

**SEVENTH EDITION**  
FULL-LINE CATALOG



- | Endmills
- | Drills
- | Specials Per Print

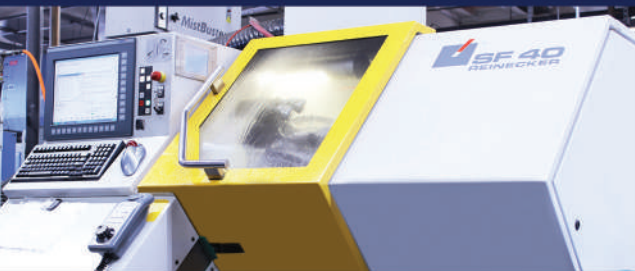
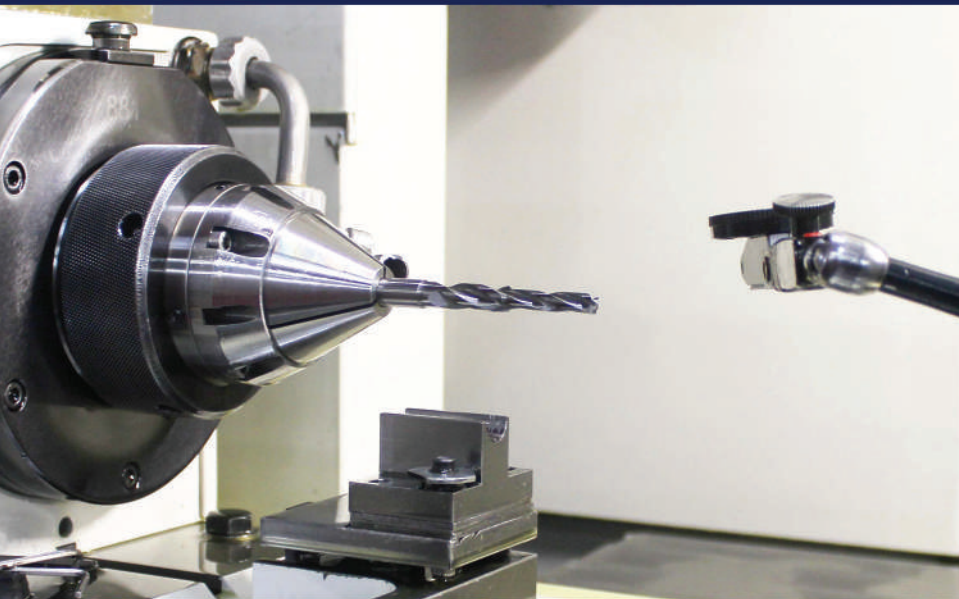
**PRECISION CUTTING TOOLS**  
*Member IMC Group*



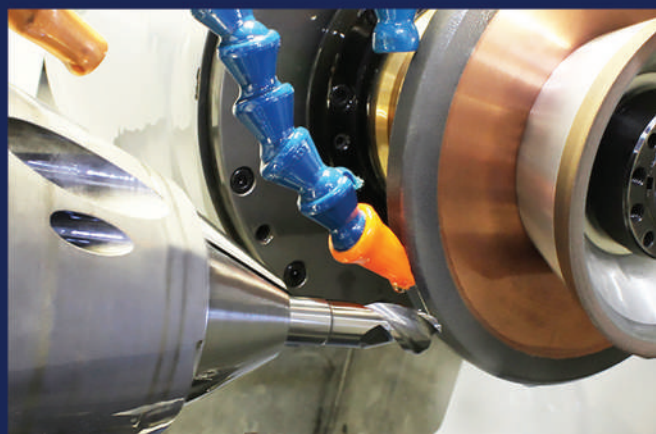
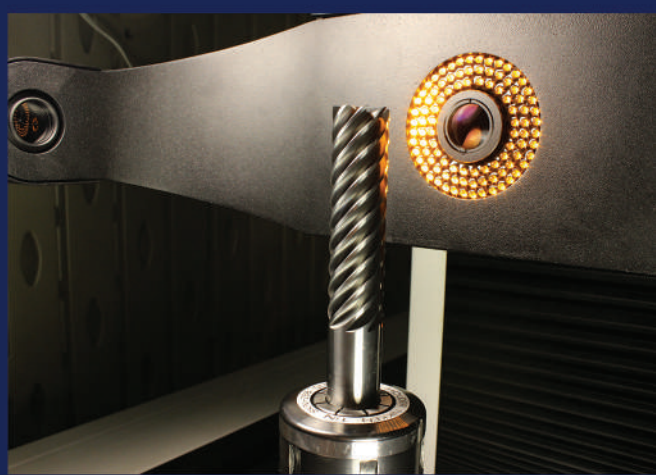
[PCT-IMC.COM](http://PCT-IMC.COM)



# INNOVATION



# QUALITY



# DELIVERY



# OVER 50 YEARS IN THE INDUSTRY

## PRECISION CUTTING TOOLS *Member IMC Group*

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## MEMBERS OF:



UNITED STATES CUTTING TOOL INSTITUTE



## ABOUT PCT

Precision Cutting Tools (PCT) was founded in 1963 and ever since has specialized in the production of high-quality and high performance cutting tools. Today, with over fifty years of experience, PCT is a leading cutting tool manufacturer that distributes its products all across North America and Europe. We base our company's success on our long-standing commitment to satisfy our customers' needs, by utilizing the finest raw materials, introducing innovative cutting tools and providing excellent customer service. What makes us different than other manufacturers is our pledge to offer the best turnaround times for specials in the industry. While many of our competitors deliver in weeks and months, we deliver it in days.

In 2006, PCT started its in-house coating facility. Because of our strict quality control and minimal rejection rate, PCT Coating Solutions has become the choice for many of the regions aerospace, automotive, and medical industries for their PVD coating needs. In 2008, PCT started manufacturing carbide endmills and drills.

In May 2018, Precision Cutting Tools was proud to announce that it had become a member of the IMC Group. In a partnership between the Sheth Family and the IMC Group, Precision Cutting Tools continues to operate as an independent brand, with our own products and distributor network. In Fall 2019, PCT will be moving its operations to a 60,000 square foot facility in La Palma, CA. This will allow us to expand our capacity and continue to dedicate ourselves to our core competency of having the best-in-industry delivery on special, high-quality, solid end mills and long drills.

Today, PCT is one of a few companies that still offers Cobalt tooling, Carbide Tooling, and coating services all under one roof.

## IN-HOUSE PVD COATING

In 2004, we integrated our own in-house coating facility, to complement our cutting tools and simplify our customers' shopping experience. We invested heavily on quality management systems that earned our in-house coating facility ISO 9001:2008 certification.



## SPECIALTIES

Carbide | Cobalt | PowderMetal | HSS  
Endmills | Drills | Specials Per Print

## MISSION

Our mission is to satisfy and fulfill the needs of our customers by offering a high performance, high quality tool at a fair price, with the quickest turnaround time in the industry. Through increasing capacity and capabilities by investing in machinery and people, we continue to grow sales while maintaining our delivery times.

## VISION

We want the PCT brand to be known for having the quality and performance that you expect from large tool manufacturers, but offer our customers the turnaround time and customer service you expect from a family run company.



# MATERIAL CODE

P	1	<b>Low-Carbon Steels -</b> 1000 Series (>25 HRC)
	2	<b>Low-Carbon Steels -</b> 1000 Series (<25 HRC)
	3	<b>Alloy Tool Steels -</b> 1300, 2000, 3000 (≤35 HRC)
	4	<b>Alloy Tool Steels -</b> 1300, 2000, 3000 (36-48 HRC)
	5	<b>Ferritic, Martensitic &amp; PH Stainless Steels -</b> 400's, pH Types (15-5, 13-8, 17-4) (≤35 HRC)
	6	<b>Ferritic, Martensitic &amp; PH Stainless Steels -</b> 400's, pH Types (15-5, 13-8, 17-4) (36-48 HRC)
M	1	<b>Austenitic Stainless Steels -</b> Inox, 200 Series, 300 Series and 304L
	2	<b>Austenitic Stainless Steels &amp; Cast Stainless Steels -</b> 310, 314, 316 (<25HRC)
	3	<b>Duplex Steels (Austenitic &amp; Ferritic) -</b> 323, 329, F55, 2205
K	1	<b>Gray Cast Iron</b>
	2	<b>Ductile Iron -</b> 60-40-18, 65-45-12 (<28HRC)
	3	<b>Ductile Iron -</b> 32510, 35018 (<38HRC)
N	1	<b>Wrought Aluminum Alloys</b>
	2	<b>Low-Silicon Aluminum Alloys -</b> Si <12.2% - 6061, 7075
	3	<b>High-Silicon Aluminum Alloys -</b> Si >12.2% - 6061, 7075
	4	<b>Copper &amp; Copper Alloys</b>
	5	<b>Nylon, Plastics, Rubbers, Phenolics, Resins, Fiberglass</b>
	6	<b>Carbon &amp; Graphite Composites</b>
	7	<b>Metal Matrix Composites</b>
S	1	<b>Iron-Based, Heat-Resistant Alloys -</b> Incoloy 800-802, A-286, N-155
	2	<b>Cobalt-Based, Heat-Resistant Alloys -</b> Haynes 188, Haynes 21, Hastelloy, Waspalloy, Inconel 625/718 (≤48 HRC)
	3	<b>Nickel-Based, Heat-Resistant Alloys -</b> Inconel 600/700 series, Incoloy 900 series, Waspalloy, Monel, K-500
	4	<b>Titanium Alloys -</b> Commercially Pure, 6Al-4V, Astm 1/2/3, Ti-6Al-2SN-4Zr-2Mo (≤48 HRC)
H	1	<b>Hardened Tool Steels -</b> H Series (10, 11, 13), D Series (2, 3), 4340, P20 (≤48 HRC)
	2	<b>Hardened Tool Steels -</b> H Series (10, 11, 13), D Series (2, 3), 4340, P20 (48-55 HRC)
	3	<b>Hardened Tool Steels -</b> H Series (10, 11, 13), D Series (2, 3), 4340, P20 (56-60 HRC)
	4	<b>Hardened Tool Steels -</b> H Series (10, 11, 13), D Series (2, 3), 4340, P20 (60-62 HRC) H Series (10, 11, 13), D Series (2, 3), 4340, P20 (62-64 HRC)

# UNDERSTANDING OUR EDP# SYSTEM

## Carbide Endmill EDP#'s

Example: EDP# 55808108 Dimensions: 1/2 x 1/2 x 5/8 x 2-1/2

**EDP# 558 08 1 0 8**



### Cutting Diameter

Sizes	Decimal	Code
1/8	.1250	02
3/16	.1875	03
1/4	.2500	04
5/16	.3125	05
3/8	.3750	06
7/16	.4375	07
1/2	.5000	08
9/16	.5625	09
5/8	.6250	10
11/16	.6875	11
3/4	.7500	12
13/16	.8125	13
7/8	.8750	14
15/16	.9375	15
1	1.000	16
1-1/8	1.125	18
1-1/4	1.250	20

### LOC – Length of Cut

1 – Stub      4 – Extra Long  
2 – Standard    5, 6, 7, ETC.  
3 – Long

### Radius / Sq

0 – Square    1 – .015    2 – .030    3 – .060  
4 – .090    5 – .125    B – Ball

### Coating Code

0 Uncoated	6 ZircoPlus®
1 TiN	7 Sistral®
2 TiCN	8 Exxtral Silver®
4 *Exxtral Plus®/ Varianta® Supral	9 Varianta® Supral
5 Exxtral Carbon®	

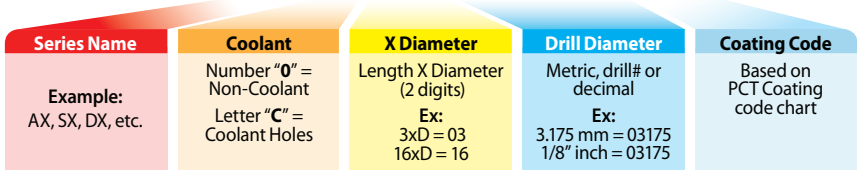
## Carbide Endmill Extended Neck / Reach

**EDP# N 558 08 1 0 8**

For All Extended Neck/Reach the letter N is added to the front of the model number.

## Drill EDP#'s

**EDP# AX 0 03 03175 T6**



### Coating Code

T0 - Uncoated	*T4 - Exxtral Plus®/ Varianta® Supral	T6 - ZircoPlus®	T8 - Exxtral Silver®
T1 - TiN	T5 - Exxtral Carbon®	T7 - Sistral®	T9 - Varianta® Supral
T2 - TiCN			TZ - ZircoPlus®

\* Exxtral Plus for HSS/cobalt/PM; Varianta® Supral Carbide Endmills

# WHAT'S NEW

## Endmills

### NEW! HPM+ Firm Hold Shank

- Maintains shank concentricity and h6 shrink-fit tolerance
- Stronger grip to reduce tool pull-out and increase tool performance

### NEW! H330 HPM+ Endmill



### NEW! 452 Series Endmill

Variable indexed with eccentric OD; provides a tougher cutting edge for chatter free machining and maximum metal removal rates



### NEW

## EXTENDED LENGTHS

### Reach for More!

Extended neck endmills now have new lengths. Look for the button/bar above to see our new extended lengths

## Coating



### Exxtral Carbon Coating

Precision Cutting Tools introduces our New Exxtral Carbon Coating! This upgraded technology allows you to reduce your tooling cost by greatly extending tool life while increasing speed and feed rates.

#### Advantages

- ✓ 3 to 4 times the life than standard PVD coating
- ✓ High thermal stability
- ✓ Outstanding wear resistance
- ✓ Excellent tribological properties
- ✓ Smooth finish
- ✓ Sharper cutting edge than with diamond coating

#### Application Recommendations

- Aluminum and aluminum alloys with up to 12% Si
- Copper, Bronze, Silver, Gold, & Platinum
- Carbon Composites
- Plastic Composites
- PCBS

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**CARBIDE DRILLS** Page 12

**CARBIDE ENDMILLS**

FOR: ALUMINUM AND NON-FERROUS ALLOYS Page 72

FOR: FERROUS AND EXOTIC ALLOYS Page 88

**CARBIDE DRILL MILLS** Page 110

**PM30, PM4, COBALT, HSS ENDMILLS**

POWDER METAL (PM30) ENDMILLS Page 112

POWDER METAL (PM4) ENDMILLS Page 116

COBALT (M42) ENDMILLS Page 121

HIGH SPEED STEEL (M7) ENDMILLS Page 137

**SERVICES**



















EDGE CUT (Edge Preparation) Page 145

**IN-HOUSE COATING** Page 146













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# SOLID CARBIDE DRILLS




(FRACTIONAL/METRIC)

ALUMINUM & CAST IRON		Material	Depths	Flutes	Helix	Point	Page
		 N	3xD - 5xD	2	15°	135°	12
		 N	3xD - 50xD	2	15°	135°	15
		 K N	3xD - 5xD	3	30°	130°	22
		 K N	3xD - 5xD	3	30°	130°	25
		 K N	5xD - 16xD	2	0°	130°	28
		 K	3xD - 30xD	2	15°	135°	32




## HIGH PERFORMANCE/MULTI-PURPOSE

		 P M K S	3xD - 5xD	2	30°	135°	39
		 P M K S	3xD - 8xD	2	30°	135°	42
		 P M K S	16xD - 50xD	2	30°	135°	46
		 P M K S	3xD - 12xD	2	30°	140°	51







## NICKEL-BASED ALLOYS

		 S H	3xD - 30xD	2	15°	135°	55
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## HARDENED MATERIALS

		 P K H	3xD - 5xD	2	30°	140°	62
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## PILOT DRILLS & SPOTTING


		 P M K N S	5xD Pilot Drills	2	30°	150°	66
		 P M K N S	Spotting Drills	2	30°	-	69

\*All deep-hole drills 16xD and above must utilize a pilot hole drill\*



# ALUMINUM AND NON-FERROUS ALLOYS

FINISHERS		Flutes	Helix Angle	Page
<b>SERIES 224</b> High Performance		2	45°	72
<b>SERIES 235</b> General Purpose		2	35°	74
<b>SERIES 360</b> High Performance Variable		3	Variable	76
<b>SERIES 345</b> High Performance		3	45°	78
<b>SERIES 337</b> General Purpose		3	37°	80

ROUGHERS		Flutes	Helix Angle	Page
<b>SERIES 338</b> Coarse Pitch Rougher		3	37°	82
<b>SERIES 363</b> Chipbreaker		3	Variable	84

HPM+		Flutes	Helix Angle	Page
<b>SERIES H235</b> High Performance		2	35°	86
<b>SERIES H337</b> High Performance		3	37°	87





# FERROUS AND EXOTIC ALLOYS

FINISHERS		Flutes	Helix Angle	Page
<b>SERIES 451</b> High Performance Variable		4	Variable	88
<b>SERIES 452</b> High Performance Variable		4	Variable	90
<b>SERIES 406</b> General Purpose		4	30°	92
<b>SERIES 538</b> High Performance Variable		5	38°	94







# FERROUS AND EXOTIC ALLOYS

FINISHERS		Flutes	Helix Angle	Page
<b>SERIES 558</b> High Performance Variable		5	35°	96
<b>SERIES 545</b> General Purpose		5, 7	45°	98
<b>SERIES 374</b> High Performance Variable		6	Variable	100
<b>SERIES 740</b> High Performance		7	40°	102
<b>SERIES 640</b> General Purpose		6	40°	104

ROUGHERS		Flutes	Helix Angle	Page
<b>SERIES 423</b> Fine Pitch Rougher		4	20°	105
<b>SERIES 429</b> Coarse Pitch Rougher		5, 7	45°	106
<b>SERIES 430</b> Negative Rake Rougher		4, 6	40°	107
<b>SERIES 453</b> Chipbreaker		4	Variable	108








## DRILL MILLS

		Flutes	Helix	Page
<b>SERIES 2060</b> 60° Drill Point		2	30°	110
<b>SERIES 2090</b> 90° Drill Point		2	30°	110
<b>SERIES 4060</b> 60° Drill Point		4	30°	111
<b>SERIES 4090</b> 90° Drill Point		4	30°	111




\* Metric and left hand available upon request

# POWDERMETAL / COBALT / HSS ENDMILLS





High-Performance - For Titanium And Stainless Steel Alloys

POWDER METAL (PM30) ENDMILLS				Helix	Standard	Extended Neck	Left-Hand
	5 Flute Finisher	Square / Ball End	P M S	35°	-	113	-
	6 Flute Finisher	Square / Ball End	P M S	35°	112	113	-
	8 Flute Finisher	Square / Ball End	P M S	35°	112	113	-
	4 Flute Rougher - Fine Pitch	Square / Ball End	P M S	30°	114	-	-
	5 Flute Rougher - Fine Pitch	Square / Ball End	P M S	30°	114	115	-
	6 Flute Rougher - Fine Pitch	Square / Ball End	P M S	30°	114	115	-
	8 Flute Rougher - Fine Pitch	Square / Ball End	P M S	30°	114	115	-

High-Performance - For Aluminum Alloys / General Purpose











POWDER METAL (PM4) ENDMILLS				Helix	Standard	Extended Neck	Left-Hand
	3 Flute Finisher	Square / Ball End	N	37°	116	117	-
	3 Flute Truncated Rougher / Finisher	Square / Ball End	N	37°	118	119	-
	3 Flute Rougher - Coarse Pitch	Square / Ball End	N	37°	120	-	-

For General Purpose








COBALT (M42) ENDMILLS				Helix	Standard	Extended Neck	Left-Hand
	2 Flute Finisher	Square / Ball End	P M K S	35°	121	-	-
	4 Flute Finisher	Square / Ball End	P M K S	35°	122	-	126
	6 Flute Finisher	Square / Ball End	P M K S	35°	124	-	127
	8 Flute Finisher	Square / Ball End	P M K S	35°	125	-	127

# POWDERMETAL / COBALT / HSS ENDMILLS

## For General Purpose

COBALT (M42) ENDMILLS				Helix	Standard	Extended Neck	Left-Hand
	4 Flute Rougher - Coarse Pitch	Square / Ball End	P M K S	30°	128	-	130
	5 Flute Rougher - Coarse Pitch	Square / Ball End	P M K S	30°	128	-	130
	6 Flute Rougher - Coarse Pitch	Square / Ball End	P M K S	30°	129	-	130
	8 Flute Rougher - Coarse Pitch	Square / Ball End	P M K S	30°	129	-	130
	4 Flute Rougher - Fine Pitch	Square / Ball End	P M K S	30°	131	-	131
	5 Flute Rougher - Fine Pitch	Square / Ball End	P M K S	30°	132	-	132
	6 Flute Rougher - Fine Pitch	Square / Ball End	P M K S	30°	133	-	133
	8 Flute Rougher - Fine Pitch	Square / Ball End	P M K S	30°	134	-	134
	4, 6, 8 Flute CurveCut™ Ground	Square	P M K S	35°	135	-	-
	4, 6, 8 Flute CurveCut™ Milled	Square	P M K S	35°	136	-	-

## For General Purpose

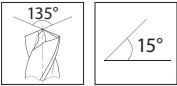
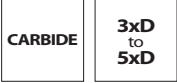
HIGH SPEED STEEL (M7) ENDMILLS				Helix	Standard	Extended Neck	Left-Hand
	2 Flute Finisher	Square / Ball End	P M K S	30°	137	-	-
	2 Flute Finisher	Square / Ball End	N	37°	138	-	139
	3 Flute Finisher	Square / Ball End	N	37°	140	-	141
	3 Flute Rougher - Coarse Pitch	Square / Ball End	N	37°	142	-	143
	4 Flute Finisher	Square / Ball End	P M K S	32-1/2°	144	-	-
	6 Flute Finisher	Square / Ball End	P M K S	32-1/2°	144	-	-
	8 Flute Finisher	Square / Ball End	P M K S	32-1/2°	144	-	-

Available Upon Request – Firm Hold Shank, Additional PVD Coatings

**N** Refer to page 4



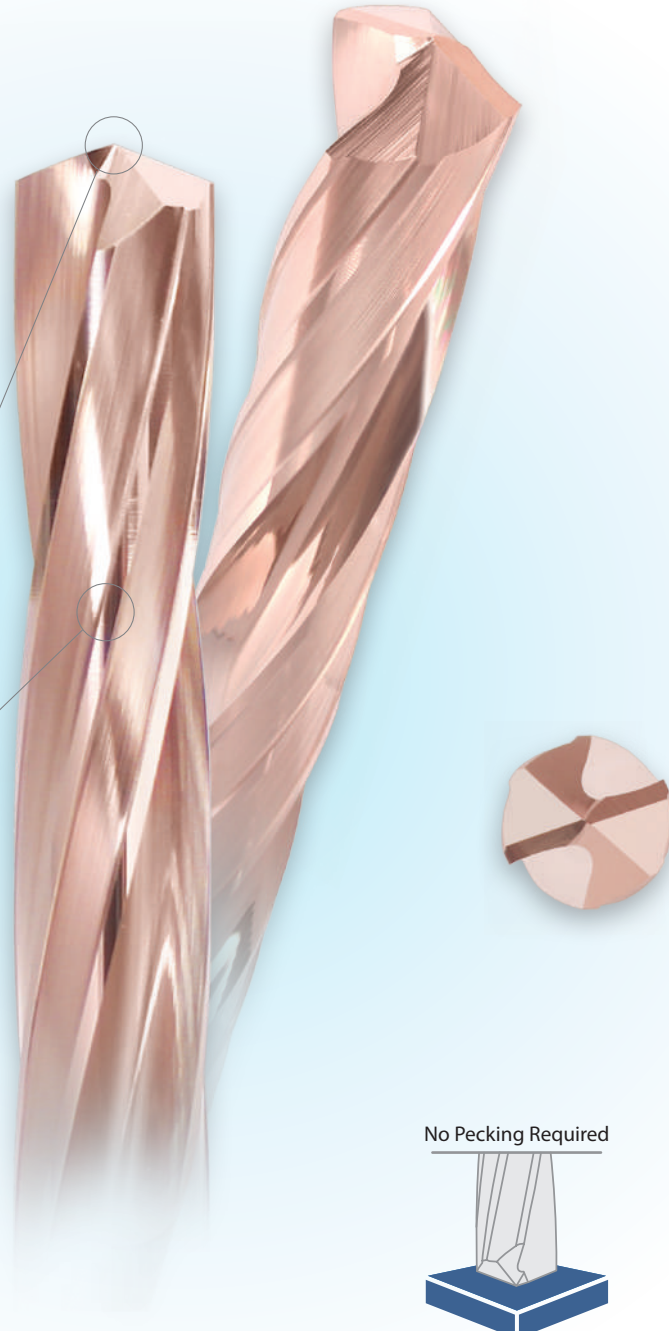
High-performance Triple-margin drill  
Non-coolant thru  
Ideal for aluminum and non-ferrous materials  
3xD-5xD



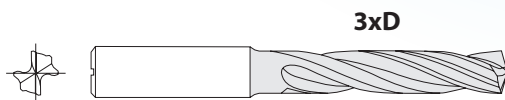
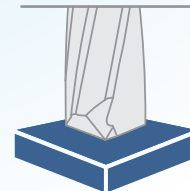
**Zirco Plus®** ZircoPlus® provides increased corrosion and abrasion resistance, for maximized machining.

**135° Point Geometry** - Engineered to provide you with advanced drilling capabilities.

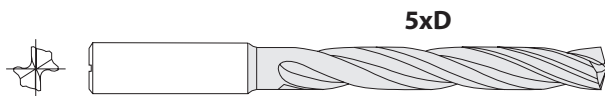
**Triple-Margin Design** - Ideal for improving surface finish and increasing stability.



No Pecking Required



3xD



5xD



Part Number (insert O3 or O5 in place of __)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (in)	3xD Dimensions (in)		5xD Dimensions (in)		Part Number (insert O3 or O5 in place of __)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (in)	3xD Dimensions (in)		5xD Dimensions (in)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>						L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
AX0__000L0T6	L	.2900	7.37	5/16	1-9/16	4	2-3/8	4	AX0__000Z0T6	Z	.4130	10.49	7/16	2	4	2-7/8	5
AX0__000M0T6	M	.2950	7.49	5/16	1-9/16	4	2-3/8	4	AX0__10500T6		.4134	10.50	7/16	2	4	2-7/8	5
AX0__07500T6		.2953	7.50	5/16	1-9/16	4	2-3/8	4	AX0__10720T6	27/64	.4219	10.72	7/16	2	4	2-7/8	5
AX0__07540T6	19/64	.2969	7.54	5/16	1-9/16	4	2-3/8	4	AX0__10800T6		.4252	10.80	7/16	2	4	2-7/8	5
AX0__000N0T6	N	.3020	7.67	5/16	1-5/8	4	2-3/8	4	AX0__11000T6		.4331	11.00	7/16	2-1/16	4	2-7/8	5
AX0__07940T6	5/16	.3125	7.94	5/16	1-5/8	4	2-3/8	4	AX0__11110T6	7/16	.4375	11.11	7/16	2-1/16	4	3	5
AX0__08000T6		.3150	8.00	3/8	1-11/16	4	2-3/8	4	AX0__11500T6		.4528	11.50	1/2	2-1/8	4	3	5
AX0__000O0T6	O	.3160	8.03	3/8	1-11/16	4	2-1/2	5	AX0__11510T6	29/64	.4531	11.51	1/2	2-1/8	4	3	5
AX0__000P0T6	P	.3230	8.20	3/8	1-11/16	4	2-1/2	5	AX0__11910T6	15/32	.4688	11.91	1/2	2-1/8	4	3	5
AX0__08330T6	21/64	.3281	8.33	3/8	1-11/16	4	2-1/2	5	AX0__12000T6		.4724	12.00	1/2	2-3/16	5	3	5
AX0__000Q0T6	Q	.3320	8.43	3/8	1-11/16	4	2-1/2	5	AX0__12300T6	31/64	.4844	12.30	1/2	2-3/16	5	3	5
AX0__08500T6		.3346	8.50	3/8	1-11/16	4	2-1/2	5	AX0__12500T6		.4921	12.50	1/2	2-1/4	5	3	5
AX0__000R0T6	R	.3390	8.61	3/8	1-11/16	4	2-1/2	5	AX0__12700T6	1/2	.5000	12.70	1/2	2-1/4	5	3-1/4	5
AX0__08730T6	11/32	.3438	8.73	3/8	1-11/16	4	2-1/2	5	AX0__13000T6		.5118	13.00	9/16	2-3/8	5	3-1/4	5
AX0__000S0T6	S	.3480	8.84	3/8	1-3/4	4	2-3/4	5	AX0__13100T6	33/64	.5156	13.10	9/16	2-3/8	5	3-1/4	5
AX0__09000T6		.3543	9.00	3/8	1-3/4	4	2-3/4	5	AX0__13490T6	17/32	.5312	13.49	9/16	2-1/2	5	3-1/4	5
AX0__000T0T6	T	.3580	9.09	3/8	1-3/4	4	2-3/4	5	AX0__13500T6		.5315	13.50	9/16	2-1/2	5	3-1/4	5
AX0__09130T6	23/64	.3594	9.13	3/8	1-3/4	4	2-3/4	5	AX0__13890T6	35/64	.5469	13.89	9/16	2-1/2	5	3-1/4	5
AX0__000U0T6	U	.3680	9.35	3/8	1-13/16	4	2-3/4	5	AX0__14000T6		.5512	14.00	9/16	2-1/2	5	3-1/4	5
AX0__09500T6		.3740	9.50	3/8	1-13/16	4	2-3/4	5	AX0__14290T6	9/16	.5625	14.29	9/16	3	5	3-1/4	5
AX0__09520T6	3/8	.3750	9.52	3/8	1-13/16	4	2-7/8	5	AX0__14500T6		.5709	14.50	5/8	3	5	3-1/2	6
AX0__000V0T6	V	.3770	9.57	7/16	1-7/8	4	2-7/8	5	AX0__14680T6	37/64	.5781	14.68	5/8	3	5	3-1/2	6
AX0__000W0T6	W	.3860	9.80	7/16	1-7/8	4	2-7/8	5	AX0__15000T6		.5906	15.00	5/8	3	5	3-1/2	6
AX0__09920T6	25/64	.3906	9.92	7/16	1-7/8	4	2-7/8	5	AX0__15080T6	19/32	.5938	15.08	5/8	3	5	3-1/2	6
AX0__10000T6		.3937	10.00	7/16	1-15/16	4	2-7/8	5	AX0__15480T6	39/64	.6094	15.48	5/8	3	5	3-1/2	6
AX0__000X0T6	X	.3970	10.08	7/16	1-15/16	4	2-7/8	5	AX0__15500T6		.6102	15.50	5/8	3	5	3-1/2	6
AX0__000Y0T6	Y	.4040	10.26	7/16	1-15/16	4	2-7/8	5	AX0__15870T6	5/8	.6250	15.87	5/8	3	5	3-1/2	6
AX0__10320T6	13/32	.4062	10.32	7/16	1-15/16	4	2-7/8	5	AX0__16000T6		.6299	16.00	3/4	3	5	3-1/2	6

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)	Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/--.00039	0-3: + 0/--.010	.0000-.1181: + 0/--.00024	0-3: + 0/--.006
.1182-.2362: + 0/--.00047	3.01-6: + 0/--.012	.1182-.2362: + 0/--.00031	3.01-6: + 0/--.008
.2363-.3937: + 0/--.00059	6.01-10.0: + 0/--.015	.2363-.3937: + 0/--.00035	6.01-10.0: + 0/--.009
.3938-.7087: + 0/--.00071	10.01-18.0: + 0/--.018	.3938-.7087: + 0/--.00043	10.01-18.0: + 0/--.011



High-performance  
Triple-margin drill  
Coolant thru  
Ideal for aluminum and  
non-ferrous materials  
3xD-50xD

Refer to page 4

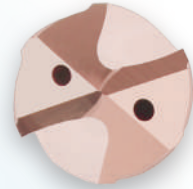
CARBIDE  
3xD  
to  
50xD



Zirco  
Plus®

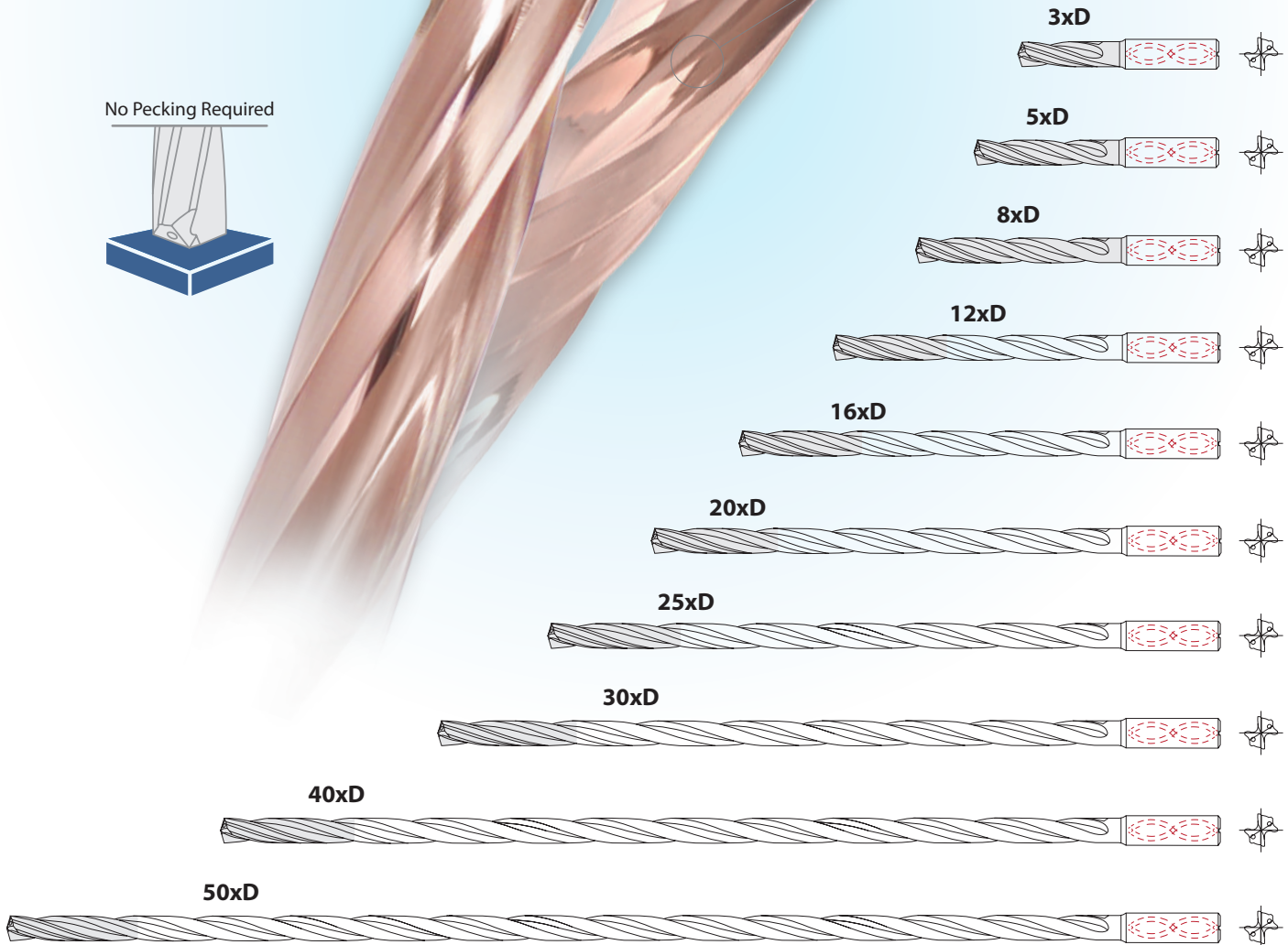
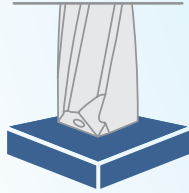
ZircoPlus® provides increased  
corrosion and abrasion resistance,  
for maximized machining.

**Coolant Holes** - Cool the  
cutting edge and improve  
chip evacuation.



**Polished Flutes** -  
12xD to 50xD

No Pecking Required



16xD – 30xD must utilize a pilot hole drill. Refer to page 66. 40xD & 50xD must utilize a 20xD intermediary drill along with pilot drill. Refer to page 19.

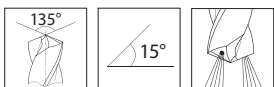
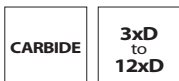


**Design** – Long spiral-fluted, triple-margin, right-hand cut and internal coolant.

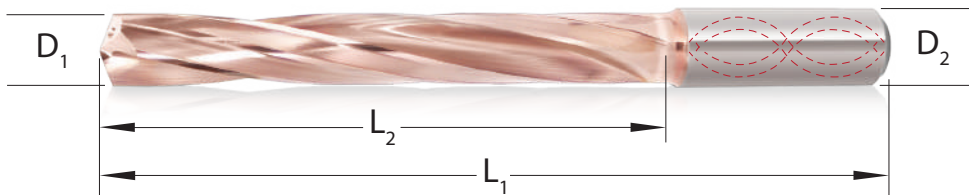
**Ideal for** – Aluminum and non-ferrous materials

**Available Upon Request** – Firm Hold Shank, Additional PVD Coatings

**N** Refer to page 4



**Zirco Plus®** provides increased corrosion and abrasion resistance, for maximized machining.



Part Number (insert 03, 05, 08 or 12 in place of __)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	3xD Dimensions (mm)		5xD Dimensions (mm)		8xD Dimensions (mm)		12xD Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
AXC__03000T6		.1181	3.000	6	20	62	28	66	34	72	54	92
AXC__03100T6		.1220	3.100	6	20	62	28	66	34	72	54	92
AXC__03175T6	1/8	.1250	3.175	6	20	62	28	66	34	72	54	92
AXC__03200T6		.1260	3.200	6	20	62	28	66	34	72	54	92
AXC__03300T6		.1299	3.300	6	20	62	28	66	34	72	54	92
AXC__03400T6		.1339	3.400	6	20	62	28	66	34	72	54	92
AXC__03500T6		.1378	3.500	6	20	62	28	66	34	72	54	92
AXC__03572T6	9/64	.1406	3.572	6	20	62	28	66	34	72	54	92
AXC__03600T6		.1417	3.600	6	20	62	28	66	34	72	54	92
AXC__03700T6		.1457	3.700	6	20	62	28	66	34	72	54	92
AXC__03800T6	#25	.1496	3.800	6	24	66	36	74	43	81	64	102
AXC__03900T6		.1535	3.900	6	24	66	36	74	43	81	64	102
AXC__03970T6	5/32	.1563	3.970	6	24	66	36	74	43	81	64	102
AXC__04000T6		.1575	4.000	6	24	66	36	74	43	81	64	102
AXC__04100T6		.1614	4.100	6	24	66	36	74	43	81	64	102
AXC__04200T6		.1654	4.200	6	24	66	36	74	43	81	64	102
AXC__04300T6		.1693	4.300	6	24	66	36	74	43	81	64	102
AXC__04370T6	11/64	.1719	4.370	6	24	66	36	74	43	81	64	102
AXC__04400T6		.1732	4.400	6	24	66	36	74	43	81	64	102
AXC__04500T6		.1772	4.500	6	24	66	36	74	43	81	64	102
AXC__04600T6		.1811	4.600	6	24	66	36	74	43	81	64	102
AXC__04650T6		.1831	4.650	6	24	66	36	74	43	81	64	102
AXC__00130T6	#13	.1850	4.700	6	24	66	36	74	43	81	64	102
AXC__04760T6	3/16	.1875	4.760	6	28	66	44	82	57	95	78	116
AXC__00120T6	#12	.1890	4.800	6	28	66	44	82	57	95	78	116
AXC__04900T6		.1929	4.900	6	28	66	44	82	57	95	78	116
AXC__05000T6		.1969	5.000	6	28	66	44	82	57	95	78	116
AXC__05100T6		.2008	5.100	6	28	66	44	82	57	95	78	116
AXC__05160T6	13/64	.2031	5.160	6	28	66	44	82	57	95	78	116
AXC__00060T6	#6	.2040	5.182	6	28	66	44	82	57	95	78	116
AXC__05200T6		.2047	5.200	6	28	66	44	82	57	95	78	116
AXC__05300T6		.2087	5.300	6	28	66	44	82	57	95	78	116
AXC__05400T6		.2126	5.400	6	28	66	44	82	57	95	78	116
AXC__05500T6		.2165	5.500	6	28	66	44	82	57	95	78	116

\*\* Diameters (2.0-2.9mm) and other dimensions are available upon request\*\*

**Tolerance**

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)	Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-0.0039	0-3: + 0/-0.10	.0000-.1181: + 0/-0.0024	0-3: + 0/-0.06
.1182-.2362: + 0/-0.0047	3.01-6: + 0/-0.12	.1182-.2362: + 0/-0.0031	3.01-6: + 0/-0.08
.2363-.3937: + 0/-0.0059	6.01-10.0: + 0/-0.15	.2363-.3937: + 0/-0.0035	6.01-10.0: + 0/-0.09
.3938-.7087: + 0/-0.0071	10.01-18.0: + 0/-0.18	.3938-.7087: + 0/-0.0043	10.01-18.0: + 0/-0.11



Part Number (insert 03, 05, 08 or 12 in place of _)					3xD		5xD		8xD		12xD	
	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	Dimensions (mm)		Dimensions (mm)		Dimensions (mm)		Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
AXC__05560T6	7/32	.2187	5.560	6	28	66	44	82	57	95	78	116
AXC__05600T6		.2205	5.600	6	28	66	44	82	57	95	78	116
AXC__05700T6		.2244	5.700	6	28	66	44	82	57	95	78	116
AXC__05800T6		.2283	5.800	6	28	66	44	82	57	95	78	116
AXC__05900T6		.2323	5.900	6	28	66	44	82	57	95	78	116
AXC__05950T6	15/64	.2344	5.950	6	28	66	44	82	57	95	78	116
AXC__06000T6		.2362	6.000	6	28	66	44	82	57	95	78	116
AXC__06100T6		.2402	6.100	8	34	79	53	91	76	114	108	146
AXC__06200T6		.2441	6.200	8	34	79	53	91	76	114	108	146
AXC__06300T6		.2480	6.300	8	34	79	53	91	76	114	108	146
AXC__06350T6	1/4	.2500	6.350	8	34	79	53	91	76	114	108	146
AXC__06400T6		.2520	6.400	8	34	79	53	91	76	114	108	146
AXC__06500T6		.2559	6.500	8	34	79	53	91	76	114	108	146
AXC__06600T6		.2598	6.600	8	34	79	53	91	76	114	108	146
AXC__06700T6		.2638	6.700	8	34	79	53	91	76	114	108	146
AXC__06750T6	17/64	.2656	6.750	8	34	79	53	91	76	114	108	146
AXC__06800T6		.2677	6.800	8	34	79	53	91	76	114	108	146
AXC__06900T6		.2717	6.900	8	41	79	53	91	76	114	108	146
AXC__07000T6		.2756	7.000	8	41	79	53	91	76	114	108	146
AXC__07100T6		.2795	7.100	8	41	79	53	91	76	114	108	146
AXC__07140T6	9/32	.2813	7.140	8	41	79	53	91	76	114	108	146
AXC__07200T6		.2835	7.200	8	41	79	53	91	76	114	108	146
AXC__07300T6		.2874	7.300	8	41	79	53	91	76	114	108	146
AXC__07400T6		.2913	7.400	8	41	79	53	91	76	114	108	146
AXC__07500T6		.2953	7.500	8	41	79	53	91	76	114	108	146
AXC__07540T6	19/64	.2969	7.540	8	41	79	53	91	76	114	108	146
AXC__07700T6		.3031	7.700	8	41	79	53	91	76	114	108	146
AXC__07800T6		.3071	7.800	8	41	79	53	91	76	114	108	146
AXC__07900T6		.3110	7.900	8	41	79	53	91	76	114	108	146
AXC__07940T6	5/16	.3125	7.940	8	41	79	53	91	76	114	108	146
AXC__08000T6		.3150	8.000	8	41	79	53	91	76	114	108	146
AXC__08100T6		.3189	8.100	10	47	89	61	103	95	142	120	162
AXC__08200T6		.3228	8.200	10	47	89	61	103	95	142	120	162
AXC__08300T6		.3268	8.300	10	47	89	61	103	95	142	120	162
AXC__08330T6	21/64	.3281	8.330	10	47	89	61	103	95	142	120	162
AXC__08400T6		.3307	8.400	10	47	89	61	103	95	142	120	162
AXC__08500T6		.3346	8.500	10	47	89	61	103	95	142	120	162
AXC__08600T6		.3386	8.600	10	47	89	61	103	95	142	120	162
AXC__08700T6		.3425	8.700	10	47	89	61	103	95	142	120	162
AXC__08730T6	11/32	.3437	8.730	10	47	89	61	103	95	142	120	162
AXC__08800T6		.3465	8.800	10	47	89	61	103	95	142	120	162
AXC__09000T6		.3543	9.000	10	47	89	61	103	95	142	120	162
AXC__09130T6	23/64	.3594	9.130	10	47	89	61	103	95	142	120	162
AXC__09200T6		.3622	9.200	10	47	89	61	103	95	142	120	162
AXC__09300T6		.3661	9.300	10	47	89	61	103	95	142	120	162
AXC__09500T6		.3740	9.500	10	47	89	61	103	95	142	120	162
AXC__09520T6	3/8	.3750	9.520	10	47	89	61	103	95	142	120	162
AXC__09600T6		.3780	9.600	10	47	89	61	103	95	142	120	162
AXC__09800T6		.3858	9.800	10	47	89	61	103	95	142	120	162
AXC__09900T6		.3898	9.900	10	47	89	61	103	95	142	120	162
AXC__09920T6	25/64	.3906	9.920	10	47	89	61	103	95	142	120	162
AXC__10000T6		.3937	10.000	10	47	89	61	103	95	142	120	162
AXC__10100T6		.3976	10.100	12	55	102	71	118	114	162	156	204
AXC__10200T6		.4016	10.200	12	55	102	71	118	114	162	156	204
AXC__10300T6		.4055	10.300	12	55	102	71	118	114	162	156	204
AXC__10320T6	13/32	.4063	10.320	12	55	102	71	118	114	162	156	204
AXC__10400T6		.4094	10.400	12	55	102	71	118	114	162	156	204
AXC__10500T6		.4134	10.500	12	55	102	71	118	114	162	156	204
AXC__10720T6	27/64	.4219	10.720	12	55	102	71	118	114	162	156	204
AXC__10800T6		.4252	10.800	12	55	102	71	118	114	162	156	204
AXC__11000T6		.4331	11.000	12	55	102	71	118	114	162	156	204
AXC__11100T6		.4370	11.100	12	55	102	71	118	114	162	156	204

\*\* Diameters (2.0-2.9mm) and other dimensions are available upon request\*\*

Part Number (insert 03, 05, 08 or 12 in place of _)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	3xD Dimensions (mm)		5xD Dimensions (mm)		8xD Dimensions (mm)		12xD Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
AXC__11113T6	7/16	.4375	11.113	12	55	102	71	118	114	162	156	204
AXC__11200T6		.4409	11.200	12	55	102	71	118	114	162	156	204
AXC__11500T6		.4528	11.500	12	55	102	71	118	114	162	156	204
AXC__11510T6	29/64	.4531	11.510	12	55	102	71	118	114	162	156	204
AXC__11700T6		.4606	11.700	12	55	102	71	118	114	162	156	204
AXC__11800T6		.4646	11.800	12	55	102	71	118	114	162	156	204
AXC__11910T6	15/32	.4687	11.910	12	55	102	71	118	114	162	156	204
AXC__12000T6		.4724	12.000	12	55	102	71	118	114	162	156	204
AXC__12100T6		.4764	12.100	14	60	107	77	124	131	178	182	230
AXC__12200T6		.4803	12.200	14	60	107	77	124	131	178	182	230
AXC__12300T6		.4843	12.300	14	60	107	77	124	131	178	182	230
AXC__12303T6	31/64	.4844	12.303	14	60	107	77	124	131	178	182	230
AXC__12500T6		.4921	12.500	14	60	107	77	124	131	178	182	230
AXC__12600T6		.4961	12.600	14	60	107	77	124	131	178	182	230
AXC__12700T6	1/2	.5000	12.700	14	60	107	77	124	131	178	182	230
AXC__13000T6		.5118	13.000	14	60	107	77	124	131	178	182	230
AXC__13300T6		.5236	13.300	14	60	107	77	124	131	178	182	230
AXC__13490T6	17/32	.5313	13.490	14	60	107	77	124	131	178	182	230
AXC__13500T6		.5315	13.500	14	60	107	77	124	131	178	182	230
AXC__14000T6		.5512	14.000	14	60	107	77	124	131	178	182	230
AXC__14290T6	9/16	.5625	14.290	16	65	115	83	133	152	203	208	260
AXC__14500T6		.5709	14.500	16	65	115	83	133	152	203	208	260
AXC__15000T6		.5906	15.000	16	65	115	83	133	152	203	208	260
AXC__15500T6		.6102	15.500	16	65	115	83	133	152	203	208	260
AXC__15870T6	5/8	.6250	15.870	16	65	115	83	133	152	203	208	260
AXC__16000T6		.6299	16.000	16	65	115	83	133	152	203	208	260
AXC__16500T6		.6496	16.500	18	73	123	93	143	171	222	234	285
AXC__17000T6		.6693	17.000	18	73	123	93	143	171	222	234	285
AXC__17500T6		.6890	17.500	18	73	123	93	143	171	222	234	285
AXC__18000T6		.7087	18.000	18	73	123	93	143	171	222	234	285
AXC__18500T6		.7283	18.500	20	79	131	101	153	190	243	258	310
AXC__19050T6	3/4	.7500	19.050	20	79	131	101	153	190	243	258	310
AXC__19500T6		.7677	19.500	20	79	131	101	153	190	243	258	310
AXC__20000T6		.7874	20.000	20	79	131	101	153	190	243	258	310

\*\* Diameters (2.0-2.9mm) and other dimensions are available upon request\*\*

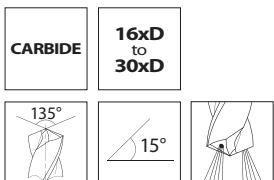


**Design** – Long spiral-fluted, triple-margin, right-hand cut and internal coolant.

**Ideal for** – Aluminum and non-ferrous materials

■ 16xD – 30xD must utilize a pilot hole drill. (Refer to page 66)

**N** Refer to page 4



ZircoPlus® provides increased corrosion and abrasion resistance, for maximized machining.



Part Number (insert 16, 20, 25 or 30 in place of _)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	16xD Dimensions (mm)		20xD Dimensions (mm)		25xD Dimensions (mm)		30xD Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
AXC__03000T6		.1181	3.000	6	60	100	80	120	98	135	105	150
AXC__03175T6	1/8	.1250	3.175	6	60	100	80	120	98	135	105	150
AXC__03200T6		.1260	3.200	6	60	100	80	120	98	135	105	150
AXC__03300T6		.1299	3.300	6	60	100	80	120	110	150	135	185
AXC__03500T6		.1378	3.500	6	60	100	80	120	110	150	135	185
AXC__03572T6	9/64	.1406	3.572	6	75	115	90	130	120	160	135	185
AXC__03800T6	#25	.1496	3.800	6	75	115	90	130	120	160	135	185
AXC__03970T6	5/32	.1563	3.970	6	75	115	90	130	120	160	135	185
AXC__04000T6		.1575	4.000	6	75	115	90	130	120	160	135	185
AXC__04200T6		.1654	4.200	6	75	115	110	160	120	160	135	185
AXC__04370T6	11/64	.1719	4.370	6	90	130	110	160	135	180	165	215
AXC__04500T6		.1772	4.500	6	90	130	110	160	135	180	165	215
AXC__00130T6	#13	.1850	4.700	6	90	130	120	160	135	180	165	215
AXC__04760T6	3/16	.1875	4.760	6	90	130	120	160	135	180	165	215
AXC__00120T6	#12	.1890	4.800	6	90	130	120	160	135	180	165	215
AXC__05000T6		.1969	5.000	6	90	130	120	160	135	180	165	215
AXC__05160T6	13/64	.2031	5.160	6	108	150	140	185	168	205	180	230
AXC__00060T6	#6	.2040	5.182	6	108	150	140	185	168	205	180	230
AXC__05500T6		.2165	5.500	6	108	150	140	185	168	205	180	230
AXC__05560T6	7/32	.2187	5.560	6	108	150	140	185	168	205	180	230
AXC__05800T6		.2283	5.800	6	108	150	140	185	168	205	180	230
AXC__05950T6	15/64	.2344	5.950	6	108	150	140	185	168	205	180	230
AXC__06000T6		.2362	6.000	6	108	150	140	185	168	205	180	230
AXC__06350T6	1/4	.2500	6.350	8	125	165	160	210	200	240	215	280
AXC__06500T6		.2559	6.500	8	125	165	160	210	200	240	215	280
AXC__06750T6	17/64	.2656	6.750	8	125	165	160	210	200	240	230	280
AXC__06800T6		.2677	6.800	8	125	165	160	210	200	240	230	280
AXC__07000T6		.2756	7.000	8	125	165	160	210	200	240	230	280
AXC__07140T6	9/32	.2813	7.140	8	140	180	180	230	220	260	230	280
AXC__07500T6		.2953	7.500	8	140	180	180	230	220	260	230	280
AXC__07540T6	19/64	.2969	7.540	8	140	180	180	230	220	260	265	315
AXC__07800T6		.3071	7.800	8	140	180	180	230	220	260	265	315
AXC__07940T6	5/16	.3125	7.940	8	140	180	180	230	220	260	265	315
AXC__08000T6		.3150	8.000	8	140	180	180	230	220	260	265	315

\*\* Diameters (2.0-2.9mm) and other dimensions are available upon request\*\*

Tolerance

<b>Drill Dia (h7) Inches (in)</b> .0000-.1181: + 0/- .00039 .1182-.2362: + 0/- .00047 .2363-.3937: + 0/- .00059 .3938-.7087: + 0/- .00071	<b>Drill Dia (h7) Metric (mm)</b> 0-3: + 0/- .010 3.01-6: + 0/- .012 6.01-10.0: + 0/- .015 10.01-18.0: + 0/- .018	<b>Shank Dia (h6) Inches (in)</b> .0000-.1181: + 0/- .00024 .1182-.2362: + 0/- .00031 .2363-.3937: + 0/- .00035 .3938-.7087: + 0/- .00043	<b>Shank Dia (h6) Metric (mm)</b> 0-3: + 0/- .006 3.01-6: + 0/- .008 6.01-10.0: + 0/- .009 10.01-18.0: + 0/- .011
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■ 16xD – 30xD must utilize a pilot hole drill. (Refer to page 66)

Part Number (insert 16, 20, 25 or 30 in place of __)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	16xD Dimensions (mm)		20xD Dimensions (mm)		25xD Dimensions (mm)		30xD Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
AXC__08330T6	21/64	.3281	8.330	10	160	205	195	206	240	285	295	350
AXC__08500T6		.3346	8.500	10	160	205	195	206	240	285	295	350
AXC__08730T6	11/32	.3437	8.730	10	160	205	230	290	268	310	330	380
AXC__08800T6		.3465	8.800	10	160	205	230	290	268	310	330	380
AXC__09000T6		.3543	9.000	10	160	205	230	290	268	310	330	380
AXC__09130T6	23/64	.3594	9.130	10	150	225	230	290	268	310	330	380
AXC__09520T6	3/8	.3750	9.520	10	180	225	230	290	268	310	330	380
AXC__09800T6		.3858	9.800	10	180	225	230	290	268	310	330	380
AXC__09920T6	25/64	.3906	9.920	10	180	225	230	290	268	310	330	380
AXC__10000T6		.3937	10.000	10	180	225	230	290	268	310	330	380
AXC__10200T6		.4016	10.200	12	190	240	268	315	325	375	-	-
AXC__10320T6	13/32	.4063	10.320	12	190	240	230	290	325	375	-	-
AXC__10720T6	27/64	.4219	10.720	12	190	240	230	290	325	375	-	-
AXC__10800T6		.4252	10.800	12	190	240	230	290	325	375	-	-
AXC__11000T6		.4331	11.000	12	190	240	268	315	325	375	-	-
AXC__11113T6	7/16	.4375	11.113	12	215	265	268	315	325	375	-	-
AXC__11500T6		.4528	11.500	12	215	265	268	315	325	375	-	-
AXC__11510T6	29/64	.4531	11.510	12	215	265	268	315	325	375	-	-
AXC__11910T6	15/32	.4687	11.910	12	215	265	268	315	325	375	-	-
AXC__12000T6		.4724	12.000	12	215	265	268	315	325	375	-	-
AXC__12300T6		.4843	12.300	14	230	280	280	325	-	-	-	-
AXC__12303T6	31/64	.4844	12.303	14	230	280	280	325	-	-	-	-
AXC__12700T6	1/2	.5000	12.700	14	230	280	280	325	-	-	-	-
AXC__13000T6		.5118	13.000	14	230	280	280	325	-	-	-	-
AXC__13300T6		.5236	13.300	14	245	295	305	355	-	-	-	-
AXC__13490T6	17/32	.5313	13.490	14	245	295	305	355	-	-	-	-
AXC__13500T6		.5315	13.500	14	245	295	305	355	-	-	-	-
AXC__14000T6		.5512	14.000	14	245	295	305	355	-	-	-	-
AXC__14290T6	9/16	.5625	14.290	16	255	305	-	-	-	-	-	-
AXC__14500T6		.5709	14.500	16	255	305	-	-	-	-	-	-
AXC__15000T6		.5906	15.000	16	255	305	-	-	-	-	-	-
AXC__15500T6		.6102	15.500	16	275	325	-	-	-	-	-	-
AXC__15870T6	5/8	.6250	15.870	16	275	325	-	-	-	-	-	-
AXC__16000T6		.6299	16.000	16	275	325	-	-	-	-	-	-

\*\* Diameters (2.0-2.9mm) and other dimensions are available upon request\*\*

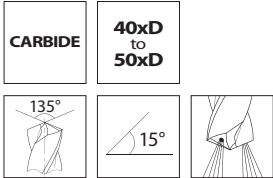


**Design** – Long spiral-fluted, triple-margin, right-hand cut and internal coolant.

**Ideal for** – Aluminum and non-ferrous materials

■ 40xD & 50xD must utilize a 20xD intermediary drill (page 19) along with a pilot drill. (page 66)

**N** Refer to page 4



**Zirco Plus®** provides increased corrosion and abrasion resistance, for maximized machining.



Part Number (insert 40 or 50 in place of _)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	40xD Hole Depth Dimensions (mm)		50xD Hole Depth Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
AXC_03000T6		.1181	3.000	6	140	190	-	-
AXC_03175T6	1/8	.1250	3.175	6	140	190	-	-
AXC_03572T6	9/64	.1406	3.572	6	140	190	-	-
AXC_03800T6	#25	.1496	3.800	6	180	230	-	-
AXC_03970T6	5/32	.1563	3.970	6	180	230	-	-
AXC_04000T6		.1575	4.000	6	180	230	225	270
AXC_04200T6		.1654	4.200	6	180	230	225	270
AXC_04370T6	11/64	.1719	4.370	6	220	270	275	320
AXC_04500T6		.1772	4.500	6	220	270	275	320
AXC_00130T6	#13	.1850	4.700	6	220	270	275	320
AXC_04760T6	3/16	.1875	4.760	6	220	270	275	320
AXC_00120T6	#12	.1890	4.800	6	220	270	275	320
AXC_05000T6		.1969	5.000	6	220	270	275	320
AXC_05160T6	13/64	.2031	5.160	6	240	290	310	360
AXC_00060T6	#6	.2040	5.182	6	240	290	310	360
AXC_05500T6		.2165	5.500	6	240	290	310	360
AXC_05560T6	7/32	.2187	5.560	6	240	290	310	360
AXC_05800T6		.2283	5.800	6	240	290	310	360
AXC_05950T6	15/64	.2344	5.950	6	240	290	310	360
AXC_06000T6		.2362	6.000	6	240	290	310	360
AXC_06350T6	1/4	.2500	6.350	8	290	340	340	385
AXC_06500T6		.2559	6.500	8	290	340	-	-
AXC_06750T6	17/64	.2656	6.750	8	320	370	-	-
AXC_06800T6		.2677	6.800	8	320	370	-	-
AXC_07000T6		.2756	7.000	8	320	370	-	-
AXC_07140T6	9/32	.2813	7.140	8	320	370	-	-
AXC_07500T6		.2953	7.500	8	320	370	-	-
AXC_07540T6	19/64	.2969	7.540	8	350	400	-	-
AXC_07800T6		.3071	7.800	8	350	400	-	-
AXC_07940T6	5/16	.3125	7.940	8	350	400	-	-
AXC_08000T6		.3150	8.000	8	350	400	-	6

\*\* Other dimensions are available upon request\*\*

Now Improved with

**EDGE CUT™** for Superior Cutter Performance



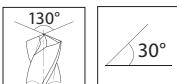
High-performance  
Single-margin drill  
Non-coolant thru  
Ideal for aluminum &  
cast materials  
3xD-5xD

**Design** – Spiral-fluted, right-hand cut, with external coolant and a cylindrical shank.

**Available Upon Request** – Firm Hold Shank, Additional PVD Coatings

**K N** Refer to page 4

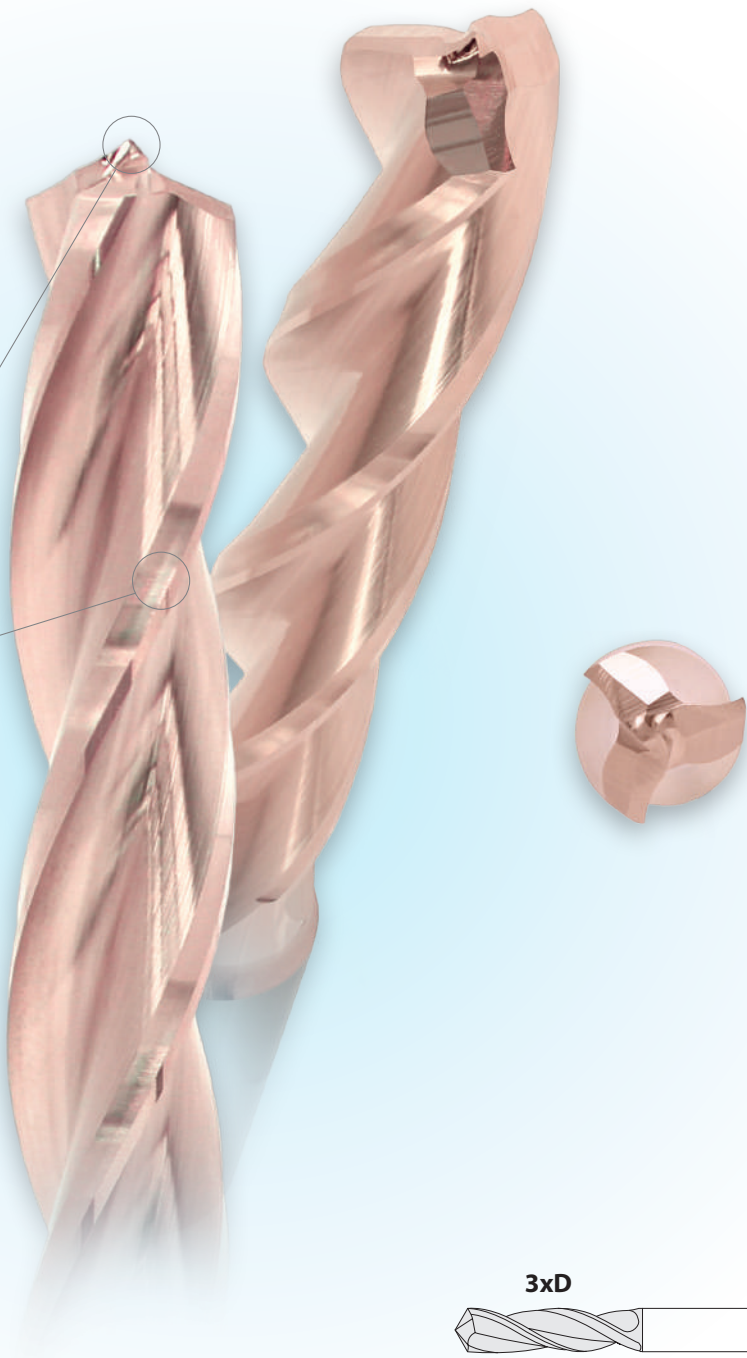
CARBIDE  
3xD to 5xD



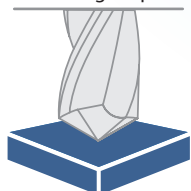
**Zirco Plus®** provides increased corrosion and abrasion resistance, for maximized machining.

**130° Point Geometry Self Centering** - Ideal for faster drilling and high feed rates.

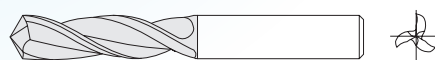
**Single-Margin Design** - For drilling accuracy.



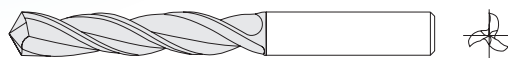
No Pecking Required

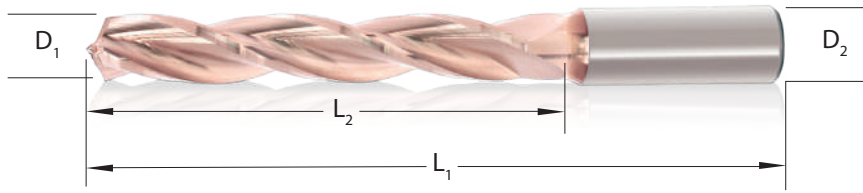


3xD



5xD





Part Number (insert 03 or 05 in place of _)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (in)	3xD Dimensions (in)		5xD Dimensions (in)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
CX0_06250T6	1/16	.0625	1.59	1/8	5/8	2	3/4	2-1/2
CX0_00520T6	#52	.0635	1.61	1/8	11/16	2	3/4	2-1/2
CX0_00510T6	#51	.0670	1.70	1/8	11/16	2	3/4	2-1/2
CX0_00500T6	#50	.0700	1.78	1/8	11/16	2	7/8	2-1/2
CX0_00490T6	#49	.0730	1.85	1/8	11/16	2	7/8	2-1/2
CX0_00480T6	#48	.0760	1.93	1/8	11/16	2	7/8	2-1/2
CX0_07810T6	5/64	.0781	1.98	1/8	11/16	2	7/8	2-1/2
CX0_00470T6	#47	.0785	1.99	1/8	3/4	2-1/2	7/8	2-1/2
CX0_07870T6		.0787	2.00	1/8	3/4	2-1/2	7/8	2-1/2
CX0_00460T6	#46	.0810	2.06	1/8	3/4	2-1/2	7/8	2-1/2
CX0_00450T6	#45	.0820	2.08	1/8	3/4	2-1/2	7/8	2-1/2
CX0_00440T6	#44	.0860	2.18	1/8	3/4	2-1/2	1	2-1/2
CX0_00430T6	#43	.0890	2.26	1/8	3/4	2-1/2	1	2-1/2
CX0_00420T6	#42	.0935	2.37	1/8	3/4	2-1/2	1	2-1/2
CX0_09380T6	3/32	.0938	2.38	1/8	3/4	2-1/2	1	2-1/2
CX0_00410T6	#41	.0960	2.44	1/8	13/16	2-1/2	1	3
CX0_00400T6	#40	.0980	2.49	1/8	13/16	2-1/2	1	3
CX0_09840T6		.0984	2.50	1/8	13/16	2-1/2	1	3
CX0_00390T6	#39	.0995	2.53	1/8	13/16	2-1/2	1-1/4	3
CX0_00380T6	#38	.1015	2.58	1/8	13/16	2-1/2	1-1/4	3
CX0_00370T6	#37	.1040	2.64	1/8	13/16	2-1/2	1-1/4	3
CX0_00360T6	#36	.1065	2.71	1/8	13/16	2-1/2	1-1/4	3
CX0_01094T6	7/64	.1094	2.78	1/8	13/16	2-1/2	1-1/4	3
CX0_00350T6	#35	.1100	2.79	1/8	7/8	2-1/2	1-1/4	3
CX0_00340T6	#34	.1110	2.82	1/8	7/8	2-1/2	1-1/4	3
CX0_00330T6	#33	.1130	2.87	1/8	7/8	2-1/2	1-1/4	3
CX0_00320T6	#32	.1160	2.95	1/8	7/8	2-1/2	1-1/4	3
CX0_03000T6		.1181	3.00	1/8	7/8	2-1/2	1-1/4	3
CX0_00310T6	#31	.1200	3.05	1/8	7/8	2-1/2	1-1/4	3
CX0_03175T6	1/8	.1250	3.17	1/8	7/8	2-1/2	1-1/4	3
CX0_00300T6	#30	.1285	3.26	3/16	15/16	2-1/2	1-3/8	3
CX0_00290T6	#29	.1360	3.45	3/16	15/16	2-1/2	1-3/8	3
CX0_03500T6		.1378	3.50	3/16	15/16	2-1/2	1-3/8	3
CX0_00280T6	#28	.1405	3.57	3/16	15/16	2-1/2	1-3/8	3
CX0_03570T6	9/64	.1406	3.57	3/16	1	2-1/2	1-3/8	3
CX0_00270T6	#27	.1440	3.66	3/16	1	2-1/2	1-3/8	3

Part Number (insert 03 or 05 in place of _)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (in)	3xD Dimensions (in)		5xD Dimensions (in)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
CX0_00260T6	#26	.1470	3.73	3/16	1	2-1/2	1-3/8	3
CX0_00250T6	#25	.1495	3.80	3/16	1	2-1/2	1-3/8	3
CX0_00240T6	#24	.1520	3.86	3/16	1	2-1/2	1-3/8	3
CX0_00230T6	#23	.1540	3.91	3/16	1	2-1/2	1-3/8	3
CX0_03970T6	5/32	.1562	3.97	3/16	1	2-1/2	1-3/8	3
CX0_00220T6	#22	.1570	3.99	3/16	1-1/16	2-1/2	1-3/8	3
CX0_04000T6		.1575	4.00	3/16	1-1/16	2-1/2	1-3/8	3
CX0_00210T6	#21	.1590	4.04	3/16	1-1/16	2-1/2	1-3/8	3
CX0_00200T6	#20	.1610	4.09	3/16	1-1/16	2-1/2	1-3/8	3
CX0_04200T6		.1654	4.20	3/16	1-1/16	2-1/2	1-5/8	4
CX0_00190T6	#19	.1660	4.22	3/16	1-1/16	2-1/2	1-5/8	4
CX0_00180T6	#18	.1695	4.30	3/16	1-1/16	2-1/2	1-5/8	4
CX0_04370T6	11/64	.1719	4.37	3/16	1-1/16	2-1/2	1-5/8	4
CX0_00170T6	#17	.1730	4.39	3/16	1-1/8	3	1-5/8	4
CX0_00160T6	#16	.1770	4.49	3/16	1-1/8	3	1-5/8	4
CX0_04500T6		.1772	4.50	3/16	1-1/8	3	1-5/8	4
CX0_00150T6	#15	.1800	4.57	3/16	1-1/8	3	1-5/8	4
CX0_00140T6	#14	.1820	4.62	3/16	1-1/8	3	1-5/8	4
CX0_00130T6	#13	.1850	4.70	3/16	1-1/8	3	1-5/8	4
CX0_04760T6	3/16	.1875	4.76	3/16	1-1/8	3	1-5/8	4
CX0_00120T6	#12	.1890	4.80	1/4	1-3/16	3	1-5/8	4
CX0_00110T6	#11	.1910	4.85	1/4	1-3/16	3	1-5/8	4
CX0_00100T6	#10	.1935	4.91	1/4	1-3/16	3	1-3/4	4
CX0_00090T6	#9	.1960	4.98	1/4	1-3/16	3	1-3/4	4
CX0_05000T6		.1969	5.00	1/4	1-3/16	3	1-3/4	4
CX0_00080T6	#8	.1990	5.05	1/4	1-3/16	3	1-3/4	4
CX0_05100T6		.2008	5.10	1/4	1-3/16	3	1-3/4	4
CX0_00070T6	#7	.2010	5.10	1/4	1-3/16	3	1-3/4	4
CX0_05160T6	13/64	.2031	5.16	1/4	1-3/16	3	1-3/4	4
CX0_00060T6	#6	.2040	5.18	1/4	1-1/4	3	1-3/4	4
CX0_00050T6	#5	.2055	5.22	1/4	1-1/4	3	1-3/4	4
CX0_00040T6	#4	.2090	5.31	1/4	1-1/4	3	1-3/4	4
CX0_00030T6	#3	.2130	5.41	1/4	1-1/4	3	1-3/4	4
CX0_02165T6		.2165	5.50	1/4	1-1/4	3	1-3/4	4
CX0_05560T6	7/32	.2188	5.56	1/4	1-1/4	3	1-3/4	4
CX0_00020T6	#2	.2210	5.61	1/4	1-5/16	3	2	4

Tolerance

<b>Drill Dia (h7) Inches (in)</b> .0000-.1181: + 0/- .00039 .1182-.2362: + 0/- .00047 .2363-.3937: + 0/- .00059 .3938-.7087: + 0/- .00071	<b>Drill Dia (h7) Metric (mm)</b> 0-3: + 0/- .010 3.01-6: + 0/- .012 6.01-10.0: + 0/- .015 10.01-18.0: + 0/- .018	<b>Shank Dia (h6) Inches (in)</b> .0000-.1181: + 0/- .00024 .1182-.2362: + 0/- .00031 .2363-.3937: + 0/- .00035 .3938-.7087: + 0/- .00043	<b>Shank Dia (h6) Metric (mm)</b> 0-3: + 0/- .006 3.01-6: + 0/- .008 6.01-10.0: + 0/- .009 10.01-18.0: + 0/- .011
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Part Number (insert 03 or 05 in place of __)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (in)	3xD Dimensions (in)			5xD Dimensions (in)		
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>		
CX0__00010T6	#1	.2280	5.79	1/4	1-5/16	3	2	4		
CX0__000A0T6	A	.2340	5.94	1/4	1-5/16	3	2	4		
CX0__05950T6	15/64	.2344	5.95	1/4	1-5/16	3	2	4		
CX0__06000T6		.2362	6.00	1/4	1-3/8	3	2	4		
CX0__000B0T6	B	.2380	6.04	1/4	1-3/8	3	2	4		
CX0__000C0T6	C	.2420	6.15	1/4	1-3/8	3	2	4		
CX0__000D0T6	D	.2460	6.25	1/4	1-3/8	3	2	4		
CX0__06350T6	1/4/E	.2500	6.35	1/4	1-3/8	3	2	4		
CX0__06500T6		.2559	6.50	5/16	1-7/16	3	2-1/8	4		
CX0__000F0T6	F	.2570	6.53	5/16	1-7/16	3	2-1/8	4		
CX0__000G0T6	G	.2610	6.63	5/16	1-7/16	3	2-1/8	4		
CX0__06750T6	17/64	.2656	6.75	5/16	1-7/16	3	2-1/8	4		
CX0__000H0T6	H	.2660	6.76	5/16	1-1/2	3	2-1/8	4		
CX0__000I0T6	I	.2720	6.91	5/16	1-1/2	3	2-1/8	4		
CX0__07000T6		.2756	7.00	5/16	1-1/2	3	2-1/8	4		
CX0__000J0T6	J	.2770	7.03	5/16	1-1/2	3	2-1/8	4		
CX0__000K0T6	K	.2810	7.14	5/16	1-1/2	3	2-1/8	4		
CX0__07140T6	9/32	.2812	7.14	5/16	1-1/2	3	2-3/8	4		
CX0__000L0T6	L	.2900	7.37	5/16	1-9/16	4	2-3/8	4		
CX0__000M0T6	M	.2950	7.49	5/16	1-9/16	4	2-3/8	4		
CX0__07500T6		.2953	7.50	5/16	1-9/16	4	2-3/8	4		
CX0__07540T6	19/64	.2969	7.54	5/16	1-9/16	4	2-3/8	4		
CX0__000N0T6	N	.3020	7.67	5/16	1-5/8	4	2-3/8	4		
CX0__07940T6	5/16	.3125	7.94	5/16	1-5/8	4	2-3/8	4		
CX0__08000T6		.3150	8.00	3/8	1-11/16	4	2-3/8	4		
CX0__000O0T6	O	.3160	8.03	3/8	1-11/16	4	2-1/2	5		
CX0__000P0T6	P	.3230	8.20	3/8	1-11/16	4	2-1/2	5		
CX0__08330T6	21/64	.3281	8.33	3/8	1-11/16	4	2-1/2	5		
CX0__000Q0T6	Q	.3320	8.43	3/8	1-11/16	4	2-1/2	5		
CX0__08500T6		.3346	8.50	3/8	1-11/16	4	2-1/2	5		
CX0__000R0T6	R	.3390	8.61	3/8	1-11/16	4	2-1/2	5		
CX0__08730T6	11/32	.3438	8.73	3/8	1-11/16	4	2-1/2	5		
CX0__000S0T6	S	.3480	8.84	3/8	1-3/4	4	2-1/2	5		
CX0__09000T6		.3543	9.00	3/8	1-3/4	4	2-1/2	5		
CX0__000T0T6	T	.3580	9.09	3/8	1-3/4	4	2-3/4	5		
CX0__09130T6	23/64	.3594	9.13	3/8	1-3/4	4	2-3/4	5		
CX0__000U0T6	U	.3680	9.35	3/8	1-13/16	4	2-3/4	5		
CX0__09500T6		.3740	9.50	3/8	1-13/16	4	2-3/4	5		
CX0__09520T6	3/8	.3750	9.52	3/8	1-13/16	4	2-7/8	5		
CX0__000V0T6	V	.3770	9.57	7/16	1-7/8	4	2-7/8	5		
CX0__000W0T6	W	.3860	9.80	7/16	1-7/8	4	2-7/8	5		
CX0__09920T6	25/64	.3906	9.92	7/16	1-7/8	4	2-7/8	5		
CX0__10000T6		.3937	10.00	7/16	1-15/16	4	2-7/8	5		
CX0__000X0T6	X	.3970	10.08	7/16	1-15/16	4	2-7/8	5		
CX0__000Y0T6	Y	.4040	10.26	7/16	1-15/16	4	2-7/8	5		
CX0__10320T6	13/32	.4062	10.32	7/16	1-15/16	4	2-7/8	5		
CX0__000Z0T6	Z	.4130	10.49	7/16	2	4	2-7/8	5		
CX0__10500T6		.4134	10.50	7/16	2	4	2-7/8	5		
CX0__10720T6	27/64	.4219	10.72	7/16	2	4	2-7/8	5		
CX0__10800T6		.4252	10.80	7/16	2	4	2-7/8	5		
CX0__11000T6		.4331	11.00	7/16	2-1/16	4	2-7/8	5		
CX0__11110T6	7/16	.4375	11.11	7/16	2-1/16	4	3	5		
CX0__11500T6		.4528	11.50	1/2	2-1/8	4	3	5		
CX0__11510T6	29/64	.4531	11.51	1/2	2-1/8	4	3	5		
CX0__11910T6	15/32	.4688	11.91	1/2	2-1/8	4	3	5		
CX0__12000T6		.4724	12.00	1/2	2-3/16	5	3	5		
CX0__12300T6	31/64	.4844	12.30	1/2	2-3/16	5	3	5		
CX0__12500T6		.4921	12.50	1/2	2-1/4	5	3	5		
CX0__12700T6	1/2	.5000	12.70	1/2	2-1/4	5	3-1/4	5		
CX0__13000T6		.5118	13.00	9/16	2-3/8	5	3-1/4	5		
CX0__13100T6	33/64	.5156	13.10	9/16	2-3/8	5	3-1/4	5		
CX0__13490T6	17/32	.5312	13.49	9/16	2-1/2	5	3-1/4	5		
CX0__13500T6		.5315	13.50	9/16	2-1/2	5	3-1/4	5		
CX0__13890T6	35/64	.5469	13.89	9/16	2-1/2	5	3-1/4	5		
CX0__14000T6		.5512	14.00	9/16	2-1/2	5	3-1/4	5		
CX0__14290T6	9/16	.5625	14.29	9/16	3	5	3-1/4	5		
CX0__14500T6		.5709	14.50	5/8	3	5	3-1/2	6		
CX0__14680T6	37/64	.5781	14.68	5/8	3	5	3-1/2	6		
CX0__15000T6		.5906	15.00	5/8	3	5	3-1/2	6		
CX0__15080T6	19/32	.5938	15.08	5/8	3	5	3-1/2	6		
CX0__15480T6	39/64	.6094	15.48	5/8	3	5	3-1/2	6		
CX0__15500T6		.6102	15.50	5/8	3	5	3-1/2	6		
CX0__15870T6	5/8	.6250	15.87	5/8	3	5	3-1/2	6		
CX0__16000T6		.6299	16.00	3/4	3	5	3-1/2	6		

\*\*Other Dimensions are Available Upon Request\*\*





**High-performance  
Single-margin  
Coolant thru drill**  
Ideal for aluminum &  
cast materials  
3xD-5xD

**Design** – Spiral-fluted, right-hand cut, with external coolant and a cylindrical shank.

**Available Upon Request** – Firm Hold Shank, Additional PVD Coatings

**K N** Refer to page 4

**CARBIDE**

**3xD  
to  
5xD**



**ZircoPlus®**

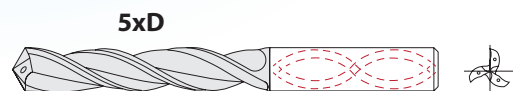
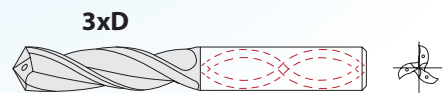
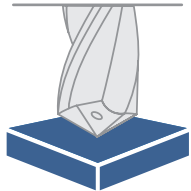
ZircoPlus® provides increased corrosion and abrasion resistance, for maximized machining.

**130° Point Geometry  
Self Centering** - Ideal for faster drilling and high feed rates.

**Single-Margin Design** - For drilling accuracy.

**Coolant Holes** - Cool the cutting edge and improve chip evacuation.

No Pecking Required





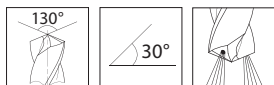
**Design** – Spiral-fluted, right-hand cut, with internal coolant and a cylindrical shank.

**Ideal for** – Aluminum, cast materials and non-ferrous materials

**K N** Refer to page 4

**Available Upon Request – Firm Hold Shank, Additional PVD Coatings**

**CARBIDE** **3xD to 5xD**



**Zirco Plus®**

ZircoPlus® provides increased corrosion and abrasion resistance, for maximized machining.



Part Number (insert 03 or 05 in place of _)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	3xD Dimensions (mm)		5xD Dimensions (mm)		Part Number (insert 03 or 05 in place of _)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	3xD Dimensions (mm)		5xD Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>						L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
CXC_03572T6	9/64	.1406	3.572	6	20	62	28	66	CXC_06100T6		.2402	6.100	8	34	79	53	91
CXC_03600T6		.1417	3.600	6	20	62	28	66	CXC_06200T6		.2441	6.200	8	34	79	53	91
CXC_03700T6		.1457	3.700	6	20	62	28	66	CXC_06300T6		.2480	6.300	8	34	79	53	91
CXC_03800T6	#25	.1496	3.800	6	24	66	36	74	CXC_06350T6	1/4	.2500	6.350	8	34	79	53	91
CXC_03900T6		.1535	3.900	6	24	66	36	74	CXC_06400T6		.2520	6.400	8	34	79	53	91
CXC_03970T6	5/32	.1563	3.970	6	24	66	36	74	CXC_06500T6		.2559	6.500	8	34	79	53	91
CXC_04000T6		.1575	4.000	6	24	66	36	74	CXC_06600T6		.2598	6.600	8	34	79	53	91
CXC_04100T6		.1614	4.100	6	24	66	36	74	CXC_06700T6		.2638	6.700	8	34	79	53	91
CXC_04200T6		.1654	4.200	6	24	66	36	74	CXC_06750T6	17/64	.2656	6.750	8	34	79	53	91
CXC_04300T6		.1693	4.300	6	24	66	36	74	CXC_06800T6		.2677	6.800	8	34	79	53	91
CXC_04370T6	11/64	.1719	4.370	6	24	66	36	74	CXC_06900T6		.2717	6.900	8	41	79	53	91
CXC_04400T6		.1732	4.400	6	24	66	36	74	CXC_07000T6		.2756	7.000	8	41	79	53	91
CXC_04500T6		.1772	4.500	6	24	66	36	74	CXC_07100T6		.2795	7.100	8	41	79	53	91
CXC_04600T6		.1811	4.600	6	24	66	36	74	CXC_07140T6	9/32	.2813	7.140	8	41	79	53	91
CXC_04650T6		.1831	4.650	6	24	66	36	74	CXC_07200T6		.2835	7.200	8	41	79	53	91
CXC_00130T6	#13	.1850	4.700	6	24	66	36	74	CXC_07300T6		.2874	7.300	8	41	79	53	91
CXC_04760T6	3/16	.1875	4.760	6	28	66	44	82	CXC_07400T6		.2913	7.400	8	41	79	53	91
CXC_00120T6	#12	.1890	4.800	6	28	66	44	82	CXC_07500T6		.2953	7.500	8	41	79	53	91
CXC_04900T6		.1929	4.900	6	28	66	44	82	CXC_07540T6	19/64	.2969	7.540	8	41	79	53	91
CXC_05000T6		.1969	5.000	6	28	66	44	82	CXC_07700T6		.3031	7.700	8	41	79	53	91
CXC_05100T6		.2008	5.100	6	28	66	44	82	CXC_07800T6		.3071	7.800	8	41	79	53	91
CXC_05160T6	13/64	.2031	5.160	6	28	66	44	82	CXC_07900T6		.3110	7.900	8	41	79	53	91
CXC_00060T6	#6	.2040	5.182	6	28	66	44	82	CXC_07940T6	5/16	.3125	7.940	8	41	79	53	91
CXC_05200T6		.2047	5.200	6	28	66	44	82	CXC_08000T6		.3150	8.000	8	41	79	53	91
CXC_05300T6		.2087	5.300	6	28	66	44	82	CXC_08100T6		.3189	8.100	10	47	89	61	103
CXC_05400T6		.2126	5.400	6	28	66	44	82	CXC_08200T6		.3228	8.200	10	47	89	61	103
CXC_05500T6		.2165	5.500	6	28	66	44	82	CXC_08300T6		.3268	8.300	10	47	89	61	103
CXC_05550T6		.2185	5.550	6	28	66	44	82	CXC_08330T6	21/64	.3281	8.330	10	47	89	61	103
CXC_05560T6	7/32	.2187	5.560	6	28	66	44	82	CXC_08400T6		.3307	8.400	10	47	89	61	103
CXC_05600T6		.2205	5.600	6	28	66	44	82	CXC_08500T6		.3346	8.500	10	47	89	61	103
CXC_05700T6		.2244	5.700	6	28	66	44	82	CXC_08600T6		.3386	8.600	10	47	89	61	103
CXC_05800T6		.2283	5.800	6	28	66	44	82	CXC_08700T6		.3425	8.700	10	47	89	61	103
CXC_05900T6		.2323	5.900	6	28	66	44	82	CXC_08730T6	11/32	.3437	8.730	10	47	89	61	103
CXC_05950T6	15/64	.2344	5.950	6	28	66	44	82	CXC_08800T6		.3465	8.800	10	47	89	61	103
CXC_06000T6		.2362	6.000	6	28	66	44	82	CXC_09000T6		.3543	9.000	10	47	89	61	103

**Tolerance**

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)	Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: +0/-0.0039	0-3: +0/-0.10	.0000-.1181: +0/-0.0024	0-3: +0/-0.006
.1182-.2362: +0/-0.0047	3.01-6: +0/-0.12	.1182-.2362: +0/-0.0031	3.01-6: +0/-0.008
.2363-.3937: +0/-0.0059	6.01-10.0: +0/-0.15	.2363-.3937: +0/-0.0035	6.01-10.0: +0/-0.009
.3938-.7087: +0/-0.0071	10.01-18.0: +0/-0.18	.3938-.7087: +0/-0.0043	10.01-18.0: +0/-0.11

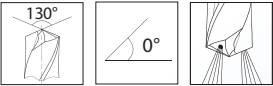
Part Number (insert O3 or O5 in place of __)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	3xD Dimensions (mm)		5xD Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
CXC__09130T6	23/64	.3594	9.130	10	47	89	61	103
CXC__09200T6		.3622	9.200	10	47	89	61	103
CXC__09300T6		.3661	9.300	10	47	89	61	103
CXC__09500T6		.3740	9.500	10	47	89	61	103
CXC__09520T6	3/8	.3750	9.520	10	47	89	61	103
CXC__09600T6		.3780	9.600	10	47	89	61	103
CXC__09800T6		.3858	9.800	10	47	89	61	103
CXC__09900T6		.3898	9.900	10	47	89	61	103
CXC__09920T6	25/64	.3906	9.920	10	47	89	61	103
CXC__10000T6		.3937	10.000	10	47	89	61	103
CXC__10100T6		.3976	10.100	12	55	102	71	118
CXC__10200T6		.4016	10.200	12	55	102	71	118
CXC__10300T6		.4055	10.300	12	55	102	71	118
CXC__10320T6	13/32	.4063	10.320	12	55	102	71	118
CXC__10400T6		.4094	10.400	12	55	102	71	118
CXC__10500T6		.4134	10.500	12	55	102	71	118
CXC__10720T6	27/64	.4219	10.720	12	55	102	71	118
CXC__10800T6		.4252	10.800	12	55	102	71	118
CXC__11000T6		.4331	11.000	12	55	102	71	118
CXC__11100T6		.4370	11.100	12	55	102	71	118
CXC__11113T6	7/16	.4375	11.113	12	55	102	71	118
CXC__11200T6		.4409	11.200	12	55	102	71	118
CXC__11500T6		.4528	11.500	12	55	102	71	118
CXC__11510T6	29/64	.4531	11.510	12	55	102	71	118
CXC__11700T6		.4606	11.700	12	55	102	71	118
CXC__11800T6		.4646	11.800	12	55	102	71	118
CXC__11910T6	15/32	.4687	11.910	12	55	102	71	118

Part Number (insert O3 or O5 in place of __)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	3xD Dimensions (mm)		5xD Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
CXC__12000T6		.4724	12.000	12	55	102	71	118
CXC__12100T6		.4764	12.100	14	60	107	77	124
CXC__12200T6		.4803	12.200	14	60	107	77	124
CXC__12300T6		.4843	12.300	14	60	107	77	124
CXC__12303T6	31/64	.4844	12.303	14	60	107	77	124
CXC__12500T6		.4921	12.500	14	60	107	77	124
CXC__12600T6		.4961	12.600	14	60	107	77	124
CXC__12700T6	1/2	.5000	12.700	14	60	107	77	124
CXC__13000T6		.5118	13.000	14	60	107	77	124
CXC__13300T6		.5236	13.300	14	60	107	77	124
CXC__13490T6	17/32	.5313	13.490	14	60	107	77	124
CXC__13500T6		.5315	13.500	14	60	107	77	124
CXC__14000T6		.5512	14.000	14	60	107	77	124
CXC__14290T6	9/16	.5625	14.290	16	65	115	83	133
CXC__14500T6		.5709	14.500	16	65	115	83	133
CXC__15000T6		.5906	15.000	16	65	115	83	133
CXC__15500T6		.6102	15.500	16	65	115	83	133
CXC__15870T6	5/8	.6250	15.870	16	65	115	83	133
CXC__16000T6		.6299	16.000	16	65	115	83	133
CXC__16500T6		.6496	16.500	18	73	123	93	143
CXC__17000T6		.6693	17.000	18	73	123	93	143
CXC__17500T6		.6890	17.500	18	73	123	93	143
CXC__18000T6		.7087	18.000	18	73	123	93	143
CXC__18500T6		.7283	18.500	20	79	131	101	153
CXC__19050T6	3/4	.7500	19.050	20	79	131	101	153
CXC__19500T6		.7677	19.500	20	79	131	101	153
CXC__20000T6		.7874	20.000	20	79	131	101	153



High-performance  
Four-margin  
Coolant thru drill  
Ideal for aluminum and  
cast materials  
5xD-16xD

CARBIDE  
5xD  
to  
16xD



Zirco Plus® provides increased corrosion and abrasion resistance, for maximized machining.

**130° Point Geometry** - Self-centering point to provide you with maximum precision, to meet tight tolerances.

**Coolant Holes** - Cool the cutting edge and improve chip evacuation.

**Four-Margin Design** - Ideal for advanced precision and a smooth surface finish.

**Polish** - Chip evacuation is improved during deep-hole drilling, when the flutes are polished.

**Four-Margins**

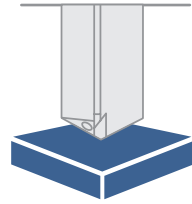
**Design** – Straight-flute, four-margins and internal coolant.

**Ideal for** – Aluminum, cast materials and non-ferrous materials

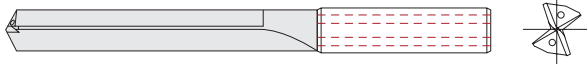
**Available Upon Request** – Firm Hold Shank, Additional PVD Coatings

**K N** Refer to page 4

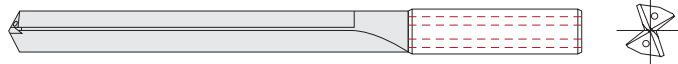
No Pecking Required



5xD



8xD



12xD



16xD



16xD must utilize a pilot hole drill. Refer to page 68

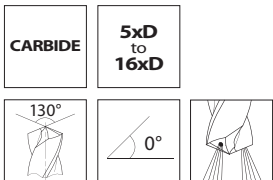


**Design** – Straight-flute, four-margins and internal coolant.

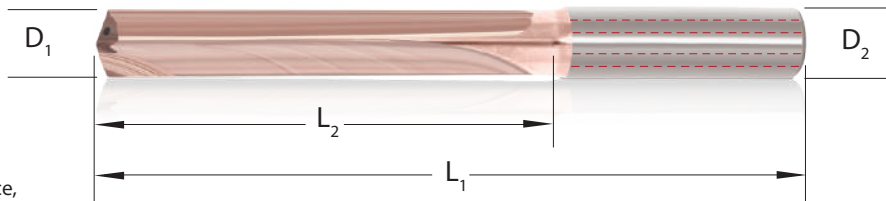
**Ideal for** – Aluminum, cast materials and non-ferrous materials

**K N** Refer to page 4

Available Upon Request – Firm Hold Shank, Additional PVD Coatings



ZircoPlus® provides increased corrosion and abrasion resistance, for maximized machining.



Part Number (insert 05, 08, 12 or 16 in place of __)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	5xD Dimensions (mm)		8xD Dimensions (mm)		12xD Dimensions (mm)		16xD Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
FXC__0300T6		.1181	3.000	6	28	66	34	72	54	92	60	100
FXC__03100T6		.1220	3.100	6	28	66	34	72	54	92	-	-
FXC__03175T6	1/8	.1250	3.175	6	28	66	34	72	54	92	60	100
FXC__03200T6		.1260	3.200	6	28	66	34	72	54	92	60	100
FXC__03300T6		.1299	3.300	6	28	66	34	72	54	92	60	100
FXC__03400T6		.1339	3.400	6	28	66	34	72	54	92	-	-
FXC__03500T6		.1378	3.500	6	28	66	34	72	54	92	60	100
FXC__03572T6	9/64	.1406	3.572	6	28	66	34	72	54	92	75	115
FXC__03600T6		.1417	3.600	6	28	66	34	72	54	92	-	-
FXC__03700T6		.1457	3.700	6	28	66	34	72	64	102	-	-
FXC__03800T6	#25	.1496	3.800	6	36	74	43	81	64	102	75	115
FXC__03900T6		.1535	3.900	6	36	74	43	81	64	10	-	-
FXC__03970T6	5/32	.1563	3.970	6	36	74	43	81	64	102	75	115
FXC__04000T6		.1575	4.000	6	36	74	43	81	64	102	75	115
FXC__04100T6		.1614	4.100	6	36	74	43	81	64	102	75	115
FXC__04200T6		.1654	4.200	6	36	74	43	81	64	102	75	115
FXC__04300T6		.1693	4.300	6	36	74	43	81	64	102	-	-
FXC__04370T6	11/64	.1719	4.370	6	36	74	43	81	64	102	90	130
FXC__04400T6		.1732	4.400	6	36	74	43	81	64	102	-	-
FXC__04500T6		.1772	4.500	6	36	74	43	81	64	102	90	130
FXC__04600T6		.1811	4.600	6	36	74	43	81	64	102	-	-
FXC__04650T6		.1831	4.650	6	36	74	43	81	64	102	-	-
FXC__00130T6	#13	.1850	4.700	6	36	74	43	81	64	102	90	130
FXC__04760T6	3/16	.1875	4.760	6	44	82	57	95	78	116	90	130
FXC__00120T6	#12	.1890	4.800	6	44	82	57	95	78	116	90	130
FXC__04900T6		.1929	4.900	6	44	82	57	95	78	116	-	-
FXC__05000T6		.1969	5.000	6	44	82	57	95	78	116	90	130
FXC__05100T6		.2008	5.100	6	44	82	57	95	78	116	-	-
FXC__05160T6	13/64	.2031	5.160	6	44	82	57	95	78	116	108	150
FXC__00060T6	#6	.2040	5.182	6	44	82	57	95	78	116	108	150
FXC__05200T6		.2047	5.200	6	44	82	57	95	78	116	-	-
FXC__05300T6		.2087	5.300	6	44	82	57	95	78	116	-	-
FXC__05400T6		.2126	5.400	6	44	82	57	95	78	116	-	-
FXC__05500T6		.2165	5.500	6	44	82	57	95	78	116	108	150
FXC__05550T6		.2185	5.550	6	44	82	57	95	78	116	-	-
FXC__05560T6	7/32	.2187	5.560	6	44	82	57	95	78	116	108	150
FXC__05600T6		.2205	5.600	6	44	82	57	95	78	116	-	-
FXC__05700T6		.2244	5.700	6	44	82	57	95	78	116	-	-
FXC__05800T6		.2283	5.800	6	44	82	57	95	78	116	108	150
FXC__05900T6		.2323	5.900	6	44	82	57	95	78	116	-	-
FXC__05950T6	15/64	.2344	5.950	6	44	82	57	95	78	116	108	150
FXC__06000T6		.2362	6.000	6	44	82	57	95	78	116	108	150
FXC__06100T6		.2402	6.100	8	53	91	76	114	108	146	-	-

\*\* Diameters (2.0-2.9mm) and other dimensions are available upon request\*\*

Part Number (insert 05, 08, 12 or 16 in place of _)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	5xD		8xD		12xD		16xD	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
FXC__06200T6		.2441	6.200	8	53	91	76	114	108	146	-	-
FXC__06300T6		.2480	6.300	8	53	91	76	114	108	146	-	-
FXC__06350T6	1/4	.2500	6.350	8	53	91	76	114	108	146	125	165
FXC__06400T6		.2520	6.400	8	53	91	76	114	108	146	-	-
FXC__06500T6		.2559	6.500	8	53	91	76	114	108	146	125	165
FXC__06600T6		.2598	6.600	8	53	91	76	114	108	146	-	-
FXC__06700T6		.2638	6.700	8	53	91	76	114	108	146	-	-
FXC__06750T6	17/64	.2656	6.750	8	53	91	76	114	108	146	125	165
FXC__06800T6		.2677	6.800	8	53	91	76	114	108	146	125	165
FXC__06900T6		.2717	6.900	8	53	91	76	114	108	146	-	-
FXC__07000T6		.2756	7.000	8	53	91	76	114	108	146	125	165
FXC__07100T6		.2795	7.100	8	53	91	76	114	108	146	-	-
FXC__07140T6	9/32	.2813	7.140	8	53	91	76	114	108	146	140	180
FXC__07200T6		.2835	7.200	8	53	91	76	114	108	146	-	-
FXC__07300T6		.2874	7.300	8	53	91	76	114	108	146	-	-
FXC__07400T6		.2913	7.400	8	53	91	76	114	108	146	-	-
FXC__07500T6		.2953	7.500	8	53	91	76	114	108	146	140	180
FXC__07540T6	19/64	.2969	7.540	8	53	91	76	114	108	146	140	180
FXC__07700T6		.3031	7.700	8	53	91	76	114	108	146	-	-
FXC__07800T6		.3071	7.800	8	53	91	76	114	108	146	140	180
FXC__07900T6		.3110	7.900	8	53	91	76	114	108	146	-	-
FXC__07940T6	5/16	.3125	7.940	8	53	91	76	114	108	146	140	180
FXC__08000T6		.3150	8.000	8	53	91	76	114	108	146	140	180
FXC__08100T6		.3189	8.100	10	61	103	95	142	120	162	-	-
FXC__08200T6		.3228	8.200	10	61	103	95	142	120	162	-	-
FXC__08300T6		.3268	8.300	10	61	103	95	142	120	162	-	-
FXC__08330T6	21/64	.3281	8.330	10	61	103	95	142	120	162	160	205
FXC__08400T6		.3307	8.400	10	61	103	95	142	120	162	-	-
FXC__08500T6		.3346	8.500	10	61	103	95	142	120	162	160	205
FXC__08600T6		.3386	8.600	10	61	103	95	142	120	162	-	-
FXC__08700T6		.3425	8.700	10	61	103	95	142	120	162	-	-
FXC__08730T6	11/32	.3437	8.730	10	61	103	95	142	120	162	160	205
FXC__08800T6		.3465	8.800	10	61	103	95	142	120	162	160	205
FXC__09000T6		.3543	9.000	10	61	103	95	142	120	162	160	205
FXC__09130T6	23/64	.3594	9.130	10	61	103	95	142	120	162	180	225
FXC__09200T6		.3622	9.200	10	61	103	95	142	120	162	-	-
FXC__09300T6		.3661	9.300	10	61	103	95	142	120	162	-	-
FXC__09500T6		.3740	9.500	10	61	103	95	142	120	162	-	-
FXC__09520T6	3/8	.3750	9.520	10	61	103	95	142	120	162	180	225
FXC__09600T6		.3780	9.600	10	61	103	95	142	120	162	-	-
FXC__09800T6		.3858	9.800	10	61	103	95	142	120	162	180	225
FXC__09900T6		.3898	9.900	10	61	103	95	142	120	162	-	-
FXC__09920T6	25/64	.3906	9.920	10	61	103	95	142	120	162	180	225
FXC__10000T6		.3937	10.000	10	61	103	95	142	120	162	180	225
FXC__10100T6		.3976	10.100	12	71	118	114	162	156	204	-	-
FXC__10200T6		.4016	10.200	12	71	118	114	162	156	204	190	240
FXC__10300T6		.4055	10.300	12	71	118	114	162	156	204	-	-
FXC__10320T6	13/32	.4063	10.320	12	71	118	114	162	156	204	190	240
FXC__10400T6		.4094	10.400	12	71	118	114	162	156	204	-	-
FXC__10500T6		.4134	10.500	12	71	118	114	162	156	204	-	-
FXC__10720T6	27/64	.4219	10.720	12	71	118	114	162	156	204	215	265
FXC__10800T6		.4252	10.800	12	71	118	114	162	156	204	190	240
FXC__11000T6		.4331	11.000	12	71	118	114	162	156	204	190	240
FXC__11100T6		.4370	11.100	12	71	118	114	162	156	204	-	-
FXC__11113T6	7/16	.4375	11.113	12	71	118	114	162	156	204	215	265
FXC__11200T6		.4409	11.200	12	71	118	114	162	156	204	-	-
FXC__11500T6		.4528	11.500	12	71	118	114	162	156	204	215	265
FXC__11510T6	29/64	.4531	11.510	12	71	118	114	162	156	204	215	265
FXC__11700T6		.4606	11.700	12	71	118	114	162	156	204	-	-
FXC__11800T6		.4646	11.800	12	71	118	114	162	156	204	-	-
FXC__11910T6	15/32	.4687	11.910	12	71	118	114	162	156	204	215	265

\*\* Diameters (2.0-2.9mm) and other dimensions are available upon request\*\*



High-performance triple-margin  
Coolant thru drill  
Ideal for gray cast iron  
and ductile iron  
3xD-30xD

CARBIDE  
3xD  
to  
30xD



Varianta®  
Supral Provides a low coefficient of friction, reducing tool wear and resulting in a longer tool life.

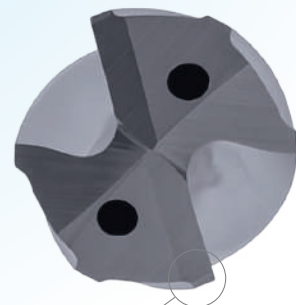
**135° Point Geometry** - Split-point geometry for superior drill penetration and accuracy.

**Coolant Holes** - Cool the cutting edge and improve chip evacuation.

**Triple-Margin Design** - Ideal for improving surface finish and increasing stability.

**Polish** - Chip evacuation is improved during deep-hole drilling, when the flutes are polished.

**45° Standard Chamfer** - Cutting edge protection and longer tool life.





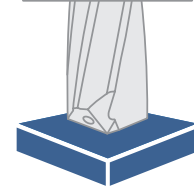
**Design** – Long spiral-fluted, 45° corner chamfer, triple-margin, right-hand cut and internal coolant.

**Ideal for** – Gray cast iron and ductile iron

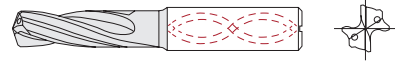
**Available Upon Request** – Firm Hold Shank, Additional PVD Coatings

**K** Refer to page 4

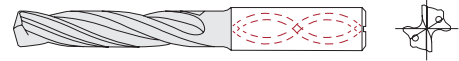
No Pecking Required



3xD



5xD



8xD



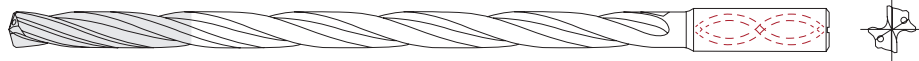
12xD



16xD



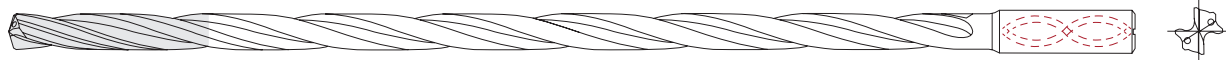
20xD



25xD



30xD



16xD – 30xD must utilize a pilot hole drill. Refer to page 66

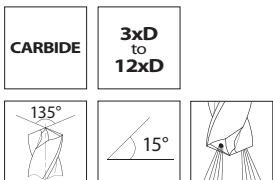


**Design** – Long spiral-fluted, 45° corner chamfer, triple-margin, right-hand cut and internal coolant.

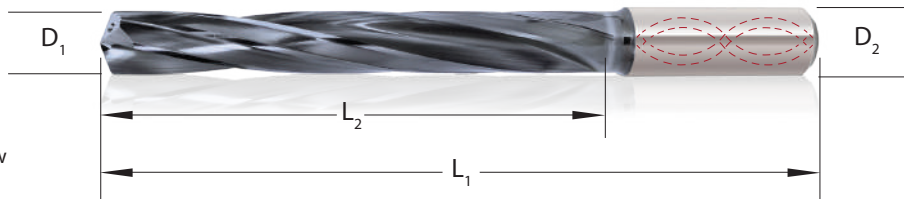
**Ideal for** – Gray cast iron and ductile iron

**Available Upon Request** – Firm Hold Shank, Additional PVD Coatings

**K** Refer to page 4



**Varianta® Supral** Provides a low coefficient of friction, reducing tool wear and resulting in a longer tool life.



Part Number (insert 03, 05, 08 or 12 in place of __)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	3xD Dimensions (mm)		5xD Dimensions (mm)		8xD Dimensions (mm)		12xD Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
IXC__03000T9		.1181	3.000	6	20	62	28	66	34	72	54	92
IXC__03100T9		.1220	3.100	6	20	62	28	66	34	72	54	92
IXC__03175T9	1/8	.1250	3.175	6	20	62	28	66	34	72	54	92
IXC__03200T9		.1260	3.200	6	20	62	28	66	34	72	54	92
IXC__03300T9		.1299	3.300	6	20	62	28	66	34	72	54	92
IXC__03400T9		.1339	3.400	6	20	62	28	66	34	72	54	92
IXC__03500T9		.1378	3.500	6	20	62	28	66	34	72	54	92
IXC__03572T9	9/64	.1406	3.572	6	20	62	28	66	34	72	54	92
IXC__03600T9		.1417	3.600	6	20	62	28	66	34	72	54	92
IXC__03700T9		.1457	3.700	6	20	62	28	66	34	72	54	92
IXC__03800T9	#25	.1496	3.800	6	24	66	36	74	43	81	64	102
IXC__03900T9		.1535	3.900	6	24	66	36	74	43	81	64	102
IXC__03970T9	5/32	.1563	3.970	6	24	66	36	74	43	81	64	102
IXC__04000T9		.1575	4.000	6	24	66	36	74	43	81	64	102
IXC__04100T9		.1614	4.100	6	24	66	36	74	43	81	64	102
IXC__04200T9		.1654	4.200	6	24	66	36	74	43	81	64	102
IXC__04300T9		.1693	4.300	6	24	66	36	74	43	81	64	102
IXC__04370T9	11/64	.1719	4.370	6	24	66	36	74	43	81	64	102
IXC__04400T9		.1732	4.400	6	24	66	36	74	43	81	64	102
IXC__04500T9		.1772	4.500	6	24	66	36	74	43	81	64	102
IXC__04600T9		.1811	4.600	6	24	66	36	74	43	81	64	102
IXC__04650T9		.1831	4.650	6	24	66	36	74	43	81	64	102
IXC__00130T9	#13	.1850	4.700	6	24	66	36	74	43	81	64	102
IXC__04760T9	3/16	.1875	4.760	6	28	66	44	82	57	95	78	116
IXC__00120T9	#12	.1890	4.800	6	28	66	44	82	57	95	78	116
IXC__04900T9		.1929	4.900	6	28	66	44	82	57	95	78	116
IXC__05000T9		.1969	5.000	6	28	66	44	82	57	95	78	116
IXC__05100T9		.2008	5.100	6	28	66	44	82	57	95	78	116
IXC__05160T9	13/64	.2031	5.160	6	28	66	44	82	57	95	78	116
IXC__00060T9	#6	.2040	5.182	6	28	66	44	82	57	95	78	116
IXC__05200T9		.2047	5.200	6	28	66	44	82	57	95	78	116
IXC__05300T9		.2087	5.300	6	28	66	44	82	57	95	78	116
IXC__05400T9		.2126	5.400	6	28	66	44	82	57	95	78	116
IXC__05500T9		.2165	5.500	6	28	66	44	82	57	95	78	116
IXC__05550T9		.2185	5.550	6	28	66	44	82	57	95	78	116

\*\* Diameters (2.0-2.9mm) and other dimensions are available upon request\*\*

**Tolerance**

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)	Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: +0/-0.0039	0-3: +0/-0.10	.0000-.1181: +0/-0.0024	0-3: +0/-0.06
.1182-.2362: +0/-0.0047	3.01-6: +0/-0.12	.1182-.2362: +0/-0.0031	3.01-6: +0/-0.08
.2363-.3937: +0/-0.0059	6.01-10.0: +0/-0.15	.2363-.3937: +0/-0.0035	6.01-10.0: +0/-0.09
.3938-.7087: +0/-0.0071	10.01-18.0: +0/-0.18	.3938-.7087: +0/-0.0043	10.01-18.0: +0/-0.11

Part Number (insert 03, 05, 08 or 12 in place of _)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	3xD Dimensions (mm)		5xD Dimensions (mm)		8xD Dimensions (mm)		12xD Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
IXC__05560T9	7/32	.2187	5.560	6	28	66	44	82	57	95	78	116
IXC__05600T9		.2205	5.600	6	28	66	44	82	57	95	78	116
IXC__05700T9		.2244	5.700	6	28	66	44	82	57	95	78	116
IXC__05800T9		.2283	5.800	6	28	66	44	82	57	95	78	116
IXC__05900T9		.2323	5.900	6	28	66	44	82	57	95	78	116
IXC__05950T9	15/64	.2344	5.950	6	28	66	44	82	57	95	78	116
IXC__06000T9		.2362	6.000	6	28	66	44	82	76	114	108	146
IXC__06100T9		.2402	6.100	8	34	79	53	91	76	114	108	146
IXC__06200T9		.2441	6.200	8	34	79	53	91	76	114	108	146
IXC__06300T9		.2480	6.300	8	34	79	53	91	76	114	108	146
IXC__06350T9	1/4	.2500	6.350	8	34	79	53	91	76	114	108	146
IXC__06400T9		.2520	6.400	8	34	79	53	91	76	114	108	146
IXC__06500T9		.2559	6.500	8	34	79	53	91	76	114	108	146
IXC__06600T9		.2598	6.600	8	34	79	53	91	76	114	108	146
IXC__06700T9		.2638	6.700	8	34	79	53	91	76	114	108	146
IXC__06750T9	17/64	.2656	6.750	8	34	79	53	91	76	114	108	146
IXC__06800T9		.2677	6.800	8	34	79	53	91	76	114	108	146
IXC__06900T9		.2717	6.900	8	41	79	53	91	76	114	108	146
IXC__07000T9		.2756	7.000	8	41	79	53	91	76	114	108	146
IXC__07100T9		.2795	7.100	8	41	79	53	91	76	114	108	146
IXC__07140T9	9/32	.2813	7.140	8	41	79	53	91	76	114	108	146
IXC__07200T9		.2835	7.200	8	41	79	53	91	76	114	108	146
IXC__07300T9		.2874	7.300	8	41	79	53	91	76	114	108	146
IXC__07400T9		.2913	7.400	8	41	79	53	91	76	114	108	146
IXC__07500T9		.2953	7.500	8	41	79	53	91	76	114	108	146
IXC__07540T9	19/64	.2969	7.540	8	41	79	53	91	76	114	108	146
IXC__07700T9		.3031	7.700	8	41	79	53	91	76	114	108	146
IXC__07800T9		.3071	7.800	8	41	79	53	91	76	114	108	146
IXC__07900T9		.3110	7.900	8	41	79	53	91	76	114	108	146
IXC__07940T9	5/16	.3125	7.940	8	41	79	53	91	76	114	108	146
IXC__08000T9		.3150	8.000	8	41	79	53	91	95	142	120	162
IXC__08100T9		.3189	8.100	10	47	89	61	103	95	142	120	162
IXC__08200T9		.3228	8.200	10	47	89	61	103	95	142	120	162
IXC__08300T9		.3268	8.300	10	47	89	61	103	95	142	120	162
IXC__08330T9	21/64	.3281	8.330	10	47	89	61	103	95	142	120	162
IXC__08400T9		.3307	8.400	10	47	89	61	103	95	142	120	162
IXC__08500T9		.3346	8.500	10	47	89	61	103	95	142	120	162
IXC__08600T9		.3386	8.600	10	47	89	61	103	95	142	120	162
IXC__08700T9		.3425	8.700	10	47	89	61	103	95	142	120	162
IXC__08730T9	11/32	.3437	8.730	10	47	89	61	103	95	142	120	162
IXC__08800T9		.3465	8.800	10	47	89	61	103	95	142	120	162
IXC__09000T9		.3543	9.000	10	47	89	61	103	95	142	120	162
IXC__09130T9	23/64	.3594	9.130	10	47	89	61	103	95	142	120	162
IXC__09200T9		.3622	9.200	10	47	89	61	103	95	142	120	162
IXC__09300T9		.3661	9.300	10	47	89	61	103	95	142	120	162
IXC__09500T9		.3740	9.500	10	47	89	61	103	95	142	120	162
IXC__09520T9	3/8	.3750	9.520	10	47	89	61	103	95	142	120	162
IXC__09600T9		.3780	9.600	10	47	89	61	103	95	142	120	162
IXC__09800T9		.3858	9.800	10	47	89	61	103	95	142	120	162
IXC__09900T9		.3898	9.900	10	47	89	61	103	95	142	120	162
IXC__09920T9	25/64	.3906	9.920	10	47	89	61	103	114	162	156	204
IXC__10000T9		.3937	10.000	10	47	89	61	103	114	162	156	204
IXC__10100T9		.3976	10.100	12	55	102	71	118	114	162	156	204
IXC__10200T9		.4016	10.200	12	55	102	71	118	114	162	156	204
IXC__10300T9		.4055	10.300	12	55	102	71	118	114	162	156	204
IXC__10320T9	13/32	.4063	10.320	12	55	102	71	118	114	162	156	204
IXC__10400T9		.4094	10.400	12	55	102	71	118	114	162	156	204
IXC__10500T9		.4134	10.500	12	55	102	71	118	114	162	156	204
IXC__10720T9	27/64	.4219	10.720	12	55	102	71	118	114	162	156	204
IXC__10800T9		.4252	10.800	12	55	102	71	118	114	162	156	204
IXC__11000T9		.4331	11.000	12	55	102	71	118	114	162	156	204
IXC__11100T9		.4370	11.100	12	55	102	71	118	114	162	156	204

Part Number (insert 03, 05, 08 or 12 in place of __)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	3xD		5xD		8xD		12xD	
					Dimensions (mm)		Dimensions (mm)		Dimensions (mm)		Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
IXC__11113T9	7/16	.4375	11.113	12	55	102	71	118	114	162	156	204
IXC__11200T9		.4409	11.200	12	55	102	71	118	114	162	156	204
IXC__11500T9		.4528	11.500	12	55	102	71	118	114	162	156	204
IXC__11510T9	29/64	.4531	11.510	12	55	102	71	118	114	162	156	204
IXC__11700T9		.4606	11.700	12	55	102	71	118	114	162	156	204
IXC__11800T9		.4646	11.800	12	55	102	71	118	114	162	156	204
IXC__11910T9	15/32	.4687	11.910	12	55	102	71	118	114	162	156	204
IXC__12000T9		.4724	12.000	12	55	102	71	118	114	162	156	204
IXC__12100T9		.4764	12.100	14	60	107	77	124	131	178	182	230
IXC__12200T9		.4803	12.200	14	60	107	77	124	131	178	182	230
IXC__12300T9		.4843	12.300	14	60	107	77	124	131	178	182	230
IXC__12303T9	31/64	.4844	12.303	14	60	107	77	124	131	178	182	230
IXC__12500T9		.4921	12.500	14	60	107	77	124	131	178	182	230
IXC__12600T9		.4961	12.600	14	60	107	77	124	131	178	182	230
IXC__12700T9	1/2	.5000	12.700	14	60	107	77	124	131	178	182	230
IXC__13000T9		.5118	13.000	14	60	107	77	124	131	178	182	230
IXC__13300T9		.5236	13.300	14	60	107	77	124	131	178	182	230
IXC__13490T9	17/32	.5313	13.490	14	60	107	77	124	131	178	182	230
IXC__13500T9		.5315	13.500	14	60	107	77	124	131	178	182	230
IXC__14000T9		.5512	14.000	14	60	107	77	124	131	178	182	230
IXC__14290T9	9/16	.5625	14.290	16	65	115	83	133	152	203	208	260
IXC__14500T9		.5709	14.500	16	65	115	83	133	152	203	208	260
IXC__15000T9		.5906	15.000	16	65	115	83	133	152	203	208	260
IXC__15500T9		.6102	15.500	16	65	115	83	133	152	203	208	260
IXC__15870T9	5/8	.6250	15.870	16	65	115	83	133	152	203	208	260
IXC__16000T9		.6299	16.000	16	65	115	83	133	152	203	208	260
IXC__16500T9		.6496	16.500	18	73	123	93	143	171	222	234	285
IXC__17000T9		.6693	17.000	18	73	123	93	143	171	222	234	285
IXC__17500T9		.6890	17.500	18	73	123	93	143	171	222	234	285
IXC__18000T9		.7087	18.000	18	73	123	93	143	171	222	234	285
IXC__18500T9		.7283	18.500	20	79	131	101	153	190	243	258	310
IXC__19050T9	3/4	.7500	19.050	20	79	131	101	153	190	243	258	310
IXC__19500T9		.7677	19.500	20	79	131	101	153	190	243	258	310
IXC__20000T9		.7874	20.000	20	79	131	101	153	190	243	258	310

\*\* Diameters (2.0-2.9mm) and other dimensions are available upon request\*\*

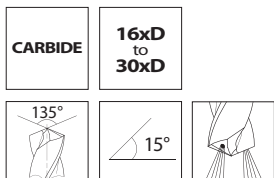


**Design** – Long spiral-fluted, 45° corner chamfer, triple-margin, right-hand cut and internal coolant.

**Ideal for** – Gray cast iron and ductile iron

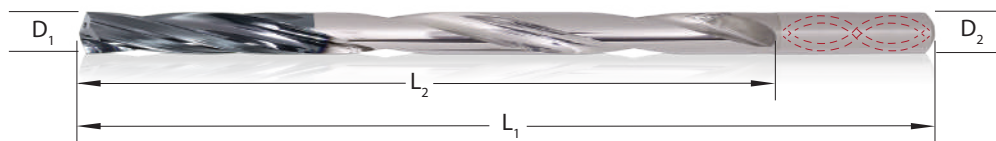
■ 16xD - 30xD must utilize a pilot hole drill. Refer to page 66

**K** Refer to page 4



**Varianta<sup>®</sup> Supral**

Varianta<sup>®</sup> Supral Provides a low coefficient of friction, reducing tool wear and resulting in a longer tool life.



Part Number (insert 16, 20, 25 or 30 in place of __)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	16xD Dimensions (mm)		20xD Dimensions (mm)		25xD Dimensions (mm)		30xD Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
IXC__03000T9		.1181	3.000	6	60	100	80	120	98	135	105	150
IXC__03175T9	1/8	.1250	3.175	6	60	100	80	120	98	135	105	150
IXC__03200T9		.1260	3.200	6	60	100	80	120	98	135	105	150
IXC__03300T9		.1299	3.300	6	60	100	80	120	110	150	135	185
IXC__03500T9		.1378	3.500	6	60	100	80	120	110	150	135	185
IXC__03572T9	9/64	.1406	3.572	6	75	115	90	130	120	160	135	185
IXC__03800T9	#25	.1496	3.800	6	75	115	90	130	120	160	135	185
IXC__03970T9	5/32	.1563	3.970	6	75	115	90	130	120	160	135	185
IXC__04000T9		.1575	4.000	6	75	115	90	130	120	160	135	185
IXC__04200T9		.1654	4.200	6	75	115	110	160	120	160	135	185
IXC__04370T9	11/64	.1719	4.370	6	90	130	110	160	135	180	165	215
IXC__04500T9		.1772	4.500	6	90	130	110	160	135	180	165	215
IXC__00130T9	#13	.1850	4.700	6	90	130	120	160	135	180	165	215
IXC__04760T9	3/16	.1875	4.760	6	90	130	120	160	135	180	165	215
IXC__00120T9	#12	.1890	4.800	6	90	130	120	160	135	180	165	215
IXC__05000T9		.1969	5.000	6	90	130	120	160	135	180	165	215
IXC__05160T9	13/64	.2031	5.160	6	108	150	140	185	168	205	180	230
IXC__00060T9	#6	.2040	5.182	6	108	150	140	185	168	205	180	230
IXC__05500T9		.2165	5.500	6	108	150	140	185	168	205	180	230
IXC__05560T9	7/32	.2187	5.560	6	108	150	140	185	168	205	180	230
IXC__05800T9		.2283	5.800	6	108	150	140	185	168	205	180	230
IXC__05950T9	15/64	.2344	5.950	6	108	150	140	185	168	205	180	230
IXC__06000T9		.2362	6.000	6	108	150	140	185	168	205	180	230
IXC__06350T9	1/4	.2500	6.350	8	125	165	160	210	200	240	215	280
IXC__06500T9		.2559	6.500	8	125	165	160	210	200	240	215	280
IXC__06750T9	17/64	.2656	6.750	8	125	165	160	210	200	240	230	280
IXC__06800T9		.2677	6.800	8	125	165	160	210	200	240	230	280
IXC__07000T9		.2756	7.000	8	125	165	160	210	200	240	230	280
IXC__07140T9	9/32	.2813	7.140	8	140	180	180	230	220	260	230	280
IXC__07500T9		.2953	7.500	8	140	180	180	230	220	260	230	280
IXC__07540T9	19/64	.2969	7.540	8	140	180	180	230	220	260	265	315
IXC__07800T9		.3071	7.800	8	140	180	180	230	220	260	265	315
IXC__07940T9	5/16	.3125	7.940	8	140	180	180	230	220	260	265	315
IXC__08000T9		.3150	8.000	8	140	180	180	230	220	260	265	315
IXC__08330T9	21/64	.3281	8.330	10	160	205	195	260	240	285	295	350

\*\* Diameters (2.0-2.9mm) and other dimensions are available upon request\*\*

Part Number (insert 16, 20, 25 or 30 in place of __)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	16xD		20xD		25xD		30xD	
					Dimensions (mm)		Dimensions (mm)		Dimensions (mm)		Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
IXC__08500T9		.3346	8.500	10	160	205	195	260	240	285	295	350
IXC__08730T9	11/32	.3437	8.730	10	160	205	230	290	268	310	330	380
IXC__08800T9		.3465	8.800	10	160	205	230	290	268	310	330	380
IXC__09000T9		.3543	9.000	10	160	205	230	290	268	310	330	380
IXC__09130T9	23/64	.3594	9.130	10	180	225	230	290	268	310	330	380
IXC__09520T9	3/8	.3750	9.520	10	180	225	230	290	268	310	330	380
IXC__09800T9		.3858	9.800	10	180	225	230	290	268	310	330	380
IXC__09920T9	25/64	.3906	9.920	10	180	225	230	290	268	310	330	380
IXC__10000T9		.3937	10.000	10	180	225	230	290	268	310	330	380
IXC__10200T9		.4016	10.200	12	190	240	268	315	325	375	-	-
IXC__10320T9	13/32	.4063	10.320	12	190	240	268	315	325	375	-	-
IXC__10720T9	27/64	.4219	10.720	12	190	240	268	315	325	375	-	-
IXC__10800T9		.4252	10.800	12	190	240	268	315	325	375	-	-
IXC__11000T9		.4331	11.000	12	190	240	268	315	325	375	-	-
IXC__11113T9	7/16	.4375	11.113	12	215	265	268	315	325	375	-	-
IXC__11500T9		.4528	11.500	12	215	265	268	315	325	375	-	-
IXC__11510T9	29/64	.4531	11.510	12	215	265	268	315	325	375	-	-
IXC__11910T9	15/32	.4687	11.910	12	215	265	268	315	325	375	-	-
IXC__12000T9		.4724	12.000	12	215	265	268	315	325	375	-	-
IXC__12300T9		.4843	12.300	14	230	280	275	325	-	-	-	-
IXC__12303T9	31/64	.4844	12.303	14	230	280	275	325	-	-	-	-
IXC__12700T9	1/2	.5000	12.700	14	230	280	275	325	-	-	-	-
IXC__13000T9		.5118	13.000	14	230	280	275	325	-	-	-	-
IXC__13300T9		.5236	13.300	14	245	295	305	355	-	-	-	-
IXC__13490T9	17/32	.5313	13.490	14	245	295	305	355	-	-	-	-
IXC__13500T9		.5315	13.500	14	245	295	305	355	-	-	-	-
IXC__14000T9		.5512	14.000	14	245	295	305	355	-	-	-	-
IXC__14290T9	9/16	.5625	14.290	16	255	305	-	-	-	-	-	-
IXC__14500T9		.5709	14.500	16	255	305	-	-	-	-	-	-
IXC__15000T9		.5906	15.000	16	255	305	-	-	-	-	-	-
IXC__15500T9		.6102	15.500	16	275	325	-	-	-	-	-	-
IXC__15870T9	5/8	.6250	15.870	16	275	325	-	-	-	-	-	-
IXC__16000T9		.6299	16.000	16	275	325	-	-	-	-	-	-

\*\* Diameters (2.0-2.9mm) and other dimensions are available upon request\*\*

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)	Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-0.0039	0-3: + 0/-0.10	.0000-.1181: + 0/-0.0024	0-3: + 0/-0.006
.1182-.2362: + 0/-0.0047	3.01-6: + 0/-0.12	.1182-.2362: + 0/-0.0031	3.01-6: + 0/-0.008
.2363-.3937: + 0/-0.0059	6.01-10.0: + 0/-0.15	.2363-.3937: + 0/-0.0035	6.01-10.0: + 0/-0.009
.3938-.7087: + 0/-0.0071	10.01-18.0: + 0/-0.18	.3938-.7087: + 0/-0.0043	10.01-18.0: + 0/-0.11



Single-margin drill  
Non-coolant thru  
Ideal for general  
purpose drilling  
3xD-5xD

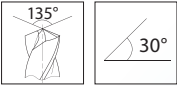
**Design** – Spiral-fluted, right-hand cut, with external coolant.

**Ideal for** – General purpose drilling

**Available Upon Request** – Firm Hold Shank, Additional PVD Coatings

**P M K S** Refer to page 4

CARBIDE  
3xD  
to  
5xD



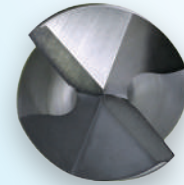
Varianta®  
Supral

Varianta® Supral Provides a low coefficient of friction, reducing tool wear and resulting in a longer tool life.

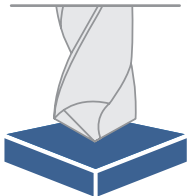
**135° Point Geometry** - Split-point geometry for superior drill penetration and accuracy.

**Single-Margin Design** - For drilling accuracy.

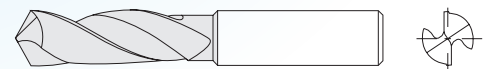
**Polish** - Chip evacuation is improved during deep-hole drilling, when the flutes are polished.



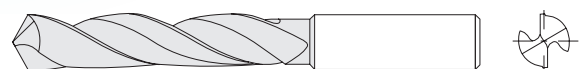
No Pecking Required



3xD



5xD



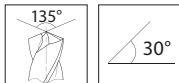
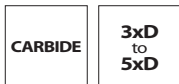


**Design** – Spiral-fluted, right-hand cut, with external coolant.

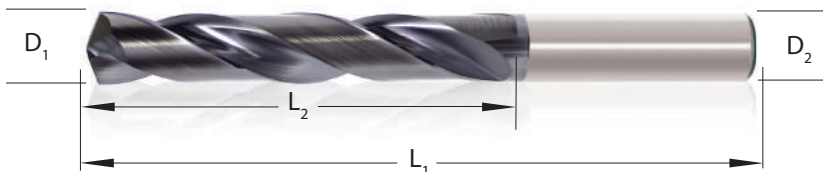
**Ideal for** – General Purpose Drilling

**P M K S** Refer to page 4

**Available Upon Request – Firm Hold Shank, Additional PVD Coatings**



**Varianta® Supral** Provides a low coefficient of friction, reducing tool wear and resulting in a longer tool life.



Part Number (insert 03 or 05 in place of _)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (in)	3xD Dimensions (in)		5xD Dimensions (in)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
SX0__06250T9	1/16	.0625	1.59	1/8	5/8	2	3/4	2-1/2
SX0__00520T9	#52	.0635	1.61	1/8	11/16	2	3/4	2-1/2
SX0__00510T9	#51	.0670	1.70	1/8	11/16	2	3/4	2-1/2
SX0__00500T9	#50	.0700	1.78	1/8	11/16	2	7/8	2-1/2
SX0__00490T9	#49	.0730	1.85	1/8	11/16	2	7/8	2-1/2
SX0__00480T9	#48	.0760	1.93	1/8	11/16	2	7/8	2-1/2
SX0__07810T9	5/64	.0781	1.98	1/8	11/16	2	7/8	2-1/2
SX0__00470T9	#47	.0785	1.99	1/8	3/4	2	7/8	2-1/2
SX0__07870T9		.0787	2.00	1/8	3/4	2-1/2	7/8	2-1/2
SX0__00460T9	#46	.0810	2.06	1/8	3/4	2-1/2	7/8	2-1/2
SX0__00450T9	#45	.0820	2.08	1/8	3/4	2-1/2	7/8	2-1/2
SX0__00440T9	#44	.0860	2.18	1/8	3/4	2-1/2	1	2-1/2
SX0__00430T9	#43	.0890	2.26	1/8	3/4	2-1/2	1	2-1/2
SX0__00420T9	#42	.0935	2.37	1/8	3/4	2-1/2	1	2-1/2
SX0__09380T9	3/32	.0938	2.38	1/8	3/4	2-1/2	1	2-1/2
SX0__00410T9	#41	.0960	2.44	1/8	13/16	2-1/2	1	2-1/2
SX0__00400T9	#40	.0980	2.49	1/8	13/16	2-1/2	1	2-1/2
SX0__09840T9		.0984	2.50	1/8	13/16	2-1/2	1-1/4	3
SX0__00390T9	#39	.0995	2.53	1/8	13/16	2-1/2	1-1/4	3
SX0__00380T9	#38	.1015	2.58	1/8	13/16	2-1/2	1-1/4	3
SX0__00370T9	#37	.1040	2.64	1/8	13/16	2-1/2	1-1/4	3
SX0__00360T9	#36	.1065	2.71	1/8	13/16	2-1/2	1-1/4	3
SX0__01094T9	7/64	.1094	2.78	1/8	13/16	2-1/2	1-1/4	3
SX0__00350T9	#35	.1100	2.79	1/8	7/8	2-1/2	1-1/4	3
SX0__00340T9	#34	.1110	2.82	1/8	7/8	2-1/2	1-1/4	3
SX0__00330T9	#33	.1130	2.87	1/8	7/8	2-1/2	1-1/4	3
SX0__00320T9	#32	.1160	2.95	1/8	7/8	2-1/2	1-1/4	3
SX0__03000T9		.1181	3.00	1/8	7/8	2-1/2	1-1/4	3
SX0__00310T9	#31	.1200	3.05	1/8	7/8	2-1/2	1-1/4	3
SX0__03175T9	1/8	.1250	3.17	1/8	7/8	2-1/2	1-1/4	3
SX0__00300T9	#30	.1285	3.26	3/16	15/16	2-1/2	1-1/4	3
SX0__00290T9	#29	.1360	3.45	3/16	15/16	2-1/2	1-3/8	3
SX0__03500T9		.1378	3.50	3/16	15/16	2-1/2	1-3/8	3
SX0__00280T9	#28	.1405	3.57	3/16	15/16	2-1/2	1-3/8	3

Part Number (insert 03 or 05 in place of _)	D <sub>1</sub>	Decimal	(mm)	(in)	3xD Dimensions (in)		5xD Dimensions (in)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
SX0__03570T9	9/64	.1406	3.57	3/16	1	2-1/2	1-3/8	3
SX0__00270T9	#27	.1440	3.66	3/16	1	2-1/2	1-3/8	3
SX0__00260T9	#26	.1470	3.73	3/16	1	2-1/2	1-3/8	3
SX0__00250T9	#25	.1495	3.80	3/16	1	2-1/2	1-3/8	3
SX0__00240T9	#24	.1520	3.86	3/16	1	2-1/2	1-3/8	3
SX0__00230T9	#23	.1540	3.91	3/16	1	2-1/2	1-3/8	3
SX0__03970T9	5/32	.1562	3.97	3/16	1	2-1/2	1-3/8	3
SX0__00220T9	#22	.1570	3.99	3/16	1-1/16	2-1/2	1-3/8	3
SX0__04000T9		.1575	4.00	3/16	1-1/16	2-1/2	1-3/8	3
SX0__00210T9	#21	.1590	4.04	3/16	1-1/16	2-1/2	1-3/8	3
SX0__00200T9	#20	.1610	4.09	3/16	1-1/16	2-1/2	1-3/8	3
SX0__04200T9		.1654	4.20	3/16	1-1/16	2-1/2	1-5/8	4
SX0__00190T9	#19	.1660	4.22	3/16	1-1/16	2-1/2	1-5/8	4
SX0__00180T9	#18	.1695	4.30	3/16	1-1/16	2-1/2	1-5/8	4
SX0__04370T9	11/64	.1719	4.37	3/16	1-1/16	2-1/2	1-5/8	4
SX0__00170T9	#17	.1730	4.39	3/16	1-1/8	3	1-5/8	4
SX0__00160T9	#16	.1770	4.49	3/16	1-1/8	3	1-5/8	4
SX0__04500T9		.1772	4.50	3/16	1-1/8	3	1-5/8	4
SX0__00150T9	#15	.1800	4.57	3/16	1-1/8	3	1-5/8	4
SX0__00140T9	#14	.1820	4.62	3/16	1-1/8	3	1-5/8	4
SX0__00130T9	#13	.1850	4.70	3/16	1-1/8	3	1-5/8	4
SX0__04760T9	3/16	.1875	4.76	3/16	1-1/8	3	1-5/8	4
SX0__00120T9	#12	.1890	4.80	1/4	1-3/16	3	1-5/8	4
SX0__00110T9	#11	.1910	4.85	1/4	1-3/16	3	1-5/8	4
SX0__00100T9	#10	.1935	4.91	1/4	1-3/16	3	1-3/4	4
SX0__00090T9	#9	.1960	4.98	1/4	1-3/16	3	1-3/4	4
SX0__05000T9		.1969	5.00	1/4	1-3/16	3	1-3/4	4
SX0__00080T9	#8	.1990	5.05	1/4	1-3/16	3	1-3/4	4
SX0__05100T9		.2008	5.10	1/4	1-3/16	3	1-3/4	4
SX0__00070T9	#7	.2010	5.10	1/4	1-3/16	3	1-3/4	4
SX0__05160T9	13/64	.2031	5.16	1/4	1-3/16	3	1-3/4	4
SX0__00060T9	#6	.2040	5.18	1/4	1-1/4	3	1-3/4	4
SX0__00050T9	#5	.2055	5.22	1/4	1-1/4	3	1-3/4	4
SX0__00040T9	#4	.2090	5.31	1/4	1-1/4	3	1-3/4	4

\*\*Other Dimensions are Available Upon Request\*\*



Part Number (insert 03 or 05 in place of __)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (in)	3xD Dimensions (in)		5xD Dimensions (in)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
SX0_00030T9	#3	.2130	5.41	1/4	1-1/4	3	1-3/4	4
SX0_02165T9		.2165	5.50	1/4	1-1/4	3	1-3/4	4
SX0_05560T9	7/32	.2188	5.56	1/4	1-1/4	3	1-3/4	4
SX0_00020T9	#2	.2210	5.61	1/4	1-5/16	3	2	4
SX0_00010T9	#1	.2280	5.79	1/4	1-5/16	3	2	4
SX0_000A0T9	A	.2340	5.94	1/4	1-5/16	3	2	4
SX0_05950T9	15/64	.2344	5.95	1/4	1-5/16	3	2	4
SX0_06000T9		.2362	6.00	1/4	1-3/8	3	2	4
SX0_000B0T9	B	.2380	6.04	1/4	1-3/8	3	2	4
SX0_000C0T9	C	.2420	6.15	1/4	1-3/8	3	2	4
SX0_000D0T9	D	.2460	6.25	1/4	1-3/8	3	2	4
SX0_06350T9	1/4/E	.2500	6.35	1/4	1-3/8	3	2	4
SX0_06500T9		.2559	6.50	5/16	1-7/16	3	2-1/8	4
SX0_000F0T9	F	.2570	6.53	5/16	1-7/16	3	2-1/8	4
SX0_000G0T9	G	.2610	6.63	5/16	1-7/16	3	2-1/8	4
SX0_06750T9	17/64	.2656	6.75	5/16	1-7/16	3	2-1/8	4
SX0_000H0T9	H	.2660	6.76	5/16	1-1/2	3	2-1/8	4
SX0_000I0T9	I	.2720	6.91	5/16	1-1/2	3	2-1/8	4
SX0_07000T9		.2756	7.00	5/16	1-1/2	3	2-1/8	4
SX0_000J0T9	J	.2770	7.03	5/16	1-1/2	3	2-1/8	4
SX0_000K0T9	K	.2810	7.14	5/16	1-1/2	3	2-1/8	4
SX0_07140T9	9/32	.2812	7.14	5/16	1-1/2	3	2-3/8	4
SX0_000L0T9	L	.2900	7.37	5/16	1-9/16	4	2-3/8	4
SX0_000M0T9	M	.2950	7.49	5/16	1-9/16	4	2-3/8	4
SX0_07500T9		.2953	7.50	5/16	1-9/16	4	2-3/8	4
SX0_07540T9	19/64	.2969	7.54	5/16	1-9/16	4	2-3/8	4
SX0_000N0T9	N	.3020	7.67	5/16	1-5/8	4	2-3/8	4
SX0_07940T9	5/16	.3125	7.94	5/16	1-5/8	4	2-3/8	4
SX0_08000T9		.3150	8.00	3/8	1-11/16	4	2-3/8	4
SX0_000O0T9	O	.3160	8.03	3/8	1-11/16	4	2-1/2	5
SX0_000P0T9	P	.3230	8.20	3/8	1-11/16	4	2-1/2	5
SX0_08330T9	21/64	.3281	8.33	3/8	1-11/16	4	2-1/2	5
SX0_000Q0T9	Q	.3320	8.43	3/8	1-11/16	4	2-1/2	5
SX0_08500T9		.3346	8.50	3/8	1-11/16	4	2-1/2	5
SX0_000R0T9	R	.3390	8.61	3/8	1-11/16	4	2-1/2	5
SX0_08730T9	11/32	.3438	8.73	3/8	1-11/16	4	2-1/2	5
SX0_000S0T9	S	.3480	8.84	3/8	1-3/4	4	2-3/4	5
SX0_09000T9		.3543	9.00	3/8	1-3/4	4	2-3/4	5
SX0_000T0T9	T	.3580	9.09	3/8	1-3/4	4	2-3/4	5

Part Number (insert 03 or 05 in place of __)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (in)	3xD Dimensions (in)		5xD Dimensions (in)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
SX0_09130T9	23/64	.3594	9.13	3/8	1-3/4	4	2-3/4	5
SX0_000U0T9	U	.3680	9.35	3/8	1-13/16	4	2-3/4	5
SX0_09500T9		.3740	9.50	3/8	1-13/16	4	2-7/8	5
SX0_09520T9	3/8	.3750	9.52	3/8	1-13/16	4	2-7/8	5
SX0_000V0T9	V	.3770	9.57	7/16	1-7/8	4	2-7/8	5
SX0_000W0T9	W	.3860	9.80	7/16	1-7/8	4	2-7/8	5
SX0_09920T9	25/64	.3906	9.92	7/16	1-7/8	4	2-7/8	5
SX0_10000T9		.3937	10.00	7/16	1-15/16	4	2-7/8	5
SX0_000X0T9	X	.3970	10.08	7/16	1-15/16	4	2-7/8	5
SX0_000Y0T9	Y	.4040	10.26	7/16	1-15/16	4	2-7/8	5
SX0_10320T9	13/32	.4062	10.32	7/16	1-15/16	4	2-7/8	5
SX0_000Z0T9	Z	.4130	10.49	7/16	2	4	2-7/8	5
SX0_10500T9		.4134	10.50	7/16	2	4	2-7/8	5
SX0_10720T9	27/64	.4219	10.72	7/16	2	4	2-7/8	5
SX0_10800T9		.4252	10.80	7/16	2	4	2-7/8	5
SX0_11000T9		.4331	11.00	7/16	2-1/16	4	3	5
SX0_11110T9	7/16	.4375	11.11	7/16	2-1/16	4	3	5
SX0_11500T9		.4528	11.50	1/2	2-1/8	4	3	5
SX0_11510T9	29/64	.4531	11.51	1/2	2-1/8	4	3	5
SX0_11910T9	15/32	.4688	11.91	1/2	2-1/8	4	3	5
SX0_12000T9		.4724	12.00	1/2	2-3/16	5	3	5
SX0_12300T9	31/64	.4844	12.30	1/2	2-3/16	5	3	5
SX0_12500T9		.4921	12.50	1/2	2-1/4	5	3-1/4	5
SX0_12700T9	1/2	.5000	12.70	1/2	2-1/4	5	3-1/4	5
SX0_13000T9		.5118	13.00	9/16	2-3/8	5	3-1/4	5
SX0_13100T9	33/64	.5156	13.10	9/16	2-3/8	5	3-1/4	5
SX0_13490T9	17/32	.5312	13.49	9/16	2-1/2	5	3-1/4	5
SX0_13500T9		.5315	13.50	9/16	2-1/2	5	3-1/4	5
SX0_13890T9	35/64	.5469	13.89	9/16	2-1/2	5	3-1/4	5
SX0_14000T9		.5512	14.00	9/16	2-1/2	5	3-1/4	5
SX0_14290T9	9/16	.5625	14.29	9/16	3	5	3-1/2	6
SX0_14500T9		.5709	14.50	5/8	3	5	3-1/2	6
SX0_14680T9	37/64	.5781	14.68	5/8	3	5	3-1/2	6
SX0_15000T9		.5906	15.00	5/8	3	5	3-1/2	6
SX0_15080T9	19/32	.5938	15.08	5/8	3	5	3-1/2	6
SX0_15480T9	39/64	.6094	15.48	5/8	3	5	3-1/2	6
SX0_15500T9		.6102	15.50	5/8	3	5	3-1/2	6
SX0_15870T9	5/8	.6250	15.87	5/8	3	5	3-1/2	6
SX0_16000T9		.6299	16.00	3/4	3	5	3-1/2	6

\*\*Other Dimensions are Available Upon Request\*\*

Tolerance

<b>Drill Dia (h7) Inches (in)</b> .0000-.1181: + 0/- .00039 .1182-.2362: + 0/- .00047 .2363-.3937: + 0/- .00059 .3938-.7087: + 0/- .00071	<b>Drill Dia (h7) Metric (mm)</b> 0-3: + 0/- .010 3.01-6: + 0/- .012 6.01-10.0: + 0/- .015 10.01-18.0: + 0/- .018	<b>Shank Dia (h6) Inches (in)</b> .0000-.1181: + 0/- .00024 .1182-.2362: + 0/- .00031 .2363-.3937: + 0/- .00035 .3938-.7087: + 0/- .00043	<b>Shank Dia (h6) Metric (mm)</b> 0-3: + 0/- .006 3.01-6: + 0/- .008 6.01-10.0: + 0/- .009 10.01-18.0: + 0/- .011
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Now Improved with

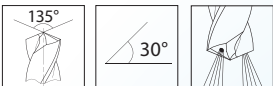
**EDGE CUT™** for Superior Cutter Performance



Single-margin drill  
Coolant thru  
Ideal for general  
purpose drilling  
3xD-8xD

**DISCONTINUED**  
available while supplies last

CARBIDE  
3xD to 8xD



**Varianta® Supral** Provides a low coefficient of friction, reducing tool wear and resulting in a longer tool life.

**Design** – Long spiral-fluted, single-margin, right-hand cut and internal coolant.

**Ideal for** – General Purpose Drilling

**Available Upon Request** – Firm Hold Shank, Additional PVD Coatings

**P M K S** Refer to page 4



**135° Point Geometry** - Split-point geometry for superior drill penetration and accuracy.

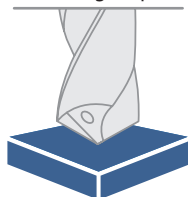
**Coolant Holes** - Cool the cutting edge and improve chip evacuation.

**Single-Margin Design** - For drilling accuracy.

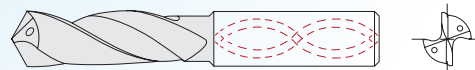
**Polish** - Chip evacuation is improved during deep-hole drilling, when the flutes are polished.



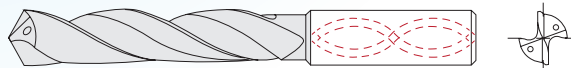
No Pecking Required



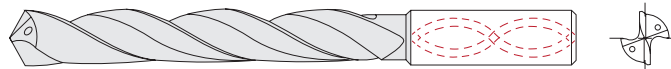
3xD



5xD



8xD



**DISCONTINUED**  
available while supplies last



Part Number (insert 03, 05 or 08 in place of __)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	3xD Dimensions (mm)		5xD Dimensions (mm)		8xD Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
GXC_03000T9		.1181	3.000	6	20	62	28	66	34	72
GXC_03100T9		.1220	3.100	6	20	62	28	66	34	72
GXC_03175T9	1/8	.1250	3.175	6	20	62	28	66	34	72
GXC_03200T9		.1260	3.200	6	20	62	28	66	34	72
GXC_03300T9		.1299	3.300	6	20	62	28	66	34	72
GXC_03400T9		.1339	3.400	6	20	62	28	66	34	72
GXC_03500T9		.1378	3.500	6	20	62	28	66	34	72
GXC_03572T9	9/64	.1406	3.572	6	20	62	28	66	34	72
GXC_03600T9		.1417	3.600	6	20	62	28	66	34	72
GXC_03700T9		.1457	3.700	6	20	62	28	66	34	72
GXC_03800T9	#25	.1496	3.800	6	24	66	36	74	43	81
GXC_03900T9		.1535	3.900	6	24	66	36	74	43	81
GXC_03970T9	5/32	.1563	3.970	6	24	66	36	74	43	81
GXC_04000T9		.1575	4.000	6	24	66	36	74	43	81
GXC_04100T9		.1614	4.100	6	24	66	36	74	43	81
GXC_04200T9		.1654	4.200	6	24	66	36	74	43	81
GXC_04300T9		.1693	4.300	6	24	66	36	74	43	81
GXC_04370T9	11/64	.1719	4.370	6	24	66	36	74	43	81
GXC_04400T9		.1732	4.400	6	24	66	36	74	43	81
GXC_04500T9		.1772	4.500	6	24	66	36	74	43	81
GXC_04600T9		.1811	4.600	6	24	66	36	74	43	81
GXC_04650T9		.1831	4.650	6	24	66	36	74	43	81
GXC_00130T9	#13	.1850	4.700	6	24	66	36	74	43	81
GXC_04760T9	3/16	.1875	4.760	6	28	66	44	82	57	95
GXC_00120T9	#12	.1890	4.800	6	28	66	44	82	57	95
GXC_04900T9		.1929	4.900	6	28	66	44	82	57	95
GXC_05000T9		.1969	5.000	6	28	66	44	82	57	95
GXC_05100T9		.2008	5.100	6	28	66	44	82	57	95
GXC_05160T9	13/64	.2031	5.160	6	28	66	44	82	57	95
GXC_00060T9	#6	.2040	5.182	6	28	66	44	82	57	95
GXC_05200T9		.2047	5.200	6	28	66	44	82	57	95
GXC_05300T9		.2087	5.300	6	28	66	44	82	57	95
GXC_05400T9		.2126	5.400	6	28	66	44	82	57	95
GXC_05500T9		.2165	5.500	6	28	66	44	82	57	95
GXC_05550T9		.2185	5.550	6	28	66	44	82	57	95
GXC_05560T9	7/32	.2187	5.560	6	28	66	44	82	57	95

\*\* Diameters (2.0-2.9mm) and other dimensions are available upon request\*\*

Tolerance

<b>Drill Dia (h7) Inches (in)</b> .0000-.1181: +0/-0.0039 .1182-.2362: +0/-0.0047 .2363-.3937: +0/-0.0059 .3938-.7087: +0/-0.0071	<b>Drill Dia (h7) Metric (mm)</b> 0-3: +0/-0.010 3.01-6: +0/-0.012 6.01-10.0: +0/-0.015 10.01-18.0: +0/-0.018	<b>Shank Dia (h6) Inches (in)</b> .0000-.1181: +0/-0.0024 .1182-.2362: +0/-0.0031 .2363-.3937: +0/-0.0035 .3938-.7087: +0/-0.0043	<b>Shank Dia (h6) Metric (mm)</b> 0-3: +0/-0.006 3.01-6: +0/-0.008 6.01-10.0: +0/-0.009 10.01-18.0: +0/-0.011
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**DISCONTINUED**

available while supplies last

Part Number (insert O3, O5 or O8 in place of __)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	3xD Dimensions (mm)		5xD Dimensions (mm)		8xD Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
GXC__05600T9		.2205	5.600	6	28	66	44	82	57	95
GXC__05700T9		.2244	5.700	6	28	66	44	82	57	95
GXC__05800T9		.2283	5.800	6	28	66	44	82	57	95
GXC__05900T9		.2323	5.900	6	28	66	44	82	57	95
GXC__05950T9	15/64	.2344	5.950	6	28	66	44	82	57	95
GXC__06000T9		.2362	6.000	6	28	66	44	82	57	95
GXC__06100T9		.2402	6.100	8	34	79	53	91	76	114
GXC__06200T9		.2441	6.200	8	34	79	53	91	76	114
GXC__06300T9		.2480	6.300	8	34	79	53	91	76	114
GXC__06350T9	1/4	.2500	6.350	8	34	79	53	91	76	114
GXC__06400T9		.2520	6.400	8	34	79	53	91	76	114
GXC__06500T9		.2559	6.500	8	34	79	53	91	76	114
GXC__06600T9		.2598	6.600	8	34	79	53	91	76	114
GXC__06700T9		.2638	6.700	8	34	79	53	91	76	114
GXC__06750T9	17/64	.2656	6.750	8	34	79	53	91	76	114
GXC__06800T9		.2677	6.800	8	34	79	53	91	76	114
GXC__06900T9		.2717	6.900	8	41	79	53	91	76	114
GXC__07000T9		.2756	7.000	8	41	79	53	91	76	114
GXC__07100T9		.2795	7.100	8	41	79	53	91	76	114
GXC__07140T9	9/32	.2813	7.140	8	41	79	53	91	76	114
GXC__07200T9		.2835	7.200	8	41	79	53	91	76	114
GXC__07300T9		.2874	7.300	8	41	79	53	91	76	114
GXC__07400T9		.2913	7.400	8	41	79	53	91	76	114
GXC__07500T9		.2953	7.500	8	41	79	53	91	76	114
GXC__07540T9	19/64	.2969	7.540	8	41	79	53	91	76	114
GXC__07700T9		.3031	7.700	8	41	79	53	91	76	114
GXC__07800T9		.3071	7.800	8	41	79	53	91	76	114
GXC__07900T9		.3110	7.900	8	41	79	53	91	76	114
GXC__07940T9	5/16	.3125	7.940	8	41	79	53	91	76	114
GXC__08000T9		.3150	8.000	8	41	79	53	91	76	114
GXC__08100T9		.3189	8.100	10	47	89	61	103	95	142
GXC__08200T9		.3228	8.200	10	47	89	61	103	95	142
GXC__08300T9		.3268	8.300	10	47	89	61	103	95	142
GXC__08330T9	21/64	.3281	8.330	10	47	89	61	103	95	142
GXC__08400T9		.3307	8.400	10	47	89	61	103	95	142
GXC__08500T9		.3346	8.500	10	47	89	61	103	95	142
GXC__08600T9		.3386	8.600	10	47	89	61	103	95	142
GXC__08700T9		.3425	8.700	10	47	89	61	103	95	142
GXC__08730T9	11/32	.3437	8.730	10	47	89	61	103	95	142
GXC__08800T9		.3465	8.800	10	47	89	61	103	95	142
GXC__09000T9		.3543	9.000	10	47	89	61	103	95	142
GXC__09130T9	23/64	.3594	9.130	10	47	89	61	103	95	142
GXC__09200T9		.3622	9.200	10	47	89	61	103	95	142
GXC__09300T9		.3661	9.300	10	47	89	61	103	95	142
GXC__09500T9		.3740	9.500	10	47	89	61	103	95	142
GXC__09520T9	3/8	.3750	9.520	10	47	89	61	103	95	142
GXC__09600T9		.3780	9.600	10	47	89	61	103	95	142
GXC__09800T9		.3858	9.800	10	47	89	61	103	95	142
GXC__09900T9		.3898	9.900	10	47	89	61	103	95	142
GXC__09920T9	25/64	.3906	9.920	10	47	89	61	103	95	142
GXC__10000T9		.3937	10.000	10	47	89	61	103	95	142
GXC__10100T9		.3976	10.100	12	55	102	71	118	114	162
GXC__10200T9		.4016	10.200	12	55	102	71	118	114	162
GXC__10300T9		.4055	10.300	12	55	102	71	118	114	162
GXC__10320T9	13/32	.4063	10.320	12	55	102	71	118	114	162
GXC__10400T9		.4094	10.400	12	55	102	71	118	114	162
GXC__10500T9		.4134	10.500	12	55	102	71	118	114	162
GXC__10720T9	27/64	.4219	10.720	12	55	102	71	118	114	162
GXC__10800T9		.4252	10.800	12	55	102	71	118	114	162
GXC__11000T9		.4331	11.000	12	55	102	71	118	114	162
GXC__11100T9		.4370	11.100	12	55	102	71	118	114	162
GXC__11113T9	7/16	.4375	11.113	12	55	102	71	118	114	162

**DISCONTINUED**

available while supplies last

Part Number (insert 03, 05 or 08 in place of __)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	3xD		5xD		8xD	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
GXC__11200T9		.4409	11.200	12	55	102	71	118	114	162
GXC__11500T9		.4528	11.500	12	55	102	71	118	114	162
GXC__11510T9	29/64	.4531	11.510	12	55	102	71	118	114	162
GXC__11700T9		.4606	11.700	12	55	102	71	118	114	162
GXC__11800T9		.4646	11.800	12	55	102	71	118	114	162
GXC__11910T9	15/32	.4687	11.910	12	55	102	71	118	114	162
GXC__12000T9		.4724	12.000	12	55	102	71	118	114	162
GXC__12100T9		.4764	12.100	14	60	107	77	124	131	178
GXC__12200T9		.4803	12.200	14	60	107	77	124	131	178
GXC__12300T9		.4843	12.300	14	60	107	77	124	131	178
GXC__12303T9	31/64	.4844	12.303	14	60	107	77	124	131	178
GXC__12500T9		.4921	12.500	14	60	107	77	124	131	178
GXC__12600T9		.4961	12.600	14	60	107	77	124	131	178
GXC__12700T9	1/2	.5000	12.700	14	60	107	77	124	131	178
GXC__13000T9		.5118	13.000	14	60	107	77	124	131	178
GXC__13300T9		.5236	13.300	14	60	107	77	124	131	178
GXC__13490T9	17/32	.5313	13.490	14	60	107	77	124	131	178
GXC__13500T9		.5315	13.500	14	60	107	77	124	131	178
GXC__14000T9		.5512	14.000	14	60	107	77	124	131	178
GXC__14290T9	9/16	.5625	14.290	16	65	115	83	133	152	203
GXC__14500T9		.5709	14.500	16	65	115	83	133	152	203
GXC__15000T9		.5906	15.000	16	65	115	83	133	152	203
GXC__15500T9		.6102	15.500	16	65	115	83	133	152	203
GXC__15870T9	5/8	.6250	15.870	16	65	115	83	133	152	203
GXC__16000T9		.6299	16.000	16	65	115	83	133	152	203
GXC__16500T9		.6496	16.500	18	73	123	93	143	171	222
GXC__17000T9		.6693	17.000	18	73	123	93	143	171	222
GXC__17500T9		.6890	17.500	18	73	123	93	143	171	222
GXC__18000T9		.7087	18.000	18	73	123	93	143	171	222
GXC__18500T9		.7283	18.500	20	79	131	101	153	190	243
GXC__19050T9	3/4	.7500	19.050	20	79	131	101	153	190	243
GXC__19500T9		.7677	19.500	20	79	131	101	153	190	243
GXC__20000T9		.7874	20.000	20	79	131	101	153	190	243

\*\* Diameters (2.0-2.9mm) and other dimensions are available upon request\*\*

CARBIDE DRILLS

Now Improved with

**EDGE CUT™** for  
Superior Cutter Performance



High-performance  
Double-margin  
Coolant thru drill  
Ideal for stainless steels,  
heat resistant alloys and  
cast material applications  
16xD-50xD

CARBIDE

16xD  
to  
50xD



Varianta®  
Supral

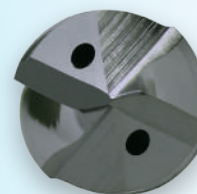
Varianta® Supral Provides a low  
coefficient of friction, reducing  
tool wear and resulting in a  
longer tool life.

**135° Point Geometry** - Split-point  
geometry for superior drill penetration  
and accuracy.

**Double-Margin Design** - For  
improved drilling stability and  
smooth surface finish.

**Coolant Holes** - Cool the cutting  
edge and improve chip evacuation.

**Polish** - Chip evacuation is improved during  
deep-hole drilling, when the flutes are polished.



50xD

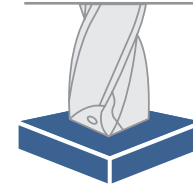


**Design** – Long spiral-fluted, right-hand cut, double-margin and internal coolant.

**Available Upon Request** – Firm Hold Shank, Additional PVD Coatings

**P M K S** Refer to page 4

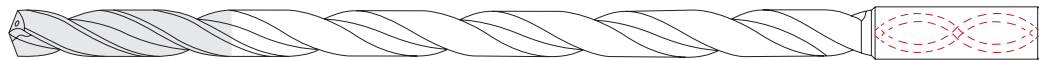
No Pecking Required



16xD



20xD



25xD



30xD



40xD



16xD – 30xD must utilize a pilot hole drill. Refer to page 66. 40xD & 50xD must utilize a 20xD intermediary drill along with pilot drill. Refer to page 48.



**Design** – Long spiral-fluted, right-hand cut, double-margin and internal coolant.

**Available Upon Request – Firm Hold Shank, Additional PVD Coatings**

■ 16xD–30xD must utilize a pilot hole drill. (Refer to page 66)

**P M K S** Refer to page 4

**CARBIDE** **16xD to 30xD**

135° 30°

**Varianta® Supral**



Part Number (insert 16, 20, 25 or 30 in place of _)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	16xD Dimensions (mm)		20xD Dimensions (mm)		25xD Dimensions (mm)		30xD Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
SXC_03000T9		.1181	3.000	6	60	100	80	120	98	135	105	150
SXC_03175T9	1/8	.1250	3.175	6	60	100	80	120	98	135	105	150
SXC_03200T9		.1260	3.200	6	60	100	80	120	110	150	105	150
SXC_03300T9		.1299	3.300	6	60	100	80	120	110	150	135	185
SXC_03500T9		.1378	3.500	6	60	100	80	120	110	150	135	185
SXC_03572T9	9/64	.1406	3.572	6	75	115	90	130	120	160	135	185
SXC_03800T9	#25	.1496	3.800	6	75	115	90	130	120	160	135	185
SXC_03970T9	5/32	.1563	3.970	6	75	115	90	130	120	160	135	185
SXC_04000T9		.1575	4.000	6	75	115	90	130	120	160	135	185
SXC_04200T9		.1654	4.200	6	75	115	110	160	120	160	135	185
SXC_04370T9	11/64	.1719	4.370	6	90	130	110	160	135	180	165	215
SXC_04500T9		.1772	4.500	6	90	130	110	160	135	180	165	215
SXC_00130T9	#13	.1850	4.700	6	90	130	120	160	135	180	165	215
SXC_04760T9	3/16	.1875	4.760	6	90	130	120	160	135	180	165	215
SXC_00120T9	#12	.1890	4.800	6	90	130	120	160	135	180	165	215
SXC_05000T9		.1969	5.000	6	90	130	120	160	135	180	165	215
SXC_05160T9	13/64	.2031	5.160	6	108	150	140	185	168	205	180	230
SXC_00060T9	#6	.2040	5.182	6	108	150	140	185	168	205	180	230
SXC_05500T9		.2165	5.500	6	108	150	140	185	168	205	180	230
SXC_05560T9	7/32	.2187	5.560	6	108	150	140	185	168	205	180	230
SXC_05800T9		.2283	5.800	6	108	150	140	185	168	205	180	230
SXC_05950T9	15/64	.2344	5.950	6	108	150	140	185	168	205	180	230
SXC_06000T9		.2362	6.000	6	108	150	140	185	168	205	180	230
SXC_06350T9	1/4	.2500	6.350	8	125	165	160	210	200	240	215	280
SXC_06500T9		.2559	6.500	8	125	165	160	210	200	240	215	280
SXC_06750T9		.2656	6.750	8	125	165	160	210	200	240	230	280

\*\* Diameters (2.0-2.9mm) and other dimensions are available upon request\*\*

**Tolerance**

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)	Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-0.0039	0-3: + 0/-0.10	.0000-.1181: + 0/-0.0024	0-3: + 0/-0.06
.1182-.2362: + 0/-0.0047	3.01-6: + 0/-0.12	.1182-.2362: + 0/-0.0031	3.01-6: + 0/-0.08
.2363-.3937: + 0/-0.0059	6.01-10.0: + 0/-0.15	.2363-.3937: + 0/-0.0035	6.01-10.0: + 0/-0.09
.3938-.7087: + 0/-0.0071	10.01-18.0: + 0/-0.18	.3938-.7087: + 0/-0.0043	10.01-18.0: + 0/-0.11



Part Number (insert 16, 20, 25 or 30 in place of _)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	16xD Dimensions (mm)		20xD Dimensions (mm)		25xD Dimensions (mm)		30xD Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
SXC__06800T9		.2677	6.800	8	125	165	160	210	200	240	230	280
SXC__07000T9		.2756	7.000	8	125	165	160	210	200	240	230	280
SXC__07140T9	9/32	.2813	7.140	8	140	180	180	230	220	260	230	280
SXC__07500T9		.2953	7.500	8	140	180	180	230	220	260	230	280
SXC__07540T9	19/64	.2969	7.540	8	140	180	180	230	220	260	265	315
SXC__07800T9		.3071	7.800	8	140	180	180	230	220	260	265	315
SXC__07940T9	5/16	.3125	7.940	8	140	180	180	230	220	260	265	315
SXC__08000T9		.3150	8.000	8	140	180	180	230	220	260	265	315
SXC__08330T9	21/64	.3281	8.330	10	160	205	195	206	240	285	295	350
SXC__08500T9		.3346	8.500	10	160	205	195	206	240	285	295	350
SXC__08730T9	11/32	.3437	8.730	10	160	205	230	290	268	310	330	380
SXC__08800T9		.3465	8.800	10	160	205	230	290	268	310	330	380
SXC__09000T9		.3543	9.000	10	160	205	230	290	268	310	330	380
SXC__09130T9	23/64	.3594	9.130	10	180	225	230	290	268	310	330	380
SXC__09520T9	3/8	.3750	9.520	10	180	225	230	290	268	310	330	380
SXC__09800T9		.3858	9.800	10	180	225	230	290	268	310	330	380
SXC__09920T9	25/64	.3906	9.920	10	180	225	230	290	268	310	330	380
SXC__10000T9		.3937	10.000	10	180	225	230	290	268	310	330	380
SXC__10200T9		.4016	10.200	12	190	240	230	290	325	375	-	-
SXC__10320T9	13/32	.4063	10.320	12	190	240	230	290	325	375	-	-
SXC__10720T9	27/64	.4219	10.720	12	190	240	230	290	325	375	-	-
SXC__10800T9		.4252	10.800	12	190	240	230	290	325	375	-	-
SXC__11000T9		.4331	11.000	12	190	240	268	315	325	375	-	-
SXC__11113T9	7/16	.4375	11.113	12	215	265	268	315	325	375	-	-
SXC__11500T9		.4528	11.500	12	215	265	268	315	325	375	-	-
SXC__11510T9	29/64	.4531	11.510	12	215	265	268	315	325	375	-	-
SXC__11910T9	15/32	.4687	11.910	12	215	265	268	315	325	375	-	-
SXC__12000T9		.4724	12.000	12	215	265	268	315	325	375	-	-
SXC__12300T9		.4843	12.300	14	230	280	280	325	-	-	-	-
SXC__12303T9	31/64	.4844	12.303	14	230	280	280	325	-	-	-	-
SXC__12700T9	1/2	.5000	12.700	14	230	280	280	325	-	-	-	-
SXC__13000T9		.5118	13.000	14	230	280	280	325	-	-	-	-
SXC__13300T9		.5236	13.300	14	245	295	305	355	-	-	-	-
SXC__13490T9	17/32	.5313	13.490	14	245	295	305	355	-	-	-	-
SXC__13500T9		.5315	13.500	14	245	295	305	355	-	-	-	-
SXC__14000T9		.5512	14.000	14	245	295	305	355	-	-	-	-
SXC__14290T9	9/16	.5625	14.290	16	255	305	320	370	-	-	-	-
SXC__14500T9		.5709	14.500	16	255	305	320	370	-	-	-	-
SXC__15000T9		.5906	15.000	16	255	305	350	400	-	-	-	-
SXC__15500T9		.6102	15.500	16	275	325	350	400	-	-	-	-
SXC__15870T9	5/8	.6250	15.875	16	275	325	350	400	-	-	-	-
SXC__16000T9		.6299	16.000	16	275	325	350	400	-	-	-	-
SXC__16500T9		.6496	16.500	18	320	370	-	-	-	-	-	-
SXC__17000T9		.6693	17.000	18	320	370	-	-	-	-	-	-
SXC__17500T9		.6890	17.500	18	320	370	-	-	-	-	-	-
SXC__18000T9		.7087	18.000	18	320	370	-	-	-	-	-	-
SXC__18500T9		.7283	18.500	20	330	380	-	-	-	-	-	-
SXC__19050T9	3/4	.7500	19.050	20	330	380	-	-	-	-	-	-
SXC__19500T9		.7677	19.500	20	350	400	-	-	-	-	-	-
SXC__20000T9		.7874	20.000	20	350	400	-	-	-	-	-	-



**Design** – Long spiral-fluted, right-hand cut, double-margin and internal coolant.

**Available Upon Request – Firm Hold Shank, Additional PVD Coatings**

■ 40xD & 50xD must utilize a 20xD intermediary drill (page 48) along with a pilot drill. (page 66)

**P M K S** Refer to page 4

**CARBIDE**  
40xD to 50xD



**Varianta® Supral**

**Varianta® Supral** Provides a low coefficient of friction, reducing tool wear and resulting in a longer tool life.

**HI-DEPTH™**  
LONG DRILLS

Part Number (insert 40 or 50 in place of _)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	40xD Hole Depth Dimensions (mm)		50xD Hole Depth Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
SXC__03000T9		.1181	3.000	6	140	190	-	-
SXC__03175T9	1/8	.1250	3.175	6	140	190	-	-
SXC__03572T9	9/64	.1406	3.572	6	140	190	-	-
SXC__03800T9	#25	.1496	3.800	6	180	230	-	-
SXC__03970T9	5/32	.1563	3.970	6	180	230	-	-
SXC__04000T9		.1575	4.000	6	180	230	225	270
SXC__04200T9		.1654	4.200	6	180	230	225	270
SXC__04370T9	11/64	.1719	4.370	6	220	270	275	320
SXC__04500T9		.1772	4.500	6	220	270	275	320
SXC__00130T9	#13	.1850	4.700	6	220	270	275	320
SXC__04760T9	3/16	.1875	4.760	6	220	270	275	320
SXC__00120T9	#12	.1890	4.800	6	220	270	275	320
SXC__05000T9		.1969	5.000	6	220	270	275	320
SXC__05160T9	13/64	.2031	5.160	6	240	290	310	360
SXC__00060T9	#6	.2040	5.182	6	240	290	310	360
SXC__05500T9		.2165	5.500	6	240	290	310	360
SXC__05560T9	7/32	.2187	5.560	6	240	290	310	360
SXC__05800T9		.2283	5.800	6	240	290	310	360
SXC__05950T9	15/64	.2344	5.950	6	240	290	310	360
SXC__06000T9		.2362	6.000	6	240	290	310	360
SXC__06350T9	1/4	.2500	6.350	8	290	340	340	385
SXC__06500T9		.2559	6.500	8	290	340	-	-
SXC__06750T9	17/64	.2656	6.750	8	320	370	-	-
SXC__06800T9		.2677	6.800	8	320	370	-	-
SXC__07000T9		.2756	7.000	8	320	370	-	-
SXC__07140T9	9/32	.2813	7.140	8	320	370	-	-
SXC__07500T9		.2953	7.500	8	320	370	-	-
SXC__07540T9	19/64	.2969	7.540	8	350	400	-	-
SXC__07800T9		.3071	7.800	8	350	400	-	-
SXC__07940T9	5/16	.3125	7.940	8	350	400	-	-
SXC__08000T9		.3150	8.000	8	350	400	-	-

\*\* Diameters (2.0-2.9mm) and other dimensions are available upon request\*\*

**Tolerance**

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)	Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/--.00039	0-3: + 0/--.010	.0000-.1181: + 0/--.00024	0-3: + 0/--.006
.1182-.2362: + 0/--.00047	3.01-6: + 0/--.012	.1182-.2362: + 0/--.00031	3.01-6: + 0/--.008
.2363-.3937: + 0/--.00059	6.01-10.0: + 0/--.015	.2363-.3937: + 0/--.00035	6.01-10.0: + 0/--.009
.3938-.7087: + 0/--.00071	10.01-18.0: + 0/--.018	.3938-.7087: + 0/--.00043	10.01-18.0: + 0/--.011

Now Improved with

**EDGE CUT™** for  
Superior Cutter Performance



High-performance  
Double-margin  
Coolant thru drill  
Ideal for steels & cast materials  
3xD-12xD

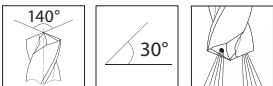
**Design** – Spiral-fluted, right-hand cut, with external coolant and a cylindrical shank.

**Ideal for** – Steels and cast materials

**Available Upon Request** – Firm Hold Shank, Additional PVD Coatings

**P K** Refer to page 4

CARBIDE  
3xD  
to  
12xD



**Varianta® Supral** Provides a low coefficient of friction, reducing tool wear and resulting in a longer tool life.

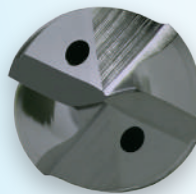
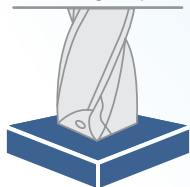
**140° Point Geometry** - Split-point geometry for superior drill penetration and accuracy.

**Double-Margin Design** - For improved drilling stability and smooth surface finish.

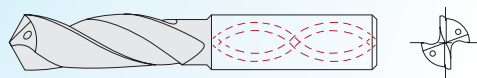
**Coolant Holes** - Cool the cutting edge and improve chip evacuation.

**Polish** - Chip evacuation is improved during deep-hole drilling, when the flutes are polished.

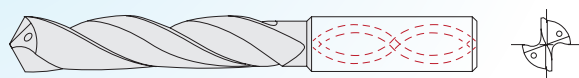
No Pecking Required



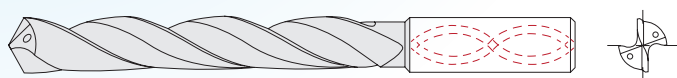
3xD



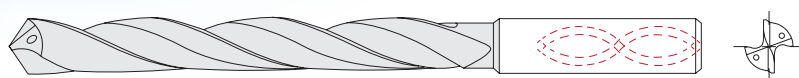
5xD

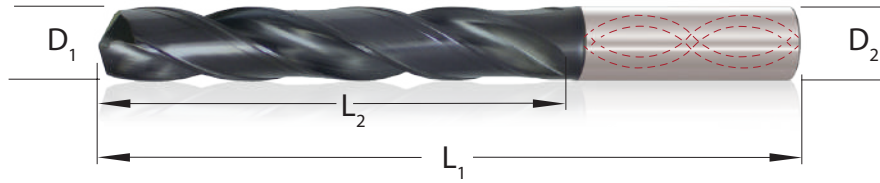


8xD



12xD





Part Number (insert 03, 05, 08 or 12 in place of _)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	3xD Dimensions (mm)		5xD Dimensions (mm)		8xD Dimensions (mm)		12xD Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
DXC_03000T9		.1181	3.000	6	20	62	28	66	34	72	54	92
DXC_03100T9		.1220	3.100	6	20	62	28	66	34	72	54	92
DXC_03175T9	1/8	.1250	3.175	6	20	62	28	66	34	72	54	92
DXC_03200T9		.1260	3.200	6	20	62	28	66	34	72	54	92
DXC_03300T9		.1299	3.300	6	20	62	28	66	34	72	54	92
DXC_03400T9		.1339	3.400	6	20	62	28	66	34	72	54	92
DXC_03500T9		.1378	3.500	6	20	62	28	66	34	72	54	92
DXC_03572T9	9/64	.1406	3.572	6	20	62	28	66	34	72	54	92
DXC_03600T9		.1417	3.600	6	20	62	28	66	34	72	54	92
DXC_03700T9		.1457	3.700	6	20	62	28	66	34	72	54	92
DXC_03800T9	#25	.1496	3.800	6	24	66	36	74	43	81	64	102
DXC_03900T9		.1535	3.900	6	24	66	36	74	43	81	64	102
DXC_03970T9	5/32	.1563	3.970	6	24	66	36	74	43	81	64	102
DXC_04000T9		.1575	4.000	6	24	66	36	74	43	81	64	102
DXC_04100T9		.1614	4.100	6	24	66	36	74	43	81	64	102
DXC_04200T9		.1654	4.200	6	24	66	36	74	43	81	64	102
DXC_04300T9		.1693	4.300	6	24	66	36	74	43	81	64	102
DXC_04370T9	11/64	.1719	4.370	6	24	66	36	74	43	81	64	102
DXC_04400T9		.1732	4.400	6	24	66	36	74	43	81	64	102
DXC_04500T9		.1772	4.500	6	24	66	36	74	43	81	64	102
DXC_04600T9		.1811	4.600	6	24	66	36	74	43	81	64	102
DXC_04650T9		.1831	4.650	6	24	66	36	74	43	81	64	102
DXC_00130T9	#13	.1850	4.700	6	24	66	36	74	43	81	64	102
DXC_04760T9	3/16	.1875	4.760	6	28	66	44	82	57	95	78	116
DXC_00120T9	#12	.1890	4.800	6	28	66	44	82	57	95	78	116
DXC_04900T9		.1929	4.900	6	28	66	44	82	57	95	78	116
DXC_05000T9		.1969	5.000	6	28	66	44	82	57	95	78	116
DXC_05100T9		.2008	5.100	6	28	66	44	82	57	95	78	116
DXC_05160T9	13/64	.2031	5.160	6	28	66	44	82	57	95	78	116
DXC_00060T9	#6	.2040	5.182	6	28	66	44	82	57	95	78	116
DXC_05200T9		.2047	5.200	6	28	66	44	82	57	95	78	116
DXC_05300T9		.2087	5.300	6	28	66	44	82	57	95	78	116
DXC_05400T9		.2126	5.400	6	28	66	44	82	57	95	78	116
DXC_05500T9		.2165	5.500	6	28	66	44	82	57	95	78	116
DXC_05550T9		.2185	5.550	6	28	66	44	82	57	95	78	116
DXC_05560T9	7/32	.2187	5.560	6	28	66	44	82	57	95	78	116

Tolerance

<b>Drill Dia (h7) Inches (in)</b> .0000-.1181: + 0/-0.0039 .1182-.2362: + 0/-0.0047 .2363-.3937: + 0/-0.0059 .3938-.7087: + 0/-0.0071	<b>Drill Dia (h7) Metric (mm)</b> 0-3: + 0/-0.10 3.01-6: + 0/-0.12 6.01-10.0: + 0/-0.15 10.01-18.0: + 0/-0.18	<b>Shank Dia (h6) Inches (in)</b> .0000-.1181: + 0/-0.0024 .1182-.2362: + 0/-0.0031 .2363-.3937: + 0/-0.0035 .3938-.7087: + 0/-0.0043	<b>Shank Dia (h6) Metric (mm)</b> 0-3: + 0/-0.06 3.01-6: + 0/-0.08 6.01-10.0: + 0/-0.09 10.01-18.0: + 0/-0.11
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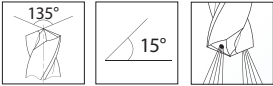
Part Number (insert 03, 05, 08 or 12 in place of _)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	3xD Dimensions (mm)		5xD Dimensions (mm)		8xD Dimensions (mm)		12xD Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
DXC__11500T9		.4528	11.500	12	55	102	71	118	114	162	156	204
DXC__11510T9	29/64	.4531	11.510	12	55	102	71	118	114	162	156	204
DXC__11700T9		.4606	11.700	12	55	102	71	118	114	162	156	204
DXC__11800T9		.4646	11.800	12	55	102	71	118	114	162	156	204
DXC__11910T9	15/32	.4687	11.910	12	55	102	71	118	114	162	156	204
DXC__12000T9		.4724	12.000	12	55	102	71	118	114	162	156	204
DXC__12100T9		.4764	12.100	14	60	107	77	124	131	178	182	230
DXC__12200T9		.4803	12.200	14	60	107	77	124	131	178	182	230
DXC__12300T9		.4843	12.300	14	60	107	77	124	131	178	182	230
DXC__12303T9	31/64	.4844	12.303	14	60	107	77	124	131	178	182	230
DXC__12500T9		.4921	12.500	14	60	107	77	124	131	178	182	230
DXC__12600T9		.4961	12.600	14	60	107	77	124	131	178	182	230
DXC__12700T9	1/2	.5000	12.700	14	60	107	77	124	131	178	182	230
DXC__13000T9		.5118	13.000	14	60	107	77	124	131	178	182	230
DXC__13300T9		.5236	13.300	14	60	107	77	124	131	178	182	230
DXC__13490T9	17/32	.5313	13.490	14	60	107	77	124	131	178	182	230
DXC__13500T9		.5315	13.500	14	60	107	77	124	131	178	182	230
DXC__14000T9		.5512	14.000	14	60	107	77	124	131	178	182	230
DXC__14290T9	9/16	.5625	14.290	16	65	115	83	133	152	203	208	260
DXC__14500T9		.5709	14.500	16	65	115	83	133	152	203	208	260
DXC__15000T9		.5906	15.000	16	65	115	83	133	152	203	208	260
DXC__15500T9		.6102	15.500	16	65	115	83	133	152	203	208	260
DXC__15870T9	5/8	.6250	15.870	16	65	115	83	133	152	203	208	260
DXC__16000T9		.6299	16.000	16	65	115	83	133	152	203	208	260
DXC__16500T9		.6496	16.500	18	73	123	93	143	171	222	234	285
DXC__17000T9		.6693	17.000	18	73	123	93	143	171	222	234	285
DXC__17500T9		.6890	17.500	18	73	123	93	143	171	222	234	285
DXC__18000T9		.7087	18.000	18	73	123	93	143	171	222	234	285
DXC__18500T9		.7283	18.500	20	79	131	101	153	190	243	258	310
DXC__19050T9	3/4	.7500	19.050	20	79	131	101	153	190	243	258	310
DXC__19500T9		.7677	19.500	20	79	131	101	153	190	243	258	310
DXC__20000T9		.7874	20.000	20	79	131	101	153	190	243	258	310

\*\*Other Dimensions are Available Upon Request\*\*



High-performance  
Double-margin  
Coolant thru drill  
Ideal for nickel-based alloys  
3xD-30xD

CARBIDE  
3xD  
to  
30xD



Sistral®  
Sistral® Its nanostructure composition provides both high heat and oxidation resistance. Ideal for dry and high-speed cutting applications of materials.

**135° Point Geometry** - Split-point geometry for superior drill penetration and accuracy.

**Double-Margin Design** - For improved drilling stability and smooth surface finish.

**Polish** - Chip evacuation is improved during deep-hole drilling, when the flutes are polished.

**Coolant Holes** - Cool the cutting edge and improve chip evacuation.

**45° Standard Chamfer** - Cutting edge protection and longer tool life.

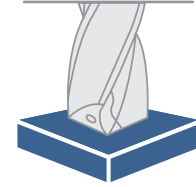
**Design** – Long spiral-fluted, 45° corner chamfer, right-hand cut, double-margin and internal coolant.

**Ideal for** – Nickel-based alloys

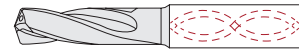
**Available Upon Request** – Firm Hold Shank, Additional PVD Coatings

**S I** Refer to page 4

No Pecking Required



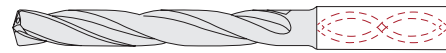
3xD



5xD



8xD



12xD



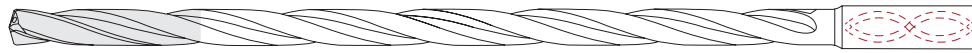
16xD



20xD



25xD



30xD



Must utilize a pilot hole drill. Refer to page 66



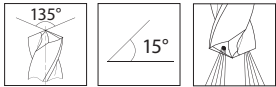
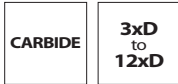


**Design** – Long spiral-fluted, 45° corner chamfer, right-hand cut, double-margin and internal coolant.

**Ideal for** – Nickel-based alloys

**Available Upon Request** – Firm Hold Shank, Additional PVD Coatings

**S** **H** Refer to page 4



**Sistral®** Its nanostructure composition provides both high heat and oxidation resistance. Ideal for dry and high-speed cutting applications of materials.



Part Number (insert 03, 05, 08 or 12 in place of __)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	3xD Dimensions (mm)		5xD Dimensions (mm)		8xD Dimensions (mm)		12xD Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
NXC__03000T7		.1181	3.000	6	20	62	28	66	34	72	54	92
NXC__03100T7		.1220	3.100	6	20	62	28	66	34	72	54	92
NXC__03175T7	1/8	.1250	3.175	6	20	62	28	66	34	72	54	92
NXC__03200T7		.1260	3.200	6	20	62	28	66	34	72	54	92
NXC__03300T7		.1299	3.300	6	20	62	28	66	34	72	54	92
NXC__03400T7		.1339	3.400	6	20	62	28	66	34	72	54	92
NXC__03500T7		.1378	3.500	6	20	62	28	66	34	72	54	92
NXC__03572T7	9/64	.1406	3.572	6	20	62	28	66	34	72	54	92
NXC__03600T7		.1417	3.600	6	20	62	28	66	34	72	54	92
NXC__03700T7		.1457	3.700	6	20	62	28	66	34	72	54	92
NXC__03800T7	#25	.1496	3.800	6	24	66	36	74	43	81	64	102
NXC__03900T7		.1535	3.900	6	24	66	36	74	43	81	64	102
NXC__03970T7	5/32	.1563	3.970	6	24	66	36	74	43	81	64	102
NXC__04000T7		.1575	4.000	6	24	66	36	74	43	81	64	102
NXC__04100T7		.1614	4.100	6	24	66	36	74	43	81	64	102
NXC__04200T7		.1654	4.200	6	24	66	36	74	43	81	64	102
NXC__04300T7		.1693	4.300	6	24	66	36	74	43	81	64	102
NXC__04370T7	11/64	.1719	4.370	6	24	66	36	74	43	81	64	102
NXC__04400T7		.1732	4.400	6	24	66	36	74	43	81	64	102
NXC__04500T7		.1772	4.500	6	24	66	36	74	43	81	64	102
NXC__04600T7		.1811	4.600	6	24	66	36	74	43	81	64	102
NXC__04650T7		.1831	4.650	6	24	66	36	74	43	81	64	102
NXC__00130T7	#13	.1850	4.700	6	24	66	36	74	43	81	64	102
NXC__04760T7	3/16	.1875	4.760	6	28	66	44	82	57	95	78	116
NXC__00120T7	#12	.1890	4.800	6	28	66	44	82	57	95	78	116
NXC__04900T7		.1929	4.900	6	28	66	44	82	57	95	78	116
NXC__05000T7		.1969	5.000	6	28	66	44	82	57	95	78	116
NXC__05100T7		.2008	5.100	6	28	66	44	82	57	95	78	116
NXC__05160T7	13/64	.2031	5.160	6	28	66	44	82	57	95	78	116
NXC__00060T7	#6	.2040	5.182	6	28	66	44	82	57	95	78	116
NXC__05200T7		.2047	5.200	6	28	66	44	82	57	95	78	116
NXC__05300T7		.2087	5.300	6	28	66	44	82	57	95	78	116
NXC__05400T7		.2126	5.400	6	28	66	44	82	57	95	78	116
NXC__05500T7		.2165	5.500	6	28	66	44	82	57	95	78	116
NXC__05550T7		.2185	5.550	6	28	66	44	82	57	95	78	116
NXC__05560T7	7/32	.2187	5.560	6	28	66	44	82	57	95	78	116
NXC__05600T7		.2205	5.600	6	28	66	44	82	57	95	78	116

\*\* Diameters (2.0-2.9mm) and other dimensions are available upon request\*\*

**Tolerance**

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)	Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/--.00039	0-3: + 0/-0.10	.0000-.1181: + 0/--.00024	0-3: + 0/-0.006
.1182-.2362: + 0/--.00047	3.01-6: + 0/-0.12	.1182-.2362: + 0/--.00031	3.01-6: + 0/-0.008
.2363-.3937: + 0/--.00059	6.01-10.0: + 0/-0.15	.2363-.3937: + 0/--.00035	6.01-10.0: + 0/-0.009
.3938-.7087: + 0/--.00071	10.01-18.0: + 0/-0.18	.3938-.7087: + 0/--.00043	10.01-18.0: + 0/-0.11

Part Number (insert 03, 05, 08 or 12 in place of _)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	3xD Dimensions (mm)		5xD Dimensions (mm)		8xD Dimensions (mm)		12xD Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
NXC__05700T7		.2244	5.700	6	28	66	44	82	57	95	78	116
NXC__05800T7		.2283	5.800	6	28	66	44	82	57	95	78	116
NXC__05900T7		.2323	5.900	6	28	66	44	82	57	95	78	116
NXC__05950T7	15/64	.2344	5.950	6	28	66	44	82	57	95	78	116
NXC__06000T7		.2362	6.000	6	28	66	44	82	57	95	78	116
NXC__06100T7		.2402	6.100	8	34	79	53	91	76	114	108	146
NXC__06200T7		.2441	6.200	8	34	79	53	91	76	114	108	146
NXC__06300T7		.2480	6.300	8	34	79	53	91	76	114	108	146
NXC__06350T7	1/4	.2500	6.350	8	34	79	53	91	76	114	108	146
NXC__06400T7		.2520	6.400	8	34	79	53	91	76	114	108	146
NXC__06500T7		.2559	6.500	8	34	79	53	91	76	114	108	146
NXC__06600T7		.2598	6.600	8	34	79	53	91	76	114	108	146
NXC__06700T7		.2638	6.700	8	34	79	53	91	76	114	108	146
NXC__06750T7	17/64	.2656	6.750	8	34	79	53	91	76	114	108	146
NXC__06800T7		.2677	6.800	8	34	79	53	91	76	114	108	146
NXC__06900T7		.2717	6.900	8	41	79	53	91	76	114	108	146
NXC__07000T7		.2756	7.000	8	41	79	53	91	76	114	108	146
NXC__07100T7		.2795	7.100	8	41	79	53	91	76	114	108	146
NXC__07140T7	9/32	.2813	7.140	8	41	79	53	91	76	114	108	146
NXC__07200T7		.2835	7.200	8	41	79	53	91	76	114	108	146
NXC__07300T7		.2874	7.300	8	41	79	53	91	76	114	108	146
NXC__07400T7		.2913	7.400	8	41	79	53	91	76	114	108	146
NXC__07500T7		.2953	7.500	8	41	79	53	91	76	114	108	146
NXC__07540T7	19/64	.2969	7.540	8	41	79	53	91	76	114	108	146
NXC__07700T7		.3031	7.700	8	41	79	53	91	76	114	108	146
NXC__07800T7		.3071	7.800	8	41	79	53	91	76	114	108	146
NXC__07900T7		.3110	7.900	8	41	79	53	91	76	114	108	146
NXC__07940T7	5/16	.3125	7.940	8	41	79	53	91	76	114	108	146
NXC__08000T7		.3150	8.000	8	41	79	53	91	76	114	108	146
NXC__08100T7		.3189	8.100	10	47	89	61	103	95	142	120	162
NXC__08200T7		.3228	8.200	10	47	89	61	103	95	142	120	162
NXC__08300T7		.3268	8.300	10	47	89	61	103	95	142	120	162
NXC__08330T7	21/64	.3281	8.330	10	47	89	61	103	95	142	120	162
NXC__08400T7		.3307	8.400	10	47	89	61	103	95	142	120	162
NXC__08500T7		.3346	8.500	10	47	89	61	103	95	142	120	162
NXC__08600T7		.3386	8.600	10	47	89	61	103	95	142	120	162
NXC__08700T7		.3425	8.700	10	47	89	61	103	95	142	120	162
NXC__08730T7	11/32	.3437	8.730	10	47	89	61	103	95	142	120	162
NXC__08800T7		.3465	8.800	10	47	89	61	103	95	142	120	162
NXC__09000T7		.3543	9.000	10	47	89	61	103	95	142	120	162
NXC__09130T7	23/64	.3594	9.130	10	47	89	61	103	95	142	120	162
NXC__09200T7		.3622	9.200	10	47	89	61	103	95	142	120	162
NXC__09300T7		.3661	9.300	10	47	89	61	103	95	142	120	162
NXC__09500T7		.3740	9.500	10	47	89	61	103	95	142	120	162
NXC__09520T7	3/8	.3750	9.520	10	47	89	61	103	95	142	120	162
NXC__09600T7		.3780	9.600	10	47	89	61	103	95	142	120	162
NXC__09800T7		.3858	9.800	10	47	89	61	103	95	142	120	162
NXC__09900T7		.3898	9.900	10	47	89	61	103	95	142	120	162
NXC__09920T7	25/64	.3906	9.920	10	47	89	61	103	95	142	120	162
NXC__10000T7		.3937	10.000	10	47	89	61	103	95	142	120	162
NXC__10100T7		.3976	10.100	12	55	102	71	118	114	162	156	204
NXC__10200T7		.4016	10.200	12	55	102	71	118	114	162	156	204
NXC__10300T7		.4055	10.300	12	55	102	71	118	114	162	156	204
NXC__10320T7	13/32	.4063	10.320	12	55	102	71	118	114	162	156	204
NXC__10400T7		.4094	10.400	12	55	102	71	118	114	162	156	204
NXC__10500T7		.4134	10.500	12	55	102	71	118	114	162	156	204
NXC__10720T7	27/64	.4219	10.720	12	55	102	71	118	114	162	156	204
NXC__10800T7		.4252	10.800	12	55	102	71	118	114	162	156	204
NXC__11000T7		.4331	11.000	12	55	102	71	118	114	162	156	204
NXC__11100T7		.4370	11.100	12	55	102	71	118	114	162	156	204
NXC__11113T7	7/16	.4375	11.113	12	55	102	71	118	114	162	156	204

\*\* Diameters (2.0-2.9mm) and other dimensions are available upon request\*\*

Part Number (insert 03, 05, 08 or 12 in place of __)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	3xD		5xD		8xD		12xD	
					Dimensions (mm)		Dimensions (mm)		Dimensions (mm)		Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
NXC__11200T7		.4409	11.200	12	55	102	71	118	114	162	156	204
NXC__11500T7		.4528	11.500	12	55	102	71	118	114	162	156	204
NXC__11510T7	29/64	.4531	11.510	12	55	102	71	118	114	162	156	204
NXC__11700T7		.4606	11.700	12	55	102	71	118	114	162	156	204
NXC__11800T7		.4646	11.800	12	55	102	71	118	114	162	156	204
NXC__11910T7	15/32	.4687	11.910	12	55	102	71	118	114	162	156	204
NXC__12000T7		.4724	12.000	12	55	102	71	118	114	162	156	204
NXC__12100T7		.4764	12.100	14	60	107	77	124	131	178	182	230
NXC__12200T7		.4803	12.200	14	60	107	77	124	131	178	182	230
NXC__12300T7		.4843	12.300	14	60	107	77	124	131	178	182	230
NXC__12303T7	31/64	.4844	12.303	14	60	107	77	124	131	178	182	230
NXC__12500T7		.4921	12.500	14	60	107	77	124	131	178	182	230
NXC__12600T7		.4961	12.600	14	60	107	77	124	131	178	182	230
NXC__12700T7	1/2	.5000	12.700	14	60	107	77	124	131	178	182	230
NXC__13000T7		.5118	13.000	14	60	107	77	124	131	178	182	230
NXC__13300T7		.5236	13.300	14	60	107	77	124	131	178	182	230
NXC__13490T7	17/32	.5313	13.490	14	60	107	77	124	131	178	182	230
NXC__13500T7		.5315	13.500	14	60	107	77	124	131	178	182	230
NXC__14000T7		.5512	14.000	14	60	107	77	124	131	178	182	230
NXC__14290T7	9/16	.5625	14.290	16	65	115	83	133	152	203	208	260
NXC__14500T7		.5709	14.500	16	65	115	83	133	152	203	208	260
NXC__15000T7		.5906	15.000	16	65	115	83	133	152	203	208	260
NXC__15500T7		.6102	15.500	16	65	115	83	133	152	203	208	260
NXC__15870T7	5/8	.6250	15.870	16	65	115	83	133	152	203	208	260
NXC__16000T7		.6299	16.000	16	65	115	83	133	152	203	208	260
NXC__16500T7		.6496	16.500	18	73	123	93	143	171	222	234	285
NXC__17000T7		.6693	17.000	18	73	123	93	143	171	222	234	285
NXC__17500T7		.6890	17.500	18	73	123	93	143	171	222	234	285
NXC__18000T7		.7087	18.000	18	73	123	93	143	171	222	234	285
NXC__18500T7		.7283	18.500	20	79	131	101	153	190	243	258	310
NXC__19050T7	3/4	.7500	19.050	20	79	131	101	153	190	243	258	310
NXC__19500T7		.7677	19.500	20	79	131	101	153	190	243	258	310
NXC__20000T7		.7874	20.000	20	79	131	101	153	190	243	258	310

\*\* Diameters (2.0-2.9mm) and other dimensions are available upon request\*\*



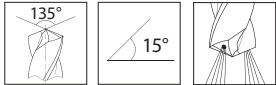
**Design** – Long spiral-fluted, 45° corner chamfer, right-hand cut, double-margin and internal coolant.

**Ideal for** – Nickel-based alloys

**S H** Refer to page 4

■ 16xD–30xD must utilize a pilot hole drill. (Refer to page 66)

**CARBIDE**  
16xD to 30xD



**Sistral®** Its nanostructure composition provides both high heat and oxidation resistance. Ideal for dry and high-speed cutting applications of materials.



Part Number (insert 16, 20, 25, or 30 in place of _)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	16xD Dimensions (mm)		20xD Dimensions (mm)		25xD Dimensions (mm)		30xD Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
NXC__03000T7		.1181	3.000	6	60	100	80	120	98	135	105	150
NXC__03175T7	1/8	.1250	3.175	6	60	100	80	120	98	135	105	150
NXC__03200T7		.1260	3.200	6	60	100	80	120	98	135	105	150
NXC__03300T7		.1299	3.300	6	60	100	80	120	110	150	135	185
NXC__03500T7		.1378	3.500	6	60	100	80	120	110	150	135	185
NXC__03572T7	9/64	.1406	3.572	6	75	115	90	130	120	160	135	185
NXC__03800T7	#25	.1496	3.800	6	75	115	90	130	120	160	135	185
NXC__03970T7	5/32	.1563	3.970	6	75	115	90	130	120	160	135	185
NXC__04000T7		.1575	4.000	6	75	115	90	130	120	160	135	185
NXC__04200T7		.1654	4.200	6	75	115	110	160	120	160	135	185
NXC__04370T7	11/64	.1719	4.370	6	90	130	110	160	135	180	165	215
NXC__04500T7		.1772	4.500	6	90	130	110	160	135	180	165	215
NXC__00130T7	#13	.1850	4.700	6	90	130	120	160	135	180	165	215
NXC__04760T7	3/16	.1875	4.760	6	90	130	120	160	135	180	165	215
NXC__00120T7	#12	.1890	4.800	6	90	130	120	160	135	180	165	215
NXC__05000T7		.1969	5.000	6	90	130	120	160	135	180	165	215
NXC__05160T7	13/64	.2031	5.160	6	108	150	140	185	168	205	180	230
NXC__00060T7	#6	.2040	5.182	6	108	150	140	185	168	205	180	230
NXC__05500T7		.2165	5.500	6	108	150	140	185	168	205	180	230
NXC__05560T7	7/32	.2187	5.560	6	108	150	140	185	168	205	180	230
NXC__05800T7		.2283	5.800	6	108	150	140	185	168	205	180	230
NXC__05950T7	15/64	.2344	5.950	6	108	150	140	185	168	205	180	230
NXC__06000T7		.2362	6.000	6	108	150	140	185	168	205	180	230
NXC__06350T7	1/4	.2500	6.350	8	125	165	160	210	200	240	215	280
NXC__06500T7		.2559	6.500	8	125	165	160	210	200	240	215	280
NXC__06750T7	17/64	.2656	6.750	8	125	165	160	210	200	240	230	280
NXC__06800T7		.2677	6.800	8	125	165	160	210	200	240	230	280
NXC__07000T7		.2756	7.000	8	125	165	160	210	200	240	230	280
NXC__07140T7	9/32	.2813	7.140	8	140	180	180	230	220	260	230	280
NXC__07500T7		.2953	7.500	8	140	180	180	230	220	260	230	280
NXC__07540T7	19/64	.2969	7.540	8	140	180	180	230	220	260	265	315
NXC__07800T7		.3071	7.800	8	140	180	180	230	220	260	265	315
NXC__07940T7	5/16	.3125	7.940	8	140	180	180	230	220	260	265	315
NXC__08000T7		.3150	8.000	8	140	180	180	230	220	260	265	315

\*\* Diameters (2.0-2.9mm) and other dimensions are available upon request\*\*

**Tolerance**

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)	Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/- .00039	0-3: + 0/- .010	.0000-.1181: + 0/- .00024	0-3: + 0/- .006
.1182-.2362: + 0/- .00047	3.01-6: + 0/- .012	.1182-.2362: + 0/- .00031	3.01-6: + 0/- .008
.2363-.3937: + 0/- .00059	6.01-10.0: + 0/- .015	.2363-.3937: + 0/- .00035	6.01-10.0: + 0/- .009
.3938-.7087: + 0/- .00071	10.01-18.0: + 0/- .018	.3938-.7087: + 0/- .00043	10.01-18.0: + 0/- .011

Part Number (insert 16, 20, 25, or 30 in place of __)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	16xD Dimensions (mm)		20xD Dimensions (mm)		25xD Dimensions (mm)		30xD Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
NXC__08330T7	21/64	.3281	8.330	10	160	205	195	260	240	285	295	350
NXC__08500T7		.3346	8.500	10	160	205	195	260	240	285	295	350
NXC__08730T7	11/32	.3437	8.730	10	160	205	230	290	268	310	330	380
NXC__08800T7		.3465	8.800	10	160	205	230	290	268	310	330	380
NXC__09000T7		.3543	9.000	10	160	205	230	290	268	310	330	380
NXC__09130T7	23/64	.3594	9.130	10	180	225	230	290	268	310	330	380
NXC__09520T7	3/8	.3750	9.520	10	180	225	230	290	268	310	330	380
NXC__09800T7		.3858	9.800	10	180	225	230	290	268	310	330	380
NXC__09920T7	25/64	.3906	9.920	10	180	225	230	290	268	310	330	380
NXC__10000T7		.3937	10.000	10	180	225	230	290	268	310	330	380
NXC__10200T7		.4016	10.200	12	190	240	268	315	325	375	-	-
NXC__10320T7	13/32	.4063	10.320	12	190	240	268	315	325	375	-	-
NXC__10720T7	27/64	.4219	10.720	12	190	240	268	315	325	375	-	-
NXC__10800T7		.4252	10.800	12	190	240	268	315	325	375	-	-
NXC__11000T7		.4331	11.000	12	190	240	268	315	325	375	-	-
NXC__11113T7	7/16	.4375	11.113	12	215	265	268	315	325	375	-	-
NXC__11500T7		.4528	11.500	12	215	265	268	315	325	375	-	-
NXC__11510T7	29/64	.4531	11.510	12	215	265	268	315	325	375	-	-
NXC__11910T7	15/32	.4687	11.910	12	215	265	268	315	-	-	-	-
NXC__12000T7		.4724	12.000	12	215	265	268	315	-	-	-	-
NXC__12300T7		.4843	12.300	14	230	280	275	325	-	-	-	-
NXC__12303T7	31/64	.4844	12.303	14	230	280	275	325	-	-	-	-
NXC__12700T7	1/2	.5000	12.700	14	230	280	275	325	-	-	-	-
NXC__13000T7		.5118	13.000	14	230	280	275	325	-	-	-	-
NXC__13300T7		.5236	13.300	14	245	295	305	355	-	-	-	-
NXC__13490T7	17/32	.5313	13.490	14	245	295	305	355	-	-	-	-
NXC__13500T7		.5315	13.500	14	245	295	305	355	-	-	-	-
NXC__14000T7		.5512	14.000	14	245	295	305	355	-	-	-	-
NXC__14290T7	9/16	.5625	14.290	16	255	305	-	-	-	-	-	-
NXC__14500T7		.5709	14.500	16	255	305	-	-	-	-	-	-
NXC__15000T7		.5906	15.000	16	255	305	-	-	-	-	-	-
NXC__15500T7		.6102	15.500	16	275	325	-	-	-	-	-	-
NXC__15870T7	5/8	.6250	15.870	16	275	325	-	-	-	-	-	-
NXC__16000T7		.6299	16.000	16	275	325	-	-	-	-	-	-

\*\* Diameters (2.0-2.9mm) and other dimensions are available upon request\*\*

CARBIDE DRILLS

Now Improved with

**EDGE CUT™** for Superior Cutter Performance



High-performance  
Single-margin  
Coolant thru drill  
Ideal for steels,  
gray cast iron &  
hardened materials  
3xD-5xD

**Design** – Spiral-fluted, right-hand cut, with internal coolant and a cylindrical shank.

**Ideal for** – Hardened Materials

**Available Upon Request** – Firm Hold Shank, Additional PVD Coatings

**P K H** Refer to page 4

CARBIDE

3xD  
to  
5xD



Sistral®

Its nanostructure composition provides both high heat and oxidation resistance. Ideal for dry and high-speed cutting applications of materials.

**140° Point Geometry** - Designed for low-cutting force and chip evacuation.

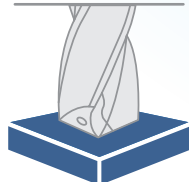
**Coolant Holes** - Cool the cutting edge and improve chip evacuation.

**Polish** - Chip evacuation is improved during deep-hole drilling, when the flutes are polished.

**Single-Margin Design** - For drilling accuracy.

**S-Point** - Stronger point edge & corner protection.

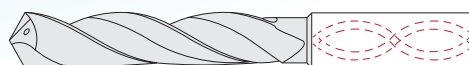
No Pecking Required



3xD



5xD



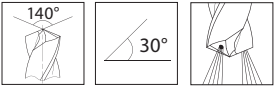
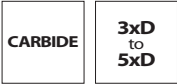


**Design** – Spiral-fluted, right-hand cut, with internal coolant and a cylindrical shank.

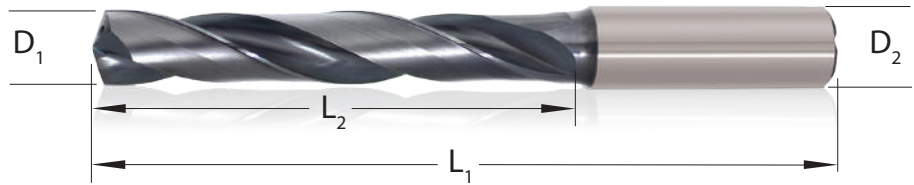
**Ideal for** – Hardened Materials

**P K H** Refer to page 4

**Available Upon Request** – Firm Hold Shank, Additional PVD Coatings



**Sistral®** Its nanostructure composition provides both high heat and oxidation resistance. Ideal for dry and high-speed cutting applications of materials.



Part Number (insert 03 or 05 in place of _)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	3xD Dimensions (mm)		5xD Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
HXC__03000T7		.1181	3.000	6	20	62	28	66
HXC__03100T7		.1220	3.100	6	20	62	28	66
HXC__03175T7	1/8	.1250	3.175	6	20	62	28	66
HXC__03200T7		.1260	3.200	6	20	62	28	66
HXC__03300T7		.1299	3.300	6	20	62	28	66
HXC__03400T7		.1339	3.400	6	20	62	28	66
HXC__03500T7		.1378	3.500	6	20	62	28	66
HXC__03572T7	9/64	.1406	3.572	6	20	62	28	66
HXC__03600T7		.1417	3.600	6	20	62	28	66
HXC__03700T7		.1457	3.700	6	20	62	28	66
HXC__03800T7	#25	.1496	3.800	6	24	66	36	74
HXC__03900T7		.1535	3.900	6	24	66	36	74
HXC__03970T7	5/32	.1563	3.970	6	24	66	36	74
HXC__04000T7		.1575	4.000	6	24	66	36	74
HXC__04100T7		.1614	4.100	6	24	66	36	74
HXC__04200T7		.1654	4.200	6	24	66	36	74
HXC__04300T7		.1693	4.300	6	24	66	36	74
HXC__04370T7	11/64	.1719	4.370	6	24	66	36	74
HXC__04400T7		.1732	4.400	6	24	66	36	74
HXC__04500T7		.1772	4.500	6	24	66	36	74
HXC__04600T7		.1811	4.600	6	24	66	36	74
HXC__04650T7		.1831	4.650	6	24	66	36	74
HXC__00130T7	#13	.1850	4.700	6	24	66	36	74
HXC__04760T7	3/16	.1875	4.760	6	28	66	44	82
HXC__00120T7	#12	.1890	4.800	6	28	66	44	82
HXC__04900T7		.1929	4.900	6	28	66	44	82
HXC__05000T7		.1969	5.000	6	28	66	44	82
HXC__05100T7		.2008	5.100	6	28	66	44	82
HXC__05160T7	13/64	.2031	5.160	6	28	66	44	82
HXC__00060T7	#6	.2040	5.182	6	28	66	44	82
HXC__05200T7		.2047	5.200	6	28	66	44	82
HXC__05300T7		.2087	5.300	6	28	66	44	82
HXC__05400T7		.2126	5.400	6	28	66	44	82
HXC__05500T7		.2165	5.500	6	28	66	44	82
HXC__05550T7		.2185	5.550	6	28	66	44	82
HXC__05560T7	7/32	.2187	5.560	6	28	66	44	82

Part Number (insert 03 or 05 in place of _)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	3xD Dimensions (mm)		5xD Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
HXC__05600T7		.2205	5.600	6	28	66	44	82
HXC__05700T7		.2244	5.700	6	28	66	44	82
HXC__05800T7		.2283	5.800	6	28	66	44	82
HXC__05900T7		.2323	5.900	6	28	66	44	82
HXC__05950T7	15/64	.2344	5.950	6	28	66	44	82
HXC__06000T7		.2362	6.000	6	28	66	44	82
HXC__06100T7		.2402	6.100	8	34	79	53	91
HXC__06200T7		.2441	6.200	8	34	79	53	91
HXC__06300T7		.2480	6.300	8	34	79	53	91
HXC__06350T7	1/4	.2500	6.350	8	34	79	53	91
HXC__06400T7		.2520	6.400	8	34	79	53	91
HXC__06500T7		.2559	6.500	8	34	79	53	91
HXC__06600T7		.2598	6.600	8	34	79	53	91
HXC__06700T7		.2638	6.700	8	34	79	53	91
HXC__06750T7	17/64	.2656	6.750	8	34	79	53	91
HXC__06800T7		.2677	6.800	8	34	79	53	91
HXC__06900T7		.2717	6.900	8	41	79	53	91
HXC__07000T7		.2756	7.000	8	41	79	53	91
HXC__07100T7		.2795	7.100	8	41	79	53	91
HXC__07140T7	9/32	.2813	7.140	8	41	79	53	91
HXC__07200T7		.2835	7.200	8	41	79	53	91
HXC__07300T7		.2874	7.300	8	41	79	53	91
HXC__07400T7		.2913	7.400	8	41	79	53	91
HXC__07500T7		.2953	7.500	8	41	79	53	91
HXC__07540T7	19/64	.2969	7.540	8	41	79	53	91
HXC__07700T7		.3031	7.700	8	41	79	53	91
HXC__07800T7		.3071	7.800	8	41	79	53	91
HXC__07900T7		.3110	7.900	8	41	79	53	91
HXC__07940T7	5/16	.3125	7.940	8	41	79	53	91
HXC__08000T7		.3150	8.000	8	41	79	53	91
HXC__08100T7		.3189	8.100	10	47	89	61	103
HXC__08200T7		.3228	8.200	10	47	89	61	103
HXC__08300T7		.3268	8.300	10	47	89	61	103
HXC__08330T7	21/64	.3281	8.330	10	47	89	61	103
HXC__08400T7		.3307	8.400	10	47	89	61	103
HXC__08500T7		.3346	8.500	10	47	89	61	103

\*\*Other Dimensions are Available Upon Request\*\*

**Tolerance**

<b>Drill Dia (h7) Inches (in)</b> .0000-.1181: +0/--.00039 .1182-.2362: +0/--.00047 .2363-.3937: +0/--.00059 .3938-.7087: +0/--.00071	<b>Drill Dia (h7) Metric (mm)</b> 0-3: +0/--.010 3.01-6: +0/--.012 6.01-10.0: +0/--.015 10.01-18.0: +0/--.018	<b>Shank Dia (h6) Inches (in)</b> .0000-.1181: +0/--.00024 .1182-.2362: +0/--.00031 .2363-.3937: +0/--.00035 .3938-.7087: +0/--.00043	<b>Shank Dia (h6) Metric (mm)</b> 0-3: +0/--.006 3.01-6: +0/--.008 6.01-10.0: +0/--.009 10.01-18.0: +0/--.011
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Part Number (insert 03 or 05 in place of _)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	3xD Dimensions (mm)		5xD Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
HXC__08600T7		.3386	8.600	10	47	89	61	103
HXC__08700T7		.3425	8.700	10	47	89	61	103
HXC__08730T7	11/32	.3437	8.730	10	47	89	61	103
HXC__08800T7		.3465	8.800	10	47	89	61	103
HXC__09000T7		.3543	9.000	10	47	89	61	103
HXC__09130T7	23/64	.3594	9.130	10	47	89	61	103
HXC__09200T7		.3622	9.200	10	47	89	61	103
HXC__09300T7		.3661	9.300	10	47	89	61	103
HXC__09500T7		.3740	9.500	10	47	89	61	103
HXC__09520T7	3/8	.3750	9.520	10	47	89	61	103
HXC__09600T7		.3780	9.600	10	47	89	61	103
HXC__09800T7		.3858	9.800	10	47	89	61	103
HXC__09900T7		.3898	9.900	10	47	89	61	103
HXC__09920T7	25/64	.3906	9.920	10	47	89	61	103
HXC__10000T7		.3937	10.000	10	47	89	61	103
HXC__10100T7		.3976	10.100	12	55	102	71	118
HXC__10200T7		.4016	10.200	12	55	102	71	118
HXC__10300T7		.4055	10.300	12	55	102	71	118
HXC__10320T7	13/32	.4063	10.320	12	55	102	71	118
HXC__10400T7		.4094	10.400	12	55	102	71	118
HXC__10500T7		.4134	10.500	12	55	102	71	118
HXC__10720T7	27/64	.4219	10.720	12	55	102	71	118
HXC__10800T7		.4252	10.800	12	55	102	71	118
HXC__11000T7		.4331	11.000	12	55	102	71	118
HXC__11100T7		.4370	11.100	12	55	102	71	118
HXC__11113T7	7/16	.4375	11.113	12	55	102	71	118
HXC__11200T7		.4409	11.200	12	55	102	71	118
HXC__11500T7		.4528	11.500	12	55	102	71	118
HXC__11510T7	29/64	.4531	11.510	12	55	102	71	118
HXC__11700T7		.4606	11.700	12	55	102	71	118

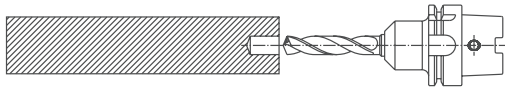
Part Number (insert 03 or 05 in place of _)	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	3xD Dimensions (mm)		5xD Dimensions (mm)	
					L <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>1</sub>
HXC__11800T7		.4646	11.800	12	55	102	71	118
HXC__11910T7	15/32	.4687	11.910	12	55	102	71	118
HXC__12000T7		.4724	12.000	12	55	102	71	118
HXC__12100T7		.4764	12.100	14	60	107	77	124
HXC__12200T7		.4803	12.200	14	60	107	77	124
HXC__12300T7		.4843	12.300	14	60	107	77	124
HXC__12303T7	31/64	.4844	12.303	14	60	107	77	124
HXC__12500T7		.4921	12.500	14	60	107	77	124
HXC__12600T7		.4961	12.600	14	60	107	77	124
HXC__12700T7	1/2	.5000	12.700	14	60	107	77	124
HXC__13000T7		.5118	13.000	14	60	107	77	124
HXC__13300T7		.5236	13.300	14	60	107	77	124
HXC__13490T7	17/32	.5313	13.490	14	60	107	77	124
HXC__13500T7		.5315	13.500	14	60	107	77	124
HXC__14000T7		.5512	14.000	14	60	107	77	124
HXC__14290T7	9/16	.5625	14.290	16	65	115	83	133
HXC__14500T7		.5709	14.500	16	65	115	83	133
HXC__15000T7		.5906	15.000	16	65	115	83	133
HXC__15500T7		.6102	15.500	16	65	115	83	133
HXC__15870T7	5/8	.6250	15.870	16	65	115	83	133
HXC__16000T7		.6299	16.000	16	65	115	83	133
HXC__16500T7		.6496	16.500	18	73	123	93	143
HXC__17000T7		.6693	17.000	18	73	123	93	143
HXC__17500T7		.6890	17.500	18	73	123	93	143
HXC__18000T7		.7087	18.000	18	73	123	93	143
HXC__18500T7		.7283	18.500	20	79	131	101	153
HXC__19050T7	3/4	.7500	19.050	20	79	131	101	153
HXC__19500T7		.7677	19.500	20	79	131	101	153
HXC__20000T7		.7874	20.000	20	79	131	101	153

\*\*Other Dimensions are Available Upon Request\*\*



## Manual for Pilot Drill

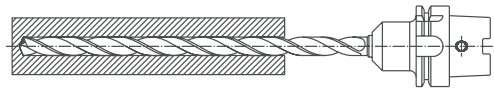
All deep-hole drills must utilize a pilot hole drill.



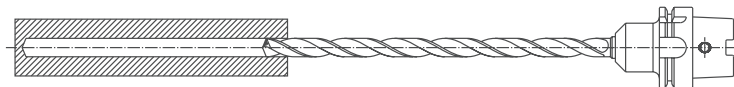
Utilize a pilot hole drill to a minimum pilot depth of 1 to 1.5 x D. The pilot drill must be .00078 inches (.02mm) bigger in diameter than the diameter of the long drill.



Introduce the long drill in the hole at a speed of 300 RPM.

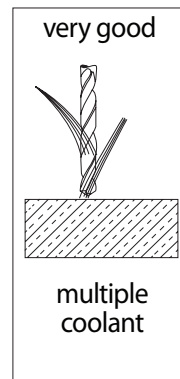
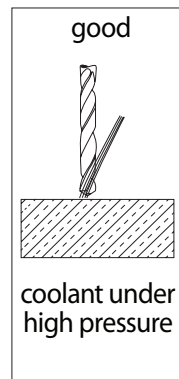
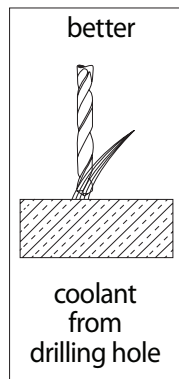
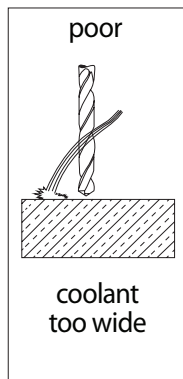
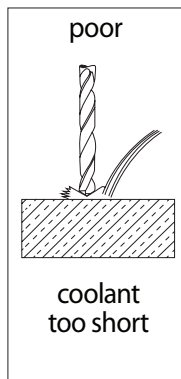


After entering the hole, increase to the recommended speed.



Before taking the drill out of the hole, reduce the speed back to 300 RPM and withdraw the long drill.

### Coolant Fed:



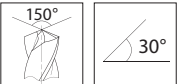


### Pilot coolant thru drill

Recommended for drills 16xD and above.

For Technical Information Refer to Page 65

CARBIDE 5xD



PILOT DRILL

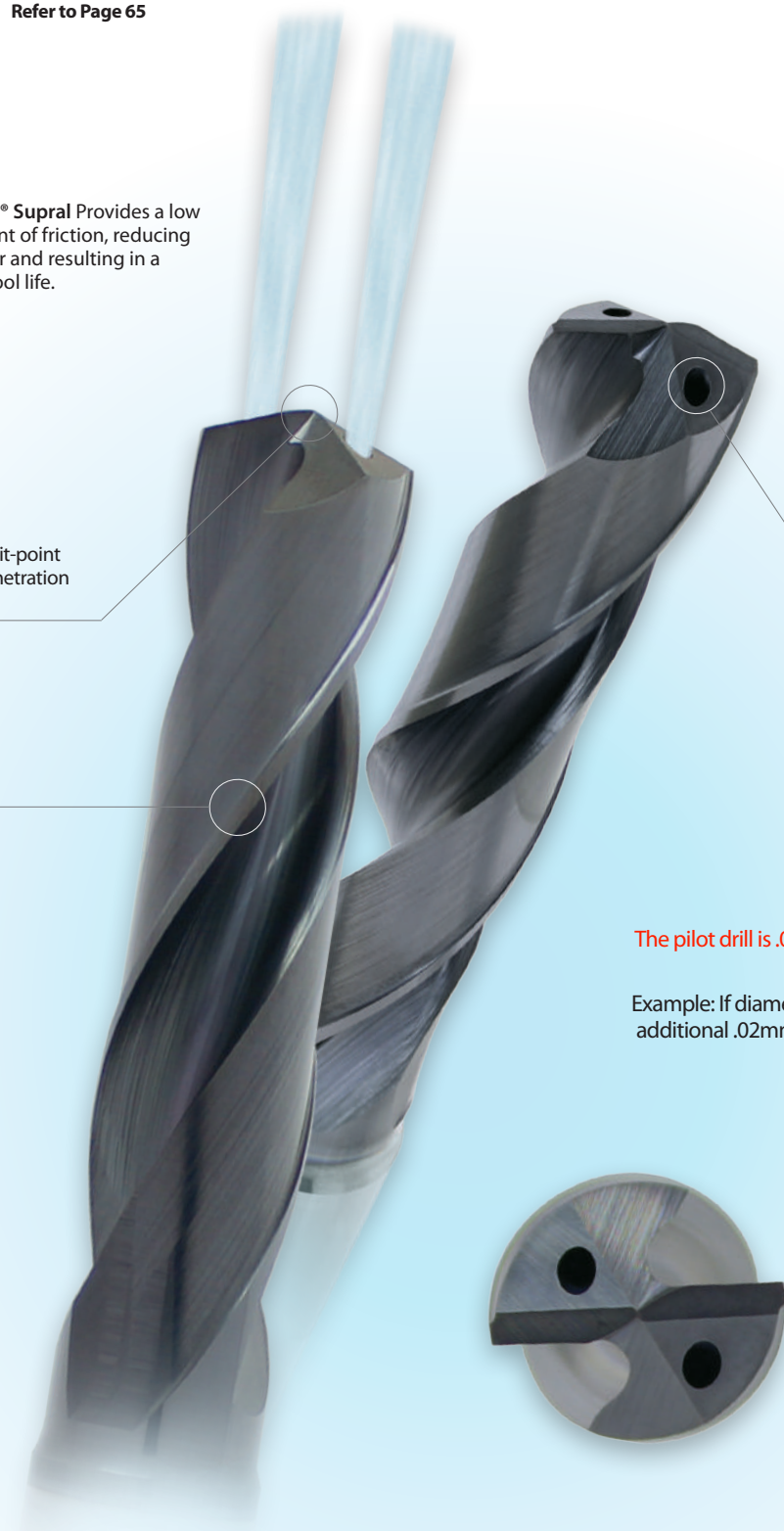
Varianta<sup>®</sup> Supral

Varianta<sup>®</sup> Supral Provides a low coefficient of friction, reducing tool wear and resulting in a longer tool life.

P M K N S Material Code: Refer to Page 4

Available Upon Request – Firm Hold Shank, Additional PVD Coatings

Before a long-drill begins perforation, we recommend our PXC Pilot Drill for deep-hole drilling.



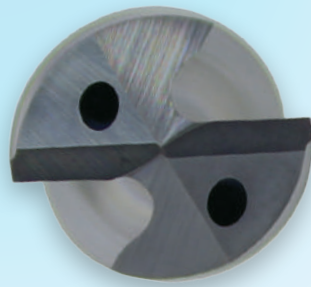
**150° Point Geometry** - Split-point geometry for superior drill penetration and accuracy.

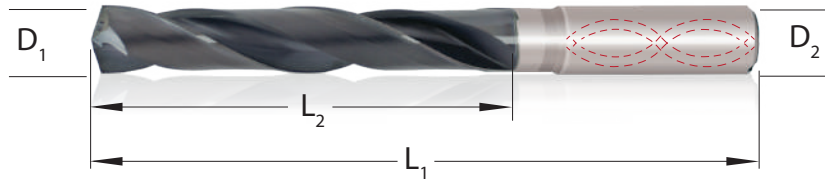
**Coolant Holes** - Cool the cutting edge and improve chip evacuation.

**Single-Margin Design** - For drilling accuracy.

The pilot drill is .00078 in (.02mm) larger in diameter than the diameter of the long drill

Example: If diameter is shown as 3.00mm we add an additional .02mm in diameter to make it a pilot drill. (3.00mm + .02mm = 3.02mm)





Part Number	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	L <sub>2</sub> (mm)	L <sub>1</sub> (mm)
PXC0503000T9		.1181	3.000	6	28	66
* PXC0503100T9		.1220	3.100	6	28	66
PXC0503175T9	1/8	.1250	3.175	6	28	66
PXC0503200T9		.1260	3.200	6	28	66
PXC0503300T9		.1299	3.300	6	28	66
* PXC0503400T9		.1339	3.400	6	28	66
PXC0503500T9		.1378	3.500	6	28	66
PXC0503572T9	9/64	.1406	3.572	6	28	66
PXC0503800T9	#25	.1496	3.800	6	36	74
PXC0503970T9	5/32	.1563	3.970	6	36	74
PXC0504000T9		.1575	4.000	6	36	74
* PXC0504100T9		.1614	4.100	6	36	74
PXC0504200T9		.1654	4.200	6	36	74
* PXC0504300T9		.1693	4.300	6	36	74
PXC0504370T9	11/64	.1719	4.370	6	36	74
PXC0504500T9		.1772	4.500	6	36	74
* PXC0504600T9		.1811	4.600	6	36	74
* PXC0504650T9		.1831	4.650	6	36	74
PXC0500130T9	#13	.1850	4.700	6	36	74
PXC0504760T9	3/16	.1875	4.760	6	44	82
PXC0500120T9	#12	.1890	4.800	6	44	82
* PXC0504900T9		.1929	4.900	6	44	82
PXC0505000T9		.1969	5.000	6	44	82
PXC0505160T9	13/64	.2031	5.160	6	44	82
PXC0500060T9	#6	.2040	5.182	6	44	82
PXC0505500T9		.2165	5.500	6	44	82
PXC0505560T9	7/32	.2187	5.560	6	44	82
* PXC0505600T9		.2205	5.600	6	44	82
PXC0505800T9		.2283	5.800	6	44	82
PXC0505950T9	15/64	.2344	5.950	6	44	82

Part Number	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	L <sub>2</sub> (mm)	L <sub>1</sub> (mm)
PXC0506000T9		.2362	6.000	8	44	82
* PXC0506200T9		.2441	6.200	8	53	91
PXC0506350T9	1/4	.2500	6.350	8	53	91
PXC0506500T9		.2559	6.500	8	53	91
PXC0506750T9	17/64	.2656	6.750	8	53	91
PXC0506800T9		.2677	6.800	8	53	91
* PXC0506900T9		.2717	6.900	8	53	91
PXC0507000T9		.2756	7.000	8	53	91
PXC0507140T9	9/32	.2813	7.140	8	53	91
* PXC0507400T9		.2913	7.400	8	53	91
PXC0507500T9		.2953	7.500	8	53	91
PXC0507540T9	19/64	.2969	7.540	8	53	91
PXC0507800T9		.3071	7.800	8	53	91
PXC0507940T9	5/16	.3125	7.940	8	53	91
PXC0508000T9		.3150	8.000	10	53	91
* PXC0508100T9		.3189	8.100	10	61	103
* PXC0508200T9		.3228	8.200	10	61	103
PXC0508330T9	21/64	.3281	8.330	10	61	103
PXC0508500T9		.3346	8.500	10	61	103
* PXC0508600T9		.3386	8.600	10	61	103
* PXC0508700T9		.3425	8.700	10	61	103
PXC0508730T9	11/32	.3437	8.730	10	61	103
PXC0508800T9		.3465	8.800	10	61	103
PXC0509000T9		.3543	9.000	10	61	103
PXC0509130T9	23/64	.3594	9.130	10	61	103
* PXC0509300T9		.3661	9.300	10	61	103
PXC0509520T9	3/8	.3750	9.520	10	61	103
* PXC0509600T9		.3780	9.600	10	61	103
PXC0509800T9		.3858	9.800	10	61	103
PXC0509920T9	25/64	.3906	9.920	10	61	103

\* Available while stock lasts

\*\* Diameters (2.0-2.9mm) and other dimensions are available upon request\*\*

Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)	Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/- .00039	0-3: + 0/- .010	.0000-.1181: + 0/- .00024	0-3: + 0/- .006
.1182-.2362: + 0/- .00047	3.01-6: + 0/- .012	.1182-.2362: + 0/- .00031	3.01-6: + 0/- .008
.2363-.3937: + 0/- .00059	6.01-10.0: + 0/- .015	.2363-.3937: + 0/- .00035	6.01-10.0: + 0/- .009
.3938-.7087: + 0/- .00071	10.01-18.0: + 0/- .018	.3938-.7087: + 0/- .00043	10.01-18.0: + 0/- .011

Part Number	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (mm)	L <sub>2</sub> (mm)	L <sub>1</sub> (mm)
PXC0510000T9		.3937	10.000	12	61	103
PXC0510200T9		.4016	10.200	12	71	118
PXC0510320T9	13/32	.4063	10.320	12	71	118
PXC0510720T9	27/64	.4219	10.720	12	71	118
PXC0510800T9		.4252	10.800	12	71	118
PXC0511000T9		.4331	11.000	12	71	118
PXC0511113T9	7/16	.4375	11.113	12	71	118
PXC0511500T9		.4528	11.500	12	71	118
PXC0511510T9	29/64	.4531	11.510	12	71	118
PXC0511910T9	15/32	.4687	11.910	12	71	118
PXC0512000T9		.4724	12.000	14	71	118
PXC0512300T9		.4843	12.300	14	77	124
PXC0512303T9	31/64	.4844	12.303	14	77	124
PXC0512700T9	1/2	.5000	12.700	14	77	124
PXC0513000T9		.5118	13.000	14	77	124
PXC0513300T9		.5236	13.300	14	77	124
PXC0513490T9	17/32	.5313	13.490	14	77	124
PXC0513500T9		.5315	13.500	14	77	124
PXC0514000T9		.5512	14.000	16	77	124
PXC0514290T9	9/16	.5625	14.290	16	83	133
PXC0514500T9		.5709	14.500	16	83	133
PXC0515000T9		.5906	15.000	16	83	133
* PXC0515500T9		.6102	15.500	16	83	133
PXC0515870T9	5/8	.6250	15.870	16	83	133
PXC0516000T9		.6299	16.000	18	83	133
PXC0519050T9	3/4	.7500	19.050	20	101	153

\* Available while stock lasts

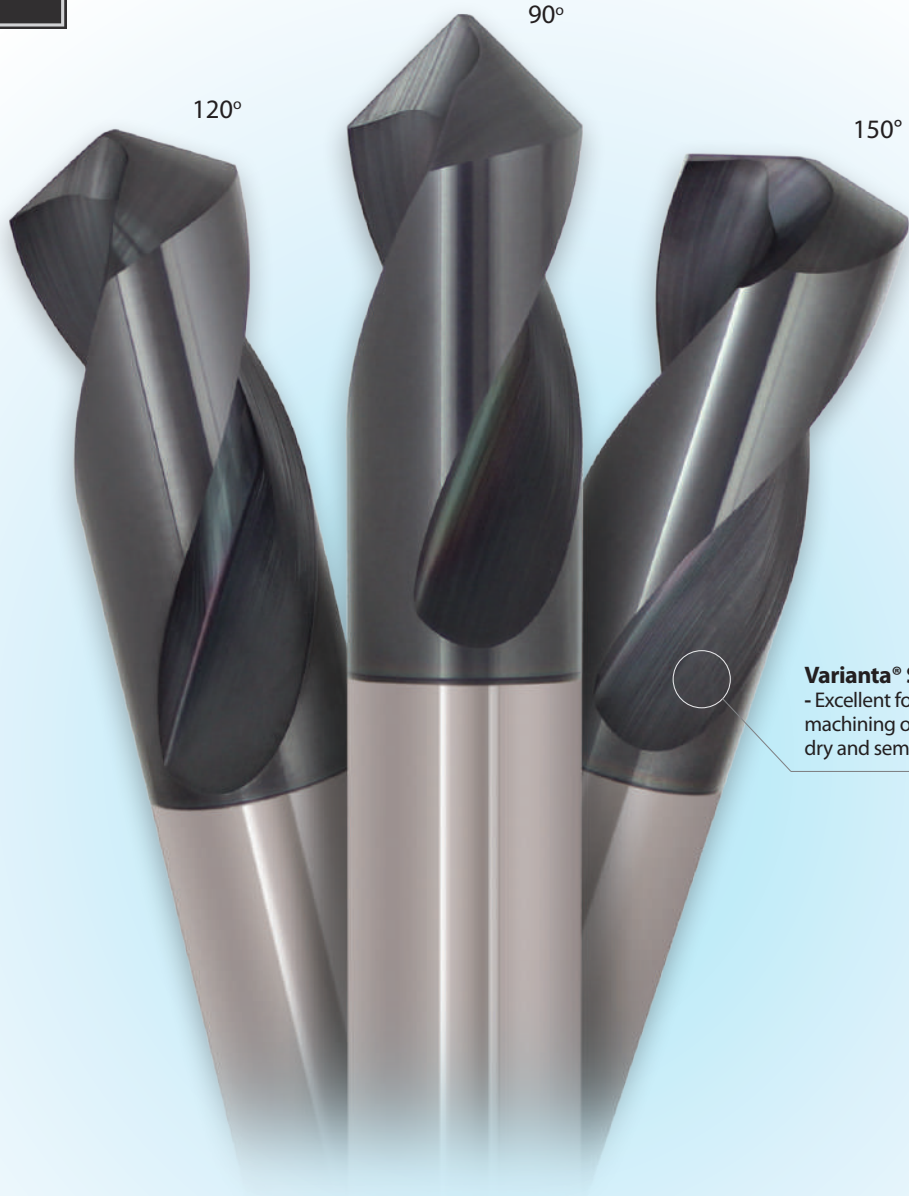
\*\* Diameters (2.0-2.9mm) and other dimensions are available upon request\*\*



## SPOTTING DRILLS

The Spotting Drill (SD) is utilized to create punctures at the desired location(s) where longer drill might have trouble. Such as uneven surfaces and angled entry points

\*Please note the Spotting Drill is not intended to drill past the angle point's depth.



**Varianta® Supral Coating**  
- Excellent for high-speed machining operations; ideal for dry and semi-dry conditions.

### Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)	Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/-0.00039	0-3: + 0/-0.010	.0000-.1181: + 0/-0.00024	0-3: + 0/-0.006
.1182-.2362: + 0/-0.00047	3.01-6: + 0/-0.012	.1182-.2362: + 0/-0.00031	3.01-6: + 0/-0.008
.2363-.3937: + 0/-0.00059	6.01-10.0: + 0/-0.015	.2363-.3937: + 0/-0.00035	6.01-10.0: + 0/-0.009
.3938-.7087: + 0/-0.00071	10.01-18.0: + 0/-0.018	.3938-.7087: + 0/-0.00043	10.01-18.0: + 0/-0.011

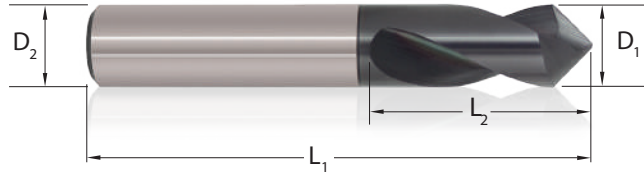


**90° Spotting Drill**  
Self-centering

**P M K N S** Refer to page 4



**Varianta® Supral** Provides a low coefficient of friction, reducing tool wear and resulting in a longer tool life.



Inches

Metric Available Upon Request

Part Number	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (in)	L <sub>2</sub> (in)	L <sub>1</sub> (in)
SD00903170T9	1/8	.1250	3.17	1/8	5/8	2-1/2
SD00904760T9	3/16	.1875	4.76	3/16	3/4	2-1/2
SD00906350T9	1/4	.2500	6.35	1/4	1	2-1/2
SD00907940T9	5/16	.3125	7.94	5/16	1	2-1/2
SD00909520T9	3/8	.3750	9.52	3/8	1-1/4	3
SD00902700T9	1/2	.5000	12.70	1/2	1-1/4	3
SD00909050T9	3/4	.7500	19.05	3/4	1-1/4	3

\*\*Other Dimensions are Available Upon Request\*\*

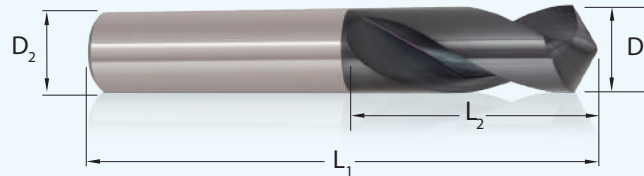


**120° Spotting Drill**  
Self-centering

**P M K N S** Refer to page 4



**Varianta® Supral** Provides a low coefficient of friction, reducing tool wear and resulting in a longer tool life.



Inches

Metric Available Upon Request

Part Number	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (in)	L <sub>2</sub> (in)	L <sub>1</sub> (in)
SD00203170T9	1/8	.1250	3.17	1/8	5/8	2-1/2
SD00204760T9	3/16	.1875	4.76	3/16	3/4	2-1/2
SD00206350T9	1/4	.2500	6.35	1/4	1	2-1/2
SD00207940T9	5/16	.3125	7.94	5/16	1	2-1/2
SD00209520T9	3/8	.3750	9.52	3/8	1-1/4	3
SD00202700T9	1/2	.5000	12.70	1/2	1-1/4	3
SD00209050T9	3/4	.7500	19.05	3/4	1-1/4	3

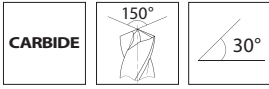
\*\*Other Dimensions are Available Upon Request\*\*

DRILLS CARBIDE DRILLS

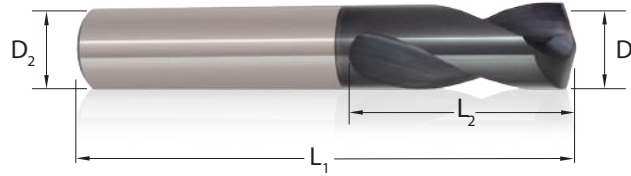


## 150° Spotting Drill Self-centering

**P M K N S** Refer to page 4



**Varianta® Supral** Provides a low coefficient of friction, reducing tool wear and resulting in a longer tool life.



### Inches

### Metric Available Upon Request

Part Number	D <sub>1</sub>	Decimal	D <sub>1</sub> (mm)	D <sub>2</sub> (in)	L <sub>2</sub> (in)	L <sub>1</sub> (in)
SD00503170T9	1/8	.1250	3.17	1/8	5/8	2-1/2
SD00504760T9	3/16	.1875	4.76	3/16	3/4	2-1/2
SD00506350T9	1/4	.2500	6.35	1/4	1	2-1/2
SD00507940T9	5/16	.3125	7.94	5/16	1	2-1/2
SD00509520T9	3/8	.3750	9.52	3/8	1-1/4	3
SD00502700T9	1/2	.5000	12.70	1/2	1-1/4	3
SD00509050T9	3/4	.7500	19.05	3/4	1-1/4	3

\*\*Other Dimensions are Available Upon Request\*\*

### Tolerance

Drill Dia (h7) Inches (in)	Drill Dia (h7) Metric (mm)	Shank Dia (h6) Inches (in)	Shank Dia (h6) Metric (mm)
.0000-.1181: + 0/--.00039	0-3: + 0/--.010	.0000-.1181: + 0/--.00024	0-3: + 0/--.006
.1182-.2362: + 0/--.00047	3.01-6: + 0/--.012	.1182-.2362: + 0/--.00031	3.01-6: + 0/--.008
.2363-.3937: + 0/--.00059	6.01-10.0: + 0/--.015	.2363-.3937: + 0/--.00035	6.01-10.0: + 0/--.009
.3938-.7087: + 0/--.00071	10.01-18.0: + 0/--.018	.3938-.7087: + 0/--.00043	10.01-18.0: + 0/--.011

# 2 FLUTE HIGH PERFORMANCE

# 224 SERIES

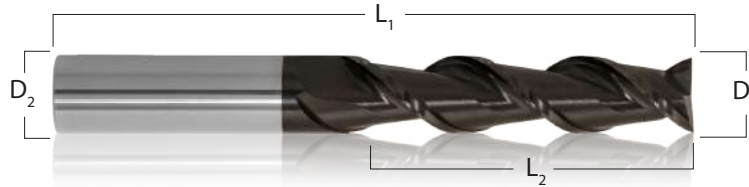
**Advanced geometry; wiper flat, E-cut polish and controlled land, will provide better chip evacuation and a superior part finish**

**Available Upon Request:** Add Flats, Left-Hand, Radii, Whistle Notch, Firm Hold Shank, Additional PVD Coatings

**Material Code:** Refer to Page 4



**Exxtral Carbon®**  
3-4 times more tool life compared to ZrN.



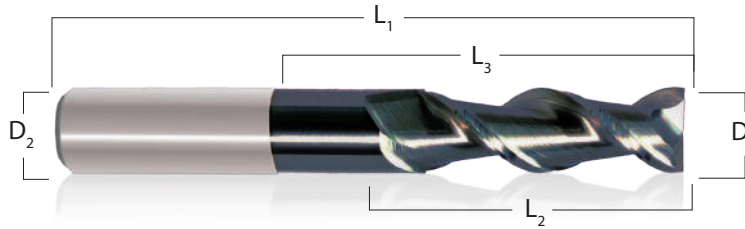
## Fractional

D1 Diameter	D2 Shank	L2 LOC	L1 OAL	Square	.015 RAD	.030 RAD	.060 RAD	.090 RAD	.125 RAD	Ball
3/16	3/16	5/16	2	22403105	22403115	22403125				22403185
3/16	3/16	9/16	2	22403205	22403215	22403225				22403285
1/4	1/4	1/2	2	22404105	22404115	22404125				22404185
1/4	1/4	3/4	2 1/2	22404205	22404215	22404225				22404285
1/4	1/4	1	3	22404305	22404315	22404325				22404385
1/4	1/4	1 1/4	4	22404405	22404415	22404425				22404485
5/16	5/16	7/16	2	22405105	22405115	22405125				22405185
5/16	5/16	7/8	2 1/2	22405205	22405215	22405225				22405285
5/16	5/16	1 1/4	3	22405305	22405315	22405325				22405385
5/16	5/16	1 5/8	4	22405405	22405415	22405425				22405485
3/8	3/8	1/2	2	22406105	22406115	22406125	22406135	22406145	22406155	22406185
3/8	3/8	1	2 1/2	22406205	22406215	22406225	22406235	22406245	22406255	22406285
3/8	3/8	1 1/8	3	22406305	22406315	22406325	22406335	22406345	22406355	22406385
3/8	3/8	1 1/2	4	22406405	22406415	22406425	22406435	22406445	22406455	22406485
7/16	7/16	9/16	2 3/4	22407105	22407115	22407125	22407135	22407145	22407155	22407185
7/16	7/16	1	2 3/4	22407205	22407215	22407225	22407235	22407245	22407255	22407285
7/16	7/16	2	4	22407305	22407315	22407325	22407335	22407345	22407355	22407385
1/2	1/2	5/8	2 1/2	22408105	22408115	22408125	22408135	22408145	22408155	22408185
1/2	1/2	1 1/4	3	22408205	22408215	22408225	22408235	22408245	22408255	22408285
1/2	1/2	1 1/2	4	22408305	22408315	22408325	22408335	22408345	22408355	22408385
1/2	1/2	2	4	22408405	22408415	22408425	22408435	22408445	22408455	22408485
1/2	1/2	1 1/2	6	22408505	22408515	22408525	22408535	22408545	22408555	22408585
1/2	1/2	3 1/8	6	22408605	22408615	22408625	22408635	22408645	22408655	22408685
5/8	5/8	3/4	3	22410105	22410115	22410125	22410135	22410145	22410155	22410185
5/8	5/8	1 5/8	3 1/2	22410205	22410215	22410225	22410235	22410245	22410255	22410285
5/8	5/8	2	4	22410305	22410315	22410325	22410335	22410345	22410355	22410385
5/8	5/8	2 1/4	5	22410405	22410415	22410425	22410435	22410445	22410455	22410485
5/8	5/8	1 1/2	6	22410505	22410515	22410525	22410535	22410545	22410555	22410585
5/8	5/8	3	6	22410605	22410615	22410625	22410635	22410645	22410655	22410685
3/4	3/4	1	3	22412105	22412115	22412125	22412135	22412145	22412155	22412185
3/4	3/4	1 5/8	4	22412205	22412215	22412225	22412235	22412245	22412255	22412285
3/4	3/4	2 1/4	5	22412305	22412315	22412325	22412335	22412345	22412355	22412385
3/4	3/4	1 1/2	6	22412405	22412415	22412425	22412435	22412445	22412455	22412485
3/4	3/4	3 1/4	6	22412505	22412515	22412525	22412535	22412545	22412555	22412585
3/4	3/4	4	7	22412605	22412615	22412625	22412635	22412645	22412655	22412685
1	1	1 1/2	4	22416105	22416115	22416125	22416135	22416145	22416155	22416185
1	1	2	4 1/2	22416205	22416215	22416225	22416235	22416245	22416255	22416285
1	1	2 1/4	5	22416305	22416315	22416325	22416335	22416345	22416355	22416385
1	1	1 1/2	6	22416405	22416415	22416425	22416435	22416445	22416455	22416485
1	1	2 5/8	6	22416505	22416515	22416525	22416535	22416545	22416555	22416585
1	1	3 1/4	6	22416605	22416615	22416625	22416635	22416645	22416655	22416685
1	1	4 1/8	7	22416705	22416715	22416725	22416735	22416745	22416755	22416785

\*\*Other Dimensions are Available Upon Request\*\*

ENDMILLS ALUMINUM AND NON-FERROUS ALLOYS





Extended Reach provides a more stable and stronger option for deep pocketing applications.

## Extended Neck

D1 Diameter	D2 Shank	L2 LOC	L3 LBS	L1 OAL	Square	.015 RAD	.030 RAD	.060 RAD	.090 RAD	.125 RAD	Ball
1/4	1/4	1/2	1 1/4	3	N22404105	N22404115	N22404125				N224041B5
1/4	1/4	1/2	2 1/8	4	N22404205	N22404215	N22404225				N224042B5
3/8	3/8	3/4	1 1/4	3	N22406105	N22406115	N22406125	N22406135	N22406145	N22406155	N224061B5
3/8	3/8	3/4	2 1/8	4	N22406205	N22406215	N22406225	N22406235	N22406245	N22406255	N224062B5
1/2	1/2	7/8	1 3/8	3	N22408105	N22408115	N22408125	N22408135	N22408145	N22408155	N224081B5
1/2	1/2	7/8	2 1/8	4	N22408205	N22408215	N22408225	N22408235	N22408245	N22408255	N224082B5
1/2	1/2	7/8	3 1/8	5	N22408A05	N22408A15	N22408A25	N22408A35	N22408A45	N22408A55	N22408AB5
1/2	1/2	7/8	4 1/8	6	N22408305	N22408315	N22408325	N22408335	N22408345	N22408355	N224083B5
5/8	5/8	1	2	4	N22410105	N22410115	N22410125	N22410135	N22410145	N22410155	N224101B5
5/8	5/8	1	3	5	N22410205	N22410215	N22410225	N22410235	N22410245	N22410255	N224102B5
5/8	5/8	1	4	6	N22410305	N22410315	N22410325	N22410335	N22410345	N22410355	N224103B5
3/4	3/4	1 1/4	2	4	N22412105	N22412115	N22412125	N22412135	N22412145	N22412155	N224121B5
3/4	3/4	1 1/4	3	5	N22412205	N22412215	N22412225	N22412235	N22412245	N22412255	N224122B5
3/4	3/4	1 1/4	4	6	N22412305	N22412315	N22412325	N22412335	N22412345	N22412355	N224123B5
1	1	1 1/2	3	5	N22416105	N22416115	N22416125	N22416135	N22416145	N22416155	N224161B5
1	1	1 1/2	4	6	N22416205	N22416215	N22416225	N22416235	N22416245	N22416255	N224162B5
1	1	1 1/2	5	7	N22416305	N22416315	N22416325	N22416335	N22416345	N22416355	N224163B5

### Tool Tolerance

**Cutting Diameter:** +.000 / -.002    **Runout (T.I.R.):** .0005 max.  
**Shank Diameter:** h6    **Overall Length:** +/- .062  
**Corner Radius:** +/- .003    **Length of Cut:** +.062 / -.000

**NEW**  
**EXTENDED LENGTHS**

ALUMINUM AND NON-FERROUS ALLOYS  
ENDMILLS

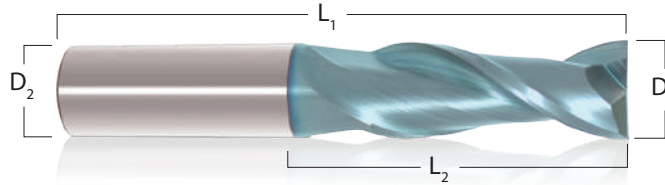
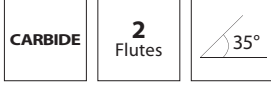
# 2 FLUTE GENERAL PURPOSE

# 235 SERIES

Versatile in general applications.

**Available Upon Request:** Add Flats, Left-Hand, Radii, Whistle Notch, Firm Hold Shank, Additional PVD Coatings

**P M K N** Material Code: Refer to Page 4



**TiCN** TiCN features high hardness and a low coefficient of friction; excellent for general purpose machining.

**DISCONTINUED**  
available while supplies last

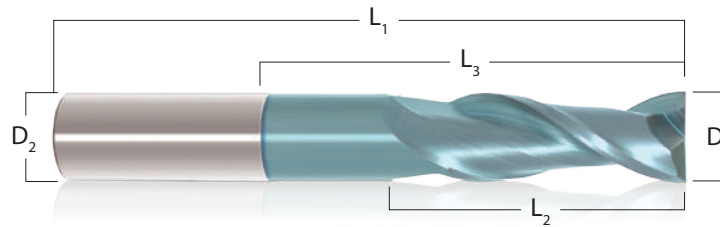
## Fractional

D1 Diameter	D2 Shank	L2 LOC	L1 OAL	Square	Ball
1/8	1/8	1/2	1 1/2	23502102	235021B2
1/8	1/8	3/4	2 1/2	23502202	235022B2
1/8	1/8	1	3	23502302	235023B2
3/16	3/16	5/8	2	23503102	235031B2
3/16	3/16	3/4	2 1/2	23503202	235032B2
3/16	3/16	1 1/8	3	23503302	235033B2
3/16	3/16	1	4	23503402	235034B2
1/4	1/4	1/2	2	23504102	235041B2
1/4	1/4	3/4	2 1/2	23504202	235042B2
1/4	1/4	1	3	23504302	235043B2
1/4	1/4	1	4	23504402	235044B2
1/4	1/4	1 1/2	4	23504502	235045B2
1/4	1/4	1 1/2	6	23504602	235046B2
5/16	5/16	1/2	2	23505102	235051B2
5/16	5/16	7/8	2 1/2	23505202	235052B2
5/16	5/16	1	3	23505302	235053B2
5/16	5/16	1	4	23505402	235054B2
5/16	5/16	1 5/8	4	23505502	235055B2
5/16	5/16	1 1/2	6	23505602	235056B2
3/8	3/8	1/2	2	23506102	235061B2
3/8	3/8	1	2 1/2	23506202	235062B2
3/8	3/8	1	3	23506302	235063B2
3/8	3/8	1	4	23506402	235064B2
3/8	3/8	2	4	23506502	235065B2
3/8	3/8	1 1/2	6	23506602	235066B2
3/8	3/8	3	6	23506702	235067B2
7/16	7/16	5/8	2 3/4	23507102	235071B2
7/16	7/16	1	2 3/4	23507202	235072B2
7/16	7/16	1 1/2	4	23507302	235073B2
7/16	7/16	1 1/2	6	23507402	235074B2
1/2	1/2	5/8	2 1/2	23508102	235081B2
1/2	1/2	1	3	23508202	235082B2
1/2	1/2	1	4	23508302	235083B2
1/2	1/2	1 1/2	4	23508402	235084B2
1/2	1/2	2	4	23508502	235085B2
1/2	1/2	1 1/2	6	23508602	235086B2
1/2	1/2	3	6	23508702	235087B2
5/8	5/8	3/4	3	23510102	235101B2
5/8	5/8	1 1/4	3 1/2	23510202	235102B2
5/8	5/8	2	6	23510302	235103B2
5/8	5/8	2 1/4	5	23510402	235104B2
5/8	5/8	3	6	23510502	235105B2
3/4	3/4	1	3	23512102	235121B2
3/4	3/4	1 1/2	4	23512202	235122B2
3/4	3/4	2	6	23512302	235123B2
3/4	3/4	2 1/4	5	23512402	235124B2
3/4	3/4	3	6	23512502	235125B2
3/4	3/4	4	7	23512602	235126B2
7/8	7/8	1 1/2	4	23514102	235141B2
1	1	1	3	23516102	235161B2
1	1	1 1/2	4	23516202	235162B2
1	1	2	6	23516302	235163B2
1	1	2 1/4	5	23516402	235164B2
1	1	3	6	23516502	235165B2
1	1	4	7	23516602	235166B2

\*\*Other Dimensions are Available Upon Request\*\*

**DISCONTINUED**

available while supplies last



Extended Reach provides a more stable and stronger option for deep pocketing applications.

## Extended Neck

D1 Diameter	D2 Shank	L2 LOC	L3 LBS	L1 OAL	Square	Ball
1/4	1/4	1/2	1 1/4	3	N23504102	N235041B2
1/4	1/4	1/2	2 1/8	4	N23504202	N235042B2
3/8	3/8	3/4	1 1/4	3	N23506102	N235061B2
3/8	3/8	3/4	2 1/8	4	N23506202	N235062B2
1/2	1/2	7/8	1 3/8	3	N23508102	N235081B2
1/2	1/2	7/8	2 1/8	4	N23508202	N235082B2
1/2	1/2	7/8	3 1/8	5	N23508A02	N23508AB2
1/2	1/2	7/8	4 1/8	6	N23508302	N235083B2
5/8	5/8	1	2	4	N23510102	N235101B2
5/8	5/8	1	3	5	N23510202	N235102B2
5/8	5/8	1	4	6	N23510302	N235103B2
3/4	3/4	1 1/4	2	4	N23512102	N235121B2
3/4	3/4	1 1/4	3	5	N23512202	N235122B2
3/4	3/4	1 1/4	4	6	N23512302	N235123B2
1	1	1 1/2	3	5	N23516102	N235161B2
1	1	1 1/2	4	6	N23516202	N235162B2
1	1	1 1/2	5	7	N23516302	N235163B2

### Tool Tolerance

**Cutting Diameter:** +.000 / -.002    **Runout (T.I.R.):** .0005 max.  
**Shank Diameter:** h6    **Overall Length:** +/- .062  
**Corner Radius:** +/- .003    **Length of Cut:** +.062 / -.000

**NEW**  
**EXTENDED LENGTHS**

ALUMINUM AND NON-FERROUS ALLOYS  
ENDMILLS

# 3 FLUTE HIGH PERFORMANCE



Variable design allows for chatter free machining at higher speed and feeds. Ideal for heavy profile and slotting applications.

Available Upon Request – Add Flats, Left-Hand, Radii, Whistle Notch, Firm Hold Shank, Additional PVD Coatings

**N** Material Code: Refer to Page 4

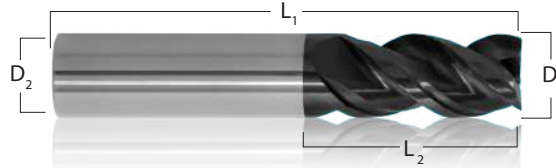
CARBIDE

3  
Flutes

Variable

Exxtral  
Carbon®

Exxtral Carbon®  
3-4 times more tool life compared to ZrN.

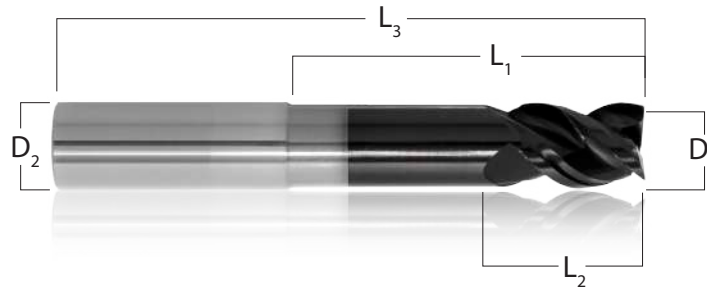


## Fractional

D1 Diameter	D2 Shank	L2 LOC	L1 OAL	Square	.015 RAD	.030 RAD	.060 RAD	.090 RAD	.125 RAD	Ball
1/4	1/4	1/2	2	36004105	36004115	36004125	36004135			360041B5
1/4	1/4	3/4	2 1/2	36004205	36004215	36004225	36004235			360042B5
5/16	5/16	1/2	2	36005105	36005115	36005125	36005135			360051B5
5/16	5/16	3/4	2 1/2	36005205	36005215	36005225	36005235			360052B5
3/8	3/8	1/2	2	36006105	36006115	36006125	36006135	36006145	36006155	360061B5
3/8	3/8	1	2 1/2	36006205	36006215	36006225	36006235	36006245	36006255	360062B5
1/2	1/2	5/8	2 1/2	36008105	36008115	36008125	36008135	36008145	36008155	360081B5
1/2	1/2	1 1/4	3	36008205	36008215	36008225	36008235	36008245	36008255	360082B5
5/8	5/8	3/4	3	36010105	36010115	36010125	36010135	36010145	36010155	360101B5
5/8	5/8	1 5/8	3 1/2	36010205	36010215	36010225	36010235	36010245	36010255	360102B5
3/4	3/4	1	3	36012105	36012115	36012125	36012135	36012145	36012155	360121B5
3/4	3/4	1 5/8	4	36012205	36012215	36012225	36012235	36012245	36012255	360122B5
7/8	7/8	1 1/2	4	36014105	36014115	36014125	36014135	36014145	36014155	360141B5
1	1	1 1/2	4	36016105	36016115	36016125	36016135	36016145	36016155	360161B5

\*\*Other Dimensions are Available Upon Request\*\*

360 Series Extended Neck continued on page 81



Extended Reach provides a more stable and stronger option for deep pocketing applications.

## Extended Neck

D1 Diameter	D2 Shank	L2 LOC	L3 LBS	L1 OAL	Square	.015 RAD	.030 RAD	.060 RAD	.090 RAD	.125 RAD	Ball
1/4	1/4	1/2	1 1/4	3	N36004105	N36004115	N36004125	N36004135			N360041B5
1/4	1/4	1/2	2 1/8	4	N36004205	N36004215	N36004225	N36004235			N360042B5
3/8	3/8	3/4	1 1/4	3	N36006105	N36006115	N36006125	N36006135	N36006145	N36006155	N360061B5
3/8	3/8	3/4	2 1/8	4	N36006205	N36006215	N36006225	N36006235	N36006245	N36006255	N360062B5
1/2	1/2	7/8	1 3/8	3	N36008105	N36008115	N36008125	N36008135	N36008145	N36008155	N360081B5
1/2	1/2	7/8	2 1/8	4	N36008205	N36008215	N36008225	N36008235	N36008245	N36008255	N360082B5
1/2	1/2	7/8	3 1/8	5	N36008A05	N36008A15	N36008A25	N36008A35	N36008A45	N36008A55	N36008AB5
1/2	1/2	7/8	4 1/8	6	N36008305	N36008315	N36008325	N36008335	N36008345	N36008355	N360083B5
5/8	5/8	1	2	4	N36010105	N36010115	N36010125	N36010135	N36010145	N36010155	N360101B5
5/8	5/8	1	3	5	N36010205	N36010215	N36010225	N36010235	N36010245	N36010255	N360102B5
5/8	5/8	1	4	6	N36010305	N36010315	N36010325	N36010335	N36010345	N36010355	N360103B5
3/4	3/4	1 1/4	2	4	N36012105	N36012115	N36012125	N36012135	N36012145	N36012155	N360121B5
3/4	3/4	1 1/4	3	5	N36012205	N36012215	N36012225	N36012235	N36012245	N36012255	N360122B5
3/4	3/4	1 1/4	4	6	N36012305	N36012315	N36012325	N36012335	N36012345	N36012355	N360123B5
1	1	1 1/2	3	5	N36016105	N36016115	N36016125	N36016135	N36016145	N36016155	N360161B5
1	1	1 1/2	4	6	N36016205	N36016215	N36016225	N36016235	N36016245	N36016255	N360162B5
1	1	1 1/2	5	7	N36016305	N36016315	N36016325	N36016335	N36016345	N36016355	N360163B5

### Tool Tolerance

**Cutting Diameter:** +.000 / -.002    **Runout (T.I.R.):** .0005 max.  
**Shank Diameter:** h6    **Overall Length:** +/- .062  
**Corner Radius:** +/- .003    **Length of Cut:** +.062 / -.000

**NEW**  
**EXTENDED LENGTHS**

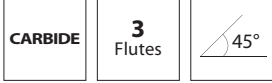
# 3 FLUTE HIGH PERFORMANCE

# 345 SERIES

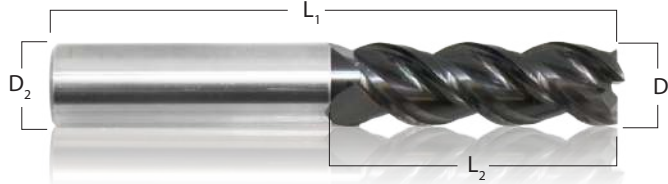
**Advanced Geometry; Wiper Flatt, E-cut Polish and Controlled Land, will Provide Better Chip Evacuation and a Superior Part Finish**

**Available Upon Request:** Add Flats, Left-Hand, Whistle Notch, Firm Hold Shank, Additional PVD Coatings

**K N Material Code:** Refer to Page 4



**Exxtral Carbon®**  
**Exxtral Carbon®** 3-4 times more tool life compared to ZrN.

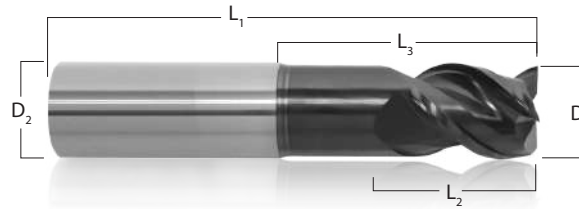


## Fractional

D1 Diameter	D2 Shank	L2 LOC	L2 OAL	Square	.015 RAD	.030 RAD	.060 RAD	.090 RAD	.125 RAD	Ball
1/8	1/8	1/4	1 1/2	34502105	34502115					345021B5
1/8	1/8	1/2	1 1/2	34502205	34502215					345022B5
3/16	3/16	5/16	2	34503105	34503115					345031B5
3/16	3/16	9/16	2	34503205	34503215					345032B5
1/4	1/4	3/8	2	34504105	34504115	34504125				345041B5
1/4	1/4	3/4	2 1/2	34504205	34504215	34504225				345042B5
1/4	1/4	1	3	34504305	34504315	34504325				345043B5
1/4	1/4	1 1/4	4	34504405	34504415	34504425				345044B5
5/16	5/16	1/2	2	34505105	34505115	34505125				345051B5
5/16	5/16	7/8	2 1/2	34505205	34505215	34505225				345052B5
5/16	5/16	1	3	34505305	34505315	34505325				345053B5
5/16	5/16	1 1/4	4	34505405	34505415	34505425				345054B5
3/8	3/8	1/2	2	34506105	34506115	34506125	34506135	34506145	34506155	345061B5
3/8	3/8	1	2 1/2	34506205	34506215	34506225	34506235	34506245	34506255	345062B5
3/8	3/8	1	3	34506305	34506315	34506325	34506335	34506345	34506355	345063B5
3/8	3/8	1 1/2	4	34506405	34506415	34506425	34506435	34506445	34506455	345064B5
7/16	7/16	1	2 3/4	34507105	34507115	34507125	34507135	34507145	34507155	345071B5
7/16	7/16	1 1/2	4	34507205	34507215	34507225	34507235	34507245	34507255	345072B5
7/16	7/16	2	4	34507305	34507315	34507325	34507335	34507345	34507355	345073B5
1/2	1/2	5/8	2 1/2	34508105	34508115	34508125	34508135	34508145	34508155	345081B5
1/2	1/2	1 1/4	3	34508205	34508215	34508225	34508235	34508245	34508255	345082B5
1/2	1/2	1 1/2	4	34508305	34508315	34508325	34508335	34508345	34508355	345083B5
1/2	1/2	2	4	34508405	34508415	34508425	34508435	34508445	34508455	345084B5
1/2	1/2	2 1/2	5	34508505	34508515	34508525	34508535	34508545	34508555	345085B5
1/2	1/2	1 1/2	6	34508605	34508615	34508625	34508635	34508645	34508655	345086B5
1/2	1/2	3 1/8	6	34508705	34508715	34508725	34508735	34508745	34508755	345087B5
5/8	5/8	3/4	3	34510105	34510115	34510125	34510135	34510145	34510155	345101B5
5/8	5/8	1 1/4	3 1/2	34510205	34510215	34510225	34510235	34510245	34510255	345102B5
5/8	5/8	2	4	34510305	34510315	34510325	34510335	34510345	34510355	345103B5
5/8	5/8	2 1/4	5	34510405	34510415	34510425	34510435	34510445	34510455	345104B5
5/8	5/8	1 1/2	6	34510505	34510515	34510525	34510535	34510545	34510555	345105B5
5/8	5/8	3	6	34510605	34510615	34510625	34510635	34510645	34510655	345106B5
3/4	3/4	1	3	34512105	34512115	34512125	34512135	34512145	34512155	345121B5
3/4	3/4	1 5/8	4	34512205	34512215	34512225	34512235	34512245	34512255	345122B5
3/4	3/4	2 1/4	5	34512305	34512315	34512325	34512335	34512345	34512355	345123B5
3/4	3/4	1 1/2	6	34512405	34512415	34512425	34512435	34512445	34512455	345124B5
3/4	3/4	3	6	34512505	34512515	34512525	34512535	34512545	34512555	345125B5
3/4	3/4	4	7	34512605	34512615	34512625	34512635	34512645	34512655	345126B5
1	1	1 1/2	4	34516105	34516115	34516125	34516135	34516145	34516155	345161B5
1	1	2	4 1/2	34516205	34516215	34516225	34516235	34516245	34516255	345162B5
1	1	2 1/4	5	34516305	34516315	34516325	34516335	34516345	34516355	345163B5
1	1	1 1/2	6	34516405	34516415	34516425	34516435	34516445	34516455	345164B5
1	1	2 5/8	6	34516505	34516515	34516525	34516535	34516545	34516555	345165B5
1	1	3	6	34516605	34516615	34516625	34516635	34516645	34516655	345166B5
1	1	4	7	34516705	34516715	34516725	34516735	34516745	34516755	345167B5
1 1/4	1 1/4	2	4 1/2	34520105	34520115	34520125	34520135	34520145	34520155	345201B5
1 1/4	1 1/4	3	6	34520205	34520215	34520225	34520235	34520245	34520255	345202B5

\*\*Other Dimensions are Available Upon Request\*\*





Extended Reach provides a more stable and stronger option for deep pocketing applications.

## Extended Neck

D1 Diameter	D2 Shank	L2 LOC	L3 LBS	L1 OAL	Square	.015 RAD	.030 RAD	.060 RAD	.090 RAD	.125 RAD	Ball
1/4	1/4	1/2	1 1/4	3	N34504105	N34504115	N34504125	N34504135			N345041B5
1/4	1/4	1/2	2 1/8	4	N34504205	N34504215	N34504225	N34504235			N345042B5
3/8	3/8	3/4	1 1/4	3	N34506105	N34506115	N34506125	N34506135	N34506145	N34506155	N345061B5
3/8	3/8	3/4	2 1/8	4	N34506205	N34506215	N34506225	N34506235	N34506245	N34506255	N345062B5
1/2	1/2	7/8	1 3/8	3	N34508105	N34508115	N34508125	N34508135	N34508145	N34508155	N345081B5
1/2	1/2	7/8	2 1/8	4	N34508205	N34508215	N34508225	N34508235	N34508245	N34508255	N345082B5
1/2	1/2	7/8	3 1/8	5	N34508A05	N34508A15	N34508A25	N34508A35	N34508A45	N34508A55	N34508AB5
1/2	1/2	7/8	4 1/8	6	N34508305	N34508315	N34508325	N34508335	N34508345	N34508355	N345083B5
5/8	5/8	1	2	4	N34510105	N34510115	N34510125	N34510135	N34510145	N34510155	N345101B5
5/8	5/8	1	3	5	N34510205	N34510215	N34510225	N34510235	N34510245	N34510255	N345102B5
5/8	5/8	1	4	6	N34510305	N34510315	N34510325	N34510335	N34510345	N34510355	N345103B5
3/4	3/4	1 1/4	2	4	N34512105	N34512115	N34512125	N34512135	N34512145	N34512155	N345121B5
3/4	3/4	1 1/4	3	5	N34512205	N34512215	N34512225	N34512235	N34512245	N34512255	N345122B5
3/4	3/4	1 1/4	4	6	N34512305	N34512315	N34512325	N34512335	N34512345	N34512355	N345123B5
1	1	1 1/2	3	5	N34516105	N34516115	N34516125	N34516135	N34516145	N34516155	N345161B5
1	1	1 1/2	4	6	N34516205	N34516215	N34516225	N34516235	N34516245	N34516255	N345162B5
1	1	1 1/2	5	7	N34516305	N34516315	N34516325	N34516335	N34516345	N34516355	N345163B5

### Tool Tolerance

**Cutting Diameter:** +.000 / -.002    **Runout (T.I.R.):** .0005 max.  
**Shank Diameter:** h6    **Overall Length:** +/- .062  
**Corner Radius:** +/- .003    **Length of Cut:** +.062 / -.000

**NEW**  
**EXTENDED LENGTHS**

ALUMINUM AND NON-FERROUS ALLOYS  
ENDMILLS

# 3 FLUTE STANDARD



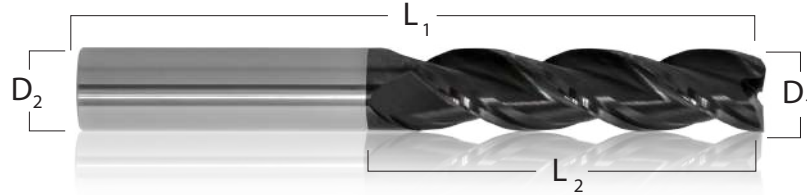
**Ideal for heavy peripheral and slotting applications. Cylindrically ground for top performance. Featured with wiper flatt.**

**Available Upon Request:** Add Flats, Left-Hand, Radii, Whistle Notch, Firm Hold Shank, Additional PVD Coatings

**N Material Code:** Refer to Page 4



**Exxtral Carbon®**  
3-4 times more tool life compared to ZrN.



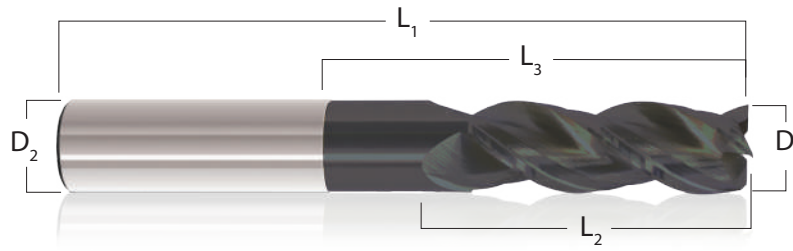
## Fractional

D1 Diameter	D2 Shank	L2 LOC	L1 OAL	Square	Ball
1/8	1/8	1/4	1 1/2	33702105	337021B5
1/8	1/8	1/2	1 1/2	33702205	337022B5
3/16	3/16	5/16	2	33703105	337031B5
3/16	3/16	9/16	2	33703205	337032B5
1/4	1/4	3/8	2	33704105	337041B5
1/4	1/4	3/4	2 1/2	33704205	337042B5
1/4	1/4	1	3	33704305	337043B5
1/4	1/4	1 1/4	4	33704405	337044B5
5/16	5/16	1/2	2	33705105	337051B5
5/16	5/16	7/8	2 1/2	33705205	337052B5
5/16	5/16	1	3	33705305	337053B5
5/16	5/16	1 1/4	4	33705405	337054B5
3/8	3/8	1/2	2	33706105	337061B5
3/8	3/8	1	2 1/2	33706205	337062B5
3/8	3/8	1	3	33706305	337063B5
3/8	3/8	1 1/2	4	33706405	337064B5
7/16	7/16	1	2 3/4	33707105	337071B5
7/16	7/16	1 1/2	4	33707205	337072B5
7/16	7/16	2	4	33707305	337073B5
1/2	1/2	5/8	2 1/2	33708105	337081B5
1/2	1/2	1 1/4	3	33708205	337082B5
1/2	1/2	1 1/2	4	33708305	337083B5
1/2	1/2	2	4	33708405	337084B5
1/2	1/2	2 1/2	5	33708505	337085B5
1/2	1/2	1 1/2	6	33708605	337086B5
1/2	1/2	3 1/8	6	33708705	337087B5
5/8	5/8	3/4	3	33710105	337101B5
5/8	5/8	1 1/4	3 1/2	33710205	337102B5
5/8	5/8	2	4	33710305	337103B5
5/8	5/8	2 1/4	5	33710405	337104B5
5/8	5/8	1 1/2	6	33710505	337105B5
5/8	5/8	3	6	33710605	337106B5
3/4	3/4	1	3	33712105	337121B5
3/4	3/4	1 1/2	4	33712205	337122B5
3/4	3/4	2 1/4	5	33712305	337123B5
3/4	3/4	1 1/2	6	33712405	337124B5
3/4	3/4	3	6	33712505	337125B5
3/4	3/4	4	7	33712605	337126B5
1	1	1 1/2	4	33716105	337161B5
1	1	2	4 1/2	33716205	337162B5
1	1	2 1/4	5	33716305	337163B5
1	1	1 1/2	6	33716405	337164B5
1	1	3	6	33716505	337165B5
1	1	4	7	33716605	337166B5
1 1/4	1 1/4	2	4 1/2	33720105	337201B5
1 1/4	1 1/4	3	6	33720205	337202B5

\*\*Other Dimensions are Available Upon Request\*\*

ENDMILLS ALUMINUM AND NON-FERROUS ALLOYS





Extended Reach provides a more stable and stronger option for deep pocketing applications.

### Extended Neck

D1 Diameter	D2 Shank	L2 LOC	L3 LBS	L1 OAL	Square	Ball
1/4	1/4	1/2	1 1/4	3	N33704105	N337041B5
1/4	1/4	1/2	2 1/8	4	N33704205	N337042B5
3/8	3/8	3/4	1 1/4	3	N33706105	N337061B5
3/8	3/8	3/4	2 1/8	4	N33706205	N337062B5
1/2	1/2	7/8	1 3/8	3	N33708105	N337081B5
1/2	1/2	7/8	2 1/8	4	N33708205	N337082B5
1/2	1/2	7/8	3 1/8	5	N33708A05	N33708AB5
1/2	1/2	7/8	4 1/8	6	N33708305	N337083B5
5/8	5/8	1	2	4	N33710105	N337101B5
5/8	5/8	1	3	5	N33710205	N337102B5
5/8	5/8	1	4	6	N33710305	N337103B5
3/4	3/4	1 1/4	2	4	N33712105	N337121B5
3/4	3/4	1 1/4	3	5	N33712205	N337122B5
3/4	3/4	1 1/4	4	6	N33712305	N337123B5
1	1	1 1/2	3	5	N33716105	N337161B5
1	1	1 1/2	4	6	N33716205	N337162B5
1	1	1 1/2	5	7	N33716305	N337163B5

#### Tool Tolerance

**Cutting Diameter:** +.000 / -.002    **Runout (T.I.R.):** .0005 max.  
**Shank Diameter:** h6    **Overall Length:** +/- .062  
**Corner Radius:** +/- .003    **Length of Cut:** +.062 / -.000

NEW  
EXTENDED LENGTHS

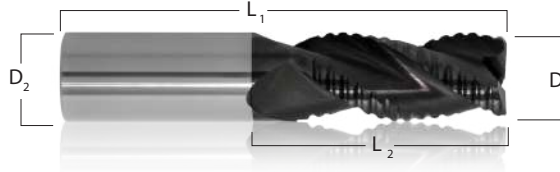
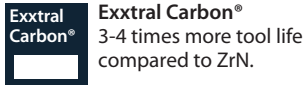
# 3 FLUTE COARSE PITCH ROUGHER



**Coarse pitch design for heavy roughing applications. Featured with standard corner radius.**

**Available Upon Request:** Add Flats, Left-Hand, Radii, Whistle Notch, Firm Hold Shank, Additional PVD Coatings

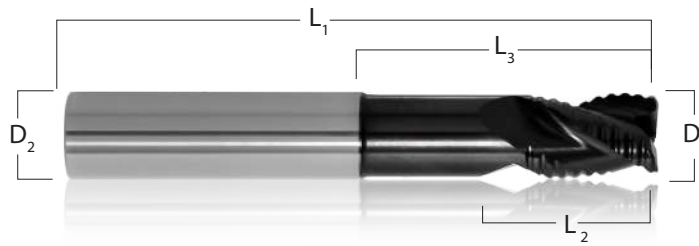
**K N Material Code:** Refer to Page 4



## Fractional

D1 Diameter	D2 Shank	L2 LOC	L1 OAL	Standard Radius	Part Number	Ball
1/4	1/4	3/8	2	.030	33804125	338041B5
1/4	1/4	3/4	2 1/2	.030	33804225	338042B5
1/4	1/4	1	3	.030	33804325	338043B5
1/4	1/4	1 1/4	4	.030	33804425	338045B5
5/16	5/16	1/2	2	.030	33805125	338051B5
5/16	5/16	7/8	2 1/2	.030	33805225	338052B5
5/16	5/16	1	3	.030	33805325	338053B5
5/16	5/16	1 1/4	4	.030	33805425	338054B5
3/8	3/8	1/2	2	.030	33806125	338061B5
3/8	3/8	1	2 1/2	.030	33806225	338062B5
3/8	3/8	1	3	.030	33806325	338063B5
3/8	3/8	1 1/2	4	.030	33806425	338064B5
7/16	7/16	1	2 3/4	.060	33807135	338071B5
7/16	7/16	2	4	.060	33807235	338072B5
1/2	1/2	5/8	2 1/2	.060	33808135	338081B5
1/2	1/2	1 1/4	3	.060	33808235	338082B5
1/2	1/2	1 1/2	4	.060	33808335	338083B5
1/2	1/2	2	4	.060	33808435	338084B5
1/2	1/2	2 1/2	5	.060	33808535	338085B5
1/2	1/2	1 1/2	6	.060	33808635	338086B5
1/2	1/2	3 1/8	6	.060	33808735	338087B5
5/8	5/8	3/4	3	.060	33810135	338101B5
5/8	5/8	1 1/4	3 1/2	.060	33810235	338102B5
5/8	5/8	2	4	.060	33810335	338103B5
5/8	5/8	2 1/4	5	.060	33810435	338104B5
5/8	5/8	1 1/2	6	.060	33810535	338105B5
5/8	5/8	3	6	.060	33810635	338106B5
3/4	3/4	1	3	.090	33812145	338121B5
3/4	3/4	1 1/2	4	.090	33812245	338122B5
3/4	3/4	2 1/4	5	.090	33812345	338123B5
3/4	3/4	1 1/2	6	.090	33812445	338124B5
3/4	3/4	3	6	.090	33812545	338125B5
3/4	3/4	4	7	.090	33812645	338126B5
1	1	1 1/2	4	.125	33816155	338161B5
1	1	2 1/4	5	.125	33816255	338162B5
1	1	1 1/2	6	.125	33816355	338163B5
1	1	3	6	.125	33816455	338164B5
1	1	4	7	.125	33816555	338165B5
1 1/4	1 1/4	2	4 1/2	.125	33820155	338201B5
1 1/4	1 1/4	3	6	.125	33820255	338202B5

\*\*Other Dimensions are Available Upon Request\*\*



Extended Reach provides a more stable and stronger option for deep pocketing applications.

### Extended Neck

D1 Diameter	D2 Shank	L2 LOC	L3 LBS	L1 OAL	Standard Radius	Part Number	Ball
1/4	1/4	1/2	1 1/4	3	.030	N33804125	N338041B5
1/4	1/4	1/2	2 1/8	4	.030	N33804225	N338042B5
3/8	3/8	3/4	1 1/4	3	.030	N33806125	N338061B5
3/8	3/8	3/4	2 1/8	4	.030	N33806225	N338062B5
1/2	1/2	7/8	1 3/8	3	.060	N33808135	N338081B5
1/2	1/2	7/8	2 1/8	4	.060	N33808235	N338082B5
1/2	1/2	7/8	3 1/8	5	.060	N33808A35	N33808AB5
1/2	1/2	7/8	4 1/8	6	.060	N33808335	N338083B5
5/8	5/8	1	2	4	.060	N33810135	N338101B5
5/8	5/8	1	3	5	.060	N33810235	N338102B5
5/8	5/8	1	4	6	.060	N33810335	N338103B5
3/4	3/4	1 1/4	2	4	.090	N33812145	N338121B5
3/4	3/4	1 1/4	3	5	.090	N33812245	N338122B5
3/4	3/4	1 1/4	4	6	.090	N33812345	N338123B5
1	1	1 1/2	3	5	.125	N33816155	N338161B5
1	1	1 1/2	4	6	.125	N33816255	N338162B5
1	1	1 1/2	5	7	.125	N33816355	N338163B5

#### Tool Tolerance

**Cutting Diameter:** +.000 / -.002      **Runout (T.I.R.):** .0005 max.  
**Shank Diameter:** h6                      **Overall Length:** +/- .062  
**Corner Radius:** +/- .003                **Length of Cut:** +.062 / -.000

**NEW**  
**EXTENDED LENGTHS**

ALUMINUM AND NON-FERROUS ALLOYS  
ENDMILLS

# 3 FLUTE CHIP BREAKER



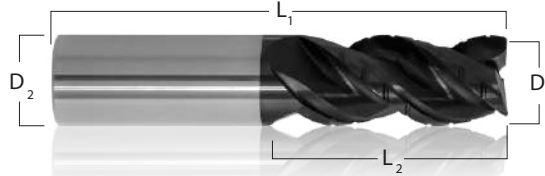
Adapted from the 360 Series, the 363 features an advance chipbreaker design which provided less machine load and better chip control

Available Upon Request – Add Flats, Left-Hand, Radii, Whistle Notch, Firm Hold Shank, Additional PVD Coatings

**N** Material Code: Refer to Page 4

CARBIDE	3 Flutes	Variable	Chip Breaker
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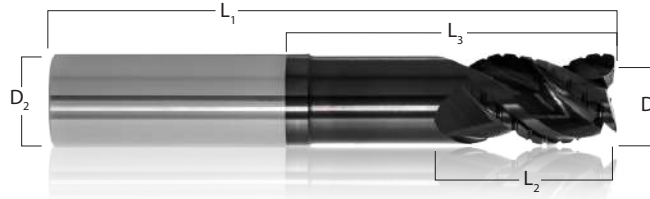
**Exxtral Carbon®**  
3-4 times more tool life compared to ZrN.



## Fractional

D1 Diameter	D2 Shank	L2 LOC	L1 OAL	.030 RAD	.060 RAD	.090 RAD	.125 RAD	Ball
1/4	1/4	1/2	2	36304125	36304135			363041B5
1/4	1/4	3/4	2 1/2	36304225	36304235			363042B5
5/16	5/16	1/2	2	36305125	36305135			363051B5
5/16	5/16	7/8	2 1/2	36305225	36305235			363052B5
3/8	3/8	1/2	2	36306125	36306135			363061B5
3/8	3/8	1	2 1/2	36306225	36306235			363062B5
1/2	1/2	5/8	2 1/2	36308125	36308135	36308145	36308155	363081B5
1/2	1/2	1 1/4	3	36308225	36308235	36308245	36308255	363082B5
5/8	5/8	3/4	3	36310125	36310135	36310145	36310155	363101B5
5/8	5/8	1 5/8	3 1/2	36310225	36310235	36310245	36310255	363102B5
3/4	3/4	1	3		36312135	36312145	36312155	363121B5
3/4	3/4	1 5/8	4		36312235	36312245	36312255	363122B5
7/8	7/8	1 1/2	4		36314135	36314145	36314155	363141B5
1	1	1 1/2	4		36316135	36316145	36316155	363161B5

\*\*Other Dimensions are Available Upon Request\*\*



Extended Reach provides a more stable and stronger option for deep pocketing applications.

### Extended Neck

D1 Diameter	D2 Shank	L2 LOC	L3 LBS	L1 OAL	.030 RAD	.060 RAD	.090 RAD	.125 RAD	Ball
1/4	1/4	1/2	1 1/4	3	N36304125	N36304135			N363041B5
1/4	1/4	1/2	2 1/8	4	N36304225	N36304235			N363042B5
3/8	3/8	3/4	1 1/4	3	N36306125	N36306135			N363061B5
3/8	3/8	3/4	2 1/8	4	N36306225	N36306235			N363062B5
1/2	1/2	7/8	1 3/8	3	N36308125	N36308135	N36308145	N36308155	N363081B5
1/2	1/2	7/8	2 1/8	4	N36308225	N36308235	N36308245	N36308255	N363082B5
1/2	1/2	7/8	3 1/8	5	N36308A25	N36308A35	N36308A45	N36308A55	N36308AB5
1/2	1/2	7/8	4 1/8	6	N36308325	N36308335	N36308345	N36308355	N363083B5
5/8	5/8	1	2	4	N36310125	N36310135	N36310145	N36310155	N363101B5
5/8	5/8	1	3	5	N36310225	N36310235	N36310245	N36310255	N363102B5
5/8	5/8	1	4	6	N36310325	N36310335	N36310345	N36310355	N363103B5
3/4	3/4	1 1/4	2	4		N36312135	N36312145	N36312155	N363121B5
3/4	3/4	1 1/4	3	5		N36312235	N36312245	N36312255	N363122B5
3/4	3/4	1 1/4	4	6		N36312335	N36312345	N36312355	N363123B5
1	1	1 1/2	3	5		N36316135	N36316145	N36316155	N363161B5
1	1	1 1/2	4	6		N36316235	N36316245	N36316255	N363162B5
1	1	1 1/2	5	7		N36316335	N36316345	N36316355	N363163B5

#### Tool Tolerance

**Cutting Diameter:** +.000 / -.002      **Runout (T.I.R.):** .0005 max.  
**Shank Diameter:** h6                      **Overall Length:** +/- .062  
**Corner Radius:** +/- .003                **Length of Cut:** +.062 / -.000

**NEW**  
**EXTENDED LENGTHS**



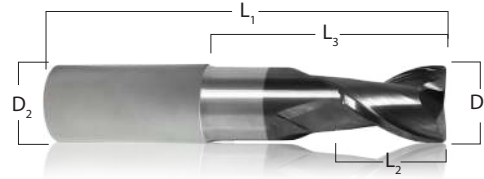
HPM+ in 2 flute and 3 flute are engineered specifically for applications reaching 15,000 to 30,000 RPM. The design features a special flute grind that leaves the cutter well-balanced and mirror polish on the flutes for better chip evacuation. Shrink fit style tooling only.

# H235

**N** Material Code: Refer to Page 4

CARBIDE	2 Flutes	35°	Exxtral Carbon®
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Exxtral Carbon®  
3-4 times more tool life compared to ZrN.



## 2 Flute High Performance - EdgeCut™ Extended Neck

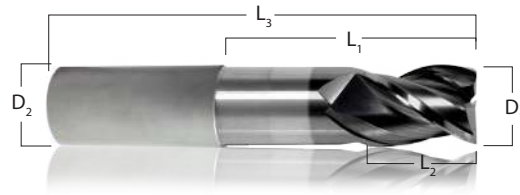
D1 Diameter	D2 Shank	L2 LOC	L3 LBS	L1 OAL	Square	.030 RAD	.060 RAD	.125 RAD	Ball
3/8	3/8	1/2	1 1/8	3	H23506105	H23506125	H23506135	H23506155	H23506185
3/8	3/8	1/2	2 1/8	4	H23506205	H23506225	H23506235	H23506255	H23506285
1/2	1/2	5/8	1 3/8	3	H23508105	H23508125	H23508135	H23508155	H23508185
1/2	1/2	5/8	2 1/8	4	H23508205	H23508225	H23508235	H23508255	H23508285
1/2	1/2	5/8	3 3/8	6	H23508305	H23508325	H23508335	H23508355	H23508385
5/8	5/8	3/4	1 5/8	4	H23510105	H23510125	H23510135	H23510155	H23510185
5/8	5/8	3/4	2 3/8	5	H23510205	H23510225	H23510235	H23510255	H23510285
5/8	5/8	3/4	3 3/8	6	H23510305	H23510325	H23510335	H23510355	H23510385
3/4	3/4	1	2	4	H23512105	H23512125	H23512135	H23512155	H23512185
3/4	3/4	1	2 1/2	5	H23512205	H23512225	H23512235	H23512255	H23512285
3/4	3/4	1	3 3/8	6	H23512305	H23512325	H23512335	H23512355	H23512385
1	1	1 1/4	2 5/8	5	H23516105	H23516125	H23516135	H23516155	H23516185
1	1	1 1/4	3 3/8	6	H23516205	H23516225	H23516235	H23516255	H23516285
1	1	1 1/4	4 3/8	7	H23516305	H23516325	H23516335	H23516355	H23516385

# H337

**N** Material Code: Refer to Page 4

CARBIDE	3 Flutes	37°	Exxtral Carbon®
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Exxtral Carbon®  
3-4 times more tool life compared to ZrN.



## 3 Flute High Performance - EdgeCut™ Extended Neck

D1 Diameter	D2 Shank	L2 LOC	L3 LBS	L1 OAL	Square	.030 RAD	.060 RAD	.125 RAD	Ball
3/8	3/8	1/2	1 1/8	3	H33706105	H33706125	H33706135	H33706155	H33706185
3/8	3/8	1/2	2 1/8	4	H33706205	H33706225	H33706235	H33706255	H33706285
1/2	1/2	5/8	1 3/8	3	H33708105	H33708125	H33708135	H33708155	H33708185
1/2	1/2	5/8	2 1/8	4	H33708205	H33708225	H33708235	H33708255	H33708285
1/2	1/2	5/8	3 3/8	6	H33708305	H33708325	H33708335	H33708355	H33708385
5/8	5/8	3/4	1 5/8	4	H33710105	H33710125	H33710135	H33710155	H33710185
5/8	5/8	3/4	2 3/8	5	H33710205	H33710225	H33710235	H33710255	H33710285
5/8	5/8	3/4	3 3/8	6	H33710305	H33710325	H33710335	H33710355	H33710385
3/4	3/4	1	2	4	H33712105	H33712125	H33712135	H33712155	H33712185
3/4	3/4	1	2 1/2	5	H33712205	H33712225	H33712235	H33712255	H33712285
3/4	3/4	1	3 3/8	6	H33712305	H33712325	H33712335	H33712355	H33712385
1	1	1 1/4	2 5/8	5	H33716105	H33716125	H33716135	H33716155	H33716185
1	1	1 1/4	3 3/8	6	H33716205	H33716225	H33716235	H33716255	H33716285
1	1	1 1/4	4 3/8	7	H33716305	H33716325	H33716335	H33716355	H33716385

**NEW**

**EXTENDED LENGTHS**

**Tool Tolerance**

**Cutting Diameter:** +.000 / -.002    **Runout (T.I.R.):** .0005 max.  
**Shank Diameter:** h6    **Overall Length:** +/- .062  
**Corner Radius:** +/- .003    **Length of Cut:** +.062 / -.000

Available Upon Request for H235, H337 and H330:  
Add Flats, Left-Hand, Radii, Coolant Holes, Whistle  
Notch, Firm Hold Shank, Additional PVD Coatings



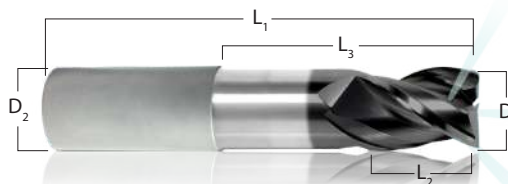
# H330

Radial Coolant Thru

**N** Material Code: Refer to Page 4



**Exxtral Carbon®**  
3-4 times more tool life compared to ZrN.



## 3 Flute High Performance - EdgeCut™ Extended Neck

D1 Diameter	D2 Shank	L2 LOC	L3 LBS	L1 OAL	Square	.030 RAD	.060 RAD	.125 RAD	Ball
3/8	3/8	1/2	1 1/8	3	H33006105	H33006125	H33006135	H33006155	H330061B5
3/8	3/8	1/2	2 1/8	4	H33006205	H33006225	H33006235	H33006255	H330062B5
1/2	1/2	5/8	1 3/8	3	H33008105	H33008125	H33008135	H33008155	H330081B5
1/2	1/2	5/8	2 1/8	4	H33008205	H33008225	H33008235	H33008255	H330082B5
1/2	1/2	5/8	3 3/8	6	H33008305	H33008325	H33008335	H33008355	H330083B5
5/8	5/8	3/4	1 5/8	4	H33010105	H33010125	H33010135	H33010155	H330101B5
5/8	5/8	3/4	2 3/8	5	H33010205	H33010225	H33010235	H33010255	H330102B5
5/8	5/8	3/4	3 3/8	6	H33010305	H33010325	H33010335	H33010355	H330103B5
3/4	3/4	1	2	4	H33012105	H33012125	H33012135	H33012155	H330121B5
3/4	3/4	1	2 1/2	5	H33012205	H33012225	H33012235	H33012255	H330122B5
3/4	3/4	1	3 3/8	6	H33012305	H33012325	H33012335	H33012355	H330123B5
1	1	1 1/4	2 5/8	5	H33016105	H33016125	H33016135	H33016155	H330161B5
1	1	1 1/4	3 3/8	6	H33016205	H33016225	H33016235	H33016255	H330162B5
1	1	1 1/4	4 3/8	7	H33016305	H33016325	H33016335	H33016355	H330163B5

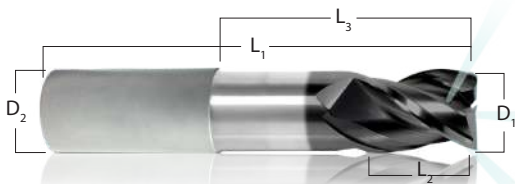
### Tool Tolerance

**Cutting Diameter:** +.000 / -.002    **Runout (T.I.R.):** .0005 max.  
**Shank Diameter:** h6    **Overall Length:** +/- .062  
**Corner Radius:** +/- .003    **Length of Cut:** +.062 / -.000

**NEW**

**EXTENDED LENGTHS**

PRECISION CUTTING TOOLS CAN CUSTOMIZE THE  
HPM TOOLS TO YOUR SET LENGTHS



**E[SPECIAL]LY**  
MADE FOR YOU

ALUMINUM AND NON-FERROUS ALLOYS  
ENDMILLS

4 FLUTE VARIABLE



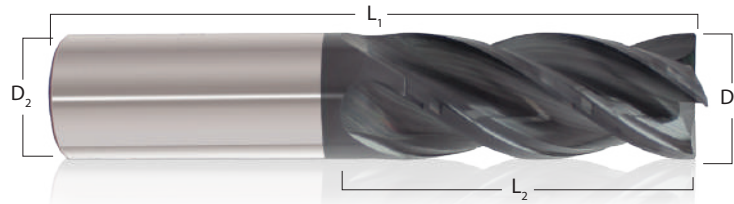
Variable design allows for chatter free machining at higher speed and feeds. Ideal for heavy profile and slotting applications

Available Upon Request – Add Flats, Left-Hand, Radii, Whistle Notch, Firm Hold Shank, Additional PVD Coatings

**P M K S** Material Code: Refer to Page 4

**CARBIDE**  
**4** Flutes  
 Variable

Varianta® Supral Provides a low coefficient of friction, reducing tool wear and resulting in a longer tool life. ideal for materials below 45Rc.

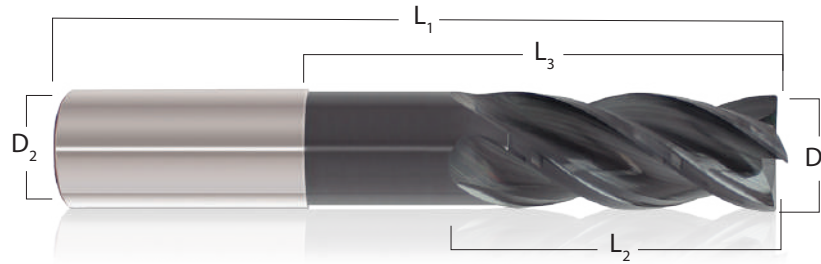


Fractional

D1 Diameter	D2 Shank	L2 LOC	L1 OAL	Square	.015 RAD	.030 RAD	.060 RAD	.090 RAD	.125 RAD	Ball
1/8	1/8	1/2	1 1/2	45102104	45102114	45102124				451021B4
3/16	3/16	5/8	2	45103104	45103114	45103124				451031B4
1/4	1/4	3/8	2	45104104	45104114	45104124	45104134			451041B4
1/4	1/4	3/4	2 1/2	45104204	45104214	45104224	45104234			451042B4
1/4	1/4	1	3	45104304	45104314	45104324	45104334			451043B4
1/4	1/4	1 1/4	4	45104404	45104414	45104424	45104434			451044B4
1/4	1/4	1 3/4	4	45104504	45104514	45104524	45104534			451045B4
5/16	5/16	1/2	2	45105104	45105114	45105124	45105134			451051B4
5/16	5/16	7/8	2 1/2	45105204	45105214	45105224	45105234			451052B4
5/16	5/16	1	3	45105304	45105314	45105324	45105334			451053B4
5/16	5/16	1 1/4	4	45105404	45105414	45105424	45105434			451054B4
5/16	5/16	1 5/8	4	45105504	45105514	45105524	45105534			451055B4
3/8	3/8	1/2	2	45106104	45106114	45106124	45106134			451061B4
3/8	3/8	1	2 1/2	45106204	45106214	45106224	45106234			451062B4
3/8	3/8	1	3	45106304	45106314	45106324	45106334			451063B4
3/8	3/8	1 1/2	4	45106404	45106414	45106424	45106434			451064B4
3/8	3/8	2 1/2	5	45106504	45106514	45106524	45106534			451065B4
7/16	7/16	5/8	2 3/4	45107104	45107114	45107124	45107134			451071B4
7/16	7/16	1	2 3/4	45107204	45107214	45107224	45107234			451072B4
7/16	7/16	1 1/2	4	45107304	45107314	45107324	45107334			451073B4
7/16	7/16	3	6	45107404	45107414	45107424	45107434			451074B4
1/2	1/2	5/8	2 1/2	45108104	45108114	45108124	45108134	45108144	45108154	451081B4
1/2	1/2	1	3	45108204	45108214	45108224	45108234	45108244	45108254	451082B4
1/2	1/2	1 1/4	3	45108304	45108314	45108324	45108334	45108344	45108354	451083B4
1/2	1/2	1 1/2	4	45108404	45108414	45108424	45108434	45108444	45108454	451084B4
1/2	1/2	2	4	45108504	45108514	45108524	45108534	45108544	45108554	451085B4
1/2	1/2	2 1/2	5	45108604	45108614	45108624	45108634	45108644	45108654	451086B4
1/2	1/2	3	6	45108704	45108714	45108724	45108734	45108744	45108754	451087B4
5/8	5/8	3/4	3	45110104	45110114	45110124	45110134	45110144	45110154	451101B4
5/8	5/8	1 1/4	3 1/2	45110204	45110214	45110224	45110234	45110244	45110254	451102B4
5/8	5/8	1 3/4	4	45110304	45110314	45110324	45110334	45110344	45110354	451103B4
5/8	5/8	2 1/4	5	45110404	45110414	45110424	45110434	45110444	45110454	451104B4
5/8	5/8	3	6	45110504	45110514	45110524	45110534	45110544	45110554	451105B4
3/4	3/4	7/8	3	45112104	45112114	45112124	45112134	45112144	45112154	451121B4
3/4	3/4	1 1/2	4	45112204	45112214	45112224	45112234	45112244	45112254	451122B4
3/4	3/4	1 5/8	4	45112304	45112314	45112324	45112334	45112344	45112354	451123B4
3/4	3/4	2 1/4	5	45112404	45112414	45112424	45112434	45112444	45112454	451124B4
3/4	3/4	3	6	45112504	45112514	45112524	45112534	45112544	45112554	451125B4
3/4	3/4	4	7	45112604	45112614	45112624	45112634	45112644	45112654	451126B4
1	1	1 1/2	4	45116104	45116114	45116124	45116134	45116144	45116154	451161B4
1	1	2	4 1/2	45116204	45116214	45116224	45116234	45116244	45116254	451162B4
1	1	2 1/4	5	45116304	45116314	45116324	45116334	45116344	45116354	451163B4
1	1	3	6	45116404	45116414	45116424	45116434	45116444	45116454	451164B4
1	1	4	7	45116504	45116514	45116524	45116534	45116544	45116554	451165B4

\*\*Other Dimensions are Available Upon Request\*\*





Extended Reach provides a more stable and stronger option for deep pocketing applications.

## Extended Neck

D1 Diameter	D2 Shank	L2 LOC	L3 LBS	L1 OAL	Square	.015 RAD	.030 RAD	.060 RAD	.090 RAD	.125 RAD	Ball
1/4	1/4	1/2	1 1/4	3	N45104104	N45104114	N45104124	N45104134			N451041B4
1/4	1/4	1/2	2 1/8	4	N45104204	N45104214	N45104224	N45104234			N451042B4
3/8	3/8	3/4	1 1/4	3	N45106104	N45106114	N45106124	N45106134			N451061B4
3/8	3/8	3/4	2 1/8	4	N45106204	N45106214	N45106224	N45106234			N451062B4
1/2	1/2	7/8	1 3/8	3	N45108104	N45108114	N45108124	N45108134	N45108144	N45108154	N451081B4
1/2	1/2	7/8	2 1/8	4	N45108204	N45108214	N45108224	N45108234	N45108244	N45108254	N451082B4
1/2	1/2	7/8	3 1/8	5	N45108A04	N45108A14	N45108A24	N45108A34	N45108A44	N45108A54	N45108AB4
1/2	1/2	7/8	4 1/8	6	N45108304	N45108314	N45108324	N45108334	N45108344	N45108354	N451083B4
5/8	5/8	1	2	4	N45110104	N45110114	N45110124	N45110134	N45110144	N45110154	N451101B4
5/8	5/8	1	3	5	N45110204	N45110214	N45110224	N45110234	N45110244	N45110254	N451102B4
5/8	5/8	1	4	6	N45110304	N45110314	N45110324	N45110334	N45110344	N45110354	N451103B4
3/4	3/4	1 1/4	2	4	N45112104	N45112114	N45112124	N45112134	N45112144	N45112154	N451121B4
3/4	3/4	1 1/4	3	5	N45112204	N45112214	N45112224	N45112234	N45112244	N45112254	N451122B4
3/4	3/4	1 1/4	4	6	N45112304	N45112314	N45112324	N45112334	N45112344	N45112354	N451123B4
1	1	1 1/2	3	5	N45116104	N45116114	N45116124	N45116134	N45116144	N45116154	N451161B4
1	1	1 1/2	4	6	N45116204	N45116214	N45116224	N45116234	N45116244	N45116254	N451162B4
1	1	1 1/2	5	7	N45116304	N45116314	N45116324	N45116334	N45116344	N45116354	N451163B4

### Tool Tolerance

**Cutting Diameter:** +.000 / -.002      **Runout (T.I.R.):** .0005 max.  
**Shank Diameter:** h6                      **Overall Length:** +/- .062  
**Corner Radius:** +/- .003                **Length of Cut:** +.062 / -.000

**NEW**  
**EXTENDED LENGTHS**

# 4 FLUTE VARIABLE

## 452 SERIES

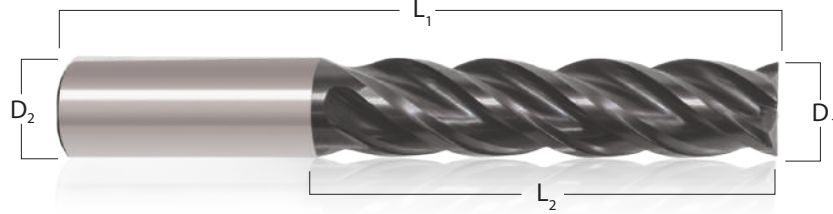
Variable indexed with eccentric OD; provides a tougher cutting edge for chatter free machining and maximum metal removal rates

Available Upon Request – Add Flats, Left-Hand, Radii, Whistle Notch, Firm Hold Shank, Additional PVD Coatings

**P M K S** Material Code: Refer to Page 4



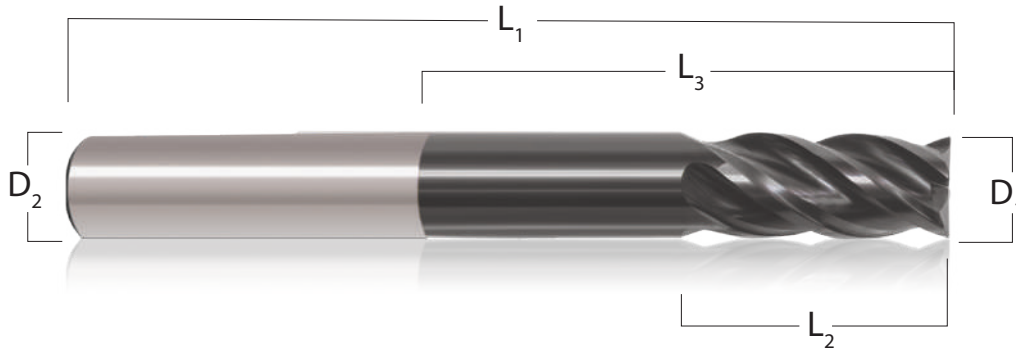
**Varianta® Supral** Provides a low coefficient of friction, reducing tool wear and resulting in a longer tool life.



### Fractional

D1 Diameter	D2 Shank	L2 LOC	L1 OAL	Square	.015 RAD	.030 RAD	.060 RAD	.090 RAD	.125 RAD	Ball
1/8	1/8	1/2	1 1/2	45202104	45202114	45202124				452021B4
3/16	3/16	5/8	2	45203104	45203114	45203124				452031B4
1/4	1/4	3/8	2	45204104	45204114	45204124	45204134			452041B4
1/4	1/4	3/4	2 1/2	45204204	45204214	45204224	45204234			452042B4
1/4	1/4	1	3	45204304	45204314	45204324	45204334			452043B4
1/4	1/4	1 1/4	4	45204404	45204414	45204424	45204434			452044B4
1/4	1/4	1 3/4	4	45204504	45204514	45204524	45204534			452045B4
5/16	5/16	1/2	2	45205104	45205114	45205124	45205134			452051B4
5/16	5/16	7/8	2 1/2	45205204	45205214	45205224	45205234			452052B4
5/16	5/16	1	3	45205304	45205314	45205324	45205334			452053B4
5/16	5/16	1 1/4	4	45205404	45205414	45205424	45205434			452054B4
5/16	5/16	1 5/8	4	45205504	45205514	45205524	45205534			452055B4
3/8	3/8	1/2	2	45206104	45206114	45206124	45206134			452061B4
3/8	3/8	1	2 1/2	45206204	45206214	45206224	45206234			452062B4
3/8	3/8	1	3	45206304	45206314	45206324	45206334			452063B4
3/8	3/8	1 1/2	4	45206404	45206414	45206424	45206434			452064B4
3/8	3/8	2 1/2	5	45206504	45206514	45206524	45206534			452065B4
7/16	7/16	5/8	2 3/4	45207104	45207114	45207124	45207134			452071B4
7/16	7/16	1	2 3/4	45207204	45207214	45207224	45207234			452072B4
7/16	7/16	1 1/2	4	45207304	45207314	45207324	45207334			452073B4
7/16	7/16	3	6	45207404	45207414	45207424	45207434			452074B4
1/2	1/2	5/8	2 1/2	45208104	45208114	45208124	45208134	45208144	45208154	452081B4
1/2	1/2	1	3	45208204	45208214	45208224	45208234	45208244	45208254	452082B4
1/2	1/2	1 1/4	3	45208304	45208314	45208324	45208334	45208344	45208354	452083B4
1/2	1/2	1 1/2	4	45208404	45208414	45208424	45208434	45208444	45208454	452084B4
1/2	1/2	2	4	45208504	45208514	45208524	45208534	45208544	45208554	452085B4
1/2	1/2	2 1/2	5	45208604	45208614	45208624	45208634	45208644	45208654	452086B4
1/2	1/2	3	6	45208704	45208714	45208724	45208734	45208744	45208754	452087B4
5/8	5/8	3/4	3	45210104	45210114	45210124	45210134	45210144	45210154	452101B4
5/8	5/8	1 1/4	3 1/2	45210204	45210214	45210224	45210234	45210244	45210254	452102B4
5/8	5/8	1 3/4	4	45210304	45210314	45210324	45210334	45210344	45210354	452103B4
5/8	5/8	2 1/4	5	45210404	45210414	45210424	45210434	45210444	45210454	452104B4
5/8	5/8	3	6	45210504	45210514	45210524	45210534	45210544	45210554	452105B4
3/4	3/4	7/8	3	45212104	45212114	45212124	45212134	45212144	45212154	452121B4
3/4	3/4	1 1/2	4	45212204	45212214	45212224	45212234	45212244	45212254	452122B4
3/4	3/4	1 5/8	4	45212304	45212314	45212324	45212334	45212344	45212354	452123B4
3/4	3/4	2 1/4	5	45212404	45212414	45212424	45212434	45212444	45212454	452124B4
3/4	3/4	3	6	45212504	45212514	45212524	45212534	45212544	45212554	452125B4
3/4	3/4	4	7	45212604	45212614	45212624	45212634	45212644	45212654	452126B4
1	1	1 1/2	4	45216104	45216114	45216124	45216134	45216144	45216154	452161B4
1	1	2	4 1/2	45216204	45216214	45216224	45216234	45216244	45216254	452162B4
1	1	2 1/4	5	45216304	45216314	45216324	45216334	45216344	45216354	452163B4
1	1	3	6	45216404	45216414	45216424	45216434	45216444	45216454	452164B4
1	1	4	7	45216504	45216514	45216524	45216534	45216544	45216554	452165B4

\*\*Other Dimensions are Available Upon Request\*\*



Extended Reach provides a more stable and stronger option for deep pocketing applications.

## Extended Neck

D1 Diameter	D2 Shank	L2 LOC	L3 LBS	L1 OAL	Square	.015 RAD	.030 RAD	.060 RAD	.090 RAD	.125 RAD	Ball
1/4	1/4	1/2	1 1/4	3	N45204104	N45204114	N45204124	N45204134			N452041B4
1/4	1/4	1/2	2 1/8	4	N45204204	N45204214	N45204224	N45204234			N452042B4
3/8	3/8	3/4	1 1/4	3	N45206104	N45206114	N45206124	N45206134			N452061B4
3/8	3/8	3/4	2 1/8	4	N45206204	N45206214	N45206224	N45206234			N452062B4
1/2	1/2	7/8	1 3/8	3	N45208104	N45208114	N45208124	N45208134	N45208144	N45208154	N452081B4
1/2	1/2	7/8	2 1/8	4	N45208204	N45208214	N45208224	N45208234	N45208244	N45208254	N452082B4
1/2	1/2	7/8	3 1/8	5	N45208A04	N45208A14	N45208A24	N45208A34	N45208A44	N45208A54	N45208AB4
1/2	1/2	7/8	4 1/8	6	N45208304	N45208314	N45208324	N45208334	N45208344	N45208354	N452083B4
5/8	5/8	1	2	4	N45210104	N45210114	N45210124	N45210134	N45210144	N45210154	N452101B4
5/8	5/8	1	3	5	N45210204	N45210214	N45210224	N45210234	N45210244	N45210254	N452102B4
5/8	5/8	1	4	6	N45210304	N45210314	N45210324	N45210334	N45210344	N45210354	N452103B4
3/4	3/4	1 1/4	2	4	N45212104	N45212114	N45212124	N45212134	N45212144	N45212154	N452121B4
3/4	3/4	1 1/4	3	5	N45212204	N45212214	N45212224	N45212234	N45212244	N45212254	N452122B4
3/4	3/4	1 1/4	4	6	N45212304	N45212314	N45212324	N45212334	N45212344	N45212354	N452123B4
1	1	1 1/2	3	5	N45216104	N45216114	N45216124	N45216134	N45216144	N45216154	N452161B4
1	1	1 1/2	4	6	N45216204	N45216214	N45216224	N45216234	N45216244	N45216254	N452162B4
1	1	1 1/2	5	7	N45216304	N45216314	N45216324	N45216334	N45216344	N45216354	N452163B4

### Tool Tolerance

**Cutting Diameter:** +.000 / -.002

**Shank Diameter:** h6

**Corner Radius:** +/- .003

**Runout (T.I.R.):** .0005 max.

**Overall Length:** +/- .062

**Length of Cut:** +.062 / -.000

**NEW**

**EXTENDED LENGTHS**

# 4 FLUTE GENERAL PURPOSE

# 406 SERIES

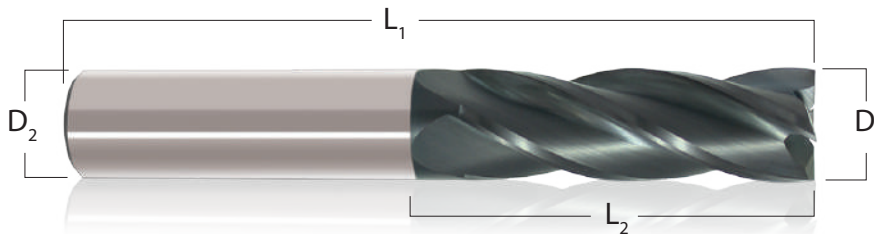
Versatile in general applications

Available Upon Request: Add Flats, Left-Hand, EdgeCut, Radii, Whistle Notch, Firm Hold Shank, Additional PVD Coatings

**P M K N S H** Material Code: Refer to Page 4



**Varianta® Supral**  
Provides a low coefficient of friction, reducing tool wear and resulting in a longer tool life.



**DISCONTINUED**  
available while supplies last

## Fractional

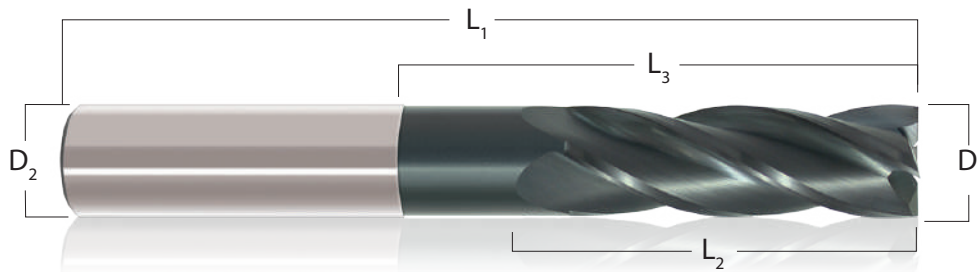
D1 Diameter	D2 Shank	L2 LOC	L1 OAL	Square	Ball
1/8	1/8	1/2	1 1/2	40602104	406021B4
1/8	1/8	3/4	2 1/2	40602204	406022B4
1/8	1/8	1	3	40602304	406023B4
3/16	3/16	5/8	2	40603104	406031B4
3/16	3/16	3/4	2 1/2	40603204	406032B4
3/16	3/16	1 1/8	3	40603304	406033B4
3/16	3/16	1	4	40603404	406034B4
1/4	1/4	1/2	2	40604104	406041B4
1/4	1/4	3/4	2 1/2	40604204	406042B4
1/4	1/4	1	3	40604304	406043B4
1/4	1/4	1	4	40604404	406044B4
1/4	1/4	1 1/8	3	40604504	406045B4
1/4	1/4	1 1/2	4	40604604	406046B4
1/4	1/4	1 1/2	6	40604704	406047B4
5/16	5/16	1/2	2	40605104	406051B4
5/16	5/16	7/8	2 1/2	40605204	406052B4
5/16	5/16	1	3	40605304	406053B4
5/16	5/16	1	4	40605404	406054B4
5/16	5/16	1 5/8	4	40605504	406055B4
5/16	5/16	1 1/2	6	40605604	406056B4
3/8	3/8	1/2	2	40606104	406061B4
3/8	3/8	1	2 1/2	40606204	406062B4
3/8	3/8	1	3	40606304	406063B4
3/8	3/8	1	4	40606404	406064B4
3/8	3/8	2	4	40606504	406065B4
3/8	3/8	1 1/8	3	40606604	406066B4
3/8	3/8	1 1/2	6	40606704	406067B4
3/8	3/8	1 3/4	4	40606804	406068B4
3/8	3/8	3	6	40606904	406069B4
7/16	7/16	5/8	2 3/4	40607104	406071B4
7/16	7/16	1	2 3/4	40607204	406072B4
7/16	7/16	1 1/2	4	40607304	406073B4
7/16	7/16	1 1/2	6	40607404	406074B4
1/2	1/2	5/8	2 1/2	40608104	406081B4
1/2	1/2	1	3	40608204	406082B4
1/2	1/2	1	4	40608304	406083B4
1/2	1/2	1 1/2	4	40608404	406084B4
1/2	1/2	2	4	40608504	406085B4
1/2	1/2	1 1/2	6	40608604	406086B4
5/8	5/8	3/4	3	40610104	406101B4
5/8	5/8	1 1/4	3 1/2	40610204	406102B4
5/8	5/8	2 1/4	5	40610304	406103B4
5/8	5/8	2	6	40610404	406104B4
5/8	5/8	3	6	40610504	406105B4
3/4	3/4	1	3	40612104	406121B4
3/4	3/4	1 1/2	4	40612204	406122B4
3/4	3/4	2	6	40612304	406123B4
3/4	3/4	2 1/4	5	40612404	406124B4
3/4	3/4	3	6	40612504	406125B4
3/4	3/4	4	7	40612604	406126B4
7/8	7/8	1 1/2	4	40614104	406141B4
1	1	1	3	40616104	406161B4
1	1	1 1/2	4	40616204	406162B4
1	1	2	6	40616304	406163B4
1	1	2 1/4	5	40616404	406164B4
1	1	3	6	40616504	406165B4
1	1	4	7	40616604	406166B4
1 1/4	1 1/4	2	4 1/2	40620104	406201B4
1 1/4	1 1/4	3	6	40620204	406202B4

\*\*Other Dimensions are Available Upon Request\*\*

ENDMILLS FERROUS AND EXOTIC ALLOYS

**DISCONTINUED**

available while supplies last



Extended Reach provides a more stable and stronger option for deep pocketing applications.

### Extended Neck

D1 Diameter	D2 Shank	L2 LOC	L3 LBS	L1 OAL	Square	Ball
1/4	1/4	1/2	1 1/4	3	N40604104	N406041B4
1/4	1/4	1/2	2 1/8	4	N40604204	N406042B4
3/8	3/8	3/4	1 1/4	3	N40606104	N406061B4
3/8	3/8	3/4	2 1/8	4	N40606204	N406062B4
1/2	1/2	7/8	1 3/8	3	N40608104	N406081B4
1/2	1/2	7/8	2 1/8	4	N40608204	N406082B4
1/2	1/2	7/8	3 1/8	5	N40608A04	N40608AB4
1/2	1/2	7/8	4 1/8	6	N40608304	N406083B4
5/8	5/8	1	2	4	N40610104	N406101B4
5/8	5/8	1	3	5	N40610204	N406102B4
5/8	5/8	1	4	6	N40610304	N406103B4
3/4	3/4	1 1/4	2	4	N40612104	N406121B4
3/4	3/4	1 1/4	3	5	N40612204	N406122B4
3/4	3/4	1 1/4	4	6	N40612304	N406123B4
1	1	1 1/2	3	5	N40616104	N406161B4
1	1	1 1/2	4	6	N40616204	N406162B4
1	1	1 1/2	5	7	N40616304	N406163B4

#### Tool Tolerance

**Cutting Diameter:** +.000 / -.002    **Runout (T.I.R.):** .0005 max.  
**Shank Diameter:** h6    **Overall Length:** +/- .062  
**Corner Radius:** +/- .003    **Length of Cut:** +.062 / -.000

**NEW**  
**EXTENDED LENGTHS**

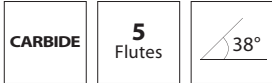
# 5 FLUTE VARIABLE



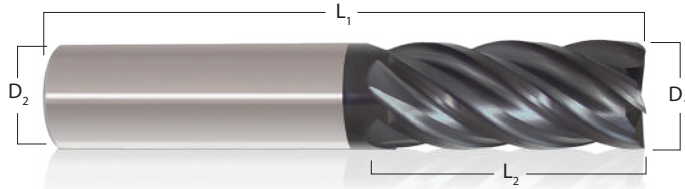
**Variable indexed and special core design; provides chatter free machining along with maximum metal removal rates**

**Available Upon Request:** Add Flats, Left-Hand, Radii, Coolant Holes, Whistle Notch, Firm Hold Shank, Additional PVD Coatings

**P M K S H Material Code:** Refer to Page 4



**Varianta® Supral** Provides a low coefficient of friction, reducing tool wear and resulting in a longer tool life.

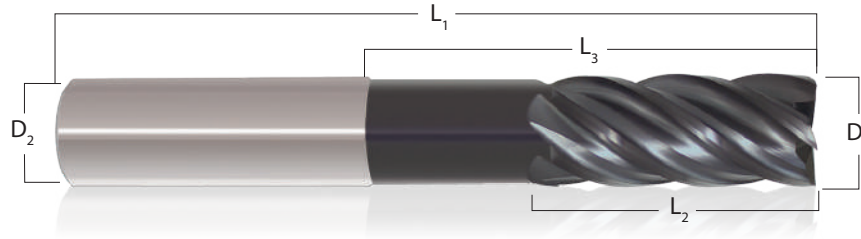


## Fractional

D1 Diameter	D2 Shank	L2 LOC	L1 OAL	Square	.015 RAD	.030 RAD	.060 RAD	.090 RAD	.125 RAD	Ball
1/4	1/4	1/2	2	53804104	53804114	53804124				538041B4
1/4	1/4	3/4	2 1/2	53804204	53804214	53804224				538042B4
1/4	1/4	1	3	53804304	53804314	53804324				538043B4
1/4	1/4	2	4	53804404	53804414	53804424				538044B4
5/16	5/16	1/2	2	53805104	53805114	53805124				538051B4
5/16	5/16	7/8	2 1/2	53805204	53805214	53805224				538052B4
5/16	5/16	1	3	53805304	53805314	53805324				538053B4
5/16	5/16	1 1/4	4	53805404	53805414	53805424				538054B4
3/8	3/8	1/2	2	53806104	53806114	53806124	53806134			538061B4
3/8	3/8	1	2 1/2	53806204	53806214	53806224	53806234			538062B4
3/8	3/8	1	3	53806304	53806314	53806324	53806334			538063B4
3/8	3/8	1 1/2	4	53806404	53806414	53806424	53806434			538064B4
7/16	7/16	1	2 3/4	53807104	53807114	53807124	53807134			538071B4
7/16	7/16	2	4	53807204	53807214	53807224	53807234			538072B4
1/2	1/2	5/8	2 1/2	53808104	53808114	53808124	53808134	53808144	53808154	538081B4
1/2	1/2	1 1/4	3	53808204	53808214	53808224	53808234	53808244	53808254	538082B4
1/2	1/2	2	4	53808304	53808314	53808324	53808334	53808344	53808354	538083B4
1/2	1/2	2 1/2	5	53808404	53808414	53808424	53808434	53808444	53808454	538084B4
1/2	1/2	3 1/8	6	53808504	53808514	53808524	53808534	53808544	53808554	538085B4
5/8	5/8	3/4	3	53810104	53810114	53810124	53810134	53810144	53810154	538101B4
5/8	5/8	1 5/8	3 1/2	53810204	53810214	53810224	53810234	53810244	53810254	538102B4
5/8	5/8	2 1/2	5	53810304	53810314	53810324	53810334	53810344	53810354	538103B4
5/8	5/8	3	6	53810404	53810414	53810424	53810434	53810444	53810454	538104B4
3/4	3/4	1	3	53812104	53812114	53812124	53812134	53812144	53812154	538121B4
3/4	3/4	1 5/8	4	53812204	53812214	53812224	53812234	53812244	53812254	538122B4
3/4	3/4	2 1/4	5	53812304	53812314	53812324	53812334	53812344	53812354	538123B4
3/4	3/4	3 1/4	6	53812404	53812414	53812424	53812434	53812444	53812454	538124B4
3/4	3/4	4	7	53812504	53812514	53812524	53812534	53812544	53812554	538125B4
1	1	1 1/2	4	53816104	53816114	53816124	53816134	53816144	53816154	538161B4
1	1	2	4 1/2	53816204	53816214	53816224	53816234	53816244	53816254	538162B4
1	1	2 1/4	5	53816304	53816314	53816324	53816334	53816344	53816354	538163B4
1	1	2 5/8	6	53816404	53816414	53816424	53816434	53816444	53816454	538164B4
1	1	3 1/4	6	53816504	53816514	53816524	53816534	53816544	53816554	538165B4
1	1	4 1/8	7	53816604	53816614	53816624	53816634	53816644	53816654	538166B4
1 1/4	1 1/4	2	4 1/2	53820104	53820114	53820124	53820134	53820144	53820154	538201B4
1 1/4	1 1/4	3	6	53820204	53820214	53820224	53820234	53820244	53820254	538202B4

\*\*Other Dimensions & Radii are Available Upon Request\*\*

ENDMILLS FERROUS AND EXOTIC ALLOYS



Extended Reach provides a more stable and stronger option for deep pocketing applications.

## Extended Neck

D1 Diameter	D2 Shank	L2 LOC	L3 LBS	L1 OAL	Square	.015 RAD	.030 RAD	.060 RAD	.090 RAD	.125 RAD	Ball
1/4	1/4	1/2	1 1/4	3	N53804104	N53804114	N53804124	N53804134			N538041B4
1/4	1/4	1/2	2 1/8	4	N53804204	N53804214	N53804224	N53804234			N538042B4
3/8	3/8	3/4	1 1/4	3	N53806104	N53806114	N53806124	N53806134			N538061B4
3/8	3/8	3/4	2 1/8	4	N53806204	N53806214	N53806224	N53806234			N538062B4
1/2	1/2	7/8	1 3/8	3	N53808104	N53808114	N53808124	N53808134	N53808144	N53808154	N538081B4
1/2	1/2	7/8	2 1/8	4	N53808204	N53808214	N53808224	N53808234	N53808244	N53808254	N538082B4
1/2	1/2	7/8	3 1/8	5	N53808A04	N53808A14	N53808A24	N53808A34	N53808A44	N53808A54	N53808AB4
1/2	1/2	7/8	4 1/8	6	N53808304	N53808314	N53808324	N53808334	N53808344	N53808354	N538083B4
5/8	5/8	1	2	4	N53810104	N53810114	N53810124	N53810134	N53810144	N53810154	N538101B4
5/8	5/8	1	3	5	N53810204	N53810214	N53810224	N53810234	N53810244	N53810254	N538102B4
5/8	5/8	1	4	6	N53810304	N53810314	N53810324	N53810334	N53810344	N53810354	N538103B4
3/4	3/4	1 1/4	2	4	N53812104	N53812114	N53812124	N53812134	N53812144	N53812154	N538121B4
3/4	3/4	1 1/4	3	5	N53812204	N53812214	N53812224	N53812234	N53812244	N53812254	N538122B4
3/4	3/4	1 1/4	4	6	N53812304	N53812314	N53812324	N53812334	N53812344	N53812354	N538123B4
1	1	1 1/2	3	5	N53816104	N53816114	N53816124	N53816134	N53816144	N53816154	N538161B4
1	1	1 1/2	4	6	N53816204	N53816214	N53816224	N53816234	N53816244	N53816254	N538162B4
1	1	1 1/2	5	7	N53816304	N53816314	N53816324	N53816334	N53816344	N53816354	N538163B4

### Tool Tolerance

**Cutting Diameter:** +.000 / -.002    **Runout (T.I.R.):** .0005 max.  
**Shank Diameter:** h6    **Overall Length:** +/- .062  
**Corner Radius:** +/- .003    **Length of Cut:** +.062 / -.000

**NEW**  
**EXTENDED LENGTHS**

# 5 FLUTE VARIABLE



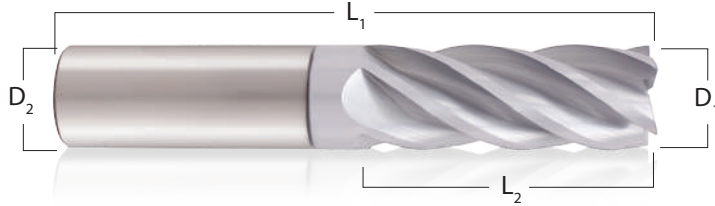
**Variable indexed with eccentric OD; provides a tougher cutting edge for chatter free machining and maximum metal removal rates**

**Available Upon Request:** Add Flats, Left-Hand, Radii, Coolant Holes, Whistle Notch, Firm Hold Shank, Additional PVD Coatings

**PMKS Material Code:** Refer to Page 4



**Exxtral Silver®** Exxtral Silver® is ideal for machining abrasive and gummy materials.

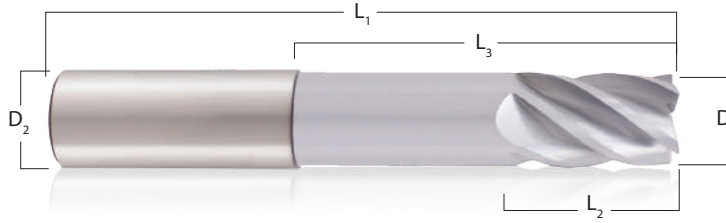


## Fractional

D1 Diameter	D2 Shank	L2 LOC	L1 OAL	Square	.015 RAD	.030 RAD	.060 RAD	.090 RAD	.125 RAD	.188 RAD	.250 RAD	Ball
1/4	1/4	1/2	2	55804108	55804118	55804128	55804138					55804188
1/4	1/4	3/4	2 1/2	55804208	55804218	55804228	55804238					55804288
1/4	1/4	1	3	55804308	55804318	55804328	55804338					55804388
1/4	1/4	1 1/2	4	55804408	55804418	55804428	55804438					55804488
1/4	1/4	2	4	55804508	55804518	55804528	55804538					55804588
5/16	5/16	1/2	2	55805108	55805118	55805128	55805138					55805188
5/16	5/16	7/8	2 1/2	55805208	55805218	55805228	55805238					55805288
5/16	5/16	1 1/4	3	55805308	55805318	55805328	55805338					55805388
5/16	5/16	1 5/8	4	55805408	55805418	55805428	55805438					55805488
5/16	5/16	2 1/8	4	55805508	55805518	55805528	55805538					55805588
3/8	3/8	1/2	2	55806108	55806118	55806128	55806138	55806148	55806158			55806188
3/8	3/8	1	2 1/2	55806208	55806218	55806228	55806238	55806248	55806258			55806288
3/8	3/8	1	3	55806308	55806318	55806328	55806338	55806348	55806358			55806388
3/8	3/8	1 1/2	4	55806408	55806418	55806428	55806438	55806448	55806458			55806488
3/8	3/8	2	4	55806508	55806518	55806528	55806538	55806548	55806558			55806588
3/8	3/8	2 1/2	6	55806608	55806618	55806628	55806638	55806648	55806658			55806688
7/16	7/16	1	2 3/4	55807308	55807318	55807328	55807338	55807348	55807358			55807388
7/16	7/16	2	4	55807408	55807418	55807428	55807438	55807448	55807458			55807488
1/2	1/2	5/8	2 1/2	55808108	55808118	55808128	55808138	55808148	55808158			55808188
1/2	1/2	1 1/4	3	55808208	55808218	55808228	55808238	55808248	55808258			55808288
1/2	1/2	1 5/8	4	55808A08	55808A18	55808A28	55808A38	55808A48	55808A58			55808A88
1/2	1/2	2	4	55808308	55808318	55808328	55808338	55808348	55808358			55808388
1/2	1/2	2 1/2	5	55808408	55808418	55808428	55808438	55808448	55808458			55808488
1/2	1/2	3 1/8	6	55808508	55808518	55808528	55808538	55808548	55808558			55808588
5/8	5/8	3/4	3	55810108	55810118	55810128	55810138	55810148	55810158			55810188
5/8	5/8	1 5/8	3 1/2	55810208	55810218	55810228	55810238	55810248	55810258			55810288
5/8	5/8	2 1/8	4	55810A08	55810A18	55810A28	55810A38	55810A48	55810A58			55810A88
5/8	5/8	2 1/2	5	55810308	55810318	55810328	55810338	55810348	55810358			55810388
5/8	5/8	3	6	55810408	55810418	55810428	55810438	55810448	55810458			55810488
3/4	3/4	1	3	55812108	55812118	55812128	55812138	55812148	55812158	55812168	55812178	55812188
3/4	3/4	1 5/8	4	55812208	55812218	55812228	55812238	55812248	55812258	55812268	55812278	55812288
3/4	3/4	2 1/4	5	55812308	55812318	55812328	55812338	55812348	55812358	55812368	55812378	55812388
3/4	3/4	3 1/4	6	55812408	55812418	55812428	55812438	55812448	55812458	55812468	55812478	55812488
3/4	3/4	4 1/8	7	55812508	55812518	55812528	55812538	55812548	55812558	55812568	55812578	55812588
1	1	1 1/2	4	55816108	55816118	55816128	55816138	55816148	55816158	55816168	55816178	55816188
1	1	2	4 1/2	55816208	55816218	55816228	55816238	55816248	55816258	55816268	55816278	55816288
1	1	2 1/4	5	55816308	55816318	55816328	55816338	55816348	55816358	55816368	55816378	55816388
1	1	2 5/8	6	55816408	55816418	55816428	55816438	55816448	55816458	55816468	55816478	55816488
1	1	3 1/4	6	55816508	55816518	55816528	55816538	55816548	55816558	55816568	55816578	55816588
1	1	4 1/8	7	55816608	55816618	55816628	55816638	55816648	55816658	55816668	55816678	55816688
1 1/4	1 1/4	2	4 1/2	55820108	55820118	55820128	55820138	55820148	55820158	55820168	55820178	55820188
1 1/4	1 1/4	3	6	55820208	55820218	55820228	55820238	55820248	55820258	55820268	55820278	55820288

\*\*Other Dimensions & Radii are Available Upon Request\*\*





Extended Reach provides a more stable and stronger option for deep pocketing applications.

### Extended Neck

D1 Diameter	D2 Shank	L2 LOC	L3 LBS	L1 OAL	Square	.015 RAD	.030 RAD	.060 RAD	.090 RAD	.125 RAD	.188 RAD	.250 RAD	Ball
1/4	1/4	1/2	1 1/4	3	N55804108	N55804118	N55804128	N55804138					N558041B8
1/4	1/4	1/2	2 1/8	4	N55804208	N55804218	N55804228	N55804238					N558042B8
1/4	1/4	1/2	3 1/8	5	N55804308	N55804318	N55804328	N55804338					N558043B8
1/4	1/4	1/2	4 1/8	6	N55804408	N55804418	N55804428	N55804438					N558044B8
5/16	5/16	9/16	2 1/8	4	N55805108	N55805118	N55805128	N55805138					N558051B8
5/16	5/16	9/16	4 1/8	6	N55805208	N55805218	N55805228	N55805238					N558052B8
3/8	3/8	3/4	1 1/4	3	N55806108	N55806118	N55806128	N55806138					N558061B8
3/8	3/8	3/4	2 1/8	4	N55806208	N55806218	N55806228	N55806238					N558062B8
3/8	3/8	3/4	3 1/8	5	N55806308	N55806318	N55806328	N55806338					N558063B8
3/8	3/8	3/4	4 1/8	6	N55806408	N55806418	N55806428	N55806438					N558064B8
1/2	1/2	7/8	1 3/8	3	N55808108	N55808118	N55808128	N55808138	N55808148	N55808158			N558081B8
1/2	1/2	7/8	2 1/8	4	N55808208	N55808218	N55808228	N55808238	N55808248	N55808258			N558082B8
1/2	1/2	7/8	3 1/8	5	N55808A08	N55808A18	N55808A28	N55808A38	N55808A48	N55808A58			N55808AB8
1/2	1/2	7/8	4 1/8	6	N55808308	N55808318	N55808328	N55808338	N55808348	N55808358			N558083B8
1/2	1/2	7/8	5 1/8	7	N55808408	N55808418	N55808428	N55808438	N55808448	N55808458			N558084B8
1/2	1/2	7/8	6 1/8	8	N55808508	N55808518	N55808528	N55808538	N55808548	N55808558			N558085B8
5/8	5/8	1	2	4	N55810108	N55810118	N55810128	N55810138	N55810148	N55810158			N558101B8
5/8	5/8	1	3	5	N55810208	N55810218	N55810228	N55810238	N55810248	N55810258			N558102B8
5/8	5/8	1	4	6	N55810308	N55810318	N55810328	N55810338	N55810348	N55810358			N558103B8
5/8	5/8	1	6	8	N55810408	N55810418	N55810428	N55810438	N55810448	N55810458			N558104B8
3/4	3/4	1 1/4	2	4	N55812108	N55812118	N55812128	N55812138	N55812148	N55812158	N55812168	N55812178	N558121B8
3/4	3/4	1 1/4	3	5	N55812208	N55812218	N55812228	N55812238	N55812248	N55812258	N55812268	N55812278	N558122B8
3/4	3/4	1 1/4	4	6	N55812308	N55812318	N55812328	N55812338	N55812348	N55812358	N55812368	N55812378	N558123B8
3/4	3/4	1 1/4	5	7	N55812408	N55812418	N55812428	N55812438	N55812448	N55812458	N55812468	N55812478	N558124B8
3/4	3/4	1 1/4	6	8	N55812508	N55812518	N55812528	N55812538	N55812548	N55812558	N55812568	N55812578	N558125B8
1	1	1 1/4	2	4	N55816008	N55816018	N55816028	N55816038	N55816048	N55816058	N55816068	N55816078	N558160B8
1	1	1 1/2	3	5	N55816108	N55816118	N55816128	N55816138	N55816148	N55816158	N55816168	N55816178	N558161B8
1	1	1 1/2	4	6	N55816208	N55816218	N55816228	N55816238	N55816248	N55816258	N55816268	N55816278	N558162B8
1	1	1 1/2	5	7	N55816308	N55816318	N55816328	N55816338	N55816348	N55816358	N55816368	N55816378	N558163B8
1	1	1 1/2	6	8	N55816408	N55816418	N55816428	N55816438	N55816448	N55816458	N55816468	N55816478	N558164B8

#### Tool Tolerance

**Cutting Diameter:** +.000 / -.002    **Runout (T.I.R.):** .0005 max.  
**Shank Diameter:** h6    **Overall Length:** +/- .062  
**Corner Radius:** +/- .003    **Length of Cut:** +.062 / -.000

**NEW**  
**EXTENDED LENGTHS**

FERROUS AND EXOTIC ALLOYS ENDMILLS

# 5, 7 FLUTE HIGH PERFORMANCE

# 545 SERIES

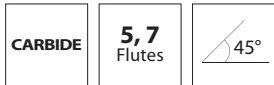
**Versatile in peripheral light finishing cuts**

**Available Upon Request:** Add Flats, Left-Hand, EdgeCut, Radii, Whistle Notch, Firm Hold Shank, Additional PVD Coatings

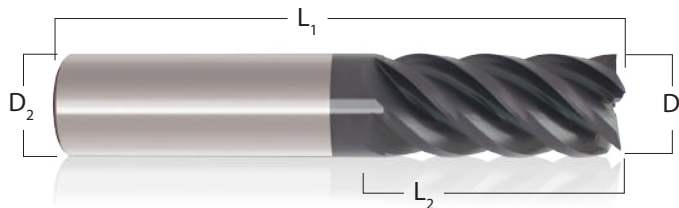
**DISCONTINUED**

available while supplies last

**P M K H** Material Code: Refer to Page 4



Varianta<sup>®</sup> Supral Provides a low coefficient of friction, reducing tool wear and resulting in a longer tool life.



## Fractional

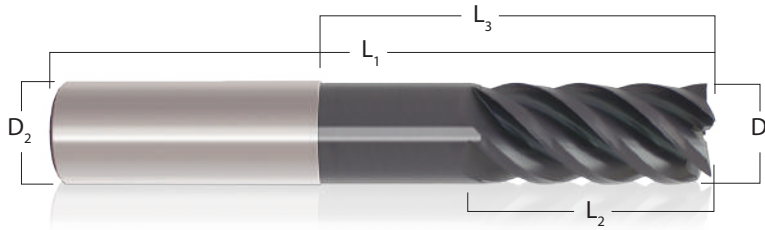
D1 Diameter	D2 Shank	L2 LOC	L1 OAL	Flute	Square	Ball
1/4	1/4	1/2	2	5	54504104	545041B4
1/4	1/4	3/4	2 1/2	5	54504204	545042B4
1/4	1/4	1	3	5	54504304	545043B4
1/4	1/4	1 1/4	4	5	54504404	545044B4
5/16	5/16	1/2	2	5	54505104	545051B4
5/16	5/16	7/8	2 1/2	5	54505204	545052B4
5/16	5/16	1	3	5	54505304	545053B4
5/16	5/16	1 1/4	4	5	54505404	545054B4
3/8	3/8	1/2	2	5	54506104	545061B4
3/8	3/8	1	2 1/2	5	54506204	545062B4
3/8	3/8	1	3	5	54506304	545063B4
3/8	3/8	1 1/2	4	5	54506404	545064B4
7/16	7/16	1	2 3/4	5	54507104	545071B4
7/16	7/16	2	4	5	54507204	545072B4
1/2	1/2	5/8	2 1/2	5	54508104	545081B4
1/2	1/2	1 1/4	3	5	54508204	545082B4
1/2	1/2	2	4	5	54508304	545083B4
1/2	1/2	2 1/2	5	5	54508404	545084B4
1/2	1/2	3 1/8	6	5	54508504	545085B4
5/8	5/8	3/4	3	5	54510104	545101B4
5/8	5/8	1 5/8	3 1/2	5	54510204	545102B4
5/8	5/8	2 1/2	5	5	54510304	545103B4
5/8	5/8	3	6	5	54510404	545104B4
3/4	3/4	1	3	5	54512104	545121B4
3/4	3/4	1 5/8	4	5	54512204	545122B4
3/4	3/4	2 1/4	5	5	54512304	545123B4
3/4	3/4	3 1/4	6	5	54512404	545124B4
3/4	3/4	4	6	5	54512504	545125B4
1	1	1 1/4	4	5	54516104	545161B4
1	1	2	4 1/2	5	54516204	545162B4
1	1	2 5/8	6	5	54516304	545163B4
1	1	3 1/4	6	5	54516404	545164B4
1	1	4 1/8	7	5	54516504	545165B4
1 1/4	1 1/4	2	4 1/2	7	54520104	545201B4
1 1/4	1 1/4	3	6	7	54520204	545202B4
1 1/4	1 1/4	4	7	7	54520304	545203B4
1 1/4	1 1/4	5	8	7	54520404	545204B4

\*\*Other Dimensions are Available Upon Request\*\*

ENDMILLS FERROUS AND EXOTIC ALLOYS

**DISCONTINUED**

available while supplies last



Extended Reach provides a more stable and stronger option for deep pocketing applications.

## Extended Neck

D1 Diameter	D2 Shank	L2 LOC	L3 LBS	L1 OAL	Flutes	Square	Ball
1/4	1/4	1/2	1 1/4	3	5	N54504104	N545041B4
1/4	1/4	1/2	2 1/8	4	5	N54504204	N545042B4
3/8	3/8	3/4	1 1/4	3	5	N54506104	N545061B4
3/8	3/8	3/4	2 1/8	4	5	N54506204	N545062B4
1/2	1/2	7/8	1 3/8	3	5	N54508104	N545081B4
1/2	1/2	7/8	2 1/8	4	5	N54508204	N545082B4
1/2	1/2	7/8	4 1/8	6	5	N54508304	N545083B4
5/8	5/8	1	2	4	5	N54510104	N545101B4
5/8	5/8	1	3	5	5	N54510204	N545102B4
5/8	5/8	1	4	6	5	N54510304	N545103B4
3/4	3/4	1 1/4	2	4	5	N54512104	N545121B4
3/4	3/4	1 1/4	3	5	5	N54512204	N545122B4
3/4	3/4	1 1/4	4	6	5	N54512304	N545123B4
1	1	1 1/2	3	5	5	N54516104	N545161B4
1	1	1 1/2	4	6	5	N54516204	N545162B4
1	1	1 1/2	5	7	5	N54516304	N545163B4

### Tool Tolerance

**Cutting Diameter:** +.000 / -.002    **Runout (T.I.R.):** .0005 max.  
**Shank Diameter:** h6    **Overall Length:** +/- .062  
**Corner Radius:** +/- .003    **Length of Cut:** +.062 / -.000

**NEW**  
**EXTENDED LENGTHS**

# 6 FLUTE VARIABLE

## 374 SERIES

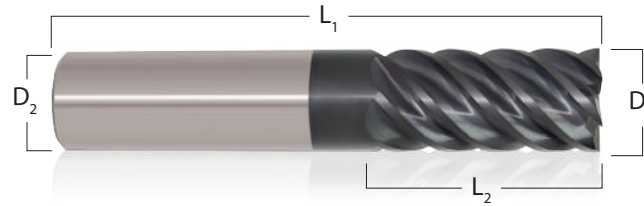
Variable indexed design provides chatter free machining with the highest requirements for surface finish. Non center cutting.

**Available Upon Request:** Add Flats, Left-Hand, Radii, Coolant Holes, Whistle Notch, Firm Hold Shank, Additional PVD Coatings

**PS Material Code:** Refer to Page 4



**Sistral®** Its nanostructure composition provides both high heat and oxidation resistance. Ideal for dry and high-speed cutting applications of materials.

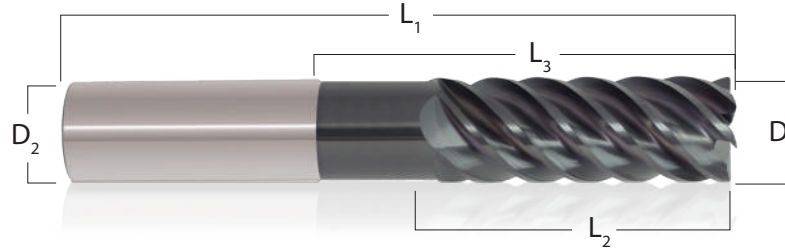


### Fractional

D1 Diameter	D2 Shank	L2 LOC	L1 OAL	Square	.015 RAD	.030 RAD	.060 RAD	.090 RAD	.125 RAD
1/4	1/4	1/2	2	37404107	37404117	37404127			
1/4	1/4	3/4	2 1/2	37404207	37404217	37404227			
1/4	1/4	1	3	37404307	37404317	37404327			
1/4	1/4	1 1/4	4	37404407	37404417	37404427			
5/16	5/16	1/2	2	37405107	37405117	37405127			
5/16	5/16	7/8	2 1/2	37405207	37405217	37405227			
5/16	5/16	1	3	37405307	37405317	37405327			
5/16	5/16	1 1/4	4	37405407	37405417	37405427			
3/8	3/8	1/2	2	37406107	37406117	37406127	37406137		
3/8	3/8	1	2 1/2	37406207	37406217	37406227	37406237		
3/8	3/8	1	3	37406307	37406317	37406327	37406337		
3/8	3/8	1 1/2	4	37406407	37406417	37406427	37406437		
7/16	7/16	1	2 3/4	37407107	37407117	37407127	37407137		
7/16	7/16	2	4	37407207	37407217	37407227	37407237		
1/2	1/2	5/8	2 1/2	37408107	37408117	37408127	37408137	37408147	37408157
1/2	1/2	1 1/4	3	37408207	37408217	37408227	37408237	37408247	37408257
1/2	1/2	2	4	37408307	37408317	37408327	37408337	37408347	37408357
1/2	1/2	2 1/2	5	37408407	37408417	37408427	37408437	37408447	37408457
1/2	1/2	3 1/8	6	37408507	37408517	37408527	37408537	37408547	37408557
5/8	5/8	3/4	3	37410107	37410117	37410127	37410137	37410147	37410157
5/8	5/8	1 5/8	3 1/2	37410207	37410217	37410227	37410237	37410247	37410257
5/8	5/8	2 1/2	5	37410307	37410317	37410327	37410337	37410347	37410357
5/8	5/8	3	6	37410407	37410417	37410427	37410437	37410447	37410457
3/4	3/4	1	3	37412107	37412117	37412127	37412137	37412147	37412157
3/4	3/4	1 5/8	4	37412207	37412217	37412227	37412237	37412247	37412257
3/4	3/4	2 1/4	5	37412307	37412317	37412327	37412337	37412347	37412357
3/4	3/4	3 1/4	6	37412407	37412417	37412427	37412437	37412447	37412457
3/4	3/4	4	7	37412507	37412517	37412527	37412537	37412547	37412557
1	1	1 1/2	4	37416107	37416117	37416127	37416137	37416147	37416157
1	1	2	4 1/2	37416207	37416217	37416227	37416237	37416247	37416257
1	1	2 1/4	5	37416307	37416317	37416327	37416337	37416347	37416357
1	1	2 5/8	6	37416407	37416417	37416427	37416437	37416447	37416457
1	1	3 1/4	6	37416507	37416517	37416527	37416537	37416547	37416557
1	1	4 1/8	7	37416607	37416617	37416627	37416637	37416647	37416657
1 1/4	1 1/4	2	4 1/2	37420107	37420117	37420127	37420137	37420147	37420157
1 1/4	1 1/4	3	6	37420207	37420217	37420227	37420237	37420247	37420257

\*\*Other Dimensions & Radii are Available Upon Request\*\*

ENDMILLS FERROUS AND EXOTIC ALLOYS



Extended Reach provides a more stable and stronger option for deep pocketing applications.

## Extended Neck

D1 Diameter	D2 Shank	L2 LOC	L3 LBS	L1 OAL	Square	.015 RAD	.030 RAD	.060 RAD	.090 RAD	.125 RAD
1/4	1/4	1/2	1 1/4	3	N37404107	N37404117	N37404127	N37404137		
1/4	1/4	1/2	2 1/8	4	N37404207	N37404217	N37404227	N37404237		
3/8	3/8	3/4	1 1/4	3	N37406107	N37406117	N37406127	N37406137		
3/8	3/8	3/4	2 1/8	4	N37406207	N37406217	N37406227	N37406237		
1/2	1/2	7/8	1 3/8	3	N37408107	N37408117	N37408127	N37408137	N37408147	N37408157
1/2	1/2	7/8	2 1/8	4	N37408207	N37408217	N37408227	N37408237	N37408247	N37408257
1/2	1/2	7/8	3 1/8	5	N37408A07	N37408A17	N37408A27	N37408A37	N37408A47	N37408A57
1/2	1/2	7/8	4 1/8	6	N37408307	N37408317	N37408327	N37408337	N37408347	N37408357
5/8	5/8	1	2	4	N37410107	N37410117	N37410127	N37410137	N37410147	N37410157
5/8	5/8	1	3	5	N37410207	N37410217	N37410227	N37410237	N37410247	N37410257
5/8	5/8	1	4	6	N37410307	N37410317	N37410327	N37410337	N37410347	N37410357
3/4	3/4	1 1/4	2	4	N37412107	N37412117	N37412127	N37412137	N37412147	N37412157
3/4	3/4	1 1/4	3	5	N37412207	N37412217	N37412227	N37412237	N37412247	N37412257
3/4	3/4	1 1/4	4	6	N37412307	N37412317	N37412327	N37412337	N37412347	N37412357
1	1	1 1/2	3	5	N37416107	N37416117	N37416127	N37416137	N37416147	N37416157
1	1	1 1/2	4	6	N37416207	N37416217	N37416227	N37416237	N37416247	N37416257
1	1	1 1/2	5	7	N37416307	N37416317	N37416327	N37416337	N37416347	N37416357

**NEW**  
**EXTENDED LENGTHS**

# 7 FLUTE VARIABLE

# 740 SERIES

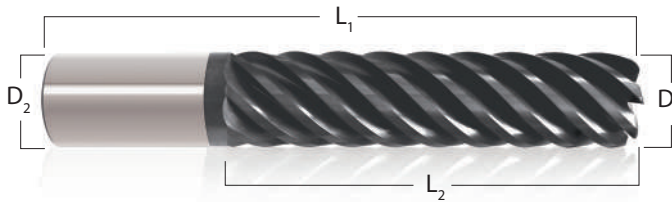
Variable indexed design provides chatter free machining with the highest requirements for surface finish. Center cutting.

Available Upon Request: Add Flats, Left-Hand, Radii, Coolant Holes, Whistle Notch, Firm Hold Shank, Additional PVD Coatings

**P M K S** Material Code: Refer to Page 4



**Sistral®** Its nanostructure composition provides both high heat and oxidation resistance. Ideal for dry and high-speed cutting applications of materials.



## Fractional

D1 Diameter	D2 Shank	L2 LOC	L1 OAL	Square	.015 RAD	.030 RAD	.060 RAD	.090 RAD	.125 RAD
1/4	1/4	1/2	2	74004107	74004117	74004127	74004137		
1/4	1/4	3/4	2 1/2	74004207	74004217	74004227	74004237		
1/4	1/4	1	3	74004307	74004317	74004327	74004337		
1/4	1/4	2	4	74004407	74004417	74004427	74004437		
5/16	5/16	1/2	2	74005107	74005117	74005127	74005137		
5/16	5/16	7/8	2 1/2	74005207	74005217	74005227	74005237		
5/16	5/16	1	3	74005307	74005317	74005327	74005337		
5/16	5/16	1 1/4	4	74005407	74005417	74005427	74005437		
3/8	3/8	1/2	2	74006107	74006117	74006127	74006137		
3/8	3/8	1	2 1/2	74006207	74006217	74006227	74006237		
3/8	3/8	1	3	74006307	74006317	74006327	74006337		
3/8	3/8	1 1/2	4	74006407	74006417	74006427	74006437		
7/16	7/16	1	2 3/4	74007107	74007117	74007127	74007137		
7/16	7/16	2	4	74007207	74007217	74007227	74007237		
1/2	1/2	5/8	2 1/2	74008107	74008117	74008127	74008137	74008147	74008157
1/2	1/2	1 1/4	3	74008207	74008217	74008227	74008237	74008247	74008257
1/2	1/2	2	4	74008307	74008317	74008327	74008337	74008347	74008357
1/2	1/2	2 1/2	5	74008407	74008417	74008427	74008437	74008447	74008457
1/2	1/2	3 1/8	6	74008507	74008517	74008527	74008537	74008547	74008557
5/8	5/8	3/4	3	74010107	74010117	74010127	74010137	74010147	74010157
5/8	5/8	1 5/8	3 1/2	74010207	74010217	74010227	74010237	74010247	74010257
5/8	5/8	2 1/2	5	74010307	74010317	74010327	74010337	74010347	74010357
5/8	5/8	3	6	74010407	74010417	74010427	74010437	74010447	74010457
3/4	3/4	1	3	74012107	74012117	74012127	74012137	74012147	74012157
3/4	3/4	1 5/8	4	74012207	74012217	74012227	74012237	74012247	74012257
3/4	3/4	2 1/4	5	74012307	74012317	74012327	74012337	74012347	74012357
3/4	3/4	3 1/4	6	74012407	74012417	74012427	74012437	74012447	74012457
3/4	3/4	4	7	74012507	74012517	74012527	74012537	74012547	74012557
1	1	1 1/2	4	74016107	74016117	74016127	74016137	74016147	74016157
1	1	2	4 1/2	74016207	74016217	74016227	74016237	74016247	74016257
1	1	2 1/4	5	74016307	74016317	74016327	74016337	74016347	74016357
1	1	2 5/8	6	74016407	74016417	74016427	74016437	74016447	74016457
1	1	3 1/4	6	74016507	74016517	74016527	74016537	74016547	74016557
1	1	4 1/8	7	74016607	74016617	74016627	74016637	74016647	74016657
1 1/4	1 1/4	2	4 1/2	74020107	74020117	74020127	74020137	74020147	74020157
1 1/4	1 1/4	3	6	74020207	74020217	74020227	74020237	74020247	74020257
1 1/4	1 1/4	5	8	74020307	74020317	74020327	74020337	74020347	74020357

\*\*Other Dimensions are Available Upon Request\*\*

ENDMILLS FERROUS AND EXOTIC ALLOYS



Extended Reach provides a more stable and stronger option for deep pocketing applications.

## Extended Neck

D1 Diameter	D2 Shank	L2 LOC	L3 LBS	L1 OAL	Square	.015 RAD	.030 RAD	.060 RAD	.090 RAD	.125 RAD
1/4	1/4	1/2	1 1/4	3	N74004107	N74004117	N74004127	N74004137		
1/4	1/4	1/2	2 1/8	4	N74004207	N74004217	N74004227	N74004237		
3/8	3/8	3/4	1 1/4	3	N74006107	N74006117	N74006127	N74006137		
3/8	3/8	3/4	2 1/8	4	N74006207	N74006217	N74006227	N74006237		
1/2	1/2	7/8	1 3/8	3	N74008107	N74008117	N74008127	N74008137	N74008147	N74008157
1/2	1/2	7/8	2 1/8	4	N74008207	N74008217	N74008227	N74008237	N74008247	N74008257
1/2	1/2	7/8	3 1/8	5	N74008A07	N74008A17	N74008A27	N74008A37	N74008A47	N74008A57
1/2	1/2	7/8	4 1/8	6	N74008307	N74008317	N74008327	N74008337	N74008347	N74008357
5/8	5/8	1	2	4	N74010107	N74010117	N74010127	N74010137	N74010147	N74010157
5/8	5/8	1	3	5	N74010207	N74010217	N74010227	N74010237	N74010247	N74010257
5/8	5/8	1	4	6	N74010307	N74010317	N74010327	N74010337	N74010347	N74010357
3/4	3/4	1 1/4	2	4	N74012107	N74012117	N74012127	N74012137	N74012147	N74012157
3/4	3/4	1 1/4	3	5	N74012207	N74012217	N74012227	N74012237	N74012247	N74012257
3/4	3/4	1 1/4	4	6	N74012307	N74012317	N74012327	N74012337	N74012347	N74012357
1	1	1 1/2	3	5	N74016107	N74016117	N74016127	N74016137	N74016147	N74016157
1	1	1 1/2	4	6	N74016207	N74016217	N74016227	N74016237	N74016247	N74016257
1	1	1 1/2	5	7	N74016307	N74016317	N74016327	N74016337	N74016347	N74016357

### Tool Tolerance

**Cutting Diameter:** +.000 / -.002

**Shank Diameter:** h6

**Corner Radius:** +/- .003

**Runout (T.I.R.):** .0005 max.

**Overall Length:** +/- .062

**Length of Cut:** +.062 / -.000

NEW

EXTENDED LENGTHS

# 6 FLUTE HIGH PERFORMANCE

## 640 SERIES

Versatile in peripheral light finishing cuts

Available Upon Request: Add Flats, Left-Hand, EdgeCut, Radii, Whistle Notch, Firm Hold Shank, Additional PVD Coatings

**P M K S H** Material Code: Refer to Page 4

CARBIDE

6  
Flutes

40°

Varianta®  
Supral

Varianta® Supral Provides a low coefficient of friction, reducing tool wear and resulting in a longer tool life.

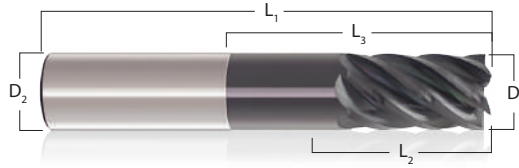


### Fractional

D1 Diameter	D2 Shank	L2 LOC	L1 OAL	Square	Ball
1/4	1/4	3/8	2	64004104	640041B4
1/4	1/4	3/4	2 1/2	64004204	640042B4
1/4	1/4	1 1/8	3	64004304	640043B4
1/4	1/4	1 1/4	4	64004404	640044B4
5/16	5/16	1/2	2	64005104	640051B4
5/16	5/16	7/8	2 1/2	64005204	640052B4
5/16	5/16	1 1/8	3	64005304	640053B4
5/16	5/16	1 1/4	4	64005404	640054B4
3/8	3/8	1/2	2	64006104	640061B4
3/8	3/8	1	2 1/2	64006204	640062B4
3/8	3/8	1 1/8	3	64006304	640063B4
3/8	3/8	1 1/2	4	64006404	640064B4
7/16	7/16	1	2 3/4	64007104	640071B4
7/16	7/16	2	4	64007204	640072B4
1/2	1/2	5/8	2 1/2	64008104	640081B4
1/2	1/2	1 1/4	3	64008204	640082B4
1/2	1/2	1 1/2	4	64008304	640083B4
1/2	1/2	3	6	64008404	640084B4
5/8	5/8	3/4	3	64010104	640101B4
5/8	5/8	1 1/4	3 1/2	64010204	640102B4
5/8	5/8	2 1/4	5	64010304	640103B4
5/8	5/8	3	6	64010404	640104B4
3/4	3/4	1	3	64012104	640121B4
3/4	3/4	1 1/2	4	64012204	640122B4
3/4	3/4	2 1/4	5	64012304	640123B4
3/4	3/4	3 1/4	6	64012404	640124B4
1	1	1 1/2	4	64016104	640161B4
1	1	2 1/4	5	64016204	640162B4
1	1	2	6	64016304	640163B4
1	1	3	6	64016404	640164B4

\*\*Other Dimensions are Available Upon Request\*\*

Extended Reach provides a more stable and stronger option for deep pocketing applications.



**NEW**  
EXTENDED LENGTHS

### Extended Neck

D1 Diameter	D2 Shank	L2 LOC	L3 LBS	L1 OAL	Square	Ball
1/4	1/4	1/2	1 1/4	3	N64004104	N640041B4
1/4	1/4	1/2	2 1/8	4	N64004204	N640042B4
3/8	3/8	3/4	1 1/4	3	N64006104	N640061B4
3/8	3/8	3/4	2 1/8	4	N64006204	N640062B4
1/2	1/2	7/8	1 3/8	3	N64008104	N640081B4
1/2	1/2	7/8	2 1/8	4	N64008204	N640082B4
1/2	1/2	7/8	4 1/8	6	N64008304	N640083B4
5/8	5/8	1	2	4	N64010104	N640101B4
5/8	5/8	1	3	5	N64010204	N640102B4
5/8	5/8	1	4	6	N64010304	N640103B4
3/4	3/4	1 1/4	2	4	N64012104	N640121B4
3/4	3/4	1 1/4	3	5	N64012204	N640122B4
3/4	3/4	1 1/4	4	6	N64012304	N640123B4
1	1	1 1/2	3	5	N64016104	N640161B4
1	1	1 1/2	4	6	N64016204	N640162B4
1	1	1 1/2	5	7	N64016304	N640163B4



# 4 FLUTE ENDMILL



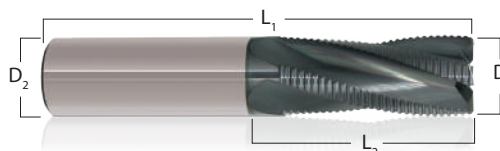
**Fine pitch rougher - ideal for nickel based material. Featured with standard corner radius.**

**Available Upon Request:** Add Flats, Left-Hand, EdgeCut, Radii, Whistle Notch, Firm Hold Shank, Additional PVD Coatings

**Material Code:** Refer to Page 4

CARBIDE	4 Flutes	20°	Fine Rougher
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**Varianta® Supral** Provides a low coefficient of friction, reducing tool wear and resulting in a longer tool life.



## Fractional

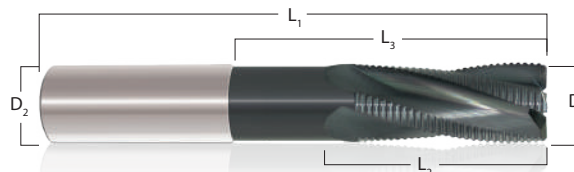
D1 Diameter	D2 Shank	L2 LOC	L1 OAL	Standard Radius	Part Number	Ball
1/4	1/4	1/2	2	.030	42304124	423041B4
1/4	1/4	3/4	2 1/2	.030	42304224	423042B4
5/16	5/16	1/2	2	.030	42305124	423051B4
5/16	5/16	7/8	2 1/2	.030	42305224	423052B4
3/8	3/8	1/2	2	.030	42306124	423061B4
3/8	3/8	1	2 1/2	.030	42306224	423062B4
1/2	1/2	5/8	2 1/2	.030	42308124	423081B4
1/2	1/2	1	3	.030	42308224	423082B4
5/8	5/8	3/4	3	.030	42310124	423101B4
5/8	5/8	1 1/4	3 1/2	.030	42310224	423102B4
5/8	5/8	1 5/8	4	.030	42310324	423103B4
3/4	3/4	1	3	.060	42312134	423121B4
3/4	3/4	1 5/8	4	.060	42312234	423122B4
1	1	1 1/4	3	.060	42316134	423161B4
1	1	1 1/2	4	.060	42316234	423162B4
1	1	2	4 1/2	.060	42316334	423163B4

\*\*Other Dimensions are Available Upon Request\*\*

Extended Reach provides a more stable and stronger option for deep pocketing applications.

**NEW**

**EXTENDED LENGTHS**



## Extended Neck

D1 Diameter	D2 Shank	L2 LOC	L3 LBS	L1 OAL	Standard Radius	Part Number	Ball
1/4	1/4	1/2	1 1/4	3	.030	N42304124	N423041B4
1/4	1/4	1/2	2 1/8	4	.030	N42304224	N423042B4
3/8	3/8	3/4	1 1/4	3	.030	N42306124	N423061B4
3/8	3/8	3/4	2 1/8	4	.030	N42306224	N423062B4
1/2	1/2	7/8	1 3/8	3	.030	N42308124	N423081B4
1/2	1/2	7/8	2 1/8	4	.030	N42308224	N423082B4
1/2	1/2	7/8	3 1/8	5	.030	N42308A24	N42308AB4
1/2	1/2	7/8	4 1/8	6	.030	N42308324	N423083B4
5/8	5/8	1	2	4	.030	N42310124	N423101B4
5/8	5/8	1	3	5	.030	N42310224	N423102B4
5/8	5/8	1	4	6	.030	N42310324	N423103B4
3/4	3/4	1 1/4	2	4	.060	N42312134	N423121B4
3/4	3/4	1 1/4	3	5	.060	N42312234	N423122B4
3/4	3/4	1 1/4	4	6	.060	N42312334	N423123B4
1	1	1 1/2	3	5	.060	N42316134	N423161B4
1	1	1 1/2	4	6	.060	N42316234	N423162B4
1	1	1 1/2	5	7	.060	N42316334	N423163B4

### Tool Tolerance

**Cutting Diameter:** +.000 / -.002      **Runout (T.I.R.):** .0005 max.  
**Shank Diameter:** h6                      **Overall Length:** +/- .062  
**Corner Radius:** +/- .003                **Length of Cut:** +.062 / -.000

# 5, 7 FLUTE ENDMILL



Medium pitch rougher - ideal for a variety of ferrous material. Featured with standard corner radius

Available Upon Request: Add Flats, Left-Hand, EdgeCut, Radii, Whistle Notch, Firm Hold Shank, Additional PVD Coatings

**P M K S** Material Code: Refer to Page 4



**Varianta<sup>®</sup> Supral** Provides a low coefficient of friction, reducing tool wear and resulting in a longer tool life.



## Fractional

D1 Diameter	D2 Shank	L2 LOC	L1 OAL	Flute	Standard Radius	Part Number	Ball
3/8	3/8	1/2	2	5	.030	42906124	429061B4
3/8	3/8	1	2 1/2	5	.030	42906224	429062B4
7/16	7/16	9/16	2 1/2	5	.030	42907124	429071B4
7/16	7/16	1	2 3/4	5	.030	42907224	429072B4
1/2	1/2	5/8	2 1/2	5	.030	42908124	429081B4
1/2	1/2	1 1/4	3	5	.030	42908224	429082B4
5/8	5/8	3/4	3	5	.030	42910124	429101B4
5/8	5/8	1 5/8	3 1/2	5	.030	42910224	429102B4
3/4	3/4	1	3	5	.060	42912134	429121B4
3/4	3/4	1 5/8	4	5	.060	42912234	429122B4
1	1	1 1/4	3	5	.060	42916134	429161B4
1	1	2	4 1/2	5	.060	42916234	429162B4
1 1/4	1 1/4	2	4 1/2	7	.060	42920134	429201B4
1 1/4	1 1/4	3	6	7	.060	42920234	429202B4

\*\*Other Dimensions are Available Upon Request\*\*

Extended Reach provides a more stable and stronger option for deep pocketing applications.



**NEW**

EXTENDED LENGTHS

## Extended Neck

D1 Diameter	D2 Shank	L2 LOC	L3 LBS	L1 OAL	Flute	Standard Radius	Part Number	Ball
1/2	1/2	7/8	1 3/8	3	5	.030	N42908124	N429081B4
1/2	1/2	7/8	2 1/8	4	5	.030	N42908224	N429082B4
1/2	1/2	7/8	5 1/8	5	5	.030	N42908A24	N42908AB4
1/2	1/2	7/8	4 1/8	6	5	.030	N42908324	N429083B4
5/8	5/8	1	2	4	5	.030	N42910124	N429101B4
5/8	5/8	1	3	5	5	.030	N42910224	N429102B4
5/8	5/8	1	4	6	5	.030	N42910324	N429103B4
3/4	3/4	1 1/4	2	4	5	.060	N42912134	N429121B4
3/4	3/4	1 1/4	3	5	5	.060	N42912234	N429122B4
3/4	3/4	1 1/4	4	6	5	.060	N42912334	N429123B4
1	1	1 1/2	3	5	5	.060	N42916134	N429161B4
1	1	1 1/2	4	6	5	.060	N42916234	N429162B4
1	1	1 1/2	5	7	5	.060	N42916334	N429163B4

### Tool Tolerance

**Cutting Diameter:** +.000 / -.002    **Runout (T.I.R.):** .0005 max.  
**Shank Diameter:** h6    **Overall Length:** +/- .062  
**Corner Radius:** +/- .003    **Length of Cut:** +.062 / -.000

# 4, 6 FLUTE ENDMILL

## 430 SERIES

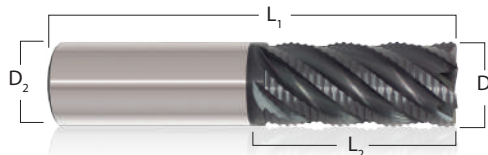
Medium pitch negative rake rougher - ideal for a titanium and hard materials. Featured with standard corner radius for added strength.

**Available Upon Request:** Add Flats, Left-Hand, EdgeCut, Whistle Notch, Firm Hold Shank, Additional PVD Coatings

**P M K S H** Material Code: Refer to Page 4

<b>CARBIDE</b>	<b>4, 6</b> Flutes	 40°	 Coarse Rougher
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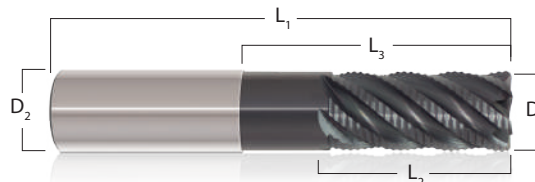
**Varianta® Supral** Provides a low coefficient of friction, reducing tool wear and resulting in a longer tool life.



### Fractional

D1 Diameter	D2 Shank	L2 LOC	L1 OAL	Flute	Standard Radius	Part Number
3/8	3/8	1/2	2	4	.030	43006124
3/8	3/8	7/8	2 1/2	4	.030	43006224
1/2	1/2	5/8	2 1/2	4	.030	43008124
1/2	1/2	1 1/4	3	4	.030	43008224
5/8	5/8	3/4	3	4	.030	43010124
5/8	5/8	1 1/4	3 1/2	4	.030	43010224
5/8	5/8	1 1/4	3 1/2	6	.030	43010324
3/4	3/4	1	3	4	.060	43012134
3/4	3/4	1 1/2	4	4	.060	43012234
3/4	3/4	1 1/2	4	6	.060	43012334
3/4	3/4	2 1/4	5	6	.060	43012434
1	1	1 1/2	4	4	.060	43016134
1	1	1 1/2	4	6	.060	43016234
1	1	2 1/4	5	6	.060	43016334

\*\*Other Dimensions are Available Upon Request\*\*



Extended Reach provides a more stable and stronger option for deep pocketing applications.

**NEW**

**EXTENDED LENGTHS**

### Extended Neck

D1 Diameter	D2 Shank	L2 LOC	L3 LBS	L1 OAL	Flute	Standard Radius	Part Number
1/2	1/2	7/8	1 3/8	3	4	.030	N43008124
1/2	1/2	7/8	2 1/8	4	4	.030	N43008224
1/2	1/2	7/8	3 1/8	5	4	.030	N43008A24
1/2	1/2	7/8	4 1/8	6	4	.030	N43008324
5/8	5/8	1	2	4	4	.030	N43010124
5/8	5/8	1	3	5	4	.030	N43010224
5/8	5/8	1	4	6	4	.030	N43010324
3/4	3/4	1 1/4	2	4	6	.060	N43012134
3/4	3/4	1 1/4	3	5	6	.060	N43012234
3/4	3/4	1 1/4	4	6	6	.060	N43012334
1	1	1 1/2	3	5	6	.060	N43016134
1	1	1 1/2	4	6	6	.060	N43016234
1	1	1 1/2	5	7	6	.060	N43016334

#### Tool Tolerance

**Cutting Diameter:** +.000 / -.002    **Runout (T.I.R.):** .0005 max.  
**Shank Diameter:** h6    **Overall Length:** +/- .062  
**Corner Radius:** +/- .003    **Length of Cut:** +.062 / -.000

FERROUS AND EXOTIC ALLOYS ENDMILLS

# 4 FLUTE VARIABLE



Adapted from the 451 Series, the 453 features an advance chipbreaker design which provided less machine load and better chip control

Available Upon Request: Add Flats, Left-Hand, Radii, Coolant Holes, Whistle Notch, Firm Hold Shank, Additional PVD Coatings

**P M K S** Material Code: Refer to Page 4

CARBIDE	4 Flutes	Chip Breaker	Variable
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**Varianta® Supral** Provides a low coefficient of friction, reducing tool wear and resulting in a longer tool life.

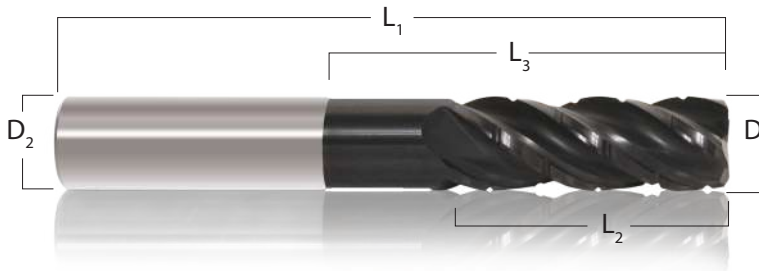


## Fractional

D1 Diameter	D2 Shank	L2 LOC	L1 OAL	.015 RAD	.030 RAD	.060 RAD	.090 RAD	.125 RAD	Ball
1/4	1/4	3/8	2	45304114	45304124				453041B4
1/4	1/4	3/4	2 1/2	45304214	45304224				453042B4
1/4	1/4	1	3	45304314	45304324				453043B4
1/4	1/4	1 1/4	4	45304414	45304424				453044B4
1/4	1/4	1 3/4	4	45304514	45304524				453045B4
5/16	5/16	1/2	2	45305114	45305124				453051B4
5/16	5/16	7/8	2 1/2	45305214	45305224				453052B4
5/16	5/16	1	3	45305314	45305324				453053B4
5/16	5/16	1 1/4	4	45305414	45305424				453054B4
5/16	5/16	1 5/8	4	45305514	45305524				453055B4
3/8	3/8	1/2	2	45306114	45306124	45306134			453061B4
3/8	3/8	1	2 1/2	45306214	45306224	45306234			453062B4
3/8	3/8	1	3	45306314	45306324	45306334			453063B4
3/8	3/8	1 1/2	4	45306414	45306424	45306434			453064B4
3/8	3/8	2 1/2	5	45306514	45306524	45306534			453065B4
1/2	1/2	5/8	2 1/2		45308124	45308134	45308144	45308154	453081B4
1/2	1/2	1	3		45308224	45308234	45308244	45308254	453082B4
1/2	1/2	1 1/4	3		45308324	45308334	45308344	45308354	453083B4
1/2	1/2	1 1/2	4		45308424	45308434	45308444	45308454	453084B4
1/2	1/2	2	4		45308524	45308534	45308544	45308554	453085B4
1/2	1/2	2 1/2	5		45308624	45308634	45308644	45308654	453086B4
1/2	1/2	3	6		45308724	45308734	45308744	45308754	453087B4
5/8	5/8	3/4	3		45310124	45310134	45310144	45310154	453101B4
5/8	5/8	1 1/4	3 1/2		45310224	45310234	45310244	45310254	453102B4
5/8	5/8	1 3/4	4		45310324	45310334	45310344	45310354	453103B4
5/8	5/8	2 1/4	5		45310424	45310434	45310444	45310454	453104B4
5/8	5/8	3	6		45310524	45310534	45310544	45310554	453105B4
3/4	3/4	7/8	3		45312134	45312144	45312154	45312164	453121B4
3/4	3/4	1 1/2	4		45312234	45312244	45312254	45312264	453122B4
3/4	3/4	1 5/8	4		45312334	45312344	45312354	45312364	453123B4
3/4	3/4	2 1/4	5		45312434	45312444	45312454	45312464	453124B4
3/4	3/4	3	6		45312534	45312544	45312554	45312564	453125B4
3/4	3/4	4	7		45312634	45312644	45312654	45312664	453126B4
1	1	1 1/2	4		45316134	45316144	45316154	45316164	453161B4
1	1	2	4 1/2		45316234	45316244	45316254	45316264	453162B4
1	1	2 1/4	5		45316334	45316344	45316354	45316364	453163B4
1	1	3	6		45316434	45316444	45316454	45316464	453164B4
1	1	4	7		45316534	45316544	45316554	45316564	453165B4

Other Dimensions & Radii are Available Upon Request

ENDMILLS FERROUS AND EXOTIC ALLOYS



Extended Reach provides a more stable and stronger option for deep pocketing applications.

### Extended Neck

D1 Diameter	D2 Shank	L2 LOC	L3 LBS	L1 OAL	.015 RAD	.030 RAD	.060 RAD	.090 RAD	.125 RAD	Ball
1/4	1/4	1/2	1 1/4	3	N45304114	N45304124	N45304134			N453041B4
1/4	1/4	1/2	2 1/8	4	N45304214	N45304224	N45304234			N453042B4
3/8	3/8	3/4	1 1/4	3	N45306114	N45306124	N45306134			N453061B4
3/8	3/8	3/4	2 1/8	4	N45306214	N45306224	N45306234			N453062B4
1/2	1/2	7/8	1 3/8	3		N45308124	N45308134	N45308144	N45308154	N453081B4
1/2	1/2	7/8	2 1/8	4		N45308224	N45308234	N45308244	N45308254	N453082B4
1/2	1/2	7/8	3 1/8	5		N45308A24	N45308A34	N45308A44	N45308A54	N45308AB4
1/2	1/2	7/8	4 1/8	6		N45308324	N45308334	N45308344	N45308354	N453083B4
5/8	5/8	1	2	4		N45310124	N45310134	N45310144	N45310154	N453101B4
5/8	5/8	1	3	5		N45310224	N45310234	N45310244	N45310254	N453102B4
5/8	5/8	1	4	6		N45310324	N45310334	N45310344	N45310354	N453103B4
3/4	3/4	1 1/4	2	4			N45312134	N45312144	N45312154	N453121B4
3/4	3/4	1 1/4	3	5			N45312234	N45312244	N45312254	N453122B4
3/4	3/4	1 1/4	4	6			N45312334	N45312344	N45312354	N453123B4
1	1	1 1/2	3	5			N45316134	N45316144	N45316154	N453161B4
1	1	1 1/2	4	6			N45316234	N45316244	N45316254	N453162B4
1	1	1 1/2	5	7			N45316334	N45316344	N45316354	N453163B4

#### Tool Tolerance

**Cutting Diameter:** +.000 / -.002    **Runout (T.I.R.):** .0005 max.  
**Shank Diameter:** h6    **Overall Length:** +/- .062  
**Corner Radius:** +/- .003    **Length of Cut:** +.062 / -.000

**NEW**  
**EXTENDED LENGTHS**

## 2 FLUTE DRILL MILL

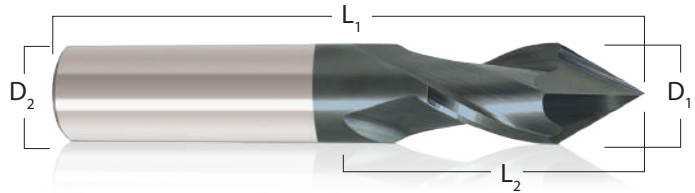
# 2060 / 2090 SERIES / SERIES

Engineered for drilling and chamfering in small passages uniform finish on the part

**P M K N S** Material Code: Refer to Page 4



**Varianta® Supral** Provides a low coefficient of friction, reducing tool wear and resulting in a longer tool life.



### 2060 SERIES

D1 Diameter	D2 Shank	L2 LOC	L1 OAL	60° Included
1/8	1/8	1/2	1 1/2	2060T402050015
3/16	3/16	5/8	2	2060T40306252
1/4	1/4	3/4	2 1/2	2060T404075025
5/16	5/16	7/8	2 1/2	2060T405087525
3/8	3/8	1	2 1/2	2060T40610025
7/16	7/16	1	2 3/4	2060T407100027
1/2	1/2	1	3	2060T40810003
5/8	5/8	1 1/4	3 1/2	2060T410125035
3/4	3/4	1 1/2	4	2060T41215004

\*\*Other Dimensions are Available Upon Request\*\*

### 2090 SERIES

D1 Diameter	D2 Shank	L2 LOC	L1 OAL	90° Included
1/8	1/8	1/2	1 1/2	2090T402050015
3/16	3/16	5/8	2	2090T40306252
1/4	1/4	3/4	2 1/2	2090T404075025
5/16	5/16	7/8	2 1/2	2090T405087525
3/8	3/8	1	2 1/2	2090T406100025
7/16	7/16	1	2 3/4	2090T407100027
1/2	1/2	1	3	2090T40810003
5/8	5/8	1 1/4	3 1/2	2090T410125035
3/4	3/4	1 1/2	4	2090T41215004

\*\*Other Dimensions are Available Upon Request\*\*

# 4 FLUTE DRILL MILL

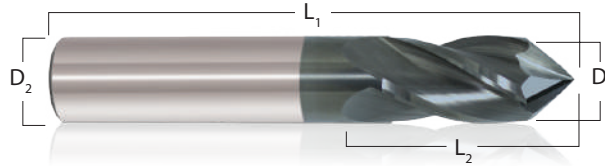
## 4060 / 4090 SERIES / SERIES

Engineered for drilling and chamfering in small passages uniform finish on the part

**P M K N S** Material Code: Refer to Page 4



**Variant<sup>®</sup> Supral** Provides a low coefficient of friction, reducing tool wear and resulting in a longer tool life.



### 4060 SERIES

D1 Diameter	D2 Shank	L2 LOC	L1 OAL	60° Included
1/8	1/8	1/2	1 1/2	4060T402050015
3/16	3/16	5/8	2	4060T40306252
1/4	1/4	3/4	2 1/2	4060T404075025
5/16	5/16	7/8	2 1/2	4060T405087525
3/8	3/8	1	2 1/2	4060T40610025
7/16	7/16	1	2 3/4	4060T407100027
1/2	1/2	1	3	4060T40810003
5/8	5/8	1 1/4	3 1/2	4060T410125035
3/4	3/4	1 1/2	4	4060T41215004

\*\*Other Dimensions are Available Upon Request\*\*

### 4090 SERIES

D1 Diameter	D2 Shank	L2 LOC	L1 OAL	90° Included
1/8	1/8	1/2	1 1/2	4090T402050015
3/16	3/16	5/8	2	4090T40306252
1/4	1/4	3/4	2 1/2	4090T404075025
5/16	5/16	7/8	2 1/2	4090T405087525
3/8	3/8	1	2 1/2	4090T40610025
7/16	7/16	1	2 3/4	4090T407100027
1/2	1/2	1	3	4090T40810003
5/8	5/8	1 1/4	3 1/2	4090T410125035
3/4	3/4	1 1/2	4	4090T41215004

\*\*Other Dimensions are Available Upon Request\*\*

SOLID CARBIDE

# 6 & 8 FLUTE

## Finisher – Center Cut

Ideal for titanium and stainless steel alloys

Right-hand spiral and cut

Weldon flats, square and ballnose end

**P M S** Material Code: Refer to Page 4

<b>PM30</b>	<b>6 &amp; 8</b> Flutes
	<b>Exxtral Plus®</b>

Exxtral Plus® is ideal for high-performance machining of hard materials.



### RIGHT HAND - 6 Flute

Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
PM3-54012X	T4-PM3-54012X	PM3-54112X	3/4	3/4	1-5/8	3-7/8
PM3-54212X	T4-PM3-54212X	PM3-54312X	3/4	3/4	2	4-1/4
PM3-54412X	T4-PM3-54412X	PM3-54512X	3/4	3/4	3	5-1/4
PM3-54612X	T4-PM3-54612X	PM3-54712X	3/4	3/4	4	6-1/4
PM3-54016X	T4-PM3-54016X	PM3-54116X	1	1	2	4-1/2
PM3-54216X	T4-PM3-54216X	PM3-54316X	1	1	3	5-1/2
PM3-54416X	T4-PM3-54416X	PM3-54516X	1	1	4	6-1/2
PM3-54416SX	T4-PM3-54416SX	PM3-54516SX	1	1	5	7-1/2
PM3-54616X	T4-PM3-54616X	PM3-54716X	1	1	6	8-1/2
PM3-54020X	T4-PM3-54020X	PM3-54120X	1-1/4	1-1/4	2	4-1/2
PM3-54220X	T4-PM3-54220X	PM3-54320X	1-1/4	1-1/4	3	5-1/2
PM3-54420X	T4-PM3-54420X	PM3-54520X	1-1/4	1-1/4	4	6-1/2
PM3-54420SX	T4-PM3-54420SX	PM3-54520SX	1-1/4	1-1/4	5	7-1/2
PM3-54620X	T4-PM3-54620X	PM3-54720X	1-1/4	1-1/4	6	8-1/2
PM3-54024X	T4-PM3-54024X	PM3-54124X	1-1/2	1-1/4	2	4-1/2
PM3-54224X	T4-PM3-54224X	PM3-54324X	1-1/2	1-1/4	3	5-1/2
PM3-54424X	T4-PM3-54424X	PM3-54524X	1-1/2	1-1/4	4	6-1/2
PM3-54624X	T4-PM3-54624X	PM3-54724X	1-1/2	1-1/4	6	8-1/2
* PM3-54032X	T4-PM3-54032X	PM3-54132X	2	1-1/4	2	4-1/2
* PM3-54232X	T4-PM3-54232X	PM3-54332X	2	1-1/4	3	5-1/2
* PM3-54432X	T4-PM3-54432X	PM3-54532X	2	1-1/4	4	6-1/2
* PM3-68004A	T4-PM3-68004A	PM3-68104A	2	2	4	7-3/4
* PM3-68006A	T4-PM3-68006A	PM3-68106A	2	2	6	9-3/4
* PM3-68008A	T4-PM3-68008A	PM3-68108A	2	2	8	11-3/4
* PM3-68010A	T4-PM3-68010A	PM3-68110A	2	2	10	13-3/4
* PM3-68012A	T4-PM3-68012A	PM3-68112A	2	2	12	15-3/4

\* Made to order



### RIGHT HAND - 8 Flute

Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
* PM3-88004A	T4-PM3-88004A	PM3-88104A	2	2	4	7-3/4
* PM3-88006A	T4-PM3-88006A	PM3-88106A	2	2	6	9-3/4
* PM3-88008A	T4-PM3-88008A	PM3-88108A	2	2	8	11-3/4
* PM3-88010A	T4-PM3-88010A	PM3-88110A	2	2	10	13-3/4
* PM3-88012A	T4-PM3-88012A	PM3-88112A	2	2	12	15-3/4

\* Made to order



# 5, 6, 8 FLUTE

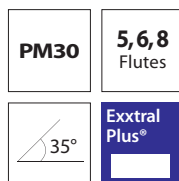
## Extended Neck Finisher - Center Cut

Ideal for titanium and stainless steel alloys

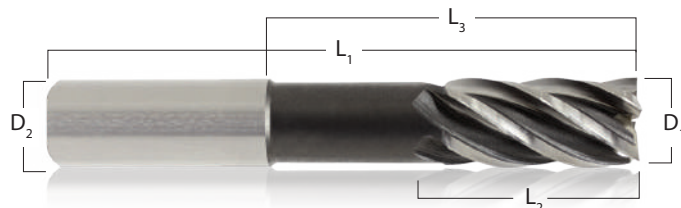
Right-hand spiral and cut

Weldon flats (upon request), square and ballnose end

**P M S** Material Code: Refer to Page 4



Exxtral Plus® is ideal for high-performance machining of hard materials.



### RIGHT HAND - Extended Neck - 5 Flute

Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL
PM3-54A08S.4Y	T4-PM3-54A08S.4Y	PM3-54B08S.4Y	1/2	1/2	1-1/4	4	6
PM3-54A10S.5Y	T4-PM3-54A10S.5Y	PM3-54B10S.5Y	5/8	5/8	1-1/2	5	7-1/8
PM3-54A12S.4Y	T4-PM3-54A12S.4Y	PM3-54B12S.4Y	3/4	3/4	1-1/2	4	6-1/4
PM3-54A12S.5Y	T4-PM3-54A12S.5Y	PM3-54B12S.5Y	3/4	3/4	1-3/4	5	7-1/4
PM3-54A12S.6Y	T4-PM3-54A12S.6Y	PM3-54B12S.6Y	3/4	3/4	2	6	8-1/4
PM3-54A16S.4Y	T4-PM3-54A16S.4Y	PM3-54B16S.4Y	1	1	2	4	6-1/2
PM3-54A16S.6Y	T4-PM3-54A16S.6Y	PM3-54B16S.6Y	1	1	2-1/2	6	8-1/2
PM3-54A16S.8Y	T4-PM3-54A16S.8Y	PM3-54B16S.8Y	1	1	3	8	10-1/2
PM3-54A16S.10Y	T4-PM3-54A16S.10Y	PM3-54B16S.10Y	1	1	3-1/2	10	12-1/2

### RIGHT HAND - Extended Neck - 6 Flute

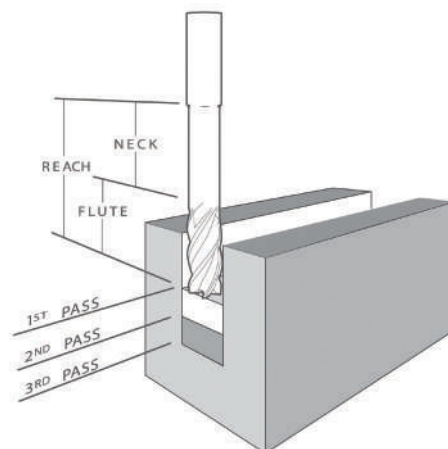
Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL
PM3-54A20S.04X	T4-PM3-54A20S.04X	PM3-54B20S.04X	1-1/4	1-1/4	2	4	6-1/2
PM3-54A20S.06X	T4-PM3-54A20S.06X	PM3-54B20S.06X	1-1/4	1-1/4	2-1/2	6	8-1/2
PM3-54A20S.08X	T4-PM3-54A20S.08X	PM3-54B20S.08X	1-1/4	1-1/4	3	8	10-1/2
PM3-54A20S.10X	T4-PM3-54A20S.10X	PM3-54B20S.10X	1-1/4	1-1/4	3-1/2	10	12-1/2
* PM3-68A32S.4	T4-PM3-68A32S.4	PM3-68B32S.4	2	2	2	4	7-3/4
* PM3-68A32S.6	T4-PM3-68A32S.6	PM3-68B32S.6	2	2	2-1/2	6	9-3/4
* PM3-68A32S.8	T4-PM3-68A32S.8	PM3-68B32S.8	2	2	3	8	11-3/4

\* Made to order

### RIGHT HAND - Extended Neck - 8 Flute

Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL
* PM3-88A32S.4	T4-PM3-88A32S.4	PM3-88B32S.4	2	2	2	4	7-3/4
* PM3-88A32S.6	T4-PM3-88A32S.6	PM3-88B32S.6	2	2	2-1/2	6	9-3/4
* PM3-88A32S.8	T4-PM3-88A32S.8	PM3-88B32S.8	2	2	3	8	11-3/4

\* Made to order



# 4, 5, 6, 8 FLUTE

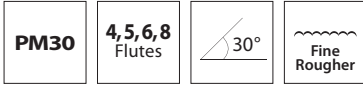
## Multi-Flute Fine Pitch Rougher - Center Cut

**PMS** Material Code: Refer to Page 4

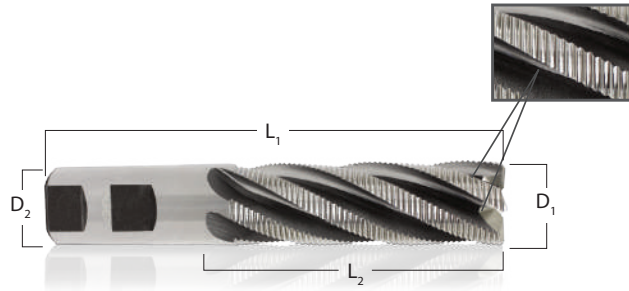
Ideal for titanium and stainless steel alloys

Right-hand spiral and cut

Weldon flats, square and ballnose end



**Exxtral Plus®** is ideal for high-performance machining of hard materials.



### RIGHT HAND - 4 Flute

Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
PM3-FS54012	T4-PM3-FS54012	PM3-FS54112	3/4	3/4	3/4	3
PM3-F54012	T4-PM3-F54012	PM3-F54112	3/4	3/4	1-5/8	3-7/8
PM3-F54212S	T4-PM3-F54212S	PM3-F54312S	3/4	3/4	2-1/4	4-1/2
PM3-F54412	T4-PM3-F54412	PM3-F54512	3/4	3/4	3	5-1/4
PM3-F54612	T4-PM3-F54612	PM3-F54712	3/4	3/4	4	6-1/4

### RIGHT HAND - 5 Flute

Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
PM3-FS54016Y	T4-PM3-FS54016Y	PM3-FS54116Y	1	1	1	3-7/8
PM3-F54016Y	T4-PM3-F54016Y	PM3-F54116Y	1	1	2	4-1/2
PM3-F54216Y	T4-PM3-F54216Y	PM3-F54316Y	1	1	3	5-1/2
PM3-F54416Y	T4-PM3-F54416Y	PM3-F54516Y	1	1	4	6-1/2
PM3-F54416SY	T4-PM3-F54416SY	PM3-F54516SY	1	1	5	7-1/2
PM3-F54616Y	T4-PM3-F54616Y	PM3-F54716Y	1	1	6	8-1/2

### RIGHT HAND - 6 Flute

Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
PM3-F54020X	T4-PM3-F54020X	PM3-F54120X	1-1/4	1-1/4	2	4-1/2
PM3-F54220X	T4-PM3-F54220X	PM3-F54320X	1-1/4	1-1/4	3	5-1/2
PM3-F54420X	T4-PM3-F54420X	PM3-F54520X	1-1/4	1-1/4	4	6-1/2
PM3-F54420SX	T4-PM3-F54420SX	PM3-F54520SX	1-1/4	1-1/4	5	7-1/2
PM3-F54620X	T4-PM3-F54620X	PM3-F54720X	1-1/4	1-1/4	6	8-1/2
PM3-F54024X	T4-PM3-F54024X	PM3-F54124X	1-1/2	1-1/4	2	4-1/2
PM3-F54224X	T4-PM3-F54224X	PM3-F54324X	1-1/2	1-1/4	3	5-1/2
PM3-F54424X	T4-PM3-F54424X	PM3-F54524X	1-1/2	1-1/4	4	6-1/2
PM3-F54624X	T4-PM3-F54624X	PM3-F54724X	1-1/2	1-1/4	6	8-1/2

### RIGHT HAND - 8 Flute

Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
* PM3-F54032Z	T4-PM3-F54032Z	PM3-F54132Z	2	1-1/4	2	4-1/2
* PM3-F88004A	T4-PM3-F88004A	PM3-F88104A	2	2	4	7-3/4
* PM3-F88006A	T4-PM3-F88006A	PM3-F88106A	2	2	6	9-3/4
* PM3-F88008A	T4-PM3-F88008A	PM3-F88108A	2	2	8	11-3/4
* PM3-F88010A	T4-PM3-F88010A	PM3-F88110A	2	2	10	13-3/4
* PM3-F88012A	T4-PM3-F88012A	PM3-F88112A	2	2	12	15-3/4

\* Made to order

# 5, 6, 8 FLUTE

## Multi-Flute Fine Pitch Rougher - Extended Neck Center Cut

Ideal for titanium and stainless steel alloys

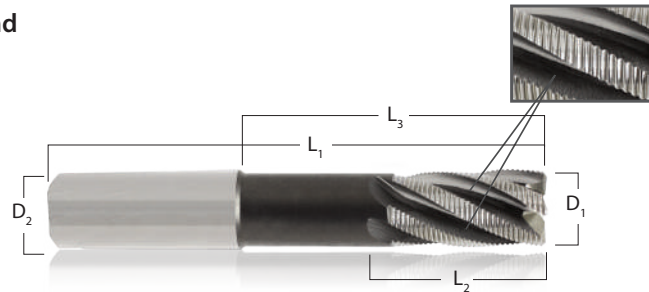
Right-hand spiral & cut

Weldon flats (upon request), square and ballnose end

**P M S** Material Code: Refer to Page 4



**Exxtral Plus®** is ideal for high-performance machining of hard materials.



### RIGHT HAND - Extended Neck - 5 Flute

Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL
PM3-F54A12S.4Y	T4-PM3-F54A12S.4Y	PM3-F54B12S.4Y	3/4	3/4	1-1/2	4	6-1/4
PM3-F54A12S.5Y	T4-PM3-F54A12S.5Y	PM3-F54B12S.5Y	3/4	3/4	1-3/4	5	7-1/4
PM3-F54A12S.6Y	T4-PM3-F54A12S.6Y	PM3-F54B12S.6Y	3/4	3/4	2	6	8-1/4
PM3-F54A16S.4Y	T4-PM3-F54A16S.4Y	PM3-F54B16S.4Y	1	1	2	4	6-1/2
PM3-F54A16S.6Y	T4-PM3-F54A16S.6Y	PM3-F54B16S.6Y	1	1	2-1/2	6	8-1/2
PM3-F54A16S.8Y	T4-PM3-F54A16S.8Y	PM3-F54B16S.8Y	1	1	3	8	10-1/2
PM3-F54A16S.10Y	T4-PM3-F54A16S.10Y	PM3-F54B16S.10Y	1	1	3	10	12-1/2

### RIGHT HAND - Extended Neck - 6 Flute

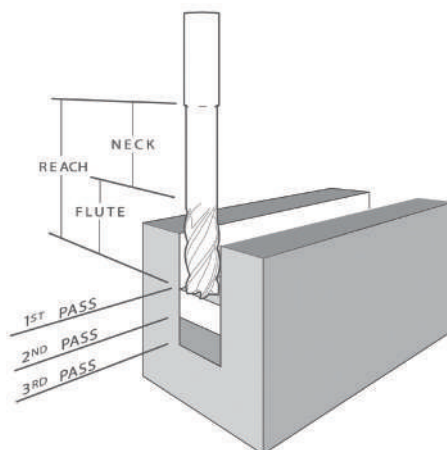
Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL
PM3-F54A20S.4X	T4-PM3-F54A20S.4X	PM3-F54B20S.4X	1-1/4	1-1/4	2	4	6-1/2
PM3-F54A20S.6X	T4-PM3-F54A20S.6X	PM3-F54B20S.6X	1-1/4	1-1/4	2-1/2	6	8-1/2
PM3-F54A24S.4X	T4-PM3-F54A24S.4X	PM3-F54B24S.4X	1-1/2	1-1/4	2	4	6-1/2
PM3-F54A24S.6X	T4-PM3-F54A24S.6X	PM3-F54B24S.6X	1-1/2	1-1/4	2-1/2	6	8-1/2
PM3-F54A24S.8X	T4-PM3-F54A24S.8X	PM3-F54B24S.8X	1-1/2	1-1/4	3	8	10-1/2
* PM3-F68A32S.4	T4-PM3-F68A32S.4	PM3-F68B32S.4	2	2	2	4	7-3/4
* PM3-F68A32S.6	T4-PM3-F68A32S.6	PM3-F68B32S.6	2	2	2-1/2	6	9-3/4
* PM3-F68A32S.8	T4-PM3-F68A32S.8	PM3-F68B32S.8	2	2	3	8	11-3/4

\* Made to order

### RIGHT HAND - Extended Neck - 8 Flute

Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL
* PM3-F88A32S.4	T4-PM3-F88A32S.4	PM3-F88B32S.4	2	2	2	4	7-3/4
* PM3-F88A32S.6	T4-PM3-F88A32S.6	PM3-F88B32S.6	2	2	2-1/2	6	9-3/4
* PM3-F88A32S.8	T4-PM3-F88A32S.8	PM3-F88B32S.8	2	2	3	8	11-3/4

\* Made to order



# 3 FLUTE

## Finisher – Center Cut

Ideal for aluminum alloys

Right-hand spiral and cut

Weld on flats, square and ballnose end

**N** Material Code: Refer to Page 4

**PM4**

**3**  
Flutes



**Exxtral Carbon®**  
3-4 times tool life  
compared to Z-Power.



### RIGHT HAND - 3 Flute

Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
PM-33008	T5-PM-33008	PM-33108	1/2	1/2	1-1/4	3-1/4
PM-33208	T5-PM-33208	PM-33308	1/2	1/2	2	4
PM-33408	T5-PM-33408	PM-33508	1/2	1/2	3	5
PM-33608	T5-PM-33608	PM-33708	1/2	1/2	4	6
PM-33010	T5-PM-33010	PM-33110	5/8	5/8	1-5/8	3-3/4
PM-33210	T5-PM-33210	PM-33310	5/8	5/8	2-1/2	4-5/8
PM-33410	T5-PM-33410	PM-33510	5/8	5/8	3	5-1/8
PM-33610	T5-PM-33610	PM-33710	5/8	5/8	4	6-1/8
PM-33610S	T5-PM-33610S	PM-33710S	5/8	5/8	6	8-1/8
PM-33012	T5-PM-33012	PM-33112	3/4	3/4	1-5/8	3-7/8
PM-33212	T5-PM-33212	PM-33312	3/4	3/4	2	4-1/4
PM-33212S	T5-PM-33212S	PM-33312S	3/4	3/4	2-1/4	4-1/2
PM-33412	T5-PM-33412	PM-33512	3/4	3/4	3	5-1/4
PM-33612	T5-PM-33612	PM-33712	3/4	3/4	4	6-1/4
PM-33612S	T5-PM-33612S	PM-33712S	3/4	3/4	6	8-1/4
PM-33812	T5-PM-33812	PM-33912	3/4	3/4	8	10-1/4
PM-33016	T5-PM-33016	PM-33116	1	1	2	4-1/2
PM-33216	T5-PM-33216	PM-33316	1	1	3	5-1/2
PM-33416	T5-PM-33416	PM-33516	1	1	4	6-1/2
PM-33416S	T5-PM-33416S	PM-33516S	1	1	5	7-1/2
PM-33616	T5-PM-33616	PM-33716	1	1	6	8-1/2
PM-33616S	T5-PM-33616S	PM-33716S	1	1	7	9-1/2
PM-33816	T5-PM-33816	PM-33916	1	1	8	10-1/2
PM-33816S	T5-PM-33816S	PM-33916S	1	1	10	12-1/2
PM-33020	T5-PM-33020	PM-33120	1-1/4	1-1/4	2	4-1/2
PM-33220	T5-PM-33220	PM-33320	1-1/4	1-1/4	3	5-1/2
PM-33420	T5-PM-33420	PM-33520	1-1/4	1-1/4	4	6-1/2
PM-33420S	T5-PM-33420S	PM-33520S	1-1/4	1-1/4	5	7-1/2
PM-33620	T5-PM-33620	PM-33720	1-1/4	1-1/4	6	8-1/2
PM-33620S	T5-PM-33620S	PM-33720S	1-1/4	1-1/4	7	9-1/2
PM-33820	T5-PM-33820	PM-33920	1-1/4	1-1/4	8	10-1/2
PM-33820S	T5-PM-33820S	PM-33920S	1-1/4	1-1/4	10	12-1/2
PM-33024	T5-PM-33024	PM-33124	1-1/2	1-1/4	2	4-1/2
PM-33224	T5-PM-33224	PM-33324	1-1/2	1-1/4	3	5-1/2
PM-33424	T5-PM-33424	PM-33524	1-1/2	1-1/4	4	6-1/2
PM-33424S	T5-PM-33424S	PM-33524S	1-1/2	1-1/4	5	7-1/2
PM-33624	T5-PM-33624	PM-33724	1-1/2	1-1/4	6	8-1/2
PM-33624S	T5-PM-33624S	PM-33724S	1-1/2	1-1/4	7	9-1/2
PM-33824	T5-PM-33824	PM-33924	1-1/2	1-1/4	8	10-1/2
PM-33032	T5-PM-33032	PM-33132	2	1-1/4	2	4-1/2
PM-33232	T5-PM-33232	PM-33332	2	1-1/4	3	5-1/2
PM-33432	T5-PM-33432	PM-33532	2	1-1/4	4	6-1/2
PM-33432S	T5-PM-33432S	PM-33532S	2	1-1/4	5	7-1/2
PM-33632	T5-PM-33632	PM-33732	2	1-1/4	6	8-1/2
PM-33632S	T5-PM-33632S	PM-33732S	2	1-1/4	7	9-1/2
PM-33832	T5-PM-33832	PM-33932	2	1-1/4	8	10-1/2
PM-37002A	T5-PM-37002A	PM-37102A	2	2	2	5-3/4
PM-37003A	T5-PM-37003A	PM-37103A	2	2	3	6-3/4
PM-37004A	T5-PM-37004A	PM-37104A	2	2	4	7-3/4
PM-37005A	T5-PM-37005A	PM-37105A	2	2	5	8-3/4
PM-37006A	T5-PM-37006A	PM-37106A	2	2	6	9-3/4
PM-37008A	T5-PM-37008A	PM-37108A	2	2	8	11-3/4
PM-37010A	T5-PM-37010A	PM-37110A	2	2	10	13-3/4
PM-37012A	T5-PM-37012A	PM-37112A	2	2	12	15-3/4

# 3 FLUTE

## Extended Neck Finisher – Center Cut

- Ideal for aluminum alloys
- Right-hand spiral and cut
- Weldon flats (upon request)
- Square and ballnose end

**N** Material Code: Refer to Page 4

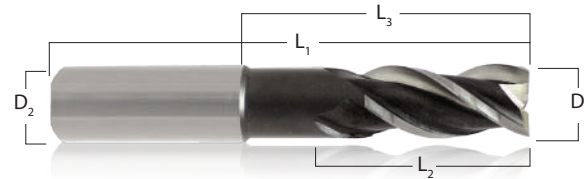
**PM4**

**3**  
Flutes

37°

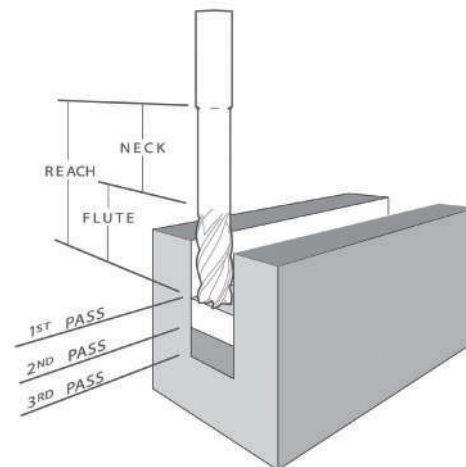
**Exxtral Carbon®**

Exxtral Carbon®  
3-4 times tool life compared to Z-Power.



### RIGHT HAND - Extended Neck - 3 Flute

Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL
PM-39A08S	T5-PM-39A08S	PM-39B08S	1/2	1/2	1-1/4	4	6
PM-39A10S	T5-PM-39A10S	PM-39B10S	5/8	5/8	1-1/2	5	7-1/8
PM-39A12S.4	T5-PM-39A12S.4	PM-39B12S.4	3/4	3/4	1-1/2	4	6-1/4
PM-39A12S.5	T5-PM-39A12S.5	PM-39B12S.5	3/4	3/4	1-3/4	5	7-1/4
PM-39A12S	T5-PM-39A12S	PM-39B12S	3/4	3/4	2	6	8-1/4
PM-39A16S.2	T5-PM-39A16S.2	PM-39B16S.2	1	1	1	2	4-1/2
PM-39A16S.3	T5-PM-39A16S.3	PM-39B16S.3	1	1	1-1/2	3	5-1/2
PM-39A16S.4	T5-PM-39A16S.4	PM-39B16S.4	1	1	2	4	6-1/2
PM-39A16S.6	T5-PM-39A16S.6	PM-39B16S.6	1	1	2-1/2	6	8-1/2
PM-39A16S.7	T5-PM-39A16S.7	PM-39B16S.7	1	1	2-3/4	7	9-1/2
PM-39A16S	T5-PM-39A16S	PM-39B16S	1	1	3	8	10-1/2
PM-39A20S.3	T5-PM-39A20S.3	PM-39B20S.3	1-1/4	1-1/4	1-1/2	3	5-1/2
PM-39A20S.4	T5-PM-39A20S.4	PM-39B20S.4	1-1/4	1-1/4	2	4	6-1/2
PM-39A20S.6	T5-PM-39A20S.6	PM-39B20S.6	1-1/4	1-1/4	2-1/2	6	8-1/2
PM-39A20S.7	T5-PM-39A20S.7	PM-39B20S.7	1-1/4	1-1/4	2-3/4	7	9-1/2
PM-39A20S.8	T5-PM-39A20S.8	PM-39B20S.8	1-1/4	1-1/4	3	8	10-1/2
PM-39A20S	T5-PM-39A20S	PM-39B20S	1-1/4	1-1/4	3-1/2	10	12-1/2



POWDER METAL ENDMILLS – PM4

# 3 FLUTE

## Truncated R/F – Center Cut

- Ideal for aluminum alloys
- Right-hand spiral and cut
- Weldon flats (upon request)
- Square and ballnose end

**N** Material Code: Refer to Page 4



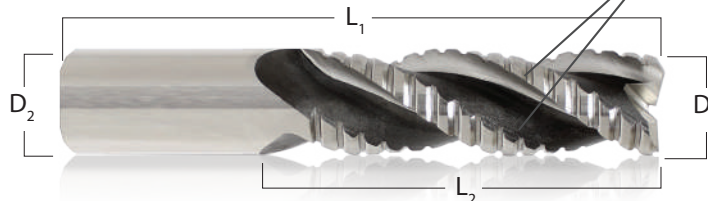
PM4

3  
Flutes

37°

Truncated  
Rougher

**Exxtral Carbon®**  
3-4 times tool life compared to Z-Power.



### RIGHT HAND - 3 Flute

Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
PM-TRF33008	T5-PM-TRF33008	PM-TRF33108	1/2	1/2	1-1/4	3-1/4
PM-TRF33208	T5-PM-TRF33208	PM-TRF33308	1/2	1/2	2	4
PM-TRF33408	T5-PM-TRF33408	PM-TRF33508	1/2	1/2	3	5
PM-TRF33608	T5-PM-TRF33608	PM-TRF33708	1/2	1/2	4	6
PM-TRF33010	T5-PM-TRF33010	PM-TRF33110	5/8	5/8	1-5/8	3-3/4
PM-TRF33210	T5-PM-TRF33210	PM-TRF33310	5/8	5/8	2-1/2	4-5/8
PM-TRF33410	T5-PM-TRF33410	PM-TRF33510	5/8	5/8	3	5-1/8
PM-TRF33610	T5-PM-TRF33610	PM-TRF33710	5/8	5/8	4	6-1/8
PM-TRF33012	T5-PM-TRF33012	PM-TRF33112	3/4	3/4	1-5/8	3-7/8
PM-TRF33212	T5-PM-TRF33212	PM-TRF33312	3/4	3/4	2	4-1/4
PM-TRF33212S	T5-PM-TRF33212S	PM-TRF33312S	3/4	3/4	2-1/4	4-1/2
PM-TRF33412	T5-PM-TRF33412	PM-TRF33512	3/4	3/4	3	5-1/4
PM-TRF33612	T5-PM-TRF33612	PM-TRF33712	3/4	3/4	4	6-1/4
PM-TRF33016	T5-PM-TRF33016	PM-TRF33116	1	1	2	4-1/2
PM-TRF33216	T5-PM-TRF33216	PM-TRF33316	1	1	3	5-1/2
PM-TRF33416	T5-PM-TRF33416	PM-TRF33516	1	1	4	6-1/2
PM-TRF33616	T5-PM-TRF33616	PM-TRF33716	1	1	6	8-1/2
PM-TRF33020	T5-PM-TRF33020	PM-TRF33120	1-1/4	1-1/4	2	4-1/2
PM-TRF33220	T5-PM-TRF33220	PM-TRF33320	1-1/4	1-1/4	3	5-1/2
PM-TRF33420	T5-PM-TRF33420	PM-TRF33520	1-1/4	1-1/4	4	6-1/2
PM-TRF33620	T5-PM-TRF33620	PM-TRF33720	1-1/4	1-1/4	6	8-1/2
PM-TRF33024	T5-PM-TRF33024	PM-TRF33124	1-1/2	1-1/4	2	4-1/2
PM-TRF33224	T5-PM-TRF33224	PM-TRF33324	1-1/2	1-1/4	3	5-1/2
PM-TRF33424	T5-PM-TRF33424	PM-TRF33524	1-1/2	1-1/4	4	6-1/2
PM-TRF33624	T5-PM-TRF33624	PM-TRF33724	1-1/2	1-1/4	6	8-1/2
* PM-TRF33032	T5-PM-TRF33032	PM-TRF33132	2	1-1/4	2	4-1/2
* PM-TRF33232	T5-PM-TRF33232	PM-TRF33332	2	1-1/4	3	5-1/2
* PM-TRF33432	T5-PM-TRF33432	PM-TRF33532	2	1-1/4	4	6-1/2
* PM-TRF33632	T5-PM-TRF33632	PM-TRF33732	2	1-1/4	6	8-1/2
* PM-TRF37002A	T5-PM-TRF37002A	PM-TRF37102A	2	2	2	5-3/4
* PM-TRF37003A	T5-PM-TRF37003A	PM-TRF37103A	2	2	3	6-3/4
* PM-TRF37004A	T5-PM-TRF37004A	PM-TRF37104A	2	2	4	7-3/4
* PM-TRF37006A	T5-PM-TRF37006A	PM-TRF37106A	2	2	6	9-3/4
* PM-TRF37008A	T5-PM-TRF37008A	PM-TRF37108A	2	2	8	11-3/4

\* Made to order

# 3 FLUTE

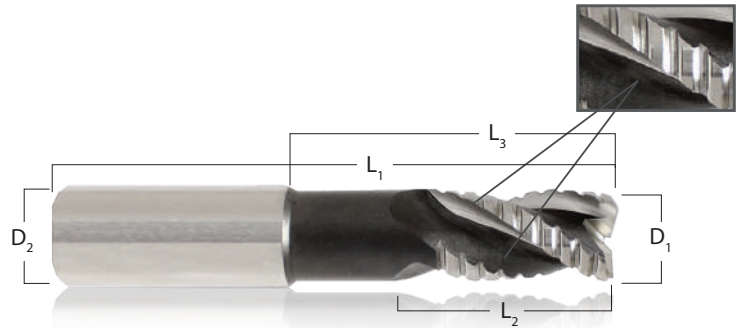
## Extended Neck Truncated R/F – Center Cut

Ideal for aluminum alloys  
Right-hand spiral and cut  
Weldon flats (upon request)  
Square and ballnose end

**N** Material Code: Refer to Page 4

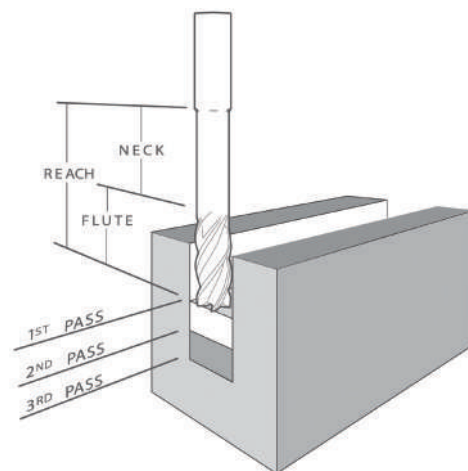


**Exxtral Carbon®**  
3-4 times tool life  
compared to Z-Power.



### RIGHT HAND - Extended Neck - 3 Flute

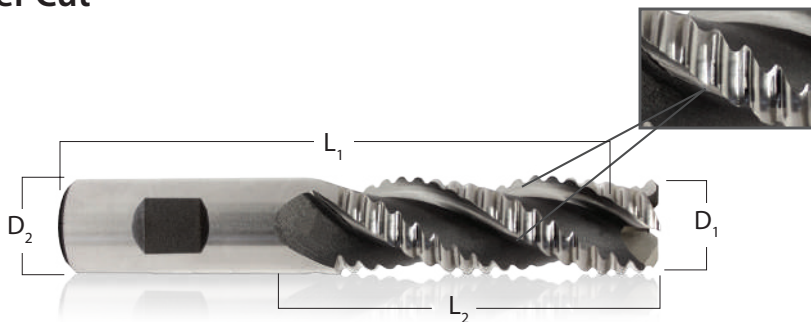
Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L3 REACH	L1 OAL
PM-TRF39A08S	T5-PM-TRF39A08S	PM-TRF39B08S	1/2	1/2	1-1/4	4	6
PM-TRF39A10S	T5-PM-TRF39A10S	PM-TRF39B10S	5/8	5/8	1-1/2	5	7-1/8
PM-TRF39A12S.4	T5-PM-TRF39A12S.4	PM-TRF39B12S.4	3/4	3/4	1-1/2	4	6-1/4
PM-TRF39A12S.5	T5-PM-TRF39A12S.5	PM-TRF39B12S.5	3/4	3/4	1-3/4	5	7-1/4
PM-TRF39A12S	T5-PM-TRF39A12S	PM-TRF39B12S	3/4	3/4	2	6	8-1/4
PM-TRF39A16S.2	T5-PM-TRF39A16S.2	PM-TRF39B16S.2	1	1	1	2	4-1/2
PM-TRF39A16S.3	T5-PM-TRF39A16S.3	PM-TRF39B16S.3	1	1	1-1/2	3	5-1/2
PM-TRF39A16S.4	T5-PM-TRF39A16S.4	PM-TRF39B16S.4	1	1	2	4	6-1/2
PM-TRF39A16S.6	T5-PM-TRF39A16S.6	PM-TRF39B16S.6	1	1	2-1/2	6	8-1/2
PM-TRF39A16S.7	T5-PM-TRF39A16S.7	PM-TRF39B16S.7	1	1	2-3/4	7	9-1/2
PM-TRF39A16S	T5-PM-TRF39A16S	PM-TRF39B16S	1	1	3	8	10-1/2
PM-TRF39A20S.3	T5-PM-TRF39A20S.3	PM-TRF39B20S.3	1-1/4	1-1/4	1-1/2	3	5-1/2
PM-TRF39A20S.4	T5-PM-TRF39A20S.4	PM-TRF39B20S.4	1-1/4	1-1/4	2	4	6-1/2
PM-TRF39A20S.6	T5-PM-TRF39A20S.6	PM-TRF39B20S.6	1-1/4	1-1/4	2-1/2	6	8-1/2
PM-TRF39A20S.7	T5-PM-TRF39A20S.7	PM-TRF39B20S.7	1-1/4	1-1/4	2-3/4	7	9-1/2
PM-TRF39A20S.8	T5-PM-TRF39A20S.8	PM-TRF39B20S.8	1-1/4	1-1/4	3	8	10-1/2
PM-TRF39A20S	T5-PM-TRF39A20S	PM-TRF39B20S	1-1/4	1-1/4	3-1/2	10	12-1/2



# 3 FLUTE

## Coarse Pitch Rougher – Center Cut

Ideal for aluminum alloys  
 Right-hand spiral and cut  
 Weldon flats  
 Square and ballnose end



**N** Material Code: Refer to Page 4

<b>PM4</b>	<b>3</b> Flutes	$37^\circ$	Coarse Rougher
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**Exxtral Carbon®**  
 3-4 times tool life  
 compared to Z-Power.

### RIGHT HAND - 3 Flute

Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
PM-R33008	T5-PM-R33008	PM-R33108	1/2	1/2	1-1/4	3-1/4
PM-R33208	T5-PM-R33208	PM-R33308	1/2	1/2	2	4
PM-R33408	T5-PM-R33408	PM-R33508	1/2	1/2	3	5
PM-R33608	T5-PM-R33608	PM-R33708	1/2	1/2	4	6
PM-R33010	T5-PM-R33010	PM-R33110	5/8	5/8	1-5/8	3-3/4
PM-R33210	T5-PM-R33210	PM-R33310	5/8	5/8	2-1/2	4-5/8
PM-R33410	T5-PM-R33410	PM-R33510	5/8	5/8	3	5-1/8
PM-R33610	T5-PM-R33610	PM-R33710	5/8	5/8	4	6-1/8
PM-R33012	T5-PM-R33012	PM-R33112	3/4	3/4	1-5/8	3-7/8
PM-R33212S	T5-PM-R33212S	PM-R33312S	3/4	3/4	2-1/4	4-1/2
PM-R33412	T5-PM-R33412	PM-R33512	3/4	3/4	3	5-1/4
PM-R33612	T5-PM-R33612	PM-R33712	3/4	3/4	4	6-1/4
PM-R33612S	T5-PM-R33612S	PM-R33712S	3/4	3/4	6	8-1/4
PM-R33016	T5-PM-R33016	PM-R33116	1	1	2	4-1/2
PM-R33216	T5-PM-R33216	PM-R33316	1	1	3	5-1/2
PM-R33416	T5-PM-R33416	PM-R33516	1	1	4	6-1/2
PM-R33616	T5-PM-R33616	PM-R33716	1	1	6	8-1/2
PM-R33020	T5-PM-R33020	PM-R33120	1-1/4	1-1/4	2	4-1/2
PM-R33220	T5-PM-R33220	PM-R33320	1-1/4	1-1/4	3	5-1/2
PM-R33420	T5-PM-R33420	PM-R33520	1-1/4	1-1/4	4	6-1/2
PM-R33620	T5-PM-R33620	PM-R33720	1-1/4	1-1/4	6	8-1/2
PM-R33820	T5-PM-R33820	PM-R33920	1-1/4	1-1/4	8	10-1/2
PM-R33024	T5-PM-R33024	PM-R33124	1-1/2	1-1/4	2	4-1/2
PM-R33224	T5-PM-R33224	PM-R33324	1-1/2	1-1/4	3	5-1/2
PM-R33424	T5-PM-R33424	PM-R33524	1-1/2	1-1/4	4	6-1/2
PM-R33624	T5-PM-R33624	PM-R33724	1-1/2	1-1/4	6	8-1/2
PM-R33824	T5-PM-R33824	PM-R33924	1-1/2	1-1/4	8	10-1/2
* PM-R33032	T5-PM-R33032	PM-R33132	2	1-1/4	2	4-1/2
* PM-R33232	T5-PM-R33232	PM-R33332	2	1-1/4	3	5-1/2
* PM-R33432	T5-PM-R33432	PM-R33532	2	1-1/4	4	6-1/2
* PM-R33632	T5-PM-R33632	PM-R33732	2	1-1/4	6	8-1/2
* PM-R37002A	T5-PM-R37002A	PM-R37102A	2	2	2	5-3/4
* PM-R37003A	T5-PM-R37003A	PM-R37103A	2	2	3	6-3/4
* PM-R37004A	T5-PM-R37004A	PM-R37104A	2	2	4	7-3/4
* PM-R37005A	T5-PM-R37005A	PM-R37105A	2	2	5	8-3/4
* PM-R37006A	T5-PM-R37006A	PM-R37106A	2	2	6	9-3/4
* PM-R37008A	T5-PM-R37008A	PM-R37108A	2	2	8	11-3/4
* PM-R37010A	T5-PM-R37010A	PM-R37110A	2	2	10	13-3/4
* PM-R37012A	T5-PM-R37012A	PM-R37112A	2	2	12	15-3/4

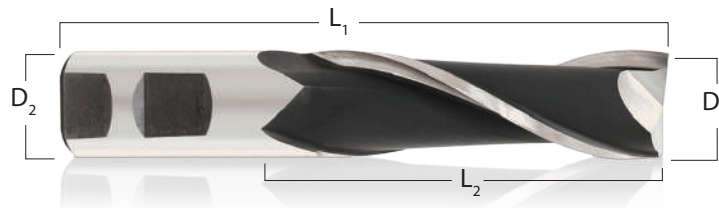
\* Made to order



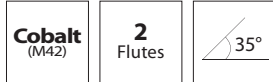
## 2 FLUTE

### Finisher- Center Cut

General purpose  
Right-hand spiral and cut  
Weldon flats  
Square and ballnose end



**P M K S** Material Code: Refer to Page 4



#### RIGHT HAND - 2 Flute

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
*24004	24104	1/4	3/8	1/2	2-5/16	24014	24114	7/8	7/8	1-1/2	3-3/4
*24204	24304	1/4	3/8	1	2-13/16	24214	24314	7/8	7/8	2	4-1/4
*24404	24504	1/4	3/8	1-1/2	3-5/16	24414	24514	7/8	7/8	2-1/2	4-3/4
*24604	24704	1/4	3/8	2	3-3/4	24614	24714	7/8	7/8	3-1/2	5-3/4
*24005	24105	5/16	3/8	9/16	2-5/16	24614S	24714S	7/8	7/8	5	7-1/4
*24205	24305	5/16	3/8	1	2-3/4	*24015.1	24115.1	15/16	5/8	1-1/2	3-5/8
*24405	24505	5/16	3/8	1-1/2	3-1/4	*24015.B	24115.B	15/16	3/4	1-1/2	3-3/4
*24605	24705	5/16	3/8	2	3-3/4	24016	24116	1	1	1-5/8	4-1/8
*24006	24106	3/8	3/8	9/16	2-5/16	24016S	24116S	1	1	2	4-1/2
*24206	24306	3/8	3/8	1	2-3/4	24216	24316	1	1	2-1/4	4-3/4
*24406	24506	3/8	3/8	1-1/2	3-1/4	24416	24516	1	1	3	5-1/2
*24606	24706	3/8	3/8	3	4-3/4	24616	24716	1	1	4	6-1/2
24008	24108	1/2	1/2	1	3	24616S	24716S	1	1	6	8-1/2
24008S	24108S	1/2	1/2	1-1/4	3-1/4	24020	24120	1-1/4	1-1/4	1-5/8	4-1/8
24208	24308	1/2	1/2	1-1/2	3-1/2	24220	24320	1-1/4	1-1/4	2-1/4	4-3/4
24408	24508	1/2	1/2	2	4	24420	24520	1-1/4	1-1/4	3	5-1/2
24608	24708	1/2	1/2	3	5	24620	24720	1-1/4	1-1/4	4	6-1/2
24608S	24708S	1/2	1/2	4	6	24620S	24720S	1-1/4	1-1/4	6	8-1/2
24010	24110	5/8	5/8	1-5/16	3-7/16	24024	24124	1-1/2	1-1/4	1-5/8	4-1/8
24210	24310	5/8	5/8	1-5/8	3-3/4	24224	24324	1-1/2	1-1/4	2-1/4	4-3/4
24410	24510	5/8	5/8	2	4-1/8	24424	24524	1-1/2	1-1/4	3	5-1/2
24610	24710	5/8	5/8	3	5-1/8	24624	24724	1-1/2	1-1/4	4	6-1/2
24610S	24710S	5/8	5/8	4	6-1/8	24624S	24724S	1-1/2	1-1/4	6	8-1/2
24012	24112	3/4	3/4	1-5/16	3-9/16	24824	24924	1-1/2	1-1/4	8	10-1/2
24012.1	24112.1	3/4	5/8	1-5/16	3-7/16	24032	24132	2	1-1/4	1-5/8	4-1/8
24012S	24112S	3/4	3/4	1-5/8	3-7/8	24232	24332	2	1-1/4	2-1/4	4-3/4
24212	24312	3/4	3/4	1-3/4	4	24432	24532	2	1-1/4	3	5-1/2
24412	24512	3/4	3/4	2-1/4	4-1/2	24632	24732	2	1-1/4	4	6-1/2
24612	24712	3/4	3/4	3	5-1/4						
24612S	24712S	3/4	3/4	4	6-1/4						
24812	24912	3/4	3/4	6	8-1/4						

\*Available while supplies last

# 4 FLUTE

**Finisher – Center Cut**  
 Right-hand spiral and cut  
 Weldon flats  
 Square and ballnose end



**P M K S** Material Code: Refer to Page 4



Exxtral Plus® is ideal for high-performance machining of hard materials.

**RIGHT HAND - 4 Flute**

Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
* 54004	T4-54004	54104	1/4	3/8	5/8	2-7/16
* 54204	T4-54204	54304	1/4	3/8	1-1/4	3-1/16
* 54404	T4-54404	54504	1/4	3/8	1-3/4	3-9/16
* 54604	T4-54604	54704	1/4	3/8	2	3-3/4
* 54804	T4-54804	54904	1/4	3/8	2-1/2	4-1/4
* 54005	T4-54005	54105	5/16	3/8	3/4	2-1/2
* 54205	T4-54205	54305	5/16	3/8	1-3/8	3-1/8
* 54405	T4-54405	54505	5/16	3/8	2	3-3/4
* 54605	T4-54605	54705	5/16	3/8	2-1/2	4-1/4
* 54805	T4-54805	54905	5/16	3/8	3	4-3/4
* 54006	T4-54006	54106	3/8	3/8	3/4	2-1/2
* 54206	T4-54206	54306	3/8	3/8	1-1/2	3-1/4
* 54406	T4-54406	54506	3/8	3/8	2-1/2	4-1/4
* 54606	T4-54606	54706	3/8	3/8	3	4-3/4
* 54806	T4-54806	54906	3/8	3/8	4	5-3/4
* 54008.6	T4-54008.6	54108.6	1/2	3/8	1	2-11/16
* 54008.8	T4-54008.8	54108.8	1/2	1/2	1	3
54008	T4-54008	54108	1/2	1/2	1-1/4	3-1/4
54208	T4-54208	54308	1/2	1/2	2	4
54408	T4-54408	54508	1/2	1/2	3	5
54608	T4-54608	54708	1/2	1/2	4	6
54608S	T4-54608S	54708S	1/2	1/2	5	7
54808	T4-54808	54908	1/2	1/2	6	8
54808S	T4-54808S	54908S	1/2	1/2	8	10
54010	T4-54010	54110	5/8	5/8	1-5/8	3-3/4
54210	T4-54210	54310	5/8	5/8	2-1/2	4-5/8
54410	T4-54410	54510	5/8	5/8	3	5-1/8
54610	T4-54610	54710	5/8	5/8	4	6-1/8
54810	T4-54810	54910	5/8	5/8	6	8-1/8
54012	T4-54012	54112	3/4	3/4	1-5/8	3-7/8
54212	T4-54212	54312	3/4	3/4	2	4-1/4
54212S	T4-54212S	54312S	3/4	3/4	2-1/4	4-1/2
54412	T4-54412	54512	3/4	3/4	3	5-1/4
54612	T4-54612	54712	3/4	3/4	4	6-1/4
54612S	T4-54612S	54712S	3/4	3/4	5	7-1/4
54812	T4-54812	54912	3/4	3/4	6	8-1/4
54812S	T4-54812S	54912S	3/4	3/4	8	10-1/4
54014	T4-54014	54114	7/8	7/8	1-7/8	4-1/8
54214	T4-54214	54314	7/8	7/8	2-1/2	4-3/4
54414	T4-54414	54514	7/8	7/8	3-1/2	5-3/4
54414S	T4-54414S	54514S	7/8	7/8	4	6-1/4
54614	T4-54614	54714	7/8	7/8	5	7-1/4
54614S	T4-54614S	54714S	7/8	7/8	6	8-1/4
* 59G16	T4-59G16	59H16	1	3/4	1-7/8	4-1/8
54016S	T4-54016S	54116S	1	1	1-1/2	4
54016	T4-54016	54116	1	1	2	4-1/2

\* Available while supplies lasts

## RIGHT HAND - 4 Flute

Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
54216	T4-54216	54316	1	1	3	5-1/2
54416	T4-54416	54516	1	1	4	6-1/2
54416S	T4-54416S	54516S	1	1	5	7-1/2
54616	T4-54616	54716	1	1	6	8-1/2
54616S	T4-54616S	54716S	1	1	7	9-1/2
54816	T4-54816	54916	1	1	8	10-1/2
54816S	T4-54816S	54916S	1	1	10	12-1/2
54020	T4-54020	54120	1-1/4	1-1/4	2	4-1/2
54220	T4-54220	54320	1-1/4	1-1/4	3	5-1/2
54420	T4-54420	54520	1-1/4	1-1/4	4	6-1/2
54420S	T4-54420S	54520S	1-1/4	1-1/4	5	7-1/2
54620	T4-54620	54720	1-1/4	1-1/4	6	8-1/2
54620S	T4-54620S	54720S	1-1/4	1-1/4	7	9-1/2
54820	T4-54820	54920	1-1/4	1-1/4	8	10-1/2
54024	T4-54024	54124	1-1/2	1-1/4	2	4-1/2
54224	T4-54224	54324	1-1/2	1-1/4	3	5-1/2
54424	T4-54424	54524	1-1/2	1-1/4	4	6-1/2
54624	T4-54624	54724	1-1/2	1-1/4	6	8-1/2
54624S	T4-54624S	54724S	1-1/2	1-1/4	7	9-1/2
54824	T4-54824	54924	1-1/2	1-1/4	8	10-1/2
54032	T4-54032	54132	2	1-1/4	2	4-1/2
54232	T4-54232	54332	2	1-1/4	3	5-1/2
54432	T4-54432	54532	2	1-1/4	4	6-1/2
* 48002A	T4-48002A	48102A	2	2	2	5-3/4
* 48003A	T4-48003A	48103A	2	2	3	6-3/4
* 48004A	T4-48004A	48104A	2	2	4	7-3/4
* 48005A	T4-48005A	48105A	2	2	5	8-3/4
* 48006A	T4-48006A	48106A	2	2	6	9-3/4
* 48008A	T4-48008A	48108A	2	2	8	11-3/4
* 48010A	T4-48010A	48110A	2	2	10	13-3/4
* 48012A	T4-48012A	48112A	2	2	12	15-3/4

\* Made to order

COBALT ENDMILLS - M42

# 6 FLUTE

**Finisher – Center Cut**  
 Right-hand spiral and cut  
 Weldon flats  
 Square and ballnose end

**P M K S** Material Code: Refer to Page 4



Exxtral Plus® is ideal for high-performance machining of hard materials.

## RIGHT HAND - 6 Flute

Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
54008X	T4-54008X	54108X	1/2	1/2	1-1/4	3-1/4
54208X	T4-54208X	54308X	1/2	1/2	2	4
54408X	T4-54408X	54508X	1/2	1/2	3	5
* 54608X	T4-54608X	54708X	1/2	1/2	4	6
* 54608SX	T4-54608SX	54708SX	1/2	1/2	5	7
* 54808X	T4-54808X	54908X	1/2	1/2	6	8
* 54808SX	T4-54808SX	54908SX	1/2	1/2	8	10
54010X	T4-54010X	54110X	5/8	5/8	1-5/8	3-3/4
54210X	T4-54210X	54310X	5/8	5/8	2-1/2	4-5/8
54410X	T4-54410X	54510X	5/8	5/8	3	5-1/8
54610X	T4-54610X	54710X	5/8	5/8	4	6-1/8
54810X	T4-54810X	54910X	5/8	5/8	6	8-1/8
54012X	T4-54012X	54112X	3/4	3/4	1-5/8	3-7/8
54212X	T4-54212X	54312X	3/4	3/4	2	4-1/4
54412X	T4-54412X	54512X	3/4	3/4	3	5-1/4
54612X	T4-54612X	54712X	3/4	3/4	4	6-1/4
54612SX	T4-54612SX	54712SX	3/4	3/4	5	7-1/4
54812X	T4-54812X	54912X	3/4	3/4	6	8-1/4
54812SX	T4-54812SX	54912SX	3/4	3/4	8	10-1/4
54014X	T4-54014X	54114X	7/8	7/8	1-7/8	4-1/8
54414X	T4-54414X	54514X	7/8	7/8	3-1/2	5-3/4
54614SX	T4-54614SX	54714SX	7/8	7/8	6	8-1/4
* 59G16X	T4-59G16X	59H16X	1	3/4	1-7/8	4-1/8
54016X	T4-54016X	54116X	1	1	2	4-1/2
54216X	T4-54216X	54316X	1	1	3	5-1/2
54416X	T4-54416X	54516X	1	1	4	6-1/2
54416SX	T4-54416SX	54516SX	1	1	5	7-1/2
54616X	T4-54616X	54716X	1	1	6	8-1/2
54616SX	T4-54616SX	54716SX	1	1	7	9-1/2
54816X	T4-54816X	54916X	1	1	8	10-1/2
54816SX	T4-54816SX	54916SX	1	1	10	12-1/2
* 59G18X	T4-59G18X	59H18X	1-1/8	3/4	1-1/2	3-7/8
* 54018X	T4-54018X	54118X	1-1/8	1	2	4-1/2
* 54218X	T4-54218X	54318X	1-1/8	1	3	5-1/2
* 54418X	T4-54418X	54518X	1-1/8	1	4	6-1/2
* 59G20X	T4-59G20X	59H20X	1-1/4	3/4	1-1/2	3-7/8
54020X	T4-54020X	54120X	1-1/4	1-1/4	2	4-1/2
54220X	T4-54220X	54320X	1-1/4	1-1/4	3	5-1/2
54420X	T4-54420X	54520X	1-1/4	1-1/4	4	6-1/2
54420SX	T4-54420SX	54520SX	1-1/4	1-1/4	5	7-1/2
54620X	T4-54620X	54720X	1-1/4	1-1/4	6	8-1/2
54620SX	T4-54620SX	54720SX	1-1/4	1-1/4	7	9-1/2
54820X	T4-54820X	54920X	1-1/4	1-1/4	8	10-1/2
54820SX	T4-54820SX	54920SX	1-1/4	1-1/4	10	12-1/2
* 59G24X	T4-59G24X	59H24X	1-1/2	3/4	1-1/2	3-7/8
54024X	T4-54024X	54124X	1-1/2	1-1/4	2	4-1/2
54224X	T4-54224X	54324X	1-1/2	1-1/4	3	5-1/2
54424X	T4-54424X	54524X	1-1/2	1-1/4	4	6-1/2
54424SX	T4-54424SX	54524SX	1-1/2	1-1/4	5	7-1/2
54624X	T4-54624X	54724X	1-1/2	1-1/4	6	8-1/2

\* Made to order

## RIGHT HAND - 6 Flute

Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
54624SX	T4-54624SX	54724SX	1-1/2	1-1/4	7	9-1/2
54824X	T4-54824X	54924X	1-1/2	1-1/4	8	10-1/2
54824SX	T4-54824SX	54924SX	1-1/2	1-1/4	10	12-1/2
* 59G28X	T4-59G28X	59H28X	1-3/4	3/4	1-1/2	3-7/8
54032X	T4-54032X	54132X	2	1-1/4	2	4-1/2
54232X	T4-54232X	54332X	2	1-1/4	3	5-1/2
54432X	T4-54432X	54532X	2	1-1/4	4	6-1/2
54632X	T4-54632X	54732X	2	1-1/4	6	8-1/2
54832X	T4-54832X	54932X	2	1-1/4	8	10-1/2
68002A	T4-68002A	68102A	2	2	2	5-3/4
68003A	T4-68003A	68103A	2	2	3	6-3/4
68004A	T4-68004A	68104A	2	2	4	7-3/4
68005A	T4-68005A	68105A	2	2	5	8-3/4
68006A	T4-68006A	68106A	2	2	6	9-3/4
68008A	T4-68008A	68108A	2	2	8	11-3/4
68010A	T4-68010A	68110A	2	2	10	13-3/4
68012A	T4-68012A	68112A	2	2	12	15-3/4
* 68014A	T4-68014A	68114A	2	2	14	17-3/4

\* Made to order

2-1/2" &amp; 3" Diameters Available Upon Request

## 8 FLUTE

## Finisher – Center Cut

Right-hand spiral and cut

Weldon flats

Square and ballnose end



**P M K S** Material Code: Refer to Page 4



Exxtral Plus® is ideal for high-performance machining of hard materials.

## RIGHT HAND - 8 Flute

Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
* 59G32Z	T4-59G32Z	59H32Z	2	3/4	2	4-1/2
88002A	T4-88002A	88102A	2	2	2	5-3/4
88003A	T4-88003A	88103A	2	2	3	6-3/4
88004A	T4-88004A	88104A	2	2	4	7-3/4
88005A	T4-88005A	88105A	2	2	5	8-3/4
88006A	T4-88006A	88106A	2	2	6	9-3/4
88008A	T4-88008A	88108A	2	2	8	11-3/4
88010A	T4-88010A	88110A	2	2	10	13-3/4
88012A	T4-88012A	88112A	2	2	12	15-3/4
* 88014A	T4-88014A	88114A	2	2	14	17-3/4

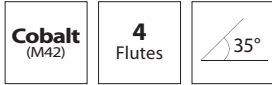
\* Made to order

# 4 FLUTE

**Finisher – Center Cut**  
 Left-hand spiral and cut  
 Weldon flats  
 Square and ballnose end



**P M K S** Material Code: Refer to Page 4



**LEFT HAND  
 COBALT ENDMILLS**

DISCONTINUED MADE TO ORDER

LEFT HAND - 4 Flute

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
* 56004	56104	1/4	3/8	5/8	2-7/16	56414	56514	7/8	7/8	3-1/2	5-3/4
* 56204	56304	1/4	3/8	1-1/4	3-1/16	56414S	56514S	7/8	7/8	4	6-1/4
* 56404	56504	1/4	3/8	1-3/4	3-9/16	56614	56714	7/8	7/8	5	7-1/4
* 56604	56704	1/4	3/8	2	3-3/4	56614S	56714S	7/8	7/8	6	8-1/4
* 56804	56904	1/4	3/8	2-1/2	4-1/4	56016.F	56116.F	1	1	1	3-1/2
* 56005	56105	5/16	3/8	3/4	2-1/2	56016	56116	1	1	2	4-1/2
* 56205	56305	5/16	3/8	1-3/8	3-1/8	56216	56316	1	1	3	5-1/2
* 56405	56505	5/16	3/8	2	3-3/4	56416	56516	1	1	4	6-1/2
* 56605	56705	5/16	3/8	2-1/2	4-1/4	56416S	56516S	1	1	5	7-1/2
* 56805	56905	5/16	3/8	3	4-3/4	56616	56716	1	1	6	8-1/2
* 56006	56106	3/8	3/8	3/4	2-1/2	56616S	56716S	1	1	7	9-1/2
* 56206	56306	3/8	3/8	1-1/2	3-1/4	56816	56916	1	1	8	10-1/2
* 56406	56506	3/8	3/8	2-1/2	4-1/4	56020	56120	1-1/4	1-1/4	2	4-1/2
* 56606	56706	3/8	3/8	2-3/4	4-1/2	56220	56320	1-1/4	1-1/4	3	5-1/2
* 56806	56906	3/8	3/8	4	5-3/4	56420	56520	1-1/4	1-1/4	4	6-1/2
* 56007	56107	7/16	3/8	1	2-11/16	56420S	56520S	1-1/4	1-1/4	5	7-1/2
* 56207	56307	7/16	1/2	1-3/4	3-3/4	56620	56720	1-1/4	1-1/4	6	8-1/2
* 56407	56507	7/16	1/2	3	5	56620S	56720S	1-1/4	1-1/4	7	9-1/2
56008	56108	1/2	1/2	1-1/4	3-1/4	56820	56920	1-1/4	1-1/4	8	10-1/2
56208	56308	1/2	1/2	2	4	56022	56122	1-3/8	1	2	4-1/2
56408	56508	1/2	1/2	3	5	56024	56124	1-1/2	1-1/4	2	4-1/2
56608	56708	1/2	1/2	4	6	56224	56324	1-1/2	1-1/4	3	5-1/2
56608S	56708S	1/2	1/2	5	7	56424	56524	1-1/2	1-1/4	4	6-1/2
56808	56908	1/2	1/2	6	8	56624	56724	1-1/2	1-1/4	6	8-1/2
56808S	56908S	1/2	1/2	8	10	56824	56924	1-1/2	1-1/4	8	10-1/2
56010	56110	5/8	5/8	1-5/8	3-3/4	56028	56128	1-3/4	1-1/4	2	4-1/2
56210	56310	5/8	5/8	2-1/2	4-5/8	56032	56132	2	1-1/4	2	4-1/2
56410	56510	5/8	5/8	3	5-1/8	56232	56332	2	1-1/4	3	5-1/2
56610	56710	5/8	5/8	4	6-1/8	56432	56532	2	1-1/4	4	6-1/2
56810	56910	5/8	5/8	6	8-1/8	56632	56732	2	1-1/4	6	8-1/2
56012	56112	3/4	3/4	1-5/8	3-7/8	56832	56932	2	1-1/4	8	10-1/2
56212	56312	3/4	3/4	2	4-1/4	48F02A	48G02A	2	2	2	5-3/4
56212S	56312S	3/4	3/4	2-1/4	4-1/2	48F03A	48G03A	2	2	3	6-3/4
56412	56512	3/4	3/4	3	5-1/4	48F04A	48G04A	2	2	4	7-3/4
56612	56712	3/4	3/4	4	6-1/4	48F05A	48G05A	2	2	5	8-3/4
56612S	56712S	3/4	3/4	5	7-1/4	48F06A	48G06A	2	2	6	9-3/4
56812	56912	3/4	3/4	6	8-1/4	48F08A	48G08A	2	2	8	11-3/4
56812S	56912S	3/4	3/4	8	10-1/4	48F10A	48G10A	2	2	10	13-3/4
56014	56114	7/8	7/8	1-7/8	4-1/8	48F12A	48G12A	2	2	12	15-3/4
56214	56314	7/8	7/8	2-1/2	4-3/4	48F14A	48G14A	2	2	14	17-3/4

\*Available While Stock Lasts.

2-1/2" & 3" Diameters Available Upon Request

# 6 FLUTE

## Finisher - Center Cut

Left-hand spiral and cut  
Weldon flats, square and ballnose end

**P M K S** Material Code: Refer to Page 4

**Cobalt**  
(M42)

**6**  
Flutes



35°



**LEFT HAND  
COBALT ENDMILLS**

DISCONTINUED MADE TO ORDER

### LEFT HAND - 6 Flute

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
56008X	56108X	1/2	1/2	1-1/4	3-1/4
56208X	56308X	1/2	1/2	2	4
56408X	56508X	1/2	1/2	3	5
56608X	56708X	1/2	1/2	4	6
56808X	56908X	1/2	1/2	6	8
56808SX	56908SX	1/2	1/2	8	10
56010X	56110X	5/8	5/8	1-5/8	3-3/4
56210X	56310X	5/8	5/8	2-1/2	4-5/8
56410X	56510X	5/8	5/8	3	5-1/8
56610X	56710X	5/8	5/8	4	6-1/8
56810X	56910X	5/8	5/8	6	8-1/8
56012X	56112X	3/4	3/4	1-5/8	3-7/8
56212X	56312X	3/4	3/4	2	4-1/4
56412X	56512X	3/4	3/4	3	5-1/4
56612X	56712X	3/4	3/4	4	6-1/4
56612SX	56712SX	3/4	3/4	5	7-1/4
56812X	56912X	3/4	3/4	6	8-1/4
56812SX	56912SX	3/4	3/4	8	10-1/4
56414X	56514X	7/8	7/8	3-1/2	5-3/4
56414SX	56514SX	7/8	7/8	4	6-1/4
56614SX	56714SX	7/8	7/8	6	8-1/4
56016X	56116X	1	1	2	4-1/2
56216X	56316X	1	1	3	5-1/2
56416X	56516X	1	1	4	6-1/2
56416SX	56516SX	1	1	5	7-1/2
56616X	56716X	1	1	6	8-1/2
56616SX	56716SX	1	1	7	9-1/2
56816X	56916X	1	1	8	10-1/2
56816SX	56916SX	1	1	10	12-1/2
56020X	56120X	1-1/4	1-1/4	2	4-1/2

2-1/2" & 3" Diameters Available Upon Request

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
56220X	56320X	1-1/4	1-1/4	3	5-1/2
56420X	56520X	1-1/4	1-1/4	4	6-1/2
56420SX	56520SX	1-1/4	1-1/4	5	7-1/2
56620X	56720X	1-1/4	1-1/4	6	8-1/2
56620SX	56720SX	1-1/4	1-1/4	7	9-1/2
56820X	56920X	1-1/4	1-1/4	8	10-1/2
56820SX	56920SX	1-1/4	1-1/4	10	12-1/2
56022X	56122X	1-3/8	1	2	4-1/2
56024X	56124X	1-1/2	1-1/4	2	4-1/2
56224X	56324X	1-1/2	1-1/4	3	5-1/2
56424X	56524X	1-1/2	1-1/4	4	6-1/2
56424SX	56524SX	1-1/2	1-1/4	5	7-1/2
56624X	56724X	1-1/2	1-1/4	6	8-1/2
56624SX	56724SX	1-1/2	1-1/4	7	9-1/2
56824X	56924X	1-1/2	1-1/4	8	10-1/2
56824SX	56924SX	1-1/2	1-1/4	10	12-1/2
56032X	56132X	2	1-1/4	2	4-1/2
56232X	56332X	2	1-1/4	3	5-1/2
56432X	56532X	2	1-1/4	4	6-1/2
56632X	56732X	2	1-1/4	6	8-1/2
56832X	56932X	2	1-1/4	8	10-1/2
68F02A	68G02A	2	2	2	5-3/4
68F03A	68G03A	2	2	3	6-3/4
68F04A	68G04A	2	2	4	7-3/4
68F05A	68G05A	2	2	5	8-3/4
68F06A	68G06A	2	2	6	9-3/4
68F08A	68G08A	2	2	8	11-3/4
68F10A	68G10A	2	2	10	13-3/4
68F12A	68G12A	2	2	12	15-3/4
68F14A	68G14A	2	2	14	17-3/4

# 8 FLUTE

## Finisher - Center Cut

Left-hand spiral and cut  
Weldon flats, square and ballnose end

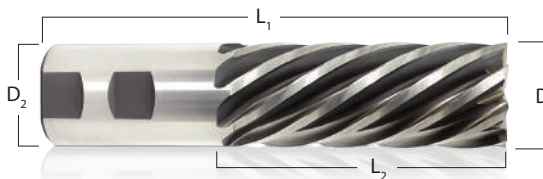
**P M K S** Material Code: Refer to Page 4

**Cobalt**  
(M42)

**8**  
Flutes



35°



**LEFT HAND  
COBALT ENDMILLS**

DISCONTINUED MADE TO ORDER

### LEFT HAND - 8 Flute

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
88F02A	88G02A	2	2	2	5-3/4
88F03A	88G03A	2	2	3	6-3/4
88F04A	88G04A	2	2	4	7-3/4
88F05A	88G05A	2	2	5	8-3/4
88F06A	88G06A	2	2	6	9-3/4

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
88F08A	88G08A	2	2	8	11-3/4
88F10A	88G10A	2	2	10	13-3/4
88F12A	88G12A	2	2	12	15-3/4
88F14A	88G14A	2	2	14	17-3/4

## 4, 5, 6, 8 FLUTE

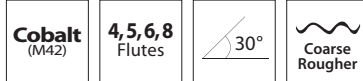
## Coarse Pitch Rougher – Center Cut

Right-hand spiral and cut

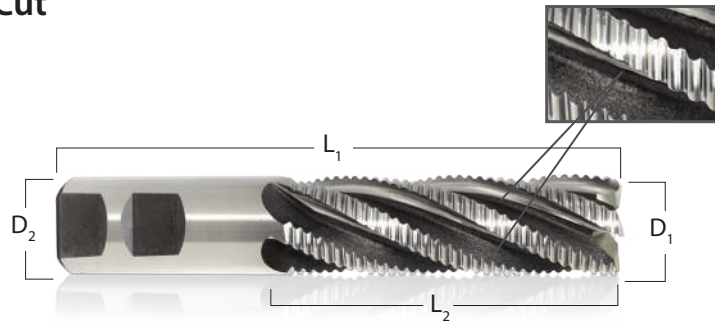
Weldon flats

Square and ballnose end

P M K S Material Code: Refer to Page 4



**Exxtral Plus®** is ideal for high-performance machining of hard materials.



## RIGHT HAND - 4 Flute

Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
R554008	T4-R554008	R554108	1/2	1/2	1/2	2-1/2
R54008	T4-R54008	R54108	1/2	1/2	1-1/4	3-1/4
R54208	T4-R54208	R54308	1/2	1/2	2	4
R54408	T4-R54408	R54508	1/2	1/2	3	5
R54608	T4-R54608	R54708	1/2	1/2	4	6
R54608S	T4-R54608S	R54708S	1/2	1/2	5	7
R54808	T4-R54808	R54908	1/2	1/2	6	8
R54808S	T4-R54808S	R54908S	1/2	1/2	8	10
R54010	T4-R54010	R54110	5/8	5/8	1-5/8	3-3/4
R54210	T4-R54210	R54310	5/8	5/8	2-1/2	4-5/8
R54410	T4-R54410	R54510	5/8	5/8	3	5-1/8
R54610	T4-R54610	R54710	5/8	5/8	4	6-1/8
R54810	T4-R54810	R54910	5/8	5/8	6	8-1/8
R554012	T4-R554012	R554112	3/4	3/4	3/4	2-7/8
R54012	T4-R54012	R54112	3/4	3/4	1-5/8	3-7/8
R54012.1	T4-R54012.1	R54112.1	3/4	5/8	1-5/8	3-3/4
R54212S	T4-R54212S	R54312S	3/4	3/4	2-1/4	4-1/2
R54412	T4-R54412	R54512	3/4	3/4	3	5-1/4
R54412.1	T4-R54412.1	R54512.1	3/4	5/8	3	5-1/8
R54612	T4-R54612	R54712	3/4	3/4	4	6-1/4
R54612S	T4-R54612S	R54712S	3/4	3/4	5	7-1/4
R54812	T4-R54812	R54912	3/4	3/4	6	8-1/4
R54812S	T4-R54812S	R54912S	3/4	3/4	8	10-1/4

\* Available while supplies lasts

## RIGHT HAND - 5 Flute

Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
R554014Y	T4-R554014Y	R554114Y	7/8	7/8	7/8	3-1/8
R54014.BY	T4-R54014.BY	R54114.BY	7/8	3/4	1-7/8	4-1/8
R54014Y	T4-R54014Y	R54114Y	7/8	7/8	1-7/8	4-1/8
R54214Y	T4-R54214Y	R54314Y	7/8	7/8	2-1/2	4-3/4
R54414Y	T4-R54414Y	R54514Y	7/8	7/8	3-1/2	5-3/4
R54614SY	T4-R54614SY	R54714SY	7/8	7/8	6	8-1/4
R554016Y	T4-R554016Y	R554116Y	1	1	1	3-1/2
R54016.BY	T4-R54016.BY	R54116.BY	1	3/4	2	4-1/4
R54016Y	T4-R54016Y	R54116Y	1	1	2	4-1/2
R54216Y	T4-R54216Y	R54316Y	1	1	3	5-1/2
R54416Y	T4-R54416Y	R54516Y	1	1	4	6-1/2
R54416SY	T4-R54416SY	R54516SY	1	1	5	7-1/2
R54616Y	T4-R54616Y	R54716Y	1	1	6	8-1/2
R54616SY	T4-R54616SY	R54716SY	1	1	7	9-1/2
R54816Y	T4-R54816Y	R54916Y	1	1	8	10-1/2



## RIGHT HAND - 6 Flute

Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
* R54018.BX	T4-R54018.BX	R54118.BX	1-1/8	3/4	2	4-1/4
* R54018X	T4-R54018X	R54118X	1-1/8	1	2	4-1/2
R54020.BX	T4-R54020.BX	R54120.BX	1-1/4	3/4	2	4-1/4
R54020X	T4-R54020X	R54120X	1-1/4	1-1/4	2	4-1/2
R54220X	T4-R54220X	R54320X	1-1/4	1-1/4	3	5-1/2
R54420X	T4-R54420X	R54520X	1-1/4	1-1/4	4	6-1/2
R54420SX	T4-R54420SX	R54520SX	1-1/4	1-1/4	5	7-1/2
R54620X	T4-R54620X	R54720X	1-1/4	1-1/4	6	8-1/2
R54620SX	T4-R54620SX	R54720SX	1-1/4	1-1/4	7	9-1/2
R54820X	T4-R54820X	R54920X	1-1/4	1-1/4	8	10-1/2
R54820SX	T4-R54820SX	R54920SX	1-1/4	1-1/4	10	12-1/2
R54024.BX	T4-R54024.BX	R54124.BX	1-1/2	3/4	2	4-1/4
R54024X	T4-R54024X	R54124X	1-1/2	1-1/4	2	4-1/2
R54224X	T4-R54224X	R54324X	1-1/2	1-1/4	3	5-1/2
R54424X	T4-R54424X	R54524X	1-1/2	1-1/4	4	6-1/2
R54424SX	T4-R54424SX	R54524SX	1-1/2	1-1/4	5	7-1/2
R54624X	T4-R54624X	R54724X	1-1/2	1-1/4	6	8-1/2
R54624SX	T4-R54624SX	R54724SX	1-1/2	1-1/4	7	9-1/2
R54824X	T4-R54824X	R54924X	1-1/2	1-1/4	8	10-1/2
R54824SX	T4-R54824SX	R54924SX	1-1/2	1-1/4	10	12-1/2
* R54028.BX	T4-R54028.BX	R54128.BX	1-3/4	3/4	2	4-1/4
* R54028X	T4-R54028X	R54128X	1-3/4	1-1/4	2	4-1/2
* R54228X	T4-R54228X	R54328X	1-3/4	1-1/4	3	5-1/2
* R54428X	T4-R54428X	R54528X	1-3/4	1-1/4	4-1/2	7
* R54628X	T4-R54628X	R54728X	1-3/4	1-1/4	6	8-1/2
R54032X	T4-R54032X	R54132X	2	1-1/4	2	4-1/2
R54232X	T4-R54232X	R54332X	2	1-1/4	3	5-1/2
R54432X	T4-R54432X	R54532X	2	1-1/4	4	6-1/2
R54632X	T4-R54632X	R54732X	2	1-1/4	6	8-1/2
R54832X	T4-R54832X	R54932X	2	1-1/4	8	10-1/2
R68002A	T4-R68002A	R68102A	2	2	2	5-3/4
* R68003A	T4-R68003A	R68103A	2	2	3	6-3/4
* R68004A	T4-R68004A	R68104A	2	2	4	7-3/4
* R68005A	T4-R68005A	R68105A	2	2	5	8-3/4
* R68006A	T4-R68006A	R68106A	2	2	6	9-3/4
* R68008A	T4-R68008A	R68108A	2	2	8	11-3/4
* R68010A	T4-R68010A	R68110A	2	2	10	13-3/4
* R68012A	T4-R68012A	R68112A	2	2	12	15-3/4

\* Made to order

## RIGHT HAND - 8 Flute

Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
R54032Z	T4-R54032Z	R54132Z	2	1-1/4	2	4-1/2
R54232Z	T4-R54232Z	R54332Z	2	1-1/4	3	5-1/2
R54432Z	T4-R54432Z	R54532Z	2	1-1/4	4	6-1/2
R54632Z	T4-R54632Z	R54732Z	2	1-1/4	6	8-1/2
R54832Z	T4-R54832Z	R54932Z	2	1-1/4	8	10-1/2
R88002A	T4-R88002A	R88102A	2	2	2	5-3/4
R88003A	T4-R88003A	R88103A	2	2	3	6-3/4
R88004A	T4-R88004A	R88104A	2	2	4	7-3/4
R88005A	T4-R88005A	R88105A	2	2	5	8-3/4
R88006A	T4-R88006A	R88106A	2	2	6	9-3/4
R88008A	T4-R88008A	R88108A	2	2	8	11-3/4
R88010A	T4-R88010A	R88110A	2	2	10	13-3/4
R88012A	T4-R88012A	R88112A	2	2	12	15-3/4

# 4, 5, 6, 8 FLUTE

## Coarse Pitch Rougher – Center Cut

General purpose

Left-hand spiral and cut

Weldon flats, square and ballnose end



**P M K S** Material Code: Refer to Page 4

<b>Cobalt</b> (M42)	<b>4, 5, 6, 8</b> Flutes		
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**Exxtral Plus®** is ideal for high-performance machining of hard materials.

**LEFT HAND**  
**COBALT ENDMILLS**

DISCONTINUED MADE TO ORDER

### LEFT HAND - 4 Flute

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
*R56004	R56104	1/4	3/8	5/8	2-7/16
*R56005	R56105	5/16	3/8	3/4	2-1/2
*R56006	R56106	3/8	3/8	3/4	2-1/2
*R56007	R56107	7/16	1/2	1-1/4	3-1/4
R56008	R56108	1/2	1/2	1-1/4	3-1/4
R56208	R56308	1/2	1/2	2	4
R56408	R56508	1/2	1/2	3	5
R56608	R56708	1/2	1/2	4	6
R56608S	R56708S	1/2	1/2	5	7
R56808	R56908	1/2	1/2	6	8
R56808S	R56908S	1/2	1/2	8	10
R56010	R56110	5/8	5/8	1-5/8	3-3/4
R56210	R56310	5/8	5/8	2-1/2	4-5/8
R56410	R56510	5/8	5/8	3	5-1/8
R56610	R56710	5/8	5/8	4	6-1/8
R56810	R56910	5/8	5/8	6	8-1/8
R56012	R56112	3/4	3/4	1-5/8	3-7/8
R56212S	R56312S	3/4	3/4	2-1/4	4-1/2
R56412	R56512	3/4	3/4	3	5-1/4
R56612	R56712	3/4	3/4	4	6-1/4
R56612S	R56712S	3/4	3/4	5	7-1/4
R56812	R56912	3/4	3/4	6	8-1/4
R56812S	R56912S	3/4	3/4	8	10-1/4

\* Available while supplies lasts

### LEFT HAND - 6 Flute

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
R56020X	R56120X	1-1/4	1-1/4	2	4-1/2
R56220X	R56320X	1-1/4	1-1/4	3	5-1/2
R56420X	R56520X	1-1/4	1-1/4	4	6-1/2
R56420SX	R56520SX	1-1/4	1-1/4	5	7-1/2
R56620X	R56720X	1-1/4	1-1/4	6	8-1/2
R56620SX	R56720SX	1-1/4	1-1/4	7	9-1/2
R56820X	R56920X	1-1/4	1-1/4	8	10-1/2
R56820SX	R56920SX	1-1/4	1-1/4	10	12-1/2
R56024X	R56124X	1-1/2	1-1/4	2	4-1/2
R56224X	R56324X	1-1/2	1-1/4	3	5-1/2
R56424X	R56524X	1-1/2	1-1/4	4	6-1/2
R56424SX	R56524SX	1-1/2	1-1/4	5	7-1/2
R56624X	R56724X	1-1/2	1-1/4	6	8-1/2
R56624SX	R56724SX	1-1/2	1-1/4	7	9-1/2
R56824X	R56924X	1-1/2	1-1/4	8	10-1/2
R56824SX	R56924SX	1-1/2	1-1/4	10	12-1/2
R56032X	R56132X	2	1-1/4	2	4-1/2
R56232X	R56332X	2	1-1/4	3	5-1/2
R56432X	R56532X	2	1-1/4	4	6-1/2
R56632X	R56732X	2	1-1/4	6	8-1/2
R56832X	R56932X	2	1-1/4	8	10-1/2
R68F02A	R68G02A	2	2	2	5-3/4
R68F03A	R68G03A	2	2	3	6-3/4
R68F04A	R68G04A	2	2	4	7-3/4
R68F05A	R68G05A	2	2	5	8-3/4
R68F06A	R68G06A	2	2	6	9-3/4
R68F08A	R68G08A	2	2	8	11-3/4

### LEFT HAND - 5 Flute

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
R56014Y	R56114Y	7/8	7/8	1-7/8	4-1/8
R56214Y	R56314Y	7/8	7/8	2-1/2	4-3/4
R56614Y	R56714Y	7/8	7/8	5	7-1/4
R56614SY	R56714SY	7/8	7/8	6	8-1/4
R56016Y	R56116Y	1	1	2	4-1/2
R56216Y	R56316Y	1	1	3	5-1/2
R56416Y	R56516Y	1	1	4	6-1/2
R56416SY	R56516SY	1	1	5	7-1/2
R56616Y	R56716Y	1	1	6	8-1/2
R56616SY	R56716SY	1	1	7	9-1/2
R56816Y	R56916Y	1	1	8	10-1/2
R56816SY	R56916SY	1	1	10	12-1/2

### LEFT HAND - 8 Flute

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
R56032Z	R56132Z	2	1-1/4	2	4-1/2
R56232Z	R56332Z	2	1-1/4	3	5-1/2
R56432Z	R56532Z	2	1-1/4	4	6-1/2
R56632Z	R56732Z	2	1-1/4	6	8-1/2
R56832Z	R56932Z	2	1-1/4	8	10-1/2
R88F02A	R88G02A	2	2	2	5-3/4
R88F03A	R88G03A	2	2	3	6-3/4
R88F04A	R88G04A	2	2	4	7-3/4
R88F05A	R88G05A	2	2	5	8-3/4
R88F06A	R88G06A	2	2	6	9-3/4
R88F08A	R88G08A	2	2	8	11-3/4
R88F10A	R88G10A	2	2	10	13-3/4
R88F12A	R88G12A	2	2	12	15-3/4

# 4 FLUTE

**P M K S** Material Code: Refer to Page 4

## Fine Pitch Rougher – Center Cut

General purpose, weldon flats  
Square and ballnose end

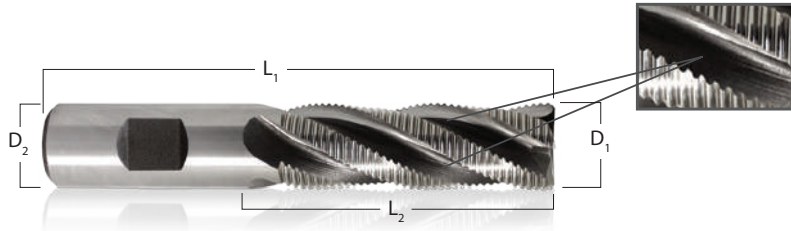
Cobalt  
(M42)

4  
Flutes

30°

Fine  
Rough

**Exxtral Plus®** Exxtral Plus® is ideal for high-performance machining of hard materials.



### RIGHT HAND - 4 Flute

Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
* F54004	T4-F54004	F54104	1/4	3/8	5/8	2-7/16
* F54204	T4-F54204	F54304	1/4	3/8	1-1/4	3-1/16
* F54404	T4-F54404	F54504	1/4	3/8	1-3/4	3-9/16
* F54604	T4-F54604	F54704	1/4	3/8	2	3-3/4
* F54804	T4-F54804	F54904	1/4	3/8	2-1/2	4-1/4
* F54005	T4-F54005	F54105	5/16	3/8	3/4	2-1/2
* F54205	T4-F54205	F54305	5/16	3/8	1-3/8	3-1/8
* F54405	T4-F54405	F54505	5/16	3/8	2	3-3/4
* F54605	T4-F54605	F54705	5/16	3/8	2-1/2	4-1/4
* F54805	T4-F54805	F54905	5/16	3/8	3	4-3/4
* F554006	T4-F554006	F554106	3/8	3/8	3/8	2-5/32
* F54006	T4-F54006	F54106	3/8	3/8	3/4	2-1/2
* F54206	T4-F54206	F54306	3/8	3/8	1-1/2	3-1/4
* F54406	T4-F54406	F54506	3/8	3/8	2-1/2	4-1/4
* F54606	T4-F54606	F54706	3/8	3/8	3	4-3/4
* F54806	T4-F54806	F54906	3/8	3/8	4	5-3/4
F554008	T4-F554008	F554108	1/2	1/2	1/2	2-1/2
F54008	T4-F54008	F54108	1/2	1/2	1-1/4	3-1/4
F54208	T4-F54208	F54308	1/2	1/2	2	4
F54408	T4-F54408	F54508	1/2	1/2	3	5
F54608	T4-F54608	F54708	1/2	1/2	4	6
F54608S	T4-F54608S	F54708S	1/2	1/2	5	7
F54808	T4-F54808	F54908	1/2	1/2	6	8
F54808S	T4-F54808S	F54908S	1/2	1/2	8	10
F54010	T4-F54010	F54110	5/8	5/8	1-5/8	3-3/4
F54210	T4-F54210	F54310	5/8	5/8	2-1/2	4-5/8
F54410	T4-F54410	F54510	5/8	5/8	3	5-1/8
F54610	T4-F54610	F54710	5/8	5/8	4	6-1/8
F54810	T4-F54810	F54910	5/8	5/8	6	8-1/8
F554012	T4-F554012	F554112	3/4	3/4	3/4	2-7/8
F54012	T4-F54012	F54112	3/4	3/4	1-5/8	3-7/8
F54012.1	T4-F54012.1	F54112.1	3/4	5/8	1-5/8	3-3/4
F54212	T4-F54212	F54312	3/4	3/4	2	4-1/4
F54212S	T4-F54212S	F54312S	3/4	3/4	2-1/4	4-1/2
F54412	T4-F54412	F54512	3/4	3/4	3	5-1/4
F54612	T4-F54612	F54712	3/4	3/4	4	6-1/4
F54612S	T4-F54612S	F54712S	3/4	3/4	5	7-1/4
F54812	T4-F54812	F54912	3/4	3/4	6	8-1/4
F54812S	T4-F54812S	F54912S	3/4	3/4	8	10-1/4

\* Available while supplies lasts

LEFT HAND  
COBALT ENDMILLS

### LEFT HAND - 4 Flute

DISCONTINUED MADE TO ORDER

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
F56008	F56108	1/2	1/2	1-1/4	3-1/4	F56610	F56710	5/8	5/8	4	6-1/8
F56208	F56308	1/2	1/2	2	4	F56810	F56910	5/8	5/8	6	8-1/8
F56408	F56508	1/2	1/2	3	5	F56012	F56112	3/4	3/4	1-5/8	3-7/8
F56608	F56708	1/2	1/2	4	6	F56212S	F56312S	3/4	3/4	2-1/4	4-1/2
F56608S	F56708S	1/2	1/2	5	7	F56412	F56512	3/4	3/4	3	5-1/4
F56808	F56908	1/2	1/2	6	8	F56612	F56712	3/4	3/4	4	6-1/4
F56808S	F56908S	1/2	1/2	8	10	F56612S	F56712S	3/4	3/4	5	7-1/4
F56010	F56110	5/8	5/8	1-5/8	3-3/4	F56812	F56912	3/4	3/4	6	8-1/4
F56210	F56310	5/8	5/8	2-1/2	4-5/8	F56812S	F56912S	3/4	3/4	8	10-1/4
F56410	F56510	5/8	5/8	3	5-1/8						

# 5 FLUTE

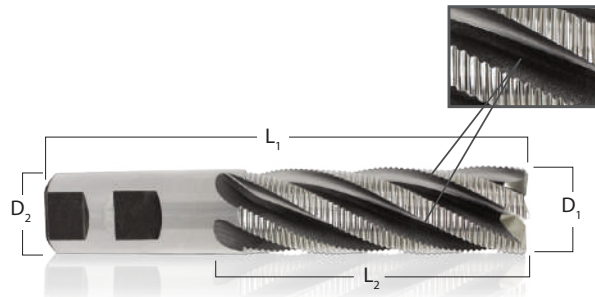
## Fine Pitch Rougher – Center Cut

General purpose

Weldon flats

Square and ballnose end

**P M K S** Material Code: Refer to Page 4

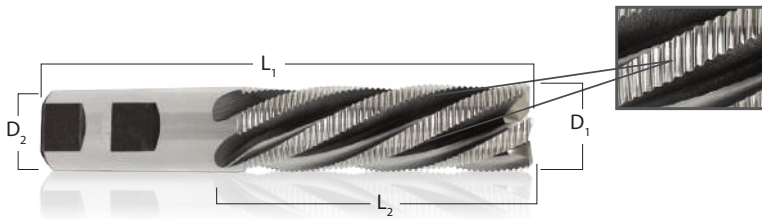


<b>Cobalt</b> (M42)	<b>5</b> Flutes	30°	Fine Rough
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**Exxtral Plus®** is ideal for high-performance machining of hard materials.

### RIGHT HAND - 5 Flute

Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
F54014.BY	T4-F54014.BY	F54114.BY	7/8	3/4	1-7/8	4-1/8
F54014Y	T4-F54014Y	F54114Y	7/8	7/8	7/8	3-1/8
F54014Y	T4-F54014Y	F54114Y	7/8	7/8	1-7/8	4-1/8
F54214Y	T4-F54214Y	F54314Y	7/8	7/8	2-1/2	4-3/4
F54414Y	T4-F54414Y	F54514Y	7/8	7/8	3-1/2	5-3/4
F54614Y	T4-F54614Y	F54714Y	7/8	7/8	5	7-1/4
F54614SY	T4-F54614SY	F54714SY	7/8	7/8	6	8-1/4
F54016.BY	T4-F54016.BY	F54116.BY	1	3/4	2	4-1/4
F54016Y	T4-F54016Y	F54116Y	1	1	1	3-1/2
F54016Y	T4-F54016Y	F54116Y	1	1	2	4-1/2
F54216Y	T4-F54216Y	F54316Y	1	1	3	5-1/2
F54416Y	T4-F54416Y	F54516Y	1	1	4	6-1/2
F54416SY	T4-F54416SY	F54516SY	1	1	5	7-1/2
F54616Y	T4-F54616Y	F54716Y	1	1	6	8-1/2
F54616SY	T4-F54616SY	F54716SY	1	1	7	9-1/2
F54816Y	T4-F54816Y	F54916Y	1	1	8	10-1/2
F54816SY	T4-F54816SY	F54916SY	1	1	10	12-1/2



**LEFT HAND  
COBALT ENDMILLS**

**DISCONTINUED** MADE TO ORDER

### LEFT HAND - 5 Flute

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
F56016Y	F56116Y	1	1	2	4-1/2
F56216Y	F56316Y	1	1	3	5-1/2
F56416Y	F56516Y	1	1	4	6-1/2
F56616Y	F56716Y	1	1	6	8-1/2
F56816Y	F56916Y	1	1	8	10-1/2
F56816SY	F56916SY	1	1	10	12-1/2

# 6 FLUTE

**P M K S** Material Code: Refer to Page 4

## Fine Pitch Rougher – Center Cut

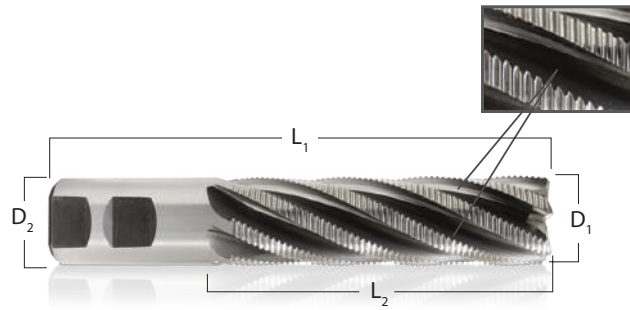
General purpose

Weldon flats

Square and ballnose end



**Exxtral Plus®** is ideal for high-performance machining of hard materials.



COBALT ENDMILLS – M42

### RIGHT HAND - 6 Flute

Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
* F54018.BX	T4-F54018.BX	F54118.BX	1-1/8	3/4	2	4-1/4
* F54018X	T4-F54018X	F54118X	1-1/8	1	2	4-1/2
F54020.BX	T4-F54020.BX	F54120.BX	1-1/4	3/4	2	4-1/4
F54020X	T4-F54020X	F54120X	1-1/4	1-1/4	2	4-1/2
F54220X	T4-F54220X	F54320X	1-1/4	1-1/4	3	5-1/2
F54420X	T4-F54420X	F54520X	1-1/4	1-1/4	4	6-1/2
F54420SX	T4-F54420SX	F54520SX	1-1/4	1-1/4	5	7-1/2
F54620X	T4-F54620X	F54720X	1-1/4	1-1/4	6	8-1/2
F54620SX	T4-F54620SX	F54720SX	1-1/4	1-1/4	7	9-1/2
F54820X	T4-F54820X	F54920X	1-1/4	1-1/4	8	10-1/2
F54820SX	T4-F54820SX	F54920SX	1-1/4	1-1/4	10	12-1/2
F54024.BX	T4-F54024.BX	F54124.BX	1-1/2	3/4	2	4-1/4
F54024X	T4-F54024X	F54124X	1-1/2	1-1/4	2	4-1/2
F54224X	T4-F54224X	F54324X	1-1/2	1-1/4	3	5-1/2
F54424X	T4-F54424X	F54524X	1-1/2	1-1/4	4	6-1/2
F54424SX	T4-F54424SX	F54524SX	1-1/2	1-1/4	5	7-1/2
F54624X	T4-F54624X	F54724X	1-1/2	1-1/4	6	8-1/2
F54624SX	T4-F54624SX	F54724SX	1-1/2	1-1/4	7	9-1/2
F54824X	T4-F54824X	F54924X	1-1/2	1-1/4	8	10-1/2
F54824SX	T4-F54824SX	F54924SX	1-1/2	1-1/4	10	12-1/2
* F54028.BX	T4-F54028.BX	F54128.BX	1-3/4	3/4	2	4-1/4
* F54028X	T4-F54028X	F54128X	1-3/4	1-1/4	2	4-1/2
* F54428X	T4-F54428X	F54528X	1-3/4	1-1/4	4-1/2	7
* F54032X	T4-F54032X	F54132X	2	1-1/4	2	4-1/2
* F54232X	T4-F54232X	F54332X	2	1-1/4	3	5-1/2
* F54432X	T4-F54432X	F54532X	2	1-1/4	4	6-1/2
* F54632X	T4-F54632X	F54732X	2	1-1/4	6	8-1/2
* F54832X	T4-F54832X	F54932X	2	1-1/4	8	10-1/2
* F68002A	T4-F68002A	F68102A	2	2	2	5-3/4
* F68003A	T4-F68003A	F68103A	2	2	3	6-3/4
* F68004A	T4-F68004A	F68104A	2	2	4	7-3/4
* F68005A	T4-F68005A	F68105A	2	2	5	8-3/4
* F68006A	T4-F68006A	F68106A	2	2	6	9-3/4
* F68008A	T4-F68008A	F68108A	2	2	8	11-3/4
* F68010A	T4-F68010A	F68110A	2	2	10	13-3/4
* F68012A	T4-F68012A	F68112A	2	2	12	15-3/4

\* Made to order

**LEFT HAND  
COBALT ENDMILLS**

### LEFT HAND - 6 Flute

DISCONTINUED MADE TO ORDER

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
F56020X	F56120X	1-1/4	1-1/4	2	4-1/2	F56624X	F56724X	1-1/2	1-1/4	6	8-1/2
F56220X	F56320X	1-1/4	1-1/4	3	5-1/2	F56624SX	F56724SX	1-1/2	1-1/4	7	9-1/2
F56420X	F56520X	1-1/4	1-1/4	4	6-1/2	F56824X	F56924X	1-1/2	1-1/4	8	10-1/2
F56420SX	F56520SX	1-1/4	1-1/4	5	7-1/2	F56824SX	F56924SX	1-1/2	1-1/4	10	12-1/2
F56620X	F56720X	1-1/4	1-1/4	6	8-1/2		F56132X	2	1-1/4	2	4-1/2
F56620SX	F56720SX	1-1/4	1-1/4	7	9-1/2	F56232X	F56332X	2	1-1/4	3	5-1/2
F56820X	F56920X	1-1/4	1-1/4	8	10-1/2	F56432X	F56532X	2	1-1/4	4	6-1/2
F56820SX	F56920SX	1-1/4	1-1/4	10	12-1/2	F56632X	F56732X	2	1-1/4	6	8-1/2
F56024X	F56124X	1-1/2	1-1/4	2	4-1/2	F56832X	F56932X	2	1-1/4	8	10-1/2
F56224X	F56324X	1-1/2	1-1/4	3	5-1/2	F68F02A	F68G02A	2	2	2	5-3/4
F56424X	F56524X	1-1/2	1-1/4	4	6-1/2	F68F04A	F68G04A	2	2	4	7-3/4
F56424SX	F56524SX	1-1/2	1-1/4	5	7-1/2	F68F06A	F68G06A	2	2	6	9-3/4



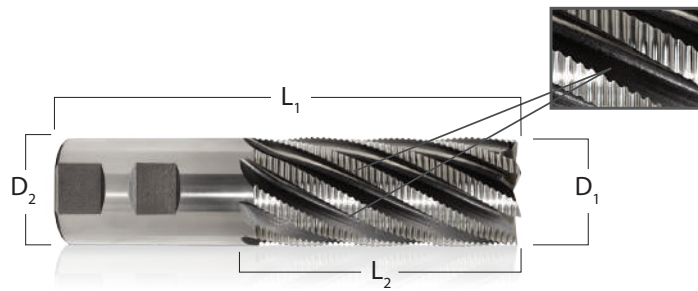
## 8 FLUTE

## Fine Pitch Rougher – Center Cut

General purpose

Weldon flats

Square and ballnose end



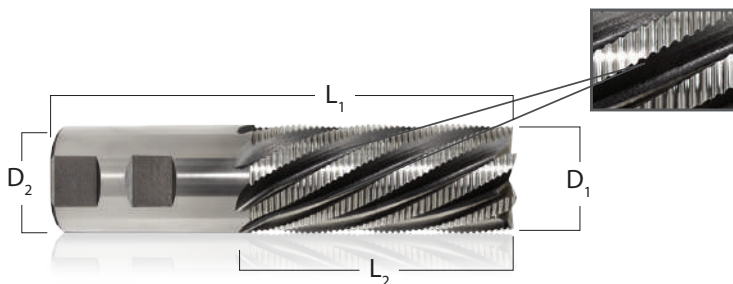
**P M K S** Material Code: Refer to Page 4



**Exxtral Plus®** is ideal for high-performance machining of hard materials.

## RIGHT HAND - 8 Flute

Uncoated Part Number	Square Coated Part Number	Ball End Uncoated Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
F54032Z	T4-F54032Z	F54132Z	2	1-1/4	2	4-1/2
F54232Z	T4-F54232Z	F54332Z	2	1-1/4	3	5-1/2
F54432Z	T4-F54432Z	F54532Z	2	1-1/4	4	6-1/2
F54632Z	T4-F54632Z	F54732Z	2	1-1/4	6	8-1/2
F54832Z	T4-F54832Z	F54932Z	2	1-1/4	8	10-1/2
F88002A	T4-F88002A	F88102A	2	2	2	5-3/4
F88003A	T4-F88003A	F88103A	2	2	3	6-3/4
F88004A	T4-F88004A	F88104A	2	2	4	7-3/4
F88005A	T4-F88005A	F88105A	2	2	5	8-3/4
F88006A	T4-F88006A	F88106A	2	2	6	9-3/4
F88008A	T4-F88008A	F88108A	2	2	8	11-3/4
F88010A	T4-F88010A	F88110A	2	2	10	13-3/4
F88012A	T4-F88012A	F88112A	2	2	12	15-3/4



**LEFT HAND  
COBALT ENDMILLS**

**DISCONTINUED** MADE TO ORDER

## LEFT HAND - 8 Flute

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
F56032Z	F56132Z	2	1-1/4	2	4-1/2
F56232Z	F56332Z	2	1-1/4	3	5-1/2
F56432Z	F56532Z	2	1-1/4	4	6-1/2
F56632Z	F56732Z	2	1-1/4	6	8-1/2
F56832Z	F56932Z	2	1-1/4	8	10-1/2
F88F02A	F88G02A	2	2	2	5-3/4
F88F04A	F88G04A	2	2	4	7-3/4
F88F06A	F88G06A	2	2	6	9-3/4

# 4, 6, 8 FLUTE

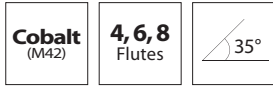
## CurveCut™ Ground Rougher

Ideal for titanium and stainless steel alloys

Weldon flats

Square and ballnose end

**P M K S** Material Code: Refer to Page 4



Exxtral Plus® is ideal for high-performance machining of hard materials.



### RIGHT HAND - 4 Flute

Left-Hand Available Upon Request

Uncoated Part Number	Square Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
CC54012	T4-CC54012	3/4	3/4	1-5/8	3-7/8
CC54212S	T4-CC54212S	3/4	3/4	2-1/4	4-1/2
CC54412	T4-CC54412	3/4	3/4	3	5-1/4
CC54612	T4-CC54612	3/4	3/4	4	6-1/4
CC54016	T4-CC54016	1	1	2	4-1/2
CC54216	T4-CC54216	1	1	3	5-1/2
CC54416	T4-CC54416	1	1	4	6-1/2
CC54616	T4-CC54616	1	1	6	8-1/2
CC54020	T4-CC54020	1-1/4	1-1/4	2	4-1/2
CC54220	T4-CC54220	1-1/4	1-1/4	3	5-1/2
CC54420	T4-CC54420	1-1/4	1-1/4	4	6-1/2
CC54024	T4-CC54024	1-1/2	1-1/4	2	4-1/2
CC54224	T4-CC54224	1-1/2	1-1/4	3	5-1/2
CC54424	T4-CC54424	1-1/2	1-1/4	4	6-1/2

### RIGHT HAND - 6 Flute

Uncoated Part Number	Square Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
CC54016X	T4-CC54016X	1	1	2	4-1/2
CC54216X	T4-CC54216X	1	1	3	5-1/2
CC54416X	T4-CC54416X	1	1	4	6-1/2
CC54020X	T4-CC54020X	1-1/4	1-1/4	2	4-1/2
CC54220X	T4-CC54220X	1-1/4	1-1/4	3	5-1/2
CC54420X	T4-CC54420X	1-1/4	1-1/4	4	6-1/2
CC54620X	T4-CC54620X	1-1/4	1-1/4	6	8-1/2
CC54024X	T4-CC54024X	1-1/2	1-1/4	2	4-1/2
CC54224X	T4-CC54224X	1-1/2	1-1/4	3	5-1/2
CC54424X	T4-CC54424X	1-1/2	1-1/4	4	6-1/2
CC54624X	T4-CC54624X	1-1/2	1-1/4	6	8-1/2
CC68002A	T4-CC68002A	2	2	2	5-3/4
CC68003A	T4-CC68003A	2	2	3	6-3/4
CC68004A	T4-CC68004A	2	2	4	7-3/4
CC68006A	T4-CC68006A	2	2	6	9-3/4
CC68008A	T4-CC68008A	2	2	8	11-3/4

### RIGHT HAND - 8 Flute

Uncoated Part Number	Square Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
CC88003A	T4-CC88003A	2	2	3	6-3/4
CC88004A	T4-CC88004A	2	2	4	7-3/4
CC88006A	T4-CC88006A	2	2	6	9-3/4

## 4, 6, 8 FLUTE

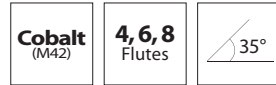
## CurveCut™ Milled Rougher

Ideal for titanium and stainless steel alloys

Weldon flats

Square and ballnose end

P M K S Material Code: Refer to Page 4



Exxtral Plus® is ideal for high-performance machining of hard materials.



## RIGHT HAND - 4 Flute

Left-Hand Available Upon Request

Uncoated Part Number	Square Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
CCM-54012	T4-CCM-54012	3/4	3/4	1-5/8	3-7/8
CCM-54212S	T4-CCM-54212S	3/4	3/4	2-1/4	4-1/2
CCM-54412	T4-CCM-54412	3/4	3/4	3	5-1/4
CCM-54612	T4-CCM-54612	3/4	3/4	4	6-1/4
CCM-54016	T4-CCM-54016	1	1	2	4-1/2
CCM-54216	T4-CCM-54216	1	1	3	5-1/2
CCM-54416	T4-CCM-54416	1	1	4	6-1/2
CCM-54616	T4-CCM-54616	1	1	6	8-1/2
CCM-54020	T4-CCM-54020	1-1/4	1-1/4	2	4-1/2
CCM-54220	T4-CCM-54220	1-1/4	1-1/4	3	5-1/2
CCM-54420	T4-CCM-54420	1-1/4	1-1/4	4	6-1/2
CCM-54024	T4-CCM-54024	1-1/2	1-1/4	2	4-1/2
CCM-54224	T4-CCM-54224	1-1/2	1-1/4	3	5-1/2
CCM-54424	T4-CCM-54424	1-1/2	1-1/4	4	6-1/2

## RIGHT HAND - 6 Flute

Uncoated Part Number	Square Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
CCM-54016X	T4-CCM-54016X	1	1	2	4-1/2
CCM-54216X	T4-CCM-54216X	1	1	3	5-1/2
CCM-54416X	T4-CCM-54416X	1	1	4	6-1/2
CCM-54020X	T4-CCM-54020X	1-1/4	1-1/4	2	4-1/2
CCM-54220X	T4-CCM-54220X	1-1/4	1-1/4	3	5-1/2
CCM-54420X	T4-CCM-54420X	1-1/4	1-1/4	4	6-1/2
CCM-54620X	T4-CCM-54620X	1-1/4	1-1/4	6	8-1/2
CCM-54024X	T4-CCM-54024X	1-1/2	1-1/4	2	4-1/2
CCM-54224X	T4-CCM-54224X	1-1/2	1-1/4	3	5-1/2
CCM-54424X	T4-CCM-54424X	1-1/2	1-1/4	4	6-1/2
CCM-54624X	T4-CCM-54624X	1-1/2	1-1/4	6	8-1/2
CCM-68002A	T4-CCM-68002A	2	2	2	5-3/4
CCM-68003A	T4-CCM-68003A	2	2	3	6-3/4
CCM-68004A	T4-CCM-68004A	2	2	4	7-3/4
CCM-68006A	T4-CCM-68006A	2	2	6	9-3/4
CCM-68008A	T4-CCM-68008A	2	2	8	11-3/4

## RIGHT HAND - 8 Flute

Uncoated Part Number	Square Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
CCM-88003A	T4-CCM-88003A	2	2	3	6-3/4
CCM-88004A	T4-CCM-88004A	2	2	4	7-3/4
CCM-88006A	T4-CCM-88006A	2	2	6	9-3/4



## 2 FLUTE

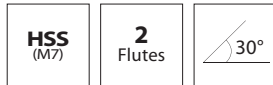
### Finisher – Center Cut

General purpose

Weld on flats

Square and ballnose end

**P M K S** Material Code: Refer to Page 4



#### RIGHT HAND - 2 Flute

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
*21004	21104	1/4	3/8	1/2	2-5/16
*21204	21304	1/4	3/8	1	2-13/16
*21404	21504	1/4	3/8	1-1/2	3-5/16
*21604	21704	1/4	3/8	2	3-3/4
*21005	21105	5/16	3/8	9/16	2-5/16
*21205	21305	5/16	3/8	1	2-3/4
*21405	21505	5/16	3/8	1-1/2	3-1/4
*21605	21705	5/16	3/8	2	3-3/4
*21006	21106	3/8	3/8	9/16	2-5/16
*21206	21306	3/8	3/8	1	2-3/4
*21406	21506	3/8	3/8	1-1/2	3-1/4
*21606	21706	3/8	3/8	2-1/2	4-1/4
*21007	21107	7/16	3/8	13/16	2-1/2
21008	21108	1/2	1/2	1	3
21008.6	21108.6	1/2	3/8	13/16	2-1/2
21208	21308	1/2	1/2	1-1/2	3-1/2
21408	21508	1/2	1/2	2	4
21608	21708	1/2	1/2	3	5
21608S	21708S	1/2	1/2	4	6
21010	21110	5/8	5/8	1-5/16	3-7/16
21010.8	21110.8	5/8	1/2	1-1/8	3-1/8
21210	21310	5/8	5/8	1-5/8	3-3/4
21410	21510	5/8	5/8	2	4-1/8
21610	21710	5/8	5/8	3	5-1/8
*21011.8	21111.8	11/16	1/2	1-5/16	3-5/16
21012	21112	3/4	3/4	1-5/16	3-9/16
21012.1	21112.1	3/4	5/8	1-5/16	3-7/16
21012.8	21112.8	3/4	1/2	1-5/16	3-5/16
21212	21312	3/4	3/4	1-3/4	4
21412	21512	3/4	3/4	2-1/4	4-1/2
21612	21712	3/4	3/4	3	5-1/4

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
21014	21114	7/8	7/8	1-1/2	3-3/4
21214	21314	7/8	7/8	2	4-1/4
21414	21514	7/8	7/8	2-1/2	4-3/4
21614	21714	7/8	7/8	3	5-1/4
*21015.1	21115.1	15/16	5/8	1-1/2	3-5/8
21016	21116	1	1	1-5/8	4-1/8
21016.1	21116.1	1	5/8	1-1/2	3-5/8
21216	21316	1	1	2-1/4	4-3/4
21416	21516	1	1	3	5-1/2
21616	21716	1	1	4	6-1/2
21020	21120	1-1/4	1-1/4	1-5/8	4-1/8
21220	21320	1-1/4	1-1/4	2-1/4	4-3/4
21420	21520	1-1/4	1-1/4	3	5-1/2
21620	21720	1-1/4	1-1/4	4	6-1/2
21620S	21720S	1-1/4	1-1/4	6	8-1/2
21820	21920	1-1/4	1-1/4	8	10-1/2
21024	21124	1-1/2	1-1/4	1-5/8	4-1/8
21224	21324	1-1/2	1-1/4	2-1/4	4-3/4
21424	21524	1-1/2	1-1/4	3	5-1/2
21624	21724	1-1/2	1-1/4	4	6-1/2
21624S	21724S	1-1/2	1-1/4	6	8-1/2
21824	21924	1-1/2	1-1/4	8	10-1/2
21032	21132	2	1-1/4	1-5/8	4-1/8
21232	21332	2	1-1/4	2-1/4	4-3/4
21432	21532	2	1-1/4	3	5-1/2
21632	21732	2	1-1/4	4	6-1/2

\* Available while supplies lasts

# 2 FLUTE

**Finisher – Center Cut**  
 Ideal for aluminum alloys  
 Weldon flats  
 Square and ballnose end

**N Material Code:** Refer to Page 4



**HSS**  
(M7)

**2**  
Flutes

37°

**RIGHT HAND - 2 Flute**

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
*23004	23104	1/4	3/8	5/8	2-7/16
*23204	23304	1/4	3/8	1-1/4	3-1/16
*23404	23504	1/4	3/8	1-3/4	3-9/16
*23005	23105	5/16	3/8	3/4	2-1/2
*23205	23305	5/16	3/8	1-3/8	3-1/8
*23405	23505	5/16	3/8	2	3-3/4
*23006	23106	3/8	3/8	3/4	2-1/2
*23206	23306	3/8	3/8	1-1/2	3-1/4
*23406	23506	3/8	3/8	2-1/2	4-1/4
*23007	23107	7/16	3/8	1	2-11/16
*23207	23307	7/16	1/2	1-3/4	3-3/4
*23407	23507	7/16	1/2	2-3/4	4-3/4
23008	23108	1/2	1/2	1-1/4	3-1/4
23208	23308	1/2	1/2	2	4
23408	23508	1/2	1/2	3	5
23608	23708	1/2	1/2	4	6
23608S	23708S	1/2	1/2	6	8
23808	23908	1/2	1/2	8	10
23010	23110	5/8	5/8	1-5/8	3-3/4
23210	23310	5/8	5/8	2-1/2	4-5/8
23410	23510	5/8	5/8	3	5-1/8
23610	23710	5/8	5/8	4	6-1/8
23610S	23710S	5/8	5/8	6	8-1/8
23810	23910	5/8	5/8	8	10-1/8
23012	23112	3/4	3/4	1-5/8	3-7/8
23212	23312	3/4	3/4	2	4-1/4
23212S	23312S	3/4	3/4	2-1/4	4-1/2
23412	23512	3/4	3/4	3	5-1/4
23612	23712	3/4	3/4	4	6-1/4
23612S	23712S	3/4	3/4	6	8-1/4
23812	23912	3/4	3/4	8	10-1/4

\*Available While Stock Lasts.

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
23014	23114	7/8	7/8	1-7/8	4-1/8
23214	23314	7/8	7/8	2-1/2	4-3/4
23414	23514	7/8	7/8	3-1/2	5-3/4
23614	23714	7/8	7/8	5	7-1/4
23614S	23714S	7/8	7/8	7	9-1/4
23016	23116	1	1	2	4-1/2
23216	23316	1	1	3	5-1/2
23416	23516	1	1	4	6-1/2
23516S	23516S	1	1	5	7-1/2
23616	23716	1	1	6	8-1/2
23616S	23716S	1	1	7	9-1/2
23816	23916	1	1	8	10-1/2
23816S	23916S	1	1	10	12-1/2
23020	23120	1-1/4	1-1/4	2	4-1/2
23220	23320	1-1/4	1-1/4	3	5-1/2
23420	23520	1-1/4	1-1/4	4	6-1/2
23420S	23520S	1-1/4	1-1/4	5	7-1/2
23620	23720	1-1/4	1-1/4	6	8-1/2
23620S	23720S	1-1/4	1-1/4	7	9-1/2
23820	23920	1-1/4	1-1/4	8	10-1/2
23820S	23920S	1-1/4	1-1/4	10	12-1/2
23024	23124	1-1/2	1-1/4	2	4-1/2
23224	23324	1-1/2	1-1/4	3	5-1/2
23424	23524	1-1/2	1-1/4	4	6-1/2
23424S	23524S	1-1/2	1-1/4	5	7-1/2
23624	23724	1-1/2	1-1/4	6	8-1/2
23624S	23724S	1-1/2	1-1/4	7	9-1/2
23824	23924	1-1/2	1-1/4	8	10-1/2
23032	23132	2	1-1/4	2	4-1/2
23232	23332	2	1-1/4	3	5-1/2
23432	23532	2	1-1/4	4	6-1/2
23432S	23532S	2	1-1/4	5	7-1/2
23632	23732	2	1-1/4	6	8-1/2
23632S	23732S	2	1-1/4	7	9-1/2
23832	23932	2	1-1/4	8	10-1/2



## LEFT HAND HSS ENDMILLS

DISCONTINUED MADE TO ORDER

### LEFT HAND - 2 Flute

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
25004	25104	1/4	3/8	5/8	2-7/16	25416	25516	1	1	4	6-1/2
25204	25304	1/4	3/8	1-1/4	3-1/16	25416S	25516S	1	1	5	7-1/2
25404	25504	1/4	3/8	1-3/4	3-9/16	25616	25716	1	1	6	8-1/2
25005	25105	5/16	3/8	3/4	2-1/2	25616S	25716S	1	1	7	9-1/2
25205	25305	5/16	3/8	1-3/8	3-1/8	25816	25916	1	1	8	10-1/2
25405	25505	5/16	3/8	2	3-3/4	25816S	25916S	1	1	10	12-1/2
25006	25106	3/8	3/8	3/4	2-1/2	25020	25120	1-1/4	1-1/4	2	4-1/2
25206	25306	3/8	3/8	1-1/2	3-1/4	25220	25320	1-1/4	1-1/4	3	5-1/2
25406	25506	3/8	3/8	2-1/2	4-1/4	25420	25520	1-1/4	1-1/4	4	6-1/2
25007	25107	7/16	3/8	1	2-11/16	25420S	25520S	1-1/4	1-1/4	5	7-1/2
25207	25307	7/16	1/2	1-3/4	3-3/4	25620	25720	1-1/4	1-1/4	6	8-1/2
25407	25507	7/16	1/2	2-3/4	4-3/4	25620S	25720S	1-1/4	1-1/4	7	9-1/2
25008	25108	1/2	1/2	1-1/4	3-1/4	25820	25920	1-1/4	1-1/4	8	10-1/2
25208	25308	1/2	1/2	2	4	25820S	25920S	1-1/4	1-1/4	10	12-1/2
25408	25508	1/2	1/2	3	5	25024	25124	1-1/2	1-1/4	2	4-1/2
25608	25708	1/2	1/2	4	6	25224	25324	1-1/2	1-1/4	3	5-1/2
25608S	25708S	1/2	1/2	6	8	25424	25524	1-1/2	1-1/4	4	6-1/2
25808	25908	1/2	1/2	8	10	25424S	25524S	1-1/2	1-1/4	5	7-1/2
25010	25110	5/8	5/8	1-5/8	3-3/4	25624	25724	1-1/2	1-1/4	6	8-1/2
25210	25310	5/8	5/8	2-1/2	4-5/8	25624S	25724S	1-1/2	1-1/4	7	9-1/2
25410	25510	5/8	5/8	3	5-1/8	25824	25924	1-1/2	1-1/4	8	10-1/2
25610	25710	5/8	5/8	4	6-1/8	25028	25128	1-3/4	1-1/4	2	4-1/2
25610S	25710S	5/8	5/8	6	8-1/8	25228	25328	1-3/4	1-1/4	3	5-1/2
25810	25910	5/8	5/8	8	10-1/8	25428	25528	1-3/4	1-1/4	4	6-1/2
25012	25112	3/4	3/4	1-5/8	3-7/8	25032	25132	2	1-1/4	2	4-1/2
25212	25312	3/4	3/4	2	4-1/4	25232	25332	2	1-1/4	3	5-1/2
25212S	25312S	3/4	3/4	2-1/4	4-1/2	25432	25532	2	1-1/4	4	6-1/2
25412	25512	3/4	3/4	3	5-1/4	25432S	25532S	2	1-1/4	5	7-1/2
25612	25712	3/4	3/4	4	6-1/4	25632	25732	2	1-1/4	6	8-1/2
25612S	25712S	3/4	3/4	6	8-1/4	25632S	25732S	2	1-1/4	7	9-1/2
25812	25912	3/4	3/4	8	10-1/4	25832	25932	2	1-1/4	8	10-1/2
25014	25114	7/8	7/8	1-7/8	4-1/8	27F02A	27G02A	2	2	2	5-3/4
25214	25314	7/8	7/8	2-1/2	4-3/4	27F03A	27G03A	2	2	3	6-3/4
25414	25514	7/8	7/8	3-1/2	5-3/4	27F04A	27G04A	2	2	4	7-3/4
25614	25714	7/8	7/8	5	7-1/4	27F05A	27G05A	2	2	5	8-3/4
25614S	25714S	7/8	7/8	7	9-1/4	27F06A	27G06A	2	2	6	9-3/4
25016	25116	1	1	2	4-1/2	27F08A	27G08A	2	2	8	11-3/4
25216	25316	1	1	3	5-1/2	27F10A	27G10A	2	2	10	13-3/4
						27F12A	27G12A	2	2	12	15-3/4

\* Available while supplies lasts

# 3 FLUTE

**Finisher – Center Cut**  
 Ideal for aluminum alloys  
 Weldon flats  
 Square and ballnose end

**N Material Code:** Refer to Page 4



**HSS**  
(M7)

**3**  
Flutes

37°

**RIGHT HAND - 3 Flute**

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
*33004	33104	1/4	3/8	5/8	2-7/16
*33204	33304	1/4	3/8	1-1/4	3-1/16
*33404	33504	1/4	3/8	1-3/4	3-9/16
*33005	33105	5/16	3/8	3/4	2-1/2
*33205	33305	5/16	3/8	1-3/8	3-1/8
*33405	33505	5/16	3/8	2	3-3/4
*33006	33106	3/8	3/8	3/4	2-1/2
*33206	33306	3/8	3/8	1-1/2	3-1/4
*33406	33506	3/8	3/8	2-1/2	4-1/4
*33007	33107	7/16	3/8	1	2-11/16
*33207	33307	7/16	1/2	1-3/4	3-3/4
*33407	33507	7/16	1/2	2-3/4	4-3/4
33008	33108	1/2	1/2	1-1/4	3-1/4
33208	33308	1/2	1/2	2	4
33408	33508	1/2	1/2	3	5
33608	33708	1/2	1/2	4	6
33608S	33708S	1/2	1/2	6	8
33808	33908	1/2	1/2	8	10
33010	33110	5/8	5/8	1-5/8	3-3/4
33210	33310	5/8	5/8	2-1/2	4-5/8
33410	33510	5/8	5/8	3	5-1/8
33610	33710	5/8	5/8	4	6-1/8
33610S	33710S	5/8	5/8	6	8-1/8
33810	33910	5/8	5/8	8	10-1/8
33012	33112	3/4	3/4	1-5/8	3-7/8
33212	33312	3/4	3/4	2	4-1/4
33212S	33312S	3/4	3/4	2-1/4	4-1/2
33412	33512	3/4	3/4	3	5-1/4
33612	33712	3/4	3/4	4	6-1/4
33612S	33712S	3/4	3/4	6	8-1/4
33812	33912	3/4	3/4	8	10-1/4
33014	33114	7/8	7/8	1-7/8	4-1/8
33214	33314	7/8	7/8	2-1/2	4-3/4
33414	33514	7/8	7/8	3-1/2	5-3/4
33414S	33514S	7/8	7/8	4	6-1/4
33614	33714	7/8	7/8	5	7-1/4
33614S	33714S	7/8	7/8	7	9-1/4

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
33016	33116	1	1	2	4-1/2
33216	33316	1	1	3	5-1/2
33416	33516	1	1	4	6-1/2
33416S	33516S	1	1	5	7-1/2
33616	33716	1	1	6	8-1/2
33616S	33716S	1	1	7	9-1/2
33816	33916	1	1	8	10-1/2
33816S	33916S	1	1	10	12-1/2
33020	33120	1-1/4	1-1/4	2	4-1/2
33220	33320	1-1/4	1-1/4	3	5-1/2
33420	33520	1-1/4	1-1/4	4	6-1/2
33420S	33520S	1-1/4	1-1/4	5	7-1/2
33620	33720	1-1/4	1-1/4	6	8-1/2
33620S	33720S	1-1/4	1-1/4	7	9-1/2
33820	33920	1-1/4	1-1/4	8	10-1/2
33820S	33920S	1-1/4	1-1/4	10	12-1/2
33024	33124	1-1/2	1-1/4	2	4-1/2
33224	33324	1-1/2	1-1/4	3	5-1/2
33424	33524	1-1/2	1-1/4	4	6-1/2
33424S	33524S	1-1/2	1-1/4	5	7-1/2
33624	33724	1-1/2	1-1/4	6	8-1/2
33624S	33724S	1-1/2	1-1/4	7	9-1/2
33824	33924	1-1/2	1-1/4	8	10-1/2
33032	33132	2	1-1/4	2	4-1/2
33232	33332	2	1-1/4	3	5-1/2
33432	33532	2	1-1/4	4	6-1/2
33432S	33532S	2	1-1/4	5	7-1/2
33632	33732	2	1-1/4	6	8-1/2
33632S	33732S	2	1-1/4	7	9-1/2
33832	33932	2	1-1/4	8	10-1/2
37002A	37102A	2	2	2	5-3/4
37003A	37103A	2	2	3	6-3/4
37004A	37104A	2	2	4	7-3/4
37005A	37105A	2	2	5	8-3/4
37006A	37106A	2	2	6	9-3/4

\* Available while supplies lasts



# LEFT HAND HSS ENDMILLS

DISCONTINUED MADE TO ORDER

## LEFT HAND - 3 Flute

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL	Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
* 35004	35104	1/4	3/8	5/8	2-7/16	35416	35516	1	1	4	6-1/2
* 35204	35304	1/4	3/8	1-1/4	3-1/16	35416S	35516S	1	1	5	7-1/2
* 35404	35504	1/4	3/8	1-3/4	3-9/16	35616	35716	1	1	6	8-1/2
* 35005	35105	5/16	3/8	3/4	2-1/2	35616S	35716S	1	1	7	9-1/2
* 35205	35305	5/16	3/8	1-3/8	3-1/8	35816	35916	1	1	8	10-1/2
* 35405	35505	5/16	3/8	2	3-3/4	35816S	35916S	1	1	10	12-1/2
* 35006	35106	3/8	3/8	3/4	2-1/2	35020	35120	1-1/4	1-1/4	2	4-1/2
* 35206	35306	3/8	3/8	1-1/2	3-1/4	35220	35320	1-1/4	1-1/4	3	5-1/2
* 35406	35506	3/8	3/8	2-1/2	4-1/4	35420	35520	1-1/4	1-1/4	4	6-1/2
* 35007	35107	7/16	3/8	1	2-11/16	35420S	35520S	1-1/4	1-1/4	5	7-1/2
* 35207	35307	7/16	1/2	1-3/4	3-3/4	35620	35720	1-1/4	1-1/4	6	8-1/2
* 35407	35507	7/16	1/2	2-3/4	4-3/4	35620S	35720S	1-1/4	1-1/4	7	9-1/2
35008	35108	1/2	1/2	1-1/4	3-1/4	35820	35920	1-1/4	1-1/4	8	10-1/2
35208	35308	1/2	1/2	2	4	35820S	35920S	1-1/4	1-1/4	10	12-1/2
35408	35508	1/2	1/2	3	5	35024	35124	1-1/2	1-1/4	2	4-1/2
35608	35708	1/2	1/2	4	6	35224	35324	1-1/2	1-1/4	3	5-1/2
35608S	35708S	1/2	1/2	6	8	35424	35524	1-1/2	1-1/4	4	6-1/2
35808	35908	1/2	1/2	8	10	35424S	35524S	1-1/2	1-1/4	5	7-1/2
35010	35110	5/8	5/8	1-5/8	3-3/4	35624	35724	1-1/2	1-1/4	6	8-1/2
35210	35310	5/8	5/8	2-1/2	4-5/8	35624S	35724S	1-1/2	1-1/4	7	9-1/2
35410	35510	5/8	5/8	3	5-1/8	35824	35924	1-1/2	1-1/4	8	10-1/2
35610	35710	5/8	5/8	4	6-1/8	35028	35128	1-3/4	1-1/4	2	4-1/2
35610S	35710S	5/8	5/8	6	8-1/8	35228	35328	1-3/4	1-1/4	3	5-1/2
35810	35910	5/8	5/8	8	10-1/8	35428	35528	1-3/4	1-1/4	4	6-1/2
35012	35112	3/4	3/4	1-5/8	3-7/8	35032	35132	2	1-1/4	2	4-1/2
35212	35312	3/4	3/4	2	4-1/4	35232	35332	2	1-1/4	3	5-1/2
35212S	35312S	3/4	3/4	2-1/4	4-1/2	35432	35532	2	1-1/4	4	6-1/2
35412	35512	3/4	3/4	3	5-1/4	35432S	35532S	2	1-1/4	5	7-1/2
35612	35712	3/4	3/4	4	6-1/4	35632	35732	2	1-1/4	6	8-1/2
35612S	35712S	3/4	3/4	6	8-1/4	35632S	35732S	2	1-1/4	7	9-1/2
35812	35912	3/4	3/4	8	10-1/4	35832	35932	2	1-1/4	8	10-1/2
35014	35114	7/8	7/8	1-7/8	4-1/8	37F02A	37G02A	2	2	2	5-3/4
35214	35314	7/8	7/8	2-1/2	4-3/4	37F03A	37G03A	2	2	3	6-3/4
35414	35514	7/8	7/8	3-1/2	5-3/4	37F04A	37G04A	2	2	4	7-3/4
35614	35714	7/8	7/8	5	7-1/4	37F05A	37G05A	2	2	5	8-3/4
35614S	35714S	7/8	7/8	7	9-1/4	37F06A	37G06A	2	2	6	9-3/4
35016	35116	1	1	2	4-1/2	37F08A	37G08A	2	2	8	11-3/4
35216	35316	1	1	3	5-1/2	37F10A	37G10A	2	2	10	13-3/4
						37F12A	37G12A	2	2	12	15-3/4

\* Available while supplies lasts

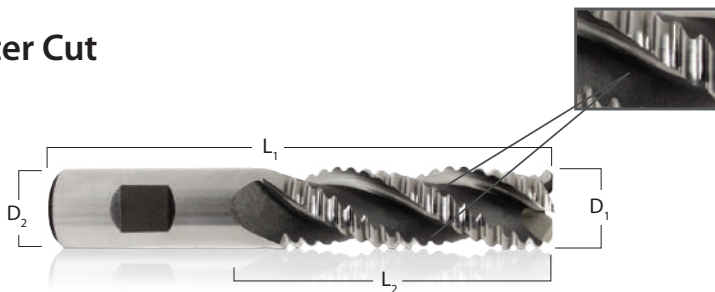
# 3 FLUTE

## Coarse Pitch Rougher – Center Cut

Ideal for aluminum alloys

Weldon flats

Square and ballnose end



**N** Material Code: Refer to Page 4

### RIGHT HAND - 3 Flute

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
*R33004	R33104	1/4	3/8	5/8	2-7/16
*R33204	R33304	1/4	3/8	1-1/4	3-1/16
*R33404	R33504	1/4	3/8	1-3/4	3-9/16
*R33005	R33105	5/16	3/8	3/4	2-1/2
*R33205	R33305	5/16	3/8	1-3/8	3-1/8
*R33405	R33505	5/16	3/8	2	3-3/4
*R33006	R33106	3/8	3/8	3/4	2-1/2
*R33206	R33306	3/8	3/8	1-1/2	3-1/4
*R33406	R33506	3/8	3/8	2-1/2	4-1/4
*R33007	R33107	7/16	3/8	1	2-11/16
*R33207	R33307	7/16	1/2	1-3/4	3-3/4
*R33407	R33507	7/16	1/2	2-3/4	4-3/4
R33008	R33108	1/2	1/2	1-1/4	3-1/4
R33208	R33308	1/2	1/2	2	4
R33408	R33508	1/2	1/2	3	5
R33608	R33708	1/2	1/2	4	6
R33608S	R33708S	1/2	1/2	6	8
R33010	R33110	5/8	5/8	1-5/8	3-3/4
R33210	R33310	5/8	5/8	2-1/2	4-5/8
R33410	R33510	5/8	5/8	3	5-1/8
R33610	R33710	5/8	5/8	4	6-1/8
R33610S	R33710S	5/8	5/8	6	8-1/8
R33012	R33112	3/4	3/4	1-5/8	3-7/8
R33212	R33312	3/4	3/4	2	4-1/4
R33212S	R33312S	3/4	3/4	2-1/4	4-1/2
R33412	R33512	3/4	3/4	3	5-1/4
R33612	R33712	3/4	3/4	4	6-1/4
R33612S	R33712S	3/4	3/4	6	8-1/4
*R33014.B	R33114.B	7/8	3/4	1-7/8	4-1/8
*R33414	R33514	7/8	7/8	3-1/2	5-3/4
*R33614	R33714	7/8	7/8	5	7-1/4

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
*R33614S	R33714S	7/8	7/8	7	9-1/4
R33016	R33116	1	1	2	4-1/2
R33216	R33316	1	1	3	5-1/2
R33416	R33516	1	1	4	6-1/2
R33616	R33716	1	1	6	8-1/2
R33816	R33916	1	1	8	10-1/2
R33020	R33120	1-1/4	1-1/4	2	4-1/2
R33220	R33320	1-1/4	1-1/4	3	5-1/2
R33420	R33520	1-1/4	1-1/4	4	6-1/2
R33420S	R33520S	1-1/4	1-1/4	5	7-1/2
R33620	R33720	1-1/4	1-1/4	6	8-1/2
R33820	R33920	1-1/4	1-1/4	8	10-1/2
R33024	R33124	1-1/2	1-1/4	2	4-1/2
R33224	R33324	1-1/2	1-1/4	3	5-1/2
R33424	R33524	1-1/2	1-1/4	4	6-1/2
R33624	R33724	1-1/2	1-1/4	6	8-1/2
R33824	R33924	1-1/2	1-1/4	8	10-1/2
R33032	R33132	2	1-1/4	2	4-1/2
R33232	R33332	2	1-1/4	3	5-1/2
R33432	R33532	2	1-1/4	4	6-1/2
R33632	R33732	2	1-1/4	6	8-1/2
R33832	R33932	2	1-1/4	8	10-1/2
R37002A	R37102A	2	2	2	5-3/4
R37003A	R37103A	2	2	3	6-3/4
R37004A	R37104A	2	2	4	7-3/4
R37005A	R37105A	2	2	5	8-3/4
R37006A	R37106A	2	2	6	9-3/4
R37008A	R37108A	2	2	8	11-3/4
R37010A	R37110A	2	2	10	13-3/4
R37012A	R37112A	2	2	12	15-3/4

\* Available while supplies lasts



**LEFT HAND  
HSS ENDMILLS**  
DISCONTINUED MADE TO ORDER

LEFT HAND - 3 Flute

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
*R35004	R35104	1/4	3/8	5/8	2-7/16
*R35204	R35304	1/4	3/8	1-1/4	3-1/16
*R35404	R35504	1/4	3/8	1-3/4	3-9/16
*R35005	R35105	5/16	3/8	3/4	2-1/2
*R35205	R35305	5/16	3/8	1-3/8	3-1/8
*R35405	R35505	5/16	3/8	2	3-3/4
*R35006	R35106	3/8	3/8	3/4	2-1/2
*R35206	R35306	3/8	3/8	1-1/2	3-1/4
*R35406	R35506	3/8	3/8	2-1/2	4-1/4
*R35007	R35107	7/16	3/8	1	2-11/16
*R35207	R35307	7/16	1/2	1-3/4	3-3/4
*R35407	R35507	7/16	3/8	2-3/4	4-3/4
R35008	R35108	1/2	1/2	1-1/4	3-1/4
R35208	R35308	1/2	1/2	2	4
R35408	R35508	1/2	1/2	3	5
R35608	R35708	1/2	1/2	4	6
R35608S	R35708S	1/2	1/2	6	8
R35010	R35110	5/8	5/8	1-5/8	3-3/4
R35210	R35310	5/8	5/8	2-1/2	4-5/8
R35410	R35510	5/8	5/8	3	5-1/8
R35610	R35710	5/8	5/8	4	6-1/8
R35610S	R35710S	5/8	5/8	6	8-1/8
R35012	R35112	3/4	3/4	1-5/8	3-7/8
R35212	R35312	3/4	3/4	2	4-1/4
R35212S	R35312S	3/4	3/4	2-1/4	4-1/2
R35412	R35512	3/4	3/4	3	5-1/4
R35612	R35712	3/4	3/4	4	6-1/4
R35612S	R35712S	3/4	3/4	6	8-1/4

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
R35016	R35116	1	1	2	4-1/2
R35216	R35316	1	1	3	5-1/2
R35416	R35516	1	1	4	6-1/2
R35616	R35716	1	1	6	8-1/2
R35616S	R35716S	1	1	8	10-1/2
R35020	R35120	1-1/4	1-1/4	2	4-1/2
R35220	R35320	1-1/4	1-1/4	3	5-1/2
R35420	R35520	1-1/4	1-1/4	4	6-1/2
R35620	R35720	1-1/4	1-1/4	6	8-1/2
R35820	R35920	1-1/4	1-1/4	8	10-1/2
R35024	R35124	1-1/2	1-1/4	2	4-1/2
R35224	R35324	1-1/2	1-1/4	3	5-1/2
R35424	R35524	1-1/2	1-1/4	4	6-1/2
R35624	R35724	1-1/2	1-1/4	6	8-1/2
R35824	R35924	1-1/2	1-1/4	8	10-1/2
R35032	R35132	2	1-1/4	2	4-1/2
R35232	R35332	2	1-1/4	3	5-1/2
R35432	R35532	2	1-1/4	4	6-1/2
R35632	R35732	2	1-1/4	6	8-1/2
R35832	R35932	2	1-1/4	8	10-1/2
R37F02A	R37G02A	2	2	2	5-3/4
R37F03A	R37G03A	2	2	3	6-3/4
R37F04A	R37G04A	2	2	4	7-3/4
R37F05A	R37G05A	2	2	5	8-3/4
R37F06A	R37G06A	2	2	6	9-3/4
R37F08A	R37G08A	2	2	8	11-3/4
R37F10A	R37G10A	2	2	10	13-3/4
R37F12A	R37G12A	2	2	12	15-3/4

\* Available while supplies lasts

HIGH SPEED STEEL ENDMILLS - M7

# 4, 6, 8 FLUTE

## Finisher - Center Cut

General purpose

Weldon flats

Square and ballnose end



**P M K S** Material Code: Refer to Page 4

<b>HSS</b> (M7)	<b>4, 6, 8</b> Flutes	
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**DISCONTINUED**

### RIGHT HAND - 4 Flute

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
* -	52103	3/16	3/8	1/2	2-3/8
* -	52104	1/4	3/8	5/8	2-7/16
* 52005	52105	5/16	3/8	3/4	2-1/2
* 52205	52305	5/16	3/8	1-3/8	3-1/8
* 52206	52306	3/8	3/8	1-1/2	3-1/4
* 52406	52506	3/8	3/8	2-1/2	4-1/4
52208	-	1/2	1/2	2	4
-	-	5/8	5/8	1-5/8	3-3/4
52210	-	5/8	5/8	2-1/2	4-5/8
52410	52510	5/8	5/8	3	5-1/8

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
-	52112	3/4	3/4	1-5/8	3-7/8
52612	-	3/4	3/4	4	6-1/4
52020	-	1-1/4	1-1/4	2	4-1/2
52220	52320	1-1/4	1-1/4	3	5-1/2
52420	-	1-1/4	1-1/4	4	6-1/2
52224	52324	1-1/2	1-1/4	3	5-1/2
47202A	-	2	2	2	5-3/4
47203A	-	2	2	3	6-3/4
-	47104A	2	2	4	7-3/4

\* Available while supplies lasts



**DISCONTINUED**

### RIGHT HAND - 6 Flute

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
52012X	52112X	3/4	3/4	1-5/8	3-7/8
52412X	52512X	3/4	3/4	3	5-1/4
52612X	-	3/4	3/4	4	6-1/4
-	52116X	1	1	2	4-1/2
52216X	52316X	1	1	3	5-1/2
52416X	52516X	1	1	4	6-1/2
52020X	-	1-1/4	1-1/4	2	4-1/2
52220X	52320X	1-1/4	1-1/4	3	5-1/2
52420X	-	1-1/4	1-1/4	4	6-1/2

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
52620X	52720X	1-1/4	1-1/4	6	8-1/2
52024X	52124X	1-1/2	1-1/4	2	4-1/2
52224X	-	1-1/2	1-1/4	3	5-1/2
-	52524X	1-1/2	1-1/4	4	6-1/2
52432X	52532X	2	1-1/4	4	6-1/2
67202A	67102A	2	2	2	5-3/4
67203A	-	2	2	3	6-3/4
67204A	-	2	2	4	7-3/4
-	67105A	2	2	5	8-3/4



**DISCONTINUED**

### RIGHT HAND - 8 Flute

Square Part Number	Ball Part Number	D1 Cutting Dia	D2 Shank Dia	L2 LOC	L1 OAL
52032Z	-	2	1-1/4	2	4-1/2
-	52532Z	2	1-1/4	4	6-1/2
87202A	-	2	2	2	5-3/4



NEW

# EDGE CUT™

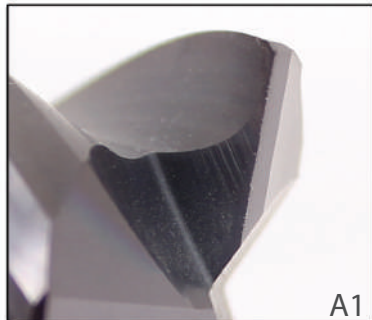
**EdgeCut** is a **NEW** manufacturing process for cutting tools, implemented to provide our customers with superior cutter performance. The **EdgeCut** process consists of adding a controlled radius on the cutting tool's edge (also known as honing), to create an even and stronger cutting edge. **EdgeCut** has proven to be a key factor in the success of our cutting tools. Through our extensive testing, cutters with **EdgeCut** have outperformed tools without any edge preparation.

## How does **EDGE CUT™** Improve Performance?

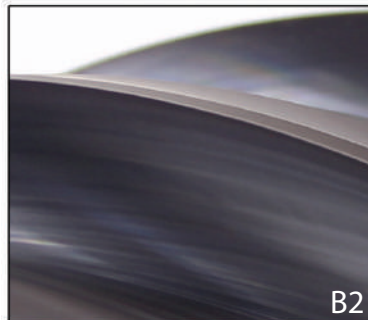
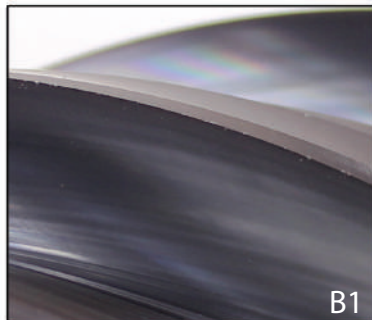
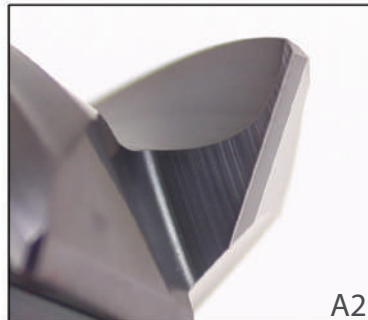
### An even and stronger cutting edge...

- Reduces the risk of edge chipping and cracking, resulting in a longer tool life.
- Increases coating adhesion, providing excellent chip evacuation and wear resistance.
- Dissipates stress and force focus, allowing for increased speeds and feeds.
- Provides chatter-free machining, leaving a smooth surface finish on the part.

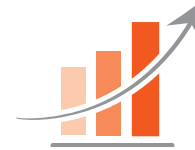
Before



After



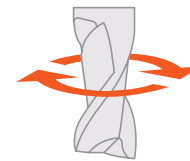
## Benefits of **EDGE CUT™**



Longer Tool Life



Increased Coating Adhesion



Higher Speeds & Feeds



Improved Surface Finish on the part



Stronger Cutting Edge



Enhanced Chip Evacuation



Reduced Cycle Time

# Stronger Edge. Faster Speeds. Longer Life.

# IN-HOUSE COATING

PCT offers a variety of coatings for all your cutting tools through its in-house coating facility. PCT Coating Solutions is ISO 9001: 2008 certified and is sure to provide you with the highest-quality PVD coatings. Our experts will help you choose the proper coating for your specific needs and will have your tools coated within a 24-48hr. time frame.



	TiN®	Z-Power®	ZircoPlus®	TiCN	
<b>Coating Material</b>	Titanium Nitride	Zirconium Nitride	Zirconium Carbo-Nitride	Titanium Carbo-Nitride	
	TiN	ZrN	ZrCN	TiCN (ML)	
<b>Micro-hardness HV 0.05</b>	2300	2800	3100	3500	
<b>Friction Coefficient Against Steel (Dry)</b>	0.6	0.5	0.5	0.2	
<b>Coating Thickness* (µm)</b>	2-4	1-4	1-4	2-4	
<b>Thermal Threshold</b>	500°C 900°F	600°C 1100°F	600°C 1100°F	400°C 750°F	
<b>Color of the Coating</b>	Gold	Pale Gold	Pale Yellow, Rose	Blue Gray	
<b>Key characteristics</b>	Standard, all-purpose coating, biocompatible	Good wear and corrosion resistance, biocompatible	Low friction high corrosion resistance, biocompatible	High hardness, good wear resistance, enhanced toughness	
<b>Primary Applications</b>	For use on cutting tools that are used for machining Iron(Fe) alloys and steels  Low-chemical reactivity against iron and steel  Metal forming  Plastic molding	Ideal for machining aluminum, brass, nickel, fiberglass, nylon and most polymer materials  Corrosion and adhesion resistant properties  Forming and punching - reduced cold re-welding  Medical applications - biocompatible & corrosion resistant	For use on carbide cutting tools, HSS and other materials below 450°C/842°F  Ideal for Aluminum Alloys with high Silicon(Si) content  Averts light metals from welding together  Excellent for non-ferrous applications	Applied to HSS cutting tools for high speed machining of steels  Ideal for interrupted cutting operations of steels  Helps maintain the sharp edges and corners on the cutting tool  Excellent for metal forming (stainless steel)	

## PROPERTIES AND APPLICATIONS OF OUR PVD COATINGS

	Exxtral Plus®	Exxtral Silver®	Exxtral Carbon®	Exxtral Black®	Sistral®	WC/C	Variantic®	Varianta® Supral	CrN CrCN
	Aluminum Titanium Nitride	Aluminum Titanium Chromium Nitride	Tetrahedral Amorphous Carbon (Diamond)	Aluminum Chromium Nitride	Aluminum Titanium Nitride (w/additions)	Tungsten Carbide-Carbon	Titanium Aluminum Carbo-Nitride	Titanium Aluminium Carbo-Nitride	Chromium Nitride Carbo-Nitride
	AlTiN (stacked)	AlTiCrN	Ta-C	AlCrN	AlTiN (nanostructured)	a-C : Me	TiAlCN	TiAlCN (ML)	CrN CrCN
	3300	3300	5500-6000	3200	3500	1000-2200	3500	3500	2000 2300
	0.7	0.4	0.1	0.45	0.7	0.2-0.25	0.2	0.7 <0.5	0.3-0.4 0.2-0.3
	1-3	2-4	0.5-1.5	2-5	1-3	1-2	2-4	2-4	2-6
	800°C 1470°F	800°C 1470°F	500°C 900°F	1100°C 2012°F	900°C 1650°F	400°C 750°F	800°C 1470°F	800°C 1470°F	600°C 1100°F
	Anthracite, Dark Gray	Silver	Rainbow Gray	Slate Gray	Anthracite (Black)	Dark Gray	Copper, Old Rose	Anthracite (Black)	Silver-Gray
	High hardness very good oxidation resistance	High hardness and oxidation resistance	High thermal stability, excellent tribological properties, and a long cutting life	High heat hardness, wear resistance and oxidation resistance	Extreme wear and oxidation resistance at high temperatures	High lubricity, low tendency for adhesive wear	Low friction, high oxidation resistance	High hardness, very good oxidation resistance low friction	Low stress/good adhesion, high toughness and corrosion resistance
	Machining of hardened steel work pieces  For use on carbide end mills  High speed operations, semi-dry or dry machining  Metal cutting tasks where other coatings reach their limits of thermal and mechanical load	For use on carbide cutting tools for machining titanium, inconel, stainless steels and cast iron  Machining abrasive and gummy materials  CrN surface reduces the cold welding tendency	Ideal for machining of Aluminum and non-ferrous materials.  Can also be used on plastic and rubber  Extremely extends the life of the cutting tool, and provides a sharper cutting edge.	Intended for use on high temperature applications  Increased adhesion and advanced oxidation resistance  Excellent for cutting steels and high speeds, dry or semi-dry machining	Best choice for cutting under extreme conditions (hard, abrasive materials, high speed, dry cutting)  Machining of hardened steel (>54 HRC)  Inconel machining  Helps maintain high cutting forces and tool life	Precision components  Punching & forming, minimal lubrication or dry  Plastic injection & molding  Moving parts, dry	Coating for a wide range of carbide, cermet and HSS and other steelsMachining under dry as well as wet conditions  Excellent for drilling in steel  Drawing, stamping, punching, forming tools for processing of high and low alloy steel	Coating for a wide range of carbide, cermet and high speed steel tooling Machining of cast iron and nickel-based high temperature alloys  High speed operations, semi-dry or dry machining  Excellent for drilling operations in steel (up to 45 HRC)	Machining copper and other non-ferrous materials  Metal forming  Plastic molding (improved demolding)  Aluminum and magnesium die casting

\*Depends on size of tools; for micro tools thinner coatings.



**PRECISION CUTTING TOOLS**  
*Member IMC Group*

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