H	.2660	4-1/8	PTD-H-JHRN	\$3.41	PTD-H-JHBN	\$3.41	PTD-H-JCGS	\$6.46	YG-H-JCGS	10	\$3.55
I	.2720	4-1/8	PTD-I-JHRN	\$3.41	PTD-I-JHBN	\$3.39	PTD-I-JCGS	\$6.03	YG-I-JCGS	10	\$3.33
J	.2770	4-1/8	PTD-J-JHRN	\$3.64	PTD-J-JHBN	\$3.64	PTD-J-JCGS	\$6.46	YG-J-JCGS	10	\$3.67
K	.2810	4-1/4	PTD-K-JHRN	\$4.03	PTD-K-JHBN	\$4.03	PTD-K-JCGS	\$6.46	YG-K-JCGS	10	\$3.67
L	.2900	4-1/4	PTD-L-JHRN	\$4.03	PTD-L-JHBN	\$4.03	PTD-L-JCGS	\$7.34	YG-L-JCGS	10	\$4.09
M	.2950	4-3/8	PTD-M-JHRN	\$4.27	PTD-M-JHBN	\$4.27	PTD-M-JCGS	\$7.76	YG-M-JCGS	10	\$4.31
N	.3020	4-3/8	PTD-N-JHRN	\$4.27	PTD-N-JHBN	\$4.27	PTD-N-JCGS	\$7.76	YG-N-JCGS	10	\$4.31
O	.3160	4-1/2	PTD-O-JHRN	\$4.31	PTD-O-JHBN	\$4.31	PTD-O-JCGS	\$8.53	YG-O-JCGS	10	\$4.79
P	.3230	4-5/8	PTD-P-JHRN	\$4.86	PTD-P-JHBN	\$4.86	PTD-P-JCGS	\$9.14	YG-P-JCGS	10	\$5.11
Q	.3320	4-3/4	PTD-Q-JHRN	\$4.86	PTD-Q-JHBN	\$4.84	PTD-Q-JCGS	\$9.45	YG-Q-JCGS	5	\$5.25
R	.3390	4-3/4	PTD-R-JHRN	\$5.20	PTD-R-JHBN	\$5.20	PTD-R-JCGS	\$9.45	YG-R-JCGS	5	\$5.25
S	.3480	4-7/8	PTD-S-JHRN	\$5.49	PTD-S-JHBN	\$5.49	PTD-S-JCGS	\$11.54	YG-S-JCGS	1	\$6.29
T	.3580	4-7/8	PTD-T-JHRN	\$6.28	PTD-T-JHBN	\$6.28	PTD-T-JCGS	\$11.54	YG-T-JCGS	1	\$6.33
U	.3680	5	PTD-U-JHRN	\$6.28	PTD-U-JHBN	\$6.28	PTD-U-JCGS	\$11.54	YG-U-JCGS	1	\$6.33
V	.3770	5	PTD-V-JHRN	\$6.46	PTD-V-JHBN	\$6.46	PTD-V-JCGS	\$12.74	YG-V-JCGS	1	\$6.88
W	.3860	5-1/8	PTD-W-JHRN	\$6.66	PTD-W-JHBN	\$6.66	PTD-W-JCGS	\$12.74	YG-W-JCGS	1	\$6.88
X	.3970	5-1/8	PTD-X-JHRN	\$8.10	PTD-X-JHBN	\$8.10	PTD-X-JCGS	\$12.74	YG-X-JCGS	1	\$7.00
Y	.4040	5-1/4	PTD-Y-JHRN	\$9.09	PTD-Y-JHBN	\$9.09	PTD-Y-JCGS	\$13.50	YG-Y-JCGS	1	\$7.38
Z	.4130	5-1/4	PTD-Z-JHRN	\$9.63	PTD-Z-JHBN	\$9.63	PTD-Z-JCGS	\$14.72	YG-Z-JCGS	1	\$7.99

MASTER DRILL DISPENSERS

Holds full packages (minimum of 12 pcs.) of jobber or screw machine length drills, fractional, letter and wire gauge sizes in one complete cabinet.

Dimensions:

26"W x 12"D x 12 1/2"H
 Weight: 43 lbs.



Description	Part Number	Price
Master Drill Dispenser	HU-13175	\$403.75

BIT BUDDY®

- Clip-on cup drill index
- High impact, break resistant plastic
- Water resistant, great for outdoor jobsites
- Fast, 1/4 turn cover secures dome to top of Bit Buddy
- Drills stay in Bit Buddy if dropped and cover is on
- If your 1/2" drill bit is 6" OAL, order Jobber Length Bit Buddy (HU-30550).

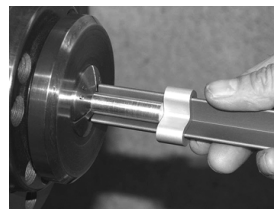
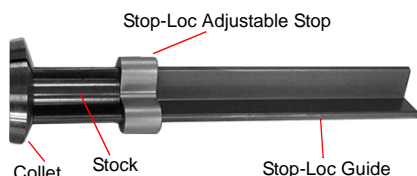


Description	Part Number	Price
For Jobbers-1/16" to 1/2" x 64ths	HU-30550	\$16.50
For Mechanics drills-1/16" to 1/2" x 64ths	HU-30650	\$16.50

CHUCK/COLLET STOP

Handheld Lathe & Mill Vise Tool

- Adjustable Precision-Gage lengths up to 5-1/2" long holding +/- .005
- Save Money! No more fixed length dedicated shop-made front collet stops for each job
- Versatile-For use on CNC or manual lathes whether you are running a bar manually or using a bar puller
- Consistency-Unique design incorporates self-centering, unobstructed viewing and contrasting colors to give user confidence
- Dimensions: 6" L x 3/4" H x 3/4" W
- Made in USA



Stop-Loc

Pat.Pend.



Graduations	Part Number	Price
Inch	STOPLOC	\$16.00
Inch/Metric	STOPLOC-THSMM	\$18.00
Metric	STOPLOC-MM	\$18.00

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
 LIVE CENTERS
 VISE ACCESSORIES
 VISE JAWS
 STRAIGHT SHANK
 COLLET HOLDERS
 TAP HOLDERS
 DRILL CHUCKS
 CARBIDE INSERTS
 THREADING/GROOVING
 CUTTING TOOLS
 MACHINERY
 PRECISION TOOLS
 DEBURRING
 COOLANT/FLUIDS
 TOOL STORAGE

SOLID CARBIDE DRILLS-JOBBER LENGTH

JOBBER LENGTH DRILLS Solid Carbide

FEATURES:

- For use on non-ferrous alloys, cast iron, plastics, aluminum and highly abrasive materials
- Made from premium submicron carbide with 10% cobalt
- 20° helix, right hand spiral, right hand cut
- 118° drill point
- Made in USA



Full Line Available!
Please call for more information.

DRILL DISPENSERS

Holds full packages of each size drill (minimum 12 pcs.). One piece drawer slide for long useful life. Stackable for larger inventories.

Dimensions:
14 5/8"W x 7 3/8"D x 7 3/4"H



"The Original"



For Drill sizes	Part Number	Price Each
1/16" to 1/2" x 64ths jobber drills	HU-13000	\$82.39
#1 to #60 wire gage drills, jobbers length	HU-13025	\$104.86
A to Z jobber length drills	HU-13050	\$82.39

Size	Dec.	LOC	OAL	UNCOATED		TIN COATED		TiAIN COATED	
				Part Number	Price Each	Part Number	Price Each	Part Number	Price Each
80	0.0135	3/16	3/4	JRUC-80-MO	\$12.86	JRTN-80-MO	\$14.40	JRTA-80-MO	\$15.05
79	0.0145	3/16	3/4	JRUC-79-MO	\$12.86	JRTN-79-MO	\$14.40	JRTA-79-MO	\$15.05
1/64	0.0156	3/16	3/4	JRUC-1/64-MO	\$12.86	JRTN-1/64-MO	\$14.40	JRTA-1/64-MO	\$15.05
78	0.0160	3/16	3/4	JRUC-78-MO	\$12.86	JRTN-78-MO	\$14.40	JRTA-78-MO	\$15.05
77	0.0180	3/16	3/4	JRUC-77-MO	\$12.43	JRTN-77-MO	\$14.40	JRTA-77-MO	\$15.05
76	0.0200	1/4	7/8	JRUC-76-MO	\$12.43	JRTN-76-MO	\$14.40	JRTA-76-MO	\$15.05
75	0.0210	1/4	7/8	JRUC-75-MO	\$12.43	JRTN-75-MO	\$14.40	JRTA-75-MO	\$15.05
74	0.0225	1/4	7/8	JRUC-74-MO	\$12.43	JRTN-74-MO	\$14.40	JRTA-74-MO	\$15.05
73	0.0240	1/4	7/8	JRUC-73-MO	\$12.43	JRTN-73-MO	\$14.40	JRTA-73-MO	\$15.05
72	0.0250	5/16	1	JRUC-72-MO	\$11.99	JRTN-72-MO	\$12.86	JRTA-72-MO	\$14.61
71	0.0260	5/16	1	JRUC-71-MO	\$11.99	JRTN-71-MO	\$12.86	JRTA-71-MO	\$14.61
70	0.0280	1/2	1-1/2	JRUC-70-MO	\$11.99	JRTN-70-MO	\$12.86	JRTA-70-MO	\$14.61
69	0.0292	1/2	1-1/2	JRUC-69-MO	\$11.99	JRTN-69-MO	\$12.86	JRTA-69-MO	\$14.61
68	0.0310	1/2	1-1/2	JRUC-68-MO	\$11.11	JRTN-68-MO	\$12.86	JRTA-68-MO	\$14.61
1/32	0.0312	1/2	1-1/2	JRUC-1/32-MO	\$7.89	JRTN-1/32-MO	\$12.86	JRTA-1/32-MO	\$14.61
67	0.0320	1/2	1-1/2	JRUC-67-MO	\$11.11	JRTN-67-MO	\$12.86	JRTA-67-MO	\$14.61
66	0.0330	1/2	1-1/2	JRUC-66-MO	\$11.11	JRTN-66-MO	\$12.86	JRTA-66-MO	\$14.61
65	0.0350	5/8	1-1/2	JRUC-65-MO	\$9.36	JRTN-65-MO	\$12.86	JRTA-65-MO	\$14.61
64	0.0360	5/8	1-1/2	JRUC-64-MO	\$9.36	JRTN-64-MO	\$12.86	JRTA-64-MO	\$14.61
63	0.0370	5/8	1-1/2	JRUC-63-MO	\$9.36	JRTN-63-MO	\$12.86	JRTA-63-MO	\$14.61
62	0.0380	5/8	8	JRUC-62-MO	\$9.36	JRTN-62-MO	\$12.86	JRTA-62-MO	\$14.61
61	0.0390	5/8	1-1/2	JRUC-61-MO	\$9.36	JRTN-61-MO	\$12.86	JRTA-61-MO	\$14.61
60	0.0400	3/4	1-1/2	JRUC-60-MO	\$9.36	JRTN-60-MO	\$12.86	JRTA-60-MO	\$14.61
59	0.0410	3/4	1-1/2	JRUC-59-MO	\$9.36	JRTN-59-MO	\$11.11	JRTA-59-MO	\$11.99
58	0.0420	3/4	1-1/2	JRUC-58-MO	\$9.36	JRTN-58-MO	\$11.11	JRTA-58-MO	\$11.99
57	0.0430	3/4	1-1/2	JRUC-57-MO	\$9.36	JRTN-57-MO	\$11.11	JRTA-57-MO	\$11.99
56	0.0465	3/4	1-1/2	JRUC-56-MO	\$7.09	JRTN-56-MO	\$8.84	JRTA-56-MO	\$9.71
3/64	0.0469	3/4	1-1/2	JRUC-3/64-MO	\$6.69	JRTN-3/64-MO	\$8.84	JRTA-3/64-MO	\$9.71
55	0.0520	3/4	1-1/2	JRUC-55-MO	\$7.09	JRTN-55-MO	\$8.84	JRTA-55-MO	\$9.71
54	0.0550	3/4	1-1/2	JRUC-54-MO	\$7.09	JRTN-54-MO	\$8.84	JRTA-54-MO	\$9.71
53	0.0595	3/4	1-1/2	JRUC-53-MO	\$7.49	JRTN-53-MO	\$8.84	JRTA-53-MO	\$9.71
1/16	0.0625	3/4	1-1/2	JRUC-1/16-MO	\$5.95	JRTN-1/16-MO	\$8.84	JRTA-1/16-MO	\$9.71
52	0.0635	3/4	1-1/2	JRUC-52-MO	\$7.09	JRTN-52-MO	\$8.84	JRTA-52-MO	\$9.71
51	0.0670	3/4	1-1/2	JRUC-51-MO	\$7.09	JRTN-51-MO	\$8.84	JRTA-51-MO	\$9.71
50	0.0700	7/8	1-3/4	JRUC-50-MO	\$7.39	JRTN-50-MO	\$9.14	JRTA-50-MO	\$10.02
49	0.0730	7/8	1-3/4	JRUC-49-MO	\$7.39	JRTN-49-MO	\$9.14	JRTA-49-MO	\$10.02
48	0.0760	7/8	1-3/4	JRUC-48-MO	\$7.39	JRTN-48-MO	\$9.14	JRTA-48-MO	\$10.02
5/64	0.0781	7/8	1-3/4	JRUC-5/64-MO	\$6.08	JRTN-5/64-MO	\$9.14	JRTA-5/64-MO	\$10.02
47	0.0785	7/8	1-3/4	JRUC-47-MO	\$7.39	JRTN-47-MO	\$9.14	JRTA-47-MO	\$10.02
46	0.0810	7/8	1-3/4	JRUC-46-MO	\$7.39	JRTN-46-MO	\$9.14	JRTA-46-MO	\$10.02
45	0.0820	7/8	1-3/4	JRUC-45-MO	\$7.39	JRTN-45-MO	\$9.14	JRTA-45-MO	\$10.02
44	0.0860	1	2	JRUC-44-MO	\$6.88	JRTN-44-MO	\$8.63	JRTA-44-MO	\$9.51
43	0.0890	1	2	JRUC-43-MO	\$6.88	JRTN-43-MO	\$8.63	JRTA-43-MO	\$9.51
42	0.0935	1	2	JRUC-42-MO	\$6.88	JRTN-42-MO	\$8.63	JRTA-42-MO	\$9.51
3/32	0.0938	1	2	JRUC-3/32-MO	\$6.36	JRTN-3/32-MO	\$8.63	JRTA-3/32-MO	\$9.51
41	0.0960	1	2	JRUC-41-MO	\$6.88	JRTN-41-MO	\$8.63	JRTA-41-MO	\$9.51
40	0.0980	1	2	JRUC-40-MO	\$6.88	JRTN-40-MO	\$8.63	JRTA-40-MO	\$9.51
39	0.9950	1-1/4	2-1/4	JRUC-39-MO	\$8.05	JRTN-39-MO	\$9.80	JRTA-39-MO	\$10.68
38	0.1015	1-1/4	2-1/4	JRUC-38-MO	\$8.05	JRTN-38-MO	\$9.80	JRTA-38-MO	\$10.68
37	0.1040	1-1/4	2-1/4	JRUC-37-MO	\$8.05	JRTN-37-MO	\$9.80	JRTA-37-MO	\$10.68
36	0.1065	1-1/4	2-1/4	JRUC-36-MO	\$8.40	JRTN-36-MO	\$9.80	JRTA-36-MO	\$11.03
7/64	0.1094	1-1/4	2-1/4	JRUC-7/64-MO	\$6.65	JRTN-7/64-MO	\$9.80	JRTA-7/64-MO	\$11.03
35	0.1100	1-1/4	2-1/4	JRUC-35-MO	\$8.05	JRTN-35-MO	\$9.80	JRTA-35-MO	\$11.03
34	0.1110	1-1/4	2-1/4	JRUC-34-MO	\$8.40	JRTN-34-MO	\$10.15	JRTA-34-MO	\$11.03
33	0.1130	1-1/4	2-1/4	JRUC-33-MO	\$8.40	JRTN-33-MO	\$10.15	JRTA-33-MO	\$11.03
32	0.1160	1-1/4	2-1/4	JRUC-32-MO	\$8.40	JRTN-32-MO	\$10.15	JRTA-32-MO	\$11.03
31	0.1200	1-1/4	2-1/4	JRUC-31-MO	\$8.05	JRTN-31-MO	\$9.80	JRTA-31-MO	\$10.68
1/8	0.1250	1-1/4	2-1/4	JRUC-1/8-MO	\$8.05	JRTN-1/8-MO	\$9.80	JRTA-1/8-MO	\$10.68
30	0.1285	1-1/4	2-1/4	JRUC-30-MO	\$8.05	JRTN-30-MO	\$9.80	JRTA-30-MO	\$10.68
29	0.1360	1-3/8	2-1/2	JRUC-29-MO	\$10.31	JRTN-29-MO	\$12.50	JRTA-29-MO	\$12.94
28	0.1405	1-3/8	2-1/2	JRUC-28-MO	\$10.31	JRTN-28-MO	\$12.50	JRTA-28-MO	\$12.94
9/64	0.1406	1-3/8	2-1/2	JRUC-9/64-MO	\$10.31	JRTN-9/64-MO	\$12.50	JRTA-9/64-MO	\$12.94
27	0.1440	1-3/8	2-1/2	JRUC-27-MO	\$10.31	JRTN-27-MO	\$12.50	JRTA-27-MO	\$12.94
26	0.1470	1-3/8	2-1/2	JRUC-26-MO	\$10.31	JRTN-26-MO	\$12.50	JRTA-26-MO	\$12.94
25	0.1495	1-3/8	2-1/2	JRUC-25-MO	\$10.31	JRTN-25-MO	\$12.50	JRTA-25-MO	\$13.52
24	0.1520	1-3/8	2-1/2	JRUC-24-MO	\$10.31	JRTN-24-MO	\$12.50	JRTA-24-MO	\$13.52
23	0.1540	1-3/8	2-1/2	JRUC-23-MO	\$10.31	JRTN-23-MO	\$12.50	JRTA-23-MO	\$13.52
5/32	0.1562	1-3/8	2-1/2	JRUC-5/32-MO	\$10.31	JRTN-5/32-MO	\$12.50	JRTA-5/32-MO	\$13.52
22	0.1570	1-3/8	2-1/2	JRUC-22-MO	\$10.31	JRTN-22-MO	\$12.50	JRTA-22-MO	\$13.52

Call Us Today For All Of Your Machine Tool Needs!

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

JOBBER LENGTH DRILLS (continued)

Solid Carbide

FEATURES:

- For use on non-ferrous alloys, cast iron, plastics, aluminum and highly abrasive materials
- Made from premium submicron carbide with 10% cobalt
- 20° helix, right hand spiral, right hand cut
- 118° drill point
- Made in USA



Full Line Available!
Please call for more information.

DRILL INDEXES

Holds and organizes your letter size, jobber length fractional and wire gauge drills.



For Drill Sizes	Part Number	Price Each
A to Z drill index	HU-10500	\$12.60
1/16" to 1/2" x 64ths drill index	HU-10550	\$12.60
#1 to 60 wire gage drill index	HU-10600	\$10.80

Size	Dec.	LOC	OAL	UNCOATED		TIN COATED		TIAIN COATED	
				Part Number	Price Each	Part Number	Price Each	Part Number	Price Each
21	0.1590	1-3/8	2-1/2	JRUC-21-MO	\$10.31	JRTN-21-MO	\$12.50	JRTA-21-MO	\$13.52
20	0.1610	1-3/8	2-1/2	JRUC-20-MO	\$10.31	JRTN-20-MO	\$12.50	JRTA-20-MO	\$13.52
19	0.1660	1-5/8	2-3/4	JRUC-19-MO	\$11.92	JRTN-19-MO	\$14.11	JRTA-19-MO	\$15.13
18	0.1695	1-5/8	2-3/4	JRUC-18-MO	\$11.92	JRTN-18-MO	\$14.11	JRTA-18-MO	\$15.13
11/64	0.1719	1-5/8	2-3/4	JRUC-11/64-MO	\$11.92	JRTN-11/64-MO	\$14.11	JRTA-11/64-MO	\$15.13
17	0.1730	1-5/8	2-3/4	JRUC-17-MO	\$11.92	JRTN-17-MO	\$14.11	JRTA-17-MO	\$15.13
16	0.1770	1-5/8	2-3/4	JRUC-16-MO	\$12.27	JRTN-16-MO	\$14.46	JRTA-16-MO	\$15.48
15	0.1800	1-5/8	2-3/4	JRUC-15-MO	\$12.27	JRTN-15-MO	\$14.46	JRTA-15-MO	\$15.48
14	0.1820	1-5/8	2-3/4	JRUC-14-MO	\$12.27	JRTN-14-MO	\$14.46	JRTA-14-MO	\$15.48
13	0.1850	1-5/8	2-3/4	JRUC-13-MO	\$12.27	JRTN-13-MO	\$14.46	JRTA-13-MO	\$15.48
3/16	0.1875	1-5/8	2-3/4	JRUC-3/16-MO	\$12.27	JRTN-3/16-MO	\$14.46	JRTA-3/16-MO	\$15.48
12	0.1890	1-5/8	2-3/4	JRUC-12-MO	\$12.27	JRTN-12-MO	\$14.46	JRTA-12-MO	\$15.48
11	0.1910	1-5/8	2-3/4	JRUC-11-MO	\$12.27	JRTN-11-MO	\$15.19	JRTA-11-MO	\$15.48
10	0.1935	1-5/8	2-3/4	JRUC-10-MO	\$12.27	JRTN-10-MO	\$15.19	JRTA-10-MO	\$15.48
9	0.1960	1-3/4	3	JRUC-9-MO	\$14.03	JRTN-9-MO	\$16.95	JRTA-9-MO	\$17.97
8	0.1990	1-3/4	3	JRUC-8-MO	\$14.03	JRTN-8-MO	\$16.95	JRTA-8-MO	\$17.97
7	0.2010	1-3/4	3	JRUC-7-MO	\$14.03	JRTN-7-MO	\$16.95	JRTA-7-MO	\$17.97
13/64	0.2031	1-3/4	3	JRUC-13/64-MO	\$14.73	JRTN-13/64-MO	\$17.65	JRTA-13/64-MO	\$18.67
6	0.2040	1-3/4	3	JRUC-6-MO	\$14.73	JRTN-6-MO	\$17.65	JRTA-6-MO	\$18.67
5	0.2055	1-3/4	3	JRUC-5-MO	\$14.73	JRTN-5-MO	\$17.65	JRTA-5-MO	\$18.67
4	0.2090	1-3/4	3	JRUC-4-MO	\$14.73	JRTN-4-MO	\$17.65	JRTA-4-MO	\$18.67
3	0.2130	1-3/4	3	JRUC-3-MO	\$14.73	JRTN-3-MO	\$17.65	JRTA-3-MO	\$18.67
7/32	0.2188	1-3/4	3	JRUC-7/32-MO	\$14.73	JRTN-7/32-MO	\$17.65	JRTA-7/32-MO	\$18.67
2	0.2210	1-3/4	3	JRUC-2-MO	\$14.73	JRTN-2-MO	\$17.65	JRTA-2-MO	\$18.67
1	0.2280	1-3/4	3	JRUC-1-MO	\$14.73	JRTN-1-MO	\$17.65	JRTA-1-MO	\$18.67
A	0.2340	2	3-1/4	JRUC-A-MO	\$17.35	JRTN-A-MO	\$20.27	JRTA-A-MO	\$21.29
15/64	0.2344	2	3-1/4	JRUC-15/64-MO	\$17.35	JRTN-15/64-MO	\$20.27	JRTA-15/64-MO	\$21.29
B	0.2380	2	3-1/4	JRUC-B-MO	\$18.40	JRTN-B-MO	\$21.32	JRTA-B-MO	\$22.34
C	0.2420	2	3-1/4	JRUC-C-MO	\$18.40	JRTN-C-MO	\$21.32	JRTA-C-MO	\$22.34
D	0.2460	2	3-1/4	JRUC-D-MO	\$18.40	JRTN-D-MO	\$21.32	JRTA-D-MO	\$22.34
1/4	0.2500	2	3-1/4	JRUC-1/4-MO	\$18.05	JRTN-1/4-MO	\$20.97	JRTA-1/4-MO	\$21.99
E	0.2500	2	3-1/4	JRUC-E-MO	\$18.40	JRTN-E-MO	\$20.97	JRTA-E-MO	\$22.34
F	0.2570	2	3-1/4	JRUC-F-MO	\$18.40	JRTN-F-MO	\$21.32	JRTA-F-MO	\$22.34
G	0.2610	2-1/4	3-1/2	JRUC-G-MO	\$21.56	JRTN-G-MO	\$25.50	JRTA-G-MO	\$28.12
17/64	0.2656	2-1/4	3-1/2	JRUC-17/64-MO	\$21.56	JRTN-17/64-MO	\$25.50	JRTA-17/64-MO	\$28.12
H	0.2660	2-1/4	3-1/2	JRUC-H-MO	\$22.26	JRTN-H-MO	\$26.20	JRTA-H-MO	\$28.82
I	0.2720	2-1/4	3-1/2	JRUC-I-MO	\$22.26	JRTN-I-MO	\$26.20	JRTA-I-MO	\$28.82
J	0.2770	2-1/4	3-1/2	JRUC-J-MO	\$22.26	JRTN-J-MO	\$26.20	JRTA-J-MO	\$28.82
K	0.2810	2-1/4	3-1/2	JRUC-K-MO	\$22.26	JRTN-K-MO	\$26.20	JRTA-K-MO	\$28.82
9/32	0.2812	2-1/4	3-1/2	JRUC-9/32-MO	\$22.26	JRTN-9/32-MO	\$26.20	JRTA-9/32-MO	\$28.82
L	0.2900	2-1/4	3-1/2	JRUC-L-MO	\$22.26	JRTN-L-MO	\$26.20	JRTA-L-MO	\$28.82
M	0.2950	2-3/8	3-3/4	JRUC-M-MO	\$26.88	JRTN-M-MO	\$30.82	JRTA-M-MO	\$33.44
19/64	0.2969	2-3/8	3-3/4	JRUC-19/64-MO	\$26.88	JRTN-19/64-MO	\$30.82	JRTA-19/64-MO	\$33.44
N	0.3020	2-3/8	3-3/4	JRUC-N-MO	\$27.23	JRTN-N-MO	\$31.17	JRTA-N-MO	\$33.79
5/16	0.3125	2-3/8	3-3/4	JRUC-5/16-MO	\$26.88	JRTN-5/16-MO	\$30.82	JRTA-5/16-MO	\$33.44
O	0.3160	2-3/8	3-3/4	JRUC-O-MO	\$27.23	JRTN-O-MO	\$31.17	JRTA-O-MO	\$33.79
P	0.3230	2-3/8	3-3/4	JRUC-P-MO	\$27.23	JRTN-P-MO	\$31.17	JRTA-P-MO	\$33.79
21/64	0.3281	2-1/2	4	JRUC-21/64-MO	\$30.24	JRTN-21/64-MO	\$34.18	JRTA-21/64-MO	\$36.80
Q	0.3320	2-1/2	4	JRUC-Q-MO	\$31.29	JRTN-Q-MO	\$35.23	JRTA-Q-MO	\$37.85
R	0.3390	2-1/2	4	JRUC-R-MO	\$31.29	JRTN-R-MO	\$35.23	JRTA-R-MO	\$37.85
11/32	0.3438	2-1/2	4	JRUC-11/32-MO	\$30.59	JRTN-11/32-MO	\$34.53	JRTA-11/32-MO	\$37.15
S	0.3480	2-1/2	4	JRUC-S-MO	\$31.29	JRTN-S-MO	\$35.23	JRTA-S-MO	\$37.85
T	0.3580	2-3/4	4-1/4	JRUC-T-MO	\$36.84	JRTN-T-MO	\$43.26	JRTA-T-MO	\$43.41
23/64	0.3594	2-3/4	4-1/4	JRUC-23/64-MO	\$36.14	JRTN-23/64-MO	\$42.56	JRTA-23/64-MO	\$42.71
U	0.3680	2-3/4	4-1/4	JRUC-U-MO	\$39.29	JRTN-U-MO	\$45.71	JRTA-U-MO	\$45.86
3/8	0.3750	2-3/4	4-1/4	JRUC-3/8-MO	\$38.59	JRTN-3/8-MO	\$45.01	JRTA-3/8-MO	\$45.16
V	0.3770	2-3/4	4-1/4	JRUC-V-MO	\$39.29	JRTN-V-MO	\$45.71	JRTA-V-MO	\$45.86
W	0.3860	2-7/8	4-1/2	JRUC-W-MO	\$49.98	JRTN-W-MO	\$57.71	JRTA-W-MO	\$59.90
25/64	0.3906	2-7/8	4-1/2	JRUC-25/64-MO	\$46.57	JRTN-25/64-MO	\$53.57	JRTA-25/64-MO	\$57.39
X	0.3970	2-7/8	4-1/2	JRUC-X-MO	\$51.03	JRTN-X-MO	\$58.76	JRTA-X-MO	\$60.95
Y	0.4040	2-7/8	4-1/2	JRUC-Y-MO	\$51.03	JRTN-Y-MO	\$58.76	JRTA-Y-MO	\$60.95
13/32	0.4062	2-7/8	4-1/2	JRUC-13/32-MO	\$47.62	JRTN-13/32-MO	\$54.62	JRTA-13/32-MO	\$58.44
Z	0.4130	2-7/8	4-1/2	JRUC-Z-MO	\$53.13	JRTN-Z-MO	\$60.86	JRTA-Z-MO	\$63.05
27/64	0.4219	2-7/8	4-1/2	JRUC-27/64-MO	\$48.93	JRTN-27/64-MO	\$55.93	JRTA-27/64-MO	\$59.75
7/16	0.4375	2-7/8	4-1/2	JRUC-7/16-MO	\$51.03	JRTN-7/16-MO	\$59.46	JRTA-7/16-MO	\$61.85
29/64	0.4531	3	4-3/4	JRUC-29/64-MO	\$65.73	JRTN-29/64-MO	\$74.16	JRTA-29/64-MO	\$76.55
15/32	0.4688	3	4-3/4	JRUC-15/32-MO	\$66.78	JRTN-15/32-MO	\$75.21	JRTA-15/32-MO	\$77.60
31/64	0.4844	3	4-3/4	JRUC-31/64-MO	\$67.04	JRTN-31/64-MO	\$75.47	JRTA-31/64-MO	\$77.86
1/2	0.5000	3	4-3/4	JRUC-1/2-MO	\$67.83	JRTN-1/2-MO	\$76.26	JRTA-1/2-MO	\$78.65

LATHE CHUCKS
LIVE CENTERS
VISE ACCESSORIES
VISE JAWS
STRAIGHT SHANK COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

PARABOLIC JOBBER LENGTH DRILLS



JOBBER LENGTH DRILLS

HSS-Wide Land Parabolic Flute
135° Self-Centering Split Point



Full Line Available!
Please call for more information.

Fractional					Bright		TiN Coated	
Dia	Dec. Equiv	Flute Length	OAL	Pkg Qty	Part Number	Price Each	Part Number	Price Each
1/16	.0625	7/8	1-7/8	12	PTD-015804	\$2.44	PTD-081704	\$4.58
5/64	.0781	1	2	12	PTD-015805	\$2.47	PTD-081705	\$4.65
3/32	.0938	1-1/4	2-1/4	12	PTD-015806	\$2.44	PTD-081706	\$4.58
7/64	.1094	1-1/2	2-5/8	12	PTD-015807	\$2.71	PTD-081707	\$5.15
1/8	.1250	1-5/8	2-3/4	12	PTD-015808	\$2.74	PTD-081708	\$5.15
9/64	.1406	1-3/4	2-7/8	12	PTD-015809	\$2.83	PTD-081709	\$5.45
5/32	.1562	2	3-1/8	12	PTD-015810	\$2.87	PTD-081710	\$5.55
11/64	.1719	2-1/8	3-1/4	12	PTD-015811	\$3.26	PTD-081711	\$6.23
3/16	.1875	2-5/16	3-1/2	12	PTD-015812	\$3.49	PTD-081712	\$6.78
13/64	.2031	2-7/16	3-5/8	12	PTD-015813	\$3.97	PTD-081713	\$7.85
7/32	.2188	2-1/2	3-3/4	12	PTD-015814	\$4.38	PTD-081714	\$8.23
15/64	.2344	2-5/8	3-7/8	12	PTD-015815	\$4.93	PTD-081715	\$9.38
1/4	.2500	2-3/4	4	12	PTD-015816	\$5.08	PTD-081716	\$9.48
17/64	.2656	2-7/8	4-1/8	12	PTD-015817	\$6.05	PTD-081717	\$12.08
9/32	.2812	2-15/16	4-1/4	12	PTD-015818	\$6.05	PTD-081718	\$12.18
19/64	.2969	3-1/16	4-3/8	12	PTD-015819	\$7.33	PTD-081719	\$14.38
5/16	.3125	3-3/16	4-1/2	6	PTD-015820	\$7.75	PTD-081720	\$14.73
21/64	.3281	3-5/16	4-5/8	6	PTD-015821	\$8.90	PTD-081721	\$16.85
11/32	.3438	3-7/16	4-3/4	6	PTD-015822	\$9.73	PTD-081722	\$18.63
23/64	.3594	3-1/2	4-7/8	6	PTD-015823	\$11.28	PTD-081723	\$21.48
3/8	.3750	3-5/8	5	6	PTD-015824	\$11.08	PTD-081724	\$21.28
25/64	.3906	3-3/4	5-1/8	6	PTD-015825	\$13.00	PTD-081725	\$24.95
13/32	.4062	3-7/8	5-1/4	6	PTD-015826	\$12.93	PTD-081726	\$24.68
27/64	.4219	3-15/16	5-3/8	6	PTD-015827	\$14.85	PTD-081727	\$28.55
7/16	.4375	4-1/16	5-1/2	6	PTD-015828	\$14.90	PTD-081728	\$28.45
29/64	.4531	4-3/16	5-5/8	6	PTD-015829	\$17.53	PTD-081729	\$33.45
15/32	.4688	4-5/16	5-3/4	6	PTD-015830	\$17.98	PTD-081730	\$34.10
31/64	.4844	4-3/8	5-7/8	6	PTD-015831	\$19.50	PTD-081731	\$37.70
1/2	.5000	4-1/2	6	6	PTD-015832	\$18.90	PTD-081732	\$36.25

Additional Sizes Available. Please Call For More Information.

Wire Sizes					Bright		TiN Coated	
Dia	Dec. Equiv	Flute Length	OAL	Pkg Qty	Part Number	Price Each	Part Number	Price Each
1	.2280	2-5/8	3-7/8	12	PTD-019401	\$5.30	PTD-080501	\$10.20
2	.2210	2-5/8	3-7/8	12	PTD-019402	\$5.30	PTD-080502	\$10.20
3	.2130	2-1/2	3-3/4	12	PTD-019403	\$4.82	PTD-080503	\$9.15
4	.2090	2-1/2	3-3/4	12	PTD-019404	\$4.82	PTD-080504	\$9.15
5	.2055	2-1/2	3-3/4	12	PTD-019405	\$4.82	PTD-080505	\$9.15
6	.2040	2-1/2	3-3/4	12	PTD-019406	\$4.82	PTD-080506	\$9.15
7	.2010	2-7/16	3-5/8	12	PTD-019407	\$4.30	PTD-080507	\$8.20
8	.1990	2-7/16	3-5/8	12	PTD-019408	\$4.30	PTD-080508	\$8.20
9	.1960	2-7/16	3-5/8	12	PTD-019409	\$4.30	PTD-080509	\$8.20
10	.1935	2-7/16	3-5/8	12	PTD-019410	\$4.30	PTD-080510	\$8.20
11	.1910	2-5/16	3-1/2	12	PTD-019411	\$3.96	PTD-080511	\$7.55
12	.1890	2-5/16	3-1/2	12	PTD-019412	\$3.96	PTD-080512	\$7.55
13	.1850	2-5/16	3-1/2	12	PTD-019413	\$3.89	PTD-080513	\$7.40
14	.1820	2-3/16	3-3/8	12	PTD-019414	\$3.89	PTD-080514	\$7.40
15	.1800	2-3/16	3-3/8	12	PTD-019415	\$3.89	PTD-080515	\$7.40
16	.1770	2-3/16	3-3/8	12	PTD-019416	\$3.89	PTD-080516	\$7.40
17	.1730	2-3/16	3-3/8	12	PTD-019417	\$3.89	PTD-080517	\$7.40
18	.1695	2-1/8	3-1/4	12	PTD-019418	\$3.22	PTD-080518	\$6.05
19	.1660	2-1/8	3-1/4	12	PTD-019419	\$3.22	PTD-080519	\$6.05
20	.1610	2-1/8	3-1/4	12	PTD-019420	\$3.22	PTD-080520	\$6.05
21	.1590	2-1/8	3-1/4	12	PTD-019421	\$2.98	PTD-080521	\$5.75
22	.1570	2	3-1/8	12	PTD-019422	\$2.98	PTD-080522	\$5.75
23	.1540	2	3-1/8	12	PTD-019423	\$2.91	PTD-080523	\$5.60
24	.1520	2	3-1/8	12	PTD-019424	\$2.91	PTD-080524	\$5.60
25	.1495	1-7/8	3	12	PTD-019425	\$2.87	PTD-080525	\$5.48

Additional Sizes Available. Please Call For More Information.

DRILL INDEXES

Holds and organizes your letter size, jobber length fractional and wire gauge drills.



For Drill Sizes	Part Number	Price Each
A to Z drill index	HU-10500	\$12.60
1/16" to 1/2" x 64ths drill index	HU-10550	\$12.60
#1 to 60 wire gage drill index	HU-10600	\$10.80

Call Us Today For All Of Your Machine Tool Needs!

SCREW MACHINE LENGTH STUB DRILLS-HSS/COBALT

C

SCREW MACHINE DRILLS

High Speed Steel
135° Self-Centering Split Point
Heavy Duty



Fractional Sizes			Black Oxide 135° Split Point	Cobalt HSS 135° Split Point	Cobalt HSS 135° Point				
Dia.	Dec Equiv	OAL	Part Number	Price Each	Part Number	Price Each	Part Number	Pkg Qty	Price Each
1/16	.0625	1-5/8	PTD-1/16-SHBS	\$1.34	PTD-1/16-SCGS	\$1.58	YG-1/16-SCGS	10	\$1.95
5/64	.0781	1-11/16	PTD-5/64-SHBS	\$1.35	PTD-5/64-SCGS	\$1.59	YG-5/64-SCGS	10	\$1.95
3/32	.0938	1-3/4	PTD-3/32-SHBS	\$1.32	PTD-3/32-SCGS	\$1.58	YG-3/32-SCGS	10	\$1.95
7/64	.1094	1-13/16	PTD-7/64-SHBS	\$1.35	PTD-7/64-SCGS	\$1.80	YG-7/64-SCGS	5	\$1.99
1/8	.1250	1-7/8	PTD-1/8-SHBS	\$1.29	PTD-1/8-SCGS	\$2.06	YG-1/8-SCGS	5	\$2.24
9/64	.1406	1-15/16	PTD-9/64-SHBS	\$1.37	PTD-9/64-SCGS	\$2.08	YG-9/64-SCGS	5	\$2.24
5/32	.1562	2-1/16	PTD-5/32-SHBS	\$1.49	PTD-5/32-SCGS	\$2.26	YG-5/32-SCGS	5	\$2.40
11/64	.1719	2-1/8	PTD-11/64-SHBS	\$1.58	PTD-11/64-SCGS	\$2.57	YG-11/64-SCGS	5	\$2.46
3/16	.1875	2-3/16	PTD-3/16-SHBS	\$1.69	PTD-3/16-SCGS	\$3.01	YG-3/16-SCGS	5	\$2.72
13/64	.2031	2-1/4	PTD-13/64-SHBS	\$1.81	PTD-13/64-SCGS	\$3.43	YG-13/64-SCGS	5	\$3.05
7/32	.2188	2-3/8	PTD-7/32-SHBS	\$2.16	PTD-7/32-SCGS	\$3.78	YG-7/32-SCGS	5	\$3.23
15/64	.2344	2-7/16	PTD-15/64-SHBS	\$2.21	PTD-15/64-SCGS	\$4.19	YG-15/64-SCGS	5	\$3.38
1/4	.2500	2-1/2	PTD-1/4-SHBS	\$2.43	PTD-1/4-SCGS	\$4.20	YG-1/4-SCGS	5	\$3.70
17/64	.2656	2-5/8	PTD-17/64-SHBS	\$2.80	PTD-17/64-SCGS	\$4.93	YG-17/64-SCGS	5	\$4.07
9/32	.2812	2-11/16	PTD-9/32-SHBS	\$3.00	PTD-9/32-SCGS	\$5.22	YG-9/32-SCGS	5	\$4.14
19/64	.2969	2-3/4	PTD-19/64-SHBS	\$3.32	PTD-19/64-SCGS	\$6.26	YG-19/64-SCGS	5	\$4.79
5/16	.3125	2-13/16	PTD-5/16-SHBS	\$3.53	PTD-5/16-SCGS	\$6.50	YG-5/16-SCGS	5	\$5.25
21/64	.3281	2-15/16	PTD-21/64-SHBS	\$3.94	PTD-21/64-SCGS	\$7.43	YG-21/64-SCGS	1	\$5.68
11/32	.3438	3	PTD-11/32-SHBS	\$4.41	PTD-11/32-SCGS	\$7.83	YG-11/32-SCGS	1	\$6.29
23/64	.3594	3-1/16	PTD-23/64-SHBS	\$5.09	PTD-23/64-SCGS	\$9.27	YG-23/64-SCGS	1	\$7.00
3/8	.3750	3-1/8	PTD-3/8-SHBS	\$5.29	PTD-3/8-SCGS	\$9.00	YG-3/8-SCGS	1	\$7.00
25/64	.3906	3-1/4	PTD-25/64-SHBS	\$6.03	PTD-25/64-SCGS	\$10.60	YG-25/64-SCGS	1	\$7.72
13/32	.4062	3-5/16	PTD-13/32-SHBS	\$6.21	PTD-13/32-SCGS	\$10.62	YG-13/32-SCGS	1	\$8.37
27/64	.4219	3-3/8	PTD-27/64-SHBS	\$6.86	PTD-27/64-SCGS	\$12.08	YG-27/64-SCGS	1	\$9.02
7/16	.4375	3-7/16	PTD-7/16-SHBS	\$6.89	PTD-7/16-SCGS	\$12.08	YG-7/16-SCGS	1	\$9.27
29/64	.4531	3-9/16	PTD-29/64-SHBS	\$8.28	PTD-29/64-SCGS	\$14.92	YG-29/64-SCGS	1	\$10.81
15/32	.4688	3-5/8	PTD-15/32-SHBS	\$8.87	PTD-15/32-SCGS	\$14.51	YG-15/32-SCGS	1	\$10.96
31/64	.4844	3-11/16	PTD-31/64-SHBS	\$9.11	PTD-31/64-SCGS	\$14.92	YG-31/64-SCGS	1	\$11.28
1/2	.5000	3-3/4	PTD-1/2-SHBS	\$8.91	PTD-1/2-SCGS	\$14.45	YG-1/2-SCGS	1	\$11.45
33/64	.5156	3-7/8	-	-	PTD-33/64-SCGS	\$37.13	-	-	-
17/32	.5312	3-7/8	-	-	PTD-17/32-SCGS	\$37.44	-	-	-
35/64	.5469	4	-	-	PTD-35/64-SCGS	\$40.32	-	-	-
9/16	.5625	4	-	-	PTD-9/16-SCGS	\$38.84	-	-	-
37/64	.5781	4-1/8	-	-	PTD-37/64-SCGS	\$45.90	-	-	-
19/32	.5938	4-1/8	-	-	PTD-19/32-SCGS	\$44.46	-	-	-
39/64	.6094	4-1/4	-	-	PTD-39/64-SCGS	\$46.80	-	-	-
5/8	.6250	4-1/4	-	-	PTD-5/8-SCGS	\$44.87	-	-	-
41/64	.6406	4-1/2	-	-	PTD-41/64-SCGS	\$53.55	-	-	-
21/32	.6562	4-1/2	-	-	PTD-21/32-SCGS	\$51.75	-	-	-
43/64	.6719	4-5/8	-	-	PTD-43/64-SCGS	\$60.30	-	-	-
11/16	.6875	4-5/8	-	-	PTD-11/16-SCGS	\$56.70	-	-	-
45/64	.7031	4-3/4	-	-	PTD-45/64-SCGS	\$64.80	-	-	-
23/32	.7188	4-3/4	-	-	PTD-23/32-SCGS	\$62.55	-	-	-
47/64	.7344	5	-	-	PTD-47/64-SCGS	\$67.95	-	-	-
3/4	.7500	5	-	-	PTD-3/4-SCGS	\$65.70	-	-	-

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

SOLID CARBIDE SPADE DRILLS

- For use on thin sheet applications and spot drilling
- Massive web construction insures maximum tool life
- Made from premium submicron carbide with 10% cobalt
- 118° drill point
- Made in USA



Size	Dec. Inch	LOC	OAL	Part Number	Price Each
1/32	0.0312	3/16	1-1/2	MO-SPD-132	\$5.47
3/64	0.0469	7/32	1-1/2	MO-SPD-364	\$5.47
1/16	0.0625	5/16	1-1/2	MO-SPD-116	\$5.33
3/32	0.0938	7/16	1-1/2	MO-SPD-332	\$5.21
7/64	0.1094	7/16	1-1/2	MO-SPD-764	\$5.21
1/8	0.1250	1/2	1-1/2	MO-SPD-18	\$5.27
9/64	0.1406	1/2	2	MO-SPD-964	\$6.45
5/32	0.1562	9/16	2	MO-SPD-532	\$6.45
11/64	0.1719	9/16	2	MO-SPD-1164	\$6.45
3/16	0.1875	11/16	2	MO-SPD-316	\$7.50

Size	Dec. Inch	LOC	OAL	Part Number	Price Each
7/32	0.2188	19/32	2	MO-SPD-732	\$8.69
1/4	0.2500	11/16	2	MO-SPD-14	\$9.81
9/32	0.2812	7/8	2-1/2	MO-SPD-932	\$12.03
5/16	0.3125	7/8	2-1/2	MO-SPD-516	\$13.54
11/32	0.3438	15/16	2-1/2	MO-SPD-1132	\$16.22
3/8	0.3750	1-1/8	2-1/2	MO-SPD-38	\$17.32
13/32	0.4062	1-1/8	2-1/2	MO-SPD-1332	\$19.62
7/16	0.4375	1-3/16	2-1/2	MO-SPD-716	\$20.88
15/32	0.4688	1-3/16	2-1/2	MO-SPD-1532	\$22.87
1/2	0.5000	1-3/16	2-1/2	MO-SPD-12	\$25.20



Call Us Or Visit Our Website For Our Complete Selection!

SCREW MACHINE/STUB LENGTH STUB DRILLS



SCREW MACHINE DRILLS Wire Sizes-HSS & Cobalt 135° Self-Centering Split Point Heavy Duty



Wire Sizes			Black Oxide 135° Split Point		Cobalt HSS 135° Split Point		Wire Sizes (continued)			Black Oxide 135° Split Point		Cobalt HSS 135° Split Point	
Dia.	Dec Equiv	OAL	Part Number	Price Each	Part Number	Price Each	Dia.	Dec Equiv	OAL	Part Number	Price Each	Part Number	Price Each
1	.2280	2-7/16	PTD-1-SHBS	\$2.32	PTD-1-SCGS	\$4.66	31	.1200	1-7/8	PTD-31-SHBS	\$1.31	PTD-31-SCGS	\$1.94
2	.2210	2-7/16	PTD-2-SHBS	\$2.33	PTD-2-SCGS	\$4.66	32	.1160	1-7/8	PTD-32-SHBS	\$1.31	PTD-32-SCGS	\$1.94
3	.2130	2-3/8	PTD-3-SHBS	\$2.19	PTD-3-SCGS	\$4.64	33	.1130	1-7/8	PTD-33-SHBS	\$1.31	PTD-33-SCGS	\$1.89
4	.2090	2-3/8	PTD-4-SHBS	\$2.19	PTD-4-SCGS	\$4.16	34	.1110	1-7/8	PTD-34-SHBS	\$1.31	PTD-34-SCGS	\$1.89
5	.2055	2-3/8	PTD-5-SHBS	\$2.19	PTD-5-SCGS	\$4.16	35	.1100	1-7/8	PTD-35-SHBS	\$1.31	PTD-35-SCGS	\$1.89
6	.2040	2-3/8	PTD-6-SHBS	\$2.19	PTD-6-SCGS	\$4.16	36	.1065	1-13/16	PTD-36-SHBS	\$1.31	PTD-36-SCGS	\$1.88
7	.2010	2-1/4	PTD-7-SHBS	\$1.82	PTD-7-SCGS	\$3.26	37	.1040	1-13/16	PTD-37-SHBS	\$1.31	PTD-37-SCGS	\$1.89
8	.1990	2-1/4	PTD-8-SHBS	\$1.83	PTD-8-SCGS	\$3.25	38	.1015	1-13/16	PTD-38-SHBS	\$1.31	PTD-38-SCGS	\$1.70
9	.1960	2-1/4	PTD-9-SHBS	\$1.83	PTD-9-SCGS	\$3.25	39	.0995	1-13/16	PTD-39-SHBS	\$1.31	PTD-39-SCGS	\$1.70
10	.1935	2-1/4	PTD-10-SHBS	\$1.82	PTD-10-SCGS	\$3.25	40	.0980	1-13/16	PTD-40-SHBS	\$1.31	PTD-40-SCGS	\$1.70
11	.1910	2-1/4	PTD-11-SHBS	\$1.82	PTD-11-SCGS	\$3.17	41	.0960	1-13/16	PTD-41-SHBS	\$1.31	PTD-41-SCGS	\$1.65
12	.1890	2-1/4	PTD-12-SHBS	\$1.83	PTD-12-SCGS	\$3.18	42	.0935	1-3/4	PTD-42-SHBS	\$1.31	PTD-42-SCGS	\$1.63
13	.1850	2-3/16	PTD-13-SHBS	\$1.83	PTD-13-SCGS	\$3.14	43	.0890	1-3/4	PTD-43-SHBS	\$1.31	PTD-43-SCGS	\$1.63
14	.1820	2-3/16	PTD-14-SHBS	\$1.83	PTD-14-SCGS	\$3.14	44	.0860	1-3/4	PTD-44-SHBS	\$1.31	PTD-44-SCGS	\$1.63
15	.1800	2-3/16	PTD-15-SHBS	\$1.83	PTD-15-SCGS	\$3.14	45	.0820	1-3/4	PTD-45-SHBS	\$1.31	PTD-45-SCGS	\$1.64
16	.1770	2-3/16	PTD-16-SHBS	\$1.83	PTD-16-SCGS	\$3.11	46	.0810	1-3/4	PTD-46-SHBS	\$1.31	PTD-46-SCGS	\$1.64
17	.1730	2-3/16	PTD-17-SHBS	\$1.83	PTD-17-SCGS	\$3.02	47	.0785	1-11/16	PTD-47-SHBS	\$1.31	PTD-47-SCGS	\$1.64
18	.1695	2-1/8	PTD-18-SHBS	\$1.53	PTD-18-SCGS	\$2.55	48	.0760	1-11/16	PTD-48-SHBS	\$1.31	PTD-48-SCGS	\$1.63
19	.1660	2-1/8	PTD-19-SHBS	\$1.53	PTD-19-SCGS	\$2.43	49	.0730	1-11/16	PTD-49-SHBS	\$1.31	PTD-49-SCGS	\$1.64
20	.1610	2-1/8	PTD-20-SHBS	\$1.53	PTD-20-SCGS	\$2.43	50	.0700	1-11/16	PTD-50-SHBS	\$1.31	PTD-50-SCGS	\$1.63
21	.1590	2-1/8	PTD-21-SHBS	\$1.47	PTD-21-SCGS	\$2.43	51	.0670	1-11/16	PTD-51-SHBS	\$1.31	PTD-51-SCGS	\$1.63
22	.1570	2-1/8	PTD-22-SHBS	\$1.48	PTD-22-SCGS	\$2.44	52	.0635	1-11/16	PTD-52-SHBS	\$1.31	PTD-52-SCGS	\$1.63
23	.1540	2-1/16	PTD-23-SHBS	\$1.48	PTD-23-SCGS	\$2.44	53	.0595	1-5/8	PTD-53-SHBS	\$1.31	PTD-53-SCGS	\$1.85
24	.1520	2-1/16	PTD-24-SHBS	\$1.48	PTD-24-SCGS	\$2.44	54	.0550	1-5/8	PTD-54-SHBS	\$1.31	PTD-54-SCGS	\$1.85
25	.1495	2-1/16	PTD-25-SHBS	\$1.46	PTD-25-SCGS	\$2.26	55	.0520	1-5/8	PTD-55-SHBS	\$1.31	PTD-55-SCGS	\$1.85
26	.1470	2-1/16	PTD-26-SHBS	\$1.46	PTD-26-SCGS	\$2.27	56	.0465	1-3/8	PTD-56-SHBS	\$1.31	PTD-56-SCGS	\$1.85
27	.1440	2-1/16	PTD-27-SHBS	\$1.46	PTD-27-SCGS	\$2.27	57	.0430	1-3/8	PTD-57-SHBS	\$1.31	PTD-57-SCGS	\$1.85
28	.1405	1-15/16	PTD-28-SHBS	\$1.31	PTD-28-SCGS	\$2.07	58	.0420	1-3/8	PTD-58-SHBS	\$1.31	PTD-58-SCGS	\$1.95
29	.1360	1-15/16	PTD-29-SHBS	\$1.31	PTD-29-SCGS	\$2.06	59	.0410	1-3/8	PTD-59-SHBS	\$1.31	PTD-59-SCGS	\$1.95
30	.1285	1-15/16	PTD-30-SHBS	\$1.31	PTD-30-SCGS	\$1.94	60	.0400	1-3/8	PTD-60-SHBS	\$1.31	PTD-60-SCGS	\$1.95

SCREW MACHINE DRILLS Letter Sizes-HSS & Cobalt 135° Self-Centering Split Point Heavy Duty



Letter Sizes			Black Oxide 135° Split Point		Cobalt HSS 135° Split Point		Cobalt HSS 135° Split Point		
Dia.	Dec Equiv	OAL	PTD Part Number	Price Each	PTD Part Number	Price Each	YG-1 Part Number	YG-1 Pkg Qty	Price Each
A	.2340	2-7/16	PTD-A-SHBS	\$2.77	PTD-A-SCGS	\$4.95	YG-A-SCGS	5	\$3.48
B	.2380	2-1/2	PTD-B-SHBS	\$2.77	PTD-B-SCGS	\$5.24	YG-B-SCGS	5	\$4.07
C	.2420	2-1/2	PTD-C-SHBS	\$2.77	PTD-C-SCGS	\$5.22	YG-C-SCGS	5	\$4.07
D	.2460	2-1/2	PTD-D-SHBS	\$2.77	PTD-D-SCGS	\$5.24	YG-D-SCGS	5	\$4.38
E	.2500	2-1/2	PTD-E-SHBS	\$2.94	PTD-E-SCGS	\$4.77	YG-E-SCGS	5	\$4.38
F	.2570	2-5/8	PTD-F-SHBS	\$3.03	PTD-F-SCGS	\$5.58	YG-F-SCGS	5	\$4.07
G	.2610	2-5/8	PTD-G-SHBS	\$3.24	PTD-G-SCGS	\$5.60	YG-G-SCGS	5	\$4.07
H	.2660	2-11/16	PTD-H-SHBS	\$3.24	PTD-H-SCGS	\$5.90	YG-H-SCGS	5	\$4.38
I	.2720	2-11/16	PTD-I-SHBS	\$3.24	PTD-I-SCGS	\$5.90	YG-I-SCGS	5	\$4.14
J	.2770	2-11/16	PTD-J-SHBS	\$3.47	PTD-J-SCGS	\$5.90	YG-J-SCGS	5	\$4.38
K	.2810	2-11/16	PTD-K-SHBS	\$3.75	PTD-K-SCGS	\$5.90	YG-K-SCGS	5	\$4.38
L	.2900	2-3/4	PTD-L-SHBS	\$3.75	PTD-L-SCGS	\$6.95	YG-L-SCGS	5	\$4.79
M	.2950	2-3/4	PTD-M-SHBS	\$4.08	PTD-M-SCGS	\$6.95	YG-M-SCGS	5	\$5.03
N	.3020	2-13/16	PTD-N-SHBS	\$4.08	PTD-N-SCGS	\$7.52	YG-N-SCGS	5	\$5.23
O	.3160	2-15/16	PTD-O-SHBS	\$4.12	PTD-O-SCGS	\$8.33	YG-O-SCGS	1	\$5.62
P	.3230	2-15/16	PTD-P-SHBS	\$4.61	PTD-P-SCGS	\$8.33	YG-P-SCGS	1	\$5.90
Q	.3320	3	PTD-Q-SHBS	\$4.61	PTD-Q-SCGS	\$9.05	YG-Q-SCGS	1	\$6.32
R	.3390	3	PTD-R-SHBS	\$4.66	PTD-R-SCGS	\$9.05	YG-R-SCGS	1	\$6.32
S	.3480	3-1/16	PTD-S-SHBS	\$5.29	PTD-S-SCGS	\$11.21	YG-S-SCGS	1	\$7.39
T	.3580	3-1/16	PTD-T-SHBS	\$6.12	PTD-T-SCGS	\$11.21	YG-T-SCGS	1	\$7.39
U	.3680	3-1/8	PTD-U-SHBS	\$6.12	PTD-U-SCGS	\$11.21	YG-U-SCGS	1	\$7.39
V	.3770	3-1/4	PTD-V-SHBS	\$6.59	PTD-V-SCGS	\$12.42	YG-V-SCGS	1	\$7.92
W	.3860	3-1/4	PTD-W-SHBS	\$6.89	PTD-W-SCGS	\$12.42	YG-W-SCGS	1	\$7.92
X	.3970	3-5/16	PTD-X-SHBS	\$8.01	PTD-X-SCGS	\$12.42	YG-X-SCGS	1	\$8.30
Y	.4040	3-5/16	PTD-Y-SHBS	\$9.47	PTD-Y-SCGS	\$12.42	YG-Y-SCGS	1	\$8.72
Z	.4130	3-3/8	PTD-Z-SHBS	\$9.47	PTD-Z-SCGS	\$14.22	YG-Z-SCGS	1	\$9.31

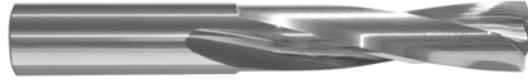
Call Us Today For All Of Your Machine Tool Needs!

MACHINE SCREW/STUB DRILLS

Solid Carbide



- FEATURES:**
- Designed for stainless steel, tool steel, titanium and nickel alloys
 - Made from premium submicron carbide with 10% cobalt
 - 15° helix, right hand spiral, right hand cut
 - 135° drill point
 - Made in USA



Full Line Available!
Please call for more information.

				UNCOATED		TIAIN COATED						UNCOATED		TIAIN COATED	
Size	Dec.	LOC	OAL	Part Number	Price Each	Part Number	Price Each	Size	Dec.	LOC	OAL	Part Number	Price Each	Part Number	Price Each
1/32	.0312	1/2	1-1/2	SRUC-1/32-MO	\$7.43	SRTA-1/32-MO	\$10.40	10	.1935	1-3/16	2-1/4	SRUC-10-MO	\$13.67	SRTA-10-MO	\$17.17
56	.0465	1/2	1-1/2	SRUC-56-MO	\$7.18	SRTA-56-MO	\$10.04	9	.1960	1-3/16	2-1/4	SRUC-9-MO	\$13.67	SRTA-9-MO	\$17.17
3/64	.0469	1/2	1-1/2	SRUC-3/64-MO	\$9.10	SRTA-3/64-MO	\$10.04	8	.1990	1-3/16	2-1/4	SRUC-8-MO	\$13.67	SRTA-8-MO	\$17.17
55	.0520	1/2	1-1/2	SRUC-55-MO	\$7.18	SRTA-55-MO	\$10.04	7	.2010	1-3/16	2-1/4	SRUC-7-MO	\$13.67	SRTA-7-MO	\$17.17
54	.0550	1/2	1-1/2	SRUC-54-MO	\$7.18	SRTA-54-MO	\$10.04	13/64	.2031	1-3/16	2-1/4	SRUC-13/64-MO	\$13.67	SRTA-13/64-MO	\$17.17
53	.0595	1/2	1-1/2	SRUC-53-MO	\$7.18	SRTA-53-MO	\$10.04	6	.2040	1-1/4	2-3/8	SRUC-6-MO	\$14.83	SRTA-6-MO	\$19.13
1/16	.0625	5/8	1-5/8	SRUC-1/16-MO	\$7.26	SRTA-1/16-MO	\$10.12	5	.2055	1-1/4	2-3/8	SRUC-5-MO	\$14.83	SRTA-5-MO	\$19.13
52	.0635	11/16	1-11/16	SRUC-52-MO	\$7.08	SRTA-52-MO	\$9.95	4	.2090	1-1/4	2-3/8	SRUC-4-MO	\$14.83	SRTA-4-MO	\$19.13
51	.0670	11/16	1-11/16	SRUC-51-MO	\$7.08	SRTA-51-MO	\$9.95	3	.2130	1-1/4	2-3/8	SRUC-3-MO	\$15.57	SRTA-3-MO	\$19.86
50	.0700	11/16	1-11/16	SRUC-50-MO	\$7.08	SRTA-50-MO	\$9.95	7/32	.2188	1-1/4	2-3/8	SRUC-7/32-MO	\$14.83	SRTA-7/32-MO	\$19.13
49	.0730	11/16	1-11/16	SRUC-49-MO	\$7.08	SRTA-49-MO	\$9.95	2	.2210	1-5/16	2-7/16	SRUC-2-MO	\$16.44	SRTA-2-MO	\$20.74
48	.0760	11/16	1-11/16	SRUC-48-MO	\$7.08	SRTA-48-MO	\$9.95	1	.2280	1-5/16	2-7/16	SRUC-1-MO	\$16.81	SRTA-1-MO	\$21.11
5/64	.0781	11/16	1-11/16	SRUC-5/64-MO	\$7.26	SRTA-5/64-MO	\$10.30	A	.2340	1-5/16	2-7/16	SRUC-A-MO	\$16.81	SRTA-A-MO	\$21.11
47	.0785	3/4	1-3/4	SRUC-47-MO	\$7.43	SRTA-47-MO	\$10.30	15/64	.2344	1-5/16	2-7/16	SRUC-15/64-MO	\$16.81	SRTA-15/64-MO	\$21.11
46	.0810	3/4	1-3/4	SRUC-46-MO	\$7.43	SRTA-46-MO	\$10.30	B	.2380	1-3/8	2-1/2	SRUC-B-MO	\$19.41	SRTA-B-MO	\$23.71
45	.0820	3/4	1-3/4	SRUC-45-MO	\$7.43	SRTA-45-MO	\$10.30	C	.2420	1-3/8	2-1/2	SRUC-C-MO	\$19.41	SRTA-C-MO	\$23.71
44	.0860	3/4	1-3/4	SRUC-44-MO	\$7.43	SRTA-44-MO	\$10.30	D	.2460	1-3/8	2-1/2	SRUC-D-MO	\$19.41	SRTA-D-MO	\$23.71
43	.0890	3/4	1-3/4	SRUC-43-MO	\$7.43	SRTA-43-MO	\$10.30	1/4	.2500	1-3/8	2-1/2	SRUC-1/4-MO	\$18.36	SRTA-1/4-MO	\$22.66
42	.0935	3/4	1-3/4	SRUC-42-MO	\$7.43	SRTA-42-MO	\$10.30	E	.2500	1-3/8	2-1/2	SRUC-E-MO	\$19.41	SRTA-E-MO	\$23.71
3/32	.0938	3/4	1-3/4	SRUC-3/32-MO	\$7.61	SRTA-3/32-MO	\$10.47	F	.2570	1-7/16	2-5/8	SRUC-F-MO	\$21.33	SRTA-F-MO	\$25.62
41	.0960	13/16	1-13/16	SRUC-41-MO	\$7.76	SRTA-41-MO	\$10.62	G	.2610	1-7/16	2-5/8	SRUC-G-MO	\$21.33	SRTA-G-MO	\$28.49
40	.0980	13/16	1-13/16	SRUC-40-MO	\$7.76	SRTA-40-MO	\$10.62	17/64	.2656	1-7/16	2-5/8	SRUC-17/64-MO	\$21.33	SRTA-17/64-MO	\$28.49
39	.0995	13/16	1-13/16	SRUC-39-MO	\$7.76	SRTA-39-MO	\$10.62	H	.2660	1-1/2	2-11/16	SRUC-H-MO	\$24.00	SRTA-H-MO	\$31.16
38	.1015	13/16	1-13/16	SRUC-38-MO	\$7.76	SRTA-38-MO	\$10.62	I	.2720	1-1/2	2-11/16	SRUC-I-MO	\$24.00	SRTA-I-MO	\$31.16
37	.1040	13/16	1-13/16	SRUC-37-MO	\$7.76	SRTA-37-MO	\$10.62	J	.2770	1-1/2	2-11/16	SRUC-J-MO	\$24.00	SRTA-J-MO	\$31.16
36	.1065	13/16	1-13/16	SRUC-36-MO	\$7.76	SRTA-36-MO	\$10.62	K	.2810	1-1/2	2-11/16	SRUC-K-MO	\$25.89	SRTA-K-MO	\$33.05
7/64	.1094	13/16	1-13/16	SRUC-7/64-MO	\$7.93	SRTA-7/64-MO	\$10.80	9/32	.2812	1-1/2	2-11/16	SRUC-9/32-MO	\$24.00	SRTA-9/32-MO	\$31.16
35	.1100	7/8	1-7/8	SRUC-35-MO	\$7.78	SRTA-35-MO	\$10.65	L	.2900	1-9/16	2-3/4	SRUC-L-MO	\$26.71	SRTA-L-MO	\$33.87
34	.1110	7/8	1-7/8	SRUC-34-MO	\$7.78	SRTA-34-MO	\$10.65	M	.2950	1-9/16	2-3/4	SRUC-M-MO	\$26.71	SRTA-M-MO	\$33.87
33	.1130	7/8	1-7/8	SRUC-33-MO	\$7.78	SRTA-33-MO	\$10.65	19/64	.2969	1-9/16	2-3/4	SRUC-19/64-MO	\$24.82	SRTA-19/64-MO	\$31.98
32	.1160	7/8	1-7/8	SRUC-32-MO	\$7.78	SRTA-32-MO	\$10.65	N	.3020	1-5/8	2-13/16	SRUC-N-MO	\$27.99	SRTA-N-MO	\$35.15
31	.1200	7/8	1-7/8	SRUC-31-MO	\$7.78	SRTA-31-MO	\$10.65	5/16	.3125	1-5/8	2-13/16	SRUC-5/16-MO	\$26.10	SRTA-5/16-MO	\$33.26
1/8	.1250	7/8	1-7/8	SRUC-1/8-MO	\$7.96	SRTA-1/8-MO	\$10.82	O	.3160	1-11/16	2-15/16	SRUC-O-MO	\$29.32	SRTA-O-MO	\$36.48
30	.1285	15/16	1-15/16	SRUC-30-MO	\$8.91	SRTA-30-MO	\$11.25	P	.3230	1-11/16	2-15/16	SRUC-P-MO	\$29.32	SRTA-P-MO	\$36.48
29	.1360	15/16	1-15/16	SRUC-29-MO	\$8.91	SRTA-29-MO	\$11.78	21/64	.3281	1-11/16	2-15/16	SRUC-21/64-MO	\$26.90	SRTA-21/64-MO	\$34.06
28	.1405	15/16	1-15/16	SRUC-28-MO	\$8.91	SRTA-28-MO	\$11.78	Q	.3320	1-11/16	3	SRUC-Q-MO	\$33.29	SRTA-Q-MO	\$40.44
9/64	.1406	15/16	1-15/16	SRUC-9/64-MO	\$8.91	SRTA-9/64-MO	\$11.78	R	.3390	1-11/16	3	SRUC-R-MO	\$33.29	SRTA-R-MO	\$40.44
27	.1440	1	2-1/16	SRUC-27-MO	\$9.59	SRTA-27-MO	\$13.09	11/32	.3438	1-11/16	3	SRUC-11/32-MO	\$31.26	SRTA-11/32-MO	\$38.41
26	.1470	1	2-1/16	SRUC-26-MO	\$9.59	SRTA-26-MO	\$13.09	S	.3480	1-3/4	3-1/16	SRUC-S-MO	\$33.73	SRTA-S-MO	\$40.89
25	.1495	1	2-1/16	SRUC-25-MO	\$9.59	SRTA-25-MO	\$13.09	T	.3580	1-3/4	3-1/16	SRUC-T-MO	\$33.73	SRTA-T-MO	\$40.89
24	.1520	1	2-1/16	SRUC-24-MO	\$9.59	SRTA-24-MO	\$13.09	23/64	.3594	1-3/4	3-1/16	SRUC-23/64-MO	\$30.65	SRTA-23/64-MO	\$37.81
23	.1540	1	2-1/16	SRUC-23-MO	\$9.59	SRTA-23-MO	\$13.09	U	.3680	1-13/16	3-1/8	SRUC-U-MO	\$40.67	SRTA-U-MO	\$47.83
5/32	.1562	1	2-1/16	SRUC-5/32-MO	\$9.59	SRTA-5/32-MO	\$13.09	3/8	.3750	1-13/16	3-1/8	SRUC-3/8-MO	\$37.10	SRTA-3/8-MO	\$44.26
22	.1570	1-1/16	2-1/8	SRUC-22-MO	\$10.12	SRTA-22-MO	\$13.62	V	.3770	1-7/8	3-1/4	SRUC-V-MO	\$42.98	SRTA-V-MO	\$53.80
21	.1590	1-1/16	2-1/8	SRUC-21-MO	\$10.12	SRTA-21-MO	\$13.62	W	.3860	1-7/8	3-1/4	SRUC-W-MO	\$42.98	SRTA-W-MO	\$53.80
20	.1610	1-1/16	2-1/8	SRUC-20-MO	\$10.82	SRTA-20-MO	\$13.62	25/64	.3906	1-7/8	3-1/4	SRUC-25/64-MO	\$39.94	SRTA-25/64-MO	\$50.75
19	.1660	1-1/16	2-1/8	SRUC-19-MO	\$11.87	SRTA-19-MO	\$15.37	X	.3970	1-15/16	3-5/16	SRUC-X-MO	\$47.56	SRTA-X-MO	\$58.38
18	.1695	1-1/16	2-1/8	SRUC-18-MO	\$11.87	SRTA-18-MO	\$15.37	Y	.4040	1-15/16	3-5/16	SRUC-Y-MO	\$47.56	SRTA-Y-MO	\$58.38
11/64	.1719	1-1/16	2-1/8	SRUC-11/64-MO	\$10.12	SRTA-11/64-MO	\$13.62	13/32	.4062	1-15/16	3-5/16	SRUC-13/32-MO	\$46.54	SRTA-13/32-MO	\$57.35
17	.1730	1-1/8	2-3/16	SRUC-17-MO	\$12.58	SRTA-17-MO	\$16.08	Z	.4130	2	3-3/8	SRUC-Z-MO	\$51.84	SRTA-Z-MO	\$62.66
16	.1770	1-1/8	2-3/16	SRUC-16-MO	\$13.01	SRTA-16-MO	\$16.51	27/64	.4219	2	3-3/8	SRUC-27/64-MO	\$50.63	SRTA-27/64-MO	\$61.45
15	.1800	1-1/8	2-3/16	SRUC-15-MO	\$13.01	SRTA-15-MO	\$16.51	7/16	.4375	2-1/16	3-7/16	SRUC-7/16-MO	\$55.56	SRTA-7/16-MO	\$66.37
14	.1820	1-1/8	2-3/16	SRUC-14-MO	\$13.01	SRTA-14-MO	\$16.51	29/64	.4531	2-1/8	3-9/16	SRUC-29/64-MO	\$61.06	SRTA-29/64-MO	\$71.88
13	.1850	1-1/8	2-3/16	SRUC-13-MO	\$13.01	SRTA-13-MO	\$16.51	15/32	.4688	2-1/8	3-5/8	SRUC-15/32-MO	\$62.58	SRTA-15/32-MO	\$73.40
3/16	.1875	1-1/8	2-3/16	SRUC-3/16-MO	\$11.18	SRTA-3/16-MO	\$14.68	31/64	.4844	2-3/16	3-11/16	SRUC-31/64-MO	\$63.21	SRTA-31/64-MO	\$74.03
12	.1890	1-3/16	2-1/4	SRUC-12-MO	\$13.67	SRTA-12-MO	\$17.17	1/2	.5000	2-1/4	3-3/4	SRUC-1/2-MO	\$67.12	SRTA-1/2-MO	\$77.94
11	.1910	1-3/16	2-1/4	SRUC-11-MO	\$13.67	SRTA-11-MO	\$17.17								

LATHE CHUCKS
LIVE CENTERS
VISE ACCESSORIES
STRAIGHT SHANK
COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

PARABOLIC/TAPER LENGTH DRILLS

SCREW MACHINE DRILLS
WIDE LAND PARABOLIC FLUTE
High Speed Steel
135° Self-Centering Split Point



Fractional					Bright		TiN Coated	
Dia	Dec. Equiv	Flute Length	OAL	Pkg Qty	Part Number	Price Each	Part Number	Price Each
1/16	.0625	5/8	1-5/8	12	PTD-058304	\$2.44	PTD-062304	\$4.54
5/64	.0781	11/16	1-11/16	12	PTD-058305	\$2.44	PTD-062305	\$4.54
3/32	.0938	3/4	1-3/4	12	PTD-058306	\$2.44	PTD-062306	\$4.54
7/64	.1094	13/16	1-13/16	12	PTD-058307	\$2.69	PTD-062307	\$5.05
1/8	.1250	7/8	1-7/8	12	PTD-058308	\$2.72	PTD-062308	\$5.15
9/64	.1406	15/16	1-15/16	12	PTD-058309	\$2.82	PTD-062309	\$5.40
5/32	.1562	1	2-1/16	12	PTD-058310	\$2.85	PTD-062310	\$5.50
11/64	.1719	1-1/16	2-1/8	12	PTD-058311	\$3.18	PTD-062311	\$6.05
3/16	.1875	1-1/8	2-3/16	12	PTD-058312	\$3.45	PTD-062312	\$6.73
13/64	.2031	1-3/16	2-1/4	12	PTD-058313	\$3.95	PTD-062313	\$7.80
7/32	.2188	1-1/4	2-3/8	12	PTD-058314	\$4.36	PTD-062314	\$8.20
15/64	.2344	1-5/16	2-7/16	12	PTD-058315	\$4.84	PTD-062315	\$9.20
1/4	.2500	1-3/8	2-1/2	12	PTD-058316	\$4.90	PTD-062316	\$9.18
17/64	.2656	1-7/16	2-5/8	12	PTD-058317	\$5.80	PTD-062317	\$11.65
9/32	.2812	1-1/2	2-11/16	12	PTD-058318	\$5.83	PTD-062318	\$11.73
19/64	.2969	1-9/16	2-3/4	12	PTD-058319	\$7.03	PTD-062319	\$13.90
5/16	.3125	1-5/8	2-13/16	6	PTD-058320	\$7.20	PTD-062320	\$13.60
21/64	.3281	1-11/16	2-15/16	6	PTD-058321	\$8.20	PTD-062321	\$15.53
11/32	.3438	1-11/16	3	6	PTD-058322	\$8.85	PTD-062322	\$16.90
23/64	.3594	1-3/4	3-1/16	6	PTD-058323	\$10.20	PTD-062323	\$19.50
3/8	.3750	1-13/16	3-1/8	6	PTD-058324	\$9.90	PTD-062324	\$18.95
25/64	.3906	1-7/8	3-1/4	6	PTD-058325	\$11.63	PTD-062325	\$22.23
13/32	.4062	1-15/16	3-5/16	6	PTD-058326	\$11.58	PTD-062326	\$21.98
27/64	.4219	2	3-3/8	6	PTD-058327	\$13.25	PTD-062327	\$25.50
7/16	.4375	2-1/16	3-7/16	6	PTD-058328	\$13.25	PTD-062328	\$25.30
29/64	.4531	2-1/8	3-9/16	6	PTD-058329	\$15.40	PTD-062329	\$29.35
15/32	.4688	2-1/8	3-5/8	6	PTD-058330	\$15.75	PTD-062330	\$29.95
31/64	.4844	2-3/16	3-3/4	6	PTD-058331	\$17.13	PTD-062331	\$33.05
1/2	.5000	2-1/4	3-3/4	6	PTD-058332	\$16.83	PTD-062332	\$32.30

TAPER LENGTH DRILLS
High Speed Steel-Bright Finish
118° Conventional Point-High Helix



Dia	Flute Length	OAL	Part Number	Price Each
1/64	5/16	1-1/2	PTD-051001	\$7.36
1/32	3/4	2	PTD-051002	\$5.38
3/64	1-1/8	2-1/4	PTD-051003	\$2.78
1/16	1-3/4	3	PTD-051004	\$2.62
5/64	2	3-3/4	PTD-051005	\$3.10
3/32	2-1/4	4-1/4	PTD-051006	\$3.65
7/64	2-1/2	4-5/8	PTD-051007	\$4.66
1/8	2-3/4	5-1/8	PTD-051008	\$4.70
9/64	3	5-3/8	PTD-051009	\$5.78
5/32	3	5-3/8	PTD-051010	\$5.78
11/64	3-3/8	5-3/4	PTD-051011	\$5.83
3/16	3-3/8	5-3/4	PTD-051012	\$5.76
13/64	3-5/8	6	PTD-051013	\$6.77
7/32	3-5/8	6	PTD-051014	\$6.68
15/64	3-3/4	6-1/8	PTD-051015	\$6.77
1/4	3-3/4	6-1/8	PTD-051016	\$6.68
17/64	3-7/8	6-1/4	PTD-051017	\$8.28
9/32	3-7/8	6-1/4	PTD-051018	\$8.21
19/64	4	6-3/8	PTD-051019	\$8.37
5/16	4	6-3/8	PTD-051020	\$8.28
21/64	4-1/8	6-1/2	PTD-051021	\$9.61
11/32	4-1/8	6-1/2	PTD-051022	\$9.52

Dia	Flute Length	OAL	Part Number	Price Each
23/64	4-1/4	6-3/4	PTD-051023	\$11.32
3/8	4-1/4	6-3/4	PTD-051024	\$11.21
25/64	4-3/8	7	PTD-051025	\$11.79
13/32	4-3/8	7	PTD-051026	\$11.66
27/64	4-5/8	7-1/4	PTD-051027	\$12.74
7/16	4-5/8	7-1/4	PTD-051028	\$12.85
29/64	4-3/4	7-1/2	PTD-051029	\$14.38
15/32	4-3/4	7-1/2	PTD-051030	\$15.14
31/64	4-3/4	7-3/4	PTD-051031	\$15.95
1/2	4-3/4	7-3/4	PTD-051032	\$15.82
33/64	4-3/4	8	PTD-051033	\$22.59
17/32	4-3/4	8	PTD-051034	\$22.39
35/64	4-7/8	8-1/4	PTD-051035	\$23.76
9/16	4-7/8	8-1/4	PTD-051036	\$23.54
37/64	4-7/8	8-3/4	PTD-051037	\$27.81
19/32	4-7/8	8-3/4	PTD-051038	\$27.81
39/64	4-7/8	8-3/4	PTD-051039	\$28.71
5/8	4-7/8	8-3/4	PTD-051040	\$28.44
41/64	5-1/8	9	PTD-051041	\$34.65
21/32	5-1/8	9	PTD-051042	\$32.99
43/64	5-3/8	9-1/4	PTD-051043	\$40.73
11/16	5-3/8	9-1/4	PTD-051044	\$39.29

Dia	Flute Length	OAL	Part Number	Price Each
45/64	5-5/8	9-1/2	PTD-051045	\$42.84
23/32	5-5/8	9-1/2	PTD-051046	\$40.91
47/64	5-7/8	9-3/4	PTD-051047	\$45.90
3/4	5-7/8	9-3/4	PTD-051048	\$43.11
49/64	6	9-7/8	PTD-051049	\$50.85
25/32	6	9-7/8	PTD-051050	\$48.15
51/64	6-1/8	10	PTD-051051	\$54.45
13/16	6-1/8	10	PTD-051052	\$51.75
53/64	6-1/8	10	PTD-051053	\$58.95
27/32	6-1/8	10	PTD-051054	\$54.45
55/64	6-1/8	10	PTD-051055	\$62.55
7/8	6-1/8	10	PTD-051056	\$57.60
57/64	6-1/8	10	PTD-051057	\$64.80
29/32	6-1/8	10	PTD-051058	\$60.75
59/64	6-1/8	10-3/4	PTD-051059	\$70.20
15/16	6-1/8	10-3/4	PTD-051060	\$65.25
61/64	6-3/8	11	PTD-051061	\$77.40
31/32	6-3/8	11	PTD-051062	\$71.55
63/64	6-3/8	11	PTD-051063	\$81.45
1	6-3/8	11	PTD-051100	\$74.70

Call Us Today For All Of Your Machine Tool Needs!

EXTRA LENGTH DRILLS

C

EXTRA LENGTH DRILLS

High Speed Steel

Longer Drills Available! Up To 48"! Call For More Information



- High speed steel
- 135° self-centering split point
- 6" aircraft extension
- Additional sizes available

Wire Sizes				Black Oxide	
Dia.	Dec Equiv	Flute Len	Pkg Qty	Part Number	Price Each
1	.2280	2-5/8	12	PTD-058101	\$5.13
2	.2210	2-5/8	12	PTD-058102	\$5.18
3	.2130	2-1/2	12	PTD-058103	\$4.66
4	.2090	2-1/2	12	PTD-058104	\$4.70
5	.2055	2-1/2	12	PTD-058105	\$4.70
6	.2040	2-1/2	12	PTD-058106	\$4.66
7	.2010	2-7/16	12	PTD-058107	\$4.66
8	.1990	2-7/16	12	PTD-058108	\$4.61
9	.1960	2-7/16	12	PTD-058109	\$4.49
10	.1935	2-7/16	12	PTD-058110	\$4.17
11	.1910	2-5/16	12	PTD-058111	\$3.85
12	.1890	2-5/16	12	PTD-058112	\$3.89
13	.1850	2-5/16	12	PTD-058113	\$3.82
14	.1820	2-3/16	12	PTD-058114	\$3.86
15	.1800	2-3/16	12	PTD-058115	\$3.86
16	.1770	2-3/16	12	PTD-058116	\$3.82
17	.1730	2-3/16	12	PTD-058117	\$3.96
18	.1695	2-1/8	12	PTD-058118	\$3.89
19	.1660	2-1/8	12	PTD-058119	\$3.80
20	.1610	2-1/8	12	PTD-058120	\$3.46
21	.1590	2-1/8	12	PTD-058121	\$3.46
22	.1570	2	12	PTD-058122	\$3.61
23	.1540	2	12	PTD-058123	\$3.61
24	.1520	2	12	PTD-058124	\$3.54
25	.1495	1-7/8	12	PTD-058125	\$3.54
26	.1470	1-7/8	12	PTD-058126	\$3.54
27	.1440	1-7/8	12	PTD-058127	\$3.47
28	.1405	1-3/4	12	PTD-058128	\$3.61
29	.1360	1-3/4	12	PTD-058129	\$3.50
30	.1285	1-5/8	12	PTD-058130	\$2.81

Wire Sizes (cont.)				Black Oxide	
Dia.	Dec Equiv	Flute Len	Pkg Qty	Part Number	Price Each
31	.1200	1-5/8	12	PTD-058131	\$2.97
32	.1160	1-5/8	12	PTD-058132	\$2.97
33	.1130	1-1/2	12	PTD-058133	\$2.97
34	.1110	1-1/2	12	PTD-058134	\$2.97
35	.1100	1-1/2	12	PTD-058135	\$2.97
36	.1065	1-7/16	12	PTD-058136	\$2.91
37	.1040	1-7/16	12	PTD-058137	\$2.97
38	.1015	1-7/16	12	PTD-058138	\$2.97
39	.0995	1-3/8	12	PTD-058139	\$2.97
40	.0980	1-3/8	12	PTD-058140	\$2.55
41	.0960	1-3/8	12	PTD-058141	\$2.71
42	.0935	1-1/4	12	PTD-058142	\$2.71
43	.0890	1-1/4	12	PTD-058143	\$3.44
44	.0860	1-1/8	12	PTD-058144	\$3.51
45	.0820	1-1/8	12	PTD-058145	\$3.51
46	.0810	1-1/8	12	PTD-058146	\$3.37
47	.0785	1	12	PTD-058147	\$3.42
48	.0760	1	12	PTD-058148	\$3.51
49	.0730	1	12	PTD-058149	\$3.51
50	.0700	1	12	PTD-058150	\$3.35
51	.0670	1	12	PTD-058151	\$3.51
52	.0635	7/8	12	PTD-058152	\$3.44
53	.0595	7/8	12	PTD-058153	\$6.89
54	.0550	7/8	12	PTD-058154	\$6.89
55	.0520	7/8	12	PTD-058155	\$6.89
56	.0465	3/4	12	PTD-058156	\$6.89
57	.0430	3/4	12	PTD-058157	\$8.30
58	.0420	11/16	12	PTD-058158	\$8.48
59	.0410	11/16	12	PTD-058159	\$8.48
60	.0400	11/16	12	PTD-058160	\$8.30

AIRCRAFT EXTENSION DRILLS

High Speed Steel-Black Oxide



TMX Drills Sold In Package Quantities

TMX Features:

- 135° Self-Centering Split Point
- HSS Black Oxide
- 6" & 12" lengths
- Sold In Package Quantities-
1/16 to 7/32: 10 per pack
15/64 to 11/32: 5 per pack
Over 23/64": 1 per pack

Dia	Dec. Equiv.	Flute Length	Pkg Qty	6" OAL 135° Split Point	Price Each	12" OAL 135° Split Point	Price Each
1/16	.0625	7/8	10	TMX-5183-0063	\$0.99	TMX-5186-0063	\$1.78
5/64	.0781	1	10	TMX-5183-0078	\$0.99	TMX-5186-0078	\$1.78
3/32	.0938	1-1/4	10	TMX-5183-0094	\$1.11	TMX-5186-0094	\$1.99
7/64	.1094	1-1/2	10	TMX-5183-0109	\$1.18	TMX-5186-0109	\$2.12
1/8	.1250	1-5/8	10	TMX-5183-0125	\$1.36	TMX-5186-0125	\$2.45
9/64	.1406	1-3/4	10	TMX-5183-0141	\$1.49	TMX-5186-0141	\$2.69
5/32	.1563	2	10	TMX-5183-0156	\$1.71	TMX-5186-0156	\$3.07
11/64	.1719	2-1/8	10	TMX-5183-0172	\$1.83	TMX-5186-0172	\$3.29
3/16	.1875	2-5/16	10	TMX-5183-0187	\$1.88	TMX-5186-0187	\$3.38
13/64	.2031	2-7/16	10	TMX-5183-0203	\$2.08	TMX-5186-0203	\$3.74
7/32	.2188	2-1/2	10	TMX-5183-0219	\$2.26	TMX-5186-0219	\$4.07
15/64	.2344	2-5/8	5	TMX-5183-0234	\$2.40	TMX-5186-0234	\$4.32
1/4	.2500	2-3/4	5	TMX-5183-0250	\$2.54	TMX-5186-0250	\$4.56
17/64	.2656	2-7/8	5	TMX-5183-0266	\$2.66	TMX-5186-0266	\$4.78
9/32	.2813	2-15/16	5	TMX-5183-0281	\$2.97	TMX-5186-0281	\$5.36
19/64	.2969	3-1/16	5	TMX-5183-0297	\$3.28	TMX-5186-0297	\$5.90
5/16	.3125	3-3/16	5	TMX-5183-0313	\$3.43	TMX-5186-0313	\$6.18
21/64	.3281	3-5/16	5	TMX-5183-0328	\$3.69	TMX-5186-0328	\$6.64
11/32	.3438	3-7/16	5	TMX-5183-0344	\$3.80	TMX-5186-0344	\$6.85
23/64	.3594	3-1/2	1	TMX-5183-0359	\$3.92	TMX-5186-0359	\$7.06
3/8	.3750	3-5/8	1	TMX-5183-0375	\$4.25	TMX-5186-0375	\$7.64
25/64	.3906	3-3/4	1	TMX-5183-0391	\$4.47	TMX-5186-0391	\$8.06
13/32	.4063	3-7/8	1	TMX-5183-0406	\$4.59	TMX-5186-0406	\$8.26
27/64	.4219	3-15/16	1	TMX-5183-0422	\$4.73	TMX-5186-0422	\$8.51
7/16	.4375	4-1/16	1	TMX-5183-0437	\$4.87	TMX-5186-0437	\$8.77
29/64	.4531	4-3/16	1	TMX-5183-0453	\$5.26	TMX-5186-0453	\$9.47
15/32	.4688	4-5/16	1	TMX-5183-0469	\$5.67	TMX-5186-0469	\$10.22
31/64	.4844	4-3/8	1	TMX-5183-0484	\$6.09	TMX-5186-0484	\$10.96
1/2	.5000	4-1/2	1	TMX-5183-0500	\$6.27	TMX-5186-0500	\$11.30

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

SILVER & DEMING/REDUCED SHANK DRILLS



1/2" REDUCED SHANK DRILLS High Speed Steel, 118° Self-Centering Split Point



- 1/2" reduced shank
- 118° point
- Round shank or 3-flat shank for positive hold
- 6" OAL, 3" flute length

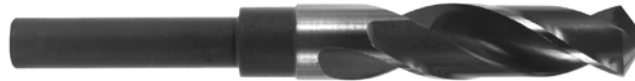
Dia.	PTD Part Number	Price Each	Dia.	PTD Number	Price Each	Dia.	PTD Number	Price Each
33/64	PTD-091433	\$22.50	11/16	PTD-091444	\$29.12	55/64	PTD-091455	\$44.37
17/32	PTD-091434	\$21.96	45/64	PTD-091445	\$30.33	7/8	PTD-091456	\$38.66
35/64	PTD-091435	\$24.03	23/32	PTD-091446	\$29.48	57/64	PTD-091457	\$46.35
9/16	PTD-091436	\$23.31	47/64	PTD-091447	\$32.94	29/32	PTD-091458	\$40.41
37/64	PTD-091437	\$25.70	3/4	PTD-091448	\$32.13	59/64	PTD-091459	\$49.95
19/32	PTD-091438	\$25.07	49/64	PTD-091449	\$35.24	15/16	PTD-091460	\$43.16
39/64	PTD-091439	\$27.00	25/32	PTD-091450	\$34.25	61/64	PTD-091461	\$52.65
5/8	PTD-091440	\$26.24	51/64	PTD-091451	\$41.27	31/32	PTD-091462	\$45.45
41/64	PTD-091441	\$28.80	13/16	PTD-091452	\$36.00	63/64	PTD-091463	\$58.50
21/32	PTD-091442	\$27.99	53/64	PTD-091453	\$42.80	1	PTD-091464	\$50.85
43/64	PTD-091443	\$29.93	27/32	PTD-091454	\$37.31			

REDUCED SHANK SILVER & DEMING DRILLS 1/2" Dia Shank-HSS & Cobalt-118° Point

Full Line Available!
Please call for more information.



- 1/2" reduced shank
- 118° point
- 6" OAL, 3" flute length
- HSS or cobalt



Dia	HSS			Cobalt		Dia	HSS			Cobalt	
	Part Number	Price Each		Part Number	Price Each		Part Number	Price Each		Part Number	Price Each
33/64	BI-5166-010	\$14.51	-	-	-	49/64	BI-5166-042	\$20.44	BI-5169-042	\$35.04	
17/32	BI-5166-012	\$14.51	BI-5169-012	\$23.85		25/32	BI-5166-044	\$21.65	BI-5169-044	\$35.04	
35/64	BI-5166-014	\$16.26	BI-5169-014	\$24.09		51/64	BI-5166-046	\$22.58	BI-5169-046	\$43.80	
9/16	BI-5166-016	\$16.26	BI-5169-016	\$22.34		13/16	BI-5166-048	\$22.58	BI-5169-048	\$38.93	
37/64	BI-5166-018	\$16.26	BI-5169-018	\$25.61		53/64	BI-5166-050	\$22.63	BI-5169-050	\$43.80	
19/32	BI-5166-020	\$16.26	BI-5169-020	\$25.61		27/32	BI-5166-052	\$22.63	BI-5169-052	\$39.91	
39/64	BI-5166-022	\$16.26	BI-5169-022	\$25.61		55/64	BI-5166-054	\$22.63	-	-	
5/8	BI-5166-024	\$16.26	BI-5169-024	\$27.25		7/8	BI-5166-056	\$23.94	BI-5169-056	\$39.91	
41/64	BI-5166-026	\$17.42	BI-5169-026	\$31.54		57/64	BI-5166-058	\$24.47	BI-5169-058	\$47.69	
21/32	BI-5166-028	\$17.42	BI-5169-028	\$29.01		29/32	BI-5166-060	\$25.22	BI-5169-060	\$43.32	
43/64	BI-5166-030	\$17.42	BI-5169-030	\$31.92		59/64	BI-5166-062	\$25.96	BI-5169-062	\$49.64	
11/16	BI-5166-032	\$17.42	BI-5169-032	\$31.92		15/16	BI-5166-064	\$26.43	BI-5169-064	\$46.72	
45/64	BI-5166-034	\$18.14	BI-5169-034	\$34.75		61/64	BI-5166-066	\$28.52	BI-5169-066	\$51.59	
23/32	BI-5166-036	\$19.85	BI-5169-036	\$31.92		31/32	BI-5166-068	\$28.62	BI-5169-068	\$50.62	
47/64	BI-5166-038	\$19.85	BI-5169-038	\$36.02		63/64	BI-5166-070	\$28.72	BI-5169-070	\$51.59	
3/4	BI-5166-040	\$19.96	BI-5169-040	\$33.09		1	BI-5166-072	\$28.72	BI-5169-072	\$50.62	

REDUCED SHANK SILVER & DEMING DRILLS 3/4" Dia Shank-High Speed Steel-118° Point

- 3/4" reduced shank
- 118° point
- 6" OAL, 3" flute length
- HSS



Dia	Part Number	Price Each	Dia	Part Number	Price Each	Dia	Part Number	Price Each
25/32	BI-5168-044	\$21.30	1-7/32	BI-5168-100	\$42.05	1-21/32	BI-5168-156	\$112.23
13/16	BI-5168-048	\$22.78	1-1/4	BI-5168-104	\$42.44	1-11/16	BI-5168-160	\$102.28
27/32	BI-5168-052	\$22.38	1-9/32	BI-5168-108	\$44.87	1-23/32	BI-5168-164	\$115.59
7/8	BI-5168-056	\$24.14	1-5/16	BI-5168-112	\$47.11	1-3/4	BI-5168-168	\$115.88
29/32	BI-5168-060	\$25.51	1-11/32	BI-5168-116	\$52.08	1-25/32	BI-5168-172	\$128.05
15/16	BI-5168-064	\$26.03	1-3/8	BI-5168-120	\$52.17	1-13/16	BI-5168-176	\$116.42
31/32	BI-5168-068	\$28.81	1-13/32	BI-5168-124	\$56.84	1-27/32	BI-5168-180	\$127.93
1	BI-5168-072	\$28.81	1-7/16	BI-5168-128	\$56.84	1-7/8	BI-5168-184	\$131.63
1-1/32	BI-5168-076	\$30.47	1-15/32	BI-5168-132	\$60.84	1-29/32	BI-5168-188	\$136.27
1-1/16	BI-5168-080	\$29.98	1-1/2	BI-5168-136	\$63.95	1-15/16	BI-5168-192	\$138.80
1-3/32	BI-5168-084	\$32.51	1-17/32	BI-5168-140	\$97.31	1-31/32	BI-5168-196	\$145.48
1-1/8	BI-5168-088	\$33.59	1-9/16	BI-5168-144	\$93.12	2	BI-5168-200	\$151.72
1-5/32	BI-5168-092	\$33.78	1-19/32	BI-5168-148	\$99.78			
1-3/16	BI-5168-096	\$42.15	1-5/8	BI-5168-152	\$97.31			

Call Us Today For All Of Your Machine Tool Needs!

SOLID CARBIDE DRILLS-STRAIGHT FLUTE

C

STRAIGHT FLUTE DRILLS

Solid Carbide

FEATURES:

- For use on work hardened and abrasive materials such as stainless steel and heat treated steel alloys
- Precision tight tolerance holes
- Made from premium submicron carbide with 10% cobalt
- 140° notched drill point
- Made in USA



Full Line Available!
Please call for more information.

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Size	Dec.	LOC	OAL	Part Number	Price Each
1/32	0.0312	1/2	1-1/2	SFRUC-1/32-MO	\$9.19
56	0.0465	1/2	1-1/2	SFRUC-56-MO	\$8.14
3/64	0.0469	1/2	1-1/2	SFRUC-3/64-MO	\$9.19
55	0.0520	1/2	1-1/2	SFRUC-55-MO	\$8.14
54	0.0550	1/2	1-1/2	SFRUC-54-MO	\$8.14
53	0.0595	1/2	1-1/2	SFRUC-53-MO	\$8.14
1/16	0.0625	5/8	1-5/8	SFRUC-1/16-MO	\$7.26
52	0.0635	11/16	1-11/16	SFRUC-52-MO	\$8.04
51	0.0670	11/16	1-11/16	SFRUC-51-MO	\$8.04
50	0.0700	11/16	1-11/16	SFRUC-50-MO	\$8.04
49	0.0730	11/16	1-11/16	SFRUC-49-MO	\$8.04
48	0.0760	11/16	1-11/16	SFRUC-48-MO	\$8.04
5/64	0.0781	11/16	1-11/16	SFRUC-5/64-MO	\$7.26
47	0.0785	3/4	1-3/4	SFRUC-47-MO	\$8.39
46	0.0810	3/4	1-3/4	SFRUC-46-MO	\$8.39
45	0.0820	3/4	1-3/4	SFRUC-45-MO	\$8.39
44	0.0860	3/4	1-3/4	SFRUC-44-MO	\$8.39
43	0.0890	3/4	1-3/4	SFRUC-43-MO	\$8.39
42	0.0935	3/4	1-3/4	SFRUC-42-MO	\$8.39
3/32	0.0938	3/4	1-3/4	SFRUC-3/32-MO	\$7.61
41	0.0960	13/16	1-13/16	SFRUC-41-MO	\$8.72
40	0.0980	13/16	1-13/16	SFRUC-40-MO	\$8.72
39	0.0995	13/16	1-13/16	SFRUC-39-MO	\$8.72
38	0.1015	13/16	1-13/16	SFRUC-38-MO	\$8.72
37	0.1040	13/16	1-13/16	SFRUC-37-MO	\$8.72
36	0.1065	13/16	1-13/16	SFRUC-36-MO	\$8.72
7/64	0.1094	13/16	1-13/16	SFRUC-7/64-MO	\$7.93
35	0.1100	7/8	1-7/8	SFRUC-35-MO	\$8.27
34	0.1110	7/8	1-7/8	SFRUC-34-MO	\$8.27
33	0.1130	7/8	1-7/8	SFRUC-33-MO	\$8.27
32	0.1160	7/8	1-7/8	SFRUC-32-MO	\$8.27
31	0.1200	7/8	1-7/8	SFRUC-31-MO	\$8.27
1/8	0.1250	7/8	1-7/8	SFRUC-1/8-MO	\$8.03
30	0.1285	15/16	1-15/16	SFRUC-30-MO	\$8.53
29	0.1360	15/16	1-15/16	SFRUC-29-MO	\$9.00
28	0.1405	15/16	1-15/16	SFRUC-28-MO	\$9.00
9/64	0.1406	15/16	1-15/16	SFRUC-9/64-MO	\$9.05
27	0.1440	1	2-1/16	SFRUC-27-MO	\$9.68
26	0.1470	1	2-1/16	SFRUC-26-MO	\$9.68
25	0.1495	1	2-1/16	SFRUC-25-MO	\$9.68
24	0.1520	1	2-1/16	SFRUC-24-MO	\$9.68
23	0.1540	1	2-1/16	SFRUC-23-MO	\$9.68
5/32	0.1562	1	2-1/16	SFRUC-5/32-MO	\$10.03
22	0.1570	1-1/16	2-1/8	SFRUC-22-MO	\$10.21
21	0.1590	1-1/16	2-1/8	SFRUC-21-MO	\$10.21
20	0.1610	1-1/16	2-1/8	SFRUC-20-MO	\$10.21
19	0.1660	1-1/16	2-1/8	SFRUC-19-MO	\$10.21
18	0.1695	1-1/16	2-1/8	SFRUC-18-MO	\$12.57
11/64	0.1719	1-1/16	2-1/8	SFRUC-11/64-MO	\$10.56
17	0.1730	1-1/8	2-3/16	SFRUC-17-MO	\$13.28
16	0.1770	1-1/8	2-3/16	SFRUC-16-MO	\$13.28
15	0.1800	1-1/8	2-3/16	SFRUC-15-MO	\$13.28
14	0.1820	1-1/8	2-3/16	SFRUC-14-MO	\$13.28
13	0.1850	1-1/8	2-3/16	SFRUC-13-MO	\$13.28
3/16	0.1875	1-1/8	2-3/16	SFRUC-3/16-MO	\$11.26
12	0.1890	1-3/16	2-1/4	SFRUC-12-MO	\$13.93
11	0.1910	1-3/16	2-1/4	SFRUC-11-MO	\$13.93

Size	Dec.	LOC	OAL	Part Number	Price Each
10	0.1935	1-3/16	2-1/4	SFRUC-10-MO	\$13.93
9	0.1960	1-3/16	2-1/4	SFRUC-9-MO	\$13.93
8	0.1990	1-3/16	2-1/4	SFRUC-8-MO	\$13.93
7	0.2010	1-3/16	2-1/4	SFRUC-7-MO	\$13.93
13/64	0.2031	1-3/16	2-1/4	SFRUC-13/64-MO	\$14.04
6	0.2040	1-1/4	2-3/8	SFRUC-6-MO	\$15.10
5	0.2055	1-1/4	2-3/8	SFRUC-5-MO	\$15.10
4	0.2090	1-1/4	2-3/8	SFRUC-4-MO	\$15.10
3	0.2130	1-1/4	2-3/8	SFRUC-3-MO	\$16.28
7/32	0.2188	1-1/4	2-3/8	SFRUC-7/32-MO	\$15.20
2	0.2210	1-5/16	2-7/16	SFRUC-2-MO	\$17.60
1	0.2280	1-5/16	2-7/16	SFRUC-1-MO	\$17.60
A	0.2340	1-5/16	2-7/16	SFRUC-A-MO	\$17.60
15/64	0.2344	1-5/16	2-7/16	SFRUC-15/64-MO	\$17.60
B	0.2380	1-3/8	2-1/2	SFRUC-B-MO	\$19.81
C	0.2420	1-3/8	2-1/2	SFRUC-C-MO	\$19.81
D	0.2460	1-3/8	2-1/2	SFRUC-D-MO	\$19.81
1/4	0.2500	1-3/8	2-1/2	SFRUC-1/4-MO	\$18.63
E	0.2500	1-3/8	2-1/2	SFRUC-E-MO	\$19.81
F	0.2570	1-7/16	2-5/8	SFRUC-F-MO	\$21.72
G	0.2610	1-7/16	2-5/8	SFRUC-G-MO	\$21.72
17/64	0.2656	1-7/16	2-5/8	SFRUC-17/64-MO	\$21.96
H	0.2660	1-1/2	2-11/16	SFRUC-H-MO	\$24.00
I	0.2720	1-1/2	2-11/16	SFRUC-I-MO	\$24.00
7.0 MM	0.2756	1-1/2	2-11/16	SFRUC-7.0MM-MO	\$25.19
J	0.2770	1-1/2	2-11/16	SFRUC-J-MO	\$24.00
K	0.2810	1-1/2	2-11/16	SFRUC-K-MO	\$26.37
9/32	0.2812	1-1/2	2-11/16	SFRUC-9/32-MO	\$24.00
L	0.2900	1-9/16	2-3/4	SFRUC-L-MO	\$27.18
M	0.2950	1-9/16	2-3/4	SFRUC-M-MO	\$27.18
19/64	0.2969	1-9/16	2-3/4	SFRUC-19/64-MO	\$24.82
N	0.3020	1-5/8	2-13/16	SFRUC-N-MO	\$28.46
5/16	0.3125	1-5/8	2-13/16	SFRUC-5/16-MO	\$26.10
O	0.3160	1-11/16	2-15/16	SFRUC-O-MO	\$29.79
P	0.3230	1-11/16	2-15/16	SFRUC-P-MO	\$29.79
21/64	0.3281	1-11/16	2-15/16	SFRUC-21/64-MO	\$26.90
Q	0.3320	1-11/16	3	SFRUC-Q-MO	\$33.79
R	0.3390	1-11/16	3	SFRUC-R-MO	\$33.79
11/32	0.3438	1-11/16	3	SFRUC-11/32-MO	\$31.26
S	0.3480	1-3/4	3-1/16	SFRUC-S-MO	\$34.24
T	0.3580	1-3/4	3-1/16	SFRUC-T-MO	\$34.24
23/64	0.3594	1-3/4	3-1/16	SFRUC-23/64-MO	\$30.65
U	0.3680	1-13/16	3-1/8	SFRUC-U-MO	\$41.30
3/8	0.3750	1-13/16	3-1/8	SFRUC-3/8-MO	\$37.10
V	0.3770	1-7/8	3-1/4	SFRUC-V-MO	\$43.61
W	0.3860	1-7/8	3-1/4	SFRUC-W-MO	\$43.61
25/64	0.3906	1-7/8	3-1/4	SFRUC-25/64-MO	\$39.94
X	0.3970	1-15/16	3-5/16	SFRUC-X-MO	\$48.24
Y	0.4040	1-15/16	3-5/16	SFRUC-Y-MO	\$48.24
13/32	0.4062	1-15/16	3-5/16	SFRUC-13/32-MO	\$46.54
Z	0.4130	2	3-3/8	SFRUC-Z-MO	\$52.65
27/64	0.4219	2	3-3/8	SFRUC-27/64-MO	\$50.63
7/16	0.4375	2-1/16	3-7/16	SFRUC-7/16-MO	\$55.56
29/64	0.4531	2-1/8	3-9/16	SFRUC-29/64-MO	\$61.06
15/32	0.4688	2-1/8	3-5/8	SFRUC-15/32-MO	\$62.58
31/64	0.4844	2-3/16	3-11/16	SFRUC-31/64-MO	\$63.21
1/2	0.5000	2-1/4	3-3/4	SFRUC-1/2-MO	\$67.12

Call Us Or Visit Our Website For Our Complete Selection!

COMBINED DRILL & COUNTERSINKS

COMBINED DRILL & COUNTERSINKS

PLAIN TYPE-60°, 82° and 90° Included Angle

- Used for producing center holes in components or workpieces which require machining between centers
- Available in 60°, 82° and 90° included angles
- Right hand -left hand also available
- Available with TiN coating
- Made in the USA



Size	Body Dia	Point Dia	Point Length	OAL	60° Included Angle				82° Included Angle		90° Included Angle	
					HSS Part Number	Price Each	COBALT Part Number	Price Each	HSS Part Number	Price Each	HSS Part Number	Price Each
0000	1/8	0.015	0.015	1-1/4	KEO-10015	\$7.97	KEO-10017	\$33.19	KEO-10039	\$28.42	KEO-10019	\$30.00
000	1/8	0.020	0.020	1-1/4	KEO-10020	\$7.56	KEO-10022	\$22.55	KEO-10040	\$18.22	KEO-10024	\$19.22
00	1/8	0.025	0.025	1-1/4	KEO-10025	\$7.56	KEO-10027	\$22.55	KEO-10029	\$19.22	KEO-10030	\$19.22
0	1/8	1/32	1/32	1-1/4	KEO-10032	\$7.56	KEO-10034	\$22.55	KEO-10036	\$19.22	KEO-10037	\$19.22
#1	1/8	3/64	3/64	1-1/4	KEO-10100	\$5.27	KEO-10142	\$12.21	KEO-10182	\$8.61	KEO-10190	\$8.61
#2	3/16	5/64	5/64	1-7/8	KEO-10200	\$5.50	KEO-10242	\$12.61	KEO-10282	\$8.82	KEO-10290	\$8.82
#3	1/4	7/64	7/64	2	KEO-10300	\$5.73	KEO-10342	\$13.03	KEO-10382	\$9.13	KEO-10390	\$9.13
#4	5/16	1/8	1/8	2-1/8	KEO-10400	\$5.91	KEO-10442	\$13.57	KEO-10482	\$9.49	KEO-10490	\$9.49
#4-1/2	3/8	9/64	9/64	2-1/2	KEO-14500	\$8.15	KEO-14542	\$20.18	KEO-14582	\$12.99	KEO-14590	\$12.99
#5	7/16	3/16	3/16	2-3/4	KEO-10500	\$9.38	KEO-10542	\$21.39	KEO-10582	\$14.46	KEO-10590	\$14.46
#6	1/2	7/32	7/32	3	KEO-10600	\$14.10	KEO-10642	\$33.17	KEO-10682	\$21.88	KEO-10690	\$21.88
#7	5/8	1/4	1/4	3-1/4	KEO-10700	\$21.39	KEO-10742	\$49.93	KEO-10782	\$30.98	KEO-10790	\$30.98
#8	3/4	5/16	5/16	3-1/2	KEO-10800	\$29.38	KEO-10842	\$70.68	KEO-10882	\$43.44	KEO-10890	\$43.44
#9	7/8	11/32	11/32	3-5/8	KEO-10900	\$53.31	KEO-10942	\$130.86	KEO-10982	\$80.11	KEO-10990	\$80.11
#10	1	3/8	3/8	3-3/4	KEO-11000	\$69.98	KEO-11042	\$171.83	KEO-11082	\$105.39	KEO-11090	\$105.39

5 PIECE COMBINED DRILL & COUNTERSINK SETS

60° Included Angle Right Hand HSS

- 5 piece set includes #1 through #5 plain type combined drill and countersink with 60° included angle
- Available in HSS, cobalt and carbide
- Provided with wooden case
- Made in the USA



Description	Part Number	Set Price
#1 - #5 HSS	KEO-10000	\$47.72
#1 - #5 TiN Coated	KEO-10000-TIN	\$61.06
#1 - #5 Cobalt	KEO-10002	\$88.74
#1 - #5 Carbide	KEO-10003	\$158.56

COMBINED DRILL & COUNTERSINKS

Plain Type 60° Angle
HSS & M42 Cobalt



Size	Body Dia	Point Dia	Point Length	OAL	HSS M2 Part Number	Price Each	COBALT Part Number	Price Each
000	1/8	.020	.020	1-1/4	MAG-1150001	\$6.95	-	-
00	1/8	.025	.020	1-1/4	MAG-1150002	\$6.95	-	-
0	1/8	.031	.031	1-1/4	MAG-1150003	\$6.95	-	-
1-0	1/8	.040	.040	1-1/4	MAG-1103151	\$6.53	-	-
1	1/8	3/64	3/64	1-1/4	MAG-1150100	\$5.09	MAG-1055010	\$10.08
(BS 2)	3/16	1/16	1/16	1-3/4	MAG-1140200	\$6.82	-	-
2	3/16	5/64	5/64	1-7/8	MAG-1150200	\$5.22	MAG-1055020	\$10.49
3	1/4	7/64	7/64	2	MAG-1150300	\$5.49	MAG-1055030	\$10.94
4	5/16	1/8	1/8	2-1/8	MAG-1150400	\$5.72	MAG-1055040	\$11.48
4-1/2	3/8	9/64	9/64	2-1/2	MAG-1150450	\$7.70	-	-
5	7/16	3/16	3/16	2-3/4	MAG-1150500	\$9.00	MAG-1055050	\$17.87
6	1/2	7/32	7/32	3	MAG-1150600	\$13.37	MAG-1055060	\$26.60
7	5/8	1/4	1/4	3-1/4	MAG-1150700	\$19.53	MAG-1055070	\$38.93
8	3/4	5/16	5/16	3-1/2	MAG-1150800	\$30.29	MAG-1055080	\$60.57

COMBINED DRILL & COUNTERSINKS

Plain Type- 82°/90° Angle
M2 HSS



Size	Body Dia	Point Dia	Point Length	OAL	82° Angle Part Number	90° Angle Part Number	Price Each
1	1/8	3/64	3/64	1-1/4	MAG-1540100	MAG-1550100	\$7.07
2	3/16	5/64	5/64	1-7/8	MAG-1540200	MAG-1550200	\$7.43
3	1/4	7/64	7/64	2	MAG-1540300	MAG-1550300	\$7.70
4	5/16	1/8	1/8	2-1/8	MAG-1540400	MAG-1550400	\$8.15
5	7/16	3/16	3/16	2-3/4	MAG-1540500	MAG-1550500	\$12.47
6	1/2	7/32	7/32	3	MAG-1540600	MAG-1550600	\$18.59
7	5/8	1/4	1/4	3-1/4	MAG-1540700	MAG-1550700	\$26.96
8	3/4	5/16	5/16	3-1/2	MAG-1540800	MAG-1550800	\$42.12



Call Us Today For All Of Your Machine Tool Needs!

PLAIN TYPE COMBINED DRILL & COUNTERSINKS

Solid Carbide

- Manufactured from premium sub-micron carbide with 10 cobalt
- Pilot has 118° drill point
- Available with 60°, 82° or 90° included angle
- TiN Coated 60° also available
- Made in USA



Full Line Available!
Please call for more information.

Size	Diameter		OAL	60° Angle Part Number	82° Angle Part Number	90° Angle Part Number	Price Each
	Point	Shank					
00	0.0265	1/8	1-1/2	MO-CD00-60	MO-CD00-82	MO-CD00-90	\$10.91
0	1/32	1/8	1-1/2	MO-CD0-60	MO-CD0-82	MO-CD0-90	\$10.25
1	3/64	1/8	1-1/2	MO-CD1-60	MO-CD1-82	MO-CD1-90	\$10.25
2	5/64	3/16	1-7/8	MO-CD2-60	MO-CD2-82	MO-CD2-90	\$13.61
3	7/64	1/4	2	MO-CD3-60	MO-CD3-82	MO-CD3-90	\$16.23
4	1/8	5/16	2-1/8	MO-CD4-60	MO-CD4-82	MO-CD4-90	\$22.25
5	3/16	7/16	2-3/4	MO-CD5-60	MO-CD5-82	MO-CD5-90	\$33.74
6	7/32	1/2	3	MO-CD6-60	MO-CD6-82	MO-CD6-90	\$43.00
7	1/4	5/8	3-1/4	MO-CD7-60	MO-CD7-82	MO-CD7-90	\$102.00
8	5/16	3/4	3-1/2	MO-CD8-60	MO-CD8-82	MO-CD8-90	\$143.87

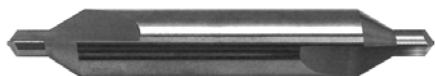


LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

COMBINED DRILL & COUNTERSINKS

Solid Carbide-Plain Type-60° Included Angle



- Used for producing center holes in components or workpieces which require machining between centers
- Available with 60° included angle
- Right hand
- Made in the USA

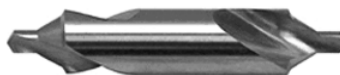
Size	Body Dia.	Point Dia	Point Length	OAL	Part Number	Price Each
00	1/8	.025	.025	1-1/2	KEO-19025	\$15.68
#0	1/8	1/32	1/32	1-1/2	KEO-19032	\$14.23
#1	1/8	3/64	3/64	1-1/2	KEO-19105	\$14.23
#2	3/16	5/64	5/64	2	KEO-19205	\$21.46
#3	1/4	7/64	7/64	2	KEO-19305	\$28.57
#4	5/16	1/8	1/8	2-1/8	KEO-19405	\$36.35
#5	7/16	3/16	3/16	2-3/4	KEO-19505	\$56.67
#6	1/2	7/32	7/32	3	KEO-19605	\$74.65
#7	5/8	1/4	1/4	3-3/4	KEO-19705	\$166.72
#8	3/4	5/16	5/16	4	KEO-19805	\$227.37

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

BELL TYPE COMBINED DRILL & COUNTERSINKS

60° Included Angle-HSS & Cobalt



- Used for producing center holes in components or workpieces which require machining between centers
- Additional 120° included chamfer eliminates the risk of deforming the countersink seat
- Right hand and left hand available
- Made in the USA

Full Line Available!
Please call for more information.

Size	Body Dia.	Point Dia.	Point Length	OAL	Bell Dia.	HSS Part Number	Price Each	COBALT Part Number	Price Each
#11	1/8	3/64	3/64	1-1/4	0.100	KEO-11100	\$6.29	KEO-11142	\$14.92
#12	3/16	1/16	1/16	1-7/8	0.150	KEO-11200	\$6.59	KEO-11242	\$15.31
#13	1/4	3/32	3/32	2	0.200	KEO-11300	\$6.68	KEO-11342	\$15.71
#14	5/16	7/64	7/64	2-1/8	0.250	KEO-11400	\$6.91	KEO-11442	\$16.24
#15	7/16	5/32	5/32	2-3/4	0.350	KEO-11500	\$10.50	KEO-11542	\$25.89
#16	1/2	3/16	3/16	3	0.400	KEO-11600	\$16.18	KEO-11642	\$40.03
#17	5/8	7/32	7/32	3-1/4	0.500	KEO-11700	\$25.05	KEO-11742	\$59.59
#18	3/4	1/4	1/4	3-1/2	0.600	KEO-11800	\$33.19	KEO-11842	\$83.13
#19	7/8	5/16	5/16	3-5/8	0.700	KEO-11900	\$57.29	KEO-11942	\$140.99
#20	1	3/8	3/8	3-3/4	0.800	KEO-12000	\$73.84	KEO-12042	\$181.77

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

COMBINED DRILL & COUNTERSINKS

Bell Type- 60°/120° Angle-HSS



Magafor combined drills and countersinks with a 120° chamfer protects the 60° countersink from any risk of blows and deformation. The splay resulting from the protective chamfer makes it easier to load parts between centers on machines with automatic feed.



Size	Body Dia	Bell Dia	Point Dia	Point Length	OAL	Part Number	Price Each
11	1/8	.100	3/64	3/64	1-1/4	MAG-1351100	\$5.94
12	3/16	.150	1/16	1/16	1-7/8	MAG-1351200	\$6.03
13	1/4	.200	3/32	3/32	2"	MAG-1351300	\$6.21
14	5/16	.250	7/64	7/64	2-1/8	MAG-1351400	\$6.44
15	7/16	.350	5/32	5/32	2-3/4	MAG-1351500	\$9.95
16	1/2	.400	3/16	3/16	3"	MAG-1351600	\$15.12
17	5/8	.500	7/32	7/32	3-1/4	MAG-1351700	\$22.77
18	3/4	.600	1/4	1/4	3-1/2	MAG-1351800	\$32.18
19	7/8	.700	5/16	5/16	3-5/8	MAG-1351900	\$57.29
20	1"	.800	3/8	3/8	3-3/4	MAG-1352000	\$70.79

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

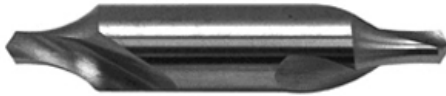
MRO & SAFETY
FLAT STOCK/DRILL ROD

COMBINED DRILL & COUNTERSINKS

RADIUS TYPE COMBINED DRILL & COUNTERSINKS

High Speed Steel

- Available in American standard sizes
- Designed to reduce bearing surface of the center hole and provide a protected centering seat, virtually eliminating the risk of breakage
- Made in the USA



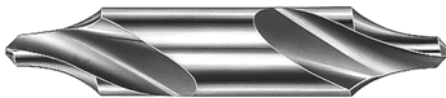
Size	Body Dia.	Point Dia.	Point Length	OAL	Radius	HSS Part Number	Price Each
#5-0	1/8	0.010	0.068	1-1/4	1/16	KEO-10050	\$10.15
#4-0	1/8	0.015	0.083	1-1/4	5/64	KEO-10055	\$9.62
#3-0	1/8	0.020	0.097	1-1/4	3/32	KEO-10060	\$8.32
#2-0	1/8	0.025	0.109	1-1/4	7/64	KEO-10065	\$8.32
#0	1/8	1/32	0.118	1-1/4	1/8	KEO-10070	\$8.32
#1	1/8	3/64	0.132	1-1/4	5/32	KEO-10110	\$6.51
#2	3/16	5/64	0.204	1-7/8	7/32	KEO-10210	\$6.91
#3	1/4	7/64	0.275	2	9/32	KEO-10310	\$7.47
#4	5/16	1/8	11/32	2-1/8	3/8	KEO-10410	\$8.38
#4-1/2	3/8	9/64	13/32	2-1/2	7/16	KEO-14510	\$10.28
#5	7/16	3/16	31/64	2-3/4	1/2	KEO-10510	\$11.68
#6	1/2	7/32	35/64	3	9/16	KEO-10610	\$17.64
#7	5/8	1/4	43/64	3-1/4	45/64	KEO-10710	\$25.88
#8	3/4	5/16	13/16	3-1/2	7/8	KEO-10810	\$34.96
#9	7/8	11/32	15/16	3-5/8	1	KEO-10910	\$65.36
#10	1	3/8	1-1/16	3-3/4	1-7/64	KEO-11010	\$85.48

COMBINED DRILL & COUNTERSINKS RADIUS TYPE

M2 HSS



The Special Profile on this tool is more robust than the 60° angle on a regular combined drill & countersink. The radius serves as a protective chamfer, helping to eliminate the risk of breakage and making it easier to locate the center hole on automatic feeding machines. The radius on this tool works well for 60°, 82°, or 90° angle.



Size	Body Dia	Radius	Point Dia	Profile Length	OAL	Part Number	Price Each
1	1/8	5/32	3/64	.132	1-1/4	MAG-1250100	\$6.30
2	3/16	7/32	5/64	.204	1-7/8	MAG-1250200	\$6.62
3	1/4	9/32	7/64	.275	2	MAG-1250300	\$6.93
4	5/16	3/8	1/8	11/32	2-1/8	MAG-1250400	\$7.25
5	7/16	1/2	3/16	31/64	2-3/4	MAG-1250500	\$11.30
6	1/2	9/16	7/32	35/64	3	MAG-1250600	\$16.70
7	5/8	45/64	1/4	43/64	3-1/4	MAG-1250700	\$24.44
8	3/4	7/8	5/16	13/16	3-1/2	MAG-1250800	\$37.89

LONG COMBINED DRILL & COUNTERSINKS

PLAIN TYPE-60°, 82° and 90° Included Angle



- Used for producing center holes in components or workpieces which require machining between centers
- Available in 60°, 82° and 90° included angles
- Long series
- Made in the USA



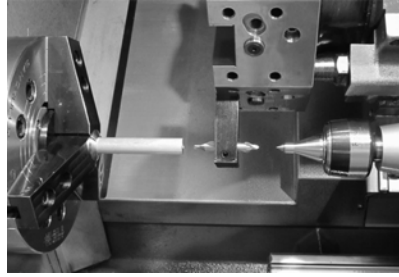
Size	OAL	Body Dia	Point Dia	Point Length	60° Angle		82° Angle		90° Angle			
					HSS Part Number	Price Each	COBALT Part Number	Price Each	HSS Part Number	Price Each	HSS Part Number	Price Each
#1	3	1/8	3/64	3/64	KEO-21030	\$12.74	KEO-21032	\$38.23	KEO-21033	\$19.68	KEO-21034	\$19.68
#1	4	1/8	3/64	3/64	KEO-21040	\$13.29	KEO-21042	\$39.52	KEO-21043	\$22.36	KEO-21044	\$22.36
#1	5	1/8	3/64	3/64	KEO-21050	\$18.46	KEO-21052	\$54.99	KEO-21053	\$31.07	KEO-21054	\$31.07
#1	6	1/8	3/64	3/64	KEO-21060	\$24.17	KEO-21062	\$71.86	KEO-21063	\$40.65	KEO-21064	\$40.65
#2	3	3/16	5/64	5/64	KEO-22030	\$12.88	KEO-22032	\$38.32	KEO-22033	\$21.61	KEO-22034	\$21.61
#2	4	3/16	5/64	5/64	KEO-22040	\$14.57	KEO-22042	\$43.32	KEO-22043	\$24.46	KEO-22044	\$24.46
#2	5	3/16	5/64	5/64	KEO-22050	\$18.66	KEO-22052	\$55.54	KEO-22053	\$31.07	KEO-22054	\$31.07
#2	6	3/16	5/64	5/64	KEO-22060	\$24.27	KEO-22062	\$72.30	KEO-22063	\$40.84	KEO-22064	\$40.84
#3	3	1/4	7/64	7/64	KEO-23030	\$13.45	KEO-23032	\$39.95	KEO-23033	\$22.60	KEO-23034	\$22.60
#3	4	1/4	7/64	7/64	KEO-23040	\$15.35	KEO-23042	\$45.55	KEO-23043	\$25.78	KEO-23044	\$25.78
#3	5	1/4	7/64	7/64	KEO-23050	\$20.19	KEO-23052	\$60.10	KEO-23053	\$33.97	KEO-23054	\$33.97
#3	6	1/4	7/64	7/64	KEO-23060	\$24.49	KEO-23062	\$72.88	KEO-23063	\$41.13	KEO-23064	\$41.13
#4	3	5/16	1/8	1/8	KEO-24030	\$15.79	KEO-24032	\$46.94	KEO-24033	\$26.51	KEO-24034	\$26.51
#4	4	5/16	1/8	1/8	KEO-24040	\$16.99	KEO-24042	\$50.60	KEO-24043	\$28.61	KEO-24044	\$28.61
#4	5	5/16	1/8	1/8	KEO-24050	\$21.73	KEO-24052	\$64.65	KEO-24053	\$36.53	KEO-24054	\$36.53
#4	6	5/16	1/8	1/8	KEO-24060	\$25.08	KEO-24062	\$74.63	KEO-24063	\$42.22	KEO-24064	\$42.22
#4-1/2	4	3/8	9/64	9/64	KEO-24540	\$19.11	KEO-24542	\$55.60	KEO-24543	\$31.47	KEO-24544	\$31.47
#4-1/2	5	3/8	9/64	9/64	KEO-24550	\$22.58	KEO-24552	\$65.92	KEO-24553	\$37.32	KEO-24554	\$37.32
#4-1/2	6	3/8	9/64	9/64	KEO-24560	\$27.26	KEO-24562	\$79.54	KEO-24563	\$44.99	KEO-24564	\$44.99
#5	4	7/16	3/16	3/16	KEO-25040	\$22.34	KEO-25042	\$65.19	KEO-25043	\$36.85	KEO-25044	\$36.85
#5	5	7/16	3/16	3/16	KEO-25050	\$25.87	KEO-25052	\$75.48	KEO-25053	\$42.72	KEO-25054	\$42.72
#5	6	7/16	3/16	3/16	KEO-25060	\$29.04	KEO-25062	\$84.70	KEO-25063	\$47.92	KEO-25064	\$47.92
#6	4	1/2	7/32	7/32	KEO-26040	\$24.24	KEO-26042	\$69.23	KEO-26043	\$30.14	KEO-26044	\$30.14
#6	5	1/2	7/32	7/32	KEO-26050	\$27.79	KEO-26052	\$79.64	KEO-26053	\$44.99	KEO-26054	\$44.99
#6	6	1/2	7/32	7/32	KEO-26060	\$33.59	KEO-26062	\$96.06	KEO-26063	\$54.30	KEO-26064	\$54.30
#7	6	5/8	1/4	1/4	KEO-27060	\$62.60	KEO-27062	\$178.15	KEO-27063	\$100.85	KEO-27064	\$100.85
#8	6	3/4	5/16	5/16	KEO-28060	\$67.60	KEO-28062	\$192.33	KEO-28063	\$108.99	KEO-28064	\$108.99

Call Us Today For All Of Your Machine Tool Needs!

CENTER DRILL HOLDER

Square Shank

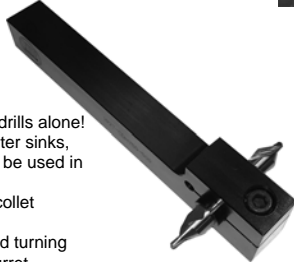
It gets into spaces that others can't even begin to! Since the holder is located in the lathe turret like an OD turning tool, the only thing protruding in front of the turret face is the tip of the center drill. The center drill can be programmed to drop into the space between the end of the part to be center drilled and the tip of the live center in the retracted position-a space less than the travel on most tailstock quills. It eliminates the time consuming process of stopping the machine to reposition the work-piece or the tailstock during the machining cycle!



Center Drill Holder Kits Include:
 -1 holder & wrench
 -Bushings
 6 total: 1/8-7/16 for 3/4" & 1" shank holders
 4 total: 3/8-5/8 for 1-1/4" shank holder
 additional bushings also available

Shank	Max. Center Diameter	Part Number	Kit Price
3/4"	1/2"	ED-CDH-750-500	\$289.98
1"	1/2"	ED-CDH1-500	\$312.59
1-1/4"	3/4"	ED-CDH1-250-750	\$321.62

Save Valuable Time!



- Is not limited to combined drills alone! Center/spotting drills, counter sinks, drills, and boring bars may be used in the holder
- Frees up drill chucks and collet holders on your tool turret
- Allows you to utilize unused turning tool pockets on your tool turret
- Increases tooling arrangement flexibility
- Can be used on manual and CNC tool room lathes
- 6" OAL



ADDITIONAL BUSHINGS

For 3/4" & 1" Shank Center Drill Holders

OD	ID	Part Number	Price Each
0.500 1/2"	1/8	ED-CDB50-125	\$13.27
	3/16	ED-CDB50-187	\$13.27
	1/4	ED-CDB50-250	\$13.27
	5/16	ED-CDB50-312	\$13.27
	3/8	ED-CDB50-375	\$13.27
	7/16	ED-CDB50-437	\$13.27

For 1-1/4" Shank Center Drill Holder

OD	ID	Part Number	Price Each
0.750 3/4"	3/8	ED-CDB75-375	\$15.03
	7/16	ED-CDB75-437	\$15.03
	1/2	ED-CDB75-500	\$15.03
	5/8	ED-CDB75-625	\$15.03

PLAIN TYPE- 60° ANGLE

HSS M2- Long Style



magafor

Size	OAL	Body Dia	Point Dia	Point Length	Part Number	Price Each
#1	3"	1/8	3/64	3/64	MAG-1850103	\$10.08
	4"	1/8	3/64	3/64	MAG-1850104	\$10.44
	5"	1/8	3/64	3/64	MAG-1850105	\$14.54
	6"	1/8	3/64	3/64	MAG-1850106	\$19.49
#2	3"	3/16	5/64	5/64	MAG-1850203	\$10.22
	4"	3/16	5/64	5/64	MAG-1850204	\$11.57
	5"	3/16	5/64	5/64	MAG-1850205	\$14.72
	6"	3/16	5/64	5/64	MAG-1850206	\$19.49
#3	3"	1/4	7/64	7/64	MAG-1850303	\$10.58
	4"	1/4	7/64	7/64	MAG-1850304	\$12.06
	5"	1/4	7/64	7/64	MAG-1850305	\$15.98
	6"	1/4	7/64	7/64	MAG-1850306	\$19.49
#4	3"	5/16	1/8	1/8	MAG-1850403	\$12.56
	4"	5/16	1/8	1/8	MAG-1850404	\$13.50

Size	OAL	Body Dia	Point Dia	Point Length	Part Number	Price Each
#4	5"	5/16	1/8	1/8	MAG-1850405	\$17.15
	6"	5/16	1/8	1/8	MAG-1850406	\$20.75
#4-1/2	4"	3/8	9/64	9/64	MAG-1850454	\$15.12
	5"	3/8	9/64	9/64	MAG-1850455	\$17.87
#5	4"	3/8	9/64	9/64	MAG-1850456	\$22.23
	5"	3/8	9/64	9/64	MAG-1850504	\$17.64
#6	4"	7/16	3/16	3/16	MAG-1850505	\$20.48
	5"	7/16	3/16	3/16	MAG-1850506	\$23.90
#7	4"	1/2	7/32	7/32	MAG-1850604	\$19.13
	5"	1/2	7/32	7/32	MAG-1850605	\$21.96
	6"	1/2	7/32	7/32	MAG-1850606	\$27.23
#8	5"	5/8	1/4	1/4	MAG-1850705	\$39.60
	6"	5/8	1/4	1/4	MAG-1850706	\$49.14
#8	6"	3/4	5/16	5/16	MAG-1850806	\$54.36

N/C SPOTTING DRILLS

82°, 90° & 120° Point Angles

- High speed steel or cobalt
- Designed with a narrow chisel edge for quick starting
- Constant web allows for resharping without the need for web thinning
- Right hand



Body Dia	Flute Length	OAL	82° Point Angle		90° Point Angle		120° Point Angle		COBALT Part Number	Price Each		
			COBALT Part Number	Price Each	HSS Part Number	Price Each	HSS Part Number	Price Each				
1/4	3/4	2-1/2	KEO-38143	\$28.38	KEO-32140	\$25.07	KEO-32143	\$28.38	KEO-33140	\$25.07	KEO-33143	\$28.38
1/4	3/4	4	KEO-38145	\$40.85	KEO-32142	\$36.09	KEO-32145	\$40.85	KEO-33142	\$36.09	KEO-33145	\$40.85
1/4	3/4	6	KEO-38147	\$56.10	KEO-32144	\$49.57	KEO-32147	\$56.10	KEO-33144	\$49.57	KEO-33147	\$56.10
3/8	1-1/8	3-1/8	KEO-38383	\$30.65	KEO-32380	\$27.07	KEO-32383	\$30.65	KEO-33380	\$27.07	KEO-33383	\$30.65
3/8	1-1/8	5	KEO-38385	\$43.55	KEO-32382	\$38.48	KEO-32385	\$43.55	KEO-33382	\$38.48	KEO-33385	\$43.55
3/8	1-1/8	7	KEO-38387	\$60.33	KEO-32384	\$53.32	KEO-32387	\$60.33	KEO-33384	\$53.32	KEO-33387	\$60.33
1/2	1-3/8	3-3/4	KEO-38123	\$39.29	KEO-32120	\$34.71	KEO-32123	\$39.29	KEO-33120	\$34.71	KEO-33123	\$39.29
1/2	1-3/8	6	KEO-38125	\$54.47	KEO-32122	\$48.13	KEO-32125	\$54.47	KEO-33122	\$48.13	KEO-33125	\$54.47
1/2	1-3/8	8	KEO-38127	\$74.08	KEO-32124	\$65.45	KEO-32127	\$74.08	KEO-33124	\$65.45	KEO-33127	\$74.08
5/8	1-5/8	4-3/8	KEO-38583	\$51.13	KEO-32580	\$45.18	KEO-32583	\$51.13	KEO-33580	\$45.18	KEO-33583	\$51.13
5/8	1-5/8	7	KEO-38585	\$68.84	KEO-32582	\$60.82	KEO-32585	\$68.84	KEO-33582	\$60.82	KEO-33585	\$68.84
5/8	1-5/8	9	KEO-38587	\$95.16	KEO-32584	\$84.08	KEO-32587	\$95.16	KEO-33584	\$84.08	KEO-33587	\$95.16
3/4	1-7/8	5	KEO-38343	\$69.95	KEO-32340	\$61.81	KEO-32343	\$69.95	KEO-33340	\$61.81	KEO-33343	\$69.95
3/4	1-7/8	8	KEO-38345	\$94.57	KEO-32342	\$83.56	KEO-32345	\$94.57	KEO-33342	\$83.56	KEO-33345	\$94.57
3/4	1-7/8	10	KEO-38347	\$126.38	KEO-32344	\$111.68	KEO-32347	\$126.38	KEO-33344	\$111.68	KEO-33347	\$126.38

Call Us Or Visit Our Website For Our Complete Selection!

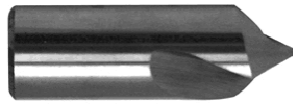
CENTER/SPOTTING DRILLS

SPOTTING & CENTERING DRILLS

90° & 118° Point Angles



- Prevents misalignment caused by using regular drills for centering
- These short drills can be chucked close to the point, ensuring accuracy and true starts
- Made in the USA



Body Dia.	Flute Length	OAL	90° Point				118° Point			
			HSS Part Number	Price Each	TIN Coated Part Number	Price Each	HSS Part Number	Price Each	TIN Coated Part Number	Price Each
1/8	3/8	1-1/4	KEO-30151	\$5.16	KEO-30151-TIN	\$6.15	KEO-30150	\$5.16	KEO-30150-TIN	\$6.15
3/16	1/2	1-3/8	KEO-30181	\$5.60	KEO-30181-TIN	\$7.02	KEO-30180	\$5.60	KEO-30180-TIN	\$7.02
1/4	5/8	1-1/2	KEO-30251	\$6.18	KEO-30251-TIN	\$8.08	KEO-30250	\$6.18	KEO-30250-TIN	\$8.08
5/16	5/8	1-1/2	KEO-30311	\$7.02	KEO-30311-TIN	\$9.45	KEO-30310	\$7.02	KEO-30310-TIN	\$9.45
3/8	1	2	KEO-30381	\$7.95	KEO-30381-TIN	\$10.37	KEO-30380	\$7.95	KEO-30380-TIN	\$10.37
7/16	1	2	KEO-30761	\$10.72	KEO-30761-TIN	\$14.60	KEO-30760	\$10.72	KEO-30760-TIN	\$14.60
1/2	1	2	KEO-30121	\$13.12	KEO-30121-TIN	\$17.01	KEO-30120	\$13.12	KEO-30120-TIN	\$17.01
9/16	1	2	KEO-30961	\$19.55	KEO-30961-TIN	\$24.38	KEO-30960	\$19.55	KEO-30960-TIN	\$24.38
5/8	1-1/8	2-1/4	KEO-30581	\$21.71	KEO-30581-TIN	\$28.15	KEO-30580	\$21.71	KEO-30580-TIN	\$28.15
3/4	1-1/8	2-1/4	KEO-30341	\$30.18	KEO-30341-TIN	\$37.56	KEO-30340	\$30.18	KEO-30340-TIN	\$37.56
7/8	1-1/4	2-1/2	KEO-30781	\$36.99	KEO-30781-TIN	\$47.10	KEO-30780	\$36.99	KEO-30780-TIN	\$47.10
1	1-1/4	2-1/2	KEO-31001	\$47.28	KEO-31001-TIN	\$60.13	KEO-31000	\$47.28	KEO-31000-TIN	\$60.13

NC SPOTTING DRILLS

HSS M35 5% Cobalt-Standard Length



- Very narrow chisel edge. Short flute and stubby length provide precise spotting prior to drilling.
- "H6" tolerance ensures perfect centering of the web and cutting edge.
- Point Angle 90° can combine centering and chamfering into one operation.
- Point Angle 120° best when follow-on drill has a 118° drill point, precise hole location.



90°



120°

Size	Dec.	OAL	Cutting Length	90° Angle Part Number	120° Angle Part Number	Price Each
2 mm	.0787	1-5/8	5/16	MAG-1950200	MAG-1960200	\$16.12
3 mm	.1181	2	7/16	MAG-1950300	MAG-1960300	\$14.65
4 mm	.1575	2-1/16	1/2	MAG-1950400	MAG-1960400	\$16.12
5 mm	.1969	2-3/8	5/8	MAG-1950500	MAG-1960500	\$18.28
6 mm	.2362	2-5/8	3/4	MAG-1950600	MAG-1960600	\$20.24
1/4"	.2500	2-5/8	7/8	MAG-1950635	MAG-1960635	\$20.63
8 mm	.3150	3-1/8	1	MAG-1950800	MAG-1960800	\$21.51
3/8"	.3750	3-1/2	1	MAG-1950952	MAG-1960952	\$22.05
1/2"	.5000	4	1-3/8	MAG-1951270	MAG-1961270	\$28.42
5/8"	.6250	4-1/2	1-3/8	MAG-1951587	MAG-1961587	\$41.21
3/4"	.7500	5-1/8	1-5/8	MAG-1951905	MAG-1961905	\$57.77
1"	1.000	5-1/2	1-3/4	MAG-1952540	MAG-1962540	\$110.54

SOLID CARBIDE N/C SPOTTING DRILLS

90° & 120° Point Angles



- Solid carbide
- Designed with a narrow chisel edge for quick starting
- Right hand
- Made in the USA



Dia	Flute Length	OAL	90° Point Angle				120° Point Angle			
			Uncoated Part Number	Price Each	TIN Coated Part Number	Price Each	Uncoated Part Number	Price Each	TIN Coated Part Number	Price Each
1/8	3/8	1-1/2	KEO-34180	\$16.91	KEO-34180-TIN	\$17.94	KEO-34181	\$16.91	KEO-34181-TIN	\$17.94
3/16	9/16	2	KEO-34187	\$22.22	KEO-34187-TIN	\$23.71	KEO-34188	\$22.22	KEO-34188-TIN	\$23.71
1/4	3/4	2-1/2	KEO-34140	\$28.35	KEO-34140-TIN	\$31.05	KEO-34141	\$28.35	KEO-34141-TIN	\$31.05
5/16	3/4	2-1/2	KEO-34312	\$34.20	KEO-34312-TIN	\$37.56	KEO-34313	\$34.20	KEO-34313-TIN	\$37.56
3/8	3/4	2-1/2	KEO-34380	\$39.15	KEO-34380-TIN	\$42.55	KEO-34381	\$39.15	KEO-34381-TIN	\$42.55
1/2	1	3	KEO-34120	\$61.22	KEO-34120-TIN	\$66.65	KEO-34121	\$61.22	KEO-34121-TIN	\$66.65
5/8	1	3-1/2	KEO-34580	\$112.73	KEO-34580-TIN	\$121.28	KEO-34581	\$112.73	KEO-34581-TIN	\$121.28
3/4	1-1/8	4	KEO-34340	\$188.16	KEO-34340-TIN	\$199.47	KEO-34341	\$188.16	KEO-34341-TIN	\$199.47



SPOTTING AND CENTERING DRILLS

82°, 90°, 100°, 120° Included Drill Point



- Solid carbide
- Right hand
- Made in the USA



Dia.	OAL	Flute Len.	Incl. Drill Pt.	Part Number	Price Each	Dia.	OAL	Flute Len.	Incl. Drill Pt.	Part Number	Price Each
1/4	2	3/4	82°	MI-SPD250082	\$22.90	1/2	2	1	82°	MI-SPD500082	\$50.05
			90°	MI-SPD250090					90°	MI-SPD500090	
			100°	MI-SPD250100					100°	MI-SPD500100	
			120°	MI-SPD250120					120°	MI-SPD500120	
5/16	2	3/4	82°	MI-SPD312082	\$26.70	5/8	2-1/2	1-1/8	82°	MI-SPD625082	\$88.50
			90°	MI-SPD312090					90°	MI-SPD625090	
			100°	MI-SPD312100					100°	MI-SPD625100	
			120°	MI-SPD312120					120°	MI-SPD625120	
3/8	2	1	82°	MI-SPD375082	\$33.60	3/4	2-1/2	1-1/8	82°	MI-SPD750082	\$134.25
			90°	MI-SPD375090					90°	MI-SPD750090	
			100°	MI-SPD375100					100°	MI-SPD750100	
			120°	MI-SPD375120					120°	MI-SPD750120	

Call Us Today For All Of Your Machine Tool Needs!

COUNTERSINKS

B

ZERO FLUTE M35 COBALT COUNTERSINK AND DEBURRING TOOLS



- All-purpose tool provides flawless counter sinking and deburring
- Chatter-free cutting action requires minimal power
- Micro-smooth CNC precision ground construction produces clean, smooth cutting without smearing on a variety of materials
- Works on all materials- excels in aluminum, plastics and other non-metallic materials
- Made in the USA

Head Dia.	Dia. of Cut		OAL	Shank Dia	60° Angle	
	Min.	Max.			Part Number	Price Each
5/16	7/64	9/32	1-7/8	1/4	KEO-53500	\$13.67
3/8	5/32	11/32	1-7/8	1/4	KEO-53501	\$15.61
1/2	11/64	29/64	2	5/16	KEO-53502	\$18.69
5/8	3/16	37/64	2-1/2	3/8	KEO-53503	\$21.46
3/4	1/4	45/64	2-3/4	3/8	KEO-53504	\$32.67
1	19/64	27/32	3	3/8	KEO-53505	\$40.63
1-1/4	27/64	1-1/32	3-1/2	1/2	KEO-53506	\$98.46



4 PIECE ZERO FLUTE COUNTERSINK SETS

4 Piece Set Includes:	C°Sink Angle	Part Number	Price Each
5/16, 3/8, 1/2, 5/8	60°	KEO-53508	\$73.84
	82°	KEO-53518	\$73.84
	90°	KEO-53528	\$73.84

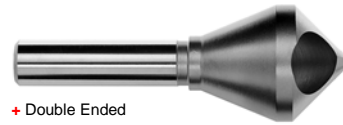
Head Dia.	Dia. of Cut		OAL	Shank Dia	82° Angle		90° Angle		100° Angle	
	Min.	Max.			Part Number	Price Each	Part Number	Price Each	Part Number	Price Each
5/16	3/32	9/32	1-5/8	1/4	KEO-53510	\$13.67	KEO-53520	\$13.67	KEO-53530	\$13.67
3/8	9/64	11/32	1-3/4	1/4	KEO-53511	\$15.61	KEO-53521	\$15.61	KEO-53531	\$15.61
1/2	5/32	29/64	1-3/4	5/16	KEO-53512	\$18.69	KEO-53522	\$18.69	KEO-53532	\$18.69
5/8	11/64	37/64	2-1/8	3/8	KEO-53513	\$21.46	KEO-53523	\$21.46	KEO-53533	\$21.46
3/4	13/64	45/64	2-3/8	3/8	KEO-53514	\$32.67	KEO-53524	\$32.67	KEO-53534	\$32.67
1	19/64	59/64	2-5/8	3/8	KEO-53515	\$40.63	KEO-53525	\$40.63	KEO-53535	\$40.63
1-1/4	23/64	1-3/32	3-1/8	1/2	KEO-53516	\$98.46	KEO-53526	\$98.46	KEO-53536	\$98.46

ZEROFLUTE COUNTERSINKS & DEBURRING TOOLS

HSS-M35 5% Cobalt

FEATURES:

- Zeroflute deburring tools give chatterless finishes.
- Single cutting edge for fast removal of stock.
- Free Cutting.
- Designed for 60°/82° and 90° cutting.
- Easily sharpened by use of a small mounted grinding wheel inserted into hole.



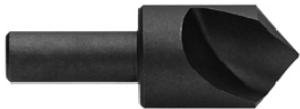
magafor

*15% to 20% greater for 60° countersinks only + Double Ended

Size	Body Dia	Dia of Cut		OAL	Shank Dia	60° Angle			Price Each
		Min*	Max			Part Number	Part Number	Part Number	
0+	1/4	.08	.22	1-3/4	1/4	MAG-4120635	MAG-4140635	MAG-4110635	\$15.83
1	7/16	.15	.40	1-3/4	1/4	MAG-4121120	MAG-4141120	MAG-4111120	\$17.05
2	9/16	.20	.52	2"	1/4	MAG-4121400	MAG-4141400	MAG-4111400	\$21.27
3	13/16	.30	.75	2-5/8	1/2	MAG-4122040	MAG-4142040	MAG-4112040	\$38.51
4	1-3/16	.48	1.10	3-1/2	1/2	MAG-4123010	MAG-4143010	MAG-4113010	\$62.13

SINGLE FLUTE COUNTERSINKS

60°, 82° & 90° Point Angles-HSS & Cobalt



- Ideal for chamfering, deburring and countersinking
- Large positive rake and single flute construction provide a smooth surface finish on a wide variety of materials
- Tool versatility can help increase productivity on all general purpose applications
- Made in the USA



Body Dia	OAL	Shank Dia	HIGH SPEED STEEL				COBALT			
			60° Angle Part Number	82° Angle Part Number	90° Angle Part Number	Price Each	60° Angle Part Number	82° Angle Part Number	90° Angle Part Number	Price Each
1/8	1-1/4	1/8	KEO-53186	KEO-53188	KEO-53189	\$8.47	KEO-55400	KEO-55412	KEO-55424	\$9.74
3/16	1-3/8	3/16	KEO-53176	KEO-53178	KEO-53179	\$8.68	KEO-55401	KEO-55413	KEO-55425	\$9.98
1/4	1-1/2	1/4	KEO-53146	KEO-53148	KEO-53149	\$9.03	KEO-55402	KEO-55414	KEO-55426	\$10.39
3/8	1-3/4	1/4	KEO-53386	KEO-53388	KEO-53389	\$10.30	KEO-55403	KEO-55415	KEO-55427	\$11.85
1/2	2	1/4	KEO-53126	KEO-53128	KEO-53129	\$12.60	KEO-55404	KEO-55416	KEO-55428	\$14.50
5/8	2-1/4	3/8	KEO-53586	KEO-53588	KEO-53589	\$16.87	KEO-55405	KEO-55417	KEO-55429	\$19.39
3/4	2-5/8	1/2	KEO-53346	KEO-53348	KEO-53349	\$24.61	KEO-55406	KEO-55418	KEO-55430	\$28.30
1	2-3/4	1/2	KEO-53106	KEO-53108	KEO-53109	\$42.21	KEO-55407	KEO-55419	KEO-55431	\$48.55
1-1/4	3	1/2	KEO-53246	KEO-53248	KEO-53249	\$82.63	KEO-55408	KEO-55420	KEO-55432	\$95.03
1-1/2	3-1/4	3/4	KEO-53226	KEO-53228	KEO-53229	\$111.89	KEO-55409	KEO-55421	KEO-55433	\$128.67
1-3/4	3-1/2	3/4	KEO-53446	KEO-53448	KEO-53449	\$142.84	KEO-55410	KEO-55422	KEO-55434	\$164.27
2	3-3/4	3/4	KEO-53206	KEO-53208	KEO-53209	\$199.93	KEO-55411	KEO-55423	KEO-55435	\$229.91

SINGLE FLUTE COUNTERSINKS

HSS-M35 5% Cobalt

- Single flute countersinks provide smooth finishes on a wide range of materials.
- Great countersinking capacity from the point to the outside diameter.
- Complete size range is available in 60° - 82° or 90° included angles.



magafor

Size	OAL	Shank Dia	60° Angle Part Number	82° Angle Part Number	90° Angle Part Number	Price Each
1/8	1-1/4	1/8	MAG-4220317	MAG-4240317	MAG-4210317	\$10.34
3/16	1-3/8	3/16	MAG-4220476	MAG-4240476	MAG-4210476	\$10.88
1/4	1-1/2	1/4	MAG-4220635	MAG-4240635	MAG-4210635	\$11.07
5/16	1-5/8	1/4	MAG-4220793	MAG-4240793	MAG-4210793	\$12.45
3/8	1-3/4	1/4	MAG-4220952	MAG-4240952	MAG-4210952	\$12.74
1/2	2"	1/4	MAG-4221270	MAG-4241270	MAG-4211270	\$16.32
5/8	2-1/4	3/8	MAG-4221587	MAG-4241587	MAG-4211587	\$21.81
3/4	2-5/8	1/2	MAG-4221905	MAG-4241905	MAG-4211905	\$29.06
7/8	2-3/4	1/2	MAG-4222222	MAG-4242222	MAG-4212222	\$49.00
1"	2-3/4	1/2	MAG-4222540	MAG-4242540	MAG-4212540	\$50.86
1-1/4	2-3/4*	1/2	MAG-4223175	MAG-4243175	MAG-4213175	\$87.22

*The 60° Countersink (MAG-4223175) has an overall length of 3"

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

397

LATHE CHUCKS
LIVE CENTERS

WISE ACCESSORIES
WISE JAWS

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

COUNTERSINKS/CENTER REAMERS

THREE FLUTE CENTER REAMERS

60°, 82° & 90° Point Angles-High Speed Steel

KEO 3-flute center reamers are versatile tools designed for countersinking holes for centers or for enlarging existing holes. Made from high speed steel.



Body Dia	OAL	Shank Dia	60° Angle Part Number	Price Each	82° Angle Part Number	90° Angle Part Number	Price Each
1/4	1-1/2	1/4	KEO-50146	\$9.55	KEO-50148	KEO-50149	\$9.55
3/8	1-3/4	1/4	KEO-50386	\$10.75	KEO-50388	KEO-50389	\$10.75
1/2	2	1/4	KEO-50126	\$13.23	KEO-50128	KEO-50129	\$13.23
5/8	2-1/4	3/8	KEO-50586	\$17.60	KEO-50588	KEO-50589	\$17.60
3/4	2-3/8	1/2	KEO-50346	\$25.73	KEO-50348	KEO-50349	\$25.73
1	2-5/4	1/2	KEO-51006	\$40.94	KEO-51008	KEO-51009	\$40.94
1-1/4	2-3/4*	1/2	KEO-51256	\$99.51	KEO-51258	KEO-51259	\$96.01
1-1/2	2-7/8*	3/4	KEO-51506	\$151.64	KEO-51508	KEO-51509	\$137.43
1-3/4	3*	3/4	KEO-51756	\$191.17	KEO-51758	KEO-51759	\$181.92
2	3-1/4*	3/4	KEO-52306	\$254.37	KEO-52308	KEO-52309	\$223.58

*60°OAL:1-1/4=3", 1-1/2=3-1/4", 1-3/4=3-1/2", 2=3-3/4"

CARBIDE COUNTERSINKS

- Manufactured from premium sub-micron carbide with 10 cobalt
- Sizes 1/4" diameter and smaller are solid carbide
- Sizes 3/8" and larger are composed of hardened steel shanks and induction brazed heads to insure a solid, safe and secure bond
- Made in USA



CHATTERLESS!
Carbide Countersinks At A High Speed Steel Price!

Cutter Dia	Shank Dia	OAL	60° Angle Part Number	82° Angle Part Number	90° Angle Part Number	100° Angle Part Number	120° Angle Part Number	Price
------------	-----------	-----	-----------------------	-----------------------	-----------------------	------------------------	------------------------	-------

SINGLE FLUTE

1/8"	1/8"	1-1/2"	MO-CC0125-60-1	MO-CC0125-82-1	MO-CC0125-90-1	MO-CC0125-100-1	MO-CC0125-120-1	\$6.38
3/16"	3/16"	2"	MO-CC0187-60-1	MO-CC0187-82-1	MO-CC0187-90-1	MO-CC0187-100-1	MO-CC0187-120-1	\$9.90
1/4"	1/4"	2"	MO-CC0250-60-1	MO-CC0250-82-1	MO-CC0250-90-1	MO-CC0250-100-1	MO-CC0250-120-1	\$11.14
5/16"	1/4"	2-1/2"	MO-CC0312-60-1	MO-CC0312-82-1	MO-CC0312-90-1	MO-CC0312-100-1	MO-CC0312-120-1	\$19.24
3/8"	1/4"	2-3/8"	MO-CC0375-60-1	MO-CC0375-82-1	MO-CC0375-90-1	MO-CC0375-100-1	MO-CC0375-120-1	\$20.55
1/2"	1/4"	2-1/2"	MO-CC0500-60-1	MO-CC0500-82-1	MO-CC0500-90-1	MO-CC0500-100-1	MO-CC0500-120-1	\$27.98
5/8"	3/8"	2-5/8"	MO-CC0625-60-1	MO-CC0625-82-1	MO-CC0625-90-1	MO-CC0625-100-1	MO-CC0625-120-1	\$36.90
3/4"	3/8"	2-7/8"	MO-CC0750-60-1	MO-CC0750-82-1	MO-CC0750-90-1	MO-CC0750-100-1	MO-CC0750-120-1	\$51.08
7/8"	1/2"	3"	MO-CC0875-60-1	MO-CC0875-82-1	MO-CC0875-90-1	MO-CC0875-100-1	MO-CC0875-120-1	\$82.39
1"	1/2"	3"	MO-CC1000-60-1	MO-CC1000-82-1	MO-CC1000-90-1	MO-CC1000-100-1	MO-CC1000-120-1	\$84.34
1-1/4"	3/4"	3-3/8"	MO-CC1250-60-1	MO-CC1250-82-1	MO-CC1250-90-1	MO-CC1250-100-1	MO-CC1250-120-1	\$119.51
1-1/2"	3/4"	3-1/2"	MO-CC1500-60-1	MO-CC1500-82-1	MO-CC1500-90-1	MO-CC1500-100-1	MO-CC1500-120-1	\$154.84

3 FLUTE

Cutter Dia	Shank Dia	OAL	60° Angle Part Number	82° Angle Part Number	90° Angle Part Number	100° Angle Part Number	120° Angle Part Number	Price
1/8"	1/8"	1-1/2"	MO-CC0125-60-3	MO-CC0125-82-3	MO-CC0125-90-3	MO-CC0125-100-3	MO-CC0125-120-3	\$6.38
3/16"	3/16"	2"	MO-CC0187-60-3	MO-CC0187-82-3	MO-CC0187-90-3	MO-CC0187-100-3	MO-CC0187-120-3	\$9.90
1/4"	1/4"	2"	MO-CC0250-60-3	MO-CC0250-82-3	MO-CC0250-90-3	MO-CC0250-100-3	MO-CC0250-120-3	\$11.14
5/16"	1/4"	2-1/2"	MO-CC0312-60-3	MO-CC0312-82-3	MO-CC0312-90-3	MO-CC0312-100-3	MO-CC0312-120-3	\$19.24
3/8"	1/4"	2-3/8"	MO-CC0375-60-3	MO-CC0375-82-3	MO-CC0375-90-3	MO-CC0375-100-3	MO-CC0375-120-3	\$20.55
1/2"	1/4"	2-1/2"	MO-CC0500-60-3	MO-CC0500-82-3	MO-CC0500-90-3	MO-CC0500-100-3	MO-CC0500-120-3	\$27.98
5/8"	3/8"	2-5/8"	MO-CC0625-60-3	MO-CC0625-82-3	MO-CC0625-90-3	MO-CC0625-100-3	MO-CC0625-120-3	\$36.90
3/4"	3/8"	2-7/8"	MO-CC0750-60-3	MO-CC0750-82-3	MO-CC0750-90-3	MO-CC0750-100-3	MO-CC0750-120-3	\$51.08
7/8"	1/2"	3"	MO-CC0875-60-3	MO-CC0875-82-3	MO-CC0875-90-3	MO-CC0875-100-3	MO-CC0875-120-3	\$82.39
1"	1/2"	3"	MO-CC1000-60-3	MO-CC1000-82-3	MO-CC1000-90-3	MO-CC1000-100-3	MO-CC1000-120-3	\$84.34
1-1/4"	3/4"	3-3/8"	MO-CC1250-60-3	MO-CC1250-82-3	MO-CC1250-90-3	MO-CC1250-100-3	MO-CC1250-120-3	\$119.51
1-1/2"	3/4"	3-1/2"	MO-CC1500-60-3	MO-CC1500-82-3	MO-CC1500-90-3	MO-CC1500-100-3	MO-CC1500-120-3	\$154.84

6-FLUTE

Cutter Dia	Shank Dia	OAL	60° Angle Part Number	82° Angle Part Number	90° Angle Part Number	100° Angle Part Number	120° Angle Part Number	Price
1/8"	1/8"	1-1/2"	MO-CC0125-60-6	MO-CC0125-82-6	MO-CC0125-90-6	MO-CC0125-100-6	MO-CC0125-120-6	\$6.38
3/16"	3/16"	2"	MO-CC0187-60-6	MO-CC0187-82-6	MO-CC0187-90-6	MO-CC0187-100-6	MO-CC0187-120-6	\$9.90
1/4"	1/4"	2"	MO-CC0250-60-6	MO-CC0250-82-6	MO-CC0250-90-6	MO-CC0250-100-6	MO-CC0250-120-6	\$11.14
5/16"	1/4"	2-1/2"	MO-CC0312-60-6	MO-CC0312-82-6	MO-CC0312-90-6	MO-CC0312-100-6	MO-CC0312-120-6	\$19.24
3/8"	1/4"	2-3/8"	MO-CC0375-60-6	MO-CC0375-82-6	MO-CC0375-90-6	MO-CC0375-100-6	MO-CC0375-120-6	\$20.55
1/2"	1/4"	2-1/2"	MO-CC0500-60-6	MO-CC0500-82-6	MO-CC0500-90-6	MO-CC0500-100-6	MO-CC0500-120-6	\$27.98
5/8"	3/8"	2-5/8"	MO-CC0625-60-6	MO-CC0625-82-6	MO-CC0625-90-6	MO-CC0625-100-6	MO-CC0625-120-6	\$36.90
3/4"	3/8"	2-7/8"	MO-CC0750-60-6	MO-CC0750-82-6	MO-CC0750-90-6	MO-CC0750-100-6	MO-CC0750-120-6	\$51.08
7/8"	1/2"	3"	MO-CC0875-60-6	MO-CC0875-82-6	MO-CC0875-90-6	MO-CC0875-100-6	MO-CC0875-120-6	\$82.39
1"	1/2"	3"	MO-CC1000-60-6	MO-CC1000-82-6	MO-CC1000-90-6	MO-CC1000-100-6	MO-CC1000-120-6	\$84.34
1-1/4"	3/4"	3-3/8"	MO-CC1250-60-6	MO-CC1250-82-6	MO-CC1250-90-6	MO-CC1250-100-6	MO-CC1250-120-6	\$119.51
1-1/2"	3/4"	3-1/2"	MO-CC1500-60-6	MO-CC1500-82-6	MO-CC1500-90-6	MO-CC1500-100-6	MO-CC1500-120-6	\$154.84

Call Us Today For All Of Your Machine Tool Needs!

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

YG COMBO TAPS

Fractional, Machine Screw & Metric Sizes

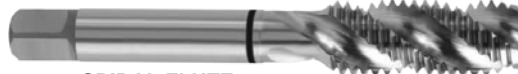
- TiCN Coated
- Reduces tap breakage, ensures accurate thread depth
- Eliminates loose threads due to tap overfeeding
- Improves thread quality & chip evacuation
- Allows tapping of many metals including stainless steel & steels
- Eliminates "bird nests" around tap shank

One Tap Does It All!

- Steel
- Stainless Steel
- Cast Iron
- Copper
- Aluminum



SPIRAL POINT



SPIRAL FLUTE



LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Size	OAL	Shank	Thrd Limits	TiCN COATED		Price Each
				SPIRAL FLUTE	SPIRAL POINT	

FRACTIONAL SIZES						
1/4-20	2.50	.255	H3	YG-TC1/4-20SFH3	YG-TC1/4-20SPH3	\$11.45
1/4-20	2.50	.255	H5	YG-TC1/4-20SFH5	YG-TC1/4-20SPH5	\$12.77
1/4-28	2.50	.255	H3	YG-TC1/4-28SFH3	YG-TC1/4-28SPH3	\$11.45
1/4-28	2.50	.255	H4	YG-TC1/4-28SFH4	YG-TC1/4-28SPH4	\$11.45
5/16-18	2.72	.318	H3	YG-TC5/16-18SF3	YG-TC5/16-18SP3	\$13.07
5/16-18	2.72	.318	H5	YG-TC5/16-18SF5	YG-TC5/16-18SP5	\$13.07
5/16-24	2.72	.318	H3	YG-TC5/16-24SF3	YG-TC5/16-24SP3	\$13.07
5/16-24	2.72	.318	H5	YG-TC5/16-24SF5	YG-TC5/16-24SP5	\$13.07
3/8-16	2.94	.381	H3	YG-TC3/8-16SFH3	YG-TC3/8-16SPH3	\$14.40
3/8-16	2.94	.381	H5	YG-TC3/8-16SFH5	YG-TC3/8-16SPH5	\$14.40
3/8-24	2.94	.381	H3	YG-TC3/8-24SFH3	YG-TC3/8-24SPH3	\$14.40
3/8-24	2.94	.381	H4	YG-TC3/8-24SFH4	YG-TC3/8-24SPH4	\$14.40
7/16-14	3.16	.323	H3	YG-TC7/16-14SF3	YG-TC7/16-14SP3	\$19.02
7/16-14	3.16	.323	H5	YG-TC7/16-14SF5	YG-TC7/16-14SP5	\$19.02
7/16-20	3.16	.323	H3	YG-TC7/16-20SF3	YG-TC7/16-20SP3	\$19.02
7/16-20	3.16	.323	H5	YG-TC7/16-20SF5	YG-TC7/16-20SP5	\$19.02
1/2-13	3.38	.367	H5	YG-TC1/2-13SFC	YG-TC1/2-13SPC	\$22.31
1/2-20	3.38	.367	H5	YG-TC1/2-20SFC	YG-TC1/2-20SPC	\$22.31
9/16-12	3.59	.429	H5	YG-TC9/16-12SFC	YG-TC9/16-12SPC	\$32.61
9/16-18	3.59	.429	H5	YG-TC9/16-18SFC	YG-TC9/16-18SPC	\$32.61
5/8-11	3.81	.480	H5	YG-TC5/8-11SFC	YG-TC5/8-11SPC	\$37.78
5/8-18	3.81	.480	H5	YG-TC5/8-18SFC	YG-TC5/8-18SPC	\$37.78
3/4-10	4.25	.590	H5	YG-TC3/4-10SFC	YG-TC3/4-10SPC	\$55.23
3/4-16	4.25	.590	H5	YG-TC3/4-16SFC	YG-TC3/4-16SPC	\$55.23
7/8-14	4.69	.697	H5	YG-TC7/8-14SFC	YG-TC7/8-14SPC	\$71.00
7/8-9	4.69	.697	H5	YG-TC7/8-9SFC	YG-TC7/8-9SPC	\$71.00
1-8	5.13	.800	H5	YG-TC1-8SFC	YG-TC1-8SPC	\$95.89
1-12	5.13	.800	H5	YG-TC1-12SFC	YG-TC1-12SPC	\$95.89

MACHINE SCREW SIZES						
4-40	1.88	.141	H2	YG-TC4-40SFC	YG-TC4-40SPC	\$12.04
4-48	1.88	.141	H2	YG-TC4-48SFC	YG-TC4-48SPC	\$12.04
5-40	1.94	.141	H2	YG-TC5-40SFC	YG-TC5-40SPC	\$12.04
5-44	1.94	.141	H2	YG-TC5-44SFC	YG-TC5-44SPC	\$12.04
6-32	2.00	.141	H3	YG-TC6-32SFC	YG-TC6-32SPC	\$10.38
6-40	2.00	.141	H2	YG-TC6-40SFC	YG-TC6-40SPC	\$10.38
8-32	2.13	.168	H3	YG-TC8-32SFC	YG-TC8-32SPC	\$10.38
8-36	2.13	.168	H2	YG-TC8-36SFC	YG-TC8-36SPC	\$10.38
10-24	2.38	.194	H3	YG-TC10-24SFC	YG-TC10-24SPC	\$10.57
10-32	2.38	.194	H3	YG-TC10-32SFC	YG-TC10-32SPC	\$10.57
12-24	2.38	.220	H3	YG-TC12-24SFC	YG-TC12-24SPC	\$10.57
12-28	2.38	.220	H3	YG-TC12-28SFC	YG-TC12-28SPC	\$10.57

Size	OAL	Shank	Thrd Limits	TiCN COATED		Price Each
				SPIRAL FLUTE	SPIRAL POINT	

METRIC SIZES						
M3 X 0.5	1.94	.141	D3	YG-TCM3X0.5SFC	YG-TCM3X0.5SPC	\$12.89
M3.5 X 0.6	2.00	.141	D4	YG-TCM3.50.6SFC	YG-TCM3.50.6SPC	\$11.15
M4 X 0.7	2.13	.168	D4	YG-TCM4X0.7SFC	YG-TCM4X0.7SPC	\$11.15
M5 X 0.8	2.38	.194	D4	YG-TCM5X0.8SFC	YG-TCM5X0.8SPC	\$11.34
M6 X 1.0	2.50	.255	D5	YG-TCM6X1.0SFC	YG-TCM6X1.0SPC	\$12.23
M7 X 1.0	2.72	.318	D5	YG-TCM7X1.0SFC	YG-TCM7X1.0SPC	\$13.89
M8 X 1.0	2.72	.318	D5	YG-TCM8X1.0SFC	YG-TCM8X1.0SPC	\$13.89
M8 X 1.25	2.72	.318	D5	YG-TCM8X1.25SFC	YG-TCM8X1.25SPC	\$13.89
M10 X 1.25	2.94	.381	D5	YG-TCM101.25SFC	YG-TCM101.25SPC	\$15.14
M10 X 1.5	2.94	.381	D6	YG-TCM10X1.5SFC	YG-TCM10X1.5SPC	\$15.14
M12 X 1.25	3.38	.367	D5	YG-TCM121.25SFC	YG-TCM121.25SPC	\$23.45
M12 X 1.75	3.38	.367	D6	YG-TCM121.75SFC	YG-TCM121.75SPC	\$23.45
M14 X 1.5	3.59	.429	D6	YG-TCM14X1.5SFC	YG-TCM14X1.5SPC	\$39.62
M14 X 2.0	3.59	.429	D7	YG-TCM14X2.0SFC	YG-TCM14X2.0SPC	\$39.62
M16 X 1.5	3.84	.480	D6	YG-TCM16X1.5SFC	YG-TCM16X1.5SPC	\$41.25
M16 X 2.0	3.81	.480	D7	YG-TCM16X2.0SFC	YG-TCM16X2.0SPC	\$41.25
M18 X 1.5	4.03	.542	D6	YG-TCM18X1.5SFC	YG-TCM18X1.5SPC	\$57.52
M18 X 2.5	4.03	.542	D7	YG-TCM18X2.5SFC	YG-TCM18X2.5SPC	\$57.52
M20 X 1.5	4.47	.652	D6	-	YG-TCM20X1.5SPC	\$61.79
M20 X 2.5	4.47	.652	D7	-	YG-TCM20X2.5SPC	\$61.79
M22 X 1.5	4.69	.697	D6	-	YG-TCM22X1.5SPC	\$78.85
M22 X 2.5	4.69	.697	D7	-	YG-TCM22X2.5SPC	\$78.85
M24 X 3.0	4.91	.760	D8	-	YG-TCM24X3.0SPC	\$105.44

TAP ADAPTERS/TAP COLLETS

- Interchangeable with industry standard tapping systems.
- Quick change feature saves you time
- **Torque Controlled** tap adapters are ideal for blind hole tapping to protect your taps and workpieces from tap breakage.
- **Positive Drive** adapters are best suited for through hole tapping applications.
- Quantity discounts!



See Page 228 For Our Complete Selection!



Call Us Or Visit Our Website For Our Complete Selection!

HIGH PERFORMANCE TAPS

SOWA HIGH PERFORMANCE TAPS



Sowa High Performance Taps help you take the guesswork out of tap selection. Taps are color-coded to ensure the proper selection for your application.

Blue Ring: For general ductile materials including aluminum, low and medium carbon steels, brass, copper and cast iron

Yellow Ring: For tough materials including stainless steel, medium grade and alloyed high carbon steel, aluminum and titanium

Orange Ring: Superior geometry and design for Stainless Steels

Red Ring: Powdered metal ideal for nickel alloys, tool steels, stainless steels and titanium



HSSE-V3 TAPS SPIRAL POINT & SPIRAL FLUTE Machine Screw and Fractional Sizes Blue Ring

Designed for high-speed tapping applications. Developed to withstand the high stress and high heat associated with high-speed CNC production tapping. Features a unique free-cutting design with a special tempering and geometry for long tool life.

Applications and Features:

- Used in general machine tapping applications for mild carbon steels such as 1018, 1010, 1035, 1045, 1050 and 1065
- Up to 25 HRC
- Metric Sizes Also Available



Spiral Point



Spiral Flute

Cutting Conditions

Materials Group	Sub-Group	Condition	Hardness (HRC)	Cutting Speed (FPM)
Low carbon	1018, 1010, 1035	Normalized	<25	20-50
Medium carbon	1045, 1050, 1065	Normalized	<25	20-40
Aluminum	Unalloyed, cast	-	-	30-80
Brass/	-	-	-	30-80
Copper	-	-	-	25-60
Cast iron	-	As cast	<15	20-40

Tap	TPI	Thread Limits	OAL	Thread Len.	SPIRAL POINT			SPIRAL FLUTE		
					No. of Flutes	Part Number	Price Each	No. Of Flutes	Part Number	Price Each
NC										
4	40	H2	1-7/8	.433	2	SOWA-119-700	\$9.84	2	SOWA-119-800	\$11.60
6	32	H3	2	.512	3	SOWA-119-701	\$8.00	3	SOWA-119-801	\$11.60
8	32	H3	2-1/8	.512	3	SOWA-119-702	\$8.32	3	SOWA-119-802	\$11.52
10	24	H3	2-3/8	.512	2	SOWA-119-703	\$8.32	-	-	-
10	24	H3	2-3/8	.512	3	SOWA-119-704	\$8.32	3	SOWA-119-803	\$11.52
12	24	H3	2-3/8	.512	3	SOWA-119-705	\$9.28	-	-	-
1/4	20	H3	2-1/2	.630	2	SOWA-119-706	\$9.28	-	-	-
1/4	20	H3	2-1/2	.630	3	SOWA-119-707	\$9.28	3	SOWA-119-804	\$12.32
5/16	18	H3	2-23/32	.748	2	SOWA-119-708	\$11.12	-	-	-
5/16	18	H3	2-23/32	.748	3	SOWA-119-709	\$11.12	3	SOWA-119-805	\$16.16
3/8	16	H3	2-15/16	.748	2	SOWA-119-710	\$12.80	-	-	-
3/8	16	H3	2-15/16	.748	3	SOWA-119-711	\$12.80	3	SOWA-119-806	\$17.76
7/16	14	H3	3-5/32	.866	3	SOWA-119-712	\$16.80	3	SOWA-119-807	\$26.56
1/2	13	H3	3-3/8	.945	3	SOWA-119-713	\$18.56	3	SOWA-119-808	\$30.40
5/8	11	H3	3-13/16	1.102	3	SOWA-119-714	\$29.04	4	SOWA-119-809	\$46.00
3/4	10	H3	4-1/4	1.220	3	SOWA-119-715	\$48.40	4	SOWA-119-810	\$65.04
7/8	9	H4	4-11/16	1.339	3	SOWA-119-716	\$64.40	4	SOWA-119-811	\$94.08
1	8	H4	5-1/8	1.496	3	SOWA-119-717	\$86.40	4	SOWA-119-812	\$125.20
1-1/8	7	H4	5-7/16	1.732	4	SOWA-119-718	\$122.32	4	SOWA-119-813	\$173.04
1-1/4	7	H4	5-3/4	1.732	4	SOWA-119-719	\$142.48	4	SOWA-119-814	\$185.68
1-3/8	6	H4	6-1/16	2.000	4	SOWA-119-720	\$187.28	4	SOWA-119-815	\$249.04
1-1/2	6	H4	6-3/8	2.000	4	SOWA-119-721	\$240.16	4	SOWA-119-816	\$312.72

NF

6	40	H2	2	.512	3	SOWA-119-722	\$8.00	-	-	-
10	32	H3	2-3/8	.512	2	SOWA-119-723	\$8.32	-	-	-
10	32	H3	2-3/8	.512	3	SOWA-119-724	\$8.32	3	SOWA-119-817	\$11.52
1/4	28	H3	2-1/2	.630	2	SOWA-119-725	\$9.28	-	-	-
1/4	28	H3	2-1/2	.630	3	SOWA-119-726	\$9.28	3	SOWA-119-818	\$12.32
5/16	24	H3	2-23/32	.748	2	SOWA-119-727	\$11.12	-	-	-
5/16	24	H3	2-23/32	.748	3	SOWA-119-728	\$11.12	3	SOWA-119-819	\$16.16
3/8	24	H3	2-15/16	.748	2	SOWA-119-729	\$12.80	-	-	-
3/8	24	H3	2-15/16	.748	3	SOWA-119-730	\$12.80	3	SOWA-119-820	\$17.76
7/16	20	H3	3-5/32	.866	3	SOWA-119-731	\$16.80	-	-	-
1/2	20	H3	3-3/8	.945	3	SOWA-119-732	\$18.56	3	SOWA-119-821	\$30.40
5/8	18	H3	3-13/16	1.102	3	SOWA-119-733	\$29.04	4	SOWA-119-822	\$46.00
3/4	16	H3	4-1/4	1.220	3	SOWA-119-734	\$48.40	4	SOWA-119-823	\$65.04
7/8	14	H4	4-11/16	1.339	3	SOWA-119-735	\$64.40	4	SOWA-119-824	\$94.08
1	12	H4	5-1/8	1.496	3	SOWA-119-736	\$86.40	4	SOWA-119-825	\$125.20
1-1/8	12	H4	5-7/16	1.732	4	SOWA-119-737	\$122.32	4	SOWA-119-826	\$173.04
1-1/4	12	H4	5-3/4	1.732	4	SOWA-119-738	\$142.48	4	SOWA-119-827	\$185.68
1-3/8	12	H4	6-1/16	2.000	4	SOWA-119-739	\$187.28	4	SOWA-119-828	\$249.04
1-1/2	12	H4	6-3/8	2.000	4	SOWA-119-740	\$240.16	4	SOWA-119-829	\$312.72

Call Us Today For All Of Your Machine Tool Needs!

HSSE-V3 3% Vanadium Machine Screw and Fractional Sizes Yellow Ring-Hardened Tool Steels Orange Ring-Stainless Steels



Designed for high-speed tapping applications. Developed to withstand the high stress and high heat associated with high-speed CNC production tapping. Features a unique free-cutting design with a special tempering and geometry which contributes to extra tool life.

Applications and Features:

- Yellow Ring:**
- Superior performance in hardened tool steels such as 4140, 4340, H13 & D2
 - Up to 35 HRC
 - Metric Sizes Also Available

- Orange Ring:**
- For **STAINLESS STEELS**
 - Up to 35 HRC

YELLOW RING						SPIRAL POINT				SPIRAL FLUTE	
Tap	TPI	No. Of Flutes	Thread Limits	OAL	Thread Len.	Part Number	Price Each	No. Of Flutes	Thread Len.	Part Number	Price Each

NC											
2	56	2	H2	1-3/4	.433	SOWA-122-550	\$9.28	2	.433	SOWA-122-500	\$13.84
3	48	2	H2	1-13/16	.512	SOWA-122-552	\$9.28	2	.512	SOWA-122-502	\$13.84
4	40	2	H2	1-7/8	.433	SOWA-123-296	\$9.28	2	.250	SOWA-123-362	\$11.60
4	40	2	*H3	1-7/8	.433	SOWA-122-554*	\$9.28	2	.250	SOWA-122-506*	\$11.60
6	32	3	H3	2	.512	SOWA-123-300	\$8.32	3	.313	SOWA-123-366	\$11.60
8	32	3	H3	2-1/8	.512	SOWA-123-302	\$8.80	3	.313	SOWA-123-368	\$11.60
10	24	3	H3	2-3/8	.512	SOWA-123-304	\$9.04	3	.417	SOWA-123-370	\$11.60
12	24	3	H3	2-3/8	.512	SOWA-123-306	\$9.76	-	-	-	-
1/4	20	3	H3	2-1/2	.630	SOWA-123-308	\$10.24	3	.500	SOWA-123-372	\$12.32
5/16	18	3	H3	2-23/32	.748	SOWA-123-310	\$12.48	3	.556	SOWA-123-374	\$14.80
3/8	16	3	H3	2-15/16	.748	SOWA-123-312	\$15.04	3	.625	SOWA-123-376	\$17.76
7/16	14	3	H3	3-5/32	.866	SOWA-123-314	\$19.68	3	.714	SOWA-123-378	\$26.56
1/2	13	3	H3	3-3/8	.945	SOWA-123-316	\$21.84	3	.769	SOWA-123-380	\$30.40
5/8	11	3	H3	3-13/16	1.102	SOWA-123-318	\$34.40	4	.909	SOWA-123-452	\$46.00
3/4	10	3	H3	4-1/4	1.220	SOWA-123-320	\$57.68	4	1.000	SOWA-123-454	\$62.96
7/8	9	3	H4	4-11/16	1.339	SOWA-123-321	\$80.40	4	1.111	SOWA-123-466	\$89.60
1	8	4	H4	5-1/8	1.496	SOWA-123-323	\$108.00	4	1.250	SOWA-123-469	\$121.04
1-1/8	7	4	H4	5-7/16	1.732	SOWA-123-364	\$152.96	4	1.429	SOWA-123-471	\$173.04
1-1/4	7	4	H4	5-3/4	1.732	SOWA-123-367	\$178.08	4	1.429	SOWA-123-473	\$185.68
1-3/8	6	4	H4	6-1/16	2.000	SOWA-123-371	\$234.08	4	1.667	SOWA-123-475	\$249.04
1-1/2	6	4	H4	6-3/8	2.000	SOWA-123-363	\$300.16	4	1.667	SOWA-123-477	\$300.16

NF											
6	40	3	H3	2	.512	SOWA-123-334	\$8.32	-	-	-	-
10	32	3	H3	2-3/8	.512	SOWA-123-338	\$9.04	3	.417	SOWA-123-382	\$11.60
1/4	28	3	H3	2-1/2	.630	SOWA-123-342	\$10.24	3	.500	SOWA-123-384	\$12.32
5/16	24	3	H3	2-23/32	.748	SOWA-123-344	\$12.48	3	.556	SOWA-123-386	\$14.80
3/8	24	3	H3	2-15/16	.748	SOWA-123-346	\$15.12	3	.625	SOWA-123-388	\$17.76
7/16	20	3	H3	3-5/32	.866	SOWA-123-348	\$19.68	-	-	-	-
1/2	20	3	H3	3-3/8	.945	SOWA-123-350	\$21.84	3	.769	SOWA-123-392	\$30.40
5/8	18	3	H3	3-13/16	1.102	SOWA-123-352	\$34.40	4	.909	SOWA-123-462	\$46.00
3/4	16	3	H3	4-1/4	1.220	SOWA-123-353	\$57.68	4	1.000	SOWA-123-464	\$62.96
7/8	14	3	H4	4-11/16	1.339	SOWA-123-359	\$80.40	4	1.111	SOWA-123-468	\$89.60
1	12	4	H4	5-1/8	1.496	SOWA-123-361	\$108.00	4	1.250	SOWA-123-470	\$121.04
1	14	4	H4	5-1/8	1.496	SOWA-123-360	\$109.54	4	1.250	SOWA-123-465	\$125.20
1-1/8	12	4	H4	5-7/16	1.732	SOWA-123-365	\$152.96	4	1.429	SOWA-123-472	\$173.04
1-1/4	12	4	H4	5-3/4	1.732	SOWA-123-369	\$178.08	4	1.429	SOWA-123-474	\$185.68
1-3/8	12	4	H4	6-1/16	2.000	SOWA-123-373	\$234.08	4	1.667	SOWA-123-476	\$249.04
1-1/2	12	4	H4	6-3/8	2.000	SOWA-123-375	\$300.16	4	1.667	SOWA-123-478	\$300.16

ORANGE RING						SPIRAL POINT				SPIRAL FLUTE	
Tap	TPI	No. Of Flutes	Thread Limits	OAL	Thread Len.	Part Number	Price Each	No. Of Flutes	Thread Len.	Part Number	Price Each

NC											
4	40	2	H2	1-7/8	.433	SOWA-124-930	\$9.28	2	.250	SOWA-124-965	\$14.28
6	32	3	H3	2	.512	SOWA-124-931	\$8.32	3	.313	SOWA-124-966	\$12.94
8	32	3	H3	2-1/8	.512	SOWA-124-932	\$8.80	3	.313	SOWA-124-967	\$12.94
10	24	3	H3	2-3/8	.512	SOWA-124-933	\$9.04	3	.417	SOWA-124-968	\$12.94
1/4	20	3	H3	2-1/2	.630	SOWA-124-934	\$10.24	3	.500	SOWA-124-969	\$13.69
5/16	18	3	H3	2-23/32	.748	SOWA-124-935	\$12.48	3	.556	SOWA-124-970	\$16.46
3/8	16	3	H3	2-15/16	.748	SOWA-124-936	\$15.12	3	.625	SOWA-124-971	\$21.84
7/16	14	3	H3	3-5/32	.866	SOWA-124-937	\$19.68	3	.714	SOWA-124-972	\$29.57
1/2	13	3	H3	3-3/8	.945	SOWA-124-938	\$21.84	3	.769	SOWA-124-973	\$37.38
5/8	11	3	H3	3-13/16	1.102	SOWA-124-939	\$34.40	4	.909	SOWA-124-975	\$51.32
3/4	10	3	H3	4-1/4	1.220	SOWA-124-940	\$57.68	4	1.000	SOWA-124-976	\$72.58
7/8	9	3	H4	4-11/16	1.339	SOWA-124-941	\$80.40	4	1.111	SOWA-124-977	\$105.00
1	8	3	H4	5-1/8	1.496	SOWA-124-942	\$108.00	4	1.250	SOWA-124-978	\$139.19

NF											
10	32	3	H3	2-3/8	.512	SOWA-124-945	\$9.04	3	.417	SOWA-124-979	\$12.94
1/4	28	3	H3	2-1/2	.630	SOWA-124-946	\$10.24	3	.500	SOWA-124-980	\$13.69
5/16	24	3	H3	2-23/32	.748	SOWA-124-947	\$12.48	3	.556	SOWA-124-981	\$18.14
3/8	24	3	H3	2-15/16	.748	SOWA-124-948	\$15.12	3	.625	SOWA-124-982	\$21.84
7/16	20	3	H3	3-5/32	.866	SOWA-124-949	\$19.68	-	-	-	-
1/2	20	3	H3	3-3/8	.945	SOWA-124-950	\$24.88	3	.769	SOWA-124-983	\$37.38
5/8	18	3	H3	3-13/16	1.102	SOWA-124-951	\$34.40	4	1.909	SOWA-124-984	\$51.32
3/4	16	3	H3	4-1/4	1.220	SOWA-124-952	\$57.68	4	1.000	SOWA-124-985	\$72.58
7/8	14	3	H4	4-11/16	1.339	SOWA-124-953	\$80.40	4	1.111	SOWA-124-986	\$105.00
1	12	3	H4	5-1/8	1.496	SOWA-124-954	\$108.00	4	1.250	SOWA-124-987	\$139.19



Spiral Point



Spiral Flute



Straight Shank Tap Holders

Are On Page 230



Bilz™ Style Tap Adapters

Are On Page 228

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

HIGH PERFORMANCE TAPS

P-HSS POWDERED METAL TAPS

Machine Screw & Fractional Sizes
Red Ring



Full Line Available!
Please call for more information.

Applications and Features:

Red Ring:

- Ideal for heat resistant materials, high strength **stainless steel** and **titanium alloys** as well as other high tensile steels and alloys including tool steel and nickel alloys
- Up to 48 HRC



Spiral Point



Spiral Flute

Tap	TPI	No. Of Flutes	Thread Limits	OAL	Thread Len.	SPIRAL POINT				SPIRAL FLUTE	
						Part Number	Price Each	No. Of Flutes	Thread Len.	Part Number	Price Each
NC											
4	40	2	H2	1-7/8	.433	SOWA-124-100	\$19.44	2	.250	SOWA-124-250	\$19.76
5	40	3	H2	1-15/16	.433	SOWA-124-105	\$17.04	-	-	-	-
6	32	3	H3	2	.512	SOWA-124-110	\$16.00	3	.313	SOWA-124-255	\$18.00
8	32	3	H3	2-1/8	.512	SOWA-124-115	\$16.00	3	.313	SOWA-124-260	\$17.76
10	24	3	H3	2-3/8	.512	SOWA-124-120	\$17.04	3	.417	SOWA-124-265	\$17.76
1/4	20	3	H3	2-1/2	.630	SOWA-124-130	\$18.48	3	.500	SOWA-124-275	\$19.76
5/16	18	3	H3	2-23/32	.748	SOWA-124-140	\$21.84	3	.556	SOWA-124-285	\$21.84
3/8	16	3	H3	2-15/16	.748	SOWA-124-150	\$29.12	3	.625	SOWA-124-295	\$29.12
7/16	14	3	H3	3-5/32	.866	SOWA-124-160	\$34.40	3	.714	SOWA-124-305	\$35.04
1/2	13	3	H3	3-3/8	.945	SOWA-124-170	\$40.32	3	.769	SOWA-124-315	\$40.32
5/8	11	3	H3	3-13/16	1.102	SOWA-124-180	\$82.32	4	.909	SOWA-124-325	\$87.12
3/4	10	4	H3	4-1/4	1.220	SOWA-124-190	\$130.72	4	1.000	SOWA-124-335	\$130.72
NF											
10	32	3	H3	2-3/8	.512	SOWA-124-125	\$17.04	3	.417	SOWA-124-270	\$17.76
1/4	28	3	H3	2-1/2	.630	SOWA-124-135	\$18.48	3	.500	SOWA-124-280	\$19.76
5/16	24	3	H3	2-23/32	.748	SOWA-124-145	\$21.84	3	.556	SOWA-124-290	\$21.84
3/8	24	3	H3	2-15/16	.748	SOWA-124-155	\$29.12	3	.625	SOWA-124-300	\$29.12
7/16	20	3	H3	3-5/32	.866	SOWA-124-165	\$34.40	3	.714	SOWA-124-310	\$35.04
1/2	20	3	H3	3-3/8	.945	SOWA-124-175	\$40.32	3	.769	SOWA-124-320	\$40.32
5/8	18	3	H3	3-13/16	1.102	SOWA-124-185	\$82.32	4	.909	SOWA-124-330	\$87.12
3/4	16	4	H3	4-1/4	1.220	SOWA-124-195	\$130.72	4	1.000	SOWA-124-340	\$130.72

SPIRAL FLUTE TAPS

For Aluminum



- Recommended for all types of aluminum alloys
- Premium powder metal high speed steel
- Bright finish
- Designed for tapping blind holes-spiral flutes draw the chips out of the hole



Tap	TPI	No. Of Flutes	Thread Limits	OAL	Thread Length	Part Number	Price Each
NC							
4	40	2	H2	1-7/8	.250	SOWA-124-400	\$13.92
6	32	2	H3	2	.313	SOWA-124-405	\$11.20
8	32	2	H3	2-1/8	.313	SOWA-124-415	\$11.20
10	24	2	H3	2-3/8	.417	SOWA-124-420	\$11.36
1/4	20	2	H3	2-1/2	.500	SOWA-124-430	\$12.56
5/16	18	2	H3	2-23/32	.556	SOWA-124-445	\$15.12
3/8	16	2	H3	2-15/16	.625	SOWA-124-465	\$17.68
NF							
10	32	2	H3	2-3/8	.417	SOWA-124-425	\$11.36
1/4	28	2	H3	2-1/2	.500	SOWA-124-440	\$12.56
5/16	24	2	H3	2-23/32	.556	SOWA-124-455	\$15.12
3/8	24	2	H3	2-15/16	.625	SOWA-124-475	\$17.68

HSSE-V3 S.T.I. TAPS

Screw Thread Insert 45° Spiral Flute Taps



STI taps combine special geometry & surface finish for tapping in Aluminum and other non-ferrous materials for screw thread insert applications.



Tap	TPI	No. Of Flutes	OAL	Thread Length	Part Number	Price Each
NC						
4	40	2	1-7/8	.250	SOWA-124-050	\$11.28
6	32	2	2	.313	SOWA-124-052	\$12.80
8	32	2	2-1/8	.313	SOWA-124-054	\$12.80
10	24	2	2-3/8	.417	SOWA-124-056	\$12.80
1/4	20	2	2-1/2	.500	SOWA-124-060	\$15.84
5/16	18	2	2-23/32	.556	SOWA-124-064	\$18.00
3/8	16	2	2-15/16	.625	SOWA-124-068	\$23.76
NF						
10	32	2	2-3/8	.417	SOWA-124-058	\$12.80
1/4	28	2	2-1/2	.500	SOWA-124-062	\$15.84
5/16	24	2	2-23/32	.556	SOWA-124-066	\$18.00
3/8	24	2	2-15/16	.625	SOWA-124-070	\$23.76

Call Us Today For All Of Your Machine Tool Needs!

HSSE-V3 METRIC TAPS

Spiral Point & Spiral Flute Blue Ring

Designed for high-speed tapping applications. Developed to withstand the high stress and high heat associated with high-speed CNC production tapping. Features a unique free-cutting design with a special tempering and geometry which contributes to extra tool life.

Applications and Features:

- Used in general machine tapping applications for mild carbon steels such as 1018, 1010, 1035, 1045, 1050 and 1065
- Up to 25 HRC



Spiral Point



Spiral Flute



Nominal Size & Pitch	No. of Flutes	Thread Limits	OAL	Thread Length	SPIRAL POINT		SPIRAL FLUTE	
					Part Number	Price Each	Part Number	Price Each
M2 X .4	2	D3	1-3/4	.433	SOWA-119-750	\$23.36	-	-
M2.5 X .45	2	D3	1-13/16	.512	SOWA-119-751	\$11.76	-	-
M3 X .5	3	D3	1-15/16	.433	SOWA-119-752	\$9.94	SOWA-119-840	\$16.56
M3.5 X .6	3	D4	2	.512	SOWA-119-753	\$8.00	SOWA-119-841	\$16.56
M4 X .7	3	D4	2-1/8	.512	SOWA-119-754	\$8.32	SOWA-119-842	\$16.56
M4.5 X .75	3	D4	2-3/8	.512	SOWA-119-755	\$8.32	-	-
M5 X .8	3	D4	2-3/8	.512	SOWA-119-756	\$9.12	SOWA-119-843	\$16.56
M6 X 1	3	D5	2-1/2	.630	SOWA-119-757	\$9.28	SOWA-119-844	\$16.56
M7 X 1	3	D5	2-23/32	.630	SOWA-119-758	\$11.68	SOWA-119-845	\$20.48
M8 X 1	3	D5	2-23/32	.748	SOWA-119-759	\$11.68	SOWA-119-846	\$20.48
M8 X 1.25	3	D5	2-23/32	.748	SOWA-119-760	\$11.68	SOWA-119-847	\$20.48
M10 X 1.25	3	D5	2-15/16	.748	SOWA-119-761	\$16.96	SOWA-119-848	\$30.48
M10 X 1.5	3	D6	2-15/16	.748	SOWA-119-762	\$16.96	SOWA-119-849	\$30.48
M12 X 1.25	3	D5	3-3/8	.945	SOWA-119-763	\$21.12	SOWA-119-850	\$33.36
M12 X 1.75	3	D6	3-3/8	.945	SOWA-119-764	\$21.12	-	-
M14 X 1.5	3	D6	3-19/32	.984	SOWA-119-765	\$32.00	SOWA-119-852	\$45.36
M14 X 2	3	D7	3-19/32	.984	SOWA-119-766	\$32.00	SOWA-119-853	\$45.36
M16 X 1.5	3	D6	3-13/16	1.102	SOWA-119-767	\$37.12	SOWA-119-854	\$53.36
M16 X 2	3	D7	3-13/16	1.102	SOWA-119-768	\$37.12	SOWA-119-855	\$53.36
M18 X 1.5	3	D6	4-1/32	1.102	SOWA-119-769	\$48.40	SOWA-119-856	\$78.20
M18 X 2.5	3	D7	4-1/32	1.102	SOWA-119-770	\$48.40	SOWA-119-857	\$78.20
M20 X 1.5	3	D5	4-15/32	1.220	SOWA-119-771	\$59.28	SOWA-119-858	\$108.61
M20 X 2.5	3	D6	4-15/32	1.220	SOWA-119-772	\$59.28	SOWA-119-859	\$108.61

HSSE-V3 3% Vanadium

Metric Taps Orange Ring

Designed for high-speed tapping applications. Developed to withstand the high stress and high heat associated with high-speed CNC production tapping. Features a unique free-cutting design with a special tempering and geometry which contributes to extra tool life.

Applications and Features:

- For STAINLESS STEELS
- Up to 35 HRC



Spiral Point



Spiral Flute



Nominal Size & Pitch	No. of Flutes	Thread Limits	OAL	Thread Length	SPIRAL POINT		SPIRAL FLUTE	
					Part Number	Price Each	Part Number	Price Each
M3 X .5	3	D3	1-15/16	.433	SOWA-124-955	\$8.24	SOWA-124-988	\$18.40
M4 X .7	3	D4	2-1/8	.512	SOWA-124-956	\$8.80	SOWA-124-989	\$18.40
M5 X .8	3	D4	2-3/8	.512	SOWA-124-957	\$10.32	SOWA-124-990	\$18.40
M6 X 1	3	D5	2-1/2	.630	SOWA-124-958	\$10.32	SOWA-124-991	\$18.40
M8 X 1.25	3	D5	2-23/32	.748	SOWA-124-959	\$12.96	SOWA-124-992	\$22.56
M10 X 1.25	3	D5	2-15/16	.748	SOWA-124-960	\$18.64	SOWA-124-993	\$33.60
M10 X 1.5	3	D6	2-15/16	.748	SOWA-124-961	\$18.64	SOWA-124-994	\$33.60
M12 X 1.75	3	D6	3-3/8	.945	SOWA-124-962	\$23.28	SOWA-124-995	\$36.80
M14 X 2	3	D6	3-19/32	.984	SOWA-124-897	\$35.28	SOWA-124-996	\$49.90
M16 X 2	3	D7	3-13/16	1.102	SOWA-124-899	\$40.88	SOWA-124-997	\$58.72
M18 X 2.5	3	D7	4-1/32	1.102	SOWA-124-901	\$58.46	SOWA-124-998	\$122.72
M20 X 2.5	3	D6	4-1/4	1.220	SOWA-124-903	\$69.04	SOWA-124-999	\$119.53
M22 X 2.5	3	D6	4-11/16	1.339	SOWA-124-905	\$81.56	SOWA-124-943	\$129.11
M24 X 3	3	D7	4-29/32	1.339	SOWA-124-907	\$109.54	SOWA-124-944	\$152.80

Full Line Available!
Please call for more information.

PERFORMANCE TAPS

For Steels & Stainless Steels



- Ideal for steels, stainless steels and materials up to 28RC
- Black steam oxide to help coolant retention
- 2% vanadium plus 5% cobalt for superior wear resistance and increased heat resistance
- 60° Unified National (UN) thread form
- Available in fractional and machine screw sizes

Nominal Size & Pitch	No. of Flutes	Thread Limits	Thread Length	OAL	SPIRAL POINT		SPIRAL FLUTE	
					Part Number	Price Each	Part Number	Price Each
M3 X .5	3	D3	0.374	1-15/16	BI-5785-0035	\$9.37	-	-
M4 X .7	3	D4	0.453	2-1/8	BI-5785-0040	\$9.37	BI-5788-0040	\$15.20
M5 X .8	3	D4	0.531	2-3/8	BI-5785-0050	\$11.23	BI-5788-0050	\$15.20
M6 X 1	3	D5	0.591	2-1/2	BI-5785-0060	\$11.23	BI-5788-0060	\$15.20
M8 X 1	3	D5	0.669	2-23/32	BI-5785-0081	\$13.49	BI-5788-0081	\$20.22
M8 X 1.25	3	D5	0.669	2-23/32	BI-5785-0080	\$13.49	BI-5788-0080	\$20.22
M10 X 1.5	3	D6	0.748	2-15/16	BI-5785-0100	\$20.79	BI-5788-0100	\$30.38
M12 X 1.25	3	D5	0.984	3-3/8	BI-5785-0121	\$23.97	BI-5788-0121	\$33.76
M12 X 1.75	3	D6	0.984	3-3/8	BI-5785-0120	\$23.97	BI-5788-0120	\$33.76

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

HAND TAPS

HAND TAPS Fractional Sizes Standard HSS, Ground Thread



Hand taps are the most commonly used general purpose tap. They are recommended for tapping free machining steels, stainless steels, aluminum, zinc and ductile material. Hand taps are utilized in either through or blind hole tapping.

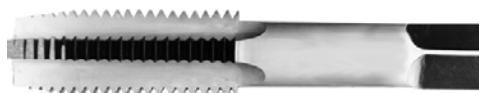
FEATURES:

- Ground thread
- Right hand
- HSS M2
- 1/4" thru 1-1/2" have 4 flutes
- 1-5/8" and larger have 6 flutes

Full Line Available!
Please call for more information.

Size	H Limit	OAL	TAPER Part Number	PLUG Part Number	BOTTOM Part Number	Price Each
1/4 - 20	H3	2-1/2	TMX-5750-0026	TMX-5750-0027	TMX-5750-0028	\$2.29
1/4 - 28	H3	2-1/2	TMX-5750-0042	TMX-5750-0043	TMX-5750-0044	\$2.29
5/16 - 18	H3	2-23/32	TMX-5750-0064	TMX-5750-0065	TMX-5750-0066	\$2.61
5/16 - 24	H3	2-23/32	TMX-5750-0080	TMX-5750-0081	TMX-5750-0082	\$2.61
3/8 - 16	H3	2-15/16	TMX-5750-0099	TMX-5750-0100	TMX-5750-0101	\$2.99
3/8 - 24	H3	2-15/16	TMX-5750-0121	TMX-5750-0122	TMX-5750-0123	\$3.06
7/16 - 14	H3	3-5/32	TMX-5750-0140	TMX-5750-0141	TMX-5750-0142	\$4.97
7/16 - 20	H3	3-5/32	TMX-5750-0156	TMX-5750-0157	TMX-5750-0158	\$4.97
1/2 - 13	H3	3-3/8	TMX-5750-0181	TMX-5750-0182	TMX-5750-0183	\$6.81
1/2 - 20	H3	3-3/8	TMX-5750-0203	TMX-5750-0204	TMX-5750-0205	\$6.81
9/16 - 12	H3	3-19/32	TMX-5750-0222	TMX-5750-0223	TMX-5750-0224	\$9.34
9/16 - 18	H3	3-19/32	TMX-5750-0238	TMX-5750-0239	TMX-5750-0240	\$9.34
5/8 - 11	H3	3-13/16	TMX-5750-0263	TMX-5750-0264	TMX-5750-0265	\$11.59
5/8 - 18	H3	3-13/16	TMX-5750-0292	TMX-5750-0293	TMX-5750-0294	\$11.59
3/4 - 10	H3	4-1/4	TMX-5750-0383	TMX-5750-0384	TMX-5750-0385	\$16.26
3/4 - 16	H3	4-1/4	TMX-5750-0405	TMX-5750-0406	TMX-5750-0407	\$16.26
7/8 - 9	H4	4-11/16	TMX-5750-0431	TMX-5750-0432	TMX-5750-0433	\$22.29
7/8 - 14	H4	4-11/16	TMX-5750-0471	TMX-5750-0472	TMX-5750-0473	\$22.29
1 - 8	H4	5-1/8	TMX-5750-0499	TMX-5750-0500	TMX-5750-0501	\$26.96
1 - 12	H4	5-1/8	TMX-5750-0539	TMX-5750-0540	TMX-5750-0541	\$28.22
1 - 14	H4	5-1/8	TMX-5750-0561	TMX-5750-0562	TMX-5750-0563	\$28.22
1-1/8 - 7	H4	5-7/16	TMX-5750-0642	TMX-5750-0643	TMX-5750-0644	\$54.86
1-1/8 - 8	H4	5-7/16	TMX-5750-0660	TMX-5750-0661	TMX-5750-0662	\$54.86
1-1/8 - 12	H4	5-7/16	TMX-5750-0699	TMX-5750-0700	TMX-5750-0701	\$54.86
1-1/4 - 7	H4	5-3/4	TMX-5750-0811	TMX-5750-0812	TMX-5750-0813	\$70.25
1-1/4 - 8	H4	5-3/4	TMX-5750-0832	TMX-5750-0833	TMX-5750-0834	\$70.25
1-1/4 - 12	H4	5-3/4	TMX-5750-0877	TMX-5750-0878	TMX-5750-0879	\$70.25
1-3/8 - 6	H4	6-1/16	TMX-5750-0943	TMX-5750-0944	TMX-5750-0945	\$84.84
1-3/8 - 8	H4	6-1/16	TMX-5750-0961	TMX-5750-0962	TMX-5750-0963	\$84.84
1-3/8 - 12	H4	6-1/16	TMX-5750-1000	TMX-5750-1001	TMX-5750-1002	\$84.84
1-1/2 - 6	H4	6-3/8	TMX-5750-1024	TMX-5750-1025	TMX-5750-1026	\$98.51
1-1/2 - 8	H4	6-3/8	TMX-5750-1045	TMX-5750-1046	TMX-5750-1047	\$98.51
1-1/2 - 12	H4	6-3/8	TMX-5750-1084	TMX-5750-1085	TMX-5750-1086	\$98.30
1-5/8 - 8	H4	6-11/16	TMX-5750-1129	TMX-5750-1130	TMX-5750-1131	\$131.54
1-5/8 - 12	H4	5	TMX-5750-1168	TMX-5750-1169	TMX-5750-1170	\$101.87

HAND TAPS Machine Screw Sizes Standard HSS, Ground Thread



Hand taps are the most commonly used general purpose tap. They are recommended for tapping free machining steels, stainless steels, aluminum, zinc and ductile material. Hand taps are utilized in either through or blind hole tapping.

FEATURES:

- Ground thread
- Right hand
- HSS M2
- 1/4" thru 1-1/2" have 4 flutes
- 1-5/8" and larger have 6 flutes

Full Line Available!
Please call for more information.

Size	H Limit	OAL	TAPER Part Number	PLUG Part Number	BOTTOM Part Number	Price Each
1 - 72	H2	1-11/16	TMX-5752-0080	TMX-5752-0081	TMX-5752-0082	\$5.94
2 - 56	H2	1-3/4	TMX-5752-0100	TMX-5752-0101	TMX-5752-0102	\$4.97
2 - 64	H2	1-3/4	TMX-5752-0118	TMX-5752-0119	-	\$4.97
3 - 48	H2	1-13/16	TMX-5752-0143	TMX-5752-0144	TMX-5752-0145	\$3.50
3 - 56	H2	1-13/16	TMX-5752-0161	TMX-5752-0162	TMX-5752-0163	\$3.50
4 - 40	H2	1-7/8	TMX-5752-0203	TMX-5752-0204	TMX-5752-0205	\$3.00
4 - 48	H2	1-7/8	TMX-5752-0221	TMX-5752-0222	TMX-5752-0223	\$3.00
5 - 40	H2	1-15/16	TMX-5752-0245	TMX-5752-0246	TMX-5752-0247	\$3.00
5 - 44	H2	1-15/16	TMX-5752-0263	TMX-5752-0264	TMX-5752-0265	\$3.00
6 - 32	H3	2	TMX-5752-0305	TMX-5752-0306	TMX-5752-0307	\$2.53
6 - 40	H2	2	TMX-5752-0323	TMX-5752-0324	TMX-5752-0325	\$2.53
8 - 32	H3	2-1/8	TMX-5752-0347	TMX-5752-0348	TMX-5752-0349	\$2.66
10 - 24	H3	2-3/8	TMX-5752-0407	TMX-5752-0408	TMX-5752-0409	\$2.66
10 - 32	H3	2-3/8	TMX-5752-0425	TMX-5752-0426	TMX-5752-0427	\$2.66
12 - 24	H3	2-3/8	TMX-5752-0449	TMX-5752-0450	TMX-5752-0451	\$2.89
12 - 28	H3	2-3/8	TMX-5752-0467	TMX-5752-0468	-	\$2.89

Call Us Today For All Of Your Machine Tool Needs!

SPIRAL POINTED HAND TAPS

C

SPIRAL POINT TAPS Fractional & Machine Screw Sizes Standard HSS, Ground Thread Plug Chamfer



- Right hand cut
- Ground thread
- Fractional & machine screw sizes
- HSS M2
- 1/4" and 5/16" have 2 flutes
- 3/8" thru 1" have 3 flutes

Fractional Sizes

Size	H Limit	OAL	Plug Part Number	Price Each
1/4-20	H3	2-1/2	TMX-5770-058	\$3.29
1/4-28	H3	2-1/2	TMX-5770-078	\$3.29
5/16-18	H3	2-23/32	TMX-5770-100	\$3.64
5/16-24	H3	2-23/32	TMX-5770-120	\$3.64
3/8-16	H3	2-5/16	TMX-5770-138	\$4.25
3/8-24	H3	2-5/16	TMX-5770-153	\$4.25
7/16-14	H3	3-5/32	TMX-5770-167	\$5.90
7/16-20	H3	3-5/32	TMX-5770-179	\$5.90
1/2-13	H3	3-3/8	TMX-5770-191	\$7.44
1/2-20	H3	3-3/8	TMX-5770-205	\$7.44
9/16-12	H3	3-19/32	TMX-5770-220	\$11.78
9/16-18	H5	3-19/32	TMX-5770-225	\$11.78
5/8-11	H3	3-13/16	TMX-5770-245	\$15.10
5/8-18	H3	3-13/16	TMX-5770-257	\$15.10
3/4-10	H3	4-1/4	TMX-5770-271	\$20.46
3/4-16	H3	4-1/4	TMX-5770-283	\$20.46
7/8-9	H4	4-11/16	TMX-5770-299	\$28.48
7/8-14	H6	4-11/16	TMX-5770-311	\$28.48
1-8	H4	5-1/8	TMX-5770-325	\$37.26
1-12	H4	5-1/8	TMX-5770-337	\$37.26
1-14	H4	5-1/8	TMX-5770-345	\$37.26

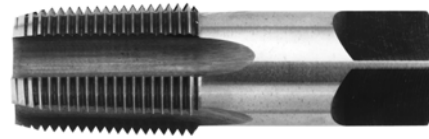
Machine Screw Sizes

Size	H Limit	OAL	Plug Part Number	Price Each
0-80	H2	1-5/8	TMX-5772-022	\$8.18
1-64	H2	1-11/16	TMX-5772-032	\$7.66
1-72	H2	1-11/16	TMX-5772-043	\$7.66
2-56	H2	1-3/4	TMX-5772-052	\$6.53
2-64	H2	1-3/4	TMX-5772-063	\$6.53
3-48	H2	1-3/16	TMX-5772-077	\$5.18
3-56	H2	1-3/16	TMX-5772-088	\$5.18
4-40	H2	1-7/8	TMX-5772-113	\$3.49
4-48	H2	7-7/8	TMX-5772-124	\$3.49
5-40	H2	1-15/16	TMX-5772-138	\$3.49
5-44	H2	1-15/16	TMX-5772-149	\$3.49
6-32	H3	2	TMX-5772-165	\$3.14
6-32	H13	2	TMX-5772-550	\$3.75
6-40	H2	2	TMX-5772-174	\$3.14
8-32	H3	2-1/8	TMX-5772-190	\$3.14
8-32	H13	2-1/8	TMX-5772-570	\$3.75
8-36	H2	2-1/8	TMX-5772-199	\$3.14
10-24	H3	2-3/8	TMX-5772-215	\$3.29
10-32	H3	2-3/8	TMX-5772-226	\$3.29
12-24	H3	2-3/8	TMX-5772-240	\$3.49
12-28	H3	2-3/8	TMX-5772-251	\$3.49

Full Line Available!
Please call for more information.

PIPE TAPS-STRAIGHT & TAPER Ground Thread-High Speed Steel

- HSS, Ground thread
- NPS Taps produce straight pipe threads for low pressure applications
- NPSF Dryseal Taps produce threads where a tight seal is achieved during assembly by metal-to-metal contact



Size	TPI	No. Of Flutes	OAL	Thread Length	TAPER				STRAIGHT			
					NPT Part Number	Price Each	NPTF Part Number	Price Each	NPS Part Number	Price Each	NPSF Part Number	Price Each
1/16	27	4	2-1/8	11/16	BI-5764-001	\$9.54	BI-5766-001	\$9.54	BI-5763-001	\$9.54	-	-
1/8(SM)*	27	4	2-1/8	3/4	BI-5764-0020	\$9.54	BI-5766-0020	\$9.54	BI-5763-0020	\$9.54	-	-
1/8(LG)*	27	4	2-1/8	3/4	BI-5764-002	\$9.54	BI-5766-002	\$9.54	BI-5763-002	\$9.54	BI-5765-002	\$9.54
1/4	18	4	2-7/16	1-1/16	BI-5764-003	\$12.34	BI-5766-003	\$12.34	BI-5763-003	\$12.34	BI-5765-003	\$12.34
3/8	18	4	2-9/16	1-1/16	BI-5764-004	\$14.48	BI-5766-004	\$14.48	BI-5763-004	\$14.48	BI-5765-004	\$14.48
1/2	14	4	3-1/8	1-3/8	BI-5764-005	\$23.86	BI-5766-005	\$25.19	BI-5763-005	\$23.86	BI-5765-005	\$25.19
3/4	14	5	3-1/4	1-3/8	BI-5764-006	\$35.69	BI-5766-006	\$35.69	BI-5763-006	\$35.69	BI-5765-006	\$35.69
1	11-1/2	5	3-3/4	1-3/4	BI-5764-007	\$74.53	BI-5766-007	\$74.53	BI-5763-007	\$74.53	-	-
1-1/4	11-1/2	5	4	1-3/4	BI-5764-008	\$113.33	BI-5766-008	\$119.30	BI-5763-008	\$113.33	-	-
1-1/2	11-1/2	7	4-1/4	1-3/4	BI-5764-009	\$149.48	BI-5766-009	\$157.13	BI-5763-009	\$149.48	-	-

*SM (small shank) = .3125 and LG (large shank) = .4375

COMBINATION TAP & DRILL High Speed Steel



- High Speed Steel, 2 Flute
- Combined drills and taps will do two operations at one time. Designed so that through-holes up to times the tap diameter can be drilled and tapped at high RPM
- Will work well in any material where HSS tools will perform
- Drill points will produce the proper size hole for tapping

Thread Size	Thread Length	H Limit	Size	Flute Length	OAL	Part Number	Price Each
4-40 NC	9/16	H2	.0890	1/4	1-7/8	TMX-5780-005	\$6.53
4-48 NF	9/16	H2	.0930	1/4	1-7/8	TMX-5780-010	\$6.53
8-32 NC	3/4	H3	.1360	3/8	2-1/8	TMX-5780-035	\$6.53
8-36 NF	3/4	H3	.1385	3/8	2-1/8	TMX-5780-040	\$6.53
10-24 NC	7/8	H3	.1520	13/32	2-3/8	TMX-5780-045	\$7.36
10-32 NF	7/8	H3	.1610	13/32	2-3/8	TMX-5780-050	\$7.36
1/4-20 NC	15/16	H3	.2010	17/32	2-1/2	TMX-5780-065	\$7.36
1/4-28 NF	15/16	H3	.2175	17/32	2-1/2	TMX-5780-070	\$7.36
5/16-18 NC	1-1/8	H3	.2570	11/16	3	TMX-5780-075	\$8.16
5/16-24 NF	1-1/8	H3	.2720	11/16	3	TMX-5780-080	\$8.16
3/8-16 NC	1-1/4	H3	.3125	13/16	3-1/2	TMX-5780-085	\$10.13
3/8-24 NF	1-1/4	H3	.3345	13/16	3-1/2	TMX-5780-090	\$10.13
7/16-14 NC	1-7/16	H3	.3680	1	3-7/8	TMX-5780-095	\$13.70
7/16-20 NF	1-7/16	H3	.3890	1	3-7/8	TMX-5780-100	\$13.70
1/2-13 NC	1-21/32	H3	.4250	1-1/8	4-1/4	TMX-5780-105	\$16.33
1/2-20 NF	1-21/32	H3	.4510	1-1/8	4-1/4	TMX-5780-110	\$16.33

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

405

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

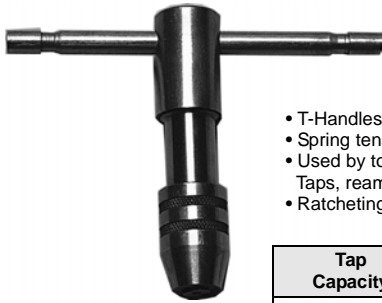
CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

TAP WRENCHES/TAP ACCESSORIES

T-HANDLE TAP WRENCHES



- T-Handles slide both ways for tightening
- Spring tension holds handle in desired position
- Used by toolmakers and mechanics for holding Taps, reamers and other small tools
- Ratcheting wrenches also available

Tap Capacity	Part Number	Price Each
1/16" to 5/32"	PEC-4300-210	\$6.99
5/32" to 1/4"	PEC-4300-220	\$7.59
1/4" to 1/2"	PEC-4300-230	\$7.99

T-HANDLE TAP WRENCHES Ratcheting Type



- Ratcheting type
- Made of tool steel, hardened and ground
- Used for holding taps and reamers

TAP CAPACITY				
Size	Square Shank	Body Length	Part Number	Price Each
1/16-3/16"	1/16-5/32"	2-1/8	A-3900-0241	\$12.99
7/32-7/16"	5/32-1/4"	2-5/8	A-3900-0245	\$16.99
1/4-1/2"	1/4-1/2"	3-1/2	A-3900-0248	\$17.49

PRECISION HAND TAPPER



- Precision ground work table and spindle for high accuracy
- 9 tap adapters included: #6, #8, #10, 1/4, 5/16, 3/8, 7/16, 1/2 & 5/8"
- Assures straight perpendicular tapped holes
- Rigid structure made of high grade tool steel
- Equipped with tap guide
- Working Area: 6-1/2" x 10"
- Clearance Height: 7"
- Depth of Throat: 7-1/2"
- Overall Height: 13"
- Weight: 37 lbs



Hand Tapper
Part # A-3900-0250
\$175.00

ADJUSTABLE TAP & REAMER WRENCHES



- Knurled steel handles
- Hardened and tempered jaws
- Can be used for taps or reamers
- Buy the set and save over 10% than if purchased separately

BUY THE SET & SAVE!

Size	For Taps	OAL	Part Number	Price Each
#0	0-5/16"	5"	A-3900-0209	\$4.99
#1-1/2	1/32-1/2"	8"	A-3900-0210	\$5.99
#3	3/16-3/4"	15"	A-3900-0211	\$16.99
#4	7/16-1"	19"	A-3900-0235	\$25.50
4 Piece Set			A-3900-0236	\$48.00

TAP WRENCH EXTENSIONS



- Precision tap extension
- Ideal for reaching taps into hard to reach areas

Tap Capacity	Shank	OAL	Part Number	Price Each
#0-12	3/8"	7"	A-3900-0218	\$10.99
#12-1/2"	1/2"	10-3/4"	A-3900-0219	\$12.99

TAP GUIDE



Spring-Loaded!



- Adjustable tension spring
- Reversible tension pin for male and female hole centering or tapping
- 1/2" diameter hardened shank knurled for easy handling
- 3/16" diameter hardened tension pin

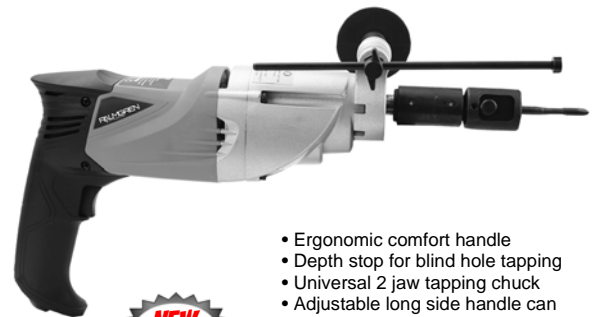
For Drill Presses & Mills

Tap Guide
Part # A-3900-0215
\$6.99

ELECTRIC HAND TAP



Palmgren's portable electric hand tapper makes it convenient, efficient and easy to tap a series of holes quickly. For general purpose tapping, making time consuming hand tapping obsolete. Push down on the spindle to get clockwise rotation with a spindle rpm of 280 revolutions per minute. At the desired depth you pull up on the spindle for a counter clockwise rotation and the tap exits the threaded hole at 680 revolutions per minute. The high reversal motor is wound for high torque and low rpm making it ideal for tapping applications.



- Ergonomic comfort handle
- Depth stop for blind hole tapping
- Universal 2 jaw tapping chuck
- Adjustable long side handle can be mounted and used from either right or left side
- Power input: 4A
- Includes molded plastic case

Tapping Capacity					
Steel	Aluminum	Voltage	Dimensions	Part Number	Price Each
9/16"	5/8"	115v-60Hz	15.75" x 3.15" x 7.87"	PALM-80452	\$510.00

Call Us Today For All Of Your Machine Tool Needs!

ROUND ADJUSTABLE SPLIT DIES

- Right hand
- High speed steel-M2
- Also available with special threads per inch and left hand



LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

STRAIGHT PIPE NPS

Size	TPI	OD	Part Number	Price Each
1/16	27	1	BI-5816-005	\$11.81
1/8	27	1	BI-5816-010	\$11.81
1/8	27	1-1/2	BI-5816-015	\$19.41
1/4	18	1-1/2	BI-5816-020	\$19.41
3/8	18	1-1/2	BI-5816-025	\$19.41
1/4	18	2	BI-5816-030	\$36.98
3/8	18	2	BI-5816-035	\$36.95
1/2	14	2	BI-5816-040	\$36.95
3/4	14	2	BI-5816-045	\$36.95
1	11-1/2	2-1/2	BI-5816-050	\$50.99
1-1/4	11-1/2	3	BI-5816-055	\$85.95
1-1/2	11-1/2	3	BI-5816-060	\$85.95
2	11-1/2	4	BI-5816-070	\$202.70
2-1/2	8	5	BI-5816-075	\$276.35
3	8	5	BI-5816-080	\$276.43

TAPER PIPE NPT

Size	TPI	OD	Part Number	Price Each
1/16	27	1	BI-5815-005	\$11.81
1/8	27	1	BI-5815-010	\$11.81
1/8	27	1-1/2	BI-5815-015	\$19.41
1/4	18	1-1/2	BI-5815-020	\$19.41
3/8	18	1-1/2	BI-5815-025	\$19.41
1/2	14	2	BI-5815-040	\$36.95
3/4	14	2	BI-5815-045	\$36.95
1	11-1/2	2-1/2	BI-5815-050	\$50.99
1-1/4	11-1/2	3	BI-5815-055	\$85.95



HEAVY DUTY DIE STOCKS

Die Dia	OAL	Part Number	Price Each
13/16	6-1/4	BI-4400-005	\$4.25
1	9	BI-4400-010	\$5.36
1-1/2	12	BI-4400-015	\$8.54
2	19-1/2	BI-4400-020	\$17.59
2-1/2	20	BI-4400-025	\$21.31
3	22	BI-4400-030	\$29.05

Size	TPI	OD	Part Number	Price Each
------	-----	----	-------------	------------

NATIONAL COARSE THREAD

#4	40	13/16	BI-5800-003	\$9.59
#5	40	13/16	BI-5800-004	\$9.59
#6	32	13/16	BI-5800-005	\$9.59
#8	32	13/16	BI-5800-010	\$9.59
#10	24	13/16	BI-5800-015	\$9.59
#12	24	13/16	BI-5800-020	\$9.59
1/4	20	13/16	BI-5800-025	\$9.59
5/16	18	13/16	BI-5800-030	\$9.59
#4	40	1	BI-5800-032	\$11.21
#5	40	1	BI-5800-034	\$11.21
#6	32	1	BI-5800-035	\$11.21
#8	32	1	BI-5800-040	\$11.21
#10	24	1	BI-5800-045	\$11.21
#12	24	1	BI-5800-050	\$11.21
1/4	20	1	BI-5800-055	\$11.21
5/16	18	1	BI-5800-060	\$11.21
3/8	16	1	BI-5800-065	\$11.21
7/16	14	1	BI-5800-070	\$11.21
1/2	13	1	BI-5800-075	\$11.21
1/4	20	1-1/2	BI-5800-080	\$17.62
5/16	18	1-1/2	BI-5800-085	\$17.62
3/8	16	1-1/2	BI-5800-090	\$17.62
7/16	14	1-1/2	BI-5800-095	\$17.62
1/2	13	1-1/2	BI-5800-100	\$17.62
9/16	12	1-1/2	BI-5800-105	\$17.62
5/8	11	1-1/2	BI-5800-110	\$17.62
3/4	10	1-1/2	BI-5800-115	\$17.62
1/4	20	2	BI-5800-116	\$33.53
5/16	18	2	BI-5800-117	\$33.53
3/8	16	2	BI-5800-118	\$33.53
7/16	14	2	BI-5800-1185	\$33.53
1/2	13	2	BI-5800-1191	\$33.53

Size	TPI	OD	Part Number	Price Each
------	-----	----	-------------	------------

9/16	12	2	BI-5800-1192	\$33.53
5/8	11	2	BI-5800-120	\$33.53
3/4	10	2	BI-5800-125	\$33.53
7/8	9	2	BI-5800-130	\$33.53
1	8	2	BI-5800-135	\$33.53
1-1/8	7	2-1/2	BI-5800-200	\$52.55
1-1/4	7	2-1/2	BI-5800-205	\$52.55
1-3/8	6	2-1/2	BI-5800-210	\$52.55
1-1/2	6	2-1/2	BI-5800-215	\$52.55
1-1/4	7	3	BI-5800-310	\$85.95
1-1/2	6	3	BI-5800-320	\$85.95
1-5/8	5-1/2	3	BI-5800-325	\$85.95
1-3/4	5	3	BI-5800-330	\$85.95
2	4-1/2	3	BI-5800-340	\$85.95

NATIONAL FINE THREAD

#4	48	13/16	BI-5805-003	\$9.70
#5	44	13/16	BI-5805-004	\$9.70
#6	40	13/16	BI-5805-005	\$9.70
#*	36	13/16	BI-5805-010	\$9.70
#10	32	13/16	BI-5805-015	\$9.70
#12	28	13/16	BI-5805-020	\$9.70
1/4	28	13/16	BI-5805-025	\$9.70
5/16	24	13/16	BI-5805-030	\$9.70
#4	48	1	BI-5805-034	\$11.21
#6	40	1	BI-5805-035	\$11.21
#8	36	1	BI-5805-040	\$11.21
#10	32	1	BI-5805-045	\$11.21
#12	28	1	BI-5805-050	\$11.21
1/4	28	1	BI-5805-055	\$11.21
5/16	24	1	BI-5805-060	\$11.21
3/8	24	1	BI-5805-065	\$11.21
7/16	20	1	BI-5805-070	\$11.21
1/2	20	1	BI-5805-075	\$11.21

Size	TPI	OD	Part Number	Price Each
------	-----	----	-------------	------------

NATIONAL FINE THREAD (CONT.)

1/4	28	1-1/2	BI-5805-080	\$17.62
5/16	24	1-1/2	BI-5805-085	\$17.62
3/8	24	1-1/2	BI-5805-090	\$17.62
7/16	20	1-1/2	BI-5805-095	\$17.62
1/2	20	1-1/2	BI-5805-100	\$17.62
9/16	18	1-1/2	BI-5805-105	\$17.62
5/8	18	1-1/2	BI-5805-110	\$17.62
3/4	16	1-1/2	BI-5805-115	\$17.62
1/4	28	2	BI-5805-116	\$33.53
5/16	24	2	BI-5805-117	\$33.53
3/8	24	2	BI-5805-118	\$33.53
7/16	20	2	BI-5805-1181	\$33.53
1/2	20	2	BI-5805-1191	\$33.53
9/16	18	2	BI-5805-1192	\$33.53
5/8	18	22	BI-5805-120	\$33.53
3/4	16	2	BI-5805-125	\$33.53
7/8	14	2	BI-5805-130	\$33.53
1	12	2	BI-5805-134	\$33.53
1	14	2	BI-5805-135	\$33.53
1-1/8	12	2-1/2	BI-5805-200	\$52.55
1-1/4	12	2-1/2	BI-5805-205	\$52.55
1-3/8	12	2-1/2	BI-5805-210	\$52.55
1-1/2	12	2-1/2	BI-5805-215	\$52.55
1	14	3	BI-5805-305	\$85.95
1-1/4	12	3	BI-5805-315	\$85.95
1-1/2	12	3	BI-5805-325	\$85.95
1-5/8	12	3	BI-5805-330	\$85.95
1-3/4	12	3	BI-5805-335	\$85.95
1-7/8	12	3	BI-5805-340	\$85.95
2	12	3	BI-5805-345	\$85.95

Additional Sizes & Styles Available!
Please Call For More Information!

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

407

SOLID CARBIDE CHUCKING REAMERS

B

SOLID CARBIDE CHUCKING REAMERS

Straight Shank-Straight Flute
C2 Micrograin Carbide



FEATURES:

- Ideal for machining tough materials
- Cutting flutes are precision ground
- Higher productivity and faster material removal
- Higher heat resistance
- 4 flutes on sizes up to .255" diameter
- 6 flutes on sizes .255" and above diameter
- Made in the USA

Expanded Selection!



TOLERANCES

Diameter	Dia. Tolerances
.0280 to .2500	-.0000/+ .0002
.2501 to .5000	-.0000/+ .0003

MORE ITEMS IN STOCK! .0005 Increments In Stock Through .275 Diameter & .001 Increments From .2580 to .5050 Diameter!

Dec. Dia	Size	LOC	OAL	Part Number	Price Each	Dec. Dia	Size	LOC	OAL	Part Number	Price Each	Dec. Dia	Size	LOC	OAL	Part Number	Price Each
0.0280	#70	1/4	1-1/2	MO-CR0280	\$17.85	0.0560	-	3/8	1-1/2	MO-CR0560	\$25.90	0.0825	-	1/2	2	MO-CR0825	\$28.23
0.0292	#69	1/4	1-1/2	MO-CR0292	\$17.85	0.0565	-	3/8	1-1/2	MO-CR0565	\$25.90	0.0830	-	1/2	2	MO-CR0830	\$28.23
0.0300	-	1/4	1-1/2	MO-CR0300	\$25.32	0.0570	-	3/8	1-1/2	MO-CR0570	\$25.90	0.0835	-	1/2	2	MO-CR0835	\$28.23
0.0310	#68	1/4	1-1/2	MO-CR0310	\$17.85	0.0575	-	3/8	1-1/2	MO-CR0575	\$25.90	0.0840	-	1/2	2	MO-CR0840	\$28.23
0.0312	1/32	1/4	1-1/2	MO-CR0312	\$14.43	0.0580	-	3/8	1-1/2	MO-CR0580	\$25.90	0.0845	-	1/2	2	MO-CR0845	\$28.23
0.0315	-	1/4	1-1/2	MO-CR0315	\$22.32	0.0585	-	3/8	1-1/2	MO-CR0585	\$25.90	0.0850	-	1/2	2	MO-CR0850	\$28.23
0.0320	#67	1/4	1-1/2	MO-CR0320	\$14.87	0.0590	-	3/8	1-1/2	MO-CR0590	\$25.90	0.0855	-	1/2	2	MO-CR0855	\$28.23
0.0325	-	1/4	1-1/2	MO-CR0325	\$22.32	0.0591	1.5mm	3/8	1-1/2	MO-CR0591	\$18.50	0.0860	#44	1/2	2	MO-CR0860	\$20.78
0.0330	#66	1/4	1-1/2	MO-CR0330	\$14.98	0.0595	#53	3/8	1-1/2	MO-CR0595	\$18.43	0.0865	-	1/2	2	MO-CR0865	\$28.23
0.0335	-	1/4	1-1/2	MO-CR0335	\$22.45	0.0600	-	3/8	1-1/2	MO-CR0600	\$24.78	0.0870	-	1/2	2	MO-CR0870	\$28.23
0.0340	-	1/4	1-1/2	MO-CR0340	\$22.45	0.0605	-	3/8	1-1/2	MO-CR0605	\$24.78	0.0875	-	1/2	2	MO-CR0875	\$28.23
0.0345	-	1/4	1-1/2	MO-CR0345	\$22.45	0.0610	-	3/8	1-1/2	MO-CR0610	\$24.78	0.0880	-	1/2	2	MO-CR0880	\$28.23
0.0350	#65	1/4	1-1/2	MO-CR0350	\$14.98	0.0615	-	3/8	1-1/2	MO-CR0615	\$24.78	0.0885	-	1/2	2	MO-CR0885	\$28.23
0.0355	-	1/4	1-1/2	MO-CR0355	\$23.93	0.0620	-	3/8	1-1/2	MO-CR0620	\$24.78	0.0890	#43	1/2	2	MO-CR0890	\$20.78
0.0360	#64	1/4	1-1/2	MO-CR0360	\$16.47	0.0625	1/16	3/8	1-1/2	MO-CR0625	\$17.32	0.0895	-	1/2	2	MO-CR0895	\$28.88
0.0365	-	1/4	1-1/2	MO-CR0365	\$23.47	0.0630	-	3/8	1-1/2	MO-CR0630	\$25.35	0.0900	-	1/2	2	MO-CR0900	\$28.88
0.0370	#63	1/4	1-1/2	MO-CR0370	\$15.98	0.0635	#52	3/8	1-1/2	MO-CR0635	\$17.88	0.0905	-	1/2	2	MO-CR0905	\$28.88
0.0375	-	1/4	1-1/2	MO-CR0375	\$23.93	0.0640	-	3/8	1-1/2	MO-CR0640	\$27.05	0.0910	-	1/2	2	MO-CR0910	\$28.88
0.0380	#62	1/4	1-1/2	MO-CR0380	\$16.47	0.0645	-	3/8	1-1/2	MO-CR0645	\$27.05	0.0915	-	1/2	2	MO-CR0915	\$28.88
0.0385	-	1/4	1-1/2	MO-CR0385	\$24.62	0.0650	-	3/8	1-1/2	MO-CR0650	\$27.05	0.0920	-	1/2	2	MO-CR0920	\$28.88
0.0390	#61	1/4	1-1/2	MO-CR0390	\$17.15	0.0655	-	1/2	1-3/4	MO-CR0655	\$27.05	0.0925	-	1/2	2	MO-CR0925	\$28.88
0.0394	1mm	1/4	1-1/2	MO-CR0394	\$17.15	0.0660	-	1/2	1-3/4	MO-CR0660	\$27.05	0.0930	-	1/2	2	MO-CR0930	\$28.88
0.0395	-	1/4	1-1/2	MO-CR0395	\$24.88	0.0665	-	1/2	1-3/4	MO-CR0665	\$27.05	0.0935	#42	1/2	2	MO-CR0935	\$21.42
0.0400	#60	1/4	1-1/2	MO-CR0400	\$17.42	0.0670	#51	1/2	1-3/4	MO-CR0670	\$19.58	0.0938	3/32	1/2	2	MO-CR0938	\$20.18
0.0405	-	1/4	1-1/2	MO-CR0405	\$24.37	0.0675	-	1/2	1-3/4	MO-CR0675	\$27.05	0.0940	-	1/2	2	MO-CR0940	\$29.65
0.0410	#59	1/4	1-1/2	MO-CR0410	\$16.88	0.0680	-	1/2	1-3/4	MO-CR0680	\$27.05	0.0945	-	1/2	2	MO-CR0945	\$29.65
0.0415	-	1/4	1-1/2	MO-CR0415	\$24.37	0.0685	-	1/2	1-3/4	MO-CR0685	\$27.05	0.0950	-	1/2	2	MO-CR0950	\$29.65
0.0420	#58	3/8	1-1/2	MO-CR0420	\$16.88	0.0690	-	1/2	1-3/4	MO-CR0690	\$27.05	0.0955	-	1/2	2	MO-CR0955	\$29.65
0.0425	-	3/8	1-1/2	MO-CR0425	\$24.88	0.0695	-	1/2	1-3/4	MO-CR0695	\$27.05	0.0960	#41	1/2	2	MO-CR0960	\$22.20
0.0430	#57	3/8	1-1/2	MO-CR0430	\$17.42	0.0700	#50	1/2	1-3/4	MO-CR0700	\$20.18	0.0965	-	1/2	2	MO-CR0965	\$30.33
0.0435	-	3/8	1-1/2	MO-CR0435	\$24.88	0.0705	-	1/2	1-3/4	MO-CR0705	\$27.05	0.0970	-	5/8	2-1/4	MO-CR0970	\$30.33
0.0440	-	3/8	1-1/2	MO-CR0440	\$24.88	0.0710	-	1/2	1-3/4	MO-CR0710	\$27.05	0.0975	-	5/8	2-1/4	MO-CR0975	\$30.33
0.0445	-	3/8	1-1/2	MO-CR0445	\$24.88	0.0715	-	1/2	1-3/4	MO-CR0715	\$27.05	0.0980	#40	5/8	2-1/4	MO-CR0980	\$22.87
0.0450	-	3/8	1-1/2	MO-CR0450	\$24.88	0.0720	-	1/2	1-3/4	MO-CR0720	\$27.05	0.0984	2.5mm	5/8	2-1/4	MO-CR0984	\$23.37
0.0455	-	3/8	1-1/2	MO-CR0455	\$24.88	0.0725	-	1/2	1-3/4	MO-CR0725	\$27.05	0.0985	-	5/8	2-1/4	MO-CR0985	\$29.65
0.0460	-	3/8	1-1/2	MO-CR0460	\$24.88	0.0730	#49	1/2	1-3/4	MO-CR0730	\$20.18	0.0990	-	5/8	2-1/4	MO-CR0990	\$29.65
0.0465	#56	3/8	1-1/2	MO-CR0465	\$17.42	0.0735	-	1/2	1-3/4	MO-CR0735	\$27.05	0.0995	#39	5/8	2-1/4	MO-CR0995	\$22.20
0.0469	3/64	3/8	1-1/2	MO-CR0469	\$16.38	0.0740	-	1/2	1-3/4	MO-CR0740	\$27.05	0.1000	-	5/8	2-1/4	MO-CR1000	\$30.33
0.0470	-	3/8	1-1/2	MO-CR0470	\$25.17	0.0745	-	1/2	1-3/4	MO-CR0745	\$27.05	0.1005	-	5/8	2-1/4	MO-CR1005	\$30.33
0.0475	-	3/8	1-1/2	MO-CR0475	\$25.17	0.0750	-	1/2	1-3/4	MO-CR0750	\$27.05	0.1010	-	5/8	2-1/4	MO-CR1010	\$30.33
0.0480	-	3/8	1-1/2	MO-CR0480	\$25.17	0.0755	-	1/2	1-3/4	MO-CR0755	\$27.05	0.1015	#38	5/8	2-1/4	MO-CR1015	\$22.87
0.0485	-	3/8	1-1/2	MO-CR0485	\$25.17	0.0760	#48	1/2	1-3/4	MO-CR0760	\$19.58	0.1020	-	5/8	2-1/4	MO-CR1020	\$29.65
0.0490	-	3/8	1-1/2	MO-CR0490	\$25.17	0.0765	-	1/2	1-3/4	MO-CR0765	\$27.05	0.1025	-	5/8	2-1/4	MO-CR1025	\$29.65
0.0495	-	3/8	1-1/2	MO-CR0495	\$25.17	0.0770	-	1/2	1-3/4	MO-CR0770	\$27.05	0.1030	-	5/8	2-1/4	MO-CR1030	\$29.65
0.0500	-	3/8	1-1/2	MO-CR0500	\$25.17	0.0775	-	1/2	1-3/4	MO-CR0775	\$27.05	0.1035	-	5/8	2-1/4	MO-CR1035	\$29.65
0.0505	-	3/8	1-1/2	MO-CR0505	\$25.17	0.0780	-	1/2	1-3/4	MO-CR0780	\$27.05	0.1040	#37	5/8	2-1/4	MO-CR1040	\$22.20
0.0510	-	3/8	1-1/2	MO-CR0510	\$25.17	0.0781	5/64	1/2	1-3/4	MO-CR0781	\$18.98	0.1045	-	5/8	2-1/4	MO-CR1045	\$30.33
0.0515	-	3/8	1-1/2	MO-CR0515	\$25.17	0.0785	#47	1/2	1-3/4	MO-CR0785	\$20.18	0.1050	-	5/8	2-1/4	MO-CR1050	\$28.07
0.0520	#55	3/8	1-1/2	MO-CR0520	\$17.70	0.0787	2mm	1/2	1-3/4	MO-CR0787	\$20.53	0.1055	-	5/8	2-1/4	MO-CR1055	\$30.33
0.0525	-	3/8	1-1/2	MO-CR0525	\$25.35	0.0790	-	1/2	1-3/4	MO-CR0790	\$28.23	0.1060	-	5/8	2-1/4	MO-CR1060	\$30.33
0.0530	-	3/8	1-1/2	MO-CR0530	\$25.35	0.0795	-	1/2	1-3/4	MO-CR0795	\$28.23	0.1065	#36	5/8	2-1/4	MO-CR1065	\$22.87
0.0535	-	3/8	1-1/2	MO-CR0535	\$25.35	0.0800	-	1/2	1-3/4	MO-CR0800	\$28.23	0.1070	-	5/8	2-1/4	MO-CR1070	\$30.33
0.0540	-	3/8	1-1/2	MO-CR0540	\$25.35	0.0805	-	1/2	1-3/4	MO-CR0805	\$28.23	0.1075	-	5/8	2-1/4	MO-CR1075	\$30.33
0.0545	-	3/8	1-1/2	MO-CR0545	\$25.35	0.0810	#46	1/2	1-3/4	MO-CR0810	\$20.78	0.1080	-	5/8	2-1/4	MO-CR1080	\$30.33
0.0550	#54	3/8	1-1/2	MO-CR0550	\$17.88	0.0815	-	1/2	2	MO-CR0815	\$28.88	0.1085	-	5/8	2-1/4	MO-CR1085	\$30.33
0.0555	-	3/8	1-1/2	MO-CR0555	\$25.90	0.0820	#45	1/2	2	MO-CR0820	\$21.42	0.1090	-	5/8	2-1/4	MO-CR1090	\$30.33

Call Us Today For All Of Your Machine Tool Needs!

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

SOLID CARBIDE REAMERS/MICRO REAMERS

SOLID CARBIDE CHUCKING REAMERS (continued)

Straight Shank-Straight Flute
C2 Micrograin Carbide



MORE ITEMS IN STOCK! .0005 Increments In Stock Through .275 Diameter & .001 Increments From .2580 to .5050 Diameter!

Dec. Dia	Size	LOC	OAL	Part Number	Price Each	Dec. Dia	Size	LOC	OAL	Part Number	Price Each	Dec. Dia	Size	LOC	OAL	Part Number	Price Each
0.4620	-	1-3/8	4	MO-CR4620	\$121.60	0.4780	-	1-3/8	4	MO-CR4780	\$121.60	0.4940	-	1-1/2	4	MO-CR4940	\$128.37
0.4630	-	1-3/8	4	MO-CR4630	\$121.60	0.4790	-	1-1/2	4	MO-CR4790	\$128.37	0.4950	-	1-1/2	4	MO-CR4950	\$128.37
0.4640	-	1-3/8	4	MO-CR4640	\$121.60	0.4800	-	1-1/2	4	MO-CR4800	\$128.37	0.4960	-	1-1/2	4	MO-CR4960	\$128.37
0.4650	-	1-3/8	4	MO-CR4650	\$121.60	0.4805	-	1-1/2	4	MO-CR4805	\$128.37	0.4970	-	1-1/2	4	MO-CR4970	\$128.37
0.4660	-	1-3/8	4	MO-CR4660	\$121.60	0.4810	-	1-1/2	4	MO-CR4810	\$128.37	0.4980	D/P	1-1/2	4	MO-CR4980	\$128.37
0.4670	-	1-3/8	4	MO-CR4670	\$121.60	0.4820	-	1-1/2	4	MO-CR4820	\$128.37	0.4990	U/S	1-1/2	4	MO-CR4990	\$128.37
0.4680	-	1-3/8	4	MO-CR4680	\$121.60	0.4830	-	1-1/2	4	MO-CR4830	\$128.37	0.4995	D/P	1-1/2	4	MO-CR4995	\$128.37
0.4688	15/32	1-3/8	4	MO-CR4688	\$92.25	0.4840	-	1-1/2	4	MO-CR4840	\$128.37	0.5000	1/2	1-1/2	4	MO-CR5000	\$105.18
0.4690	-	1-3/8	4	MO-CR4690	\$121.60	0.4844	31/64	1-1/2	4	MO-CR4844	\$107.00	0.5005	-	1-1/2	4	MO-CR5005	\$126.42
0.4700	-	1-3/8	4	MO-CR4700	\$121.60	0.4850	-	1-1/2	4	MO-CR4850	\$128.37	0.5010	O/S	1-1/2	4	MO-CR5010	\$126.42
0.4710	-	1-3/8	4	MO-CR4710	\$121.60	0.4860	-	1-1/2	4	MO-CR4860	\$128.37	0.5015	-	1-1/2	4	MO-CR5015	\$126.42
0.4720	-	1-3/8	4	MO-CR4720	\$121.60	0.4870	-	1-1/2	4	MO-CR4870	\$128.37	0.5020	-	1-1/2	4	MO-CR5020	\$126.42
0.4724	12mm	1-3/8	4	MO-CR4724	\$99.82	0.4880	-	1-1/2	4	MO-CR4880	\$128.37	0.5030	-	1-1/2	4	MO-CR5030	\$126.42
0.4730	-	1-3/8	4	MO-CR4730	\$121.60	0.4890	-	1-1/2	4	MO-CR4890	\$128.37	0.5040	-	1-1/2	4	MO-CR5040	\$126.42
0.4740	-	1-3/8	4	MO-CR4740	\$121.60	0.4900	-	1-1/2	4	MO-CR4900	\$128.37	0.5050	-	1-1/2	4	MO-CR5050	\$126.42
0.4750	-	1-3/8	4	MO-CR4750	\$121.60	0.4910	-	1-1/2	4	MO-CR4910	\$128.37						
0.4760	-	1-3/8	4	MO-CR4760	\$121.60	0.4921	12.5mm	1-1/2	4	MO-CR4921	\$113.98						
0.4770	-	1-3/8	4	MO-CR4770	\$121.60	0.4930	-	1-1/2	4	MO-CR4930	\$128.37						

SOLID CARBIDE HIGH PRECISION MICRO REAMERS

Spiral Flute-Right Hand Cut-Left Hand Helix

- For through hole applications
- Tolerance 0 + .00012"
- 0.0236" to 0.0929" = 4 flutes
- 0.0933" to 0.5138 = 6 flutes
- 10° left spiral, right hand cut
- Special orders also available

**Hundreds Of Sizes Available!
Please Call For
More Information!**



mm	Dec.	OAL	Part Number	Price	mm	Dec.	OAL	Part Number	Price	mm	Dec.	OAL	Part Number	Price
0.60	.0236	1.30"	MAG-86000060	\$36.20	0.90	.0354	1.30"	MAG-86000090	\$28.13	1.20	.0472	1.58"	MAG-86000120	\$27.25
0.61	.0240	1.30"	MAG-86000061	\$36.20	0.91	.0358	1.30"	MAG-86000091	\$28.13	1.21	.0476	1.58"	MAG-86000121	\$27.25
0.62	.0244	1.30"	MAG-86000062	\$36.20	0.92	.0362	1.30"	MAG-86000092	\$28.13	1.22	.0480	1.58"	MAG-86000122	\$27.25
0.63	.0248	1.30"	MAG-86000063	\$36.20	0.93	.0366	1.30"	MAG-86000093	\$28.13	1.23	.0484	1.58"	MAG-86000123	\$27.25
0.64	.0252	1.30"	MAG-86000064	\$36.20	0.94	.0370	1.30"	MAG-86000094	\$28.13	1.24	.0488	1.58"	MAG-86000124	\$27.25
0.65	.0256	1.30"	MAG-86000065	\$36.20	0.95	.0374	1.30"	MAG-86000095	\$28.13	1.25	.0492	1.58"	MAG-86000125	\$27.25
0.66	.0260	1.30"	MAG-86000066	\$36.20	0.96	.0378	1.30"	MAG-86000096	\$28.13	1.26	.0496	1.58"	MAG-86000126	\$27.25
0.67	.0264	1.30"	MAG-86000067	\$36.20	0.97	.0382	1.30"	MAG-86000097	\$28.13	1.27	.0500	1.58"	MAG-86000127	\$27.25
0.68	.0268	1.30"	MAG-86000068	\$36.20	0.98	.0386	1.30"	MAG-86000098	\$28.13	1.28	.0504	1.58"	MAG-86000128	\$27.25
0.69	.0272	1.30"	MAG-86000069	\$36.20	0.99	.0390	1.30"	MAG-86000099	\$28.13	1.29	.0508	1.58"	MAG-86000129	\$27.25
0.70	.0276	1.30"	MAG-86000070	\$28.13	1.00	.0394	1.30"	MAG-86000100	\$28.13	1.30	.0512	1.58"	MAG-86000130	\$27.25
0.71	.0280	1.30"	MAG-86000071	\$28.13	1.01	.0398	1.30"	MAG-86000101	\$28.13	1.31	.0516	1.58"	MAG-86000131	\$27.25
0.72	.0283	1.30"	MAG-86000072	\$28.13	1.02	.0402	1.30"	MAG-86000102	\$28.13	1.32	.0520	1.58"	MAG-86000132	\$27.25
0.73	.0287	1.30"	MAG-86000073	\$28.13	1.03	.0406	1.30"	MAG-86000103	\$28.13	1.33	.0524	1.58"	MAG-86000133	\$27.25
0.74	.0291	1.30"	MAG-86000074	\$28.13	1.04	.0409	1.30"	MAG-86000104	\$28.13	1.34	.0528	1.58"	MAG-86000134	\$27.25
0.75	.0295	1.30"	MAG-86000075	\$28.13	1.05	.0413	1.30"	MAG-86000105	\$28.13	1.35	.0531	1.58"	MAG-86000135	\$27.25
0.76	.0299	1.30"	MAG-86000076	\$28.13	1.06	.0417	1.58"	MAG-86000106	\$27.24	1.36	.0535	1.58"	MAG-86000136	\$27.25
0.77	.0303	1.30"	MAG-86000077	\$28.13	1.07	.0421	1.58"	MAG-86000107	\$27.24	1.37	.0539	1.58"	MAG-86000137	\$27.25
0.78	.0307	1.30"	MAG-86000078	\$28.13	1.08	.0425	1.58"	MAG-86000108	\$27.24	1.38	.0543	1.58"	MAG-86000138	\$27.25
0.79	.0311	1.30"	MAG-86000079	\$28.13	1.09	.0429	1.58"	MAG-86000109	\$27.24	1.39	.0547	1.58"	MAG-86000139	\$27.25
0.80	.0315	1.30"	MAG-86000080	\$28.13	1.10	.0433	1.58"	MAG-86000110	\$27.24	1.40	.0551	1.58"	MAG-86000140	\$27.25
0.81	.0319	1.30"	MAG-86000081	\$28.13	1.11	.0437	1.58"	MAG-86000111	\$27.24	1.41	.0555	1.58"	MAG-86000141	\$27.25
0.82	.0323	1.30"	MAG-86000082	\$28.13	1.12	.0441	1.58"	MAG-86000112	\$27.24	1.42	.0559	1.58"	MAG-86000142	\$27.25
0.83	.0327	1.30"	MAG-86000083	\$28.13	1.13	.0445	1.58"	MAG-86000113	\$27.24	1.43	.0563	1.58"	MAG-86000143	\$27.25
0.84	.0331	1.30"	MAG-86000084	\$28.13	1.14	.0449	1.58"	MAG-86000114	\$27.24	1.44	.0567	1.58"	MAG-86000144	\$27.25
0.85	.0335	1.30"	MAG-86000085	\$28.13	1.15	.0453	1.58"	MAG-86000115	\$27.24	1.45	.0571	1.58"	MAG-86000145	\$27.25
0.86	.0339	1.30"	MAG-86000086	\$28.13	1.16	.0457	1.58"	MAG-86000116	\$27.24	1.46	.0575	1.58"	MAG-86000146	\$27.25
0.87	.0343	1.30"	MAG-86000087	\$28.13	1.17	.0461	1.58"	MAG-86000117	\$27.24	1.47	.0579	1.58"	MAG-86000147	\$27.25
0.88	.0346	1.30"	MAG-86000088	\$28.13	1.18	.0465	1.58"	MAG-86000118	\$27.24	1.48	.0583	1.58"	MAG-86000148	\$27.25
0.89	.0350	1.30"	MAG-86000089	\$28.13	1.19	.0469	1.58"	MAG-86000119	\$27.24	1.49	.0587	1.58"	MAG-86000149	\$27.25

Many More Sizes Available! Please Call For More Information!

Call Us Today For All Of Your Machine Tool Needs!

STRAIGHT SHANK CHUCKING REAMERS

M-42 Cobalt

List No. 1433- Straight Shank, Straight Flute, Right Hand Cut

List No. 1435- RH Spiral Flutes, Straight Shank,

Left Hand Cut also available



LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

List 1433

Dia	Dec. Equiv	Flute Length	No. of Flutes	OAL	Part Number	Price Each
#80	0.0135	3/8	2	3/4	YA1433-0135	\$22.24
#79	0.0145	3/8	2	3/4	YA1433-0145	\$22.24
1/64	0.0156	3/8	2	3/4	YA1433-0156	\$22.24
#78	0.0160	3/8	2	7/8	YA1433-0160	\$22.24
#77	0.0180	3/8	2	7/8	YA1433-0180	\$22.24
#76	0.0200	3/8	2	7/8	YA1433-0200	\$22.24
#75	0.0210	1/2	3	1	YA1433-0210	\$22.24
#74	0.0225	1/2	3	1	YA1433-0225	\$22.24
#73	0.0240	1/2	3	1-1/8	YA1433-0240	\$22.24
#72	0.0250	1/2	3	1-1/8	YA1433-0250	\$22.24
#71	0.0260	1/2	3	1-1/4	YA1433-0260	\$22.24
#70	0.0280	1/2	3	1-1/4	YA1433-0280	\$22.24
#69	0.0292	1/2	3	1-3/8	YA1433-0292	\$22.24
#68	0.0310	1/2	3	1-3/8	YA1433-0310	\$22.24
1/32	0.0312	1/2	3	1-3/8	YA1433-0312	\$18.30
#67	0.0320	1/2	3	1-3/8	YA1433-0320	\$18.30
#66	0.0330	1/2	3	1-3/8	YA1433-0330	\$18.30
#65	0.0350	1/2	3	1-1/2	YA1433-0350	\$18.30
#64	0.0360	1/2	3	1-1/2	YA1433-0360	\$18.30
#63	0.0370	1/2	3	1-1/2	YA1433-0370	\$18.30
#62	0.0380	1/2	3	1-1/2	YA1433-0380	\$18.30
#61	0.0390	1/2	3	1-1/2	YA1433-0390	\$18.30
O/U	0.0394	1/2	4	2- 1/2	YA1433-0394	\$18.00
#60	0.0400	1/2	4	2-1/2	YA1433-0400	\$18.00
#59	0.0410	1/2	4	2-1/2	YA1433-0410	\$18.00
#58	0.0420	1/2	4	2-1/2	YA1433-0420	\$18.00
#57	0.0430	1/2	4	2-1/2	YA1433-0430	\$18.00
#56	0.0465	1/2	4	2-1/2	YA1433-0465	\$18.00
3/64	0.0469	1/2	4	2-1/2	YA1433-0469	\$18.00
#55	0.0520	1/2	4	2-1/2	YA1433-0520	\$18.00
#54	0.0550	1/2	4	2-1/2	YA1433-0550	\$18.00
O/U	0.0591	1/2	4	2- 1/2	YA1433-0591	\$18.00
#53	0.0595	1/2	4	2-1/2	YA1433-0595	\$18.00
1/16	0.0625	1/2	4	2-1/2	YA1433-0625	\$18.00
#52	0.0635	1/2	4	2-1/2	YA1433-0635	\$18.00
#51	0.0670	3/4	4	3	YA1433-0670	\$14.51
#50	0.0700	3/4	4	3	YA1433-0700	\$14.51
#49	0.0730	3/4	4	3	YA1433-0730	\$14.51
#48	0.0760	3/4	4	3	YA1433-0760	\$14.51
5/64	0.0781	3/4	4	3	YA1433-0781	\$14.51
#47	0.0785	3/4	4	3	YA1433-0785	\$14.51
O/U	0.0787	3/4	4	3	YA1433-0787	\$14.51
#46	0.0810	3/4	4	3	YA1433-0810	\$14.51
#45	0.0820	3/4	4	3	YA1433-0820	\$14.51
#44	0.0860	3/4	4	3	YA1433-0860	\$14.51
#43	0.0890	3/4	4	3	YA1433-0890	\$14.51
#42	0.0935	3/4	4	3	YA1433-0935	\$14.51
3/32	0.0938	3/4	4	3	YA1433-0938	\$14.51
#41	0.0960	7/8	4	3-1/2	YA1433-0960	\$14.61
#40	0.0980	7/8	4	3-1/2	YA1433-0980	\$14.61
O/U	0.0984	7/8	4	3- 1/2	YA1433-0984	\$14.61
#39	0.0995	7/8	4	3-1/2	YA1433-0995	\$14.61
#38	0.1015	7/8	4	3-1/2	YA1433-1015	\$14.61
#37	0.1040	7/8	4	3-1/2	YA1433-1040	\$14.61
#36	0.1065	7/8	4	3-1/2	YA1433-1065	\$14.61
7/64	0.1094	7/8	4	3-1/2	YA1433-1094	\$15.06
#35	0.1100	7/8	4	3-1/2	YA1433-1100	\$15.06
#34	0.1110	7/8	4	3-1/2	YA1433-1110	\$15.06
#33	0.1130	7/8	4	3-1/2	YA1433-1130	\$15.06
#32	0.1160	7/8	4	3-1/2	YA1433-1160	\$15.06

List 1433

Dia	Dec. Equiv	Flute Length	No. of Flutes	OAL	Part Number	Price Each
O/U	0.1181	7/8	4	3- 1/2	YA1433-1181	\$15.06
#31	0.1200	7/8	4	3-1/2	YA1433-1200	\$15.06
O/U	0.1240	7/8	4	3-1/2	YA1433-1240	\$15.06
1/8	0.1250	7/8	4	3-1/2	YA1433-1250	\$12.04
O/U	0.1260	7/8	4	3-1/2	YA1433-1260	\$15.06
#30	0.1285	7/8	4	3-1/2	YA1433-1285	\$15.06
#29	0.1360	1	4	4	YA1433-1360	\$17.99
O/U	0.1378	1	4	4	YA1433-1378	\$17.99
#28	0.1405	1	4	4	YA1433-1405	\$17.99
9/64	0.1406	1	4	4	YA1433-1406	\$17.99
#27	0.1440	1	4	4	YA1433-1440	\$17.99
#26	0.1470	1	4	4	YA1433-1470	\$17.99
#25	0.1495	1	4	4	YA1433-1495	\$17.99
#24	0.1520	1	4	4	YA1433-1520	\$17.99
#23	0.1540	1	4	4	YA1433-1540	\$17.99
5/32	0.1562	1	4	4	YA1433-1562	\$16.16
#22	0.1570	1	6	4	YA1433-1570	\$17.99
O/U	0.1575	1	6	4	YA1433-1575	\$17.99
#21	0.1590	1-1/8	6	4-1/2	YA1433-1590	\$19.22
#20	0.1610	1-1/8	6	4-1/2	YA1433-1610	\$19.22
#19	0.1660	1-1/8	6	4-1/2	YA1433-1660	\$19.22
#18	0.1695	1-1/8	6	4-1/2	YA1433-1695	\$19.22
11/64	0.1719	1-1/8	6	4-1/2	YA1433-1719	\$19.22
#17	0.1730	1-1/8	6	4-1/2	YA1433-1730	\$19.22
#16	0.1770	1-1/8	6	4-1/2	YA1433-1770	\$19.22
O/U	0.1772	1-1/8	6	4- 1/2	YA1433-1772	\$19.22
#15	0.1800	1-1/8	6	4-1/2	YA1433-1800	\$19.22
#14	0.1820	1-1/8	6	4-1/2	YA1433-1820	\$19.22
#13	0.1850	1-1/8	6	4-1/2	YA1433-1850	\$19.22
O/U	0.1865	1-1/8	6	4-1/2	YA1433-1865	\$19.22
3/16	0.1875	1-1/8	6	4-1/2	YA1433-1875	\$17.32
O/U	0.1885	1-1/8	6	4-1/2	YA1433-1885	\$19.23
#12	0.1890	1-1/8	6	4-1/2	YA1433-1890	\$19.23
#11	0.1910	1-1/4	6	5	YA1433-1910	\$22.12
#10	0.1935	1-1/4	6	5	YA1433-1935	\$22.12
#9	0.1960	1-1/4	6	5	YA1433-1960	\$22.12
O/U	0.1969	1-1/4	6	5	YA1433-1969	\$22.12
#8	0.1990	1-1/4	6	5	YA1433-1990	\$22.12
#7	0.2010	1-1/4	6	5	YA1433-2010	\$22.12
13/64	0.2031	1-1/4	6	5	YA1433-2031	\$22.12
#6	0.2040	1-1/4	6	5	YA1433-2040	\$22.12
#5	0.2055	1-1/4	6	5	YA1433-2055	\$22.12
#4	0.2090	1-1/4	6	5	YA1433-2090	\$22.12
#3	0.2130	1-1/4	6	5	YA1433-2130	\$22.12
O/U	0.2165	1-1/4	6	5	YA1433-2165	\$22.12
7/32	0.2188	1-1/4	6	5	YA1433-2188	\$22.12
#2	0.2210	1-1/2	6	6	YA1433-2210	\$22.75
#1	0.2280	1-1/2	6	6	YA1433-2280	\$22.75
A	0.2340	1-1/2	6	6	YA1433-2340	\$22.75
15/64	0.2344	1-1/2	6	6	YA1433-2344	\$22.75
O/U	0.2362	1-1/2	6	6	YA1433-2362	\$22.87
B	0.2380	1-1/2	6	6	YA1433-2380	\$22.87
C	0.2420	1-1/2	6	6	YA1433-2420	\$22.87
D	0.2460	1-1/2	6	6	YA1433-2460	\$20.78
O/U	0.2490	1-1/2	6	6	YA1433-2490	\$20.57
E	0.2500	1-1/2	6	6	YA1433-2500	\$19.44
O/U	0.2510	1-1/2	6	6	YA1433-2510	\$20.57
O/U	0.2559	1-1/2	6	6	YA1433-2559	\$22.87
F	0.2570	1-1/2	6	6	YA1433-2570	\$22.87
G	0.2610	1-1/2	6	6	YA1433-2610	\$22.87

(continued on following page)

Call Us Or Visit Our Website For Our Complete Selection!

CHUCKING REAMERS-COBALT

STRAIGHT SHANK CHUCKING REAMERS

M-42 Cobalt

List No. 1433- Straight Shank, Straight Flute, Right Hand Cut
List No. 1435- RH Spiral Flutes, Straight Shank
LeftHand Cut also available



List 1433						
Dia	Dec. Equiv	Flute Length	No. of Flutes	OAL	Part Number	Price Each
17/64	0.2656	1-1/2	6	6	YA1433-2656	\$31.01
H	0.2660	1-1/2	6	6	YA1433-2660	\$31.01
I	0.2720	1-1/2	6	6	YA1433-2720	\$31.01
O/U	0.2756	1-1/2	6	6	YA1433-2756	\$31.01
J	0.2770	1-1/2	6	6	YA1433-2770	\$31.01
K	0.2810	1-1/2	6	6	YA1433-2810	\$31.01
9/32	0.2812	1-1/2	6	6	YA1433-2812	\$29.46
L	0.2900	1-1/2	6	6	YA1433-2900	\$31.01
M	0.2950	1-1/2	6	6	YA1433-2950	\$31.01
O/U	0.2953	1-1/2	6	6	YA1433-2953	\$31.01
19/64	0.2969	1-1/2	6	6	YA1433-2969	\$31.01
N	0.3020	1-1/2	6	6	YA1433-3020	\$31.01
O/U	0.3115	1-1/2	6	6	YA1433-3115	\$29.46
5/16	0.3125	1-1/2	6	6	YA1433-3125	\$27.89
O/U	0.3135	1-1/2	6	6	YA1433-3135	\$29.46
O/U	0.3150	1-1/2	6	6	YA1433-3150	\$31.01
O	0.3160	1-1/2	6	6	YA1433-3160	\$31.01
P	0.3230	1-1/2	6	6	YA1433-3230	\$33.40
21/64	0.3281	1-1/2	6	6	YA1433-3281	\$33.40
Q	0.3320	1-1/2	6	6	YA1433-3320	\$33.40
O/U	0.3346	1-1/2	6	6	YA1433-3346	\$33.40
R	0.3390	1-1/2	6	6	YA1433-3390	\$33.40
11/32	0.3438	1-1/2	6	6	YA1433-3438	\$33.40
S	0.3480	1-3/4	6	7	YA1433-3480	\$33.98
O/U	0.3543	1-3/4	6	7	YA1433-3543	\$33.98
T	0.3580	1-3/4	6	7	YA1433-3580	\$33.98
23/64	0.3594	1-3/4	6	7	YA1433-3594	\$33.98
U	0.3680	1-3/4	6	7	YA1433-3680	\$33.98
O/U	0.3740	1-3/4	6	7	YA1433-3740	\$32.24
3/8	0.3750	1-3/4	6	7	YA1433-3750	\$30.56
O/U	0.3760	1-3/4	6	7	YA1433-3760	\$32.24
V	0.3770	1-3/4	6	7	YA1433-3770	\$41.40
W	0.3860	1-3/4	6	7	YA1433-3860	\$41.40
25/64	0.3906	1-3/4	6	7	YA1433-3906	\$41.40
O/U	0.3937	1-3/4	6	7	YA1433-3937	\$41.40

List 1433						
Dia	Dec. Equiv	Flute Length	No. of Flutes	OAL	Part Number	Price Each
X	0.3970	1-3/4	6	7	YA1433-3970	\$41.40
Y	0.4040	1-3/4	6	7	YA1433-4040	\$41.40
13/32	0.4062	1-3/4	6	7	YA1433-4062	\$41.40
Z	0.4130	1-3/4	6	7	YA1433-4130	\$41.40
O/U	0.4134	1-3/4	6	7	YA1433-4134	\$41.40
27/64	0.4219	1-3/4	6	7	YA1433-4219	\$41.40
O/U	0.4331	1-3/4	6	7	YA1433-4331	\$41.40
O/U	0.4365	1-3/4	6	7	YA1433-4365	\$41.40
7/16	0.4375	1-3/4	6	7	YA1433-4375	\$39.35
O/U	0.4385	1-3/4	6	7	YA1433-4385	\$41.40
O/U	0.4528	1-3/4	6	7	YA1433-4528	\$47.46
29/64	0.4531	1-3/4	6	7	YA1433-4531	\$47.46
15/32	0.4688	1-3/4	6	7	YA1433-4688	\$47.46
O/U	0.4724	2	6	8	YA1433-4724	\$47.46
31/64	0.4844	2	6	8	YA1433-4844	\$47.46
O/U	0.4921	2	6	8	YA1433-4921	\$47.46
O/U	0.4990	2	6	8	YA1433-4990	\$47.46
1/2	0.5000	2	6	8	YA1433-5000	\$45.08
O/U	0.5010	2	6	8	YA1433-5010	\$47.46
17/32	0.5312	2	6	8	YA1433-5312	\$53.24
9/16	0.5625	2	8	8	YA1433-5625	\$53.89
19/32	0.5938	2	8	8	YA1433-5938	\$53.89
5/8	0.6250	2-1/4	8	9	YA1433-6250	\$62.89
21/32	0.6562	2-1/4	8	9	YA1433-6562	\$71.09
11/16	0.6875	2-1/4	8	9	YA1433-6875	\$71.09
23/32	0.7188	2-1/4	8	9	YA1433-7188	\$79.35
3/4	0.7500	2-1/2	8	9-1/2	YA1433-7500	\$79.82
25/32	0.7812	2-1/2	8	9-1/2	YA1433-7812	\$86.09
13/16	0.8125	2-1/2	8	9-1/2	YA1433-8125	\$86.09
27/32	0.8438	2-1/2	8	9-1/2	YA1433-8438	\$101.85
7/8	0.8750	2-5/8	8	10	YA1433-8750	\$104.21
29/32	0.9062	2-5/8	8	10	YA1433-9062	\$112.29
15/16	0.9375	2-5/8	8-10	10	YA1433-9375	\$112.29
31/32	0.9688	2-5/8	8-10	10	YA1433-9688	\$125.77
1"	1.0000	2-3/4	8-10	10- 1/1	YA1433-1	\$126.95

DOWEL PIN REAMERS

High Speed Steel & M-42 Cobalt

List No. 470- High Speed Steel, Straight Flute
List No. 1470- M-42 Cobalt, Straight Flute

What's the difference between Dowel Pin Reamers and Standard Chucking Reamers?

Standard chucking reamers are produced with little back taper and a plus diameter tolerance, while dowel pin reamers are produced with increased back taper and a minus diameter tolerance.

COMPLETE LINE AVAILABLE!
Hand Reamers • Taper Reamers
Stub Screw • Expansion Reamers
Counterbores • Sets

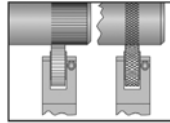


				List 470		List 1470	
Dia	Flute Length	No. of Flutes	OAL	Part Number	Price Each	Part Number	Price Each
0.1230	7/8	4	3-1/2	YA470-1230	\$13.43	YA1470-1230	\$14.58
0.1247	7/8	4	3-1/2	YA470-1247	\$13.43	YA1470-1247	\$14.58
0.1855	1-1/8	6	4-1/2	YA470-1855	\$17.11	YA1470-1855	\$18.33
0.1870	1-1/8	6	4-1/2	YA470-1870	\$17.11	YA1470-1870	\$18.33
0.2480	1-1/2	6	6	YA470-2480	\$18.68	YA1470-2480	\$20.59
0.2495	1-1/2	6	6	YA470-2495	\$18.68	YA1470-2495	\$20.59
0.3105	1-1/2	6	6	YA470-3105	\$21.98	YA1470-3105	\$29.47
0.3120	1-1/2	6	6	YA470-3120	\$21.98	YA1470-3120	\$29.47
0.3730	1-3/4	6	7	YA470-3730	\$23.70	YA1470-3730	\$32.26
0.3745	1-3/4	6	7	YA470-3745	\$23.70	YA1470-3745	\$32.26
0.4355	1-3/4	6	7	YA470-4355	\$26.77	YA1470-4355	\$41.39
0.4370	1-3/4	6	7	YA470-4370	\$26.77	YA1470-4370	\$41.39
0.4980	2	6	8	YA470-4980	\$29.14	YA1470-4980	\$47.48
0.4995	2	6	8	YA470-4995	\$29.14	YA1470-4995	\$47.48

Call Us Today For All Of Your Machine Tool Needs!

SWFKT - Single Wheel Fixed Knurling Tool For Manual or CNC Lathes

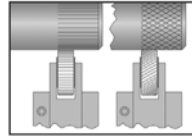
Precision square shank with preset center height. Single knurl wheel for straight and diamond pattern. Knurl wheel is mounted between the thrust washers to ensure smooth and even rotation of the knurl while knurling is performed. Best used for straight patterns or bump knurling a diamond pattern.



Center Height	Shank Size	Desc.	Part Number	Price Each	Knurl Wheel	Knurl Pin Set	Part Number
0.500	.500x.500	SWFKT-50-D	DN21730	\$90.67	DS-30-C	KPS-18-50	DN28805
0.750	.750x.750	SWFKT-75-M	DN21740	\$115.86	MS-25-C	KPS-31-75	DN28840
1.000	1.00x1.00	SWFKT-100-O	DN21750	\$128.46	OS-25-C	KPS-31-100	DN28845

SCK - Self-Centering Knurling Tool For CNC Lathes

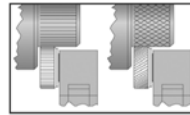
Precision square shank with preset center height. Twin knurl wheels for straight and diamond pattern. Knurl wheels are mounted between the thrust washers to ensure a smooth and even rotation of the knurls while knurling is performed. Self-centering knurling head for a precise alignment to the working part.



Center Height	Shank Size	Desc.	Part Number	Price Each	Knurl Wheel	Knurl Pin Set	Part Number
0.750	.750 x 1.25	SCK-75-M	DN22121	\$295.94	MDR/L-25-C	KPS-31-75	DN28840
1.000	1.00 x 1.25	SCK-100-M	DN22131	\$333.73			

SSCK - Shoulder Self-Centering Knurling Tool For CNC Lathes

Designed to knurl against a square shoulder. Precision square shank with preset center height. Twin knurl wheels for straight and diamond pattern. Knurl wheels are mounted between thrust washers to ensure smooth and even rotation of the knurls while knurling is performed. Supplied with Cobalt TIC/N coated SW series knurl wheels. Self-centering knurling head for a precise alignment to the working part.



Center Height	Shank Size	Desc.	Part Number	Price Each	Knurl Wheel	Knurl Pin Set	Part Number
0.500	.500 x .625	SSCK-50-2	DN22220	\$358.91	SW2-S/R/L	SW2.0P-2S	DN29055
0.750	.750 x .750	SSCK-75-4	DN22240	\$434.47			
1.000	1.00 x 1.00	SSCK-100-4	DN22250	\$434.47	SW4-S/R/L	SW4.0P-2S	DN29085

CUTTING CNC-000-1-2 Small cutting range: 5/16" to 1-1/2"

- Minimum stress on the machine, and faster knurl forming action.
- Twin straight SW series knurl wheels for diamond pattern. Allows tool to knurl close to a square shoulder.
- Supplied with SW2S-30C cobalt knurl wheels-Tin-c coated. Adds longer life and better performance to the knurl wheels.



Description	Shank Size	Tool Length	Part Number	Price Each
SCNC-37-1-2	0.375	4.125	DN20010	\$528.91
SCNC-50-1-2	0.5	4.375	DN20020	\$579.29
SCNC-162-1-2	0.625	4.375	DN20025	\$623.36
CNC-75-1-2	0.75	5.5	DN20410	\$748.05
CNC-100-1-2	1	6.75	DN20420	\$817.30
CNC-125-1-2	1.25	7.25	DN20430	\$868.94

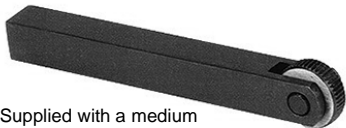
CUTTING CNC-000-2-R Heavy duty cutting range: 1" to 5"

- Minimum stress on the machine, and faster than knurl forming action.
- Twin straight R series knurl wheels for diamond pattern. Supplies more rigidity for larger diameters
- Knurl wheels are mounted between thrust washers. Ensures smooth and even rotation of the knurls.
- Supplied with RS-25-C cobalt knurl wheels - Tin-c coated. Adds longer life and better performance to the knurl wheels.



Description	Shank Size	Tool Length	Part Number	Price Each
CNC-75-2-R	0.75	5.5	DN20510	\$879.02
CNC-100-2-R	1	6.75	DN20520	\$931.90
CNC-125-2-R	1.25	7.25	DN20530	\$994.87

SINGLE KNURLING TOOL PIVOT HEAD KNURLING TOOL HSS KNURLING WHEELS



- Supplied with a medium cut HSS knurl
- Holder: 4" length x 5/8" sq shank
- Straight (AA) pattern knurl
- Black oxide finish
- Knurl size is 3/4 X 1/4 X 1/4"

Single Knurling Tool
Part # A-2220-0004
\$15.00 ea



- Self-adjusting pivot head
- Holder: 4" length x 1/2" sq shank
- Knurl size: 3/4 x 3/8 x 1/4"
- Produces a medium diamond pattern

**Pivot Head
Knurling Tool**
Part # A-2220-0005
\$22.50 ea



- HSS
- 3/4" OD x 3/8" W x 1/4" hole
- Sold in pairs



Pitch	Lines / Inch	STRAIGHT PATTERN	DIAMOND PATTERN	Pair Price
Coarse	14	A-2220-0214	A-2220-0014	\$10.00
Medium	21	A-2220-0216	A-2220-0016	\$10.00
Fine	33	A-2220-0218	A-2220-0018	\$10.00

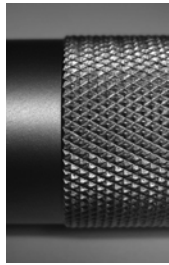
Call Us Or Visit Our Website For Our Complete Selection!

KNURLING WHEELS

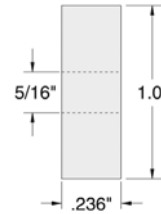


CIRCULAR PITCH KNURLS

Made to extremely high standards from the finest materials available. Knurls are individually hob cut and lapped to a smooth hard finish to give longer life and impart a smooth clean surface to the knurled part. Knurls available in High Speed, Cobalt, TIC/N - Coated, beveled, and diametral pitch.

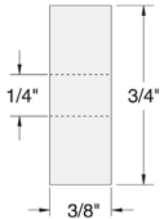


"M" Series Cobalt



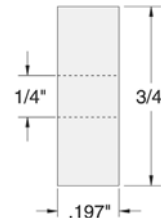
TPI	Incl. Tooth Angle	PATTERN		
		Straight	Diagonal Right	Diagonal Left
12	90°	DN25306	DN25372	DN25438
14	90°	DN25308	DN25374	DN25440
16	90°	DN25310	DN25376	DN25442
20	90°	DN25312	DN25378	DN25444
25	90°	DN25314	DN25380	DN25446
30	90°	DN25316	DN25382	DN25448
Price Each		\$44.87	\$44.87	\$44.87

"A" Series High Speed Steel



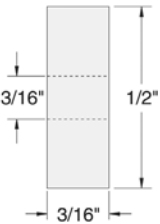
TPI	Incl. Tooth Angle	PATTERN		
		Straight	Diagonal Right	Diagonal Left
10	90°	DN23502	DN23634	DN23766
12	90°	DN23504	DN23636	DN23768
14	90°	DN23506	DN23638	DN23770
16	90°	DN23508	DN23640	DN23772
20	90°	DN23510	DN23642	DN23774
25	90°	DN23512	DN23644	DN23776
30	90°	DN23514	DN23646	DN23778
35	90°	DN23516	DN23648	DN23780
40	90°	DN23518	DN23650	DN23782
50	70°	DN23520	DN23652	DN23784
80	70°	DN23522	DN23654	DN23786
Price Each		\$21.95	\$21.95	\$21.95

"R" Series Cobalt



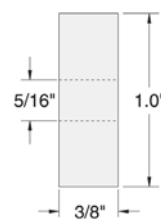
TPI	Incl. Tooth Angle	PATTERN		
		Straight	Diagonal Right	Diagonal Left
10	90°	DN26502	DN26564	DN26626
12	90°	DN26504	DN26566	DN26628
14	90°	DN26506	DN26568	DN26630
16	90°	DN26508	DN26570	DN26632
20	90°	DN26510	DN26572	DN26634
25	90°	DN26512	DN26574	DN26636
30	90°	DN26514	DN26576	DN26638
35	90°	DN26516	DN26578	DN26640
40	90°	DN26518	DN26580	DN26642
50	70°	DN26520	DN26582	DN26644
Price Each		\$31.76	\$31.76	\$31.76

"D" Series Cobalt



TPI	Incl. Tooth Angle	PATTERN		
		Straight	Diagonal Right	Diagonal Left
16	90°	DN25002	DN25056	DN25110
20	90°	DN25004	DN25058	DN25112
25	90°	DN25006	DN25060	DN25114
30	90°	DN25008	DN25062	DN25116
35	90°	DN25010	DN25064	DN25118
40	90°	DN25012	DN25066	DN25120
50	70°	DN25014	DN25068	DN25122
80	70°	DN25016	DN25070	DN25124
Price Each		\$27.05	\$27.05	\$27.05

"O" Series High Speed Steel



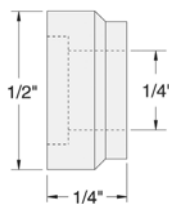
TPI	Incl. Tooth Angle	PATTERN		
		Straight	Male Diamond	Female Diamond
12	90°	DN25606	—	—
14	90°	DN25608	—	—
16	90°	DN25610	—	—
20	90°	DN25612	DN26008	DN26074
25	90°	DN25614	DN26010	DN26076
30	90°	DN25616	DN26012	DN26078
Price Each		\$32.26	\$46.27	\$46.27

"SW" SERIES KNURLING WHEELS



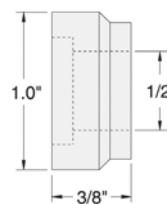
- "SW" knurling wheels are technically designed to knurl against a square shoulder.
- With super precise workmanship, the wheels are made of heat treated High Cobalt Steel to withstand severe knurling operation.
- Knurl wheels are Titanium Nitriding coated to reduce the co-efficient of friction when knurling, increasing the quality and the force of knurling as well as the life of the knurl wheels.
- All SW Series knurl wheels are available only in cobalt and tin coated.

"SW2" Series Cobalt



TPI	Incl. Tooth Angle	PATTERN		
		Straight	Diagonal Right	Diagonal Left
16	90°	DN27402	DN27452	DN27502
20	90°	DN27404	DN27454	DN27504
25	90°	DN27406	DN27456	DN27506
30	90°	DN27408	DN27458	DN27508
35	90°	DN27410	DN27460	DN27510
40	90°	DN27412	DN27462	DN27512
50	70°	DN27414	DN27464	DN27514
Price Each		\$45.26	\$45.26	\$45.26

"SW4" Series Cobalt



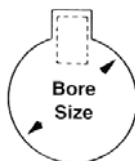
TPI	Incl. Tooth Angle	PATTERN		
		Straight	Diagonal Right	Diagonal Left
14	90°	DN28002	DN28056	DN28110
16	90°	DN28004	DN28058	DN28112
20	90°	DN28006	DN28060	DN28114
25	90°	DN28008	DN28062	DN28116
30	90°	DN28010	DN28064	DN28118
35	90°	DN28012	DN28066	DN28120
40	90°	DN28014	DN28068	DN28122
50	70°	DN28016	DN28070	DN28124
Price Each		\$57.56	\$57.56	\$57.56

Call Us Today For All Of Your Machine Tool Needs!

KEYWAY BROACH SETS

HIGH SPEED STEEL

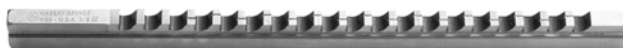
Broach sets come in a durable plastic case (Dura-Case) and include broaches, bushings, shims, lubrication and operation guides.



No. Of Combos	Type	Description	Dura Case	
			Part Number	Price Each
15	Standard Precision #1	3 Broaches: 1/16-I, 3/32-I, 1/8-I 5 Bushings: 1/4-I, 5/16-I, 3/8-I, 7/16-I, 1/2-I	HS-15315	\$204.20
18	Standard Set C-1	4 Broaches: 1/8-II, 3/16-II, 1/4-III, 3/8-III 9 Bushings: 1/2-II, 5/8-II, 3/4-III, 7/8-II, 1-III, 1-1/8-III, 1-1/4-III, 1-3/8-III, 1-1/2-III	HS-15318	\$356.90
18	Standard Set C-1A	4 Broaches: 1/8-II, 3/16-II, 1/4-III, 3/8-III 9 Bushings: 9/16-II, 11/16-II, 13/16-II, 15/16-III, 1-1/16-III, 1-3/16-III, 1-5/16-III, 1-7/16-III, 1-9/16-III	HS-15319	\$356.90
15	Standard Set C-2	3 Broaches: 1/8-II, 3/16-III, 1/4-III 9 Bushings: 9/16-II, 11/16-II, 13/16-II, 15/16-III, 1-1/16-III, 1-3/16-III, 1-5/16-III, 1-7/16-III, 1-9/16-III	HS-15320	\$302.55
14	Standard Set C-2A	3 Broaches: 1/8-II, 3/16-III, 1/4-III 9 Bushings: 1/2-II, 5/8-II, 3/4-III, 7/8-II, 1-III, 1-1/8-III, 1-1/4-III, 1-3/8-III, 1-1/2-III	HS-15321	\$302.55
30	Standard Set C-10A	3 Broaches: 1/8-II, 3/16-III, 1/4-III 18 Bushings: 1/2-II, 9/16-II, 5/8-II, 11/16-II, 3/4-III, 13/16-II, 7/8-II, 15/16-III, 1-III, 1-1/16-III, 1-1/8-III, 1-3/16-III, 1-1/4-III, 1-5/16-III, 1-3/8-III, 1-7/16-III, 1-1-1/2-III, 1-9/16-III	HS-15330	\$431.95
36	Standard Set C-10	4 Broaches: 1/8-II, 3/16-II, 1/4-III, 3/8-III 18 Bushings: 1/2-II, 9/16-II, 5/8-II, 11/16-II, 3/4-III, 13/16-II, 7/8-II, 15/16-III, 1-III, 1-1/16-III, 1-1/8-III, 1-3/16-III, 1-1/4-III, 1-5/16-III, 1-3/8-III, 1-7/16-III, 1-1-1/2-III, 1-9/16-III	HS-15336	\$456.85

KEYWAY BROACHES WITH SHIMS

HIGH SPEED STEEL-AMERICAN STANDARD



Used to cut keyways in machined round holes. Designed to be used with an arbor press or manually, it is suited for use in a variety of non-ferrous and ferrous materials.

FEATURES:

- Tapered broach allows teeth to cut key way to proper depth
- Manufactured from high speed steel
- Ground and hardened bar with cutting teeth on the edges
- Replacement shims also available

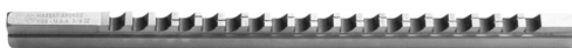


Broach Size/Type	Keyway Width Tolerance	Dimensions	No. Of Shims	Part Number	Price Each
1/16 -I	.0625-.0635	1/8 X 5 1/4	0	HS-10104	\$53.75
3/32 -I	.0937-.0947	1/8 X 5 1/4	0	HS-10106	\$53.75
1/8 -I	.1252-.1262	1/8 X 5 1/4	1	HS-10108	\$53.75
3/32 -II	.0937-.0947	3/16 X 7	0	HS-10206	\$63.60
1/8 -II	.1252-.1262	3/16 X 7	1	HS-10208	\$63.60
5/32 -II	.1564-.1574	3/16 X 7	1	HS-10210	\$63.60
3/16 -II	.1877-.1887	3/16 X 7	1	HS-10212	\$63.60
3/16 -III	.1877-.1887	3/8 X 11 7/8	1	HS-10312	\$78.25
1/4 -III	.2502-.2512	3/8 X 11 7/8	1	HS-10316	\$78.25
5/16 -III	.3127-.3137	3/8 X 11 7/8	1	HS-10320	\$78.25
3/8 -III	.3755-.3765	3/8 X 11 7/8	2	HS-10324	\$78.25

Broach Size/Type	Keyway Width Tolerance	Dimensions	No. Of Shims	Part Number	Price Each
5/16 -IV	.3127-.3137	9/16 X 13 7/8	1	HS-10420	\$119.50
3/8 -IV	.3755-.3765	9/16 X 13 7/8	2	HS-10424	\$119.50
7/16 -IV	.4380-.4390	9/16 X 13 7/8	2	HS-10428	\$119.50
1/2 -IV	.5006-.5016	9/16 X 13 7/8	3	HS-10432	\$119.50
9/16 -IV	.5630-.5640	9/16 X 13 7/8	3	HS-10436	\$285.60
5/8 -V	.6260-.6270	3/4 X 15 1/4	4	HS-10540	\$194.95
3/4 -V	.7517-.7525	3/4 X 15 1/4	5	HS-10548	\$194.95
7/8 -VI	.8765-.8775	1 X 19 1/4	6	HS-10656	\$361.40
1" -VI	1.0015-1.0025	1 X 19 1/4	7	HS-10664	\$361.40
1 1/8	1.1260-1.1270	1 1/8 X 23	8	HS-10666	\$1,002.20
1 1/4	1.2510-1.2520	1 1/4 X 23	9	HS-10668	\$1,130.55

ONE PASS KEYWAY BROACHES

HIGH SPEED STEEL-AMERICAN STANDARD



Used to cut keyways in machined round holes in a single pass. Designed to be used with an arbor press or manually, it is suited for use in a variety of non-ferrous and ferrous materials.

FEATURES:

- Tapered broach allows teeth to cut key way to proper depth
- Manufactured from high speed steel
- Ground and hardened bar with cutting teeth on the edges
- Replacement shims also available
- Also available in metric sizes

Broach Size/Type	Keyway Width Tolerance	Dimensions Inches	Min. Length of Cut	Max. Length of Cut	Part Number	Price Each
1/8 II	.1252-.1262	3/16 X 10 3/4	1/4	1 1/2	HS-10208COP	\$215.20
5/32 II	.1564-.1574	3/16 X 10 3/4	1/4	1 1/2	HS-10210COP	\$215.20
3/16 II	.1877-.1887	3/16 X 10 3/4	1/4	1 1/2	HS-10212COP	\$218.30
3/16 III	.1877-.1887	3/8 X 18 1/2	5/16	1 11/16	HS-10312COP	\$259.95
1/4 III	.2502-.2512	3/8 X 18 1/2	5/16	1 11/16	HS-10316COP	\$259.95
5/16 III	.3127-.3137	3/8 X 18 1/2	5/16	1 11/16	HS-10320COP	\$259.95
3/8 III	.3755-.3765	3/8 X 18 1/2	5/16	1 11/16	HS-10324COP	\$259.95

EXTRA SHIMS

FOR STANDARD KEYWAY BROACHES

HIGH SPEED STEEL-AMERICAN STANDARD

Shims are designed to be placed between the bushing and the broach to allow the broach to cut deeper slots in the hole in succeeding passes.



Broach Size/Type	Thick.	Length x Width	Part Number	Price Each	Broach Size/Type	Thick.	Length x Width	Part Number	Price Each
1/8 I	.031	1 3/8 X 1/8	HS-30108	\$3.40	7/16 IV	.075	6 1/4 X 9/16	HS-30428	\$4.65
1/8 II	.031	1 7/8 X 3/16	HS-30208	\$3.40	1/2 IV	.062	6 1/4 X 9/16	HS-30432	\$4.65
5/32 II	.042	1 7/8 X 3/16	HS-30210	\$3.40	5/8 V	.062	6 3/4 X 3/4	HS-30540	\$4.65
3/16 II	.050	1 7/8 X 3/16	HS-30212	\$3.40	3/4 V	.062	6 3/4 X 3/4	HS-30548	\$4.65
3/16 III	.050	2 7/8 X 3/8	HS-30312	\$3.40	7/8 VI	.062	6 3/4 X 1	HS-30656	\$4.65
1/4 III	.062	2 7/8 X 3/8	HS-30316	\$3.40	1" VI	.062	6 3/4 X 1	HS-30664	\$4.65
5/16 III	.078	2 7/8 X 3/8	HS-30320	\$3.40	1.125	.062	7 X 1 1/8	HS-30740	\$7.80
3/8 III	.062	2 7/8 X 3/8	HS-30324	\$3.40	1.25	.062	7 X 1 1/4	HS-30750	\$7.80
5/16 IV	.078	6 1/4 X 9/16	HS-30420	\$4.65	1.375	.062	7 X 1 1/4	HS-30760	\$7.80
3/8 IV	.062	6 1/4 X 9/16	HS-30424	\$4.65	1.5	.062	7 X 1 1/4	HS-30770	\$7.80

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

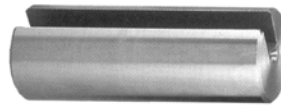
COOLANT/FLUIDS
TOOL STORAGE

BROACHES

KEYWAY BUSHINGS KNURLED COLLAR & PLAIN TYPE

Designed for use with standard keyway broaches for cutting keyways in machined holes. Keyway bushings act as a guide to guide the keyway broach through the hole.

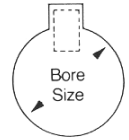
Plain Type: Used with Type IV & V broaches
Knurled Collar Type: Designed for use with Type I, II & III broaches



Plain Type Bushing



Collar Bushing



I Collared Bushings for I Broaches

Dia/Type	Length	Part Number	Price Each
1/4 I	1 1/8	HS-20116	\$12.95
5/16 I	1 1/8	HS-20120	\$12.95
3/8 I	1 1/8	HS-20124	\$12.95
7/16 I	1 1/8	HS-20128	\$12.95
1/2 I	1 1/8	HS-20132	\$12.95

II Collared Bushings for II Broaches

Dia/Type	Length	Part Number	Price Each
1/2 II	1 11/16	HS-20232	\$11.40
9/16 II	1 11/16	HS-20236	\$11.40
5/8 II	1 11/16	HS-20240	\$11.40
11/16 II	1 11/16	HS-20244	\$11.40
3/4 II	1 11/16	HS-20248	\$11.40
13/16 II	1 11/16	HS-20252	\$11.40
7/8 II	1 11/16	HS-20256	\$11.40

III Collared Bushings for III Broaches

Dia/Type	Length	Part Number	Price Each
3/4 III	2 1/2	HS-20348	\$15.20
13/16 III	2 1/2	HS-20352	\$15.20
7/8 III	2 1/2	HS-20356	\$15.20
15/16 III	2 1/2	HS-20360	\$15.20
1" III	2 1/2	HS-20364	\$15.20

III Collared Bushings for III Broaches

Dia/Type	Length	Part Number	Price Each
1 1/16 III	2 1/2	HS-20368	\$15.20
1 1/8 III	2 1/2	HS-20372	\$15.20
1 3/16 III	2 1/2	HS-20376	\$18.40
1 1/4 III	2 1/2	HS-20380	\$18.40
1 5/16 III	2 1/2	HS-20384	\$18.40
1 3/8 III	2 1/2	HS-20388	\$18.40
1 7/16 III	2 1/2	HS-20392	\$18.40
1 1/2 III	2 1/2	HS-20396	\$18.40
1 9/16 III	2 1/2	HS-20400	\$18.40

IV Plain Bushings for IV Broaches

Dia/Type	Length	Part Number	Price Each
1 7/16	4	HS-21492	\$18.40
1 1/2	4	HS-21496	\$18.40
1 9/16	4	HS-21500	\$18.40
1 5/8	4	HS-21504	\$18.40
1 11/16	4	HS-21508	\$25.70
1 3/4	4	HS-21512	\$25.70
1 13/16	5	HS-21516	\$25.70
1 7/8	5	HS-21520	\$25.70
1 15/16	5	HS-21524	\$28.10

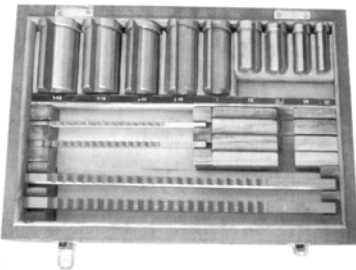
IV Plain Bushings for IV Broaches

Dia/Type	Length	Part Number	Price Each
2"	5	HS-21528	\$28.10
2 1/16	5	HS-21532	\$28.10
2 1/8	5	HS-21536	\$28.10
2 3/16	5	HS-21540	\$28.10
2 1/4	5	HS-21544	\$37.50
2 5/16	5	HS-21548	\$37.50
2 3/8	6	HS-21552	\$37.50
2 7/16	6	HS-21556	\$37.50
2 1/2	6	HS-21560	\$47.70
2 9/16	6	HS-21564	\$47.70
2 5/8	6	HS-21568	\$47.70
2 11/16	6	HS-21572	\$47.70
2 3/4	6	HS-21576	\$47.70
2 13/16	6	HS-21580	\$47.70
2 7/8	6	HS-21584	\$47.70
2 15/16	6	HS-21588	\$47.70
3	6	HS-21592	\$47.70

Additional Sizes Available.

KEYWAY BROACH SETS

Heavy Duty, High Speed Steel



- High speed steel
- Complete with wood case
- **30 piece set** includes 5 broaches, 18 collared bushings and 7 shims for 47 keyway combinations.
- **9 piece set** includes 3 broaches, 5 collared bushings and 1 shim for 15 keyway combinations



No. Of Combos	Type	Description	Part Number	Price Each
15	Standard Style A	3 Broaches: 1/16, 3/32, 1/8 5 Bushings: 1/4, 5/16, 3/8, 7/16, 1/2 (includes shim)	A-2006-0051	\$155.00
47	Standard Style B/C	5 Broaches: 1/8-B, 3/16-B, 1/4-C, 5/16-C, 3/8-C 18 Bushings: 1/2-B, 9/16-B, 5/8-B, 11/16-B, 3/4-B, 13/16-B, 7/8-B, 15/16-C, 1"-C, 1-1/16-C, 1-1/8-C, 1-3/16-C, 1-1/4-C, 1-5/16-C, 1-3/8-C, 1-7/16-C, 1-1/2-C, 1-9/16-C (includes 7 shims)	A-2006-0056	\$550.00

ARBOR PRESSES

The Palmgren arbor press delivers the heavy force needed for riveting, squeezing, punching, bending, and other pressing applications with sturdy, cast-iron construction. Removable machined steel anvil provides accurate work support in four slot positions. Rugged steel ram is driven by a machined pinion. Punches or tools may be added to the end of the ram with the aid of a magnetic insert. Base drilled for mounting on a bench or pedestal. PALM-61101 is equipped with a handwheel to perform light and quick press work.

The Arbor Press Stand provides a sturdy base and optimal height for easy operation. It has a slot on the top for pieces which need to extend below the base of the press table. Stand comes with built-in cup for catching expressed pieces. Base and top are cast iron; body of welded steel. Fits all 2-4 ton presses.



Arbor Press Stand
PALM-70103



Force Ton	Swing	Anvil Dia.	Max Work Hgt.	Ram Dim.	Height	Base Dimension	Wgt	Part Number	Price Each
0.5	7-1/2"	3-3/8"	4-1/2"	3/4" x 3/4"	9-3/8"	5-1/8" x 9-3/8"	22 lbs	PALM-61051	\$78.60
1	8"	4-7/16"	6-1/8"	1" x 1"	11-1/8"	6-5/16 x 10-3/4"	27 lbs	PALM-61101	\$115.30
2	11-7/8"	6-5/8"	8"	1-1/4" x 1-1/4"	15-1/8"	11-1/8 x 16"	64 lbs	PALM-61201	\$236.75
3	12-1/2"	6-5/8"	12-5/8"	1-1/2" x 1-1/2"	21"	7-7/8 x 17-7/8"	102 lbs	PALM-61301	\$369.40

Arbor Press Stand

Top Dimension	Base Dimension	Height	Wgt	Part Number	Price Each
11-13/16" x 22-1/16"	11-13/16" x 22-1/4"	33-13/16"	100 lbs	PALM-70103	\$288.10

Call Us Today For All Of Your Machine Tool Needs!

STANDARD HEXAGON PUSH BROACHES HIGH SPEED STEEL



Used to cut hexagonal shaped holes in machined round holes. Designed to allow broach to start in a plain round hole and cut a precisely shaped hexagonal hole in a single pass. Designed to be used with an arbor press or manually, it is suited for use in a variety of non-ferrous and ferrous materials.



FEATURES:

- Each tooth is progressively larger and cuts slightly deeper than the previous tooth
- Manufactured from high speed steel
- Ground and hardened bar with cutting teeth on the edges
- Also available in metric sizes

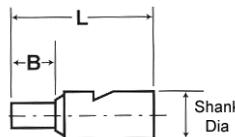


Hex Size	Tolerance	Pilot Dia	Drill Size	Broach Length	Min LOC	Max LOC	Part Number	Price Each
1/8	.1255-.1260	.1245	1/8	4 5/8	3/16	3/8	HS-12008	\$133.10
5/32	.1565-.1570	.1557	5/32	5 1/2	1/4	1/2	HS-12010	\$150.85
3/16	.1880-.1890	.1870	3/16	5 9/16	1/4	5/8	HS-12012	\$140.05
7/32	.2190-.2200	.2182	7/32	6	1/4	3/4	HS-12014	\$166.25
1/4	.2505-.2515	.2495	1/4	6 1/2	1/4	3/4	HS-12016	\$140.05
9/32	.2815-.2825	.2807	9/32	7 3/4	3/8	1	HS-12018	\$173.30
5/16	.3130-.3140	.3120	5/16	8 1/4	3/8	1	HS-12020	\$146.45
11/32	.3440-.3450	.3432	11/32	8 1/4	3/8	1 1/4	HS-12022	\$213.20
3/8	.3755-.3765	.3745	3/8	9	3/8	1 1/4	HS-12024	\$171.30
13/32	.4065-.4075	.4057	13/32	10	1/2	1 3/8	HS-12026	\$255.10
7/16	.4385-.4395	.4370	7/16	10 3/4	1/2	1 3/8	HS-12028	\$216.60
15/32	.4690-.4700	.4682	15/32	12 3/8	1/2	1 3/8	HS-12030	\$305.75
1/2	.5005-.5015	.4995	1/2	12 1/2	1/2	1 3/8	HS-12032	\$253.40
9/16	.5630-.5640	.5620	9/16	14 1/4	1/2	1 1/2	HS-12036	\$304.05
5/8	.6260-.6270	.6245	5/8	16 7/8	5/8	1 5/8	HS-12040	\$350.15
11/16	.6880-.6890	.6870	11/16	17	5/8	1 5/8	HS-12044	\$385.80
3/4	.7510-.7520	.7495	3/4	17 7/8	5/8	1 5/8	HS-12048	\$406.65
7/8	.8755-.8765	.8745	7/8	18 7/8	5/8	1 5/8	HS-12056	\$640.90
1"	1.0020-1.0030	.9995	1	19 7/8	5/8	1 5/8	HS-12064	\$671.55

INTERNAL HEX & SQUARE BROACHES HIGH SPEED STEEL

FEATURES:

- Also referred to as "wobble," "blind hole," "punch" and "rotary" broaches
- For use with screw machines, CNC turning machines and presses
- Also available in special forms- torx, octagons, splines- please call for more information
- For Rotary Broach Holders, please see the following page



HEXAGONAL PUNCH BROACHES .315 SHANK

Shank Dia	Hex Size	DOC B	OAL L	Part Number	Price Each
.315	.051	5/64	1-1/4	HS-66002	\$57.30
	1/16	3/32	1-1/4	HS-66004	\$57.30
	5/64	7/64	1-1/4	HS-66005	\$57.30
	3/32	9/64	1-1/4	HS-66006	\$57.30
	7/64	5/32	1-1/4	HS-66007	\$57.30
	1/8	3/16	1-1/4	HS-66008	\$57.30
	9/64	7/32	1-1/4	HS-66009	\$57.30
	5/32	1/4	1-1/4	HS-66010	\$57.30
	3/16	9/32	1-1/4	HS-66012	\$57.30
	7/32	11/32	1-1/4	HS-66014	\$57.30
	1/4	3/8	1-1/4	HS-66016	\$57.30
	9/32	3/8	1-1/2	HS-66018	\$75.60
	5/16	3/8	1-1/2	HS-66020	\$75.60
	11/32	7/16	1-1/2	HS-66022	\$75.60
	3/8	1/2	1-1/2	HS-66024	\$78.80
	13/32	1/2	1-1/2	HS-66026	\$78.80
7/16	1/2	1-1/2	HS-66028	\$78.80	
15/32	1/2	1-1/2	HS-66030	\$78.80	
1/2	1/2	1-1/2	HS-66032	\$78.80	

HEXAGONAL PUNCH BROACHES .500 SHANK

Shank Dia	Hex Size	DOC B	OAL L	Part Number	Price Each
.500	1/4	3/8	1-1/2	HS-66116	\$67.40
	9/32	7/16	1-1/2	HS-66118	\$67.40
	5/16	1/2	1-1/2	HS-66120	\$67.40
	11/32	9/16	1-1/2	HS-66122	\$67.40
	3/8	9/16	1-1/2	HS-66124	\$67.40
	13/32	5/8	2	HS-66126	\$89.70
	7/16	5/8	2	HS-66128	\$89.70
	15/32	5/8	2	HS-66130	\$89.70
	1/2	5/8	2	HS-66132	\$89.70
	9/16	5/8	2	HS-66136	\$92.25
	5/8	3/4	2	HS-66140	\$94.40
	11/16	7/8	2	HS-66144	\$97.40
	3/4	7/8	2	HS-66148	\$99.25

SQUARE PUNCH BROACHES .315 SHANK

Shank Dia	Hex Size	DOC B	OAL L	Part Number	Price Each
.315	1/16	1/8	1-1/4	HS-68004	\$57.30
	3/32	9/64	1-1/4	HS-68006	\$57.30
	1/8	3/16	1-1/4	HS-68008	\$57.30
	5/32	1/4	1-1/4	HS-68010	\$57.30
	3/16	9/32	1-1/4	HS-68012	\$57.30
	7/32	11/32	1-1/4	HS-68014	\$57.30
	1/4	3/8	1-1/2	HS-68016	\$77.90
	9/32	3/8	1-1/2	HS-68018	\$77.90
	5/16	3/8	1-1/2	HS-68020	\$77.90
	11/32	3/8	1-1/2	HS-68022	\$79.05
3/8	3/8	1-1/2	HS-68024	\$79.05	

SQUARE PUNCH BROACHES .500 SHANK

Shank Dia	Hex Size	DOC B	OAL L	Part Number	Price Each
.500	3/32	9/64	1-1/2	HS-68106	\$67.40
	1/8	3/16	1-1/2	HS-68108	\$67.40
	5/32	1/4	1-1/2	HS-68110	\$67.40
	3/16	9/32	1-1/2	HS-68112	\$67.40
	7/32	11/32	1-1/2	HS-68114	\$67.40
	1/4	3/8	1-1/2	HS-68116	\$67.40
9/32	7/16	1-1/2	HS-68118	\$67.40	
5/16	1/2	1-1/2	HS-68120	\$67.40	
11/32	9/16	1-1/2	HS-68122	\$94.60	
3/8	5/8	2	HS-68124	\$94.60	
7/16	5/8	2	HS-68128	\$94.60	
1/2	5/8	2	HS-68132	\$94.60	
9/16	3/4	2	HS-68136	\$99.25	
5/8	7/8	2	HS-68140	\$99.25	

HEXAGONAL PUNCH BROACHES .500 SHANK

Shank Dia	Hex Size	DOC B	OAL L	Part Number	Price Each
.500	3/32	9/64	1-1/2	HS-66106	\$67.40
	7/64	5/32	1-1/2	HS-66107	\$67.40
	1/8	3/16	1-1/2	HS-66108	\$67.40
	9/64	7/32	1-1/2	HS-66109	\$67.40
	5/32	1/4	1-1/2	HS-66110	\$67.40
	3/16	9/32	1-1/2	HS-66112	\$67.40
	7/32	9/32	1-1/2	HS-66114	\$67.40



**Rotary Broach
Holders
Also Available!**

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

GRINDERS/BUFFERS/SANDERS

A

BENCH GRINDERS

POWERGRIND bench grinders are built with high quality motors for heavy duty use and long duty cycles. Our stated horsepower is actual sustained horsepower under 100% loads. Designed to do more, Palmgren bench grinders under full load provide you with 4 to 7 times longer duty cycles and 8 times less speed degradation than all other competitors.

Palmgren's line up of industrial grade bench grinders provide smooth, quiet power for all grinding, cleaning, deburring, chamfering, and sharpening jobs. Designed to handle heavy stock removal to finishing applications these units are built for continuous and efficient use all day, every day.

- Heavy duty capacitor motors supply the extra current required during the start-up and operation under load
- Extended wheel-to-wheel clearance allows for longer items to be ground easily
- Dynamically balanced rotors and sealed bearings minimize vibration and ensure smooth running
- Large adjustable tool rests for safe, efficient tilt and angle grinding
- Adjustable safety eye shields and spark guards easily positioned with hurricane bolts
- Exclusive single port dust collection system, on select models
- Maximum performance, accuracy and value
- CSA approved and OSHA compliant



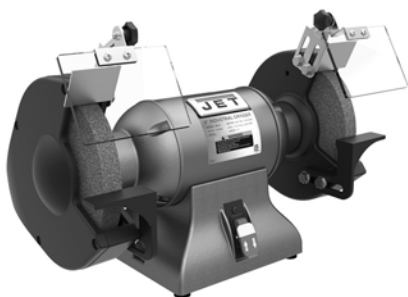
PALM-82062



*No dust collection ports

Wheel Dia	Face Wheel	Arbor Hole	RPM	Motor HP	Phase	Voltage (Hertz)	Part Number	Price Each
6"	3/4"	1/2"	3,450	1/3	1	115/230	PALM-82061*	\$116.00
6"	3/4"	1/2"	3,450	1/3	1	115/230	PALM-82062	\$133.00
8"	1"	5/8"	3,450	3/4	1	120/240	PALM-82081	\$232.00
8"	1"	5/8"	3,450	3/4	3	120/240	PALM-82082	\$232.00
10"	1"	1"	1,725	1	1	115/230	PALM-82101	\$469.00
10"	1"	1"	1,725	1	3	220/440	PALM-82102	\$469.00

INDUSTRIAL BENCH GRINDERS



- UL listed
- Heavy duty capacitor motor
- Sealed bearings offer years of maintenance free grinding
- CSA/CUS certified, following strict guidelines and electrical requirements
- Industrial strength construction
- All grinders include 1-1/4" wheel dresser



CALL FOR OUR PROMOTIONAL PRICING!

Wheel Dia	Shaft Dia	Wheel Dia	RPM	Motor HP	Amps	Voltage (Hertz)	Part Number	Price Each
8"	5/8"	8" x 1"	3,450	1	7	115V, 1Ph	JET-578008	\$354.29
10"	1"	10" x 1"	1,720	1-1/2	10	115V, 1Ph	JET-578010	\$640.00
12"	1-1/4"	12" x 2"	1,720	2	10	230V, 1Ph	JET-578012	\$1,550.00

BENCH GRINDER & MULTITOOL ATTACHMENT



- Perfect complement to 6" & 8" grinders
- Includes a 7-inch disc wheel, flat belt, free strap, and rubber contact wheel
- Operates in either the horizontal or vertical position
- Cast iron guard houses the 36 Grit Wheel
- Adjustable cast iron tool rest
- Massive cast iron body
- Totally enclosed pre-lubricated ball bearings
- Cast iron wheel guard with safety shield on the left and sheet metal guard on the belt



CALL FOR OUR PROMOTIONAL PRICING!

Wheel Dia	Shaft Dia	Wheel Dia	RPM	Motor HP	Wheel Grits	Voltage (Hertz)	Dust Port Size	Part Number	Price Each
6"	1/2"	6" x 3/4"	3,450	1/2	36/60	115V, 1Ph	2"	JET-577109	\$557.14
8"	5/8"	8" x 1"	3,450	1	36/60	115V, 1Ph	2"	JET-577107	\$742.86
8"	5/8"	8" x 1"	3,450	1	36/60	115V, 1Ph	2-1/2"	JET-577208	\$850.00

HEAVY DUTY BENCH GRINDERS



- Direct drive motor-no brushes or belts to adjust or replace
- Permanently lubricated motor bearings
- Adjustable shatter-resistant plastic eye shields
- Removable wheel covers for easier wheel changes
- Adjustable tool rests
- UL approved, 6' wire cord

Wheel Dia	Motor (HP)	RPM	Power	Part Number	Price Each
6"	1/2	3,500	110 V /1PH	A-7600-0030	\$95.00
8"	3/4	3,500	110 V /1PH	A-7600-0028	\$120.00

Pedestal Stand For Bench Grinder

For 6", 8" & 10" Grinders-34" Overall Height	A-8071-0034	\$69.00
--	-------------	---------

PEDESTAL STAND



PALM-70101

JET-577172



- Heavy duty cast iron construction
- Stable, wide stance base
- Fully adjustable platform
- Designed to accommodate most 6", 7" 8" & 10" bench grinders



Top View

Vendor	Mounting Surface	Overall Height	Weight	Part Number	Price Each
JET	11" x 10"	31"	46lbs	JET-577172	\$119.00
PALMGREN	11" x 10"	31-3/4"	59 lbs	PALM-70101	\$129.00

Call Us Today For All Of Your Machine Tool Needs!

2" x 42" BENCH BELT & DISC SANDER

- Deluxe miter gauge turns and locks for common angles, 45° both left/right
- Removable platen allows for sanding, grinding or finishing of outside curves or odd shaped work pieces on the belt
- Allows for sanding, grinding or finishing of outside, curves or odd shaped work
- Cast Iron construction



Part Number	Call For Our Promotional Price
JET-577004	
Overall Dimensions	20-1/2" x 22-3/4" x 20"
Belt Size	2" x 42"
Belt Speed (SFPM)	3,100
Belt Table Size	10" x 6"
Belt & Disc Table Tilt	45° Out
Disc Dia	8"
Disc Speed (RPM)	3,450
Disc Table Size	10-3/4" x 7-1/2"
Table Slots	5/8
Motor	3/4HP, 1Ph, 115V
Net Weight	60 lbs

20" DISC SANDER



- Direct drive motor
- Tilting table capability adds flexibility of 45° forward and 15° backward on positive lock rack and gear
- Table can be lowered below the disc to accommodate large work pieces
- Equipped with low voltage protection ON/OFF switch
- Foot brake for rapid braking



Part Number	Call For Our Promotional Price
JET-577010	
Height	53"
Width	28"
Length	30"
Net Weight	400 lbs
Motor	3 HP, 460V, 3 Ph
Disc Table Size	27-1/2 X 10-1/2
Disc Table Tilt	45° out, 15° in
Disc Diameter	20"
Disc Speed RPM	1725

SQUARE WHEEL BELT GRINDER



- Flat & Angular Stock: Platen setting is the perfect angle for high speed, precision flat and level grinding
- Fully guarded cover
- Belt speed of 4,600 SFPM
- Belt size 2" x 72"



Part Number	Call For Our Promotional Price
JET-577000	
Net Weight	163 lbs
Motor	1 HP, 115/230V, 1 Ph
Belt Size	2" X 72"
Belt Speed	4600 SFPM
Contact Wheel Dia	8 x 2, 3 x 2, 1-1/2 x 2

BELT & DISC FINISHING MACHINE



For general purpose sanding and finishing on metal, wood, plastic and other materials. Typical operations include surfacing, finishing, sanding, polishing and deburring. Heavy duty construction for long life. Capacitor motors supply the extra current required during start-up and running under load. Belt housing that can be rotated from vertical to horizontal position for sanding long pieces. Tensioned belt mechanisms provide even sanding surface and easy belt changes.

- 2" X 42" belt with a 6" disc bench model
- Belt operates in the horizontal or vertical position and is designed for fast, easy belt changes
- Both the belt and disc come with a tilting work table
- Disc table is slotted to accept the standard miter gauge
- Cast base for maximum rigidity

Full Line Available!
Please call for more information.



Belt Size	Belt FPM	Disc Size	Disc RPM	Motor HP	Voltage (Hertz)	Part Number	Price Each
2" x 42"	4400	6"	3500	1/3	120/240 (60)	PALM-81061	\$232.00

INDUSTRIAL COMBINATION BELT & DISC FINISHING MACHINE

High-speed precision and amazing versatility. This rugged piece of equipment has a belt that operates at any angle, and conforms to curves, angles or circular finishing and grinding operations. Machinists who take great pride in their work prefer the JET Industrial Combination Belt & Disc Finishing Machine

- Plain and compound miters are easily obtained using the standard die cast aluminum miter gauge
- Fully machined, balanced disc
- Removable upper belt guard for contour finishing
- Completely enclosed drums and guarded sanding belt
- Adjustable, heavy duty cast iron, removable platen
- Variable position locks
- Belt head adjusts vertically and horizontally
- Large cast iron slotted table
- Adjustable dust collector and dust chute
- Heavy duty one-piece steel stand
- 60 grit belt and disc standard on machine
- Miter gauge included

Full Line Available!
Please call for more information.



Call For Our Promotional Pricing!



Part Number	Call For Our Promotional Price
JET-414551	
Belt Size	6" x 48"
Belt Speed (SFPM)	2,850
Belt Table Size	7-3/8" X 14-3/4"
Disc Dia	12"
Disc Speed (RPM)	1,960
Disc Table Size	12" X 16-3/8"
Table Tilt	45° Out
Motor	1-1/2 HP, 115V, 1Ph
Net Weight	250 lbs

Call Us Or Visit Our Website For Our Complete Selection!

BANDSAWS

7" x 12" HORIZONTAL/VERTICAL BANDSAW WITH COOLANT SYSTEM

- 9-7/16" x 10" work table in the vertical position
- Rapid action vise miters to 45°
- Improved Height and width of stand with built-in storage cabinet and chip tray
- Adjustable material stop for repeatability
- CSA/CUS Certification
- Blade drive is a belt to sealed, hardened and ground gear drive system
- Blade wheels are made from flanged cast iron for increased durability
- Auto shut-off after cut
- Adjustable ball bearing blade guides
- Cast mounted adjustable hydraulic downfeed
- Complete coolant system
- Four 8" rubber wheels for ease of movement
- 3/4" Bi-Metal blade



Part Number JET-414559	Call For Our Promotional Price
Model Number	HVBS-712
Cutting Capacity:	7 X 12
Round Cap. at 90°	7"
Rectangle Cap. at 90°	7" x 10-3/8"
Square Cap. at 90°	7" x 7"
Throat Depth	7
Vertical Tables	5" x 6"
Vise Swivels	45°
Blade Size	3/4 x .032 x 93"
Blade Wheel Dia.	11-3/4"
Blade Speeds (SFPM)	86, 132, 178, 260
Bed Height (w/o wheels)	22-1/4"
Motor	3/4HP, 1Ph, 115/230V
Dimensions	48" x 17" x 40"
Net Weight	374 lbs

7" x 12" HORIZONTAL BANDSAW

Palmgren's 7" x 12" horizontal bandsaw is the ideal saw for machine, maintenance and fabricating shops and for limited run production applications. Heavy duty rigid steel and cast iron construction of the saw head and base provide full blade support and eliminates vibration and deflection.

- Step pulley drive train with 4 speed settings to cover all your sawing applications
- Gear box utilizes a bronze worm gear and hardened worm shaft running in an oil bath
- Adjustable hydraulic down feed of the saw head
- Automatic shut off at end of cut
- Adjustable ball bearing blade guides delivers straight accurate cuts
- Flood coolant system cools and cleans chips from the blade
- Castor for easy positioning of the saw anywhere in the shop
- Chip brush
- Rapid acting vise
- Adjustable material work stop



PALMGREN
a CH Hanson brand

Part Number PALM-83311	\$2,050.00
Round Capacity	7"
Rectangle Capacity	7" x 11-3/4"
Square Capacity	7"
Max. Thickness of	7"
Vise Swivels	45°
Blade Size	93" x 3/4" x 0.035"
Blade Wheel Dia.	11-1/2"
Blade Speeds (FPM)	96-132-178-260
Cutting Angle	45°
Motor	1HP, 1Ph, 120/240V
Amps AC	12/6.0
Dimensions H x W x RPM	41" x 18" x 45" 1725

10" x 14" HORIZONTAL MITERING BANDSAW

JET Mitering Horizontal bandsaws unique design features a swiveling head while the base remains stationary. This allows the stock to remain same position while making accurate crosscuts and miters. Backed by the industry leading two year warranty, JET Mitering Bandsaws are built to last and deliver precision results.

- Mitering head swivels to cut any angle 0° - 45° while the work piece remains secured
- Large, easy-to-read scale for accurate positioning of the saw head
- Fully adjustable hydraulic downfeed with separate on/off control valve
- Large hand wheel and built-in gauge provides easy blade tensioning
- Carbide blade guides with roller bearings
- Coolant is distributed through the blade guides
- Quick positioning vise reduces set-up time
- Self propelled blade brush extends blade life
- Automatic shut-off after cut
- Coolant system
- Adjustable material stop
- 1" Bi-Metal blade



Call For Our Promotional Pricing!



Part Number JET-414479	Call For Our Promotional Price
Cutting Capacity (W X D)	10" X 14"
Round At 90°	10"
Round At 45°	9"
Rectangle At 90°	10" x 14"
Rectangle At 45°	9" x 8-1/2"
Throat Depth	10-1/2"
Vise Swivels	45°
Head Movement	45°
Blade Size	1" X .035 X 130
Blade Length	130"
Blade Wheel Diameter	14"
Blade Speed (SFPM)	82, 132, 210, 330
Bed Height	25
Motor (HP)	2 HP, 230V, 1PH
Drive	BELT DRIVE
Overall Dimensions	26" L x 69" W x 44" H
Weight	946 lbs
Prewired Voltage (V.)	230 ONLY

Call Us Today For All Of Your Machine Tool Needs!

9" X 20" BELT DRIVE BENCH LATHE



- Spindle supported by precision tapered roller bearings
- Hardened and ground bedways
- Reversing switch for added versatility
- Backlash adjustments in carriage are easily adjustable
- Quick change gearbox provides a wide range of inch and metric threads
- Power longitudinal feed allows reverse threading
- Standard 1-1/2 x 8 TPI spindle mount allows for many after market accessories
- Tailstock is adjustable for taper cuts

STANDARD EQUIPMENT

- Full length splash guard
- 4" 3-Jaw chuck with threaded back plate
- 7" 4-Jaw chuck with threaded back plate
- Metric change gears
- Centers
- Threading dial

Shown With Optional Stand

Call For Our Promotional Pricing!



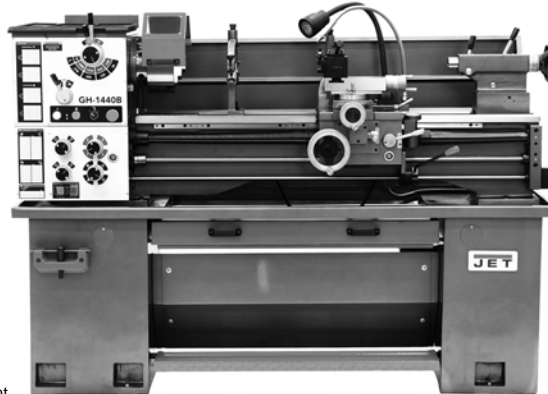
Part Number JET-321376	Call For Our Promotional Price
Model	BD-920W
Swing Over Bed	9"
Swing Over Cross Slide	5-5/16"
Distance Between Centers	20"
Hole Through Spindle	25/32"
Spindle Mount (in. x TPI)	1-1/2 x 8
Spindle Taper	MT-3
Spindle Speeds	6
Spindle Speed Range (RPM)	130-2,000
Longitudinal Feeds	60
Longitudinal Feed Range (in. /rev.)	0.0006-0.037
Inch Threads	30
Inch Thread Range	8-60 TPI
Overall Dimensions (L x W x H)	37" x 18-3/4" x 417-3/8"
Motor	3/4HP, 1Ph, 115V only
Net Weight	265 lbs

14" X 40" GEARED HEAD BENCH LATHES

With Stand & Foot Brake



- Precision spindle roller bearings
- High quality steel hardened gears in headstock
- Lead screw cover
- Cast iron stand (GH-1440B)
- Foot brake comes standard
- Emergency stop within easy reach of the operator
- Chuck guard
- Electronic chuck key docking station- lathe will not turn without the chuck key being docked
- Mounted on cast iron stand with foot pedal, coolant, chuck key docking station ready to use
- Mounted on stand with foot pedal, coolant and ready to use
- Enclosed gearbox design provides smooth, quiet operation
- Gap bed section provided for larger diameter work
- Adjustable gibs incorporated in carriage & slideways
- Gearbox gives wide range of inch & metric threading & feed capabilities with few gear changes
- Compound and cross slide have backlash adjustment
- Tailstock maybe offset for turning tapers and include an inch/metric graduated quill



STANDARD EQUIPMENT

- 8" 3-Jaw Chuck (GH-1440B)
- 8" 4-Jaw Chuck
- 10" Face Plate
- Steady Rest with Roller Bearings
- Follow Rest
- Quick Change Toolpost
- 5pc Set of Holders
- LED Work Lamp
- MT3 Live Center
- MT-5/3 Sleeve

Call For Our Promotional Pricing!

Part Number JET-331440	Call For Our Promotional Price
Model Number	GH-1440B
Swing Over Bed	14"
Swing Over Cross Slide	8"
Swing Through Gap	20"
Distance Between Centers	36-7/8"
Spindle Bore	2"
Spindle Mount	D1-5
Spindle Taper (With Sleeve)	MT-6
Number of Spindle Speeds	8
Range of Spindle Speeds	70 - 1,900 RPM
No. of Long. and Cross Feeds	32/32
Range of Long. Feeds (in./rev.)	0.0002 - 0.0548
Range of Crossfeeds (in./rev.)	0.0007 - 0.0187
Number of Inch Threads	34
Range of Inch Threads	4 - 56 TPI
Max. Tool Size	4/5" x 4/5
Max. Compound Slide Travel	3-1/2"
Max. Cross Slide Travel	7"
Max. Carriage Travel	37-2/5"
Tailstock Spindle Travel	4"
Taper in Tailstock Spindle	MT-4
Steady Rest Capacity	0.31-2.95
Follow Rest Capacity	0.31-2.16
Width of Bed	7.32"
Motor	2HP, 1Ph, 230V
Overall Dimensions	77" x 30" x 60"
Net Weight	1674 lbs



- Manual Mills & Lathes
- CNC Plus Lathes & Mills
- 5-Axis Vertical Turning Centers
- Turn/Mill Centers

Model GT-1640

Please Call For Our Current Low Prices!



FINANCING AVAILABLE!



Call Us Or Visit Our Website For Our Complete Selection!

VERTICAL MILLING MACHINES

A

VERTICAL MILLING MACHINES

JVM-836-1/3

This small mill has all of the features found on our larger mills, but sized for the home shop, repair shops or small maintenance shops.

STANDARD FEATURES

- Precision bored and honed milling head
- Large diameter quill is chromed
- High precision spindle bearings
- Over 10" of front to back ram travel
- Locks on all movable surfaces
- Hardened and ground precision table
- Head tilts left or right
- Graduated scale on column
- Precision ground dovetail ways

STANDARD EQUIPMENT

- One-shot lubrication system
- Way Covers
- Draw bar
- Tool box and tools

OPTIONAL ACCESSORIES

Description	Part Number	Price
58 Piece Clamping Kit	TECO-20402PL	\$89.99
R-8 Collet Set (13pcs)	R8-SET13	\$118.00
6" Vise	KURT-DX6	\$569.00
X-Axis Table Powerfeed	JET-350089	call
Y-Axis Table Powerfeed	JET-350087	call
Newall DRO 3-Axis	JET-J8246C80M	call



Call For Our Promotional Pricing!



PART NUMBER	JET-690036 Please Call	JET-690038 Please Call
Model Number	JVM-836-1	JVM-836-3
Table Size	7-7/8" x 35-3/4"	7-7/8" x 35-3/4"
Spindle Taper	R-8	R-8
Diameter of Quill	3-3/8"	3-3/8"
Number of Spindle Speeds	5	10
Range of Spindle Speeds (RPM)	240 - 1,550	120-1,550
Spindle Travel	5"	5"
Head Movement	90° R & L	90°R&L
Distance Spindle to Table (max)	14"	14"
Distance Spindle to Column (min)	5-1/4"	5-1/4"
Distance Spindle to Column (max)	15-3/4"	15-3/4"
Longitudinal Table Travel (X-axis)	22-1/4"	22-1/4"
Cross Travel (Y-axis)	9-1/2"	9-1/2"
Collet Capacity	1/8" - 7/8"	1/8" - 7/8"
T-Slots (Number & Size)	3 at 5/8"	3 at 5/8"
T-Slot Centers	2-1/2"	2-1/2"
Maximum Weight of Workpiece	500 lbs	500 lbs
Travel of Knee (Z-axis)	14"	14"
Travel of Ram	10-1/2"	10-1/2"
Motor	1-1/2HP, 115/230V, 1Ph, Prewired 115V	1-1/2HP, 230V only 3Ph Prewired
Overall Dimensions	55" x 52" x 77"	55" x 52" x 72"
Net Weight	1544	1544

VERTICAL MILLING MACHINES

JTM-1/2

JET'S Step Pulley milling machine is the perfect solution for maintenance shops, repair shops, job shops, schools and light production.

STANDARD EQUIPMENT

- Meehanite® casting
- Precision bored and honed milling head
- Large diameter quill is chromed
- High precision Class 7 spindle bearings
- Spindle head is internally cooled
- Satin chrome finished dials
- Heavy-duty splined motor drive
- One-piece quill pinion and shaft
- Three-stage power downfeed with automatic stop
- Heavy-duty spindle brake
- Locks on all movable surfaces
- Precision hardened and ground ways
- Precision ground table
- Adjustable gibs throughout
- Internal coolant tank built into base for use with coolant system (Pump not included)
- Tolerance test sheet included

STANDARD EQUIPMENT

- One-shot lubrication system
- Way covers
- Draw bar
- Tool box with tools

OPTIONAL ACCESSORIES

Description	Part Number	Price
58 Piece Clamping Kit	TECO-20402PL	\$89.99
R-8 Collet Set (13pcs)	R8-SET13	\$118.00
6" Vise	KURT-DX6	\$569.00



JET-690082 shown with optional equipment

Call For Our Promotional Pricing!



JTM-1/2 VERTICAL MILLING MACHINES

PART NUMBER	JET-690082 Please Call	JET-690089 Please Call
Model Number	JTM-1	JTM-2
Table Size	9" x 42"	9" x 42"
Spindle Taper	R-8	R-8
Diameter of Quill	3-3/8"	3-3/8"
Number of Spindle Speeds	16	8
Range of Spindle Speeds (RPM)	80 - 5,440	80 - 2,720
Downfeeds of Spindle (per/rev/in.)	.0015 -.003-.006	.0015 -.003-.006
Spindle Travel	5"	5"
Head Movement	90° R/L 45° F/B	90° R/L 45° F/B
Distance Spindle to Table (max)	17-1/2"	17-1/2"
Distance Spindle to Column (min)	4-1/2"	4-1/2"
Distance Spindle to Column (max)	19"	19"
Longitudinal Table Travel (X-axis)	23-7/8"	23-7/8"
Cross Travel (Y-axis)	12-1/2"	12-1/2"
Collet Capacity	1/8 - 7/8	1/8 - 7/8
T-slots, Number & Size	3 at 5/8"	3 at 5/8"
T-slot Centers	2-1/2"	2-1/2"
Maximum Weight of Workpiece	550 lbs	550 lbs
Travel of Knee (Z-axis)	14-1/2"	14-1/2"
Travel of Ram	13-3/8"	13-3/8"
Motor	2HP, 230V, 3Ph	2HP, 115/230V, 1Ph, Prewired 230V
Overall Dimensions	57" x 64" x 82"	57" x 64" x 82"
Net Weight	2,056 lbs	2,056lbs

Call Us Today For All Of Your Machine Tool Needs!

DRILL PRESSES

A

15" & 20" DRILL PRESSES Step Pulley

Call For Our Promotional Pricing!



JET-354400

- Constructed to provide a solid base for drilling
- The enclosed spindle assembly supported by four permanently lubricated ball bearings for greater precision and accuracy
- Cast Iron head
- Large ground steel column for maximum head and table support
- Large quill allows greater accuracy
- 3-1/8" stroke for deep hole applications
- Accurate depth stop for precise hole depths
- Table tilts 45°
- 5/8" drill chuck and arbor
- Telescoping safety spindle guard

Full Line Available!
Please call for more information



JET-354402

Part Number	JET-354400 \$779.00	JET-354402 \$1,343.00
Type	15" Floor	20" Floor
Drills to Center of Circle	15"	20"
Cast Iron Drilling Cap.	5/8"	3/4"
Steel Drilling Cap.	1/2"	5/8"
Quill Diameter (in.)	1-7/8"	2-1/4"
Quill Travel (in.)	3-3/8"	4-3/4"
Spindle Taper	2 MT	3 MT
Number & Range of Spindle Speeds (RPM)	16 (200-3,630)	12 150-4,200
Overall Table Size	11-1/2" x 11-1/2"	18-11/16" x 16-3/4"
Column Diameter	2-7/8"	3-5/8"
Base Size	11" x 19-1/2"	22-3/4" x 17-3/4"
Spindle to Base	48-3/4"	43-1/2"
Motor	3/4HP, 115V, 1Ph	1HP, 115/130V, 1Ph Prewired 115V
Overall Dimensions	31" x 13" x 63"	33-1/2" x 18-1/2" x 67"
Net Weight	167 lbs	304 lbs

15" & 20" DRILL PRESSES Step Pulley • 16 Speed Heavy Duty



- Fully enclosed spindle for accurate drilling operations
- Maximum spindle run out of 0.0005"
- Extended quill/spindle travel for deep hole applications
- LED readout of spindle speed and quill travel
- Rack and pinion table raiser
- Precision ground t-slotted work table with coolant trough
- Table tilts 45° right and left and rotates 360° around column
- Quick change vertical depth stop for accurate, repeatable feed length
- Heavy cast metal 3 spoke quill feed handle with ergonomic speed feed handle
- Front mounted industrial paddle-type power switch
- Includes chuck with key and arbor
- 3 Year Warranty

Full Line Available!
Please call for more information



PALMGREN
a CH Hanson brand

Part Number	PALM-80158 \$725.00	PALM-80209 \$1,150.00
Type	15" Floor	20" Floor
Swing	15"	20"
Motor HP	1/2"	1-1/2"
Volts	120/240, 1 PH	120/240, 1PH
Amps	8.6/4.3	14.2/7.1
Capacity Cast Iron	5/8"	1-1/4"
Spindle Speeds	16	16
RPM	138-3476	120-3605
Spindle Taper	MT2	MT3
Spindle Travel	5	6
Spindle To Table	29"	26"
Table Work Surface	11-1/2" x 11-1/2"	19-1/4" x 18-3/4"
Table Slots	5/8"	5/8"

20" VARIABLE SPEED DRILL PRESSES

Call For Our Promotional Pricing!



- Steel Column
- Heavy Duty Casted Iron Design
- Head is massively constructed for more accuracy and rigidity
- Large Precision Ground T-slot Production Table for easy set ups
- Massive 3" Quill Diameter
- CSA/CUS: Following strict guidelines and electrical requirements, these JET Drills are CSA/CUS certified
- LED Machine Lamp
- Spindle Guard
- Variable Spindle Speeds from 300 - 2,000 RPM's
- Front Mounted LED Spindle RPM Readout
- Front Mounted Positive Control Depth Stop
- Table rotates 360° around the column
- Machine T-Slotted base
- Large Hand Grips designed with the Users comfort in mind

STANDARD EQUIPMENT

- Spindle Safety Guard
- LED Machine Lamp



Part Number	JET-354230 \$779.00	JET-354240 \$1,343.00
Model Number	JDP-20VS-1	JDP-20VST
Distance: Column to Spindle	10-7/16	10-7/16
Drills to Center of Circle	15"	20"
Cast Iron Drilling Cap.	5/8"	3/4"
T-Slots Number & Size	3 & 5/8"	3 & 5/8"
Spindle Distance to Base	44-1/2"	44-1/2"
Spindle Travel (in.)	6"	6"
Spindle Taper	3 MT	3 MT
Number & Range of Spindle Speeds (RPM)	Variable (300-2,000)	Variable (150-2,000)
Base Work Area	14-3/4" x 12"	14-3/4" x 12"
Column Diameter	4-1/2"	4-1/2"
Base Size (L x W x H)	27" x 19"	27" x 19"
Base Slots Number & Size	2 & 5/8"	2 & 5/8"
Motor	2HP, 115V/230, 1Ph	2HP, 230V, 3Ph
Work Table Weight Cap.	154 lbs	154 lbs
Net Weight	780 lbs	780 lbs

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

MACHINERY & ACCESSORIES

RADIAL ARM DRILL PRESSES

Palmgren's radial arm drill presses have an extended reach, tilting drill head that is ideal for large or odd-shaped work pieces. The table tilts 45° left or right allowing easy machining of holes at almost any angle.

- Durable cast iron head, table & base
- Spindle supported by high quality ball bearings
- Rack and pinion table raiser
- Table tilts 45° right & left and swivels 360° around the column
- 1/2" through table & base slots for easy mounting and clamping of workpiece
- Front mounted safety, paddle on/off switch
- Drill chuck & key
- 3 Year Warranty

Head Tilts 90° Left & 45° Right!
Head Moves 12-1/2" Forward or Backward!



PALM-80341



PALM-80342



PALMGREN
a CH Hanson brand

Part Number	PALM-80341 \$475.00	PALM-80342 \$550.00
Swing	9 to 33"	9 to 33"
Motor HP	1/2 HP	1/2 HP
Voltage	115	115
Amps	4.8 A	4.8 A
Capacity Cast Iron	5/8"	5/8"
Spindle Speeds	5	5
RPM	575-3520	575-3520
Spindle Taper	MT2	MT2
Spindle Travel	3- 5/32"	3- 5/32"
Spindle to Table	15"	30"
Table Work Surface	8-7/8 x 9"	10-3/8 x 10-3/8"
Table Slots	1/2"	1/2"
Height	37"	65"
Width	10"	14"
Depth	33"	33"

MATERIAL SUPPORT STANDS

Full Line Available!
Please call for more information

PALMGREN
a CH Hanson brand



PALM-70141



PALM-70181

The Palmgren material support stands are made of heavy duty cast iron and steel for handling heavy loads of stock-up to 2,000 lbs. A clamping mechanism on the column allows for quick and easy height adjustments. Locking screws provide added safety. Stand can be ordered with either a Horizontal Head or a V-Roller Head. Replacement heads are available.

The Horizontal Head is a chrome-plated, 2" x 14" ball bearing roller head designed to smoothly move up to 2,000 lbs. of flat stock. The V-Roller Head consists of two chrome-plated 2" x 5" ball bearing roller heads designed to smoothly move up to 2,000 lbs. round stock 1" to 18" diameter.

Weight Cap.	Height Range	Base Size	Length of Horz. Holder	Min Stock Dia	Max Stock Dia	Type	Part Number	Price Each
2000 lbs	23" to 38-1/2"	15" x 16-1/2"	14"	-	-	Horizontal Head	PALM-70141	\$167.00
			5"	1"	18"	V-Roller Head	PALM-70181	\$172.00

MACHINE MOUNTS

Full Line Available!
Please call for more information

ROYAL
PRODUCTS
Optimize everything



- Simplify machine installation, reduce noise and isolate vibration
- Prevents machines from "walking" without the need for bolting or cementing
- Ideal for injection molding machines, presses, lathes, mills and grinders
- Protects sensitive machine components, improves performance and reduces maintenance costs
- Meets OSHA requirements

Mount Type	Load Per Mount (lbs)	Base Dia	Bolt Size	Level Adjust.	Bolt Length	Overall Height	Part Number	Price
#1	100-1,100	3.16	M12 X 1.25	.88	4.72	5.25	ROY-27001	\$39.20
#2	880-2,200	4.75	M16 X 1.5	.88	4.72	5.25	ROY-27002	\$74.48
#3	1,760-5,500	6.31	M20 X 1.5	1.00	6.88	7.50	ROY-27003	\$106.82
#4	3,300-8,800	6.31	M20 X 1.5	1.00	6.88	7.50	ROY-27004	\$127.40
#5	6,600-12,000	7.88	M20 X 1.5	1.00	6.88	7.88	ROY-27005	\$206.78

Easy Installation!

- 1- Raise machine and slide mount into place
- 2- Insert leveling bolt through machine base hole and thread into mount. Lower machine onto leveling plate.
- 3- Raise or lower machine by turning leveling bolt
- 4- When machine is level, secure in place

Extra-Long Leveling Bolts (For machines with thick bases)

For Mount Type	Bolt Size	Bolt Length	Part Number	Price
#1	M12 X 1.25	8-1/4"	ROY-27007	\$16.66
#2	M16 X 1.5	8-1/4"	ROY-27008	\$20.58
#3-#5	M20 X 1.5	9-3/4"	ROY-27009	\$30.38

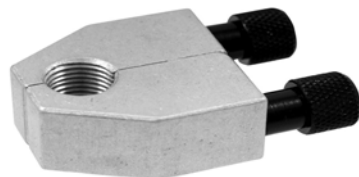
QUILL STOP

FEATURES:

- Fast on-off clip action
- Rapid depth setting on quill
- Rigid clamping
- Increase productivity and reduce cost
- For Bridgeport™ type mills with 1/2"-20 stop rod

Part Number A-3900-0200

\$7.49 each



ISO
INTERNATIONAL SELECT QUALITY



QUILL FEED HANDLES

FEATURES:

- Time saving accessory for Bridgeport™ type mills
- Move handle into any position desired with a simple twist of the wrist
- Spring pushes pin back from quill feed actuation up or down

Part # A-3900-0201

\$19.99 each



ISO
INTERNATIONAL SELECT QUALITY



Call Us Today For All Of Your Machine Tool Needs!

POWERLOCK™ DRAWBARS



Available for most manual & CNC mills with standard R-8 collets or 30 or 40 taper tool holders. Automate your present "Knee-Type" milling machines by installing a Kurt PowerLock Drawbar. PowerLock Drawbars reduce tool change time and allow more cutting time in the cycle. This eliminates waste. The whole process using the Kurt automatic or mechanical PowerLock Drawbar cuts the tool change time to one-fourth the time required to change tools manually with wrenches. An added benefit is consistent torque on the drawbar rod. When you multiply the time savings for every tool change on all of your mills, it can really add up.

FEATURES:

- Easy installation - operator can install with no special tools (instructions provided).
- Reduces operator fatigue - improves productivity and safety.
- Eliminates drawbar tapping to free tool in collet - reduces operator abuse.
- Convenient control - eliminates operator stretching to reach the drawbar.
- Assures uniform collet tightening - prevents under tightening and tool slip or over tightening and drawbar breakage.
- Operates on shop air supply - filter/lubricator, regulator and gauge included with most units. Provides clean oiled air to ensure long life.
- Safety interlock on automatic models prevents accidental engagement.
- Used with present tooling - operates R-8, #30 & #40 taper tool holders. Additional special tool holders not needed.



Don't see your mill listed? Call us for more information!

Name And Mill Model	AUTOMATIC		MECHANICAL	
	Part Number	Price Each	Part Number	Price Each
ACER				
ULTIMA 3VS R8, Variable	KURT-AR1000	\$727.00	KURT-AR6000	\$454.00
BRIDGEPORT				
SERIES I STD 2 J R8, Variable	KURT-BR1000	\$727.00	KURT-BR6000	\$454.00
SERIES I STD J R8, Step Pulley	KURT-BR1001	\$773.00	KURT-BR6001	\$485.00
HURCO				
SM-1 & SM-2 R8, Variable	KURT-HU2000	\$727.00	KURT-HU7000	\$454.00
KENT				
KTM-3VK	KURT-KE1000	\$727.00	KURT-KE6000	\$454.00
KTM-3VS	KURT-MI1800	\$727.00	KURT-MI6800	\$454.00
LAGUN				
FTV-1 & FTV-2 R8, Variable	RL1100	\$727.00	RL6100	\$454.00
SHARP				
LMV & HMV R8, Variable	KURT-SH1600	\$727.00	KURT-SH6600	\$454.00
SUPERMAX				
YC-1 1/2-VS R8, Variable	KURT-SM1401	\$727.00	KURT-SM6401	\$454.00

HI-TORQUE POWERFEEDS



- Maximum Torque- 650 in/lb for heavy duty applications
- Strengthened "Zytel" Gear
- Helical gearing, internal clutch
- Automatic shut-off at end of cut
- Variable speed control
- Pilot light, on/off switch

Speed Range Inch/Minute: 0-32
Bevel Drive Gear Ratio: 4:8:1
RPM: 4-160
Power: 110V, 1 PH, 50/60 cycle

Description	Part Number	Price
X-Axis	PP-PF-X	\$525.00
Y-Axis	PP-PF-Y	\$525.00
Z-Axis	PP-PF-Z	\$595.00

AIR POWER DRAWBARS



FEATURES:

- Automatic Shut-off when spindle is running
- 3 second tool changes!
- Easy Installation
- Available in R8 & 40 taper

Taper	Part Number	Price Each
R8	PP-APD-R8	\$590.00
40	PP-APD-40T	\$650.00

HI-TORQUE POWERFEEDS

- Specially designed for each model
- X, Y, & Z-axis available
- Provides continuously variable feed rate of up to 32 in./min.
- Adjustable stops allow automatic shut off
- Includes rapid traverse button
- Built-in clutch helps prevent damage in overload
- Installation of powerfeed will reduce table travel



Description	Part Number	Price
X-Axis	JET-350194	\$525.00
Y-Axis	JET-350195	\$525.00
Z-Axis	JET-350196	\$595.00

DRAW BARS FOR RIGHT ANGLE ATTACHMENT

When using the MMRAA-R8, a special drawbar is required and should be ordered with the Dorian right angle attachment. 7/16-20 thread, 4140 heat-treated alloy steel.



Machine Type	Length		Desc.	Part Number	Price
	Bar	Hex			
SPECIAL DRAW BAR FOR DORIAN MMRAA-R8					
Bridgeport Kondia	18.000	8.00	BDBRA-2J800	DN04090	\$50.27
STANDARD DRAW BAR					
Alliant Sharp	18.000	6.500	SDB-AS	DN04084	\$40.70
Index Lagun	18.000	8.500	SDB-IL	DN04086	\$43.09

MILLING MACHINE DRAWBARS



- For Bridgeport™ type mills
- Available in step pulley or variable speed
- Crafted from alloy steel

Description	Thread	OAL	Part Number	Price
Step Pulley	7/16"-20	21-1/8"	A-3900-0205	\$12.50
Variable Speed	7/16"-20	24-3/16"	A-3900-0207	\$14.50

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

429

LATHE CHUCKS
LIVE CENTERS
VISE JAWS
VISE ACCESSORIES
STRAIGHT SHANK
COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

KDK STYLE QUICK CHANGE TOOL POSTS

#101/151/201 KDK STYLE TURNING & FACING HOLDER

BEST VALUE

- Interchangeable with KDK same series tool holders
- No. 101 is for KDK-100 quick change tool posts
- No. 151 is for KDK-150 quick change tool posts
- All working parts are hardened and ground



Holder No.	Tool Bit Cap.	Lathe Swing	Part Number	Price
101	1/2"	12-16"	KDK-101	\$47.00
151	5/8"	15-18"	KDK-151	\$58.00
201	3/4"	18-24"	KDK-201	\$79.00

#104/154/204 KDK STYLE PARTING BAR HOLDER

BEST VALUE

- Interchangeable with KDK same series tool holders
- No. 104 is for KDK-100 quick change tool posts
- No. 154 is for KDK-150 quick change tool posts
- All working parts are hardened and ground



Holder No.	Blade Cap.	Lathe Swing	Part Number	Price
104	1/8" x 11/16"	12-16"	KDK-104	\$86.00
154	1/8" x 7/8"	15-18"	KDK-154	\$92.00
204	1/8" X 1-1/8"	18-24"	KDK-204	\$125.00

#102/152/202 KDK STYLE THREADING & FACING HOLDER

BEST VALUE

- Interchangeable with KDK same series tool holders
- No. 102 is for KDK-100 quick change tool posts
- No. 152 is for KDK-150 quick change tool posts
- All working parts are hardened and ground



Holder No.	Tool Bit Cap.	Lathe Swing	Part Number	Price
102	1/2"	12-16"	KDK-102	\$62.00
152	5/8"	15-18"	KDK-152	\$83.00
202	3/4"	18-24"	KDK-202	\$99.50

#105/155/205 KDK STYLE BORING BAR HOLDER

BEST VALUE

- No. 104 is for KDK-100 quick change tool posts
- No. 154 is for KDK-150 quick change tool posts
- All working parts are hardened and ground



Holder No.	Boring Bar Cap.	Lathe Swing	Part Number	Price
105	1" hole	12-16"	KDK-105	\$64.00
155	1-1/4" hole	15-18"	KDK-155	\$73.00
205	1-1/2" hole	18-24"	KDK-205	\$93.00

#103/153/203 KDK STYLE EXTENSION TURNING BAR HOLDER

BEST VALUE

- Interchangeable with KDK same series tool holders
- No. 103 is for KDK-100 quick change tool posts
- No. 153 is for KDK-150 quick change tool posts
- All working parts are hardened and ground



Holder No.	Tool Bit Cap.	Lathe Swing	Part Number	Price
103	1/2"	12-16"	KDK-103	\$89.00
153	5/8"	15-18"	KDK-153	\$96.00
203	3/4"	18-24"	KDK-203	\$125.00

#119 KDK STYLE 5C COLLET HOLDER

BEST VALUE

- Interchangeable with KDK same series tool holders
- No. 119 is for kdk-100/150 quick change tool posts
- For lathes having 1" center height or more
- All working parts are hardened and ground
- Includes spanner wrench and lock ring



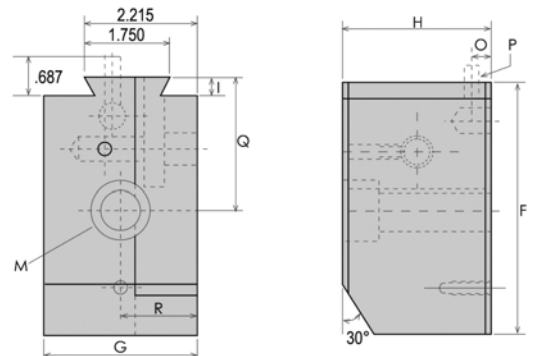
Holder No.	Part Number	Price
119	KDK-119	\$84.38

KDK STYLE TOOL POSTS SERIES 100, 150 & 200

BEST VALUE



- Interchangeable with KDK same series
- All working parts are hardened and ground
- Lathe Swing:
12-16" (100 series)
15-18" (150 series)
18-24" (200 series)
- Lock down bolt diameter:
7/16 (100 series)
5/8" (150 series)
3/4" (200 series)
- T-slot nut and mounting bolt not included



Series	F	G	H	I	M	O	P	Q	R	Part Number	Price
100	3.50	2.50	2.25	.312	7/16"	.331	1/4"	.875	1.375	KDK-100	\$213.00
150	4.37	2.50	2.25	.312	5/8"	.331	5/16"	2.312	1.250	KDK-150	\$262.00
200	5.00	2.87	3.00	.312	3/4"	.331	5/16"	2.562	1.437	KDK-200	\$340.00

Call Us Today For All Of Your Machine Tool Needs!

TOOL POST DRILL CHUCK

Designed to decrease the time it takes to drill a hole on the lathe. Peck drilling can be performed much faster since the drill bit is held at the tool post instead of the tailstock. Hole depths can also be monitored on the carriage DRO during the drilling process.



- Precision 1/32"-1/2" keyless drill chuck included
- Fast and accurate procedure to align drill chuck with spindle
- Precision alignment pin magnetically held in body cavity for convenience
- Mounts in any tool post tool holder
- Made from high strength aluminum
- Durable anodized finish

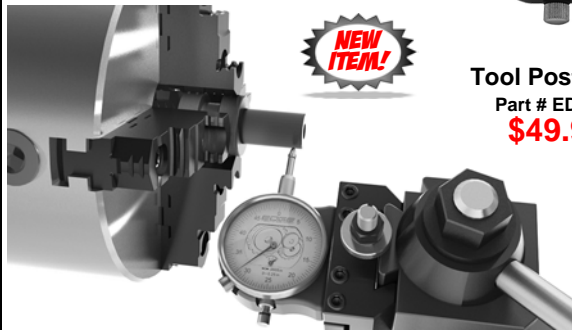


Tool Post Drill Chuck
Part # EDGE-41000
\$99.99 ea



TOOL POST INDICATOR

Reduce set up time with the Tool Post Indicator by Edge Technology. This unit is much faster to install and more rigid than a mag base indicator holder. It is the best way to align a work piece in a 4 jaw chuck.

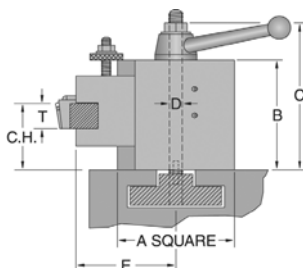
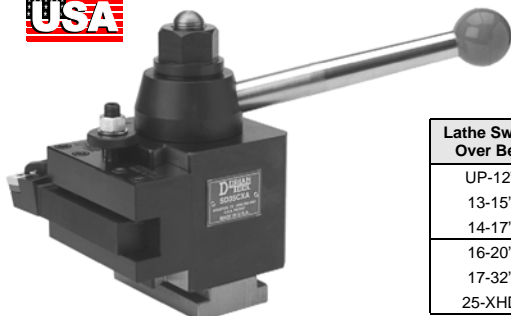


- High resolution 0.0005" indicator included
- Mounts in any tool post tool holder
- Body made from high strength aluminum
- Durable anodized finish
- Includes padded case

Tool Post Indicator
Part # EDGE-42000
\$49.99 ea

SUPER QUICK CHANGE TOOL POST

Engineered and built to perform with precision, rigidity, and simplicity from the tool-room lathe to the extra heavy duty lathe.

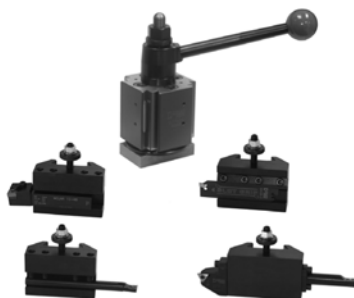


- Maintenance Free
- Dorian tool posts are fully interchangeable with other industry standard tool posts
- Repetitive accuracy within millionths
- New locking system eliminates the worm gear and gib, which are the most affected by wear & tear usage
- Holding force produces over 20,000 lbs per sq. in.

Lathe Swing Over Bed	A	B	C	D	E	T-Tool Cap.	C.H.		Desc.	Part Number	Price
							Min.	Max.			
UP-12"	2.50	2.250	3.937	0.500	1.875	0.500	0.875	1.625	SD25AXA	DN01000	\$342.70
13-15"	3.00	2.750	4.437	0.625	2.375	0.625	1.062	2.125	SD30BXA	DN01002	\$428.74
14-17"	3.50	3.250	5.500	0.750	2.687	0.750	1.250	2.250	SD35CXA	DN01004	\$586.46
16-20"	4.00	3.750	6.375	0.875	3.250	1.000	1.562	2.750	SD40CA	DN01006	\$737.30
17-32"	5.00	4.625	7.375	1.000	4.125	1.250	2.000	3.375	SD50DA	DN01008	\$1,055.87
25-XHD	6.00	5.000	8.125	1.125	5.187	1.500	2.500	3.500	SD60EA	DN01010	\$1,629.66

QUADRA INDEX TOOL POST SETS

- Absolute zero backlash
- Four quick change tool holders locked simultaneously
- The Quadra offers repetitive accuracy within millionths.
- New patented locking system eliminates the traditional worm gear and gib which are the most affected by wear and tear.
- First Time Buyers Set includes 1 tool post and 4 holders.
- Includes 1 square shank tool, 1 boring bar, 1 cut-off blade, 1 internal threading bar, and 4 inserts



First Time Buyers Set Includes:

- Tool post • No. 1 Turning & facing holder
- No. 2 Turning, facing & boring holder
 - No. 7-71C Cut-off holder
- No 881 Threading & grooving holer

Holders Toolled Up At No Charge With:

- | | | |
|------------------------|--|--------------------------------------|
| 1) STNCR toolholder | 2) Gold coated TCMT turning & boring inserts | 1) Gold coated TNMC threading insert |
| 1) SI-STCMB boring bar | 1) High Speed cut-off blade | 1) Gold coated Laydown insert |

Set Description	QITP25-FTB	QITP30-FTB	QITP35-FTB	QITP40-FTB
Part Number	DN00056	DN00058	DN00060	DN00062
Lathe Swing	Up to 12"	13"-15"	14"-17"	16"-20"
Price	\$1,539.61	\$1,727.27	\$2,053.70	\$2,532.97

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

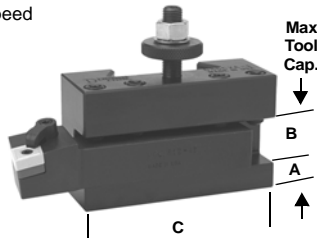
COOLANT/FLUIDS
TOOL STORAGE

QUICK CHANGE TOOL POST HOLDERS



TURNING & FACING HOLDER NO. 1

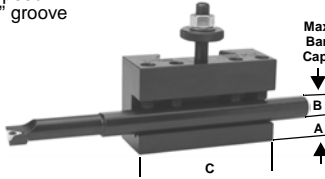
For turning & facing with high speed or carbide square shank tools.



A	B	C	Desc. SDN	Part Number	Price	QITP	Part Number	Price
.375	.500	2.75	D25AXA-1	DN01100	\$58.56	QITP25-1	DN00100	\$91.26
.437	.625	3.25	D30BXA-1	DN01250	\$66.48	QITP30-1	DN00250	\$109.51
.500	.750	3.75	D35CXA-1	DN01400	\$86.44	QITP35-1	DN00400	\$135.37
.562	1.00	4.50	D40CA-1	DN01550	\$107.35	QITP40-1	DN00550	\$150.58
.750	1.25	6.00	D50DA-1	DN01700	\$172.55	QITP50-1	DN00700	\$248.55
1.00	1.50	7.00	D60EA-1	DN01850	\$267.66	QITP60-1	DN00850	\$364.85

TURNING, FACING & BORING HOLDER NO. 2

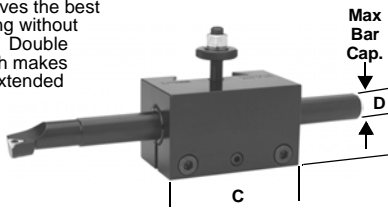
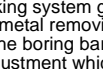
For turning & facing with high speed or square shank tool, plus a "V" groove for holding a boring bar



A	B	C	Desc. SDN	Part Number	Price	QITP	Part Number	Price
.375	.500	2.75	D25AXA-2	DN01104	\$61.34	QITP25-2	DN00104	\$97.33
.437	.625	3.25	D30BXA-2	DN01254	\$73.32	QITP30-2	DN00254	\$115.59
.500	.625	3.75	D35CXA-2	DN01404	\$90.63	QITP35-2	DN00404	\$150.58
.562	.750	4.50	D40CA-2	DN01554	\$114.31	QITP40-2	DN00554	\$167.30
.750	.875	6.00	D50DA-2	DN01704	\$184.77	QITP50-2	DN00704	\$267.66
1.00	1.25	7.00	D60EA-2	DN01854	\$277.23	QITP60-2	DN00854	\$374.41

HEAVY DUTY BORING BAR HOLDER No. 4

Precision ground bore with 360° collar locking system gives the best rigidity in metal removing without scarring the boring bar. Double height adjustment which makes the tool reversible for extended center height range.



A	B	C	Desc. SDN	Part Number	Price	QITP	Part Number	Price
0.625	.750	2.75	D25AXA-4	DN01110	\$104.18	QITP25-4	DN00110	\$136.96
0.750	1.00	3.25	D30BXA-4	DN01260	\$121.59	QITP30-4	DN00260	\$153.74
1.000	1.00	3.75	D35CXA-4	DN01410	\$139.76	QITP35-4	DN00410	\$184.48
1.125	1.25	4.50	D40CA-4	DN01560	\$167.71	QITP40-4	DN00560	\$223.61
1.500	1.50	6.00	D50DA-4	DN01710	\$263.54	QITP50-4	DN00710	\$332.35
1.750	2.00	7.00	D60EA-4	DN01860	\$428.34	QITP60-4	DN00860	\$486.08

HIGH SPEED & CARBIDE COMBINATION CUTOFF HOLDER No. 7-71C

For High Speed and Dorcut True Grip blades. Gives max. rigidity & performance in cutting & face grooving. The taper lock system & double height adjustment make it reversible for positioning.

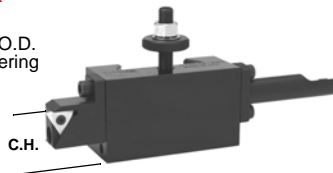


Cutting tool sold separately

DorCut Blades	High Speed	Desc. SDN	Part Number	Price	Desc. QITP	Part Number	Price
19-2	P3	D25AXA-7-71C	DN01126	\$170.22	QITP25-7-71C	DN00126	\$203.19
19-2	P3	D30BXA-7-71C	DN01276	\$194.06	QITP30-7-71C	DN00276	\$222.86
26-2 to 26-6	P5	D35CXA-7-71C	DN01428	\$209.22	QITP35-7-71C	DN00428	\$250.90
26-2 to 26-6	P5	D40CA-7-71C	DN01576	\$240.49	QITP40-7-71C	DN00576	\$278.33
32-3 to 32-9	P9	D50DA-7-71C	DN01726	\$289.97	QITP50-7-71C	DN00726	\$296.48
32-3 to 32-9	P9	D60EA-7-71C	DN01876	\$328.21	QITP60-7-71C	DN00876	\$415.69

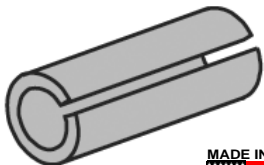
UNIVERSAL THREADING & GROOVING HOLDER No. 881

The most advanced tool holder for O.D. and I.D. threading. Capable of covering all threading requirements. Using standard carbide inserts.



CH	Supplied Insert	Desc. SDN	Part Number	Price	Desc. QITP	Part Number	Price
.875	TNMC-32	D25AXA-881	DN01132	\$183.87	QITP25-881	DN00132	\$215.52
1.00	TNMC-32	D30BXA-881	DN01282	\$202.74	QITP30-881	DN00282	\$231.33
1.25	TNMC-32	D35CXA-881	DN01434	\$217.48	QITP35-881	DN00434	\$255.05
1.50	TNMC-32	D40CA-881	DN01582	\$243.19	QITP40-881	DN00582	\$292.60

REDUCER BUSHINGS



No. 4 Holder Style	O.D.	I.D.	Desc.	Part Number	Price Each	No. 41 Holder Style	O.D.	I.D.	Desc.	Part Number	Price Each
25-4	0.75	0.50	D25-4B	DN03705	\$82.34	25-41	1.00	0.75	D25-41B	DN03719	\$89.19
30-4	1.00	0.75	D30-4B	DN03707	\$89.19	30-41	1.25	1.00	D30-41B	DN03721	\$104.06
35-4	1.00	0.75	D35-4B	DN03709	\$96.06	35-41	1.25	1.00	D35-41B	DN03723	\$112.06
40-4	1.25	1.00	D40-4B	DN03711	\$104.06	40-41	1.50	1.25	D40-41B	DN03725	\$153.61
50-4	1.50	1.25	D50-4B	DN03713	\$153.61	50-41	2.00	1.50	D50-41B	DN03727	\$218.03
60-4	2.00	1.50	D60-4B	DN03715	\$218.03	60-41	2.50	2.00	D60-41B	DN03729	\$265.29

Call Us Today For All Of Your Machine Tool Needs!

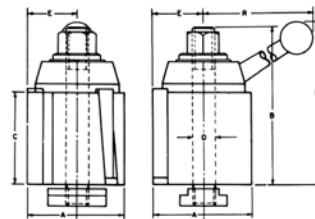


QUICK CHANGE TOOL POST & SETS

- Takes only seconds to change tools
- Rugged-no chatter or vibration
- No time wasted with shims
- Unlimited versatility
- Safe and easy to operate
- Speed your lathe operations up to 90%



Full Line Available!
Please call for more information.



SETS INCLUDE:

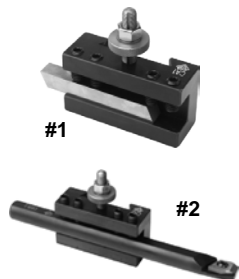
- 1 Tool Post
- # 1: Turning and facing holder
- # 2: Boring, turning and facing holder
- # 4D: Boring bar holder
- # 7: Universal parting (part-off) blade holder

INDIVIDUAL QUICK CHANGE TOOL POSTS

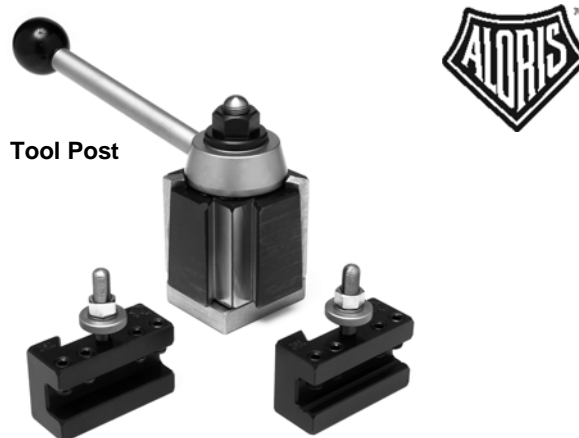
Series	A	B	C	D	E	H	R	Part Number	Price	Tool Post Sets	
										Part Number	Price
AXA	2-1/2	3-7/8	2-1/4	9/16	1-3/8	4-11/16	5-3/4	ALOR-AXA	\$357.00	ALOR-1-BS	\$651.00
BXA	3	4-5/8	2-3/4	5/8	1-5/8	5-9/16	7-5/16	ALOR-BXA	\$434.00	ALOR-2-BS	\$759.00
CXA	3-1/2	5-1/8	3	3/4	1-7/8	6-1/8	7-7/8	ALOR-CXA	\$592.00	ALOR-3-BS	\$972.00
CA	4	6-1/4	3-5/8	7/8	2-1/8	7	9	ALOR-CA	\$745.00	ALOR-4-BS	\$1,218.00
DA	5	7-5/8	4-5/8	1	2-11/16	8-3/4	10-7/8	ALOR-DA	\$1,052.00	ALOR-5-BS	\$1,685.00
EA	6	8-1/2	5	1-1/4	3-1/8	10	13-3/4	ALOR-EA	\$1,662.00	ALOR-6-BS	\$2,647.00

SUPER-PRECISION INTRO-PRO SETS

Precision engineered to ensure repetitive accuracy. Advanced design provides built-in quick tool changing, versatility with positive rigidity to meet the most exacting working tolerances. Quickly and easily installed on any engine lathe, bench or CNC lathe for a wide range of operations-from fine precision work to heavy duty cutting.



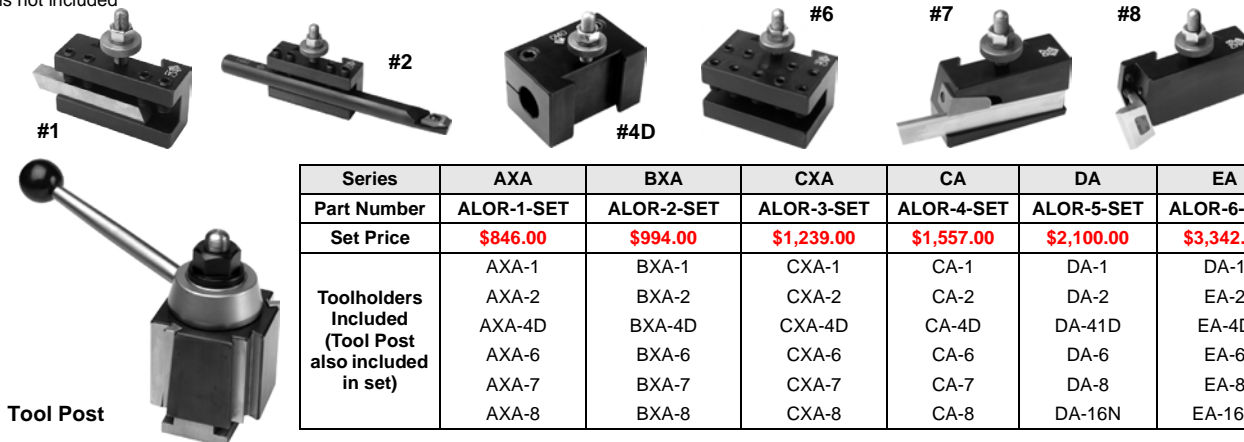
- Save By Buying The Set!
- All sets include tool post and custom T-bolt
- Intro-Pro 3 piece set include (1) tool post, (1) #1 turning & facing holder, and (1) #2 boring, turning & facing holder



Series	AXA	BXA	CXA	CA	DA	EA
Part Number	ALOR-1-IP	ALOR-2-IP	ALOR-3-IP	ALOR-4-IP	ALOR-5-IP	ALOR-6-IP
Set Price	\$454.10	\$548.15	\$733.00	\$916.00	\$1,303.00	\$2,064.00

7 PIECE TOOL POST AND HOLDERS SET

- Save by buying the set
- All sets include tool post and custom T-bolt
- Tools not included



Series	AXA	BXA	CXA	CA	DA	EA
Part Number	ALOR-1-SET	ALOR-2-SET	ALOR-3-SET	ALOR-4-SET	ALOR-5-SET	ALOR-6-SET
Set Price	\$846.00	\$994.00	\$1,239.00	\$1,557.00	\$2,100.00	\$3,342.00
Toolholders Included (Tool Post also included in set)	AXA-1	BXA-1	CXA-1	CA-1	DA-1	DA-1
	AXA-2	BXA-2	CXA-2	CA-2	DA-2	EA-2
	AXA-4D	BXA-4D	CXA-4D	CA-4D	DA-41D	EA-4D
	AXA-6	BXA-6	CXA-6	CA-6	DA-6	EA-6
	AXA-7	BXA-7	CXA-7	CA-7	DA-8	EA-8
	AXA-8	BXA-8	CXA-8	CA-8	DA-16N	EA-16N

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

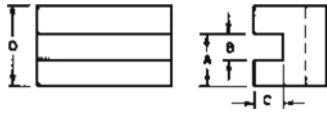
COOLANT/FLUIDS
TOOL STORAGE

QUICK CHANGE TOOL POSTS

B

#1 TURNING & FACING HOLDERS

- Takes various sizes of bits
- Turning and facing tools can be locked in together
- Saves time and labor when changing operations.



Series	A	B	C	D	Tool Bit	Part Number	Price
AXA	15/16	1/2	7/16	1-1/2	3/16-1/2	ALOR-AXA-1	\$58.00
BXA	1-1/8	5/8	1/2	1-3/4	1/4-5/8	ALOR-BXA-1	\$68.00
CXA	1-7/16	3/4	5/8	2-1/8	1/2-3/4	ALOR-CXA-1	\$85.00
CA	1-11/16	1	3/4	2-1/2	1/2-1	ALOR-CA-1	\$103.00
DA	2-3/16	1-1/4	1	3-1/8	1/2-1-1/4	ALOR-DA-1	\$153.00
EA	2-11/16	1-1/2	1-1/4	4	3/4-1-1/2	ALOR-EA-1	\$240.00

#2 BORING, TURNING & FACING HOLDERS

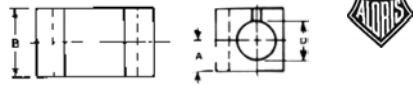
- "V" groove holds round shank boring bars and tools as well as square tool bits



Series	A	B	C	D	Tool Bit	Shank	Part Number	Price
AXA	15/16	1/2	7/16	1-1/2	3/16-1/2	7/16	ALOR-AXA-2	\$63.00
BXA	1-5/8	5/8	1/2	1-3/4	1/4-5/8	1/2	ALOR-BXA-2	\$75.00
CXA	1-7/16	3/4	5/8	2-1/8	1/2-3/4	3/4	ALOR-CXA-2	\$94.00
CA	1-11/16	1	3/4	2-1/2	1/2-1	13/16	ALOR-CA-2	\$116.00
DA	2-3/16	1-1/4	1	3-1/8	1/2-1-1/4	1	ALOR-DA-2	\$166.00
EA	2-11/16	1-1/2	1-1/4	4	3/4-1-1/2	1-1/4	ALOR-EA-2	\$270.00

#4D BORING BAR HOLDER

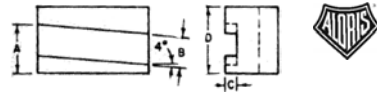
- Precision ground bore & split clamping design
- Provides excellent clamping pressure
- Optional bushings available to accommodate different tool diameters



Series	A	B	D	Part Number	Price
AXA	3/4	1-1/2	3/4	ALOR-AXA-4D	\$88.00
BXA	1	2	1	ALOR-BXA-4D	\$107.00
CXA	1	2	1	ALOR-CXA-4D	\$124.00
CA	1-3/8	2-3/4	1-1/4	ALOR-CA-4D	\$152.00
DA	1-5/8	3-1/4	1-1/2	ALOR-DA-4D	\$227.00
EA	2-1/4	4-1/2	2-1/2	ALOR-EA-4D	\$357.00

#7 UNIVERSAL PARTING BLADE HOLDER

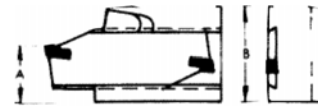
- For use with "T" type blades or bevel blades having parallel top and bottom edges
- Enables cut-off close to chuck
- Absence of vibration prevents breaking blades



Series	A	B	C	D	Blade Ht.	Part Number	Price
AXA	13/16	1/2	3/16	1-1/2	1/2	ALOR-AXA-7	\$101.60
BXA	1	11/16	3/16	1-3/4	11/16	ALOR-BXA-7	\$115.00
CXA	1-3/16	3/4	3/16	2	3/4	ALOR-CXA-7	\$128.00
CA	1-7/16	7/8	1/4	2-1/2	7/8	ALOR-CA-7	\$166.00
DA	1-3/4	1-1/8	1/4	2-3/4	1-1/8	ALOR-DA-7	\$189.00
EA	1-7/8	1-1/8	1/4	3	1-1/8	ALOR-EA-7	\$257.00

#71 CUT-OFF & GROOVING HOLDER

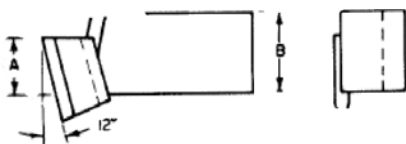
- Designed for high rigidity under heavy duty conditions
- Simple blade position adjustment
- Self-locking throwaway insert blade can be used
- Cool, chatter-free operations at high speeds



Series	A	B	USED WITH BLADE WIDTHS	Part Number	Price
AXA	31/32	1-5/8	.087 & .093X.750	ALOR-AXA-71	\$207.00
BXA	1-7/32	2	.093-.120-.187	ALOR-BXA-71	\$210.00
CXA	1-9/32	2	.120-.160-.187	ALOR-CXA-71	\$242.00
CA	1-7/16	2-1/2	.120-.187-.250	ALOR-CA-71	\$253.00
DA	1-17/32	2-5/8	.120-.187-.250	ALOR-DA-71	\$286.00
EA	2-1/16	3-3/8	3/16 OR 1/4	ALOR-EA-71	\$380.00

#8 THREADING HOLDER

This universal threading holder comes with an interchangeable high speed threading blade which has two cutting edges. You may now reverse your spindle and cut a thread without fear of hitting shoulders. Holders supplied with blade as follows: AXA-P10, BXA/CXA-P6, CA/DA/EA-P4.



Series	A	B	Used With	Part Number	Price
AXA	13/16	1-5/8	Any Threading Blade	ALOR-AXA-8	\$124.00
BXA	1	1-3/4	Any Threading Blade	ALOR-BXA-8	\$131.00
CXA	1-1/8	2	Any Threading Blade	ALOR-CXA-8	\$151.00
CA	1-1/4	2-1/4	Any Threading Blade	ALOR-CA-8	\$173.00
DA	1-1/2	2-3/4	Any Threading Blade	ALOR-DA-8	\$217.00

60° High Speed Threading Blades

Capacity	Model #	Part Number	Price
4 or more TPI	P-4	ALOR-P-4	\$52.00
6 or more TPI	P-6	ALOR-P-6	\$52.00
10 or more TPI	P-10	ALOR-P-10	\$52.00

HIGH SPEED THREADING BLADES – 60°

Exclusive blade design with two cutting edges, precision ground, assures unusually long life. To resharpen, simply grind the top surface. All blades are uniformly designed to fit any Aloris threading holder.



Call Us Today For All Of Your Machine Tool Needs!

QUICK CHANGE TOOL POST/HOLDER SETS

PISTON & WEDGE STYLE

- Select either piston or wedge style
- Precision engineered to assure repetitive accuracy
- Wedge-type tool post has 0.0001" repeatability
- Piston-type tool post has 0.0002" repeatability
- Tool posts accept industry standard series toolholders within same series (ex: 100 AXA series)
- Each set consists of one toolpost and 5 holders, one of each style No. 1, No. 2, No. 4, No. 7 and No. 10

Toolholder Styles

- No. 1: Turning and facing holder
- No. 2: Boring, turning and facing holder
- No. 4: Heavy-duty boring bar holder
- No. 7: Universal parting (part-off) blade holder
- No. 10: Knurling, turning and facing holder



Piston Style

Wedge Style

Full Line Available!
Please call for more information.

Piston Sets

Series	Swing	Part Number	Set Price
100 AXA	9-12"	PH2-251-100	\$219.00
200 BXA	10-15"	PH2-251-200	\$253.00
300 CXA	13-18"	PH2-251-300	\$373.00
400 CA	14-20"	PH2-251-400	\$605.00

Wedge Sets

Series	Swing	Part Number	Set Price
100 AXA	9-12"	PH2-251-111	\$274.00
200 BXA	10-15"	PH2-251-222	\$329.00
300 CXA	13-18"	PH2-251-333	\$461.00
400 CA	14-20"	PH2-251-444	\$655.00
500 DA	17-48"	PH2-251-555	\$1,540.00

MINI QUICK-CHANGE TOOL POST SET

- Fits 7x10, 7x12 & 7x14 mini lathes
- No tools required to change tooling
- Made from aluminum



6 Piece Set Includes:

- Tool post
- Mounting hardware
- 2 turning tool holders
- Boring tool holder
- Cut-off blade holder



MINI QUICK-CHANGE SET

Part # A-3900-5350

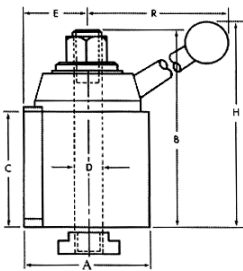
\$109.00

QUICK CHANGE TOOL POSTS

PISTON OR WEDGE TYPE

Both piston and wedge style quick change tool posts are precision engineered to assure repetitive accuracy. Advanced design provides built-in quick tool changing versatility with positive rigidity to meet the most exacting tolerances. Quickly and easily installed on an engine, bench or turret lathe for a wide range of operations, from fine, precise work to heavy duty cutting.

Piston type posts are economical, while the wedge type posts are clearly ultra-precise. Both accept the same series toolholders, and are interchangeable with Aloris, Dorian and DTM Tooling. **Please note, base must be machined to fit your compound rest.**



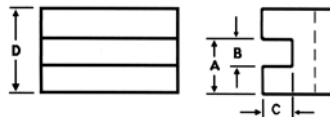
Style	Series	Swing	A	B	C	D	E	H	R	Part Number	Price Each
PISTON STYLE	100 AXA	9-12"	2-1/2"	3-7/8"	2-1/4"	9/16"	1-7/16"	4-11/16"	5-3/4"	PH2-250-100	\$116.00
	200 BXA	10-15"	3"	4-5/8"	2-3/4"	5/8"	1-5/8"	5-9/16"	7-5/16"	PH2-250-200	\$132.00
	300 CXA	13-18"	3-3/8"	5-1/8"	3"	3/4"	1-7/8"	6-1/8"	7-7/8"	PH2-250-300	\$175.00
	400 CA	14-20"	4"	6-1/4"	3-5/8"	7/8"	2-1/8"	7"	9"	PH2-250-400	\$290.00
WEDGE STYLE	100 AXA	9-12"	2-1/2"	3-7/8"	2-1/4"	9/16"	1-3/8"	4-11/16"	5-3/4"	PH2-250-111	\$153.00
	200 BXA	10-15"	3"	4-5/8"	2-3/4"	5/8"	1-9/16"	5-9/16"	7-5/16"	PH2-250-222	\$172.00
	300 CXA	13-18"	3-1/2"	5-1/8"	3"	3/4"	1-29/32"	6-1/8"	7-7/8"	PH2-250-333	\$250.00
	400 CA	14-20"	4"	6-1/4"	3-5/8"	7/8"	2-1/8"	7"	9"	PH2-250-444	\$336.00
	500 DA	17-48"	5"	7-3/8"	4-5/8"	1"	2-11/16"	-	-	PH2-250-555	\$770.00

TURNING & FACING HOLDERS

NO. 1



- Accepts various size bits
- Turning and facing tools can be locked in together
- Save time and labor when changing operations



No. 1-TURNING AND FACING HOLDERS

Series	A	B	C	D	Toolbit	Part Number	Price
100 AXA	15/16"	1/2"	7/16"	1-1/2"	3/16-1/2"	PH2-250-101	\$28.00
200 BXA	1-1/8"	5/8"	1/2"	1-3/4"	1/4-5/8"	PH2-250-201	\$30.00
300 CXA	1-7/16"	3/4"	5/8"	2-1/8"	1/4-3/4"	PH2-250-301	\$41.00
400 CA	1-11/16"	1"	3/4"	2-1/2"	1/2-1"	PH2-250-401	\$51.00
500 DA	3-3/16"	1-1/4"	1"	3-1/8"	3/4-1-1/4"	PH2-250-501	\$120.00

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

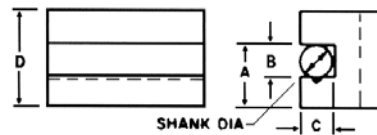
QUICK-CHANGE TOOL POSTS & HOLDERS

BORING, TURNING & FACING HOLDERS

NO. 2



- V-groove holds round shank boring bars and tools as well as square toolbits
- Boring bars sold separately



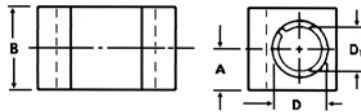
Series	A	B	C	D	Toolbit	Shank	Part Number	Price
100 AXA	15/16"	1/2"	7/16"	1-1/2"	3/16-1/2"	7/16"	PH2-250-102	\$29.00
200 BXA	1-1/8"	5/8"	1/2"	1-3/4"	1/4-5/8"	1/2"	PH2-250-202	\$33.00
300 CXA	1-7/16"	3/4"	5/8"	2-1/8"	1/2-3/4"	3/4"	PH2-250-302	\$43.00
400 CA	1-11/16"	1"	3/4"	2-1/2"	1/2-1"	13/16"	PH2-250-402	\$54.00
500 DA	2-3/16"	1-1/4"	1"	3-1/8"	3/4-1-1/4"	1-1/8"	PH2-250-502	\$125.00

HEAVY DUTY BORING BAR HOLDERS

NO. 4



- Equipped with a split bushing to accommodate a boring bar of a smaller diameter
- Grips with extreme rigidity
- Cuts smoothly without chatter
- Boring bars sold separately



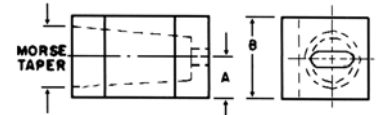
Series	A	B	D	D1	Part Number	Price
100 AXA	3/4"	1-1/2"	3/4"	5/8"	PH2-250-104	\$43.00
200 BXA	7/8"	1-3/4"	1"	3/4"	PH2-250-204	\$51.00
300 CXA	1"	2"	1"	3/4"	PH2-250-304	\$61.00
400 CA	1-1/4"	2-1/2"	1-1/4"	1"	PH2-250-404	\$75.00
500 DA	1-9/16"	3-1/8"	1-1/2"	1-1/4"	PH2-250-504	\$154.00

MORSE TAPER HOLDERS

NO. 5



- Drills with carriage by using power feed instead of tailstock
- Easily centered
- For MT2, MT3 & MT 4 drills (sold separately)



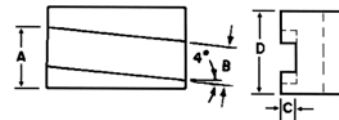
Series	A	B	Hole Size	Part Number	Price
100 AXA	3/4"	1-1/2"	2MT	PH2-250-105	\$44.00
200 BXA	7/8"	1-3/4"	2MT	PH2-250-205	\$47.00
300 CXA	1"	2"	3MT	PH2-250-305	\$60.00
400 CA	1-1/4"	2-1/2"	3MT	PH2-250-405	\$74.00
500 DA	1-9/16"	3-1/8"	4MT	PH2-250-505	\$115.00

UNIVERSAL PARTING BLADE HOLDERS

NO. 7



- For bevel as well as T-cut blades
- Enables you to cut-off close to chuck
- Absence of vibration prevents breaking blades



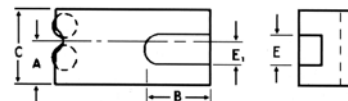
Series	A	B	C	D	Toolbit	Shank	Part Number	Price
100 AXA	15/16"	1/2"	7/16"	1-1/2"	3/16-1/2"	7/16"	PH2-250-107	\$44.00
200 BXA	1-1/8"	5/8"	1/2"	1-3/4"	1/4-5/8"	1/2"	PH2-250-207	\$46.00
300 CXA	1-7/16"	3/4"	5/8"	2-1/8"	1/2-3/4"	3/4"	PH2-250-307	\$57.00
400 CA	1-11/16"	1"	3/4"	2-1/2"	1/2-1"	13-16"	PH2-250-407	\$75.00
500 DA	2-3/16"	1-1/4"	1"	3-1/8"	3/4-1-1/4"	1-1/8"	PH2-250-507	\$136.00

KNURLING, TURNING AND FACING HOLDERS

NO. 10



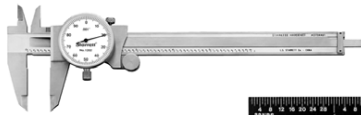
- For turning and facing as well as knurling
- Supplied with a set of high-speed, precision ground, lapped medium diamond knurls
- Knurl dimensions: 3/4" x 3/8" x 1/4"
- Uses American standard knurls



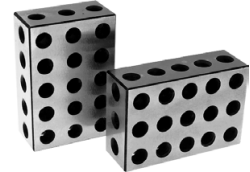
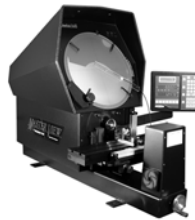
Series	A	B	C	E	E1	Toolbit	Part Number	Price
100 AXA	7/8"	2-1/2"	1-9/16"	1/2"	13/32"	3/16-1/2"	PH2-250-110	\$53.00
200 BXA	1"	2-5/8"	1-3/4"	5/8"	1/2"	1/4-5/8"	PH2-250-210	\$60.00
300 CXA	1-3/16"	3-1/8"	2"	3/4"	1/2"	1/2-3/4"	PH2-250-310	\$69.00
400 CA	1-7/16"	3-3/4"	2-1/2"	1"	3/4"	1/2-1"	PH2-250-410	\$78.00
500 DA	1-7/8"	4-1/2"	3-1/8"	1-1/4"	1"	1/2-1-1/4"	PH2-250-510	\$165.00

Call Us Today For All Of Your Machine Tool Needs!

PRECISION TOOLS



Calipers-Dial/Digital..... page 438-439
 Micrometers..... page 440-442
 Precision Measuring Kits..... page 442
 Bore Gages..... page 443
 Dial Indicators..... page 444-446
 Magnetic Bases..... page 447
 Tool Setters..... page 448
 Height Gages..... page 449
 Surface Plates..... page 450
 Edge Finders..... page 451
 Gage Blocks/Levels..... page 452
 Parallels/1-2-3 & V-Blocks..... page 453-454
 Protractors/Rules/Punches..... page 455-457
 Wire/Drill & Screw Pitch Gages..... page 458
 Thread & Pin Gages..... page 459-462
 Metrology/Microscopes/Optical..... page 463-464
 Comparators..... page 464



ABRASIVES



Grinding Wheels..... page 465-469
 Deburring Wheels..... page 470
 Abrasive Sheets..... page 471
 Shop Rolls..... page 471
 PSA/Stick-On Discs..... page 472
 Quick Change Discs..... page 473
 Tapered Rolls..... page 474
 Flap Wheels..... page 475
 Flap Brushes..... page 475
 Hand Pads..... page 476
 Buff & Blend Rolls..... page 477
 Abrasive Wool..... page 477
 Buff & Blend Discs..... page 477
 Stripping Wheels..... page 477
 Deburring Tools..... page 478-483

Call Us Or Visit Our Website For Our Complete Selection!

DIAL CALIPERS

PRECISION DIAL CALIPERS

Series 3202

- Sharp, clear dial graduations of 0.001"
- 1" per revolution
- Thumb-operated fine adjustment roll
- Sharp, black graduations on the satin finished bar, every .1"
- Hardened stainless steel bar, measuring surfaces, rack, gears, and depth rod
- Positive, spring-loaded double pinion anti-backlash control
- Lock screws for sliding jaw and dial bezel
- Knife-edge contacts
- Adjustable bezel
- 0-6", 0-8" and 0-12" sizes available



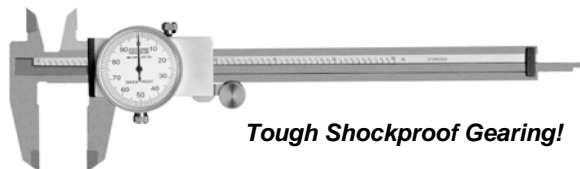
Range	Model	Part Number	Price
0-6"	3202-6	STR-61467	\$102.00
0-8"	3202-8	STR-61468	\$147.00
0-12"	3202-12	STR-61466	\$214.00

DIAL CALIPERS

Machinist Grade



C



Tough Shockproof Gearing!

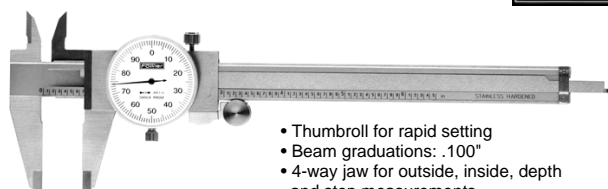
- 4-way jaws
- Stainless steel construction
- Silky smooth movement throughout
- .100" range per revolution
- .001" reading dial face
- Supplied in molded case

Range	Face	Accuracy	Part Number	Price
0-6"	White	+/-0.001"	FOW-52-008-706	\$60.00
0-6"	Black	+/-0.001"	FOW-52-008-707	\$60.00
0-8"	White	+/-0.0015"	FOW-52-008-708	\$78.00

0-6" DIAL CALIPERS



C



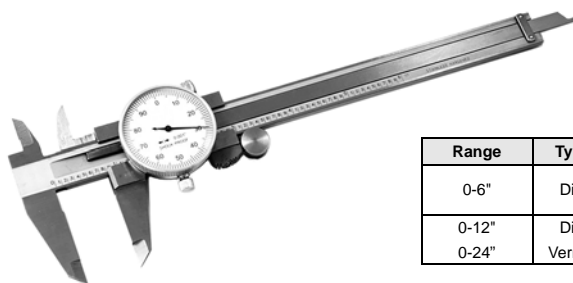
Supplied With Shop-Hardened Case

- Thumbroll for rapid setting
- Beam graduations: .100"
- 4-way jaw for outside, inside, depth and step measurements
- Hardened stainless steel throughout with measuring faces precision ground and microlapped for exceptional accuracy
- Knurled lock assures precise settings
- Adjustable dial
- Scale surface is satin chrome finished to prevent glare, reduces operator fatigue; microfine graduations read in inches

Range	Grad.	Face	Part Number	Price
0-6"	0.001"	White	FOW-52-008-007	\$85.00
0-6"	0.001"	Black	FOW-52-008-005	\$85.00

ECONOMY DIAL CALIPERS

- Standard Rack Dial Caliper
- Covered rack for longer life and chip free operation
- 4-way measurement for outside, inside, depth and step
- Adjustable dial for easy reading
- Meets DIN 862
- Positive lock
- 4-way measurements including inside, outside, depth and step
- .001" accuracy
- .100" per revolution
- Decimal to fraction conversion chart on back of caliper
- Lock screw for knurled dial (1-1/2") bezel
- Supplied in a fitted case



Range	Type	Face	Part Number	Price
0-6"	Dial	White	CAL-600	\$35.00
		Black	A-4100-0201	\$35.00
0-12"	Dial	White	CAL-1200	\$95.00
0-24"	Vernier	n/a	CAL-2400	\$99.00

PRECISION DIAL CALIPERS

Series 120A

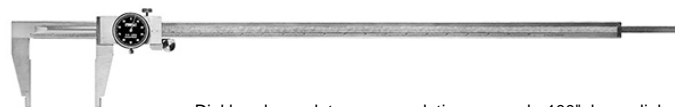


- Sharp, clear dial graduations of .001" or 0.02mm - .100" or 2mm in one revolution
- Knife-edge contacts for both inside and outside measurements
- One hand use with the thumb-operated, fine adjustment roll
- Lock screw for holding sliding jaw in position
- Hardened stainless steel bar, measuring surfaces, rack, gears and depth rod
- Positive, split-gear anti-backlash control
- Includes case

Range	Model	Face Color	Part Number	Price
0-6"	120A-6	White	STR-64514	\$203.00
0-6"	B120A-6	Black	STR-64515	\$207.00
0-9"	120AZ-9	White	STR-64520	\$381.00
0-12"	120Z-12	White	STR-56693	\$415.00

EXTENDED RANGE DIAL CALIPERS

18" & 24"



- Dial hand completes one revolution per each .100", large dial with easy to read graduations
- Inverted covered rack prevents dirt accumulation in rack gear teeth. Self-contained movement eliminates gear misalignment
- Exclusive dual pinion drive mechanism reduces wear on rack and pinion
- Beam graduated in .100" increments
- Thumbroll for rapid setting
- Hardened stainless steel throughout with measuring faces precision ground and microlapped for exceptional accuracy
- Depth rod on both models
- Knurled lock assures precise settings
- Adjustable dial reads directly to .001"

Range	Grad	Jaw Depth	Part Number	Price
0-18"	0.001"	3.125"	FOW-52-008-018	\$155.00
0-24"	0.001"	3.375"	FOW-52-008-024	\$235.00

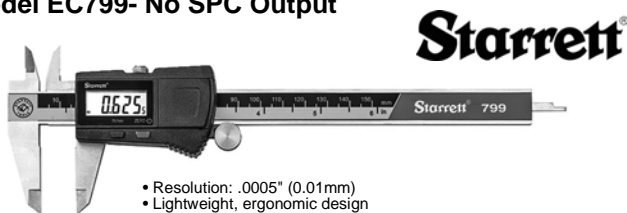
Call Us Today For All Of Your Machine Tool Needs!

ELECTRONIC CALIPERS

A

ELECTRONIC DIGITAL CALIPER

Model EC799- No SPC Output



- Resolution: .0005" (0.01mm)
- Lightweight, ergonomic design
- Inch/millimeter conversion reads .0005" or 0.01mm
- Easy access to the single long-life battery
- Last measuring position retained when shut off
- Hardened stainless measuring surfaces for long life
- Fine adjustment thumb wheel
- Lock screw to hold the slide in position
- Zero at any position
- Protective fitted case included

Range	Model	Part Number	Price
6" (0-150mm)	EC799A-6	STR-00142	\$158.00
8" (0-200mm)	EC799A-8/200	STR-00145	\$222.00
12" (0-300mm)	EC799A-12/300	STR-00148	\$332.00

ULTRA-CAL V ELECTRONIC CALIPERS

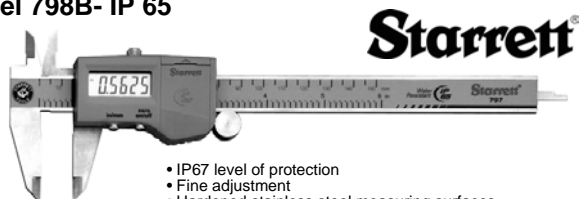


- 4-way measurement, inside, outside, depth and step on 6" & 8" models
- Direct inch/metric conversion
- Hardened stainless steel construction
- Direct RS-232 output
- Zero setting
- REL and ABS functions
- Features Absolute/Relative measuring modes
- Hold function
- Thumbroll (6" model only)

Range	Accuracy	Resolution	Part Number	Price
0-6"	.0008"	0.0005"	FOW-54-100-0671	\$160.00
0-8"	.0012"	0.0005"	FOW-54-100-0681	\$365.00
0-12"	.0012"	0.0005"	FOW-54-100-0691	\$475.00

ELECTRONIC DIGITAL CALIPER

Model 798B- IP 65



- IP67 level of protection
- Fine adjustment
- Hardened stainless steel measuring surfaces
- Large, easy-to-read, high contrast LCD digital readout
- Induction type linear encoder system
- RS232 output
- Heavy-duty bar and slide with slide lock
- One 3-volt battery for over one year of normal usage
- In/mm conversion
- Zero at any position
- Auto-Off after 30 minutes
- Reactivation of display with no loss of position



Range	Model	Part Number	Price
6" (0-150mm)	798B-6/150	STR-12521	\$256.00
8" (0-200mm)	798B-8/200	STR-12523	\$316.00
12" (0-300mm)	798B-12/300	STR-12525	\$461.00

ELECTRONIC CALIPERS



- Auto power off or manual on/off key
- Three-key model including inch/mm, on/off & zero
- Switchable inch/metric on a high contrast easy to read LCD display
- 4-way measurements: Outside, Inside, Depth & Step
- Floating zero
- Body and scale are hardened stainless steel
- Zero setting

Range	Resolution	Part Number	Price
0-6"	.0005"	A-4100-0030	\$28.00
0-8"	.0005"	A-4100-0031	\$37.00
0-12"	.0005"	A-4100-0032	\$65.00
Replacement Battery		A-4102-0030	\$3.25

ECONOMY DIGITAL CALIPERS

Absolute Reading!

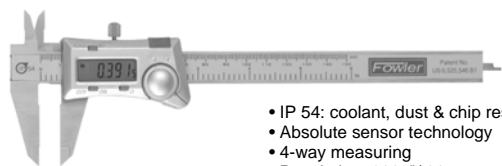


- Absolute sensor technology
- Direct inch/metric conversion
- Resolution: .0005"/.01mm
- Large easy-to-read LCD display
- Includes shop hardened case

Range	Accuracy	Part Number	Price
0-4"	.001"/.02mm	FOW-54-1000042	\$70.00
0-6"	.001"/.02mm	FOW-54-1000002	\$82.00
0-8"	.0015"/.03mm	FOW-54-1000082	\$110.00
0-12"	.0015"/.03mm	FOW-54-1001122	\$125.00
Replacement Battery		FOW-54-902-110	\$6.50

IP54 DIGITAL CALIPER

Coolant Resistant

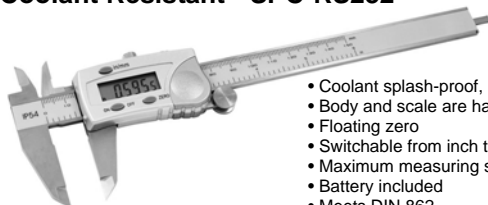


- IP 54: coolant, dust & chip resistant
- Absolute sensor technology
- 4-way measuring
- Resolution: .0005"/.01mm
- Stainless steel frame

Range	Accuracy	Part Number	Price
0-6"	.001"/.02mm	FOW-54-1007772	\$90.00
0-12"	0.0015"/.04mm	FOW-54-100-7122	\$120.00
Replacement Battery		FOW-54-902-110	\$6.50

IP54 DIGITAL CALIPER

Coolant Resistant • SPC-RS232



- Coolant splash-proof, dust-proof and chip-proof
- Body and scale are hardened stainless steel
- Floating zero
- Switchable from inch to mm
- Maximum measuring speed is 3.0m/s
- Battery included
- Meets DIN 862
- Accuracy is 0.001"/0.02mm

Range	Resolution	Part Number	Price	
0-6"	.0005"	0.001"/.02mm	A-4109-0036	\$69.00
0-8"	.0005"	0.001"/.02mm	A-4109-0037	\$99.00
0-12"	.0005"	0.001"/.02mm	A-4109-0038	\$120.00

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

439

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

MICROMETERS

OUTSIDE MICROMETERS



- .0001" reading
- Ratchet thimble and locking nut
- Carbide measuring faces
- Microfine graduations
- Meets or exceeds federal accuracy specs
- Sizes over 1" include standard

Range	Part Number	Price
0 - 1"	FOW-52-229-201	\$40.00
1 - 2"	FOW-52-229-202	\$47.00
2 - 3"	FOW-52-229-203	\$58.00
3 - 4"	FOW-52-229-204	\$66.00

DIGIT COUNTER MICROMETERS

.0001/.001" GRADUATION

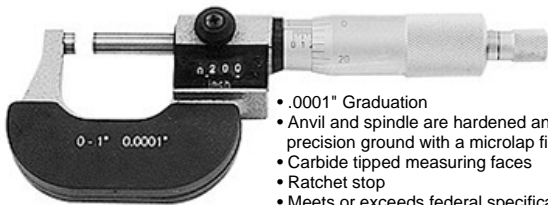
- .001" is read directly from the counter.
- .0001" is read from the vernier scale on the micrometer sleeve
- Steel measuring face
- Ratchet stop and lock nut
- Balanced frame design for comfortable, accurate measuring
- Extremely hard and stable one-piece spindle
- Micro-lapped anvil and spindle faces



Starrett

Range	Graduation	Model	Part Number	Price
0-1"	.001"	216RL-1	STR-55953	\$264.00
1-2"	.001"	216RL-2	STR-56153	\$322.00
2-3"	.001"	216RL-3	STR-56205	\$364.00
3-4"	.001"	216RL-4	STR-56208	\$408.00
4-5"	.001"	216RL-5	STR-63470	\$568.00
5-6"	.001"	216RL-6	STR-63471	\$576.00

DIGIT COUNTER MICROMETERS



- .0001" Graduation
- Anvil and spindle are hardened and precision ground with a microlap finish
- Carbide tipped measuring faces
- Ratchet stop
- Meets or exceeds federal specifications
- Standards included

Range	Grad.	Part Number	Price
0-1"	.0001"	MICDG-1	\$57.00
1-2"	.0001"	MICDG-2	\$59.00
2-3"	.0001"	MICDG-3	\$60.00
3-4"	.0001"	MICDG-4	\$81.00



OUTSIDE MICROMETERS

Solid Metal Frame



- Hardened and precision ground anvil spindle thread with microlap finish on ends
- Positive locking clamp with ratchet stop
- Solid Mitutoyo® style metal C-shape frame
- Carbide tipped face
- Meets or exceeds federal specifications
- Supplied with standards and a fitted case



Call Us Today For All Of Your Machine Tool Needs!

OUTSIDE MICROMETERS



- Hardened and ground anvil spindle thread with microlap finish on ends
- Meets or exceeds federal specifications
- Micro fine graduations
- Spindle lock
- Carbide faces
- Ratchet stop
- Standards included

Range	Grad.	Part Number	Price	
0-1"	.0001"	MIC-1/C	\$25.00	
1-2"	.0001"	MIC-2/C	\$28.00	
2-3"	.0001"	MIC-3/C	\$31.00	
3 Piece Set			A-4200-0010	\$75.00

DIGIT COUNTER MICROMETERS



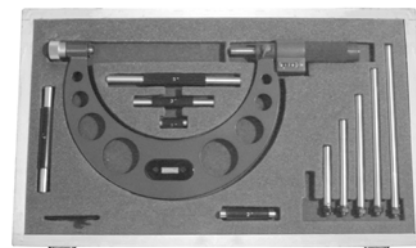
- Digital counter reads to 0.001"
- Resolution: .0001" (using vernier)
- Microfine graduations on satin chrome
- Carbide tipped measuring faces
- Positive locking nut on spindle
- Sizes over 1" include standard

Range	Part Number	Price
0-1"	FOW-52-224-001	\$79.00
1-2"	FOW-52-224-002	\$83.00
2-3"	FOW-52-224-003	\$95.00
3-4"	FOW-52-224-004	\$104.00
0-3" Set	FOW-52-224-103	\$251.00
0-4" Set	FOW-52-224-104	\$356.00

INTERCHANGEABLE ANVIL MICROMETER SETS



- Blue baked enamel frame
- Spindle and thread are hardened & ground
- Standards included with each set
- Supplied with 6 anvils
- Complete in case



Range	Grad.	Accuracy	Part Number	Price
0-6"	0.0001"	0.00024"	FOW-52-401-2211	\$185.00
6-12"	0.0001"	0.00024"	FOW-52-401-2221	\$269.00

Buy The Set & Save!



Range	Grad.	Part Number	Price	
0-1"	.0001"	A-4200-0150	\$26.00	
1-2"	.0001"	A-4200-0152	\$30.00	
2-3"	.0001"	A-4200-0153	\$34.00	
3-4"	.0001"	A-4200-0154	\$36.00	
4-5"	.0001"	A-4200-0155	\$42.00	
0-3" Set (3 pcs)			A-4200-0165	\$81.00
0-4" Set (4 pcs)			A-4200-0164	\$121.00

DIGITAL MICROMETERS

DIGITAL ELECTRONIC MICROMETERS

With SPC Output



Starrett

- High contrast LCD digital readout
- Measurement hold button
- Accuracy: +/- .0001"
- SPC Output
- Ring-type knurled lock nut for quick and sure locking
- Smooth friction thimble
- Carbide measuring faces
- Automatic OFF after 30 minutes of non-use

Range	Resolution	Model	Part Number	Price
0-1"/0-25mm	.00005"	733XFL-1	STR-64239	\$340.00
1-2"/25-50mm	.00005"	733XFLZ-2	STR-64241	\$410.00
2-3"/50-75mm	.00005"	733XFLZ-3	STR-64242	\$502.00
3-4"/75-100mm	.00005"	733XFLZ-4	STR-64243	\$541.00
4-5"/100-125mm	.0001"	733XFLZ-5	STR-64244	\$624.00

ELECTRONIC MICROMETERS

Fowler



XTRA-VALUE

- Accuracy: +/- .00016"
- Carbide measuring faces
- Resolution: .00005"/.001mm
- Absolute and incremental modes
- IP40-dust resistant
- Ratchet thimble
- FREE ball attachment included

Supplied With Shop-Hardened Case!

Description	Range	Part Number	Price
IP 40 Electronic Micrometer	0-1"	FOW-54-870-001	\$72.00
	1-2"	FOW-54-870-002	\$79.00
	2-3"	FOW-54-870-003	\$88.00
Replacement Battery		FOW-54-100-350	\$6.00

ELECTRONIC MICROMETERS

IP 54 Coolant & Fluid Resistant

Fowler



IP54
RESISTANT

- IP 54 specifications
- Automatic switch off
- Absolute & incremental modes
- Resolution: .00005"/.001mm
- Accuracy: +/-0.00016"
- Large LCD display
- Carbide measuring faces
- FREE ball attachment included

Range	Part Number	Price
0-1" / 0-25 mm	FOW-54-860-0011	\$95.00
1-2" / 25mm-50mm	FOW-54-860-0021	\$109.00
2-3" / 50mm-75mm	FOW-54-860-0031	\$119.00

DIGIMATIC MICROMETERS

Series 293 MDC-Lite

Mitutoyo



Supplied In Fitted Plastic Case

- Resolution: .00005"/0.001mm
- Provided only with a zero set and inch/metric keys
- Slim design for easy access to the stepped feature
- Ratchet stop or friction thimble for constant measuring
- Measurement readout with large characters on LCD screen
- No spindle clamp or data output

Range	Description	Part Number	Price
0-1" (0-25mm)	Friction Thimble	MIT-293-832	\$120.00
	Ratchet Stop	MIT-293-831	\$130.00

ELECTRONIC MICROMETER

Pro-Series

ISO
INTERNATIONAL SELECT QUALITY



NEW ITEM!

- 0-1"/0-25mm Electronic Micrometer
- Graduation is .00005"/.001mm
- Extra large characters on an LCD display
- Measuring faces are carbide-tipped
- Spindle lock
- Two keys with multiple functions that include on/off, Datum set, Inch/mm, Zero reset, and absolute and relative mode
- Complete with fitted case

0-1" Micrometer

Part # A-4209-0001

\$79.00 ea

Replacement Battery

Part # A-4102-0032 \$3.00 ea

ELECTRONIC MICROMETERS

Quick-Displacement

Fowler



NEW ITEM!

World's Finest Micrometer!

- Position recall
- IP67 specifications
- Delrin quick displacement thimble
- Adjustable measuring force, 5N/10N
- Menu customizable with free software
- Non-rotating spindle, 10mm rotation
- USB output
- Carbide anvils

Range	Max Error	Part Number	Price
0-1.18"	0.00012"	FOW-54-815-030	\$435.00
1.18"-2.6"	0.00016"	FOW-54-815-060	\$710.00
2.6"-4.0"	0-00020"	FOW-54-815-100	\$960.00

IP67 ELECTRONIC MICROMETERS

- Resolution: .00005" (0.001mm)
- Large, easy-to-read LCD readout
- IP67 level of protection against coolant, water, dirt and dust
- RS232 output
- Automatic OFF
- Smooth friction thimble for uniform pressure with ratchet stop
- Zero tool at any position-retain and return to true zero
- Accuracies: Inch: +/- .0001", Metric: +/- .002mm



Starrett

Range	Series	Description	Part Number	Price
0-1" (0-25mm)	795	IP67 with Output	STR-01100	\$269.00
	796	IP67, No Output	STR-01104	\$200.00
1-2" (25-50mm)	795	IP67 with Output	STR-01101	
	796	IP67, No Output	STR-01105	

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

441

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

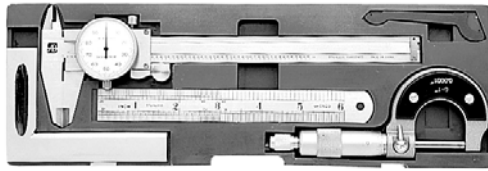
CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBRUING

COOLANT/FLUIDS
TOOL STORAGE

MICROMETERS/MEASURING SETS

4 PIECE STUDENT KIT



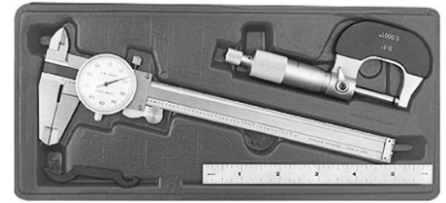
- **6" Dial Caliper**- 0.001" graduation, 4-way measurement, shockproof with large dial face
- **0-1" Outside Micrometer**- 0.0001" graduation, carbide tipped, ratchet stop, lock nut
- **4" Bevel Square**- Beam size 2-3/4", ground and lapped accuracy for straightness, parallelism and at right angles
- **6" Flex Ruler**- 4R graduation, satin chrome finish, stainless steel



4 Pc Student Kit
Part #A-4902-0004

\$69.00

3 PIECE STUDENT KIT



6" Flex Ruler:

- 4R graduation
- Stainless steel
- Satin chrome finish
- 0-1" Micrometer
- 0.0001" graduation
- Ratchet stop
- Carbide tipped

0-6" Dial Caliper:

- 0.001" graduation
- 4 way measurement
- Shock resistant
- Stainless steel

3 Pc Student Kit
Part #A-4902-0004

\$59.00

DIGIT COUNTER DEPTH MICROMETER



- Range: 0-6"
- Easy-to-read digit counter
- .001" graduation
- 4" base, hardened and ground
- Satin chrome finish
- Ratchet thimble
- Locking clamp
- Furnished with shop hardened case



Range	Base	Part Number	Price
0-6"	4"	FOW-52-225-226	\$155.00

ELECTRONIC DEPTH MICROMETER

IP54 Water, Fluid & Oil Resistant



- Range: 0-6"/150mm
- 4" Base: Hardened tool steel, precision ground & microlapped
- Protected to IP54 Standards
- Resolution: .00005"/.001mm
- Automatic switch off
- Large LCD display

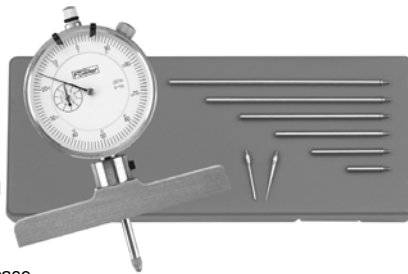


Range	Part Number	Price
0-6"/150mm	FOW-54-225-456	\$175.00

0-22" DEPTH GAGE



- Range 0-22"
- Carbide contact point
- Includes 2 extra points for small hole applications; one 0.078" dia. x 1" long and one needle point x 1" long
- 0-1" travel indicator
- .001" graduations
- Rods connect together for full 22" capacity
- Satin chrome finish
- Base size: 4"
- Complete in shop hardened case.



Description	Part Number	Price
X-Depth 22 Dial Depth Gage	FOW-52-1250061	\$135.00

ECONOMY DEPTH MICROMETERS



- 0.001" Graduation
- Interchangeable rods are fitted to the micrometer spindle against a positive stop and locked
- Base surface hardened & lapped
- Ratchet stop for consistent and repetitive measurements
- Satin chrome non-glare finish

Range	Base	No. of Rods	Part Number	Price
0-4"	2.5"	4	A-4500-0001	\$88.00
0-4"	4"	4	A-4500-0011	\$87.00
0-6"	4"	6	A-4500-0002	\$87.00

INDICATING MICROMETERS



- Anvil and spindle hardened and precision ground
- Fully insulated frame, satin chrome finish
- Carbide tipped anvil & spindle
- Retracting button conveniently located in relation to operator's hand
- Head graduated .001"
- Flatness: .000012"
- Dial graduated in .00005"
- Diameter of spindle: .256"

Range	Accuracy	Part Number	Price
0-1"	0.00016"	FOW-52-245-501	\$275.00
1-2"	0.00016"	FOW-52-245-502	\$330.00

INSIDE MICROMETER



- Spindle threads are hardened and ground
- Ratchet stop
- Satin chrome finish on barrel and thimble
- Measuring faces are fully hardened and precision ground on a radius for accurate feel without cramping
- .001" graduation
- Supplied in a fitted case

Range	Part Number	Price
.2-1.2"	A-4200-0201	\$69.00
.2-2.2"	A-4200-0202	\$55.00

Call Us Today For All Of Your Machine Tool Needs!

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

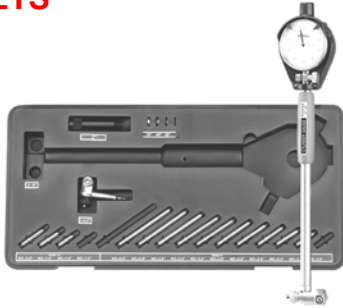
BORE GAGES

C

DIAL BORE GAGE SETS



- Easy-to-read
- Carbide anvils
- Graduation: .0005"
- Chrome plated handle
- Insulated grip
- Includes extension holder and fitted case
- Complete in shop hardened case



Range	Graduation	Part Number	Price
.7-1.5"	0.0005"	FOW-52-646-100	\$117.00
2-6"	0.0005"	FOW-52-646-300	\$110.00
1.4-6"	0.0005"	FOW-52-646-400	\$140.00

DIAL BORE GAGE SETS



- For close tolerance measurements of holes taper and roundness
- Gages supplied with AGD Group II dial indicator
- Easy setting with micrometers or ring gage
- 0.0005" graduations on dial indicator
- Self centering



Range	Probe Depth	No. of Anvils	Part Number	Price
0.4 - 0.7"	4"	.11	A-4400-0062	\$115.00
0.7 - 1.5"	6"	9	A-4400-0063	\$95.00
1.4 - 2.4"	6"	6	A-4400-0064	\$95.00
2.0 - 6.0"	6"	11	A-4400-0007	\$89.00
1.4 - 6.0"	6"	17	A-4400-1406	\$140.00

DIAL BORE GAGE



- Resolution: .0005"
- 2-point contact
- Non-slip insulating grip
- Carbide contacts for extended wear
- Aluminum case with gage and accessory cutouts
- Gage chart for quick and easy anvil selection



Measuring Range	Probe Depth	Contacts	Extension	Part Number	Price
0.7-1.5"	6"	2	-	STR-12456	\$249.00
1.4-2.4"	6"	4	-	STR-12457	\$249.00
2-6"	6"	4	(1x) 2	STR-12458	\$278.00

DIGITAL BORE GAGES



- Used for precise bore measurements, this gage is the perfect instrument for easy set-ups and gauging
- Uses a digital indicator for accurate results
- Fast and easy inch/metric conversion, no need for revolution counters
- Zero-setting function and RS 232 output
- Rapid display and hold function
- Includes 11 anvils



Grad.	Range	Part Number	Price
.0005"	2-6"	PH2-900-274	\$140.00
.0001"	2-6"	PH2-900-284	\$175.00

BORE GAGE COMBO SET

- Bore Gage Features:**
- Range: 1.4"-6"/35mm-150mm
 - Carbide anvils
 - Easily adjustable
 - Self-centering
 - Includes 2" contact extension



- Indicator Features:**
- Dual reading inch/metric electronic indicator.
 - Bar graph and numeric digital display
 - Resolution: .00005"/.001mm
 - Preset with recall
 - ABS/INC measurement
 - Min/Max/TIR

Description	Part Number	Price
1.4-6" Electronic Bore Gage Set	FOW-54-646-401	\$255.00

PRECISION RADIUS GAGE SETS



- Radius gage set in a plastic case
- Five different gaging surfaces on each gage for both convex and concave radius
- Made of satin finish rust and stain resistant stainless steel
- Includes handy gage holders



No. Of Pieces	Description	Part Number	Price
25	1/64"-17/64 x 64ths & 9/32"-1/2" x 32nds	A-4901-0040	\$41.00
26	.5-13mm by 0.5mm	A-4901-0047	\$38.00

TELESCOPING HOLE GAGES

- FEATURES:**
- 6 piece set.
 - Range: 5/16" to 6"
 - Double action rigid handle with self-centering feature for quick checking of inside measurements.
 - Completely assembled with handle.
 - Constant spring tension for uniform feel.



Brand	Part Number	Price
FOWLER	FOW-52-470-006	\$101.80
PEC	PEC-3S-6	\$86.53

SMALL HOLE GAGES



- FEATURES:**
- Size adjustment by knurled knob
 - Gaging surface is fully hardened
 - Satin chrome finish
 - Extra long for gaging deep holes and slots
 - Final size is obtained by measuring over the contact points with a micrometer
 - Supplied in fitted case



Range	Part Number	Price
.125"-.500"	PEC-4S-4	\$50.57

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

DIAL TEST INDICATORS

DIAL TEST INDICATORS

With Dovetail Mounts



- Series 708 reads to .0001"
- Large 1-3/8" diameter dial
- Angled head for better reading position
- Precision gear-driven design with smooth, jeweled movement
- Three dovetail positioning mounts provide added versatility
- 13/16" long carbide contacts are frictionally adjustable and replaceable
- Dial color options: White or Black
- **Attachments included:** dovetail body clamp, tool post holder, swivel post snug w/ dovetail indicator clamp and snug/rod unit



A

Description	Range	Dial Reading	Part Number	Price
Black Dial, w/ attachments	.010"	0-5-0	STR-64608	\$384.00
White Dial, w/ attachments	.010"	0-5-0	STR-64217	\$384.00
White Dial, w/o attachments	.020"	0-5-0	STR-64213	\$366.00
White Dial, w/ attachments	.020"	0-5-0	STR-64218	\$448.00

TEST INDICATOR ACCESSORIES

- Accessories for Starrett Series 708 and 811 test indicators
- Replacement attachments
- Additional accessories also available



Dovetail Body Clamp



Tool Post Holder



Snug and Rod Unit



Indicator Axial Support



Swivel Post Snug w/ Dovetail Indicator Clamp



Indicator Attachment



Description	Part Number	Price
Dovetail Body Clamp	STR-72441	\$23.50
Tool Post Holder	STR-71361	\$23.50
Swivel Post Snug w/ Dovetail Indicator Clamp	STR-72440	\$23.50
Snug and Rod Unit	STR-72442	\$29.00
Indicator Axial Support	STR-65101	\$101.00
Indicator Attachment-Dovetail Style	STR-68713	\$195.00

TEST INDICATOR KIT

- 0-0.03" Dial Test Indicator set with .0005" Graduation
- Three dovetail positioning mounts work with most existing test indicator accessories
- Precision design with smooth jeweled movement
- Contact point reverses automatically
- Frictionally adjustable contacts.
- Meets or exceeds ANSI/ASME specifications
- High contrast easy to read dial
- Narrow body for in reach ability
- Interchangeable with 3808AC
- Includes 2 contact points, 2 dovetail clamps, 1 swivel post holder, 1 tool post holder and 1 contact wrench in a fitted case



Test Indicator Kit
Part #A-4409-1208

\$72.00

DIAL TEST INDICATOR

- Precision pivot bearing
- Dial reading 0-15-0
- 0.098" contact point
- Satin chrome finish
- Jeweled movements
- Dovetail mount top, back & front
- Includes case & 2 stems



Range	Graduation	Brand	Part Number	Price
0-0.03"	0.0005"	IMPORT	IND-25010L	\$25.34
0-0.03"	0.0005"	ISQ	A-4400-0010	\$41.00
0-0.03"	0-0005"	ISQ Ultra	A-4409-1201	\$47.00

DIAL TEST INDICATORS

With Dovetail Mounts



All Fowler Test Indicators Include:

- Bi-directional constant clockwise rotation
- Automatic reversal
- 3 dovetail mounts
- Jeweled movement
- 2 dovetail clamps
- Universal holder
- Complete in a molded case!

Range: .030"
Dial reading: 0-15-0

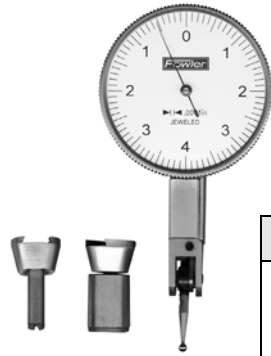


Grad.	Dial Dia.	Point Length	Dial Color	Part Number	Price
0.001"	1"	1/2"	White	FOW-52-562-774	\$80.00
.0005"	1-1/2"	1/2"	White	FOW-52-562-776	\$80.00
.0005"	1-1/2"	1/2"	Black	FOW-52-562-780	\$80.00

TEST INDICATORS



- Total Range: .008"
- Dial reading: 0-4 -0
- Jewelled movement
- Bi-directional constant clockwise rotation
- Easy-to-read tilted dial
- Auto-reverse
- 0.0001" graduation
- 1/2" point length



Dial Dia.	Dial Color	Part Number	Price
1"	White	FOW-52-563-770	\$90.00
1"	Black	FOW-52-563-771	\$90.00
1-1/2"	White	FOW-52-563-777	\$90.00
1-1/2"	Black	FOW-52-563-772	\$90.00

DIAL TEST INDICATORS



- Range: 0.060"
- Jeweled movement
- Revolution counter
- Easy-to-read tilted dial
- Automatic reversal
- 210° Swivel arc
- Tungsten carbide points: .040", .080" and .120" diameter
- 5/32" stem



Twice The Range Of Most Indicators!



Dial Dia.	Grad.	Part Number	Price
1-1/2"	.0005"	FOW-52-562-001	\$99.00
1"	.0005"	FOW-52-562-002	\$99.00

Call Us Today For All Of Your Machine Tool Needs!

UNIVERSAL INDICATOR HOLDER

For use with Test Indicators. Attaches to spindle with dovetail mount.

- For Bridgeport® type Machines.
- Clamping Diameter 1-7/8".
- Length from Clamping Bracket to indicator 4-1/2".
- For Milling Machines and Jigbores.
- A Quicker way of Indicating.
- Suitable for all popular Indicators with 5/32" shank or dovetail.
- Does not disturb the working tool.
- Mounts with single pressure screw
- Guaranteed accurate readings.



Indicator Holder
Part #IND-87050B
\$11.50

TEST INDICATOR & UNIVERSAL INDICATOR HOLDER SET

UNIVERSAL HOLDER SET:

- For Bridgeport type mills.
- Mounts directly on machine quill with single pressure screw.
- 1 7/8" clamping diameter.
- Stays clear of working tool.

Indicator Holder Set
Part # UTH-500
\$35.00



X-TEST & XTRA-MAG COMBO

Mag Base:

- 2 universal ball sockets
- Microfine adjustment screw
- 3-9/16" extension arm
- Dovetail mounting

Complete In a Shop Hardened Case!

Test Indicator:

- Range:.060"
- Reading:0-15-0, 1-1/2" dial dia
- Jewelled movement
- Graduation:.0005"
- Automatic reversal
- Tungsten carbide points: .040", .080" & .120"



Virtually unlimited positioning as a Universal Base!

Description	Part Number	Price
Xtra Mag with Test Indicator	FOW-52-562-105	\$172.20

PRECISION TEST INDICATOR KIT

Indicator Holder:

- 2 universal ball sockets
- Microfine adjustment screw
- 3-9/16" extension arm
- Dovetail mounting

0-0.03" Test Indicator:

- Resolution: 0.0005"
- Precise pivot bearing
- 0.098" contact point
- Satin chrome finish
- Dovetail mount top, back and front
- 2 stems (7/32" & 1/4")
- Jeweled movement, automatic reversing



Test Indicator Kit
Part # A-4400-0013
\$59.66



DIAL INDICATORS-AGD GROUPS 2 & 3



- Indicators have a shockless, hardened steel gear train and jewel bearings
- Lug on center back
- Conforms to AGD Standards



AGD Group 2



AGD Group 3

Grad.	Range		Dial Reading	Part Number	Price
	One Rev.	Total			
AGD Group 2- Face Dia: 2-1/4"					
.0005"	.050"	.500"	0-50	STR-53292	\$185.00
		1.000"	0-50	STR-53304	\$185.00
.001"	.100"	.500"	0-100	STR-53293	\$160.00
		1.000"	0-50-0	STR-53287	\$157.00
			0-100	STR-53295	\$154.00
AGD Group 3- Face Dia: 2-3/4"					
.001"	.100"	.500"	0-50-0	STR-53607	\$201.00
		1.000"	0-100	STR-53613	\$201.00

DIAL INDICATORS



- Graduation: .001"
- 1" total travel (range)
- 0-100 continuous reading
- Revolution counter
- Tolerance markers
- Lug back mount
- Includes certificate of calibration
- 3 year warranty

Reading	Face	Part Number	Price
.001"	White	FOW-52-520-1102	\$68.00
.001"	Black	FOW-52-520-1101	\$68.00
.0005"	White	FOW-52-520-129	\$81.00



DIAL INDICATOR Inch & Metric Reading



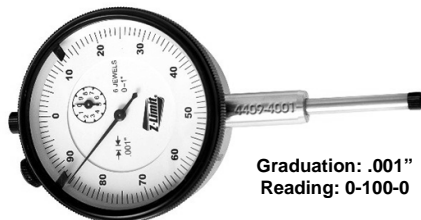
- Two dial indicators in one
- Inch on one side and metric on the opposite side
- Range: 0.5"/12.5mm
- 8mm mounting stem with 3/8" adaptor bushing included
- Jeweled movements
- Carbide contact point
- 1" spline contact point included
- Includes NIST certificate for both inch and metric readings

Grad.	Part Number	Price
0.001"	FOW-52-530-115	\$95.00



1" TRAVEL INDICATOR

- 1" Jeweled & dual back travel indicator
- 6 jewel movement
- Bezel lock screw is designed for easy adjustments
- Contact point is interchangeable with 4-48 thread points
- 3/8" diameter stem
- 2.19" in diameter dial face
- Reading range pointers are installed in the bezel
- Long form of calibration certificate is included
- Flat back is installed with an extra lug back included



Graduation: .001"
Reading: 0-100-0

1" Travel Indicator
Part # A-4409-4001
\$38.00



Call Us Or Visit Our Website For Our Complete Selection!

DIAL INDICATORS & ACCESSORIES

AGD GROUP 2 DIAL INDICATORS



- Rack and contact point made of hardened stainless steel
- 3/8" diameter stem
- Contact point is interchangeable with thread 4-48
- Jeweled movement
- 2" diameter dial face
- Lug back



Range	Graduation	Part Number	Price
0-0.50"	.001"	A-4400-0004	\$18.16
0-1"	0.001"	A-4400-0001	\$19.00
0-1"	0.0005"	A-4400-1100	\$19.80
0-1"	0.0001"	A-4400-1000	\$61.67
0-2"	0.001"	A-4400-0002	\$43.00

INDICATOR & STAND COMBO



- Stand Features:**
- 6" x 6" x 2" granite base
 - Positive lock screw
 - Fine adjustment knob for zero setting
 - Column height is 8"

- Black Face Indicator features:**
- Reading: .001"
 - 1" Travel
 - AGD Group 2
 - Dial diameter: 2.25"
 - Continuous reading: 0—100



Indicator	Part Number	Price
Black Face	FOW-52-580-109	\$135.00

DIAL INDICATOR & STAND

- Granite Stand:**
- Fine adjustment
 - 0.00005" granite flatness
 - 10" height
 - Accepts all AGD indicators with lug back
 - Stand base is 6" x 6" x 2"



- Indicator:**
- 0-1" range
 - 3/8" diameter stem
 - Contact point is interchangeable with thread 4-48
 - Jeweled movement
 - 2" diameter dial face
 - Lug back

Stand & Indicator
Part # A-4401-2001
\$65.00 each

Granite Stand Only
Part # A-4401-0020
\$55.00 each

MAGNETIC BASE

- MAGNETIC BASE:**
- Fine adjustment
 - On/off switch
 - Power pull: 130 lbs
 - Overall height: 9"
 - Max. reach: 16"
 - Holds most AGD group indicators
 - Base: 2" wide x 2-1/2" deep



- DIAL INDICATOR:**
- 0-1" range
 - 3/8" diameter stem
 - Contact point is interchangeable with thread 4-48
 - Jeweled movement
 - 2" diameter dial face
 - Lug back

Base & Indicator
Part # A-4401-0015
\$47.00 each

Magnetic Base Only
Part # A-4401-0001
\$22.00 each

MAG BASE & INDICATOR COMBO

- Articulating Mag Base Features:**
- Adjust in almost unlimited ways.
 - Fine adjust
 - 85 lb. pull
 - V-slot on base for mounting on rounded surfaces

- AGD Indicator Features:**
- 1" travel.
 - Continuous reading: 0-100.
 - Reading: .001"
 - AGD group 2, 2-1/4" dial diameter.
 - Revolution counter
 - Tolerance markers
 - Lug back mount
 - Carbide point

Can Be Set Up In Almost Unlimited Positions!



Description	Part Number	Price
Mag Base & Indicator	FOW-52-585-150	\$169.90
Mag Base Only	FOW-52-585-008	\$92.20

ELECTRONIC INDICATOR



- Direct Inch/Metric Conversion
- 2-1/4" dial face
- 1"/25mm travel
- Lug Back with 3/8" stem mountings
- Resolution .0005"/.01mm
- Tolerance indicators
- Min/Max measurement
- Floating zero
- Carbide-tipped point



Description	Dial Face	Part Number	Price
1"	2-1/4"	FOW-54-520-250	\$75.00
1" Inch/Metric/Fraction	2-1/4"	FOW-54-520-260	\$80.00

ELECTRONIC INDICATOR



- Large, easy to read LCD
- **Range:** .500" (12.7mm)
- **Resolution:** .0005" (.01mm)
- Power On/Off button
- Reverse travel
- Zero setting at any position
- 3/8" diameter stem
- 4-48 spindle thread
- Lug on center back
- Plastic storage case with clear cover

0-.500" Range Electronic Indicator
Part # STR-68813
\$182.00



A

ELECTRONIC INDICATOR



- Extra large LCD display
- **Range:** 0-0.5"
- **Resolution:** .0005" (.01mm)
- 4-48 thread
- Absolute zero reset button
- Zero setting at any position
- Includes SR44, 1.55V battery
- Lug back
- Supplied in fitted case

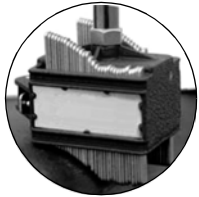
0-.500" Range Electronic Indicator
Part # A-4400-0115
\$78.00



Call Us Today For All Of Your Machine Tool Needs!

PRO-QUALITY CONTOUR MAGNETIC BASE

- Magnetic base conforms to any shape
- Cam lock mechanism
- Unlimited versatility
- Fine adjustment
- On/off knob



Contour Magnetic Base
Part # A-4401-0510
\$30.00

UNIVERSAL MAGNETIC BASE



- 3D rigid steel arm movement
- Unique central locking mechanism
- Fine adjust
- On/off switch
- Max. reach on Mini model is 7.5"



A-4401-0810



A-4401-0511

Description	Base Size	Part Number	Price
MINI Universal Magnetic Base	1.2" w x 1.5" d	A-4401-0810	\$42.00
Universal Magnetic Base	2" w x 2-1/2" d	A-4401-0511	\$46.00

FLEXIBLE ARM MAGNETIC BASE

- Flexible Magnetic Base
- Permanent magnet with on/off switch control
- Adjustable cable tension
- Stem flexes a full 360°
- Overall length is 13"
- Power pull is 130 lbs
- Base dimension is 2" wide x 2-1/2" depth
- Can be used with all AGD dial indicators
- Cam lever operates the cable and locks it rigid at any desired position



Flexible Magnetic Base
Part # A-4401-0002
\$40.00

SURFACE GAGE WITH BUILT-IN SWITCHABLE MAGNETIC BASE



- Set includes 3-1/8" x 2-1/16" permanent magnetic base with on/off switch, fine adjustment on base and a 5/16" x 9" upright.
- .0005" test indicator (FOW#52-562-778) with .040", .080" & .120" contact points.
- Swivel clamp to mount indicator.
- Two dovetail stems: 5/32" & 3/8"
- 4" hardened scriber.
- Form fitted shop-hardened case for easy accessibility, and storage.



Indicator Not Included

Description	Part Number	Price
Xtra-Surf	FOW-52-155-743	\$109.00

FLEX ARM MAG BASE SET

Includes Indicator & Flex Arm Mag Base



Dial Indicator Features:

- AGD group 2
- Black face
- Dial dia: 2-1/4"
- Travel: 1", Reading: .001"
- Continuous reading: .100"
- Carbide tipped point

Flex Arm Mag Base Features:

- Corrosion resistant chrome plated flex arm
- 85 lb. pull magnet
- Holds rigidly in almost any position
- V-base for mounting on rounded surfaces



Description	Part Number	Price
Set w/ Dial Indicator	FOW-52-585-500	\$191.18
Set w/ Digital Indicator	FOW-52-585-100	\$171.24

FINE ADJUST MAG BASE SET

Includes Indicator & Magnetic Base



Dial Indicator Features:

- AGD group 2
- Black face
- Dial dia: 2-1/4"
- Travel: 1", Reading: .001"
- Continuous reading: .100"
- Carbide tipped point

Magnetic Base Features:

- Fine adjustment
- 85 lb. pull magnet
- V-bottom base



Description	Part Number	Price
Set w/ AGD Dial Indicator	FOW-52-585-125	\$135.00
Set w/ Indi-X Electronic Indicator	FOW-52-585-075	\$170.00

LARGE DIAMETER MAGNETIC BASE

With Articulating Arm & LED Flashlight



- 14 LED Ultra-bright flashlight
- Powerful, low-profile magnetic base
- Positive-locking 6" articulating arm allows for easy and accurate positioning
- Quick release mounting bracket clamp
- Batteries included



This Product Is Ideal For Focused Applications In Industrial And Automotive!

Mag Base & Flashlight
Part # FOW-52-630-460

\$52.16 each



Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

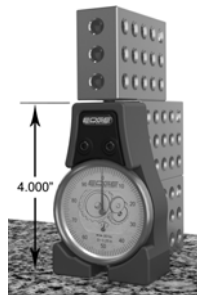
PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

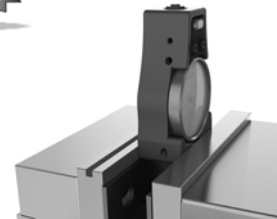
TOOL SETTERS

TOUCH OFF GAGE

Set tools accurately! Dramatically decrease set up time and eliminate tool path mismatch. Allows you to standardize the way tool offsets are measured in your shop, ensuring every job is setup the same way and runs without issue. Just lower the tool down onto the contact face until the indicator reads zero. At that point, you can be confident that the tool tip is exactly 4 inches from the surface the gage is sitting on.



- Accurately establishes tool length offsets for CNC milling machines
- The contact face is lightly spring loaded
- Contact face diameter is 0.250"
- Rectangular base and recessed indicator face allows fit between vise jaws on a pair of parallels
- Offset height 4.000 in (101.6mm)
- Large 2.2" easy to read indicator face
- Easy calibration check using 1-2-3 blocks
- Gage graduations 0.001"-repeatability 0.0002"
- Body and contact face are red anodized 6061-T6 aluminum
- Base: 2.4" wide x 1.3" depth x 4" height
- Padded case and manual included



TOUCH OFF GAGE
Part # EDGE-52000
\$99.99 ea

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

Z-AXIS TOOL SETTER



- Positioning accuracy and repeatability: 0.0004"
- Set "0" point with built-in dial indicator
- Height: 2" or 4" (with magnetic base)
- Dimensions: 1.45" x 1.45" x 2" height

Z-AXIS SETTER
2" Height
Part # A-4401-0050
\$95.00
With Magnetic Base
4" Height
Part # A-4401-0051
\$150.00

Z-AXIS TOOL SETTER



- Positioning accuracy and repeatability: 0.0002"
- Easy to set "0" point with built-in dial indicator
- Includes magnetic base
- Dimensions: 2" x 2" x 4" height

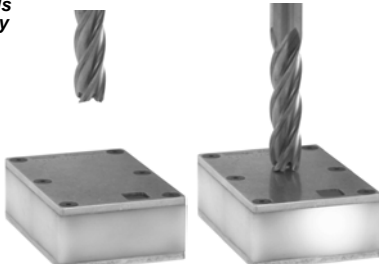
PRO Z-AXIS SETTER
4" Height
Part # A-4401-0062
\$230.00

MIRAGE TOOL SET

The Fowler/Mirage Tool Set Is An Easy And Affordable Way To Set Z Depths Quickly And Accurately!



- Can be operated directly off table or from machine vise
- Aluminum contact face eliminates carbide chipping on cutting tools
- Repeatability: .0002"
- Block dimensions: 1" x 2" x 3"
- Batteries included



Slowly lower cutting tool toward Tool Set ...Indicator will light up upon contact!

Part Number	Price
FOW-54-575-750	\$99.00

Z-AXIS TOOL SETTER Ultra Precision



- Low spring force to avoid breaking of small size endmills and drills
- Accuracy: .0004"
- 2" height
- Built in dial indicator
- Range: 0 - 0.1"

Z-AXIS SETTER
2" Height
Part # A-4401-0054
\$250.00

PRECISION CENTERING INDICATOR

- Quick, accurate, easy centering in boring and milling set-up on horizontal or vertical machines
- Operates at an angle from horizontal to vertical machines and from internal to external diameter without any change by simply changing the feeler
- Face of the indicator remains stationary at any desired position while the machine spindle rotates, leaving the operator with hands free to accurately position the table

- Includes:**
- Restraining rod
 - Center point feeler
 - 2, 4 & 6" straight feeler
 - 2, 4 & 6" curved feeler



Specifications	
Body Length	5-1/2"
Shank	3/8" dia x 7/8" long
Feeler Ball	1/8" dia
Measuring Range	250 axis offset
Capacity	Internal: 5/32-4-1/4" dia External 0-4-1/4" dia
Speed	Up to 800 RPM
Locating Accuracy	.0002" of true center

Centering Indicator
Part # A-4400-0020
\$125.00

Call Us Today For All Of Your Machine Tool Needs!

COAXIAL INDICATOR SETS



Use the 2 Dimensional Coaxial Set for accurate component centering and positioning in most machining applications. The 2D Coaxial indicator can be used at any angle and the dial remains stationary during the rotation of the machine spindle. Recommended speed not to exceed 800 RPM.



- Indicator assembly with 1.6" (42.5mm) diameter dial
- Graduations and revolution counter .0005" (.01mm)
- 3 Internal and 3 External feelers
- Center point feeler, restraining arm
- Complete in a fitted case.

Specifications:

- Length: 6-7/8" (175mm)
- Shank: 3/8" dia. x 7/8" (10mm x 20mm) long
- Feeler ball: 1/8" (3mm) dia.
- Dial readings: 0-50
- Measuring range: .250" (6mm) axis offset
- Locating accuracy to within .0002" (.005mm) of true center

Description	Part Number	Price
2D Coaxial Set-Inch	FOW-52-710-025	\$248.00
2D Coaxial Set-Metric	FOW-52-710-030	\$253.00



LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

DIAL HEIGHT GAGES



- .001" Graduation
- 5mm X 8mm Clamp
- Made of high quality stainless steel
- Fine feed adjustment with positive lock
- Scriber is carbide tipped
- Other side of scriber has a pin to attach indicator clamp and dovetail
- Complete with fitted case

Range	Part Number	Price
0-12"	A-4309-0012	\$145.00
0-24"	A-4309-0024	\$350.00



B

ELECTRONIC HEIGHT GAGE



- Direct inch/metric conversion.
- Resolution: .0005"/.01mm
- Large, high contrast LCD display
- ABS/INC measurement
- Direct RS232 output
- Floating zero
- Positive lock, carbide scriber
- **Includes high-impact aircraft quality aluminum case**

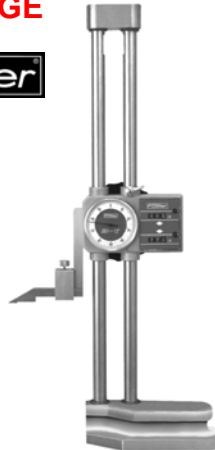
Range	Accuracy	Part Number	Price
0-12"/300mm	±.0015"	FOW-54-175-012	\$385.00
0-18"/0-450mm	±.002"	FOW-54-175-018	\$450.00
0-24"/600mm	±.003"	FOW-54-175-024	\$510.00



TWIN BEAM DIAL HEIGHT GAGE



- Separate digit counters register both upward & downward travel
- Zero setting can be obtained throughout the gage's range
- Coarse readings in .100" graduations: fine readings taken on indicator are .001"
- Dual chrome plated beams
- Carbide tipped scriber
- Base is hardened, ground & lapped for maximum flatness



Range	Part Number	Price
12"	FOW-52-174-212	\$215.00
24"	FOW-52-174-224	\$405.00

0-6" ELECTRONIC HEIGHT GAGE



- Range: 0-6" (150mm)
- Linear Accuracy: ± .001" (± 0.03mm)
- Resolution: .0005" (0.01mm)
- Clear, easily read numbers, properly sized for the tool
- Hardened, stainless steel bar for long life
- Fine adjustment thumb roll for precision measurements
- The auxiliary scriber has a rounded nose for cutting clean, sharp lines with smoothness and less pressure.
- Lock to hold the slide in position
- Hardened, ground, and lapped base with finger grooves to provide ease of movement
- One-year minimum battery life with two furnished 3-volt batteries
- Scriber can reference zero from the bottom of the base to get the full 6" (150mm) usable range
- Includes case

Range	Part Number	Price
0-6"	STR-12221	\$269.00



A

0-12" ELECTRONIC HEIGHT GAGE



- Range (in): 0 - 12"
- Resolution (in): .0005"
- Accuracy (in): (+/-)0.0015"
- Clear bar graduations in .100" and 5mm increments
- Large (9.65mm/3/8"), easy-to-read LCD display
- Carrier and scriber designed to read from zero
- Hold control feature to retain a reading at any position
- Ability to set zero at any position
- Manual on/off plus a built-in automatic off after 30 minutes
- Large positive action keypad
- Ability to retain and return to the true zero
- RS232 data output port
- 1-1/2+ years battery life (includes 2 batteries)
- Base is well-balanced, hardened, ground and lapped

Desc.	Range	Part Number	Price
3754-12/300	0-12"	STR-72625	\$824.00



A

ELECTRONIC HEIGHT GAGES



- Large display screen
- Preset memorizing function
- Hardened and ground stainless steel frame
- Cast iron base
- True inch/metric conversion



Range	Resolution	Part Number	Price
0-12"	.0005"/.01mm	A-4300-0112	\$230.00
0-20"	.0005"/.01mm	A-4300-0120	\$310.00



CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

SURFACE PLATES & ACCESSORIES



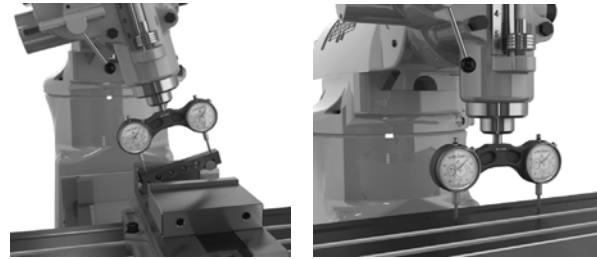
PRO TRAM SYSTEM

The Pro Tram makes the process of tramping your mill fast, easy and accurate. Tramping is the process of squaring the head of your milling machine to the table. The Pro Tram is sized to fit the bed of a 6" vise allowing you to tram directly to vise for increased accuracy. It can be used with a sine bar or sine plate to adjust the head to precise angles.



- Quickly square the head of a milling machine
- Perfectly fits the bed of a 6" vise
- Indicator graduations 0.001" and 0.0005"
- Shank sizes available in 1/2" and 3/8"
- Large 2.2" easy to read indicator face
- Indicator repeatability of 0.0002"
- Body made from red anodized aluminum
- Includes calibration gage, manual and case

Ind. Grad.	Shank Dia	Part Number	Price Each
0.001"	1/2"	EDGE-01000	\$124.99
0.001"	3/8"	EDGE-10000	\$124.99
0.0005"	1/2"	EDGE-09000	\$139.99



SPINDLE SQUARES

Offers accuracy, convenience and significant time saving with the common shop task of tramping the head of a vertical milling machine. This must be done regularly to ensure squareness and perpendicularity between the spindle and work surface. The spindle square is easier to use and more precise than the traditional method of tramping with a dial test indicator. .001" Grad, 0-50-0 Dial; .250" Range.



- Includes two AGD Group 2 dial indicators
- Patented design
- Solid steel body construction with black oxide finish
- Ground gaging surface
- Approximately 4 lbs with custom case
- 3/8" inch shank diameter
- 4" (100mm) between contact points
- Approx. 6-3/4" (172mm) wide and 5-1/2" (140mm) from the top of shank to the end of the contact points



Reference	Range	Grad.	Dial Reading	Part Number	Price
649-1	.025"	.001"	0-50-0	STR-52080	\$217.00
649-5	.125"	.0005"	0-25-0	STR-52081	\$229.00
649-1M	2.5mm	0.01	0-50-0	STR-52082	\$229.00

BLACK GRANITE SURFACE PLATES



No Ledge

- **Grade A, Inspection Grade:** Typically specified for general work in quality control
- Meets or exceeds US Federal Specification GGG-P-463c for flatness
- High quartz content which provides greater wear resistance to wear and damage
- Black granite creates little glare resulting in less eyestrain for individuals using the plates



Size	Thickness	Flatness Unilateral Tolerance	Weight lbs.	Part Number	Price
12" x 12"	4"	.000100"	55	STR-85008	\$199.00
12" x 18"		.000100"	85	STR-85013	\$263.00
18" x 24"		.000150"	248	STR-85031	\$508.00
24" x 24"		.000150"	330	STR-85038	\$668.00
24" x 36"	6"	.000200"	495	STR-85058	\$1,091.00
36" x 36"		.000300"	745	STR-85092	\$1,743.00
36" x 48"		.000400"	1320	STR-85113	\$2,309.00
36" x 60"		.000500"	2065	STR-85120	\$2,769.00

BLACK GRANITE SURFACE PLATES



Grades A & B • No Ledge

- Surface plates are checked by auto-collimator for overall accuracy assurance
- All points on surface are between two parallel planes separated by the accuracy
- **Grade A:** Inspection
- **Grade B:** Toolroom



Grade: A- No Ledge

Size	Accuracy	Weight	Part Number	Price
18" x 12" x 3"	+/- .00005"	80lbs	A-4401-1812	\$102.00
24" x 18" x 3"	+/- .000075"	150	A-4401-2418	\$195.00
36" x 24" x 4"	+/- .0001"	495	A-4401-3624	\$540.00
48" x 36" x 6"	+/- .0002"	1200	A-4401-4836	\$1,220.00

Grade: B- No Ledge

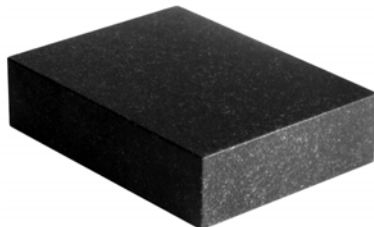
Size	Accuracy	Weight	Part Number	Price
12" x 9" x 3"	+/- .0001"	40 lbs	A-4401-0011	\$61.00
18" x 12" x 3"	+/- .0001"	80	A-4401-0012	\$77.00
24" x 18" x 3"	+/- .00015"	150	A-4401-0013	\$163.00
36" x 24" x 4"	+/- .0002"	350	A-4401-0014	\$470.00
48" x 36" x 6"	+/- .0004"	1200	A-4401-1604	\$1,095.00
48" x 72" x 6"	+/- .0004"	2480	A-4401-1607	\$3,280.00



- Overall height: 36"
- Made of heavy gauge steel with baked enamel finish
- Assembly required
- Comes with leveling screws

Surface Plate Stands For 0 Ledge

Plate Size	Weight	Part Number	Price
24" x 18"	70 lbs	A-4401-1301	\$221.00
36" x 24"	100 lbs	A-4401-1401	\$287.00
48" x 36"	115 lbs	A-4401-1602	\$416.00
48" x 72"	200 lbs	A-4401-1608	\$765.00



Call Us Today For All Of Your Machine Tool Needs!

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

EDGE/CENTER FINDERS

B

ELECTRONIC EDGE FINDER



- Six equally spaced light ports provide visibility at any angle.
- Made in the USA
- Read off any electrically conductive metal.
- Edge finder lights instantly when stylus touches work edge.
- Repeatability: .0002"



54-575-600

Stylus	Shank	Audible	Battery	Part Number	Price Each
.200"	1/2"	NO	AAA	FOW-54-575-600	\$31.00
.200"	1/2"	NO	12 Volt	FOW-54-575-625	\$112.00
.400"	3/4"	YES	12 Volt	FOW-54-575-650	\$112.00

ELECTRONIC EDGE FINDER



- Break-away stylus prevents crash damage!
- Locate work surfaces quickly and easily at almost any angle
- No bulbs, LED light lasts for years without replacement
- Easy to change 12v battery included
- Repeatability ±.0002
- All surfaces precision ground

Break-Away Stylus Prevents Crash Damage!

Stylus	Shank	Audible	Part Number	Price
.200"	1/2"	NO	PEC-4200-B20	\$94.39
.400"	3/4"	YES	PEC-4200-B40	\$94.39

EDGE/CENTER FINDERS

- Made from precision ground tool steel
- Hardened and ground
- Accurately locates starting point for all types of machine work and jig boring



Style	End	Shank	Tip Size	Part Number	Price
Edge	Single	3/8	.200	PEC-4200-038	\$10.96
Edge	Single	1/2	.200	PEC-4200-039	\$10.96
Edge	Single	1/2	.500	PEC-4200-077	\$10.96
Edge & Center	Double	3/8	.200	PEC-4200-073	\$12.53
Edge & Center	Double	1/2	.200	PEC-4200-074	\$12.53
End	Double	1/2	.200	PEC-4200-076	\$12.53

EDGE FINDERS



Work surfaces may be located easily, quickly and accurately with edge finders. Work with flat, straight edges, shoulders, grooves, round work, studs, dowels or center points and scribed lines all can be accurately located with this handy tool. Body and contacts are made of tool steel, hardened, ground and lapped to close tolerances for diameter and concentricity.



Single End



Double End

Description	Body Dia	Contact Dia	Part Number	Price
Single End	3/8"	.200"	STR-53062	\$26.50
Double End	1/2"	.200"	STR-53063	\$32.50

COMBO EDGE/CENTER FINDERS

- Made from precision ground tool steel
- Hardened and ground
- Accurately locates starting point for all types of machine work and jig boring



Style	End	Shank	Tip Size	Part Number	Price
Edge	Double	1/2"	.20/.50	A-4401-0029	\$9.00
Edge	Single	3/8	.200	A-4401-0030	\$8.00
Edge	Single	1/2	.200	A-4401-0031	\$8.00
Edge	Single	1/2	.500	A-4401-0032	\$8.00
Edge & Center	Double	3/8	.200	A-4401-0040	\$8.00
Edge & Center	Double	1/2	.200	A-4401-0041	\$8.59

EDGE FINDER SET



- Accurately locate starting points and centers
- Crafted from precision hardened ground tool steel
- Set includes: 3/8 x .200" edge finder, 1/2 x .200" edge finder, 1/2 x .200 combo edge & 1/2 x .500" edge finder
- Includes fitted case



Brand	Part Number	Price
PEC	PEC-4200-S4	\$35.62
FOWLER	FOW-52-575-125	\$49.96

DRILL PRESS CENTER FINDER

- Accurately and quickly locates center on round workpieces
- Satin chrome finish
- Place tool in drill chuck or collet and line up pointer with line scribed on shaft



Part Number	Price
PEC-4200-100	\$13.26

ELECTRONIC SHORT SHANK EDGE FINDER



- 3/4" Electronic short shank edge finder
- Quickly locates work edges
- Helps you save time positioning work pieces
- One piece construction for strength and accuracy within 0.005mm/ 0.0002".
- Highly visible LED lights.
- Precision ground on all surfaces.
- Ball diameter is 0.394".
- Shank diameter is 3/4".
- Overall length is 3.875".
- Replacement battery is A-4102-0030



EDGE FINDER
Part # A-4401-0038
\$62.00 ea



Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

451

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

GAGE BLOCKS/LEVELS

MICROMETER CALIBRATION SET



- Grade AS-0 = Grade 2(At) : +/- 2 millionth
- Meet or exceeds U.S. Federal specification GGG-G-15C and ISO 9000 requirements
- Gauge blocks included are .0625, .100, .125, .200, .250, .300, .500, 1.000 & 2.000"
- Optical flats for checking micrometer flatness
- Manufacturer's calibration certificate included
- Complete with fitted case

12 Pc Micro Checking Set
Part # A-4101-0032
\$260.00

RECTANGULAR GAGE BLOCK SETS

81 Pieces, Steel



- 81 piece set meets or exceeds US Federal Spec. GGG-G-15C
- Crafted from tool steel
- Sizes labeled on each block
- Surface hardness: HRC 64
- Complete with certification and sturdy wooden case
- **Accuracy:**
Grade AS-2(B): +/- 50 millionth
Grade AS-1(3): + 8/-4 millionth
Grade 0(2): +/-2 millionth



81 Piece Set Blocks Included	Grade	Part Number	Set Price
9 Blocks: .1001" thru .1009" step of .0001" 49	AS-2(B)	A-4101-0022	\$159.00
Blocks: .101" thru .149" step of .001" 19	AS-1(3)	A-4101-0021	\$280.00
4 Blocks: .050" thru .950" step of .050" 4	0(2)	A-4101-0001	\$540.00

RECTANGULAR GAGE BLOCK SETS



- Economy grade steel
- Manufactured to meet Federal Spec ASME B89.1.9-2002 tolerance on length
- Each block certified to N.I.S.T.
- Tolerances to +/- .00005"
- Complete with fitted wooden case
- Complete with manufacturer's calibration certificate

Description	Part Number	Price
36 piece	FOW-53-672-036	\$210.00
81 piece	FOW-53-672-081	\$390.00

GRADE Ø RECTANGULAR GAGE BLOCK SETS



- Grade Ø
- Each block certified to N.I.S.T.
- Tolerances= +4, -2 millionths for sizes to 1"
- Complete with fitted wooden case

Description	Part Number	Price
36 Pc Grade 2 Set	FOW-53-670-038	\$330.00
81 Pc Grade 2 set	FOW-53-670-080	\$595.00

52 PIECE PRECISION GAGE BALL SET



- 26 Pairs of precision balls-
- 1 pair of each size: 1/8", 9/64", 5/32", 3/16", 7/32", 1/4", 9/32", 5/16", 11/32", 3/8", 13/32", 7/16", 15/32", 1/2", 17/32", 9/16", 19/32", 5/8", 21/32", 11/16", 23/32", 3/4", 13/16", 7/8", 15/16", 1"
- Chrome Steel Hardened to 63RC.
- Ground and Lapped.
- Grade 24 Accuracy- AFBMA Certified.
- Provided in a "shop-hardened" protective case.

Description	Part Number	Price
52 Pc Gage Ball Set	FOW-52-438-766	\$80.55

360° DIGITAL LEVEL/PROTRACTOR

XTRA-VALUE



- Measuring range: 4 x 90°
- Resolution: .05°
- Accuracy: ±.2°
- Repeatability: ±.05
- Standard 9 volt battery (250 hours life)
- Dimensions: 9"L x 1"W x 2-1/4"H
- Includes two-way level and plumb vials

9" Electronic Level
Part # FOW-54-440-600

\$69.20

SINE BARS



1-2-3 Block Not Included

- For angles set up by using Sine Bar with 1-2-3 blocks or gage blocks
- Parallelism: 0.0004"
- Working face accuracy 0.00003" per inch
- Rolls center distance accuracy 0.0002"
- Flange on the end for the resting of workpiece

Dimensions	Part Number	Price
2-1/2" L x 1" W	A-3402-1203	\$48.00
5" L x 1" W	A-3402-1205	\$62.00

STRAIGHT EDGES



- Made of selected steels
- Hardened for wear resistance
- Matched to ensure precision



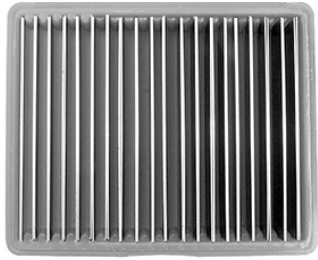
Length	Width	Thickness	Brand	Part Number	Price
12"	1-5/16"	5/32"	PEC	PEC-4800-012	\$45.09
18"	1-5/16"	5/32"	PEC	PEC-4800-018	\$63.12
24"	1-5/16"	5/32"	PEC	PEC-4800-024	\$94.69
36"	2-5/16"	7/32"	PEC	PEC-4800-036	\$148.15

Call Us Today For All Of Your Machine Tool Needs!

PARALLEL SETS

C

1/32" PARALLEL SET



- Length: 6"
- Parallelism: $\pm .0001"$
- Paired $\pm .0001"$ in height.
- Hardness: RC 50-55
- Thickness: 1/32"
- Made from fine quality tool steel, stress relieved against distortion, precision ground, hardened and blue finished.

Part Number	Price
A-3900-3032	\$59.00



ECONOMY 1/8" PARALLEL SET

FEATURES:

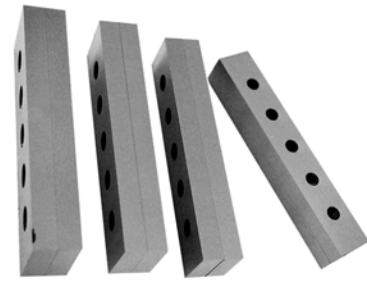
- Made from high quality tool steel
- Stress relieved against distortion
- Precision ground and hardened
- 1/8" thick with 2 holes in each parallel
- 10 pairs, 6" Length
- Heights: 1/2", 5/8", 3/4", 7/8", 1", 1-1/8", 1-1/4", 1-3/8", 1-1/2" and 1-5/8"
- Complete with durable fitted plastic case



Description	Length	Part Number	Price
10 Pair Set	1/8" W X 6" L	A-3900-3010	\$54.00



ECONOMY 1/4" PARALLEL SET



- Made from high quality tool steel
- Stress relieved against distortion
- Precision ground and hardened
- Ideal for layout work and set-ups
- 9 pairs, 1/4" thick, 6" Length
- Heights: 3/4", 7/8", 1", 1-1/8", 1-1/4", 1-3/8", 1-1/2", 1-5/8" and 1-3/4"
- Parallel to 0.0003 on top & bottom
- Complete with durable fitted plastic case

Description	Length	Part Number	Price
9 Pair Set	1/4" W X 6" L	A-3900-3009	\$89.00

1/8" PARALLEL SET



- Made from high-grade alloy steel, hardened and ground from 1/8" stock with 2 holes in each parallel.
- 10 pairs, 6" Length, 1/8" Width, Heights: 1/2", 5/8", 3/4", 7/8", 1", 1-1/8", 1-1/4", 1-3/8", 1-1/2", 1-5/8"
- Absolute heights are nominal.

FOW-P52-437-000: Parallel within .0008" each pair, Heights matched within $\pm .001"$ each pair
FOW-P52-437-125: Parallel within .0001" each pair, Heights matched within $\pm .0001"$ each pair

Includes "Shop Hardened" Molded Case!

Length	Part Number	Price
1/8" W X 6" L	FOW-52-437-000	\$170.00
	FOW-52-437-125	\$298.83

1/4" PARALLEL SET



- Made from high-grade alloy steel, hardened and ground from 1/4" stock with 2 holes in each parallel.
- 9 pairs, 6" Length, 1/4" Width 3/4", 7/8", 1", 1-1/8", 1-1/4", 1-3/8", 1-1/2", 1-5/8", 1-3/4"
- Height specifications relate to consistency within each pair.
- Absolute heights are nominal.



Accuracy:
 Parallelism $\pm .0002"$
 Paired in height $\pm .0002"$
 Hardness 52-58HRc.

Length	Part Number	Price
1/4" W X 6" L	FOW-52-437-250	\$366.44

WAVY PARALLEL SET



- For precision clamping of parts in drilling, boring, milling, grinding, and assembly work
- Can readily be used as elastic shims
- Thin and fragile workpieces can be secured without damage by utilizing the spring pressure of these parallels.
- Made of high quality spring steel, hardened, stress relieved and precision ground.
- Fitted case.

Accuracy
 $\pm .0002"$
 in Height & Parallelism

Range	Part Number	Price
1/2" - 1-1/2"	A-3900-2909	\$53.00

ADJUSTABLE PARALLELS



- Two precision ground pieces
- Locked into position by set screws
- Can be quickly inserted into openings and expanded to exact size, then measured with a micrometer
- Supplied with screwdriver
- Made in USA

Description	Part Number	Price
6 Pc Adjustable Parallel Set	PEC-S-112-6	\$98.24

STEEL PARALLELS



- Hardened and ground to close limits on four sides
- For inspection and layout work for various setups on drill presses, milling and grinding machines, shapers, etc.
- 6" length
- Sold in pairs

Length	Thickness	Width	Part Number	Price
6"	1/8"	1"	STR-51445	\$111.00
	3/16"	7/8"	STR-51447	\$111.00
	1/4"	3/4"	STR-51449	\$117.00
	3/8"	1/2"	STR-51451	\$117.00

A

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

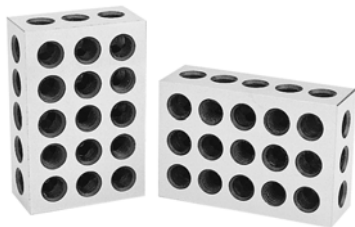
ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

1-2-3 BLOCKS/V-BLOCKS

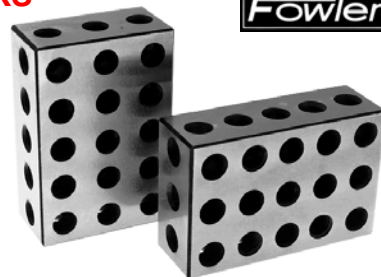
PRECISION 1-2-3 & 2-4-6 BLOCK SETS



- Heat treated and case hardened to HRC 55-60
- Precision ground on all 6 sides of block
- Accuracy: within .0001" per inch
- 23 holes consists of 5 tapped (3/8"-16) for clamping and 18 untapped holes drilled
- Sold as matched pairs

Description	Part Number	Price
1-2-3 Block Set	A-3402-0005	\$21.50
2-4-6 Block Set	A-3402-0510	\$125.00

1-2-3 & 2-4-6 BLOCKS



- 31 holes for easy clamping
- Sold in pairs
- Useful in layout & grinding work
- Accuracy: .0002"
- Matched Accuracy: .0002"

Description	Part Number	Price
1-2-3 Blocks	FOW-52-439-031	\$62.00
2-4-6 Blocks	FOW-52-439-246	\$140.00

PREMIUM 1-2-3 BLOCKS



- Case hardened (HRC 55-60)
- Squareness on all sides to .0001"
- 23 holes for easy clamping
- Useful in layout & grinding work
- Complete with "Shop Hardened" molded case

Description	Part Number	Price
Premium 1-2-3 Blocks	FOW-52-439-032	\$72.00

ECONOMY V-BLOCKS



- 90° V-groove- accuracy is central, parallel and square
- All surfaces within 0.0003"
- Case is hardened and ground
- Includes clamps
- Sold in matched pairs

Capacity	Dimensions (WxHxL)	Part Number	Price
1"	1-1/4" x 1-1/4" x 1-5/8"	A-3402-0951	\$57.00
1-1/2"	1-5/8" x 1-3/4" x 2-3/4"	A-3402-0953	\$70.00
2-1/8"	2-1/8" x 3-1/2" x 4-7/8"	A-3402-0955	\$190.00

V-BLOCK SET



- 2 each @: 1-1/2" L x 1-1/4" W x 1-1/4" H. Work capacity: Approximately 1"
- 2 each @: Dimensions: 2" L x 1-1/2" W x 1-1/2" H. Work capacity: 1-1/2"

All Blocks Feature:

- 2 clamps
- Surfaces are square and parallel within .0005"
- V-grooves are square and parallel with all surfaces within .0005"
- Corresponding dimensions for each pair are alike within .0005"
- All enclosed in shop-hardened case



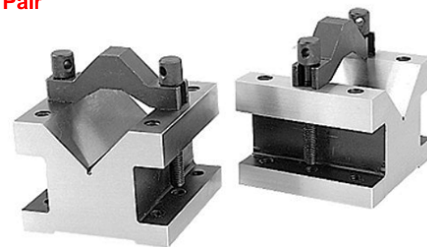
Part Number	Price
FOW-52-475-500	\$118.00

V-BLOCK & CLAMP SET



Supplied In A Matched Pair

- Guaranteed square parallel within .0002"
- Hardened and ground to RC 58-60
- 90° V-blocks
- Supplied in a matched pair
- Supplied with bolts and clamps in wooden case



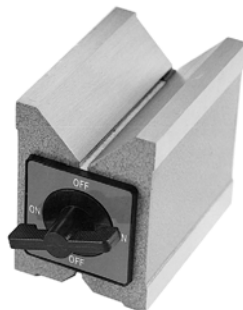
Length	Width	Height	V Cap.	Part Number	Price
1-3/8	1-3/8	1-3/16	1-9/32	A-3402-0001	\$55.00
2-3/8	2-3/8	2	1-3/16	A-3402-0002	\$79.00
4-1/8	4-1/8	3-1/16	2-9/16	A-3402-0003	\$165.00

MAGNETIC V-BLOCKS

With Switch



- Precision ground finished working surfaces
- Ideal for scribing, grinding, measuring and machining round or irregular shape items
- On/Off switch
- Two-centered 90° vees
- Power pull: 250 lbs

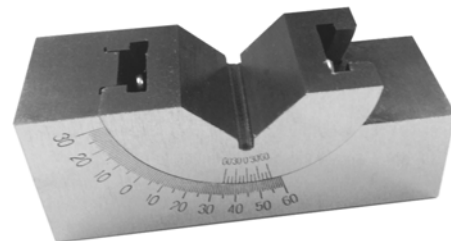


Dimensions	Power Pull	Part Number	Price
3.75 H x 2.75 W x 3" L	130 lbs	A-3402-0990	\$83.00
3.75 H x 2.75 W x 4" L	250	A-3402-0901	\$94.00
3.75 H x 2.75 W x 5" L	275	A-3402-0992	\$130.00

0-60° ANGLE BLOCKS



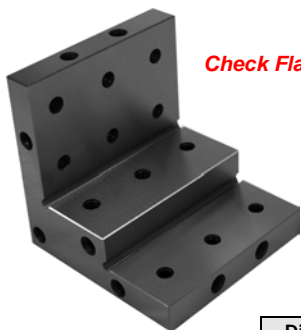
- 0-60° Precision Angle Block
- For drilling, milling, and set up applications
- Angle is adjusted from 0-60° by locking the hex screw on the bottom of block
- Squareness is -0.0002".
- Angle accuracy is ±10'.
- Hardness is HRC 50-55



Dimensions	Part Number	Price
1-1/4 H x 1" W x 3" L	A-3402-0010	\$70.00
1-13/16 H x 1-3/16 W x 4" L	A-3402-0011	\$75.00

Call Us Today For All Of Your Machine Tool Needs!

ANGLE PLATES



Check Flatness, Squareness And Parallelism!

- Manufactured from a single piece of hardened tool steel
- Precision ground, square and parallel
- Flatness: within .0002"
- 24 tapped holes (1/4"-20 thread) for clamping work and fastening fixtures to plate

Dimensions	Part Number	Price
3" x 3" x 3"	PLT-333	\$35.00

10 PIECE ANGLE BLOCK SET



- Block Size: 3" length x 1/4" thickness
- Simple, quick angle set ups
- Made of hardened tool steel
- Precision ground
- Accuracy: +.0001 per inch
- Includes 1, 2, 3, 4, 5, 10, 15, 20, 25 & 30° angles
- Supplied with fitted case

10 Pc Angle Block Set

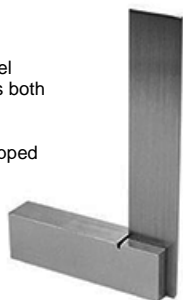
Part # A-3402-0015

\$54.00

MACHINIST STEEL SQUARES



- Crafted from tool steel
- Accurate right angles both inside and out
- Fully hardened
- Beam ground and lapped



Size	Part Number	Price
4" x 3"	MSQ-4X3	\$15.93
2", 3", 4" & 6"	MSQ-SET4	\$36.25

12 PIECE ANGLE BLOCK SET



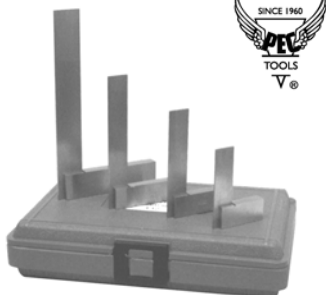
FEATURES:

- Precision ground hardened steel.
- Angular accuracy .0001" per inch, + or - 30 arc seconds.
- 3" long x 1/4" thick.
- Simple, quick angle set-ups.
- Eliminates calculations and avoids errors.
- Complete set of 12 blocks: 1/4°, 1/2°, 1°, 2°, 3°, 4°, 5°, 10°, 15°, 20°, 25°, 30°.

Part Number	Price
FOW-53-666-000	\$127.20

SQUARE SETS

- Made of the finest carbon tool steel, these economy squares have true right angles both inside and outside.
- Beams and blades ground and lapped for straightness and parallelism.
- Hardened blade.
- Beam grooved at inner corner for clearance of burrs and dirt.
- Complete in a shop-hardened molded case.

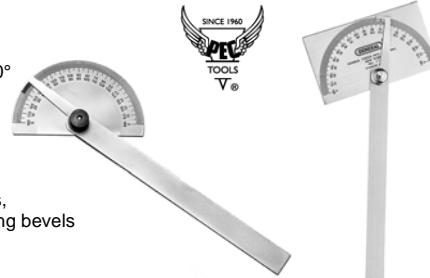


Set Includes	Part Number	Price
4 Squares: 2", 3", 4" & 6"	PEC-7000-S4	\$56.16
4 Squares: 4", 6", 9" & 12"	PEC-7000-S5	\$136.11



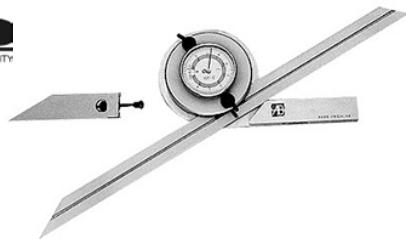
PROTRACTORS

- Measures angles from 0-180°
- Head measures 3-5/16" x 2"
- Blade secured firmly by lock nut at any angle
- Made of tempered steel with satin chrome finish
- Used for drawing radial lines, transferring angles and setting bevels



Style	Description	Part Number	Price
Rectangle	6" Arm	PEC-5170	\$25.65
Semi-Circle	6" Arm	PEC-5180	\$23.68
Rectangle	6" Graduated Rule	PEC-5190	\$27.49

UNIVERSAL DIAL PROTRACTOR SET



- Measuring value can be read on dial indicator.
- Inspection window reads a full 360° with four 0-90° sections.
- Hardened stainless steel construction throughout this tool.
- It can be used as a ruler, straight edge, cross or miter square.
- Blades are beveled at 45° on one side and 60° on the other side.
- Blade Length: 6, 8-1/2, 12"

Dial Protractor Set

Part # A-4901-0001

\$85.00

MINI-MAG DIGITAL PROTRACTOR

The NEW mini-MAG Protractor provides instant 360° digital inclination display of any angle with the additional unique feature of embedded magnets on both sides and the bottom which make it ideal for a variety of measurements.



- Embedded magnets with 35lb. pull.
- Uses standard 9V battery (250 hrs.)
- Measuring range: 360° (4 x 90°)
- Display inverts, hold feature
- Resolution: .05° Accuracy: ±.2°
- Repeatability: .05°
- Dimensions: 2.375"L x 1.375"W x 2.375"H

Mini-Mag Protractor

Part # FOW-54-422-4501

\$103.65

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

MEASURING TOOLS-FLEXIBLE & RIGID STEEL RULES



RULES

Graduations:
4R: 8ths, 16ths, 32nds, 64ths
5R: 32nds, 64ths, 10ths, 100ths

EZ-Read Black Face Rules

- Hardened stainless steel
- White easy-to-read micro-fine graduations against a black, non-glare finish

Satin Chrome Rules

- Tempered steel
- Non-glare
- Sharp, easy-to-read micro-fine graduations



Golden Rules

- Titanium coated for superior wear resistance
- Glare finish=RC80
- Scratch resistant microfine graduations with excellent clarity and contrast



RIGID STEEL RULES

Size	Reading	Finish	Part Number	Price
6"	4R	Satin Chrome	FOW-52-330-006	\$12.00
		Black	FOW-52-337-006	\$10.00
		Golden	FOW-52-339-006	\$20.75
12"	4R	Satin Chrome	FOW-52-330-012	\$21.00
		Black	FOW-52-337-012	\$18.00
		Golden	FOW-52-339-012	\$39.74
6"	5R	Satin Chrome	FOW-52-340-006	\$9.60
		Black	FOW-52-347-006	\$8.40
		Golden	FOW-52-349-006	\$20.75
12"	5R	Satin Chrome	FOW-52-340-012	\$16.25
		Black	FOW-52-347-012	\$17.30
		Golden	FOW-52-349-012	\$39.74

FLEXIBLE STEEL RULES

Size	Reading	Finish	Part Number	Price
6"	4R	Satin Chrome	FOW-52-295-006	\$10.00
		Black	FOW-52-297-006	\$9.00
		Golden	FOW-52-299-006	\$20.30
12"	4R	Satin Chrome	FOW-52-295-012	\$18.00
		Black	FOW-52-297-012	\$15.00
		Golden	FOW-52-299-012	\$36.55
6"	5R	Satin Chrome	FOW-52-300-006	\$9.60
		Black	FOW-52-307-006	\$8.78
		Golden	FOW-52-309-006	\$20.40
12"	5R	Satin Chrome	FOW-52-300-012	\$14.70
		Black	FOW-52-307-012	\$13.73
		Golden	FOW-52-309-012	\$36.55

FLEX/RIGID RULES

- Made from the finest stainless steel available
- All rules fully hardened and tempered
- Precisely etched, then white filled for readability
- Black chrome finish

Graduation Styles:
3R: 32nds, 64ths, 10ths, 50ths
4R: 8ths & 16ths, 32nds & 64ths
5R: 32nds, 64ths, 10ths, 100ths
16R: 32nds & 64ths, 50ths & 100ths
Metric: mm & 0.5mm both sides
English/Metric: 0.5mm & 32nds, mm & 64ths



FLEX RULES-CHROME

Length	Style	Width	Part Number	Price
6"	4R	1/2	PEC-401-006	\$8.50
12"	4R	1/2	PEC-401-012	\$16.60
24"	4R	3/4	PEC-401-024	\$37.76
36"	4R	3/4	PEC-401-036	\$81.89
48"	4R	3/4	PEC-401-048	\$149.01
6"	5R	1/2	PEC-501-006	\$8.50
12"	5R	1/2	PEC-501-012	\$16.60
24"	5R	3/4	PEC-501-024	\$37.76
36"	5R	3/4	PEC-501-036	\$81.89
48"	5R	3/4	PEC-501-048	\$149.01
6"	16R	1/2	PEC-161-006	\$8.50
12"	16R	1/2	PEC-161-012	\$16.60
24"	16R	3/4	PEC-161-024	\$37.76
36"	16R	3/4	PEC-161-036	\$81.89
48"	16R	3/4	PEC-161-048	\$149.01
6"	3R	1/2	PEC-301-006	\$8.50
	E/M	1/2	PEC-261-006	\$8.50
12"	E/M	1/2	PEC-261-012	\$14.49

CERTIFIED

Length	Style	Width	Part Number	Price
6"	4R	1/2	PEC-401-006CT	\$27.64
	5R	1/2	PEC-501-006CT	\$27.64

TIN COATED

Length	Style	Width	Part Number	Price
6"	4R	1/2	PEC-401-006TN	\$17.34
	5R	1/2	PEC-501-006TN	\$17.34

RIGID RULES-CHROME

Length	Style	Width	Part Number	Price
6"	4R	3/4	PEC-402-006	\$8.97
12"	4R	1	PEC-402-012	\$18.20
24"	4R	1-1/8	PEC-402-024	\$38.88
36"	4R	1-1/4	PEC-402-036	\$88.78
48"	4R	1-1/4	PEC-402-048	\$149.23
6"	5R	3/4	PEC-502-006	\$8.97
12"	5R	1	PEC-502-012	\$18.20
24"	5R	1-1/8	PEC-502-024	\$38.88
36"	5R	1-1/4	PEC-502-036	\$88.78
48"	5R	1-1/4	PEC-502-048	\$149.23
6"	16R	3/4	PEC-162-006	\$8.97
12"	16R	1	PEC-162-012	\$18.20
24"	16R	1-1/8	PEC-162-024	\$38.88
36"	16R	1-1/4	PEC-162-036	\$88.78
48"	16R	1-1/4	PEC-162-048	\$149.23
6"	3R	3/4	PEC-302-006	\$8.97
	E/M	3/4	PEC-262-006	\$8.97
12"	E/M	1	PEC-262-012	\$18.20

CERTIFIED

Length	Style	Width	Part Number	Price
6"	4R	3/4	PEC-402-006CT	\$27.64
	5R	3/4	PEC-502-006CT	\$27.64
24"	4R	1-1/8	PEC-402-024CT	\$74.73
	5R	1-1/8	PEC-502-024CT	\$74.73

MAGNETIC

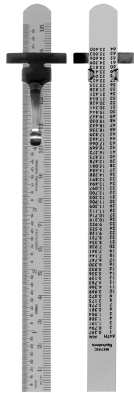
Length	Style	Width	Part Number	Price
6"	4R	3/4	PEC-402-006MG	\$15.19
12"	4R	1	PEC-402-012MG	\$28.63
6"	5R	3/4	PEC-502-006MG	\$15.19
12"	5R	1	PEC-502-012MG	\$28.63

TIN COATED

Length	Style	Width	Part Number	Price
6"	4R	3/4	PEC-402-006TN	\$17.34
	5R	3/4	PEC-502-006TN	\$17.34

Call Us Today For All Of Your Machine Tool Needs!

6" POCKET STEEL RULES



- Stainless steel finish
- Rounded edge prevents damage to shirt pocket
- Supplied with pocket clip
- Fully hardened and tempered
- Precisely etched then black filled for readability.

Graduations	Width	Part Number	Price
32nds & 64ths	.500	PEC-7202-SS6	\$3.04
64ths & mm	.500	PEC-7203-SS6	\$3.04
64th & mm	.470	FOW-52-380-100	\$7.72

HOOK RULES

- Hardened and Tempered Tool Steel
- Thickness .040"
- Hard Chrome Finish, No Glare
- Furnished with Adjustable Hook



Length	Width	Part Number	Price
6"	3/4"	PEC-402-H06	\$18.69
12"	1"	PEC-402-H12	\$26.94
18"	1-1/8"	PEC-402-H18	\$37.66
24"	1-1/8"	PEC-402-H24	\$48.53

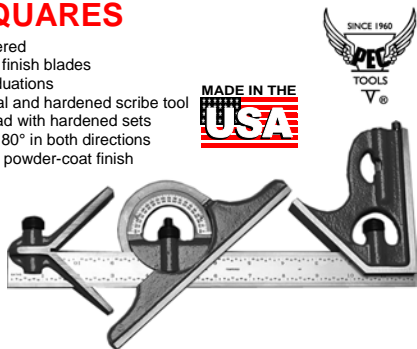
COMBINATION SQUARES

- All blades fully hardened and tempered
- Durable, easy to read satin chrome finish blades
- High contrast, micro-fine blade graduations
- Square/Miter head features level vial and hardened scribe tool
- Reversible (full-body) protractor head with hardened sets
- Protractor scale graduated from 0-180° in both directions
- Heads supplied with a hammertone powder-coat finish

Includes:
 Machinist's Blade
 Square/Miter Head
 Protractor Head
 Center Head

Graduation Styles:

4R: 8ths & 16ths, 32nds & 64ths
 16R: 32nds & 64ths, 50ths & 100ths



DOUBLE SQUARES

- Ideal for Precision Layout Work
- Used Either as a Parallel or Double Square
- All Blades Fully Hardened and Tempered

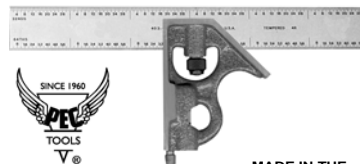


Blade Length	Blade Style	Part Number	Price
4"	4R	PEC-7104-404	\$35.26
	16R	PEC-7104-164	\$35.26
6"	4R	PEC-7105-406	\$40.45
	16R	PEC-7105-166	\$40.45



CARPENTER SQUARES

- All blades tempered
- Durable, easy to read chrome finished blades
- High contrast blade graduations
- Square/Miter head features level vial and hardened scribe tool
- Heads supplied with a hammertone powder-coat finish



Length	Graduations	Part Number	Price
12"	8ths, 16ths, & 16ths, 32nds	PEC-7110	\$25.62

DRIVE PIN PUNCHES

- Made of tool steel
- Black oxide finish for rust prevention
- Knurled body for better grip
- Hardened both ends, Rc 45 to 52
- Points precision ground
- 4" Length 1/16" dia punch 3" long
- Set supplied in fitted case



Drive Pin



Center



Long Drive Pin



Type	Length	No. Of Pieces	Includes	PEC	Price
Center	4"	5	1/16", 5/64", 3/32", 9/64", 5/32"	PEC-6200-005	\$11.80
Drive Pin	4"	8	1/16", 3/32", 1/8", 5/32", 3/16", 7/32", 1/4", 5/16"	PEC-6300-008	\$20.18
Long Drive Pin	8"	5	1/8", 3/16", 1/4", 5/16", 3/8"	PEC-6301-058	\$19.89

HEAVY DUTY SCREW JACK SET

- Simplify set-up applications on all machine and inspection operations
- Adjustable from 4.5" to 8"
- Quick-acting height adjustment
- Fine adjust ring for easy leveling
- Height locking ring
- Lifting capacity 2000 lbs.

Adjustable From 4.5" to 8"



Description	Part Number	Price
Max-Jack Screw Jack	FOW-52-104-050	\$122.48
Max-Jack Screw Jack-Pair	FOW-52-104-055	\$240.31

MACHINIST JACK SET

- Set consists of 2 machinist jacks supplied in a shop-hardened case.
- Individual jacks consist of a heavy, steel cast base with adjustable steel screw and tilting swivel head, with a locknut for permanent positioning.
- 1-1/2" jack base for added stability.
- Range: Min: 3"; Max: 4"
- Lifting capacity: 1000 lbs.



Description	Part Number	Price
2 Machinist's Jacks	FOW-52-104-025	\$17.70

Call Us Or Visit Our Website For Our Complete Selection!

GAGES-CENTER/ DRILL POINT/ THREAD

FIXED TWO POINT SCRIBER

GENERAL

- Hardened and ground steel needle points are fixed to a knurled body
- Has one straight point and one 90° bent point

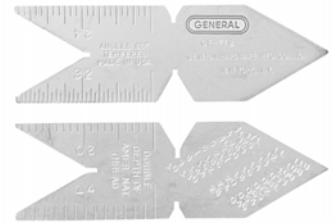


OAL	Body Length	Body Dia	Part Number	Price
8-7/16"	3-1/4"	9/32"	GEN-31090-3	\$4.49

CENTER GAGE

- Crafted from high quality steel
- Satin chrome finish

GENERAL



Description	PEC	Price
Center Gage	PEC-5031	\$8.22

GENERAL	Price
GEN-35010-7	\$9.70

DRILL POINT GAGE

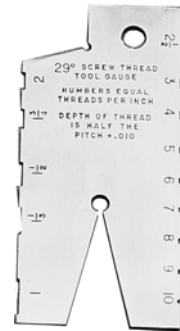
- For measuring properly ground 59° drill tips
- Rule & slide made of steel
- Satin chrome finish
- End clip is adjustable and removable



Part Number	Price
PEC-5070	\$33.60

ACME THREAD GAGE

- Crafted from high quality steel
- Satin chrome finish
- Offers a quick and accurate way of checking drill & rod sizes



Part Number	Price
PEC-5640	\$20.01

WIRE GAGE

- Crafted from high quality steel
- Satin chrome finish
- Offers a quick and accurate way of checking drill & rod sizes



Style	Description	Part Number	Price
American Standard Wire Gage for Non-Ferrous Metals	Gages for non-ferrous metals such as copper, brass, aluminum, etc. Sizes range from 0 to 36	PEC-5056	\$24.48
U.S. Standard Wire Gage for Sheet, Plate-Iron and Steel	Gage for uncoated sheet metal, plate iron and steel. Gage provides measurements from 0 to 36	PEC-5058	\$24.48

DRILL GAGES

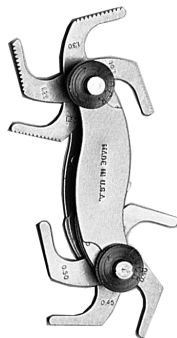


- Crafted from high quality steel
- Satin chrome finish
- Offers a quick and accurate way of checking drill & rod sizes

Description	Part Number	Price
1-60 Range	PEC-5051-H	\$14.49
1/16" - 1/2", 29 holes	PEC-5052-H	\$13.90
A - Z, 26 holes	PEC-5053-H	\$13.90

SCREW PITCH GAGE

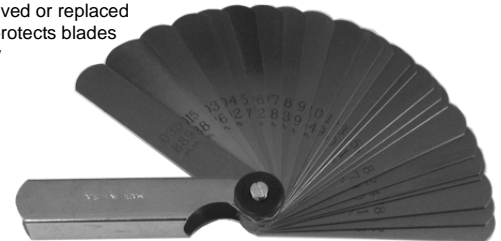
- Narrow designed blades permit use for internal and external screw threads
- Locking device at each end to secure all blades for storage or positioning an individual blade for use
- Correct pitch is determined by matching blade teeth with threads
- Each blade clearly marked with proper thread size
- Blades protected in sturdy steel case



Type Of Blades	No. Of Blades	No. Of Groups	Blades Included	Part Number	Price
English Gage	51	3	4-84 inch	PEC-5651	\$36.64
English/Metric	28	2	4-56 inch 0.50-6.00mm	PEC-5629	\$18.75
Metric Gage	28	2	0.25-2.50 mm	PEC-5625	\$18.75
Metric Gage	18	2	.50-7.00 mm	PEC-5617	\$16.19

FEELER GAGES

- Blade Length: 3" No. Of Blades: 26
- Made from the finest feeler gage stock available
- Hardened and tempered
- Lock-Nut securely holds one or more blades in any desired position for taking measurements
- Each blade clearly marked with thickness
- Blades easily removed or replaced
- Sturdy steel case protects blades safely and securely



Type Of Blades	Thicknesses Included	Part Number	Price
Tapered Blade 1/4" width at tip	.0015 to .025	PEC-5026-T	\$16.16
Straight Blade 1/2" width at tip	.0015 to .035	PEC-5027	\$16.16

Call Us Today For All Of Your Machine Tool Needs!

THREAD PLUG & RING GAGES

MADE IN THE USA

FEATURES:

- Greenfield thread plug gages are made of selected steel, manufactured with the finest equipment available and meticulously inspected in every thread element.
- Greenfield thread ring gages are made of selected graphitic steel, ground and accurately lapped. They are then set with Greenfield's first quality Thread Setting Plug gages.
- NO GO ring gages are distinguished by the groove around the rim
- Gages are standard in "X" tolerance.



**Thread Plug Gage
(Includes handle)**



**Thread Ring Gage
(Handle sold separately)**

Classes 2A and 2B:

Most commonly used for general applications, including screws, nuts & bolts. Class 2A and 2B provides for minimum clearance between mating threads to allow threads to be assembled without binding, seizing or being excessively loose.

Classes 3A and 3B:

Provide closer tolerances than 2A/B class. Provides no clearance or allowance for the assembly, and mating threads will bind or fit very tightly at assembly. The maximum diameter of a class 3A (external) thread is equal to the minimum diameter of a class 3B (internal) thread.

All gages include a Certificate of Compliance, which states the gages are manufactured and inspected to all specifications as ordered and found to be in tolerance using matters traceable to N.I.S.T. Facilities. Certificate with pitch diameter actuals traceable to N.B.S. available at an additional charge.

THREAD PLUG GAGES				THREAD RING GAGES			
GO/NO GO W/ HANDLE				GO/NO GO SET			
Size	Threads Per Inch	Class 2B Part Number	Class 3B Part Number	Price Each	Class 2A Part Number	Class 3A Part Number	Price Each

THREAD PLUG GAGES				THREAD RING GAGES			
GO/NO GO W/ HANDLE				GO/NO GO SET			
Size	Threads Per Inch	Class 2B Part Number	Class 3B Part Number	Price Each	Class 2A Part Number	Class 3A Part Number	Price Each
0	80 UNF	GR-150116	GR-150117	\$114.52	GR-240126	GR-250127	\$284.82
1	64 UNC	GR-150216	GR-150217	\$114.52	GR-240226	GR-250227	\$282.21
	72 UNF	GR-150316	GR-150317	\$114.52	GR-240326	GR-250327	\$282.21
2	56 UNC	GR-150416	GR-150417	\$114.52	GR-240426	GR-250427	\$246.49
	64 UNF	GR-150516	GR-150517	\$114.52	GR-240526	GR-250527	\$246.49
3	48 UNC	GR-150616	GR-150617	\$103.56	GR-240626	GR-250627	\$246.49
	56 UNF	GR-150716	GR-150717	\$103.56	GR-240726	GR-250727	\$246.49
4	40 UNC	GR-150916	GR-150917	\$103.56	GR-240926	GR-250927	\$224.58
	48 UNF	GR-151016	GR-151017	\$103.56	GR-241026	GR-251027	\$224.58
5	40 UNC	GR-151116	GR-151117	\$90.00	GR-241126	GR-251127	\$211.01
	44 UNF	GR-151216	GR-151217	\$90.00	GR-241226	GR-251227	\$211.01
6	32 UNC	GR-151316	GR-151317	\$90.00	GR-241326	GR-251327	\$211.01
	40 UNF	GR-151416	GR-151417	\$90.00	GR-241426	GR-251427	\$211.01
8	32 UNC	GR-151516	GR-151517	\$90.00	GR-241526	GR-251527	\$202.66
	36 UNF	GR-151616	GR-151617	\$90.00	GR-241626	GR-251627	\$202.66
10	24 UNC	GR-151716	GR-151717	\$90.00	GR-241726	GR-251727	\$202.66
	32 UNF	GR-151816	GR-151817	\$90.00	GR-241826	GR-251827	\$202.66
12	24 UNC	GR-151916	GR-151917	\$90.00	GR-241926	GR-251927	\$202.66
	28 UNF	GR-152016	GR-152017	\$90.00	GR-242026	GR-252027	\$202.66
1/4"	20 UNC	GR-152216	GR-152217	\$76.16	GR-242226	GR-252227	\$191.72
	28 UNF	GR-152316	GR-152317	\$76.16	GR-242326	GR-252327	\$191.72
5/16"	18 UNC	GR-152516	GR-152517	\$76.16	GR-242526	GR-252527	\$191.72
	24 UNF	GR-152616	GR-152617	\$76.16	GR-242626	GR-252627	\$191.72
3/8"	16 UNC	GR-152816	GR-152817	\$81.65	GR-242826	GR-252827	\$211.01
	24 UNF	GR-152916	GR-152917	\$81.65	GR-242926	GR-252927	\$211.01
7/16"	14 UNC	GR-153116	GR-153117	\$81.65	GR-243126	GR-253127	\$211.01
	20 UNF	GR-153216	GR-153217	\$81.65	GR-243226	GR-253227	\$211.01
1/2"	13 UNC	GR-153416	GR-153417	\$90.00	GR-243426	GR-253427	\$221.97
	20 UNF	GR-153516	GR-153517	\$90.00	GR-243526	GR-253527	\$221.97
9/16"	12 UNC	GR-153716	GR-153717	\$111.91	GR-243726	GR-253727	\$249.34
	18 UNF	GR-153816	GR-153817	\$111.91	GR-243826	GR-253827	\$249.34
5/8"	11 UNC	GR-154016	GR-154017	\$111.91	GR-244026	GR-254027	\$249.34
	18 UNF	GR-154116	GR-154117	\$111.91	GR-244126	GR-254127	\$249.34
3/4"	10 UNC	GR-154416	GR-154417	\$122.85	GR-244426	GR-254427	\$334.12
	16 UNF	GR-154516	GR-154517	\$122.85	GR-244526	GR-254527	\$334.12
7/8"	9 UNC	GR-154816	GR-154817	\$129.63	GR-244826	GR-254827	\$391.75
	14 UNF	GR-154916	GR-154917	\$129.63	GR-244926	GR-254927	\$391.75
1"	8 UNC	GR-155216	GR-155217	\$148.68	GR-245226	GR-255227	\$441.06
	12 UNF	GR-155316	GR-155317	\$148.68	GR-245326	GR-255327	\$441.06
1-1/8"	14 UNS	GR-155416	GR-155417	\$148.68	GR-245426	GR-255427	\$441.06
	7 UNC	GR-155716	GR-155717	\$187.01	GR-245726	GR-255727	\$501.30
1-1/4"	12 UNF	GR-155816	GR-155817	\$187.01	GR-245826	GR-255827	\$501.30
	7 UNC	GR-156116	GR-156117	\$203.45	GR-246126	GR-256127	\$561.56
1-1/2"	12 UNF	GR-156216	GR-156217	\$203.45	GR-246226	GR-256227	\$561.56
	6 UNC	GR-156516	GR-156517	\$219.87	GR-246526	GR-256527	\$594.42
1-3/8"	12 UNF	GR-156616	GR-156617	\$219.87	GR-246626	GR-256627	\$594.42
	6 UNC	GR-156916	GR-156917	\$244.66	GR-246926	GR-256927	\$662.76
1-1/2"	6 UNC	GR-157016	GR-157017	\$244.66	GR-247026	GR-257027	\$662.76

RING GAGE HOLDERS

(Sold Separately)

FEATURES:

- Protects your valuable ring gages from jarring or dropping
- Allows for secure gripping
- Installs quickly and easily in seconds

Number	Size Range		Part Number	Price Each
	Inch	Metric		
1	0-12MS	1.6 - 5mm	GR-701022	\$15.88
2	1/4-5/16	6 - 8mm	GR-701023	\$18.14
3	3/8-1/2	10 - 12mm	GR-701024	\$20.41
4	9/16-3/4	14 - 20mm	GR-701025	\$24.95
5	7/8-1-1/8	24 mm	GR-701026	\$31.75
6	1.1/4-1-1/2	—	GR-701027	\$38.56

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS
VISE JAWS
VISE ACCESSORIES
STRAIGHT SHANK
COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE



THREAD GAGES-PLUG & RING

THREAD GAGES-PLUG AND RING UNF & UNC

Vermont Gage's thread gages inspect the pitch diameter and the functional thread for both internal and external threaded products. All stocked thread gages are made to Class X tolerances per ANSI B1.2 (Unified inch screw threads) and ANSI B1.16M (Metric M series screw threads). All thread gages are supplied with a Certificate of Accuracy. Rings and setting plugs are stocked in 2A and 3A (inch) or 6g (metric) classes of fit. ACME and Buttress thread gages are also available.



CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD



PLUG GAGE SETS-GO/NO GO W/ HANDLE

Size	Threads Per Inch	Class 2B Part Number	Class 3B Part Number	Price
0	80 UNF	VET-301101040	VET-301101050	\$120.00
1	64 UNC	VET-301102540	VET-301102550	\$120.00
	72 UNF	VET-301103540	VET-301103550	\$120.00
	56 UNC	VET-301105040	VET-301105050	\$120.00
2	64 UNF	VET-301106040	VET-301106050	\$120.00
	48 UNC	VET-301107540	VET-301107550	\$105.60
3	56 UNF	VET-301108540	VET-301108550	\$105.60
	40 UNC	VET-301110040	VET-301110050	\$104.40
4	48 UNF	VET-301111040	VET-301111050	\$104.40
	40 UNC	VET-301112540	VET-301112550	\$90.00
5	44 UNF	VET-301113540	VET-301113550	\$90.00
	32 UNC	VET-301115040	VET-301115050	\$90.00
6	40 UNF	VET-301116040	VET-301116050	\$90.00
	32 UNC	VET-301117540	VET-301117550	\$90.00
8	36 UNF	VET-301118540	VET-301118550	\$90.00
	24 UNC	VET-301120040	VET-301120050	\$90.00
10	32 UNF	VET-301121040	VET-301121050	\$90.00
	24 UNC	VET-301122540	VET-301122550	\$90.00
12	28 UNF	VET-301123540	VET-301123550	\$90.00
	20 UNC	VET-301126040	VET-301126050	\$85.20
1/4"	28 UNF	VET-301127040	VET-301127050	\$85.20
	18 UNC	VET-301129540	VET-301129550	\$85.20
5/16"	24 UNF	VET-301130540	VET-301130550	\$85.20
	16 UNC	VET-301133040	VET-301133050	\$87.60
3/8"	24 UNF	VET-301134040	VET-301134050	\$87.60
	14 UNC	VET-301136540	VET-301136550	\$87.60
7/16"	20 UNF	VET-301137540	VET-301137550	\$87.60

Size	Threads Per Inch	Class 2B Part Number	Class 3B Part Number	Price
1/2"	13 UNC	VET-301140040	VET-301140050	\$90.00
	20 UNF	VET-301141040	VET-301141050	\$90.00
9/16"	12 UNC	VET-301143540	VET-301143550	\$114.00
	18 UNF	VET-301144540	VET-301144550	\$114.00
5/8"	11 UNC	VET-301147040	VET-301147050	\$116.40
	18 UNF	VET-301148040	VET-301148050	\$116.40
3/4"	10 UNC	VET-301152040	VET-301152050	\$123.60
	16 UNF	VET-301153040	VET-301153050	\$123.60
7/8"	9 UNC	VET-301157040	VET-301157050	\$134.40
	14 UNF	VET-301158040	VET-301158050	\$134.40
1"	8 UNC	VET-301162040	VET-301162050	\$156.00
	12 UNF	VET-301163040	VET-301163050	\$156.00
	14 UNS	VET-301164040	VET-301164050	\$156.00
1-1/16"	8 UN	VET-301166040	VET-301166050	\$256.80
	12 UN	VET-301166540	VET-301166550	\$256.80
1-1/8"	7 UNC	VET-301169040	VET-301169050	\$187.20
	12 UNF	VET-301170040	VET-301170050	\$187.20
1-3/16"	8 UN	VET-301172040	VET-301172050	\$258.00
	12 UN	VET-301172540	VET-301172550	\$258.00
1-1/4"	7 UNC	VET-301175040	VET-301175050	\$198.00
	12 UNF	VET-301176040	VET-301176050	\$198.00
	20 UN	VET-301177340	VET-301177350	\$274.80
1-3/8"	28 UN	VET-301177540	VET-301177550	\$332.40
	6 UNC	VET-301181040	VET-301181050	\$214.80
	12 UNF	VET-301182040	VET-301182050	\$214.80

THREAD RING GAGES- GO/NO GO SET

Size	Threads Per Inch	Class 2A Part Number	Class 3A Part Number	Price
0	80 UNF	VET-361101050	VET-361101060	\$360.00
1	64 UNC	VET-361102550	VET-361102560	\$331.20
	72 UNF	VET-361103550	VET-361103560	\$331.20
	56 UNC	VET-361105050	VET-361105060	\$264.00
2	64 UNF	VET-361106050	VET-361106060	\$264.00
	48 UNC	VET-361107550	VET-361107560	\$264.00
3	56 UNF	VET-361108550	VET-361108560	\$264.00
	40 UNC	VET-361110050	VET-361110060	\$235.20
4	48 UNF	VET-361111050	VET-361111060	\$235.20
	40 UNC	VET-361112550	VET-361112560	\$213.60
5	44 UNF	VET-361113550	VET-361113560	\$213.60
	32 UNC	VET-361115050	VET-361115060	\$213.60
6	40 UNF	VET-361116050	VET-361116060	\$213.60
	32 UNC	VET-361117550	VET-361117560	\$213.60
8	36 UNF	VET-361118550	VET-361118560	\$213.60
	24 UNC	VET-361120050	VET-361120060	\$213.60
10	32 UNF	VET-361121050	VET-361121060	\$213.60
	24 UNC	VET-361122550	VET-361122560	\$213.60
12	28 UNF	VET-361123550	VET-361123560	\$213.60
	20 UNC	VET-361126050	VET-361126060	\$206.40
1/4"	28 UNF	VET-361127050	VET-361127060	\$206.40
	18 UNC	VET-361129550	VET-361129560	\$206.40
5/16"	24 UNF	VET-361130550	VET-361130560	\$206.40
	16 UNC	VET-361133050	VET-361133060	\$220.80
3/8"	24 UNF	VET-361134050	VET-361134060	\$220.80
	14 UNC	VET-361136550	VET-361136560	\$220.80
7/16"	20 UNF	VET-361137550	VET-361137560	\$220.80

Size	Threads Per Inch	Class 2A Part Number	Class 3A Part Number	Price
1/2"	13 UNC	VET-361140050	VET-361140060	\$242.40
	20 UNF	VET-361141050	VET-361141060	\$242.40
9/16"	12 UNC	VET-361143550	VET-361143560	\$268.80
	18 UNF	VET-361144550	VET-361144560	\$268.80
5/8"	11 UNC	VET-361147050	VET-361147060	\$271.20
	18 UNF	VET-361148050	VET-361148060	\$271.20
3/4"	10 UNC	VET-361152050	VET-361152060	\$345.60
	16 UNF	VET-361153050	VET-361153060	\$345.60
7/8"	9 UNC	VET-361157050	VET-361157060	\$369.60
	14 UNF	VET-361158050	VET-361158060	\$369.60
1"	8 UNC	VET-361162050	VET-361162060	\$451.20
	12 UNF	VET-361163050	VET-361163060	\$451.20
	14 UNS	VET-361164050	VET-361164060	\$348.00
1-1/16"	8 UN	VET-361166050	VET-361166060	\$592.80
	12 UN	VET-361166550	VET-361166560	\$592.80
1-1/8"	7 UNC	VET-361169050	VET-361169060	\$528.00
	12 UNF	VET-361170050	VET-361170060	\$528.00
1-3/16"	8 UN	VET-361172050	VET-361172060	\$633.60
	12 UN	VET-361172550	VET-361172560	\$633.60
1-1/4"	7 UNC	VET-361175050	VET-361175060	\$578.40
	12 UNF	VET-361176050	VET-361176060	\$578.40
	20 UN	VET-361177350	VET-361177360	\$645.60
1-3/8"	28 UN	VET-361177550	VET-361177560	\$880.80
	6 UNC	VET-361181050	VET-361181060	\$602.40
	12 UNF	VET-361182050	VET-361182060	\$602.40



Call Us Today For All Of Your Machine Tool Needs!



THREAD GAGES-PLUG AND RING UNEF

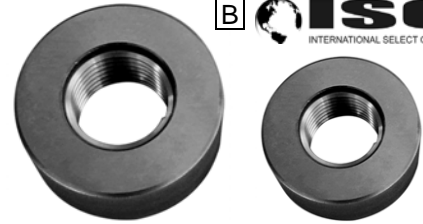
Vermont Gage's thread gages inspect the pitch diameter and the functional thread for both internal and external threaded products. All stocked thread gages are made to Class X tolerances per ANSI B1.2 (Unified inch screw threads) and ANSI B1.16M (Metric M series screw threads). All thread gages are supplied with a Certificate of Accuracy. Rings and setting plugs are stocked in 2A and 3A (inch) or 6G (metric) classes of fit. ACME and Buttress thread gages are also available.



Size	Threads Per Inch	Thread Plug Gages			Thread Ring Gages		
		Go/No Go Set w/ Handle			Go/No Go Set		
		Class 2B Part Number	Class 3B Part Number	Price	Class 2A Part Number	Class 3A Part Number	Price
12	32 UNEF	VET-301124540	VET-301124550	\$111.60	VET-361124550	VET-361124560	\$276.00
1/4	32 UNEF	VET-301128040	VET-301128050	\$140.40	VET-361128050	VET-361128060	\$283.20
5/16	32 UNEF	VET-301131540	VET-301131550	\$140.40	VET-361131550	VET-361131560	\$283.20
3/8	32 UNEF	VET-301135040	VET-301135050	\$154.80	VET-361135050	VET-361135060	\$288.00
7/16	28 UNEF	VET-301138540	VET-301138550	\$219.60	VET-361138550	VET-361138560	\$288.00
1/2	28 UNEF	VET-301142040	VET-301142050	\$162.00	VET-361142050	VET-361142060	\$304.80
9/16	24 UNEF	VET-301145540	VET-301145550	\$174.00	VET-361145550	VET-361145560	\$319.20
5/8	24 UNEF	VET-301149040	VET-301149050	\$176.40	VET-361149050	VET-361149060	\$331.20
11/16	24 UNEF	VET-301150540	VET-301150550	\$181.20	VET-361150550	VET-361150560	\$360.00
3/4	20 UNEF	VET-301154040	VET-301154050	\$176.40	VET-361154050	VET-361154060	\$412.80
13/16	20 UNEF	VET-301155540	VET-301155550	\$188.40	VET-361155550	VET-361155560	\$432.00
7/8	20 UNEF	VET-301159040	VET-301159050	\$196.80	VET-361159050	VET-361159060	\$376.80
15/16	20 UNEF	VET-301160540	VET-301160550	\$201.60	VET-361160550	VET-361160560	\$451.20
1	20 UNEF	VET-301165040	VET-301165050	\$218.40	VET-361165050	VET-361165060	\$504.00
1-1/16	18 UNEF	VET-301167540	VET-301167550	\$220.80	VET-361167550	VET-361167560	\$530.40
1-1/8	18 UNEF	VET-301171040	VET-301171050	\$225.60	VET-361171050	VET-361171060	\$559.20
1-3/16	18 UNEF	VET-301173540	VET-301173550	\$226.80	VET-361173550	VET-361173560	\$559.20
1-1/4	18 UNEF	VET-301177040	VET-301177050	\$236.40	VET-361177050	VET-361177060	\$590.40
1-5/16	18 UNEF	VET-301179540	VET-301179550	\$270.00	VET-361179550	VET-361179560	\$602.40
1-3/8	18 UNEF	VET-301183040	VET-301183050	\$274.80	VET-361183050	VET-361183060	\$648.00
1-7/16	18 UNEF	VET-301185540	VET-301185550	\$286.80	VET-361185550	VET-361185560	\$660.00

THREAD PLUG & RING GAGES

- Made in "X" tolerance
- Sold in sets-Go/No go
- Available in inch and metric sizes
- Classes 2A and 2B are for inch gages
- Classes 6H and 6G are for metric
- Used for general applications including checking threads for bolts, nuts, screws and similar fasteners



INCH	PLUG GAGE CLASS 2B Go/No Go w/ Handle		RING GAGE CLASS 2A Go/No Go	
Size	Part Number	Price Each	Part Number	Price Each
4-40 UNC	A-4101-0208	\$46.20	A-4101-0308	\$82.50
5-40 UNC	A-4101-0210	\$46.20	A-4101-0310	\$82.50
6-32 UNC	A-4101-0212	\$50.05	A-4101-0312	\$74.80
8-32 UNC	A-4101-0214	\$50.05	A-4101-0314	\$74.80
10-24 UNC	A-4101-0216	\$50.05	A-4101-0316	\$71.50
10-32 UNF	A-4101-0217	\$50.05	A-4101-0317	\$71.50
1/4-20 UNC	A-4101-0221	\$46.20	A-4101-0321	\$71.50
1/4-28 UNF	A-4101-0222	\$46.20	A-4101-0322	\$71.50
5/16-18 UNC	A-4101-0224	\$46.20	A-4101-0324	\$71.50
5/16-24 UNF	A-4101-0225	\$46.20	A-4101-0325	\$71.50
3/8-16 UNC	A-4101-0227	\$49.50	A-4101-0327	\$71.50
3/8-24 UNF	A-4101-0228	\$49.50	A-4101-0328	\$71.50
7/16-14 UNC	A-4101-0230	\$49.50	A-4101-0330	\$71.50
7/16-20 UNF	A-4101-0231	\$49.50	A-4101-0331	\$71.50
1/2-13 UNC	A-4101-0233	\$53.90	A-4101-0333	\$79.20
1/2-20 UNF	A-4101-0234	\$53.90	A-4101-0334	\$79.20

METRIC	PLUG GAGE CLASS 6H Go/No Go w/ Handle		RING GAGE CLASS 6G Go/No Go	
Size	Part Number	Price Each	Part Number	Part Number
M2 X 0.4	A-4101-1102	\$36.30	A-4101-1202	\$79.20
M3 X 0.5	A-4101-1103	\$36.30	A-4101-1203	\$71.50
M2.5 X 0.45	A-4101-1125	\$29.70	A-4101-1225	\$68.20
M3.5 X 0.6	A-4101-1135	\$29.70	A-4101-1235	\$68.20
M4 X 0.7	A-4101-1104	\$27.50	A-4101-1204	\$67.10
M5 X 0.8	A-4101-1105	\$27.50	A-4101-1205	\$67.10
M6 X 1.0	A-4101-1106	\$27.50	A-4101-1206	\$67.10
M7 X 1.0	A-4101-1107	\$31.90	A-4101-1207	\$69.30
M8 X 1.25	A-4101-1108	\$31.90	A-4101-1208	\$69.30
M10 X 1.25	A-4101-1110	\$33.00	A-4101-1210	\$71.50
M10 X 1.50	A-4101-1111	\$33.00	A-4101-1211	\$71.50
M12 X 1.75	A-4101-1112	\$33.00	A-4101-1212	\$71.50
M14 X 2.0	A-4101-1114	\$35.20	A-4101-1214	\$71.50
M16 X 2.0	A-4101-1116	\$35.20	A-4101-1216	\$74.80
M18 X 2.50	A-4101-1118	\$38.50	A-4101-1218	\$74.80
M20 X 2.50	A-4101-1120	\$38.50	A-4101-1220	\$74.80

THREAD REPAIR FILES

- Restore damaged external threads on studs, bolts, screws, plumbing pipe and pipe fittings
- Each file provides 4 to 8 different thread pitches
- Restores rusted or corroded fasteners
- Doubles as a screw pitch gage
- Black oxide coating prevents rust



7/16" Dia x 8-1/2" OAL



Thread Pitches	Part Number	Price
11,12,13,14,16,18,20,24 TPI	GEN-31236-5	\$11.99
9,10,12,16,20,27,28,32 TPI	GEN-31240-2	\$11.99

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

PIN GAGE SETS



PRECISION STEEL PIN GAGE SETS

- Supplied in a sturdy, dust-proof plastic fitted case
- Sizes marked on case for easy identification
- Finish to 10 microns or better
- Fully hardened to 60-62 Rc



INCH

No. of Pieces	Size	Part Number	Set Price
MINUS SETS (-) -0.0002" + 0.0000			
50	0.011-0.060"	A-4101-0010	\$27.50
190	0.061-0.250"	A-4101-0011	\$65.00
250	0.251-0.500"	A-4101-0012	\$120.00
125	0.501-0.625"	A-4101-0013	\$141.00
125	0.626-0.750"	A-4101-0014	\$150.00
82	0.751-0.832"	A-4101-0015	\$155.00
84	0.833-0.916"	A-4101-0016	\$201.00
84	0.917-1.000"	A-4101-0017	\$231.00
PLUS SETS (+) -0.0000" + 0.0002			
190	0.061-0.250"	A-4101-0111	\$63.00
250	0.251-0.500"	A-4101-0112	\$121.00

METRIC

No. of Pieces	Size	Part Number	Set Price
Accuracy -0.005mm + 0.000mm			
55	0.20-1.28mm	A-4101-1010	\$72.00
55	0.21-1.29mm	A-4101-1011	\$72.00
185	1.30-4.98mm	A-4101-1012	\$165.00
185	1.31-4.99mm	A-4101-1013	\$165.00
250	5.00-9.98mm	A-4101-1014	\$222.00
250	5.01-9.99mm	A-4101-1015	\$222.00
200	10.00-13.98mm	A-4101-1016	\$235.00
200	10.01-13.99mm	A-4101-1017	\$235.00

PIN GAGE HANDLES



- Comfortable, ergonomically made handle for pin gages
- Crafted from aluminum and powder coated
- Can be used with GO pin (green) on one end and NO GO pin (red) on opposite end

For Pin Gage	Part Number	Price
.011 - .060	A-4102-0001	\$13.00
.061 - .250	A-4102-0002	\$12.00
.251 - .500	A-4102-0003	\$17.00
.501 - .625	A-4102-0004	\$18.00

For Pin Gage	Part Number	Price
.626 - .750	A-4102-0005	\$20.50
.751 - .832	A-4102-0006	\$22.00
.833 - .916	A-4102-0007	\$22.00
.917 - 1.000"	A-4102-0008	\$24.00

PRECISION STEEL PIN GAGE SETS



High precision Pin Gage (Plug Gage) sets at very economical prices. Offered in two grades of tolerance: Plus (+.0002") & Minus (-.0002"). Fowler Pin Gage Sets come in a range of sizes. These accurate and well made precision tools are ideal for checking hole size, location, gage slots, distance between holes, go & no-go gaging, setting other gages and micrometers.

- Optional handle **FOW-53-885-100** is also available
- Each set furnished with case and every size gage hole clearly marked for size.
- Fully hardened to 60-62 RC, centerless lapped to 10 millionths AA micro-finish or better; sizes etched on ranges over .061".
- Each gage checked against master gages traceable to the National Institute of Standards and Technology.
- Gages are cylindrical, 2" in length and have no sharp corners.
- Accurate to .0002".
- Gage increments are in .001" steps.



Part Number FOW-53-885-100

Range	Accuracy	No. of Gages per Set	Part Number	Set Price
.006" to .060"	+.0002"-.0000"	55	FOW-53-880-995	\$169.75
.006" to .060"	+.0000"-.0002"	55	FOW-53-880-996	\$169.75
.011" to .060"	+.0002"-.0000"	50	FOW-53-880-060	\$124.47
.011" to .060"	+.0000"-.0002"	50	FOW-53-880-070	\$124.47
.011" to .250"	+.0000"-.0002"	240	FOW-53-880-000	\$434.22
.011" to .250"	+.0002"-.0000"	240	FOW-53-880-005	\$434.22
.061" to .250"	+.0002"-.0000"	190	FOW-53-880-250	\$280.03
.061" to .250"	+.0000"-.0002"	190	FOW-53-880-260	\$280.03
.251" to .500"	+.0002"-.0000"	250	FOW-53-880-500	\$411.62
.251" to .500"	+.0000"-.0002"	250	FOW-53-880-510	\$411.62
.501" to .625"	+.0002"-.0000"	125	FOW-53-880-620	\$478.17
.501" to .625"	+.0000"-.0002"	125	FOW-53-880-630	\$478.17
.626" to .750"	+.0002"-.0000"	125	FOW-53-880-750	\$528.98
.626" to .750"	+.0000"-.0002"	125	FOW-53-880-760	\$528.98
.751" to .832"	+.0002"-.0000"	82	FOW-53-880-830	\$1,133.00
.751" to .832"	+.0000"-.0002"	82	FOW-53-880-840	\$1,133.00
.833" to .916"	+.0002"-.0000"	84	FOW-53-880-920	\$1,264.59
.833" to .916"	+.0000"-.0002"	84	FOW-53-880-930	\$1,264.59
.917" to 1.000"	+.0002"-.0000"	84	FOW-53-880-980	\$1,309.90
.917" to 1.000"	+.0000"-.0002"	84	FOW-53-880-990	\$1,309.90

PRECISION STEEL PIN GAGE SETS



Precision gage pins are used to determine small hole sizes, for gaging slots, and finding hole distances.

- Color coded, fully adjustable Go/No-Go gage handle furnished with each set
- Sets are supplied in rugged, high impact protective cases with each space marked for the appropriate gage
- Inspection certificate with every set
- Starrett pin gages are manufactured to a 0.0002 tolerance
- Plus and minus tolerance sets and individual pins available
- Offered in 0.001 increments
- Each pin is centerless lapped and is clearly etched with the stated size
- All gages are 2 inches long and hardened to RC 60/64
- All sharp corners are broken



PLUS SETS

Range	No of Gages	Part Number	Price
.011-.060	50	STR-67480	\$84.00
.061-.250	190	STR-67482	\$188.00
.251-.500	250	STR-67484	\$286.00
.501-.625	125	STR-67486	\$329.00
.626-.750	125	STR-67488	\$364.00
.751-.832	82	STR-67490	\$654.00
.833-.916	84	STR-67492	\$746.00
.917-1.000	84	STR-67494	\$794.00

MINUS SETS

Range	No of Gages	Part Number	Price
.011-.060	50	STR-67481	\$84.00
.061-.250	190	STR-67483	\$188.00
.251-.500	250	STR-67485	\$286.00
.501-.625	125	STR-67487	\$329.00
.626-.750	125	STR-67489	\$364.00
.751-.832	82	STR-67491	\$654.00
.833-.916	84	STR-67493	\$746.00
.917-1.000	84	STR-67495	\$794.00

Call Us Today For All Of Your Machine Tool Needs!

READING MAGNIFIER



- Lens measures 2" x 4" for distortion free magnification
- Standard model features plastic frame and ribbed handle and ground and polished optical glass lens
- Illuminated model features shatter-proof lens, reversible light reflector that adapts to right or left hand use and 2 "AA" batteries (included)



Type	Power	Focal Length	Part Number	Price
Standard	1.25	8"	GEN-42437-2	\$25.99
Illuminated	2.50	4"	GEN-42509-6	\$35.00

FLOURESCENT MAGNIFIER

- Fluorescent light
- Rectangular lens 7" x 5.2"
- 3 diopter lens provides 1.75X magnification
- Swing arm with 32" reach
- Max. 2-1/2" adjustable bench clamp
- Power on/off switch
- 115V, 9W (includes H-shaped fluorescent bulb)



Flourescent Magnifier
Part # A-8401-0047
\$125.00

10X OPTICAL COMPARATOR SET



The 10X Pocket Optical Comparator magnifies images which are sharp, undistorted and free of aberrations. Convenient for checking angles, thread measurements, hole sizes and more. This 10X comparator is widely used by machinists, toolmakers and inspectors in the industry. Includes 9 reticules.

Part Number	Price
FOW-52-664-009	\$118.63

OPTICAL COMPARATOR SET

10X Magnification W/ 8 Extra Reticles



- Widely used by machinists, toolmakers and inspectors for checking angles, diameters, radii, thread pitches & hole sizes
- The scales are photo etched into glass reticle for easy reading
- Reticule screw-in mounting are interchangeable
- 9 pc/set includes: Comparator and 8 pc Reticule
- Lens diameter: 21mm

Optical Comparator Set
Part #A-8902-0041
\$90.00

20X SHOP MICROSCOPE

- 20X power
- Easy focal adjustment
- Illuminated light allows use in dark places and is adjustable
- 2 in. 1 metric and inch straight line scale
- Operates on 2 "AAA" batteries (not included)



Shop Microscope
Part # A-8902-0035
\$120.00

TRIplet MAGNIFIER



- Hastings Triplet magnifier
- Lens diameter is 21mm
- Triplet lens system
- Includes black case

Power	Lens Dia	Part Number	Price
10X	21mm	A-4902-0045	\$28.00
15X	21mm	A-4902-0046	\$30.00

40X SHOP MICROSCOPE

With Reticle

- Wide field eyepiece with direct reading reticle - no calibration required
- Eyepiece turns to permit sharp focus of reticle scale
- Penlight illuminator in a swivel mount
- Requires 2 AAA batteries which are not included
- Jack and pinion focusing with dual focusing knobs
- Cast aluminum.
- Height is 9"
- Reticle is 0-18mm/.02mm X 90



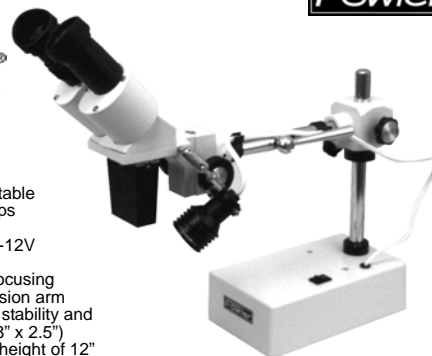
Shop Microscope
Part # A-8902-0036
\$125.00

MICROSCOPE



XTRA-RANGE®

- 10X eyepieces with adjustable centers and rubber eyecups
- 2X objective lens
- Top swiveling light source-12V lamp, 110V supply
- Positive rack and pinion focusing
- Articulated 12" long extension arm
- Heavy base plate insures stability and houses transformer (5" x 8" x 2.5")
- Overall base and column height of 12"



Description	Part Number	Price
Xtra Range Microscope	FOW-53-640-280	\$383.21

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

METROLOGY/OPTICAL

METROLOGY CASTING MATERIAL

- Exotic metrology-grade rubber
- Self-curing in minutes
- Virtually perfect replica casing of internal and external forms
- Non-toxic, easy to use-100 times faster than RTV silicones
- Excellent for checking parts with optical comparators



QUICK REPLICAS-ZERO SHRINKAGE!



Repro rubber Thin Pour:

Final Color: Light Green
Manipulation Time: 2 minutes
Cure Time: approximately 10 minutes

For internal-shape applications where a thin pour will completely fill the cavity without voids. A complete replica casting is quickly formed. Kits include graduated mixing cups, wooden spatulas and instructions.

Repro rubber Quick Setting Putty

Final Color: Light Blue
Manipulation Time: 3-4 minutes
Cure Time: approximately 8-10 minutes

Excellent for internal shapes. Simply spread over master with fingers and wait for cure. You can also cast internal shapes and cavities, but pressure should be applied.

Thin Pour		Repro rubber		
Description	Color	Size	Part Number	Price
Thin Pour	Green	380 ml	FXB-16135	\$162.00
Quick-Setting Putty	Blue	520 ml	FXB-16130	\$170.00
Quick-Setting Putty	Blue	7 lb.	FXB-16131	\$620.00
Thin Pour Trial Kit	-	130 ml	FXB-16116	\$56.00
Quick-Setting Putty Trial Kit	-	220 ml	FXB-16129	\$75.00

REPRORUBBER METROLOGY CASTING QUICK DISPENSE CARTRIDGE SYSTEM KITS



Create Highly Accurate Replicas With Zero Shrinkage!

Repro rubber Quick Dispense Cartridge System Kits contain everything you need to easily create highly accurate, zero shrinkage replicas. Each kit includes 1 each Repru-Mix II Reusable Dispensing Gun, 6 each 50ml Prefilled Repru rubber Disposable Cartridges, 15 Disposable Mixing Nozzles, 2 Micro Injector Snap-On Nozzles, and a deluxe fitted carrying case.



Kit Includes:

- Repru-Mix II reusable dispensing gun
- 6 50ml prefilled Repru rubber cartridges
- 2 Micro Injector nozzles
- 15 mixing nozzles
- Deluxe fitted carrying case

Description	Part Number	Price
Repro rubber Green Thin Pour Quick Dispense Cartridge System Kit	FXB-16300	\$249.50
Repro rubber Orange Medium Pour Quick Dispense Cartridge System Kit	FXB-16305	\$258.62
Repro rubber Thin & Medium Combo Kit- 3 Green & 3 Orange Cartridges	FXB-16309	\$260.00

System Refills

Description	Size	Part Number	Price
Green Thin Pour Cartridge	50 ml	FXB-16301	\$22.00
Orange Medium Pour Cartridge	50 ml	FXB-16306	\$24.00
Helix Mixing Nozzles	15 pack	FXB-16313	\$23.00
Dispensing Gun (reusable)	n/a	FXB-16311	\$58.00

MASTER-VIEW™ 14" OPTICAL COMPARATOR

With Erect Image

- 1 micron glass scales.
- Two long-life tungsten-halogen light sources.
- Extra bright surface illumination through duplex fiber optics.
- Individual switches select profile, surface or combination surface-profile illumination modes.
- High capacity 4" x 8" travel stage with 4-1/2" x 19" work surface.
- Ball way construction handles loads to 100lbs.
- Heavy-duty monorail type, welded steel frame.
- Rotary frosted glass screen with 90° crosslines and 360° protractor markings.
- Vernier readings to 5 arc minutes.
- 10 power lens system (20 & 50X optional).
- Edge detection is standard.
- Screen-mounted overlay chart clips.



Includes Suburban's Own MV-14-DRO2 3-axis Digital Readout With:

- Part view to show the relationship between all part features
- 5.7" LCD screen
- Direct measurement of circles, arcs, angles, points, lines, distance, perpendicularity, parallelism and slots
- Part programming
- Auto-enter, looping and auto-finish
- 360° digital protractor
- Multiple languages
- Output to PC or printer
- Inch-mm conversion
- Skew capability
- Display reads to 0.0001"



MV-140SE Optical Comparator

Part #SUB-MV-140SE

Call For Pricing

HORIZONTAL BENCHTOP MEASURING PROJECTOR

- Fully usable 16" (400mm) screen diameter
- All metal construction
- Large measuring travel: 10" X-axis, 4" Y-Axis (254mm x 100mm)
- Digital protractor for accurate angle measurements: 1' resolution
- Lamphouse mounted helix adjustment for accurate thread form inspection
- Available with the full range of Quadra-Chek readout systems
- Fine adjustment on all axis, plus zero backlash, fast traverse mechanism on the X-axis
- Fully retractable duplex fiber optic surface illumination
- Optional automatic edge detection



Model HE400 MkIII

Benchtop Projector
Part #STR-HE400MKIII

Please Call For Pricing



Call Us Today For All Of Your Machine Tool Needs!

BENCH & PEDESTAL GRINDING WHEELS

B

BENCH & PEDESTAL GRINDING WHEELS

BROWN ALUMINUM OXIDE

Type 01-Straight

Guide To Grit Sizes
 Aluminum Oxide (A)
 24-30 Rough grinding
 36-46 General purpose work
 60-80 Finish grinding



Type 01

- Aluminum oxide for general purpose off-hand work
- Straight vitrified wheels used for tool sharpening and grinding
- For bench and pedestal grinders in maintenance departments and tool & die and metal fabrication shops

Buy In Case Quantities & Save 15%!

Case Quantity (10)

Specification	Max RPM	Part Number	Price Each	Case Qty Part Number	Price Each
6" x 1/2" x 1"					
A46MV (1)	4456	CGW-38003	\$14.13		
A60MV (1)	4456	CGW-38004	\$14.13		
6" x 3/4" x 1"					
A36OV (1)	4456	CGW-38007	\$15.92	CGW-35009	\$13.53
A46MV (1)	4456	CGW-38008	\$15.92	CGW-35010	\$13.53
A60MV (1)	4456	CGW-38009	\$15.92	CGW-35011	\$13.53
A80MV (1)	4456	CGW-38010	\$15.92	CGW-35012	\$13.53
6" x 1" x 1"					
A36OV (1)	4456	CGW-38012	\$17.54	CGW-35018	\$14.91
A46MV (1)	4456	CGW-38013	\$17.54	CGW-35019	\$14.91
A60MV (1)	4456	CGW-38014	\$17.54	CGW-35020	\$14.91
A80MV (1)	4456	CGW-38015	\$17.54	CGW-35021	\$14.91
7" x 1" x 1"					
A36OV (1)	3760	CGW-38017	\$20.46	CGW-35035	\$17.39
A46MV (1)	3760	CGW-38018	\$20.46	CGW-35036	\$17.39
A60MV (1)	3760	CGW-38019	\$20.46	CGW-35037	\$17.39
A80MV (1)	3760	CGW-38020	\$20.46	CGW-35038	\$17.39
8" x 1" x 1-1/4"					
A36OV (3)	3600	CGW-38022	\$24.90	CGW-35047	\$21.17
A46MV (3)	3600	CGW-38023	\$24.90	CGW-35048	\$21.17
A60MV (3)	3600	CGW-38024	\$24.90	CGW-35049	\$21.17
A80MV (3)	3600	CGW-38025	\$24.90	CGW-35050	\$21.17

Specification	Max RPM	Part Number	Price Each
10" x 1" x 1-1/4"			
A36OV (2)	2483	CGW-38027	\$41.96
A46MV (2)	2483	CGW-38028	\$41.96
A60MV (2)	2483	CGW-38029	\$41.96
A80MV (2)	2483	CGW-38030	\$41.96
12" x 2" x 1-1/2"			
A24QV (4)	2220	CGW-38046	\$89.87
A36OV (4)	2220	CGW-38047	\$89.87
A46MV (4)	2220	CGW-38048	\$89.87
A60MV (4)	2220	CGW-38049	\$89.87
A80MV (4)	2220	CGW-38050	\$89.87
14" x 2" x 1-1/2"			
A36OV (4)	1773	CGW-38052	\$138.58
A46MV (4)	1773	CGW-38053	\$138.58

- (1) 1" hole, installed telescopic bushings for 3/4", 5/8" & 1/2" arbors
- (2) 1-1/4" hole, installed telescopic bushings for 1" & 3/4" arbors
- (3) 1-1/4" hole, installed telescopic bushings for 1", 3/4", 4/8" & 1/2" arbors
- (4) 1-1/2" hole, installed telescopic bushings for 1-1/4" & 1" arbors

BENCH & PEDESTAL GRINDING WHEELS

GREEN SILICON CARBIDE

Type 01-Straight

- Green silicon carbide is ideal for non-ferrous metals
- Straight vitrified wheels used for tool sharpening and grinding



Type 01

Buy In Case Quantities & Save Over 15%!

Case Quantity (10)

Case Quantity (10)

Specification	Max RPM	Part Number	Price Each	Case Qty Part Number	Price Each
6" x 1/2" x 1"					
GC60IV (1)	4456	CGW-38501	\$16.98	CGW-35005	\$14.43
GC80IV (1)	4456	CGW-38502	\$16.98	CGW-35006	\$14.43
GC100IV (1)	4456	CGW-38503	\$16.98	CGW-35007	\$14.43
6" x 3/4" x 1"					
GC60IV (1)	4456	CGW-38504	\$19.24	CGW-35013	\$16.35
GC80IV (1)	4456	CGW-38505	\$19.24	CGW-35014	\$16.35
GC100IV (1)	4456	CGW-38506	\$19.24	CGW-35015	\$16.35
6" x 1" x 1"					
GC60IV (1)	4456	CGW-38507	\$21.23	CGW-35022	\$18.05
GC80IV (1)	4456	CGW-38508	\$21.23	CGW-35023	\$18.05
GC100IV (1)	4456	CGW-38509	\$21.23	CGW-35024	\$18.05
7" x 1" x 1"					
GC60IV (1)	3760	CGW-38513	\$25.44	CGW-35039	\$21.62
GC80IV (1)	3760	CGW-38514	\$25.44	CGW-35040	\$21.62
GC100IV (1)	3760	CGW-38515	\$25.44	CGW-35041	\$21.62

Specification	Max RPM	Part Number	Price Each	Case Qty Part Number	Price Each
8" x 1" x 1-1/4"					
GC60IV (3)	3600	CGW-38516	\$30.54	CGW-35051	\$25.96
GC80IV (3)	3600	CGW-38517	\$30.54	CGW-35052	\$25.96
GC100IV (3)	3600	CGW-38518	\$30.54	CGW-35053	\$25.96
10" x 1" x 1-1/4"					
GC60IV (2)	2483	CGW-38519	\$53.64		
GC80IV (2)	2483	CGW-38520	\$753.64		
12" x 2" x 1-1/2"					
GC60IV (4)	2220	CGW-38531	\$105.21		
GC80IV (4)	2220	CGW-38532	\$105.21		
14" x 2" x 1-1/2"					
GC60IV (4)	1773	CGW-38534	\$175.35		

- (1) 1" hole, installed telescopic bushings for 3/4", 5/8" & 1/2" arbors
- (2) 1-1/4" hole, installed telescopic bushings for 1" & 3/4" arbors
- (3) 1-1/4" hole, installed telescopic bushings for 1", 3/4", 4/8" & 1/2" arbors
- (4) 1-1/2" hole, installed telescopic bushings for 1-1/4" & 1" arbors

BENCH & PEDESTAL GRINDING WHEELS

BLUE ALUMINUM OXIDE

Type 01-Straight



- Ideal for grinding high speed steels over 55Rc and general purpose tool steels
- Excellent value in most 32A applications - one letter grade harder is suggested
- Exceptionally fast and cool cutting characteristics suitable for grinding heat sensitive and alloy steels

Specification	Grit	Max RPM	Part Number	Price Each
6" x 3/4" x 1"				
AZ36K8V3 (1)		4456	CGW-38111	\$18.40
AZ60K8V3		4456	CGW-38113	\$18.40
AZ80K8V3		4456	CGW-38114	\$18.40
AZ120K8V		4456	CGW-38116	\$18.40
6" x 1" x 1"				
AZ36K8V32A (1)		4456	CGW-38121	\$20.87
AZ60K8V32A		4456	CGW-38123	\$20.87
AZ120K8V32		4456	CGW-38126	\$20.87

Specification	Grit	Max RPM	Part Number	Price Each
7" x 1" x 1"				
AZ36K8V32A (1)		3760	CGW-38161	\$24.08
AZ60K8V32A		3760	CGW-38163	\$24.08
AZ80K8V32A		3760	CGW-38164	\$24.08
AZ120K8V32		3760	CGW-38166	\$24.08
8" x 1" x 1-1/4"				
AZ36K8V32A (3)		3600	CGW-38201	\$29.16
AZ60K8V32A		3600	CGW-38203	\$29.16
AZ80K8V32A		3600	CGW-38204	\$29.16
AZ120K8V32		3600	CGW-38206	\$29.16

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

465

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

GRINDING WHEELS

WHITE TOOL ROOM WHEELS

Type 01



- Premium friable grain
- Used primarily for grinding hard tool steels
- Cool cutting on heat sensitive material
- Light stock removal-.001 or less per pass
- Equivalent to Norton 38A

Dia	Width	Hole Size	Grit	Max Speed RPM	Part Number	Price Each
TYPE 01						
7"	1/4"	1-1/4"	60J	3,600	CW-53-103-011	\$15.15
7"	1/4"	1-1/4"	60K	3,600	CW-53-103-012	\$15.15
7"	1/4"	1-1/4"	80K	3,600	CW-53-103-013	\$15.15
7"	1/2"	1-1/4"	46H	3,600	CW-53-103-014	\$18.18
7"	1/2"	1-1/4"	46 I	3,600	CW-53-103-015	\$18.18
7"	1/2"	1-1/4"	46J	3,600	CW-53-103-016	\$18.18
7"	1/2"	1-1/4"	60J	3,600	CW-53-103-017	\$18.18
7"	1/2"	1-1/4"	60K	3,600	CW-53-103-018	\$18.18
7"	1/2"	1-1/4"	80K	3,600	CW-53-103-019	\$18.18
8"	1/2"	1-1/4"	46H	3,600	CW-53-103-022	\$25.26
8"	1/2"	1-1/4"	60J	3,600	CW-53-103-023	\$25.26
10"	1"	1-1/4"	46H	2,485	CW-53-103-024	\$50.52
12"	1"	1-1/4"	60J	2,070	CW-53-103-025	\$77.81

PINK TOOL ROOM WHEELS

Type 01



- Premium A/O light bright pink grain
- Used primarily for surface grinding of high content chrome steel
- Excellent for use on heat sensitive materials and exotic alloy materials
- Light to medium stock removal-.001-.002 per pass
- Equivalent to Norton 86A

Dia	Width	Hole Size	Grit	Max Speed RPM	Part Number	Price Each
TYPE 01						
7"	1/4"	1-1/4"	60J	3,600	CW-53-103-027	\$15.15
7"	1/4"	1-1/4"	80K	3,600	CW-53-103-028	\$15.15
7"	1/2"	1-1/4"	46H	3,600	CW-53-103-029	\$18.18
7"	1/2"	1-1/4"	46 I	3,600	CW-53-103-030	\$18.18
7"	1/2"	1-1/4"	46J	3,600	CW-53-103-031	\$18.18
7"	1/2"	1-1/4"	60J	3,600	CW-53-103-032	\$18.18
7"	1/2"	1-1/4"	80K	3,600	CW-53-103-033	\$18.18
8"	1/2"	1-1/4"	46H	3,600	CW-53-103-036	\$25.26
8"	1/2"	1-1/4"	60J	3,600	CW-53-103-037	\$25.26
10"	1"	3"	46H	2,485	CW-53-103-038	\$50.52
12"	1"	5"	60J	2,070	CW-53-103-039	\$77.81
14"	1"	5"	60J	1,800	CW-53-103-041	\$96.00

RUBY TOOL ROOM WHEELS

Type 01

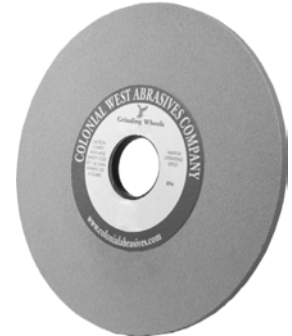


- Excellent for grinding a wide variety of tool steels at moderate to heavy feed rates
- Used in many tool and die and mold grinding operations
- Durable grain will hold forms and will stay sharp and free cutting
- Moderate to heavy stock removal
- Aluminum oxide, ruby color
- Equal to or better than Norton 32A in many applications

Dia	Width	Hole Size	Grit	Max Speed RPM	Part Number	Price Each
TYPE 01						
7"	1/4"	1-1/4"	60J	3,600	CW-53-103-042	\$19.19
7"	1/4"	1-1/4"	60K	3,600	CW-53-103-043	\$19.19
7"	1/4"	1-1/4"	80K	3,600	CW-53-103-044	\$19.19
7"	1/2"	1-1/4"	46H	3,600	CW-53-103-045	\$25.26
7"	1/2"	1-1/4"	46 I	3,600	CW-53-103-046	\$25.26
7"	1/2"	1-1/4"	46J	3,600	CW-53-103-047	\$25.26
7"	1/2"	1-1/4"	60J	3,600	CW-53-103-048	\$25.26
7"	1/2"	1-1/4"	60K	3,600	CW-53-103-049	\$25.26
7"	1/2"	1-1/4"	80K	3,600	CW-53-103-050	\$25.26
8"	1/2"	1-1/4"	46H	3,600	CW-53-103-053	\$31.32
8"	1/2"	1-1/4"	60J	3,600	CW-53-103-054	\$31.32
10"	1"	3"	46H	2,485	CW-53-103-055	\$72.76
12"	1"	5"	60J	2,070	CW-53-103-056	\$86.91

CERAMIC TOOL ROOM WHEELS

Type 01



- Blue Ceramic grain mixed with premium aluminum oxide
- Excellent for grinding steels 40Rc or greater
- Faster stock removal with longer wheel life
- Cool grinding and excellent stock removal
- 3-5 times the wheel life of standard aluminum oxide
- Equivalent to Norton SG wheels

Dia	Width	Hole Size	Grit	Max Speed RPM	Part Number	Price Each
TYPE 01						
7"	1/4"	1-1/4"	60J	3,600	CW-53-103-058	\$25.26
7"	1/4"	1-1/4"	80K	3,600	CW-53-103-059	\$25.26
7"	1/2"	1-1/4"	46 I	3,600	CW-53-103-060	\$32.33
7"	1/2"	1-1/4"	46J	3,600	CW-53-103-061	\$32.33
7"	1/2"	1-1/4"	60J	3,600	CW-53-103-062	\$32.33
7"	1/2"	1-1/4"	60K	3,600	CW-53-103-063	\$32.33
7"	1/2"	1-1/4"	80K	3,600	CW-53-103-064	\$32.33
8"	1/2"	1-1/4"	46 I	3,600	CW-53-103-066	\$39.41
8"	1/2"	1-1/4"	60J	3,600	CW-53-103-067	\$39.41
10"	1"	3"	46 I	2,485	CW-53-103-068	\$80.85
12"	1"	5"	60J	2,070	CW-53-103-069	\$119.24

Call Us Today For All Of Your Machine Tool Needs!

SURFACE GRINDING WHEELS PINK ALUMINUM OXIDE

- Best suited for high alloy steel applications, for sharpening HSS cutters, reamers, chisels, end mills and cutting saws.
- Ideal for grinding medium and hard to grind high speed steels and alloy steels
- Sharp grain for fast, cool cutting action at light to moderate feed rates
- Engineered for enhanced self-sharpening effect
- Good general purpose wheel
- Pink aluminum oxide is a slightly tougher grain and less friable than white aluminum oxide, but still attains free cutting properties



Type 01



Type 05



LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Buy In Case Quantities & Save 15%!

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
7" x 1/4" x 1-1/4"-Straight Type 01					
PA46-I8-V	3760	CGW-58000	\$16.15	10	\$13.73
PA60-J8-V	3760	CGW-58001	\$16.15	10	\$13.73
PA80-K8-V	3760	CGW-58002	\$16.15	10	\$13.73
PA100-K8-V	3760	CGW-58003	\$16.15	10	\$13.73

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
7" x 1/2" x 1-1/4"-Straight Type 01					
PA46-H8-V	3760	CGW-58004	\$20.53	10	\$17.45
PA46-I8-V	3760	CGW-58005	\$20.53	10	\$17.45
PA46-J8-V	3760	CGW-58006	\$20.53	10	\$17.45
PA46-K8-V	3760	CGW-58007	\$20.53	10	\$17.45
PA60-H8-V	3760	CGW-58008	\$20.53	10	\$17.45
PA60-I8-V	3760	CGW-58009	\$20.53	10	\$17.45
PA60-J8-V	3760	CGW-58010	\$20.53	10	\$17.45
PA60-K8-V	3760	CGW-58011	\$20.53	10	\$17.45
PA80-K8-V	3760	CGW-58012	\$20.53	10	\$17.45

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
7" x 3/4" x 1-1/4"-Straight Type 01					
PA46-I8-V	3760	CGW-58013	\$28.11	10	\$23.89
PA46-J8-V	3760	CGW-58014	\$28.11	10	\$23.89
PA60-J8-V	3760	CGW-58015	\$28.11	10	\$23.89

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
7" x 1" x 1-1/4"-Straight Type 01					
PA46-H8-V	3760	CGW-58016	\$34.16	10	\$29.04
PA46-J8-V	3760	CGW-58017	\$34.16	10	\$29.04
PA60-J8-V	3760	CGW-58018	\$34.16	10	\$29.04

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
8" x 1/2" x 1-1/4"-Straight Type 01					
PA46-H8-V	3600	CGW-58019	\$27.35	10	\$23.25
PA46-I8-V	3600	CGW-58020	\$27.35	10	\$23.25
PA46-J8-V	3600	CGW-58021	\$27.35	10	\$23.25
PA46-K8-V	3600	CGW-58022	\$27.35	10	\$23.25
PA60-J8-V	3600	CGW-58023	\$27.35	10	\$23.25
PA60-K8-V	3600	CGW-58024	\$27.35	10	\$23.25
PA80-K8-V	3600	CGW-58025	\$27.35	10	\$23.25

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
8" x 3/4" x 1-1/4"-Straight Type 01					
PA46-H8-V	3600	CGW-58026	\$35.86	10	\$30.48

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
8" x 1" x 1-1/4"-Straight Type 01					
PA46-H8-V	3600	CGW-58027	\$41.65	10	\$35.40
PA46-J8-V	3600	CGW-58028	\$41.65	10	\$35.40
PA60-J8-V	3600	CGW-58029	\$41.65	10	\$35.40

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
10" x 1" x 3"-Straight Type 01					
PA46-H8-V	2674	CGW-58030	\$63.05	5	\$53.59
PA46-J8-V	2674	CGW-58031	\$63.05	5	\$53.59
PA60-J8-V	2674	CGW-58032	\$63.05	5	\$53.59

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
12" x 1" x 3"-Straight Type 01					
PA46-H8-V	2228	CGW-58033	\$87.02	2	\$73.96
PA46-J8-V	2228	CGW-58034	\$87.02	2	\$73.96

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
12" x 1" x 5"-Straight Type 01					
PA46-K8-V	2228	CGW-58035	\$87.02	2	\$73.96
PA60-K8-V	2228	CGW-58036	\$87.02	2	\$73.96

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
12" x 1-1/2" x 5"-Recessed 1 Side R/1 -7-1/2 x 1/2"-Type 05					
PA46-H8-V	2228	CGW-58037	\$136.44	2	\$115.97
PA46-J8-V	2228	CGW-58038	\$136.44	2	\$115.97

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
12" x 2" x 5"-Recessed 2 Sides R/2 -7-1/2 x 1/2"-Type 05					
PA46-H8-V	2228	CGW-58039	\$110.67	1	-
PA46-I8-V	2228	CGW-58040	\$110.67	1	-

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
14" x 1" x 5"-Straight Type 01					
PA46-H8-V	1910	CGW-58048	\$142.05	2	\$120.74
PA46-I8-V	1910	CGW-58049	\$142.05	2	\$120.74
PA60-K8-V	1910	CGW-58050	\$142.05	2	\$120.74

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
14" x 1-1/2" x 5"-Straight Type 01					
PA46-H8-V	1910	CGW-58041	\$190.61	2	\$162.02
PA46-J8-V	1910	CGW-58042	\$190.61	2	\$162.02

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
14" x 2" x 5"-Recessed 1 Side R/1 -8 x 1"-Type 05					
PA46-H8-V	1910	CGW-58043	\$175.08	1	-
PA46-I8-V	1910	CGW-58044	\$175.08	1	-
PA60-K8-V	1910	CGW-58045	\$175.08	1	-

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
14" x 2" x 5"-Recessed 2 Sides R/2 -8 x 3/8"-Type 05					
PA46-I8-V	1910	CGW-58046	\$175.08	1	-
PA46-J8-V	1910	CGW-58047	\$175.08	1	-

SURFACE GRINDING WHEELS GREEN SILICON CARBIDE

- For use on titanium and cemented carbide
- Quickly grinds non-ferrous metals and sharpens tungsten carbide tools
- Types 01 and 05



Type 01



Type 05



Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
7" x 1/4" x 1-1/4"-Straight Type 01					
GC60-I-V	3760	CGW-34611	\$18.18	10	\$15.45
GC80-I-V	3760	CGW-34612	\$18.18	10	\$15.45
GC100-I-V	3760	CGW-34613	\$18.18	10	\$15.45

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
7" x 1/2" x 1-1/4"-Straight Type 01					
GC60-I-V	3760	CGW-34627	\$23.07	10	\$19.61
GC80-I-V	3760	CGW-34628	\$23.07	10	\$19.61
GC100-I-V	3760	CGW-34629	\$23.07	10	\$19.61

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
7" x 3/4" x 1-1/4"-Recessed 1 Side R/1 -3 x 1/4"-Type 05					
GC60-I-V	3760	CGW-34644	\$29.26	10	\$24.87
GC80-I-V	3760	CGW-34645	\$29.26	10	\$24.87

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
7" x 1" x 1-1/4"-Recessed 1 Side R/1 -3 x 1/2"-Type 05					
CG60-I-V	3760	CGW-34655	\$32.61	10	\$27.72
GC80-I-V	3760	CGW-34656	\$32.61	10	\$27.72

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
8" x 1/4" x 1-1/4"-Straight Type 01					
GC80-I-V	3600	CGW-34669	\$28.75	10	\$24.44

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
8" x 1/2" x 1-1/4"-Straight Type 01					
GC60-I-V	3600	CGW-34680	\$31.58	10	\$26.84
GC80-I-V	3600	CGW-34681	\$31.58	10	\$26.84
GC100-I-V	3600	CGW-34682	\$31.58	10	\$26.84

Buy In Case Quantities & Save 15%!

Call Us Or Visit Our Website For Our Complete Selection!

SURFACE GRINDING WHEELS

RUBY SURFACE GRINDING WHEELS

- Ideal for rough grinding of all tool steels including steel with high levels of chromium
- Tough, sharp, yet friable abrasive with high material removal rate and strong form holding capabilities
- Grain is tougher than White, AZ or Pink wheels



Buy In Case Quantities & Save 15%!

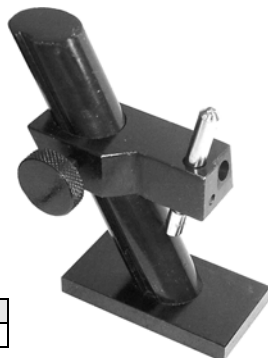
Grit	Hardness	Specification	Part Number	Box Qty	Price Each	Case Qty Price EA
Size: 7" X 1/4" X 1-1/4"-Straight Type 01 - 3760 RPM						
60	J	RA60-J-V	CGW-59025	10	\$20.22	\$17.19
Size: 7" X 1/2" X 1-1/4"-Straight Type 01 - 3760 RPM						
46	H	RA46-H-V	CGW-34633	10	\$23.12	\$19.65
46	J/K	RA46-J/K-V	CGW-34634	10	\$23.12	\$19.65
60	J/K	RA60-J/K-V	CGW-34635	10	\$23.12	\$19.65
80	K	RA80-K-V	CGW-59000	10	\$23.12	\$19.65
Size: 7" X 3/4" X 1-1/4"-Straight Type 01 - 3760 RPM						
46	H	RA46-H-V	CGW-59027	10	\$29.84	\$25.36
46	J	RA46-J-V	CGW-59001	10	\$29.84	\$25.36
60	J/K	RA60-J/K-V	CGW-59028	10	\$29.84	\$25.36
60	J	RA60-J-V	CGW-59002	10	\$29.84	\$25.36
Size: 7" X 1" X 1-1/4"-R/1-3" X 1/2" - 3760 RPM						
46	J	RA46-J-V	CGW-59003	10	\$36.18	\$30.76
60	J	RA60-J-V	CGW-59004	10	\$36.18	\$30.76
60	J/K	RA60-J/K-V	CGW-59030	10	\$36.18	\$30.76
Size: 8" X 1/2" X 1-1/4"-Straight Type 01 - 3600 RPM						
46	H	RA46-H-V	CGW-59005	10	\$32.12	\$27.30
46	J/K	RA46-J/K-V	CGW-59006	10	\$32.12	\$27.30
60	K	RA60-K-V	CGW-59007	10	\$32.12	\$27.30
80	K	RA80-K-V	CGW-59008	10	\$32.12	\$27.30
Size: 8" X 3/4" X 1-1/4"- R/1-3" X 1/4" - 3600 RPM						
46	H	RA46-H-V	CGW-59009	10	\$40.76	\$34.64
60	J/K	RA60-J/K-V	CGW-59033	10	\$40.76	\$34.64
Size: 8" X 1" X 1-1/4"- R/1-3 X 1/2 - 3600 RPM						
46	H	RA46-H-V	CGW-59034	10	\$47.35	\$40.25
46	J/K	RA46-J/K-V	CGW-59010	10	\$47.35	\$40.25
60	J/K	RA60-J/K-V	CGW-59011	10	\$47.35	\$40.25

Grit	Hardness	Specification	Part Number	Box Qty	Price Each	Case Qty Price EA
Size: 10" X 1" X 3"-Straight Type 01 - 2630 RPM						
46	J/K	RA46-J/K-V	CGW-59012	5	\$81.69	\$69.44
60	J/K	RA60-J/K-V	CGW-59035	5	\$81.69	\$69.43
Size: 12" X 1" X 3"-Straight Type 01 - 2190 RPM						
46	H	RA46-H-V	CGW-59013	2	\$102.28	\$86.94
46	J/K	RA46-J/K-V	CGW-59014	2	\$102.28	\$86.94
60	J/K	RA60-J/K-V	CGW-59036	2	\$102.28	\$86.94
Size: 12" X 1" X 5"-Straight Type 01 - 2190 RPM						
46	J/K	RA46-J/K-V	CGW-59038	2	\$102.28	\$86.94
46	K	RA46-K-V	CGW-59015	2	\$102.28	\$86.94
60	K	RA60-K-V	CGW-59016	2	\$102.28	\$86.94
Size: 12" X 1-1/2" X 5"- R/1-7-1/2" X 1/2" - 2190 RPM						
46	H	RA46-H8-V	CGW-59017	2	\$145.13	\$123.36
46	J/K	RA46-J/K-V	CGW-59018	2	\$145.13	\$123.36
60	J/K	RA60-J/K-V	CGW-59040	2	\$145.13	\$123.36
Size: 12" X 2" X 5"-R/2-7-1/2" X 1/2" - 2190 RPM						
46	H	RA46-H8-V	CGW-59019	1	\$140.77	\$119.65
46	J/K	RA46-J/K-V	CGW-59020	1	\$140.77	\$119.65
60	J/K	RA60-J/K-V	CGW-59041	1	\$140.77	\$119.65
Size: 14" X 1" X 5"-Straight Type 01 - 1880 RPM						
46	H	RA46-H-V	CGW-59042	2	\$156.52	\$133.04
46	I/J	RA46-I/J-V	CGW-59021	2	\$156.52	\$133.04
46	J/K	RA46-J/K-V	CGW-59043	2	\$156.52	\$133.04
Size: 14" X 1-1/2" X 5"-Straight Type 01 - 1880 RPM						
46	H	RA46-H-V	CGW-59022	2	\$209.97	\$178.47
46	J/K	RA46-J/K-V	CGW-59045	2	\$209.97	\$178.47

ADJUSTABLE DRESSER



- Dress the OD and face
- Height adjusts to 7"
- Comes complete with 0.25 carat diamond
- Additional single point dressers also available.



Shank	Part Number	Price
3/8" X 3" OAL	A-3900-0056	\$52.90

HI-LOW ADJUSTABLE DRESSER



- For use on all grinding machines
- Dress OD and face
- Adjustable to 7" height
- Includes 3/8" shank diamond dresser



Description	Part Number	Price
Hi-Low Adjustable Dresser	A-3900-0061	\$67.04

SINGLE POINT DIAMOND DRESSERS



Carat	3/8 x 3"		7/16 x 3"	
	Part Number	Part Number	Part Number	Price
1/4	A-3900-0072	A-3900-0082		\$7.76
1/3	A-3900-0073	A-3900-0083		\$11.16
1/2	A-3900-0074	A-3900-0084		\$15.18
3/4	A-3900-0075	A-3900-0085		\$21.97
1	A-3900-0079	A-3900-0090		\$57.62



Call Us Today For All Of Your Machine Tool Needs!

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

SURFACE GRINDING WHEELS

B

SURFACE GRINDING WHEELS PREMIUM BLUE ALUMINUM OXIDE

- Vitrified bonded premium blue aluminum oxide
- Excellent value in most 32A applications
- Engineered for grinding high speed steels over 55Rc and general purpose tool steels
- Exceptionally fast and cool cutting characteristics suitable for grinding heat sensitive alloy steels and mold steels
- Friable grain for cooler grinding and requires minimal dressing and holds form well



Buy In Case Quantities & Save 15%!

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
7" x 1/4" x 1-1/4"					
AZ46-I8-V32A	3760	CGW-34303	\$14.84	10	\$12.62
AZ60-K8-V32A	3760	CGW-34310	\$14.84	10	\$12.62
AZ80-J8-V32A	3760	CGW-34312	\$14.84	10	\$12.62
AZ80-K8-V32A	3760	CGW-34313	\$14.84	10	\$12.62
AZ100-K8-V32A	3760	CGW-34315	\$14.84	10	\$12.62
AZ150-K8-V32A	3760	CGW-34317	\$14.84	10	\$12.62

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
7" x 1/2" x 1-1/4"					
AZ46-H8-V32A	3760	CGW-34318	\$18.86	10	\$16.03
AZ46-I8-V32A	3760	CGW-34319	\$18.86	10	\$16.03
AZ46-J8-V32A	3760	CGW-34320	\$18.86	10	\$16.03
AZ46-K8-V32A	3760	CGW-34321	\$18.86	10	\$16.03
AZ60-H8-V32A	3760	CGW-34323	\$18.86	10	\$16.03
AZ60-I8-V32A	3760	CGW-34324	\$18.86	10	\$16.03
AZ60-J8-V32A	3760	CGW-34325	\$18.86	10	\$16.03
AZ60-K8-V32A	3760	CGW-34326	\$18.86	10	\$16.03
AZ60-L8-V32A	3760	CGW-34327	\$18.86	10	\$16.03
AZ80-H8-V32A	3760	CGW-34328	\$18.86	10	\$16.03
AZ80-K8-V32A	3760	CGW-34329	\$18.86	10	\$16.03
AZ100-K8-V32A	3760	CGW-34330	\$18.86	10	\$16.03

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
7" x 3/4" x 1-1/4"-Recessed 1 Side R/1 -3 x 1/4					
AZ46-H8-V32A	3760	CGW-34335	\$25.35	10	\$21.54
AZ46-I8-V32A	3760	CGW-34336	\$25.35	10	\$21.54
AZ46-J8-V32A	3760	CGW-34337	\$25.35	10	\$21.54
AZ46-K8-V32A	3760	CGW-34338	\$25.35	10	\$21.54
AZ60-J8-V32A	3760	CGW-34341	\$25.35	10	\$21.54

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
7" x 1" x 1-1/4"-Recessed 1 Side R/1 -3 x 1/2					
AZ46-H8-V32A	3760	CGW-34342	\$28.96	10	\$24.61
AZ46-I8-V32A	3760	CGW-34343	\$28.96	10	\$24.61
AZ46-J8-V32A	3760	CGW-34344	\$28.96	10	\$24.61
AZ46-K8-V32A	3760	CGW-34345	\$28.96	10	\$24.61
AZ60-J8-V32A	3760	CGW-34348	\$28.96	10	\$24.61
AZ60-K8-V32A	3760	CGW-34349	\$28.96	10	\$24.61

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
8" x 1/2" x 1-1/4"					
AZ46-H8-V32A	3600	CGW-34350	\$25.13	10	\$21.36
AZ46-I8-V32A	3600	CGW-34351	\$25.13	10	\$21.36
AZ46-J8-V32A	3600	CGW-34352	\$25.13	10	\$21.36
AZ46-K8-V32A	3600	CGW-34353	\$25.13	10	\$21.36
AZ60-H8-V32A	3600	CGW-34354	\$25.13	10	\$21.36
AZ60-I8-V32A	3600	CGW-34355	\$25.13	10	\$21.36
AZ60-J8-V32A	3600	CGW-34356	\$25.13	10	\$21.36
AZ60-K8-V32A	3600	CGW-34357	\$25.13	10	\$21.36
AZ80-K8-V32A	3600	CGW-34358	\$25.13	10	\$21.36

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
8" x 3/4" x 1-1/4"-Recessed 1 Side R/1 -3 x 1/4					
AZ46-H8-V32A	3600	CGW-34359	\$30.34	10	\$25.79
AZ46-J8-V32A	3600	CGW-34360	\$30.34	10	\$25.79
AZ60-J8-V32A	3600	CGW-34364	\$30.34	10	\$25.79

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
8" x 1" x 1-1/4"-Recessed 1 Side R/1 -3 x 1/2					
AZ46-H8-V32A	3600	CGW-34366	\$36.88	10	\$31.35
AZ46-J8-V32A	3600	CGW-34367	\$36.88	10	\$31.35
AZ60-J8-V32A	3600	CGW-34369	\$36.88	10	\$31.35

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
10" x 1" x 3"					
AZ46-H8-V32A	2674	CGW-34389	\$58.49	5	\$49.72
AZ46-I8-V32A	2674	CGW-34390	\$58.49	5	\$49.72
AZ46-J8-V32A	2674	CGW-34391	\$58.49	5	\$49.72
AZ46-K8-V32A	2674	CGW-34392	\$58.49	5	\$49.72
AZ60-I8-V32A	2674	CGW-34394	\$58.49	5	\$49.72
AZ60-J8-V32A	2674	CGW-34395	\$58.49	5	\$49.72
AZ60-K8-V32A	2674	CGW-34396	\$58.49	5	\$49.72

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
12" x 1" x 3"					
AZ46-H8-V32A	2228	CGW-34411	\$79.95	2	\$67.96
AZ46-I8-V32A	2228	CGW-34412	\$79.95	2	\$67.96
AZ46-J8-V32A	2228	CGW-34413	\$79.95	2	\$67.96
AZ46-K8-V32A	2228	CGW-34414	\$79.95	2	\$67.96
AZ60-I8-V32A	2228	CGW-34416	\$79.95	2	\$67.96
AZ60-K8-V32A	2228	CGW-34418	\$79.95	2	\$67.96

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
12" x 1" x 5"					
AZ46-H8-V32A	2228	CGW-34419	\$79.95	2	\$67.96
AZ46-J8-V32A	2228	CGW-34421	\$79.95	2	\$67.96
AZ46-K8-V32A	2228	CGW-34422	\$79.95	2	\$67.96
AZ60-J8-V32A	2228	CGW-34425	\$79.95	2	\$67.96

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
12" x 1-1/2" x 5"-Recessed 1 Side R/1 -7-1/2 x 1/2					
AZ46-H8-V32A	2228	CGW-34427	\$119.01	2	\$101.15
AZ46-I8-V32A	2228	CGW-34428	\$119.01	2	\$101.15
AZ46-J8-V32A	2228	CGW-34429	\$119.01	2	\$101.15
AZ46-K8-V32A	2228	CGW-34430	\$119.01	2	\$101.15

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
12" x 2" x 5"-Recessed 2 Sides R/2 -7-1/2 x 1/2					
AZ46-I8-V32A	2228	CGW-34437	\$111.82	1	

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
14" x 1" x 5"					
AZ46-I8-V32A	1910	CGW-34448	\$134.42	2	\$114.25
AZ60-I8-V32A	1910	CGW-34452	\$134.42	2	\$114.25

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
14" x 1-1/2" x 5"					
AZ46-H8-V32A	1910	CGW-34456	\$180.37	2	\$153.32
AZ46-J8-V32A	1910	CGW-34458	\$180.37	2	\$153.32

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
14" x 1-1/2" x 5"-Recessed 1 Side R/1 -8 x 1/2					
AZ46-H8-V32A	1910	CGW-34464	\$180.37	2	\$153.32
AZ60-J8-V32A	1910	CGW-34470	\$180.37	2	\$153.32

Specification Grit	Max RPM	Part Number	Price Each	Case Size	Case Qty Price EA
14" x 2" x 5"-Recessed 1 Side R/1 -8 x 1					
AZ46-H8-V32A	1910	CGW-34480	\$175.35	1	
AZ46-I8-V32A	1910	CGW-34481	\$175.35	1	
AZ60-K8-V32A	1910	CGW-34487	\$175.35	1	
AZ46-J8-V32A	1910	CGW-34489	\$175.35	1	

Buy In Case Quantities & Save 15%!

We Offer The Full Line Of CGW/Camel Abrasives! Please Call For More Information!

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

469

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

DEBURRING WHEELS

EXL DEBURRING WHEELS

Scotch-Brite™ EXL Convolute Wheels

The EXL family of wheels is designed for a broad variety of critical deburring and finishing applications. Unique resin system helps minimize smearing and allows these wheels to exhibit superior performance on stainless steel, titanium and nickel alloys.



Scotch-Brite™

- Use to clean, finish, blend, deburr or polish all types of metals, composites and glass
- Gray in color
- EXL wheels feature higher edge durability and resist smearing on stainless steel, carbon steel, titanium and high nickel alloys
- "8" density is recommended for deburring and finishing operations
- "9" density is ideal for more severe deburring applications



Dia x W x AH	Density	Mineral Type	Grade	Max. RPM	Part Number	Price Each
6" x 1/2" x 1"	8	S	Fine	6,000	3M-09548-6	\$53.58
	9	S	Fine		3M-05790-3	\$53.58
6" x 1" x 1"	8	A	Medium	6,000	3M-13617-2	\$75.01
	8	S	Fine		3M-09549-3	\$75.01
	9	S	Fine		3M-05132-1	\$75.01
8" x 1/2" x 3"	8	S	Fine	4,500	3M-14629-4	\$63.74
	9	S	Fine		3M-05791-0	\$63.74
8" x 1" x 3"	8	A	Medium	4,500	3M-13619-6	\$93.81
	8	S	Fine		3M-09551-6	\$93.81
	9	S	Fine		3M-05135-2	\$93.81

EXL-XP DEBURRING WHEELS

Scotch-Brite™



- High performance and durability
- Exceptional feel for deburring and finishing applications
- Convolutely wound on a standard core
- Fine grade silicon carbide

Dia x W x AH	Density	Grade	Part Number	Price Each
6" x 1/2" x 1"	8S	Fine	3M-60442-8	\$64.24
	10S	Fine	3M-60447-3	\$64.24
6" x 1" x 1"	9S	Fine	3M-60306-3	\$89.94
	10S	Fine	3M-60310-0	\$89.94
8" X 1/2" X 3"	9S	Fine	3M-60443-5	\$76.43
8" x 1" x 3"	9S	Fine	3M-60307-0	\$112.48
	10S	Fine	3M-60311-7	\$112.48

XE DEBURRING WHEELS



- Ideal for heavy deburring applications
- Holds shape longer
- Improves cut rate
- Equivalent to EX-2, EX-3 and series 4000 industry standard deburring wheels

For Heavy Deburring Applications!

Size	Grade	Part Number	Price Each
6" x 1/2" x 1"	10 S Fine	SUP-54681	\$48.95
	9 A Fine	SUP-55343	\$48.95
6" x 1" x 1"	10 S Fine	SUP-54687	\$64.04
	9 A Medium	SUP-54685	\$64.04
8" x 1/2" x 3"	10 S Fine	SUP-40771	\$58.23
	9 A Medium	SUP-40770	\$58.23
8" x 1" x 3"	10 S Fine	SUP-40773	\$81.80
	9 A Medium	SUP-40772	\$81.80

GP/LDW CONVOLUTE WHEELS

These Convolute Wheels ensure competitive performance in the most demanding deburring, blending and finishing applications. For blending machine and belt marks and polishing and applying final finishes.



GP (General Purpose) PLUS FEATURES:

- Provides a consistent cut rate without the sudden and dramatic wheel degradation associated with other wheels
- The cut rate on small parts is fast, reducing dwell time
- Lower attrition rates under normal and heavy loads
- The reduction in heat contributes to a perfect surface finish

LDW (Light Deburring Wheel) FEATURES:

- For light deburring, blending and finishing of small parts
- Finishing rate is fast, leaving a bright, smear-free finish
- Provides the operator with greater flexibility, faster finishing rate and more consistent finish.

GP Plus-Silicone Carbide-Fine Grade

Size	Spec.	Max RPM	Part Number	Price Each
6" x 1/2" x 1"	8SF	6000	SA-853053	\$52.74
	9SF	6000	SA-854053	\$52.74
6" x 1" x 1"	8SF	6000	SA-853153	\$73.83
	9SF	6000	SA-854153	\$73.83
6" x 2" x 1"	9SF	6000	SA-854253	\$131.49
8" x 1/2" x 3"	8SF	4500	SA-853753	\$62.74
	9SF	4500	SA-854753	\$62.74
8" x 1" x 3"	8SF	4500	SA-853353	\$92.34
	9SF	4500	SA-854353	\$92.34
	8SF	4500	SA-853453	\$161.01

LDW-Silicone Carbide-Fine Grade

Size	Spec.	Max RPM	Part Number	Price Each
6" x 1/2" x 1"	6SF	6000	SA-851033	\$53.49
	7SF	6000	SA-852033	\$57.05
6" x 1" x 1"	8SF	6000	SA-853033	\$57.05
	6SF	6000	SA-851133	\$74.87
6" x 1" x 1"	7SF	6000	SA-852133	\$79.86
	8SF	6000	SA-853133	\$79.86
8" x 1/2" x 3"	7SF	4500	SA-852733	\$67.88
	8SF	4500	SA-853733	\$67.88
8" x 1" x 3"	7SF	4500	SA-852333	\$99.91
	8SF	4500	SA-853333	\$99.91

Call Us Today For All Of Your Machine Tool Needs!

ABRASIVE SHEETS/SHOP ROLLS

B

CLOTH SHEETS



Grit	Part Number	Pkg Price
40	SUP-12145	\$82.80
50	SUP-12146	\$71.55
60	SUP-12147	\$67.50
80	SUP-12148	\$59.85
100	SUP-12149	\$54.00
120	SUP-12150	\$54.00
150	SUP-12151	\$54.00
180	SUP-12152	\$54.00
220	SUP-12153	\$54.00
240	SUP-12154	\$54.00
320	SUP-12155	\$54.00
400	SUP-12156	\$54.00
500	SUP-12157	\$54.00

FEATURES:

- Aluminum oxide abrasive
- Resin cloth backing
- Tough and durable
- Ideal for hand sanding, deburring, polishing and removing cutting tool marks on all metal parts
- Package size is 50 sheets

PAPER SHEETS



FEATURES:

- 9" x 11" waterproof sheets
- Silicone carbide abrasive
- 50 sheets per package
- Garnet and aluminum oxide paper sheets also available

Grit	Weight	Pkg Qty	Part Number	Pkg Price
80	C	50	SUP-12158	\$42.30
120	C	50	SUP-12159	\$32.40
180	C	50	SUP-12160	\$30.15
220	A	50	SUP-12161	\$29.25
240	A	50	SUP-12162	\$29.25
320	A	50	SUP-12163	\$29.25
400	A	50	SUP-12164	\$29.25
600	A	50	SUP-12166	\$29.25

ECONOMY SHOP ROLLS

Aluminum Oxide-50 Yards



- Aluminum oxide abrasive
- Clean-cutting economy shop roll for metal finishing
- Ideal for light deburring, blending machine tool marks, removing rust and fine sanding and polishing

Grit	1" x 50 Yards		1-1/2" x 50 Yards		2" x 50 Yards	
	Part Number	Price Each	Part Number	Price Each	Part Number	Price Each
60	CGW-63002	\$13.49	CGW-63022	\$17.49	CGW-63042	\$23.99
80	CGW-63003	\$13.49	CGW-63023	\$17.49	CGW-63043	\$23.99
100	CGW-63004	\$13.49	CGW-63024	\$17.49	CGW-63044	\$23.99
120	CGW-63005	\$13.49	CGW-63025	\$17.49	CGW-63045	\$23.99
150	CGW-63006	\$13.49	CGW-63026	\$17.49	CGW-63046	\$23.99
180	CGW-63007	\$13.49	CGW-63027	\$17.49	CGW-63047	\$23.99
220	CGW-63008	\$13.49	CGW-63028	\$17.49	CGW-63048	\$23.99
240	CGW-63009	\$13.49	CGW-63029	\$17.49	CGW-63049	\$23.99
320	CGW-63011	\$13.49	CGW-63031	\$17.49	CGW-63051	\$23.99
400	CGW-63012	\$13.49	CGW-63032	\$17.49	CGW-63052	\$23.99

SHOP ROLLS



FEATURES:

- Aluminum oxide X and J weight cloth
- Durable cloth backing
- Ideal for all utility jobs-blending, finishing and cleaning
- Can be torn into strips and rolled without shelling

Grit	1" x 50 Yards		2" x 50 Yards	
	Part Number	Price Each	Part Number	Price Each
P60	3M-19793-2	\$33.29	3M-19824-3	\$60.46
P80	3M-19792-5	\$28.12	3M-19823-6	\$50.62
P100	3M-19791-8	\$28.12	3M-19822-9	\$48.28
P120	3M-19790-1	\$28.12	3M-19821-2	\$48.28
P150	3M-19789-5	\$28.12	3M-19820-5	\$48.28
P180	3M-19788-8	\$28.12	3M-19819-9	\$48.28
P220	3M-19787-1	\$28.12	3M-19818-2	\$48.28
P240	3M-19786-4	\$28.12	3M-19817-5	\$48.28
P320	3M-19784-0	\$28.12	3M-19815-1	\$48.28
P400	3M-19783-3	\$28.12	3M-19814-4	\$48.28

SHOP ROLLS



Our flexible shop rolls and sheets have fast cutting aluminum oxide grain that is resin bonded to a "J" weight cloth backing. Designed for easy workability and long life in all maintenance, machine shop or production applications. Shop Rolls are suitable for all ferrous and non-ferrous metals, also works great on wood and fiberglass.

Grit	1" x 50 Yards		1-1/2" x 50 Yards		2" x 50 Yards	
	Part Number	Price Each	Part Number	Price Each	Part Number	Price Each
50J	SUP-12106	\$30.04	SUP-12118	\$43.15	SUP-12130	\$53.90
60J	SUP-12107	\$26.98	SUP-12119	\$38.38	SUP-12131	\$50.95
80J	SUP-12108	\$24.05	SUP-12120	\$35.19	SUP-12132	\$45.61
100J	SUP-12109	\$23.19	SUP-12121	\$33.32	SUP-12133	\$43.17
120J	SUP-12110	\$23.19	SUP-12122	\$33.32	SUP-12134	\$43.17
150J	SUP-12111	\$23.19	SUP-12123	\$33.32	SUP-12135	\$43.17
180J	SUP-12112	\$23.19	SUP-12124	\$33.32	SUP-12136	\$43.17
240J	SUP-12114	\$23.19	SUP-12126	\$33.32	SUP-12138	\$43.17
320J	SUP-12115	\$23.19	SUP-12127	\$33.32	SUP-12139	\$43.17

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

471

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

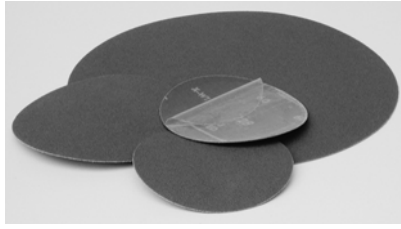
PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

SANDING DISCS

PSA DISCS

Made from aluminum oxide, PSA discs are for lighter duty blending, finishing and polishing on contour surfaces of ferrous and non-ferrous materials.



Full Line Available!
Please call for more information.

Size	Grit	Part Number	Pkg Price
1/2"	60	SA-700548	\$9.41
	80	SA-701868	\$9.41
	100	SA-708331	\$9.41
	120	SA-709607	\$9.41
3/4"	40	SA-712410	\$11.45
	50	SA-706503	\$11.45
	60	SA-700627	\$11.45
	80	SA-701935	\$11.45
	100	SA-709023	\$11.45
	120	SA-710322	\$11.45
1"	40	SA-711580	\$17.83
	50	SA-705718	\$17.83
	60	SA-712909	\$17.83
	80	SA-701122	\$17.83
	100	SA-705215	\$17.83
	120	SA-706487	\$17.83

Size	Grit	Part Number	Pkg Price
1-1/2"	40	SA-712376	\$24.27
	50	SA-706475	\$23.11
	60	SA-700595	\$22.66
	80	SA-701909	\$22.66
	100	SA-705286	\$22.66
	120	SA-706538	\$22.66
2"	40	SA-710598	\$44.77
	50	SA-704748	\$42.51
	60	SA-711880	\$39.56
	80	SA-700153	\$37.58
	100	SA-700209	\$36.80
	120	SA-701476	\$36.08
3"	36	SA-711954	\$52.10
	40	SA-709583	\$50.88
	50	SA-703717	\$48.27
	60	SA-710857	\$45.61

Size	Grit	Part Number	Pkg Price
3"	80	SA-712192	\$47.70
	100	SA-712776	\$45.90
	120	SA-700980	\$45.90
4"	36	SA-702484	\$37.35
	60	SA-701351	\$30.60
	80	SA-702701	\$29.25
	100	SA-712248	\$28.35
	120	SA-700472	\$28.35
5"	36	SA-701412	\$27.68
	40	SA-712123	\$52.65
	50	SA-706242	\$48.60
	80	SA-701657	\$44.10
	100	SA-707246	\$42.30
120	SA-708503	\$42.30	

Size	Grit	Part Number	Pkg Price
6"	60	SA-703857	\$66.60
	80	SA-705169	\$63.90
	100	SA-706739	\$61.65
8"	80	SA-713062	\$23.94
	100	SA-713511	\$22.86
	120	SA-713063	\$22.86
9"	80	SA-713059	\$32.85
	100	SA-713152	\$30.96
	120	SA-714855	\$30.96
12"	40	SA-707505	\$67.50
	60	SA-708751	\$58.95
	80	SA-710056	\$55.62
100	SA-712597	\$53.64	

STICK-ON DISCS

Heavy duty "X" weight resin bond cloth combined with our "state of the art" hot melt P.S.A. coating system produces a stick-on disc that delivers maximum performance for today's high temperature grinding applications. Discs will not slip or fly off and are easily removed without leaving residue on the holders or backing plates.



Size	Grit	Part Number	Price Per Box
1/2"	60	SUP-11376	\$19.80
	80	SUP-11384	\$19.80
	100	SUP-11385	\$19.80
	120	SUP-11386	\$19.80
	180	SUP-11387	\$19.80
1"	60	SUP-11390	\$21.60
	80	SUP-11391	\$21.60
	100	SUP-11392	\$21.60
	120	SUP-11393	\$21.60
	240	SUP-18004	\$21.60
	320	SUP-18508	\$21.60
1-1/2"	60	SUP-11399	\$22.50
	80	SUP-11400	\$22.50
	120	SUP-11402	\$22.50
180	SUP-11404	\$22.50	

Size	Grit	Part Number	Price Per Box
2"	36	SUP-11408	\$37.80
	40	SUP-11409	\$36.00
	50	SUP-11410	\$34.20
	60	SUP-11411	\$34.20
	80	SUP-11412	\$32.40
	100	SUP-11413	\$32.40
	120	SUP-11414	\$32.40
	150	SUP-11415	\$32.40
	180	SUP-11416	\$32.40
	240	SUP-11417	\$32.40
3"	36	SUP-11420	\$22.95
	40	SUP-11421	\$22.50
	50	SUP-11422	\$21.60
	60	SUP-11423	\$20.70

Size	Grit	Part Number	Price Per Box
3"	80	SUP-11424	\$19.35
	100	SUP-11425	\$18.90
	120	SUP-11426	\$18.90
	150	SUP-11427	\$18.90
	180	SUP-11428	\$18.90
	240	SUP-11429	\$18.90
	320	SUP-11430	\$18.90
4"	60	SUP-11435	\$25.65
	80	SUP-11436	\$24.30
	100	SUP-11437	\$23.85
	120	SUP-11438	\$23.85
5"	180	SUP-11440	\$23.85
	36	SUP-11444	\$41.85
	40	SUP-11445	\$40.50
50	SUP-11446	\$37.80	

Size	Grit	Part Number	Price Per Box
5"	60	SUP-11447	\$36.45
	80	SUP-11448	\$34.65
	100	SUP-11449	\$32.85
	120	SUP-11450	\$32.85
	150	SUP-11451	\$32.85
	180	SUP-11452	\$32.85
	240	SUP-11453	\$32.85
6"	320	SUP-11454	\$32.85
	36	SUP-11456	\$63.00
	40	SUP-11457	\$60.75
	50	SUP-11458	\$55.80
	60	SUP-11459	\$52.65
	100	SUP-11460	\$49.95
120	SUP-11461	\$47.70	
180	SUP-11462	\$47.70	

DISC HOLDERS



Dia	Shank	Part Number	Price Each
1/2"	1/8"	SUP-11701	\$3.25
1/2"	1/4"	SUP-11702	\$3.78
3/4"	1/8"	SUP-11703	\$3.63
3/4"	1/4"	SUP-11704	\$3.63
1"	1/8"	SUP-11705	\$3.77
1"	1/4"	SUP-11706	\$3.77
1-1/2"	1/4"	SUP-11707	\$5.67
2"	1/4"	SUP-11708	\$5.98
3"	1/4"	SUP-11709	\$6.81
4"	1/4"	SUP-11710	\$10.99
5"	1/4"	SUP-11711	\$14.45

ABRASIVE DISC KITS

Type "S" and "R"



Kit Contains:
-5 Discs each in A/O 36, 60, 80 and 120 grit.
-1 medium density holder w/ 1/4" shank

Each kit contains 20 of the most popular "Shur-Kut" quick change discs. Used for general purpose grinding, deburring and blending on most all metal applications.

Description	Part Number	Price Each
2" Type "S" Kit	SUP-34309	\$20.66
2" Type "R" Kit	SUP-37500	\$19.67

Call Us Today For All Of Your Machine Tool Needs!

QUICK-CHANGE DISCS

B

STIK-ON GOLD DISCS

A heavy duty P.S.A. paper disc with anti-load stearate coating that is resin bonded for fast cutting and long life. Designed for industrial and automotive use, ideal for metal, wood, paint and fiberglass.

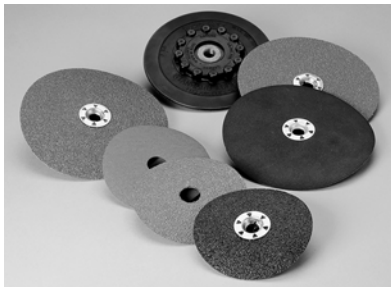


Grit	5" Discs		6" Discs	
	Part Number	Price Each	Part Number	Price Each
80	SUP-25078	\$33.57	SUP-25086	\$45.42
100	SUP-25079	\$31.46	SUP-25087	\$42.81
120	SUP-25080	\$31.46	SUP-25088	\$42.81
150	SUP-25081	\$31.46	SUP-25089	\$42.81
180	SUP-25082	\$31.46	SUP-25090	\$42.81
220	SUP-25083	\$31.46	SUP-25091	\$42.81
240	SUP-25084	\$31.46	SUP-25092	\$42.81
320	SUP-25085	\$31.46	SUP-25093	\$42.81

RESIN FIBER DISCS

Used in removing imperfections along with blending and finishing on larger surface areas on ferrous metals. Closed-coat aluminum oxide resin bond. 7/8" center hole.

Full Line Available!
Please call for more information.

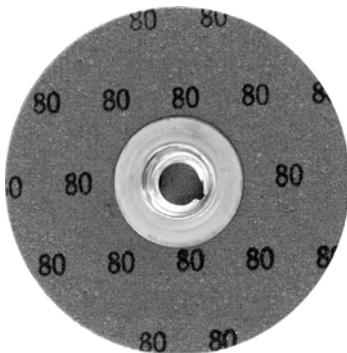


Size	Grit	Pack Size	Part Number	Pkg Price
4 1/2" x 7/8"	16	25	SA-530001	\$42.75
	24	25	SA-530002	\$33.30
	36	25	SA-530003	\$32.18
	50	25	SA-530004	\$30.83
	60	25	SA-530005	\$28.58
	80	25	SA-530006	\$27.23
	100	25	SA-530007	\$27.23
	120	25	SA-530008	\$27.23
5" x 7/8"	16	25	SA-530101	\$44.78
	24	25	SA-530102	\$35.10
	36	25	SA-530103	\$33.53
	50	25	SA-530104	\$32.18

Size	Grit	Pack Size	Part Number	Pkg Price
5" x 7/8"	60	25	SA-530105	\$30.38
	80	25	SA-530106	\$28.35
	100	25	SA-530107	\$28.80
	120	25	SA-530108	\$28.80
7" x 7/8"	16	25	SA-530201	\$71.55
	24	25	SA-530202	\$54.00
	36	25	SA-530203	\$52.43
	50	25	SA-530204	\$50.85
	60	25	SA-530205	\$46.80
	80	25	SA-530206	\$44.10
	100	25	SA-530207	\$45.45
	120	25	SA-530208	\$45.45

QUICK CHANGE SocAtt DISCS

Features an all-metal attachment on the holder pad and disc to ensure a safe, secure, durable fit. Change discs by simply twisting to unlock the disc from the holder pad. The Soc Att style is the most popular attachment system in the world. Aluminum Oxide, 2-ply quick change disc, comparable to 3M Roloc® TS & TSM and Power-Lock Type II from Merit Abrasives.



Size	Grit	Pack Size	Part Number	Pkg Price
1"	24	100	SA-522201	\$45.00
	36	100	SA-522202	\$46.70
	40	100	SA-522203	\$42.30
	50	100	SA-522204	\$40.50
	60	100	SA-522205	\$37.80
	80	100	SA-522206	\$36.00
	100	100	SA-522207	\$36.00
	120	100	SA-522208	\$36.00
	150	100	SA-522209	\$36.00
	180	100	SA-522210	\$36.00
	240	100	SA-522211	\$36.00
	320	100	SA-522212	\$36.00
1 1/2"	24	100	SA-522301	\$52.20
	36	100	SA-522302	\$49.50
	40	100	SA-522303	\$48.60
	50	100	SA-522304	\$48.60
	60	100	SA-522305	\$47.70
	80	100	SA-522306	\$46.80
	100	100	SA-522307	\$46.80
	120	100	SA-522308	\$46.80
	150	100	SA-522309	\$46.80
	180	100	SA-522310	\$46.80
	240	100	SA-522311	\$46.80
	320	100	SA-522312	\$46.80

Size	Grit	Pack Size	Part Number	Pkg Price
2"	24	100	SA-522401	\$81.90
	36	100	SA-522402	\$77.40
	40	100	SA-522403	\$73.80
	50	100	SA-522404	\$72.00
	60	100	SA-522405	\$69.30
	80	100	SA-522406	\$68.40
	100	100	SA-522407	\$67.50
	120	100	SA-522408	\$67.50
	150	100	SA-522409	\$67.50
	180	100	SA-522410	\$67.50
	240	100	SA-522411	\$67.50
	320	100	SA-522412	\$67.50
3"	24	50	SA-522501	\$51.75
	36	50	SA-522502	\$48.60
	40	50	SA-522503	\$47.25
	50	50	SA-522504	\$45.45
	60	50	SA-522505	\$44.10
	80	50	SA-522506	\$42.75
	100	50	SA-522507	\$41.85
	120	50	SA-522508	\$41.85
	150	50	SA-522509	\$41.85
	180	50	SA-522510	\$47.25
	240	50	SA-522511	\$41.85
	320	50	SA-522512	\$47.25

PRECISION TOOLROOM CUT-OFF WHEELS NON-REINFORCED & REINFORCED

- **Non-Reinforced Cut-Off Wheels** for use on stationary grinders (bench or surface) and must only be used where the work is held tightly and the wheel operates on a controlled cutting surface with no movement. Applications that require twisting or lateral stresses must use a reinforced wheel.
- **Reinforced Cut-Off Wheels**, also used on stationary grinders, are designed and manufactured to tight tolerances, with a fiberglass reinforcement for added strength. Reinforced wheels should not be used unless the workpiece is fixed or rotates into the wheel.



ALSO AVAILABLE!
Please Call For More Information

LATHE CHUCKS
LIVE CENTERS
VISE JAWS
VISE ACCESSORIES
STRAIGHT SHANK
COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

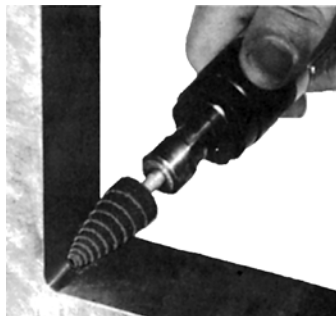
473

TAPERED ROLLS/FLAP WHEELS

FULL TAPERED ROLLS

Our tapered rolls, fabricated from A/O resin bond cloth, offer the same fast cutting quality as our cartridge rolls. They are designed for use in angles and corners, and especially useful on jobs with sharp edges, channels, fillets, and irregular or concave surfaces. A large selection of grits and sizes are available.

Full Line Available!
Please call for more information.



Size	Grit	Part Number	Price Per Box
3/8" x 1" x 1/8" 100/Box	60	SUP-11904	\$48.60
	80	SUP-11905	\$48.60
	120	SUP-11906	\$48.60
	180	SUP-11907	\$48.60
3/8" x 1-1/2" x 1/8" 100/Box	60	SUP-11908	\$51.30
	80	SUP-11909	\$51.30
	120	SUP-11910	\$51.30
1/2" x 1" x 1/8" 100/Box	60	SUP-11912	\$53.10
	80	SUP-11913	\$53.10
	120	SUP-11914	\$53.10

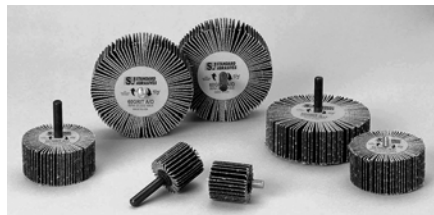
Size	Grit	Part Number	Price Per Box
1/2" x 1-1/2" x 1/8" 100/Box	60	SUP-11916	\$59.40
	80	SUP-11917	\$59.40
1/2" x 1-1/2" x 1/8" 100/Box	120	SUP-11918	\$59.40
	180	SUP-11919	\$59.40
	240	SUP-16987	\$59.40
	320	SUP-16988	\$59.40
1/2" x 2" x 1/8" 100/Box	60	SUP-16751	\$65.70
	80	SUP-20099	\$65.70
	120	SUP-30091	\$65.70
3/4" x 1-1/2" x 3/16"	80	SUP-16652	\$87.30

FLAP WHEELS-SMALL

1" Through 3" Diameters

These aluminum oxide resin bond flap wheels are ideal for applications requiring high stock removal. Provides maximum stability and smaller contact areas on work surface. High initial cut rate. Perfect for blending, finishing and cleaning on inside and outside diameters of ferrous and non-ferrous materials, as well as deburring edges and removing flash and parting lines.

1/4" Steel Shank- Package size: 10



Size	Grit	Max RPM	Part Number	Price Per 10 Pack
1" x 1/2"	60	30000	SA-611105	\$56.07
	80	30000	SA-611106	\$56.07
	120	30000	SA-611108	\$56.07
1" x 1"	60	30000	SA-611405	\$54.36
	80	30000	SA-611406	\$54.36
	120	30000	SA-611408	\$54.36
1-1/2" x 1/2"	60	30000	SA-612105	\$61.38
	80	30000	SA-612106	\$61.38
	120	30000	SA-612108	\$61.38
1-1/2" x 1"	60	30000	SA-612405	\$64.35
	80	30000	SA-612406	\$64.35
	120	30000	SA-612408	\$64.35
2" x 1/2"	60	23000	SA-613105	\$70.02
	80	23000	SA-613106	\$70.02
	120	23000	SA-613108	\$70.02



FLAP WHEELS-LARGE

3-1/2" Through 8" Diameters

These aluminum oxide resin bond flap wheels are ideal for applications requiring high stock removal. Provides maximum stability and smaller contact areas on work surface. High initial cut rate. Ideal for blending, finishing and cleaning on inside and outside diameters of ferrous and non-ferrous materials, as well as deburring edges and removing flash and parting lines.

1/4" Steel Shank- Package size: 10



Full Line Available!
Please call for more information.

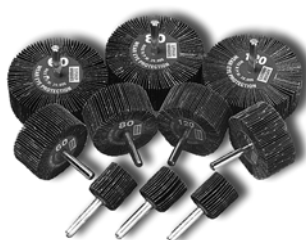
Size	Grit	Max RPM	Part Number	Price Each
3 1/2"x 1"x 5/8"	60	12000	SA-635405	\$12.04
	80	12000	SA-635406	\$12.74
	120	12000	SA-635408	\$13.46
3 1/2"x 1 1/2"x 5/8"	60	12000	SA-635505	\$15.06
	80	12000	SA-635506	\$15.93
	120	12000	SA-635508	\$16.82
	60	12000	SA-640405	\$15.55
4"x 1"x 5/8"	80	12000	SA-640406	\$16.48
	120	12000	SA-640408	\$17.59
	60	12000	SA-640605	\$22.57
4"x 2"x 5/8"	80	12000	SA-640606	\$23.41
	60	6200	SA-661405	\$26.79
6"x 1"x 1"	80	6200	SA-661406	\$28.20
	100	6200	SA-661407	\$32.66
	120	6200	SA-661408	\$30.54

Size	Grit	Max RPM	Part Number	Price Each
6"x 1 1/2"x 1"	40	6200	SA-661503	\$27.71
	50	6200	SA-661504	\$27.71
	60	6200	SA-661505	\$28.23
	80	6200	SA-661506	\$29.42
6"x 2"x 1"	120	6200	SA-661508	\$32.13
	60	6200	SA-661605	\$37.89
	80	6200	SA-661606	\$40.28
6"x 2"x 1"	100	6200	SA-661607	\$47.49
	120	6200	SA-661608	\$48.91
	8"x 1"x 1"	60	4700	SA-681405
80		4700	SA-681406	\$38.43
120		4700	SA-681408	\$42.09
8"x 2"x 1"	60	4700	SA-681605	\$64.04
	80	4700	SA-681606	\$68.92
	120	4700	SA-681608	\$76.10



FLAP WHEEL TEST KIT

Aluminum oxide "X" weight resin bond
Each kit contains the 10 most popular
Shur-Kut® flap wheels in 3", 2" and 1"
diameters. All are mounted on a
1/4" steel shank.



Description	Part Number	Price Each
Flap Wheel Kit	SUP-28799	\$45.00

Call Us Today For All Of Your Machine Tool Needs!

DUPLEX FLAP WHEELS

Extra smooth finishing! Our Duplex Wheels one to one interleaf design cushions the abrasive flaps allowing for an extra-smooth operation. They produce a finer finish than regular flap wheels, yet are more aggressive than other brands. They are excellent for metal finishing where uniform scratch patterns or satin and decorative finishes are required and also for light deburring and removal of parting lines.

Full Line Available!
Please call for more information.



Size	Grit	Part Number	Price Each
6" x 1" x 1"	A/O 80	SUP-10426	\$33.74
	A/O 120	SUP-10427	\$34.91
	A/O 180	SUP-10428	\$39.47
6" x 2" x 1"	A/O 80	SUP-10429	\$43.07
	A/O 120	SUP-10430	\$43.15
	A/O 180	SUP-10431	\$46.82

FLAP BRUSHES

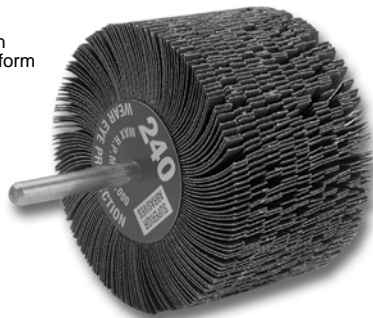
High Density Flap Brushes are flexible and will conform to irregular surfaces. They have extensive applications on contour, convex and flat surfaces. They are excellent for fine uniform finishes on: aluminum, brass, stainless steel, satin finishing on soft metals, removal of fine burrs on threaded metal and applying fine finishes on aluminum extrusions.



Size	A/O Medium Part Number	A/O Fine Part Number	Price Each
6" x 1" x 2	SUP-28854	SUP-28855	\$44.54
6" x 2" x 2	SUP-28857	SUP-28858	\$67.75
8" x 1" x 3	SUP-28863	SUP-28864	\$53.59
8" x 2" x 3	SUP-28866	SUP-28867	\$93.57
12" x 2" x 5	SUP-32058	SUP-32059	\$125.28

FLAP MOPS

Our flexible Flap Mops are manufactured with Premium Aluminum Oxide "J" wt. resin bond cloth for maximum flexibility. These flap mops will conform to difficult contours when finishing, polishing and deburring irregular surfaces.



Dia x Face Width	Grit	Part Number	Price Each	
2" x 1"	120	SUP-28967	\$9.09	
	180	SUP-28968	\$9.09	
	1/4" Shank	240	SUP-28969	\$9.09
		320	SUP-28970	\$9.09
2 1/2" x 1 1/2"	120	SUP-28971	\$13.12	
	180	SUP-28973	\$13.12	
	1/4" Shank	240	SUP-28974	\$13.12
		320	SUP-28953	\$13.12
3" x 2"	120	SUP-28954	\$18.45	
	180	SUP-28955	\$18.45	
	1/4" Shank	240	SUP-28145	\$18.45
		320	SUP-28956	\$18.45

SURFACE CONDITIONING DISC KIT

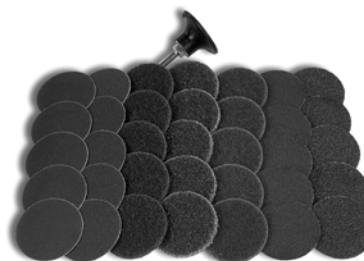
Each kit contains 15 of the most popular Shur-Brite® surface conditioning discs. Designed for rust and oxidation removal, blending machine tool marks, and other surface imperfections.



Description	Part Number	Price Each
2" Type "S" Kit	SUP-34311	\$23.36
2" Type "R" Kit	SUP-37501	\$22.99

COMBO DISC KIT

Our combo disc kit is a combination of the abrasive disc kit and the surface conditioning disc kit. This combo kit is available in both 2" and 3" diameter and can be supplied in either Type "S" or Type "R" fastening system.



Type "S"

Size	Part Number	Price Each
2"	SUP-28313	\$31.99
3"	SUP-28801	\$45.00

Type "R"

Size	Part Number	Price Each
2"	SUP-32056	\$31.99
3"	SUP-32057	\$45.00

INTRUDER™ SAFETY GLASSES



- Economical, lightweight glasses offer superior protection
- Superior comfort and fit
- Scratch resistant lenses
- Meets ANSI Z87.1-2003 standards



Lens Color	Temple Color	Part Number	Price Each
Clear	Clear	PYR-S4110S	\$1.62
Gray	Gray	PYR-S4120S	\$1.69

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS
VISE ACCESSORIES
VISE JAWS
STRAIGHT SHANK COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

NON-WOVEN PADS & ROLLS

SCOTCH-BRITE™ NONWOVEN HAND PADS- 6" x 9"



Most universally used in a variety of applications and the best choice for cleaning and finishing surfaces by hand. Outperforms steel wool and other nonwoven hand pads. Excellent starting point to clean, finish, grain, de-nib and defuzz. **Scotch-Brite™** material can be used with water or solvents and will never rust. May be used by hand, with a hand pad block, or on an in-line sander. Delivers longer life, higher cut and better finish.



Best Value!

Buy In Bulk Packs & Save!

Mfg Ref.	Description	Color	Pkg Qty	Part Number	Price
7447	General Purpose Hand Pad	Maroon	20	3M-04029-5	\$26.76
7447B	General Purpose Hand Pad (Bulk)	Maroon	60	3M-04229-9	\$73.18
6444	Extra Duty Hand Pad	Brown	20	3M-16553-0	\$31.43
6448	Light Duty Hand Pad	Dark Gray	20	3M-16555-4	\$28.55
7440	Heavy Duty Hand Pad	Tan	10	3M-04050-9	\$36.02
7440B	Heavy Duty Hand Pad (Bulk)	Tan	40	3M-18451-7	\$130.94
7445	Light Duty Cleansing Pad	White	20	3M-16976-7	\$27.44
7446	Blending Hand Pad	Gray	40	3M-04051-6	\$97.00
7448	Ultra Fine Hand Pad	Light Gray	20	3M-04028-8	\$26.76
7448B	Ultra Fine Hand Pad (Bulk)	Light Gray	60	3M-14049-0	\$73.05

HAND PADS-6" x 9"

Superior Abrasives' hand pads are cut from industrial quality non-woven nylon, impregnated throughout with abrasive grain and bonded with heavy duty resins. Their open structure prevents loading and can be used wet or dry. Designed for general cleanup, light deburring, blending and satin finishing on all types of ferrous and non-ferrous metals.



Full Line Available!
Please call for more information.



Description	Grain	Color	Pkg Qty	Part Number	Pkg Price
General Purpose	A/O	Maroon	60	SUP-10473	\$56.70
Heavy Duty	A/O	Tan	60	SUP-10474	\$133.92
Ultra Fine	S/C	Gray	60	SUP-10475	\$61.02
Industrial Scouring	A/O	Green	60	SUP-10476	\$54.00
Stainless Steel	S/C	Black	60	SUP-40754	\$127.44
Cleaning/Non Abrasive		White	60	SUP-34961	\$57.78
Pad Holder	3-3/8" x 5-3/4"		1	SUP-43934	\$14.72

HAND PADS

Hand pads are used for deburring, polishing, cleaning and finishing for hand applications on metals or composite or plastic surfaces.

FEATURES:

- Pre-cut 6" x 9" size
- Flexible and Washable
- Various grades, economical size
- Conforms to work piece- will not alter shape of piece
- Reusable; rust proof
- Replaces steel wool, files, scrapers, wire brushes and sandpaper sheets



Full Line Available!
Please call for more information.



Description	Grain	Color	Pkg Qty	Part Number	Pkg Price
General Purpose	A/O	Maroon	20	SA-827505-20	\$25.00
Heavy Duty	A/O	Tan	10	SA-827510-10	\$35.00
Ultra Fine	S/C	Gray	20	SA-827500	\$59.57
Industrial	A/O	Green	60	SA-827520	\$61.82
Pad Holder	3-3/8" x 5-3/4"		1	SA-827000	\$19.54

BUFF & BLEND ROLLS

Buff & Blend Rolls are used with vibratory orbital and straight-line sanders to produce matte and satin finishes. Rolls can also be cut to size and used by hand or to finish a part turning on a lathe or spindle. Ideal for deburring, cleaning, blending and finishing. Constructed of non-woven fiber with abrasive grain, these rolls are waterproof and may be used with lubricants.

FEATURES:

- **GP**-Flexible and conformable. Provides high rate of cut while producing consistent finishes
- **HP**- Durable and aggressive. Recommended starting point for deburring applications
- **High Strength**- Very conformable and durable. Best suited for light deburring and finishing applications



Size	Grade	Grain	Color	Part Number	Pkg Price
HIGH STRENGTH					
4" x 30'	Medium	A/O	Blue	SA-830270	\$148.70
6" x 30'				SA-830271	\$217.24
4" x 30'	Very Fine	A/O	Maroon	SA-830170	\$80.46
6" x 30'				SA-830171	\$116.00
GP					
4" x 30'	Very Fine	A/O	Maroon	SA-830020	\$59.64
6" x 30'				SA-830021	\$77.55
4" x 30'	Fine	A/O	Maroon	SA-830015	\$64.38
6" x 30'				SA-830016	\$92.86
4" x 30'	Medium	A/O	Maroon	SA-830010	\$86.15
6" x 30'				SA-830011	\$124.25
4" x 30'	Very Fine	S/C	Gray	SA-830025	\$53.76
6" x 30'				SA-830026	\$77.42

Call Us Today For All Of Your Machine Tool Needs!

FINISHING ROLLS



- For hand cleaning and polishing
- Ideal for blending of light tool marks, removing burrs and mold and die cleaning and final finishing on aerospace parts
- For ferrous, non-ferrous, stainless, plastics, composites and wood material

Grit	4" x 30"		6" x 30"	
	Part Number	Price Each	Part Number	Price Each
A/O - Medium	SUP-30537	\$63.09	SUP-30541	\$91.61
A/O - Fine	SUP-30538	\$49.31	SUP-30542	\$71.27
A/O - Very Fine	SUP-30539	\$42.45	SUP-30543	\$61.33
S/C - Ultra Fine	SUP-30540	\$44.21	SUP-30544	\$93.41

ABRASIVE WOOL



FEATURES:

- Non-rusting-can be used wet or dry
- Clean and finish anywhere you can reach
- Easy on your hands
- Ideal for metal, wood and other materials
- 1 gallon box

Size	Grade	Color	Finish	Part Number	Price Each
1 gallon box	Coarse	Red	2-3	SUP-39975	\$19.99
	Medium	Maroon	1-00	SUP-39976	\$19.99
	Fine	Gray	000-0000	SUP-39977	\$19.99

BUFF & BLEND DISCS

Flexible and conformable for removing surface contaminants from aluminum, stainless steel, brass and bronze. Blends tool marks on aluminum and prepares surfaces for painting.



FEATURES:

- **GP-Flexible and conformable.** Provides high rate of cut while producing consistent finishes
- **HP- Durable and aggressive.** Recommended starting point for deburring applications
- **High Strength-** Very conformable and durable. Best suited for light deburring and finishing applications

Size	Grade	Color	Part Number	Price Per Pack
------	-------	-------	-------------	----------------

GP-FLEXIBLE & CONFORMABLE-Pkg of 10

6" x 1/2"	Medium	Maroon	SA-840710	\$40.10
	Fine		SA-840709	\$26.00
	Very Fine		SA-840708	\$21.50
8" x 1/2"	Medium	Maroon	SA-840910	\$62.90
	Fine		SA-840909	\$40.40
	Very Fine		SA-840908	\$34.00

HP-DURABLE & AGGRESSIVE-Pkg of 10

6" x 1/2"	Very Fine	Red	SA-850708	\$32.60
8" x 1/2"			SA-850908	\$50.40

HIGH STRENGTH-LIGHT DEBURRING & FINISHING-Pkg of 10

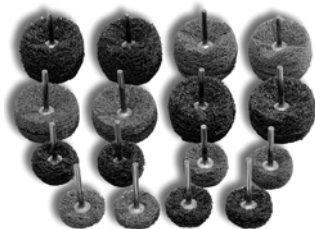
6" x 1/4"	Medium	Blue	SA-813710	\$54.80
6" x 1/2"	Medium	Blue	SA-810710	\$54.80
	Very Fine	Pink	SA-860708	\$27.80
8" x 1/2"	Medium	Blue	SA-810910	\$85.40
	Very Fine	Pink	SA-860908	\$45.60

HIGH STRENGTH-LIGHT DEBURRING & FINISHING-Pkg of 5

12" x 1-1/4"	Medium	Blue	SA-819130	\$83.15
	Very Fine	Pink	SA-869128	\$40.65

MINI DISC WHEEL KIT

Ideal for finishing, cleaning and polishing tight areas and small ID's, as well as odd forms and shapes. Produces a high luster finish and will not alter part. Each mini disc wheel kit contains 16 wheels in both medium and fine grit, all mounted on a 1/8" shank.



Kit Contains 4 each,(2 in each grit):

- 1" 1-ply medium and fine
 - 1" 2-ply medium and fine
 - 1-1/2" 2-ply medium and fine
 - 1-1/2" 3-ply medium and fine
- All mounted on 1/8" shank

Description	Part Number	Price Each
Mini Disc Wheel Kit	SUP-40432	\$37.45

FINISHING STARS

Our new finishing stars are designed for cleaning, finishing and polishing small I.D.'s, including tubes and tight areas. Stars will not alter the part geometry while producing a uniform high luster finish.



FEATURES:

- 1/4-20 eyelet
- 2 ply construction
- Premium aluminum oxide material
- Available in fine, very fine and medium grits

Size	Grit	Pkg. Qty	Part Number	Pkg Price
1-1/2"	A/O Med.	50	SUP-42806	\$117.90
	A/O V.F.		SUP-42807	\$117.90
2"	A/O Med.	50	SUP-42808	\$131.85
	A/O V.F.		SUP-42809	\$127.80
3"	A/O Med.	25	SUP-42810	\$88.65
	A/O V.F.		SUP-42811	\$85.28

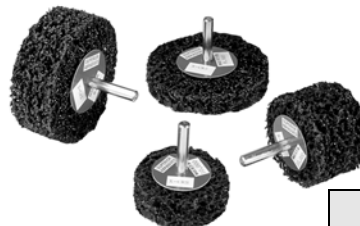
MANDRELS



Style	Description	Part Number	Price Each
EM-4	1/4-20 x 3" Long - 1/4" SK.	SUP-12219	\$3.87
EM-46	1/4-20 x 6" Long - 1/4" SK.	SUP-42815	\$10.71

STRIPPING WHEEL KIT

Stripping Wheels are designed for heavy duty stripping and cleaning of rust, oxides, paint and weld conditioning. X-Coarse grit.



Kit Contains 4 wheels:

- 2" x 1/2"
 - 2" x 1"
 - 3" x 1/2"
 - 3" x 1"
- All mounted on 1/4" shank

Description	Part Number	Price Each
Stripping Wheel Kit	SUP-36956	\$39.00

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

DEBURRING BLADES & HOLDERS

ZIP/BURR™ B-SET FOR B-SERIES BLADES



FEATURES:

- Takes all B-series blades
- Includes one B-10 blade and one B-20 blade
- Holder telescopes from 1/2" to 5"
- Handle has storage compartment for spare blades.
- Blade can be inserted at 90° for deburring cross holes
- Handle has lifetime guarantee; if it breaks, return it to your Royal distributor with your next order and we will replace handle at no charge



Description	Pkg Qty	Part Number	Price
Complete Zip/Burr B-Set	1	ROY-22600	\$10.43
Zip/Burr Handle Only	1	ROY-22610	\$5.68
Zip/Burr B-Holder Only	1	ROY-22614	\$5.73

ZIP/BURR™ HEAVY DUTY SET FOR E-SERIES BLADES



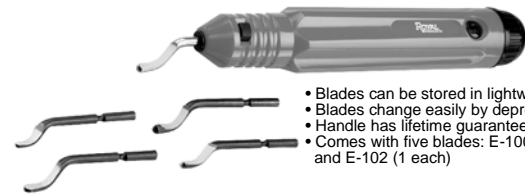
FEATURES:

- Takes all heavy-duty E-series blades
- Includes one E-100 blade, one E-200 blade and one E-300 blade
- Holder telescopes from 1/2" to 5"
- Handle has storage compartment for spare blades
- Handle has lifetime guarantee; if it breaks, return it to your Royal distributor with your next order and we will replace handle at no charge



Description	Pkg Qty	Part Number	Price
Complete Zip/Burr E-Set	1	ROY-22620	\$12.15
Zip/Burr Handle Only	1	ROY-22610	\$5.68
Zip/Burr E-Holder Only	1	ROY-22633	\$5.73

ROYAL MULTI/BURR-5



- Blades can be stored in lightweight plastic handle
- Blades change easily by depressing locking button
- Handle has lifetime guarantee
- Comes with five blades: E-100, E-200, E350, E-101 and E-102 (1 each)



Description	Part Number	Price
Multi/Burr complete w/5 Blades	ROY-22842	\$10.68
Multi/Burr handle	ROY-22570	\$7.05

DISPOSABLE BURR

- Non-replaceable blade
- Consists of heavy-duty E-100 blade, handle and handy pocket clip
- For removing burrs from steel and aluminum
- Sold in packages of 10



Description	Part Number	Price
Royal Disposable Burr-Pkg of 10	ROY-22050	\$43.16

REPLACEMENT BLADES

Many More "B" & "E" Blades Available!
Please Call For More Information!



STANDARD DUTY B-SERIES BLADES-Sold in packages of 10

Standard Duty B Blades	Pkg. Qty.	Part Number	Pkg Price
B-10	10	ROY-22110	\$11.17
HSS for steel and aluminum			
B-10A	10	ROY-22109	\$12.00
HSS for steel, aluminum and plastic			

Standard Duty B Blades	Pkg. Qty.	Part Number	Pkg Price
B-20	10	ROY-22120	\$11.17
HSS for brass & cast iron; can rotate clockwise & counterclockwise			
B-30	10	ROY-22130	\$19.15
HSS; removes internal and external burrs from holes in tubing & sheet metal			

HEAVY DUTY E-SERIES BLADES-Sold in packages of 10

Standard Duty E Blades	Pkg. Qty.	Part Number	Pkg Price
E-100	10	ROY-22025	\$13.91
Heavy Duty HSS for steel and aluminum			
E-200	10	ROY-22030	\$13.91
Heavy Duty HSS for brass & cast iron			

Standard Duty E Blades	Pkg. Qty.	Part Number	Pkg Price
E-350	10	ROY-22035	\$14.65
Heavy Duty HSS for straight edges on all materials			
E-101	10	ROY-22037	\$16.46
Heavy Duty HSS for holes as small as 7/64" dia.			

NOTE: FOR SAFETY REASONS, PLEASE DO NOT REGRIND BLADES.

Call Us Today For All Of Your Machine Tool Needs!



Pick the best Mango Handle for your job!

	Long-Reach	Extra-Close
Large Hands	Mango	Mango Click B/E
Standard Hands	Mango II	Mango II B/E

MANGO II HANDLES

A NEW GENERATION OF COMFORT AND CONTROL IN DEBURRING

A comfortable, ergonomic handle best suited for standard sizes hands, MANGO II handles are ideal for both extra-close and long-reach applications. You can feel the difference!

FEATURES:

- Works with all SHAVIV holders
- Mango II B supports all B blades
- Mango II E supports all E blades



Type	Description	Part Number	Price
Mango II	Works w/ all Shaviv holders & blades	SHAVIV-90055	\$6.49
Mango II B	Works w/ all B blades	SHAVIV-90053	\$6.49
Mango II E	Works w/ all E blades	SHAVIV-90054	\$6.49

MANGO II BLADE SETS

For Extra Close Or Long Reach Work

Extra Close Set Includes:

- (1) Mango II B/E handle
- (10) blades

Long Reach Set Includes:

- (1) Mango II handle
- (1) Telescopic long reach holder
- (10) blades



Our Most Popular Sets!

Blade Type	Description	Part Number	Set Price
------------	-------------	-------------	-----------

For Extra Close Work

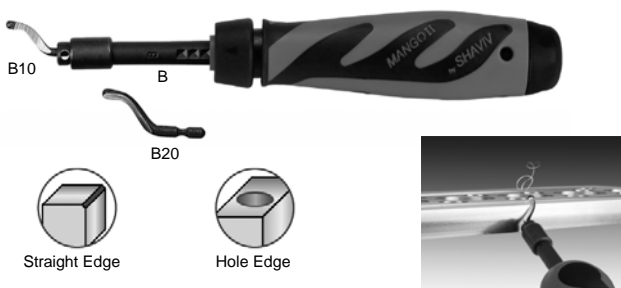
B10	Mango II B Handle w/ 10 B10 Blades	SHAVIV-29249	\$11.62
E100	Mango II E Handle w/ 10 E100 Blades	SHAVIV-29250	\$18.20
B10S	Mango II B Handle w/ 10 B10S Blades	SHAVIV-29255	\$17.62
E100S	Mango II E Handle w/ 10 E100S Blades	SHAVIV-29251	\$17.62

For Long Reach Work

B10	Mango II B Handle w/ 10 B10 Blades	SHAVIV-29252	\$17.09
E100	Mango II E Handle w/ 10 E100 Blades	SHAVIV-29253	\$20.91
B10S	Mango II B Handle w/ 10 B10S Blades	SHAVIV-29256	\$18.44
E100S	Mango II E Handle w/ 10 E100S Blades	SHAVIV-29254	\$23.07

MANGO II SET B- THE WORKHORSE

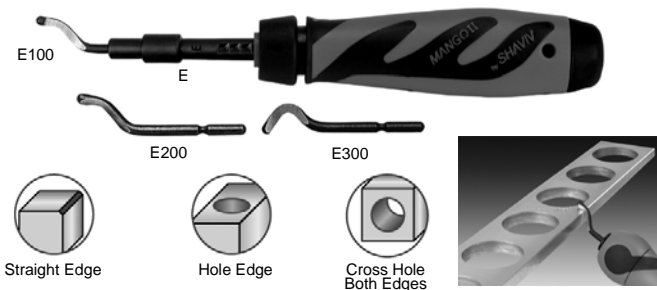
A popular set for holes, slots and edges. B holder supports all B blades which can be inserted axially or perpendicular to the holder.



Handle Type	Uses Blades	Part Number	Set Price
MANGO II	B10, B20	SHAVIV-90056	\$15.86

MANGO II SET E- HEAVY DEBURR

Rugged deburring set for heavy-duty deburring of holes, slots and edges. E holder supports all E blades.



Handle Type	Uses Blades	Part Number	Set Price
MANGO II	E100 E200 E300	SHAVIV-90065	\$18.30

MANGO CLICK N' GO

Ergonomic Handle • One Click To Replace Blade

DEBURRING HAS NEVER BEEN SO EASY!

- Works with E blades, just Click n' Go!
- Easy-to-use, comfortable and durable
- Original Mango handle best suited for larger-sized hands
- For deburring metal & plastic



Handle Type	Blades	Part Number	Set Price
MANGO Click E	(12) E100	SHAVIV-29229	\$20.49

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

DEBURRING BLADES & HOLDERS

MANGO IIB SETS- For Multi-Purpose B Blades



Sets contain the Mango II B extra-close handle and a variety of blades for deburring materials with spiral or powdery chips. Deburrs steel, aluminum, copper, brass, cast iron and plastics.



Set Name	Includes Blades	Part Number	Set Price
MANGO IIB + 4	(1 each) B10,B11,B25,B20	SHAVIV-90061	\$10.98

MANGO IIE SETS- For Heavy-Duty E Blades

Sets contain the Mango II E extra-close handle and a variety of blades for deburring materials with spiral or powdery chips. Deburrs steel, aluminum, copper, brass, cast iron and plastics.



Set Name	Includes Blades	Part Number	Set Price
MANGO IIE + 5	(1 each) E100,E111, E120,E200,E300	SHAVIV-90070	\$13.83

SET C- THE SCRAPER



Features triangular blade with 3 cutting edges for high quality finishing and scraping. The telescopic blade holder lets you get to difficult-to-reach areas. Includes key for safely removing blades



Handle Type	Uses Blades	Part Number	Set Price
MANGO II	C42	SHAVIV-90062	\$23.56
Classic	C42	SHAVIV-29067	\$22.32

SET F- THE COUNTERSINK



Powerful tool, excellent for chamfering and countersinking. Use for hole-edge applications with up to 0.79" (20mm) diameter.



Handle Type	Uses Blades	Part Number	Set Price
MANGO II	F20	SHAVIV-90071	\$30.14

GLO-BURR

RAINBOW SERIES B & E



Also Available As A 4 Piece Kit!



- Easy-to-grip deburring tools are strong, yet lightweight
- Feature a convenient pocket clip and blade storage
- Supplied with B10 or E100 blade
- Deburrs steel, aluminum, copper and plastics
- E-Kit includes 4 Glo-Burr handles and blades E100, E200, E300 & E111
- B-Kit includes 4 Glo-Burr handles and blades B10, B20, B30 & B11



Straight Edge



Hole Edge



Blades	Color	Part Number	Price
E	Blue	SHAVIV-29133	\$4.07
	Yellow	SHAVIV-29157	
	Green	SHAVIV-29155	
	Red	SHAVIV-29156	
4 Piece E Kit		SHAVIV-29114	\$15.00
B	Blue	SHAVIV-29134	\$4.07
	Yellow	SHAVIV-29154	
	Green	SHAVIV-29152	
	Red	SHAVIV-29153	
4 Piece B Kit		SHAVIV-90042	\$15.00

AEROBURR SET

For Aviation, Aerospace & Medical Industries

- Customized for the unique applications required by the aerospace industries,
- Excellent for electronic and medical applications
- Designed to deburr curves and small holes as small as 1/16" (1.5 mm)
- Blades are TiN (Titanium Nitride) coated to face the challenges of deburring materials such as steel, aluminum, copper, stainless steel, and plastics
- TiN coated blades provide increased tool life
- Great for other applications such as dies, molds, automotive and R&D



Includes:

- Standard Duty Set**
- (1) Mango II handle
 - (1) B holder
 - (5) B11P coated blades
- Heavy Duty Set**
- (1) Mango II handle
 - (1) E holder
 - (5) E111P coated blades



Handle Type	Uses Blades	Part Number	Set Price
Standard	B11P Coated	SHAVIV-90110	\$20.49
Heavy Duty	E111P Coated	SHAVIV-90111	\$23.00

Call Us Today For All Of Your Machine Tool Needs!

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

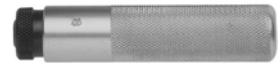
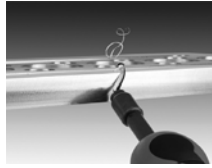
ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

SET B- THE WORKHORSE

Popular set for holes, slots and edges. Supports all "B" blades. Blades can be inserted axially or perpendicular to holder. Choose either the Classic, Aluminum or, for maximum comfort, the Mango Handle. Includes handle, adapter, B10 and B20 blade.

Deburs steel, aluminum, copper, brass, cast iron and plastics.



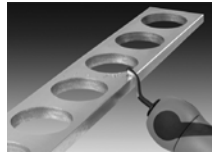
Handle Type	Uses Blades	Part Number	Set Price
Classic	B10, B20	SHAVIV-29065	\$14.65
Aluminum	B10, B20	SHAVIV-29066	\$18.70

SHAVIV USA
by Vargus
Leading Deburring Solutions

SET E- HEAVY DEBURR

Rugged deburring set for heavy-duty deburring of holes, slots and edges. Supports all "E" blades. Get the Mango handle for maximum comfort. When you need an extra-close grip, use the Mango Handle with Adapter E.

Deburs steel, aluminum, copper, brass, cast iron and plastics.



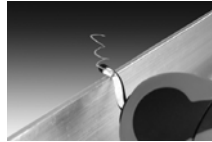
Handle Type	Uses Blades	Part Number	Set Price
Classic	E100 E200 E300	SHAVIV-29069	\$17.08

SHAVIV USA
by Vargus
Leading Deburring Solutions

BASIC B & E SET

Advanced deburring for E blades. Comes with the ergonomic Mango handle, engineered for unparalleled comfort, performance and safety. Sets include E adapter and 3 blades. Available for "E" blades.

Deburs steel, aluminum, copper, brass, cast iron and plastics.



Includes Mango Handle, 3 blades and B or E adapter!



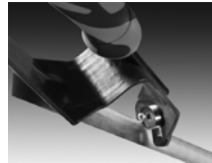
Handle Type	Uses Blades	Part Number	Set Price
Mango Basic B	B10, B20	SHAVIV-90060	\$8.50
Mango Basic E	E100, E200, E300	SHAVIV-90068	\$9.99

SHAVIV USA
by Vargus
Leading Deburring Solutions

SET BURR-BI MANGO

For heavy-duty deburring of materials with single or double straight edges up to 0.56" thick. Holder can take two R10, R20 or R30 blades for arc shape finishes on workpieces up to 0.63" thick. Hand guard attached for worker safety.

Deburs steel, aluminum, copper, brass, cast iron, stainless steel and plastics.



"A" side for spiral chips "B" side for powdery chips

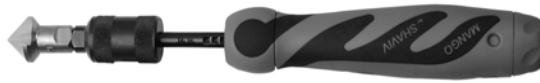
Handle Type	Uses Blades	Part Number	Set Price
BR	R10 x 2	SHAVIV-90095	\$26.50

SHAVIV USA
by Vargus
Leading Deburring Solutions

SET FR-RATCHETBURR

Features FR ratchet holder, ideal for rotational chamfering, even when workspace is limited. For inside diameters up to 0.79". Get the Mango handle for maximum comfort.

Deburs steel, aluminum, copper, brass, cast iron, stainless steel and plastics.



Handle Type	Uses Blades	Part Number	Set Price
Mango	F20	SHAVIV-90072	\$44.64

SHAVIV USA
by Vargus
Leading Deburring Solutions

SET C- THE SCRAPER

This telescopic blade holder lets you get to difficult-to-reach areas. Includes key for safely removing blades. Get the Mango holder for maximum comfort.

Deburs steel, aluminum, copper, brass, cast iron, stainless steel and plastics.



Handle Type	Uses Blades	Part Number	Set Price
Mango	C42	SHAVIV-90062	\$23.56

SHAVIV USA
by Vargus
Leading Deburring Solutions

SET L- EXTERNAL PIPE/EDGE CLEANER

Great for removing burrs from the external edges of pipes and tubes 0.79" diameters and up. Get the Mango holder for maximum comfort.

Deburs steel, aluminum, copper, stainless steel and plastics.



Handle Type	Uses Blades	Part Number	Set Price
Mango	L10	SHAVIV-90101	\$32.99

SHAVIV USA
by Vargus
Leading Deburring Solutions

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

DEBURRING BLADES & HOLDERS

SET F- THE COUNTERSINK

This powerful tool is excellent for chamfering and countersinking. The Mango handle provides maximum comfort.

Deburs steel, aluminum, copper, brass, cast iron, stainless steel and plastics.



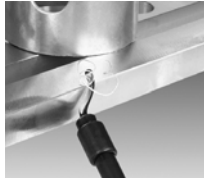
SHAVIV USA
by varqus
Leading Deburring Solutions

Handle Type	Uses Blades	Part Number	Set Price
Mango	F20	SHAVIV-90071	\$30.14
Classic	F20	SHAVIV-29070	\$29.08

SET 1- SLOT EDGE CLEANER

The original set for heavy duty deburring of holes and edges. Features a built-in, non-telescopic steel blade holder which holds blades close to handle.

Deburs steel, aluminum, copper, brass, cast iron and plastics.



SHAVIV USA
by varqus
Leading Deburring Solutions

Handle Type	Uses Blades	Part Number	Set Price
Handle 1	E100 E200 E300	SHAVIV-29078	\$11.15

MANGO STARTER KIT



SHAVIV USA
by varqus
Leading Deburring Solutions

The Number 1 ergonomic Mango handle and the three most popular types of blades and holders for different deburring applications

Kit Contains:

- 1 Mango Handle
- Mango Adapters B & E
- Blades: B10, B20, B30, B50, B60, C40, E100 & E300
- Holders: B, C & E

MANGO STARTER KIT
Part # SHAVIV-90085

\$89.00 ea

KIT KPC2-THE FAVORITE 5

SHAVIV USA
by varqus
Leading Deburring Solutions



Five extremely popular sets, provided in one handy kit. Available with plastic Classic handle or the Mango handle for maximum comfort.

Kit Contains:

- Set B: The Workhorse and Mango Adapter B
- Set C: The Scraper
- Set D: The Sheet Cleaner
- Set E: The Heavy DeBurr set and Mango Adapter E
- Set F: The Countersink

Handle Style	Part Number	Kit Price
Mango	SHAVIV-90002	\$109.00

HANDLES



MANGO HANDLE

The original ergonomic handle, engineered for maximum comfort & performance. Features a comfortable, anti-slip surface and smooth back cap. Works with all Shaviv blade holders and blades. Also takes the unique Mango Adapters, designed to hold B & E-series blades closer to the handle and give you a firm, power grip. Large storage inside handle for spare blades.

Part #: SHAVIV-90000 Price: **\$6.47 each**

CLASSIC HANDLE A

Classic universal handle. Accepts all Shaviv blade holders. To store spare blades inside handle, simply unscrew the back cap.

Part #: SHAVIV-29054 Price: **\$4.88 each**

HANDLE A (ALUMINUM)

Classic universal handle. Heavy-duty aluminum version. Accepts all Shaviv blade holders.

Part #: SHAVIV-29055 Price: **\$9.76 each**

HANDYCHUCK PIN VISE









Holds small files, drills, reamers, taps, mold polishing stones, wires, countersinks, etc. Grips objects with 1mm (0.04") to 8 mm (0.32") diameter. Can be used with C50 & C60 scrapers. Useful for repairing and assembling watches, electrical appliances & miniature electronic equipment.

Part #: SHAVIV-29057 Price: **\$28.46 each**

SHAVIV USA
by varqus
Leading Deburring Solutions



BLADE HOLDERS

Type	Description	Part Number	Price Each
	Model B Blade Holder Holds all B blades	SHAVIV-29000	\$6.51
	Mango Adapter B Provides firm and close grip. Holds B-series blades	SHAVIV-90005	\$2.50
	Blade Holder C Holds C40 & C42 blades	SHAVIV-29001	\$6.51
	Model E Blade Holder Holds all E-series blades	SHAVIV-29004	\$6.51
	Mango Adapter E Provides firm and close grip. Holds E-series blades	SHAVIV-90006	\$2.50
	Model F Blade Holder Holds all F-series blades	SHAVIV-29005	\$6.51
	Model FR Blade Holder Ratchet holder for all F blades	SHAVIV-29006	\$15.98
	Blade Holder L Holds L10 blades	SHAVIV-29010	\$15.98

Call Us Today For All Of Your Machine Tool Needs!

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

BLADES

BLADES SOLD IN PACKAGES OF 10 ONLY



Blade	Description	Part Number	Price Each
B10	Deburr materials with spiral chips. HSS	SHAVIV-29012	\$1.22
B10C	Solid carbide, B10 geometry.	SHAVIV-29013	\$8.13
B10D	Diamond-coated. B10 geometry.	SHAVIV-29014	\$13.83
B10L	B10 for left-handed users.	SHAVIV-29095	\$1.30
B10P	PVD TiN coated for high resistance to wear. B10 geometry.	SHAVIV-29015	\$2.51
B10PL	B10 coated with PVD TiN for left-handed users.	SHAVIV-29096	\$2.51
B10S	Long-lasting, cobalt-enriched. B10 geometry.	SHAVIV-29210	\$1.36
B11	Extra thin, HSS. Deburrs holes with min. diameter 2 mm (0.08").	SHAVIV-29108	\$1.30
B12	Short-nosed, HSS.	SHAVIV-29016	\$1.25
B12P	Short-nosed, PVD TiN coated for high resistance to wear.	SHAVIV-29017	\$2.51
B20	HSS. Rotates clockwise & counterclockwise.	SHAVIV-29019	\$1.22
B20C	Solid carbide. Rotates clockwise & counterclockwise.	SHAVIV-29020	\$8.13
B20P	PVD TiN coated-high wear resistance. Rotates clockwise & counterclockwise	SHAVIV-29021	\$2.51
B25	Thin-nosed. Specially designed for plastics.	SHAVIV-29022	\$1.22
B25C	Solid carbide, thin-nosed. Specially designed for abrasive plastics.	SHAVIV-29110	\$8.13
B30	Simultaneously deburrs the inside and outside of holes up to 0.16" thick.	SHAVIV-29023	\$1.79
B30P	PVD TiN coated for high resistance to wear. B30 geometry.	SHAVIV-29024	\$3.34
B32	Rotates clockwise & counterclockwise. B30 geometry.	SHAVIV-29025	\$1.79
B50	Carbide tipped scribe.	SHAVIV-29026	\$6.10

Blade	Description	Part Number	Price Each
B60	HSS. Removes burrs from back-edge of holes up to 0.8" thick.	SHAVIV-29027	\$2.44
B70	Carbide tipped. Deburrs sheet metal up to 4.5 mm (0.18") thick.	SHAVIV-29028	\$8.43
B1	Long-lasting, cobalt-enriched. Deburrs materials with spiral chips.	SHAVIV-29207	\$1.22
C40	Small 0.16" (4mm), triangular HSS scraper for precision work	SHAVIV-29029	\$8.36
C42	Standard Size 0.31" (8mm), triangular HSS Scraper	SHAVIV-29030	\$14.21
E100	Heavy-duty HSS. Deburrs materials with spiral chips.	SHAVIV-29034	\$1.63
E100C	Wear resistant carbide. E100 geometry.	SHAVIV-29035	\$8.13
E100D	Diamond-coated. E100 geometry.	SHAVIV-29036	\$15.45
E100L	E100 for left-handed users.	SHAVIV-29098	\$1.79
E100P	PVD TiN coated for high resistance to wear. E100 geometry.	SHAVIV-29037	\$3.34
E100S	Long-lasting, cobalt-enriched. E100 geometry.	SHAVIV-29211	\$1.87
E110	E shaft, B10 cutting edge, spiral chips. Deburrs holes with min. dia. 0.08".	SHAVIV-29038	\$1.79
E110P	PVD TiN coated for high resistance to wear. E110 geometry.	SHAVIV-29039	\$3.34
E111	Thin-nosed, HSS. Deburrs holes with min. diameter 1.5 mm (0.06").	SHAVIV-29109	\$1.58
E120	E shaft, B20 cutting edge for powdery chips. CW/CCW rotation	SHAVIV-29058	\$1.58
E200	HSS for materials with powdery chips. Clockwise & counterclockwise.	SHAVIV-29040	\$1.60
E200P	PVD TiN coated for high resistance to wear. E200 geometry.	SHAVIV-29099	\$3.34
E200C	Wear resistant carbide. E200 geometry.	SHAVIV-29041	\$8.13
E250	Specially designed for plastics. Very thin, heavy duty.	SHAVIV-29106	\$1.63

Blade	Description	Part Number	Price Each
E300	HSS for materials with spiral chips. Simultaneously deburrs ID & OD of holes up to 0.24" thick.	SHAVIV-29042	\$2.03
E300P	PVD TiN coated for high resistance to wear. E300 geometry.	SHAVIV-29227	\$3.57
E320	HSS for powdery chips. Simultaneously deburrs ID & OD of holes up to 0.24" thick. Rotates CW/CCW.	SHAVIV-29043	\$2.03
E350	HSS for materials with powdery chips. Rotates CW/CCW.	SHAVIV-29044	\$1.63
E600	HSS. Removes burrs from back-edge of holes up to 20 mm (0.8") thick.	SHAVIV-29045	\$3.25
E601	Extra-long HSS. Removes burrs from back-edges of holes up to 1.6" thick.	SHAVIV-29046	\$4.07
E700	HSS for spiral chips. Excellent for deburring & scraping inside thick-walled holes and cross-holes.	SHAVIV-29047	\$2.44
E720	HSS for chips. Excellent for deburring & scraping inside thick-walled holes and cross-holes. Rotates CW/CCW.	SHAVIV-29048	\$2.44
E750	HSS specially designed for deburring rubber & soft plastics without poking or sticking into workpiece.	SHAVIV-29113	\$2.44
E755	HSS for deburring corner-edges of 1 mm (0.04") high steps.	SHAVIV-29085	\$4.07
E800	HSS for materials with spiral chips. Removes burrs from corner-edges of shallow steps.	SHAVIV-29018	\$1.79
E10	Long-lasting, cobalt-enriched for materials with spiral chips. Ideal for heavy duty jobs.	SHAVIV-29216	\$1.79
F12	Countersink for hole-edges with up to 12 mm (0.47") dia.	SHAVIV-29049	\$15.88
F20	Countersink for hole-edges with up to 20 mm (0.79") dia.	SHAVIV-29050	\$21.74
F30	Countersink for hole-edges with up to 30 mm (1.18") dia.	SHAVIV-29051	\$37.62
F26X	Excellent for external chamfering of pipes, tubes and other items with up to 26 mm (1.02") diameter.	SHAVIV-29147	\$30.10

UNIVERSAL DEBURRING, CLEANING & COUNTERSINK SET



Set Includes:

- 1 Universal Handle
- 2 Adapters
- 2 Deburring Blades
- 1 Countersink for 20mm/.47" diameter.
- 1 Countersink for 30mm/1.18" diameter.
- 4 Cleaner Blades, for sheet metal, small ridges, relieving corners and for narrow slots.
- Combined in a compact molded case.



A Complete Kit For Machine Shop Applications!

Description	Part Number	Price
Deburr, Clean & Countersink Set	FWO-52-483-888	\$62.31

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

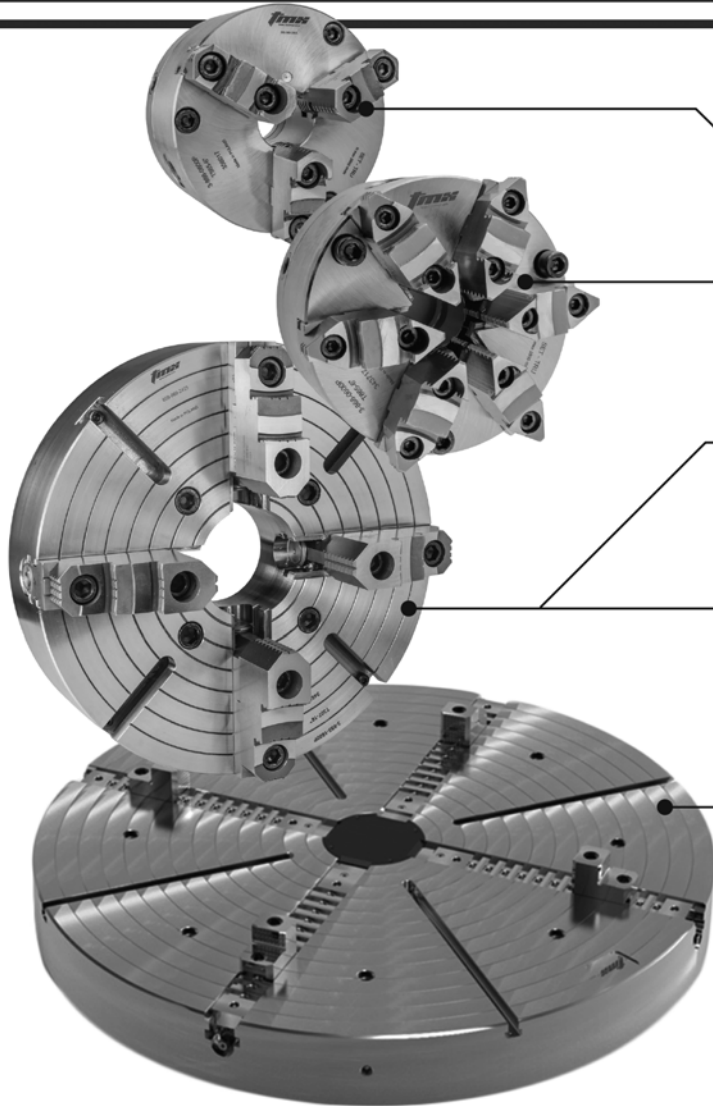
CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

Precision Defined.



MADE IN EUROPE

ALL FORGED STEEL BODIES

2-YEAR QUALITY & PERFORMANCE WARRANTY

AMERICAN STANDARD TONGUE & GROOVE JAWS

3"-100" SIZE RANGE

Toolmex's 45-year legacy of European craftsmanship equals a smart choice in manual chucks. Manufactured in Europe, TMX performance workholding is guaranteed to outperform and outlast any other product on the market. Period.

OFFERING: 2, 3, 4 & 6-JAW SET-TRU SCROLL CHUCKS ■ 3 & 4-JAW SELF-CENTERING SCROLL CHUCKS ■ 4-JAW INDEPENDENT CHUCKS ■ 3-JAW SCROLL & 4-JAW INDEPENDENT OIL COUNTRY CHUCKS ■ 3-JAW SCROLL & 4-JAW INDEPENDENT VTL CHUCKS ■ FACEPLATES



Scan & Explore
www.toolmex.com
©2018 Toolmex Industrial Solutions



Please See Pages 77-83 For More Information!

Call Us Today For All Of Your Machine Tool Needs!



In This Section...

Coolant Lines.....	486-488
Mist Coolant Systems.....	489
Machine Lubricants.....	490-491
Coolant & Maintenance.....	492-495
Cutting Fluids.....	496
Safety/Anti-Fatigue Mats.....	497-499
Glasses, Eye Protection.....	500
Hand Protection/Gloves.....	501
Ear Protection.....	502
Shop Lights.....	503
Machine Safety Guards.....	504-505
Books/Calculator.....	506
Layout Fluid.....	507
Stamping/Hammers/Aprons.....	508-509
Air Tools.....	510
Hex & Torx® Tools/Wrenches.....	511-515
Tool Storage.....	516-521
Material-Flat Stock & Drill Rod.....	522-530
Screws & Plungers.....	531-535
Gang Tools For Slide Lathes.....	536-539
Drill & Tap Chart.....	540
Terms & Conditions.....	541
Easy Jaw Finder.....	542-554
Special Order Forms.....	555-561

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Multiple Storage Solutions....

One Source....

Waterloo® products all have one thing in common, high quality. Our commitment to your satisfaction starts the moment you purchase our products. That's why our commitment is your greatest value.

Every job needs the right tools. Waterloo® has one made just for you. We're your number source for all your storage needs.

Please See Pages 516-517 For More Information!

Storage you need. Quality you deserve.



You can see these products and a whole lot more at:
www.waterlooindustries.com

© Waterloo Industries 2006



Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

COOLANT HOSES/NOZZLES

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

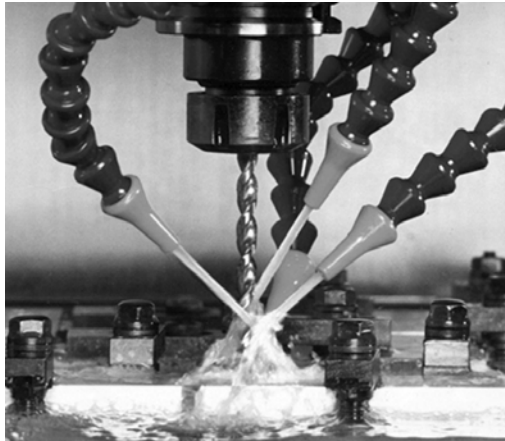
TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

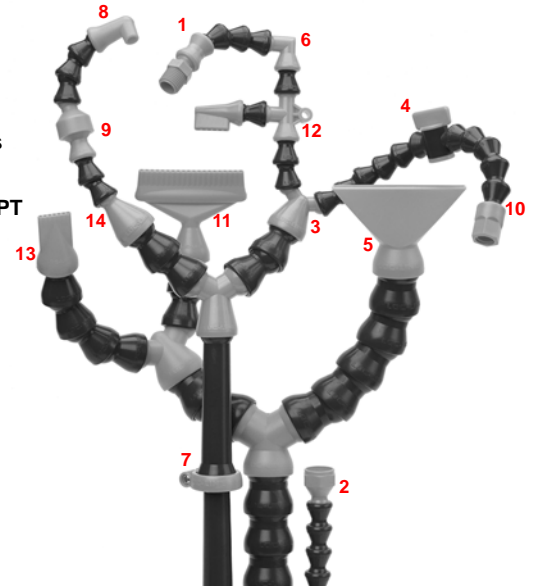
MRO & SAFETY
FLAT STOCK/DRILL ROD



The Originator of the Modular Hose System!

LOC-LINE®
THE ORIGINAL MODULAR HOSE SYSTEM

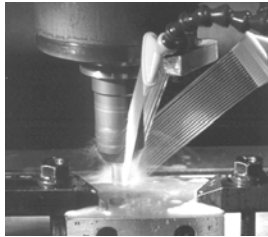
1. Double Sockets
2. Flare Nut Fittings
3. "Y" Fittings & Reducers
4. Valves
5. Flare Nozzles
6. Elbow Fittings
7. Extended Elements & Clamps
8. 90° Nozzles
9. In-Line Check Valves
10. 1/4" Socket x 1/8" Female NPT
11. Swivel Nozzles
12. "T" Fittings
13. Flat Nozzles
14. Hose Adapters



The standard for low pressure coolant delivery, Loc-Line is the leader in modular hoses. Loc-Line is manufactured in a premium grade acetal copolymer material which is chemically resistant to petroleum products, coolants and most common chemicals.

FEATURES:

- Unique ball and socket design is fully hand adjustable in both position and length
- Bending does not decrease the inside diameter and it will not kink or fatigue like copper tubing
- Unlike metal hoses, Loc-Line will not damage machine tool cutters if contact occurs
- No internal positioning rod that can break or restrict fluid flow
- Repeated positioning is easy-stays in position without any springback



Full Line Available!
Please call for more information.

COOLANT SHIELD With Magnetic Base

LOC-LINE®
THE ORIGINAL MODULAR HOSE SYSTEM



All Quick-Set Shield Kits include a 14" adjustable 3/4" Loc-Line® arm, magnetic base and fitting for fixed mounting.

Shield Size	Part Number	Price Each
6" x 8"	LOC-60525	\$31.17
7-1/2" x 10"	LOC-60526	\$33.57
8-1/2" x 12"	LOC-60527	\$35.98

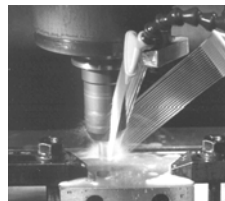
1/4" ID System		
Description	Part Number	Price Per Pack
1/4" Assembly Kit 13" length with fittings: 1/4", 1/8", 1/16" nozzles 1/4" & 1/8" male NPT connectors	LOC-40413	\$8.57
1/4" Flared Tubing Replacement Kit 8-5 3/4" hose segments, 4-3/8" flare nut adapters, 4-1/4" nozzles, 4-1/8" nozzles, 1-1" flare nozzle	LOC-40452	\$31.17
1/4" Hose Segment Pack (2- 5 3/4" pcs) 1/4" Hose Segment (50 foot coil)	LOC-41401 LOC-49421	\$6.45 \$283.87
1/16" Round Nozzle pack of 4 1/8" Round Nozzle pack of 4 1/4" Round Nozzle pack of 4	LOC-41402 LOC-41403 LOC-41404	\$4.26 \$4.26 \$4.26
1/8" NPT Connector pack of 4 1/4" NPT Connector pack of 4	LOC-41405 LOC-41406	\$4.26 \$4.26
1" Flare Nozzle pack of 2	LOC-41407	\$6.45
1/4" Y Fitting pack of 2	LOC-41408	\$6.45
1/4" Double Socket pack of 4	LOC-41409	\$4.74
1/4" Socket X 1/8" Female NPT pack of 4	LOC-41411	\$5.41

1/4" ID System (continued)		
Description	Part Number	Price Per Pack
3/8" Flare Nut Adapter pack of 4 1/4" Flare Nut Adapter pack of 4	LOC-41412 LOC-41414	\$6.45 \$6.45
1/16" 90° Nozzle pack of 4 1/8" 90° Nozzle pack of 4 1/4" 90° Nozzle pack of 4	LOC-41470 LOC-41471 LOC-41472	\$5.96 \$5.96 \$5.96
1/4" Elbow pack of 2	LOC-41415	\$5.96
1/4" T Fitting pack of 2	LOC-41416	\$7.14
1/4" Swivel Nozzle 40 pack of 2 1/4 Swivel Nozzle 60 pack of 2	LOC-41481 LOC-41482	\$9.55 \$9.55
Flat Slot 40 Nozzle pack of 4 Flat Slot 60 Nozzle pack of 4	LOC-41483 LOC-41484	\$6.82 \$6.82
Flat 5 Hole Nozzle pack of 4 Flat 7 Hole Nozzle pack of 4 Flat Nozzle Assortment pack	LOC-41485 LOC-41486 LOC-41487	\$6.82 \$6.82 \$6.82
1/4" Male NPT valves pack of 2 1/4" Female NPT valves pack of 2 1/4" In-Line Valves pack of 2	LOC-21192 LOC-21193 LOC-21194	\$10.75 \$10.75 \$10.75
1/4" End Caps pack of 4	LOC-41480	\$4.26
1/4" Assembly Pliers	LOC-78001	\$11.97

Call Us Today For All Of Your Machine Tool Needs!



Full Line Available!
Please call for more information.



LOC-LINE®
THE ORIGINAL MODULAR HOSE SYSTEM

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

1/2" ID System			
Description		Part Number	Price Per Pack
	1/2" Hose Assembly Kit 13" length with fittings: 1/4", 3/8", 1/2" nozzles 3/8" & 1/2" male NPT connectors	LOC-50813	\$9.66
	1/2" Segment Pack 1/2" 50 feet Coil	LOC-51801 LOC-59861	\$7.27 \$336.26
	3/8" Round Nozzle pack of 4 1/2" Round Nozzle pack of 4	LOC-51802 LOC-51803	\$4.86 \$4.86
	3/8" NPT Connector pack of 4 1/2" NPT Connector pack of 4	LOC-51804 LOC-51805	\$4.86 \$4.86
	1 1/4" Flare Nozzle pack of 2 2 1/2" Flare Nozzle pack of 2	LOC-51807 LOC-51809	\$7.27 \$8.36
	1/2" Y Fitting pack of 2	LOC-51808	\$7.27
	1/2" to 1/4" Adapter pack of 2	LOC-51821	\$5.35
	1/2" to 1/4" Y Reducer pack of 2	LOC-51822	\$7.27
	1/2" Double Socket pack of 4	LOC-51811	\$5.41
	3/8" SAE Flare Nut for 1/2" pack of 4	LOC-51823	\$6.65

1/2" ID System			
Description		Part Number	Price Per Pack
	1/4" 90 Degree for 1/2" pack of 4 3/8" 90 Degree Nozzle pack of 4 1/2" 90 Degree Nozzle pack of 4	LOC-51828 LOC-51829 LOC-51830	\$6.77 \$6.77 \$6.77
	1/2" 90 Spray Bar pack of 2	LOC-51831	\$7.27
	1/2" Elbow pack of 2	LOC-51824	\$6.77
	1/2" T Fitting pack of 2	LOC-51825	\$7.97
	1/2" Flat Slot 80 Nozzle pack of 4 1/2" Flat Slot 125 Nozzle pack of 4	LOC-51840 LOC-51841	\$7.64 \$7.64
	1/2" Flat 5 Hole Nozzle pack of 4 1/2" Flat 7 Hole Nozzle pack of 4	LOC-51842 LOC-51843	\$7.64 \$7.64
	1/2" Male NPT Valves, pack of 2 1/2" Female NPT Valves, pack of 2 1/2" In-Line Valves, pack of 2	LOC-32092 LOC-32093 LOC-32094	\$13.15 \$13.15 \$13.15
	1/2" End Caps pack of 4	LOC-51838	\$4.86
	1/2" Hose Assembly Pliers 1/4" and 1/2" Hose Assembly Plier Set	LOC-78002 LOC-78003	\$11.97 \$21.56

Can't Find The Part You Need? Call Us & We'll Locate It For You!

3/4" System			
Description		Part Number	Price Per Pack
	3/4" Hose Assembly Kit 14" length with fittings: 5/8", 3/4" nozzles 3/4" male NPT connectors	LOC-60513	\$11.97
	3/4" Hose Segment pack (2-5 3/4" pcs) 3/4" Hose 50 feet Coil	LOC-61501 LOC-69541	\$9.07 \$360.00
	3/4" Round Nozzle pack of 4 5/8" Round Nozzle pack of 4	LOC-61502 LOC-61503	\$5.45 \$5.96
	3/4" Y Fitting pack of 2	LOC-61511	\$9.55
	3/4" to 1/2" Y Reducer pack of 2	LOC-61512	\$8.75
	3" Flare Nozzle Pack of 2	LOC-61507	\$9.55
	3/4" NPT Connector pack of 4	LOC-61505	\$5.96
	3/4" to 1/2" Adapter pack of 2	LOC-61508	\$6.55
	3/4" Double Socket pack of 4	LOC-61514	\$6.61
	3/4" Assembly Pliers	LOC-78004	\$15.23

MIST COOLANT SYSTEM

- Air adjustment valve
- Fluid control allows for right mixture for every job
- Flexible tube puts mist right where it is needed
- For boring, milling, grinding or drilling operations
- Fits on a standard magnetic base verticle post
- Supplied with set screw to hold location



Mist Coolant System
Part # A-8401-0200
\$74.00 each



COOLANT HOSE ASSEMBLY With Magnetic Base



- Two 1/4" diameter flexible coolant hoses are included
- 100 pound magnetic pull
- On/off switchable base



Coolant Hose Assembly
Part # A-8401-0048
\$49.00 each

Call Us Or Visit Our Website For Our Complete Selection!

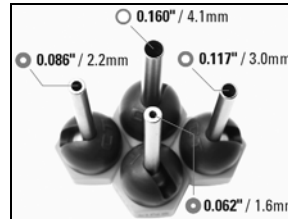
COOLANT NOZZLES

HIGH PRESSURE TURRET NOZZLES

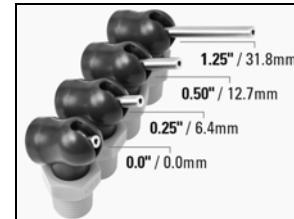


Compact & Extended Rotation

- CT style nozzles designed for tight spaces
- XR style nozzles feature wide swing and ability to aim coolant below horizontal plane
- Expand working pressure range from 0 to 1000 PSI
- Maximum operating temperature 115°
- Available in four nozzle lengths: 0.0", 0.25", 0.50" and 1.25" and four nozzle diameters: 0.062", 0.086", 0.117" and 0.160"



4 Nozzle Diameters



4 Nozzle Lengths

CT HPT NOZZLES

The CT (Compact Turret) style nozzle is designed for tight spaces, from 0 to 1000 PSI



1/8" NPT/BSPT THREAD

0.0" NOZZLE LENGTH				0.25" NOZZLE LENGTH			0.5" NOZZLE LENGTH			1.25" NOZZLE LENGTH		
Size	Qty	Part Number	Price	Qty	Part Number	Price	Qty	Part Number	Price	Qty	Part Number	Price
0.062	2	LOC-72010	\$39.97	2	LOC-72011	\$39.97	2	LOC-72012	\$43.97	2	LOC-72013	\$44.77
0.062	10	LOC-79010	\$181.69	10	LOC-79011	\$181.69	10	LOC-79012	\$192.59	10	LOC-79013	\$203.50
0.086	2	LOC-72014	\$39.97	2	LOC-72015	\$39.97	2	LOC-72016	\$43.97	2	LOC-72017	\$44.77
0.086	10	LOC-79014	\$181.69	10	LOC-79015	\$181.69	10	LOC-79016	\$192.59	10	LOC-79017	\$203.50
0.117	2	LOC-72018	\$39.97	2	LOC-72019	\$39.97	2	LOC-72020	\$43.97	2	LOC-72021	\$44.77
0.117	10	LOC-79018	\$181.69	10	LOC-79019	\$181.69	10	LOC-79020	\$192.59	10	LOC-79021	\$203.50
0.160	2	LOC-72022	\$39.97	2	LOC-72023	\$39.97	2	LOC-72024	\$43.97	2	LOC-72025	\$44.77
0.160	10	LOC-79022	\$181.69	10	LOC-79023	\$181.69	10	LOC-79024	\$192.59	10	LOC-79025	\$203.50

1/4" NPT/BSPT THREAD

0.0" NOZZLE LENGTH				0.25" NOZZLE LENGTH			0.5" NOZZLE LENGTH			1.25" NOZZLE LENGTH		
Size	Qty	Part Number	Price	Qty	Part Number	Price	Qty	Part Number	Price	Qty	Part Number	Price
0.062	2	LOC-72060	\$39.97	2	LOC-72061	\$39.97	2	LOC-72062	\$43.97	2	LOC-72063	\$44.77
0.062	10	LOC-79060	\$181.69	10	LOC-79061	\$181.69	10	LOC-79062	\$192.59	10	LOC-79063	\$203.50
0.086	2	LOC-72064	\$39.97	2	LOC-72065	\$39.97	2	LOC-72066	\$43.97	2	LOC-72067	\$44.77
0.086	10	LOC-79064	\$181.69	10	LOC-79065	\$181.69	10	LOC-79066	\$192.59	10	LOC-79067	\$203.50
0.117	2	LOC-72068	\$39.97	2	LOC-72069	\$39.97	2	LOC-72070	\$43.97	2	LOC-72071	\$44.77
0.117	10	LOC-79068	\$181.69	10	LOC-79069	\$181.69	10	LOC-79070	\$192.59	10	LOC-79071	\$203.50
0.160	2	LOC-72072	\$39.97	2	LOC-72073	\$39.97	2	LOC-72074	\$43.97	2	LOC-72075	\$44.77
0.160	10	LOC-79072	\$181.69	10	LOC-79073	\$181.69	10	LOC-79074	\$192.59	10	LOC-79075	\$203.50

XR HPT NOZZLES

The XR (Extended Rotation) style nozzle features a wide nozzle swing and the ability to aim coolant below the horizontal plane, from 0 to 1000 PSI

1/8" NPT/BSPT THREAD

0.0" NOZZLE LENGTH				0.25" NOZZLE LENGTH			0.5" NOZZLE LENGTH			1.25" NOZZLE LENGTH		
Size	Qty	Part Number	Price	Qty	Part Number	Price	Qty	Part Number	Price	Qty	Part Number	Price
0.062	2	LOC-72040	\$39.97	2	LOC-72041	\$39.97	2	LOC-72042	\$43.97	2	LOC-72043	\$44.77
0.062	10	LOC-79040	\$181.69	10	LOC-79041	\$181.69	10	LOC-79042	\$192.59	10	LOC-79043	\$203.50
0.086	2	LOC-72044	\$39.97	2	LOC-72045	\$39.97	2	LOC-72046	\$43.97	2	LOC-72047	\$44.77
0.086	10	LOC-79044	\$181.69	10	LOC-79045	\$181.69	10	LOC-79046	\$192.59	10	LOC-79047	\$203.50
0.117	2	LOC-72048	\$39.97	2	LOC-72049	\$39.97	2	LOC-72050	\$43.97	2	LOC-72051	\$44.77
0.117	10	LOC-79048	\$181.69	10	LOC-79049	\$181.69	10	LOC-79050	\$192.59	10	LOC-79051	\$203.50
0.160	2	LOC-72052	\$39.97	2	LOC-72053	\$39.97	2	LOC-72054	\$43.97	2	LOC-72055	\$44.77
0.160	10	LOC-79052	\$181.69	10	LOC-79053	\$181.69	10	LOC-79054	\$192.59	10	LOC-79055	\$203.50

1/4" NPT/BSPT THREAD

0.0" NOZZLE LENGTH				0.25" NOZZLE LENGTH			0.5" NOZZLE LENGTH			1.25" NOZZLE LENGTH		
Size	Qty	Part Number	Price	Qty	Part Number	Price	Qty	Part Number	Price	Qty	Part Number	Price
0.062	2	LOC-72080	\$39.97	2	LOC-72081	\$39.97	2	LOC-72082	\$43.97	2	LOC-72083	\$44.77
0.062	10	LOC-79080	\$181.69	10	LOC-79081	\$181.69	10	LOC-79082	\$192.59	10	LOC-79083	\$203.50
0.086	2	LOC-72084	\$39.97	2	LOC-72085	\$39.97	2	LOC-72086	\$43.97	2	LOC-72087	\$44.77
0.086	10	LOC-79084	\$181.69	10	LOC-79085	\$181.69	10	LOC-79086	\$192.59	10	LOC-79087	\$203.50
0.117	2	LOC-72088	\$39.97	2	LOC-72089	\$39.97	2	LOC-72090	\$43.97	2	LOC-72091	\$44.77
0.117	10	LOC-79088	\$181.69	10	LOC-79089	\$181.69	10	LOC-79090	\$192.59	10	LOC-79091	\$203.50
0.160	2	LOC-72092	\$39.97	2	LOC-72093	\$39.97	2	LOC-72094	\$43.97	2	LOC-72095	\$44.77
0.160	10	LOC-79092	\$181.69	10	LOC-79093	\$181.69	10	LOC-79094	\$192.59	10	LOC-79095	\$203.50



Call Us Today For All Of Your Machine Tool Needs!

12" PORTAMIST COOLANT SYSTEM

- Kit Includes:**
- Portamist model 60M
 - Air and coolant hoses
 - 12" flexible Loc-Line™ positioner
 - Magnetic base
 - One gallon of "Formula 78" concentrated coolant
 - Sample (4 oz) of "Formula 77" concentrated coolant

Portamist Starter Kit
Part # KOOL-560
\$155.00



1 GALLON SPRAY MIST STARTER KIT

- Kit Includes:**
- One Model 100N Mist Coolant System with one gallon stainless steel tank
 - One Adjustable Magnetic Nozzle Positioner
 - One Gallon Formula 78 Concentrated Coolant (Heavy duty spray mist coolant)
 - One 4 oz sample bottle Formula 77 Concentrated Coolant

Spray Mist Starter Kit
Part # KOOL-500
\$222.00



PORTAMIST SPRAY MIST COOLANT SYSTEMS

With Magnetic Base

Our PortaMist units are the most flexible system to be used with your own tank or sump. These systems provide the user the ability to move the unit quickly and easily, therefore, creating less downtime for the operator. Air supply required.

- Single Air/Coolant Control Valve
- Adjustable Spray Nozzle
- Heavy Duty Magnetic Base
- 12" or 18" Flexible LOC-LINE Nozzle Positioner
- 4 FT. Coolant hose with Anti Syphon Check Valve
- 4 FT. Air Hose with Male Pipe Thread Fitting



Description	Part Number	Price
12" Flexible Nozzle	KOOL-60M12	\$117.00
18" Flexible Nozzle	KOOL-60M18	\$139.00

Accessories

12" Spray Line Assembly	KOOL-PML-12	\$62.00
18" Spray Line Assembly	KOOL-PML-18	\$85.00

TANKLESS MIST COOLANT SYSTEMS

Available With Or Without Magnetic Base

For Use With Your Own Tank!

These models are to be used with your own Tank or Sump. Lite Duty models are best used in production operations that require minimal set up changes. Lite Duty models generate a very fine spray mist.

- Includes:**
- 2' nylon reinforced coolant line 5/16" OD
 - 4" brass nozzle
 - 4' syphoning line



Description	Part Number	Price
-------------	-------------	-------

With Magnetic Positioner

Straight Brass Nozzle	KOOL-80SM	\$108.00
45° Brass Nozzle	KOOL-80SM-45	\$117.60
90° Brass Nozzle	KOOL-80SM-90	\$117.60

With Mounting Bracket Only

(No Magnetic Positioner-Attaches directly to machine)

Straight Brass Nozzle	KOOL-80S	\$74.00
45° Brass Nozzle	KOOL-80S-45	\$74.00
90° Brass Nozzle	KOOL-80S-90	\$74.00

MIST COOLANT SYSTEMS

With Stainless Steel Tanks

Can handle most machine shop work such as drilling, tapping, pantographing, cutoff saws, band saws and surface grinders. The controls of this completely portable unit are factory mounted to the tank top instead of the machine, so that the entire system can be relocated at will.

- 5/16" nozzle
- Output from each nozzle is regulated by a single knob on the control
- No scrambled lines! Coolant and compressed air are brought to the nozzle separately through a coaxial line, halving the number of lines to the machine



KOOL-100NF18



Tank Cap.	Nozzle Length	No. of Outlets	Part Number	Price
1 Gallon	12" Flexline	1	KOOL-100NF12	\$239.63
		2	KOOL-102NF12	\$345.00
1 Gallon	18" Flexline	1	KOOL-100NF18	\$235.00
		2	KOOL-102NF18	\$388.00
3 Gallon	12" Flexline	1	KOOL-350NF12	\$246.00
		2	KOOL-352NF12	\$379.00
3 Gallon	18" Flexline	1	KOOL-350NF18	\$267.00
		2	KOOL-352NF18	\$418.00

FORMULA 77 & 78 CONCENTRATED COOLANTS

Available With Or Without Magnetic Base

Formula 77 & 78 will not cause dermatitis, rancidity or build-up. Will create no rust or corrosion when diluted with clean water. 100% synthetic and biodegradable and meets OSHA & EPA requirements. Concentrated: 1 gallon makes 33 gallons!

Formula 77: For Tougher Service

Highly recommended for mist cooling any metal or alloy where tougher machining conditions require greater lubricity.

Formula 78: For Regular Duty

Can be used on any metal or alloy, and displays high efficiency in the cutting of exotic metals and alloys such as Monel, Inconel, Titanium, etc., as well as all non-ferrous metals.



Description	Part Number	Price
Formula 77-For Tougher Service		
1 Gallon	KOOL-77-1	\$40.00
Case (4-1 Gallon Bottles)	KOOL-77-4	\$151.00
5 gallon pail	KOOL-77-5	\$185.00
55 gallon drum	KOOL-77-55	\$1,870.00

Formula 78-For Regular Duty

1 Gallon	KOOL-78-1	\$38.00
Case (4-1 Gallon Bottles)	KOOL-78-4	\$145.00
5 gallon pail	KOOL-78-5	\$178.00
55 gallon drum	KOOL-78-55	\$1,789.00

Call Us Or Visit Our Website For Our Complete Selection!

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

AIR GUNS/WAY & HYDRAULIC OIL

BLIND HOLE AIR GUN

GUARDAIR



- Designed to clean out blind holes in work pieces.
- 1/8" diameter plastic air tube allows access into small diameter holes.
- Safety air shield protects workers from dangerous chip fly-back.
- 1/4" NPT (female) inlet.
- 3/16" OD brass extension.
- Meets OSHA standards.

Size	Part Number	Price
6"	GU-74BH006Z	\$25.89
12"	GU-74BH012Z	\$27.14

WHISPER JET SAFETY AIR GUN

The Quietest Safety Air Gun Available!

GUARDAIR



- Unique Coandaire nozzle reduces noise to 6-20dB less than conventional air guns.
- The best tool on the market for cleaning in noise sensitive areas.
- Ergonomic pistol grip and trigger reduces hand fatigue.
- Maximum operation pressure of 150psi.
- Meets OSHA Standards.

Whisper Jet Air Gun
Part # GU-80WJ
\$24.17

XTRA THRUST SAFETY AIR GUN

GUARDAIR



- The most powerful safety air gun available.
- Designed for tough, close in work.
- Features a cast aluminum handle, full length trigger and a permanently attached aluminum venturi nozzle.
- 1/4" NPT (female) inlet with max. operating pressure of 150psi.
- Meets OSHA Standards.

Xtra Thrust Air Gun
Part #: GU-75XXT
\$25.05

LONG JOHN SAFETY AIR GUN

GUARDAIR

LONGEST

Safety Air Gun Available!

- Perfect tool for cleaning hard to reach areas
- Used for blowing debris into piles, cleaning masonry forms, tanks, large molds, as well as machinery and storage areas
- Pistol style grip and aluminum extension makes it easy to handle
- Delivers full plant air pressure through an efficient aluminum venturi nozzle
- 1/4" NPT (female) inlet and a maximum operating pressure of 150psi
- Meets OSHA standards

Size	Part Number	Price
6"	GU-75LJ006AA	\$23.95
12"	GU-75LJ012AA	\$25.11
18"	GU-75LJ018AA	\$26.27
24"	GU-75LJ024AA	\$27.44
36"	GU-75LJ036AA	\$29.76

XTRA THRUST SAFETY AIR GUN

GUARDAIR



- Capable of moving large volumes of heavy debris
- Cast aluminum pistol grip handle and standard aluminum extension
- Used for blowing floor debris into piles, cleaning masonry forms, tanks, large molds, rafters and machinery and storage areas
- Pistol style grip and standard aluminum extension makes it easy to handle
- Delivers full plant air pressure through a high efficiency aluminum venturi nozzle
- 1/4" NPT (female) inlet and a maximum operating pressure of 150psi
- Meets OSHA standards

Size	Part Number	Price
6"	GU-75XT006AA	\$26.64
12"	GU-75XT012AA	\$28.97
18"	GU-75XT018AA	\$30.13
24"	GU-75XT024AA	\$31.29
36"	GU-75XT036AA	\$33.62

WAY OIL-SHELL TONNA OIL V

Applications

- Machine tool slides and tables
- Chains, cables and other parts requiring tackiness
- Some combined hydraulic and tableway applications

Features/Benefits

- Excellent stick-slip performance & thermal stability
- Outstanding extreme pressure performance
- Tackiness improving its ability to stay in place



Description	Size	Part Number	Price
Way Oil	5 Gallon Pail	SH-TONNAV68-5	\$97.15
	55 Gallon Drum	SH-TONNAV68-55	\$870.67

MOBIL VACTRA NO. 2 WAY OIL

Dual-purpose hydraulic and way oil is recommended when extreme precision or slow speeds make it necessary to eliminate stick-slip or chatter. Approved by major machine tool builders such as Cincinnati Milacron and Okuma. Helps to minimize wear. Offers good coolant separability and extends oil life.



Size	Part Number	Price
5 Gallon Pail	MOB-VACTRA2-5	\$119.00
55 Gallon Drum	MOB-VACTRA2-55	\$1,395.00

MOBIL DTE 24 HYDRAULIC OIL

Formulated for most applications in industrial, marine, and mobile service where zinc-free fluids are desired. For high-pressure systems, systems with servo valves, NC control mechanisms, and all robotics. Provide maximum equipment productivity with keep-clean performance, minimizing sludge, varnish, and deposit formation.



Size	Part Number	Price
5 Gallon Pail	MOB-DTE24-5	\$115.00
55 Gallon Drum	MOB-DTE24-55	\$1,150.00

HYDRAULIC OIL-SHELL TELLUS

Applications

- Industrial hydraulic systems
- Mobile hydraulic fluid power transmission systems
- Circulating oil systems
- General machine lubrication

Features/Benefits

- Good thermal stability
- Excellent antiwear
- Resistant to oxidation
- Excellent filterability
- Good water separation
- Excellent air release



Description	Size	Part Number	Price
Hydraulic Oil	5 Gallon Pail	SH-TELLOIL46-5	\$74.29
	55 Gallon Drum	SH-TELLOIL46-55	\$662.75

Call Us Today For All Of Your Machine Tool Needs!

WAY LUBE



Premium grade way oils are stable high quality 100% pure Paraffin Base Oils specially formulated to provide efficient lubrication for Machine Ways. They are adhesive, tacky and help prevent stick-slip, chatter and similar problems. They stay in place to provide maximum anti-wear and rust protection to machine surfaces even where a continuous supply of lubricant is difficult to maintain. They are formulated to meet all industry standards.



Also Available In 55 Gallon Barrels!



Description	Size	Part Number	Price
WAY OIL #1 Light (ISO 32)	1 Gal	QA-WAY032-1	\$20.45
	5 Gal	QA-WAY032-5	\$73.56
WAY OIL #2 Medium (ISO 32)	1 Gal	QA-WAY068-1	\$20.45
	5 Gal	QA-WAY068-5	\$68.16
WAY OIL #4 Heavy (ISO 220)	1 Gal	QA-WAY220-1	\$20.45
	5 Gal	QA-WAY220-5	\$68.16

HYDRAULIC OIL



Hydraulic Oils are used in all types of industrial applications. They are blended from high quality 100% pure paraffin base stocks and are fortified with special thermally stable antiwear additives plus effective rust and corrosion inhibitors. It has excellent demulsification characteristics and is formulated to meet or exceed most hydraulic oil specifications. ProtectAll Hydraulic Oil is also an excellent general purpose lube and machine oil.



Also Available In 55 Gallon Barrels!



Description	Size	Part Number	Price
Hydraulic Oil (ISO 32)	1 Gal	QA-HYD032-1	\$18.07
	5 Gal	QA-HYD032-5	\$69.47
Hydraulic Oil (ISO 46)	1 Gal	QA-HYD046-1	\$18.07
	5 Gal	QA-HYD046-5	\$70.84
Hydraulic Oil (ISO 68)	1 Gal	QA-HYD068-1	\$18.07
	5 Gal	QA-HYD068-5	\$73.56

SPINDLE OIL



Premium Grade Spindle Oils are specifically formulated to reduce friction and prevent wear on high speed spindles and most other types of Bearings. They pass the U.S. Steel 127 & 136 4-Ball Wear Test (ASTM D-2266). Premium grade spindle oils contain advanced rust and corrosion protection additives and resist foaming. These oils keep precision spindles safely lubricated for optimum performance and long life.



Also Available In 55 Gallon Barrels!



Description	Size	Part Number	Price
Spindle Oil (ISO 32)	1 Gal	QA-SPN002-1	\$21.82
	5 Gal	QA-SPN002-5	\$81.75
Spindle Oil (ISO 46)	1 Gal	QA-SPN010-1	\$21.82
	5 Gal	QA-SPN010-5	\$74.93
Spindle Oil (ISO 68)	1 Gal	QA-SPN022-1	\$21.82
	5 Gal	QA-SPN022-5	\$72.20

SOLUBLE OIL

Soluble Oil GP is a premium, general-purpose coolant for machining and grinding operations on metals where the machinability ratings are 70 and above. Formulated for applications where cooling rather than high load-carrying capacity is the primary requirement. Contains no added chlorine or sulfur. An effective bactericide provides good sump life. Soluble Oil GP leaves a light oily film to help provide short-term corrosion protection.

The 2500 contains an EP additive for hard materials and has better sump life than the 2100.



Also Available In 55 Gallon Barrels!



Description	Size	Part Number	Price
Soluble Oil 2100	1 Gal	QA-SOL2100-1	\$20.35
	5 Gal	QA-SOL2100-5	\$101.80
Soluble Oil 2500 (w/ additive)	1 Gal	QA-SOL2500-1	\$29.07
	5 Gal	QA-SOL2500-5	\$145.44

CUTTING OIL

Cutting Oil Clear is a transparent straw-colored machine aid that allows the operator to see the workpiece. It is excellent for cutting, drilling, milling and threading most types of steel including low and medium carbon as well as nickel and chrome alloy types. It is also safe for use on aluminum, brass and copper, as it does not contain sulfur.

Cutting Oil Dark is a heavy-duty multi-purpose cutting oil formulated for use on hard-to-machine alloy and stainless steels as well as many of the exotic metals. It contains a balanced package of premium chlorine, sulfur and fatty additives. It provides excellent tool life and smooth finishes in all types of machining operations including cutting, milling, drilling, tapping, grinding and similar operations. Not for use on copper or brass.



Also Available In 55 Gallon Barrels!



Description	Size	Part Number	Price
Cutting Oil Clear	1 Gal	PT-CUTCL-1GA	\$16.75
	5 Gal	PT-CUTCL-5GA	\$74.25
Cutting Oil Dark	1 Gal	PT-CUTDK-1GA	\$16.65
	5 Gal	PT-CUTDK-5GA	\$73.80

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

CUTTING FLUIDS/COOLANT

WATER SOLUBLE OIL

WS-5050 - Heavy Duty

WS-5050 is a superior water-soluble oil with extreme pressure additives for moderate and heavy-duty use.

- Multipurpose, versatile product
- Dependable all-around performance
- Special additives protect neoprene seals
- Recommended for ferrous & most nonferrous metals
- Compatible with CNC machining
- Provides great surface finish with less rework
- Extends tool life and reduces tooling costs



Description	Size	Weight lbs	Part Number	Price Each
WS-5050 Heavy Duty Soluble Oil	1 Gallon	9	RUST-74016-1	\$41.75
	5 Gallon Pail	43	RUST-74056	\$158.65
	55 Gallon Drum	480	RUST-74556	\$1,482.95

WATER SOLUBLE OIL

WS-11- Light Duty, Economical

Economical water-soluble oil for light-duty use.

- Chlorine, silicone free
- Thin oily-film corrosion protection
- Compatible with ferrous & nonferrous metals
- Low cost solution
- Also use as a light film rust preventative



Description	Size	Weight lbs	Part Number	Price Each
WS-11 CF LD Water Soluble Oil	1 Gallon	9	RUST-74013-1	\$33.00
	5 Gallon Pail	43	RUST-74053	\$125.40
	55 Gallon Drum	480	RUST-74553	\$1,172.30

WATER SOLUBLE OIL

WS-500A

Quality water-soluble oil with nonchlorinated extreme pressure additives for moderate-duty use.

- Multi-metal versatility
- Thin oily-film corrosion protection
- Recommended for ferrous metals, aluminum and titanium
- Limited use on brass, bronze, copper
- General-purpose coolant to use in a wide range of applications
- Noticeably increases tool life



Description	Size	Weight lbs	Part Number	Price
WS-500A Water Soluble Oil	5 Gallon Pail	48	RUST-74055	\$156.75
	55 Gallon Drum	528	RUST-74555	\$1,465.85

WATER SOLUBLE OIL

Ultracut PRO

Premium, long-lasting water-soluble oil with chlorinated extreme pressure additives and advanced bioresistance for heavy-duty use.

- Proven resistance to fungus and bacteria
- Outstanding lubricity and performance; great rust protection
- Recommended for ferrous & most nonferrous metals
- Maximizes functional sump life
- Increases part integrity and machining tolerances
- Extends tool life; reduces tooling costs



Description	Size	Weight lbs	Part Number	Price Each
Ultracut PRO Heavy Duty Water Soluble Oil	5 Gallon Pail	42	RUST-84405	\$200.00
	55 Gallon Drum	462	RUST-84455	\$1,678.65

WATER SOLUBLE OIL

ULTRACUT PRO CF

Premium, chlorine free, extended life water-soluble oil with added performance and bioresistance for heavy-duty use.

- Prevents rancidity, inhibits microbial growth
- Dependable performance, outstanding rust inhibitors
- Recommended for ferrous & nonferrous metals
- Significantly prolongs coolant life
- Improves tool life; boosts productivity rates
- Enhances workpiece quality and surface finish



Description	Size	Weight lbs	Part Number	Price Each
Ultracut PRO Chlorine Free Water Soluble Oil	5 Gallon Pail	42	RUST-83305	\$173.85
	55 Gallon Drum	462	RUST-83355	\$1,625.50

SYNTHETIC COOLANT

POWERCHIP 2000

Premium synthetic coolant with extreme pressure additives for heavy-duty use.

- Not susceptible to bacteria or fungus
- Chlorine free
- Good lubricity; minimizes misting
- Recommended for ferrous metals, titanium and high-nickel alloys
- Improves coolant life and machine cleanliness
- Excellent quenching and chip removal



Description	Size	Weight lbs	Part Number	Price
PowerChip 2000 Synthetic Coolant	5 Gallon Pail	48	RUST-76305	\$160.55
	55 Gallon Drum	528	RUST-76355	\$1,501.00

Call Us Today For All Of Your Machine Tool Needs!

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

**SEMI-SYNTHETIC COOLANT
ULTRACUT 380R**



Premium, ultra long-lasting semi-synthetic coolant with added performance package and biostability for moderate to heavy-duty use.

- Dependable performance; high lubricity
- No chlorine, sulfur, boron, phenols, nitrites or triazines
- Recommended for all ferrous & nonferrous metals-aluminum friendly!
- Use in individual sumps and large central systems
- Ultra long-lasting; increased coolant & tool life
- Keeps machines exceptionally clean
- Enhances workpiece quality and surface finish
- Outstanding resistant to bacteria and fungus
- Great corrosion protection



Description	Size	Weight lbs	Part Number	Price
Ultracut 380R Biostable Semi-Synthetic Coolant	5 Gallon Pail	45	RUST-76005	\$168.00
	55 Gallon Drum	500	RUST-76055	\$1,456.35

**SEMI-SYNTHETIC COOLANT
ULTRACUT 375R**



Superior, versatile semi-synthetic coolant with chlorinated extreme pressure additives and fungal control package for heavy-duty use.

- Universal fluid; reliable rancidity control
- Recommended for ferrous & most nonferrous metals- limited use on aluminum
- Easy care; extends operational coolant life
- Ideal for multi-material, multi-operational shops
- Cleaner machines and parts
- Great in high-pressure/high-volume systems; very low foaming



Description	Size	Weight lbs	Part Number	Price
Ultracut 375R Biostable Semi-Synthetic Chlorinated Coolant	5 Gallon Pail	45	RUST-74905	\$155.80
	55 Gallon Drum	500	RUST-74955	\$1,456.35

SYNTHETIC GRINDING COOLANT

General Purpose



Superior synthetic coolant for Blanchard, surface, centerless and cylindrical grinding

- Dry-film rust protection
- Good tramp oil rejection
- Recommended for ferrous metals, brass, bronze and copper
- Easy cleaning; no sticky residue
- Trouble-free tramp oil skimming and cleaning



Description	Size	Weight lbs	Part Number	Price
G-25J Synthetic Grinding Fluid	1 Gallon	9.25	RUST-75012-1	\$24.25
	5 Gallon Pail	47	RUST-75052	\$92.15
	55 Gallon Drum	531	RUST-75552	\$811.30

**SEMI-SYNTHETIC COOLANT
SS-405L**



Most Economical Choice!

Quality semi-synthetic cutting fluid for moderate duty use.

- Good corrosion protection
- Recommended for ferrous & most non-ferrous metals-limited use on aluminum
- Improves shop cleanliness
- No gummy residue on parts or machines
- Low foaming in high-pressure/high volume systems



Description	Size	Weight lbs	Part Number	Price
SS-405L Semi-Synthetic Coolant	5 Gallon Pail	44	RUST-78405	\$123.50
	55 Gallon Drum	485	RUST-78410	\$1,155.20

METALWORKING COOLANT SELECTION GUIDE

Coolant	Coolant Type	Chlorine	Cast Iron	Carbon & Tool Steel	Stainless Steel	Titanium & Nickel Alloys	Aluminum	Brass, Bronze & Copper	Magnesium	Recommended Concentration	Refractometer Reading Range
ULTRACUT Aero	Water-Soluble Oil		•	•	•	•	•	•	X	3-10%	3.0-9.2
ULTRACUT Pro	Water-Soluble Oil	Yes	•	•	•	X	•	•	X	3-10%	3.0-9.2
ULTRACUT Pro CF	Water-Soluble Oil		•	•	•	•	•	•	X	3-10%	3.0-9.2
ULTRACUT Green	Soluble Vegetable Oil	Yes	•	•	•	X	•	•	X	3-10%	3.2-9.7
ULTRACUT Green CF	Soluble Vegetable Oil		•	•	•	•	•	•	X	3-10%	3.1-9.5
WS-5050	Water-Soluble Oil	Yes	•	•	•	X	♦	♦	X	3-10%	3.2-9.7
WS-500A	Water-Soluble Oil		♦	♦	♦	♦	♦	♦	X	3-10%	3.6-10.7
WS-1000	Water-Soluble Oil	Yes	♦	•	•	X	♦	♦	X	3-10%	3.2-9.4
WS-1000 CF	Water-Soluble Oil		♦	♦	♦	♦	♦	♦	X	3-10%	3.2-9.5
WS-11	Water-Soluble Oil		♦	♦	♦	♦	♦	♦	X	3-10%	3.5-10.6
ULTRACUT 380R	Semi-Synthetic		•	•	♦	♦	•	•	X	3-10%	2.1-6.2
ULTRACUT 375R	Semi-Synthetic	Yes	•	•	♦	X	♦	♦	X	3-10%	2.4-7.2
ULTRACUT 370R	Semi-Synthetic		•	•	♦	♦	♦	♦	♦	3-10%	2.3-7.0
SS-405L	Semi-Synthetic		♦	♦	♦	♦	♦	♦	♦	3-10%	1.6-4.8
SS-150	Semi-Synthetic		♦	♦	♦	♦	♦	♦	X	4-10%	1.3-3.5
PowerChip 2000	Synthetic		•	•	•	•	X	X	X	3-10%	1.4-4.1
SN-100A	Synthetic		♦	♦	♦	♦	X	X	X	3-10%	1.2-3.6
Vytron-N	Synthetic		♦	♦	♦	♦	X	X	X	3-10%	1.3-3.8
PowerSaw	Synthetic		♦	♦	♦	♦	X	X	X	3-10%	1.1-3.3

• Best ♦ Better ■ Limited Use X Not Recommended

Call Us Or Visit Our Website For Our Complete Selection!

COOLANT MANAGEMENT

REFRACTOMETER



- Range 0-10, 0-18 or 0-32%
- Accurately measures coolant concentration
- Diamond-knurled sleeve for good gripping
- Comfortable eyepiece with adjustable focus for easy reading
- Optimize coolant use and tool life
- Average use accuracy range
- Carrying case with sampler included

Range	Brand	Part Number	Price
0-10%	Zebra	ZEB-OPT10	\$137.75
0-32%	Zebra	ZEB-OPT32	\$137.75
0-18%	Pride	A-8010-0018	\$109.00

SUMP MAINTENANCE



TRIADINE 20 controls bacteria and fungus growth. Provides added protection to extend coolant life. Sterilizes sumps to prevent re-infestations of the micro-organisms which cause rancidity.

Size	Part Number	Price
7.5 oz	RUST-77116-1	\$19.99
1 case (6)	RUST-77116	\$109.00

ODOR CONTROL TABLETS

- Safe and easy-to-use
- Eliminates sump odors caused by hydrogen sulfide bacterial emissions
- Effective way to control sump odor
- Contains no harmful chemicals
- Safer and more economical than biocides
- Works best when used with Zebra Oxygenator



Description	Part Number	Price
1 tube (15 tablets)	ZEB-XOCT25	\$37.05

SIMPLE DISC SKIMMER

- Maximizes coolant performance
- Handles heavy oil loads from coolant and wastewater applications
- Intermittent-duty, surge protected motor
- One year warranty (lifetime on disk/wiper set)
- Up to 5 gallons per hour oil removal capacity
- 1/2"x12" (13x300mm) sump access needed (for 12" model)



Access	Reach	Part Number	Price
1" x 12"	4.5"	ZEB-LH300	\$224.30
1" x 18"	7.0"	ZEB-LH460	\$256.50

Maximum Temperatures:
 • 80° F (27° C) on poly belts for coolant
 • 212° F (100° C) on steel belts for wash water

SMART DISC SKIMMER

- Saves you nearly \$300 per year over Simple Disk Skimmers
- Integrated Diverter™ knows the difference between floating tramp oils and coolant
- Continuous-duty, fan cooled motor
- Rugged steel construction
- Lifetime warranty on disk and wipers, one year on all other parts



Access	Reach	Part Number	Price
1" x 12"	4.5"	ZEB-GS4H300	\$327.28
1" x 18"	7.0"	ZEB-GS4H460	\$424.94

How The Diverter Works:
 1-Oils (tramp & coolant) enter under this weir
 2-Coolant sinks and passes through
 3-Clean coolant returns to your sump
 4-Tramp oils discharge to waste container

UNIVERSAL WHEEL SKIMMER

FEATURES:

- Exclusive bi-directional tramp oil drains
- Chemical and corrosion resistant frame and wheel
- Smaller footprint than a conventional old style wheel skimmer making it easier to install
- Easily and economically converts to 18" or high temperature wheels
- Removes up to 1.5 gallons of tramp oil per hour
- Prolongs Coolant Life
- Eliminates Tramp Oils
- Cuts Maintenance and Machine Downtime



The Universal Wheel Skimmer's unique injected molded frame is the result of modern engineering and manufacturing techniques. The design provides greater flexibility than conventional wheel skimmers in operation, wheel sizes and mounting.



Description	Motor	Part Number	Price
Molded Plastic Frame	120V 1Ph-6AMP	RUST-78034	\$210.00

SIDEWINDER™ TUBE SKIMMER

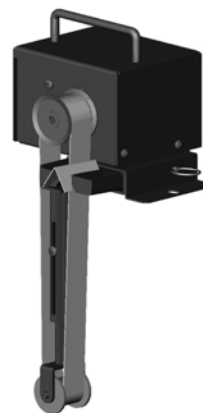
- Skims underneath conveyors, enclosed sumps, and hard-to-access areas
- Also works on oil spills
- Pick the reach you need: reach sizes available from the standard 8" model up to 95"
- Installs in seconds
- Industrial-grade pick-up tubing uses ceramic scraper
- Large oil discharge port
- Continuous-duty motor options
- One year warranty



Reach	Part Number	Price
8"	ZEB-ZVA8-08	\$369.55
11"	ZEB-ZVA8-11	\$369.55
14"	ZEB-ZVA8-14	\$369.55
Cartridge Replacements		
8"	ZEB-ZXCART8-08	\$116.00
11"	ZEB-ZXCART8-11	\$116.00
14"	ZEB-ZXCART8-14	\$116.00

BELT SKIMMER

- Steel, heavy-duty, rugged construction
- Removable, easy-to-clean collection tray
- Self-tensioning, 1" wide belt on fixed lower pulley (for short reaches)
- Dual wiper set with lifetime warranty
- One year warranty all other parts (except steel belts)
- Continuous-duty, fan-cooled motor
- 1 gallon per hour oil removal capacity
- 2" diameter minimum access required



Reach	Part Number	Price
8"	ZEB-BPF1-08	\$379.05
12"	ZEB-BPF1-12	\$388.55
18"	ZEB-BPF1-18	\$398.05
24"	ZEB-BPF1-24	\$407.55
Spare Belts		
8"	ZEB-BP-08	\$51.00
12"	ZEB-BP-12	\$56.00
18"	ZEB-BP-18	\$61.00
24"	ZEB-BP-24	\$66.00

Maximum Temperatures:
 • 80° F (27° C) on poly belts for coolant
 • 212° F (100° C) on steel belts for wash water

Call Us Today For All Of Your Machine Tool Needs!

DRUM MIXER

These sturdy, corrosion-resistant mixers (which offer a significant advancement over traditional Venturi-type drum mixers) are used to automatically dilute and mix coolant concentrates with the proper amount of water. The Rustlick drum mixer comes with a series of color coded inserts (proportioning valves), each of which deliver a specific dilution ratio: 30:1, 20:1, 10:1, etc.

- Ensures proper mixture every time.
- Eliminates the concern of too rich/too lean concentrations.
- Eliminates messy mixing spills.



Description	Weight	Part Number	Price
Drum Mixer	3 lbs	RUST-78096	\$155.00

A

ECONOMY MIXER

- Properly mixing provides better emulsions and saves on raw material costs
- Maintaining a consistent concentration increases sump and tool life
- 14 metering tips for specific ratios
- Maximum viscosity of 500 SUS
- 30 day warranty only
- 48" discharge tube included (max length for delivery)
- Fits easily on 55 gal. barrels



Description	Part Number	Price
Economy Mixer	ZEB-MIX05120	\$141.55
Water Limiter, 15-150 adjustable PSI range	ZEB-MIXXLW-1	\$125.00

MACHINIST MIXER

- Separate water shut-off valve
- Machined from solid bronze casting with galvanized steel and pipe
- Stainless steel models available for caustic concentrates
- Maximum viscosity of 500 SUS
- 40" discharge tube included, max length delivery
- Minimum 25psi needed (75psi max)
- LIFETIME WARRANTY



GPM	Mix Range %	Mix Ratio		Applications	Part Number	Price
		Low	High			
3	0-7	100:1	15:1	55 Gal Barrel	ZEB-MIX0327	\$376.20
3	0-25	100:1	4:1	55 Gal Barrel	ZEB-MIX03725	\$549.00
10	0-7	100:1	15:1	55 Gal Barrel	ZEB-MIX1027	\$521.55
10	0-25	100:1	4:1	55 Gal Barrel	ZEB-MIX10725	\$521.55

OXYGENATOR™

In the absence of oxygen, anaerobes multiply, causing coolant to spoil. Injecting oxygen into the coolant inhibits anaerobic bacterial growth, extending coolant life.

- Extends coolant life
- Eliminates foul odors
- Maintain high oxygen levels
- Industrial-grade bronze air diffuser
- Fuel-grad tubing
- Power: 110v



Description	Application	Part Number	Price
Medium Oxygenator	26-50 gal sump	ZEB-XBUB5000	\$64.64
Large Oxygenator	51-100 gal sump	ZEB-XBUB8000	\$117.70

NON-SILICONE DEFOAMER



- Controls excessive foam
- Silicone and silica free
- Fast-acting formula
- Use with most coolants, washing compounds and cleaners
- Will not interfere with painting or plating

Size	Part Number	Price
1 Gal	RUST-78640-1	\$17.25

HARDNESS TESTING STRIPS

Prevent Coolant Pudding, Foam and Rust



- Easy to use- dip in the coolant to match colors-results in 3 seconds
- 50 sticks per bottle will last one year per sump
- Non-hazardous
- A must for every shop

Description	Part Number	Price
Qty 50 Hardness Testing Sticks: 0-1000 ppm calcium carbonates and/or magnesium	ZEB-XWT50	\$28.50

THE CHIPINATOR™

The Chipinator (patent pending) keeps your drain free on Haas™ CNC machine tools with an auger "Corkscrew" type chip removal system. The Chipinator runs off the existing programmable auger. The Chipinator is made from hard anodized 6061 aluminum and has 3 spring loaded aluminum blades designed for machines running aluminum and plastic. The device has withstood thousands of hours of testing. The Chipinator has a break away design so it cannot harm your machine.



Designed For HAAS® Mills!

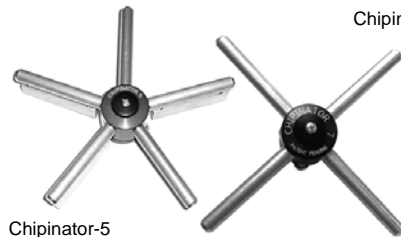
- Keeps your drain free of chips when running **ALUMINUM or PLASTIC**
- Eliminates broken cutters & scrap due to coolant starvation
- Allows you to run machine unattended
- Installs in less than 5 minutes!

*Haas is a registered trademark of Haas Automation, Inc. Haas is not affiliated with Chipinator



CHIPINATOR

Chipinator-7



Machine Auger Pitch	Part Number	Price
5"	CHIPINATOR-5	\$199.00
7"	CHIPINATOR-7	\$199.00

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

LUBRICANTS & CUTTING FLUIDS

RAPID TAP

All Metal Cutting Fluid & Paste



- Greatly extends tool life
- No special labeling or reporting
- Super-fine machined finish in operation after operation
- Excels in tough materials
- Anti-mist protection for a healthier work environment
- Contains no 1,1,1- trichloroethane or other ozone-depleting chemicals

Size & Description	Part Number	Price Each
4 oz. Bottle	REL-04Z-NRT-1	\$3.49
8 oz. Paste	REL-08Z-NRTP-1	\$12.49
1 Pint Bottle	REL-PNT-NRT-1	\$11.49
1 Gallon Bottle	REL-01G-NRT-1	\$59.00

OPTION 1

Biodegradable Metal-Cutting Fluid



- Option 1 leaves no oily residue
- Water-based
- Contains no 1,1,1- trichloroethane or other ozone-depleting chemicals
- Cleans up with dry cloth or water
- Great for use in computer clean rooms, hospitals or a weld operation follows machining operations

Size & Description	Part Number	Price Each
4 oz. Bottle	REL-04Z-OP-1	\$3.99
1 Pint Bottle	REL-PNT-OP-1	\$11.99
1 Gallon Bottle	REL-01G-OP-1	\$59.00

A-9 ALUMINUM CUTTING FLUID



- Eases all operations on aluminum: milling, broaching, drilling, threading, tapping, reaming, sawing, etc.
- Contains a scientific blend of chemicals that attach to aluminum surfaces, forming an extreme-pressure boundary lubricant between tool and work surface
- Contains anti-mist component for a healthier work environment

Size & Description	Part Number	Price Each
4 oz. Bottle	REL-04Z-A9-1	\$3.99
1 Pint Bottle	REL-PNT-A9-1	\$11.99
1 Gallon Bottle	REL-01G-A9-1	\$59.00

MICROFINISH

Microfinish is a very effective cutting compound for all tapping, drilling, broaching, turning and reaming operations. It is a super lubricant effective on spinning, stamping and forming jobs, as well as on work supported between centers. Microfinish is highly successful on most metals, both ferrous and non-ferrous, producing astounding results in improved finish with a marked reduction of seizures and chipping. Tap breakage is likewise reduced, with closer fits and also the elimination of scrap losses.

Contains No 1,1,1- Trichloroethane Or Other Ozone Depleting Solvents!

Description	Size	Part Number	Price
Microfinish Aerosol	13 oz	PT-MIC4-13OZ	\$18.25
Microfinish Can	16 oz	PT-MIC5-16OZ	\$17.50
Microfinish	1 Gal	PT-MIC1-1GA	\$79.35



M1® ALL-PURPOSE LUBRICANT



- Lubricates and stops squeaks
- Displaces moisture and wetness
- Protects metal against rust and corrosion damage
- Cleans and polishes metal parts and painted surfaces

Description	Part Number	Price Each	Case Qty	Part Number	Price Each
12 oz. Aerosol Can	STR-95173-1	\$6.75	12	STR-95173	\$6.15
1 Gallon	STR-93221-1	\$40.49	4	STR-93221	\$35.92
5 Gallon	STR-93227	\$264.09			

POWER CHUCK LUBRICANT



CHUCK-EEZ® ensures long chuck life, machine accuracy and operator safety. Formulated with a high percentage of molybdenum disulfide to reduce seizing, galling, fretting wear and lower friction under conditions of extreme pressure. Rust and oxidation inhibitors incorporated to maximize complete rust protection. Able to withstand pressures up to 500,000 pounds per square inch!

- Double to triple clamping pressure
- Keeps work piece clamped in place
- Provides boundary lubrication protection
- Lowers friction and wear
- Assists in wear-in of new chucks
- Lowers maintenance costs
- High resistance to centrifuge force
- For optimum performance, it is highly recommended that you grease your chuck once per shift
- **QUANTITY DISCOUNTS!**

Quantity Discounts	
12-23	Save 10%
24-35	Save 12%
36 +	Save 15%



CHUCK-EEZ

LOWER FRICTION & INCREASE GRIPPING FORCE!

Container Size	Case Qty	Part Number	Price Each
4 Oz Cartridge	24	EZ-21471	\$5.86
4 Oz Cartridge w/ grease gun	1	EZ-OKIT-21471	\$31.93
16 Oz Cartridge	12	EZ-21478	\$17.93
10 Lb Pail	1	EZ-21444	\$146.98
40 Lb Pail	1	EZ-21445	\$561.04
135 Lb Keg	1	EZ-21446	\$1,848.83
450 Lb Drum	1	EZ-21448	\$5,894.85

Call Us Today For All Of Your Machine Tool Needs!

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

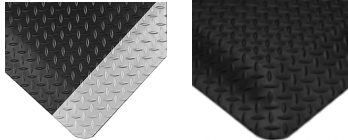
ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

DIAMOND PLATE SPONGECOTE

Anti-Fatigue Mats-No. 415

Diamond-Plate SpongeCote is the most popular anti-fatigue mat in the industry because no other offers such a complete package of exceptional comfort, long life, and a high-tech, industrial image. Its exceptionally resilient Nitricell sponge base defines the mat by providing true comfort, enhancing productivity, and reviving morale, all while relieving fatigue throughout the day.



- For use in dry work areas
- Anti-fatigue
- Nitricell sponge base for unparalleled comfort
- Safety beveled edges
- Slip and wear resistant
- **3 Year Warranty**

BEST SELLER!

Ideal For Heavily Trafficked Areas!

Size	Thickness	Color	Part Number	Price
2' x 3'	9/16"	Black	WW-415916-2-3BK	\$55.30
		Blk/Yellow	WW-415916-2-3BY	\$63.02
3' x 5'	9/16"	Black	WW-415916-3-5BK	\$134.47
		Blk/Yellow	WW-415916-3-5BY	\$145.08

DIAMOND PLATE MATS

Anti-Fatigue Mats-SMART® No. 497

An economical and Green solution for preventing worker fatigue. Recycled urethane composite sponge designed for budget and environmentally conscious operations. Comfort and resilience that surpasses traditional sponge diamond plate mats.



- For use in dry work areas
- Anti-fatigue
- Recycled urethane composite
- Good rebound
- Economical and Green choice!
- **1 Year Warranty**

BEST VALUE!

Thickness	Size	Color	Part Number	Price
5/8"	2' x 3'	Black	WW-49758-2-3BK	\$38.29
		Blk/Yellow	WW-49758-2-3BY	\$43.64
	3' x 5'	Black	WW-49758-3-5BK	\$93.24
		Blk/Yellow	WW-49758-3-5BY	\$100.49
1"	2' x 3'	Black	WW-4971-2-3BK	\$50.21
		Blk/Yellow	WW-4971-2-3BY	\$55.62
	3' x 5'	Black	WW-4971-3-5BK	\$127.28
		Blk/Yellow	WW-4971-3-5BY	\$138.14

WORKSAFE™ MATS

WorkSafe Light-Cutting Fluid Resistant

This best-selling, light-weight, high performance drainage mat, is now available in a new formulation that's resistant to the effects of mineral oil based cutting fluid. That's why we call it CFR - Cutting Fluid Resistant. Perfect for wet industrial areas, its lightweight design eases the strain of clean up, yet keeps employees quite comfortable.



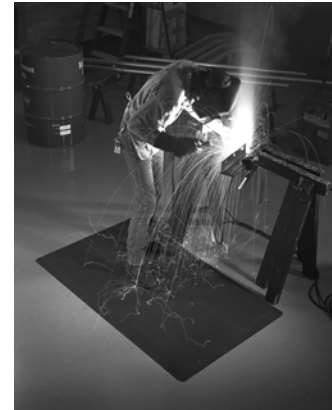
- For use in wet, dry and greasy areas
- Anti-fatigue
- Cutting fluid resistant
- Design helps keep debris from becoming trapped
- Slip resistant
- **1 Year Warranty**

Size	Thickness	Color	Part Number	Price
3' x 5'	1/2"	Gray	WW-47812-3-5GY	\$129.82
3' x 10'	1/2"	Gray	WW-47812-3-10GY	\$298.98
3' x 20'	1/2"	Gray	WW-47812-3-20GY	\$615.96

WELDSAFT™ MATS

No. 447

WeldSafe dramatically reduces fatigue while withstanding the challenges of welding environments. It is specifically formulated to repel sparks and hot metal shards, the thick rubber surface has a melt point of over 500° F. The super resilient Nitricel© sponge base is a Nitrile rubber composite that offers unparalleled comfort during long shifts. All edges are safety beveled.



- For use in welding areas
- Thick rubber surface repels sparks and hot metal shards
- 300° + melting point
- **3 Year Warranty**

Size	Thickness	Color	Part Number	Price
2' x 3'	9/16"	Black	WW-447916-2-3BK	\$65.46
	7/8"	Black	WW-44778-2-3BK	\$103.62
3' x 5'	9/16"	Black	WW-447916-3-5BK	\$163.76
	7/8"	Black	WW-44778-3-5BK	\$232.25

ORTHO STAND™ INDUSTRIAL MATS

HOLLOW-DOMED SURFACE

- Ergonomically designed with a hollow-domed surface
- Helps to increase circulation to reduce fatigue and improve worker's overall comfort
- For dry areas
- 1/2" overall thickness
- **1 Year Warranty**



Size	Thickness	Color	Part Number	Price Each
2' X 3'	1/2"	Black	WW-45412-2-3BK	\$46.87
		Black/Yellow	WW-45412-2-3BY	\$57.96
3' X 4'	1/2"	Black	WW-45412-3-4BK	\$67.46
		Black/Yellow	WW-45412-3-4BY	\$88.27

Call Us Or Visit Our Website For Our Complete Selection!

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

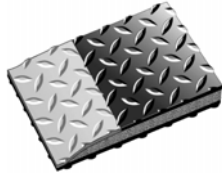
MRO & SAFETY
FLAT STOCK/DRILL ROD

SAFETY/ANTI-FATIGUE MATTING

DIAMOND PLATE- KNOB BACK™

ANTI-FATIGUE MATS

- Suitable for wet area applications
- Self-extinguishing, non-flammable and chemical resistant
- 5/32" thick diamond plate surface permanently bonded to 3/8" or 3/4" thick closed cell polymeric sponge base
- Available in 3/4" or 1-1/8" thickness
- All edges are beveled and sealed for safety and durability
- **3 year warranty**

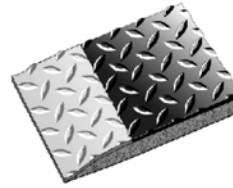


Size	Thickness	Color	Part Number	Price Each
2' x 3'	3/4"	Black	RH-DTK2436-B	\$74.17
		Gray	RH-DTK2436-G	\$74.17
		Black/Yellow	RH-DTK2436-BY2	\$83.08
3' x 5'	3/4"	Black	RH-DTK3660-B	\$188.75
		Gray	RH-DTK3660-G	\$188.75
		Black/Yellow	RH-DTK3660-BY2	\$197.92
2' x 3'	1-1/8"	Black	RH-DTK2436DS-B	\$98.42
		Gray	RH-DTK2436DS-G	\$98.42
		Black/Yellow	RH-DTK2436DSBY2	\$107.83
3' x 5'	1-1/8"	Black	RH-DTK3660DS-B	\$246.67
		Gray	RH-DTK3660DS-G	\$246.67
		Black/Yellow	RH-DTK3660DSBY2	\$273.33

DIAMOND PLATE™

ANTI-FATIGUE MATS

- Offers excellent durability following exposure to many organic and inorganic industrial chemicals
- Closed cell polymeric sponge base produces incredibly soft and resilient rebound properties
- Heavy duty style is 9/16" thick and Super Duty is a full 1" thick
- Also available in full roll lengths
- **3 year warranty**

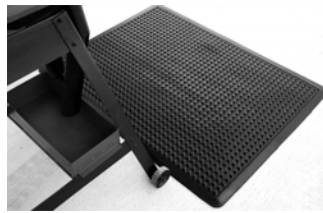


Size	Thickness	Color	Part Number	Price Each
2' X 3'	9/16"	Black	RH-DTT2436-B	\$49.67
		Gray	RH-DTT2436-G	\$49.67
		Black/Yellow	RH-DTT2436-BY2	\$56.67
3' X 5'	9/16"	Black	RH-DTT3660-B	\$120.83
		Gray	RH-DTT3660-G	\$120.83
		Black/Yellow	RH-DTT3660-BY2	\$130.42
2' X 3'	1"	Black	RH-DTT2436DS-B	\$66.00
		Gray	RH-DTT2436DS-G	\$66.00
		Black/Yellow	RH-DTT2436DSBY2	\$72.08
3' X 5'	1"	Black	RH-DTT3660DS-B	\$165.00
		Gray	RH-DTT3660DS-G	\$165.00
		Black/Yellow	RH-DTT3660DSBY2	\$180.00

ULTRA-DOME™ WORKSTATION

ANTI-FATIGUE MATS

- Designed for worker comfort, hollow rubber dome design encourages frequent yet subtle changes in posture, inducing natural flexing of muscles which can help reduce fatigue
- Single piece molded beveled borders on all 4 sides
- Solid and drain-thru mats available



Solid Mat

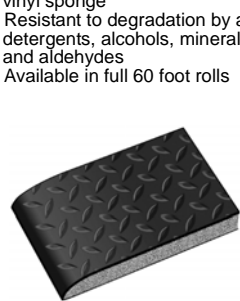
Drain-Thru Mat

Size	Thickness	Color	Part Number	Price Each
2' X 3'	1/2"	Black	RH-UD2436S-B	\$43.33
		Black/Yellow	RH-UD2436S-BY	\$53.33
		Black/Drain-Thru	RH-UD2436D-B	\$44.17
3' X 4'	1/2"	Black	RH-UD3648S-B	\$61.67
		Black/Yellow	RH-UD3648S-BY	\$81.67
		Black/Drain-Thru	RH-UD3648D-B	\$78.33

DIAMOND-TRED™

ANTI-FATIGUE MATS

- Economical diamond plate mat that offers surprising yet and value
- Durable, integrated slip-resistant wear layer of high-density vinyl foam bound to a soft, moisture-resistant closed-cell vinyl sponge
- Resistant to degradation by acids, detergents, alcohols, mineral oil and aldehydes
- Available in full 60 foot rolls

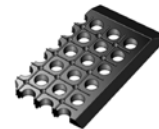


Size	Thickness	Color	Part Number	Price Each
24" X 36"	1/2"	Black	RH-DT-2436	\$39.17
36" X 60"	1/2"	Black	RH-DT-3660	\$97.50

COMFORT TRACT™

ANTI-FATIGUE MATS

- Offers light-weight design, high performance and excellent anti-fatigue characteristics in industrial and commercial workstations
- Features a molded bevel edge on four sides that helps keep mat in place
- Made of resilient grease-resistant rubber that stands up to cutting fluids
- **Black** mat is grease resistant while **Gray** mat is grease proof



Size	Thickness	Color	Part Number	Price Each
3' X 5'	1/2"	Black	RH-CT3660-B	\$65.00
		Gray	RH-CT3660-G	\$100.00
3' X 10'	1/2"	Black	RH-CT310-B	\$158.33
		Gray	RH-CT310-G	\$233.33

Call Us Today For All Of Your Machine Tool Needs!

SAFETY/ANTI-FATIGUE MATTING

B

WORKSAFE GREASE RESISTANT

No. 477

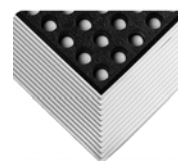
- Ideal for wet, dry and greasy areas
- Textured surface adds traction in wet areas
- Grease resistant
- Drainage holes allow water, debris & chips to flow through and under mat
- 7/8" overall thickness
- 1 Year Warranty



Size	Thickness	Color	Part Number	Price Each
2' x 3'	7/8"	Black	WW-47778-2-3BK	\$69.53
3' x 4'	7/8"	Black	WW-47778-3-4BK	\$113.92
3' x 5'	7/8"	Black	WW-47778-3-5BK	\$125.02

INDUSTRIAL WORKSAFE™

No. 476



- Ideal for wet, dry and greasy areas
- Textured surface adds traction in wet areas
- Nitrile rubber
- Drainage holes allow water, debris and chips to flow through and under mat
- 5/8" overall thickness
- Molded safety borders on all sides
- 1 Year Warranty



Size	Thickness	Color	Part Number	Price Each
2' x 3'	5/8"	Black/Yellow	WW-47658-2-3BY	\$137.06
3' x 4'	5/8"	Black/Yellow	WW-47658-3-4BY	\$249.15
3' x 5'	5/8"	Black/Yellow	WW-47658-3-5BY	\$319.33

SAFETY TRACT™

ANTI-FATIGUE MATS



- Provides safe, firm footing and superior anti-fatigue properties, increasing worker productivity
- Made of resilient grease-resistant rubber that stands up to cutting fluids and other fluids found in industrial situations
- Surface design prevents slipping while minimizing dirt trapping
- Safety beveled borders on all 4 sides for extra visibility



Size	Thickness	Color	Part Number	Price Each
40" X 52"	7/8"	Black/Yellow	RH-ST4052-BY	\$183.18
40" X 64"	7/8"	Black/Yellow	RH-ST4064-BY	\$191.25
40" X 124"	7/8"	Black/Yellow	RH-ST4124-BY	\$369.75

COMFORT2GO™

No. 518



A portable mat with a built-in handle, this mat is easy on the knees when you kneel and bolsters underfoot when you need some standing support. Dual-layer anti-fatigue mat that features a long-lasting PVC surface and a premium nitrile rubber composite sponge base. 4 year warranty.

- Dimensions: 17" x 30" x 7/8" thick



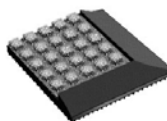
Size	Color	Part Number	Price
17" x 30"	Black	WW-51878-1730BK	\$64.38

ENTRANCE MATS

Town 'n Country



- All weather surface of raised reinforced, Loop-Pile, fabric covered surface cubes that prevent pile from crushing
- Ideal for heavy traffic areas, scraping off soil, sand and snow to make this a perfect mat for any climate
- Raised reinforced rubber borders help trap soil and moisture holding up to 1-1/2 gallons of water per square yard
- Nitrile rubber base with cleated backing reduces mat movement and remains flexible in freezing temperatures
- Easily cleaned by vacuum, hose, or pressure washer, not launderable
- Available colors: Brown, Burgundy, Charcoal, Green, Blue, Red, Silver



Size	Thickness	Color	Part Number	Price
2' x 3'	3/8"	Charcoal	RH-TNC2436-CH	\$28.57
		Brown	RH-TNC2436-BR	\$28.57
		Blue	RH-TNC2436-BL	\$28.57
3' x 5'	3/8"	Red/Black	RH-TNC2436-RE	\$28.57
		Charcoal	RH-TNC3660-CH	\$72.14
		Brown	RH-TNC3660-BR	\$72.14
		Blue	RH-TNC3660-BL	\$72.14
		Red/Black	RH-TNC3660-RE	\$72.14

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

499

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

SAFETY GLASSES

PMXTREME® SAFETY GLASSES



- Black frame w/ clear lens
- Built-in rubber nose piece
- Rubber temple tips
- Ventilated, straight-back flexible temples
- Scratch resistant polycarbonate lens provides 99% UVA/B/C protection
- Includes black lanyard cord

Lens Color	Frame Color	Part Number	Price Each
Clear	Black	PYR-SB6310SP	\$2.99
Gray	Black	PYR-SB6320SP	\$2.99

ACCURIST® SAFETY GLASSES

- Sporty design for on and off the job
- Inner foam padding is flame resistant
- Built-in rubber nosepiece
- Durable frame features dual-injected straightback temples
- Anti-fog lenses
- Scratch resistant polycarbonate lens provides 99% UVA/B/C protection



Lens Color	Frame Color	Part Number	Price Each
Clear	Black	PYR-SB8710DTP	\$7.99
Clear	Black/Red	PYR-SBR8710DTP	\$8.99
Gray	Black	PYR-SB8720DTP	\$7.99

INTRUDER™ SAFETY GLASSES

- Economical, lightweight glasses offers superior protection
- Superior comfort and fit
- Lenses are coated for scratch resistance
- Provides 99% protection against harmful UV rays
- Meets ANSI Z87.1-2003 standards



Lens Color	Temple Color	Part Number	Price Each
Clear	Clear	PYR-S4110S	\$1.49
Gray	Gray	PYR-S4120S	\$1.69

ZTEK® SAFETY GLASSES

- Economical wrap-around single lens provides full panoramic view
- Soft, non-slip rubber temple tips provide non-binding fit
- Integrated nose piece
- Lenses are coated for superior scratch resistance
- Lenses provide 99% protection against harmful UV rays
- Meets or exceeds ANSI Z87.1-2003 standards
- CE EN166 and CAN/CSA Z94.3-07 certified



Frame Color	Lens Color	Part Number	Price Each
Clear	Clear	PYR-S2510S	\$2.99
Gray	Gray	PYR-S2520S	\$3.29

VENTURE II® SAFETY GLASSES

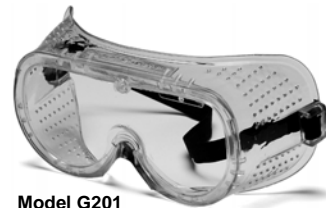
- 9.75 base curved lens provides full side protection without distracting seams or traditional type side shields
- Nose buds secure the glass and prevent slipping while providing a pillow soft fit
- Temples adjust to four different lengths
- Lenses are coated for superior scratch resistance
- Lenses provide 99% protection against harmful UV rays
- Exceeds ANSI Z87.1-2003 standards
- CE EN166 and CAN/CSA Z94.3-07 certified



Frame Color	Lens Color	Part Number	Price Each
Black	Clear	PYR-SB1810S	\$4.39
	Gray	PYR-SB1820S	\$4.99
	Blue	PYR-SB1860S	\$4.99
	Amber	PYR-SB1830S	\$4.99

GOGGLES

- Model G201**
- Perforated goggle, provides excellent ventilation
 - Lenses provide 99% protection against harmful UV rays
 - CE EN166 certified
 - Exceeds ANSI Z87.1-2003 high impact requirements



Model G201

- Model G204T**
- Chemical splash goggle features vent caps to restrict the influx of liquids
 - Anti-fog
 - Lenses provide 99% protection against harmful UV rays
 - CE EN166 certified
 - Exceeds ANSI Z87.1-2003 high impact requirements



Model G204T

Description	Part Number	Price Each
Ventilated Goggle	PYR-G201	\$1.99
Chemical Goggle, Anti-Fog	PYR-G204T	\$3.50

Call Us Today For All Of Your Machine Tool Needs!

HAND PROTECTION

D

CUFFED WORK GLOVES



- Standard shoulder leather
- Gunn pattern
- 2-1/2" safety cuff
- Full leather index finger and palm
- Leather knuckle strap
- Color: Gray palm with blue pattern
- Sold per pair



Description	Size	Part Number	1-11	12+
Cuffed Work Gloves	Large	GLV-1160	\$1.99	\$1.67

PREMIUM GRAIN GOAT SKIN "PRO-MECH" GLOVES



- Designed for the professional mechanic or sports enthusiast
- Reinforced palm and thumb crotch
- Black spandex back and wrist
- Adjustable Velcro closure
- Keystone thumb
- Color: Gray with black trim
- Sold per pair



Description	Size	Part Number	1-11	12+
Goat Skin Mechanic Glove	Large	GLV-M4017-L	\$9.29	\$8.59
	X-Large	GLV-M4017-X	\$9.29	\$8.59

BROWN JERSEY GLOVES



- Comfortable and durable all-purpose glove
- 8 oz. cotton brown jersey
- Clute pattern cut for comfort
- Knit wrist
- Color: Brown
- Sold per pair



Description	Size	Part Number	1-11	12+
Brown Jersey Gloves	Large	GLV-2204	\$0.99	\$0.84

DOTTED CANVAS GLOVES



- Comfortable and durable
- 9 oz. cotton canvas
- Black PVC dots on palm, index finger and thumb for enhanced grip
- White knit wrist
- Color: White with black dots
- Sold per pair



Description	Size	Part Number	1-11	12+
Dotted Canvas Gloves	Large	GLV-2405	\$0.99	\$0.84

LATEX COATED STRING GLOVES



- Ideal for material handling
- Blue latex coated palm, thumb and fingertips
- Gray cotton poly blend string knit
- Color: Gray with blue coating or Natural with green coating
- Sold per pair



Description	Size	Part Number	1-11	12+
Blue Coated Palm	Large	GLV-2627-L	\$2.49	\$2.32
	X-Large	GLV-2627-X	\$2.49	\$2.32

DISPOSABLE NITRILE GLOVES



- 5 mil disposable nitrile
- Powder free
- Industrial grade
- Polymer coated
- Color: Blue
- Sold per box of 100



Description	Size	Part Number	1-11	12+
5mil Disposable Nitrile Gloves-Box/100	Large	GLV-6394-L	\$10.59	\$9.85
	X-Large	GLV-6394-X	\$10.59	\$9.85

CUFFED WORK GLOVES LEATHER PALM



- Standard shoulder leather
- Gunn pattern
- 2-1/2" safety cuff
- Patch palm
- Full leather index finger and finger tips
- Color: Gray palm with blue denim
- Sold per pair



Description	Size	Part Number	1-11	12+
Denim Work Gloves	Large	GLV-1176PPB	\$1.79	\$1.49

SELECT SHOULDER COWHIDE WELDER GLOVES



- Select shoulder cowhide
- Fully welted and lined
- Wing thumb
- Reinforced thumb strap
- Kevlar® sewn
- Color: Blue



Description	Size	Part Number	1-11	12+
Blue Select Shoulder	Large	GLV-5440	\$6.99	\$6.50

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

501

CHUCK JAWS
LATHE WORKHOLDING

EAR PROTECTION

DISPOSABLE EARPLUGS

- NRR 31db
- CE EN-352-2:2002 certification
- Contoured fit, disposable polyurethane ear plugs
- Plug gently expands and self-adjusts to all size ear canals
- Available corded or uncorded in convenient dispenser box

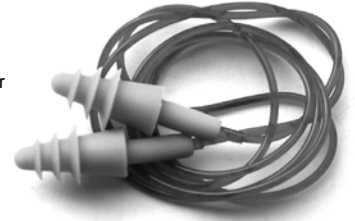


Description	Pack Size	Part Number	Price
Disposable Uncorded Earplugs	200/box	PYR-DP1000	\$25.00
Disposable Corded Earplugs	100/box	PYR-DP1001	\$25.00

MACHINE VISES
VISE JAWS

REUSABLE EARPLUGS

- NRR 23db
- Constructed of flexible rubber wrapped around a pocket of air for superb comfort
- Three flanges of flexible rubber forms a cozy seal for all size ear canals
- Packaged in convenient dispenser box containing 100 pair per box



Reusable Earplugs
Part #PYR-RP2001
\$86.67 Box of 100

RETENTION KNOBS
ER, DA, TG COLLETS

BACK SUPPORTS

- Stabilizes the spine, supports the abdomen and lower back to prompt proper lifting techniques
- Constructed from lightweight, durable material
- Contoured shape allows flexibility and complete freedom of movement
- Features breakaway suspenders
- 2 overlap style adjustable panels
- Washable and shrink resistant



Size	Part Number	Price Each
Medium (33" - 37")	PYR-EB100M	\$11.70
Large (38" - 42")	PYR-EB100L	\$11.70
Extra Large (43" - 48")	PYR-EB100XL	\$11.70
XXL (49" - 53")	PYR-EB1002XL	\$12.30

TOOLHOLDERS
TAP HOLDERS

MODEL PM5010 EAR MUFFS



- NRR 31db
- Large, soft foam ear cups
- Low profile design
- Adjustable to fit all sizes
- fold-away padded headband
- Meets or exceeds ANSI S3.19 requirements



Model PM5010 Ear Muffs
Part #PYR-PM5010
\$11.40

INDEXABLE DRILLS
TURNING & BORING

LENS CLEANING TOWELETTES

- Ideal for manufacturing areas where dirt, grit and grime can stick to lenses.
- Available in canister of 100 lens cleaning tissues or in a box of 100 individually packaged towelettes



Description	Part Number	Price Each
Canister of 100	PYR-LCC100	\$6.80
100 Individually Packaged	PYR-LCT100	\$7.20

ENDMILLS, DRILLS
TAPS & REAMERS

WE'VE GOT THE ITEMS YOU NEED!



- Chuck Jaws
- Lathe & Collet Chucks
- Lathe Tooling
- Machine Vises
- Milling Toolholders
- ER, TG & DA Collets
- Carbide Inserts

- Drills, Taps & Reamers
- Threading & Grooving
- Indexable Cutting Tools
- Abrasives
- Cutting Fluids
- Measuring Tools
- MRO & Safety



PLEASE CALL FOR MORE INFORMATION!

Call Us Today For All Of Your Machine Tool Needs!

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

WATERPROOF LED WORKING LIGHTS



- LED lights provide an excellent solution for heat intensive environment
- High brightness with 330 Lumens
- Magnetic base: 2" x 2" w/ 110lbs power pull
- 50,000 hours LED lifetime
- Arm length: 20"
- Power supply: 110V AC/1 Ph
- Bolt-on mounting plate: 2" x 2"



Bolt-on base



Bolt On LED Worklight
Part # A-8401-0448
\$59.00

Mag Base w/ LED Worklight
Part # A-8401-0449
\$79.00



LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

FLEXIBLE SHAFT HALOGEN LIGHTS



A-8401-0410

- 115V/ 60Hz/ 1Ph
- 24" flexible arm
- Powerful magnetic base with bolt on bracket



24" FLEXIBLE SHAFT
Part # A-8401-0410
\$69.00

Replacement Bulb:
Part # A-8401-0411 **\$11.00 ea**



A-8401-0415

- 110V/ 60Hz/ 1Ph 35 watts
- 20" flexible arm
- Powerful magnetic base with on/off switch

20" FLEXIBLE SHAFT
Part # A-8401-0415
\$52.00

Replacement Bulb:
Part # A-8401-0416 **\$10.00 ea**

LED FLASHLIGHT With Magnetic Base



Ideal For Focused Applications In Industrial & Automotive!

- Flexible shaft with universal movement
- Max. reach: 8"
- Magnetic base: 1-1/2" dia
- 25lbs power pull
- LED flashlight requires 3 AAA batteries

Universal Mag. Base W/ LED Flashlight
Part # A-8401-0440
\$29.00



STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

MAGNETIC LAMP



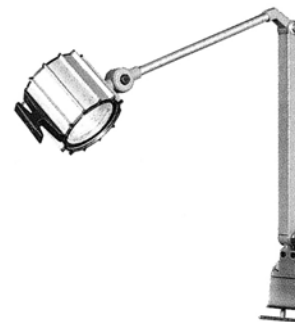
- Powerful magnet base with on/off switch
- Guaranteed power pull: 130 lbs
- Flexible arm for any position adjustment
- 60VA power rating
- Power supply: 110V/60Hz/1 phase
- Base Body: 2 5/16" L x 2" W x 2" H

Part Number
A-8401-0049
\$26.50 each



HALOGEN MACHINE LAMPS

- Waterproof and dustproof
- Suitable for all heavy-duty conditions subject to extreme effects by lubricant and coolant
- Lamp head made of sturdy lacquered aluminum
- Sturdy rod-arm with special joint and connection clamp in base
- Protective low voltage
- Regulation transformer 120V



HALOGEN MACHINE LAMP
Part # A-8401-0417
\$185.00
Replacement Bulb:
Part # A-8401-0418 **\$10.00 ea**



CUTTING TOOLS
MACHINERY

LED FLASHLIGHT Large Diameter With Magnetic Base

- 14 LED Ultra-bright flashlight
- Large, 2" diameter chrome mag base
- Slim, articulating flex bar allows easy and accurate positioning
- Quick release mounting bracket clamp
- Batteries included

Large Diameter Magnetic Mini Flex Bar W/ LED Flashlight
Part # FOW-52-630-455
\$26.50



HALOGEN LAMPS



- FEATURES:**
- Exclusive halogen design
 - Built-in transformer
 - Water resistant
 - 110v, single phase

HALOGEN LAMP
Part #PP-HL-110
\$179.00 each



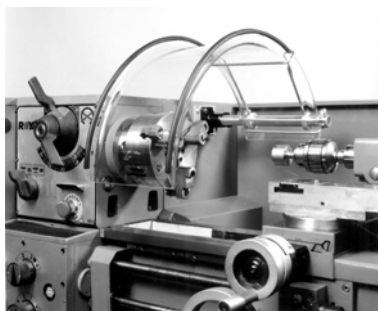
PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

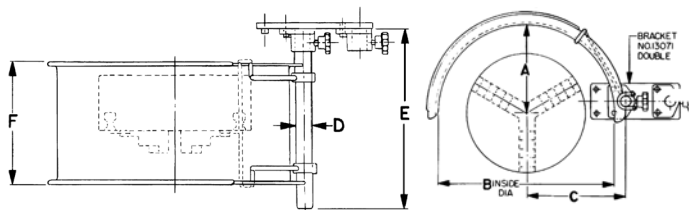
Call Us Or Visit Our Website For Our Complete Selection!

SAFETY PRODUCTS-MACHINE GUARDS

LATHEGUARDS



- Clear LEXAN, Semi-Circular wrap-a-round guards
- Heavy Duty Chrome-plated extension tube and hardware
- Ready to mount; all you do is affix mounting bracket with two screws.
- Back of shield is reinforced with plated wire-form housing
- Locks in swing away or functional positions
- Accepts 3 or 4-Jaw Chucks
- Included mounting bracket



Lathe Size	Cnt Ht. (Shield Height)	For Use With Chucks Up To (A)	Shield Width F	Shield Length B	Tube Length E	Part Number	Price
Small	3.9"	6" Dia	6 1/4"	7.8"	10"	FXB-12999	\$143.68
6 to 12	6"	8" Dia	6 1/4"	11.8"	10"	FXB-13060	\$159.77
12 to 16	8"	12" Dia	8"	15.8"	11 1/2"	FXB-13061	\$182.76
16 to 20	10"	16" Dia	8"	19.70"	13"	FXB-13062	\$198.85
20 to 24	13"	20" Dia	8"	23.6"	13"	FXB-13064	\$227.59

VISORGUARD

Provides Complete Protection Between Cutting Tool and Operator's Eyes

- Flexbar arm permits setting of Visorguard at the correct height and angle for each setup.
- Simply flip shield up to load part and down for machining.
- Special spring-loaded shaft makes shield stay put - no springback.
- Wing-shaped shield protects workers at adjacent machines
- Flexbar locks rigid; has stainless aircraft-grade tension cable
- Can be installed in minutes on CNC mills, conventional milling machines and others.
- Use the Long Reach Visorguard for large milling machines (vertical and horizontal) and unguarded machines including CNC machines



DIMENSIONS	
Visorguard	• Shield Size - 16" W x 8" H
	• Flexbar Arm - 10" long
Long Reach Visorguard	• Shield Size - 16" W x 8" H
	• Flexbar Arm - 10" long
	• Available Reach- Up to 40"



VISORGUARD

Part # FXB-13055

\$143.68

REPLACEMENT SHIELD

Part # FXB-13054

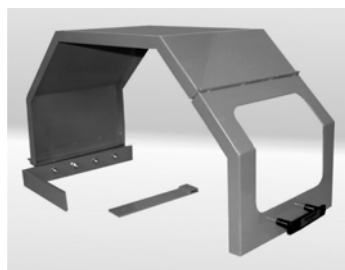
\$33.33

LONG REACH VISORGUARD

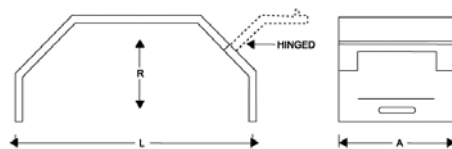
Part # FXB-13050

\$217.24

CHUCKGUARD



- Hinged front panel allows easy access to the chuck
- Lexan window for easy viewing
- Comes complete with mounting bracket and support bar for mounting on headstock
- Bright safety painted finish
- Exceeds O.S.H.A. requirements



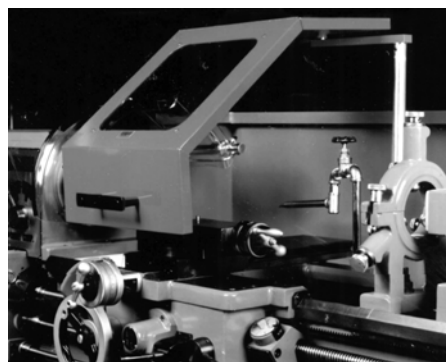
A	R	L	Chuck Diameters	Part Number	Price
14"	17-1/2"	35"	20", 24", 25", 26", 28", 30", 30-1/2"	FXB-13056	\$572.41
14"	20"	40"	30-1/2", 32", 36"	FXB-13057	\$660.92
14"	25-1/2"	51"	39-1/2", 47", 49"	FXB-13058	\$787.36

Super Heavy Duty Steel Guards Made Of 14 Gauge Steel For Chucks Up To 47" Diameter!



TRAVELGUARD

EXTRA-HEAVY DUTY O.E.M. TYPE FOR LATHES, GRINDING MACHINES, ETC.



- Operator protection wherever tool is cutting
- Easy to mount on cross slide (tool compound).
- Fully adjustable in all directions-forward & backwards
- Heavy steel construction with thick lexan window.
- Frame is 3/4" construction made of heavy gauge steel
- Front panel is hinged and can be lifted for quick access to machine.

20" Chuck (Max.)

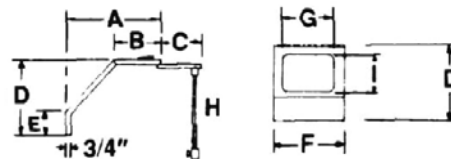
Part # FXB-13086

\$274.71

28" Chuck (Max.)

Part # FXB-13087

\$304.60

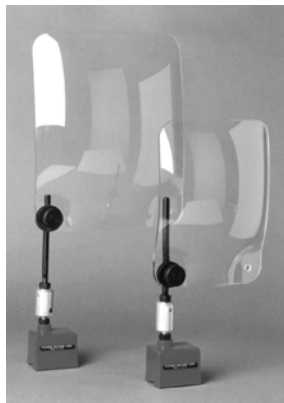


Model	A	B	C	D	E	F	G	H	I
FXB-13086	16	8	7-3/4	13	4	11-7/8	8-1/2	20-1/2	8-1/2
FXB-13087	22-3/4	10-1/2	9-3/4	14-1/2	5-5/8	14	9-3/4	20-1/2	10-3/4

Call Us Today For All Of Your Machine Tool Needs!

SPLASHGUARD

- Protects eyes against chip & liquid burns
- Safety shield on tilt-type magnetic stand (shield swivels 360° and locks positively where placed)
- Overall height of stand (base to top of post) 9"
- Powerful magnetic base
- Shields are made of durable clear view 1/8" thick plastic
- Concave and flat shields are interchangeable on all models (Splashguard and Eyeguard)



Concave Splashguard

Size	Part Number	Price	Pkg Qty	Part Number	Price
6" x 8"	FXB-13108	\$28.45	3	FXB-13108-L	\$25.29
8" x 10"	FXB-13109	\$32.76	3	FXB-13109-L	\$35.63
10" x 12"	FXB-13110	\$37.93	3	FXB-13110-L	\$50.57
12" x 16"	FXB-13111	\$43.68	3	FXB-13111-L	\$62.07
16" x 20"	FXB-13112	\$52.87	3	FXB-13112-L	\$105.75

Replacement Shields

Flat Splashguard

Size	Part Number	Price	Pkg Qty	Part Number	Price
6" x 8"	FXB-13115	\$25.29	3	FXB-13115-L	\$17.24
8" x 10"	FXB-13116	\$27.59	3	FXB-13116-L	\$29.89
10" x 12"	FXB-13117	\$29.89	3	FXB-13117-L	\$35.63
12" x 16"	FXB-13118	\$33.91	3	FXB-13118-L	\$44.83
16" x 20"	FXB-13119	\$37.93	3	FXB-13119-L	\$54.02

Replacement Shields

PANELGUARD™



Movable, sturdy and free-standing machine guard. Ideal for creating machine safety areas, reducing machine noise and separating machines.

- Protects operators from chips and noise from neighboring machines
- Consists of 4 modular panels 16" W x 71" H and opens 66" across
- Upper panels are transparent, high impact resistant Lexan
- Lower panels are safety colored tempered masonite
- Expandable-create a custom machine guarding system by adding extra panels



Description	Part Number	Price
Basic 4-panel set	FXB-13035	\$488.51
2 panel extension set	FXB-13036	\$247.13
Extra slide-in hinge	FXB-13037	\$13.79

GRINDERGUARD



- Heavy-duty swivel-lock positioning shield protects operator from flying grit and debris.
- Cast frame with virtually unbreakable 3/16" thick Lexan® shield will contain and deflect any wheel breakage.
- One standard frame with a choice of three sizes of interchangeable Lexan® shields will provide protection for grinding and buffing wheels up to 14".
- Extra heavy-duty steel pivot with locking knob connects the frame to the curved adjustable Mounting bracket
- Comes complete with frame, Lexan shield and pivot mount hardware



Grinder Guard w/ Shield

For Bench Grinders	Shield Size	Part Number	Price	Part Number	Price
6", 7", 8"	5-1/2" x 5-3/4"	FXB-13040	\$114.66	FXB-13043	\$16.00
8", 10"	6-1/2" x 5-1/2"	FXB-13041	\$126.44	FXB-13044	\$24.00
10" and up	12-3/4" x 11"	FXB-13042	\$136.78	FXB-13045	\$33.00

Replacement Shields

DRILLGUARD



- Provides complete operator protection and vision
- Smooth telescopic action via patented spiral guide grooves-window caged housing moves up while drill comes down, continuously guarding cutting tool
- Made of heavy duty material
- Comes complete with installation and operation instructions
- Interchangeable bushings available to accommodate most drill press quill sizes



DRILLGUARD
Part # FXB-13125
\$135.63

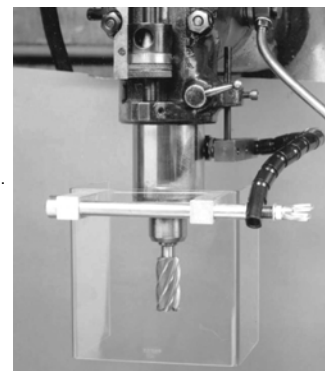
Interchangeable Bushings

Fits Quill Dia (range)	Part Number	Price
2.625" to 2.563"	FXB-13127	\$16.09
2.562" to 2.501"	FXB-13128	\$16.09
2.500" to 2.438"	FXB-13129	\$16.09
2.437" to 2.376"	FXB-1330	\$16.09
2.375" to 2.313"	FXB-13131	\$16.09
2.312" to 2.251"	FXB-13132	\$16.09
2.250 to 2.188"	FXB-13133	\$16.09
2.187" to 2.126"	FXB-13134	\$16.09
2.125" to 2.063"	FXB-13135	\$16.09
2.062" to 2.000"	FXB-13136	\$16.09

DRILL/CHUCK VISORGUARD™



- Flexbar arm permits setting of guard at the correct height and angle for each setup.
- Flip shield up to load part and down for drilling.
- Special spring-loaded shaft makes shield stay put - no springback.
- Wing-shaped shield (90° angled) protects workers at adjacent machines.
- Flexbar locks rigid; has stainless aircraft-grade tension cable.
- Can be installed in minutes on drill presses, mills, milling machines and others.
- Shield Size - 6" wide x 6" high
- Flexbar Arm - 10" long
- Comes complete with all mounting hardware



DRILL/CHUCK VISORGUARD
Part # FXB-13032
\$136.78

REPLACEMENT SHIELD
Part # FXB-13033
\$33.56

LONG REACH DRILL/CHUCK VISORGUARD
Part # FXB-13032-L
\$205.75

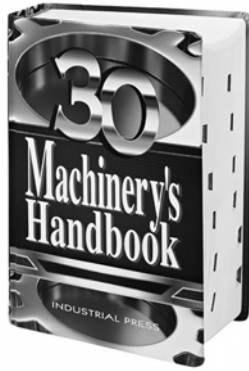
Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS
VISE JAWS
VISE ACCESSORIES
STRAIGHT SHANK
COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

INDUSTRIAL REFERENCE

MACHINERY'S HANDBOOK-29th Edition

For more than 100 years, Machinery's Handbook has been the most popular reference work in metalworking, design, engineering and manufacturing facilities, and technical schools and colleges throughout the world. It is universally acknowledged as an extraordinarily authoritative, comprehensive, and practical tool, providing its users with the most fundamental and essential aspects of sophisticated manufacturing practice. The 30th edition of the "Bible of the Metalworking Industries" contains major revisions of existing content, as well as new material on a variety of topics. It is essential reference for mechanical, manufacturing, and industrial engineers, designers, draftsmen, toolmakers, machinists, engineering students, and the serious home hobbyist.



New in the 30th Edition

Expanded metrology section including v-blocks and micrometer, vernier, and dial calipers. New fluid power section covering pneumatic, hydraulic, and vacuum theory and applications. New powder metallurgy section, including additive manufacturing. Even more useful specs, including tap drill sizes for Unified threads, reaming allowances for drilling, standard mesh and grit sizes, rules for figuring tapers, and assembly with pins and studs. Includes recently added information on sheet metal and presses, keys and keyways, shaft alignment, taps and tapping, helical coil screw thread inserts, metric screw threads, miniature screws, fluid mechanics, solid geometry, statistics, calculating hole coordinates and thread dimensions, and distinguishing between bolts and screws.

Plus ...

Numerous major sections have been extensively reworked and renovated throughout, including mathematics, mechanics and strength of materials, properties of materials, dimensioning, gaging and measuring, machining operations, manufacturing process, fasteners, threads and threading, and machine elements. Standards have been updated. The metric content continues to be expanded. Throughout the book, wherever practical, metric units are shown adjacent to the U.S. customary units in the text. Many formulas are now presented with equivalent metric expressions, and metric examples have been added. The detailed tables of contents located at the beginning of each section have been expanded and fine-tuned to make finding topics easier and faster. The entire text of this edition, including all the tables and equations, has been reset, and thousands of figures have been refined and redrawn. The page count has increased, by nearly 100 pages, to 2,896 pages.

Description	Part Number	Price
Machinery's Handbook 29th - Toolbox Edition	IP-30916	\$105.00
Machinery's Handbook 29th - Large Print Edition	IP-30923	\$125.00
Machinery's Handbook 29th - CD Rom & Toolbox Set	IP-30961	\$180.00
Machinery's Handbook 29th - CD-Rom & Large Print Set	IP-30978	\$199.95
Machinery's Handbook 29th - CD Rom	IP-30930	\$105.00
Machinery's Handbook Guide-29th Edition	IP-30947	\$19.95

MACHINIST CALC PRO 2

Advanced Machining Math Calculator with Materials

The Machinist Calc Pro 2 now includes materials and tool settings combined with DOC and WOC to solve all your speed and feed calculations for face, end or slot milling plus turning, drilling and boring. It also gives you step-saving drill and thread chart look-ups, right triangle solutions, bolt-circle patterns, a larger 2-line LCD display and much more all built into a portable, rugged and cost-effective handheld calculator. Includes a rugged shock, dust and moisture resistant Armadillo Gear protective case.

Built-in Functions and Calculations:

- New - Machining-specific keys to enter or calculate Surface Feet per Minute (SFM), Inches per Tooth (IPT), Inches per Minute (IPM), Inches per Revolution (IPR), # of Teeth, Depth of Cut (DOC), Width of Cut (WOC) and Length of Cut (LOC)
- New - Materials - Choose from 20 popular Materials
- New - Processes - Face Milling, End Milling, Slot Milling, Turning, Boring, Drilling
- New - Tools - High Speed, Carbide and High Performance
- Speeds and Feeds - calculate for milling, turning and drilling; cutting speed, spindle speed (RPM), feed rate (IPM), cutting feed, feed per tooth/chip load, number of Teeth and Radial Chip Thinning adjustment factor
- Built-in Drill and Thread Size Tables save time and steps (Compliant with ANSI/ASME B1.1-2003 and ANSI/ASME B1.13M-2005)
- Enter Numeric, Fractional, Metric Thread Sizes and Drill Sizes - and display tap, roll tap, close and free fit drill sizes plus pitch, major and minor diameters
- Drill Points - enter the cutting angle and drill size to calculate the drill point cut depth
- Bolt Pattern Layouts - enter start angle, number of bolts, diameter and optional x, y offset; calculate x and y coordinates. Find center-to-center spacing for bolt pattern layouts
- 3-Wire Measure - enter Wire Size (or use calculated Best Wire size) and 3-Wire Measurement to calculate pitch diameter
- Teeth and Radial Chip Thinning adjustment factor
- Thread Size - Enter numeric, fractional or metric thread sizes and display tap, roll tap, close and free fit drill sizes. Display pitch, major and minor diameters
- Drill Size - Enter numeric, letter, fractional or metric drill size and display the closest fitting
- Trig Functions - Sine, Cosine, Tangent, Arcsine, Arccosine, Arc tangent
- right triangle math - enter, calculate Angle, Hypotenuse, Opposite and Adjacent side lengths
- Great for machinists, setters, tool and die makers, supervisors, shop owners
- One-year warranty

Tech Specs

Size: 6.25" x 3.5" x 0.9" (160 mm x 90 mm x 25 mm)
 Product Weight: 6 oz. (170 gm) Includes Armadillo Gear Case
 Power: One 3-volt CR2025 long-life battery
 Display Type: 12 Digits (8 normal, 4 fractions)
 Display Dimensions: 0.813" x 2.5" (21 mm x 65 mm)
 Accuracy: 12 digit internal accuracy



MACHINIST CALC PRO 2
 Part # CALC-MCP2
\$84.95 each

Call Us Today For All Of Your Machine Tool Needs!

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

MARKING PENS

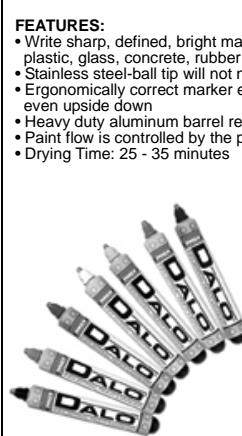


DYKEM® BRITE-MARK® is a general purpose permanent marker ideal for making clear, bold markings on almost any surface. Its quick drying, oil-based paint withstands indoor and outdoor conditions without fading, chipping or losing its opacity. They can be used to permanently identify inventory, assemblies, tools, finished products or work-in-progress while resisting most work related abuses or compounds.

- FEATURES:**
- Make permanent bright marks on metal, rubber, plastic, glass, concrete, leather, stone, wood, vinyl and more
 - Valve action mechanism prevents paint in barrel from drying when cap is left off
 - Ideal for color coding
 - Drying Time: 25 - 35 seconds

Point	Color	Part Number	Price Each
Medium	Blue	DYKEM-84001	\$3.05
	Black	DYKEM-84002	
	White	DYKEM-84003	
	Yellow	DYKEM-84004	
	Red	DYKEM-84006	

PAINT MARKERS



- FEATURES:**
- Write sharp, defined, bright marks on any surface including metal, plastic, glass, concrete, rubber and more
 - Stainless steel-ball tip will not need to be replaced
 - Ergonomically correct marker enables you to mark at all angles, even upside down
 - Heavy duty aluminum barrel retains its shape
 - Paint flow is controlled by the pressure bulb at the end of the barrel
 - Drying Time: 25 - 35 minutes

Point	Color	Part Number	Price Each
Medium	Blue	DYKEM-26013	\$5.50
	Black	DYKEM-26033	
	White	DYKEM-26083	
	Yellow	DYKEM-26063	
	Red	DYKEM-26023	

LAYOUT FLUIDS



- FEATURES:**
- Prevents glare with uniform, deep color
 - Dries in minutes
 - Allows scribing of sharp, clear, precise lines
 - RED use for aligning metal gears

Size	BLUE Part Number	RED Part Number	Price
4 oz. Brush-In-Cap	DYKEM-80300	DYKEM-80396	\$8.95
8 oz. Brush-In-Cap	DYKEM-80400	DYKEM-80496	\$12.95
16 oz. Aerosol	DYKEM-80000	DYKEM-80096	\$10.96
1 Gallon	DYKEM-80700	DYKEM-80796	\$60.50

REMOVER & CLEANER



DYKEM® Remover & Cleaner is the solution for all surface preparation, removal and dilution of DYKEM® Staining Colors and Layout Fluids. It has been proven that layout fluids and stains adhere better to surfaces that are prepared with this product and the formula is toluene-free for workers' safety.



Description	Size	Part Number	Price Each
Remover	16oz Aerosol	DYKEM-82038	\$8.22
	1Gallon	DYKEM-82738	\$27.98

HAND CLEANERS



- FAST ORANGE HAND CLEANER**
- Fresh orange scent
 - Cleans hands quickly and naturally
 - Removes dirt, grease, grime, soil and resins
 - Biodegradable- with aloe, lanolin, glycerin & jojoba

Description	Size	Part Number	Price Each
With Pumice	7.5 oz	SCRUBS-25108	\$2.89
	15 oz	SCRUBS-25116	\$4.29
	.5 Gal	SCRUBS-25217	\$12.49
	1 Gal	SCRUBS-25218	\$20.59

HAND CLEANERS



- Proven way to clean your hands away from the sink
- Dual-textured towels lock in dirt & will not transfer soils back onto hands
- Leave your hands clean, no rinsing necessary
- Remove: Dirt, Tar, Oils, Grease, Paints, Adhesives, Epoxies, Caulks, Inks & Dyes, Urethanes, Lubricants, "Icky-PIC", Cable Jelly, Asphalt

Size	Part Number	Price
10 Pack	SCRUBS-42289	\$2.69
Bucket-30 ct	SCRUBS-42230	\$6.99
Bucket-72 ct	SCRUBS-42272	\$13.99



BALANCED TOOLHOLDERS FOR INCREASED SPEED & SPINDLE LIFE

Kingston Tool offers a complete line of balanced CNC tool holders, manufactured to meet today's machinists need for speed and accuracy at a competitive price. Balanced to 15,000 rpm @ g6.3, Kingston Balanced Toolholders increase spindle and tool life, as well as helping to improve surface finish. See pages 180-215 for our complete selection.



- FEATURES:**
- Balanced to 15,000 rpm @ g6.3
 - Manufactured to the highest degree of technical excellence to ISO9002 quality control standards
 - Certification included with each holder
 - Crafted from SAE 8620 alloy steel
 - AT3 Class Accuracy
 - Balanced holders result in less vibration, chatter and extended tool life.
 - 100% Satisfaction Guaranteed!

Balanced Toolholders
Starting At Only
\$49.95 each

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

STEEL STAMP SETS/IDENTIFICATION TOOLS

STEEL LETTER AND NUMBER STAMP SETS

For Hand-Held, Hammer Struck Applications

Full Line Available!
Please call for more information.



Letter Sets:

Contains 27 pieces, A-Z plus ampersand (&)

Number Sets:

Contains 9 pieces, 0-9 (the 6 is also used as a 9)

Combination Sets:

Contains 36 pieces, A-Z, ampersand and 0-9 (the 6 is also used as a 9)

STANDARD STAMPS

- For light to medium general purpose applications
- Standard size shank for hand striking
- Crowned striking surface ensures full force to center of the stamp & textured shank provides firm easy grip
- Ideal for marking wood, leather, aluminum, brass, sheet metal and cold roll steel

Size	Letter Sets		Number Sets		Combination Letter & Number Sets	
	Part Number	Price Per Set	Part Number	Price Per Set	Part Number	Price Per Set
1/16"	CHH-20100	\$43.83	CHH-20501	\$14.62	CHH-20622	\$58.44
3/32"	CHH-20150	\$43.83	CHH-20521	\$14.62	CHH-20623	\$58.44
1/8"	CHH-20200	\$43.83	CHH-20541	\$14.62	CHH-20624	\$58.44
3/16"	CHH-20250	\$53.20	CHH-20561	\$17.73	CHH-20625	\$70.97
1/4"	CHH-20300	\$64.07	CHH-20581	\$21.36	CHH-20626	\$85.44
3/8"	CHH-20350	\$93.54	CHH-20601	\$31.17	CHH-20627	\$124.71
1/2"	CHH-20400	\$139.03	CHH-20621	\$46.36		

HEAVY DUTY STAMPS

- For moderate industrial applications
- Oversized shank to deliver more consistent stamp control
- Tempered shanks for extra durability and safety
- Marked with character designation and size on thumb side
- Excels in marking wood, leather, aluminum, brass, sheet metal and cold roll steel

Size	Letter Sets		Number Sets		Combination Letter & Number Sets	
	Part Number	Price Per Set	Part Number	Price Per Set	Part Number	Price Per Set
1/16"	CHH-20751	\$73.47	CHH-21320	\$24.50	CHH-21623	\$97.93
3/32"	CHH-20801	\$73.47	CHH-21340	\$24.50	CHH-21624	\$97.93
1/8"	CHH-20851	\$73.47	CHH-21360	\$24.50	CHH-21625	\$97.93
3/16"	CHH-20951	\$88.00	CHH-21400	\$29.32	CHH-21627	\$117.34
1/4"	CHH-21051	\$101.90	CHH-21440	\$33.96	CHH-21628	\$135.86
3/8"	CHH-21151	\$144.21	CHH-21480	\$48.08		
1/2"	CHH-21201	\$245.46	CHH-21500	\$81.83		

PREMIER STAMPS

- For prolonged industrial use
- Large shanks are tempered designed to hold up under continuous hard hammering
- Top quality tempered shanks for extra safety
- Marked with character designation and size on thumb side
- Crowned striking surface ensures full force to the center of the stamp & textured shank provides firm easy grip
- The best choice for marking wood, leather, brass aluminum, sheet metal, cold roll steel, stainless steel and water or oil hardened steel

Size	Letter Sets		Number Sets		Combination Letter & Number Sets	
	Part Number	Price Per Set	Part Number	Price Per Set	Part Number	Price Per Set
1/16"	CHH-22050	\$84.65	CHH-22821	\$28.22	CHH-24003	\$112.87
3/32"	CHH-22100	\$84.65	CHH-22841	\$28.22	CHH-24004	\$112.87
1/8"	CHH-22150	\$84.65	CHH-22861	\$28.22	CHH-24005	\$112.87
3/16"	CHH-22250	\$101.37	CHH-22901	\$33.79	CHH-24007	\$135.18
1/4"	CHH-22350	\$116.95	CHH-22941	\$38.99	CHH-24008	\$155.94
3/8"	CHH-22450	\$165.29	CHH-22981	\$55.09		
1/2"	CHH-22550	\$282.59	CHH-23021	\$94.21		

TYPE HOLDER KITS

Allows for marking one line of characters into various industrial products

- Stamp figures or letters on products or name plates
- Made of high shock alloy steel
- Easily interchange letters and numbers
- Unique locking bar on type holder prevents type from incorrect insertion
- Kit packed in sturdy wooden box
- Kit includes: type holder and 40 pieces of type- A-Z, 0-9, Dash, 3 blank spacers
- Made in USA



Type Holder Dimensions:
5-3/8 OAL x 1" shank

Type Holder Cap.	Character Size	Part Number	Kit Price
16	1/16"	CHH-27770	\$493.98
15	1/8"	CHH-27774	\$535.42
15	3/16"	CHH-27778	\$572.26
12	1/4"	CHH-27782	\$641.48

Call Us Today For All Of Your Machine Tool Needs!

DENIM SHOP APRONS



- 100% blue cotton denim
- "E" version includes waist pocket
- 5 pocket design
- One size fits all
- 35" length x 28" wide



Description	Part Number	Price
Denim Apron w/ 5 Pocket	SHOP-APRON-5	\$14.99

SHOP APRON



- Helps protect clothing from grease, chips, coolant and dirt
- Features one side pocket and one large front pocket
- Crafted from 14 oz heavy denim
- Save 15% on 6 or more

Denim Shop Apron
Part # A-8070-7004

\$6.50 each

**6 or More:
\$5.99 each**

CHIP BRUSHES



- For cleaning chips from machinery and parts
- Wood handle
- Stiff plastic filament or tampico fiber bristles

Overall Width	Brush Thickness	Fill Material	Trim Length	Part Number	Price Each
1"	5/16"	Plastic Filament	1-3/4	OSB-72030	\$1.82
1-1/2"	11/16"	Black Tampico Fiber	1-7/8	OSB-73035	\$3.84
2"	7/16"	Plastic Filament	1-3/4	OSB-72031	\$2.84
3"	1/2"	Plastic Filament	2	OSB-72032	\$4.40

DEAD BLOW HAMMERS



- Shot loaded interior produces a powerful driving force
- Non-marring, non-sparking
- Tough, durable polypropylene casting
- Resistant to industrial chemicals

Weight	Head Dia	OAL	Part Number	Price
1 lbs	1-3/4	12"	A-7080-0291	\$12.99
2 lbs	2	13-1/2"	A-7080-0292	\$14.99
3 lbs	2-1/2	14-1/2"	A-7080-0293	\$18.99

BRASS HAMMER
Fiberglass Handle



FEATURES:

- Industrial grade
- Non-marring/Non-sparking
- Polished high purity brass heads

Head Dia	OAL	Weight lbs	Part Number	Price Each
1-1/8	11-1/2	1	A-7080-0036	\$21.49
1-1/4"	12-1/2	1.5	A-7080-0037	\$29.50
1-1/2"	12-1/2	2	A-7080-0038	\$34.99
1-5/8"	15"	2	A-7080-0039	\$50.99

DEAD BLOW HAMMERS

Replaceable Face, Medium Hard



- Replaceable face- replace faces instead of the entire hammer!
- Extremely durable recoilless, polyurethane, shatterproof and wear resistant
- Steel Tube Shaft
- Preserves sensitive surfaces and edges
- Increases striking power
- Cushion grip helps to avoid hand fatigue

Face Dia	Head Length	OAL	Weight	Part Number	Price Each	Replacement Heads	
						Part Number	Price Each
1"	4.2"	11.3"	18 oz.	WIHA-80225	\$23.99	WIHA-80200	\$3.99
1.2"	4.5"	11.4"	19 oz.	WIHA-80230	\$23.99	WIHA-80202	\$3.99
1.4"	4.6"	11.8"	22 oz.	WIHA-80235	\$42.00	WIHA-80204	\$5.06
1.6"	4.9"	12"	26 oz.	WIHA-80240	\$46.88	WIHA-80206	\$5.52
1.8"	5.1"	12.2"	30 oz.	WIHA-80245	\$35.89	WIHA-80208	\$5.67
2"	5.1"	14.4"	40 oz.	WIHA-80250	\$35.98	WIHA-80210	\$6.48
2.3"	6.1"	14.7"	72 oz.	WIHA-80260	\$47.68	WIHA-80213	\$9.09
2.8"	6.3"	15.1"	97 oz.	WIHA-80270	\$66.80	WIHA-80216	\$9.99
3 Piece Set: 80230, 80240 & 80250				WIHA-80290	\$85.50		

WATERPROOF LED WORKING LIGHTS



- LED lights provide an excellent solution for heat intensive environment
- High brightness with 330 Lumens
- Magnetic base: 2" x 2" w/ 110lbs power pull
- 50,000 hours LED lifetime
- Arm length: 20"
- Power supply: 110V AC/1 Ph
- Bolt-on mounting plate: 2" x 2"



Bolt-on base



Bolt On LED Worklight
Part # A-8401-0448
\$59.00

Mag Base w/ LED Worklight
Part # A-8401-0449
\$79.00

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

AIR TOOLS

ECONOMY 1/4" DIE GRINDER KIT

- Built in safety lever
- Rear exhaust
- Free Speed: 22,000 RPM
- Overall Length: 5-1/2"
- Air Pressure: 90 PSI
- Air Inlet: 1/4" NPT
- Hose Size: 3/8"

Kit Includes:

- die grinder
- 5 assorted stones
- 1/4" collet
- wrench



Speed RPM	PSI	OAL	Part Number	Price Each
22,000	90	6-5/8"	A-7600-0090	\$34.00

1/4" DIE GRINDER KIT

- Rubber molded cushion grip
- Air regulator on top
- Safety throttle lever
- Rear exhaust with silencer
- 360 degree swivel air inlet
- Low noise 79 dB(A)
- Free Speed: 20,000 RPM
- Air Inlet: 1/4" NPT
- Hose Size: 3/8"
- Air Pressure: 90 PSI
- Air Consumption: 4 CFM
- Overall Length: 7-3/8"
- **Kit Includes:** 1-Air Die Grinder
5-1/4" Shank Mounted Stone
5-1/8" Shank Mounted Stone
1-Fitted Blow Case



1/4" AIR DIE GRINDER KIT

Part # A-7609-0901
\$95.00

ERGONOMIC & LOW NOISE!

1/4" ANGLE AIR DIE GRINDER

Z-Limit

- Rubber molded cushion grip
- Air regulator on top
- Safety throttle lever
- Rear exhaust with silencer
- 360 degree swivel air inlet
- Low noise 77 dB(A)
- Free Speed: 20,000 RPM
- Collet Size: 1/4"
- Air Inlet: 1/4" NPT
- Hose Size: 3/8"
- Air Pressure: 90 PSI
- Air Consumption: 4 CFM
- Overall Length: 6-11/16"
- Weight: 1.1 lbs



1/4" ANGLE AIR DIE GRINDER

Part # A-7609-0904
\$94.00

ERGONOMIC & LOW NOISE!

1/4" AIR DIE GRINDER

Z-Limit

- Rubber molded cushion grip
- Air regulator on top
- Safety throttle lever
- Rear exhaust with silencer
- 360 degree swivel air inlet
- Low noise 79 dB(A)
- Free Speed: 20,000 RPM
- Air Inlet: 1/4" NPT
- Air Pressure: 90 PSI
- Air Consumption: 4 CFM
- Overall Length: 7-3/8"
- Hose Size: 3/8"
- Weight: 1.5 lbs



1/4" AIR DIE GRINDER

Part # A-7609-0903
\$79.00

ERGONOMIC & LOW NOISE!

1/8" MINI AIR DIE GRINDER

Z-Limit

- Pen type is ideal for access to confined areas
- Includes 1/8" collet, wrenches, quick connect coupler and water/oil separator
- Free Speed: 54,000 RPM
- Collet Chuck: 1/8"
- Air Inlet: 1/4" NPT
- Hose Size: 3/8"
- Air Pressure: 90 PSI
- Overall Length: 5-1/4"



1/8" MINI AIR DIE GRINDER

Part # A-7600-0088
\$149.00

1/4" AIR DIE GRINDER

Z-Limit

- Rubber molded cushion grip
- Air regulator on top safety throttle lever
- Rear exhaust with silencer
- Free speed: 25,000 RPM
- Low noise 79 dB
- Air inlet: 1/4 NPT
- Hose size: 3/8"
- Air Pressure: 90 PSI
- Air Consumption: 4 CFM
- Overall Length: 6-1/4"
- Weight: 1 lbs.



1/4" MINI AIR DIE GRINDER

Part # A-7609-0902
\$65.00

AIR IMPACT WRENCH

Z-Limit

- Push button on hand forward/reverse
- Rubber molded cushion rip
- Composite motor housing
- Pin clutch mechanism
- Working Torque: 50-650 ft/lbs
- Max. Torque: 1000 ft/lbs.
- Free Speed: 7000 RPM
- Air Inlet: 1/4 NPT
- Hose Size ID: 3/8"
- Air Consumption: 4 CFM
- Overall Length: 7.2"
- Weight: 4 lbs.
- Low noise 83 dB



AIR IMPACT WRENCH

Part # A-7609-0942
\$175.00

AIR RATCHET WRENCH

Z-Limit

- Rubber molded cushion rip
- Rear exhaust with silencer
- Low noise 79 dB
- Free speed: 150 RPM
- Maximum torque: 60 ft/lbs
- Air inlet: 1/4 NPT
- Air Pressure: 90 PSI
- Air Consumption: 4 CFM
- Overall Length: 10-3/8"
- Weight: 2.8 lbs.



AIR RATCHET WRENCH

3/8" Drive: Part # A-7609-0931
1/2" Drive: Part # A-7609-0932
\$94.00

Call Us Today For All Of Your Machine Tool Needs!

PRESET TORQUE SCREWDRIVERS

PRESET TORQUE SCREWDRIVERS



- **Never Overtighten!** Screwdriver "clicks" when desired torque is reached
- **Precise!** Preset torque accuracy +/-10%
- **Reversible!** Can also be used to loosen screw
- **3 Types Of Handles!** Choose from ergonomically designed Universal, T-handle or Slim handle
- **Cut Down On Errors!** Color coded bit means the proper adapter and bit is used
- **Sturdy!** Alloy steel bits hardened to 58-60 Rc. Adapter can be used over 20,000 "clicks" before replacing
- **Available for TORX® and HEX screws**



SLOKY®



- 3 different type of handle.
- Ergonomically refined design

- No-over tighten mechanism
- Torque accuracy ±10%.
- Reversible system.

• Color recognition



LT SINGLE SETS FLAG STYLE

- Fits TORX® screws3
- 5 piece set, single size
- Contains 1 pc LT handle w/ adapter, 2 pcs 1" TORX bits & 2 pcs 2" TORX bits
- Handle: 2-3/4" L x 3/4" W x 1-1/2" H
- Designed for cutting tools, parts assembling, electronics & aerospace



SLOKY®

Size	Nm	In-lb	Part Number	Set Price
TX6	0.6	5.3	STS-TX-LT-06	\$55.20
TX7	0.9	8.0	STS-TX-LT-07	\$55.20
TX8	1.2	10.6	STS-TX-LT-08	\$55.20
TX9	1.4	12.4	STS-TX-LT-09	\$55.20
TX10	2.0	17.7	STS-TX-LT-10	\$55.20
TX15	3.0	26.6	STS-TX-LT-15	\$55.20

HD SINGLE SETS SCREWDRIVER STYLE

- Fits TORX® screws
- 3 piece set, single size
- Contains 1 pc HD handle w/ adapter, 1 pc 1" TORX bits & 1 pc. 2" TORX bits
- Soft grip HD handle: 5-1/8" H x 1-1/4" D
- Designed for cutting tools, parts assembling, electronics & aerospace



SLOKY®

Size	Nm	In-lb	Part Number	Set Price
TX6	0.6	5.3	STS-TX-HD-06	\$24.00
TX7	0.9	8.0	STS-TX-HD-07	\$24.00
TX8	1.2	10.6	STS-TX-HD-08	\$24.00
TX9	1.4	12.4	STS-TX-HD-09	\$24.00
TX10	2.0	17.7	STS-TX-HD-10	\$24.00
TX15	3.0	26.6	STS-TX-HD-15	\$24.00

ST SINGLE SETS T-WRENCH STYLE

- Fits TORX® screws
- 5 piece set, single size
- Contains 1 pc ST handle w/ adapter, 2 pcs 1" TORX bits & 2 pcs 2" TORX bits
- Handle: 3-7/8" L x 1" W x 2-1/2" H
- Designed for cutting tools, parts assembling, electronics & aerospace



SLOKY®

Size	Nm	In-lb	Part Number	Set Price
TX6	0.6	5.3	STS-TX-ST-06	\$63.60
TX7	0.9	8.0	STS-TX-ST-07	\$63.60
TX8	1.2	10.6	STS-TX-ST-08	\$63.60
TX9	1.4	12.4	STS-TX-ST-09	\$63.60
TX10	2.0	17.7	STS-TX-ST-10	\$63.60
TX15	3.0	26.6	STS-TX-ST-15	\$63.60
TX20	5.0	44.3	STS-TX-ST-20	\$63.60

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

511

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

PRESET TORQUE SCREWDRIVERS

LT COMBO SET PRESET TORQUE SCREWDRIVERS

- Fits TORX® screws
- 13 Piece Set in plastic case
- TX6, TX7, TX8, Tx9, TX10, TX15
- Combo Set Contains:
 - 1 pc LT handle
 - 6 pcs adapters (1 of each size)
 - 6 pcs of 1" bit for Torx/Torx-Plus (1 of each size)
- Designed for cutting tools, parts assembling, electronics & aerospace



LT Combo Set
Part # STS-TX-LT-S1
\$168.00

LT DISPLAY SET PRESET TORQUE SCREWDRIVERS

- Fits TORX® screws
- 18 Piece Set in a steel stand
- TX6, TX7, TX8, TX9, TX10, TX15
- Display Set Contains:
 - 6 pc LT handle (1 ea TX6,7,8,9,10,15)
 - 6 pcs of 1" bit for Torx/Torx-Plus (1 of each size)
 - 6 pcs of 2" bit for Torx/Torx-Plus (1 of each size)
- Designed for cutting tools, parts assembling, electronics & aerospace



LT Display Set
Part # STS-TX-LT-S4
\$248.40

ST SINGLE SETS HEX T-WRENCH STYLE

- Fits HEX screws
- 5 piece set, single size
- Contains 1 pc LT handle w/ adapter and 4 2" long hex bits
- Handle: 3-7/8" L x 1" W x 2-1/2" H
- Designed for cutting tools, parts assembling, electronics & aerospace



Size	Nm	In-lb	Part Number	Set Price
9/64	5.0	44.5	STS-HX-ST-9/64	\$63.60
5/32	5.0	44.5	STS-HX-ST-5/32	\$63.60
3/16	5.5	48.7	STS-HX-ST-3/16	\$63.60

LT SINGLE SETS HEX FLAG STYLE

- Fits HEX screws
- 5 piece set, single size
- Contains 1 pc LT handle w/ adapter, 2 pieces of 1" long hex bits and 2 pieces of 2" long hex bits
- Handle: 3-7/8" L x 1" W x 2-1/2" H
- Designed for cutting tools, parts assembling,



Size	Nm	In-lb	Part Number	Set Price
1/16	0.6	8.0	STS-HX-LT-1/16	\$55.20
5/64	1.4	12.4	STS-HX-LT-5/64	\$55.20
3/32	1.4	12.4	STS-HX-LT-3/32	\$55.20
7/64	2.0	17.7	STS-HX-LT-7/64	\$55.20
1/8	3.0	26.6	STS-HX-LT-1/8	\$55.20

HAWG BUDDY GORILLAGRIP® Motorcycle Fold Up

- Designed for making all common adjustments to Harley Davidson® motorcycles
- World's strongest handle
- Speed-Wrench feature
- Tools open from both the top and bottom
- Molded-in 90° stop
- Includes Phillips, TORX® and Hex tips
- BriteGuard™ chrome finish



Phillips, TORX® & Hex Tips!

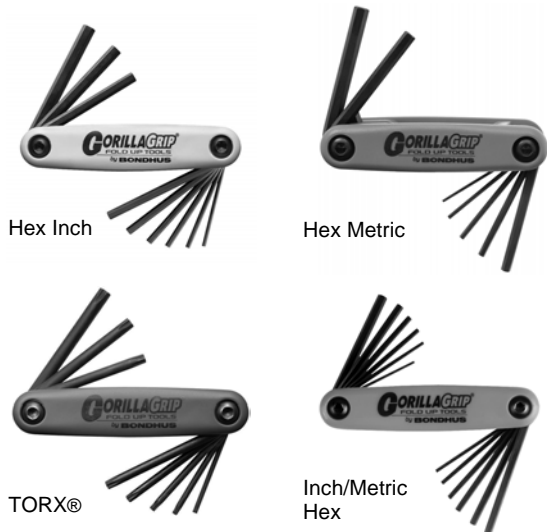


# of Tools	Description	Part Number	Price Each
7	PH #2 Torx® T27, T40, Hex 5/32, 3/16, 1/4, 5/16	BO-12531	\$22.49

*Harley Davidson® is a registered trademark of Harley Davidson Motorcycles

Call Us Today For All Of Your Machine Tool Needs!

“GORILLAGRIP” FOLD UP HEX & TORX® SETS



- Patented handle design makes every job faster and easier
- Gorillagrip handle is stronger than normal steel handles
- Sizes marked on handle
- Gorillagrips are color coded:
Yellow: Inch Red: Metric,
Green: TORX® Orange: Inch/Metric



Full Line Available!
Please call for more information.

Type	Description	Part Number	Price Each
Inch Hex	9 Pieces: .050, 1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 3/16"	BO-12591	\$4.89
	9 Pieces: 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 3/16, 7/32, 1/4"	BO-12589	\$6.74
Metric Hex	7 Pieces: 1.5, 2, 2.5, 3, 4, 5, 6mm	BO-12592	\$5.26
	7 Pieces: 2, 2.5, 3, 4, 5, 6, 8mm	BO-12587	\$6.91
Torx®	8 Piece Torx®: T6, T7, T8, T9, T10, T15, T20, T25	BO-12632	\$12.61
	8 Piece Torx®: T9, T10, T15, T20, T25, T27, T30, T40	BO-12634	\$12.92
Hex Combo	12 Piece Inch/Metric: 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 1.5, 2, 2.5, 3, 4, 5mm	BO-12550	\$8.75
GORILLAGRIP® FOLD UP MULTI-PACKS			
9 Piece Inch: 5/64-1/4" & 7 Piece Metric: 2-8mm		BO-12522	\$12.34
9 Pc Inch: 5/64-1/4" 7 Pc Metric: 2-8mm 8 Pc Torx® T9 to T40		BO-12533	\$24.08

L-WRENCH SETS



- Patented handle design makes every job faster and easier
- Gorillagrip handle is stronger than normal steel handles



Type	No. Of Pieces	Hex Wrench Set Includes	Part Number	Price Each
Inch	12	.050, 1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 3/16, 7/32, 1/4, 5/16	BO-12136	\$7.94
Inch	13	.050, 1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 3/16, 7/32, 1/4, 5/16, 3/8"	BO-12137	\$9.04
Metric	9	1.5, 2, 2.5, 3, 4, 5, 6, 8, 10mm	BO-12199	\$8.56
Torx®	8	T6, T7, T8, T9, T10, T15, T20, T25	BO-31832	\$16.09
Combo Pack	13 & 9	Inch & Metric Set	BO-22199	\$16.67

BALL END HEX & TORX® SETS



- Screw turns much faster
- Ball end saves time by quickly funneling tool into screw
- ProGuard™ finish for superior protection
- Works at up to 25° angle, allowing natural hand and wrist movement
- Come complete with plastic holder

Type	No. Of Pieces	Balldriver Set Includes	Part Number	Price Each
Inch	12	.050, 1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 3/16, 7/32, 1/4, 5/16	BO-10936	\$13.72
Inch	13	.050, 1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 3/16, 7/32, 1/4, 5/16, 3/8	BO-10937	\$15.74
Metric	9	1.5, 2, 2.5, 3, 4, 5, 6, 8, 10mm	BO-10999	\$12.79
Combo Pack	22	BO-10937 & BO-10999	BO-20199	\$26.86
	30	BO-10937, BO-10999 & BO-12634 (Torx®)	BO-14138	\$38.71

BALL END L-WRENCH HEX SETS

ColorGuard™ Finish



COLOR-CODED FOR EASY TOOL IDENTIFICATION!



- Color-coded tools can be distinguished at a glance
- Superior rust protection finish
- Sizes stamped on tool
- Ball end inserts into screw at a 25° angle

Type	No. Of Pieces	Balldriver Set Includes	Part Number	Price Each
Inch	13	.050, 1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 3/16, 7/32, 1/4, 5/16, 3/8	BO-69637	\$29.33
Metric	9	1.5, 2, 2.5, 3, 4, 5, 6, 8, 10mm	BO-69699	\$23.77
Combo Pack	22	BO-69637 & BO-69699	BO-69600	\$50.43

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

ACCESSORIES/HAND TOOLS

BALL END L-WRENCHES

With BriteGuard™ Finish



- Ball End inserts into screw at a 25° angle and saves times by quickly funneling tool into screw
- Entry angle allows natural hand and wrist movement
- Works in hard to reach places
- BriteGuard™ finish delivers superior corrosion protection



NEXT GENERATION CHROME FINISH FOR SUPERIOR PROTECTION!

Type	No. Of Pieces	Length	Balldriver Set Includes	Part Number	Price Each
STANDARD					
Inch	13	Long	.050, 1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 3/16, 7/32, 1/4, 5/16, 3/8	BO-16937	\$20.46
Metric	9	Extra Long	1.5, 2, 2.5, 3, 4, 5, 6, 8, 10mm	BO-17099	\$16.62
STUBBY					
Inch	13	Long	.050, 1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 3/16, 7/32, 1/4, 5/16, 3/8	BO-16737	\$25.57
Metric	9	Extra Long	1.5, 2, 2.5, 3, 4, 5, 6, 8, 10mm	BO-16799	\$20.73

T-WRENCH SETS

Hex & Balldriver End

FEATURES:

- Precision fit-burr free tip
- Blades welded into handles for maximum strength
- Ergonomically designed cushion grip handles are color coded: Yellow:Inch and Red:Metric
- Comes complete with stand



Type	No. Of Pieces	Hex T-Wrench Set Includes	HEX END		BALLDRIVER	
			Part Number	Price Each	Part Number	Price Each
Inch	10	3/32, 7/64, 1/8, 9/64, 5/32, 3/16, 7/32, 1/4, 5/16, 3/8	BO-13390	\$44.68	BO-13190	\$52.24
Metric	8	2, 2.5, 3, 4, 5, 6, 8, 10mm	BO-13389	\$39.21	BO-13189	\$43.47

TORX® WING SETS



- Fits all TORX®, TORX PLUS®, Star and Star Plus screws
- ComfortGrip handle features soft rubber outer coating for maximum comfort and grip
- Broad contact surface for deep lobe engagement
- ProGuard™ finish for superior protection

No. Of Pieces	Hex T-Wrench Set Includes	Part Number	Price Each
7	T6,T7,T8,T9,T10,T15,T20	BO-34745	\$22.50

TORX® T-WRENCH SETS



FEATURES:

- Fits all TORX® and Star screws
- Solid steel handles
- Welded handle/blade connection
- Ergonomic handle design
- Flywheel effect saves time
- Smooth, non-porous handle coating
- ProGuard™ finish for superior protection

No. Of Pieces	Hex T-Wrench Set Includes	Part Number	Price Each
8	T9,T10,T15,T20,T25,T27,T30,T40	BO-33034	\$44.21

TORXPLUS L-KEY SHORT ARM SETS



Range:

WIHA-36197: IP6, IP7, IP8, IP9, IP10, IP15, IP20
WIHA-36199: IP8, IP9, IP10, IP15, IP20, IP25, IP27 IP30, IP40

Description	Part Number	Price
Torx-Plus L-Key Short Arm 7 Piece Set	WIHA-36197	\$17.17
Torx-Plus L-Key Short Arm 9 Piece Set	WIHA-36199	\$24.36

TORX T-HANDLE SET



Description	Part Number	Price
7 Pieces: T9, T10, T15, T20, T25, T27, T30	WIHA-36492	\$43.46

Call Us Today For All Of Your Machine Tool Needs!

TORX® L-WRENCH KEYS



- Black oxide finish for durability
- Sold by the piece-sets also available

Description	Part Number	Price Each
T7 x 41mm	WIHA-36307	\$1.87
T8 X 44mm	WIHA-36308	\$1.87
T9 x 48mm	WIHA-36309	\$1.87
T10 x 51mm	WIHA-36310	\$1.87
T15 x 54mm	WIHA-36315	\$1.87
T20 x 57mm	WIHA-36320	\$1.87
T25 x 60mm	WIHA-36325	\$1.87
T27 x 63mm	WIHA-36327	\$1.87
T30 x 70mm	WIHA-36330	\$2.54
T40 x 76mm	WIHA-36340	\$3.61
T45 x 82mm	WIHA-36345	\$4.56
T50 x 95mm	WIHA-36350	\$4.99
T55 x 108mm	WIHA-36355	\$6.46

T-HANDLE TORX®



- Molded on ergonomic handle
- Hard chrome finish for durability
- Sold by the piece-sets also available

Description	Part Number	Price
T15 x 100mm	WIHA-36415	\$5.48
T15 x 200mm	WIHA-36417	\$5.48
T20 x 100mm	WIHA-36420	\$6.22
T20 x 200mm	WIHA-36422	\$6.22
T25 x 100mm	WIHA-36425	\$6.48
T25 x 200mm	WIHA-36427	\$6.48
T27 x 100mm	WIHA-36430	\$7.40
T27 x 200mm	WIHA-36432	\$7.40
T30 x 100mm	WIHA-36435	\$7.28
T30 x 200mm	WIHA-36437	\$7.60
T40 x 100mm	WIHA-36440	\$8.04
T40 x 200mm	WIHA-36442	\$8.15
T45 x 150mm	WIHA-36445	\$9.82

WING STYLE TORX®



- Molded on handle, black oxide finish
- Sold by the piece-sets also available

Description	Part Number	Price
T6 x 50mm	WIHA-36510	\$3.16
T7 x 50mm	WIHA-36512	\$3.16
T8 x 50mm	WIHA-36515	\$3.16
T9 x 50mm	WIHA-36520	\$3.16
T10 x 50mm	WIHA-36525	\$3.16
T15 x 50mm	WIHA-36530	\$3.16
T20 x 50mm	WIHA-36535	\$3.16

FLAG STYLE TORX®



Description	Part Number	Price
T5 x 35mm	WIHA-37013	\$2.94
T6 x 35mm	WIHA-37016	\$2.94
T7 x 35mm	WIHA-37019	\$2.94
T8 x 40mm	WIHA-37022	\$2.94
T9 x 40mm	WIHA-370 26	\$2.94
T10 x 40mm	WIHA-37029	\$2.94
T15 x 45mm	WIHA-37032	\$2.94
T20 x 45mm	WIHA-37036	\$2.94

BITS SELECTOR - SLOTTED, PHILLIPS AND TORX BITS



- Range:
 Contains 1 each
 1/4" x 25mm Bits:
 Slotted: 5.5, 6.5, 8.0mm
 Phillips: #0, #1, #2, #3
 Torx: T10, T15, T20
 Magnetic Adapter:
 1/4" x 2.3



Description	Part Number	Price
Bits Selector	WIHA-79243	\$17.45

TORX 1/4" BITS



Description	Part Number	Price	Description	Part Number	Price
T5 x 25mm	WIHA-71505	\$1.14	T15 x 25mm	WIHA-71515	\$0.94
T6 x 25mm	WIHA-71506	\$1.14	T20 x 25mm	WIHA-71520	\$0.94
T7 x 25mm	WIHA-71507	\$1.14	T25 x 25mm	WIHA-71525	\$0.94
T8 x 25mm	WIHA-71508	\$1.14	T27 x 25mm	WIHA-71527	\$0.94
T9 x 25mm	WIHA-71509	\$1.14	T30 x 25mm	WIHA-71530	\$0.94
T10 x 25mm	WIHA-71510	\$0.94	T40 x 25mm	WIHA-71540	\$1.14

6 PIECE SLOTTED PHILLIPS SET



- Range:
 3.5 x 100mm (9/64), 4.5 x 125mm (3/16),
 6.5 x 150mm (1/4),
Insulated!

Description	Part Number	Price
6 Piece Slotted/Phillips Set	WIHA-32092	\$40.28

7 PIECE SLOTTED/PHILLIPS SET



- Range:
 Contains 1 each Precision Slotted/Phillips
 1.5mm x 40mm (1/16), 2.0 x 50mm (5/64)
 2.5 x 50mm (3/32), 3.0 x 60mm (1/8)
 PH#00 x 40mm, PH #0 x 50mm PH#1 x 60mm

Description	Part Number	Price
7 Piece Slotted/Phillips Set	WIHA-26190	\$23.31

5 PIECE SLOTTED/PHILLIPS SET



- Range:
 Contains 1 Each
Micro/Finish Slotted/Phillips:
 4.0 x 100mm, 5.5 x 125mm, 8.0 x 150mm
 PH#1 x 80mm, PH#2 x 100mm



Description	Part Number	Price
5 piece Set	WIHA-52090	\$39.31

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

TOOL STORAGE CHESTS & CABINETS

SHOP SERIES MACHINISTS CHESTS & CABINETS

Designed to provide an exceptional value at an economical price. Reinforced sidewall construction and external lock bars with keyed locks combine with quality casters to meet your utility, storage and mobility needs. Offered in a selection of mix-and-match sizes and drawer configurations.

- Full-extension ball-bearing drawer slides support 25lbs.
- Full-width drawer pulls provide ability to open drawers from any angle
- Lid support safely holds lid open during use
- Includes drawer liners
- **NEW! Internal keyed locking system**
- 4" x 2" casters support up to 500lbs!
- Available in **RED** or **BLACK**
- 1 Year Limited Warranty



Intermediate



Cabinet



Chest



WO-SCH-265BK-B/WO-SIN-262BK-B/WO-SCA-264BK-B

Ball-Bearing Drawer Slides

Description	No of Drawers	Color	Dimensions W x D x H	Wt.	RED Part Number	BLACK Part Number	Price Each
Chest	4	Black	26" X 12" X 15.5"	42	WO-SCH-264RD-B	WO-SCH-264BK-B	\$161.94
Chest	5	Black	26" X 12" X 17.5"	42	WO-SCH-265RD-B	WO-SCH-265BK-B	\$192.79
Cabinet	4	Black	26.5" X 18" X 32"	72	WO-SCA-264RD-B	WO-SCA-264BK-B	\$194.85
Cabinet	5	Black	26.5" X 18" X 32"	72	WO-SCA-265RD-B	WO-SCA-265BK-B	\$259.70
Intermediate	2	Black	26" X 12" X 11.5	26	WO-SIN-262RD-B	WO-SIN-262BK-B	\$134.90
Tool Center	5	Black	26.5" X 14" X 43.5	86	WO-STC-265RD-B	WO-STC-265BK-B	\$234.30

Friction Drawer Slides

Description	No of Drawers	Dimensions W x D x H	Wt.	RED Part Number	Price Each
Chest	4	26" X 12" X 15.5"	42	WO-SCH-264RD-F	\$151.02
Chest	7	26" X 12" X 17.5"	47	WO-SCH-267RD-F	\$179.14
Cabinet	5	26.5" X 14" X 32"	63	WO-SCA-26514RD-F	\$191.44
Cabinet	5	26.5" X 18" X 32"	75	WO-SCA-265RD-F	\$238.89
Intermediate	3	26" X 12" X 11.5	33	WO-SIN-263RD-F	\$129.46
Tool Center	6	26.5" X 14" X 43.5	86	WO-STC-266RD-F	\$219.97

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

WATERLOO® SERIES MACHINISTS CHESTS & CABINETS

Designed for everyday applications where ball-bearing slides and tough construction make the job easier. For the discriminating professional who needs high-quality tool storage at an affordable price or the Do-It-Yourself who desires the best standard use tool storage money can buy. *Mix-and-Match* sizes and drawer counts.



- Full-extension ball-bearing drawer slides for complete tool access support 85lbs
- Rugged internal construction provides strength and durability
- Ball-bearing chest lids include lid support to stay open during use
- Tubular locking system secures all drawers
- 5" x 2" casters support up to 1,120 lbs!
- Sturdy tubular cabinet handles for easy maneuverability
- 7 Year Limited Warranty



WO-WCH-418BK/WO-WCA-4111BK



Intermediate



Cabinet



Chest

Description	No of Drawers	Dimensions W x D x H	Wt. lbs	RED Part Number	BLACK Part Number	Price Each
Chest	5	26" X 16" X 19.7"	51	WO-WCH-265RD	WO-WCH-265BK	\$299.88
Chest	6	26" X 12" X 15.3"	50	WO-WCH-266RD	WO-WCH-266BK	\$229.78
Chest	8	40.5" X 16" X 20"	143	WO-WCH-418RD	WO-WCH-418BK	\$630.26
Cabinet	5	26.5" X 18" X 34.5"	112	WO-WCA-265RD	WO-WCA-265BK	\$384.85
Cabinet	6	26.5" X 18" X 41"	128	WO-WCA-266RD	WO-WCA-266BK	\$474.81
Cabinet	11	41" X 18" X 37.3"	220	WO-WCA-4111RD	WO-WCA-4111BK	\$997.13
Intermediate	2	26" X 16" X 10.5"	37	WO-WIN-262RD	WO-WIN-262BK	\$197.38

Call Us Today For All Of Your Machine Tool Needs!

PROJECT CENTERS

- Meet your specialized storage needs
- Caster load rating 500 lbs per unit
- Ball-bearing drawer slides glide open to provide easy access to storage
- Small parts storage and organization under removable work surface
- Powered 5 drawer project center features power tool holster and battery charger storage. UL approved power strip with 6 foot cord
- Steel sides include peg holes for hand tool and other small item storage



3 Drawer Project Center
WO-SP-PC3BK



Full Line Available!
Please call for more information.

5 Drawer Project Center
With Power
WO-SP-PC5BK

Description	No of Drawers	Color	Dimensions W x D x H	Wt. lbs	Part Number	Price
Project Center	3	Black	34" x 20" x 34.5"	75	WO-SP-PC3BK	\$237.10
Project Center w/ Power	5	Black	29" x 20" x 34.5"	80	WO-SP-PC5BK-P	\$284.55

TOOLBOX DRAWER LINERS



- Non-slip
- Protect your tool chest drawers and valuable tools
- Color: black
- Available in 2 sizes

Dimensions	Color	Part Number	Price
22.50" W x 115" L	Black	WO-SP-LINER23BK-1	\$22.19
16.50" W x 156.80" L	Black	WO-SP-LINER17BK-1	\$33.72

METAL PORTABLE TOOL CHESTS



- Tool organization in a compact mobile design
- Durable metal construction
- Top tray for additional organization
- Comfort grip top handle
- Lockable unit (padlock not included)
- 3 drawer design features 25 lb full-extension friction drawer slides
- Additional sizes available
- 1 year limited warranty



No of Drawers	Dimensions W x D x H	Color	Wt. lbs	Part Number	Price Each
3	20" X 9" X 12"	Black	22	WO-MP-2012BK	\$77.72

PLASTIC PORTABLE TOOL CHESTS



WO-PP-1709BK



WO-PP-2314BK

- Tool organization in a compact mobile design
- Rugged high-impact polypropylene and molded in black color assures years of dent, rust and mar-free service
- Comfort grip handle tucks neatly into lid
- Lockable unit (padlock not included)
- 3 drawer design features 25 lb full-extension friction drawer slides
- Additional sizes available

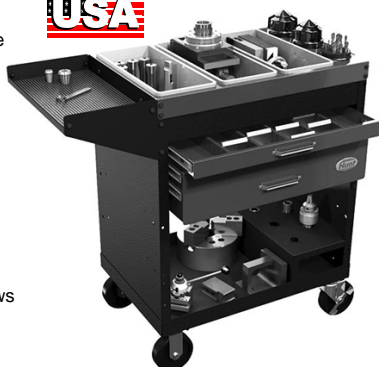


No of Drawers	Dimensions W x D x H	Color	Wt. lbs	Part Number	Price Each
3	23" X 10.5" X 13.5"	Black	16	WO-PP-2314BK	\$71.01
-	17" X 9.4" X 9"	Black	5	WO-PP-1709BK	\$17.04

LATHESCOOT

Store and organize your turning tools! Chances are, your turning tooling is scattered all over the shop. Here's a storage and organization solution to increase your shop's efficiency.

- Top drawer utilizes welded columns with dividers for tool organization. Comes with 24 adjustable dividers
- Large 6" deep drawer for storing live tooling heads and other large tools
- Two removable top bins store and organize set up tools (See optional divider kit # HU-77030 sold separately)
- Side tray for optional collet racks, presetters, or other items
- Welded frame for rigidity requires no assembly
- Live center shelf holds 3MT and 4MT taper centers
- Open area for collet chucks, 3 jaw chucks, hard and soft jaws
- Blue and black paint combination
- Dimensions: 41" L x 35.25" H x 18" D
- Shipping weight is 92 lbs-ships via truck



HUOT LATHESCOOT
Part #: HU-77300
\$749.00

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

TOOL STORAGE

TOOLSCOOT™ TOOL CART For CAT/BT & HSK Taper Tools

Quality and mobility at an affordable price! Durable nylon inserts on both shelves help protect tool holders. Lower shelf angled for quick, easy tool access from either side. Solid, interlocking side panel construction for maximum strength and stability.

Dimensions: 18" W x 35 1/4" L x 35" H
Weight: 75 lbs.



**CAT-30, CAT-35
& CAT-45 Toolscoots
Also Available!**



Tool Size	Total No. of Holes	Part Number	Price Each
40 taper	48	HU-13940	\$465.55
50 taper	36	HU-13950	\$465.55
HSK 63A	48	HU-13970	\$498.75
HSK 100A	36	HU-13980	\$498.75

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

SUPERSCOOT TOOLCART



- Constructed of 12 gauge steel
- Increased storage capacity
- Rolling casters load rated to 1600 lbs
- Baked on gold vein powder coating
- Phosphate pretreatment undercoating for additional toughness
- Outrigger design for improved stability and easier maneuverability

Dimensions: 45-1/4" width (includes handle & end tray) x 17-1/2" D x 40" high
Weight: 132lbs

Tool Size	Total No. of Holes	Holes per Shelf	Part Number	Price Each
40 taper	90	45	HU-23940	\$698.25
50 taper	52	26	HU-23950	\$698.25
HSK 63A	90	45	HU-23970	\$698.25
HSK 100A	78	36	HU-23980	\$698.25



TOOL TOWER For CAT/BT & HSK Taper Tools



Provides an economical, free standing storage unit for toolholders. The Tooltower comes with 3 shelves and can be stacked to form a 5 or 6 shelf tower, providing a cost effective way to store and protect your tools in a compact space. Sturdy 16 gauge steel construction. Molded inserts protect each tool holder.

Tool Size	Total No. of Holes	Part Number	Price Each
40 taper	72	HU-13840	\$389.50
50 taper	54	HU-13850	\$389.50
63A HSK	72	HU-13870	\$389.50
100A HSK	54	HU-13880	\$389.50

SPEEDYSCOOT TOOLCART



- Only 15" wide, lets you easily move industrial tooling through narrow spaces
- Heavy duty construction
- Durable nylon inserts help prevent tooling damage
- Solid side panel for maximum strength
- Heavy duty 4" x 1-1/2" casters load rated at 1000 lbs.
- All steel infrared-baked epoxy finish
- **Dimensions:** 15" W x 35-1/4" L x 35" H



Tool Size	Capacity	Part Number	Price
CAT/BT/NMTB 40	24	HU-33940	\$331.55
CAT/BT/NMTB 50 taper	15	HU-33950	\$331.55
HSK 63A	24	HU-33970	\$331.55
HSK 100A	15	HU-33980	\$331.55



TOOLSCOOT™ TREE



- **Dimensions:** 57" H x 28-1/2" W x 28" D
- 5 Adjustable shelves for 40 taper tools
- Each shelf holds 18 toolholders (90 total)
- Shelves can be set flat or at a 20° angle
- 1 Utility shelf to hold collet racks and tools
- 70 Matching slot locations (35 per side) for maximum shelf adjustment
- Adjustable height handle
- 3 built-in top slots for spanner wrenches
- Rugged unibody arched design and made from 14-gauge CRS.
- Heavy duty 5" casters rated to 1200 lbs.

Tool Size	Cap.	Part Number	Price
CAT/BT 40 taper	90	HU-55940	\$899.00

CNC TOOL TOTE RACKS



- Built-in end handles for comfortable carrying
- Bench mount, hand carry, or mount on top
- Made of heavy gauge steel
- Nylon inserts help protect tooling
- Painted texture black powder coating

Tool Size	Cap.	Part Number	Price
40 Taper Tools	6	HU-14780	\$68.00
50 Taper Tools	5	HU-14790	\$68.00



TRISCOOT

- Only 15" wide, lets you easily move industrial tooling through narrow spaces
- Heavy duty construction
- Durable nylon inserts help prevent tooling damage
- Solid side panel for maximum strength
- Heavy duty 4" x 1-1/2" casters load rated at 1000 lbs.
- All steel infrared-baked epoxy finish
- **Dimensions:** 15" W x 35-1/4" L x 35" H

Tool Size	Cap.	Part Number	Price
BT, CAT, NMTB 40 Taper	72	HU-13409	\$569.00
BT, CAT, NMTB 50 Taper	54	HU-13509	\$569.00



Call Us Today For All Of Your Machine Tool Needs!

CNC, HSK AND COLLET PLATFORM



Conveniently holds your CNC tools or collets at the ready, for quick access. Angled platform for 40 & 50 taper tools and 5C or R8 collets.

Dimensions:
27-1/4" W x 20-1/4" D x 11" H
at rear of rack.



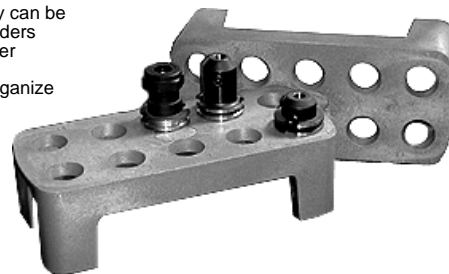
Tool Size	No. of Holes	Part Number	Price
40 taper	24	HU-14840	\$126.00
50 taper	18	HU-14850	\$126.00
5C collets	48	HU-14856	\$126.00



STURDY PLASTIC HOLDING TRAYS

For CAT or BT Taper Toolholders

- Sturdy plastic holding tray can be used with CAT or BT Holders
- Available for 30 or 40 taper tool holders.
- An inexpensive way to organize your tool holders.



Taper Size	No. of Holes	Part Number	Price Each
CAT/BT30	10	TRAY30-10	\$29.50
CAT/BT40	10	TRAY40-10	\$29.50

3J & 16C COLLET RACKS



FEATURES:

- Protects and organizes your valuable collets
- Sturdy steel construction
- Available for 3J & 16C collets
- 25 holes
- See page 120-121 for 16C and 3J collets and accessories

Description	No. Of Holes	Part Number	Price Each
3J Collet Tray	25	TRAY-125-3J	\$40.00
16C Collet Tray	25	TRAY-125-16C	\$49.00

COLLET RACKS FOR ER/RD/DR/DA & TG COLLETS



For ER, DA & TG Collets, please see pages 176-187

Protect, store and organize your valuable collets! Made of heavy 14 gauge steel finished with durable epoxy, powder paint. All racks conveniently fit in the Toolscot and Tool Tower storage trays and are mountable on bench top.

Collet Type	No. of Holes	Hole Size	Part Number	Price
ER 11	49	27/64"	HU-14800	\$46.35
ER 16	49	39/64"	HU-14801	
ER 20	36	49/64"	HU-14802	
ER 25	48	61/64"	HU-14803	
ER 32	40	1 13/64"	HU-14804	
ER 40	27	1 1/2"	HU-14805	
ER 50	21	2"	HU-14806	\$46.35
DA300	49	5/16"	HU-14810	
DA200	49	15/32"	HU-14811	
DA180	48	29/32"	HU-14812	
DA100	36	43/64"	HU-14813	\$46.35
TG75	40	1 1/32"	HU-14820	
TG100	27	1 5/16"	HU-14821	
TG150	21	1 59/64"	HU-14822	

5C/R8 COLLET RACKS



FEATURES:

- Now more holes per rack
- No More Ruined Collets
- Made From Hi-impact Plastic
- Made in the USA
- For 5C collets, see pages 122-123
- R8 collets are on page 245-247



Description	No. of Holes	Part Number	Price Each
5C Collet Rack	76	SIE-5C-76	\$28.40
R8 Collet Rack	52	SIE-R8-52	\$27.31

5C/R8 COLLET RACKS



Made of heavy gauge steel, this collet rack is angled for visibility and easier selection of stored collets and is mountable on bench tops. Tough, solvent free, epoxy finish Ecolo-Clad for long lasting protection.

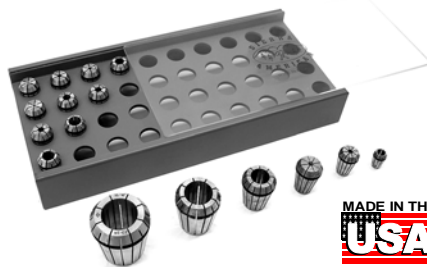
Mountable to milling machine!



Type	No. of Holes	Dimensions	Weight	Part Number	Price
5C	30	Top 9"W x 12"D	3 lbs.	HU-14600	\$32.40
R8	16	Top 5 1/4"W x 9"D	2 lbs.	HU-14625	\$32.40

COLLET TRAYS

- High impact plastic tray will not damage accurate locating surfaces
- Sliding see thru plastic cover
- Up to 40 collets per tray - holds a full set plus special & metric sizes
- Angled seat location to secure collet
- Made in USA
- ER Collets are located on pages 167-174



Protect & Organize Your Collets!

Collet Series	Collet Capacity	Part Number	Price Each
ER-11	40	SIE-SAER-11-40	\$33.01
ER-16	40	SIE-SAER-16-40	\$33.01
ER-20	40	SIE-SAER-20-40	\$35.86
ER-25	40	SIE-SAER-25-40	\$35.86
ER-32	40	SIE-SAER-32-40	\$37.00
ER-40	28	SIE-SAER-40-28	\$37.00

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS
VISE JAWS
VISE ACCESSORIES
STRAIGHT SHANK
COLLET HOLDERS
TAP HOLDERS
DRILL CHUCKS
CARBIDE INSERTS
THREADING/GROOVING
CUTTING TOOLS
MACHINERY
PRECISION TOOLS
DEBURRING
COOLANT/FLUIDS
TOOL STORAGE

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

CUTTING TOOL STORAGE

B

MASTER DRILL DISPENSERS



Holds full packages (minimum of 12 pcs.) of jobber or screw machine length drills, fractional, letter and wire gauge sizes in one complete cabinet.

Dimensions:
26"W x 12"D x 12 1/2"H



Description	Part Number	Price
Master Drill Dispenser	HU-13175	\$403.75

"THE ORIGINAL" DRILL DISPENSER



Holds full packages of each size drill (minimum 12 pcs.). Once piece drawer slide for long useful life. Stackable for larger inventories.

Dimensions:
14 5/8"W x 7 3/8"D x 7 3/4"H



for Drill sizes	Part Number	Price
1/16" to 1/2" x 64ths jobber drills	HU-13000	\$82.39
#1 to #60 wire gage drills, jobbers length	HU-13025	\$104.86
A to Z jobber lenth drills	HU-13050	\$82.39

MASTER TAP DISPENSERS



Model HU-1385
Holds most common NC/NF sizes from 1/4" to 1/2". Holds metric from 2.5 mm to 30 mm. Holds machine screw size 2-56 thru 12-28 taper, plug, bottom and spiral. Extruded vinyl drawer dividers protect taps. Top Drawer has 20 compartments. Second drawer has 78 compartments. Third drawer has 21 compartemnts. Fourth Drawer has 13 compartments. Stackable for larger inventories. Lockable.



Dimensions:
26"W X 12"D X 12-1/2" H.

Description	Part Number	Price
Master Series Tap Cabinet	HU-13585	\$426.55

"THE ORIGINAL" TAP DISPENSER



New one piece drawer slide for long, useful life. Stackable- holds full packages (minimum) of each size.

Model HU-13500
1/4"-20NC 1/4"-28NF 5/16"-18NC 5/16"-24NF 3/8"-16NC 3/8"-24NF 7/16"-14NC 7/16"-20NF 1/2"-13NC 1/2"-20NF 9/16"-12NC 9/16"-18NF 5/8"-11NC 5/8"-18NF 3/4"-10NC 3/4"-16NF 7/8"-9NC 7/8"-14NF 1"-8NC 1"-14NF

Model HU-13550
Each size holds taper, plug, bottoming, and spiral point taps. 60 compartments. Holds machine screw sizes:
2-56 3-48 3-56 4-40 4-48 5-40 5-44 6-32 6-40 8-32 8-36 10-24 10-32 12-24 12-28



Description	Part Number	Price
1/4"-20 thru 1"-14	HU-13500	\$84.55
2-56 thru 12-28	HU-13550	\$104.50

MASTER REAMER CABINETS



Lockable and stackable.
Stores the following reamers:
1/8"-4ea., 0.1230 d/p, 0.1240 under, 0.1247 d/p, 0.1260 over, 3 ea. 3/16", 0.1855 D/P, 0.1865 under, 0.1870 d/p, 0.1885 over 3, ea. 1/4"-4 ea., 0.2480 d/p, 0.2490 under, 0.2495 d/p, 0.2510 over 3 ea. 5/16"-3 ea., 0.3105 d/p - 3 ea., 0.3115 under 2 ea., 0.3120 d/p-2 ea., 0.3135 over-2ea. 3/8"-4 ea., 0.3730 d/p, 0.3740 under, 0.3745 d/p, 0.3760 over 3 ea. 7/16, 0.4355 d/p, 0.4365 under, 0.4370 d/p, 0.4385 over 2 ea. 1/2"-4 ea., 0.4980 d/p-2 ea., 0.4990 under .4995 d/p, 0.5010 over 3, ea.



Dimensions	Part Number	Price
26" W x 12" D x 9-5/16" H	HU-13400	\$379.05

SPACE SAVING REAMER CABINETS



There are 4 different models for reamer organization. These cabinets are ideal where compact space is a must. Decimal equivalents also listed.

Dimensions: (All Models)
14 5/8"W x 7 3/8"D x 7 3/4"H



For Reamer Sizes:	No. of Drawers	Part Number	Price
1/16" to 1/2"	4	HU-13410	\$103.55
A to Z	3	HU-13415	\$94.05
#1 to #60	5	HU-13420	\$113.05
Over/Under and dowel pin	3	HU-13430	\$94.05

INSERT DISPENSERS



Holds square, triangular, diamond and round inserts, with additional space for specials. Has 36 compartments to hold packages or loose inserts and is pre-labeled for insert shape. Includes a label set for your personalized marking of size, radius, grind and thickness. Lockable and stackable.

Dimensions: 26"W x 12"D x 12 1/2"H



Description	Part Number	Price
Dispenser for inserts	HU-13600	\$426.55

TAP AND DRILL DISPENSERS



Stores and organizes correct tap drill with corresponding size tap. Holds one dozen (minimum) of each size.
Dimensions: 14 5/8"W x 7 3/8"D x 7 3/4"H
Weight: 10 1/2 lbs.

Holds 6-32 Tap, #36 Drill, 8-32 Tap, #29 Drill, 10-24 Tap, #25 Drill, 10-32 Tap, #21 Drill, 1/4-20 Tap, #7 Drill, 1/4-28 Tap, #3 Drill, 5/16-18 Tap, F Drill, 5/16-24 Tap, I Drill, 3/8-16 Tap, 5/16 Drill, 3/8-24 Tap, Q Drill, 7/16-14 Tap, U Drill, 7/16-20 Tap, 25/64 Drill, 1/2-13 Tap, 27/64 Drill, 1/2-20 Tap, 29/64 Drill.



Description	Part Number	Price
Tap and drill dispenser	HU-13590	\$94.05

Call Us Today For All Of Your Machine Tool Needs!

TAP INDEXES

Model HU-12575 holds 10 Fractional Sizes:

Coarse and Fine: 1/4"-20, 5/16"-18, 3/8"-16, 7/16"-14, 1/2"-13, 1/4"-28, 5/16"-24, 3/8"-24, 7/16"-20, 1/2"-20

Model HU-12550 holds 19 Machine Screw Sizes:

Fine and Coarse: 0-80, 1-72, 2-56, 3-48, 4-40, 5-40, 1-64, 2-64, 3-56, 4-48, 5-44, 6-32, 8-32, 10-24, 12-24, 6-40, 8-36, 10-32, 12-28

Model HU-12590 holds the following U.S. tap sizes:

4-40NC, 6-32NC, 8-32NC, 10-24NC, 10-32NF, 1/4"-20NC, 5/16"-18NC, 3/8"-16NC, 1/2"-13NC, 5/8"-11NC

or the following 10 METRIC tap sizes:

16X2.0, 12X1.75, 10X1.5, 8X1.25, 6X1.0, 5X.8, 4.5X.75, 4X7, 3.5X.6, 3X.5

Dimensions: (All Models)

3 1/4"W x 4 1/2"D x 1"H



Description	Part Number	Price
19 piece tap index	HU-12550	\$14.85
10 piece tap index	HU-12575	\$14.85
10 piece tap index	HU-12590	\$18.90

TAP & DRILL INDEXES

Organizes 9 pieces of plug taps with the 9 correct jobber length drill bits.

Dimensions:

Models HU-12600/ HU-12650/HU-12675:

4"W x 7"D x 1 1/4"H

Model HU-12700:

12 13/16"W x 4 1/8"D x 1 7/32"H



Description	Part Number	Price
NC6-32 #6 to 1/2"-13 #27/64 tap and drill index	HU-12600	\$11.70
NF6-40 #33 to 1/2"-20 #29/64 tap and drill index	HU-12650	\$11.70
Metric 2.5mm x 0.45, 2.05 to 12.0mm x 1.75 10.20mm tap and drill index	HU-12675	\$12.60
NC and NF taps and drills in one index	HU-12700	\$44.04

BIT BUDDY®

- Clip-on cup drill index
- High impact, break resistant plastic
- Water resistant, great for outdoor job sites
- Fast, 1/4 turn cover secures dome to top of Bit Buddy
- Drills stay in Bit Buddy if dropped and cover is on
- If your 1/2" drill bit is 6" OAL, order Jobbers Length Bit Buddy (HU-30550).



Description	Part Number	Price
For Jobbers-1/16" to 1/2" x 64ths	HU-30550	\$16.50
For Mechanics drills-1/16" to 1/2" x 64ths	HU-30650	\$16.50

TOOLBOX DRAWER LINERS

- Non-slip
- Protect your tool chest drawers and valuable tools
- Color: black
- Available in 2 sizes



Dimensions	Color	Part Number	Price
22.50" W x 115" L	Black	WO-SP-LINER23BK	\$19.22
16.50" W x 156.80" L	Black	WO-SP-LINER17BK	\$29.20

WEBBING

Protect your tools!

Woven of tough, flexible and stretchable polyethylene, this webbing provides great protection for delicate edges of cutting tools. More than doubles the storage capacity of any drawer. Reusable-slips on and off easily, with elasticity assuring a snug fit and non-slip grip. This inexpensive protection is easily cut to any length.



Size	Length	Part Number	Price Each
1/4" to 1" dia. tools	50 ft.	HU-14025	\$30.60
1/4" to 1/2" dia. tools	100 ft.	HU-14026	\$30.60
1/2" to 1" dia. tools	100 ft.	HU-14027	\$30.60
1" to 1-1/2" dia. tools	50 ft.	HU-14028	\$30.60

CUFFED WORK GLOVES LEATHER PALM



- Standard shoulder leather
- Gunn pattern
- 2-1/2" safety cuff
- Patch palm
- Full leather index finger and finger tips
- Color: Gray palm with blue denim
- Sold per pair

Description	Size	Part Number	1-11	12+
Denim Work Gloves	Large	GLV-1176PPB	\$1.79	\$1.49

PREMIUM GRAIN GOAT SKIN "PRO-MECH" GLOVES



- Designed for the professional mechanic or sports enthusiast
- Reinforced palm and thumb crotch
- Black spandex back and wrist
- Adjustable Velcro closure
- Keystone thumb
- Color: Gray with black trim
- Sold per pair

Description	Size	Part Number	1-11	12+
Goat Skin Mechanic Glove	Large	GLV-M4017-L	\$9.29	\$8.59
	X-Large	GLV-M4017-X	\$9.29	\$8.59

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

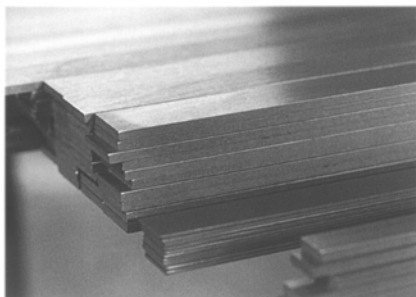
COOLANT/FLUIDS
TOOL STORAGE

PRECISION-GROUND FLAT STOCK

**NOW SHIPPING FROM 6 WAREHOUSES!
SAVE LEAD TIME!**

For your convenience, we now ship flat stock and drill rod from 6 warehouses, cutting down lead time and reducing freight costs! We will ship your order from the closest warehouse to your location (stock permitting):

**Bolingbrook, IL • Santa Fe Springs, CA
Columbia, SC • Hartford, CT
Denver, CO • Euless, TX**



Can't Find Your Size? Please Call For More Information!

Our American manufacturer's huge inventory of ground flat stock features more than three thousand distinct items which provide coverage for virtually every known ground flat stock application. Six standard grades of material-0-1, A-2, D-2, S-7, C-1018 and the heat-treated 4142 Modified are available.

Our ground flat stock is produced exclusively from cross-rolled sheet or plate to ensure more homogeneous structure, finer grain size, better toughness and superior tensile strength. All of our tool steel grades (0-1, A-2, D-2 and S-7) are stress relief annealed immediately prior to surface grinding, so there is more uniform response to heat treatment and less distortion in the heat-treated product. Close control during annealing ensures complete spheroidization throughout. The low-carbon C-1018 is supplied with pearlitic microstructure. All ground flat stock is 100% free of decarburization on all six sides and can be heat-treated or case-hardened immediately without further metal removal. Thickness and width are horizontally ground to a maximum finish of 35 Ra. Blanchard-ground squares are vertically ground to a maximum finish of 80 Ra. The ends of our ground flat stock are precisely cut and deburred to ensure excellent yield as well as handling safety. Thicknesses 3/16" and up are cold-sawn; lighter sections are sheared. Every piece of ground flat stock is hand-straightened with a flatness aim, when shipped, of approximately .005" per foot depending upon size and grade.

OIL-HARDENING FLAT STOCK Precision Ground • 18" & 36" Lengths



- Ground flat stock is an electric furnace melt oil-hardening tool steel supplied with a fully spheroidized structure.
- A non-shrinking general-purpose tool steel, it has excellent abrasion resistance, toughness and machinability characteristics.

- **HEAT TREATMENT:** For sections smaller than 1/4", heat to 1450°-1475°F and hold until heated through. For larger sections, preheat to 1200°F, then raise to 1450°-1500°F hardening temperature, hold half an hour per inch of cross section. Quench in oil at 125°-150°F and temper immediately.

ADDITIONAL SIZES AVAILABLE!
For your ease of ordering, we have listed the most popular items. We offer thousands of additional sizes not listed. If you do not see your size listed, please call!



Thick	Width (inch)	Length (inch)	Part Number	Price Each
1/16	1/2	36	PM01350	\$17.28
	3/4	36	PM00119	\$21.81
	1	36	PM00075	\$26.33
	2	18	PM00020	\$25.44
	2	36	PM00103	\$41.08
	2-1/2	36	PM01230	\$49.37
	3	18	PM00180	\$33.15
	4	18	PM00128	\$42.72
3/32	8	36	PM03900	\$161.41
	1/4	36	PM03172	\$67.77
	1/2	18	PM00063	\$12.97
	3/4	18	PM00037	\$16.07
	1	18	PM00113	\$19.21
	1-1/2	18	PM00031	\$25.40
	2	18	PM00155	\$31.65
	2	36	PM01725	\$51.10
1/8	1/8	18	PM00093	\$27.41
	1/4	18	PM00552	\$9.86
	5/16	18	PM00378	\$10.75
	1/2	18	PM00004	\$12.53
	1/2	36	PM00065	\$21.79
	5/8	18	PM00058	\$13.94
	5/8	36	PM00189	\$24.25
	3/4	18	PM00009	\$15.40
	3/4	36	PM00091	\$26.77
	1	18	PM00001	\$18.21
	1	36	PM00022	\$31.68
	1-1/4	18	PM00024	\$20.87
1-1/4	36	PM00266	\$33.70	
1-1/2	18	PM00040	\$23.67	
1-1/2	36	PM00098	\$38.25	
1-3/4	36	PM01465	\$42.83	
2	18	PM00014	\$29.32	

Thick	Width (inch)	Length (inch)	Part Number	Price Each
1/8	2	36	PM00151	\$47.36
	2-1/2	18	PM00185	\$34.93
	3	18	PM00150	\$37.69
	3	36	PM00311	\$65.55
	4	18	PM00035	\$48.15
	5	18	PM01380	\$58.58
5/32	6	18	PM00163	\$69.03
	1/2	18	PM00120	\$15.43
	3/4	36	PM00536	\$32.87
	1-1/4	36	PM02355	\$41.33
	3-1/2	18	PM03725	\$52.39
	3/16	3/16	18	PM00095
1/4		18	PM01696	\$13.51
1/2		18	PM00006	\$16.84
3/4		36	PM00101	\$32.58
1		36	PM00087	\$38.19
1-1/4		18	PM00060	\$26.87
1-1/2		18	PM00106	\$30.32
2		36	PM00192	\$60.11
3		18	PM00139	\$47.35
4		36	PM00557	\$104.53
5		18	PM03075	\$72.91
8		36	PM06475	\$204.58
7/32	12	36	PM05915	\$299.05
	7/32	36	PM00980	\$37.96
1/4	6	36	PM04785	\$178.11
	1/4	18	PM00042	\$21.92
	1/2	18	PM00007	\$18.70
	5/8	18	PM00618	\$20.55
	3/4	18	PM00005	\$22.31
	1	36	PM00008	\$42.00
	1-1/4	18	PM00073	\$29.34
	1-1/2	18	PM00023	\$33.05

Thick	Width (inch)	Length (inch)	Part Number	Price Each
1/4	1-1/2	36	PM00050	\$53.37
	2	18	PM00015	\$37.45
	2-1/2	18	PM00154	\$44.21
	3	36	PM00144	\$88.65
	4	18	PM00055	\$64.55
	4-1/2	36	PM03070	\$123.99
	6	18	PM00100	\$95.31
	8	18	PM00611	\$136.39
5/16	14	18	PM07575	\$211.58
	5/16	18	PM00194	\$23.70
	3/8	36	PM02436	\$33.34
	1/2	18	PM00138	\$22.38
	5/8	36	PM01286	\$39.65
	3/4	18	PM00153	\$26.68
	1	36	PM00141	\$50.07
	1-3/4	36	PM01515	\$70.27
	2	36	PM00242	\$77.23
	2-1/2	36	PM02580	\$91.11
	3-1/2	36	PM06645	\$118.79
	5	36	PM04890	\$160.10
3/8	3/8	18	PM00030	\$29.82
	3/8	36	PM00043	\$48.15
	1/2	18	PM00018	\$27.28
	5/8	18	PM00684	\$29.92
	3/4	36	PM00079	\$52.52
	1	18	PM00019	\$34.99
	1	36	PM00017	\$60.85
	1-1/4	18	PM00126	\$39.40
	1-1/2	36	PM00148	\$76.91
	1-3/4	36	PM01265	\$87.78
	2	36	PM00245	\$93.72
	2-1/2	18	PM00175	\$63.46
4	18	PM00190	\$92.37	

Call Us Today For All Of Your Machine Tool Needs!

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

PRECISION-GROUND FLAT STOCK

C

O-1 REGULAR OIL-HARDENING (continued)

Precision Ground Flat Stock

O-1 REGULAR OIL HARDENING



Thick	Width (inch)	Length (inch)	Part Number	Price Each
3/8	4	36	PM00866	\$160.63
	4-1/2	18	PM05800	\$101.96
	4-1/2	36	PM04790	\$177.32
	5	18	PM02450	\$111.55
7/16	3/4	18	PM03165	\$35.80
	3/4	36	PM00491	\$62.25
	1-1/4	18	PM00170	\$46.53
	1-1/4	36	PM02800	\$80.94
1/2	1/2	18	PM00013	\$33.54
	1/2	36	PM00071	\$54.17
	5/8	18	PM00134	\$34.06
	5/8	36	PM00995	\$59.24
	3/4	18	PM00038	\$36.96
	3/4	36	PM00215	\$64.28
	1	18	PM00012	\$42.75
	1	36	PM00069	\$74.36
	1-1/4	18	PM00083	\$48.36
	1-1/4	36	PM00833	\$84.11
	1-1/2	18	PM00059	\$54.13
	2	18	PM00047	\$65.77
	2	36	PM00197	\$114.38
	3	18	PM00121	\$89.02

Thick	Width (inch)	Length (inch)	Part Number	Price Each
1/2	4	18	PM00084	\$112.27
	4	36	PM01170	\$195.25
	5	18	PM01605	\$136.32
9/16	9/16	18	PM04545	\$37.38
	1-1/2	36	PM04895	\$106.68
5/8	3/4	18	PM00257	\$44.17
	1	18	PM00142	\$50.82
	1	36	PM00836	\$88.38
	3-1/2	18	PM05135	\$117.37
	6	18	PM03285	\$184.98
3/4	3/4	18	PM00076	\$52.52
	3/4	36	PM00236	\$91.34
	1	18	PM00061	\$60.33
	1	36	PM00281	\$104.94
	1-1/4	18	PM00178	\$67.70
	1-1/2	36	PM01470	\$131.25
	1-3/4	18	PM02437	\$83.25
	2	18	PM00524	\$91.02
	2	36	PM01420	\$158.29
	3	18	PM00473	\$122.15
	4	18	PM00800	\$153.22
	4-1/2	36	PM06485	\$270.96

Thick	Width (inch)	Length (inch)	Part Number	Price Each
3/4	5	18	PM05395	\$185.21
7/8	7/8	36	PM03920	\$114.44
	1	18	PM02805	\$70.25
	1-1/4	18	PM04435	\$78.57
1	3	36	PM07535	\$225.43
	1	18	PM00078	\$75.54
	1	36	PM00347	\$131.36
	1-1/4	36	PM02865	\$146.45
	1-1/2	18	PM00422	\$93.51
	2	18	PM00191	\$112.04
	2-1/2	18	PM02460	\$130.60
	3	18	PM01125	\$149.10
	3	36	PM04985	\$239.36
	4	18	PM01235	\$186.19
1-1/4	5	36	PM06110	\$359.81
	1-1/2	36	PM01965	\$189.12
	3	36	PM06495	\$299.53
1-1/2	6	18	PM04695	\$300.04
	2	36	PM02920	\$262.87
1-1/2	2-1/2	18	PM05145	\$190.05
	6	18	PM06130	\$350.45

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

O-1 OVERSIZE- OIL HARDENING

Precision Ground Flat Stock

(Color Code: Green)

O-1 OVERSIZE OIL HARDENING



- Ground flat stock is an electric furnace melt oil-hardening tool steel supplied with a fully spheroidized structure.
- A non-shrinking general-purpose tool steel, it has excellent abrasion resistance, toughness and machinability characteristics.
- HEAT TREATMENT:** For sections smaller than 1/4", heat to 1450°-1475°F and hold until heated through. For larger sections, preheat to 1200°, then raise to 1450°-1500° hardening temperature, hold half an hour per inch of cross section. Quench in oil at 125°-150°F and temper immediately.

ADDITIONAL SIZES AVAILABLE!
For your ease of ordering, we have listed the most popular items. We offer thousands of additional sizes not listed. If you do not see your size listed, please call!

O-1 Oversize- Inch

Thick	Width (inch)	Length (inch)	Part Number	Price Each
3/16	3/4	18	PM01590	\$20.57
1/4	3/4	36	PM00221	\$36.76
	1	18	PM00176	\$26.53
5/16	3	36	PM02625	\$90.42
	3/4	36	PM03865	\$43.95
	2	36	PM06015	\$78.77
	2-1/2	36	PM06020	\$92.93
1/2	4	36	PM06720	\$135.35
	1	36	PM04940	\$75.84
	1-1/2	18	PM02825	\$55.22
5/8	6	18	PM02440	\$170.42
	5/8	36	PM02565	\$72.38
3/4	1-1/2	36	PM07340	\$133.87
	3	18	PM05880	\$124.59
	4	18	PM05470	\$156.29
1	1	18	PM04090	\$77.04
	1-1/2	18	PM05315	\$95.37

O-1 Oversize- Metric

Thick	Width (mm)	Length (mm)	Part Number	Price Each
3mm	15mm	1m	PM10005	\$34.85
	20mm		PM10010	\$35.49
	25mm		PM10015	\$37.86
	30mm		PM10020	\$40.23
	40mm		PM10025	\$42.91
	50mm		PM10030	\$46.96
	60mm		PM10035	\$53.25
	75mm		PM10040	\$60.65
	100mm		PM10045	\$77.06
	150mm		PM10050	\$115.44
4mm	15mm	1m	PM10055	\$34.18
	20mm		PM10060	\$37.51
	25mm		PM10065	\$38.43
	30mm		PM10070	\$40.23
	40mm		PM10075	\$46.25
	50mm		PM10080	\$54.80
	60mm		PM10085	\$58.57
	75mm		PM10090	\$64.67
	100mm		PM10095	\$85.16
	150mm		PM10100	\$130.72
5mm	15mm	1m	PM10105	\$37.76
	20mm		PM10110	\$40.22
	25mm		PM10115	\$42.70
	30mm		PM10120	\$51.23
	40mm		PM10125	\$53.44

O-1 Oversize- Metric (cont.)

Thick	Width (mm)	Length (mm)	Part Number	Price Each
5mm	50mm	1m	PM10130	\$55.71
	60mm		PM10135	\$62.45
	75mm		PM10140	\$71.87
	100mm		PM10145	\$97.29
	150mm		PM10150	\$141.98
6mm	15mm	1m	PM10155	\$45.17
	20mm		PM10160	\$49.30
	25mm		PM10165	\$53.44
	30mm		PM10170	\$55.81
	40mm		PM10175	\$57.88
	50mm		PM10180	\$60.45
	60mm		PM10185	\$74.80
	75mm		PM10190	\$94.81
	100mm		PM10195	\$101.76
	150mm		PM10200	\$146.32
10mm	15mm	1m	PM10205	\$75.91
	20mm		PM10210	\$95.69
	25mm		PM10215	\$99.63
	30mm		PM10220	\$103.55
	40mm		PM10225	\$106.24
	50mm		PM10230	\$142.87
	60mm		PM10235	\$157.94
	75mm		PM10240	\$160.15
	100mm		PM10245	\$246.13
	150mm		PM10250	\$341.92

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

523

PRECISION-GROUND FLAT STOCK

A-2 REGULAR- AIR HARDENING

Precision-Ground Flat Stock (COLOR CODE: BLUE)

- A-2 ground flat stock is made from fine grain, electric furnace air-hardening, 5% chrome tool steel.
- A superior quality steel has excellent wear and abrasion resistance.
- 100% free of decarb and surface imperfections.
- Low sulphur content makes it non-freemachining.
- HEAT TREATMENT** Preheat thoroughly at 1450°F, then raise to hardening temperature 1725°-1800°F and soak uniformly. For larger sections use high side; for thin or smaller sections, use low side. Quench in still air or dry air blast at 125°-175°F, then TEMPER IMMEDIATELY.

A-2 REGULAR
AIR HARDENING**ADDITIONAL SIZES AVAILABLE!**

For your ease of ordering, we have listed the most popular items. We offer thousands of additional sizes not listed. If you do not see your size listed, please call!



Thick	Width (inch)	Length (inch)	Part Number	Price Each
1/16	3/4	36	PM53291	\$31.93
3/32	3	36	PM01801	\$103.45
	5	36	PM11145	\$160.56
	6	36	PM11150	\$189.67
	8	18	PM11025	\$155.92
1/8	1/4	36	PM11160	\$20.26
	3/8	18	PM11035	\$12.86
	1/2	18	PM00029	\$14.29
	1/2	36	PM00049	\$25.97
	3/4	18	PM00680	\$17.54
	3/4	36	PM00275	\$31.90
	1	18	PM00140	\$20.79
	1	36	PM00072	\$35.09
	1-1/4	18	PM01034	\$23.82
	1-1/4	36	PM00183	\$40.21
	1-1/2	36	PM00172	\$45.70
	2	36	PM00143	\$56.71
6	18	PM02075	\$79.49	
5/32	1	18	PM00188	\$26.82
3/16	1/2	36	PM00184	\$33.63
	5/8	36	PM11175	\$36.09
	1	18	PM00135	\$28.48
1/4	1/4	18	PM00182	\$30.71
	1/4	36	PM00173	\$51.86
	5/16	18	PM11060	\$37.30
	3/8	18	PM11065	\$20.54
	1/2	18	PM00033	\$22.58

Thick	Width (inch)	Length (inch)	Part Number	Price Each	
1/4	1/2	36	PM00108	\$38.10	
	3/4	36	PM00171	\$46.09	
	1	18	PM00110	\$32.10	
	1	36	PM00051	\$54.19	
	1-1/2	36	PM00132	\$69.56	
	2	18	PM00112	\$47.05	
	2	36	PM00094	\$85.55	
	2-1/2	36	PM00329	\$101.52	
	3	18	PM00647	\$64.64	
	3	36	PM00156	\$117.51	
	12	18	PM20980	\$235.07	
	5/16	3/8	36	PM11210	\$53.68
1/2		36	PM00127	\$44.67	
3/4		36	PM00962	\$53.79	
1		36	PM00199	\$62.91	
1-1/2		18	PM02170	\$44.25	
2-1/2		18	PM02980	\$64.34	
3/8	3/8	18	PM01016	\$38.86	
	3/4	36	PM00145	\$65.68	
	1	18	PM00157	\$42.19	
	1	36	PM00090	\$76.71	
	1-1/4	18	PM01300	\$47.67	
	1-1/2	36	PM00181	\$97.79	
	2	18	PM00164	\$65.99	
	2	36	PM00146	\$119.97	
1/2	2-1/2	18	PM01100	\$78.15	
	1/2	1/2	18	PM00854	\$36.39

Thick	Width (inch)	Length (inch)	Part Number	Price Each
1/2	5/8	18	PM01926	\$39.99
	3/4	18	PM01140	\$43.57
	1	18	PM00383	\$50.78
	1	36	PM00338	\$92.32
	1-1/4	36	PM02885	\$104.66
	1-1/2	18	PM02500	\$64.77
	2	18	PM00944	\$79.14
	2	36	PM02780	\$143.89
	2-1/2	36	PM03555	\$170.09
	3-1/2	18	PM04739	\$122.32
5/8	4	36	PM02070	\$229.48
	5	18	PM05625	\$166.41
	10	18	PM21120	\$321.40
	3/4	3/4	18	PM00511
3/4	8	18	PM11105	\$303.05
	3/4	18	PM01243	\$61.87
	2	18	PM00664	\$108.42
	2-1/2	18	PM03174	\$127.34
	2-1/2	36	PM02811	\$213.71
	3	18	PM04074	\$144.33
1	6	18	PM04102	\$240.50
	1	18	PM01244	\$90.94
	1-1/4	18	PM04269	\$101.71
	1-1/4	36	PM02846	\$184.91
	1-1/2	36	PM01927	\$190.19
	3	18	PM04271	\$183.50
	4	18	PM02924	\$212.60

A-2 OVERSIZE- AIR HARDENING

Precision Ground Flat Stock (Color Code: Blue)

- A-2 ground flat stock is made from fine grain, electric furnace air-hardening, 5% chrome tool steel.
- A superior quality steel has excellent wear and abrasion resistance.
- Furnished with a fully spheroidized structure-100% free of decarb and other surface imperfections.
- Low sulphur content makes it non-freemachining.
- HEAT TREATMENT** Preheat thoroughly at 1450°F, then raise to hardening temperature 1725°-1800°F and soak uniformly. For larger sections use high side; for thin or smaller sections, use low side. Quench in still air or dry air blast at 125°-175°F, then TEMPER IMMEDIATELY.

A-2 OVERSIZE
AIR HARDENING**ADDITIONAL SIZES AVAILABLE!**

For your ease of ordering, we have listed the most popular items. We offer thousands of additional sizes not listed. If you do not see your size listed, please call!

Thick	Width (inch)	Length (inch)	Part Number	Price Each
1/8	1/4	18	PM11265	\$11.59
	3/8	18	PM11270	\$13.37
	1/2	18	PM00117	\$14.85
	1/2	36	PM00160	\$27.01
	3/4	18	PM01705	\$18.25
3/16	3/4	18	PM03690	\$25.10
	3/4	36	PM01395	\$42.37
	1	36	PM00935	\$50.00
	1-1/2	36	PM01495	\$64.49
1/4	1/4	36	PM00767	\$53.94
	1/2	18	PM00131	\$23.47
	5/8	18	PM11300	\$25.59
	1	36	PM00162	\$56.36
5/16	1/2	18	PM02635	\$27.51
	1/2	36	PM00437	\$46.46
	5/8	36	PM11380	\$52.26

Thick	Width (inch)	Length (inch)	Part Number	Price Each
5/16	6	36	PM05980	\$234.97
3/8	1/2	18	PM01165	\$33.61
	1/2	36	PM01067	\$56.75
	3/4	18	PM01275	\$27.01
	1	18	PM00692	\$43.88
	2-1/2	36	PM02390	\$147.77
	3	36	PM01052	\$170.80
	3-1/2	18	PM06045	\$106.60
	5/8	18	PM05630	\$41.59
1/2	3/4	18	PM02725	\$45.32
	1-1/4	18	PM03705	\$59.87
	2	18	PM02350	\$82.30
	3	18	PM04960	\$112.24
	3/4	3/4	18	PM02910
5/8	2-1/2	18	PM06775	\$116.64
3/4	1	18	PM02405	\$74.30

Thick	Width (inch)	Length (inch)	Part Number	Price Each
3/4	1	36	PM02395	\$135.10
	2	36	PM06175	\$189.23
	2-1/2	36	PM06685	\$222.26
	4	36	PM07625	\$321.24
	6	36	PM06915	\$454.75
7/8	7/8	18	PM08125	\$79.20
1	1	18	PM03635	\$94.58
	2	36	PM05700	\$238.67
1-1/4	1-1/4	18	PM01959	\$144.81
	1-1/2	18	PM04221	\$159.72
	2	36	PM04436	\$348.20
1-1/2	4	36	PM04437	\$606.53
	1-1/2	18	PM00666	\$187.09
	2	36	PM02952	\$401.33
	2-1/2	18	PM04224	\$268.87
	5	18	PM07208	\$491.34

Call Us Today For All Of Your Machine Tool Needs!

C1018 LOW-CARBON Precision Ground Flat Stock (Color Code: Yellow)

C1018 LOW-CARBON



- C1018 Ground flat stock is a fine-grained, vacuum-degassed carbon steel.
- Easily machined, excellent weldability and responds uniformly to case hardening
- The manganese content provides greater strength and hardness compared to many other carbon steels.
- It is often used in its natural state for such applications as backup plate, stripper plates, punch pads and machine parts.
- As a casehardened material, it is used for jigs, fixtures, cams and patterns.

ADDITIONAL SIZES AVAILABLE!
For your ease of ordering, we have listed the most popular items. We offer thousands of additional sizes not listed. If you do not see your size listed, please call!

HARDENING CARBURIZING: For maximum depth of hardening, 1/32", hold in carburizing salt at 1700°F for 3 hours.

CASE HARDENING: Hold in sodium cyanide salt bath at 1500°F for 30 minutes. Maximum case is .006".

Thick	Width (inch)	Length (inch)	Part Number	Price Each
1/16	1/2	24	PM00025	\$12.12
	3/4	24	PM00081	\$14.68
	1	24	PM00129	\$17.47
	1-1/2	24	PM00198	\$22.95
	2	24	PM00166	\$29.60
	2-1/2	24	PM00548	\$33.32
3/32	3	24	PM00845	\$38.15
	1/2	24	PM00057	\$15.10
1/8	1	24	PM00026	\$21.79
	1/2	24	PM00011	\$14.62
	3/4	24	PM00054	\$17.48
	1	24	PM00028	\$20.50
	1-1/2	24	PM00039	\$27.10
	2	24	PM00066	\$31.40
	2-1/2	24	PM00105	\$34.49
5/32	4	24	PM00152	\$48.56
	6	24	PM00177	\$70.28
	1/2	24	PM00116	\$17.98
3/16	3	24	PM03540	\$43.15
	1/2	24	PM00118	\$25.31
	3/4	24	PM00092	\$28.74
	1	24	PM00115	\$34.13
	1-1/4	24	PM00165	\$34.26
	1-1/2	24	PM00167	\$38.40
	2	24	PM00296	\$46.69
	2-1/2	24	PM00455	\$55.65
	4	24	PM00821	\$80.28
	1/4	1/4	24	PM00159
1/2		24	PM00053	\$24.56

Thick	Width (inch)	Length (inch)	Part Number	Price Each
1/4	3/4	24	PM00052	\$27.90
	1	24	PM00109	\$32.70
	1-1/4	24	PM00096	\$34.69
	1-1/2	24	PM00158	\$37.68
	2	24	PM00036	\$45.68
	2-1/2	24	PM00088	\$53.93
	3	24	PM00102	\$61.76
	3-1/2	24	PM00293	\$68.95
5/16	4	24	PM00149	\$77.55
	6	24	PM00168	\$109.74
	8	24	PM00260	\$138.87
	1/2	24	PM00130	\$28.92
3/8	3/4	24	PM00578	\$32.78
	2	24	PM00686	\$52.00
	6	24	PM01615	\$121.73
	3/8	24	PM00041	\$30.02
	1/2	24	PM00097	\$32.89
	3/4	24	PM00045	\$33.67
	1	24	PM00064	\$39.62
	1-1/4	24	PM00137	\$43.50
1/2	1-1/2	24	PM00099	\$47.05
	2	24	PM00082	\$55.79
	6	24	PM00809	\$131.03
	8	24	PM01775	\$166.00
	1/2	24	PM00124	\$36.01
	3/4	24	PM00062	\$40.53
	1	24	PM00085	\$46.88
	1-1/4	24	PM00551	\$52.00
1-1/2	24	PM00107	\$57.17	

Thick	Width (inch)	Length (inch)	Part Number	Price Each
1/2	2	24	PM00077	\$66.19
	2-1/2	24	PM00272	\$76.23
	4	24	PM00111	\$105.80
	5	24	PM00186	\$127.32
	6	24	PM00125	\$147.58
5/8	8	24	PM00560	\$186.44
	1	24	PM00230	\$52.85
3/4	1-1/4	24	PM01305	\$60.24
	6	24	PM02415	\$165.02
	3/4	24	PM00195	\$50.68
	1	24	PM00089	\$62.80
	1-1/4	24	PM00881	\$68.22
	1-1/2	24	PM00368	\$75.06
	2	24	PM00353	\$87.48
	3	24	PM00269	\$112.68
7/8	5	24	PM01004	\$161.14
	6	24	PM00788	\$187.02
	8	24	PM01245	\$219.82
	3-1/2	24	PM05830	\$137.01
1	1	24	PM00187	\$75.47
	1-1/2	24	PM00791	\$92.74
	2	24	PM00212	\$107.39
	2-1/2	24	PM01480	\$120.84
	3	24	PM00605	\$134.28
	4	24	PM00683	\$161.00
	8	24	PM01690	\$252.79
	9	24	PM04825	\$282.71

SAE D-2 REGULAR- AIR HARDENING Precision Ground Flat Stock (Color Code: White)



D-2 REGULAR AIR HARDENING

- D-2 is fine quality, air-hardening, electric furnace melt tool steel.
- The combination of superior abrasion resistance and toughness found in D-2 results from its high carbon and high chromium analysis.
- D-2 ground flat is extraordinary tool steel that can be specified for the most demanding application.
- Full spheroidized condition, free of decarb and surface imperfections.
- D-2 Ground flat's low sulphur content makes it non-freemachining.
- **HEAT TREATMENT** Preheat thoroughly at 1450°-1500°F, then raise temperature 1800°-1850°F and hold until uniformly heated through. Soak at temperature 45-60 minutes per inch of thickness. To minimize surface decarburization use salt bath, controlled atmosphere furnace or pack harden. Use high side of hardness for thicker sections.

ADDITIONAL SIZES AVAILABLE!
For your ease of ordering, we have listed the most popular items. We offer thousands of additional sizes not listed. If you do not see your size listed, please call!

Thick	Width (inch)	Length (inch)	Part Number	Price Each
1/16	1/2	18	PM30010	\$15.09
1/8	3/4	18	PM30450	\$25.68
	3/4	36	PM30460	\$44.99
1/4	1	36	PM30480	\$53.50
	1	36	PM31140	\$73.22
	1-1/2	18	PM31170	\$49.93
5/16	1-1/2	36	PM31180	\$94.20
	1	36	PM31360	\$86.61
3/8	1	36	PM31580	\$105.18
	2	36	PM31640	\$166.43
1/2	3/4	36	PM31760	\$107.25
	1	36	PM31780	\$125.60

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

PRECISION-GROUND FLAT STOCK

AISI-SAE D-2 OVERSIZE- AIR HARDENING

Precision Ground Flat Stock
(Color Code: White)



- D-2 is fine quality, air-hardening, electric furnace melt tool steel.
- The combination of superior abrasion resistance and toughness found in D-2 results from its high carbon and high chromium analysis.
- D-2 ground flat is extraordinary tool steel that can be specified for the most demanding application.
- Full spheroidized condition, free of decarb and surface imperfections.
- D-2 Ground flat is low sulphur content makes it non-freemachining.
- HEAT TREATMENT** Preheat thoroughly at 1450°-1500°F, then raise temperature 1800°-1850°F and hold until uniformly heated through. Soak at temperature 45-60 minutes per inch of thickness. To minimize surface decarburization use salt bath, controlled atmosphere furnace or pack harden. Use high side of hardness for thicker sections.



Thick	Width (inch)	Length (inch)	Part Number	Price Each
3/16	1-1/4	36	PM01055	\$74.96
5/16	1/2	18	PM01665	\$34.09
	1/2	36	PM05175	\$64.32
3/8	1/2	18	PM00860	\$41.50
	1/2	36	PM01082	\$78.31
1/2	2	18	PM03120	\$93.50
	4	18	PM06065	\$193.90
1	2	18	PM04472	\$169.33
	2-1/2	18	PM03967	\$193.25

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

S-7 OVERSIZE- AIR HARDENING

Precision-Ground Flat Stock
(COLOR CODE: BLACK)



- S-7 ground flat stock is an excellent air-hardening shock steel
- S-7 combines the qualities of high strength and good ductility for cold and medium hot work applications.
- HEAT TREATMENT** Preheat thoroughly at 1200°-1300°F and raise to hardening temperature of 1725°F. Hold for one hour and quench in still air. Upon reaching 150°F, steel should be tempered without delay.



Thick	Width (inch)	Length (inch)	Part Number	Price Each
5/16	1/2	36	PM05185	\$54.69
	1	18	PM05515	\$42.37
	1-1/4	18	PM07250	\$47.30
	1-1/2	18	PM04045	\$53.20
1/2	3/4	36	PM04600	\$100.31
	1	36	PM05445	\$116.58
	1-1/4	18	PM07510	\$73.69
	1-1/2	36	PM06005	\$147.67
	2-1/2	18	PM07255	\$119.15
	4	18	PM06085	\$173.83

4142 PRE-HARDENED

Precision Ground Flat Stock
(COLOR CODE: RED)



- 4142 ground flat stock is a modified pre-hardened alloy steel with a Brinell hardness of 261-321 (Rc28-32).
- It is normalized and tempered in machinable condition of approximately 85% of a 1.00 carbon steel.
- Useful in applications requiring a lower hardness and less wear resistance than fully heat treated tool steel, but can be flame-hardened where a hardness is desired.



Thick	Width (inch)	Length (inch)	Part Number	Price Each
1/16	1/2	36	PM25105	\$31.15
	1-1/2	36	PM25120	\$59.06
	2	36	PM25125	\$74.03
1/8	1/2	36	PM06806	\$32.53
	3	18	PM06719	\$53.35
3/16	3/4	36	PM06821	\$41.70
	1-1/2	18	PM06729	\$34.66
	1-1/2	36	PM06824	\$60.28
1/4	3/4	36	PM06834	\$40.85
	1	18	PM06741	\$30.43
	2	18	PM06744	\$43.37
	6	36	PM06846	\$188.14

Thick	Width (inch)	Length (inch)	Part Number	Price Each
5/16	1	36	PM06849	\$58.01
3/8	1	36	PM06863	\$65.04
	2	36	PM06867	\$96.20
1/2	3/4	18	PM06779	\$37.64
	1	36	PM06876	\$75.69
	2	36	PM06879	\$109.79
3/4	2	18	PM06794	\$89.52
	2	36	PM06889	\$155.69
1	1	36	PM91078	\$148.53
	2	18	PM06801	\$111.47
	4	18	PM06803	\$199.39



CHEMISTRY AND SPECIFICATIONS

Chemical Compositions (%)

Grade/A.I.S.I.	Carbon	Manganese	Silicon	Phosphorus	Sulphur	Chromium	Vanadium	Tungsten	Molybdenum
0-1	.90/1.00	1.00/1.15	.20/.35	0.020	.020	.40/.60	.08/.15	.45/.60	-
A-2	.90/1.05	.40/.60	.20/.35	0.025	.005	4.90/5.30	.15/.20	-	.90/1.10
S-7	.48/.53	.50/.70	.20/.40	0.025	.003	3.10/3.40	.20/.30	-	1.30/1.60
4142	.38/.46	.70/1.00	.15/.30	0.035	.040	.80/1.15	.030 Min	-	.15/.25
D-2	1.50/1.60	.20/.40	.20/.60	0.025	.015	11.50/12.00	.80/1.00	-	.70/.80
C-1018	.15/.20	.69/.90	-	0.040	.050	-	-	-	-



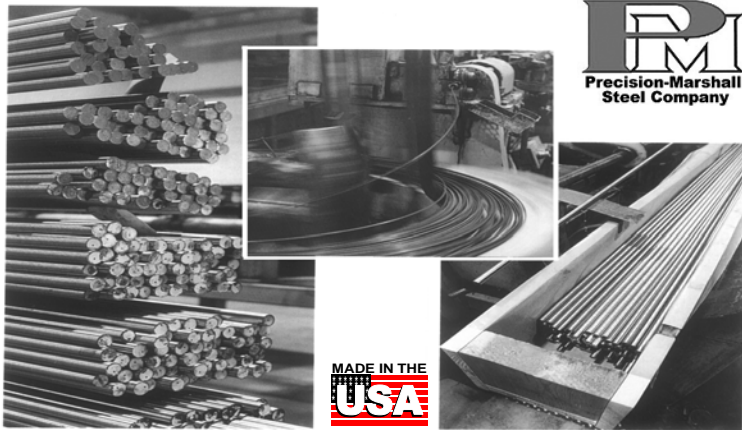
Specifications and Physical Properties

Grade/A.I.S.I.	UNS Designation	S.A.E.	A.S.T.M.	Federal	Hardness		
					Brinell	Rockwell	Machinability*
0-1	T31501	J-437	A-681-76	QQT-570 Rev. C.	177-212	Rb88-95	95
A-2	T30102	J-437	A-681-77	QQT-570 Rev. C.	200-235	Rb94-99	65
S-7	T41907	J-437	A-681-78	QQT-570 Rev. C.	188-223	Rb90-97	95
4142	G41420	-	A-322	-	261-321	Rc26-34	85
D-2	T30402	J-437	A-681-78	QQT-570 Rev. C.	220-255	Rb97-102	50
C-1018	G10180	-	-	635	168 Max	Rb85 Max	-

*Compared to 1.0% Carbon Tool Steel

Tolerances	
Thickness Regular	± .001"
Thickness Oversize	+ .010/.015"
Width Regular	+ .000/.005"
Width Oversize	+ .010/.015"
Squares Regular	± .001"
Squares Oversize	+ .010/.015"
18" Length	+ .125/.250"
24" Length	+ .1875/.375"
36" Length	+ .250/.500"
Squareness Edge Regular & Oversize	.003" per inch of thickness

Call Us Today For All Of Your Machine Tool Needs!



**NOW SHIPPING FROM 6 WAREHOUSES!
SAVE LEAD TIME!**

For your convenience, we now ship flat stock and drill rod from 6 warehouses, cutting down lead time and reducing freight costs! We will ship your order from the closest warehouse to your location (stock permitting):

**Bolingbrook, IL • Santa Fe Springs, CA
Columbia, SC • Hartford, CT
Denver, CO • Euless, TX**

**We Offer The Largest Selection
Of Drill Rod In The USA-
If You Do Not See Your Size Listed,
Please Call Us!**

Drill Rods (Made in USA) include six standard grades of material: W-1, 0-1, A-2, S-7, D-2 and M-2 in more than four hundred standard diameters (including metric) in both three and twelve-foot lengths. We can provide you difficult-to-locate lettered and numbered sizes of drill rod.

Ground and polished drill rod is guaranteed to be 100% free of decarburization, seams, laps, pits and other surface imperfections. It is ready to be heat-treated without additional grinding or polishing. Modern annealing furnace and instrumentation produce finely controlled microstructures that are consistent lot-to-lot. Ninety percent minimum spheroidization is guaranteed. The ends of all our ground and polished drill rod in 3/8" through 2" diameters are saw-cut and chamfered to protect other lengths from scratching, facilitate setup and ensure safety in handling.

Drill Rods Tolerances		Standard Tolerance (section)	Straightness Max T.I.R.	Standard Tolerance (length)
Round Drill Rod	2.000" to 1.500"	±.00075	.005i	+ 1/8", -.0
	1.500" thru .125" dia.	±.0005	.005i	+ 1/8", -.0
	.124" and smaller dia	±.0003	.005	+1/8", -.0
Flat and Square Drill Rod	1.000" thru .750" (largest dim.)	±.0015		+ 1/8", -.0
	.749" thru .250"			
	Largest Dimension	±.001		+ 1/8", -.0
	.249" and smaller	±.0005		+ 1/8", -.0

* Closer tolerances than standard may be produced upon inquiry

MARKING PENS



DYKEM® BRITE-MARK® is a general purpose permanent marker ideal for making clear, bold markings on almost any surface. Its quick drying, oil-based paint withstands indoor and outdoor conditions without fading, chipping or losing its opacity. They can be used to permanently identify inventory, assemblies, tools, finished products or work-in-progress while resisting most work related abuses or compounds.

FEATURES:

- Make permanent bright marks on metal, rubber, plastic, glass, concrete, leather, stone, wood, vinyl and more
- Valve action mechanism prevents paint in barrel from drying when cap is left off
- Ideal for color coding
- Drying Time: 25 – 35 seconds

Point	Color	Part Number	Price Each
Medium	Blue	DYKEM-84001	\$3.99
	Black	DYKEM-84002	
	White	DYKEM-84003	
	Yellow	DYKEM-84004	
	Red	DYKEM-84006	

LAYOUT FLUIDS

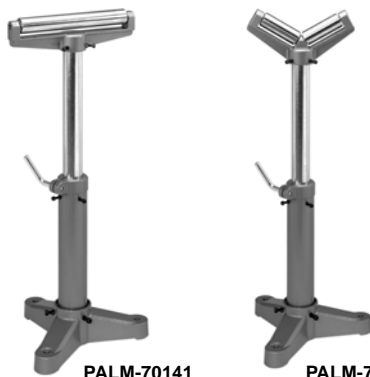


FEATURES:

- Prevents glare with uniform, deep color
- Dries in minutes
- Allows scribing of sharp, clear, precise lines
- RED use for aligning metal gears

Size	BLUE Part Number	RED Part Number	Price
4 oz. Brush-In-Cap	DYKEM-80300	DYKEM-80396	\$8.95
8 oz. Brush-In-Cap	DYKEM-80400	DYKEM-80496	\$12.95
16 oz. Aerosol	DYKEM-80000	DYKEM-80096	\$10.96
1 Gallon	DYKEM-80700	DYKEM-80796	\$60.50

MATERIAL SUPPORT STANDS



The Palmgren material support stands are made of heavy duty cast iron and steel for handling heavy loads of stock-up to 2,000 lbs. A clamping mechanism on the column allows for quick and easy height adjustments. Locking screws provide added safety. Stand can be ordered with either a Horizontal Head or a V-Roller Head. Replacement heads are available.

The Horizontal Head is a chrome-plated, 2" x 14" ball bearing roller head designed to smoothly move up to 2,000 lbs. of flat stock. The V-Roller Head consists of two chrome-plated 2" x 5" ball bearing roller heads designed to smoothly move up to 2,000 lbs. round stock 1" to 18" diameter.

Weight Cap.	Height Range	Base Size	Length of Horz. Holder	Min Stock Dia	Max Stock Dia	Type	Part Number	Price Each
2000 lbs	23" to 38-1/2"	15" x 16-1/2"	14"	-	-	Horizontal Head	PALM-70141	\$167.00
			-	1"	18"	V-Roller Head	PALM-70181	\$172.00

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE



GROUND & POLISHED DRILL ROD

W-1 WATER HARDENING

Ground And Polished And Cold-Drawn Drill Rod (Color Code: Red)

- The most popular, versatile, and least expensive grade of drill rod.
- The through-hardening quality of W-1 affords optimum response to heat treatment and provides toughness and maximum wear-resistance in service.
- High carbon content allows it to be used often without heat treatment for many maintenance applications
- It is a fine-grained electric furnace-melted commercial grade tool steel which is supplied in the fully-spheroidized 100% decarb free condition.

HEAT TREATMENT: Heat thoroughly at 1425°-1500°F. Hold one-half hour per inch of section, quench in water (brine). Sizes below 9/32-inch round may be quenched in oil.



ADDITIONAL SIZES AVAILABLE!

For your ease of ordering, we have listed the most popular items. We offer thousands of additional sizes not listed. If you do not see your size listed, please call!

Dia (inch)	Length (inch)	Part Number	Price Each	Dia (inch)	Length (inch)	Part Number	Price Each
1/16	36	PM53401	\$0.81	5/8	36	PM53257	\$12.02
3/32	36	PM53393	\$1.48	11/16	36	PM53241	\$16.04
1/8	36	PM53385	\$1.64	3/4	36	PM53225	\$16.99
5/32	36	PM53377	\$2.08	25/32	36	PM53217	\$21.31
3/16	36	PM53369	\$2.44	55/64	36	PM53197	\$26.86
3/16	144	PM53370	\$9.85	7/8	36	PM53193	\$25.50
7/32	144	PM53362	\$12.15	1	36	PM53161	\$29.67
15/64	36	PM53357	\$3.82	1-1/4	36	PM53097	\$46.69
1/4	36	PM53353	\$3.00	P	36	PM53861	\$5.00
5/16	36	PM53337	\$3.90	U	36	PM53881	\$6.50
3/8	36	PM53321	\$5.21	#44	36	PM53673	\$1.67
7/16	36	PM53305	\$7.08	#39	36	PM53653	\$1.78
1/2	36	PM53289	\$8.53	#32	36	PM53625	\$2.39
17/32	36	PM53281	\$11.06	#32	144	PM53626	\$12.02
39/64	36	PM53261	\$15.19				

O-1 OIL-HARDENING

Ground and Polished Drill Rod (Color Code: Yellow)

- O-1 drill rod is an electric furnace-melted oil-hardening tool steel supplied with a full-spheroidized structure.
- A non-shrinking general-purpose tool steel, it has excellent abrasion resistance toughness and machinability characteristics.

HEAT TREATMENT Sections smaller than 1/4" heat to 1450°-1475° and hold until heated through. For larger sections, preheat to 1200°F, then raise to 1450°-1500° to hardening temperature, hold one-half hour per inch of cross section. Quench in oil at 125°-150°F and TEMPER IMMEDIATELY.



Full Line Available!
Please call for more information.

Dia (inch)	Length (inch)	Part Number	Price Each
1/16	36	PM51401	\$1.47
3/32	36	PM51393	\$1.71
1/8	36	PM51385	\$2.25
9/64	36	PM51381	\$3.02
5/32	36	PM51377	\$2.84
11/64	36	PM51373	\$3.68
3/16	36	PM51369	\$3.26
13/64	36	PM51365	\$4.12
7/32	36	PM51361	\$3.90
7/32	144	PM51362	\$15.62
15/64	36	PM51357	\$4.84
1/4	36	PM51353	\$3.71
1/4	144	PM51354	\$14.83
9/32	36	PM51345	\$4.66
5/16	36	PM51337	\$4.66
11/32	36	PM51329	\$6.18
23/64	36	PM51325	\$7.31
3/8	36	PM51321	\$6.57
3/8	144	PM51322	\$26.29

Dia (inch)	Length (inch)	Part Number	Price Each
25/64	36	PM51317	\$8.41
13/32	36	PM51313	\$8.54
7/16	36	PM51305	\$8.91
15/32	36	PM51297	\$11.28
1/2	36	PM51289	\$10.96
9/16	36	PM51273	\$15.30
5/8	36	PM51257	\$16.93
5/8	144	PM51258	\$62.89
3/4	36	PM51225	\$23.82
3/4	144	PM51226	\$88.50
51/64	36	PM51213	\$31.82
7/8	36	PM51193	\$33.14
7/8	144	PM51194	\$132.59
1	36	PM51161	\$37.43
1-1/32	36	PM51153	\$45.89
1-1/8	36	PM51129	\$52.16
1-1/4	36	PM51097	\$61.12
1-17/64	36	PM51093	\$67.43
1-1/2	36	PM51033	\$87.14
1-3/4	36	PM51017	\$118.61

Dia (inch)	Length (inch)	Part Number	Price Each
2	36	PM51001	\$153.65
2-1/2	36	PM20010	\$284.21
D	36	PM51813	\$5.30
K	36	PM51841	\$5.02
L	36	PM51845	\$5.33
R	36	PM51869	\$6.51
W	36	PM51889	\$8.23
Y	36	PM51897	\$9.02
#38	36	PM51649	\$2.16
#35	36	PM51637	\$2.42
#34	36	PM51633	\$2.49
#32	144	PM51626	\$10.93
#31	36	PM51621	\$2.96
#28	36	PM51609	\$2.96
#27	36	PM51605	\$3.14
#22	36	PM51585	\$3.64
#19	36	PM51573	\$3.36
#17	36	PM51565	\$3.70
#9	36	PM51533	\$3.79
#3	36	PM51509	\$4.50

Call Us Today For All Of Your Machine Tool Needs!

O-1 METRIC OIL-HARDENING

Ground and Polished Drill Rod

(Color Code: Yellow)

- O-1 drill rod is an electric furnace-melted oil-hardening tool steel supplied with a full-spheroidized structure.
- A non-shrinking general-purpose tool steel, it has excellent abrasion resistance toughness and machinability characteristics.



HEAT TREATMENT Sections smaller than 1/4" heat to 1450°-1475° and hold until heated through. For larger sections, preheat to 1200°F, then raise to 1450°-1500° to hardening temperature, hold one-half hour per inch of cross section. Quench in oil at 125°-150°F and TEMPER IMMEDIATELY.

Dia (mm)	Length (mm)	Part Number	Price Each	Dia (mm)	Length (mm)	Part Number	Price Each
2mm	36	PM60104	\$3.02	14mm	36	PM60128	\$19.61
3mm	36	PM60106	\$3.51	15mm	36	PM60130	\$22.44
4mm	36	PM60108	\$3.83	16mm	36	PM60132	\$24.68
5mm	36	PM60110	\$4.81	17mm	36	PM60134	\$28.26
6mm	36	PM60112	\$7.53	18mm	36	PM60136	\$31.77
7mm	36	PM60114	\$5.94	19mm	36	PM60138	\$34.44
8mm	36	PM60116	\$7.13	20mm	36	PM60140	\$35.42
9mm	36	PM60118	\$8.59	21mm	36	PM60142	\$39.16
10mm	36	PM60120	\$10.51	22mm	36	PM60144	\$42.95
11mm	36	PM60122	\$12.94	23mm	36	PM60146	\$45.62
12mm	36	PM60124	\$14.87	24mm	36	PM60148	\$50.96
13mm	36	PM60126	\$16.93	25mm	36	PM60150	\$55.34

A-2 AIR HARDENING

Ground and Polished Drill Rod

(Color Code: Blue)



- A-2 drill rod is made from fine grain, electric furnace air-hardening 5% chrome tool steel.
- Superior quality steel which has excellent wear and abrasion resistant properties.

HEAT TREATMENT Preheat thoroughly at 1450°F, then raise to hardening temperature of 1725-1800°F and soak uniformly. For larger sections, use high side; for thin or smaller sections, use low side. Quench in still air or dry air blast at 125-175°F, then TEMPER IMMEDIATELY.

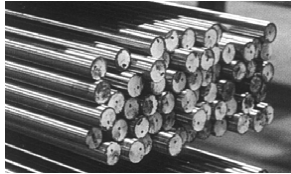
Dia (inch)	Length (inch)	Part Number	Price Each
1/8	36	PM85009	\$4.05
5/32	36	PM85013	\$5.76
3/16	36	PM85017	\$6.15
1/4	36	PM85025	\$8.42
5/16	36	PM85033	\$10.86
11/32	36	PM85037	\$14.50
23/64	36	PM85039	\$15.86
3/8	36	PM85041	\$15.46
7/16	36	PM85049	\$21.04
1/2	36	PM85057	\$26.36

Dia (inch)	Length (inch)	Part Number	Price Each
5/8	36	PM85065	\$37.77
21/32	36	PM85067	\$46.03
3/4	36	PM85073	\$53.98
13/16	36	PM85075	\$63.35
7/8	36	PM85077	\$73.48
1	36	PM85079	\$95.39
1-1/4	36	PM85085	\$139.53
1-1/2	36	PM85089	\$199.25
2	36	PM85093	\$324.45

S-7 AIR HARDENING

Ground and Polished Drill Rod

S-7 Drill Rod is an excellent shock steel that can be and often is used in hot work applications where the tool temperature does not exceed 1000°F. It combines the qualities of high strength and good ductility for cold and medium hot work applications.

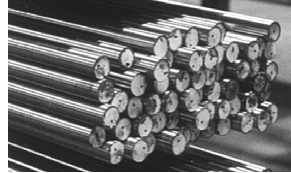


Dia (inch)	Length (inch)	Part Number	Price Each
1/16	36	PM70996	\$3.79
3/32	36	PM70998	\$5.52
1/8	36	PM71001	\$6.76
5/32	36	PM71005	\$8.78
3/16	36	PM71009	\$10.42
7/32	36	PM71011	\$12.07
1/4	36	PM71013	\$13.54
5/16	36	PM71017	\$15.97
3/8	36	PM71023	\$21.84
7/16	36	PM71027	\$29.71
1/2	36	PM71029	\$31.46
5/8	36	PM71035	\$44.37
3/4	36	PM71039	\$63.91
7/8	36	PM71043	\$87.00
1	36	PM71045	\$110.71
1-1/4	36	PM71049	\$173.00
1-3/8	36	PM71051	\$193.21
1-1/2	36	PM71053	\$229.93
1-3/4	36	PM71055	\$312.99
2	36	PM71057	\$409.19

D-2 AIR HARDENING

Ground and Polished Drill Rod

D-2 Drill rod is fine quality, air-hardening, electric furnace melt tool steel. The combination of superior abrasion resistance and toughness found in D-2 results from its high carbon and high chromium analysis. It is an extraordinary tool steel that can be specified for the most demanding application. It is supplied in the full spheroidized condition, 100% free of decarb and other surface imperfections. D-2's low sulphur content makes it non-freemaching.



Dia (inch)	Length (inch)	Part Number	Price Each
1/8	36	PM07176	\$18.29
3/16	36	PM07177	\$14.68
1/4	36	PM07178	\$21.00
5/16	36	PM07181	\$28.68
3/8	36	PM07182	\$36.98
7/16	36	PM07183	\$50.44
1/2	36	PM07184	\$63.21
5/8	36	PM07186	\$95.68
3/4	36	PM07188	\$137.83
7/8	36	PM07189	\$187.40
1	36	PM07191	\$217.46
1-1/4	36	PM07192	\$374.51
1-1/2	36	PM07193	\$538.46

ADDITIONAL SIZES AVAILABLE!

For your ease of ordering, we have listed the most popular items. We offer thousands of additional sizes not listed. If you do not see your size listed, please call!

M-2 ANNEALED

High Speed Drill Rod

M-2 is a tungsten-molybdenum high-speed steel. It has a wider heat treat range than most of the high speed steels and has a resistance to decarburization. It offers an excellent combination of good red hardness, toughness and wear resistance.



Dia (inch)	Length (inch)	Part Number	Price Each
1/16	36	PM60500	\$4.94
5/64	36	PM60502	\$7.36
3/32	36	PM60504	\$10.50
7/64	36	PM60506	\$10.71
1/8	36	PM60508	\$9.25
5/32	36	PM60510	\$13.81
3/16	36	PM60512	\$13.49
1/4	36	PM60514	\$20.53
5/16	36	PM60516	\$26.82
3/8	36	PM60518	\$34.92
7/16	36	PM60520	\$47.59
1/2	36	PM60522	\$59.98
5/8	36	PM60524	\$90.92
3/4	36	PM60526	\$130.77
1	36	PM60528	\$206.82
1-1/4	36	PM60530	\$319.63
1-1/2	36	PM60532	\$419.48

Full Line Available!
Please call for more information.

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

GROUND AND POLISHED DRILL ROD

A-2 AIR-HARDENING

Ground and Polished Drill Rod (COLOR CODE: BLUE)

- Made from fine grain, electric furnace air-hardening 5% chrome tool steel.
- Superior quality steel which has excellent wear and abrasion resistant properties.
- A-2 is furnished with a fully-spheroidized structure and is 100% free of decarb and other surface imperfections.

HEAT TREATMENT Preheat thoroughly at 1450°F, then raise to hardening temperature 1725°-1800°F, and soak uniformly. For larger sections, use high side; for thin or smaller sections, use low side. Quench in still air or dry air blast at 125°-175°F, then TEMPER IMMEDIATELY



Tempering Data

Temper °F	Rockwell Hardness
As Hardened	62-65
300	61-64
400	59-62
500	58-61
600	57-60
800	56-59
900	55-58
1000	56-59

Typical Analysis	
Carbon	.95/1.05
Manganese	1.00 Max
Silicon	0.50 Max
Phosphorus	0.030
Sulfur	0.030
Chromium	4.75/5.50
Vanadium	.15/.50
Tungsten	-
Molybdenum	.90/1.40

S-7 AIR-HARDENING

GROUND AND POLISHED DRILL ROD (Color Code: Black)

- S-7 drill rod is an excellent shock steel that can be and is often used in hotwork applications where the tool temperature does not exceed 1000° F. It combines the qualities of high strength and good ductility for cold and medium hot work applications.

HEAT TREATMENT Preheat thoroughly at 1200°-1300°F and raise to hardening temperature of 1725°F. Hold for one hour and quench in still air. Upon reaching 150x F, steel should be tempered without delay.

Tempering Data

Temper °F	Rockwell C Hardness
As Quenched	59-61
400	56-58
500	54-56
600	53-55
700	52-54
800	52-54
900	51-53
1000	50-52
1100	46-48
1200	40-42
1300	33-35

Typical Analysis	
Carbon	.45/.55
Manganese	.20/.80
Silicon	.20/1.00
Phosphorus	0.030
Sulfur	0.030
Chromium	3.00/3.50
Vanadium	.20/.30
Tungsten	-
Molybdenum	1.30/1.80

D-2 AIR-HARDENING

Ground and Polished Drill Rod (Color Code: White)

- D-2 drill rod is fine quality, air-hardening, electric furnace melt tool steel.
- The combination of superior abrasion resistance and toughness found in D-2 results from its high carbon and high chromium analysis.
- Extraordinary tool steel that can be specified for the most demanding application.
- It is supplied in the full spheroidized condition, 100% free of decarb and other surface imperfections.
- Low sulphur content makes it non-freemachining.

HEAT TREATMENT Preheat thoroughly to 1450°-1500°F, then raise temperature to 1800°-1850°F and hold until uniformly heated through. Soak at temperature 45-60 minutes per inch of thickness. To minimize surface decarburization use salt bath, controlled atmosphere furnace or pack harden. Use high side of hardness for larger diameters.

Tempering Data

Temper °F	Rockwell C Hardness
As Hardened	62-65
400	60-60
500	59-62
600	57-59
700	57-59
800	57-59
900	59-61

Typical Analysis	
Carbon	1.40/1.60
Manganese	0.60 Max
Silicon	0.60 Max
Phosphorus	0.030
Sulfur	0.030
Chromium	11.00/13.00
Vanadium	1.10 Max
Tungsten	-
Molybdenum	.70/1.20

M-2 ANNEALED

High-Speed Drill Rod (Color Code: Orange)

- M-2 is a tungsten-molybdenum high speed steel.
- It has a wider heat treat range than most of the high speed steels, and has a resistance to decarburization.
- It offers an excellent combination of good red hardness, toughness and wear resistance.

HEAT TREATMENT Warm slightly before charging into furnace, which should be operating at 1350°-1500°F. After thorough preheating, transfer to hardening furnace at 2175°-2225°F, depending on tool size and degree of hardening required for application. Cool in air, oil or a molten salt bath operating at 1000°-1100°F in case of oil quenching, it is usually good practice to interrupt the quench by removing the tool after it has reached about 1000°F; and allow cooling to continue in still air. Tools should be allowed to cool to 150°F, or when they can be held by the bare hand and then tempered immediately. The tempering temperature may be varied according to the desired hardness, but it is usually in the range of 1000°-1100°F.

Tempering Data

Temper °F	Rockwell C	Hardness
	Oil-quenched	Air-quenched
300	65	65
400	64	63
500	63	62.5
600	62.5	62.5
700	63	62.5
800	63.5	63.5
850	63.5	63.5
900	65	64
950	66	65
1000	66	65.5
1050	66	63.5
1100	64.5	61.5
1150	62	60
1200	53.5	53
1300	43	39.5
1400	33.5	34

Typical Analysis	
Carbon	0.85 Max
Manganese	0.30 Max
Silicon	0.30 Max
Phosphorus	-
Sulfur	-
Chromium	4.00 Max
Vanadium	2.00 Max
Tungsten	6.00 Max
Molybdenum	5.00 Max

Call Us Today For All Of Your Machine Tool Needs!

SOCKET HEAD CAP SCREWS



SOCKET HEAD CAP SCREWS

- Crafted from heat treated alloy steel
- Hardness RC 38-43
- Class fit 3A
- Meets all standard specifications ASME/ANSI B18.3-2002/ASTM A574
- Knurled head
- Sold in package quantities only



LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Dia & Thread	Lgth Under Head	Box Qty.	Part Number	Price Per Box
0-80	1/8	100	SHC-00-80-125-B	\$8.62
	3/16	100	SHC-00-80-187-B	\$7.54
	1/4	100	SHC-00-80-250-B	\$8.06
	3/8	100	SHC-00-80-375-B	\$8.33
1-72	1/8	100	SHC-01-72-125-B	\$7.54
	3/16	100	SHC-01-72-187-B	\$7.66
	1/4	100	SHC-01-72-250-B	\$8.18
	3/8	100	SHC-01-72-375-B	\$8.45
2-56	3/16	100	SHC-02-56-187-B	\$7.56
	1/4	100	SHC-02-56-250-B	\$7.66
	3/8	100	SHC-02-56-375-B	\$7.73
	1/2	100	SHC-02-56-5.0-B	\$8.45
3-48	3/16	100	SHC-03-48-187-B	\$7.44
	1/4	100	SHC-03-48-250-B	\$7.46
	3/8	100	SHC-03-48-375-B	\$7.56
	1/2	100	SHC-03-48-5.0-B	\$8.45
4-40	1/4	100	SHC-04-40-250-B	\$3.70
	3/8	100	SHC-04-40-375-B	\$3.74
	1/2	100	SHC-04-40-5.0-B	\$3.91
	5/8	100	SHC-04-40-625-B	\$4.03
5-40	3/4	100	SHC-04-40-750-B	\$4.32
	1/4	100	SHC-05-40-250-B	\$4.37
	3/8	100	SHC-05-40-375-B	\$4.56
	1/2	100	SHC-05-40-5.0-B	\$4.68
6-32	5/8	100	SHC-05-40-625-B	\$4.73
	3/4	100	SHC-05-40-750-B	\$5.12
	1/4	100	SHC-06-32-250-B	\$3.79
	3/8	100	SHC-06-32-375-B	\$3.94
6-40	1/2	100	SHC-06-32-5.0-B	\$4.03
	5/8	100	SHC-06-32-625-B	\$4.18
	3/4	100	SHC-06-32-750-B	\$4.49
	7/8	100	SHC-06-32-875-B	\$4.78
8-32	1	100	SHC-06-32-100-B	\$5.09
	1/4	100	SHC-06-40-250-B	\$3.79
	3/8	100	SHC-06-40-375-B	\$3.94
	1/2	100	SHC-06-40-5.0-B	\$4.03
8-36	5/8	100	SHC-06-40-625-B	\$4.18
	3/4	100	SHC-06-40-750-B	\$4.49
	1/4	100	SHC-08-32-250-B	\$4.03
	3/8	100	SHC-08-32-375-B	\$3.98
10-24	1/2	100	SHC-08-32-5.0-B	\$4.10
	5/8	100	SHC-08-32-625-B	\$4.20
	3/4	100	SHC-08-32-750-B	\$4.51
	7/8	100	SHC-08-32-875-B	\$4.80
8-36	1	100	SHC-08-32-100-B	\$5.23
	11/4	100	SHC-08-32-125-B	\$6.70
	11/2	100	SHC-08-32-150-B	\$7.49
	3/8	100	SHC-08-36-375-B	\$4.20
10-24	1/2	100	SHC-08-36-5.0-B	\$4.44
	3/4	100	SHC-08-36-750-B	\$4.74
	3/8	100	SHC-10-24-375-B	\$4.13
	1/2	100	SHC-10-24-5.0-B	\$4.20
10-24	5/8	100	SHC-10-24-625-B	\$4.49
	3/4	100	SHC-10-24-750-B	\$4.75
	7/8	100	SHC-10-24-875-B	\$5.33
	1	100	SHC-10-24-100-B	\$5.59
10-24	11/4	100	SHC-10-24-125-B	\$7.30
	11/2	100	SHC-10-24-150-B	\$8.68
	13/4	100	SHC-10-24-175-B	\$9.53
	2	100	SHC-10-24-200-B	\$10.44

Dia & Thread	Lgth Under Head	Box Qty.	Part Number	Price Per Box
10-32	3/8	100	SHC-10-32-375-B	\$4.13
	1/2	100	SHC-10-32-5.0-B	\$4.20
	5/8	100	SHC-10-32-625-B	\$4.49
	3/4	100	SHC-10-32-750-B	\$4.75
	7/8	100	SHC-10-32-875-B	\$5.33
	1	100	SHC-10-32-100-B	\$5.59
	1-1/4	100	SHC-10-32-125-B	\$7.30
	1-1/2	100	SHC-10-32-150-B	\$8.74
1/4-20	1-3/4	100	SHC-10-32-175-B	\$9.53
	2	100	SHC-10-32-200-B	\$10.44
	3/8	100	SHC-25-20-375-B	\$6.34
	1/2	100	SHC-25-20-5.0-B	\$5.35
	5/8	100	SHC-25-20-625-B	\$5.47
	3/4	100	SHC-25-20-750-B	\$5.76
	7/8	100	SHC-25-20-875-B	\$6.34
	1	100	SHC-25-20-100-B	\$6.94
1/4-28	1-1/4	100	SHC-25-20-125-B	\$7.50
	1-1/2	100	SHC-25-20-150-B	\$8.70
	1-3/4	100	SHC-25-20-175-B	\$9.90
	2	100	SHC-25-20-200-B	\$11.14
	2-1/4	100	SHC-25-20-225-B	\$13.80
	2-1/2	100	SHC-25-20-2.5-B	\$15.84
	2-3/4	100	SHC-25-20-2.7-B	\$18.46
	3	100	SHC-25-20-3.0-B	\$21.00
1/4-28	3-1/2	100	SHC-25-20-3.5-B	\$34.32
	4	100	SHC-25-20-4.0-B	\$42.24
	3/8	100	SHC-25-28-375-B	\$6.65
	1/2	100	SHC-25-28-5.0-B	\$5.62
	5/8	100	SHC-25-28-625-B	\$5.74
	3/4	100	SHC-25-28-750-B	\$6.05
	7/8	100	SHC-25-28-875-B	\$6.65
	1	100	SHC-25-28-100-B	\$7.30
5/16-18	1-1/4	100	SHC-25-28-125-B	\$7.87
	1-1/2	100	SHC-25-28-150-B	\$9.14
	1-3/4	100	SHC-25-28-175-B	\$10.41
	2	100	SHC-25-28-200-B	\$11.69
	2-1/4	100	SHC-25-28-225-B	\$15.48
	3/8	100	SHC-31-18-375-B	\$11.23
	1/2	100	SHC-31-18-5.0-B	\$8.78
	5/8	100	SHC-31-18-625-B	\$9.15
5/16-18	3/4	100	SHC-31-18-750-B	\$9.91
	7/8	100	SHC-31-18-875-B	\$10.22
	1	100	SHC-31-18-100-B	\$10.87
	1-1/4	100	SHC-31-18-125-B	\$13.14
	1-1/2	100	SHC-31-18-150-B	\$13.73
	1-3/4	100	SHC-31-18-175-B	\$15.60
	2	100	SHC-31-18-200-B	\$16.10
	2-1/4	100	SHC-31-18-225-B	\$19.77
5/16-24	2-1/2	100	SHC-31-18-2.5-B	\$21.45
	2-3/4	100	SHC-31-18-2.7-B	\$25.83
	3	100	SHC-31-18-3.0-B	\$28.32
	3-1/4	100	SHC-31-18-3.2-B	\$32.74
	3-1/2	100	SHC-31-18-3.5-B	\$37.03
	4	100	SHC-31-18-4.0-B	\$54.12
	1/2	100	SHC-31-24-5.0-B	\$9.75
	5/8	100	SHC-31-24-625-B	\$10.32
5/16-24	3/4	100	SHC-31-24-750-B	\$10.50
	7/8	100	SHC-31-24-875-B	\$10.78
	1	100	SHC-31-24-100-B	\$11.45
	1-1/4	100	SHC-31-24-125-B	\$13.80

Dia & Thread	Lgth Under Head	Box Qty.	Part Number	Price Per Box	
5/16-24	1-1/2	100	SHC-31-24-150-B	\$14.42	
	1-3/4	100	SHC-31-24-175-B	\$19.11	
	2	100	SHC-31-24-200-B	\$16.92	
	2-1/4	100	SHC-31-24-225-B	\$25.14	
	2-1/2	100	SHC-31-24-2.5-B	\$24.22	
3/8-16	1/2	100	SHC-37-16-5.0-B	\$18.22	
	5/8	100	SHC-37-16-625-B	\$15.38	
	3/4	100	SHC-37-16-750-B	\$14.40	
	7/8	100	SHC-37-16-875-B	\$15.36	
	1	100	SHC-37-16-100-B	\$16.32	
	1-1/4	100	SHC-37-16-125-B	\$17.62	
	1-1/2	100	SHC-37-16-150-B	\$19.70	
	1-3/4	100	SHC-37-16-175-B	\$22.80	
	2	100	SHC-37-16-200-B	\$24.29	
	2-1/4	100	SHC-37-16-225-B	\$28.56	
	2-1/2	50	SHC-37-16-2.5-B	\$15.71	
	2-3/4	50	SHC-37-16-2.7-B	\$17.39	
	3	50	SHC-37-16-3.0-B	\$18.90	
3/8-24	3-1/4	50	SHC-37-16-3.2-B	\$22.72	
	3-1/2	50	SHC-37-16-3.5-B	\$25.08	
	4	50	SHC-37-16-4.0-B	\$29.51	
	4-1/2	50	SHC-37-16-4.5-B	\$34.15	
	5	50	SHC-37-16-5.0-B	\$18.22	
	6	50	SHC-37-16-6.0-B	\$62.93	
	3/8-24	1/2	100	SHC-37-24-5.0-B	\$19.15
		5/8	100	SHC-37-24-625-B	\$16.20
		3/4	100	SHC-37-24-750-B	\$15.19
		7/8	100	SHC-37-24-875-B	\$16.18
		1	100	SHC-37-24-100-B	\$17.09
		1-1/4	100	SHC-37-24-125-B	\$18.53
		1-1/2	100	SHC-37-24-150-B	\$20.69
1-3/4		100	SHC-37-24-175-B	\$24.38	
3/8-24	2	100	SHC-37-24-200-B	\$30.35	
	2-1/4	100	SHC-37-24-225-B	\$34.86	
	2-1/2	50	SHC-37-24-2.5-B	\$16.46	
	3	50	SHC-37-24-3.0-B	\$19.91	
7/16-14	1/2	100	SHC-43-14-5.0-B	\$29.06	
	5/8	100	SHC-43-14-625-B	\$30.24	
	3/4	100	SHC-43-14-750-B	\$27.53	
	7/8	100	SHC-43-14-875-B	\$28.82	
	1	100	SHC-43-14-100-B	\$30.26	
	1-1/4	100	SHC-43-14-125-B	\$32.50	
	1-1/2	100	SHC-43-14-150-B	\$41.27	
	1-3/4	100	SHC-43-14-175-B	\$45.56	
	2	50	SHC-43-14-200-B	\$24.84	
	2-1/4	50	SHC-43-14-225-B	\$28.77	
7/16-20	2-1/2	50	SHC-43-14-2.5-B	\$31.09	
	2-3/4	50	SHC-43-14-2.7-B	\$31.02	
	3	50	SHC-43-14-3.0-B	\$32.48	
	3-1/2	50	SHC-43-14-3.5-B	\$43.74	
	4	50	SHC-43-14-4.0-B	\$43.70	
	1	100	SHC-43-20-100-B	\$33.29	
	1-1/4	100	SHC-43-20-125-B	\$35.74	
	1-1/2	100	SHC-43-20-150-B	\$38.90	
2	50	SHC-43-20-200-B	\$23.41		

Full Line Available!
Please call for more information.

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

531



SOCKET/BUTTON HEAD CAP SCREWS

SOCKET HEAD CAP SCREWS (continued)

- Crafted from heat treated alloy steel
- Hardness RC 38-43
- Class fit 3A
- Meets all standard specifications
ASME/ANSI B18.3-2002/ASTM A574
- Knurled head
- Sold in package quantities only

Dia & Thread	Lgth Under Head	Box Qty.	Part Number	Price Per Box
1/2-13	1/2	50	SHC-50-13-500-B	\$24.49
	5/8	50	SHC-50-13-625-B	\$20.54
	3/4	50	SHC-50-13-750-B	\$15.52
	7/8	50	SHC-50-13-875-B	\$14.99
	1	50	SHC-50-13-100-B	\$16.34
	1-1/4	50	SHC-50-13-125-B	\$17.42
	1-1/2	50	SHC-50-13-150-B	\$19.87
	1-3/4	50	SHC-50-13-175-B	\$21.19
	2	50	SHC-50-13-200-B	\$22.73
	2-1/4	50	SHC-50-13-225-B	\$26.21
	2-1/2	50	SHC-50-13-2-5-B	\$27.59
	2-3/4	50	SHC-50-13-2-7-B	\$31.02
	3	50	SHC-50-13-3-0-B	\$33.00
	3-1/4	25	SHC-50-13-3-2-B	\$17.49
	3-1/2	25	SHC-50-13-3-5-B	\$19.60
	4	25	SHC-50-13-4-0-B	\$22.22
4-1/2	25	SHC-50-13-4-5-B	\$27.46	
5	25	SHC-50-13-5-0-B	\$24.49	
5-1/2	25	SHC-50-13-5-5-B	\$33.26	
6	25	SHC-50-13-6-0-B	\$38.48	
6-1/2	10	SHC-50-13-6-5-B	\$21.70	
7	10	SHC-50-13-7-0-B	\$24.59	
8	10	SHC-50-13-8-0-B	\$29.42	
1/2-20	1	50	SHC-50-20-100-B	\$17.98
	1-1/4	50	SHC-50-20-125-B	\$22.36
	1-1/2	50	SHC-50-20-150-B	\$21.85
	1-3/4	50	SHC-50-20-175-B	\$27.19
	2	50	SHC-50-20-200-B	\$25.00
	2-1/4	50	SHC-50-20-225-B	\$28.82
	2-1/2	50	SHC-50-20-2-5-B	\$30.35
	3	50	SHC-50-20-3-0-B	\$36.28
5/8-11	1	50	SHC-62-11-100-B	\$31.36
	1-1/4	50	SHC-62-11-125-B	\$33.31
	1-1/2	50	SHC-62-11-150-B	\$34.83
	1-3/4	50	SHC-62-11-175-B	\$37.20
	2	50	SHC-62-11-200-B	\$40.81
	2-1/4	25	SHC-62-11-225-B	\$21.88

Dia & Thread	Lgth Under Head	Box Qty.	Part Number	Price Per Box
5/8-11	2-1/2	25	SHC-62-11-2-5-B	\$23.56
	2-3/4	25	SHC-62-11-2-7-B	\$26.20
	3	25	SHC-62-11-3-0-B	\$29.04
	3-1/4	25	SHC-62-11-3-2-B	\$30.03
	3-1/2	25	SHC-62-11-3-5-B	\$31.63
	4	25	SHC-62-11-4-0-B	\$35.90
	4-1/2	25	SHC-62-11-4-5-B	\$41.25
	5	25	SHC-62-11-5-0-B	\$46.07
	5-1/2	10	SHC-62-11-5-5-B	\$20.66
	6	10	SHC-62-11-6-0-B	\$23.22
5/8-18	6-1/2	10	SHC-62-11-6-5-B	\$32.02
	7	10	SHC-62-11-7-0-B	\$34.52
	8	10	SHC-62-11-9-0-B	\$42.24
	1	50	SHC-62-18-100-B	\$38.15
	1-1/4	50	SHC-62-18-125-B	\$39.28
	1-1/2	50	SHC-62-18-150-B	\$40.79
3/4-10	1-3/4	50	SHC-62-18-175-B	\$43.24
	2	50	SHC-62-18-200-B	\$47.52
	2-1/2	25	SHC-62-18-2-5-B	\$27.65
	1-1/4	25	SHC-75-10-125-B	\$27.39
	1-1/2	25	SHC-75-10-150-B	\$27.79
	1-3/4	25	SHC-75-10-175-B	\$29.17
	2	25	SHC-75-10-200-B	\$31.52
	2-1/4	25	SHC-75-10-225-B	\$32.99
	2-1/2	25	SHC-75-10-2-5-B	\$35.74
	2-3/4	25	SHC-75-10-2-7-B	\$39.15
5/8-11	3	25	SHC-75-10-3-0-B	\$41.58
	3-1/4	25	SHC-75-10-3-2-B	\$46.74
	3-1/2	25	SHC-75-10-3-5-B	\$49.37
	4	25	SHC-75-10-4-0-B	\$51.98
	4-1/2	25	SHC-75-10-4-5-B	\$60.72
	5	25	SHC-75-10-5-0-B	\$67.72
	5-1/2	10	SHC-75-10-5-5-B	\$29.24
	6	10	SHC-75-10-6-0-B	\$31.66
	6-1/2	10	SHC-75-10-6-5-B	\$45.01
	7	10	SHC-75-10-7-0-B	\$49.74
8	10	SHC-75-10-8-0-B	\$62.17	

Dia & Thread	Lgth Under Head	Box Qty.	Part Number	Price Per Box
7/8-9	2	10	SHC-87-09-200-B	\$23.00
	2-1/4	10	SHC-87-09-225-B	\$24.60
	2-1/2	10	SHC-87-09-2-5-B	\$26.79
	2-3/4	10	SHC-87-09-2-7-B	\$31.31
	3	10	SHC-87-09-3-0-B	\$31.75
	3-1/4	10	SHC-87-09-3-2-B	\$32.63
	3-1/2	10	SHC-87-09-3-5-B	\$34.15
	4	10	SHC-87-09-4-0-B	\$40.55
	4-1/2	10	SHC-87-09-4-5-B	\$46.96
	5	10	SHC-87-09-5-0-B	\$51.40
1-8	5-1/2	10	SHC-87-09-5-5-B	\$54.20
	6	10	SHC-87-09-6-0-B	\$59.93
	6-1/2	10	SHC-87-09-6-5-B	\$75.50
	7	10	SHC-87-09-7-0-B	\$82.76
	8	10	SHC-87-09-8-0-B	\$97.43
	2	10	SHC-10-08-200-B	\$32.03
	2-1/4	10	SHC-10-08-225-B	\$34.84
	2-1/2	10	SHC-10-08-2-5-B	\$35.78
	2-3/4	10	SHC-10-08-2-7-B	\$37.71
	3	10	SHC-10-08-3-0-B	\$39.64
1-8	3-1/4	10	SHC-10-08-3-2-B	\$42.22
	3-1/2	10	SHC-10-08-3-5-B	\$43.90
	4	10	SHC-10-08-4-0-B	\$49.03
	4-1/2	10	SHC-10-08-4-5-B	\$59.29
	5	10	SHC-10-08-5-0-B	\$64.47
	5-1/2	10	SHC-10-08-5-5-B	\$72.28
	6	10	SHC-10-08-6-0-B	\$76.54
	6-1/2	10	SHC-10-08-6-5-B	\$94.22
	7	10	SHC-10-08-7-0-B	\$101.15
	8	10	SHC-10-08-8-0-B	\$120.84

Full Line Available!
Please call for more information.

BUTTON HEAD CAP SCREWS

- Meets all standard specifications
ASME/ANSI B18.3-2002/ASTM F835
- Crafted from heat treated alloy steel
- Hardness RC 38-43
- Class fit 3A
- Sold in box quantities of 100 (*50 per box)



Dia & Thread	Lgth Under Head	Part Number	Price Per Box
4-40	1/4	SBH-04-40-250-B	\$3.62
	3/8	SBH-04-40-375-B	\$3.74
	1/2	SBH-04-40-5-0-B	\$3.89
6-32	1/4	SBH-06-32-250-B	\$3.74
	3/8	SBH-06-32-375-B	\$3.89
	1/2	SBH-06-32-5-0-B	\$3.98
	5/8	SBH-06-32-625-B	\$4.27
8-32	1/4	SBH-08-32-250-B	\$4.06
	3/8	SBH-08-32-375-B	\$4.13
	1/2	SBH-08-32-5-0-B	\$4.22
	5/8	SBH-08-32-625-B	\$4.51
10-24	3/4	SBH-08-32-750-B	\$4.80
	1/4	SBH-10-24-250-B	\$4.22
	3/8	SBH-10-24-375-B	\$4.39
	1/2	SBH-10-24-5-0-B	\$4.66
10-24	5/8	SBH-10-24-625-B	\$4.99
	3/4	SBH-10-24-750-B	\$5.23
	7/8	SBH-10-24-875-B	\$5.54
	1	SBH-10-24-100-B	\$5.98

Dia & Thread	Lgth Under Head	Part Number	Price Per Box
10-32	1/4	SBH-10-32-250-B	\$4.22
	3/8	SBH-10-32-375-B	\$4.39
	1/2	SBH-10-32-5-0-B	\$4.66
	5/8	SBH-10-32-625-B	\$4.99
	3/4	SBH-10-32-750-B	\$5.23
1/4-20	1	SBH-10-32-100-B	\$5.98
	3/8	SBH-25-20-375-B	\$5.76
	1/2	SBH-25-20-5-0-B	\$5.90
	5/8	SBH-25-20-625-B	\$6.05
	3/4	SBH-25-20-750-B	\$6.62
1/4-28	7/8	SBH-25-20-875-B	\$7.08
	1	SBH-25-20-100-B	\$7.63
	3/8	SBH-25-28-375-B	\$6.05
	1/2	SBH-25-28-5-0-B	\$6.22
	5/8	SBH-25-28-625-B	\$6.34
5/16-18	3/4	SBH-25-28-750-B	\$6.96
	1	SBH-25-28-100-B	\$7.99
	3/8	SBH-31-18-375-B	\$9.42
	1/2	SBH-31-18-5-0-B	\$8.90
	5/8	SBH-31-18-625-B	\$9.26
5/16-18	3/4	SBH-31-18-750-B	\$9.77
	7/8	SBH-31-18-875-B	\$10.44
	1	SBH-31-18-100-B	\$11.23

Dia & Thread	Lgth Under Head	Part Number	Price Per Box
5/16-24	3/8	SBH-31-24-375-B	\$9.90
	1/2	SBH-31-24-5-0-B	\$9.34
	5/8	SBH-31-24-625-B	\$9.74
	3/4	SBH-31-24-750-B	\$11.96
3/8-16	1	SBH-31-24-100-B	\$13.75
	1/2	SBH-37-16-5-0-B	\$13.99
	5/8	SBH-37-16-625-B	\$14.35
	3/4	SBH-37-16-750-B	\$14.98
3/8-24	7/8	SBH-37-16-875-B	\$15.94
	1	SBH-37-16-100-B	\$16.90
	1-1/4	SBH-37-16-125-B	\$19.15
	1/2	SBH-37-24-5-0-B	\$24.51
1/2-13	5/8	SBH-37-24-625-B	\$15.66
	3/4	SBH-37-24-750-B	\$18.94
	1	SBH-37-24-100-B	\$22.26
	1	SBH-50-13-100-B	\$32.71
5/8-11	1-1/4	SBH-50-13-125-B	\$38.09
	1-1/2	SBH-50-13-150-B	\$41.71
	2	SBH-50-13-200-B	\$26.34
	1	SBH-62-11-100-B*	\$33.54
5/8-11	1-1/4	SBH-62-11-125-B*	\$36.74
	1-1/2	SBH-62-11-150-B*	\$40.10
	2	SBH-62-11-200-B*	\$49.15

Call Us Today For All Of Your Machine Tool Needs!

CHUCK JAWS
LATHE WORKHOLDING

MACHINE VISES
VISE JAWS

RETENTION KNOBS
ER, DA, TG COLLETS

TOOLHOLDERS
TAP HOLDERS

INDEXABLE DRILLS
TURNING & BORING

ENDMILLS, DRILLS
TAPS & REAMERS

ABRASIVES
MEASURING TOOLS

MRO & SAFETY
FLAT STOCK/DRILL ROD

SOCKET SET SCREWS



- Cup point
- Alloy steel, heat-treated
- Conforms to ASME/ANSI B18.3-2002
- ASTM F912 standards
- Sold in box quantities

Full Line Available!
Please call for more information.



LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBRUISING

COOLANT/FLUIDS
TOOL STORAGE

Size	OAL	Box Qty	Part Number	Box Price
2-56	1/16	100	SSC-02-56-625-B	\$10.14
	3/32	100	SSC-02-56-937-B	\$10.30
	1/2	100	SSC-02-56-5.0-B	\$14.21
	3/16	100	SSC-02-56-187-B	\$10.64
	1/4	100	SSC-02-56-250-B	\$10.78
3-48	3/32	100	SSC-03-48-937-B	\$8.69
	1/8	100	SSC-03-48-125-B	\$8.83
	3/16	100	SSC-03-48-187-B	\$8.98
	1/4	100	SSC-03-48-250-B	\$9.12
4-40	1/8	100	SSC-04-40-125-B	\$3.98
	3/16	100	SSC-04-40-187-B	\$4.10
	1/4	100	SSC-04-40-250-B	\$4.20
	5/16	100	SSC-04-40-312-B	\$4.27
	3/8	100	SSC-04-40-375-B	\$4.42
5-40	1/2	100	SSC-04-40-5.0-B	\$4.82
	5/8	100	SSC-04-40-625-B	\$6.10
	1/8	100	SSC-05-40-125-B	\$4.20
	3/16	100	SSC-05-40-187-B	\$4.37
	1/4	100	SSC-05-40-250-B	\$4.42
6-32	5/16	100	SSC-05-40-312-B	\$4.49
	3/8	100	SSC-05-40-375-B	\$4.63
	1/2	100	SSC-05-40-5.0-B	\$5.21
	5/8	100	SSC-05-40-625-B	\$6.38
	3/4	100	SSC-05-40-750-B	\$7.32
	8-32	1/8	100	SSC-06-32-125-B
3/16		100	SSC-06-32-187-B	\$4.20
1/4		100	SSC-06-32-250-B	\$4.25
5/16		100	SSC-06-32-312-B	\$4.30
3/8		100	SSC-06-32-375-B	\$4.39
7/16		100	SSC-06-32-437-B	\$4.49
1/2		100	SSC-06-32-5.0-B	\$4.58
5/8		100	SSC-06-32-625-B	\$6.24
3/4		100	SSC-06-32-750-B	\$6.77
10-24	7/8	100	SSC-06-32-875-B	\$7.56
	1	100	SSC-06-32-100-B	\$9.14
	1/8	100	SSC-08-32-125-B	\$5.40
	3/16	100	SSC-08-32-187-B	\$4.22
	1/4	100	SSC-08-32-250-B	\$4.27
	5/16	100	SSC-08-32-312-B	\$4.37
	3/8	100	SSC-08-32-375-B	\$4.46
10-24	7/16	100	SSC-08-32-437-B	\$4.54
	1/2	100	SSC-08-32-5.0-B	\$4.61
	5/8	100	SSC-08-32-625-B	\$6.02
	3/4	100	SSC-08-32-750-B	\$6.86
	7/8	100	SSC-08-32-875-B	\$7.68
	1	100	SSC-08-32-100-B	\$9.43
	10-24	3/16	100	SSC-10-24-187-B
1/4		100	SSC-10-24-250-B	\$4.54
5/16		100	SSC-10-24-312-B	\$4.61
3/8		100	SSC-10-24-375-B	\$4.73
7/16		100	SSC-10-24-437-B	\$4.80
1/2		100	SSC-10-24-5.0-B	\$4.94
5/8		100	SSC-10-24-625-B	\$6.43
3/4		100	SSC-10-24-750-B	\$7.01
7/8		100	SSC-10-24-875-B	\$7.75
1		100	SSC-10-24-100-B	\$9.74
1-1/4	100	SSC-10-24-125-B	\$12.10	

Size	OAL	Box Qty	Part Number	Box Price
10-32	3/16	100	SSC-10-32-187-B	\$4.46
	1/4	100	SSC-10-32-250-B	\$4.54
	5/16	100	SSC-10-32-312-B	\$4.61
	3/8	100	SSC-10-32-375-B	\$4.73
	7/16	100	SSC-10-32-437-B	\$4.80
	1/2	100	SSC-10-32-5.0-B	\$4.94
	5/8	100	SSC-10-32-625-B	\$6.43
	3/4	100	SSC-10-32-750-B	\$7.01
	1	100	SSC-10-32-100-B	\$9.74
	1-1/4	100	SSC-10-32-125-B	\$12.10
1/4-20	3/16	100	SSC-25-20-187-B	\$5.04
	1/4	100	SSC-25-20-250-B	\$4.58
	5/16	100	SSC-25-20-312-B	\$4.63
	3/8	100	SSC-25-20-375-B	\$4.75
	7/16	100	SSC-25-20-437-B	\$4.82
	1/2	100	SSC-25-20-5.0-B	\$4.97
	5/8	100	SSC-25-20-625-B	\$6.50
	3/4	100	SSC-25-20-750-B	\$7.39
	1	100	SSC-25-20-875-B	\$8.26
	1-1/4	100	SSC-25-20-100-B	\$10.42
1/4-28	1-1/4	100	SSC-25-20-125-B	\$14.02
	1-1/2	100	SSC-25-20-150-B	\$18.38
	1-3/4	100	SSC-25-20-175-B	\$21.05
	2	100	SSC-25-20-200-B	\$24.12
	3/16	100	SSC-25-28-187-B	\$5.04
	1/4	100	SSC-25-28-250-B	\$4.58
	5/16	100	SSC-25-28-312-B	\$4.63
	3/8	100	SSC-25-28-375-B	\$4.75
	7/16	100	SSC-25-28-437-B	\$4.82
	1/2	100	SSC-25-28-5.0-B	\$4.97
5/16-18	5/8	100	SSC-25-28-625-B	\$6.50
	3/4	100	SSC-25-28-750-B	\$7.39
	1	100	SSC-25-28-100-B	\$10.42
	1-1/4	100	SSC-25-28-125-B	\$14.02
	1/4	100	SSC-31-18-250-B	\$6.72
	5/16	100	SSC-31-18-312-B	\$6.12
	3/8	100	SSC-31-18-375-B	\$6.26
	7/16	100	SSC-31-18-437-B	\$6.36
	1/2	100	SSC-31-18-5.0-B	\$6.82
	5/8	100	SSC-31-18-625-B	\$8.83
5/16-24	3/4	100	SSC-31-18-750-B	\$9.89
	7/8	100	SSC-31-18-875-B	\$12.60
	1	100	SSC-31-18-100-B	\$13.39
	1-1/4	100	SSC-31-18-125-B	\$17.47
	1-1/2	100	SSC-31-18-150-B	\$23.52
	1-3/4	100	SSC-31-18-175-B	\$27.10
	2	100	SSC-31-18-200-B	\$30.72
	1/4	100	SSC-31-24-250-B	\$6.72
	5/16	100	SSC-31-24-312-B	\$6.42
	3/8	100	SSC-31-24-375-B	\$6.58
3/8-16	7/16	100	SSC-31-24-437-B	\$6.68
	1/2	100	SSC-31-24-5.0-B	\$7.16
	5/8	100	SSC-31-24-625-B	\$9.27
	3/4	100	SSC-31-24-750-B	\$10.38
	1	100	SSC-31-24-100-B	\$14.07
	1-1/4	100	SSC-31-24-125-B	\$18.34
	1/4	100	SSC-37-16-250-B	\$10.80
	5/16	100	SSC-37-16-312-B	\$8.40
	3/8	100	SSC-37-16-375-B	\$7.18
	7/16	100	SSC-37-16-437-B	\$8.14
3/8-16	1/2	100	SSC-37-16-5.0-B	\$8.42
	5/8	100	SSC-37-16-625-B	\$10.78
	3/4	100	SSC-37-16-750-B	\$11.45
	7/8	100	SSC-37-16-875-B	\$18.18
	1	100	SSC-37-16-100-B	\$19.02
	1-1/4	100	SSC-37-16-125-B	\$20.38
	1-1/2	100	SSC-37-16-150-B	\$27.12
	1-3/4	100	SSC-37-16-175-B	\$33.14
	2	100	SSC-37-16-200-B	\$37.56

Size	OAL	Box Qty	Part Number	Box Price
3/8-24	1/4	100	SSC-37-24-250-B	\$11.34
	5/16	100	SSC-37-24-312-B	\$9.24
	3/8	100	SSC-37-24-375-B	\$8.04
	7/16	100	SSC-37-24-437-B	\$8.57
	1/2	100	SSC-37-24-5.0-B	\$8.83
	5/8	100	SSC-37-24-625-B	\$11.33
	3/4	100	SSC-37-24-750-B	\$12.62
	1	100	SSC-37-24-100-B	\$20.04
	1-1/4	100	SSC-37-24-125-B	\$22.44
	1-1/2	100	SSC-37-24-150-B	\$29.98
7/16-14	3/8	100	SSC-43-14-375-B	\$17.71
	7/16	100	SSC-43-14-437-B	\$18.17
	1/2	100	SSC-43-14-5.0-B	\$18.36
	5/8	100	SSC-43-14-625-B	\$20.74
	3/4	100	SSC-43-14-750-B	\$22.32
	7/8	100	SSC-43-14-875-B	\$24.72
	1	100	SSC-43-14-100-B	\$28.37
	1-1/4	100	SSC-43-14-125-B	\$34.27
	1-1/2	100	SSC-43-14-150-B	\$39.22
	2	100	SSC-43-14-200-B	\$49.10
7/16-20	3/8	100	SSC-43-20-375-B	\$19.49
	7/16	100	SSC-43-20-437-B	\$19.99
	1/2	100	SSC-43-20-5.0-B	\$20.21
1/2-13	3/8	100	SSC-50-13-375-B	\$18.79
	7/16	100	SSC-50-13-437-B	\$18.50
	1/2	100	SSC-50-13-5.0-B	\$18.70
	5/8	100	SSC-50-13-625-B	\$21.02
	3/4	100	SSC-50-13-750-B	\$22.63
	7/8	100	SSC-50-13-875-B	\$25.03
	1	100	SSC-50-13-100-B	\$28.70
	1-1/4	100	SSC-50-13-125-B	\$34.80
	1-1/2	100	SSC-50-13-150-B	\$40.03
	1-3/4	50	SSC-50-13-175-B	\$24.87
1/2-20	2	50	SSC-50-13-200-B	\$27.75
	2-1/2	50	SSC-50-13-2.5-B	\$35.40
	3	50	SSC-50-13-3.0-B	\$43.95
	1/2	100	SSC-50-20-5.0-B	\$20.42
5/8-11	5/8	100	SSC-50-20-625-B	\$22.06
	3/4	100	SSC-50-20-750-B	\$23.71
	1	100	SSC-50-20-100-B	\$30.05
	1/2	50	SSC-62-11-5.0-B	\$17.96
3/4-10	5/8	50	SSC-62-11-625-B	\$19.13
	3/4	50	SSC-62-11-750-B	\$20.51
	7/8	50	SSC-62-11-875-B	\$24.05
	1	50	SSC-62-11-100-B	\$25.28
	1-1/4	50	SSC-62-11-125-B	\$28.85
	1-1/2	50	SSC-62-11-150-B	\$33.90
	1-3/4	50	SSC-62-11-175-B	\$40.11
	2	50	SSC-62-11-200-B	\$47.40
	2-1/2	50	SSC-62-11-2.5-B	\$55.35
	3	50	SSC-62-11-3.0-B	\$64.62
5/8-18	5/8	50	SSC-62-18-625-B	\$21.05
	1	50	SSC-62-18-100-B	\$27.80
	5/8	50	SSC-75-10-625-B	\$30.43
	3/4	50	SSC-75-10-750-B	\$31.81
7/8-9	1	50	SSC-75-10-100-B	\$37.68
	1-1/4	50	SSC-75-10-125-B	\$43.82
	1-1/2	50	SSC-75-10-150-B	\$47.68
	1-3/4	25	SSC-75-10-175-B	\$29.09
	2	25	SSC-75-10-200-B	\$32.28
	2-1/2	25	SSC-75-10-2.5-B	\$39.25
	3	25	SSC-75-10-3.0-B	\$46.30
	7/8	25	SSC-87-09-875-B	\$54.39
	1	25	SSC-87-09-100-B	\$44.36
	1-1/2	25	SSC-87-09-150-B	\$76.53
7/8-9	2	25	SSC-87-09-200-B	\$74.50
	2-1/2	25	SSC-87-09-2.5-B	\$88.55
	3	25	SSC-87-09-3.0-B	\$87.92

Call Us Or Visit Our Website For Our Complete Selection!

SOCKET CAP SCREWS

FLAT HEAD SOCKET CAP SCREWS

- Crafted from heat treated alloy steel
- Hardness RC 38-43
- Class fit 3A
- Meets all standard specifications ASME/ANSI B18.3-2002/ASTM F835
- Sold in package quantities only



Size	OAL	Box Qty	Part Number	Box Price
4-40	1/4	100	SFH-04-40-250-B	\$3.79
	3/8	100	SFH-04-40-375-B	\$3.98
	1/2	100	SFH-04-40-500-B	\$4.10
	5/8	100	SFH-04-40-625-B	\$4.30
	3/4	100	SFH-04-40-750-B	\$4.44
5-40	1/4	100	SFH-05-40-250-B	\$3.89
	3/8	100	SFH-05-40-375-B	\$4.06
	1/2	100	SFH-05-40-500-B	\$4.18
	5/8	100	SFH-05-40-625-B	\$4.39
	3/4	100	SFH-05-40-750-B	\$4.58
6-32	1/4	100	SFH-06-32-250-B	\$4.01
	3/8	100	SFH-06-32-375-B	\$4.13
	1/2	100	SFH-06-32-500-B	\$4.30
	5/8	100	SFH-06-32-625-B	\$4.42
	3/4	100	SFH-06-32-750-B	\$4.63
8-32	3/8	100	SFH-08-32-375-B	\$4.18
	1/2	100	SFH-08-32-500-B	\$4.32
	5/8	100	SFH-08-32-625-B	\$4.44
10-24	3/4	100	SFH-10-24-750-B	\$5.38
	1	100	SFH-10-24-1000-B	\$5.56
	1-1/4	100	SFH-10-24-1250-B	\$7.97
	1-1/2	100	SFH-10-24-1500-B	\$9.24
10-32	3/8	100	SFH-10-32-375-B	\$4.54
	1/2	100	SFH-10-32-500-B	\$4.63
	5/8	100	SFH-10-32-625-B	\$4.94
	3/4	100	SFH-10-32-750-B	\$5.38
	1	100	SFH-10-32-1000-B	\$5.76
	1-1/4	100	SFH-10-32-1250-B	\$7.97
1/4-20	1-1/2	100	SFH-10-32-1500-B	\$9.24
	3/8	100	SFH-25-20-375-B	\$6.12
	1/2	100	SFH-25-20-500-B	\$6.22
	5/8	100	SFH-25-20-625-B	\$6.50
	3/4	100	SFH-25-20-750-B	\$6.77
3/8-16	1	100	SFH-25-20-1000-B	\$7.58
	1-1/4	100	SFH-25-20-1250-B	\$9.34
	1-1/2	100	SFH-25-20-1500-B	\$10.34
	1-3/4	100	SFH-25-20-1750-B	\$12.67
	2	100	SFH-25-20-2000-B	\$13.92

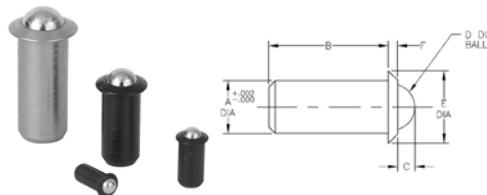
Size	OAL	Box Qty	Part Number	Box Price
1/4-28	3/8	100	SFH-25-28-375-B	\$7.49
	1/2	100	SFH-25-28-500-B	\$7.64
	5/8	100	SFH-25-28-625-B	\$6.86
	3/4	100	SFH-25-28-750-B	\$7.18
	1	100	SFH-25-28-1000-B	\$8.11
	1-1/4	100	SFH-25-28-1250-B	\$9.91
5/16-18	1-1/2	100	SFH-25-28-1500-B	\$12.74
	1/2	100	SFH-31-18-500-B	\$9.72
	5/8	100	SFH-31-18-625-B	\$10.01
	3/4	100	SFH-31-18-750-B	\$10.46
	1	100	SFH-31-18-1000-B	\$11.57
	1-1/4	100	SFH-31-18-1250-B	\$13.61
	1-1/2	100	SFH-31-18-1500-B	\$14.26
	1-3/4	100	SFH-31-18-1750-B	\$16.42
	2	100	SFH-31-18-2000-B	\$18.17
	2-1/4	100	SFH-31-18-2250-B	\$20.95
5/16-24	2-1/2	100	SFH-31-18-2500-B	\$25.08
	1/2	100	SFH-31-24-500-B	\$10.13
	5/8	100	SFH-31-24-625-B	\$10.49
	3/4	100	SFH-31-24-750-B	\$11.02
	1	100	SFH-31-24-1000-B	\$12.14
	1-1/4	100	SFH-31-24-1250-B	\$14.28
	1-1/2	100	SFH-31-24-1500-B	\$14.98
	1/2	100	SFH-37-16-500-B	\$16.10
	5/8	100	SFH-37-16-625-B	\$16.51
	3/4	100	SFH-37-16-750-B	\$16.90
3/8-16	1	100	SFH-37-16-1000-B	\$17.42
	1-1/4	100	SFH-37-16-1250-B	\$19.06
	1-1/2	100	SFH-37-16-1500-B	\$20.86
	1-3/4	100	SFH-37-16-1750-B	\$23.38
	2	100	SFH-37-16-2000-B	\$25.61
	2-1/4	100	SFH-37-16-2250-B	\$30.36
	2-1/2	50	SFH-37-16-2500-B	\$16.76
	3	50	SFH-37-16-3000-B	\$18.97
3/8-24	5/8	100	SFH-37-24-625-B	\$17.11
	3/4	100	SFH-37-24-750-B	\$17.50
	1	100	SFH-37-24-1000-B	\$17.64
	1-1/4	100	SFH-37-24-1250-B	\$19.49
	1-1/2	100	SFH-37-24-1500-B	\$21.29
7/16-14	3/4	100	SFH-43-14-750-B	\$29.59
	1	100	SFH-43-14-1000-B	\$31.08
	1-1/4	100	SFH-43-14-1250-B	\$34.78
	1-1/2	100	SFH-43-14-1500-B	\$37.73

Size	OAL	Box Qty	Part Number	Box Price
1/2-13	3/4	100	SFH-50-13-750-B	\$33.26
	1	100	SFH-50-13-1000-B	\$33.96
	1-1/4	100	SFH-50-13-1250-B	\$39.86
	1-1/2	100	SFH-50-13-1500-B	\$42.38
	1-3/4	50	SFH-50-13-1750-B	\$22.43
	2	50	SFH-50-13-2000-B	\$24.34
	2-1/4	50	SFH-50-13-2250-B	\$26.39
	2-1/2	50	SFH-50-13-2500-B	\$29.70
	3	50	SFH-50-13-3000-B	\$33.66
	1/2-20	3/4	100	SFH-50-20-750-B
1		100	SFH-50-20-1000-B	\$37.58
1-1/4		100	SFH-50-20-1250-B	\$42.60
1-1/2		100	SFH-50-20-1500-B	\$53.97
1-3/4		50	SFH-50-20-1750-B	\$28.39
2		50	SFH-50-20-2000-B	\$30.70
5/8-11	1-1/4	50	SFH-62-11-1250-B	\$36.74
	1-1/2	50	SFH-62-11-1500-B	\$40.76
	1-3/4	50	SFH-62-11-1750-B	\$44.76
	2	50	SFH-62-11-2000-B	\$48.96
	2-1/4	25	SFH-62-11-2250-B	\$26.52
	2-1/2	25	SFH-62-11-2500-B	\$28.57
3/4-10	3	25	SFH-62-11-3000-B	\$32.82
	1-1/4	25	SFH-75-10-1250-B	\$33.10
	1-1/2	25	SFH-75-10-1500-B	\$36.29
	1-3/4	25	SFH-75-10-1750-B	\$38.45
	2	25	SFH-75-10-2000-B	\$40.23
	2-1/4	25	SFH-75-10-2250-B	\$44.11
3/4-10	2-1/2	25	SFH-75-10-2500-B	\$47.26
	3	25	SFH-75-10-3000-B	\$55.04

Full Line Available!
Please call for more information.

PRESS FIT BALL PLUNGERS

Full Line Available!
Please call for more information.



FEATURES:

- Ideal for installation in softer materials, such as aluminum, wood or plastic.
- Sturdy shoulder provides a fixed seating position and positively resists detent force (installation hole can be counterbored to recess the shoulder).
- Use when a threaded hole would be impractical.
- Black Oxide Finish - Steel Only

Prices Reduced!

A	End Force (lbs)		B	C	Dia. D	Dia. E	F	STEEL BODY		STAINLESS STEEL BODY	
	Initial	Final						Part Number	Price Each	Part Number	Price Each
.125	.4	1.3	.252	.035	.094	.187	.032	TECO-53754	\$2.64	TECO-53755	\$3.95
.125	.75	2.5	.252	.035	.094	.187	.032	TECO-53756	\$2.64	TECO-53757	\$3.95
.188	1.0	2.5	.410	.058	.156	.250	.035	TECO-53701	\$2.61	TECO-53709	\$3.86
.250	1.5	3.5	.480	.070	.188	.312	.044	TECO-53702	\$2.70	TECO-53710	\$4.01
.312	2.0	5.0	.643	.090	.250	.375	.045	TECO-53758	\$2.64	TECO-53759	\$3.95
.312	4.0	10.0	.643	.090	.250	.375	.045	TECO-53760	\$2.64	TECO-53761	\$3.95
.375	2.5	7.0	.790	.110	.312	.500	.078	TECO-53703	\$2.81	TECO-53711	\$4.21
.500	4.0	9.0	1.13	.161	.438	.688	.088	TECO-53704	\$3.04	TECO-53712	\$4.49

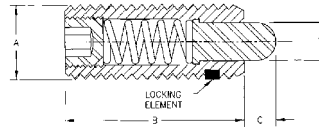
Call Us Today For All Of Your Machine Tool Needs!

SPRING PLUNGERS

C

STANDARD SPRING PLUNGERS

Carbon & Stainless Steel Bodies
Heavy End Forces



Prices Reduced!

Carbon & Stainless Steel Nose

End Force (lbs)		Thread A	B	C	+.000/-.001 D	Steel		Stainless Steel	
Initial	Final					Part Number	Price Each	Part Number	Price Each
1.50	4.50	6-32	17/32	.062	.046	TECO-52001	\$3.98	TECO-53201	\$6.78
1.00	1.60	6-32	3/8	.062	.046	TECO-52002	\$3.98	TECO-53202	\$6.78
2.70	7.30	8-32	5/8	.093	.070	TECO-52003	\$3.98	TECO-53203	\$6.64
2.90	11.10	10-32	3/4	.125	.093	TECO-52004	\$3.83	TECO-53204	\$6.64
3.00	13.00	1/4-20	1	.187	.119	TECO-52005	\$3.83	TECO-53205	\$6.34
3.00	13.00	1/4-28	1	.187	.119	TECO-52006	\$3.83	TECO-53206	\$6.34
2.00	9.00	1/4-20	3/4	.125	.119	TECO-52007	\$3.83	TECO-53207	\$5.94
3.00	15.00	5/16-18	1	.187	.135	TECO-52008	\$3.83	TECO-53208	\$6.64
5.50	14.50	3/8-16	1-1/8	.187	.186	TECO-52009	\$3.83	TECO-53209	\$7.43
6.60	17.40	1/2-13	1-1/4	.250	.248	TECO-52010	\$3.98	TECO-53210	\$7.02
10.50	25.50	5/8-11	1-1/2	.312	.310	TECO-52011	\$5.15	TECO-53211	\$13.04

Carbon & Stainless Steel Nose

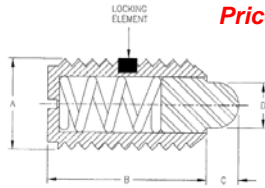
- Stainless Steel Plunger has a stainless steel body and nose.
- Steel Plunger has Carbon, Case Hardened Nose and Black Oxide Finish on bodies.
- Many sizes conform to TCMAI standards.

Material:

Body – Steel: 12L14 Steel
Body – Stainless Steel: 303 Stainless Steel
Nose – Steel: 12L14 Steel
Nose – Stainless Steel: 303 Stainless Steel

SHORT SPRING PLUNGERS

Carbon & Stainless Steel Bodies
Heavy End Forces



Prices Reduced!



Carbon & Stainless Steel Nose

End Forces (lbs)		Thread A	B	C	+.000/-.001 D	Steel		Stainless Steel	
Initial	Final					Part Number	Price Each	Part Number	Price Each
.50	3.50	6-32	3/8	.036	.046	TECO-52408	\$4.25	TECO-53408	\$5.03
1.50	4.75	8-32	7/16	.052	.070	TECO-52409	\$4.39	TECO-53409	\$5.03
1.50	4.75	8-36	7/16	.052	.069	TECO-52401	\$3.93	TECO-53401	\$4.85
1.75	6.25	10-32	15/32	.065	.093	TECO-52402	\$3.72	TECO-53402	\$4.85
3.00	10.50	1/4-20	17/32	.078	.119	TECO-52403	\$3.72	TECO-53403	\$4.74
3.75	15.50	5/16-18	9/16	.084	.135	TECO-52404	\$3.72	TECO-53404	\$4.74
4.50	18.50	3/8-16	5/8	.110	.186	TECO-52405	\$3.93	TECO-53405	\$5.64

Carbon & Stainless Steel Nose

- Stainless Steel Plunger has a stainless steel body and nose.
- Steel Plunger has Carbon, Case Hardened Nose and Black Oxide Finish on bodies.
- Metric sizes available.
- Many sizes conform to TCMAI standards.

Material:

Body – Steel: 12L14 Steel
Body – Stainless Steel: 303 Stainless Steel
Nose – Steel: 12L14 Steel
Nose – Stainless Steel: 303 Stainless Steel

Black Delrin Nose

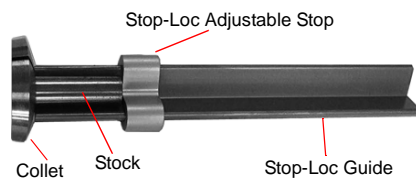
End Forces (lbs)		Thread A	B	C	+.000/-.002 D	Steel		Stainless Steel	
Initial	Final					Part Number	Price Each	Part Number	Price Each
0.50	3.50	6-32	3/8	.036	.046	TECO-52508	\$4.39	TECO-53427	\$5.03
1.50	4.75	8-32	7/16	.052	.070	TECO-52509	\$4.72	TECO-53428	\$5.03
1.50	4.75	8-36	7/16	.052	.070	TECO-52501	\$3.93	TECO-53420	\$5.03
1.75	6.25	10-32	15/32	.065	.093	TECO-52502	\$3.93	TECO-53421	\$4.71
3.00	10.50	1/4-20	17/32	.078	.119	TECO-52503	\$3.93	TECO-53422	\$4.62
3.75	15.50	5/16-18	9/16	.084	.135	TECO-52504	\$3.93	TECO-53423	\$4.62
4.50	18.50	3/8-16	5/8	.110	.186	TECO-52505	\$3.98	TECO-53424	\$5.44

Delrin Nose

- Ideal for aluminum, brass, or any soft, easily marred material.
- Reinforced for minimum deformation under force.
- High dielectric strength
- Excellent wear resistance
- Self-lubricating surface

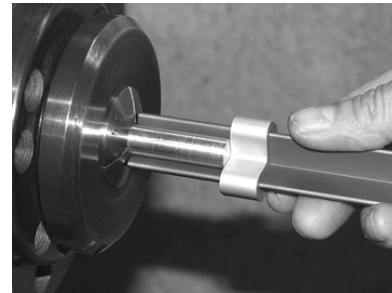
CHUCK/COLLET STOP

Handheld Lathe & Mill Vise Tool



- Adjustable Precision-Gage lengths up to 5-1/2" long holding +/- .005
- Save Money! No more fixed length dedicated shop-made front collet stops for each job
- Versatile-For use on CNC or manual lathes whether you are running a bar manually or using a bar puller
- Consistency-Unique design incorporates self-centering, unobstructed viewing and contrasting colors to give user confidence
- Dimensions: 6" L x 3/4" H x 3/4" W
- Made in USA

Stop-Loc
Pat. Pend.



Graduations	Part Number	Price
Inch	STOPLOC	\$16.00
Inch/Metric	STOPLOC-THSMM	\$18.00
Metric	STOPLOC-MM	\$18.00

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

535

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

GANG TOOLING-For Hardinge® Style Slide Lathes

MULTI-POSITION TOOL HOLDERS

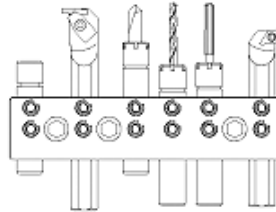
Ideal For Parts Less Than 1" Diameter!

Direct bolt on to 1/2" or 3/4" center height or adaptable to any height using riser adapters on page 119. A range of tools and holders that best suit the "Gang Tool" style of machining have been selected to provide the best use of space without compromising the rigidity or functionality of your machine tool. Each tool & tool holder integrates with a collet system, boring bar or square tool, to provide a rigid platform producing quality parts. The tool holders featured can be used alone or with a combination of other holders. Achieve Fast change-overs with multi position holders using the down-loadable tool offset capabilities of your control. Thicker tool holders provide long thread engagement on 3/4" bores.



Direct Bolt Onto:
Hardinge CHNC Style Turrets • Omni-Turn
CMS • Upgrade Technologies

Riser Adapters Required for:
Hyundai • Kia • Mazak • Daewoo
Washino • Hardinge GT27 • Ameri-Tech



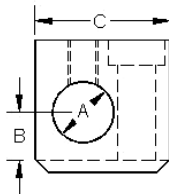
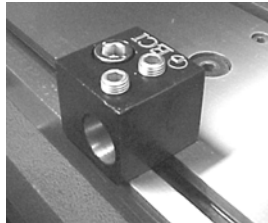
*All machines referenced are trademarks of their respective manufacturers.

Add More Tools To Your Table!

FEATURES & BENEFITS:

- Fast change over
- Reduced set-up time
- Made of hardened steel
- Alloy bolts and chrome plated anchoring nuts for positive location of tools
- Can be used alone or in combination with other holders
- Custom spacing also available

SINGLE POSITION HOLDERS



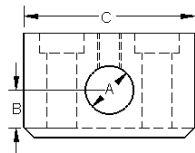
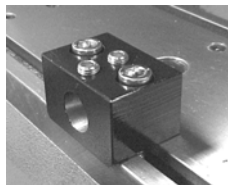
FEATURES:

- Ideal for mounting tools for odd sized work.
- These holders let you set the spacing on any sized work.
- Great for use with Posi-lock holders.
- Use a single position for bar stops.

Description	A	B	C	Part Number	Price
3/8" Center 5/8" Bore right hand	.6250	.3750	1.500	EC-TBS-1356	CALL FOR PRICES
3/8" Center 5/8" Bore left hand	.6250	.3750	1.500	EC-TBS-1357	
1/2" Center 5/8" Bore right hand	.6250	.5000	1.500	EC-TBS-1456	
1/2" Center 5/8" Bore left hand	.6250	.5000	1.500	EC-TBS-1457	
1/2" Center 3/4" Bore right hand	.7500	.5000	1.500	EC-TBS-1466	
1/2" Center 3/4" Bore left hand	.7500	.5000	1.500	EC-TBS-1467	
3/4" Center 3/4" Bore right hand	.7500	.7500	1.500	EC-TBS-1666	
3/4" Center 3/4" Bore left hand	.7500	.7500	1.500	EC-TBS-1666	



SINGLE POSITION HOLDERS-HEAVY DUTY



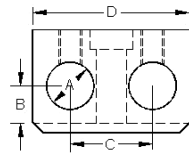
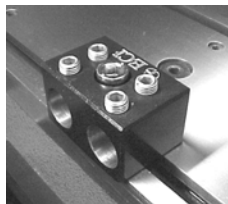
FEATURES:

- Designed for heavier cuts.
- Double hold down bolts provide extra clamping for heavy turning and boring.
- Great for tangential type turning.

Description	A	B	C	Part Number	Price
1/2" Center 5/8" Bore Heavy Duty	.6250	.500	2.220	EC-TBS-1450	CALL FOR PRICES
1/2" Center 3/4" Bore Heavy Duty	.7500	.500	2.220	EC-TBS-1460	
3/4" Center 3/4" Bore Heavy Duty	.7500	.750	2.200	EC-TBS-1660	



2 POSITION HOLDERS



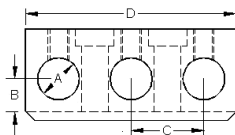
FEATURES:

- Ideal for holding 2 boring bars, or a center drill and drill in 1 holder.
- Easy change over for modular tooling.
- Use with a 6 or 8 position for non changing tools.

Description	A	B	C	D	Part Number	Price
3/8" Center 5/8" Bore	.6250	.3750	1.250	2.200	EC-TBS-2354	CALL FOR PRICES
1/2" Center 5/8" Bore	.6250	.5000	1.250	2.200	EC-TBS-2454	
1/2" Center 3/4" Bore	.7500	.5000	1.250	2.200	EC-TBS-2464	
3/4" Center 3/4" Bore	.7500	.7500	1.250	2.200	EC-TBS-2664	



3 POSITION HOLDERS



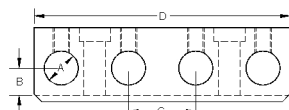
FEATURES:

- This tool is ideal for mounting groups of tools for drilling, turning or boring work.
- 3 spacing for optimum tool plate spacing.

Description	A	B	C	D	E	Part Number	Price
3/8" Center 5/8" Bore	.6250	.5000	1.250	3.500	1.250	EC-TBS-3354	CALL FOR PRICES
1/2" Center 5/8" Bore	.6250	.5000	1.250	3.500	1.250	EC-TBS-3454	
1/2" Center 3/4" Bore	.7500	.5000	1.250	3.500	1.250	EC-TBS-3464	
3/4" Center 3/4" Bore	.7500	.7500	1.250	3.500	1.250	EC-TBS-3664	



4 POSITION HOLDERS



FEATURES:

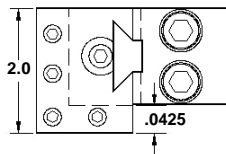
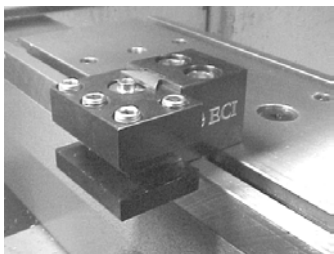
- A versatile mid size holder.
- Even spacing to accommodate any operations.
- Available in 5/8" or 3/4" bore.

Description	A	B	C	D	Part Number	Price
1/2" Center 5/8" Bore	.6250	.5000	1.250	4.750	EC-TBS-4454	CALL
1/2" Center 3/4" Bore	.7500	.5000	1.250	4.750	EC-TBS-4464	



Call Us Today For All Of Your Machine Tool Needs!

COMBO TURN HEADS

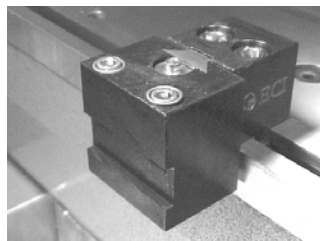


FEATURES:

- Accepts up to 0.50" square tools
- Used in turning and / or facing.
- Available in right or left hand to accommodate any application.
- Fine adjustment leveling screw for precise centering.
- Easy change over for modular tooling.
- Could be used to hold 2 tools.

Description	Part Number	Price
Combo holder for 1/2" square turning and/or facing / right hand	EC-PST-2106	CALL FOR PRICES
Combo holder for 1/2" square turning and/or facing / left hand	EC-PST-2107	
Post & dovetail 1/2" center height	EC-PPS-0150	
Post & dovetail 3/4" center height	EC-PPS-0175	

REPLACEABLE BLADE CUT-OFF HEAD



FEATURES:

- Accepts 0.04" to 0.125" wide blades, 5/8" to 11/16" high
- Position on far side of table to conserve space.
- Right or left hand approach.
- Sturdy design insures straight cuts.
- Fine adjustment leveling screw for precise centering.
- Easy change over for modular tooling.
- Post sold separately.

Description	Part Number	Price
Straight 11/16" T blade cut-off holder	EC-PCO-2160	CALL FOR PRICES
Post & dovetail 1/2" center height	EC-PPS-0150	
Post & dovetail 3/4" center height	EC-PPS-0175	

3 POSITION HEAD

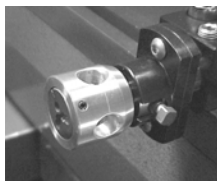


FEATURES:

- Use three drills or other tools only taking 2" of space.
- Uses 1/2" standard bushings.
- Fine adjustment leveling screw for precise centering.
- Post sold separately.

Description	Part Number	Price
Compact 3 close spacing 1/2" bushing drill holder	EC-PDA-3040	CALL FOR PRICES
Post & dovetail 1/2" center height	EC-PPS-0150	
Post & dovetail 3/4" center height	EC-PPS-0175	

THREADING DIE HOLDER

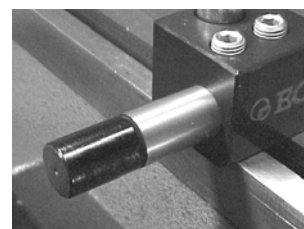


FEATURES:

- Allows threading of long small diameter threads.
- Oil wash cross holes for proper lubrication.
- 5/16" shank (also fits swiss automatics)
- Made from strong aircraft aluminum.
- Use with sliding tap holder, (not included)
- Uses 13/16" button dies.
- A great solution for single pointing small diameter threads-can thread up to 5/16"-18.
- Initially developed for Swiss cam automatics.

Description	Part Number	Price
Threading die holder, for small fine longer threads	EC-BDH-1316	CALL

REVOLVING STOPS



FEATURES:

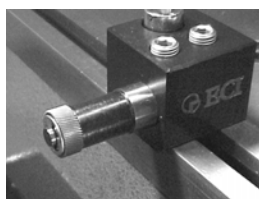
- Smooth rotating head and positive stopping action insures precise feed outs with out the need for facing.
- Can withstand severe conditions and still outperform other types on the market.

Shank Dia	Part Number	Price
5/8"	EC-ARS-0050	CALL
3/4"	EC-ARS-0060	

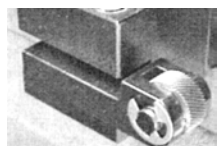
KNURLING TOOLS

FEATURES:

- The perfect tool when space is an issue.
- Knurl from either side to save travel time.
- Quick change c-clip release.
- Hardened alloy steel.
- Uses GK series knurls (not included).



Axial Approach Knurling Tool



Side Knurling Tool

Description	Shank	Knurl ID	Part Number	Price
Side approach, for GK knurls	Square	.250	EC-AKR-0375	CALL FOR PRICES
Axial approach, for GK / KN knurls	5/8"	.250	EC-AKA-6250	
Axial approach, for GK / KN knurls	3/4"	.250	EC-AKA-7500	
Axial approach, for PH knurls	3/4" HD	.500	EC-AKA-7501	

Call Us Or Visit Our Website For Our Complete Selection!

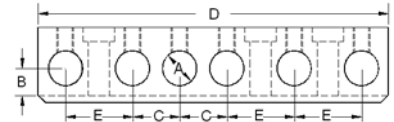
GANG TOOLING-For Hardinge Style Slide Lathes



6 POSITION HOLDERS



- FEATURES:**
- Perfect for a repeat production run on a wide range of work.
 - 6 tool positions allow for the exact spacing you need
 - Overall length of 6.5" allows flexibility on big setups.

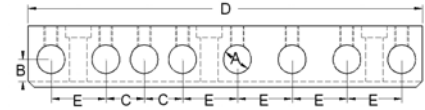


Description	A	B	C	D	E	Part Number	Price
3/8" Center 5/8" Bore	.6250	.3750	.8750	6.500	1.250	EC-TBS-6350	CALL FOR PRICES
1/2" Center 5/8" Bore	.6250	.5000	.8750	6.500	1.250	EC-TBS-6450	
1/2" Center 3/4" Bore	.7500	.5000	.8750	6.500	1.250	EC-TBS-6460	
3/4" Center 3/4" Bore	.7500	.7500	.8750	6.500	1.250	EC-TBS-6660	

8 POSITION HOLDERS

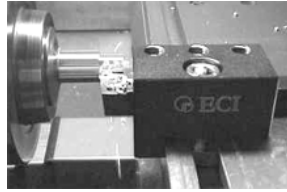


- FEATURES:**
- This holder is perfect for a repeat production run on a wide range of work.
 - 8 tool positions allow for the exact spacing you need.
 - Overall length of 9" allows flexibility on big setups.



Description	A	B	C	D	E	Part Number	Price
3/8" Center 5/8" Bore	.6250	.3750	.8750	9.000	1.250	EC-TBS-8350	CALL FOR PRICES
1/2" Center 5/8" Bore	.6250	.5000	.8750	9.000	1.250	EC-TBS-8450	
1/2" Center 3/4" Bore	.7500	.5000	.8750	9.000	1.250	EC-TBS-8460	

TURNING/FACING HOLDERS



- FEATURES:**
- Turn and face with the same tool.
 - Accepts 0.500" or 0.750" shank square tools
 - Solid positive lock down directly to the table for deeper cuts.
 - Eliminates chatter and harmonics.
 - Recommended inserts: 80° diamond, triangle or trigon

Size	Type	Width	Part Number	Price
1/2" square	Right	1.250	EC-TBA-1446	CALL FOR PRICES
1/2" square	Left	1.250	EC-TBA-1447	
3/4" square	Right	1.500	EC-TBA-1666	
3/4" square	Left	1.500	EC-TBA-1667	

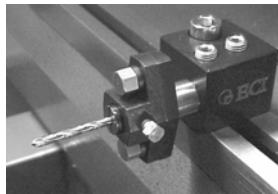
ADAPTER BUSHINGS



- FEATURES:**
- Large clearance holes for positive locking from screw to shaft.
 - .0002" concentricity.
 - Fits all tool station bolt patterns.

Size	Part Number	Price
3/4" to 5/8"	EC-ABR-3458	CALL FOR PRICES
3/4" to 1/2"	EC-ABR-3412	
5/8" to 1/2"	EC-ABR-5812	
5/8" to 3/8"	EC-ABR-5838	

DRILL HOLDERS-ADJUSTABLE CENTER



- FEATURES:**
- 5/8" shank diameter, accepts standard 1/2" bushings.
 - Secure, center locking bolts.
 - Thru hole in shank for deep drill insertion.
 - Head adjusts for exact centering.
 - Hardened alloy steel hardware.
 - Provides a rigid platform for positive drilling.
 - Can be used for small drill operations to achieve accurate centering.

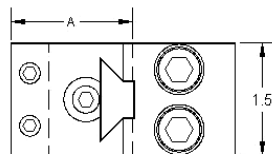
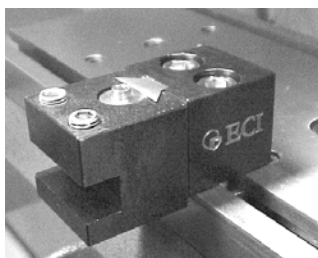
Description	Part Number	Price
5/8" shank, 1/2" OD bushing size	EC-ADJ-2050	CALL

POSI-LOCK DOVETAIL SYSTEM

This system allows you to mount universal posts and just change the heads! The dovetail plate is drawn back to the post with two cap head bolts from the rear, creating a solid, vibration free, heavy duty holder! To adjust center, simply loosen the rear bolts, insert a hex key in the jack screw, center the tool and lock it back in place. Patent Pending.



EXTENSION HEADS



- FEATURES:**
- Compact-Post is only 1.50" wide.
 - Double cap head bolts for solid lock down to the table.
 - Vibration free double bolted dovetail.
 - Can be used on either side of the work piece.
 - Fine adjustment leveling screw for precise centering.
 - Holds square tools up to 0.5".
 - All components are hardened alloy steel.

Description	A	Part Number	Price
Post & dovetail 1/2" center height	-	EC-PPS-0150	CALL FOR PRICES
Post & dovetail 3/4" center height	-	EC-PPS-0175	
1" extension for 1/2" square turning tool	1.625	EC-PEX-2100	
2" extension for 1/2" square turning tool	2.625	EC-PEX-2200	
3" extension for 1/2" square turning tool	3.625	EC-PEX-2300	

Call Us Today For All Of Your Machine Tool Needs!

GANG TOOLING-For Hardinge Style Slide Lathes

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE



RISER ADAPTERS

Every inch of your X travel is precious space, especially when doing intricate parts with many operations. When working with a 1 1/2+ spindle bore machine, one needs not only rigidity, but efficient use of table space. Large OEM holders address the rigidity but use a lot of area, as they are mounted directly to the machine table and must achieve a stretch of 85mm (3.346") to the spindle center. Our riser adapter systems used with the 3/4" & 1/2" center height tooling, provides: 1) More than doubling the quantity of tools, 2) a rigid work platform, 3) And a much broader selection of tooling options. Easy bolt on to all 85, 55, or 35 mm spindle center height machines.

EC-ROP-8517 (85mm) A one piece design for general use. It covers the entire useable X travel of the machine, utilizing the 1/2" or 3/4" center height tooling. **For use on Daewoo, Kia, & Hyundai machines.**

EC-ROP-8512 A one piece design for use with a sub spindle. It covers 12" of useable X travel while allowing the sub spindle to operate. Also utilizing the 3/4" center height tooling only. **For use on Daewoo, Kia, & Hyundai machines.**

EC-ROP-5512 (55mm) A one piece design for general use. Two of these units covers the entire useable X travel of the machine, utilizing the 3/4" center height tooling. **For use on some Mazak machines.**

EC-ROP-3517 (35mm) A one piece design for general use. It covers the entire useable X travel of the machine, utilizing the 1/2" center height tooling. **For use on some Wasino machines.**

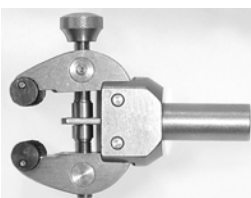
If your machine or center height is not listed here, call us for pricing. We can adapt to any gang turn lathe.



*All machines referenced are trademarks of their respective manufacturers.

Description	Height	Part Number	Price
Daewoo & Hundai -12" long riser for spindle center & sub-spindle	85mm	EC-ROP-8512	CALL FOR PRICES
Daewoo & Hundai -17" long riser	85mm	EC-ROP-8517	
Wasino Riser using 1/2" center tooling	35mm	EC-ROP-3517	
Mazak Riser using 3/4" center tooling	55mm	EC-ROP-5512	

COMPACT BAR PULLER



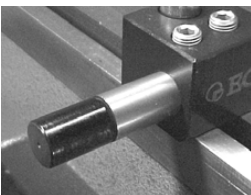
FEATURES:

- Grip range of .050" to 1.50"- will handle a wide range of materials with no tools required for adjustments.
- "Cam Grip" jaws roll on to the material with less loading on the lathe than other bar puller designs.
- Compact bar puller releases with a simultaneous X and Z movement.
- Made of stainless steel and brass-ensures long life and corrosion protection.
- Cam grippers are hardened tool steel.
- Available with standard 5/8" round shaft.

Takes Only 3/4" Of Space!

Description	Part Number	Price
Cam Action Bar Puller - 5/8" shaft x 3/4" width	EC-ABP-0050	CALL

REVOLVING STOPS

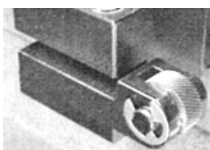
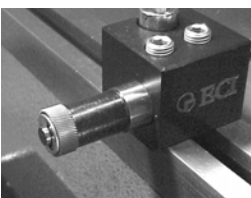


FEATURES:

- Smooth rotating head and positive stopping action insures precise feed outs with out the need for facing.
- Can withstand severe conditions and still outperform other types on the market.

Shank Dia	Part Number	Price
5/8"	EC-ARS-0050	CALL FOR PRICES
3/4"	EC-ARS-0060	
1"	EC-ARS-0080	

KNURLING TOOLS



Side Knurling Tool

Axial Approach Knurling Tool

FEATURES:

- The perfect tool when space is an issue.
- Knurl from either side to save travel time.
- Quick change c-clip release.
- Hardened alloy steel.
- Uses GK series knurls (not included).

Description	Shank	Knurl ID	Part Number	Price
Side approach, for GK knurls	Square	.250	EC-AKR-0375	CALL FOR PRICES
Axial approach, for GK / KN knurls	5/8"	.250	EC-AKA-6250	
Axial approach, for GK / KN knurls	3/4"	.250	EC-AKA-7500	
Axial approach, for PH knurls	3/4" HD	.500	EC-AKA-7501	

DRILL BUSHINGS



FEATURES:

- 3 sets available in each size-fraction, wire, & letter.
- Split for easy insertion.
- Banded to prevent loss.
- Hardened alloy steel.

OD	Range	Set Qty	Part Number	Price
1/2"	5/64 thru 3/8	20	EC-ABD-2140	CALL FOR PRICES
1/2"	#1 thru #47	47	EC-ABD-2141	
1/2"	A thru Z	26	EC-ABD-2142	
5/8"	3/32 thru 1/2	30	EC-ABD-2150	
5/8"	#1 thru #41	41	EC-ABD-2151	
5/8"	A thru Z	26	EC-ABD-2152	

TAP BUSHINGS

- FEATURES:**
- 8 piece set 0-80 thru 1/2"-13
 - Split for easy insertion.
 - Square drive for positive locking.
 - Twist-torque design won't pull out.
 - Hardened alloy steel.



OD	Range	Set Qty	Part Number	Price
1/2"	0-80 thru 1/2-13	8	EC-ABT-2100	CALL

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

539

DECIMAL EQUIVALENT/DRILL TAP CHARTS

CONVERSION CHART Drill Size Decimal Equivalent



Drill Size	mm	Dec. Equiv.
-	0.10	.0039
-	0.20	.0079
-	0.25	.0098
-	0.30	.0118
80	0.34	.0135
79	0.37	.0145
1/64	0.40	.0156
78	0.41	.0160
77	0.46	.0180
-	0.50	.0197
76	0.51	.0200
75	0.53	.0210
74	0.57	.0225
-	0.60	.0236
73	0.61	.0240
72	0.64	.0250
71	0.66	.0260
-	0.70	.0276
70	0.71	.0280
69	0.74	.0292
-	0.75	.0295
68	0.79	.0310
1/32	0.79	.0313
-	0.80	.0315
67	0.81	.0320
66	0.84	.0330
65	0.89	.0350
-	0.90	.0354
64	0.91	.0360
63	0.94	.0370
62	0.97	.0380
61	0.99	.0390
-	1.00	.0394
60	1.02	.0400
59	1.04	.0410
58	1.07	.0420
57	1.09	.0430
56	1.18	.0465
3/64	1.19	.0469
55	1.32	.0520
54	1.40	.0550

Drill Size	mm	Dec. Equiv.
53	1.51	.0595
1/16	1.59	.0625
52	1.61	.0635
51	1.70	.0670
50	1.78	.0700
49	1.85	.0730
48	1.93	.0760
5/64	1.98	.0781
47	1.99	.0785
-	2.00	.0787
46	2.06	.0810
45	2.08	.0820
44	2.18	.0860
43	2.26	.0890
42	2.37	.0935
3/32	2.38	.0938
41	2.44	.0960
40	2.50	.0980
39	2.53	.0995
38	2.58	.1015
37	2.64	.1040
36	2.71	.1065
7/64	2.78	.1094
35	2.79	.1100
34	2.82	.1110
33	2.87	.1130
32	2.95	.1160
-	3.00	.1181
31	3.05	.1200
1/8	3.18	.1250
30	3.26	.1285
29	3.45	.1360
28	3.57	.1405
9/64	3.57	.1406
27	3.66	.1440
26	3.73	.1470
25	3.80	.1495
24	3.86	.1520
23	3.91	.1540
5/32	3.97	.1562
22	3.99	.1570

Drill Size	mm	Dec. Equiv.
-	4.00	.1575
21	4.04	.1590
20	4.09	.1610
19	4.22	.1660
18	4.31	.1695
11/64	4.37	.1719
17	4.39	.1730
16	4.50	.1770
15	4.57	.1800
14	4.62	.1820
13	4.70	.1850
3/16	4.76	.1875
12	4.80	.1890
11	4.85	.1910
10	4.91	.1935
9	4.98	.1960
-	5.00	.1968
8	5.05	.1990
7	5.11	.2010
13/64	5.16	.2031
6	5.18	.2040
5	5.22	.2055
4	5.31	.2090
3	5.41	.2130
7/32	5.56	.2188
2	5.61	.2210
1	5.79	.2280
A	5.94	.2340
15/64	5.95	.2344
-	6.00	.2362
B	6.05	.2380
C	6.15	.2420
D	6.25	.2460
1/4	6.35	.2500
E	6.35	.2500
F	6.53	.2570
G	6.63	.2610
17/64	6.75	.2656
H	6.76	.2660
I	6.91	.2720
-	7.00	.2756

Drill Size	mm	Dec. Equiv.
J	7.04	.2770
K	7.14	.2810
9/32	7.14	.2812
L	7.37	.2900
M	7.49	.2950
19/64	7.54	.2969
N	7.67	.3020
5/16	7.94	.3125
-	8.00	.3150
O	8.03	.3160
P	8.20	.3230
21/64	8.33	.3281
Q	8.43	.3320
R	8.61	.3390
11/32	8.73	.3438
S	8.84	.3480
-	9.00	.3543
T	9.09	.3580
23/64	9.13	.3594
U	9.35	.3680
3/8	9.53	.3750
V	9.56	.3770
W	9.80	.3860
25/64	9.92	.3906
-	10.00	.3937
X	10.08	.3970
Y	10.26	.4040
13/32	10.32	.4062
Z	10.49	.4130
27/64	10.72	.4219
-	11.00	.4331
7/16	11.11	.4375
29/64	11.51	.4531
15/32	11.91	.4688
-	12.00	.4724
31/64	12.30	.4844
1/2	12.70	.5000
-	13.00	.5118
33/64	13.10	.5156
17/32	13.49	.5312
35/64	13.89	.5469

Drill Size	mm	Dec. Equiv.
-	14.00	.5512
9/16	14.29	.5625
37/64	14.68	.5781
-	15.00	.5906
19/32	15.08	.5938
39/64	15.48	.6094
5/8	15.88	.6250
-	16.00	.6299
41/64	16.27	.6406
21/32	16.67	.6562
-	17.00	.6693
43/64	17.07	.6719
11/16	17.46	.6875
45/64	17.86	.7031
-	18.00	.7087
23/32	18.26	.7188
47/64	18.65	.7344
-	19.00	.7480
3/4	19.05	.7500
49/64	19.45	.7656
24/32	19.84	.7812
-	20.00	.7874
51/64	20.24	.7969
13/16	20.64	.8125
-	21.00	.8269
53/64	21.03	.8282
27/32	21.43	.8438
55/64	21.84	.8594
-	22.00	.8661
7/8	22.23	.8750
57/64	22.62	.8906
-	23.00	.9055
29/32	23.02	.9062
59/64	23.42	.9219
15/16	23.81	.9375
-	24.00	.9449
61/64	24.21	.9531
31/32	24.61	.9688
-	25.00	.9842
63/64	25.00	.9844
1	25.40	1.0000

TAP DRILL CHART



Tap Size	Drill Size	Probable% of Thread
0-80	3/64	71-81
M1.6x.35	1.25mm	67-77
1-64	53	59-67
M2x.4	1/16	72-79
1-72	53	67-75
2-56	51	62-69
2-64	50	70-79
M2.5x.45	2.05mm	69-77
3-48	5/64	70-77
3-56	46	69-78
4-40	44	65-71
4-48	42	61-68
M3x.5	40	70-79
5-40	39	65-72
5-44	38	63-71
M3.5x.6	33	72-81
6-32	36	71-78

Tap Size	Drill Size	Probable% of Thread
6-40	33	69-77
M4x.7	3.25mm	74-82
8-32	29	62-69
8-36	29	70-78
10-24	25	69-75
10-32	21	68-76
M5x.8	4.2mm	69-77
12-24	17	66-72
12-28	15	70-78
M6x1	10	76-84
1/4-20	7	70-75
1/4-28	3	72-80
5/16-18	F	72-77
5/16-24	I	67-75
M81.25	6.7mm	74-80
3/8-16	5/16	72-77
3/8-24	Q	71-79

Tap Size	Drill Size	Probable% of Thread
M10x1.5	8.4mm	76-82
7/16-14	U	70-75
7/16-20	25/64	65-72
M12x1.75	13/32	69-74
1/2-13	27/64	73-78
1/2-20	29/64	65-72
M14x2	15/32	76-81
9/16-12	31/64	68-72
9/16-18	33/64	58-65
5/8-11	17/32	75-79
5/8	37/64	58-65
M16x2	35/64	76-81
3/4-10	21/32	68-72
3/4-16	11/16	71-77
M20x2.5	11/16	74-78
7/8-9	49/64	72-76
7/8-14	13/16	62-67

Tap Size	Drill Size	Probable% of Thread
M24x3	53/64	72-76
1-8	7/8	73-77
1-12	59/64	67-72
1-14	15/16	61-67
1-1/8-7	63/64	72-76
1/18-12	1-3/64	66-72
M30x3.5	1-3/64	75
-1/4-7	1-7/64	76
1-1/4-12	1-11/64	72
1-3/8-6	1-7/32	72
1-3/8-12	1-19/64	72
M36x4	1-1/4	82
1-1/2-6	1-11/32	72
1-1/2-12	1-27/64	72

Call Us Today For All Of Your Machine Tool Needs!

CALL US TODAY FOR ALL OF YOUR MACHINE TOOL NEEDS!

SERVICE-

Our trained staff is ready to help you select the right tool for your needs.

TECHNICAL SUPPORT-

Our "Tech Support" agents are available to answer any questions you may have in order to ensure your complete satisfaction.

SELECTION & SPECIAL ORDERS-

We offer many more items and sizes not listed in this catalog. Non-stock items are also available. Call us and let us help you find the right part for the job!

SAME DAY SHIPPING-

When we receive your order by 4:30pm Pacific Standard Time, we will make every effort to ship your order the same day. Special orders and items not in stock will be shipped as soon as possible.

OPEN ACCOUNTS:

A new account will be established upon the receipt of a completed, signed credit application. We will strive to open your account as soon as possible, but for immediate delivery, please allow us to ship your first order paid by credit card.

TERMS:

30 Days Net, unless otherwise agreed upon.

PAYMENT OPTIONS:

We accept cash, checks, PayPal and ACH payments, as well as Visa, Mastercard, American Express and Discover credit cards.

FREIGHT:

F.O.B. Anaheim, CA, Warren, MI or Manufacturers' location.

PRICING:

Prices in this catalog are effective at the time of printing. Prices are subject to change without notice. Although we strive for complete accuracy, we will not be responsible for typographical errors or omissions.

RETURNS:

We want your complete satisfaction with your purchase. If, however, **prior to usage**, you are not satisfied, please call our Customer Service Department. All authorized returns must be shipped prepaid in the original box unless otherwise advised. No merchandise will be accepted that has been Special Ordered or held by the customer for more than 30 days. We reserve the right to determine whether the material is eligible for credit. Credit can only be given for products that can be returned to stock. Returns are subject to a restocking charge of 20%, however, many manufacturers have a higher re-stocking charge, in which case the higher re-stocking charge will apply. No merchandise will be accepted without a Return Goods Authorization number (RGA) and original packing list or invoice. Please obtain an RGA from a Customer Service Representative prior to returning any material. Any claims for discrepancies in shipment must be made within 5 days of receipt of merchandise. For items that cannot be returned via designated package carrier, call us so that we may attempt to arrange for return transportation. Please reference your customer or invoice number to expedite claims. Items damaged in transit must be reported immediately to your local UPS, FEDEX or common carrier.

RETURNS ON MEASURING TOOLS, HARD JAWS AND BOOKS-

Measuring tools and hard jaws can be exchanged for the same item only. Please make sure that you are ordering the correct measuring tool or hard jaw for your application. If damaged or defective, we will gladly exchange measuring tools or hard jaws for **the exact same item** to ensure your satisfaction. No credit will be given, exchanges will be for the exact same part only. **There are no returns or exchanges on Books, all sales are final.**

WARRANTY:

As the seller we make no warranties, expressed or implied, of performance, workmanship, fitness, quality, durability, or suitability of the merchandise in any respect including its fitness for the purpose and uses of the buyer. The only warranties applying to materials sold are those specifically provided by the manufacturer. Seller further makes no express warranties or implied warranties of merchantability or fitness with respect to any changes, alterations, or modifications made on materials at the request or instruction of the purchaser. The obligations of seller are limited to repair or replacement of defective parts or its sole option, to the refund of the purchase price. Seller is not liable for incidental or consequential damages. This warranty is in lieu of all other warranties, expressed or implied, including any implied warranty of merchantability or fitness for a particular purpose. In no event shall we be liable for any special, incidental or consequential damages (including, but not limited to, lost profits).

RESPONSIBILITY:

The value of the defective product or material sent in error is our liability. All technical data has been supplied by the manufacturer and is listed only as a convenience. All specifications in this catalog are subject to change without notice. Drawings shown herein are general representations of various items and may include optional equipment.

WARNING:

We shall not be liable for any loss or consequential damage arising from the use of the products or information, or typographical errors or omissions in this catalog. The responsibility for the correct fit and proper use must lie with the user and the information in this catalog should be considered only a guide.

Copyright ©2019 S B Machining, Inc.

All rights reserved under International and Pan-American Copyright Conventions.

USST, SBM Tools, Tridex, Quadex, Best Value, Internation Select Quality, Everyday Value & Pride Products are trademarks of S B Machining, Inc. None of the Artwork in this Catalog can be reproduced and/or used in any other publication other than those produced by us without obtaining permission in writing and then only in the publications for which permission is granted.

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

541

EASY JAW FINDER

EASY JAW FINDER

Can't Find The Correct Jaws For Your Chuck?

If You Know Your Chuck Make And Model, It's As Easy As **1-2-3!**

NEED HELP?



Use The
"Chuck Group Number"
To Find The Correct
Jaws For Your Chuck!

Chuck Group Number	Critical Dimensions								STEEL	ALUMINUM
	Chuck Dia. Inch	Groove Width G	Screw Size E	Hole Space D	Hole to Front J	Width Inch C	Length Inch B	Height Inch A	Order Number	Order Number
K1-08-15:	4	0.315	6mm	0.590	1.000	0.750	2.000	1.00	KT-4100F	KT-4100AF
								2.00	KT-4200F	KT-4200AF

We have a wide selection of Round, Soft and Hard Jaws, Jaw Nuts, T-Nuts and master keys for most Lathe Chucks. If you know your chuck's make and model, you can use the **"I Know My Chuck"** method. Whether or not you know your chuck's make and model, you can always find the jaws **for your chuck by** using the **"Critical Dimensions"** method located on page 8.

I Know My Chuck Make And Model: How do I find the jaws?

Our Easy Jaw Finder index is easy to use due to its' alphabetical listing of lathe chuck make and model. This index is fairly comprehensive, but not complete. Our jaws fit many more chucks that have not yet made it to our index. To find the correct jaws for your chuck, follow these steps:

- Jaw Finder for **TONGUE AND GROOVE, ACME SERRATED AND SQUARE SERRATED** jaw chucks, see page **554**.
- Jaw Finder for Metric (1.5mm x 60°, 3.0mm x 60°) and Inch (1/16 x 90°, 3/32 x 90°), start at Step 1 below :

1) Find your chuck manufacturer in the chuck/jaw index beginning on page 543. (ex: **Kitagawa**)

2) Find your chuck model. (ex: **B210**)

Once you find your exact chuck, you will find, in one place, the Group Number and the catalog pages for your Soft, Round and Hard jaws and even the Jaw Nut that fits your specific chuck.

3) Follow the page numbers indicated to find your chuck's group number leading to our large selection of jaws and jaw nuts and master keys, if applicable, for your chuck. All your soft jaws will be together, with the round jaws on the facing page. Page numbers will easily lead you to the hard jaws and jaw nuts as well.

I Know My Critical Dimensions: How do I find the jaws?

Use the method shown on page 8 to locate the correct jaws using the critical dimensions.

Remember, this information is only a guide for your convenience. You must make sure that the product you select is correct. Many chuck manufacturers also make the same chuck model that use different style or different serration jaws! You must confirm that the product is correct for your chuck and application.

Please call us and let us help you find the jaws that fit your chuck and application.

*Kitagawa® is a registered trademark of Kitagawa NorthTech. Kitagawa®, Strong®, Samchully®, Bison®, TMX®, Buck®, MMK®, SMW Autoblock®, Howa®, Hitachi-Seiki®, Rohm® Pratt Burnerd®, BTC®, Cushman®, Amestra® and all chuck brands listed are all registered trademarks of their respective companies.

Call Us Today For All Of Your Machine Tool Needs!

EASY JAW FINDER

For 1.5mm x 60°, 3.0mm x 60°, 1/16 x 90° & 3/32 x 90° Serration Chucks

ATLAS, AUTOGRIP, FORKHARDT

Jaw Chuck Manufacturer	Chuck Model	Chuck Size	Serration Type	Jaw Group	Catalog Page Number						Jaw Nut & Keys Part Numbers	OEM Chuck Mfg Jawnut
					Hard Jaws	Round Jaws	Soft Jaws	Claw Jaws	Jaw Nuts			
ATLAS	PA10	10 in.	1.5MM X 60°	K1-16-30	55	24	25	60-61	-	CALL	-	
	PA12	12 in.	1.5MM X 60°	K1-18-30	55	28	29	60-61	-	CALL	-	
	PA15	15 in.	1.5MM X 60°	K1-26-43	55	28	29	-	-	CALL	-	
	PA18	18 in.	1.5MM X 60°	K1-26-43	55	28	29	-	-	CALL	-	
	PA21	21 in.	3.0MM X 60°	K3-25-60	-	34	35	-	-	CALL	-	
	PA24	24 in.	3.0MM X 60°	K3-25-60	-	34	35	-	-	CALL	-	
	PA4	4 in.	1.5MM X 60°	K1-10-14	-	8	9	-	-	CALL	-	
	PA5	5 in.	1.5MM X 60°	K1-10-19	-	8	9	-	-	CALL	-	
	PA6	6 in.	1.5MM X 60°	K1-12-20	55	10	11	60-61	-	CALL	-	
	PA8	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-	
	PAF10	10 in.	3.0MM X 60°	K3-16-30	56	32	33	-	-	CALL	-	
	PAF12	12 in.	3.0MM X 60°	K3-16-30	56	32	33	-	-	CALL	-	
	PAFH10	10 in.	1.5MM X 60°	K1-18-30	55	28	29	60-61	-	CALL	-	
	PAFH12	12 in.	1.5MM X 60°	K1-21-40	-	-	33	-	-	CALL	-	
	PAFH15	15 in.	3.0MM X 60°	K3-26-50	-	34	35	-	-	CALL	-	
	PAFH8	8 in.	1.5MM X 60°	K1-16-25	55	14	15	-	-	CALL	-	
	PHB10	10 in.	1.5MM X 60°	K1-16-30	55	24	25	60-61	-	CALL	-	
	PHB12	12 in.	1.5MM X 60°	K1-21-30	55	22	23	-	-	CALL	-	
	PHB15	15 in.	1.5MM X 60°	K1-26-43	55	28	29	-	-	CALL	-	
	PHB4	4 in.	1.5MM X 60°	K1-10-14	-	8	9	-	-	CALL	-	
	PHB5	5 in.	1.5MM X 60°	K1-10-14	-	8	9	-	-	CALL	-	
	PHB6	6 in.	1.5MM X 60°	K1-12-20	55	10	11	60-61	-	CALL	-	
	PHB8	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-	
	PHTB10	10 in.	1.5MM X 60°	K1-16-30	55	24	25	60-61	-	CALL	-	
	PHTB12	12 in.	1.5MM X 60°	K1-21-30	55	22	23	-	-	CALL	-	
	PHTB4	4 in.	1.5MM X 60°	K1-10-14	-	8	9	-	-	CALL	-	
	PHTB5	5 in.	1.5MM X 60°	K1-10-14	-	8	9	-	-	CALL	-	
	PHTB6	6 in.	1.5MM X 60°	K1-12-20	55	10	11	60-61	-	CALL	-	
	PHTB8	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-	
	PL10	10 in.	1.5MM X 60°	K1-18-30	55	28	29	60-61	-	CALL	-	
	PL12	12 in.	3.0MM X 60°	K3-21-40	-	34	35	-	-	CALL	-	
	PL6	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	-	
	PL8	8 in.	1.5MM X 60°	K1-16-25	55	14	15	-	-	CALL	-	
	PT10	10 in.	1.5MM X 60°	K1-16-30	55	24	25	60-61	-	CALL	-	
	PT12	12 in.	1.5MM X 60°	K1-18-30	55	28	29	60-61	-	CALL	-	
	PT4	4 in.	1.5MM X 60°	K1-10-14	-	8	9	-	-	CALL	-	
PT5	5 in.	1.5MM X 60°	K1-10-19	-	8	9	-	-	CALL	-		
PT6	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	-		
PT8	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-		
PTH10	10 in.	1.5MM X 60°	K1-18-30	55	28	29	60-61	-	CALL	-		
PTH12	12 in.	3.0MM X 60°	K3-21-40	-	34	35	-	-	CALL	-		
PTH5	5 in.	1.5MM X 60°	K1-10-19	-	8	9	-	-	CALL	-		
PTH6	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	-		
PTH8	8 in.	1.5MM X 60°	K1-16-25	55	14	15	-	-	CALL	-		
AUTOGRIP	3H-204	4"	1.5MM X 60°	K1-10-14	-	8	9	-	-	CALL	-	
	3H-205	5"	1.5MM X 60°	K1-10-14	-	8	9	-	-	CALL	-	
	3H-206	6"	1.5MM X 60°	K1-12-20	55	10	11	60-61	-	CALL	-	
	3H-208	8"	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-	
	3H-10B	10"	1.5MM X 60°	K1-16-30	55					CALL	-	
	3H-212	12"	1.5MM X 60°	K1-21-30	55	22	23	60-61	-	CALL	-	
	3H-215	15"	1.5MM X 60°	K1-26-43	55					CALL	-	
	3H-18B	18"	1.5MM X 60°	K1-26-43	55					CALL	-	
	3H-21B	21"	3.0MM X 60°	K3-25-30	56					CALL	-	
3H-24B	24"	3.0MM X 60°	K3-25-60	56					CALL	-		
FORKHARDT	2BLEF-200	200mm/8in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-	
	2BPL-PS 160-200	160mm/7in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-	
	KG 200-250	250mm/10in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-	
	KG 400-500	500mm/20in	3/32 X 90 D	I3-100-138	-	40	41	-	-	CALL	-	
	KGH 160-175-200	175mm/7in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-	
	KGHF 160-175-200	175mm/7in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-	
	KGHF 200	200mm/8in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-	
	KL 160	160mm/7in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-	
KL 250 MO	250mm/10in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-		

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

EASY JAW FINDER

For 1.5mm x 60°, 3.0mm x 60°, 1/16 x 90° & 3/32 x 90° Serration Chucks

FORKHARDT, GAMET, HARDINGE, HITACHI-SEIKI, HOWA

Catalog Page Number

Jaw Chuck Manufacturer	Chuck Model	Chuck Size	Serration Type	Jaw Group	Catalog Page Number					Jaw Nut & Keys Part Numbers	OEM Chuck Mfg Jawnut
					Hard Jaws	Round Jaws	Soft Jaws	Claw Jaws	Jaw Nuts		
FORKHARDT	KSHF 250-55(INDEX)	250mm/10in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
	KSPS 160-200	200mm/8in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
	KT 200	200mm/8in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
	KT 400-500	500mm/20in	3/32 X 90 D	I3-100-138	-	40	41	-	41	FK-160TN	-
	KTG 160-200	200mm/8in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
	KTGF 200	200mm/8in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
	KTGF 400-500	500mm/20in	3/32 X 90 D	I3-100-138	-	40	41	-	41	FK-160TN	-
	KTH 160-200	200mm/8in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
	KTN 160-200	200mm/8in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
	NH 160-200	200mm/8in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
	NH 400-500	500mm/20in	3/32 X 90 D	I3-100-138	-	40	41	-	41	FK-160TN	-
	NHF 160-200	200mm/8in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
	NHF250-65/290-104(INDEX)	250mm/10in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
	GAMET	NHF 400-500	500mm/20in	3/32 X 90 D	I3-100-138	-	40	41	-	41	FK-160TN
QLC 175-210		210mm/9in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
UVE 160-200-250		200mm/8in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
UVE 400-500		500mm/20in	3/32 X 90 D	I3-100-138	-	40	41	-	41	FK-160TN	-
HARDINGE	DE 400	400mm/16in	3/32 X 90 D	I3-100-138	-	40	41	-	41	FK-160TN	-
	DELTA 210	210mm/9in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
	GA 210	210mm/9in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
HARDINGE	MAC 200-220	220mm/9in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
	CM2-305B-5 (5" Sure Grip)	5 in.	1.5MM X 60°	K1-10-18	-	8	9	-	-	CALL	-
	CM2-306C-5 (6" Sure Grip)	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	-
	CM2-306E-5 (6" Sure Grip)	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	-
	CM2-308B-6 (8" Sure Grip)	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-
	CM2-308C-6 (8" Sure Grip)	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-
	CM2-310B-8 (10" Sure Grip)	10 in.	1.5MM X 60°	K1-16-30	55	24	25	60-61	-	CALL	-
	CM2-310C-8 (10" Sure Grip)	10 in.	1.5MM X 60°	K1-16-30	55	24	25	60-61	-	CALL	-
	Hardinge 10" 1/16x90° Ser.	10 in.	1/16X90°	I1-82-118	-	38	39	-	-	CALL	-
	Hardinge 4" 1/16x90° Ser.	4 in.	1/16X90°	I1-43-71	56	36	37	-	-	CALL	-
	Hardinge 5" 1/16x90° Ser.	5 in.	1/16X90°	I1-43-71	56	36	37	-	-	CALL	-
	HCM-312C-8 (12" Sure Grip)	12 in.	1.5MM X 60°	K1-21-30	55	22	23	-	-	CALL	-
	HM-304 (4" Sure Grip)	4 in.	1.5MM X 60°	K1-10-14	-	8	8	-	-	CALL	-
	HM-305 (5" Sure Grip)	5 in.	1.5MM X 60°	K1-10-18	-	8	8	-	-	CALL	-
	HM-306 (6" Sure Grip)	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	-
	HM-306-6 (6" Sure Grip)	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	-
	HM-306-6L (6" Sure Grip)	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	-
	HM-308 (8" Sure Grip)	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-
	HM-308-5 (8" Sure Grip)	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-
	HM-310-6 (10" Sure Grip)	10 in.	1.5MM X 60°	K1-16-30	55	24	25	60-61	-	CALL	-
	HM-310-8 (10" Sure Grip)	10 in.	1.5MM X 60°	K1-16-30	55	24	25	60-61	-	CALL	-
	HM-312C-8 (12" Sure Grip)	12 in.	1.5MM X 60°	K1-21-30	55	22	23	-	-	CALL	-
	HVM-310-11 (10" Sure Grip For VT200)	10 in.	1.5MM X 60°	K1-16-30	55	24	25	60-61	-	CALL	-
	HVM-310-8 (10" Sure Grip For VT100)	10 in.	1.5MM X 60°	K1-16-30	55	24	25	60-61	-	CALL	-
HVM-312C-11 (12" Sure Grip For VT200)	12 in.	1.5MM X 60°	K1-21-30	55	22	23	-	-	CALL	-	
HVM-312C-8 (12" Sure Grip For VT100)	12 in.	1.5MM X 60°	K1-21-30	55	22	23	-	-	CALL	-	
HITACHI-SEIKI	10"	10 in.	1.5MM X 60°	K1-16-32	55	26	27	-	-	CALL	-
HOWA	H3KT10	10 in.	1.5MM X 60°	K1-16-30	55	24	25	60-61	-	CALL	-
	H3KT12	12 in.	1.5MM X 60°	K1-21-30	55	22	23	-	-	CALL	-
	H3KT6	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	-
	H3KT8	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-
	HO15M10	10 in.	1.5MM X 60°	K1-16-25	55	14	15	-	23	HO-80JN	-
	HO15M12	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	HO-100JN	-
	HO15M15	15 in.	3.0MM X 60°	K3-21-40	-	34	35	-	35	H3-158JN	-
	HO15M6	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	H3-60JN	-
	HO15M8	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-
	HO1MA10	10 in.	3.0MM X 60°	K3-16-30	56	32	33	-	-	CALL	-
	HO1MA12	12 in.	3.0MM X 60°	K3-18-30	56	32	33	-	-	CALL	-
HO1MA15	15 in.	3.0MM X 60°	K3-26-50	-	34	35	-	-	CALL	-	
HO1MA6	6 in.	3.0MM X 60°	K3-12-20	-	32	33	-	41	H3-60JN	-	

Call Us Today For All Of Your Machine Tool Needs!

EASY JAW FINDER

For 1.5mm x 60°, 3.0mm x 60°, 1/16 x 90° & 3/32 x 90° Serration Chucks

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

HOWA, KITAGAWA

Jaw Chuck Manufacturer	Chuck Model	Chuck Size	Serration Type	Jaw Group	Catalog Page Number					Jaw Nut & Keys Part Numbers	OEM Chuck Mfg Jawnut
					Hard Jaws	Round Jaws	Soft Jaws	Claw Jaws	Jaw Nuts		
HOWA	HO1MA8	8 in.	3.0MM X 60°	K3-14-25	-	32	33	-	-	CALL	-
	HO22M10	10 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	HO-80JN	-
	HO22M12	12 in.	3.0MM X 60°	K3-21-40	-	34	35	-	-	HO-100JN	-
	HO22M6	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	H3-60JN	-
	HO22M8	8 in.	1.5MM X 60°	K1-16-25	55	14	15	-	-	CALL	-
	HO24M10	10 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	HO-80JN	-
	HO24M12	12 in.	3.0MM X 60°	K3-21-40	-	34	35	-	-	HO-100JN	-
	HO24M6	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	H3-60JN	-
	HO24M8	8 in.	1.5MM X 60°	K1-16-25	55	14	15	-	-	CALL	-
	HO27M10	10 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	HO-100JN	-
	HO27M12	12 in.	1.5MM X 60°	K1-21-35	-	32	33	-	-	CALL	-
	HO27M15	15 in.	3.0MM X 60°	K3-26-42	-	34	35	-	35	H3-154JN	-
	HO27M6	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	H3-60JN	-
	HO27M8	8 in.	1.5MM X 60°	K1-16-25	55	14	15	-	-	CALL	-
	HO34M10	10 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	HO-100JN	-
	HO34M12	12 in.	1.5MM X 60°	K1-21-35	-	32	33	-	-	CALL	-
	HO34M6	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	H3-60JN	-
	HO34M8	8 in.	1.5MM X 60°	K1-16-25	55	14	15	-	23	HO-80JN	-
	HO37M10	10 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	HO-100JN	-
	HO37M12	12 in.	1.5MM X 60°	K1-21-35	-	32	33	-	-	CALL	-
	HO37M6	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	H3-60JN	-
	HO37M8	8 in.	1.5MM X 60°	K1-16-25	55	14	15	-	23	HO-80JN	-
	HO47M10	10 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	HO-100JN	-
	HO47M12	12 in.	1.5MM X 60°	K1-21-35	-	32	33	-	-	CALL	-
HO47M6	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	H3-60JN	-	
HO47M8	8 in.	1.5MM X 60°	K1-16-25	55	14	15	-	23	HO-80JN	-	
HO7MA10	10 in.	1.5MM X 60°	K1-16-25	55	14	15	-	23	HO-80JN	-	
HO7MA12	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	HO-100JN	-	
HO7MA15	15 in.	3.0MM X 60°	K3-21-40	-	34	35	-	35	H3-158JN	-	
HO7MA6	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	H3-60JN	-	
HO7MA8	8 in.	1.5MM X 60°	K1-14-25	55	20	21	60-61	-	CALL	-	
KITAGAWA	B-21	21 in.	3.0MM X 60°	K3-25-60	-	34	35	-	35	KT-240JN	-
	B-24	24 in.	3.0MM X 60°	K3-25-60	-	34	35	-	35	KT-240JN	-
	B-306	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	-
	B-530	530mm/21in	3.0MM X 60°	K3-25-60	-	34	35	-	-	CALL	-
	B-600	600mm/24in	3.0MM X 60°	K3-25-60	-	34	35	-	-	CALL	-
	BB-06	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	KT-60JN	-
	BB-08	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	13	KT-81JN	-
	BB-208	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-
	BB-212	12 in.	1.5MM X 60°	K1-21-30	55	30	31	-	-	CALL	-
	BL-206	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	-
	BL-208	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-
	BL-210	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	-
	BL-212	12 in.	1.5MM X 60°	K1-21-30	55	30	31	-	-	CALL	-
	BLT-206	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	-
	BLT-208	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-
	BLT-210	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	-
	BLT-212	12 in.	1.5MM X 60°	K1-21-30	55	22	23	-	-	CALL	-
	BT-15	15 in.	1.5MM X 60°	K1-22-43	55	34	35	-	35	KT-153JN	-
	BT-204	4 in.	1.5MM X 60°	K1-10-14	-	8	9	-	-	CALL	-
	BT-205	5 in.	1.5MM X 60°	K1-10-14	-	8	9	-	-	CALL	-
	HJ-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	17	KT-101JN	-
	HJ-12	12 in.	1.5MM X 60°	K1-18-38	-	32	33	-	-	CALL	-
	HJ-450	450mm/18in	3.0MM X 60°	K3-25-60	-	34	35	-	-	CALL	-
	HJ-530	530mm/21in	3.0MM X 60°	K3-25-60	-	34	35	-	-	CALL	-
	HJ-6	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	KT-61JN	-
	HJ-610	610mm/25in	3.0MM X 60°	K3-25-60	-	34	35	-	-	CALL	-
	HJ-8	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	13	KT-80JN	-
	HJA-24	24 in.	3.0MM X 60°	K3-25-60	-	34	35	-	35	KT-242JN	-
HOBT-5	5 in.	1.5MM X 60°	K1-10-18	-	8	9	-	9	KT-53JN	-	

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

545

EASY JAW FINDER

For 1.5mm x 60°, 3.0mm x 60°, 1/16 x 90° & 3/32 x 90° Serration Chucks

KITAGAWA

Catalog Page Number

Jaw Chuck Manufacturer	Chuck Model	Chuck Size	Serration Type	Jaw Group	Hard Jaws	Round Jaws	Soft Jaws	Claw Jaws	Jaw Nuts	Jaw Nut & Keys Part Numbers	OEM Chuck Mfg Jawnut
KITAGAWA	HOH-06K	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	KT-61JN	TNS1101
	HOH-08K	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	13	KT-80JN	TNS1102
	HOH-10K	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	17	KT-101JN	TNS1103
	HOH-12K	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	-	CALL	-
	HOH-15K	15 in.	1.5MM X 60°	K1-22-43	55	26	27	-	27	KT-153JN	TNS1107
	HW-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	-
	HW-12	12 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	-
	NL-04	4 in.	1.5MM X 60°	K1-10-14	-	8	9	-	9	KT-45JN	TNS2200
	NLT-06	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	-
	NLT-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	-
	NT-06	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	KT-61JN	TNS1101
	NT-08	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	13	KT-80JN	TNS1102
	NT-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	17	KT-101JN	TNS1103
	NT-12	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	KT-120JN	TNS1104
	UVE160K	160mm/7in	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-
	UVE-200	200mm/8in	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	-
	UVE200K	200mm/8in	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	-
	UVE2-50K	250mm/10in	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	-
	UVE-500AR	500mm/20in	3.0MM X 60°	K3-25-60	-	34	35	-	-	CALL	-
	UVE-500LB	500mm/20in	3.0MM X 60°	K3-25-60	-	34	35	-	-	CALL	-
	UVE-630AR	630mm/25in	3.0MM X 60°	K3-25-60	-	34	35	-	-	CALL	-
	UVE-630LB	630mm/25in	3.0MM X 60°	K3-25-60	-	34	35	-	-	CALL	-
	UVE-670LB	670mm/27in	3.0MM X 60°	K3-25-60	-	34	35	-	-	CALL	-
	UVE-750AR	750mm/30in	3.0MM X 60°	K3-25-80	-	34	35	-	-	CALL	-
	UVE-800LB	800mm/32in	3.0MM X 60°	K3-25-80	-	34	35	-	43	KT-241JN	-
	AS-04	4 in.	1.5MM X 60°	K1-10-14	-	16	17	-	17	KT-45JN	-
	AS-06	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	KT-61JN	TNS1101
	AS-08	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	13	KT-80JN	TNS1102
	AS-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	17	KT-101JN	TNS1103
	AS-110	110mm/5in	1.5MM X 60°	K1-10-14	-	8	9	-	9	KT-45JN	-
	AS-165	165mm/7in	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	KT-61JN	-
	AS-210	210mm/9in	1.5MM X 60°	K1-14-25	55	12	13	60-61	13	KT-80JN	-
	AS-250	250mm/10in	1.5MM X 60°	K1-16-30	55	16	17	60-61	17	KT-101JN	-
	AT-04	4 in.	1.5MM X 60°	K1-10-14	-	16	17	-	17	KT-45JN	TNS2200
	AT-06	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	KT-61JN	TNS1101
	AT-08	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	13	KT-80JN	TNS1102
	AT-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	17	KT-101JN	TNS1103
	B-04	4 in.	1.5MM X 60°	K1-08-15	-	8	9	-	9	KT-40JN	TNS1099
	B-05	5 in.	1.5MM X 60°	K1-10-18	-	8	9	-	9	KT-53JN	TNS1100
	B-06	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	KT-61JN	TNS1101
	B-07	7 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	KT-60JN	-
	B-08	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	13	KT-80JN	TNS1102
	B-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	17	KT-101JN	TNS1103
	B-106	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	KT-60JN	-
	B-108	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	13	KT-81JN	-
	B-12	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	KT-120JN	TNS1104
	B-15	15 in.	1.5MM X 60°	K1-22-43	55	26	27	60-61	27	KT-153JN	TNS1107
	B-160	6.5 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	KT-61JN	-
B-204	4 in.	1.5MM X 60°	K1-10-14	-	8	9	-	-	CALL	TNS2199	
B-205	5 in.	1.5MM X 60°	K1-10-14	-	18	9	-	-	CALL	TNS2199	
B-206	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	KT-60JN	TNS2201	
B-208	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	13	KT-81JN	TNS2202	
B-210	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	17	KT-100JN	TNS2203	
B-212	12 in.	1.5MM X 60°	K1-21-30	55	22	23	-	-	CALL	TNS2204	
B-215	15 in.	1.5MM X 60°	K1-26-43	55	28	29	-	29	KT-151JN	-	
B-250	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	17	KT-101JN	-	
B-380	380mm/15in	1.5MM X 60°	K1-22-43	55	26	27	-	27	KT-150JN	-	
B-450	450mm/18in	1.5MM X 60°	K1-22-43	55	26	27	-	27	KT-150JN	-	
BL-06	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	-	

Call Us Today For All Of Your Machine Tool Needs!

EASY JAW FINDER

For 1.5mm x 60°, 3.0mm x 60°, 1/16 x 90° & 3/32 x 90° Serration Chucks

KITAGAWA

Jaw Chuck Manufacturer	Chuck Model	Chuck Size	Serration Type	Jaw Group	Catalog Page Number					Jaw Nut & Keys Part Numbers	OEM Chuck Mfg Jawnut
					Hard Jaws	Round Jaws	Soft Jaws	Claw Jaws	Jaw Nuts		
KITAGAWA	BL210	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	-
	BL212	12 in.	1.5MM X 60°	K1-21-30	55	30	31	-	-	CALL	-
	BT-04	4 in.	1.5MM X 60°	K1-08-15	-	8	9	-	9	KT-40JN	TNS1099
	BT-05	5 in.	1.5MM X 60°	K1-10-18	-	8	9	-	9	KT-53JN	TNS1100
	BT-06	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	KT-61JN	TNS1101
	BT-08	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	13	KT-80JN	TNS1102
	BT-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	17	KT-101JN	TNS1103
	BT-12	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	KT-120JN	-
	BT-206	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	KT-60JN	-
	BT-208	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	13	KT-81JN	-
	BT-210	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	17	KT-100JN	-
	BT-212	12 in.	1.5MM X 60°	K1-21-30	55	22	23	-	-	CALL	-
	HG730-254	254mm/10in	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	-
	HG738-165	165mm/7in	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	-
	HJ-4	4 in.	1.5MM X 60°	K1-10-14	-	8	9	-	9	KT-45JN	-
	HJ-5	5 in.	1.5MM X 60°	K1-10-19	-	8	9	-	9	KT-50JN	-
	HJA-4	4 in.	1.5MM X 60°	K1-10-19	-	8	9	-	-	CALL	-
	HJA5-6	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	-
	HJA6-12	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	KT-120JN	-
	HJA6-8	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	13	KT-80JN	-
	HJA8-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	17	KT-101JN	-
	HJA8-12	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	KT-120JN	-
	HLA6-12	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	KT-120JN	-
	HLA6-15	15 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	KT-120JN	-
	HLA8-15	15 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	KT-120JN	-
	HO-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	17	KT-101JN	-
	HO-12	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	KT-120JN	-
	HO-6	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	KT-61JN	-
	HO-8	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	13	KT-80JN	-
	HOB-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	17	KT-101JN	-
	HOB-12	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	KT-120JN	-
	HOB-15	15 in.	1.5MM X 60°	K1-22-43	55	34	35	-	35	KT-150JN	TNS1107
	HOB-18	18 in.	1.5MM X 60°	K1-22-43	55	34	35	-	35	KT-150JN	-
	HOB-4	4 in.	1.5MM X 60°	K1-08-15	-	8	9	-	9	KT-40JN	-
	HOB-5	5 in.	1.5MM X 60°	K1-10-18	-	8	9	-	9	KT-53JN	TNS1100
	HOB-6	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	KT-61JN	-
	HOB-8	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	13	KT-80JN	-
	HOH-06	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	KT-60JN	-
	HOH-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	17	KT-101JN	-
	HOH-106	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	-
	HOH-108	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	13	KT-81JN	-
	HOH-110	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	17	KT-101JN	-
	HOH-12	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	KT-120JN	-
	HOH-15	15 in.	1.5MM X 60°	K1-22-43	55	26	27	-	27	KT-150JN	-
	HOH-160	6.5 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	KT-61JN	-
HOH-18	18 in.	1.5MM X 60°	K1-22-43	55	26	27	-	27	KT-150JN	-	
HOH-200	200mm/8in	1.5MM X 60°	K1-14-25	55	12	13	60-61	13	KT-80JN	-	
HOH-206	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	KT-60JN	TNS2201	
HOH-208	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	13	KT-81JN	-	
HOH-210	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	17	KT-100JN	TNS2203	
HOH-250	250mm/10in	1.5MM X 60°	K1-16-30	55	24	25	60-61	25	KT-100JN	-	
HOH-30	30 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	KT-120JN	-	
HOH-300	300mm/12in	1.5MM X 60°	K1-18-30	55	20	21	60-61	-	CALL	-	
HOH-380	380mm/15in	1.5MM X 60°	K1-22-43	55	26	27	-	27	KT-150JN	-	
HOH-8	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	13	KT-80JN	-	
HOS-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	17	KT-101JN	-	
HOS-12	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	KT-120JN	-	
HOS-6	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	KT-61JN	-	
HOS-8	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	13	KT-80JN	-	
N-04	4 in.	1.5MM X 60°	K1-10-14	-	8	9	-	9	KT-45JN	TNS2200	
N-05	5 in.	1.5MM X 60°	K1-10-19	-	8	9	-	9	KT-50JN	-	
N-06	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	KT-61JN	TNS1101	
N-08	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	13	KT-80JN	TNS1102	
N-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	17	KT-101JN	TNS1103	
N-12	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	KT-120JN	TNS1104	

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

547

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

EASY JAW FINDER

For 1.5mm x 60°, 3.0mm x 60°, 1/16 x 90° & 3/32 x 90° Serration Chucks

KITAGAWA, LEADER, MATSUMOTO, MMK

Catalog Page Number

Jaw Chuck Manufacturer	Chuck Model	Chuck Size	Serration Type	Jaw Group	Hard Jaws	Round Jaws	Soft Jaws	Claw Jaws	Jaw Nuts	Jaw Nut & Keys Part Numbers	OEM Chuck Mfg Jawnut
KITAGAWA	N15	15 in.	1.5MM X 60°	K1-26-43	55	36	37	-	-	CALL	-
	N-160	160mm/7in	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	KT-61JN	-
	N18	18 in.	1.5MM X 60°	K1-26-43	55	28	29	-	-	CALL	-
	N-200	200mm/8in	1.5MM X 60°	K1-14-25	55	12	13	60-61	21	KT-80JN	-
	N-250	250mm/10in	1.5MM X 60°	K1-16-30	55	16	17	60-61	17	KT-101JN	-
	N-300	300mm/12in	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	KT-120JN	-
	NL-06	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	19	KT-61JN	TNS1101
	NL-08	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	21	KT-80JN	TNS1102
	NL-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	17	KT-101JN	TNS1103
	NL-12	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	KT-120JN	TNS1104
	NLT-08	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-
	NLT-12	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	KT-120JN	-
	NLT-160	6.5 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	-
	NT-04	4 in.	1.5MM X 60°	K1-10-14	-	8	9	-	17	KT-45JN	TNS2200
	NT-05	5 in.	1.5MM X 60°	K1-10-19	-	8	9	-	17	KT-50JN	-
UVE-160K	160mm/7in	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-	
UVE-200K	200mm/8in	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	-	
UVE-250K	250mm/10in	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	-	
UVE-315K	315mm/13in	1.5MM X 60°	K1-18-38	-	32	33	-	-	CALL	-	
LEADER	LC-165	165mm/7in	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	-
	LC-210	210mm/9in	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-
	LC-250	250mm/10in	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	-
	LC-315	315mm/13in	1.5MM X 60°	K1-21-30	55	30	31	-	-	CALL	-
MATSUMOTO (MMK)	H-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	17	KT-100JN	-
	H-10-67	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	-
	H-11-67	11 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	-
	H-11-72	11 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	-
	H-12	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	-	CALL	60120002
	H-15	15 in.	3.0MM X 60°	K3-22-50	56	34	35	-	-	CALL	-
	H-18	18 in.	3.0MM X 60°	K3-22-50	56	34	35	-	-	CALL	-
	H-18-162	18 in.	3.0MM X 60°	K3-22-50	56	34	35	-	-	CALL	-
	H-4(HPC)	4 in.	1.5MM X 60°	K1-10-14	-	8	9	-	9	KT-45JN	-
	H-4(NAK)	4 in.	1.5MM X 60°	K1-10-14	-	8	9	-	9	KT-45JN	-
	H-4-21	4 in.	1.5MM X 60°	K1-10-14	-	8	9	-	9	KT-45JN	-
	H-6	6 in.	3.0MM X 60°	K3-12-20	-	32	33	-	-	CALL	-
	HA 8-11	8 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	17	KT-100JN	-
	HA*6-10- (HitachiSeiki)	6 in.	1.5MM X 60°	K1-16-32	55	26	27	-	27	MT-100JN	60100102
	HA11-15	15 in.	3.0MM X 60°	K3-22-50	56	34	35	-	-	CALL	60150102
	HA11-18	18 in.	3.0MM X 60°	K3-22-50	56	34	35	-	-	CALL	-
	HA5-6	6 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	60100002
	HA6-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	60100002
	HA6-8	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-
	HA8-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	60100002
	HA8-12	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	-	CALL	-
	HA8-15	15 in.	3.0MM X 60°	K3-22-50	56	34	35	-	-	CALL	60150102
	HH-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	17	KT-100JN	-
	HH11-15	15 in.	3.0MM X 60°	K3-22-50	56	34	35	-	-	CALL	-
	HH-12	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	KT-120JN	-
	HH-15	15 in.	3.0MM X 60°	K3-22-50	56	34	35	-	-	CALL	-
	HH-18	18 in.	3.0MM X 60°	K3-22-50	56	34	35	-	-	CALL	-
	HH-4	4 in.	1.5MM X 60°	K1-10-14	-	8	9	-	9	KT-45JN	-
	HH-8	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-
	HHJ-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	17	KT-100JN	-
	HHJ-12	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	KT-120JN	-
	HHJ-8	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-
HHJL-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	-	
HHL-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	17	KT-100JN	-	
HHL-12	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	KT-120JN	-	
HHL-15	15 in.	3.0MM X 60°	K3-22-50	56	34	35	-	-	CALL	-	
HHL-8	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-	
HHXA 5-6	5 in.	1.5MM X 60°	K1-10-19	-	8	9	-	-	CALL	-	
HJ-06	6 in.	3.0MM X 60°	K3-12-20	-	32	33	-	33	H3-60JN	-	
HJ-08	8 in.	3.0MM X 60°	K3-14-25	-	32	33	-	-	CALL	-	
HJ-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	17	KT-100JN	TNS1103	

Call Us Today For All Of Your Machine Tool Needs!

EASY JAW FINDER

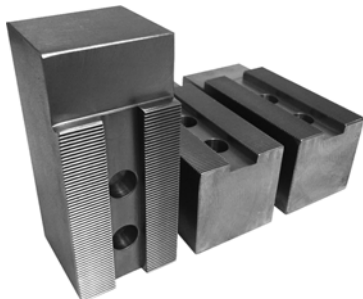
For 1.5mm x 60°, 3.0mm x 60°, 1/16 x 90° & 3/32 x 90° Serration Chucks

MATSUMOTO/MMK

Catalog Page Number

Jaw Chuck Manufacturer	Chuck Model	Chuck Size	Serration Type	Jaw Group	Hard Jaws	Round Jaws	Soft Jaws	Claw Jaws	Jaw Nuts	Jaw Nut & Keys Part Numbers	OEM Chuck Mfg Jawnut
MATSUMOTO (MMK)	HJ-10-67	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	-
	HJ-12	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	21	KT-120JN	-
	HJ-8	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-
	HL-8	8 in.	1.5MM X 60°	K1-14-25	55	20	21	60-61	-	CALL	-
	MMK-12	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	-	CALL	-
	SA 5-6-40	5 in.	1.5MM X 60°	K1-10-19	-	8	9	-	-	CALL	-
	SH-12	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	-	CALL	-
	STC-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	17	KT-100JN	-
	STC-6	6 in.	3.0MM X 60°	K3-12-20	-	32	33	-	-	CALL	-
	STC-8	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-
	U-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	-
	Z-15	15 in.	3.0MM X 60°	K3-22-50	56	34	35	-	-	CALL	60150102
	Z-18	18 in.	3.0MM X 60°	K3-22-50	56	34	35	-	-	CALL	60150102
	Z-4	4 in.	1.5MM X 60°	K1-10-14	-	8	9	-	-	CALL	4604012
	Z-5	5 in.	1.5MM X 60°	K1-10-14	-	8	9	-	-	CALL	61060105
	Z-6	6 in.	1.5MM X 60°	K1-11-25	55	18	19	-	19	SG-60JN	60060002
	Z-8	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	60080002
	Z-8-52	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-
	ZA11-15	15 in.	3.0MM X 60°	K3-22-50	56	34	35	-	-	CALL	60150102
	ZA11-18	18 in.	3.0MM X 60°	K3-22-50	56	34	35	-	-	CALL	60150102
	ZA15-18	18 in.	3.0MM X 60°	K3-22-50	56	34	35	-	-	CALL	60150102
	ZA5-5	5 in.	1.5MM X 60°	K1-10-14	-	8	9	-	-	CALL	61060105
	ZA5-6	6 in.	1.5MM X 60°	K1-11-25	55	10	11	-	11	SG-60JN	60060002
	ZA5-6-0	6 in.	1.5MM X 60°	K1-11-25	55	10	11	-	11	SG-60JN	60060002
	ZA5-6B	6 in.	1.5MM X 60°	K1-11-25	55	10	11	-	11	SG-60JN	60060002
	ZA6-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	60100002
	ZA-6-10	6 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	-
	ZA6-10_ (For Hitachi Seiki)	6 in.	1.5MM X 60°	K1-16-32	55	26	27	-	27	MT-100JN	60100102
	ZA6-8	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	60080002
	ZA8-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	60100002
	ZA8-10 (For Hitachi Seiki)	8 in.	1.5MM X 60°	K1-16-32	55	26	27	-	27	MT-100JN	60100102
	ZA8-12	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	-	CALL	60120002
	ZA8-15	15 in.	3.0MM X 60°	K3-22-50	56	34	35	-	-	CALL	60150102
	ZA8-15- On HAAS	15 in.	1.5MM X 60°	K1-26-43	55	36	37	-	-	CALL	-
	ZJ-8-52	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-
	ZJA11-15	15 in.	3.0MM X 60°	K3-22-50	56	34	35	-	-	CALL	60150102
ZJA11-18	18 in.	3.0MM X 60°	K3-22-50	56	34	35	-	-	CALL	60150102	
ZJA5-6	6 in.	1.5MM X 60°	K1-11-25	55	10	11	-	11	SG-60JN	60060002	
ZJA6-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	60100002	
ZJA6-8	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	60080002	
ZJA8-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	60100002	
ZJA8-12	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	-	CALL	60120002	

SPECIAL ORDER JAWS AVAILABLE!



- Super Quick Turnaround Time- 5 Days Or Less In Most Cases!
- **Special Order Round Jaws Up To 32" dia!**
- Special Order Soft Jaws Up To 8" Height!
- Soft Jaws Available In Any Length-Steel Or Aluminum
- Tongue And Groove, Square Serrated & Acme Serrated Jaws Up To 8" Height!
- Made Per Your Special Specifications In The USA! Please See Our Special Order Forms On Pages 555-560.

Special Order Chuck Jaws Available! Please Call Today For A Quote!

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

549

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

EASY JAW FINDER**For 1.5mm x 60°, 3.0mm x 60°, 1/16 x 90° & 3/32 x 90° Serration Chucks****MATSUMOTO/ MMK, PBA PRATT BURNERD, ROHM****Catalog Page Number**

Jaw Chuck Manufacturer	Chuck Model	Chuck Size	Serration Type	Jaw Group	Catalog Page Number					Jaw Nut & Keys Part Numbers	OEM Chuck Mfg Jawnut
					Hard Jaws	Round Jaws	Soft Jaws	Claw Jaws	Jaw Nuts		
MATSUMOTO (MMK)	ZJA8-15/ZLA11-15	15 in.	3.0MM X 60°	K3-22-50	56	34	35	-	-	CALL	60150102
	YA5-6-46	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	-
	ZLA6-8	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	60080002
	ZLA8-10	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	60100002
PBA	ZLA8-12	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	-	CALL	60120002
	9151-_1723	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	-
	9151-_2123	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-
	9151-_2623	10 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	-
	9151-_3123	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	-	CALL	-
	9151-_3823	15 in.	1.5MM X 60°	K1-22-43	55	26	27	-	-	CALL	-
	9161-_2123	8 in.	1.5MM X 60°	K1-14-25	55	20	21	60-61	-	CALL	-
	9161-_2623	8 in.	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	-
	9821-_1723	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	-
	9821-_2110	8 in.	1/16X90°	I1-66-100	-	36	37	-	-	CALL	-
	9821-_2123	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-
	9821-_2610	10 in.	1/16X90°	I1-66-100	-	36	37	-	-	CALL	-
	9821-_2623	10 in.	1.5MM X 60°	K1-16-30	55	24	25	60-61	-	CALL	-
	9821-_3110	12 in.	1/16X90°	I1-82-125	-	-	47	-	-	CALL	-
	9821-_3123	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	-	CALL	-
	9821-_3810	15 in.	1/16X90°	I1-100-175	-	-	39	-	-	CALL	-
	9821-_3823	15 in.	1.5MM X 60°	K1-22-43	55	34	35	-	-	CALL	-
	9821-_4610	18 in.	1/16X90°	I1-100-175	-	-	39	-	-	CALL	-
	9821-_5310	21 in.	1/16X90°	I1-100-175	-	-	39	-	-	CALL	-
	9821-_6110	24 in.	1/16X90°	I1-100-175	-	-	39	-	-	CALL	-
	9831-_1723	6 in.	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	-
	9831-_2110	8 in.	1/16X90°	I1-66-100	-	36	37	-	-	CALL	-
	9831-_2123	8 in.	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-
	9831-_2610	10 in.	1/16X90°	I1-66-100	-	36	37	-	-	CALL	-
	9831-_2623	10 in.	1.5MM X 60°	K1-16-30	55	24	25	60-61	-	CALL	-
	9831-_3110	12 in.	1/16X90°	I1-82-125	-	-	47	-	-	CALL	-
	9831-_3123	12 in.	1.5MM X 60°	K1-18-30	55	20	21	60-61	-	CALL	-
	PBA (PRATT-BURNERD)	15	15	1.5MM X 60°	I1-78-118	56	38	39	-	-	CALL
160-200 HIGH SPEED Q.C.		160mm/7in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
160-200 INTERNATIONAL		160mm/7in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
250 HIGH SPEED Q.C.		250mm/10in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
254 INTERNATIONAL		-	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
265 HIGH SPEED Q.C.		265mm/11in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
265 KB		265mm/11in	1.5MM X 60°	K1-16-30	55	24	25	60-61	-	CALL	-
305KB		305mm/13in	1.5MM X 60°	K1-18-30	55	28	29	60-61	-	CALL	-
400 HYD. FRONT END		400mm/16in	3/32 X 90 D	I3-100-138	-	40	41	-	41	FK-160TN	-
400 INTERNATIONAL		400mm/16in	3/32 X 90 D	I3-100-138	-	40	41	-	41	FK-160TN	-
500 HYD. FRONT END		500mm/20in	3/32 X 90 D	I3-100-138	-	40	41	-	41	FK-160TN	-
9"		9 in.	1/16 X 90°	I1-66-87	-	44	45	-	-	CALL	-
HSL 315		315mm/13in	1.5MM X 60°	K1-18-30	55	20	21	60-61	-	CALL	-
ROTA NC 315		315mm/13in	1.5MM X 60°	K1-18-30	55	20	21	60-61	-	CALL	-
ROTA NCF 315	315mm/13in	1.5MM X 60°	K1-18-30	55	20	21	60-61	-	CALL	-	
ROTA NCK 315	315mm/13in	1.5MM X 60°	K1-18-30	55	20	21	60-61	-	CALL	-	
ROHM	KFD 130	130mm/6in	1/16X90°	I1-47-59	-	36	37	-	-	CALL	-
	KFD 160-200	200mm/8in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
	KFD 400-500-630	500mm/20in	3/32 X 90 D	I3-100-138	-	40	41	-	-	CALL	-
	KFD-HE 130	130mm/6in	1.5MM X 60°	K1-10-14	-	8	9	-	-	CALL	-
	KFD-HE 170	170mm/7in	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	-
	KFD-HE 210	210mm/9in	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	-
	KFD-HE 254	-	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	-
	KFD-HE 315	315mm/13in	1.5MM X 60°	K1-21-30	55	22	23	-	-	CALL	-
	KFD-HF 160-200	160mm/7in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
	KFD-HF 400-500	400mm/16in	3/32 X 90 D	I3-100-138	-	40	41	-	-	CALL	-
	KFD-HS 160	160mm/7in	1/16X90°	I1-47-59	-	36	37	-	-	CALL	-
	KFD-HS 400-500	400mm/16in	3/32 X 90 D	I3-100-138	-	40	41	-	-	CALL	-
	KFH 140	140mm/6in	1/16X90°	I1-47-59	-	36	37	-	-	CALL	-
	KFH 160-200	200mm/8in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
KFH 400-500	500mm/20in	3/32 X 90 D	I3-100-138	-	40	41	-	-	CALL	-	

Call Us Today For All Of Your Machine Tool Needs!

EASY JAW FINDER

For 1.5mm x 60°, 3.0mm x 60°, 1/16 x 90° & 3/32 x 90° Serration Chucks

SAMCHULLY, SCHUNK

Catalog Page Number

Jaw Chuck Manufacturer	Chuck Model	Chuck Size	Serration Type	Jaw Group	Hard Jaws	Round Jaws	Soft Jaws	Claw Jaws	Jaw Nuts	Jaw Nut & Keys Part Numbers	OEM Chuck Mfg Jawnut
SAMCHULLY	HS-05	5 in.	1.5mm x 60°	K1-10-14	CALL	8	9	-	17	KT-204JN	-
	HS-06	6 in.	1.5mm x 60°	K1-12-20	55	18	19	60-61	19	KT-60JN	TN-HS-06
	HS-08	8 in.	1.5mm x 60°	K1-14-25	55	12	13	60-61	21	KT-81JN	TN-HS-08
	HS-10	10 in.	1.5mm x 60°	K1-16-30	55	16	17	60-61	17	KT-100JN	TN-HS-10
	HS-12	12 in.	1.5mm x 60°	K1-21-30	55	30	31	-	31	KT-128JN	TN-HS-12
	HAS-05A05	5 in.	1.5mm x 60°	K1-10-14	CALL	8	9	-	17	-	-
	HAS-06A05	6 in.	1.5mm x 60°	K1-12-20	55	18	19	60-61	19	KT-60JN	TN-HS-06
	HAS-08A06	8 in.	1.5mm x 60°	K1-14-25	55	12	13	60-61	21	KT-81JN	TN-HS-08
	HAS-10A06	10 in.	1.5mm x 60°	K1-16-30	55	16	17	60-61	17	KT-100JN	TN-HS-10
	HAS-10A08	10 in.	1.5mm x 60°	K1-16-30	55	16	17	60-61	17	KT-100JN	TN-HS-10
	HAS-12A06	12 in.	1.5mm x 60°	K1-21-30	55	22	23	-	23	KT-128JN	TN-HS-12
	HAS-12A08	12 in.	1.5mm x 60°	K1-21-30	55	22	23	-	23	KT-128JN	TN-HS-12
	HC-04	4 in.	1.5mm x 60°	K1-10-14	CALL	16	17	-	17	KT-45JN	TN-HC-04
	HC-05	5 in.	1.5mm x 60°	K1-10-19	CALL	-	-	-	-	-	TN-HC-05
	HC-06	6 in.	1.5mm x 60°	K1-12-20	55	18	19	60-61	19	KT-61JN	TN-HCH-HC-
	HC-08	8 in.	1.5mm x 60°	K1-14-25	55	12	13	60-61	21	KT-80JN	TN-HCH-HC-
	HC-10	10 in.	1.5mm x 60°	K1-16-30	55	16	17	60-61	17	KT-101JN	TN-HCH-HC-
	HC-12	12 in.	1.5mm x 60°	K1-18-30	55	20	21	60-61	21	KT-120JN	TN-HCH-HC-
	HC-15	15 in.	1.5mm x 60°	K1-26-43	55	36	37	-	37	-	-
	HC-18	18 in.	1.5mm x 60°	K1-26-43	55	36	37	-	37	-	-
	HC-21	21 in.	3.0mm x 60°	K3-25-60	CALL	34	35	-	-	NONE T-NUT	TXN-HC-21-
	HC-24	24 in.	3.0mm x 60°	K3-25-60	CALL	34	35	-	-	NONE T-NUT	TXN-HC-21-
	HCH-04	4 in.	1.5mm x 60°	K1-08-15	CALL	-	-	-	-	-	TN-HCH-04
	HCH-06	6 in.	1.5mm x 60°	K1-12-20	55	18	19	60-61	19	KT-61JN	TN-HCH-HC-
	HCH-08	8 in.	1.5mm x 60°	K1-14-25	55	12	13	60-61	13	KT-80JN	TN-HCH-HC-
	HCH-10	10 in.	1.5mm x 60°	K1-16-30	55	16	17	60-61	17	KT-101JN	TN-HCH-HC-
	HCH-12	12 in.	1.5mm x 60°	K1-18-30	55	20	21	60-61	21	KT-120JN	TN-HCH-HC-
	HCH-15	18 in.	1.5mm x 60°	K1-22-43	55	26	27	-	27	KT-153JN	TN-HCH-15-
	HCH-18	18 in.	1.5mm x 60°	K1-22-43	55	26	27	-	27	KT-153JN	TN-HCH-15-
	HCH-21	21 in.	3.0mm x 60°	K3-25-60	CALL	34	35	-	-	KT-240JN	TN-HCH-21-
	HCH-24	21 in.	3.0mm x 60°	K3-25-60	CALL	34	35	-	-	KT-240JN	TN-HCH-21-
	HH-206	6 in.	1.5mm x 60°	K1-12-20	55	18	19	60-61	19	KT-60JN	TN-HS-06
HH-208	8 in.	1.5mm x 60°	K1-14-25	55	12	13	60-61	13	KT-81JN	TN-HS-08	
HH-210	10 in.	1.5mm x 60°	K1-16-30	55	16	17	60-61	17	-	-	
HH-212	12 in.	1.5mm x 60°	K1-21-30	55	22	23	-	23	KT-128JN	TN-HS-12	
HST-06	6 in.	1.5mm x 60°	K1-12-20	55	18	19	60-61	19	KT-60JN	TN-HS-06	
HST-08	8 in.	1.5mm x 60°	K1-14-25	55	12	13	60-61	13	KT-81JN	TN-HS-08	
HST-10	10 in.	1.5mm x 60°	K1-16-30	55	24	25	60-61	25	KT-100JN	TN-HS-10	
HST-12	12 in.	1.5mm x 60°	K1-21-30	55	22	23	-	23	KT-128JN	TN-HS-12	
SCHUNK	HSL 400	400mm/16in	3/32 X 90 D	I3-100-138	-	40	41	-	-	CALL	-
	ROTA NC 400	400mm/16in	3/32 X 90 D	I3-100-138	-	40	41	-	-	CALL	-
	ROTA NCF 400	400mm/16in	3/32 X 90 D	I3-100-138	-	40	41	-	-	CALL	-
	HSG 400	400mm/16in	3/32 X 90 D	I3-100-138	-	40	41	-	-	CALL	-
	ROTA NC 165	165mm/7in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
	ROTA NC 165-210	165mm/7in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
	ROTA NC 210	210mm/9in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
	ROTA NC 400	400mm/16in	3/32 X 90 D	I3-100-138	-	40	41	-	-	CALL	-
	ROTA NCD 210	210mm/9in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
	ROTA NCD 400	400mm/16in	3/32 X 90 D	I3-100-138	-	40	41	-	-	CALL	-
	ROTA NCF 160	165mm/7in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
	ROTA NCF 160-200	160mm/7in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
	ROTA NCF 200	210mm/9in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
	ROTA NCF 250	250mm/10in	1.5MM X 60°	K1-16-30	55	24	25	64-65	-	CALL	-
	ROTA NCF 400	400mm/16in	3/32 X 90 D	I3-100-138	-	40	41	-	-	CALL	-
	ROTA NCK 165	165mm/7in	1.5MM X 60°	K1-12-20	55	18	19	64-65	19	KT-60JN	-
	ROTA NCK 210	210mm/9in	1.5MM X 60°	K1-14-25	55	12	13	60-61	13	KT-81JN	-
	ROTA NCK 250	250mm/10in	1.5MM X 60°	K1-16-30	55	16	17	64-65	17	KT-100JN	-
	ROTA NCK 315	315mm/13in	1.5MM X 60°	K1-21-30	55	22	23	-	23	KT-128JN	-
	TH 165-210	210mm/9in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
	TH 400-500	500mm/20in	3/32 X 90 D	I3-100-138	-	40	41	-	-	CALL	-
	THF 165-210	210mm/9in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
	THF 400-500	500mm/20in	3/32 X 90 D	I3-100-138	-	40	41	-	-	CALL	-

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

EASY JAW FINDER

For 1.5mm x 60°, 3.0mm x 60°, 1/16 x 90° & 3/32 x 90° Serration Chucks

SEOAM, SMW AUTOBLOK

Jaw Chuck Manufacturer	Chuck Model	Chuck Size	Serration Type	Jaw Group	Catalog Page Number					Jaw Nut & Keys Part Numbers	OEM Chuck Mfg Jawnut
					Hard Jaws	Round Jaws	Soft Jaws	Claw Jaws	Jaw Nuts		
SEOAM	CAH-05	5"	1.5MM X 60°	K1-10-14	CALL	8	9	-	CALL	CALL	CALL
	CAH-06	6"	1.5MM X 60°	K1-12-20	CALL	10	11	-	CALL	CALL	CALL
	CAH-08	8"	1.5MM X 60°	K1-14-25	55	12	13	60-61	CALL	CALL	CALL
	CAH-10	10"	1.5MM X 60°	K1-16-30	55	16	17	60-61	CALL	CALL	CALL
	CAH-12	12"	1.5MM X 60°	K1-21-30	55	22	23	60-61	CALL	CALL	CALL
	CAH-15	15"	1.5MM X 60°	K1-22-43	55	26	27	60-61	CALL	CALL	CALL
	CAH-18	18"	1.5MM X 60°	K1-22-43	55	26	27	60-61	CALL	CALL	CALL
	CAH-21	21"	3.0MM X 60°	K3-25-60	56	34	35	-	CALL	CALL	CALL
CAH-24	24"	3.0MM X 60°	K3-25-60	56	34	35	-	CALL	CALL	CALL	
SMW AUTOBLOK	ALM-165	165mm/7in	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	73061602
	ALM-210	210mm/9in	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	73061602
	ALM-250	250mm/10in	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	73062501
	ALM-305/315	305mm/13in	1.5MM X 60°	K1-21-30	55	22	23	-	-	CALL	73063050
	ALM-400	400mm/16in	1.5MM X 60°	K1-26-38	-	-	39	-	-	CALL	12065020
	AND 125	125mm/5in	1/16X90°	I1-47-59	-	36	37	-	-	CALL	-
	AND 210	210mm/9in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
	AND-250	250mm/10in	1/16X90°	I1-82-118	-	38	39	-	-	CALL	73063050
	AND-305/315	305mm/13in	1/16X90°	I1-82-118	-	38	39	-	-	CALL	73063050
	AND-400	400mm/16in	3/32 X 90 D	I3-100-156	-	40	41	-	-	CALL	12065020
	ANM 165	165mm/7in	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	-
	ANM 250	250mm/10in	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	-
	ANM 315	315mm/13in	1.5MM X 60°	K1-21-30	55	22	23	-	-	CALL	-
	ANM-210	210mm/9in	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	73061602
	ANM-305/315	305mm/13in	1.5MM X 60°	K1-21-30	55	30	31	-	-	CALL	73063050
	ANM-400	400mm/16in	1.5MM X 60°	K1-26-38	-	-	39	-	-	CALL	12065020
	BB 500-ES	500mm/20in	3/32 X 90 D	I3-100-156	-	40	41	-	-	CALL	-
	BB 630-ES 265	265mm/11in	3/32 X 90 D	I3-100-156	-	40	41	-	-	CALL	-
	BB-D 210	210mm/9in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
	BBD-210	210mm/9in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	73062150
	BBD-250	250mm/10in	1/16X90°	I1-82-118	-	38	39	-	-	CALL	73063050
	BBD-305/315	305mm/13in	1/16X90°	I1-82-118	-	38	39	-	-	CALL	73063050
	BBM-175	175mm/7in	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	73061602
	BBM-210	210mm/9in	1.5MM X 60°	K1-14-25	55	20	21	60-61	-	CALL	73061602
	BBM-250	250mm/10in	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	73062501
	BBM-305/315	305mm/13in	1.5MM X 60°	K1-21-30	55	22	23	-	-	CALL	73063050
	BH-D 210	210mm/9in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
	BHD-210	210mm/9in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	73062150
	BHD-250	250mm/10in	1/16X90°	I1-82-118	-	38	39	-	-	CALL	73063050
	BHD-305/315	305mm/13in	1/16X90°	I1-82-118	-	38	39	-	-	CALL	73063050
	BHD-FC 210	210mm/9in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	-
	BH-FCD210	210mm/9in	1/16X90°	I1-66-87	-	36	37	-	-	CALL	73062150
	BH-FCD250	250mm/10in	1/16X90°	I1-82-118	-	38	39	-	-	CALL	73063050
	BH-FCD305/315	305mm/13in	1/16X90°	I1-82-118	-	38	39	-	-	CALL	73063050
	BH-FCD500	500mm/20in	3/32 X 90 D	I3-100-156	-	40	41	-	-	CALL	12065020
	BH-FCD630	630mm/25in	3/32 X 90 D	I3-100-156	-	40	41	-	-	CALL	12065020
	BHM-165	165mm/7in	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	73061602
	BHM-210	210mm/9in	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	73061602
	BHM-250	250mm/10in	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	73062501
	BHM-305/315	305mm/13in	1.5MM X 60°	K1-21-30	55	22	23	-	-	CALL	73063050
BHM-FC 165	165mm/7in	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	-	
BHM-FC 250	250mm/10in	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	-	
BHM-FC165	165mm/7in	1.5MM X 60°	K1-12-20	55	18	19	60-61	-	CALL	73061602	
BHM-FC210	210mm/9in	1.5MM X 60°	K1-14-25	55	12	13	60-61	-	CALL	73061602	
BHM-FC250	250mm/10in	1.5MM X 60°	K1-16-30	55	16	17	60-61	-	CALL	73062501	
BHM-FC305/315	305mm/13in	1.5MM X 60°	K1-21-30	55	22	23	-	-	CALL	73063050	

Call Us Today For All Of Your Machine Tool Needs!

EASY JAW FINDER

For 1.5mm x 60° & 3.0mm x 60° Serration Chucks

STRONG, TONFOU

Jaw Chuck Manufacturer	Chuck Model	Chuck Size	Serration Type	Jaw Group	Catalog Page Number					Jaw Nut & Keys Part Numbers	OEM Chuck Mfg Jawnut
					Hard Jaws	Round Jaws	Soft Jaws	Claw Jaws	Jaw Nuts		
STRONG / AUTO STRONG	N-204	4 in.	1.5mm x 60°	K1-10-14	CALL	16	17	-	17	KT-45JN	-
	N-205	5 in.	1.5mm x 60°	K1-10-14	CALL	16	17	-	17	KT-45JN	-
	N-206	6 in.	1.5mm x 60°	K1-12-20	55	18	19	60-61	19	KT-61JN	-
	N-208	8 in.	1.5mm x 60°	K1-14-25	55	12	13	60-61	13	KT-80JN	-
	N-210	10 in.	1.5mm x 60°	K1-16-30	55	16	17	60-61	17	KT-101JN	-
	N-212	12 in.	1.5mm x 60°	K1-21-30	55	22	23	-	23	KT-128JN	-
	N-215	15 in.	1.5mm x 60°	K1-22-43	55	26	27	-	27	KT-153JN	-
	N-218	18 in.	1.5mm x 60°	K1-22-43	55	26	27	-	27	KT-153JN	-
	N-220	20 in.	3.0mm x 60°	K3-25-60	CALL	34	35	-	-	-	-
	N-224	24 in.	3.0mm x 60°	K3-25-60	CALL	34	35	-	-	-	-
	NT-205	5 in.	1.5mm x 60°	K1-10-14	CALL	16	17	-	17	KT-45JN	-
	NT-206	6 in.	1.5mm x 60°	K1-12-20	55	18	19	60-61	19	KT-61JN	-
	NT-208	8 in.	1.5mm x 60°	K1-14-25	55	12	13	60-61	13	KT-80JN	-
	NT-210	10 in.	1.5mm x 60°	K1-16-30	55	16	17	60-61	17	KT-101JN	-
	NT-212	12 in.	1.5mm x 60°	K1-21-30	55	22	23	-	23	KT-128JN	-
	NT-215	15 in.	1.5mm x 60°	K1-22-43	55	26	27	-	27	KT-153JN	-
	NIT-208	8 in.	1.5mm x 60°	K1-14-25	55	12	13	60-61	13	KT-80JN	-
	NIT-210	10 in.	1.5mm x 60°	K1-16-30	55	16	17	60-61	17	KT-101JN	-
	NIT-212	12 in.	1.5mm x 60°	K1-21-30	55	22	23	-	23	KT-128JN	-
	NIT-215	15 in.	1.5mm x 60°	K1-22-43	55	26	27	-	27	KT-153JN	-
	V-206	6 in.	1.5mm x 60°	K1-12-20	55	18	19	60-61	19	KT-61JN	-
	V-208	8 in.	1.5mm x 60°	K1-14-25	55	12	13	60-61	13	KT-80JN	-
	V-210	10 in.	1.5mm x 60°	K1-16-30	55	16	17	60-61	17	KT-101JN	-
	V-212	12 in.	1.5mm x 60°	K1-18-30	55	20	21	60-61	21	KT-120JN	-
V-215	15 in.	1.5mm x 60°	K1-26-43	55	28	29	-	29	KT-151JN	-	
V-218	18 in.	1.5mm x 60°	K1-26-43	55	28	29	-	29	KT-151JN	-	
TONFOU	TF-3B5	5"	1.5mm x 60°	K1-10-14	CALL	16	17	-	17	CALL	CALL
	TF-3B6	6"	1.5mm x 60°	K1-12-20	55	18	19	60-61	19	CALL	CALL
	TF-3B8	8"	1.5mm x 60°	K1-14-25	55	20	21	60-61	21	CALL	CALL
	TF-3B10	10"	1.5mm x 60°	K1-16-30	55	16	17	60-61	17	CALL	CALL
	TF-3B12	12"	1.5mm x 60°	K1-21-30	55	22	23	-	23	CALL	CALL

SPECIAL ORDER JAWS AVAILABLE!

**SPECIAL ROUND JAWS
UP TO 32" DIA!**

**SPECIAL SOFT JAWS
UP TO 8" HEIGHT!**

- Super Quick Turnaround Time- 5 Days Or Less In Most Cases!
- Soft Jaws Available In Any Length Steel Or Aluminum
- Tongue And Groove, Square Serrated & Acme Serrated Jaws Up To 8" Height!
- Made Per Your Special Specifications In The USA!

FAST TURNAROUND TIME!

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

553

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

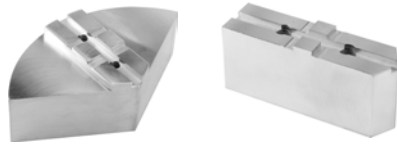
CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

EASY JAW FINDER

For American Standard Tongue & Groove Chucks



Jaw Chuck Manufacturer	Chuck Model	Chuck Size	Jaw Lock Type	Jaw Group	Catalog Page Number		
					Hard Jaws	Round Jaws	Soft Jaws
ATLAS, TMX, BERG, BISON, BTC, BUCK, CUSHMAN, PBA, SCA, YUASA	4"	1/4	ASTG-MEDIUM DUTY	TI-25-1/4-11	-	-	51
	5"	5/16	ASTG-MEDIUM DUTY	TI-31-5/16-12	-	42	43
	6"	3/8	ASTG-MEDIUM DUTY	TI-31-3/8-15	57	42	43
	8"	3/8	ASTG-MEDIUM DUTY	TI-31-3/8-17	57	42	43
	10"	1/2	ASTG-MEDIUM DUTY	TI-50-1/2-21	57	44	45
	12"	1/2	ASTG-MEDIUM DUTY	TI-50-1/2-25	57	44	45
	15"	5/8	ASTG-MEDIUM DUTY	TI-50-5/8-30	57	46	47

Jaw Chuck Manufacturer	Chuck Model	Chuck Size	Jaw Lock Type	Jaw Group	Catalog Page Number		
					Hard Jaws	Round Jaws	Soft Jaws
ATLAS, AMESTRA, BERG, BISON, BTC, BUCK, CUSHMAN, PBA, SCA, YUASA	6"	7/16	ASTG-HEAVY DUTY	TI-31-7/16-15	-	42	43
	8"	1/2	ASTG-HEAVY DUTY	TI-31-1/2-17	-	42	43
	10"	5/8	ASTG-HEAVY DUTY	TI-50-5/8-21	-	44	45
	12"	5/8	ASTG-HEAVY DUTY	TI-50-5/8-25	57	44	45
	15"	3/4	ASTG-HEAVY DUTY	TI-50-3/4-30	-	46	47
	18"	3/4	ASTG-HEAVY DUTY	TI-50-3/4-30	-	46	47

Jaw Chuck Manufacturer	Chuck Model	Chuck Size	Jaw Lock Type	Jaw Group	Catalog Page Number		
					Hard Jaws	Round Jaws	Soft Jaws
Warner & Swasey	8"	1/2	ASTG FOR W&S	TI-31-1/2-17	-	42	43
	10"	5/8	ASTG FOR W&S	TI-50-5/8-21	-	44	45
	12"	5/8	ASTG FOR W&S	TI-50-5/8-25	57	44	45
	15"	3/4	ASTG FOR W&S	TI-50-3/4-30	-	46	47
	18"	3/4	ASTG FOR W&S	TI-50-3/4-30	-	46	47

Jaw Chuck Manufacturer	Chuck Model/Size	Jaw Lock Type	Jaw Group	Catalog Page Number		
				Hard Jaws	Round Jaws	Soft Jaws
SCHUNK, SMW SYSTEMS, SMW AUTOBLOK, FORK-ARDT, ROHM QUICK CHANGE CHUCKS	140MM / 160MM / 165MM / 170MM / 175MM	METRIC TONGUE & GROOVE	TK-08-08-32	-	49	49
	200MM / 210MM / 225MM	METRIC TONGUE & GROOVE	TK-10-08-40	-	49	49
	250MM / 265MM / 280MM	METRIC TONGUE & GROOVE	TK-12-12-40	-	49	49
	315MM & LARGER	METRIC TONGUE & GROOVE	TK-12-12-54	-	49	49

For Acme/Square Serrated



Jaw Chuck Manufacturer	Chuck Model	Jaw Lock Type	Jaw Group	Catalog Page Number					Master Key Part Number	Master Key Page
				Hard Jaws	Round Jaws	Soft Jaws	Jaw Nuts	Jaw Nut & Keys		
CUSHMAN, HOWA, LOGANSPORT, PBA, SMW AUTOBLOK	8in	ACME SER	AI-06-1/2-12	-	50	51	51	51	AC-80AK	51
	10in	ACME SER	AI-07-1/2-17	58	50	51	51	51	AC-120AK/	51
	12in	ACME SER	AI-08-5/8-20	58	50	51	51	51	AC-120AK/	51
	15 - 18	ACME SER	AI-10-3/4-25	58	50	51	51	51	AC-150AK/	51
	21-24	ACME SER	AI-12-7/8-30	-	50	51	51	51	AC-210AK	51
MMK MATSUMOTO	HH, HHA, HHJ 21"-24"	ACME SER	AI-12-7/8-30	-	50	51	-	-	CALL	-
	HH, HHA, HHJ 28"-40"	ACME SER	AI-12-7/8-30	-	50	51	-	-	CALL	-

Jaw Chuck Manufacturer	Chuck Model	Jaw Lock Type	Jaw Group	Catalog Page Number					Master Key Part Number	Master Key Page
				Hard Jaws	Round Jaws	Soft Jaws	Jaw Nuts	Jaw Nut & Keys		
BUCK, GISHOLT, PBA, SP, WARNER & SWASSEY	8in	SQUARE SER	SI-05-3/8-14	-	52	53	53	53	SP-80SQK	53
	10in	SQUARE SER	SI-07-1/2-17	58	52	53	53	53	SP-120SQK	53
	12in	SQUARE SER	SI-07-5/8-17	58	52	53	53	53	SP-120SQK	53
	15in-18in	SQUARE SER	SI-10-3/4-25	58	52	53	53	53	SP-150SQK/	53
	20in-24in	SQUARE SER	SI-10-3/4-30	-	52	53	53	61	SP-210SQK	53

Call Us Today For All Of Your Machine Tool Needs!

SPECIAL ORDER JAW FORMS

METRIC & IMPERIAL SERRATIONS

Customer #: _____

Date: _____

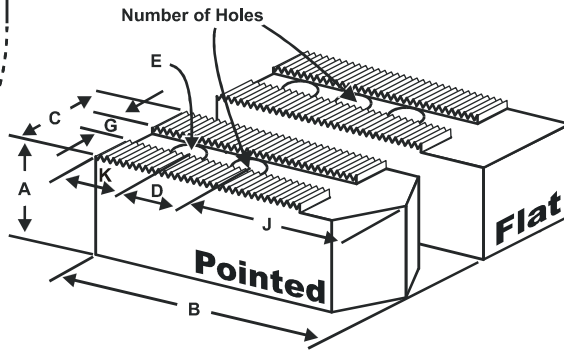
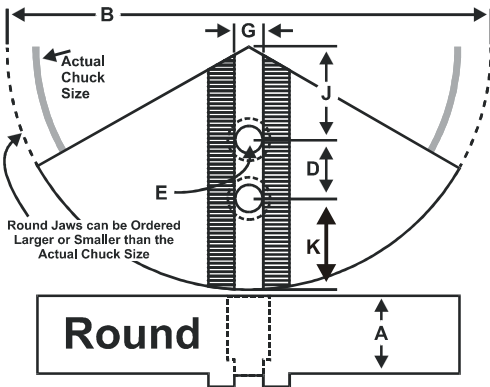
Company Name: _____ Your Name: _____

Address: _____

Phone: _____ FAX: _____

PLEASE NOTE: Special Order jaws are NON-REFUNDABLE. Special Order Soft Jaws have a 3 set (9 piece) minimum. Special Order Round Jaws have no minimum.

Angle of Tooth	Pitch	Style of Jaw you Need	Number of Holes
<input type="checkbox"/> 60° 	<input type="checkbox"/> 1.5 mm (.059")	1.5 mm X 60° Serrations	2 Holes Only
	<input type="checkbox"/> 3.0 mm (.118")	3.0 mm X 60° Serrations	
<input type="checkbox"/> 90° 	<input type="checkbox"/> 1/16 inch	1/16" X 90° Serrations	<input type="checkbox"/> 2 Holes
	<input type="checkbox"/> 3/32 inch	3/32" X 90° Serrations	<input type="checkbox"/> 3 Holes



Style of Jaw: _____ Quantity (in sets of 3) : _____

Actual Chuck Size	Critical Dimensions			Dimensions			Material & Style		
	G Groove Width	E Screw Size	D Hole Space	J Hole to Front	C Width Inch	B Length or Dia.	A Height Inch	Steel Aluminum or Cast Iron	Flat or Pointed or Round

Chuck Make & Model Number _____

Chuck make and model number may help us provide better service to you.

PLEASE FILL OUT IF PLACING AN ORDER:

PO#: _____ Customer Signature: _____ Date: _____

OFFICE USE ONLY

Quoted By: _____

List Price per Set: _____ (Valid for 30 Days) Job#: _____

Order Will Ship _____ days after receipt of order (i.e. PO#) Quote#: _____

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

555

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

SPECIAL ORDER JAW FORMS

AMERICAN STANDARD TONGUE & GROOVE

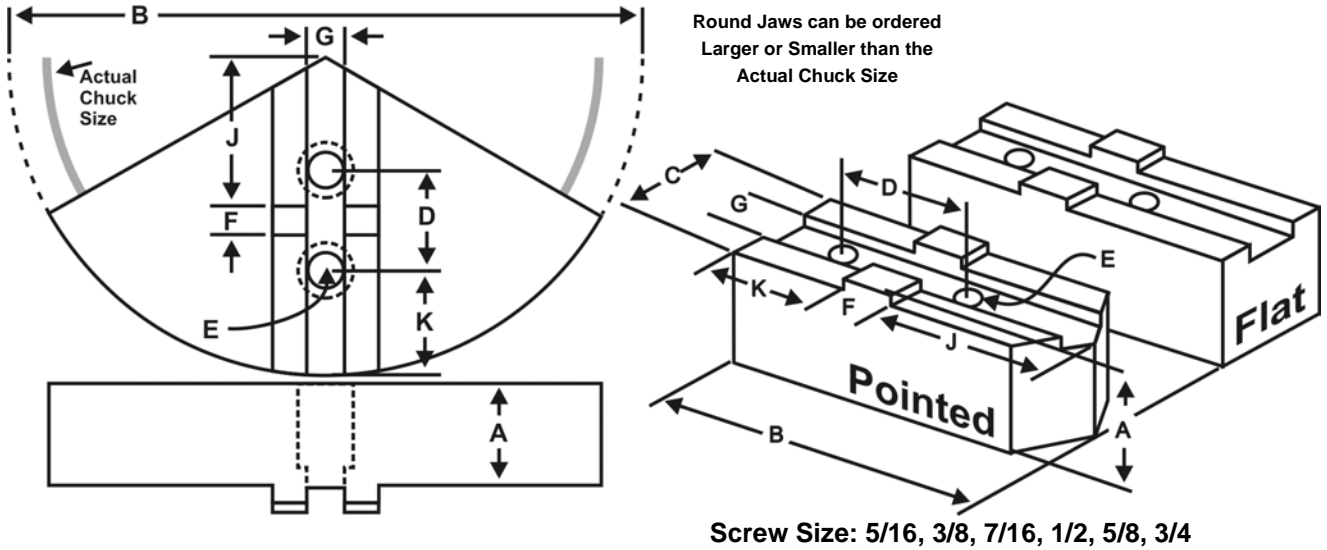
Customer #: _____ Date: _____

Company Name: _____ Your Name: _____

Address: _____

Phone: _____ FAX: _____

PLEASE NOTE: Special Order jaws are NON-REFUNDABLE. Special Order Soft Jaws have a 3 set (9 piece) minimum. Special Order Round Jaws have no minimum.



Style of Jaw: _____ Quantity (in sets of 3) : _____

Actual Chuck Size	Critical Dimensions			Dimensions					Material & Style	
	G Groove Width	E Screw Size	D Hole Space	F Tongue Width	J Tongue Front	C Width Inch	B Length or Dia.	A Height Inch	Steel Aluminum or Cast Iron	Flat or Pointed or Round

Chuck Make & Model Number _____

Chuck make and model number may help us provide better service to you.

PLEASE FILL OUT IF PLACING AN ORDER:

PO#: _____ Customer Signature: _____ Date: _____

OFFICE USE ONLY

Quoted By: _____

List Price per Set: _____ (Valid for 30 Days) Job#: _____

Order Will Ship _____ days after receipt of order (i.e. PO#) Quote#: _____

Call Us Today For All Of Your Machine Tool Needs!

SPECIAL ORDER JAW FORMS

SQUARE SERRATED STYLE

Customer #: _____

Date: _____

Company Name: _____

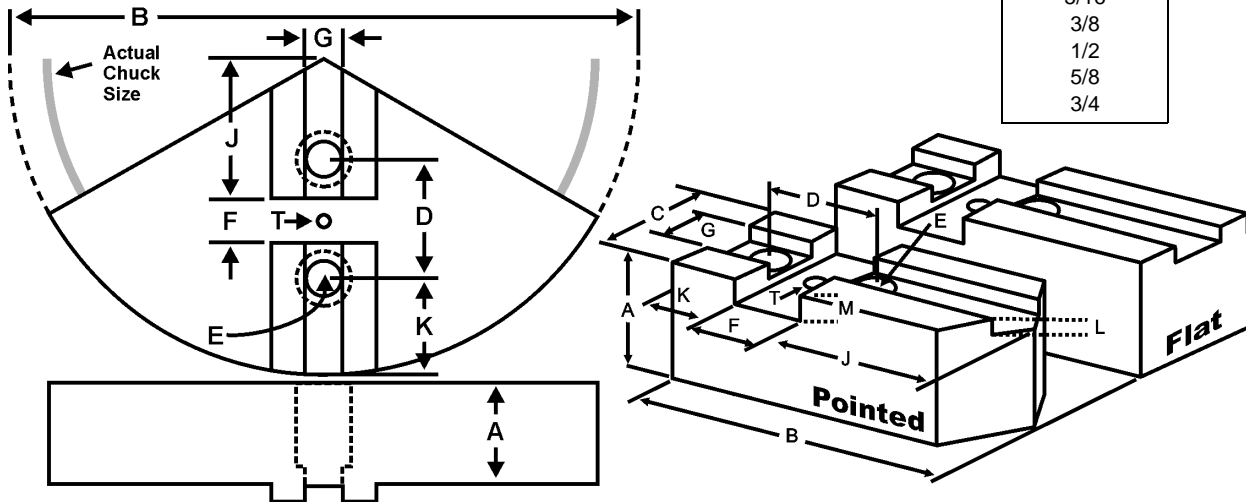
Your Name: _____

Address: _____

Phone: _____ FAX: _____

PLEASE NOTE: Special Order jaws are NON-REFUNDABLE. Special Order Soft Jaws have a 3 set (9 piece) minimum. Special Order Round Jaws have no minimum.

Screw Sizes:
5/16
3/8
1/2
5/8
3/4



Style of Jaw: _____ Quantity (in sets of 3) : _____

Critical Dimensions							Dimensions					Material & Style	
Actual Chuck Size	G Groove Width	M Groove Depth	E Screw Size	F Key Width	L Key Depth	D Hole Space	J Key to Front	T Thread Size	C Width Inch	B Length or Dia.	A Height Inch	Steel Aluminum or Cast Iron	Flat or Pointed or Round

Chuck Make & Model Number _____

Chuck make and model number may help us provide better service to you.

PLEASE FILL OUT IF PLACING AN ORDER:

PO#: _____ Customer Signature: _____ Date: _____

OFFICE USE ONLY

Quoted By: _____

List Price per Set: _____ (Valid for 30 Days) Job#: _____

Order Will Ship _____ days after receipt of order (i.e. PO#) Quote#: _____

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

SPECIAL ORDER JAW FORMS

ACME SERRATED STYLE

Customer #: _____

Date: _____

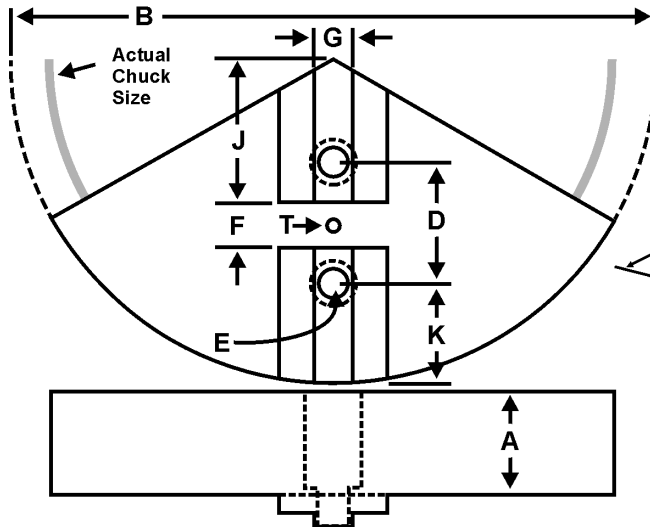
Company Name: _____

Your Name: _____

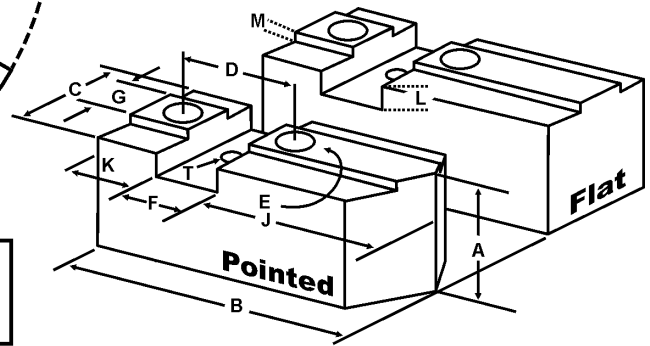
Address: _____

Phone: _____ FAX: _____

PLEASE NOTE: Special Order jaws are NON-REFUNDABLE. Special Order Soft Jaws have a 3 set (9 piece) minimum. Special Order Round Jaws have no minimum.



Screw Sizes:	
1/2	
5/8	
3/4	
7/8	



Style of Jaw: _____ Quantity (in sets of 3) : _____

Critical Dimensions							Dimensions					Material & Style	
Actual Chuck Size	G Tongue Width	M Tongue Depth	E Screw Size	F Key Width	L Key Depth	D Hole Space	J Key to Front	T Thread Size	C Width Inch	B Length or Dia.	A Height Inch	Steel Aluminum or Cast Iron	Flat or Pointed or Round

Chuck Make & Model Number _____

Chuck make and model number may help us provide better service to you.

PLEASE FILL OUT IF PLACING AN ORDER:

PO#: _____ Customer Signature: _____ Date: _____

OFFICE USE ONLY	Quoted By: _____
List Price per Set: _____ (Valid for 30 Days)	Job#: _____
Order Will Ship _____ days after receipt of order (i.e. PO#)	Quote#: _____

Call Us Today For All Of Your Machine Tool Needs!

SPECIAL ORDER JAW FORMS

FOR NORTHFIELD™ STYLE CHUCKS

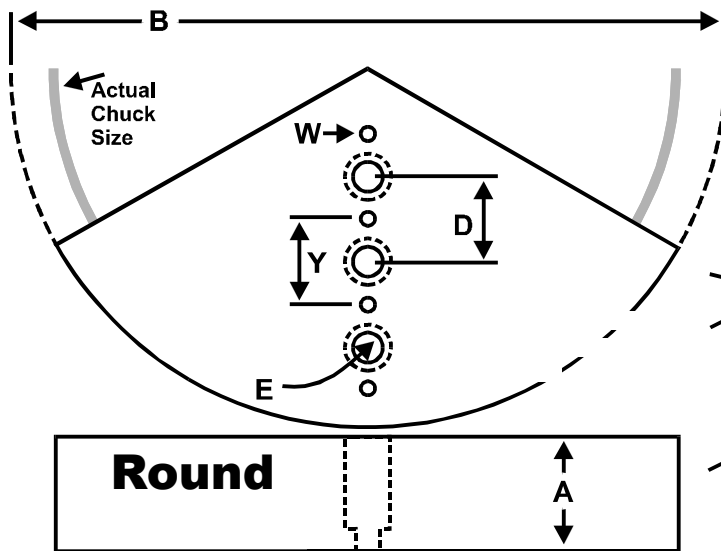
Customer #: _____ Date: _____

Company Name: _____ Your Name: _____

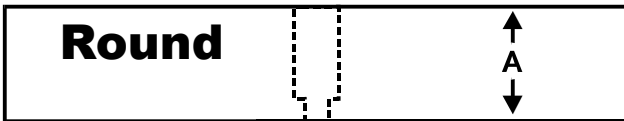
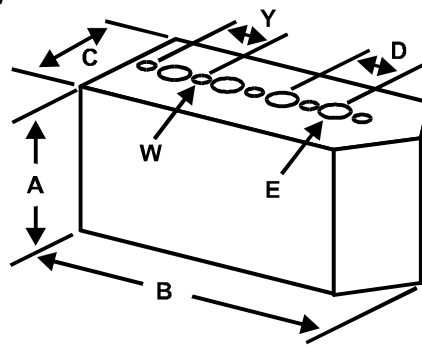
Address: _____

Phone: _____ FAX: _____

PLEASE NOTE: Special Order jaws are NON-REFUNDABLE. Special Order Soft Jaws have a 3 set (9 piece) minimum. Special Order Round Jaws have no minimum.



Round Jaws can be ordered Larger or Smaller than the Actual Chuck Size
Northfield is a trademark of Northfield Precision Instrument Corp.



Style of Jaw: _____ Quantity (in sets of 3) : _____

Actual Chuck Size	No. Of Pin Holes	No. Of Screw Holes	Critical Dimensions				Dimensions			Material & Style		
			W Pin Hole Size	Y Pin Space	E Screw Size	D Hole Space	C Width Inch	B Length or Dia.	A Height Inch	Steel or Aluminum	Pointed or Round	

Chuck Make & Model Number _____

Chuck make and model number may help us provide better service to you.

PLEASE FILL OUT IF PLACING AN ORDER:

PO#: _____ Customer Signature: _____ Date: _____

OFFICE USE ONLY

Quoted By: _____

List Price per Set: _____ (Valid for 30 Days) Job#: _____

Order Will Ship _____ days after receipt of order (i.e. PO#) Quote#: _____

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

559

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

SPECIAL ORDER JAW FORMS

SPECIAL ORDER HARD JAWS

Customer #: _____

Date: _____

Your Name: _____

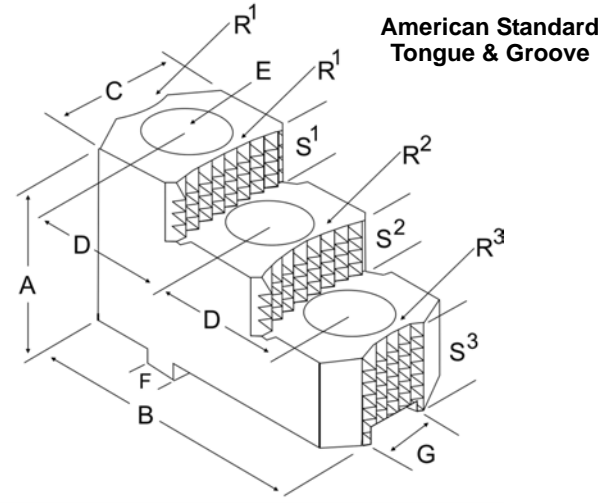
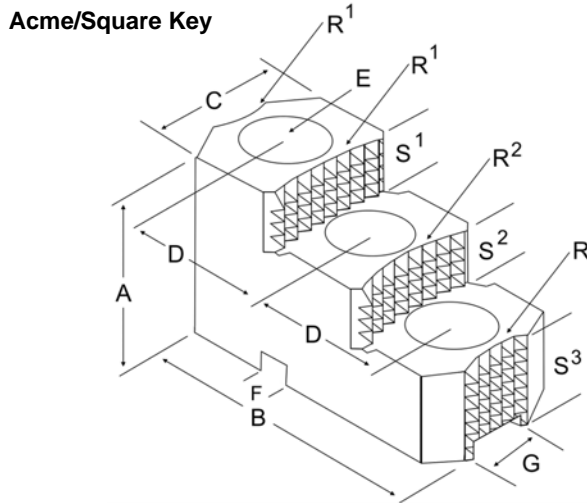
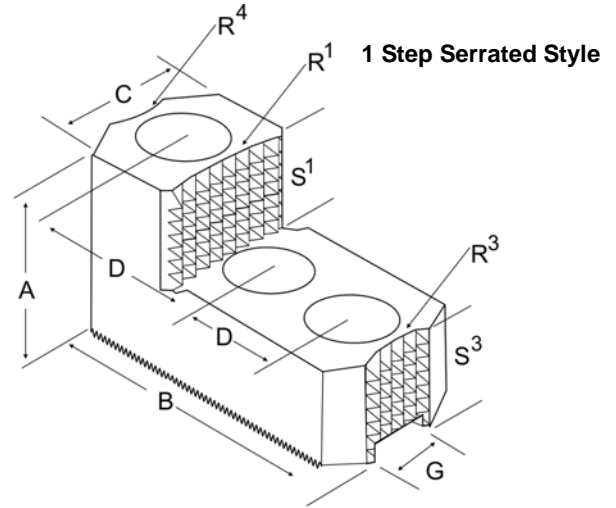
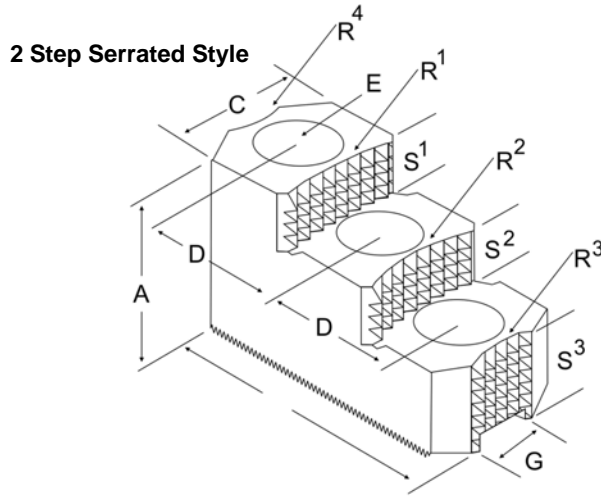
Company Name: _____

Address: _____

Email: _____

Phone: _____

FAX: _____



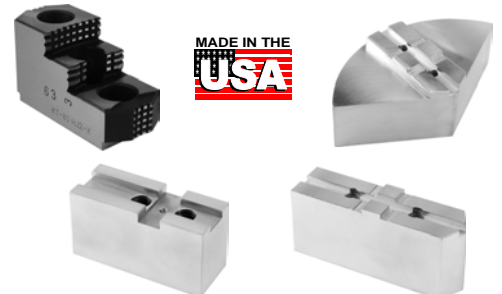
Actual Chuck Size	Critical Dimensions			Dimensions					Special Radius				Step Heights		
	G Groove Width	E Screw Size	D Hole Space	F Key Width	J Hole to Front	C Width Inch	B Length or Dia.	A Height Inch	Radius R1	Radius R2	Radius R3	Radius R4	Step 1 S1	Step 2 S2	Step 3 S3

SPECIAL ORDER JAWS AVAILABLE!



Please Call Today For A Quote!

- Super Quick Turnaround Time On Soft and Round Jaws!- 3 Days Or Less In Most Cases!
- Special Order Round Jaws Up To 32"
- Special Order Soft Jaws Up To 8" Height!
- Soft Jaws Available In Any Length-Steel Or Aluminum
- Tongue And Groove, Square Serrated & Acme Serrated Jaws Up To 8" Height!
- Made Per Your Special Specifications In The USA! Please See Our Special Order Forms On Pages 555-560.



Call Us Today For All Of Your Machine Tool Needs!

SPECIAL ORDER RETENTION KNOBS

Customer #: _____

Date: _____

Company Name: _____ Your Name: _____

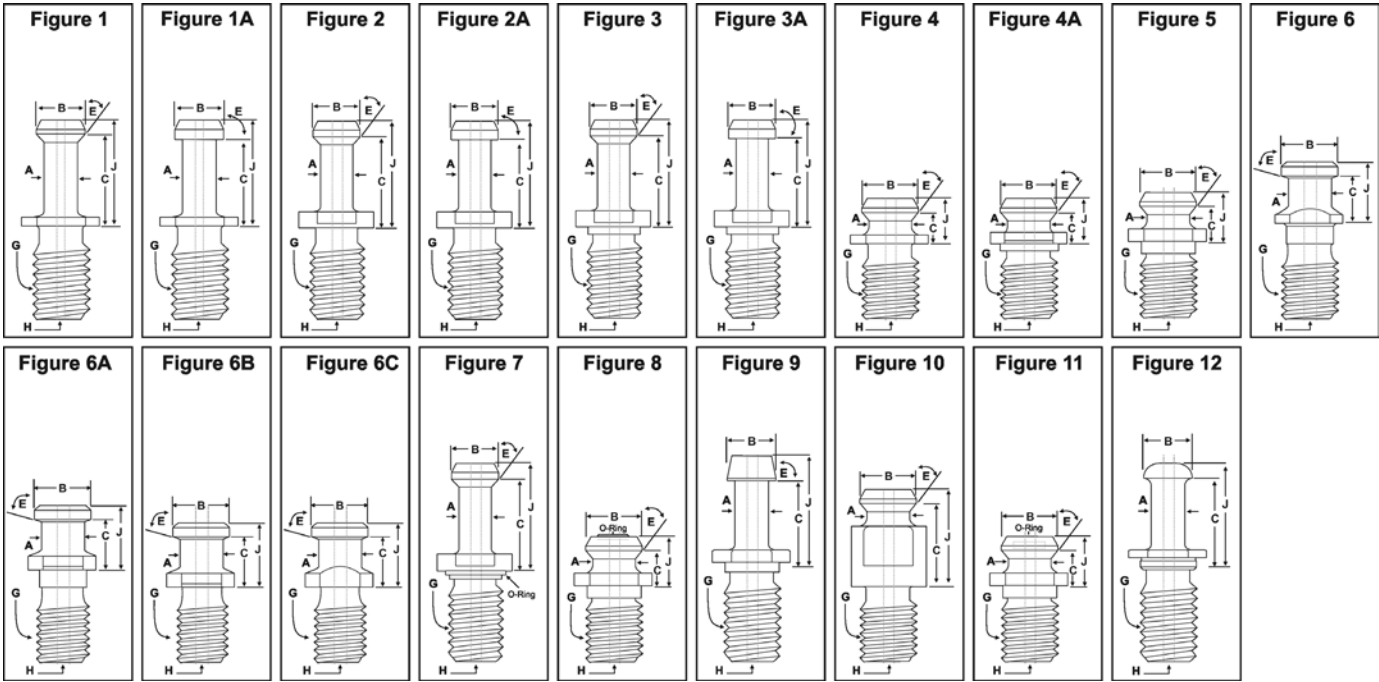
Address: _____

Phone: _____ FAX _____

How to Order Retention Knobs:

Retention Knobs come in many shapes and sizes. Many machining center manufacturers use different Knob configurations on each of their models. Please provide us with the following information when ordering knobs:

1. Your machining center's size and flange type (CAT or BT) 2. The Brand Name of your machining center.
 3. Its configuration (Vertical or Horizontal) 4. The Model Number (if known) 5. It may also help if you have a competitor's part number.
- Even if your machining center is unknown to us or has undergone a spindle modification, we'll probably be able supply you with the correct knob from our stock. Take a look at these drawings. They show the important dimensions which usually determine the exact knob needed. Please have these dimensions ready when you call us to place your order.



Make of Machine _____ Model of Machine _____

Size of Tool Holder _____ Taper of Tool Holder _____

A Diameter of Neck	B Diameter of Head	C Full Neck Length	E Angle of Head Taper	F Coolant Hole Diameter	G Thread Size	Style of Knob Above

PO #: _____ Customer Signature: X _____
 (Fill in only if placing an order) (Sign only at the time of placing an order)

Office Use Only Quoted By: _____

List Price each: _____ (Valid for 30 Days) Job #: _____

Order will ship _____ days after receiving order (i.e. PO#) Quote _____

Call Us Or Visit Our Website For Our Complete Selection!

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBRURING

COOLANT/FLUIDS
TOOL STORAGE



PRODUCT OFFERING

HSS, Cobalt & Solid Carbide Cutting Tools

- **Drills** General Purpose & Heavy Duty, Taper Shank, Silver & Deming, Spotting & Centering, Annular (Sluggler)
- **Reamers** Chucking, Hand, Bridge, Car, Taper Pin & Pipe, Shell
- **End Mills** Regular, Long, & Extra-Long Lengths, Ball Nose Dovetail & Corner Rounding Cutters
- **Milling Cutters** Side, Plain & Staggered Tooth, Concave, Convex, Double & Single Angle, Woodruff Key Seat, Shell, Involute Gear
- **Saws** Jewelers, Screw Slotting, Slitting
- **Taps** Performance, Regular & Special Thread Hand Taps, Pipe
- **Dies** Round Adjustable, RH, LH, Regular & Special Threads
- **Counterbores & Countersinks** Capscrew, Combined

Rotary Tool Holders

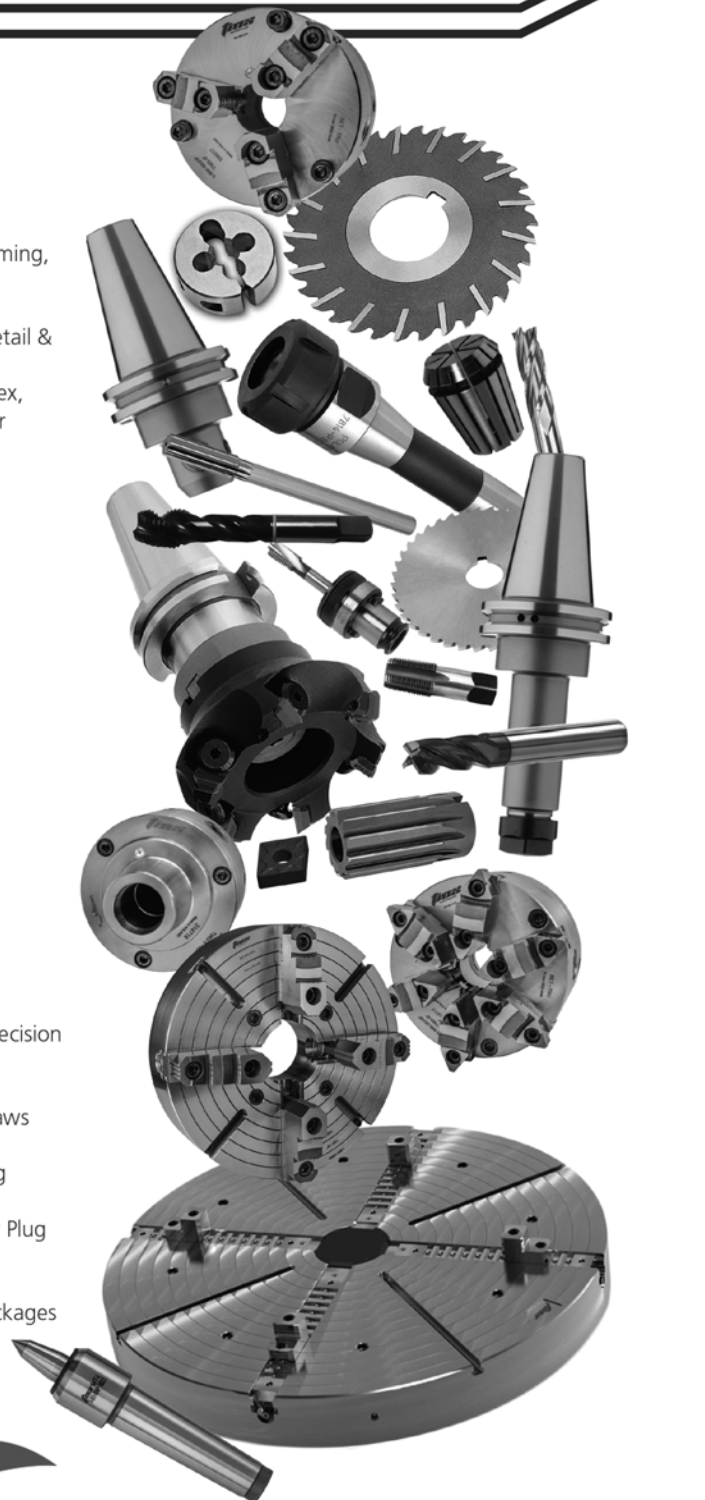
- **Coolant Thru & Standard** style holders are available
- **V-Flanges** CAT, BT, NMTB & HSK
- **Shanks** Straight, Morse Taper Shank & R8
- **Holder** End Mill, Collet Chucks, Shell Mill, Tap
- **Arbors** Milling Machine, Annular Cutter, Shell Reamer
- **Collets** ER, TG, DA, 5C, 16C, R8

Indexable Carbide Cutting Tools

- **Turning** Boring Bars & ISO Inserts
- **Grooving & Parting**
- **Milling** End Milling, & Face Milling
- **Drilling** Inserts & Bodies in 3xD & 4xD Lengths

Workholding

- **Manual Chucks** Standard All Forged Steel Bodies. Set-Tru & Precision 2, 3, 4 and 6 Jaw Scroll Chucks & 4 Jaw Independent Chucks
- **Manual Collet Chucks** 5C, 16C, Tru-Length, Set-Tru
- **Manual Oil Country Chucks** Extra Heavy-Duty & Oversized Jaws with fine serrated matching surfaces for superior gripping
- **Rotary Table Packages** for all leading manufacturers including Haas®, Lyndex-Nikken®, DMG Mori Seiki® & ATS Systems®
- **VTL Chucks** with Extended Master Jaws, Wiper Seals & Center Plug
- **Faceplates** Slotted with Direct Mount or Plain Back
- **Live & Dead Centers** Super & Ultra Precision, Slim Casing
- **Power Chucks** OE TMX Replacements, Upsizing Options & Packages
- **Precision CNC Milling Vises** Ultra-Precision Power Clamping



Scan & Explore
www.toolmex.com
©2018 Toolmex Industrial Solutions

TOOLMEX
Industrial Solutions

Call Us Today For All Of Your Machine Tool Needs!

MANUFACTURERS' INDEX

MANUFACTURERS INDEX (continued)- A thru G

Full Line Available!
Please call for more information.



Manufacturer	Catalog Page Number	Product
3M	470-471, 476	Abrasive Products
5th Axis	121	5 Axis Workholding
A		
Accu-Collet	152-163, 187-189, 200-202, 207	ER, TG, DA, AF Collets
Accu-Stop	7	Lathe Work Stop
Albrecht	225, 227	Drill Chucks
Align		Powerfeeds
Aloris	6, 433-434	Quick Change Tool Posts
ARK	170, 177	Retention Knob Sockets
ATS Workholding	88	Collet Chucks For Lathe
B		
Best Value	105, 108-109, 133-134, 136, 140, 187, 219, 294, 430	Machine Tools And Shop Supplies
Bilz	228-231	Tap Adapters And Tap Collets
Bison	45, 75, 79-80, 82-86, 92, 96, 99-101, 147-148, 190, 194, 204, 219-222, 225	Lathe Chucks, Toolholders, R8 Collets, Replacement Parts
Bondhus	255, 258, 512-514	Hex & Ball Drivers
Brighton Best	531-534	Socket Head Cap Screws
Brown & Sharpe		Measuring Tools, Gage Blocks
BTC	78, 81, 84, 86	Manual Chucks
Buck	76	Manual Chucks
Bush-Rite	114-118	Lathe Bushings, Boring Bar Sleeves
C		
Carmex	316-329	Threading Inserts
Calculated Industries	506	Machinist Calculator
CGW	465, 467-471, 473	Grinding Wheels, Abrasives
Chick	119	Workholding System For Milling
Chipinator	495	Chip Remover For Haas Milling Machines
NEW! CH HANSON	508	Steel Stamp Sets
Chuck-EEZ	7, 19, 65, 496	Lubricant For Chucks
Clamprite	176	Spindle Force Measurement
NEW! Colonial West	466	Grinding Wheels
Collis	218	Toolholders And Machine Accessories
Concentric		Live Centers
Crawford Collets	108-109, 219	Workholding Collets
D		
DC Products	7, 24	Lathe Work Stop
Dorian Tool	27, 178, 296-297, 417-418, 429-432	Knurling, Machine Tool Accessories, Toolposts
Dunham	105	Bar Pullers, Expanding Collets
Dykem	507, 527	Marking Pens And Fluids
E		
Eagle Rock	5, 113, 150	Anti-Backlash Rings, Expanding Arbors, 5C Fixtures
ECl	536-539	Gang Tools For Slide Lathes
NEW! EDGE Technology	5, 6, 7, 23, 26, 40, 109, 133-136, 193, 217, 225, 347, 431, 448, 450	Lathe & Mill Productivity Tools
Endurance	220-222	R8 Endmill Holders, R8 Toolholders
Everede Tool Co	300	Brazes Tools, Cutting Tools, Indexable Mills
Evermill	191, 203, 214, 298-300	Milling Cutters
NEW! Evermore	234-236	VDI Holders
F		
Flex Bar	47, 77, 82, 464, 504-505	Machine Safety, Casting Material, Metrology
Flex Arm	232	Flexible Tapping Arm
Fowler	437-464	Measuring Tools
G		
Ganesh	425	CNC & Manual Machines
General	461, 463	Shop Accessories And Precision Tools
Guard Air	490	Air Guns
Greenfield	459	Thread Gages
Grip-Rite	10, 12, 14, 16, 18, 22, 26, 28, 32, 35, 36, 55-58	Hard Jaws
GS Tooling	124	Machine Vises

LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

563

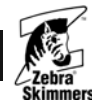
MANUFACTURERS' INDEX**MANUFACTURERS INDEX (continued)- H thru Q****Full Line Available!**
Please call for more information.

Manufacturer	Catalog Page Number	Product
H		
Hassay Savage	419-421	Broaches
Huot	25, 109, 160, 186, 193, 206, 281, 517-521	Collet Racks, Tool Storage
I		
Internal Tool	241, 348, 350, 353, 357, 362-368	Solid Carbide Cutting Tools
ISQ	123-125, 135, 139, 146-150, 177, 223, 226, 231, 333, 358, 438-464, 468, 487, 503-510	Machine Tools And Shop Supplies
J		
Jacobs	223-224, 226	Drill Chucks And Arbors
Jet	422-427, 429	Machinery And Machine Tools
K		
Kalamazoo	92, 150	5C Collet Chucks & Fixtures, Bandsaw
Keo	366-368, 392-398	Center Drills, Combined Drills & Countersinks
Kingston	168, 178-227	Balanced Toolholders
Kitagawa	71-72	Power Chucks
Kool Mist	489	Spray Mist Coolant Systems
Korloy	261, 263, 283, 287, 290-293	Indexable Drills & Inserts
Kurt	119-120, 122, 126-127, 130, 133-136, 139	Mill Workholding & Accessories
L		
Lamina Technologies	298	Milling Inserts
Llambrich USA	221, 223-224, 226-227	Drill Chucks-Made In Spain
Lexair, Inc.		5C/16C Collet Closers
LFA	223-224, 226	Drill Chucks & Keys
Loc-Line	486-488	Coolant Hose & Attachements
Lyndex	107-109, 156-161, 178-227, 193, 219-222	Toolholders, Collets, Retention Knobs
M		
Magafor	392-397, 412	Countersinks, Center Drills, Reamers
Melin	333-334, 337, 341, 345-346, 350	Endmills
Michigan Drill		Drills
Micro 100	269, 280, 294, 299, 326-353, 355-365	Solid Carbide Cutting Tools
Mitee-Bite	132, 137-139, 142	Clamps, Workholding, Vise Jaws
Mitutoyo	441	Precision Measuring Tools, Calipers
Mobil	490	Machine Lubricants & Cutting Fluids
Monster Tools	331-335, 340, 342-343, 349-351, 354, 382-391, 398, 408-412	American Made Solid Carbide Cutting Tools
N		
Newcomer	297	Part-Off Inserts & Blades
Osborn	509	Nylon Abrasive Brushes
P		
Palmgren	123-125, 146, 148-149, 232, 406, 420, 422-428, 527	Vises, Machine Tools And Accessories
Parlec	178-227	Workholding System, Retention Knobs, Tool Holders, Tap Holders
PEC Tools	406, 443, 451-458	Measuring Tools
PH Workholding	106-107, 109, 112	16C/3J Emergency Collets
Phase II	147, 150, 435-436, 443	Measuring Tools, Machine Tools And Accessories
Powerpac	429, 503	Power Feed, Draw Bar, Helogen Lamps
Pratt Burnerd PBA	84	Manual Chucks, Magnetic Chucks
Precision Marshall	522-530	Flat Stock And Drill Rod
Pride Products	77, 135, 494	Machine Tools And Accessories
Proconier	231	Tapping Tools
Protect All		Machine Lubricants & Cutting Fluids
PTD-Precision Twist Drill	379-381, 384-390	Jobber, Stub And Indexable Drills
Pyramex	28, 254, 263, 500, 502	Safety Supplies, Glasses, Welding Helmets
Q		
NEW! QA LUBRICANT INC.	491	Machine Lubricants & Cutting Fluids
Quality Glove	501, 521	Gloves, Hand Protection

We Are A Full Line Supplier For All Brands Listed In Our Catalog!**Call Us Today For All Of Your Machine Tool Needs!**

MANUFACTURERS' INDEX

MANUFACTURERS INDEX (continued)- R thru Z



LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Manufacturer	Catalog Page Number	Product
R		
Rainier	164-167	Straight Shank Collet Holders
NEW! Relton	496	Cutting/Tapping Fluid
Reichel	227	Drill Chuck Key
Repro Rubber	464	Metrology/Optical
Rhino	50, 498-499	Anti-Fatigue Mats
Riten	97	Live & Dead Centers
Robb Jack	375	Carbide Saws
Royal	6, 40, 87, 89-92, 94-95, 99-101, 103-104, 113, 220, 225, 428, 478	Live Centers, Collet Chucks, Accessories
Rustlick	492-495	Cutting Fluids, Coolant
S		
Samchully	69-70, 72-73,	CNC Power Chucks And Hydraulic Cylinders
SBM	8-58, 62-65, 102, 110-112, 128-129, 233, 244-245, 259, 272	Vise Jaws, Lathe Tools, Cutting Tools
Schunk	59-61,	
Shark Jaws	10, 12, 14, 16, 18, 22, 26, 28, 32, 35, 36, 42, 44, 46, 50, 52, 55-58	Hard Jaws
Shaviv	479-483	Hand Deburring, Blades
Shell	490	Machine Lubricants & Cutting Fluids
Sierra American	109, 156, 225, 294, 370, 519	Collet Racks, Saw Arbors
Skoda	98, 100	Live & Dead Centers
NEW! Sloky	511-512	Pre-Set Torque Screwdrivers
Snap Jaws	130-132	Vise Jaws
Sowa	178-227, 400-403	Tool Holders - Milling, Tap Holders, Taps
Speed Tap System	228-230, 399	Tap Holders, Tap Collets
Spin Tru	178-227	Premium Balanced Tool Holders
Standard Abrasives	470-477	Abrasives
Starrett	376-377, 437-464, 496	Precision Measuring Tools, Bandsaw Blades
Stop-Loc	14, 33, 81, 132, 256, 381, 535	Chuck/collet Stop, Work Stop
Strong	66-68, 72-73,	CNC Power Chucks
Suburban Tool	464	Machine Tools, Precision Tools
Superior Abrasives	470-477	Abrasives
T		
Techniks	158, 178-230	Tool Holders - Milling, Shrink Fit
TE-CO	122, 125, 140-145, 534-535	Tooling Components
TMX	57, 70, 74, 77, 82, 86, 92, 93, 99, 101, 125, 178, 190, 204, 227, 261, 262, 268, 297, 332, 336, 341, 344, 360, 369-374, 389-390, 403-407	Lathe Chucks, Toolholders, Cutting Tools
Toolex	120, 125	Vise Workholding Systems, Machine Vises
Toolfo	304-315	Grooving & Threading
Tridex	237-239	Indexable Drills & Inserts
Trumax	93, 101	Live & Dead Centers
Turn-Tek	260, 262, 264, 266	Indexable Boring Bars
Tungaloy	242-243, 245, 258-265, 273-279, 282-292, 295, 301-303	Carbide Inserts, Milling Cutters, Boring Bars
U		
NEW! ULTRA-DEX USA	240-241	
USST	5, 9, 11-58, 169-176, 193, 254-260, 265-266, 270-271, 273-279, 509	Chuck Jaws, Retention Knobs, Boring/Turning Tools
V		
Vermont Gage	460-461	Thread Gages
W		
Waterloo	485, 516-517, 521	Machinist Chests, Workbenches, Shop Storage
Wearwell	167, 497, 499	Anti-fatigue Mats
Wiha	509, 514-515	Shop Accessories, Hammers, Hand Tools
Wilton	124	Machinists' Vises
X		
Xtra-Bite	10, 12, 14, 16, 18, 22, 26, 28, 32, 35, 36, 42, 44, 46, 50, 52, 55-58	Hard Jaws
Xtra-Mag		X-test & Xtra-Mag Combo
Y		
Yankee	413-416	Reamers
YG-1	217, 246-252, 298, 332, 336, 338-339, 344, 347, 348, 379-381, 385-386, 399	Spade Drills, Inserts, Drills, Taps and Endmills
Z		
Zebra Skimmers	494-495	Coolant Management & Accessories
NEW! Z-Limit	510	AIR TOOLS

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

565

PRODUCT INDEX- 16C Collets to Carbide Inserts



Abrasives
pages 465-477

16C Collets & Wrenches		107,109
16C Collet Chucks	ROYAL, ABS	88-89
3J Collets & Wrenches		107,109
3J Collet Chucks	ROYAL, ABS	88-89
3J or 16C to 5C Universal Collet Adapter		88
5 Axis Workholding	Vises	121-122
5C Collet Blocks		109
5C Collet Chucks	ROYAL, ABS, BISON, TMX	88-89
5C Collet Stops		109
5C Collet Toolholder For Lathes		116
5C Collet Wrench		109
5C Collets		108
5C Expanding Collets - ID Holding		113
5C Indexers		150
5C Oversize collets		112
5C Step Collets		109

A

Abrasives		465-477
	Abrasive Sheets	471
	Brushes	475
	Convolute Wheels	470
	Flap Wheels	474-475
	Grinding Wheels	465-469
	Psa Discs And Holders	472
	Quick Change Discs	473
	Scotch Brite Pads & Rolls	476
	Shop Rolls	471
	Tapered Rolls	474
	Wool, Stars, Discs	477

Accessories/Hand Tools		514
Actuators		73
AF Collet Straight Shank Holders		167
AF Collets		162-163
AIR GUNS	GUARDAIR	490
Air Tools		510
Angle Plates		146
Aprons		28,509
Arbor Presses		420
Arbors, Expanding		113
Arbors, Saw - Sierra American		370

B

Backbelts, Back Support		502
Bandsaw blades		376-377
Bandsaws	JET AND PALMGREN	424
Bar Pullers For CNC Lathes	SBM, ROYAL, DUNHAM	102-105
Belt Sanders		423
Bench Grinders	PALMGREN, JET, ISQ	422
Bilz Style Tap Collets		228-231
BISON CHUCKS	see Manual Chucks	75-86
Blades, Bandsaw		376-377
Books and Reference Material		536
Boring Bar Sleeves		118
Boring Bars & Quick Change Toolholders		355

B (continued)

Boring Bars (Steel, Heavy Metal & Carbide) & Inserts		
	Using Diamond Shaped CDCD Inserts	255-256
	SWLOR_ Using WCMT Inserts	254
	Using Triangle Shaped TDAB Inserts	257
	STJOR_ Using TBGP/TPGG Inserts	266
	STUCR_ Using TCMT/TCGT Inserts	264
	SCLCR_ Using CCMT/CCGT Inserts	260
	STUPR_ Using TPMT Inserts	259
	STFPR_ Using TPMT Inserts	259
	SCLPR_ - Using CPMT Inserts	258
	STFCR_ Using TCMT/TCGT Inserts	264
	SCLOR_ Using CPGP/CPGM Inserts	267
	Backfacing Bars Using DCMT Inserts	272
	SDUCR_ Using DCMT/DCGT Inserts	262
	SI-MWLNRL Using WNMG Inserts	271
	SVUCR Using WCMT Inserts	268
	CTFPR Using TPU Inserts	268
	SI-MTUNR/L Using TNMG Inserts	271
	SVUCR Using VCMT or VCGT Inserts	268
	SI-MTFNR/L Using TNMG Inserts	270
	SI-MCLNR/L Using CNMG Inserts	270
	SI-MDUNR/L Using DNMG Inserts	270
	SI-MVUNR/L using VNMG Inserts	270
Boring Bars, Coolant thru - Micro 100		269
Boring Heads		358
Boring Tools, Solid Carbide		353-357
Box Turning Tools		359
Brazed Boring Bars		358
Brazed Tools		360
Broach Holders		421
Broaches - Keyway		419-421
BT Taper Toolholders		205-230
Bull Head Live Centers		99
Burrs, Carbide		349
Bushings, Lathe		114-118
Cabinets For Cutting Tools		520
Carbide Burrs		349
Carbide Drills		
	Jobber Drills - Carbide	382-383
	Screw Machine / Stub Drills - Carbide	387
	Straight Flute Carbide	391
Carbide Inserts for Aluminum KORLOY		293
Carbide Inserts, TUNGALOY		282-292
	CCGT	290
	CCMT	289
	CNGG	284
	CNMG	283-284
	CPMT	290
	DCGT	291
	DCMT	291
	DNGG	285
	DNMG	285
	SNMG	286
	TCGT	293
	TCMT	292
	TNMG	286
	TPMT	292
	VBMT	292
	VCGT	293
	VNMG	287
	WNMG	288

Call Us Today For All Of Your Machine Tool Needs!

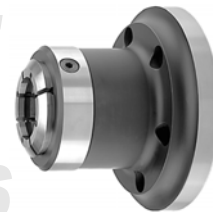
C (continued)

Carbide, Solid Boring Tools	353-357
CAT Taper Toolholders	180-204
CCMT Inserts	261
CDCD Inserts	256
Center Drills	392-396
Center Drill Holder	395
Centers, Dead	101
Centers, Live	93-100
Chamfer Mill, Solid	348
Chamfer Mill - Insert type	300
Chipinator	495
Chuck EEZ Power Chuck Lubricant	7,19
Chuck Jaws - Hard	10-58
Chuck Jaws - Round	8-54
Chuck Jaws - Soft	9-54
Chuck Jaws, Claw Jaws	60-61
Chuck Jaws, Quick Change-Base & Monoblok Style	59
Chuck Keys	77
Chuck Parts & Accessories	72
Chucks, Power	66-70
Clamping Sets	140
CLAMPRITE Drawbar Force Gage	176
Clamps C-Clamps, L-Clamps, Cantilever	146
Clamps, End	141-142
CNC & HSK Tool Cart	193
CNC Lathe Collet Chucks	87-91
Collet Adapter - 16C or 3J to 5C	88
Collet Chucks - Lathe	87-91
5c Collet Chuck -TMX	92
5C, 16C, & 3J Manual Collet Fixtures	92
5C, 16C, 3J ROYAL brand CNC Collet Chucks	87-89
Manual Collet Chucks & Accessories	92
QUIK GRIP Collet Chucks & Collets	90-91
"S" Style CNC Collet Chucks	89
Collet Nuts	168
Collet Pad Accessories	65
Collet Pads - Warner Swasey & S Style	64
Collet Pads & Top Jaws For Jaw Chucks	62
Collet Racks 5C, 16C, 3J, R8	109
Collet Trays	519
Collet Wrenches	168
Collets	
16C	106-107
3J	106-107
5C	108
AF	162-163
DA	161
Emergency 5C, 16C, 3J	107,109
ER Collet Sets	156
ER Coolant & Tap Collets	157-158
ER20, ER25 Collets	153
ER32, ER40 Collets	154-155
ER8, ER11, ER16 Collets	152



Collet Chucks

Collet Chucks
page 87-92



C (continued)

Collets, TG	159-160
TG Collet Sets & Racks	160
TG75, TG100 & TG150 Collets	159
Combined Drill And Countersinks	392-396
Concave Cutters	369
Convex Cutter	369
Coolant - Synthetic, Soluble Oil	492-493
Coolant Drum Mixer	495
Coolant Oxygenators	495
Coolant Testing - Refractometers	495
Counterbores	416
Countersinks, Center Drills	392-398
Center Drill Holder	395
CPGM Inserts	267
CPGT Inserts	267
CPMT Inserts	258
Cut-Off Tools Blades, Inserts, Toolbits, Toolholder Style	294-297
Cutters	
Concave & Convex	369
Dovetail	368
Involute	371
Keyseat Cutters	366-367
Cutting Fluids	491-493
Cylinders, Hydraulic	73

D

DA Collet Straight Shank Holders	167
DA Collets	161
DCMT Inserts	263
Dead Center Full, Half, Carbide Tipped	101
Deburring, Blade & Holders - ROYAL	478
Deburring, Blade style - SHAVIV	478-483
Dies Split Dies	407
Dovetail Cutters	368
Drawbar Force Gage CLAMPRITE	176
Drawbars, Power	429
Drawer Liners	521
Drill Chucks	223-227
Integral Shank Type	227
Key Type, Keyless	223-225
Drift Keys and Arbors	226
Drill Dispensers	520
Drill Mills	350
Drill Presses	428
Drill Rod - Precision Ground And Polished	526-530
Drills, Twist	378-390
Decimal Equivalent/drill Tap Charts	540
Drill Sets - Jobber and Stub	378
Extra Length Drills	389
Jobber Drills	379-381
Parabolic Drills - Extra Length	388
Parabolic Drills - Jobber Length	384
Screw Machine / Stub Drills -	387
Silver & Deming drills	390
Taper Length Drills	388
DYKEM	507



Drill Chucks

Drill Chucks
page 223-227

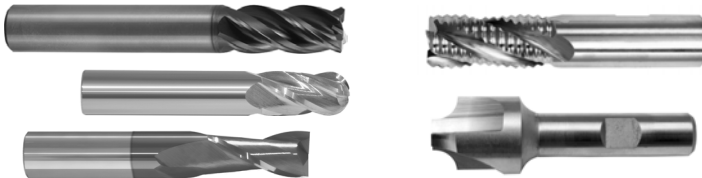


Chucks

Call Us Or Visit Our Website For Our Complete Selection!

PRODUCT INDEX- Ear Protection to Knurling Tools

Endmills pages 330-352



E		
Ear Protection		502
Easy Jaw Finder		542-554
Electrical Hand Tap		406
Emergency Collets	5C, 16C, 3J	107,109
Endmills		
	2 & 4 Flute Ball End	343-345
	2 & 4 Flute Corner Radius	342
	2 Flute Square End	331-333
	3 & 4 Flute 60° Helix Endmills	339
	3 Flute Square End	334
	4 Flute Square End	335-337
	Corner Rounding	341
	Drill Point	350
	Economy HSS Endmills	380
	High Performance Endmills	338-339
	Metric End Mills	336
	Micro/Miniature Endmills	351-352
	Rougher-Finisher Endmills	346-348
	Solid Carbide 2 & 4 Flute Square End	342
	Solid Carbide Burrs	349
	Variable Helix	340
	Engraving Tools, Carbide	359
	ER Collet Straight Shank Holders	164-166
ER Collets		
	ER Collet Sets	156
	ER Coolant Collets	157-158
	ER Tapping Collets	158
	Expanding Arbors	113
	Expanding Collets - ID Workholding	110-112
F		
	Faceshields	500
	Fasteners	531-534
	Button Head Cap Screws	532
	Flat Head Socket Cap Screws	534
	Socket Head Cap Screws	531-532
	Socket Set Screws	533
	Fixture Clamps	137-139
	Flat Stock - Precision Ground	522-526
G		
	Gang Tooling For Slide Lathes	537-539
	Gloves	501
	Goggles	500
	Grease, Chuck	7
	Groove Tools, Solid Carbide	362
	Grooving, TOP-NOTCH Compatible Inserts & Holders	305-312
H		
	Hand Cleaners	507
	Hand Tools	509
	Hex & Torx Wrenches	513-515
	Chip Brushes	509
	Hammers, Dead Blow	509
	Screwdrivers	515
	Torx Bits And Tools	514-515
	T-Wrenches	514

H (continued)	
Hard Chuck Jaws	55-58
Acme Key Serrated Hard Jaws	58
American Standard Tongue & Groove	58
Hard Jaws-1.5Mm X 60° Serrations	55
Hard Jaws-3.0Mm X 60° & 1/16" X 90° Serrations	56
Square Key Serrated Hard Jaws	57
Hex & Torx Keys & Wrenches	513-514
High Performance Endmills-YG-1	338-339
HSK Toolholders	218
Hydraulic Cylinders	73
Hydraulic Oil	490-491
Hydraulic Toolholders	217

I	
ID Workholding on Lathes	110-112
Indexable Insert Drills	
QUADEX Indexable Drills and Inserts	244-245
TDXU Tungaloy Indexable Drills and Inserts	243
TRIDEX Drill Inserts	238-239
TUNGSIX-Tungaloy Indexable Drills and Inserts	242
ULTRA-DEX Coolant Thru Indexable Drill & Inserts	240-241
Indexers, Rotary	
	148
Inserts, Boring	
CCMT Inserts	261
CDCD Inserts	256
CPGM Inserts	267
CPGT Inserts	267
CPMT Inserts	258
DCMT Inserts	263
TBGP Inserts	266
TCMT Inserts	264-265
TDAB Inserts	257
TPMT Inserts	259
WCMT Inserts	254
Inserts, Milling	298-303
Inserts, Turning	282-292
Internal Threading "Quick Change" Tools & Holders	363
Involute Cutters	371

J	
Jaw Boring Accessories	5
Jaw Boring Rings & Stars	5
CNC Lathe Gage	5,23
Jaw Nuts & Master Keys	
Jawnuts and Screws	9-53
Jaws, Lathe Chuck	8-58
Jaws, Vise	See Vise Jaws
	128-132

K	
Keyseat Cutters	366-367
Keyway Broaches	419-421
Knurling Tools	417-418



ER Collets
pages 152-158

ER Collets

Call Us Today For All Of Your Machine Tool Needs!

L	
Lamps	503
Lathe Bushings	114-118
Type B - Split Type Bushings	116
Type C & CS	114
Type DD Bushings	117
Type G Bushings	118
Type J Bushings	115
Type L Bushings	117
Type LB & LBF Bushings	116
Type Z Bushings	115
Lathe Collet Chucks	87-89
Lathe Workstops	6-7, 27
Latheguards	FLEXBAR Lathe Guards 47,82
Lathes, CNC - JET and GANESH	425
Lathes, Manual - JET	425
Lens Cleaner	502
Live & Dead Centers	96
Live Centers	93-100
LOC-LINE Coolant Hoses & Nozzles	486-488
Lubricants	496

M	
Machine Guards	504-505
Machine Mounts	428
Machinery's Handbook	506
Machinist Calculator Pro 2	506
Manual Chucks	75-86
BISON	79-80
BISON Set-Tru Scroll chucks	75
4 Jaw Chucks	83-84
3 Jaw Self Centering Chucks	81
BTC 3 Jaw ZERO-SET	78
BUCK Chucks	76
Chuck Keys For Manual Chucks	77
Oil Country Chucks	86
Replacement Parts BISON	85
TMX Brand - Set Tru Chucks	77
Marking Pens And Fluids	507
Master Jaw System For 5C & 16C Collets	89
Material	522-530
Drill Rod - Precision Ground	526-530
Flat Stock - Precision Ground	522-526
Mats - Safety and Anti-Fatigue	499

Milling Cutters & Inserts

Milling Cutters & Inserts
pages **298-303**



M (continued)	
Measuring Tools	437-464
1-2-3 Blocks	453-454
Angle Blocks & Angle Plates	455
Bore Gages	443
Calipers - Dial & Digital	438-439
Center Finders	451
Depth Gage	442
Depth Micrometer	442
Dial Indicators	444-446
Drill Point Gages	458
Edge Finders	451
Feeler Gages	458
Gage Blocks	452
Granite Plates	450
Height Gages	449
Indicator Holding Sets	445-446
Inside Micrometer	442
Levels	452
Magnetic Bases	447
Measuring Sets	442
Micrometers - Analog & Digital	440-442
Parallels	453-454
Pin Gages	459-462
Protractors	455-457
Rules	455-457
Squares	455-457
Straight Edges	452
Thread - Plug And Ring Gages	459-462
Tool Height Setters	448
Tool Setters	448
Universal Holders	447
V-Blocks	453-454
Metal Cutting Fluid	496
Metrology	463-464
Comparators - Benchtop	464
Magnifiers/Microscopes	463
Mirrors	463
Optical comparator	463
Repro Rubber	464
Mill, Thread - Solid Carbide and Insert Style	324-328
Milling Cutters and Inserts	298-303
APKT Inserts	298
Dofeed Super High Feed Milling Cutters & Inserts	302-303
Dorec High Performance Milling Cutters & Inserts	301
Everede Tool Indexable Chamfer Mills	300
Evermill 90° Shell/Face Mills And Endmills	298
Evermill45° Shell/Face Mills Using SDKT Inserts	300
Evermill 90° Shell/Face Mills And Endmills	299
Evermill Profiling Cutters Using RDMT Inserts	300
High Feed Cutters And Inserts - Tungaloy	302-303
Micro 100 Indexable Milling Cutters	299
Milling Toolholders	179-216

LATHE CHUCKS
LIVE CENTERS

VICE JAWS
VICE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

PRODUCT INDEX- Milling Tables to Slitting Saws

M (continued)		
Milling/Cross Slide & Tilting Tables		149
Mist Coolant Systems		489
Mitee-Bite Clamps		137-139
Multi-Purpose Taps	Combo Taps - YG	399
N		
NMTB Toolholders		222
O		
OD Turning Toolholders		
	ACLNR/L using CNMG inserts	273
	ADJNR/L Toolholders	275
	ADJNR/L using DNMG inserts	275
	ATGNR/L Toolholders	277
	ATGNR/L using TNMG inserts	277
	AWLNR/L Toolholders	278
	AWLNR/L using WNMG inserts	278
	MCLNR/L using CNMG inserts	273
	MCRNR/L using CNMG inserts	274
	MDJNR/L using DNMG inserts	275
	MDPNN using DNMG inserts	274
	Micro 100 OD Holders	280
	MSDNN using SNMG inserts	274
	MTANR/L using TNMG inserts	275
	MTENNS using TNMG inserts	276
	MTFNR/L using TNMG inserts	276
	MTGNR/L using TNMG inserts	276
	MTJNR/L using TNMG inserts	277
	MVJNR/L using VNMG inserts	277
	MWLNR/L using WNMG inserts	278
	SCLCR/L using CCMT inserts	278
	SDJCR/L using DCMT inserts	279
	Spare Parts for OD Holders	281
	SSDCN using SCMT inserts	279
	SVJCR/L using VCMT inserts	279
	Swiss Style Machine Tooling - OD Turning	279
	SWLCR using WCMT inserts	279
	Oil Skimmers	494
P		
Parallels		453-454
Part-Off Tools	Blades, Inserts, Toolbits, Toolholder style	294-297
Plastic Toolholder Trays		193,201
Plungers		535
Power Chucks		66-70
	KITAGAWA B200 & BB200 Series Chucks	71
	Power Chuck Accessories	72
	Samchully HS/HCH Series - 3 Jaw	69
	Samchully MH & HST Series	70
	STRONG Brand N Series - 3 Jaw	66-67
	STRONG Brand NT/NIT Series -2 & 4 Jaw	68
	Threaded Drawnuts	72
Power Drawbars		429
Powerfeeds For Mills		429
Precision Hand Tapper		231, 406
Preset Torque Screwdrivers		511-512

Power Chucks



Retention Knobs
pages 169-176

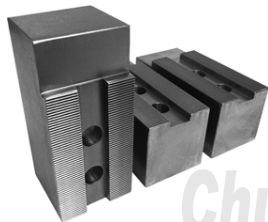


Retention Knobs

P (continued)		
Pull Studs/Retention Knobs - Torque Wrenches	177	
Pull Studs/Retention Knobs -BT Style	169-172	
Pull Studs/Retention Knobs -CAT Style	173-176	
Pull Studs/Retention Knobs -Install/Remove Sockets	177	
Punches	457	
Q		
Quill Handles	428	
R		
R8 Collets & Tooling	219-221	
Radius Tools, Carbide	361	
Reamers - Carbide	408-416	
Reamers - Cobalt	415-416	
Reamers - HSS	413-414	
Refractometers	494	
Retention Knobs/Pull Studs -BT Style	169-172	
Retention Knobs/Pull Studs -CAT Style	173-176	
Retention Knobs/Pull Studs -Install/Removal Sockets	177	
Right Angle Head	429	
Rotary Tables	147	
Round Jaws	8-54	
	Acme Serrated Key Type	50
	American Standard Tongue & Groove	42-46
	Metric Tongue & Groove	48
	Northfield Chuck Style	54
	Serrated - Inch -1/16 x 90°	36,38
	Serrated - Inch -3/32 x 90°	40
	Serrated - Metric - 1.5mm x 60°	8-30
	Serrated - Metric -3.0mm x 60°	32,34
	Square Serrated Key Type	52
S		
"S" Style Collet Chucks	89	
Safety Glasses	500	
SAMCHULLY Chucks	69-70	
Saw Arbors	Side Milling Saw Arbors	370
Saws and Saw blades		
	Arbors	370
	Bandsaw Blades	376-377
	Slitting	372-374
Saws, Carbide	375	
Screws, Socket Head Cap	531-534	
SHAVIV Deburring	478-483	
Shrink Fit Holders	192	
Skimmer - Tramp Oil	494	
Slide Lathe Tools	537-539	
Slitting Saw Arbor, R8	370,372	
Slitting Saws	372	

Call Us Today For All Of Your Machine Tool Needs!

PRODUCT INDEX- Soft Chuck Jaws to Tool Posts



Soft Chuck Jaws
pages 9-54

*Soft
Chuck Jaws*



S (continued)

Soft Chuck Jaws		
	Acme Serrated Key Type	51
	American Standard Tongue & Groove	43-47
	Metric Tongue & Groove	49
	Northfield Chuck Style	54
	Serrated - Inch -1/16 x 90°	37-39
	Serrated - Inch -3/32 x 90°	41
	Serrated - Metric - 1.5mm x 60°	9-31
	Serrated - Metric -3.0mm x 60°	33-35
	Square Serrated Key Type	53
	Solid Carbide Boring Tools	353-357
	Solid Carbide Threading Tools	364-365
	Soluble Oil	491
	Spade Drills	Accessories 252
		Super HSS & Carbide Coated Inserts 248-251
		Drill Bodies 246-247
	Spade Drills & Inserts	
	Spindle Oil	491
	Spindle, Adapter Type Guide	74
	Spindle Wipers	193,201
	Spot Drills	395-396
	Spray - Mist Coolant Systems	489
	S-Style Collet Pads	64
	Steel Stamp Sets/Indentification Tools	508
	Step Collets, 5C	109
	STOPLOC	132
	Straight Shank Bilz Tap Holders	230
	Straight Shank Collet Holders	ER, DA, TG & AF 164-167
	Straight Shank Tap Holders & Collets	231
	STRONG Chucks	66-68
	Studs	145
T		
	T Slot Nuts - Mill tables	139-141
	Tailstocks	148
	Tap Adapters/Collets	Bilz Style 228
	Tap Wrenches	406
	TapMatic Tappers	260
	Tapping Arms	Quick Tap Tapping Arm 232
	Tapper, Precision Hand Tapper	406
	Tapping Oil	496
	Tap Guide & Extensions	406
	Taps	399-406
		Combined Drill and Tap 405
		Hand Taps 404-405
		High Performance 400-403
	TBGP Inserts	266
	TCMT Inserts	264-265
	TDAB Inserts	257
	Tee Nuts & Screws	37,39,41
	TG Collet Straight Shank Holders	166
	TG Collets	TG Collet Racks 160
		TG75, TG100 & TG150 Collets & Sets 159-160
	Thread Gages	459-461
	Thread Repair Files	461

T (continued)

Threading	ON EDGE Style Inserts And Holders	315
	Tools Solid Carbide	364-365
	Laydown Holders CARMEX	322-323
	Laydown Inserts CARMEX	316-322
	TOP-NOTCH Compatible Holders & Inserts	305-310
Threadmills - Solid Carbide and Insert Style		324-326
Tomstones	KURT, CHICK, TOOLEX	119-120
Tool Storage		516-520
	Carts	517
	CAT And BT Toolholder Storage	518-519
	Chests And Cabinets	516-517
	Collet Trays	519
	Drawer Liners	521
	Tool Netting	521
	Cutting Tool Storage Dispensers	520
Tool Storage Chests & Cabinets		516-517
Tool Tightening Fixtures		178,193
Toolx Vise Systems		120
Toolholder Accessories	Pro-Touch Off Gage	193, 217
Toolholder Bushings		114-118
Toolholder Packages - CAT & BT		179
Toolholder Storage - CAT and BT		518-519
Toolholders, BT Taper		205-216
	BT-30 Tool Holders	205-207
	BT-40 DA Collet Chucks	213
	BT-40 Endmill Holders	208-210
	BT-40 ER Collet Chucks	211-212
	BT-40 Jacobs/Morse Taper Holders	215
	BT-40 Shell Mill Holders	214
	BT-40 Tap Holders	229
	BT-40 TG Collet Chucks	213
	BT-50 Tool Holders	216
Toolholders, CAT Taper		180-204
	CAT-40 DA Collet Chucks	188
	CAT-40 Endmill Holders	180-184
	CAT-40 ER Collet Chucks	185-187
	CAT-40 Jacobs/Morse Taper Holders	190
	CAT-40 Shell Mill Holders	191
	CAT-40 Shrink Fit Holders	192
	CAT-40 Stub Arbor Holders	194
	CAT-40 Tap Holders	229
	CAT-40 TG Collet Chucks	189
	CAT-50 DA Collet Chucks	201
	CAT-50 Endmill Holders	195-198
	CAT-50 ER Collet Chucks	199-200
	CAT-50 Jacobs/Morse Taper Holders	204
	CAT-50 Shell Mill Holders	203
	CAT-50 Stub Arbor Holders	194
	CAT-50 Tap Holders	229
	CAT-50 TG Collet Chucks	202
Toolholders, HSK		218
Toolholders, NMTB Taper		222
Tool Posts - KDK Style, ALORIS, PHASE II, DORIAN		430-436

Tool Posts



Tool Posts
pages 430-436



LATHE CHUCKS
LIVE CENTERS

WISE JAWS
WISE ACCESSORIES

STRAIGHT SHANK
COLLET HOLDERS

TAP HOLDERS
DRILL CHUCKS

CARBIDE INSERTS
THREADING/GROOVING

CUTTING TOOLS
MACHINERY

PRECISION TOOLS
DEBURRING

COOLANT/FLUIDS
TOOL STORAGE

Call Us Or Visit Our Website For Our Complete Selection!

2019-20 MASTER CATALOG

571

PRODUCT INDEX- Tool Setters to Z-Axis Setter



**Machine/Shop Vises
pages 123-127**

T (continued)		
Tool Setter		178
Top Jaws For Collet Pads		62
Torx Bits		514-515
TPMT Inserts		259
V		
VACTRA - 2		490
V-Blocks		454-455
VDI Toolholders		233-236
Vertical Milling Machines		426-427
Vise Accessories		
	2 Position Vise Handle	136
	Mill Organizer Tray - EDGE TECH	136
	Multi-Axis Workstop	134
	Parallel Separator	135
	Pro Mill Stops	134
	Pro Vise Stops	133
Vise Jaws	Machinable Soft Jaws	128-129
	Machined Aluminum Vise Jaws	129
	SNAP JAWS - Quick Change Jaws	130-132
Vises	Machine Vises - KURT, PALMGREN, TMX	125-127
	Shop Vises	123-124
	Vise Accessories	133-136

Vises

W		
Warner & Swasey Collet Pads		63
Washers		144
WAY LUBE		491
Way Oil		490
WCMT Inserts		254
Webbing - Tool Netting		521
Wipes		507
Woodruff Keyseat Cutters		366-367
Workholding System	Kurt DX6 Crossover 6" Vise	119
Workstop for Lathes		6-7, 27
Workholding Accessories	Chuck Stops - ROYAL	6,40
	Chuck/Collet Stop	14,33
	CNC Lathe Stops - ACCU-STOP	7,24
	CNC Spindle Workstop - DORIAN	27
	CNC, Manual Lathe Stops - ALORIS	6
	Lathescoot- HUOT	25
	Speedy Lathe Gage - EDGE TECH	40
Z		
Z-Axis Setter		448

Vise Accessories



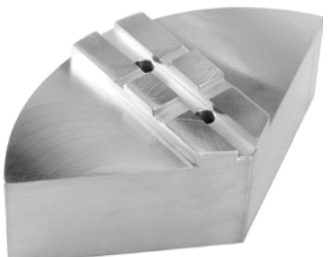
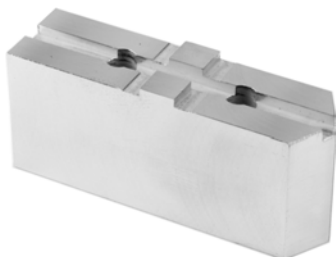
**Vise Accessories
pages 133-136**



SPECIAL ORDER JAWS AVAILABLE!

**SPECIAL ROUND JAWS
UP TO 32" DIA!**

**SPECIAL SOFT JAWS
UP TO 8" HEIGHT!**



- Super Quick Turnaround Time- 3 Days Or Less In Most Cases!
- Soft Jaws Available In Any Length Steel Or Aluminum
- Tongue And Groove, Square Serrated & Acme Serrated Jaws Up To 8" Height!
- Made Per Your Special Specifications In The USA!



FAST TURNAROUND TIME!

Call Us Today For All Of Your Machine Tool Needs!

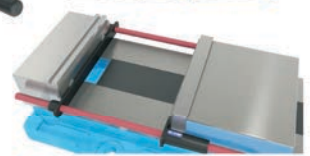
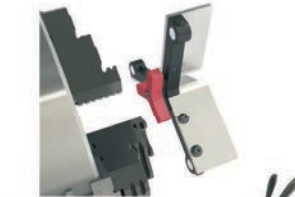
Look For These **HOT ITEMS** In Our New Catalog!

EDGE
TECHNOLOGY

MILL & LATHE PRODUCTIVITY TOOLS!

Vise Stops • Chuck Stops • Touch-Off Gages • Vise Handles
Tool Post Accessories • 5C Collet Stops • Work Stops & More!

NEW ITEM! Please See Pages 133-136 For More Information



MASTER JAW SYSTEM FOR 5C & 16C COLLETS

Use 5C or 16C Collets On Your 3-Jaw CNC Power Chuck!

The Master Jaw System is available for 6, 8, 10 and 12 inch CNC power chucks. A cost effective and efficient alternative to a standard collet chuck that eliminates the need to remove your chuck from the machine. This system provides a positive stop, dead length for repeatable part lengths. Installation is as fast and easy as installing a set of soft jaws. A TIR runout average of .0008 – .0015" can be expected above your collet's factory tolerances and depends on the condition of your chuck and the quality of your collets. The collet housing is made from US heat treated 4140 alloy steel and the jaws are US 1018 CR steel.



- Available for 6", 8", 10" & 12" CNC lathe chucks
- Allows you to use your 5C or 16C collets
- Easy Installation- As fast and simple as changing over a set of soft jaws!
- Quick changeover to different stock size & shape
- Eliminates the need to bore soft jaws
- TIR runout average of .0008 – .0015"
- Saves you time and money!
- **MADE IN THE USA**

**CONVERT YOUR CNC LATHE CHUCK INTO A
PRECISION-LENGTH COLLET SYSTEM!**



Chuck Make/Model	Size	Part Number	Price EA
B206, N206	6"	ED-MJSK6LA	\$783.75
B208, N208, HS08	8"	ED-MJSK8LA	\$783.75
B210, N210	10"	ED-MJSK10LA	\$783.75
HS10	10"	ED-MJSK10HA	\$783.75

Please See Page 89 For More Information

Bush  **Rite™**

LATHE TOOLHOLDER BUSHINGS



FEATURES:

- Increased step diameter for easy and perfect sealing
- Concentric ground and diamond polished OD & ID resulting in a mirror smooth finish
- "Easy Entry" feature on OD for quick insertion
- Wrench flats for easy removal
- Step relief for easy removal and gripping on Z style bushings
- Type and size clearly marked on surface of head diameter for easy identification
- Crafted from 8620 alloy steel
- Case hardened and ground concentric on OD & ID
- Concentricity: OD & ID 0.0002"
- 100% Satisfaction Guaranteed

**See Our Selection
On Pages 114-118!**



Type C • Type CS • Type Z • Type J • Type B • Type BBS • Type LB • Type LBF

Shop Online @ www.usstexpress.com

U S Shop Tools www.usshoptools.com

2019/20 MASTER CATALOG

ORDER TOLL FREE: **800-243-7701**

FAX TOLL FREE: **800-342-3311**

- Chuck Jaws
- Lathe Workholding
- Tooling For Mills
- 5C, 16C & 3J Collets
- Retention Knobs
- Carbide Cutting Tools
- Threading & Grooving
- End Mills, Drills, Taps & Reamers
- Measuring & Inspection Tools
- Abrasives & Deburring
- MRO, Coolant & Tool Storage



U S Shop Tools

1340 S. Allec Street
Anaheim, CA 92805-6303

Orders: (800) 243-7701

Fax: (800) 342-3311

Office: (714) 772-9011 Fax: (714) 772-1270

Website: www.usshoptools.com

Email: sales@usshoptools.com

Customer
Number:

****Now Shipping From 2 Locations!****
ANAHEIM, CA & WARREN, MI

If Addressee Is No Longer At This Location, Please Forward To Tool Buyer or Purchasing Manager