

**HAIMER®**  
Quality Wins.



M A S T E R   C A T A L O G

**HAIMER®**

## QUALITY WINS.

### Our corporate company philosophy

Dear customers and prospective customers,

We are very pleased to present you the new HAIMER Master Catalog. In this compilation, we bundled all HAIMER catalogs and it will be continuously updated with new products and services.

As a system partner all around the machine tool, it is our top priority to provide you with consistent solutions for all of your tooling and machining needs.

HAIMER started as a job shop in 1977. From the very beginning HAIMER has been known as a quality supplier and has lived up to the corporate company philosophy "Quality wins" ever since.

Even today with over 800 employees worldwide, quality still defines our actions.

For our customers we consistently strive for highest values which are at the center of our company philosophy:

- Quality – micron precision through double 100% inspection
- Innovation through 8% R&D-ratio
- Fast and dynamic company culture
- Flexibility through short paths of communication
- Reliability – Delivery performance due to high stock availability
- Best price-performance ratio

In an effort to live by one of our core values that states, "The benchmark for the value of our daily work is the satisfaction of our customers", HAIMER established its first worldwide subsidiary in the Chicago area in 2002. Founded in the garage at the house of the Holden family, HAIMER knew that in order to properly support and satisfy the North American market, a local sales and service center had to be established.

By 2003, the North American operation moved into a 5,000 square foot warehouse in the Chicago suburb of Villa Park, IL. This is where the operation is still today, having now expanded to over 30,000 square feet. In this location, there is a full inventory, showroom, training room, sales, service and support center ready to assist our customers. In addition to our North American headquarters, we have over 20 employees in the United States and Canada living in their territories in order to provide local support. In total, there are over 40 employees in the United States and Canada ready to assist at any time.

In 2014, Haimer North America officially founded Haimer Mexico in Queretaro, Mexico. Currently Haimer Mexico has about 10 employees living throughout the country and we are willing and able to support the Mexican market fully with the HAIMER product.

We are pleased to continuously support you with our passion for precision and innovation, expanding our position as the market leader, true to our corporate philosophy:

### Quality wins.



Franz Haimer

Company Founder and  
CEO Haimer GmbH



Claudia Haimer

Company Founder and  
CEO Haimer GmbH



Andreas Haimer

Managing Director Haimer GmbH  
and President Haimer Group



Brendt Holden

President Haimer USA and  
North America

## GROWING WITH CHALLENGES. OPEN FOR NEW POSSIBILITIES.

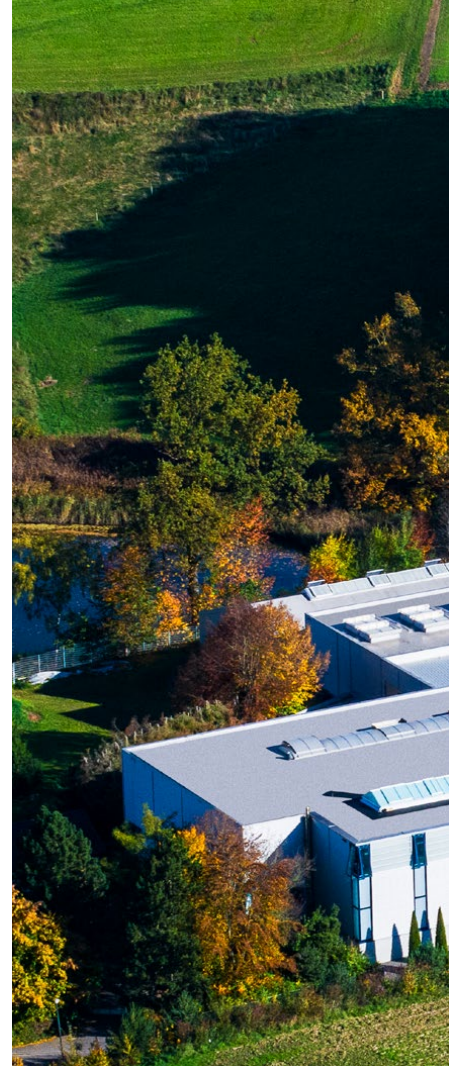
The HAIMER success story started as a one-man-business in 1977. HAIMER first produced high-precision parts as a supplier for the aerospace and automotive industry. Even back then it was about achieving the highest quality standards. Acquired special skills in conjunction with the typical HAIMER passion for innovation proved to be an ideal base for its first in-house product developments.

In 1988, HAIMER presented its first 3D-sensor, a milestone which has since been followed by many more: From tool holders, shrinking and balancing technology to solid carbide end mills.

HAIMER's latest product line expansion is the integration of the HAIMER Microset tool presetting technology. Today, HAIMER is considered a global system supplier in the tooling industry and is the European market leader in tool holding technology.

Simultaneously, the Igenhausen production site with state-of-the-art machinery and a high degree of automation has been consistently further developed.

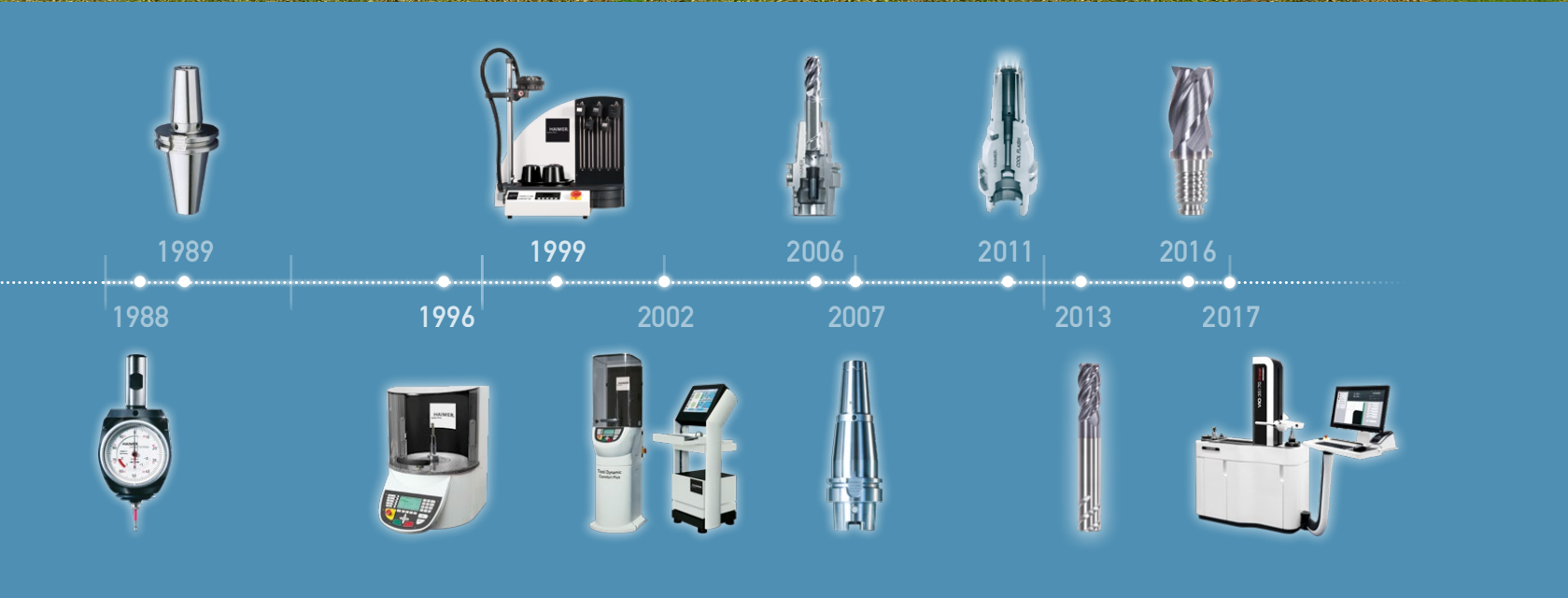
In addition, HAIMER has expanded globally with its own sales and service subsidiaries in the largest metal working markets. At the second production site in Bielefeld high-precision tool presetters have been produced for over 50 years.



1977

>500

More than 500 of over 800 HAIMER employees are working at the production site in Igenhausen, near Augsburg. They are working for the strict compliance of our corporate philosophy:  
**Quality wins.**



## QUALITY STARTS WITH THE PRODUCT. SERVICE COMPLETES IT.

With our subsidiaries across the globe we guarantee the highest possible quality of support. We are always at your service: Our local specialists are available to personally support you in your respective business activities and based on your specific requirements.

From specific product advice to individual customer service support, the global HAIMER subsidiaries help you throughout the entire sales process even after the delivery is completed.

In countries without direct HAIMER sales and service subsidiaries, we trust our trained distribution and competence partners to locally support our end customers. Thus we are able to export our products to over 100 countries worldwide.

Haimer USA, LLC



Haimer Mexico,  
S. de R.L. de C.V.

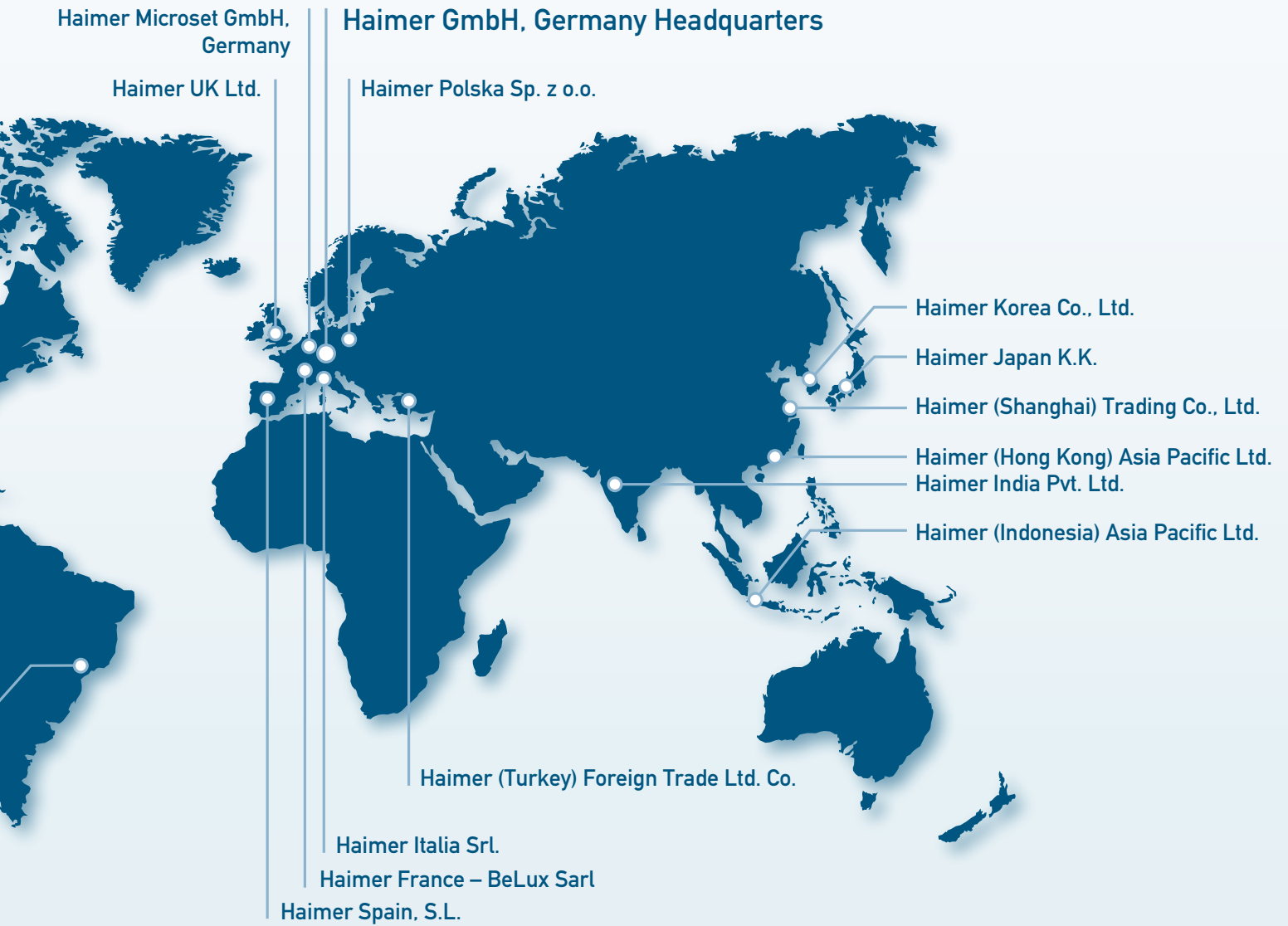
Haimer do Brasil, Ltda.



HAIMER USA and North American Headquarters in Villa Park, IL

# 16

This is the number of our subsidiaries worldwide. For first-class service, competent consultation and the global implementation of our corporate philosophy: **Quality wins.**



## QUALITY LIES WITHIN THE PROCESS. HAIMER IS YOUR SYSTEM PARTNER.

We are offering groundbreaking solutions for the entire machining process! From efficient and professional tool handling through shrinking, balancing and presetting technology or machining itself – with technologically advanced tool holders and solid carbide end mills.

All of the solutions provided work seamlessly together with one another. This reduces non-productive times and allows you to increase your efficiency and productivity. Of course, the HAIMER quality promise is valid for the entire product offering.

In summary: With HAIMER, you are not only purchasing a product but a full and consistent solution.

### MEASURING TECHNOLOGY

#### **3D-sensors and centering devices**

Fast and precise positioning and measuring of work pieces and clamping systems.

# 10,220

A high variety of products in six product segments is at your disposal: In order to increase your efficiency and productivity. **Quality wins.**

## TOOL MANAGEMENT

### Entire solution for tool storage and management

For functional and ergonomic workspaces. The HAIMER DAC offers a Tool Management system to connect all process steps around the machine tool.

## TOOLING TECHNOLOGY

### Tool holders, solid carbide and modular end mills

High-end tooling technology for maximum cutting performance and precision.

## SHRINKING TECHNOLOGY

### Inductive shrink fit machines

Tool change within seconds with maximum clamping forces and most precise tool holding.

## BALANCING TECHNOLOGY

### Balancing machines for tool holders, tools, grinding wheels and other rotors.

More productivity, longer tool life and process security through less imbalance in production.

## PRESETTING TECHNOLOGY

### Tool Presetters for precise measuring of tools

More productivity and process security in tool presetting – direct data transfer to the machine tool.





## QUALITY NEEDS CONSISTENCY.

**For us at HAIMER quality is not just a promise. It is at the center of our actions and a key factor for both the journey as well as the end result.**

Our customers around the world rely on quality. It is our ambition to develop solutions that help great companies to achieve their targets, increase their competitive advantage and expand their successful market position in the long run.

This requires experienced, skilled and highly motivated and qualified employees. The use of most modern technologies is demanded, as well as the ability to completely incorporate requests from various industries.


Particularly the continued willingness to do the very best again and again in every single process step is a key factor. This is HAIMER – discover our company and what we can do for you.



# 200%

Consistently ambitious: Besides the existing DIN-standards, HAIMER has defined its own considerably higher standards. Our double 100% inspection ensures the compliance.

**Quality wins.**



We leave nothing to chance.  
We inspect thoroughly.  
From raw material selection to delivery.  
The HAIMER Quality Management.

## KEEP GOING ON AND ON.

In 2018, HAIMER set new standards with the new additional production site in Motzenhofen. Since then HAIMER is turning and milling high precision rotating tool holders on a production space of more than 47,000 ft<sup>2</sup> with the help of the most modern and automated machine tools.

With a maximum capacity of 4,000 tool holders per day, the HAIMER plant in Motzenhofen is the biggest production facility for rotating tool holders worldwide.

Needless to say, HAIMER is using its own tool holders, cutting tools, shrinking, balancing and presetting technology, as well as our own Tool Management Systems.

The raw material inspection, a quality measuring room and a large tool room provide the best conditions to produce consistent quality – from the first holder to the last.



Tool Room Motzenhofen, Germany

# 4,000...

...Tool holders per day is our maximum capacity. The challenge for us is to deliver each and every tool holder in consistent µm-precise accuracy. **Quality wins.**



## PRECISION REACHES ITS TARGET. IN MANY INDUSTRIES.

Aerospace. Heavy duty machine construction. General mechanical engineering. Die and mold. Automotive industry. Medical industry. Watchmaking industry. Consumer electronics. HAIMER is present in various industries with many different requirements for machining: From micro-machining in the electronic and medical industry to heavy-duty cutting in the aerospace industry.

However, all industries have one thing in common: Wherever maximum precision and productivity in metal cutting is the target, HAIMER technology is often used on the shopfloor.

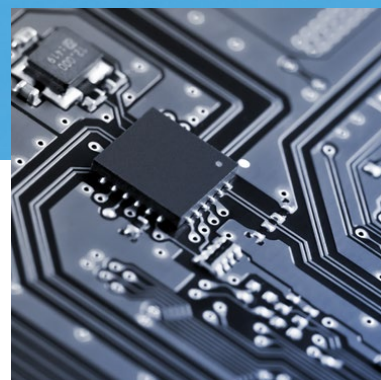
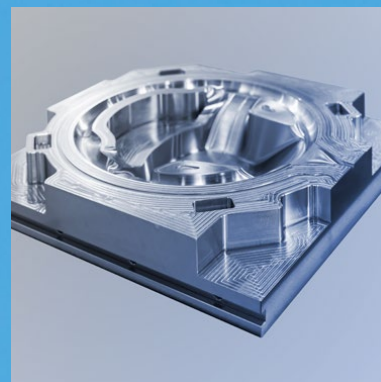
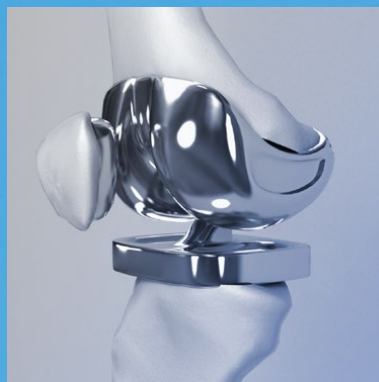
No matter what result is at the end of the value chain, every company depends on maximum process reliability for their success. And this is exactly what innovative HAIMER solutions provide.

All in all, HAIMER customers are machining with more precision and with a safer, more productive solution – reducing the wear of tools and machine tools at the same time.



# 30,977

Companies from dynamic industries are depending on HAIMER technology. And this number increases everyday.  
**Quality wins.**



Jet engines, structural parts, implants, engine and chassis components for cars and trains as well as complex parts for consumer electronics and general engineering are only a few of the application areas HAIMER products are used for.

## HAIMER CARE. ALWAYS AT YOUR SERVICE.

The HAIMER machines are known for their high quality and longevity. For HAIMER, quality does not end with the products, but continues through the quality of service HAIMER employees provide.

The HAIMER technicians are quickly on site and you benefit from:

- Early wear detection
- Maintaining the condition of the equipment
- High availability of HAIMER specialists
- Consistent quality level
- Prerequisite for certification according to ISO 9001



Learn more about the HAIMER service program from your contact person or by visiting:

[www.haimer-usa.com/services/haimer-care](http://www.haimer-usa.com/services/haimer-care)



# Demo Van

## Individual advice at your shop.

We travel internationally with our Demo Vans. On board we have our latest solutions and demonstrate state-of-the-art shrink fit, balancing and presetting of tools LIVE. We provide a free balancing check of your tool assemblies on site – through these tests, we often discover the reasons for spindle damage and vibrations!

Ask us and benefit from the experience of our experts!

We will come to your facility!





## HAIMER HCCP PROGRAM

Both Haimer USA and Haimer Mexico have established the HAIMER Competency Center in an effort to give our distributors the skills and tools to support the HAIMER products properly in the market.

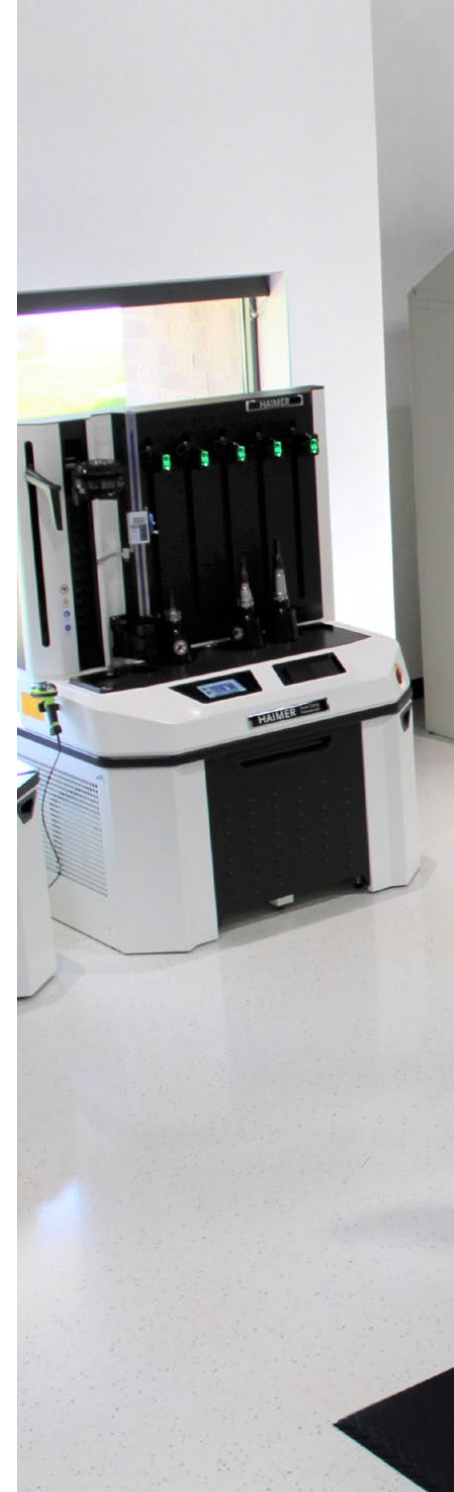
Participating distributors in the HCCP program walk away from their training prepared to share with their customers the benefits of using HAIMER products on the shop floor in an effort to optimize production and save costs.

In return, HAIMER has committed to support our distributors in the field with on-site visits at the end-users.

## SHOWROOM AND APPLICATION CENTER

Both Haimer USA and Haimer Mexico are equipped with a showroom and application center that includes a training room, a test environment for machining trials and a fully equipped tool room that has many different HAIMER machines under power for demonstration.

- Over 10,000 square feet in the USA with machinery, training room, reception and hospitality
- Close to 300 square meters in Mexico with machinery, training room and reception
- Both showrooms are always ready to receive visitors for product demonstrations at any time
- One machining center in Villa Park, IL for trials, product comparisons and applications for a variety of industries
- Fully equipped state-of-the-art tool room with many HAIMER machines under power in both the USA and Mexico
- Modern audio and visual technology for live demonstrations



## Benefit

Haimer USA offers its distribution partners the opportunity to further their sales efforts. Learn how one distributor benefited from the HCCP Program.  
**Quality wins.**



#### CUSTOMER VOICE

*"I deal with these products on a daily basis but I really haven't had a lot of hands-on experience myself, so just being able to spend some time around the product was worthwhile. We've all come back with such positive feedback and got quite a bit out of it. Not only the technical part, but the hands-on part of the training was really helpful for the few of us who have been able to attend. We will be sending more employees to this training in the future."*

Participant Haimer USA HCCP training

## INVESTING IN THE FUTURE. TITANS OF CNC AND HAIMER USA JOIN FORCES.

Haimer USA is proud to announce a partnership with TITANS of CNC, an organization that uplifts students, educators and the manufacturing workforce in over 170 countries worldwide.

Titan Gilroy, CEO and founder of TITANS of CNC is focused on developing and delivering high-level manufacturing education through the TITANS of CNC: Academy and Aerospace Academy. Over the past few years, TITANS of CNC has reshaped the way manufacturing education is approached and delivered. With its free, online, video-based, step by-step, training system, TITANS of CNC continues to provide real solutions to real manufacturing problems.

As part of the collaboration, Haimer USA introduced various industry leading products to Titan so he can implement the HAIMER technology into his academies and teach his students about how HAIMER products provide consistent solutions for machinists to increase their productivity. “We are excited to be working with Titan and his team,” President of Haimer USA, Brendt Holden stated, “Through the TITANS of CNC: Academy, together we will be able to educate operators on why our system solution of balancing, presetting, shrinking and measuring are so important to implement in machine shops.”

“TITANS of CNC is proud to partner with HAIMER who is a world leader in the area of shrink fit, balancing, and presetting technology,” Titan Gilroy – CEO of TITANS of CNC stated, “We are excited to introduce our audience to these incredible products and solutions and we look forward to using them to help teach the trade at the highest level.”

HAIMER is the worldwide leader in the production of shrinking, balancing and presetting equipment combined. Together these three technologies, along with a state of the art Tool Management cabinet system is in place and on display in the TITANS of CNC shop. New and exciting educational videos are soon to be produced in order to show this equipment in action in practical uses for any size shop.

HAIMER supports the continuing training for the machinists of tomorrow through their apprenticeship program and their HAIMER Academy, a series of webinars and workshops. “Education has always been a core passion at HAIMER as we agree that it is important to invest in educating the future of our trade,” explains Brendt. “It is a pleasure to expand upon that passion with Titan and his Academy.”



For more information on TITANS of CNC,  
please visit [titansofcnc.com](http://titansofcnc.com)



## Apprenticeship at HAIMER

HAIMER GmbH welcomed 15 new apprentices this year to bring the total to 50 apprentices currently working and learning at the HAIMER headquarters located in Igenhausen, Germany.



## STAY CONNECTED.



Today, the social media presence of the HAIMER group comprises nearly 25,000 followers on YouTube, LinkedIn, Facebook, Instagram and Twitter.

On our YouTube channel we offer:

- Product and application videos
- Tutorials
- Customer success stories



Learn more about specific products by visiting the website below  
[www.youtube.com/user/haimerusallc](http://www.youtube.com/user/haimerusallc)

## DOWNLOAD OF DXF AND STP FILES

For our customers, HAIMER offers free drawings to download for a smooth interference contour analysis and integration into the CAD/CAM system. For all HAIMER tool holders and tools, there are 2D and 3D files as DXF and STP available.

Simply register on our corporate HAIMER website to get access. Overall drawings for more than 5,000 tool holders, cutting tools and accessories are available for download. More than 15,000 users are already taking advantage of this service.



[www.haimer-usa.com/registration](http://www.haimer-usa.com/registration)



# HAIMER i4.0 – Technologies for smart production



## HAIMER Info

Keep in touch with the HAIMER newsletter. The HAIMER newsletter keeps you informed about the latest HAIMER Group updates.

### Benefits of registering:

- **Free tickets** for events & conventions
- **Invitations** (e. g. for open house)
- **Application tips and stories** from other customers
- **Important information** about HAIMER products













Sign up for the newsletter here:  
[www.haimer-usa.com/news/blog](http://www.haimer-usa.com/news/blog)



QUALITY WINS.



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# TOOLING TECHNOLOGY METRIC / INCH



# CONTENT

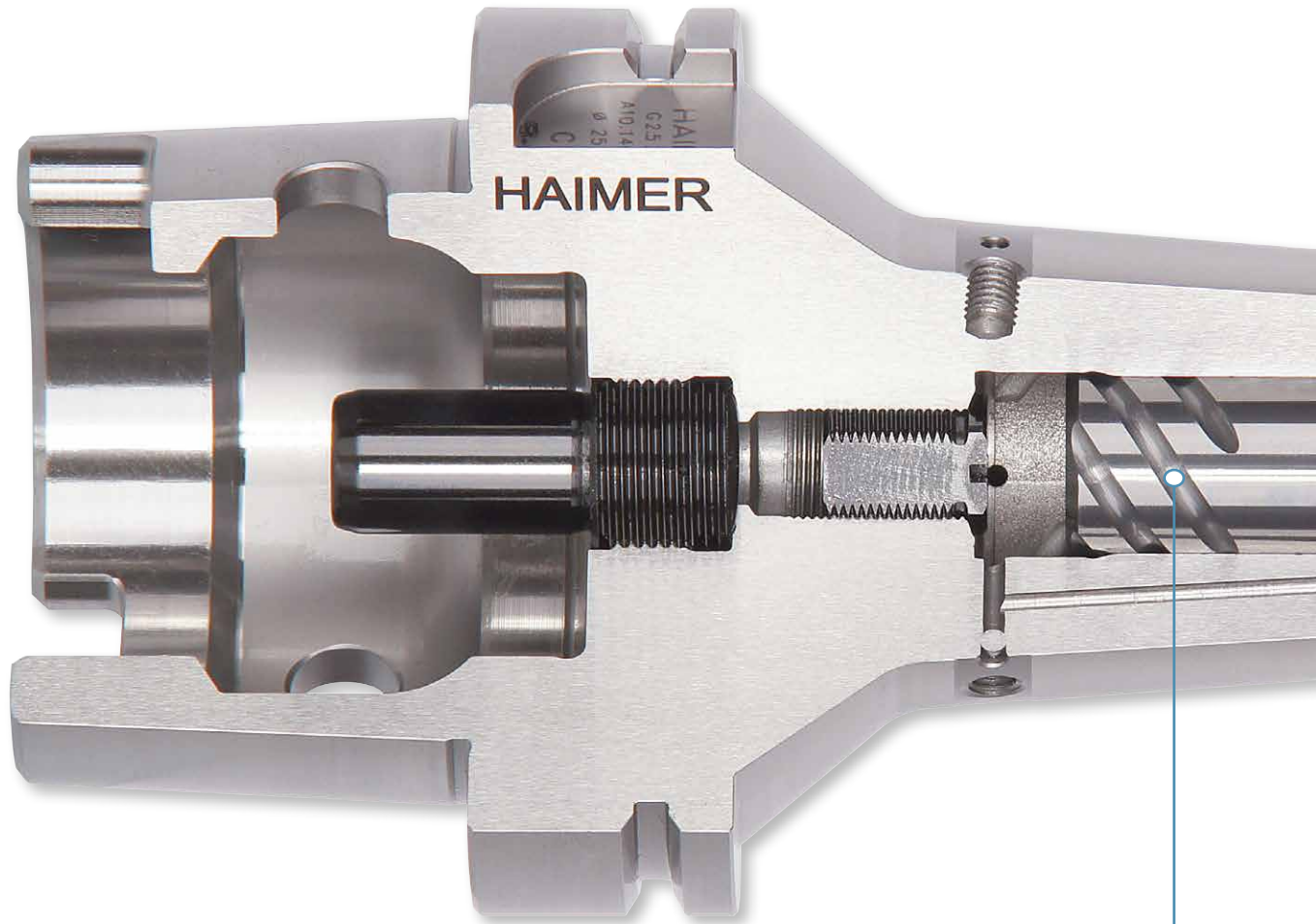
METRIC

INCH

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# HAIMER MILL Power Series

## Solid Carbide End Mills – Unique Advantages

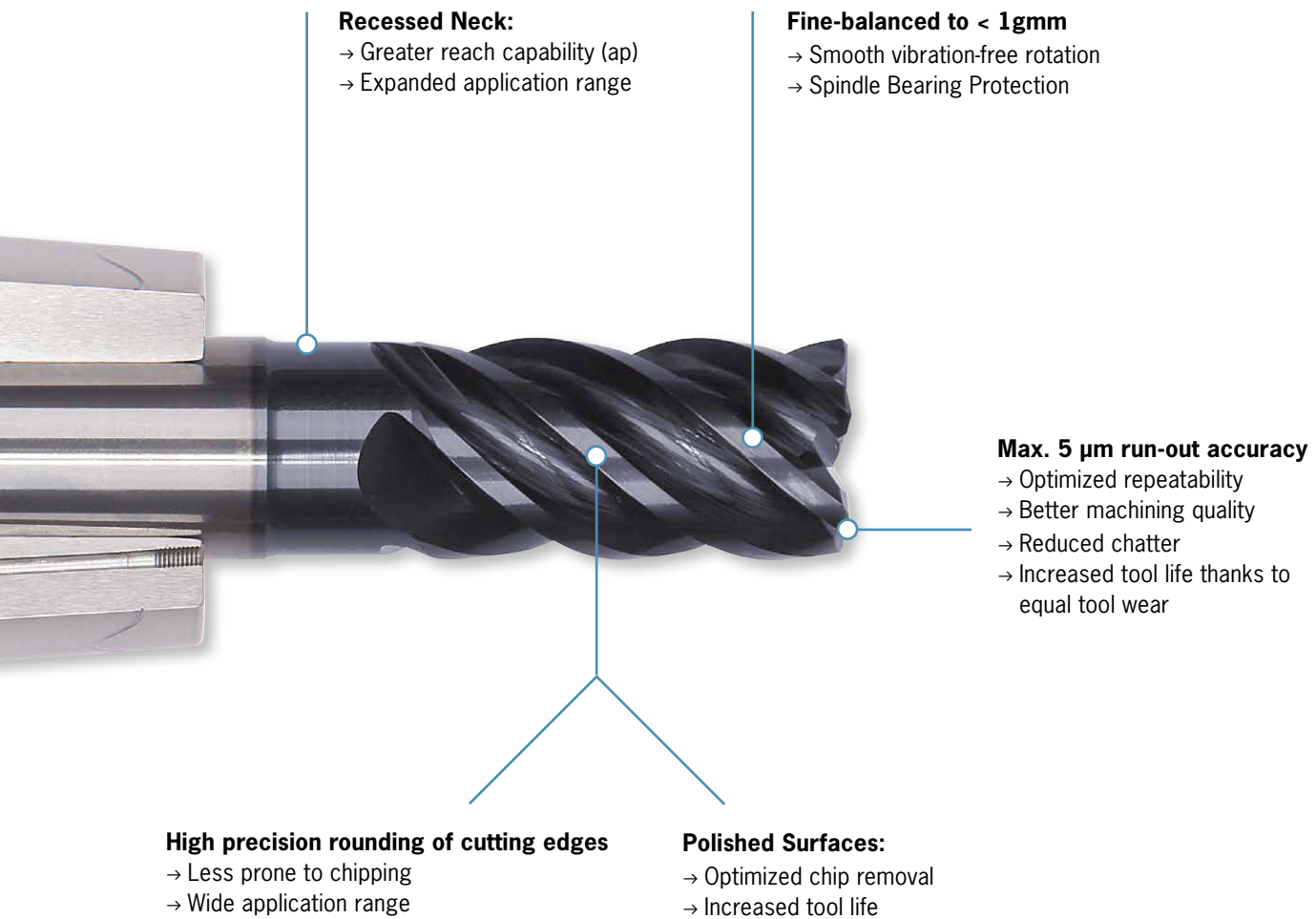


HAIMER Quality – 100% guarantee:

- Consistent cutting tool performance
- Maximized process reliability

**Safe-Lock shank:**

- Maximum pull-out protection
- Best run-out accuracy
- Maximum cutting volume
- Even in tool holders without Safe-Lock consistent clamping forces and torques
- h5 shank tolerance



**Shock-resistant packaging**  
→ Top quality in each delivery



# HAIMER MILL Power Series

For maximum cutting performance and tool life

## FORMULAS – MILLING BASICS

## Common North American cutting tool formulas

INCH

Description	Formula	Legend
Cutting Speed (RPM)	$RPM = \frac{SFM \cdot 3.82}{Dia.}$	RPM = Revolutions per minute Dia. = Tool diameter [inch] SFM = Surface feed per minute [inch/min] IPM = Feed per minute [inch/min] IPR = Feed per revolution [inch/r] IPT = Feed per tooth [inch/Z] MRR = Material removal rate [inch <sup>3</sup> /min] WOC = Width of cut DOC = Depth of cut
Surface feed per minute	$SFM = RPM \cdot 0.262 \cdot Dia.$	
Feed (IPM)	$IPM = RPM \cdot IPR$	
Feed per tooth	$IPT = \frac{IPM / RPM}{No. of flutes}$	
Material removal rate	$MRR = IPM \cdot WOC \cdot DOC$	

## Cutting speed, Feed and Milling

METRIC

Description	Formula	Legend
RPM	$n = \frac{v_c \cdot 1000}{D \cdot \pi}$	a <sub>e</sub> = Radial cutting width [mm] a <sub>p</sub> = Axial cutting depth [mm] D = Diameter [mm] f <sub>n</sub> = Feed per rotation [mm/r] f <sub>z</sub> = Feed per tooth [mm/Z] h <sub>m</sub> = Average chip thickness [mm] k <sub>c</sub> = Specific cutting force [N/mm <sup>2</sup> ] l = Length of cut [mm] n = Revolutions per minute [rpm] P <sub>a</sub> = Drive power [kW] Q = Material removal rate [cm <sup>3</sup> /min] T <sub>c</sub> = Cutting time [min] v <sub>c</sub> = Cutting speed [m/min] v <sub>f</sub> = Feed rate [mm/min] z = Number of teeth π = 3.14... η <sub>mt</sub> = Efficiency rate
Cutting speed	$v_c = \frac{D \cdot \pi \cdot n}{1000}$	
Feed per tooth	$f_z = \frac{f_n}{z} \quad f_z = \frac{v_f}{z \cdot n}$	
Feed per rotation	$f_n = f_z \cdot z \quad f_n = \frac{v_f}{n}$	
Feed rate	$v_f = f_z \cdot z \cdot n$	
Material removal rate	$Q = \frac{a_p \cdot a_e \cdot v_f}{1000}$	
Drive power	$P_a = \frac{a_p \cdot a_e \cdot v_f \cdot k_c}{60 \cdot 10^6 \cdot \eta_{mt}}$	
Cutting time	$T_c = \frac{l}{v_f} = \text{min}$	
Average chip thickness	$h_m = f_z \cdot \sqrt{\frac{a_e}{D}}$	



## SAFE-LOCK® – The safety belt for your tools

In high performance cutting (HPC), it is possible for the cutting tool to be pulled out of the chuck. The reason is a slow micro-creeping motion. It happens when cutting at high speeds and with high pull out forces. Even chucks with extremely high clamping force cannot prevent micro-creeping. High-quality work pieces become scrap as a result. **The Safe-lock® system offers a solution.**

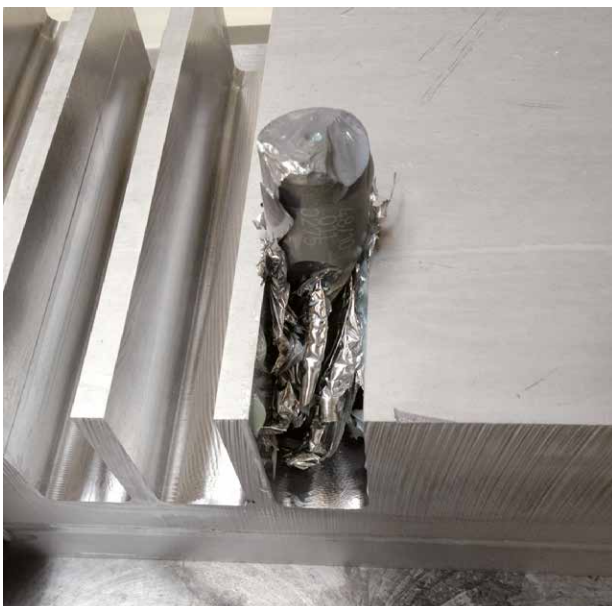
The revolutionary system secures the cutting tool via the high accuracy frictional clamping in conjunction with a positive locking form fit connection.

This is accomplished by means of grooves in the cutting tools and the corresponding form fit in the tool holder. Resulting in a connection in which all potential movements of the cutting tool are prevented.

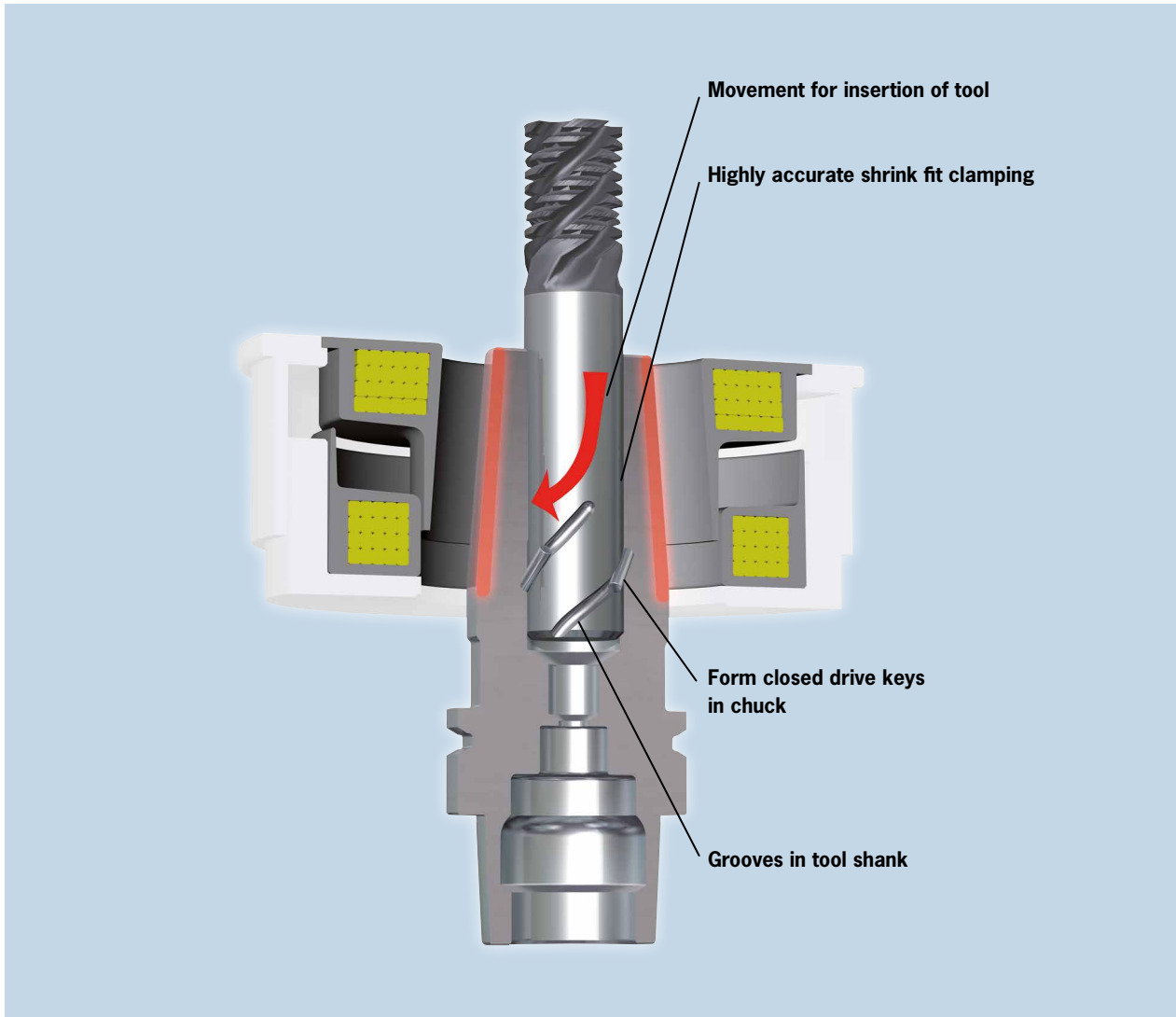
## Your advantages On the safe side with SAFE-LOCK®:

- For High Performance Cutting
- Highly accurate clamping due to shrink fit or collet chuck technology
- High torque due to form closed clamping
- No tool pull out (see image on the lower left)
- No twisting
- Patent granted: licensing possible

➔ **Maximum metal removal rate  
with absolute process reliability**

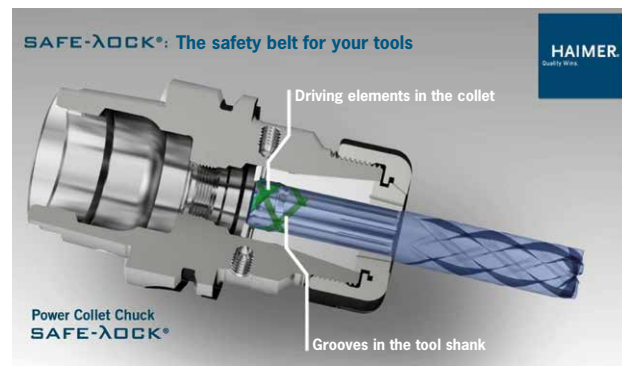
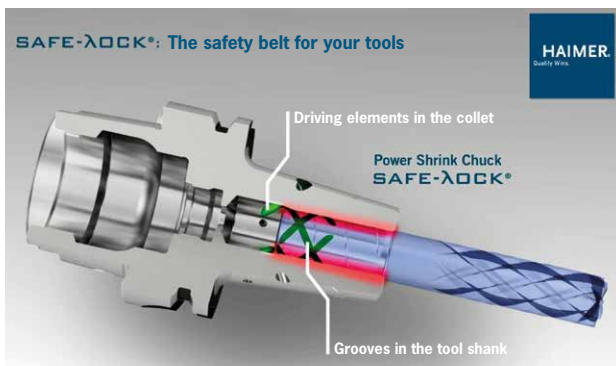


No tool pull out with Safe-Lock



POWER SHRINK CHUCK WITH SAFE-LOCK

POWER COLLET CHUCK WITH SAFE-LOCK





**QUESTION:**

***Can an end mill with Safe-Lock shank also be clamped into a tool holder without Safe-Lock pins?***

## ANSWER:

Yes, tools with Safe-Lock shank can be clamped in every frictional tool holder.

**QUESTION:**

***Is the length of tools with Safe-Lock shank adjustable?***

## ANSWER:

Yes, the pull out protection Safe-Lock allows shifting the tool within the Safe-Lock groove without any problems.

**QUESTION:**

***How can I shrink in tools with Safe-Lock shank?***

## ANSWER:

Tools with Safe-Lock shank are put in the heated tool holder and are then shrunk in with a twisting movement.

**QUESTION:**

***How can I get out broken tools with Safe-Lock shank from a Safe-Lock tool holder?***

## ANSWER:

The HAIMER shrink out device (Order No. 80.126.00) helps to get out broken tools despite the spiral-shaped Safe-Lock grooves without any problems.

**QUESTION:**

***What advantages does the Safe-Lock system offer compared to the well-tried Weldon-clamping system?***

## ANSWER:

Due to the side clamping of the Weldon system, the tool is pushed off center, which causes poor runout accuracy of up to 0.05 mm, inconsistent balance, all of which causes insufficient surface finish and poor tool life.

In comparison, HAIMER Safe-Lock provides, in addition to the pull out protection, a very high runout accuracy of < 0.003 mm and repeatable balance.

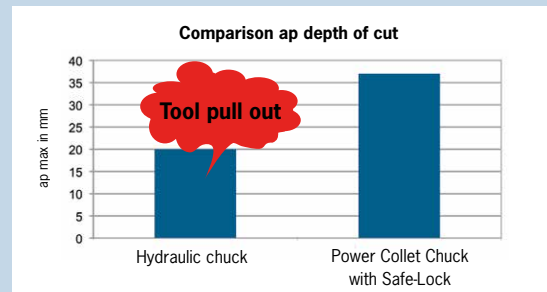
Only Safe-Lock allows a maximum metal removal rate combined with absolute process reliability and precision!

## SAFE-LOCK® APPLICATION EXAMPLES

## Power Collet Chuck with Safe-Lock

Maximum metal removal rate and best surface finish without risk of pullout

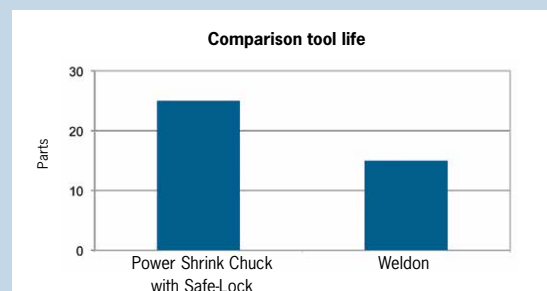
Application:	Slot milling
Work piece:	Titanium block
Material:	Ti6Al4V
Tool Holder:	Power Collet Chuck with Safe-Lock
Machine:	DMG MORI, DMU 80 P duoBLOCK®
Interface tool:	HSK-A 100
Cooling / pressure:	Emulsion/100 bar
Tool:	Safe-Lock solid carbide end mill, Z4, Ø20mm
Cutting data:	ae: 20 mm
	ap: 20/32.5/35/37.5 mm
	fz: 0.07 mm
	vc: 60 m/min



## Power Shrink Chuck with Safe-Lock

66% more tool life with Safe-Lock compared to Weldon

Application:	Pocket milling
Work piece:	Mold
Material:	1.2312/40CrMnMoS 8-6, 40 HRC
Tool Holder:	Power Shrink Chuck with Safe-Lock
Machine:	Mazak FH7800
Interface tool:	HSK-A 100
Cooling:	Air
Tool:	Safe-Lock solid carbide end mill, Z4, Ø20mm
Cutting data:	ae: 2 mm
	ap: 35 mm
	fz: 0.25 mm
	vc: 180 m/min



OVERVIEW SOLID CARBIDE END MILLS

Products		ø D1	Page	Characteristics
E1012 - HAIMER MILL MULTIFUNCTION END MILL		METRIC ø 4 - ø 10	43	  
E1014UN - HAIMER MILL QUADRANT END MILL		METRIC ø 6 - ø 10	45	 
E1014UN/E1016UN - HAIMER MILL CHAMFERING END MILL		METRIC ø 4 - ø 10	47	  
F1003NN - HAIMER MILL Power Series		METRIC ø 2 - ø 20 INCH ø 3/32" - ø 1"	49 51	   
F1004NN - HAIMER MILL Power Series		METRIC ø 2 - ø 20 INCH ø 3/32" - ø 1"	53 55	   
F1004NN - HAIMER MILL Power Series		METRIC ø 2 - ø 20 INCH ø 3/32" - ø 1"	57 - 59 61	   
F1005LL - HAIMER MILL Power Series		METRIC ø 6 - ø 20 INCH ø 1/4" - ø 1"	63 65	   
F1005NN - HAIMER MILL Power Series		METRIC ø 10 - ø 32	67	   
F1104NN - HAIMER MILL Power Series CHIP BREAKER		METRIC ø 6 - ø 20	69	   

Shank	Application	Material
		<p>Main Material </p> <p>also suitable for </p>
		<p>Main Material </p> <p>also suitable for </p>
		<p>Main Material </p> <p>also suitable for </p>
  		<p>Main Material </p> <p>also suitable for </p>
  		<p>Main Material </p> <p>also suitable for </p>
  		<p>Main Material </p> <p>also suitable for </p>
  		<p>Main Material </p> <p>also suitable for </p>
  		<p>Main Material </p> <p>also suitable for </p>
  		<p>Main Material </p> <p>also suitable for </p>

OVERVIEW SOLID CARBIDE END MILLS

Products		ø D1	Page	Characteristics
F1105LL – HAIMER MILL Power Series CHIP BREAKER		METRIC ø 6 – ø 20	71	   
F1304NN – HAIMER MILL Power Series ROUGHING		METRIC ø 6 – ø 20 INCH ø 1/4" – ø 1"	73 75	   
F2004MN – HAIMER MILL		INCH ø 3/32" – ø 3/4"	78	   
F2004MN – HAIMER MILL		INCH ø 3/32" – ø 3/4"	79	   
F2004NN – HAIMER MILL		METRIC ø 2 – ø 20	80	   
F2004NN – HAIMER MILL UNDERSIZE		METRIC ø 5.7 – ø 19.5	81	   
F2004NN – HAIMER MILL		METRIC ø 2 – ø 20	82	   
F2004NN – HAIMER MILL		METRIC ø 2 – ø 20	83 – 85	   
F2004LL – HAIMER MILL		METRIC ø 6 – ø 20 INCH ø 1/4" – ø 3/4"	86 87	   

Shank	Application	Material
		<p>Main Material <b>P</b></p> <p>also suitable for <b>K S N M H</b></p>
		<p>Main Material <b>P</b></p> <p>also suitable for <b>K S N M</b></p>
		<p>Main Material <b>P M</b></p> <p>also suitable for <b>K S N H</b></p>
		<p>Main Material <b>P M</b></p> <p>also suitable for <b>K S N H</b></p>
		<p>Main Material <b>P M</b></p> <p>also suitable for <b>K S N H</b></p>
		<p>Main Material <b>P M</b></p> <p>also suitable for <b>K S N H</b></p>
		<p>Main Material <b>P M</b></p> <p>also suitable for <b>K S N H</b></p>
		<p>Main Material <b>P M</b></p> <p>also suitable for <b>K S N H</b></p>
		<p>Main Material <b>P M</b></p> <p>also suitable for <b>K S N H</b></p>

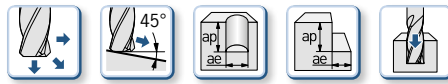
OVERVIEW SOLID CARBIDE END MILLS

Products		ø D1	Page	Characteristics
<b>F2014KK – HAIMER MILL</b>				
	METRIC	ø 2 – ø 20	88	   
	INCH	ø 3/32" – ø 3/4"	89	
<b>F2014 – HAIMER MILL</b>				
	INCH	ø 1/4" – ø 3/4"	91	  
<b>F4002NN – HAIMER MILL Alu Series UNCOATED</b>				
	METRIC	ø 2 – ø 20	93	   
<b>F4002NN – HAIMER MILL Alu Series</b>				
	METRIC	ø 2 – ø 20	95	   
<b>F4003NN – HAIMER MILL Alu Series UNCOATED</b>				
	METRIC	ø 2 – ø 20	97	   
<b>F4003NN – HAIMER MILL Alu Series</b>				
	METRIC	ø 2 – ø 20	99	   
<b>V1002NN – HAIMER MILL Power Series</b>				
	METRIC	ø 2 – ø 20	101	   
	INCH	ø 3/32" – ø 1/2"	103	
<b>V4002NN – HAIMER MILL Alu Series UNCOATED</b>				
	METRIC	ø 2 – ø 20	105	   
<b>V4002NN – HAIMER MILL Alu Series</b>				
	METRIC	ø 2 – ø 20	107	   

Shank

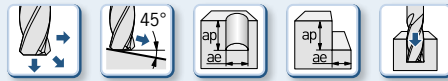
Application

Material



Main Material also suitable for

P	M	K	S
		N	H



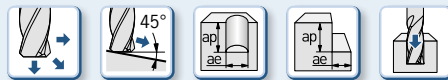
Main Material also suitable for

P	M	K	S
		N	H



Main Material

N
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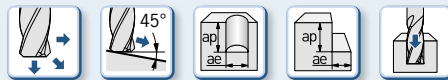
Main Material

N
---



Main Material

N
---



Main Material

N
---



Main Material also suitable for

P	K	S	N
	M	H	



Main Material

N
---



Main Material

N
---



Explanation Icons

Characteristics

<b>Cutting length</b> factor x Ø 	<b>similar DIN</b> DIN 6527 L 	<b>Helix angle</b> 	<b>Sharp cutting edge</b> S 	<b>Corner chamfer</b> 45° 	<b>Corner radius</b> R 	<b>Ball Nose</b> VR 	<b>Spot</b> W 	<b>Edge radius</b> R 
<b>Teeth 2</b> Z=2 	<b>Teeth 3</b> Z=3 	<b>Teeth 4</b> Z=4 	<b>Teeth 5</b> Z=5 	<b>Teeth 6</b> Z=6 	<b>Safe-lock®</b> S=λ 	<b>Straight shank</b> HA 	<b>Weldon shank</b> HB 	<b>All three shanks available</b> 

Application

<b>Feed direction</b> 	<b>Feed direction</b> 	<b>Feed direction</b> 	<b>Ramping</b> 	<b>Slotting</b> ap ae 	<b>Side milling</b> ap ae 	<b>Rounding</b> ap ae 	<b>Chamfering</b> ap ae 
<b>Drilling</b> 	<b>3D Milling</b> 	<b>V-slotting</b> 	<b>Contouring</b> 	<b>Chamfering</b> 	<b>Side milling</b> 		

Coolant

<b>Emulsion</b> 	<b>Cold air</b> Air 	<b>Dry machining</b> 	<b>Minimal lubrication</b> MMS 
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Explanation article code

F	1	0	0	2	M	N	L
Tool type	Group	Type	Modification	No. of teeth	Length of cut	Overall length	Shank type
F- Cylindrical end mill	1- Universal	0- Plain cutter	0- With neck	2- Z2	N- DIN (1.75-2.5xD)	N- DIN6527	L- Safe-Lock
E- Chamfering end mill	2- Steel < 52HRC	1- Chip breaker	1- No Neck	3- Z3	L- 2.6-3.5xD	L- Long	H- Straight
V- Ball nose end mill	4- Alu	3- Roughing		4- Z4	M- 1.5xD	K- Short	B- Weldon
	6- Titan/ Inconel			5- Z5	K- 1.25xD	U- Ultra short	
				6- Z6	U- 0.75xD		
				8- Z8			
				0- Z10			

Material list

HAIMER Material groups		Example material		Material information	
		ANSI	Material no.	Tensile strength	Content/Hardness
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 116,000 PSI, 800MPa	up to 25 HRC
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 116,000 PSI, 800MPa	up to 45 HRC
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 94,275 PSI, 650MPa	
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 94,275 PSI, 650MPa	
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 65,265 PSI, 450MPa	
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 65,265 PSI, 450MPa	
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165		
<b>S2</b>	High Temp alloys	Inconel, Nimonic			
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315		
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si >12%
<b>H1</b>	Hardened steels				45 - 55 HRC
<b>H1</b>	Hardened steels				>- 55 HRC

1000	R	1.00	A	A	0001	KR
Diameter	Cutting edge transition	Size transition	Material	Coating	Special number	Cooling
1200- Metric 1/2Z- Inch	S- Sharp cutting edge C- Chamfer R- Radius W- Chamfer angle	1.00- Metric .03- Inch 90- Chamfer angle 60- Chamfer angle 120- Chamfer angle	A- HF10 h5 D- HF10 h6	A- HAIMER-UNI C- HAIMER-ALU T- HAIMER-HARD - none	0000 - 9999	KR- Cooling radial KZ- Cooling central KS- Cooling special

## Cutting data

HAIMER Material groups	Example material		Material information		Roughing Vc (m/min)	Finishing Vc (m/min)
	ANSI	Material no.	Tensile strength	Content/ Hardness		
<b>P1</b> <b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>160 – 220</b>	<b>220 – 280</b>
<b>P2</b> <b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>120 – 160</b>	<b>160 – 200</b>
<b>M1</b> Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		80 – 120	120 – 160
<b>M2</b> Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 650 N/mm <sup>2</sup>		60 – 90	90 – 120
<b>K1</b> Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		120 – 180	180 – 240
<b>K2</b> Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		80 – 160	160 – 220
<b>S1</b> Titanium & titanium alloys	Ti6Al4V	3.7165			40 – 80	40 – 80
<b>S2</b> High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		30 – 40	30 – 40
<b>N1</b> Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	500 – 900	500 – 900
<b>N2</b> Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 350	120 – 350
<b>H1</b> Hardened steels				45 – 55 HRC	40 – 60	60 – 80

Cutting data are reference values and need to be adjusted according to the application area.

## Feed per tooth (mm/tooth) in relation with D1 and cutting width ae

	ø 4	ø 6	ø 8	ø 10
fz	0.01 – 0.04	0.015 – 0.06	0.02 – 0.08	0.03 – 0.10

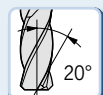
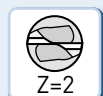
METRIC

E1012 – HAIMER MILL  
MULTIFUNCTION END MILL

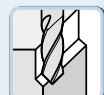
## Technical data and Product characteristics



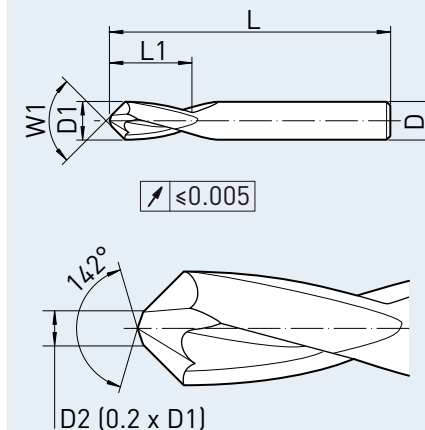
## Characteristics



## Application



## Coolant



Fine balanced

## Material – characteristics

## Main Material



## also suitable for



- Cone angle 60/90/120°/142°
- Center spot
- Multi functional tool
- Circumference cutting

Article-Code	HAIMER Quality	D1 (h6) [mm]	Chamfer	Angle W1	L1 max. [mm]	L [mm]	D2 [mm]	Shank
E1012NNH0400W60..	DA	4.00	W	60°	11	51	4.00	HA
E1012NNH0400W90..	DA	4.00	W	90°	11	51	4.00	HA
E1012NNH0400W120..	DA	4.00	W	120°	11	51	4.00	HA
E1012NNH0400W142..	DA	4.00	W	142°	11	51	4.00	HA
E1012NLH0600W60..	DA	6.00	W	60°	13	66	6.00	HA
E1012NLH0600W90..	DA	6.00	W	90°	13	66	6.00	HA
E1012NLH0600W120..	DA	6.00	W	120°	13	66	6.00	HA
E1012NLH0600W142..	DA	6.00	W	142°	13	66	6.00	HA
E1012NLH0800W60..	DA	8.00	W	60°	19	79	8.00	HA
E1012NLH0800W90..	DA	8.00	W	90°	19	79	8.00	HA
E1012NLH0800W120..	DA	8.00	W	120°	19	79	8.00	HA
E1012NLH0800W142..	DA	8.00	W	142°	19	79	8.00	HA
E1012NLH1000W60..	DA	10.00	W	60°	22	89	10.00	HA
E1012NLH1000W90..	DA	10.00	W	90°	22	89	10.00	HA
E1012NLH1000W120..	DA	10.00	W	120°	22	89	10.00	HA
E1012NLH1000W142..	DA	10.00	W	142°	22	89	10.00	HA

Order No. = Article Code + HAIMER Quality.

## Cutting data

HAIMER Material groups	Example material		Material information		Roughing Vc (m/min)	Finishing Vc (m/min)
	ANSI	Material no.	Tensile strength	Content/ Hardness		
<b>P1</b> <b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>160 – 220</b>	<b>220 – 280</b>
<b>P2</b> <b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>120 – 160</b>	<b>160 – 200</b>
<b>M1</b> Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		80 – 120	120 – 160
<b>M2</b> Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 650 N/mm <sup>2</sup>		60 – 90	90 – 120
<b>K1</b> Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		120 – 180	180 – 240
<b>K2</b> Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		80 – 160	160 – 220
<b>S1</b> Titanium & titanium alloys	Ti6Al4V	3.7165			40 – 80	40 – 80
<b>S2</b> High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		30 – 40	30 – 40
<b>N1</b> Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	500 – 900	500 – 900
<b>N2</b> Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 350	120 – 350
<b>H1</b> Hardened steels				45 – 55 HRC	40 – 60	60 – 80

Cutting data are reference values and need to be adjusted according to the application area.

## Feed per tooth (mm/tooth) in relation with D1 and cutting width ae

	ø 6	ø 8	ø 10
fz	0.015 – 0.06	0.02 – 0.08	0.03 – 0.10



# E1014UN – HAIMER MILL QUADRANT END MILL

## Technical data and Product characteristics



Characteristics	Application	Coolant
R		
Z=4		
HA		

Fine balanced  
\* diameter not center cutting

### Material – characteristics

Main Material



also suitable for



- For contour rounding
- 5° tangential release
- Positive rake angle without profile displacement

Article-Code	HAIMER Quality	D1 [mm]	Cutting edge	Edge radius [mm]	L1 max. [mm]	L [mm]	D (h6) [mm]	Shank
E1014UNH0600R0.25..	DA	5.0	R	0.25	0.50	58	6	HA
E1014UNH0600R0.50..	DA	4.5	R	0.50	0.75	58	6	HA
E1014UNH0800R0.75..	DA	6.0	R	0.75	1.00	64	8	HA
E1014UNH0800R1.00..	DA	5.0	R	1.00	1.50	64	8	HA
E1014UNH1000R1.50..	DA	6.0	R	1.50	2.00	73	10	HA
E1014UNH1000R2.00..	DA	5.0	R	2.00	2.50	73	10	HA

Order No. = Article Code + HAIMER Quality.

## Cutting data

HAIMER Material groups	Example material ANSI	Material no.	Material information Tensile strength Content/ Hardness		Cutting width			
					Cutting speed Vc (m/min)	Cutting width		
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>170 – 200</b>	<b>210 – 240</b>	<b>250 – 270</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>90 – 110</b>	<b>110 – 130</b>	<b>130 – 150</b>
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		–	–	55 – 65
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 650 N/mm <sup>2</sup>		–	–	40 – 50
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		110 – 130	130 – 150	200 – 220
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTMA536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		90 – 110	110 – 130	160 – 180
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			60 – 80	60 – 80	60 – 80
<b>S2</b>	High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		30 – 40	30 – 40	30 – 40
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	120 – 240	120 – 240	120 – 240
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 240	120 – 240	120 – 240
<b>H1</b>	Hardened steels				45 – 55 HRC	40 – 60	60 – 80	60 – 80

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (mm/tooth) in relation with D1 and cutting width ae				
	ø 4	ø 6	ø 8	ø 10
fz	0.01 – 0.04	0.015 – 0.06	0.02 – 0.08	0.03 – 0.10



# E1014UN/E1016UN – HAIMER MILL CHAMFERING END MILL

## Technical data and Product characteristics



Characteristics	Application	Coolant
W		
Z=4		
Z=6		
HA		

Fine balanced  
\* diameter not center cutting

### Material – characteristics

Main Material



also suitable for



- Cone angle 60/90/120°
- Flat tip
- Multi functional tool
- Straight fluted

Article-Code	HAIMER Quality	D1 (h6) [mm]	Chamfer	Angle W1	L1 max. [mm]	L [mm]	D2 [mm]	Shank
E1014UNH0400W60..	DA	4.00	W	60°	2.8	51	0.8	HA
E1014UNH0400W90..	DA	4.00	W	90°	1.6	51	0.8	HA
E1014UNH0400W120..	DA	4.00	W	120°	0.9	51	0.8	HA
E1016UNH0600W60..	DA	6.00	W	60°	4.2	51	0.8	HA
E1016UNH0600W90..	DA	6.00	W	90°	2.4	58	1.2	HA
E1016UNH0600W120..	DA	6.00	W	120°	1.3	58	1.2	HA
E1016UNH0800W60..	DA	8.00	W	60°	5.5	64	1.6	HA
E1016UNH0800W90..	DA	8.00	W	90°	3.2	64	1.6	HA
E1016UNH0800W120..	DA	8.00	W	120°	1.8	64	1.6	HA
E1016UNH1000W60..	DA	10.00	W	60°	6.9	73	2.0	HA
E1016UNH1000W90..	DA	10.00	W	90°	4	73	2.0	HA
E1016UNH1000W120..	DA	10.00	W	120°	2.3	73	2.0	HA

Order No. = Article Code + HAIMER Quality.




Cutting data

HAIMER Material groups	Example material	Material no.	Tensile strength	Content/ Hardness	Cutting width			
					Cutting speed Vc (m/min)			
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038. 1.0050. 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>170 – 200</b>	<b>210 – 240</b>	<b>250 – 270</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367. 1.2379. 1.2363. 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>90 – 110</b>	<b>110 – 130</b>	<b>130 – 150</b>
<b>M1</b>	Stainless steels	303, 304	1.4305. 1.4301. 1.4034	≤ 650 N/mm <sup>2</sup>		–	–	55 – 65
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571. 1.4404. 1.4418	> 650 N/mm <sup>2</sup>		–	–	40 – 50
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020. 0.6040. 0.7040	≤ 450 N/mm <sup>2</sup>		110 – 130	130 – 150	200 – 220
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTMA536 100-70-06	0.7060. 0.7070	> 450 N/mm <sup>2</sup>		90 – 110	110 – 130	160 – 180
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			60 – 80	60 – 80	60 – 80
<b>S2</b>	High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		30 – 40	30 – 40	30 – 40
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	120 – 240	120 – 240	120 – 240
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 240	120 – 240	120 – 240
<b>H1</b>	Hardened steels				45 – 55 HRC	40 – 60	60 – 80	60 – 80

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (mm/tooth) in relation with D1 and cutting width ae												
ae	ø 2	ø 3	ø 4	ø 5	ø 6	ø 8	ø 10	ø 12	ø 14	ø 16	ø 18	ø 20
to 50% ø	0.012	0.018	0.024	0.030	0.036	0.048	0.060	0.072	0.084	0.096	0.108	0.120
100% ø	0.010	0.015	0.020	0.025	0.030	0.040	0.050	0.060	0.070	0.080	0.090	0.100
	0.002	0.003	0.004	0.005	0.006	0.008	0.010	0.012	0.014	0.016	0.018	0.020

Technical data and Product characteristics




**Optional:**


- Straight shank  
DIN 6535-HA
- Safe-Lock shank (S-λ)
- Weldon shank similar  
DIN 6535-HB

\* = H      \* = L      \* = B


**Characteristics**

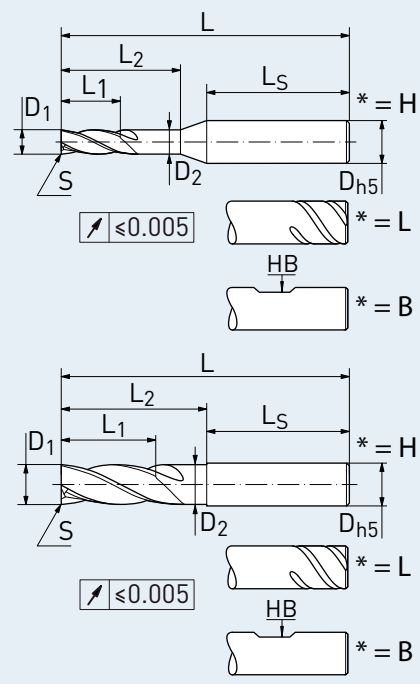


**Application**



**Coolant**





Fine balanced  
Except Weldon shank

Material – characteristics

**Main Material** also suitable for

P

K

S

N

M

H

- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Polished flute and relief

Article-Code	HAIMER Quality	D1 (h9) [mm]	Cutting edge	L1 max. [mm]	L [mm]	L2 [mm]	D2 [mm]	D (h5) [mm]	LS [mm]	Shank
F1003NN*0200S..	AA	2.00	S	7	58	9	1.9	6	44.3	HA/S-λ/HB
F1003NN*0300S..	AA	3.00	S	8	58	10	2.9	6	44.0	HA/S-λ/HB
F1003NN*0400S..	AA	4.00	S	11	58	15	3.8	6	40.0	HA/S-λ/HB
F1003NN*0500S..	AA	5.00	S	13	58	18	4.8	6	37.875	HA/S-λ/HB
F1003NN*0600S..	AA	6.00	S	13	58	20	5.7	6	36.5	HA/S-λ/HB
F1003NN*0800S..	AA	8.00	S	19	64	26	7.6	8	36.5	HA/S-λ/HB
F1003NN*1000S..	AA	10.00	S	22	73	30.5	9.5	10	40.5	HA/S-λ/HB
F1003NN*1200S..	AA	12.00	S	26	84	36.5	11.4	12	45.5	HA/S-λ/HB
F1003NN*1400S..	AA	14.00	S	26	84	36.5	13.3	14	45.5	HA/S-λ/HB
F1003NN*1600S..	AA	16.00	S	32	93	42.5	15.2	16	48.5	HA/S-λ/HB
F1003NN*1800S..	AA	18.00	S	32	93	42.5	17.1	18	48.5	HA/S-λ/HB
F1003NN*2000S..	AA	20.00	S	38	105	52	19	20	50.5	HA/S-λ/HB

\* = L - Safe-Lock / H - Straight shank / B - Weldon shank. Order No. = Article Code + HAIMER Quality.

Cutting data

HAIMER Material groups	Example material	Material no.	Tensile strength	Content/ Hardness	Cutting width			
					ae = 100% D1 ap = 1 x D1	ae = 50% D1 ap = 1.5 x D1	ae = 25% D1 ap = L1 max.	
					Cutting Speed (SFM)			
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 116,000 PSI, 800MPA	up to 25 HRC	<b>557 – 656</b>	<b>689 – 787</b>	<b>820 – 885</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 116,000 PSI, 800MPA	up to 45 HRC	<b>295 – 361</b>	<b>361 – 426</b>	<b>426 – 492</b>
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 94,275 PSI, 650MPA		-	-	180 – 213
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 94,275 PSI, 650MPA		-	-	131 – 164
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 65,265 PSI, 450MPA		361 – 426	426 – 492	656 – 721
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTMA536 100-70-06	0.7060, 0.7070	> 65,265 PSI, 450MPA		295 – 361	361 – 426	525 – 590
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			197 – 262	197 – 262	197 – 262
<b>S2</b>	High Temp alloys	Inconel, Nimonic				98 – 131	98 – 131	98 – 131
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315			393 – 787	393 – 787	393 – 787
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si >12%	393 – 787	393 – 787	393 – 787
<b>H1</b>	Hardened steels				45 - 55 HRC	131 – 197	197 – 262	197 – 262

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (inch/tooth) in relation with D1 and cutting width ae										
ae	3/32	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1
to 50% $\phi$	0.0006	0.0008	0.0011	0.0015	0.0019	0.0023	0.0030	0.0038	0.0045	0.0060
100% $\phi$	0.0005	0.0006	0.0009	0.0013	0.0016	0.0019	0.0025	0.0031	0.0038	0.0050
	0.0001	0.0001	0.0002	0.0003	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010

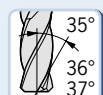
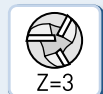
INCH

# F1003NN – HAIMER MILL Power Series SHARP CUTTING EDGE

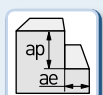
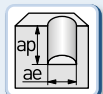
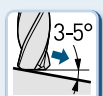
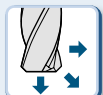
## Technical data and Product characteristics



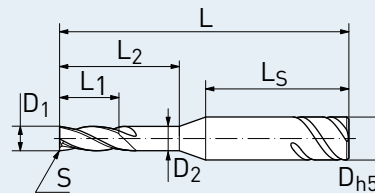
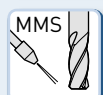
### Characteristics



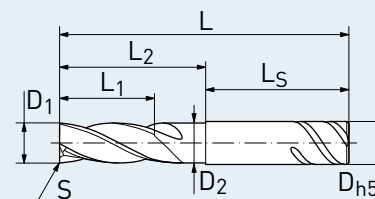
### Application



### Coolant



↗ ≤0.0002



↗ ≤0.0002

Fine balanced  
Except Weldon shank

### Material – characteristics

#### Main Material



#### also suitable for



- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Polished flute and relief

Article-Code	HAIMER Quality	D1 (h9) [inch]	Cutting edge	L1 max. [inch]	L [inch]	L2 [inch]	D2 [inch]	D (h5) [inch]	LS [inch]	Shank
F1003NNL3/32ZS..	AA	3/32	S	3/16	2	1/4	0.089	1/4	1.562	S-λ
F1003NNL1/8ZS..	AA	1/8	S	1/4	2	5/16	0.121	1/4	1.531	S-λ
F1003NNL3/16ZS..	AA	3/16	S	3/8	2	1/2	0.179	1/4	1.375	S-λ
F1003NNL1/4ZS..	AA	1/4	S	1/2	2	5/8	0.238	1/4	1.343	S-λ
F1003NNL5/16ZS..	AA	5/16	S	5/8	2 3/16	13/16	0.296	5/16	1.312	S-λ
F1003NNL3/8ZS..	AA	3/8	S	3/4	2 1/2	1	0.355	3/8	1.437	S-λ
F1003NNL1/2ZS..	AA	1/2	S	1	3	1 1/4	0.476	1/2	1.687	S-λ
F1003NNL5/8ZS..	AA	5/8	S	1 1/4	3 3/8	1 9/16	0.593	5/8	1.750	S-λ
F1003NNL3/4ZS..	AA	3/4	S	1 1/2	3 3/4	1 7/8	0.710	3/4	1.812	S-λ
F1003NNL1ZS..	AA	1	S	2	4 1/2	2 1/2	0.960	1	1.937	S-λ

Order No. = Article Code + HAIMER Quality

Cutting data

HAIMER Material groups	Example material	Material no.	Material information		Cutting width		
			Tensile strength	Content/ Hardness	ap = 100% D1 ap = 1 x D1	ap = 50% D1 ap = 1.5 x D1	ap = 25% D1 ap = L1 max.
ANSI	Material no.	Tensile strength	Content/ Hardness	Cutting speed Vc (m/min)			
<b>P1</b> <b>General construction steels</b>	A252, A50-2, 1045	1.0038. 1.0050. 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>170 – 200</b>	<b>210 – 240</b>	<b>250 – 270</b>
<b>P2</b> <b>Heat treated steels</b>	D2, 4140	1.2367. 1.2379. 1.2363. 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>90 – 110</b>	<b>110 – 130</b>	<b>130 – 150</b>
<b>M1</b> Stainless steels	303, 304	1.4305. 1.4301. 1.4034	≤ 650 N/mm <sup>2</sup>		–	–	55 – 65
<b>M2</b> Stainless steels	316Ti, 316L	1.4571. 1.4404. 1.4418	> 650 N/mm <sup>2</sup>		–	–	40 – 50
<b>K1</b> Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020. 0.6040. 0.7040	≤ 450 N/mm <sup>2</sup>		110 – 130	130 – 150	200 – 220
<b>K2</b> Cast iron	ASTM A536 80-55-06, ASTMA536 100-70-06	0.7060. 0.7070	> 450 N/mm <sup>2</sup>		90 – 110	110 – 130	160 – 180
<b>S1</b> Titanium & titanium alloys	Ti6Al4V	3.7165			60 – 80	60 – 80	60 – 80
<b>S2</b> High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		30 – 40	30 – 40	30 – 40
<b>N1</b> Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	120 – 240	120 – 240	120 – 240
<b>N2</b> Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 240	120 – 240	120 – 240
<b>H1</b> Hardened steels				45 – 55 HRC	40 – 60	60 – 80	60 – 80


Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (mm/tooth) in relation with D1 and cutting width ae												
ae	ø 2	ø 3	ø 4	ø 5	ø 6	ø 8	ø 10	ø 12	ø 14	ø 16	ø 18	ø 20
to 50% ø	0.012	0.018	0.024	0.030	0.036	0.048	0.060	0.072	0.084	0.096	0.108	0.120
100% ø	0.010	0.015	0.020	0.025	0.030	0.040	0.050	0.060	0.070	0.080	0.090	0.100
	0.002	0.003	0.004	0.005	0.006	0.008	0.010	0.012	0.014	0.016	0.018	0.020



# F1004NN – HAIMER MILL Power Series CHAMFER

## Technical data and Product characteristics



**Optional:**

- Straight shank  
DIN 6535-HA
- Safe-Lock shank (S-λ)
- Weldon shank similar  
DIN 6535-HB

\* = H      \* = L      \* = B

**Characteristics**

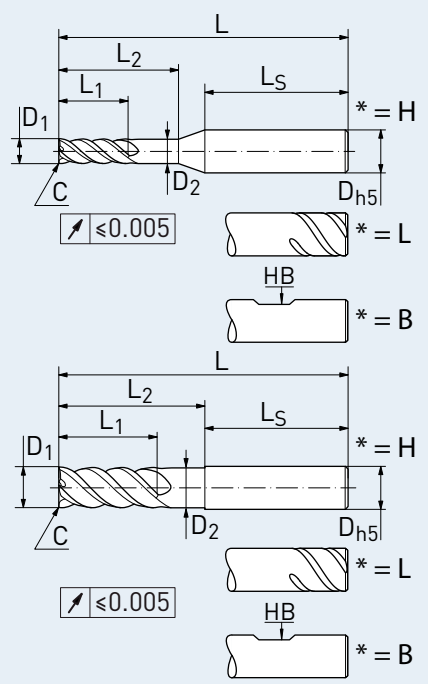
- DIN 6527 L
- 45°
- Z=4
- 41° / 43°

**Application**

- 3-5°
- ap, ae
- ap, ae

**Coolant**

- Air
- MMS



Fine balanced  
Except Weldon shank

### Material – characteristics

**Main Material** P

**also suitable for**

K

S

N

M

H

- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Polished flute and relief

Article-Code	HAIMER Quality	D1 (h9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	L2 [mm]	D2 [mm]	D (h5) [mm]	LS [mm]	Shank
F1004NN*0200C..	AA	2.00	C	0.10	7	58	9	1.9	6	44.3	HA/S-λ/HB
F1004NN*0300C..	AA	3.00	C	0.10	8	58	10	2.9	6	44.0	HA/S-λ/HB
F1004NN*0400C..	AA	4.00	C	0.15	11	58	15	3.8	6	40.0	HA/S-λ/HB
F1004NN*0500C..	AA	5.00	C	0.20	13	58	18	4.8	6	37.875	HA/S-λ/HB
F1004NN*0600C..	AA	6.00	C	0.20	13	58	20	5.7	6	36.5	HA/S-λ/HB
F1004NN*0800C..	AA	8.00	C	0.20	19	64	26	7.6	8	36.5	HA/S-λ/HB
F1004NN*1000C..	AA	10.00	C	0.30	22	73	30.5	9.5	10	40.5	HA/S-λ/HB
F1004NN*1200C..	AA	12.00	C	0.30	26	84	36.5	11.4	12	45.5	HA/S-λ/HB
F1004NN*1400C..	AA	14.00	C	0.40	26	84	36.5	13.3	14	45.5	HA/S-λ/HB
F1004NN*1600C..	AA	16.00	C	0.50	32	93	42.5	15.2	16	48.5	HA/S-λ/HB
F1004NN*1800C..	AA	18.00	C	0.50	32	93	42.5	17.1	18	48.5	HA/S-λ/HB
F1004NN*2000C..	AA	20.00	C	0.60	38	105	52	19	20	50.5	HA/S-λ/HB

\* = L - Safe-Lock / H - Straight shank / B - Weldon shank. Order No. = Article Code + HAIMER Quality.

Cutting data

HAIMER Material groups	Example material	Material no.	Tensile strength	Content/ Hardness	Cutting width			
					ae = 100% D1 ap = 1 x D1	ae = 50% D1 ap = 1.5 x D1	ae = 25% D1 ap = L1 max.	
					Cutting Speed (SFM)			
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 116,000 PSI, 800MPA	up to 25 HRC	<b>557 – 656</b>	<b>689 – 787</b>	<b>820 – 885</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 116,000 PSI, 800MPA	up to 45 HRC	<b>295 – 361</b>	<b>361 – 426</b>	<b>426 – 492</b>
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 94,275 PSI, 650MPA		-	-	180 – 213
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 94,275 PSI, 650MPA		-	-	131 – 164
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 65,265 PSI, 450MPA		361 – 426	426 – 492	656 – 721
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTMA536 100-70-06	0.7060, 0.7070	> 65,265 PSI, 450MPA		295 – 361	361 – 426	525 – 590
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			197 – 262	197 – 262	197 – 262
<b>S2</b>	High Temp alloys	Inconel, Nimonic				98 – 131	98 – 131	98 – 131
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315			393 – 787	393 – 787	393 – 787
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si >12%	393 – 787	393 – 787	393 – 787
<b>H1</b>	Hardened steels				45 - 55 HRC	131 – 197	197 – 262	197 – 262

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (inch/tooth) in relation with D1 and cutting width ae										
ae	3/32	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1
to 50% $\phi$	0.0006	0.0008	0.0011	0.0015	0.0019	0.0023	0.0030	0.0038	0.0045	0.0060
100% $\phi$	0.0005	0.0006	0.0009	0.0013	0.0016	0.0019	0.0025	0.0031	0.0038	0.0050
	0.0001	0.0001	0.0002	0.0003	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010

INCH

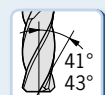
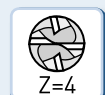
# F1004NN – HAIMER MILL Power Series CHAMFER

## Technical data and Product characteristics

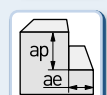
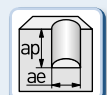
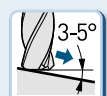
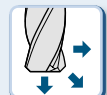


SAFE-LOCK®

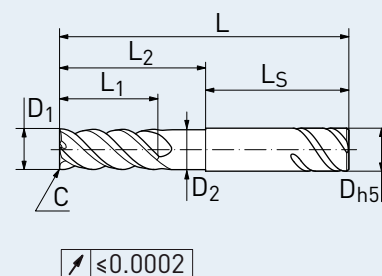
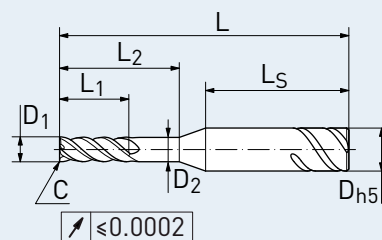
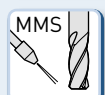
### Characteristics



### Application



### Coolant



Fine balanced  
Except Weldon shank

### Material – characteristics

#### Main Material



#### also suitable for



- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Polished flute and relief

Article-Code	HAIMER Quality	D1 (f9) [inch]	Cutting edge	Size [inch]	L1 max. [inch]	L [inch]	L2 [inch]	D2 [inch]	D (h5) [inch]	LS [inch]	Shank
F1004NNL3/32ZC..	AA	3/32	C	0.004	3/16	2	1/4	0.089	1/4	1.562	S-λ
F1004NNL1/8ZC..	AA	1/8	C	0.004	1/4	2	5/16	0.121	1/4	1.531	S-λ
F1004NNL3/16ZC..	AA	3/16	C	0.006	3/8	2	1/2	0.179	1/4	1.375	S-λ
F1004NNL1/4ZC..	AA	1/4	C	0.008	1/2	2	5/8	0.238	1/4	1.343	S-λ
F1004NNL5/16ZC..	AA	5/16	C	0.008	5/8	2 3/16	13/16	0.296	5/16	1.312	S-λ
F1004NNL3/8ZC..	AA	3/8	C	0.012	3/4	2 1/2	1	0.355	3/8	1.437	S-λ
F1004NNL1/2ZC..	AA	1/2	C	0.012	1	3	1 1/4	0.476	1/2	1.687	S-λ
F1004NNL5/8ZC..	AA	5/8	C	0.020	1 1/4	3 3/8	1 9/16	0.593	5/8	1.750	S-λ
F1004NNL3/4ZC..	AA	3/4	C	0.024	1 1/2	3 3/4	1 7/8	0.710	3/4	1.812	S-λ
F1004NNL1ZC..	AA	1	C	0.032	2	4 1/2	2 1/2	0.960	1	1.937	S-λ

Order No. = Article Code + HAIMER Quality



Cutting data

HAIMER Material groups	Example material	Material no.	Material information		Cutting width		
			Tensile strength	Content/ Hardness	ap = 100% D1 ap = 1 x D1	ap = 50% D1 ap = 1.5 x D1	ap = 25% D1 ap = L1 max.
ANSI	Material no.	Tensile strength	Content/ Hardness	Cutting speed Vc (m/min)			
<b>P1</b> <b>General construction steels</b>	A252, A50-2, 1045	1.0038. 1.0050. 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>170 – 200</b>	<b>210 – 240</b>	<b>250 – 270</b>
<b>P2</b> <b>Heat treated steels</b>	D2, 4140	1.2367. 1.2379. 1.2363. 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>90 – 110</b>	<b>110 – 130</b>	<b>130 – 150</b>
<b>M1</b> Stainless steels	303, 304	1.4305. 1.4301. 1.4034	≤ 650 N/mm <sup>2</sup>		–	–	55 – 65
<b>M2</b> Stainless steels	316Ti, 316L	1.4571. 1.4404. 1.4418	> 650 N/mm <sup>2</sup>		–	–	40 – 50
<b>K1</b> Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020. 0.6040. 0.7040	≤ 450 N/mm <sup>2</sup>		110 – 130	130 – 150	200 – 220
<b>K2</b> Cast iron	ASTM A536 80-55-06, ASTMA536 100-70-06	0.7060. 0.7070	> 450 N/mm <sup>2</sup>		90 – 110	110 – 130	160 – 180
<b>S1</b> Titanium & titanium alloys	Ti6Al4V	3.7165			60 – 80	60 – 80	60 – 80
<b>S2</b> High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		30 – 40	30 – 40	30 – 40
<b>N1</b> Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	120 – 240	120 – 240	120 – 240
<b>N2</b> Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 240	120 – 240	120 – 240
<b>H1</b> Hardened steels				45 – 55 HRC	40 – 60	60 – 80	60 – 80

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (mm/tooth) in relation with D1 and cutting width ae												
ae	ø 2	ø 3	ø 4	ø 5	ø 6	ø 8	ø 10	ø 12	ø 14	ø 16	ø 18	ø 20
to 50% ø	0.012	0.018	0.024	0.030	0.036	0.048	0.060	0.072	0.084	0.096	0.108	0.120
100% ø	0.010	0.015	0.020	0.025	0.030	0.040	0.050	0.060	0.070	0.080	0.090	0.100
	0.002	0.003	0.004	0.005	0.006	0.008	0.010	0.012	0.014	0.016	0.018	0.020



# F1004NN – HAIMER MILL Power Series CORNER RADIUS

## Technical data and Product characteristics

\* = H      \* = L      \* = B

**Optional:**

- Straight shank  
DIN 6535-HA
- Safe-Lock shank (S-λ)
- Weldon shank similar  
DIN 6535-HB

**Characteristics**

- DIN 6527 L
- R
- Z=4
- 41° / 43°

**Application**

- 3-5°
- ap, ae
- ap, ae

**Coolant**

- Air
- MMS

Fine balanced  
Except Weldon shank

### Material – characteristics

Main Material



also suitable for




- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Polished flute and relief

Article-Code	HAIMER Quality	D1 (h9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	L2 [mm]	D2 [mm]	D (h5) [mm]	LS [mm]	Shank
F1004NN*0200R0.20..	AA	2.00	R	0.20	7	58	9	1.9	6	44.3	HA/S-λ/HB
F1004NN*0300R0.30..	AA	3.00	R	0.30	8	58	10	2.9	6	44.0	HA/S-λ/HB
F1004NN*0400R0.30..	AA	4.00	R	0.30	11	58	15	3.8	6	40.0	HA/S-λ/HB
F1004NN*0400R0.40..	AA	4.00	R	0.40	11	58	15	3.8	6	40.0	HA/S-λ/HB
F1004NN*0400R0.50..	AA	4.00	R	0.50	11	58	15	3.8	6	40.0	HA/S-λ/HB
F1004NN*0500R0.30..	AA	5.00	R	0.30	13	58	18	4.8	6	37.875	HA/S-λ/HB
F1004NN*0500R0.50..	AA	5.00	R	0.50	13	58	18	4.8	6	37.875	HA/S-λ/HB
F1004NN*0500R1.00..	AA	5.00	R	1.00	13	58	18	4.8	6	37.875	HA/S-λ/HB
F1004NN*0600R0.30..	AA	6.00	R	0.30	13	58	20	5.7	6	36.5	HA/S-λ/HB
F1004NN*0600R0.50..	AA	6.00	R	0.50	13	58	20	5.7	6	36.5	HA/S-λ/HB
F1004NN*0600R1.00..	AA	6.00	R	1.00	13	58	20	5.7	6	36.5	HA/S-λ/HB
F1004NN*0600R1.50..	AA	6.00	R	1.50	13	58	20	5.7	6	36.5	HA/S-λ/HB

➔ Turn page for more articles

\* = L - Safe-Lock / H - Straight shank / B - Weldon shank. Order No. = Article Code + HAIMER Quality.

Technical data and Product characteristics



\* = H      \* = L      \* = B

**Optional:**

- Straight shank  
DIN 6535-HA
- Safe-Lock shank (S-λ)
- Weldon shank similar  
DIN 6535-HB

**Characteristics**

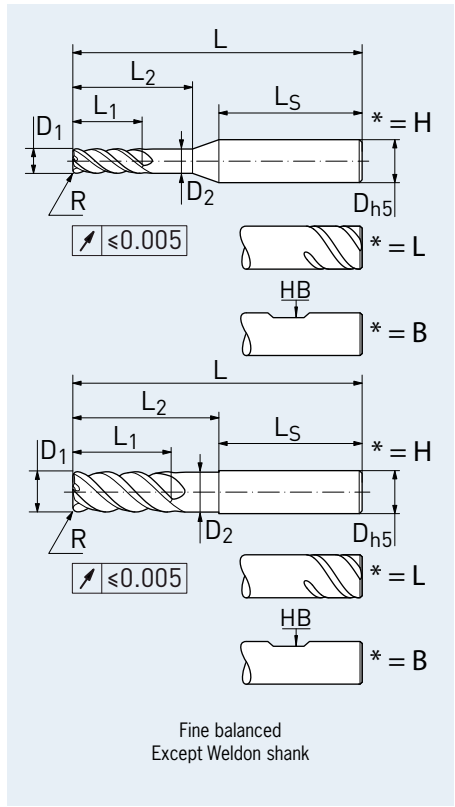
- DIN 6527 L
- R
- Z=4
- 41°  
43°

**Application**

- 3-5°
- ap  
ae
- ap  
ae

**Coolant**

- Air
- MMS



Fine balanced  
Except Weldon shank

Material – characteristics

Main Material



also suitable for



- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Polished flute and relief

Article-Code	HAIMER Quality	D1 (h9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	L2 [mm]	D2 [mm]	D (h5) [mm]	LS [mm]	Shank
F1004NN*0800R0.30..	AA	8.00	R	0.30	19	64	26	7.6	8	36.5	HA/S-λ/HB
F1004NN*0800R0.50..	AA	8.00	R	0.50	19	64	26	7.6	8	36.5	HA/S-λ/HB
F1004NN*0800R1.00..	AA	8.00	R	1.00	19	64	26	7.6	8	36.5	HA/S-λ/HB
F1004NN*0800R1.50..	AA	8.00	R	1.50	19	64	26	7.6	8	36.5	HA/S-λ/HB
F1004NN*0800R2.00..	AA	8.00	R	2.00	19	64	26	7.6	8	36.5	HA/S-λ/HB
F1004NN*1000R0.30..	AA	10.00	R	0.30	22	73	30.5	9.5	10	40.5	HA/S-λ/HB
F1004NN*1000R0.50..	AA	10.00	R	0.50	22	73	30.5	9.5	10	40.5	HA/S-λ/HB
F1004NN*1000R1.00..	AA	10.00	R	1.00	22	73	30.5	9.5	10	40.5	HA/S-λ/HB
F1004NN*1000R1.50..	AA	10.00	R	1.50	22	73	30.5	9.5	10	40.5	HA/S-λ/HB
F1004NN*1000R2.00..	AA	10.00	R	2.00	22	73	30.5	9.5	10	40.5	HA/S-λ/HB

➔ Turn page for more articles

\* = L - SafeLock / H - Straight shank / B - Weldon shank. Order No. = Article Code + HAIMER Quality.



## F1004NN – HAIMER MILL Power Series CORNER RADIUS

Article-Code	HAIMER Quality	D1 (h9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	L2 [mm]	D2 [mm]	D (h5) [mm]	LS [mm]	Shank
F1004NN*1200R0.30..	AA	12.00	R	0.30	26	84	36.5	11.4	12	45.5	HA/S-λ/HB
F1004NN*1200R0.50..	AA	12.00	R	0.50	26	84	36.5	11.4	12	45.5	HA/S-λ/HB
F1004NN*1200R1.00..	AA	12.00	R	1.00	26	84	36.5	11.4	12	45.5	HA/S-λ/HB
F1004NN*1200R1.50..	AA	12.00	R	1.50	26	84	36.5	11.4	12	45.5	HA/S-λ/HB
F1004NN*1200R2.00..	AA	12.00	R	2.00	26	84	36.5	11.4	12	45.5	HA/S-λ/HB
F1004NN*1200R3.00..	AA	12.00	R	3.00	26	84	36.5	11.4	12	45.5	HA/S-λ/HB
F1004NN*1200R4.00..	AA	12.00	R	4.00	26	84	36.5	11.4	12	45.5	HA/S-λ/HB
F1004NN*1400R0.50..	AA	14.00	R	0.50	26	84	36.5	13.3	14	45.5	HA/S-λ/HB
F1004NN*1400R1.00..	AA	14.00	R	1.00	26	84	36.5	13.3	14	45.5	HA/S-λ/HB
F1004NN*1400R2.00..	AA	14.00	R	2.00	26	84	36.5	13.3	14	45.5	HA/S-λ/HB
F1004NN*1600R0.30..	AA	16.00	R	0.30	32	93	42.5	15.2	16	48.5	HA/S-λ/HB
F1004NN*1600R0.50..	AA	16.00	R	0.50	32	93	42.5	15.2	16	48.5	HA/S-λ/HB
F1004NN*1600R0.80..	AA	16.00	R	0.80	32	93	42.5	15.2	16	48.5	HA/S-λ/HB
F1004NN*1600R1.00..	AA	16.00	R	1.00	32	93	42.5	15.2	16	48.5	HA/S-λ/HB
F1004NN*1600R1.50..	AA	16.00	R	1.50	32	93	42.5	15.2	16	48.5	HA/S-λ/HB
F1004NN*1600R2.00..	AA	16.00	R	2.00	32	93	42.5	15.2	16	48.5	HA/S-λ/HB
F1004NN*1600R3.00..	AA	16.00	R	3.00	32	93	42.5	15.2	16	48.5	HA/S-λ/HB
F1004NN*1600R4.00..	AA	16.00	R	4.00	32	93	42.5	15.2	16	48.5	HA/S-λ/HB
F1004NN*1800R0.50..	AA	18.00	R	0.50	32	93	42.5	17.1	18	48.5	HA/S-λ/HB
F1004NN*1800R1.00..	AA	18.00	R	1.00	32	93	42.5	17.1	18	48.5	HA/S-λ/HB
F1004NN*1800R2.00..	AA	18.00	R	2.00	32	93	42.5	17.1	18	48.5	HA/S-λ/HB
F1004NN*2000R0.30..	AA	20.00	R	0.30	38	105	52	19	20	50.5	HA/S-λ/HB
F1004NN*2000R0.50..	AA	20.00	R	0.50	38	105	52	19	20	50.5	HA/S-λ/HB
F1004NN*2000R0.80..	AA	20.00	R	0.80	38	105	52	19	20	50.5	HA/S-λ/HB
F1004NN*2000R1.00..	AA	20.00	R	1.00	38	105	52	19	20	50.5	HA/S-λ/HB
F1004NN*2000R1.50..	AA	20.00	R	1.50	38	105	52	19	20	50.5	HA/S-λ/HB
F1004NN*2000R2.00..	AA	20.00	R	2.00	38	105	52	19	20	50.5	HA/S-λ/HB
F1004NN*2000R3.00..	AA	20.00	R	3.00	38	105	52	19	20	50.5	HA/S-λ/HB
F1004NN*2000R4.00..	AA	20.00	R	4.00	38	105	52	19	20	50.5	HA/S-λ/HB

\* = L - Safe-Lock / H - Straight shank / B - Weldon shank. Order No. = Article Code + HAIMER Quality.

Cutting data

HAIMER Material groups	Example material	Material no.	Tensile strength	Content/ Hardness	Cutting width			
					ae = 100% D1 ap = 1 x D1	ae = 50% D1 ap = 1.5 x D1	ae = 25% D1 ap = L1 max.	
					Cutting Speed (SFM)			
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 116,000 PSI, 800MPA	up to 25 HRC	<b>557 – 656</b>	<b>689 – 787</b>	<b>820 – 885</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 116,000 PSI, 800MPA	up to 45 HRC	<b>295 – 361</b>	<b>361 – 426</b>	<b>426 – 492</b>
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 94,275 PSI, 650MPA		-	-	180 – 213
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 94,275 PSI, 650MPA		-	-	131 – 164
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 65,265 PSI, 450MPA		361 – 426	426 – 492	656 – 721
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTMA536 100-70-06	0.7060, 0.7070	> 65,265 PSI, 450MPA		295 – 361	361 – 426	525 – 590
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			197 – 262	197 – 262	197 – 262
<b>S2</b>	High Temp alloys	Inconel, Nimonic				98 – 131	98 – 131	98 – 131
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315			393 – 787	393 – 787	393 – 787
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si >12%	393 – 787	393 – 787	393 – 787
<b>H1</b>	Hardened steels				45 - 55 HRC	131 – 197	197 – 262	197 – 262

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (inch/tooth) in relation with D1 and cutting width ae										
ae	3/32	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1
to 50% $\phi$	0.0006	0.0008	0.0011	0.0015	0.0019	0.0023	0.0030	0.0038	0.0045	0.0060
100% $\phi$	0.0005	0.0006	0.0009	0.0013	0.0016	0.0019	0.0025	0.0031	0.0038	0.0050
	0.0001	0.0001	0.0002	0.0003	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010

INCH

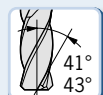
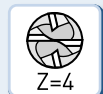
# F1004NN – HAIMER MILL Power Series CORNER RADIUS

## Technical data and Product characteristics

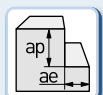
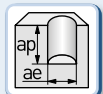
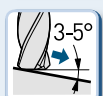
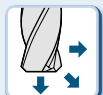


SAFE-LOCK®

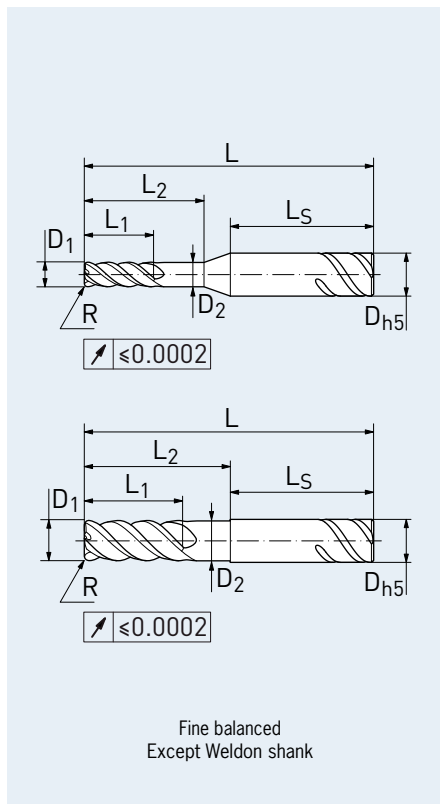
### Characteristics



### Application



### Coolant



### Material – characteristics

#### Main Material



#### also suitable for



- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Polished flute and relief

Article-Code	HAIMER Quality	D1 (f9) [inch]	Cutting edge	Size [inch]	L1 max. [inch]	L [inch]	L2 [inch]	D2 [inch]	D (h5) [inch]	LS [inch]	Shank
F1004NNL3/32ZR.010..	AA	3/32	R	0.010	3/16	2	1/4	0.089	1/4	1.562	S-λ
F1004NNL1/8ZR.010..	AA	1/8	R	0.010	1/4	2	5/16	0.121	1/4	1.531	S-λ
F1004NNL3/16ZR.015..	AA	3/16	R	0.015	3/8	2	1/2	0.179	1/4	1.375	S-λ
F1004NNL1/4ZR.015..	AA	1/4	R	0.015	1/2	2	5/8	0.238	1/4	1.343	S-λ
F1004NNL5/16ZR.015..	AA	5/16	R	0.015	5/8	2 3/16	13/16	0.296	5/16	1.312	S-λ
F1004NNL3/8ZR.020..	AA	3/8	R	0.020	3/4	2 1/2	1	0.355	3/8	1.437	S-λ
F1004NNL1/2ZR.030..	AA	1/2	R	0.030	1	3	1 1/4	0.476	1/2	1.687	S-λ
F1004NNL5/8ZR.030..	AA	5/8	R	0.030	1 1/4	3 3/8	1 9/16	0.593	5/8	1.750	S-λ
F1004NNL3/4ZR.030..	AA	3/4	R	0.030	1 1/2	3 3/4	1 7/8	0.710	3/4	1.812	S-λ
F1004NNL1ZR.030..	AA	1	R	0.030	2	4 1/2	2 1/2	0.960	1	1.937	S-λ

Order No. = Article Code + HAIMER Quality

## Cutting data

HAIMER Material groups		Example material		Material information		Cutting width
		ANSI	Material no.	Tensile strength	Content/ Hardness	Cutting speed Vc (m/min)
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>250 – 270</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>130 – 150</b>
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		55 – 65
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 650 N/mm <sup>2</sup>		40 – 50
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		200 – 220
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		160 – 180
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			60 – 80
<b>S2</b>	High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		30 – 40
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	120 – 240
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 240
<b>H1</b>	Hardened steels				45 – 55 HRC	60 – 80



ae = 5% D1  
ap = L1 max.

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (mm/tooth) in relation with D1 and cutting width ae								
ae	ø 6	ø 8	ø 10	ø 12	ø 14	ø 16	ø 18	ø 20
to 5% ø	0.051	0.068	0.085	0.102	0.119	0.136	0.153	0.170



# F1005LL – HAIMER MILL Power Series CHAMFER

## Technical data and Product characteristics

\* = H      \* = L      \* = B

**Optional:**

- Straight shank  
DIN 6535-HA
- Safe-Lock shank (S-λ)
- Weldon shank similar  
DIN 6535-HB

**Characteristics**

- 3.0xØ
- 45°
- Z=5
- 46° / 47°

**Application**

- ap, ae

**Coolant**

- Air
- MMS

Fine balanced  
Except Weldon shank  
\* diameter not center cutting

### Material – characteristics

Main Material



also suitable for



- Neck for higher cutting depth
- Unequal cutting edge
- Length of cutting edge: long
- Polished flute and relief

Article-Code	HAIMER Quality	D1 (h9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	L2 [mm]	D2 [mm]	D (h5) [mm]	LS [mm]	Shank
F1005LL*0600C..	AA	6.00	C	0.20	18	62	24	5.7	6	36.5	HA/S-λ/HB
F1005LL*0800C..	AA	8.00	C	0.20	24	70	32	7.6	8	36.5	HA/S-λ/HB
F1005LL*1000C..	AA	10.00	C	0.30	30	82	40	9.5	10	40.5	HA/S-λ/HB
F1005LL*1200C..	AA	12.00	C	0.30	36	95	48	11.4	12	45.5	HA/S-λ/HB
F1005LL*1400C..	AA	14.00	C	0.40	42	105	56	13.3	14	46.5	HA/S-λ/HB
F1005LL*1600C..	AA	16.00	C	0.50	48	115	64	15.2	16	48.5	HA/S-λ/HB
F1005LL*1800C..	AA	18.00	C	0.50	54	123	72	17.1	18	48	HA/S-λ/HB
F1005LL*2000C..	AA	20.00	C	0.60	60	133	80	19.0	20	50.5	HA/S-λ/HB

\* = L - SafeLock / H - Straight shank / B - Weldon shank. Order No. = Article Code + HAIMER Quality.



## Cutting data

HAIMER Material groups		Example material		Material information		Cutting width
		ANSI	Material no.	Tensile strength	Content/ Hardness	Cutting Speed (SFM)
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 116,000 PSI, 800MPa	up to 25 HRC	<b>820 – 885</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 116,000 PSI, 800MPa	up to 45 HRC	<b>426 – 492</b>
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 94,275 PSI, 650MPa		180 – 213
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 94,275 PSI, 650MPa		131 – 164
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 65,265 PSI, 450MPa		656 – 721
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 65,265 PSI, 450MPa		525 – 590
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			197 – 262
<b>S2</b>	High Temp alloys	Inconel, Nimonic				98 – 131
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315			393 – 787
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si >12%	393 – 787
<b>H1</b>	Hardened steels				45 - 55 HRC	197 – 262



ae = 5% D1  
ap = L1 max.

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (inch/tooth) in relation with D1 and cutting width ae							
ae	1/4	5/16	3/8	1/2	5/8	3/4	1
to 5% ø	0.0021	0.0027	0.0032	0.0043	0.0085	0.0064	0.0085

INCH

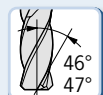
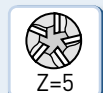
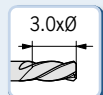
# F1005LL – HAIMER MILL Power Series CHAMFER

## Technical data and Product characteristics

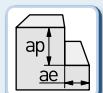
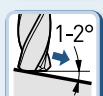
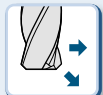


SAFE-LOCK®

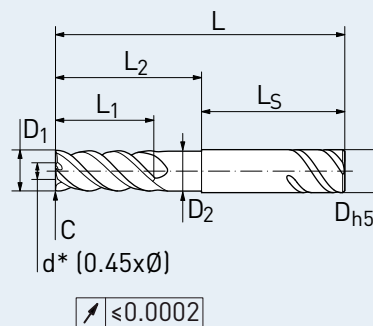
### Characteristics



### Application



### Coolant



Fine balanced  
\* Diameter not center cutting  
Except Weldon shank

### Material – characteristics

#### Main Material



#### also suitable for



- Neck for higher cutting depth
- Unequal cutting edge
- Length of cutting edge: long
- Polished flute and relief

Article-Code	HAIMER Quality	D1 (f9) [inch]	Cutting edge	Size [inch]	L1 max. [inch]	L [inch]	L2 [inch]	D2 [inch]	D (h5) [inch]	LS [inch]	Shank
F1005LLL1/4ZC..	AA	1/4	C	0.008	3/4	2 3/8	1	0.238	1/4	1.343	S-λ
F1005LLL5/16ZC..	AA	5/16	C	0.008	15/16	2 5/8	1 1/4	0.296	5/16	1.312	S-λ
F1005LLL3/8ZC..	AA	3/8	C	0.012	1 1/8	3	1 1/2	0.355	3/8	1.437	S-λ
F1005LLL1/2ZC..	AA	1/2	C	0.012	1 1/2	3 3/4	2	0.476	1/2	1.687	S-λ
F1005LLL5/8ZC..	AA	5/8	C	0.020	1 7/8	4 5/16	2 1/2	0.593	5/8	1.750	S-λ
F1005LLL3/4ZC..	AA	3/4	C	0.024	2 1/4	4 7/8	3	0.710	3/4	1.812	S-λ
F1005LLL1ZC..	AA	1	C	0.032	3	6	4	0.960	1	1.937	S-λ

Order No. = Article Code + HAIMER Quality

## Cutting data

HAIMER Material groups	Example material	Material information	Cutting width				
			ae = 100% D1 ap = 1 x D1	ae = 50% D1 ap = 1.5 x D1	ae = 25% D1 ap = L1 max.		
ANSI	Material no.	Tensile strength	Content/ Hardness	Cutting speed Vc (m/min)			
<b>P1</b> General construction steels	A252, A50-2, 1045	1.0038. 1.0050. 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>170 – 200</b>	<b>210 – 240</b>	<b>250 – 270</b>
<b>P2</b> Heat treated steels	D2, 4140	1.2367. 1.2379. 1.2363. 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>90 – 110</b>	<b>110 – 130</b>	<b>130 – 150</b>
<b>M1</b> Stainless steels	303, 304	1.4305. 1.4301. 1.4034	≤ 650 N/mm <sup>2</sup>		–	–	55 – 65
<b>M2</b> Stainless steels	316Ti, 316L	1.4571. 1.4404. 1.4418	> 650 N/mm <sup>2</sup>		–	–	40 – 50
<b>K1</b> Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020. 0.6040. 0.7040	≤ 450 N/mm <sup>2</sup>		110 – 130	130 – 150	200 – 220
<b>K2</b> Cast iron	ASTM A536 80-55-06, ASTMA536 100-70-06	0.7060. 0.7070	> 450 N/mm <sup>2</sup>		90 – 110	110 – 130	160 – 180
<b>S1</b> Titanium & titanium alloys	Ti6Al4V	3.7165			60 – 80	60 – 80	60 – 80
<b>S2</b> High Temp alloys	Inconel, Nimonic		800 – 1700 N/ mm <sup>2</sup>		30 – 40	30 – 40	30 – 40
<b>N1</b> Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	120 – 240	120 – 240	120 – 240
<b>N2</b> Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 240	120 – 240	120 – 240
<b>H1</b> Hardened steels				45 – 55 HRC	40 – 60	60 – 80	60 – 80

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (mm/tooth) in relation with D1 and cutting width ae								
ae	ø 10	ø 12	ø 14	ø 16	ø 18	ø 20	ø 25	ø 32
to 50% ø	0.060	0.072	0.084	0.096	0.108	0.120	0.15	0.2
100% ø	0.050	0.060	0.060	0.070	0.080	0.090	0.125	0.16



# F1005NN – HAIMER MILL Power Series CHAMFER

## Technical data and Product characteristics

**Optional:**

- Straight shank  
DIN 6535-HA
- Safe-Lock shank (S-λ)
- Weldon shank similar  
DIN 6535-HB

\* = H      \* = L      \* = B

Characteristics	Application	Coolant

Fine balanced  
Except Weldon shank  
\* diameter not center cutting

### Material – characteristics

**Main Material** P

**also suitable for**

K

S

N

M

H

- Neck for higher cutting depth
- Unequal cutting edge
- Polished flute and relief


Article-Code	HAIMER Quality	D1 (h9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	L2 [mm]	D2 [mm]	D (h5) [mm]	LS [mm]	Shank
F1005NN*1000C..	AA	10.00	C	0.30	22	73	30.5	9.5	10	40.5	HA/S-λ/HB
F1005NN*1200C..	AA	12.00	C	0.30	26	84	36.5	11.4	12	45.5	HA/S-λ/HB
F1005NN*1400C..	AA	14.00	C	0.40	26	84	36.5	13.3	14	45.5	HA/S-λ/HB
F1005NN*1600C..	AA	16.00	C	0.50	32	93	42.5	15.2	16	48.5	HA/S-λ/HB
F1005NN*1800C..	AA	18.00	C	0.50	32	93	42.5	17.1	18	48.5	HA/S-λ/HB
F1005NN*2000C..	AA	20.00	C	0.60	38	105	52	19	20	50.5	HA/S-λ/HB
F1005NN*2500C..	AA	25.00	C	0.70	45	122	61	24	25	57.0	HA/S-λ/HB
F1005NN*3200C..	AA	32.00	C	0.70	50	130	65	31	32	61.0	HA/S-λ/HB

\* = L - SafeLock / H - Straight shank / B - Weldon shank. Order No. = Article Code + HAIMER Quality.

Cutting data

HAIMER Material groups	Example material	Material information	Cutting width				
			ap = 100% D1 ap = 1 x D1	ap = 50% D1 ap = 1.5 x D1	ap = 25% D1 ap = L1 max.		
ANSI	Material no.	Tensile strength	Content/ Hardness	Cutting speed Vc (m/min)			
<b>P1</b> General construction steels	A252, A50-2, 1045	1.0038. 1.0050. 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>170 – 200</b>	<b>210 – 240</b>	<b>250 – 270</b>
<b>P2</b> Heat treated steels	D2, 4140	1.2367. 1.2379. 1.2363. 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>90 – 110</b>	<b>110 – 130</b>	<b>130 – 150</b>
<b>M1</b> Stainless steels	303, 304	1.4305. 1.4301. 1.4034	≤ 650 N/mm <sup>2</sup>		–	–	55 – 65
<b>K1</b> Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020. 0.6040. 0.7040	≤ 450 N/mm <sup>2</sup>		110 – 130	130 – 150	200 – 220
<b>K2</b> Cast iron	ASTM A536 80-55-06, ASTMA536 100-70-06	0.7060. 0.7070	> 450 N/mm <sup>2</sup>		90 – 110	110 – 130	160 – 180
<b>S1</b> Titanium & titanium alloys	Ti6Al4V	3.7165			60 – 80	60 – 80	60 – 80
<b>S2</b> High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		30 – 40	30 – 40	30 – 40
<b>N1</b> Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	120 – 240	120 – 240	120 – 240
<b>N2</b> Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 240	120 – 240	120 – 240
<b>H1</b> Hardened steels				45 – 55 HRC	40 – 60	60 – 80	60 – 80

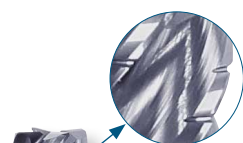
Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (mm/tooth) in relation with D1 and cutting width ae								
ae	ø 6	ø 8	ø 10	ø 12	ø 14	ø 16	ø 18	ø 20
to 50% ø	0.036	0.048	0.060	0.072	0.084	0.096	0.108	0.120
100% ø	0.030	0.040	0.050	0.060	0.070	0.080	0.090	0.100
	0.006	0.008	0.010	0.012	0.014	0.016	0.018	0.020

METRIC

# F1104NN – HAIMER MILL Power Series CHAMFER CHIP BREAKER

## Technical data and Product characteristics



Optional:

- Straight shank  
DIN 6535-HA
- Safe-Lock shank (S-λ)
- Weldon shank similar  
DIN 6535-HB



\* = H



\* = L



\* = B

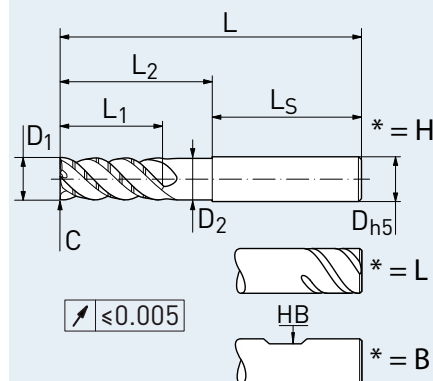
### Characteristics



### Application



### Coolant



Fine balanced  
Except Weldon shank

### Material – characteristics

Main Material



also suitable for



- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Polished flute and relief

Article-Code	HAIMER Quality	D1 (h9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	L2 [mm]	D2 [mm]	D (h5) [mm]	LS [mm]	Shank
F1104NN*0600C..	AA	6.00	C	0.20	13	58	20	5.7	6	36.5	HA/S-λ/HB
F1104NN*0800C..	AA	8.00	C	0.20	19	64	26	7.6	8	36.5	HA/S-λ/HB
F1104NN*1000C..	AA	10.00	C	0.30	22	73	30.5	9.5	10	40.5	HA/S-λ/HB
F1104NN*1200C..	AA	12.00	C	0.30	26	84	36.5	11.4	12	45.5	HA/S-λ/HB
F1104NN*1400C..	AA	14.00	C	0.40	26	84	36.5	13.3	14	45.5	HA/S-λ/HB
F1104NN*1600C..	AA	16.00	C	0.50	32	93	42.5	15.2	16	48.5	HA/S-λ/HB
F1104NN*1800C..	AA	18.00	C	0.50	32	93	42.5	17.1	18	48.5	HA/S-λ/HB
F1104NN*2000C..	AA	20.00	C	0.60	38	105	52	19	20	50.5	HA/S-λ/HB

\* = L - SafeLock / H - Straight shank / B - Weldon shank. Order No. = Article Code + HAIMER Quality.

## Cutting data

HAIMER Material groups		Example material		Material information		Cutting width
		ANSI	Material no.	Tensile strength	Content/ Hardness	Cutting speed Vc (m/min)
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>250 – 270</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>130 – 150</b>
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		55 – 65
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		200 – 220
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTMA536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		160 – 180
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			60 – 80
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	120 – 240
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 240
<b>H1</b>	Hardened steels				45 – 55 HRC	60 – 80



ae = 5% D1  
ap = L1 max.


Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (mm/tooth) in relation with D1 and cutting width ae								
ae	ø 6	ø 8	ø 10	ø 12	ø 14	ø 16	ø 18	ø 20
to 5% ø	0.051	0.068	0.085	0.102	0.119	0.136	0.153	0.170



# F1105LL – HAIMER MILL Power Series CHAMFER CHIP BREAKER

## Technical data and Product characteristics



**Optional:**

- Straight shank  
DIN 6535-HA
- Safe-Lock shank (S-λ)
- Weldon shank similar  
DIN 6535-HB

\* = H    \* = L    \* = B

**Characteristics**

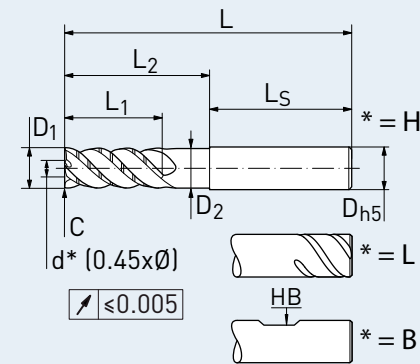
- 3.0xØ
- 45°
- Z=5
- 46° / 47°

**Application**

- 1-2°
- ap, ae

**Coolant**

- Air
- MMS



Fine balanced  
Except Weldon shank  
\* diameter not center cutting

### Material – characteristics

Main Material



also suitable for



- Neck for higher cutting depth
- Unequal cutting edge
- Length of cutting edge: long
- Polished flute and relief

Article-Code	HAIMER Quality	D1 (h9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	L2 [mm]	D2 [mm]	D (h5) [mm]	LS [mm]	Shank
F1105LL*0600C..	AA	6.00	C	0.20	18	62	24	5.7	6	36.5	HA/S-λ/HB
F1105LL*0800C..	AA	8.00	C	0.20	24	70	32	7.6	8	36.5	HA/S-λ/HB
F1105LL*1000C..	AA	10.00	C	0.30	30	82	40	9.5	10	40.5	HA/S-λ/HB
F1105LL*1200C..	AA	12.00	C	0.30	36	95	48	11.4	12	45.5	HA/S-λ/HB
F1105LL*1400C..	AA	14.00	C	0.40	42	105	56	13.3	14	46.5	HA/S-λ/HB
F1105LL*1600C..	AA	16.00	C	0.50	48	115	64	15.2	16	48.5	HA/S-λ/HB
F1105LL*1800C..	AA	18.00	C	0.50	54	123	72	17.1	18	48	HA/S-λ/HB
F1105LL*2000C..	AA	20.00	C	0.60	60	133	80	19.0	20	50.5	HA/S-λ/HB

\* = L - SafeLock / H - Straight shank / B - Weldon shank. Order No. = Article Code + HAIMER Quality.



## Cutting data

HAIMER Material groups	Example material	Material information	Cutting width				
			ae = 100% D1 ap = 1 x D1	ae = 50% D1 ap = 1.5 x D1	ae = 25% D1 ap = L1 max.		
ANSI	Material no.	Tensile strength	Content/ Hardness	Cutting speed Vc (m/min)			
<b>P1</b> General construction steels	A252, A50-2, 1045	1.0038. 1.0050. 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>170 – 200</b>	<b>210 – 240</b>	<b>250 – 270</b>
<b>P2</b> Heat treated steels	D2, 4140	1.2367. 1.2379. 1.2363. 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>90 – 110</b>	<b>110 – 130</b>	<b>130 – 150</b>
<b>M1</b> Stainless steels	303, 304	1.4305. 1.4301. 1.4034	≤ 650 N/mm <sup>2</sup>		–	–	55 – 65
<b>K1</b> Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020. 0.6040. 0.7040	≤ 450 N/mm <sup>2</sup>		110 – 130	130 – 150	200 – 220
<b>K2</b> Cast iron	ASTM A536 80-55-06, ASTMA536 100-70-06	0.7060. 0.7070	> 450 N/mm <sup>2</sup>		90 – 110	110 – 130	160 – 180
<b>S1</b> Titanium & titanium alloys	Ti6Al4V	3.7165			60 – 80	60 – 80	60 – 80
<b>N1</b> Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	120 – 240	120 – 240	120 – 240
<b>N2</b> Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 240	120 – 240	120 – 240

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (mm/tooth) in relation with D1 and cutting width ae								
ae	ø 6	ø 8	ø 10	ø 12	ø 14	ø 16	ø 18	ø 20
to 50% ø	0.036	0.048	0.060	0.072	0.084	0.096	0.108	0.120
100% ø	0.030	0.040	0.050	0.060	0.070	0.080	0.090	0.100



# F1304NN – HAIMER MILL Power Series CHAMFER ROUGHING

## Technical data and Product characteristics

\* = H      \* = L      \* = B

**Optional:**

- Straight shank  
DIN 6535-HA
- Safe-Lock shank (S-λ)
- Weldon shank similar  
DIN 6535-HB

Characteristics	Application	Coolant

Fine balanced  
Except Weldon shank

### Material – characteristics

**Main Material** P

**also suitable for**

K

S

N

M

- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Polished flute and relief

Article-Code	HAIMER Quality	D1 (h9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	L2 [mm]	D2 [mm]	D (h5) [mm]	LS [mm]	Shank
F1304NN*0600C..	AA	6.00	C	0.20	13	58	20	5.7	6	36.5	HA/S-λ/HB
F1304NN*0800C..	AA	8.00	C	0.20	19	64	26	7.6	8	36.5	HA/S-λ/HB
F1304NN*1000C..	AA	10.00	C	0.30	22	73	30.5	9.5	10	40.5	HA/S-λ/HB
F1304NN*1200C..	AA	12.00	C	0.30	26	84	36.5	11.4	12	45.5	HA/S-λ/HB
F1304NN*1400C..	AA	14.00	C	0.40	26	84	36.5	13.3	14	45.5	HA/S-λ/HB
F1304NN*1600C..	AA	16.00	C	0.50	32	93	42.5	15.2	16	48.5	HA/S-λ/HB
F1304NN*1800C..	AA	18.00	C	0.50	32	93	42.5	17.1	18	48.5	HA/S-λ/HB
F1304NN*2000C..	AA	20.00	C	0.60	38	105	52	19	20	50.5	HA/S-λ/HB

\* = L - SafeLock / H - Straight shank / B - Weldon shank. Order No. = Article Code + HAIMER Quality.

Cutting data

HAIMER Material groups	Example material	Material no.	Tensile strength	Content/ Hardness	Cutting width			
					ap = 100% D1 ap = 1 x D1	ap = 50% D1 ap = 1.5 x D1	ap = 25% D1 ap = L1 max.	
					Cutting Speed (SFM)			
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 116,000 PSI, 800MPA	up to 25 HRC	<b>557 – 656</b>	<b>689 – 787</b>	<b>820 – 885</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 116,000 PSI, 800MPA	up to 45 HRC	<b>295 – 361</b>	<b>361 – 426</b>	<b>426 – 492</b>
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 94,275 PSI, 650MPA		-	-	180 – 213
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 65,265 PSI, 450MPA		361 – 426	426 – 492	656 – 721
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTMA536 100-70-06	0.7060, 0.7070	> 65,265 PSI, 450MPA		295 – 361	361 – 426	525 – 590
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			197 – 262	197 – 262	197 – 262
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315			393 – 787	393 – 787	393 – 787
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si >12%	393 – 787	393 – 787	393 – 787

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (inch/tooth) in relation with D1 and cutting width ae										
ae	3/32	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1
to 50% ø	0.0006	0.0008	0.0011	0.0015	0.0019	0.0023	0.0030	0.0038	0.0045	0.0060
100% ø	0.0005	0.0006	0.0009	0.0013	0.0016	0.0019	0.0025	0.0031	0.0038	0.0050

INCH

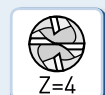
# F1304NN – HAIMER MILL Power Series CHAMFER ROUGHING

## Technical data and Product characteristics

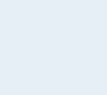
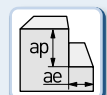
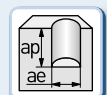
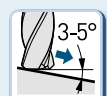


SAFE-LOCK®

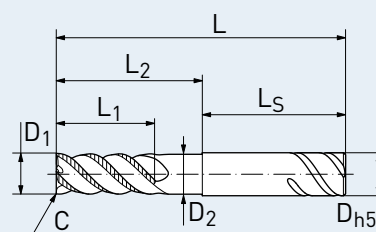
### Characteristics



### Application



### Coolant



↗ ≤ 0.0002

Fine balanced  
Except Weldon shank

### Material – characteristics

#### Main Material



#### also suitable for



- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Polished flute and relief

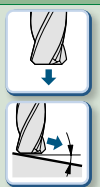
Article-Code	HAIMER Quality	D1 (f9) [inch]	Cutting edge	Size [inch]	L1 max. [inch]	L [inch]	L2 [inch]	D2 [inch]	D (h5) [inch]	LS [inch]	Shank
F1304NNL1/4ZC..	AA	1/4	C	0.008	1/2	2	5/8	0.238	1/4	1.343	S-λ
F1304NNL5/16ZC..	AA	5/16	C	0.008	5/8	2 3/16	13/16	0.296	5/16	1.312	S-λ
F1304NNL3/8ZC..	AA	3/8	C	0.012	3/4	2 1/2	1	0.355	3/8	1.437	S-λ
F1304NNL1/2ZC..	AA	1/2	C	0.012	1	3	1 1/4	0.476	1/2	1.687	S-λ
F1304NNL5/8ZC..	AA	5/8	C	0.020	1 1/4	3 3/8	1 9/16	0.593	5/8	1.750	S-λ
F1304NNL3/4ZC..	AA	3/4	C	0.024	1 1/2	3 3/4	1 7/8	0.710	3/4	1.812	S-λ
F1304NNL1ZC..	AA	1	C	0.032	2	4 1/2	2 1/2	0.960	1	1.937	S-λ

Order No. = Article Code + HAIMER Quality

Cutting data inch





HAIMER Material groups	Example material	Material information				Cutting width			
		ANSI	Material no.	Tensile strength	Content/ Hardness	Ramping	Cutting Speed (SFM)		
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 116,000 PSI, 800MPa	up to 25 HRC	45°	836 – 902	1049 – 1115	1311 – 1377
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 116,000 PSI, 800MPa	up to 45 HRC	30°	623 – 689	721 – 787	951 – 1016
<b>M1</b>	<b>Stainless steels</b>	303, 304	1.4305, 1.4301, 1.4034	≤ 94,275 PSI, 650MPa		10°	311 – 361	377 – 443	492 – 557
<b>M2</b>	<b>Stainless steels</b>	316Ti, 316L	1.4571, 1.4404, 1.4418	> 94,275 PSI, 650MPa		5°	246 – 295	311 – 344	361 – 426
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 65,265 PSI, 450MPa		45°	525 – 590	590 – 656	689 – 754
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 65,265 PSI, 450MPa		20°	426 – 492	492 – 557	590 – 656
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			10°	164 – 197	197 – 262	262 – 295
<b>S2</b>	High Temp alloys	Inconel, Nimonic				5°	98 – 131	98 – 131	98 – 131
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315			30°	1541 – 1607	1967 – 2066	2557 – 2689
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si >12%	30°	1115 – 1180	1377 – 1443	1770 – 1902
<b>H1</b>	Hardened steels				45 - 55 HRC	10°	131 – 197	197 – 262	197 – 262

Cutting data are reference values and need to be adjusted according to the application area.  
Chip removal recommended for drilling depth 0.5 – 1 x D.

Feed per tooth (inch/tooth) in relation with D1 and cutting width ae									
ae	3/32	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4
to 50% ø	0.0006	0.0008	0.0012	0.0016	0.0020	0.0024	0.0033	0.0041	0.0049
100% ø	*0.0005	*0.0007	*0.0011	*0.0014	*0.0017	*0.0021	*0.0028	*0.0034	*0.0041
	<b>P</b>	0.0004	0.0006	0.0009	0.0011	0.0014	0.0017	0.0023	0.0028
	<b>M</b>	0.0002	0.0003	0.0005	0.0006	0.0008	0.0009	0.0013	0.0016
	<b>K</b>	0.0004	0.0005	0.0008	0.0010	0.0013	0.0015	0.0020	0.0025
	<b>S</b>	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010	0.0013
	<b>N</b>	0.0004	0.0006	0.0009	0.0011	0.0014	0.0017	0.0023	0.0028

\* For Slotting (100% ø) in material M1, M2 and S1 reduce fz by 30%.

Cutting data metric


HAIMER Material groups	Example material	Material information			Cutting width							
		ANSI	Material no.	Tensile strength	Content/ Hardness	Ramping	Cutting speed Vc (m/min)					
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038. 1.0050. 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC					ae = 100% D1 ap = 1 x D1	ae = 15% D1 ap = L1 max.	ae = 5% D1 ap = L1 max.
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367. 1.2379. 1.2363. 1.7225	> 800 N/mm <sup>2</sup>	up to 25 HRC	45°	255 – 275	320 – 340	400 – 420			
<b>M1</b>	Stainless steels	303, 304	1.4305. 1.4301. 1.4034	≤ 650 N/mm <sup>2</sup>		10°	95 – 110	115 – 135	150 – 170			
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571. 1.4404. 1.4418	> 650 N/mm <sup>2</sup>		5°	75 – 90	95 – 105	110 – 130			
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020. 0.6040. 0.7040	≤ 450 N/mm <sup>2</sup>		45°	160 – 180	180 – 200	210 – 230			
<b>K2</b>	Cast iron	ASTM A536 80- 55-06, ASTMA536 100-70-06	0.7060. 0.7070	> 450 N/mm <sup>2</sup>		20°	130 – 150	150 – 170	180 – 200			
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			10°	50 – 60	60 – 80	80 – 90			
<b>S2</b>	High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		5°	30 – 40	30 – 40	30 – 40			
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	30°	470 – 490	600 – 630	780 – 820			
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si > 9%	30°	340 – 360	420 – 440	540 – 580			
<b>H1</b>	Hardened steels				45 – 55 HRC	10°	40 – 60	60 – 80	60 – 80			

Cutting data are reference values and need to be adjusted according to the application area.  
Chip removal recommended for drilling depth 0.5 – 1 x D.

Feed per tooth (mm/tooth) in relation with D1 and cutting width ae												
ae	ø 2	ø 3	ø 4	ø 5	ø 6	ø 8	ø 10	ø 12	ø 14	ø 16	ø 18	ø 20
to 50% ø	0.013	0.020	0.026	0.033	0.039	0.052	0.065	0.078	0.091	0.104	0.117	0.13
100% ø	*0.011	*0.017	*0.022	*0.028	*0.033	*0.044	*0.055	*0.066	*0.077	*0.088	*0.099	*0.11
	<b>P</b>	0.007	0.011	0.014	0.018	0.021	0.028	0.035	0.042	0.049	0.056	0.063
	<b>M</b>	0.004	0.006	0.008	0.010	0.012	0.016	0.020	0.024	0.028	0.032	0.036
	<b>K</b>	0.007	0.011	0.014	0.018	0.021	0.028	0.035	0.042	0.049	0.056	0.063
	<b>S</b>	0.004	0.006	0.008	0.010	0.012	0.016	0.020	0.024	0.028	0.032	0.036
	<b>N</b>	0.009	0.014	0.018	0.023	0.027	0.036	0.045	0.054	0.063	0.072	0.081

\*For Slotting (100% ø) in material M1, M2, S1 and S2 reduce fz by 30%.

Technical data and Product characteristics



**Optional:**

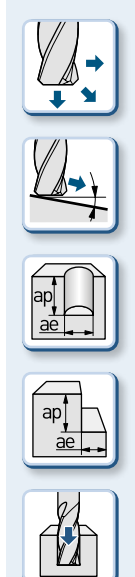
- Straight shank  
DIN 6535-HA
- Safe-Lock shank (S-λ)
- Weldon shank similar  
DIN 6535-HB

\* = H      \* = L      \* = B

**Characteristics**

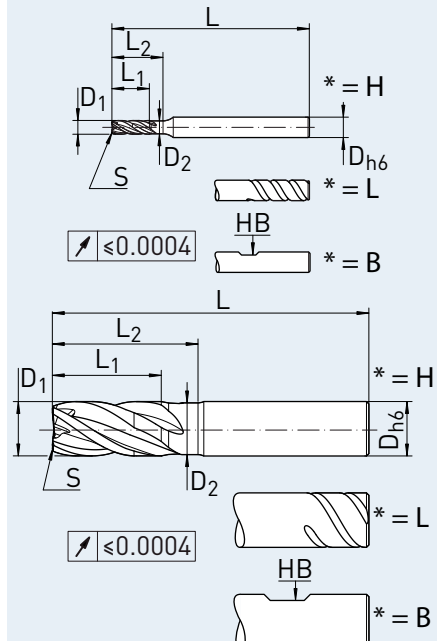
- 2.25xØ
- S
- Z=4
- 37° / 39°

**Application**



**Coolant**

- Air
- MMS



Material – characteristics

Main Material

also suitable for



- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Cutting length L1 max. 2.25 x D1


Article-Code	HAIMER Quality	D1 (f9) [inch]	Cutting edge	L1 [inch]	L [inch]	L2 [inch]	D2 [inch]	D (h6) [inch]	Shank
F2004MN*3/32ZS..	DA	3/32	S	0.211	2	9/32	0.090	1/4	HA/S-λ/HB
F2004MN*1/8ZS..	DA	1/8	S	0.281	2	3/8	0.121	1/4	HA/S-λ/HB
F2004MN*3/16ZS..	DA	3/16	S	0.422	2 1/2	9/16	0.180	1/4	HA/S-λ/HB
F2004MN*1/4ZS..	DA	1/4	S	0.563	2 1/2	3/4	0.231	1/4	HA/S-λ/HB
F2004MN*5/16ZS..	DA	5/16	S	0.703	2 1/2	15/16	0.297	5/16	HA/S-λ/HB
F2004MN*3/8ZS..	DA	3/8	S	0.844	3	1 1/8	0.355	3/8	HA/S-λ/HB
F2004MN*1/2ZS..	DA	1/2	S	1.125	3 1/2	1 1/2	0.476	1/2	HA/S-λ/HB
F2004MN*5/8ZS..	DA	5/8	S	1.406	4	1 7/8	0.594	5/8	HA/S-λ/HB
F2004MN*3/4ZS..	DA	3/4	S	1.688	4 1/2	2 1/4	0.711	3/4	HA/S-λ/HB

\* = L - Safe-Lock / H - Straight shank / B - Weldon shank. Order No. = Article Code + HAIMER Quality.

INCH

# F2004MN – HAIMER MILL CORNER RADIUS

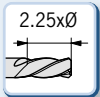
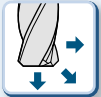


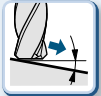


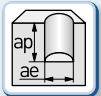





## Technical data and Product characteristics

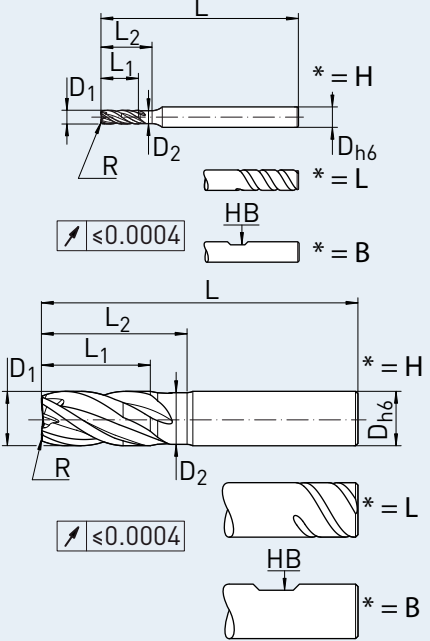


**Optional:**

- Straight shank  
DIN 6535-HA
- Safe-Lock shank (S-λ)
- Weldon shank similar  
DIN 6535-HB

\* = H      \* = L      \* = B

Characteristics	Application	Coolant
		
		
		
		
		



### Material – characteristics

**Main Material** also suitable for

P

M

K

S

N

H


- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Cutting length L1 max. 2.25 x D1

Article-Code	HAIMER Quality	D1 (f9) [inch]	Cutting edge	Size [inch]	L1 [inch]	L [inch]	L2 [inch]	D2 [inch]	D (h6) [inch]	Shank
F2004MN*3/32ZR.010..	DA	3/32	R	0.010	0.211	2	9/32	0.090	1/4	HA/S-λ/HB
F2004MN*1/8ZR.010..	DA	1/8	R	0.010	0.281	2	3/8	0.121	1/4	HA/S-λ/HB
F2004MN*3/16ZR.015..	DA	3/16	R	0.015	0.422	2 1/2	9/16	0.180	1/4	HA/S-λ/HB
F2004MN*1/4ZR.030..	DA	1/4	R	0.030	0.563	2 1/2	3/4	0.231	1/4	HA/S-λ/HB
F2004MN*5/16ZR.030..	DA	5/16	R	0.030	0.703	2 1/2	15/16	0.297	5/16	HA/S-λ/HB
F2004MN*3/8ZR.015..	DA	3/8	R	0.015	0.844	3	1 1/8	0.355	3/8	HA/S-λ/HB
F2004MN*3/8ZR.030..	DA	3/8	R	0.030	0.844	3	1 1/8	0.355	3/8	HA/S-λ/HB
F2004MN*1/2ZR.015..	DA	1/2	R	0.015	1.125	3 1/2	1 1/2	0.476	1/2	HA/S-λ/HB
F2004MN*1/2ZR.020..	DA	1/2	R	0.020	1.125	3 1/2	1 1/2	0.476	1/2	HA/S-λ/HB
F2004MN*1/2ZR.060..	DA	1/2	R	0.060	1.125	3 1/2	1 1/2	0.476	1/2	HA/S-λ/HB
F2004MN*5/8ZR.060..	DA	5/8	R	0.060	1.406	4	1 7/8	0.594	5/8	HA/S-λ/HB
F2004MN*3/4ZR.060..	DA	3/4	R	0.060	1.688	4 1/2	2 1/4	0.711	3/4	HA/S-λ/HB
F2004MN*3/4ZR.090..	DA	3/4	R	0.090	1.688	4 1/2	2 1/4	0.711	3/4	HA/S-λ/HB
F2004MN*3/4ZR.125..	DA	3/4	R	0.125	1.688	4 1/2	2 1/4	0.711	3/4	HA/S-λ/HB

\* = L - Safe-Lock / H - Straight shank / B - Weldon shank. Order No. = Article Code + HAIMER Quality.



Technical data and Product characteristics



**Optional:**

- Straight shank  
DIN 6535-HA
- Safe-Lock shank (S-λ)
- Weldon shank similar  
DIN 6535-HB

**Characteristics**

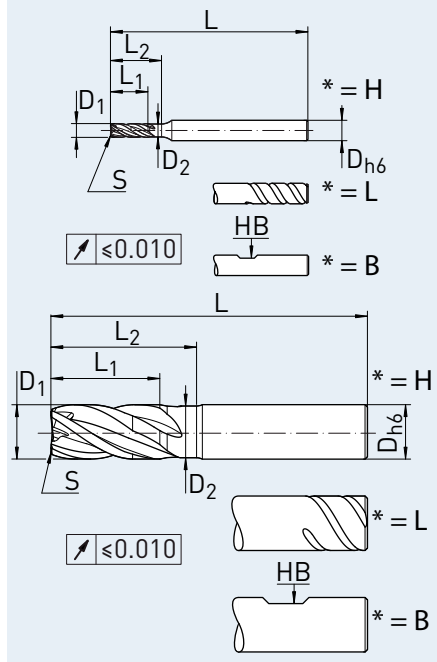
- DIN 6527 L
- S
- Z=4
- 31°  
33°
-

**Application**

- 
- 
- 
- 
-

**Coolant**

- Air
- MMS



Material – characteristics

**Main Material** also suitable for

P

M

K

S

N

H

- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge

Article-Code	HAIMER Quality	D1 (f9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	D (h6) [mm]	Shank h6	Shank h6
F2004NN*0200S..	DA	2.00	S	7	58	9	1.9	6	HA/S-λ/HB
F2004NN*0300S..	DA	3.00	S	8	58	10	2.9	6	HA/S-λ/HB
F2004NN*0400S..	DA	4.00	S	11	58	15	3.8	6	HA/S-λ/HB
F2004NN*0500S..	DA	5.00	S	13	58	18	4.8	6	HA/S-λ/HB
F2004NN*0600S..	DA	6.00	S	13	58	20	5.7	6	HA/S-λ/HB
F2004NN*0800S..	DA	8.00	S	19	64	26	7.6	8	HA/S-λ/HB
F2004NN*1000S..	DA	10.00	S	22	73	30.5	9.5	10	HA/S-λ/HB
F2004NN*1200S..	DA	12.00	S	26	84	36.5	11.4	12	HA/S-λ/HB
F2004NN*1400S..	DA	14.00	S	26	84	36.5	13.3	14	HA/S-λ/HB
F2004NN*1600S..	DA	16.00	S	32	93	42.5	15.2	16	HA/S-λ/HB
F2004NN*1800S..	DA	18.00	S	32	93	42.5	17.1	18	HA/S-λ/HB
F2004NN*2000S..	DA	20.00	S	38	105	52	19	20	HA/S-λ/HB



# F2004NN – HAIMER MILL CHAMFER UNDERSIZE

## Technical data and Product characteristics

**Optional:**

- Straight shank  
DIN 6535-HA
- Safe-Lock shank (S-λ)
- Weldon shank similar  
DIN 6535-HB

\* = H      \* = L      \* = B

Characteristics	Application	Coolant

### Material – characteristics

**Main Material** also suitable for

P

M

K

S

N

H


- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge

Cooling with Cool Jet or Cool Flash and using Power Chucks is recommended for higher tool life and high removal rate.

Article-Code	HAIMER Quality	D1 (f9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	L2 [mm]	D2 [mm]	D (h6) [mm]	Shank
F2004NN*0570C..	DA	5.70	C	0.12	13	58	20	5.7	6	HA/S-λ/HB
F2004NN*0770C..	DA	7.70	C	0.16	19	64	26	7.6	8	HA/S-λ/HB
F2004NN*0970C..	DA	9.70	C	0.20	22	73	30.5	9.5	10	HA/S-λ/HB
F2004NN*1170C..	DA	11.70	C	0.24	26	84	36.5	11.4	12	HA/S-λ/HB
F2004NN*1370C..	DA	13.70	C	0.28	26	84	36.5	13.3	14	HA/S-λ/HB
F2004NN*1560C..	DA	15.60	C	0.32	32	93	42.5	15.2	16	HA/S-λ/HB
F2004NN*1950C..	DA	19.50	C	0.40	38	105	52	19	20	HA/S-λ/HB

\* = L - Safe-Lock / H - Straight shank / B - Weldon shank. Order No. = Article Code + HAIMER Quality.

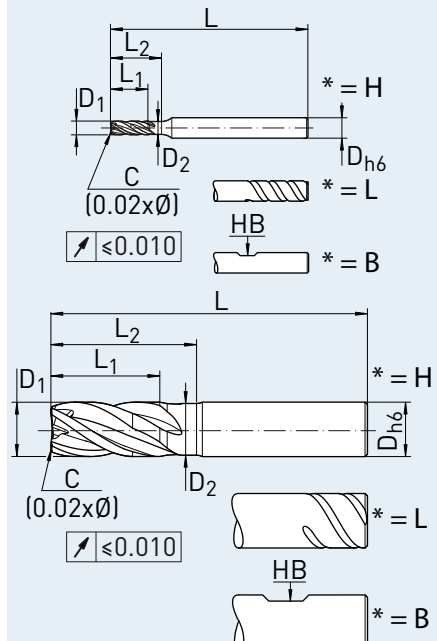
Technical data and Product characteristics



**Optional:**

- Straight shank  
DIN 6535-HA
- Safe-Lock shank (S-λ)
- Weldon shank similar  
DIN 6535-HB

Characteristics	Application	Coolant



Material – characteristics

Main Material

also suitable for



- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge

Article-Code	HAIMER Quality	D1 (f9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	L2 [mm]	D2 [mm]	D (h6) [mm]	Shank
F2004NN*0200C..	DA	2.00	C	0.04	7	58	9	1.9	6	HA/S-λ/HB
F2004NN*0300C..	DA	3.00	C	0.06	8	58	10	2.9	6	HA/S-λ/HB
F2004NN*0400C..	DA	4.00	C	0.08	11	58	15	3.8	6	HA/S-λ/HB
F2004NN*0500C..	DA	5.00	C	0.10	13	58	18	4.8	6	HA/S-λ/HB
F2004NN*0600C..	DA	6.00	C	0.12	13	58	20	5.7	6	HA/S-λ/HB
F2004NN*0800C..	DA	8.00	C	0.16	19	64	26	7.6	8	HA/S-λ/HB
F2004NN*1000C..	DA	10.00	C	0.20	22	73	30.5	9.5	10	HA/S-λ/HB
F2004NN*1200C..	DA	12.00	C	0.24	26	84	36.5	11.4	12	HA/S-λ/HB
F2004NN*1400C..	DA	14.00	C	0.28	26	84	36.5	13.3	14	HA/S-λ/HB
F2004NN*1600C..	DA	16.00	C	0.32	32	93	42.5	15.2	16	HA/S-λ/HB
F2004NN*1800C..	DA	18.00	C	0.36	32	93	42.5	17.1	18	HA/S-λ/HB
F2004NN*2000C..	DA	20.00	C	0.40	38	105	52	19	20	HA/S-λ/HB

\* = L - Safe-Lock / H - Straight shank / B - Weldon shank. Order No. = Article Code + HAIMER Quality.



# F2004NN – HAIMER MILL CORNER RADIUS

## Technical data and Product characteristics

**Optional:**

- Straight shank  
DIN 6535-HA
- Safe-Lock shank (S-λ)
- Weldon shank similar  
DIN 6535-HB

\* = H      \* = L      \* = B

**Characteristics**

**Application**

**Coolant**

### Material – characteristics

**Main Material** also suitable for

P

M

K

S

N

H

- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge


Article-Code	HAIMER Quality	D1 (f9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	L2 [mm]	D2 [mm]	D (h6) [mm]	Shank
F2004NN*0200R.020..	DA	2.00	R	0.20	7	58	9	1.9	6	HA/S-λ/HB
F2004NN*0300R.030..	DA	3.00	R	0.30	8	58	10	2.9	6	HA/S-λ/HB
F2004NN*0400R.030..	DA	4.00	R	0.30	11	58	15	3.8	6	HA/S-λ/HB
F2004NN*0400R.040..	DA	4.00	R	0.40	11	58	15	3.8	6	HA/S-λ/HB
F2004NN*0400R.050..	DA	4.00	R	0.50	11	58	15	3.8	6	HA/S-λ/HB
F2004NN*0500R.030..	DA	5.00	R	0.30	13	58	18	4.8	6	HA/S-λ/HB
F2004NN*0500R.050..	DA	5.00	R	0.50	13	58	18	4.8	6	HA/S-λ/HB
F2004NN*0500R.100..	DA	5.00	R	1.00	13	58	18	4.8	6	HA/S-λ/HB
F2004NN*0600R.030..	DA	6.00	R	0.30	13	58	20	5.7	6	HA/S-λ/HB
F2004NN*0600R.050..	DA	6.00	R	0.50	13	58	20	5.7	6	HA/S-λ/HB
F2004NN*0600R.080..	DA	6.00	R	0.80	13	58	20	5.7	6	HA/S-λ/HB
F2004NN*0600R.100..	DA	6.00	R	1.00	13	58	20	5.7	6	HA/S-λ/HB

⇒ Turn page for more articles

\* = L - Safe-Lock / H - Straight shank / B - Weldon shank. Order No. = Article Code + HAIMER Quality.

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Technical data and Product characteristics



**Optional:**

- Straight shank  
DIN 6535-HA
- Safe-Lock shank (S-λ)
- Weldon shank similar  
DIN 6535-HB

**Characteristics**

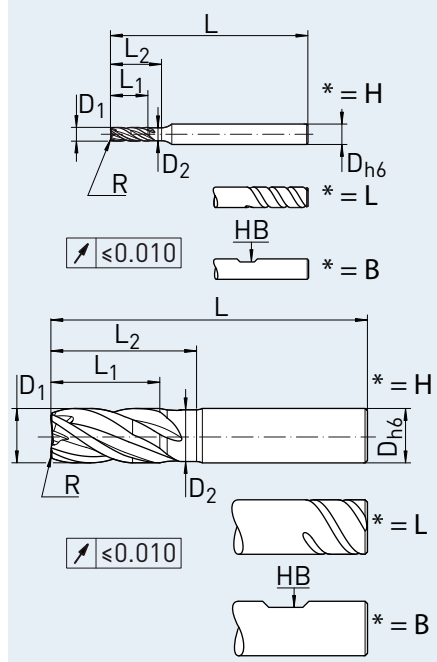
- DIN 6527 L
- R
- Z=4
- 31° / 33°

**Application**

- Center cutting
- ap, ae
- ap, ae

**Coolant**

- Air
- MMS



Material – characteristics

Main Material

also suitable for

- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge



Article-Code	HAIMER Quality	D1 (f9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	L2 [mm]	D2 [mm]	D (h6) [mm]	Shank
F2004NN*0600R1.50..	DA	6.00	R	1.50	13	58	20	5.7	6	HA/S-λ/HB
F2004NN*0600R2.00..	DA	6.00	R	2.00	13	58	20	5.7	6	HA/S-λ/HB
F2004NN*0800R0.30..	DA	8.00	R	0.30	19	64	26	7.6	8	HA/S-λ/HB
F2004NN*0800R0.50..	DA	8.00	R	0.50	19	64	26	7.6	8	HA/S-λ/HB
F2004NN*0800R0.80..	DA	8.00	R	0.80	19	64	26	7.6	8	HA/S-λ/HB
F2004NN*0800R1.00..	DA	8.00	R	1.00	19	64	26	7.6	8	HA/S-λ/HB
F2004NN*0800R1.50..	DA	8.00	R	1.50	19	64	26	7.6	8	HA/S-λ/HB
F2004NN*0800R2.00..	DA	8.00	R	2.00	19	64	26	7.6	8	HA/S-λ/HB
F2004NN*1000R0.30..	DA	10.00	R	0.30	22	73	30.5	9.5	10	HA/S-λ/HB
F2004NN*1000R0.50..	DA	10.00	R	0.50	22	73	30.5	9.5	10	HA/S-λ/HB

➔ Turn page for more articles

\* = L - SafeLock / H - Straight shank / B - Weldon shank. Order No. = Article Code + HAIMER Quality.




## F2004NN – HAIMER MILL CORNER RADIUS

Article-Code	HAIMER Quality	D1 (f9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	L2 [mm]	D2 [mm]	D (h6) [mm]	Shank
F2004NN*1000R0.80..	DA	10.00	R	0.80	22	73	30.5	9.5	10	HA/S-λ/HB
F2004NN*1000R1.00..	DA	10.00	R	1.00	22	73	30.5	9.5	10	HA/S-λ/HB
F2004NN*1000R1.50..	DA	10.00	R	1.50	22	73	30.5	9.5	10	HA/S-λ/HB
F2004NN*1000R2.00..	DA	10.00	R	2.00	22	73	30.5	9.5	10	HA/S-λ/HB
F2004NN*1000R2.50..	DA	10.00	R	2.50	22	73	30.5	9.5	10	HA/S-λ/HB
F2004NN*1200R0.30..	DA	12.00	R	0.30	26	84	36.5	11.4	12	HA/S-λ/HB
F2004NN*1200R0.50..	DA	12.00	R	0.50	26	84	36.5	11.4	12	HA/S-λ/HB
F2004NN*1200R0.80..	DA	12.00	R	0.80	26	84	36.5	11.4	12	HA/S-λ/HB
F2004NN*1200R1.00..	DA	12.00	R	1.00	26	84	36.5	11.4	12	HA/S-λ/HB
F2004NN*1200R1.50..	DA	12.00	R	1.50	26	84	36.5	11.4	12	HA/S-λ/HB
F2004NN*1200R2.00..	DA	12.00	R	2.00	26	84	36.5	11.4	12	HA/S-λ/HB
F2004NN*1200R2.50..	DA	12.00	R	2.50	26	84	36.5	11.4	12	HA/S-λ/HB
F2004NN*1200R3.00..	DA	12.00	R	3.00	26	84	36.5	11.4	12	HA/S-λ/HB
F2004NN*1200R4.00..	DA	12.00	R	4.00	26	84	36.5	11.4	12	HA/S-λ/HB
F2004NN*1400R0.50..	DA	14.00	R	0.50	26	84	36.5	13.3	14	HA/S-λ/HB
F2004NN*1400R1.00..	DA	14.00	R	1.00	26	84	36.5	13.3	14	HA/S-λ/HB
F2004NN*1400R2.00..	DA	14.00	R	2.00	26	84	36.5	13.3	14	HA/S-λ/HB
F2004NN*1600R0.30..	DA	16.00	R	0.30	32	93	42.5	15.2	16	HA/S-λ/HB
F2004NN*1600R0.50..	DA	16.00	R	0.50	32	93	42.5	15.2	16	HA/S-λ/HB
F2004NN*1600R0.80..	DA	16.00	R	0.80	32	93	42.5	15.2	16	HA/S-λ/HB
F2004NN*1600R1.00..	DA	16.00	R	1.00	32	93	42.5	15.2	16	HA/S-λ/HB
F2004NN*1600R1.50..	DA	16.00	R	1.50	32	93	42.5	15.2	16	HA/S-λ/HB
F2004NN*1600R2.00..	DA	16.00	R	2.00	32	93	42.5	15.2	16	HA/S-λ/HB
F2004NN*1600R3.00..	DA	16.00	R	3.00	32	93	42.5	15.2	16	HA/S-λ/HB
F2004NN*1600R4.00..	DA	16.00	R	4.00	32	93	42.5	15.2	16	HA/S-λ/HB
F2004NN*1800R0.50..	DA	18.00	R	0.50	32	93	42.5	17.1	18	HA/S-λ/HB
F2004NN*1800R1.00..	DA	18.00	R	1.00	32	93	42.5	17.1	18	HA/S-λ/HB
F2004NN*1800R2.00..	DA	18.00	R	2.00	32	93	42.5	17.1	18	HA/S-λ/HB
F2004NN*2000R0.30..	DA	20.00	R	0.30	38	105	52	19	20	HA/S-λ/HB
F2004NN*2000R0.50..	DA	20.00	R	0.50	38	105	52	19	20	HA/S-λ/HB
F2004NN*2000R0.80..	DA	20.00	R	0.80	38	105	52	19	20	HA/S-λ/HB
F2004NN*2000R1.00..	DA	20.00	R	1.00	38	105	52	19	20	HA/S-λ/HB
F2004NN*2000R1.50..	DA	20.00	R	1.50	38	105	52	19	20	HA/S-λ/HB
F2004NN*2000R2.00..	DA	20.00	R	2.00	38	105	52	19	20	HA/S-λ/HB
F2004NN*2000R3.00..	DA	20.00	R	3.00	38	105	52	19	20	HA/S-λ/HB
F2004NN*2000R4.00..	DA	20.00	R	4.00	38	105	52	19	20	HA/S-λ/HB

\* = L - Safe-Lock / H - Straight shank / B - Weldon shank. Order No. = Article Code + HAIMER Quality.

Technical data and Product characteristics

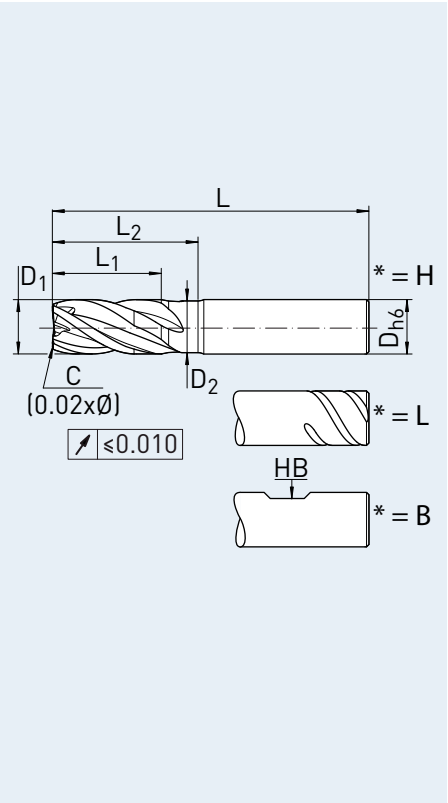


Optional:

- Straight shank  
DIN 6535-HA
- Safe-Lock shank (S-λ)
- Weldon shank similar  
DIN 6535-HB

\* = H      \* = L      \* = B

Characteristics	Application	Coolant



Material – characteristics

Main Material      also suitable for

P

M

K

S

N

H

- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge


Article-Code	HAIMER Quality	D1 (f9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	L2 [mm]	D2 [mm]	D (h6) [mm]	Shank
F2004LL*0600C..	DA	6.00	C	0.12	18	62	24	5.7	6	HA/S-λ/HB
F2004LL*0800C..	DA	8.00	C	0.16	24	70	32	7.6	8	HA/S-λ/HB
F2004LL*1000C..	DA	10.00	C	0.20	30	82	40	9.5	10	HA/S-λ/HB
F2004LL*1200C..	DA	12.00	C	0.24	36	95	48	11.4	12	HA/S-λ/HB
F2004LL*1400C..	DA	14.00	C	0.28	42	105	56	13.3	14	HA/S-λ/HB
F2004LL*1600C..	DA	16.00	C	0.32	48	115	64	15.2	16	HA/S-λ/HB
F2004LL*2000C..	DA	20.00	C	0.40	60	133	80	19.0	20	HA/S-λ/HB

\* = L - Safe-Lock / H - Straight shank / B - Weldon shank. Order No. = Article Code + HAIMER Quality.

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# F2004LL – HAIMER MILL CHAMFER

## Technical data and Product characteristics




**Optional:**

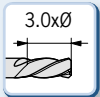
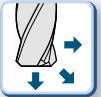


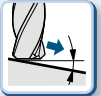


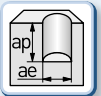


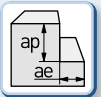




- Straight shank  
DIN 6535-HA
- Safe-Lock shank (S-λ)
- Weldon shank similar  
DIN 6535-HB

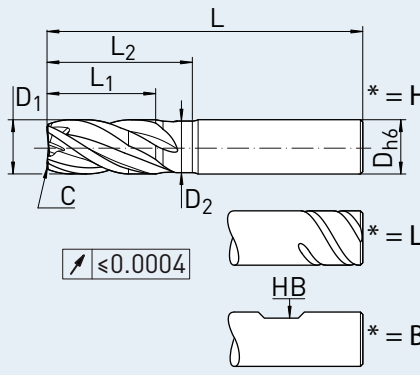


\* = L



\* = B

Characteristics	Application	Coolant
		
		
		
		
		



### Material – characteristics

Main Material

also suitable for



- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Cutting length L1 max. 3 x D1
- Very favorable solid carbide shank shape

Article-Code	HAIMER Quality	D1 (f9) [inch]	Cutting edge	Size [inch]	L1 [inch]	L [inch]	L2 [inch]	D2 [inch]	D (h6) [inch]	Shank
F2004LL*1/4ZC..	DA	1/4	C	0.0050	0.750	2 1/2	1	0.238	1/4	HA/S-λ/HB
F2004LL*5/16ZC..	DA	5/16	C	0.0064	0.938	3	1 1/4	0.296	5/16	HA/S-λ/HB
F2004LL*3/8ZC..	DA	3/8	C	0.0075	1.125	3 1/2	1 1/2	0.355	3/8	HA/S-λ/HB
F2004LL*1/2ZC..	DA	1/2	C	0.0100	1.500	4	2	0.476	1/2	HA/S-λ/HB
F2004LL*5/8ZC..	DA	5/8	C	0.0125	1.875	4 1/2	2 1/2	0.593	5/8	HA/S-λ/HB
F2004LL*3/4ZC..	DA	3/4	C	0.0150	2.250	5	3	0.710	3/4	HA/S-λ/HB

\* = L - SafeLock / H - Straight shank / B - Weldon shank. Order No. = Article Code + HAIMER Quality.



Technical data and Product characteristics



Characteristics	Application	Coolant

Material – characteristics

Main Material

P

M

K

S

N

H

also suitable for

- Center cutting
- Unequal cutting edge
- Cutting length L1 max. 1.25 x D1
- No neck
- Shortened shank for ideal length in some applications

Article-Code	HAIMER Quality	D1 (f9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	D (h6) [mm]	Shank h6
F2014KK*0200C..	DA	2.00	C	0.04	2.50	38	6	HA/HB
F2014KK*0300C..	DA	3.00	C	0.06	3.75	38	6	HA/HB
F2014KK*0400C..	DA	4.00	C	0.08	5.00	38	6	HA/HB
F2014KK*0500C..	DA	5.00	C	0.10	6.25	38	6	HA/HB
F2014KK*0600C..	DA	6.00	C	0.12	7.50	38	6	HA/HB
F2014KK*0800C..	DA	8.00	C	0.16	10.00	42	8	HA/HB
F2014KK*1000C..	DA	10.00	C	0.20	12.50	50	10	HA/HB
F2014KK*1200C..	DA	12.00	C	0.24	15.00	55	12	HA/HB
F2014KK*1400C..	DA	14.00	C	0.28	17.50	58	14	HA/HB
F2014KK*1600C..	DA	16.00	C	0.32	20.00	63	16	HA/HB
F2014KK*2000C..	DA	20.00	C	0.40	25.00	75	20	HA/HB

\* = L - Safe-Lock / H - Straight shank / B - Weldon shank. Order No. = Article Code + HAIMER Quality.

INCH

# F2014KK – HAIMER MILL CHAMFER

## Technical data and Product characteristics



Characteristics	Application	Coolant

### Material – characteristics

Main Material

also suitable for







- Center cutting
- Unequal cutting edge
- Cutting length L1 max. 1.25 x D1
- No neck
- Shortened shank for ideal length in some applications

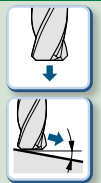
Article-Code	HAIMER Quality	D1 (f9) [inch]	Cutting edge	Size [inch]	L1 [inch]	L [inch]	D (h6) [inch]	Shank
F2014KK*3/32ZC..	DA	3/32	C	0.0018	0.117	1 1/2	1/4	HA/HB
F2014KK*1/8ZC..	DA	1/8	C	0.0025	0.156	1 1/2	1/4	HA/HB
F2014KK*3/16ZC..	DA	3/16	C	0.0038	0.234	1 1/2	1/4	HA/HB
F2014KK*1/4ZC..	DA	1/4	C	0.0050	0.313	1 1/2	1/4	HA/HB
F2014KK*5/16ZC..	DA	5/16	C	0.0064	0.391	2	5/16	HA/HB
F2014KK*3/8ZC..	DA	3/8	C	0.0075	0.469	2	3/8	HA/HB
F2014KK*1/2ZC..	DA	1/2	C	0.0100	0.625	2 1/2	1/2	HA/HB
F2014KK*5/8ZC..	DA	5/8	C	0.0125	0.781	2 1/2	5/8	HA/HB
F2014KK*3/4ZC..	DA	3/4	C	0.0150	0.938	3	3/4	HA/HB

\* = H - Straight shank / B - Weldon shank. Order No. = Article Code + HAIMER Quality.

Cutting data

HAIMER Material groups	Example material ANSI	Material no.	Material information		Ramping	Cutting width			
			Tensile strength	Content/ Hardness					
						ae = 100% D1 ap = 1 x D1	ae = 15% D1 ap = L1 max.	ae = 5% D1 ap = L1 max.	
						Cutting Speed (SFM)			
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 116,000 PSI, 800MPa	up to 25 HRC	45°	836 – 902	1049 – 1115	1311 – 1377
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 116,000 PSI, 800MPa	up to 45 HRC	30°	623 – 689	721 – 787	951 – 1016
<b>M1</b>	<b>Stainless steels</b>	303, 304	1.4305, 1.4301, 1.4034	≤ 94,275 PSI, 650MPa		10°	311 – 361	377 – 443	492 – 557
<b>M2</b>	<b>Stainless steels</b>	316Ti, 316L	1.4571, 1.4404, 1.4418	> 94,275 PSI, 650MPa		5°	246 – 295	311 – 344	361 – 426
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 65,265 PSI, 450MPa		45°	525 – 590	590 – 656	689 – 754
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTMA536 100-70-06	0.7060, 0.7070	> 65,265 PSI, 450MPa		20°	426 – 492	492 – 557	590 – 656
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			10°	164 – 197	197 – 262	262 – 295
<b>S2</b>	High Temp alloys	Inconel, Nimonic				5°	98 – 131	98 – 131	98 – 131
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315			30°	1541 – 1607	1967 – 2066	2557 – 2689
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si >12%	30°	1115 – 1180	1377 – 1443	1770 – 1902
<b>H1</b>	Hardened steels				45 - 55 HRC	10°	131 – 197	197 – 262	197 – 262

Cutting data are reference values and need to be adjusted according to the application area.  
Chip removal recommended for drilling depth 0.5 – 1 x D.

Feed per tooth (inch/tooth) in relation with D1 and cutting width ae							
ae		1/4	5/16	3/8	1/2	5/8	3/4
to 50% ø		0.0016	0.0020	0.0024	0.0033	0.0041	0.0049
100% ø		*0.0014	*0.0017	*0.0021	*0.0028	*0.0034	*0.0041
	<b>P</b>	0.0011	0.0014	0.0017	0.0023	0.0028	0.0034
	<b>M</b>	0.0006	0.0008	0.0009	0.0013	0.0016	0.0019
	<b>K</b>	0.0010	0.0013	0.0015	0.0020	0.0025	0.0030
	<b>S</b>	0.0005	0.0006	0.0008	0.0010	0.0013	0.0015
	<b>N</b>	0.0011	0.0014	0.0017	0.0023	0.0028	0.0034

\* For Slotting (100% ø) in material M1, M2 and S1 reduce fz by 30%.

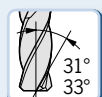
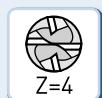
INCH

# F2014 – HAIMER MILL CORNER RADIUS

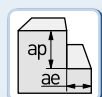
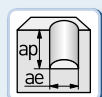
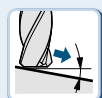
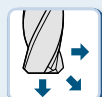
## Technical data and Product characteristics



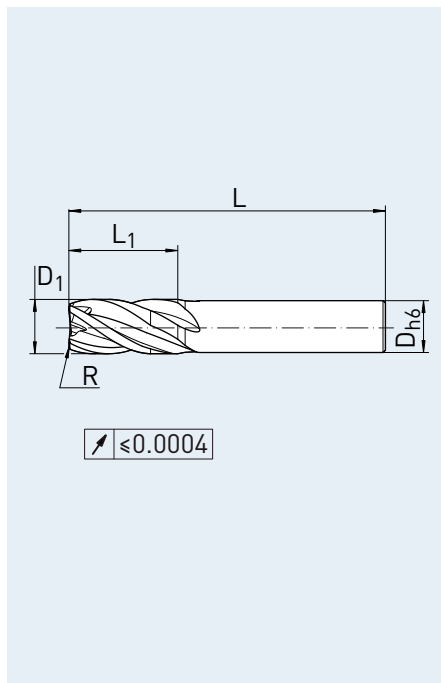
### Characteristics



### Application



### Coolant



### Material – characteristics

Main Material

also suitable for

- Center cutting
- Unequal cutting edge




Article-Code	HAIMER Quality	D1 (f9) [inch]	Cutting edge	Size [inch]	L1 [inch]	L [inch]	D (h6) [inch]	Shank
F2014NNH1/4ZR.015..	DA	1/4	R	0.015	7/16	2 1/2	1/4	HA
F2014NNH1/4ZR.030..	DA	1/4	R	0.030	7/16	2 1/2	1/4	HA
F2014LNH1/4ZR.015..	DA	1/4	R	0.015	3/4	2 1/2	1/4	HA
F2014LNH1/4ZR.030..	DA	1/4	R	0.030	3/4	2 1/2	1/4	HA
F2014LNH5/16ZR.015..	DA	5/16	R	0.015	13/16	2 1/2	5/16	HA
F2014LNH5/16ZR.030..	DA	5/16	R	0.030	13/16	2 1/2	5/16	HA
F2014KNH3/8ZR.030..	DA	3/8	R	0.030	1/2	2 1/2	3/8	HA
F2014NNH3/8ZR.030..	DA	3/8	R	0.030	7/8	2 1/2	3/8	HA
F2014KKH1/2ZR.015..	DA	1/2	R	0.015	5/8	2 1/2	1/2	HA
F2014KKH1/2ZR.030..	DA	1/2	R	0.030	5/8	2 1/2	1/2	HA
F2014NNH1/2ZR.030..	DA	1/2	R	0.030	1	3	1/2	HA
F2014NNH1/2ZR.060..	DA	1/2	R	0.060	1	3	1/2	HA
F2014NLH1/2ZR.015..	DA	1/2	R	0.015	1 1/4	3 1/2	1/2	HA
F2014NLH1/2ZR.030..	DA	1/2	R	0.030	1 1/4	3 1/2	1/2	HA
F2014NLH1/2ZR.060..	DA	1/2	R	0.060	1 1/4	3 1/2	1/2	HA
F2014NNH5/8ZR.030..	DA	5/8	R	0.030	1 1/4	4	5/8	HA
F2014NNH5/8ZR.060..	DA	5/8	R	0.060	1 1/4	4	5/8	HA
F2014NNH3/4ZR.030..	DA	3/4	R	0.030	1 1/2	4	3/4	HA
F2014NNH3/4ZR.060..	DA	3/4	R	0.060	1 1/2	4	3/4	HA
F2014NNH3/4ZR.090..	DA	3/4	R	0.090	1 1/2	4	3/4	HA
F2014NNH3/4ZR.125..	DA	3/4	R	0.125	1 1/2	4	3/4	HA

Order No. = Article Code + HAIMER Quality

Cutting data

HAIMER Material groups	Example material	Material no.	Tensile strength	Content/ Hardness	Cutting width		
					ap = 100% D1 ap = 1 x D1	ap = 50% D1 ap = 1.5 x D1	ap = 25% D1 ap = L1 max.
					Cutting speed Vc (m/min)		
<b>N1</b> Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	<b>300 – 400</b>	<b>400 – 500</b>	<b>500 – 600</b>
<b>N2</b> Aluminum cast alloys	A310, A400	3.2581		Si > 9%			


Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (mm/tooth) in relation with D1 and cutting width ae												
ae	ø 2	ø 3	ø 4	ø 5	ø 6	ø 8	ø 10	ø 12	ø 14	ø 16	ø 18	ø 20
to 50% ø	0.02	0.03	0.04	0.05	0.06	0.08	0.1	0.12	0.14	0.16	0.18	0.2
100% ø	0.01	0.015	0.02	0.025	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1
	0.002	0.003	0.004	0.005	0.006	0.008	0.010	0.012	0.014	0.016	0.018	0.020



# F4002NN – HAIMER MILL Alu Series CHAMFER UNCOATED

## Technical data and Product characteristics



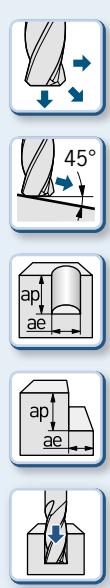
**Optional:**

- Straight shank  
DIN 6535-HA
- Safe-Lock shank (S-λ)
- Weldon shank similar  
DIN 6535-HB


**Characteristics**

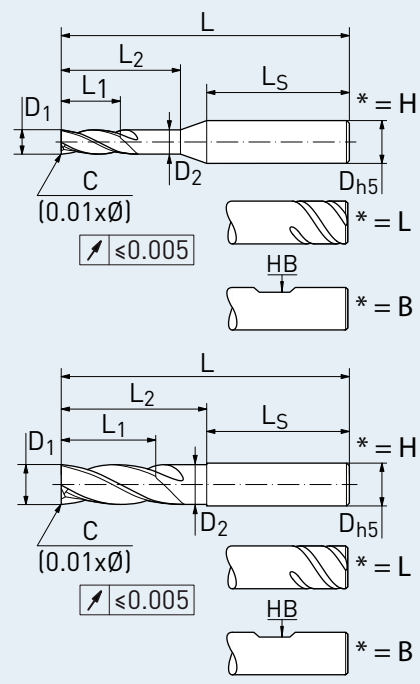
- DIN 6527 L
- 45°
- Z=2
- 41° / 43°

**Application**



**Coolant**





Fine balanced  
Except Weldon shank

\* = H
\* = L
\* = B

### Material – characteristics

#### Main Material



- Neck for higher cutting depth
- Center cutting
- Polished flute and relief
- Uncoated

Article-Code	HAIMER Quality	D1 (h9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	L2 [mm]	D2 [mm]	D (h5) [mm]	LS [mm]	Shank
F4002NN*0200C..	A-	2.00	C	0.02	7	58	9	1.9	6	44.3	HA/S-λ/HB
F4002NN*0300C..	A-	3.00	C	0.03	8	58	10	2.9	6	44.0	HA/S-λ/HB
F4002NN*0400C..	A-	4.00	C	0.04	11	58	15	3.8	6	40.0	HA/S-λ/HB
F4002NN*0500C..	A-	5.00	C	0.05	13	58	18	4.8	6	37.875	HA/S-λ/HB
F4002NN*0600C..	A-	6.00	C	0.06	13	58	20	5.7	6	36.5	HA/S-λ/HB
F4002NN*0800C..	A-	8.00	C	0.08	19	64	26	7.6	8	36.5	HA/S-λ/HB
F4002NN*1000C..	A-	10.00	C	0.10	22	73	30.5	9.5	10	40.5	HA/S-λ/HB
F4002NN*1200C..	A-	12.00	C	0.12	26	84	36.5	11.4	12	45.5	HA/S-λ/HB
F4002NN*1400C..	A-	14.00	C	0.14	26	84	36.5	13.3	14	45.5	HA/S-λ/HB
F4002NN*1600C..	A-	16.00	C	0.16	32	93	42.5	15.2	16	48.5	HA/S-λ/HB
F4002NN*1800C..	A-	18.00	C	0.18	32	93	42.5	17.1	18	48.5	HA/S-λ/HB
F4002NN*2000C..	A-	20.00	C	0.20	38	105	52	19	20	50.5	HA/S-λ/HB


\* = L - Safe-Lock / H - Straight shank / B - Weldon shank. Order No. = Article Code + HAIMER Quality.



Cutting data

HAIMER Material groups	Example material	Material information	Cutting width			
			ap = 100% D1 ap = 1 x D1	ap = 50% D1 ap = 1.5 x D1	ap = 25% D1 ap = L1 max.	
ANSI	Material no.	Tensile strength	Content/ Hardness	Cutting speed Vc (m/min)		
<b>N1</b> Wrought aluminum alloys	A5005, A6061, A7075	3.3315	Si < 9%	<b>300 – 400</b>	<b>400 – 500</b>	<b>500 – 600</b>
<b>N2</b> Aluminum cast alloys	A310, A400	3.2581	Si > 9%			

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (mm/tooth) in relation with D1 and cutting width ae												
ae	ø 2	ø 3	ø 4	ø 5	ø 6	ø 8	ø 10	ø 12	ø 14	ø 16	ø 18	ø 20
to 50% ø	0.02	0.03	0.04	0.05	0.06	0.08	0.1	0.12	0.14	0.16	0.18	0.2
100% ø	0.01	0.015	0.02	0.025	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1
	0.002	0.003	0.004	0.005	0.006	0.008	0.010	0.012	0.014	0.016	0.018	0.020



# F4002NN – HAIMER MILL Alu Series CHAMFER

## Technical data and Product characteristics



Optional:

- Straight shank  
DIN 6535-HA
- Safe-Lock shank (S-λ)
- Weldon shank similar  
DIN 6535-HB

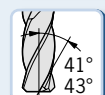
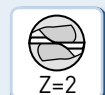


\* = H

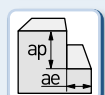
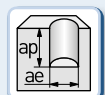
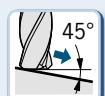
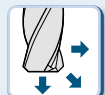
\* = L

\* = B

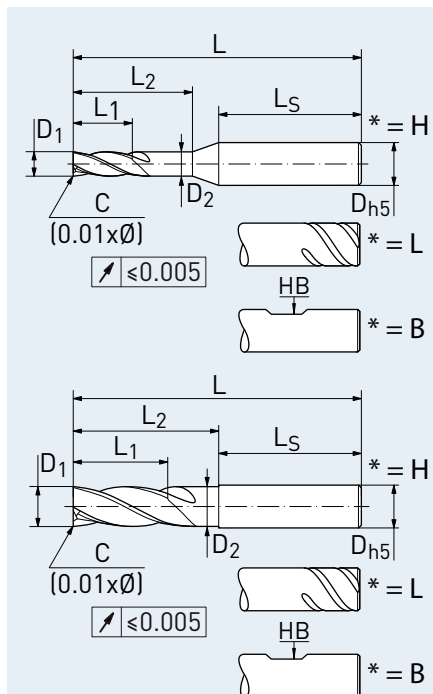
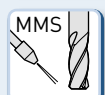
### Characteristics



### Application



### Coolant



Fine balanced  
Except Weldon shank

## Material – characteristics

### Main Material



- Coating for abrasive materials
- Neck for higher cutting depth
- Center cutting
- Polished flute and relief

Article-Code	HAIMER Quality	D1 (h9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	L2 [mm]	D2 [mm]	D (h5) [mm]	LS [mm]	Shank
F4002NN*0200C..	AC	2.00	C	0.02	7	58	9	1.9	6	44.3	HA/S-λ/HB
F4002NN*0300C..	AC	3.00	C	0.03	8	58	10	2.9	6	44.0	HA/S-λ/HB
F4002NN*0400C..	AC	4.00	C	0.04	11	58	15	3.8	6	40.0	HA/S-λ/HB
F4002NN*0500C..	AC	5.00	C	0.05	13	58	18	4.8	6	37.875	HA/S-λ/HB
F4002NN*0600C..	AC	6.00	C	0.06	13	58	20	5.7	6	36.5	HA/S-λ/HB
F4002NN*0800C..	AC	8.00	C	0.08	19	64	26	7.6	8	36.5	HA/S-λ/HB
F4002NN*1000C..	AC	10.00	C	0.10	22	73	30.5	9.5	10	40.5	HA/S-λ/HB
F4002NN*1200C..	AC	12.00	C	0.12	26	84	36.5	11.4	12	45.5	HA/S-λ/HB
F4002NN*1400C..	AC	14.00	C	0.14	26	84	36.5	13.3	14	45.5	HA/S-λ/HB
F4002NN*1600C..	AC	16.00	C	0.16	32	93	42.5	15.2	16	48.5	HA/S-λ/HB
F4002NN*1800C..	AC	18.00	C	0.18	32	93	42.5	17.1	18	48.5	HA/S-λ/HB
F4002NN*2000C..	AC	20.00	C	0.20	38	105	52	19	20	50.5	HA/S-λ/HB

\* = L - Safe-Lock / H - Straight shank / B - Weldon shank. Order No. = Article Code + HAIMER Quality.






Cutting data

HAIMER Material groups	Example material	Material no.	Tensile strength	Content/ Hardness	Cutting width		
					ap = 100% D1 ap = 1 x D1	ap = 50% D1 ap = 1.5 x D1	ap = 25% D1 ap = L1 max.
					Cutting speed Vc (m/min)		
<b>N1</b> Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	<b>300 – 400</b>	<b>400 – 500</b>	<b>500 – 600</b>
<b>N2</b> Aluminum cast alloys	A310, A400	3.2581		Si > 9%			

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (mm/tooth) in relation with D1 and cutting width ae												
ae	ø 2	ø 3	ø 4	ø 5	ø 6	ø 8	ø 10	ø 12	ø 14	ø 16	ø 18	ø 20
to 50% ø	0.02	0.03	0.04	0.05	0.06	0.08	0.1	0.12	0.14	0.16	0.18	0.2
100% ø	0.01	0.015	0.02	0.025	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1
	0.002	0.003	0.004	0.005	0.006	0.008	0.010	0.012	0.014	0.016	0.018	0.020



# F4003NN – HAIMER MILL Alu Series CHAMFER UNCOATED

## Technical data and Product characteristics

\* = H      \* = L      \* = B

**Optional:**

- Straight shank  
DIN 6535-HA
- Safe-Lock shank (S-λ)
- Weldon shank similar  
DIN 6535-HB

Characteristics	Application	Coolant

Fine balanced  
Except Weldon shank

### Material – characteristics

#### Main Material



- Neck for higher cutting depth
- Center cutting
- Polished flute and relief
- Uncoated

Article-Code	HAIMER Quality	D1 (h9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	L2 [mm]	D2 [mm]	D (h5) [mm]	LS [mm]	Shank
F4003NN*0200C..	A-	2.00	C	0.02	7	58	9	1.9	6	44.3	HA/S-λ/HB
F4003NN*0300C..	A-	3.00	C	0.03	8	58	10	2.9	6	44.0	HA/S-λ/HB
F4003NN*0400C..	A-	4.00	C	0.04	11	58	15	3.8	6	40.0	HA/S-λ/HB
F4003NN*0500C..	A-	5.00	C	0.05	13	58	18	4.8	6	37.875	HA/S-λ/HB
F4003NN*0600C..	A-	6.00	C	0.06	13	58	20	5.7	6	36.5	HA/S-λ/HB
F4003NN*0800C..	A-	8.00	C	0.08	19	64	26	7.6	8	36.5	HA/S-λ/HB
F4003NN*1000C..	A-	10.00	C	0.10	22	73	30.5	9.5	10	40.5	HA/S-λ/HB
F4003NN*1200C..	A-	12.00	C	0.12	26	84	36.5	11.4	12	45.5	HA/S-λ/HB
F4003NN*1400C..	A-	14.00	C	0.14	26	84	36.5	13.3	14	45.5	HA/S-λ/HB
F4003NN*1600C..	A-	16.00	C	0.16	32	93	42.5	15.2	16	48.5	HA/S-λ/HB
F4003NN*1800C..	A-	18.00	C	0.18	32	93	42.5	17.1	18	48.5	HA/S-λ/HB
F4003NN*2000C..	A-	20.00	C	0.20	41	105	52	19	20	50.5	HA/S-λ/HB

\* = L - Safe-Lock / H - Straight shank / B - Weldon shank. Order No. = Article Code + HAIMER Quality.



**Cutting data**

HAIMER Material groups	Example material	Material no.	Material information		Cutting width		
			Tensile strength	Content/ Hardness			
	ANSI				Cutting speed Vc (m/min)		
<b>N1</b> Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	<b>300 – 400</b>	<b>400 – 500</b>	<b>500 – 600</b>
<b>N2</b> Aluminum cast alloys	A310, A400	3.2581		Si > 9%			


Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (mm/tooth) in relation with D1 and cutting width ae												
ae	ø 2	ø 3	ø 4	ø 5	ø 6	ø 8	ø 10	ø 12	ø 14	ø 16	ø 18	ø 20
to 50% ø	0.02	0.03	0.04	0.05	0.06	0.08	0.1	0.12	0.14	0.16	0.18	0.2
100% ø	0.01	0.015	0.02	0.025	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1
	0.002	0.003	0.004	0.005	0.006	0.008	0.010	0.012	0.014	0.016	0.018	0.020



# F4003NN – HAIMER MILL Alu Series CHAMFER

## Technical data and Product characteristics



**Optional:**

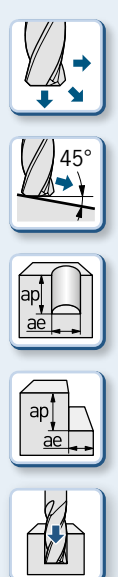
- Straight shank  
DIN 6535-HA
- Safe-Lock shank (S-λ)
- Weldon shank similar  
DIN 6535-HB

\* = H      \* = L      \* = B


**Characteristics**

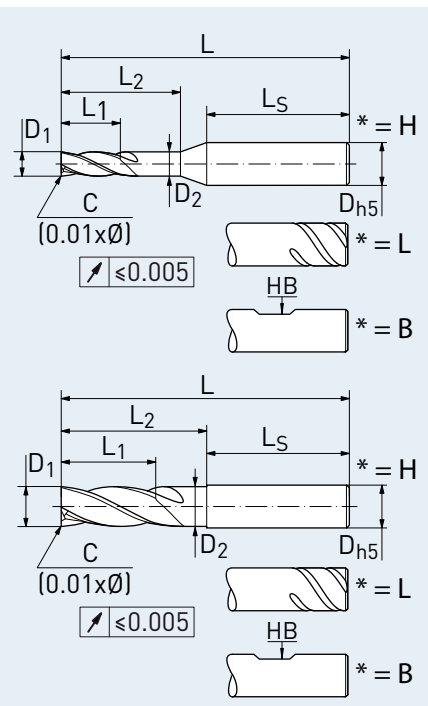
- DIN 6527 L
- 45°
- Z=3
- 42.5°, 41.5°, 43.5°

**Application**



**Coolant**





Fine balanced  
Except Weldon shank

### Material – characteristics

**Main Material**



- Coating for abrasive materials
- Neck for higher cutting depth
- Center cutting
- Polished flute and relief

Article-Code	HAIMER Quality	D1 (h9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	L2 [mm]	D2 [mm]	D (h5) [mm]	LS [mm]	Shank
F4003NN*0200C..	AC	2.00	C	0.02	7	58	9	1.9	6	44.3	HA/S-λ/HB
F4003NN*0300C..	AC	3.00	C	0.03	8	58	10	2.9	6	44.0	HA/S-λ/HB
F4003NN*0400C..	AC	4.00	C	0.04	11	58	15	3.8	6	40.0	HA/S-λ/HB
F4003NN*0500C..	AC	5.00	C	0.05	13	58	18	4.8	6	37.875	HA/S-λ/HB
F4003NN*0600C..	AC	6.00	C	0.06	13	58	20	5.7	6	36.5	HA/S-λ/HB
F4003NN*0800C..	AC	8.00	C	0.08	19	64	26	7.6	8	36.5	HA/S-λ/HB
F4003NN*1000C..	AC	10.00	C	0.10	22	73	30.5	9.5	10	40.5	HA/S-λ/HB
F4003NN*1200C..	AC	12.00	C	0.12	26	84	36.5	11.4	12	45.5	HA/S-λ/HB
F4003NN*1400C..	AC	14.00	C	0.14	26	84	36.5	13.3	14	45.5	HA/S-λ/HB
F4003NN*1600C..	AC	16.00	C	0.16	32	93	42.5	15.2	16	48.5	HA/S-λ/HB
F4003NN*1800C..	AC	18.00	C	0.18	32	93	42.5	17.1	18	48.5	HA/S-λ/HB
F4003NN*2000C..	AC	20.00	C	0.20	41	105	52	19	20	50.5	HA/S-λ/HB

\* = L - Safe-Lock / H - Straight shank / B - Weldon shank. Order No. = Article Code + HAIMER Quality.

## Cutting data

HAIMER Material groups	Example material		Material information		Roughing Vc (m/min)	Finishing Vc (m/min)
	ANSI	Material no.	Tensile strength	Content/ Hardness		
<b>P1</b> <b>General construction steels</b>	A252, A50-2, 1045	1.0038. 1.0050. 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>180 – 220</b>	<b>280 – 320</b>
<b>P2</b> <b>Heat treated steels</b>	D2, 4140	1.2367. 1.2379. 1.2363. 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>170 – 190</b>	<b>270 – 290</b>
<b>M1</b> Stainless steels	303, 304	1.4305. 1.4301. 1.4034	≤ 650 N/mm <sup>2</sup>		110 – 130	170 – 190
<b>M2</b> Stainless steels	316Ti, 316L	1.4571. 1.4404. 1.4418	> 650 N/mm <sup>2</sup>		70 – 90	120 – 140
<b>K1</b> Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020. 0.6040. 0.7040	≤ 450 N/mm <sup>2</sup>		190 – 210	290 – 310
<b>K2</b> Cast iron	ASTM A536 80-55-06, ASTMA536 100-70-06	0.7060. 0.7070	> 450 N/mm <sup>2</sup>		140 – 160	220 – 240
<b>S1</b> Titanium & titanium alloys	Ti6Al4V	3.7165			60 – 80	60 – 80
<b>S2</b> High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		30 – 40	30 – 40
<b>N1</b> Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	120 – 240	120 – 240
<b>N2</b> Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 240	120 – 240
<b>H1</b> Hardened steels				45 – 55 HRC	40 – 60	60 – 80


Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (mm/tooth) in relation with D1 and cutting width ae												
ae	ø 2	ø 3	ø 4	ø 5	ø 6	ø 8	ø 10	ø 12	ø 14	ø 16	ø 18	ø 20
to 50% ø	0.02	0.03	0.04	0.05	0.06	0.08	0.1	0.12	0.14	0.16	0.18	0.2
100% ø	0.01	0.015	0.02	0.025	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1
	0.002	0.003	0.004	0.005	0.006	0.008	0.010	0.012	0.014	0.016	0.018	0.020




# V1002NN – HAIMER MILL Power Series BALL NOSE


## Technical data and Product characteristics








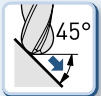


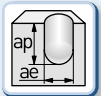







**Optional:**

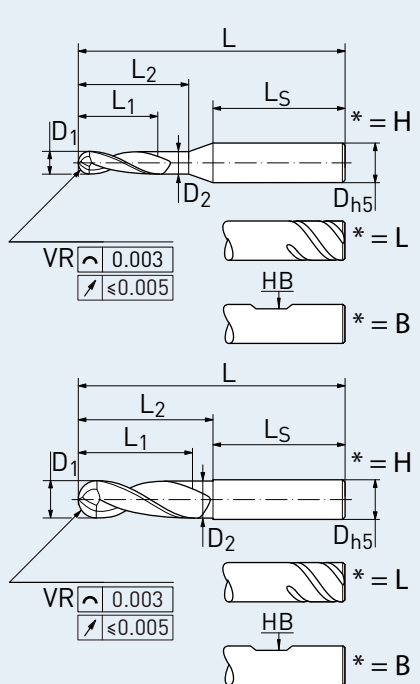
- Straight shank  
DIN 6535-HA
- Safe-Lock shank (S-λ)
- Weldon shank similar  
DIN 6535-HB

  
\* = H

  
\* = L

  
\* = B

Characteristics	Application	Coolant
		
		
		
		
		



Fine balanced  
Except Weldon shank

### Material – characteristics

**Main Material** P

**also suitable for**

K

S

N

M

H

- Neck for higher cutting depth
- Ball Nose
- Polished flute and relief

Article-Code	HAIMER Quality	D1 [mm]	VR ± 0.005 mm	L1 max. [mm]	L [mm]	L2 [mm]	D2 [mm]	D (h5) [mm]	LS [mm]	Shank	
V1002NN*0200R..	AA	2	$\begin{matrix} -0.005 \\ -0.025 \end{matrix}$	0.9925	7	58	9	1.9	6	44.3	HA/S-λ/HB
V1002NN*0300R..	AA	3	$\begin{matrix} -0.005 \\ -0.025 \end{matrix}$	1.4925	8	58	10	2.9	6	44.0	HA/S-λ/HB
V1002NN*0400R..	AA	4	$\begin{matrix} -0.010 \\ -0.030 \end{matrix}$	1.99	11	58	15	3.8	6	40.0	HA/S-λ/HB
V1002NN*0500R..	AA	5	$\begin{matrix} -0.010 \\ -0.030 \end{matrix}$	2.49	13	58	18	4.8	6	37.875	HA/S-λ/HB
V1002NN*0600R..	AA	6	$\begin{matrix} -0.010 \\ -0.030 \end{matrix}$	2.99	13	58	20	5.7	6	36.5	HA/S-λ/HB
V1002NN*0800R..	AA	8	$\begin{matrix} -0.010 \\ -0.030 \end{matrix}$	3.99	19	64	26	7.6	8	36.5	HA/S-λ/HB
V1002NN*1000R..	AA	10	$\begin{matrix} -0.010 \\ -0.030 \end{matrix}$	4.99	22	73	30.5	9.5	10	40.5	HA/S-λ/HB
V1002NN*1200R..	AA	12	$\begin{matrix} -0.010 \\ -0.030 \end{matrix}$	5.99	26	84	36.5	11.4	12	45.5	HA/S-λ/HB
V1002NN*1400R..	AA	14	$\begin{matrix} -0.010 \\ -0.030 \end{matrix}$	6.99	26	84	36.5	13.3	14	45.5	HA/S-λ/HB
V1002NN*1600R..	AA	16	$\begin{matrix} -0.010 \\ -0.030 \end{matrix}$	7.99	32	93	42.5	15.2	16	48.5	HA/S-λ/HB
V1002NN*1800R..	AA	18	$\begin{matrix} -0.010 \\ -0.030 \end{matrix}$	8.99	32	93	42.5	17.1	18	48.5	HA/S-λ/HB
V1002NN*2000R..	AA	20	$\begin{matrix} -0.010 \\ -0.030 \end{matrix}$	9.99	38	105	52	19	20	50.5	HA/S-λ/HB

\* = L - Safe-Lock / H - Straight shank / B - Weldon shank. Order No. = Article Code + HAIMER Quality.

Cutting data

HAIMER Material groups	Example material		Material information		Cutting width		
	ANSI	Material no.	Tensile strength	Content/ Hardness	Roughing	Finishing	
							Cutting Speed (SFM)
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 116,000 PSI, 800MPA	up to 25 HRC	<b>590 – 721</b>	<b>918 – 1049</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 116,000 PSI, 800MPA	up to 45 HRC	<b>557 – 623</b>	<b>885 – 951</b>
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 94,275 PSI, 650MPA		361 – 426	557 – 623
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 94,275 PSI, 650MPA		230 – 295	393 – 459
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 65,265 PSI, 450MPA		623 – 689	951 – 1016
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTMA536 100-70-06	0.7060, 0.7070	> 65,265 PSI, 450MPA		459 – 525	721 – 787
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			197 – 262	197 – 262
<b>S2</b>	High Temp alloys	Inconel, Nimonic				98 – 131	98 – 131
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315			393 – 787	393 – 787
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si >12%	393 – 787	393 – 787
<b>H1</b>	Hardened steels				45 - 55 HRC	131 – 197	197 – 262

Cutting data are reference values and need to be adjusted according to the application area.

		3/32	1/8	3/16	1/4	5/16	3/8	1/2
<b>Definition of application</b>								
<b>Roughing</b>	ae	0.0047	0.0063	0.0113	0.0167	0.0234	0.0281	0.0417
	ap	0.0070	0.0063	0.0150	0.0208	0.0293	0.0375	0.0625
<b>Finishing</b>	ae	0.0023	0.0029	0.0045	0.0058	0.0063	0.0068	0.0083
	ap	0.0023	0.0025	0.0034	0.0042	0.0059	0.0075	0.0104

<b>Feed per tooth (inch/tooth) in relation with D1 and cutting width ae</b>								
		3/32	1/8	3/16	1/4	5/16	3/8	1/2
	ae							
	Roughing	0.0014	0.0017	0.0018	0.0021	0.0027	0.0038	0.0050
	Finishing	0.0014	0.0017	0.0018	0.0021	0.0027	0.0038	0.0050

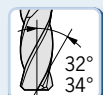
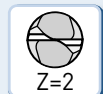
INCH

# V1002NN – HAIMER MILL Power Series BALL NOSE

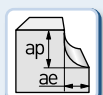
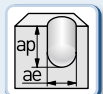
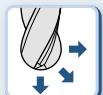
## Technical data and Product characteristics



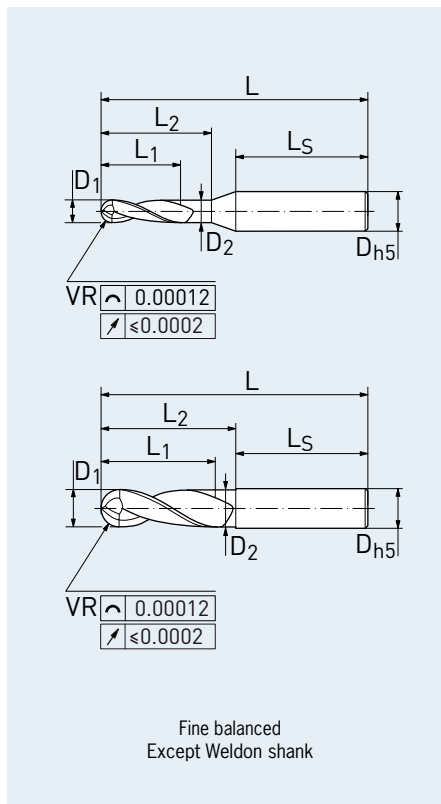
### Characteristics



### Application



### Coolant



### Material – characteristics

Main Material



also suitable for



- Neck for higher cutting depth
- Ball Nose
- Polished flute and relief

Article-Code	HAIMER Quality	D1 [inch]	VR ± 0.0002 [inch]	L1 max. [inch]	L [inch]	L2 [inch]	D2 [inch]	D (h5) [inch]	LS [inch]	Shank
V1002NNH3/32ZR..	DA	3/32 <sup>-0.0002</sup> / <sub>-0.001</sub>	0.046	9/32	2-1/4	3/8	0.089	1/4	1.796	HA
V1002NNH1/8ZR..	DA	1/8 <sup>-0.0002</sup> / <sub>-0.001</sub>	0.062	1/4	2-1/4	3/8	0.121	1/4	1.815	HA
V1002NNH3/16ZR..	DA	3/16 <sup>-0.0004</sup> / <sub>-0.0012</sub>	0.093	1/2	2-1/4	5/8	0.179	1/4	1.593	HA
V1002NNH1/4ZR..	DA	1/4 <sup>-0.0004</sup> / <sub>-0.0012</sub>	0.124	1/2	2-1/4	3/4	0.238	1/4	1.500	HA
V1002NNH5/16ZR..	DA	5/16 <sup>-0.0004</sup> / <sub>-0.0012</sub>	0.158	3/4	2-1/2	1	0.296	5/16	1.500	HA
V1002NNH3/8ZR..	DA	3/8 <sup>-0.0004</sup> / <sub>-0.0012</sub>	0.187	7/8	2-5/8	1-3/16	0.355	3/8	1.437	HA
V1002NNH1/2ZR..	DA	1/2 <sup>-0.0004</sup> / <sub>-0.0012</sub>	0.250	1	3-1/4	1-3/8	0.476	1/2	1.875	HA


Order No. = Article Code + HAIMER Quality



Cutting data

HAIMER Material groups	Example material	Material no.	Tensile strength	Content/ Hardness	Cutting width		
					Cutting speed Vc (m/min)		
<b>N1</b> Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	300 – 400	400 – 500	500 – 600
<b>N2</b> Aluminum cast alloys	A310, A400	3.2581		Si > 9%			

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (mm/tooth) in relation with D1 and cutting width ae												
ae	ø 2	ø 3	ø 4	ø 5	ø 6	ø 8	ø 10	ø 12	ø 14	ø 16	ø 18	ø 20
to 50% ø	0.02	0.03	0.04	0.05	0.06	0.08	0.1	0.12	0.14	0.16	0.18	0.2
100% ø	0.01	0.015	0.02	0.025	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1
	0.002	0.003	0.004	0.005	0.006	0.008	0.010	0.012	0.014	0.016	0.018	0.020

METRIC

# V4002NN – HAIMER MILL Alu Series BALL NOSE UNCOATED

## Technical data and Product characteristics



Optional:

- Straight shank  
DIN 6535-HA
- Safe-Lock shank (S-λ)
- Weldon shank similar  
DIN 6535-HB

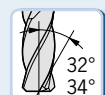
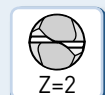


\* = H

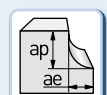
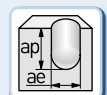
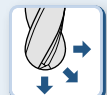
\* = L

\* = B

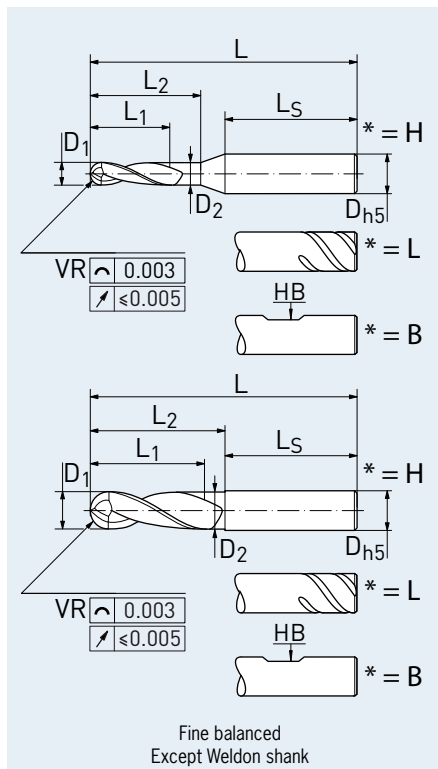
### Characteristics



### Application



### Coolant



## Material – characteristics

### Main Material



- Neck for higher cutting depth
- Ball Nose
- Polished flute and relief
- Uncoated


Article-Code	HAIMER Quality	D1 [mm]	VR ± 0.005 mm	L1 max. [mm]	L [mm]	L2 [mm]	D2 [mm]	D (h5) [mm]	LS [mm]	Shank
V4002NN*0200R..	A-	2	-0.005 -0.025	0.9925	7	58	9	1.9	6	44.3 HA/S-λ/HB
V4002NN*0300R..	A-	3	-0.005 -0.025	1.4925	8	58	10	2.9	6	44.0 HA/S-λ/HB
V4002NN*0400R..	A-	4	-0.010 -0.030	1.99	11	58	15	3.8	6	40.0 HA/S-λ/HB
V4002NN*0500R..	A-	5	-0.010 -0.030	2.49	13	58	18	4.8	6	37.875 HA/S-λ/HB
V4002NN*0600R..	A-	6	-0.010 -0.030	2.99	13	58	20	5.7	6	36.5 HA/S-λ/HB
V4002NN*0800R..	A-	8	-0.010 -0.030	3.99	19	64	26	7.6	8	36.5 HA/S-λ/HB
V4002NN*1000R..	A-	10	-0.010 -0.030	4.99	22	73	30.5	9.5	10	40.5 HA/S-λ/HB
V4002NN*1200R..	A-	12	-0.010 -0.030	5.99	26	84	36.5	11.4	12	45.5 HA/S-λ/HB
V4002NN*1400R..	A-	14	-0.010 -0.030	6.99	26	84	36.5	13.3	14	45.5 HA/S-λ/HB
V4002NN*1600R..	A-	16	-0.010 -0.030	7.99	32	93	42.5	15.2	16	48.5 HA/S-λ/HB
V4002NN*1800R..	A-	18	-0.010 -0.030	8.99	32	93	42.5	17.1	18	48.5 HA/S-λ/HB
V4002NN*2000R..	A-	20	-0.010 -0.030	9.99	38	105	52	19	20	50.5 HA/S-λ/HB

\* = L - Safe-Lock / H - Straight shank / B - Weldon shank. Order No. = Article Code + HAIMER Quality.


Cutting data

HAIMER Material groups	Example material	Material no.	Tensile strength	Content/ Hardness	Cutting width		
					ap = 100% D1 ap = 1 x D1	ap = 50% D1 ap = 1.5 x D1	ap = 25% D1 ap = L1 max.
					Cutting speed Vc (m/min)		
<b>N1</b> Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	<b>300 – 400</b>	<b>400 – 500</b>	<b>500 – 600</b>
<b>N2</b> Aluminum cast alloys	A310, A400	3.2581		Si > 9%			

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (mm/tooth) in relation with D1 and cutting width ae												
ae	ø 2	ø 3	ø 4	ø 5	ø 6	ø 8	ø 10	ø 12	ø 14	ø 16	ø 18	ø 20
to 50% ø	0.02	0.03	0.04	0.05	0.06	0.08	0.1	0.12	0.14	0.16	0.18	0.2
100% ø	0.01	0.015	0.02	0.025	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1
	0.002	0.003	0.004	0.005	0.006	0.008	0.010	0.012	0.014	0.016	0.018	0.020

Technical data and Product characteristics



**Optional:**

- Straight shank  
DIN 6535-HA
- Safe-Lock shank (S-λ)
- Weldon shank similar  
DIN 6535-HB

\* = H      \* = L      \* = B

**Characteristics**

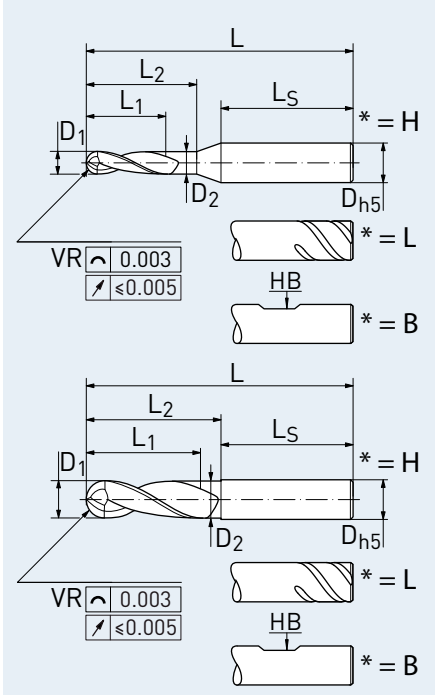
- DIN 6527 L
- VR
- Z=2
- 32° / 34°

**Application**

- 45°
- ap, ae
- ap, ae

**Coolant**

- Air
- MMS



Fine balanced  
Except Weldon shank

Material – characteristics

Main Material



- Coating for abrasive materials
- Neck for higher cutting depth
- Ball Nose
- Polished flute and relief

Article-Code	HAIMER Quality	D1 [mm]	VR ± 0.005 mm	L1 max. [mm]	L [mm]	L2 [mm]	D2 [mm]	D (h5) [mm]	LS [mm]	Shank	
V4002NN*0200R..	AC	2	-0.005 -0.025	0.9925	7	58	9	1.9	6	44.3	HA/S-λ/HB
V4002NN*0300R..	AC	3	-0.005 -0.025	1.4925	8	58	10	2.9	6	44.0	HA/S-λ/HB
V4002NN*0400R..	AC	4	-0.010 -0.030	1.99	11	58	15	3.8	6	40.0	HA/S-λ/HB
V4002NN*0500R..	AC	5	-0.010 -0.030	2.49	13	58	18	4.8	6	37.875	HA/S-λ/HB
V4002NN*0600R..	AC	6	-0.010 -0.030	2.99	13	58	20	5.7	6	36.5	HA/S-λ/HB
V4002NN*0800R..	AC	8	-0.010 -0.030	3.99	19	64	26	7.6	8	36.5	HA/S-λ/HB
V4002NN*1000R..	AC	10	-0.010 -0.030	4.99	22	73	30.5	9.5	10	40.5	HA/S-λ/HB
V4002NN*1200R..	AC	12	-0.010 -0.030	5.99	26	84	36.5	11.4	12	45.5	HA/S-λ/HB
V4002NN*1400R..	AC	14	-0.010 -0.030	6.99	26	84	36.5	13.3	14	45.5	HA/S-λ/HB
V4002NN*1600R..	AC	16	-0.010 -0.030	7.99	32	93	42.5	15.2	16	48.5	HA/S-λ/HB
V4002NN*1800R..	AC	18	-0.010 -0.030	8.99	32	93	42.5	17.1	18	48.5	HA/S-λ/HB
V4002NN*2000R..	AC	20	-0.010 -0.030	9.99	38	105	52	19	20	50.5	HA/S-λ/HB

\* = L - Safe-Lock / H - Straight shank / B - Weldon shank. Order No. = Article Code + HAIMER Quality.

# DUO-LOCK®

## Advanced Materials Require Advanced Manufacturing.

The continuing development of high-strength, lightweight materials such as titanium alloys, Inconel, and new aluminum alloys are eagerly sought by manufacturers in many industries, including aerospace and defense, energy, and transportation. These new materials present significant machining challenges in themselves.

Add the competitive pressures in these global industries, and finding advanced manufacturing solutions becomes a top priority.

## DUO-LOCK®

The Duo-Lock technology addresses the issue of the increasing cost of carbide by delivering a modular interface for cutting tool heads. Duo-Lock provides maximum stability and load capacity through a proprietary thread design with a double cone bond.

The results are unmatched precision and productivity, with a connection that is virtually unbreakable in the most demanding applications.

## SAFE-LOCK®

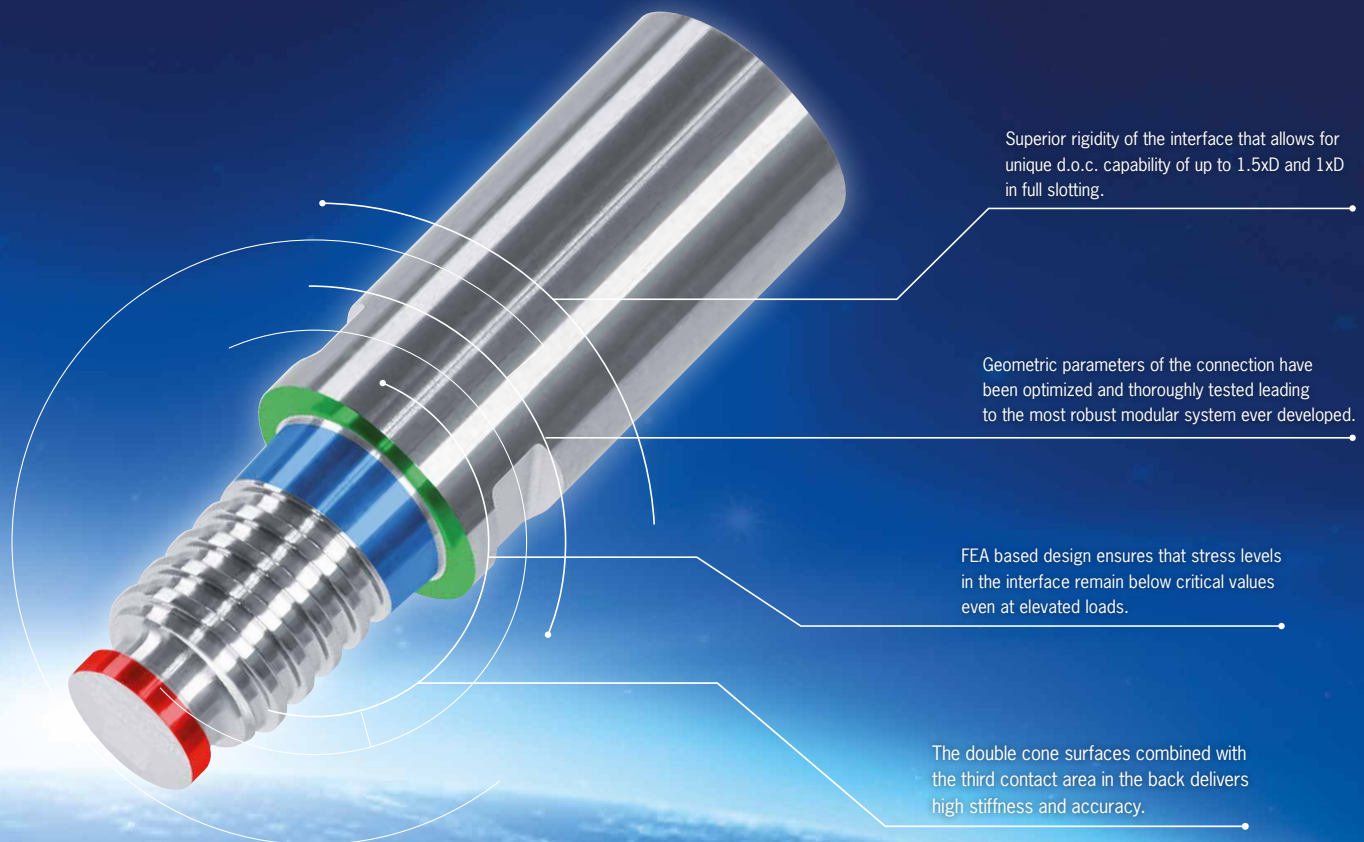
The Safe-Lock anti-pullout interface is also available with modular Duo-Lock extensions to take advantage of long reach and aggressive cuts.



**For the first time, a modular milling system can achieve the similar high performance of the latest generation solid carbide end mill.**

To deliver groundbreaking joint technology, Duo-Lock combines the innovative histories of two leaders in the world of manufacturing – Kennametal and HAIMER.

Duo-Lock maximizes a carbide tool's full potential with productivity gains in both roughing and finishing. It provides high load capacity and rigidity when machining at high metal removal rates. When combined with high-performance cutting tools, Duo-Lock provides more than double the metal removal rate in common milling applications.



Products		ø D1	Page	Characteristics
<b>E1002KK – HAIMER MILL MULTIFUNCTION END MILL</b> 	METRIC	ø 10 – ø 20	121	  
<b>E1014UK – HAIMER MILL QUADRANT END MILL</b> 	METRIC	ø 10 – ø 20	123	 
<b>E1016/18UK – HAIMER MILL CHAMFERING END MILL</b> 	METRIC	ø 10 – ø 20	125	  
	INCH	ø 3/8" – ø 3/4"	127	
<b>F1004MN – HAIMER MILL Power Series UNCOATED</b> 	METRIC	ø 10 – ø 20	129	   
	INCH	ø 3/8" – ø 1 1/4"	131	
<b>F1004MN – HAIMER MILL Power Series</b> 	METRIC	ø 10 – ø 20	133	   
	INCH	ø 3/8" – ø 1 1/4"	135	
<b>F1004MN – HAIMER MILL Power Series UNCOATED</b> 	METRIC	ø 10 – ø 20	137	   
<b>F1004MN – HAIMER MILL Power Series</b> 	METRIC	ø 10 – ø 20	141	   
<b>F1105LL – HAIMER MILL Power Series CHIP BREAKER</b> 	METRIC	ø 10 – ø 32	145	   
<b>F1105MN – HAIMER MILL Power Series CHIP BREAKER</b> 	METRIC	ø 10 – ø 32	147	   

Application

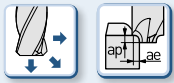
Material



Main Material



also suitable for



Main Material



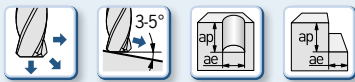
also suitable for



Main Material



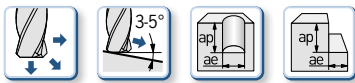
also suitable for



Main Material



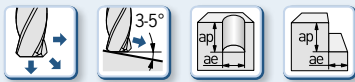
also suitable for



Main Material



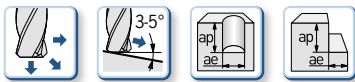
also suitable for



Main Material



also suitable for



Main Material



also suitable for



Main Material



also suitable for



Main Material



also suitable for

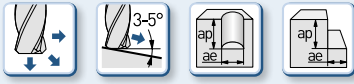




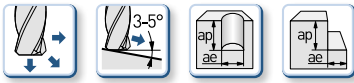
Products		ø D1	Page	Characteristics
<b>F2003MN – HAIMER MILL</b> 	METRIC	ø 2 – ø 20	149	   
	INCH	ø 3/8" – ø 3/4"	151	
<b>F2003UK – HAIMER MILL</b> 	METRIC	ø 10 – ø 20	153	   
	INCH	ø 3/8" – ø 3/4"	155	
<b>F2004MN – HAIMER MILL</b> 	METRIC	ø 2 – ø 32	157	   
	INCH	ø 3/8" – ø 1 1/4"	159	
<b>F2004MN – HAIMER MILL</b> 	METRIC	ø 10 – ø 20	161	   
	INCH	ø 3/8" – ø 3/4"	165	
<b>F2004UK – HAIMER MILL</b> 	METRIC	ø 10 – ø 32	167	   
	INCH	ø 3/8" – ø 1 1/4"	169	
<b>F2006/08/00MN – HAIMER MILL FINISHING</b> 	METRIC	ø 10 – ø 20	171	   
	INCH	ø 3/8" – ø 3/4"	173	
<b>F2006/08/00MN – HAIMER MILL FINISHING</b> 	METRIC	ø 10 – ø 20	175	   
	INCH	ø 3/8" – ø 3/4"	177	
<b>F2006/08/00UK – HAIMER MILL FINISHING</b> 	METRIC	ø 10 – ø 20	179	   
	INCH	ø 3/8" – ø 3/4"	181	
<b>F2304MN – HAIMER MILL ROUGHING</b> 	METRIC	ø 10 – ø 20	183	   
	INCH	ø 3/8" – ø 3/4"	185	

Application

Material



Main Material **P** also suitable for **K S N M H**



Main Material **P** also suitable for **K S N M H**



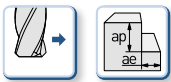
Main Material **P M** also suitable for **K S N H**



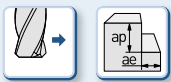
Main Material **P M** also suitable for **K S N H**



Main Material **P M** also suitable for **K S N H**



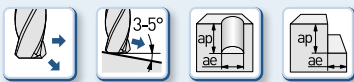
Main Material **P M** also suitable for **K S N H**






































Main Material **P M** also suitable for **K S N H**



Main Material **P M** also suitable for **K S N H**

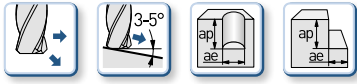


Main Material **P** also suitable for **K S N M**

Products		ø D1	Page	Characteristics
<b>F2304UK – HAIMER MILL ROUGHING</b> 	METRIC	ø 10 – ø 20	187	   
	INCH	ø 3/8" – ø 3/4"	189	
<b>F4002MN – HAIMER MILL Alu Series UNCOATED</b> 	METRIC	ø 10 – ø 20	191	   
<b>F4002MN – HAIMER MILL Alu Series</b> 	METRIC	ø 10 – ø 20	193	   
<b>F4003MN – HAIMER MILL Alu Series UNCOATED</b> 	METRIC	ø 10 – ø 20	195	   
<b>F4003MN – HAIMER MILL Alu Series</b> 	METRIC	ø 10 – ø 20	197	   
<b>H2004UK – HAIMER MILL HF Series HIGH FEED KZ</b> 	METRIC	ø 10 – ø 20	199	   
<b>H2006UK – HAIMER MILL HF Series HIGH FEED KZ</b> 	METRIC	ø 10 – ø 20	201	   

Application

Material



Main Material



also suitable for



Main Material



Main Material



Main Material



Main Material



Main Material



also suitable for



Main Material

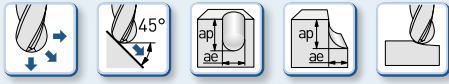


also suitable for



Products		ø D1	Page	Characteristics
V2002MN – HAIMER MILL		METRIC ø 2 – ø 10	203	   
V2002UK – HAIMER MILL		METRIC ø 10 – ø 20 INCH ø 3/8" – ø 3/4"	205 207	   
V2004MN – HAIMER MILL		METRIC ø 2 – ø 10	209	   
V2004UK – HAIMER MILL		METRIC ø 10 – ø 20	211	   
V4002UK – HAIMER MILL Alu Series UNCOATED		METRIC ø 10 – ø 20	213	   
V4002UK – HAIMER MILL Alu Series		METRIC ø 10 – ø 20	215	   

Application



Material

Main Material



also suitable for



Main Material



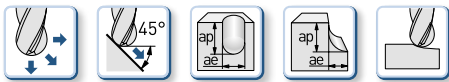
also suitable for



Main Material



also suitable for



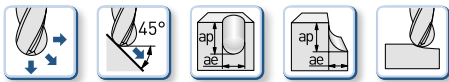
Main Material



also suitable for



Main Material

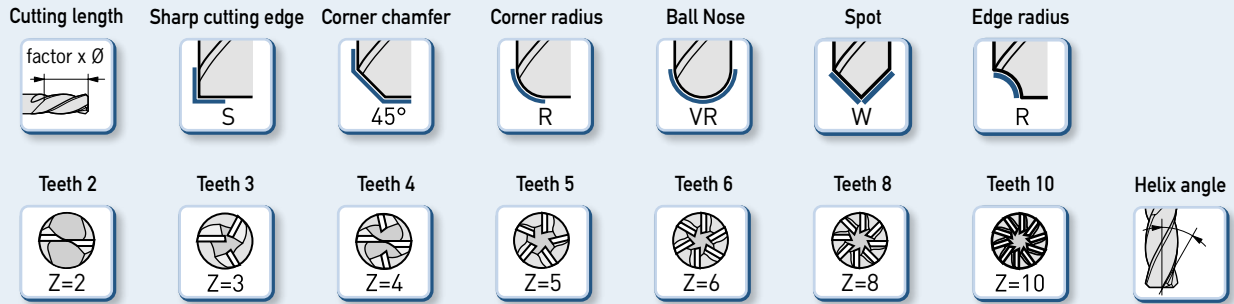


Main Material

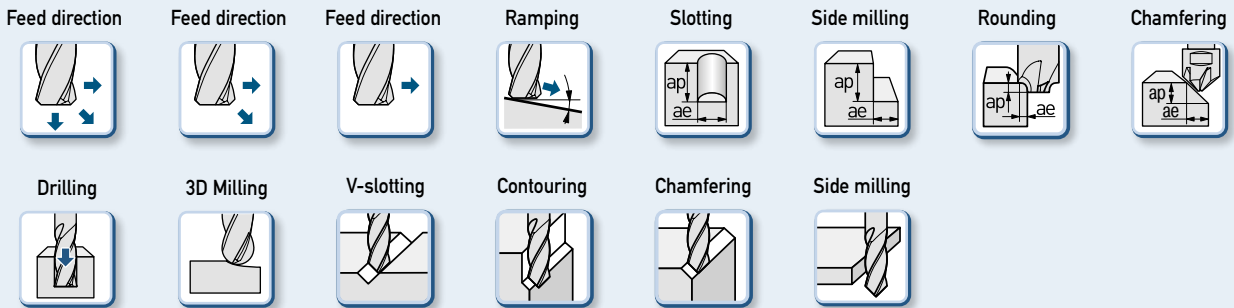


Explanation Icons

Characteristics



Application



Coolant



Explanation article code

DL12	F	1	0	0	2	M	N
Interface	Tool type	Group	Type	Modification	No. of teeth	Length of cut	Overall length
DL10	F- Cylindrical end mill	1- Universal	0- Plain cutter	0- With neck	2- Z2	L- 2.6-3.5xD	N- 2xD
DL12	E- Chamfering end mill	2- Steel < 52HRC	1- Chip breaker	1- No Neck	3- Z3	M- 1.5xD	L- 3.5xD
DL16	V- Ball nose end mill	4- Alu	3- Roughing		4- Z4	K- 1.25xD	K- 1.25xD
DL20		6- Titan/ Inconel			5- Z5	U- 0.75xD	
DL25	H- HighFeed end mill				6- Z6		
DL32					8- Z8		
					0- Z10		

Material list

HAIMER Material groups	Example material		Material information	
	ANSI	Material no.	Tensile strength	Content/Hardness
<b>P1</b> <b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 116,000 PSI, 800MPA	up to 25 HRC
<b>P2</b> <b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 116,000 PSI, 800MPA	up to 45 HRC
<b>M1</b> Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 94,275 PSI, 650MPA	
<b>M2</b> Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 94,275 PSI, 650MPA	
<b>K1</b> Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 65,265 PSI, 450MPA	
<b>K2</b> Cast iron	ASTM A536 80-55-06, ASTMA536 100-70-06	0.7060, 0.7070	> 65,265 PSI, 450MPA	
<b>S1</b> Titanium & titanium alloys	Ti6Al4V	3.7165		
<b>S2</b> High Temp alloys	Inconel, Nimonic			
<b>N1</b> Wrought aluminum alloys	A5005, A6061, A7075	3.3315		
<b>N2</b> Aluminum cast alloys	A310, A400	3.2581		Si >12%
<b>H1</b> Hardened steels				45 - 55 HRC
<b>H1</b> Hardened steels				>- 55 HRC

	1000	R	1.00	A	A	0001	KR
	Diameter	Cutting edge transition	Size transition	Material	Coating	Special number	Cooling
	1200- Metric 1/2Z- Inch	S- Sharp cutting edge C- Chamfer R- Radius W- Chamfer angle	1.00- Metric .03- Inch 90- Chamfer angle 60- Chamfer angle 120- Chamfer angle	A- HF10 h5 D- HF10 h6	A- HAIMER-UNI C- HAIMER-ALU P- HAIMER-P  - none	0000 - 9999	KR- Cooling radial KZ- Cooling central KS- Cooling special



## Cutting data

HAIMER Material groups		Example material		Material information		Roughing Vc (m/min)	Finishing Vc (m/min)
		ANSI	Material no.	Tensile strength	Content/ Hardness		
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>160 – 220</b>	<b>220 – 280</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>120 – 160</b>	<b>160 – 200</b>
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		80 – 120	120 – 160
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 650 N/mm <sup>2</sup>		60 – 90	90 – 120
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		120 – 180	180 – 240
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		80 – 160	160 – 220
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			40 – 80	40 – 80
<b>S2</b>	High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		30 – 40	30 – 40
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	500 – 900	500 – 900
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 350	120 – 350
<b>H1</b>	Hardened steels				45 – 55 HRC	40 – 60	60 – 80

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae				
	∅ 10	∅ 12	∅ 16	∅ 20
fz	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

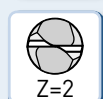
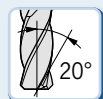
METRIC

E1002KK – DUO-LOCK® HAIMER MILL  
MULTIFUNCTION END MILL

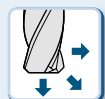
Technical data and Product characteristics



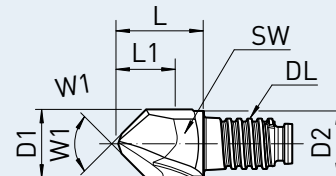
Characteristics



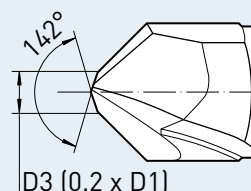
Application



Coolant



≤0.005



Fine balanced

Material – characteristics

Main Material



also suitable for



- Cone angle 60°/90°/120°/142°
- Center spot
- Multi functional tool
- Circumference cutter
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	Z	D1 (f9) [mm]	Chamfer	W1	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL10E1002KK1000W60..	DA	DL10	2	10.00	W	60°	10	12.5	9.6	SW8	20
DL10E1002KK1000W90..	DA	DL10	2	10.00	W	90°	10	12.5	9.6	SW8	20
DL10E1002KK1000W120..	DA	DL10	2	10.00	W	120°	10	12.5	9.6	SW8	20
DL10E1002KK1000W142..	DA	DL10	2	10.00	W	142°	10	12.5	9.6	SW8	20
DL12E1002KK1200W60..	DA	DL12	2	12.00	W	60°	12	15	11.5	SW9.5	30
DL12E1002KK1200W90..	DA	DL12	2	12.00	W	90°	12	15	11.5	SW9.5	30
DL12E1002KK1200W120..	DA	DL12	2	12.00	W	120°	12	15	11.5	SW9.5	30
DL12E1002KK1200W142..	DA	DL12	2	12.00	W	142°	12	15	11.5	SW9.5	30
DL16E1002KK1600W60..	DA	DL16	2	16.00	W	60°	16	20	15.5	SW13	60
DL16E1002KK1600W90..	DA	DL16	2	16.00	W	90°	16	20	15.5	SW13	60
DL16E1002KK1600W120..	DA	DL16	2	16.00	W	120°	16	20	15.5	SW13	60
DL16E1002KK1600W142..	DA	DL16	2	16.00	W	142°	16	20	15.5	SW13	60
DL20E1002KK2000W60..	DA	DL20	2	20.00	W	60°	20	25	19.3	SW16	80
DL20E1002KK2000W90..	DA	DL20	2	20.00	W	90°	20	25	19.3	SW16	80
DL20E1002KK2000W120..	DA	DL20	2	20.00	W	120°	20	25	19.3	SW16	80
DL20E1002KK2000W142..	DA	DL20	2	20.00	W	142°	20	25	19.3	SW16	80

## Cutting data

HAIMER Material groups		Example material		Material information		Roughing Vc (m/min)	Finishing Vc (m/min)
		ANSI	Material no.	Tensile strength	Content/ Hardness		
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>160 – 220</b>	<b>220 – 280</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>120 – 160</b>	<b>160 – 200</b>
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		80 – 120	120 – 160
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 650 N/mm <sup>2</sup>		60 – 90	90 – 120
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		120 – 180	180 – 240
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		80 – 160	160 – 220
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			40 – 80	40 – 80
<b>S2</b>	High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		30 – 40	30 – 40
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	500 – 900	500 – 900
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 350	120 – 350
<b>H1</b>	Hardened steels				45 – 55 HRC	40 – 60	60 – 80

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae				
	∅ 10	∅ 12	∅ 16	∅ 20
fz	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.



**E1014UK – DUO-LOCK® HAIMER MILL  
QUADRANT END MILL**

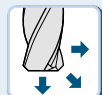
Technical data and Product characteristics



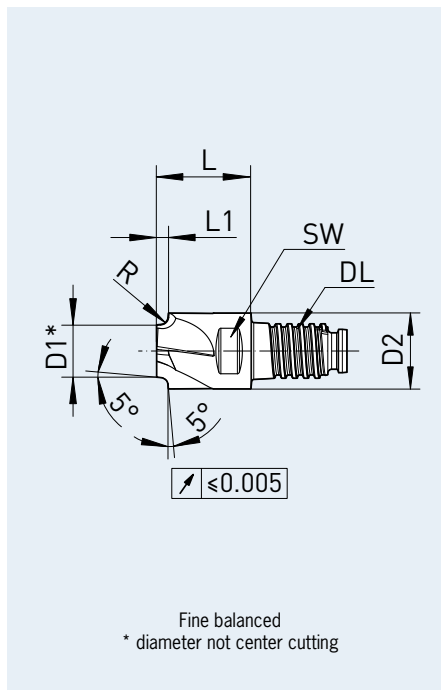
Characteristics



Application



Coolant



Material – characteristics

Main Material



also suitable for



- For contour rounding
- 5° tangential release
- Positive rake angle without profile displacement
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (h9) [mm]	Cutting edge	Radius [mm]	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL10E1014UK1000R1.00..	DA	DL10	7	R	1.00	1.50	12.5	10	SW8	20
DL10E1014UK1000R1.50..	DA	DL10	6	R	1.50	2.00	12.5	10	SW8	20
DL10E1014UK1000R2.00..	DA	DL10	5	R	2.00	2.50	12.5	10	SW8	20
DL12E1014UK1200R2.50..	DA	DL12	6	R	2.50	3.00	15.0	12	SW9.5	30
DL12E1014UK1200R3.00..	DA	DL12	5	R	3.00	3.50	15.0	12	SW9.5	30
DL16E1014UK1600R3.50..	DA	DL16	8	R	3.50	4.00	20.0	16	SW13	60
DL16E1014UK1600R4.00..	DA	DL16	7	R	4.00	4.50	20.0	16	SW13	60
DL16E1014UK1600R4.50..	DA	DL16	6	R	4.50	5.00	20.0	16	SW13	60
DL20E1014UK2000R5.00..	DA	DL20	8	R	5.00	6.00	25.0	20	SW16	80
DL20E1014UK2000R6.00..	DA	DL20	6	R	6.00	7.00	25.0	20	SW16	80

Order No. = Article Code + HAIMER Quality.

## Cutting data

HAIMER Material groups		Example material		Material information		Roughing Vc (m/min)	Finishing Vc (m/min)
		ANSI	Material no.	Tensile strength	Content/ Hardness		
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>160 – 220</b>	<b>220 – 280</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>120 – 160</b>	<b>160 – 200</b>
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		80 – 120	120 – 160
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 650 N/mm <sup>2</sup>		60 – 90	90 – 120
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		120 – 180	180 – 240
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		80 – 160	160 – 220
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			40 – 80	40 – 80
<b>S2</b>	High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		30 – 40	30 – 40
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	500 – 900	500 – 900
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 350	120 – 350
<b>H1</b>	Hardened steels				45 – 55 HRC	40 – 60	60 – 80

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae				
	∅ 10	∅ 12	∅ 16	∅ 20
fz	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

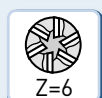
METRIC

E1016UK/E1018UK – DUO-LOCK® HAIMER MILL  
CHAMFERING END MILL

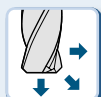
## Technical data and Product characteristics



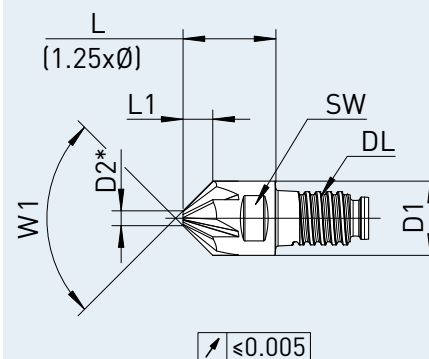
## Characteristics



## Application



## Coolant



Fine balanced  
\* diameter not center cutting

## Material – characteristics

## Main Material



## also suitable for



- Cone angle 60°/90°/120°
- Flat tip
- Multi functional tool
- Best length repeatability
- Straight fluted

Article-Code	HAIMER Quality	Duo-Lock Size	Z	D1 (h6) [mm]	Chamfer	W1	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL10E1016UK1000W60..	DA	DL10	6	10.00	W	60°	6.9	12.5	2.0	SW8	20
DL10E1016UK1000W90..	DA	DL10	6	10.00	W	90°	4	12.5	2.0	SW8	20
DL10E1016UK1000W120..	DA	DL10	6	10.00	W	120°	2.3	12.5	2.0	SW8	20
DL12E1016UK1200W60..	DA	DL12	6	12.00	W	60°	8.3	15	2.4	SW9.5	30
DL12E1016UK1200W90..	DA	DL12	6	12.00	W	90°	4.8	15	2.4	SW9.5	30
DL12E1016UK1200W120..	DA	DL12	6	12.00	W	120°	2.7	15	2.4	SW9.5	30
DL16E1018UK1600W60..	DA	DL16	8	16.00	W	60°	11	20	3.2	SW13	60
DL16E1018UK1600W90..	DA	DL16	8	16.00	W	90°	6.4	20	3.2	SW13	60
DL16E1018UK1600W120..	DA	DL16	8	16.00	W	120°	3.6	20	3.2	SW13	60
DL20E1018UK2000W60..	DA	DL20	8	20.00	W	60°	13.9	25	4	SW16	80
DL20E1018UK2000W90..	DA	DL20	8	20.00	W	90°	8	25	4	SW16	80
DL20E1018UK2000W120..	DA	DL20	8	20.00	W	120°	4.6	25	4	SW16	80

Order No. = Article Code + HAIMER Quality.

## Cutting data

HAIMER Material groups	Example material	Material information	Cutting width		
			Roughing	Finishing	
	ANSI	Material no.	Tensile strength	Content/ Hardness	Cutting Speed (SFM)
<b>P1</b> <b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 116,000 PSI, 800MPA	up to 25 HRC	<b>525 - 725</b> <b>725 - 920</b>
<b>P2</b> <b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 116,000 PSI, 800MPA	up to 45 HRC	<b>395 - 525</b> <b>525 - 655</b>
<b>M1</b> Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 94,275 PSI, 650MPA		260 - 395      395 - 525
<b>M2</b> Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 94,275 PSI, 650MPA		195 - 295      295 - 395
<b>K1</b> Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 65,265 PSI, 450MPA		395 - 590      590 - 785
<b>K2</b> Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 65,265 PSI, 450MPA		260 - 525      525 - 720
<b>S1</b> Titanium & titanium alloys	Ti6Al4V	3.7165			130 - 260      130 - 260
<b>S2</b> High Temp alloys	Inconel, Nimonic				100 - 130      100 - 130
<b>N1</b> Wrought aluminum alloys	A5005, A6061, A7075	3.3315			1640 - 2950      1640 - 2950
<b>N2</b> Aluminum cast alloys	A310, A400	3.2581		Si >12%	395 - 1150      395 - 1150
<b>H1</b> Hardened steels				45 - 55 HRC	130 - 195      195 - 260

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (inch/tooth) in relation with D1 and cutting width ae				
Ø	3/8	1/2	5/8	3/4
fz	0.0011 - 0.0035	0.0011 - 0.0039	0.0016 - 0.0047	0.002 - 0.005

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

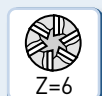
INCH

E1016UK/E1018UK – DUO-LOCK® HAIMER MILL  
CHAMFERING END MILL

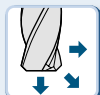
Technical data and Product characteristics



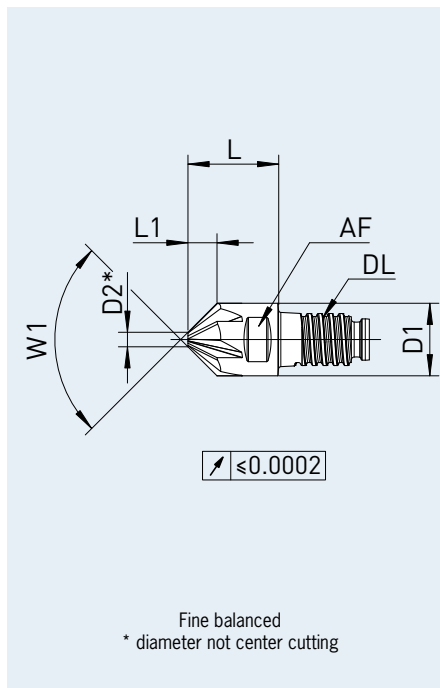
Characteristics



Application



Coolant



Material – characteristics

Main Material



also suitable for



- Cone angle 60°/90°/120°
- Flat tip
- Multi functional tool
- Best length repeatability
- Straight fluted

Article-Code	HAIMER Quality	Duo-Lock Size	Z	D1 (h6) [inch]	Chamfer	W1	L1 max. [inch]	L [inch]	D2 [inch]	AF [inch]	Torque [N/m]
DL10E1016UK3/8ZW60..	DA	DL10	6	3/8	W	60	0.272	0.492	0.079	0.315	20
DL10E1016UK3/8ZW90..	DA	DL10	6	3/8	W	90	0.157	0.492	0.079	0.315	20
DL10E1016UK3/8ZW120..	DA	DL10	6	3/8	W	120	0.091	0.492	0.079	0.315	20
DL12E1016UK1/2ZW60..	DA	DL12	6	1/2	W	60	0.327	0.591	0.094	0.374	30
DL12E1016UK1/2ZW90..	DA	DL12	6	1/2	W	90	0.189	0.591	0.094	0.374	30
DL12E1016UK1/2ZW120..	DA	DL12	6	1/2	W	120	0.11	0.591	0.094	0.374	30
DL16E1018UK5/8ZW60..	DA	DL16	8	5/8	W	60	0.433	0.787	0.126	0.512	60
DL16E1018UK5/8ZW90..	DA	DL16	8	5/8	W	90	0.252	0.787	0.126	0.512	60
DL16E1018UK5/8ZW120..	DA	DL16	8	5/8	W	120	0.142	0.787	0.126	0.512	60
DL20E1018UK3/4ZW60..	DA	DL20	8	3/4	W	60	0.547	0.984	0.157	0.630	80
DL20E1018UK3/4ZW90..	DA	DL20	8	3/4	W	60	0.315	0.984	0.157	0.630	80
DL20E1018UK3/4ZW120..	DA	DL20	8	3/4	W	60	0.181	0.984	0.157	0.630	80

Order No. = Article Code + HAIMER Quality



## Cutting data

HAIMER Material groups	Example material	Material no.	Tensile strength	Content/ Hardness	Cutting width			
					ae = 100% D1 ap = 1 x D1	ae = 50% D1 ap = 1.5 x D1	ae = 25% D1 ap = L1 max.	
					Cutting speed Vc (m/min)			
<b>P1</b>	General construction steels	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	20	30	40
<b>P2</b>	Heat treated steels	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	20	30	40
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		10 – 20	10 – 20	10 – 20
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 650 N/mm <sup>2</sup>		10 – 20	10 – 20	10 – 20
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		20 – 30	20 – 30	20 – 30
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		20 – 30	20 – 30	20 – 30
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			10	10	20
<b>S2</b>	High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		10	10	20
<b>N1</b>	<b>Wrought aluminum alloys</b>	A5005, A6061, A7075	3.3315		Si < 9%	<b>300 – 400</b>	<b>300 – 400</b>	<b>400 – 500</b>
<b>N2</b>	<b>Aluminum cast alloys</b>	A310, A400	3.2581		Si > 9%	<b>300 – 400</b>	<b>300 – 400</b>	<b>400 – 500</b>

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae				
	ø 10	ø 12	ø 16	ø 20
fz	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

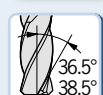
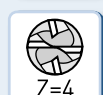
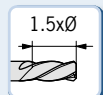
METRIC

F1004MN – DUO-LOCK® HAIMER MILL Power Series  
CHAMFER UNCOATED

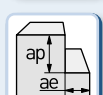
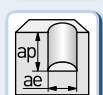
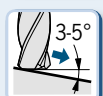
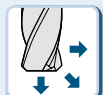
Technical data and Product characteristics



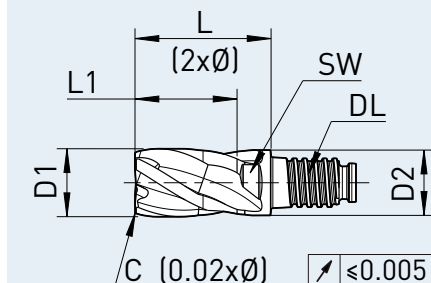
Characteristics



Application



Coolant



Fine balanced

Material – characteristics

Main Material



also suitable for



- Particularly suitable for long overhang and cases of unstable part clamping
- Best results with carbide extension
- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Best length repeatability
- Polished flute and relief
- Uncoated

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL10F1004MN1000C..	D-	DL10	10.00	C	0.20	15	20	9.6	SW8	20
DL12F1004MN1200C..	D-	DL12	12.00	C	0.24	18	24	11.5	SW9.5	30
DL16F1004MN1600C..	D-	DL16	16.00	C	0.32	24	32	15.5	SW13	60
DL20F1004MN2000C..	D-	DL20	20.00	C	0.40	30	40	19.3	SW16	80

Order No. = Article Code + HAIMER Quality.

## Cutting data

HAIMER Material groups	Example material	ANSI	Tensile strength	Tensile strength	Content/ Hardness	Cutting width		
						Cutting Speed (SFM)		
<b>P1</b>	General construction steels	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 116,000 PSI, 800MPA	up to 25 HRC	65	100	130
<b>P2</b>	Heat treated steels	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 116,000 PSI, 800MPA	up to 45 HRC	65	100	130
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 94,275 PSI, 650MPA		35 - 65	35 - 65	35 - 65
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 94,275 PSI, 650MPA		35 - 65	35 - 65	35 - 65
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 65,265 PSI, 450MPA		65 - 100	65 - 100	65 - 100
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 65,265 PSI, 450MPA		65 - 100	65 - 100	65 - 100
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			35	35	65
<b>S2</b>	High Temp alloys	Inconel, Nimonic				35	35	65
<b>N1</b>	<b>Wrought aluminum alloys</b>	A5005, A6061, A7075	3.3315			<b>985 - 1310</b>	<b>985 - 1310</b>	<b>1310 - 1640</b>
<b>N2</b>	<b>Aluminum cast alloys</b>	A310, A400	3.2581		Si >12%	<b>985 - 1310</b>	<b>985 - 1310</b>	<b>1310 - 1640</b>

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (inch/tooth) in relation with D1 and cutting width ae						
Ø	3/8	1/2	5/8	3/4	1	1 1/4
fz	0.0011 - 0.0035	0.0011 - 0.0039	0.0016 - 0.0047	0.002 - 0.005	0.0024 - 0.0067	0.0027 - 0.0079

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

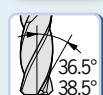
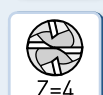
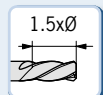
INCH

F1004MN – DUO-LOCK® HAIMER MILL Power Series  
CHAMFER UNCOATED

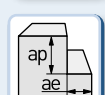
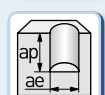
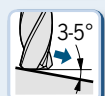
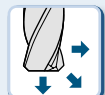
Technical data and Product characteristics



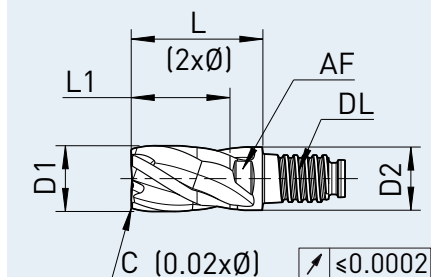
Characteristics



Application



Coolant



Fine balanced

Material – characteristics

Main Material

also suitable for



- Particularly suitable for long overhang and cases of unstable part clamping
- Best results with carbide extension
- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Best length repeatability
- Polished flute and relief
- Uncoated

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [inch]	Cutting edge	Size [inch]	L1 max. [inch]	L [inch]	D2 [inch]	AF [inch]	Torque [N/m]
DL10F1004MN3/8ZC..	D-	DL10	3/8	C	0.008	0.591	0.787	0.359	0.315	20
DL12F1004MN1/2ZC..	D-	DL12	1/2	C	0.010	0.709	0.945	0.480	0.374	30
DL16F1004MN5/8ZC..	D-	DL16	5/8	C	0.013	0.945	1.260	0.605	0.512	60
DL20F1004MN3/4ZC..	D-	DL20	3/4	C	0.015	1.181	1.575	0.730	0.630	80
DL25F1004MN1ZC..	D-	DL25	1	C	0.020	1.476	1.970	0.961	0.827	100
DL32F1004MN11/4ZC..	D-	DL32	11/4	C	0.025	1.890	2.520	1.211	1.102	130

Order No. = Article Code + HAIMER Quality

Cutting data

HAIMER Material groups	Example material	Material no.	Tensile strength	Content/ Hardness	Cutting width			
					ap = 100% D1 ap = 1 x D1	ap = 50% D1 ap = 1.5 x D1	ap = 25% D1 ap = L1 max.	
					Cutting speed Vc (m/min)			
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>170 – 200</b>	<b>210 – 240</b>	<b>250 – 270</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>90 – 110</b>	<b>110 – 130</b>	<b>130 – 150</b>
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		40 – 80	40 – 80	40 – 80
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 650 N/mm <sup>2</sup>		30 – 60	30 – 60	30 – 60
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		110 – 130	140 – 180	200 – 220
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		90 – 110	120 – 150	160 – 180
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			50 – 60	60 – 80	80 – 90
<b>S2</b>	High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		30 – 40	30 – 40	30 – 40
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	120 – 240	120 – 240	120 – 240
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 240	120 – 240	120 – 240
<b>H1</b>	Hardened steels				45 – 55 HRC	40 – 60	60 – 80	60 – 80

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae				
	ø 10	ø 12	ø 16	ø 20
fz	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.



# F1004MN – DUO-LOCK® HAIMER MILL Power Series CHAMFER

## Technical data and Product characteristics



Characteristics	Application	Coolant

Fine balanced

### Material – characteristics

Main Material



also suitable for



- Particularly suitable for long overhang and cases of unstable part clamping
- Best results with carbide extension
- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Best length repeatability
- Polished flute and relief

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL10F1004MN1000C..	DA	DL10	10.00	C	0.20	15	20	9.6	SW8	20
DL12F1004MN1200C..	DA	DL12	12.00	C	0.24	18	24	11.5	SW9.5	30
DL16F1004MN1600C..	DA	DL16	16.00	C	0.32	24	32	15.5	SW13	60
DL20F1004MN2000C..	DA	DL20	20.00	C	0.40	30	40	19.3	SW16	80

Order No. = Article Code + HAIMER Quality.

Cutting data

HAIMER Material groups	Example material	Material information	Cutting width				
			ap = 100% D1 ap = 1 x D1	ap = 50% D1 ap = 1.5 x D1	ap = 25% D1 ap = L1 max.		
ANSI	Material no.	Tensile strength	Content/ Hardness	Cutting Speed (SFM)			
<b>P1</b> <b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 116,000 PSI, 800MPA	up to 25 HRC	<b>560 - 655</b>	<b>690 - 785</b>	<b>820 - 885</b>
<b>P2</b> <b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 116,000 PSI, 800MPA	up to 45 HRC	<b>295 - 360</b>	<b>360 - 425</b>	<b>425 - 490</b>
<b>M1</b> Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 94,275 PSI, 650MPA		130 - 260	130 - 260	130 - 260
<b>M2</b> Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 94,275 PSI, 650MPA		100 - 195	100 - 195	100 - 195
<b>K1</b> Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 65,265 PSI, 450MPA		360 - 425	460 - 590	655 - 720
<b>K2</b> Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 65,265 PSI, 450MPA		295 - 360	395 - 490	525 - 590
<b>S1</b> Titanium & titanium alloys	Ti6Al4V	3.7165			165 - 200	200 - 260	260 - 295
<b>S2</b> High Temp alloys	Inconel, Nimonic				100 - 130	100 - 130	100 - 135
<b>N1</b> Wrought aluminum alloys	A5005, A6061, A7075	3.3315			395 - 785	395 - 785	395 - 785
<b>N2</b> Aluminum cast alloys	A310, A400	3.2581		Si >12%	395 - 785	395 - 785	395 - 785
<b>H1</b> Hardened steels				45 - 55 HRC	130 - 195	195 - 260	195 - 260

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (inch/tooth) in relation with D1 and cutting width ae						
∅	3/8	1/2	5/8	3/4	1	1 1/4
fz	0.0011 - 0.0035	0.0011 - 0.0039	0.0016 - 0.0047	0.002 - 0.005	0.0024 - 0.0067	0.0027 - 0.0079

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

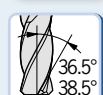
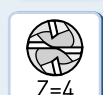
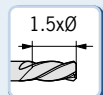
INCH

F1004MN – DUO-LOCK® HAIMER MILL Power Series  
CHAMFER

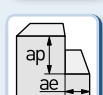
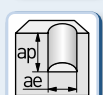
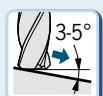
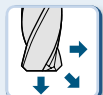
Technical data and Product characteristics



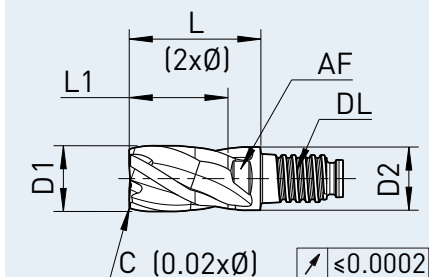
Characteristics



Application



Coolant



Fine balanced

Material – characteristics

Main Material



also suitable for



- Particularly suitable for long overhang and cases of unstable part clamping
- Best results with carbide extension
- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Best length repeatability
- Polished flute and relief

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [inch]	Cutting edge	Size [inch]	L1 max. [inch]	L [inch]	D2 [inch]	AF [inch]	Torque [N/m]
DL10F1004MN3/8ZC..	DA	DL10	3/8	C	0.008	0.591	0.787	0.359	0.315	20
DL12F1004MN1/2ZC..	DA	DL12	1/2	C	0.010	0.709	0.945	0.480	0.374	30
DL16F1004MN5/8ZC..	DA	DL16	5/8	C	0.013	0.945	1.260	0.605	0.512	60
DL20F1004MN3/4ZC..	DA	DL20	3/4	C	0.015	1.181	1.575	0.730	0.630	80
DL25F1004MN1ZC..	DA	DL25	1	C	0.020	1.476	1.970	0.961	0.827	100
DL32F1004MN11/4ZC..	DA	DL32	11/4	C	0.025	1.890	2.520	1.211	1.102	130

Order No. = Article Code + HAIMER Quality



## Cutting data

HAIMER Material groups	Example material	Material information	Cutting width				
			ae = 100% D1 ap = 1 x D1	ae = 50% D1 ap = 1.5 x D1	ae = 25% D1 ap = L1 max.		
ANSI	Material no.	Tensile strength	Content/ Hardness	Cutting speed Vc (m/min)			
<b>P1</b> General construction steels	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	20	30	40
<b>P2</b> Heat treated steels	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	20	30	40
<b>M1</b> Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		10 – 20	10 – 20	10 – 20
<b>M2</b> Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 650 N/mm <sup>2</sup>		10 – 20	10 – 20	10 – 20
<b>K1</b> Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		20 – 30	20 – 30	20 – 30
<b>K2</b> Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		20 – 30	20 – 30	20 – 30
<b>S1</b> Titanium & titanium alloys	Ti6Al4V	3.7165			10	10	20
<b>S2</b> High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		10	10	20
<b>N1</b> <b>Wrought aluminum alloys</b>	A5005, A6061, A7075	3.3315		Si < 9%	<b>300 – 400</b>	<b>300 – 400</b>	<b>400 – 500</b>
<b>N2</b> <b>Aluminum cast alloys</b>	A310, A400	3.2581		Si > 9%	<b>300 – 400</b>	<b>300 – 400</b>	<b>400 – 500</b>

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae				
	ø 10	ø 12	ø 16	ø 20
fz	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

METRIC

# F1004MN – DUO-LOCK® HAIMER MILL Power Series CORNER RADIUS UNCOATED

## Technical data and Product characteristics



Characteristics	Application	Coolant

Fine balanced

### Material – characteristics

Main Material

also suitable for



- Particularly suitable for long overhang and cases of unstable part clamping
- Best results with carbide extension
- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Best length repeatability
- Polished flute and relief
- Uncoated

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [mm]	Cutting edge	R [mm]	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL10F1004MN1000R0.30..	D-	DL10	10.00	R	0.3	15	20	9.6	SW8	20
DL10F1004MN1000R0.50..	D-	DL10	10.00	R	0.5	15	20	9.6	SW8	20
DL10F1004MN1000R0.80..	D-	DL10	10.00	R	0.8	15	20	9.6	SW8	20
DL10F1004MN1000R1.00..	D-	DL10	10.00	R	1.0	15	20	9.6	SW8	20
DL10F1004MN1000R1.50..	D-	DL10	10.00	R	1.5	15	20	9.6	SW8	20
DL10F1004MN1000R2.00..	D-	DL10	10.00	R	2.0	15	20	9.6	SW8	20
DL10F1004MN1000R2.50..	D-	DL10	10.00	R	2.5	15	20	9.6	SW8	20
DL12F1004MN1200R0.50..	D-	DL12	12.00	R	0.5	18	24	11.5	SW9.5	30
DL12F1004MN1200R0.80..	D-	DL12	12.00	R	0.8	18	24	11.5	SW9.5	30
DL12F1004MN1200R1.00..	D-	DL12	12.00	R	1.0	18	24	11.5	SW9.5	30
DL12F1004MN1200R1.50..	D-	DL12	12.00	R	1.5	18	24	11.5	SW9.5	30
DL12F1004MN1200R2.00..	D-	DL12	12.00	R	2.0	18	24	11.5	SW9.5	30
DL12F1004MN1200R2.50..	D-	DL12	12.00	R	2.5	18	24	11.5	SW9.5	30
DL12F1004MN1200R3.00..	D-	DL12	12.00	R	3.0	18	24	11.5	SW9.5	30

→ Turn page for more articles

## Cutting data

HAIMER Material groups	Example material	Material information	Cutting width				
			ae = 100% D1 ap = 1 x D1	ae = 50% D1 ap = 1.5 x D1	ae = 25% D1 ap = L1 max.		
ANSI	Material no.	Tensile strength	Content/ Hardness	Cutting speed Vc (m/min)			
<b>P1</b> General construction steels	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	20	30	40
<b>P2</b> Heat treated steels	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	20	30	40
<b>M1</b> Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		10 – 20	10 – 20	10 – 20
<b>M2</b> Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 650 N/mm <sup>2</sup>		10 – 20	10 – 20	10 – 20
<b>K1</b> Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		20 – 30	20 – 30	20 – 30
<b>K2</b> Cast iron	ASTM A536 80-55-06, ASTMA536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		20 – 30	20 – 30	20 – 30
<b>S1</b> Titanium & titanium alloys	Ti6Al4V	3.7165			10	10	20
<b>S2</b> High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		10	10	20
<b>N1</b> <b>Wrought aluminum alloys</b>	A5005, A6061, A7075	3.3315		Si < 9%	<b>300 – 400</b>	<b>300 – 400</b>	<b>400 – 500</b>
<b>N2</b> <b>Aluminum cast alloys</b>	A310, A400	3.2581		Si > 9%	<b>300 – 400</b>	<b>300 – 400</b>	<b>400 – 500</b>

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae				
	ø 10	ø 12	ø 16	ø 20
fz	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

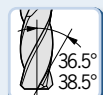
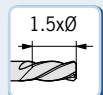
METRIC

# F1004MN – DUO-LOCK® HAIMER MILL Power Series CORNER RADIUS UNCOATED

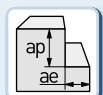
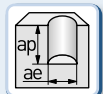
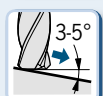
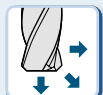
## Technical data and Product characteristics



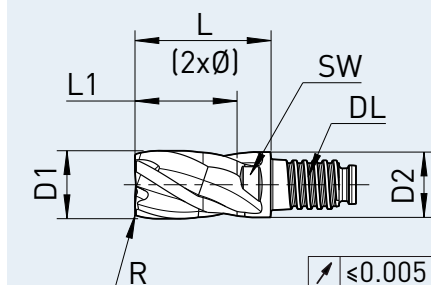
### Characteristics



### Application



### Coolant



Fine balanced

## Material – characteristics

### Main Material



### also suitable for



- Particularly suitable for long overhang and cases of unstable part clamping
- Best results with carbide extension
- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Best length repeatability
- Polished flute and relief
- Uncoated

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [mm]	Cutting edge	R [mm]	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL12F1004MN1200R4.00..	D-	DL12	12.00	R	4.0	18	24	11.5	SW9.5	30
DL16F1004MN1600R0.50..	D-	DL16	16.00	R	0.5	24	32	15.5	SW13	60
DL16F1004MN1600R0.80..	D-	DL16	16.00	R	0.8	24	32	15.5	SW13	60
DL16F1004MN1600R1.00..	D-	DL16	16.00	R	1.0	24	32	15.5	SW13	60
DL16F1004MN1600R2.00..	D-	DL16	16.00	R	2.0	24	32	15.5	SW13	60
DL16F1004MN1600R2.50..	D-	DL16	16.00	R	2.5	24	32	15.5	SW13	60
DL16F1004MN1600R3.00..	D-	DL16	16.00	R	3.0	24	32	15.5	SW13	60
DL16F1004MN1600R4.00..	D-	DL16	16.00	R	4.0	24	32	15.5	SW13	60
DL20F1004MN2000R0.50..	D-	DL20	20.00	R	0.5	30	40	19.3	SW16	80
DL20F1004MN2000R0.80..	D-	DL20	20.00	R	0.8	30	40	19.3	SW16	80
DL20F1004MN2000R1.00..	D-	DL20	20.00	R	1.0	30	40	19.3	SW16	80
DL20F1004MN2000R2.00..	D-	DL20	20.00	R	2.0	30	40	19.3	SW16	80
DL20F1004MN2000R2.50..	D-	DL20	20.00	R	2.5	30	40	19.3	SW16	80
DL20F1004MN2000R3.00..	D-	DL20	20.00	R	3.0	30	40	19.3	SW16	80
DL20F1004MN2000R4.00..	D-	DL20	20.00	R	4.0	30	40	19.3	SW16	80

## Cutting data

HAIMER Material groups	Example material	Material no.	Tensile strength	Content/ Hardness	Cutting width			
					Cutting speed Vc (m/min)			
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>170 – 200</b>	<b>210 – 240</b>	<b>250 – 270</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>90 – 110</b>	<b>110 – 130</b>	<b>130 – 150</b>
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		40 – 80	40 – 80	40 – 80
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 650 N/mm <sup>2</sup>		30 – 60	30 – 60	30 – 60
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		110 – 130	140 – 180	200 – 220
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		90 – 110	120 – 150	160 – 180
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			50 – 60	60 – 80	80 – 90
<b>S2</b>	High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		30 – 40	30 – 40	30 – 40
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	120 – 240	120 – 240	120 – 240
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 240	120 – 240	120 – 240
<b>H1</b>	Hardened steels				45 – 55 HRC	40 – 60	60 – 80	60 – 80

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae				
	ø 10	ø 12	ø 16	ø 20
fz	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

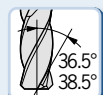
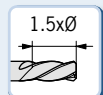
METRIC

# F1004MN – DUO-LOCK® HAIMER MILL Power Series CORNER RADIUS

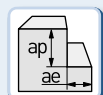
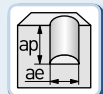
## Technical data and Product characteristics



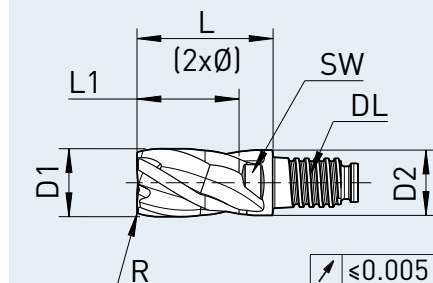
### Characteristics



### Application



### Coolant



Fine balanced

## Material – characteristics

### Main Material



### also suitable for



- Particularly suitable for long overhang and cases of unstable part clamping
- Best results with carbide extension
- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Best length repeatability
- Polished flute and relief

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [mm]	Cutting edge	R [mm]	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL10F1004MN1000R0.30..	DA	DL10	10.00	R	0.3	15	20	9.6	SW8	20
DL10F1004MN1000R0.50..	DA	DL10	10.00	R	0.5	15	20	9.6	SW8	20
DL10F1004MN1000R0.80..	DA	DL10	10.00	R	0.8	15	20	9.6	SW8	20
DL10F1004MN1000R1.00..	DA	DL10	10.00	R	1.0	15	20	9.6	SW8	20
DL10F1004MN1000R1.50..	DA	DL10	10.00	R	1.5	15	20	9.6	SW8	20
DL10F1004MN1000R2.00..	DA	DL10	10.00	R	2.0	15	20	9.6	SW8	20
DL10F1004MN1000R2.50..	DA	DL10	10.00	R	2.5	15	20	9.6	SW8	20
DL12F1004MN1200R0.50..	DA	DL12	12.00	R	0.5	18	24	11.5	SW9.5	30
DL12F1004MN1200R0.80..	DA	DL12	12.00	R	0.8	18	24	11.5	SW9.5	30
DL12F1004MN1200R1.00..	DA	DL12	12.00	R	1.0	18	24	11.5	SW9.5	30
DL12F1004MN1200R1.50..	DA	DL12	12.00	R	1.5	18	24	11.5	SW9.5	30
DL12F1004MN1200R2.00..	DA	DL12	12.00	R	2.0	18	24	11.5	SW9.5	30
DL12F1004MN1200R2.50..	DA	DL12	12.00	R	2.5	18	24	11.5	SW9.5	30
DL12F1004MN1200R3.00..	DA	DL12	12.00	R	3.0	18	24	11.5	SW9.5	30

➔ Turn page for more articles

Cutting data

HAIMER Material groups	Example material	Material no.	Tensile strength	Content/ Hardness	Cutting width			
					ap = 100% D1 ap = 1 x D1	ap = 50% D1 ap = 1.5 x D1	ap = 25% D1 ap = L1 max.	
					Cutting speed Vc (m/min)			
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>170 – 200</b>	<b>210 – 240</b>	<b>250 – 270</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>90 – 110</b>	<b>110 – 130</b>	<b>130 – 150</b>
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		40 – 80	40 – 80	40 – 80
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 650 N/mm <sup>2</sup>		30 – 60	30 – 60	30 – 60
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		110 – 130	140 – 180	200 – 220
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		90 – 110	120 – 150	160 – 180
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			50 – 60	60 – 80	80 – 90
<b>S2</b>	High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		30 – 40	30 – 40	30 – 40
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	120 – 240	120 – 240	120 – 240
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 240	120 – 240	120 – 240
<b>H1</b>	Hardened steels				45 – 55 HRC	40 – 60	60 – 80	60 – 80

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae				
	ø 10	ø 12	ø 16	ø 20
fz	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

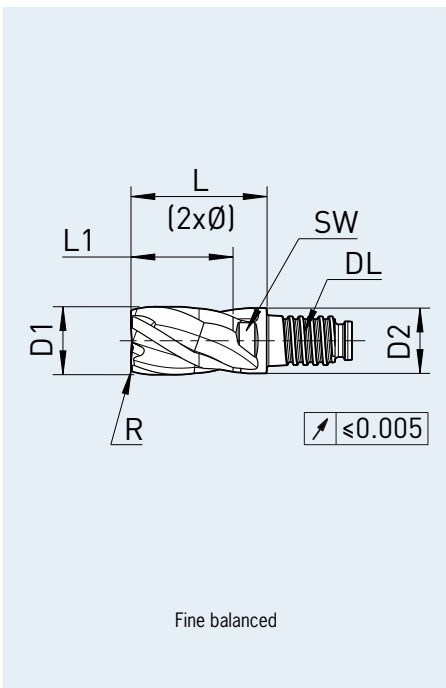
METRIC

F1004MN – DUO-LOCK® HAIMER MILL Power Series  
CORNER RADIUS

Technical data and Product characteristics



Characteristics	Application	Coolant



Material – characteristics

Main Material



also suitable for



- Particularly suitable for long overhang and cases of unstable part clamping
- Best results with carbide extension
- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Best length repeatability
- Polished flute and relief

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [mm]	Cutting edge	R [mm]	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL12F1004MN1200R4.00..	DA	DL12	12.00	R	4.0	18	24	11.5	SW9.5	30
DL16F1004MN1600R0.50..	DA	DL16	16.00	R	0.5	24	32	15.5	SW13	60
DL16F1004MN1600R0.80..	DA	DL16	16.00	R	0.8	24	32	15.5	SW13	60
DL16F1004MN1600R1.00..	DA	DL16	16.00	R	1.0	24	32	15.5	SW13	60
DL16F1004MN1600R2.00..	DA	DL16	16.00	R	2.0	24	32	15.5	SW13	60
DL16F1004MN1600R2.50..	DA	DL16	16.00	R	2.5	24	32	15.5	SW13	60
DL16F1004MN1600R3.00..	DA	DL16	16.00	R	3.0	24	32	15.5	SW13	60
DL16F1004MN1600R4.00..	DA	DL16	16.00	R	4.0	24	32	15.5	SW13	60
DL20F1004MN2000R0.50..	DA	DL20	20.00	R	0.5	30	40	19.3	SW16	80
DL20F1004MN2000R0.80..	DA	DL20	20.00	R	0.8	30	40	19.3	SW16	80
DL20F1004MN2000R1.00..	DA	DL20	20.00	R	1.0	30	40	19.3	SW16	80
DL20F1004MN2000R2.00..	DA	DL20	20.00	R	2.0	30	40	19.3	SW16	80
DL20F1004MN2000R2.50..	DA	DL20	20.00	R	2.5	30	40	19.3	SW16	80
DL20F1004MN2000R3.00..	DA	DL20	20.00	R	3.0	30	40	19.3	SW16	80
DL20F1004MN2000R4.00..	DA	DL20	20.00	R	4.0	30	40	19.3	SW16	80



## Cutting data

HAIMER Material groups	Example material	Material information	Material information		Cutting data	
			Tensile strength	Content/ Hardness	Roughing Vc (m/min)	Finishing Vc (m/min)
ANSI	Material no.					
<b>P1</b> <b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>160 – 220</b>	<b>220 – 280</b>
<b>P2</b> <b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>120 – 160</b>	<b>160 – 200</b>
<b>M1</b> Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		80 – 120	120 – 160
<b>K1</b> Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		120 – 180	180 – 240
<b>K2</b> Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		80 – 160	160 – 220
<b>S1</b> Titanium & titanium alloys	Ti6Al4V	3.7165			40 – 80	40 – 80
<b>N1</b> Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	500 – 900	500 – 900
<b>N2</b> Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 350	120 – 350
<b>H1</b> Hardened steels				45 – 55 HRC	40 – 60	60 – 80



ae = 5% D1  
ap = L1 max.

Cutting data are reference values and need to be adjusted according to the application area.


Feed per tooth Fz (mm/tooth) in relation with D1 and cutting width ae				
ae 5%	ø 16	ø 20	ø 25	ø 32
fz	0.04 – 0.12	0.05 – 0.13	0.06 – 0.17	0.07 – 0.20

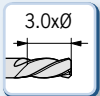
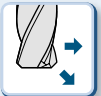








Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

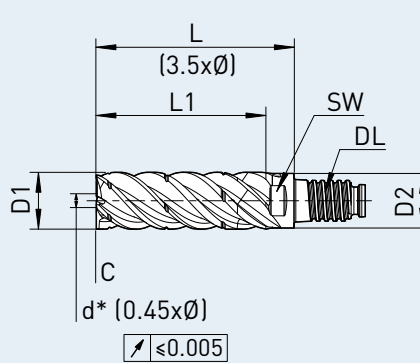
METRIC

# F1105LL – DUO-LOCK® HAIMER MILL Power Series CHAMFER CHIP BREAKER

## Technical data and Product characteristics



Characteristics	Application	Coolant
		
		
		
		



Fine balanced  
\* diameter not center cutting

### Material – characteristics

Main Material



also suitable for



- Neck for higher cutting depth
- Unequal cutting edge
- Best length repeatability
- Polished flute and relief

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (h9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL16F1105LL1600C..	DA	DL16	16.00	C	0.50	48	56	15.5	SW13	60
DL20F1105LL2000C..	DA	DL20	20.00	C	0.60	60	70	19.3	SW16	80
DL25F1105LL2500C..	DA	DL25	25.00	C	0.60	75	87.5	24.0	SW21	100
DL32F1105LL3200C..	DA	DL32	32.00	C	0.70	96	112	31.0	SW28	130

Order No. = Article Code + HAIMER Quality.

## Cutting data

HAIMER Material groups		Example material		Material information		Roughing Vc (m/min)	Finishing Vc (m/min)
		ANSI	Material no.	Tensile strength	Content/ Hardness		
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>160 – 220</b>	<b>220 – 280</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>120 – 160</b>	<b>160 – 200</b>
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		80 – 120	120 – 160
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		120 – 180	180 – 240
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		80 – 160	160 – 220
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			40 – 80	40 – 80
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	500 – 900	500 – 900
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 350	120 – 350
<b>H1</b>	Hardened steels				45 – 55 HRC	40 – 60	60 – 80

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth Fz (mm/tooth) in relation with D1 and cutting width ae						
	∅ 10	∅ 12	∅ 16	∅ 20	∅ 25	∅ 32
fz	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13	0.06 – 0.17	0.07 – 0.20

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.



F1105MN – DUO-LOCK® HAIMER MILL Power Series  
CHAMFER CHIP BREAKER

Technical data and Product characteristics



Characteristics	Application	Coolant

Fine balanced  
\* diameter not center cutting

Material – characteristics

Main Material



also suitable for



- Neck for higher cutting depth
- Unequal cutting edge
- Best length repeatability
- Polished flute and relief

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (h9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL10F1105MN1000C..	DA	DL10	10.00	C	0.30	15	20	9.6	SW8	20
DL12F1105MN1200C..	DA	DL12	12.00	C	0.30	18	24	11.5	SW9.5	30
DL16F1105MN1600C..	DA	DL16	16.00	C	0.50	24	32	15.5	SW13	60
DL20F1105MN2000C..	DA	DL20	20.00	C	0.60	30	40	19.3	SW16	80
DL25F1105MN2500C..	DA	DL25	25.00	C	0.60	37.5	50	24.0	SW21	100
DL32F1105MN3200C..	DA	DL32	32.00	C	0.70	48	64	31.0	SW28	130

Order No. = Article Code + HAIMER Quality.

## Cutting data

HAIMER Material groups		Example material		Material information		Roughing Vc (m/min)	Finishing Vc (m/min)
		ANSI	Material no.	Tensile strength	Content/ Hardness		
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>160 – 220</b>	<b>220 – 280</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>120 – 160</b>	<b>160 – 200</b>
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		80 – 120	120 – 160
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 650 N/mm <sup>2</sup>		60 – 90	90 – 120
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		120 – 180	180 – 240
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		80 – 160	160 – 220
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			40 – 80	40 – 80
<b>S2</b>	High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		30 – 40	30 – 40
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	500 – 900	500 – 900
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 350	120 – 350
<b>H1</b>	Hardened steels				45 – 55 HRC	40 – 60	60 – 80

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae										
	ø 2	ø 3	ø 4	ø 5	ø 6	ø 8	ø 10	ø 12	ø 16	ø 20
fz	0.006 – 0.018	0.009 – 0.027	0.012 – 0.036	0.015 – 0.045	0.018 – 0.054	0.024 – 0.072	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.



F2003MN - DUO-LOCK® HAIMER MILL  
SHARP CUTTING EDGE

Technical data and Product characteristics



Characteristics	Application	Coolant

Material – characteristics

Main Material



also suitable for



- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Best length repeatability
- $\varnothing 2 - \varnothing 8$  mm for universal use with DL10 interface (without neck)

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [mm]	Cutting edge	L1 max. [mm]	L [mm]	D [mm]	AF [mm]	Torque [N/m]
DL10F2003MN0200S..	DA	DL10	2.00	S	3.0	20	9.6	SW8	20
DL10F2003MN0300S..	DA	DL10	3.00	S	4.5	20	9.6	SW8	20
DL10F2003MN0400S..	DA	DL10	4.00	S	6.0	20	9.6	SW8	20
DL10F2003MN0500S..	DA	DL10	5.00	S	7.5	20	9.6	SW8	20
DL10F2003MN0600S..	DA	DL10	6.00	S	9.0	20	9.6	SW8	20
DL10F2003MN0800S..	DA	DL10	8.00	S	12.0	20	9.6	SW8	20
DL10F2003MN1000S..	DA	DL10	10.00	S	15	20	9.6	SW8	20
DL12F2003MN1200S..	DA	DL12	12.00	S	18	24	11.5	SW9.5	30
DL16F2003MN1600S..	DA	DL16	16.00	S	24	32	15.5	SW13	60
DL20F2003MN2000S..	DA	DL20	20.00	S	30	40	19.3	SW16	80

Order No. = Article Code + HAIMER Quality.

## Cutting data

HAIMER Material groups	Example material		Material information		Cutting width	
	ANSI	Material no.	Tensile strength	Content/ Hardness	Roughing Cutting Speed (SFM)	Finishing
<b>P1</b> <b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 116,000 PSI, 800MPA	up to 25 HRC	<b>525 - 725</b>	<b>725 - 920</b>
<b>P2</b> <b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 116,000 PSI, 800MPA	up to 45 HRC	<b>395 - 525</b>	<b>525 - 655</b>
<b>M1</b> Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 94,275 PSI, 650MPA		260 - 395	395 - 525
<b>M2</b> Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 94,275 PSI, 650MPA		195 - 295	295 - 395
<b>K1</b> Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 65,265 PSI, 450MPA		395 - 590	590 - 785
<b>K2</b> Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 65,265 PSI, 450MPA		260 - 525	525 - 720
<b>S1</b> Titanium & titanium alloys	Ti6Al4V	3.7165			130 - 260	130 - 260
<b>S2</b> High Temp alloys	Inconel, Nimonic				100 - 130	100 - 130
<b>N1</b> Wrought aluminum alloys	A5005, A6061, A7075	3.3315			1640 - 2950	1640 - 2950
<b>N2</b> Aluminum cast alloys	A310, A400	3.2581		Si >12%	395 - 1150	395 - 1150
<b>H1</b> Hardened steels				45 - 55 HRC	130 - 195	195 - 260

Cutting data are reference values and need to be adjusted according to the application area.

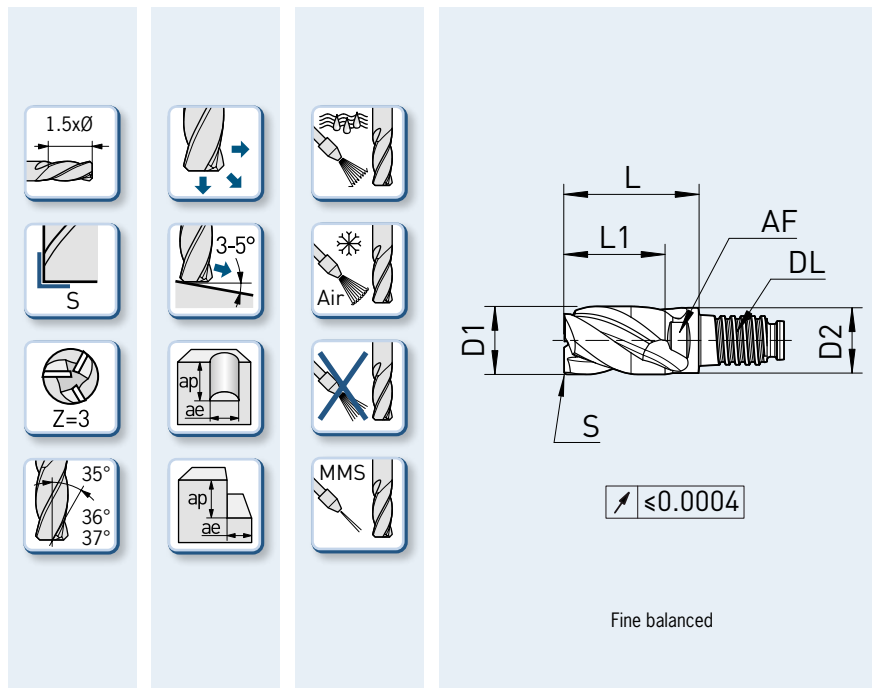
Feed per tooth (inch/tooth) in relation with D1 and cutting width ae				
Ø	3/8	1/2	5/8	3/4
fz	0.0011 - 0.0035	0.0011 - 0.0039	0.0016 - 0.0047	0.002 - 0.005

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

INCH

F2003MN – DUO-LOCK® HAIMER MILL  
SHARP CUTTING EDGE

Technical data and Product characteristics



Material – characteristics

Main Material



also suitable for



- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [inch]	Cutting edge	L1 max. [inch]	L [inch]	D2 [inch]	AF [inch]	Torque [N/m]
DL10F2003MN3/8ZS..	DA	DL10	3/8	S	0.591	0.787	0.359	0.315	20
DL12F2003MN1/2ZS..	DA	DL12	1/2	S	0.709	0.945	0.480	0.374	30
DL16F2003MN5/8ZS..	DA	DL16	5/8	S	0.945	1.260	0.605	0.512	60
DL20F2003MN3/4ZS..	DA	DL20	3/4	S	1.181	1.575	0.730	0.630	80

Order No. = Article Code + HAIMER Quality



## Cutting data

HAIMER Material groups		Example material		Material information		Roughing Vc (m/min)	Finishing Vc (m/min)
		ANSI	Material no.	Tensile strength	Content/ Hardness		
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>160 – 220</b>	<b>220 – 280</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>120 – 160</b>	<b>160 – 200</b>
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		80 – 120	120 – 160
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 650 N/mm <sup>2</sup>		60 – 90	90 – 120
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		120 – 180	180 – 240
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		80 – 160	160 – 220
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			40 – 80	40 – 80
<b>S2</b>	High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		30 – 40	30 – 40
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	500 – 900	500 – 900
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 350	120 – 350
<b>H1</b>	Hardened steels				45 – 55 HRC	40 – 60	60 – 80

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae				
	∅ 10	∅ 12	∅ 16	∅ 20
fz	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.



F2003UK – DUO-LOCK® HAIMER MILL  
SHARP CUTTING EDGE

Technical data and Product characteristics



Characteristics	Application	Coolant

Material – characteristics

Main Material



also suitable for



- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [mm]	Cutting edge	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL10F2003UK1000S..	DA	DL10	10.00	S	7.5	12.5	9.6	SW8	20
DL12F2003UK1200S..	DA	DL12	12.00	S	9	15	11.5	SW9.5	30
DL16F2003UK1600S..	DA	DL16	16.00	S	12	20	15.5	SW13	60
DL20F2003UK2000S..	DA	DL20	20.00	S	15	25	19.3	SW16	80

Order No. = Article Code + HAIMER Quality.

## Cutting data

HAIMER Material groups		Example material		Material information		Cutting width	
		ANSI	Material no.	Tensile strength	Content/ Hardness	Roughing	Finishing
		Cutting Speed (SFM)					
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 116,000 PSI, 800MPA	up to 25 HRC	<b>525 - 725</b>	<b>725 - 920</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 116,000 PSI, 800MPA	up to 45 HRC	<b>395 - 525</b>	<b>525 - 655</b>
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 94,275 PSI, 650MPA		260 - 395	395 - 525
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 94,275 PSI, 650MPA		195 - 295	295 - 395
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 65,265 PSI, 450MPA		395 - 590	590 - 785
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTMA536 100-70-06	0.7060, 0.7070	> 65,265 PSI, 450MPA		260 - 525	525 - 720
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			130 - 260	130 - 260
<b>S2</b>	High Temp alloys	Inconel, Nimonic				100 - 130	100 - 130
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315			1640 - 2950	1640 - 2950
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si >12%	395 - 1150	395 - 1150
<b>H1</b>	Hardened steels				45 - 55 HRC	130 - 195	195 - 260

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (inch/tooth) in relation with D1 and cutting width ae				
Ø	3/8	1/2	5/8	3/4
fz	0.0011 - 0.0035	0.0011 - 0.0039	0.0016 - 0.0047	0.002 - 0.005

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

INCH

F2003UK – DUO-LOCK® HAIMER MILL  
SHARP CUTTING EDGE

Technical data and Product characteristics



Material – characteristics

Main Material



also suitable for







- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [inch]	Cutting edge	L1 max. [inch]	L [inch]	D2 [inch]	AF [inch]	Torque [N/m]
DL10F2003UK3/8ZS..	DA	DL10	3/8	S	0.295	0.492	0.359	0.315	20
DL12F2003UK1/2ZS..	DA	DL12	1/2	S	0.354	0.591	0.480	0.374	30
DL16F2003UK5/8ZS..	DA	DL16	5/8	S	0.472	0.787	0.605	0.512	60
DL20F2003UK3/4ZS..	DA	DL20	3/4	S	0.591	0.984	0.730	0.630	80

Order No. = Article Code + HAIMER Quality

## Cutting data

HAIMER Material groups	Example material	Material information			Cutting width							
		ANSI	Material no.	Tensile strength	Content/ Hardness	Ramping	Cutting speed Vc (m/min)					
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038. 1.0050. 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC					ae = 100% D1 ap = 1 x D1	ae = 15% D1 ap = L1 max.	ae = 5% D1 ap = L1 max.
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367. 1.2379. 1.2363. 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>45°</b>	<b>255 – 275</b>	<b>320 – 340</b>	<b>400 – 420</b>			
<b>M1</b>	<b>Stainless steels</b>	303, 304	1.4305. 1.4301. 1.4034	≤ 650 N/mm <sup>2</sup>		<b>30°</b>	<b>190 – 210</b>	<b>220 – 240</b>	<b>290 – 310</b>			
<b>M2</b>	<b>Stainless steels</b>	316Ti, 316L	1.4571. 1.4404. 1.4418	> 650 N/mm <sup>2</sup>		<b>10°</b>	<b>95 – 110</b>	<b>115 – 135</b>	<b>150 – 170</b>			
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020. 0.6040. 0.7040	≤ 450 N/mm <sup>2</sup>		<b>5°</b>	<b>75 – 90</b>	<b>95 – 105</b>	<b>110 – 130</b>			
<b>K2</b>	Cast iron	ASTM A536 80- 55-06, ASTMA536 100-70-06	0.7060. 0.7070	> 450 N/mm <sup>2</sup>		<b>45°</b>	160 – 180	180 – 200	210 – 230			
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			<b>20°</b>	130 – 150	150 – 170	180 – 200			
<b>S2</b>	High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		<b>10°</b>	50 – 60	60 – 80	80 – 90			
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	<b>5°</b>	30 – 40	30 – 40	30 – 40			
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si > 9%	<b>30°</b>	470 – 490	600 – 630	780 – 820			
<b>H1</b>	Hardened steels				45 – 55 HRC	<b>30°</b>	340 – 360	420 – 440	540 – 580			
						<b>10°</b>	40 – 60	60 – 80	60 – 80			

Cutting data are reference values and need to be adjusted according to the application area.  
Chip removal recommended for drilling depth 0.5 – 1 x D.

Feed per tooth Fz (mm/tooth) in relation with D1 and cutting width ae						
	ø 2	ø 3	ø 4	ø 5	ø 6	ø 8
fz	0.006 – 0.018	0.009 – 0.027	0.012 – 0.036	0.015 – 0.045	0.018 – 0.054	0.024 – 0.072
	ø 10	ø 12	ø 16	ø 20	ø 25	ø 32
fz	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13	0.06 – 0.17	0.07 – 0.20

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

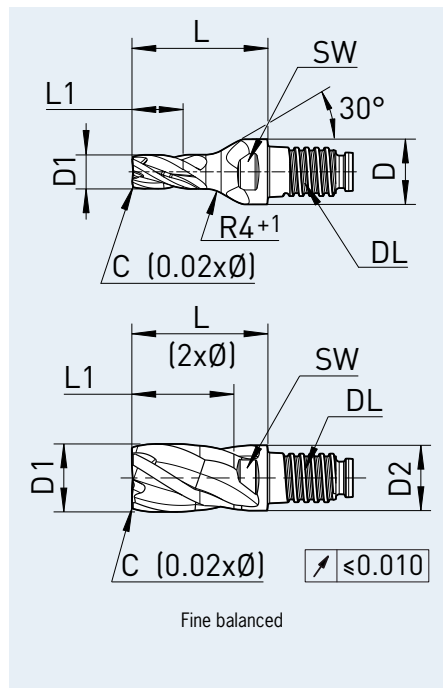
METRIC

F2004MN – DUO-LOCK® HAIMER MILL CHAMFER

Technical data and Product characteristics



Characteristics	Application	Coolant



Material – characteristics

Main Material

also suitable for







- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Best length repeatability
- $\varnothing 2 - \varnothing 8$  for universal use with DL10 interface (without neck)

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	D [mm]	AF [mm]	Torque [N/m]
DL10F2004MN0200C..	DA	DL10	2.00	C	0.04	3.0	20	9.6	SW8	20
DL10F2004MN0300C..	DA	DL10	3.00	C	0.06	4.5	20	9.6	SW8	20
DL10F2004MN0400C..	DA	DL10	4.00	C	0.08	6.0	20	9.6	SW8	20
DL10F2004MN0500C..	DA	DL10	5.00	C	0.10	7.5	20	9.6	SW8	20
DL10F2004MN0600C..	DA	DL10	6.00	C	0.12	9.0	20	9.6	SW8	20
DL10F2004MN0800C..	DA	DL10	8.00	C	0.16	12.0	20	9.6	SW8	20
DL10F2004MN1000C..	DA	DL10	10.00	C	0.20	15	20	9.6	SW8	20
DL12F2004MN1200C..	DA	DL12	12.00	C	0.24	18	24	11.5	SW9.5	30
DL16F2004MN1600C..	DA	DL16	16.00	C	0.32	24	32	15.5	SW13	60
DL20F2004MN2000C..	DA	DL20	20.00	C	0.40	30	40	19.3	SW16	80
DL25F2004MN2500C..	DA	DL25	25.00	C	0.50	37.5	50	24.0	SW21	100
DL32F2004MN3200C..	DA	DL32	32.00	C	0.64	48	64	31.0	SW28	130

Order No. = Article Code + HAIMER Quality.

Cutting data

HAIMER Material groups	Example material		Material information		Ramping	Cutting width			
	ANSI	Material no.	Tensile strength	Content/ Hardness					
						ae = 100% D1 ap = 1 x D1	ae = 15% D1 ap = L1 max.	ae = 5% D1 ap = L1 max.	
						Cutting Speed (SFM)			
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 116,000 PSI, 800MPa	up to 25 HRC	<b>45°</b>	<b>835 - 900</b>	<b>1050 - 1115</b>	<b>1310 - 1380</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 116,000 PSI, 800MPa	up to 45 HRC	<b>30°</b>	<b>625 - 690</b>	<b>720 - 785</b>	<b>950 - 1015</b>
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 94,275 PSI, 650MPa		10°	310 - 360*	375 - 445	490 - 560
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 94,275 PSI, 650MPa		5°	245 - 295*	310 - 345	360 - 425
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 65,265 PSI, 450MPa		45°	525 - 590	590 - 655	690 - 755
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 65,265 PSI, 450MPa		20°	425 - 490	490 - 560	590 - 655
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			10°	165 - 195*	195 - 260	260 - 295
<b>S2</b>	High Temp alloys	Inconel, Nimonic				5°	100 - 130	100 - 130	100 - 130
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315			30°	1540 - 1610	1970 - 2065	2560 - 2690
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si > 12%	30°	1115 - 1180	1380 - 1440	1770 - 1900
<b>H1</b>	Hardened steels				45 - 55 HRC	10°	130 - 195	195 - 260	195 - 260

Cutting data are reference values and need to be adjusted according to the application area.  
Chip removal recommended for drilling depth 0.5 – 1 x D.

Feed per tooth (inch/tooth) in relation with D1 and cutting width ae						
Ø	3/8	1/2	5/8	3/4	1	1 1/4
fz	0.0011 - 0.0035	0.0011 - 0.0039	0.0016 - 0.0047	0.002 - 0.005	0.0024 - 0.0067	0.0027 - 0.0079

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

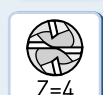
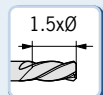
INCH

F2004MN – DUO-LOCK® HAIMER MILL CHAMFER

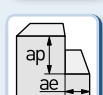
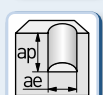
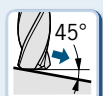
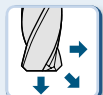
Technical data and Product characteristics



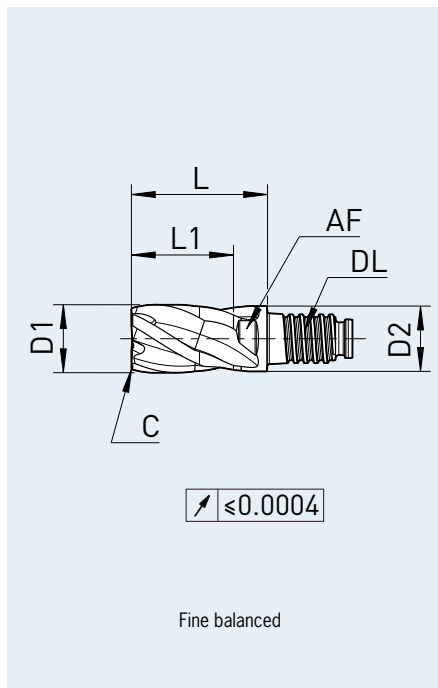
Characteristics



Application



Coolant



Material – characteristics

Main Material



also suitable for



- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [inch]	Cutting edge	Size [inch]	L1 max. [inch]	L [inch]	D2 [inch]	AF [inch]	Torque [N/m]
DL10F2004MN3/8ZC..	DA	DL10	3/8	C	0.008	0.591	0.787	0.359	0.315	20
DL12F2004MN1/2ZC..	DA	DL12	1/2	C	0.010	0.709	0.945	0.480	0.374	30
DL16F2004MN5/8ZC..	DA	DL16	5/8	C	0.013	0.945	1.260	0.605	0.512	60
DL20F2004MN3/4ZC..	DA	DL20	3/4	C	0.015	1.181	1.575	0.730	0.630	80
DL25F2004MN1ZC..	DA	DL25	1	C	0.020	1.476	1.970	0.961	0.827	100
DL32F2004MN11/4ZC..	DA	DL32	11/4	C	0.025	1.890	2.520	1.211	1.102	130

Order No. = Article Code + HAIMER Quality



## Cutting data

HAIMER Material groups	Example material	Material information	Cutting width					
			Ramping	Cutting speed Vc (m/min)				
ANSI	Material no.	Tensile strength	Content/ Hardness					
<b>P1</b> General construction steels	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	45°	255 – 275	320 – 340	400 – 420
<b>P2</b> Heat treated steels	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	30°	190 – 210	220 – 240	290 – 310
<b>M1</b> Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		10°	95 – 110	115 – 135	150 – 170
<b>M2</b> Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 650 N/mm <sup>2</sup>		5°	75 – 90	95 – 105	110 – 130
<b>K1</b> Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		45°	160 – 180	180 – 200	210 – 230
<b>K2</b> Cast iron	ASTM A536 80-55-06, ASTMA536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		20°	130 – 150	150 – 170	180 – 200
<b>S1</b> Titanium & titanium alloys	Ti6Al4V	3.7165			10°	50 – 60	60 – 80	80 – 90
<b>S2</b> High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		5°	30 – 40	30 – 40	30 – 40
<b>N1</b> Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	30°	470 – 490	600 – 630	780 – 820
<b>N2</b> Aluminum cast alloys	A310, A400	3.2581		Si > 9%	30°	340 – 360	420 – 440	540 – 580
<b>H1</b> Hardened steels				45 – 55 HRC	10°	40 – 60	60 – 80	60 – 80

Cutting data are reference values and need to be adjusted according to the application area.  
Chip removal recommended for drilling depth 0.5 – 1 x D.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae				
	∅ 10	∅ 12	∅ 16	∅ 20
fz	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.



F2004MN – DUO-LOCK® HAIMER MILL  
CORNER RADIUS

Technical data and Product characteristics



Characteristics	Application	Coolant

Material – characteristics

Main Material

also suitable for







- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [mm]	Cutting edge	R [mm]	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL10F2004MN1000R0.30..	DA	DL10	10.00	R	0.3	15	20	9.6	SW8	20
DL10F2004MN1000R0.50..	DA	DL10	10.00	R	0.5	15	20	9.6	SW8	20
DL10F2004MN1000R0.80..	DA	DL10	10.00	R	0.8	15	20	9.6	SW8	20
DL10F2004MN1000R1.00..	DA	DL10	10.00	R	1.0	15	20	9.6	SW8	20
DL10F2004MN1000R1.50..	DA	DL10	10.00	R	1.5	15	20	9.6	SW8	20
DL10F2004MN1000R2.00..	DA	DL10	10.00	R	2.0	15	20	9.6	SW8	20
DL10F2004MN1000R2.50..	DA	DL10	10.00	R	2.5	15	20	9.6	SW8	20
DL12F2004MN1200R0.50..	DA	DL12	12.00	R	0.5	18	24	11.5	SW9.5	30
DL12F2004MN1200R0.80..	DA	DL12	12.00	R	0.8	18	24	11.5	SW9.5	30
DL12F2004MN1200R1.00..	DA	DL12	12.00	R	1.0	18	24	11.5	SW9.5	30
DL12F2004MN1200R2.00..	DA	DL12	12.00	R	2.0	18	24	11.5	SW9.5	30
DL12F2004MN1200R2.50..	DA	DL12	12.00	R	2.5	18	24	11.5	SW9.5	30
DL12F2004MN1200R3.00..	DA	DL12	12.00	R	3.0	18	24	11.5	SW9.5	30
DL12F2004MN1200R4.00..	DA	DL12	12.00	R	4.0	18	24	11.5	SW9.5	30

⇒ Turn page for more articles

Order No. = Article Code + HAIMER Quality.

## Cutting data

HAIMER Material groups	Example material	Material information			Cutting width					
		ANSI	Material no.	Tensile strength	Content/ Hardness	Ramping	Cutting speed Vc (m/min)			
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC					
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>45°</b>	<b>255 – 275</b>	<b>320 – 340</b>	<b>400 – 420</b>	
<b>M1</b>	<b>Stainless steels</b>	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		<b>30°</b>	<b>190 – 210</b>	<b>220 – 240</b>	<b>290 – 310</b>	
<b>M2</b>	<b>Stainless steels</b>	316Ti, 316L	1.4571, 1.4404, 1.4418	> 650 N/mm <sup>2</sup>		<b>10°</b>	<b>95 – 110</b>	<b>115 – 135</b>	<b>150 – 170</b>	
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		<b>5°</b>	<b>75 – 90</b>	<b>95 – 105</b>	<b>110 – 130</b>	
<b>K2</b>	Cast iron	ASTM A536 80- 55-06, ASTMA536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		<b>45°</b>	<b>160 – 180</b>	<b>180 – 200</b>	<b>210 – 230</b>	
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			<b>20°</b>	<b>130 – 150</b>	<b>150 – 170</b>	<b>180 – 200</b>	
<b>S2</b>	High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		<b>10°</b>	<b>50 – 60</b>	<b>60 – 80</b>	<b>80 – 90</b>	
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	<b>5°</b>	<b>30 – 40</b>	<b>30 – 40</b>	<b>30 – 40</b>	
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si > 9%	<b>30°</b>	<b>470 – 490</b>	<b>600 – 630</b>	<b>780 – 820</b>	
<b>H1</b>	Hardened steels				45 – 55 HRC	<b>30°</b>	<b>340 – 360</b>	<b>420 – 440</b>	<b>540 – 580</b>	
						<b>10°</b>	<b>40 – 60</b>	<b>60 – 80</b>	<b>60 – 80</b>	

Cutting data are reference values and need to be adjusted according to the application area.  
Chip removal recommended for drilling depth 0.5 – 1 x D.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae				
	∅ 10	∅ 12	∅ 16	∅ 20
fz	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.



F2004MN – DUO-LOCK® HAIMER MILL  
CORNER RADIUS

Technical data and Product characteristics



Characteristics	Application	Coolant

Material – characteristics

Main Material

also suitable for



- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL16F2004MN1600R0.50..	DA	DL16	16.00	R	0.5	24	32	15.5	SW13	60
DL16F2004MN1600R0.80..	DA	DL16	16.00	R	0.8	24	32	15.5	SW13	60
DL16F2004MN1600R1.00..	DA	DL16	16.00	R	1.0	24	32	15.5	SW13	60
DL16F2004MN1600R2.00..	DA	DL16	16.00	R	2.0	24	32	15.5	SW13	60
DL16F2004MN1600R2.50..	DA	DL16	16.00	R	2.5	24	32	15.5	SW13	60
DL16F2004MN1600R3.00..	DA	DL16	16.00	R	3.0	24	32	15.5	SW13	60
DL16F2004MN1600R4.00..	DA	DL16	16.00	R	4.0	24	32	15.5	SW13	60
DL20F2004MN2000R0.50..	DA	DL20	20.00	R	0.5	30	40	19.3	SW16	80
DL20F2004MN2000R0.80..	DA	DL20	20.00	R	0.8	30	40	19.3	SW16	80
DL20F2004MN2000R2.00..	DA	DL20	20.00	R	2.0	30	40	19.3	SW16	80
DL20F2004MN2000R2.50..	DA	DL20	20.00	R	2.5	30	40	19.3	SW16	80
DL20F2004MN2000R3.00..	DA	DL20	20.00	R	3.0	30	40	19.3	SW16	80
DL20F2004MN2000R4.00..	DA	DL20	20.00	R	4.0	30	40	19.3	SW16	80

Order No. = Article Code + HAIMER Quality.

Cutting data

HAIMER Material groups	Example material ANSI	Material no.	Material information		Ramping	Cutting width			
			Tensile strength	Content/ Hardness					Cutting Speed (SFM)
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 116,000 PSI, 800MPa	up to 25 HRC	<b>45°</b>	<b>835 - 900</b>	<b>1050 - 1115</b>	<b>1310 - 1380</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 116,000 PSI, 800MPa	up to 45 HRC	<b>30°</b>	<b>625 - 690</b>	<b>720 - 785</b>	<b>950 - 1015</b>
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 94,275 PSI, 650MPa		10°	310 - 360*	375 - 445	490 - 560
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 94,275 PSI, 650MPa		5°	245 - 295*	310 - 345	360 - 425
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 65,265 PSI, 450MPa		45°	525 - 590	590 - 655	690 - 755
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 65,265 PSI, 450MPa		20°	425 - 490	490 - 560	590 - 655
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			10°	165 - 195*	195 - 260	260 - 295
<b>S2</b>	High Temp alloys	Inconel, Nimonic				5°	100 - 130	100 - 130	100 - 130
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315			30°	1540 - 1610	1970 - 2065	2560 - 2690
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si >12%	30°	1115 - 1180	1380 - 1440	1770 - 1900
<b>H1</b>	Hardened steels				45 - 55 HRC	10°	130 - 195	195 - 260	195 - 260

Cutting data are reference values and need to be adjusted according to the application area.  
Chip removal recommended for drilling depth 0.5 – 1 x D.

Feed per tooth (inch/tooth) in relation with D1 and cutting width ae				
Ø	3/8	1/2	5/8	3/4
fz	0.0011 - 0.0035	0.0011 - 0.0039	0.0016 - 0.0047	0.002 - 0.005

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

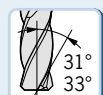
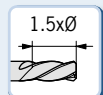
INCH

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CORNER RADIUS

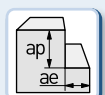
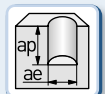
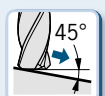
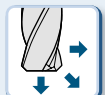
Technical data and Product characteristics



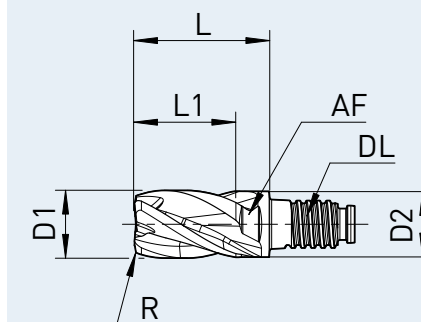
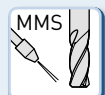
Characteristics



Application



Coolant



⚡ ≤0.0004

Fine balanced

Material – characteristics

Main Material







also suitable for



- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (φ9) [inch]	Cutting edge	Size [inch]	L1 max. [inch]	L [inch]	D2 [inch]	AF [inch]	Torque [N/m]
DL10F2004MN3/8ZR.015..	DA	DL10	3/8	R	0.015	0.591	0.787	0.359	0.315	20
DL10F2004MN3/8ZR.030..	DA	DL10	3/8	R	0.030	0.591	0.787	0.359	0.315	20
DL10F2004MN3/8ZR.060..	DA	DL10	3/8	R	0.060	0.591	0.787	0.359	0.315	20
DL12F2004MN1/2ZR.015..	DA	DL12	1/2	R	0.015	0.709	0.945	0.480	0.374	30
DL12F2004MN1/2ZR.030..	DA	DL12	1/2	R	0.030	0.709	0.945	0.480	0.374	30
DL12F2004MN1/2ZR.060..	DA	DL12	1/2	R	0.060	0.709	0.945	0.480	0.374	30
DL16F2004MN5/8ZR.015..	DA	DL16	5/8	R	0.015	0.945	1.260	0.605	0.512	60
DL16F2004MN5/8ZR.030..	DA	DL16	5/8	R	0.030	0.945	1.260	0.605	0.512	60
DL16F2004MN5/8ZR.060..	DA	DL16	5/8	R	0.060	0.945	1.260	0.605	0.512	60
DL16F2004MN5/8ZR.090..	DA	DL16	5/8	R	0.090	0.945	1.260	0.605	0.512	60
DL16F2004MN5/8ZR.125..	DA	DL16	5/8	R	0.125	0.945	1.260	0.605	0.512	60
DL20F2004MN3/4ZR.030..	DA	DL20	3/4	R	0.030	1.181	1.575	0.730	0.630	80
DL20F2004MN3/4ZR.060..	DA	DL20	3/4	R	0.060	1.181	1.575	0.730	0.630	80
DL20F2004MN3/4ZR.090..	DA	DL20	3/4	R	0.090	1.181	1.575	0.730	0.630	80
DL20F2004MN3/4ZR.125..	DA	DL20	3/4	R	0.125	1.181	1.575	0.730	0.630	80
DL20F2004MN3/4ZR.150..	DA	DL20	3/4	R	0.150	1.181	1.575	0.730	0.630	80

## Cutting data

HAIMER Material groups	Example material	Material information			Cutting width							
		ANSI	Material no.	Tensile strength	Content/ Hardness	Ramping	Cutting speed Vc (m/min)					
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC					ae = 100% D1 ap = 1 x D1	ae = 15% D1 ap = L1 max.	ae = 5% D1 ap = L1 max.
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>45°</b>	<b>255 – 275</b>	<b>320 – 340</b>	<b>400 – 420</b>			
<b>M1</b>	<b>Stainless steels</b>	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		<b>30°</b>	<b>190 – 210</b>	<b>220 – 240</b>	<b>290 – 310</b>			
<b>M2</b>	<b>Stainless steels</b>	316Ti, 316L	1.4571, 1.4404, 1.4418	> 650 N/mm <sup>2</sup>		<b>10°</b>	<b>95 – 110</b>	<b>115 – 135</b>	<b>150 – 170</b>			
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		<b>5°</b>	<b>75 – 90</b>	<b>95 – 105</b>	<b>110 – 130</b>			
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		<b>45°</b>	<b>160 – 180</b>	<b>180 – 200</b>	<b>210 – 230</b>			
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			<b>20°</b>	<b>130 – 150</b>	<b>150 – 170</b>	<b>180 – 200</b>			
<b>S2</b>	High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		<b>10°</b>	<b>50 – 60</b>	<b>60 – 80</b>	<b>80 – 90</b>			
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	<b>5°</b>	<b>30 – 40</b>	<b>30 – 40</b>	<b>30 – 40</b>			
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si > 9%	<b>30°</b>	<b>470 – 490</b>	<b>600 – 630</b>	<b>780 – 820</b>			
<b>H1</b>	Hardened steels				45 – 55 HRC	<b>30°</b>	<b>340 – 360</b>	<b>420 – 440</b>	<b>540 – 580</b>			
						<b>10°</b>	<b>40 – 60</b>	<b>60 – 80</b>	<b>60 – 80</b>			

Cutting data are reference values and need to be adjusted according to the application area.  
Chip removal recommended for drilling depth 0.5 – 1 x D.

Feed per tooth Fz (mm/tooth) in relation with D1 and cutting width ae						
	ø 10	ø 12	ø 16	ø 20	ø 25	ø 32
fz	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13	0.06 – 0.17	0.07 – 0.20

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.



# F2004UK – DUO-LOCK® HAIMER MILL CHAMFER

## Technical data and Product characteristics



Characteristics	Application	Coolant

### Material – characteristics

Main Material

also suitable for







- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL10F2004UK1000C..	DA	DL10	10.00	C	0.20	7.5	12.5	9.6	SW8	20
DL12F2004UK1200C..	DA	DL12	12.00	C	0.24	9	15	11.5	SW9.5	30
DL16F2004UK1600C..	DA	DL16	16.00	C	0.32	12	20	15.5	SW13	60
DL20F2004UK2000C..	DA	DL20	20.00	C	0.40	15	25	19.3	SW16	80
DL25F2004UK2500C..	DA	DL25	25.00	C	0.50	18.75	31.25	24.0	SW21	100
DL32F2004UK3200C..	DA	DL32	32.00	C	0.64	24	40	31.0	SW28	130

Order No. = Article Code + HAIMER Quality.



## Cutting data

HAIMER Material groups	Example material		Material information		Cutting width					
	ANSI	Material no.	Tensile strength	Content/ Hardness						
					Ramping	Cutting Speed (SFM)				
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 116,000 PSI, 800MPa	up to 25 HRC	<b>45°</b>	<b>835 - 900</b>	<b>1050 - 1115</b>	<b>1310 - 1380</b>	
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 116,000 PSI, 800MPa	up to 45 HRC	<b>30°</b>	<b>625 - 690</b>	<b>720 - 785</b>	<b>950 - 1015</b>	
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 94,275 PSI, 650MPa		10°	310 - 360*	375 - 445	490 - 560	
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 94,275 PSI, 650MPa		5°	245 - 295*	310 - 345	360 - 425	
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 65,265 PSI, 450MPa		45°	525 - 590	590 - 655	690 - 755	
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 65,265 PSI, 450MPa		20°	425 - 490	490 - 560	590 - 655	
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			10°	165 - 195*	195 - 260	260 - 295	
<b>S2</b>	High Temp alloys	Inconel, Nimonic				5°	100 - 130	100 - 130	100 - 130	
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315			30°	1540 - 1610	1970 - 2065	2560 - 2690	
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si >12%	30°	1115 - 1180	1380 - 1440	1770 - 1900	
<b>H1</b>	Hardened steels				45 - 55 HRC	10°	130 - 195	195 - 260	195 - 260	

Cutting data are reference values and need to be adjusted according to the application area.  
Chip removal recommended for drilling depth 0.5 – 1 x D.

Feed per tooth (inch/tooth) in relation with D1 and cutting width ae						
Ø	3/8	1/2	5/8	3/4	1	1 1/4
fz	0.0011 - 0.0035	0.0011 - 0.0039	0.0016 - 0.0047	0.002 - 0.005	0.0024 - 0.0067	0.0027 - 0.0079

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

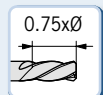
INCH

F2004UK – DUO-LOCK® HAIMER MILL CHAMFER

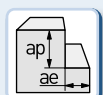
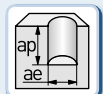
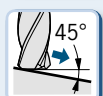
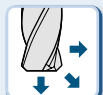
Technical data and Product characteristics



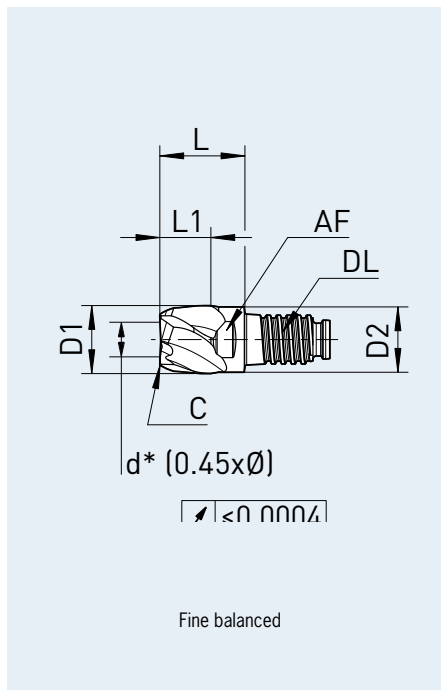
Characteristics



Application



Coolant



Material – characteristics

Main Material



also suitable for




- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [inch]	Cutting edge	Size [inch]	L1 max. [inch]	L [inch]	D2 [inch]	AF [inch]	Torque [N/m]
DL10F2004UK3/8ZC..	DA	DL10	3/8	C	0.008	0.295	0.492	0.359	0.315	20
DL12F2004UK1/2ZC..	DA	DL12	1/2	C	0.010	0.354	0.591	0.480	0.374	30
DL16F2004UK5/8ZC..	DA	DL16	5/8	C	0.013	0.472	0.787	0.605	0.512	60
DL20F2004UK3/4ZC..	DA	DL20	3/4	C	0.015	0.591	0.984	0.730	0.630	80
DL25F2004UK1ZC..	DA	DL25	1	C	0.020	0.738	1.230	0.961	0.827	100
DL32F2004UK11/4ZC..	DA	DL32	11/4	C	0.025	0.945	1.575	1.211	1.102	130

Order No. = Article Code + HAIMER Quality

## Cutting data

HAIMER Material groups		Example material		Material information		Cutting width
						 ae = 5% D1 ap = L1 max.
		ANSI	Material no.	Tensile strength	Content/ Hardness	Cutting speed Vc (m/min)
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>220 – 280</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>160 – 200</b>
<b>M1</b>	<b>Stainless steels</b>	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		<b>120 – 160</b>
<b>M2</b>	<b>Stainless steels</b>	316Ti, 316L	1.4571, 1.4404, 1.4418	> 650 N/mm <sup>2</sup>		<b>90 – 120</b>
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		180 – 240
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTMA536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		160 – 220
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			40 – 80
<b>S2</b>	High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		30 – 40
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	500 – 900
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 350
<b>H1</b>	Hardened steels				45 – 55 HRC	60 – 80

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae				
ae 5%	ø 10	ø 12	ø 16	ø 20
fz	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

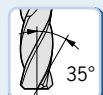
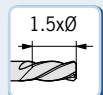


# F2006/08/00MN – DUO-LOCK® HAIMER MILL CHAMFER FINISHING

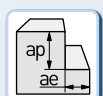
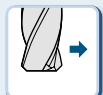
## Technical data and Product characteristics



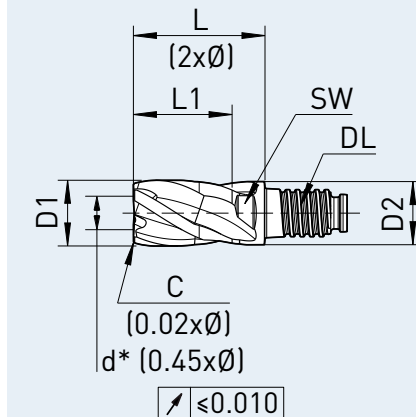
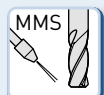
### Characteristics



### Application



### Coolant



Fine balanced  
\* diameter not center cutting

### Material – characteristics

#### Main Material

also suitable for



- Neck for higher cutting depth
- Unequal cutting edge
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [mm]	Cutting edge	No. teeth	Size [mm]	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL10F2006MN1000C..	DA	DL10	10.00	C	6	0.2	15	20	9.6	SW8	20
DL12F2006MN1200C..	DA	DL12	12.00	C	6	0.24	18	24	11.5	SW9.5	30
DL16F2008MN1600C..	DA	DL16	16.00	C	8	0.32	24	32	15.5	SW13	60
DL20F2000MN2000C..	DA	DL20	20.00	C	10	0.4	30	40	19.3	SW16	80

Order No. = Article Code + HAIMER Quality.

## Cutting data

HAIMER Material groups		Example material		Material information		Cutting width
		ANSI	Material no.	Tensile strength	Content/ Hardness	Cutting Speed (SFM)
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 116,000 PSI, 800MPA	up to 25 HRC	<b>725 - 920</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 116,000 PSI, 800MPA	up to 45 HRC	<b>525 - 655</b>
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 94,275 PSI, 650MPA		395 - 525
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 94,275 PSI, 650MPA		295 - 395
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 65,265 PSI, 450MPA		590 - 785
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 65,265 PSI, 450MPA		525 - 720
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			130 - 260
<b>S2</b>	High Temp alloys	Inconel, Nimonic				100 - 130
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315			1640 - 2950
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si >12%	395 - 1150
<b>H1</b>	Hardened steels				45 - 55 HRC	195 - 260



ae = 5% D1  
ap = L1 max.

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (inch/tooth) in relation with D1 and cutting width ae				
Ø	3/8	1/2	5/8	3/4
fz	0.0011 - 0.0035	0.0011 - 0.0039	0.0016 - 0.0047	0.002 - 0.005

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

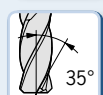
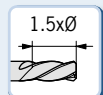
INCH

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CHAMFER FINISHING

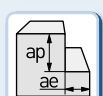
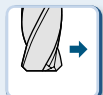
Technical data and Product characteristics



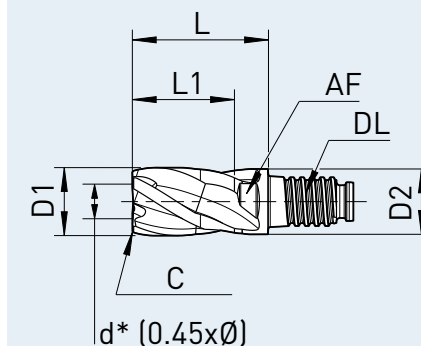
Characteristics



Application



Coolant



↗ ≤0.0004

Fine balanced  
\* diameter not center cutting

Material – characteristics

Main Material



also suitable for




- Neck for higher cutting depth
- Unequal cutting edge
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [inch]	Cutting edge	Size [inch]	Z	L1 max. [inch]	L [inch]	D2 [inch]	AF [inch]	Torque [N/m]
DL10F2006MN3/8ZC..	DA	DL10	3/8	C	0.008	6	0.591	0.787	0.359	0.315	20
DL12F2006MN1/2ZC..	DA	DL12	1/2	C	0.010	6	0.709	0.945	0.480	0.374	30
DL16F2008MN5/8ZC..	DA	DL16	5/8	C	0.013	8	0.945	1.260	0.605	0.512	60
DL20F2000MN3/4ZC..	DA	DL20	3/4	C	0.015	10	1.181	1.575	0.730	0.630	80

Order No. = Article Code + HAIMER Quality

## Cutting data

HAIMER Material groups		Example material		Material information		Cutting width
						 ae = 5% D1 ap = L1 max.
		ANSI	Material no.	Tensile strength	Content/ Hardness	Cutting speed Vc (m/min)
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>220 – 280</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>160 – 200</b>
<b>M1</b>	<b>Stainless steels</b>	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		<b>120 – 160</b>
<b>M2</b>	<b>Stainless steels</b>	316Ti, 316L	1.4571, 1.4404, 1.4418	> 650 N/mm <sup>2</sup>		<b>90 – 120</b>
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		180 – 240
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTMA536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		160 – 220
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			40 – 80
<b>S2</b>	High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		30 – 40
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	500 – 900
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 350
<b>H1</b>	Hardened steels				45 – 55 HRC	60 – 80

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae				
ae 5%	ø 10	ø 12	ø 16	ø 20
fz	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

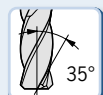
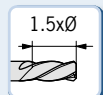
METRIC

F2006/08/00MN – DUO-LOCK® HAIMER MILL  
CORNER RADIUS FINISHING

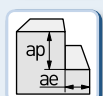
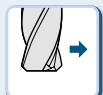
Technical data and Product characteristics



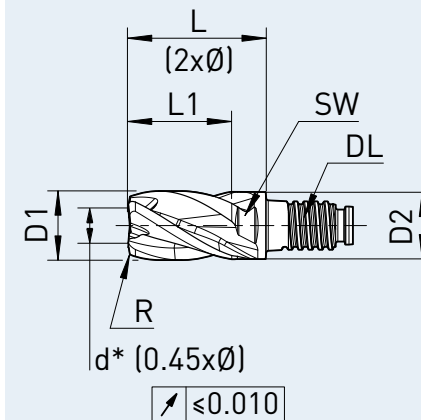
Characteristics



Application



Coolant



Fine balanced  
\* diameter not center cutting

Material – characteristics

Main Material

also suitable for




- Neck for higher cutting depth
- Unequal cutting edge
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [mm]	Cutting edge	No. teeth	Size [mm]	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL10F2006MN1000R0.50..	DA	DL10	10.00	R	6	0.50	15	20	9.6	SW8	20
DL10F2006MN1000R1.00..	DA	DL10	10.00	R	6	1.00	15	20	9.6	SW8	20
DL10F2006MN1000R1.50..	DA	DL10	10.00	R	6	1.50	15	20	9.6	SW8	20
DL10F2006MN1000R2.00..	DA	DL10	10.00	R	6	2.00	15	20	9.6	SW8	20
DL12F2006MN1200R0.50..	DA	DL12	12.00	R	6	0.50	18	24	11.5	SW9.5	30
DL12F2006MN1200R1.00..	DA	DL12	12.00	R	6	1.00	18	24	11.5	SW9.5	30
DL12F2006MN1200R2.00..	DA	DL12	12.00	R	6	2.00	18	24	11.5	SW9.5	30
DL16F2008MN1600R0.50..	DA	DL16	16.00	R	8	0.50	24	32	15.5	SW13	60
DL16F2008MN1600R1.00..	DA	DL16	16.00	R	8	1.00	24	32	15.5	SW13	60
DL16F2008MN1600R2.00..	DA	DL16	16.00	R	8	2.00	24	32	15.5	SW13	60
DL16F2008MN1600R4.00..	DA	DL16	16.00	R	8	4.00	24	32	15.5	SW13	60
DL20F2000MN2000R0.50..	DA	DL20	20.00	R	10	0.50	30	40	19.3	SW16	80
DL20F2000MN2000R2.00..	DA	DL20	20.00	R	10	2.00	30	40	19.3	SW16	80
DL20F2000MN2000R4.00..	DA	DL20	20.00	R	10	4.00	30	40	19.3	SW16	80

Order No. = Article Code + HAIMER Quality.



## Cutting data

HAIMER Material groups		Example material		Material information		Cutting width  ae = 5% D1 ap = L1 max.	Cutting Speed (SFM)
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 116,000 PSI, 800MPA	up to 25 HRC	<b>725 - 920</b>	
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 116,000 PSI, 800MPA	up to 45 HRC	<b>525 - 655</b>	
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 94,275 PSI, 650MPA		395 - 525	
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 94,275 PSI, 650MPA		295 - 395	
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 65,265 PSI, 450MPA		590 - 785	
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 65,265 PSI, 450MPA		525 - 720	
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			130 - 260	
<b>S2</b>	High Temp alloys	Inconel, Nimonic				100 - 130	
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315			1640 - 2950	
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si >12%	395 - 1150	
<b>H1</b>	Hardened steels				45 - 55 HRC	195 - 260	

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (inch/tooth) in relation with D1 and cutting width ae				
Ø	3/8	1/2	5/8	3/4
fz	0.0011 - 0.0035	0.0011 - 0.0039	0.0016 - 0.0047	0.002 - 0.005

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

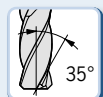
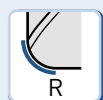
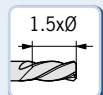
INCH

# F2006/08/00MN – DUO-LOCK® HAIMER MILL CORNER RADIUS FINISHING

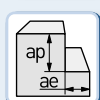
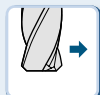
## Technical data and Product characteristics



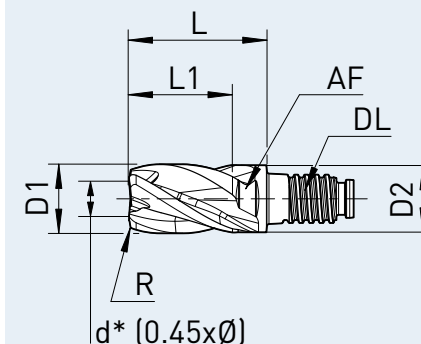
### Characteristics



### Application



### Coolant



↗ ≤0.0004

Fine balanced  
\* diameter not center cutting

## Material – characteristics

### Main Material




### also suitable for



- Neck for higher cutting depth
- Unequal cutting edge
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [inch]	Cutting edge	Size [inch]	Z	L1 max. [inch]	L [inch]	D2 [inch]	AF [inch]	Torque [N/m]
DL10F2006MN3/8ZR.015..	DA	DL10	3/8	R	0.015	6	0.591	0.787	0.359	0.315	20
DL10F2006MN3/8ZR.030..	DA	DL10	3/8	R	0.030	6	0.591	0.787	0.359	0.315	20
DL10F2006MN3/8ZR.060..	DA	DL10	3/8	R	0.060	6	0.591	0.787	0.359	0.315	20
DL12F2006MN1/2ZR.015..	DA	DL12	1/2	R	0.015	6	0.709	0.945	0.480	0.374	30
DL12F2006MN1/2ZR.030..	DA	DL12	1/2	R	0.030	6	0.709	0.945	0.480	0.374	30
DL12F2006MN1/2ZR.060..	DA	DL12	1/2	R	0.060	6	0.709	0.945	0.480	0.374	30
DL16F2008MN5/8ZR.015..	DA	DL16	5/8	R	0.015	8	0.945	1.260	0.605	0.512	60
DL16F2008MN5/8ZR.030..	DA	DL16	5/8	R	0.030	8	0.945	1.260	0.605	0.512	60
DL16F2008MN5/8ZR.060..	DA	DL16	5/8	R	0.060	8	0.945	1.260	0.605	0.512	60
DL16F2008MN5/8ZR.090..	DA	DL16	5/8	R	0.090	8	0.945	1.260	0.605	0.512	60
DL16F2008MN5/8ZR.125..	DA	DL16	5/8	R	0.125	8	0.945	1.260	0.605	0.512	60
DL20F2000MN3/4ZR.030..	DA	DL20	3/4	R	0.030	10	1.181	1.575	0.730	0.630	80
DL20F2000MN3/4ZR.060..	DA	DL20	3/4	R	0.060	10	1.181	1.575	0.730	0.630	80
DL20F2000MN3/4ZR.090..	DA	DL20	3/4	R	0.090	10	1.181	1.575	0.730	0.630	80
DL20F2000MN3/4ZR.125..	DA	DL20	3/4	R	0.125	10	1.181	1.575	0.730	0.630	80
DL20F2000MN3/4ZR.150..	DA	DL20	3/4	R	0.150	10	1.181	1.575	0.730	0.630	80

## Cutting data

HAIMER Material groups		Example material	Material information		Cutting width  ae = 5% D1 ap = L1 max.	
			Material no.	Tensile strength		Content/ Hardness
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>220 – 280</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>160 – 200</b>
<b>M1</b>	<b>Stainless steels</b>	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		<b>120 – 160</b>
<b>M2</b>	<b>Stainless steels</b>	316Ti, 316L	1.4571, 1.4404, 1.4418	> 650 N/mm <sup>2</sup>		<b>90 – 120</b>
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		180 – 240
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTMA536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		160 – 220
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			40 – 80
<b>S2</b>	High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		30 – 40
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	500 – 900
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 350
<b>H1</b>	Hardened steels				45 – 55 HRC	60 – 80

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae				
ae 5%	ø 10	ø 12	ø 16	ø 20
fz	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

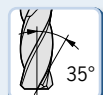
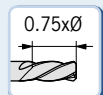


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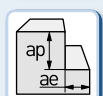
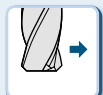
Technical data and Product characteristics



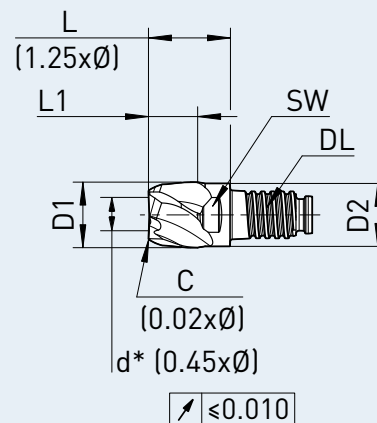
Characteristics



Application



Coolant



Fine balanced  
\* diameter not center cutting

Material – characteristics

Main Material

also suitable for




- Neck for higher cutting depth
- Unequal cutting edge
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [mm]	Cutting edge	No. teeth	Size [mm]	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL10F2006UK1000C..	DA	DL10	10.00	C	6	0.2	7.5	12.5	9.6	SW8	20
DL12F2006UK1200C..	DA	DL12	12.00	C	6	0.24	9	15	11.5	SW9.5	30
DL16F2008UK1600C..	DA	DL16	16.00	C	8	0.32	12	20	15.5	SW13	60
DL20F2000UK2000C..	DA	DL20	20.00	C	10	0.4	15	25	19.3	SW16	80

Order No. = Article Code + HAIMER Quality.

## Cutting data

HAIMER Material groups		Example material		Material information		Cutting width
						 ae = 5% D1 ap = L1 max.
		ANSI	Material no.	Tensile strength	Content/ Hardness	Cutting Speed (SFM)
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 116,000 PSI, 800MPa	up to 25 HRC	<b>725 - 920</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 116,000 PSI, 800MPa	up to 45 HRC	<b>525 - 655</b>
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 94,275 PSI, 650MPa		395 - 525
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 94,275 PSI, 650MPa		295 - 395
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 65,265 PSI, 450MPa		590 - 785
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 65,265 PSI, 450MPa		525 - 720
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			130 - 260
<b>S2</b>	High Temp alloys	Inconel, Nimonic				100 - 130
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315			1640 - 2950
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si >12%	395 - 1150
<b>H1</b>	Hardened steels				45 - 55 HRC	195 - 260

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (inch/tooth) in relation with D1 and cutting width ae				
∅	3/8	1/2	5/8	3/4
fz	0.0011 - 0.0035	0.0011 - 0.0039	0.0016 - 0.0047	0.002 - 0.005

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

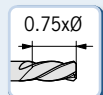
INCH

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CHAMFER FINISHING

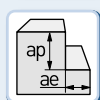
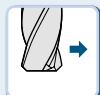
Technical data and Product characteristics



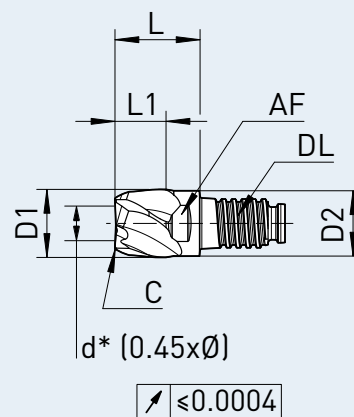
Characteristics



Application



Coolant



Fine balanced  
\* diameter not center cutting

Material – characteristics

Main Material



also suitable for



- Neck for higher cutting depth
- Unequal cutting edge
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [inch]	Cutting edge	Size [inch]	Z	L1 max. [inch]	L [inch]	D2 [inch]	AF [inch]	Torque [N/m]
DL10F2006UK3/8ZC..	DA	DL10	3/8	C	0.008	6	0.295	0.492	0.359	0.315	20
DL12F2006UK1/2ZC..	DA	DL12	1/2	C	0.010	6	0.354	0.591	0.480	0.374	30
DL16F2008UK5/8ZC..	DA	DL16	5/8	C	0.013	8	0.472	0.787	0.605	0.512	60
DL20F2000UK3/4ZC..	DA	DL20	3/4	C	0.015	10	0.591	0.984	0.730	0.630	80

Order No. = Article Code + HAIMER Quality

## Cutting data

HAIMER Material groups		Example material		Material information		Roughing Vc (m/min)	Finishing Vc (m/min)
		ANSI	Material no.	Tensile strength	Content/ Hardness		
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>160 – 220</b>	<b>220 – 280</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>120 – 160</b>	<b>160 – 200</b>
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		80 – 120	120 – 160
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		120 – 180	180 – 240
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		80 – 160	160 – 220
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			40 – 80	40 – 80
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	500 – 900	500 – 900
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 350	120 – 350

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae				
	∅ 10	∅ 12	∅ 16	∅ 20
fz	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.



# F2304MN – DUO-LOCK® HAIMER MILL CHAMFER ROUGHING

## Technical data and Product characteristics



Characteristics	Application	Coolant

Fine balanced

### Material – characteristics

Main Material



also suitable for



- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL10F2304MN1000C..	DA	DL10	10.00	C	0.30	15	20	9.6	SW8	20
DL12F2304MN1200C..	DA	DL12	12.00	C	0.30	18	24	11.5	SW9.5	30
DL16F2304MN1600C..	DA	DL16	16.00	C	0.50	24	32	15.5	SW13	60
DL20F2304MN2000C..	DA	DL20	20.00	C	0.60	30	40	19.3	SW16	80

Order No. = Article Code + HAIMER Quality.



## Cutting data

HAIMER Material groups	Example material		Material information		Cutting width			
	ANSI	Material no.	Tensile strength	Content/ Hardness	Roughing	Finishing		
							Cutting Speed (SFM)	
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 116,000 PSI, 800MPA	up to 25 HRC	<b>525 - 725</b>	<b>725 - 920</b>	
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 116,000 PSI, 800MPA	up to 45 HRC	<b>395 - 525</b>	<b>525 - 655</b>	
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 94,275 PSI, 650MPA		260 - 395	395 - 525	
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 65,265 PSI, 450MPA		395 - 590	590 - 785	
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTMA536 100-70-06	0.7060, 0.7070	> 65,265 PSI, 450MPA		260 - 525	525 - 720	
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			130 - 260	130 - 260	
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315			1640 - 2950	1640 - 2950	
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si >12%	395 - 1150	395 - 1150	

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (inch/tooth) in relation with D1 and cutting width ae				
Ø	3/8	1/2	5/8	3/4
fz	0.0011 - 0.0035	0.0011 - 0.0039	0.0016 - 0.0047	0.002 - 0.005

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

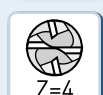
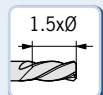
INCH

F2304MN – DUO-LOCK® HAIMER MILL  
ROUGHING

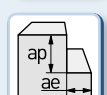
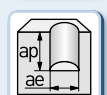
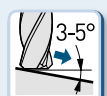
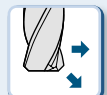
Technical data and Product characteristics



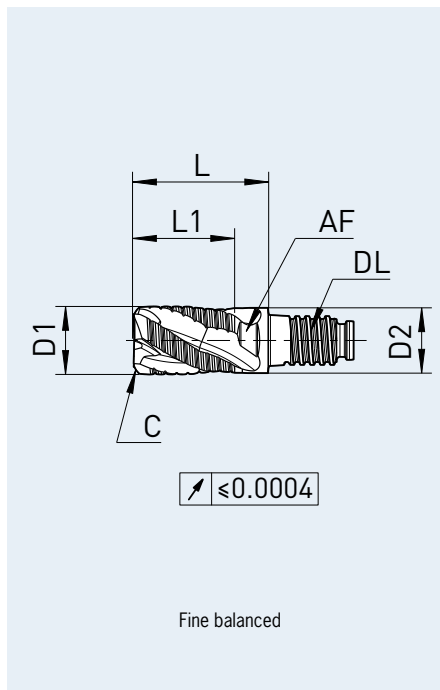
Characteristics



Application



Coolant



Material – characteristics

Main Material



also suitable for



- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [inch]	Cutting edge	Size [inch]	L1 max. [inch]	L [inch]	D2 [inch]	AF [inch]	Torque [N/m]
DL10F2304MN3/8ZC..	DA	DL10	3/8	C	0.012	0.591	0.787	0.359	0.315	20
DL12F2304MN1/2ZC..	DA	DL12	1/2	C	0.012	0.709	0.945	0.480	0.374	30
DL16F2304MN5/8ZC..	DA	DL16	5/8	C	0.020	0.945	1.260	0.605	0.512	60
DL20F2304MN3/4ZC..	DA	DL20	3/4	C	0.024	1.181	1.575	0.730	0.630	80

Order No. = Article Code + HAIMER Quality

## Cutting data

HAIMER Material groups		Example material		Material information		Roughing Vc (m/min)	Finishing Vc (m/min)
		ANSI	Material no.	Tensile strength	Content/ Hardness		
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>160 – 220</b>	<b>220 – 280</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>120 – 160</b>	<b>160 – 200</b>
<b>M1</b>	Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		80 – 120	120 – 160
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		120 – 180	180 – 240
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTMA536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		80 – 160	160 – 220
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			40 – 80	40 – 80
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	500 – 900	500 – 900
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 350	120 – 350

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae				
	∅ 10	∅ 12	∅ 16	∅ 20
fz	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

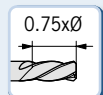
METRIC

F2304UK – DUO-LOCK® HAIMER MILL  
CHAMFER ROUGHING

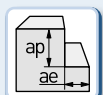
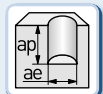
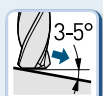
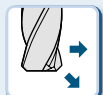
Technical data and Product characteristics



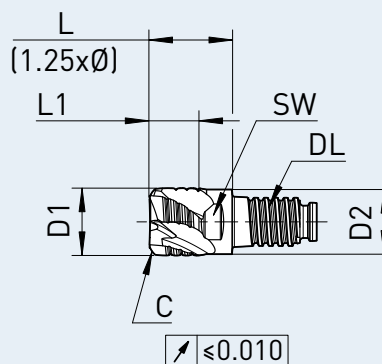
Characteristics



Application



Coolant



Fine balanced

Material – characteristics

Main Material



also suitable for



- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL10F2304UK1000C..	DA	DL10	10.00	C	0.30	7.5	12.5	9.6	SW8	20
DL12F2304UK1200C..	DA	DL12	12.00	C	0.30	9	15	11.5	SW9.5	30
DL16F2304UK1600C..	DA	DL16	16.00	C	0.50	12	20	15.5	SW13	60
DL20F2304UK2000C..	DA	DL20	20.00	C	0.60	15	25	19.3	SW16	80

Order No. = Article Code + HAIMER Quality.

## Cutting data

HAIMER Material groups	Example material	Material information	Cutting width		
			Roughing	Finishing	
	ANSI	Material no.	Tensile strength	Content/ Hardness	Cutting Speed (SFM)
<b>P1</b> General construction steels	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 116,000 PSI, 800MPA	up to 25 HRC	<b>525 - 725</b> <b>725 - 920</b>
<b>P2</b> Heat treated steels	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 116,000 PSI, 800MPA	up to 45 HRC	<b>395 - 525</b> <b>525 - 655</b>
<b>M1</b> Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 94,275 PSI, 650MPA		260 - 395      395 - 525
<b>K1</b> Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 65,265 PSI, 450MPA		395 - 590      590 - 785
<b>K2</b> Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 65,265 PSI, 450MPA		260 - 525      525 - 720
<b>S1</b> Titanium & titanium alloys	Ti6Al4V	3.7165			130 - 260      130 - 260
<b>N1</b> Wrought aluminum alloys	A5005, A6061, A7075	3.3315			1640 - 2950      1640 - 2950
<b>N2</b> Aluminum cast alloys	A310, A400	3.2581		Si >12%	395 - 1150      395 - 1150

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (inch/tooth) in relation with D1 and cutting width ae				
Ø	3/8	1/2	5/8	3/4
fz	0.0011 - 0.0035	0.0011 - 0.0039	0.0016 - 0.0047	0.002 - 0.005

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

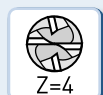
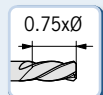
INCH

F2304UK – DUO-LOCK® HAIMER MILL  
ROUGHING

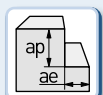
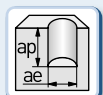
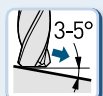
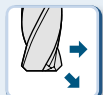
Technical data and Product characteristics



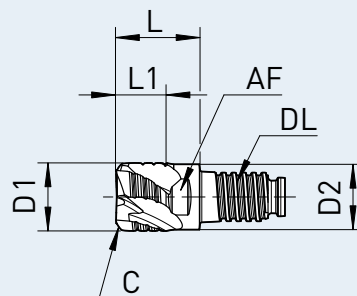
Characteristics



Application



Coolant



≤0.0004

Fine balanced

Material – characteristics

Main Material



also suitable for



- Neck for higher cutting depth
- Center cutting
- Unequal cutting edge
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [inch]	Cutting edge	Size [inch]	L1 max. [inch]	L [inch]	D2 [inch]	AF [inch]	Torque [N/m]
DL10F2304UK3/8ZC..	DA	DL10	3/8	C	0.012	0.295	0.492	0.359	0.315	20
DL12F2304UK1/2ZC..	DA	DL12	1/2	C	0.012	0.354	0.591	0.480	0.374	30
DL16F2304UK5/8ZC..	DA	DL16	5/8	C	0.020	0.472	0.787	0.605	0.512	60
DL20F2304UK3/4ZC..	DA	DL20	3/4	C	0.024	0.591	0.984	0.730	0.630	80

Order No. = Article Code + HAIMER Quality

## Cutting data

HAIMER Material groups		Example material		Material information		Roughing Vc (m/min)	Finishing Vc (m/min)
		ANSI	Material no.	Tensile strength	Content/ Hardness		
<b>N1</b>	<b>Wrought aluminum alloys</b>	A5005, A6061, A7075	3.3315		Si < 9%	<b>300 – 400</b>	<b>400 – 500</b>
<b>N2</b>	<b>Aluminum cast alloys</b>	A310, A400	3.2581		Si > 9%		

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae				
	∅ 10	∅ 12	∅ 16	∅ 20
fz	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

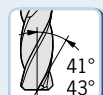
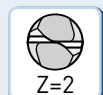
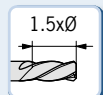
METRIC

# F4002MN – DUO-LOCK® HAIMER MILL Alu Series CHAMFER UNCOATED

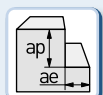
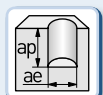
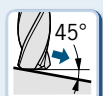
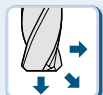
## Technical data and Product characteristics



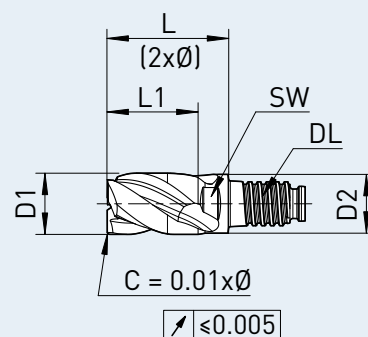
### Characteristics



### Application



### Coolant



Fine balanced

## Material – characteristics

### Main Material



- Neck for higher cutting depth
- Center cutting
- Polished flute and relief
- Best length repeatability
- Uncoated

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (h9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL10F4002MN1000C..	D-	DL10	10.00	C	0.1	15	20	9.6	SW8	20
DL12F4002MN1200C..	D-	DL12	12.00	C	0.12	18	24	11.5	SW9.5	30
DL16F4002MN1600C..	D-	DL16	16.00	C	0.16	24	32	15.5	SW13	60
DL20F4002MN2000C..	D-	DL20	20.00	C	0.2	30	40	19.3	SW16	80

Order No. = Article Code + HAIMER Quality.



## Cutting data

HAIMER Material groups		Example material		Material information		Roughing Vc (m/min)	Finishing Vc (m/min)
		ANSI	Material no.	Tensile strength	Content/ Hardness		
<b>N1</b>	<b>Wrought aluminum alloys</b>	A5005, A6061, A7075	3.3315		Si < 9%	<b>300 – 400</b>	<b>400 – 500</b>
<b>N2</b>	<b>Aluminum cast alloys</b>	A310, A400	3.2581		Si > 9%		

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae				
	ø 10	ø 12	ø 16	ø 20
fz	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.



F4002MN – DUO-LOCK® HAIMER MILL Alu Series  
CHAMFER

Technical data and Product characteristics



Characteristics	Application	Coolant

Fine balanced

Material – characteristics

Main Material



- Coating for abrasive materials
- Neck for higher cutting depth
- Center cutting
- Polished flute and relief
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (h9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL10F4002MN1000C..	DC	DL10	10.00	C	0.1	15	20	9.6	SW8	20
DL12F4002MN1200C..	DC	DL12	12.00	C	0.12	18	24	11.5	SW9.5	30
DL16F4002MN1600C..	DC	DL16	16.00	C	0.16	24	32	15.5	SW13	60
DL20F4002MN2000C..	DC	DL20	20.00	C	0.2	30	40	19.3	SW16	80

Order No. = Article Code + HAIMER Quality.

## Cutting data

HAIMER Material groups	Example material		Material information		Roughing Vc (m/min)	Finishing Vc (m/min)
	ANSI	Material no.	Tensile strength	Content/ Hardness		
<b>N1</b> Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	<b>300 – 400</b>	<b>400 – 500</b>
<b>N2</b> Aluminum cast alloys	A310, A400	3.2581		Si > 9%		

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae				
	∅ 10	∅ 12	∅ 16	∅ 20
fz	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

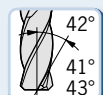
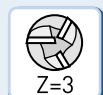
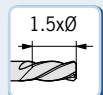
METRIC

F4003MN – DUO-LOCK® HAIMER MILL Alu Series  
CHAMFER UNCOATED

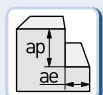
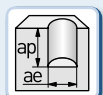
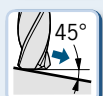
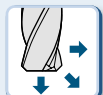
Technical data and Product characteristics



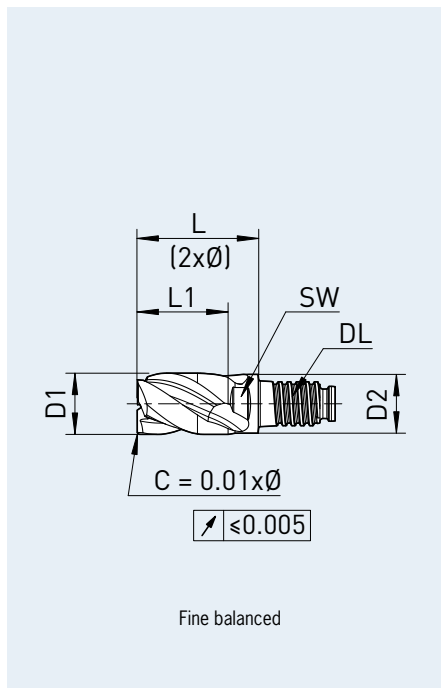
Characteristics



Application



Coolant



Material – characteristics

Main Material



- Neck for higher cutting depth
- Center cutting
- Polished flute and relief
- Best length repeatability
- Uncoated

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (h9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL10F4003MN1000C..	D-	DL10	10.00	C	0.1	15	20	9.6	SW8	20
DL12F4003MN1200C..	D-	DL12	12.00	C	0.12	18	24	11.5	SW9.5	30
DL16F4003MN1600C..	D-	DL16	16.00	C	0.16	24	32	15.5	SW13	60
DL20F4003MN2000C..	D-	DL20	20.00	C	0.2	30	40	19.3	SW16	80

Order No. = Article Code + HAIMER Quality.

## Cutting data

HAIMER Material groups		Example material		Material information		Roughing Vc (m/min)	Finishing Vc (m/min)
		ANSI	Material no.	Tensile strength	Content/ Hardness		
<b>N1</b>	<b>Wrought aluminum alloys</b>	A5005, A6061, A7075	3.3315		Si < 9%	<b>300 – 400</b>	<b>400 – 500</b>
<b>N2</b>	<b>Aluminum cast alloys</b>	A310, A400	3.2581		Si > 9%		

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae				
	∅ 10	∅ 12	∅ 16	∅ 20
fz	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.



F4003MN – DUO-LOCK® HAIMER MILL Alu Series  
CHAMFER

Technical data and Product characteristics



Characteristics	Application	Coolant

Fine balanced

Material – characteristics

Main Material



- Coating for abrasive materials
- Neck for higher cutting depth
- Center cutting
- Polished flute and relief
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (h9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL10F4003MN1000C..	DC	DL10	10.00	C	0.1	15	20	9.6	SW8	20
DL12F4003MN1200C..	DC	DL12	12.00	C	0.12	18	24	11.5	SW9.5	30
DL16F4003MN1600C..	DC	DL16	16.00	C	0.16	24	32	15.5	SW13	60
DL20F4003MN2000C..	DC	DL20	20.00	C	0.2	30	40	19.3	SW16	80

Order No. = Article Code + HAIMER Quality.

## Cutting data

HAIMER Material groups		Example material		Material information		Roughing Vc (m/min)	Finishing Vc (m/min)
		ANSI	Material no.	Tensile strength	Content/ Hardness		
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038. 1.0050. 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>250 – 320</b>	<b>340 – 420</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367. 1.2379. 1.2363. 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>190 – 220</b>	<b>240 – 310</b>
<b>M1</b>	Stainless steels	303, 304	1.4305. 1.4301. 1.4034	≤ 650 N/mm <sup>2</sup>		95 – 115	135 – 170
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571. 1.4404. 1.4418	> 650 N/mm <sup>2</sup>		75 – 95	105 – 130
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020. 0.6040. 0.7040	≤ 450 N/mm <sup>2</sup>		160 – 180	200 – 230
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTMA536 100-70-06	0.7060. 0.7070	> 450 N/mm <sup>2</sup>		130 – 150	170 – 200
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			50 – 60	80 – 90
<b>S2</b>	High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		30 – 40	30 – 40
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	500 – 900	500 – 900
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 350	120 – 350
<b>H1</b>	Hardened steels				45 – 55 HRC	40 – 60	60 – 80

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae				
	∅ 10	∅ 12	∅ 16	∅ 20
fz	0.1–0.3	0.12–0.36	0.16–0.48	0.2–0.6
ap HFC	0.75	0.9	1.2	1.5

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

METRIC

H2004UK – DUO-LOCK® HAIMER MILL HF Series  
HIGH FEED

Technical data and Product characteristics



Characteristics	Application	Coolant

Material – characteristics

Main Material



also suitable for



- Central inner cooling
- Neck for higher cutting depth
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [mm]	Cutting edge	R1 [mm]	R2 [mm]	Dp [mm]	L1 max. [mm]	L [mm]	DKZ [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL10H2004UK1000R..	DAKZ	DL10	10.00	R	1.5	5	6	7.5	12.5	2	9.6	SW8	20
DL12H2004UK1200R..	DAKZ	DL12	12.00	R	1.8	6	7.2	9	15	2	11.5	SW9.5	30
DL16H2004UK1600R..	DAKZ	DL16	16.00	R	2.4	8	9.6	12	20	2	15.5	SW13	60
DL20H2004UK2000R..	DAKZ	DL20	20.00	R	3	10	12	15	25	3	19.3	SW16	80

Order No. = Article Code + HAIMER Quality.



## Cutting data

HAIMER Material groups		Example material		Material information		Roughing Vc (m/min)	Finishing Vc (m/min)
		ANSI	Material no.	Tensile strength	Content/ Hardness		
<b>P1</b>	<b>General construction steels</b>	A252, A50-2, 1045	1.0038. 1.0050. 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>250 – 320</b>	<b>340 – 420</b>
<b>P2</b>	<b>Heat treated steels</b>	D2, 4140	1.2367. 1.2379. 1.2363. 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>190 – 220</b>	<b>240 – 310</b>
<b>M1</b>	Stainless steels	303, 304	1.4305. 1.4301. 1.4034	≤ 650 N/mm <sup>2</sup>		95 – 115	135 – 170
<b>M2</b>	Stainless steels	316Ti, 316L	1.4571. 1.4404. 1.4418	> 650 N/mm <sup>2</sup>		75 – 95	105 – 130
<b>K1</b>	Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020. 0.6040. 0.7040	≤ 450 N/mm <sup>2</sup>		160 – 180	200 – 230
<b>K2</b>	Cast iron	ASTM A536 80-55-06, ASTMA536 100-70-06	0.7060. 0.7070	> 450 N/mm <sup>2</sup>		130 – 150	170 – 200
<b>S1</b>	Titanium & titanium alloys	Ti6Al4V	3.7165			50 – 60	80 – 90
<b>S2</b>	High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		30 – 40	30 – 40
<b>N1</b>	Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	500 – 900	500 – 900
<b>N2</b>	Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 350	120 – 350
<b>H1</b>	Hardened steels				45 – 55 HRC	40 – 60	60 – 80

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae				
	∅ 10	∅ 12	∅ 16	∅ 20
fz	0.1–0.3	0.12–0.36	0.16–0.48	0.2–0.6
ap HFC	0.75	0.9	1.2	1.5

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

METRIC

H2006UK – DUO-LOCK® HAIMER MILL HF Series  
HIGH FEED

Technical data and Product characteristics



Characteristics	Application	Coolant

Material – characteristics

Main Material



also suitable for



- Central inner cooling
- Neck for higher cutting depth
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [mm]	Cutting edge	R1 [mm]	R2 [mm]	Dp [mm]	L1 max. [mm]	L [mm]	DKZ [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL10H2006UK1000R..	DPKZ	DL10	10.00	R	1.5	5	6	7.5	12.5	2	9.6	SW8	20
DL12H2006UK1200R..	DPKZ	DL12	12.00	R	1.8	6	7.2	9	15	2	11.5	SW9.5	30
DL16H2006UK1600R..	DPKZ	DL16	16.00	R	2.4	8	9.6	12	20	2	15.5	SW13	60
DL20H2006UK2000R..	DPKZ	DL20	20.00	R	3	10	12	15	25	3	19.3	SW16	80

Order No. = Article Code + HAIMER Quality.

## Cutting data

HAIMER Material groups	Example material	Material information		Roughing Vc (m/min)	Finishing Vc (m/min)	
		ANSI	Material no.			Tensile strength
<b>P1</b> General construction steels	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>160 – 220</b>	<b>220 – 280</b>
<b>P2</b> Heat treated steels	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>120 – 160</b>	<b>160 – 200</b>
<b>M1</b> Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		80 – 120	120 – 160
<b>M2</b> Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 650 N/mm <sup>2</sup>		60 – 90	90 – 120
<b>K1</b> Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		120 – 180	180 – 240
<b>K2</b> Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		80 – 160	160 – 220
<b>S1</b> Titanium & titanium alloys	Ti6Al4V	3.7165			40 – 80	40 – 80
<b>S2</b> High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		30 – 40	30 – 40
<b>N1</b> Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	500 – 900	500 – 900
<b>N2</b> Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 350	120 – 350
<b>H1</b> Hardened steels				45 – 55 HRC	40 – 60	60 – 80

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae								
	ø 2	ø 2.5	ø 3	ø 4	ø 5	ø 6	ø 8	ø 10
fz	0.006 – 0.018	0.008 – 0.023	0.009 – 0.027	0.012 – 0.036	0.015 – 0.045	0.018 – 0.054	0.024 – 0.072	0.03 – 0.09

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.



V2002MN – DUO-LOCK® HAIMER MILL  
BALL NOSE

Technical data and Product characteristics



Characteristics	Application	Coolant

Material – characteristics

Main Material



also suitable for



- Neck for higher cutting depth
- Ball Nose
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [mm]	Cutting edge	Radius [mm]	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL10V2002MN0200R..	DA	DL10	2.00	R	1.00	3.0	20	9.6	SW8	20
DL10V2002MN0250R..	DA	DL10	2.50	R	1.25	3.75	20	9.6	SW8	20
DL10V2002MN0300R..	DA	DL10	3.00	R	1.50	4.5	20	9.6	SW8	20
DL10V2002MN0400R..	DA	DL10	4.00	R	2.00	6.0	20	9.6	SW8	20
DL10V2002MN0500R..	DA	DL10	5.00	R	2.50	7.5	20	9.6	SW8	20
DL10V2002MN0600R..	DA	DL10	6.00	R	3.00	9.0	20	9.6	SW8	20
DL10V2002MN0800R..	DA	DL10	8.00	R	4.00	12	20	9.6	SW8	20
DL10V2002MN1000R..	DA	DL10	10.00	R	5.00	15	20	9.6	SW8	20

Order No. = Article Code + HAIMER Quality.

## Cutting data

HAIMER Material groups	Example material		Material information		Roughing Vc (m/min)	Finishing Vc (m/min)
	ANSI	Material no.	Tensile strength	Content/ Hardness		
<b>P1</b> General construction steels	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>160 – 220</b>	<b>220 – 280</b>
<b>P2</b> Heat treated steels	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>120 – 160</b>	<b>160 – 200</b>
<b>M1</b> Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		80 – 120	120 – 160
<b>M2</b> Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 650 N/mm <sup>2</sup>		60 – 90	90 – 120
<b>K1</b> Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		120 – 180	180 – 240
<b>K2</b> Cast iron	ASTM A536 80-55-06, ASTMA536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		80 – 160	160 – 220
<b>S1</b> Titanium & titanium alloys	Ti6Al4V	3.7165			40 – 80	40 – 80
<b>S2</b> High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		30 – 40	30 – 40
<b>N1</b> Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	500 – 900	500 – 900
<b>N2</b> Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 350	120 – 350
<b>H1</b> Hardened steels				45 – 55 HRC	40 – 60	60 – 80

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae				
	∅ 10	∅ 12	∅ 16	∅ 20
fz	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.



V2002UK – DUO-LOCK® HAIMER MILL  
BALL NOSE

Technical data and Product characteristics



Characteristics	Application	Coolant

Fine balanced

Material – characteristics

Main Material



also suitable for



- Neck for higher cutting depth
- Ball Nose
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [mm]	Cutting edge	Radius [mm]	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL10V2002UK1000R..	DA	DL10	10.00	R	5.00	7.5	12.5	9.6	SW8	20
DL12V2002UK1200R..	DA	DL12	12.00	R	6.00	9	15	11.5	SW9.5	30
DL16V2002UK1600R..	DA	DL16	16.00	R	8.00	12	20	15.5	SW13	60
DL20V2002UK2000R..	DA	DL20	20.00	R	10.00	15	25	19.3	SW16	80

Order No. = Article Code + HAIMER Quality.

## Cutting data

HAIMER Material groups	Example material		Material information		Cutting width	
	ANSI	Material no.	Tensile strength	Content/ Hardness	Roughing Cutting Speed (SFM)	Finishing
<b>P1</b> <b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 116,000 PSI, 800MPA	up to 25 HRC	<b>525 - 725</b>	<b>725 - 920</b>
<b>P2</b> <b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 116,000 PSI, 800MPA	up to 45 HRC	<b>395 - 525</b>	<b>525 - 655</b>
<b>M1</b> Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 94,275 PSI, 650MPA		260 - 395	395 - 525
<b>M2</b> Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 94,275 PSI, 650MPA		195 - 295	295 - 395
<b>K1</b> Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 65,265 PSI, 450MPA		395 - 590	590 - 785
<b>K2</b> Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 65,265 PSI, 450MPA		260 - 525	525 - 720
<b>S1</b> Titanium & titanium alloys	Ti6Al4V	3.7165			130 - 260	130 - 260
<b>S2</b> High Temp alloys	Inconel, Nimonic				100 - 130	100 - 130
<b>N1</b> Wrought aluminum alloys	A5005, A6061, A7075	3.3315			1640 - 2950	1640 - 2950
<b>N2</b> Aluminum cast alloys	A310, A400	3.2581		Si >12%	395 - 1150	395 - 1150
<b>H1</b> Hardened steels				45 - 55 HRC	130 - 195	195 - 260

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth (inch/tooth) in relation with D1 and cutting width ae				
Ø	3/8	1/2	5/8	3/4
fz	0.0011 - 0.0035	0.0011 - 0.0039	0.0016 - 0.0047	0.002 - 0.005

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

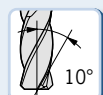
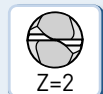
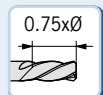
INCH

V2002UK – DUO-LOCK® HAIMER MILL  
BALL NOSE

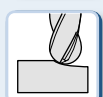
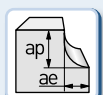
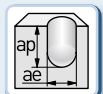
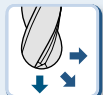
Technical data and Product characteristics



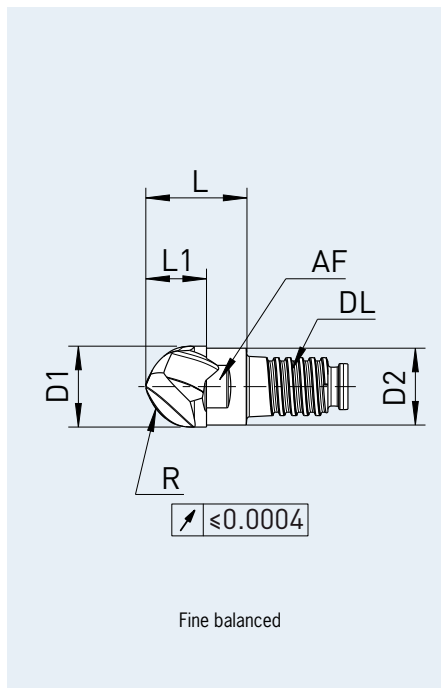
Characteristics



Application



Coolant



Material – characteristics

Main Material



also suitable for



- Neck for higher cutting depth
- Ball Nose
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [inch]	Cutting edge	Size [inch]	L1 max. [inch]	L [inch]	D2 [inch]	AF [inch]	Torque [N/m]
DL10V2002UK3/8ZR..	DA	DL10	3/8	R	3/16	0.1875	0.492	0.359	0.315	20
DL12V2002UK1/2ZR..	DA	DL12	1/2	R	1/4	0.250	0.591	0.480	0.374	30
DL16V2002UK5/8ZR..	DA	DL16	5/8	R	5/16	0.3125	0.787	0.605	0.512	60
DL20V2002UK3/4ZR..	DA	DL20	3/4	R	3/8	0.375	0.984	0.730	0.630	80

Order No. = Article Code + HAIMER Quality



## Cutting data

HAIMER Material groups	Example material	Material information		Roughing Vc (m/min)	Finishing Vc (m/min)	
		ANSI	Material no.			Tensile strength
<b>P1</b> General construction steels	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>160 – 220</b>	<b>220 – 280</b>
<b>P2</b> Heat treated steels	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>120 – 160</b>	<b>160 – 200</b>
<b>M1</b> Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		80 – 120	120 – 160
<b>M2</b> Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 650 N/mm <sup>2</sup>		60 – 90	90 – 120
<b>K1</b> Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		120 – 180	180 – 240
<b>K2</b> Cast iron	ASTM A536 80-55-06, ASTMA536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		80 – 160	160 – 220
<b>S1</b> Titanium & titanium alloys	Ti6Al4V	3.7165			40 – 80	40 – 80
<b>S2</b> High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		30 – 40	30 – 40
<b>N1</b> Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	500 – 900	500 – 900
<b>N2</b> Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 350	120 – 350
<b>H1</b> Hardened steels				45 – 55 HRC	40 – 60	60 – 80

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae								
	ø 2	ø 2.5	ø 3	ø 4	ø 5	ø 6	ø 8	ø 10
fz	0.006 – 0.018	0.008 – 0.023	0.009 – 0.027	0.012 – 0.036	0.015 – 0.045	0.018 – 0.054	0.024 – 0.072	0.03 – 0.09

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.



V2004MN – DUO-LOCK® HAIMER MILL  
BALL NOSE

Technical data and Product characteristics



Characteristics	Application	Coolant

Material – characteristics

Main Material



also suitable for



- Neck for higher cutting depth
- Ball Nose
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [mm]	Cutting edge	Radius [mm]	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL10V2004MN0200R..	DA	DL10	2.00	R	1.00	3.0	20	9.6	SW8	20
DL10V2004MN0250R..	DA	DL10	2.50	R	1.25	3.75	20	9.6	SW8	20
DL10V2004MN0300R..	DA	DL10	3.00	R	1.50	4.5	20	9.6	SW8	20
DL10V2004MN0400R..	DA	DL10	4.00	R	2.00	6.0	20	9.6	SW8	20
DL10V2004MN0500R..	DA	DL10	5.00	R	2.50	7.5	20	9.6	SW8	20
DL10V2004MN0600R..	DA	DL10	6.00	R	3.00	9.0	20	9.6	SW8	20
DL10V2004MN0800R..	DA	DL10	8.00	R	4.00	12	20	9.6	SW8	20
DL10V2004MN1000R..	DA	DL10	10.00	R	5.00	15	20	9.6	SW8	20

Order No. = Article Code + HAIMER Quality.

## Cutting data

HAIMER Material groups	Example material		Material information		Roughing Vc (m/min)	Finishing Vc (m/min)
	ANSI	Material no.	Tensile strength	Content/ Hardness		
<b>P1</b> <b>General construction steels</b>	A252, A50-2, 1045	1.0038, 1.0050, 1.0503	≤ 800 N/mm <sup>2</sup>	up to 25 HRC	<b>160 – 220</b>	<b>220 – 280</b>
<b>P2</b> <b>Heat treated steels</b>	D2, 4140	1.2367, 1.2379, 1.2363, 1.7225	> 800 N/mm <sup>2</sup>	up to 45 HRC	<b>120 – 160</b>	<b>160 – 200</b>
<b>M1</b> Stainless steels	303, 304	1.4305, 1.4301, 1.4034	≤ 650 N/mm <sup>2</sup>		80 – 120	120 – 160
<b>M2</b> Stainless steels	316Ti, 316L	1.4571, 1.4404, 1.4418	> 650 N/mm <sup>2</sup>		60 – 90	90 – 120
<b>K1</b> Cast iron	ASTM A48 NO. 30, ASTM A48 NO. 55/60, G1800	0.6020, 0.6040, 0.7040	≤ 450 N/mm <sup>2</sup>		120 – 180	180 – 240
<b>K2</b> Cast iron	ASTM A536 80-55-06, ASTM A536 100-70-06	0.7060, 0.7070	> 450 N/mm <sup>2</sup>		80 – 160	160 – 220
<b>S1</b> Titanium & titanium alloys	Ti6Al4V	3.7165			40 – 80	40 – 80
<b>S2</b> High Temp alloys	Inconel, Nimonic		800 – 1700 N/mm <sup>2</sup>		30 – 40	30 – 40
<b>N1</b> Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	500 – 900	500 – 900
<b>N2</b> Aluminum cast alloys	A310, A400	3.2581		Si > 9%	120 – 350	120 – 350
<b>H1</b> Hardened steels				45 – 55 HRC	40 – 60	60 – 80

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae				
	∅ 10	∅ 12	∅ 16	∅ 20
fz	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.



V2004UK – DUO-LOCK® HAIMER MILL  
BALL NOSE

Technical data and Product characteristics



Characteristics	Application	Coolant

Fine balanced

Material – characteristics

Main Material



also suitable for



- Neck for higher cutting depth
- Ball Nose
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (f9) [mm]	Cutting edge	Radius [mm]	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL10V2004UK1000R..	DA	DL10	10.00	R	5.00	7.5	12.5	9.6	SW8	20
DL12V2004UK1200R..	DA	DL12	12.00	R	6.00	9	15	11.5	SW9.5	30
DL16V2004UK1600R..	DA	DL16	16.00	R	8.00	12	20	15.5	SW13	60
DL20V2004UK2000R..	DA	DL20	20.00	R	10.00	15	25	19.3	SW16	80

Order No. = Article Code + HAIMER Quality.

## Cutting data

HAIMER Material groups		Example material		Material information		Roughing Vc (m/min)	Finishing Vc (m/min)
		ANSI	Material no.	Tensile strength	Content/ Hardness		
N1	Wrought aluminum alloys	A5005, A6061, A7075	3.3315		Si < 9%	300 – 400	400 – 500
	N2	Aluminum cast alloys	A310, A400	3.2581	Si > 9%		

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae				
	∅ 10	∅ 12	∅ 16	∅ 20
fz	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

METRIC

V4002UK – DUO-LOCK® HAIMER MILL Alu Series  
BALL NOSE UNCOATED

Technical data and Product characteristics



Characteristics	Application	Coolant

Material – characteristics

Main Material



- Neck for higher cutting depth
- Center cutting
- Polished flute and relief
- Best length repeatability
- Uncoated

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (h9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL10V4002UK1000R..	D-	DL10	10.00	R	5.00	7.5	12.5	9.6	SW8	20
DL12V4002UK1200R..	D-	DL12	12.00	R	6.00	9	15	11.5	SW9.5	30
DL16V4002UK1600R..	D-	DL16	16.00	R	8.00	12	20	15.5	SW13	60
DL20V4002UK2000R..	D-	DL20	20.00	R	10.00	15	25	19.3	SW16	80

Order No. = Article Code + HAIMER Quality.

## Cutting data

HAIMER Material groups		Example material		Material information		Roughing Vc (m/min)	Finishing Vc (m/min)
		ANSI	Material no.	Tensile strength	Content/ Hardness		
<b>N1</b>	<b>Wrought aluminum alloys</b>	A5005, A6061, A7075	3.3315		Si < 9%	<b>300 – 400</b>	<b>400 – 500</b>
<b>N2</b>	<b>Aluminum cast alloys</b>	A310, A400	3.2581		Si > 9%		

Cutting data are reference values and need to be adjusted according to the application area.

Feed per tooth fz (mm/tooth) in relation with D1 and cutting width ae				
	∅ 10	∅ 12	∅ 16	∅ 20
fz	0.03 – 0.09	0.03 – 0.10	0.04 – 0.12	0.05 – 0.13

Cutting data is based on short cylindrical extensions, cutting data for long overhang need to be adjusted.

Technical data and Product characteristics



Characteristics	Application	Coolant

Fine balanced

Material – characteristics

Main Material

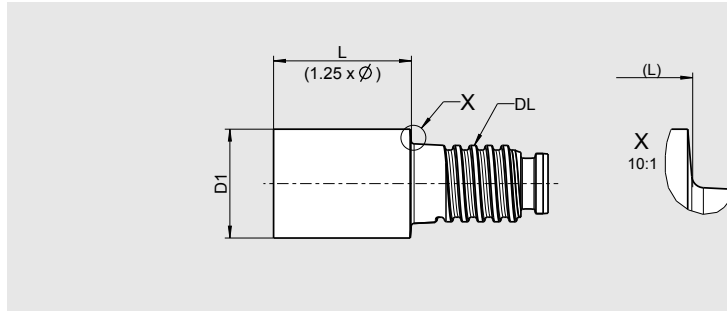


- Coating for abrasive materials
- Neck for higher cutting depth
- Center cutting
- Polished flute and relief
- Best length repeatability

Article-Code	HAIMER Quality	Duo-Lock Size	D1 (h9) [mm]	Cutting edge	Size [mm]	L1 max. [mm]	L [mm]	D2 [mm]	AF [mm]	Torque [N/m]
DL10V4002UK1000R..	DC	DL10	10.00	R	5.00	7.5	12.5	9.6	SW8	20
DL12V4002UK1200R..	DC	DL12	12.00	R	6.00	9	15	11.5	SW9.5	30
DL16V4002UK1600R..	DC	DL16	16.00	R	8.00	12	20	15.5	SW13	60
DL20V4002UK2000R..	DC	DL20	20.00	R	10.00	15	25	19.3	SW16	80

Order No. = Article Code + HAIMER Quality.



**Version: short, without wrench flats**

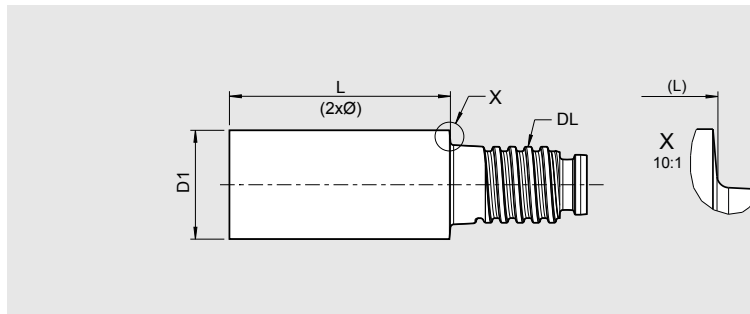
- Best length repeatability
- HF10: Fine grain carbide, 10% cobalt
- Measuring devices on request

Pay attention to wrench flats overview

Use only with Duo-Lock Torque Master

Keep minimum length to plain surface (See page 223)

Article-Code	D1 (h6) [mm]	L (+ 1) [mm]	Interface	Tightening torque [Nm]	AF [mm]	Material
RODL10-D10HA0125-0001	10	12.5	DL10	20	8	HF10
RODL12-D12HA0150-0001	12	15	DL12	30	9.5	HF10
RODL16-D16HA0200-0001	16	20	DL16	60	13	HF10
RODL20-D20HA0250-0001	20	25	DL20	80	16	HF10
RODL25-D25HA0313-0001	25	31.25	DL25	100	21	HF10
RODL32-D32HA0400-0001	32	40	DL32	130	28	HF10

**Version: normal, without wrench flats**

- Best length repeatability
- HF10: Fine grain carbide, 10% cobalt
- Measuring devices upon request

Pay attention to wrench flats overview

Use only with Duo-Lock Torque Master

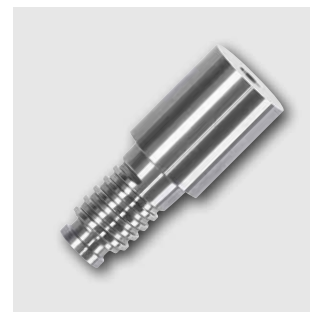
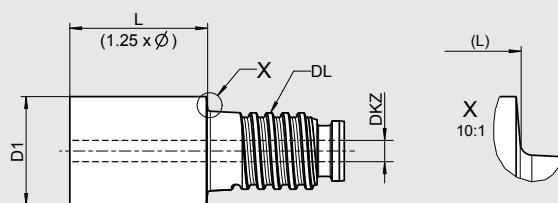
Keep minimum length to plain surface (See page 223)

Article-Code	D1 (h6) [mm]	L (+ 1) [mm]	Interface	Tightening torque [Nm]	AF [mm]	Material
RODL10-D10HA0200-0001	10	20	DL10	20	8	HF10
RODL12-D12HA0240-0001	12	24	DL12	30	9.5	HF10
RODL16-D16HA0320-0001	16	32	DL16	60	13	HF10
RODL20-D20HA0400-0001	20	40	DL20	80	16	HF10
RODL25-D25HA0500-0001	25	50	DL25	100	21	HF10
RODL32-D32HA0640-0001	32	64	DL32	130	28	HF10

Further lengths available on request



## DUO-LOCK® BLANK COOLING BORE CENTRAL – WITHOUT WRENCH FLATS



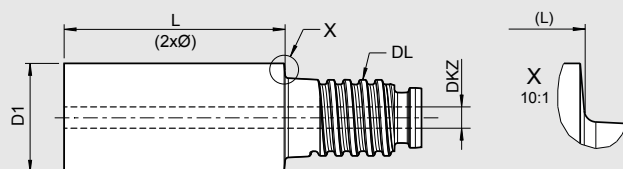
### Version: short, without wrench flats

- Best length repeatability
- HF10: Fine grain carbide, 10% cobalt
- Measuring devices on request
- Central cooling

Pay attention to wrench flats overview  
Use only with Duo-Lock Torque Master  
Keep minimum length to plain surface (See page 223)

Article-Code	D1 (h6) [mm]	L (+ 1) [mm]	Interface	DKZ [mm]	Tightening torque [Nm]	AF [mm]	Material
RODL10-D10HA0125-0001KZ	10	12.5	DL10	2	20	8	HF10
RODL12-D12HA0150-0001KZ	12	15	DL12	2	30	9.5	HF10
RODL16-D16HA0200-0001KZ	16	20	DL16	2	60	13	HF10
RODL20-D20HA0250-0001KZ	20	25	DL20	3	80	16	HF10
RODL25-D25HA0313-0001KZ	25	31.25	DL25	4	100	21	HF10
RODL32-D32HA0400-0001KZ	32	40	DL32	5	130	28	HF10

Further lengths available on request - Radial cooling available on request



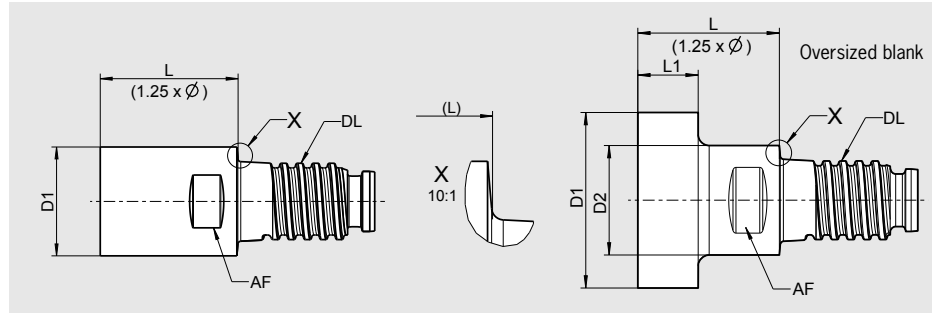
### Version: normal, without wrench flats

- Best length repeatability
- HF10: Fine grain carbide, 10% cobalt
- Measuring devices upon request
- Central cooling

Pay attention to wrench flats overview  
Use only with Duo-Lock Torque Master  
Keep minimum length to plain surface (See page 223)

Article-Code	D1 (h6) [mm]	L (+ 1) [mm]	Interface	DKZ [mm]	Tightening torque [Nm]	AF [mm]	Material
RODL10-D10HA0200-0001KZ	10	20	DL10	2	20	8	HF10
RODL12-D12HA0240-0001KZ	12	24	DL12	2	30	9.5	HF10
RODL16-D16HA0320-0001KZ	16	32	DL16	2	60	13	HF10
RODL20-D20HA0400-0001KZ	20	40	DL20	3	80	16	HF10
RODL25-D25HA0500-0001KZ	25	50	DL25	4	100	21	HF10
RODL32-D32HA0640-0001KZ	32	64	DL32	5	130	28	HF10

Further lengths available on request - Radial cooling available on request

**Version: short, with wrench flats**

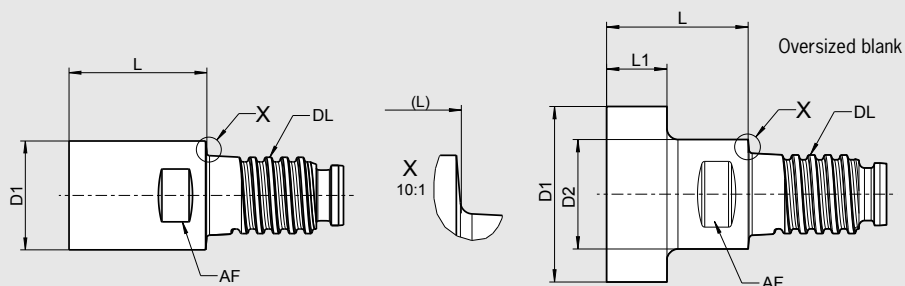
- Best length repeatability
- HF10: Fine grain carbide, 10% cobalt
- Measuring devices on request
- Central cooling available upon request

Article-Code	D1 (h6) [mm]	D2 (-0.1) [mm]	L (+ 1) [mm]	L1 (+ 1) [mm]	Interface	Tightening torque [Nm]	AF [mm]	Material
RODL10-D10HA0125-0002	10	–	12.5	–	DL10	20	8	HF10
RODL10-D12HA0125-0002	12	9.60	12.5	5.0	DL10	20	8	HF10
RODL10-D1270HA0125-0002	12.7	9.60	12.5	5	DL10	20	8	HF10
RODL10-D16HA0125-0002	16	9.60	12.5	5.0	DL10	20	8	HF10
RODL10-D20HA0125-0002	20	9.60	12.5	5.0	DL10	20	8	HF10
RODL12-D12HA0150-0002	12	–	15	–	DL12	30	9.5	HF10
RODL12-D1270HA0150-0002	12.7	–	15	–	DL12	30	9.5	HF10
RODL12-D16HA0150-0002	16	11.50	15	6.0	DL12	30	9.5	HF10
RODL12-D18HA0150-0002	18	11.50	15	6.0	DL12	30	9.5	HF10
RODL12-D20HA0150-0002	20	11.50	15	6.0	DL12	30	9.5	HF10
RODL12-D25HA0150-0002	25	11.50	15	6.0	DL12	30	9.5	HF10
RODL12-D2540HA0150-0002	25.4	11.50	15	6	DL12	30	9.5	HF10
RODL16-D16HA0200-0002	16	–	20	–	DL16	60	13	HF10
RODL16-D18HA0200-0002	18	15.50	20	8.0	DL16	60	13	HF10
RODL16-D20HA0200-0002	20	15.50	20	8.0	DL16	60	13	HF10
RODL16-D25HA0200-0002	25	15.50	20	8.0	DL16	60	13	HF10
RODL16-D2540HA0200-0002	25.4	15.50	20	8	DL16	60	13	HF10
RODL16-D32HA0200-0002	32	15.50	20	8.0	DL16	60	13	HF10
RODL20-D20HA0250-0002	20	–	25	–	DL20	80	16	HF10
RODL20-D25HA0250-0002	25	19.30	25	10.0	DL20	80	16	HF10
RODL20-D2540HA0250-0002	25.4	19.30	25	10	DL20	80	16	HF10
RODL20-D32HA0250-0002	32	19.30	25	10.0	DL20	80	16	HF10
RODL20-D36HA0250-0002	36	19.30	25	10.0	DL20	80	16	HF10
RODL20-D40HA0250-0002	40	19.30	25	10.0	DL20	80	16	HF10
RODL25-D25HA0313-0002	25	–	31.25	–	DL25	100	21	HF10
RODL25-D2540HA0313-0002	25.4	–	31.25	–	DL25	100	21	HF10
RODL32-D32HA0400-0002	32	–	40	–	DL32	130	28	HF10

Further lengths available on request

INCH

## DUO-LOCK® BLANK SHORT – WITH WRENCH FLATS

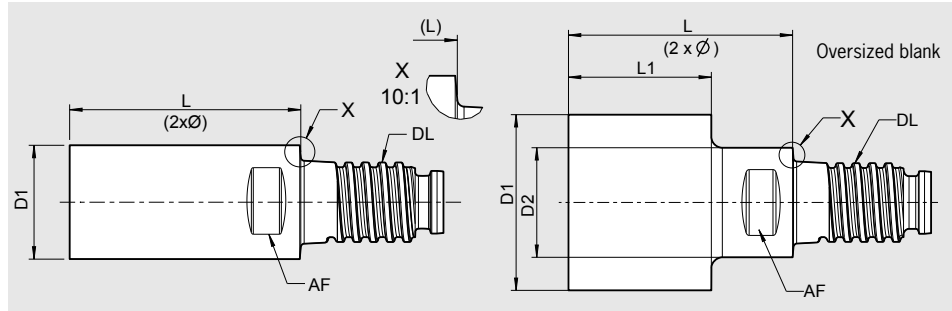


### Version: short, with wrench flats

- Best length repeatability
- HF10: Fine grain carbide, 10% cobalt
- Measuring devices on request
- Central cooling available upon request

Article-Code	D1 (h6) [inch]	D2 (-0.004) [inch]	L (+ 0.04) [inch]	L1 (+ 0.04) [inch]	Interface	Tightening torque [Nm]	AF [inch]	Material
RODL10-D10HA0125-0002	0.394	–	0.492	–	DL10	20	0.315	HF10
RODL10-D12HA0125-0002	0.472	0.378	0.492	0.197	DL10	20	0.315	HF10
RODL10-D1270HA0125-0002	0.500	0.378	0.492	0.197	DL10	20	0.315	HF10
RODL10-D16HA0125-0002	0.630	0.378	0.492	0.197	DL10	20	0.315	HF10
RODL10-D20HA0125-0002	0.394	0.378	0.492	0.197	DL10	20	0.315	HF10
RODL12-D12HA0150-0002	0.472	–	0.590	–	DL12	30	0.374	HF10
RODL12-D1270HA0150-0002	0.500	–	0.590	–	DL12	30	0.374	HF10
RODL12-D16HA0150-0002	0.630	0.453	0.590	0.236	DL12	30	0.374	HF10
RODL12-D18HA0150-0002	0.709	0.453	0.590	0.236	DL12	30	0.374	HF10
RODL12-D20HA0150-0002	0.787	0.453	0.590	0.236	DL12	30	0.374	HF10
RODL12-D25HA0150-0002	0.984	0.453	0.590	0.236	DL12	30	0.374	HF10
RODL12-D2540HA0150-0002	1.000	0.453	0.590	0.236	DL12	30	0.374	HF10
RODL16-D16HA0200-0002	0.630	–	0.787	–	DL16	60	0.512	HF10
RODL16-D18HA0200-0002	0.709	0.610	0.787	0.315	DL16	60	0.512	HF10
RODL16-D20HA0200-0002	0.787	0.610	0.787	0.315	DL16	60	0.512	HF10
RODL16-D25HA0200-0002	0.984	0.610	0.787	0.315	DL16	60	0.512	HF10
RODL16-D2540HA0200-0002	1.000	0.610	0.787	0.315	DL16	60	0.512	HF10
RODL16-D32HA0200-0002	1.260	0.610	0.787	0.315	DL16	60	0.512	HF10
RODL20-D20HA0250-0002	0.787	–	0.984	–	DL20	80	0.630	HF10
RODL20-D25HA0250-0002	0.984	0.760	0.984	0.394	DL20	80	0.630	HF10
RODL20-D2540HA0250-0002	1.000	0.760	0.984	0.394	DL20	80	0.630	HF10
RODL20-D32HA0250-0002	1.260	0.760	0.984	0.394	DL20	80	0.630	HF10
RODL20-D36HA0250-0002	1.417	0.760	0.984	0.394	DL20	80	0.630	HF10
RODL20-D40HA0250-0002	1.575	0.760	0.984	0.394	DL20	80	0.630	HF10
RODL25-D25HA0313-0002	0.984	–	1.230	–	DL25	100	0.827	HF10
RODL25-D2540HA0313-0002	1.000	–	1.230	–	DL25	100	0.827	HF10
RODL32-D32HA0400-0002	1.260	–	1.575	–	DL32	130	1.102	HF10

Further lengths available on request

**Version: normal, with wrench flats**

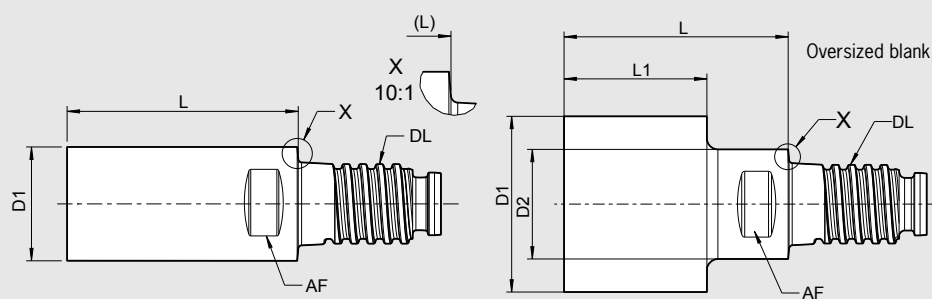
- Best length repeatability
- HF10: Fine grain carbide, 10% cobalt
- Measuring devices on request
- Central cooling available upon request

Article-Code	D1 (h6) [mm]	D2 (-0.1) [mm]	L (+ 1) [mm]	L1 (+ 1) [mm]	Interface	Tightening torque [Nm]	AF [mm]	Material
RODL10-D06HA0200-0002	6	9.60	20	16.0	DL10	20	8	HF10
RODL10-D0635HA0200-0002	6.4	9.60	20	16.0	DL10	20	8	HF10
RODL10-D08HA0200-0002	8	9.60	20	16.0	DL10	20	8	HF10
RODL10-D10HA0200-0002	10	–	20	–	DL10	20	8	HF10
RODL10-D12HA0200-0002	12	9.60	20	12.5	DL10	20	8	HF10
RODL10-D1270HA0200-0002	12.7	9.60	20	12.5	DL10	20	8	HF10
RODL10-D16HA0200-0002	16	9.60	20	12.5	DL10	20	8	HF10
RODL10-D20HA0200-0002	20	9.60	20	12.5	DL10	20	8	HF10
RODL12-D12HA0240-0002	12	–	24	–	DL12	30	9.5	HF10
RODL12-D1270HA0240-0002	12.7	–	24	–	DL12	30	9.5	HF10
RODL12-D16HA0240-0002	16	11.50	24	15.0	DL12	30	9.5	HF10
RODL12-D18HA0240-0002	18	11.50	24	15.0	DL12	30	9.5	HF10
RODL12-D20HA0240-0002	20	11.50	24	15.0	DL12	30	9.5	HF10
RODL12-D25HA0240-0002	25	11.50	24	15.0	DL12	30	9.5	HF10
RODL12-D2540HA0240-0002	25.4	11.50	24	15.0	DL12	30	9	HF10
RODL16-D16HA0320-0002	16	–	32	–	DL16	60	13	HF10
RODL16-D18HA0320-0002	18	15.50	32	20.0	DL16	60	13	HF10
RODL16-D20HA0320-0002	20	15.50	32	20.0	DL16	60	13	HF10
RODL16-D25HA0320-0002	25	15.50	32	20.0	DL16	60	13	HF10
RODL16-D2540HA0320-0002	25.4	15.50	32	20.0	DL16	60	13	HF10
RODL16-D32HA0320-0002	32	15.50	32	20.0	DL16	60	13	HF10
RODL20-D20HA0400-0002	20	–	40	–	DL20	80	16	HF10
RODL20-D25HA0400-0002	25	19.30	40	25.0	DL20	80	16	HF10
RODL20-D2540HA0400-0002	25.4	19.30	40	25.0	DL20	80	16	HF10
RODL20-D32HA0400-0002	32	19.30	40	25.0	DL20	80	16	HF10
RODL20-D36HA0400-0002	36	19.30	40	25.0	DL20	80	16	HF10
RODL20-D40HA0400-0002	40	19.30	40	25.0	DL20	80	16	HF10
RODL25-D25HA0500-0002	25	–	50	–	DL25	100	21	HF10
RODL25-D2540HA0500-0002	25.4	–	50	–	DL25	100	21	HF10
RODL32-D32HA0640-0002	32	–	64	–	DL32	130	28	HF10

Further lengths available on request

INCH

## DUO-LOCK® BLANK NORMAL – WITH WRENCH FLATS



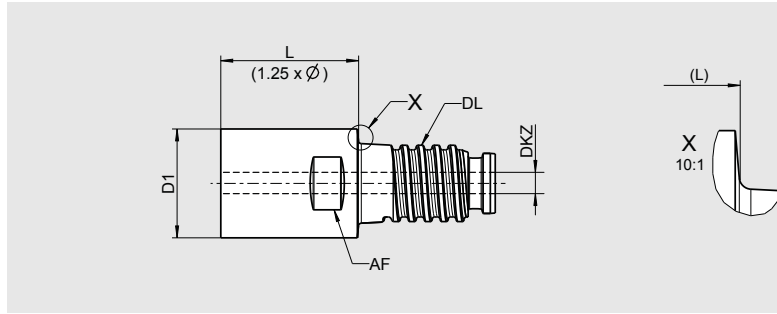
### Version: normal, with wrench flats

- Best length repeatability
- HF10: Fine grain carbide, 10% cobalt
- Measuring devices on request
- Central cooling available upon request

Article-Code	D1 (h6) [inch]	D2 (-0.004) [inch]	L (+ 0.04) [inch]	L1 (+ 0.04) [inch]	Interface	Tightening torque [Nm]	AF [inch]	Material
RODL10-D06HA0200-0002	0.236	0.378	0.787	0.630	DL10	20	0.315	HF10
RODL10-D0635HA0200-0002	0.250	0.378	0.787	0.630	DL10	20	0.315	HF10
RODL10-D08HA0200-0002	0.315	0.378	0.787	0.630	DL10	20	0.315	HF10
RODL10-D10HA0200-0002	0.394	–	0.787	–	DL10	20	0.315	HF10
RODL10-D12HA0200-0002	0.472	0.378	0.787	0.492	DL10	20	0.315	HF10
RODL10-D1270HA0200-0002	0.500	0.378	0.787	0.492	DL10	20	0.315	HF10
RODL10-D16HA0200-0002	0.630	0.378	0.787	0.492	DL10	20	0.315	HF10
RODL10-D20HA0200-0002	0.787	0.378	0.787	0.492	DL10	20	0.315	HF10
RODL12-D12HA0240-0002	0.472	–	0.945	–	DL12	30	0.374	HF10
RODL12-D1270HA0240-0002	0.500	–	0.945	–	DL12	30	0.374	HF10
RODL12-D16HA0240-0002	0.630	0.453	0.945	0.591	DL12	30	0.374	HF10
RODL12-D18HA0240-0002	0.709	0.453	0.945	0.591	DL12	30	0.374	HF10
RODL12-D20HA0240-0002	0.787	0.453	0.945	0.591	DL12	30	0.374	HF10
RODL12-D25HA0240-0002	0.984	0.453	0.945	0.591	DL12	30	0.374	HF10
RODL12-D2540HA0240-0002	1.000	0.453	0.945	0.591	DL12	30	0.374	HF10
RODL16-D16HA0320-0002	0.630	–	1.260	–	DL16	60	0.512	HF10
RODL16-D18HA0320-0002	0.709	0.610	1.260	0.787	DL16	60	0.512	HF10
RODL16-D20HA0320-0002	0.787	0.610	1.260	0.787	DL16	60	0.512	HF10
RODL16-D25HA0320-0002	0.984	0.610	1.260	0.787	DL16	60	0.512	HF10
RODL16-D2540HA0320-0002	1.000	0.610	1.260	0.787	DL16	60	0.512	HF10
RODL16-D32HA0320-0002	1.260	0.610	1.260	0.787	DL16	60	0.512	HF10
RODL20-D20HA0400-0002	0.787	–	1.575	–	DL20	80	0.630	HF10
RODL20-D25HA0400-0002	0.984	0.760	1.575	0.984	DL20	80	0.630	HF10
RODL20-D2540HA0400-0002	1.000	0.760	1.575	0.984	DL20	80	0.630	HF10
RODL20-D32HA0400-0002	1.260	0.760	1.575	0.984	DL20	80	0.630	HF10
RODL20-D36HA0400-0002	1.417	0.760	1.575	0.984	DL20	80	0.630	HF10
RODL20-D40HA0400-0002	1.575	0.760	1.575	0.984	DL20	80	0.630	HF10
RODL25-D25HA0500-0002	0.984	–	1.969	–	DL25	100	0.827	HF10
RODL25-D2540HA0500-0002	1.000	–	1.969	–	DL25	100	0.827	HF10
RODL32-D32HA0640-0002	1.260	–	2.520	–	DL32	130	1.102	HF10

Further lengths available on request

DUO-LOCK® BLANK  
COOLING BORE CENTRAL – WITH WRENCH FLATS

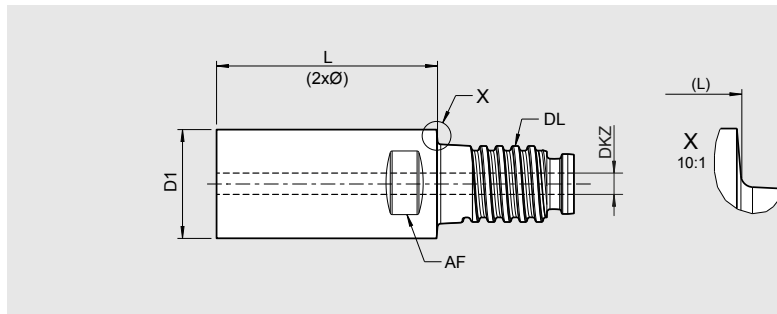


**Version: short, with wrench flats**

- Best length repeatability
- HF10: Fine grain carbide, 10% cobalt
- Measuring devices on request
- Central cooling

Article-Code	D1 (h6) [mm]	L (+ 1) [mm]	Interface	DKZ [mm]	Tightening torque [Nm]	AF [mm]	Material
RODL10-D10HA0125-0002KZ	10	12.5	DL10	2	20	8	HF10
RODL12-D12HA0150-0002KZ	12	15	DL12	2	30	9.5	HF10
RODL16-D16HA0200-0002KZ	16	20	DL16	2	60	13	HF10
RODL20-D20HA0250-0002KZ	20	25	DL20	3	80	16	HF10
RODL25-D25HA0313-0002KZ	25	31.25	DL25	4	100	21	HF10
RODL32-D32HA0400-0002KZ	32	40	DL32	5	130	28	HF10

Further lengths available on request - Radial cooling available on request



**Version: normal, with wrench flats**

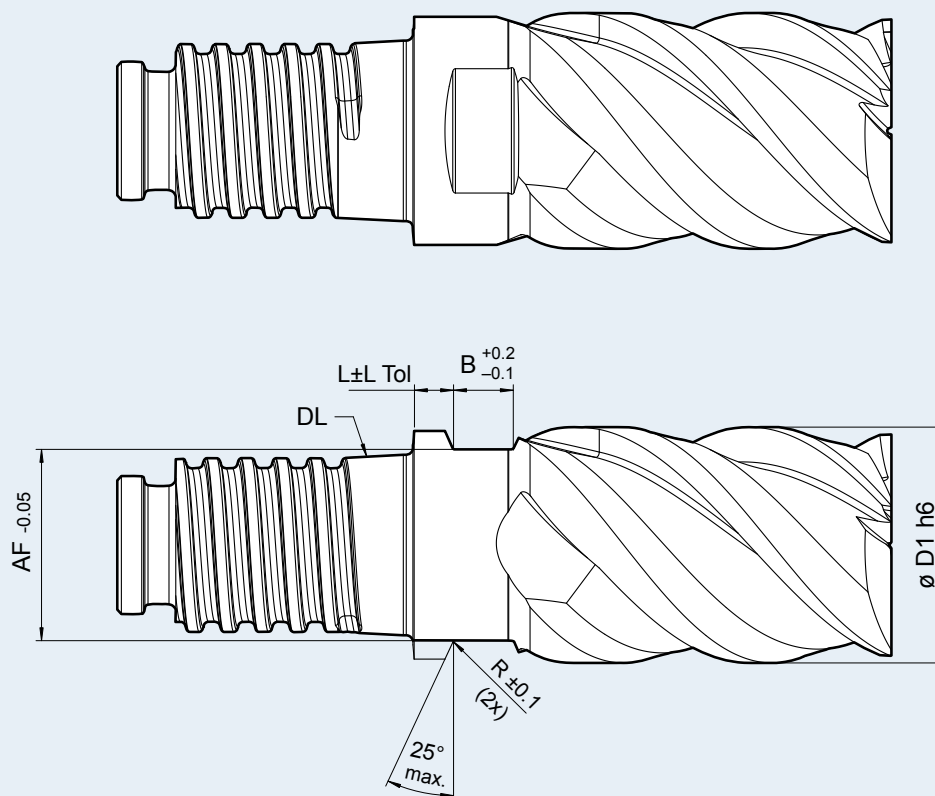
- Best length repeatability
- HF10: Fine grain carbide, 10% cobalt
- Measuring devices on request
- Central cooling

Article-Code	D1 (h6) [mm]	L (+ 1) [mm]	Interface	DKZ [mm]	Tightening torque [Nm]	AF [mm]	Material
RODL10-D10HA0200-0002KZ	10	20	DL10	2	20	8	HF10
RODL12-D12HA0240-0002KZ	12	24	DL12	2	30	9.5	HF10
RODL16-D16HA0320-0002KZ	16	32	DL16	2	60	13	HF10
RODL20-D20HA0400-0002KZ	20	40	DL20	3	80	16	HF10
RODL25-D25HA0500-0002KZ	25	50	DL25	4	100	21	HF10
RODL32-D32HA0640-0002KZ	32	64	DL32	5	130	28	HF10

Further lengths available on request - Radial cooling available on request

METRIC

INCH

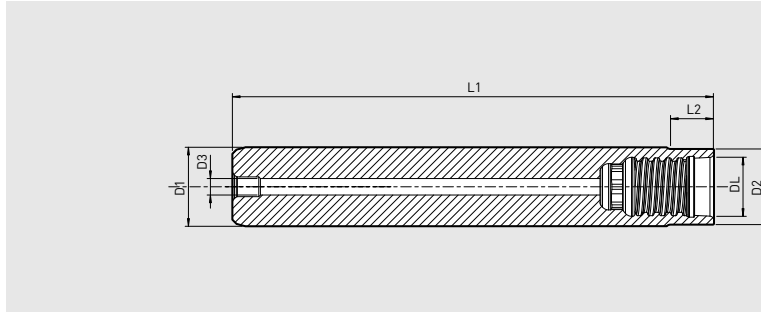
DUO-LOCK® BLANK  
WRENCH FLATS SPECIFICATIONS

Interface	AF [mm]	L [mm]	L Tol. ± [mm]	B [mm]	ø D1 [mm]	R [mm]
DL10	8	1.7	± 0.15	2.5	10	0.3
DL12	9.5	2	± 0.15	3	12	0.3
DL16	13	2.5	± 0.2	4	16	0.3
DL20	16	3.1	± 0.2	4.8	20	0.3
DL25	21	3.5	± 0.2	7	25	0.6
DL32	28	4	± 0.2	9	32	0.6

Interface	AF [inch]	L [inch]	L Tol. ± [inch]	B [inch]	ø D1 [inch]	R [inch]
DL10	0.315	0.067	± 0.006	0.098	3/8	0.012
DL12	0.374	0.079	± 0.006	0.118	1/2	0.012
DL16	0.512	0.098	± 0.008	0.157	5/8	0.012
DL20	0.630	0.122	± 0.008	0.189	3/4	0.012
DL25	0.827	0.138	± 0.008	0.276	1	0.024
DL32	1.102	0.157	± 0.008	0.354	1 1/4	0.024



DUO-LOCK® EXTENSIONS  
CYLINDRICAL – SHORT – STEEL



Version: cylindrical, short

- Shank tolerance: h6
- With inner coolant bore
- Optional with Safe-Lock

- Also available:

Extensions with coating – for perfect shrinking in and out even at high forces during machining

Duo-Lock extensions cylindrical: short

Interface DL	Order No.	Order No. with Coating	Clamping Ø D1 [mm]	Length L1 [mm]	Neck Ø D2 [mm]	Neck length L2 [mm]	Internal bore Ø D3 [mm]
DL12	75.120.DL12	75.120.DL12.1	12	60	11.5	6	2.5
DL16	75.160.DL16	75.160.DL16.1	16	65	15.5	8	3
DL20	75.200.DL20	75.200.DL20.1	20	70	19.3	10	3
DL25	75.250.DL25	75.250.DL25.1	25	80	24	12.5	5
DL32	75.320.DL32	75.320.DL32.1	32	90	31	16	5

Duo-Lock extensions cylindrical: short with Safe-Lock

Interface DL	Order No.	Order No. with Coating	Clamping Ø D1 [mm]	Length L1 [mm]	Neck Ø D2 [mm]	Neck length L2 [mm]	Internal bore Ø D3 [mm]
DL10	75.100.DL10	75.100.DL10.1	10	55	9.6	5	2.5
DL12	75.121.DL12	75.121.DL12.1	12	65	11.5	6	2.5
DL16	75.161.DL16	75.161.DL16.1	16	70	15.5	8	3
DL20	75.201.DL20	75.201.DL20.1	20	80	19.3	10	3
DL25	75.251.DL25	75.251.DL25.1	25	90	24	12.5	5
DL32	75.321.DL32	75.321.DL32.1	32	105	31	16	5

Duo-Lock extensions cylindrical: short

Interface DL	Order No.	Order No. with Coating	Clamping Ø D1 [inch]	Length L1 [inch]	Neck length L2 [inch]	Neck Ø D2 [inch]	Internal bore Ø D3 [inch]
DL16	75.5/8z0.DL16	75.5/8z0.DL16.1	5/8	2.5	0.3125	0.6053	0.1181
DL20	75.3/4z0.DL20	75.3/4z0.DL20.1	3/4	3	0.375	0.7303	0.1181
DL25	75.1z0.DL25	75.1z0.DL25.1	1	3	0.5	0.9606	0.1969
DL32	75.11/4z0.DL32	75.11/4z0.DL32.1	11/4	3.5	0.625	1.2106	0.1969

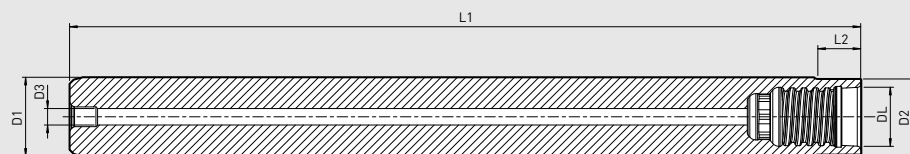
Duo-Lock extensions cylindrical: short with Safe-Lock

Interface DL	Order No.	Order No. with Coating	Clamping Ø D1 [inch]	Length L1 [inch]	Neck length L2 [inch]	Neck Ø D2 [inch]	Internal bore Ø D3 [inch]
DL10	75.3/8z0.DL10	75.3/8z0.DL10.1	3/8	2.25	0.1875	0.3593	0.0984
DL12	75.1/2z0.DL12	75.1/2z0.DL12.1	1/2	2.5	0.25	0.4803	0.0984
DL16	75.5/8z1.DL16	75.5/8z1.DL16.1	5/8	2.75	0.3125	0.6053	0.1181
DL20	75.3/4z1.DL20	75.3/4z1.DL20.1	3/4	3	0.375	0.7303	0.1181
DL25	75.1z1.DL25	75.1z1.DL25.1	1	3.5	0.5	0.9606	0.1969
DL32	75.11/4z1.DL32	75.11/4z1.DL32.1	11/4	4	0.625	1.2106	0.1969

Torque of Duo-Lock interface						
	DL10	DL12	DL16	DL20	DL25	DL32
Nm	20	30	60	80	100	130

Attention: For a long lifetime of the system, the compliance with the torque is required.

METRIC INCH **DUO-LOCK® EXTENSIONS**  
CYLINDRICAL – LONG – STEEL

**Version: cylindrical, long**

- Shank tolerance: h6
- With inner coolant bore
- Vibration dampening on request
- Safe-Lock for an extra charge
- Cutting to length possible for an extra charge

– Also available:

Extensions with coating – for perfect shrinking in and out even at high forces during machining

**Duo-Lock extensions cylindrical: long**

Interface DL	Order No.	Order No. with Coating	Clamping Ø D1 [mm]	Length L1 [mm]	Neck Ø D2 [mm]	Neck length L2 [mm]	Internal bore Ø D3 [mm]
DL10	75.102.DL10	75.102.DL10.1	10	100	9.6	5	2.5
DL12	75.122.DL12	75.122.DL12.1	12	120	11.5	6	2.5
DL16	75.162.DL16	75.162.DL16.1	16	160	15.5	8	3
DL20	75.202.DL20	75.202.DL20.1	20	200	19.3	10	3
DL25	75.252.DL25	75.252.DL25.1	25	250	24	12.5	5
DL32	75.322.DL32	75.322.DL32.1	32	250	31	16	5

**Duo-Lock extensions cylindrical: long**

Interface DL	Order No.	Order No. with Coating	Clamping Ø D1 [inch]	Length L1 [inch]	Neck length L2 [inch]	Neck Ø D2 [inch]	Internal bore Ø D3 [inch]
DL10	75.3/8z2.DL10	75.3/8z2.DL10.1	3/8	3.75	0.1875	0.3593	0.0984
DL12	75.1/2z2.DL12	75.1/2z2.DL12.1	1/2	5	0.25	0.4803	0.0984
DL16	75.5/8z2.DL16	75.5/8z2.DL16.1	5/8	6.25	0.3125	0.6053	0.1181
DL20	75.3/4z2.DL20	75.3/4z2.DL20.1	3/4	7.5	0.375	0.7303	0.1181
DL25	75.1z2.DL25	75.1z2.DL25.1	1	10	0.5	0.9606	0.1969
DL32	75.11/4z2.DL32	75.11/4z2.DL32.1	11/4	10	0.625	1.2106	0.1969

**Torque of Duo-Lock interface**

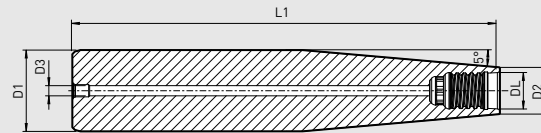
	DL10	DL12	DL16	DL20	DL25	DL32
<b>Nm</b>	<b>20</b>	<b>30</b>	<b>60</b>	<b>80</b>	<b>100</b>	<b>130</b>

Attention: For a long lifetime of the system, the compliance with the torque is required.

DUO-LOCK® EXTENSIONS  
CONICAL – SHORT – STEEL

METRIC

INCH

**Version: conical, short**

- Shank tolerance: h6
- With inner coolant bore
- With Safe-Lock as standard

Also available:

Extensions with coating – for perfect shrinking in and out even at high forces during machining

**Duo-Lock extensions conical: short with Safe-Lock**

Interface DL	Order No.	Order No. with Coating	Clamping Ø D1 [mm]	Length L1 [mm]	Outer Ø D2 [mm]	Internal bore Ø D3 [mm]
DL10	75.120.DL10	75.120.DL10.1	12	65	9.6	2.5
DL10	75.160.DL10	75.160.DL10.1	16	90	9.6	2.5
DL10	75.200.DL10	75.200.DL10.1	20	115	9.6	2.5
DL12	75.160.DL12	75.160.DL12.1	16	80	11.5	2.5
DL12	75.200.DL12	75.200.DL12.1	20	105	11.5	2.5
DL16	75.200.DL16	75.200.DL16.1	20	80	15.5	3
DL16	75.250.DL16	75.250.DL16.1	25	115	15.5	3
DL20	75.250.DL20	75.250.DL20.1	25	95	19.3	3
DL25	75.320.DL25	75.320.DL25.1	32	105	24	5
DL32	75.400.DL32	75.400.DL32.1	40	140	31	5
DL32	75.500.DL32	75.500.DL32.1	50	200	31	5

**Duo-Lock extensions conical: short with Safe-Lock**

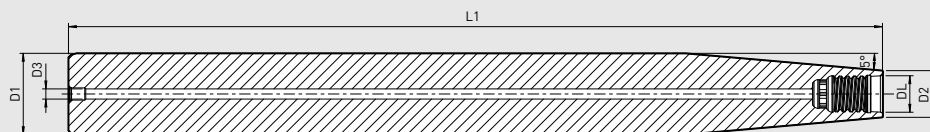
Interface DL	Order No.	Order No. with Coating	Clamping Ø D1 [inch]	Length L1 [inch]	Outer Ø D2 [inch]	Internal bore Ø D3 [inch]
DL10	75.1/2z0.DL10	75.1/2z0.DL10.1	1/2	2.5	0.3593	0.0984
DL10	75.5/8z0.DL10	75.5/8z0.DL10.1	5/8	3.5	0.3593	0.0984
DL10	75.3/4z0.DL10	75.3/4z0.DL10.1	3/4	4.5	0.3593	0.0984
DL12	75.5/8z0.DL12	75.5/8z0.DL12.1	5/8	3.25	0.4803	0.0984
DL12	75.3/4z0.DL12	75.3/4z0.DL12.1	3/4	4.25	0.4803	0.0984
DL16	75.3/4z0.DL16	75.3/4z0.DL16.1	3/4	3.25	0.6053	0.1181
DL16	75.1z0.DL16	75.1z0.DL16.1	1	4.5	0.6053	0.1181
DL20	75.1z0.DL20	75.1z0.DL20.1	1	3.75	0.7303	0.1181
DL25	75.11/4z0.DL25	75.11/4z0.DL25.1	11/4	4.25	0.9606	0.1969
DL32	75.11/2z0.DL32	75.11/2z0.DL32.1	11/2	5.5	1.2106	0.1969
DL32	75.2z0.DL32	75.2z0.DL32.1	2	7.5	1.2106	0.1969

**Torque of Duo-Lock interface**

	DL10	DL12	DL16	DL20	DL25	DL32
Nm	20	30	60	80	100	130

Attention: For a long lifetime of the system, the compliance with the torque is required.

METRIC INCH DUO-LOCK® EXTENSIONS  
CONICAL – LONG – STEEL



**Version: conical, long**

- Shank tolerance: h6
- With inner coolant bore
- Vibration dampening on request
- Safe-Lock for an extra charge
- Cutting to length possible for an extra charge

Also available:

Extensions with coating – for perfect shrinking in and out even at high forces during machining

**Duo-Lock extensions conical: long**

Interface DL	Order No.	Order No. with Coating	Clamping Ø D1 [mm]	Length L1 [mm]	Outer Ø D2 [mm]	Internal bore Ø D3 [mm]
DL10	75.122.DL10	75.122.DL10.1	12	120	9.6	2.5
DL10	75.162.DL10	75.162.DL10.1	16	160	9.6	2.5
DL10	75.202.DL10	75.202.DL10.1	20	200	9.6	2.5
DL12	75.162.DL12	75.162.DL12.1	16	160	11.5	2.5
DL12	75.202.DL12	75.202.DL12.1	20	200	11.5	2.5
DL16	75.202.DL16	75.202.DL16.1	20	200	15.5	3
DL16	75.252.DL16	75.252.DL16.1	25	250	15.5	3
DL20	75.252.DL20	75.252.DL20.1	25	250	19.3	3
DL25	75.322.DL25	75.322.DL25.1	32	250	24	5
DL32	75.402.DL32	75.402.DL32.1	40	250	31	5
DL32	75.502.DL32	75.502.DL32.1	50	250	31	5

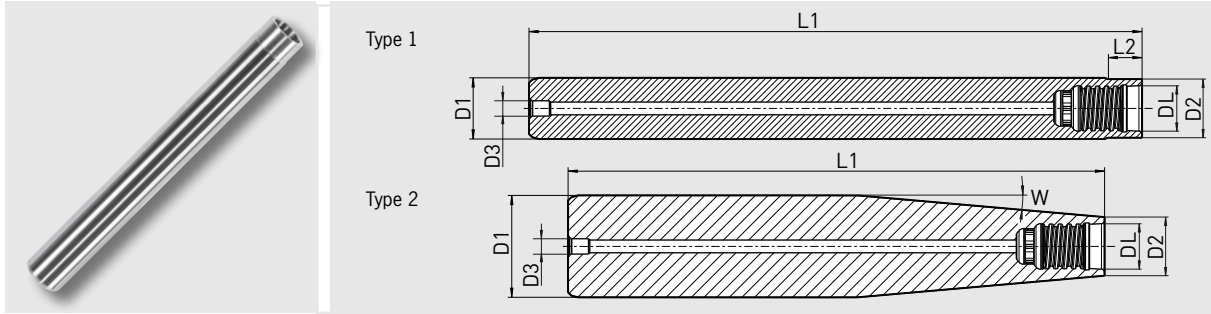
**Duo-Lock extensions conical: long**

Interface DL	Order No.	Order No. with Coating	Clamping Ø D1 [inch]	Length L1 [inch]	Outer Ø D2 [inch]	Internal bore Ø D3 [inch]
DL10	75.1/2z2.DL10	75.1/2z2.DL10.1	1/2	5	0.3593	0.0984
DL10	75.5/8z2.DL10	75.5/8z2.DL10.1	5/8	6.25	0.3593	0.0984
DL10	75.3/4z2.DL10	75.3/4z2.DL10.1	3/4	7.5	0.3593	0.0984
DL12	75.5/8z2.DL12	75.5/8z2.DL12.1	5/8	6.25	0.4803	0.0984
DL12	75.3/4z2.DL12	75.3/4z2.DL12.1	3/4	7.5	0.4803	0.0984
DL16	75.3/4z2.DL16	75.3/4z2.DL16.1	3/4	7.5	0.6053	0.1181
DL16	75.1z2.DL16	75.1z2.DL16.1	1	10	0.6053	0.1181
DL20	75.1z2.DL20	75.1z2.DL20.1	1	10	0.7303	0.1181
DL25	75.11/4z2.DL25	75.11/4z2.DL25.1	11/4	10	0.9606	0.1969
DL32	75.11/2z2.DL32	75.11/2z2.DL32.1	11/2	10	1.2106	0.1969
DL32	75.2z2.DL32	75.2z2.DL32.1	2	10	1.2106	0.1969

**Torque of Duo-Lock interface**

	DL10	DL12	DL16	DL20	DL25	DL32
<b>Nm</b>	<b>20</b>	<b>30</b>	<b>60</b>	<b>80</b>	<b>100</b>	<b>130</b>

Attention: For a long lifetime of the system, the compliance with the torque is required.



**Version: Heavy metal**

- L1, L2 and W angle customizable
- Shank tolerance: h6
- With inner coolant bore
- Optional with Safe-Lock

**Duo-Lock extensions: Heavy metal**

Interface DL	Order No.	Clamping Ø D1 [mm]	Length max. L1 [mm]	Internal bore D3 [mm]
DL10	75.109.DL10.4.XXX.XXX	10	150	2.5
DL10 - DL12	75.129.DLXX.4.XXX.XXX	12	180	2.5
DL10 - DL16	75.169.DLXX.4.XXX.XXX	16	240	3
DL10 - DL20	75.209.DLXX.4.XXX.XXX	20	260	3
DL10 - DL25	75.259.DLXX.4.XXX.XXX	25	260	3
DL10 - DL32	75.329.DLXX.4.XXX.XXX	32	260	5
DL10 - DL32	75.409.DLXX.4.XXX.XXX	40	260	5
DL10 - DL32	75.509.DLXX.4.XXX.XXX	50	260	5

Torque of Duo-Lock interface						
	DL10	DL12	DL16	DL20	DL25	DL32
Nm	15	25	40	60	90	130

Attention: For a long lifetime of the system, the compliance with the torque is required.  
The torque specification is given on the extension.

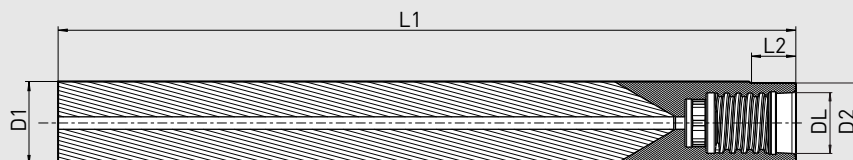
Interface DL	Fix Ø D2 [mm]	Standard L2 [mm]
DL10	9.6	5
DL12	11.5	6
DL16	15.5	8
DL20	19.3	10
DL25	24	12.5
DL32	31	16

**Legend Order No.:**

**75.XX9.DLXX.4.XXX.XXX**



METRIC INCH **DUO-LOCK® EXTENSIONS**  
CARBIDE

**Version: Carbide**

- L1 and L2 customizable
- Shank tolerance: h6
- With inner coolant bore
- Optional with Safe-Lock

**Duo-Lock extensions cylindrical: long**

Interface DL	Order No.	Clamping Ø D1 [mm]	Length max. L1 [mm]	Fix Ø D2 [mm]	Standard L2 [mm]
DL10	75.109.DL10.5.XXX.XXX	10	150	9.6	5
DL12	75.129.DL12.5.XXX.XXX	12	180	11.5	6
DL16	75.169.DL16.5.XXX.XXX	16	240	15.5	8
DL20	75.209.DL20.5.XXX.XXX	20	260	19.3	10
DL25	75.259.DL25.5.XXX.XXX	25	260	24	12.5
DL32	75.329.DL32.5.XXX.XXX	32	260	31	16

**Duo-Lock extensions cylindrical: long**

Interface DL	Order No.	Clamping Ø D1 [inch]	Length max. L1 [inch]	Fix Ø D2 [inch]	Standard L2 [inch]
DL10	75.3/8z9.DL10.5.XXX.XXX	3/8	5.9055	0.3593	0.1875
DL12	75.1/2z9.DL12.5.XXX.XXX	1/2	7.0866	0.4803	0.25
DL16	75.5/8z9.DL16.5.XXX.XXX	5/8	9.4488	0.6053	0.3125
DL20	75.3/4z9.DL20.5.XXX.XXX	3/4	10.2362	0.7303	0.375
DL25	75.1z9.DL25.5.XXX.XXX	1	10.2362	0.9606	0.5
DL32	75.11/4z9.DL32.5.XXX.XXX	11/4	10.2362	1.2106	0.625

**Torque of Duo-Lock interface**

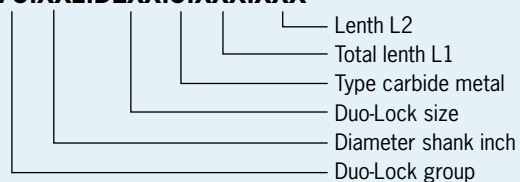
	DL10	DL12	DL16	DL20	DL25	DL32
<b>Nm</b>	<b>20</b>	<b>30</b>	<b>60</b>	<b>80</b>	<b>100</b>	<b>130</b>

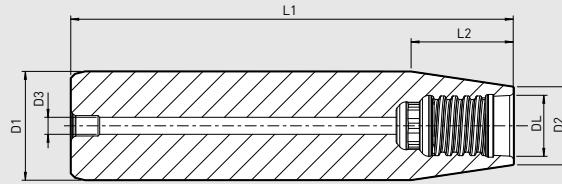
Attention: For a long lifetime of the system, the compliance with the torque is required.

For more Duo-Lock information, please see pages "Torque Master" 247 - 249

**Legend Order No.:**

**75.XXz.DLXX.5.XXX.XXX**



**Version: Heavy Duty**

- Shank tolerance: h6
- With inner coolant bore
- With Safe-Lock as standard

Also available:

Extension with coating – for perfect shrinking in and out even at high forces during machining

**Duo-Lock extensions Heavy Duty with Safe-Lock**

Interface DL	Order No.	Clamping Ø D1 [mm]	Length L1 [mm]	Length L2 [mm]	Outer Ø D2 [mm]	Internal bore Ø D3 [mm]
DL10	75.160.DL10.9	16	62.5	12.5	9.6	2.5
DL12	75.160.DL12.9	16	65	15	11.5	2.5
DL16	75.200.DL16.9	20	72	20	15.5	3
DL20	75.250.DL20.9	25	82	24	19.3	3

**Duo-Lock extensions Heavy Duty with Safe-Lock**

Interface DL	Order No.	Clamping Ø D1 [inch]	Length L1 [inch]	Neck length L2 [inch]	Outer Ø D2 [inch]	Internal bore Ø D3
DL10	75.5/8z0.DL10.9	5/8	2.4606	0.4921	0.3593	0.0984
DL12	75.5/8z0.DL12.9	5/8	2.5591	0.5906	0.4803	0.0984
DL16	75.3/4z0.DL16.9	3/4	2.8346	0.7874	0.6053	0.1181
DL20	75.1z0.DL20.9	1	3.2283	0.9449	0.7303	0.1181

**Torque of Duo-Lock interface**

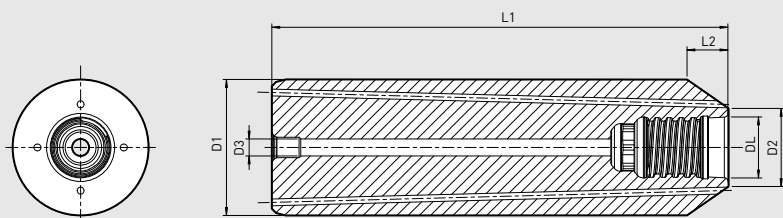
	DL10	DL12	DL16	DL20
Nm	20	30	60	80

Attention: For a long lifetime of the system, the compliance with the torque is required.

METRIC

INCH

## DUO-LOCK® EXTENSIONS HEAVY DUTY WITH COOL JET – STEEL



### Version: Heavy Duty with Cool Jet

- Shank tolerance: h6
- With Cool Jet
- With Safe-Lock as standard

Also available:

Extension with coating – for perfect shrinking in and out even at high forces during machining

### Duo-Lock extensions Heavy Duty with Cool Jet

Interface DL	Order No.	Clamping Ø D1 [mm]	Length L1 [mm]	Length L2 [mm]	Outer Ø D2 [mm]	Internal bore Ø D3 [mm]
DL10	75.160.DL10.82	16	62.5	6	9.6	2.5
DL12	75.200.DL12.82	20	67	6	11.5	2.5
DL16	75.250.DL16.82	25	78	6	15.5	3
DL20	75.320.DL20.82	32	82	6	19.3	3

### Duo-Lock extensions Heavy Duty with Cool Jet

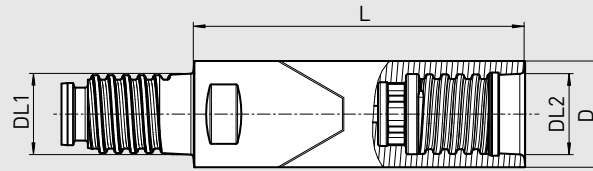
Interface DL	Order No.	Clamping Ø D1 [inch]	Length L1 [inch]	Neck length L2 [inch]	Outer Ø D2 [inch]	Internal bore Ø D3
DL10	75.5/8z0.DL10.82	5/8	2.4606	0.2362	0.3593	0.0984
DL12	75.3/4z0.DL12.82	3/4	2.6378	0.2362	0.4803	0.0984
DL16	75.1z0.DL16.82	1	3.0709	0.2362	0.6053	0.1181
DL20	75.11/4z0.DL20.82	1 1/4	3.2283	0.2362	0.7303	0.1181

### Torque of Duo-Lock interface

	DL10	DL12	DL16	DL20
<b>Nm</b>	<b>20</b>	<b>30</b>	<b>60</b>	<b>80</b>

Attention: For a long lifetime of the system, the compliance with the torque is required.





Cylindrical carbide / steel Duo-Lock extension for fast and effective reaching of cavities.

– With inner coolant bore

#### Duo-Lock extension for extension

Interface DL1	Order No.	Interface DL2	Outer Ø D [mm]	Length L [mm]
DL10	75.DL10.DL10.030	DL10	9.6	30
DL12	75.DL12.DL12.040	DL12	11.5	40
DL16	75.DL16.DL16.050	DL16	15.5	50
DL20	75.DL20.DL20.060	DL20	19.3	60

#### Duo-Lock extension for extension

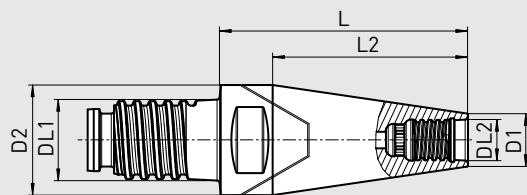
Interface DL1	Order No.	Interface DL2	Outer Ø D [inch]	Length L [inch]
DL10	75.DL10.DL10.030	DL10	0.3780	1.1811
DL12	75.DL12.DL12.040	DL12	0.4528	1.5748
DL16	75.DL16.DL16.050	DL16	0.6102	1.9685
DL20	75.DL20.DL20.060	DL20	0.7598	2.3622

#### Torque of Duo-Lock interface

	DL10	DL12	DL16	DL20
Nm	20	30	60	80

Attention: For a long lifetime of the system, the compliance with the torque is required.

METRIC INCH **DUO-LOCK®**  
CARBIDE/STEEL REDUCTION



Cylindrical carbide / steel Duo-Lock reduction for fast and effective reaching of cavities.

- With inner coolant bore
- External contour adaptation (L2) possible at extra cost (special request)

#### Duo-Lock reduction for extension

Interface DL1	Order No.	Interface DL2	Outer Ø D1 [mm]	Outer Ø D2 [mm]	Length L [mm]
DL12	75.DL12.DL10.030	DL10	9.6	11.5	30
DL16	75.DL16.DL10.035	DL10	9.6	15.5	35
DL16	75.DL16.DL12.035	DL12	11.5	15.5	35
DL20	75.DL20.DL10.045	DL10	9.6	19.3	45
DL20	75.DL20.DL12.045	DL12	11.5	19.3	45
DL20	75.DL20.DL16.045	DL16	15.5	19.3	45

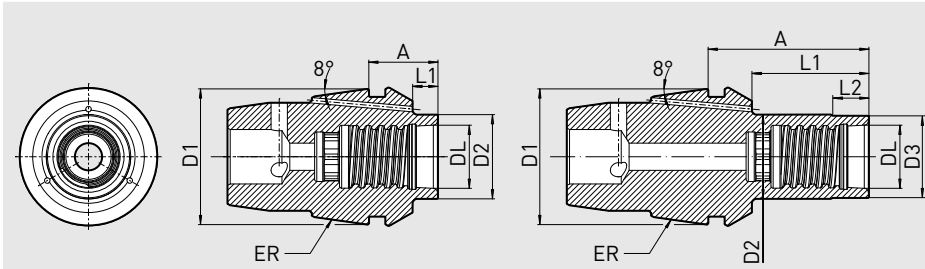
#### Duo-Lock reduction for extension

Interface DL1	Order No.	Interface DL2	Outer Ø D1 [inch]	Outer Ø D2 [inch]	Length L [inch]
DL12	75.DL12.DL10.030	DL10	0.3780	0.4528	1.1811
DL16	75.DL16.DL10.035	DL10	0.3780	0.6102	1.3780
DL16	75.DL16.DL12.035	DL12	0.4528	0.6102	1.3780
DL20	75.DL20.DL10.045	DL10	0.3780	0.7598	1.7717
DL20	75.DL20.DL12.045	DL12	0.4528	0.7598	1.7717
DL20	75.DL20.DL16.045	DL16	0.6102	0.7598	1.7717

#### Torque of Duo-Lock interface

	DL10	DL12	DL16	DL20
Nm	20	30	60	80

Attention: For a long lifetime of the system, the compliance with the torque is required.



- Useable for Duo-Lock milling heads from DL10 – DL25
- Compatible with all established ER systems
- Optional with Cool Jet 3 or 6 bores
- Accessories see page 250

#### Duo-Lock collets

Order No.	ER Size	Nominal Ø D1 [mm]	Length A [mm]	Length L1 [mm]	Length L2 [mm]	Outer Ø D2 [mm]	Neck Ø D3 [mm]	Duo-Lock Size DL
81.160.0120.DL10	ER16	16	12	5.3	–	9.6	–	DL10
81.200.0130.DL10	ER20	20	13	5.48	–	9.6	–	DL10
81.200.0140.DL12	ER20	20	14	6.48	–	11.5	–	DL12
81.250.0135.DL10	ER25	25	13.5	5.5	–	9.6	–	DL10
81.250.0145.DL12	ER25	25	14.5	6.5	–	11.5	–	DL12
81.250.0135.DL16	ER25	25	13.5	5.5	–	15.5	–	DL16
81.320.0140.DL10	ER32	32	14	5	–	9.6	–	DL10
81.320.0355.DL10	ER32	32	35.5	26.5	5	10	9.6	DL10
81.320.0150.DL12	ER32	32	15	6	–	11.5	–	DL12
81.320.0365.DL12	ER32	32	36.5	27.5	6	12	11.5	DL12
81.320.0170.DL16	ER32	32	17	8	–	15.5	–	DL16
81.320.0355.DL16	ER32	32	35.5	26.5	8	16	15.5	DL16
81.320.0190.DL20	ER32	32	19	10	–	19.3	–	DL20
81.320.0355.DL20	ER32	32	35.5	26.5	10	20	19.3	DL20
81.320.0215.DL25	ER32	32	21.5	12.5	–	24	–	DL25
81.320.0407.DL25	ER32	32	40.75	31.75	–	24	–	DL25

#### Torque of Duo-Lock interface

	DL10	DL12	DL16	DL20	DL25	DL32
Nm	20	30	60	80	100	130

Attention: For a long lifetime of the system, the compliance with the torque is required.

#### Accessories

##### Cool Jet with 3 coolant bores

Order No. 91.100.25

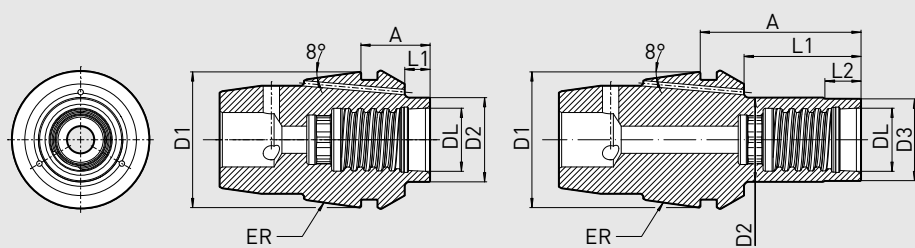
##### Cool Jet with 6 coolant bores

Order No. 91.100.31



Alternatively we recommend using our shrink fit collets in driven tools.

INCH

DUO-LOCK®  
COLLETS

- Useable for Duo-Lock milling heads from DL10 – DL25
- Compatible with all established ER systems
- Optional with Cool Jet 3 or 6 bores
- Accessories see page 250

## Duo-Lock collets

Order No.	ER Size	Nominal $\varnothing$ D1 [mm]	Length A [inch]	Length L1 [inch]	Length L2 [inch]	Outer $\varnothing$ D2 [inch]	Neck $\varnothing$ D3 [inch]	Duo-Lock Size DL
81.160.0120.DL10	ER16	16	0.4724	0.2087	-	0.3780	-	DL10
81.200.0130.DL10	ER20	20	0.5118	0.2157	-	0.3780	-	DL10
81.200.0140.DL12	ER20	20	0.5512	0.2582	-	0.4528	-	DL12
81.250.0135.DL10	ER25	25	0.5315	0.2165	-	0.3780	-	DL10
81.250.0145.DL12	ER25	25	0.5709	0.2559	-	0.4528	-	DL12
81.250.0135.DL16	ER25	25	0.5315	0.2165	-	0.6102	-	DL16
81.320.0140.DL10	ER32	32	0.5512	0.1969	-	0.3780	-	DL10
81.320.0355.DL10	ER32	32	1.3976	1.0433	0.1969	0.3937	0.3780	DL10
81.320.0150.DL12	ER32	32	0.5906	0.2362	-	0.4528	-	DL12
81.320.0355.DL12	ER32	32	1.4370	1.0827	0.2362	0.4724	0.4528	DL12
81.320.0170.DL16	ER32	32	0.6693	0.3150	-	0.6102	-	DL16
81.320.0355.DL16	ER32	32	1.3976	1.0433	0.315	0.6299	0.6102	DL16
81.320.0190.DL20	ER32	32	0.7480	0.3937	-	0.7598	-	DL20
81.320.0355.DL20	ER32	32	1.3976	1.0433	0.3937	0.7874	0.7598	DL20
81.320.0215.DL25	ER32	32	0.8465	0.4921	-	0.9449	-	DL25
81.320.0407.DL25	ER32	32	1.6043	1.25	-	0.9449	-	DL25

## Torque of Duo-Lock interface

	DL10	DL12	DL16	DL20	DL25
Nm	20	30	60	80	100

Attention: For a long lifetime of the system, the compliance with the torque is required.

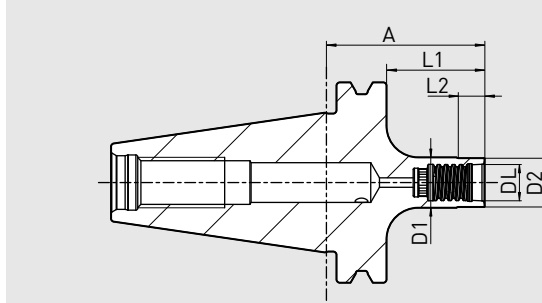
## Accessories

## Cool Jet with 3 coolant bores

Order No. 91.100.25

## Cool Jet with 6 coolant bores

Order No. 91.100.31



**CERTIFICATE OF QUALITY**

- Chuck body fine balanced  
G2.5 25,000 rpm  
or U < 1 gmm
- All functional surfaces fine machined
- Taper tolerance AT3
- Coolant supply form AD/AF

Duo-Lock Monoblock holder for direct clamping.  
Perfectly suitable for milling with short overhang.

Form AD/AF means: central coolant supply and coolant channels on the collar which can be sealed again.

With steep taper SK40 Form AD/AF DIN ISO 7388-1  
(formerly DIN 69871).

- All holders incl. inner coolant
- Hardened 54-2 HRC

**SK40**

Interface		DL10	DL12	DL16	DL20	DL25	DL32
∅ D1 [mm]		10	12	16	20	25	32
∅ D2 [mm]		9.6	11.5	15.5	19.3	24	31
L1 [mm]		21.9	21.9	30.9	30.9	36.9	45.9
L2 [mm]		5	6	8	10	12.5	16
Length A [mm]	short	41	41	50	50	56	65
Order No.	40.490.DL...	10	12	16	20	25	32

Torque of Duo-Lock interface						
	DL10	DL12	DL16	DL20	DL25	DL32
Nm	20	30	60	80	100	130

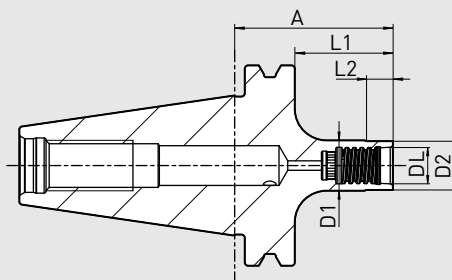
Attention: For a long lifetime of the system, the compliance with the torque is required.

INCH

**DUO-LOCK® MONOBLOCK HOLDER**  
CAT 40 · ASME B5.50

**CERTIFICATE OF QUALITY**

- Chuck body fine balanced  
G2.5 25,000 rpm  
or U<1 gmm
- All functional surfaces fine machined
- Taper tolerance AT3
- Coolant supply form AD/AF



Duo-Lock Monoblock holder for direct clamping.  
Perfectly suitable for milling with short overhang.

Form AD/AF means: central coolant supply and coolant channels on the collar which can be sealed again.

- All holders incl. inner coolant
- Hardened 54-2 HRC

**CAT 40**

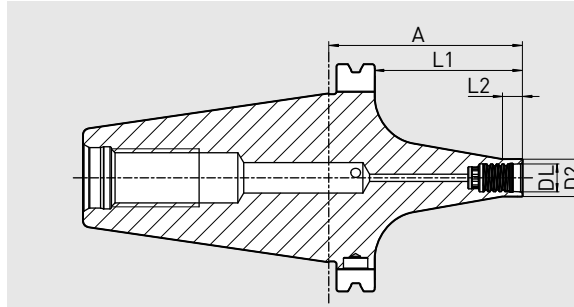
Interface		DL10	DL12	DL16	DL20	DL25	DL32
∅ D1 [inch]		3/8	1/2	5/8	3/4	1	1 1/4
∅ D2 [inch]		0.3593	0.4803	0.6053	0.7303	0.9606	1.2106
L1 [inch]		0.87	0.87	1.25	1.25	1.5	1.75
L2 [inch]		0.1875	0.25	0.3125	0.375	0.5	0.625
Length A [inch]	short	1.6201	1.6201	2.00	2.00	2.25	2.50
Order No.	40.890.DL...	10.i	12.i	16.i	20.i	25.i	32.i

Torque of Duo-Lock interface						
	DL10	DL12	DL16	DL20	DL25	DL32
<b>Nm</b>	<b>20</b>	<b>30</b>	<b>60</b>	<b>80</b>	<b>100</b>	<b>130</b>

Attention: For a long lifetime of the system, the compliance with the torque is required.

For more Duo-Lock information, please see pages "Torque Master" 247 - 249

**DUO-LOCK® MONOBLOCK HOLDER**  
DIN ISO 7388-1 · SK50



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF

Duo-Lock Monoblock holder for direct clamping.  
Perfectly suitable for milling and also for grinding Duo-Lock blanks.

Form AD/AF means: central coolant supply and coolant channels on the collar which can be sealed again.

With steep taper SK50 Form AD/AF DIN ISO 7388-1  
(formerly DIN 69871).

- All holders incl. inner coolant
- Hardened 54-2 HRC
- Reinforced geometry
- Incl. ground sensor surface and labeled correction value

**SK50**

Interface		DL10	DL12	DL16	DL20	DL25	DL32
∅ D2 [mm]		9.6	11.5	15.5	19.3	24	31
L1 [mm]		60.9	60.9	60.9	60.9	60.9	60.9
L2 [mm]		5	6	8	10	12.5	16
Length A [mm]	short	80	80	80	80	80	80
Order No.	50.490.DL...	10	12	16	20	25	32

**SK50**

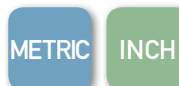
Interface		DL10	DL12	DL16	DL20	DL25	DL32
∅ D1 [inch]		0.3780	0.4528	0.6102	0.7598	0.9449	1.2205
∅ D2 [inch]		2.3976	2.3976	2.3976	2.3976	2.3976	2.3976
L1 [inch]		0.1969	0.2362	0.3150	0.3937	0.4921	0.6299
L2 [inch]		0.1875	0.25	0.3125	0.375	0.5	0.625
Length A [inch]	short	3.1496	3.1496	3.1496	3.1496	3.1496	3.1496
Order No.	50.490.DL...	10	12	16	20	25	32

**Torque of Duo-Lock interface**

	DL10	DL12	DL16	DL20	DL25	DL32
<b>Nm</b>	<b>20</b>	<b>30</b>	<b>60</b>	<b>80</b>	<b>100</b>	<b>130</b>

Attention: For a long lifetime of the system, the compliance with the torque is required.

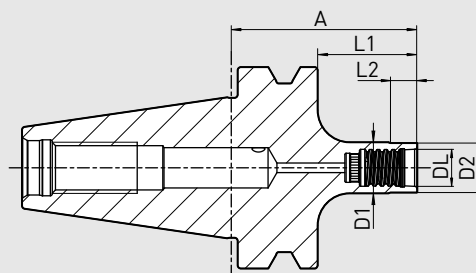
For more Duo-Lock information, please see pages "Torque Master" 247 - 249



**DUO-LOCK® MONOBLOCK HOLDER**  
JIS B 6339 · BT40

**CERTIFICATE OF QUALITY**

- Chuck body fine balanced  
G2.5 25,000 rpm  
or U<1 gmm
- All functional surfaces fine machined
- Taper tolerance AT3
- Coolant supply form AD/AF



Duo-Lock Monoblock holder for direct clamping.  
Perfectly suitable for milling with short overhang.

Form AD/AF means: central coolant supply and coolant channels on the collar which can be sealed again.

With steep taper BT40 Form JIS B 6339.

- All holders incl. inner coolant
- Hardened 54-2 HRC

**BT40**

Interface		DL10	DL12	DL16	DL20	DL25	DL32
∅ D1 [mm]		10	12	16	20	25	32
∅ D2 [mm]		9.6	11.5	15.5	19.3	24	31
L1 [mm]		22	22	31	31	33	41
L2 [mm]		5	6	8	10	12.5	16
Length A [mm]	short	49	49	58	58	60	68
Order No.	40.690.DL...	10	12	16	20	25	32

**BT40**

Interface		DL10	DL12	DL16	DL20	DL25	DL32
∅ D1 [inch]		3/8	1/2	5/8	3/4	1	1 1/4
∅ D2 [inch]		0.3593	0.4803	0.6053	0.7303	0.9606	1.2106
L1 [inch]		0.9370	0.9370	1.1870	1.1870	1.3170	1.6870
L2 [inch]		0.1875	0.25	0.3125	0.375	0.5	0.625
Length A [inch]	short	2.00	2.00	2.25	2.25	2.38	2.75
Order No.	40.690.DL...	10.i	12.i	16.i	20.i	25.i	32.i

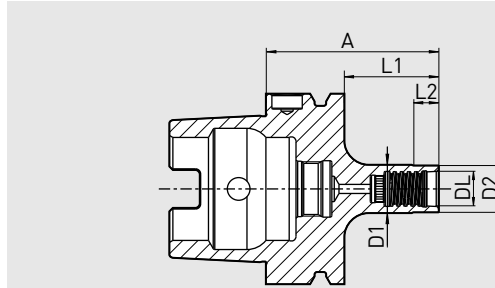
Torque of Duo-Lock interface						
	DL10	DL12	DL16	DL20	DL25	DL32
<b>Nm</b>	<b>20</b>	<b>30</b>	<b>60</b>	<b>80</b>	<b>100</b>	<b>130</b>

Attention: For a long lifetime of the system, the compliance with the torque is required.

For more Duo-Lock information, please see pages "Torque Master" 247 - 249



DUO-LOCK® MONOBLOCK HOLDER  
DIN 69893-1 · HSK-A63



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN

Duo-Lock Monoblock holder for direct clamping.  
Perfectly suitable for milling with short overhang.

- All holders incl. inner coolant
- Hardened 54-2 HRC

HSK-A63

Interface		DL10	DL12	DL16	DL20	DL25	DL32
∅ D1 [mm]		10	12	16	20	25	32
∅ D2 [mm]		9.6	11.5	15.5	19.3	24	31
L1 [mm]		22	26	31	31	35	46
L2 [mm]		5	6	8	10	12.5	16
Length A [mm]	short	48	52	57	57	61	72
Order No.	A63.190.DL...	10	12	16	20	25	32

HSK-A63

Interface		DL10	DL12	DL16	DL20	DL25	DL32
∅ D1 [inch]		3/8	1/2	5/8	3/4	1	1 1/4
∅ D2 [inch]		0.3593	0.4803	0.6053	0.7303	0.9606	1.2106
L1 [inch]		0.9783	1.2283	1.2283	1.2283	1.4783	1.8583
L2 [inch]		0.1875	0.25	0.3125	0.375	0.5	0.625
Length A [inch]	short	2.00	2.25	2.25	2.25	2.50	2.88
Order No.	A63.190.DL...	10.i	12.i	16.i	20.i	25.i	32.i

Torque of Duo-Lock interface						
	DL10	DL12	DL16	DL20	DL25	DL32
Nm	20	30	60	80	100	130

Attention: For a long lifetime of the system, the compliance with the torque is required.

For more Duo-Lock information, please see pages "Torque Master" 247 - 249

METRIC

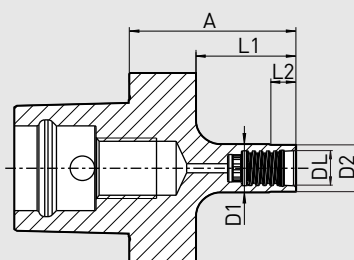
INCH

## DUO-LOCK® MONOBLOCK HOLDER

### ISO 26623-1 · PSC 63

#### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 25,000 rpm  
or U<1 gmm
- All functional surfaces fine machined
- More accurate than DIN



Duo-Lock Monoblock holder for direct clamping.  
Perfectly suitable for milling with short overhang.

- All holders incl. inner coolant
- Hardened 54-2 HRC

#### PSC 63

Interface		DL10	DL12	DL16	DL20	DL25	DL32
∅ D1 [mm]		10	12	16	20	25	32
∅ D2 [mm]		9.6	11.5	15.5	19.3	24	31
L1 [mm]		28	28	33	33	38	46
L2 [mm]		5	6	8	10	12.5	16
Length A [mm]	short	50	50	55	55	60	68
Order No.	CC6.190.DL...	10	12	16	20	25	32

#### PSC 63

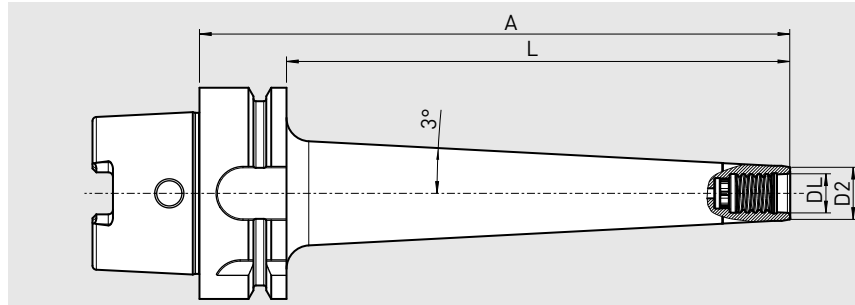
Interface		DL10	DL12	DL16	DL20	DL25	DL32
∅ D1 [inch]		3/8	1/2	5/8	3/4	1	1 1/4
∅ D2 [inch]		0.3593	0.4803	0.6053	0.7303	0.9606	1.2106
L1 [inch]		1.1319	1.1319	1.3819	1.3819	1.5119	1.8819
L2 [inch]		0.1875	0.25	0.3125	0.375	0.5	0.625
Length A [inch]	short	2.00	2.00	2.25	2.25	2.38	2.75
Order No.	CC6.190.DL...	10.i	12.i	16.i	20.i	25.i	32.i

#### Torque of Duo-Lock interface

	DL10	DL12	DL16	DL20	DL25	DL32
Nm	20	30	60	80	100	130

Attention: For a long lifetime of the system, the compliance with the torque is required.

For more Duo-Lock information, please see pages "Torque Master" 247 - 249



Duo-Lock Die and Mold Chuck for direct Duo-Lock clamping.

- With inner coolant bore
- Stable 3° angle for perfect milling on inclined forms
- Including carbide core for vibration-damped milling with long overhang lengths
- Repair possible at extra cost (if end mill breaks in interface)

#### HSK-A63

Interface DL	Order No.	Outer Ø D2 [mm]	Length L [mm]	Length A [mm]
DL10	A63.180.DL10.100	9.6	100	126
DL10	A63.180.DL10.125	9.6	125	151
DL10	A63.180.DL10.150	9.6	150	176
DL12	A63.180.DL12.100	11.5	100	126
DL12	A63.180.DL12.125	11.5	125	151
DL12	A63.180.DL12.150	11.5	150	176
DL16	A63.180.DL16.100	15.5	100	126
DL16	A63.180.DL16.125	15.5	125	151
DL16	A63.180.DL16.150	15.5	150	176
DL16	A63.180.DL16.175	15.5	175	201
DL16	A63.180.DL16.200	15.5	200	226
DL16	A63.180.DL16.250	15.5	250	276
DL20	A63.180.DL20.100	19.3	100	126
DL20	A63.180.DL20.125	19.3	125	151
DL20	A63.180.DL20.150	19.3	150	176
DL20	A63.180.DL20.175	19.3	175	201
DL20	A63.180.DL20.200	19.3	200	226
DL20	A63.180.DL20.250	19.3	250	276

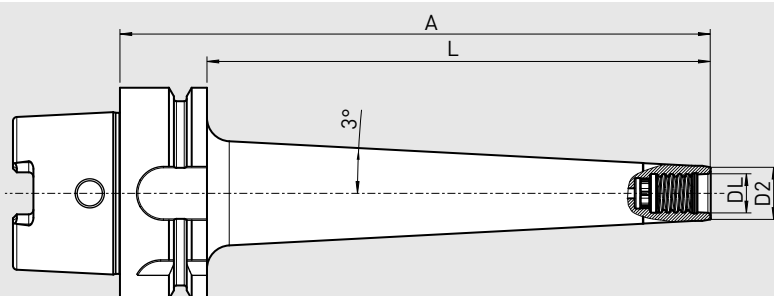
#### Torque of Duo-Lock interface

	DL10	DL12	DL16	DL20
Nm	20	30	60	80

Attention: For a long lifetime of the system, the compliance with the torque is required.

INCH

## DUO-LOCK® DIE AND MOLD CHUCK DIN 69893-1 · HSK-A63



Duo-Lock Die and Mold Chuck for direct Duo-Lock clamping.

- With inner coolant bore
- Stable 3° angle for perfect milling on inclined forms
- Including carbide core for vibration-damped milling with long overhang lengths
- Repair possible at extra cost (if end mill breaks in interface)

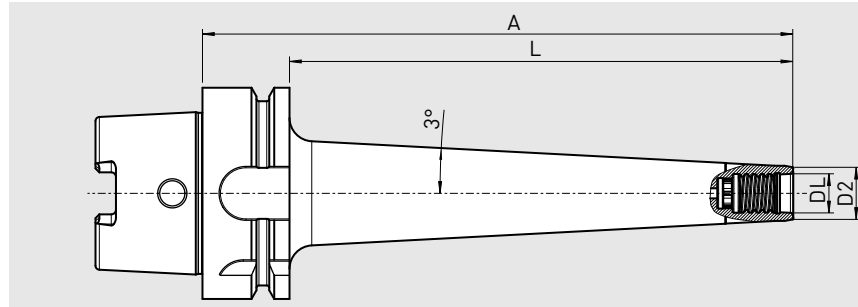
### HSK-A63

Interface DL	Order No.	Outer Ø D2 [inch]	Length L [inch]	Length A [inch]
DL10	A63.180.DL10.100	0.3780	3.9370	4.9606
DL10	A63.180.DL10.125	0.3780	4.9213	5.9449
DL10	A63.180.DL10.150	0.3780	5.9055	6.9291
DL12	A63.180.DL12.100	0.4528	3.9370	4.9606
DL12	A63.180.DL12.125	0.4528	4.9213	5.9449
DL12	A63.180.DL12.150	0.4528	5.9055	6.9291
DL16	A63.180.DL16.100	0.6102	3.9370	4.9606
DL16	A63.180.DL16.125	0.6102	4.9213	5.9449
DL16	A63.180.DL16.150	0.6102	5.9055	6.9291
DL16	A63.180.DL16.175	0.6102	6.8898	7.9134
DL16	A63.180.DL16.200	0.6102	7.8740	8.8976
DL16	A63.180.DL16.250	0.6102	9.8425	10.8661
DL20	A63.180.DL20.100	0.7598	3.9370	4.9606
DL20	A63.180.DL20.125	0.7598	4.9213	5.9449
DL20	A63.180.DL20.150	0.7598	5.9055	6.9291
DL20	A63.180.DL20.175	0.7598	6.8898	7.9134
DL20	A63.180.DL20.200	0.7598	7.8740	8.8976
DL20	A63.180.DL20.250	0.7598	9.8425	10.8661

### Torque of Duo-Lock interface

	DL10	DL12	DL16	DL20
Nm	20	30	60	80

Attention: For a long lifetime of the system, the compliance with the torque is required.



Duo-Lock Die and Mold Chuck for direct Duo-Lock clamping.

- With inner coolant bore
- Stable 3° angle for perfect milling on inclined forms
- Including carbide core for vibration-damped milling with long overhang lengths
- Repair possible at extra cost (if end mill breaks in interface)

#### HSK-A100

Interface DL	Order No.	Outer Ø D2 [mm]	Length L [mm]	Length A [mm]
DL10	A10.180.DL10.100	9.6	100	129
DL10	A10.180.DL10.150	9.6	150	179
DL12	A10.180.DL12.100	11.5	100	129
DL12	A10.180.DL12.150	11.5	150	179
DL12	A10.180.DL12.200	11.5	200	229
DL12	A10.180.DL12.250	11.5	250	279
DL16	A10.180.DL16.100	15.5	100	129
DL16	A10.180.DL16.150	15.5	150	179
DL16	A10.180.DL16.200	15.5	200	229
DL16	A10.180.DL16.250	15.5	250	279
DL20	A10.180.DL20.100	19.3	100	129
DL20	A10.180.DL20.150	19.3	150	179
DL20	A10.180.DL20.200	19.3	200	229
DL20	A10.180.DL20.250	19.3	250	279

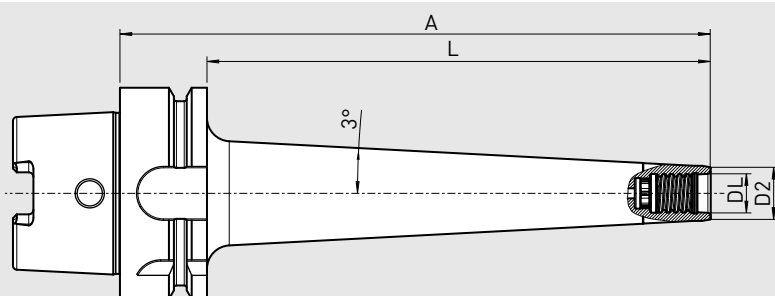
#### Torque of Duo-Lock interface

	DL10	DL12	DL16	DL20
Nm	20	30	60	80

Attention: For a long lifetime of the system, the compliance with the torque is required.

INCH

## DUO-LOCK® DIE AND MOLD CHUCK DIN 69893-1 · HSK-A100



Duo-Lock Die and Mold Chuck for direct Duo-Lock clamping.

- With inner coolant bore
- Stable 3° angle for perfect milling on inclined forms
- Including carbide core for vibration-damped milling with long overhang lengths
- Repair possible at extra cost (if end mill breaks in interface)

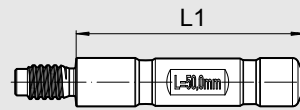
### HSK-A100

Interface DL	Order No.	Outer Ø D2 [inch]	Length L [inch]	Length A [inch]
DL10	A10.180.DL10.100	0.3780	3.9370	5.0787
DL10	A10.180.DL10.150	0.3780	5.9055	7.0472
DL12	A10.180.DL12.100	0.4528	3.9370	5.0787
DL12	A10.180.DL12.150	0.4528	5.9055	7.0472
DL12	A10.180.DL12.200	0.4528	7.8740	9.0157
DL12	A10.180.DL12.250	0.4528	9.8425	10.9843
DL16	A10.180.DL16.100	0.6102	3.9370	5.0787
DL16	A10.180.DL16.150	0.6102	5.9055	7.0472
DL16	A10.180.DL16.200	0.6102	7.8740	9.0157
DL16	A10.180.DL16.250	0.6102	9.8425	10.9843
DL20	A10.180.DL20.100	0.7598	3.9370	5.0787
DL20	A10.180.DL20.150	0.7598	5.9055	7.0472
DL20	A10.180.DL20.200	0.7598	7.8740	9.0157
DL20	A10.180.DL20.250	0.7598	9.8425	10.9843

### Torque of Duo-Lock interface

	DL10	DL12	DL16	DL20
Nm	20	30	60	80

Attention: For a long lifetime of the system, the compliance with the torque is required.

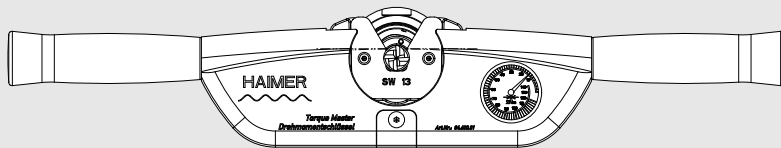


- Presetting aid
- Length presetting

Duo-Lock length presetting tool		
Order No.	Size	L1
75.000.DL10	DL10	50 $\pm 0,01$
75.000.DL12	DL12	50 $\pm 0,01$
75.000.DL16	DL16	50 $\pm 0,01$
75.000.DL20	DL20	50 $\pm 0,01$
75.000.DL25	DL25	50 $\pm 0,01$
75.000.DL32	DL32	50 $\pm 0,01$



**DUO-LOCK® TORQUE MASTER**



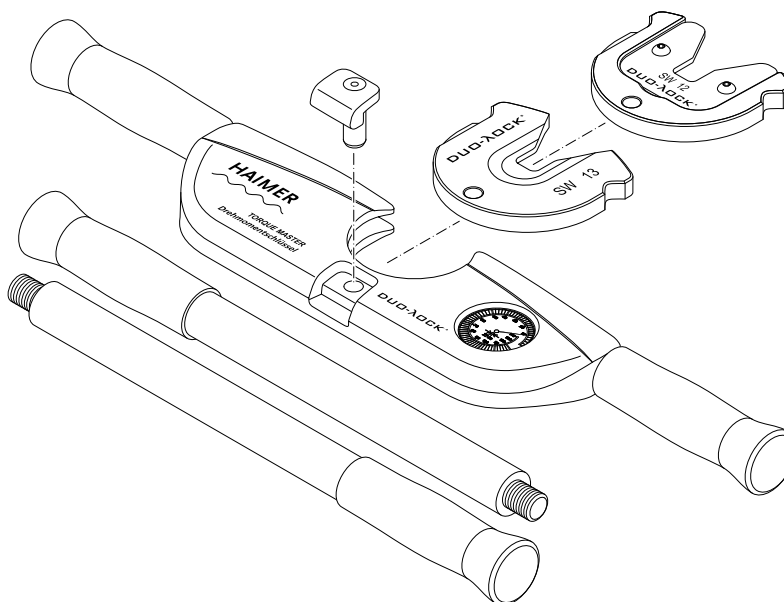
**Two-armed torque wrench for Duo-Lock:**

- For highest runout accuracy, avoids one-sided clamping
- Optimal power transmission by constant force application
- Torque wrench for highest clamping accuracy and repeatability with dial gauge
- Maximum torque for highest clamping force
- No overloading of smaller clamping diameters
- Changeable inserts, useable also for standard ER-Nuts
- Extended grips for DL16 – DL32

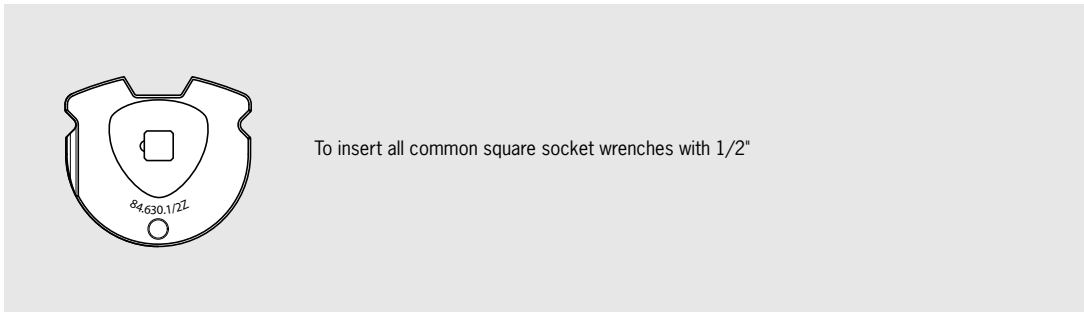
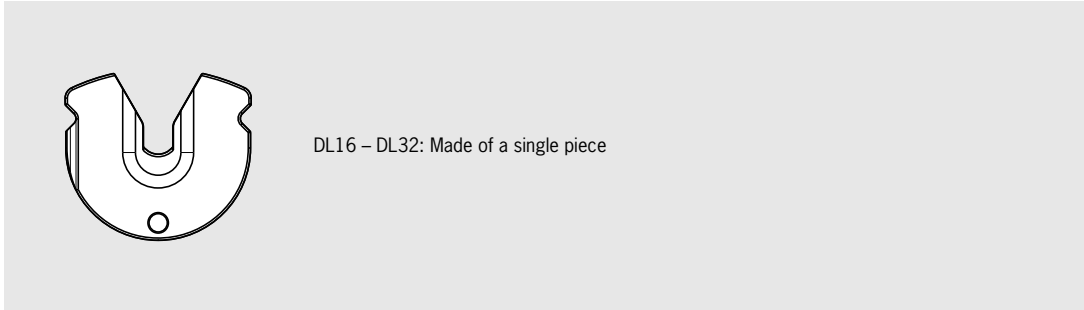
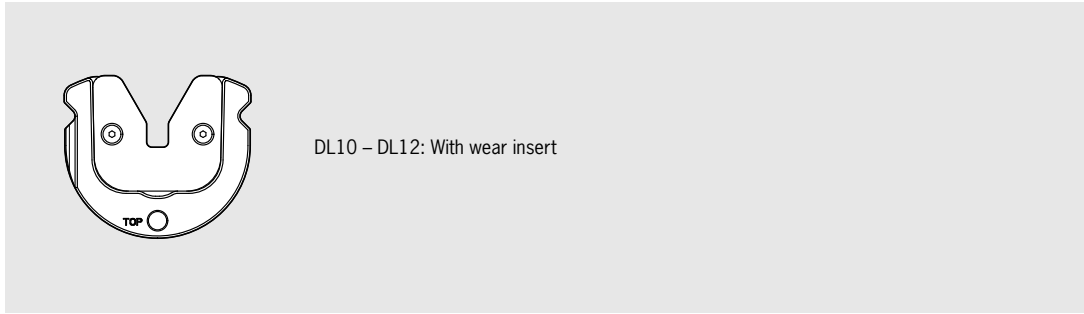
Torque wrench for Duo-Lock	
Torque Master Set Duo-Lock (with case, 6 inserts and grip sets, long)	84.600.20.AK
Torque Master Duo-Lock incl. grip set long (without inserts)	84.600.20
Grip set long for Torque Master Duo-Lock	84.600.10.1

Torque of Duo-Lock interface						
	DL10	DL12	DL16	DL20	DL25	DL32
<b>Nm</b>	20	30	60	80	100	130

Attention: For a long lifetime of the system, the compliance with the torque is required.








- Exchangeable inserts for Duo-Lock Torque Master
- Suitable for Duo-Lock milling heads

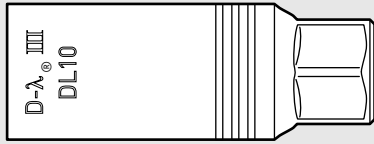
Inserts		
Order No.	Size	AF [mm]
84.640.10	DL10	8
84.640.12	DL12	9.5
84.640.16	DL16	13
84.640.20	DL20	16
84.640.25	DL25	21
84.640.32	DL32	28
84.630.1/2Z	To insert all common square socket wrenches with 1/2"	

Accessories

Wear insert				
Size			DL10	DL12
Order No.	84.640...		.10.1	.12.1

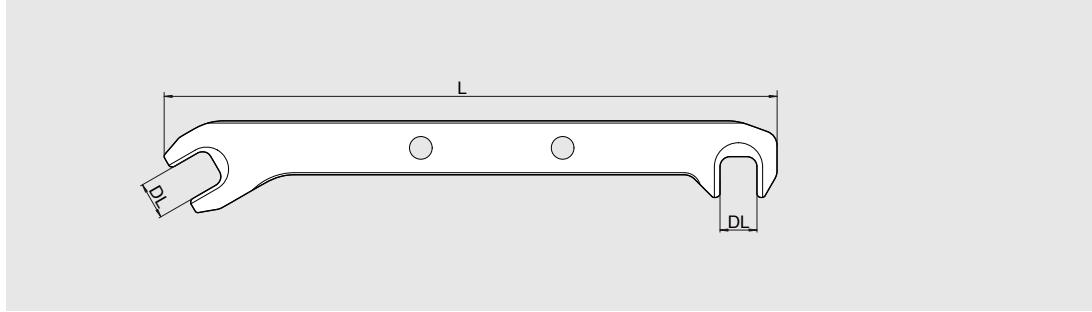
METRIC

## ROLLER BEARING WRENCH FOR CLAMPING DUO-LOCK® BLANKS



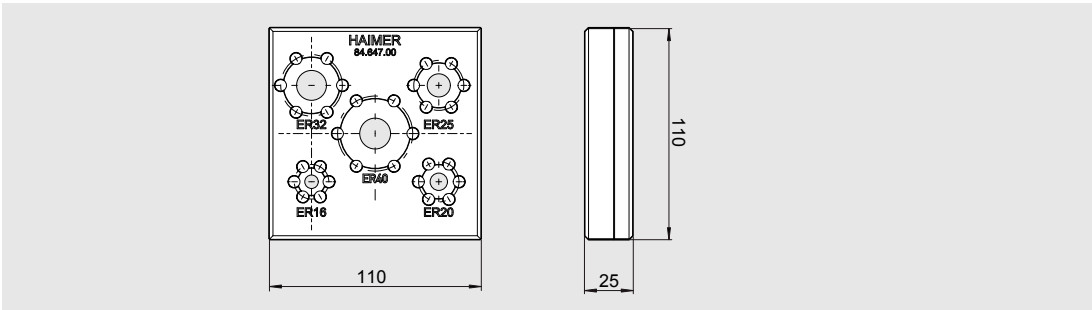
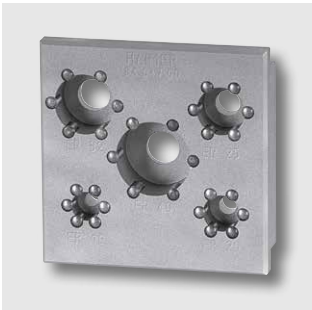
- Useable for Duo-Lock blanks from DL10 – DL20
- For square socket ratchet with 1/2"

Roller Bearing Wrench	
Order No.	Size
84.645.DL10	DL10
84.645.DL12	DL12
84.645.DL16	DL16
84.645.DL20	DL20



- Useable for Duo-Lock tool heads from DL10 – DL20
- For replacing Duo-Lock tool heads directly in the lathe

Duo-Lock Hand wrench			
Order No.	Size	Overall length L [mm]	Overall length L [inch]
84.647.DL10	DL10	196	7.7165
84.647.DL12	DL12	199	7.8346
84.647.DL16	DL16	217	8.5433
84.647.DL20	DL20	236	9.2913

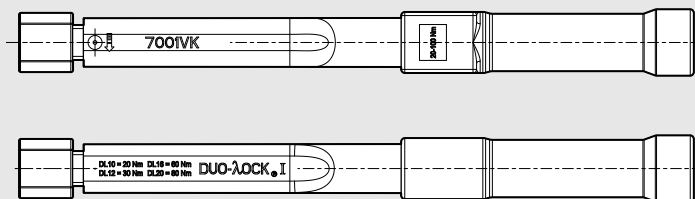


- Useable for Duo-Lock collets from ER16, ER20, ER25, ER32, ER40
- Clamping surfaces for the tension in the vice

Duo-Lock collets clamping device	
Order No.	Size
84.647.00	ER16, ER20, ER25, ER32, ER40

METRIC

## 7001 TORQUE WRENCH DL10 – DL20



- 7001 torque wrench with changeover ratchet
- For changing Duo-Lock tool heads directly in the lathe
- Torque: 20 – 100 Nm
- Useable for Duo-Lock milling heads from DL10 – DL20
- Connecting size 9 x 12 mm
- Changeable to clockwise and counter clockwise

## Torque wrench for Duo-Lock

Order No.

7001 Torque wrench 9 x 12 mm

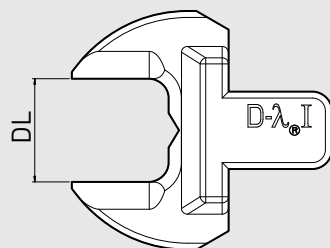
82.587.00

## Torque of Duo-Lock interface

	DL10	DL12	DL16	DL20
Nm	20	30	60	80

METRIC

## DUO-LOCK® INSERTS FOR 7001 TORQUE WRENCH



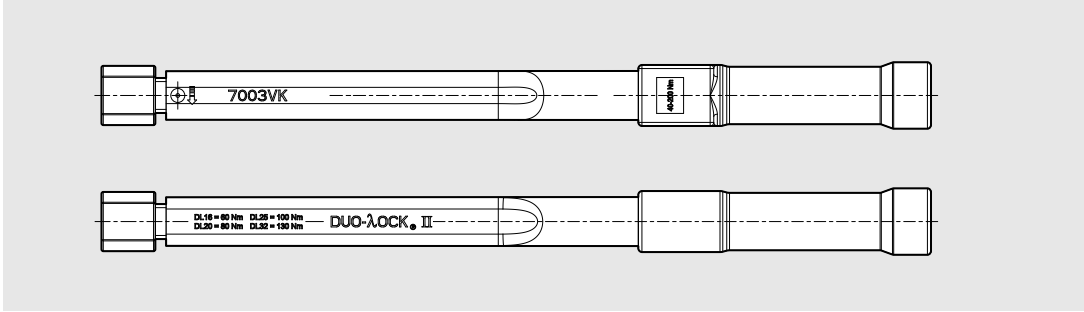
- For changing Duo-Lock tool heads directly in the lathe
- Changeable inserts for 7001 torque wrench
- Useable for Duo-Lock milling heads from DL10 – DL20
- Connecting size 9 x 12 mm

## Insert

Order No.	Size
82.587.DL10	DL10
82.587.DL12	DL12
82.587.DL16	DL16
82.587.DL20	DL20

7003 TORQUE WRENCH DL16 – DL32

METRIC



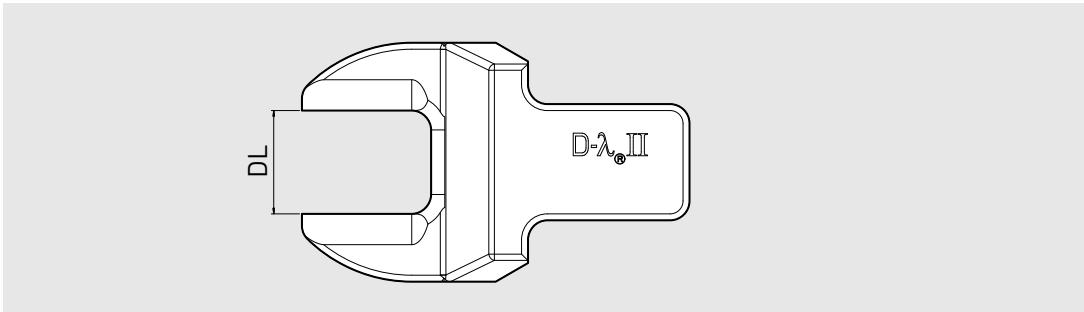
- 7003 torque wrench with changeover ratchet
- For changing Duo-Lock tool heads directly in the lathe
- Torque: 40 – 200 Nm
- Useable for Duo-Lock milling heads from DL16 – DL32
- Connecting size 14 x 18 mm
- Changeable to clockwise and counter clockwise

<b>Torque wrench for Duo-Lock</b>	<b>Order No.</b>
<b>7003 Torque wrench 14 x 18 mm</b>	<b>82.588.00</b>

Torque of Duo-Lock interface				
	DL16	DL20	DL25	DL32
<b>Nm</b>	<b>60</b>	<b>80</b>	<b>100</b>	<b>130</b>

DUO-LOCK® INSERTS FOR 7003 TORQUE WRENCH

METRIC



- For changing Duo-Lock tool heads directly in the lathe
- Changeable inserts for 7003 torque wrench
- Useable for Duo-Lock milling heads from DL16 – DL32
- Connecting size 14 x 18 mm

Insert	
Order No.	Size
<b>82.588.DL16</b>	<b>DL16</b>
<b>82.588.DL20</b>	<b>DL20</b>
<b>82.588.DL25</b>	<b>DL25</b>
<b>82.588.DL32</b>	<b>DL32</b>

HAIMER.

Tooling  
Technology



# HAIMER DUO-LOCK®

For fastest tool change and highest performance in turning and milling applications



# FORM SPECIAL REQUEST SOLID CARBIDE END MILL

Special Request Number

Date

Company <input type="text"/>	Customer-No. <input type="text"/>
Street <input type="text"/>	Contact Person <input type="text"/>
City/State <input type="text"/>	Phone <input type="text"/>
State/Country <input type="text"/>	Email <input type="text"/>

Applications Engineer

External Sales Representative

Internal Sales Representative

## Product Groups




F1003 – Power Series Z3   
  F1304 – Power Series Z4   
  F2004 – Z4  
 F1004 – Power Series Z4   
  F1005 – Power Series Z5   
  V1002 – Power Series Z2

Standard Article No.

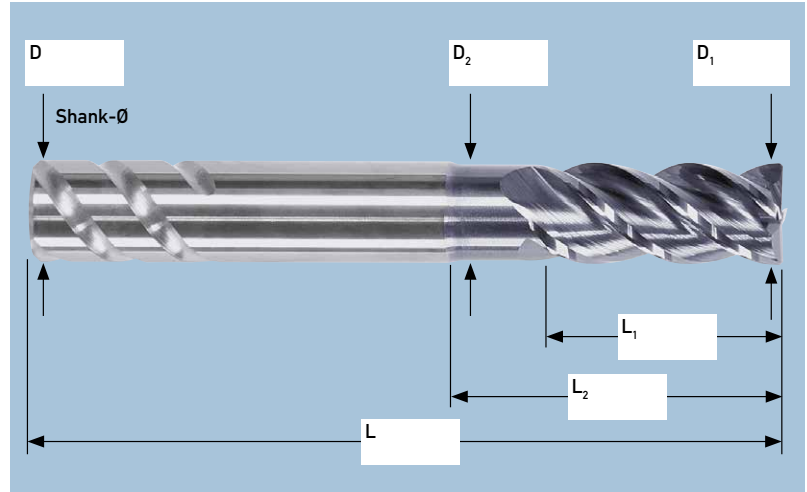
Center Cutting  Yes  No

Chip Breaker  Yes  No




## Shank

HA Straight Shank   
 HB Weldon Shank   
 Safe-Lock Shank 

## Dimensions




## Face Geometry

Sharp Corner (S)   
 Radius R    
 Chamfer C  

Coating  Yes  No

## Areas of Application

Material (Material Number) <input type="text"/>	Cutting Depth $a_p$ in mm <input type="text"/>	Cutting Speed $V_c$ in m/min <input type="text"/>
Hardness/Tensile Strength <input type="text"/>	Cutting Width $a_e$ in mm <input type="text"/>	Feed per Tooth $F_z$ in mm <input type="text"/>



Cooling

Dry  
 MQL  
 Air  
 Lubricant:

## Calculation

Customer Annual Sales	Quantity	Price	Quantity	Price
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Customer Mills Annual Sales	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Competitor

Customer is currently working with

Cost of the tool

## Comments / Description of Application

# FORM SPECIAL REQUEST DUO-LOCK®

Special Request Number

HAIMER.

Tooling  
Technology

Date

Company	Customer-No.
Street	Contact Person
City/State	Phone
State/Country	Email

Applications Engineer
External Sales Representative
Internal Sales Representative

## Product Groups

- E1016/18 – Z6/Z8
- F2003 – Z3
- F2304 – Z4
- F1004 – Power Series Z4
- F2004 – Z4
- V2002 – Z2 Power Series
- F2006/08/00 – Z6/Z8/Z10

## Standard Article No.

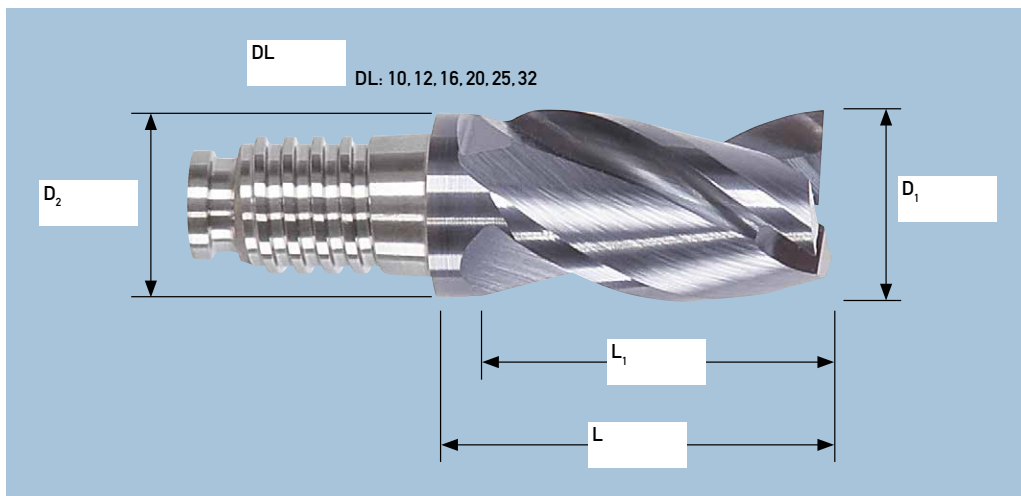
## Center Cutting

- Yes  No

## Chip Breaker

- Yes  No

## Dimensions



## Face Geometry

- Sharp Corner (S)



- Radius

R



- Chamfer

C

∠



## Coating

- Yes  No

## Areas of Application

Material (Material Number)	Cutting Depth $a_p$ in mm	Cutting Speed $V_c$ in m/min
Hardness/Tensile Strength	Cutting Width $a_e$ in mm	Feed per Tooth $F_z$ in mm

## Cooling

- Dry
- MQL
- Air
- Lubricant:

## Calculation

Customer Annual Sales	Quantity	Price	Quantity	Price
Customer Mills Annual Sales				

## Competitor

Customer is currently working with

Cost of the tool

## Comments / Description of Application





# FORM SPECIAL REQUEST DUO-LOCK® BLANK

Special Request Number

Date

Company	Customer-No.
Street	Contact Person
City/State	Phone
State/Country	Email

Applications Engineer

External Sales Representative

Internal Sales Representative

**Wrench flats**

Yes

No

**Oversize**

Yes

No

**Inner Cooling**

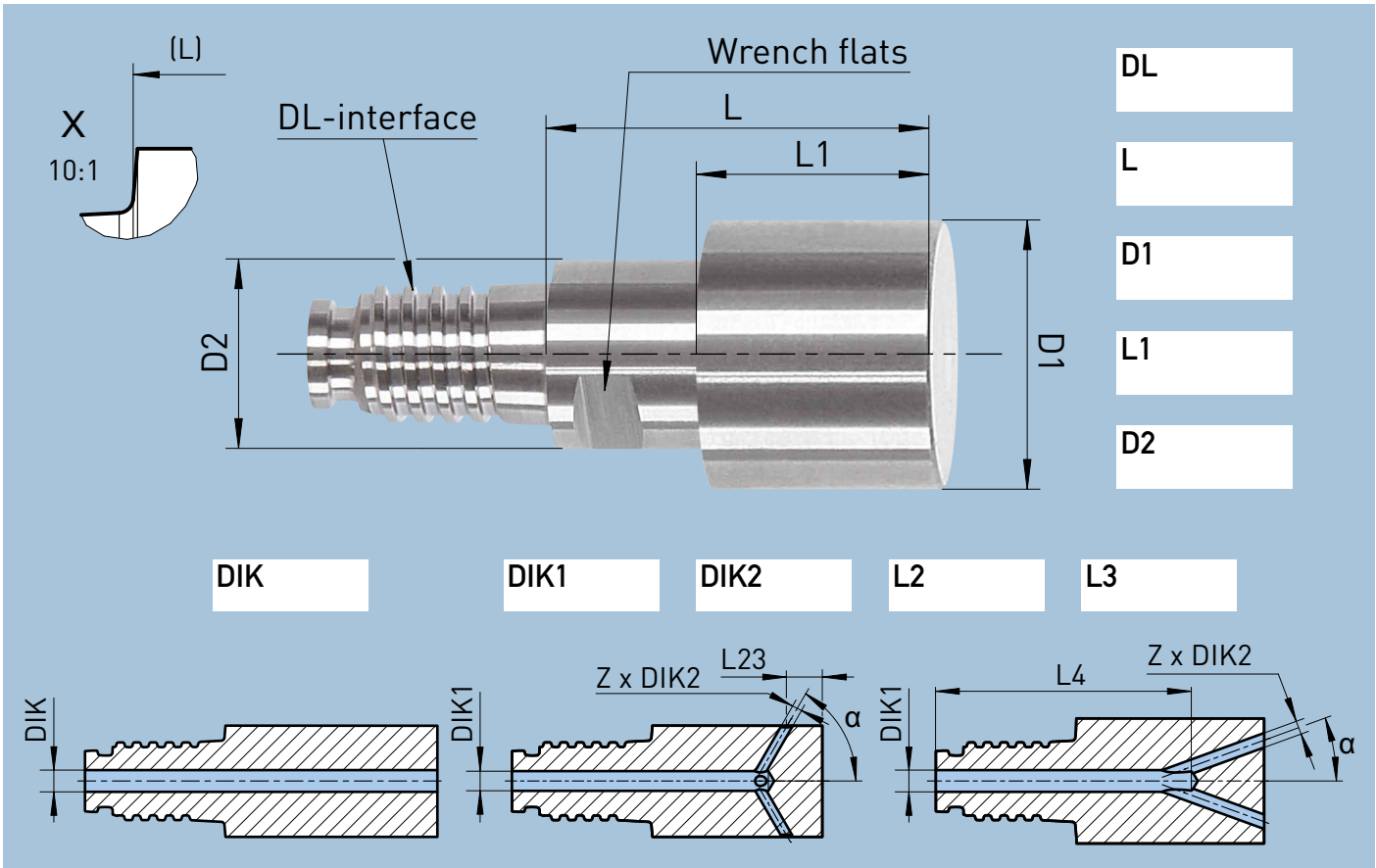
No

Central Cooling

Y Cooling

**Standard Article No.**

## Dimensions



## Calculation

Customer Annual Sales	Quantity	Price	Quantity	Price
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Customer Mills Annual Sales	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

**Y-Cooling Angle**

$\alpha$

**Y-Cooling Number**

Z

## Comments / Description of Application

# FORM SPECIAL REQUEST RELIEF DUO-LOCK® EXTENSION

Special Request Number

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Tooling  
Technology

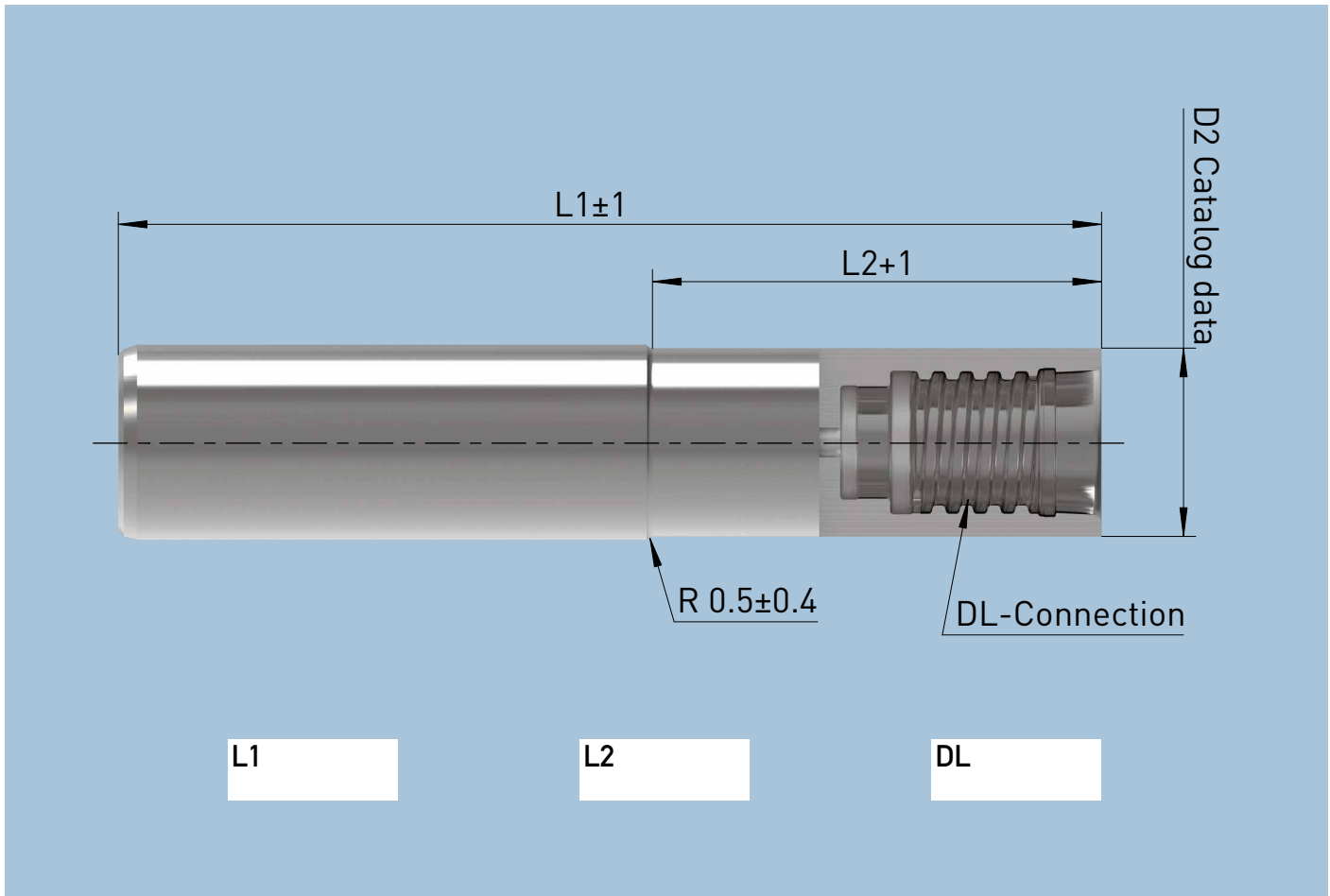
Date

Company	Customer-No.
Street	Contact Person
City/State	Phone
State/Country	Email

Applications Engineer
External Sales Representative
Internal Sales Representative

## Standard Article No.

## Dimensions



## Calculation

Customer Annual Sales	Quantity	Price	Quantity	Price
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Customer Mills Annual Sales	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

## Note

A relief according to the customer's wishes can affect the stability of the DUO-lock® extension.

## Comments / Description of Application

# TOOL HOLDERS

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## THE SUITABLE CLAMPING TECHNIQUE FOR ALL TYPES OF MACHINING APPLICATIONS

Every industry has its specific requirements for tool holding. The range of applications varies from high speed cutting of aluminum to heavy machining of titanium.

For each industry with its typical machining applications HAIMER offers the right clamping technology. To find the suitable product for your specific application, please choose your industry.

### Industry



Die and mold, electronics and medical engineering



Automotive engineering



General mechanical engineering



Aerospace industry



Heavy machinery industry

## Requirements for tool holding

## Suitable tool holder

- High Speed Cutting (HSC)
- Slim tooling
- Long protruding lengths for deep cavities
- Mostly low cutting forces at high rpm
- Vibration dampening features
- 5-axis machining
- High flexibility in tool clamping
- Modular system with shrink fit extensions

- Mini Shrink
- Power Mini Shrink Chuck
- Shrink Fit Chuck standard and extensions
- Power Collet Chuck
- High-Precision Chuck and extensions
- ER Collet Chuck
- Duo-Lock Die and Mold Chuck

- Process reliability in the series production
- Machining of deep bores
- Pull out protection for cutting tools with Safe-Lock
- Consistent high quality in the procurement of spare parts

- Shrink Fit Chuck standard and extensions
- Power Shrink Chuck
- ER Collet Chuck

- High flexibility of tool clamping
- Tool holders for universal usage
- Vibration-free machining
- Modular system with shrink fit extensions

- Shrink Fit Chuck standard and extensions
- Power Shrink Chuck
- ER Collet Chuck
- High-Precision Chuck and extensions
- Power Collet Chuck

- Low vibrations at high speed for aluminum cutting
- High cutting capacity (High Performance Cutting, HPC)
- Extreme rigidity and clamping force for titanium machining
- Pull out protection for cutting tools with Safe-Lock

- Shrink Fit Chuck standard and extensions
- Power Shrink Chuck
- Heavy Duty Chuck and extensions
- Power Collet Chuck
- High-Precision Chuck and extensions
- ER Collet Chuck

- Machining of large steel and cast parts (e.g. gear housings)
- High cutting forces at low to medium rpm
- High rigidity, even at long protruding lengths

- Shrink Fit Chuck standard
- Power Shrink Chuck
- Heavy Duty Chuck and extensions
- ER Collet Chuck
- Power Collet Chuck

## ARE YOU READY FOR THE NEXT GENERATION OF MACHINING EFFICIENCY?

All shrink fit holders are not created equal. Choose HAIMER holders for best results.

### Total quality control

- All made at HAIMER in Germany
- Consistent material
- High-temperature resistant special steel
- High clamping force
- Long clamping bore
- Best runout accuracy
- TIR within 0.00012" at 3 times diameter
- Patented back-up screw
- Prebalanced to G2.5 @ 25,000 RPM
- Fine balancing with set-screws possible
- Cool Jet and Cool Flash coolant delivery available
- Bore for the data chip standard
- "DIN-B" standard
- AT3 taper or better on steep taper
- HSK specialists
- Many tapers available

### Shrinking holders from HAIMER

- Power Shrink
- Mini Shrink
- Heavy Duty Shrink
- Safe-Lock
- Extensions

### Tapers

- CAT40/CAT50
- CAT40/CAT50 with face contact
- BT30/BT40/BT50
- BT30/BT40/BT50 with face contact
- SK30/SK40/SK50
- HSK-32A/E
- HSK-40A/E
- HSK-50A/E
- HSK-63A/F
- HSK-80A
- HSK-100A
- HSK-80F Makino
- HSK-25E
- HSK-125A
- PSC 63



### Balancing quality:

Fine-balanced to G2.5 at 25,000 rpm

### The shank:

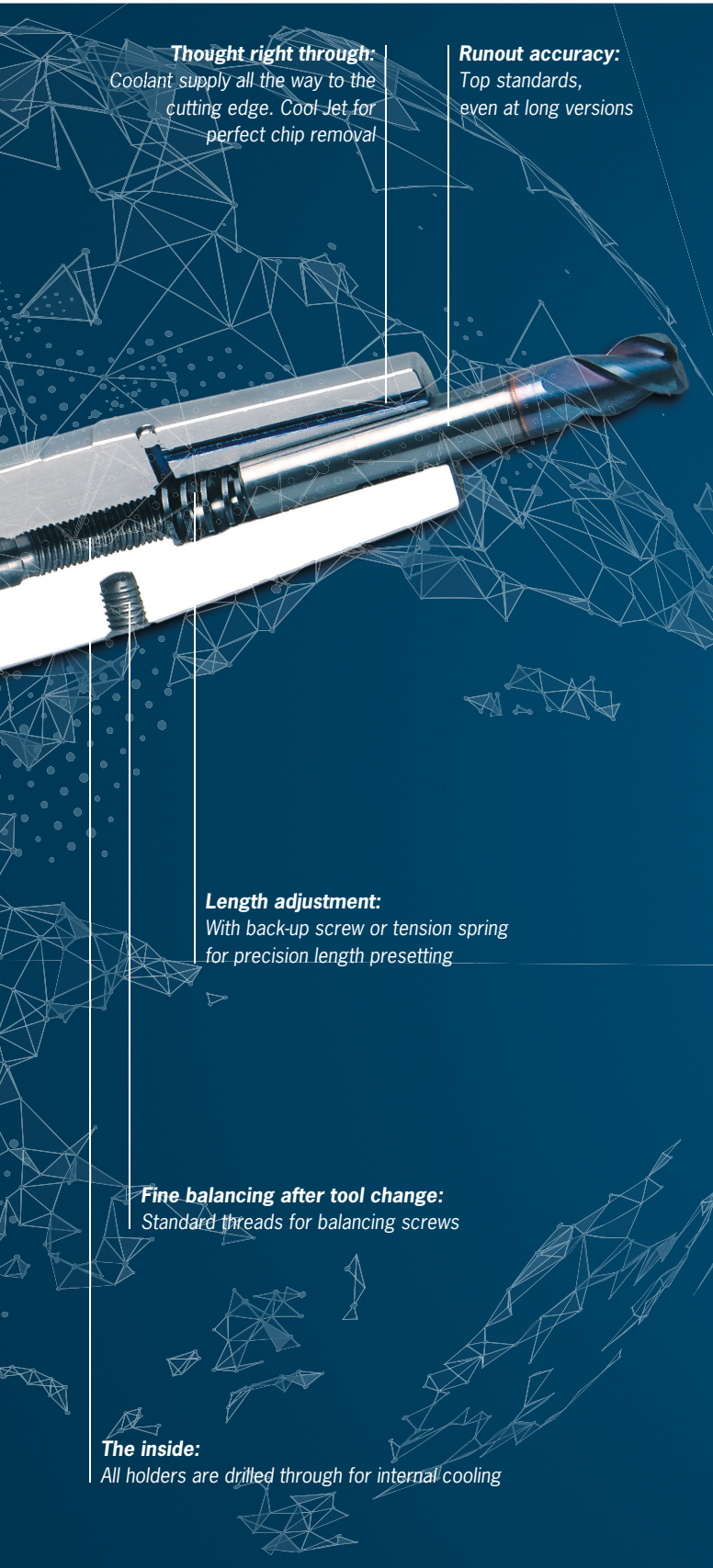
A well rounded piece of precision workmanship. Top metal-cutting capacity, thanks to perfect length. Long versions are also available

### The coolant tube:

Extremely smooth surface for saving the seal in the spindle

### The HSK:

All functional surfaces fine-finished



**Thought right through:**  
Coolant supply all the way to the cutting edge. Cool Jet for perfect chip removal

**Runout accuracy:**  
Top standards, even at long versions

**Length adjustment:**  
With back-up screw or tension spring for precision length presetting

**Fine balancing after tool change:**  
Standard threads for balancing screws

**The inside:**  
All holders are drilled through for internal cooling

**Are you saving costs at the right place?**

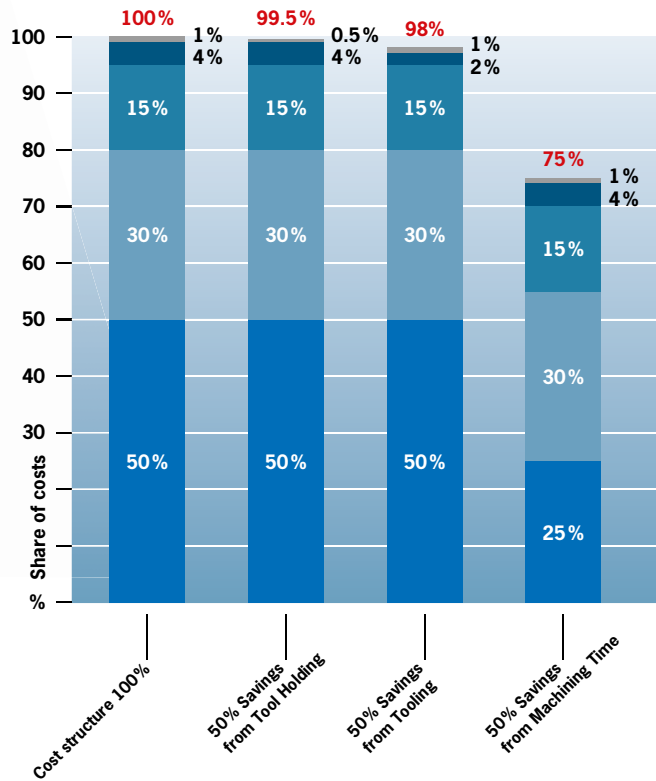
**For machining efficiently, potential savings must be explored. But where are these potential savings?**

Roughly, the costs of a work piece are composed of the following:

Machine costs with operator (machining time and idle time)	approx. 50%
General costs	approx. 30%
Raw material	approx. 15%
Tooling	approx. 4%
Tool holder	approx. 1%

Assume you could save 50% on tool holders, tooling and machining time.

**The resulting potential savings are as follows:**



**The result: The costs for tooling and tool holders are nearly meaningless. Even with savings of 50%, the total costs remain nearly the same.**

Essential savings can be reached by minimizing the machining time. This potential only can be exploited when the cutting process is optimized and the productivity is increased.

**Tool holders from HAIMER for more efficiency at high speed machining:**

- Higher cutting capacity
- Extended tool life
- Shorter machining times
- High runout accuracy
- Better surface finish
- High reliability of the whole process



# THE EVOLUTION OF SHRINK FIT TECHNOLOGY

The **Standard Shrink Fit Chuck** is suitable for a broad range of applications and, based on the needs of our customers with demanding machining challenges, HAIMER developed the **Power Shrink Chuck**.

Thus a much higher metal removal rate and significant tool life increase (e.g. at aluminum machining) could be achieved. With the Power Shrink Chucks, the area of applications for shrinking technology is extended to roughing (still with a runout accuracy of  $< 0.00012''$  (0.003 mm) and vibration resistance due to optimized outer geometry).

The extremely rigid outer geometry and the reinforced wall thickness at the clamping bore make the **Heavy Duty Chuck** a profitable chuck for highest performances (e.g. for titanium machining) in the aerospace and heavy machining industry.

Power Shrink and Heavy Duty Shrink Chucks can be equipped with Safe-Lock from diam.  $\frac{1}{4}''$  (6 mm) and with the cooling system Cool Flash from diam.  $\frac{1}{4}''$  to 1" (6 mm to 25 mm) (optional).

Standard  
Shrink Fit Chuck

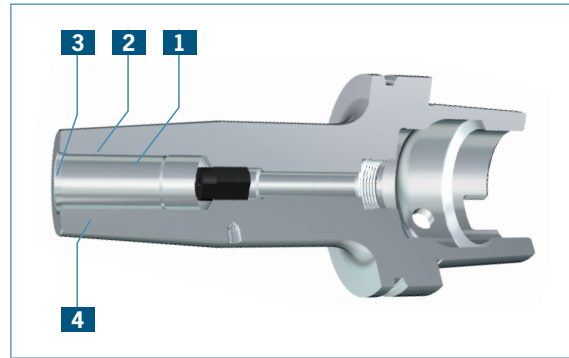


Power  
Shrink Chuck

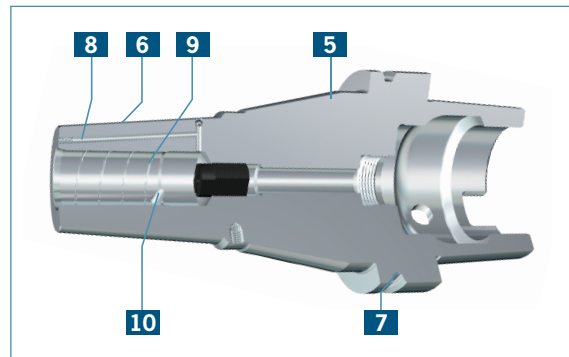


**The most important features**

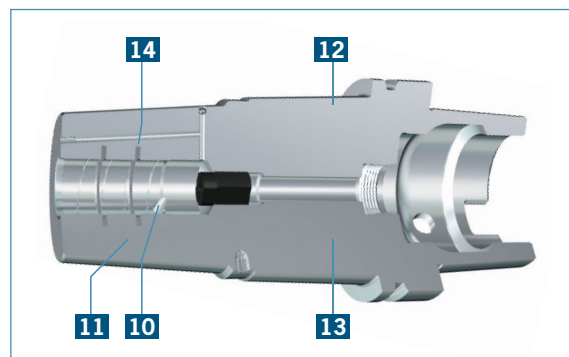
- 1** High runout accuracy
- 2** Extreme clamping torque
- 3** Short chamfer
- 4** Cool Jet available upon request
- 5** Low tendency towards vibrations
- 6** Slim design at the top
- 7** Very rigid shank
- 8** Standard with Cool Jet, Cool Flash optional
- 9** Oil groove in the clamping bore
- 10** Mounting of Safe-Lock possible
- 11** Reinforced wall thickness
- 12** Extremely rigid outer geometry
- 13** High rigidity
- 14** Expansion grooves in the clamping bore



**HAIMER Standard Shrink Fit Chuck**



**HAIMER Power Shrink Chuck**



**HAIMER Heavy Duty Chuck**

**Heavy Duty Chuck**



# THE EVOLUTION OF COLLET CHUCK TECHNOLOGY

HAIMER has developed the existing technology of collet chucks further.

The Power Collet Chucks are collet chucks designed for high speed cutting (HSC) – an alternative to the reinforced shrink fit chucks of the Power Series. **Power Collet Chucks** offer a reinforced wall thickness and extra rigid outer contour and are therefore stable and resistant to vibrations. The chucks achieve maximum performance with even more precision with  $< 0.00012''$  (0.003 mm) runout accuracy and higher metal removal rate when using the specifically developed HAIMER high-precision collets.

The Power Collets can optionally be equipped with Safe-Lock and Cool Jet.

With the **High Precision Collet Chuck**, a new standard has been set, especially for micro and fine machining. It is featured by the highest runout accuracy of less than  $0.00012''$  (0.003 mm) providing the best surface finish at high rpm.

The specially coated locknuts (fine balanced to  $< 1$  gmm) guarantee vibration dampening and noise-reducing features in high speed cutting (e.g. in the watchmaking or medical industry).

Standard  
Collet Chuck

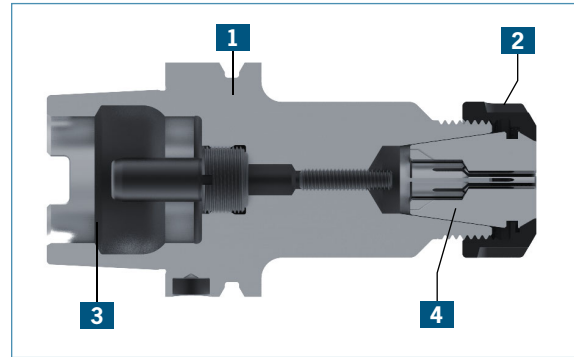
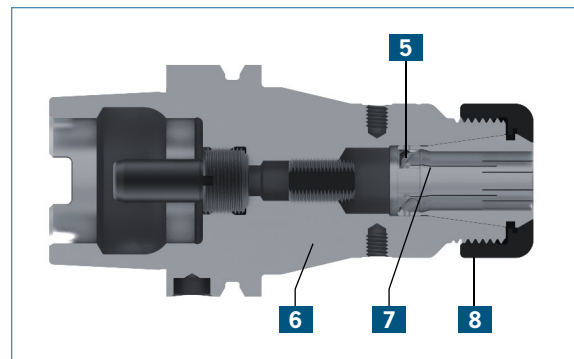
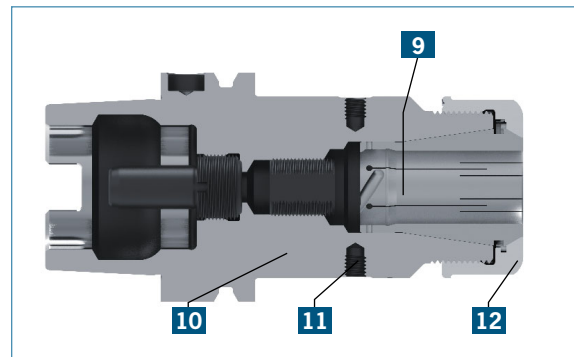


Power  
Collet Chuck























**The most important features**

- 1** Fine balanced to G2.5 at 25,000 rpm
- 2** Fine balanced clamping nut
- 3** All functional surfaces ground
- 4** High runout accuracy ( $< 0.00012'' / 0.003 \text{ mm}$ )
- 5** Safe-Lock in the high precision collet (optional)
- 6** Low tendency towards vibrations by a rigid shank
- 7** High precision collet
- 8** Fine balanced Power Collet clamping nut
- 9** High precision collet with Cool Jet bores (optional)
- 10** Chuck body fine balanced to G2.5 at 30,000 rpm or  $U < 1 \text{ gmm}$
- 11** Thread for balancing screws
- 12** With specially coated locknut fine balanced  $< 1 \text{ gmm}$

**HAIMER Standard Collet Chuck****HAIMER Power Collet Chuck****High Precision  
Collet Chuck****HAIMER High Precision Collet Chuck**

# OVERVIEW OF TOOL HOLDER TECHNOLOGY

## Tool Holding Systems For Cylindrical Shank Cutting Tools















Application Areas	Shrink Fit Technology					Mechanical
	Shrink Fit Chuck Standard	Power Shrink Chuck	Heavy Duty Shrink Chuck	Power Mini Shrink Chuck	Mini Shrink Chuck	ER Collet Chuck
						
Application	 	   	 	 	 	 
Drilling	•	•		•	•	•
Finishing	•	•		•	•	•
High Speed Cutting	◐	•	◐	•	•	
Roughing		•	•			
Clamping Range [mm]	3 - 32	6 - 32	16 - 50	3 - 16	3 - 12	0.5 - 25
Runout [mm] at 3xD	0.003 mm	0.003 mm	0.003 mm	0.003 mm	0.003 mm	0.02 mm
Max. RPM	up to 50,000	up to 50,000	up to 50,000	up to 80,000	up to 80,000	up to 15,000
Balancing Grade G	*2.5 @ 25,000 RPM	*2.5 @ 25,000 RPM	*2.5 @ 25,000 RPM	*2.5 @ 25,000 RPM	*2.5 @ 25,000 RPM	*2.5 @ 25,000 RPM
Outer Contour	slim	shank reinforced	clamping area and shank reinforced	very slim, shank reinforced	very slim	medium
Tool Changing Time	60 s	60 s	120 s	60 s	60 s	180 s
Pullout Protection	Safe-Lock	Safe-Lock	Safe-Lock			
Maintenance / Care	none / remove oil	none / remove oil	none / remove oil	none / remove oil	none / remove oil	check collet / cleaning

\*HAIMER Standard • applicable ◐ applicable to limited extent

## HAIMER Tool Holder Program

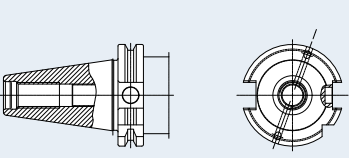
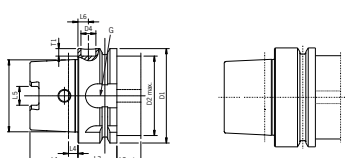
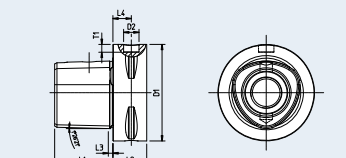
Program Diversity	CAT		CAT with Face Contact		BT			BT with Face Contact			SK			HSK										PSC						
	40	50	40	50	30	40	50	30	40	50	30	40	50	A32	A40	A50	A63	A63/80	A80	A100	A125	E25	E32	E40	E50	F63	F80M	63		
Shrink Fit Chuck Standard	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Power Shrink Chuck	•	•	•	•		•	•		•	•		•	•				•	•	•	•	•									•
Heavy Duty Shrink Chuck		•		•			•			•			•								•	•								
Power Mini Shrink Chuck	•				•	•		•	•			•	•																	
Mini Shrink Chuck												•										•	•	•	•					
ER Collet Chuck	•	•			•	•	•				•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Power Collet Chuck	•	•			•	•	•				•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
High Precision Collet Chuck			•	•	•	•	•	•	•	•				•	•	•	•	•	•	•	•		•	•	•	•				•
High-Precision Chuck						•	•				•										•									
Weldon Chuck						•	•				•	•		•	•	•	•	•	•	•	•				•					•
Whistle-Notch																					•									
Face Mill Arbor	•	•			•	•	•				•	•		•	•	•	•	•	•	•	•				•	•	•	•	•	•
Combi Shell Endmill Arbor						•	•							•	•	•	•	•	•	•	•									

Tool Holders

Power Collet Chuck	High Precision Collet Chuck	HG-Chuck	Weldon Chuck	Whistle-Notch	Hydraulic Chuck**	Milling Chuck**
						
						
•	•	•			•	
•	•	•			•	
•	•	•				
•	•	•	•	•		•
2 - 20	2 - 20	2 - 20	6 - 40	6 - 40	3 - 25	6 - 50
0.003 mm	0.003 mm	0.003 mm	0.03 mm	0.03 mm	0.003 mm	0.01 mm
up to 25,000	up to 40,000	up to 50,000	up to 15,000	up to 15,000	up to 40,000	up to 15,000
*2.5 @ 25,000 RPM	*2.5 @ 25,000 RPM	*2.5 @ 25,000 RPM	*2.5 @ 22,000 RPM	*6.3 @ 8,000 RPM	2.5 @ 25,000 RPM	partially fine balanced
shank reinforced	shank reinforced	medium	medium	medium	very massive	large interference contour
180 s	180 s	60 s	60 s	120 s	60 s	120 s
Safe-Lock	Safe-Lock		•	•		
check collet / cleaning	check collet / cleaning	check collet / cleaning	check clamping screw / remove oil	check clamping screw / remove oil	yearly membrane check / daily test for leaks	accurate and sensitive cleaning necessary

\*\*not in the HAIMER delivery program

Interfaces

	Steep taper CAT, BT, SK	HSK-A/E	PSC Polygon Shank Coupling
Standard	ASME B5.50, JIS B6339, DIN ISO 7388-1	DIN 69893-1, DIN 69893-5	ISO 26623
Drawing			
Info	Traditional interface for milling spindles. Very robust. Also applicable for heavy duty machining. Clamping always with additional pull stud. Centering only via taper surface, without face contact. Therefore limited accuracy. For applications up to 12,000 rpm.	HSK-A: Standard for new machining centers. High precision centering and positioning by taper with face contact. Torque transmission by taper drive keys. For applications up to 35,000 rpm. HSK-E: No drive keys but symmetrical design. Mainly used for high speed machining.	Widespread at multitask (mill-turn centers) machines. Torque transmission and centering due to polygon taper. Exact positioning by face contact. Very high static stiffness.
Quality	HAIMER: 3,000 measuring points guarantee highest taper tolerance of AT3, i.e. all surface tolerances are within 1.5 µm (applies for SK40). HAIMER pull studs from highly precise in-house production made of impact-resistant steel are specially case hardened. For highest breakage and process security.	HAIMER: All functional surfaces at and in the taper (clamping shoulder, wings of drive keys, etc.) fine finished after hardening. For equal axial pull-in, highest runout accuracy and max. rigidity.	Complete ground inner taper for optimal clamping and centering accuracy.

TOOL HOLDERS ARTICLE NUMBER SYSTEM

Explanation article code

Example of article:

Taper size/Type of taper

40.

CAT40

Clamping system

84

Shrink fit chuck

40.

Taper size and type of taper

30	BT/SK
30P	BT with face contact
40	CAT/BT/SK
40P	CAT/BT with face contact
50	CAT/BT/SK
50P	CAT/BT with face contact
A32	HSK-A32
A40	HSK-A40
A50	HSK-A50
A63	HSK-A63
A63/80	HSK-A63/80
A80	HSK-A80
A10	HSK-A100
A125	HSK-A125
E25	HSK-E25
E32	HSK-E32
E40	HSK-E40
E50	HSK-E50
F63	HSK-F63
F80M	HSK-F80M
CC6	PSC 63

84

Clamping system – Key number

CAT	BT	SK	HSK	PSC 63	Clamping system
70	50	30	00	00	Weldon
72	52	32	02	02	ER Collet Chuck
33	53	33	03		Whistle Notch
74	54	34	04		Combination Shell Endmill Arbor
75	55	35	05	05	Face Mill Arbor
37	57	37	07		Quick Change Tapping Chuck
38	58	38	08		Adapter for Morse Taper with Tang
39	59	39	09		Blank Adapter
82	62	42	12		High-Precision Chuck
43	63	43	13		Adapter for Morse Taper with Thread
84	64	44	14	14	Shrink Fit Chuck
85	65	45	15		Shrink Fit Chuck Type S
88	48	47	17		Mini Shrink extra slim
48	68	48	18		Mini Shrink standard

Length	Size/Clamping diameter	Version
<b>0.</b>	<b>1Z</b>	<b>.4</b>
short	1"	with Cool Jet

0.	1Z	.4																																				
Length	Size/Clamping diameter	Version																																				
	<table border="1"> <thead> <tr> <th>INCH</th> <th>METRIC</th> </tr> </thead> <tbody> <tr><td>.1/8Z Ø 1/8"</td><td>.02 Ø 2 mm</td></tr> <tr><td>.3/16Z Ø 3/16"</td><td>.03 Ø 3 mm</td></tr> <tr><td>.1/4Z Ø ¼"</td><td>.04 Ø 4 mm</td></tr> <tr><td>.5/16Z Ø 5/16"</td><td>.05 Ø 5 mm</td></tr> <tr><td>.3/8Z Ø 3/8"</td><td>.06 Ø 6 mm</td></tr> <tr><td>.7/16Z Ø 7/16"</td><td>.07 Ø 7 mm</td></tr> <tr><td>.1/2Z Ø ½"</td><td>.08 Ø 8 mm</td></tr> <tr><td>.5/8Z Ø 5/8"</td><td>.10 Ø 10 mm</td></tr> <tr><td>.9/16Z Ø 9/16"</td><td>.12 Ø 12 mm</td></tr> <tr><td>.3/4Z Ø ¾"</td><td>.14 Ø 14 mm</td></tr> <tr><td>.7/8Z Ø 7/8"</td><td>.16 Ø 16 mm</td></tr> <tr><td>.1Z Ø 1"</td><td>.18 Ø 18 mm</td></tr> <tr><td>.1 1/4Z Ø 1 ¼"</td><td>.20 Ø 20 mm</td></tr> <tr><td>.1 1/2Z Ø 1 ½"</td><td>.25 Ø 25 mm</td></tr> <tr><td>.2Z Ø 2"</td><td>.32 Ø 32 mm</td></tr> <tr><td></td><td>.40 Ø 40 mm</td></tr> <tr><td></td><td>.50 Ø 50 mm</td></tr> </tbody> </table>	INCH	METRIC	.1/8Z Ø 1/8"	.02 Ø 2 mm	.3/16Z Ø 3/16"	.03 Ø 3 mm	.1/4Z Ø ¼"	.04 Ø 4 mm	.5/16Z Ø 5/16"	.05 Ø 5 mm	.3/8Z Ø 3/8"	.06 Ø 6 mm	.7/16Z Ø 7/16"	.07 Ø 7 mm	.1/2Z Ø ½"	.08 Ø 8 mm	.5/8Z Ø 5/8"	.10 Ø 10 mm	.9/16Z Ø 9/16"	.12 Ø 12 mm	.3/4Z Ø ¾"	.14 Ø 14 mm	.7/8Z Ø 7/8"	.16 Ø 16 mm	.1Z Ø 1"	.18 Ø 18 mm	.1 1/4Z Ø 1 ¼"	.20 Ø 20 mm	.1 1/2Z Ø 1 ½"	.25 Ø 25 mm	.2Z Ø 2"	.32 Ø 32 mm		.40 Ø 40 mm		.50 Ø 50 mm	
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0. short		.1 Telescope, without slits																																				
1. long		.2 with Cool Jet																																				
2. oversize		.26 with Cool Flash																																				
4. ZG130 (130 mm long)		.3 Power Chuck																																				
5. ultra short		.36 Power Chuck with Cool Flash																																				
6. ZG200 (200 mm long)		.37 Power Chuck with Safe-Lock																																				
7. ZG120 (120 mm long)		.38 Power Chuck with Safe-Lock & Cool Flash																																				
		.3.HP High Precision Collet Chuck																																				
		.4 with Cool Jet bores that can be sealed																																				
		.47 with Cool Jet and Safe-Lock																																				
		.6 Heavy Duty Chuck																																				
		.66 Heavy Duty Chuck with Cool Flash																																				
		.67 Heavy Duty Chuck with Safe-Lock																																				
		.68 Heavy Duty Chuck with Safe-Lock & Cool Flash																																				
		.7 Safe-Lock																																				
		.8 Power Mini Shrink																																				
		.KKB with Coolant Exit bores																																				



## PERFECTION REQUIRES PRECISION

Tight tolerances and high quality demands leave no room for compromises. Where quality is concerned, we trust ourselves first and foremost. Not only do we manufacture all our products in-house, the fixtures and vices on our machines are also made by HAIMER. We do so because we know that only **Quality wins**.



## CERTIFICATE OF QUALITY

**HAIMER®**  
Quality Wins.

### 100 % Made in Germany

- Constant high quality due to 100 % control in own factory
- Highest process reliability during machining

### Tool holders fine balanced (G2.5 at 25.000 RPM)

- Low vibration on spindle
- Better surfaces
- Maximum tool life
- Long lifetime of spindle

### Steep taper really AT3: (1.5 µm shape tolerance)

- Optimum connection between machine and tool
- Highest process reliability during fine machining
- Secure clamping during heavy milling

### High precision pull studs made of special steel with high toughness

- No danger of breakage
- Highest security against accidents
- Precise tool clamping

### All functional surfaces fine machined

- Symmetric force transmission to clamping shoulder of HSK
- Precise drive slots on the HSK
- More accurate than DIN





## ASME B5.50 CAT40 / CAT50

Article	Page
<b>CAT40</b>	
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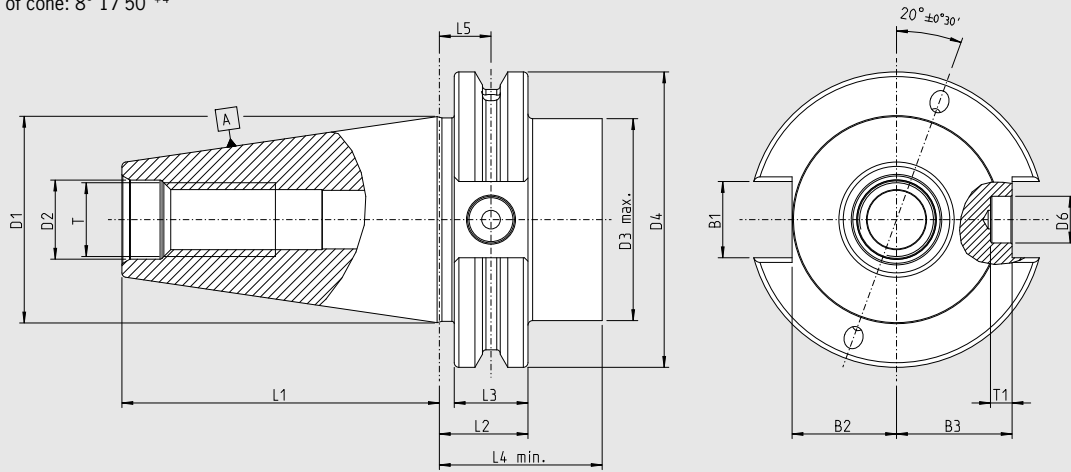
## STEEP TAPER ASME B5.50 · CAT40 / CAT50

**Design:**

- Tool holders case-hardened 60–2 HRC
- Tensile strength in the core at least 950 N/mm<sup>2</sup>
- Taper in tolerance quality AT3
- Form AD/AF: interior coolant supply through center (form AD) and through the collar (form AF)
- Incl. bore for data chip Ø 10 mm

**CAT40 / CAT50**

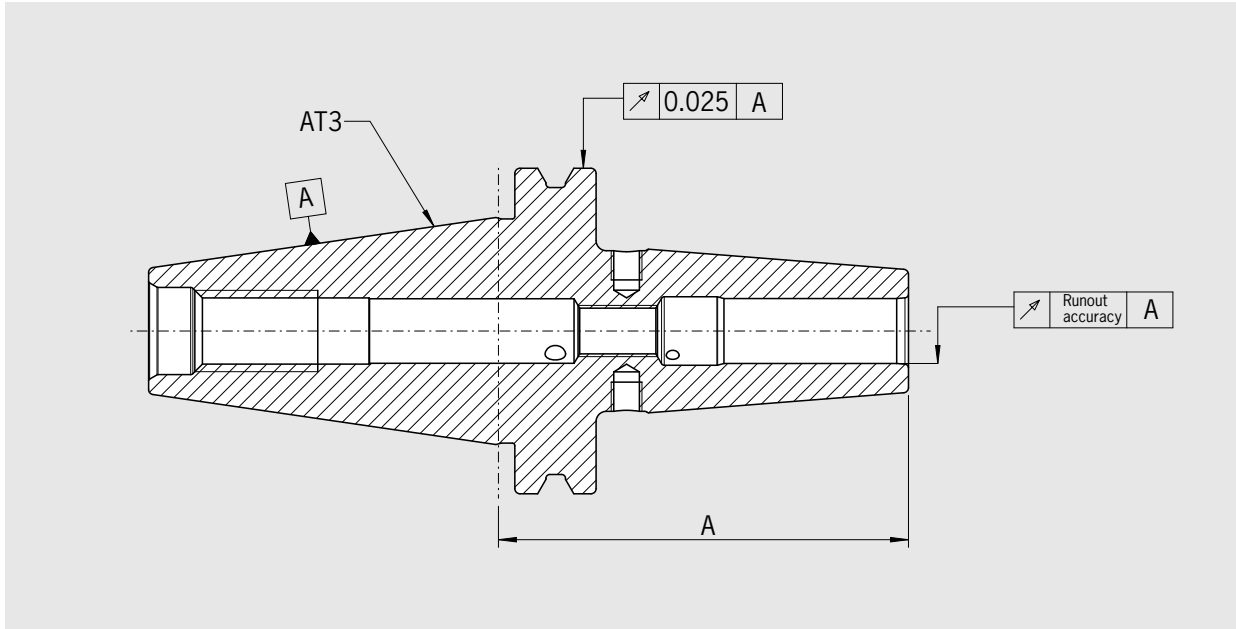
- Angle of cone: 8° 17'50"±4"



CAT40	D1	D2	D3 max.	D4	D5	D6	L1	L2	L3	L4 min.	L5	T	T1	B1	B2	B3
inch	1.75	0.669	1.71	2.5	2.126	0.39	2.687	0.75	0.625	1.38	0.44	5/8"-11	0.18	0.646	0.89	0.984

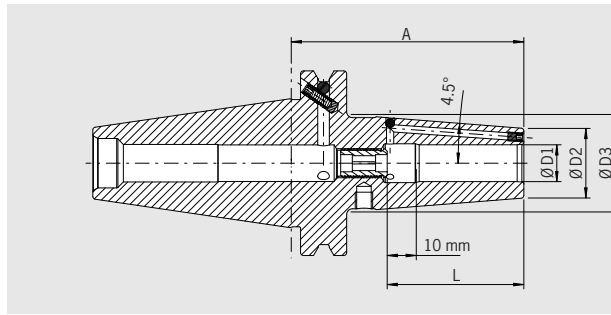
CAT50	D1	D2	D3 max.	D4	D5	D6	L1	L2	L3	L4 min.	L5	T	T1	B1	B2	B3
inch	2.75	1.063	2.71	3.875	3.307	0.39	4.0	0.75	0.625	1.38	0.44	1"-8	0.18	1.02	1.39	1.484

**RUNOUT ACCURACY**  
**ASME B5.50 · CAT40 / CAT50**



Gage length	A < 160	A ≥ 160
<b>max. runout tolerance in mm</b>		
Shrink Fit Chuck	0.003	0.004
Power Shrink Chuck	0.003	0.004
Heavy Duty Chuck	0.003	0.004
Power Mini Shrink Chuck	0.003	0.004
Collet Chuck ER	0.003	0.004
Power Collet Chuck	0.003	0.004
High Precision Collet Chuck	0.003	0.004
High Precision Chuck	0.003	0.003
Face Mill Arbor	0.006	0.006
Adapter for Morse Taper	0.008	—

# SHRINK FIT CHUCK ASME B5.50 · CAT40



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF
<input checked="" type="checkbox"/>	Cool Jet, can be sealed

**Use:**

Shrink fit chuck suitable for use with all available shrink fit units.

**CAT40 Form AD/AF**

Form AD/AF means central-coolant supply and coolant channels through the flange which can be sealed again

- Heat resistant hot-working steel
- Hardened 54-2 HRC
- For HSS and solid carbide tools
- Shank tolerance h6
- With threaded holes in order to balance with balancing screws
- Cool Jet coolant bores that can be sealed included

**Optional:**

- Cooling with Cool Flash from ¼"-1" for an extra charge (See pages 502-503)
- Safe-Lock pull out protection (See pages 496-500)

**Standard version, similar to DIN 69882-8**

INCH	Clamping Ø D1 [inch]		1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	1 1/4
	Ø D2 [inch]		0.39	0.39	0.83	0.83	0.94	0.94	0.94	1.06	1.30	1.30	1.73	1.73
	Ø D3 [inch]				1.06	1.06	1.26	1.26	1.26	1.34	1.65	1.65	2.09	2.09
	L [inch]		0.35	0.47	1.42	1.42	1.65	1.65	1.85	1.97	2.05	2.05	2.28	2.28
Gage length A [inch]	short		3.15 <sup>1)</sup>	3.15 <sup>1)</sup>	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.94	3.94
<b>Standard Order No.</b>	<b>40.840...</b>		.1/8Z	.3/16Z	.1/4Z.4	.5/16Z.4	.3/8Z.4	.7/16Z.4	.1/2Z.4	.5/8Z.4	.3/4Z.4	.7/8Z.4	.1Z.4	.1 1/4Z.4
Gage length A [inch]	ZG130		—	—	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12
<b>Order No.</b>	<b>40.844...</b>				.1/4Z.4	.5/16Z.4	.3/8Z.4	.7/16Z.4	.1/2Z.4	.5/8Z.4	.3/4Z.4	.7/8Z.4	.1Z.4	.1 1/4Z.4
Gage length A [inch]	oversize		—	—	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30
<b>Order No.</b>	<b>40.842...</b>				.1/4Z.4	.5/16Z.4	.3/8Z.4	.7/16Z.4	.1/2Z.4	.5/8Z.4	.3/4Z.4	.7/8Z.4	.1Z.4	.1 1/4Z.4

METRIC	Clamping Ø D1 [mm]		03	04	05	06	08	10	12	14	16	20	25	32
	Ø D2 [mm]		10	10	10	21	21	24	24	27	27	33	44	44
	Ø D3 [mm]					27	27	32	32	34	34	42	53	53
	L [mm]		09	12	15	36	36	42	47	47	50	52	58	58
Gage length A [mm]	short		80 <sup>1)</sup>	80 <sup>1)</sup>	80 <sup>1)</sup>	80	80	80	80	80	80	80	100	100
<b>Order No.</b>	<b>40.840...</b>		.03	.04	.05	.06.4	.08.4	.10.4	.12.4	.14.4	.16.4	.20.4	.25.4	.32.4
Gage length A [mm]	ZG130		—	—	—	130	130	130	130	130	130	130	130	130
<b>Order No.</b>	<b>40.844...</b>					.06.4	.08.4	.10.4	.12.4	.14.4	.16.4	.20.4	.25.4	.32.4
Gage length A [mm]	oversize		—	—	—	160	160	160	160	160	160	160	160	—
<b>Order No.</b>	<b>40.842...</b>					.06.4	.08.4	.10.4	.12.4	.14.4	.16.4	.20.4	.25.4	

**Standard version with Safe-Lock and M3 seal screw installed**

INCH	Clamping Ø D1 [inch]		1/4	5/16	3/8	1/2	5/8	3/4	1	1 1/4
	Ø D2 [inch]		0.83	0.83	0.94	0.94	1.06	1.30	1.73	1.73
	Ø D3 [inch]		1.06	1.06	1.26	1.26	1.34	1.65	2.09	2.09
	L [inch]		1.42	1.42	1.65	1.85	1.97	2.05	2.28	2.28
Gage length A [inch]	short		3.15	3.15	3.15	3.15	3.15	3.15	3.94	3.94
<b>Order No.</b>	<b>40.840...</b>		.1/4Z.47	.5/16Z.47	.3/8Z.47	.1/2Z.47	.5/8Z.47	.3/4Z.47	.1Z.47	.1 1/4Z.47

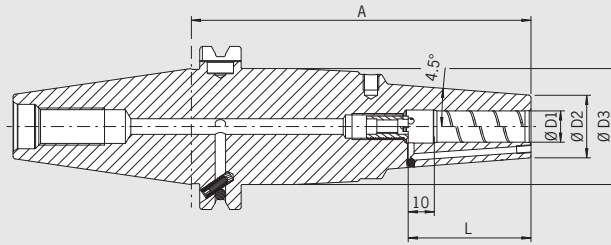
METRIC	Clamping Ø D1 [mm]		06	08	10	12	14	16	20	25	32
	Ø D2 [mm]		21	21	24	24	27	27	33	44	44
	Ø D3 [mm]		27	27	32	32	34	34	42	53	53
	L [mm]		36	36	42	47	47	50	52	58	58
Gage length A [mm]	short		80	80	80	80	80	80	80	100	100
<b>Order No.</b>	<b>40.840...</b>		.06.47	.08.47	.10.47	.12.47	.14.47	.16.47	.20.47	.25.47	.32.47

1) Without back-up screw, without threads for balancing screws, with slits along the clamping bore for coolant around the tool

# POWER SHRINK CHUCK ASME B5.50 · CAT40

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 25,000 rpm  
or U<1 gmm
- All functional surfaces machined
- Taper tolerance AT3
- Coolant supply form AD/AF
- Cool Jet, can be sealed



The Power Shrink Chuck is designed for the highest cutting performance in High Speed machining. The optimized design combines high rigidity with vibration dampening, which protects the machine, spindle and tool.

- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy
- Quieter running, therefore better surface quality and protection of tools, spindles and machines
- With threaded holes in order to balance with balancing screws
- Cool Jet coolant bores that can be sealed included

The long versions with slim tips are especially versatile to use.

- High rigidity, slim at the tip, dampen vibrations
- Higher clamping forces
- Equally suited to High Speed and Heavy Duty machining
- Universal usage, saves space in tool magazine

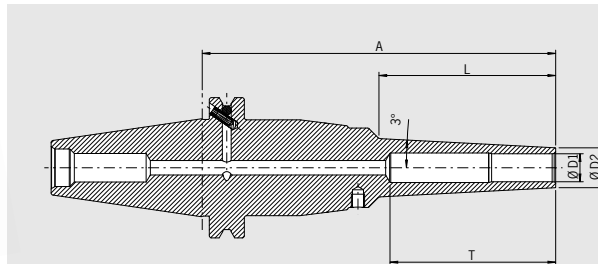
Optional:

- Cooling with Cool Flash for an extra charge (See pages 502–503)
- Safe-Lock pull out protection (See pages 496–500)

INCH	Ø D1 [inch]	1/4	5/16	3/8	1/2	5/8	3/4	1
	Ø D2 [inch] ultra short	0.87	0.87	1.04	1.04	1.16	1.40	1.79
	Ø D3 [inch] ultra short	1.75	1.75	1.75	1.75	1.75	1.75	1.75
	L [inch] ultra short	1.42	1.42	1.65	1.85	1.97	2.05	2.28
Gage length A [inch]	ultra short	2.56	2.56	2.56	2.56	2.56	2.56	2.95
Standard Order No.	40.845...	.1/4z.3	.5/16z.3	.3/8z.3	.1/2z.3	.5/8z.3	.3/4z.3	.1z.3
Safe-Lock Order No.	40.845...	.1/4z.37	.5/16z.37	.3/8z.37	.1/2z.37	.5/8z.37	.3/4z.37	.1z.37
	Ø D2 [inch] ZG130/oversize	0.83	0.83	0.94	0.94	1.06	1.30	
	Ø D3 [inch] ZG130/oversize	1.75	1.75	1.75	1.75	1.75	1.75	
	L [inch] ZG130/oversize	1.42	1.42	1.65	1.85	1.97	2.05	
Gage length A [inch]	ZG130	5.12	5.12	5.12	5.12	5.12	5.12	
Standard Order No.	40.844...	.1/4z.3	.5/16z.3	.3/8z.3	.1/2z.3	.5/8z.3	.3/4z.3	
Safe-Lock Order No.	40.844...	.1/4z.37	.5/16z.37	.3/8z.37	.1/2z.37	.5/8z.37	.3/4z.37	
Gage length A [inch]	oversize	6.30	6.30	6.30	6.30	6.30	6.30	
Standard Order No.	40.842...	.1/4z.3	.5/16z.3	.3/8z.3	.1/2z.3	.5/8z.3	.3/4z.3	
Safe-Lock Order No.	40.842...	.1/4z.37	.5/16z.37	.3/8z.37	.1/2z.37	.5/8z.37	.3/4z.37	

METRIC	Ø D1 [mm]	6	8	10	12	16	20	25
	Ø D2 [mm] ultra short	22	22	26.5	26.5	29.5	35.5	45.5
	L [mm] ultra short	36	36	42	47	50	52	58
Gage length A [mm]	ultra short	65	65	65	65	65	65	75
Standard Order No.	40.845...	.06.3	.08.3	.10.3	.12.3	.16.3	.20.3	.25.3
Safe-Lock Order No.	40.845...	.06.37	.08.37	.10.37	.12.37	.16.37	.20.37	.25.37
	Ø D2 [mm] ZG130/oversize	21	21	24	24	27	33	
	Ø D3 [mm] ZG130/oversize	44.45	44.45	44.45	44.45	44.45	44.45	
	L [mm] ZG130/oversize	36	36	42	47	50	52	
Gage length A [mm]	ZG130	130	130	130	130	130	130	
Standard Order No.	40.844...	.06.3	.08.3	.10.3	.12.3	.16.3	.20.3	
Safe-Lock Order No.	40.844...	.06.37	.08.37	.10.37	.12.37	.16.37	.20.37	
Gage length A [mm]	oversize	160	160	160	160	160	160	
Order No.	40.842...	.06.3	.08.3	.10.3	.12.3	.16.3	.20.3	
Safe-Lock Order No.	40.842...	.06.37	.08.37	.10.37	.12.37	.16.37	.20.37	

# POWER MINI SHRINK CHUCK ASME B5.50 · CAT40 INCH



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF

Power Mini Shrink Chuck is perfect for 5-axis machining in the die & mold and medical industry. Very slim at the top like the HAIMER Mini Shrink Chucks, the Power Mini Shrink is reinforced at the base. This allows for efficient milling with an angled tool, even at long protruding lengths.

- Extremely slim design
- No disturbing edges
- TIR less than 0.00012" (3 µm)
- Ideal for the HAIMER Power Clamp
- For all solid carbide tools with shank tolerance h6
- With 3° angle for die and mold

**Attention:** Heating and cooling sleeves are needed when shrinking on most shrink fit machines (see accessories). However, when using the Power Clamp i4.0 Sprint/Air or Nano machines with the motorized coil and scanner, sleeves are not necessary.

INCH	Clamping Ø D1 [inch]		1/8	3/16	1/4	5/16	3/8	1/2	5/8
	Ø D2 [inch] standard		0.35	0.43	0.47	0.55	0.63	0.71	0.95
	Ø D2 [inch] extra slim		0.24	0.32	0.35	0.43	0.51	0.59	—
	T [inch]		—	—	—	—	2.68	2.95	2.95
	L [inch] ZG130		1.97	1.97	1.97	1.97	1.97	1.97	1.97
Gage length A [mm]	ZG130		5.12	5.12	5.12	5.12	5.12	5.12	5.12
Order No.	standard	40.884...	.1/8z.8	.3/16z.8	.1/4z.8	.5/16z.8	.3/8z.8	.1/2z.8	.5/8z.8
Order No.	extra slim	40.874...	.1/8z.8	.3/16z.8	.1/4z.8	.5/16z.8	.3/8z.8	.1/2z.8	—
	L [inch]		3.15	3.15	3.15	3.15	3.15	3.15	3.15
Gage length A [mm]	oversize		6.30	6.30	6.30	6.30	6.30	6.30	6.30
Order No.	standard	40.882...	.1/8z.8	.3/16z.8	.1/4z.8	.5/16z.8	.3/8z.8	.1/2z.8	.5/8z.8
Order No.	extra slim	40.872...	.1/8z.8	.3/16z.8	.1/4z.8	.5/16z.8	.3/8z.8	.1/2z.8	—
Gage length A [mm]	ZG200		7.87	7.87	7.87	7.87	7.87	7.87	7.87
Order No.	standard	40.886...	.1/8z.8	.3/16z.8	.1/4z.8	.5/16z.8	.3/8z.8	.1/2z.8	.5/8z.8
Order No.	extra slim	40.876...	.1/8z.8	.3/16z.8	.1/4z.8	.5/16z.8	.3/8z.8	.1/2z.8	—

### Power Mini Shrink Chuck short version

INCH	Clamping Ø D1 [inch]		1/8	3/16	1/4	3/8	1/2
	Ø D2 [inch]		0.35	0.43	0.47	0.63	0.81
	L [inch]		1.97	1.97	1.97	1.97	1.42
Gage length A [inch]			3.94	3.94	3.94	3.94	3.15
Order No.	40.889...		.1/8z.0002	.3/16z.0002	.1/4z.0001	.3/8z.0001	.1/2z.0001
Suitable Shrink and cooling sleeves							
Order No.	80.105.14...		.2.04	.2.05	.2.09	.2.11	—
Suitable cooling sleeve							
Order No.	80.105.16...		—	—	—	—	.0033

### Accessories

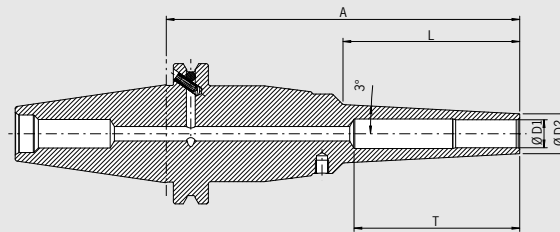
Shrink and cooling adapter for Mini Shrink

See page 593

# POWER MINI SHRINK CHUCK ASME B5.50 · CAT40 METRIC

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 25,000 rpm  
or U < 1 gmm
- All functional surfaces machined
- Taper tolerance AT3
- Coolant supply form AD/AF



**Power Mini Shrink Chuck is perfect for 5-axis machining in the die & mold and medical industry. Very slim at the top like the HAIMER Mini Shrink Chucks, the Power Mini Shrink is reinforced at the base. This allows for efficient milling with an angled tool, even at long protruding lengths.**

- Extremely slim design
- No disturbing edges
- TIR less than 0.00012" (3 µm)
- Ideal for the HAIMER Power Clamp
- For all solid carbide tools with shank tolerance h6
- With 3° angle for die and mold

**Attention:** Heating and cooling sleeves are needed when shrinking on most shrink fit machines (see accessories). However, when using the Power Clamp i4.0 Sprint/Air or Nano machines with the motorized coil and scanner, sleeves are not necessary.

METRIC	Clamping Ø D1 [mm]		03	04	05	06	08	10	12	16
	Ø D2 [mm] standard		09	10	11	12	14	16	18	24
	Ø D2 [mm] extra slim		06	07	08	09	11	13	15	—
	T [mm]		—	—	—	—	—	68	75	75
	L [mm] ZG130		50	50	50	50	50	50	50	50
Gage length A [mm]	ZG130		130	130	130	130	130	130	130	130
Order No.	standard	40.884...	.03.8	.04.8	.05.8	.06.8	.08.8	.10.8	.12.8	.16.8
Order No.	extra slim	40.874...	.03.8	.04.8	.05.8	.06.8	.08.8	.10.8	.12.8	—
	L [mm]		80	80	80	80	80	80	80	80
Gage length A [mm]	oversize		160	160	160	160	160	160	160	160
Order No.	standard	40.882...	.03.8	.04.8	.05.8	.06.8	.08.8	.10.8	.12.8	.16.8
Order No.	extra slim	40.872...	.03.8	.04.8	.05.8	.06.8	.08.8	.10.8	.12.8	—
Gage length A [mm]	ZG200		200	200	200	200	200	200	200	200
Order No.	standard	40.886...	.03.8	.04.8	.05.8	.06.8	.08.8	.10.8	.12.8	.16.8
Order No.	extra slim	40.876...	.03.8	.04.8	.05.8	.06.8	.08.8	.10.8	.12.8	—

### Power Mini Shrink Chuck short version

METRIC	Clamping Ø D1 [mm]	04	06
	Ø D2 [mm]	10	12
	L [mm]	50	50
Gage length A [mm]		100	100
Order No.	40.889...	.04.8.1001	.06.8.1002 <sup>1)</sup>
Suitable Shrink and cooling sleeves			
Order No.	80.105.14...	.2.08	.2.09

### Accessories

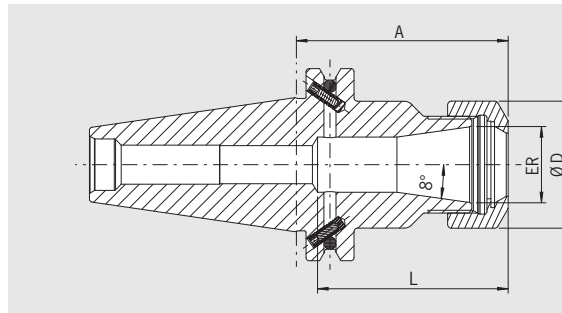
Shrink and cooling adapter for Mini Shrink

See page 593

1) With EDM slits



# ER COLLET CHUCK ASME B5.50 · CAT40



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 22,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF

**Use:**  
For clamping tools with cylindrical shank in ER collets according to ISO 15488.

**CAT40 Form AD/AF**  
Form AD/AF means central-coolant supply and coolant channels through the flange which can be sealed again

- Balanced collet nuts with special slide coating for low friction and higher clamping forces
- Included in delivery: ER collet chuck with pre-balanced collet nut

INCH	Ø ER	ER11	ER16	ER20	ER25	ER32	ER40
	Ø D [inch]	0.75	1.1	1.34	1.65	1.97	2.48
	Clamping range [inch]	0.02–0.28	0.02–0.39	0.04–0.51	0.04–0.63	0.04–0.79	0.08–1.02
	Clamping range [mm]	0.5–7.0	0.5–10.0	1.0–13.0	1.0–16.0	1.0–20.0	2.0–26.0
L [inch]		—	<sup>2)</sup>	1.63	2.44	2.52	2.87
Gage length A [inch]	short	—	2.76	2.76	2.76	2.76	2.76
Order No.	40.720...		.16	.20	.25	.32	.40
L [inch]		<sup>2)</sup> 3.94	<sup>2)</sup> 3.94	1.63	2.24	2.52	2.87
Gage length A [inch]	long	—	3.94	3.94	3.94	3.94	3.94
Order No.	40.721...		.11	.16	.20	.25	.32
L [inch]		—	<sup>2)</sup> 6.30	1.63	2.24	2.52	2.87
Gage length A [inch]	oversize	—	6.30	6.30	6.30	6.30	6.30
Order No.	40.722...		.16	.20	.25	.32	.40
L [inch]		—	<sup>2)</sup> 7.87	1.63	2.24	2.52	—
Gage length A [inch]	ZG200	—	7.87	7.87	7.87	7.87	—
Order No.	40.726...		.16	.20	.25	.32	—

**Accessories**

**Collet nut, pre-balanced**

Ø ER	Order No.	ER11	ER16	ER20	ER25	ER32	ER40
	83.912...	.11	.16	.20	.25	.32	.40

**Collet nut HS (High Speed), fine-balanced**

Ø ER	Order No.	ER16	ER20	ER25	ER32	ER40
	83.912...	.16.HS	.20.HS	.25.HS	.32.HS	.40.HS

**Wrench**

Ø ER	Order No.	ER11	ER16	ER20	ER25	ER32	ER40
	84.200...	.11	.16	.20	—	—	—

**Wrench**

Ø ER	Order No.	ER25	ER32	ER40
	84.200...	.25	.32	.40

**Balancing index rings**

Ø ER	Order No.	ER11	ER16	ER20	ER25	ER32	ER40 <sup>1)</sup>
	79.350...	.19	.28	.34	.42	.1.71Z	.50

**Collets ER** See pages 768–773

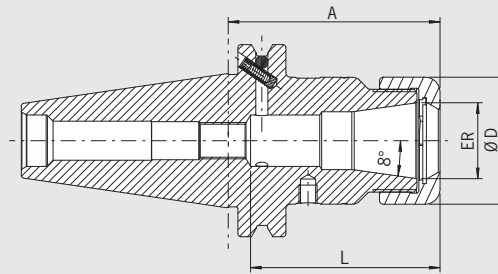
**Pull Studs** See pages 787–791

1) Not for 40.720.40  
2) Drilled through

# POWER COLLET CHUCK ASME B5.50 · CAT40

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 25,000 rpm
- All functional surfaces fine-machined
- Taper tolerance AT3
- Coolant supply form AD/AF








**The Power Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with improved construction combines high rigidity with vibration dampening features, giving more protection to the machine, spindle and tool. The universal Power Collet Chuck is a unique high performance chuck that can also be used with standard collets.**

- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (formerly DIN 6499)  
(Attention: By using standard collet, ER length A will increase)
- High rigidity

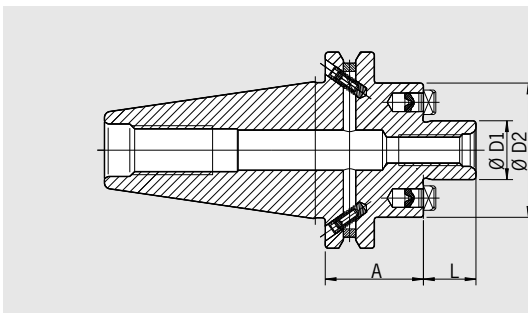
- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

INCH	ER	16	25	32
	Ø D [inch]	1.1	1.65	1.97
	Clamping range [inch]	1/8–3/8	1/8–5/8	1/8–3/4
	Clamping range [mm]	2.0–10.0	2.0–16.0	2.0–20.0
	L [inch] short	1.69	2.42	2.44
Gage length A [inch]	short	2.76	2.76	2.76
<b>Order No.</b>	<b>40.720...</b>	<b>.16.3</b>	<b>.25.3</b>	<b>.32.3</b>
	L [inch]	1.69	2.01	2.09
Gage length A [inch]	long	3.94	3.94	3.94
<b>Order No.</b>	<b>40.721...</b>	<b>.16.3</b>	<b>.25.3</b>	<b>.32.3</b>
Gage length A [inch]	oversize	6.30	6.30	6.30
<b>Order No.</b>	<b>40.722...</b>	<b>.16.3</b>	<b>.25.3</b>	<b>.32.3</b>

### Accessories

<b>Locknut (fine-balanced)</b>					See page 779
Size		ER 16	ER 25	ER 32	
<b>Order No.</b>	<b>83.914...</b>	<b>.16</b>	<b>.25</b>	<b>.32</b>	
<b>Power Collet clamping wrench</b>					See page 781
<b>Torque Master torque wrench</b>					See page 780
<b>Order No.</b>	<b>84.600.00</b>				
<b>Power Collets</b>					See page 774
<b>Power Collets with Safe-Lock</b>					See page 776
<b>Cool Jet bores for Power Collets</b>					See page 777
<b>Order No.</b>	<b>91.100.27</b>				
<b>Shrink Fit Collets</b>					See pages 759–766

# FACE MILL ARBOR ASME B5.50 · CAT40



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 22,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF

**Use:**

For clamping face mill cutters.

**CAT40 FORM AD/AF**

Form AD/AF means central-coolant supply and coolant channels through the flange which can be sealed again

– Included in delivery: Face Mill Arbor and clamping screw

INCH	Ø D1 [inch]		3/4	1	1 1/4	1 1/2
	L [inch]		0.67	0.67	0.67	0.94
	Ø D2 [inch]		1.71	2.17	2.75	3.78
Gage length A [inch]	short		1.38	1.97	1.97	1.97
<b>Order No.</b>	<b>40.750...</b>		<b>.3/4Z</b>	<b>.1Z</b>	<b>.1 1/4Z</b>	<b>.1 1/2Z</b>
Gage length A [inch]	long		3.94	3.94	—	—
<b>Order No.</b>	<b>40.751...</b>		<b>.3/4Z</b>	<b>.1Z</b>		

**Accessories**

**Clamping Screw**

Ø D1 [inch]			3/4	1	1 1/4	1 1/2
<b>Order No.</b>	<b>85.300...</b>		<b>.3/4Z</b>	<b>.1Z</b>	<b>.11/4Z</b>	<b>.11/2Z</b>

**Wrench**

Ø D1 [inch]			3/4	1	1 1/4	1 1/2
<b>Order No.</b>	<b>84.400...</b>		<b>.3/4Z</b>	<b>.1Z</b>	<b>.11/4Z</b>	<b>.11/2Z</b>

**Balancing index rings**

Ø D1 [inch]			3/4	1	1 1/4	1 1/2
<b>Order No.</b>	<b>79.350...</b>		<b>.1.71Z</b>	<b>.55</b>	<b>.70</b>	<b>.96</b>

**Pull Studs**

						See pages 787–791
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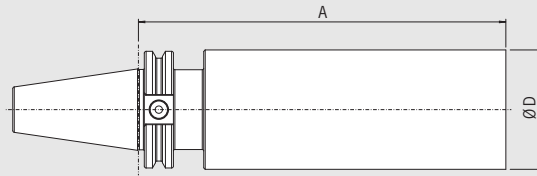
**Coolant bores**

<b>Order No.</b>	<b>91.100.03</b>					
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# BLANK ADAPTER – HARDENED ASME B5.50 · CAT40

### CERTIFICATE OF QUALITY

- All functional surfaces fine machined
- Taper tolerance AT3






### Use:

For manufacturing special tools in your factory.

### Version:

- Taper and groove hardened and ground
- Cylindrical part hardened to 52+2 HRC

Taper **ASME B5.50 CAT40** prepared for Form AD.  
Form AD means central coolant supply

INCH	Ø D [inch]		2.56
Gage Length A [inch] <b>Order No.</b>	ZG100 <b>R40.796.0650...</b>		3.94 <b>.0100</b>
Gage Length A [inch] <b>Order No.</b>	ZG200 <b>R40.796.0650...</b>		7.87 <b>.0200</b>
Gage Length A [inch] <b>Order No.</b>	ZG300 <b>R40.796.0650...</b>		11.81 <b>.0300</b>

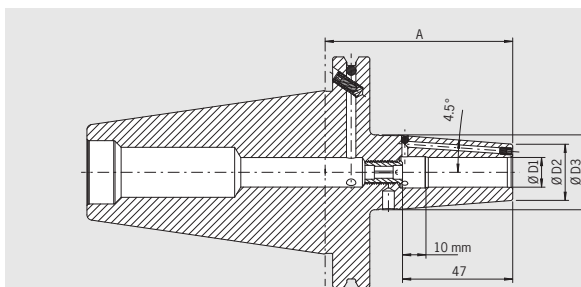
### Accessories

**Pull studs**



See pages 787–791

# SHRINK FIT CHUCK ASME B5.50 · CAT50



### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 25,000 rpm  
or U<1 gmm
- All functional surfaces machined
- Taper tolerance AT3
- Coolant supply form AD/AF
- Cool Jet, can be sealed

**Use:**

Shrink fit chuck suitable for use with all available shrink fit units.

**CAT50 Form AD/AF**

Form AD/AF means central coolant supply and coolant channels through the flange which can be sealed again

- Heat resistant hot-working steel
- Hardened 54-2 HRC
- For HSS and solid carbide tools
- Shank tolerance h6
- With threaded holes in order to balance with balancing screws
- Cool Jet coolant bores that can be sealed included

Optional:

- Cooling with Cool Flash for an extra charge (See pages 502–503)

INCH	Clamping Ø D1 [inch]		1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	1 1/4
	Ø D2 [inch]		0.83	0.83	0.94	0.94	0.94	1.06	1.30	1.30	1.73	1.73
	Ø D3 [inch]		1.06	1.06	1.26	1.26	1.26	1.34	1.65	1.65	2.09	2.09
	L [inch]		1.42	1.42	1.65	1.65	1.85	1.97	2.05	2.05	2.28	2.28
Gage length A [inch]	short		3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.94	3.94
<b>Order No.</b>	<b>50.840...</b>		<b>.1/4Z.4</b>	<b>.5/16Z.4</b>	<b>.3/8Z.4</b>	<b>.7/16Z.4</b>	<b>.1/2Z.4</b>	<b>.5/8Z.4</b>	<b>.3/4Z.4</b>	<b>.7/8Z.4</b>	<b>.1Z.4</b>	<b>.11/4Z.4</b>
Gage length A [inch]	ZG130		5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12
<b>Order No.</b>	<b>50.844...</b>		<b>.1/4Z.4</b>	<b>.5/16Z.4</b>	<b>.3/8Z.4</b>	<b>.7/16Z.4</b>	<b>.1/2Z.4</b>	<b>.5/8Z.4</b>	<b>.3/4Z.4</b>	<b>.7/8Z.4</b>	<b>.1Z.4</b>	<b>.11/4Z.4</b>
Gage length A [inch]	oversize		6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30
<b>Order No.</b>	<b>50.842...</b>		<b>.1/4Z.4</b>	<b>.5/16Z.4</b>	<b>.3/8Z.4</b>	<b>.7/16Z.4</b>	<b>.1/2Z.4</b>	<b>.5/8Z.4</b>	<b>.3/4Z.4</b>	<b>.7/8Z.4</b>	<b>.1Z.4</b>	<b>.11/4Z.4</b>

METRIC	Clamping Ø D1 [mm]		06	08	10	12	14	16	18	20	25	32
	Ø D2 [mm]		21	21	24	24	27	27	33	33	44	44
	Ø D3 [mm]		27	27	32	32	34	34	42	42	53	53
	L [mm]		36	36	42	47	47	50	50	52	58	58
Gage length A [mm]	short		80	80	80	80	80	80	80	80	100	—
<b>Order No.</b>	<b>50.840...</b>		<b>.06.4</b>	<b>.08.4</b>	<b>.10.4</b>	<b>.12.4</b>	<b>.14.4</b>	<b>.16.4</b>	<b>.18.4</b>	<b>.20.4</b>	<b>.25.4</b>	
Gage length A [mm]	ZG130		130	130	130	130	130	130	130	130	130	130
<b>Order No.</b>	<b>50.844...</b>		<b>.06.4</b>	<b>.08.4</b>	<b>.10.4</b>	<b>.12.4</b>	<b>.14.4</b>	<b>.16.4</b>	<b>.18.4</b>	<b>.20.4</b>	<b>.25.4</b>	<b>.32.4</b>
Gage length A [mm]	oversize		160	160	160	160	160	160	—	160	160	160
<b>Order No.</b>	<b>50.842...</b>		<b>.06.4</b>	<b>.08.4</b>	<b>.10.4</b>	<b>.12.4</b>	<b>.14.4</b>	<b>.16.4</b>		<b>.20.4</b>	<b>.25.4</b>	<b>.32.4</b>

**Accessories**

Cool Flash

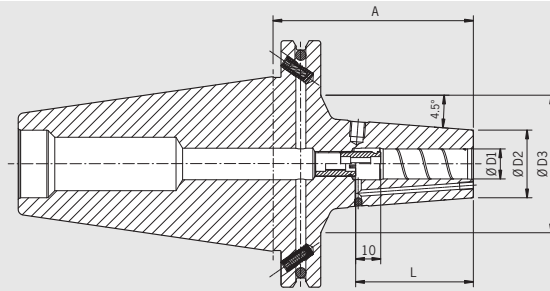


Order No. 91.100.40

See pages 502–503

# POWER SHRINK CHUCK ASME B5.50 · CAT50

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF
<input checked="" type="checkbox"/>	Cool Jet, can be sealed



The Power Shrink Chuck is designed for the highest cutting performance in High Speed machining. The optimized design combines high rigidity with vibration dampening, which protects the machine, spindle and tool.

- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy
- Quieter running, therefore better surface quality and protection of tools, spindles and machines
- With threaded holes in order to balance with balancing screws
- Cool Jet coolant bores that can be sealed included

The long versions (A=160 and 200) with slim tips are especially versatile to use.

- High rigidity, slim at the tip, dampen vibrations
- Higher clamping forces
- Equally suited to High Speed and Heavy Duty machining
- Universal usage, saves space in tool magazine

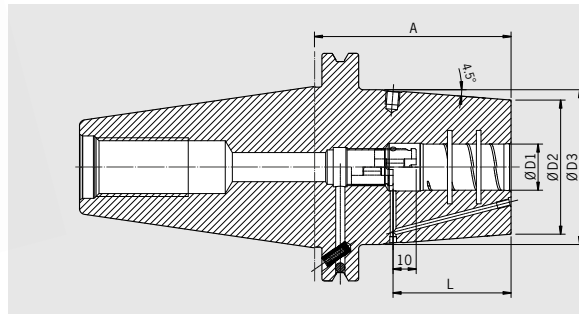
Optional:

- Cooling with Cool Flash for an extra charge (See pages 502–503)
- Safe-Lock pull out protection (See pages 496–500)

INCH	Clamping Ø D1 [inch]	1/4	5/16	3/8	1/2	5/8	3/4	1
	Ø D2 [inch] short	0.83	0.83	1.06	1.06	1.31	1.76	1.73
	Ø D3 [inch] short	2.68	2.68	2.17	2.17	—	—	—
	L [inch]	1.42	1.42	1.65	1.85	1.97	2.05	2.28
Gage length A [inch]	short	3.15	3.15	3.15	3.15	3.15	3.15	3.94
Order No.	50.840...	.1/4z.3	.5/16z.3	.3/8z.3	.1/2z.3	.5/8z.3	.3/4z.3	.1z.3
Safe-Lock Order No.	50.840...	.1/4z.37	.5/16z.37	.3/8z.37	.1/2z.37	.5/8z.37	.3/4z.37	.1z.37
	Ø D2 [inch] oversize/ZG200	0.83	0.83	1.06	1.06	1.30	1.73	1.73
	Ø D3 [inch] oversize/ZG200	2.75	2.75	2.75	2.75	2.75	2.75	2.75
Gage length A [inch]	oversize	6.30	6.30	6.30	6.30	6.30	6.30	6.30
Order No.	50.842...	.1/4z.3	.5/16z.3	.3/8z.3	.1/2z.3	.5/8z.3	.3/4z.3	.1z.3
Safe-Lock Order No.	50.842...	.1/4z.37	.5/16z.37	.3/8z.37	.1/2z.37	.5/8z.37	.3/4z.37	.1z.37
Gage length A [inch]	ZG200	7.87	7.87	7.87	7.87	7.87	7.87	7.87
Order No.	50.846...	.1/4z.3	.5/16z.3	.3/8z.3	.1/2z.3	.5/8z.3	.3/4z.3	.1z.3
Safe-Lock Order No.	50.846...	.1/4z.37	.5/16z.37	.3/8z.37	.1/2z.37	.5/8z.37	.3/4z.37	.1z.37

METRIC	Ø D1 [mm]	06	08	10	12	14	16	18	20	25
	Ø D2 [mm] short	21	21	27	27	33.3	33.3	44.7	44.7	44
	Ø D3 [mm] short	68	68	55	55	—	—	—	—	—
	L [mm]	36	36	42	47	47	50	50	52	58
Gage length A [mm]	short	80	80	80	80	80	80	80	80	100
Order No.	50.840...	.06.3	.08.3	.10.3	.12.3	.14.3	.16.3	.18.3	.20.3	.25.3
Safe-Lock Order No.	50.840...	.06.37	.08.37	.10.37	.12.37	.14.37	.16.37	.18.37	.20.37	.25.37
	Ø D2 [mm] oversize/ZG200	21	21	27	27	33	33	44	44	44.7
	Ø D3 [mm] oversize/ZG200	69.85	69.85	69.85	69.85	69.85	69.85	69.85	69.85	69.85
Gage length A [mm]	oversize	160	160	160	160	160	160	160	160	160
Order No.	50.842...	.06.3	.08.3	.10.3	.12.3	.14.3	.16.3	.18.3	.20.3	.25.3
Safe-Lock Order No.	50.842...	.06.37	.08.37	.10.37	.12.37	.14.37	.16.37	.18.37	.20.37	.25.37
Gage length A [mm]	ZG200	200	200	200	200	200	200	200	200	200
Order No.	50.846...	.06.3	.08.3	.10.3	.12.3	.14.3	.16.3	.18.3	.20.3	.25.3
Safe-Lock Order No.	50.846...	.06.37	.08.37	.10.37	.12.37	.14.37	.16.37	.18.37	.20.37	.25.37

# HEAVY DUTY CHUCK ASME B5.50 · CAT50



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF
<input checked="" type="checkbox"/>	Cool Jet, can be sealed

The Heavy Duty Chuck is a shrink fit chuck designed for extreme cases and Heavy Duty machining. The contour is optimized for highest rigidity and clamping force.

- Smooth clamping of the tool shank
- TIR less than 0.00012" (3 µm)
- Reinforced outer contour
- To shrink with 13 kW HD coil (see page 600) or with high performance shrink fit unit HAIMER Power Clamp Profi Plus (20 kW)
- With internal groove in the clamping bore
- Cool Jet coolant bores that can be sealed included
- With threaded holes in order to balance with balancing screws

- Optional:
- Cooling with Cool Flash from 5/8"-1" for an extra charge
  - Safe-Lock pull out protection

INCH	Clamping Ø D1 [inch]	5/8	3/4	1	1 1/4	1 1/2	2
	Ø D2 [inch]	2.01	2.28	2.48	2.76	3.23	3.23
	Ø D3 [inch]	—	2.64	—	3.07	3.54	3.70
	L [inch]	1.97	2.05	2.28	2.40	3.46	3.46
Gage length A [inch]	short	3.15	3.35	3.54	3.54	3.94	5.51
Order No.	50.850...	.5/8z.6	.3/4z.6	.1z.6	.11/4z.6	.11/2z.6	.2z.6
Safe-Lock Order No.	50.850...	.5/8z.67	.3/4z.67	.1z.67	.11/4z.67	.11/2z.67	.2z.67

METRIC	Clamping Ø D1 [mm]	16	20	25	32	40	50
	Ø D2 [mm]	51	58	63	70	82	82
	Ø D3 [mm] short	—	67	—	78	90	94
	L [mm]	50	52	58	61	88	88
Gage length A [mm]	short	80	85	90	90	100	140
Order No.	50.850...	.16.6	.20.6	.25.6	.32.6	.40.6	.50.6
Safe-Lock Order No.	50.850...	.16.67	.20.67	.25.67	.32.67	.40.67	.50.67
	Ø D3 [mm] oversize/ZG200	69.85	69.85	78	85	94	94
Gage length A [mm]	oversize	160	160	160	160	160	160
Order No.	50.852...	.16.6	.20.6	.25.6	.32.6	.40.6	.50.6
Safe-Lock Order No.	50.852...	.16.67	.20.67	.25.67	.32.67	.40.67	.50.67
Gage length A [mm]	ZG200	200	200	200	200	200	200
Order No.	50.856...	.16.6	.20.6	.25.6	.32.6	.40.6	.50.6
Safe-Lock Order No.	50.856...	.16.67	.20.67	.25.67	.32.67	.40.67	.50.67

**Accessories**  
Cool Flash



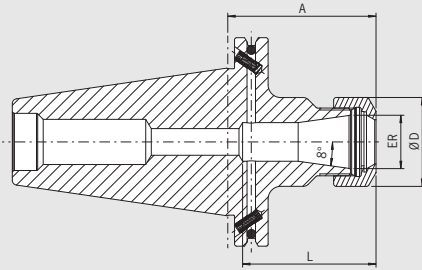
Order No. 91.100.40

See pages 502-503

# ER COLLET CHUCK ASME B5.50 · CAT50

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 22,000 rpm  
or U<1 gmm
- All functional surfaces machined
- Taper tolerance AT3
- Coolant supply form AD/AF



### Use:

For clamping tools with cylindrical shank in ER collets according to ISO 15488.

### CAT50 Form AD/AF

Form AD/AF means central-coolant supply and coolant channels through the flange which can be sealed again

- Balanced collet nuts with special slide coating for low friction and higher clamping forces
- Included in delivery: ER collet chuck with pre-balanced collet nut

INCH	ER	ER16	ER20	ER25	ER32	ER40
	Ø D [inch]	1.1	1.34	1.65	1.97	2.48
	Clamping range [inch]	0.02–0.39	0.04–0.51	0.04–0.63	0.04–0.79	0.08–1.02
	Clamping range [mm]	0.5–10.0	1.0–13.0	1.0–16.0	1.5–20.0	2.5–26.0
L [inch]		<sup>4)</sup>	1.63	2.44	2.52	2.87
Gage length A [inch]	short	2.76	2.76	2.76	2.76	2.76
Order No.	50.720...	.16	.20	.25	.32	.40
L [inch]		<sup>4)</sup>	1.63	2.24	2.52	2.87
Gage length A [inch]	long	3.94	3.94	3.94	3.94	3.94
Order No.	50.721...	.16	.20	.25	.32	.40
L [inch]		<sup>4)</sup>	1.63	2.24	2.52	2.87
Gage length A [inch]	oversize	6.30	6.30	6.30	6.30	6.30
Order No.	50.722...	.16	.20	.25	.32	.40

### Accessories

#### Collet nut, pre-balanced

Ø ER		ER16	ER20	ER25	ER32	ER40
Order No.	83.912...	.16	.20	.25	.32	.40

#### Collet nut HS (Highspeed), fine-balanced

Ø ER		ER16	ER20	ER25	ER32	ER40
Order No.	83.912...	.16.HS	.20.HS	.25.HS	.32.HS	.40.HS

#### Wrench

Ø ER		ER16	ER20	–	–	–
Order No.	84.200...	.16	.20			

#### Wrench

Ø ER		–	–	ER25	ER32	ER40
Order No.	84.200...			.25	.32	.40

#### Balancing index rings

Ø ER		ER16	ER20	ER25 <sup>1)</sup>	ER32 <sup>2)</sup>	ER40 <sup>3)</sup>
Order No.	79.350...	.28	.34	.42	.48	.63

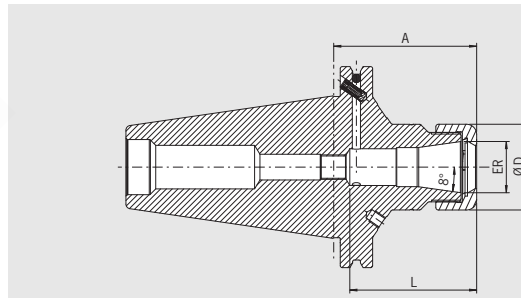
**Collets ER** See pages 768–773

**Pull Studs** See pages 787–791

1) Not for 50.720.25 2) Not for 50.720.32 3) Not for 50.720.40 4) Drilled through



## POWER COLLET CHUCK ASME B5.50 · CAT50







CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine-machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF








The Power Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with improved construction combines high rigidity with vibration dampening features, giving more protection to the machine, spindle and tool. The universal Power Collet Chuck is a unique high performance chuck that can also be used with standard collets.

- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (formerly DIN 6499)  
(Attention: By using standard collet, ER length A will increase)

- High rigidity
- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

INCH	ER		16	25	32
	Ø D [inch]		1.1	1.65	1.97
	Clamping range [inch]		1/8–3/8	1/8–5/8	1/8–3/4
	Clamping range [mm]		2.0–10.0	2.0–16.0	2.0–20.0
	L [inch] short		1.69	2.44	2.46
Gage length A [inch]	short		2.76	2.76	2.76
Order No.	50.720...		.16.3	.25.3	.32.3
	L [inch]		1.69	2.01	2.09
Gage length A [inch]	long		3.94	3.94	3.94
Order No.	50.721...		.16.3	.25.3	.32.3
Gage length A [inch]	ZG130		5.12	5.12	5.12
Order No.	50.724...		.16.3	.25.3	.32.3
Gage length A [inch]	oversize		6.30	6.30	6.30
Order No.	50.722...		.16.3	.25.3	.32.3

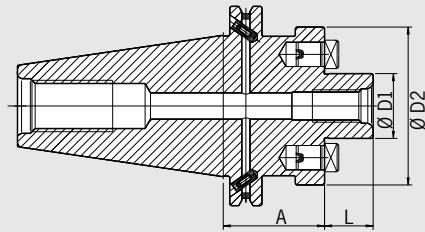
### Accessories

<b>Locknut (fine-balanced)</b>					See page 779
Size			ER 16	ER 25	ER 32
Order No.	83.914...		.16	.25	.32
<b>Power Collet clamping wrench</b>					See page 781
					
<b>Torque Master torque wrench</b>					See page 780
Order No.	84.600.00				
<b>Power Collets</b>					See page 774
					
<b>Power Collets with Safe-Lock</b>					See page 776
					
<b>Cool Jet bores for Power Collets</b>					See page 777
Order No.	91.100.27				
<b>Shrink Fit Collets</b>					See pages 759–766
					

# FACE MILL ARBOR ASME B5.50 · CAT50

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 22,000 rpm  
or U < 1 gmm
- All functional surfaces machined
- Taper tolerance AT3
- Coolant supply form AD/AF





### Use:

For clamping face mill cutters.

### CAT50 FORM AD/AF

Form AD/AF means central coolant supply and coolant channels through the flange which can be sealed again

– Included in delivery: Face Mill Arbor and clamping screw

INCH	Ø D1 [inch]		3/4	1	1 1/4	1 1/2
	L [inch]		0.67	0.67	0.67	0.94
	Ø D2 [inch]		1.71	2.17	2.71	3.78
Gage length A [inch]	short		1.38	1.38	1.38	2.36
<b>Order No.</b>	<b>50.750...</b>		<b>.3/4Z</b>	<b>.1Z</b>	<b>.1 1/4Z</b>	<b>.1 1/2Z</b>
Gage length A [inch]	long		3.94	3.94	—	—
<b>Order No.</b>	<b>50.751...</b>		<b>.3/4Z</b>	<b>.1Z</b>		

### Accessories

#### Clamping Screw

Ø D1 [inch]			3/4	1	1 1/4	1 1/2
<b>Order No.</b>	<b>85.300...</b>		<b>.3/4Z</b>	<b>.1Z</b>	<b>.11/4Z</b>	<b>.11/2Z</b>

#### Wrench

Ø D1 [inch]			3/4	1	1 1/4	1 1/2
<b>Order No.</b>	<b>84.400...</b>		<b>.3/4Z</b>	<b>.1Z</b>	<b>.11/4Z</b>	<b>.11/2Z</b>

#### Balancing index rings


Ø D1 [inch]			3/4	1	—	—
<b>Order No.</b>	<b>79.350...</b>		<b>.1.71Z</b>	<b>.55</b>		

#### Pull Studs

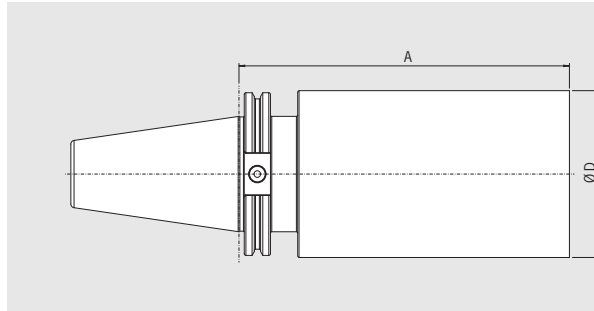


See pages 787–791

#### Coolant bores

<b>Order No.</b>	<b>91.100.03</b>	
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## BLANK ADAPTER – HARDENED ASME B5.50 · CAT50



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3

**Use:**

For manufacturing special tools in your factory.

**Version:**

- Taper and groove hardened and ground
- Cylindrical part hardened to 52+2 HRC

Taper **ASME B5.50 CAT50** prepared for Form AD.  
Form AD means central coolant supply

INCH	Ø D [inch]		3.98
Gage Length A [inch] <b>Order No.</b>	ZG100 <b>R50.796.1010...</b>		3.94 <b>.0100</b>
Gage Length A [inch] <b>Order No.</b>	ZG200 <b>R50.796.1010...</b>		7.87 <b>.0200</b>
Gage Length A [inch] <b>Order No.</b>	ZG300 <b>R50.796.1010...</b>		11.81 <b>.0300</b>

**Accessories**

**Pull studs**



See pages 787 – 791



## Similar ASME B5.50 CAT with Face Contact

Article	Page
<b>CAT40 with Face Contact</b>	
Shrink Fit Chuck	294
Power Shrink Chuck	295
High Precision Collet Chuck	296
<b>CAT50 with Face Contact</b>	
Shrink Fit Chuck	297
Power Shrink Chuck	298
Heavy Duty Chuck	299
High Precision Collet Chuck	300

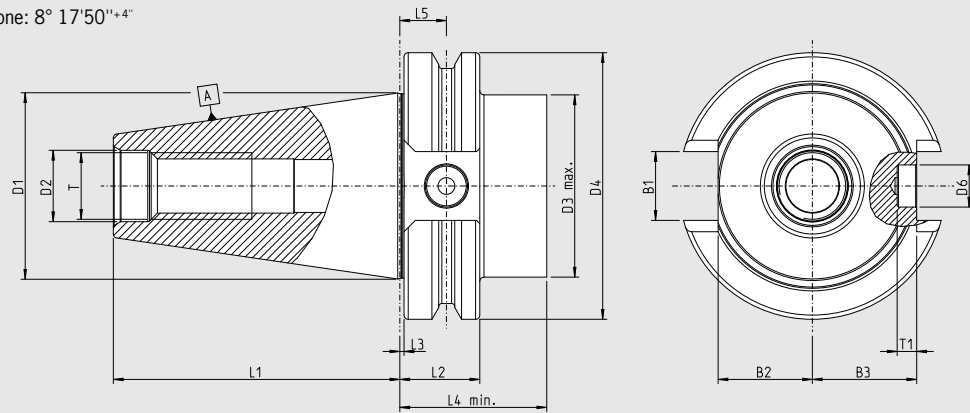
## STEEP TAPER SIMILAR ASME B5.50 · CAT WITH FACE CONTACT

**Design:**

- Additional support on the flange surface for more rigidity
- Tool holders case-hardened 60–2 HRC
- Tensile strength in the core at least 950 N/mm<sup>2</sup>
- Taper in tolerance quality AT3
- Form AD: interior coolant supply through center
- Incl. bore for data chip Ø 10 mm
- Compatible with Big-Plus\* spindles

**CAT40 / CAT50 with face contact**

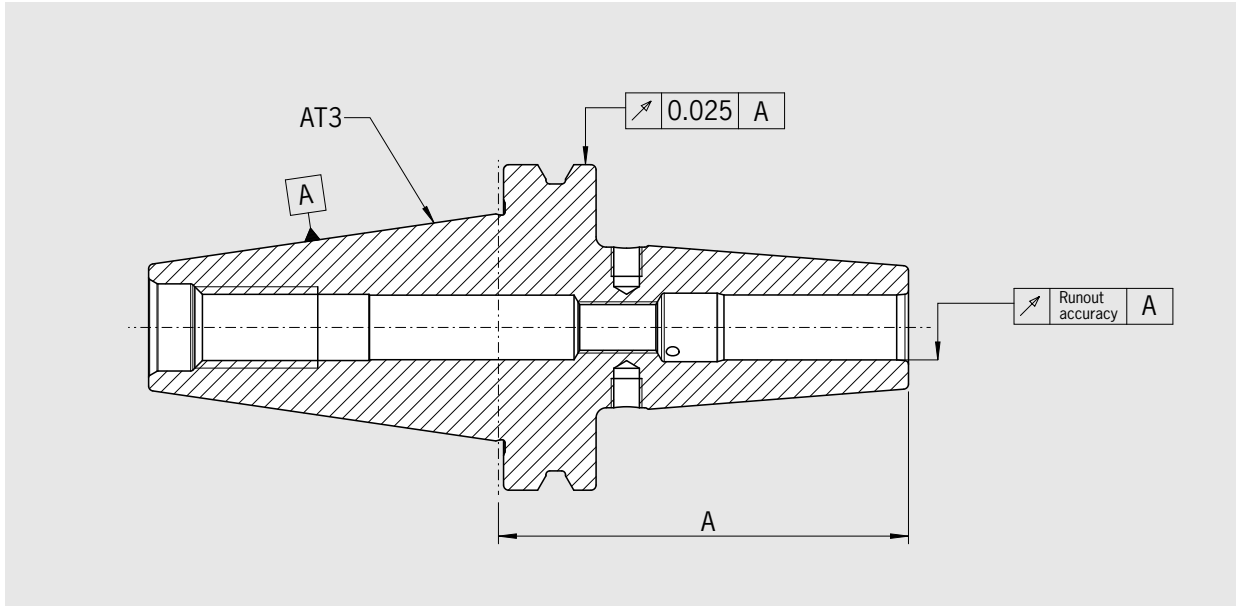
- Angle of cone: 8° 17'50"±4"



CAT40	D1	D2	D3 max.	D4	D6	L1	L2	L3	L4 min.	L5	T	T1	B1	B2	B3
inch	1.750	0.669	1.711	2.502	0.394	2.687	0.752	0.039	1.382	0.437	5/8"-11 UNC	0.183	0.646	0.890	0.984

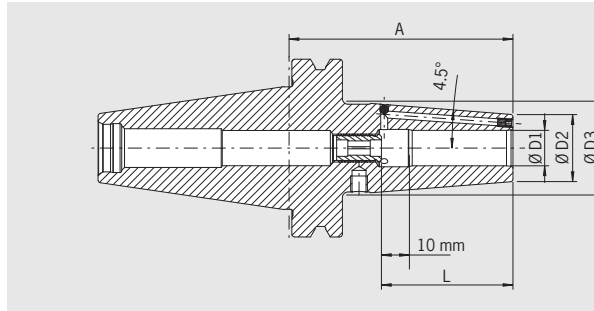
CAT50	D1	D2	D3 max.	D4	D6	L1	L2	L3	L4 min.	L5	T	T1	B1	B2	B3
inch	2.750	1.063	2.711	3.875	0.394	4.000	0.752	0.059	1.382	0.437	1"-8 UNC	0.183	1.020	1.390	1.484

**RUNOUT ACCURACY  
SIMILAR ASME B5.50 · CAT WITH FACE CONTACT**



Gage length A [mm]	A < 160	A ≥ 160
max. runout tolerance in mm		
Shrink Fit Chuck	0.003	0.004
Power Shrink Chuck	0.003	0.004
Heavy Duty Chuck	0.003	0.004
High Precision Collet Chuck	0.003	0.004

# SHRINK FIT CHUCK SIMILAR ASME B5.50 · CAT40 WITH FACE CONTACT



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD
<input checked="" type="checkbox"/>	Cool Jet, can be sealed

**Use:**

Shrink fit chuck suitable for use with all available shrink fit units. Additional support on the flange surface for more rigidity.

**Similar ASME B5.50 CAT40 Form AD with face contact**

Form AD means central coolant supply

- Heat resistant hot-working steel
- Hardened 54-2 HRC
- For HSS and solid carbide tools
- Shank tolerance h6
- With threaded holes in order to balance with balancing screws
- Cool Jet coolant bores that can be sealed included
- Compatible with Big-Plus\* spindles

Optional:

- Cooling with Cool Flash from ¼"-1" for an extra charge (See pages 502-503)
- Safe-Lock pull out protection (See pages 496-500)

**Standard version, similar to DIN 69882-8**

INCH	Clamping Ø D1 [inch]		1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	1 1/4
	Ø D2 [inch]		0.39	0.39	0.83	0.83	0.95	0.95	0.95	1.06	1.30	1.30	1.73	1.73
	Ø D3 [inch]				1.06	1.06	1.26	1.26	1.26	1.34	1.65	1.65	2.09	2.09
	L [inch]		0.35	0.47	1.42	1.42	1.65	1.65	1.85	1.97	2.05	2.05	2.28	2.28
Gage length A [inch]	short		3.15 <sup>1)</sup>	3.15 <sup>1)</sup>	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.94	3.94
<b>Standard Order No.</b>	<b>40P.840...</b>		<b>.1/8Z</b>	<b>.3/16Z</b>	<b>.1/4Z.4</b>	<b>.5/16Z.4</b>	<b>.3/8Z.4</b>	<b>.7/16Z.4</b>	<b>.1/2Z.4</b>	<b>.5/8Z.4</b>	<b>.3/4Z.4</b>	<b>.7/8Z.4</b>	<b>.1Z.4</b>	<b>.1 1/4Z.4</b>
Gage length A [inch]	ZG130		—	—	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12
<b>Order No.</b>	<b>40P.844...</b>				<b>.1/4Z.4</b>	<b>.5/16Z.4</b>	<b>.3/8Z.4</b>	<b>.7/16Z.4</b>	<b>.1/2Z.4</b>	<b>.5/8Z.4</b>	<b>.3/4Z.4</b>	<b>.7/8Z.4</b>	<b>.1Z.4</b>	<b>.1 1/4Z.4</b>
Gage length A [inch]	oversize		—	—	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30
<b>Order No.</b>	<b>40P.842...</b>				<b>.1/4Z.4</b>	<b>.5/16Z.4</b>	<b>.3/8Z.4</b>	<b>.7/16Z.4</b>	<b>.1/2Z.4</b>	<b>.5/8Z.4</b>	<b>.3/4Z.4</b>	<b>.7/8Z.4</b>	<b>.1Z.4</b>	<b>.1 1/4Z.4</b>

**Accessories**

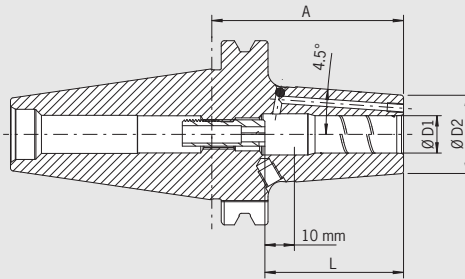
<b>Shrink fit extensions</b>		See page 750
<b>Balancing screws</b>		See page 784
<b>Pull studs</b>		See pages 787-791
<b>Reduction sleeves</b>		See page 794
<b>Back-up screws</b>		See pages 796-799
<b>Cool Flash</b>		<b>Order No. 91.100.40</b> See pages 502-503

1) Without back-up screw, without threads for balancing screws, with slits along the clamping bore for coolant around the tool  
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# POWER SHRINK CHUCK SIMILAR ASME B5.50 · CAT40 WITH FACE CONTACT

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 25,000 rpm  
or U < 1 gmm
- All functional surfaces machined
- Taper tolerance AT3
- Coolant supply form AD
- Cool Jet, can be sealed



**The Power Shrink Chuck is designed for the highest cutting performance in High Speed machining. The optimized design combines high rigidity with vibration dampening, which protects the machine, spindle and tool.**

- Additional support on the flange surface for more rigidity
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy
- Quieter running, therefore better surface quality and protection of tools, spindles and machines
- With threaded holes in order to balance with balancing screws
- Cool Jet coolant bores that can be sealed included

- High rigidity, slim at the tip, dampen vibrations
- Higher clamping forces
- Equally suited to High Speed and Heavy Duty machining
- Universal usage, saves space in tool magazine
- Compatible with Big-Plus\* spindles

Optional:

- Cooling with Cool Flash for an extra charge (See pages 502–503)
- Safe-Lock pull out protection (See pages 496–500)

INCH	Ø D1 [inch]	1/4	5/16	3/8	1/2	5/8	3/4	1
	Ø D2 [inch]	0.87	0.87	1.04	1.04	1.16	1.40	1.79
	L [inch]	1.42	1.42	1.65	1.85	1.97	2.05	2.28
Gage length A [inch]	ultra short	2.56	2.56	2.56	2.56	2.56	2.56	2.95
Standard Order No.	40.845...	.1/4z.3	.5/16z.3	.3/8z.3	.1/2z.3	.5/8z.3	.3/4z.3	.1z.3
Safe-Lock Order No.	40.845...	—	—	—	.1/2z.37	.5/8z.37	.3/4z.37	.1z.37



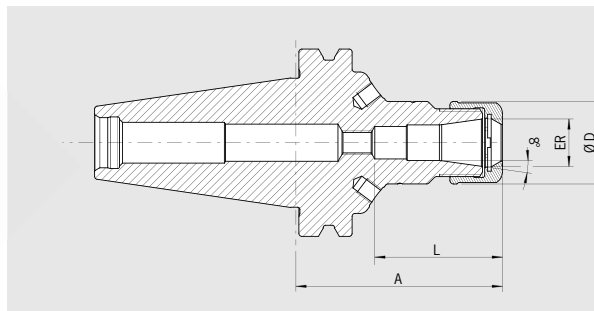
### Accessories

- Shrink fit extensions** See page 750
- Balancing screws** See page 784
- Pull studs** See pages 787–791
- Back-up screws** See pages 796–799
- Cool Flash** **Order No. 91.100.40** See pages 502–503

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# HIGH PRECISION COLLET CHUCK SIMILAR ASME B5.50 · CAT40 WITH FACE CONTACT



### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 30,000 rpm
- All functional surfaces fine-machined
- Taper tolerance AT3
- Coolant supply form AD

**The High Precision Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with better construction and a special coated smooth locknut combines high rigidity with vibration dampening and noise-reducing features, giving more protection to machines, spindles and tools.**

- Additional support on the flange surface for more rigidity
- With a specially coated smooth locknut, balanced at < 1 gmm
- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (Attention: By using standard collet, ER length A will increase)
- High rigidity

- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776
- Compatible with Big-Plus\* spindles

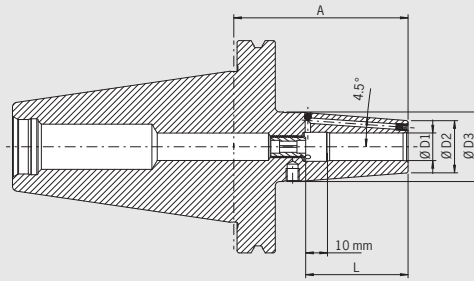
INCH	ER	16	25	32
	Ø D [inch]	1.1	1.65	1.97
	Clamping range [inch]	1/8–3/8	1/8–5/8	1/8–3/4
	Clamping range [mm]	2.0–10.0	2.0–16.0	2.0–20.0
	L [inch] short	1.69	2.01	2.09
Gage length A [inch]	short	2.76	2.76	2.76
<b>Order No.</b>	<b>40P.720...</b>	<b>.16.3.HP</b>	<b>.25.3.HP</b>	<b>.32.3.HP</b>
Gage length A [inch]	ZG130	5.12	5.12	5.12
<b>Order No.</b>	<b>40P.724...</b>	<b>.16.3.HP</b>	<b>.25.3.HP</b>	<b>.32.3.HP</b>
Gage length A [inch]	oversize	6.30	6.30	6.30
<b>Order No.</b>	<b>40P.722...</b>	<b>.16.3.HP</b>	<b>.25.3.HP</b>	<b>.32.3.HP</b>

### Accessories

<b>High Precision Smooth Locknut (fine-balanced)</b>				See page 779
Size		ER 16	ER 25	ER 32
<b>Order No.</b>	<b>83.914...</b>	<b>.16.1</b>	<b>.25.1</b>	<b>.32.1</b>
<b>Roller bearing wrench</b>				See page 782
<b>Order No.</b>	<b>84.650...</b>	<b>.16.1</b>	<b>.25.1</b>	<b>.32.1</b>
<b>Collets ER</b>				See pages 768–773
<b>Shrink Fit Collets</b>				See pages 759–766
<b>Power Collets</b>				See page 774
<b>Power Collets with Safe-Lock</b>				See page 776
<b>Cool Jet bores for Power Collets</b>				See page 777
<b>Order No.</b>	<b>91.100.27</b>			

# SHRINK FIT CHUCK SIMILAR ASME B5.50 · CAT50 WITH FACE CONTACT

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD
<input checked="" type="checkbox"/>	Cool Jet, can be sealed



**Use:**

Shrink fit chuck suitable for use with all available shrink fit units. Additional support on the flange surface for more rigidity.

**Similar ASME B5.50 CAT50 Form AD with face contact**

Form AD means central coolant supply

- Heat resistant hot-working steel
- Hardened 54-2 HRC
- For HSS and solid carbide tools
- Shank tolerance h6
- With threaded holes in order to balance with balancing screws
- Cool Jet coolant bores that can be sealed included
- Compatible with Big-Plus\* spindles

Optional:

- Cooling with Cool Flash for an extra charge (See pages 502–503)

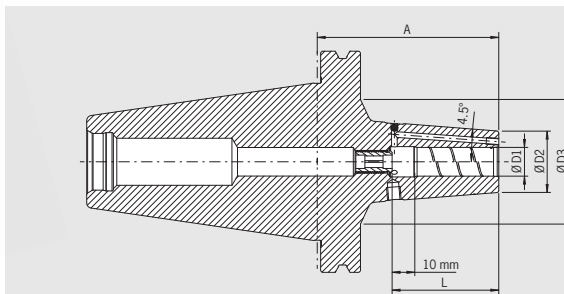
INCH	Clamping Ø D1 [inch]		1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	1 1/4
	Ø D2 [inch]		0.83	0.83	0.94	0.94	0.94	1.06	1.30	1.30	1.73	1.73
	Ø D3 [inch]		1.06	1.06	1.26	1.26	1.26	1.34	1.65	1.65	2.09	2.09
	L [inch]		1.42	1.42	1.65	1.65	1.85	1.97	2.05	2.05	2.28	2.28
Gage length A [inch]	short		3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.94	3.94
Order No.	50P.840...		.1/4Z.4	.5/16Z.4	.3/8Z.4	.7/16Z.4	.1/2Z.4	.5/8Z.4	.3/4Z.4	.7/8Z.4	.1Z.4	.11/4Z.4
Gage length A [inch]	ZG130		5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12
Order No.	50P.844...		.1/4Z.4	.5/16Z.4	.3/8Z.4	.7/16Z.4	.1/2Z.4	.5/8Z.4	.3/4Z.4	.7/8Z.4	.1Z.4	.11/4Z.4
Gage length A [inch]	oversize		6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30
Order No.	50P.842...		.1/4Z.4	.5/16Z.4	.3/8Z.4	.7/16Z.4	.1/2Z.4	.5/8Z.4	.3/4Z.4	.7/8Z.4	.1Z.4	.11/4Z.4

**Accessories**

<b>Shrink fit extensions</b>		See page 750
<b>Balancing screws</b>		See page 784
<b>Pull studs</b>		See pages 787–791
<b>Reduction sleeves</b>		See page 794
<b>Back-up screws</b>		See pages 796–799
<b>Cool Flash</b>		Order No. 91.100.40 See pages 502–503

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# POWER SHRINK CHUCK SIMILAR ASME B5.50 · CAT50 WITH FACE CONTACT



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD
<input checked="" type="checkbox"/>	Cool Jet, can be sealed

The Power Shrink Chuck is designed for the highest cutting performance in High Speed machining. The optimized design combines high rigidity with vibration dampening, which protects the machine, spindle and tool.

- Additional support on the flange surface for more rigidity
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy
- Quieter running, therefore better surface quality and protection of tools, spindles and machines
- With threaded holes in order to balance with balancing screws
- Cool Jet coolant bores that can be sealed included

- High rigidity, slim at the tip, dampen vibrations
- Higher clamping forces
- Equally suited to High Speed and Heavy Duty machining
- Universal usage, saves space in tool magazine
- Compatible with Big-Plus\* spindles

Optional:

- Cooling with Cool Flash for an extra charge (See pages 502–503)
- Safe-Lock pull out protection (See pages 496–500)

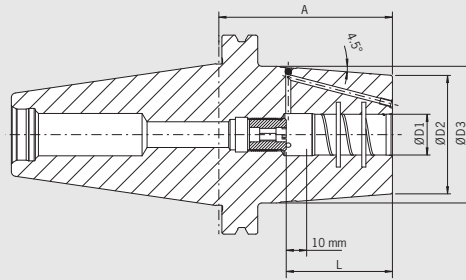
INCH	Clamping Ø D1 [inch]	1/4	5/16	3/8	1/2	5/8	3/4	1
	Ø D2 [inch] short	0.83	0.83	1.06	1.06	1.31	1.76	1.73
	Ø D3 [inch] short	2.68	2.68	2.17	2.17	—	—	—
	L [inch]	1.42	1.42	1.65	1.85	1.97	2.05	2.28
Gage length A [inch]	short	3.15	3.15	3.15	3.15	3.15	3.15	3.94
Order No.	50P.840...	.1/4z.3	.5/16z.3	.3/8z.3	.1/2z.3	.5/8z.3	.3/4z.3	.1z.3
Safe-Lock Order No.	50P.840...	—	—	—	.1/2z.37	.5/8z.37	.3/4z.37	.1z.37

Accessories

Shrink fit extensions		See page 750
Balancing screws		See page 784
Pull studs		See pages 787–791
Back-up screws		See pages 796–799
Cool Flash		Order No. 91.100.40 See pages 502–503

# HEAVY DUTY CHUCK SIMILAR ASME B5.50 · CAT50 WITH FACE CONTACT

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD
<input checked="" type="checkbox"/>	Cool Jet, can be sealed



**The Heavy Duty Chuck is a shrink fit chuck designed for extreme cases and Heavy Duty machining. The contour is optimized for highest rigidity and clamping force.**

- Additional support on the flange surface for more rigidity
- Smooth clamping of the tool shank
- TIR less than 0.00012" (3 µm)
- Reinforced outer contour
- To shrink with 13 kW HD coil (see page 600) or with high performance shrink fit unit HAIMER Power Clamp Profi Plus (20 kW)
- With internal groove in the clamping bore
- Cool Jet coolant bores that can be sealed included
- With threaded holes in order to balance with balancing screws
- Compatible with Big-Plus\* spindles






Optional:

- Cooling with Cool Flash from 5/8"-1" for an extra charge (See pages 502-503)
- Safe-Lock pull out protection (See pages 496-500)

INCH	Clamping Ø D1 [inch]	5/8	3/4	1	1 1/4	1 1/2	2
	Ø D2 [inch]	2.01	2.28	2.48	2.76	3.23	3.23
	Ø D3 [inch]	—	2.64	—	3.07	3.54	3.70
	L [inch]	1.97	2.05	2.28	2.40	3.46	3.46
Gage length A [inch]	short	3.15	3.35	3.54	3.54	3.94	5.51
Order No.	50P.850...	.5/8z.6	.3/4z.6	.1z.6	.11/4z.6	.11/2z.6	.2z.6
Safe-Lock Order No.	50P.850...	.5/8z.67	.3/4z.67	.1z.67	.11/4z.67	.11/2z.67	.2z.67

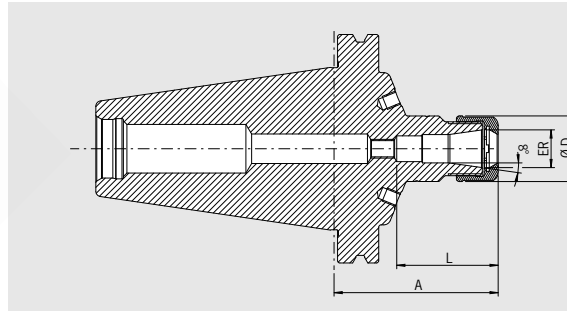


### Accessories

Shrink fit extensions		See page 750
Balancing screws		See page 784
Pull studs		See pages 787-791
Back-up screws		See pages 796-799
Cool Flash		Order No. 91.100.40 See pages 502-503

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# HIGH PRECISION COLLET CHUCK SIMILAR ASME B5.50 · CAT50 WITH FACE CONTACT






CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine-machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD






**The High Precision Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with better construction and a special coated smooth locknut combines high rigidity with vibration dampening and noise-reducing features, giving more protection to machines, spindles and tools.**

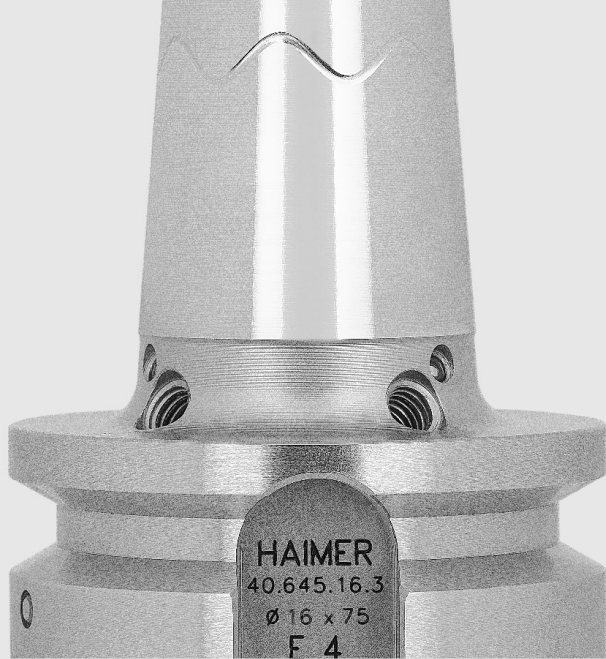
- Additional support on the flange surface for more rigidity
- With a specially coated smooth locknut, balanced at < 1 gmm
- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (Attention: By using standard collet, ER length A will increase)
- High rigidity

- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776
- Compatible with Big-Plus\* spindles

INCH	ER	16	25	32	
	Ø D [inch]	1.1	1.65	1.97	
	Clamping range [inch]	1/8–3/8	1/8–5/8	1/8–3/4	
	Clamping range [mm]	2.0–10.0	2.0–16.0	2.0–20.0	
	L [inch]	1.69	2.01	2.09	
Gage length A [inch]	short		3.94	3.94	3.94
<b>Order No.</b>	<b>50P.720...</b>	<b>.16.3.HP</b>	<b>.25.3.HP</b>	<b>.32.3.HP</b>	
Gage length A [inch]	ZG130		5.12	5.12	5.12
<b>Order No.</b>	<b>50P.724...</b>	<b>.16.3.HP</b>	<b>.25.3.HP</b>	<b>.32.3.HP</b>	
Gage length A [inch]	oversize		6.30	6.30	6.30
<b>Order No.</b>	<b>50P.722...</b>	<b>.16.3.HP</b>	<b>.25.3.HP</b>	<b>.32.3.HP</b>	

**Accessories**

<b>High Precision Smooth Locknut (fine-balanced)</b>				See page 779
Size		ER 16	ER 25	ER 32
<b>Order No.</b>	<b>83.914...</b>	<b>.16.1</b>	<b>.25.1</b>	<b>.32.1</b>
<b>Roller bearing wrench</b>				See page 782
<b>Order No.</b>	<b>84.650...</b>	<b>.16.1</b>	<b>.25.1</b>	<b>.32.1</b>
<b>Collets ER</b>				See pages 768–773
<b>Shrink Fit Collets</b>				See pages 759–767
<b>Power Collets</b>				See page 774
<b>Power Collets with Safe-Lock</b>				See page 776
<b>Cool Jet bores for Power Collets</b>				See page 777
<b>Order No.</b>	<b>91.100.27</b>			



## JIS B 6339 (MAS 403) BT30 / BT40 / BT50

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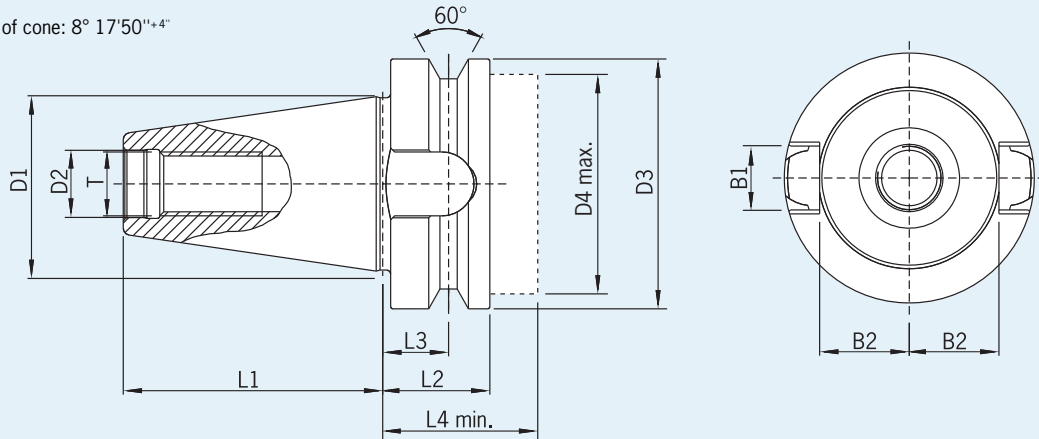
## STEEP TAPER JIS B 6339 · BT30/BT40

**Design:**

- Tool holders case-hardened 60-2 HRC
- Tensile strength in the core at least 950 N/mm<sup>2</sup>
- Taper in tolerance quality AT3
- Form AD/AF: interior coolant supply through center (form AD) and through the collar (form AF)
- Without bore for data chip

**BT30**

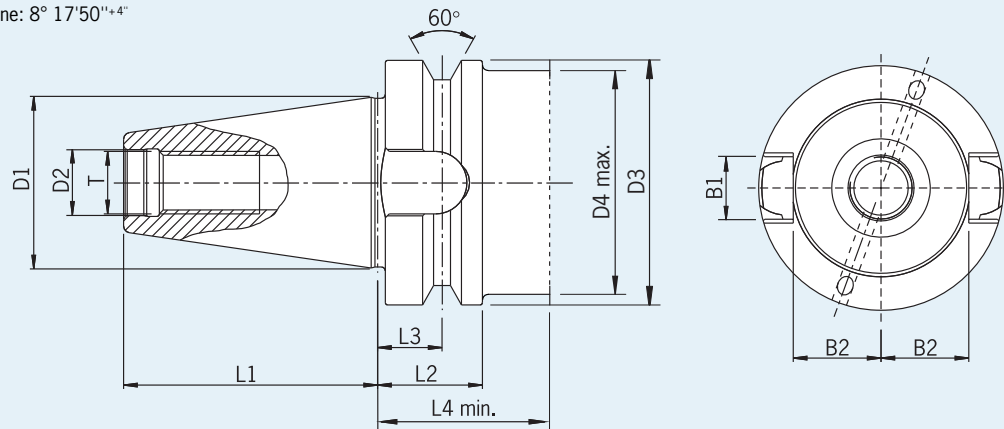
- Angle of cone: 8° 17'50"±4"



[mm]	D1	D2	D3	D4	L1	L2	L3	L4	T	B1	B2
<b>BT30</b>	31.75	12.5	46	42	48.4	22	13.6	34.5	M12	16.1	16.3

**BT40**

- Angle of cone: 8° 17'50"±4"



[mm]	D1	D2	D3	D4	L1	L2	L3	L4	T	B1	B2
<b>BT40</b>	44.45	17	63	59	65.4	27	16.6	45	M16	16.1	22.6

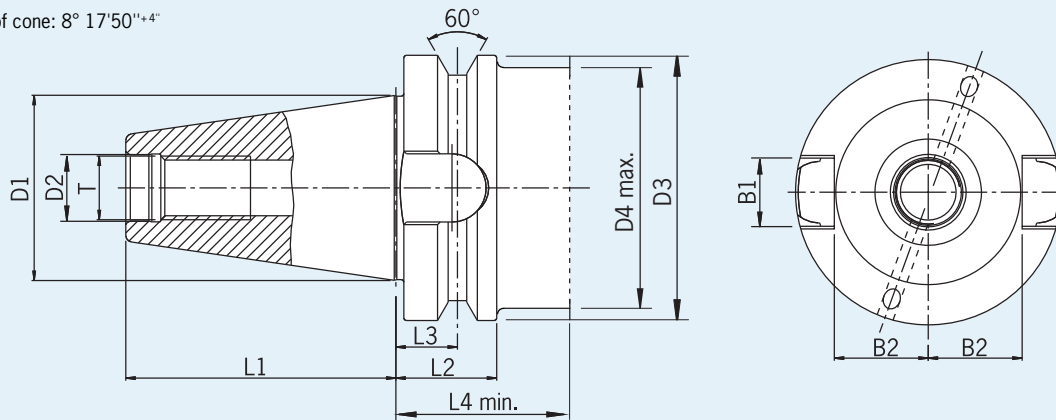
# STEEP TAPER JIS B 6339 · BT50

**Design:**

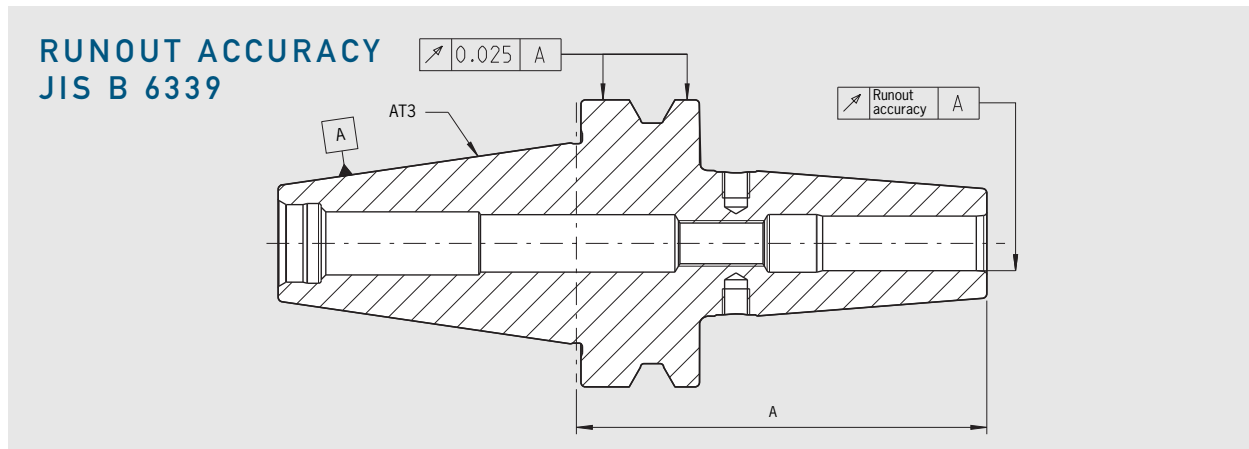
- Tool holders case-hardened 60-2 HRC
- Tensile strength in the core at least 950 N/mm<sup>2</sup>
- Taper in tolerance quality AT3
- Form AD/AF: interior coolant supply through center (form AD) and through the collar (form AF)
- Without bore for data chip

**BT50**

- Angle of cone: 8° 17'50"<sup>+4°</sup>



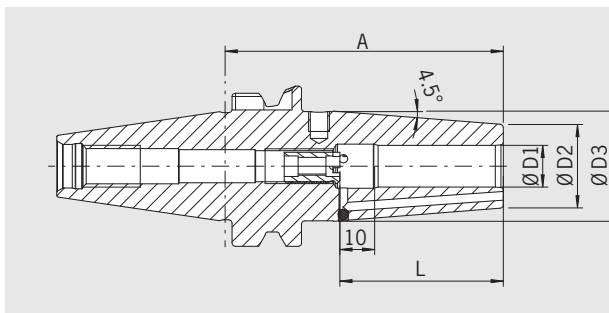
[mm]	D1	D2	D3	D4	L1	L2	L3	L4	T	B1	B2
<b>BT50</b>	69.85	25	100	95.5	101.8	38	23.2	51	M24	25.7	35.4



Gage length	A < 160	A ≥ 160
<b>max. runout tolerance in mm</b>		
Shrink Fit Chuck	0.003	0.004
Collet Chuck ER	0.003	0.004
Power Collet Chuck	0.003	0.004
High Precision Collet Chuck	0.003	0.004
High-Precision Chuck	0.003	0.003
Face Mill Arbor	0.006	0.006
Adapter for Morse Taper	0.008	—



# SHRINK FIT CHUCK JIS B 6339 · BT30



### CERTIFICATE OF QUALITY

<input checked="" type="checkbox"/>	Chuck body fine balanced U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD

**Use:**

Shrink fit chuck suitable for use with all available shrink fit units.

**JIS B 6339 BT30 FORM AD**

Form AD means central coolant supply

- Heat resistant hot-working steel
- Hardened 54-2 HRC
- For HSS and solid carbide tools
- Shank tolerance h6
- Included in delivery: with back-up screw
- With threaded holes in order to balance with balancing screws
- Cool Jet bores that can be sealed included (INCH sizes)

Optional:

- Cooling with Cool Flash for an extra charge (See pages 502–503)

**Short**

INCH	Clamping Ø D1 [inch]	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4
	Ø D2 [inch]	0.39	0.39	0.83	0.83	0.94	0.94	0.94	1.06	1.30
	Ø D3 [inch]	—	—	1.06	1.06	1.26	1.26	1.26	1.34	1.65
	L [inch]	0.35	0.59	1.42	1.42	1.65	1.65	1.85	1.97	2.05
Gage Length A [inch]	short	3.15 <sup>1)</sup>	3.15 <sup>1)</sup>	3.15	3.15	3.15	3.15	3.15	3.15	3.54
Order No.	30.640...	.1/8Z	.3/16Z	.1/4Z.4	.5/16Z.4	.3/8Z.4	.7/16Z.4	.1/2Z.4	.5/8Z.4	.3/4Z.4

**Standard version, similar to DIN 69882-8**

METRIC	Clamping Ø D1 [mm]	03	04	05	06	08	10	12	14	16	18	20
	Ø D2 [mm]	10	10	10	21	21	24	24	27	27	33	33
	Ø D3 [mm]	—	—	—	27	27	32	32	34	34	40.5	40.5
	L [mm]	09	12	15	36	36	42	47	47	50	50	52
Gage Length A [mm]	short	80 <sup>1)</sup>	80 <sup>1)</sup>	80 <sup>1)</sup>	80	80	80	80	80	80	90	90
Order No.	30.640...	.03	.04	.05	.06	.08	.10	.12	.14	.16	.18	.20

**Ultra Short**

INCH	Clamping Ø D1 [inch]	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4
	Ø D2 [inch]	0.39	0.39	0.91	0.91	1.06	1.06	1.06	1.18	1.39
	L [inch]	0.35	0.59	1.42	1.42	1.65	1.65	1.85	1.97	2.05
Gage Length A [inch]	ultra short	2.36 <sup>1)</sup>	2.36 <sup>1)</sup>	2.36	2.36	2.36	2.36	2.36	2.56	2.75
Order No.	30.645...	.1/8Z	.3/16Z	.1/4Z.4	.5/16Z.4	.3/8Z.4	.7/16Z.4	.1/2Z.4	.5/8Z.4	.3/4Z.4

**Ultra Short**

METRIC	Clamping Ø D1 [mm]	03	04	05	06	08	10	12	14	16	18	20
	Ø D2 [mm]	10	10	10	23	23	27	27	30	30	35.5	35.5
	Ø D3 [mm]	—	—	—	—	—	—	—	—	—	40.5	40.5
	L [mm]	09	12	15	36	36	42	47	47	50	50	52
Gage Length A [mm]	ultra short	60 <sup>1)</sup>	60 <sup>1)</sup>	60 <sup>1)</sup>	60 <sup>2)</sup>	60 <sup>2)</sup>	60 <sup>2)</sup>	60 <sup>2)</sup>	65 <sup>2)</sup>	65 <sup>2)</sup>	70 <sup>2)</sup>	70 <sup>2)</sup>
Order No.	30.645...	.03	.04	.05	.06	.08	.10	.12	.14	.16	.18	.20

**Accessories**

Cool Flash



Order No. 91.100.40

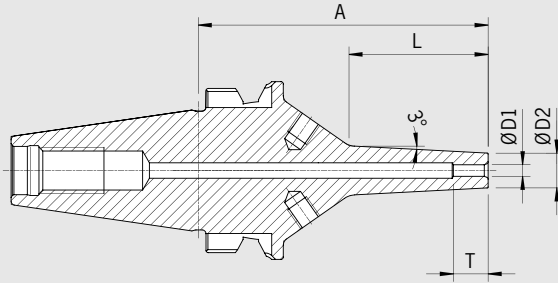
See pages 502–503

1) Without back-up screw, without threads for balancing screws, with slits along the clamping bore for cooling from outside, without Cool Jet bores  
2) Without threads for balancing screws

# POWER MINI SHRINK CHUCK JIS B 6339 · BT30

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
U < 1 gmm
- All functional surfaces fine machined
- Taper tolerance AT3
- Coolant supply form AD



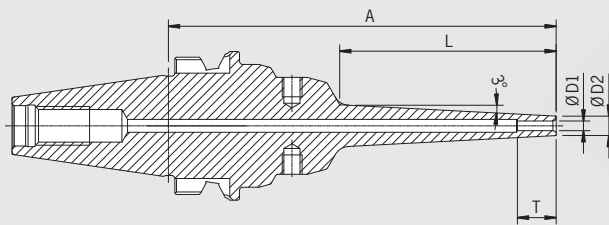
**Power Mini Shrink Chuck is perfect for 5-axis machining in the die & mold and in the medical industry. Very slim at the top like the HAIMER Mini Shrink Chucks, the Power Mini Shrink is reinforced at the base. This allows for efficient milling with an angled tool, even at long protruding lengths.**

- 3° angle at the top
- With threaded holes in order to balance with balancing screws
- For solid carbide tools with shank tolerance h6

**Attention:** Heating and cooling sleeves are needed when shrinking on most shrink fit machines (see accessories). However, when using the Power Clamp i4.0 Sprint/Air or Nano machines with the motorized coil and scanner, sleeves are not necessary.

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
U < 1 gmm
- All functional surfaces fine machined
- Taper tolerance AT3
- Coolant supply form AD



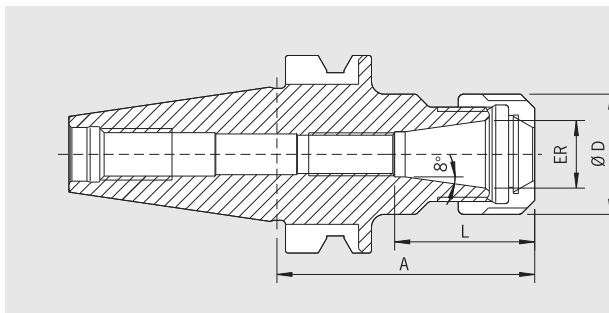
METRIC	Clamping Ø D1 [mm]	03	04	06	08	10	12
	T [mm]	—	—	—	—	68	75
	Ø D2 [mm] short	09	10	12	14	16	18
	L [mm] short	36	36	36	36	36	36
Gage Length A [mm]	short	75	75	75	75	75	75
<b>Order No.</b>	<b>30.680...</b>	<b>.03.8</b>	<b>.04.8</b>	<b>.06.8</b>	<b>.08.8</b>	<b>.10.8</b>	<b>.12.8</b>
	Ø D2 [mm] ZG95	06	07	09			
	L [mm] ZG95	42	42	42			
Gage Length A [mm]	ZG95	95	95	95			
<b>Order No.</b>	<b>30.671...</b>	<b>.03.8</b>	<b>.04.8</b>	<b>.06.8</b>			
	Ø D2 [mm] ZG120	06	07	09			
	L [mm] ZG120	67	67	67			
Gage Length A [mm]	ZG120	120	120	120			
<b>Order No.</b>	<b>30.677...</b>	<b>.03.8</b>	<b>.04.8</b>	<b>.06.8</b>			

### Accessories

Shrink and cooling adapter for Mini Shrink

See page 593

# ER COLLET CHUCK JIS B 6339 · BT30



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3

**Use:**  
For clamping tools with cylindrical shank in ER collets according to ISO 15488.

- JIS B 6339 BT 30**
- Included in delivery: Locknut type HS (High Speed, fine balanced, with slide coating for higher clamping forces)
  - Increasing size L possible upon request

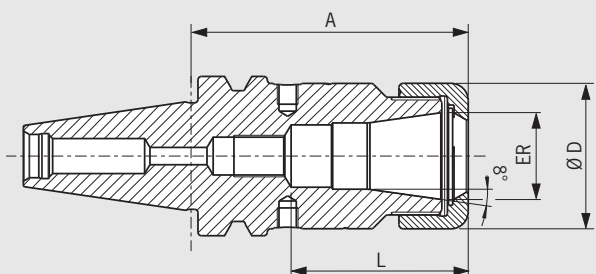
INCH	ER		11	16	20	25	32
	Ø D [inch]		0.75	1.10	1.34	1.65	1.97
	Clamping range [inch]		0.02–0.28	0.02–0.39	0.04–0.51	0.04–0.63	0.06–0.79
	Clamping range [mm]		0.5–7.0	0.5–10.0	1.5–13.0	1.0–16.0	1.5–20.0
	L [inch]		1.04	1.28	1.51	1.61	2.05
Gage Length A [inch]	ultra short		1.97	1.97	1.97	—	2.36
Order No.	30.525...		.11	.16	.20	—	.32
Gage Length A [inch]	short		2.36	2.36	2.36	2.36	—
Order No.	30.520...		.11	.16	.20	.25	—
Gage Length A [inch]	ZG80		—	3.15	3.15	3.15	—
Order No.	30.523...		—	.16	.20	.25	—
Gage Length A [inch]	ZG90		—	3.54	3.54	3.54	—
Order No.	30.528...		—	.16	.20	.25	—
Gage Length A [inch]	long		3.94	3.94	3.94	3.94	—
Order No.	30.521...		.11	.16	.20	.25	—

**Accessories**

<b>Collets ER</b>		See pages 768–773
<b>Shrink Fit Collets</b>		See pages 758–767
<b>Locknut (pre-balanced)</b>		
Size		ER 11    ER 16    ER 20    ER 25    ER 32
Order No.	83.912...	.11    .16    .20    .25    .32
<b>Locknut HS (fine-balanced)</b>		
Size		—    ER 16    ER 20    ER 25    ER 32
Order No.	83.912...	—    .16.HS    .20.HS    .25.HS    .32.HS
<b>Fork wrench</b>		
Size		ER 11    ER 16    ER 20    —    —
Order No.	84.200...	.11    .16    .20
<b>Clamping wrench</b>		
Size		—    —    —    ER 25    ER 32
Order No.	84.200...	—    —    —    .25    .32
<b>Balancing index rings</b>		
Size	long/oversize	ER 11    ER 16    ER 20    ER 25    ER 32
Order No.	79.350...	.19    .28    .34    .42    .48
<b>Pull studs</b>		See pages 787–791
<b>Shrink fit extensions</b>		See pages 751–753

# POWER COLLET CHUCK JIS B 6339 · BT30

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD



**The Power Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with improved construction combines high rigidity with vibration dampening features, giving more protection to the machine, spindle and tool. The universal Power Collet Chuck is a unique high performance chuck that can also be used with standard collets.**

- High runout accuracy: < 0.00012" (3 µm) at 3 x D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488  
(Attention: By using standard collet, ER length A will increase)
- High rigidity

- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

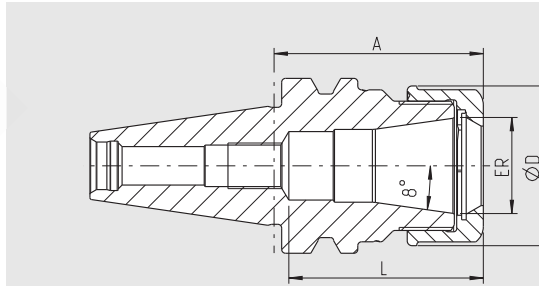
INCH	ER		16	25	32
	Ø D [inch]		1.1	1.65	1.97
	Clamping range [inch]		1/8–3/8	1/8–5/8	1/8–3/4
	Clamping range [mm]		2.0–10.0	2.0–16.0	2.0–20.0
	L [inch]		1.69	2.01	2.08
Gage length A [inch]	ultra short		2.16 <sup>1)</sup>	2.16 <sup>1)</sup>	2.16 <sup>1)</sup>
Order No.	30.525...		.16.3	.25.3	.32.3
Gage length A [inch]	short		3.15	3.15	3.15
Order No.	30.520...		.16.3	.25.3	.32.3

### Accessories

<b>Locknut (fine-balanced)</b>					See page 779
Size			ER 16	ER 25	ER 32
Order No.	83.914...		.16	.25	.32
<b>Power Collet clamping wrench</b>					See page 781
<b>Torque Master torque wrench</b>					See page 780
Order No.	84.600.00				
<b>Power Collets</b>					See page 775
<b>Power Collets with Safe-Lock</b>					See page 776
<b>Cool Jet bores for Power Collets</b>					See page 777
Order No.	91.100.27				
<b>Shrink Fit Collets</b>					See pages 759–767

1) Without threaded holes

# HIGH PRECISION COLLET CHUCK JIS B 6339 · BT30



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD

The High Precision Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with better construction and a special coated smooth locknut combines high rigidity with vibration dampening and noise-reducing features, giving more protection to machines, spindles and tools. The chuck is especially suitable for micro and fine machining (e.g. in the medical or watchmaking industry).

- With a specially coated smooth locknut, balanced at < 1 gmm
- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (Attention: By using standard collet, ER length A will increase)

- High rigidity
- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

INCH	ER		16	25	32
	Ø D [inch]		1.10	1.65	1.97
	Clamping range [inch]		1/8–3/8	1/8–5/8	1/8–3/4
	Clamping range [mm]		2.0–10.0	2.0–16.0	2.0–20.0
	L [inch]		1.69	2.01	2.08
Gage length A [inch] Order No.	ultra short 30.525...		2.16 <sup>1)</sup> .16.3.HP	2.16 <sup>1)</sup> .25.3.HP	2.16 <sup>1)</sup> .32.3.HP
Gage length A [inch] Order No.	short 30.520...		3.15 .16.3.HP	3.15 .25.3.HP	3.15 .32.3.HP

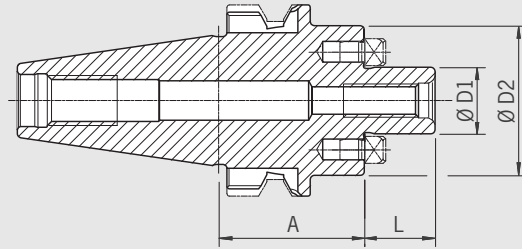
**Accessories**

<b>High Precision Smooth Locknut (fine-balanced)</b>			See page 779		
Size			ER 16	ER 25	ER 32
Order No.	83.914...		.16.1	.25.1	.32.1
<b>Roller bearing wrench</b>			See page 782		
Order No.	84.650...		.16.1	.25.1	.32.1
<b>Collets ER</b>			See pages 768–773		
<b>Shrink Fit Collets</b>			See pages 759–767		
<b>Power Collets</b>			See page 775		
<b>Power Collets with Safe-Lock</b>			See page 776		
<b>Cool Jet bores for Power Collets</b>			See page 777		
Order No.	91.100.27				

# FACE MILL ARBOR JIS B 6339 · BT30

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
U < 1 gmm
- All functional surfaces fine machined
- Taper tolerance AT3



### Use:

For holding face mill cutters and milling cutters with radial driving slot DIN 1880.  
With coolant exit bores on the end face for milling cutters with central cooling.

Similar to DIN 6357 with taper **JIS B 6339 BT30 form AD**.

– Included in delivery: complete with tightening bolt

METRIC	Clamping Ø D1 [mm]	16	22	27
	Ø D2 [mm]	36	42	42
	L [mm]	17	19	21
Gage length A [mm]	short	35	35	35
Order No.	30.550...	.16.KKB	.22.KKB	.27.KKB

### Accessories

#### Tightening bolt

Size D1		16	22	27
Order No.	85.300...	.16	.22	.27

#### Wrench

Size D1		16	22	27
Order No.	84.400...	.16	.22	.27

#### Pull studs



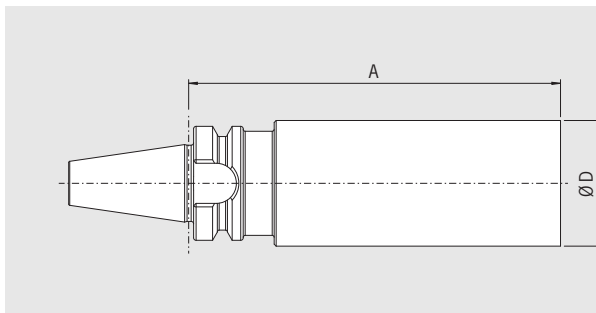
See pages 787–791

#### Coolant bores

Order No. 91.100.03



**BLANK ADAPTER – HARDENED**  
**JIS B 6339 · BT30**



**CERTIFICATE OF QUALITY**  
 All functional surfaces fine machined  
 Taper tolerance AT3

**Use:**  
 For manufacturing special tools in your factory.

**Version:**  
 – Taper and groove hardened and ground  
 – Cylindrical part hardened to 52+2 HRC

Taper **JIS B 6339 BT30** prepared for **Form AD**.  
 Form AD means central coolant supply

METRIC	Ø D [mm]		50.7
Gage Length A [mm]	ZG150		150
Order No.	R30.596.0507...		.0150

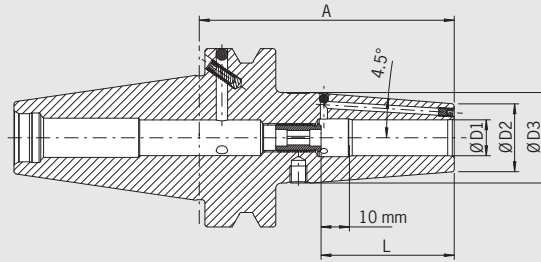
**Accessories**  
**Pull studs**



See pages 787–791

# SHRINK FIT CHUCK JIS B 6339 · BT40 INCH

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF
<input checked="" type="checkbox"/>	Cool Jet, can be sealed



**Use:**

Shrink fit chuck suitable for use with all available shrink fit units.

JIS B 6339 **BT40 Form AD/AF**

Form AD/AF means central coolant supply and coolant channels through the flange which can be sealed again

- Heat resistant hot-working steel
- Hardened 54-2 HRC

- For HSS and solid carbide tools
- Shank tolerance h6
- Included in delivery: Shrink fit chuck with back-up screw
- With threaded holes in order to balance with balancing screws
- Cool Jet bores that can be sealed included


Optional:

- Cooling with Cool Flash from ¼"-1" for an extra charge (See pages 502-503)







**Standard version**

INCH	Clamping Ø D1 [inch]	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	1 1/4
	Ø D2 [inch]	0.39	0.39	0.83	0.83	0.94	0.94	0.94	1.06	1.30	1.30	1.73	1.73
	Ø D3 [inch]	—	—	1.06	1.06	1.26	1.26	1.26	1.34	1.65	1.65	2.09	2.09
	L [inch]	0.35	0.47	1.42	1.42	1.65	1.65	1.85	1.97	2.05	2.05	2.28	2.28
Gage length A [inch]	short	3.54 <sup>1)</sup>	3.54 <sup>1)</sup>	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.54	3.94	3.94
Order No.	40.640...	.1/8Z	.3/16Z	.1/4Z.4	.5/16Z.4	.3/8Z.4	.7/16Z.4	.1/2Z.4	.5/8Z.4	.3/4Z.4	.7/8Z.4	.1Z.4	.1 1/4Z.4
Gage length A [inch]	ZG130	—	—	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12
Order No.	40.644...	—	—	.1/4Z.4	.5/16Z.4	.3/8Z.4	.7/16Z.4	.1/2Z.4	.5/8Z.4	.3/4Z.4	.7/8Z.4	.1Z.4	.1 1/4Z.4
Gage length A [inch]	oversize	—	—	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30
Order No.	40.642...	—	—	.1/4Z.4	.5/16Z.4	.3/8Z.4	.7/16Z.4	.1/2Z.4	.5/8Z.4	.3/4Z.4	.7/8Z.4	.1Z.4	.1 1/4Z.4

**Standard version with Safe-Lock and M3 seal screw installed**

INCH	Clamping Ø D1 [inch]		1/4	5/16	3/8	1/2	5/8	3/4	1	1 1/4
	Ø D2 [inch]		0.83	0.83	0.94	0.94	1.06	1.30	1.73	1.73
	Ø D3 [inch]		1.06	1.06	1.26	1.26	1.34	1.65	2.09	2.09
	L [inch]		1.42	1.42	1.65	1.85	1.97	2.05	2.28	2.28
Gage length A [inch]	short		3.54 <sup>2)</sup>	3.54 <sup>2)</sup>	3.54 <sup>2)</sup>	3.54 <sup>2)</sup>	3.54 <sup>2)</sup>	3.54 <sup>2)</sup>	3.94 <sup>2)</sup>	3.94 <sup>2)</sup>
Order No.	40.640...		.1/4Z.47	.5/16Z.47	.3/8Z.47	.1/2Z.47	.5/8Z.47	.3/4Z.47	.1Z.47	.1 1/4Z.47

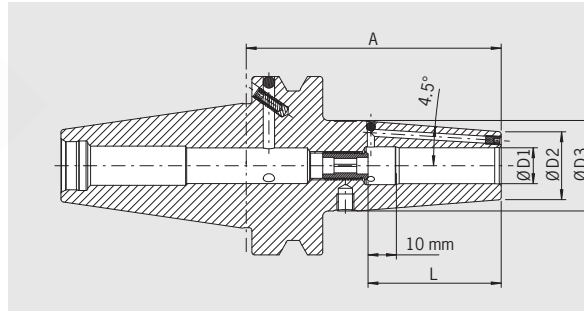
**Accessories**

<b>Shrink fit extensions</b>		See page 750
<b>Balancing screws</b>		See page 784
<b>Pull studs</b>		See pages 787-791
<b>Reduction sleeves</b>		See page 794
<b>Back-up screws</b>		See pages 796-799
<b>Cool Flash</b>		Order No. 91.100.40 See pages 502-503

1) Without back-up screw, without threads for balancing screws, with slits along the clamping bore for coolant around the tool  
2) With tension spring



# SHRINK FIT CHUCK JIS B 6339 · BT40 METRIC



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF

**Use:**

Shrink fit chuck suitable for use with all available shrink fit units.

**JIS B 6339 BT40 Form AD/AF**

Form AD/AF means central coolant supply and coolant channels through the flange which can be sealed again

- Heat resistant hot-working steel
- Hardened 54-2 HRC

- For HSS and solid carbide tools

- Shank tolerance h6
- Included in delivery: Shrink fit chuck with back-up screw
- With threaded holes in order to balance with balancing screws

**Optional:**

- Cooling with Cool Jet for an extra charge (See page 501)
- Cooling with Cool Flash for an extra charge (See pages 502-503)

**Standard version, similar to DIN 69882-8**

METRIC	Clamping Ø D1 [mm]		03	04	05	06	08	10	12	14	16	18	20	25	32
	Ø D2 [mm]		10	10	10	21	21	24	24	27	27	33	33	44	44
	Ø D3 [mm]		—	—	—	27	27	32	32	34	34	42	42	53	53
	L [mm]		9	12	15	36	36	42	47	47	50	50	52	58	58
Gage length A [mm]	short		90 <sup>1)</sup>	90 <sup>1)</sup>	90 <sup>1)</sup>	90	90	90	90	90	90	90	90	100	100
Order No.	40.640...		.03.1	.04.1	.05.1	.06	.08	.10	.12	.14	.16	.18	.20	.25	.32
Gage length A [mm]	ZG120		120 <sup>1)</sup>	120 <sup>1)</sup>	120 <sup>1)</sup>	120	120	120	120	120	120	120	120	120	120
Order No.	40.647...		.03.1	.04.1	.05.1	.06	.08	.10	.12	.14	.16	.18	.20	.25	.32
Gage length A [mm]	ZG130		130 <sup>1)</sup>	130 <sup>1)</sup>	130 <sup>1)</sup>	130	130	130	130	130	130	130	130	130	—
Order No.	40.644...		.03.1	.04.1	.05.1	.06	.08	.10	.12	.14	.16	.18	.20	.25	—
Gage length A [mm]	extra long		—	—	—	160	160	160	160	160	160	160	160	160	—
Order No.	40.642...		—	—	—	.06	.08	.10	.12	.14	.16	.18	.20	.25	—
Gage length A [mm]	ZG200		—	—	—	200	200	200	200	200	200	200	200	200	—
Order No.	40.646...		—	—	—	.06	.08	.10	.12	.14	.16	.18	.20	.25	—

**Standard version, with Cool Jet (Ø 3-5 mm Cooling with slits)**

METRIC	Clamping Ø D1 [mm]		03	04	05	06	08	10	12	14	16	20	25
	Ø D2 [mm]		10	10	10	21	21	24	24	27	27	33	44
	Ø D3 [mm]		—	—	—	27	27	32	32	34	34	42	53
	L [mm]		9	12	15	36	36	42	47	47	50	52	58
Gage length A [mm]	short		90 <sup>2)</sup>	90 <sup>2)</sup>	90 <sup>2)</sup>	90	90	90	90	90	90	90	100
Order No.	40.640...		.03	.04	.05	.06.2	.08.2	.10.2	.12.2	.14.2	.16.2	.20.2	.25.2

**Standard version, with Safe-Lock pull out protection**

METRIC	Clamping Ø D1 [mm]		06	08	10	12	14	16	18	20	25	32
	Ø D2 [mm]		21	21	24	24	27	27	33	33	44	44
	Ø D3 [mm]		27	27	32	32	34	34	42	42	53	53
	L [mm]		36	36	42	47	47	50	50	52	58	58
Gage length A [mm]	short		90 <sup>3)</sup>	90 <sup>3)</sup>	90 <sup>3)</sup>	90 <sup>3)</sup>	90 <sup>3)</sup>	90 <sup>3)</sup>	90 <sup>3)</sup>	90 <sup>3)</sup>	100 <sup>3)</sup>	100 <sup>3)</sup>
Order No.	40.640...		.06.7	.08.7	.10.7	.12.7	.14.7	.16.7	.18.7	.20.7	.25.7	.32.7

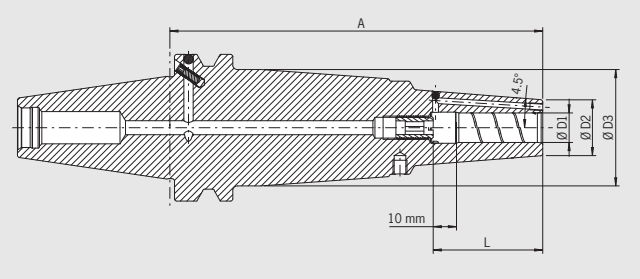
1) Without back-up screw, without threads for balancing screws, without slits along the clamping bore for cooling from outside

2) Without back-up screw, without threads for balancing screws, with slits along the clamping bore for cooling from outside

3) With tension spring

# POWER SHRINK CHUCK JIS B 6339 · BT40

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF
<input checked="" type="checkbox"/>	Cool Jet, can be sealed



The Power Shrink Chuck is designed for the highest cutting performance in High Speed machining. The optimized design combines high rigidity with vibration dampening, which protects the machine, spindle and tool.

- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times
- Quieter running, therefore better surface quality and protection of tools, spindles and machines
- Higher machining accuracy
- With threaded holes in order to balance with balancing screws
- Cool Jet coolant bores that can be sealed included

The long versions (A=130 and 160) with slim tips are especially versatile to use.

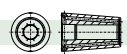
- High rigidity
- Slim at the tip
- Dampen vibrations
- Higher clamping forces
- Equally suited to High Speed and Heavy Duty machining
- Universal usage, saves space in tool magazine

- Optional:
- Cooling with Cool Flash from 1/4"-1" for an extra charge (See pages 502-503)
  - Safe-Lock pull out protection (See pages 496-500)

INCH	Clamping Ø D1 [inch]	1/4	5/16	3/8	1/2	5/8	3/4	1	1 1/4
	Ø D2 [inch]	0.87	0.87	1.04	1.04	1.16	1.39	1.79	1.79
	L [inch]	1.42	1.42	1.65	1.85	1.97	2.05	2.28	2.28
Gage length A [inch]	ultra short	2.76	2.76	2.76	2.76	2.95	2.95	3.35	3.35
Order No.	40.645...	.1/4z.3	.5/16z.3	.3/8z.3	.1/2z.3	.5/8z.3	.3/4z.3	.1z.3	.11/4z.3
Safe-Lock Order No.	40.645...	.1/4z.37	.5/16z.37	.3/8z.37	.1/2z.37	.5/8z.37	.3/4z.37	.1z.37	.11/4z.37

METRIC	Clamping Ø D1 [mm]	06	08	10	12	14	16	18	20	25	32
	Ø D2 [mm] ultra short	22	22	26.5	26.5	29.5	29.5	35.5	35.5	45.5	45.5
	L [mm] ultra short	36	36	42	47	47	50	50	52	58	58
Gage length A [mm]	ultra short	70	70	70	70	75	75	75	75	85	85
Order No.	40.645...	.06.3	.08.3	.10.3	.12.3	.14.3	.16.3	.18.3	.20.3	.25.3	.32.3
Safe-Lock Order No.	40.645...	.06.37	.08.37	.10.37	.12.37	.14.37	.16.37	.18.37	.20.37	.25.37	.32.37
	Ø D2 [mm] ZG130/oversize	21	21	24	24	27	27	33	33		
	Ø D3 [mm] ZG130/oversize	50	50	50	50	50	50	50	50		
	L [mm]	36	36	42	47	47	50	50	52		
Gage length A [mm]	ZG130	130	130	130	130	130	130	130	130		
Order No.	40.644...	.06.3	.08.3	.10.3	.12.3	.14.3	.16.3	.18.3	.20.3		
Safe-Lock Order No.	40.644...	.06.37	.08.37	.10.37	.12.37	.14.37	.16.37	.18.37	.20.37		
Gage length A [mm]	oversize	160	160	160	160	160	160	160	160		
Order No.	40.642...	.06.3	.08.3	.10.3	.12.3	.14.3	.16.3	.18.3	.20.3		
Safe-Lock Order No.	40.642...	.06.37	.08.37	.10.37	.12.37	.14.37	.16.37	.18.37	.20.37		

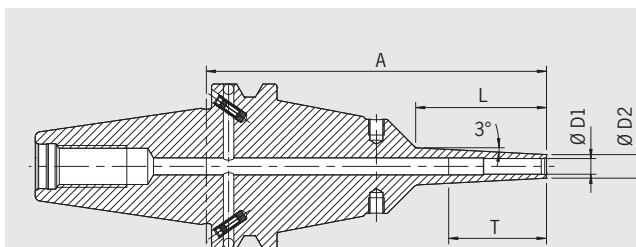
Accessories  
Cool Flash



Order No. 91.100.40

See pages 502-503

## POWER MINI SHRINK CHUCK JIS B 6339 · BT40



Drawing shows standard version

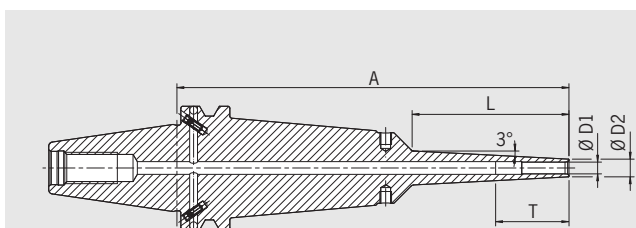
### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 25,000 rpm or U<1 gmm
- All functional surfaces fine machined
- Taper tolerance AT3
- Coolant supply form AD/AF

Power Mini Shrink Chuck is perfect for 5-axis machining in the die & mold and in the medical industry. Very slim at the top like the HAIMER Mini Shrink Chucks, the Power Mini Shrink is reinforced at the base. This allows for efficient milling with an angled tool, even at long protruding lengths.

- 2 types: Standard (3 mm wall thickness) and extra slim (1.5 mm wall thickness)
- 3° angle at the top
- With threaded holes in order to balance with balancing screws
- For solid carbide tools with shank tolerance h6

**Attention:** Heating and cooling sleeves are needed when shrinking on most shrink fit machines (see accessories). However, when using the Power Clamp i4.0 Sprint/Air or Nano machines with the motorized coil and scanner, sleeves are not necessary.



Drawing shows extra slim version

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 25,000 rpm or U<1 gmm
- All functional surfaces fine machined
- Taper tolerance AT3
- Coolant supply form AD/AF

METRIC	Clamping Ø D1 [mm]		03	04	05	06	08	10	12	16
	Ø D2 [mm] standard		09	10	11	12	14	16	18	24
	Ø D2 [mm] extra slim		06	07	08	09	11	13	15	—
	T [mm]		—	—	—	—	—	68	75	75
	L [mm] ZG130		50	50	50	50	50	50	50	50
Gage length A [mm]	ZG130		130	130	130	130	130	130	130	130
Order No.	standard	40.684...	.03.8	.04.8	.05.8	.06.8	.08.8	.10.8	.12.8	.16.8
Order No.	extra slim	40.674...	.03.8	.04.8	.05.8	.06.8	.08.8	.10.8	.12.8	—
	L [mm]		80	80	80	80	80	80	80	80
Gage length A [mm]	oversize		160	160	160	160	160	160	160	160
Order No.	standard	40.682...	.03.8	.04.8	.05.8	.06.8	.08.8	.10.8	.12.8	.16.8
Order No.	extra slim	40.672...	.03.8	.04.8	.05.8	.06.8	.08.8	.10.8	.12.8	—
Gage length A [mm]	ZG200		200	200	200	200	200	200	200	200
Order No.	standard	40.686...	.03.8	.04.8	.05.8	.06.8	.08.8	.10.8	.12.8	.16.8
Order No.	extra slim	40.676...	.03.8	.04.8	.05.8	.06.8	.08.8	.10.8	.12.8	—

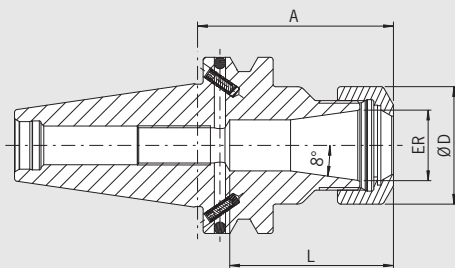
### Accessories

Shrink and cooling adapter for Mini Shrink

See page 593

# ER COLLET CHUCK JIS B 6339 · BT40

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 22,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF






**Use:**

For clamping tools with cylindrical shank in ER collets according to ISO 15488.





**BT40 Form AD/AF**

Form AD/AF means central-coolant supply and coolant channels through the flange which can be sealed again

- Included in delivery: Locknut (balanced, with slide coating for higher clamping forces)
- Locknut type HS (High Speed, fine balanced, with slide coating for higher clamping forces) for an extra charge
- Increasing size L possible upon request

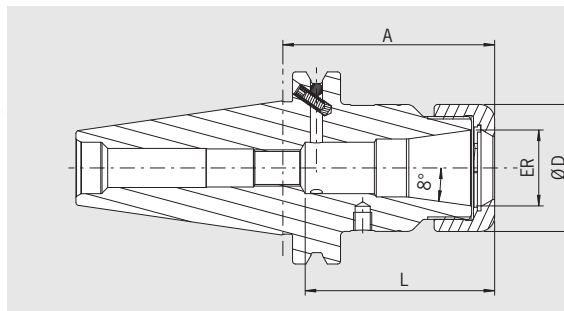
INCH	ER	16	20	25	32	40
	Ø D [inch]	1.1	1.34	1.65	1.97	2.48
	Clamping range [inch]	0.02–0.39	0.04–0.51	0.04–0.63	0.04–0.79	0.08–1.02
	Clamping range [mm]	0.5–10.5	1.5–13.0	1.0–16.0	1.5–20.0	2.5–26.0
L [inch]		<sup>1)</sup>	1.63	2.24	2.52	2.83
Gage length A [inch]	short		2.76	2.76	2.76	2.76
Order No.	40.520...	.16	.20	.25	.32	.40 <sup>2)</sup>
L [inch]		<sup>1)</sup>	1.63	2.24	2.52	2.87
Gage length A [inch]	long		3.94	3.94	3.94	3.94
Order No.	40.521...	.16	.20	.25	.32	.40
L [inch]		<sup>1)</sup>	1.63	2.24	2.52	2.87
Gage length A [inch]	oversize		6.30	6.30	6.30	6.30
Order No.	40.522...	.16	.20	.25	.32	.40

**Accessories**

<b>Collets ER</b>		See pages 768–773				
<b>Shrink Fit Collets</b>		See pages 759–767				
<b>Locknut (pre-balanced)</b>						
Size		ER 16	ER 20	ER 25	ER 32	ER 40
Order No.	83.912...	.16	.20	.25	.32	.40
<b>Locknut HS (fine-balanced)</b>						
Size		ER 16	ER 20	ER 25	ER 32	ER 40
Order No.	83.912...	.16.HS	.20.HS	.25.HS	.32.HS	.40.HS
<b>Fork wrench</b>						
Size		ER 16	ER 20	—	—	—
Order No.	84.200...	.16	.20	—	—	—
<b>Clamping wrench</b>						
Size		—	—	ER 25	ER 32	ER 40
Order No.	84.200...	—	—	.25	.32	.40
<b>Balancing index rings</b>						
Size	long/oversize	ER 16	ER 20	ER 25	ER 32	ER 40
Order No.	79.350...	.28	.34	.42	.48	.52
<b>Pull studs</b>		See pages 787–791				
<b>Shrink fit extensions</b>		See pages 751–753				

1) Drilled through

## POWER COLLET CHUCK JIS B 6339 · BT40






CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine-machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF








The Power Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with improved construction combines high rigidity with vibration dampening features, giving more protection to the machine, spindle and tool. The universal Power Collet Chuck is a unique high performance chuck that can also be used with standard collets.

- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (formerly DIN 6499)
- High rigidity

- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

INCH	ER		16	25	32
	Ø D [inch]		1.1	1.65	1.97
	Clamping range [inch]		1/8–3/8	1/8–5/8	1/8–3/4
	Clamping range [mm]		2.0–10.0	2.0–16.0	2.0–20.0
	L [inch]		1.69	2.01	2.09
Gage length A [inch]	short		2.76	2.76	2.76 (L=2.52 inch)
Order No.	40.520...		.16.3	.25.3	.32.3
Gage length A [inch]	long		3.94	3.94	3.94
Order No.	40.521...		.16.3	.25.3	.32.3
Gage length A [inch]	oversize		6.30	6.30	6.30
Order No.	40.522...		.16.3	.25.3	.32.3

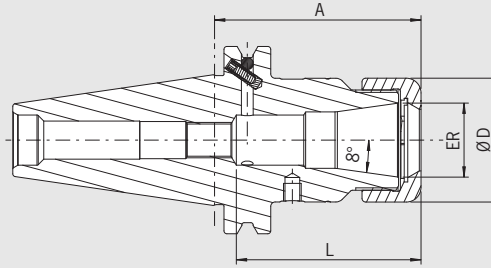
### Accessories

<b>Locknut (fine-balanced)</b>					See page 779
Size			ER 16	ER 25	ER 32
Order No.	83.914...		.16	.25	.32
<b>Power Collet clamping wrench</b>					See page 781
					
<b>Torque Master torque wrench</b>					See page 780
Order No.	84.600.00				
<b>Power Collets</b>					See page 775
					
<b>Power Collets with Safe-Lock</b>					See page 776
					
<b>Cool Jet bores for Power Collets</b>					See page 777
Order No.	91.100.27				
<b>Shrink Fit Collets</b>					See pages 759–767
					

# HIGH PRECISION COLLET CHUCK JIS B 6339 · BT40

### CERTIFICATE OF QUALITY




- Chuck body fine balanced  
G2.5 30,000 rpm
- All functional surfaces fine machined
- Taper tolerance AT3
- Coolant supply form AD/AF










**The High Precision Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with better construction and a special coated smooth locknut combines high rigidity with vibration dampening and noise-reducing features, giving more protection to machines, spindles and tools.**

- With a specially coated smooth locknut, balanced at < 1 gmm
- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (Attention: By using standard collet, ER length A will increase)
- High rigidity

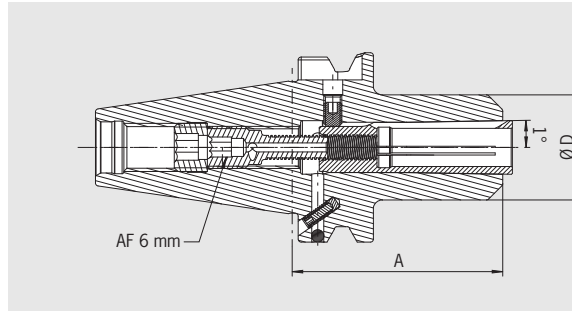
- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

INCH	ER		16	25	32
	Ø D [inch]		1.1	1.65	1.97
	Clamping range [inch]		1/8–3/8	1/8–5/8	1/8–3/4
	Clamping range [mm]		2.0–10.0	2.0–16.0	2.0–20.0
	L [inch]		1.69	2.01	2.09
Gage length A [inch]	short		2.76	2.76	2.76 (L=2.52 inch)
Order No.	40.520...		.16.3.HP	.25.3.HP	.32.3.HP
Gage length A [inch]	long		3.94	3.94	3.94
Order No.	40.521...		.16.3.HP	.25.3.HP	.32.3.HP
Gage length A [inch]	oversize		6.30	6.30	6.30
Order No.	40.522...		.16.3.HP	.25.3.HP	.32.3.HP

### Accessories

<b>High Precision Smooth Locknut (fine-balanced)</b>			See page 779		
Size			ER 16	ER 25	ER 32
Order No.	83.914...		.16.1	.25.1	.32.1
<b>Roller bearing wrench</b>			See page 782		
Order No.	84.650...		.16.1	.25.1	.32.1
<b>Collets ER</b>			See pages 768–773		
					
<b>Shrink Fit Collets</b>			See pages 759–767		
					
<b>Power Collets</b>			See page 775		
					
<b>Power Collets with Safe-Lock</b>			See page 776		
					
<b>Cool Jet bores for Power Collets</b>			See page 777		
Order No.	91.100.27				

# HIGH-PRECISION CHUCK JIS B 6339 · BT40



### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 25,000 rpm
- All functional surfaces fine machined
- Taper tolerance AT3
- Coolant supply form AD/AF



**Use:**

For highly precise clamping of tools with cylindrical shank with special collets.  
Also for shanks with clamping flats. Very useful for High Speed machining.

**BT40 Form AD/AF**

Form AD/AF means central-coolant supply and coolant channels through the flange which can be sealed again

- Included in delivery: High-Precision Chuck with clamping screw and pull-out hook without collet
- Shank tolerance h6
- Extensions available for High-Precision Chuck
- Optional: Cool Jet bores on HG Collets from Ø 1/4"

INCH	HG		01	02	03
	Ø D [inch]		1.18	1.38	1.89
	Clamping Ø shank tolerance h6 [inch]		0.08–0.35	0.39–0.57	0.63–0.79
	Clamping Ø shank tolerance h6 [mm]		2   3   4   5   6   8	10   12   14	16   18   20
Gage length A [inch]	short		2.56	2.76	2.95
<b>Order No.</b>	<b>40.620...</b>		<b>.01</b>	<b>.02</b>	<b>.03</b>
Gage length A [inch]	long		3.94	3.94	3.94
<b>Order No.</b>	<b>40.621...</b>		<b>.01</b>	<b>.02</b>	<b>.03</b>

**Accessories**

**Clamping screw**



**Collets HG INCH**

See page 783

HG 01 Ø D [inch]		Ø 1/8	Ø 3/16	Ø 1/4	Ø 5/16				
<b>Order No.</b>	<b>82.510...</b>	<b>.1/8Z</b>	<b>.3/16Z</b>	<b>.1/4Z</b>	<b>.5/16Z</b>				

HG 02 Ø D [inch]						Ø 3/8	Ø 7/16	Ø 1/2	Ø 9/16
<b>Order No.</b>	<b>82.520...</b>					<b>.3/8Z</b>	<b>.7/16Z</b>	<b>.1/2Z</b>	<b>.9/16Z</b>

HG 03 Ø D [inch]									Ø 5/8	Ø 3/4
<b>Order No.</b>	<b>82.530...</b>								<b>.5/8Z</b>	<b>.3/4Z</b>

**Collets HG METRIC**


See page 783

HG 01 Ø D [mm]		Ø 02	Ø 03	Ø 04	Ø 05	Ø 06	Ø 08	—	—	—	—	—
<b>Order No.</b>	<b>82.510...</b>	<b>.02</b>	<b>.03</b>	<b>.04</b>	<b>.05</b>	<b>.06</b>	<b>.08</b>					


HG 02 Ø D [mm]								Ø 10	Ø 12	Ø 14	—	—
<b>Order No.</b>	<b>82.520...</b>							<b>.10</b>	<b>.12</b>	<b>.14</b>		

HG 03 Ø D [mm]											Ø 16	Ø 18	Ø 20
<b>Order No.</b>	<b>82.530...</b>										<b>.16</b>	<b>.18</b>	<b>.20</b>

**Pull-out hook**

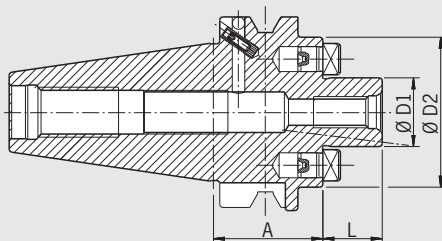
HG			HG 01		HG 02	HG 03
<b>Order No.</b>	<b>82.570...</b>		<b>.00</b>		<b>.00</b>	<b>.00</b>

**Balancing index rings**

HG			HG 01		HG 02	HG 03
<b>Order No.</b>	<b>79.350...</b>		<b>.30</b>		<b>.35</b>	<b>.48</b>

# FACE MILL ARBOR JIS B 6339 · BT40

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 22,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF



**Use:**

For holding face mill cutters and milling cutters with radial driving slot  
DIN 1880 and exceeding Ø 40 clamping according to DIN 2079  
(4 additional tapped holes).


Metric sizes:



With coolant exit bores on the end face for milling cutters with central cooling

**BT40 FORM AD/AF**

Form AD/AF means central-coolant supply and coolant channels through the flange which can be sealed again

- Included in delivery: complete with tightening bolt
- Coolant bores on front side for an extra charge (Inch sizes)

INCH	Clamping Ø D1 [inch]		3/4	1	1 1/4
	Ø D2 [inch]		1.71	2.17	2.75
	L [inch]		0.67	0.67	0.67
Gage length A [inch]	short		1.38	1.97	2.36
Order No.	40.550...		.3/4Z	.1Z	.1 1/4Z

METRIC	Clamping Ø D1 [mm]		16	22	27	32	40
	Ø D2 [mm]		36	48	59	78	87
	L [mm]		17	19	21	24	27
Length A [mm]	short		35	35	35 <sup>1)</sup>	65	70
Order No.	40.550...		.16.KKB	.22.KKB	.27.KKB	.32.KKB	.40.KKB
Length A [mm]	long		—	100	100	—	—
Order No.	40.551...		—	.22.KKB	.27.KKB	—	—

**Accessories**

**Clamping Screw**

Ø D1 [inch]			3/4	1	1 1/4
Order No.	85.300...		.3/4Z	.1Z	.11/4Z


**Wrench**

Ø D1 [inch]			3/4	1	1 1/4
Order No.	84.400...		.3/4Z	.1Z	.11/4Z

**Balancing index rings**

Ø D1 [inch]			3/4	1	—
Order No.	79.350...		.1.71Z	.55	—

**Pull Studs**


						See pages 787–791
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**Coolant bores**


Order No.	91.100.03					
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**Accessories**


**Tightening bolt**

Size D1			16	22	27	32	40
Order No.	85.300...		.16	.22	.27	.32	.40


**Wrench**

Size D1			16	22	27	32	40
Order No.	84.400...		.16	.22	.27	.32	.40

**Balancing index rings**

Size D1	short		—	—	—	32	40
Order No.	79.350...		—	—	—	.78	.87

**Pull studs**

							See pages 787–791
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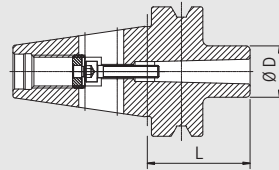
1) ØD2 = 48 mm



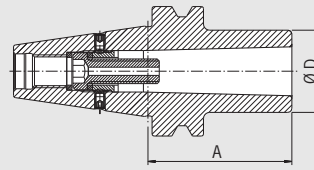
## ADAPTER FOR MORSE TAPER WITH THREAD JIS B 6339 · BT40



Type 1



Type 2



**CERTIFICATE OF QUALITY**

- Chuck body balanced  
G6.3 8,000 rpm
- All functional surfaces fine machined
- Taper tolerance AT3

**Use:**

For clamping tools with Morse taper and thread according to DIN 228-1 form A.

Similar to DIN 6383 with taper **JIS B 6339 BT40 form AD**.

- Included in delivery: tightening bolt
- Fine-balancing for an extra charge

MK3 and MK4 without bore for tang Form AD

Type		1	1	2	2
MK		01	02	03	04
Ø D [mm]		25	32	40	48
Gage Length A [mm]	short	50	50	70	95
Order No.	40.630...	.01	.02	.03	.04

**Accessories**

**Balancing index rings**

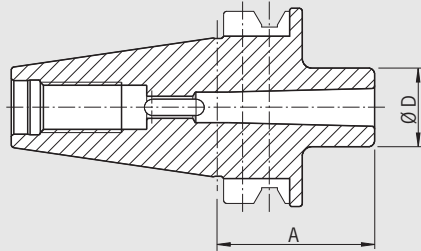
See page 785

MK		01	02	03	04
Order No.	79.350...	.25	.32	.40	.48
Pull studs					See pages 787-791

# ADAPTER FOR MORSE TAPER WITH TANG JIS B 6339 · BT40

**CERTIFICATE OF QUALITY**

- Chuck balanced  
G6.3 8,000 rpm
- All functional surfaces fine machined
- Taper tolerance AT3



**Use:**

For holding tools with Morse taper and tang according to DIN 228-11 form AF.



Similar to DIN 6383 with taper **JIS B 6339 BT40 form AD**.

– Fine-balancing for an extra charge

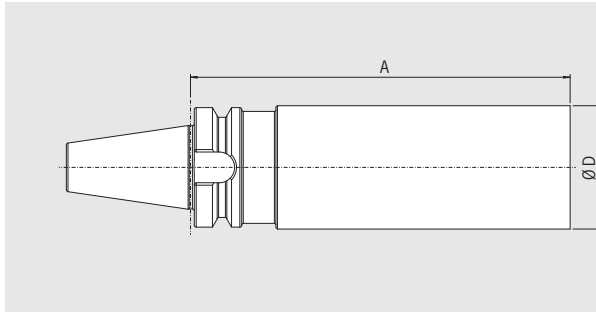
MK			01	02	03	04
	Ø D [mm]		25	32	40	48
	Gage Length A [mm]	short	50	50	70	95
	Order No.	40.580...	.01	.02	.03	.04



**Accessories**

<b>Balancing index rings</b>						See page 785
MK			01	02	03	04
Order No.	79.350...		.25	.32	.40	.48
<b>Pull studs</b>						See pages 787–791

**BLANK ADAPTER – HARDENED**  
**JIS B 6339 · BT40**



**CERTIFICATE OF QUALITY**  
 All functional surfaces fine machined  
 Taper tolerance AT3

**Use:**  
 For manufacturing special tools in your factory.

**Version:**  
 – Taper and groove hardened and ground  
 – Cylindrical part hardened to 52+2 HRC

Taper **JIS B 6339 BT40** prepared for **Form AD**.  
 Form AD means central coolant supply

METRIC	Ø D [mm]		65
Gage Length A [mm]	ZG100		100
<b>Order No.</b>	<b>R40.596.0650...</b>		<b>.0100</b>
Gage Length A [mm]	ZG200		200
<b>Order No.</b>	<b>R40.596.0650...</b>		<b>.0200</b>
Gage Length A [mm]	ZG300		300
<b>Order No.</b>	<b>R40.596.0650....</b>		<b>.0300</b>

**Accessories**

**Pull studs**

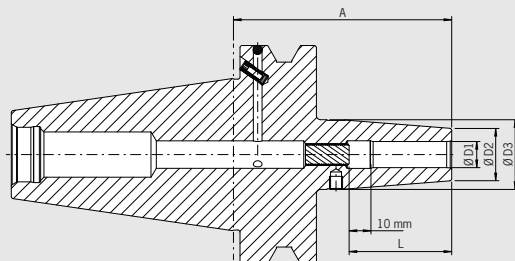


See pages 787–791

# SHRINK FIT CHUCK JIS B 6339 · BT50

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 25,000 rpm or U<1 gmm
- All functional surfaces fine machined
- Taper tolerance AT3
- Coolant supply form AD/AF



### Use:

Shrink fit chuck suitable for use with all available shrink fit units.

### JIS B 6339 BT50 Form AD/AF

Form AD/AF means central coolant supply and coolant channels through the flange which can be sealed again

- Heat resistant hot-working steel
- Hardened 54–2 HRC
- For HSS and solid carbide tools
- Shank tolerance h6
- Included in delivery: Shrink fit chuck with back-up screw
- With threaded holes in order to balance with balancing screws

### Optional:

- Cooling with Cool Jet for an extra charge (See page 501)
- Cooling with Cool Flash from diam. 6 mm–25 mm for an extra charge (See pages 502–503)

### Standard version, similar to DIN 69882-8

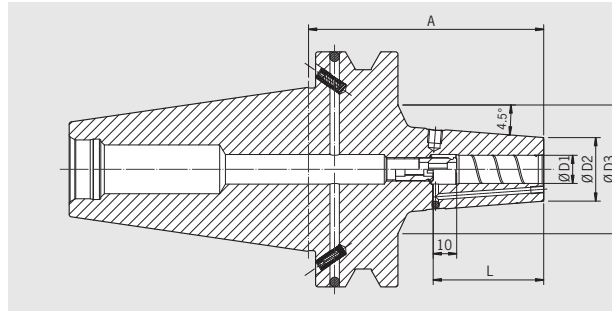
METRIC	Clamping Ø D1 [mm]		06	08	10	12	14	16	18	20	25	32
	Ø D2 [mm]		21	21	24	24	27	27	33	33	44	44
	Ø D3 [mm]		27	27	32	32	34	34	42	42	53	53
	L [mm]		36	36	42	47	47	50	50	52	58	58
Gage length A [mm]	short		100	100	100	100	100	100	100	100	100 <sup>1)</sup>	100 <sup>1)</sup>
Order No.	50.640...		.06	.08	.10	.12	.14	.16	.18	.20	.25	.32
Gage length A [mm]	ZG120		120	120	120	120	120	120	120	120	120	120
Order No.	50.647...		.06	.08	.10	.12	.14	.16	.18	.20	.25	.32
Gage length A [mm]	ZG130		130	130	130	130	130	130	130	130	130	130
Order No.	50.644...		.06	.08	.10	.12	.14	.16	.18	.20	.25	.32
Gage length A [mm]	oversize		160	160	160	160	160	160	160	160	160	160
Order No.	50.642...		.06	.08	.10	.12	.14	.16	.18	.20	.25	.32
Gage length A [mm]	ZG200		200	200	200	200	200	200	200	200	200	200
Order No.	50.646...		.06	.08	.10	.12	.14	.16	.18	.20	.25	.32

### Accessories

<b>Shrink fit extensions</b>		See pages 751–753
<b>Balancing screws</b>		See page 784
<b>Pull studs</b>		See pages 787–791
<b>Reduction sleeves</b>		See page 794
<b>Back-up screws</b>		See pages 796–799
<b>Cool Jet bores</b>		See page 501
<b>Cool Flash</b>		Order No. 91.100.40
<b>Cool Flash Upgrade incl. Cool Jet</b>		Order No. 91.100.41

1) Clamping diam. D2 = 45 mm

POWER SHRINK CHUCK  
JIS B 6339 · BT50



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF
<input checked="" type="checkbox"/>	Cool Jet, can be sealed

The Power Shrink Chuck is designed for the highest cutting performance in High Speed machining. The optimized design combines high rigidity with vibration dampening, which protects the machine, spindle and tool.


- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy
- Quieter running, therefore better surface quality and protection of tools, spindles and machines
- With threaded holes in order to balance with balancing screws
- Cool Jet coolant bores that can be sealed included




The oversize and ZG200 versions (A=160 and 200) with slim tips are especially versatile to use.

- High rigidity, slim at the tip, dampen vibrations
- Higher clamping forces
- Equally suited to High Speed and Heavy Duty machining
- Universal usage, saves space in tool magazine

Optional:

- Cooling with Cool Flash for an extra charge (See pages 502–503)

INCH	Clamping Ø D1 [inch]		1/4	5/16	3/8	1/2	5/8	3/4	1
	Ø D2 [inch]		0.83	0.83	1.06	1.06	1.31	1.76	1.76
	Ø D3 [inch]		2.76	2.76	2.17	2.17	—	—	—
	L [inch]		1.42	1.42	1.65	1.85	1.97	2.05	2.28
Gage length A [inch]	short		3.94	3.94	3.94	3.94	3.94	3.94	3.94
Order No.	50.640...		.1/4z.3	.5/16z.3	.3/8z.3	.1/2z.3	.5/8z.3	.3/4z.3	.1z.3
Safe-Lock Order No.	50.640...		.1/4z.37	.5/16z.37	.3/8z.37	.1/2z.37	.5/8z.37	.3/4z.37	.1z.37

METRIC	Clamping Ø D1 [mm]		06	08	10	12	14	16	18	20	25
	Ø D2 [mm] short		21	21	27	27	33.3	33.3	44.7	44.7	44.7
	Ø D3 [mm] short		70	70	55	55	—	—	—	—	—
	L [mm]		36	36	42	47	47	50	50	52	58
Gage length A [mm]	short		100	100	100	100	100	100	100	100	100
Order No.	50.640...		.06.3	.08.3	.10.3	.12.3	.14.3	.16.3	.18.3	.20.3	.25.3
Safe-Lock Order No.	50.640...		.06.37	.08.37	.10.37	.12.37	.14.37	.16.37	.18.37	.20.37	.25.37
	Ø D2 [mm] oversize/ZG200		21	21	27	27	33	33	44	44	44
	Ø D3 [mm] oversize/ZG200		83	83	83	83	83	83	83	83	83
Gage length A [mm]	oversize		160	160	160	160	160	160	160	160	160
Order No.	50.642...		.06.3	.08.3	.10.3	.12.3	.14.3	.16.3	.18.3	.20.3	.25.3
Safe-Lock Order No.	50.642...		.06.37	.08.37	.10.37	.12.37	.14.37	.16.37	.18.37	.20.37	.25.37
Gage length A [mm]	ZG200		200	200	200	200	200	200	200	200	200
Order No.	50.646...		.06.3	.08.3	.10.3	.12.3	.14.3	.16.3	.18.3	.20.3	.25.3
Safe-Lock Order No.	50.646...		.06.37	.08.37	.10.37	.12.37	.14.37	.16.37	.18.37	.20.37	.25.37

Accessories  
Cool Flash

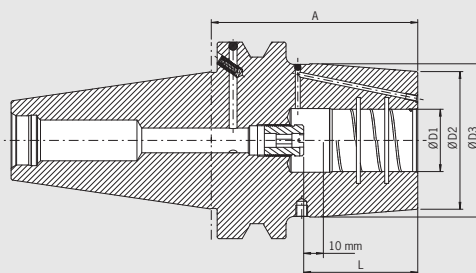


Order No. 91.100.40

See pages 502–503

# HEAVY DUTY CHUCK JIS B 6339 · BT50

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF
<input checked="" type="checkbox"/>	Cool Jet, can be sealed



**The Heavy Duty Chuck is a shrink fit chuck designed for extreme cases and Heavy Duty machining. The contour is optimized for highest rigidity and clamping force.**

- Smooth clamping of the tool shank
- No deformation at the tool shank after shrink process
- TIR less than 0.00012" (3 µm)
- Reinforced outer contour
- To shrink with 13 kW HD coil (see page 600) or with high performance shrink fit unit HAIMER Power Clamp Profi Plus (20 kW)
- With internal groove in the clamping bore

- With threaded holes in order to balance with balancing screws
- Cool Jet coolant bores that can be sealed included

Optional:

- Cooling with Cool Flash from 5/8" - 1" for an extra charge (See pages 502-503)

INCH	Clamping Ø D1 [inch]	5/8	3/4	1	1 1/4	1 1/2	2
	Ø D2 [inch]	2.01	2.28	2.48	2.76	3.24	3.24
	Ø D3 [inch]	—	2.63	2.83	3.07	—	—
	L [inch]	1.97	2.05	2.28	2.40	3.46	3.46
Gage length A [inch]	short	3.94	3.94	4.13	4.13	4.53	4.72
Order No.	50.650...	.5/8z.6	.3/4z.6	.1z.6	.11/4z.6	.11/2z.6	.2z.6
Safe-Lock Order No.	50.650...	.5/8z.67	.3/4z.67	.1z.67	.11/4z.67	.11/2z.67	.2z.67



METRIC	Clamping Ø D1 [mm]	16	20	25	32	40	50
	Ø D2 [mm]	51	58	63	70	82	82
	Ø D3 [mm] short	—	67	72	78	—	—
	L [mm]	50	52	58	61	88	88
Gage length A [mm]	short	100	100	105	105	115 <sup>1)</sup>	120
Order No.	50.650...	.16.6	.20.6	.25.6	.32.6	.40.6	.50.6
Safe-Lock Order No.	50.650...	.16.67	.20.67	.25.67	.32.67	.40.67	.50.67
	Ø D3 [mm] oversize/ZG200	85	85	85	85	94	94
Gage length A [mm]	oversize	160	160	160	160	160	160
Order No.	50.652...	.16.6	.20.6	.25.6	.32.6	.40.6	.50.6
Safe-Lock Order No.	50.652...	.16.67	.20.67	.25.67	.32.67	.40.67	.50.67
Gage length A [mm]	ZG200	200	200	200	200	200	200
Order No.	50.656...	.16.6	.20.6	.25.6	.32.6	.40.6	.50.6
Safe-Lock Order No.	50.656...	.16.67	.20.67	.25.67	.32.67	.40.67	.50.67



### Heavy Duty Chuck – For 13 kW shrink fit machine

Clamping	Ø D1 [mm]	16
	Ø D2 [mm]	46
	L [mm]	50
Gage length A [mm]	short	100
Order No.	50.640...	.16.6
Safe-Lock Order No.	50.640...	.16.67



### Accessories

Cool Flash

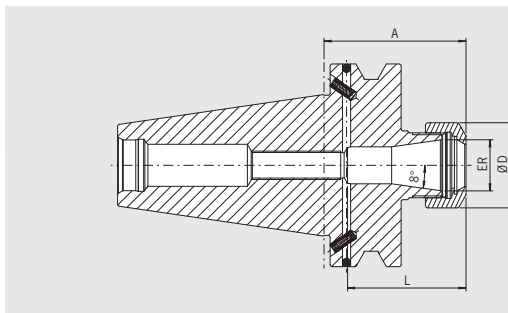


Order No. 91.100.40

See pages 502-503

1) Clamping diam. D2 = 82.3 mm

# ER COLLET CHUCK JIS B 6339 · BT50



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 22,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF

**Use:**

For clamping tools with cylindrical shank in ER collets according to ISO 15488 (formerly DIN 6499).

**BT50 Form AD/AF**

Form AD/AF means central-coolant supply and coolant channels through the flange which can be sealed again

- Included in delivery: ER collet chuck with pre-balanced collet nut
- Balanced Collet nuts HS with special slide coating for low friction and higher clamping forces
- Enlarging of size L on request

INCH	ER	ER16	ER20	ER25	ER32	ER40
Ø D [inch]		1.1	1.33	1.65	1.97	2.48
Clamping range [inch]		0.02–0.39	0.05–0.51	0.04–0.63	0.04–0.79	0.08–1.02
Clamping range [mm]		0.5–10.0	1.5–13.0	1.0–16.0	1.5–20.0	2.5–26.0
L [inch]		<sup>1)</sup>	1.63	2.24	2.52	2.87
Gage length A [inch]	short	2.76	2.76	2.76	2.76	3.15
Order No.	50.520...	.16	.20	.25	.32	.40
Gage length A [inch]	long	3.94	3.94	3.94	3.94	3.94
Order No.	50.521...	.16	.20	.25	.32	.40
Gage length A [inch]	oversize	6.30	—	6.30	6.30	6.30
Order No.	50.522...	.16	—	.25	.32	.40

**Accessories**

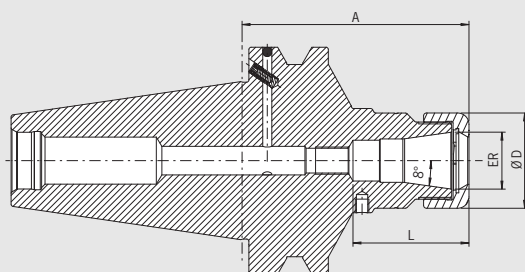
<b>Collet nut, pre-balanced</b>						
Ø ER		ER16	—	ER25	ER32	ER40
Order No.	83.912...	.16	—	.25	.32	.40
<b>Collet nut HS (Highspeed), fine-balanced</b>						
Ø ER		ER16	—	ER25	ER32	ER40
Order No.	83.912...	.16.HS	—	.25.HS	.32.HS	.40.HS
<b>Wrench</b>						
Ø ER		ER16	—	—	—	—
Order No.	84.200...	.16	—	—	—	—
<b>Wrench</b>						
Ø ER		—	—	ER25	ER32	ER40
Order No.	84.200...	—	—	.25	.32	.40
<b>Balancing index rings</b>						
Ø ER long/oversize		ER16	—	ER25	ER32	ER40
Order No.	79.350...	.28	—	.42	.48	.52
<b>Collet</b>						
<b>Pull Stud</b>						

See pages 787–791

1) Drilled through

# POWER COLLET CHUCK JIS B 6339 · BT50

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine-machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF



**The Power Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with improved construction combines high rigidity with vibration dampening features, giving more protection to the machine, spindle and tool. The universal Power Collet Chuck is a unique high performance chuck that can also be used with standard collets.**

- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (formerly DIN 6499)  
(Attention: By using standard collet, ER length A will increase)
- High rigidity

- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

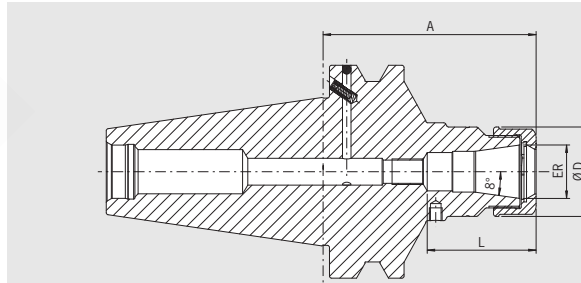
INCH	ER		16	25	32
	Ø D [inch]		1.1	1.65	1.97
	Clamping range [inch]		1/8–3/8	1/8–5/8	1/8–3/4
	Clamping range [mm]		2.0–10.0	2.0–16.0	2.0–20.0
	L [inch]		1.69	2.01	2.09
Gage length A [inch]	short		3.94	3.94	3.94
Order No.	50.520...		.16.3	.25.3	.32.3
Gage length A [inch]	ZG130		5.12	5.12	5.12
Order No.	50.524...		.16.3	.25.3	.32.3
Gage length A [inch]	oversize		6.30	6.30	6.30
Order No.	50.522...		.16.3	.25.3	.32.3

**Accessories**

<b>Locknut (fine-balanced)</b>					See page 779
Size			ER 16	ER 25	ER 32
Order No.	83.914...		.16	.25	.32
<b>Power Collet clamping wrench</b>					See page 781
<b>Torque Master torque wrench</b>					See page 780
Order No.	84.600.00				
<b>Power Collets</b>					See page 775
<b>Power Collets with Safe-Lock</b>					See page 776
<b>Cool Jet bores for Power Collets</b>					See page 777
Order No.	91.100.27				
<b>Shrink Fit Collets</b>					See pages 759–767



## HIGH PRECISION COLLET CHUCK JIS B 6339 · BT50






### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 25,000 rpm
- All functional surfaces fine machined
- Taper tolerance AT3
- Coolant supply form AD/AF

The High Precision Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with better construction and a special coated smooth locknut combines high rigidity with vibration dampening and noise-reducing features, giving more protection to machines, spindles and tools.

- With a specially coated smooth locknut, balanced at < 1 gmm
- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (Attention: By using standard collet, ER length A will increase)

- High rigidity
- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

INCH	ER		16	25	32
	Ø D [inch]		1.1	1.65	1.97
	Clamping range [inch]		1/8–3/8	1/8–5/8	1/8–3/4
	Clamping range [mm]		2.0–10.0	2.0–16.0	2.0–20.0
	L [inch]		1.69	2.01	2.09
Gage length A [inch]	short		3.94	3.94	3.94
Order No.	50.520...		.16.3.HP	.25.3.HP	.32.3.HP
Gage length A [inch]	ZG130		5.12	5.12	5.12
Order No.	50.524...		.16.3.HP	.25.3.HP	.32.3.HP
Gage length A [inch]	oversize		6.30	6.30	6.30
Order No.	50.522...		.16.3.HP	.25.3.HP	.32.3.HP

#### Accessories

##### High Precision Smooth Locknut (fine-balanced)

Size ER 16 ER 25 ER 32 See page 779

Order No. 83.914...  .16.1 .25.1 .32.1

##### Roller bearing wrench

Order No. 84.650...  .16.1 .25.1 .32.1 See page 782

##### Collets ER

 See pages 768–773

##### Shrink Fit Collets

 See pages 759–767

##### Power Collets

 See page 775

##### Power Collets with Safe-Lock

 See page 776

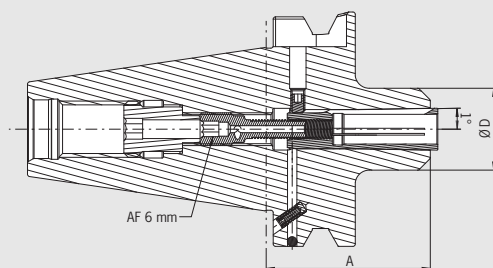
##### Cool Jet bores for Power Collets

Order No. 91.100.27  See page 777

# HIGH-PRECISION CHUCK JIS B 6339 · BT50

### CERTIFICATE OF QUALITY

- Chuck fine balanced  
G2.5 25,000 rpm
- All functional surfaces fine machined
- Taper tolerance AT3
- Coolant supply form AD/AF






### Use:

For highly precise clamping of tools with cylindrical shank with special collets.  
Very useful for High Speed machining.

### BT50 Form AD/AF

Form AD/AF means central-coolant supply and coolant channels through the flange which can be sealed again

- Included in delivery: High-Precision Chuck with clamping screw and pull-out hook without collet
- Shank tolerance h6
- Extensions available for High-Precision Chuck

INCH	HG		01	02	03
		Ø D [inch]	1.18	1.38	1.89
		Clamping Ø shank tolerance h6 [inch]	0.08-0.35	0.39-0.57	0.63-0.79
		Clamping Ø shank tolerance h6 [mm]	2   3   4   5   6   8	10   12   14	16   18   20
Gage length A [inch]	short		—	2.76	2.95
<b>Order No.</b>	<b>50.620...</b>			<b>.02</b>	<b>.03</b>
Gage length A [inch]	long		—	3.94	—
<b>Order No.</b>	<b>50.621...</b>			<b>.02</b>	
Gage length A [inch]	oversize		6.3	6.3	—
<b>Order No.</b>	<b>50.622...</b>		<b>.01</b>	<b>.02</b>	

### Accessories

#### Clamping screw



#### Collets HG INCH

See page 783

HG 01 Ø D [inch]

**Order No.**

**82.510...**



Ø 1/8 Ø 3/16 Ø 1/4 Ø 5/16  
**.1/8Z .3/16Z .1/4Z .5/16Z**

HG 02 Ø D [inch]

**Order No.**

**82.520...**



Ø 3/8 Ø 7/16 Ø 1/2 Ø 9/16  
**.3/8Z .7/16Z .1/2Z .9/16Z**

HG 03 Ø D [inch]

**Order No.**

**82.530...**



Ø 5/8 Ø 3/4  
**.5/8Z .3/4Z**

#### Collets HG METRIC

See page 783

HG 01 Ø D [mm]

**Order No.**

**82.510...**



Ø 02 Ø 03 Ø 04 Ø 05 Ø 06 Ø 08 — — — — —  
**.02 .03 .04 .05 .06 .08**

HG 02 Ø D [mm]

**Order No.**

**82.520...**



Ø 10 Ø 12 Ø 14 — — —  
**.10 .12 .14**

HG 03 Ø D [mm]

**Order No.**

**82.530...**



Ø 16 Ø 18 Ø 20  
**.16 .18 .20**

#### Pull-out hook

HG

**Order No.**

**82.570...**



HG 01  
**.00**

HG 02  
**.00**

HG 03  
**.00**

#### Balancing index rings

HG

**Order No.**

**79.350...**

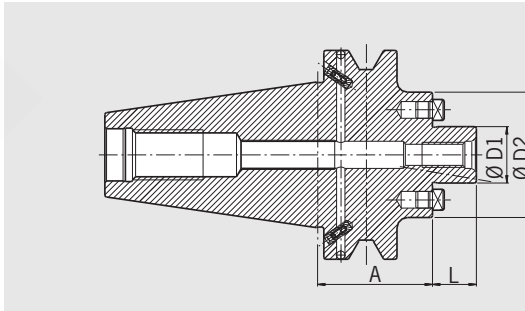


HG 01  
**.30**

HG 02  
**.35**

HG 03  
**.48**

FACE MILL ARBOR  
JIS B 6339 · BT50



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 22,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF

**Use:**

For holding face mill cutters and milling cutters with radial driving slot  
DIN 1880 and exceeding Ø 40 clamping according to DIN 2079 (4 additional  
tapped holes).  
With coolant exit bores on the end face for milling cutters with central cooling.

Similar to DIN 6357 with taper **JIS B 6339 BT50 form AD/AF**.  
Form AD/AF means central-coolant supply and coolant channels through the  
flange which can be sealed again.

– Included in delivery: complete with tightening bolt

METRIC	Clamping Ø D1 [mm]		22	27	32	40
	Ø D2 [mm]		48	60	78	89
	L [mm]		19	21	24	27
Gage length A [mm]	short		55	55	55	55
<b>Order No.</b>	<b>50.550...</b>		<b>.22.KKB</b>	<b>.27.KKB</b>	<b>.32.KKB</b>	<b>.40.KKB</b>
Gage length A [mm]	long		100	100	100	—
<b>Order No.</b>	<b>50.551...</b>		<b>.22.KKB</b>	<b>.27.KKB</b>	<b>.32.KKB</b>	

**Accessories**

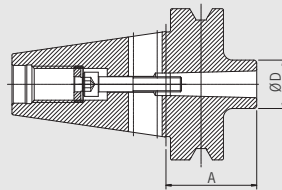
<b>Tightening bolt</b>						
Size D1			22	27	32	40
<b>Order No.</b>	<b>85.300...</b>		<b>.22</b>	<b>.27</b>	<b>.32</b>	<b>.40</b>
<b>Wrench</b>						
Size D1			22	27	32	40
<b>Order No.</b>	<b>84.400...</b>		<b>.22</b>	<b>.27</b>	<b>.32</b>	<b>.40</b>
<b>Balancing index rings</b>						
Size D1	short		—	—	32	40
<b>Order No.</b>	<b>79.350...</b>				<b>.78</b>	<b>.89</b>
Size D1	long		22	27	32	40
<b>Order No.</b>	<b>79.350...</b>		<b>.48</b>	<b>.60</b>	<b>.78</b>	<b>.89</b>
<b>Pull studs</b>						

See pages 787–791

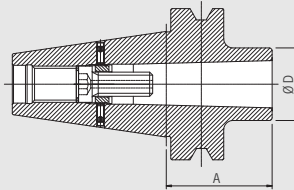
# ADAPTER FOR MORSE TAPER WITH THREAD JIS B 6339 · BT50

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body balanced G6.3 8,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3

Type 1



Type 2



**Use:**

For clamping tools with Morse taper with drawbar thread according to DIN 228-1 form A.

Similar to DIN 6383 with taper **JIS B 6339 BT50 form A**.

- Included in delivery: tightening bolt
- Fine-balancing for an extra charge

MK3 and MK4 without bore for tang form AD

METRIC	Type	1	1	2
	MK	02	03	04
	Ø D [mm]	32	40	48
Gage length A [mm]	short	60	65	70
<b>Order No.</b>	<b>50.630...</b>	<b>.02</b>	<b>.03</b>	<b>.04</b>



**Accessories**

**Balancing index rings**

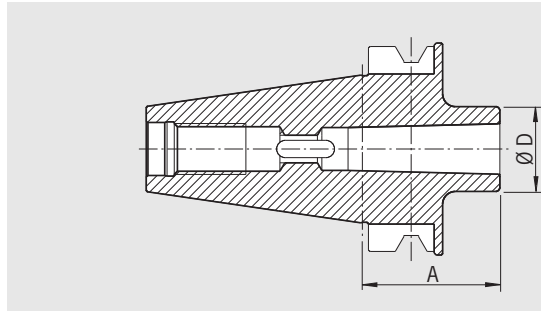
MK		02	03	04
<b>Order No.</b>	<b>79.350...</b>	<b>.32</b>	<b>.40</b>	<b>.48</b>



**Pull studs**



## ADAPTER FOR MORSE TAPER WITH TANG JIS B 6339 · BT50



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck balanced G6.3 8,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3

**Use:**

For holding tools with Morse taper and tang according to DIN 228-11 form AF.

Similar to DIN 6383 with taper **JIS B 6339 BT50 Form AD**.

– Fine-balancing for an extra charge

METRIC	MK	02	03	04
	Ø D [mm]	32	40	48
Gage Length A [mm]		60	65	95
Order No.	50.580...	.02	.03	.04



**Accessories**

**Balancing index rings**

MK	02	03	04	
Order No.	79.350...	.32	.40	.48



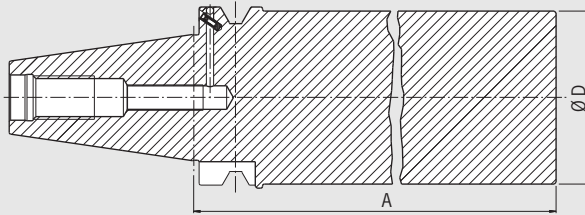
**Pull studs**

See pages 787–791

# BLANK ADAPTER JIS B 6339 · BT50

**CERTIFICATE OF QUALITY**

- All functional surfaces fine machined
- Taper tolerance AT3



**Use:**

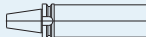
For manufacturing special tools in your factory.

**Design:**

Taper and groove are hardened and ground, the cylindrical part is soft.

With taper **JIS B 6339 BT50 Form AD/AF**.

Form AD/AF means central coolant supply and coolant channels on the collar which can be sealed again.

METRIC	Ø D [mm]		95.5
Gage Length A [mm]			315
<b>Order No.</b>	<b>50.590...</b>		<b>.95</b>

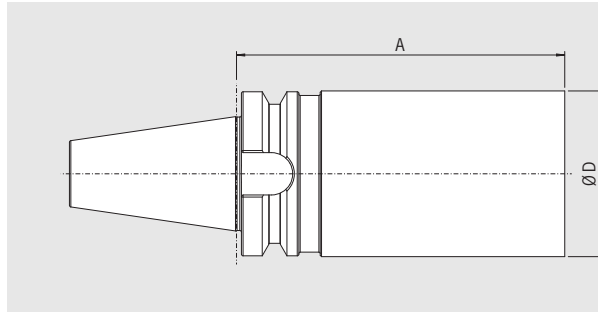
**Accessories**

**Pull studs**



See pages 787–791

**BLANK ADAPTER – HARDENED**  
**JIS B 6339 · BT50**



**CERTIFICATE OF QUALITY**  
 All functional surfaces fine machined  
 Taper tolerance AT3

**Use:**  
 For manufacturing special tools in your factory.

**Version:**  
 – Taper and groove hardened and ground  
 – Cylindrical part hardened to 52+2 HRC

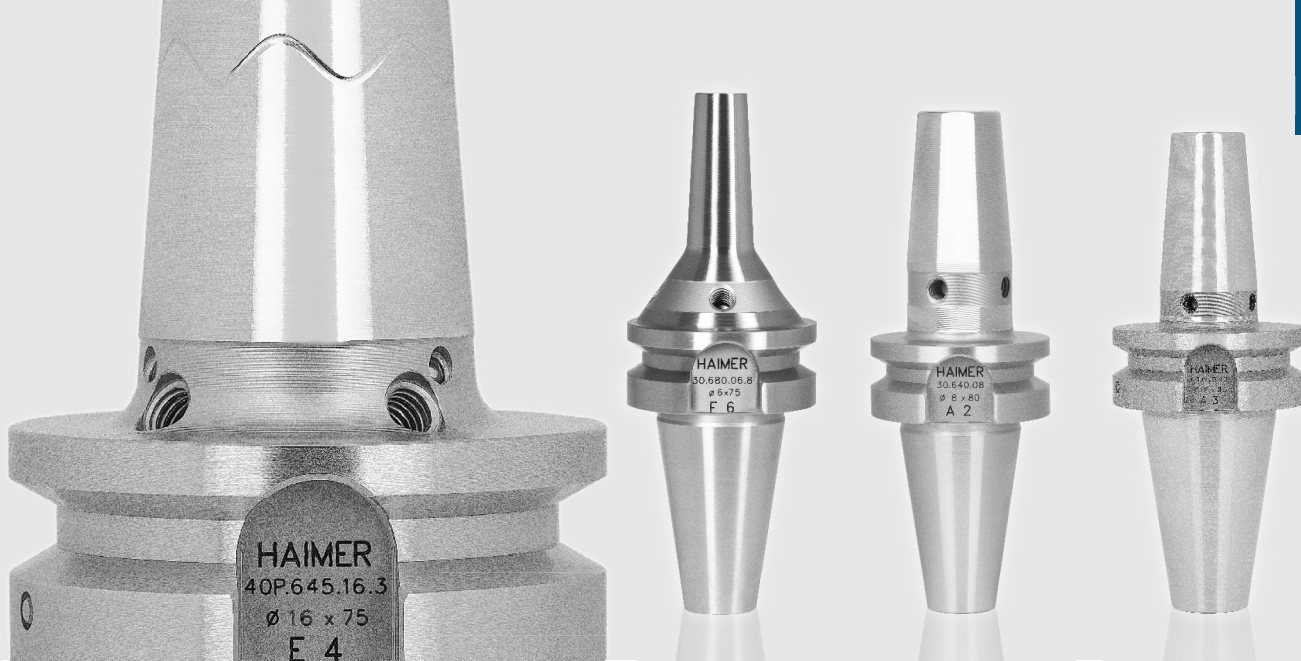
Taper **JIS B 6339 BT50** prepared for **Form AD**.  
 Form AD means central coolant supply

METRIC	Ø D [mm]		101
Gage Length A [mm] <b>Order No.</b>	ZG100 <b>R50.596.1010...</b>		100 <b>.0100</b>
Gage Length A [mm] <b>Order No.</b>	ZG200 <b>R50.596.1010...</b>		200 <b>.0200</b>
Gage Length A [mm] <b>Order No.</b>	ZG300 <b>R50.596.1010...</b>		300 <b>.0300</b>

**Accessories**  
**Pull studs**



See pages 787–791



## Similar JIS B 6339 BT with Face Contact

Article	Page
<b>BT30 with Face Contact</b>	
Shrink Fit Chuck	338
Power Mini Shrink Chuck	340
High Precision Collet Chuck	341
Blank Adapter – Hardened	342
<b>BT40 with Face Contact</b>	
Shrink Fit Chuck	343
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<b>BT50 with Face Contact</b>	
Shrink Fit Chuck	348
Power Shrink Chuck	349
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High Precision Collet Chuck	351



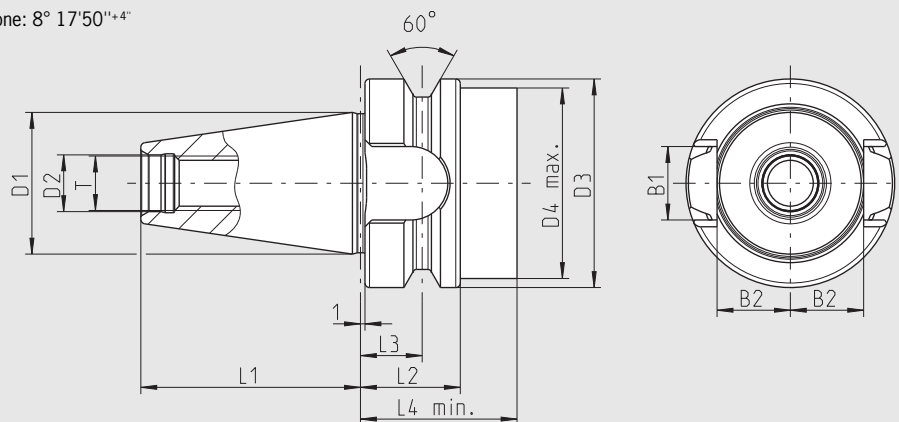
## STEEP TAPER SIMILAR JIS B 6339 · BT WITH FACE CONTACT

**Design:**

- Additional support on the flange surface for more rigidity
- Tool holders case-hardened 60-2 HRC
- Tensile strength in the core at least 950 N/mm<sup>2</sup>
- Taper in tolerance quality AT3
- Form AD: interior coolant supply through center
- Without bore for data chip
- Compatible with Big-Plus\* spindles

**BT30 with face contact**

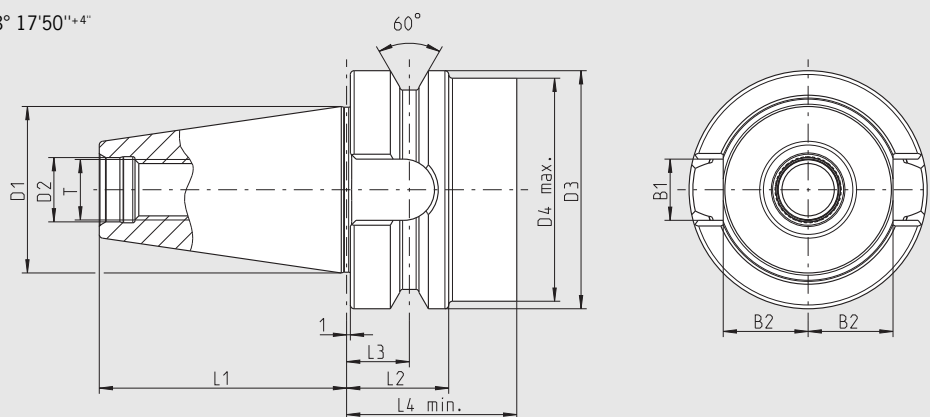
- Angle of cone: 8° 17'50"±4"



INCH [inch]	D1	D2	D3	D4	L1	L2	L3	L4	T	B1	B2
<b>BT30 with face contact</b>	1.25	0.492	1.811	1.653	1.906	0.866	0.535	1.358	M12	0.633	0.641
METRIC [mm]	D1	D2	D3	D4	L1	L2	L3	L4	T	B1	B2
<b>BT30 with face contact</b>	31.75	12.5	46	42	48.4	22	13.6	34.5	M12	16.1	16.3

**BT40 with face contact**

- Angle of cone: 8° 17'50"±4"



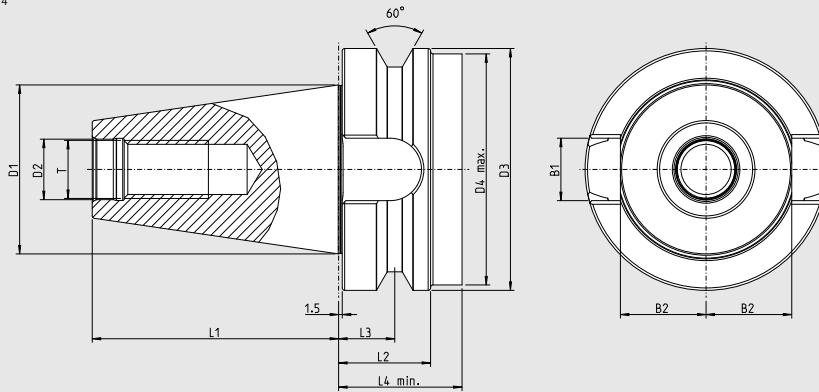
INCH [inch]	D1	D2	D3	D4	L1	L2	L3	L4	T	B1	B2
<b>BT40 with face contact</b>	1.75	0.669	2.480	2.323	2.575	1.063	0.654	1.772	M16	0.633	0.889
METRIC [mm]	D1	D2	D3	D4	L1	L2	L3	L4	T	B1	B2
<b>BT40 with face contact</b>	44.45	17	63	59	65.4	27	16.6	45	M16	16.1	22.6

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## RUNOUT ACCURACY SIMILAR JIS B 6339 · BT WITH FACE CONTACT

### BT50 with face contact

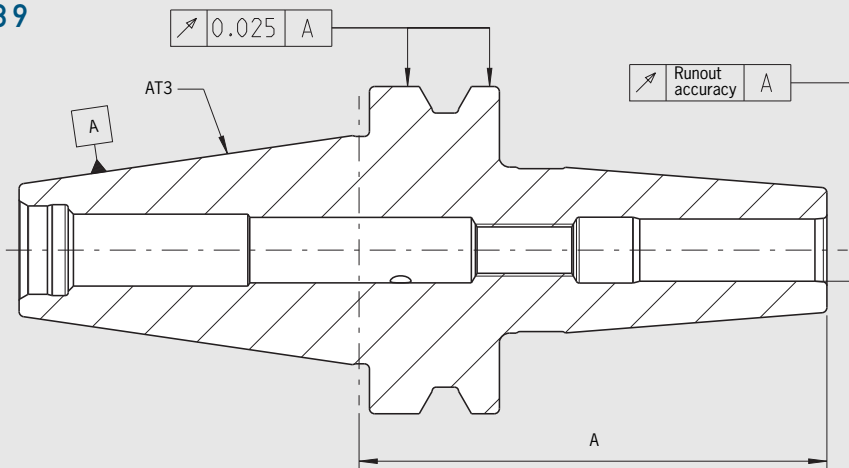
– Angle of cone:  $8^{\circ} 17'50''^{+4''}$



INCH [inch]	D1	D2	D3	D4	L1	L2	L4	T	B1	B2
<b>BT50 with face contact</b>	2.750	0.984	3.937	3.760	4.008	1.496	2.008	M24	1.012	1.394

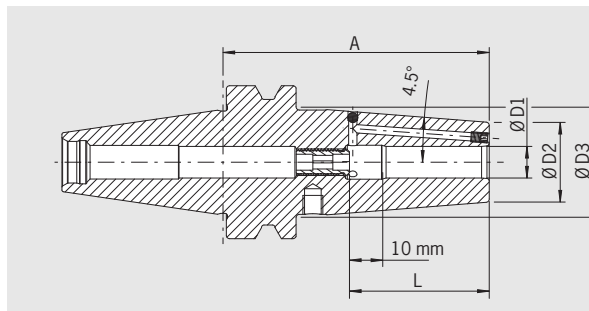
METRIC [mm]	D1	D2	D3	D4	L1	L2	L4	T	B1	B2
<b>BT50 with face contact</b>	69.85	25	100	95.5	101.8	38	51	M24	25.7	35.4

## RUNOUT ACCURACY JIS B 6339



Gage length A [mm]	A < 160	A ≥ 160
<b>max. runout tolerance in mm</b>		
Shrink Fit Chuck	0.003	0.004
Power Shrink Chuck	0.003	0.004
Heavy Duty Chuck	0.003	0.004
Power Mini Shrink Chuck	0.003	0.004
High Precision Collet Chuck	0.003	0.004

# SHRINK FIT CHUCK SIMILAR JIS B 6339 · BT30 WITH FACE CONTACT INCH



### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
U < 1 gmm
- All functional surfaces fine machined
- Taper tolerance AT3

**Use:**

Shrink fit chuck suitable for use with all available shrink fit units. Additional support on the flange surface for more rigidity.

- Cool Jet bores that can be sealed included
- Cooling with Cool Flash for an extra charge (See pages 502–503)
- Compatible with Big-Plus\* spindles

**Similar JIS B 6339 BT30 with face contact form AD**

Form AD means central coolant supply

- Heat resistant hot-working steel
- Hardened 54-2 HRC
- For HSS and solid carbide tools
- Shank tolerance h6
- Included in delivery: with back-up screw
- With threaded holes in order to balance with balancing screws

**Ultra short version**

INCH	Clamping Ø D1 [inch]	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4
	Ø D2 [inch]	0.39	0.39	0.83	0.83	0.95	0.95	0.95	1.06	1.30
	Ø D3 [inch]	—	—	—	—	—	—	—	—	1.59
	L [inch]	0.35	0.47	1.42	1.42	1.65	1.65	1.85	1.97	2.05
Gage Length A [inch]	ultra short	2.36 <sup>1)</sup>	2.36 <sup>1)</sup>	2.36 <sup>2)</sup>	2.36 <sup>2)</sup>	2.36 <sup>2)</sup>	2.36 <sup>2)</sup>	2.36 <sup>2)</sup>	2.56 <sup>2)</sup>	2.76 <sup>2)</sup>
Order No.	30P.645...	.1/8Z	.3/16Z	.1/4Z.4	.5/16Z.4	.3/8Z.4	.7/16Z.4	.1/2Z.4	.5/8Z.4	.3/4Z.4

**Short version**

INCH	Clamping Ø D1 [inch]	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4
	Ø D2 [inch]	0.39	0.39	0.83	0.83	0.95	0.95	0.95	1.06	1.30
	Ø D3 [inch]	—	—	1.06	1.06	1.26	1.26	1.26	1.34	1.59
	L [inch]	0.35	0.47	1.42	1.42	1.65	1.65	1.85	1.97	2.05
Gage Length A [inch]	short	3.15 <sup>1)</sup>	3.15 <sup>1)</sup>	3.15	3.15	3.15	3.15	3.15	3.15	3.54
Order No.	30P.640...	.1/8Z	.3/16Z	.1/4Z.4	.5/16Z.4	.3/8Z.4	.7/16Z.4	.1/2Z.4	.5/8Z.4	.3/4Z.4

**Accessories**

<b>Shrink fit extensions</b>		See page 750
<b>Balancing screws</b>		See page 784
<b>Pull studs</b>		See pages 787–791
<b>Reduction sleeves</b>		See page 794
<b>Back-up screws</b>		See pages 796–799
<b>Cool Flash</b>		Order No. 91.100.40 See pages 502–503

1) Without back-up screw, without threads for balancing screws, with slits along the clamping bore for cooling from outside

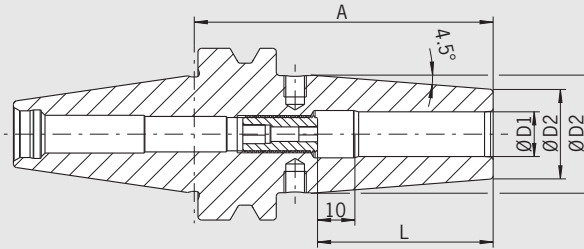
2) With back-up screw, without thread for balancing screws

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# SHRINK FIT CHUCK SIMILAR JIS B 6339 · BT30 WITH FACE CONTACT METRIC

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
U < 1 gmm
- All functional surfaces fine machined
- Taper tolerance AT3



### Use:

Suitable for all inductive, contact and hot air shrink fit units.  
Additional support on the flange surface for more rigidity.

- Cooling with Cool Jet for an extra charge (See page 501)
- Cooling with Cool Flash for an extra charge (See pages 502-503)
- Compatible with Big-Plus\* spindles

### Similar JIS B 6339 BT30 with face contact form AD

Form AD means central coolant supply

- Heat resistant hot-working steel
- Hardened 54-2 HRC
- For HSS and solid carbide tools
- Shank tolerance h6
- Included in delivery: with back-up screw
- With threaded holes in order to balance with balancing screws

### Ultra short version

METRIC	Clamping Ø D1 [mm]	03	04	05	06	08	10	12	14	16	20
	Ø D2 [mm]	10	10	10	23	23	27	27	30	30	35.5
	Ø D3 [mm]	—	—	—	—	—	—	—	—	—	40.5
	L [mm]	09	12	15	36	36	42	47	47	50	52
Length A [mm]	ultra short	60 <sup>1)</sup>	60 <sup>1)</sup>	60 <sup>1)</sup>	60 <sup>2)</sup>	60 <sup>2)</sup>	60 <sup>2)</sup>	60 <sup>2)</sup>	65 <sup>2)</sup>	65 <sup>2)</sup>	70 <sup>2)</sup>
Order No.	30P.645...	.03	.04	.05	.06	.08	.10	.12	.14	.16	.20



### Standard version, similar to DIN 69882-8

METRIC	Clamping Ø D1 [mm]	03	04	05	06	08	10	12	14	16	20
	Ø D2 [mm]	10	10	10	21	21	24	24	27	27	33
	Ø D3 [mm]	—	—	—	27	27	32	32	34	34	40.5
	L [mm]	09	12	15	36	36	42	47	47	50	52
Length A [mm]	short	80 <sup>1)</sup>	80 <sup>1)</sup>	80 <sup>1)</sup>	80	80	80	80	80	80	90
Order No.	30P.640...	.03	.04	.05	.06	.08	.10	.12	.14	.16	.20



### Accessories

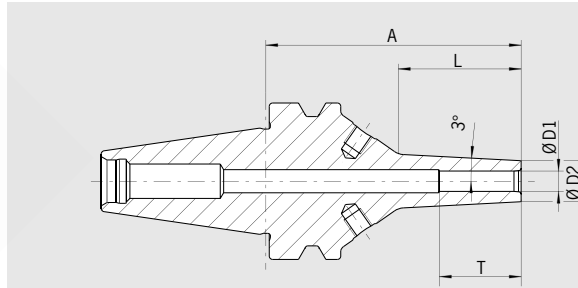
Shrink fit extensions		See pages 751-753
Balancing screws		See page 784
Pull studs		See pages 787-791
Reduction sleeves		See page 794
Back-up screws		See pages 796-799
Cool Jet bores		See page 501
Cool Flash		Order No. 91.100.40
Cool Flash Upgrade incl. Cool Jet		Order No. 91.100.41
		See pages 502-503
		See pages 502-503

1) Without back-up screw, without threads for balancing screws, with slits along the clamping bore for cooling from outside

2) With back-up screw, without threads for balancing screws

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## POWER MINI SHRINK CHUCK SIMILAR JIS B 6339 · BT30 WITH FACE CONTACT

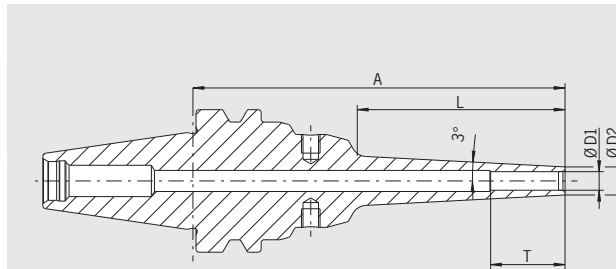


CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD

**Power Mini Shrink Chuck is perfect for 5-axis machining in the die & mold and in the medical industry. Very slim at the top like the HAIMER Mini Shrink Chucks, the Power Mini Shrink is reinforced at the base. Therefore efficient milling is possible with an angled tool, even at long protruding lengths.**

- Additional support on the flange surface for more rigidity
- 3° angle at the top
- With threaded holes in order to balance with balancing screws
- For solid carbide tools with shank tolerance h6
- Compatible with Big-Plus\* spindles

**Attention:** Heating and cooling sleeves are needed when shrinking on most shrink fit machines (see accessories). However, when using the Power Clamp i4.0 Sprint/Air or Nano machines with the motorized coil and scanner, sleeves are not necessary.



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD

METRIC	Clamping Ø D1 [mm]		03	04	06	08	10	12
	T [mm]		—	—	—	—	68	75
	Ø D2 [mm] short		09	10	12	14	16	18
	L [mm] short		36	36	36	36	36	36
Length A [mm]	short		75	75	75	75	75	75
Order No.	30P.680...		.03.8	.04.8	.06.8	.08.8	.10.8	.12.8
	Ø D2 [mm] ZG95		06	07	09			
	L [mm] ZG95		42	42	42			
Length A [mm]	ZG95		95	95	95			
Order No.	30P.671...		.03.8	.04.8	.06.8			
	Ø D2 [mm] ZG120		06	07	09			
	L [mm] ZG120		67	67	67			
Length A [mm]	ZG120		120	120	120			
Order No.	30P.677...		.03.8	.04.8	.06.8			

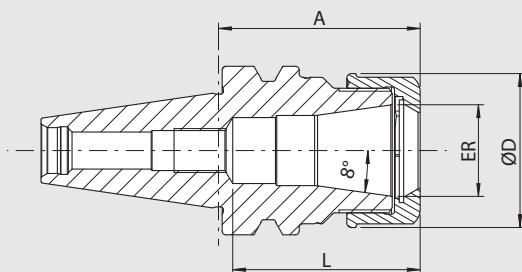
**Accessories**

Shrink and cooling adapter for Mini Shrink

See page 593

# HIGH PRECISION COLLET CHUCK SIMILAR JIS B 6339 · BT30 WITH FACE CONTACT

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD



The High Precision Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with better construction and a special coated smooth locknut combines high rigidity with vibration dampening and noise-reducing features, giving more protection to machines, spindles and tools. The chuck is especially suitable for micro and fine machining (e.g. in the medical or watchmaking industry).

- Additional support on the flange surface for more rigidity
- With a specially coated smooth locknut, balanced at < 1 gmm
- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (Attention: By using standard collet, ER length A will increase)

- High rigidity
- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776
- Compatible with Big-Plus\* spindles

INCH	ER		16	25	32
	Ø D [inch]		1.10	1.65	1.97
	Clamping range [inch]		1/8–3/8	1/8–5/8	1/8–3/4
	Clamping range [mm]		2.0–10.0	2.0–16.0	2.0–20.0
	L [inch]		1.69	2.01	2.09
Gage length A [inch]	ultra short		2.16 <sup>1)</sup>	2.16 <sup>1)</sup>	2.16 <sup>1)</sup>
Order No.	30P.525...		.16.3.HP	.25.3.HP	.32.3.HP
Gage length A [inch]	ZG60		2.36 <sup>2)</sup>	2.36 <sup>2)</sup>	2.36 <sup>2)</sup>
Order No.	30P.529...		.16.3.060.HP	.25.3.060.HP	.32.3.060.HP
Gage length A [inch]	ZG75		2.95	2.95	2.95
Order No.	30P.529...		.16.3.075.HP	.25.3.075.HP	.32.3.075.HP
Gage length A [inch]	short		3.15	3.15	3.15
Order No.	30P.520...		.16.3.HP	.25.3.HP	.32.3.HP
Gage length A [inch]	ZG105		4.13	4.13	4.13
Order No.	30P.529...		.16.3.105.HP	.25.3.105.HP	.32.3.105.HP
Gage length A [inch]	ZG120		4.72	4.72	4.72
Order No.	30P.527...		.16.3.HP	.25.3.HP	.32.3.HP

### Accessories

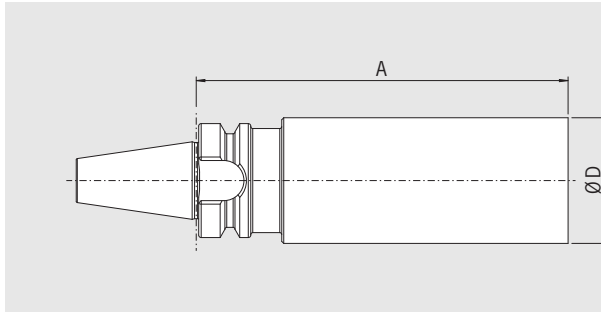
<b>High Precision Smooth Locknut (fine-balanced)</b>					See page 779
Size			ER 16	ER 25	ER 32
Order No. 83.914...			.16.1	.25.1	.32.1
<b>Roller bearing wrench</b>					See page 782
Order No. 84.650...			.16.1	.25.1	.32.1
<b>Collets ER</b>					See pages 768–773
<b>Shrink Fit Collets</b>					See pages 759–767
<b>Power Collets</b>					See pages 770–771
<b>Power Collets with Safe-Lock</b>					See page 776
<b>Cool Jet bores for Power Collets</b>					See page 777
Order No. 91.100.27					

1) Without threaded holes

2) Without balancing thread

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**BLANK ADAPTER – HARDENED  
SIMILAR JIS B 6339 · BT30 WITH FACE CONTACT**



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD

**Use:**  
For manufacturing special tools in your factory.

- Version:**
- Taper and groove hardened and ground
  - Cylindrical part hardened to 52+2 HRC
  - Compatible with Big-Plus\* spindles

Taper **similar to JIS B 6339 BT30** with face contact prepared for Form AD.  
Form AD means central coolant supply

METRIC	Ø D [mm]		50.7
Gage Length A [mm]	ZG150		150
Order No.	RP30.596.0507...		.0150

**Accessories**

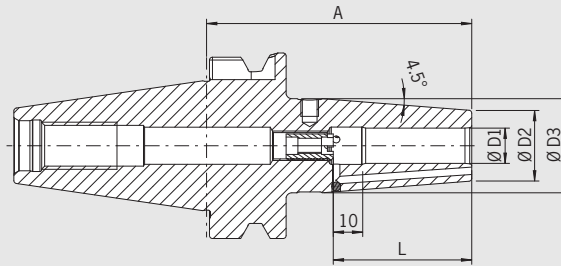
**Pull studs**



See pages 787–791

# SHRINK FIT CHUCK SIMILAR JIS B 6339 · BT40 WITH FACE CONTACT

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD



**Use:**

Suitable for all shrinking units.  
Additional support on the flange surface for more rigidity.

- Inch version: Cool Jet bores that can be sealed included (Metric optional)
- Cooling with Cool Flash for an extra charge (See pages 502-503)
- Compatible with Big-Plus\* spindles

**Similar JIS B 6339 BT40 with face contact form AD**







Form AD means central coolant supply

- Heat resistant hot-working steel
- Hardened 54-2 HRC
- For HSS and solid carbide tools
- Shank tolerance h6
- With threaded holes in order to balance with balancing screws
- Included in delivery: Shrink fit chuck with back-up screw


**INCH Standard version**

INCH	Clamping Ø D1 [inch]	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	1 1/4
	Ø D2 [inch]	0.39	0.39	0.83	0.83	0.94	0.94	0.94	1.06	1.30	1.30	1.73	1.73
	Ø D3 [inch]	—	—	1.06	1.06	1.26	1.26	1.26	1.34	1.65	1.65	2.09	2.09
	L [inch]	0.35	0.47	1.42	1.42	1.65	1.65	1.85	1.97	2.05	2.05	2.28	2.28
Gage length A [inch]	short	3.15 <sup>2)</sup>	3.15 <sup>2)</sup>	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.54	3.94	3.94
<b>Order No.</b>	<b>40P.640...</b>	<b>.1/8Z</b>	<b>.3/16Z</b>	<b>.1/4Z.4</b>	<b>.5/16Z.4</b>	<b>.3/8Z.4</b>	<b>.7/16Z.4</b>	<b>.1/2Z.4</b>	<b>.5/8Z.4</b>	<b>.3/4Z.4</b>	<b>.7/8Z.4</b>	<b>.1Z.4</b>	<b>.1 1/4Z.4</b>
Gage length A [inch]	ZG130	—	—	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12
<b>Order No.</b>	<b>40P.644...</b>	—	—	<b>.1/4Z.4</b>	<b>.5/16Z.4</b>	<b>.3/8Z.4</b>	<b>.7/16Z.4</b>	<b>.1/2Z.4</b>	<b>.5/8Z.4</b>	<b>.3/4Z.4</b>	<b>.7/8Z.4</b>	<b>.1Z.4</b>	<b>.1 1/4Z.4</b>
Gage length A [inch]	oversize	—	—	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30
<b>Order No.</b>	<b>40P.642...</b>	—	—	<b>.1/4Z.4</b>	<b>.5/16Z.4</b>	<b>.3/8Z.4</b>	<b>.7/16Z.4</b>	<b>.1/2Z.4</b>	<b>.5/8Z.4</b>	<b>.3/4Z.4</b>	<b>.7/8Z.4</b>	<b>.1Z.4</b>	<b>.1 1/4Z.4</b>

**METRIC Standard version, similar to DIN 69882-8**

METRIC	Clamping Ø D1 [mm]	03	04	05	06	08	10	12	14	16	18	20	25	32	
	Ø D2 [mm]	10	10	10	21	21	24	24	27	27	33	33	44	44	
	Ø D3 [mm]	—	—	—	27	27	32	32	34	34	42	42	53	53	
	L [mm]	9	12	15	36	36	42	47	47	50	50	52	58	58	
Length A [mm]	short		90 <sup>1)</sup>	90 <sup>1)</sup>	90 <sup>1)</sup>	90	90	90	90	90	90	90	90	100	100
<b>Order No.</b>	<b>40P.640...</b>		<b>.03.1</b>	<b>.04.1</b>	<b>.05.1</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>	<b>.25</b>	<b>.32</b>
Length A [mm]	ZG130		—	—	—	130	130	130	130	130	130	130	130	—	
<b>Order No.</b>	<b>40P.644...</b>		—	—	—	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>	<b>.25</b>	
Length A [mm]	extra long		—	—	—	160	160	160	160	160	160	160	160	—	
<b>Order No.</b>	<b>40P.642...</b>		—	—	—	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>	<b>.25</b>	

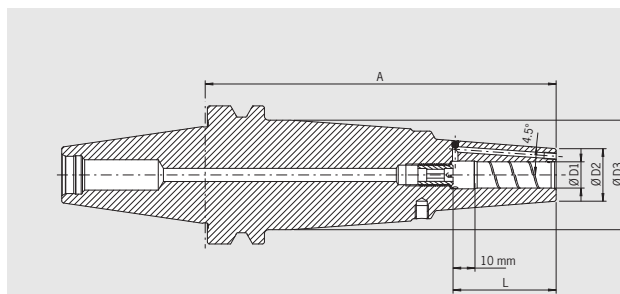
**METRIC Standard version, with Cool Jet (Ø 3-5 mm Cooling with slits)**

METRIC	Clamping Ø D1 [mm]	03	04	05	06	08	10	12	14	16	20	25	
	Ø D2 [mm]	10	10	10	21	21	24	24	27	27	33	44	
	Ø D3 [mm]	—	—	—	27	27	32	32	34	34	42	53	
	L [mm]	9	12	15	36	36	42	47	47	50	52	58	
Length A [mm]	short		90 <sup>2)</sup>	90 <sup>2)</sup>	90 <sup>2)</sup>	90	90	90	90	90	90	100	
<b>Order No.</b>	<b>40P.640...</b>		<b>.03</b>	<b>.04</b>	<b>.05</b>	<b>.06.2</b>	<b>.08.2</b>	<b>.10.2</b>	<b>.12.2</b>	<b>.14.2</b>	<b>.16.2</b>	<b>.20.2</b>	<b>.25.2</b>

1) Without back-up screw, without thread for balancing screws, without slits along the clamping bore for cooling from outside  
 2) Without back-up screw, without thread for balancing screws, with slits along the clamping bore for cooling from outside  
 \*BIG-PLUS® is a registered trademark/tradename of Big Daishowa Co. Ltd./Big Daishowa Seiki Co. Ltd.



## POWER SHRINK CHUCK SIMILAR JIS B 6339 · BT40 WITH FACE CONTACT



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD
<input checked="" type="checkbox"/>	Cool Jet, can be sealed

The Power Shrink Chuck is the shrink fit chuck for highest machining capacity in High Speed machining. The optimized design combines high rigidity with dampening vibrations, therefore giving more protection to machines, spindles and tools.

- Additional support on the flange surface for more rigidity
- Increased machining capacity due to higher spindle speed, higher feed and larger cutting depth
- Shorter processing times, higher machining accuracy
- Quieter running, therefore better surface quality and protection of tools, spindles and machines
- With threaded holes in order to balance with balancing screws
- Cool Jet bores that can be sealed included
- Cooling with Cool Flash for an extra charge (See pages 502–503)

The long versions (A=130 and 160) with slim tips are especially versatile to use.

- High rigidity, slim at the tip, dampen vibrations
- High clamping force
- Equally suited to High Speed and Heavy Duty machining
- Universal usage, saves space in tool magazine
- Compatible with Big-Plus\* spindles

INCH	Clamping Ø D1 [inch]	1/4	5/16	3/8	1/2	5/8	3/4	1	1 1/4
	Ø D2 [inch]	0.87	0.87	1.04	1.04	1.16	1.40	1.79	1.79
	L [inch]	1.42	1.42	1.65	1.85	1.97	2.05	2.28	2.28
Gage length A [inch]	ultra short	2.76	2.76	2.76	2.76	2.95	2.95	3.35	3.35
Order No.	40P.645...	.1/4z.3	.5/16z.3	.3/8z.3	.1/2z.3	.5/8z.3	.3/4z.3	.1z.3	.11/4z.3
Safe-Lock Order No.	40P.645...	—	—	—	.1/2z.37	.5/8z.37	.3/4z.37	.1z.37	.11/4z.37

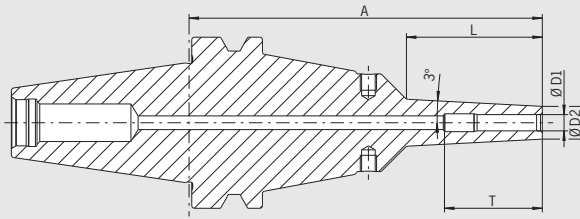
METRIC	Clamping Ø D1 [mm]	06	08	10	12	14	16	18	20	25	32
	Ø D2 [mm] ultra short	22	22	26.5	26.5	29.5	29.5	35.5	35.5	45.5	45.5
	L [mm] ultra short	36	36	42	47	47	50	50	52	58	58
Length A [mm]	ultra short	70	70	70	70	75	75	75	75	85	85
Order No.	40P.645...	.06.3	.08.3	.10.3	.12.3	.14.3	.16.3	.18.3	.20.3	.25.3	.32.3
	Ø D2 [mm]	21	21	24	24	27	27	33	33		
	Ø D3 [mm]	50	50	50	50	50	50	50	50		
	L [mm]	36	36	42	47	47	50	50	52		
Length A [mm]	ZG130	130	130	130	130	130	130	130	130		
Order No.	40P.644...	.06.3	.08.3	.10.3	.12.3	.14.3	.16.3	.18.3	.20.3		
Length A [mm]	oversize	160	160	160	160	160	160	160	160		
Order No.	40P.642...	.06.3	.08.3	.10.3	.12.3	.14.3	.16.3	.18.3	.20.3		

### Power Shrink Chuck with Safe-Lock

METRIC	Clamping Ø D1 [mm]	12	16	20	25	32
	Ø D2 [mm] ultra short	26.5	29.5	35.5	45.5	45.5
	L [mm] ultra short	47	50	52	58	58
Length A [mm]	ultra short	70	75	75	85	85
Order No.	40P.645...	.12.37	.16.37	.20.37	.25.37	.32.37
	Ø D2 [mm]	24	27	33		
	Ø D3 [mm]	50	50	50		
	L [mm]	47	50	52		
Length A [mm]	ZG130	130	130	130		
Order No.	40P.644...	.12.37	.16.37	.20.37		
Length A [mm]	oversize	160	160	160		
Order No.	40P.642...	.12.37	.16.37	.20.37		

# POWER MINI SHRINK CHUCK SIMILAR JIS B 6339 · BT40 WITH FACE CONTACT

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD

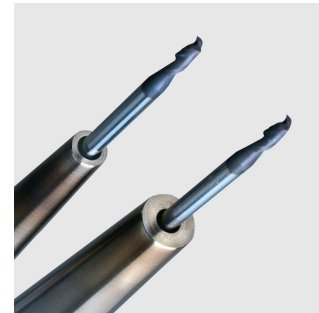
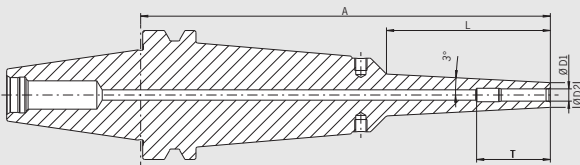


**Power Mini Shrink Chuck is perfect for 5-axis machining in the die & mold and in the medical industry. Very slim at the top like the HAIMER Mini Shrink Chucks, the Power Mini Shrink is reinforced at the base. Therefore efficient milling is possible with an angled tool, even at long protruding lengths.**

- Additional support on the flange surface for more rigidity
- 2 types: Standard (3 mm wall thickness) and extra slim (1.5 mm wall thickness)
- 3° angle at the top
- With threaded holes in order to balance with balancing screws
- For solid carbide tools with shank tolerance h6
- Compatible with Big-Plus\* spindles

**Attention:** Heating and cooling sleeves are needed when shrinking on most shrink fit machines (see accessories). However, when using the Power Clamp i4.0 Sprint/Air or Nano machines with the motorized coil and scanner, sleeves are not necessary.

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD



Clamping	Ø D1 [mm]		03	04	05	06	08	10	12	16
	Ø D2 [mm] standard		09	10	11	12	14	16	18	24
	Ø D2 [mm] extra slim		06	07	08	09	11	13	15	—
	T [mm]		—	—	—	—	—	68	75	75
	L [mm] ZG130		50	50	50	50	50	50	50	50
Length A [mm]	ZG130		130	130	130	130	130	130	130	130
Order No.	standard	<b>40P.684...</b>	<b>.03.8</b>	<b>.04.8</b>	<b>.05.8</b>	<b>.06.8</b>	<b>.08.8</b>	<b>.10.8</b>	<b>.12.8</b>	<b>.16.8</b>
Order No.	extra slim	<b>40P.674...</b>	<b>.03.8</b>	<b>.04.8</b>	<b>.05.8</b>	<b>.06.8</b>	<b>.08.8</b>	<b>.10.8</b>	<b>.12.8</b>	—
	L [mm]		80	80	80	80	80	80	80	80
Length A [mm]	oversize		160	160	160	160	160	160	160	160
Order No.	standard	<b>40P.682...</b>	<b>.03.8</b>	<b>.04.8</b>	<b>.05.8</b>	<b>.06.8</b>	<b>.08.8</b>	<b>.10.8</b>	<b>.12.8</b>	<b>.16.8</b>
Order No.	extra slim	<b>40P.672...</b>	<b>.03.8</b>	<b>.04.8</b>	<b>.05.8</b>	<b>.06.8</b>	<b>.08.8</b>	<b>.10.8</b>	<b>.12.8</b>	—

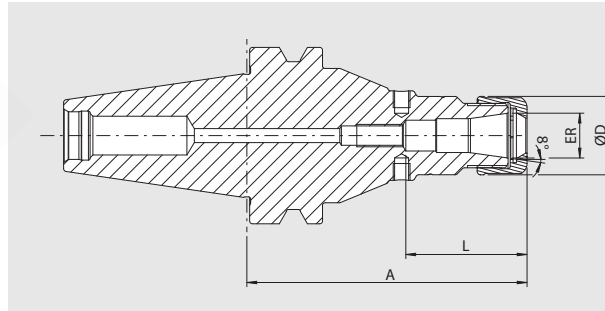
**Accessories**

Shrink and cooling adapter for Mini Shrink

See page 593

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## HIGH PRECISION COLLET CHUCK SIMILAR JIS B 6339 · BT40 WITH FACE CONTACT



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 30,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD

**The High Precision Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with better construction and a special coated smooth locknut combines high rigidity with vibration dampening and noise-reducing features, giving more protection to machines, spindles and tools.**

- Additional support on the flange surface for more rigidity
- With a specially coated smooth locknut, balanced at < 1 gmm
- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (Attention: By using standard collet, ER length A will increase)
- High rigidity

- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776
- Compatible with Big-Plus\* spindles

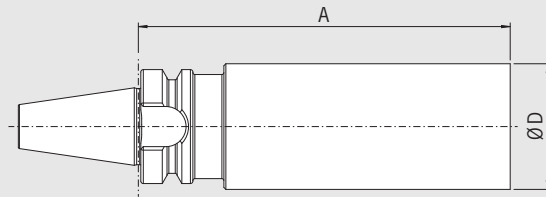
INCH	ER		16	25	32
	Ø D [inch]		1.1	1.65	1.97
	Clamping range [inch]		1/8–3/8	1/8–5/8	1/8–3/4
	Clamping range [mm]		2.0–10.0	2.0–16.0	2.0–20.0
	L [inch]		1.69	2.01	2.09
Gage length A [inch]	short		2.76	2.76	2.76
Order No.	40P.520...		.16.3.HP	.25.3.HP	.32.3.HP
Gage length A [inch]	long		3.94	3.94	3.94
Order No.	40P.521...		.16.3.HP	.25.3.HP	.32.3.HP
Gage length A [inch]	ZG4.72		4.72	4.72	4.72
Order No.	40P.527...		.16.3.HP	.25.3.HP	.32.3.HP
Gage length A [inch]	oversize		6.30	6.30	6.30
Order No.	40P.522...		.16.3.HP	.25.3.HP	.32.3.HP

### Accessories

<b>High Precision Smooth Locknut (fine-balanced)</b>				See page 779
Size		ER 16	ER 25	ER 32
Order No.	83.914...	.16.1	.25.1	.32.1
<b>Roller bearing wrench</b>				See page 782
Order No.	84.650...	.16.1	.25.1	.32.1
<b>Collets ER</b>				See pages 768–773
<b>Shrink Fit Collets</b>				See pages 759–767
<b>Power Collets</b>				See pages 770–771
<b>Power Collets with Safe-Lock</b>				See page 776
<b>Cool Jet bores for Power Collets</b>				See page 777
Order No.	91.100.27			

# BLANK ADAPTER – HARDENED SIMILAR JIS B 6339 · BT40 WITH FACE CONTACT

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD



**Use:**

For manufacturing special tools in your factory.

**Version:**

- Taper and groove hardened and ground
- Cylindrical part hardened to 52+2 HRC
- Compatible with Big-Plus\* spindles

Taper **similar to JIS B 6339 BT40** with face contact prepared for Form AD.

Form AD means central coolant supply

METRIC	Ø D [mm]		65
Gage Length A [mm]	ZG100		100
<b>Order No.</b>	<b>RP40.596.0650...</b>		<b>.0100</b>
Gage Length A [mm]	ZG200		200
<b>Order No.</b>	<b>RP40.596.0650...</b>		<b>.0200</b>
Gage Length A [mm]	ZG300		300
<b>Order No.</b>	<b>RP40.596.0650...</b>		<b>.0300</b>

**Accessories**

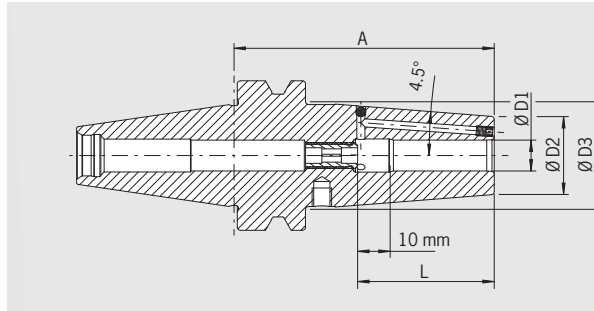
**Pull studs**



See pages 787–791

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## SHRINK FIT CHUCK SIMILAR JIS B 6339 · BT50 WITH FACE CONTACT



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD
<input checked="" type="checkbox"/>	Cool Jet, can be sealed

**Use:**

Shrink fit chuck suitable for use with all available shrink fit units. Additional support on the flange surface for more rigidity.

**Similar JIS B 6339 BT40 with face contact form AD**

Form AD means central coolant supply

- Heat resistant hot-working steel
- Hardened 54-2 HRC
- For HSS and solid carbide tools
- Shank tolerance h6
- Included in delivery: Shrink fit chuck with back-up screw
- With threaded holes in order to balance with balancing screws
- Cool Jet bores that can be sealed included
- Compatible with Big-Plus\* spindles

Optional:

- Cooling with Cool Flash from ¼" - 1" for an extra charge (See pages 502-503)

INCH	Clamping Ø D1 [inch]	1/4	5/16	3/8	1/2	5/8	3/4	1	1 1/4
	Ø D2 [inch]	0.83	0.83	0.95	0.95	1.06	1.30	1.73	1.73
	Ø D3 [inch]	1.06	1.06	1.26	1.26	1.34	1.65	2.09	2.09
	L [inch]	1.42	1.42	1.65	1.85	1.97	2.05	2.28	2.28
Gage Length A [inch]	short	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94
Order No.	50P.640...	.1/4Z.4	.5/16Z.4	.3/8Z.4	.1/2Z.4	.5/8Z.4	.3/4Z.4	.1Z.4	.1 1/4Z.4

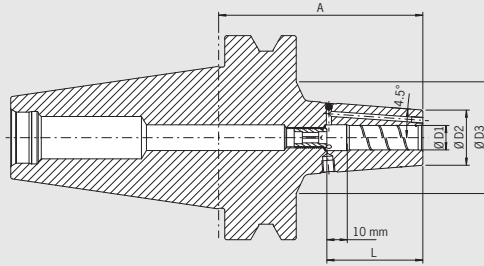
**Accessories**

<b>Shrink fit extensions</b>		See page 750
<b>Balancing screws</b>		See page 784
<b>Pull studs</b>		See pages 787-791
<b>Reduction sleeves</b>		See page 794
<b>Back-up screws</b>		See pages 796-799
<b>Cool Flash</b>	<b>Order No. 91.100.40</b>	See pages 502-503

# POWER SHRINK CHUCK SIMILAR JIS B 6339 · BT50 WITH FACE CONTACT

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 25,000 rpm
- All functional surfaces machined
- Taper tolerance AT3
- Coolant supply form AD
- Cool Jet, can be sealed



**The Power Shrink Chuck is designed for the highest cutting performance in High Speed machining. The optimized design combines high rigidity with vibration dampening, which protects the machine, spindle and tool.**

- Additional support on the flange surface for more rigidity
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy
- Quieter running, therefore better surface quality and protection of tools, spindles and machines
- With threaded holes in order to balance with balancing screws
- Cool Jet coolant bores that can be sealed included

- High rigidity, slim at the tip, dampen vibrations
- Higher clamping forces
- Equally suited to High Speed and Heavy Duty machining
- Universal usage, saves space in tool magazine
- Compatible with Big-Plus\* spindles

**Optional:**

- Cooling with Cool Flash for an extra charge (See pages 502–503)

INCH	Clamping Ø D1 [inch]	1/4	5/16	3/8	1/2	5/8	3/4	1
	Ø D2 [inch]	0.83	0.83	1.06	1.06	1.31	1.76	1.76
	Ø D3 [inch]	2.76	2.76	2.17	2.17	—	—	—
	L [inch]	1.42	1.42	1.65	1.85	1.97	2.05	2.28
Gage length A [inch]	short	3.94	3.94	3.94	3.94	3.94	3.94	3.94
Order No.	50P.640...	.1/4z.3	.5/16z.3	.3/8z.3	.1/2z.3	.5/8z.3	.3/4z.3	.1z.3
Safe-Lock Order No.	50P.640...	—	—	—	.1/2z.37	.5/8z.37	.3/4z.37	.1z.37

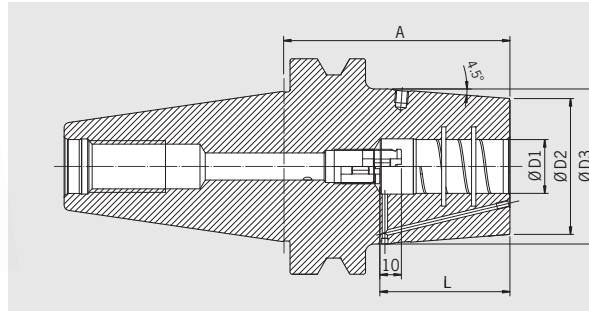


**Accessories**

- Shrink fit extensions** See page 750
- Balancing screws** See page 784
- Pull studs** See pages 787–791
- Reduction sleeves** See page 794
- Back-up screws** See pages 796–799
- Cool Flash** **Order No. 91.100.40** See pages 502–503

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## HEAVY DUTY CHUCK SIMILAR JIS B 6339 · BT50 WITH FACE CONTACT



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD
<input checked="" type="checkbox"/>	Cool Jet, can be sealed

**The Heavy Duty Chuck is a shrink fit chuck designed for extreme cases and Heavy Duty machining. The contour is optimized for highest rigidity and clamping force.**

- Additional support on the flange surface for more rigidity
- Smooth clamping of the tool shank
- No deformation at the tool shank after shrink process
- TIR less than 0.00012" (3 µm)
- Reinforced outer contour
- To shrink with 13 kW HD coil (see page 600) or with high performance shrink fit unit HAIMER Power Clamp Profi Plus (20 kW)
- With internal groove in the clamping bore
- With threaded holes in order to balance with balancing screws

- Cool Jet coolant bores that can be sealed included
- Compatible with Big-Plus\* spindles

Optional:

- Cooling with Cool Flash from 5/8"–1" for an extra charge (See pages 502–503)

INCH	Clamping Ø D1 [inch]	5/8	3/4	1	1 1/4	1 1/2	2
	Ø D2 [inch]	2.01	2.28	2.48	2.76	3.23	3.23
	Ø D3 [inch]	—	2.64	2.84	3.07	—	—
	L [inch]	1.97	2.05	2.28	2.40	3.47	3.47
Gage length A [inch]	short	3.94	3.94	4.13	4.13	4.53	4.72
Order No.	50P.650...	.5/8z.6	.3/4z.6	.1z.6	.11/4z.6	.11/2z.6	.2z.6
Safe-Lock Order No.	50P.650...	.5/8z.67	.3/4z.67	.1z.67	.11/4z.67	.11/2z.67	.2z.67

### Accessories

Shrink fit extensions		See page 750
Balancing screws		See page 784
Pull studs		See pages 787–791
Reduction sleeves		See page 794
Back-up screws		See pages 796–799
Cool Flash		Order No. 91.100.40 See pages 502–503

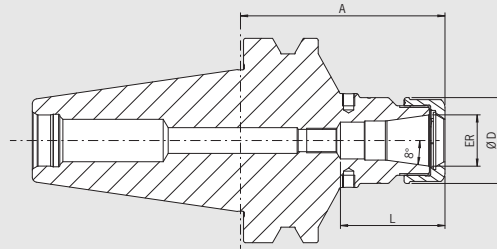
1) Clamping diam. D2 = 82.3 mm

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# HIGH PRECISION COLLET CHUCK SIMILAR JIS B 6339 · BT50 WITH FACE CONTACT

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 25,000 rpm
- All functional surfaces fine machined
- Taper tolerance AT3
- Coolant supply form AD



**The High Precision Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with better construction and a special coated smooth locknut combines high rigidity with vibration dampening and noise-reducing features, giving more protection to machines, spindles and tools.**

- Additional support on the flange surface for more rigidity
- With a specially coated smooth locknut, balanced at < 1 gmm
- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (Attention: By using standard collet, ER length A will increase)
- High rigidity

- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776
- Compatible with Big-Plus\* spindles

INCH	ER	16	25	32
	Ø D [inch]	1.1	1.65	1.97
	Clamping range [inch]	1/8–3/8	1/8–5/8	1/8–3/4
	Clamping range [mm]	2.0–10.0	2.0–16.0	2.0–20.0
	L [inch]	1.69	2.01	2.09
Gage length A [inch]	short	3.94	3.94	3.94
Order No.	50P.520...	.16.3.HP	.25.3.HP	.32.3.HP
Gage length A [inch]	ZG130	5.12	5.12	5.12
Order No.	50P.524...	.16.3.HP	.25.3.HP	.32.3.HP
Gage length A [inch]	oversize	6.30	6.30	6.30
Order No.	50P.522...	.16.3.HP	.25.3.HP	.32.3.HP

### Accessories

<b>High Precision Smooth Locknut (fine-balanced)</b>					See page 779
Size		ER 16	ER 25	ER 32	
Order No.	83.914...	.16.1	.25.1	.32.1	
<b>Roller bearing wrench</b>					See page 782
Order No.	84.650...	.16.1	.25.1	.32.1	
<b>Collets ER</b>					See pages 768–773
<b>Shrink Fit Collets</b>					See pages 760–767
<b>Power Collets</b>					See page 775
<b>Power Collets with Safe-Lock</b>					See page 776
<b>Cool Jet bores for Power Collets</b>					See page 777
Order No.	91.100.27				

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# HAIMER Power Series

For highest precision and maximum productivity  
in milling applications



# DIN ISO 7388-1 SK30/SK40/SK50

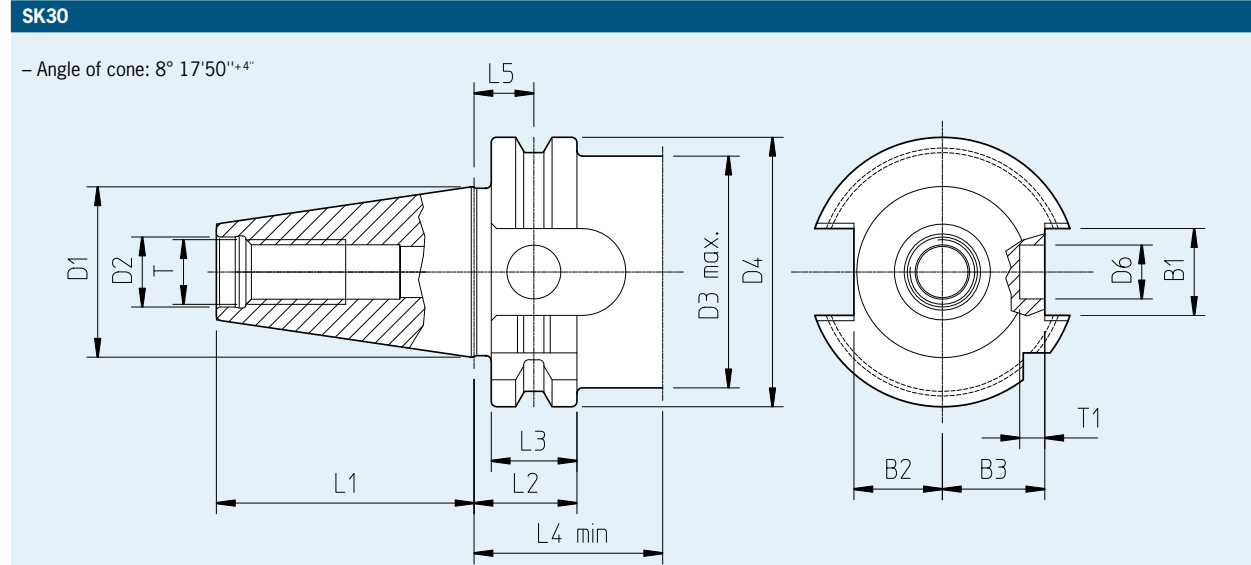
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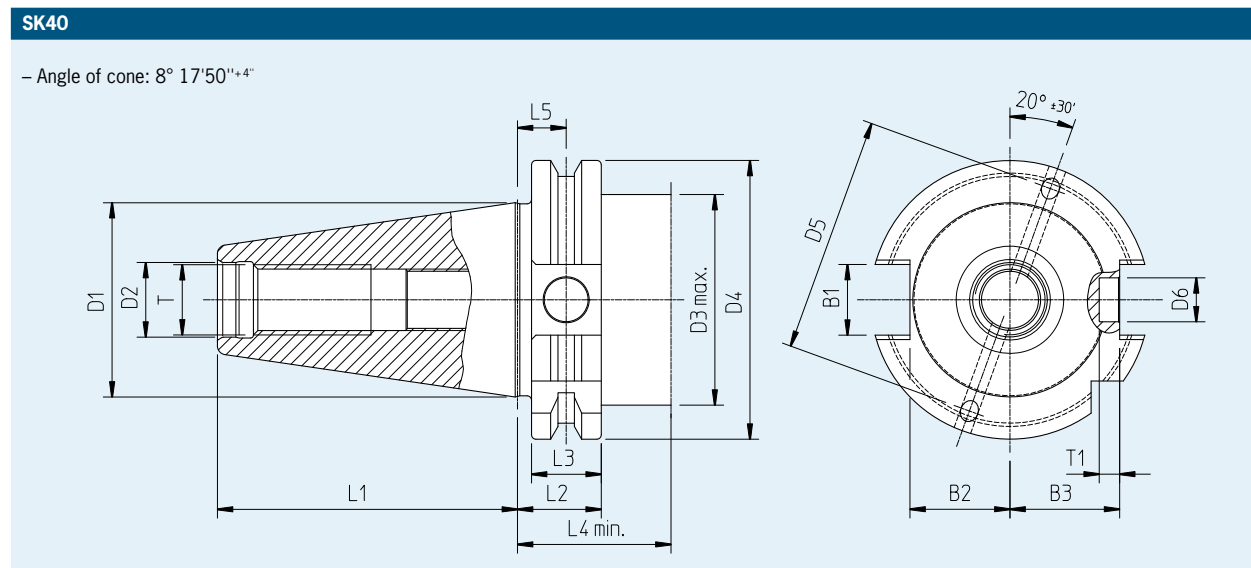
# STEEP TAPER DIN ISO 7388-1 · SK30/SK40 (FORMERLY DIN 69871)

**Design:**

- Tool holders case-hardened 60–2 HRC
- Tensile strength in the core at least 950 N/mm<sup>2</sup>
- Taper in tolerance quality AT3
- Form AD/AF: interior coolant supply through center (form AD) and through the collar, (form AF)
- Incl. bore for data chip Ø 10mm



SK30	D1	D2	D3 max.	D4	D5	D6	L1	L2	L3	L4 min.	L5	T	T1	B1	B2	B3
[mm]	31.75	13	43	50	—	10	47.	19.1	15.9	35	11.1	M12	4.65	16.1	16.4	19



SK40	D1	D2	D3 max.	D4	D5	D6	L1	L2	L3	L4 min.	L5	T	T1	B1	B2	B3
[mm]	44.45	17	48	63.55	54	10	68.4	19.1	15.9	35	11.1	M16	4.65	16.1	22.8	25

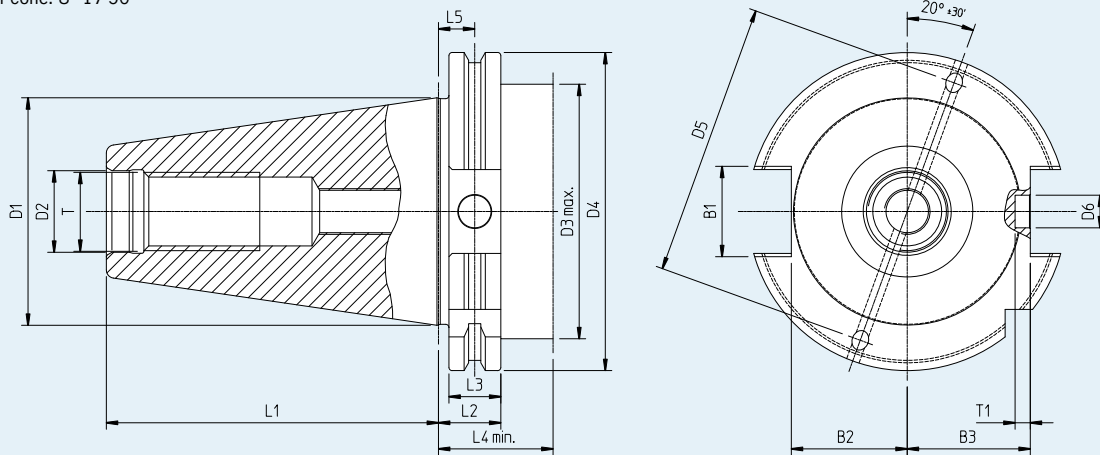
# STEEP TAPER DIN ISO 7388-1 · SK50 (FORMERLY DIN 69871)

**Design:**

- Tool holders case-hardened 60–2 HRC
- Tensile strength in the core at least 950 N/mm<sup>2</sup>
- Taper in tolerance quality AT3
- Form AD/AF: interior coolant supply through center (form AD) and through the collar, (form AF)
- Incl. bore for data chip Ø 10mm

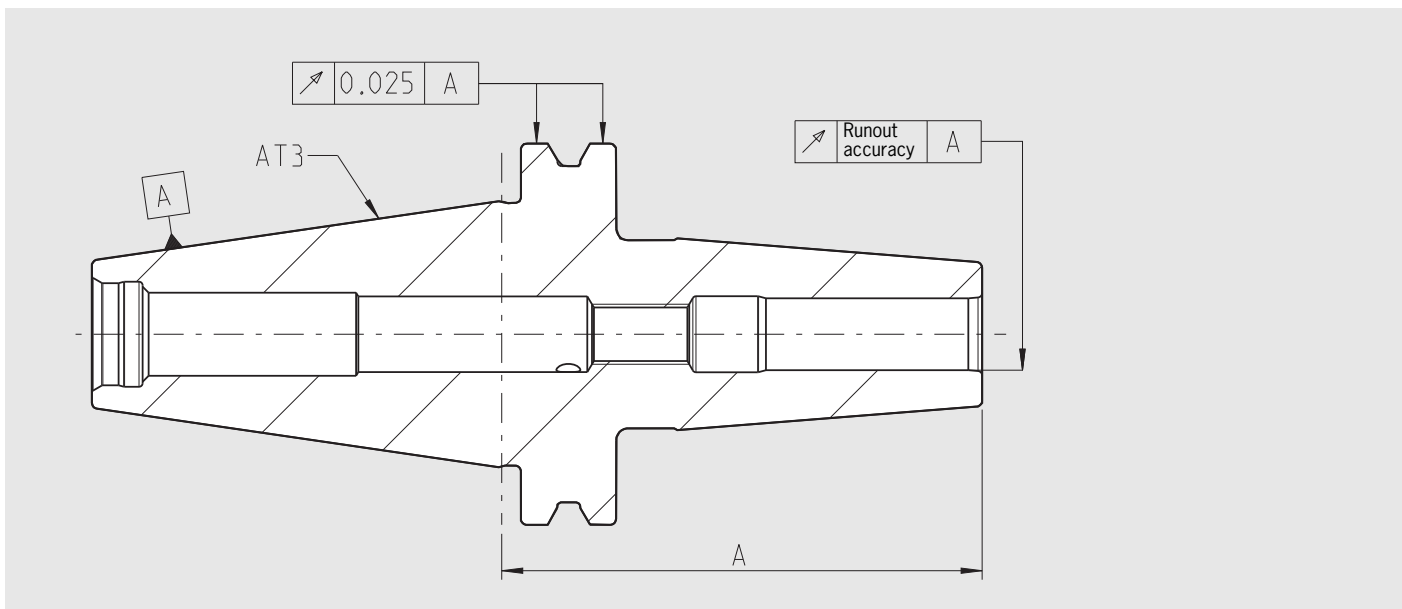
**SK50**

- Angle of cone:  $8^{\circ} 17'50'' \pm 4''$



SK50	D1	D2	D3 max.	D4	D5	D6	L1	L2	L3	L4 min.	L5	T	T1	B1	B2	B3
[mm]	69.85	25	78	97.5	84	10	101.75	19.1	15.9	35	11.1	M24	4.65	25.7	35.5	37.7

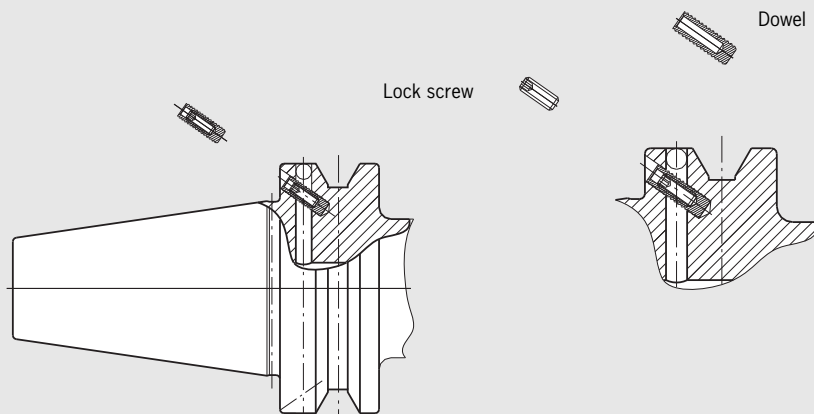
**RUNOUT ACCURACY**  
**DIN ISO 7388-1**  
 (FORMERLY DIN 69871)



Gage length	A < 160	A ≥ 160
<b>max. runout tolerance in mm</b>		
Shrink Fit Chuck	0.003	0.004
Collet Chuck ER	0.003	0.004
Power Collet Chuck	0.003	0.004
High Precision Collet Chuck	0.003	0.004
High Precision Chuck	0.003	0.003
Weldon Tool Holder	0.003	0.004
Face Mill Arbor	0.006	0.006
Adapter for Morse Taper	0.008	—
Adapter SK40/SK50	0.005	—
Drill Chuck Adapter	0.005	—

## COOLANT DIN ISO 7388-1 (FORMERLY DIN 69871)

**Attention: each dowel for single use only!**



**According to DIN ISO 7388-1, 3 possibilities of inner coolant supply are available:**

- **Form A:** no inner coolant supply
- **Form AD:** central coolant supply through retention knob.  
A retention knob with centralized bore is required.
- **Form AF:** lateral coolant supply via the collar.  
A sealed retention knob is required.

HAIMER tool holders with taper according to DIN ISO 7388-1 are produced in form AD/AF unless otherwise noted.

Form AD/AF means the tool holders are equipped with bores for form AD as well as for form AF. Unless otherwise requested, the tool holders are delivered in form AD. The bores on the flange, for form AF are then sealed with plastic-dowels and secured with lock screws.

For changing to form AF, the bores at the collar, must be opened by unscrewing the lock screw halfway. Removal of screws together with the dowels are done by using pliers.

The bores also can be sealed again. A conversion kit consisting of dowels and lock screws is available (please refer to accessories).

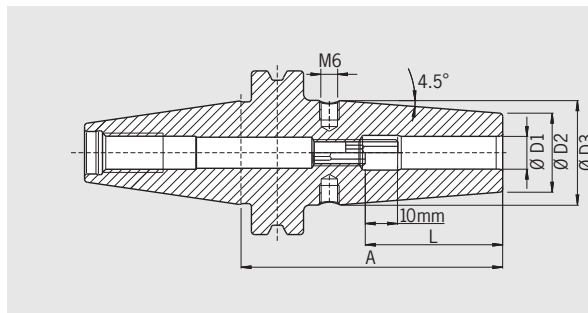
### - Spare part Dowel

Order No. 85.600.40 (SK40)

Order No. 85.600.50 (SK50)

(incl. 50 pcs)

# SHRINK FIT CHUCK DIN ISO 7388-1 · SK30 (FORMERLY DIN 69871)



### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 25,000 rpm or U<1 gmm
- All functional surfaces fine machined
- Taper tolerance AT3

**Use:**

Suitable for all shrinking units.

With taper **DIN ISO 7388-1 SK30 form AD**.

- Heat resistant hot-working steel
- Hardened 54–2 HRC
- For HSS and solid carbide tools
- Shank tolerance h6
- With threaded holes in order to balance with balancing screws
- Included in delivery: Shrink fit chuck with back-up screw
- Cooling with Cool Jet for an extra charge (see page 501)
- Cooling with Cool Flash for an extra charge (See pages 502–503)






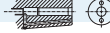


**Standard version, similar to DIN 69882-8**

Clamping	Ø D1 [mm]	03	04	05	06	08	10	12	16
	Ø D2 [mm]	10	10	10	21	21	24	24	27
	Ø D3 [mm]	—	—	—	27	27	32	32	34
	L [mm]	09	12	15	36	36	42	47	50
Length A [mm]	short	80 <sup>1)</sup>	80 <sup>1)</sup>	80 <sup>1)</sup>	80	80	80	80	80
Order No.	30.440...	.03	.04	.05	.06	.08	.10	.12	.16

**Ultra short version**

Clamping	Ø D1 [mm]	03	04	06	08	10	12	16	20
	Ø D2 [mm]	10	10	23	23	27	27	30	35.5
	Ø D3 [mm]	—	—	—	—	—	—	—	40.5
	L [mm]	09	12	36	36	42	47	50	52
Length A [mm]	ultra short	60 <sup>1)</sup>	60 <sup>1)</sup>	60 <sup>2)</sup>	60 <sup>2)</sup>	60 <sup>2)</sup>	60 <sup>2)</sup>	65 <sup>2)</sup>	70 <sup>2)</sup>
Order No.	30.445...	.03	.04	.06	.08	.10	.12	.16	.20

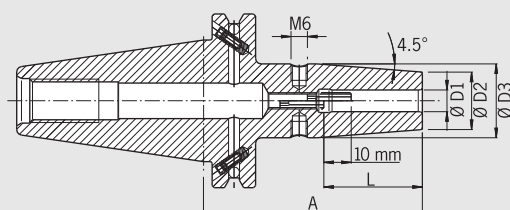
**Accessories**

- Shrink fit extensions**  See pages 751–753
- Balancing screws**  See page 784
- Pull studs**  See pages 789–791
- Reduction sleeves**  See page 794
- Back-up screws**  See pages 796–799
- Cool Jet bores**  See page 501
- Cool Flash**  **Order No. 91.100.40** See pages 502–503
- Cool Flash Upgrade incl. Cool Jet**  **Order No. 91.100.41** See pages 502–503

1) Without back-up screw, without threads for balancing screws, with slits along the clamping bore for cooling from outside  
2) Without thread for balancing screws

# SHRINK FIT CHUCK DIN ISO 7388-1 · SK40 (FORMERLY DIN 69871)

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF



**Use:**

Suitable for all shrinking units.

With taper **DIN ISO 7388-1 SK40 form AD/AF.**






Form AD/AF means central coolant supply and coolant channels through the flange which can be sealed again.

- Heat resistant hot-working steel
- Hardened 54-2 HRC
- For HSS and solid carbide tools
- Shank tolerance h6


- With threaded holes in order to balance with balancing screws
- Included in delivery: Shrink fit chuck with back-up screw

- Cooling with Cool Jet for an extra charge (see page 501)
- Cooling with Cool Flash for an extra charge (See pages 502-503)


**Standard version, similar to DIN 69882-8**

Clamping	Ø D1 [mm]		03	04	05	06	08	10	12	14	16	18	20	25	32
	Ø D2 [mm]		10	10	10	21	21	24	24	27	27	33	33	44	44
	Ø D3 [mm]		—	—	—	27	27	32	32	34	34	42	42	53	53
	L [mm]		09	12	15	36	36	42	47	47	50	50	52	58	58
Length A [mm]	short		80 <sup>1)</sup>	80 <sup>1)</sup>	80 <sup>1)</sup>	80	80	80	80	80	80	80	80	100	100
<b>Order No.</b>	<b>40.440...</b>		<b>.03.1</b>	<b>.04.1</b>	<b>.05.1</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>	<b>.25</b>	<b>.32</b>
Length A [mm]	ZG120		120 <sup>1)</sup>	120 <sup>1)</sup>	120 <sup>1)</sup>	120	120	120	120	120	120	120	120	120	120
<b>Order No.</b>	<b>40.447...</b>		<b>.03.1</b>	<b>.04.1</b>	<b>.05.1</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>	<b>.25</b>	<b>.32</b>
Length A [mm]	ZG130		130 <sup>1)</sup>	130 <sup>1)</sup>	130 <sup>1)</sup>	130	130	130	130	130	130	130	130	130	130
<b>Order No.</b>	<b>40.444...</b>		<b>.03.1</b>	<b>.04.1</b>	<b>.05.1</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>	<b>.25</b>	<b>.32</b>
Length A [mm]	oversize		—	—	—	160	160	160	160	160	160	160	160	160	—
<b>Order No.</b>	<b>40.442...</b>					<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>	<b>.25</b>	
Length A [mm]	ZG200		—	—	—	200	200	200	200	200	200	200	200	200	—
<b>Order No.</b>	<b>40.446...</b>					<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>	<b>.25</b>	

**Standard version, with Cool Jet (Ø 3-5 mm cooling with slits)**

Clamping	Ø D1 [mm]		03	04	05	06	08	10	12	14	16	18	20	25	32
	Ø D2 [mm]		10	10	10	21	21	24	24	27	27	33	33	44	44
	Ø D3 [mm]		—	—	—	27	27	32	32	34	34	42	42	53	53
	L [mm]		09	12	15	36	36	42	47	47	50	50	52	58	58
Length A [mm]	short		80 <sup>2)</sup>	80 <sup>2)</sup>	80 <sup>2)</sup>	80	80	80	80	80	80	80	80	100	100
<b>Order No.</b>	<b>40.440...</b>		<b>.03</b>	<b>.04</b>	<b>.05</b>	<b>.06.2</b>	<b>.08.2</b>	<b>.10.2</b>	<b>.12.2</b>	<b>.14.2</b>	<b>.16.2</b>	<b>.18.2</b>	<b>.20.2</b>	<b>.25.2</b>	<b>.32.2</b>

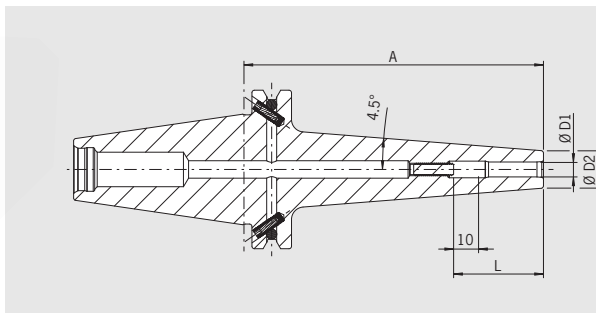
**Standard version, with Safe-Lock pull out protection**

Clamping	Ø D1 [mm]		06	08	10	12	14	16	18	20	25	32
	Ø D2 [mm]		21	21	24	24	27	27	33	33	44	44
	Ø D3 [mm]		27	27	32	32	34	34	42	42	53	53
	L [mm]		36	36	42	47	47	50	50	52	58	58
Length A [mm]	short		80 <sup>3)</sup>	80 <sup>3)</sup>	80 <sup>3)</sup>	80 <sup>3)</sup>	80 <sup>3)</sup>	80 <sup>3)</sup>	80 <sup>3)</sup>	80 <sup>3)</sup>	100 <sup>3)</sup>	100 <sup>3)</sup>
<b>Order No.</b>	<b>40.440...</b>		<b>.06.7</b>	<b>.08.7</b>	<b>.10.7</b>	<b>.12.7</b>	<b>.14.7</b>	<b>.16.7</b>	<b>.18.7</b>	<b>.20.7</b>	<b>.25.7</b>	<b>.32.7</b>

1) Without back-up screw, without thread for balancing screws, without slits along the clamping bore for cooling from outside  
 2) Without back-up screw, without thread for balancing screws, with slits along the clamping bore for cooling from outside  
 3) With tension spring



**SHRINK FIT CHUCK EXTRA SLIM**  
**DIN ISO 7388-1 · SK40**  
 (FORMERLY DIN 69871)



**CERTIFICATE OF QUALITY**

- Chuck body fine balanced  
G2.5 25,000 rpm or U < 1 gmm
- All functional surfaces fine machined
- Taper tolerance AT3
- Coolant supply form AD/AF

**Use:**

Suitable for all shrinking units.  
 Extra slim version with smaller diameter D2, 4.5°.

With taper **DIN ISO 7388-1 SK40 form AD/AF**.

Form AD/AF means central coolant supply and coolant channels through the flange which can be sealed again.

- Heat resistant hot-working steel
- Hardened 54–2 HRC
- For solid carbide tools with shank tolerance h6
- Shank tolerance h6
- Included in delivery: Shrink fit chuck with back-up screw (Ø 6–12 mm)
- Cooling with slits for an extra charge

**Standard version, similar to DIN 69882-8**

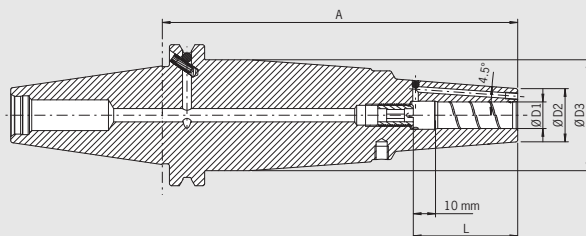
METRIC	Clamping Ø D1 [mm]	03	04	05	06	08	10	12
	Ø D2 [mm]	09	09	09	15	15	18	18
	L [mm]	—	—	—	36	36	42	47
Length A [mm]	ZG120	120 <sup>1)</sup>	120 <sup>1)</sup>	120 <sup>1)</sup>	120	120	120	120
Order No.	40.447...	.03.10	.04.10	.05.10	.06.10	.08.10	.10.10	.12.10

**Accessories**

<b>Shrink fit extensions</b>								See pages 751–753
<b>Reduction sleeves</b>								See page 794
<b>Back-up screws</b>								See pages 796–799
<b>Cooling adapter</b>								
<b>Order No.</b>		Ø 3 – 5 mm 80.105.14.1.3			Ø 6 – 12 mm 80.105.14.1.2			See page 592

**POWER SHRINK CHUCK**  
**DIN ISO 7388-1 · SK40**  
 (FORMERLY DIN 69871)

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF
<input checked="" type="checkbox"/>	Cool Jet, can be sealed



The Power Shrink Chuck is the shrink fit chuck for highest cutting performance in High Speed machining. The optimized design combines high rigidity with dampening vibrations, therefore giving more protection to machines, spindles and tools.

- Increased machining capacity due to higher spindle speed, higher feed and larger cutting depth
- Shorter processing times, higher machining accuracy
- Quieter running, therefore better surface quality and protection of tools, spindles and machines
- With threaded holes in order to balance with balancing screws
- Cool Jet bores that can be sealed included
- Cooling with Cool Flash for an extra charge (See pages 502–503)

The long versions (A=130 and 160) with slim tips are especially versatile to use.

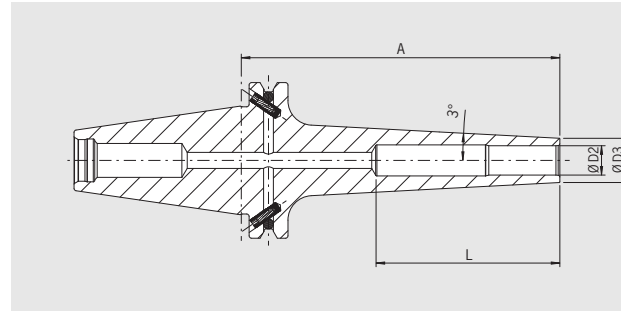
- High rigidity, slim at the tip, dampen vibrations
- High clamping force
- Equally suited to High Speed and Heavy Duty machining
- Universal usage, saves space in tool magazine

Clamping	Ø D1 [mm]	06	08	10	12	14	16	18	20	25	32
	Ø D2 [mm] ultra short	22	22	26.5	26.5	29.5	29.5	35.5	35.5	45.5	45.5
	L [mm] ultra short	36	36	42	47	47	50	50	52	58	58
Length A [mm] Order No.	ultra short 40.445...	65 .06.3	65 .08.3	65 .10.3	65 .12.3	65 .14.3	65 .16.3	65 .18.3	65 .20.3	75 .25.3	80 .32.3
	Ø D2 [mm]	21	21	24	24	27	27	33	33	44	44
	Ø D3 [mm]	50	50	50	50	50	50	50	50	53	53
	L [mm]	36	36	42	47	47	50	50	52	58	58
Length A [mm] Order No.	ZG130 40.444...	130 .06.3	130 .08.3	130 .10.3	130 .12.3	130 .14.3	130 .16.3	130 .18.3	130 .20.3	130 .25.3	130 .32.3
Length A [mm] Order No.	oversize 40.442...	160 .06.3	160 .08.3	160 .10.3	160 .12.3	160 .14.3	160 .16.3	160 .18.3	160 .20.3	160 .25.3	160 .32.3

**Power Shrink Chuck with Safe-Lock**

Clamping	Ø D1 [mm]	06	08	10	12	14	16	18	20	25	32
	Ø D2 [mm] ultra short	22	22	26.5	26.5	29.5	29.5	35.5	35.5	45.5	45.5
	L [mm] ultra short	36	36	42	47	47	50	50	52	58	58
Length A [mm] Order No.	ultra short 40.445...	65 .06.37	65 .08.37	65 .10.37	65 .12.37	65 .14.37	65 .16.37	65 .18.37	65 .20.37	75 .25.37	80 .32.37
	Ø D2 [mm]	21	21	24	24	27	27	33	33	44	44
	Ø D3 [mm]	50	50	50	50	50	50	50	50	53	53
	L [mm]	36	36	42	47	47	50	50	52	58	58
Length A [mm] Order No.	ZG130 40.444...	130 .06.37	130 .08.37	130 .10.37	130 .12.37	130 .14.37	130 .16.37	130 .18.37	130 .20.37	130 .25.37	130 .32.37
Length A [mm] Order No.	oversize 40.442...	160 .06.37	160 .08.37	160 .10.37	160 .12.37	160 .14.37	160 .16.37	160 .18.37	160 .20.37	160 .25.37	160 .32.37

**MINI SHRINK**  
**DIN ISO 7388-1 · SK40**  
 (FORMERLY DIN 69871)



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF

**SK40**

- No disturbing edges
- Highest runout accuracy: 3 µm
- Also jobs difficult to access can be reached
- Optimum rigidity
- Ideal to shrink with the HAIMER Power Clamp
- For all solid carbide tools with shank tolerance h6
- Heat resistant hot-working steel
- Hardened 54–2 HRC
- With 3° angle for die and mold

- Tool holders fine balanced
- Delivery without coolant tube
- **Extra slim version:** extremely slim for fine machining and for jobs very difficult to reach
- **Standard version:** with high clamping force

Heating and cooling sleeves are needed when shrinking on most shrink fit machines (see accessories). However, when using the Power Clamp i4.0 Sprint/Air or Nano machines with the motorized coil and scanner, sleeves are not necessary.

METRIC	Clamping Ø D1 [mm]		03	04	05	06	08	10	12	16
	Ø D2 extra slim [mm]		06	07	08	09	11	13	15	—
	Ø D2 standard [mm]		09	10	11	12	14	16	18	22
Gage Length A [mm]	ZG120		120	120	120	120	120	120	120	120
Order No.	extra slim 40.477...		.03	.04	.05	.06	.08	.10	.12	—
Gage Length A [mm]	ZG120		120	120	120	120	120	120	120	120
Order No.	standard 40.487...		.03	.04	.05	.06	.08	.10	.12	.16



**Mini Shrink shrink and cooling sleeve**

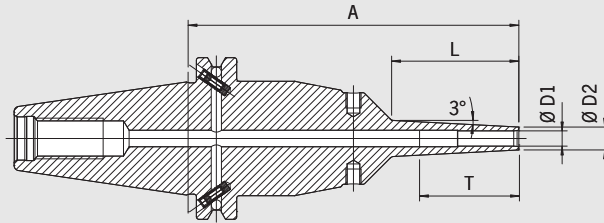
- Protect Mini Shrink chucks from overheating
- Extend lifetime of shrink fit chucks
- Secure and user friendly handling
- Cooling with standard cooling body

Shrinking and cooling sleeves for Mini Shrink chucks								Order No.
<b>Extra slim</b>								
Size [mm]	Ø 03	Ø 04	Ø 05	Ø 06	Ø 08	Ø 10	Ø 12	
Size [inch]	Ø 1/8	—	Ø 3/16	Ø 1/4	Ø 5/16	Ø 3/8	Ø 1/2	
Order No. 80.105.14...	.201	.202	.203	.204	.205	.206	.207	
<b>Standard</b>								
Size [mm]	Ø 03	Ø 04	Ø 05	Ø 06	Ø 08	Ø 10	Ø 12	Ø 16
Size [inch]	Ø 1/8	—	Ø 3/16	Ø 1/4	Ø 5/16	Ø 3/8	Ø 1/2	Ø 5/8
Order No. 80.105.14...	.204	.208	.205	.209	.210	.211	.212	.216
<b>Base</b>								<b>80.105.14.2.99</b>
<b>Set with base (12 pcs., diameter 3 – 12 mm)</b>								<b>80.105.14.2.00</b>

**POWER MINI SHRINK CHUCK**  
**DIN ISO 7388-1 · SK40**  
 (FORMERLY DIN 69871)

**CERTIFICATE OF QUALITY**

- Chuck body fine balanced  
G2.5 25,000 rpm or U<1 gmm
- All functional surfaces fine machined
- Taper tolerance AT3
- Coolant supply form AD/AF



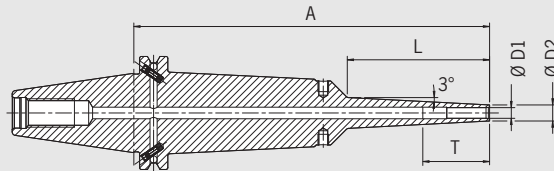
**Power Mini Shrink Chuck is perfect for 5-axis-machining in the die & mold and in the medical industry. Very slim at the top like the HAIMER Mini Shrink Chuck, the Power Mini Shrink is reinforced at the base. Therefore, efficient milling is possible with an angled tool even at long protruding lengths.**

- 2 types: Standard (3 mm wall thickness) and extra slim (1.5 mm wall thickness)
- 3° angle at the top
- With threaded holes in order to balance with balancing screws
- For solid carbide tools with shank tolerance h6

**Attention:** Heating and cooling sleeves are needed when shrinking on most shrink fit machines (see accessories). However, when using the Power Clamp i4.0 Sprint/Air or Nano machines with the motorized coil and scanner, sleeves are not necessary.

**CERTIFICATE OF QUALITY**

- Chuck body fine balanced  
G2.5 25,000 rpm or U<1 gmm
- All functional surfaces fine machined
- Taper tolerance AT3
- Coolant supply form AD/AF



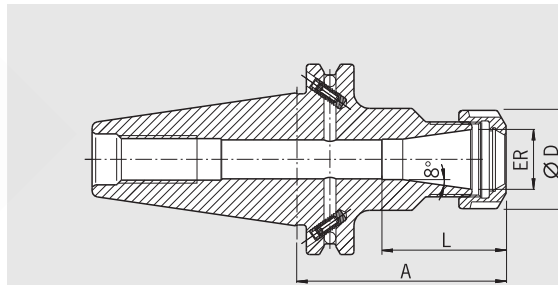
Clamping	Ø D1 [mm]		03	04	05	06	08	10	12	16
	Ø D2 [mm] standard		09	10	11	12	14	16	18	24
	Ø D2 [mm] extra slim		06	07	08	09	11	13	15	—
	T [mm]		—	—	—	—	—	68	75	75
	L [mm] ZG130		50	50	50	50	50	50	50	50
Length A [mm]	ZG130		130	130	130	130	130	130	130	130
Order No.	standard	40.484...	.03.8	.04.8	.05.8	.06.8	.08.8	.10.8	.12.8	.16.8
Order No.	extra slim	40.474...	.03.8	.04.8	.05.8	.06.8	.08.8	.10.8	.12.8	—
	L [mm]		80	80	80	80	80	80	80	80
Length A [mm]	oversize		160	160	160	160	160	160	160	160
Order No.	standard	40.482...	.03.8	.04.8	.05.8	.06.8	.08.8	.10.8	.12.8	.16.8
Order No.	extra slim	40.472...	.03.8	.04.8	.05.8	.06.8	.08.8	.10.8	.12.8	—
Length A [mm]	ZG200		200	200	200	200	200	200	200	200
Order No.	standard	40.486...	.03.8	.04.8	.05.8	.06.8	.08.8	.10.8	.12.8	.16.8
Order No.	extra slim	40.476...	.03.8	.04.8	.05.8	.06.8	.08.8	.10.8	.12.8	—

**Accessories**

Shrink and cooling adapter for Mini Shrink

See page 593

**COLLET CHUCK ER**  
**DIN ISO 7388-1 · SK40**  
 (FORMERLY DIN 69871)



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 22,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF
<input checked="" type="checkbox"/>	Cool Jet, can be sealed

**Use:**

For clamping tools with cylindrical shank in collets according to ISO 15488 (formerly DIN 6499).

With taper **DIN ISO 7388-1 SK40 form AD/AF.**

Form AD/AF means central coolant supply and coolant channels on the collar, which can be sealed again.

- Included in delivery: locknut (balanced, with slide coating for higher clamping forces)
- Locknut type HS (High-Speed, fine balanced, with slide coating for higher clamping forces) for an extra charge
- Enlarging of size L upon request

ER	16	20	25	32	40	
Ø D [mm]	28	34	42	50	63	
Clamping range [mm]	0.5–10.0	1.5–13.0	1.0–16.0	1.5–20.0	2.5–26.0	
Clamping range [inch]	0.02–0.39	0.06–0.51	0.04–0.63	0.06–0.79	0.1–1.02	
L [mm]	<sup>2)</sup>	41.5	62	64	73	
Length A [mm]	short	70 <sup>1)</sup>	70 <sup>1)</sup>	70 <sup>1)</sup>	70	
Order No.	40.320...	.16	.20	.25	.32	.40
L [mm]	<sup>2)</sup>	41.5	57	64	73	
Length A [mm]	long	100 <sup>1)</sup>	100 <sup>1)</sup>	100 <sup>1)</sup>	100	
Order No.	40.321...	.16	.20	.25	.32	.40
Length A [mm]	oversize	160 <sup>1)</sup>	—	160 <sup>1)</sup>	160	
Order No.	40.322...	.16	—	.25	.32	.40
Length A [mm]	ZG200	200 <sup>1)</sup>	—	200 <sup>1)</sup>	200	
Order No.	40.326...	.16	—	.25	.32	—

**Accessories**

**Collets ER**  See pages 768–773

**Shrink Fit Collets**  See pages 760–767

**Locknut (pre-balanced)**

Size	ER 16	ER 20	ER 25	ER 32	ER 40	
Order No.	83.912...	.16	.20	.25	.32	.40

**Locknut HS (fine-balanced)**

Size	ER 16	ER 20	ER 25	ER 32	ER 40	
Order No.	83.912...	.16.HS	.20.HS	.25.HS	.32.HS	.40.HS

**Fork wrench**

Size	ER 16	ER 20	—	—	—
Order No.	84.200...	.16	.20	—	—

**Clamping wrench**


Size	—	—	ER 25	ER 32	ER 40
Order No.	84.200...	—	.25	.32	.40

**Balancing index rings**

Size	ER 16	ER 20	—	—	—
Order No.	79.350...	.28	.34	—	—

Size	ER 16	ER 20	ER 25	ER 32	ER 40	
Order No.	79.350...	.28	.34	.42	.48	.50

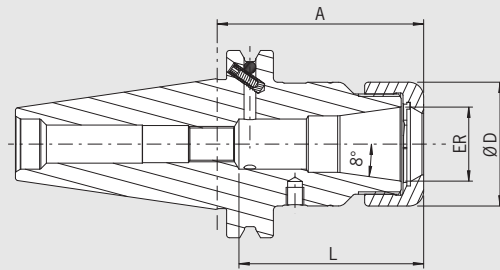
**Pull studs**  See pages 789–791

**Shrink fit extensions**  See pages 751–753

**POWER COLLET CHUCK**  
**DIN ISO 7388-1 · SK40**  
 (FORMERLY DIN 69871)

**CERTIFICATE OF QUALITY**

- Chuck body fine balanced  
G2.5 25,000 rpm
- All functional surfaces fine machined
- Taper tolerance AT3
- Coolant supply form AD/AF



**The Power Collet Chuck is the collet chuck for the highest machining capacity in High Speed machining. The optimized design with better construction combines high rigidity with vibration dampening features, giving more protection to machines, spindles and tools. The universal Power Collet Chuck is a unique high performance chuck that can also be used with standard collets.**

- High runout accuracy: 0.003 mm at 3×D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (Attention: By using standard collet ER, length A will get longer)
- High rigidity

- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Product range of Power Collets on pages 774 – 776

ER		16	25	32
Ø D [mm]		28	42	50
Clamping range [mm]		2.0–10.0	2.0–16.0	2.0–20.0
Clamping range [inch]		1/8–3/8	1/8–5/8	1/8–3/4
L [mm]		43	61.5	62
Length A [mm]	short	70	70	70
Order No.	40.320...	.16.3	.25.3	.32.3
L [mm]		43	51	53
Length A [mm]	long	100	100	100
Order No.	40.321...	.16.3	.25.3	.32.3
Length A [mm]	oversize	160	160	160
Order No.	40.322...	.16.3	.25.3	.32.3

**Accessories**

**Locknut (fine-balanced)** See page 779

Size	ER 16	ER 25	ER 32	
Order No.	83.914...	.16	.25	.32

**Power Collet clamping wrench** See page 781

**Torque Master torque wrench** See page 780

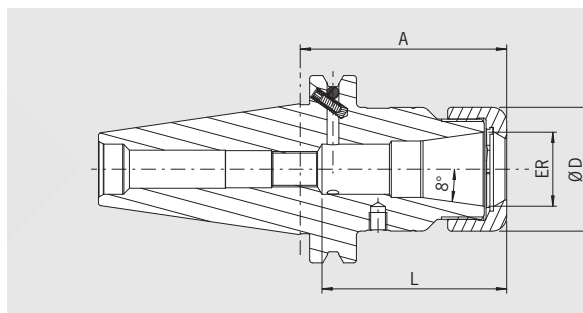
**Power Collets** See page 775

**Power Collets with Safe-Lock** See page 776

**Cool Jet bores for Power Collets** See page 777

**Shrink Fit Collets** See pages 760–767

# HIGH PRECISION COLLET CHUCK DIN ISO 7388-1 · SK40 (FORMERLY DIN 69871)






### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 30,000 rpm
- All functional surfaces fine machined
- Taper tolerance AT3
- Coolant supply form AD/AF




**The High Precision Collet Chuck is the collet chuck for highest metal removal rates in High Speed machining. The optimized design with better construction and a special coated smooth locknut combines high rigidity with vibration dampening and noise-reducing features, giving more protection to machines, spindles and tools.**

- With a specially coated smooth locknut, balanced at < 1 gmm
- High runout accuracy: 0.003 mm at 3×D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (Attention: By using standard collet ER, length A will get longer)
- High rigidity

- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Product range of Power Collets on pages 774 – 776

ER	16	25	32
Ø D [mm]	28	42	50
Clamping range [mm]	2.0–10.0	2.0–16.0	2.0–20.0
Clamping range [inch]	1/8–3/8	1/8–5/8	1/8–3/4
L [mm]	43	61.5	62
Length A [mm]	short	70	70
Order No.	40.320... 	.16.3.HP	.25.3.HP
	L [mm]	43	51
Length A [mm]	long	100	100
Order No.	40.321... 	.16.3.HP	.25.3.HP
Length A [mm]	oversize	160	160
Order No.	40.322... 	.16.3.HP	.25.3.HP

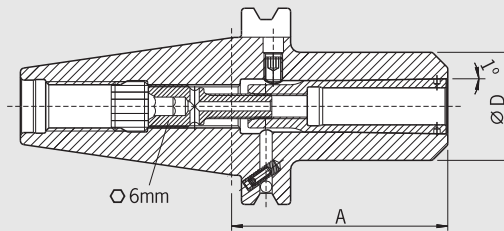
### Accessories

<b>High Precision Smooth Locknut (fine-balanced)</b>				See page 779
Size		ER 16	ER 25	ER 32
Order No.	83.914... 	.16.1	.25.1	.32.1
<b>Roller bearing wrench</b>				See page 782
Order No.	84.650... 	.16.1	.25.1	.32.1
<b>Collets ER</b>				See pages 768–773
<b>Shrink Fit Collets</b>				See pages 760–767
<b>Power Collets</b>				See page 775
<b>Power Collets with Safe-Lock</b>				See page 776
<b>Cool Jet bores for Power Collets</b>				See page 777
Order No.	91.100.27 			

# HIGH-PRECISION CHUCK DIN ISO 7388-1 · SK40 (FORMERLY DIN 69871)

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 25,000 rpm
- All functional surfaces fine machined
- Taper tolerance AT3
- Coolant supply form AD/AF



### Use:

For highly precise clamping of tools with cylindrical shank with special collets and also for shanks with clamping flats. Very useful for high-speed machining.

With taper **DIN ISO 7388-1 SK40 form AD/AF.**

Form AD/AF means central coolant supply and coolant channels on the collar, which can be sealed again.

- Included in delivery: High-Precision Chuck with clamping screw and pull-out hook without collet
- Shank tolerance h6

HG		01						02			03		
Ø D [mm]		30						35			48		
Clamping diameter		2	3	4	5	6	8	10	12	14	16	18	20
Length A [mm]	short	65 <sup>1)</sup>						70 <sup>1)</sup>			75		
Order No.	40.420...	.01						.02			.03		
Length A [mm]	long	100 <sup>1)</sup>						100 <sup>1)</sup>			100		
Order No.	40.421...	.01						.02			.03		
Length A [mm]	oversize	160 <sup>1)</sup>						160 <sup>1)</sup>			160		
Order No.	40.422...	.01						.02			.03		

### Accessories

#### Clamping screw



#### Collets HG INCH

See page 783

HG 01 Ø D [inch]		Ø 1/8	Ø 3/16	Ø 1/4	Ø 5/16							
Order No.	82.510...	.1/8Z	.3/16Z	.1/4Z	.5/16Z							
HG 02 Ø D [inch]							Ø 3/8	Ø 7/16	Ø 1/2	Ø 9/16		
Order No.	82.520...						.3/8Z	.7/16Z	.1/2Z	.9/16Z		

HG 03 Ø D [inch]										Ø 5/8	Ø 3/4
Order No.	82.530...									.5/8Z	.3/4Z

#### Collets HG METRIC

See page 783

HG 01		Ø 02	Ø 03	Ø 04	Ø 05	Ø 06	Ø 08	—	—	—	—	—	—	
Order No.	82.510...	.02	.03	.04	.05	.06	.08							
HG 02		—	—	—	—	—	—	Ø 10	Ø 12	Ø 14	—	—	—	
Order No.	82.520...								.10	.12	.14			
HG 03		—	—	—	—	—	—	—	—	—	Ø 16	Ø 18	Ø 20	
Order No.	82.530...											.16	.18	.20

#### Pull-out hook

HG		HG 01	HG 02	HG 03
Order No.	82.570...	.00	.00	.00

#### Balancing index rings

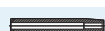
HG		HG 01	HG 02	HG 03
Order No.	79.350...	.30	.35	.48

#### Pull studs



See pages 789–791

#### Shrink fit extensions



See pages 751–753

#### Cool Jet bores

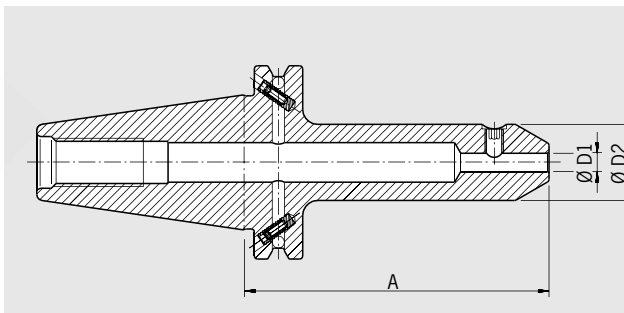
Order No.	91.100.24	
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See page 501

1) Also suitable for ANSI-CAT



**WELDON TOOL HOLDER**  
**DIN ISO 7388-1 · SK40**  
 (FORMERLY DIN 69871)



**CERTIFICATE OF QUALITY**

- Chuck body fine balanced  
G2.5 22,000 rpm
- All functional surfaces fine machined
- Taper tolerance AT3
- Coolant supply form AD/AF

**Use:**

For clamping cutters with cylindrical shank and Weldon flat similar to DIN 1835-B and DIN 6535-HB.

Similar to DIN 6359-2 with taper **DIN ISO 7388-1 SK40 form AD/AF**.

Form AD/AF means central coolant supply and coolant channels on the collar, which can be sealed again.

- Delivery: with clamping screw
- Extra short design only available in form AD
- Cooling with Cool Jet for an extra charge (See page 501)

Clamping	Ø D1 [mm]	06	08	10	12	14	16	18	20	25	32
	Ø D2 [mm]	25	28	35	42	42	48	48	52	65	72
Length A [mm]	ultra short	—	—	—	—	—	35	35	40	60	70
<b>Order No.</b>	<b>40.305...</b>						<b>.16</b>	<b>.18</b>	<b>.20</b>	<b>.25</b>	<b>.32</b>
Length A [mm]	short	50 <sup>1)</sup>	50 <sup>1)</sup>	50 <sup>1)</sup>	50 <sup>1)</sup>	50 <sup>1)</sup>	63	63	63	100	100
<b>Order No.</b>	<b>40.300...</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>	<b>.25</b>	<b>.32</b>
Length A [mm]	long	100 <sup>1)</sup>	100 <sup>1)</sup>	100 <sup>1)</sup>	100 <sup>1)</sup>	100 <sup>1)</sup>	100	100	100	—	—
<b>Order No.</b>	<b>40.301...</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>		
Length A [mm]	oversize	160 <sup>1)</sup>	160 <sup>1)</sup>	160 <sup>1)</sup>	160 <sup>1)</sup>	160 <sup>1)</sup>	160	160	160	160	—
<b>Order No.</b>	<b>40.302...</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>	<b>.25</b>	

**Standard version, with Cool Jet**

Clamping	Ø D1 [mm]	06	08	10	12	14	16	20	25
	Ø D2 [mm]	25	28	35	42	42	48	52	65
Length A [mm]	short	50 <sup>1)</sup>	50 <sup>1)</sup>	50 <sup>1)</sup>	50 <sup>1)</sup>	50 <sup>1)</sup>	63	63	100
<b>Order No.</b>	<b>40.300...</b>	<b>.06.2</b>	<b>.08.2</b>	<b>.10.2</b>	<b>.12.2</b>	<b>.14.2</b>	<b>.16.2</b>	<b>.20.2</b>	<b>.25.2</b>

**Accessories**

**Clamping screw**

Clamping Ø	06	08	10	12	14	16	18	20	25	32	
<b>Order No.</b>	<b>85.100...</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.12</b>	<b>.14</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>

**Balancing index rings**

Clamping Ø	long/ZG130/oversize/ZG200	06	08	10	12	14	16	18	20	25	32
<b>Order No.</b>	<b>79.350...</b>	<b>.25</b>	<b>.28</b>	<b>.35</b>	<b>.42</b>	<b>.42</b>	<b>.48</b>	<b>.48</b>	<b>.52</b>	<b>.65</b>	<b>.72</b>

**Pull studs**



See pages 789–791

**Cool Jet bores from Ø 6 mm – Ø 20 mm**

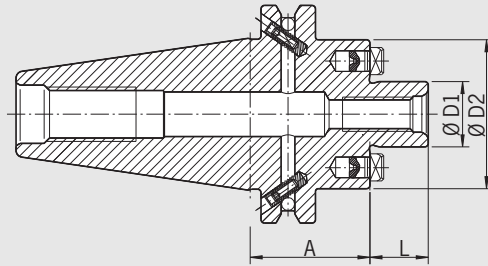
<b>Order No.</b>	<b>91.100.24</b>											See page 501
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**Cool Jet bores from Ø 25 mm – Ø 32 mm**

<b>Order No.</b>	<b>91.100.26</b>											See page 501
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**FACE MILL ARBOR**  
**DIN ISO 7388-1 · SK40**  
 (FORMERLY DIN 69871)

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 22,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF



**Use:**

For holding face mill cutters and cutters with radial driving slot DIN 1880 and exceeding clamping diameter 40 clamping according to DIN 2079 is possible, too (4 additional tapping holes).

According to DIN 6357 with taper **DIN ISO 7388-1 SK40 form AD/AF**.  
 Form AD/AF means central coolant supply and coolant channels on the collar, which can be sealed again.

- Included in delivery: tightening bolt, size 16.1 with reduced contact diameter
- With coolant exit bores on the end face for milling cutters with central cooling

Clamping	Ø D1 [mm]		16	22	27	32	40
	Ø D2 [mm] short		32	48	48	78	87
	L [mm]		17	19	21	24	27
Length A [mm]	short		35	35	35	50	50
Order No.	40.350...		.16.KKB	.22.KKB	.27.KKB	.32.KKB	.40.KKB
	Ø D2 [mm]		36	48	60	78	
Length A [mm]	long		100	100	100	100	
Order No.	40.351...		.16.KKB	.22.KKB	.27.KKB	.32.KKB	
Length A [mm]	oversize		—	160	160	160	
Order No.	40.352...			.22.KKB	.27.KKB	.32.KKB	

**Accessories**

**Tightening bolt**

Size D1			—	22	27	32	40
Order No.	85.300...			.22	.27	.32	.40

**Wrench**

Size D1			—	22	27	32	40
Order No.	84.400...			.22	.27	.32	.40

**Balancing index rings**

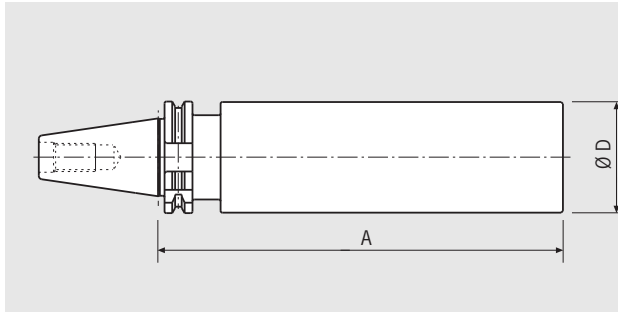
Size D1	short		—	22	27	—	—
Order No.	79.350...				.48		.48

**Pull studs**



See pages 789–791

**BLANK ADAPTER**  
**DIN ISO 7388-1 · SK40**  
 (FORMERLY DIN 69871)



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF

**Use:**

For manufacturing special tools in your factory.  
 Also suitable for ANSICAT.

**Design:**

Taper and groove are hardened and ground, the cylindrical part is soft.

With taper **SK40 form AD/AF** DIN ISO 7388-1.

Form AD/AF means central coolant supply and coolant channels on the collar, which can be sealed again.

	Ø D [mm]		63
Length A [mm]	ZG100		100
<b>Order No.</b>	<b>40.395...</b>		<b>.63</b>
Length A [mm]	ZG230		230
<b>Order No.</b>	<b>40.390...</b>		<b>.63</b>

**Accessories**

**Pull studs**

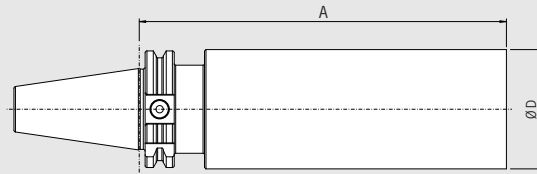


See pages 789–791

**BLANK ADAPTER – HARDENED**  
**DIN ISO 7388-1 · SK40**  
 (FORMERLY DIN 69871)

**CERTIFICATE OF QUALITY**

- All functional surfaces fine machined
- Taper tolerance AT3






**Use:**

For manufacturing special tools in your factory.

**Version:**

- Taper and groove hardened and ground
- Cylindrical part hardened to 52+2 HRC

Taper **DIN ISO 7388-1 SK40** prepared for Form AD.  
 Form AD means central coolant supply

	Ø D [mm]		65
Gage Length A [mm]	ZG100		100
<b>Order No.</b>	<b>R40.396.0650...</b>		<b>.0100</b>
Gage Length A [mm]	ZG200		200
<b>Order No.</b>	<b>R40.396.0650...</b>		<b>.0200</b>
Gage Length A [mm]	ZG300		300
<b>Order No.</b>	<b>R40.396.0650...</b>		<b>.0300</b>

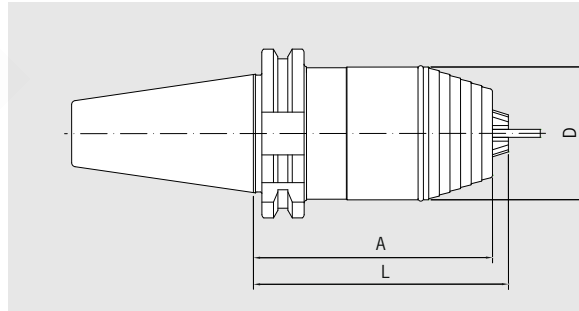
**Accessories**

**Pull studs**



See pages 789–791

**SHORT DRILL CHUCK**  
**DIN ISO 7388-1 · SK40**  
 (FORMERLY DIN 69871)




CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 22,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF

**Use:**

For clamping tools with cylindrical shank, for left and right hand turn, clamping and loosening with a hexagon socket wrench.

With **DIN ISO 7388-1 SK40 From AD/AF.**

Form AD/AF means central coolant supply and coolant channels on the collar which can be sealed again

	Clamping range [mm]		0.5–13
	Ø D [mm]		50
	L [mm]		96
Length A [mm]			90
<b>Order No.</b>	<b>40.411...</b>		<b>.13</b>

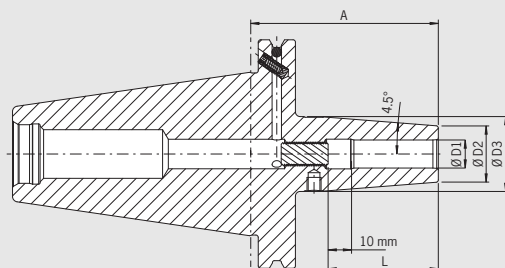
**Accessories**  
**Pull studs**



See pages 789–791

# SHRINK FIT CHUCK DIN ISO 7388-1 · SK50 (FORMERLY DIN 69871)

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF



**Use:**

Suitable for all shrinking units.

With taper **DIN ISO 7388-1 SK40 form AD/AF.**

Form AD/AF means central coolant supply and coolant channels through the flange which can be sealed again.

- Heat resistant hot-working steel
- Hardened 54–2 HRC
- For HSS and solid carbide tools
- Shank tolerance h6
- With threaded holes in order to balance with balancing screws
- Included in delivery: Shrink fit chuck with back-up screw
- Cooling with Cool Jet for an extra charge (See page 501)
- Cooling with Cool Flash for an extra charge (See pages 502–503)

**Standard version, similar to DIN 69882-8**

Clamping	Ø D1 [mm]	06	08	10	12	14	16	18	20	25	32
	Ø D2 [mm]	21	21	24	24	27	27	33	33	44	44
	Ø D3 [mm]	27	27	32	32	34	34	42	42	53	53
	L [mm]	36	36	42	47	47	50	50	52	58	58
Length A [mm]	short	80	80	80	80	80	80	80	80	100	100
<b>Order No.</b>	<b>50.440...</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>	<b>.25</b>	<b>.32</b>
Length A [mm]	ZG120	120	120	120	120	120	120	120	120	120	120
<b>Order No.</b>	<b>50.447...</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>	<b>.25</b>	<b>.32</b>
Length A [mm]	ZG130	130	130	130	130	130	130	130	130	130	130
<b>Order No.</b>	<b>50.444...</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>	<b>.25</b>	<b>.32</b>
Length A [mm]	oversize	160	160	160	160	160	160	160	160	160	160
<b>Order No.</b>	<b>50.442...</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>	<b>.25</b>	<b>.32</b>
Length A [mm]	ZG200	200	200	200	200	200	200	200	200	200	200
<b>Order No.</b>	<b>50.446...</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>	<b>.25</b>	<b>.32</b>

**Standard version, with Cool Jet**

Clamping	Ø D1 [mm]	06	08	10	12	14	16	18	20	25	32
	Ø D2 [mm]	21	21	24	24	27	27	33	33	44	44
	Ø D3 [mm]	27	27	32	32	34	34	42	42	53	53
	L [mm]	36	36	42	47	47	50	50	52	58	58
Length A [mm]	short	80	80	80	80	80	80	80	80	100	100
<b>Order No.</b>	<b>50.440...</b>	<b>.06.2</b>	<b>.08.2</b>	<b>.10.2</b>	<b>.12.2</b>	<b>.14.2</b>	<b>.16.2</b>	<b>.18.2</b>	<b>.20.2</b>	<b>.25.2</b>	<b>.32.2</b>

**Accessories**

Cool Flash



Order No. 91.100.40

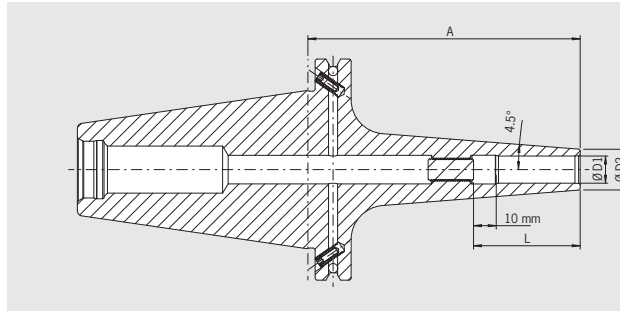
See pages 502–503

Cool Flash Upgrade incl. Cool Jet

Order No. 91.100.41

See pages 502–503

**SHRINK FIT CHUCK EXTRA SLIM**  
**DIN ISO 7388-1 · SK50**  
 (FORMERLY DIN 69871)



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF

**Use:**

Suitable for all shrinking units.  
 Extra slim version with smaller diameter D2, 4.5°.

With taper **DIN ISO 7388-1 SK40 form AD/AF**.

Form AD/AF means central coolant supply and coolant channels through the flange which can be sealed again.

- Heat resistant hot-working steel
- Hardened 54-2 HRC
- For solid carbide tools with shank tolerance h6
- Shank tolerance h6
- Included in delivery: Shrink fit chuck with back-up screw
- Cooling with slits for an extra charge

**Standard version, similar to DIN 69882-8**

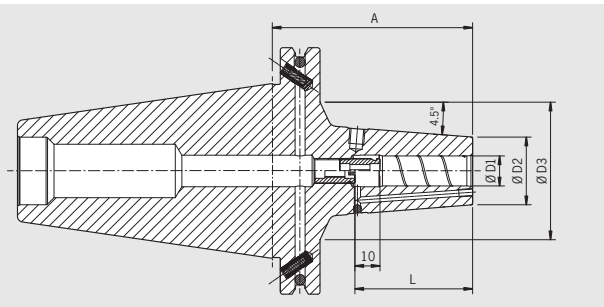
METRIC	Clamping Ø D1 [mm]	03	04	05	06	08	10	12
	Ø D2 [mm]	09	09	09	15	15	18	18
	L [mm]	—	—	—	36	36	42	47
Length A [mm]	ZG120	120 <sup>1)</sup>	120 <sup>1)</sup>	120 <sup>1)</sup>	120	120	120	120
Order No.	50.447...	.03.10	.04.10	.05.10	.06.10	.08.10	.10.10	.12.10

Accessories					
Shrink fit extensions	See pages 751-753				
Pull studs	See pages 789-791				
Reduction sleeves	See page 794				
Back-up screws	See pages 796-799				
Cooling adapter	See page 592				
Order No.	<table border="0"> <tr> <td>Ø 3 - 5 mm</td> <td>Ø 6 - 12 mm</td> </tr> <tr> <td>80.105.14.1.3</td> <td>80.105.14.1.2</td> </tr> </table>	Ø 3 - 5 mm	Ø 6 - 12 mm	80.105.14.1.3	80.105.14.1.2
Ø 3 - 5 mm	Ø 6 - 12 mm				
80.105.14.1.3	80.105.14.1.2				

1) Without back-up screw

# POWER SHRINK CHUCK DIN ISO 7388-1 · SK50 (FORMERLY DIN 69871)

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF
<input checked="" type="checkbox"/>	Cool Jet, can be sealed



The Power Shrink Chuck is the shrink fit chuck for highest cutting performance in High Speed machining. The optimized design combines high rigidity with dampening vibrations, therefore giving more protection to machines, spindles and tools.

- Increased machining capacity due to higher spindle speed, higher feed and larger cutting depth
- Shorter processing times, higher machining accuracy
- Quieter running, therefore better surface quality and protection of tools, spindles and machines
- With threaded holes in order to balance with balancing screws
- Cool Jet bores that can be sealed included
- Cooling with Cool Flash for an extra charge (See pages 502–503)

The long versions (A=160 and 200 mm) with slim tips are especially versatile to use.

- High rigidity, slim at the tip, dampen vibrations
- High clamping force
- Equally suited to High Speed and Heavy Duty machining
- Universal usage, saves space in tool magazine

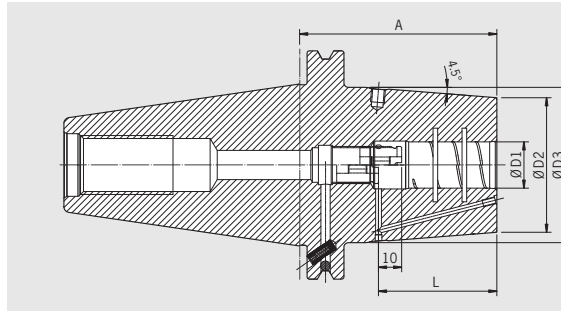
Clamping	Ø D1 [mm]		06	08	10	12	14	16	18	20	25
	Ø D2 [mm] short		21	21	27	27	33.3	33.3	44.7	44.7	44
	Ø D3 [mm] short		70	70	55	55	—	—	—	—	78
	L [mm]		36	36	42	47	47	50	50	52	58
Length A [mm]	short		80	80	80	80	80	80	80	80	100
Order No.	50.440...		.06.3	.08.3	.10.3	.12.3	.14.3	.16.3	.18.3	.20.3	.25.3
	Ø D2 [mm]		21	21	27	27	33	33	44	44	44
	Ø D3 [mm]		78	78	78	78	78	78	78	78	78
Length A [mm]	oversize		160	160	160	160	160	160	160	160	160
Order No.	50.442...		.06.3	.08.3	.10.3	.12.3	.14.3	.16.3	.18.3	.20.3	.25.3
Length A [mm]	ZG200		200	200	200	200	200	200	200	200	200
Order No.	50.446...		.06.3	.08.3	.10.3	.12.3	.14.3	.16.3	.18.3	.20.3	.25.3

### Power Shrink Chuck with Safe-Lock

Clamping	Ø D1 [mm]		06	08	10	12	14	16	18	20	25
	Ø D2 [mm] short		21	21	27	27	33.3	33.3	44.7	44.7	44
	Ø D3 [mm] short		70	70	55	55	—	—	—	—	78
	L [mm]		36	36	42	47	47	50	50	52	58
Length A [mm]	short		80	80	80	80	80	80	80	80	100
Order No.	50.440...		.06.37	.08.37	.10.37	.12.37	.14.37	.16.37	.18.37	.20.37	.25.37
	Ø D2 [mm]		21	21	27	27	33	33	44	44	44
	Ø D3 [mm]		78	78	78	78	78	78	78	78	78
Length A [mm]	oversize		160	160	160	160	160	160	160	160	160
Order No.	50.442...		.06.37	.08.37	.10.37	.12.37	.14.37	.16.37	.18.37	.20.37	.25.37
Length A [mm]	ZG200		200	200	200	200	200	200	200	200	200
Order No.	50.446...		.06.37	.08.37	.10.37	.12.37	.14.37	.16.37	.18.37	.20.37	.25.37



# HEAVY DUTY CHUCK DIN ISO 7388-1 · SK50 (FORMERLY DIN 69871)



### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 25,000 rpm
- All functional surfaces fine machined
- Taper tolerance AT3
- Coolant supply form AD/AF
- Cool Jet, can be sealed

For heavy machining applications it is now possible to replace the Weldon tool holders finally. Heavy Duty Chuck is the shrink fit chuck for extreme cases. The contour is optimized for highest rigidity and clamping force.

- Smooth clamping of the tool shank
- No deformation at the tool shank after shrink process
- High runout accuracy: 3 µm
- Reinforced outer contour
- To shrink with 13 kW HD coil (see page 600) or with high performance shrink fit unit HAIMER Power Clamp Profi Plus (20 kW)
- With internal groove in the clamping bore
- With threaded holes in order to balance with balancing screws
- Cool Jet bores that can be sealed
- Cooling with Cool Flash for an extra charge (See pages 502–503)

Clamping	Ø D1 [mm]	16	20	25	32	40	50
	Ø D2 [mm]	51	58	63	70	82	82
	Ø D3 [mm] short	—	67	72	78	90	94
	Ø D3 [mm]	78	78	78	85	94	94
	L [mm]	50	52	58	61	88	88
Length A [mm]	short	80	85	90	90	100	140
Order No.	50.450...	.16.6	.20.6	.25.6	.32.6	.40.6	.50.6
Length A [mm]	oversize	160	160	160	160	160	160
Order No.	50.452...	.16.6	.20.6	.25.6	.32.6	.40.6	.50.6
Length A [mm]	ZG200	200	200	200	200	200	200
Order No.	50.456...	.16.6	.20.6	.25.6	.32.6	.40.6	.50.6

### Heavy Duty Chuck with Safe-Lock

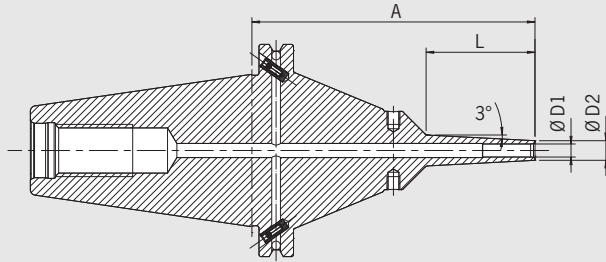
Clamping	Ø D1 [mm]	16	20	25	32	40	50
	Ø D2 [mm]	51	58	63	70	82	82
	Ø D3 [mm] short	—	67	72	78	90	94
	Ø D3 [mm]	78	78	78	85	94	94
	L [mm]	50	52	58	61	88	88
Length A [mm]	short	80	85	90	90	100	140
Order No.	50.450...	.16.67	.20.67	.25.67	.32.67	.40.67	.50.67
Length A [mm]	oversize	160	160	160	160	160	160
Order No.	50.452...	.16.67	.20.67	.25.67	.32.67	.40.67	.50.67
Length A [mm]	ZG200	200	200	200	200	200	200
Order No.	50.456...	.16.67	.20.67	.25.67	.32.67	.40.67	.50.67

### For 13 kW shrink fit machine

Clamping	Ø D1 [mm]	16
	Ø D2 [mm]	46
	L [mm]	50
Length A [mm]	short	80
Order No.	Standard 50.440...	.16.6
Order No.	Safe-Lock 50.440...	.16.67

**POWER MINI SHRINK CHUCK**  
**DIN ISO 7388-1 · SK50**  
 (FORMERLY DIN 69871)

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF

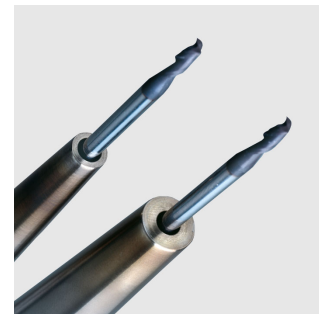
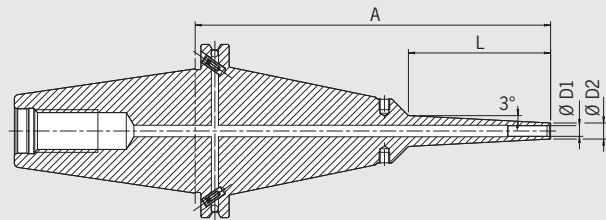


**Power Mini Shrink Chuck is perfect for 5-axis-machining in the die & mold and in the medical industry. Very slim at the top like the HAIMER Mini Shrink Chuck, the Power Mini Shrink is reinforced at the base. Therefore, efficient milling is possible with an angled tool even at long protruding lengths.**

- 2 types: Standard (3 mm wall thickness) and extra slim (1.5 mm wall thickness)
- 3° angle at the top
- With threaded holes in order to balance with balancing screws
- For solid carbide tools with shank tolerance h6

**Attention:** Heating and cooling sleeves are needed when shrinking on most shrink fit machines (see accessories). However, when using the Power Clamp i4.0 Sprint or Air machines with the motorized coil and scanner, sleeves are not necessary.

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF



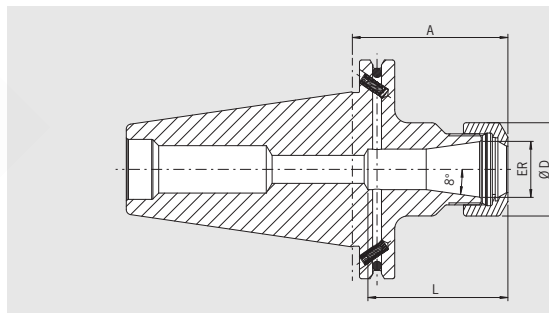
Clamping	Ø D1 [mm]		06	08
	Ø D2 [mm] standard		12	14
	Ø D2 [mm] extra slim		09	11
	L [mm] ZG130		50	50
Length A [mm]	ZG130		130	130
Order No.	standard	50.484...	.06.8	.08.8
Order No.	extra slim	50.474...	.06.8	.08.8
	L [mm]		80	80
Length A [mm]	oversize		160	160
Order No.	standard	50.482...	.06.8	.08.8
Order No.	extra slim	50.472...	.06.8	.08.8
Length A [mm]	ZG200		200	200
Order No.	standard	50.486...	.06.8	.08.8
Order No.	extra slim	50.476...	.06.8	.08.8

**Accessories**

**Shrink and cooling adapter for Mini Shrink**

See page 593

**COLLET CHUCK ER**  
**DIN ISO 7388-1 · SK50**  
 (FORMERLY DIN 69871)



**CERTIFICATE OF QUALITY**

- Chuck body fine balanced  
G2.5 22,000 rpm
- All functional surfaces fine machined
- Taper tolerance AT3
- Coolant supply form AD/AF

**Use:**

For clamping tools with cylindrical shank in collets according to ISO 15488 (formerly DIN 6499).

With taper **SK50 form AD/AF** DIN ISO 7388-1.

Form AD/AF means central coolant supply and coolant channels on the collar, which can be sealed again.

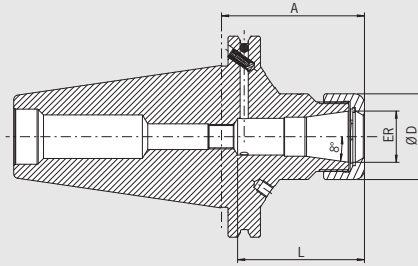
- Included in delivery: locknut (balanced, with slide coating for higher clamping forces)
- Locknut type HS (High-Speed, fine balanced, with slide coating for higher clamping forces) for an extra charge
- Enlarging of size L upon request

ER	16	20	25	32	40	
Ø D [mm]	28	34	42	50	63	
Clamping range [mm]	0.5–10.0	1.5–13.0	1.0–16.0	1.5–20.0	2.5–26.0	
Clamping range [inch]	0.02–0.39	0.06–0.51	0.04–0.63	0.06–0.79	0.10–1.02	
L [mm]	<sup>2)</sup>	41.5	62	64	73	
Length A [mm]	short	70 <sup>1)</sup>	70 <sup>1)</sup>	70 <sup>1)</sup>	70 <sup>1)</sup>	
Order No.	50.320...	.16	.20	.25	.32	.40
L [mm]	<sup>2)</sup>	41.5	57	64	73	
Length A [mm]	long	100 <sup>1)</sup>	100 <sup>1)</sup>	100 <sup>1)</sup>	100 <sup>1)</sup>	
Order No.	50.321...	.16	.20	.25	.32	.40
Length A [mm]	oversize	160 <sup>1)</sup>	—	160 <sup>1)</sup>	160 <sup>1)</sup>	
Order No.	50.322...	.16	—	.25	.32	.40
Length A [mm]	ZG200	200 <sup>1)</sup>	—	200 <sup>1)</sup>	200 <sup>1)</sup>	
Order No.	50.326...	.16	—	.25	.32	.40

Accessories							
<b>Collets ER</b>							See pages 768–773
<b>Shrink Fit Collets</b>							See pages 760–767
<b>Locknut (pre-balanced)</b>							
Size			ER 16	ER 20	ER 25	ER 32	ER 40
Order No.	83.912...		.16	.20	.25	.32	.40
<b>Locknut HS (fine-balanced)</b>							
Size			ER 16	ER 20	ER 25	ER 32	ER 40
Order No.	83.912...		.16.HS	.20.HS	.25.HS	.32.HS	.40.HS
<b>Fork wrench</b>							
Size			ER 16	ER 20	—	—	—
Order No.	84.200...		.16	.20	—	—	—
<b>Clamping wrench</b>							
Size			—	—	ER 25	ER 32	ER 40
Order No.	84.200...		—	—	.25	.32	.40
<b>Balancing index rings</b>							
Size	short		ER 16	ER 20	—	—	—
Order No.	79.350...		.28	.34	—	—	—
Size	long/oversize/ZG200		ER 16	ER 20	ER 25	ER 32	ER 40
Order No.	79.350...		.28	.34	.42	.48	.50
<b>Pull studs</b>							See pages 789–791
<b>Shrink fit extensions</b>							See pages 751–753

**POWER COLLET CHUCK**  
**DIN ISO 7388-1 · SK50**  
 (FORMERLY DIN 69871)

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF



**The Power Collet Chuck is the collet chuck for the highest machining capacity in High Speed machining. The optimized design with better construction combines high rigidity with vibration dampening features, giving more protection to machines, spindles and tools. The universal Power Collet Chuck is a unique high performance chuck that can also be used with standard collets.**

- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Product range of Power Collets on pages 774 – 776

- High runout accuracy: 0.003 mm at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (Attention: By using standard collet ER, length A will get longer)
- High rigidity

ER		16	25	32
Ø D [mm]		28	42	50
Clamping range [mm]		2.0-10.0	2.0-16.0	2.0-20.0
Clamping range [inch]		1/8-3/8	1/8-5/8	1/8-3/4
L [mm]		43	62	62.5
Length A [mm]	short	70	70	70
Order No.	50.320...	.16.3	.25.3	.32.3
L [mm]		43	51	53
Length A [mm]	long	100	100	100
Order No.	50.321...	.16.3	.25.3	.32.3
Length A [mm]	ZG130	130	130	130
Order No.	50.324...	.16.3	.25.3	.32.3
Length A [mm]	oversize	160	160	160
Order No.	50.322...	.16.3	.25.3	.32.3

**Accessories**

**Locknut (fine-balanced)** See page 779

Size	ER 16	ER 25	ER 32
Order No.	83.914... .16	.25	.32

**Power Collet clamping wrench** See page 781

**Torque Master torque wrench** See page 780

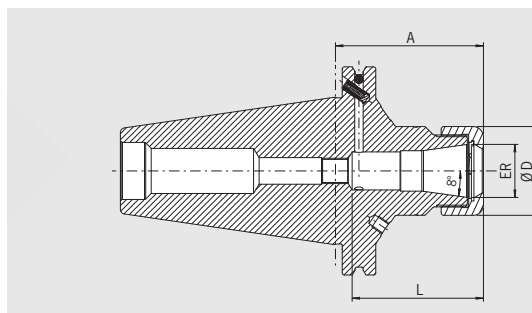
**Power Collets** See page 775

**Power Collets with Safe-Lock** See page 776

**Cool Jet bores for Power Collets** See page 777

**Shrink Fit Collets** See pages 760-767

# HIGH PRECISION COLLET CHUCK DIN ISO 7388-1 · SK50 (FORMERLY DIN 69871)







CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF




**The High Precision Collet Chuck is the collet chuck for highest metal removal rates in High Speed machining. The optimized design with better construction and a special coated smooth locknut combines high rigidity with vibration dampening and noise-reducing features, giving more protection to machines, spindles and tools.**

- With a specially coated smooth locknut, balanced at < 1 gmm
- High runout accuracy: 0.003 mm at 3×D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (Attention: By using standard collet ER, length A will get longer)
- High rigidity

- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Product range of Power Collets see page 668

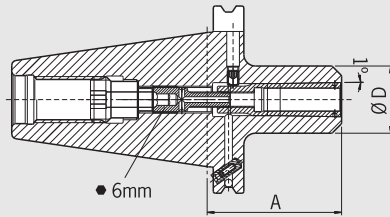
ER	16	25	32
Ø D [mm]	28	42	50
Clamping range [mm]	2.0–10.0	2.0–16.0	2.0–20.0
Clamping range [inch]	1/8–3/8	1/8–5/8	1/8–3/4
L [mm]	43	62	62.5
Length A [mm]	short	70	70
Order No.	50.320... 	.16.3.HP	.25.3.HP
L [mm]	43	51	53
Length A [mm]	long	100	100
Order No.	50.321... 	.16.3.HP	.25.3.HP
Length A [mm]	ZG130	130	130
Order No.	50.324... 	.16.3.HP	.25.3.HP
Length A [mm]	oversize	160	160
Order No.	50.322... 	.16.3.HP	.25.3.HP

**Accessories**

<b>High Precision Smooth Locknut (fine-balanced)</b>				See page 779
Size		ER 16	ER 25	ER 32
Order No.	83.914... 	.16.1	.25.1	.32.1
<b>Roller bearing wrench</b>				See page 782
Order No.	84.650... 	.16.1	.25.1	.32.1
<b>Collets ER</b>				See pages 768–773
<b>Shrink Fit Collets</b>				See pages 760–767
<b>Power Collets</b>				See page 775
<b>Power Collets with Safe-Lock</b>				See page 776
<b>Cool Jet bores for Power Collets</b>				See page 777
Order No.	91.100.27 			

# HIGH-PRECISION CHUCK DIN ISO 7388-1 · SK50 (FORMERLY DIN 69871)

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF



**Use:**

For highly precise clamping of tools with cylindrical shank with special collets.  
Very useful for high-speed machining.  
Also suitable for ANSI-CAT.

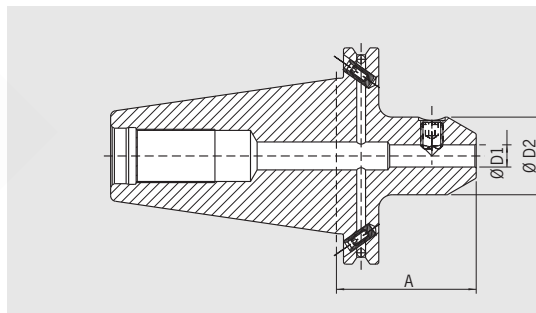
With taper **SK50 form AD/AF** DIN ISO 7388-1.  
Form AD/AF means central coolant supply and coolant channels on the collar, which can be sealed again.

- Included in delivery: High-Precision Chuck with clamping screw and pull-out hook without collet
- Shank tolerance h6

HG	Ø D [mm]	01						02			03		
		30						35			48		
Clamping diameter		2	3	4	5	6	8	10	12	14	16	18	20
Length A [mm]	short							70			75		
Order No.	50.420...	.01						.02			.03		
Length A [mm]	long							100			100		
Order No.	50.421...	.01						.02			.03		
Length A [mm]	oversize							160			160		
Order No.	50.422...	.01						.02			.03		

Accessories													
Clamping screw													
Collets HG INCH		See page 783											
HG 01 Ø D [inch]		Ø 1/8 Ø 3/16 Ø 1/4 Ø 5/16											
Order No.	82.510...	.1/8Z .3/16Z .1/4Z .5/16Z											
HG 02 Ø D [inch]		Ø 3/8 Ø 7/16 Ø 1/2 Ø 9/16											
Order No.	82.520...	.3/8Z .7/16Z .1/2Z .9/16Z											
HG 03 Ø D [inch]		Ø 5/8 Ø 3/4											
Order No.	82.530...	.5/8Z .3/4Z											
Collets HG METRIC		See page 783											
HG 01		Ø 02 Ø 03 Ø 04 Ø 05 Ø 06 Ø 08 — — — — —											
Order No.	82.510...	.02 .03 .04 .05 .06 .08											
HG 02		— — — — — — — Ø 10 Ø 12 Ø 14 — — —											
Order No.	82.520...	.10 .12 .14											
HG 03		— — — — — — — — — Ø 16 Ø 18 Ø 20											
Order No.	82.530...	.16 .18 .20											
Pull-out hook													
HG		HG 01						HG 02			HG 03		
Order No.	82.570...	.00						.00			.00		
Balancing index rings													
HG		HG 01						HG 02			HG 03		
Order No.	79.350...	.30						.35			.48		
Pull studs													
Shrink fit extensions													
Cool Jet bores		See page 501											
Order No.	91.100.24												

**WELDON TOOL HOLDER**  
**DIN ISO 7388-1 · SK50**  
 (FORMERLY DIN 69871)



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 22,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF

**Use:**

For clamping cutters with cylindrical shank and Weldon flat similar to DIN 1835-B and DIN 6535-HB.

Similar to DIN 6359-2 with taper **SK50 form AD/AF** DIN ISO 7388-1. Form AD/AF means central coolant supply and coolant channels on the collar, which can be sealed again.

Included in delivery: with clamping screw  
 – Cooling with Cool Jet for an extra charge (See page 501)

Clamping	Ø D1 [mm]	06	08	10	12	14	16	18	20	25	32	40
	Ø D2 [mm]	25	28	35	42	42	48	48	52	65	72	78
Length A [mm]	short	63 <sup>1)</sup>	63 <sup>1)</sup>	63 <sup>1)</sup>	63 <sup>1)</sup>	63 <sup>1)</sup>	63 <sup>1)</sup>	63 <sup>1)</sup>	63 <sup>1)</sup>	80 <sup>1)</sup>	100	100
<b>Order No.</b>	<b>50.300...</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>	<b>.25</b>	<b>.32</b>	<b>.40</b>
Length A [mm]	long	100 <sup>1)</sup>	100 <sup>1)</sup>	100 <sup>1)</sup>	100 <sup>1)</sup>	100 <sup>1)</sup>	100 <sup>1)</sup>	100 <sup>1)</sup>	100 <sup>1)</sup>	100 <sup>1)</sup>	—	—
<b>Order No.</b>	<b>50.301...</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>	<b>.25</b>	—	—
Length A [mm]	ZG130	130 <sup>1)</sup>	130 <sup>1)</sup>	130 <sup>1)</sup>	130 <sup>1)</sup>	130 <sup>1)</sup>	130 <sup>1)</sup>	130 <sup>1)</sup>	130 <sup>1)</sup>	130 <sup>1)</sup>	130	130
<b>Order No.</b>	<b>50.304...</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>	<b>.25</b>	<b>.32</b>	<b>.40</b>
Length A [mm]	oversize	160 <sup>1)</sup>	160 <sup>1)</sup>	160 <sup>1)</sup>	160 <sup>1)</sup>	160 <sup>1)</sup>	160 <sup>1)</sup>	160 <sup>1)</sup>	160 <sup>1)</sup>	160	160	160
<b>Order No.</b>	<b>50.302...</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>	<b>.25</b>	<b>.32</b>	<b>.40</b>
Length A [mm]	ZG200	200 <sup>1)</sup>	200 <sup>1)</sup>	200 <sup>1)</sup>	200 <sup>1)</sup>	200 <sup>1)</sup>	200 <sup>1)</sup>	200 <sup>1)</sup>	200 <sup>1)</sup>	—	—	—
<b>Order No.</b>	<b>50.306...</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>	—	—	—

**Standard version, with Cool Jet**

Clamping	Ø D1 [mm]	10	12	16	20
	Ø D2 [mm]	35	42	48	52
Length A [mm]	short	63 <sup>1)</sup>	63 <sup>1)</sup>	63 <sup>1)</sup>	63 <sup>1)</sup>
<b>Order No.</b>	<b>50.300...</b>	<b>.10.2</b>	<b>.12.2</b>	<b>.16.2</b>	<b>.20.2</b>

**Accessories**

**Clamping screw**

Clamping Ø		06	08	10	12	14	16	18	20	25	32
<b>Order No.</b>	<b>85.100...</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.12</b>	<b>.14</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>


**Balancing index rings**


Clamping Ø	long/ZG130/oversize/ZG200	06	08	10	12	14	16	18	20	25	32
<b>Order No.</b>	<b>79.350...</b>	<b>.25</b>	<b>.28</b>	<b>.35</b>	<b>.42</b>	<b>.42</b>	<b>.48</b>	<b>.48</b>	<b>.52</b>	<b>.65</b>	<b>.72</b>

**Pull studs**



See pages 789–791

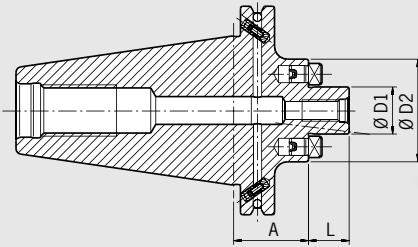
**Cool Jet bores from Ø 6 mm – Ø 20 mm**  **Order No. 91.100.24** See page 501

**Cool Jet bores from Ø 25 mm – Ø 32 mm**  **Order No. 91.100.26** See page 501

1) Also suitable for ANSI-CAT

**FACE MILL ARBOR**  
**DIN ISO 7388-1 · SK50**  
 (FORMERLY DIN 69871)

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 22,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF



**Use:**

For holding face mill cutters and cutters with radial driving slot DIN 1880 and exceeding clamping diameter 40 clamping according to DIN 2079 is possible, too (4 additional tapping holes).

According to DIN 6357 with taper **SK50 form AD/AF** DIN ISO 7388-1. Form AD/AF means central coolant supply and coolant channels on the collar, which can be sealed again.

- Included in delivery: tightening bolt
- With coolant exit bores on the end face for milling cutters with central cooling

Clamping	Ø D1 [mm]		22	27	32	40	50	60
	Ø D2 [mm]		48	60	78	89	120	127
	L [mm]		19	21	24	27	30	40
Length A [mm]	short		35 <sup>1)</sup>	35 <sup>1)</sup>	35	50	70	70
<b>Order No.</b>	<b>50.350...</b>		<b>.22.KKB</b>	<b>.27.KKB</b>	<b>.32.KKB</b>	<b>.40.KKB</b>	<b>.50.KKB</b>	<b>.60.KKB</b>
Length A [mm]	long		100 <sup>1)</sup>	100 <sup>1)</sup>	100	100	—	—
<b>Order No.</b>	<b>50.351...</b>		<b>.22.KKB</b>	<b>.27.KKB</b>	<b>.32.KKB</b>	<b>.40.KKB</b>		
Length A [mm]	oversize		160 <sup>1)</sup>	160 <sup>1)</sup>	160	160	—	—
<b>Order No.</b>	<b>50.352...</b>		<b>.22.KKB</b>	<b>.27.KKB</b>	<b>.32.KKB</b>	<b>.40.KKB</b>		

**Accessories**

**Tightening bolt**

Size D1			22	27	32	40	50	60
<b>Order No.</b>	<b>85.300...</b>		<b>.22</b>	<b>.27</b>	<b>.32</b>	<b>.40</b>	<b>.50</b>	<b>.60</b>

**Wrench**

Size D1			22	27	32	40	50	60
<b>Order No.</b>	<b>84.400...</b>		<b>.22</b>	<b>.27</b>	<b>.32</b>	<b>.40</b>	<b>.50</b>	<b>.60</b>

**Balancing index rings**

Size D1	short		22	27	—	—	—	—
<b>Order No.</b>	<b>79.350...</b>		<b>.48</b>	<b>.60</b>				

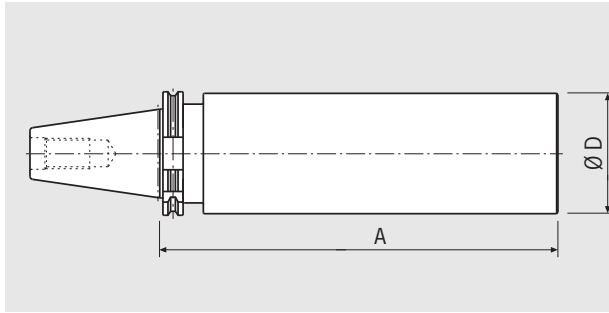
Size D1	long/oversize		22	27	32	40	—	—
<b>Order No.</b>	<b>79.352...</b>		<b>.48</b>	<b>.60</b>	<b>.78</b>	<b>.89</b>		

<b>Pull studs</b>								See pages 789–791
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1) Also suitable for ANSI-CAT



**BLANK ADAPTER**  
**DIN ISO 7388-1 · SK50**  
 (FORMERLY DIN 69871)



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF

**Use:**  
 For manufacturing special tools in your factory.

**Design:**  
 Taper and groove are hardened and ground, the cylindrical part is soft.

With taper **SK50 form AD/AF** DIN ISO 7388-1.  
 Form AD/AF means central coolant supply and coolant channels on the collar, which can be sealed again.

	Ø D [mm]		95
Length A [mm]	ZG315		315 <sup>1)</sup>
<b>Order No.</b>	<b>50.390...</b>		<b>.95</b>

**Accessories**

**Pull studs**



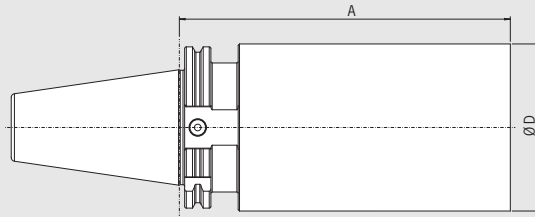
See pages 789–791

<sup>1)</sup> Also suitable for ANSI-CAT

**BLANK ADAPTER – HARDENED**  
**DIN ISO 7388-1 · SK50**  
 (FORMERLY DIN 69871)

**CERTIFICATE OF QUALITY**

- All functional surfaces fine machined
- Taper tolerance AT3





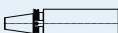
**Use:**

For manufacturing special tools in your factory.

**Version:**

- Taper and groove hardened and ground
- Cylindrical part hardened to 52+2 HRC

Taper **DIN ISO 7388-1 SK50** prepared for Form AD.  
 Form AD means central coolant supply

	Ø D [mm]		101
Gage Length A [mm]	ZG100		100
<b>Order No.</b>	<b>R50.396.1010...</b>		<b>.0100</b>
Gage Length A [mm]	ZG200		200
<b>Order No.</b>	<b>R50.396.1010...</b>		<b>.0200</b>
Gage Length A [mm]	ZG300		300
<b>Order No.</b>	<b>R50.396.1010...</b>		<b>.0300</b>

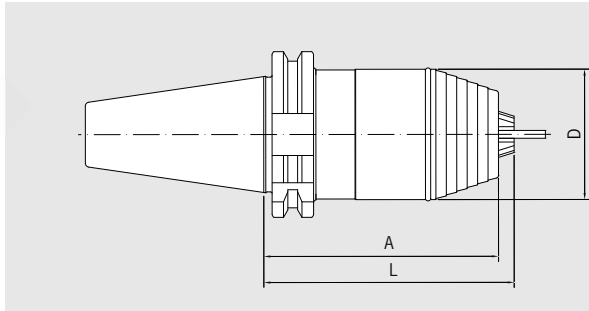
**Accessories**

**Pull studs**



See pages 789–791

**SHORT DRILL CHUCK**  
**DIN ISO 7388-1 · SK50**  
 (FORMERLY DIN 69871)




CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G6.3 22,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	Taper tolerance AT3
<input checked="" type="checkbox"/>	Coolant supply form AD/AF

**Use:**

For clamping tools with cylindrical shank, for left and right hand turn, clamping and loosening with a hexagon socket wrench.

With **DIN ISO 7388-1 SK50 Form AD/AF.**

Form AD/AF means central coolant supply and coolant channels on the collar which can be sealed again

	Clamping range [mm]		0.5–13
	Ø D [mm]		50
	L [mm]		106
Length A [mm]			112
<b>Order No.</b>	<b>50.411...</b>		<b>.13</b>

**Accessories**

**Pull studs**

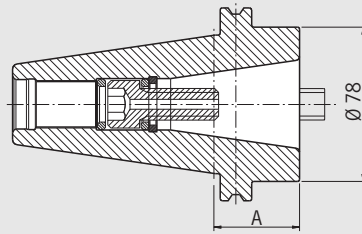


See pages 789–791

**ADAPTER**  
**DIN ISO 7388-1 · SK50**  
 (FORMERLY DIN 69871)

**CERTIFICATE OF QUALITY**

- Chuck body fine balanced  
G6.3 8,000 rpm
- All functional surfaces fine machined
- Taper tolerance AT3




**Use:**

For holding tapers according to DIN ISO 7388-1 AD SK40 and JIS B 6339 BT40.

With taper **SK50 form AD** DIN ISO 7388-1.

- Included in delivery: mounted tightening bolt
- Fine-balancing for an extra charge

Holding Taper	SK		40
Length A [mm]	short		43
<b>Order No.</b>	<b>50.360...</b>		<b>.40</b>

**Accessories**

**Pull studs**



See pages 789–791



Tooling  
Technology

Shrinking  
Technology

Balancing  
Technology

Measuring and  
Presetting Technology

# HAIMER SAFE-LOCK®

For reliable roughing and trochoidal milling processes, combined with the highest precision and without any risk of tool pull out



# DIN 69893 HSK-A / HSK-E / HSK-F

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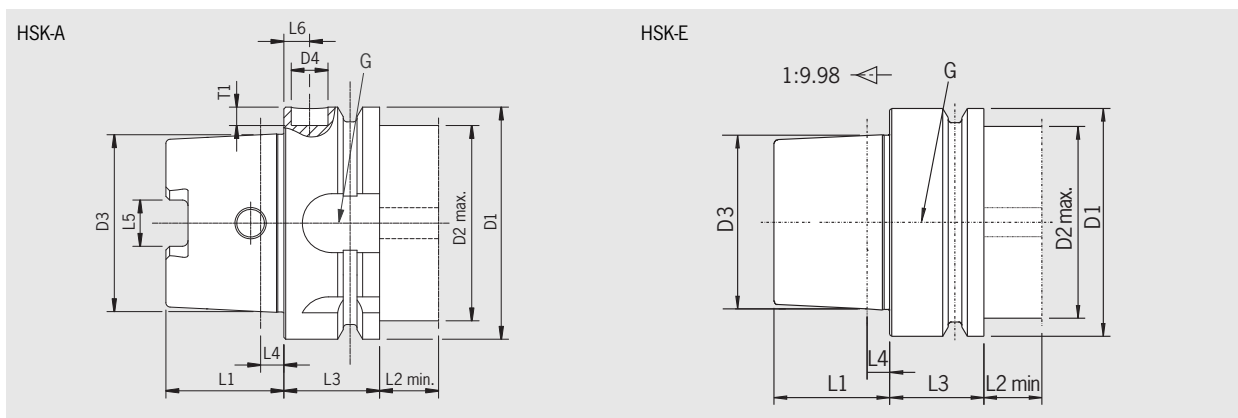
# HSK-A/HSK-E/HSK-F DIN 69893

**Compared to the steep taper the HSK has the following advantages:**

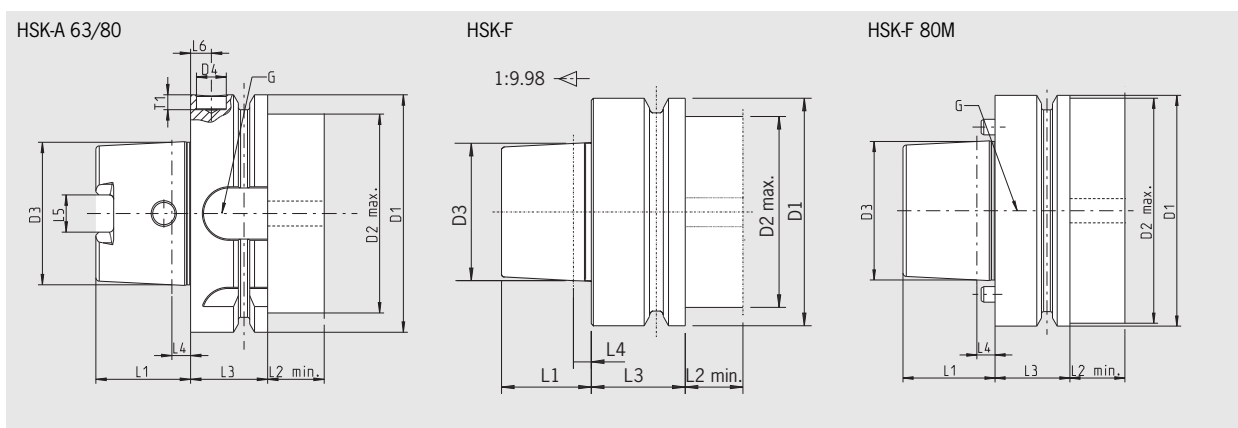
- Highly repeatable accuracy when clamping tools into spindle
- Fixed axial positioning with flat contact surface
- Suitable for high speed cutting
- No pull stud necessary
- Incl. bore for data chip (only HSK-A)

**Material:**

- Special case-hardening steel for highly stressed parts
- Surface hardness: 58-2 HRC
- **Tensile strength in core min. 1000 N/mm<sup>2</sup>**

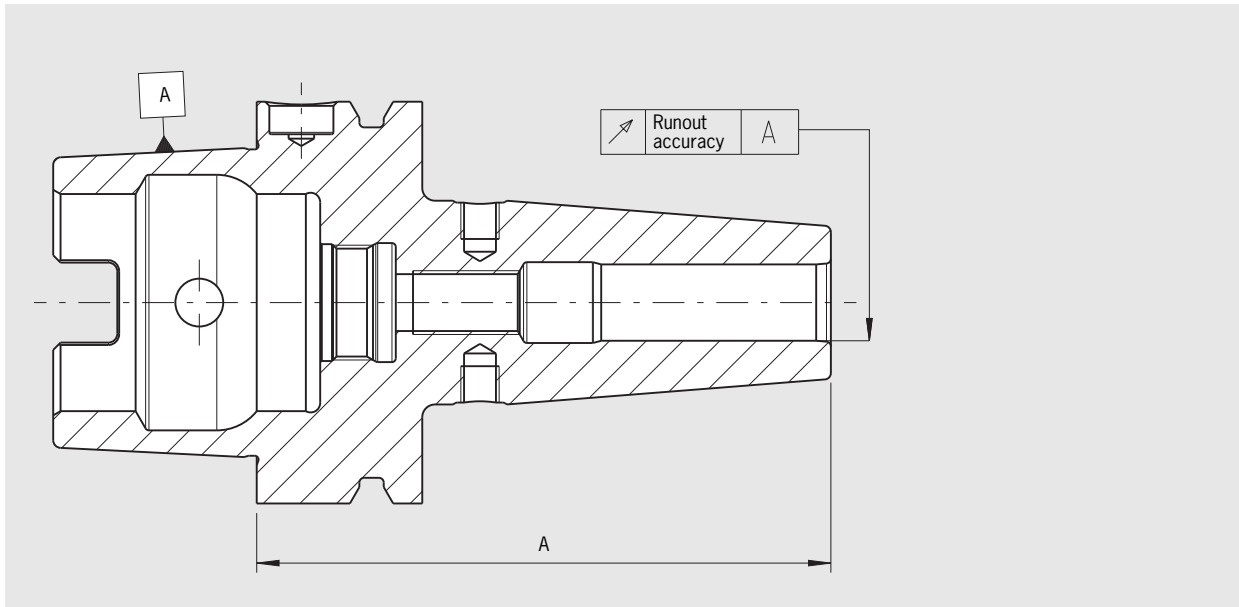


Length [mm]	D1	D2 max.	D3	D4	L1	L2 min.	L3	L4	L5	L6	G	T1
HSK-E 25	25	20	19.006	-/-	13	10	10	2.5	—	—	M8x1	-/-
HSK-A/E 32	32	26	24.007	10/-	16	15	20	3.2	7.05	7	M10x1	5.4/-
HSK-A/E 40	40	34	30.007	10/-	20	15	20	4	8.05	7	M12x1	5.3/-
HSK-A/E 50	50	42	38.009	10/-	25	16	26	5	10.54	7	M16x1	5.2/-
HSK-A 63	63	53	48.010	10/-	32	16	26	6.3	12.54	7	M18x1	5/-
HSK-A 80	80	67	60.012	10/-	40	16	26	8	16.04	7	M20x1.5	5/-
HSK-A 100	100	85	75.013	10/-	50	16	29	10	20.02	7	M24x1.5	4.9/-
HSK-A 125	125	111	95.016	10/-	63	16	29	12.5	25.02	7	M30x1.5	4.8/-



Length [mm]	D1	D2 max.	D3	D4	L1	L2 min.	L3	L4	L5	L6	G	T1
HSK-A 63/80	80	67	48.010	10/-	32	16	26	6.3	12.54	7	M18x1	5/-
HSK-F 63	63	53	38.009	—	25	16	26	5	—	—	—	—
HSK-F 80M	80	78	48.010	—	32	16	26	6.3	—	—	M18x1	—

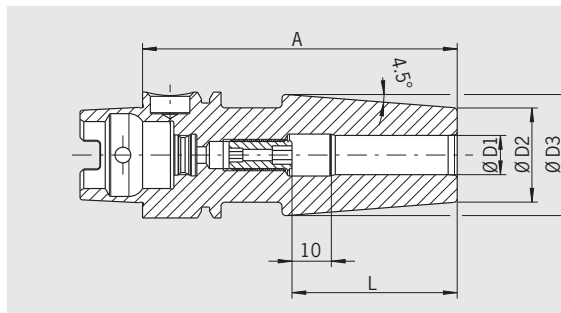
**RUNOUT ACCURACY  
DIN 69893**



Gage length A [mm]	A < 160	A ≥ 160
<b>max. runout tolerance in mm</b>		
Shrink Fit Chuck	0.003	0.004
Mini Shrink	0.003	0.004
Collet Chuck ER	0.003	0.004
Power Collet Chuck	0.003	0.004
High Precision Collet Chuck	0.003	0.004
High Precision Chuck	0.003	0.003
Face Mill Arbor	0.006	0.006
Whistle Notch Tool Holder	0.003	0.004
Adapter for Morse Taper	0.008	—



## SHRINK FIT CHUCK DIN 69893-1 · HSK-A32



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN

**Use:**

Shrink fit chuck suitable for use with all available shrink fit units.

**Optional:**

- Cooling with Cool Jet for an extra charge (See page 501)
- Cooling with Cool Flash from diam. 6 mm for an extra charge (See pages 502-503)

**DIN 69893-1**

- Included in delivery: Shrink fit chuck with back-up screw, without coolant tube
- Heat resistant hot-working steel
- Hardened 54-2 HRC
- For HSS and solid carbide tools
- Shank tolerance h6

**Standard version, similar to DIN 69882-8**

METRIC	Clamping Ø D1 [mm]	03	04	05	06	08	10
	Ø D2 [mm]	10	10	10	21	21	24
	Ø D3 [mm]	—	—	—	27	27	32
	L [mm]	09	12	15	36	36	42
Length A [mm]	short	60 <sup>1)</sup>	60 <sup>1)</sup>	60 <sup>1)</sup>	70 <sup>2)</sup>	70 <sup>2)</sup>	80 <sup>2)</sup>
Order No.	A32.140...	.03	.04	.05	.06	.08	.10

**Accessories**

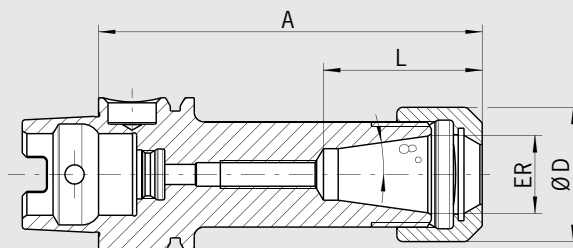
<b>Shrink fit extensions</b>		See pages 751-753
<b>Balancing screws</b>		See page 784
<b>Coolant tube</b>	<b>Order No. 85.700.32</b>	See page 793
<b>Reduction sleeves</b>		See page 794
<b>Back-up screws</b>		See pages 796-799
<b>Cool Jet bores</b>		See page 501
<b>Cool Flash</b>		<b>Order No. 91.100.40</b>
<b>Cool Flash Upgrade incl. Cool Jet</b>		<b>Order No. 91.100.41</b>

1) Without back-up screw, without threads for balancing screws, with slits along the clamping bore for cooling from outside  
2) Without threads for balancing screws

# ER COLLET CHUCK DIN 69893-1 · HSK-A32

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
U < 1 gmm
- All functional surfaces fine machined
- More accurate than DIN



### Use:

For clamping tools with cylindrical shank in collets according to ISO 15488 (formerly DIN 6499).

### DIN 69882-6

- Hardened 54–2 HRC
- Included in delivery:
  - Locknut type HS (High-Speed, fine balanced, with slide coating for higher clamping forces)
  - Enlarging of size L upon request

INCH	ER	16	25
	Ø D [inch]	1.1	1.65
	Clamping range [inch]	0.02–0.39	0.04–0.51
	Clamping range [mm]	0.5–10.0	1.0–16.0
	L [inch] ultra short	1.28	1.61
Gage length A [inch]	ultra short	2.17 <sup>1)</sup>	—
Order No.	A32.025...	.16	—
Gage length A [inch]	short	3.15	3.15
Order No.	A32.020...	.16	.25

### Accessories

**Collets ER**  See pages 768–773

**Shrink Fit Collets**  See pages 759–763

### Locknut (pre-balanced)

Size ER 16 ER 25  
 Order No. 83.912...  .16 .25

### Chuck nut HS (fine-balanced)

Size ER 16 ER 25  
 Order No. 83.912...  .16.HS .25.HS

### Fork wrench

Size ER 16 —  
 Order No. 84.200...  .16


### Clamping wrench

Size — ER 25  
 Order No. 84.200...  .25


### Balancing index rings


Size long/oversize ER 16 ER 25  
 Order No. 79.350...  .22 .32

### Adjusting screw

Size ER 16 ER 25  
 Order No. 85.800...  .34 .34

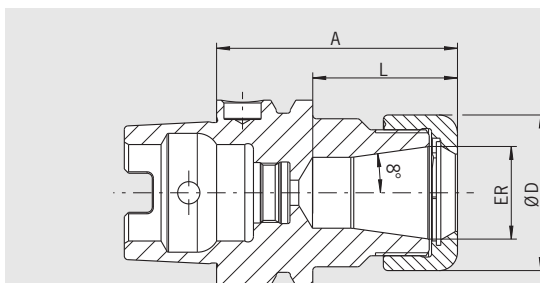
### Coolant tube

Order No. 85.700.32 

**Shrink fit extensions**  See pages 751–753

1) Without thread for back-up screw

POWER COLLET CHUCK  
DIN 69893-1 · HSK-A32



**CERTIFICATE OF QUALITY**

- Chuck body fine balanced  
U < 1 gmm
- All functional surfaces fine machined
- More accurate than DIN

The Power Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with improved construction combines high rigidity with vibration dampening features, giving more protection to the machine, spindle and tool. The universal Power Collet Chuck is a unique high performance chuck that can also be used with standard collets.

- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488  
(Attention: By using standard collet, ER length A will increase)
- High rigidity

- Hardened 54-2 HRC
- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

INCH	ER	16	25
	Ø D [inch]	1.1	1.65
	Clamping range [inch]	1/8–3/8	1/8–5/8
	Clamping range [mm]	2.0–10.0	2.0–16.0
	L [inch]	1.26	1.53
Gage length A [inch]	ultra short	1.97	2.36
Order No.	A32.025...	.16.3	.25.3

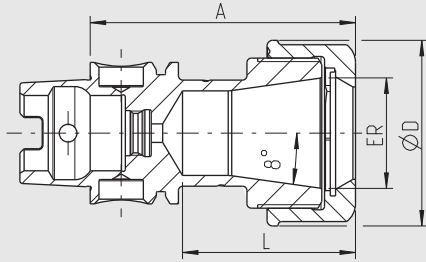
**Accessories**

<b>Locknut (fine-balanced)</b>			See page 779
Size		ER 16	ER 25
Order No. 83.914...		.16	.25
<b>Power Collet clamping wrench</b>			See page 781
<b>Torque Master torque wrench</b>			See page 780
<b>Power Collets</b>			See page 775
<b>Power Collets with Safe-Lock</b>			See page 776
<b>Cool Jet bores for Power Collets</b>			See page 777
<b>Shrink Fit Collets</b>			See pages 759–763

# HIGH PRECISION COLLET CHUCK DIN 69893-1 · HSK-A32

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
U < 1 gmm
- All functional surfaces fine machined
- More accurate than DIN










**The High Precision Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with better construction and a special coated smooth locknut combines high rigidity with vibration dampening and noise-reducing features, giving more protection to machines, spindles and tools. The chuck is especially suitable for micro and fine machining (e.g. in the medical or watchmaking industry).**

- With a specially coated smooth locknut, balanced at < 1 gmm
- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488  
(Attention: By using standard collet, ER length A will increase)
- High rigidity

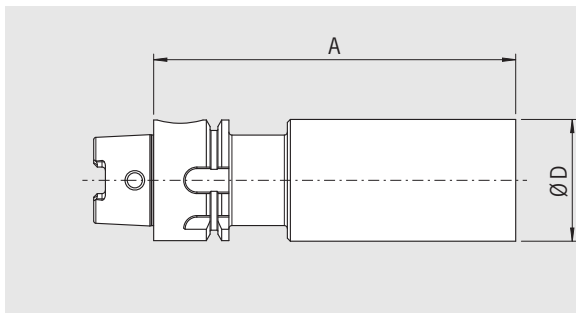
- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

INCH	ER	16	25
	Ø D [inch]	1.1	1.65
	Clamping range [inch]	1/8–3/8	1/8–5/8
	Clamping range [mm]	2.0–10.0	2.0–16.0
	L [inch]	1.26	1.53
Gage length A [inch]	ultra short	1.97	2.36
Order No.	A32.025...	.16.3.HP	.25.3.HP

### Accessories

<b>High Precision Smooth Locknut (fine-balanced)</b>			See page 779
Size		ER 16	ER 25
Order No. 83.914...		.16.1	.25.1
<b>Roller bearing wrench</b>			See page 782
Order No. 84.650...		.16.1	.25.1
<b>Collets ER</b>			See pages 768–773
<b>Shrink Fit Collets</b>			See pages 759–763
<b>Power Collets</b>			See page 775
<b>Power Collets with Safe-Lock</b>			See page 776
<b>Cool Jet bores for Power Collets</b>			See page 777
Order No. 91.100.27			

**BLANK ADAPTER – HARDENED**  
**DIN 69893-1 · HSK-A32**



**CERTIFICATE OF QUALITY**  
 All functional surfaces fine machined  
 More accurate than DIN

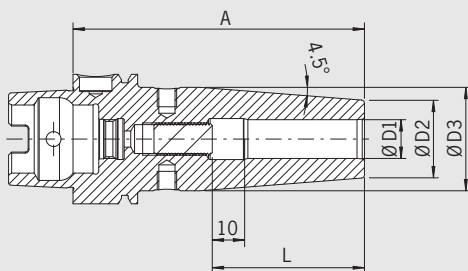
**Use:**  
 For manufacturing special tools in your own factory.

**Version:**  
 – HSK hardened and ground  
 – Cylindrical part hardened to 52+2 HRC

METRIC	Ø D [mm]		32.3
Gage Length A [mm]	ZG96		96
<b>Order No.</b>	<b>RA32.096.0323...</b>		<b>.0096</b>

# SHRINK FIT CHUCK DIN 69893-1 · HSK-A40

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN



**Use:**

Shrink fit chuck suitable for use with all available shrink fit units.

**Optional:**

- Cooling with Cool Jet for an extra charge (See page 501)
- Cooling with Cool Flash from 1/4" for an extra charge (See pages 502–503)

**DIN 69893-1**

- Included in delivery: Shrink fit chuck with back-up screw, without coolant tube
- Heat resistant hot-working steel
- Hardened 54-2 HRC
- For HSS and solid carbide tools
- Shank tolerance h6
- With threaded holes in order to balance with balancing screws

INCH	Clamping Ø D1 [inch]	1/8	3/16	1/4	3/8	7/16	1/2	5/8
	Ø D2 [inch]	0.39	0.39	0.83	0.94	0.94	0.94	1.06
	Ø D3 [inch]	—	—	1.06	1.26	1.26	1.26	1.30
	L [inch]	0.35	0.59	1.42	1.65	1.65	1.85	1.97
Gage length A [inch]	short	2.36 <sup>1)</sup>	2.36 <sup>1)</sup>	3.15	3.15	3.15	3.54	3.54
Order No.	A40.140...	.1/8Z	.3/16Z	.1/4Z	.3/8Z	.7/16Z	.1/2Z	.5/8Z

**Standard version, similar to DIN 69882-8**

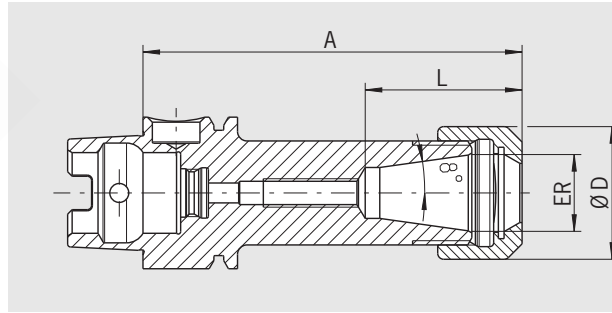
METRIC	Clamping Ø D1 [mm]	03	04	05	06	08	10	12	14	16
	Ø D2 [mm]	10	10	10	21	21	24	24	27	27
	Ø D3 [mm]	—	—	—	27	27	32	32	34	34
	L [mm]	09	12	15	36	36	42	47	47	50
Length A [mm]	short	60 <sup>1)</sup>	60 <sup>1)</sup>	60 <sup>1)</sup>	80	80	80	90	90	90
Order No.	A40.140...	.03	.04	.05	.06	.08	.10	.12	.14	.16
Length A [mm]	ZG120	120 <sup>2)</sup>	120 <sup>2)</sup>	120 <sup>2)</sup>	120	120	120	120	—	—
Order No.	A40.147...	.03.1	.04.1	.05.1	.06	.08	.10	.12	—	—
Length A [mm]	ZG130	130 <sup>2)</sup>	130 <sup>2)</sup>	130 <sup>2)</sup>	130	130	130	130	—	—
Order No.	A40.144...	.03.1	.04.1	.05.1	.06	.08	.10	.12	—	—

**Accessories**

Shrink fit extensions		See pages 750–753
Balancing screws		See page 784
Coolant tube	Order No. 85.700.40	See page 793
Reduction sleeves		See page 794
Back-up screws		See pages 796–799
Cool Jet bores		See page 501
Cool Flash		Order No. 91.100.40
Cool Flash Upgrade incl. Cool Jet		Order No. 91.100.41

1) Without back-up screw, without threads for balancing screws, with slits along the clamping bore for cooling from outside  
 2) Without back-up screw, without threads for balancing screws, without slits along the clamping bore for cooling from outside

# ER COLLET CHUCK DIN 69893-1 · HSK-A40



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN

**Use:**

For clamping tools with cylindrical shank in collets according to ISO 15488 (formerly DIN 6499).

**DIN 69882-6**

- Hardened 54–2 HRC
- Included in delivery:
  - Locknut type HS (High Speed, fine balanced, with slide coating for higher clamping forces)
  - Enlarging of size L upon request

INCH	ER		11	16	25	32
	Ø D [inch]		0.75	1.10	1.65	1.97
	Clamping range [inch]		0.02–0.28	0.02–0.39	0.04–0.63	0.04–0.79
	Clamping range [mm]		0.5–7.0	0.5–10.0	1.0–16.0	1.5–20.0
	L [inch]		0.93	1.28	1.61	1.85
Gage length A [inch]	ultra short		2.36 <sup>1)</sup>	2.36 <sup>1)</sup>	2.76 <sup>1)</sup>	2.76 <sup>1)</sup>
<b>Order No.</b>	<b>A40.025...</b>		<b>.11</b>	<b>.16</b>	<b>.25</b>	<b>.32</b>
Gage length A [inch]	short		—	3.15	3.15	—
<b>Order No.</b>	<b>A40.020...</b>			<b>.16</b>	<b>.25</b>	

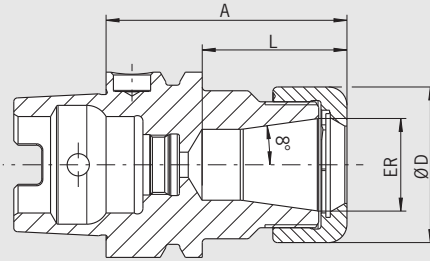
**Accessories**

<b>Collets ER</b>						See pages 768–773
<b>Shrink Fit Collets</b>						See pages 758–767
<b>Locknut (pre-balanced)</b>						
Size			ER 11	ER 16	ER 25	ER 32
<b>Order No.</b>	<b>83.912...</b>		<b>.11</b>	<b>.16</b>	<b>.25</b>	<b>.32</b>
<b>Chuck nut HS (fine-balanced)</b>						
Size			—	ER 16	ER 25	ER 32
<b>Order No.</b>	<b>83.912...</b>			<b>.16.HS</b>	<b>.25.HS</b>	<b>.32.HS</b>
<b>Fork wrench</b>						
Size			ER 11	ER 16	—	—
<b>Order No.</b>	<b>84.200...</b>		<b>.11</b>	<b>.16</b>		
<b>Clamping wrench</b>						
Size			—	—	ER 25	ER 32
<b>Order No.</b>	<b>84.200...</b>				<b>.25</b>	<b>.32</b>
<b>Balancing index rings</b>						
Size	long/oversize		—	ER 16	ER 25	ER 32
<b>Order No.</b>	<b>79.350...</b>			<b>.19</b>	<b>.28</b>	<b>.32</b>
<b>Adjusting screw</b>						
Size			—	ER 16	ER 25	ER 32
<b>Order No.</b>	<b>85.800...</b>			<b>.34</b>	<b>.34</b>	<b>.35</b>
<b>Coolant tube</b>						
<b>Order No.</b>	<b>85.700.40</b>					
<b>Shrink fit extensions</b>						
						See pages 751–753

1) Drilled through

# POWER COLLET CHUCK DIN 69893-1 · HSK-A40

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN



**The Power Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with improved construction combines high rigidity with vibration dampening features, giving more protection to the machine, spindle and tool. The universal Power Collet Chuck is a unique high performance chuck that can also be used with standard collets.**

- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488  
(Attention: By using standard collet, ER length A will increase)
- High rigidity

- Hardened 54–2 HRC
- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

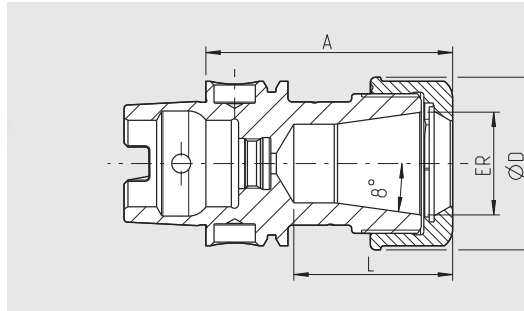
INCH	ER	16	25	32
	Ø D [inch]	1.1	1.65	1.97
	Clamping range [inch]	1/8–3/8	1/8–5/8	1/8–3/4
	Clamping range [mm]	2.0–10.0	2.0–16.0	2.0–20.0
	L [inch] ultra short	1.22	1.51	1.85
Gage length A [inch]	ultra short	1.97	2.36	2.76
Order No.	A40.025...	.16.3	.25.3	.32.3
	L [inch] short	1.69	2.01	2.09
Gage length A [inch]	short	3.15	3.15	3.15
Order No.	A40.020...	.16.3	.25.3	.32.3

### Accessories

<b>Locknut (fine-balanced)</b>					See page 779
Size		ER 16	ER 25	ER 32	
Order No.	83.914...	.16	.25	.32	
<b>Power Collet clamping wrench</b>					See page 781
<b>Torque Master torque wrench</b>					See page 780
Order No.	84.600.00				
<b>Power Collets</b>					See page 775
<b>Power Collets with Safe-Lock</b>					See page 776
<b>Cool Jet bores for Power Collets</b>					See page 777
Order No.	91.100.27				
<b>Shrink Fit Collets</b>					See pages 759–767
<b>Coolant tube</b>					See page 793
Order No.	85.700.40				



# HIGH PRECISION COLLET CHUCK DIN 69893-1 · HSK-A40



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN

The High Precision Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with better construction and a special coated smooth locknut combines high rigidity with vibration dampening and noise-reducing features, giving more protection to machines, spindles and tools. The chuck is especially suitable for micro and fine machining (e.g. in the medical or watchmaking industry).

- With a specially coated smooth locknut, balanced at < 1 gmm
- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488  
(Attention: By using standard collet, ER length A will increase)
- High rigidity

- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

INCH	ER	16	25	32
	Ø D [inch]	1.1	1.65	1.97
	Clamping range [inch]	1/8–3/8	1/8–5/8	1/8–3/4
	Clamping range [mm]	2.0–10.0	2.0–16.0	2.0–20.0
	L [inch] ultra short	1.22	1.51	1.85
Gage length A [inch]	ultra short	1.97	2.36	2.76
Order No.	A40.025...	.16.3.HP	.25.3.HP	.32.3.HP
	L [inch] short	1.69	2.01	2.09
Gage length A [inch]	short	3.15	3.15	3.15
Order No.	A40.020...	.16.3.HP	.25.3.HP	.32.3.HP

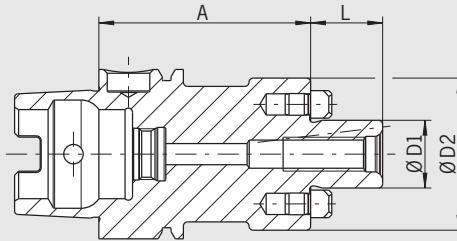
**Accessories**

<b>High Precision Smooth Locknut (fine-balanced)</b>					See page 779
Size		ER 16	ER 25	ER 32	
Order No.	83.914...	.16.1	.25.1	.32.1	
<b>Roller bearing wrench</b>					See page 782
Order No.	84.650...	.16.1	.25.1	.32.1	
<b>Collets ER</b>					See pages 768–773
<b>Shrink Fit Collets</b>					See pages 759–767
<b>Power Collets</b>					See page 775
<b>Power Collets with Safe-Lock</b>					See page 776
<b>Cool Jet bores for Power Collets</b>					See page 777
Order No.	91.100.27				
<b>Coolant tube</b>					See page 793
Order No.	85.700.40				

FACE MILL ARBOR  
DIN 69893-1 · HSK-A40

**CERTIFICATE OF QUALITY**

- Chuck body fine balanced  
U < 1 gmm
- All functional surfaces fine machined
- More accurate than DIN




**Use:**

For holding face mill cutters and cutters with radial driving slot DIN 1880.


**DIN 69882-3**

- Hardened 54-2 HRC
- Included in delivery: tightening bolt, without coolant tube
- With coolant exit bores on the end face for milling cutters with central cooling

METRIC	Clamping Ø D1 [mm]	16	22
	Ø D2 [mm]	36	48
	L [mm]	17	19
Length A [mm]	short	50	60
Order No.	A40.050... 	.16.KKB	.22.KKB

**Accessories**

**Tightening bolt**

Size D1		16	22
Order No.	85.300... 	.16	.22


**Wrench**

Size D1		16	22
Order No.	84.400... 	.16	.22

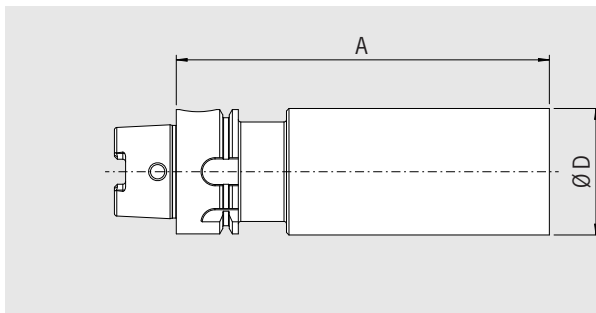
**Balancing index rings**

Size D1		16	22
Order No.	79.350... 	.36	.48

**Coolant tube**

Order No.	85.700.40 		
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**BLANK ADAPTER – HARDENED**  
**DIN 69893-1 · HSK-A40**



**CERTIFICATE OF QUALITY**  
 All functional surfaces fine machined  
 More accurate than DIN

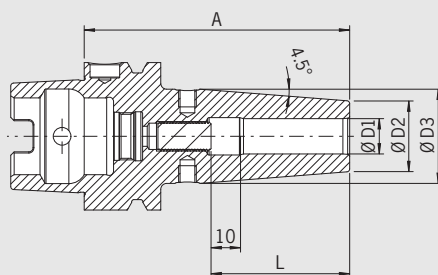
**Use:**  
 For manufacturing special tools in your own factory.

**Version:**  
 – HSK hardened and ground  
 – Cylindrical part hardened to 52+2 HRC

METRIC	Ø D [mm]		40.7
Gage Length A [mm]	ZG120		120
Order No.	RA40.096.0407...		.0120

# SHRINK FIT CHUCK DIN 69893-1 · HSK-A50

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN



**Use:**

Shrink fit chuck suitable for use with all available shrink fit units.

**DIN 69893-1**

- Included in delivery: Shrink fit chuck with back-up screw, without coolant tube
- Heat resistant hot-working steel
- Hardened 54-2 HRC
- For HSS and solid carbide tools
- Shank tolerance h6
- With threaded holes in order to balance with balancing screws

**Optional:**

- Cooling with Cool Jet for an extra charge (See page 501)
- Cooling with Cool Flash from diam. 6 mm for an extra charge (See pages 502-503)

**Standard version, similar to DIN 69882-8**

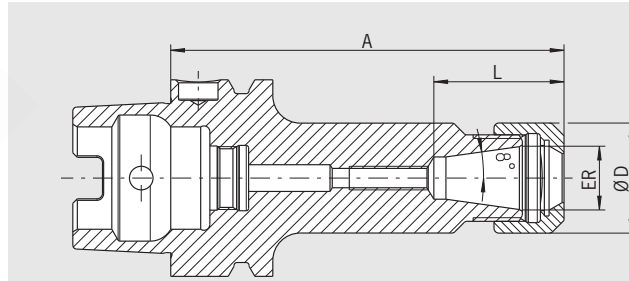
METRIC	Clamping Ø D1 [mm]	03	04	05	06	08	10	12	14	16
	Ø D2 [mm]	10	10	10	21	21	24	24	27	27
	Ø D3 [mm]	—	—	—	27	27	32	32	34	34
	L [mm]	09	12	15	36	36	42	47	47	50
Length A [mm]	short	60 <sup>1)</sup>	60 <sup>1)</sup>	60 <sup>1)</sup>	80	80	85	90	90	95
Order No.	A50.140...	.03	.04	.05	.06	.08	.10	.12	.14	.16
Length A [mm]	ZG120	120 <sup>2)</sup>	120 <sup>2)</sup>	120 <sup>2)</sup>	120	120	120	120	—	120
Order No.	A50.147...	.03.1	.04.1	.05.1	.06	.08	.10	.12	—	.16
Length A [mm]	ZG130	130 <sup>2)</sup>	130 <sup>2)</sup>	130 <sup>2)</sup>	130	130	130	130	—	130
Order No.	A50.144...	.03.1	.04.1	.05.1	.06	.08	.10	.12	—	.16

**Accessories**

<b>Shrink fit extensions</b>		See pages 751-753
<b>Balancing screws</b>		See page 784
<b>Coolant tube</b>	<b>Order No. 85.700.50</b>	See page 793
<b>Reduction sleeves</b>		See page 794
<b>Back-up screws</b>		See pages 796-799
<b>Cool Jet bores</b>		See page 501
<b>Cool Flash</b>	<b>Order No. 91.100.40</b>	See pages 502-503
<b>Cool Flash Upgrade incl. Cool Jet</b>	<b>Order No. 91.100.41</b>	See pages 502-503

1) Without back-up screw, without threads for balancing screws, with slits along the clamping bore for cooling from outside  
 2) Without back-up screw, without threads for balancing screws, without slits along the clamping bore for cooling from outside

# ER COLLET CHUCK DIN 69893-1 · HSK-A50



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN

**Use:**

For clamping tools with cylindrical shank in collets according to ISO 15488 (formerly DIN 6499).

**DIN 69882-6**

- Hardened 54-2 HRC
- Included in delivery:
  - Locknut type HS (High-Speed, fine balanced, with slide coating for higher clamping forces)
  - Enlarging of size L upon request

INCH	ER		11	16	25	32	40
	Ø D [inch]		0.75	1.10	1.65	1.97	2.48
	Clamping range [inch]		0.02-0.28	0.02-0.39	0.04-0.63	0.06-0.79	0.10-1.02
	Clamping range [mm]		0.5-7.0	0.5-10.0	1.0-16.0	1.5-20.0	2.5-26.0
	L [inch]		1.04	1.28	1.61	1.85	2.09
Gage length A [inch]	ultra short		2.36 <sup>1)</sup>	2.36 <sup>1)</sup>	2.76 <sup>1)</sup>	3.15 <sup>1)</sup>	3.15 <sup>1)</sup>
Order No.	A50.025...		.11	.16	.25	.32	.40
Gage length A [inch]	short		—	3.94	3.94	3.94	4.72
Order No.	A50.020...			.16	.25	.32	.40

**Accessories**

<b>Collets ER</b>		See pages 768-773
<b>Shrink Fit Collets</b>		See pages 758-767
<b>Locknut (pre-balanced)</b>		
Size		ER 16    ER 25    ER 32
Order No.	83.912...	.16    .25    .32
<b>Chuck nut HS (fine-balanced)</b>		
Size		ER 16    ER 25    ER 32
Order No.	83.912...	.16.HS    .25.HS    .32.HS
<b>Fork wrench</b>		
Size		ER 16    —    —
Order No.	84.200...	.16
<b>Clamping wrench</b>		
Size		—    ER 25    ER 32
Order No.	84.200...	—    .25    .32
<b>Balancing index rings</b>		
Size	long/oversize	ER11    ER 16    ER 25    ER 32    ER 40
Order No.	79.350... <sup>2)</sup>	.19    .22    .32    .40    .50
<b>Adjusting screw</b>		
Size		ER 16    ER 25    ER 32
Order No.	85.800...	.34    .34    .35
<b>Coolant tube</b>		
Order No.	85.700.50	
<b>Shrink fit extensions</b>		See pages 751-753

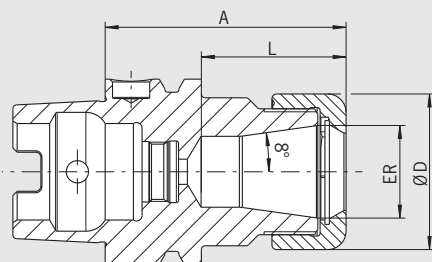
1) Drilled through

2) Suitable balancing index rings Order No. 79.350.28

# POWER COLLET CHUCK DIN 69893-1 · HSK-A50

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
U < 1 gmm
- All functional surfaces fine machined
- More accurate than DIN




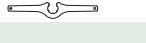





**The Power Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with improved construction combines high rigidity with vibration dampening features, giving more protection to the machine, spindle and tool. The universal Power Collet Chuck is a unique high performance chuck that can also be used with standard collets.**

- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (formerly DIN 6499)  
(Attention: By using standard collet, ER length A will increase)
- High rigidity
- Hardened 54–2 HRC

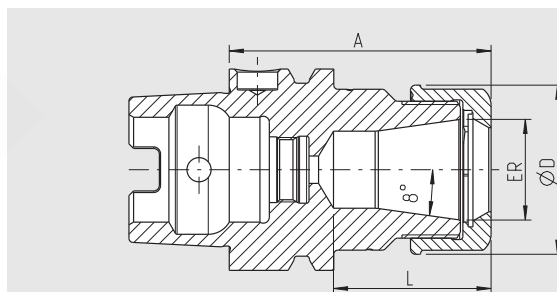
- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

INCH	ER	16	25	32
	Ø D [inch]	1.1	1.65	1.97
	Clamping range [inch]	1/8–3/8	1/8–5/8	1/8–3/4
	Clamping range [mm]	2.0–10.0	2.0–16.0	2.0–20.0
	L [inch]	1.26	1.53	1.89
Gage length A [inch]	ultra short	2.36	2.56	2.95
Order No.	A50.025...	.16.3	.25.3	.32.3

### Accessories

<b>Locknut (fine-balanced)</b>					See page 779
Size		ER 16	ER 25	ER 32	
Order No.	83.914...	.16	.25	.32	
<b>Power Collet clamping wrench</b>					See page 781
<b>Torque Master torque wrench</b>					See page 780
<b>Power Collets</b>					See page 775
<b>Power Collets with Safe-Lock</b>					See page 776
<b>Cool Jet bores for Power Collets</b>					See page 777
<b>Shrink Fit Collets</b>					See pages 760–767
<b>Coolant tube</b>					See page 793
Order No.	85.700.50				

## HIGH PRECISION COLLET CHUCK DIN 69893-1 · HSK-A50



### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
U < 1 gmm
- All functional surfaces fine machined
- More accurate than DIN

The High Precision Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with better construction and a special coated smooth locknut combines high rigidity with vibration dampening and noise-reducing features, giving more protection to machines, spindles and tools. The chuck is especially suitable for micro and fine machining (e.g. in the medical or watchmaking industry).

- With a specially coated smooth locknut, balanced at < 1 gmm
- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (Attention: By using standard collet, ER length A will increase)

- High rigidity
- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

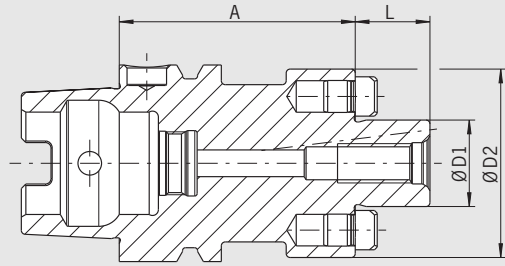
INCH	ER	16	25	32
	Ø D [inch]	1.1	1.65	1.97
	Clamping range [inch]	1/8–3/8	1/8–5/8	1/8–3/4
	Clamping range [mm]	2.0–10.0	2.0–16.0	2.0–20.0
	L [inch]	1.26	1.53	1.89
Gage length A [inch]	ultra short	2.36	2.56	2.95
Order No.	A50.025...	.16.3.HP	.25.3.HP	.32.3.HP

### Accessories

<b>High Precision Smooth Locknut (fine-balanced)</b>				See page 779
Size		ER 16	ER 25	ER 32
Order No.	83.914...	.16.1	.25.1	.32.1
<b>Roller bearing wrench</b>				See page 782
Order No.	84.650...	.16.1	.25.1	.32.1
<b>Collets ER</b>				See pages 768–773
<b>Shrink Fit Collets</b>				See pages 760–767
<b>Power Collets</b>				See page 775
<b>Power Collets with Safe-Lock</b>				See page 776
<b>Cool Jet bores for Power Collets</b>				See page 777
Order No.	91.100.27			
<b>Coolant tube</b>				See page 793
Order No.	85.700.50			

FACE MILL ARBOR  
DIN 69893-1 · HSK-A50

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN



**Use:**

For holding face mill cutters and cutters with radial driving slot DIN 1880 and exceeding clamping diameter 40 clamping according to DIN 2079 is possible, too (4 additional tapped holes).  
With coolant exit bores on the end face for milling cutters with central cooling.

**DIN 69882-3**

– Included in delivery: tightening bolt, without coolant tube

METRIC	Clamping Ø D1 [mm]		16	22	27	32
	Ø D2 [mm]		36	48	60	78
	L [mm]		17	19	21	24
Length A [mm]	short		50	60	60	—
<b>Order No.</b>	<b>A50.050...</b>		<b>.16.KKB</b>	<b>.22.KKB</b>	<b>.27.KKB</b>	—
Length A [mm]	long		100	100	100	100
<b>Order No.</b>	<b>A50.051...</b>		<b>.16.KKB</b>	<b>.22.KKB</b>	<b>.27.KKB</b>	<b>.32.KKB</b>
Length A [mm]	oversize		160	—	—	—
<b>Order No.</b>	<b>A50.052...</b>		<b>.16.KKB</b>	—	—	—

**Accessories**

**Tightening bolt**

Size D1			16	22	27
<b>Order No.</b>	<b>85.300...</b>		<b>.16</b>	<b>.22</b>	<b>.27</b>

**Wrench**

Size D1			16	22	27
<b>Order No.</b>	<b>84.400...</b>		<b>.16</b>	<b>.22</b>	<b>.27</b>

**Balancing index rings**

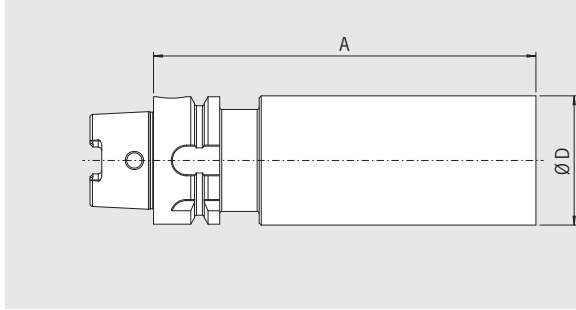
Size D1			16	22	27
<b>Order No.</b>	<b>79.350...</b>		<b>.36</b>	<b>.48</b>	<b>.60</b>

**Coolant tube**

<b>Order No.</b>	<b>85.700.50</b>	
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**BLANK ADAPTER – HARDENED  
DIN 69893-1 · HSK-A50**



**CERTIFICATE OF QUALITY**  
 All functional surfaces fine machined  
 More accurate than DIN

**Use:**  
 For manufacturing special tools in your own factory.

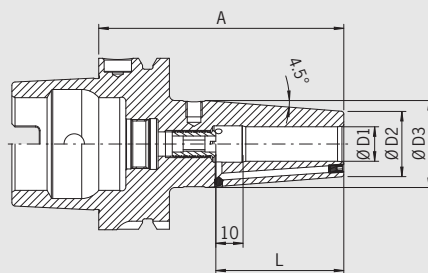
**Version:**  
 – HSK hardened and ground  
 – Cylindrical part hardened to 52+2 HRC

METRIC	Ø D [mm]	50.7
Gage Length A [mm]	ZG150	150
<b>Order No.</b>	<b>RA50.096.0507...</b> 	<b>.0150</b>

# SHRINK FIT CHUCK DIN 69893-1 · HSK-A63 INCH

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 25,000 rpm  
or U < 1 gmm
- All functional surfaces machined
- More accurate than DIN
- Cool Jet, can be sealed



### Use:

Shrink fit chuck suitable for use with all available shrink fit units.

- Heat resistant hot-working steel
- Hardened 54-2 HRC
- For HSS and solid carbide tools
- Shank tolerance h6
- With threaded holes in order to balance with balancing screws
- Cool Jet coolant bores that can be sealed included

### DIN 69893-1

Optional:

- Cooling with Cool Flash from 1/4" - 1" for an extra charge (See pages 502-503)

### Standard version

INCH	Clamping Ø D1 [inch]		1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	1	1 1/4
	Ø D2 [inch]		0.39	0.39	0.83	0.83	0.94	0.94	0.94	1.06	1.30	1.73	1.73
	Ø D3 [inch]		-	-	1.06	1.06	1.26	1.26	1.26	1.34	1.65	2.09	2.09
	L [inch]		0.35	0.47	1.42	1.42	1.65	1.65	1.85	1.97	2.05	2.28	2.28
Gage length A [inch]	short		3.15 <sup>1)</sup>	3.15 <sup>1)</sup>	3.15	3.15	3.35	3.35	3.54	3.74	3.94	4.53	4.72
Order No.	A63.140...		.1/8Z	.3/16Z	.1/4Z.4	.5/16Z.4	.3/8Z.4	.7/16Z.4	.1/2Z.4	.5/8Z.4	.3/4Z.4	.1Z.4	.1 1/4Z.4
Gage length A [inch]	ZG130		-	-	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12
Order No.	A63.144...		-	-	.1/4Z.4	.5/16Z.4	.3/8Z.4	.7/16Z.4	.1/2Z.4	.5/8Z.4	.3/4Z.4	.1Z.4	.1 1/4Z.4
Gage length A [inch]	oversize		-	-	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	-
Order No.	A63.142...		-	-	.1/4Z.4	.5/16Z.4	.3/8Z.4	.7/16Z.4	.1/2Z.4	.5/8Z.4	.3/4Z.4	.1Z.4	-

### Standard version with Safe-Lock and M3 seal screw installed

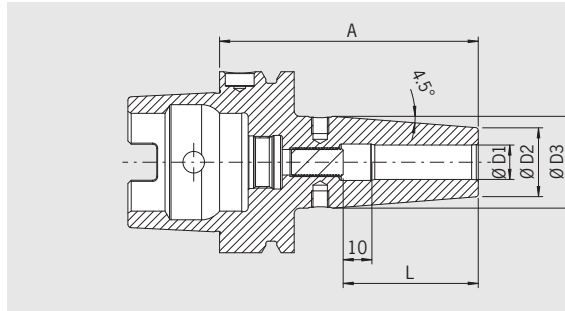
INCH	Clamping Ø D1 [inch]		1/4	5/16	3/8	1/2	5/8	3/4	1	1 1/4
	Ø D2 [inch]		0.83	0.83	0.94	0.94	1.06	1.30	1.73	1.73
	Ø D3 [inch]		1.06	1.06	1.26	1.26	1.34	1.65	2.09	2.09
	L [inch]		1.42	1.42	1.65	1.85	1.97	2.05	2.28	2.28
Gage length A [inch]	short		3.15 <sup>2)</sup>	3.15 <sup>2)</sup>	3.35 <sup>2)</sup>	3.54 <sup>2)</sup>	3.74 <sup>2)</sup>	3.94 <sup>2)</sup>	4.53 <sup>2)</sup>	4.72 <sup>2)</sup>
Order No.	A63.140...		.1/4Z.47	.5/16Z.47	.3/8Z.47	.1/2Z.47	.5/8Z.47	.3/4Z.47	.1Z.47	.1 1/4Z.47

### Accessories

Coolant tube		Order No. 85.700.63	See page 793
Set of Balancing Screws		Order No. 80.203.00	See pages 784
Back-up screws			See pages 796-799
Cool Flash		Order No. 91.100.40	See pages 502-503

1) Without back-up screw, without threads for balancing screws, with slits along the clamping bore for coolant around the tool  
2) With tension spring

# SHRINK FIT CHUCK DIN 69893-1 · HSK-A63 METRIC



### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 25,000 rpm or U<1 gmm
- All functional surfaces fine machined
- More accurate than DIN

#### Use:

Shrink fit chuck suitable for use with all available shrink fit units.

- Heat resistant hot-working steel
- Hardened 54-2 HRC
- For HSS and solid carbide tools
- Shank tolerance h6
- With threaded holes in order to balance with balancing screws
- Included in delivery: Shrink fit chuck with back-up screw, without coolant tube

#### DIN 69893-1

Optional:

- Cooling with Cool Jet for an extra charge (See page 501)
- Cooling with Cool Flash for an extra charge (See pages 502-503)

#### Standard version, similar to DIN 69882-8

METRIC	Clamping Ø D1 [mm]		03	04	05	06	08	10	12	14	16	18	20	25	32
	Ø D2 [mm]		10	10	10	21	21	24	24	27	27	33	33	44	44
	Ø D3 [mm]		—	—	—	27	27	32	32	34	34	42	42	53	53
	L [mm]		09	12	15	36	36	42	47	47	50	50	52	58	58
Length A [mm]	short		80 <sup>1)</sup>	80 <sup>1)</sup>	80 <sup>1)</sup>	80	80	85	90	90	95	95	100	115	120
Order No.	A63.140...		.03.1	.04.1	.05.1	.06	.08	.10	.12	.14	.16	.18	.20	.25	.32
Length A [mm]	ZG120		120 <sup>1)</sup>	120 <sup>1)</sup>	120 <sup>1)</sup>	120	120	120	120	120	120	120	120	—	—
Order No.	A63.147...		.03.1	.04.1	.05.1	.06	.08	.10	.12	.14	.16	.18	.20	—	—
Length A [mm]	ZG130		130 <sup>1)</sup>	130 <sup>1)</sup>	130 <sup>1)</sup>	130	130	130	130	130	130	130	130	130	—
Order No.	A63.144...		.03.1	.04.1	.05.1	.06	.08	.10	.12	.14	.16	.18	.20	.25	—
Length A [mm]	oversize		—	—	—	160	160	160	160	160	160	160	160	160	160
Order No.	A63.142...		—	—	—	.06	.08	.10	.12	.14	.16	.18	.20	.25	.32
Length A [mm]	ZG200		—	—	—	200	200	200	200	200	200	200	200	200	200
Order No.	A63.146...		—	—	—	.06	.08	.10	.12	.14	.16	.18	.20	.25	.32

#### Standard version, with Cool Jet (Ø 3-5 mm Cooling with slits)

METRIC	Clamping Ø D1 [mm]		03	04	05	06	08	10	12	14	16	18	20	25	32
	Ø D2 [mm]		10	10	10	21	21	24	24	27	27	33	33	44	44
	Ø D3 [mm]		—	—	—	27	27	32	32	34	34	42	42	53	53
	L [mm]		09	12	15	36	36	42	47	47	50	50	52	58	58
Length A [mm]	short		80 <sup>2)</sup>	80 <sup>2)</sup>	80 <sup>2)</sup>	80	80	85	90	90	95	95	100	115	120
Order No.	A63.140...		.03	.04	.05	.06.2	.08.2	.10.2	.12.2	.14.2	.16.2	.18.2	.20.2	.25.2	.32.2
Length A [mm]	ZG130		—	—	—	130	130	130	130	130	130	130	130	130	—
Order No.	A63.144...		—	—	—	.06.2	.08.2	.10.2	.12.2	.14.2	.16.2	.18.2	.20.2	.25.2	—

#### Standard version, with Safe-Lock pull out protection

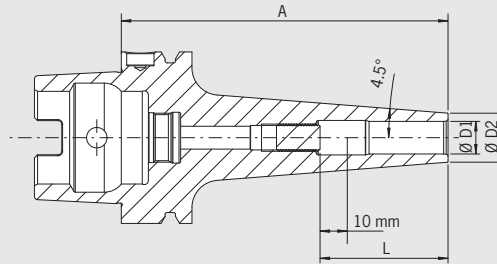
METRIC	Clamping Ø D1 [mm]		06	08	10	12	14	16	18	20	25	32
	Ø D2 [mm]		21	21	24	24	27	27	33	33	44	44
	Ø D3 [mm]		27	27	32	32	34	34	42	42	53	53
	L [mm]		36	36	42	47	47	50	50	52	58	58
Length A [mm]	short		80 <sup>3)</sup>	80 <sup>3)</sup>	85 <sup>3)</sup>	90 <sup>3)</sup>	90 <sup>3)</sup>	95 <sup>3)</sup>	95 <sup>3)</sup>	100 <sup>3)</sup>	115 <sup>3)</sup>	120 <sup>3)</sup>
Order No.	A63.140...		.06.7	.08.7	.10.7	.12.7	.14.7	.16.7	.18.7	.20.7	.25.7	.32.7

1) Without back-up screw, without threads for balancing screws, without slits along the clamping bore for cooling from outside  
 2) Without back-up screw, without threads for balancing screws, with slits along the clamping bore for cooling from outside  
 3) With tension spring

# SHRINK FIT CHUCK – EXTRA SLIM DIN 69893-1 · HSK-A63 METRIC

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 25,000 rpm or U<1 gmm
- All functional surfaces fine machined
- More accurate than DIN



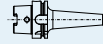
### Use:

Shrink fit chuck suitable for use with all available shrink fit units.  
Extra slim version with smaller diameter D2, 4.5°.






- Heat resistant hot-working steel
- Hardened 54-2 HRC
- For solid carbide tools with shank tolerance h6
- Shank tolerance h6
- Included in delivery: Shrink fit chuck with back-up screw, without coolant tube
- Cooling with slits for an extra charge

### Standard version, similar to DIN 69882-8

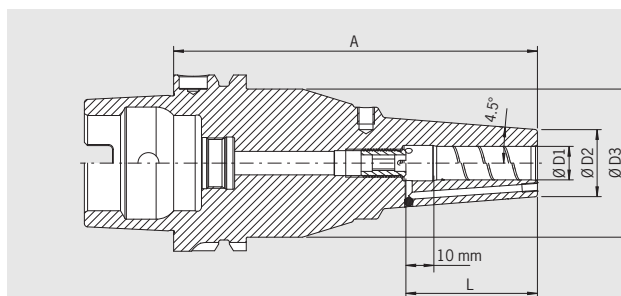
METRIC	Clamping Ø D1 [mm]	06	08	10	12
	Ø D2 [mm]	15	15	18	18
	L [mm]	36	36	42	47
Length A [mm]	ZG120	120	120	120	120
Order No.	A63.147...	.06.10	.08.10	.10.10	.12.10



### Accessories

- Shrink fit extensions**  See pages 751–753
- Coolant tube**  **Order No. 85.700.63** See page 793
- Reduction sleeves**  See page 794
- Back-up screws**  See pages 796–799
- Cooling adapter**  **Ø 6 – 12 mm**  
**Order No. 80.105.14.1.2** See page 592

# POWER SHRINK CHUCK DIN 69893-1 · HSK-A63



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN
<input checked="" type="checkbox"/>	Cool Jet, can be sealed

The Power Shrink Chuck is designed for the highest cutting performance in High Speed machining. The optimized design combines high rigidity with vibration dampening, which protects the machine, spindle and tool.

- Heat resistant hot-working steel
- Hardened 54–2 HRC
- Increased machining capacity due to higher spindle speed, higher feed and larger cutting depth
- Shorter processing times, higher machining accuracy
- Quieter running, therefore better surface quality and protection of tools, spindles and machines
- With threaded holes in order to balance with balancing screws

The long versions (A=120, 130 and 160) with slim tips are especially versatile to use.

- High rigidity, slim at the tip, dampen vibrations
- High clamping force
- Equally suited to High Speed and Heavy Duty machining
- Universal usage, saves space in tool magazine
- Cool Jet coolant bores that can be sealed included

Optional:

- Cooling with Cool Flash for an extra charge (See pages 502–503)
- Safe-Lock pull out protection (See pages 496–500)

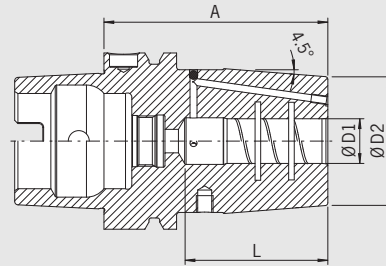
INCH	Clamping Ø D1 [inch]	1/4	5/16	3/8	1/2	5/8	3/4	1	1 1/4
	Ø D2 [inch] ultra short	0.87	0.87	1.04	1.04	1.16	1.40	1.77	1.77
	Ø D3 [inch] ultra short	—	—	—	—	—	—	2.01	2.01
	L [inch] ultra short	1.49	1.49	1.70	1.81	1.93	1.93	2.24	2.32
Gage length A [inch]	ultra short	2.76 <sup>1)</sup>	2.76 <sup>1)</sup>	2.76 <sup>1)</sup>	2.76 <sup>1)</sup>	2.95 <sup>1)</sup>	2.95 <sup>1)</sup>	3.35 <sup>1)</sup>	3.35 <sup>1)</sup>
Order No.	A63.145...	.1/4z.3	.5/16z.3	.3/8z.3	.1/2z.3	.5/8z.3	.3/4z.3	.1z.3	.1 1/4z.3
Safe-Lock Order No.	A63.145...	.1/4z.37	.5/16z.37	.3/8z.37	.1/2z.37	.5/8z.37	.3/4z.37	.1z.37	.1 1/4z.37
	Ø D2 [inch]	0.83	0.83	0.94	0.94	1.06	1.30	1.73	1.73
	Ø D3 [inch]	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09
	L [inch]	1.42	1.42	1.65	1.85	1.97	2.05	2.28	2.28
Gage length A [inch]	ZG130	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12
Order No.	A63.144...	.1/4z.3	.5/16z.3	.3/8z.3	.1/2z.3	.5/8z.3	.3/4z.3	.1z.3	.1 1/4z.3
Safe-Lock Order No.	A63.144...	.1/4z.37	.5/16z.37	.3/8z.37	.1/2z.37	.5/8z.37	.3/4z.37	.1z.37	.1 1/4z.37
Gage length A [inch]	oversize	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30
Order No.	A63.142...	.1/4z.3	.5/16z.3	.3/8z.3	.1/2z.3	.5/8z.3	.3/4z.3	.1z.3	.1 1/4z.3
Safe-Lock Order No.	A63.142...	.1/4z.37	.5/16z.37	.3/8z.37	.1/2z.37	.5/8z.37	.3/4z.37	.1z.37	.1 1/4z.37

METRIC	Clamping Ø D1 [mm]	06	08	10	12	14	16	18	20	25	32
	Ø D2 [mm] ultra short	22	22	26.5	26.5	29.5	29.5	35.5	35.5	45	45
	Ø D3 [mm] ultra short	—	—	—	—	—	—	—	—	51	51
	L [mm] ultra short	38	38	43	46	48	49	49	49	57	59
Gage length A [mm]	ultra short	70 <sup>1)</sup>	70 <sup>1)</sup>	70 <sup>1)</sup>	70 <sup>1)</sup>	75 <sup>1)</sup>	75 <sup>1)</sup>	75 <sup>1)</sup>	75 <sup>1)</sup>	85 <sup>1)</sup>	85 <sup>1)</sup>
Order No.	A63.145...	.06.3	.08.3	.10.3	.12.3	.14.3	.16.3	.18.3	.20.3	.25.3	.32.3
Safe-Lock Order No.	A63.145...	.06.37	.08.37	.10.37	.12.37	.14.37	.16.37	.18.37	.20.37	.25.37	.32.37
	Ø D2 [mm]	21	21	24	24	27	27	33	33	44	44
	Ø D3 [mm]	53	53	53	53	53	53	53	53	53	53
	L [mm]	36	36	42	47	47	50	50	52	58	58
Gage length A [mm]	ZG120	120	120	120	120	120	120	120	120	120	120
Order No.	A63.147...	.06.3	.08.3	.10.3	.12.3	.14.3	.16.3	.18.3	.20.3	.25.3	.32.3
Safe-Lock Order No.	A63.147...	.06.37	.08.37	.10.37	.12.37	.14.37	.16.37	.18.37	.20.37	.25.37	—
Gage length A [mm]	ZG130	130	130	130	130	130	130	130	130	130	130
Order No.	A63.144...	.06.3	.08.3	.10.3	.12.3	.14.3	.16.3	.18.3	.20.3	.25.3	.32.3
Safe-Lock Order No.	A63.144...	.06.37	.08.37	.10.37	.12.37	.14.37	.16.37	.18.37	.20.37	.25.37	.32.37
Gage length A [mm]	oversize	160	160	160	160	160	160	160	160	160	160
Order No.	A63.142...	.06.3	.08.3	.10.3	.12.3	.14.3	.16.3	.18.3	.20.3	.25.3	.32.3
Safe-Lock Order No.	A63.142...	.06.37	.08.37	.10.37	.12.37	.14.37	.16.37	.18.37	.20.37	.25.37	.32.37

1) Without back-up screw

# HEAVY DUTY CHUCK DIN 69893-1 · HSK-A63

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN
<input checked="" type="checkbox"/>	Cool Jet, can be sealed



**The Heavy Duty Chuck is a shrink fit chuck designed for extreme cases and Heavy Duty machining. The contour is optimized for highest rigidity and clamping force.**

- Heat resistant hot-working steel
- Hardened 54–2 HRC
- Smooth clamping of the tool shank
- No deformation at the tool shank after shrink process
- TIR less than 0.00012" (3 µm)
- Reinforced outer contour
- To shrink with 13 kW HD coil (see page 600) or with high performance shrink fit unit HAIMER Power Clamp Profi Plus (20 kW)

- With internal groove in the clamping bore
- With threaded holes in order to balance with balancing screws
- Cool Jet coolant bores that can be sealed included
- Without back-up screws

Optional:

- Cooling with Cool Flash for an extra charge (See pages 502–503)
- Safe-Lock pull out protection (See pages 496–500)

INCH	Clamping Ø D1 [inch]	5/8	3/4
	Ø D2 [inch]	1.81	1.81
	L [inch]	2.01	2.08
Gage length A [inch]	ultra short	3.15	3.15
<b>Order No.</b>	<b>A63.145...</b>	<b>.5/8z.6</b>	<b>.3/4z.6</b>
<b>Safe-Lock Order No.</b>	<b>A63.145...</b>	<b>.5/8z.67</b>	<b>.3/4z.67</b>
Gage length A [inch]	short	3.35	3.35
<b>Order No.</b>	<b>A63.140...</b>	<b>.5/8z.6</b>	<b>.3/4z.6</b>
<b>Safe-Lock Order No.</b>	<b>A63.140...</b>	<b>.5/8z.67</b>	<b>.3/4z.67</b>

METRIC	Clamping Ø D1 [mm]	16	20
	Ø D2 [mm]	46	46
	L [mm]	51	53
Gage length A [mm]	ultra short	80	80
<b>Order No.</b>	<b>A63.145...</b>	<b>.16.6</b>	<b>.20.6</b>
<b>Safe-Lock Order No.</b>	<b>A63.145...</b>	<b>.16.67</b>	<b>.20.67</b>
Gage length A [mm]	short	85	85
<b>Order No.</b>	<b>A63.140...</b>	<b>.16.6</b>	<b>.20.6</b>
<b>Safe-Lock Order No.</b>	<b>A63.140...</b>	<b>.16.67</b>	<b>.20.67</b>

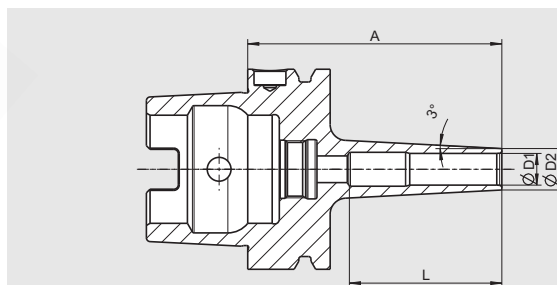
**Accessories**  
Cool Flash



Order No. 91.100.40

See pages 502–503

# MINI SHRINK DIN 69893-1 · HSK-A63



### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 25,000 rpm  
or U < 1 gmm
- All functional surfaces fine machined
- More accurate than DIN

- Extremely slim design
- No disturbing edges
- Highest runout accuracy: 3 µm
- Also jobs difficult to access can be reached
- Optimum rigidity
- Ideal to shrink with the HAIMER Power Clamp
- For all solid carbide tools with shank tolerance h6
- Heat resistant hot-working steel
- Hardened 54-2 HRC
- With 3° angle for die and mold

- Tool holders fine balanced
- Delivery without coolant tube
- **Extra slim version:** extremely slim for fine machining and for jobs very difficult to reach
- **Standard version:** with high clamping force

Heating and cooling sleeves are needed when shrinking on most shrink fit machines (see accessories). However, when using the Power Clamp i4.0 Sprint/Air or Nano machines with the motorized coil and scanner, sleeves are not necessary.

METRIC	Clamping Ø D1 [mm]	03	04	05	06	08	10	12	16
	Ø D2 [mm] extra slim	06	07	08	09	11	13	15	—
	Ø L [mm] extra slim	—	—	—	—	—	48	48	—
Gage length A [mm]	ZG80				80	80	80	80	
<b>Order No.</b>	extra slim <b>A63.173...</b>	—	—	—	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	—
Gage length A [mm]	ZG120	120	120	120	120	120	120	120	
<b>Order No.</b>	extra slim <b>A63.177...</b>	<b>.03</b>	<b>.04</b>	<b>.05</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	—
	Ø D2 [mm] standard	09	10	11	12	14	16	18	24
	Ø L [mm] standard	—	—	—	—	—	68	75	75
Length A [mm]	standard	120	120	120	120	120	120	120	120
<b>Order No.</b>	extra slim <b>A63.187...</b>	<b>.03</b>	<b>.04</b>	<b>.05</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.16</b>



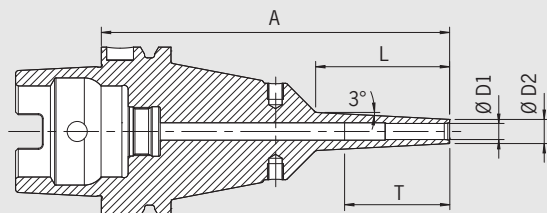
### Mini Shrink shrink and cooling sleeve

- Protect Mini Shrink chucks from overheating
- Extend lifetime of shrink fit chucks
- Secure and user friendly handling
- Cooling with standard cooling body

Shrinking and cooling sleeves for Mini Shrink chucks								Order No.
<b>Extra slim</b>								
Size [mm]	Ø 03	Ø 04	Ø 05	Ø 06	Ø 08	Ø 10	Ø 12	
<b>Order No. 80.105.14...</b>	<b>.2.01</b>	<b>.2.02</b>	<b>.2.03</b>	<b>.2.04</b>	<b>.2.05</b>	<b>.2.06</b>	<b>.2.07</b>	
<b>Standard</b>								
Size [mm]	Ø 03	Ø 04	Ø 05	Ø 06	Ø 08	Ø 10	Ø 12	Ø 16
<b>Order No. 80.105.14...</b>	<b>.2.04</b>	<b>.2.08</b>	<b>.2.05</b>	<b>.2.09</b>	<b>.2.10</b>	<b>.2.11</b>	<b>.2.12</b>	<b>.2.16</b>
<b>Base</b>								<b>80.105.14.2.99</b>
<b>Set with base (12 pcs., diameter 3 – 12 mm)</b>								<b>80.105.14.2.00</b>

# POWER MINI SHRINK CHUCK DIN 69893-1 · HSK-A63

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U < 1 grmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN



The Power Mini Shrink Chuck is perfect for 5-axis machining in the die & mold and in the medical industry. Very slim at the top like the HAIMER Mini Shrink Chucks, the Power Mini Shrink is reinforced at the base. This allows for efficient milling with an angled tool, even at long protruding lengths.

- 2 types: Standard (3 mm wall thickness) and extra slim (1.5 mm wall thickness)
- 3° angle at the top
- With threaded holes in order to balance with balancing screws
- For solid carbide tools with shank tolerance h6
- Heat resistant hot-working steel
- Hardened 54-2 HRC

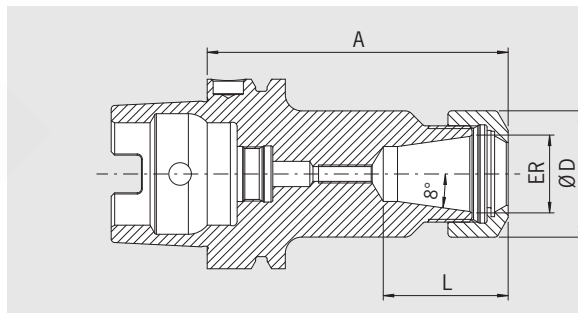
**Attention:** Heating and cooling sleeves are needed when shrinking on most shrink fit machines (see accessories). However, when using the Power Clamp i4.0 Sprint/Air or Nano machines with the motorized coil and scanner, sleeves are not necessary.

INCH	Clamping Ø D1 [inch]		1/8	3/16	1/4	5/16	3/8	1/2	5/8
	Ø D2 [inch] standard		0.35	0.43	0.47	0.55	0.63	0.71	0.94
	Ø D2 [inch] extra slim		0.24	0.32	0.35	0.43	0.51	0.59	—
	T [inch]		—	—	—	—	2.68	2.95	2.95
	L [inch] ZG130		1.97	1.97	1.97	1.97	1.97	1.97	1.97
Gage length A [inch]	ZG130		5.12	5.12	5.12	5.12	5.12	5.12	5.12
Order No.	standard	A63.184...	.1/8z.8	.3/16z.8	.1/4z.8	.5/16z.8	.3/8z.8	.1/2z.8	.5/8z.8
Order No.	extra slim	A63.174...	.1/8z.8	.3/16z.8	.1/4z.8	.5/16z.8	.3/8z.8	.1/2z.8	—
	L [inch] oversize/ZG200		3.15	3.15	3.15	3.15	3.15	3.15	3.15
Gage length A [inch]	oversize		160	160	160	160	160	160	160
Order No.	standard	A63.182...	.1/8z.8	.3/16z.8	.1/4z.8	.5/16z.8	.3/8z.8	.1/2z.8	.5/8z.8
Order No.	extra slim	A63.172...	.1/8z.8	.3/16z.8	.1/4z.8	.5/16z.8	.3/8z.8	.1/2z.8	—
Gage length A [inch]	ZG200		200	200	200	200	200	200	200
Order No.	standard	A63.186...	.1/8z.8	.3/16z.8	.1/4z.8	.5/16z.8	.3/8z.8	.1/2z.8	.5/8z.8
Order No.	extra slim	A63.176...	.1/8z.8	.3/16z.8	.1/4z.8	.5/16z.8	.3/8z.8	.1/2z.8	—

METRIC	Clamping Ø D1 [mm]		03	04	05	06	08	10	12	16
	Ø D2 [mm] standard		09	10	11	12	14	16	18	24
	Ø D2 [mm] extra slim		06	07	08	09	11	13	15	—
	T [mm]		—	—	—	—	—	68	75	75
	L [mm] ZG130		50	50	50	50	50	50	50	50
Gage length A [mm]	ZG130		130	130	130	130	130	130	130	130
Order No.	standard	A63.184...	.03.8	.04.8	.05.8	.06.8	.08.8	.10.8	.12.8	.16.8
Order No.	extra slim	A63.174...	.03.8	.04.8	.05.8	.06.8	.08.8	.10.8	.12.8	—
	L [mm] oversize/ZG200		80	80	80	80	80	80	80	80
Gage length A [mm]	oversize		160	160	160	160	160	160	160	160
Order No.	standard	A63.182...	.03.8	.04.8	.05.8	.06.8	.08.8	.10.8	.12.8	.16.8
Order No.	extra slim	A63.172...	.03.8	.04.8	.05.8	.06.8	.08.8	.10.8	.12.8	—
Gage length A [mm]	ZG200		200	200	200	200	200	200	200	200
Order No.	standard	A63.186...	.03.8	.04.8	.05.8	.06.8	.08.8	.10.8	.12.8	.16.8
Order No.	extra slim	A63.176...	.03.8	.04.8	.05.8	.06.8	.08.8	.10.8	.12.8	—



# ER COLLET CHUCK DIN 69893-1 · HSK-A63



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck fine balanced G2.5 25,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN

**Use:**

For clamping tools with cylindrical shank in ER collets according to ISO 15488. – Increasing size L possible upon request

- Locknut (balanced, with slide coating for higher clamping forces); without coolant tube
- Locknut type HS (High Speed, fine balanced, with slide coating for higher clamping forces) for an extra charge

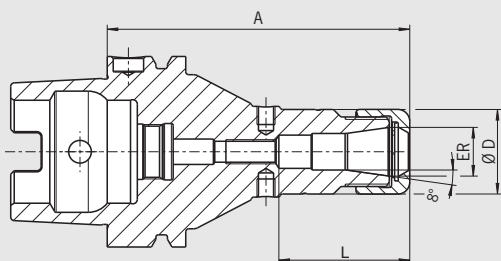
INCH	ER		11	16	25	32	40
		Ø D [inch]	0.75	1.1	1.65	1.97	2.48
		Clamping range [inch]	0.02–0.28	0.02–0.39	0.04–0.63	0.06–0.79	0.09–1.02
		Clamping range [mm]	0.5–7.0	0.5–10.0	1.0–16.0	1.5–20.0	2.5–26.0
L [inch]			1.03	1.81	1.83	1.85	2.09
Gage length A [inch]	ultra short		2.95	2.95	2.95	2.95	3.35
Order No.	A63.025...		.11 <sup>1)</sup>	.16 <sup>1)</sup>	.25 <sup>1)</sup>	.32 <sup>1)</sup>	.40 <sup>1)</sup>
L [inch]			<sup>2)</sup>	1.28	1.61	1.85	2.09
Gage length A [inch]	short		3.94	3.94	3.94	3.94	4.72
Order No.	A63.020...		.11	.16	.25	.32	.40
L [inch]				1.28	1.61	1.85	2.09
Gage length A [inch]	oversize		—	6.30	6.30	6.30	6.30
Order No.	A63.022...		—	.16	.25	.32	.40

**Accessories**

<b>Collets ER</b>		See pages 768–773
<b>Shrink Fit Collets</b>		See pages 758–767
<b>Locknut (pre-balanced)</b>		
Size		ER 11    ER 16    ER 25    ER 32    ER 40
Order No.	83.912...	.11    .16    .25    .32    .40
<b>Chuck nut HS (fine-balanced)</b>		
Size		—    ER 16    ER 25    ER 32    ER 40
Order No.	83.912...	—    .16.HS    .25.HS    .32.HS    .40.HS
<b>Fork wrench</b>		
Size		ER 11    ER 16    —    —    —
Order No.	84.200...	.11    .16
<b>Clamping wrench</b>		
Size		—    —    ER 25    ER 32    ER 40
Order No.	84.200...	—    —    .25    .32    .40
<b>Balancing index rings</b>		
Size	long/oversize	—    ER 16    ER 25    ER 32    ER 40
Order No.	79.350...	—    .28    .42    .48    .50
<b>Adjusting screw</b>		
Size		—    ER 16    ER 25    ER 32    ER 40
Order No.	85.800...	—    .34    .34    .35    .35
<b>Coolant tube</b>		See page 793
Order No.	85.700.63	
<b>Shrink fit extensions</b>		See pages 751–753

# POWER COLLET CHUCK DIN 69893-1 · HSK-A63

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck fine balanced G2.5 25,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN



**The Power Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with improved construction combines high rigidity with vibration dampening features, giving more protection to the machine, spindle and tool. The universal Power Collet Chuck is a unique high performance chuck that can also be used with standard collets.**

- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488  
(Attention: By using standard collet, ER length A will increase)
- High rigidity
- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection

- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

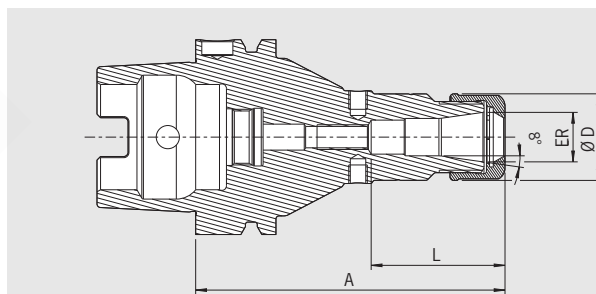
INCH	ER	16	25	32
	Ø D [inch]	1.1	1.65	1.97
	Clamping range [inch]	1/8–3/8	1/8–5/8	1/8–3/4
	Clamping range [mm]	2.0–10.0	2.0–16.0	2.0–20.0
	L [inch] ultra short	1.12	1.41	1.65
Gage length A [inch]	ultra short	2.95	2.95	2.95
Order No.	A63.025...	.16.3 <sup>1)</sup>	.25.3 <sup>1)</sup>	.32.3 <sup>1)</sup>
	L [inch]	1.69	2.01	2.09
Gage length A [inch]	short	3.94	3.94	3.94
Order No.	A63.020...	.16.3	.25.3	.32.3
Gage length A [inch]	oversize	6.30	6.30	6.30
Order No.	A63.022...	.16.3	.25.3	.32.3

### Accessories

<b>Locknut (fine-balanced)</b>				See page 779
Size		ER 16	ER 25	ER 32
Order No.	83.914...	.16	.25	.32
<b>Power Collet clamping wrench</b>				See page 781
<b>Torque Master torque wrench</b>				See page 780
Order No.	84.600.00			
<b>Power Collets</b>				See page 775
<b>Power Collets with Safe-Lock</b>				See page 776
<b>Cool Jet bores for Power Collets</b>				See page 777
Order No.	91.100.27			
<b>Shrink Fit Collets</b>				See pages 760–767
<b>Coolant tube</b>				See page 793
Order No.	85.700.63			

1) Without thread for back-up screw

# HIGH PRECISION COLLET CHUCK DIN 69893-1 · HSK-A63



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 30,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN

The High Precision Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with better construction and a special coated smooth locknut combines high rigidity with vibration dampening and noise-reducing features, giving more protection to machines, spindles and tools.

- With a specially coated smooth locknut, balanced at < 1 gmm
- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (Attention: By using standard collet, ER length A will increase)
- High rigidity
- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection

- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

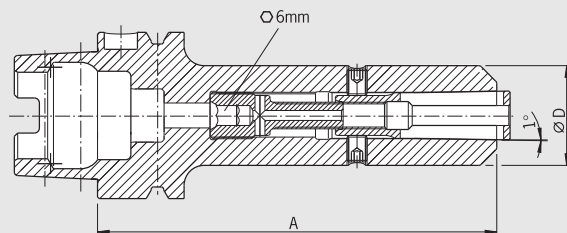
INCH	ER	16	25	32
	Ø D [inch]	1.1	1.65	1.97
	Clamping range [inch]	1/8–3/8	1/8–5/8	1/8–3/4
	Clamping range [mm]	2.0–10.0	2.0–16.0	2.0–20.0
	L [inch] ultra short	1.12	1.41	1.65
Gage length A [inch]	ultra short	2.95	2.95	2.95
Order No.	A63.025...	.16.3.HP <sup>1)</sup>	.25.3.HP <sup>1)</sup>	.32.3.HP <sup>1)</sup>
	L [inch]	1.69	2.01	2.09
Gage length A [inch]	short	3.94	3.94	3.94
Order No.	A63.020...	.16.3.HP	.25.3.HP	.32.3.HP
Gage length A [inch]	oversize	6.30	6.30	6.30
Order No.	A63.022...	.16.3.HP	.25.3.HP	.32.3.HP

**Accessories**

<b>High Precision Smooth Locknut (fine-balanced)</b>					See page 779
Size		ER 16	ER 25	ER 32	
Order No.	83.914...	.16.1	.25.1	.32.1	
<b>Roller bearing wrench</b>					See page 782
Order No.	84.650...	.16.1	.25.1	.32.1	
<b>Collets ER</b>					See pages 768–773
<b>Shrink Fit Collets</b>					See pages 759–767
<b>Power Collets</b>					See page 775
<b>Power Collets with Safe-Lock</b>					See page 776
<b>Cool Jet bores for Power Collets</b>					See page 777
Order No.	91.100.27				
<b>Coolant tube</b>					See page 793
Order No.	85.700.63				

# HIGH-PRECISION CHUCK DIN 69893-1 · HSK-A63

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck fine balanced G2.5 25,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN



### Use:

For high-precision clamping of tools with cylindrical shank, also with clamping flats. Very useful for High Speed machining.

- Included in delivery: High-Precision Chuck with clamping screw and pull-out hook, without collet, without coolant tube
- Shank tolerance h6
- Optional: Cool Jet bores on HG Collets from diam. 1/4" (6 mm)
- Extensions for High-Precision Chuck available

METRIC	HG	01	02	03
	Ø D [mm]	30	35	48
	Clamping diameter	2   3   4   5   6   8	10   12   14	16   18   20
Length A [mm]	short	120	120	120
Order No.	A63.120...	.01	.02	.03
Length A [mm]	oversize	160	160	160
Order No.	A63.122...	.01	.02	.03

### Accessories

#### Clamping screw



#### Collets HG INCH

See page 783

HG 01 Ø D [inch]		Ø 1/8	Ø 3/16	Ø 1/4	Ø 5/16				
Order No.	82.510...	.1/8Z	.3/16Z	.1/4Z	.5/16Z				

HG 02 Ø D [inch]						Ø 3/8	Ø 7/16	Ø 1/2	Ø 9/16
Order No.	82.520...					.3/8Z	.7/16Z	.1/2Z	.9/16Z

HG 03 Ø D [inch]									Ø 5/8	Ø 3/4
Order No.	82.530...								.5/8Z	.3/4Z

#### Collets HG METRIC

See page 783

HG 01 Ø D [mm]		Ø 02	Ø 03	Ø 04	Ø 05	Ø 06	Ø 08	—	—	—	—
Order No.	82.510...	.02	.03	.04	.05	.06	.08				

HG 02 Ø D [mm]		—	—	—	—	—	—	Ø 10	Ø 12	Ø 14	—
Order No.	82.520...							.10	.12	.14	

HG 03 Ø D [mm]		—	—	—	—	—	—	—	—	—	Ø 16	Ø 18	Ø 20
Order No.	82.530...										.16	.18	.20

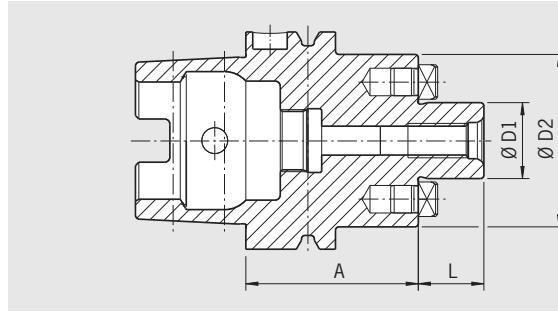
#### Pull-out hook

HG		HG 01	HG 02	HG 03
Order No.	82.570...	.00	.00	.00

#### Balancing index rings

HG		HG 01	HG 02	HG 03
Order No.	79.350...	.30	.35	.48

# FACE MILL ARBOR DIN 69893-1 · HSK-A63



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck fine balanced G2.5 25,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN

**Use:**

For clamping face mill cutters.

Metric version: With coolant exit bores on the end face for milling cutters with central cooling

- Included in delivery: tightening bolt, without coolant tube

- Inch sizes: Coolant bores on front side for an extra charge

INCH	Clamping Ø D1 [inch]		3/4	1	1 1/4	1 1/2
	L [inch]		0.70	0.70	0.70	0.94
	Ø D2 [inch]		1.67	1.67	1.67	3.78
Gage length A [inch]	short		1.97	2.36	2.36	2.36
<b>Order No.</b>	<b>A63.050...</b>		<b>.3/4Z</b>	<b>.1Z</b>	<b>.1 1/4Z</b>	<b>.1 1/2Z</b>
Gage length A [inch]	long		3.94	3.94	3.94	3.94
<b>Order No.</b>	<b>A63.051...</b>		<b>.3/4Z</b>	<b>.1Z</b>	<b>.1 1/4Z</b>	<b>.1 1/2Z</b>
Gage length A [inch]	oversize		6.30	6.30	—	—
<b>Order No.</b>	<b>A63.052...</b>		<b>.3/4Z</b>	<b>.1Z</b>		

METRIC	Clamping Ø D1 [mm]		16	22	27	32	40
	Ø D2 [mm]		36	48	60	78	87
	L [mm]		17	19	21	24	27
Length A [mm]	short		50	50	60	60	60
<b>Order No.</b>	<b>A63.050...</b>		<b>.16.KKB</b>	<b>.22.KKB</b>	<b>.27.KKB</b>	<b>.32.KKB</b>	<b>.40.KKB</b>
Length A [mm]	long		—	100	100	100	100
<b>Order No.</b>	<b>A63.051...</b>			<b>.22.KKB</b>	<b>.27.KKB</b>	<b>.32.KKB</b>	<b>.40.KKB</b>
Length A [mm]	oversize		—	160	160	160	—
<b>Order No.</b>	<b>A63.052...</b>			<b>.22.KKB</b>	<b>.27.KKB</b>	<b>.32.KKB</b>	

**Accessories**

**Clamping Screw**

Ø D1 [inch]			3/4	1	1 1/4	1 1/2
<b>Order No.</b>	<b>85.300...</b>		<b>.3/4Z</b>	<b>.1Z</b>	<b>.11/4Z</b>	<b>.11/2Z</b>

**Wrench**

Ø D1 [inch]			3/4	1	1 1/4	1 1/2
<b>Order No.</b>	<b>84.400...</b>		<b>.3/4Z</b>	<b>.1Z</b>	<b>.11/4Z</b>	<b>.11/2Z</b>

**Balancing index ring**

Ø D1 [inch]			3/4	1	—	—
<b>Order No.</b>	<b>79.350...</b>		<b>.1.71Z</b>	<b>.55</b>		

**Coolant tube**

Ø D1 [inch]			3/4	1	1 1/4	1 1/2
<b>Order No.</b>	<b>85.700...</b>		<b>.63</b>	<b>.63</b>	<b>.63</b>	<b>.63</b>

**Coolant bores**

<b>Order No.</b>	<b>91.100.03</b>					
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**Accessories**

**Tightening bolt**

Size D1			16	22	27	32	40
<b>Order No.</b>	<b>85.300...</b>		<b>.16</b>	<b>.22</b>	<b>.27</b>	<b>.32</b>	<b>.40</b>

**Wrench**

Size D1			16	22	27	32	40
<b>Order No.</b>	<b>84.400...</b>		<b>.16</b>	<b>.22</b>	<b>.27</b>	<b>.32</b>	<b>.40</b>

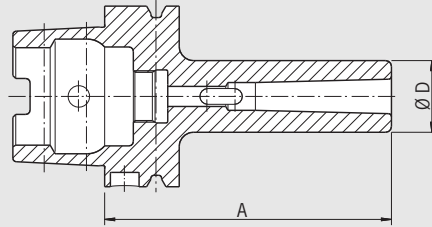
**Balancing index rings**

Size D1			16	22	27	32	40
<b>Order No.</b>	<b>79.350...</b>		<b>.36</b>	<b>.48</b>	<b>.60</b>	<b>.78</b>	<b>.87</b>

# ADAPTER FOR MORSE TAPER WITH TANG DIN 69893-1 · HSK-A63

### CERTIFICATE OF QUALITY

- Chuck balanced  
G6.3 8,000 rpm
- All functional surfaces fine machined
- More accurate than DIN



### Use:

For holding tools with morse taper and tang according to DIN 228-1 form AF.

– Fine-balancing for an extra charge

METRIC	MK	01	02	03	04
	Ø D [mm]	25	32	40	48
Gage Length A [mm]	short	100	120	140	160
Order No.	A63.080...	.01	.02	.03	.04

### Accessories

#### Balancing index rings

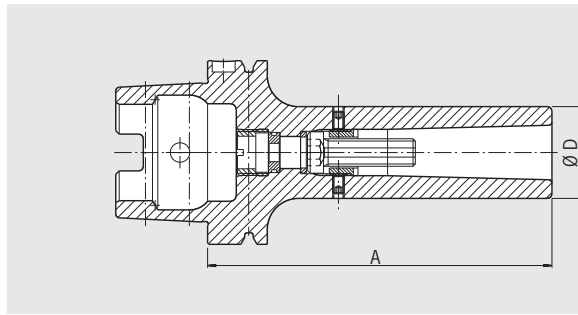
MK	01	02	03	04	
Order No.	79.350...	.25	.32	.40	.48

#### Coolant tube

Order No. 85.700.63

See page 793

## ADAPTER FOR MORSE TAPER WITH THREAD DIN 69893-1 · HSK-A63



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck balanced G6.3 8,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN

**Use:**

For holding tools with morse taper with thread according to DIN 228-1 form A.

- Fine-balancing for an extra charge
- Delivery with tightening bolt without coolant tube

METRIC	MK	02	03	04
	Ø D [mm]	32	40	48
Gage Length A [mm]	short	120	140	160
<b>Order No.</b>	<b>A63.130...</b>	<b>.02</b>	<b>.03</b>	<b>.04</b>

**Accessories**

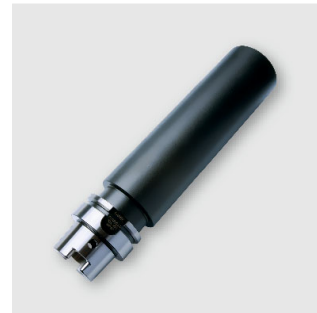
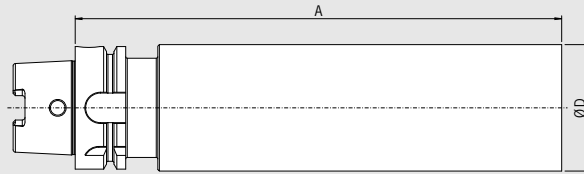
**Balancing index rings**

MK		02	03	04
<b>Order No.</b>	<b>79.350...</b>	<b>.32</b>	<b>.40</b>	<b>.48</b>
<b>Coolant tube</b>				
<b>Order No.</b>	<b>85.700.63</b>			

## BLANK ADAPTER DIN 69893-1 · HSK-A63

### CERTIFICATE OF QUALITY

- All functional surfaces fine machined
- More accurate than DIN

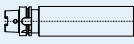


#### Use:

For manufacturing special tools in your own factory.

#### Design:

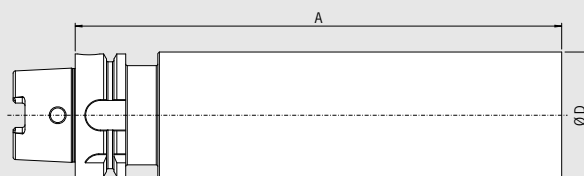
HSK is hardened and ground, the cylindrical part is soft.

METRIC	Ø D [mm]		64
Gage Length A [mm]	ZG250		250
Order No.	A63.090...		.64

## BLANK ADAPTER – HARDENED DIN 69893-1 · HSK-A63

### CERTIFICATE OF QUALITY

- All functional surfaces fine machined
- More accurate than DIN





#### Use:

For manufacturing special tools in your own factory.

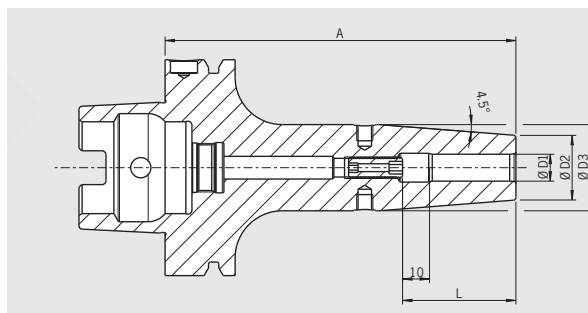
#### Version:

- HSK hardened and ground
- Cylindrical part hardened to 52+2 HRC

METRIC	Ø D [mm]		65
Gage Length A [mm]	ZG100		100
Order No.	RA63.096.0650...		.0100
Gage Length A [mm]	ZG250		250
Order No.	RA63.096.0650...		.0250



# STANDARD SHRINK FIT CHUCK SIMILAR DIN 69893-1 · HSK-A63/80 (TAPER A63/FLANGE 80MM)



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 33,000 rpm or U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN

**Use:**  
Suitable for all shrinking units.

**DIN 69893-1**

- With threaded holes in order to balance with balancing screws
- Included in delivery: Shrink fit chuck with back-up screw, without coolant tube
- Heat resistant hot-working steel
- Hardened 54–2 HRC
- For HSS and solid carbide tools
- Shank tolerance h6
- Incl. pocket for data chip
- Cooling systems Cool Jet and Cool Flash available on request

**Standard version, similar to DIN 69882-8**

INCH	Clamping Ø D1 [inch]	1/4	5/16	3/8	1/2	5/8
	Ø D2 [inch]	0.83	0.83	0.94	0.94	1.06
	Ø D3 [inch]	1.06	1.06	1.26	1.26	1.34
	L [inch]	1.42	1.42	1.65	1.85	1.97
Length A [inch]	ZG130	5	5	5	5	5
Order No.	A63/80.144...	.1/4z.i	.5/16z.i	.3/8z.i	.1/2z.i	5/8z.i

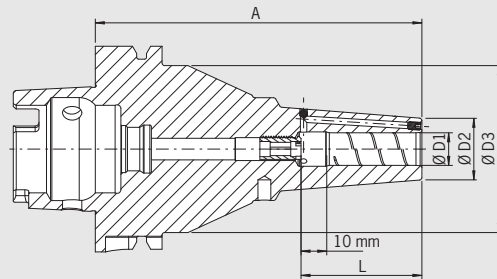
METRIC	Clamping Ø D1 [mm]	06	08	10	12	14	16	18
	Ø D2 [mm]	21	21	24	24	27	27	33
	Ø D3 [mm]	27	27	32	32	34	34	42
	L [mm]	36	36	42	47	47	50	50
Length A [mm]	ZG130	130	130	130	130	130	130	130
Order No.	A63/80.144...	.06	.08	.10	.12	.14	.16	.18

Accessories		
Shrink fit extensions		See pages 750–753
Balancing screws		Order No. 80.203.00 See page 784
Cool Jet bores		Order No. 91.100.24 See page 501
Cool Flash Upgrade incl. Cool Jet		Order No. 91.100.41 See pages 502–503
Balluff-Chip BIS-C-122-04/L		Order No. 909009-0002
Data-Lock mechanical data carrier locking system		Order No. 91.100.06 See page 504
Coolant tube		Order No. 85.700.63 See page 793
Reduction sleeves		See page 794
Back-up screws		See pages 796–799
Cooling grooves on request		

# POWER SHRINK CHUCK SIMILAR DIN 69893-1 · HSK-A63/80 (TAPER A63/FLANGE 80MM) INCH

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 33,000 rpm or U<1 gmm
- All functional surfaces fine machined
- More accurate than DIN



The Power Shrink Chuck is designed for the highest cutting performance in High Speed machining. The optimized design combines high rigidity with vibration dampening, which protects the machine, spindle and tool.

- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy
- Heat resistant hot-working steel
- Hardened 54–2 HRC

#### Delivery includes:

- Cool Jet bores (sealed)
- With threaded holes in order to balance with balancing screws
- Incl. pocket for data chip
- With thread for coolant tube

INCH	Clamping Ø D1 [inch]	1/4	5/16	3/8	1/2	5/8	3/4	1	
	Ø D2 [inch]	0.87	0.87	1.04	1.04	1.16	1.40	1.81	
	L [inch] extra ultra short	—	—	—	—	—	1.71	1.85	
Length A [inch]	extra ultra short							2.75	2.75
Order No.	A63/80.145...							.3/4z.5.i	.1z.5.i
	Ø D2 [inch]	0.87	0.87	1.04	1.04	1.16	1.40	1.77	
	L [inch] ultra short	1.50	1.50	1.69	1.81	1.93	1.93	2.24	
Length A [inch]	ultra short							3	3
Order No.	A63/80.145...	.1/4z.3.i	.5/16z.3.i	.3/8z.3.i	.1/2z.3.i	.5/8z.3.i	.3/4z.3.i	.1z.3.i	
Length A [inch]	short								3.5
Order No.	A63/80.140...								.1z.3.i

#### Length A = ZG130

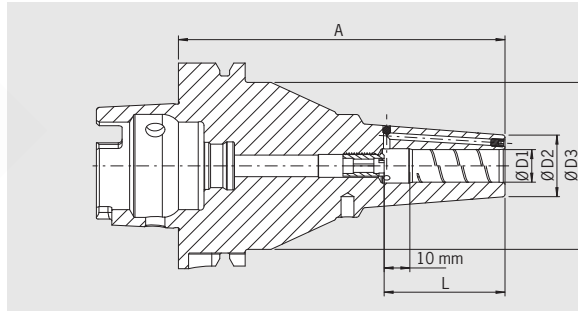
INCH	Clamping Ø D1 [inch]	1/4	5/16	3/8	1/2	5/8	
	Ø D2 [inch]	0.83	0.83	0.94	0.94	1.06	
	Ø D2 [inch]	2.56	2.56	2.56	2.56	2.56	
	L [inch]	1.42	1.42	1.65	1.85	1.97	
Length A [inch]	ZG130						5 <sup>1)</sup>
Order No.	A63/80.144...	.1/4z.3.i	.5/16z.3.i	.3/8z.3.i	.1/2z.3.i	.5/8z.3.i	

#### Accessories

Shrink fit extensions			See page 750
Balancing screws		Order No. 80.203.00	See page 784
Cool Flash		Order No. 91.100.40	See pages 502–503
Balluff-Chip BIS-C-122-04/L		Order No. 909009-0002	
Data-Lock mechanical data carrier locking system		Order No. 91.100.06	See page 504
Coolant tube		Order No. 85.700.63	See page 793
Cooling adapters for extra ultra short holders			
Size		Ø 20	Ø 25
Order No.	80.105...	.16.0045	.18.0011
Cooling grooves on request			

1) With back-up screw

**POWER SHRINK CHUCK WITH SAFE-LOCK®**  
**SIMILAR DIN 69893-1 · HSK-A63/80 (TAPER A63/FLANGE 80MM)**  
**INCH**



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 33,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN

The Power Shrink Chuck is designed for the highest cutting performance in High Speed machining. The optimized design combines high rigidity with vibration dampening, which protects the machine, spindle and tool.

- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy
- Heat resistant hot-working steel
- Hardened 54–2 HRC

**Delivery includes:**

- Safe-Lock pull-out protection
- Cool Jet bores (sealed)
- With threaded holes in order to balance with balancing screws
- Incl. pocket for data chip
- With thread for coolant tube

INCH	Clamping Ø D1 [inch]		1/2	5/8	3/4	1
	Ø D2 [inch] extra ultra short		—	—	1.40	1.77
	L [inch] extra ultra short		—	—	1.93	2.24
Length A [inch]	extra ultra short		—	—	2.75	2.75
Order No.	A63/80.145...				.3/4z.57.i	.1z.57.i
	Ø D2 [inch]		1.04	1.16	1.40	1.77
	L [inch]		1.81	1.93	1.93	2.24
Length A [inch]	ultra short		3	3	3	3
Order No.	A63/80.145...		.1/2z.37.i	.5/8z.37.i	.3/4z.37.i	.1z.37.i
Length A [inch]	short		—	—	—	3.5
Order No.	A63/80.140...					.1z.37.i

**Length A = ZG130**

INCH	Clamping Ø D1 [inch]		1/2	5/8
	Ø D2 [inch]		0.94	1.06
	Ø D3 [inch]		2.56	2.56
	L [inch]		1.85	1.97
Length A [inch]	ZG130		5 <sup>1)</sup>	5 <sup>1)</sup>
Order No.	A63/80.144...		.1/2z.37.i	.5/8z.37.i

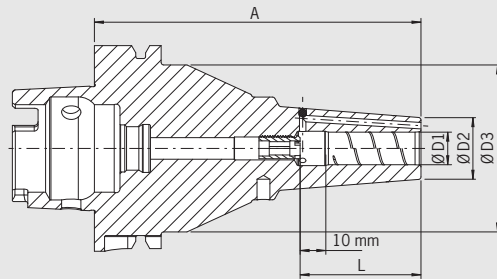
**Accessories**

<b>Shrink fit extensions</b>				See page 750
<b>Balancing screws</b>		Order No. 80.203.00		See page 784
<b>Cool Flash</b>		Order No. 91.100.40		See pages 502–503
<b>Balluff-Chip BIS-C-122-04/L</b>		Order No. 909009-0002		
<b>Data-Lock mechanical data carrier locking system</b>		Order No. 91.100.06		See page 504
<b>Coolant tube</b>		Order No. 85.700.63		See page 793
<b>Cooling adapters for extra ultra short holders</b>				
Size		Ø 20	Ø 25	
Order No.	80.105...	.16.0045	.18.0011	
<b>Cooling grooves on request</b>				

# POWER SHRINK CHUCK SIMILAR DIN 69893-1 · HSK-A63/80 (TAPER A63/FLANGE 80MM) METRIC

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 33,000 rpm or U<1 gmm
- All functional surfaces fine machined
- More accurate than DIN



The Power Shrink Chuck is designed for the highest cutting performance in High Speed machining. The optimized design combines high rigidity with vibration dampening, which protects the machine, spindle and tool.

- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy
- Heat resistant hot-working steel
- Hardened 54–2 HRC

### Delivery includes:

- Cool Jet bores (sealed)
- With threaded holes in order to balance with balancing screws
- Incl. pocket for data chip
- With thread for coolant tube

METRIC	Clamping Ø D1 [mm]	06	08	10	12	16	20	25	32
	Ø D2 [mm] extra ultra short	22	22	27	26.5	29.5	35.5	46	—
	L [mm] extra ultra short	—	—	41	—	—	43.5	47	—
Length A [mm]	extra ultra short			65			70 <sup>2)</sup>	70 <sup>3)</sup>	
Order No.	A63/80.145...			.10.5			.20.5	.25.5	
	Ø D2 [mm]	22	22	26.5	26.5	29.5	35.5	45	45
	L [mm]	38	38	43	46	49	49	57	59
Length A [mm]	ultra short	70	70	70	70	75	75	80 <sup>3)</sup>	—
Order No.	A63/80.145...	.06.3	.08.3	.10.3	.12.3	.16.3	.20.3	.25.3	
Length A [mm]	short							90	90
Order No.	A63/80.140...							.25.3	.32.3

### Length A = ZG130

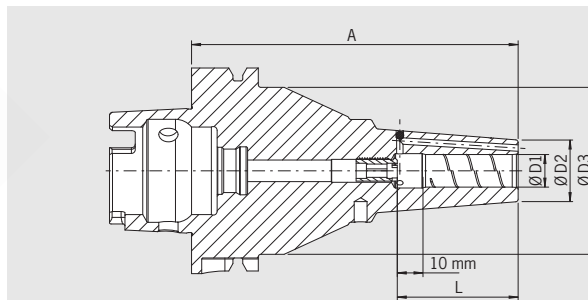
METRIC	Clamping Ø D1 [mm]	06	08	10	12	16
	Ø D2 [mm]	21	21	24	24	27
	Ø D3 [mm]	65	65	65	65	65
	L [mm]	36	36	42	47	50
Length A [mm]	ZG130	130	130	130	130	130
Order No.	A63/80.144...	.06.3 <sup>1)</sup>	.08.3 <sup>1)</sup>	.10.3 <sup>1)</sup>	.12.3 <sup>1)</sup>	.16.3 <sup>1)</sup>

### Accessories

Shrink fit extensions			See pages 751–753
Balancing screws		Order No. 80.203.00	See page 784
Cool Flash		Order No. 91.100.40	See pages 502–503
Balluff-Chip BIS-C-122-04/L		Order No. 909009-0002	
Data-Lock mechanical data carrier locking system		Order No. 91.100.06	See page 504
Coolant tube		Order No. 85.700.63	See page 793
Cooling adapters for extra ultra short holders			
Size		Ø 20	Ø 25
Order No.	80.105...	.16.0045	.18.0011
Cooling grooves on request			

1) With back-up screw  
2) Cooling adapter for Ø 20 mm  
3) Cooling adapter for Ø 25 mm

# POWER SHRINK CHUCK WITH SAFE-LOCK® SIMILAR DIN 69893-1 · HSK-A63/80 (TAPER A63/FLANGE 80MM) METRIC



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 33,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN

The Power Shrink Chuck is designed for the highest cutting performance in High Speed machining. The optimized design combines high rigidity with vibration dampening, which protects the machine, spindle and tool.

- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy
- Heat resistant hot-working steel
- Hardened 54–2 HRC

**Delivery includes:**

- Safe-Lock pull-out protection
- Cool Jet bores (sealed)
- With threaded holes in order to balance with balancing screws
- Incl. pocket for data chip
- With thread for coolant tube

METRIC	Clamping Ø D1 [mm]	08	10	12	16	20	25
	Ø D2 [mm] extra ultra short	—	—	—	—	35.5	46
	L [mm] extra ultra short	—	—	—	—	43.5	47
Length A [mm]	extra ultra short					70 <sup>2)</sup>	70 <sup>3)</sup>
Order No.	A63/80.145...					.20.57	.25.57
	Ø D2 [mm]	22	26.5	26.5	29.5	35.5	45
	L [mm]	38	43	46	49	49	57
Length A [mm]	ultra short	70	70	70	75	75	80 <sup>3)</sup>
Order No.	A63/80.145...	.08.37	.10.37	.12.37	.16.37	.20.37	.25.37
Length A [mm]	short						90
Order No.	A63/80.140...						.25.37

**Length A = ZG130**

METRIC	Clamping Ø D1 [mm]	12	16
	Ø D2 [mm]	24	27
	Ø D3 [mm]	65	65
	L [mm]	47	50
Length A [mm]	ZG130	130 <sup>1)</sup>	130 <sup>1)</sup>
Order No.	A63/80.144...	.12.37	.16.37

**Accessories**

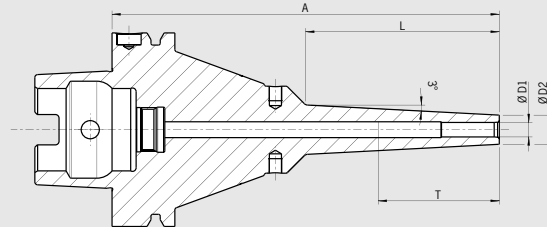
Shrink fit extensions		See pages 751–753
Balancing screws		See page 784
Cool Flash		Order No. 91.100.40
Balluff-Chip BIS-C-122-04/L		Order No. 909009-0002
Data-Lock mechanical data carrier locking system		Order No. 91.100.06 See page 504
Coolant tube		Order No. 85.700.63 See page 793
Cooling adapters for extra ultra short holders		
Size		<sup>2)</sup> Ø 20 <sup>3)</sup> Ø 25
Order No. 80.105...		.16.0045    .18.0011

1) With back-up screw  
2) Cooling adapter for Ø 20 mm  
3) Cooling adapter for Ø 25 mm

# POWER MINI SHRINK SIMILAR DIN 69893-1 · HSK-A63/80 (TAPER A63/FLANGE 80MM)

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 33,000 rpm or U<1 gmm
- All functional surfaces fine machined
- More accurate than DIN



**Power Mini Shrink Chuck is perfect for 5-axis machining of parts that are difficult to access. Very slim at the top like the HAIMER Mini Shrink Chucks, the Power Mini Shrink is reinforced at the base. This allows for efficient milling with an angled tool, even at long protruding lengths.**

- 3 mm wall thickness
- 3° angle at the top
- With threaded holes in order to balance with balancing screws
- For solid carbide tools with shank tolerance h6
- Incl. pocket for data chip
- Heat resistant hot-working steel
- Hardened 54-2 HRC

**Attention:** Heating and cooling sleeves are needed when shrinking on most shrink fit machines (see accessories). However, when using the Power Clamp i4.0 Sprint/Air or Nano machines with the motorized coil and scanner, sleeves are not necessary.

INCH	Clamping Ø D1 [inch]	1/8	1/4	5/16	3/8	1/2
	Ø D2 [inch]	0.35	0.47	0.55	0.63	0.71
	T [inch]	—	—	—	2.68	2.95
	L [inch]	3.15	3.15	3.15	3.15	3.15
Length A [inch]	oversize	6.5	6.5	6.5	6.5	6.5
Order No.	A63/80.182...	.1/8z.8.i	.1/4z.8.i	.5/16z.8.i	.3/8z.8.i	.1/2z.8.i

METRIC	Clamping Ø D1 [mm]	03	04	05	06	08	10	12
	Ø D2 [mm]	09	10	11	12	14	16	18
	T [mm]	—	—	—	—	—	68	75
	L [mm]	80	80	80	80	80	80	80
Length A [mm]	oversize	160	160	160	160	160	160	160
Order No.	A63/80.182...	.03.8	.04.8	.05.8	.06.8	.08.8	.10.8	.12.8

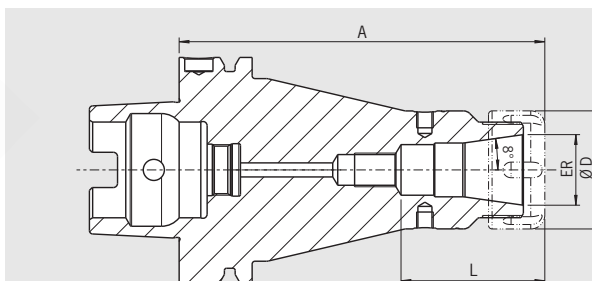
### Mini Shrink shrink and cooling sleeve

- Protect Mini Shrink chucks from overheating
- Extend lifetime of shrink fit chucks
- Secure and user friendly handling
- Cooling with standard cooling body



Fitting sleeves for Mini Shrink chucks						Order No.
Size [mm]		Ø 03	Ø 06	Ø 08	Ø 10	Ø 12
Size [inch]		Ø 1/8	Ø 1/4	Ø 5/16	Ø 3/8	Ø 1/2
Order No.	80.105.14.2...	.04	.09	.10	.11	.12
<b>Base</b>						<b>80.105.14.2.99</b>
<b>Set with base (12 pcs., diameter 3 - 12 mm)</b>						<b>80.105.14.2.00</b>

## POWER COLLET CHUCK SIMILAR DIN 69893-1 · HSK-A63/80 (TAPER A63/FLANGE 80MM)



### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 33,000 rpm or U<1 gmm
- All functional surfaces fine machined
- More accurate than DIN


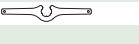





The Power Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with improved construction combines high rigidity with vibration dampening features, giving more protection to the machine, spindle and tool. The universal Power Collet Chuck is a unique high performance chuck that can also be used with standard collets.

- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488  
(Attention: By using standard collet, ER length A will increase)
- High rigidity
- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection

- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, high clamping force
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Incl. pocket for data chip
- Optional: Cool Jet bores on Power Collets from ER 25, Ø 6 mm
- Program of Power Collets on pages 774 – 777

INCH	ER	16	25	32
	Ø D [inch]	1.10	1.65	1.97
	Clamping range [inch]	1/8–3/8	1/8–5/8	1/8–3/4
	Clamping range [mm]	2.0–10.0	2.0–16.0	2.0–20.0
	L [inch]	1.69	1.97	1.87
Length A [inch]	ultra short	2.95	2.95	2.95
Order No.	A63/80.025...	.16.3	.25.3	.32.3
Length A [inch]	ZG130	5.12	5.12	5.12
Order No.	A63/80.024...	.16.3	.25.3	.32.3

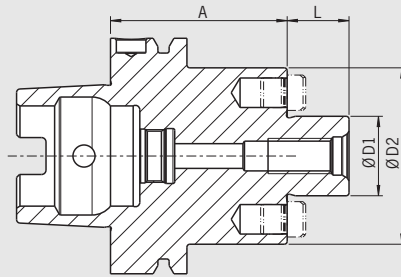
#### Accessories

<b>Locknut (fine-balanced)</b>				See page 779
Size		ER 16	ER 25	ER 32
Order No.	83.914...	.16	.25	.32
<b>Power Collet clamping wrench</b>				See page 781
<b>Torque Master torque wrench</b>				See page 780
<b>Power Collets</b>				See page 775
<b>Power Collets with Safe-Lock</b>				See page 776
<b>Cool Jet bores for Power Collets</b>				See page 777
Order No.	91.100.27			
<b>Shrink Fit Collets</b>				See pages 759–767
<b>Coolant tube</b>				See page 793
Order No.	85.700.63			

# FACE MILL ARBOR SIMILAR DIN 69893-1 · HSK-A63/80 (TAPER A63/FLANGE 80MM)

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 33,000 rpm or U<1 gmm
- All functional surfaces fine machined
- More accurate than DIN



### Use:

For holding face mill cutters and cutters with radial driving slot DIN 1880 and exceeding clamping diameter 40 clamping according to DIN 2079 is possible, too (4 additional tapped holes).

### DIN 69882-3

- Included in delivery: tightening bolt, without coolant tube
- INCH Version: With coolant exit bores on the end face for milling cutters with central cooling
- METRIC Version: Coolant exit bores optional

INCH	Clamping Ø D1 [inch]	3/4	1
	Ø D2 [inch]	1.71	2.17
	L [inch]	0.67	0.67
Length A [inch]	short	1.97	2.36
Order No.	A63/80.050...	.3/4z.i	.1z.i

METRIC	Clamping Ø D1 [mm]	22	27
	Ø D2 [mm]	48	60
	L [mm]	19	21
Length A [mm]	short	50	60
Order No.	A63/80.050...	.22	.27

### Accessories

#### Tightening bolt

Size D1		22	27
Order No.	85.300...	.22	.27

#### Wrench

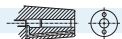
Size D1		22	27
Order No.	84.400...	.22	.27

#### Balancing index rings

Size D1		22	27
Order No.	79.350...	.50	.60

### Accessories

#### Cool Jet bores

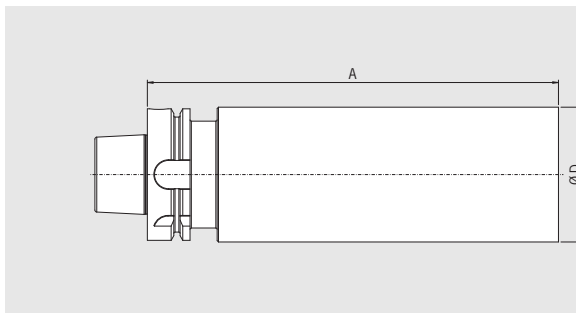


Order No. 91.100.24

See page 501



**BLANK ADAPTER – HARDENED**  
**SIMILAR DIN 69893-1 · HSK-A63/80 (TAPER A63/FLANGE 80MM)**



**CERTIFICATE OF QUALITY**  
 All functional surfaces fine machined  
 More accurate than DIN

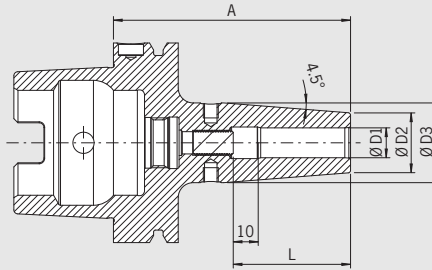
**Use:**  
 For manufacturing special tools in your own factory.

**Version:**  
 – HSK hardened and ground  
 – Cylindrical part hardened to 52+2 HRC

METRIC	Ø D [mm]		82
Gage Length A [mm]	ZG250		250
<b>Order No.</b>	<b>RA63/80.096.0820...</b>		<b>.0250</b>

# SHRINK FIT CHUCK DIN 69893-1 · HSK-A80

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN



**Use:**

Shrink fit chuck suitable for use with all available shrink fit units.

- Heat resistant hot-working steel
- Hardened 54-2 HRC
- For HSS and solid carbide tools
- Shank tolerance h6
- With threaded holes in order to balance with balancing screws
- Included in delivery: Shrink fit chuck with backup screw, without coolant tube

**Optional:**

- Cooling with Cool Jet for an extra charge (See page 501)
- Cooling with Cool Flash for an extra charge (See pages 502–503)

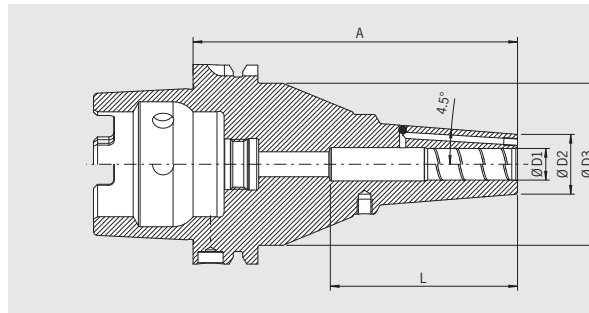
**Standard version, similar to DIN 69882-8**

METRIC	Clamping Ø D1 [mm]	06	08	10	12	14	16	18	20	25	32
	Ø D2 [mm]	21	21	24	24	27	27	33	33	44	44
	Ø D3 [mm]	27	27	32	32	34	34	42	42	53	53
	L [mm]	36	36	42	47	47	50	50	52	58	58
Length A [mm]	short	85	85	90	95	95	100	100	105	115	120
<b>Order No.</b>	<b>A80.140...</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>	<b>.25</b>	<b>.32</b>

**Accessories**

<b>Shrink fit extensions</b>		See pages 751–753
<b>Balancing screws</b>		See page 784
<b>Coolant tube</b>		<b>Order No. 85.700.80</b> See page 793
<b>Reduction sleeves</b>		See page 794
<b>Back-up screws</b>		See pages 796–799
<b>Cool Jet bores</b>		<b>Order No. 91.100.24</b> See page 501
<b>Cool Flash</b>		<b>Order No. 91.100.40</b> See pages 502–503

POWER SHRINK CHUCK  
DIN 69893-1 · HSK-A80



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN

The Power Shrink Chuck is designed for the highest cutting performance in High Speed machining. The optimized design combines high rigidity with vibration dampening, which protects the machine, spindle and tool.




- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times
- Quieter running, therefore better surface quality and protection of tools, spindles and machines
- Higher machining accuracy
- With threaded holes in order to balance with balancing screws
- Cool Jet coolant bores that can be sealed included




The long versions with slim tips are especially versatile to use.

- High rigidity
- Slim at the tip
- Dampen vibrations
- Higher clamping forces
- Equally suited to High Speed and Heavy Duty machining
- Universal usage, saves space in tool magazine

Optional:

- Cooling with Cool Flash from for an extra charge (See pages 502-503)
- Safe-Lock pull out protection

INCH	Clamping Ø D1 [inch]		1/2	3/4
	Ø D2 [inch]		0.944	1.299
	Ø D3 [inch] short		2.598	2.598
	Ø D3 [inch] ZG130/oversize		2.559	2.559
	L [inch] short		2.795	2.716
	L [inch] ZG130		2.952	3.779
	L [inch] oversize		2.952	3.976
Gage length A [inch]	short		3.94	3.94
Order No.	A80.149...		.1/2z.3.2140	.3/4z.3.2140
Gage length A [inch]	ZG130		5.12	5.12
Order No.	A80.149...		.1/2z.3.2144	.3/4z.3.2144
Gage length A [inch]	oversize		6.3	6.3
Order No.	A80.149...		.1/2z.3.2142	.3/4z.3.2142

METRIC	Clamping Ø D1 [mm]		08	10	12	16	20
	Ø D2 [mm]		21	24	24	27	33
	Ø D3 [mm] short		66	66	66	66	66
	Ø D3 [mm] ZG130/oversize		65	65	65	65	65
	L [mm] short		—	68	71	70	69
	L [mm] ZG130		—	70	75	75	96
	L [mm] oversize		—	70	75	75	101
Gage length A [mm]	short		100	100	100	100	100
Order No.	A80.149...		.08.3.2140	.10.3.2140	.12.3.2140	.16.3.2140	.20.3.2140
Gage length A [mm]	ZG130		130	130	130	130	130
Order No.	A80.149...		.08.3.2144	.10.3.2144	.12.3.2144	.16.3.2144	.20.3.2144
Gage length A [mm]	oversize		160	160	160	160	160
Order No.	A80.149...		.08.3.2142	.10.3.2142	.12.3.2142	.16.3.2142	.20.3.2142

Accessories

Cool Flash



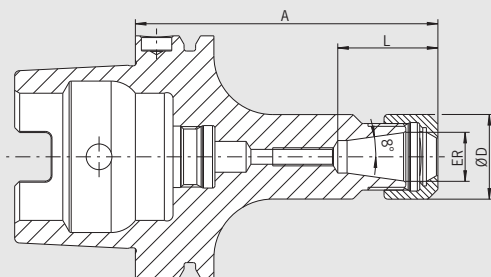
Order No. 91.100.40

See pages 502-503

# ER COLLET CHUCK DIN 69893-1 · HSK-A80

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 25,000 rpm
- All functional surfaces fine machined
- More accurate than DIN



### Use:


For clamping tools with cylindrical shank in ER collets according to ISO 15488.

- Included in delivery: locknut (balanced, with slide coating for higher clamping forces); without coolant tube
- Locknut type HS (High Speed, fine balanced, with slide coating for higher clamping forces) for an extra charge
- Increasing size L possible upon request


INCH	Ø ER	16	25	32
	Ø D [inch]	1.1	1.65	1.97
	Clamping range [inch]	0.02–0.39	0.04–0.63	0.59–0.79
	Clamping range [mm]	0.5–10.0	1.0–16.0	1.5–20.0
	L [inch]	1.26	1.62	1.85
Gage length A [inch]	short	3.94	3.94	3.94
Order No.	A80.020...	.16	.25	.32

### Accessories


**Collets ER**  See pages 768–773

**Shrink Fit Collets**  See pages 759–767


### Locknut (pre-balanced)

Size ER 16 ER 25 ER 32  
**Order No.** 83.912...  .16 .25 .32


### Chuck nut HS (fine-balanced)

Size ER 16 ER 25 ER 32  
**Order No.** 83.912...  .16.HS .25.HS .32.HS


### Fork wrench

Size ER 16 — —  
**Order No.** 84.200...  .16


### Clamping wrench

Size — ER 25 ER 32  
**Order No.** 84.200...  .25 .32


### Balancing index rings


Size long/oversize ER 16 ER 25 ER 32  
**Order No.** 79.350...  .28 .42 .48

### Adjusting screw

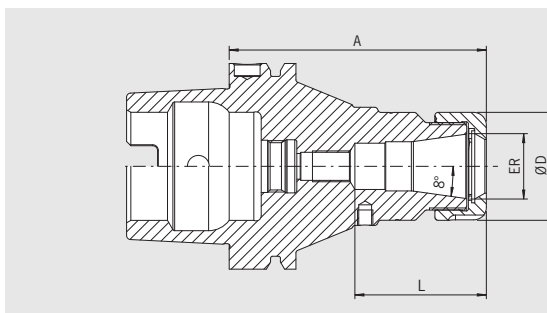
Size ER 16 ER 25 ER 32  
**Order No.** 85.800...  .34 .34 .35

### Coolant tube

**Order No.** 85.700.80 

**Shrink fit extensions**  See pages 751–753

POWER COLLET CHUCK  
DIN 69893-1 · HSK-A80



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN

The Power Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with improved construction combines high rigidity with vibration dampening features, giving more protection to the machine, spindle and tool.

The universal Power Collet Chuck is a unique high performance chuck that can also be used with standard collets.

- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488  
(Attention: By using standard collet, ER length A will increase)
- High rigidity

- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

INCH	ER	25	32
	Ø D1 [inch]	1.653	1.968
	Clamping range [inch]	1/8–5/8	1/8–3/4
	Clamping range [mm]	2.0–16.0	2.0–20.0
	L [inch] short	2.755	2.716
	L [inch] ZG130	3.248	3.543
	L [inch] oversize	3.248	3.858
Gage length A [inch]	short	3.94	3.94
Order No.	A80.029...	.25.3.2021	.32.3.2021
Gage length A [inch]	ZG130	5.12	5.12
Order No.	A80.029...	.25.3.2024	.32.3.2024
Gage length A [inch]	oversize	6.3	6.3
Order No.	A80.029...	.25.3.2022	.32.3.2022

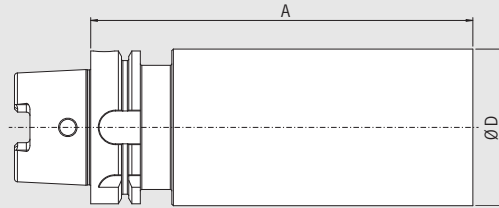
Accessories

<b>Locknut (fine-balanced)</b>			See page 779
Size		ER 25	ER 32
Order No.	83.914...	.25	.32
<b>Power Collet clamping wrench</b>			See page 781
<b>Torque Master torque wrench</b>			See page 780
<b>Power Collets</b>			See page 774
<b>Power Collets with Safe-Lock</b>			See page 776
<b>Cool Jet bores for Power Collets</b>			See page 777
Order No.	91.100.27		
<b>Shrink Fit Collets</b>			See pages 763–766
<b>Coolant tube</b>			See page 793
Order No.	85.700.80		

## BLANK ADAPTER – HARDENED DIN 69893-1 · HSK-A80

### CERTIFICATE OF QUALITY

- All functional surfaces fine machined
- More accurate than DIN



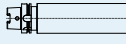


### Use:

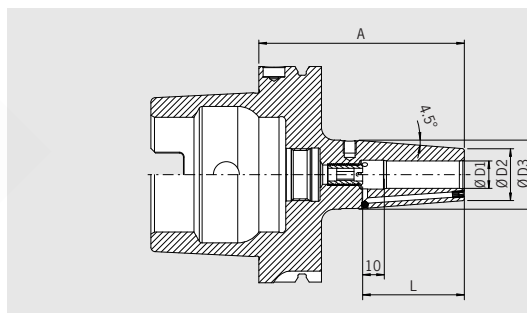
For manufacturing special tools in your own factory.

### Version:

- HSK hardened and ground
- Cylindrical part hardened to 52+2 HRC

METRIC	Ø D [mm]		82
Gage Length A [mm] <b>Order No.</b>	ZG100 <b>RA80.096.0820...</b>		100 <b>.0100</b>
Gage Length A [mm] <b>Order No.</b>	ZG200 <b>RA80.096.0820...</b>		200 <b>.0200</b>
Gage Length A [mm] <b>Order No.</b>	ZG300 <b>RA80.096.0820...</b>		300 <b>.0300</b>

# SHRINK FIT CHUCK DIN 69893-1 · HSK-A100



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN

**Use:**





Shrink fit chuck suitable for use with all available shrink fit units.

- Heat resistant hot-working steel
- Hardened 54-2 HRC
- For HSS and solid carbide tools
- Shank tolerance h6






- With threaded holes in order to balance with balancing screws
- Inch sizes with Cool Jet, metric sizes with Cool Jet optional
- Included in delivery: Back-up screw, without coolant tube

**Optional:**








- Cooling with Cool Flash for an extra charge (See pages 502–503)

INCH	Clamping Ø D1 [inch]	1/4	5/16	3/8	7/16	1/2	5/8	3/4	1	1 1/4
	Ø D2 [inch]	0.83	0.83	0.94	0.94	0.94	1.06	1.30	1.73	1.73
	Ø D3 [inch]	1.06	1.06	1.26	1.26	1.26	1.34	1.65	2.09	2.09
	L [inch]	1.42	1.42	1.65	1.65	1.85	1.97	2.05	2.28	2.28
Gage length A [inch]	short 	3.35	3.35	3.54	3.54	3.74	3.94	4.13	4.53	4.72
<b>Order No.</b>	<b>A10.140...</b>	<b>.1/4Z.4</b>	<b>.5/16Z.4</b>	<b>.3/8Z.4</b>	<b>.7/16z.4</b>	<b>.1/2Z.4</b>	<b>.5/8Z.4</b>	<b>.3/4Z.4</b>	<b>.1Z.4</b>	<b>.1 1/4Z.4</b>
Gage length A [inch]	ZG130 	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12
<b>Order No.</b>	<b>A10.144...</b>	<b>.1/4Z.4</b>	<b>.5/16Z.4</b>	<b>.3/8Z.4</b>	<b>.7/16z.4</b>	<b>.1/2Z.4</b>	<b>.5/8Z.4</b>	<b>.3/4Z.4</b>	<b>.1Z.4</b>	<b>.1 1/4Z.4</b>
Gage length A [inch]	oversize 	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30	6.30
<b>Order No.</b>	<b>A10.142...</b>	<b>.1/4Z.4</b>	<b>.5/16Z.4</b>	<b>.3/8Z.4</b>	<b>.7/16z.4</b>	<b>.1/2Z.4</b>	<b>.5/8Z.4</b>	<b>.3/4Z.4</b>	<b>.1Z.4</b>	<b>.1 1/4Z.4</b>
Gage length A [inch]	ZG200 	7.87	—	7.87	—	7.87	7.87	7.87	7.87	7.87
<b>Order No.</b>	<b>A10.146...</b>	<b>.1/4Z.4</b>	—	<b>.3/8Z.4</b>	—	<b>.1/2Z.4</b>	<b>.5/8Z.4</b>	<b>.3/4Z.4</b>	<b>.1Z.4</b>	<b>.1 1/4Z.4</b>

**Standard version, similar to DIN 69882-8**

METRIC	Clamping Ø D1 [mm]	06	08	10	12	14	16	18	20	25	32
	Ø D2 [mm]	21	21	24	24	27	27	33	33	44	44
	Ø D3 [mm]	27	27	32	32	34	34	42	42	53	53
	L [mm]	36	36	42	47	47	50	50	52	58	58
Gage length A [mm]	short 	85	85	90	95	95	100	100	105	115	120
<b>Order No.</b>	<b>A10.140...</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>	<b>.25</b>	<b>.32</b>
Gage length A [mm]	ZG120 	120	120	120	120	120	120	120	120	120	—
<b>Order No.</b>	<b>A10.147...</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>	<b>.25</b>	—
Gage length A [mm]	ZG130 	130	130	130	130	130	130	130	130	130	130
<b>Order No.</b>	<b>A10.144...</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>	<b>.25</b>	<b>.32</b>
Gage length A [mm]	oversize 	160	160	160	160	160	160	160	160	160	160
<b>Order No.</b>	<b>A10.142...</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>	<b>.25</b>	<b>.32</b>
Gage length A [mm]	ZG200 	200	200	200	200	200	200	200	200	200	200
<b>Order No.</b>	<b>A10.146...</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>	<b>.25</b>	<b>.32</b>

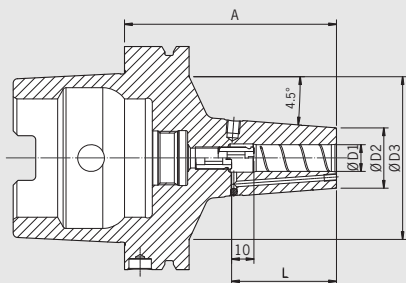
**Accessories**

<b>Shrink fit extensions</b>		See pages 750–753
<b>Balancing screws</b>		See page 784
<b>Coolant tube</b>	 <b>Order No. 85.700.10</b>	See page 793
<b>Reduction sleeves</b>		See page 794
<b>Back-up screws</b>		See pages 796–799
<b>Cool Flash</b>		<b>Order No. 91.100.40</b>
<b>Cool Flash Upgrade incl. Cool Jet</b>		<b>Order No. 91.100.41</b>

# POWER SHRINK CHUCK DIN 69893-1 · HSK-A100

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 25,000 rpm
- All functional surfaces machined
- More accurate than DIN
- Cool Jet, can be sealed



The Power Shrink Chuck is designed for the highest cutting performance in High Speed machining. The optimized design combines high rigidity with vibration dampening, which protects the machine, spindle and tool.




- Heat resistant hot-working steel
- Hardened 54-2 HRC
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy
- Quieter running, therefore better surface quality and protection of tools, spindles and machines
- With threaded holes in order to balance with balancing screws
- Cool Jet coolant bores that can be sealed included




The long versions (A=160 and 200) with slim tips are especially versatile to use.

- High rigidity, slim at the tip, dampen vibrations
- High clamping forces
- Equally suited to High Speed and Heavy Duty machining
- Universal usage, saves space in tool magazine

Optional:

- Cooling with Cool Flash for an extra charge (See pages 502–503)

INCH	Clamping Ø D1 [inch]		1/4	5/16	3/8	1/2	5/8	3/4	1
	Ø D2 [inch]		0.83	0.83	1.06	1.06	1.3	1.73	1.73
	Ø D3 [inch] ultra short		2.36	2.36	2.09	2.87	3.07	3.35	3.35
	Ø D3 [inch]		3.27	3.27	3.27	3.27	3.27	3.27	3.27
	L [inch]		1.42	1.42	1.65	1.85	1.97	2.05	2.28
Gage length A [inch]	short		3.35	3.35	3.54	3.74	3.94	4.13	4.53
Standard Order No.	A10.140...		.1/4z.3	.5/16z.3	.3/8z.3	.1/2z.3	.5/8z.3	.3/4z.3	.1z.3
Safe-Lock Order No.	A10.140...		.1/4z.37	.5/16z.37	.3/8z.37	.1/2z.37	.5/8z.37	.3/4z.37	.1z.37
Gage length A [inch]	oversize		6.30	6.30	6.30	6.30	6.30	6.30	6.30
Standard Order No.	A10.142...		.1/4z.3	.5/16z.3	.3/8z.3	.1/2z.3	.5/8z.3	.3/4z.3	.1z.3
Safe-Lock Order No.	A10.142...		.1/4z.37	.5/16z.37	.3/8z.37	.1/2z.37	.5/8z.37	.3/4z.37	.1z.37
Gage length A [inch]	ZG200		7.87	7.87	7.87	7.87	7.87	7.87	7.87
Standard Order No.	A10.146...		.1/4z.3	.5/16z.3	.3/8z.3	.1/2z.3	.5/8z.3	.3/4z.3	.1z.3
Safe-Lock Order No.	A10.146...		.1/4z.37	.5/16z.37	.3/8z.37	.1/2z.37	.5/8z.37	.3/4z.37	.1z.37

METRIC	Clamping Ø D1 [mm]		06	08	10	12	14	16	18	20	25
	Ø D2 [mm]		21	21	27	27	33	33	44	44	44
	Ø D3 [mm] ultra short		60	60	53	73	60	78	76	85	85
	Ø D3 [mm]		83	83	83	83	83	83	83	83	83
	L [mm]		36	36	42	47	47	50	50	52	58
Gage length A [mm]	short		85	85	90	95	95	100	100	105	115
Standard Order No.	A10.140...		.06.3	.08.3	.10.3	.12.3	.14.3	.16.3	.18.3	.20.3	.25.3
Safe-Lock Order No.	A10.140...		.06.37	.08.37	.10.37	.12.37	.14.37	.16.37	.18.37	.20.37	.25.37
Gage length A [mm]	oversize		160	160	160	160	160	160	160	160	160
Standard Order No.	A10.142...		.06.3	.08.3	.10.3	.12.3	.14.3	.16.3	.18.3	.20.3	.25.3
Safe-Lock Order No.	A10.142...		.06.37	.08.37	.10.37	.12.37	.14.37	.16.37	.18.37	.20.37	.25.37
Gage length A [mm]	ZG200		200	200	200	200	200	200	200	200	200
Standard Order No.	A10.146...		.06.3	.08.3	.10.3	.12.3	.14.3	.16.3	.18.3	.20.3	.25.3
Safe-Lock Order No.	A10.146...		.06.37	.08.37	.10.37	.12.37	.14.37	.16.37	.18.37	.20.37	.25.37

### Accessories

Cool Flash

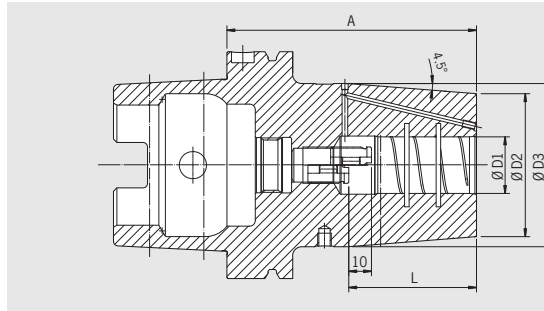


Order No. 91.100.40

See pages 502–503



# HEAVY DUTY CHUCK DIN 69893-1 · HSK-A100



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN
<input checked="" type="checkbox"/>	Cool Jet, can be sealed

The Heavy Duty Chuck is a shrink fit chuck designed for extreme cases and Heavy Duty machining. The contour is optimized for highest rigidity and clamping force.

- Heat resistant hot-working steel
- Hardened 54-2 HRC
- Smooth clamping of the tool shank
- TIR less than 0.00012" (3 µm)
- Reinforced outer contour
- To shrink with 13 kW HD coil (see page 600) or with high performance shrink fit unit HAIMER Power Clamp Profi Plus (20 kW)

- With internal groove in the clamping bore
- With threaded holes in order to balance with balancing screws
- Cool Jet coolant bores that can be sealed included

Optional:  
- Cooling with Cool Flash for an extra charge (See pages 502–503)

INCH	Clamping Ø D1 [inch]	5/8	3/4	1	1 1/4	1 1/2	2
	Ø D2 [inch]	2.01	2.28	2.48	2.76	3.22	3.22
	Ø D3 [inch]	—	2.64	2.83	3.07	3.70	3.70
	L [inch]	1.97	2.05	2.28	2.4	3.46	3.46
Gage length A [inch]	short	3.94	3.94	4.33	4.33	5.51	5.51
Order No.	A10.150...	.5/8z.6	.3/4z.6	.1z.6	.11/4z.6	.11/2z.6	.2z.6
Safe-Lock Order No.	A10.150...	.5/8z.67	.3/4z.67	.1z.67	.11/4z.67	.11/2z.67	.2z.67

METRIC	Clamping Ø D1 [mm]	16	20	25	32	40	50
	Ø D2 [mm]	51	58	63	70	82	82
	Ø D3 [mm] short	—	67	72	78	94	94
	Ø D3 [mm]	85	85	85	85	94	94
	L [mm]	50	52	58	61	88	88
Gage length A [mm]	short	100	100	110	110	140	140
Order No.	A10.150...	.16.6	.20.6	.25.6	.32.6	.40.6	.50.6
Safe-Lock Order No.	A10.150...	.16.67	.20.67	.25.67	.32.67	.40.67	.50.67
Gage length A [mm]	oversize	160	160	160	160	160	160
Order No.	A10.152...	.16.6	.20.6	.25.6	.32.6	.40.6	.50.6
Safe-Lock Order No.	A10.152...	.16.67	.20.67	.25.67	.32.67	.40.67	.50.67
Gage length A [mm]	ZG200	200	200	200	200	200	200
Order No.	A10.156...	.16.6	.20.6	.25.6	.32.6	.40.6	.50.6
Safe-Lock Order No.	A10.156...	.16.67	.20.67	.25.67	.32.67	.40.67	.50.67

### Heavy Duty Chuck – For 13 kW shrink fit machine

METRIC	Clamping Ø D1 [mm]	16	20
	Ø D2 [mm]	46	46
	L [mm]	51	53
Gage length A [mm]	short	100	100
Order No.	A10.140...	.16.6	.20.6 <sup>1)</sup>
Safe-Lock Order No.	A10.140...	.16.67	.20.67 <sup>1)</sup>

Accessories  
Cool Flash



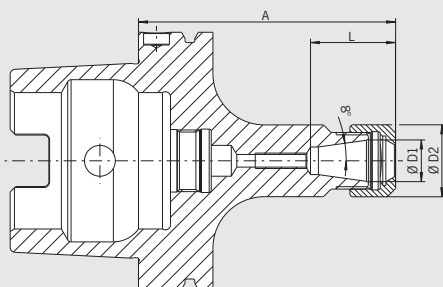
Order No. 91.100.40

See pages 502–503

# ER COLLET CHUCK DIN 69893-1 · HSK-A100

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 25,000 rpm
- All functional surfaces fine machined
- More accurate than DIN





### Use:

For clamping tools with cylindrical shank in collets according to ISO 15488 (formerly DIN 6499).




### DIN 69882-6

Included in delivery:

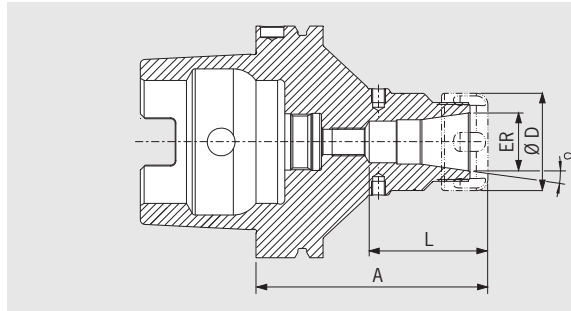
- Locknut (balanced, with slide coating for higher clamping forces); without coolant tube
- Locknut Type HS (High-Speed, fine balanced, with slide coating for higher clamping forces) for an extra charge
- Enlarging of size L upon request

INCH	ER		16	25	32	40
		Ø D [inch]	1.1	1.65	1.97	2.48
		Clamping range [inch]	0.02-0.39	0.04-0.63	0.06-0.79	0.10-1.02
		Clamping range [mm]	0.5-10.0	1.0-16.0	1.5-16.0	2.5-26.0
		L [inch]	1.28	1.62	1.85	2.09
Gage length A [inch]	short		3.94	3.94	3.94	4.72
Order No.	A10.020...		.16	.25	.32	.40
Gage length A [inch]	oversize		6.30	6.30	6.30	6.30
Order No.	A10.022...		.16	.25	.32	.40

### Accessories

<b>Collets ER</b>		See pages 768-773
<b>Shrink Fit Collets</b>		See pages 759-767
<b>Locknut (pre-balanced)</b>		
Size		ER 16    ER 25    ER 32    ER 40
Order No.	83.912...	.16    .25    .32    .40
<b>Chuck nut HS (fine-balanced)</b>		
Size		ER 16    ER 25    ER 32    ER 40
Order No.	83.912...	.16.HS    .25.HS    .32.HS    .40.HS
<b>Fork wrench</b>		
Size		ER 16    —    —    —
Order No.	84.200...	.16
<b>Clamping wrench</b>		
Size		—    ER 25    ER 32    ER 40
Order No.	84.200...	.25    .32    .40
<b>Balancing index rings</b>		
Size	long/oversize	ER 16    ER 25    ER 32    ER 40
Order No.	79.350...	.28    .42    .48    .50
<b>Adjusting screw</b>		
Size		ER 16    ER 25    ER 32    ER 40
Order No.	85.800...	.34    .34    .35    .35
<b>Coolant tube</b>		
Order No.	85.700.10	
<b>Shrink fit extensions</b>		See pages 751-753

**POWER COLLET CHUCK**  
DIN 69893-1 · HSK-A100



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN

The Power Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with improved construction combines high rigidity with vibration dampening features, giving more protection to the machine, spindle and tool. The universal Power Collet Chuck is a unique high performance chuck that can also be used with standard collets.

- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (formerly DIN 6499)  
(Attention: By using standard collet, ER length A will increase)
- High rigidity

- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

INCH	ER		16	25	32
	Ø D [inch]		1.1	1.65	1.97
	Clamping range [inch]		1/8–3/8	1/8–5/8	1/8–3/4
	Clamping range [mm]		2.0–10.0	2.0–16.0	2.0–20.0
	L [inch]		1.69	2.01	2.09
Gage length A [inch]	ultra short		3.35	3.35	3.35
Order No.	A10.025...		.16.3	.25.3	.32.3
Gage length A [inch]	short		3.93	3.93	3.93
Order No.	A10.020...		.16.3	.25.3	.32.3
Gage length A [inch]	ZG1.30		5.12	5.12	5.12
Order No.	A10.024...		.16.3	.25.3	.32.3
Gage length A [inch]	oversize		6.30	6.30	6.30
Order No.	A10.022...		.16.3	.25.3	.32.3

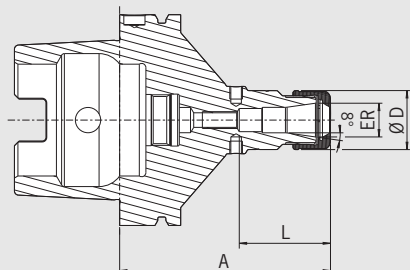
**Accessories**

<b>Locknut (fine-balanced)</b>					See page 779
Size			ER 16	ER 25	ER 32
Order No.	83.914...		.16	.25	.32
<b>Power Collet clamping wrench</b>					See page 781
<b>Torque Master torque wrench</b>					See page 780
Order No.	84.600.00				
<b>Power Collets</b>					See page 775
<b>Power Collets with Safe-Lock</b>					See page 776
<b>Cool Jet bores for Power Collets</b>					See page 777
Order No.	91.100.27				
<b>Shrink Fit Collets</b>					See pages 759–767
<b>Coolant tube</b>					See page 793
Order No.	85.700.10				

# HIGH PRECISION COLLET CHUCK DIN 69893-1 · HSK-A100

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 25,000 rpm
- All functional surfaces fine machined
- More accurate than DIN



**The High Precision Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with better construction and a special coated smooth locknut combines high rigidity with vibration dampening and noise-reducing features, giving more protection to machines, spindles and tools.**

- With a specially coated smooth locknut, balanced at < 1 gmm
- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (Attention: By using standard collet, ER length A will increase)
- High rigidity

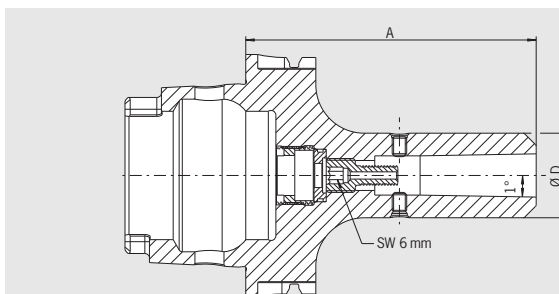
- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

INCH	ER		16	25	32
	Ø D [inch]		1.1	1.65	1.97
	Clamping range [inch]		1/8–3/8	1/8–5/8	1/8–3/4
	Clamping range [mm]		2.0–10.0	2.0–16.0	2.0–20.0
	L [inch]		1.69	2.01	2.09
Gage length A [inch]	ultra short		3.35	3.35	3.35
Order No.	A10.025...		.16.3.HP	.25.3.HP	.32.3.HP
Gage length A [inch]	short		3.93	3.93	3.93
Order No.	A10.020...		.16.3.HP	.25.3.HP	.32.3.HP
Gage length A [inch]	ZG1.30		5.12	5.12	5.12
Order No.	A10.024...		.16.3.HP	.25.3.HP	.32.3.HP
Gage length A [inch]	oversize		6.30	6.30	6.30
Order No.	A10.022...		.16.3.HP	.25.3.HP	.32.3.HP

### Accessories

<b>High Precision Smooth Locknut (fine-balanced)</b>					See page 779
Size			ER 16	ER 25	ER 32
Order No.	83.914...		.16.1	.25.1	.32.1
<b>Roller bearing wrench</b>					See page 782
Order No.	84.650...		.16.1	.25.1	.32.1
<b>Collets ER</b>					See pages 768–773
<b>Shrink Fit Collets</b>					See pages 759–767
<b>Power Collets</b>					See page 775
<b>Power Collets with Safe-Lock</b>					See page 776
<b>Cool Jet bores for Power Collets</b>					See page 777
Order No.	91.100.27				
<b>Coolant tube</b>					See page 793
Order No.	85.700.10				

# HIGH-PRECISION CHUCK DIN 69893-1 · HSK-A100



### CERTIFICATE OF QUALITY

- Chuck fine balanced  
G2.5 25,000 rpm
- All functional surfaces fine machined
- More accurate than DIN

**Use:**

For high-precision clamping of tools with cylindrical shank, also with clamping flats. Very useful for High Speed machining.

- Included in delivery: High-Precision Chuck with clamping screw and pull-out hook, without collet, without coolant tube
- Shank tolerance h6
- Optional: Cool Jet bores on HG Collets from diam. 0.25" – 0.78"
- Extensions for High-Precision Chuck available

INCH	HG	01	02	03
	ØD [inch]	1.18	1.38	1.89
	Clamping Ø [inch]	0.08–0.35	0.39–0.57	0.63–0.79
	Clamping Ø [mm]	2 3 4 5 6 8	10 12 14	16 18 20
Gage length A [inch]	short	4.72	4.72	5.12
<b>Order No.</b>	<b>A10.120...</b>	<b>.01</b>	<b>.02</b>	<b>.03</b>
Gage length A [inch]	oversize	6.30	6.30	6.30
<b>Order No.</b>	<b>A10.122...</b>	<b>.01</b>	<b>.02</b>	<b>.03</b>

**Accessories**

**Clamping screw**



**Collets HG INCH**

See page 783

HG 01 Ø D [inch]		Ø 1/8	Ø 3/16	Ø 1/4	Ø 5/16				
<b>Order No.</b>	<b>82.510...</b>	<b>.1/8Z</b>	<b>.3/16Z</b>	<b>.1/4Z</b>	<b>.5/16Z</b>				

HG 02 Ø D [inch]						Ø 3/8	Ø 7/16	Ø 1/2	Ø 9/16
<b>Order No.</b>	<b>82.520...</b>					<b>.3/8Z</b>	<b>.7/16Z</b>	<b>.1/2Z</b>	<b>.9/16Z</b>

HG 03 Ø D [inch]									Ø 5/8	Ø 3/4
<b>Order No.</b>	<b>82.530...</b>								<b>.5/8Z</b>	<b>.3/4Z</b>

**Collets HG METRIC**

See page 783

HG 01 Ø D [mm]		Ø 02	Ø 03	Ø 04	Ø 05	Ø 06	Ø 08	—	—	—	—	—
<b>Order No.</b>	<b>82.510...</b>	<b>.02</b>	<b>.03</b>	<b>.04</b>	<b>.05</b>	<b>.06</b>	<b>.08</b>					

HG 02 Ø D [mm]								Ø 10	Ø 12	Ø 14	—	—
<b>Order No.</b>	<b>82.520...</b>							<b>.10</b>	<b>.12</b>	<b>.14</b>		

HG 03 Ø D [mm]											Ø 16	Ø 18	Ø 20
<b>Order No.</b>	<b>82.530...</b>										<b>.16</b>	<b>.18</b>	<b>.20</b>

**Pull-out hook**

HG		HG 01		HG 02	HG 03
<b>Order No.</b>	<b>82.570...</b>	<b>.00</b>		<b>.00</b>	<b>.00</b>

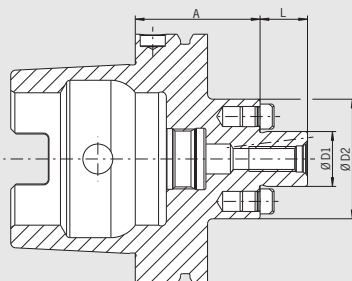
**Balancing index rings**

HG		HG 01		HG 02	HG 03
<b>Order No.</b>	<b>79.350...</b>	<b>.30</b>		<b>.35</b>	<b>.48</b>

# FACE MILL ARBOR DIN 69893-1 · HSK-A100

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 25,000 rpm  
or U < 1 gmm
- All functional surfaces fine machined
- More accurate than DIN



### Use:

For clamping face mill cutters.

Metric version: With coolant exit bores on the end face for milling cutters with central cooling.

- Included in delivery: Face Mill Arbor with clamping screw
- Inch sizes: Coolant bores on front side for an extra charge

INCH	Ø D1 [inch]		3/4	1	1 1/4	1 1/2
	L [inch]		0.67	0.67	0.67	0.94
	Ø D2 [inch]		1.71	2.17	2.75	3.78
Gage length A [inch]	long		3.94	3.94	3.94	3.94
Order No.	A10.051...		.3/4Z	.1Z	.1 1/4Z	.1 1/2Z
Gage length A [inch]	oversize		6.30	6.30	6.30	6.30
Order No.	A10.052...		.3/4Z	.1Z	.1 1/4Z	.1 1/2Z

METRIC	Ø D1 [mm]		16	22	27	32	40
	L [mm]		17	19	21	24	27
	Ø D2 [mm]		36	48	60	78	87
Gage length A [mm]	short		50	50	50	50	60
Order No.	A10.050...		.16.KKB	.22.KKB	.27.KKB	.32.KKB	.40.KKB
Gage length A [mm]	long		100	100	100	100	100
Order No.	A10.051...		.16.KKB	.22.KKB	.27.KKB	.32.KKB	.40.KKB
Gage length A [mm]	oversize		160	160	160	160	160
Order No.	A10.052...		.16.KKB	.22.KKB	.27.KKB	.32.KKB	.40.KKB

### Accessories

#### Clamping Screw

Ø D1 [inch]		3/4	1	1 1/4	1 1/2	
Order No.	85.300...		.3/4Z	.1Z	.11/4Z	.11/2Z

#### Wrench

Ø D1 [inch]		3/4	1	1 1/4	1 1/2	
Order No.	84.400...		.3/4Z	.1Z	.11/4Z	.11/2Z

#### Balancing index ring

Ø D1 [inch]		3/4	1	—	—
Order No.	79.350...		.1.71Z	.55	

#### Coolant tube

Ø D1 [inch]		3/4	1	1 1/4	1 1/2
Order No.	85.700...		.10	.10	.10

#### Coolant bores

Order No.	91.100.03					
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### Accessories

#### Clamping Screw

Ø D1 [mm]		16	22	27	32	40	
Order No.	85.300...		.16	.22	.27	.32	.40

#### Wrench

Ø D1 [mm]		16	22	27	32	40	
Order No.	84.400...		.16	.22	.27	.32	.40

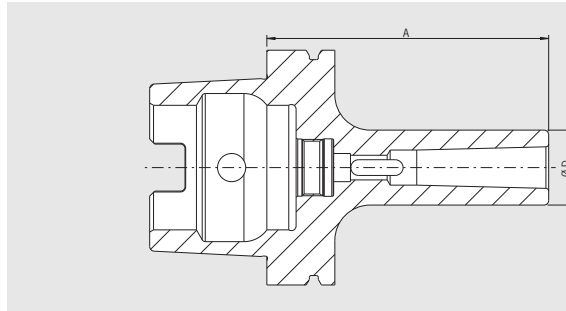
#### Balancing index ring

Ø D1 [mm]		16	22	27	32	40	
Order No.	79.350...		.36	.48	.60	.78	.87

#### Coolant tube

Ø D1 [mm]		16	22	27	32	40
Order No.	85.700...		.10	.10	.10	.10

ADAPTER FOR MORSE TAPER WITH TANG  
DIN 69893-1 · HSK-A100



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck balanced G6.3 8,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN

**Use:**

For holding tools with morse taper and tang according to DIN 228-1 form AF.

– Fine-balancing for an extra charge

MK			01	02	03	04
	Ø D [mm]		25	32	40	48
	Gage Length A [mm]	short	110	120	150	170
	Order No.	A10.080...	.01	.02	.03	.04

**Accessories**

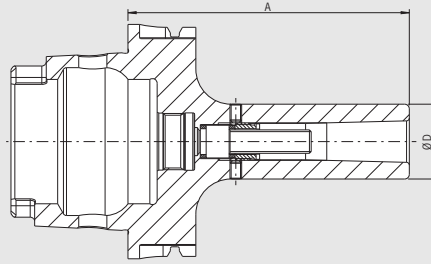
**Balancing index rings**

MK			01	02	03	04
	Order No.	79.350...	.25	.32	.40	.48
	Coolant tube					
	Order No.	85.700.10				

# ADAPTER FOR MORSE TAPER WITH THREAD DIN 69893-1 · HSK-A100

### CERTIFICATE OF QUALITY

- Chuck balanced  
G6.3 8,000 rpm
- All functional surfaces fine machined
- More accurate than DIN



### Use:

For holding tools with morse taper with thread according to DIN 228-1 form A.

- Fine-balancing for an extra charge
- Delivery with tightening bolt without coolant tube

MK			01	02	03	04
	Ø D [mm]		25	32	40	48
	Gage Length A [mm]	short	110	120	150	170
	Order No.	A10.130...	.01	.02	.03	.04

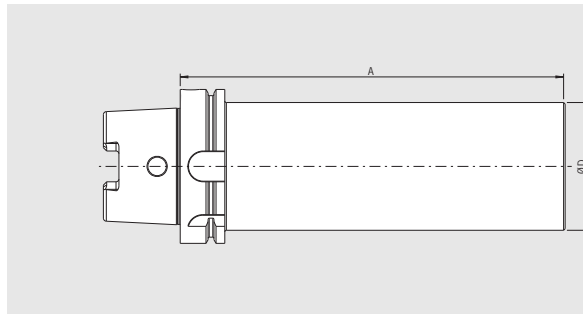
### Accessories

#### Balancing index rings

MK			01	02	03	04
Order No.	79.350...		.25	.32	.40	.48
<b>Coolant tube</b>						
Order No.	85.700.10					



## BLANK ADAPTER DIN 69893-1 · HSK-A100



**CERTIFICATE OF QUALITY**  
 All functional surfaces fine machined  
 More accurate than DIN

**Use:**

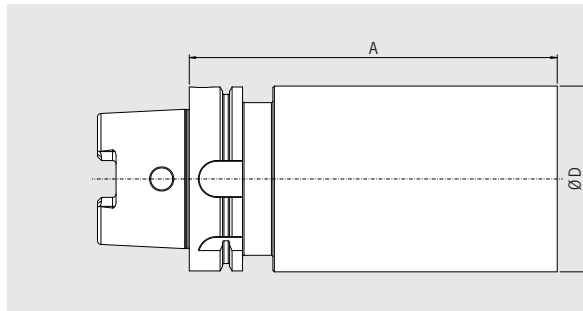
For manufacturing special tools in your own factory.

**Design:**

HSK is hardened and ground, the cylindrical part is soft.

	Ø D [mm]		83
Gage Length A [mm]	ZG250		250
<b>Order No.</b>	<b>A10.090...</b>		<b>.83</b>

## BLANK ADAPTER – HARDENED DIN 69893-1 · HSK-A100





**CERTIFICATE OF QUALITY**  
 All functional surfaces fine machined  
 More accurate than DIN

**Use:**

For manufacturing special tools in your own factory.

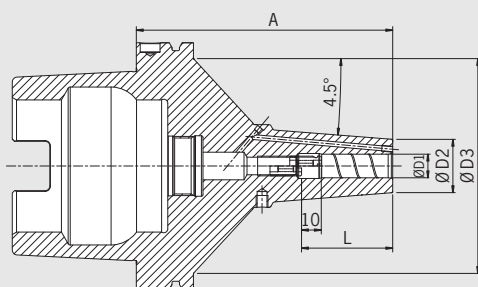
**Version:**

- HSK hardened and ground
- Cylindrical part hardened to 52+2 HRC

METRIC	Ø D [mm]		101
Gage Length A [mm]	ZG100		100
<b>Order No.</b>	<b>RA100.096.1010...</b>		<b>.0100</b>
Gage Length A [mm]	ZG200		200
<b>Order No.</b>	<b>RA100.096.1010...</b>		<b>.0200</b>

# POWER SHRINK CHUCK DIN 69893-1 · HSK-A125

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN
<input checked="" type="checkbox"/>	Cool Jet, can be sealed



**The Power Shrink Chuck is designed for the highest cutting performance in High Speed machining. The optimized design combines high rigidity with vibration dampening, which protects the machine, spindle and tool.**

- Heat resistant hot-working steel
- Hardened 54-2 HRC
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy
- Quieter running, therefore better surface quality and protection of tools, spindles and machines
- With Cool Jet bores that can be sealed (Thread M4) and 6 bores

- With internal groove in the clamping bore
- Higher coolant flow rate due to optimized coolant bores
- With threaded holes in order to balance with balancing screws

**The long versions (A= oversize and ZG9 inch) with slim tips are especially versatile to use.**

- High rigidity, slim at the tip, dampen vibrations
- Higher clamping forces
- Equally suited to High Speed and Heavy Duty machining
- Universal usage, saves space in tool magazine

Optional:

- Cooling with Cool Flash for an extra charge (See pages 502–503)

INCH	Clamping Ø D1 [inch]		3/8	1/2	5/8	3/4	1
	Ø D2 [inch]		1.06	1.06	1.30	1.73	1.73
	Ø D3 [inch]		4.29	4.29	4.29	4.29	4.29
	L [inch]		1.65	1.85	1.97	2.05	2.28
Gage length A [inch]	ZG5 inch		5 <sup>1)</sup>	5 <sup>1)</sup>	5 <sup>1)</sup>	5	5
Order No.	A125.140...		.3/8Z.3.I	.1/2Z.3.I	.5/8Z.3.I	.3/4Z.3.I	.1Z.3.I
Safe-Lock Order No.	A125.140...		.3/8Z.37.I	.1/2Z.37.I	.5/8Z.37.I	.3/4Z.37.I	.1Z.37.I
Gage length A [inch]	oversize		7 <sup>1)</sup>	7 <sup>1)</sup>	7 <sup>1)</sup>	7	7
Order No.	A125.142...		.3/8Z.3.I	.1/2Z.3.I	.5/8Z.3.I	.3/4Z.3.I	.1Z.3.I
Safe-Lock Order No.	A125.142...		.3/8Z.37.I	.1/2Z.37.I	.5/8Z.37.I	.3/4Z.37.I	.1Z.37.I
Gage length A [inch]	ZG9 inch		9 <sup>1)</sup>	9 <sup>1)</sup>	9 <sup>1)</sup>	9	9
Order No.	A125.146...		.3/8Z.3.I	.1/2Z.3.I	.5/8Z.3.I	.3/4Z.3.I	.1Z.3.I
Safe-Lock Order No.	A125.146...		.3/8Z.37.I	.1/2Z.37.I	.5/8Z.37.I	.3/4Z.37.I	.1Z.37.I

METRIC	Clamping Ø D1 [mm]		10	12	16	20	25
	Ø D2 [mm]		27	27	33	44	44
	Ø D3 [mm]		109	109	109	109	109
	L [mm]		42	47	50	52	58
Gage length A [mm]	ZG130		130 <sup>1)</sup>	130 <sup>1)</sup>	130	130	130
Order No.	A125.140...		.10.3	.12.3	.16.3	.20.3	.25.3
Safe-Lock Order No.	A125.140...		.10.37	.12.37	.16.37	.20.37	.25.37
Gage length A [mm]	oversize		160 <sup>1)</sup>	160 <sup>1)</sup>	160	160	160
Order No.	A125.142...		.10.3	.12.3	.16.3	.20.3	.25.3
Safe-Lock Order No.	A125.142...		.10.37	.12.37	.16.37	.20.37	.25.37
Gage length A [mm]	ZG200		200 <sup>1)</sup>	200 <sup>1)</sup>	200	200	200
Order No.	A125.146...		.10.3	.12.3	.16.3	.20.3	.25.3
Safe-Lock Order No.	A125.146...		.10.37	.12.37	.16.37	.20.37	.25.37

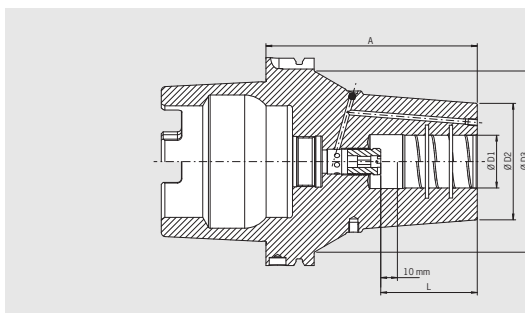
**Accessories**

**Cool Flash** Order No. 91.100.40 See pages 502–503

**Coolant tube** Order No. 85.700.125 See page 793

1) Thread M3, 2 bores

# HEAVY DUTY SHRINK CHUCK DIN 69893-1 · HSK-A125



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN
<input checked="" type="checkbox"/>	Cool Jet, can be sealed

**The Heavy Duty Chuck is a shrink fit chuck designed for extreme cases and Heavy Duty machining. The contour is optimized for highest rigidity and clamping force.**

- Heat resistant hot-working steel
- Hardened 54-2 HRC
- No deformation at the tool shank after shrink process
- TIR less than 0.00012" (3 µm)
- Reinforced outer contour
- To shrink with 13 kW HD coil (see page 600) or with high performance shrink fit unit HAIMER Power Clamp Profi Plus (20 kW)
- With internal groove in the clamping bore

- With Cool Jet bores that can be sealed (Thread M4) and 6 bores
- Higher coolant flow rate due to optimized coolant bores
- With threaded holes in order to balance with balancing screws

Optional:  
- Cooling with Cool Flash from 5/8" - 1" for an extra charge (See pages 502-503)

INCH	Clamping Ø D1 [inch]		5/8	3/4	1	1 1/4	1 1/2	2
	Ø D2 [inch]		2.01	2.28	2.48	2.76	3.23	3.23
	Ø D3 [inch]		4.29	4.29	4.29	4.29	4.29	4.29
	L [inch]		1.97	2.05	2.28	2.28	3.46	3.46
Gage length A [inch]	ZG5 inch		5	5	5	5	5 <sup>1)2)</sup>	5 <sup>1)2)</sup>
Order No.	A125.150...		.5/8Z.6.I	.3/4Z.6.I	.1Z.6.I	.11/4Z.6.I	.11/2Z.6.I	.2Z.6.I
Safe-Lock Order No.	A125.150...		.5/8Z.67.I	.3/4Z.67.I	.1Z.67.I	.11/4Z.67.I	.11/2Z.67.I	.2Z.67.I
Gage length A [inch]	oversize		7	7	7	7	7	7
Order No.	A125.152...		.5/8Z.6.I	.3/4Z.6.I	.1Z.6.I	.11/4Z.6.I	.11/2Z.6.I	.2Z.6.I
Safe-Lock Order No.	A125.152...		.5/8Z.67.I	.3/4Z.67.I	.1Z.67.I	.11/4Z.67.I	.11/2Z.67.I	.2Z.67.I
Gage length A [inch]	ZG9 inch		9	9	9	9	9	9
Order No.	A125.156...		.5/8Z.6.I	.3/4Z.6.I	.1Z.6.I	.11/4Z.6.I	.11/2Z.6.I	.2Z.6.I
Safe-Lock Order No.	A125.156...		.5/8Z.67.I	.3/4Z.67.I	.1Z.67.I	.11/4Z.67.I	.11/2Z.67.I	.2Z.67.I

METRIC	Clamping Ø D1 [mm]		16	20	25	32	40	50
	Ø D2 [mm]		51	58	63	70	82	82
	Ø D3 [mm]		109	109	109	109	109	109
	L [mm]		50	52	58	61	88	88
Gage length A [mm]	ZG130		130	130	130	130	130 <sup>1)2)</sup>	130 <sup>1)2)</sup>
Order No.	A125.150...		.16.6	.20.6	.25.6	.32.6	.40.6	.50.6
Safe-Lock Order No.	A125.150...		.16.67	.20.67	.25.67	.32.67	.40.67	.50.67
Gage length A [mm]	oversize		160	160	160	160	160	160
Order No.	A125.152...		.16.6	.20.6	.25.6	.32.6	.40.6	.50.6
Safe-Lock Order No.	A125.152...		.16.67	.20.67	.25.67	.32.67	.40.67	.50.67
Gage length A [mm]	ZG200		200	200	200	200	200	200
Order No.	A125.156...		.16.6	.20.6	.25.6	.32.6	.40.6	.50.6
Safe-Lock Order No.	A125.156...		.16.67	.20.67	.25.67	.32.67	.40.67	.50.67

**Accessories**

**Coolant tube** **Order No. 85.700.125** See page 793

**Back-up screws** See pages 796-798

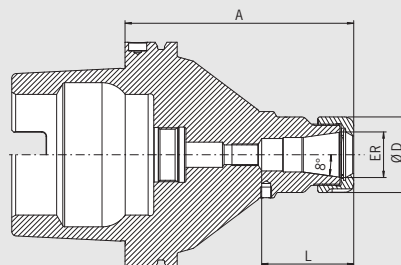
**Cool Flash** **Order No. 91.100.40** See pages 502-503

1) Without back-up screws  
2) Gage L = 87.5 mm / 3.43"

# POWER COLLET CHUCK DIN 69893-1 · HSK-A125

### CERTIFICATE OF QUALITY





- Chuck fine balanced  
G2.5 25,000 rpm
- All functional surfaces fine machined
- More accurate than DIN







**The Power Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with improved construction combines high rigidity with vibration dampening features, giving more protection to the machine, spindle and tool.**  
**The universal Power Collet Chuck is a unique high performance chuck that can also be used with standard collets.**





- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (formerly DIN 6499)  
(Attention: By using standard collet, ER length A will increase)
- High rigidity

- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

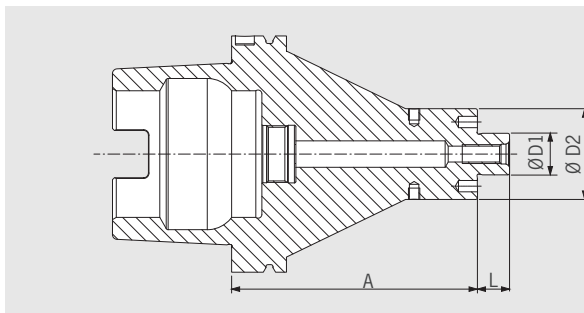
INCH	ER		25	32
	Ø D [inch]		1.65	1.97
	Clamping range [inch]		1/8–5/8	1/8–3/4
	Clamping range [mm]		2.0–16.0	2.0–20.0
	L [inch]		2.01	2.09
Gage length A [inch]	short		4	4
<b>Order No.</b>	<b>A125.020...</b>		<b>.25.3.I</b>	<b>.32.3.I</b>
Gage length A [inch]	ZG5 inch		5	5
<b>Order No.</b>	<b>A125.024...</b>		<b>.25.3.I</b>	<b>.32.3.I</b>
Gage length A [inch]	oversize		7	7
<b>Order No.</b>	<b>A125.022...</b>		<b>.25.3.I</b>	<b>.32.3.I</b>
Gage length A [inch]	ZG9 inch		9	9
<b>Order No.</b>	<b>A125.026...</b>		<b>.25.3.I</b>	<b>.32.3.I</b>

METRIC	ER		25	32
	Ø D [mm]		42	50
	Clamping range [mm]		2.0–16.0	2.0–20.0
	L [mm]		51	53
Gage length A [mm]	short		100	100
<b>Order No.</b>	<b>A125.020...</b>		<b>.25.3</b>	<b>.32.3</b>
Gage length A [mm]	ZG130		130	130
<b>Order No.</b>	<b>A125.024...</b>		<b>.25.3</b>	<b>.32.3</b>
Gage length A [mm]	oversize		160	160
<b>Order No.</b>	<b>A125.022...</b>		<b>.25.3</b>	<b>.32.3</b>
Gage length A [mm]	ZG200		200	200
<b>Order No.</b>	<b>A125.026...</b>		<b>.25.3</b>	<b>.32.3</b>

### Accessories

<b>Power Collets</b>		See pages 774–775
<b>Power Collets with Safe-Lock</b>		See page 776
<b>Cool Jet bores for Power Collets</b>		<b>Order No. 91.100.27</b> See page 777
<b>Shrink Fit Collets</b>		See pages 763–767

# FACE MILL ARBOR DIN 69893-1 · HSK-A125



### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 25,000 rpm  
or U<1 gmm
- All functional surfaces machined
- More accurate than DIN

**Use:**

For holding face mill cutters and cutters with radial driving slot DIN 1880.

**DIN 69882-3**

- Reinforced outer contour
- Included in delivery: tightening bolt, with threaded holes in order to balance with balancing screws, without coolant tube
- Metric sizes: With coolant exit bores on the end face for milling cutters with central cooling

INCH	Clamping Ø D1 [inch]		3/4	1
	Ø D2 [inch]		1.71	2.17
	L [inch]		0.67	0.67
Gage length A [inch]	short		4	4
<b>Order No.</b>	<b>A125.050...</b>		<b>.3/4Z.3.I</b>	<b>.1Z.3.I</b>
Gage length A [inch]	ZG5 inch		5	5
<b>Order No.</b>	<b>A125.054...</b>		<b>.3/4Z.3.I</b>	<b>.1Z.3.I</b>
Gage length A [inch]	oversize		7	7
<b>Order No.</b>	<b>A125.052...</b>		<b>.3/4Z.3.I</b>	<b>.1Z.3.I</b>
Gage length A [inch]	ZG9 inch		9	9
<b>Order No.</b>	<b>A125.056...</b>		<b>.3/4Z.3.I</b>	<b>.1Z.3.I</b>

METRIC	Clamping Ø D1 [mm]		22	27
	Ø D2 [mm]		48	60
	L [mm]		19	21
Gage length A [mm]	short		100	100
<b>Order No.</b>	<b>A125.050...</b>		<b>.22.3.KKB</b>	<b>.27.3.KKB</b>
Gage length A [mm]	ZG130		130	130
<b>Order No.</b>	<b>A125.054...</b>		<b>.22.3.KKB</b>	<b>.27.3.KKB</b>
Gage length A [mm]	oversize		160	160
<b>Order No.</b>	<b>A125.052...</b>		<b>.22.3.KKB</b>	<b>.27.3.KKB</b>
Gage length A [mm]	ZG200		200	200
<b>Order No.</b>	<b>A125.056...</b>		<b>.22.3.KKB</b>	<b>.27.3.KKB</b>

**Accessories**

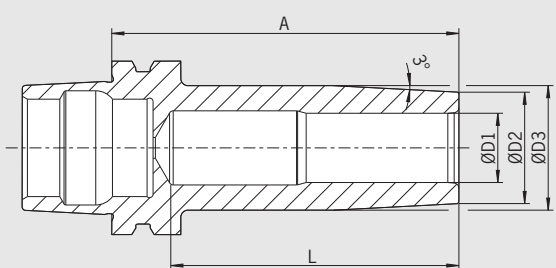
<b>Tightening bolt</b>				
Size D1			22	27
<b>Order No.</b>	<b>85.300...</b>		<b>.22</b>	<b>.27</b>
<b>Wrench</b>				
Size D1			22	27
<b>Order No.</b>	<b>84.400...</b>		<b>.22</b>	<b>.27</b>
<b>Balancing index rings</b>				
Size D1			22	27
<b>Order No.</b>	<b>79.350...</b>		<b>.48</b>	<b>.60</b>
<b>Coolant bores</b>				
<b>Order No.</b>	<b>91.100.03</b>			
<b>Coolant tube</b>				
<b>Order No.</b>	<b>85.700.125</b>			

See page 793

# MINI SHRINK DIN 69893-5 · HSK-E25

**CERTIFICATE OF QUALITY**

- Chuck body fine balanced  
U < 1 gmm
- All functional surfaces fine machined
- More accurate than DIN



Low cutting forces at high rpm are typical in micro machining (die & mold, medical engineering, micro mechanical engineering). The slim and short design of the all new HSK-E25 series from HAIMER – which is well known from the HAIMER Mini Shrink tool holders – is perfectly suitable for the requirements of micro machining.

- No disturbing edges, also jobs difficult to access can be reached
- Highest runout accuracy: < 0.00012" (3 µm)
- Ideal to shrink with the HAIMER Power Clamp Nano
- Heat resistant hot-working steel
- Hardened 54–2 HRC

**Attention:** Heating and cooling sleeves are needed when shrinking on most shrink fit machines (see accessories). However, when using the Power Clamp i4.0 Sprint/Air or Nano machines with the motorized coil and scanner, sleeves are not necessary.

METRIC	Clamping Ø D1 [mm]		03	04	05	06	06	06	08	10	10	10	12
	Ø D2 [mm]		09	10	11	12	12	12	14	16	16	16	18
	Ø D3 [mm]		—	—	—	—	—	—	—	18	18	18	20
	L [mm] ultra short		15	18	23	27.5	—	—	27	26.5	—	—	26
	L [mm] standard		15	18	28	37.5	32.5	37.5	27	41.5	36.5	41.5	35.5
Gage length A [mm]	ultra short		35 <sup>1)</sup>	35 <sup>1)</sup>	35 <sup>1)</sup>	40 <sup>1)</sup>	—	—	40 <sup>1)</sup>	40 <sup>1)</sup>	—	—	40 <sup>1)</sup>
Order No.	E25.185...		.03	.04	.05	.06			.08	.10			.12
Gage length A [mm]	standard		45	45	45	45 <sup>2)</sup>	45	50	50	50 <sup>2)</sup>	50	55	50
Order No.	E25.180...		.03	.04	.05	.06	.06.V2	.06.V3	.08	.10	.10.V2	.10.V3	.12

1) Only shrinkable with Power Clamp Nano  
2) Without thread for coolant tube

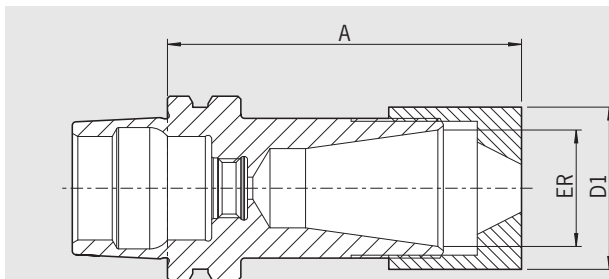
### Mini Shrink shrink and cooling sleeves

- Protect Mini Shrink chucks from overheating
- Extend lifetime of shrink fit chucks
- Secure and user friendly handling
- Cooling with standard cooling body



Shrinking and cooling sleeves for Mini Shrink chucks								Order No.
<b>Extra slim</b>								
Size [mm]	Ø 03	Ø 04	Ø 05	Ø 06	Ø 08	Ø 10	Ø 12	
Order No. 80.105.14...	.201	.202	.203	.204	.205	.206	.207	
<b>Standard</b>								
Size [mm]	Ø 03	Ø 04	Ø 05	Ø 06	Ø 08	Ø 10	Ø 12	
Order No. 80.105.14...	.204	.208	.205	.209	.210	.211	.212	
<b>Base</b>								80.105.14.2.99
<b>Set with base (12 pcs., diameter 3 – 12 mm)</b>								80.105.14.2.00

COLLET CHUCK MINI ER  
DIN 69893-5 · HSK-E25



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN

Low cutting forces at high RPMs are typical in micro machining (die & mold, medical engineering, micro mechanical engineering). The slim and short design of the all new HSK-E25 series from HAIMER is perfectly suitable for the requirements of micro machining.

– Included in delivery: Locknut

Available as:


– Mini-ER collet chuck (Mini-ER 16) in two different lengths

Standard version, similar to DIN 69882-8

INCH	Mini-ER	16
	Ø D [inch]	0.87
	Clamping range [inch]	0.02–0.39
	Clamping range [mm]	0.50–10.0
Gage length A [inch]	ultra short	1.69
Order No.	E25.025...	.16.7 <sup>1)</sup>
Gage length A [inch]	short	1.89
Order No.	E25.020...	.16.7

Accessories

Clamping nut

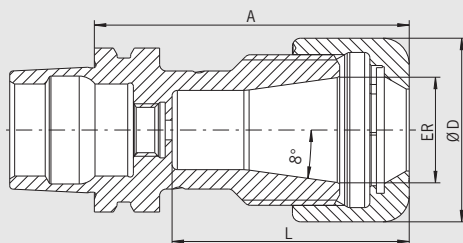
Size Mini ER 16  
Order No. 915010-  .0002

Torque Master torque wrench  
Order No. 84.600.00

Insert torque wrench Mini ER 16  
Order No. 84.620... .16.1

# HIGH PRECISION COLLET CHUCK DIN 69893-5 · HSK-E25

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN



The High Precision Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with better construction and a special coated smooth locknut combines high rigidity with vibration dampening and noise-reducing features, giving more protection to machines, spindles and tools. The chuck is especially suitable for micro and fine machining (e.g. in the medical or watchmaking industry).

- With a specially coated smooth locknut, balanced at < 1 gmm
- High runout accuracy: 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (Attention: By using standard collet, ER length A will increase)
- High rigidity

- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

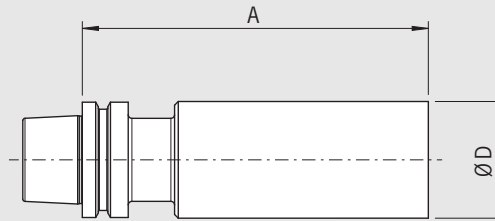
INCH	ER	16
	Ø D [inch]	1.1
	Clamping range [inch]	1/8–3/8
	Clamping range [mm]	2.0–10.0
	L [inch]	1.22
Gage length A [inch]	ultra short	1.77
Order No.	E25.025...	.16.3.HP

### Accessories

High Precision Smooth Locknut (fine-balanced)		See page 779
Size	ER 16	
Order No.	83.914...	.16.1
Roller bearing wrench		See page 782
Order No.	84.650...	.16.1
Collets ER		See pages 768–773
Shrink Fit Collets		See pages 759–765
Power Collets		See page 775
Power Collets with Safe-Lock		See page 776
Cool Jet bores for Power Collets		See page 777
Order No.	91.100.27	



**BLANK ADAPTER – HARDENED**  
**DIN 69893-5 · HSK-E25**



**CERTIFICATE OF QUALITY**  
 All functional surfaces fine machined  
 More accurate than DIN

**Use:**

For manufacturing special tools in your own factory.

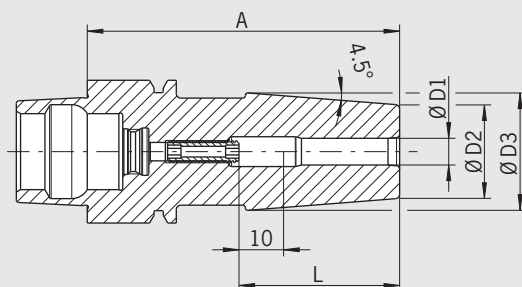
**Version:**

- HSK hardened and ground
- Cylindrical part hardened to 52+2 HRC

<b>METRIC</b>	<b>Ø D [mm]</b>	<b>25.3</b>
Gage Length A [mm]	ZG75	75
<b>Order No.</b>	<b>RE25.096.0253...</b> 	<b>.0075</b>

# SHRINK FIT CHUCK DIN 69893-5 · HSK-E32

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN



**Use:**

Shrink fit chuck suitable for use with all available shrink fit units.


**Optional:**

- Cooling with Cool Jet for an extra charge (See page 501)
- Cooling with Cool Flash for an extra charge (See pages 502-503)

**DIN 69893-5**






- With threaded holes in order to balance with balancing screws
- Included in delivery: Shrink fit chuck with backup screw, without coolant tube
- Heat resistant hot-working steel
- Hardened 54-2 HRC
- For HSS and solid carbide tools
- Shank tolerance h6

**Standard version, similar to DIN 69882-8**

INCH	Clamping Ø D1 [inch]		1/8	3/16	1/4	3/8
	Ø D2 [inch]		0.39	0.39	0.83	0.94
	L [inch]		0.35	0.59	1.42	1.65
Gage length A [inch]	short		2.36 <sup>1)</sup>	2.36 <sup>1)</sup>	2.76	3.15
Order No.	E32.140...		.1/8Z	.3/16Z	.1/4Z	.3/8Z

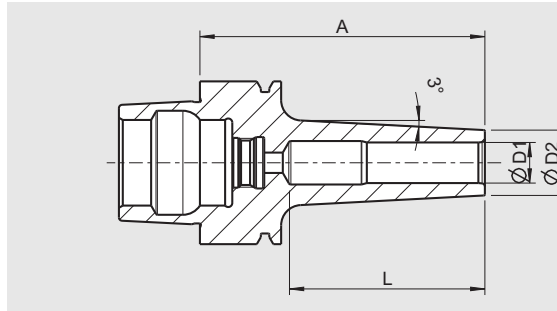
METRIC	Clamping Ø D1 [mm]		03	04	05	06	08	10
	Ø D2 [mm]		10	10	10	21	21	24
	Ø D3 [mm]		—	—	—	27	27	32
	L [mm]		09	12	15	36	36	42
Length A [mm]	short		60 <sup>1)</sup>	60 <sup>1)</sup>	60 <sup>1)</sup>	70 <sup>2)</sup>	70 <sup>2)</sup>	80 <sup>2)</sup>
Order No.	E32.140...		.03	.04	.05	.06	.08	.10

**Accessories**

<b>Balancing screws</b>		See page 784
<b>Back-up screws</b>		See pages 796-799
<b>Cool Jet bores</b>		See page 501
<b>Cool Flash</b>		Order No. 91.100.40
<b>Cool Flash Upgrade incl. Cool Jet</b>		Order No. 91.100.41

1) Without back-up screw, without threads for balancing screws, with slits along the clamping bore for coolant around the tool  
2) Without threads for balancing screws

MINI SHRINK  
DIN 69893-5 · HSK-E32



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN

- Extremely slim design
- No disturbing edges
- Highest runout accuracy: 3 µm
- Also jobs difficult to access can be reached
- Optimum rigidity
- Heat resistant hot-working steel
- Hardened 54 – 2 HRC
- Ideal to shrink with the HAIMER Power Clamp
- For all solid carbide tools with shank tolerance h6
- With 3° angle for die and mold

- **Standard version:** with high clamping force
- Tool holders fine balanced
- Delivery without coolant tube

**Attention:** Heating and cooling sleeves are needed when shrinking on most shrink fit machines (see accessories). However, when using the Power Clamp i4.0 Sprint/Air or Nano machines with the motorized coil and scanner, sleeves are not necessary.

INCH	Clamping Ø D1 [inch]	1/8	3/16	1/4	3/8	1/2
	Ø D2 [inch]	0.35	0.43	0.47	0.63	0.71
Gage length A [inch]	ultra short	2.37	2.37	2.37	2.37	2.37
Length L [inch]		1.81	1.69	1.69	1.65	1.63
<b>Order No.</b>	<b>E32.185...</b>	<b>.1/8Z</b>	<b>.3/16Z</b>	<b>.1/4Z</b>	<b>.3/8Z</b>	<b>.1/2Z</b>
Gage length A [inch]	short	2.76	2.76	2.76	2.76	2.76
Length L [inch]		2.6	2.48	2.48	1.89	1.89
<b>Order No.</b>	<b>E32.183...</b>	<b>.1/8Z</b>	<b>.3/16Z</b>	<b>.1/4Z</b>	<b>.3/8Z</b>	<b>.1/2Z</b>

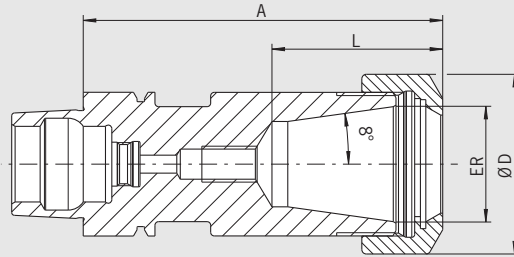
METRIC	Clamping Ø D1 [mm]	03	04	05	06	08	10	12
	Ø D2 Standard [mm]	09	10	11	12	14	16	18
Gage length A [mm]	ultra short	60	60	60	60	60	60	60
Length L [mm]		46	43	43	43	38	42	41.5
<b>Order No.</b>	<b>E32.185...</b>	<b>.03</b>	<b>.04</b>	<b>.05</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>
Gage length A [mm]	ZG80	80	80	80	80	80	80	80
Length L [mm]		66	63	63	63	38	48	48
<b>Order No.</b>	<b>E32.183...</b>	<b>.03</b>	<b>.04</b>	<b>.05</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>

Shrinking and cooling sleeves for Mini Shrink chucks								Order No.
<b>Extra slim</b>								
Size [mm]	Ø 03	Ø 04	Ø 05	Ø 06	Ø 08	Ø 10	Ø 12	
Size [inch]	Ø 1/8	—	Ø 3/16	Ø 1/4	Ø 5/16	Ø 3/8	Ø 1/2	
<b>Order No. 80.105.14...</b>	<b>.2.01</b>	<b>.2.02</b>	<b>.2.03</b>	<b>.2.04</b>	<b>.2.05</b>	<b>.2.06</b>	<b>.2.07</b>	
<b>Standard</b>								
Size [mm]	Ø 03	Ø 04	Ø 05	Ø 06	Ø 08	Ø 10	Ø 12	
Size [inch]	Ø 1/8	—	Ø 3/16	Ø 1/4	Ø 5/16	Ø 3/8	Ø 1/2	
<b>Order No. 80.105.14...</b>	<b>.2.04</b>	<b>.2.08</b>	<b>.2.05</b>	<b>.2.09</b>	<b>.2.10</b>	<b>.2.11</b>	<b>.2.12</b>	
<b>Base</b>								<b>80.105.14.2.99</b>
<b>Set with base (12 pcs., diameter 3 – 12 mm)</b>								<b>80.105.14.2.00</b>

# ER COLLET CHUCK DIN 69893-5 · HSK-E32

### CERTIFICATE OF QUALITY

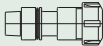
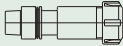
- Chuck body fine balanced  
U < 1 gmm
- All functional surfaces machined
- More accurate than DIN



### Use:

For clamping tools with cylindrical shank in ER collets.

- Locknut type HS (High Speed, fine balanced, with slide coating for higher clamping forces)
- Balanced collet nuts with special slide coating for low friction and higher clamping forces


INCH	ER	16	25
	Ø D [inch]	1.1	1.65
	Clamping range [inch]	0.02-0.39	0.04-0.63
	Clamping range [mm]	0.5-10.0	1.0-16.0
L [inch]		1.28	1.61
Gage length A [inch]		3.15	3.15
<b>Order No.</b>	<b>E32.020...</b> 	<b>.16</b>	<b>.25</b>
L [inch]		1.28	
Gage length A [inch]		3.94	
<b>Order No.</b>	<b>E32.021...</b> 	<b>.16</b>	<b>—</b>

### Accessories

#### Collet nut HS (Highspeed), fine-balanced

Ø ER		ER16	ER25
<b>Order No.</b>	<b>83.912...</b> 	<b>.16.HS</b>	<b>.25.HS</b>

#### Wrench

Ø ER		ER16	
<b>Order No.</b>	<b>84.200...</b> 	<b>.16</b>	


#### Wrench

Ø ER			ER25
<b>Order No.</b>	<b>84.200...</b> 		<b>.25</b>


#### Balancing index rings

Ø ER		ER16	ER25
<b>Order No.</b>	<b>79.350...</b> 	<b>.22</b>	<b>.32</b>

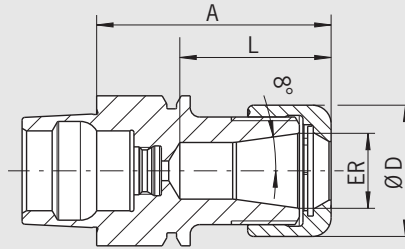
#### Back-up screw

Ø ER		ER16	ER25
<b>Order No.</b>	<b>85.800...</b> 	<b>.34</b>	<b>.34</b>

#### Coolant tube

Ø ER		ER16	ER25
<b>Order No.</b>	<b>85.700...</b> 	<b>.32</b>	<b>.32</b>

POWER COLLET CHUCK  
DIN 69893-5 · HSK-E32



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced or U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces machined
<input checked="" type="checkbox"/>	More accurate than DIN








The Power Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with improved construction combines high rigidity with vibration dampening features, giving more protection to the machine, spindle and tool. The universal Power Collet Chuck is a unique high performance chuck that can also be used with standard collets.

- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (formerly DIN 6499) (Attention: By using standard collet, ER length A will increase)
- High rigidity

- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- Without thread for set screw
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

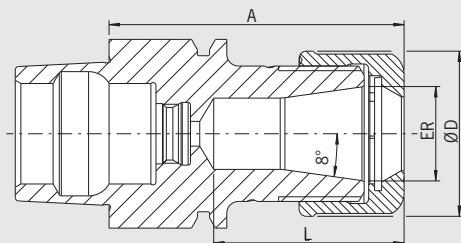
INCH	ER	16	25
	Ø D [inch]	1.1	1.65
	Clamping range [inch]	1/8–3/8	1/8–5/8
	Clamping range [mm]	2.0–10.0	2.0–16.0
	L [inch]	1.26	1.53
Gage length A [inch]	ultra short	1.97	2.36
Order No.	E32.025...	.16.3	.25.3

Accessories

<b>Locknut (fine-balanced)</b>			See page 779
Size		ER 16	ER 25
Order No.	83.914...	.16	.25
<b>Power Collet clamping wrench</b>			See page 781
<b>Torque Master torque wrench</b>			See page 780
<b>Power Collets</b>			See page 775
<b>Power Collets with Safe-Lock</b>			See page 776
<b>Cool Jet bores for Power Collets</b>			See page 777
<b>Shrink Fit Collets</b>			See pages 759–765
<b>Coolant tube</b>			See page 793
Order No.	85.700.32		

# HIGH PRECISION COLLET CHUCK DIN 69893-5 · HSK-E32

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN



The High Precision Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with better construction and a special coated smooth locknut combines high rigidity with vibration dampening and noise-reducing features, giving more protection to machines, spindles and tools. The chuck is especially suitable for micro and fine machining (e.g. in the medical or watchmaking industry).

- With a specially coated smooth locknut, balanced at < 1 gmm
- High runout accuracy: 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (Attention: By using standard collet, ER length A will increase)
- High rigidity

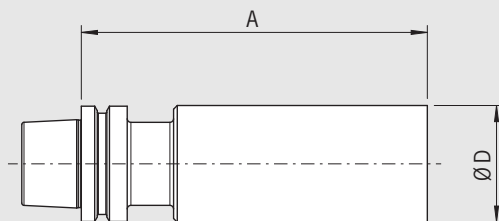
- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

INCH	ER	16	25
	Ø D [inch]	1.1	1.65
	Clamping range [inch]	1/8–3/8	1/8–5/8
	Clamping range [mm]	2.0–10.0	2.0–16.0
	L [inch]	1.26	1.53
Gage length A [inch]	ultra short	1.97	2.36
Order No.	E32.025...	.16.3.HP	.25.3.HP

### Accessories

<b>High Precision Smooth Locknut (fine-balanced)</b>			See page 779
Size		ER 16	ER 25
Order No.	83.914...	.16.1	.25.1
<b>Roller bearing wrench</b>			See page 782
Order No.	84.650...	.16.1	.25.1
<b>Collets ER</b>			See pages 768–773
<b>Shrink Fit Collets</b>			See pages 759–765
<b>Power Collets</b>			See page 775
<b>Power Collets with Safe-Lock</b>			See page 776
<b>Cool Jet bores for Power Collets</b>			See page 777
Order No.	91.100.27		
<b>Coolant tube</b>			See page 793
Order No.	85.700.32		

**BLANK ADAPTER – HARDENED  
DIN 69893-5 · HSK-E32**



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN

**Use:**

For manufacturing special tools in your own factory.

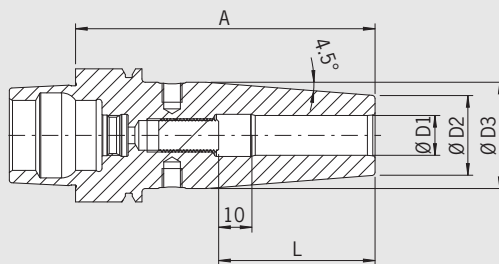
**Version:**

- HSK hardened and ground
- Cylindrical part hardened to 52+2 HRC

METRIC	Ø D [mm]		32.3
Gage Length A [mm]	ZG96		96
<b>Order No.</b>	<b>RE32.096.0323...</b>		<b>.0096</b>

# SHRINK FIT CHUCK DIN 69893-5 · HSK-E40

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN



**Use:**

Shrink fit chuck suitable for use with all available shrink fit units.

- With threaded holes in order to balance with balancing screws
- Included in delivery: Shrink fit chuck with backup screw, without coolant tube
- Heat resistant hot-working steel
- Hardened 54–2 HRC
- For HSS and solid carbide tools
- Shank tolerance h6


Optional:

- Cooling with Cool Jet for an extra charge (See page 501)
- Cooling with Cool Flash for an extra charge (See pages 502–503)

INCH	Clamping Ø D1 [inch]	1/8	3/16	1/4	5/16	3/8	1/2	5/8
	Ø D2 [inch]	0.39	0.39	0.83	0.83	0.94	0.94	1.06
	Ø D3 [inch]	–	–	1.06	1.06	1.26	1.26	1.34
	L [inch]	0.35	0.59	1.42	1.42	1.65	1.85	1.97
Gage length A [inch]	short	2.36 <sup>1)</sup>	2.36 <sup>1)</sup>	3.15	3.15	3.15	3.54	3.54
Order No.	E40.140...	.1/8Z	.3/16Z	.1/4Z	.5/16Z	.3/8Z	.1/2Z	.5/8Z

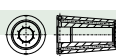

METRIC	Clamping Ø D1 [mm]	03	04	05	06	08	10	12	14	16
	Ø D2 [mm]	10	10	10	21	21	24	24	27	27
	Ø D3 [mm]	–	–	–	27	27	32	32	34	34
	Ø D2 [mm] E40.145...	–	–	–	22.5	22.5	26.5	26.5	30	30
	Ø D3 [mm] E40.145...	–	–	–	28.7	28.7	32	32	33	33
	L [mm]	09	12	15	36	36	42	47	47	50
Length A [mm]	ultra short	–	–	–	60 <sup>2)</sup>	60 <sup>2)</sup>	60 <sup>3)</sup>	60 <sup>3)</sup>	60 <sup>3)</sup>	60 <sup>3)</sup>
Order No.	E40.145...				.06	.08	.10	.12	.14	.16
Length A [mm]	short	60 <sup>1)</sup>	60 <sup>1)</sup>	60 <sup>1)</sup>	80	80	80	90	90	90
Order No.	E40.140...	.03	.04	.05	.06	.08	.10	.12	.14	.16

**Accessories**

**Balancing screws**  See page 784

**Back-up screws**  See pages 796–799

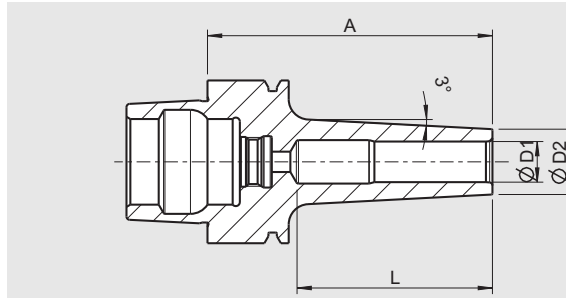
**Cool Jet bores**  See page 501

**Cool Flash**  **Order No. 91.100.40** See pages 502–503  
**Cool Flash Upgrade incl. Cool Jet**  **Order No. 91.100.41** See pages 502–503

1) Without back-up screw, without threads for balancing screws, with slits along the clamping bore for coolant around the tool  
 2) Without back-up screw, without threads for balancing screws  
 3) Without back-up screw, without threads for balancing screws, without thread for coolant tube



# MINI SHRINK DIN 69893-5 · HSK-E40



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck fine balanced U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN

- Extremely slim design
- No disturbing edges
- TIR less than 0.00012" (3 µm)
- Also jobs difficult to access can be reached
- Optimum rigidity
- Heat resistant hot-working steel
- Hardened 54 – 2 HRC
- Ideal for the HAIMER Power Clamp
- For all solid carbide tools with shank tolerance h6
- With 3° angle for die and mold

- **Standard version:** with high clamping force
- **Extra slim version:** extremely slim for fine machining and for jobs very difficult to reach
- Tool holders fine balanced
- Delivery without coolant tube

**Attention:** Heating and cooling sleeves are needed when shrinking on most shrink fit machines (see accessories). However, when using the Power Clamp i4.0 Sprint/Air or Nano machines with the motorized coil and scanner, sleeves are not necessary.

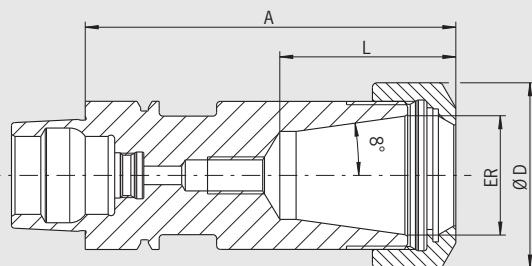
INCH	Clamping Ø D1 [inch]		1/8	3/16	1/4	3/8	1/2
	Ø D2 [inch]		0.35	0.43	0.47	0.63	0.71
Gage length A [inch]	ultra short		2.36	2.36	2.36	2.36	2.36
Length L [inch]			—	—	1.61	1.65	1.61
<b>Order No.</b>	Standard <b>E40.185...</b>		<b>.1/8Z</b>	<b>.3/16Z</b>	<b>.1/4Z</b>	<b>.3/8Z</b>	<b>.1/2Z</b>
Gage length A [inch]	short		2.76	2.76	2.76	2.76	2.76
Length L [inch]			—	—	2.01	1.89	1.89
<b>Order No.</b>	Standard <b>E40.180...</b>		<b>.1/8Z</b>	<b>.3/16Z</b>	<b>.1/4Z</b>	<b>.3/8Z</b>	<b>.1/2Z</b>

METRIC	Clamping Ø D1 [mm]		03	04	05	06	08	10	12
	Ø D2 Standard [mm]		09	10	11	12	14	16	18
	Ø D2 Extra slim [mm]		06	07	08	09	11	13	15
Length A [mm]	ultra short		60	60	60	60	60	60	60
Length L [mm]			—	—	—	41	41	42	41,5
<b>Order No.</b>	Standard <b>E40.185...</b>		<b>.03</b>	<b>.04</b>	<b>.05</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>
<b>Order No.</b>	Extra slim <b>E40.175...</b>		<b>.03</b>	<b>.04</b>	<b>.05</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>
Length A [mm]	short		70	70	70	70	70	70	70
Length L [mm]			—	—	—	51	51	48	48
<b>Order No.</b>	Standard <b>E40.180...</b>		<b>.03</b>	<b>.04</b>	<b>.05</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>
<b>Order No.</b>	Extra slim <b>E40.170...</b>		<b>.03</b>	<b>.04</b>	<b>.05</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>
Length A [mm]	ZG80		80	80	80	80	80	80	80
Length L [mm]			—	—	—	61	61	48	48
<b>Order No.</b>	Standard <b>E40.183...</b>		<b>.03</b>	<b>.04</b>	<b>.05</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>
<b>Order No.</b>	Extra slim <b>E40.173...</b>		<b>.03</b>	<b>.04</b>	<b>.05</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>

Shrinking and cooling sleeves for Mini Shrink chucks								Order No.
<b>Extra slim</b>								
Size [mm]	Ø 03	Ø 04	Ø 05	Ø 06	Ø 08	Ø 10	Ø 12	
Size [inch]	Ø 1/8	—	Ø 3/16	Ø 1/4	Ø 5/16	Ø 3/8	Ø 1/2	
<b>Order No. 80.105.14...</b>	<b>.2.01</b>	<b>.2.02</b>	<b>.2.03</b>	<b>.2.04</b>	<b>.2.05</b>	<b>.2.06</b>	<b>.2.07</b>	
<b>Standard</b>								
Size [mm]	Ø 03	Ø 04	Ø 05	Ø 06	Ø 08	Ø 10	Ø 12	Ø 16
Size [inch]	Ø 1/8	—	Ø 3/16	Ø 1/4	Ø 5/16	Ø 3/8	Ø 1/2	Ø 5/8
<b>Order No. 80.105.14...</b>	<b>.2.04</b>	<b>.2.08</b>	<b>.2.05</b>	<b>.2.09</b>	<b>.2.10</b>	<b>.2.11</b>	<b>.2.12</b>	<b>.2.16</b>
<b>Base</b>								<b>80.105.14.2.99</b>
<b>Set with base (12 pcs., diameter 3 – 12 mm)</b>								<b>80.105.14.2.00</b>

# ER COLLET CHUCK DIN 69893-5 · HSK-E40

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN



**Use:**

For clamping tools with cylindrical shank in ER collets.

- Locknut type HS (High Speed, fine balanced, with slide coating for higher clamping forces)
- Balanced collet nuts with special slide coating for low friction and higher clamping forces

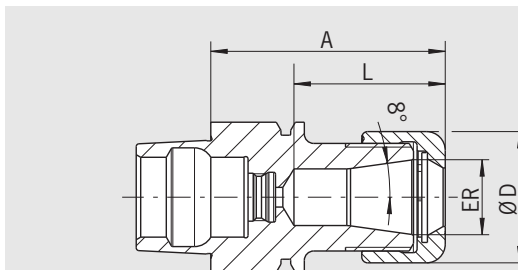
INCH	ER		11	16	25	32
	Ø D [inch]		0.75	1.1	1.65	1.97
	Clamping range [inch]		0.02-0.28	0.02-0.39	0.04-0.63	0.04-0.79
	Clamping range [mm]		0.5-7.0	0.5-10.0	1.0-16.0	1.5-20.0
L [inch]			1.05	1.28	1.61	1.85
Gage length A [inch]	ultra short		2.36	2.36	2.76	2.76
Order No.	E40.025...		.11 <sup>1)</sup>	.16 <sup>1)</sup>	.25 <sup>1)</sup>	.32 <sup>1)</sup>
L [inch]				1.30	1.61	
Gage length A [inch]	short			3.15	3.15	
Order No.	E40.020...		—	.16	.25	—

**Accessories**

<b>Collet nut HS (Highspeed), fine-balanced</b>						
Ø ER			—	ER16	ER25	ER32
Order No.	83.912...			.16.HS	.25.HS	.32.HS
<b>Wrench</b>						
Ø ER			ER11	ER16	—	—
Order No.	84.200...		.11	.16		
<b>Wrench</b>						
Ø ER			—	—	ER25	ER32
Order No.	84.200...				.25	.32
<b>Balancing index rings</b>						
Ø ER			ER11	ER16	ER25	ER32
Order No.	79.350...		.19	.28	.32	.40
<b>Back-up screw</b>						
Ø ER			—	ER16	ER25	ER32
Order No.	85.800...			.34	.34	.35
<b>Coolant tube</b>						
Ø ER			ER11	ER16	ER25	ER32
Order No.	85.700...		.40	.40	.40	.40

1) Without thread for back-up screw

**POWER COLLET CHUCK**  
DIN 69893-5 · HSK-E40



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN

The Power Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with improved construction combines high rigidity with vibration dampening features, giving more protection to the machine, spindle and tool. The universal Power Collet Chuck is a unique high performance chuck that can also be used with standard collets.

- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (formerly DIN 6499)  
(Attention: By using standard collet, ER length A will increase)
- High rigidity

- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- Without thread for set screw
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

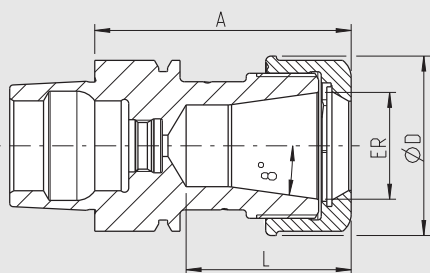
INCH	ER	16	25	32
	Ø D [inch]	1.1	1.65	1.97
	Clamping range [inch]	1/8–3/8	1/8–5/8	1/8–3/4
	Clamping range [mm]	2.0–10.0	2.0–16.0	2.0–20.0
	L [inch]	1.22	1.51	1.85
Gage length A [inch]	ultra short	1.97	2.36	2.76
Order No.	E40.025...	.16.3	.25.3	.32.3
	L [inch]	1.69	2.01	2.09
Gage length A [inch]	short	3.15	3.15	3.15
Order No.	E40.020...	.16.3	.25.3	.32.3

**Accessories**

<b>Locknut (fine-balanced)</b>					See page 779
Size		ER 16	ER 25	ER 32	
Order No.	83.914...	.16	.25	.32	
<b>Power Collet clamping wrench</b>					See page 781
<b>Torque Master torque wrench</b>					See page 780
Order No.	84.600.00				
<b>Power Collets</b>					See page 775
<b>Power Collets with Safe-Lock</b>					See page 776
<b>Cool Jet bores for Power Collets</b>					See page 777
Order No.	91.100.27				
<b>Shrink Fit Collets</b>					See pages 759–767
<b>Coolant tube</b>					See page 793
Order No.	85.700.40				

# HIGH PRECISION COLLET CHUCK DIN 69893-5 · HSK-E40

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN



**The High Precision Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with better construction and a special coated smooth locknut combines high rigidity with vibration dampening and noise-reducing features, giving more protection to machines, spindles and tools. The chuck is especially suitable for micro and fine machining (e.g. in the medical or watchmaking industry).**

- With a specially coated smooth locknut, balanced at < 1 gmm
- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (Attention: By using standard collet, ER length A will increase)
- High rigidity

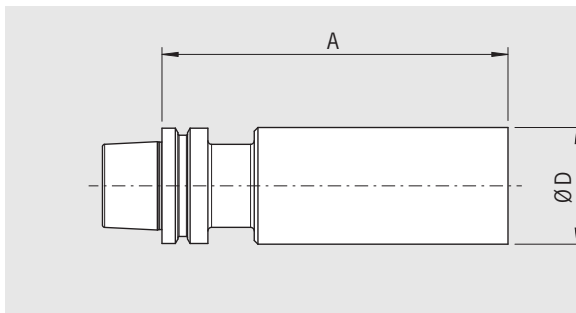
- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

INCH	ER	16	25	32
	Ø D [inch]	1.1	1.65	1.97
	Clamping range [inch]	1/8–3/8	1/8–5/8	1/8–3/4
	Clamping range [mm]	2.0–10.0	2.0–16.0	2.0–20.0
	L [inch]	1.22	1.51	1.85
Gage length A [inch]	ultra short	1.97	2.36	2.76
Order No.	E40.025...	.16.3.HP	.25.3.HP	.32.3.HP
	L [inch]	1.69	2.01	2.09
Gage length A [inch]	short	3.15	3.15	3.15
Order No.	E40.020...	.16.3.HP	.25.3.HP	.32.3.HP

### Accessories

<b>High Precision Smooth Locknut (fine-balanced)</b>					See page 779
Size		ER 16	ER 25	ER 32	
Order No.	83.914...	.16.1	.25.1	.32.1	
<b>Roller bearing wrench</b>					See page 782
Order No.	84.650...	.16.1	.25.1	.32.1	
<b>Collets ER</b>					See pages 768–773
<b>Shrink Fit Collets</b>					See pages 759–767
<b>Power Collets</b>					See page 775
<b>Power Collets with Safe-Lock</b>					See page 776
<b>Cool Jet bores for Power Collets</b>					See page 777
Order No.	91.100.27				
<b>Coolant tube</b>					See page 793
Order No.	85.700.40				

**BLANK ADAPTER – HARDENED**  
**DIN 69893-5 · HSK-E40**




**CERTIFICATE OF QUALITY**  
 All functional surfaces fine machined  
 More accurate than DIN

**Use:**

For manufacturing special tools in your own factory.

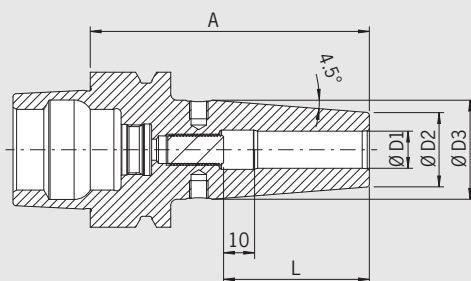
**Version:**

- HSK hardened and ground
- Cylindrical part hardened to 52+2 HRC

METRIC	Ø D [mm]		40.7
Gage Length A [mm]	ZG120		120
<b>Order No.</b>	<b>RE40.096.0407...</b>		<b>.0120</b>

# SHRINK FIT CHUCK DIN 69893-5 · HSK-E50

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN



**Use:**

Shrink fit chuck suitable for use with all available shrink fit units.

**Optional:**

- Cooling with Cool Jet for an extra charge (See page 501)
- Cooling with Cool Flash for an extra charge (See pages 502–503)

**DIN 69893-5**

- Included in delivery: Shrink fit chuck with back-up screw, without coolant tube
- Heat resistant hot-working steel
- Hardened 54-2 HRC
- For HSS and solid carbide tools
- Shank tolerance h6

INCH	Clamping Ø D1 [inch]	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4
	Ø D2 [inch]	0.39	0.39	0.83	0.83	0.94	0.94	0.94	1.06	1.30
	Ø D3 [inch]	—	—	1.06	1.06	1.26	1.26	1.26	1.34	1.65
	L [inch]	0.35	0.59	1.42	1.42	1.65	1.65	1.85	1.97	2.05
Gage length A [inch]	short	2.36 <sup>1)</sup>	2.36 <sup>1)</sup>	3.15	3.15	3.35	3.35	3.54	3.74	3.94
<b>Order No.</b>	<b>E50.140...</b>	<b>.1/8Z</b>	<b>.3/16Z</b>	<b>.1/4Z</b>	<b>.5/16Z</b>	<b>.3/8Z</b>	<b>.7/16Z</b>	<b>.1/2Z</b>	<b>.5/8Z</b>	<b>.3/4Z</b>
Gage length A [inch]	ZG130	—	—	5.12	5.12	5.12	5.12	5.12	5.12	5.12
<b>Order No.</b>	<b>E50.144...</b>	—	—	<b>.1/4Z</b>	<b>.5/16Z</b>	<b>.3/8Z</b>	<b>.7/16Z</b>	<b>.1/2Z</b>	<b>.5/8Z</b>	<b>.3/4Z</b>

**Standard version, similar to DIN 69882-8**

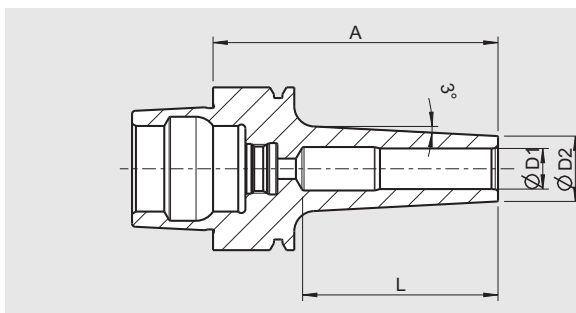
METRIC	Clamping Ø D1 [mm]	03	04	05	06	08	10	12	14	16
	Ø D2 [mm]	10	10	10	21	21	24	24	27	27
	Ø D3 [mm]	—	—	—	27	27	32	32	34	34
	L [mm]	09	12	15	36	36	42	47	47	50
Length A [mm]	short	60 <sup>1)</sup>	60 <sup>1)</sup>	60 <sup>1)</sup>	80	80	85	90	90	95
<b>Order No.</b>	<b>E50.140...</b>	<b>.03</b>	<b>.04</b>	<b>.05</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>
Length A [mm]	ZG130	—	—	—	130	130	130	130	130	130
<b>Order No.</b>	<b>E50.144...</b>	—	—	—	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>

**Accessories**

<b>Shrink fit extensions</b>		See pages 750–753
<b>Set of Balancing Screws</b>		<b>Order No. 80.203.00</b> See page 784
<b>Coolant tube</b>		<b>Order No. 85.700.50</b> See page 793
<b>Reduction sleeves</b>		See page 794
<b>Back-up Screws</b>		See pages 796–799
<b>Cool Jet bores</b>		<b>Order No. 91.100.24</b> See page 501
<b>Cool Flash Upgrade</b>		<b>Order No. 91.100.41</b> See pages 502–503

1) Without back-up screw, without threads for balancing screws, with slits along the clamping bore for coolant around the tool

# MINI SHRINK DIN 69893-5 · HSK-E50



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck fine balanced U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN

- Extremely slim design
- No disturbing edges
- TIR less than 0.00012" (3 µm)
- Also jobs difficult to access can be reached
- Ideal for the HAIMER Power Clamp
- For all solid carbide tools with shank tolerance h6
- With 3° angle for die and mold

- With high clamping force
- Tool holders fine balanced
- Delivery without coolant tube

**Attention:** Heating and cooling sleeves are needed when shrinking on most shrink fit machines (see accessories). However, when using the Power Clamp i4.0 Sprint/Air or Nano machines with the motorized coil and scanner, sleeves are not necessary.

INCH	Clamping Ø D1 [inch]		1/8	3/16	1/4	3/8	1/2
	Ø D2 standard [inch]		0.35	0.43	0.47	0.63	0.71
	Ø D2 extra slim [inch]		0.24	0.31	0.35	0.51	0.59
	L [inch]		1)	1)	1)	1.89	1.89
Gage length A [inch]	short		2.76	2.76	2.76	2.76	2.76
Order No.	Standard E50.180...		.1/8Z	.3/16Z	.1/4Z	.3/8Z	.1/2Z
Order No.	extra slim E50.170...		.1/8Z	.3/16Z	.1/4Z	.3/8Z	.1/2Z
Gage length A [inch]	ZG100		3.94	3.94	3.94	3.94	3.94
Order No.	Standard E50.181...		-	.3/16Z	.1/4Z	.3/8Z	.1/2Z
Order No.	extra slim E50.171...		.1/8Z	.3/16Z	.1/4Z	.3/8Z	.1/2Z

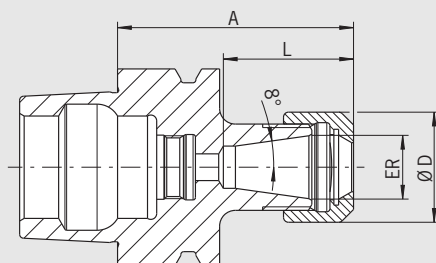
METRIC	Clamping Ø D1 [mm]		03	04	05	06	08	10	12
	Ø D2 Standard [mm]		09	10	11	12	14	16	18
	Ø D2 extra slim [mm]		06	07	08	09	11	13	15
Gage length A [mm]	short		70	70	70	70	70	70	70
Gage length L [mm]			-	-	-	-	-	48	48
Order No.	Standard E50.180...		.03	.04	.05	.06	.08	.10	.12
Order No.	extra slim E50.170...		.03	.04	.05	.06	.08	.10	.12
Gage length A [mm]	ZG80		80	80	80	80	80	80	80
Gage length L [mm]			-	-	-	-	-	48	48
Order No.	Standard E50.183...		.03	.04	.05	.06	.08	.10	.12
Order No.	extra slim E50.173...		.03	.04	.05	.06	.08	.10	.12
Gage length A [mm]	ZG100				100	100	100	100	100
Gage length L [mm]			-	-	-	-	-	48	48
Order No.	Standard E50.181...		-	-	.05	.06	.08	.10	.12
Order No.	extra slim E50.171...		-	-	.05	.06	.08	.10	.12

Shrinking and cooling sleeves for Mini Shrink chucks								Order No.
<b>Extra slim</b>								
Size [mm]		Ø 03	Ø 04	Ø 05	Ø 06	Ø 08	Ø 10	Ø 12
Size [inch]		Ø 1/8	-	Ø 3/16	Ø 1/4	Ø 5/16	Ø 3/8	Ø 1/2
Order No.	80.105.14...	.2.01	.2.02	.2.03	.2.04	.2.05	.2.06	.2.07
<b>Standard</b>								
Size [mm]		Ø 03	Ø 04	Ø 05	Ø 06	Ø 08	Ø 10	Ø 12
Size [inch]		Ø 1/8	-	Ø 3/16	Ø 1/4	Ø 5/16	Ø 3/8	Ø 1/2
Order No.	80.105.14...	.2.04	.2.08	.2.05	.2.09	.2.10	.2.11	.2.12
<b>Base</b>								80.105.14.2.99
<b>Set with base (12 pcs., diameter 3 – 12 mm)</b>								80.105.14.2.00

1) Drilled through

# ER COLLET CHUCK DIN 69893-5 · HSK-E50

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN



**Use:**

For clamping tools with cylindrical shank in ER collets.

- Locknut type HS (High Speed, fine balanced, with slide coating for higher clamping forces)
- Balanced collet nuts with special slide coating for low friction and higher clamping forces

INCH	ER	11	16	20	25	32
	Ø D [inch]	0.75	1.1	1.34	1.65	1.97
	Clamping range [inch]	0.02–0.28	0.02–0.39	0.04–0.51	0.04–0.63	0.04–0.79
	Clamping range [mm]	0.5–7.0	0.5–10.0	1.5–13.0	1.0–16.0	1.5–20.0
L [inch]		1.05	1.28	1.73	1.61	1.85
Gage length A [inch]	ultra short	2.36	2.36	2.76	2.76	3.15
Order No.	<b>E50.025...</b>	<b>.11<sup>1)</sup></b>	<b>.16<sup>1)</sup></b>	<b>.20<sup>1)</sup></b>	<b>.25<sup>1)</sup></b>	<b>.32<sup>1)</sup></b>
L [inch]		—	1.28	—	1.61	1.85
Gage length A [inch]	short	—	3.94	—	3.94	3.94
Order No.	<b>E50.020...</b>	—	<b>.16</b>	—	<b>.25</b>	<b>.32</b>

**Accessories**

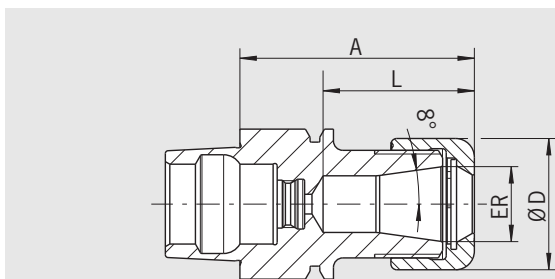
<b>Collets ER</b>		See pages 768–773				
<b>Shrink Fit Collets</b>		See pages 758–767				
<b>Chuck nut HS (fine-balanced)</b>						
Size		ER 16	ER 20	ER 25	ER 32	
Order No.	<b>83.912...</b>	<b>.16.HS</b>	<b>.20.HS</b>	<b>.25.HS</b>	<b>.32.HS</b>	
<b>Fork wrench</b>						
Size		ER 11	ER 16	ER 20	—	—
Order No.	<b>84.200...</b>	<b>.11</b>	<b>.16</b>	<b>.20</b>	—	—
<b>Clamping wrench</b>						
Size		—	—	ER 25	ER 32	
Order No.	<b>84.200...</b>	—	—	<b>.25</b>	<b>.32</b>	
<b>Balancing index rings</b>						
Size	oversize	ER 11	ER 16	ER 20	ER 25	ER 32
Order No.	<b>79.350...</b>	<b>.19</b>	<b>.22</b>	<b>.34</b>	<b>.32</b>	<b>.40</b>
<b>Adjusting screw</b>						
Size		ER 16	—	ER 25	ER 32	
Order No.	<b>85.800...</b>	<b>.34</b>	—	<b>.34</b>	<b>.35</b>	
<b>Coolant tube</b>		See page 793				
Order No.	<b>85.700.50</b>					
<b>Shrink fit extensions</b>		See pages 751–753				

1) Without thread for back-up screw

2) Suitable balancing index rings Order No. 79.350.28



## POWER COLLET CHUCK DIN 69893-5 · HSK-E50



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN







The Power Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with improved construction combines high rigidity with vibration dampening features, giving more protection to the machine, spindle and tool. The universal Power Collet Chuck is a unique high performance chuck that can also be used with standard collets.

- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (formerly DIN 6499)  
(Attention: By using standard collet, ER length A will increase)
- High rigidity

- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- Without thread for set screw
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

INCH	ER	16	25	32
	Ø D [inch]	1.1	1.65	1.97
	Clamping range [inch]	1/8–3/8	1/8–5/8	1/8–3/4
	Clamping range [mm]	2.0–10.0	2.0–16.0	2.0–20.0
	L [inch]	1.26	1.53	1.89
Gage length A [inch]	ultra short	2.36	2.56	2.95
Order No.	E50.025...	.16.3	.25.3	.32.3

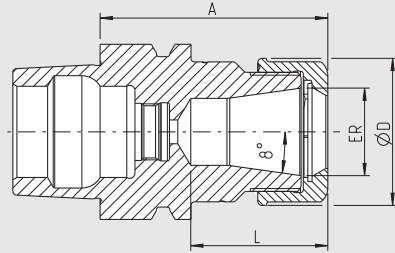
### Accessories

<b>Locknut (fine-balanced)</b>				See page 779
Size		ER 16	ER 25	ER 32
Order No.	83.914...	.16	.25	.32
<b>Power Collet clamping wrench</b>				See page 781
<b>Torque Master torque wrench</b>				See page 780
Order No.	84.600.00			
<b>Power Collets</b>				See page 775
<b>Power Collets with Safe-Lock</b>				See page 776
<b>Cool Jet bores for Power Collets</b>				See page 777
Order No.	91.100.27			
<b>Shrink Fit Collets</b>				See pages 759–767
<b>Coolant tube</b>				See page 793
Order No.	85.700.50			

# HIGH PRECISION COLLET CHUCK DIN 69893-5 · HSK-E50

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
U < 1 gmm
- All functional surfaces fine machined
- More accurate than DIN



**The High Precision Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with better construction and a special coated smooth locknut combines high rigidity with vibration dampening and noise-reducing features, giving more protection to machines, spindles and tools. The chuck is especially suitable for micro and fine machining (e.g. in the medical or watchmaking industry).**

- With a specially coated smooth locknut, balanced at < 1 gmm
- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (formerly DIN 6499)  
(Attention: By using standard collet, ER length A will increase)
- High rigidity

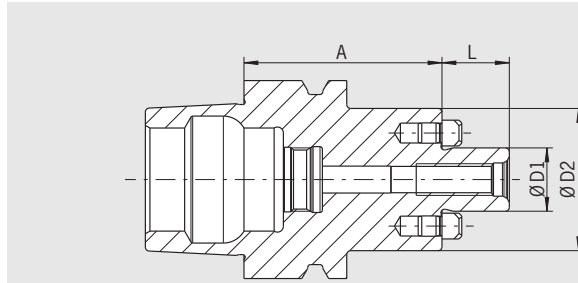
- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

INCH	ER	16	25	32
	Ø D [inch]	1.1	1.65	1.97
	Clamping range [inch]	1/8–3/8	1/8–5/8	1/8–3/4
	Clamping range [mm]	2.0–10.0	2.0–16.0	2.0–20.0
	L [inch]	1.26	1.53	1.89
Gage length A [inch]	ultra short	2.36	2.56	2.95
Order No.	E50.025...	.16.3.HP	.25.3.HP	.32.3.HP

### Accessories

<b>High Precision Smooth Locknut (fine-balanced)</b>					See page 779
Size		ER 16	ER 25	ER 32	
Order No.	83.914...	.16.1	.25.1	.32.1	
<b>Roller bearing wrench</b>					See page 782
Order No.	84.650...	.16.1	.25.1	.32.1	
<b>Collets ER</b>					See pages 768–773
<b>Shrink Fit Collets</b>					See pages 759–767
<b>Power Collets</b>					See page 775
<b>Power Collets with Safe-Lock</b>					See page 776
<b>Cool Jet bores for Power Collets</b>					See page 777
Order No.	91.100.27				
<b>Coolant tube</b>					See page 793
Order No.	85.700.50				

FACE MILL ARBOR  
DIN 69893-5 · HSK-E50



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 1/min or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN

**Use:**

For holding face mill cutters and cutters with radial driving slot DIN 1880 and exceeding clamping diameter 40 clamping according to DIN 2079 is possible, too (4 additional tapping holes).

**DIN 69882-3**

- Included in delivery: tightening bolt, without coolant tube
- With coolant exit bores on the end face for milling cutters with central cooling

METRIC	Clamping Ø D1 [mm]	16	22	27	32
	Ø D2 [mm]	36	48	60	78
	L [mm]	17	19	21	24
Length A [mm]	short	50	60	60	60
<b>Order No.</b>	<b>E50.050...</b>	<b>.16.KKB</b>	<b>.22.KKB</b>	<b>.27.KKB</b>	<b>.32.KKB</b>
Length A [mm]	long	100	100	100	100
<b>Order No.</b>	<b>E50.051...</b>	<b>.16.KKB</b>	<b>.22.KKB</b>	<b>.27.KKB</b>	<b>.32.KKB</b>
Length A [mm]	oversize	—	160	—	—
<b>Order No.</b>	<b>E50.052...</b>	—	<b>.22.KKB</b>	—	—

**Accessories**

**Tightening bolt**

Size D1		16	22	27	32
<b>Order No.</b>	<b>85.300...</b>	<b>.16</b>	<b>.22</b>	<b>.27</b>	<b>.32</b>

**Wrench**

Size D1		16	22	27	32
<b>Order No.</b>	<b>84.400...</b>	<b>.16</b>	<b>.22</b>	<b>.27</b>	<b>.32</b>

**Balancing index rings**

Size D1		16	22	27	32
<b>Order No.</b>	<b>79.350...</b>	<b>.36</b>	<b>.48</b>	<b>.60</b>	<b>.78</b>

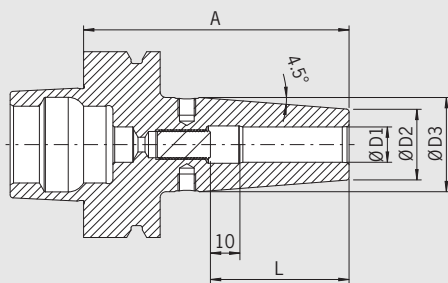
**Coolant tube**

<b>Order No.</b>	<b>85.700.50</b>				
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See page 793

# SHRINK FIT CHUCK DIN 69893-6 · HSK-F63

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN



**Use:**

Shrink fit chuck suitable for use with all available shrink fit units.

- Heat resistant hot-working steel
- Hardened 54-2 HRC
- For HSS and solid carbide tools
- Shank tolerance h6
- With threaded holes in order to balance with balancing screws
- Included in delivery: Shrink fit chuck with back-up screw
- Cool Jet option available upon request (See page 501)

INCH	Clamping Ø D1 [inch]		1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1
	Ø D2 [inch]		0.39	0.39	0.83	0.83	0.94	0.94	1.06	1.3	1.73
	Ø D3 [inch]		-	-	1.06	1.06	1.26	1.26	1.34	1.65	2.09
	L [inch]		0.35	0.59	1.42	1.42	1.65	1.85	1.97	2.05	2.28
Gage length A [inch]	short		3.15 <sup>1)</sup>	3.15 <sup>1)</sup>	3.15	3.15	3.35	3.54	3.74	3.94	4.53
Order No.	F63.140...		.1/8Z	.3/16Z	.1/4Z	.5/16Z	.3/8Z	.1/2Z	.5/8Z	.3/4Z	.1Z
Gage length A [inch]	ZG130		-	-	5.12	5.12	5.12	5.12	-	5.12	-
Order No.	F63.144...		-	-	.1/4Z	.5/16Z	.3/8Z	.1/2Z	-	.3/4Z	-

**Standard version, similar to DIN 69882-8**

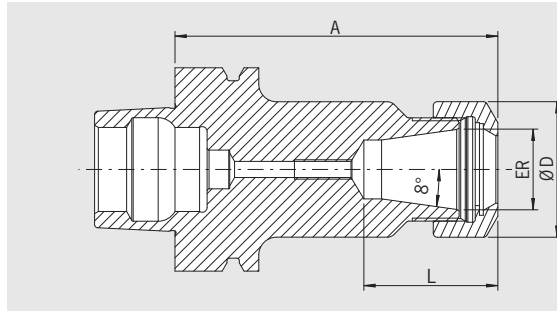
METRIC	Clamping Ø D1 [mm]		03	04	05	06	08	10	12	16	20	25
	Ø D2 [mm]		10	10	10	21	21	24	24	27	33	44
	Ø D3 [mm]		-	-	-	27	27	32	32	34	42	53
	L [mm]		09	12	15	36	36	42	47	50	52	58
Length A [mm]	short		80 <sup>1)</sup>	80 <sup>1)</sup>	80 <sup>1)</sup>	80	80	85	90	95	100	115
Order No.	F63.140...		.03	.04	.05	.06	.08	.10	.12	.16	.20	.25
Length A [mm]	ZG120		120 <sup>2)</sup>	120 <sup>2)</sup>	120 <sup>2)</sup>	120	120	120	120	120	120	120
Order No.	F63.147...		.03.1	.04.1	.05.1	.06	.08	.10	.12	.16	.20	.25
Length A [mm]	ZG130		-	-	-	130	130	130	130	130	130	130
Order No.	F63.144...		-	-	-	.06	.08	.10	.12	.16	.20	.25

**Accessories**

<b>Shrink fit extensions</b>		See pages 750–753
<b>Balancing screws</b>		See page 784
<b>Back-up screws</b>		See pages 796–799

1) Without back-up screw, without threads for balancing screws, with slits along the clamping bore for coolant around the tool  
2) Without slits along the clamping bore

## ER COLLET CHUCK DIN 69893-6 · HSK-F63



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN

**Use:**

For clamping tools with cylindrical shank in ER collets according to ISO 15488.

**DIN 69882-6**

- Included in delivery: locknut (balanced, with slide coating for higher clamping forces)
- Locknut type HS (High Speed, fine balanced, with slide coating for higher clamping forces) for an extra charge

INCH	ER	11	16	20	25	32	40
	ØD [inch]	0.75	1.1	1.34	1.65	1.97	2.48
	Clamping range [inch]	0.02–0.28	0.02–0.39	0.06–0.51	0.04–0.63	0.06–0.79	0.10–1.02
	Clamping range [mm]	0.5–7.0	0.5–10.0	1.5–13.0	1.0–16.0	1.5–20.0	2.5–26.0
L [inch]		1.93	1.93	1.93	1.89	1.98	2.09
Gage length A [inch]	ultra short	2.95	2.95	2.95	2.95	2.95	2.95
Order No.	F63.025...	.11	.16	.20	.25	.32	.40
L [inch]		0.91	1.28	1.51	1.61	1.85	2.09
Gage length A [inch]	short	3.94	3.94	3.94	3.94	3.94	4.72
Order No.	F63.020...	.11	.16	.20	.25	.32	.40

**Accessories**

**Collets ER**  See pages 768–773

**Shrink Fit Collets**  See pages 758–767

**Locknut (pre-balanced)**

Size		ER 11	ER 16	ER 20	ER 25	ER 32	ER 40
Order No.	83.912...	.11	.16	.20	.25	.32	.40

**Chuck nut HS (fine-balanced)**

Size		—	ER 16	ER 20	ER 25	ER 32	ER 40
Order No.	83.912...	—	.16.HS	.20.HS	.25.HS	.32.HS	.40.HS

**Balancing index rings**

Size	short/oversize	ER 11	ER 16	ER 20	ER 25	ER 32	ER 40
Order No.	79.350...	.19	.28	.34	.42	.48	.50

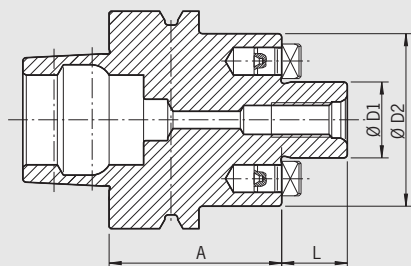
**Adjusting screw**

Size		—	ER 16	ER 20	ER 25	ER 32	ER 40
Order No.	85.800...	—	.34	.34	.34	.35	.35

# FACE MILL ARBOR DIN 69893 · HSK-F63

### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 25,000 rpm  
or U < 1 grmm
- All functional surfaces fine machined
- More accurate than DIN



### Use:

For holding face mill cutters and cutters with radial driving slot DIN 1880 and exceeding clamping diameter 40 according to DIN 2079 is also possible (4 additional tapped holes).

With coolant exit bores on the end face for milling cutters with central cooling.

Special modification available: Mounting thread for coolant tube for an extra charge.

### DIN 69882

– Included in delivery: tightening bolt, without coolant tube

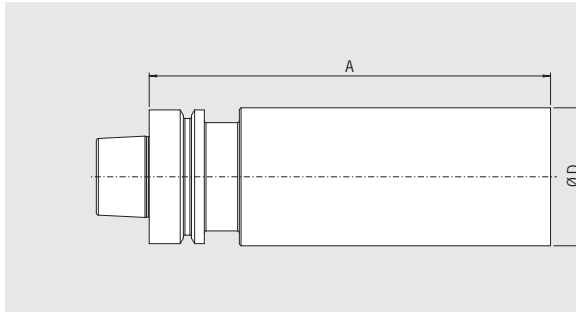
METRIC	Clamping Ø D1 [mm]	22	27
	Ø D2 [mm]	48	60
	L [mm]	19	21
Gage length A [mm]	short	50	60
Order No.	F63.050...	.22.KKB	.27.KKB



### Accessories

<b>Tightening bolt</b>			
Size D1		22	27
Order No.	85.300...	.22	.27
<b>Wrench</b> <span style="float: right;">See page 781</span>			
Size D1		22	27
Order No.	84.400...	.22	.27
<b>Balancing index rings</b> <span style="float: right;">See page 785</span>			
Size D1		22	27
Order No.	79.350...	.48	.60
Thread for coolant tube	91.100.18		

**BLANK ADAPTER – HARDENED**  
**DIN 69893-6 · HSK-F63**



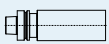
**CERTIFICATE OF QUALITY**  
 All functional surfaces fine machined  
 More accurate than DIN

**Use:**

For manufacturing special tools in your own factory.

**Version:**

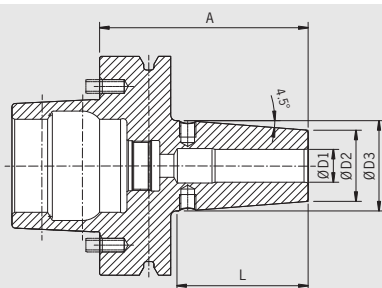
- HSK hardened and ground
- Cylindrical part hardened to 52+2 HRC

METRIC	Ø D [mm]		65
Gage Length A [mm]	ZG250		189
Order No.	<b>RF63.096.0650...</b>		<b>.0189</b>

# SHRINK FIT CHUCK SIMILAR DIN 69893-6 - HSK-F80 MAKINO INCH

### CERTIFICATE OF QUALITY

- Chuck fine balanced  
G2.5 33,000 rpm or U < 1 gmm
- Balanceable via screws M6
- All functional surfaces fine machined
- With thread for coolant tube



The HAIMER HSK-F80 Makino shrink fit chucks provide the highest machining capacity in High Speed machining. The optimized design combines high rigidity with vibration dampening, which protects machine, spindle and tool.

- All pre-balanced to G2.5@33,000 rpm or U < 1 gmm
- All standard balanceable via set screws
- Short gage length per machine builders recommendation
- Dampen vibrations, high clamping force
- Equally suited to High Speed machining and heavy milling
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times
- Quieter running, therefore better surface quality and protection of cutting tools, machine spindles and machines
- Higher machining accuracy
- Heat resistant hot-working steel
- Hardened 54-2 HRC
- For HSS and solid carbide tools
- Shank tolerance h6
- With thread for coolant tube
- Cooling with Cool Jet for an extra charge (See page 501)
- Cooling with Cool Flash for an extra charge (See pages 502–503)

### Standard version

INCH	Clamping Ø D1 [inch]	1/4	5/16	3/8	7/16	1/2	5/8	3/4	1	1 1/4
	Ø D2 [inch]	0.826	0.826	1.003	1.023	1.023	1.141	1.397	1.83	1.772
	Ø D3 [inch]	1.063	1.063	1.220	1.260	1.300	1.417	1.614	2.047	2.087
	L [inch]	1.417	1.417	1.693	1.693	1.890	2.008	2.008	1.930	2.560
Gage length A [inch]	ultra short	3	3	3	3	3	3	3	3	3.5
Order No.	F80M.145...	.1/4z <sup>1)</sup>	.5/16z <sup>1)</sup>	.3/8z	.7/16z	.1/2z	.5/8z	.3/4z	.1z	.11/4z

### Extra ultra short version

INCH	Clamping Ø D1 [inch]	3/4	1
	Ø D2 [inch]	1.398	1.811
	Ø D3 [inch]	—	—
	L [inch]	1.713	1.850
Gage length A [inch]	extra ultra short	2.75	2.75
Order No.	F80M.145...	.3/4z.5.i	.1z.5.i
Suitable Cooling adapter	80.105...	.16.0045	.18.0011

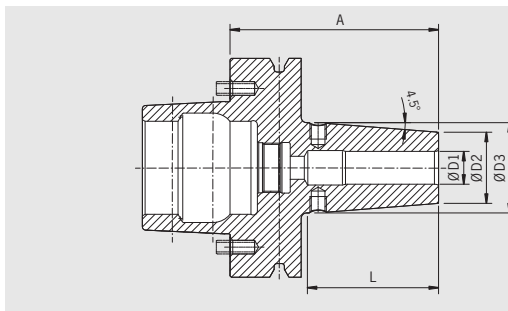
### Accessories

Shrink fit extensions			See page 750
Coolant tube		Order No. 85.700.63	See page 793
Reduction sleeves			See page 794
Back-up screws			See pages 796–799
Set of balancing screws		Order No. 80.203.00	See page 784
Cool Flash		Order No. 91.100.40	See pages 502–503
Cool Flash Upgrade incl. Cool Jet		Order No. 91.100.41	See pages 502–503

1) With back-up screw



# SHRINK FIT CHUCK SIMILAR DIN 69893-6 - HSK-F80 MAKINO METRIC



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck fine balanced G2.5 33,000 rpm or U< 1gmm
<input checked="" type="checkbox"/>	Balanceable via screws M6
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	With thread for coolant tube

The HAIMER HSK-F80 Makino shrink fit chucks provide the highest machining capacity in High Speed machining. The optimized design combines high rigidity with vibration dampening, which protects machine, spindle and tool.

- All pre-balanced to G2.5@33,000 RPM or U < 1gmm
- All standard balanceable via set screws
- Short gage length per machine builders recommendation
- Dampen vibrations, high clamping force
- Equally suited to High Speed machining and heavy milling
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times
- Quieter running, therefore better surface quality and protection of cutting tools, machine spindles and machines
- Higher machining accuracy

**Use:**

Shrink fit chuck suitable for use with all available shrink fit units.

- Heat resistant hot-working steel
- Hardened 54-2 HRC
- For HSS and solid carbide tools
- Shank tolerance h6
- With thread for coolant tube
- Safe-Lock pull-out protection for an extra charge
- Cooling with Cool Jet for an extra charge (See page 501)
- Cooling with Cool Flash for an extra charge (See pages 502-503)

**Standard version**

METRIC	Clamping Ø D1 [mm]	6	8	10	12	14	16	20	25
	Ø D2 [mm]	21	21	26	26	29	29	35.5	46.5
	Ø D3 [mm]	27	27	32	33	36	36	41	52
	L [mm]	36	36	43	48	48	51	50.5	49
Length A [mm]	ultra short	76.2	76.2	76.2	76.2	76.2	76.2	76.2	76.2
Order No.	F80M.145...	.06 <sup>1)</sup>	.08 <sup>1)</sup>	.10	.12	.14	.16	.20	.25

**Extra ultra short version**

METRIC	Clamping Ø D1 [mm]	6	8	10	12	16	20	25
	Ø D2 [mm]	22	22	26.5	26.5	29.5	35.5	46
	Ø D3 [mm]	—	—	—	—	—	—	—
	L [mm]	38	38	43	36	44.5	43.5	47
Length A [mm]	extra ultra short	70	70	70	70	70	70	70
Order No.	F80M.145...	06.5	08.5	10.5	12.5	16.5	20.5	25.5
Suitable Cooling adapter	80.105...	—	—	—	—	—	.16.0045	.18.0011

**Accessories**

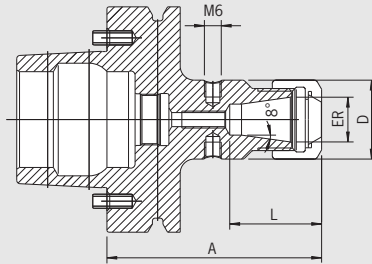
Shrink fit extensions		See pages 751-753
Coolant tube	Order No. 85.700.63	See page 793
Reduction sleeves		See page 794
Back-up screws		See pages 796-799
Set of balancing screws	Order No. 80.203.00	See page 784
Cool Flash	Order No. 91.100.40	See pages 502-503
Cool Flash Upgrade incl. Cool Jet	Order No. 91.100.41	See pages 502-503

1) With back-up screw

# ER COLLET CHUCK SIMILAR DIN 69893-6 - HSK-F80 MAKINO

### CERTIFICATE OF QUALITY

- Chuck fine balanced  
G2.5 33,000 rpm or U < 1gmm
- Balanceable via screws M6
- All functional surfaces fine machined
- With thread for coolant tube



The HAIMER HSK-F80 Makino ER collet chucks provide a universal clamping solution for High Speed machining. The optimized design combines a highly accurate universal clamping system for cutting tools.

- All pre-balanced to G2.5@33,000 RPM or U < 1 gmm
- All standard balanceable via screws
- Short gage length per machine builders recommendation
- Balanced nuts with special slide coating for low friction and high clamping forces
- Great for drilling
- Good clamping force
- Higher machining accuracy

### Use:

For clamping tools with cylindrical shank in collets according to ISO 15488.

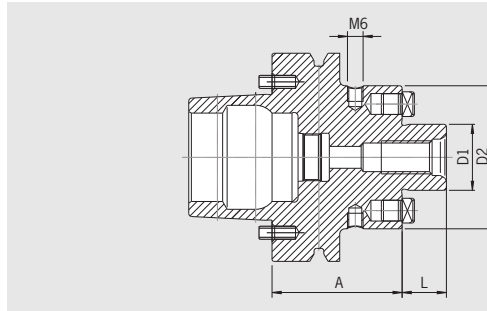
- Included in delivery: Locknut (balanced, with slide coating for higher clamping forces)
- Locknut type HS (High Speed, fine-balanced, with slide coating for higher clamping forces) available for an extra charge
- With threaded holes in order to balance with balancing screws

INCH	ER	11	16	20	25	32	40
Ø D [inch]		1.062	1.102	1.574	1.653	1.968	2.483
Clamping range [inch]		0.02-0.276	0.02-0.394	0.059-0.512	0.039-0.63	0.02-0.787	0.098-1.024
Clamping range [mm]		0.5-7.0	0.5-10.0	1.5-13.0	1.0-16.0	1.5-20.0	2.5-26.0
L [inch]		1.043	1.279	1.515	1.889	1.850	2.086
Gage length A [inch]	ultra short	3	3	3	3	3	3
Order No.	F80M.025...	.11	.16	.20	.25	.32	.40

### Accessories

<b>Collets ER</b>								See pages 768-773
<b>Shrink Fit Collets</b>								See pages 758-767
<b>Locknut (pre-balanced)</b>								
Size		ER11	ER16	ER20	ER25	ER32	ER40	
Order No.	83.912...	.11	.16	.20	.25	.32	.40	
<b>Chuck nut HS (fine-balanced)</b>								
Size		ER11	ER16	ER20	ER25	ER32	ER40	
Order No.	83.912...	.11.HS	.16.HS	.20.HS	.25.HS	.32.HS	.40.HS	
<b>Set of balancing screws</b>		Order No. 80.203.00						See page 784
<b>Coolant tube</b>		Order No. 85.700.63						See page 793

## FACE MILL ARBOR SIMILAR DIN 69893-6 - HSK-F80 MAKINO



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck fine balanced G2.5 33,000 rpm
<input checked="" type="checkbox"/>	Balanceable via screws M6
<input checked="" type="checkbox"/>	Integrated thread for coolant tube



The HAIMER HSK-F80 Makino Face mill arbors provide a solid base for face mill cutters for High Speed machining. The optimized design combines a highly accurate universal clamping system for cutting tools.

**Use:**

For holding face mill cutters and milling cutters with radial driving slot DIN 1880.

- All pre-balanced to G2.5@33,000 RPM
- All standard as a balanceable for fine tune balancing capability
- Short gage length per machine builders recommendation
- Higher machining accuracy due to proper construction

- Included in delivery: Tightening bolt, without coolant tube
- Coolant bores on front side available for an extra charge
- With threaded holes in order to balance with balancing screws


INCH	Clamping Ø D1 [inch]	3/4	1
	Ø D2 [inch]	1.710	2.165
	L [inch]	0.669	0.669
Gage length A [inch]	ultra short	1.968	1.968
<b>Order No.</b>	<b>F80M.050...</b> 	<b>.3/4z</b>	<b>.1z</b>
Gage length A [inch]	short	3.937	3.937
<b>Order No.</b>	<b>F80M.051...</b> 	<b>.3/4z</b>	<b>.1z</b>


**Accessories**

**Tightening bolt**

Ø D1 [inch]		3/4	1
<b>Order No.</b>	<b>85.300...</b> 	<b>.3/4z</b>	<b>.1z</b>

**Coolant bores**  **Order No. 91.100.03**

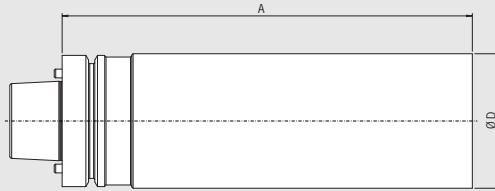
**Set of Balancing Screws**  **Order No. 80.203.00** See page 784

**Coolant tube**  **Order No. 85.700.63** See page 793

# BLANK ADAPTER – HARDENED SIMILAR DIN 69893-6 - HSK-F80 MAKINO

**CERTIFICATE OF QUALITY**

- All functional surfaces fine machined
- More accurate than DIN




**Use:**

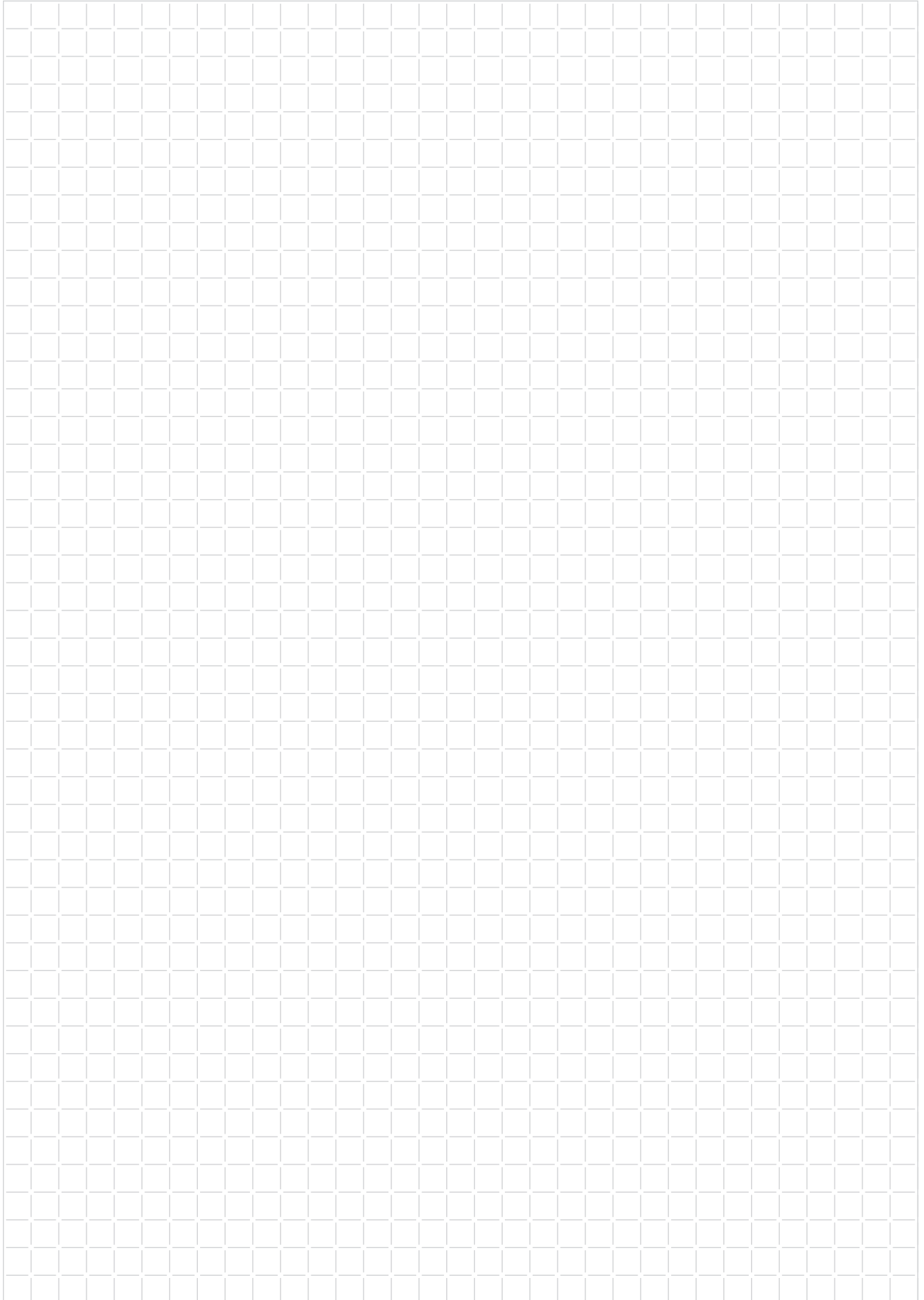
For manufacturing special tools in your own factory.

**Version:**

- HSK hardened and ground
- Cylindrical part hardened to 52+2 HRC

METRIC	$\varnothing D$ [mm]		82
Gage Length A [mm]	ZG250		250
Order No.	RF80M.096.0820...		.0250

FOR YOUR NOTES





## ISO 26623 PSC 63

Article	Page
<b>ISO 26623 PSC 63</b>	
Technical Details of Interface	486
Shrink Fit Chuck	488
Power Shrink Chuck	489
Collet Chuck ER	490
Power Collet Chuck	491
High Precision Collet Chuck	492
Weldon Holder	493
Face Mill Arbor	494
Blank Adapter – Hardened	495

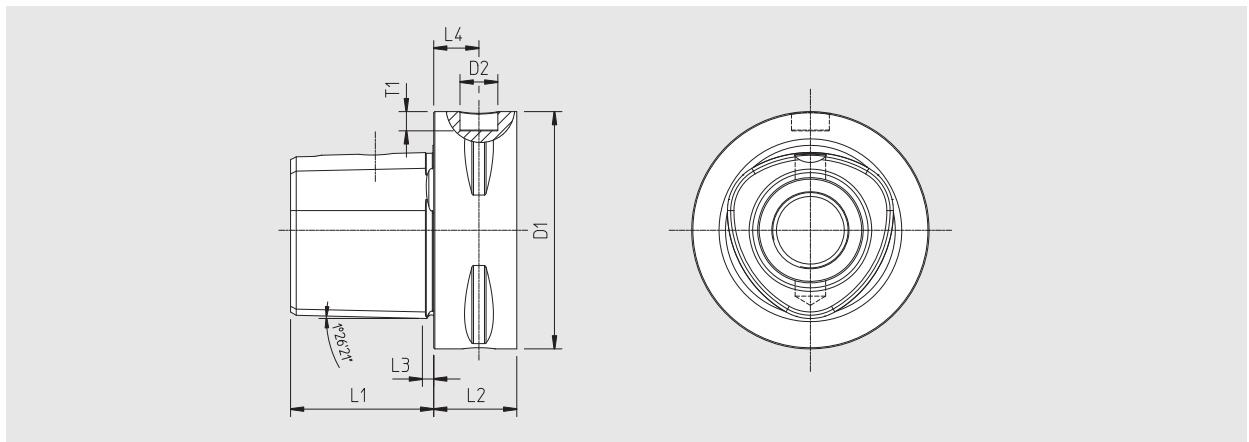
## POLYGON SHANK COUPLING PSC 63 ISO 26623

### Compared to steep tapers, PSC has the following advantages:

- Highly repeatable accuracy when clamping tools into spindle
- Fixed axial positioning with face contact surface
- Suitable for high speed cutting
- No pull stud necessary
- Interface with a unique tapered polygon and flange face contact
- Exact positioning in the circumferential direction
- Highest runout accuracy, torque and rigidity
- Innovative modular tool system with highest precision
- Suitable for both turning and milling centers
- Incl. bore for data chip  $\varnothing$  10 mm

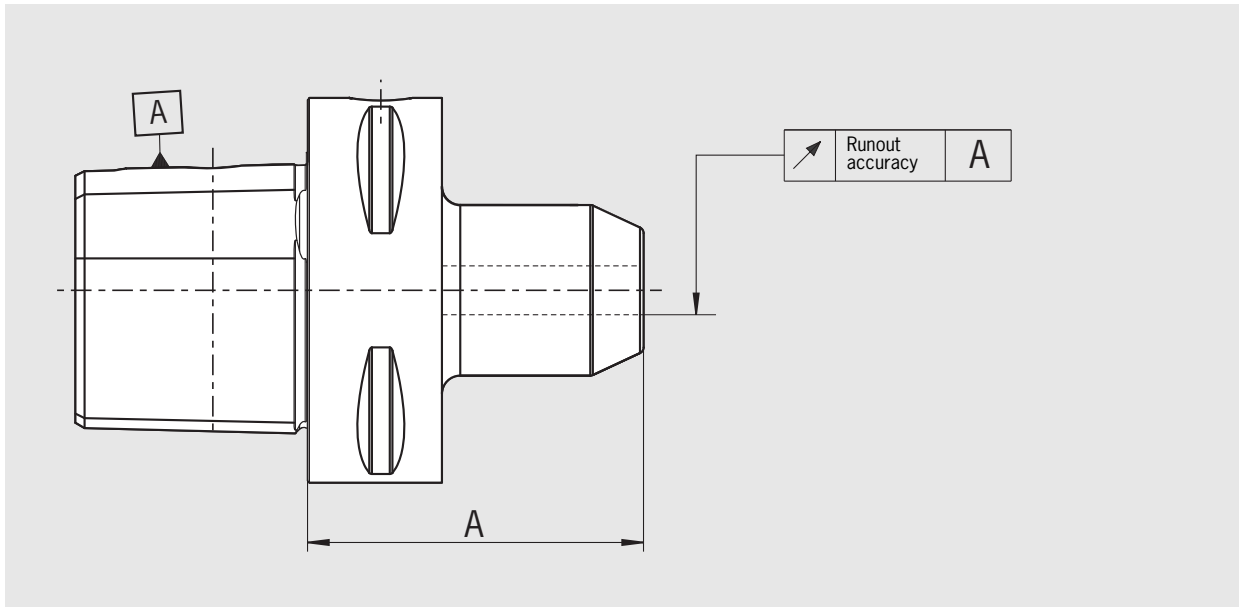
### Material:

- Special case-hardening steel for highly stressed parts
- Surface hardness: 60–2 HRC
- **Tensile strength in core min. 950 N/mm<sup>2</sup>**



Length [mm]	D1	D2	L1	L2	L3	L4	T1
PSC 63	63	10	38	22	3	12	5

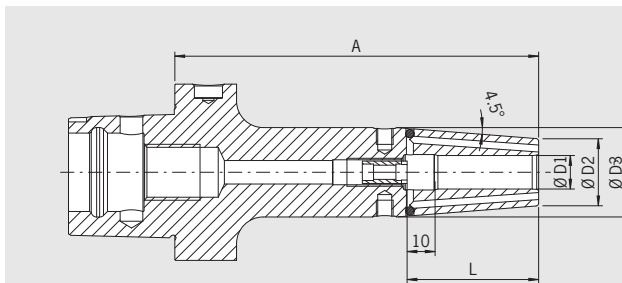
# RUNOUT ACCURACY ISO 26623



Gage length A [mm]	A < 160	A ≥ 160
max. runout tolerance in mm		
Shrink Fit Chuck	0.003	0.004
Collet Chuck ER	0.003	0.004
Power Collet Chuck	0.003	0.004
High Precision Collet Chuck	0.003	0.004
Weldon Tool Holder	0.003	0.004
Face Mill Arbor	0.006	0.006



# SHRINK FIT CHUCK ISO 26623-1 · PSC 63



### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 25,000 rpm  
or U < 1 gmm
- All functional surfaces fine machined
- More accurate than DIN

#### Shrink fit chuck suitable for use with all available shrink fit units.

- Interface with a unique tapered polygon and flange location face
- Exact positioning in the spindle
- Highest runout accuracy, torque and rigidity
- Innovative modular tool system with highest precision
- Suitable for both turning and milling centers
- With threaded holes in order to balance with balancing screws
- Inch sizes with Cool Jet, metric sizes without Cool Jet (optional available)

#### Optional:

- Metric sizes: Cooling with Cool Jet for an extra charge (See page 501)
- Cooling with Cool Flash for an extra charge (See pages 502-503)

#### ISO 26623

- Delivery: With back-up screw

INCH	Clamping Ø D1 [inch]	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	1 1/4
	Ø D2 [inch]	0.83	0.83	0.94	0.94	0.94	1.06	1.30	1.30	1.73	1.73
	Ø D3 [inch]	1.06	1.06	1.26	1.26	1.26	1.34	1.65	1.65	2.09	2.09
	L [inch]	1.42	1.42	1.65	1.65	1.85	1.97	2.05	2.05	2.28	2.28
Gage length A [inch]	short	3.15	—	3.15	—	3.15	3.35	3.35	—	3.54	—
Order No.	CC6.140...	.1/4Z.4	—	.3/8Z.4	—	.1/2Z.4	.5/8Z.4	.3/4Z.4	—	.1Z.4	—
Gage length A [inch]	long	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	—	—
Order No.	CC6.141...	.1/4Z.4	.5/16Z.4	.3/8Z.4	.7/16Z.4	.1/2Z.4	.5/8Z.4	.3/4Z.4	.7/8Z.4	—	—
Gage length A [inch]	ZG130	5.12	—	5.12	—	5.12	5.12	5.12	—	5.12	5.12
Order No.	CC6.144...	.1/4Z.4	—	.3/8Z.4	—	.1/2Z.4	.5/8Z.4	.3/4Z.4	—	.1Z.4	.11/4Z.4

METRIC	Clamping Ø D1 [mm]	03	04	05	06	08	10	12	14	16	18	20	25	32
	Ø D2 [mm]	10	10	10	21	21	24	24	27	27	33	33	44	44
	Ø D3 [mm]	—	—	—	27	27	32	32	34	34	42	42	53	53
	L [mm]	09	12	15	36	36	42	47	47	50	50	52	58	58
Gage length A [mm]	short	80 <sup>1)</sup>	80 <sup>1)</sup>	80 <sup>1)</sup>	80	80	80	80	85	85	85	85	90	95
Order No.	CC6.140...	.03	.04	.05	.06	.08	.10	.12	.14	.16	.18	.20	.25	.32
Gage length A [mm]	long	—	—	—	100	100	100	100	100	100	100	100	—	—
Order No.	CC6.141...	—	—	—	.06	.08	.10	.12	.14	.16	.18	.20	—	—
Gage length A [mm]	ZG120	120 <sup>2)</sup>	120 <sup>2)</sup>	120 <sup>2)</sup>	120	120	120	120	120	120	—	120	120	—
Order No.	CC6.147...	.03.1	.04.1	.05.1	.06	.08	.10	.12	.14	.16	—	.20	.25	—
Gage length A [mm]	ZG130	130 <sup>2)</sup>	130 <sup>2)</sup>	130 <sup>2)</sup>	130	130	130	130	130	130	130	130	130	130
Order No.	CC6.144...	.03.1	.04.1	.05.1	.06	.08	.10	.12	.14	.16	.18	.20	.25	.32
Gage length A [mm]	oversize	—	—	—	160	160	160	160	160	160	160	160	160	160
Order No.	CC6.142...	—	—	—	.06	.08	.10	.12	.14	.16	.18	.20	.25	.32

#### Accessories

Cool Flash



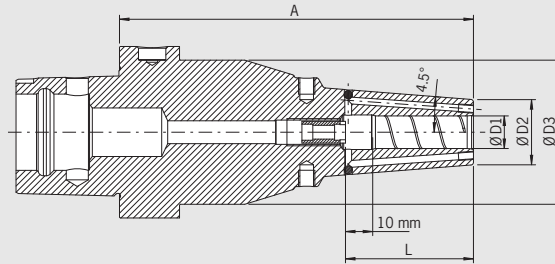
Order No. 91.100.40

See pages 502-503

1) Without back-up screw, without threads for balancing screws, with slits along the clamping bore for cooling from outside  
2) Without slits along the clamping bore

# POWER SHRINK CHUCK ISO 26623-1 · PSC 63

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U<1 gmm
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN



The Power Shrink Chuck is designed for the highest cutting performance in High Speed machining. The optimized design combines high rigidity with vibration dampening, which protects the machine, spindle and tool.

- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy
- Quieter running, therefore better surface quality and protection of tools, spindles and machines
- With threaded holes in order to balance with balancing screws
- Cool Jet bores that can be sealed included
- Cooling with Cool Flash for an extra charge (See pages 502–503)

The long versions (A=130) with slim tips are especially versatile to use.

- High rigidity, slim at the tip, dampen vibrations
- High clamping force
- Equally suited to High Speed and Heavy Duty machining
- Universal usage, saves space in tool magazine

INCH	Clamping Ø D1 [inch]	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	1 1/4
	Ø D2 [inch] ultra short	0.87	0.87	1.04	1.04	1.04	1.16	1.40	1.40	1.77	1.77
	Ø D3 [inch] ultra short	—	—	—	—	—	—	—	—	—	—
	L [inch] ultra short	1.50	1.50	1.69	1.81	1.81	2.00	2.09	2.09	2.36	2.56
Gage length A [inch]	ultra short	2.56	2.56	2.56	2.56	2.56	2.76	2.76	2.76	3.15	3.15
Order No.	CC6.145...	.1/4Z.3	.5/16Z.3	.3/8Z.3	.7/16Z.3	.1/2Z.3	.5/8Z.3	.3/4Z.3	.7/8Z.3	.1Z.3	.11/4Z.3
Safe-Lock Order No.	CC6.145...	—	—	—	—	.1/2Z.37	.5/8Z.37	.3/4Z.37	—	—	—
	Ø D2 [inch] ZG130	0.83	—	0.94	—	0.94	1.06	1.30	—	—	—
	Ø D3 [inch] ZG130	2.09	—	2.09	—	2.09	2.09	2.09	—	—	—
	L [inch] ZG130	1.42	—	1.65	—	1.65	1.97	1.97	—	—	—
Gage length A [inch]	ZG130	5.12	—	5.12	—	5.12	5.12	5.12	—	—	—
Order No.	CC6.144...	.1/4Z.3	—	.3/8Z.3	—	.1/2Z.3	—	—	—	—	—
Safe-Lock Order No.	CC6.144...	.1/4Z.37	—	.3/8Z.37	—	.1/2Z.37	.5/8Z.37	.3/4Z.37	—	—	—

METRIC	Clamping Ø D1 [mm]	06	08	10	12	14	16	18	20	25	32
	Ø D2 [mm] ultra short	22	22	26.5	26.5	29.5	29.5	35.5	35.5	45	45
	Ø D3 [mm] ultra short	—	—	—	—	—	—	—	—	—	—
	L [mm] ultra short	38	38	43	46	48	51	51	53	60	65
Gage Length A [mm]	ultra short	65	65	65	65	70	70	70	70	80	80
Order No.	CC6.145...	.06.3	.08.3	.10.3	.12.3	.14.3	.16.3	.18.3	.20.3	.25.3	.32.3
Safe-Lock Order No.	CC6.145...	—	—	—	.12.37	—	.16.37	—	.20.37	.25.37	.32.37
	Ø D2 [mm] ZG130	21	21	24	24	—	27	—	33	—	—
	Ø D3 [mm] ZG130	53	53	53	53	—	53	—	53	—	—
	L [mm] ZG130	36	36	42	47	—	50	—	52	—	—
Gage Length A [mm]	ZG130	130	130	130	130	—	130	—	130	—	—
Order No.	CC6.144...	.06.3	.08.3	.10.3	.12.3	—	.16.3	—	.20.3	—	—
Safe-Lock Order No.	CC6.144...	—	—	.10.37	.12.37	—	.16.37	—	.20.37	—	—

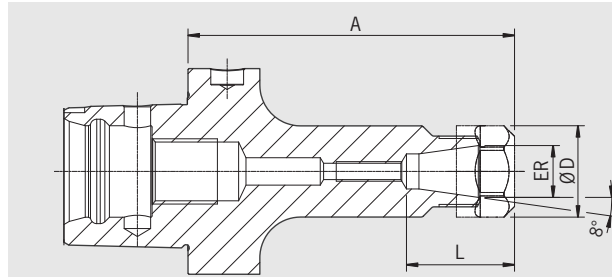
Accessories  
Cool Flash



Order No. 91.100.40

See pages 502–503

COLLET CHUCK ER  
ISO 26623-1 · PSC 63



**CERTIFICATE OF QUALITY**

- Chuck body fine balanced  
G2.5 25,000 rpm or U<1 gmm
- All functional surfaces machined
- More accurate than DIN

**Use:**

For clamping tools with cylindrical shank in collets according to ISO 15488 (formerly DIN 6499). Available from ER 16 to 40.

**ISO 26623**

- Included in delivery: With locknut (balanced, with slide coating for higher clamping forces)
- In four different lengths available, additionally Mini-ER 11 and Mini-ER 16 in two lengths

INCH	ER	16	20	25	32	40
	Ø D [inch]	1.1	1.34	1.65	1.97	2.48
	Clamping range [inch]	0.02-0.39	0.06-0.51	0.04-0.63	0.06-0.79	0.98-1.02
L [inch]		<sup>2)</sup>	<sup>2)</sup>	1.91	1.87	2.11
Gage length A [inch]	ultra short	2.36	2.36	2.36	2.36	2.56
Order No.	CC6.025...	<b>.16<sup>1)</sup></b>	<b>.20<sup>1)</sup></b>	<b>.25<sup>1)</sup></b>	<b>.32<sup>1)</sup></b>	<b>.40<sup>1)</sup></b>
L [inch]		1.30	1.54	1.63	1.87	2.11
Gage length A [inch]	long	3.94	3.94	3.94	3.94	3.94
Order No.	CC6.021...	<b>.16</b>	<b>.20</b>	<b>.25</b>	<b>.32</b>	<b>.40</b>
L [inch]		1.30	1.54	1.63	1.87	2.11
Gage length A [inch]	ZG130	5.12	5.12	5.12	5.12	5.12
Order No.	CC6.024...	<b>.16</b>	<b>.20</b>	<b>.25</b>	<b>.32</b>	<b>.40</b>
L [inch]		1.30	1.54	1.63	1.87	2.11
Gage length A [inch]	oversize	6.30	6.30	6.30	6.30	6.30
Order No.	CC6.022...	<b>.16</b>	<b>.20</b>	<b>.25</b>	<b>.32</b>	<b>.40</b>

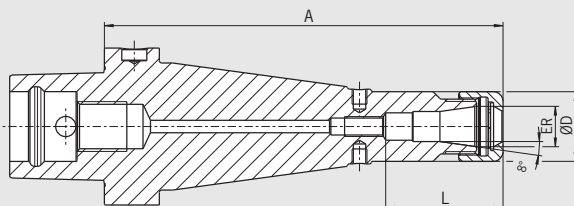
INCH	Collet Chuck Mini-ER	11	16
	Ø D1 [inch]	0.63	0.87
	L [inch]	1.00	1.56
Gage length A [inch]	long	3.94	3.94
Order No.	CC6.021...	<b>.11.7<sup>1)</sup></b>	<b>.16.7<sup>1)</sup></b>
Gage length A [inch]	oversize	6.30	6.30
Order No.	CC6.022...	<b>.11.7<sup>1)</sup></b>	<b>.16.7<sup>1)</sup></b>

1) Without thread for back-up screw

# POWER COLLET CHUCK ISO 26623-1 · PSC 63

### CERTIFICATE OF QUALITY

- ☑ Chuck body fine balanced  
G2.5 25,000 rpm or U<1 gmm
- ☑ All functional surfaces fine machined
- ☑ More accurate than DIN









**The Power Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with improved construction combines high rigidity with vibration dampening features, giving more protection to the machine, spindle and tool. The universal Power Collet Chuck is a unique high performance chuck that can also be used with standard collets.**

- TIR less than 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (Attention: By using standard collet, ER length A will increase)
- High rigidity

- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, high clamping force
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

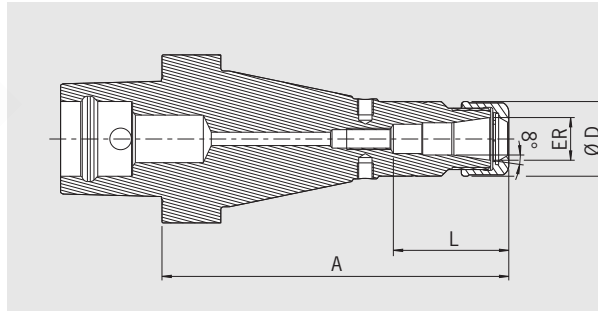
INCH	ER	16	25	32
	Ø D [inch]	1.1	1.65	1.97
	Clamping range [inch]	1/8–3/8	1/8–5/8	1/8–3/4
	Clamping range [mm]	2.0–10.0	2.0–16.0	2.0–20.0
	L [inch]	1.69	2.01	2.09
Gage length A [inch]	oversize	6.30 <sup>1)</sup>	6.30 <sup>1)</sup>	6.30 <sup>1)</sup>
Order No.	CC6.024...	.16.3	.25.3	.32.3

### Accessories

<b>Locknut (fine-balanced)</b>					See page 779
Size		ER 16	ER 25	ER 32	
Order No.	83.914...	.16	.25	.32	
<b>Power Collet clamping wrench</b>					See page 781
<b>Torque Master torque wrench</b>					See page 780
Order No.	84.600.00				
<b>Power Collets</b>					See page 775
<b>Power Collets with Safe-Lock</b>					See page 776
<b>Cool Jet bores for Power Collets</b>					See page 777
Order No.	91.100.27				
<b>Shrink Fit Collets</b>					See pages 759–767

1) With back-up screw

# HIGH PRECISION COLLET CHUCK ISO 26623-1 · PSC 63



### CERTIFICATE OF QUALITY

- Chuck body fine balanced  
G2.5 30,000 rpm or U<1 gmm
- All functional surfaces fine machined
- More accurate than DIN

**The High Precision Collet Chuck is designed for the highest cutting performance in High Speed machining. The optimized design with better construction and a special coated smooth locknut combines high rigidity with vibration dampening and noise-reducing features, giving more protection to machines, spindles and tools.**

- With a specially coated smooth locknut, balanced at < 1 gmm
- High runout accuracy: < 0.00012" (3 µm) at 3 × D with HAIMER Power Collets
- Also for standard collets ER according to ISO 15488 (Attention: By using standard collet, ER length A will increase)
- High rigidity

- Runs smoother thanks to vibration absorbing geometry, yielding better surface finish and increased tool, spindle and machine protection
- Highest cutting performance with higher spindle speeds, higher feeds and larger cutting depths
- Shorter cycle times, higher machining accuracy, higher clamping forces
- Equally suited to High Speed and dynamic machining
- With threaded holes in order to balance with balancing screws
- Optional: Cool Jet bores on Power Collets
- Program of Power Collets on pages 774 – 776

INCH	ER	16	25	32
	Ø D [inch]	1.1	1.65	1.97
	Clamping range [inch]	1/8–3/8	1/8–5/8	1/8–3/4
	Clamping range [mm]	2.0–10.0	2.0–16.0	2.0–20.0
	L [inch]	1.69	2.01	2.09
Gage length A [inch]	oversize	6.30 <sup>1)</sup>	6.30 <sup>1)</sup>	6.30 <sup>1)</sup>
Order No.	CC6.024...	.16.3.HP	.25.3.HP	.32.3.HP

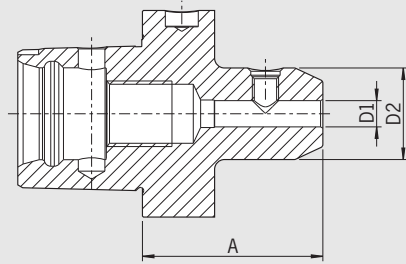
#### Accessories

<b>High Precision Smooth Locknut (fine-balanced)</b>				See page 779
Size		ER 16	ER 25	ER 32
Order No. 83.914...		.16.1	.25.1	.32.1
<b>Roller bearing wrench</b>				See page 782
Order No. 84.650...		.16.1	.25.1	.32.1
<b>Collets ER</b>				See pages 768–773
<b>Shrink Fit Collets</b>				See pages 759–767
<b>Power Collets</b>				See page 775
<b>Power Collets with Safe-Lock</b>				See page 776
<b>Cool Jet bores for Power Collets</b>				See page 777
Order No. 91.100.27				

**WELDON TOOL HOLDER**  
**ISO 26623-1 · PSC 63**

**CERTIFICATE OF QUALITY**

- Chuck fine balanced  
G2.5 25,000 rpm
- All functional surfaces machined
- More accurate than DIN



**Use:**


For clamping cutters with cylindrical shanks and Weldon flats according to DIN 1835-B and DIN 6935-HB.

From Ø 6 to Ø 40 mm.

- Interface with a unique tapered polygon and flange location face
- Exact positioning in the spindle
- Highest runout accuracy, torque and rigidity
- Innovative modular tool system with highest precision
- Suitable for both turning and milling centers


**ISO 26623**

- Included in delivery: with clamping screw


METRIC	Clamping Ø D1 [mm]		06	08	10	12	14	16	18	20	25	32	40
	Ø D2 [mm]		25	28	35	42	44	48	50	52	64	72	80
Gage length A [mm]	short		55	55	60	60	60	65	65	65	80	90	100
Order No.	CC6.000...		.06	.08	.10	.12	.14	.16	.18	.20	.25	.32	.40

**Accessories**



**Clamping screw**

Clamping Ø			06	08	10	12	14	16	18	20	25	32	40
Order No.	85.100...		.06	.08	.10	.12	.12	.14	.14	.16	.18	.20	.25

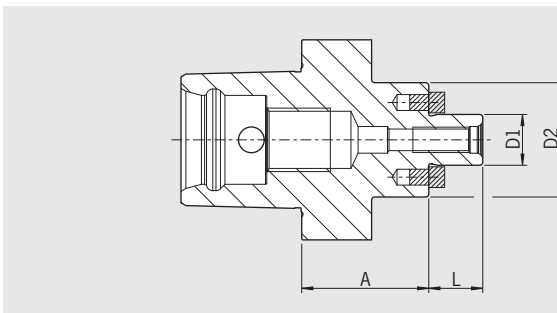
**Balancing index rings**

Clamping Ø	long/oversize		06	08	10	12	14	16	18	20	25	32	40
Order No.	79.350...		.25	.28	.35	.42	.44	.48	.50	.52	.64	.72	.80

Cool Jet bores from Ø 6 mm – Ø 20 mm													See page 501
Order No.	91.100.24												

Cool Jet bores from Ø 25 mm – Ø 32 mm													See page 501
Order No.	91.100.26												

FACE MILL ARBOR  
ISO 26623-1 · PSC 63



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	Chuck body fine balanced G2.5 25,000 rpm or U < 1 gmm
<input checked="" type="checkbox"/>	All functional surfaces machined
<input checked="" type="checkbox"/>	More accurate than DIN


**Use:**

For clamping face mill cutters and cutters with radial driving slot DIN 1880.

- Interface with a unique tapered polygon and flange location face
- Exact positioning in the spindle
- Highest runout accuracy, torque and rigidity
- Innovative modular tool system with highest precision
- Suitable for both turning and milling centers


**ISO 26623**

- Included in delivery: tightening bolt
- With coolant exit bores on the end face for milling cutters with central cooling


METRIC	Clamping Ø D1 [mm]	16	22	27	32	40
	Ø D2 [mm]	36	48	60	63	70
	L [mm]	17	19	21	24	27
Gage length A [mm]	short	40	25	25	25	40
Order No.	CC6.050... 	.16.KKB	.22.KKB	.27.KKB	.32.KKB	.40.KKB

**Accessories**


**Tightening bolt**

Size D1			16	22	27	32	40
Order No.	85.300...		.16	.22	.27	.32	.40

**Wrench**

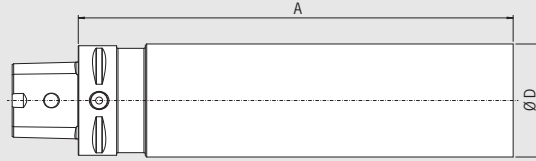
Size D1			16	22	27	32	40
Order No.	84.400...		.16	.22	.27	.32	.40

**Balancing index rings**

Size D1			16	—	—	—	40
Order No.	79.350...		.36				.70

**BLANK ADAPTER – HARDENED**  
**ISO 26623-1 · PSC 63**

**CERTIFICATE OF QUALITY**  
 All functional surfaces fine machined  
 More accurate than DIN



**Use:**

For manufacturing special tools in your own factory.

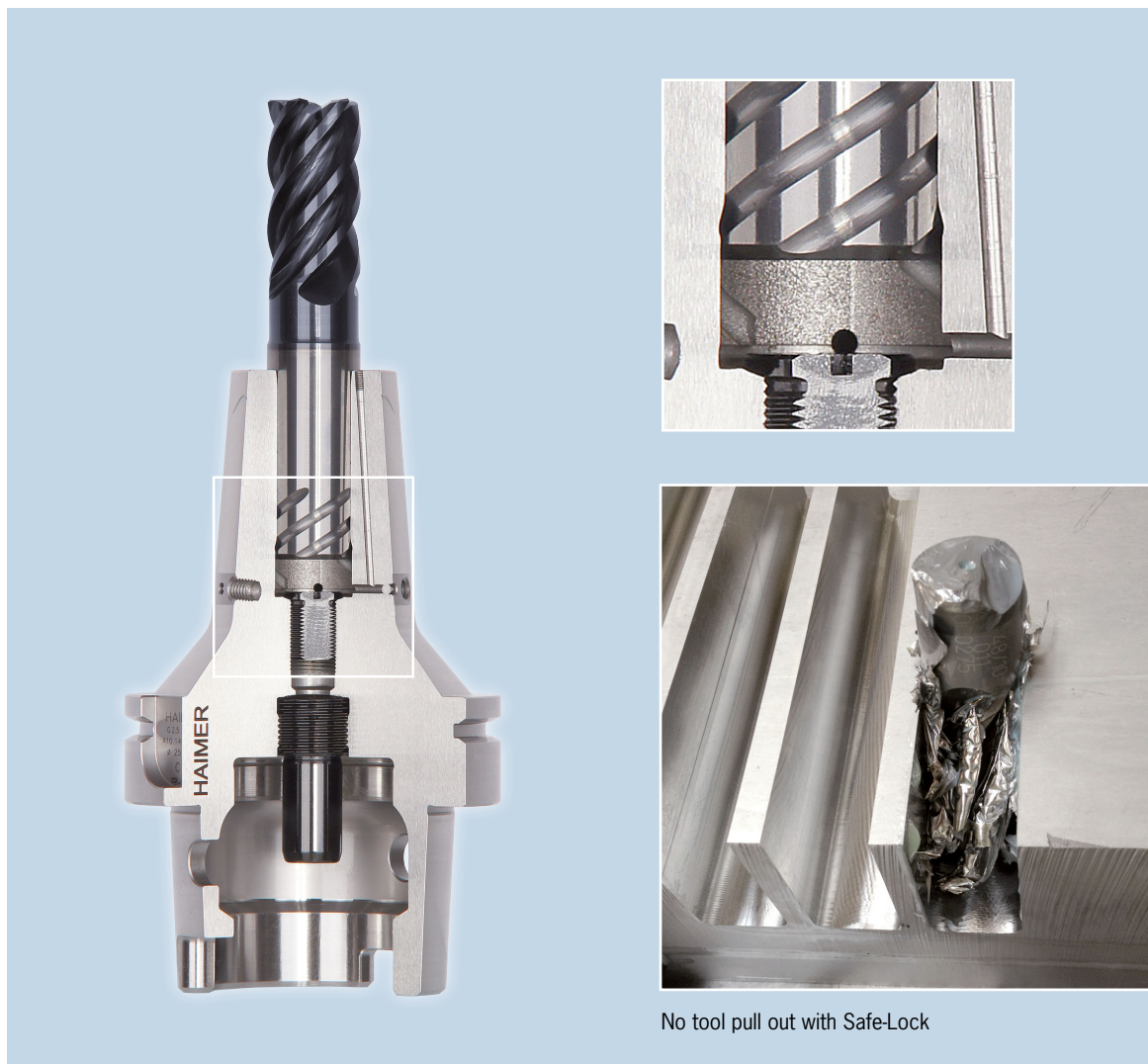
**Version:**

- Polygon taper and groove hardened and ground
- Cylindrical part hardened to 52+2 HRC

METRIC	$\varnothing D$ [mm]		65
Gage Length A [mm]	ZG100		100
<b>Order No.</b>	<b>RCC6.096.0650...</b>		<b>.0100</b>
Gage Length A [mm]	ZG250		250
<b>Order No.</b>	<b>RCC6.096.0650...</b>		<b>.0250</b>



## SAFE-LOCK® PULL OUT PROTECTION – THE SYSTEM



No tool pull out with Safe-Lock

### SAFE-LOCK: The safety belt for your tools

In high performance cutting (HPC), it is possible for the cutting tool to be pulled out of the chuck. The reason is a slow micro-creeping motion. It happens when cutting at high speeds and with high pull out forces. Even chucks with extremely high clamping force cannot prevent micro-creeping. High-quality work pieces become scrap as a result. **The Safe-Lock system offers a solution.**

The revolutionary system secures the cutting tool via the high accuracy frictional clamping in conjunction with a positive locking form fit connection with the grooves in the cutting tools and the corresponding form fit in the tool holder. This creates a connection in which all potential movements of the cutting tool are prevented.

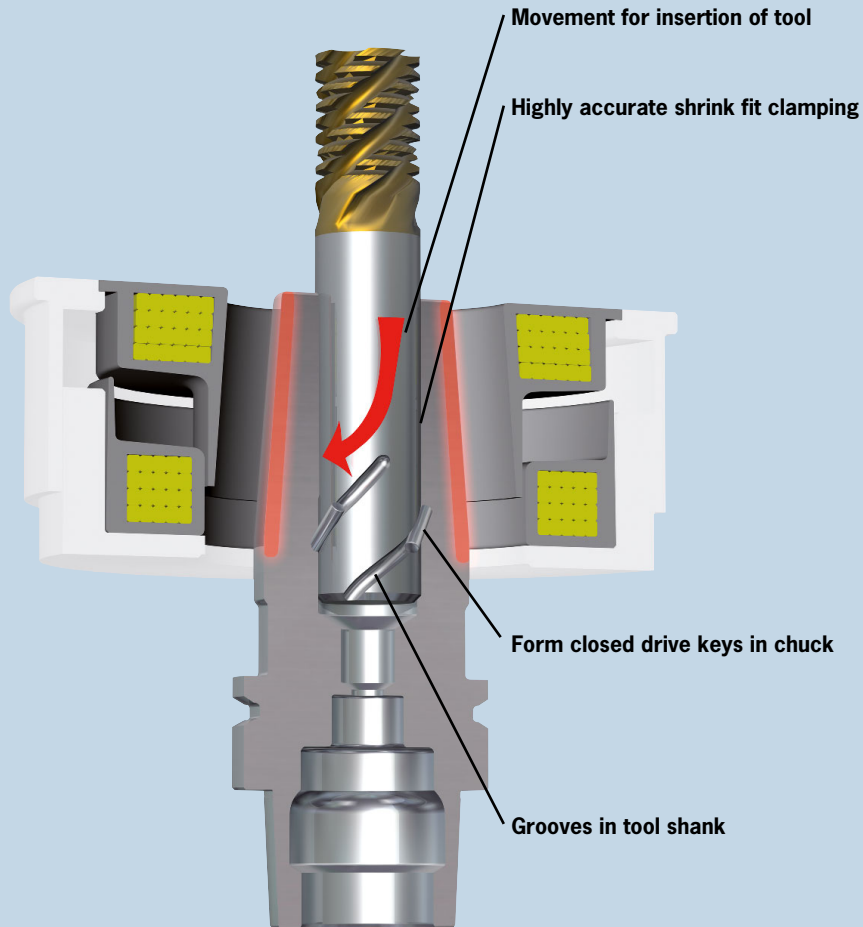
### Your advantages – Be on the safe side with SAFE-LOCK

- For High Performance Cutting (HPC)
- Highly accurate clamping due to shrink fit or collet chuck technology, runout accuracy < 0.00012" (3 µm)
- High torque due to form closed clamping
- No pull out of the tool, thus no damages to the work piece or machine
- No spinning of the tool
- The groove on the tool shank is directed so that the tool will be pulled into the chuck (depending on direction of rotation)
- Patent granted: licensing possible



**Maximum metal removal rate  
with absolute process reliability**

SAFE-LOCK® PULL OUT PROTECTION – FUNCTIONALITY



The following tool manufacturers are officially licensed by HAIMER and offer their shank cutting tools with Safe-Lock grooves in the tool shank as a standard.



## SAFE-LOCK® APPLICATION EXAMPLES

**Safe-Lock: Application in the aerospace industry at a large aircraft manufacturer in the USA****Problem:**

- Low metal removal rate (especially for roughing)
- Low cutting tool life
- Expensive scrap at titanium and aluminum work pieces
- All tests with different systems failed: Milling Chucks, Press-Fit Chucks, Hydraulic Chucks or reinforced shrink fit chucks could not prevent cutting tool pull-out, despite higher clamping forces
- As a result they only used Whistle Notch / Weldon

**Target:**

- Needed to increase metal removal rate – especially for roughing
- Wanted to increase cutting tool life
- Increase of process reliability to avoid expensive scrap

**Application: Roughing Titanium**

Work piece:	Critical airplane component made of Ti6Al4V, a titanium alloy
Machine:	Vertical portal milling machine
Machine tool:	HSK-A100
Tool holder:	Shrink Fit Chuck HAIMER Safe-Lock , Ø 32 mm, length 120 mm
Roughing/ Fine machining:	One and the same coated solid carbide tool, effective cutting length of 83 mm

**Result:**

- Cutting tool was securely held due to Safe-Lock in all tests, no movement in the chuck during the entire machining process
- No danger of the tool being pulled out of the chuck
- Tool life more than doubled
- During roughing and finishing operations no vibrations, and consequently no chatter marks – unlike the Weldon chuck
- Significant productivity increases through the increase in material removal rates of **30%**

100% MORE TOOL LIFE WITH

**SAFE-LOCK®**

## SAFE-LOCK® APPLICATION EXAMPLES

**Safe-Lock: Application at a leading provider in the industrial sealing technology****Problem:**

- Tool pull-out at high precision tool holder
- Only Weldon holders could be used

**Target:**

- Process reliability in machining with highly precise tool holding

**Application: Roughing VA Steel**

Work piece:	Gasket ring
Material:	1.4571 (VA)
Machine:	Mazak
Interface:	SK40
Tool:	Solid carbide, variable flute end mill, Ø 16 mm

**Application parameters:**

Cutting Depth:	Axial (ap) 19.8 mm
Radial (ae) Slot:	29.8 mm
RPM:	1194 rpm
Cutting speed (vc):	60 m/min
Feed rate/flute (fz):	0.2 mm/r

**Result:**

- With Weldon holder and tooling, 50–70 parts per cutter
- With Safe-Lock, 150 parts per cutter and no pull-out issue
- Machine runs much smoother with less vibrations

**Test:**

Weldon Holder Ø 16 mm, Length A = 80 mm

HAIMER Safe-Lock Power Shrink Chuck  
40.445.16.37, Length A = 65 mm



**Test result: Higher output by 86 pieces in the same time or an increase by 122%.**

## SAFE-LOCK® APPLICATION EXAMPLES



## Safe-Lock: Roughing application in the packing machine industry

**Problem:**

- High tool wear on one flute (tool breakout)
- Only Weldon holders could be used

**Target:**

- Increase of tool life
- Usage of high precision tool holding instead of Weldon

**Application: Contour milling**

**Material work piece:** Steel

**Cutting tool:** HPC solid carbide cutter with variable flutes,  $\varnothing = 20$  mm,  $Z=4$

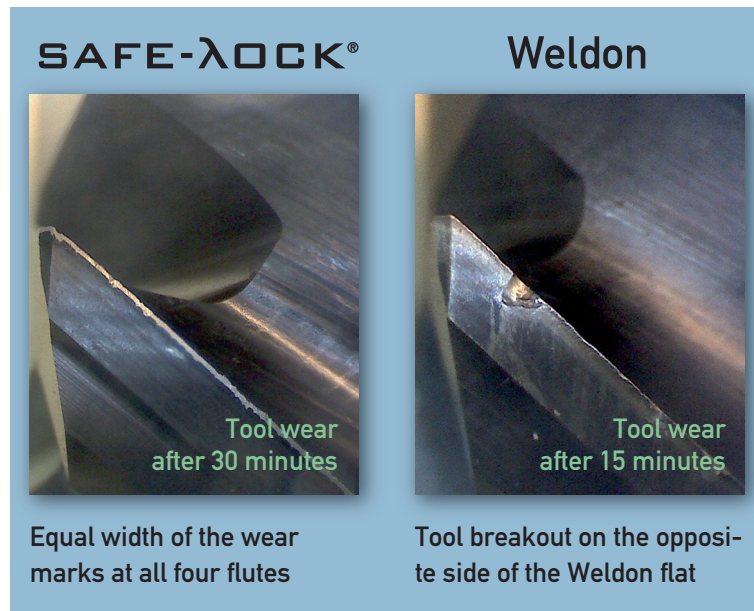
**Application parameters:**

Cutting depth radial ( $a_e$ ) = 10 mm

Cutting depth axial ( $a_p$ ) =  $0.75 \times D$

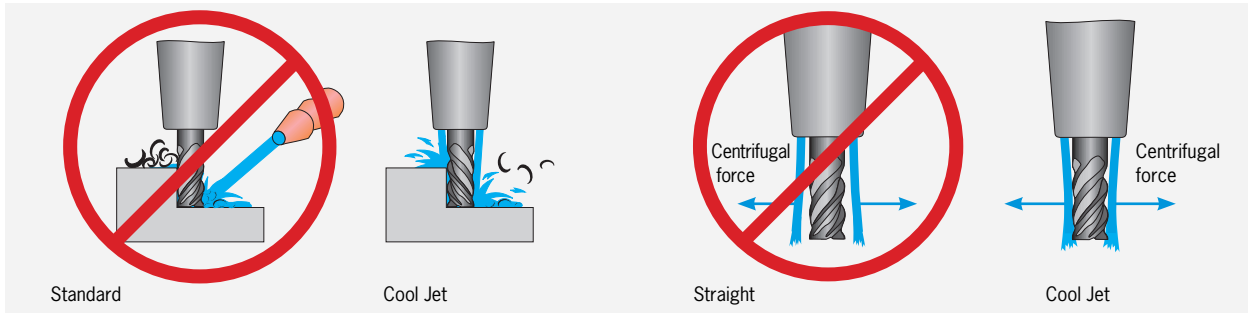
Cutting speed ( $v_c$ ) = 180 m/min

Feed rate/flute ( $f_z$ ) = 0.07 mm

**Result**

This comparison shows the wear characteristics of the cutting tools at various machining times. It is worth noting that, in the case of Safe-Lock, even at double the machining time, wear is less prevalent and more controlled than the Weldon – **with 100% protection against pull-out.**

COOL JET – CUT THE CHIP ONLY ONCE!



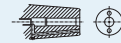
- Coolant directly to the cutting edge
- Extended tool life up to 100%
- Higher reliability of cutting process
- Eliminates chips packing and chip welding

Function at high spindle speed

Previous coolant bores: straight  
Optimized coolant bores: aimed at center

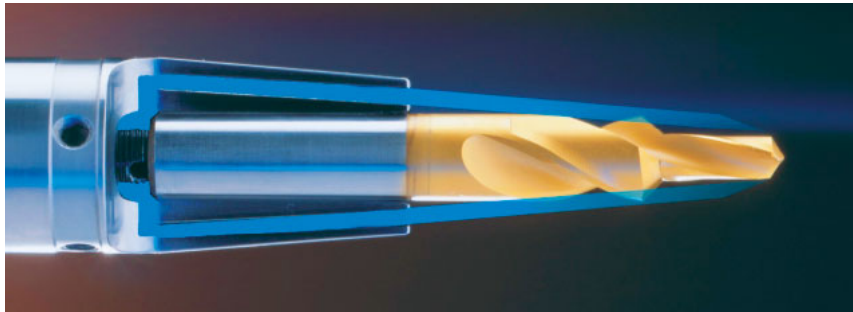
Cool Jet available in following versions

- Cool Jet with 2 Coolant bores for Shrink fit chucks (Ø 6–14 mm), Weldon (Ø 6–20 mm) and HG Collets
- Cool Jet with 3 Coolant bores (Shrink fit chuck Ø 16 mm–32 mm)
- Cool Jet with 4 Coolant bores for Weldon (Ø 25–40 mm) and Whistle Notch (Ø 25–40 mm)



Order No.

- 91.100.24
- 91.100.25
- 91.100.26

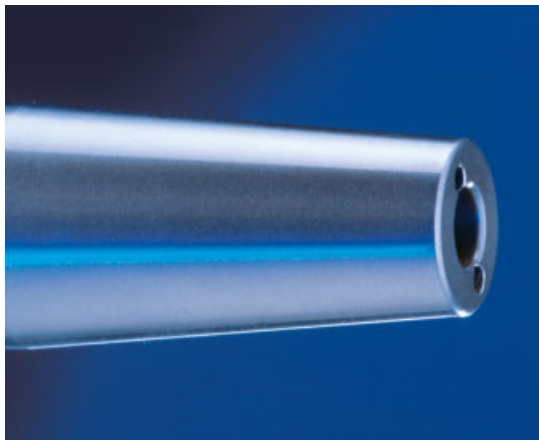


Shrink Fit Chuck

Examples

For use in:

- Shrink Fit Chuck
- High-Precision Chuck
- Face Mill Arbor
- Weldon Chucks
- Power Collets
- Duo-Lock Collets
- Duo-Lock Extensions

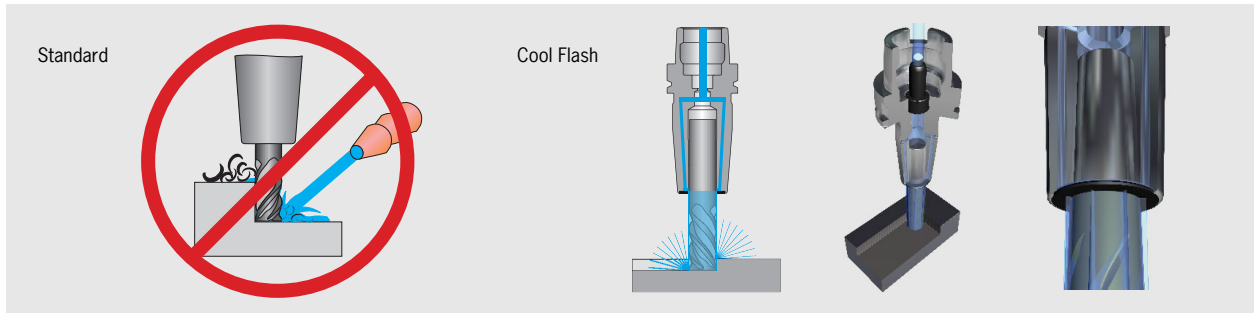


Coolant bores aimed at center  
Cool Jet by HAIMER



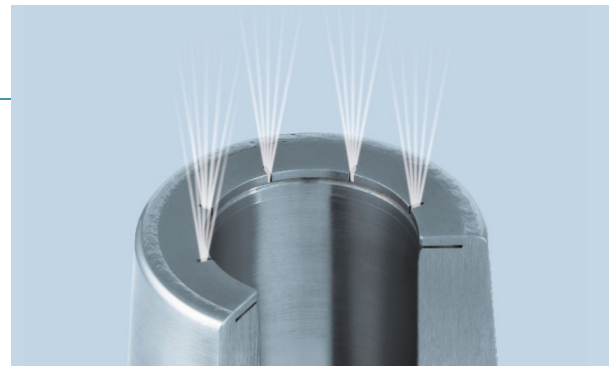
Weldon

COOLING SYSTEM COOL FLASH – COOLANT TAKEN TO THE TOP



True to the slogan “make good things even better”, HAIMER has developed the Cool Flash system out of the existing Cool Jet system. The Cool Flash design directs coolant into T-slots at the nose of the holder and works with the centrifugal force of the rotating tool to lead the coolant along the shank of the cutter and directly to the flutes at any speed.

- Coolant directly to the cutting edge
- Extended tool life up to 100%
- Eliminates chip packing and chip welding
- Also for high rpm
- Optimized runout accuracy! No additional unbalance! No disturbing clearance!
- Low acquisition costs & can be added later
- For tools from diam. ¼"-1" (6 mm up to diam. 25 mm)



Optimized coolant bores with coolant outlet through slots  
Cool Flash by HAIMER

Cool Flash vs. internal tool cooling		
	Cool Flash	internal tool cooling
Cooling range at the cutting edge	✓ 100%	✗ max. 30-40%
Tool stability	✓ maximum	✗ reduced
Application range	✓ variable	✗ per cutting tool
Diameter area	✓ from 6 mm	✗ from 12 mm
Acquisition cost	✓ per tool holder	✗ per cutting tool

**Cool Flash**  
**Cool Flash**  
**Cool Flash Upgrade** incl. Cool Jet

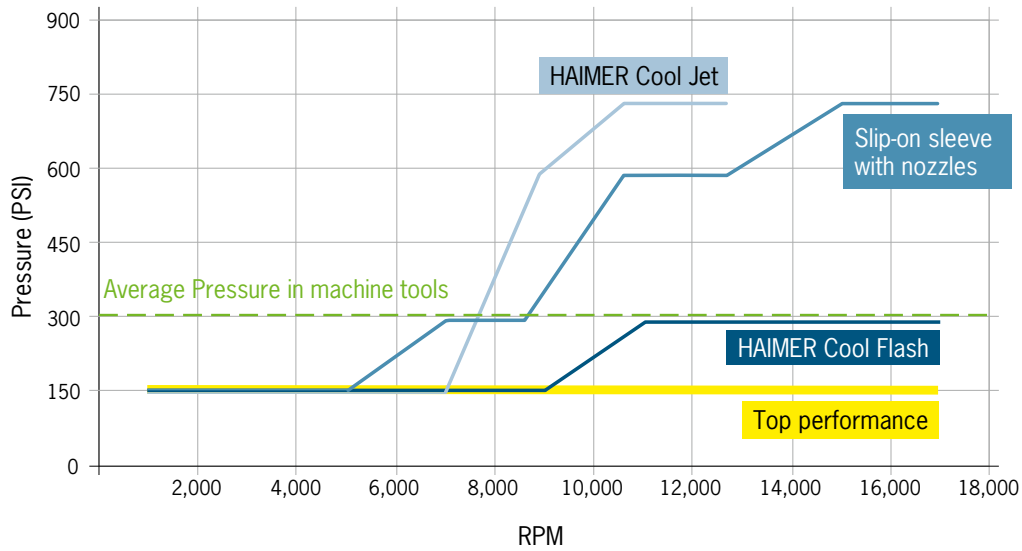
**Order No. 91.100.40**  
**Order No. 91.100.41**

## COOLING SYSTEM COOL FLASH – SIMULATION

The goal of the development of the Cool Flash system was to transport the coolant directly to the cutting edges. Even for existing machine tools with an average pressure of approx. 290 psi, Cool Flash allows for reliable and precise cooling without any changes to the cooling system of the machine tool.

The graphic shows the optimized coolant supply to the cutting edges for different systems by comparing dependence of pressure and rpm. Even at low pressure and high rpm Cool Flash assures precise cooling. On competitive systems, higher rpm require higher pressure to generate effective cooling.

*Optimized coolant supply to the top of the cutting tool  
(Protruding length: 28 mm, Tool Ø 6 mm)*



## COOL FLASH COMPARED TO COMPETITIVE SYSTEMS

### Test Results

Tool: Endmill (two flutes)  
 Tool diameter: 20 mm  
 Protruding length: 50 mm  
 Pressure: 290 psi (20 bar)  
 RPM: 12,000



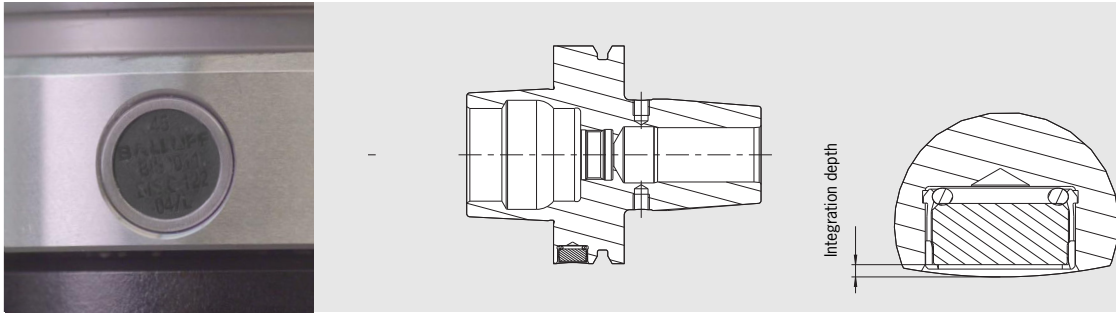
Cool Flash – effective cooling at the cutting edges



Slip-on sleeve with nozzles – ineffective cooling, coolant does not reach the cutting edges



## DATA-LOCK MECHANICAL DATA CARRIER LOCKING SYSTEM



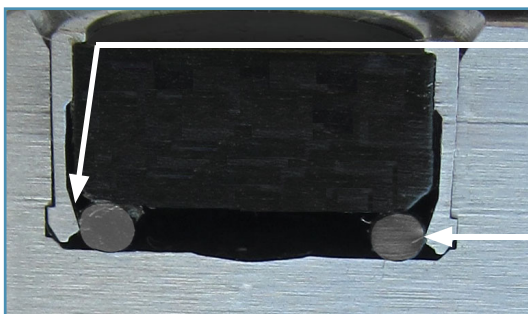
The mechanical data carrier locking system locks the data carrier by a form and press fit into the tool holder. Especially for higher rpm ranges the new system provides high process reliability.

**Advantages:**

- Process reliability even at high rotations thanks to mechanical locking (60,000 – 120,000 rpm)
- Less integration depth than comparable mechanical locking systems
- Process reliability at the reading/writing process thanks to the reduced integration depth
- Fine balanced tool holder after data carrier assembly
- Immediately ready to use
- Possible also for non-HAIMER holders
- Patent pending

**Delivery includes:**

- Modification of the data carrier bore
- Sleeve for the data carrier
- Seal ring
- Mounting of data carrier
- Fine balancing



Sleeve is clamped by form and press fit into the tool holder

Seal ring locks data carrier in the sleeve



Detail Data-Lock cut-away model

	Order No.
Mounting on HAIMER holders incl. fine balancing	91.100.06
Mounting on different holders incl. fine balancing	91.100.07

## ULTRA-PRECISION SHRINK FIT CHUCK WITH RUNOUT <math>< 0.001\text{MM}</math>



### CERTIFICATE OF QUALITY

- Chuck body ultra fine balanced  
G2.5 33,000 rpm  
or U<math>< 0.5\text{ gmm}</math>
- All functional surfaces fine machined
- More accurate than DIN

HAIMER offers the opportunity to supply Ultra-Precision Shrink Fit Chucks with a runout accuracy <math>< 1\ \mu\text{m}</math>.

The Ultra-Precision Shrink Fit Chucks with additional ultra fine balancing are ideal for ultra high speed and high precision machining centers to achieve even better surface finish.

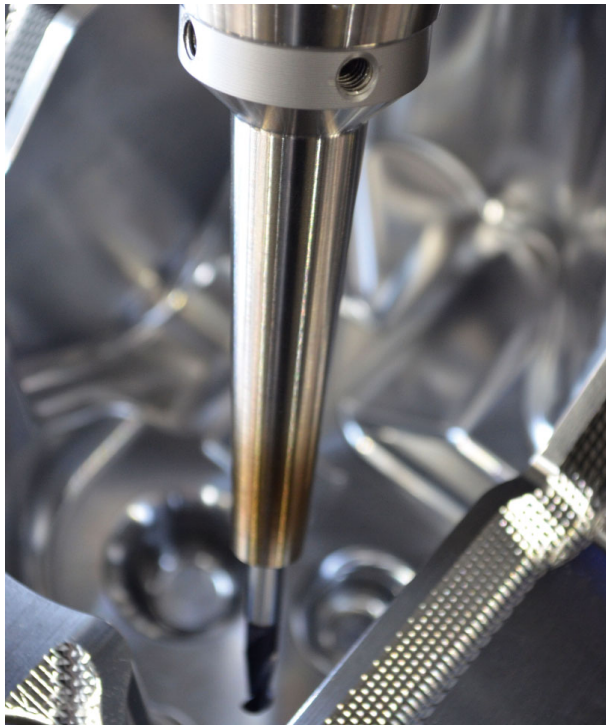
#### Your advantages are:

- No extra wear of the tool
- Higher accuracy
- Better surface finish
- Higher cutting volume
- Smooth running, low vibration
- Optional available for all shrink chucks
- With additional ultra fine balancing G2.5 33,000 rpm or U <math>< 0.5\ \text{gmm}</math>

Ultra-Precision Shrink Fit Chuck

Order No.

91.100.45



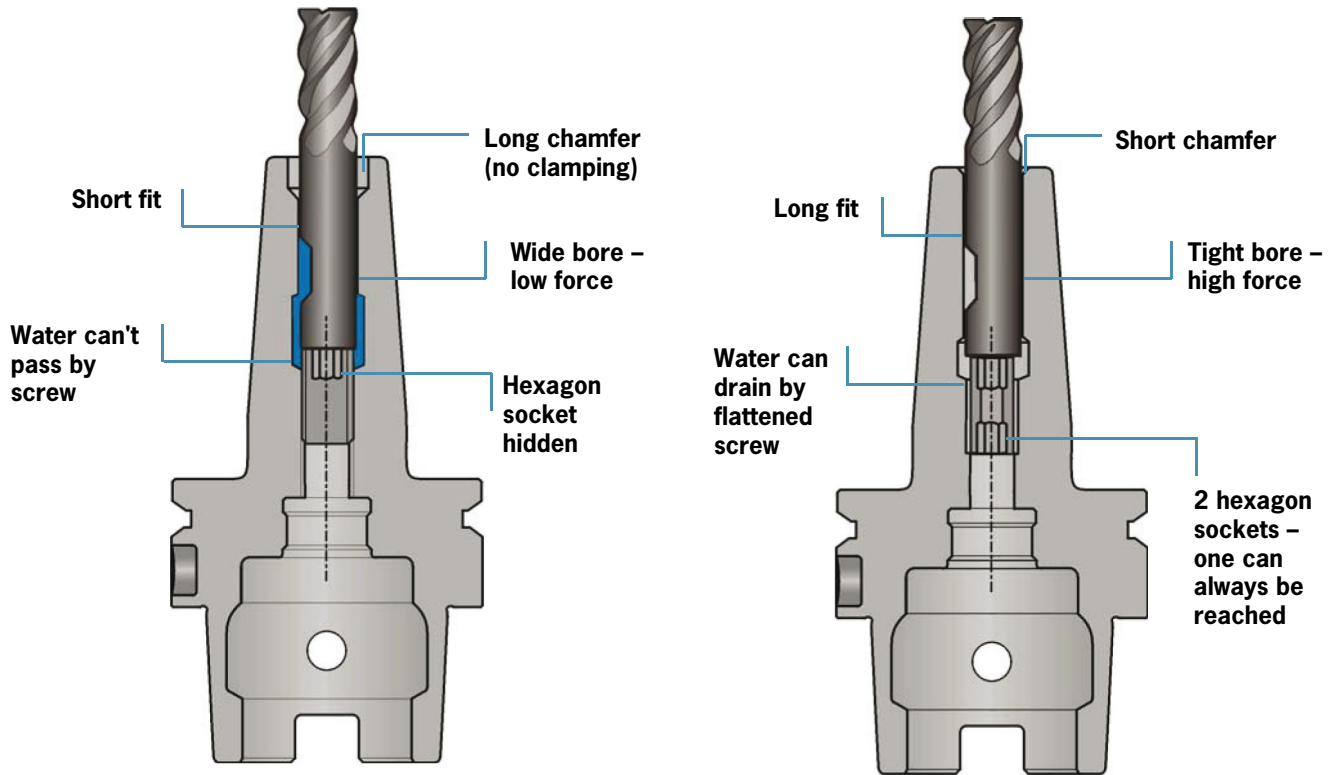
Now available: Ultra-Precision Shrink Fit Chuck  
with runout accuracy <math>< 1\ \mu\text{m}</math>



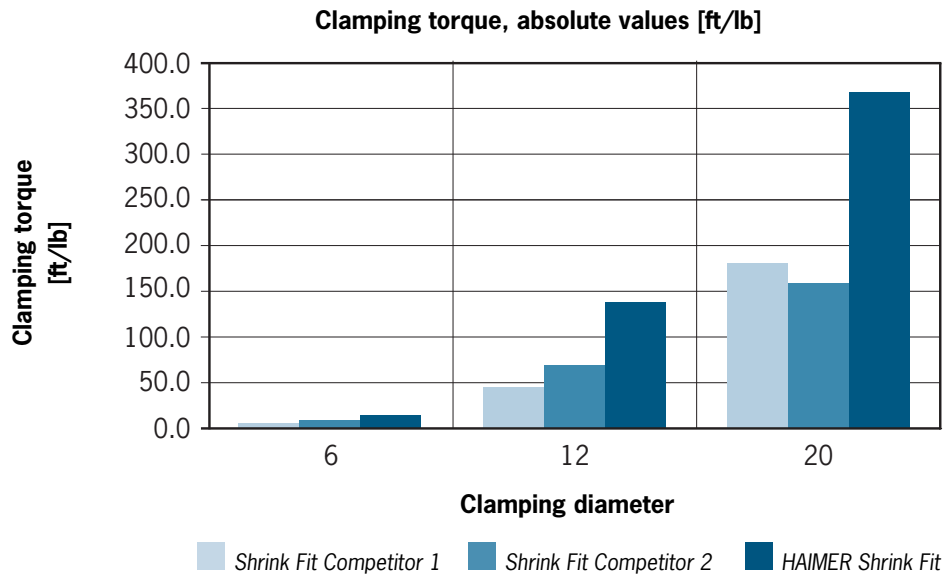
COMPARISON SHRINK FIT CHUCKS – HAIMER VS. COMPETITOR

Competitor

HAIMER



Comparison Shrink Fit Clamping Torque



## HAIMER SHRINK FIT CHUCKS ADVANTAGES

### Total quality control

- All shrink chucks built by HAIMER in-house
- HAIMER is a true innovator – making shrink fit an even better solution for everyone
- Shrinking of carbide and HSS tools from diameter 3 – 50 mm (1/8" to 2") in tolerance h6
- Even small clamping diameter 3 – 5 mm (1/8", 3/16") suitable for HSS tools with shank tolerance h6

### Highest clamping force due to extreme pressure on shank

- Highest pull out force
- Highest torque (See diagram)
- Secure clamping even when tool shank is at lower range of tolerance
- Optimum process security

### Optimum support of tool

- Short chamfer for inserting tool – clamping up to the top (See sketch)
- Long fit – support of tool on whole length (See sketch)
- Extreme rigidity
- Long tool life
- No movement of tool in tool holder

### Patented security set screw (See sketch)

- No dangerous development of steam when heating due to total drainage of water
- Precise length adjustment due to fine pitch thread (small clearance)
- Hexagon socket on both ends
- Simple tool removal after breakage (on hexagon socket always can be reached)

### Long life of tool holder

- High-temperature resistant special steel (tested more than 2,000 times)
- No wear of clamping bore due to high clamping forces and short chamfer
- No distortion due to special hardening method

### More

- For heavy-duty machining reinforced chucks type Power Shrink or Heavy Duty
- Flexible tool length with shrink fit extensions – no more special tool holders
- Optimum coolant supply by Cool Jet or Cool Flash system (no interruption of the bore)
- Balanced to G2.5 at 25,000 RPMs or under 1 gmm of unbalance (dependent upon taper)
- Fine balancing with set screws possible
- Several lengths in stock
- Slender shape – "Mini-Shrink" available
- Outer shape can be machined by user
- Dimensions according to DIN 69882-8 - Inch and metric bore diameters standard
- TIR 0.00012" (0.003 mm) at 3 times diameter
- Steep taper in tolerance AT 3, form AD/AF (coolant through center and through collar)
- All DIN and HSK-A include pocket for data chip
- CAT40 and CAT50 holders have ground pilot for pull-stud connection
- CAT40 and CAT50 standard with DIN-B coolant delivery option

# GRINDING WHEEL ADAPTERS

# CONTENT

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For Grinding Wheel Adapters	521
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Tool Assembly Device Tool Clamp	525

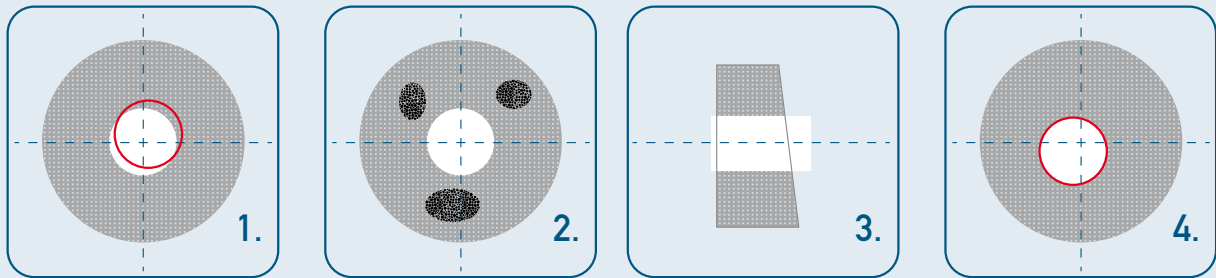
## WHY BALANCE GRINDING WHEELS?

### Why balance grinding wheels?

#### Dressing ≠ Balancing

Balancing of grinding wheels is essential no matter if you dress them or not!

#### Causes of unbalance on a grinding wheel:



1. Tolerance of the grinding wheel bore
2. Uniformity of the grinding wheel
3. Parallelism of the grinding wheel
4. Concentricity of the grinding wheel

- Tolerance of the grinding wheel arbor
- Dressing of the grinding wheel
- Wear of the grinding wheel
- Profiling of the grinding wheel

#### Consequences of unbalance

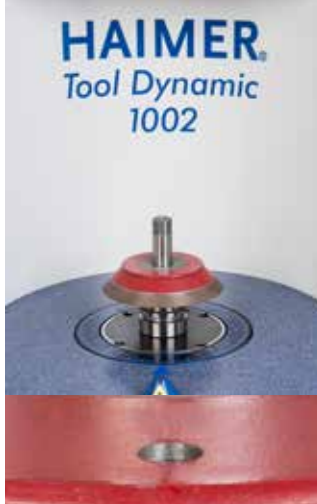
1. Reduced surface quality → Chatter marks
2. Reduced dimensional accuracy on the work piece → Increased costs for wheel dressing
3. Extremely high grinding wheel wear → Reduced tool life
4. Spindle head wear out → Danger of machine down time → Unnecessary repairs → Expensive inspections

**As a result, the grinding parameters are reduced and productivity is decreased**

## HOW TO BALANCE AND DRESS YOUR GRINDING WHEELS CORRECTLY

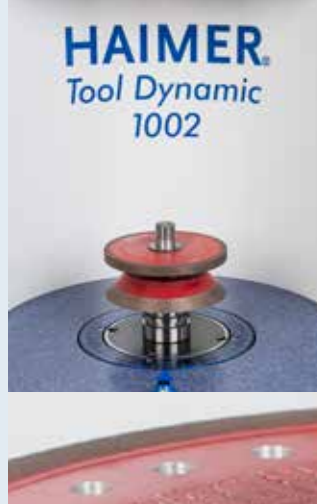
## Guideline for initial balancing of a new grinding wheel pack

## Step 1



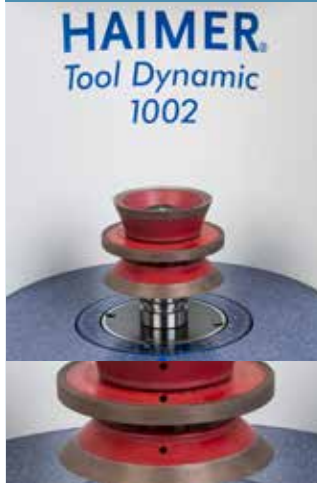
1. Add first grinding wheel on arbor
2. Add distance disk
3. Tighten nut
4. Measure unbalance
5. Correct unbalance (e.g. by axial drilling)

## Step 2



1. Add 2nd grinding wheel to arbor
2. Add position reference marking on both grinding wheels
3. Tighten nut
4. Measure unbalance
5. Correct unbalance (e.g. by axial drilling)

## Step 3



1. Add 3rd grinding wheel to arbor
  2. Add position reference marking on all three grinding wheels
  3. Tighten nut
  4. Measure unbalance
  5. Correct unbalance (e.g. by axial drilling)
- Prebalancing finished

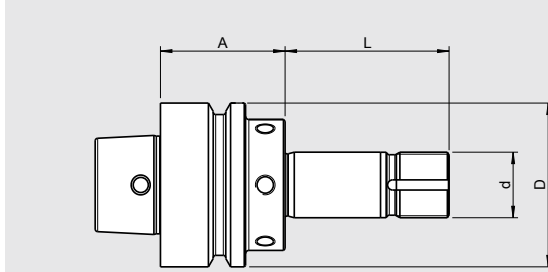
## Step 4



1. Dressing of complete grinding wheel
  2. Measure unbalance
  3. Correct unbalance  
(e.g. by balancing screws see page 522)
- Fine-balancing and dressing finished



## ISOG GRINDING WHEEL ADAPTER HSK-F50 (WITH ACCESS HOLE) Ø 20 MM FOR SPACERS Ø 40 MM



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN
<input checked="" type="checkbox"/>	Body with balancing threads
<input checked="" type="checkbox"/>	Balanced

**Use:**

Grinding wheel adapter HSK-F50 (with access hole) / Ø 20 mm suitable for ISOG tool grinding machines for spacers Ø 40 mm

**Delivery:**

Spacer pack, clamping nut, sealing pin, lock plate

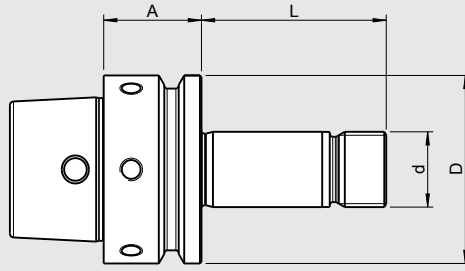
Clamping	Ø d [mm]	20	
Length A [mm]		38	
Order No.	Ø D [mm]	40	
	L [mm]	50	
Length A [mm]		58	
Order No.	Ø D [mm]	40	
	L [mm]	60	
Length A [mm]		58	
Order No.	Ø D [mm]	40	
	L [mm]	90	
Order No.			

Accessories			
<b>Spacers Ø 40 mm</b>			
Length L [mm]		3	
Order No.	999001-1135	*1	
Length L [mm]		6	
Order No.	999001-1136	*1	
Length L [mm]		12	
Order No.	999001-1137	*2	
<b>Lock plate</b>			
Length		35x20x1.5	
Order No.	999001-1134		
<b>Clamping nut</b>			
Thread		M20x1	
Order No.	915005-0004		
<b>Set of balancing screws</b>			
Order No.	80.203.00		
<b>Sealing pin - POM/white</b>			
Order No.	900052-0007	M8	

\*1= without balancing thread \*2= with balancing thread  
See page 521 for additional spacers

# UWS (REINECKER) GRINDING WHEEL ADAPTER HSK-E50 (WITH ACCESS HOLE) Ø 20 MM FOR SPACERS Ø 50 MM

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN
<input checked="" type="checkbox"/>	Body with balancing threads
<input checked="" type="checkbox"/>	Balanced



**Use:**

Grinding wheel adapter HSK-E50 (with access hole) / Ø 20 mm suitable for Reinecker tool grinding machines for spacers Ø 50 mm

**Delivery:**

Spacer pack, clamping nut

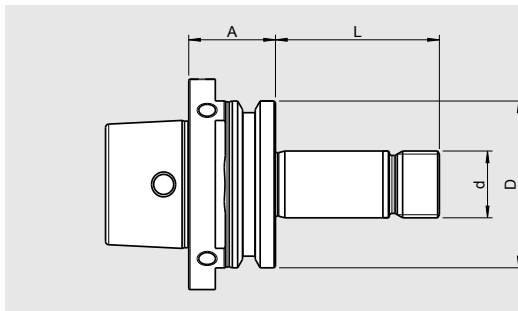
Clamping	Ø d [mm]	20	
Length A [mm]		26	
Order No.	Ø D [mm]	50	
	L [mm]	49	
	E50.160.20.2 Incl. spacers (2x L=12, 2x L=3 [mm])		
Length A [mm]		26	
Order No.	Ø D [mm]	50	
	L [mm]	74	
	E50.163.20.2 Incl. spacers (3x L=12, 2x L=6, 2x L=3 [mm])		
Length A [mm]		26	
Order No.	Ø D [mm]	50	
	L [mm]	109	
	E50.161.20.2 Incl. spacers (4x L=12, 3x L=6, 2x L=3 [mm])		

Accessories			
<b>Spacers Ø 50 mm</b>			
Length L [mm]		3	
Order No.	999001-1139	*1	
Length L [mm]		6	
Order No.	999001-1140	*1	
Length L [mm]		12	
Order No.	999001-1138	*2	
<b>Clamping nut</b>			
Thread		M20x1.5	
Order No.	915005-0001		
<b>Set of balancing screws</b>			
Order No.	80.203.00		

\*1= without balancing thread \*2= with balancing thread

See page 521 for additional spacers

## ROLLOMATIC GRINDING WHEEL ADAPTER HSK-E50 (Ø 20 MM WITH ACCESS HOLE) FOR SPACERS Ø 50 MM



CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN
<input checked="" type="checkbox"/>	Body with balancing threads
<input checked="" type="checkbox"/>	Balanced

**Use:**

Grinding wheel adapter HSK-E50 (with access hole) / Ø 20 mm suitable for Rollomatic tool grinding machines for spacers Ø 50 mm

**Delivery:**

Spacer pack, clamping nut

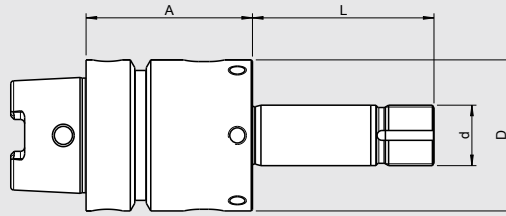
Clamping	Ø d [mm]	20	
Length A [mm]		26	
Order No.	Ø D [mm]	50	
	L [mm]	49	
	E50.160.20.1 Incl. spacers (2x L=12, 2x L=3 [mm])		
Length A [mm]		26	
Order No.	Ø D [mm]	50	
	L [mm]	81	
	E50.163.20.1 Incl. spacers (3x L=12, 2x L=6, 2x L=3 [mm])		

Accessories			
<b>Spacers Ø 50 mm</b>			
Length L [mm]		3	
Order No.	999001-1139	*1	
Length L [mm]		6	
Order No.	999001-1140	*1	
Length L [mm]		12	
Order No.	999001-1138	*2	
<b>Clamping nut</b>			
Thread		M20x1.5	
Order No.	915005-0001		
<b>Set of balancing screws</b>			
Order No.	80.203.00		

\*1= without balancing thread \*2= with balancing thread  
See page 521 for additional spacers

# WALTER GRINDING WHEEL ADAPTER HSK-C50 Ø 20 MM FOR SPACERS Ø 50 MM

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN
<input checked="" type="checkbox"/>	Body with balancing threads
<input checked="" type="checkbox"/>	Balanced



**Use:**

Grinding wheel adapter HSK-C50 / Ø 20 mm suitable for Walter tool grinding machines for spacers Ø 50 mm

**Delivery:**

Spacer pack, clamping nut, lock plate

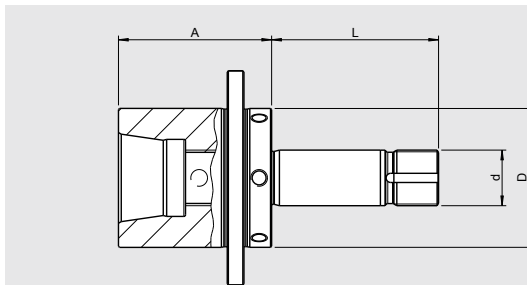
Clamping	Ø d [mm]	20	
<b>Length A [mm]</b>		<b>55</b>	
	Ø D [mm]	50	
	L [mm]	40	
<b>Order No.</b>	<b>C50.165.20.4</b>		
Incl. spacers	(1x L=12, 1x L=3 [mm])		
<b>Length A [mm]</b>		<b>55</b>	
	Ø D [mm]	50	
	L [mm]	60	
<b>Order No.</b>	<b>C50.160.20.4</b>		
Incl. spacers	(2x L=12, 1x L=6, 2x L=3 [mm])		
<b>Length A [mm]</b>		<b>55</b>	
	Ø D [mm]	50	
	L [mm]	85	
<b>Order No.</b>	<b>C50.163.20.4</b>		
Incl. spacers	(3x L=12, 2x L=6, 2x L=3 [mm])		
<b>Length A [mm]</b>		<b>55</b>	
	Ø D [mm]	50	
	L [mm]	100	
<b>Order No.</b>	<b>C50.161.20.4</b>		
Incl. spacers	(3x L=12, 3x L=6, 2x L=3 [mm])		
<b>Length A [mm]</b>		<b>55</b>	
	Ø D [mm]	50	
	L [mm]	120	
<b>Order No.</b>	<b>C50.167.20.4</b>		
Incl. spacers	(4x L=12, 3x L=6, 2x L=3 [mm])		

Accessories			
<b>Spacers Ø 50 mm</b>			
Length L [mm]		3	
<b>Order No.</b>	<b>999001-1139</b>	*1	
Length L [mm]		6	
<b>Order No.</b>	<b>999001-1140</b>	*1	
Length L [mm]		12	
<b>Order No.</b>	<b>999001-1138</b>	*2	
<b>Lock plate</b>			
Length L [mm]		35x20x1.5	
<b>Order No.</b>	<b>999001-1134</b>		
<b>Clamping nut</b>			
Thread		M20x1	
<b>Order No.</b>	<b>915005-0004</b>		
<b>Set of balancing screws</b>			
<b>Order No.</b>	<b>80.203.00</b>		

\*1= without balancing thread \*2= with balancing thread

See page 521 for additional spacers

## WALTER GRINDING WHEEL ADAPTER Z50 Ø 20 MM FOR SPACERS Ø 50 MM



### CERTIFICATE OF QUALITY

- All functional surfaces fine machined
- Body with balancing threads
- Balanced

#### Use:

Grinding wheel adapter Z50 / Ø 20 mm suitable for Walter tool grinding machines for spacers Ø 50 mm

#### Delivery:

Spacer pack, clamping nut, lock plate, thread piece, cylinder screw, thread pin

Clamping	Ø d [mm]	20	
Length A [mm]		55	
Order No.	Ø D [mm]	50	
	L [mm]	40	
Incl. spacers	Z50.165.20.5 (1x L=12, 1x L=3 [mm])		
Length A [mm]		55	
Order No.	Ø D [mm]	50	
	L [mm]	60	
Incl. spacers	Z50.160.20.5 (2x L=12, 1x L=6, 2x L=3 [mm])		
Length A [mm]		55	
Order No.	Ø D [mm]	50	
	L [mm]	85	
Incl. spacers	Z50.163.20.5 (3x L=12, 2x L=6, 2x L=3 [mm])		
Length A [mm]		55	
Order No.	Ø D [mm]	50	
	L [mm]	100	
Incl. spacers	Z50.161.20.5 (3x L=12, 3x L=6, 2x L=3 [mm])		
Length A [mm]		55	
Order No.	Ø D [mm]	50	
	L [mm]	120	
Incl. spacers	Z50.167.20.5 (4x L=12, 3x L=6, 2x L=3 [mm])		

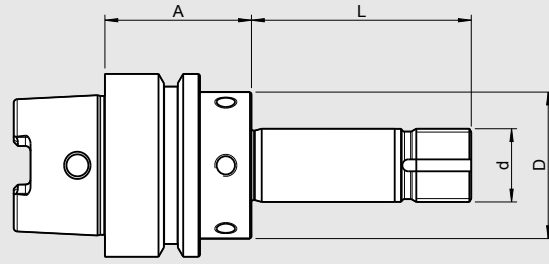
Accessories			
<b>Spacers Ø 50 mm</b>			
Length L [mm]		3	
Order No.	999001-1139	*1	
Length L [mm]		6	
Order No.	999001-1140	*1	
Length L [mm]		12	
Order No.	999001-1138	*2	
<b>Lock plate</b>			
Length L [mm]		35x20x1.5	
Order No.	999001-1134		
<b>Clamping nut</b>			
Thread		M20x1	
Order No.	915005-0004		
<b>Set of balancing screws</b>			
Order No.	80.203.00		

\*1= without balancing thread \*2= with balancing thread  
See page 521 for additional spacers

# SAACKE/VOLLMER GRINDING WHEEL ADAPTER HSK-C50 (WITH GROOVES FOR TOOL CHANGER) Ø 20 MM FOR SPACERS Ø 50 MM

### CERTIFICATE OF QUALITY

- All functional surfaces fine machined
- More accurate than DIN
- Body with balancing threads
- Balanced



### Use:

Grinding wheel adapter HSK-C50 (with gripper groove for tool changer) / Ø 20 mm suitable for Saacke and Vollmer tool grinding machines for spacers Ø 50 mm

### Delivery:

Spacer pack, clamping nut, lock plate

Clamping	Ø d [mm]	20	
<b>Length A [mm]</b>		<b>40</b>	
	Ø D [mm]	40	
	L [mm]	40	
<b>Order No.</b>	<b>C50.165.20.6</b>		
Incl. spacers	(1x L=12, 1x L=3 [mm])		
<b>Length A [mm]</b>		<b>40</b>	
	Ø D [mm]	40	
	L [mm]	60	
<b>Order No.</b>	<b>C50.160.20.6</b>		
Incl. spacers	(2x L=12, 1x L=6, 2x L=3 [mm])		
<b>Length A [mm]</b>		<b>40</b>	
	Ø D [mm]	40	
	L [mm]	75	
<b>Order No.</b>	<b>C50.168.20.6</b>		
Incl. spacers	(3x L=12, 2x L=6, 2x L=3 [mm])		
<b>Length A [mm]</b>		<b>40</b>	
	Ø D [mm]	40	
	L [mm]	85	
<b>Order No.</b>	<b>C50.163.20.6</b>		
Incl. spacers	(3x L=12, 2x L=6, 2x L=3 [mm])		
<b>Length A [mm]</b>		<b>40</b>	
	Ø D [mm]	40	
	L [mm]	100	
<b>Order No.</b>	<b>C50.161.20.6</b>		
Incl. spacers	(3x L=12, 3x L=6, 2x L=3 [mm])		

### Accessories

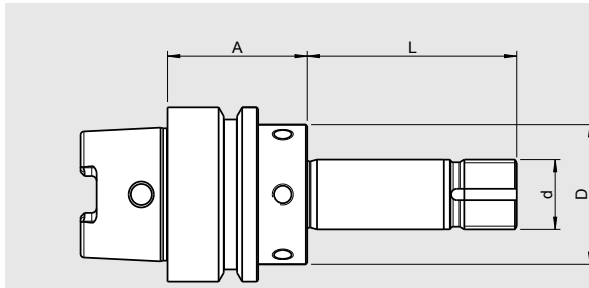
Spacers Ø 50 mm		
Length L [mm]		3
<b>Order No.</b>	<b>999001-1139</b>	*1
Length L [mm]		6
<b>Order No.</b>	<b>999001-1140</b>	*1
Length L [mm]		12
<b>Order No.</b>	<b>999001-1138</b>	*2
Lock plate		
Length L [mm]		35x20x1.5
<b>Order No.</b>	<b>999001-1134</b>	
Clamping nut		
Thread		M20x1
<b>Order No.</b>	<b>915005-0004</b>	
Set of balancing screws		
<b>Order No.</b>	<b>80.203.00</b>	



\*1= without balancing thread \*2= with balancing thread

See page 521 for additional spacers

## SCHÜTTE GRINDING WHEEL ADAPTER HSK-C50 (WITH GRIPPER GROOVE HSK-E50) Ø 20 MM FOR SPACERS Ø 50 MM



### CERTIFICATE OF QUALITY

- All functional surfaces fine machined
- More accurate than DIN
- Body with balancing threads
- Balanced

#### Use:

Grinding wheel adapter HSK-C50 (with gripper groove HSK-E50) / Ø 20 mm suitable for Schütte tool grinding machines (205 series) for spacers Ø 50 mm

#### Delivery:

Spacer pack, clamping nut, lock plate

Clamping	Ø d [mm]	20	
Length A [mm]		40	
Order No.	Ø D [mm]	40	
	L [mm]	40	
Incl. spacers	<b>C50.165.20.6</b> (1x L=12, 5x L=3 [mm])		
Length A [mm]		40	
Order No.	Ø D [mm]	40	
	L [mm]	60	
Incl. spacers	<b>C50.160.20.6</b> (2x L=12, 1x L=6, 2x L=3 [mm])		
Length A [mm]		40	
Order No.	Ø D [mm]	40	
	L [mm]	75	
Incl. spacers	<b>C50.168.20.6</b> (3x L=12, 2x L=6, 2x L=3 [mm])		
Length A [mm]		40	
Order No.	Ø D [mm]	40	
	L [mm]	85	
Incl. spacers	<b>C50.163.20.6</b> (3x L=12, 2x L=6, 2x L=3 [mm])		
Length A [mm]		40	
Order No.	Ø D [mm]	40	
	L [mm]	100	
Incl. spacers	<b>C50.161.20.6</b> (3x L=12, 3x L=6, 2x L=3 [mm])		

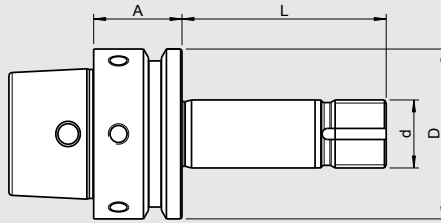
Accessories			
<b>Spacers Ø 50 mm</b>			
Length L [mm]		3	
Order No.	<b>999001-1139</b>	*1	
Length L [mm]	6	*1	
Order No.	<b>999001-1140</b>		
Length L [mm]	12	*2	
Order No.	<b>999001-1138</b>		
<b>Lock plate</b>			
Length L [mm]		35x20x1.5	
Order No.	<b>999001-1134</b>		
<b>Clamping nut</b>			
Thread		M20x1	
Order No.	<b>915005-0004</b>		
<b>Set of balancing screws</b>			
Order No.	<b>80.203.00</b>		

\*1= without balancing thread \*2= with balancing thread

See page 521 for additional spacers

# SCHÜTTE GRINDING WHEEL ADAPTER HSK-E50 (WITH ACCESS BORE) Ø 20 MM FOR SPACERS Ø 50 MM

CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN
<input checked="" type="checkbox"/>	Body with balancing threads
<input checked="" type="checkbox"/>	Balanced



**Use:**

Grinding wheel adapter HSK-E50 (with access bore) / Ø 20 mm suitable for Schütte tool grinding machines (305 series) for spacers Ø 50 mm

**Delivery:**

Spacer pack, clamping nut, lock plate

Clamping	Ø d [mm]	20	
<b>Length A [mm]</b>		<b>26</b>	
	Ø D [mm]	50	
	L [mm]	40	
<b>Order No.</b>	<b>E50.165.20.8</b>		
Incl. spacers	(1x L=12, 1x L=3 [mm])		
<b>Length A [mm]</b>		<b>26</b>	
	Ø D [mm]	50	
	L [mm]	55	
<b>Order No.</b>	<b>E50.160.20.8</b>		
Incl. spacers	(2x L=12, 1x L=6, 2x L=3 [mm])		
<b>Length A [mm]</b>		<b>26</b>	
	Ø D [mm]	50	
	L [mm]	85	
<b>Order No.</b>	<b>E50.163.20.8</b>		
Incl. spacers	(3x L=12, 2x L=6, 2x L=3 [mm])		

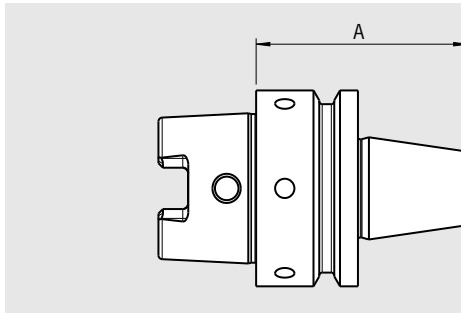
Accessories			
<b>Spacers Ø 50 mm</b>			
Length L [mm]		3	
<b>Order No.</b>	<b>999001-1139</b>	*1	
Length L [mm]		6	
<b>Order No.</b>	<b>999001-1140</b>	*1	
Length L [mm]		12	
<b>Order No.</b>	<b>999001-1138</b>	*2	
<b>Lock plate</b>			
Length L [mm]		35x20x1.5	
<b>Order No.</b>	<b>999001-1134</b>		
<b>Clamping nut</b>			
Thread		M20x1	
<b>Order No.</b>	<b>915005-0004</b>		
<b>Set of balancing screws</b>			
<b>Order No.</b>	<b>80.203.00</b>		

\*1= without balancing thread \*2= with balancing thread

See page 521 for additional spacers



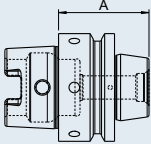

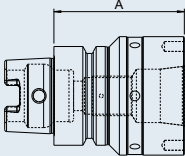

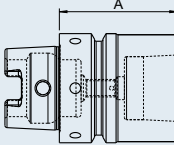

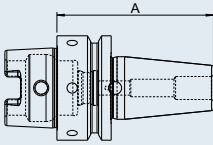

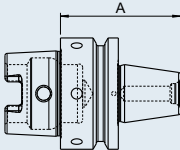

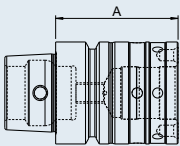

## ADAPTER HSK-A50 FOR TOOL GRINDING MACHINES, DRESSING MACHINES, TOOL PRESETTERS, BALANCING MACHINES



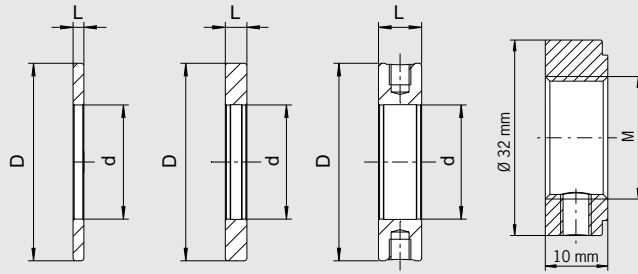
CERTIFICATE OF QUALITY	
<input checked="" type="checkbox"/>	All functional surfaces fine machined
<input checked="" type="checkbox"/>	More accurate than DIN
<input checked="" type="checkbox"/>	Body with balancing threads
<input checked="" type="checkbox"/>	Balanced

**Use:**

Adapter HSK-A50 for tool grinding machines, dressing machines, tool presetters, balancing machines

Adapter				
<b>Length A [mm]</b>		<b>42</b>		
<b>Walter, Haas</b>	Thread	M12x1.25		
<b>Order No.</b>	<b>A50.165.Z50.5</b>			
<b>Length A [mm]</b>		<b>66</b>		
<b>Saacke</b>	Thread	M20x1.5		
<b>Order No.</b>	<b>A50.165.Z50.7</b>			
<b>Length A [mm]</b>		<b>54</b>		
<b>Strausak Promat</b>	Thread	M8		
<b>Order No.</b>	<b>A50.165.Z50.9</b>			
<b>Length A [mm]</b>		<b>75</b>		
<b>Strausak Fleximat</b>	Thread	M10		
<b>Order No.</b>	<b>A50.165.Z50.10</b>			
<b>Length A [mm]</b>		<b>54</b>		
<b>Anca</b>	Thread	M8		
<b>Order No.</b>	<b>A50.165.Z50.11</b>			
<b>Length A [mm]</b>		<b>60</b>		
<b>Rollomatic Perfect Arbor</b>	Thread	M10		
<b>Order No.</b>	<b>A50.165.Z50.12</b>			

## ACCESSORIES FOR GRINDING WHEEL ADAPTERS



### Summary of the accessories for HAIMER grinding wheel adapters

Accessories		
<b>Spacers Ø D 40 mm/d 20 mm</b>		<b>L [mm]</b>
<b>Order No.</b>		
999001-1135	without balancing thread	3
999001-1136	without balancing thread	6
999001-1137	with balancing thread	12
<b>Spacers Ø D 50 mm/d 20 mm</b>		<b>L [mm]</b>
<b>Order No.</b>		
999001-1139	without balancing thread	3
999001-1140	without balancing thread	6
999001-1138	with balancing thread	12
<b>Spacers Ø D 40 mm/d ¾"</b>		<b>L [mm]</b>
<b>Order No.</b>		
999001-1149	without balancing thread	3
999001-1150	without balancing thread	6
999001-1151	with balancing thread	12
<b>Spacers Ø D 55 mm/d 1¼"</b>		<b>L [mm]</b>
<b>Order No.</b>		
999001-1153	without balancing thread	3
999001-1154	without balancing thread	6
999001-1152	with balancing thread	12
<b>Spacers Ø D 35 mm/d 20 mm</b>		<b>L [mm]</b>
<b>Order No.</b>		
999001-1155	without balancing thread	3
999001-1156	without balancing thread	6
999001-1157	with balancing thread	12
<b>Lock plate</b>		
<b>Order No.</b>		
999001-1134		35x20x1.5
<b>Clamping nut</b>		
<b>Order No.</b>		<b>Thread</b>
915005-0004		M20x1
915005-0001	(only Rollomatic+Reinecker)	M20x1.5
<b>Sealing pin POM white</b>		
<b>Order No.</b>		<b>Thread</b>
900052-0007		M8



## SET OF BALANCING SCREWS



**Use:**

For fine-balancing grinding wheel adapter and spacers with balancing threads M6.

The screws have different weights in fine increments.

They are screwed into the balancing threads of the tool holder so that their weight compensates the unbalance of the tool holder.

- Set consisting of screws of 11 different sizes and weights
- The screws are tightened to the bottom of the thread. No additional fixing of screws necessary
- Balance quickly and precisely
- No damage of tool holders
- Can be repeated as often as necessary
- Suitable for tool holders of all brands
- The balancing machine calculates the necessary weight of the screws  
(e. g. HAIMER Tool Dynamic)

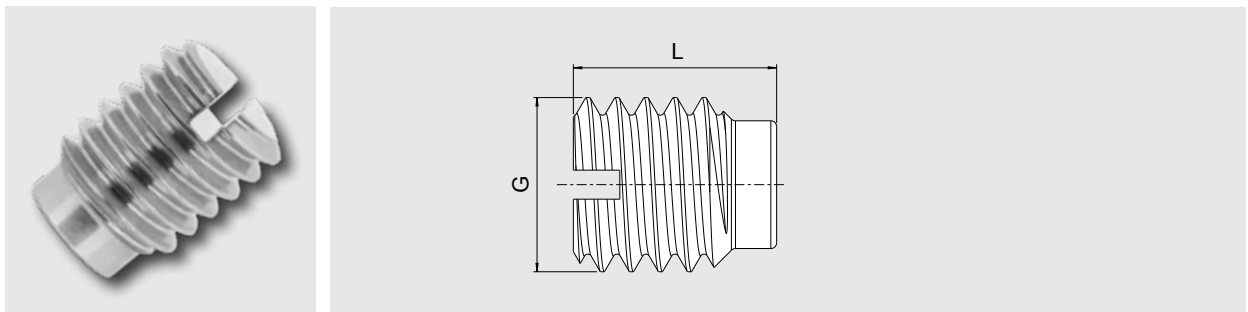
**Delivery:**

Case with 11 x 10 balancing screws, screwdriver

**Set of balancing screws**

**Order No.** 80.203.00

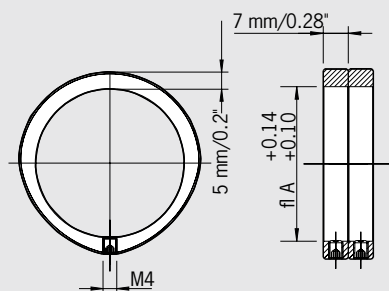
## HEAVY METAL BALANCING SCREWS



Heavy metal balancing screws (thread M6) for manual balancing of tool holders.

Length L [mm]	07	07	08	08	10	10
Size G [mm]	M6x7	M6x7 (5 pcs.)	M6x8	M6x8 (5 pcs.)	M6x10	M6x10 (5 pcs.)
Mass	ca. 2.3 g	ca. 2.3 g	ca. 2.7 g	ca. 2.7 g	ca. 3.5 g	ca. 3.5 g
<b>Order No.</b>	<b>85.502...</b>	<b>.7.0</b>	<b>.7.0.SET</b>	<b>.8.0</b>	<b>.8.0.SET</b>	<b>.10.0</b>
					<b>.10.0</b>	<b>.10.0.SET</b>

## BALANCING RINGS



For fine-balancing all tool holders with cylindrical outer diameter (diam. A).

The balancing index rings have a defined unbalance in themselves. They are turned in such a position that the unbalance of the tool holder will be compensated. There are always 2 rings needed per balancing plane.

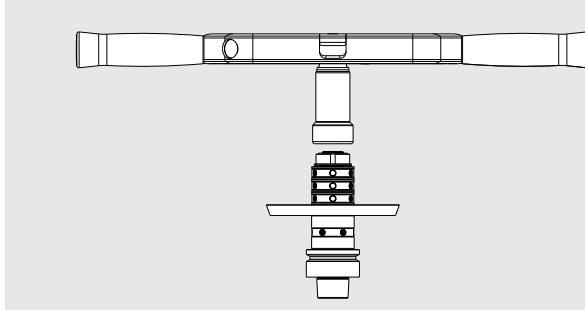
- Balancing quickly and precisely
- No damage to tool holder
- Can be repeated as often as necessary
- Simply fixed by clamping screw
- Suitable for tool holders of all brands
- The balancing machine determines the position of the rings
- Included in delivery: 2 balancing index rings with screws (without hex wrench)
- Tightening torque: 1 ft lb (1.4 Nm)

Order No.	Ø A [mm]	Ø A [inch]	unbalance <sup>1)</sup>	rpm [1/min]
79.350.15	15	0.59	14 g·mm	max. 55,000
79.350.16	16	0.63	14 g·mm	max. 55,000
79.350.17	17	0.67	16 g·mm	max. 55,000
79.350.18	18	0.71	17 g·mm	max. 55,000
79.350.19	19	0.75	19 g·mm	max. 55,000
79.350.20	20	0.79	21 g·mm	max. 55,000
79.350.22	22	0.87	23 g·mm	max. 55,000
79.350.23	23	0.91	25 g·mm	max. 55,000
79.350.24	24	0.94	27 g·mm	max. 55,000
79.350.25	25	0.98	28 g·mm	max. 55,000
79.350.26	26	1.02	32 g·mm	max. 50,000
79.350.27	27	1.06	32.5 g·mm	max. 50,000
79.350.28	28	1.10	34 g·mm	max. 50,000
79.350.30	30	1.18	37 g·mm	max. 45,000
79.350.32	32	1.26	43 g·mm	max. 45,000
79.350.34	34	1.34	46 g·mm	max. 40,000
79.350.35	35	1.38	48 g·mm	max. 40,000
79.350.36	36	1.42	51 g·mm	max. 40,000
79.350.38	38	1.50	56 g·mm	max. 35,000
79.350.40	40	1.57	60 g·mm	max. 35,000
79.350.42	42	1.65	65 g·mm	max. 35,000
79.350.43	43	1.69	69 g·mm	max. 35,000
79.350.1.71Z	43.45	1.71	68 g·mm	max. 35,000
79.350.44	44	1.73	72 g·mm	max. 35,000
79.350.46	46	1.81	80 g·mm	max. 35,000
79.350.48	48	1.89	85 g·mm	max. 30,000
79.350.50	50	1.97	90 g·mm	max. 30,000
79.350.52	52	2.05	100 g·mm	max. 30,000
79.350.53	53	2.09	100 g·mm	max. 30,000
79.350.54	54	2.13	103 g·mm	max. 30,000

Order No.	Ø A [mm]	Ø A [inch]	unbalance <sup>1)</sup>	rpm [1/min]
79.350.55	55	2.17	105 g·mm	max. 30,000
79.350.56	56	2.20	110 g·mm	max. 30,000
79.350.58	58	2.28	120 g·mm	max. 30,000
79.350.60	60	2.36	128 g·mm	max. 25,000
79.350.62	62	2.44	132 g·mm	max. 25,000
79.350.63	63	2.48	135 g·mm	max. 25,000
79.350.64	64	2.52	147 g·mm	max. 25,000
79.350.65	65	2.56	147 g·mm	max. 25,000
79.350.66	66	2.60	145 g·mm	max. 25,000
79.350.68	68	2.68	161 g·mm	max. 25,000
79.350.70	70	2.76	165 g·mm	max. 25,000
79.350.72	72	2.83	170 g·mm	max. 25,000
79.350.74	74	2.91	184 g·mm	max. 25,000
79.350.76	76	2.99	186 g·mm	max. 20,000
79.350.78	78	3.07	206 g·mm	max. 20,000
79.350.80	80	3.15	215 g·mm	max. 20,000
79.350.82	82	3.23	213 g·mm	max. 20,000
79.350.84	84	3.31	229 g·mm	max. 20,000
79.350.86	86	3.39	249 g·mm	max. 20,000
79.350.87	87	3.43	256 g·mm	max. 20,000
79.350.88	88	3.46	251 g·mm	max. 20,000
79.350.89	89	3.50	260 g·mm	max. 20,000
79.350.90	90	3.54	265 g·mm	max. 20,000
79.350.92	92	3.62	275 g·mm	max. 20,000
79.350.94	94	3.70	286 g·mm	max. 20,000
79.350.96	96	3.78	300 g·mm	max. 20,000
79.350.98	98	3.86	305 g·mm	max. 20,000
79.350.100	100	3.94	320 g·mm	max. 15,000
79.350.125	125	4.92	500 g·mm	max. 15,000

1) Unbalance g·mm are reference values, small variances possible  
 Additional sizes may be available – please contact Haimer USA for more information

## TORQUE WRENCH WITH EXTENSION AND BOX NUT FOR HAIMER GRINDING WHEEL ADAPTERS



**Use:**

- For highest runout accuracy (no one-side clamping)
- Optimal power transmission (consistent force application)
- For highest clamping accuracy and repeatability with dial gauge
- Maximum torque for highest clamping force
- Changeable inserts

**Torque wrench with extension and box nut extension**

**Torque wrench**

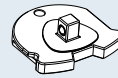
**Order No.** 84.600.01



**Extension**

To accommodate all standard square socket wrench inserts 1/2"

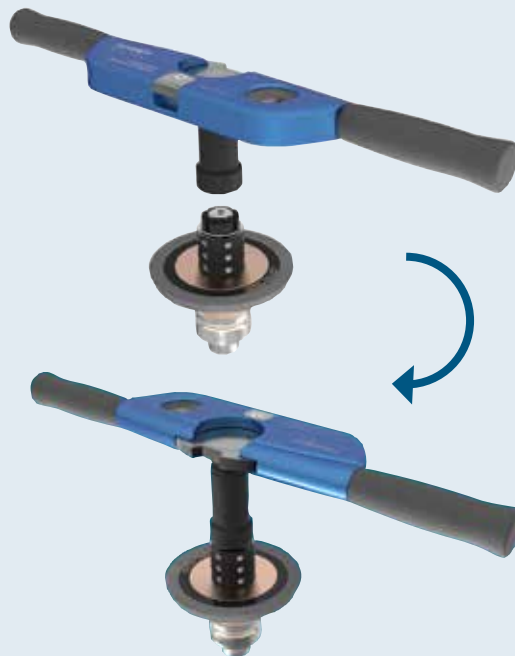
**Order No.** 84.630.1/2z



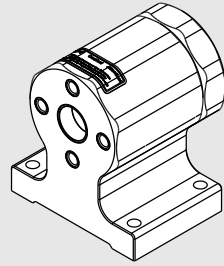
**Box nut 4-KM4**

Suitable for all HAIMER clamping nuts

**Order No.** 915005-0005



## ASSEMBLY STATION – ACCESSORIES



### Tool Clamp – Tool-assembly device:

- Secure tool assembly with minimal physical effort
- Quick-change function for different taper interfaces – without additional tools
- Accident-free assembly of cutting tools
- Elastic locking bolt
- Mechanical security pin
- Better tool clamping, thanks to optimum ergonomics
- Replaceable brass inserts protect the taper surface
- Required space 140 x 100 mm



Tool Clamp



Tool holder SK



Vice

<b>Tool Clamp – without tool holder, 4 x 90° indexable</b>	
<b>Order No.</b>	<b>84.700.00</b>
<b>Tool holder CAT/BT/SK</b>	
<b>Order No.</b>	<b>Type</b>
84.701.30	CAT/BT/SK 30
84.701.40	CAT/BT/SK 40
84.701.50	CAT/BT/SK 50
<b>Tool holder HSK-A</b>	
<b>Order No.</b>	<b>Type</b>
84.702.40	HSK-A40
84.702.50	HSK-A50
84.702.63	HSK-A63
84.702.80	HSK-A80
84.702.10	HSK-A100
<b>Tool holder HSK-C/HSK-E</b>	
<b>Order No.</b>	<b>Type</b>
84.703.32	HSK-C/E32
84.703.40	HSK-C/E40
84.703.50	HSK-C/E50
84.703.63	HSK-C/E63
84.703.80	HSK-C/E80
<b>Tool holder HSK-F</b>	
<b>Order No.</b>	<b>Type</b>
84.704.63.M	HSK-F63 MAKINO
84.704.80.M	HSK-F80 MAKINO
<b>Tool holder PSC</b>	
<b>Order No.</b>	<b>Type</b>
84.705.32	PSC 32
84.705.40	PSC 40
84.705.50	PSC 50
84.705.60	PSC 63
<b>Tool holder KM4X100*</b>	
<b>Order No.</b>	<b>Type</b>
84.706.4X.100	KM4X*
<b>Vice</b>	
<b>Order No.</b>	<b>84.810.22</b>

\*KM4X is a registered trademark/tradename of Kennametal Inc.



Tool Dynamic TD 1002



Tool Dynamic TD Comfort/Comfort Plus

# Want to get the full potential of your grinding machine? Then balance your grinding wheels!

You can find our balancing machines for  
balancing grinding wheel adapters on  
page 610 of the catalog



Tool Dynamic TD 800



Tool Dynamic TD Preset Microset





# SHRINKING TECHNOLOGY



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Shrinking  
Technology

HAIMER

**HAIMER** Power Clamp  
Premium i4.0

See the HAIMER Power Clamp  
Shrink Fit System in Action:



# Top 10 Reasons to Use HAIMER Shrink Fit Technology

1

**Unsurpassed machining accuracy**

We guarantee  $< 0.00012''$  ( $3\mu\text{m}$ ) run-out at 3xD.  
This degree of accuracy is consistently repeatable for any number of operators from shift to shift.

2

**Slim profiles – perfect for 5-axis machining**

HAIMER Shrink Fit tool holders have very slim profiles.  
They can also be modified to a straight-walled design if needed in order to prevent tool holder collision with the work piece.

3

**Gripping torque**

Our shrink fit chucks grip the cutting tool  $360^\circ$  around the shank on multiple planes,  
delivering very high gripping torque that prevents chatter during roughing or finishing operations.

4

**Consistency of setup**

A unique benefit of HAIMER shrink fit is that it eliminates any variation between tool changes.  
Removing these variables means regardless of the operator and their experience level,  
you will get repeatable uniformity in tooling setup and equally consistent results.

5

**Extended reach options**

Shrink fit extensions provide many options. For example, when machining deep cavities,  
you can place shrink fit extensions into standard shrink fit chucks, getting unsurpassed gage lengths with minimal run-out.

6

**Balance accuracy and repeatability**

We hold our shrink fit holders to the highest balance accuracy standards ( $G2.5 @ 25,000 \text{ RPM}$ ).  
Since shrink fit holders have no moving parts, it offers the best balance repeatability of any tool holding system on the market.

7

**Reduction of tool changing time & less tool holder accessory inventory**

Nothing beats the tool change time of our shrink fit chucks when combined with the HAIMER Power Clamp shrink fit machines. Tool changes can be done in less than 5 seconds.

8

**Clean bores**

Run-out accuracy is often compromised if contaminants are introduced to the bore of a tool holder during machining.  
A shrink fit chuck is a sealed system by design. This minimizes the introduction of contaminants.

9

**Coolant options**

Our shrink fit chucks are available with a variety of coolant options, including our Cool Jet and Cool Flash technology,  
which delivers coolant down to the cutting edge of the tool.  
This helps clean out chips and can aid in providing better part finishes.

10

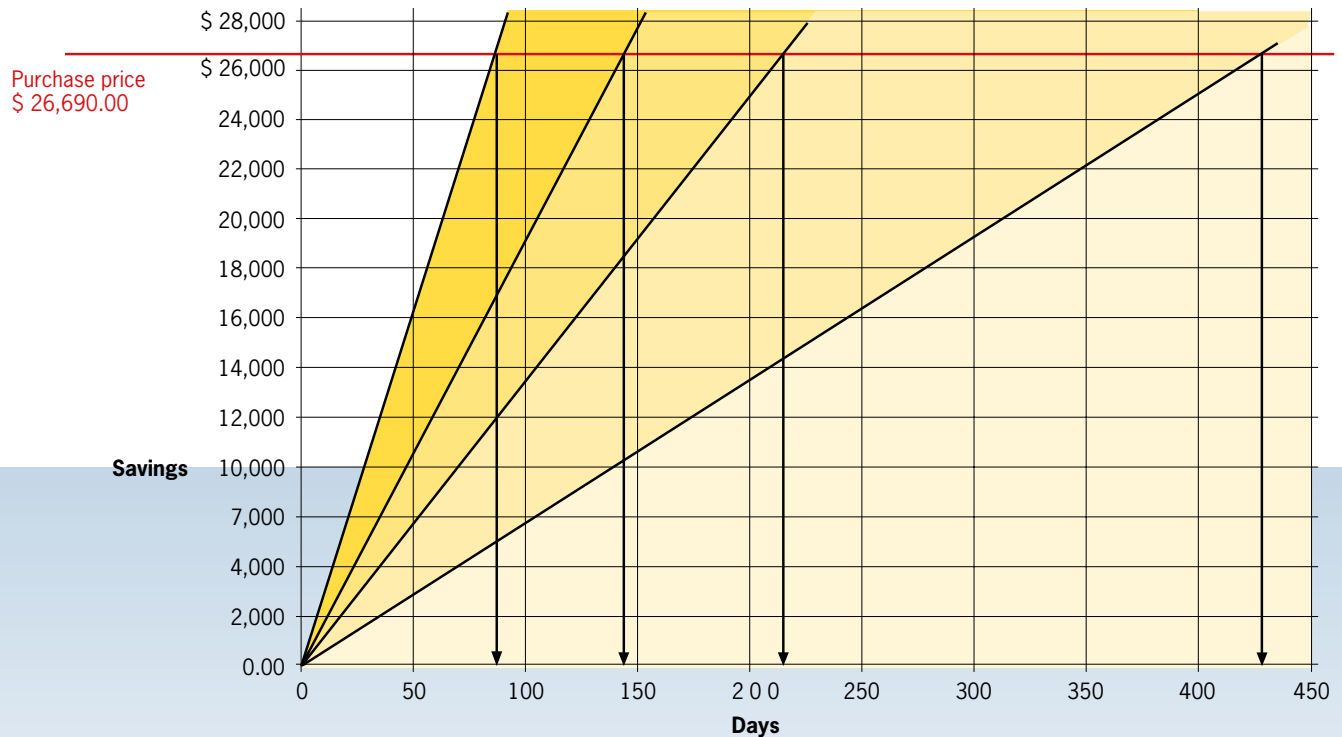
**Availability**

Bestseller machines are available and stocked locally.  
All other configurations and modifications are available per order within just a couple of weeks.  
Shrink fit holders are available in stock in a wide variety of lengths in the most common spindle interfaces.

THE POWER CLAMP SYSTEM

# Amortization HAIMER Power Clamp

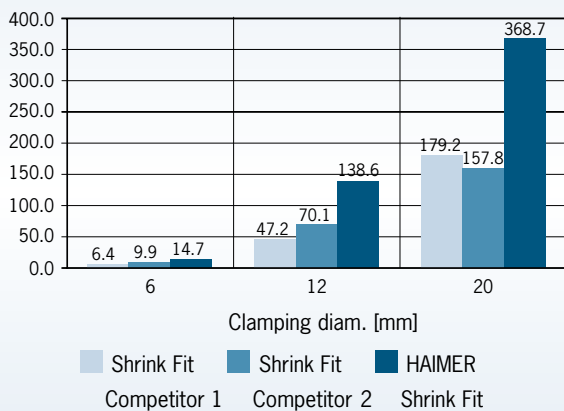
The following diagram shows the amortization of the Power Clamp Comfort NG with Speed Cooler in relation to the number of shrink cycles per day.



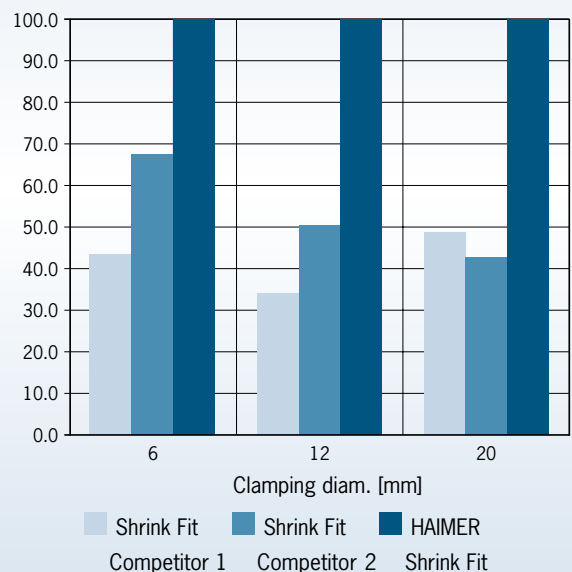
Time Savings: 5 min. per cycle  
 Cost per Employee/Hour: \$50.00/h

## Gripping Torque Data:

Clamping torque, absolute values [ft/lb]



Clamping torque, percentage (HAIMER = 100%)



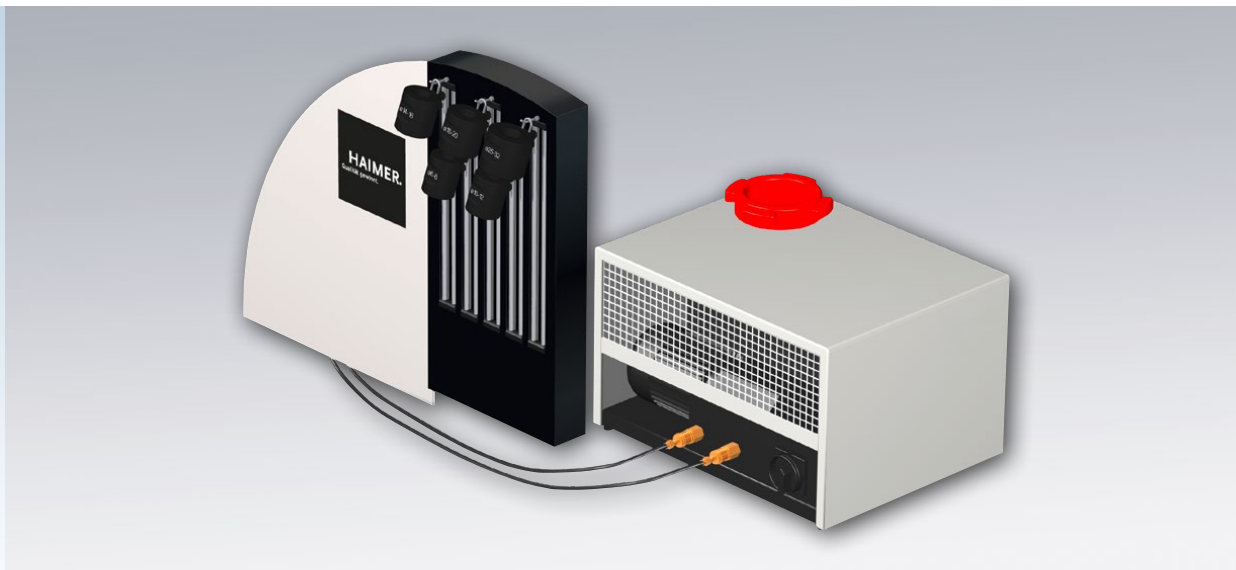
## THE POWER CLAMP SYSTEM

### The Contact Cooling

**The patented cooling system from HAIMER is the quickest and cleanest method of cooling shrink fit chucks. There is a suitable cooling body for every chuck.**

The cooling body has full surface contact with the shrink fit chuck and extracts the heat smoothly. A water cycle cools the cooling body.

The cooling procedure takes place evenly and gently. There is no deformation of the chuck. The runout accuracy is preserved. The chucks do not come into contact with the water. They remain dry and do not rust. The work place also remains clean and dry.



#### Cooling body for rapid cooling

- Cooling in record time: approx. 30 sec.
- Tool holders remain dry
- No build-up of rust
- No time lost through drying process
- Even cooling, runout accuracy is maintained
- Hot points are always covered, no risk of injury
- Hot parts don't need to be touched
- Gentle handling of chuck, no shocking
- No heating of cooling body, even after lots of shrink fit procedures: heat is removed with contact cooling
- 5 cooling bodies for all standardized chucks
- No messy water = a clean work space

## THE POWER CLAMP SYSTEM

## The Coil Technology

**The induction coil is the core of inductive shrink fit technology.** HAIMER has been the leading developer of inductive shrink fit technology for tool holders for years. A number of patents, predominantly in the field of induction coils, is the visible proof of our innovation and advancement.

**Power electronics**

The second component of shrink fit technology is power electronics. It supplies the coil with power. Frequency and current must be exactly coordinated with one another to do this. Heating must take place within seconds, without overheating the chuck. A specially developed procedure

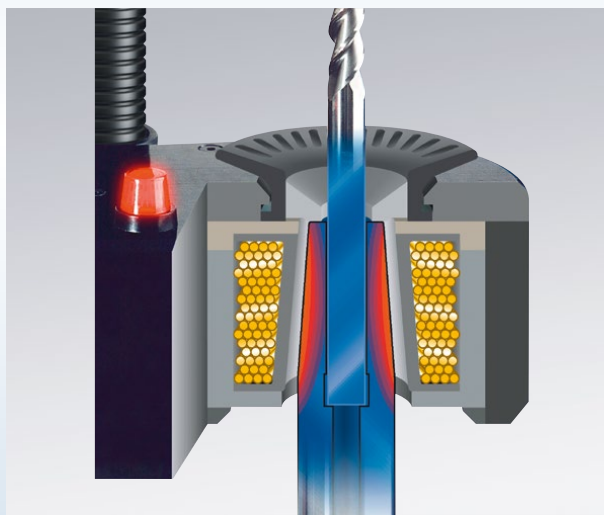
for power regulation makes sure this is the case, independent of the main voltage. HAIMER offers shrink fit equipment with an output of 10 to 20 kW.

**Operation**

Equally decisive for the success of an investment is its acceptance among your employees. A machine, which is used happily and frequently, pays for itself within a short period of time. HAIMER shrink fit equipment can be equipped for any purpose and need. From a simple device with one shrink fit station and no cooling, up to fully equipped machines with rotary table, integrated contact cooling and system cart.

**The standard coil**

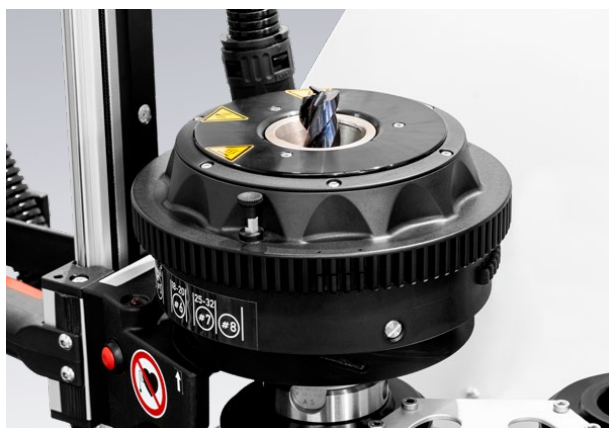
The standard coils have been proven for years with interchangeable stop disks. All shrink fit chucks with a diameter of 1/8" – 1 1/4" (3 to 32 mm) can be heated with a single coil. Just 5 stop disks are enough to adapt the coil to each chuck, from the smallest to the largest.

**The standard coil**

With over 20 years of experience in making inductive shrink fit machine coils, HAIMER has evolved our standard coil to be a very solid and efficient component on our machines. Through our intelligent control, the coil only activates the inductive zones that will most effectively heat up the shrink fit chuck in order to give long lasting tool holder life.

## THE POWER CLAMP SYSTEM

## The New Generation Coil Technology

**The NG (New Generation) coils**

The intelligent NG coils are particularly flexible, comfortable and adjustable. With one turn, you can set the coil to the size of the shrink fit chucks, both in length and diameter. Stop disks are no longer necessary. This means the chuck is only heated where it is intended, even with special sizes.

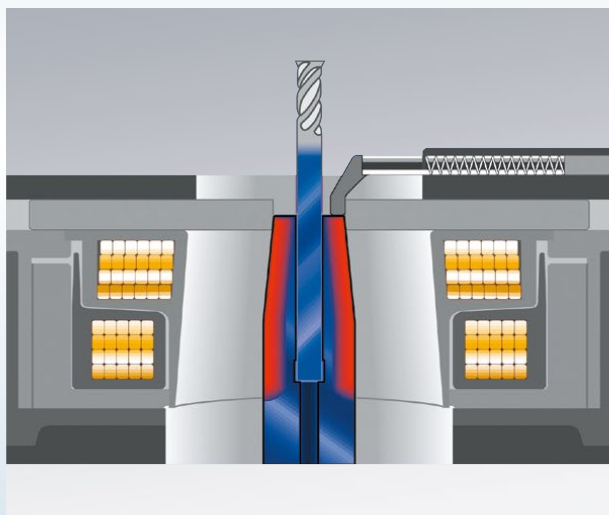


Picture shows motorized coil with auxiliary fume extraction unit

**The motorized New Generation (NG) coil**

For the most convenient and automated shrinking process the motorized NG coil on a HAIMER i4.0 shrink machine is highly recommended in conjunction with a hand scanner. The intelligent, motorized NG coil adjusts automatically to the correct tool diameter and length for heating up the tool holder / shrink fit collet with the right parameters. Just scan the tool holder or shrink fit collet's data-matrix code and the coil's motor starts to move the coil to the right position.

Place the motorized NG coil on the shrink fit chuck / collet and start inductive heating at the push of a button. This leads to a very smooth, consistent and operator independent shrinking process.

**The NG Coils have two heating zones**

In an effort to maximize the efficiency of the heating process, HAIMER has a revolutionary two heating zone design in their NG (New Generation) intelligent coils. This allows for even and efficient heating across the nose of the shrink fit chuck – leading to longer tool holder life. These coils also can adapt themselves to ultra-short shrink fit chucks easily and ultra-short shrink fit chucks can often provide a benefit in the machining process.



## THE POWER CLAMP SYSTEM

## Basic Line / Profi Line / i4.0 Line

**HAIMER has the right shrink fit technology for any need.** Take advantage of the largest range of shrink fit equipment and coils in the world.



### Basic Line: Concentrating on the basics.

The Basic Line is the economical entrance into inductive shrink fit technology. The power electronics enables problem free shrinking. The mechanical construction of the equipment has been kept deliberately simple and functional. There are just single chuck solutions.

The Basic Line equipment is exclusively designed for operation with standard coils. It is not possible to upgrade.

The Basic Line is ideal for the price-conscious user, who only wants to shrink a few tools on a daily basis.

For micro machining purposes, the special horizontal shrink fit machine Power Clamp Nano is part of the program. It combines perfectly easy tool handling of small diameters and fast tool exchange.

## THE POWER CLAMP SYSTEM



### Profi Line: Modular Versatility.

The Profi Line offers the full range of performance and is unbeatable in efficiency. High performance coils, contact cooling and a rotary table guarantees simultaneous shrinking and cooling in record time. No wishes remain unfulfilled.

The machines of the Profi Line work with both the standard coils and the intelligent, comfortable NG coils. Of course, the equipment recognizes each coil and chooses the correct shrink fit parameters automatically.

The shrink fit machines of the Profi Line form a modular system. The start-up Power Clamp Economic machine can gradually be upgraded to the high-end Power Clamp Comfort NG.

### i4.0 Line: Network-compatible and communicative.












In addition to the well-known machines of the Basic and Profi line, the all-new Industry 4.0-ready and network-compatible series was developed with its Power Clamp Premium i4.0, Sprint i4.0, Preset i4.0, Air i4.0, Comfort i4.0 and Nano i4.0 models.

The machines are equipped with a workshop friendly 7" touch display and new intuitive software, which makes machine operation with or without gloves even easier. Upon request, the Power Clamp i4.0 devices can also be equipped with a hand-held scanner that is able to read the shrinking parameters of Data-Matrix codes. This way automated shrinking is easier than ever before.

The new and ergonomic shrinking stations have a modern and high-quality design. Due to their patented NG coil, they are suited for both solid carbide and HSS tools with diameters from 1/8" – 1 1/4" (3 to 32 mm).

EQUIPMENT FEATURES

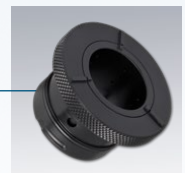
Symbol	Line Feature	Basic Line			Profi Line				
		Nano	Mini	Basic	Economic	Economic NG	Economic Plus	Economic Plus NG	Comfort
									
	Single chuck version	●	●	●	●	●	●	●	—
	Cooling and Shrinking simultaneously	—	—	—	○	○	○	○	●
	Rotary table	—	—	—	○	○	○	○	●
	Cooling	●	—	—	○	○	●	●	●
	Speed Cooler with Cooling Manager	—	—	—	○	○	●	●	●
	TME Cooling system	—	—	—	—	—	○	○	○
	Modular system	—	—	—	●	●	●	●	●
	Standard coil	—	●	●	●	○	●	○	●
	Variable NG coil	—	—	—	○	●	○	●	○
	Intelligent motor coil	—	—	—	○	○	○	○	○
	13 kW HD coil	—	—	—	○	○	○	○	○
	20 kW coil	—	—	—	—	—	—	—	—
	5 keys membrane keypad	●	●	●	●	●	●	●	●
	Industry 4.0 ready	—	—	—	—	—	—	—	—
	7" Touchscreen	—	—	—	—	—	—	—	—
	Hand-held scanner	—	—	—	—	—	—	—	—
	Length presetting	●	—	—	○*	○*	○*	○*	○*
	System cart	○	○	○	○	○	○	○	○
	Auxiliary fume extraction unit	—	○	○	○	○	○	○	○

				i4.0 Line						
Comfort NG	Profi Plus NG	Preset NG	Premium Plus	Nano NG i4.0	Air i4.0 Eco	Air i4.0 Comfort	Comfort i4.0	Preset i4.0	Premium i4.0	Sprint i4.0
										
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Shrinking Technology

# Power Clamp Nano

Horizontal shrink fit machine for small tools.



**Air cooling**  
Cooling by compressed air, regardless of contour and safest handling for small tool holders



Stop disk



Chuck support for tool holders with bayonet clamping

**Length presetting**  
Horizontal length presetting unit  
Tolerance 0.05 mm

## POWER CLAMP BASIC LINE POWER CLAMP NANO

### Power Clamp Nano

- Easy tool handling by horizontal shrinking
- With Power Clamp Nano air cooling
- With length presetting
- With calibration adapter
- Power: 13 kW
- Mains voltage: 3x400–480V, 16A
- Tools: solid carbide and HSS from  $\varnothing$  1/8" – 5/8" (3 – 16 mm)

### Technical details

– Mains voltage	3x400–480 Volt, 16 Ampere, 13 kW
– Compressed Air	6 bar
– Tools	solid carbide and HSS
– Tool diameter	1/8" – 5/8" (3 – 16 mm)
– Maximum length of shrink fit chuck with tool	9" (230 mm)
– Dimensions WxDxH	28" x 24" x 25" (715 x 600 x 630 mm)
– Weight	165 lbs (75 kg)
– <b>Order No.</b>	<b>80.160.01.3</b>

### Accessories

	Order No.
– Chuck support for Power Clamp Nano	see page 583
– Cooling nozzle for Mini Shrink $\varnothing$ 3–12 mm	80.164.02
– Clips for tools for length presetting	
– $\varnothing$ 3 mm	80.166.03
– $\varnothing$ 4 mm	80.166.04
– $\varnothing$ 5 mm	80.166.05
– $\varnothing$ 6 mm	80.166.06
– $\varnothing$ 8 mm	80.166.08
– $\varnothing$ 10 mm	80.166.10
– $\varnothing$ 12 mm	80.166.12
– Set of clips incl. plate	80.166.00



#### Calibration adapter for length presetting

For resetting the measuring device



#### Clips for tools (optional)

For safest and precise handling of high quality carbide tools – especially with smaller diameters

# Power Clamp Mini Power Clamp Basic

Entry-level shrink fit machine without cooling.



Power Clamp Mini

Power Clamp Basic

POWER CLAMP BASIC LINE  
 POWER CLAMP MINI  
 POWER CLAMP BASIC

### Power Clamp Mini

- Power: 10 kW
- Mains voltage: 3 x 400–480 V, 16 A
- Tools: solid carbide and HSS from  $\varnothing$  1/8" – 5/8" (3 – 16 mm)
- With 1 base holder
- With 1 chuck support

#### Technical details

– Mains voltage	3x400–480 Volt, 16 Ampere, 10 kW
– Tools	Solid carbide and HSS
– Tool diameter	1/8" – 5/8" (3 – 16 mm)
– Maximum total length	13.8" (350 mm)
– Dimensions WxDxH	25" x 35" x 24" (650 x 900 x 600 mm)
– Weight	99 lbs (45 kg)
– <b>Order No.</b>	<b>80.143.00.3</b>

### Power Clamp Basic

- Power: 10 kW
- Mains voltage: 3 x 400–480 V, 16 A
- Tools: solid carbide and HSS from  $\varnothing$  1/8" – 1 1/4" (3 – 32 mm)
- With 1 base holder
- With 1 chuck support

#### Technical details

– Mains voltage	3x400–480 Volt, 16 Ampere, 10 kW
– Tools	Solid carbide and HSS
– Tool diameter	$\varnothing$ 1/8" – 1 1/4" (3 – 32 mm)
– Maximum total length	13.8" (350 mm)
– Dimensions WxDxH	26" x 35" x 24" (650 x 900 x 600 mm)
– Weight	99 lbs (45 kg)
– <b>Order No.</b>	<b>80.150.00.3</b>

#### Accessories

#### Order No.

- |   |              |
|---|--------------|
| – Chuck support for single-chuck system | See page 584 |
|---|--------------|



## POWER CLAMP PROFI LINE

## Power Clamp Profi Line: The modular system

### Step by step more shrink fit technology

Basic unit can be combined with two rear walls and two base plates. The chuck support for the rotary table will be supplied as requested.

#### Accessories

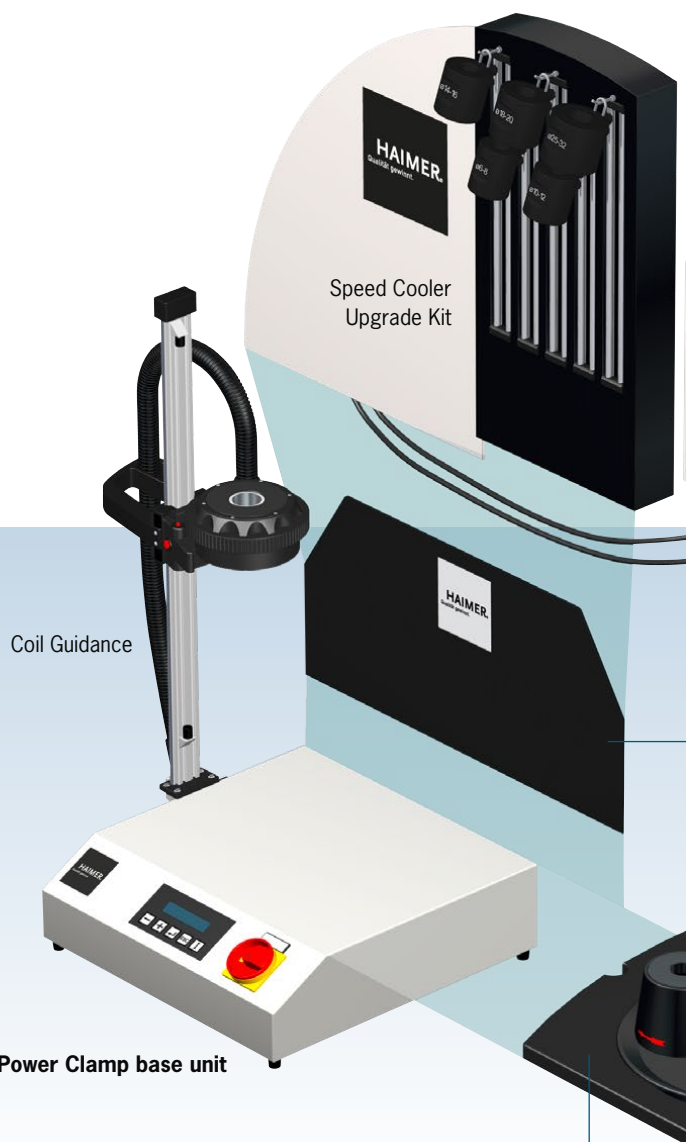
- **Speed-Cooler Upgrade Kit: Expansion Plane 1**  
Speed-Cooler with rear wall incl. 5 cooling bodies  
Order No. 80.115.01

---

- **Rotary table Upgrade Kit: Expansion Plane 2  
(= Power Clamp Comfort)**  
Base plate with rotary table for 3 chucks  
incl. craning boxes  
(For a full Comfort machine, both expansion planes #1  
and #2 are required)  
Order No. 80.116.00

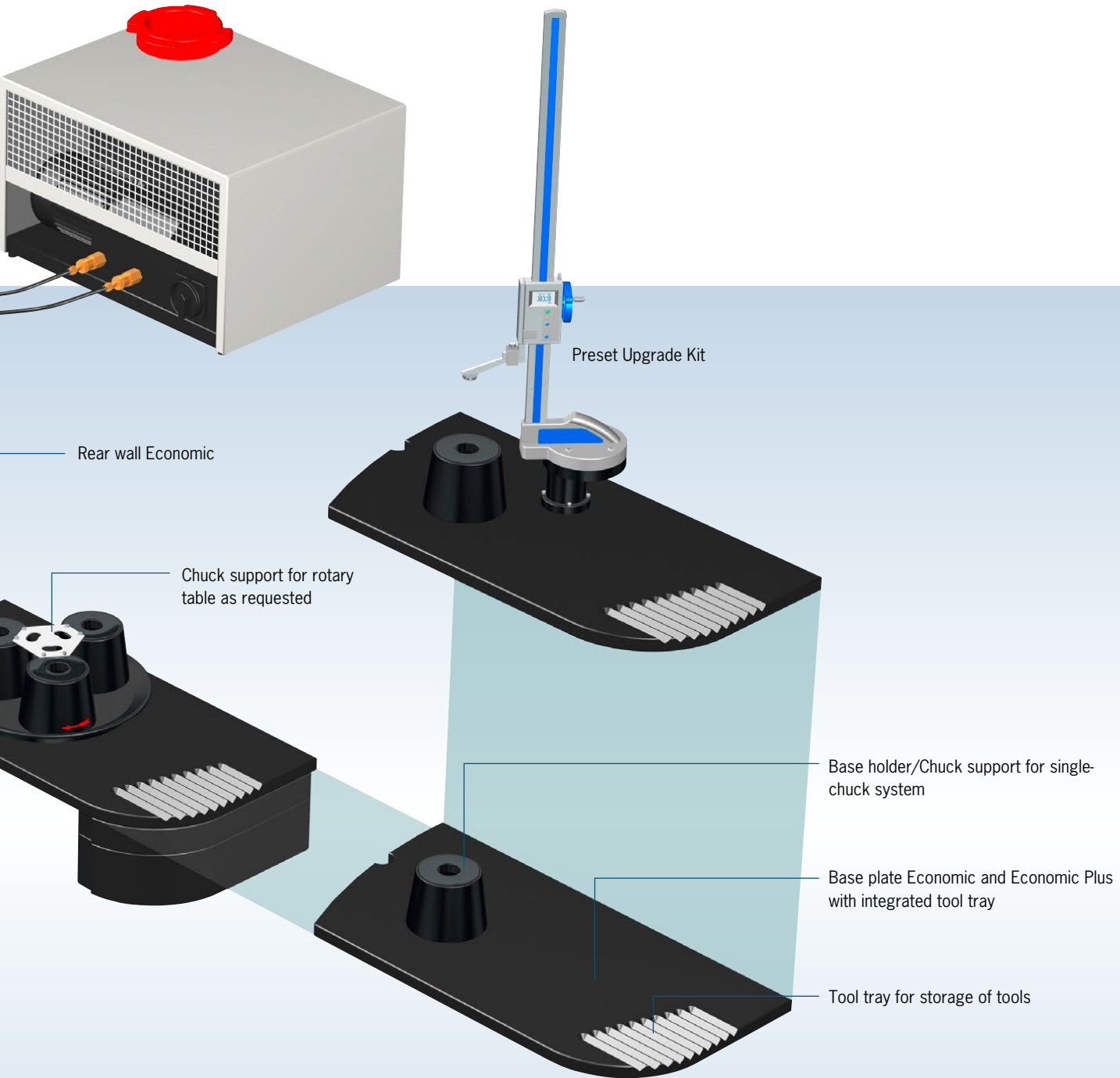
---

- **Preset Upgrade Kit**  
Measuring plate, height gage,  
2 precision base holders incl. craning boxes  
Order No. 80.117.00



Base plate standard made of aluminum with rotary table,  
integrated tool tray and craning boxes

# POWER CLAMP PROFI LINE



## POWER CLAMP PROFI LINE

## Power Clamp Profi Line Program

**Start with the essential, then upgrade as needed:  
Keep an eye on the future.**

An entrance into modern shrink fit technology: State-of-the-art coil technology at low costs. The question is not "Should I invest in shrink fit technology" but rather "When will I invest in shrink fit technology". It is now time to invest in the technology of the future.

**Our modular system offers the ideal  
start-up solution.**



## POWER CLAMP PROFI LINE

## Technical details

– <b>Basic unit Comfort</b>	3x400–480 Volt, 16A, 13 kW
– Maximum length of shrink fit chuck (longer chucks upon request)	20" (510 mm)
– Dimensions WxDxH	33" x 24" x 38" (840 x 600 x 970 mm)
– Weight	154 lbs (70 kg)
– <b>Speed-Cooler unit</b>	115 Volt/60 Hz, 1 kW
– Dimensions WxDxH	22" x 18" x 16" (565 x 450 x 400 mm)
– Weight	99 lbs (45 kg)



**Power Clamp Economic Plus NG**  
with cooling, without rotary table, incl. 1 base holder and 1 chuck support, with integrated tool tray



**Power Clamp Comfort NG**  
with cooling, rotary table, 1 chuck support, integrated tool tray and craning boxes



**Power Clamp Profi Plus NG**  
**High powered shrink fit machine**

- Heating power 20 kW
- For shrinking of tools from  $\varnothing 1/8" - 2"$  (3 – 50 mm)
- For HSS- and solid carbide tools
- Big coil for  $\varnothing 1\frac{1}{2}" - 2"$  (40 – 50 mm) optional
- Incl. rotary table and chuck support
- Incl. tool tray
- With craning boxes for accessories

# Power Clamp Profi Line

## HAIMER Power Clamp New Generation

### 1 Single hand operation

- Positioning of coil and starting of shrink process with one hand

### 2 Cooling bodies for rapid cooling

- Chucks remain dry
- No rust
- Hot spots always covered, no danger of injury
- Hot parts don't need to be touched

### 3 The turning table

- Work fast and efficiently
- Heating and cooling at the same time on 3 stations
- No idle periods



Chuck support

### 4 Chuck support for 3 chucks

- For all actual tapers
- Different taper combinations possible

### 5 The tool tray

- For laying down cutting tools
- Integrated in base plate

### 8 The system cart

- For a clearly arranged and ergonomic work place



Picture shows Power Clamp Comfort NG with accessories and system cart

### 6 The craning boxes

- For accessories
- Everything close at hand

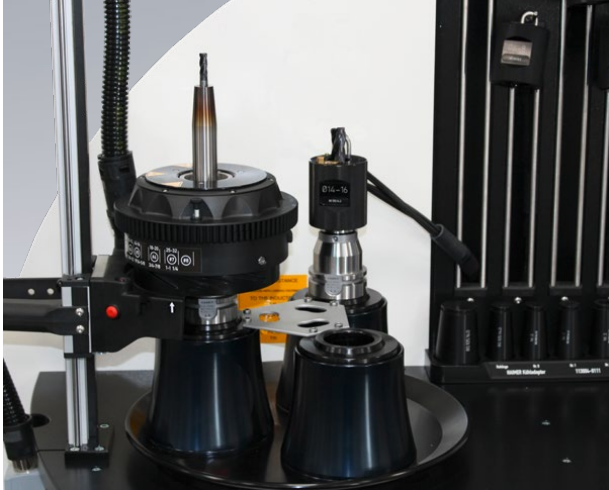
### 7 The display

- User-friendly operating panel
- Clear, compact and easy to handle

### 9 The drawer

- Profiled inserts for accessories
- Everything in its place

## POWER CLAMP PROFI LINE HAIMER POWER CLAMP NEW GENERATION

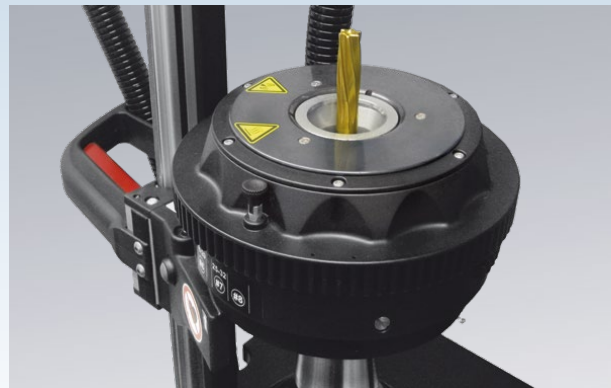


### Safe, dry, fast cooling

- Efficient: Shrink one holder while cooling another
- Water-cooled cooling bodies
- Concentrated cooling efficiency due to contact cooling
- Even cooling: No material deformation

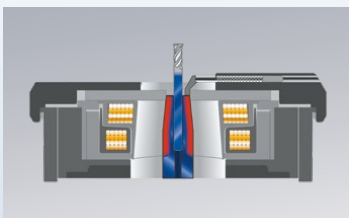
### Intelligent patented coil technology:

The coil adjusts itself to the chuck in length and diameter. Therefore only the shrinking area of the chuck will be warmed – nothing else. Shrinking and cooling will be much faster.

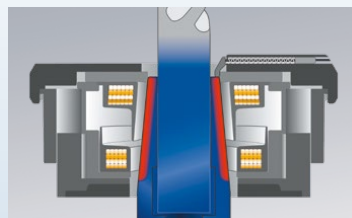


### More efficiency, more flexibility, easier handling.

- Coil adjusts itself to the chuck
- Perfect magnetic flow due to length adjustment of the coil
- Optimal heat distribution due to length adjustment of the coil
- Lower chuck warming
- Shorter shrinking time
- Shorter cooling time
- Simple operation
- Contact disks are no longer necessary
- Suitable for T-shaped groove milling cutters
- Suitable for ultra-short chucks
- Suitable for special shape



Small tool



Big tool

# Power Clamp Economic/ Power Clamp Economic NG

Profi Line entry-level shrink fit machine without cooling.



Power Clamp Economic

Power Clamp Economic NG

POWER CLAMP PROFI LINE  
 POWER CLAMP ECONOMIC  
 POWER CLAMP ECONOMIC NG

### Power Clamp Economic

- With standard coil
- Single chuck version
- Without cooling
- With 1 base holder
- With 1 chuck support
- Power: 13 kW
- Mains voltage: 3x400–480V, 16A
- Tools: solid carbide and HSS from  $\varnothing 1/8'' - 1 1/4''$  (3 – 32 mm)

### Power Clamp Economic NG

- With intelligent NG coil
- Single chuck version
- Without cooling
- With 1 base holder
- With 1 chuck support
- Power: 13 kW
- Mains voltage: 3x400–480V, 16A
- Tools: solid carbide and HSS from  $\varnothing 1/8'' - 1 1/4''$  (3 – 32 mm)

### Technical details

– Mains voltage	3x400–480 Volt, 16 Ampere, 13 kW
– Tools	Solid carbide and HSS
– Tool diameter	$\varnothing 1/8'' - 1 1/4''$ (3 – 32 mm)
– Maximum length of shrink fit chuck	Economic: 20" (510 mm)/Economic NG: 22" (570 mm)
– Dimensions WxDxH	33" x 24" x 38" (840 x 600 x 970 mm)
– Weight	132 lbs (60 kg)
– <b>Power Clamp Economic Order No.</b>	<b>80.110.00.3</b>
– <b>Power Clamp Economic NG Order No.</b>	<b>80.110.00NG.3</b>

### Accessories

	Order No.
– Craning boxes	80.134.00NG
– Chuck support for single-chuck system	See page 584



# Power Clamp Economic Plus/ Power Clamp Economic Plus NG

Advanced Profi Line shrink fit machine with cooling.



Power Clamp Economic Plus



Power Clamp Economic Plus NG

POWER CLAMP PROFI LINE  
 POWER CLAMP ECONOMIC PLUS  
 POWER CLAMP ECONOMIC PLUS NG

### Power Clamp Economic Plus

- With standard coil
- Single chuck version
- With integrated contact cooling
- With 1 base holder
- With 1 chuck support
- Incl. Cooling Manager
- Power: 13 kW
- Mains voltage: 3x400–480V, 16A
- Tools: solid carbide and HSS from  $\varnothing 1/8'' - 1 1/4''$  (3 – 32 mm)

### Power Clamp Economic Plus NG

Upgrade possible with HD coil for shrinking of Heavy Duty Shrink Chucks up to  $\varnothing 50$  mm (optional)

- With intelligent NG coil
- Single chuck version
- With integrated contact cooling
- With 1 base holder
- With 1 chuck support
- Incl. Cooling Manager
- Power: 13 kW
- Mains voltage: 3x400–480V, 16A
- Tools: solid carbide and HSS from  $\varnothing 1/8'' - 1 1/4''$  (3 – 32 mm)

### Technical details

– Mains voltage	3x400–480 Volt, 16 Ampere, 13 kW
– Tools	Solid carbide and HSS
– Tool diameter	$\varnothing 1/8'' - 1 1/4''$ (3 – 32 mm)
– Maximum length of shrink fit chuck	Economic Plus: 20" (510 mm)/Economic Plus NG: 22" (570 mm)
– Dimensions WxDxH	33" x 24" x 38" (840 x 600 x 970 mm)
– Weight	243 lbs (110 kg)
– <b>Power Clamp Economic Plus Order No.</b>	<b>80.110.11.3</b>
– <b>Power Clamp Economic Plus NG Order No.</b>	<b>80.110.11NG.3</b>

### Accessories

	Order No.
– Craning boxes	80.134.00NG
– Chuck support for single-chuck system	See page 584
– Upgrade Kit 13 kW HD coil for Economic Plus NG	80.151.30.10

# Power Clamp Comfort/ Power Clamp Comfort NG

Profi Line high performance shrink fit machine for the ambitious with 3 stations and cooling.



Power Clamp Comfort

Power Clamp Comfort NG

POWER CLAMP PROFI LINE  
 POWER CLAMP COMFORT  
 POWER CLAMP COMFORT NG

### Power Clamp Comfort

- With standard coil
- Rotary table with 3 stations
- With integrated contact cooling
- Incl. Cooling Manager
- With 1 chuck support for rotary table
- With craning boxes
- Power: 13 kW
- Mains voltage: 3x400–480V, 16A
- Tools: solid carbide and HSS from  $\varnothing 1/8" - 1 1/4"$  (3 – 32 mm)

### Power Clamp Comfort NG

Upgrade possible with HD coil for shrinking of Heavy Duty  
 Shrink Chucks up to  $\varnothing 50$  mm (optional)

- With intelligent NG coil
- Rotary table with 3 stations
- With integrated contact cooling
- Incl. Cooling Manager
- With 1 chuck support for rotary table
- With craning boxes
- Power: 13 kW
- Mains voltage: 3x400–480V, 16A
- Tools: solid carbide and HSS from  $\varnothing 1/8" - 1 1/4"$  (3 – 32 mm)

### Technical details

– Mains voltage	3x400–480 Volt, 16 Ampere, 13 kW
– Tools	Solid carbide and HSS
– Tool diameter	$\varnothing 1/8" - 1 1/4"$ (3 – 32 mm)
– Maximum length of shrink fit chuck	Power Clamp Comfort: 20" (510 mm)/Comfort NG: 22" (570 mm)
– Dimensions WxDxH	33" x 24" x 38" (840 x 600 x 970 mm)
– Weight	254 lbs (115 kg)
– <b>Power Clamp Comfort Order No.</b>	<b>80.100.01.3</b>
– <b>Power Clamp Comfort NG Order No.</b>	<b>80.100.01NG.3</b>

### Accessories

	Order No.
– Chuck support for rotary table	See page 587
– Upgrade Kit 13 kW HD coil for Power Clamp Comfort NG	80.151.30.10

# Power Clamp Profi Plus NG

High performance shrink fit machine for professionals up to Ø 2" (50 mm) and with cooling.



## POWER CLAMP PROFI LINE POWER CLAMP PROFI PLUS NG

### Power Clamp Profi Plus NG

- With intelligent NG coil
- Rotary table with 3 stations
- With integrated contact cooling
- Incl. Cooling Manager
- Second coil for  $\varnothing 1\frac{1}{2}$ " – 2" (40 – 50mm)
- With 1 chuck support for rotary table
- Power: 20 kW
- Mains voltage: 3x400–480V, 32A
- Tools: solid carbide and HSS from  $\varnothing 1/8$ " – 2" (3 – 50 mm)

### Technical details

– Mains voltage	3x400–480 Volt, 32 Ampere, 20 kW
– Tools	Solid carbide and HSS
– Tool diameter	$\varnothing 1/8$ " – 2" (3 – 50 mm)
– Maximum length of shrink fit chuck	22" (570 mm)
– Dimensions WxDxH	39" x 24" x 38" (1000 x 600 x 970 mm)
– Weight	282 lbs (128 kg)
– <b>Power Clamp Profi Plus NG Order No.</b>	<b>80.100.11NG.3</b>

### Accessories

### Order No.

– Chuck support for rotary table	See page 587
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# Power Clamp Preset NG

High performance shrink fit machine for professionals with length presetting and cooling.



## POWER CLAMP PROFI LINE POWER CLAMP PRESET NG

### Power Clamp Preset NG

Upgrade possible with HD coil for shrinking of Heavy Duty  
Shrink Chucks up to Ø 2" (50mm) (optional)

- With vertical stop for length presetting
- With intelligent NG coil
- Single chuck version
- With integrated contact cooling
- Incl. Cooling Manager
- With 2 precision base holders
- With 2 precision chuck supports
- Power: 13 kW
- Mains voltage: 3x400–480V, 16A
- Tools: solid carbide and HSS from Ø 1/8" – 1 ¼" (3 – 32 mm)

#### Technical details

– Mains voltage	3 x 400–480 Volt, 16 Ampere, 13 kW
– Tools	Solid carbide and HSS
– Tool diameter	Ø 1/8" – 1 ¼" (3 – 32 mm)
– Maximum length of shrink fit chuck	22" (570 mm)
– Dimensions WxDxH	33" x 24" x 43" (840 x 600 x 1110 mm)
– Weight	243 lbs (110 kg)
– <b>Power Clamp Preset NG Order No.</b>	<b>80.130.01NG.3</b>

#### Accessories

#### Order No.

– Precision chuck support	See page 585
– Upgrade Kit 13 kW HD coil	80.151.30.10



# Power Clamp Premium Plus

High-end shrink fit machine for absolute process reliability.



## POWER CLAMP PROFI LINE POWER CLAMP PREMIUM PLUS

### High-end shrink fit machine with two separate electronic units and two coils

- Power: 33 kW
- Mains voltage: 3x400V, 63A
- Tools: solid carbide and HSS from Ø 1/8" – 2" (3 – 50 mm)
- With intelligent coil VS32m and 20 kW coil
- TME Intelligent Cooling System with temperature control
- Automatic move-up of the cooling bodies after the termination of the cooling process (temperature-time controlled)
- Integrated contact cooling with six cooling bodies
- Linear guided cooling bodies
- No damage at the edges of the cutting tool
- Incl. Cooling Manager
- Two length presetting units with height stop
- Incl. 2 precision base holders and 2 precision chuck supports
- 3 integrated drawers

### Technical details

– Mains voltage	3x400 Volt, 63Ampere, 33kW
– Compressed Air	87 psi (6 bar)
– Tools	Solid carbide and HSS
– Tool diameter	Ø 1/8" – 2" (3 – 50 mm)
– Maximum length of shrink fit chuck	21" (535 mm)
– Dimensions WxDxH	63" x 35" x 91" (1601 x 890 x 2300 mm)
– Weight	1,676 lbs (760 kg)
– <b>Power Clamp Premium Plus Order No.</b>	<b>80.170.10.3</b>

### Accessories

	Order No.
– Precision chuck support	See page 586
– Precision base holder for chuck support	80.131.01



Power Clamp Nano NG i4.0



Power Clamp Air i4.0 Eco/Comfort



Power Clamp Comfort i4.0



Power Clamp Preset i4.0

# POWER CLAMP i4.0 Line: Shrinking Technology Industry 4.0-ready

With the new Power Clamp i4.0 series, HAIMER is setting new standards regarding digital connectivity and communication of tools and machines in the world of manufacturing.



Power Clamp Premium i4.0



Power Clamp Sprint i4.0

## POWER CLAMP i4.0 LINE

## Power Clamp i4.0 Line Highlights

**With the new Power Clamp i4.0 series, HAIMER is setting new standards regarding digital connectivity and communication between tools and machines in the world of manufacturing.**

All Power Clamp i4.0 shrink fit machines are equipped with the following features:

- 7" Touch-Display and new intuitive software for simplified usability
- Network-compatible and Industry 4.0-ready for communication on the shopfloor
- Scanner to readout shrinking parameters from Data-Matrix codes (optional)
- Patented NG-coil for tool diameters from  $\varnothing 1/8" - 1 1/4"$  (3 – 32 mm)

**Touch-Display**

- 7" Touch-Display and new intuitive software
- User-friendly Interface
- Illustrated functions
- Clear symbols, large font
- Robust color display
- Water, scratch and impact resistant

**Hand-held scanner**

Scanner to readout shrinking parameters from Data-Matrix codes for easiest automatic shrinking (optional)

## POWER CLAMP i4.0 LINE

## Cooling i4.0



## POWER CLAMP PREMIUM i4.0

**Contact cooling with signaling of the right cooling station**

- Cooling body for rapid cooling
- Automatic signaling of the right cooling station for easy, fast and safe cooling
- Cooling in record time: approx. 30 sec.
- Tool holders remain dry, no build-up of rust
- Gentle handling of chuck by even cooling; runout accuracy is maintained
- Hot points are always covered, no risk of injury

## POWER CLAMP SPRINT i4.0

**Cooling regardless of the outside contour**

- One size fits all – cooling for all kinds of cutting tools, no more selecting of cooling bodies
- Safe, smooth and clean cooling without dirt and water residue
- Intelligent cooling system with temperature control

# Power Clamp Nano NG i4.0

Horizontal i4.0 shrink fit machine for tool holders and shrink fit collets.



**Chuck support for tool holders with bayonet clamping**



**Clips for tools (optional)**  
For safest and precise handling of high quality carbide tools – especially with smaller diameters



**Calibration adapter for length presetting**  
For resetting the measuring device

## POWER CLAMP i4.0 LINE POWER CLAMP NANO NG i4.0

**Power Clamp Nano NG i4.0 is especially suitable for small tool holders in high frequency spindles, for shrink fit collets and for shrink fit chucks up to CAT40/HSK-A63.**

- Easy tool handling by horizontal shrinking
- With intelligent motor coil
- With scanner to readout shrinking parameters from tool holders (Data-Matrix code)
- With air cooling for tools up to outer diam. 1 ¼" (32 mm)
- With length presetting
- With calibration adapter
- With 7" Touch-Display and new intuitive software
- Industry 4.0-ready due to scanner connection
- With 1 chuck support
- Power: 13 kW
- Mains voltage: 3x400–480V, 16A
- Tools: solid carbide and HSS from Ø 1/8"–1 ¼" (3–32 mm)

### Technical details

– Mains voltage	3 x 400–480 Volt, 16 Ampere, 13 kW
– Compressed Air	58 psi (4 bar)
– Tools	solid carbide and HSS
– Tool diameter	1/8" – 1 ¼" (3 – 32 mm)
– Maximum length of shrink fit chuck with tool	9.8" (250 mm)
– Dimensions WxDxH	31" x 34" x 26" (800 x 860 x 670 mm)
– Weight	209 lbs (94 kg)
– <b>Power Clamp Nano NG i4.0 Order No.</b>	<b>80.160.21NGM.3</b>

### Accessories

	Order No.
– Chuck support for Power Clamp Nano NG i4.0	see page 583
– Set of clips incl. plate	80.166.00
– System Cart	80.124.00.4
– Insert for System Cart	80.124.07

### Application example



#### Shrink Fit Collets

Power Clamp Nano NG i4.0 is perfectly suitable for process reliable shrinking and cooling of shrink fit collets. See pages 758 – 767 to find the shrink fit collet program.



# Power Clamp Air i4.0 Eco

Economic i4.0 shrink fit machine for tool holders and shrink fit collets.



## POWER CLAMP i4.0 LINE POWER CLAMP AIR i4.0 ECO

**Power Clamp Air i4.0 Eco is a high performance shrink fit machine with integrated cooling for all tools (solid carbide and HSS).**

**It is perfectly suitable for process reliable shrinking and cooling of shrink fit collets and tool holders.**

**Smooth and clean cooling of all kinds of tool holders by air – without dirt and water residue.**

- Contour independent air cooling with temperature control
- Pneumatic brake of cooling hood with release-by-touch
- Cooling process finishes automatically
- With 7" Touch-Display and new intuitive software
- Industry 4.0-ready due to scanner connection
- With intelligent NG coil
- Single chuck version
- With 2 precision base holders and 2 precision chuck supports
- With craning boxes
- Incl. Cooling Manager

### Technical details

– Mains voltage	3 x 400–480 Volt, 16 Ampere, 13 kW
– Compressed Air	58 psi (4 bar)
– Tools	Solid carbide and HSS
– Tool diameter	1/8" – 1 1/4" (3 – 32 mm)
– Maximum length of shrink fit chuck (shrinking)	22" (570 mm)
– Maximum length of shrink fit chuck (cooling)	10" (260 mm)
– Dimensions WxDxH	35" x 30" x 43" (880 x 750 x 1100 mm)
– Weight	231 lbs (105 kg)
– <b>Power Clamp Air i4.0 Eco Order No.</b>	<b>80.180.41NG.3</b>

### Accessories

### Order No.

– Scanner to readout shrinking parameters from Data-Matrix codes	80.185.01
– Precision chuck support	See page 585
– Length presetting	80.188.40
– Intelligent motor coil	80.101.03NG
– Auxiliary Fume Extraction Unit	80.101.02NG.01
– System Cart	80.124.00.4
– Insert for System Cart	80.124.06

### Application example



#### Shrink Fit Collets

Power Clamp Air i4.0 Eco is perfectly suitable for process reliable shrinking and cooling of shrink fit collets. See pages 758 – 767 to find the shrink fit collet program.

# Power Clamp Air i4.0 Comfort

Comfort i4.0 shrink fit machine for tool holders and shrink fit collets.



Picture shows 80.180.41NG.3 with length presetting (optional)

## POWER CLAMP i4.0 LINE

### POWER CLAMP AIR i4.0 COMFORT

**Power Clamp Air i4.0 Comfort is a high performance shrink fit machine with integrated cooling for all tools (solid carbide and HSS).**

**It is perfectly suitable for process reliable shrinking and cooling of shrink fit collets and tool holders.**

**Smooth and clean cooling of all kinds of tool holders by air – without dirt and water residue.**

- Contour independent air cooling with temperature control
- Pneumatic brake of cooling hood with release-by-touch
- Cooling process finishes automatically
- With 7" Touch-Display and new intuitive software
- Industry 4.0-ready due to scanner connection
- With scanner to readout shrinking parameters from tool holders (Data-Matrix code)
- With intelligent motor coil
- Single chuck version
- With 2 precision base holders and 2 precision chuck supports
- With craning boxes
- Incl. Cooling Manager

#### Technical details

– Mains voltage	3 x 400–480 Volt, 16 Ampere, 13 kW
– Compressed Air	58 psi (4 bar)
– Tools	Solid carbide and HSS
– Tool diameter	1/8" – 1 1/4" (3 – 32 mm)
– Maximum length of shrink fit chuck (shrinking)	22" (570 mm)
– Maximum length of shrink fit chuck (cooling)	10" (260 mm)
– Dimensions WxDxH	35" x 30" x 43" (880 x 750 x 1100 mm)
– Weight	231 lbs (105 kg)
– <b>Power Clamp Air i4.0 Comfort Order No.</b>	<b>80.180.41NGM.3</b>

#### Accessories

	Order No.
– Length presetting	80.188.40
– Precision chuck support	See page 585
– Auxiliary Fume Extraction Unit	80.101.02NG.01
– System Cart	80.124.00.4
– Insert for System Cart	80.124.06

#### Application example



##### Shrink Fit Collets

Power Clamp Air i4.0 Comfort is perfectly suitable for process reliable shrinking and cooling of shrink fit collets. See pages 758 – 767 to find the shrink fit collet program.

# Power Clamp Comfort i4.0

i4.0 shrink fit machine for the ambitious.



## POWER CLAMP i4.0 LINE POWER CLAMP COMFORT i4.0

With the new Power Clamp i4.0 series, HAIMER is setting new standards regarding digital connectivity and communication in the world of shrink technology.

A 7" Touch-Display and new intuitive software provide simplified usability.

Upgrade possible with HD coil for shrinking of Heavy Duty Shrink Chucks up to Ø 50 mm (optional)

- Industry 4.0-ready due to scanner connection
- With 7" Touch-Display and new intuitive software
- With intelligent NG coil
- Rotary table with 3 stations
- With integrated contact cooling
- Incl. Cooling Manager
- With 1 chuck support for rotary table
- With craning boxes
- Power: 13 kW
- Mains voltage: 3x400–480V, 16A
- Tools: solid carbide and HSS from Ø 1/8" – 1 1/4" (3–32 mm)
- Scanner to readout shrinking parameters from tool holders (Data-Matrix code) (optional)
- TME Cooling System (optional)

### Technical details

– Mains voltage	3 x 400–480 Volt, 16 Ampere, 13 kW
– Tools	Solid carbide and HSS
– Tool diameter	1/8" – 1 1/4" (3 – 32 mm)
– Maximum length of shrink fit chuck	22" (570 mm)
– Dimensions WxDxH	33" x 26" x 38" (850 x 660 x 970 mm)
– Weight	254 lbs (115 kg)
– <b>Power Clamp Comfort i4.0 Order No.</b>	<b>80.100.21NG.3</b>

### Accessories

	Order No.
– Scanner to readout shrinking parameters from Data-Matrix codes	80.185.01
– Chuck support for rotary table	See page 587
– Upgrade Kit 13 kW HD coil for Power Clamp Comfort i4.0	80.151.30.10
– Auxiliary Fume Extraction Unit	80.101.02NG.01
– System Cart	80.124.00.4
– TME Cooling System for 13 kW machines (optional)	80.105.19.01

# Power Clamp Preset i4.0

i4.0 shrink fit machine for the ambitious with length presetting.



## POWER CLAMP i4.0 LINE POWER CLAMP PRESET i4.0

With the new Power Clamp i4.0 series, HAIMER is setting new standards regarding digital connectivity and communication in the world of shrink technology.

A 7" Touch-Display and new intuitive software provide simplified usability.

Upgrade possible with HD coil for shrinking of Heavy Duty Shrink Chucks up to Ø 50 mm (optional)

- Industry 4.0-ready due to scanner connection
- With 7" Touch-Display and new intuitive software
- With vertical stop for length presetting
- With intelligent NG coil
- Single chuck version
- With integrated contact cooling
- Incl. Cooling Manager
- With 2 precision base holders and 2 precision chuck supports
- With craning boxes
- Power: 13 kW
- Mains voltage: 3x400–480V, 16A
- Tools: solid carbide and HSS from Ø 1/8" – 1 1/4" (3–32 mm)
- Scanner to readout shrinking parameters from tool holders (Data-Matrix code) (optional)
- TME Cooling System (optional)

### Technical details

– Mains voltage	3x400–480 Volt, 16 Ampere, 13 kW
– Tools	Solid carbide and HSS
– Tool diameter	1/8" – 1 1/4" (3 – 32 mm)
– Maximum length of shrink fit chuck	22" (570 mm)
– Dimensions WxDxH	34" x 26" x 38" (860 x 660 x 970 mm)
– Weight	254 lbs (115 kg)
– <b>Power Clamp Preset i4.0 Order No.</b>	<b>80.130.21NG.3</b>

### Accessories

	Order No.
– Scanner to readout shrinking parameters from Data-Matrix codes	80.185.01
– Precision chuck support	See page 585
– Precision base holder for chuck support	80.131.01
– Upgrade Kit 13 kW HD coil for Power Clamp Preset i4.0	80.151.30.10
– Auxiliary Fume Extraction Unit	80.101.02NG.01
– System Cart	80.124.00.4
– TME Cooling System for 13 kW machines (optional)	80.105.19.01



# Power Clamp Premium i4.0

Ergonomic i4.0 high-end shrink station.



Picture shows 80.180.01NG with length presetting and scanner (optional)

## POWER CLAMP i4.0 LINE POWER CLAMP PREMIUM i4.0

**Ergonomic high-end shrink station in new, premium quality industrial design with integrated contact cooling for all cutting tools (solid carbide and HSS) and for perfect handling and simultaneous cool-down at max. five cooling stations.**

- With 7" Touch-Display and new intuitive software
- Industry 4.0-ready due to scanner connection
- Power: 13 kW
- Mains voltage: 3x400–480V, 16A
- Tools: solid carbide and HSS from Ø 1/8" – 1 1/4" (3–32 mm)
- With intelligent NG coil
- TME Intelligent Cooling System with temperature control
- Integrated contact cooling with five cooling bodies
- Linear guided cooling bodies with automatic signaling of the right cooling station for easy, fast and safe cooling
- No damage at the edges of the cutting tool
- Incl. Speed Cooler and Cooling Manager
- Incl. 2 precision base holders and 2 precision chuck supports
- Integrated drawer in base cabinet
- Scanner to readout shrinking parameters from tool holders (Data-Matrix code) (optional)
- Length presetting (optional)

### Technical details

– Mains voltage	3 x 400–480 Volt, 16 Ampere, 13 kW
– Tools	Solid carbide and HSS
– Tool diameter	1/8" – 1 1/4" (3 – 32 mm)
– Maximum length of shrink fit chuck	21" (535 mm)
– Dimensions WxDxH	53" x 36" x 71" (1340 x 914 x 1816 mm)
– Weight	1,179 lbs / (535 kg) incl. base cabinet
– <b>Power Clamp Premium i4.0 Order No.</b>	<b>80.180.01NG</b>

### Accessories

	Order No.
– Scanner to readout shrinking parameters from Data-Matrix codes	80.185.00
– Intelligent motor coil for Power Clamp Premium i4.0	80.101.03S
– Precision chuck support	See page 585
– Precision base holder for chuck support	80.131.01
– Length presetting	80.188.00
– Auxiliary Fume Extraction Unit	80.101.02NG.03

# Power Clamp Sprint i4.0

Ergonomic i4.0 shrink station for cooling all geometries.



Picture shows 80.180.21NG with length presetting and scanner (optional)

## POWER CLAMP i4.0 LINE POWER CLAMP SPRINT i4.0

**Ergonomic shrink station in new, premium quality industry design with integrated cooling for all kinds of cutting tools (solid carbide and HSS) and shrink fit collets in record time.**

- With 7" Touch-Display and new intuitive software
- Industry 4.0-ready due to scanner connection
- With intelligent NG coil
- Smooth and clean cooling of all kinds of shrink fit chucks and shrink fit collets regardless of the outside contour by air nozzles and drizzle – without dirt and water residue
- Temperature control for optimized and safe cooling
- No damage at the edges of the cutting tool
- Incl. 2 precision base holders and 2 precision chuck supports
- Integrated drawer in base cabinet
- Scanner to readout shrinking parameters from tool holders (Data-Matrix code) (optional)
- Length presetting (optional)

### Technical details

– Mains voltage	3x400–480 Volt, 16 Ampere, 13 kW
– Compressed Air	87 psi (6 bar)
– Tools	Solid carbide and HSS
– Tool diameter	1/8" – 1 1/4" (3 – 32 mm)
– Maximum length of shrink fit chuck	21" (535 mm)
– Dimensions WxDxH	53" x 38" x 101" (1340 x 962 x 2560 mm) (max. work height) 53" x 38" x 77" (1340 x 962 x 1960 mm) (transportation height)
– Weight	1,213 lbs (550 kg) incl. base cabinet
– <b>Power Clamp Sprint i4.0 Order No.</b>	<b>80.180.21NG</b>

### Accessories

	Order No.
– Scanner to readout shrinking parameters from Data-Matrix codes	80.185.00
– Intelligent motor coil for Power Clamp Sprint i4.0	80.101.03S
– Precision chuck support	See page 585
– Precision base holder for chuck support	80.131.01
– Length presetting	80.188.00
– Auxiliary Fume Extraction Unit	80.101.02NG.03

### Application example

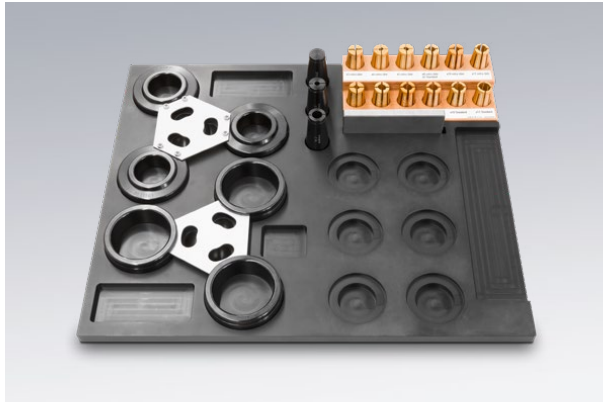


#### Shrink Fit Collets

Power Clamp Sprint i4.0 is perfectly suitable for process reliable shrinking and cooling of shrink fit collets. See pages 758 – 767 to find the shrink fit collet program.

## CARTS AND INSERTS

## Accessories

**Drawer insert for system cart**

(Accessories not included)

**Technical details**

– Drawer Order No.	80.124.04
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**System cart**

- Cart for shrinking machine and accessories
- For a clear and tidy work space
- Ergonomic work height
- Everything at hand
- Optional: Drawers with inserts to store accessories

**Technical details**

– <b>System cart</b>	
Dimensions	1000x620x840 mm
Order No.	80.124.00.4

**Cart for shrink fit machine****Technical details**

– Cart Order No.	80.106.00.3
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## BASE HOLDER



To hold chuck supports of all sizes.  
Available in two versions:

**Base holder for Power Clamp Basic/Economic/  
Economic Plus**



**Precision base holder for Power Clamp Preset/  
Premium Plus/Preset i4.0/Premium i4.0/Sprint i4.0**

High precision version with fine machined functional surfaces for maximum precision at length presetting.

	Order No.
– Base holder for Power Clamp Basic/Economic/Economic Plus	80.155.01
– Precision base holder for Power Clamp Preset/Premium Plus/ Preset i4.0/Premium i4.0/Sprint i4.0	80.131.01

## BASE HOLDER

**Precision base holder for HAIMER ER shrink fit collets.**

High precision version with fine machined functional surfaces for maximum precision at length presetting. Open base design for optimal access to adjust the length.

**Precision base holder for HAIMER ER shrink fit collets**

	Order No.
– Precision base holder for HAIMER ER shrink fit collets	80.131.02

## CHUCK SUPPORT FOR POWER CLAMP NANO


**Chuck support for horizontal shrink fit machine  
Power Clamp Nano.**

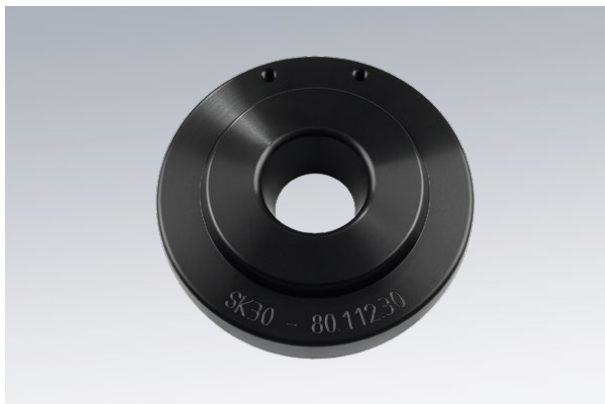
Available in taper sizes SK30 – SK40, CAT30 – CAT50,  
BT30 – BT40, JBS T15, HSK-25 – HSK-63, PSC 40 – PSC 63

**Precision chuck support for Power Clamp Nano/Nano NG i4.0**

For taper size	Order No.
– BT30/CAT30 (also for version with Face Contact) with pull stud DIN69872/MAS40	80.162.30
– BT30/SK30 (also for version with Face Contact) without pull stud with thread M12	80.162.30.01
– BT40/SK40 (also for version with Face Contact) without pull stud with thread M16	80.162.40.01
– CAT40 (also for version with Face Contact) with pull stud DIN 69872	80.162.40.02
– CAT40 (also for version with Face Contact) with pull stud ISO 7388-B	80.162.40.04
– BT40 (also for version with Face Contact) with pull stud MAS 403	80.162.40.06
– JBS T15 with pull stud JBS R15-45	80.162.T15
– HSK-25	80.163.25
– HSK-32	80.163.32
– HSK-40	80.163.40
– HSK-50	80.163.50
– HSK-63	80.163.63
– PSC 40	80.167.C4
– PSC 50	80.167.C5
– PSC 63	80.167.C6
– ER11	80.168.ER11
– ER16	80.168.ER16
– ER20	80.168.ER20
– ER25	80.168.ER25
– ER32	80.168.ER32



## CHUCK SUPPORT

**Chuck support for single-chuck system.**

Available in taper sizes CAT30 – CAT50, BT30 – BT50, HSK-25 – HSK-125, PSC 32 – PSC 80, Makino F63, Makino F80

**Precision chuck support for Power Clamp Mini, Basic, Economic/NG, Economic Plus/NG**

For taper size	Order No.
– CAT/BT/SK30 (also for version with Face Contact)	80.112.30
– CAT/BT/SK40 (also for version with Face Contact)	80.112.40
– CAT/BT/SK45 (also for version with Face Contact)	80.112.45
– CAT/BT/SK50 (also for version with Face Contact)	80.112.50
– HSK-25	80.113.25
– HSK-32	80.113.32
– HSK-40	80.113.40
– HSK-50/HSK-63F	80.113.50
– HSK-63/KM4X63*	80.113.63
– HSK-80	80.113.80
– HSK-100/KM4X100*	80.113.10
– HSK-125	80.113.125
– PSC 32	80.114.30
– PSC 40	80.114.40
– PSC 50	80.114.50
– PSC 63	80.114.60
– PSC 80	80.114.80
– Makino F63	80.113.F63M
– Makino F80	80.113.F80M

\* KM4X is a registered trademark/tradename of Kennametal Inc.

## PRECISION CHUCK SUPPORT

**Precision chuck support for single-chuck system.**

– Fine machined functional surfaces

Available in taper sizes CAT30 – CAT50, HSK-25 – HSK-125, PSC 32 – PSC 80, Makino F63, Makino F80

**Precision chuck support for Power Clamp Preset NG/Power Clamp Premium Plus/Power Clamp Air i4.0  
Eco/Comfort/Power Clamp Preset i4.0/Power Clamp Premium i4.0/Power Clamp Sprint i4.0**

For taper size	Order No.
– CAT/BT/SK30 (also for version with Face Contact)	80.132.30
– CAT/BT/SK40 (also for version with Face Contact)	80.132.40
– CAT/BT/SK45 (also for version with Face Contact)	80.132.45
– CAT/BT/SK50 (also for version with Face Contact)	80.132.50
– HSK-25	80.133.25
– HSK-32	80.133.32
– HSK-40	80.133.40
– HSK-50/HSK-63F	80.133.50
– HSK-63/KM4X63*	80.133.63
– HSK-80	80.133.80
– HSK-100/KM4X100*	80.133.100
– HSK-125	80.133.125
– PSC 32	80.134.30
– PSC 40	80.134.40
– PSC 50	80.134.50
– PSC 63	80.134.60
– PSC 80	80.134.80
– Makino F63	80.133.F63M
– Makino F80	80.133.F80M

\* KM4X is a registered trademark/tradename of Kennametal Inc.

## PRECISION CHUCK SUPPORT FOR POWER CLAMP PREMIUM PLUS

**Precision chuck support for Power Clamp Premium Plus.**

- Fine machined functional surfaces
- With pin for protection of the chuck

Available in taper sizes CAT30 – CAT50, BT30 – BT50,  
HSK-25 – HSK-125, PSC 32 – PSC 80

**Precision chuck support for Power Clamp Premium Plus**

For taper size	Order No.
– CAT/SK30	80.172.30
– CAT/SK40	80.172.40
– CAT/SK45	80.172.45
– CAT/SK50	80.172.50
– BT30	80.175.30
– BT40	80.175.40
– BT45	80.175.45
– BT50	80.175.50
– HSK-25	80.173.25
– HSK-32	80.173.32
– HSK-40	80.173.40
– HSK-50	80.173.50
– HSK-63	80.173.63
– HSK-80	80.173.80
– HSK-100	80.173.10
– HSK-125	80.173.125
– HSK-F63M	80.173.F63M
– HSK-F80M	80.173.F80M
– PSC 32	80.174.30
– PSC 40	80.174.40
– PSC 50	80.174.50
– PSC 63	80.174.60
– PSC 80	80.174.80

## CHUCK SUPPORT FOR ROTARY TABLE

**Chuck support for rotary table.**

Available in taper sizes CAT30 – CAT50,  
BT30 – BT50, HSK-25 – HSK-100,  
PSC 32 – PSC 80

**Chuck support for Power Clamp Profi Plus NG/Comfort/Comfort NG/Comfort i4.0**

For taper size	Order No.
– CAT/BT/SK30 (also for version with Face Contact)	80.102.30
– CAT/BT/SK40 (also for version with Face Contact)	80.102.40
– CAT/BT/SK45 (also for version with Face Contact)	80.102.45
– CAT/BT/SK50 (also for version with Face Contact)	80.102.50
– Various sizes	80.103.00
– HSK-25	80.103.25
– HSK-32	80.103.32
– HSK-40	80.103.40
– HSK-50	80.103.50
– HSK-63	80.103.63
– HSK-80	80.103.80
– HSK-100	80.103.10
– PSC 32	80.104.30
– PSC 40	80.104.40
– PSC 50	80.104.50
– PSC 63	80.104.60
– PSC 80	80.104.80

## CHUCK SUPPORT FOR ER SHRINK FIT COLLETS

**Chuck support for ER shrink fit collets with integrated length presetting.**

- Precise clamping of the collet
- Fast and repeatable length adjustment with stop pin
- Adjustment with set screw and counter nut
- Integrated in chuck support, thus very space-saving
- Easy handling by turning of set screw and counter nut
- Application suitable also at multi-spindle machines for repeatable length presetting of twin tools

**Chuck support for****Order No.**

- ER11	80.135.11
- ER16	80.135.16
- ER20	80.135.20
- ER25	80.135.25
- ER32	80.135.32
- Base holder for Power Clamp Basic/Economic/Economic Plus	80.155.01

## CHUCK SUPPORT FOR HAIMER ER SHRINK FIT COLLETS



### Chuck support for HAIMER ER shrink fit collets with integrated length presetting.

- Fixture of collet by screwing on chuck support
- High process stability, no movement of collet possible
- Fast and repeatable length adjustment with stop pin
- Adjustment with set screw and counter nut
- Integrated in chuck support, thus very space-saving
- Easy handling by turning of set screw and counter nut
- Application suitable also at multi-spindle machines for repeatable length presetting of twin tools

Chuck support for	Order No.
– ER11	80.137.ER11
– ER16	80.137.ER16
– ER20	80.137.ER20
– ER25	80.137.ER25
– ER32	80.137.ER32
– Precision base holder for HAIMER ER shrink fit collets	80.131.02

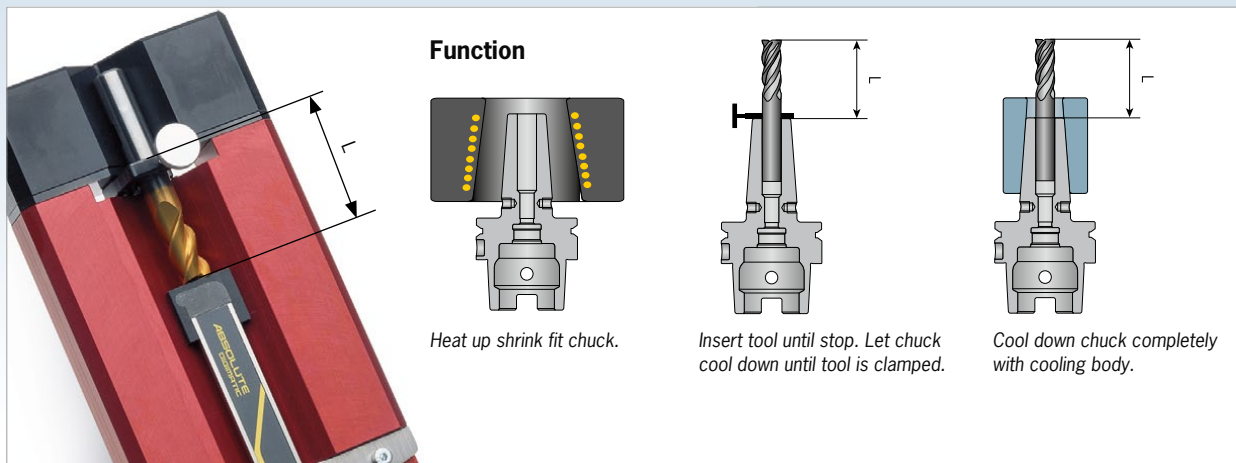
## EASY SET SIMPLE PRESETTING

### Simple presetting

- Quick and simple presetting tool overhang
- Maximum overhang length: 150 mm
- Accuracy:  $\pm 0.05$  mm
- Suitable for all shrink fit chucks and machines (flame, hot air, contact, induction)
- Space-saving
- Excellent relationship between price and efficiency
- Can be added at any time
- Included in delivery: 3 stop clips  
( $\varnothing$  3–12,  $\varnothing$  12–20,  $\varnothing$  16–25 mm),  
Optional:  $\varnothing$  25–32 mm



Stop clips



### Easy Set

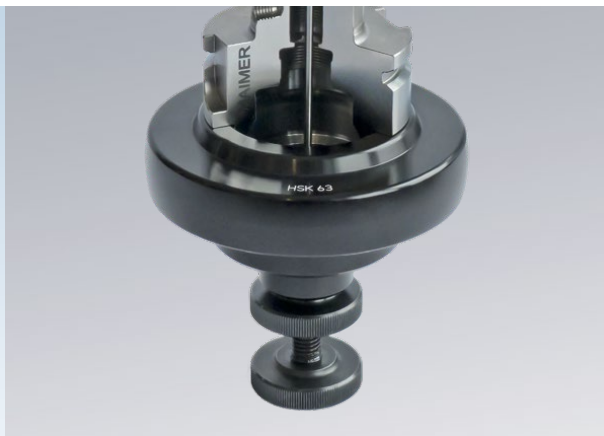
### Order No.

– Easy Set 100 mm protruding length	80.123.00
– Easy Set 150 mm protruding length	80.125.00
– Stop clip for clamping $\varnothing$ 3–12 mm	80.123.01
– Stop clip for clamping $\varnothing$ 12–20 mm	80.123.02
– Stop clip for clamping $\varnothing$ 16–25 mm	80.123.03
– Stop clip for clamping $\varnothing$ 25–32 mm	80.123.04

## QUICK SET LENGTH PRESETTING

### Length adjustment for shrink fit chucks without back-up screw, e. g. Mini Shrink

- Fast, repeatable length adjustment of the total tool assembly with stop pin
- Adjustment with set screw and counter nut
- Integrated in chuck support, thus very space-saving
- Easy handling by turning of set screw and counter nut
- Application suitable also at multi-spindle machines for repeatable length presetting of twin tools



Picture shows: Quick Set with base holder (Base holder not included in delivery)

Length Presetting Quick Set for	Order No.
– CAT/SK/BT40	80.136.240
– HSK-E25	80.136.325
– HSK-E32	80.136.332
– HSK-E40	80.136.340
– HSK-E50	80.136.350
– HSK-A63	80.136.363
– HSK-A100	80.136.310
– PSC 40	80.136.440
– PSC 50	80.136.450
– Base holder for Power Clamp Basic/Economic/Economic Plus	80.155.01
– Pin L = 150 mm	80.136.001
– Pin L = 200 mm	80.136.002
– Pin L = 125 mm	80.136.003
– Pin L = 175 mm	80.136.004
– Pin L = 310 mm	80.136.006
– Pin L = 270 mm	80.136.007

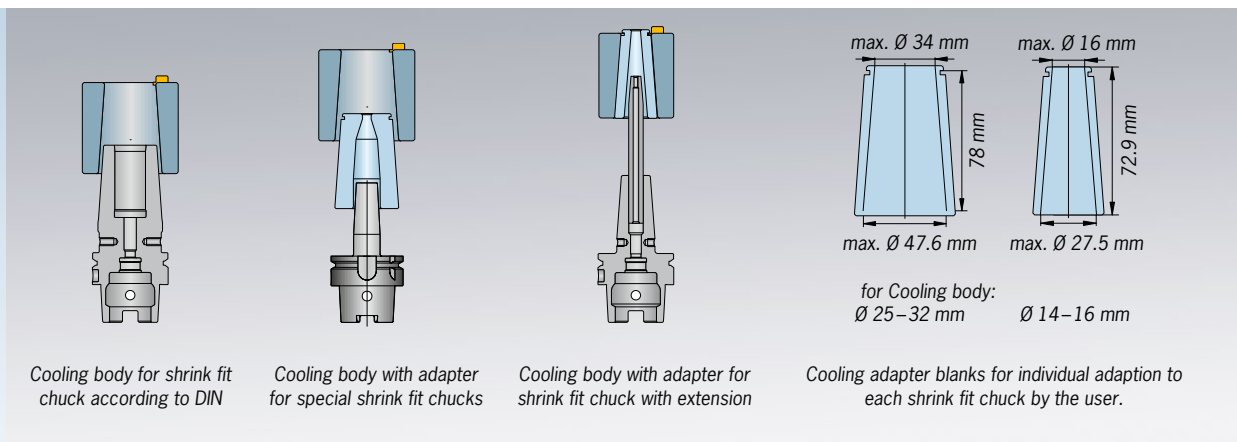


## COOLING ADAPTER AND COOLING ADAPTER BLANKS



Cooling adapters fit and cool an expanded selection of shrink fit chucks and extensions. The adapter is inserted into the cooling body and locked. Then it can be placed onto the shrink fit chuck.

- Cooling bodies for  $\varnothing$  14–16 mm and  $\varnothing$  25–32 mm with side lock



Cooling body for shrink fit chuck according to DIN

Cooling body with adapter for special shrink fit chucks

Cooling body with adapter for shrink fit chuck with extension

Cooling adapter blanks for individual adaption to each shrink fit chuck by the user.

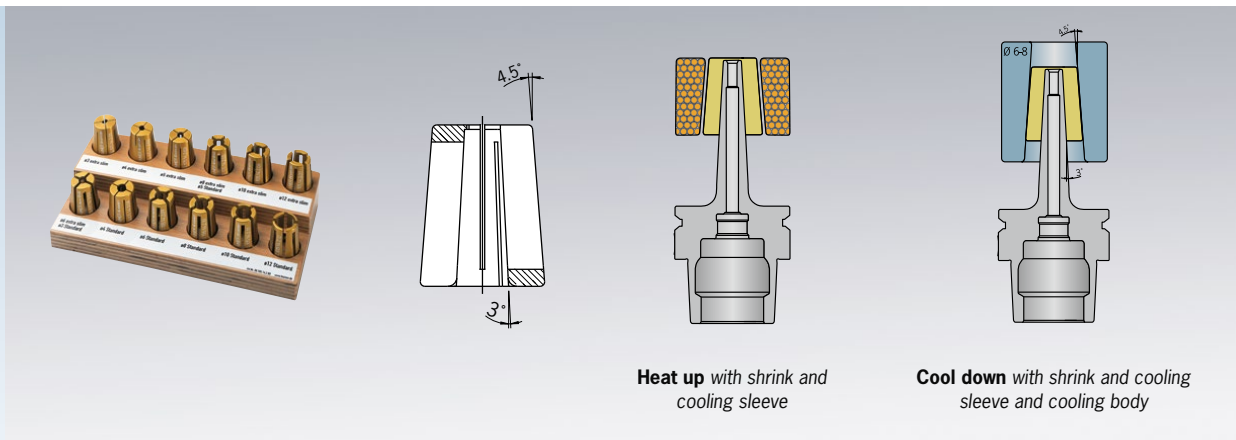
Accessories		Order No.
- Cooling adapter blanks for cooling body	$\varnothing$ 14–16 mm	80.105.14.0
- Cooling adapter blanks for cooling body	$\varnothing$ 25–32 mm	80.105.16.0
- Cooling adapter blanks for cooling body	$\varnothing$ 40–50 mm	80.105.19.3.0
- Cooling adapter for extensions	$\varnothing$ 12 mm/ $\varnothing$ 16 mm	80.105.14.1.1
- Cooling adapter for extensions	$\varnothing$ 20 mm	80.105.14.1.2
- Cooling adapter for shrink fit chucks	$\varnothing$ 3–5 mm	80.105.14.1.3
- Cooling adapter Heavy Duty $\varnothing$ 16 mm for cooling body 80.105.19.1		80.105.19.3.1
- Cooling adapter Heavy Duty $\varnothing$ 20 mm for cooling body 80.105.19.1		80.105.19.3.2
- Cooling adapter Heavy Duty $\varnothing$ 25 mm for cooling body 80.105.19.1		80.105.19.3.3
- Cooling adapter Heavy Duty $\varnothing$ 32 mm for cooling body 80.105.19.1		80.105.19.3.4
- Base for cooling adapters		80.105.14.1.99

## MINI SHRINK SHRINK AND COOLING SLEEVES



For shrinking and cooling of Mini Shrink chucks.

- Protect Mini Shrink chucks from overheating
- Extend lifetime of shrink fit chucks
- Secure and user-friendly handling
- Cooling with standard cooling body  $\varnothing$  6–8 mm



Heat up with shrink and cooling sleeve

Cool down with shrink and cooling sleeve and cooling body

### Fitting sleeves for Mini Shrink chucks

### Order No.

- **Extra slim**

Size [mm]	$\varnothing$ 03	$\varnothing$ 04	$\varnothing$ 05	$\varnothing$ 06	$\varnothing$ 08	$\varnothing$ 10	$\varnothing$ 12
Size [inch]	$\varnothing$ 1/8	—	$\varnothing$ 3/16	$\varnothing$ 1/4	$\varnothing$ 5/16	$\varnothing$ 3/8	$\varnothing$ 1/2
Order No. 80.105.14...	.2.01	.2.02	.2.03	.2.04	.2.05	.2.06	.2.07

- **Standard**

Size [mm]	$\varnothing$ 03	$\varnothing$ 04	$\varnothing$ 05	$\varnothing$ 06	$\varnothing$ 08	$\varnothing$ 10	$\varnothing$ 12	$\varnothing$ 16
Size [inch]	$\varnothing$ 1/8	—	$\varnothing$ 3/16	$\varnothing$ 1/4	$\varnothing$ 5/16	$\varnothing$ 3/8	$\varnothing$ 1/2	$\varnothing$ 5/8
Order No. 80.105.14...	.2.04	.2.08	.2.05	.2.09	.2.10	.2.11	.2.12	.2.16

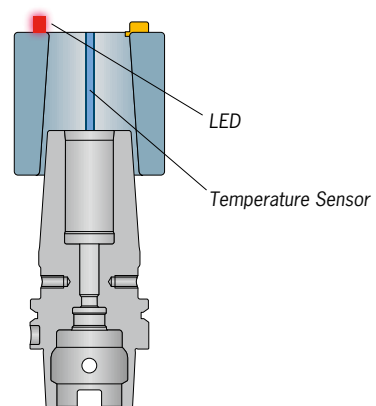
- Base

80.105.14.2.99

- Set with base (12 pcs., diameter 3 – 12 mm)

80.105.14.2.00

## TME COOLING SYSTEM WITH TEMPERATURE CONTROL


**Temperature control of the shrink fit chuck during the cooling process for safe handling**

- Sensor in aluminum body measures temperature
- If temperature is too high: red light
- If temperature is at right level: green light
- Minimizes danger of injury due to hot chucks
- Patented temperature control

**TME Cooling System**
**Order No.**

– TME Intelligent Cooling System for 13 kW machines	80.105.19.01
– TME Intelligent Cooling System for 20 kW machines	80.105.19.11

TENSION SPRINGS FOR LENGTH PRESETTING FOR SHRINK FIT CHUCKS



Tension spring for length presetting

- Spring is set into clamping bore
- Spring presses tool against stop disk
- Backup screw can remain in chuck
- Fits all common shrink fit chucks

Tension Springs										Order No.	
- Size [mm]	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20	Ø 25	Ø 32	
Size [inch]	Ø ¼	Ø 5/16	Ø 3/8	Ø ½	—	Ø 5/8	—	Ø ¾	Ø 1	Ø 1 ¼	
Order No. 85.830...	.06	.08	.10	.12	.14	.16	.18	.20	.25	.32	
- Tension spring set (10 pcs. of each size) incl. pull-out gripper										85.830.00	

## SHRINK-OUT DEVICE

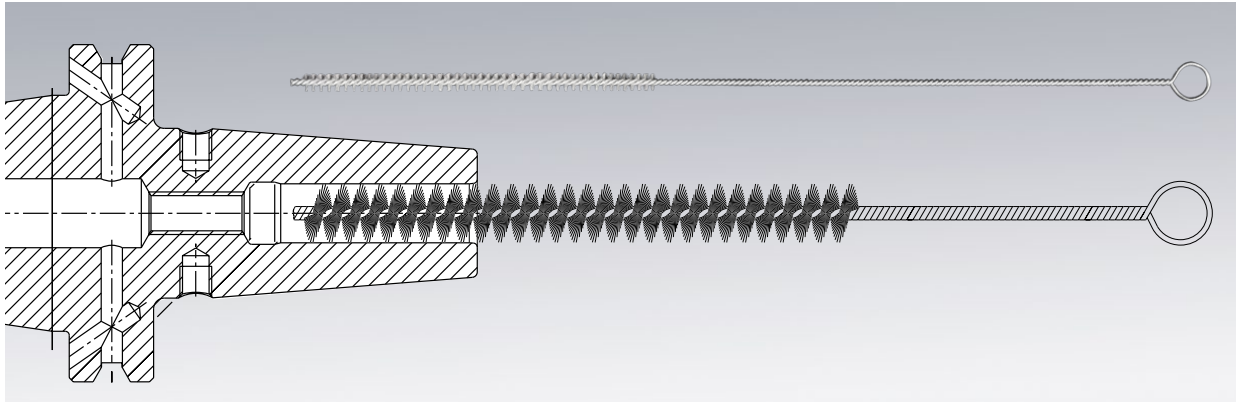
**Shrink-out device for broken tools.**

- Set includes 1 base plate and 6 pins (3 diameters in 2 lengths each), without pliers
- Rubber plate for saving the chuck
- Drawer insert for craning box
- Suitable for all Power Clamp shrink fit machines

	Order No.
– Shrink-out device	80.126.00
– Combination pliers	80.107.00

Accessories	Order No.
– Pin 160 mm x 2.3 mm	113027-0004
– Pin 160 mm x 4.7 mm	113027-0005
– Pin 160 mm x 6.0 mm	113027-0006
– Pin 275 mm x 2.3 mm	113027-0007
– Pin 275 mm x 4.7 mm	113027-0008
– Pin 275 mm x 6.0 mm	113027-0009

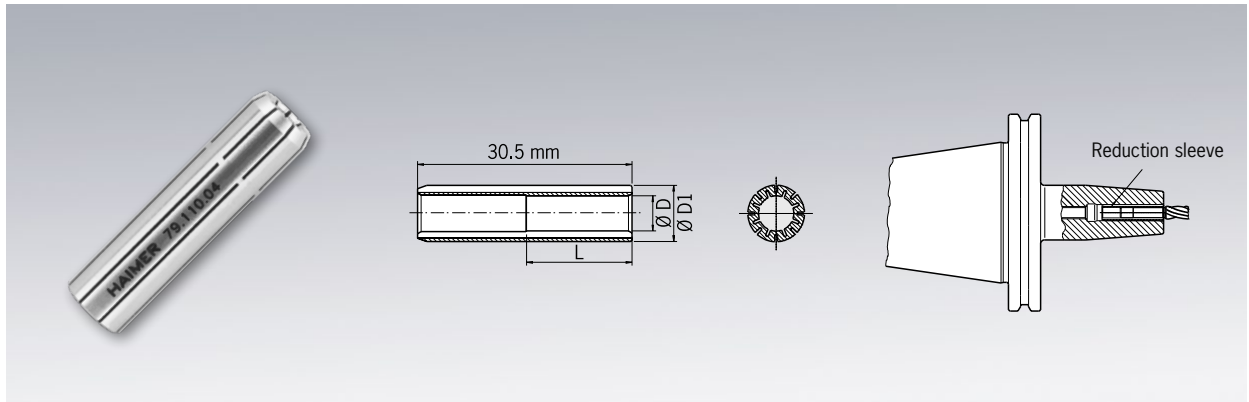
## SHRINK FIT BRUSH



In order to achieve the best possible shrink fit connection, a grease-free socket and shank is necessary. The cleaning can be done by a dry solvent (e.g. brake cleaner). An appropriate cleaning brush is necessary to clean the socket of the Shrink Fit Chuck.

Shrink Fit Brush	Order No.
– Ø 1/8" (3 mm)	86.200.01
– Ø 3/16" / 3.5 mm / 4 mm / 4.5 mm / 5 mm	86.200.02
– Ø 1/4" – 5/16" / 6 mm / 8 mm	86.200.03
– Ø 3/8" – 1/2" / 10 mm / 12 mm	86.200.04
– Ø 5/8" / 14 mm / 16 mm	86.200.06
– Ø 3/4" / 18 mm / 20 mm	86.200.07
– Ø 1" / 25 mm	86.200.08

## REDUCTION SLEEVES



**Use:**

For clamping small shanks in chucks with  $\varnothing$  5/16" or 8 mm ID's.

First step: shrink sleeve into bore of chuck.  
 Second step: shrink tool shank in reduction sleeve.

- Shank tolerance h6
- Sealed (ready for internal coolant)

**For use in all chucks as reducers.**

- Shrink fit chucks
- High-Precision chucks
- Collet chucks
- Hydraulic chucks
- Other high precision mechanical chucks

INCH	Ø D	Ø D1	L	Order No.
- Clamping Ø	3/32"	5/16"	0.27"	79.110.3/32Z
- Clamping Ø	1/8"	5/16"	0.35"	79.110.1/8Z
- Clamping Ø	5/32"	5/16"	0.47"	79.110.5/32Z
- Clamping Ø	3/16"	5/16"	0.56"	79.110.3/16Z
- Clamping Ø	7/32"	5/16"	0.65"	79.110.7/32Z

METRIC	Ø D	Ø D1	L	Order No.
- Clamping Ø	2.5 mm	8 mm	7.5 mm	79.110.2.5
- Clamping Ø	3.0 mm	8 mm	9.0 mm	79.110.03
- Clamping Ø	3.5 mm	8 mm	10.5 mm	79.110.3.5
- Clamping Ø	4.0 mm	8 mm	12.0 mm	79.110.04
- Clamping Ø	4.5 mm	8 mm	13.5 mm	79.110.4.5
- Clamping Ø	5.0 mm	8 mm	15.0 mm	79.110.05
- Clamping Ø	5.5 mm	8 mm	16.5 mm	79.110.5.5

## AUXILIARY FUME EXTRACTION UNIT



Auxiliary fume extraction unit to remove and filter vapors, which are produced during the shrink process.

For process reliable functionality, we recommend the assembly of the extraction unit directly on to a HAIMER system cart.

Auxiliary fume extraction unit	Shrink fit machine Power Clamp	Order No.
<b>For coil</b>		
– VS32-H/M	Comfort (i4.0)/Comfort NG/Preset (NG/i4.0)/Profi Plus NG	80.101.02NG.01
– VS32-H	Premium Plus	80.101.02NG.02
– VS32-M	Premium Plus	80.101.03NG.02
– VS32-S	Premium i4.0/Sprint i4.0	80.101.02NG.03
– V2008	Economic/Economic Plus/Comfort (i4.0)	80.151.00.01
– 13 kW HD/20 kW	Economic Plus NG/Comfort NG/Preset NG (i4.0)	80.151.10.01



## UPGRADE KIT 13 KW HD COIL

**Use:**

For shrinking of Heavy Duty Shrink Chucks up to  $\varnothing$  50 mm.

Delivery includes:

- 13 kW HD coil
- Coil base
- Set of stop disks
- Latest software
- HD cooling body  $\varnothing$  1 ½"–2" (40–50 mm)
- Hose set for HD cooling body
- Coolant Manifold Connection
- Optional: Cooling adapter for HD cooling body

Upgrade only possible for existing shrink fit machine Power Clamp Economic Plus (NG), Comfort (NG) or Preset (NG) that were **produced after 01/2012**.

**Order No.**

- Upgrade Kit 13 kW HD coil

80.151.30.10

## STOP DISKS

Clamping Ø D [mm]	Stop disks	Order No.
<b>For coil N29 (Power Clamp Nano)</b>		
- 3 – 5 mm		80.162.03
- 6 – 8 mm		80.162.06
- 10 – 16 mm		80.162.10
- 10 – 12 mm		80.162.10.2
-	Stop disk set N29	80.162.00
- 3 – 5 mm	Stop disk split	80.162.03.1
- 6 – 8 mm	Stop disk split	80.162.06.1
- 10 – 16 mm	Stop disk split	80.162.10.1
- 10 – 12 mm	Stop disk split	80.162.10.2.1
<b>For 13 kW coil V2008</b>		
- 3 – 5 mm		80.152.03
- 6 – 12 mm		80.152.06
- 14 – 16 mm		80.152.14
- 18 – 20 mm		80.152.18
- 25 – 32 mm		80.152.25
-	Set of stop disks 13 kW V2008	80.152.00
- 3 – 5 mm	Stop disk split	80.152.03.1
- 6 – 12 mm	Stop disk split	80.152.06.1
- 14 – 16 mm	Stop disk split	80.152.14.1
- 18 – 20 mm	Stop disk split	80.152.18.1
- 25 – 32 mm	Stop disk split	80.152.25.1
-	Set of stop disks 13 kW V2008 (split)	80.152.00.1
- 6 – 12 mm	Stop disk for ultra short Power Shrink Chucks	80.152.06.2
- 14 – 20 mm	Stop disk for ultra short Power Shrink Chucks	80.152.14.2
- 25 – 32 mm	Stop disk for ultra short Power Shrink Chucks	80.152.25.2
<b>For 20 kW coil and 13 kW HD coil</b>		
- 16 – 20 mm		80.151.10.42
- 20 – 32 mm		80.151.10.41
- 40 – 50 mm		80.151.40.40
- 16 – 20 mm	Stop disk 20 kW/13 kW split	80.151.10.42.1
- 25 – 32 mm	Stop disk 20 kW/13 kW split	80.151.10.41.1
- 40 – 50 mm	Stop disk 20 kW/13 kW split	80.151.40.40.1

**Use:**

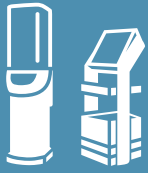
Changeable stop disks for positioning the coil above the chuck.

# BALANCING TECHNOLOGY



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HAIMER  
G 2.5 25000  
A63.144.25.3  
Ø 25 x 130  
A 6

# Top 10 Reasons to Use HAIMER Balancing Technology

1

## **Faster Speed and Higher Productivity**

Vibration is often the reason higher speeds and feeds are not realized. Balanced assemblies permit 10~15% faster spindle speeds and higher productivity without degradation of sound or tool life.

2

## **Longer Tool Life**

On average, balanced tools (tools, inserts and grinding wheels) last 20% longer when the entire tooling assembly is balanced. Depending on the amount of unbalance, the tool life increase can be much greater.

3

## **Repeatable Tool Performance**

The elimination of vibration dramatically reduces problems like chatter and tool chipping, thereby stabilizing tool performance and making lights out machining possible.

4

## **Longer Spindle Life**

Unbalance in a tool assembly creates excessive centrifugal forces that can damage spindle bearings. Such damage reduces spindle life and can lead to costly unplanned downtime.

5

## **Better Surface Finishes**

Unbalance creates excessive vibration that can be translated to the finished part in the form of chatter and poorer finishes. To achieve the best finish, balance the full assembly.

6

## **Improved Accuracy**

At higher speeds, unbalance can actually induce runout during rotation where none was measured statically. Without balance, the result is slower speeds, less productivity and lower accuracy.

7

## **Fewer Tool Changes**

When tool life increases 20% to 100%, tool changing time is reduced. This means less time needed for tool changes in the tool room and less set up times of the machine.

8

## **Accurate Process**

A solid concrete base construction, centrifugal force sensors for measuring, patented spindle that clamps the tools identical to the machine tool, and a simple/reliable machine calibration process.

9

## **Ease of use**

Simple software and clear compensation options (removing, adding or displacing weight) make the balancing process fast and simple for all users.

10

## **Industry 4.0 Success**

Industry 4.0 is all about using gathered data to automate changes on the fly that optimize the machining process. Without balance, the optimal machining logic will ultimately require a reduction of speeds until the problem is resolved, thereby reducing productivity.

## WHY SHOULD I BUY A BALANCING MACHINE?

### ***“I’m only running tools at 1,500 RPM. Is balancing really necessary?”***

You are running only at 1,500 RPM, but the real question is why?

Is that because you have always machined your part at that spindle speed with the appropriately related feed rate, or is it due to the fact that if you tried to increase your spindle speeds and your feeds, you heard vibration, noticed chatter marks on the work piece, cut oversize, bored oval holes, etc.?

Naturally, this would cause you to slow things down in order to create good parts, while giving away potential productivity.

There is always a benefit to having balanced tool holder assemblies, even at low spindle speeds. In fact, some of the most eye-opening benefits of running balanced tools can be found in traditionally lower speed applications, such as face-milling, machining with boring heads, or in use with special form tools.

With balancing the full tooling assembly, you can really get the most potential out of your machine tool and gain productivity in order to machine your parts faster, with greater tool life and higher accuracy – regardless of the RPM you are running.

### ***“I don’t need balanced tool holders.”***

Modern milling machines operate with high spindle speeds. An unbalance causes centrifugal forces. The centrifugal forces increase squared to the spindle speed. Older machines have spindle speeds of about 2,000 rpm. Even at 10,000 rpm, the unbalance in the same exact tool holder causes a centrifugal force that is 25 times higher.

- The centrifugal force stresses the spindle bearings. The lifetime of the bearings decreases with excessive stress. Consequently, the spindle bearings become damaged and unnecessary repair costs are incurred.
- The manufacturers of milling machines and spindles specify the use of balanced tools. Often times, if unbalanced tools are used, there will be no warranty on the machine spindle.
- The direction of the centrifugal force is changing steadily as it rotates with the spindle. This is why centrifugal force causes vibrations.
- Vibrations shorten the life of the cutting tools. This causes higher cutting tool costs and a decrease in the quality of the surface finish.

### ***“I only have a few parts to balance. For this purpose a simple machine is sufficient.”***

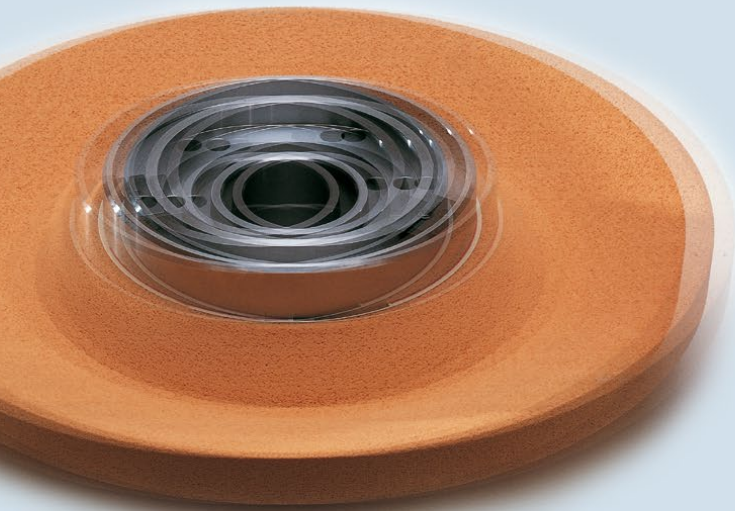
When balancing is not done regularly, the operators have no experience. The risk of incorrect measurement due to improper handling of the machine is very high. Therefore, in such cases, it is important to have a balancing machine that guides the user through the procedure. Plus, it would be unfortunate to have an inferior balancing machine that limits your balancing potential for the future.



### ***“Balancing is too complicated.”***

**It depends.** Simple balancing systems often aren't handled correctly because the operators don't know the physical background of unbalance and balancing. Sometimes the existing unbalance is increased instead of reduced, since some balancing machines are not adjusted or calibrated correctly for the specific tool. Overall it is rather difficult to have a specialist just for balancing and this is not necessary.

With a good machine, balancing is simple. The operator only has to choose the type of tool he or she wants to balance. From then on the machine tells the operator what to do. The machine has the expert knowledge, not the operator.



### ***“A balancing machine is too expensive for me.”***

A balancing machine is an investment. An investment must provide a quick return on investment. The purchasing price only has a small influence on the payback of an investment.

A balancing machine will quickly pay for itself as:

- the process reliability in the production can be improved
- the life time of the spindle can be extended (one single replacement of a spindle costs more than a balancing machine)
- The frequency of the downtime of the machines is decreased.
- The most expensive factor in a production is machine standstill
- the result of the production is improved (better surface finish)
- the maximum spindle speeds and feeds can be utilized on your machine (quicker throughput)
- the tool life is extended
- the cutting capacity is improved

Overall, it is important that a balancing machine is easy to handle and that it gives you reliable and repeatable results. Ultimately, it should provide the easiest method to find your desired balance level to run at a safe and productive rate in your facility. It is possible to get all of that with a balancing machine that is easy and secure to handle, insuring that you reach the desired results.

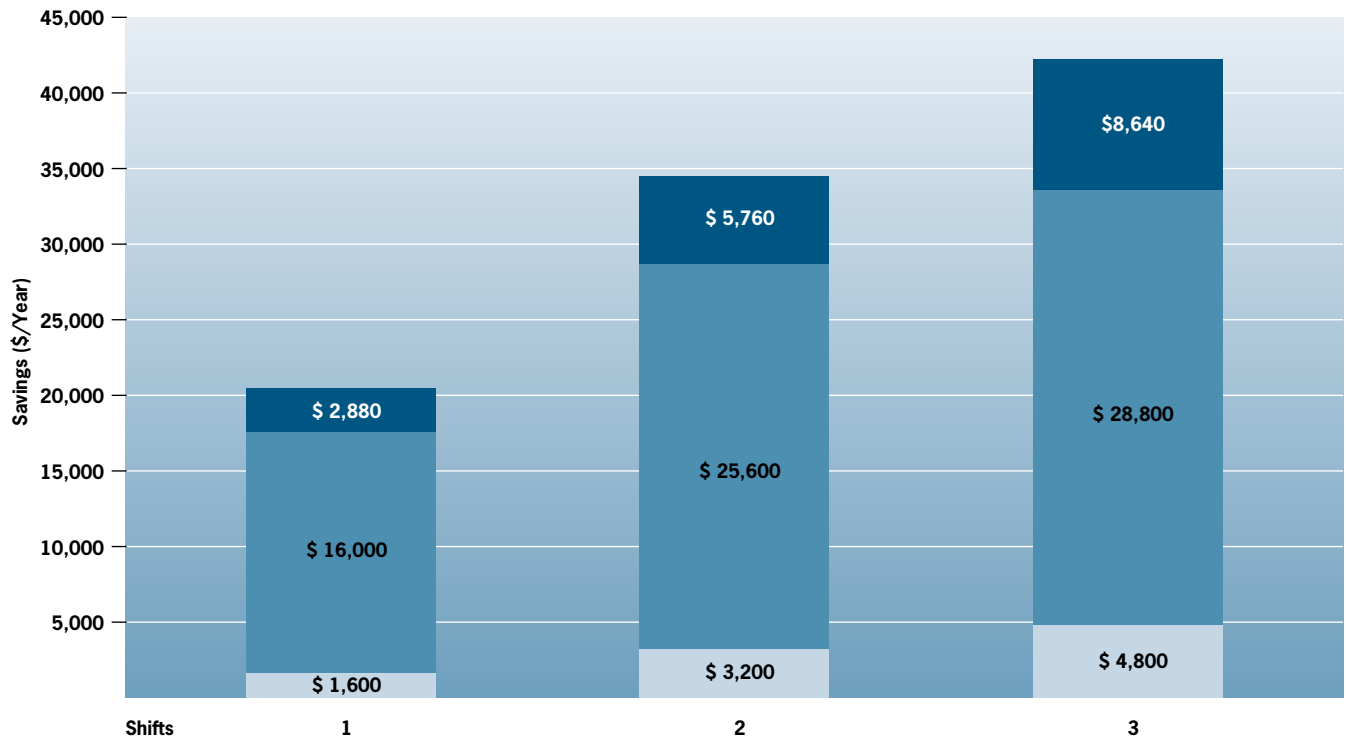
### ***“The tool holders that I buy are already balanced.”***

Generally a good idea. The manufacturer of tool holders normally can balance quicker and more efficiently. However:

- What happens when you clamp a cutting tool into a balanced tool holder? The cuttings tools often are unsymmetrical (e.g. side lock shanks). Many tool holders have movable parts which can have different positions after being mounted (e.g. pull studs, clamping screws, bearing races, collets, locknuts). Tool holders for high speed machining should always be balanced when mounted as one complete set-up (tool holder, pull stud, collet, cutting tool, etc.). Once tool holder elements have been modified, the balance level changes.
- Most tool holder manufacturers stock products in a “Pre-Balanced” condition. A pre-balanced condition means that the tool holders are fully balanced without components such as cutting tools, pull studs, collets, clamping nuts, moveable bearings or data chips. Once these other components are added to the tool holder assembly, the tool holder may need to be re-balanced in order to conform to ISO balance specifications.
- What about the tool holders which are already in your factory? It is nearly impossible to avoid a mixing up of balanced and unbalanced tool holders. One single process with an unbalanced tool at high spindle speed can damage the spindle bearings. This is why the “old” tool holders should be balanced as well.
- How do you know your tool holders are balanced? After all, when one receives a shipment from a vendor they first check the items in the box and insure that selection and quantity of the items in the box is correct. Why not check that the balance of the tools is correct as well? What balance level does your “pre-balanced” tool holders come to you? Checking the balance of tool holders should always be part of the quality control of incoming goods, particularly if you are paying a premium for “fine-balanced” tools.



## COST REDUCTION BY THE USE OF BALANCED TOOL HOLDERS (PER MACHINING CENTER)



- Savings by raising spindle lifetime by 100%
- Savings by raising cutting volume by 10%
- Savings by extending tool life by 10%

Basics of the calculation	runtime h/year	cost rate \$/h	tooling costs \$/h
1 shift	1,600	100	10
2 shifts	3,200	80	10
3 shifts	4,800	60	10

**Spindle lifetime ( $n_{max} = 15,000$  rpm):**

Tools not balanced: 5,000 hrs.  
 Tools balanced: 10,000 hrs.  
 Cost for spindle replacement: \$ 18,000

**Not taken into account:**

- Improved surface quality
- Costs for unplanned downtime of the machine (spindle replacement)
- Improved accuracy
- Real savings may be much higher than calculated

## ON THE SAFE SIDE: BALANCE YOUR TOOLS QUICKLY AND EFFICIENTLY WITH THE TOOL DYNAMIC SYSTEM

### Reliable, quick and efficient – the perfect balancing system for tool holders, grinding wheels and other rotors.

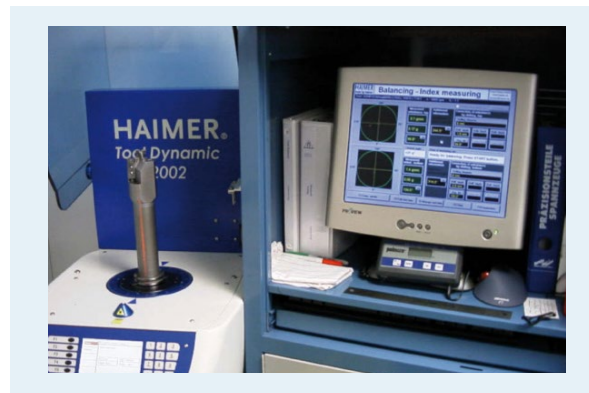
- Flexibility for future requirements due to modular construction
- 4 versions available, offering a perfect solution for every need
- Balancing in 1 or 2 planes
- Unique high precision spindle taper adapter system with automatic clamping for all common tooling systems and tapers
- Highest measuring accuracy and repeatability
- Even low cost chucks (steep taper with low precision) can be clamped accurately due to elastic centering
- Adapters for rotors with a center bore (e.g. grinding wheels)
- Unbalance correction by drilling, milling, balancing rings and weights
- Unbalance correction using fixed components (e.g. balancing screws in threads)
- Easy service due to modular construction with plug connectors
- Calibration function for testing equipment control according to ISO 9001
- Single machine calibration for all tools, thanks to hard bearing technology (force measuring vertical balancing machine)

### Simple and self-explanatory operation. User-friendly menu guidance on PC screen or integrated display. All languages possible.

- Excellent relationship between price and efficiency
- Multiple methods of measuring: simple measuring, index measuring, measuring with spindle compensation, measuring with zero setting
- Tool management for more than 5,000 tools, storing the most recent balancing results
- Interface to the local computer network
- Input of balancing tolerance in balancing quality grades (G or Q)
- Graphically displayed measuring results
- Printout of measuring results on label or certificate
- Clear indication if balancing tolerance has been reached
- Indication of actual balancing quality grade and permissible spindle speed
- Optical indexing aid: actual position of unbalance visible on screen
- Automatic positioning of spindle at position of unbalance
- Optical laser marks the position of unbalance directly on the tool
- Error diagnosis
- Density function with an integrated list of materials with different specific weights

### Test Data Example

(Completed by a major auto parts supplier in South Carolina)  
DR2002 FLCA machine Cast Iron/Tool #607 (Drilling/Boring/Facing Tool)



	Before Balancing	After Balancing	Comment
Tool life	250 Pieces per edge	350 Pieces per edge	100 Piece increase
Surface finish	20 Rz	15 Rz	5 Rz finer finish
Bore size and roundness	Presetter + .055 mm	Presetter 0 mm	Cut to set size
Vibration Analysis Results	1.821 mm/sec.	.051 mm/sec.	Lowered 1.77

#### Before Balance:

This tool would not consistently reach its full life (inserts would fail).

**After Balance:** This tool reached its full life 100% of the time.

#### Future Expectations include:

- Increase in tool life plant wide, better surface finishes and controllable bore dimensions
- Spindle bearing failure decrease plant wide
- Decrease in premature tool failures
- Overall tool performance and repeatability, chatter and scrap reduction

#### Summary:

As nearly all machine tool manufacturers recommend the tools used in their spindles should be balanced to G2.5 at all rpm ranges, not all tools require balancing. Determination should be made using a tool by tool method considering the following: tool rpm, tool weight, tool operation, stress applied to the spindle and application trouble shooting. Testing has proven that balancing tools at any rpm range can yield positive results, even below 8,000 rpm.

## Tool Dynamic TD 1002: For minimalists

Runout Measuring device  
for TD 1002 on page 641



*Picture shows TD1002 with runout measuring device (optional)*

## TOOL DYNAMIC TD 1002 BASIC BALANCING SYSTEM












### Balancing machine for balancing tools, tool holders and grinding wheels in 1 or 2 planes (optional).

- Force measuring table top machine
- Ideal for smaller shops
- For small batch lots, single application, standard chucks and grinding wheel packages
- Adapter with automatic clamping system

### Features:

- Menu-based handling – via integrated user interface and display
- Safety hood with automatic door lock
- Special high precision spindle bearings

### Characteristics

	Vibration optimized base	Adapted table for optimized base
	User interface	Integrated user interface for easy handling of the machine
	Optical indexing help 80.204.00	Indication of the exact spindle angle position on display
	Laser marking	Indicates the position of unbalance and correction with a laser
	Radial drilling	Balancing by drilling radially
	Software for compensation with balancing rings	Balancing by rings or other movable weights
	Index balancing	Compensation of measuring errors by index balancing (2 measuring runs, indexing angle 180°)
	Balancing with spindle compensation	Quick and precise measurement of repetition parts (single measuring run)
	Balancing in 1 plane	Measuring and correction of unbalance in 1 plane (static)
	Deutsch/English/Français/ Italiano/Español	Languages for user interface
	Accessories and special equipment	Please check the table on pages 622–625

### Technical details

#### Tool Dynamic TD 1002

Dimensions l x h x d [mm/inch]	500x680x820 / 20x27x32	Power usage [kW]	0.4
Weight [kg/lbs]	200/441	Compressed air [bar/psi]	6/87
Spindle Speed [rpm]	600–1100	Max. tool length [mm/inch]	360/14.2
Measuring accuracy	< 1.0 gmm	Max. tool-Ø [mm/inch]	340/13.4
Power requirements [V/Hz]	230/50–60	Max. tool weight [kg/lbs]	15/33
	(comes with 110V transformer)	<b>Order No.</b>	<b>80.250.00.3.US</b>

## Tool Dynamic TD Economic: For beginners












## TOOL DYNAMIC TD ECONOMIC MODULAR BALANCING SYSTEM







Your introduction into the modular balancing system Tool Dynamic TD. The Tool Dynamic TD Economic measures and corrects the unbalance in one plane (static).

Therefore the TD Economic is perfect for balancing short tool holders and tools because of the couple unbalance being very low. Easy handling with integrated keyboard and screen.

The following characteristics are identical to Tool Dynamic TD 1002:

Characteristics		
 User interface	 Radial drilling	 Balancing with spindle compensation
 Optical indexing help 80.204.00	 Software for compensation with balancing rings	 Balancing in 1 plane
 Laser marking	 Index balancing	 Deutsch/English/Français/ Italiano/Español

The following characteristics are included standard for Tool Dynamic TD Economic:

Characteristics	
 Base made of polymer concrete	Heavy base ensures the highest measuring accuracy
 Fixed components 80.202.00	Enables balancing at predefined positions (e.g. with balancing screws)
 Automatic indexing 80.217.00	Turns the spindle on the selected angle position and simplifies exact positioning of spindle
 Rack for accessories 80.227.00	Storage rack with two integrated drawers for balancing adapters and other accessories
 Balancing Software TD 4.0 80.245.06	New software with user-friendly graphical interface and touchscreen control
 Accessories and special equipment	Please check the table on pages 622–625

Technical details			
Tool Dynamic TD Economic			
Dimensions l x h x d [mm/inch]	500x1500x820 / 20x59x32	Compressed air [bar/psi]	6/87
Weight [kg/lbs]	450/990	Max. tool length [mm/inch]	400/15.7
Spindle speed [rpm]	300–1100	Optional [mm/inch]	700/27.6
Measuring accuracy [gmm]	< 0.5	Max. tool diameter [mm/inch]	380/14.96
Power requirements [V/Hz]	230/50–60	Optional [mm/inch]	425/16.73
Power usage [kW]	0.4	Max. tool weight [kg/lbs]	30/66
<b>Order No.</b>			<b>80.220.00.09.3.US</b>

## Tool Dynamic TD Economic Plus: For advanced users



## TOOL DYNAMIC TD ECONOMIC PLUS MODULAR BALANCING SYSTEM



The TD Economic Plus is perfect for measuring unbalance in two planes (dynamic). Long tools must be balanced in two planes to correct the couple or dynamic unbalance. Accessories can be clearly arranged in the built-in drawers.

Work quickly and error free with laser marking, optical indexing help and automatic indexing of the spindle. The “fixed components” allow you to balance with screws on rotors with threaded bores.

### The following characteristics are identical to Tool Dynamic TD Economic:

Characteristics					
	Base made of polymer concrete		Radial drilling		Balancing in 1 plane
	User interface		Fixed components 80.202.00		Automatic indexing 80.217.00
	Optical indexing help 80.204.00		Software for compensation with balancing rings		Rack for accessories 80.227.00
	Laser marking		Index balancing		Balancing Software TD 4.0 80.245.06
			Balancing with spindle compensation		Deutsch/English/Français/ Italiano/Español

### The following characteristics are included standard for Tool Dynamic TD Economic Plus:

Characteristics			
	Balancing in 2 planes 80.252.01	Measuring and correction of unbalance in 2 planes (dynamic unbalance)	
	Accessories and special equipment	Please check the table on pages 622–625	

Technical details			
Tool Dynamic TD Economic Plus			
Dimensions l x h x d [mm/inch]	500x1500x820 / 20x59x32	Compressed air [bar/psi]	6/87
Weight [kg/lbs]	450/990	Max. tool length [mm/inch]	400/15.7
Spindle speed [rpm]	300–1100	Optional [mm/inch]	700/27.6
Measuring accuracy [gmm]	< 0.5	Max. tool diameter [mm/inch]	380/14.96
Power requirements [V/Hz]	230/50–60	Optional [mm/inch]	425/16.73
Power usage [kW]	0.4	Max. tool weight [kg/lbs]	30/66
		<b>Order No.</b>	<b>80.222.00.09.3.US</b>



## Tool Dynamic TD Comfort: For ambitious users


















## TOOL DYNAMIC TD COMFORT MODULAR BALANCING SYSTEM







If you want to use the Tool Dynamic frequently and keep the balancing time as short as possible, the TD Comfort is the right choice. It is equipped with a PC, keyboard, mouse and monitor. The big screen enables you to input tool data faster with all the comfort of a graphical user interface – you just balance faster!

In addition, the software in this machine offers unbalance correction through milling, which is a very common method to correct the imbalance.

The following characteristics are identical to Tool Dynamic TD Economic Plus:

Characteristics		
 Base made of polymer concrete	 Software for compensation with balancing rings	 Fixed components 80.202.00
 User interface	 Index balancing	 Automatic indexing 80.217.00
 Optical indexing help 80.204.00	 Balancing with spindle compensation	 Rack for accessories 80.227.00
 Laser marking	 Balancing in 1 plane	 Balancing Software TD 4.0 80.245.06
 Radial drilling	 Balancing in 2 planes 80.252.01	 Deutsch/English/Français/ Italiano/Español

The following characteristics are included standard for Tool Dynamic TD Comfort:

Characteristics	
 Print label	Print balancing results on label
 Milling program 80.212.00	Milling program allows correction of unbalance via milling
 User account administration 80.245.12	User administration with individual allocation of user rights
 Screen holder 80.228.03.3	Comfortable tray to place PC screen and keyboard
 TFT screen 80.229.02	Comfortable usage via keyboard for integrated PC (includes TFT screen, keyboard and mouse)
 Accessories and special equipment	Please check the table on pages 622–625

### Technical details

#### Tool Dynamic TD Comfort

Dimensions l x h x d [mm/inch]	1100x1500x820 / 43x59x32	Compressed air [bar/psi]	6/87
Weight [kg/lbs]	450/990	Max. tool length [mm/inch]	400/15.7
Spindle speed [rpm]	300–1100	Optional [mm/inch]	700/27.6
Measuring accuracy [gmm]	< 0.5	Max. tool diameter [mm/inch]	380/14.96
Power requirements [V/Hz]	230/50–60	Optional [mm/inch]	425/16.73
Power usage [kW]	0.4	Max. tool weight [kg/lbs]	30/66

**Order No. 80.224.00.09.3.US**

## Tool Dynamic TD Comfort Plus: For perfectionists












*Picture shows special equipment: Safety hood type 3 for tools with length up to 700 mm (see optional configurations on p. 624)*

## TOOL DYNAMIC TD COMFORT PLUS MODULAR BALANCING SYSTEM



The Tool Dynamic TD Comfort Plus offers maximum usability and comfort. By using the TD Comfort Plus, you will never lose sight of your goal during the balancing process.  
Would you like to balance your tools efficiently, quickly and without being an expert?

Then choose Tool Dynamic TD Comfort Plus – optimized touchscreen usage, integrated PC, comfortable storage for your balancing accessories and maximum equipment to make balancing fast, convenient and easy.

### The following characteristics are identical to Tool Dynamic TD Comfort:

Characteristics		
 Base made of polymer concrete	 Software for compensation with balancing rings	 Automatic indexing 80.217.00
 User interface	 Index balancing	 Rack for accessories 80.227.00
 Optical indexing help 80.204.00	 Balancing with spindle compensation	 Milling program 80.212.00
 Laser marking	 Balancing in 1 plane	 Balancing Software TD 4.0 80.245.06
 Print label	 Balancing in 2 planes 80.252.01	 User account administration 80.245.12
 Radial drilling	 Fixed components 80.202.00	 Deutsch/English/Français/ Italiano/Español

### The following characteristics are included standard for Tool Dynamic TD Comfort Plus:

Characteristics	
 Control terminal incl. touchscreen 80.233.00.4	Control terminal for storage of touchscreen, keyboard, mouse, printer, and further accessories (only together with Balancing Software TD 4.0)
 Accessories and special equipment	Please check the table on pages 622–625

Technical details			
Tool Dynamic TD Comfort Plus			
Dimensions l x h x d [mm/inch]	1100x1500x820 / 43x59x32	Compressed air [bar/psi]	6/87
Weight [kg/lbs]	450/990	Max. tool length [mm/inch]	400/15.7
Spindle speed [rpm]	300–1100	Optional [mm/inch]	700/27.6
Measuring accuracy [gmm]	< 0.5	Max. tool diameter [mm/inch]	380/14.96
Power requirements [V/Hz]	230/50–60	Optional [mm/inch]	425/16.73
Power usage [kW]	0.4	Max. tool weight [kg/lbs]	30/66
<b>Order No.</b>			<b>80.226.00.09.3.US</b>

## Tool Dynamic TD Comfort Plus i4.0: Industry 4.0 balancing machine for maximum process reliability in production.








Picture shows special equipment: Tool Control with accessories (see optional configurations on p. 624)






## TOOL DYNAMIC TD COMFORT PLUS i4.0 MODULAR BALANCING SYSTEM

The new Tool Dynamic TD Comfort Plus i4.0 offers a maximum of usability and comfort. Highlights are the possibility of digital data transfer to the machine, network compatibilities (i4.0 ready) and an optimized 27" multi-touchscreen usage via separate control terminal, integrated PC, comfortable storages for your balancing accessories and a maximum of equipment make balancing fast, convenient and very easy.

The following characteristics are identical to Tool Dynamic TD Comfort Plus:

















Characteristics					
	Base made of polymer concrete		Software for compensation with balancing rings		Automatic indexing 80.217.00
	User interface		Index balancing		Rack for accessories 80.227.00
	Optical indexing help 80.204.00		Balancing with spindle compensation		Milling program 80.212.00
	Laser marking		Balancing in 1 plane		Balancing Software TD 4.0 80.245.06
	Print label		Balancing in 2 planes 80.252.01		User account administration 80.245.12
	Radial drilling		Fixed components 80.202.00		Deutsch/English/Français/ Italiano/Español

The following characteristics are included standard for Tool Dynamic TD Comfort Plus i4.0:























Characteristics		
	Control terminal i4.0 incl. touchscreen 80.233.09	High quality 27" touchscreen with hardened glass surface for easiest control. Control terminal with drawer for balancing adapter and tools and storing facility for printers
	i4.0 ready	Digital data transfer to machine via LAN or USB, optional data transfer with Balluff chip and DAC connectivity
	Software via 27" multi-touchscreen	Software via 27" multi-touchscreen or mouse & keyboard for maximum usability
	Windows 10	Software based on operation system Windows 10
	Accessories and special equipment	Please check the table on pages 622–625

Technical details			
Tool Dynamic TD Comfort Plus i4.0			
Dimensions l x h x d [mm/inch]	1100x1500x820 / 43x59x32	Compressed air [bar/psi]	6/87
Weight [kg/lbs]	544/1,197	Max. tool length [mm/inch]	400/15.7
Spindle speed [rpm]	300–1100	Optional [mm/inch]	700/27.6
Measuring accuracy [gmm]	< 0.5	Max. tool diameter [mm/inch]	380/14.96
Power requirements [V/Hz]	230/50–60	Optional [mm/inch]	425/16.73
Power usage [kW]	0.4	Max. tool weight [kg/lbs]	30/66
		<b>Order No.</b>	<b>80.226.04.09.3.US</b>

OPTIONAL CONFIGURATIONS

Symbol	Order No.	Article name	Description	TD 1002	Tool Dynamic TD					TD Preset Microset	TD 800
					Economic	Economic Plus	Comfort	Comfort Plus	Comfort Plus i4.0		
											
	<b>80.205.10</b>	Transformer	Transforms 230 Volt single phase power to 110 Volt single phase	●	●	●	●	●	●	●	●
	—	Vibration optimized base	Adapted table for optimized base	●	—	—	—	—	—	—	—
	—	Base made of polymer concrete	Heavy base ensures the highest measuring accuracy	—	●	●	●	●	●	●	●
	—	User interface	Integrated user interface for easy handling of the machine	●	●	●	●	●	●	●	●
	—	Optical indexing help	Indication of the exact spindle angle position on display	●	●	●	●	●	●	●	●
	—	Laser marking	Indicates the position of unbalance and correction with a laser	●	●	●	●	●	●	●	●
	—	Print label	Print balancing results on label	—	—	—	●	●	●	●	●
	—	Radial drilling	Balancing by drilling radially	●	●	●	●	●	●	●	●
	—	Software for compensation with balancing rings	Balancing by rings or other movable weights	●	●	●	●	●	●	●	●
	—	Index balancing	Compensation of measuring errors by index balancing (2 measuring runs, indexing angle 180°)	●	●	●	●	●	●	●	●
	—	Balancing with spindle compensation	Quick and precise measurement of repetition parts (single measuring run)	●	●	●	●	●	●	●	●
	—	Balancing in 1 plane	Measuring and correction of unbalance in 1 plane (static)	●	●	●	●	●	●	●	●
	<b>80.252.01</b>	Balancing in 2 planes	Measuring and correction of unbalance in 2 planes (dynamic unbalance)	○	○	●	●	●	●	●	●
	<b>80.202.00</b>	Fixed components	Enables balancing at pre-defined positions (e.g. with balancing screws)	○	●	●	●	●	●	●	●























● included ○ optional — not available

Symbol	Order No.	Article name	Description	TD 1002	Tool Dynamic TD					TD Preset Microset	TD 800
					Economic	Economic Plus	Comfort	Comfort Plus	Comfort Plus i4.0		
											
	80.217.00	Automatic indexing	Turns the spindle on the selected angle position and simplifies exact positioning of spindle	○	●	●	●	●	●	●	●
	80.227.00	Rack for accessories	Storage rack with two integrated drawers for balancing adapters and further accessories	—	●	●	●	●	●	●	●
	80.212.00	Milling program	Milling program allows correction of unbalance via milling	○	○	○	●	●	●	●	●
	80.245.06	Balancing Software TD 4.0	New software with user-friendly graphical interface and touchscreen control	—	●	●	●	●	●	●	●
	80.228.03.3	Screen holder	Comfortable tray to place PC screen and keyboard	—	○	○	●	—	—	—	—
	80.228.02.01.3	Printer desk	Optional desk for printer (Requires screen holder)	—	○	○	○	—	—	—	—
	80.228.02.02.3	PC holder	Optional holder for external PC (Requires screen holder)	—	○	○	○	—	—	—	—
	80.233.00.4	Control terminal incl. touchscreen	Terminal for storage of touchscreen, keyboard, mouse, printer, and further accessories (only together with Balancing Software TD 4.0)	—	○	○	○	●	—	—	●
	80.233.09	Control terminal i4.0 incl. touchscreen	Control terminal with 27" touchscreen and integrated PC (Windows based)	—	—	—	—	○	●	●	○
	80.233.01.3	Desk for label printer	Optional desk for label printer (Requires Tool Control i4.0)	—	—	—	—	○	○	○	○
	80.233.02.3	Desk for tool scale	Optional desk for tool scale or tools (Requires Tool Control i4.0)	—	—	—	—	○	○	○	○
	80.229.03	Touchscreen	TFT monitor with touchscreen (Upgrade for TD Comfort)	—	—	—	○	●	●	●	●
	80.229.02	TFT screen	Comfortable usage via keyboard for integrated PC	—	○	○	●	—	—	—	—
	80.229.04	Touchscreen	TFT monitor with touchscreen for TD Economic and TD Economic Plus	—	○	○	—	●	●	●	●





















● included ○ optional — not available



## OPTIONAL CONFIGURATIONS

Symbol	Order No.	Article name	Description	TD 1002	Tool Dynamic TD					TD Preset Microset	TD 800
					Economic	Economic Plus	Comfort	Comfort Plus	Comfort Plus i4.0		
											
	<b>80.209.00</b>	Specific weight function	Enables specification of the specific weight of the holder to be balanced, if different from steel	○	○	○	○	○	○	●	○
	<b>80.213.01</b>	Drilling axial	Enables balancing by axial drilling (e.g. for grinding wheels)	○	○	○	○	○	○	○	○
	<b>80.218.00</b>	Index balancing with free indexing angle	Index balancing of holders which can not be indexed 180° (e.g. PSC chucks)	○	○	○	○	○	○	○	○
	<b>80.214.00</b>	Software for report printout	Printout of a detailed measuring protocol (balancing certificate)	○	○	○	○	○	○	●	○
	—	Deutsch/English/Français/Italiano/Español	Languages for user interface	●	●	●	●	●	●	●	●
	<b>80.245.12</b>	User account administration	User administration with individual allocation of user rights (80.245.06 required)	—	○	○	●	●	●	○	○
	<b>80.245.09</b>	Forbidden areas	Defined areas that are not allowed for the correction of the unbalance (80.245.06 required)	—	○	○	○	○	○	○	○
	<b>80.245.10</b>	Alternative balance correction positions	Calculation of alternative positions, when proposed position not possible (80.245.06 required)	—	○	○	○	○	○	○	○
	<b>80.245.11</b>	Optimized measuring time	Shortened measuring run, if measuring accuracy is sufficient (80.245.06 required)	—	○	○	○	○	○	○	○
	<b>80.245.14</b>	Eccentric Balancing	Correction of unbalance by eccentric milling or turning	—	○	○	○	○	○	○	○
	<b>80.232.01.3</b>	Safety hood type 3	Safety hood for extra long tool holders with max. 700 mm length and max. 400 mm diam. (incl. second laser marking from top)	—	○	○	○	○	○	●	—
	<b>80.232.02.3</b>	Safety hood type 4	Safety hood for extra long tool holders with max. 700 mm length and max. 425 mm diam. (incl. second laser marking from top)	—	○	○	○	○	○	—	—
	<b>80.254.00.3</b>	Runout measuring device	Easy and reliable check of grinding wheel's runout and axial runout	○	—	—	—	—	—	—	—
	<b>80.203.00</b>	Balancing screw set	Set consisting of 11 × 10 special screws for fine-balancing of tool holders with balancing threads m6 (e.g. shrink fit chucks from HAIMER)	○	○	○	○	○	○	●	○

● included ○ optional — not available

Symbol	Order No.	Article name	Description	TD 1002	Tool Dynamic TD					TD Preset Microset	TD 800
					Economic	Economic Plus	Comfort	Comfort Plus	Comfort Plus i4.0		
											
	<b>79.350.xx</b>	Balancing rings	For fine-balancing of all tool holders with cylindrical outer diameter (see p. 657)	○	○	○	○	○	○	○	○
	<b>80.207.01</b>	Precision scale	For highly precise weighing of balancing weights	○	○	○	○	○	○	○	○
	<b>80.207.12</b>	Software scale integration	Automatic transfer of holder weight from scale	—	○	○	○	○	○	○	○
	<b>80.207.10</b>	Tool scale	Measures the weight of the tool holder, optional direct transfer into the Balancing Software (see option 80.207.12)	○	○	○	○	○	○	○	○
	<b>80.215.02</b>	Laser printer for balancing reports	Laser printer with Ethernet port to print out a detailed balancing report (together with option 80.214.00)	○	○	○	○	○	○	○	○
	<b>80.206.00</b>	Set of calibration magnets	Calibration magnets for testing, training, and demonstration purposes	○	○	○	○	○	○	○	○
	<b>90.101.20.02</b>	Product training	The training is obligatory for future warranty claims	○	○	○	○	○	○	○	○
	<b>80.243.01</b>	Grinding wheel edge finder	Easy edge measurement for grinding wheels	—	—	—	—	—	○	—	—
	<b>80.230.00</b>	Calibration tube	For the calibration and testing of every balancing machine with the help of a defined mass	○	○	○	○	○	○	○	○
	<b>80.228.02.04.3</b>	Support arm for tool scale	Optional desk for tool scale	—	○	○	○	○	○	—	○
	<b>80.245.13</b>	Export measuring results	Software to export measuring results	—	○	○	○	○	○	○	○
	<b>80.215.05</b>	Label printer "Dymo"	Printout of a label with the measuring results (short report); USB interface (80.245.06 required)	—	—	—	○	○	○	○	○

● included ○ optional — not available

## Tool Dynamic Control Terminal: For more operating comfort

High quality touchscreen with hardened glass surface for easy control

Traditional keyboard and mouse input possible

Drawer for accessories

Storage space for printers

Storage for balancing adapter and tools

Additional drawer



# TOOL DYNAMIC TD SOFTWARE 4.0

## Intelligent Balancing Software

Balancing is now even easier and more user-friendly. The user interface is completely made up of graphics. Buttons with symbols replace the text fields in most locations. Selection can take place using function buttons, by clicking the mouse or by touching the screen.

The proven simple design of the existing interface has been kept. Anyone who already knows the Tool Dynamic can work with the latest software without any problems.

## In addition, there is a series of additional functions

User management makes it possible to assign different access rights. For example, one user can create new tool data and determine balance tolerances while another may only pull up the existing data and carry out the balancing procedure.

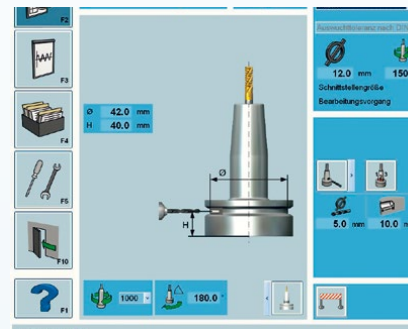
- User-friendly design
- Operation with touchscreen (optional)
- Allocation of balance tolerances by machine type
- Tool management with database
- Tool data management in folder structure
- Simple data exchange with other systems (e.g. tool data management)

## Further options

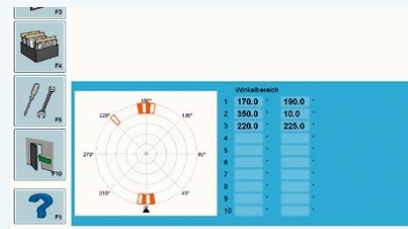
- Definition of forbidden areas where the compensation of the unbalance is not possible
- Calculation of alternative balancing positions
- User management with access rights
- Connection to external scales possible
- Optimized measuring run
- Export of measuring results



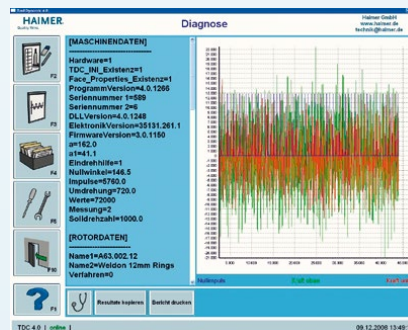
Clearly organized graphical user interface



Intuitive user guidance



Feature: Forbidden areas



Advanced diagnostic modes

## Tool Dynamic TD Preset Microset: For balancing and presetting in one step



## TOOL DYNAMIC TD PRESET MICROSET TOOL BALANCING AND PRESETTING

### Two proven systems – a trendsetting innovation

The Tool Dynamic Preset Microset is a perfect combination of HAIMER's balancing and HAIMER Microset's presetting technology.

The tool is clamped in the high precision balancing spindle fitted with HAIMER's proven adapter system. This saves time, money and increases accuracy because the tool does not have to be re-clamped.

- Breakthrough state-of-the-art technology: Tool Dynamic Comfort Plus and Microset UNO Premium
- Highest efficiency and time saving by combining two production stages
- Utmost accuracy due to high precision clamping in HAIMER's balancing adapters
- Needs little space
- Simple and logical operation with HAIMER TDC 4.0 and Microvision UNO with 27" multi-touchscreen
- Adapter for all interfaces
- Highest possible measuring convenience



### Presetting

Measuring system with high resolution camera and digital photo processing

### Software for professionals

Various options for measuring and balancing clearly arranged in menus with automatic switch between balancing and presetting software

Technical details			
Tool Dynamic TD Preset Microset			
Dimensions (WxHxD) [mm/inch]	2000×1800×850/ 79×71×33	Visual Indicator [mm/inch]	0.001 / 0.00004
Weight [kg/lbs]	550/1,213	Compressed air [bar/psi]	5–6/73–87
Power requirements [V/Hz]	230/50–60	Max. tool length balancing [mm/inch]	700/27.6
Spindle speed [rpm]	300–1100	Max. tool length measuring and presetting [mm/inch]	400/15.7
Measuring accuracy [gmm]	< 0.5	Max. tool diameter [mm/inch]	400/15.7
Power usage [kW]	1.5	Max. tool weight [kg/lbs]	30/66
Repeatability [mm/inch]	± 2µm / 0.00008	<b>Order No.</b>	<b>80.240.00.3.US</b>

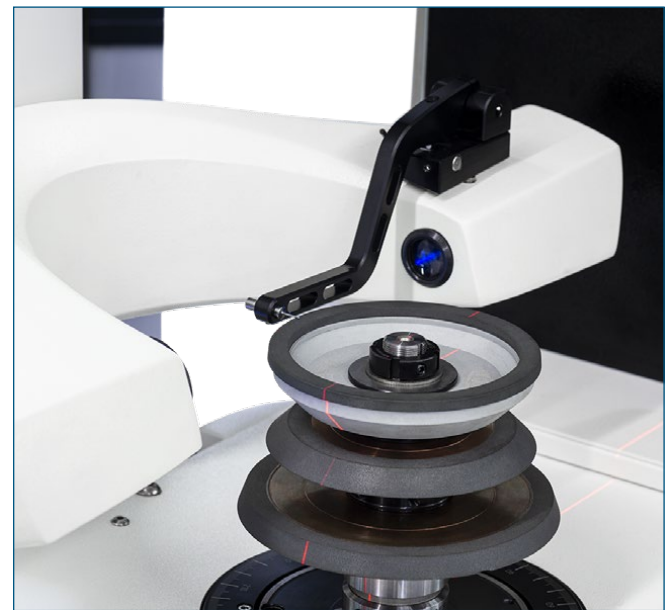
## TOOL DYNAMIC TD PRESET MICROSET PRODUCT FEATURES

### Your benefits at a glance

- Simple operation through photorealistic input dialog
- Automatic software switch by positioning the measuring arm
- Non-contact measurement with a high-resolution camera and digital image processing, incl. measuring software "Microvision" with all important measuring functions of a modern and up-to-date presetting device
- Convenient operation, menu-driven via PC and 27" touchscreen
- Large hood for tool holders with max. 27.6" (700 mm) length. Balancing in 1 plane (static) and 2 planes (dynamic)
- Various measuring and balancing methods
- Optional grinding wheel edge finder: ideal for measuring grinding wheel packages and subsequently balancing for best grinding results
- RFID ready (Balluff, etc.) to read and write balance grade and max. rotation
- Ready for barcode scanner
- HAIMER DAC (Data Analyzer & Controller) ready
- Built-in drawer cabinet for storing accessories



*Non-contact measurement with a high-resolution camera and digital image processing, incl. measuring software "Microvision"*



**Optional: Grinding wheel edge finder for grinding wheels**

*Easy edge measurement for grinding wheels*

*The measuring pin eliminates the blur on the surface and creates a clear point of intersection (Order no. 80.243.01)*

## TOOL DYNAMIC TD PRESET MICROSET FEATURES

### Machine & Tool Control

- Robust, long-life cast iron construction
- Base made of polymer concrete
- Thermally optimized material combination for improved repeatability
- USB / LAN data output
- Windows 10
- Storage rack with two integrated drawers
- Storage drawers for balancing adapters and tool accessories in the Tool Control
- Software via 27" multi-touchscreen or mouse & keyboard for maximum usability
- Label printer optional

### Tool Presetting

- Technology package: Incident light, Edgefinder, release-by-touch
- Sigma function
- $\pm 2 \mu\text{m}$  repeatability
- Manual fine adjustment
- Memory for 1,000 zero points and tools
- Easy and intuitive Microvision measuring software
- Manual RFID system optional
- Bi-directional interface optional
- Post processor optional

### Balancing

- Integrated user interface for easy handling of the machine
- Optical indexing help
- Laser marking
- 2nd laser (from above)
- Index balancing
- Drilling radial
- Balancing with spindle compensation
- Software for compensation with balancing rings
- Balancing in 1 and 2 planes
- Balancing Software TDC 4.0
- Fixed components
- Specific weight function
- Milling program
- Software for printout of report



## Tool Dynamic TD 800: For specialists



Picture shows special equipment: Runout measuring console

## TOOL DYNAMIC TD 800 SPECIAL BALANCING MACHINES

### Your solution for big rotors up to Ø 800 mm

Based on the proven Tool Dynamic balancing technology, the Tool Dynamic TD 800 allows balancing of large rotors of any kind, including bearing rings, grinding wheels and turbine wheels. With hand tailored clamping adapters, you can balance your rotors as easily and as quickly as usual.



*The safety hood is segmented and opens to the side so the rotor is accessible from above. Heavy parts can be handled by a crane.*

#### Technical details

##### Tool Dynamic TD 800

Dimensions l x h x d [mm/inch]	2000 x 1950 x 1020 / 79 x 77 x 42	Compressed air [bar/psi]	5–6/87
Weight [kg/lbs]	600/1323	Air consumption [l/h]	30
Spindle speed [rpm]	100–600	Max. tool length [mm/inch]	750/29.5
Measuring accuracy [gmm]	< 0.5	Max. tool diameter [mm/inch]	800/31.5
Power requirements [V/Hz]	230/50–60	Max. tool weight [kg/lbs]	110/242
Power usage [kW]	1.0	<b>Order No.</b>	<b>80.270.00</b>

# Tool Dynamic TD Automatic: For professionals



## TOOL DYNAMIC TD AUTOMATIC AUTOMATIC BALANCING TECHNOLOGY

We take balancing to the next level: faster, better, more efficient!

### The Tool Dynamic TD Automatic

The Tool Dynamic TD Automatic is a truly universal CNC-based balancing machine with automated correction of unbalance. It automatically corrects the unbalance in one or two planes by drilling, milling or grinding. The machine can work vertically and horizontally.

The balancing machine is controlled by an integrated 19" touch-screen. The numerical control is a Siemens 840DSL, which can be accessed simultaneously with the Balancing Software.

### Automatic Balancing – that's how it works

After measuring for unbalance, the software calculates how deep the machine must drill, mill or grind in order to correct the unbalance. The balancing spindle turns to the correct position. The integrated CNC unit moves to the pre-selected balancing plane and automatically removes the appropriate amount of material. It's as simple as that.

Balancing could not be any faster or easier. Errors, such as those caused by incorrect marking on the tool holder or through inadvertently incorrect drilling depths, are no longer an issue.

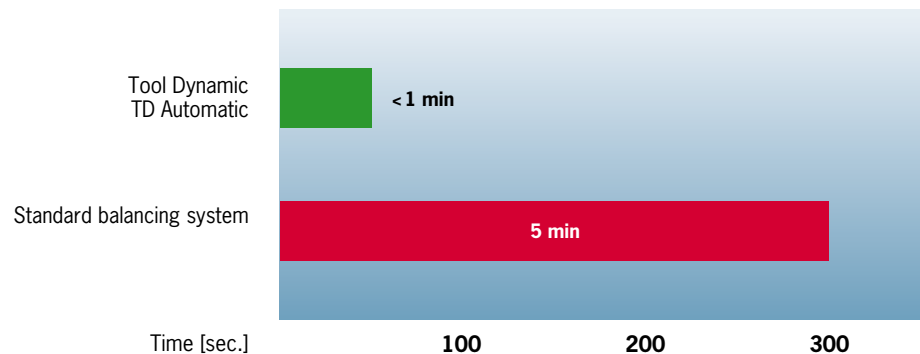
- Measures and corrects unbalance in one step
- Rapid, easy and economic
- No incorrect drilling on the holder
- Integration into automatic production lines is possible
- Specific software for particular methods of balancing available

Tool Dynamic TD Automatic – automatic vertical CNC based balancing machine: **Maximum comfort, maximum process reliability with highest efficiency and precision.**

Contact Haimer USA for more details.

### Improve your efficiency: balancing in record time!

**Balancing process:**  
Simple measuring run,  
balance correction and check



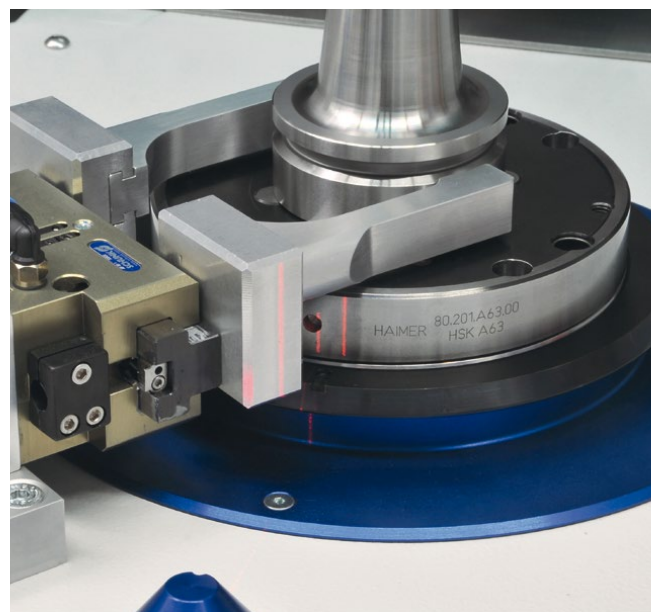
## TOOL DYNAMIC TD AUTOMATIC PRODUCT FEATURES

### Your benefits at a glance

- Correction of unbalance is fully automated by drilling, milling or grinding in one or two planes with the help of an integrated simultaneous 4 Axis CNC machine tool
- Integrated and exchangeable balancing adapters clamp holders with the highest precision. There are standard adapters for all common interfaces and customized solutions for special purposes
- Gripper for automated indexing (optional). It can be mounted without any additional tools and connected together with the balancing adapter
- Chips are removed by exhaust (suction) equipment
- Central lubrication enables a nearly maintenance free 3 shift use
- Balancing spindle and control box are cooled
- Dynamic measuring mode enables shortest measuring times – balance and control your holders in record time!
- Simple measuring mode: measuring, drilling and checking in less than **1 minute!**
- Integration of robot unit is possible – fully integrate your balancing machine into your production line
- Intelligent software allows for the fast and efficient re-balancing of holders that have been balanced on the machine once before



Automated correction of unbalance via CNC machining unit



Integrated balancing adapter and gripper for automatic index measuring

## TOOL DYNAMIC TD AUTOMATIC PRODUCT FEATURES

Technical data		
<b>Measuring accuracy</b>		
Measuring accuracy	< 0.5 gmm	
<b>Limitation of the rotor</b>		
Max. diameter (mm/inch)	400 / 15.74	
Max. length (mm/inch)	600 / 23.6	
Max. weight (kg/lbs)	50 / 110	
<b>Operational range</b>		
X-axis (mm/inch)	155 / 6.10	
Y-axis (mm/inch)	395 / 15.55	
Z-axis (mm/inch)	205 / 8.07	
B-axis	360°	
Rapid mode	20 m/min	on all axis
<b>Balancing spindle</b>		
Max. RPM	1400 U/min/rpm	
Max. torque	35 Nm	
<b>CNC unit</b>		
Interface	VDI 30	
Max. engine speed	6000 U/min	adjustable
Max. torque	15 Nm	at S3-25%
Max. drilling capacity (mm/inch)	Ø 10 mm / 3/8"	in hardened steel with HRC 60
<b>Operational range of rotor in horizontal mode</b>		
Max. diameter (mm/inch)	400 / 15.74	
Max. height (mm/inch)	250 / 9.8	
<b>Operational range of rotor in vertical mode</b>		
Max. diameter (mm/inch)	400 / 15.74	
Max. height (mm/inch)	280 / 11.0	

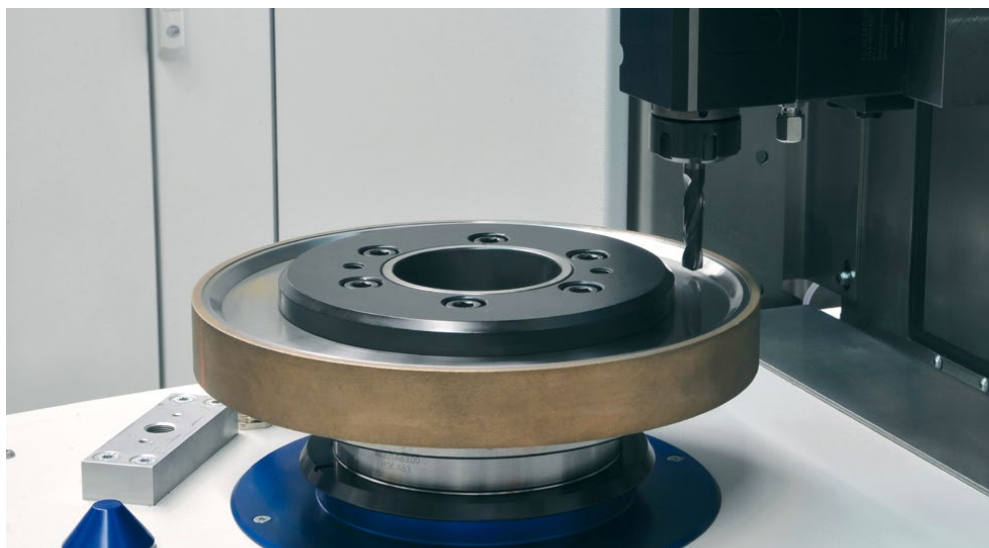


Integrated control and Balancing software

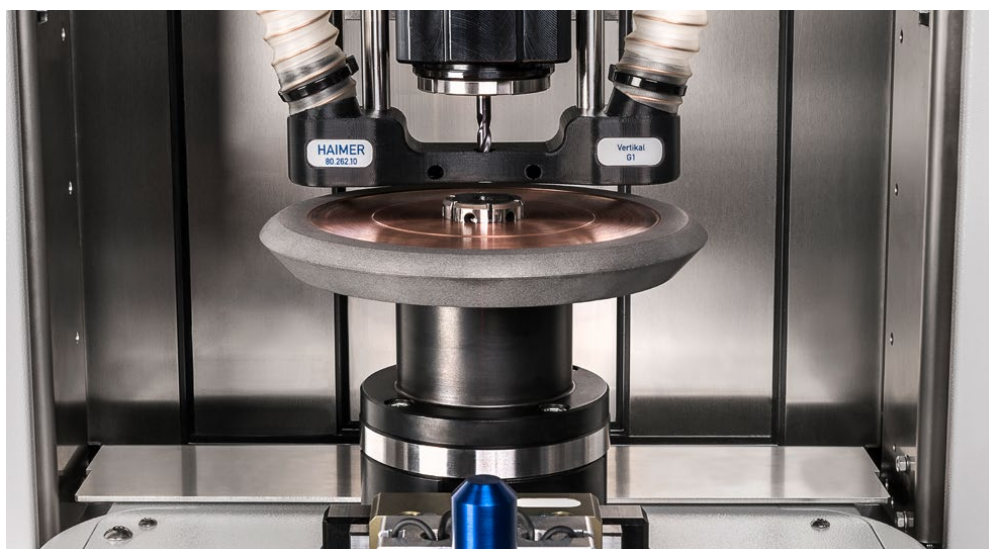
## APPLICATION EXAMPLES



**Compressor wheel for turbocharger**  
Balancing by peripheral milling axial.



**Balancing of grinding wheels by axial drilling**  
Balanced grinding wheels reduce the surface roughness of the work piece, which leads to a remarkable increase of the process performance and higher precision of the end product.

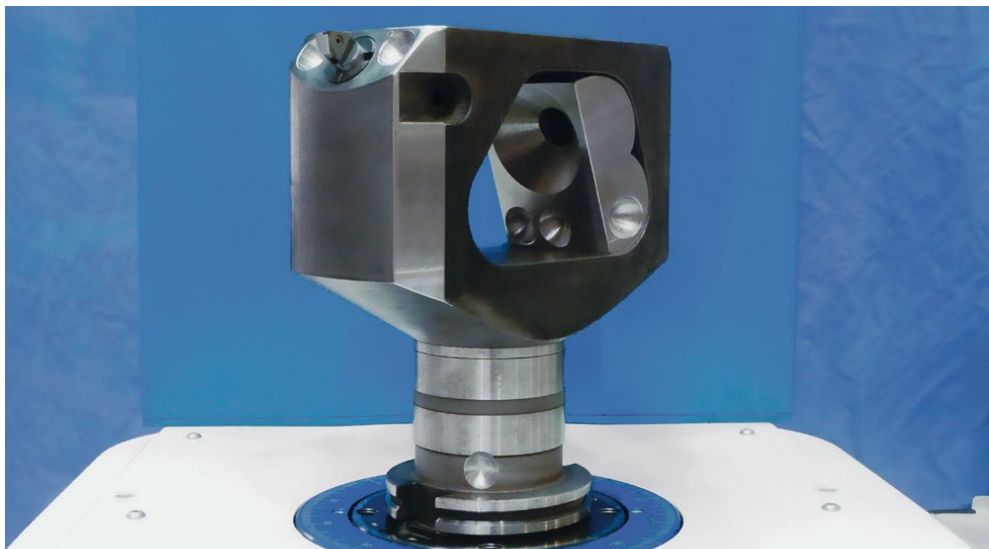


**Balancing of grinding wheels by axial drilling**



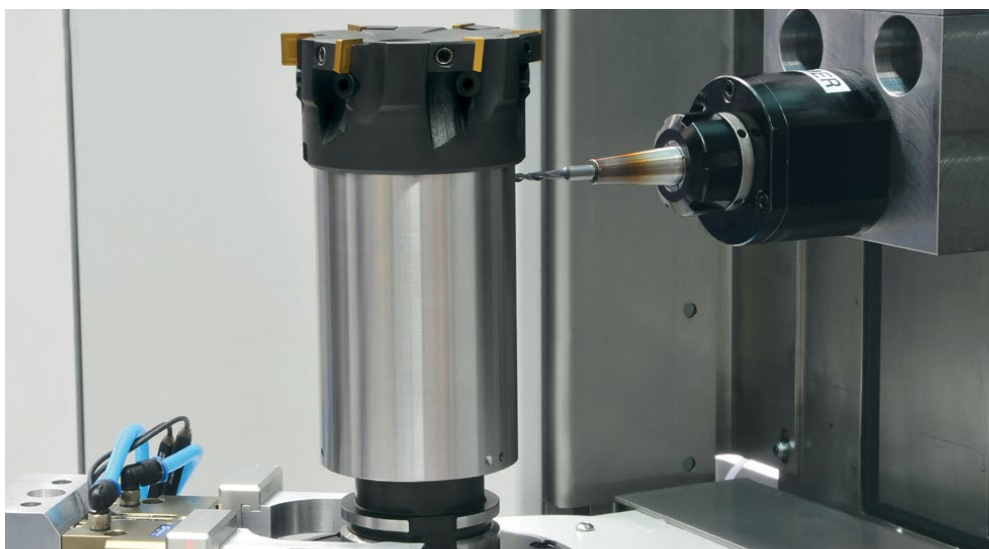
### Tools for woodworking

Balancing prevents cutting edge breakage and reduces vibrations, enabling the highest accuracy and the cleanest edges on your work piece. This raises your productivity and allows you to realize a higher cutting capacity.



### Balancing of fine boring heads

Get better tolerance grades and better roundness. The cutting capacity can be raised up to 300%.



### Milling head, balancing in two planes

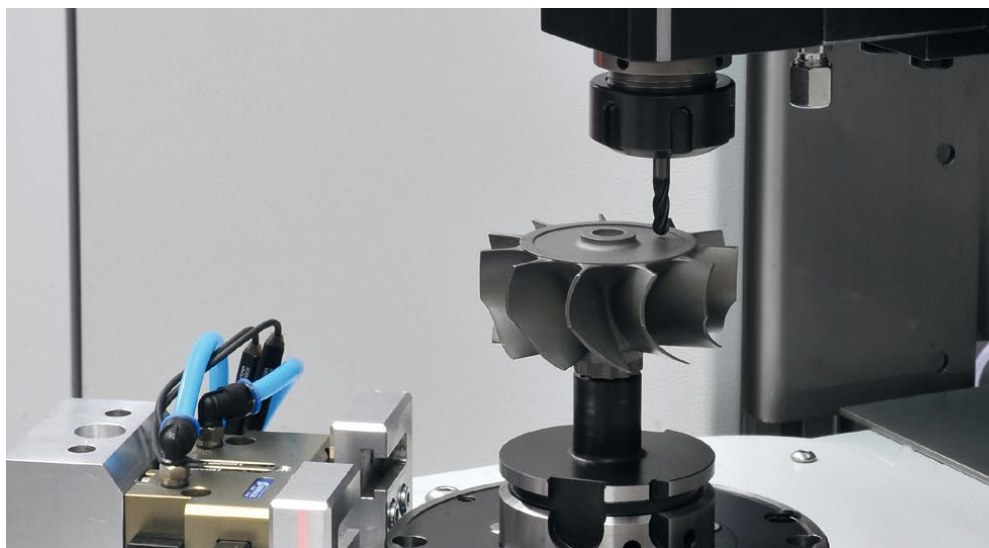
Long projecting tools must be balanced in two planes in order to eliminate the couple unbalance (dynamic balancing). On longer tools, this leads to a higher cutting capacity and a better surface finish.



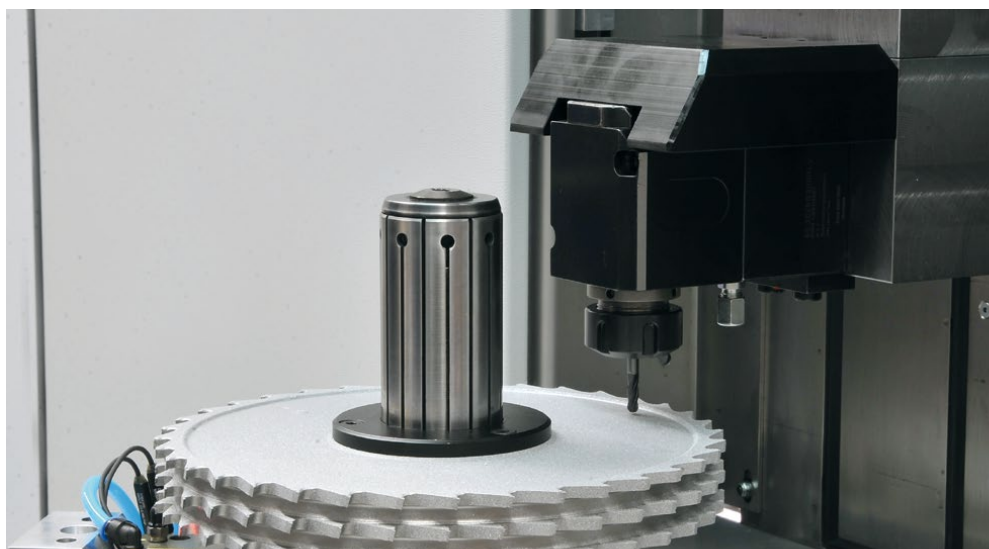
## APPLICATION EXAMPLES

**Balancing of tools with a HG balancing adapter for tools with a cylindrical shank**

For further information, please go to page 655.

**Compressor wheel for turbo charger**

Axial drilling.

**Balancing of PCD jointing cutters for laminate**

Balancing enables the best edge quality for the piece of furniture by vibration-free tool run. In addition, the noise while machining is reduced to a minimum.

## RUNOUT MEASURING DEVICE FOR TD 1002

### Accessories for maximum performance

#### Runout measuring device

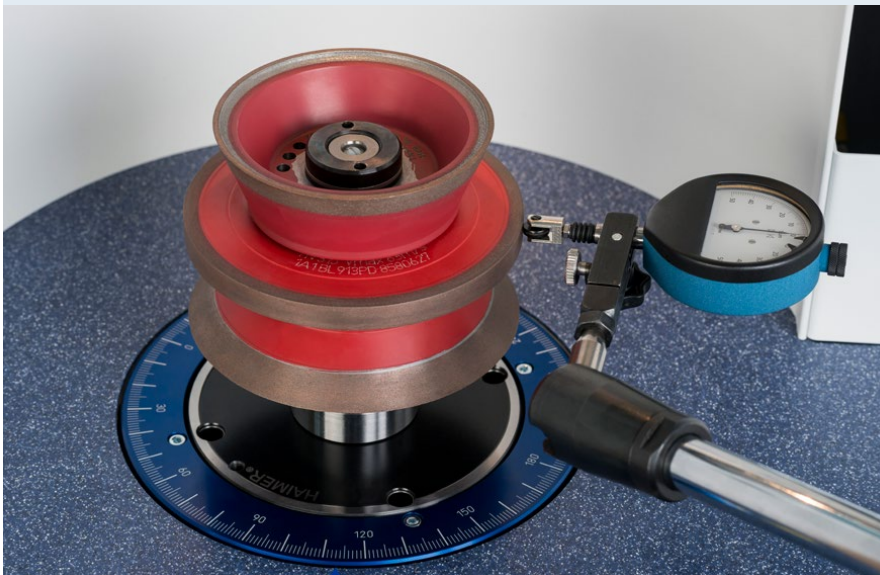


With the runout measuring device, you can do an easy and reliable check of your grinding wheel's runout and axial runout.

The runout measuring unit consists of: Measuring arm with tripod and fine indicator in 0.001 mm accuracy execution as well as a measuring roll.

Runout measuring device  
**Order No. 80.254.00.3**

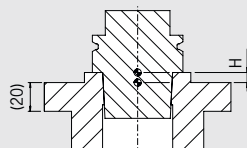
Axial runout check



Measuring runout and axial runout as well as balancing without re-clamping.

Runout measuring

## BALANCING ADAPTER HSK



- Micron precision clamping for the highest measuring accuracy and repeatability
- Easy and quick changing due to compact design

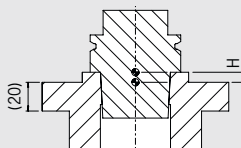
Attention: Adapters only to be used with original HAIMER Tool Dynamic Balancing Machines

HSK balancing adapter with automatic clamping system				
HSK interface	Adapter Order No.	Correlation	Description	Height H
<b>HSK 25</b>				
E	80.201.E25.00		Adapter for HSK-E25 with clamping system	0 mm
<b>HSK 32</b>				
A	80.201.A32.00		Adapter for HSK-A32 with clamping system	0 mm
B	80.201.E25.00	B32 = E25	Adapter for HSK-E25 with clamping system	0 mm
C	80.201.A32.00	C32 = A32	Adapter for HSK-A32 with clamping system	0 mm
D	80.201.E25.00	D32 = E25	Adapter for HSK-E25 with clamping system	0 mm
E	80.201.E32.00		Adapter for HSK-E32 with clamping system	0 mm
F	80.201.E25.00	F32 = E25	Adapter for HSK-E25 with clamping system	0 mm
<b>HSK 40</b>				
A	80.201.A40.00		Adapter for HSK-A40 with clamping system	0 mm
B	80.201.E32.00	B40 = E32	Adapter for HSK-E32 with clamping system	0 mm
C	80.201.A40.00	C40 = A40	Adapter for HSK-A40 with clamping system	0 mm
D	80.201.E32.00	D40 = E32	Adapter for HSK-E32 with clamping system	0 mm
E	80.201.E40.00		Adapter for HSK-E40 with clamping system	0 mm
F	80.201.E32.00	F40 = E32	Adapter for HSK-E32 with clamping system	0 mm
<b>HSK 50</b>				
A	80.201.A50.00		Adapter for HSK-A50 with clamping system	0 mm
B	80.201.E40.00	B50 = E40	Adapter for HSK-E40 with clamping system	0 mm
C	80.201.A50.00	C50 = A50	Adapter for HSK-A50 with clamping system	0 mm
D	80.201.E40.00	D50 = E40	Adapter for HSK-E40 with clamping system	0 mm
E	80.201.E50.00		Adapter for HSK-E50 with clamping system	0 mm
F	80.201.E40.00	F50 = E40	Adapter for HSK-E40 with clamping system	0 mm
<b>HSK 63</b>				
A	80.201.A63.00		Adapter for HSK-A63 with clamping system	0 mm
B	80.201.E50.00	B63 = E50	Adapter for HSK-E50 with clamping system	0 mm
C	80.201.A63.00	C63 = A63	Adapter for HSK-A63 with clamping system	0 mm
D	80.201.E50.00	D63 = E50	Adapter for HSK-E50 with clamping system	0 mm
E	80.201.E63.00		Adapter for HSK-E63 with clamping system	0 mm
F	80.201.E50.00	F63 = E50	Adapter for HSK-E50 with clamping system	0 mm
<b>Weinig</b>				
Weinig	80.201.W63.00		Adapter for Weinig tool holder	0 mm
<b>Makino</b>				
Makino	80.201.F63.00.M	Makino F63	Adapter for Makino F63 tool holder	0 mm
Makino	80.201.F80.00.M	Makino F80	Adapter for Makino F80 tool holder	0 mm
<b>HSK 80</b>				
A	80.201.A80.00		Adapter for HSK-A80 with clamping system	0 mm
B	80.201.E63.00	B80 = E63	Adapter for HSK-E63 with clamping system	0 mm
C	80.201.A80.00	C80 = A80	Adapter for HSK-A80 with clamping system	0 mm
D	80.201.E63.00	D80 = E63	Adapter for HSK-E63 with clamping system	0 mm
E	80.201.E80.00		Adapter for HSK-E80 with clamping system	0 mm
F	80.201.E63.00	F80 = E63	Adapter for HSK-E63 with clamping system	0 mm
<b>HSK 100</b>				
A	80.201.A100.00		Adapter for HSK-A100 with clamping system	0 mm
B	80.201.E80.00	B100 = E80	Adapter for HSK-E80 with clamping system	0 mm
C	80.201.A100.00	C100 = A100	Adapter for HSK-A100 with clamping system	0 mm
D	80.201.E80.00	D100 = E80	Adapter for HSK-E80 with clamping system	0 mm
E	80.201.E100.00		Adapter for HSK-E100 with clamping system	0 mm
F	80.201.E80.00	F100 = E80	Adapter for HSK-E80 with clamping system	0 mm
<b>HSK 125</b>				
A	80.201.A125.00		Adapter for HSK-A125 with clamping system	61 mm

## BALANCING ADAPTER FOR SK/BT/CAT/BBT\*/PSC/KM\*/KM4X\*

- Micron precision clamping for the highest measuring accuracy and repeatability
- Easy and quick changing due to compact design

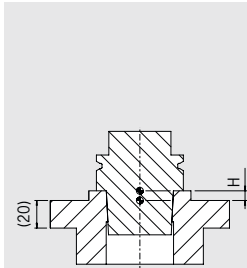
Attention: Adapters only to be used with original HAIMER Tool Dynamic Balancing Machines



SK/BT/CAT/BBT balancing adapter with automatic clamping system			
Order No.	for taper size	for pull stud	Height H
80.201.330.01	SK30/BT30/BBT30 <sup>1)</sup>	thread M12	0 mm
80.201.330.01.IN	CAT30	thread 1/2"-13	0 mm
80.201.330.02	SK30	DIN 69872; ISO 7388-3, Form AF/AD/AC	0 mm
80.201.330.02	BT30/BBT30 <sup>1)</sup>	MAS 30°/45°/90°; ISO 7388-3, Form JD/JF	0 mm
80.201.330.04	SK30	ISO 7388-3, Form UF/UD/UC	0 mm
80.201.140.01	SK40	DIN 2080 thread M16	0 mm
80.201.340.01	SK40/BT40/BBT40 <sup>1)</sup>	thread M16	0 mm
80.201.340.01.IN	CAT40	thread 5/8"-11	0 mm
80.201.340.02	CAT40/SK40	DIN 69872; ISO 7388-3, Form AF/AD/AC	0 mm
80.201.340.02	BT40/BBT40 <sup>1)</sup>	JIS B6339	0 mm
80.201.340.04	CAT40/SK40	ISO 7388-3, Form UF/UD/UC	0 mm
80.201.340.06	CAT40	Similar ISO 7388-3 Form JF/JD/MORI-SEIKI 90° (L3 = 0.99")	0 mm
80.201.340.06	BT40	MAS 30°/45°/90°; ISO 7388-3, Form JD/JF	0 mm
80.201.150.01	SK50	DIN 2080 thread M24	0 mm
80.201.350.01	SK50/BT50/BBT50 <sup>1)</sup>	thread M24	0 mm
80.201.350.01.IN	CAT50	thread 1"-8	0 mm
80.201.350.02	CAT50/SK50	DIN 69872; ISO 7388-3, Form AF/AD/AC	0 mm
80.201.350.02	BT50/BBT50 <sup>1)</sup>	JIS B6339	0 mm
80.201.350.04	CAT50/SK50	ISO 7388-3, Form UF/UD/UC	0 mm
80.201.350.06	CAT50	Similar ISO 7388-3 Form JF/JD/MORI-SEIKI 90° (L3 = 1.39")	0 mm
80.201.350.06	BT50/BBT50 <sup>1)</sup>	MAS 30°/45°/90°; ISO 7388-3, Form JD/ JF	0 mm
Balancing adapter PSC with automatic clamping system			
Order No.	for taper size		Height H
80.201.C3.00	PSC 32		7 mm
80.201.C4.00	PSC 40		7 mm
80.201.C5.00	PSC 50		7 mm
80.201.C6.00	PSC 63		7 mm
80.201.C8.00	PSC 80		7 mm
80.201.C10.00	PSC 100		7 mm
Balancing adapter KM* with automatic clamping system			
Order No.	for taper size		Height H
80.201.KM32.01	KM32		7 mm
80.201.KM40.01	KM40		7 mm
80.201.KM50.01	KM50		7 mm
80.201.KM63.01	KM63		7 mm
80.201.KM80.01	KM80		7 mm
80.201.KM100.01	KM100		30 mm
80.201.KM125.00	KM125 (upon request)		
Balancing adapter KM4X* with automatic clamping system			
Order No.	for taper size		Height H
80.201.KM63.4X	KM4X 63		7 mm
80.201.KM100.4X	KM4X 100		30 mm

<sup>1)</sup> BBT: also suitable for BIG-PLUS. BBT and BIG-PLUS are registered trademarks/tradenames of Big Daishowa Co., Ltd.  
 KM/KM4X are registered trademarks/tradenames of Kennametal Inc.  
 Further adapters available upon request

## BALANCING ADAPTER HSK – INCREASED OFFSET



- Increased offset for better accessibility
- $\mu\text{m}$  precise clamping for the highest measuring accuracy and repeatability
- Easy and quick changing due to compact design

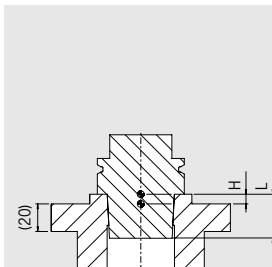
Attention: Adapters only to be used with original HAIMER Tool Dynamic Balancing Machines

### HSK balancing adapter with automatic clamping system – increased offset

Order No.	for taper size	Height H
80.201.E32.02	HSK-A/C/E 32; HSK-B/D/F 40	57 mm
80.201.E40.02	HSK-A/C/E 40; HSK-B/D/F 50	57 mm
80.201.E50.02	HSK-A/C/E 50; HSK-B/D/F 63	57 mm
80.201.E63.02	HSK-A/C/E 63; HSK-B/D/F 80	57 mm

Further adapter available upon request

## BALANCING ADAPTER ROLLOMATIC



- Increased offset for better accessibility
- $\mu\text{m}$  precise clamping for the highest measuring accuracy and repeatability
- Easy and quick changing due to compact design

Attention: Adapters only to be used with original HAIMER Tool Dynamic Balancing Machines

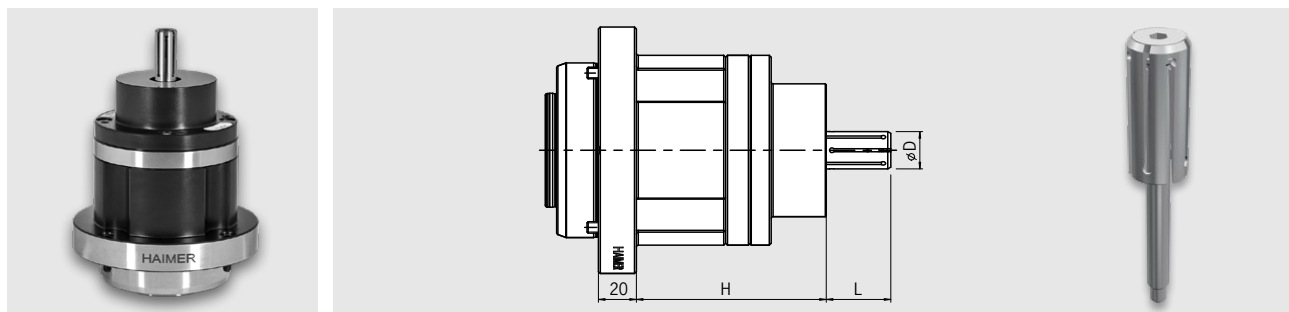
### Balancing adapter Rollomatic Perfect Arbor with automatic clamping system

Order No.	for taper size	Length L	Height H
80.201.R025.00	R025 – 20	20 mm	57 mm
80.201.R025.01	R025 – 25	25 mm	57 mm

Further adapter available upon request

## HSM BALANCING ADAPTER (MANUAL)

### HSM 00 – HSM 01



#### Manual balancing adapter with cartridge mandrel for inner diameter with bore of $\varnothing 15$ up to $\varnothing 100$ mm

- Clamping range - 0.3 / + 0.5 mm
- Precise center clamping for highest repeatability
- Fine balanced to < 1 gmm
- Can be used individually

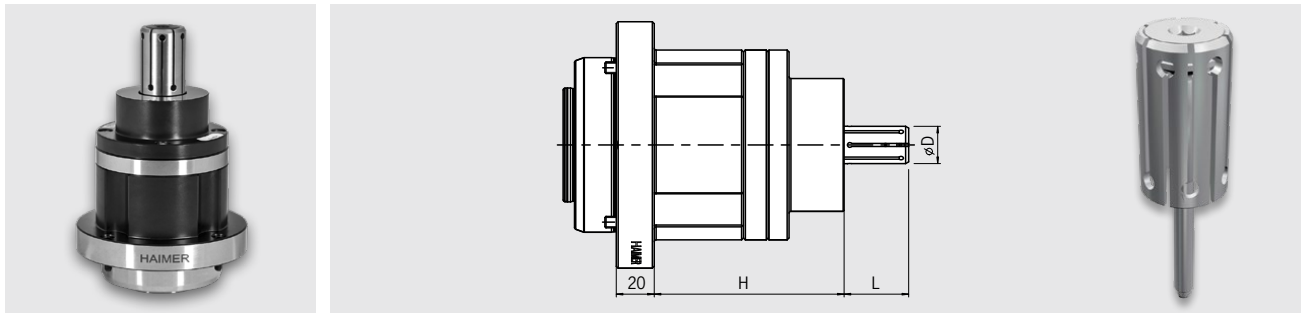
#### Note:

Adapters only to be used with original HAIMER Tool Dynamic Balancing Machines

HSM balancing adapter with manual clamping system	Clamping set	Bore $\varnothing D$ [mm]	Clamping length L [mm]	Height adapter H
Order No.	Order No.	- 0.3 / + 0.5 mm		
<b>HSM 00, Clamping range 15-20 mm</b>				
<b>80.201.HSM00.00</b>	<b>80.201.HSZ00.15</b>	$\varnothing 15.0$	34	100 mm
	<b>80.201.HSZ00.15.5</b>	$\varnothing 15.5$	34	100 mm
	<b>80.201.HSZ00.16</b>	$\varnothing 16.0$	34	100 mm
	<b>80.201.HSZ00.16.5</b>	$\varnothing 16.5$	34	100 mm
	<b>80.201.HSZ00.17</b>	$\varnothing 17.0$	34	100 mm
	<b>80.201.HSZ00.17.5</b>	$\varnothing 17.5$	34	100 mm
	<b>80.201.HSZ00.18</b>	$\varnothing 18.0$	34	100 mm
	<b>80.201.HSZ00.18.5</b>	$\varnothing 18.5$	34	100 mm
	<b>80.201.HSZ00.19</b>	$\varnothing 19.0$	34	100 mm
	<b>80.201.HSZ00.19.5</b>	$\varnothing 19.5$	34	100 mm
	<b>80.201.HSZ00.20</b>	$\varnothing 20.0$	34	100 mm
<b>HSM 01, Clamping range 20-25 mm</b>				
<b>80.201.HSM01.00</b>	<b>80.201.HSZ01.20</b>	$\varnothing 20.0$	39	100 mm
	<b>80.201.HSZ01.20.5</b>	$\varnothing 20.5$	39	100 mm
	<b>80.201.HSZ01.21</b>	$\varnothing 21.0$	39	100 mm
	<b>80.201.HSZ01.21.5</b>	$\varnothing 21.5$	39	100 mm
	<b>80.201.HSZ01.22</b>	$\varnothing 22.0$	39	100 mm
	<b>80.201.HSZ01.22.5</b>	$\varnothing 22.5$	39	100 mm
	<b>80.201.HSZ01.23</b>	$\varnothing 23.0$	39	100 mm
	<b>80.201.HSZ01.23.5</b>	$\varnothing 23.5$	39	100 mm
	<b>80.201.HSZ01.24</b>	$\varnothing 24.0$	39	100 mm
	<b>80.201.HSZ01.24.5</b>	$\varnothing 24.5$	39	100 mm
	<b>80.201.HSZ01.25</b>	$\varnothing 25.0$	39	100 mm

When ordering, you need one balancing adapter and at least one clamping set.

## HSM BALANCING ADAPTER (MANUAL) HSM 02 – HSM 04

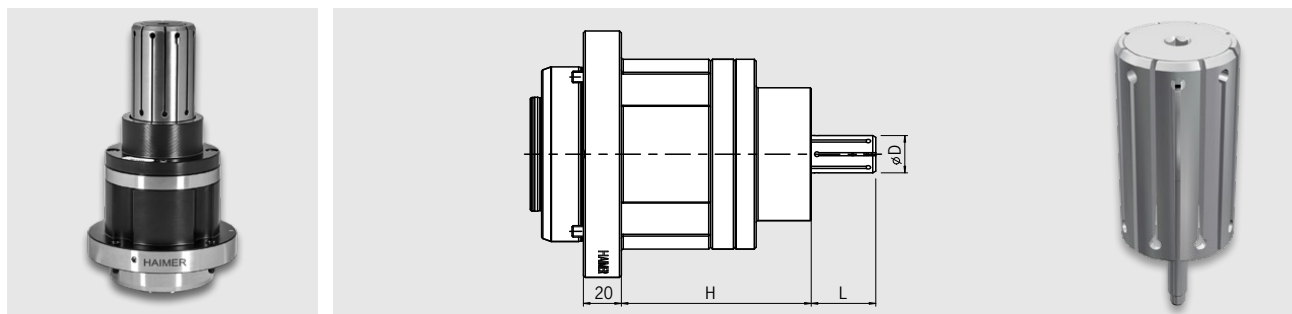


HSM balancing adapter with manual clamping system	Clamping set	Bore Ø D [mm]	Clamping length L [mm]	Height adapter H
Order No.	Order No.	- 0.3 / + 0.5 mm		
<b>HSM 02, Clamping range 25-30 mm</b>				
<b>80.201.HSM02.00</b>	<b>80.201.HSZ02.25</b>	Ø 25.0	45	100 mm
	80.201.HSZ02.25.5	Ø 25.5	45	100 mm
	80.201.HSZ02.26	Ø 26.0	45	100 mm
	80.201.HSZ02.26.5	Ø 26.5	45	100 mm
	80.201.HSZ02.27	Ø 27.0	45	100 mm
	80.201.HSZ02.27.5	Ø 27.5	45	100 mm
	80.201.HSZ02.28	Ø 28.0	45	100 mm
	80.201.HSZ02.28.5	Ø 28.5	45	100 mm
	80.201.HSZ02.29	Ø 29.0	45	100 mm
	80.201.HSZ02.29.5	Ø 29.5	45	100 mm
	80.201.HSZ02.30	Ø 30.0	45	100 mm
<b>HSM 03, Clamping range 30-35 mm</b>				
<b>80.201.HSM03.00</b>	<b>80.201.HSZ03.30</b>	Ø 30.0	49	100 mm
	80.201.HSZ03.30.5	Ø 30.5	49	100 mm
	80.201.HSZ03.31	Ø 31.0	49	100 mm
	80.201.HSZ03.31.5	Ø 31.5	49	100 mm
	80.201.HSZ03.32	Ø 32.0	49	100 mm
	80.201.HSZ03.32.5	Ø 32.5	49	100 mm
	80.201.HSZ03.33	Ø 33.0	49	100 mm
	80.201.HSZ03.33.5	Ø 33.5	49	100 mm
	80.201.HSZ03.34	Ø 34.0	49	100 mm
	80.201.HSZ03.34.5	Ø 34.5	49	100 mm
	80.201.HSZ03.35	Ø 35.0	49	100 mm
<b>HSM 04, Clamping range 35-40 mm</b>				
<b>80.201.HSM04.00</b>	<b>80.201.HSZ04.35</b>	Ø 35.0	59	100 mm
	80.201.HSZ04.35.5	Ø 35.5	59	100 mm
	80.201.HSZ04.36	Ø 36.0	59	100 mm
	80.201.HSZ04.36.5	Ø 36.5	59	100 mm
	80.201.HSZ04.37	Ø 37.0	59	100 mm
	80.201.HSZ04.37.5	Ø 37.5	59	100 mm
	80.201.HSZ04.38	Ø 38.0	59	100 mm
	80.201.HSZ04.38.5	Ø 38.5	59	100 mm
	80.201.HSZ04.39	Ø 39.0	59	100 mm
	80.201.HSZ04.39.5	Ø 39.5	59	100 mm
	80.201.HSZ04.40	Ø 40.0	59	100 mm

When ordering, you need one balancing adapter and at least one clamping set.

# HSM BALANCING ADAPTER (MANUAL)

## HSM 05 – HSM 07

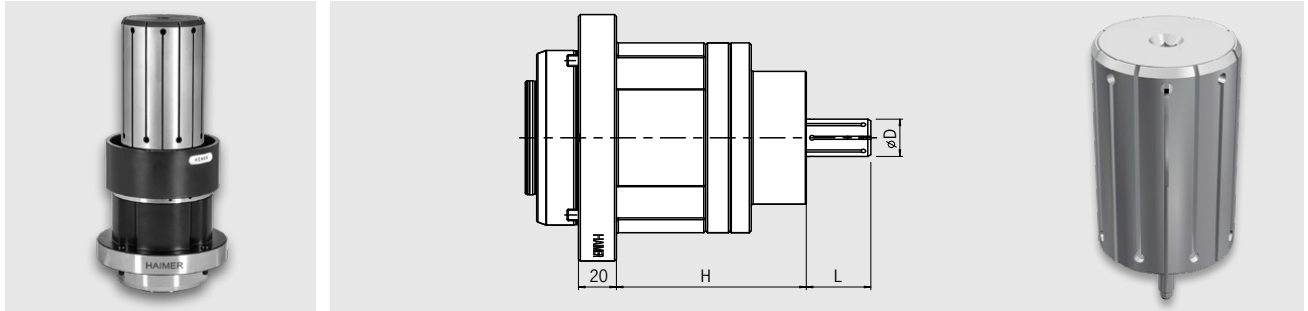


HSM balancing adapter with manual clamping system	Clamping set	Bore Ø D [mm]	Clamping length L [mm]	Height adapter H
Order No.	Order No.	- 0.3 / + 0.5 mm		
<b>HSM 05, Clamping range 40-45 mm</b>				
<b>80.201.HSM05.00</b>	<b>80.201.HSZ05.40</b>	Ø 40.0	59	100 mm
	80.201.HSZ05.40.5	Ø 40.5	59	100 mm
	80.201.HSZ05.41	Ø 41.0	59	100 mm
	80.201.HSZ05.41.5	Ø 41.5	59	100 mm
	80.201.HSZ05.42	Ø 42.0	59	100 mm
	80.201.HSZ05.42.5	Ø 42.5	59	100 mm
	80.201.HSZ05.43	Ø 43.0	59	100 mm
	80.201.HSZ05.43.5	Ø 43.5	59	100 mm
	80.201.HSZ05.44	Ø 44.0	59	100 mm
	80.201.HSZ05.44.5	Ø 44.5	59	100 mm
	80.201.HSZ05.45	Ø 45.0	59	100 mm
<b>HSM 06, Clamping range 45-55 mm</b>				
<b>80.201.HSM06.00</b>	<b>80.201.HSZ06.45</b>	Ø 45.0	79	100 mm
	80.201.HSZ06.46	Ø 46.0	79	100 mm
	80.201.HSZ06.47	Ø 47.0	79	100 mm
	80.201.HSZ06.48	Ø 48.0	79	100 mm
	80.201.HSZ06.49	Ø 49.0	79	100 mm
	80.201.HSZ06.50	Ø 50.0	79	100 mm
	80.201.HSZ06.51	Ø 51.0	79	100 mm
	80.201.HSZ06.52	Ø 52.0	79	100 mm
	80.201.HSZ06.53	Ø 53.0	79	100 mm
	80.201.HSZ06.54	Ø 54.0	79	100 mm
	80.201.HSZ06.55	Ø 55.0	79	100 mm
<b>HSM 07, Clamping range 55-65 mm</b>				
<b>80.201.HSM07.00</b>	<b>80.201.HSZ07.55</b>	Ø 55.0	89	100 mm
	80.201.HSZ07.56	Ø 56.0	89	100 mm
	80.201.HSZ07.57	Ø 57.0	89	100 mm
	80.201.HSZ07.58	Ø 58.0	89	100 mm
	80.201.HSZ07.59	Ø 59.0	89	100 mm
	80.201.HSZ07.60	Ø 60.0	89	100 mm
	80.201.HSZ07.61	Ø 61.0	89	100 mm
	80.201.HSZ07.62	Ø 62.0	89	100 mm
	80.201.HSZ07.63	Ø 63.0	89	100 mm
	80.201.HSZ07.64	Ø 64.0	89	100 mm
	80.201.HSZ07.65	Ø 65.0	89	100 mm

When ordering, you need one balancing adapter and at least one clamping set.

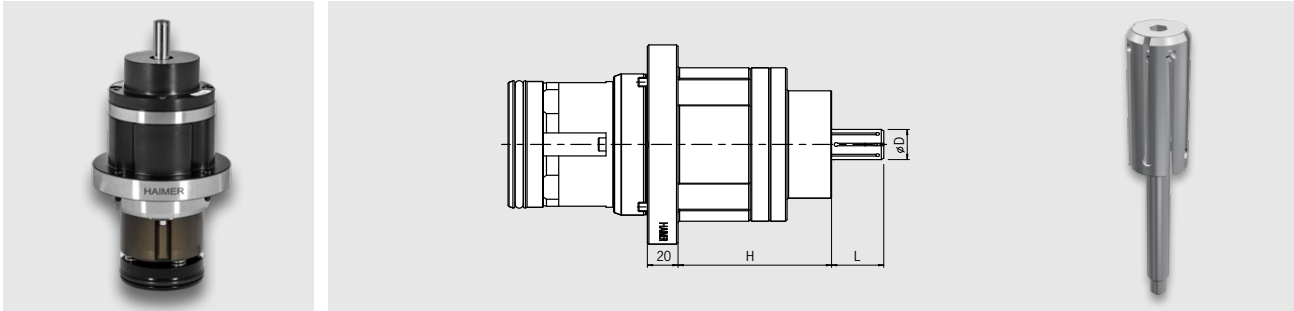


## HSM BALANCING ADAPTER (MANUAL) HSM 08 – HSM 09



HSM balancing adapter with manual clamping system	Clamping set	Bore Ø D [mm]	Clamping length L [mm]	Height adapter H
Order No.	Order No.	- 0.3 / + 0.5 mm		
<b>HSM 08, Clamping range 65–82 mm</b>				
<b>80.201.HSM08.00</b>	<b>80.201.HSZ08.65</b>	Ø 65.0	99	100 mm
	80.201.HSZ08.66	Ø 66.0	99	100 mm
	80.201.HSZ08.67	Ø 67.0	99	100 mm
	80.201.HSZ08.68	Ø 68.0	99	100 mm
	80.201.HSZ08.69	Ø 69.0	99	100 mm
	80.201.HSZ08.70	Ø 70.0	99	100 mm
	80.201.HSZ08.71	Ø 71.0	99	100 mm
	80.201.HSZ08.72	Ø 72.0	99	100 mm
	80.201.HSZ08.73	Ø 73.0	99	100 mm
	80.201.HSZ08.74	Ø 74.0	99	100 mm
	80.201.HSZ08.75	Ø 75.0	99	100 mm
	80.201.HSZ08.76	Ø 76.0	99	100 mm
	80.201.HSZ08.77	Ø 77.0	99	100 mm
	80.201.HSZ08.78	Ø 78.0	99	100 mm
	80.201.HSZ08.79	Ø 79.0	99	100 mm
	80.201.HSZ08.80	Ø 80.0	99	100 mm
	80.201.HSZ08.81	Ø 81.0	99	100 mm
	80.201.HSZ08.82	Ø 82.0	99	100 mm
<b>HSM 09, Clamping range 82–101 mm</b>				
<b>80.201.HSM09.00</b>	<b>80.201.HSZ09.82</b>	Ø 82.0	121	100 mm
	80.201.HSZ09.83	Ø 83.0	121	100 mm
	80.201.HSZ09.84	Ø 84.0	121	100 mm
	80.201.HSZ09.85	Ø 85.0	121	100 mm
	80.201.HSZ09.86	Ø 86.0	121	100 mm
	80.201.HSZ09.87	Ø 87.0	121	100 mm
	80.201.HSZ09.88	Ø 88.0	121	100 mm
	80.201.HSZ09.89	Ø 89.0	121	100 mm
	80.201.HSZ09.90	Ø 90.0	121	100 mm
	80.201.HSZ09.91	Ø 91.0	121	100 mm
	80.201.HSZ09.92	Ø 92.0	121	100 mm
	80.201.HSZ09.93	Ø 93.0	121	100 mm
	80.201.HSZ09.94	Ø 94.0	121	100 mm
	80.201.HSZ09.95	Ø 95.0	121	100 mm
	80.201.HSZ09.96	Ø 96.0	121	100 mm
	80.201.HSZ09.97	Ø 97.0	121	100 mm
	80.201.HSZ09.98	Ø 98.0	121	100 mm
	80.201.HSZ09.99	Ø 99.0	121	100 mm
	80.201.HSZ09.100	Ø 100.0	121	100 mm
	80.201.HSZ09.101	Ø 101.0	121	100 mm

## HSA BALANCING ADAPTER (AUTOMATIC) HSA 00 – HSA 01



### Automatic balancing adapter with cartridge mandrel for inner diameter with bore of Ø 15 up to Ø 100 mm

- Clamping range - 0.3 / + 0.5 mm
- Precise center clamping for highest repeatability
- Fine balanced to < 1 gmm
- Can be used individually

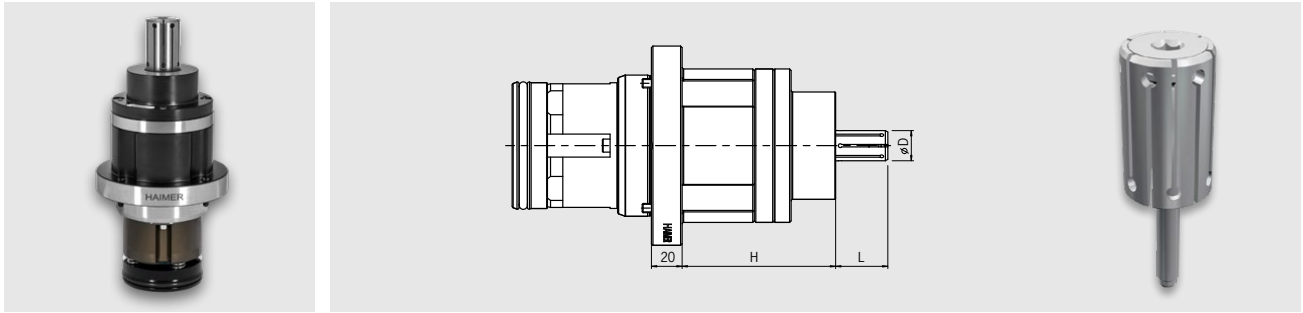
**Note:**

Adapters only to be used with original HAIMER Tool Dynamic Balancing Machines

HSA balancing adapter with automatic clamping system	Clamping set	Bore Ø D [mm]	Clamping length L [mm]	Height adapter H
Order No.	Order No.	- 0.3 /+ 0.5 mm		
<b>HSA 00, Clamping range 15-20 mm</b>				
<b>80.201.HSA00.00</b>	<b>80.201.HSZ00.15</b>	Ø 15.0	34	100 mm
	<b>80.201.HSZ00.15.5</b>	Ø 15.5	34	100 mm
	<b>80.201.HSZ00.16</b>	Ø 16.0	34	100 mm
	<b>80.201.HSZ00.16.5</b>	Ø 16.5	34	100 mm
	<b>80.201.HSZ00.17</b>	Ø 17.0	34	100 mm
	<b>80.201.HSZ00.17.5</b>	Ø 17.5	34	100 mm
	<b>80.201.HSZ00.18</b>	Ø 18.0	34	100 mm
	<b>80.201.HSZ00.18.5</b>	Ø 18.5	34	100 mm
	<b>80.201.HSZ00.19</b>	Ø 19.0	34	100 mm
	<b>80.201.HSZ00.19.5</b>	Ø 19.5	34	100 mm
	<b>80.201.HSZ00.20</b>	Ø 20.0	34	100 mm
<b>HSA 01, Clamping range 20-25 mm</b>				
<b>80.201.HSA01.00</b>	<b>80.201.HSZ01.20</b>	Ø 20.0	39	100 mm
	<b>80.201.HSZ01.20.5</b>	Ø 20.5	39	100 mm
	<b>80.201.HSZ01.21</b>	Ø 21.0	39	100 mm
	<b>80.201.HSZ01.21.5</b>	Ø 21.5	39	100 mm
	<b>80.201.HSZ01.22</b>	Ø 22.0	39	100 mm
	<b>80.201.HSZ01.22.5</b>	Ø 22.5	39	100 mm
	<b>80.201.HSZ01.23</b>	Ø 23.0	39	100 mm
	<b>80.201.HSZ01.23.5</b>	Ø 23.5	39	100 mm
	<b>80.201.HSZ01.24</b>	Ø 24.0	39	100 mm
	<b>80.201.HSZ01.24.5</b>	Ø 24.5	39	100 mm
	<b>80.201.HSZ01.25</b>	Ø 25.0	39	100 mm

When ordering, you need one balancing adapter and at least one clamping set.

## HSA BALANCING ADAPTER (AUTOMATIC) HSA 02 – HSA 04

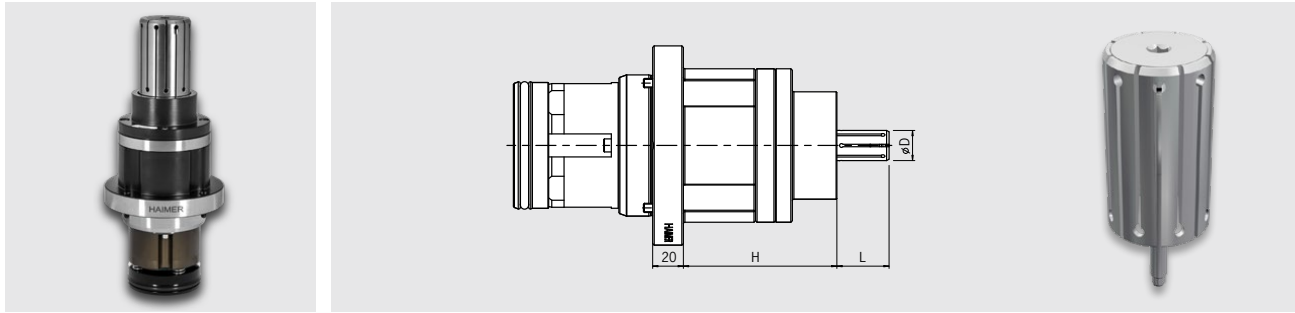


HSA balancing adapter with automatic clamping system	Clamping set	Bore Ø D [mm]	Clamping length L [mm]	Height adapter H
Order No.	Order No.	- 0.3 /+ 0.5 mm		
<b>HSA 02, Clamping range 25–30 mm</b>				
<b>80.201.HSA02.00</b>	<b>80.201.HSZ02.25</b>	Ø 25.0	45	100 mm
	80.201.HSZ02.25.5	Ø 25.5	45	100 mm
	80.201.HSZ02.26	Ø 26.0	45	100 mm
	80.201.HSZ02.26.5	Ø 26.5	45	100 mm
	80.201.HSZ02.27	Ø 27.0	45	100 mm
	80.201.HSZ02.27.5	Ø 27.5	45	100 mm
	80.201.HSZ02.28	Ø 28.0	45	100 mm
	80.201.HSZ02.28.5	Ø 28.5	45	100 mm
	80.201.HSZ02.29	Ø 29.0	45	100 mm
	80.201.HSZ02.29.5	Ø 29.5	45	100 mm
	80.201.HSZ02.30	Ø 30.0	45	100 mm
<b>HSA 03, Clamping range 30–35 mm</b>				
<b>80.201.HSA03.00</b>	<b>80.201.HSZ03.30</b>	Ø 30.0	49	100 mm
	80.201.HSZ03.30.5	Ø 30.5	49	100 mm
	80.201.HSZ03.31	Ø 31.0	49	100 mm
	80.201.HSZ03.31.5	Ø 31.5	49	100 mm
	80.201.HSZ03.32	Ø 32.0	49	100 mm
	80.201.HSZ03.32.5	Ø 32.5	49	100 mm
	80.201.HSZ03.33	Ø 33.0	49	100 mm
	80.201.HSZ03.33.5	Ø 33.5	49	100 mm
	80.201.HSZ03.34	Ø 34.0	49	100 mm
	80.201.HSZ03.34.5	Ø 34.5	49	100 mm
	80.201.HSZ03.35	Ø 35.0	49	100 mm
<b>HSA 04, Clamping range 35–40 mm</b>				
<b>80.201.HSA04.00</b>	<b>80.201.HSZ04.35</b>	Ø 35.0	59	100 mm
	80.201.HSZ04.35.5	Ø 35.5	59	100 mm
	80.201.HSZ04.36	Ø 36.0	59	100 mm
	80.201.HSZ04.36.5	Ø 36.5	59	100 mm
	80.201.HSZ04.37	Ø 37.0	59	100 mm
	80.201.HSZ04.37.5	Ø 37.5	59	100 mm
	80.201.HSZ04.38	Ø 38.0	59	100 mm
	80.201.HSZ04.38.5	Ø 38.5	59	100 mm
	80.201.HSZ04.39	Ø 39.0	59	100 mm
	80.201.HSZ04.39.5	Ø 39.5	59	100 mm
	80.201.HSZ04.40	Ø 40.0	59	100 mm

When ordering, you need one balancing adapter and at least one clamping set.

## HSA BALANCING ADAPTER (AUTOMATIC)

### HSA 05 – HSA 06

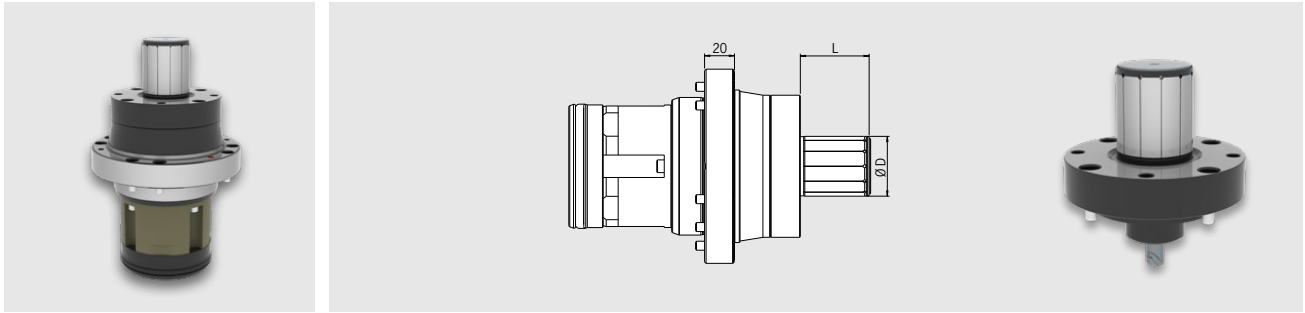


HSA balancing adapter with automatic clamping system	Clamping set	Bore Ø D [mm]	Clamping length L [mm]	Height adapter H
Order No.	Order No.	- 0.3 /+ 0.5 mm		
<b>HSA 05, Clamping range 40–45 mm</b>				
<b>80.201.HSA05.00</b>	<b>80.201.HSZ05.40</b>	Ø 40.0	59	100 mm
	80.201.HSZ05.40.5	Ø 40.5	59	100 mm
	80.201.HSZ05.41	Ø 41.0	59	100 mm
	80.201.HSZ05.41.5	Ø 41.5	59	100 mm
	80.201.HSZ05.42	Ø 42.0	59	100 mm
	80.201.HSZ05.42.5	Ø 42.5	59	100 mm
	80.201.HSZ05.43	Ø 43.0	59	100 mm
	80.201.HSZ05.43.5	Ø 43.5	59	100 mm
	80.201.HSZ05.44	Ø 44.0	59	100 mm
	80.201.HSZ05.44.5	Ø 44.5	59	100 mm
	80.201.HSZ05.45	Ø 45.0	59	100 mm
<b>HSA 06, Clamping range 45–55 mm</b>				
<b>80.201.HSA06.00</b>	<b>80.201.HSZ06.45</b>	Ø 45.0	79	100 mm
	80.201.HSZ06.46	Ø 46.0	79	100 mm
	80.201.HSZ06.47	Ø 47.0	79	100 mm
	80.201.HSZ06.48	Ø 48.0	79	100 mm
	80.201.HSZ06.49	Ø 49.0	79	100 mm
	80.201.HSZ06.50	Ø 50.0	79	100 mm
	80.201.HSZ06.51	Ø 51.0	79	100 mm
	80.201.HSZ06.52	Ø 52.0	79	100 mm
	80.201.HSZ06.53	Ø 53.0	79	100 mm
	80.201.HSZ06.54	Ø 54.0	79	100 mm
	80.201.HSZ06.55	Ø 55.0	79	100 mm

When ordering, you need one balancing adapter and at least one clamping set.

HSA Balancing Adapters (automatic) are also available with diameters of 55 mm – 101 mm (upon request)

## SDA BALANCING ADAPTER (AUTOMATIC)



**Automatic balancing adapter with mandrel for inner diameter  
with bore of Ø 8 up to Ø 60 mm**

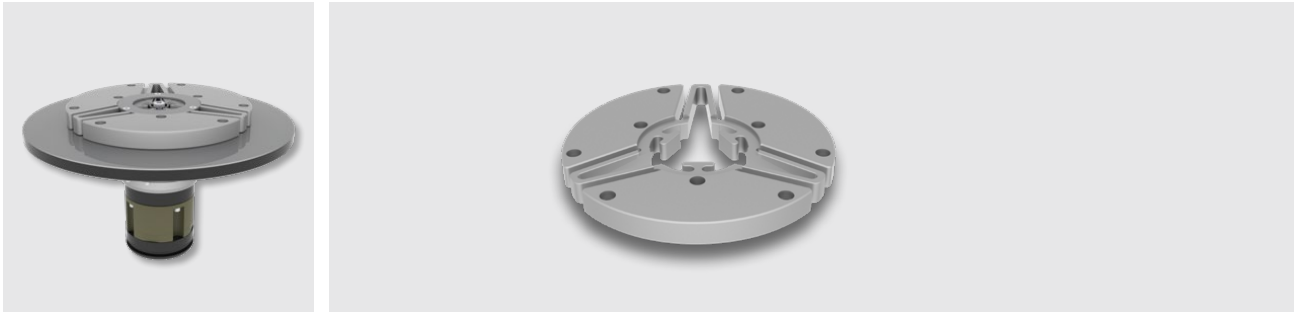
- Clamping range - 0.03 / + 0.05 mm
- Precise centrally clamping for highest repeatability
- Fine balanced to < 1 g·mm
- Can be used individually

**Note:**

Adapters only to be used with original HAIMER Tool Dynamic  
Balancing Machines

SDA balancing adapter with automatic clamping system Order No.	Bore Ø D [mm]	Clamping length L [mm]
80.201.SDA08.00	Ø 8.0	2 x D
80.201.SDA10.00	Ø 10.0	2 x D
80.201.SDA12.00	Ø 12.0	2 x D
80.201.SDA14.00	Ø 14.0	2 x D
80.201.SDA16.00	Ø 16.0	2 x D
80.201.SDA18.00	Ø 18.0	2 x D
80.201.SDA20.00	Ø 20.0	1 x D
80.201.SDA25.00	Ø 25.0	1 x D
80.201.SDA30.00	Ø 30.0	1 x D
80.201.SDA35.00	Ø 35.0	1 x D
80.201.SDA40.00	Ø 40.0	1 x D
80.201.SDA45.00	Ø 45.0	1 x D
80.201.SDA50.00	Ø 50.0	1 x D
80.201.SDA55.00	Ø 55.0	1 x D
80.201.SDA60.00	Ø 60.0	1 x D
80.201.SDA11/4Z.00	Ø 11/4"	1 x D
80.201.SDA11/2Z.00	Ø 11/2"	1 x D
80.201.SDA17/8Z.00	Ø 17/8"	1 x D

## SAB BALANCING ADAPTER (AUTOMATIC) SAB 01



### Automatic balancing adapter with spring washer for inner diameter with bore of Ø 100 up to Ø 250 mm

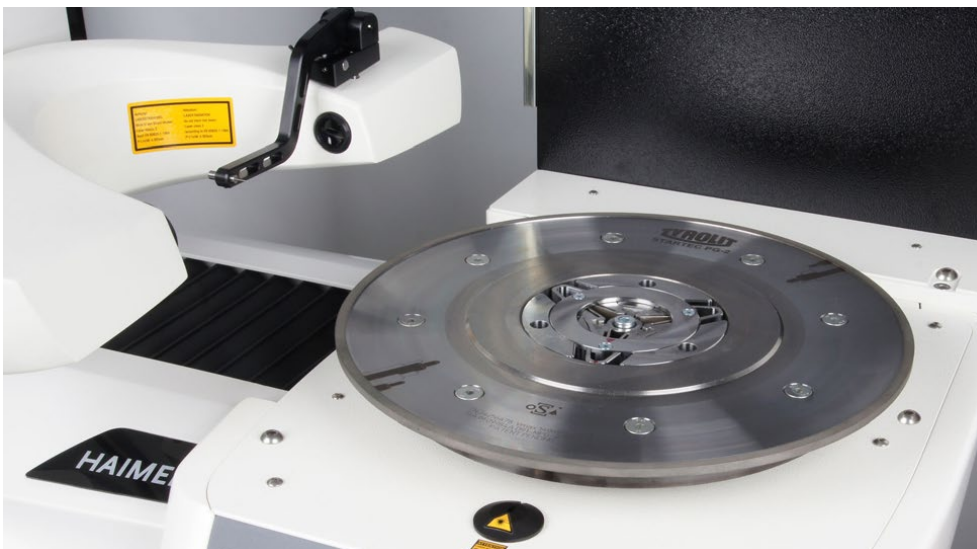
- Clamping range - 0.15 / + 0.8 mm
- Precise centrally clamping for highest repeatability
- Fine balanced to <math>< 1 \text{ g}\cdot\text{mm}</math>
- Can be used individually

#### Note:

Adapters only to be used with original HAIMER Tool Dynamic Balancing Machines

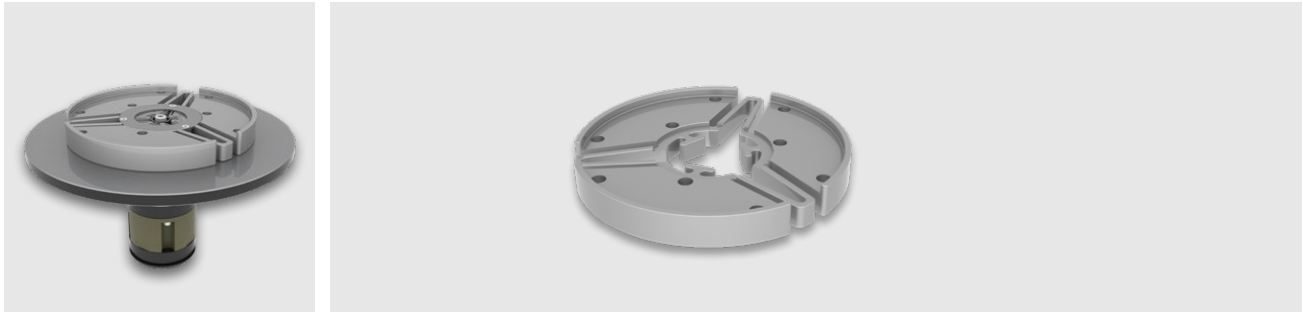
Adapters only available on request. HAIMER will check the technical suitability together with the customer before quoting.

SAB balancing adapter with automatic clamping system	Spring washer	Bore Ø D [mm]
SAB 01, Clamping range 100–250 mm	Order No.	
<b>80.201.SAB</b>	<b>80.201.SAB01.120</b>	Ø 120
	<b>80.201.SAB01.127</b>	Ø 127
	<b>80.201.SAB01.150</b>	Ø 150
	<b>80.201.SAB01.175</b>	Ø 175
	<b>80.201.SAB01.203</b>	Ø 203
	<b>80.201.SAB01.250</b>	Ø 250



Application example

## SAS BALANCING ADAPTER (AUTOMATIC) SAS 01



### Automatic balancing adapter with spring washer for outside diameter of $\varnothing$ 100 up to $\varnothing$ 250 mm

- Clamping range - 0.15 / + 0.8 mm
- Precise centrally clamping for highest repeatability
- Fine balanced to < 1 g·mm
- Can be used individually

#### Note:

Adapters only to be used with original HAIMER Tool Dynamic Balancing Machines

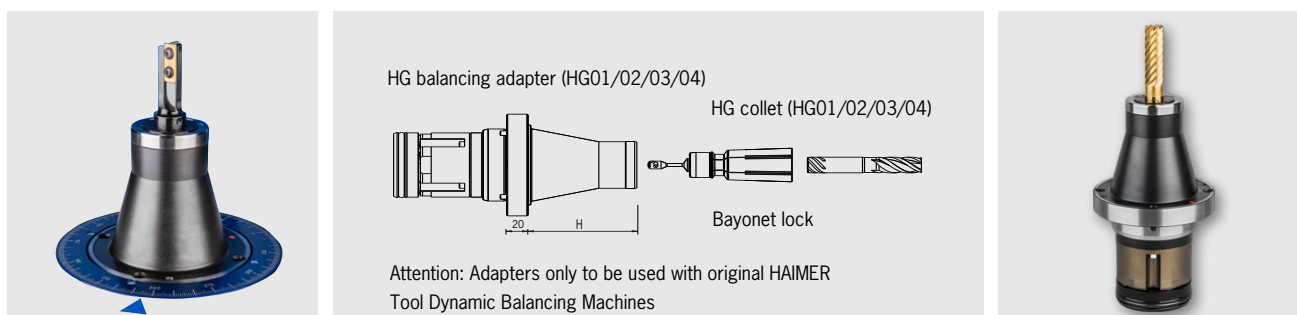
Adapters only available on request. HAIMER will check the technical suitability together with the customer before quoting.

SAS balancing adapter with automatic clamping system Clamping range 100–250 mm	Spring washer Order No.	Spindle $\varnothing$ D [mm]
<b>80.201.SAS</b>	<b>80.201.SAS01.120</b>	$\varnothing$ 120
	<b>80.201.SAS01.127</b>	$\varnothing$ 127
	<b>80.201.SAS01.150</b>	$\varnothing$ 150
	<b>80.201.SAS01.175</b>	$\varnothing$ 175
	<b>80.201.SAS01.203</b>	$\varnothing$ 203
	<b>80.201.SAS01.250</b>	$\varnothing$ 250



Application example

## HG BALANCING ADAPTER



### Balancing adapter for tools with a cylindrical shank

- For efficient and automatic clamping of tools with a cylindrical shank
- For cylindrical shanks up to tolerance h8
- Available with shank diameter up to 40 mm upon request

Balancing adapter with exchangeable high precision collets (system HG) and automatic clamping. From now on, you can clamp your cylindrical shank tools directly in the balancing adapter without any accessories.

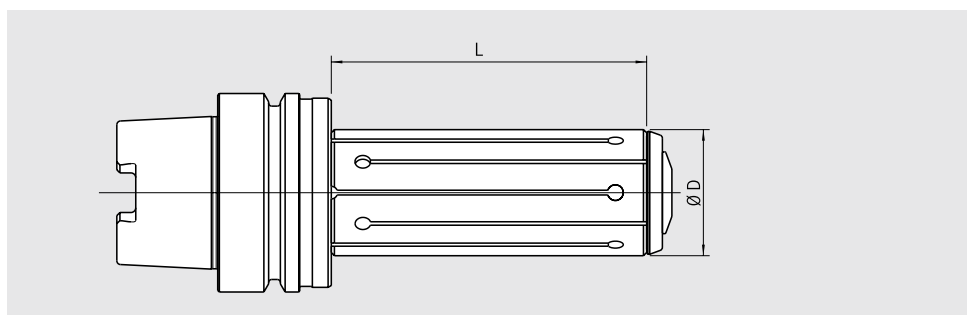
HG adapter Order No.	Collet Order No.	Clamping range	Height H
<b>HG01</b>	<b>HG01</b>	<b>Ø 2–9.25 mm</b>	
<b>80.201.HG01.00</b>	<b>80.201.HG01.02</b>	2 mm	80 mm
	<b>80.201.HG01.02.5</b>	2.5 mm	80 mm
	<b>80.201.HG01.03</b>	3 mm	80 mm
	<b>80.201.HG01.03.5</b>	3.5 mm	80 mm
	<b>80.201.HG01.1/8Z</b>	1/8"	80 mm
	<b>80.201.HG01.04</b>	4 mm	80 mm
	<b>80.201.HG01.04.5</b>	4.5 mm	80 mm
	<b>80.201.HG01.3/16Z</b>	3/16"	80 mm
	<b>80.201.HG01.05</b>	5 mm	80 mm
	<b>80.201.HG01.05.5</b>	5.5 mm	80 mm
	<b>80.201.HG01.05.6</b>	5.6 mm	80 mm
	<b>80.201.HG01.06</b>	6 mm	80 mm
	<b>80.201.HG01.06.3</b>	6.3 mm	80 mm
	<b>80.201.HG01.1/4Z</b>	1/4"	80 mm
	<b>80.201.HG01.07</b>	7 mm	80 mm
	<b>80.201.HG01.07.1</b>	7.1 mm	80 mm
	<b>80.201.HG01.5/16Z</b>	5/16" mm	80 mm
	<b>80.201.HG01.08</b>	8 mm	80 mm
	<b>80.201.HG01.09</b>	9 mm	80 mm
	<b>80.201.HG01.09.25</b>	9.25 mm	80 mm
<b>HG02</b>	<b>HG02</b>	<b>Ø 10–14 mm</b>	
<b>80.201.HG02.00</b>	<b>80.201.HG02.3/8Z</b>	3/8"	80 mm
	<b>80.201.HG02.10</b>	10 mm	80 mm
	<b>80.201.HG02.11</b>	11 mm	80 mm
	<b>80.201.HG02.7/16Z</b>	7/16"	80 mm
	<b>80.201.HG02.12</b>	12 mm	80 mm
	<b>80.201.HG02.12.5</b>	12.5 mm	80 mm
	<b>80.201.HG02.1/2Z</b>	1/2"	80 mm
	<b>80.201.HG02.13</b>	13 mm	80 mm
	<b>80.201.HG02.14</b>	14 mm	80 mm
	<b>80.201.HG02.9/16Z</b>	9/16"	80 mm

HG adapter Order No.	Collet Order No.	Clamping range	Height H
<b>HG03</b>	<b>HG03</b>	<b>Ø 16–20 mm</b>	
<b>80.201.HG03.00</b>	<b>80.201.HG03.5/8Z</b>	5/8"	80 mm
	<b>80.201.HG03.16</b>	16 mm	80 mm
	<b>80.201.HG03.18</b>	18 mm	80 mm
	<b>80.201.HG03.3/4Z</b>	3/4"	80 mm
	<b>80.201.HG03.20</b>	20 mm	80 mm
<b>HG04</b>	<b>HG04</b>	<b>Ø 20–32 mm</b>	
<b>80.201.HG04.00</b>	<b>80.201.HG04.20</b>	20 mm	100 mm
	<b>80.201.HG04.22</b>	22 mm	100 mm
	<b>80.201.HG04.25</b>	25 mm	100 mm
	<b>80.201.HG04.1Z</b>	1"	100 mm
	<b>80.201.HG04.27</b>	27 mm	100 mm
	<b>80.201.HG04.30</b>	30 mm	100 mm
	<b>80.201.HG04.11/4Z</b>	1¼ mm	100 mm
	<b>80.201.HG04.32</b>	32 mm	100 mm

When ordering, you need one HG adapter and at least one collet.



## BALANCING ARBORS



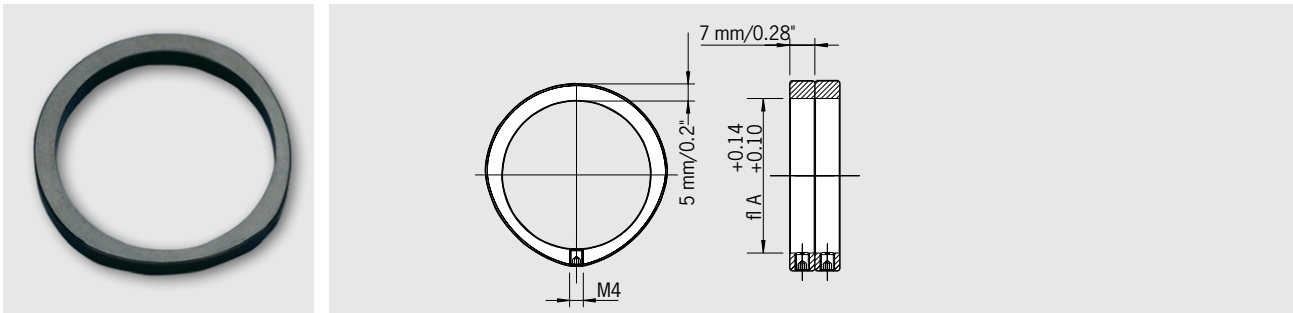
- To balance tools with cylindrical bore
- Precise center clamping for highest repeatability

- Fine balanced to < 1 gmm
- Can be used individually

Balancing arbor Order No.	Collet Order No.	Clamping range Ø D	L
<b>DG07, Clamping range 25–34.5 mm</b>			
<b>80.250.A63.070</b>	80.250.07.25	Ø 25–25.5 mm	100 mm
	80.250.07.26	Ø 26–26.5 mm	100 mm
	80.250.07.28	Ø 28–28.5 mm	100 mm
	80.250.07.30	Ø 30–30.5 mm	100 mm
	80.250.07.32	Ø 32–32.5 mm	100 mm
	80.250.07.34	Ø 34–34.5 mm	100 mm
<b>DG08, Clamping range 35–44.5 mm</b>			
<b>80.250.A63.080</b>	80.250.08.35	Ø 35–35.5 mm	100 mm
	80.250.08.36	Ø 36–36.5 mm	100 mm
	80.250.08.38	Ø 38–38.5 mm	100 mm
	80.250.08.40	Ø 40–40.5 mm	100 mm
	80.250.08.42	Ø 42–42.5 mm	100 mm
	80.250.08.44	Ø 44–44.5 mm	100 mm
<b>DG09, Clamping range 45–54.5 mm</b>			
<b>80.250.A63.090</b>	80.250.09.45	Ø 45–45.5 mm	125 mm
	80.250.09.48	Ø 48–48.5 mm	125 mm
	80.250.09.50	Ø 50–50.5 mm	125 mm
	80.250.09.52	Ø 52–52.5 mm	125 mm
	80.250.09.54	Ø 54–54.5 mm	125 mm
<b>DG10, Clamping range 55–65.5 mm</b>			
<b>80.250.A63.100</b>	80.250.10.55	Ø 55–55.5 mm	135 mm
	80.250.10.58	Ø 58–58.5 mm	135 mm
	80.250.10.60	Ø 60–60.5 mm	135 mm
	80.250.10.62	Ø 62–62.5 mm	135 mm
	80.250.10.65	Ø 65–65.5 mm	135 mm

Please specify collet with balancing arbor order  
When ordering, you need one balancing arbor and one collet

## BALANCING RINGS



For fine-balancing all tool holders with cylindrical outer diameter (diam. A).

The balancing index rings have a defined unbalance in themselves. They are turned in such a position that the unbalance of the tool holder will be compensated. There are always 2 rings needed per balancing plane.

- Balancing quickly and precisely
- No damage to tool holder
- Can be repeated as often as necessary
- Simply fixed by clamping screw
- Suitable for tool holders of all brands
- The balancing machine determines the position of the rings
- Included in delivery: 2 balancing index rings with screws (without hex wrench)
- Tightening torque: 1 ft lb (1.4 Nm)

Order No.	Ø A [mm]	Ø A [inch]	unbalance <sup>1)</sup>	rpm [1/min]
79.350.15	15	0.59	14 g·mm	max. 55,000
79.350.16	16	0.63	14 g·mm	max. 55,000
79.350.17	17	0.67	16 g·mm	max. 55,000
79.350.18	18	0.71	17 g·mm	max. 55,000
79.350.19	19	0.75	19 g·mm	max. 55,000
79.350.20	20	0.79	21 g·mm	max. 55,000
79.350.22	22	0.87	23 g·mm	max. 55,000
79.350.23	23	0.91	25 g·mm	max. 55,000
79.350.24	24	0.94	27 g·mm	max. 55,000
79.350.25	25	0.98	28 g·mm	max. 55,000
79.350.26	26	1.02	32 g·mm	max. 50,000
79.350.27	27	1.06	32,5 g·mm	max. 50,000
79.350.28	28	1.10	34 g·mm	max. 50,000
79.350.30	30	1.18	37 g·mm	max. 45,000
79.350.32	32	1.26	43 g·mm	max. 45,000
79.350.34	34	1.34	46 g·mm	max. 40,000
79.350.35	35	1.38	48 g·mm	max. 40,000
79.350.36	36	1.42	51 g·mm	max. 40,000
79.350.38	38	1.50	56 g·mm	max. 35,000
79.350.40	40	1.57	60 g·mm	max. 35,000
79.350.42	42	1.65	65 g·mm	max. 35,000
79.350.43	43	1.69	69 g·mm	max. 35,000
79.350.1.71Z	43.45	1.71	68 g·mm	max. 35,000
79.350.44	44	1.73	72 g·mm	max. 35,000
79.350.46	46	1.81	80 g·mm	max. 35,000
79.350.48	48	1.89	85 g·mm	max. 30,000
79.350.50	50	1.97	90 g·mm	max. 30,000
79.350.52	52	2.05	100 g·mm	max. 30,000
79.350.53	53	2.09	100 g·mm	max. 30,000
79.350.54	54	2.13	103 g·mm	max. 30,000

Order No.	Ø A [mm]	Ø A [inch]	unbalance <sup>1)</sup>	rpm [1/min]
79.350.55	55	2.17	105 g·mm	max. 30,000
79.350.56	56	2.20	110 g·mm	max. 30,000
79.350.58	58	2.28	120 g·mm	max. 30,000
79.350.60	60	2.36	128 g·mm	max. 25,000
79.350.62	62	2.44	132 g·mm	max. 25,000
79.350.63	63	2.48	135 g·mm	max. 25,000
79.350.64	64	2.52	147 g·mm	max. 25,000
79.350.65	65	2.56	147 g·mm	max. 25,000
79.350.66	66	2.60	145 g·mm	max. 25,000
79.350.68	68	2.68	161 g·mm	max. 25,000
79.350.70	70	2.76	165 g·mm	max. 25,000
79.350.72	72	2.83	170 g·mm	max. 25,000
79.350.74	74	2.91	184 g·mm	max. 25,000
79.350.76	76	2.99	186 g·mm	max. 20,000
79.350.78	78	3.07	206 g·mm	max. 20,000
79.350.80	80	3.15	215 g·mm	max. 20,000
79.350.82	82	3.23	213 g·mm	max. 20,000
79.350.84	84	3.31	229 g·mm	max. 20,000
79.350.86	86	3.39	249 g·mm	max. 20,000
79.350.87	87	3.43	256 g·mm	max. 20,000
79.350.88	88	3.46	251 g·mm	max. 20,000
79.350.89	89	3.50	260 g·mm	max. 20,000
79.350.90	90	3.54	265 g·mm	max. 20,000
79.350.92	92	3.62	275 g·mm	max. 20,000
79.350.94	94	3.70	286 g·mm	max. 20,000
79.350.96	96	3.78	300 g·mm	max. 20,000
79.350.98	98	3.86	305 g·mm	max. 20,000
79.350.100	100	3.94	320 g·mm	max. 15,000
79.350.125	125	4.92	500 g·mm	max. 15,000

1) Unbalance g·mm are reference values, small variances possible  
 Additional sizes may be available – please contact Haimer USA for more information

## SET OF BALANCING SCREWS



For fine-balancing of all tool holders with balancing threads M6 (e.g. shrink fit chucks from HAIMER).

The screws have different weights in a fine graduation.

They are screwed into the balancing threads of the tool holder so that their weight compensates the unbalance of the tool holder.

- Set consisting of screws in 11 different sizes and weights
  - Screws are screwed to the bottom of the thread and tightened.  
No additional fixing of screws necessary
  - Balance quickly and precisely
  - No damage to tool holders
  - Can be repeated as often as necessary
  - Suitable for tool holders of all brands
  - The balancing machine calculates the necessary weight of the screws (e.g. HAIMER Tool Dynamic)
- Included in delivery: Case with 11 x 10 balancing screws, screw driver

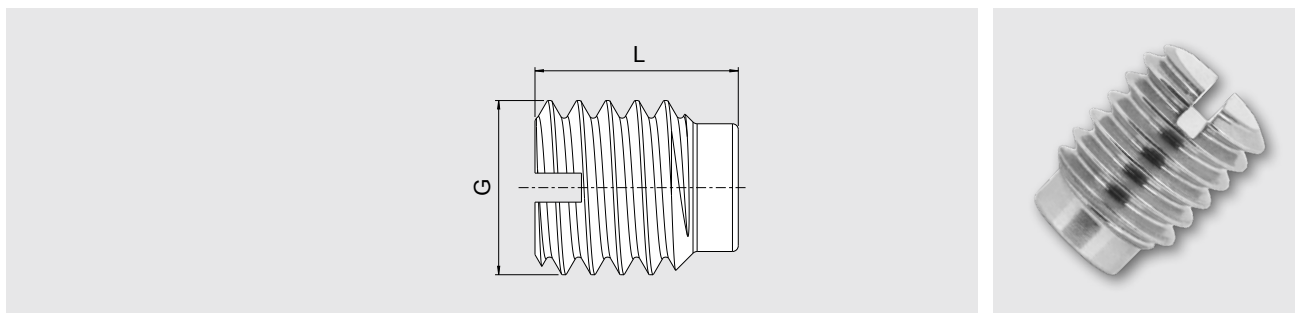
### Accessories

Set of Balancing Screws

### Order No.

80.203.00

## HEAVY METAL BALANCING SCREWS



Heavy metal balancing screws (thread M6) for manual balancing of tool holders.

Length L [mm]	07	07	08	08	10	10
Size G [mm]	M6x7	M6x7 (5 pcs.)	M6x8	M6x8 (5 pcs.)	M6x10	M6x10 (5 pcs.)
Mass	ca. 2.3g	ca. 2.3g	ca. 2.7g	ca. 2.7g	ca. 3.5g	ca. 3.5g
Order No.	85.502...	.7.0 .7.0.SET	.8.0	.8.0 .8.0.SET	.10.0	.10.0 .10.0.SET

## HAIMER DEMO VANS: TARGETED ADVICE ON-SITE.

**Request our service and profit from the experience of our experts.  
Our knowledge is your advantage!**



### Our service advantages

- Latest tool holders as well as shrinking, balancing and presetting technology presented in a **mobile showroom**
- **Specific solutions** for higher process reliability and less machine downtime
- **True experts** from your area demonstrate the necessity of balancing so that your machine can operate at its fullest capacity
- **Free of charge inspection** of your tool holders, grinding wheels or other rotors such as impellers, ventilators and housings

### Equipment of the Demo Van

- Shrink Fit device Power Clamp Comfort NG
- Balancing machine TD Comfort
- Presetting device Microset UNO premium
- Broad selection of tool holders for all current interfaces (HSK-A/E, CAT/SK/BT)
- Innovations such as Safe-Lock, Cool Flash, Duo-Lock
- Shrink Fit extensions
- HAIMER MILL solid carbide endmills
- 3D sensors and centering devices



# PRESETTING TECHNOLOGY



HAIMER

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# Top 10 Reasons to Use HAIMER Microset Presetting Technology

1

**Increased Machine Utilization**

Reducing set-up time by as much as 70% or more translates to more machine “up-time” and productivity.

2

**Faster Set-ups**

Even if set-ups are not being performed offline, using a tool presetter is significantly faster than setting tools in the machine manually or with a laser.

3

**Reduced Scrap**

Microset presetters use optical cameras for measurement, which provide higher degrees of accuracy versus manual setting methods. Options like automatic focusing and measuring further reduce deviations in measurement, regardless of the operator.

4

**Longer Tool Life**

Runout that is not often inspected for non-critical assemblies can be measured and accounted for easily with a presetter, thereby extending tool life by preventing inaccurate tools from ever entering the machine.

5

**Fewer Collisions**

With optional data transmission methods like post-processing or RFID, the manual entry of offsets into the machine can be eliminated. This reduces errors that occur from operators accidentally mistyping offset values.

6

**More Cost-Effective than Lasers**

Machines make money when they are making chips and not being used as measuring devices. Furthermore, one presetter can manage 10–30 machines which is more cost-effective than purchasing a laser for each machine.

7

**Consistency**

Confirmation that tools are set properly, within specified tolerances, every time.

8

**Ease of Use**

Simple software makes the process as easy as possible for all users. No software engineering degrees needed!

9

**Universal**

Easy to preset milling tools, adjustable boring heads, complex multi-inserted face-mills, PCD form tools, step-drills, etc. from all makes and manufacturers.

10

**Industry 4.0 Success**

Industry 4.0 is all about using gathered data to automate changes on the fly that optimize the machining process. The future smart factory will require technologies that can receive and transmit such data. HAIMER Microset tool presetters are able to communicate (bi-directionally) with a variety of machine controls and CAD/CAM systems.



## CAPABILITIES

## Precision and productivity in production



**Whether presetting, shrinking, inspecting and correcting balance, or measuring – we offer the perfect solution for all tool sizes and work environments.** Improve the quality and precision of your work pieces with our know-how and wide range of products.



UNO series – entry level tool presetters include high-tech options as standard

## TOOL PRESETTERS – YOUR BENEFITS

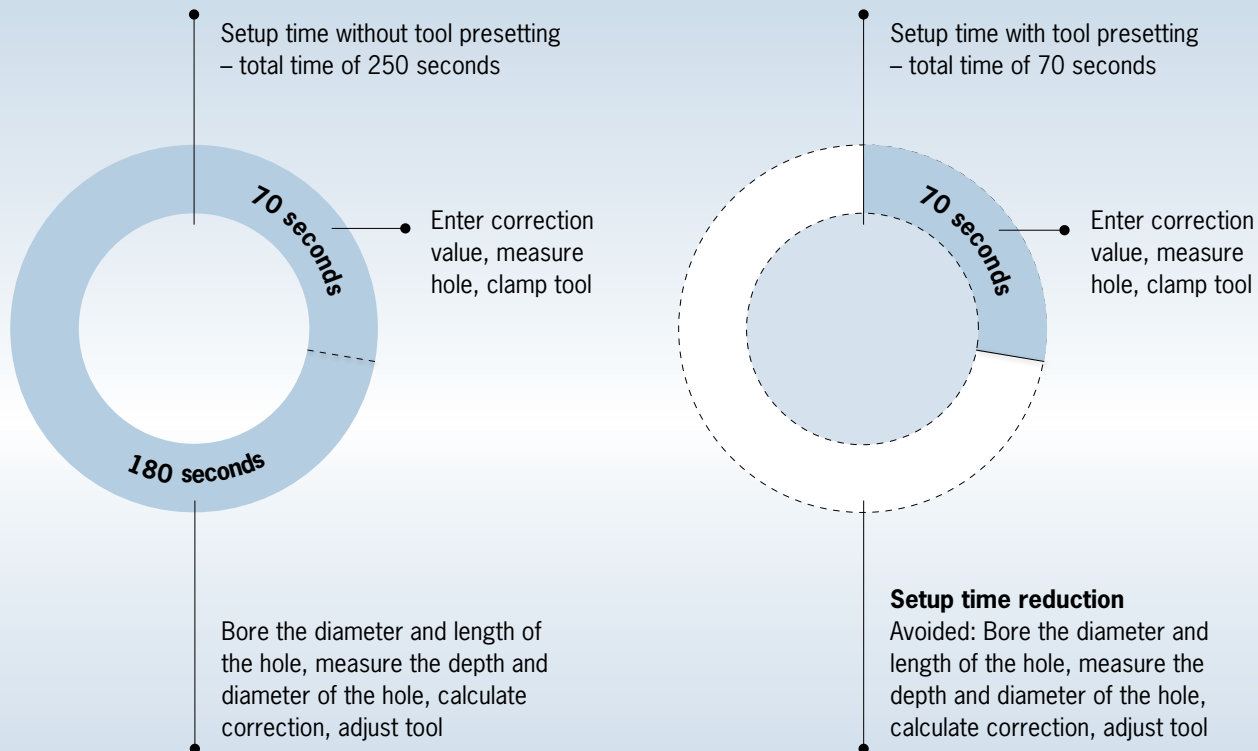
# Save time and money, improve work piece quality

**The efficient tool presetting equipment from HAIMER Microset optimizes your machining processes from the ground up.** Improve your tool life, achieve better surface finishes and boost overall process reliability in your production.

- Minimize the idle time of your machines
- Reduce scrap and tooling costs
- Increase process reliability in your production
- Improve your tool life
- Generate consistent quality in your products

## Reduce up to 70% of your set up time!

*Boring Head Example:*

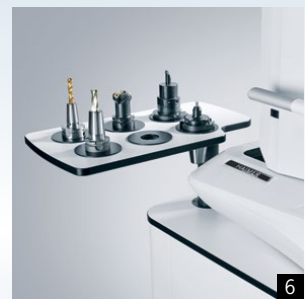


## UNO SERIES – EQUIPMENT AND FUNCTIONALITY

## UNO series – entry level tool presetters include high-tech options as standard



In addition to its precision, speed and reliability, the UNO series also includes numerous features in hardware. The new design and improved ergonomics set the standard by using high-quality components from Festo/SMC, Bosch, Heidenhain, and IDS.



- 1: Camera system for setting the center of rotation  
 2: Tactile measurement of the center of rotation  
 3: Release-by-touch function, easy to operate without buttons  
 4: Useful system cabinet with 3 drawers, 1 door and internal oil tray.  
 Also includes 3 maintenance doors (on all sides)  
 5: Keypad and  $\mu\text{m}$ -precise adjustments  
 6: 150° swiveling adapter storage  
 7–8: Measuring based on the snap gauge principle for diameters up to 100 mm



## UNO SERIES – NEW AUTOFOCUS AND AUTOMATIC DRIVE FEATURES

### UNO autofocus & automatic drive – efficient and precise

**The autofocus and automatic drive models of the UNO series provide unique advantages for tool measurement at the highest level.**

Choose the presetter that meets your needs.

#### Highlights

Reduce the work load of the operator through the automation of presetting, with full or partially automated measuring functions.



#### autofocus

Automatically focuses on the cutting edge. Motorized spindles with convenient system cabinet and 24", 10 point touchscreen as standard.



#### automatic drive

Fully automatic tool presetting and measurement independent of the operator (CNC-controlled, 3-axis), with convenient system cabinet and 24" touch display standard.

## VIO SERIES – EQUIPMENT AND FUNCTIONALITY

## VIO linear – maximum ease of use and functionality

**Optimize process reliability in your production with fully automatic measurement capabilities.** The open device platform allows for the integration of both new and existing production processes.

#### Maximum stability and precision

The FEM-optimized, thermally stable cast iron construction of the VIO *linear* series ensures accurate measuring results and equipment longevity. Additionally, highly dynamic, wear-free linear drives ensure accurate long-term quality. The parallel drive and guidance system ensures optimal distribution of forces and guarantees  $\pm 2 \mu\text{m}$  measurement repeatability.

#### Highlights

- High rigidity ensures low distortion even at the maximum permissible load
- FEM-optimized and thermally stable cast iron construction
- Maximum tool weight 352 lbs (160 kg)
- Fast, silent and highly accurate cutting edge approach via unique linear drive



#### Leader in innovation:

- Fully automatic measuring cycles for maximum operating convenience
- High quality components from Heidenhain, Bosch Rexroth
- Maintenance free linear drives for higher speed, low noise and highly accurate positioning
- User-friendly operating panel ensures ultimate flexibility
- High power software Microvision VIO
- Release-by-touch
- Measure-by-touch (optional)



1



2



3

1: Second camera for measuring the center of rotation (optional)  
2–3: Fully automatic axis drive via modern linear technology

## DATA EXCHANGE AND DATA TRANSFER

# Data exchange and transfer to the machine tool

### Post-processor / Ethernet / USB

Post-processed data is transferred to the relevant data exchange drive either via USB, Ethernet LAN or RS232 interface.

### Bidirectional interface

All presetting units can send and receive tool data to nearly all software (tool management, databases, CAD / CAM) via a bidirectional interface – regardless of whether it is a standard or a customized solution.

(Not available for UNO smart)

### Post processor and bidirectional interface\*

HAIMER Microset tool presetting devices are compatible with machine tools from all manufacturers. (Not available for UNO smart)

### HQR

Easy data input via HQR USB plug in. Input your data via scan of a code on the label, printed on the presetter, without manual operation of the operator.

*\* The measured data is quickly transferred directly to the machine tool. Control systems from Siemens, Heidenhain, FANUC, MAPPS and many others can be connected via USB data storage, Ethernet LAN or RS232.*

## RFID – data carrier system

- Customer-specific data storage
- Measurement processes with integrated data retrieval and storage
- Integration of all popular RFID systems
- The read/write head can be positioned automatically and manually for all popular tool holder systems (e.g. Balluff, Euchner, Mazak, Pepperl & Fuchs, Turck)



Automatic positioning of the read/write head



Manual positioning of the read/write head

## DATA EXCHANGE AND DATA TRANSFER

## HQR-Connect

With HQR-Connect tool data can be edited and printed as QR Code by the presetter, then be read by a scanner at the machine tool and directly sent to the machine control.

The tool presetter creates a QR code which contains all the necessary actual values and other features of the tool. Through HQR-Connect the data stored in the QR code is automatically transferred into the data fields of the machine tool. The HQR-Connect System is connected to the machine control via USB. At the machine control, the generated QR code is read with a scanner and the data is transmitted.

**Your benefits:**

- Network connectivity is not necessary
- Up to 45% time savings compared to manual entry
- Elimination of manual input errors or transposed digits
- Upgrades are possible at any time

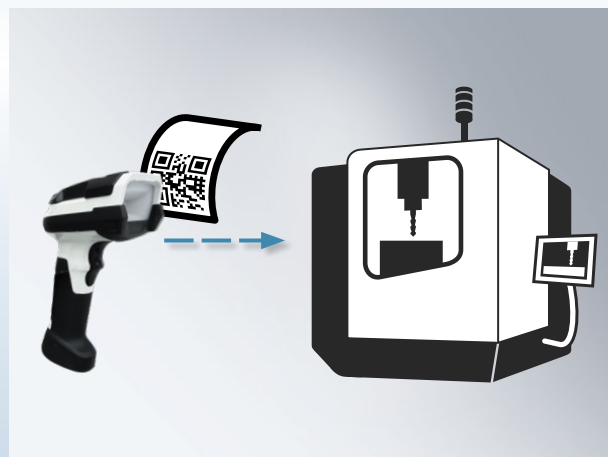
(Not available for UNO smart)

## HQR-Connect – Operating Principle

- The HQR-system works like an external (USB) keyboard
- The data is automatically sent to the control system, therefore reading or typing errors are eliminated
- The configuration of the HQR-system is done with a Windows based software
- The system consists of electronics and the QR code scanner
- Available for all control units with USB ports that allow data input via an external keyboard



After measuring the tool, a label with the QR code is printed



The HQR system is connected to the control system of the machine. It reads the QR code and transmits the tool data directly to the control system

## DATA EXCHANGE AND DATA TRANSFER

### HRFID-Connect

With HRFID-Connect tool data can be written on a RFID-data carrier by the presetter, then be read by a RFID reader at the machine tool and directly sent to the machine control.

The actual values measured on the tool presetter and other features of the tool are saved on the RFID data carrier.

The HRFID-Connect System is connected to the control system of the machine via USB.

The data stored on the data carrier is automatically entered into the data fields of the machine tool via HRFID-Connect transfer.

#### Your benefits:

- Network connectivity is not necessary
- Up to 45% time savings compared to manual entry
- Elimination of manual input errors or transposed digits
- Upgrades are possible at any time

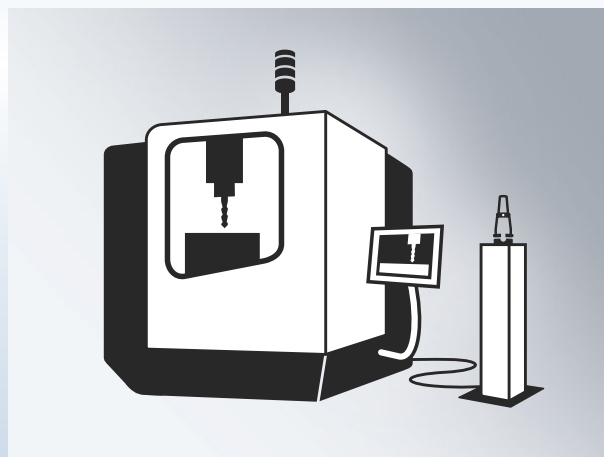
(Not available for UNO smart)

### HRFID-Connect – Operating Principle

- The HRFID-system works like an external (USB) keyboard
- The data is automatically sent to the control system, therefore reading or typing errors are eliminated
- The configuration of the HRFID-system is done with a Windows based software
- The system consists of an electronic and the RFID reader
- Available for all control units with USB ports that allow data input via an external keyboard



After measuring the tool, the data is transferred to the Balluff data carrier



The RFID reader is connected to the machine control. It reads the Balluff data carrier and transmits the tool data directly into the control system of the machine



## DAC – DATA ANALYZER &amp; CONTROLLER

## HAIMER i4.0 Tool &amp; Data Management

**HAIMER Data Analyzer & Controller**

- System compatibility of each component – everything from the single source “HAIMER”
- Modular set-up – customer can start at each step
- HAIMER DAC connects all hardware components
- Data transfer through all interfaces to the machine tool
- Simplified tool management
- Reduction of manual data entry errors – high process-security

**1 CAD/CAM-system**

- Simple transfer of the generated job to the tool vending system for commissioning

**2 Tool Management & Commissioning**

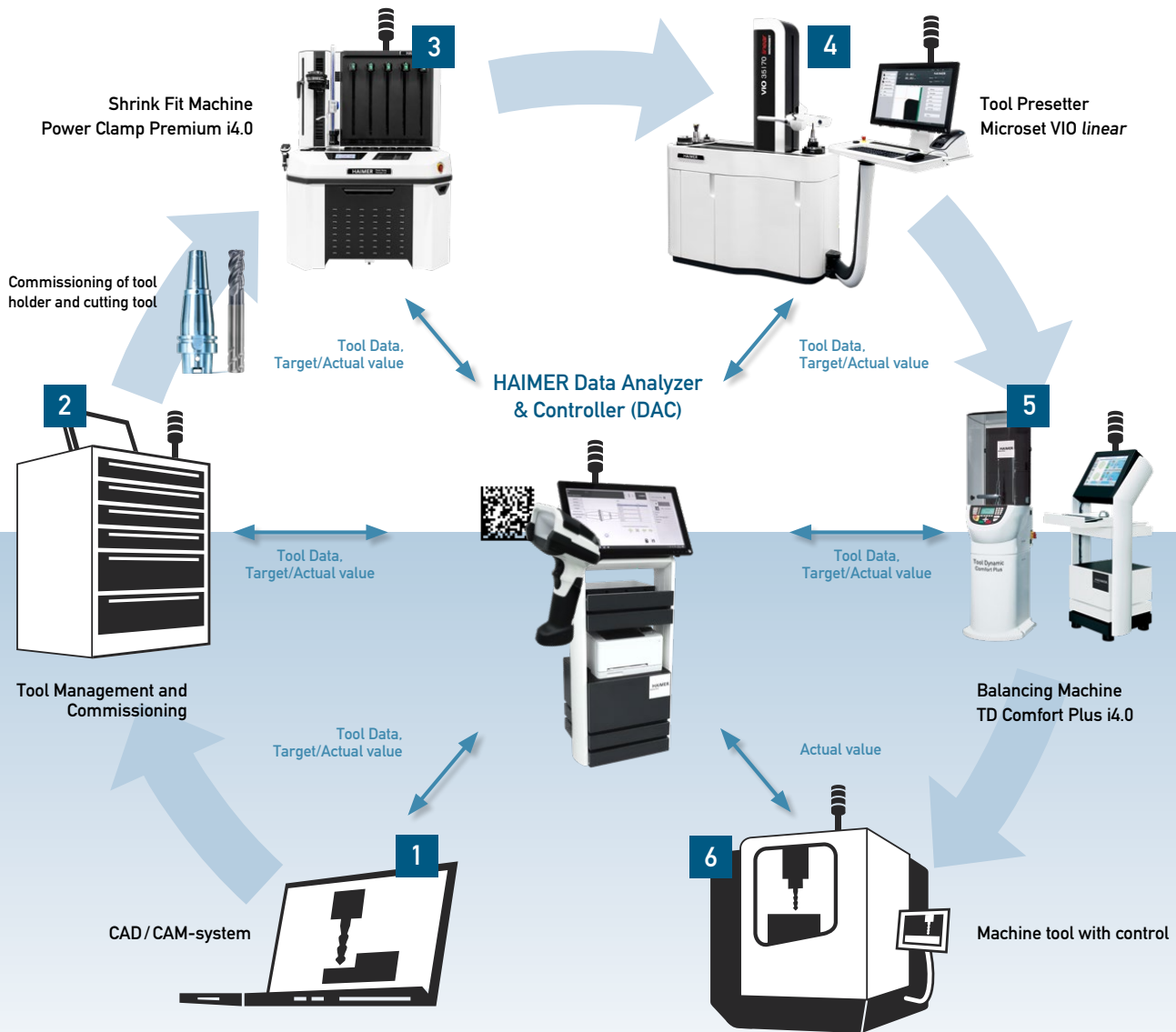
- Signal light indicates open job order
- Clearly arranged selection of the job that needs to be commissioned
- Simple commissioning through stock shelf indication of all components, through illustration of complete tool assembly and through showing exact position within the stock shelf
- Automatic output of needed components through on-screen selection
- Interactive step-by-step instruction for highest process security and low error rates
- Job transfer to the shrink fit machine through HAIMER DAC

**3 Shrink Fit Machine  
Power Clamp Premium i4.0**

- Signal light at the right assembly station indicates the next step (shrinking in the cutting tool or assembly at the tool clamp)
- Scanning the data-matrix code off the tool holder recalls the required assembly parameters from the database (shrinking parameters, length adjustment, torque etc.)
- Pictographic assembly instruction in the system helps for visual check
- Subsequent job transfer from HAIMER DAC to the tool presetter

**4 Tool Presetter  
Microset VIO linear**

- Signal light indicates open measuring jobs
- Scanning the data matrix code recalls the open job from HAIMER DAC and starts the automatic measuring process
- Once the measuring job is successfully completed, the values will be stored. If the balancing grade of the tool is defined in the job, the data will be transferred from the HAIMER DAC to the balancing machine



## 5 Balancing Machine TD Comfort Plus i4.0

- Signal light indicates open balancing jobs
- Identification of the tool via data-matrix code and hand scanner
- The requested balancing parameters are recalled from the data base
- After recalling the tool ID from the system, the balancing process can be started
- Once the balancing job is successfully completed, the data is transferred to the HAIMER DAC

## 6 Machine tool with control

- Selection of tool and balancing data via data-matrix code scan when loading the machine
- Automatically, the machine control takes over all previously transferred tool data
- Recall and transfer of tool life to the HAIMER DAC via data-matrix code scan when unloading the tool from the machine tool

# UNO smart

Smart entry into tool presetting



Picture shows Uno smart 20|40 with optional locking indexing

## TOOL PRESETTERS – MANUAL

**The UNO smart is our entry-level machine featuring a small footprint, user-friendly operation and high precision.** It is particularly well suited for measurements right on the shop floor and has all this at an unbeatable price-performance ratio.

### Standard Equipment

- |   |   |
|---|---|
| – Microvision SMART image processing system                           | – Manual fine adjustment                      |
| – SK50 high-precision spindle, manual                                 | – Energy saving mode                          |
| – Robust, long-life cast iron construction                            | – 7.0" multi-touchscreen                      |
| – Thermally optimized material combination for improved repeatability | – Memory for 99 zero points                   |
| – Manual operation  | – $\pm 5 \mu\text{m}$ repeatability (0.0002") |
|   | – Label printer                               |

### Measurement Range

#### UNO smart

- |                                   |   |
|-----------------------------------|---|
| – Maximum tool diameter on X-axis | 15.75 in<br>(400 mm)                              |
| – Maximum tool length on Z-axis   | 15.75 / 27.56 in<br>(400 / 700 mm)                |
| – Maximum tool weight             | 44 lbs<br>(20 kg)                                 |
| – Weight                          | 20 40: 210 lbs (95 kg)<br>20 70: 231 lbs (105 kg) |
| – Order No.                       | 20 40: M-G1111<br>20 70: M-G1116                  |

### Options

- Technology package: Tool inspection light, edgfinder, release-by-touch
- Smart Pro package: Tool inspection light, edgfinder, release-by-touch, base cabinet smart with adapter tray for 3 tools or adapters
- 4 × 90° indexing and spindle brake
- Turning package: Dial gauge included with pneumatic indexing
- Alignment and calibration-set
- Sigma function



Picture shows UNO smart with Smart Pro package (optional)

# UNO premium

The bestseller with high-quality components that complement your machine tool



## TOOL PRESETTERS – MANUAL

### UNO premium – The right solution for every user. The highest standard of manual tool presetting.

Operator independent measuring results, easy to use with digital data transfer capabilities.

#### Standard Equipment

- |   |  |
|---|--|
| – Microvision UNO image processing system                             | – 22" touchscreen                              |
| – SK50 ultra-high precision spindle, manual                           | – Windows 10                                   |
| – Robust, long-life cast iron construction                            | – Sigma function                               |
| – Thermally optimized material combination for improved repeatability | – Memory for 1,000 zero points and 1,000 tools |
| – Manual operation  | – USB / LAN data output                        |
| – Label printer   | – $\pm 2 \mu\text{m}$ repeatability (0.00008") |

#### Measurement Range

##### UNO premium

- |  |  |
|--|--|
| – Maximum tool diameter on X-axis            | 15.75 in<br>(400 mm)                               |
| – Maximum snap gauge tool diameter on X-axis | 3.93 in<br>(100 mm)                                |
| – Maximum tool length on Z-axis              | 15.75 / 27.56 in<br>(400 / 700 mm)                 |
| – Maximum tool weight                        | 66 lbs<br>(30 kg)                                  |
| – Weight                                     | 20 40: 309 lbs (140 kg)<br>20 70: 342 lbs (155 kg) |
| – Order No.                                  | 20 40: M-G1120<br>20 70: M-G1130                   |



#### Options

- Technology package: Inspection light, edgfinder, release-by-touch
- Premium Pro package: Tool inspection light, edgfinder, release-by-touch, system cabinet premium with adapter tray for 6 tools and adapters
- Turning package:  $4 \times 90^\circ$  and  $3 \times 120^\circ$  indexing, second camera
- Manual fine adjustment
- Label printer
- User management
- Manual RFID system (only combined with premium Pro package)
- Bidirectional interface
- Post-processor
- Manual ISS spindle
- HQR-Connect
- HRFID-Connect



Picture shows UNO premium with premium Pro package (optional)

# UNO autofocus

Ideal for multi-edge tools



## TOOL PRESETTERS – SEMI-AUTOMATIC

### UNO autofocus – The right presetter for demanding measurements.

Take advantage of semi-automatic spindle operation with multiple tool measurements on one plane.

#### Standard Equipment

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>– Microvision UNO image processing system</li> <li>– SK50 ultra-high precision spindle, autofocus</li> <li>– Robust, long-life cast iron construction</li> <li>– Thermally optimized material combination for improved repeatability</li> <li>– Motorized fine adjustment of the C-axis</li> <li>– 24" touchscreen</li> <li>– 4 × 90° and 3 × 120° motorized indexing</li> <li>– Pneumatic spindle brake</li> <li>– Vacuum clamping</li> <li>– Premium base cabinet includes storage for six adapters</li> </ul> | <ul style="list-style-type: none"> <li>– Sigma function</li> <li>– Memory for 1,000 zero points, tools and tool lists</li> <li>– USB / LAN data output</li> <li>– Release-by-touch</li> <li>– Edgefinder</li> <li>– Inspection light</li> <li>– 2 μm spindle runout (0.00008")</li> <li>– ± 2 μm repeatability (0.00008")</li> <li>– Label printer</li> <li>– Windows 10</li> </ul> |
|---|---|

#### Measurement Range

##### UNO autofocus

– Maximum tool diameter on X-axis	15.75 in (400 mm)
– Maximum snap gauge tool diameter on X-axis	3.93 in (100 mm)
– Maximum tool length on Z-axis	15.75 / 27.56 in (400 / 700 mm)
– Maximum tool weight	66 lbs (30 kg)
– Weight	20 40: 529 lbs (240 kg) 20 70: 562 lbs (255 kg)
– Order No.	20 40: M-G1140 20 70: M-G1150



Automatic focus on the cutting edge

#### Options

- ISS-U universal ultra-high precision spindle with automatic adapter identification
- Turning package: Second camera incl. indexing, 4 × 90° and 3 × 120° motor driven
- Bidirectional interface
- Manual RFID system
- Post-processor
- HQR-Connect
- HRFID-Connect



# UNO automatic drive

Fully automatic measuring for unrivalled convenience



## TOOL PRESETTERS – FULLY AUTOMATIC

**With fully automated measurement capabilities, the UNO automatic drive is the high-end model in the UNO series.** The UNO automatic drive is fully independent of the operator and can be used with minimal user expertise. This guarantees maximum quality and time savings, even with complex tools on multiple planes.

### Standard Equipment

– Microvision UNO image processing system	– Sigma function
– Automatic tool measurement in 3 axes	– Memory for 1,000 zero points, tools and tool lists
– SK50 ultra-high precision spindle, autofocus	– USB / LAN data output
– Motorized fine adjustment of all axes	– Release-by-touch
– 24" touchscreen	– Edgfinder
– 4 × 90° and 3 × 120° motor-driven indexing	– Inspection light
– Pneumatic spindle brake	– 2 μm spindle runout (0.00008")
– Vacuum clamping	– ± 2 μm repeatability (0.00008")
– Premium base cabinet includes storage for 6 adapters	– Label printer

### Measurement Range

#### UNO automatic drive

– Maximum tool diameter on X-axis	15.75 in (400 mm)
– Maximum snap gauge tool diameter on X-axis	3.93 in (100 mm)
– Maximum tool length on Z-axis	15.75 / 27.56 in (400 / 700 mm)
– Maximum tool weight	66 lbs (30 kg)
– Weight	20 40: 529 lbs (240 kg) 20 70: 562 lbs (255 kg)
– Order No.	20 40: M-G1160 20 70: M-G1170



Fully automatic tool presetting and measurement - independent of the operator

### Options

- ISS-U universal ultra-high precision spindle with automatic adapter identification
- Turning package: Second camera incl. indexing, 4 × 90° and 3 × 120° motor driven
- Bidirectional interface
- Manual RFID system
- Individual release of X/Y-axis
- Post-processor
- HQR-Connect
- HRFID-Connect
- Scan function with DXF output option
- DXF fitting software option
- Reamer module for guided reamer
- Measured value history

# VIO basic

Suitable for large and heavy tools



## TOOL PRESETTERS – SEMI-AUTOMATIC

The **VIO basic, with optional semi-automatic (autofocus) or manual operation**, is one of the most modern presetting devices in its class, with many features and an extensive set of standard equipment.

### Standard Equipment

- |   |  |
|---|--|
| – Microvision VIO image processing system                             | – Sigma function                               |
| – SK50 ultra-high precision spindle, manual                           | – Memory for 1,000 zero points                 |
| – Robust, long-life cast iron construction                            | – Unlimited tool memory                        |
| – Thermally optimized material combination for improved repeatability | – User management                              |
| – Manual fine adjustment  | – Swiveling operating panel                    |
| – 24" multi-touchscreen   | – Edgefinder                                   |
| – Pneumatic spindle brake   | – Inspection light                             |
| – Vacuum clamping   | – 2 $\mu\text{m}$ spindle runout (0.00008")    |
| – System VIO includes storage for up to 9 adapters                    | – $\pm 2 \mu\text{m}$ repeatability (0.00008") |

### Measurement Range

#### VIO basic

- |  |   |
|--|---|
| – Maximum tool diameter on X-axis            | 16.53 / 27.56 / 39.17 in<br>(420 / 700 / 1000 mm) |
| – Maximum snap gauge tool diameter on X-axis | 3.93 in<br>(100 mm)                               |
| – Maximum tool length on Z-axis              | 19.69 / 27.56 / 39.37 in<br>(500 / 700 / 1000 mm) |
| – Maximum tool weight                        | 352 lbs<br>(160 kg)                               |
| – Weight                                     | 881 lbs – 1,213 lbs<br>(400 kg – 550 kg)          |
| – Order No.                                  | M-G1026*  |

### Options

- ISS-U universal ultra-high precision spindle with automatic adapter identification, mechanical tool clamping, spindle brake pneumatically and  $4 \times 90^\circ$  or  $3 \times 120^\circ$  indexing motorized
- $4 \times 90^\circ$  and  $3 \times 120^\circ$  pneumatic indexing
- Turning package: Second camera incl. indexing,  $4 \times 90^\circ$  and  $3 \times 120^\circ$
- Bidirectional interface
- Manual RFID system
- 27" multi-touchscreen
- Label printer
- Post-processor
- HQR-Connect
- HRFID-Connect



\* this part number is for the smallest unit in X and Z, please contact HAIMER for the part numbers of the larger machines

# VIO *linear*

Perfect for rapid measurements, even on highly complex tools



## TOOL PRESETTERS – FULLY AUTOMATIC

### VIO linear – The complete solution: for fully automatic high-end tool presetting with customizable options.

The modular concept makes it possible to preset tools up to 39.37" in length and diameter.

#### Standard Equipment

- |   |  |
|---|--|
| – Microvision VIO image processing system                             | – System VIO includes storage for 9 adapters |
| – High-precision and fast axis-positioning via linear motion          | – Sigma function                             |
| – SK50 ultra-high precision spindle, autofocus                        | – Memory for 1,000 zero points               |
| – 4 × 90° and 3 × 120° electronic indexing                            | – Unlimited tool memory                      |
| – Pneumatic spindle brake   | – User management                            |
| – Robust, long-life cast iron construction                            | – Swiveling operating panel                  |
| – Thermally optimized material combination for improved repeatability | – Edgfinder                                  |
| – Motorized fine adjustment of all axes                               | – Inspection light                           |
| – 24" multi-touchscreen   | – 2 μm spindle runout (0.00008")             |
|   | – ± 2 μm repeatability (0.00008")            |

#### Measurement Range

##### VIO linear

- |  |   |
|--|---|
| – Maximum tool diameter on X-axis            | 16.53 / 27.56 / 39.17 in<br>(420 / 700 / 1000 mm) |
| – Maximum snap gauge tool diameter on X-axis | 3.93 in<br>(100 mm)                               |
| – Maximum tool length on Z-axis              | 19.69 / 27.56 / 39.37 in<br>(500 / 700 / 1000 mm) |
| – Maximum tool weight                        | 352 lbs<br>(160 kg)                               |
| – Weight                                     | 881 lbs – 1,213 lbs<br>(400 kg – 550 kg)          |
| – Order No.                                  | M-G1035*  |



#### Options

- |   |   |
|---|---|
| – ISS-U universal ultra-high precision spindle with automatic adapter identification, mechanical tool clamping, pneumatic spindle brake and 4 × 90° and 3 × 120° motorized indexing | – HQR-Connect   |
| – Second camera for measuring the center of rotation  | – HRFID-Connect   |
| – Bidirectional interface   | – Robot-ready software interface for integration of a robot cell to preset tools without operator |
| – Manual or automatic RFID system   | – Length stop system for automatic length adjustment for hydraulic or ER collet chucks            |
| – 27" multi-touchscreen   | – Direct photo storage for easy integration of tool data  |
| – Post-processor  | – Gear Skyving System   |
| – VIO Fit/Scan  | – Y-axis for measurement of multi-tool turning holder   |
| – Angular head system, swiveling camera carrier, Y-axis offset for measuring multiple slewing gear witness  | – Reamer module for guided reamer   |

\* this part number is for the smallest unit in X and Z, please contact HAIMER for the part numbers of the larger machines

# VIO *linear* toolshrink

Shrinking and presetting combined



## SHRINKING/PRESETTING

The combination of shrinking and presetting technology with precise length adjustment on the  $\mu\text{m}$  scale makes the VIO *linear* top of its class, which includes the toolshrink variant. The VIO *linear* toolshrink is the ideal choice, especially when using shrink fit holders, duplicate assemblies, or multi-spindle machines.

### Standard Equipment

- Microvision VIO image processing system
- ISS-U universal ultra-high precision spindle with automatic adapter identification, mechanical clamping and  $4 \times 90^\circ$  and  $3 \times 120^\circ$  motorized indexing
- Best shrinking results, regardless of the holder brand
- High precision and fast axis-positioning through linear motion
- Fully automatic HAIMER induction unit 13 kW coil
- Automatic detection of shrinking parameters
- Automatic length adjustment within  $\pm 10 \mu\text{m}$  (0.0004")
- Extractor with filter
- HAIMER contact cooling TME-12: Intelligent Cooling System with sensor
- 24" touchscreen
- Ideally used with HAIMER shrink fit holders for best results
- Dynamic shrinking for short process times

### Measurement Range

#### VIO *linear* toolshrink

– Maximum tool diameter on X-axis	16.53 in (420 mm)
– Maximum snap gauge tool diameter on X-axis	3.93 in (100 mm)
– Maximum tool length on Z-axis shrinking	2.36 – 25.59 in (60 – 650 mm)
– Maximum tool length on Z-axis measuring	19.69 / 27.56 / 39.37 in (500 / 700 / 1000 mm)
– Maximum tool weight	352 lbs (160 kg)
– Weight	1,587 – 1,764 lbs (720 – 800 kg)
– Order No.	M-G1061*



### Options

- Second camera for measuring the center of rotation
- Post-processor
- Bidirectional interface
- VIO Fit
- VIO Scan
- Manual RFID system
- Automatic RFID system
- Label printer
- TME cooling system with temperature monitoring
- 27" multi-touchscreen
- HQR-Connect
- HRFID-Connect
- Robot-ready software interface for integration of a robot cell to preset tools without operator
- Length stop system for automatic length adjustment for hydraulic or ER collet chucks
- Direct photo storage for easy integration of tool data
- Gear Skyving System
- Reamer module for guided reamer
- Quick in/out, shrinking like a Power Clamp i4.0 (no setup)
- Scan function for shrinking parameter
- Pre-installed HAIMER data base

\* this part number is for the smallest unit in X and Z, please contact HAIMER for the part numbers of the larger machines



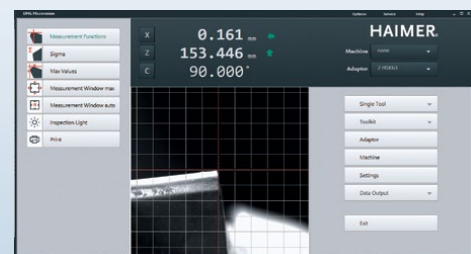
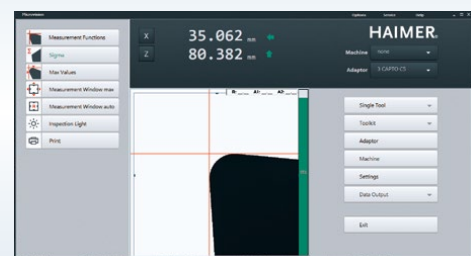
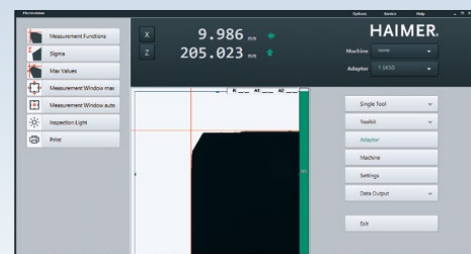
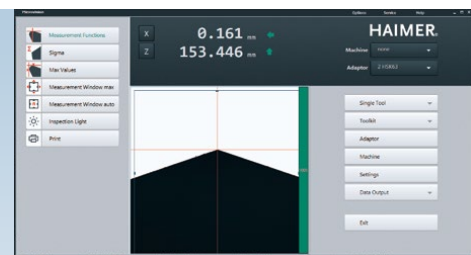
## Microvision – easy and intuitive

**Microvision software enables fast and easy inspection of complex shapes and features, creating even more time savings potential during setup.**

These savings are achieved due to the machine's ability to quickly and precisely measure and set tools, independent from the operator. Modern image processing ensures that the tools are quickly and accurately measured and in turn guarantees the highest quality in your production processes. Complex tools can be measured within an incredibly short period of time with the latest measuring techniques.

### Highlights

- Intuitive operation ensures quick and precise measurement results
- Accurate measurement of complex and helical cutters with the precise focus window
- User administration and access privileges
- Display currently in 16:9 format
- Cross hair fixed / floating with automatic measurement lines and automatic contour evaluation
- Identical software design for all Microset models
- Windows based
- Measuring macros for fast creation of automatic measuring sequences
- Template-System, for fast and easy creation of measuring cycles for similar tool geometries
- Creation of customized master measuring cycles possible
- Template module to easily copy measuring cycle of identical tool types, e.g. drill from one size to the next
- History of measured data for security of measuring results and process optimization
- HQRID scanner ready, to scan and ID tools and to find the measuring cycle of that specific tool
- QR code parameter print for easy shrink parameter identification for non-HAIMER holders
- Print Editor for easy adjustment of printouts
- Direct photo storage to easily add pictures to the database, right at the presetter
- Remote access, program your tool from your desk
- Rules and calculations that can be added to create the right measuring point



## TOOL PRESETTING – ACCESSORIES

## Adapters and spindles for every taper

**High-quality, precise adapters and spindles are important elements for precise tool presetting.**

We offer an extraordinarily wide range of adapters and spindles so that you can quickly and easily get the results you need. We will gladly provide consultation regarding your individual requirements and applications.

The ISS-U universal ultra-high precision spindle enables incredibly high-precision direct clamping. The ISS-U spindle utilizes the highest clamping forces with runout accuracy < 0.002 mm, all without need for adapters.

## Examples of Adapters



We offer solutions for all requirements, from standard tool holders to customer-specific special tool holders. You benefit from our many years of experience in tool design.

SK50 Ultra precision adapter

1: HSK 63 adapter with integrated clamping

2: VDI 40 adapter with manual clamping

3: PSC adapter with integrated manual clamping system

## Examples of spindles



Our offer: the Universal clamping system clamps tools precisely and reliably, regardless of the tool holder's geometry. This also applies to the attachment holder (2), which was designed for all common tool holder systems on the market.

Universal clamping system

1: ISS-U universal ultra-high precision spindle

2: Attachment holder (SK, HSK, PSC, VDI)

3: Complete system

## TOOL PRESETTING – ACCESSORIES

**Adapter with integrated clamping.**

Available in taper sizes

HSK ACET 32 / BDF 40 – HSK ACET 100 / BDF 125,  
 HSK-F80 Makino, PSC 32 – PSC 80, KM 32 – KM 80,  
 VDI 16 – VDI 60, VDI 25 with Trifix – VDI 50 with Trifix,  
 BMT 40 – BMT 75

**Reduction sleeves from SK50 to SK/BT/CAT/BBT\*/PSC/KM/VDI/ANSI adapter with clamping system**

For taper size	Height H	Order No.
– HSK ACET 32 / BDF 40	50 mm	M-R1034
– HSK ACET 40 / BDF 50	60 mm	M-R1035
– HSK ACET 50 / BDF 63	70 mm	M-R1036
– HSK ACET 63 / BDF 80	80 mm	M-R1037
– HSK ACET 80 / BDF 100	90 mm	M-R1038
– HSK ACET 100 / BDF 125	110 mm	M-R1039
– HSK-F80 Makino	80 mm	M-R4071
– PSC 32	70 mm	M-R1040
– PSC 40	80 mm	M-R1046
– PSC 50	90 mm	M-R1047
– PSC 63	120 mm	M-R1048
– PSC 80	140 mm	M-R1049
– KM 32	40 mm	M-R3200
– KM 40	40 mm	M-R3210
– KM 50	60 mm	M-R3220
– KM 63	60 mm	M-R3230
– KM 80	80 mm	M-R3240
– VDI 16	70 mm	M-R1027
– VDI 20	70 mm	M-R1028
– VDI 25	70 mm	M-R1029
– VDI 30	80 mm	M-R1030
– VDI 40	80 mm	M-R1031
– VDI 50	110 mm	M-R1032
– VDI 60	115 mm	M-R1033
– VDI 25 with Trifix	70 mm	M-R1200
– VDI 30 with Trifix	80 mm	M-R1210
– VDI 40 with Trifix	80 mm	M-R1220
– VDI 50 with Trifix	110 mm	M-R1230
– BMT 40	95 mm	M-R3100
– BMT 45	95 mm	M-R3104
– BMT 50	95 mm	M-R3107
– BMT 55	95 mm	M-R3103
– BMT 60	95 mm	M-R3101
– BMT 65	95 mm	M-R3105
– BMT 75	95 mm	M-R3106

\*BBT is a registered trademark/tradename of Big Daishowa Co. Ltd./Big Daishowa Seiki Co. Ltd.

## TOOL PRESETTING – ACCESSORIES

**Adapter with manual clamping.**

Available in taper sizes  
 SK/BT/CAT/ANSI 20 – SK/BT/CAT/ANSI 45,  
 HSK ACET 25 / BDF 32 – HSK ACET 100 / BDF 125,  
 PSC 32 – PSC 80, VDI 16 – VDI 60

**Reduction sleeves from SK50 to SK/BT/CAT/BBT\*/PSC/KM adapter without clamping system**

For taper size	Height H	Order No.
– SK/BT/CAT/ANSI 20	45 mm	M-R1004
– SK/BT/CAT/ANSI 25	45 mm	M-R1003
– SK/BT/CAT/ANSI/BBT* 30	25 mm	M-R1001
– SK/BT/CAT/ANSI/BBT* 40	20 mm	M-R1000
– SK/BT/CAT/ANSI 45	25 mm	M-R1002
– HSK ACET 25 / 32 BDF	50 mm	M-R1070
– HSK ACET 32 / 40 BDF	40 mm	M-R1010
– HSK ACET 40 / 50 BDF	40 mm	M-R1011
– HSK ACET 50 / 63 BDF	40 mm	M-R1012
– HSK ACET 63 / 80 BDF	55 mm	M-R1013
– HSK ACET 80 / 100 BDF	60 mm	M-R1014
– HSK ACET 100 / 125 BDF	90 mm	M-R1015
– PSC 32	30 mm	M-R1063
– PSC 40	30 mm	M-R1064
– PSC 50	30 mm	M-R1065
– PSC 63	30 mm	M-R1066
– PSC 80	70 mm	M-R1067
– VDI 16	60 mm	M-R1020
– VDI 20	60 mm	M-R1021
– VDI 25	40 mm	M-R1022
– VDI 30	40 mm	M-R1023
– VDI 40	40 mm	M-R1024
– VDI 50	50 mm	M-R1025
– VDI 60	130 mm	M-R1026

\*BBT is a registered trademark/tradename of Big Daishowa Co. Ltd./Big Daishowa Seiki Co. Ltd.

TECHNICAL DATA

		UNO smart	UNO premium
<b>Measurement range</b>			
Maximum tool diameter	mm	400	400 / (420 optional)
Max. tool diameter for measuring using the snap gauge principle	mm	–	100
Maximum tool length on Z-axis	mm	400 / 700	400 / 700
Maximum tool length shrinking	mm	–	–
<b>Operation</b>			
Manual		•	•
Autofocus		–	–
Fully automatic		–	–
Shrinking		–	–
<b>Base cabinet</b>			
System base cabinet smart including storage for 3 adapters		◦	–
System base cabinet premium including storage for 6 adapters		–	◦
System VIO <sup>1)</sup> including storage for up to 9 adapters		–	–
<b>Spindle</b>			
SK50 high precision spindle, manual		•	–
SK50 ultra-high precision spindle, manual		–	•
SK50 ultra-high precision spindle, autofocus		–	–
ISS-U universal ultra-high precision spindle, manual		–	◦
ISS-U universal ultra-high precision spindle, autofocus		–	–
Automatic adapter recognition		–	–
Mechanical clamping		–	–
Vacuum clamping		–	•
Spindle brake		◦	•
4 × 90° and 3 × 120° indexing		◦	◦
<b>Accuracy</b>			
Spindle runout	µm	3	2
Repeatability	µm	± 5	± 2
<b>Turning center measurement</b>			
Dial gauge with 4 × 90° indexing		◦	–
Camera with 4 × 90° indexing		–	◦
<b>Miscellaneous</b>			
Inspection light		◦	◦
Edgefinder		◦	◦
Magnet board		–	◦
7" touchscreen		•	–
22" touchscreen		–	•
24" touchscreen		–	◦
27" touchscreen		–	–
Measure-by-touch		–	–
Release-by-touch		◦	◦
Individual release and clamping of X/Z-axis		–	•
Joystick		–	–
<b>Software</b>			
Image processing		Microvision SMART	Microvision UNO
Zero points		99	1000
Tool storage unit		–	1000
Sigma function		◦	•
User management		–	◦
<b>Data output</b>			
Label printing		◦	◦
USB		–	•
LAN/network		–	•
Post-processor		–	◦
Bidirectional interface		–	◦
Manual RFID system		–	◦
Automatic RFID system		–	–
HQR-Connect		–	◦
HRFID-Connect		–	◦

• Standard ◦ Optional – Not available

<sup>1)</sup> System base cabinet VIO linear toolshrink including storage for 3 adapters

UNO autofocus	UNO automatic drive	VIO basic	VIO linear	VIO linear toolshrink
400 / (420 optional)	400 / (420 optional)	420 / 700 / 1000	420 / 700 / 1000	420
100	100	100	100	100
400 / 700	400 / 700	500 / 700 / 1000	500 / 700 / 1000	650
-	-	-	-	650
•	•	•	•	•
•	•	◦	•	•
-	•	-	•	•
-	-	-	-	•
-	-	•	•	•
•	•	-	-	-
-	-	•	•	•
-	-	-	-	-
-	-	•	-	-
-	-	◦	•	-
-	-	◦	-	-
◦	◦	-	◦	•
◦	◦	◦	◦	◦
◦	◦	◦	◦	•
•	•	•	•	-
•	•	•	•	•
◦	◦	◦	•	•
2	2	2	2	2
± 2	± 2	± 2	± 2	± 2
-	-	-	-	-
◦	◦	◦	◦	◦
•	•	•	•	•
•	•	•	•	•
•	•	-	-	-
-	-	-	-	-
-	-	-	-	-
•	•	•	•	•
-	-	◦	◦	◦
-	-	-	◦	◦
•	•	•	•	•
◦	◦	•	•	•
-	-	-	•	•
Microvision UNO	Microvision UNO	Microvision VIO	Microvision VIO	Microvision VIO
1000	1000	1000	1000	1000
1000	1000	unlimited	unlimited	unlimited
•	•	•	•	•
•	•	◦	•	•
•	•	•	•	•
•	•	•	•	•
◦	◦	◦	◦	◦
◦	◦	◦	◦	◦
◦	◦	◦	◦	◦
-	-	◦	◦	◦
◦	◦	◦	◦	◦
◦	◦	◦	◦	◦

HAIMER.

# MEASURING TECHNOLOGY



Measuring  
Technology

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# HAIMER Sensors – Benefits

1.

## No math needed

- Zero on the indicator = Zero on the machine control
- The sensor is pre-calibrated to incorporate the probe tip radius offset

2.

## 3-Axis edge finder

- Tram in your work piece
- Check surface flatness
- The indicator always faces the operator = No more reaching into the machine

3.

## Quickly verify part dimensions

- Part lengths, slot depths, hole diameters and more



- 2-IN-1: 3-axis edge finder and measuring tool
- Reduced set-up time by 65%
- Check for straightness and flatness on all surfaces (including the z-axis)
- Measure lengths and depths



HAIMER®

Quality Wins.

Tooling Technology

Shrinking Technology

Balancing Technology

Measuring and Presetting Technology

## HAIMER 3D Sensor

For simple and precise positioning

www.haimer.com

# Applications

Locating work piece edge in X, Y and Z is easy as 1, 2, 3



Measure your work piece dimensions



Tram in your work piece or fixture to your machine



Measure surface flatness

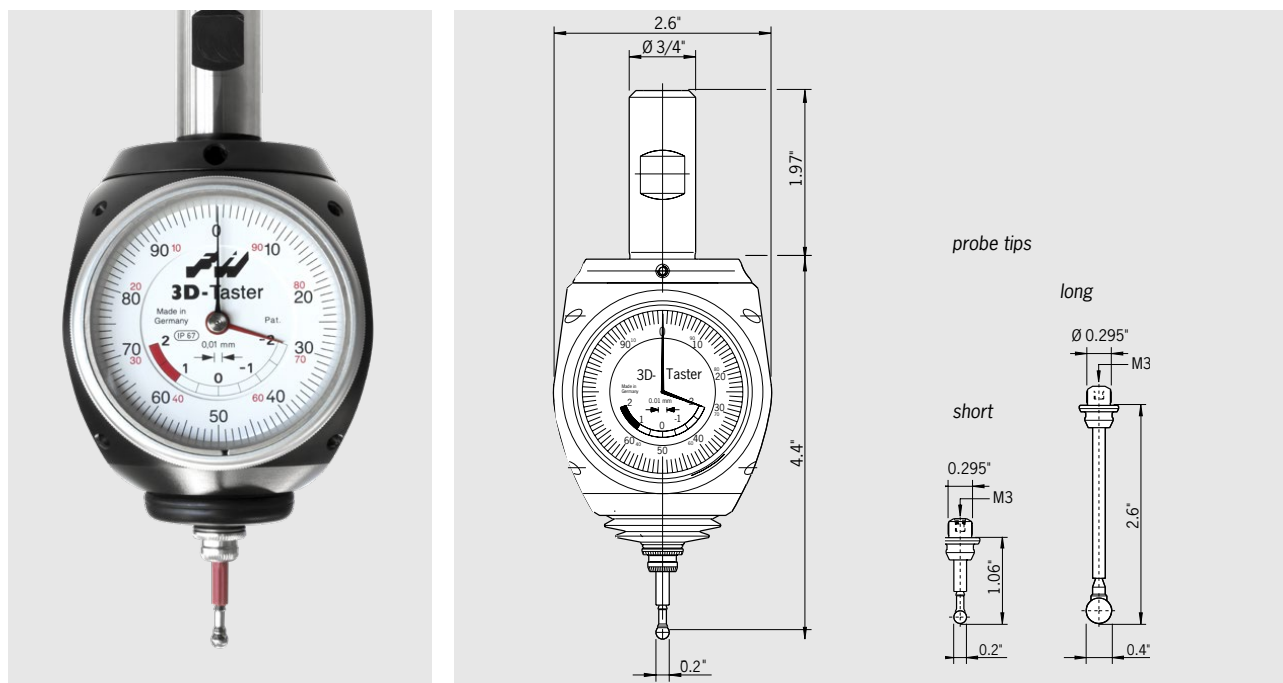


Orientate the machine spindle with the center of a drilled hole or cylindrical O.D.

# Universal 3D-Sensor INCH



# UNIVERSAL 3D-SENSOR INCH



## Universal 3D-Sensor INCH

The Universal 3D-Sensor is a very precise and versatile edge-finding measuring instrument for milling and EDM machines (insulated probe). Made entirely at the HAIMER Germany facility, it is an instrument that no shop can do without.

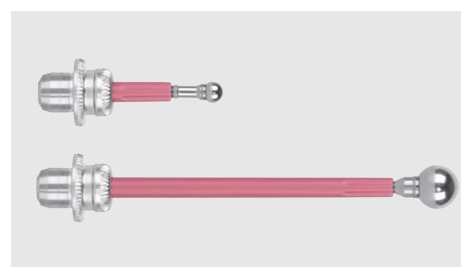
The 3D-Sensor is clamped into a tool holder and inserted into a milling spindle. Once clamped into the machine spindle, the run-out (T.I.R) is fully adjustable to zero. Then, you are able to find exact positioning of the spindle axis on the edges of the work piece. This allows for zeros to be set and the length to be measured quickly and easily. You may approach from any direction (X-, Y-, Z- axis – hence the name “3D-Sensor”). When the dial gauge shows zero, the spindle axis is exactly on the work piece edge.

Only the HAIMER 3D-Sensor allows for the edge to be found on the first try. No calculating of the probe’s ball diameter is necessary – just zero it out! Problems with mathematics or calculations are eliminated, allowing for fewer operator errors. Our 3D-Sensor is quick and easy, reducing the extra time needed with most edge-finders, thus increasing the productivity and accuracy of the operator.

Short and long probes are available. The sensor probes can be changed without ever needing a tool. No re-calibration of the unit is needed after changing sensor probes.

Simply bring the needle to Zero, and that is your edge with any probe. The accuracy is such that you are able to inspect your parts right on the machine. Tram vises, find the center of your bore, find your edge and inspect parts - it is all possible with the HAIMER 3D-Sensor. The unit has a large overrun distance as well as fully tested preset probe breaking points, giving the sensor long life. All Universal 3D-Sensors are individually tested and adjusted during assembly in order to achieve maximum measuring precision.

– IP 67 waterproof



Short probe tip Ø 0.2"  
Long probe tip Ø 0.4"

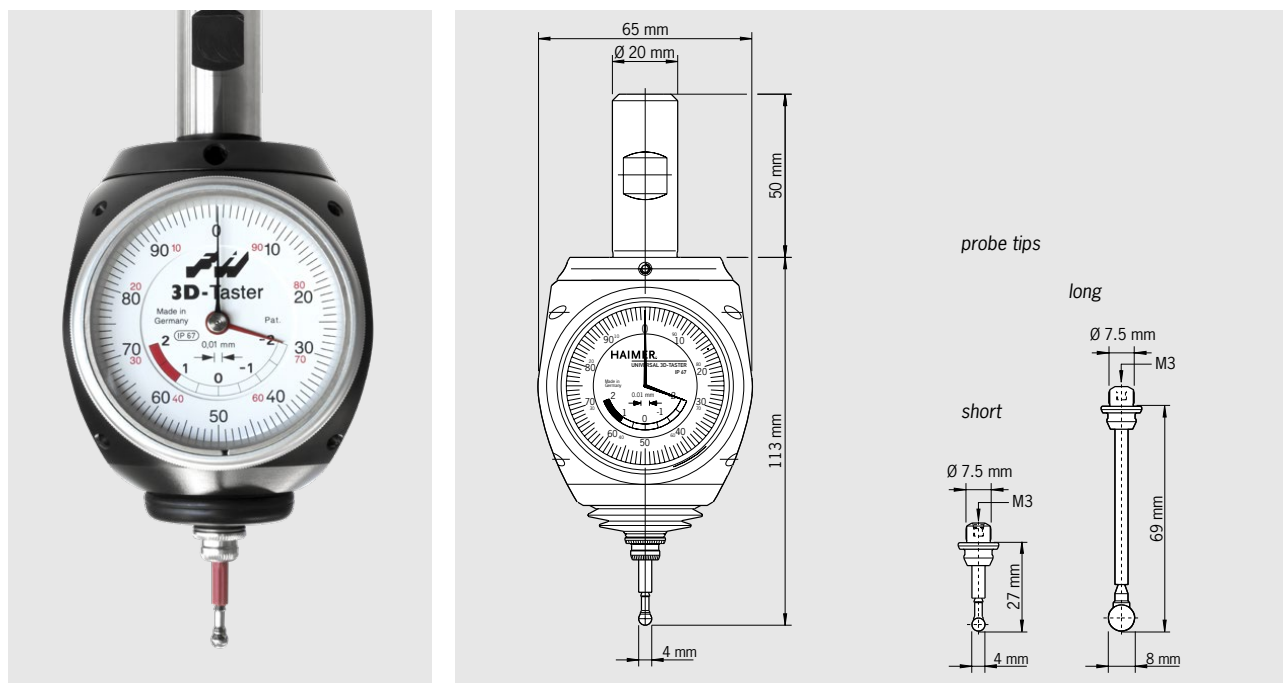
Technical details	
<b>Universal 3D-Sensor with clamping shank, diam. 3/4" including short probe tip Ø 0.2"</b>	
Accuracy	0.0004"
Length without clamping shank	4.4"
<b>Order No. 80.360.00.IN</b>	
Accessories	
Short probe tip Ø 0.2"	
<b>Order No. 80.365.20</b>	
Long probe tip Ø 0.4"	
<b>Order No. 80.365.30</b>	

Recommended HAIMER tool holders	
	<b>Order No.</b>
Short chuck CAT 40	<b>40.720.32</b>
Short chuck CAT 50	<b>50.720.32</b>
Short chuck HSK-A63	<b>A63.020.32</b>
Short chuck HSK-A100	<b>A10.020.32</b>
Please order ER collet along with above holders:	
ER32 3/4" collet	<b>81.320.20</b>
(additional taper styles please see ER or HG collet chuck section)	

# Universal 3D-Sensor METRIC



# UNIVERSAL 3D-SENSOR METRIC



## Universal 3D-Sensor METRIC

The Universal 3D-Sensor is a very precise and versatile measuring instrument for milling and EDM machines (insulated probe).

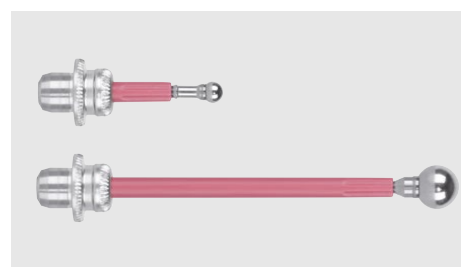
The 3D-Sensor is clamped into a tool holder and inserted into a milling spindle. Once clamped into the machine spindle, the run-out (T.I.R) is fully adjustable to zero. Then, you are able to find exact positioning of the spindle axis on the edges of the work piece. This allows for zeros to be set and the length to be measured quickly and easily. You may approach from any direction (X-, Y-, Z- axis – hence the name “3D-Sensor”). When the dial gauge shows zero, the spindle axis is exactly on the work piece edge.

Only the HAIMER 3D-Sensor allows for the edge to be found on the first try. No calculating of the probe’s ball diameter is necessary – just zero it out! Problems with mathematics or calculations are eliminated, allowing for fewer operator errors. Our 3D-Sensor is quick and easy, reducing the extra time needed with most edge-finders, increasing the productivity and accuracy of the operator.

Short and long probes are available. The sensor probes can be changed without ever needing a tool. No re-calibration of the unit is needed after changing sensor probes.

Simply bring the needle to Zero, and that is your edge with any probe. The accuracy is such that you are able to inspect your parts right on the machine. Tram vises, find the center of your bore, find your edge and inspect parts - it is all possible with the HAIMER 3D-Sensor. The unit has a large overrun distance as well as fully tested preset probe breaking points, giving the sensor long life. All Universal 3D-Sensors are individually tested and adjusted during assembly in order to achieve maximum measuring precision.

– IP 67 waterproof



Short probe tip Ø 4 mm  
Long probe tip Ø 8 mm

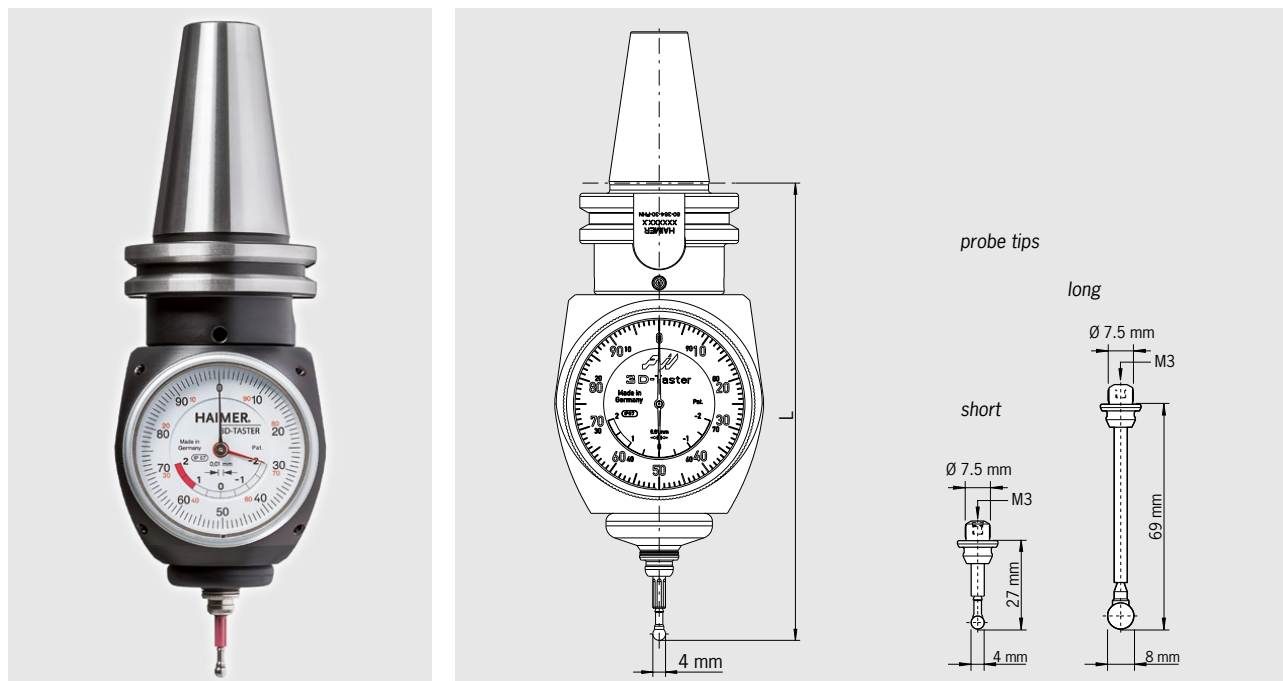
Technical details	
<b>Universal 3D-Sensor with clamping shank Ø 20 mm including short probe tip Ø 4 mm</b>	
Accuracy	0.01 mm
Length without clamping shank	113 mm
<b>Order No. 80.360.00.FHN</b>	
Accessories	
Short probe tip Ø 4 mm	
<b>Order No. 80.362.00</b>	
Long probe tip Ø 8 mm	
<b>Order No. 80.363.00</b>	

Recommended HAIMER tool holders	
	<b>Order No.</b>
Short chuck SK 40	<b>40.305.20</b>
Short chuck SK 50	<b>50.300.20</b>
Short chuck BT 40	<b>40.500.20</b>
Short chuck BT 50	<b>50.500.20</b>
Short chuck HSK-A 50	<b>A50.000.20</b>
Short chuck HSK-E 50	<b>E50.000.20</b>
Short chuck HSK-A 63	<b>A63.000.20</b>
Short chuck HSK-A 80	<b>A80.000.20</b>
Short chuck HSK-A 100	<b>A10.000.20</b>

## Universal 3D-Sensor with integrated adapter



## UNIVERSAL 3D-SENSOR WITH INTEGRATED ADAPTER



### Universal 3D-Sensor with integrated adapter

The integrated taper (ASME B5.50, CAT40, DIN 69871, SK40 or JIS B6339, BT40) guarantees the easiest handling and maximum comfort.

The Universal 3D-Sensor is a very precise and versatile measuring instrument for milling and EDM machines (insulated probe). The 3D-Sensor is clamped into a tool holder and inserted into a milling spindle. Once clamped into the machine spindle, the run-out (T.I.R) is fully adjustable to zero. Then, you are able to find exact positioning of the spindle axis on the edges of the work piece. This allows for zeros to be set and the length to be measured quickly and easily. You may approach from any direction (X-, Y-, Z- axis – hence the name “3D-Sensor”). When the dial gauge shows zero, the spindle axis is exactly on the work piece edge.

Only the HAIMER 3D-Sensor allows for the edge to be found on the first try.

No calculating of the probe's ball diameter is necessary – just zero it out! Problems with mathematics or calculations are eliminated, allowing for fewer operator errors.

Our 3D-Sensor is quick and easy, reducing the extra time needed with most edge-finders, increasing the productivity and accuracy of the operator.

Short and long probes are available. The sensor probes can be changed without ever needing a tool. No re-calibration of the unit is needed.

For safety, the unit has a large overrun distance as well as fully tested preset probe breaking points, giving the sensor a longer life. Universal 3D-Sensors are individually tested and adjusted when being assembled in order to achieve maximum measuring precision.

– IP 67 waterproof

### Technical details

#### Universal 3D-Sensor with integrated adapter including short probe tip Ø 4 mm

Accuracy	0.01 mm	
Length without clamping shank	113 mm	
<b>Article</b>	<b>Order No.</b>	<b>L [mm]</b>
With integrated adapter SK 30	<b>80.364.30.FHN</b>	<b>144.0</b>
With integrated adapter SK 40	<b>80.364.40.FHN</b>	<b>143.9</b>
With integrated adapter BT 30	<b>80.365.30.FHN</b>	<b>143.5</b>
With integrated adapter BT 40	<b>80.365.40.FHN</b>	<b>143.9</b>
With integrated adapter CAT 40	<b>80.367.40.FHN</b>	<b>144.0</b>

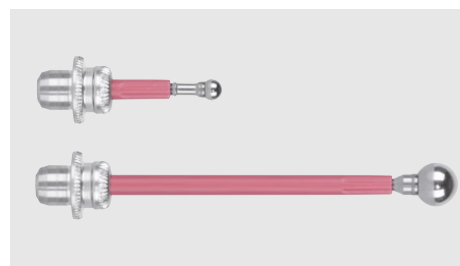
### Accessories

Short probe tip Ø 4 mm

**Order No. 80.362.00**

Long probe tip Ø 8 mm

**Order No. 80.363.00**



Short probe tip Ø 4 mm

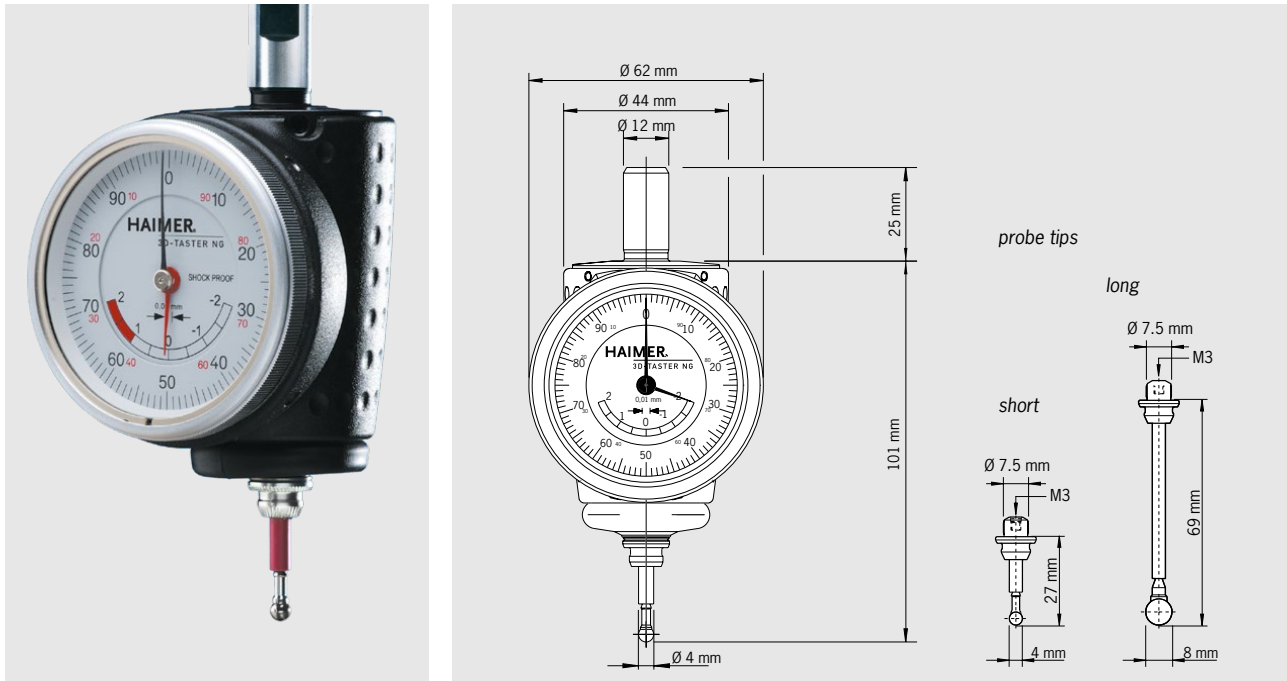
Long probe tip Ø 8 mm



## 3D-Sensor New Generation



## 3D-SENSOR NEW GENERATION METRIC



### 3D-Sensor New Generation

The 3D-Sensor NG is a further development of our globally accepted and proven Universal 3D-Sensors. Its distinguishing features include improved mechanics and a new, compact design.

#### Advantages:

- Compact and easy to grip casing will not restrict working area
- Precise display of spindle position with large 1/100 mm dial gauge (2 hands)
- Utmost precision of 0.01 mm (when using original HAIMER probe tips)
- Overrun distance indicated on display (safety distance)
- IP 67 waterproof

#### Functions:

- Aligns machine spindle to work piece and reference edges (x-, y-, z-axis)
- Sets zeros
- Centers bores and shafts
- Measures lengths and depths
- Checks straightness and levelness of surfaces
- Aligns work pieces and vices
- Quick, without calculations, eliminating mathematical errors

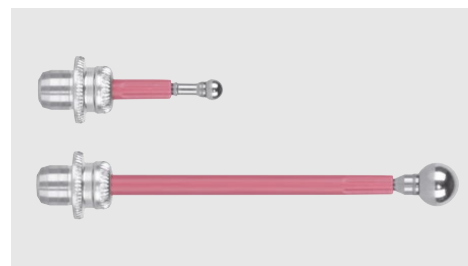
#### Technical details

##### 3D-Sensor NG with clamping shank $\varnothing$ 12 mm including short probe tip $\varnothing$ 4 mm

Accuracy	0.01 mm
Length without clamping shank	100 mm
<b>Order No. 80.360.00NG</b>	

#### Accessories

Short Probe tip $\varnothing$ 4 mm
<b>Order No. 80.362.00</b>
Long Probe tip $\varnothing$ 8 mm
<b>Order No. 80.363.00</b>

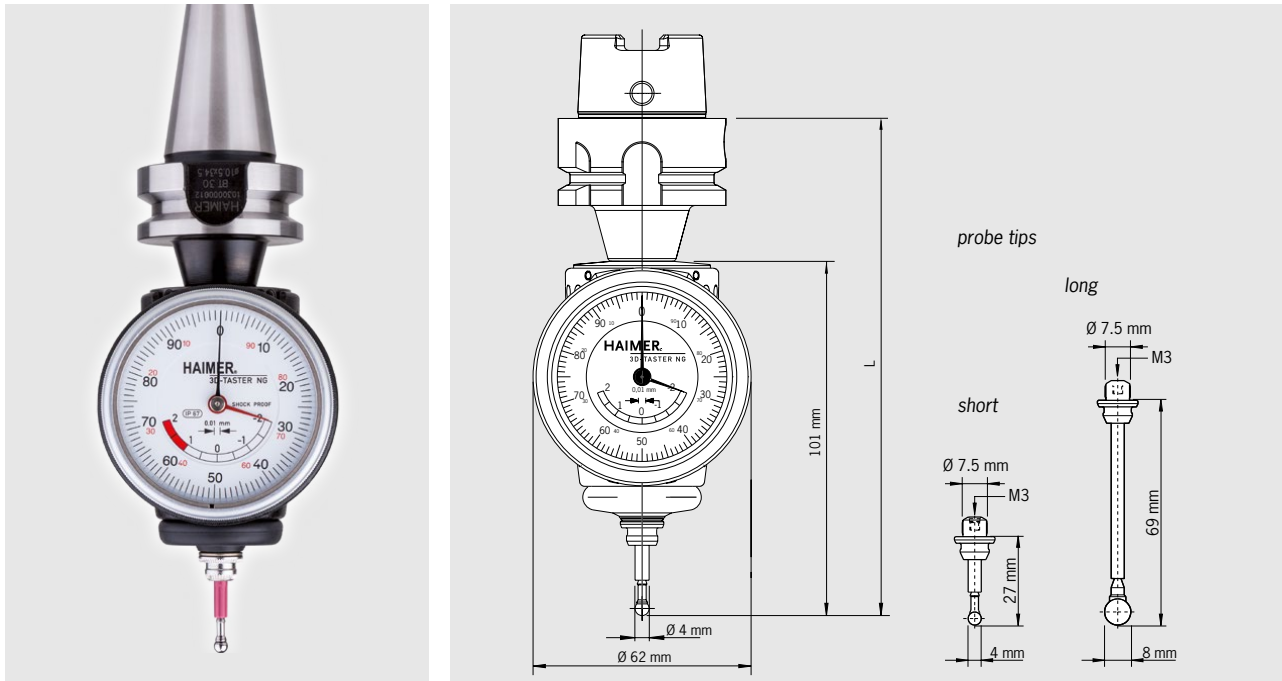


Short probe tip  $\varnothing$  4 mm  
Long probe tip  $\varnothing$  8 mm

## 3D-Sensor NG with integrated short adapter



### 3D-SENSOR NG WITH INTEGRATED SHORT ADAPTER



For interfaces SK30, BT30, HSK-25/32/40/50/63

Easily measures the work piece while taking up less space.

**Version:**

- With integrated short adapter available in taper sizes SK30, BT30, HSK-A32/40/50/63, HSK-E25/32/40/50
- Manual runout adjustment no longer necessary! Preset runout accuracy at the probe tip of 0.01 mm
- Measuring accuracy: 0.01 mm
- Short and long probe tips available
- No re-calibration of the sensor is needed
- Increased overrun distance
- IP 67 waterproof

**Application:**

- For small milling and EDM machines (insulated probe)
- For work piece reset and length measuring
- Approach from any direction (X-, Y-, Z-axis)

**Technical details**

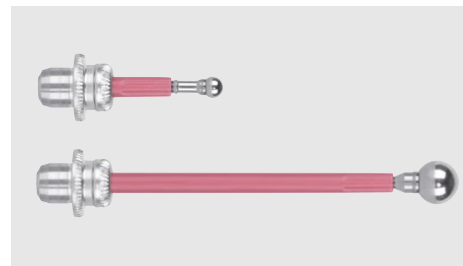
3D-Sensor NG with integrated short adapter including short probe tip Ø 4 mm

Accuracy	0.01 mm	
<b>Article</b>	<b>Order No.</b>	<b>L [mm]</b>
3D-Sensor NG with short adapter HSK-E25	80.363.E25NG	126.5
3D-Sensor NG with short adapter HSK-E32	80.363.E32NG	136.5
3D-Sensor NG with short adapter HSK-E40	80.363.E40NG	136.5
3D-Sensor NG with short adapter HSK-E50	80.363.E50NG	143.5
3D-Sensor NG with short adapter HSK-A32	80.363.A32NG	136.5
3D-Sensor NG with short adapter HSK-A40	80.363.A40NG	136.5
3D-Sensor NG with short adapter HSK-A50	80.363.A50NG	143.5
3D-Sensor NG with short adapter HSK-A63	80.363.A63NG	147.0
3D-Sensor NG with short adapter SK30	80.364.30NG	136.1
3D-Sensor NG with short adapter BT30	80.365.30NG	135.5

**Accessories**

Short Probe tip Ø 4 mm  
**Order No. 80.362.00**

Long Probe tip Ø 8 mm  
**Order No. 80.363.00**

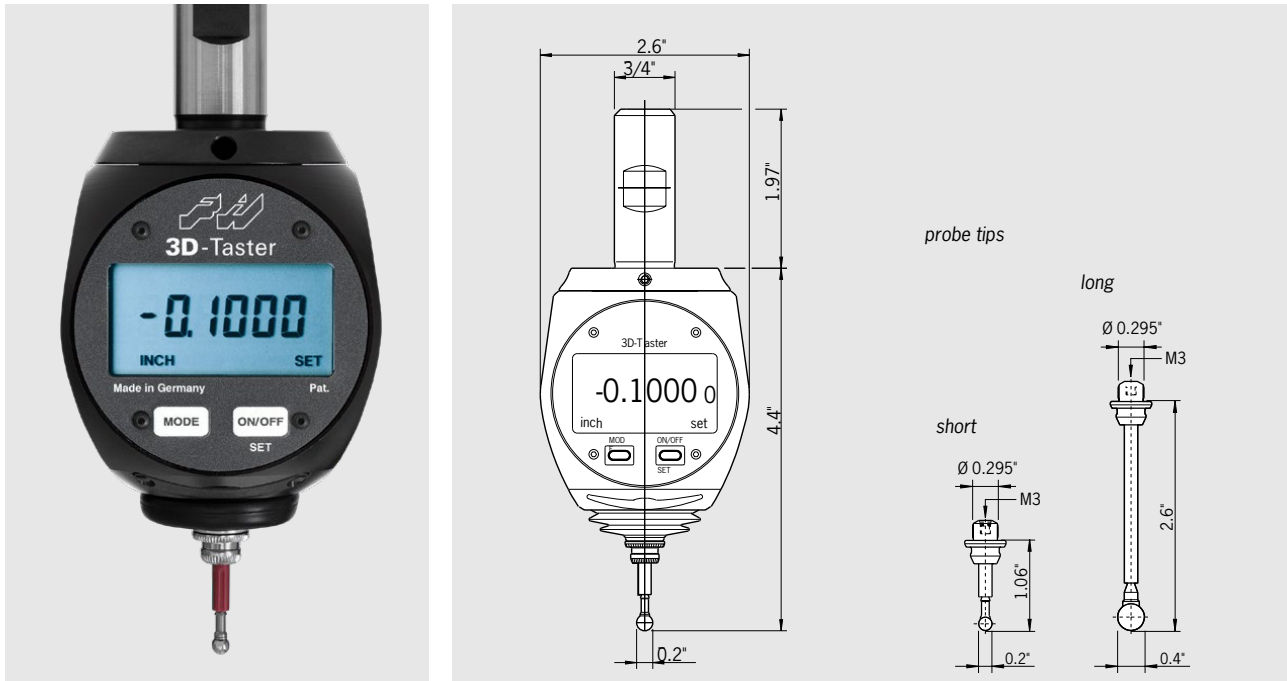


Short probe tip Ø 4 mm  
 Long probe tip Ø 8 mm

## 3D-Sensor Digital



# 3D-SENSOR DIGITAL INCH



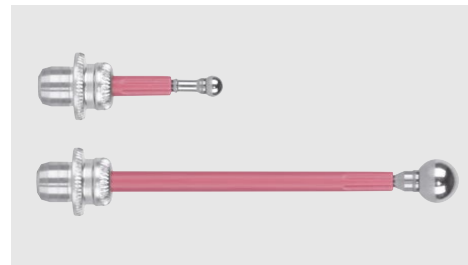
### Digital 3D-Sensor

#### Highly accurate – safe handling

The Digital 3D-Sensor is a further development of the time proven Mechanical 3D-Sensor. It serves for setting work piece edges on milling and EDM machines. The spindle may be positioned quickly and safely on the reference edge. The setting operation can be precisely monitored on the digital display and the zero position is found on the first try. The machine coordinate system can be set without any calculations because the spindle axis is positioned exactly on the approached edge.

The digital display has large, easy-to-read numbers with measurements in increments of 0.0002". It can be easily read from a long distance (i.e. when mounted on a large machining center).

The digital display is splash-proof and dust-proof (IP64) and can be stored in the tool magazine of the machine.



Short probe tip Ø 0.2"  
Long probe tip Ø 0.4"

#### Technical details

##### 3D-Sensor Digital with clamping shank, diam. 3/4" including short probe tip Ø 0.2"

Smallest unit of measure	0.00005"
Repeatability	0.00005"
Measuring accuracy	0.0002"
<b>Display</b>	
Display mode	May be switched to inch or metric
Display size	1.8" x 0.9"
Height of numbers	0.3"
Service life of battery (continuous operation) approx.	3000 hrs

**Order No. 80.460.00.IN**

#### Accessories

Short probe tip Length 1" – ball tip Ø 0.2"

**Order No. 80.365.20**

Long probe tip Length 2.6" – ball tip Ø 0.4"

**Order No. 80.365.30**

#### Recommended HAIMER tool holders

	Order No.
Short chuck CAT 40	<b>40.720.32</b>
Short chuck CAT 50	<b>50.720.32</b>
Short chuck HSK-A63	<b>A63.020.32</b>
Short chuck HSK-A100	<b>A10.020.32</b>

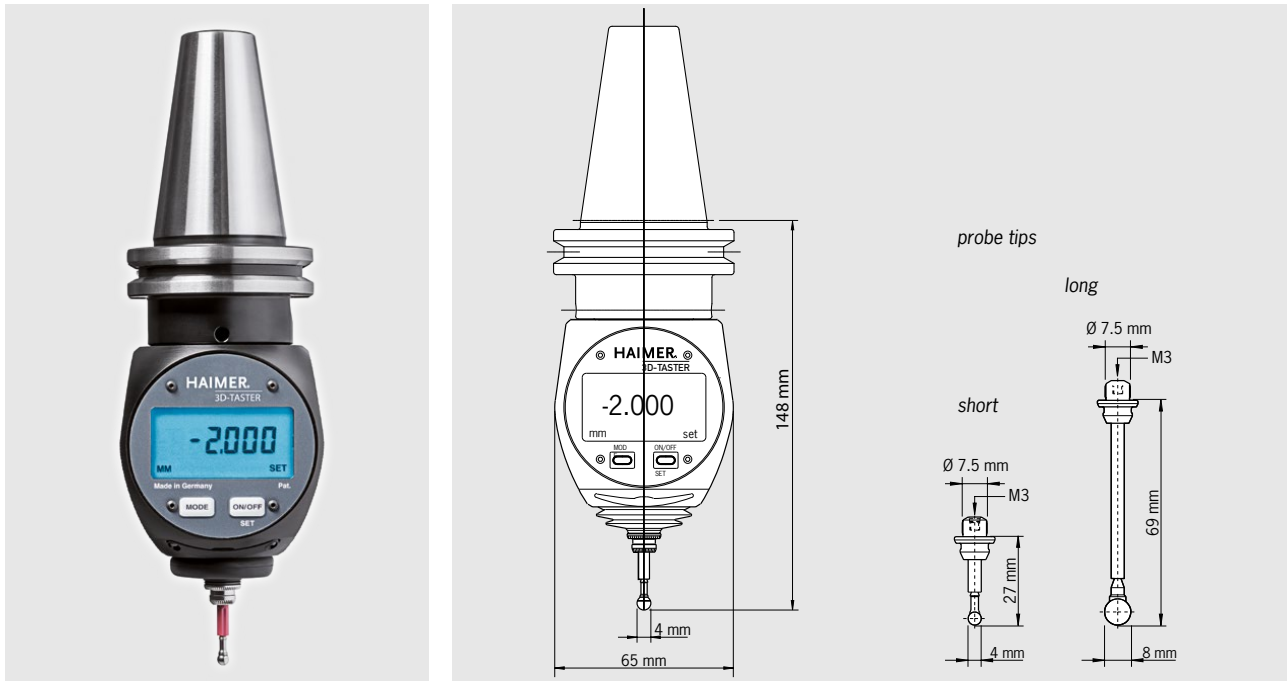
Please order ER collet along with above holders:

ER 32 - 3/4" collet **81.320.20**  
(additional taper styles please see ER or HG collet chuck section)

## Digital 3D-Sensor with integrated adapter



## 3D-SENSOR DIGITAL WITH INTEGRATED ADAPTER METRIC



### Digital 3D-Sensor with integrated adapter

The integrated taper (DIN 69871, SK40 or JIS B6339, BT40) guarantees the easiest handling and a maximum comfort.

### Highly accurate – safe handling

The Digital 3D-Sensor is a further development of the time proven mechanical 3D-Sensor. It serves for setting work piece edges on milling and EDM machines. The spindle may be positioned quickly and safely on the reference edges and the setting operation can be precisely monitored on the digital display. The zero points can be set without any calculations because the spindle axis is positioned exactly on the approached edge.

### Especially practical

The digital display has large easy-to-read numbers that measure in increments of 0.001 mm. It can be easily read from a long distance (i.e. when mounted on a large machining center). The digital display is water- and dust-proof (IP 64) and can be stored in the tool magazine of the machine.

### Technical details

#### 3D-Sensor Digital with integrated adapter incl. short probe tip Ø 4 mm

Smallest unit of measure	0.001 mm
Repeatability	0.005 mm
Measuring accuracy	0.005 mm
<b>Display</b>	
Display mode	May be switched to inch or metric
Display size	45x23 mm
Height of numbers	8.5 mm
Service life of battery (continuous operation) approx.	3000 hrs

With integrated adapter SK 40

**Order No. 80.464.40.FHN**

With integrated adapter BT 40

**Order No. 80.465.40.FHN**

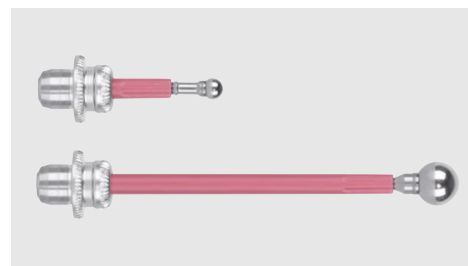
### Accessories

Short probe tip Ø 4 mm

**Order No. 80.362.00**

Long probe tip Ø 8 mm

**Order No. 80.363.00**



Short probe tip Ø 4 mm

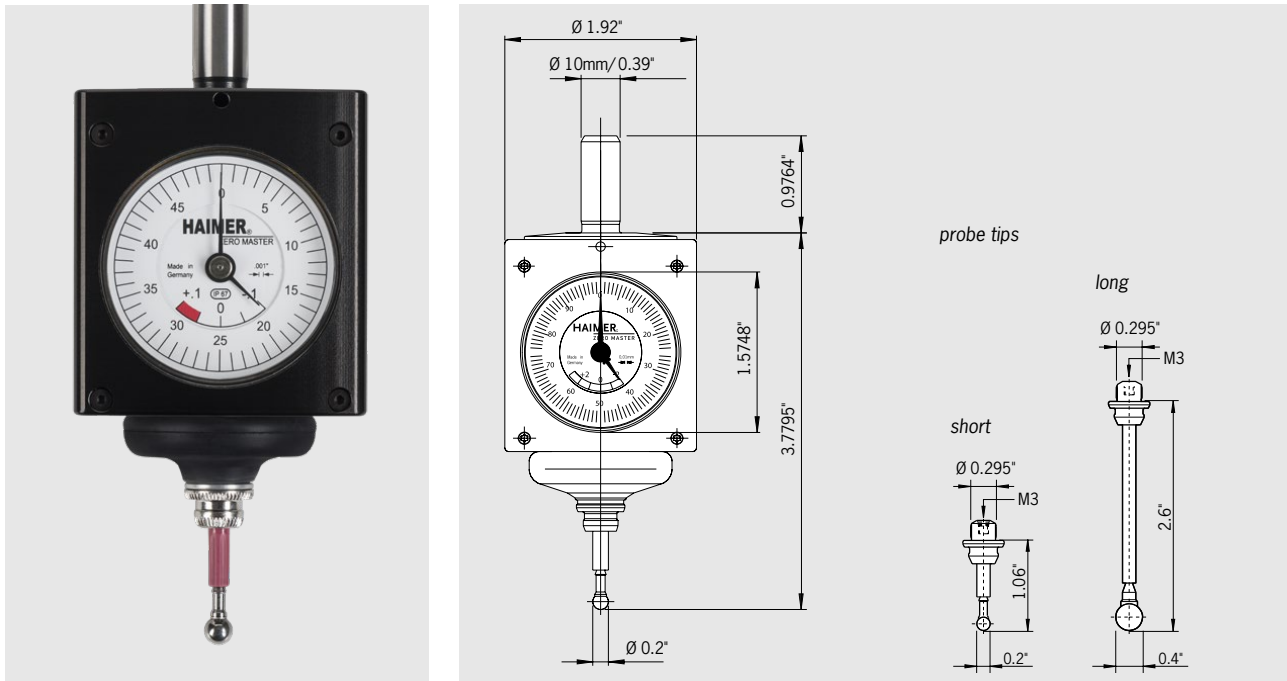
Long probe tip Ø 8 mm



# Zero Master – Universal Mini 3D-Sensor INCH



# ZERO MASTER – UNIVERSAL MINI 3D-SENSOR INCH



## Zero Master INCH

### Small but powerful

The Zero Master is the smallest 3D-Sensor worldwide. Usage, function and accuracy are equal to the Universal 3D-Sensor. The size of the Zero Master is adapted to small machines. The diameter of the clamping shank is 10 mm/ 0.3937 inch.

Accordingly, it can be also used on machines with ISO 30 or small HSK spindles.

The housing is shortened and does not protrude far from the spindle so even large work pieces can be measured. The Zero Master can be read on its small analog dial gauge.

The Zero Master can be equipped with a short (ball diam. 0.2 inch) and a long (ball diam. 0.4 inch) probe tip. Naturally, the probe tips are compatible with all other HAIMER 3D-Sensors.

### Please take note:

The given measuring precision of 0.0004" only applies if the original HAIMER probe tips are used.

– IP67 waterproof

### Technical details

#### Zero Master with clamping shank Ø 0.39" including short probe tip Ø 0.2"

Accuracy	0.0004"
Length without clamping shank	3.7795"

**Order No. 80.960.00.IN**

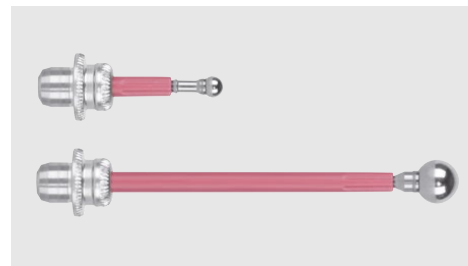
### Accessories

Short probe tip length 1" – ball tip Ø 0.2"

**Order No. 80.365.20**

Long probe tip length 2.6" – ball tip Ø 0.4"

**Order No. 80.365.30**

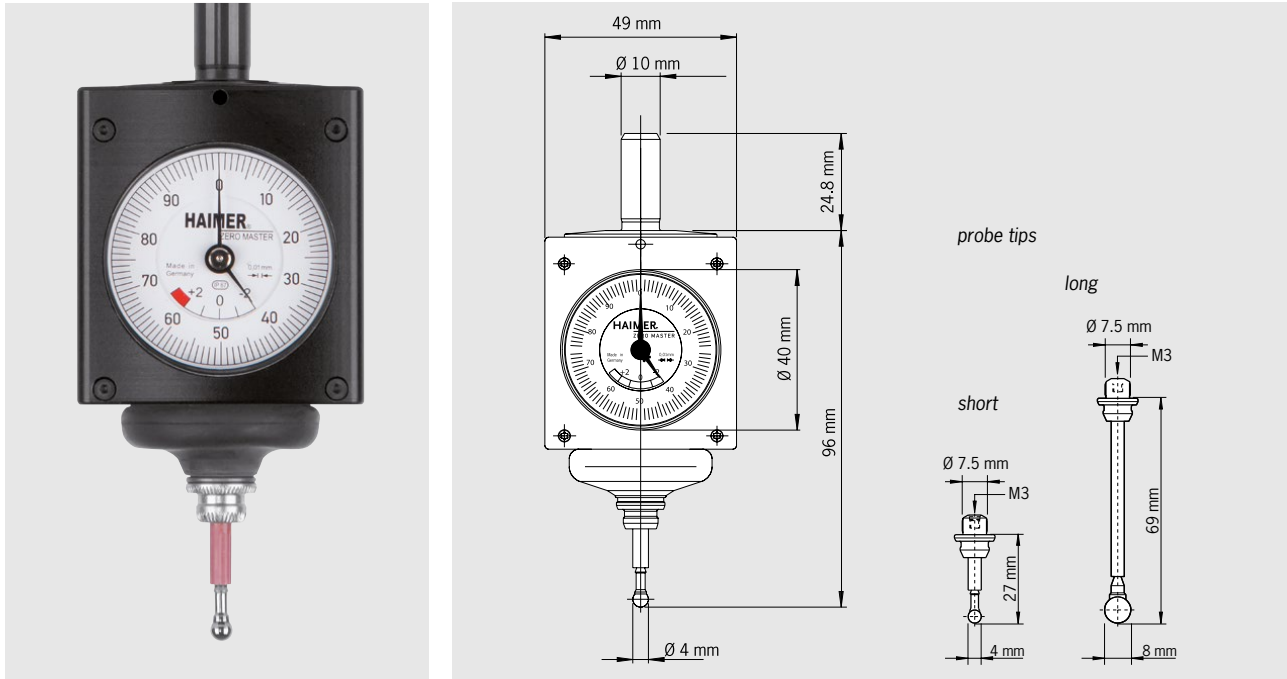


Short probe tip Ø 0.2"  
Long probe tip Ø 0.4"

# Zero Master – Universal Mini 3D-Sensor METRIC



## ZERO MASTER – UNIVERSAL MINI 3D-SENSOR METRIC



### Zero Master METRIC

#### Small but powerful

The Zero Master is the smallest 3D-Sensor worldwide. Usage, function and accuracy are equal to the Universal 3D-Sensor. The size of the Zero Master is adapted to small machines. The diameter of the clamping shank is 10 mm. Accordingly, it can be also used on machines with ISO 30 or small HSK spindles.

The housing is shortened and does not protrude far from the spindle so even large work pieces can be measured. The Zero Master can be read on its small analog dial gauge.

The Zero Master can be equipped with a short (ball diam. 4 mm) and a long (ball diam. 8 mm) probe tip. Naturally, the probe tips are compatible with all other HAIMER 3D-Sensors.

#### Please take note:

The given measuring precision of 0.01 mm only applies if the original HAIMER probe tips are used.

– IP67 waterproof

#### Technical details

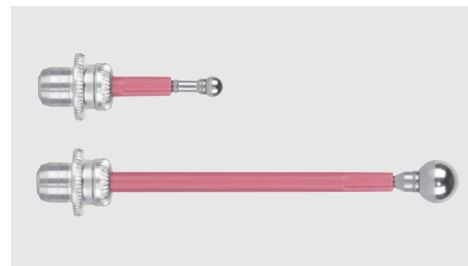
##### Zero Master with clamping shank $\varnothing$ 10 mm including short probe tip $\varnothing$ 4 mm

Accuracy	0.01 mm
Length without clamping shank	96 mm
<b>Order No. 80.960.00</b>	

#### Accessories

Short probe tip  $\varnothing$  4 mm  
**Order No. 80.362.00**

Long probe tip  $\varnothing$  8 mm  
**Order No. 80.363.00**

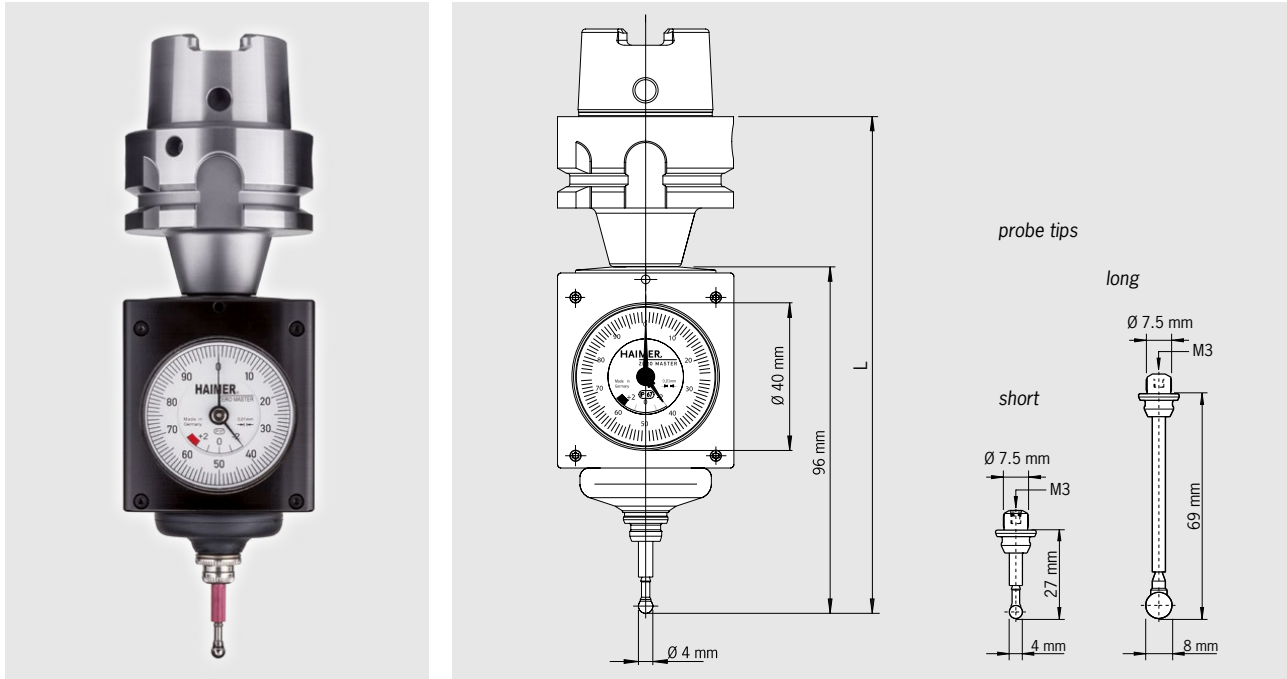


Short probe tip  $\varnothing$  4 mm  
 Long probe tip  $\varnothing$  8 mm

# Zero Master – Universal Mini 3D-Sensor with integrated short adapter METRIC



# ZERO MASTER – UNIVERSAL MINI 3D-SENSOR WITH INTEGRATED SHORT ADAPTER



**For interfaces SK30, BT30, HSK-25/32/40/50/63**

Easily measures the work piece while taking up less space.

**Version:**

- With integrated short adapter available in taper sizes SK30, BT30, HSK-A32/40/50/63, HSK-E25/32/40/50
- Manual runout adjustment no longer necessary! Preset runout accuracy at the probe tip of 0.01 mm
- Measuring accuracy: 0.01 mm
- Short and long probe tips available
- No re-calibration of the sensor is needed
- Increased overrun distance with preset probe tip breaking points to ensure a long life of the sensor
- IP 67 waterproof

**Application:**

- For small milling and EDM machines (insulated probe)
- For work piece reset and length measuring
- Approach from any direction (X-, Y-, Z-axis)

**Technical details**

**Zero Master with integrated short adapter including short probe tip Ø 4 mm**

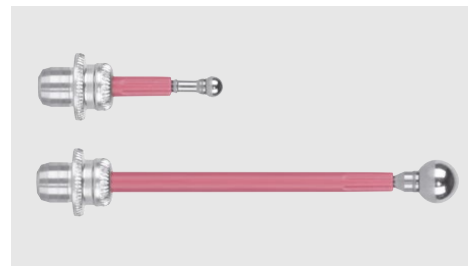
Accuracy	0.01 mm	
<b>Article</b>	<b>Order No.</b>	<b>L [mm]</b>
3D-Sensor Zero Master with short adapter HSK-E25	80.963.E25	121.6
3D-Sensor Zero Master with short adapter HSK-E32	80.963.E32	131.6
3D-Sensor Zero Master with short adapter HSK-E40	80.963.E40	131.6
3D-Sensor Zero Master with short adapter HSK-E50	80.963.E50	138.6
3D-Sensor Zero Master with short adapter HSK-A32	80.963.A32	131.6
3D-Sensor Zero Master with short adapter HSK-A40	80.963.A40	131.6
3D-Sensor Zero Master with short adapter HSK-A50	80.963.A50	138.6
3D-Sensor Zero Master with short adapter HSK-A63	80.963.A63	142.1
3D-Sensor Zero Master with short adapter SK30	80.964.30	131.2
3D-Sensor Zero Master with short adapter BT30	80.965.30	130.7

**Accessories**

- Short probe tip Ø 4 mm  
**Order No. 80.362.00**

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- Long probe tip Ø 8 mm  
**Order No. 80.363.00**

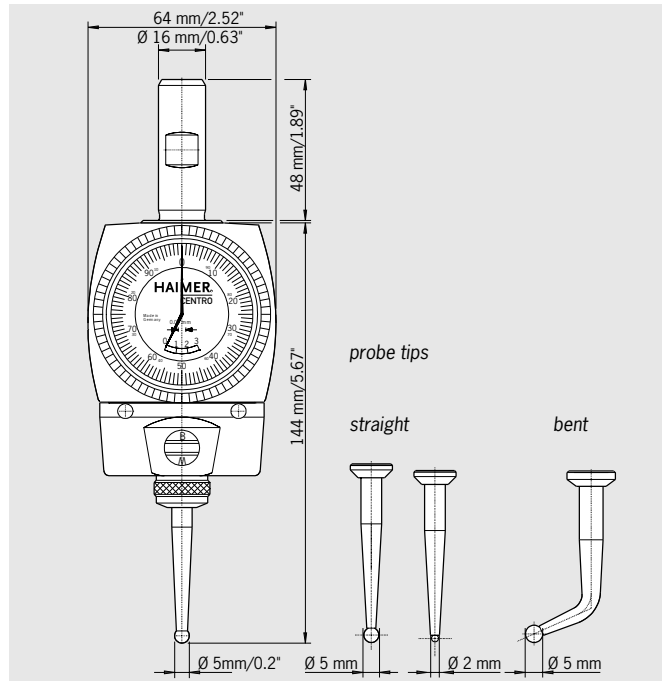


Short probe tip Ø 4 mm  
Long probe tip Ø 8 mm

# Coaxial Indicator Centro



# CENTRO THE MOST ROBUST COAXIAL INDICATOR AVAILABLE ON THE MARKET



**CENTRO quickly locates the centers of bores and shafts.**

**Center bores and arbors quickly and precisely**

The Centro is clamped in a tool holder and positioned close to the desired bore or shaft. Once the probe tip is adjusted, it slides around the circumference of the bore or shaft.

**Dial gauge always in field of vision**

The Centro rotates along the bore or shaft at 150 rpm. Its movement is transferred to the dial gauge. By using an antenna the Centro remains stationary and always stays in your field of vision.

**By using the Centro you find the center of bores or shafts – reliably**

As long as the spindle is out of center of the bore or shaft, the hands of the dial gauge stay in movement. By changing the position of x- and y- axis of the machine you can align the z-axis of the spindle and center of the bore or shaft of the work piece.

**Further advantages:**

- Check the run-out of the work piece to the spindle
- Runout errors of the spindle and tool holder are canceled out
- >> No adjustment necessary
- Even from longer distances, the large size of the dial gauge is easy to see
- Replaceable probes
- Excellent for aligning a turret on a lathe with the machine spindle
- Perfect for use in horizontal machining centers (no droop)



probe tip: straight Ø 0.2" Ø 0.08" bent Ø 0.2"

**Technical details**

<b>Centro with straight probe tip, Ø 5 mm/0.2", clamping shank Ø 16 mm/0.63"</b>	
Centering accuracy	0.003 mm/0.0001"
Max. rotation speed	150 rpm
Measuring range interior diameter (drill hole)	3-125 mm/0.1"-5"
Measuring range exterior diameter (shaft, with probe tip bent)	0-125 mm/0-5"
<b>Order No. 80.300.00.FHN</b>	

**Accessories**

Probe tip straight with diameter of ball 5 mm/0.2"	<b>Order No. 80.301.00</b>
Probe tip bent with diameter of ball 5 mm/0.2"	<b>Order No. 80.302.00</b>
Probe tip straight with diameter of ball 2 mm/0.08", for small bores	<b>Order No. 80.303.00</b>

**Recommended HAIMER tool holders**

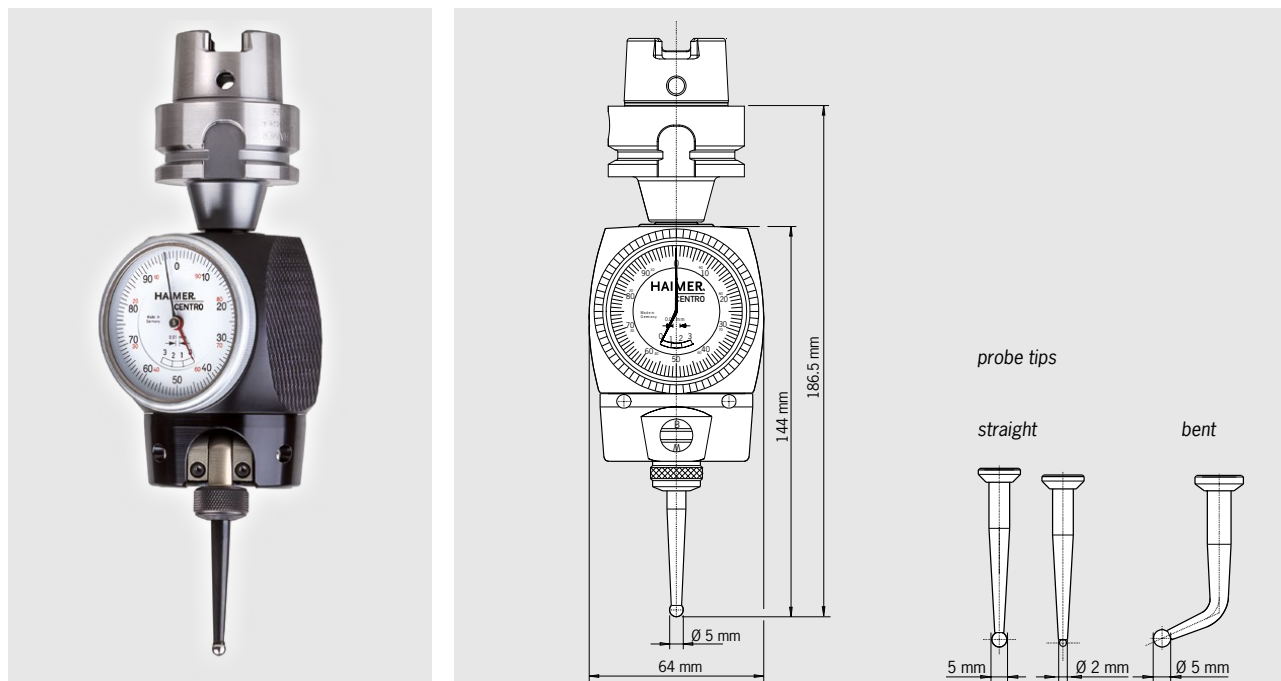
for Centro	Order No.
CAT 40	<b>40.720.25</b>
CAT 50	<b>50.720.25</b>
Please order ER collet along with above holders:	
ER 25 - 16 mm collet	<b>81.250.16</b>
BT 40	<b>40.500.16</b>
BT 50	<b>50.500.16</b>
SK 40	<b>40.300.16</b>
SK 50	<b>50.300.16</b>
HSK-A 40	<b>A40.000.16</b>
HSK-E 40	<b>E40.000.16</b>
HSK-A 50	<b>A50.000.16</b>
HSK-E 50	<b>E50.000.16</b>
HSK-A 63	<b>A63.000.16</b>
HSK-A 100	<b>A10.000.16</b>



## Centro with integrated short adapter



## CENTRO WITH INTEGRATED ADAPTER HSK-A50

**Centro with integrated adapter**

The integrated adapter guarantees easiest handling and a maximum comfort.

**Center bores and arbors quick and precise**

The Centro is clamped in a tool holder and positioned close the sought axis. The probe tip is adjusted and touches the bore or arbor all the way around.

**Dial gauge always in field of vision**

With low rpm the probe slides along the bore or arbor.

Its movement is transferred to the dial gauge. By using an antenna the Centro does not spin around and stays in field of vision.

**By using the Centro you find the axis of bores or arbors – reliably**

As long as the spindle is out of the center of the bore or arbor the hands of the dial gauge stay in movement. By changing the position of x- and y- axis at the machine you can jibe the axis of the spindle and the work piece.

**Further advantages:**

- Check the run-out of the work piece to the spindle
- Runout errors of the spindle and tool holder are canceled out  
>> No adjustment necessary
- Even from longer distances, the large size of the dial gauge is easy to see
- Replaceable probes
- Excellent for aligning a turret on a lathe with the machine spindle
- Perfect for use in horizontal machining centers (no droop)

**Technical details****Centro with integrated adapter HSK-A50 and straight probe tip Ø 5 mm**

Centering accuracy	0.003 mm
Max. rotation speed	150 rpm
Measuring range interior diameter (drill hole)	3–125 mm
Measuring range exterior diameter (shaft, with probe tip bent)	0–125 mm

**Order No. 80.303.A50**

**Accessories**

Probe tip straight with diameter of ball 5 mm

**Order No. 80.301.00**

Probe tip bent with diameter of ball 5 mm

**Order No. 80.302.00**

Probe tip straight with diameter of ball 2 mm, for small bores

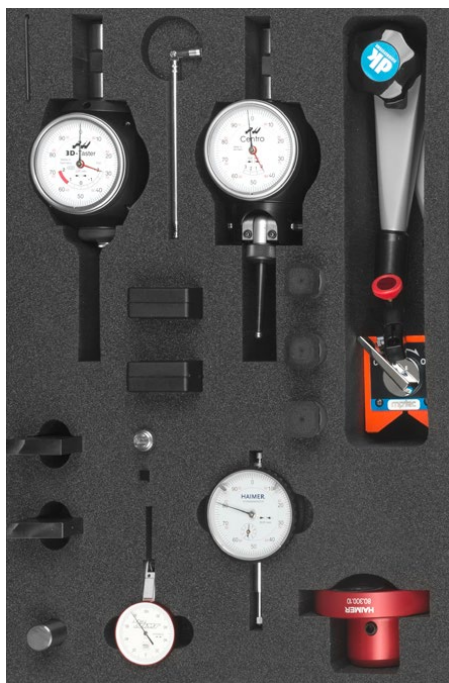
**Order No. 80.303.00**



## Machine tool calibration set



## MACHINE TOOL CALIBRATION SET



- Stable, dust and water proof plastic-case provides perfect protection of your measuring equipment
- Two high quality, precise and universal HAIMER sensors incl. accessories
- Adapter for versatile use of the HAIMER sensors in all types of metal cutting machines
- Several gauge blocks for checking and calibrating your measuring equipment and for individual measurements
- Two high quality dial indicators with corresponding gauge stand

### Fast and easy installation and inspection of your machine tool

- Highly accurate alignment of lathe and milling machines to secure your quality level
- Quick and very precise positioning of your axis and work pieces to check the machine accuracy
- Faster and more precise installation of axis and spindles of your machine tool to reduce scrap and avoid unnecessarily high tool costs
- Simple and reliable inspection of the machine geometry for consistent machining results

#### Included in delivery:

- HAIMER Universal 3D-Sensor
- Short probe tip  $\varnothing 4$  mm, long probe tip  $\varnothing 8$  mm
- HAIMER Centro
- Straight probe tip,  $\varnothing 5$  mm
- Bent probe tip,  $\varnothing 5$  mm
- Straight probe tip,  $\varnothing 2$  mm
- Centro fixture and adjustment help
- Test bolt,  $\varnothing 16 \times 93$  mm
- KÄFER dial indicator M2TopS:  
Measuring range 10 mm, collision protection, robust metal housing, rotation counter
- Lever gauge, TESA Swisstast, length probe arm 12.5 mm with ruby ball
- Dial indicator tripod, DK fixturing systems  
Radius of action 345 mm, magnetic holding power 900 N, clamping shaft  $\varnothing 8$  mm, h 6
- Gauge block, 50 x 35 x 9 mm
- Case:  
Black plastic-case, dust- and water proof according to IP67, collision protection  
external dimension: 464 x 366 x 176 mm, internal dimension: 426 x 290 x 159 mm
- Black foam inlay with 18 recesses

Machine tool calibration set

Order No. 80.370.00

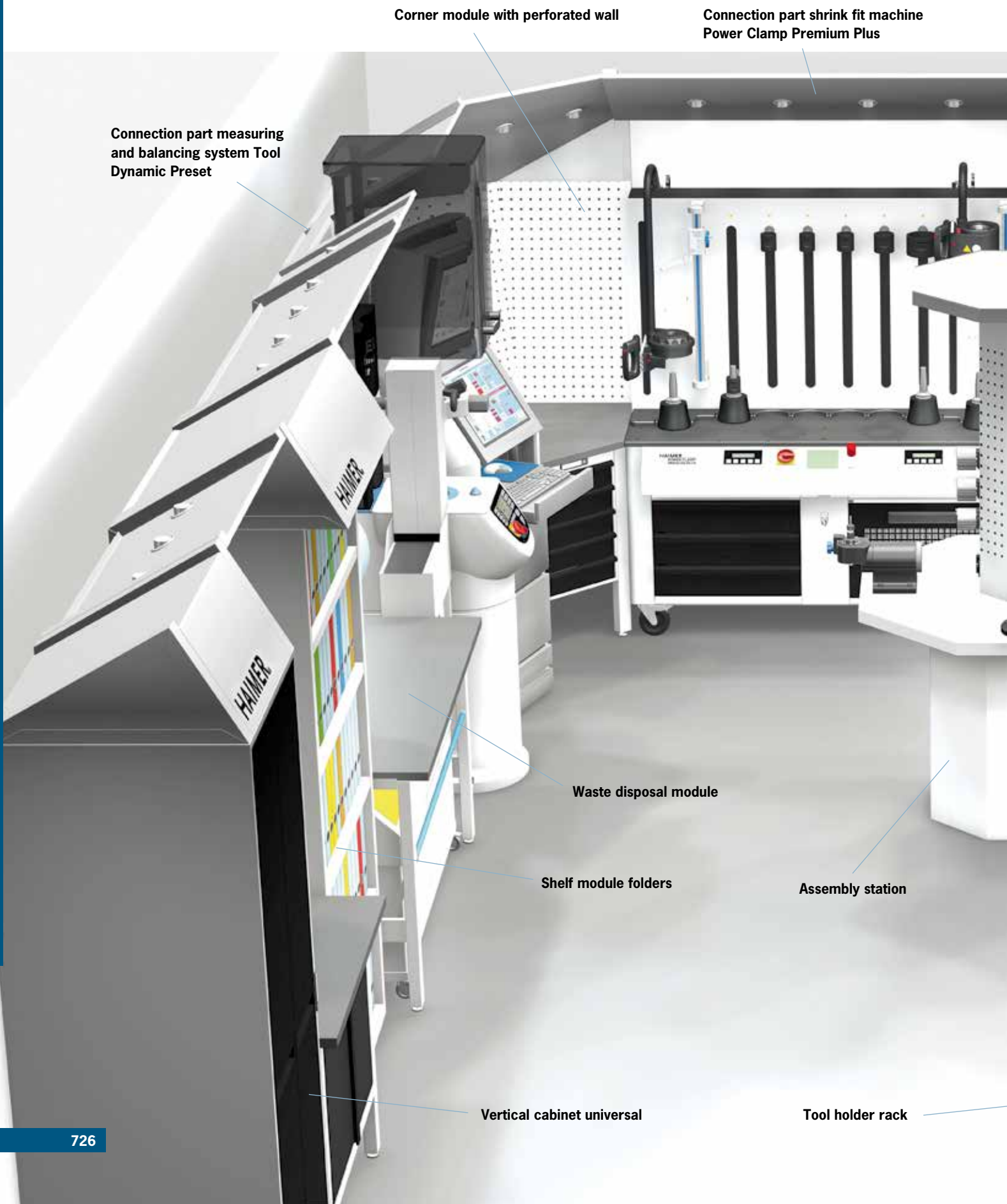
# TOOL MANAGEMENT



# CONTENT

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## HAIMER TOOL MANAGEMENT LOGISTICS SYSTEM – OVERVIEW



Corner module with perforated wall

Connection part shrink fit machine  
Power Clamp Premium Plus

Connection part measuring  
and balancing system Tool  
Dynamic Preset

Waste disposal module

Shelf module folders

Assembly station

Vertical cabinet universal

Tool holder rack

Workbench assembly module

Corner module with rear wall for storing collets and tools

Workbench info module

Shelf module parts

Magazine cabinet

Vertical cabinet tool holders





## TOOL MANAGEMENT – FOR EFFICIENT WORKING

**Use:**

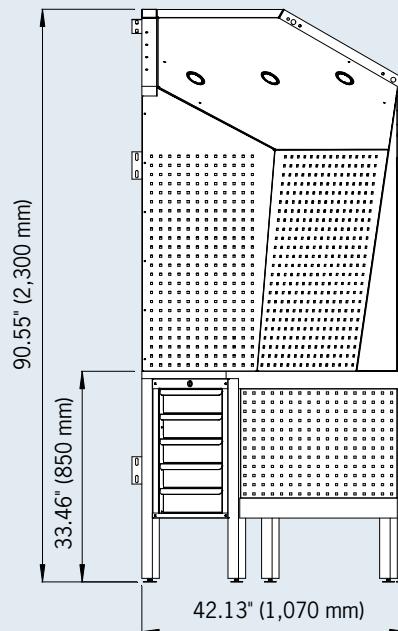
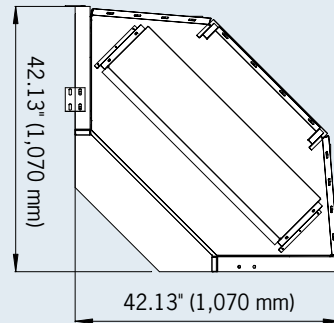
The HAIMER Tool Management completes the HAIMER product program as a system partner around your machine tool. That means HAIMER offers the complete Tool Management equipment from a single source. As a complete solution for tool presetting and tool management, the HAIMER Tool Management provides you with functional and ergonomic criteria for the design of work stations.

The storage, setup and management of tools is simplified and optimized by the HAIMER solutions so that efficient working is guaranteed.

- Modular room design according to the customer's requirements
- Shrinking, balancing and presetting already integrated into the concept
- Tidy and isolated solution for concentrated working

CORNER MODULE

Corner module with perforated wall



**Use:**

The perforated back wall and drawer unit provide a clean and structured workspace. The three integrated LED spot lights ensure a continually bright and comfortable working atmosphere.

Delivery includes:

- Corner module with a perforated wall, roof with LED lighting, drawer unit

**Description**

Corner module 4.0

**Order No.**

84.802.00.3

WORKBENCH ASSEMBLY MODULE



Picture shows: Assembly module with special configuration, Order No. 84.801.03.3

**Use:**

- Freely configurable workbench
- Individual delivery by using a predefined modular system

Delivery includes:

- Standard equipment includes perforated back wall, 4 LED spot lights and 4 x 230 V power outlets\*

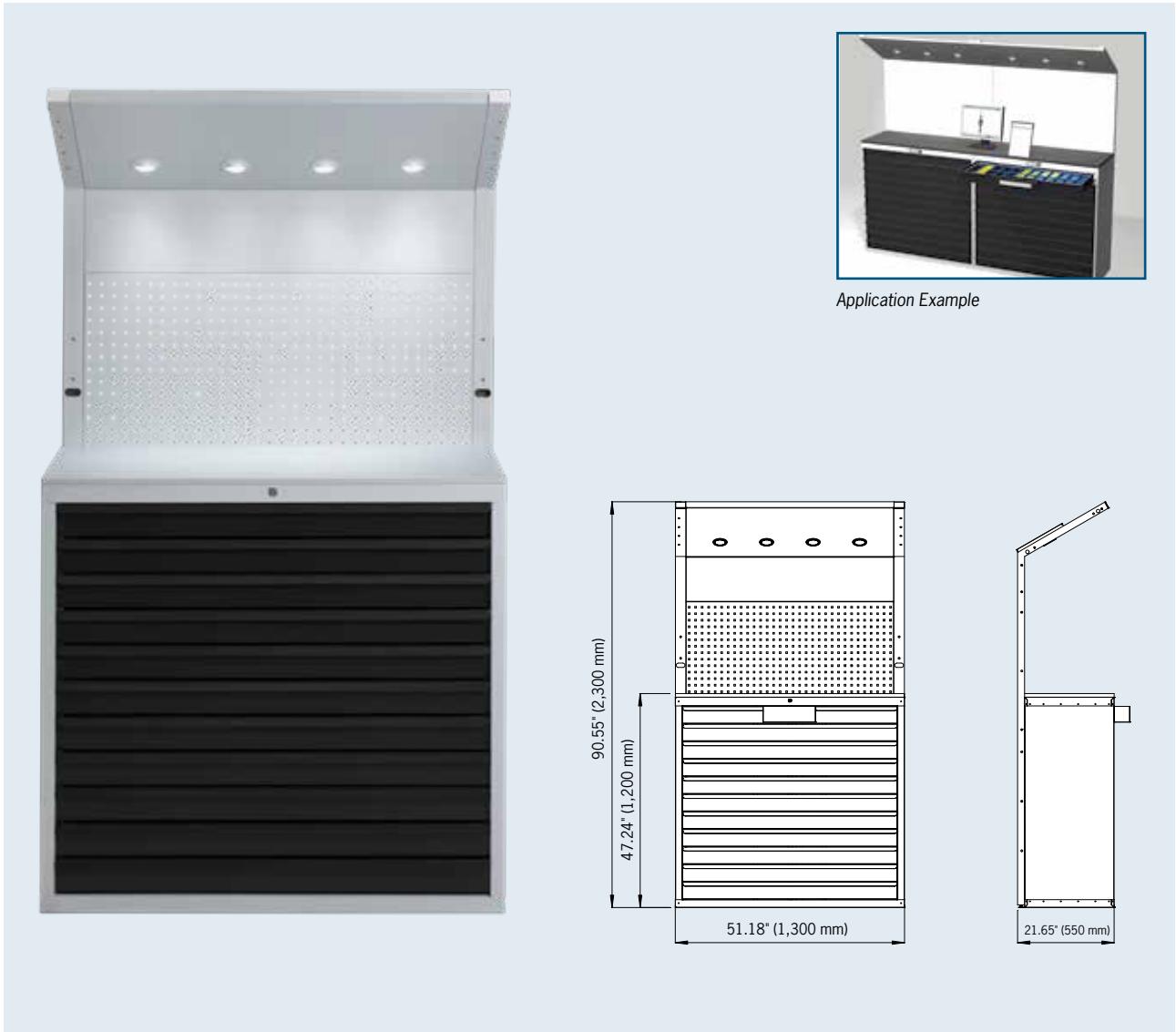
Description	Order No.
Workbench assembly module	84.801.00.3

## WORKBENCH ASSEMBLY MODULE – CONFIGURATIONS



Configurations	Order No.
Workbench assembly module with perforated wall	84.801.00.3
Workbench assembly module with drawer cupboard	84.801.01.3
Workbench assembly module with PC holder and screen holder	84.801.02.3
Workbench assembly module with PC holder, screen holder and drawer cupboard	84.801.03.3
Workbench assembly module with paper dispenser	84.801.04.3
Workbench assembly module with drawer cupboard and paper dispenser	84.801.05.3
Workbench assembly module with drawer cupboard, paper dispenser, PC holder and screen holder	84.801.06.3
Workbench assembly module with waste disposal module	84.801.07.3
Workbench assembly module with waste disposal module and paper dispenser	84.801.08.3
Workbench module – removed for Power Clamp Premium	84.807.00.3

## MAGAZINE CABINET



**Use:**

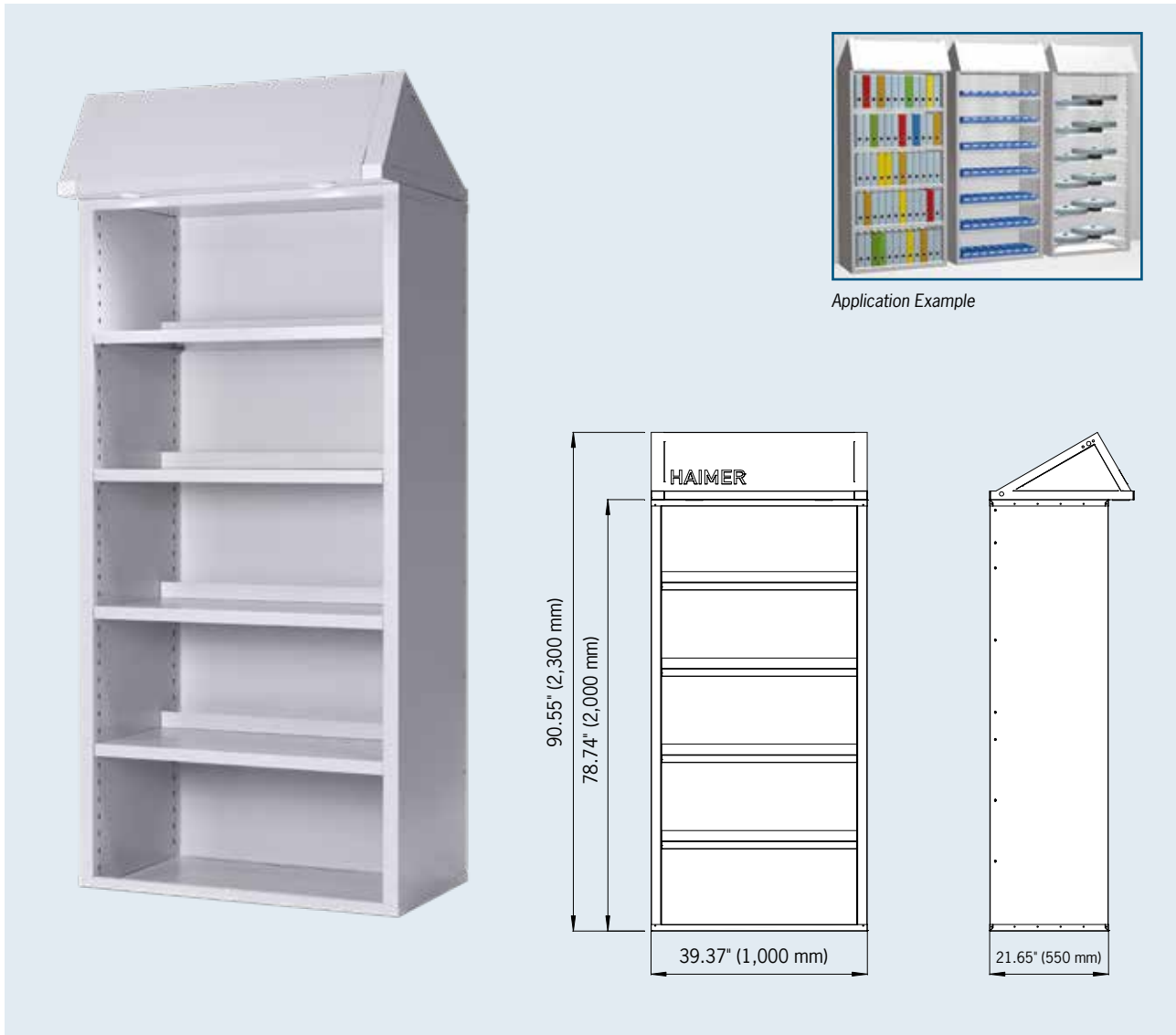
Magazine cabinet for proper storage of tools (inserts, round tools, etc.) and small parts. The perforated wall helps for a clear arrangement of (mounting) tools. Ergonomical working height at 3.9 ft (1.20 m).

Delivery includes:

- Magazine cabinet with a standing work area, perforated wall and 4 LED spot lights
- 11 drawers

Description	Order No.
Magazine cabinet	84.804.00.3
Accessories	Order No.
12 pcs. Drawer equipment (plastic blue) sufficient for 1 drawer at the magazine cabinet	84.810.14
24 pcs. Divider for drawer equipment (synthetic material)	84.810.15

## SHELF MODULE



**Use:**

Shelf module with hood for proper storage of accessories.

Delivery includes:

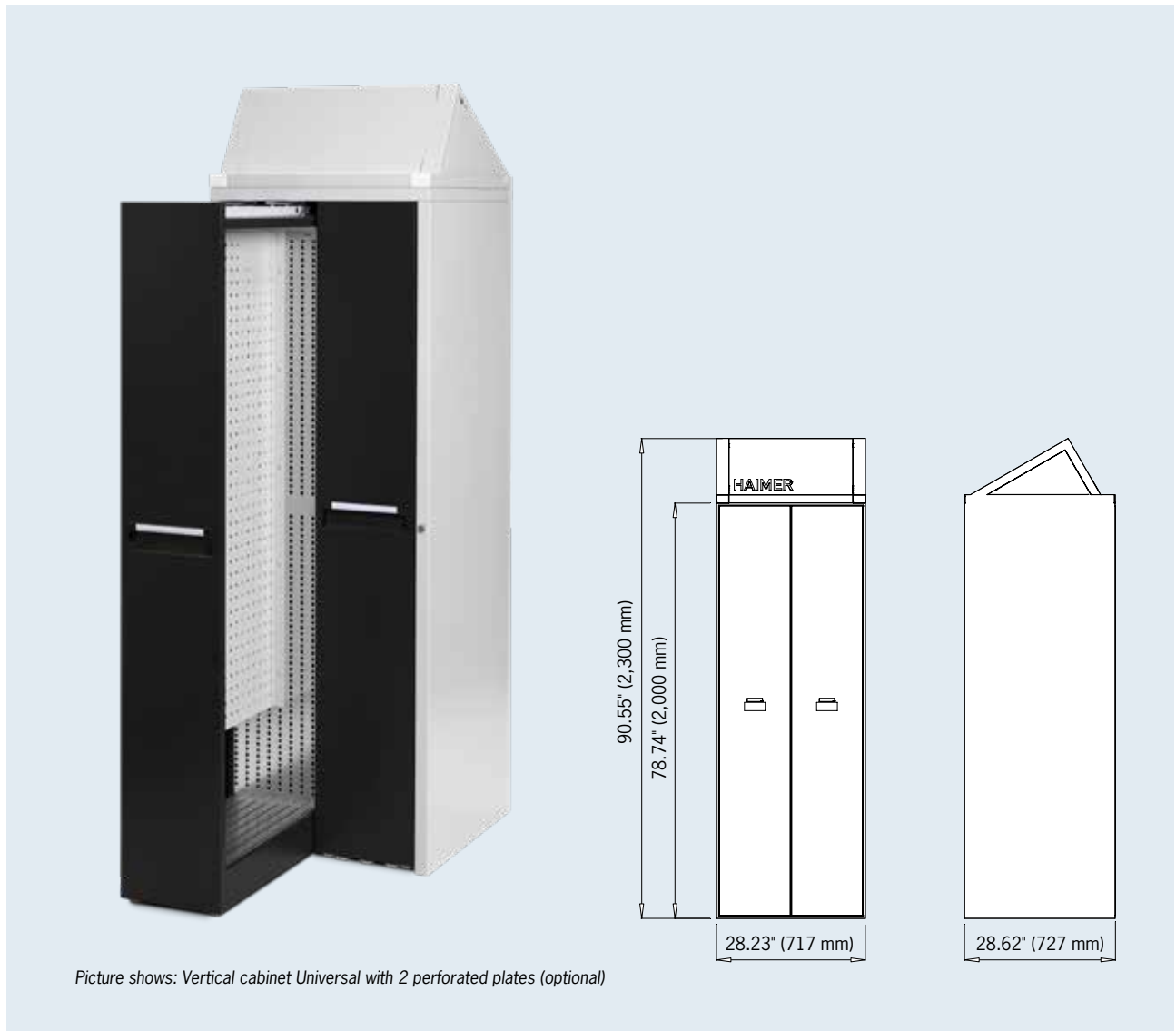
– Equipped as standard with 4 shelf cabinets and 2 LED spot lights

Optional: additional shelf cabinet, shelf cabinet for grinding wheels

Description	Order No.
Shelf module with hood	84.805.01.3

Accessories	Order No.
Shelf for shelf cabinet with stop bar	84.805.00.01.3
Shelf for grinding wheels for shelf cabinet to hold 2 grinding wheels	84.805.00.03.3

## VERTICAL CABINET UNIVERSAL



**Use:**

Pullout cabinets with perforated walls can be equipped on both sides and provide a clean storage area for tools or auxiliary tools. The accessibility from both sides facilitates the removal and localization of the needed tool.

Delivery includes:

- Vertical cabinet Universal (can be equipped with shelf units and perforated plates)

Description	Order No.
Vertical cabinet Universal	84.805.06.3

## VERTICAL CABINET TOOL HOLDER



**Use:**

Safe and space-saving storage of tool holders of all tapers, even with clamped cutting tools. Good accessibility from both sides of the pullouts.

Delivery includes:

- Vertical cabinet for tool holders with 4 pullout cabinets

Additionally available shelf units provide a clean, safe and space-saving storage for your tool holders

Description	Order No.
Vertical cabinet tool holder	84.805.07.3

Accessories	Order No.
Shelves for vertical cabinet	See page 737

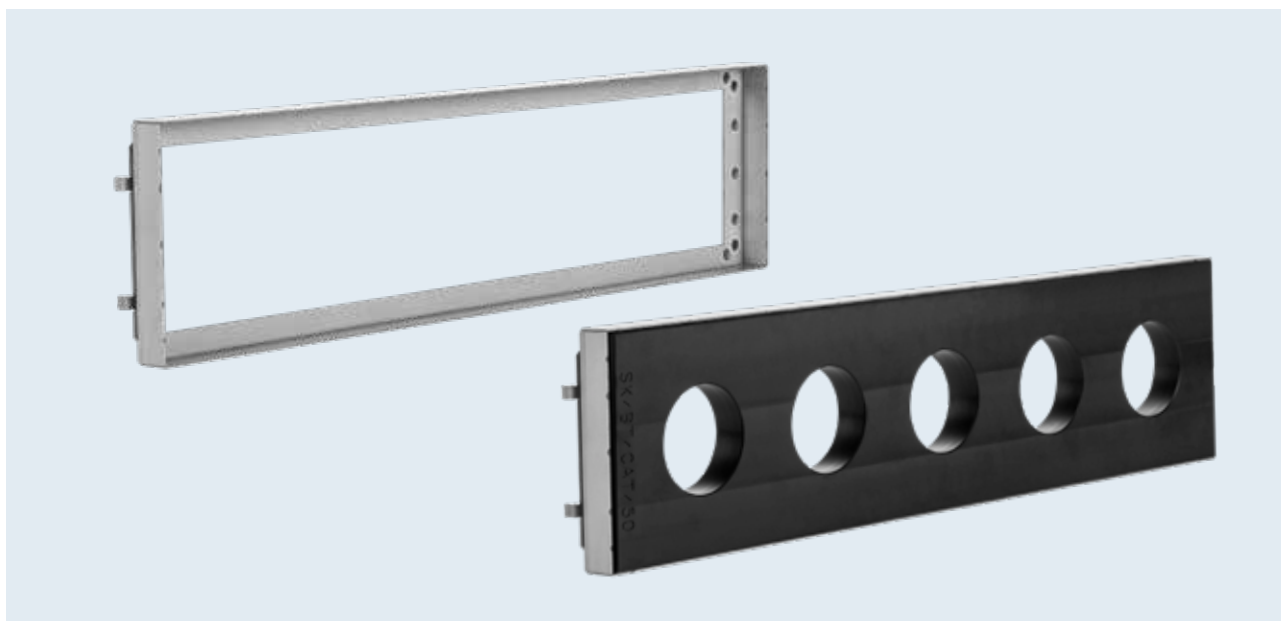


## VERTICAL CABINET TOOL HOLDER – APPLICATION EXAMPLE

This is how you store your tool holders and accessories correctly.



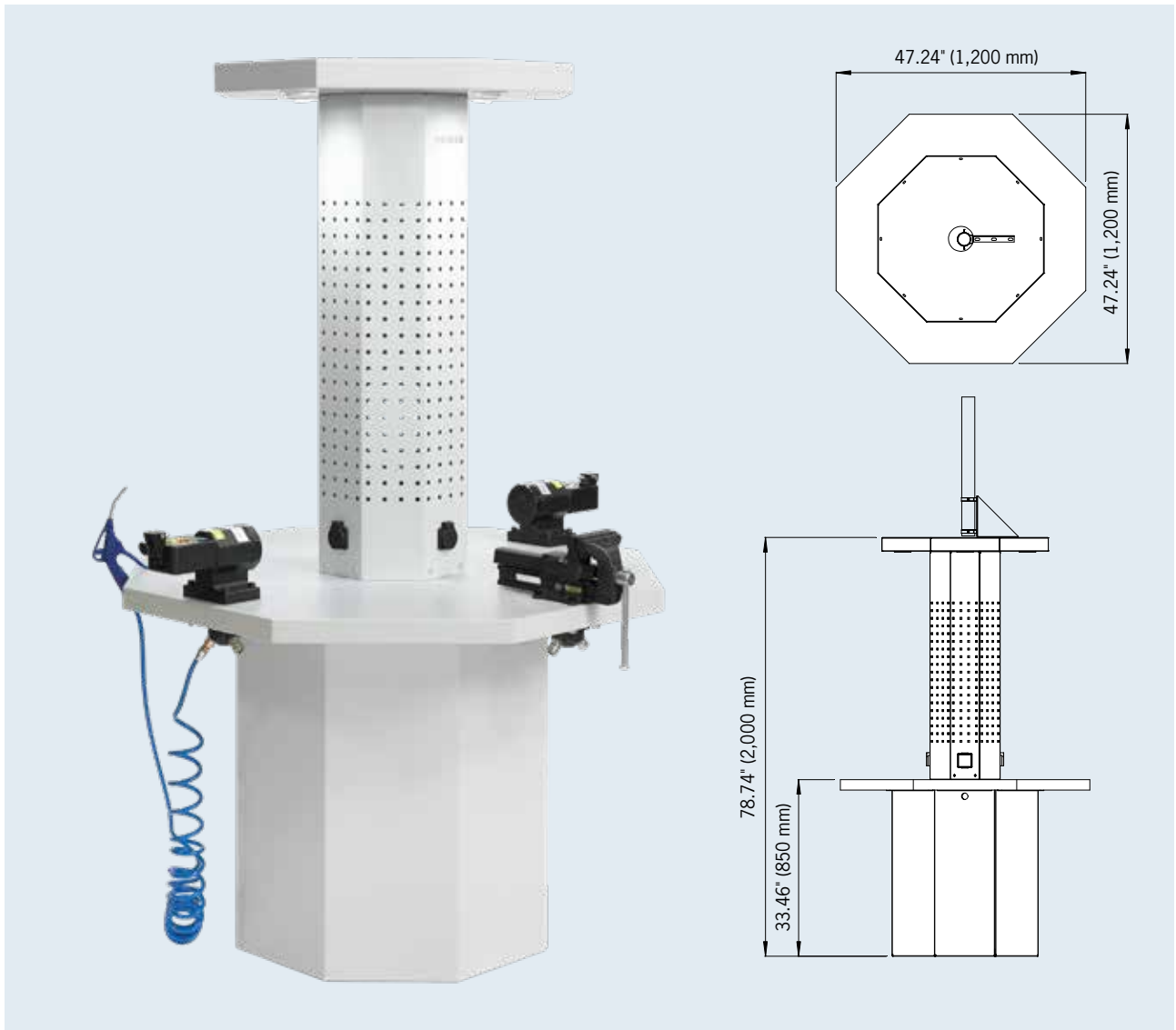
## VERTICAL CABINET TOOL HOLDER – SHELVES



Description	Order No.
Frame to hold the shelves in the 4-fold vertical cabinet	84.805.07.01
Frame to hold the shelves in the 2-fold vertical cabinet	84.805.07.02
Frame to hold the shelves in the 2-fold vertical cabinet (extra wide)	84.805.07.03
<b>Shelf SK/BT/CAT</b>	
Shelf to hold 12 SK30/BT30/CAT30 holders	84.805.07.032
Shelf to hold 4 SK40/BT40/CAT40 holders	84.805.07.040
Shelf to hold 6 SK40/BT40/CAT40 holders	84.805.07.041
Shelf to hold 12 SK40/BT40/CAT40 holders	84.805.07.042
Shelf to hold 4 SK50/BT50/CAT50 holders	84.805.07.050
Shelf to hold 5 SK50/BT50/CAT50 holders	84.805.07.051
<b>Shelf HSK</b>	
Shelf to hold 16 HSK-A/C/E 32 holders	84.805.07.132
Shelf to hold 16 HSK-A/C/E 40 holders	84.805.07.140
Shelf to hold 4 HSK-A/C/E 40 holders	84.805.07.141
Shelf to hold 12 HSK-A/C/E 50 holders	84.805.07.150
Shelf to hold 4 HSK-A/C/E 63 holders	84.805.07.163
Shelf to hold 6 HSK-A/C/E 63 holders	84.805.07.164
Shelf to hold 12 HSK-A/C/E 63 holders	84.805.07.165
Shelf to hold 5 HSK-A/C/E 80 holders	84.805.07.181
Shelf to hold 4 HSK-A/C/E 100 holders	84.805.07.110
Shelf to hold 5 HSK-A/C/E 100 holders	84.805.07.111
Shelf to hold 4 HSK-A/C/E 125 holders	84.805.07.125
<b>Other Shelves</b>	
Shelf to hold 12 PSC 32 holders	84.805.07.230
Shelf to hold 12 PSC 40 holders	84.805.07.240
Shelf to hold 12 PSC 50 holders	84.805.07.250
Shelf to hold 6 PSC 63 holders	84.805.07.260
Shelf to hold 4 VDI25 holders	84.805.07.325
Shelf to hold 4 VDI30 holders	84.805.07.330
Shelf to hold 4 VDI40 holders	84.805.07.340
Shelf to hold 5 Makino F-80 holders	84.805.07.680
Shelf to hold 3 balancing adapter	84.805.07.401
Shelf without recess (extra wide)	84.805.07.801

Further shelves available upon request

## ASSEMBLY STATION

**Use:**

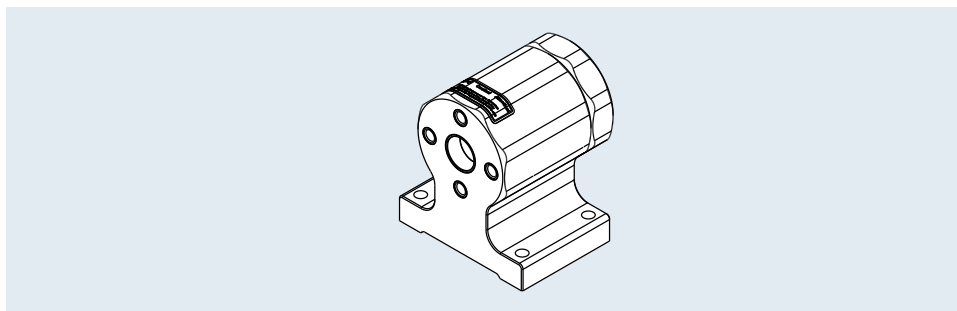
- 360° accessible assembly area
- Middle column with perforated tin wall equipped with 3 x 230V sockets\* and 4 LED spot lights
- The assembly station is perfectly suited for a peripheral, space-saving placement next to the machining center or centrally in the tool assembly room
- Heavy duty workplace

**Delivery includes:**

- 4 double compressed air connections
- 4 LED lighting spot lights

**Description****Assembly station****Order No.****84.803.00.3**

## ASSEMBLY STATION – ACCESSORIES



### Tool Clamp – Tool-assembly device:

- Secure tool assembly with minimal physical effort
- Quick-change function for different taper interfaces – without additional tools
- Accident-free assembly of cutting tools
- Elastic locking bolt
- Mechanical security pin
- Better tool clamping, thanks to optimum ergonomics
- Replaceable brass inserts protect the taper surface
- Required space 140 x 100 mm



Tool Clamp



Tool holder SK

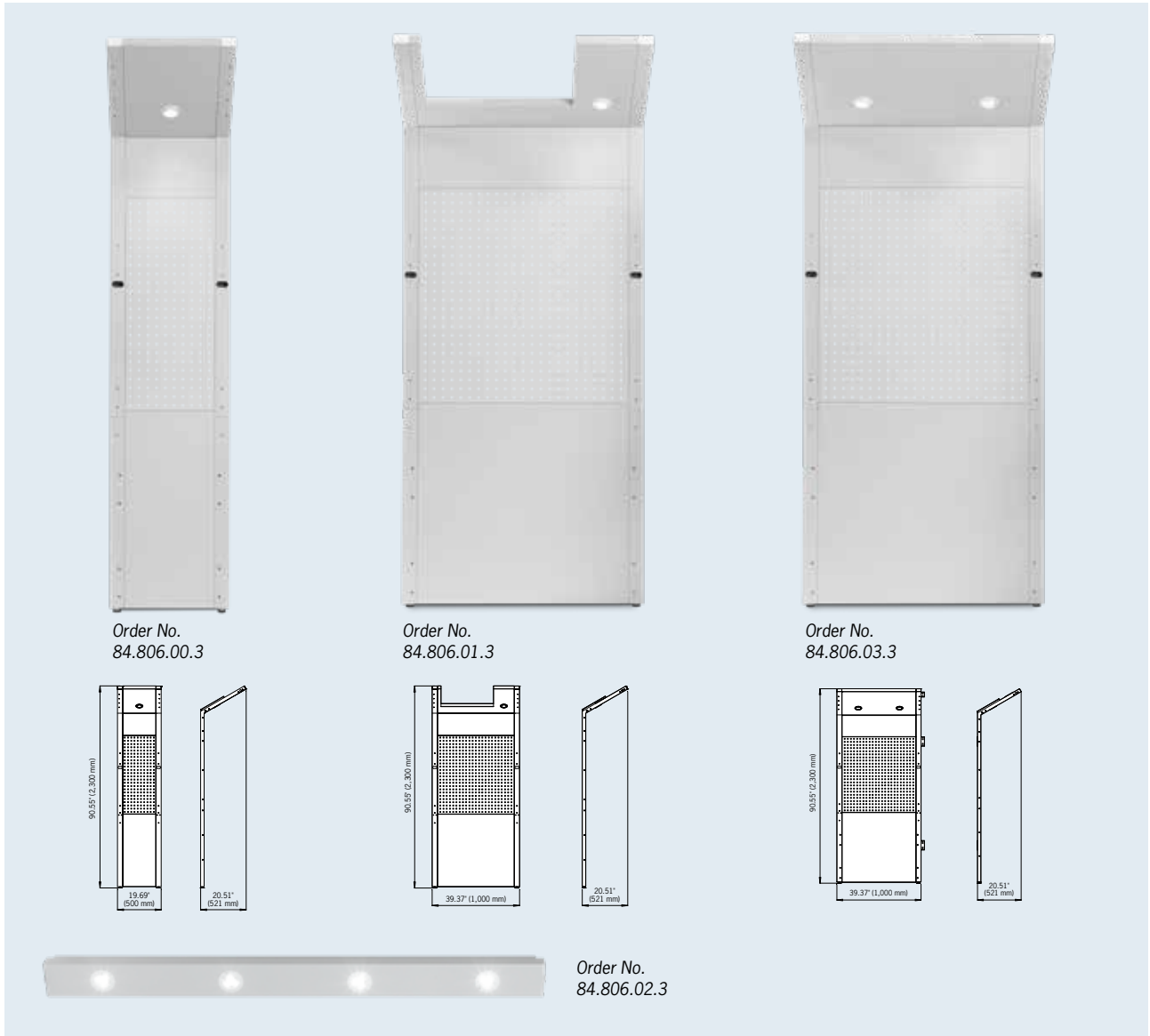


Vice

<b>Tool Clamp – without tool holder, 4 x 90° indexable</b>	
<b>Order No.</b>	<b>84.700.00</b>
<b>Tool holder CAT/BT/SK</b>	
<b>Order No.</b>	<b>Type</b>
84.701.30	CAT/BT/SK30
84.701.40	CAT/BT/SK40
84.701.50	CAT/BT/SK50
<b>Tool holder HSK-A</b>	
<b>Order No.</b>	<b>Type</b>
84.702.40	HSK-A40
84.702.50	HSK-A50
84.702.63	HSK-A63
84.702.80	HSK-A80
84.702.10	HSK-A100
<b>Tool holder HSK-C/HSK-E</b>	
<b>Order No.</b>	<b>Type</b>
84.703.32	HSK-C/E32
84.703.40	HSK-C/E40
84.703.50	HSK-C/E50
84.703.63	HSK-C/E63
84.703.80	HSK-C/E80
<b>Tool holder HSK-F</b>	
<b>Order No.</b>	<b>Type</b>
84.704.63.M	HSK-F63 MAKINO
84.704.80.M	HSK-F80 MAKINO
<b>Tool holder PSC</b>	
<b>Order No.</b>	<b>Type</b>
84.705.32	PSC 32
84.705.40	PSC 40
84.705.50	PSC 50
84.705.60	PSC 63
<b>Tool holder KM4X100*</b>	
<b>Order No.</b>	<b>Type</b>
84.706.4X.100	KM4X*
<b>Vice</b>	
<b>Order No.</b>	<b>84.810.22</b>

\*KM4X is a registered trademark/tradename of Kennametal Inc.

CONNECTION PARTS



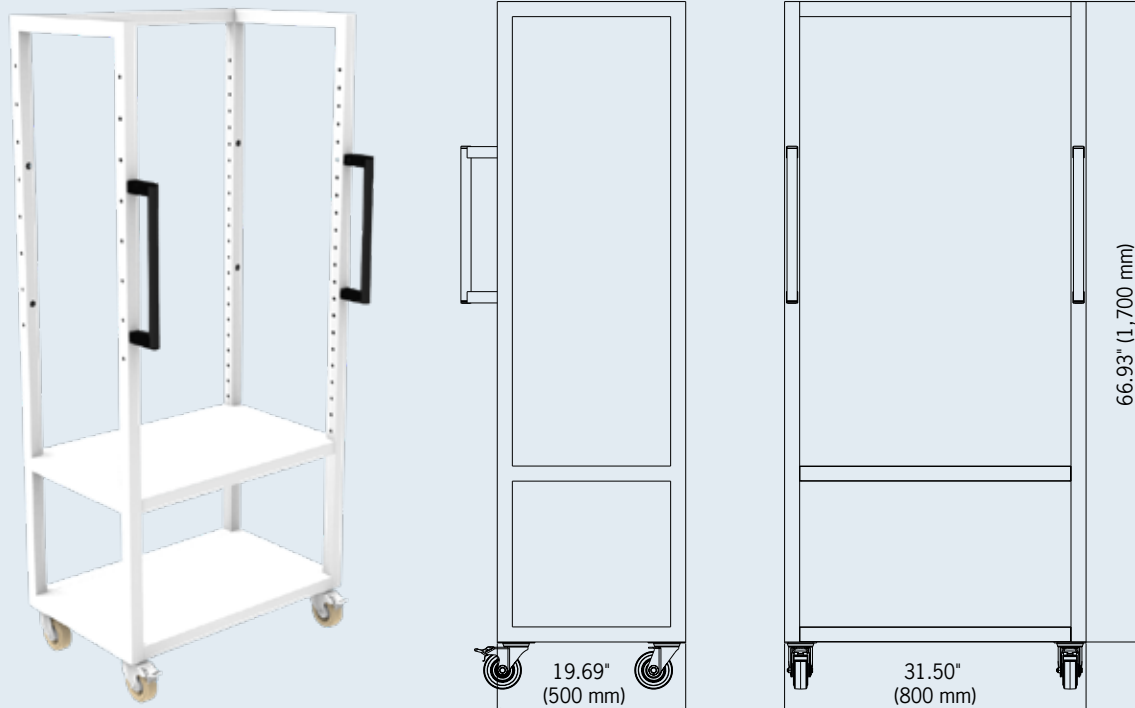
**Use:**

- Intermediate segment in order to connect the individual modules
- Each intermediate segment is equipped with a perforated wall and spot lights

Description	Order No.
<b>Connection part</b>	
Connection part 50 cm wide with 1 LED spot light and perforated plate	84.806.00.3
Connection part 100 cm wide with 2 LED spot lights and perforated plate for TD Preset	84.806.01.3
Connection part 100 cm wide with 2 LED spot lights and perforated plate	84.806.03.3
Light Bar superstructure for Power Clamp Premium Plus	84.806.02.3

## TOOL HOLDER CART

## Tool holder cart - base frame

**Use:**

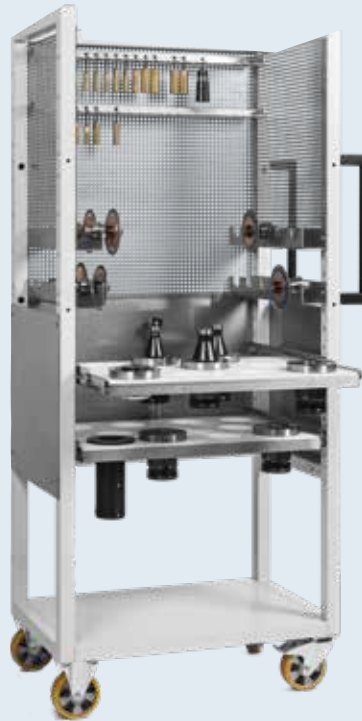
- Standard frame with four wheels, brakes and two handles
- Individual delivery by using a predefined modular system
- Safe transportation of tools and accessories to the machine
- More organization in the machine area
- More clearly arranged than commercially available tool carts
- Tool cart for grinding wheel adapters (held using standard size gripper grooves)
- Tool cart works for any tool used at the machine, no matter if it has an internal hexagon, external hexagon, hook wrench, rubber mallet, gauge etc.
- Tool cart for balancing machine accessories to hold balancing adapters, HG collets etc.

Description	Order No.
Tool holder cart	84.808.00.3

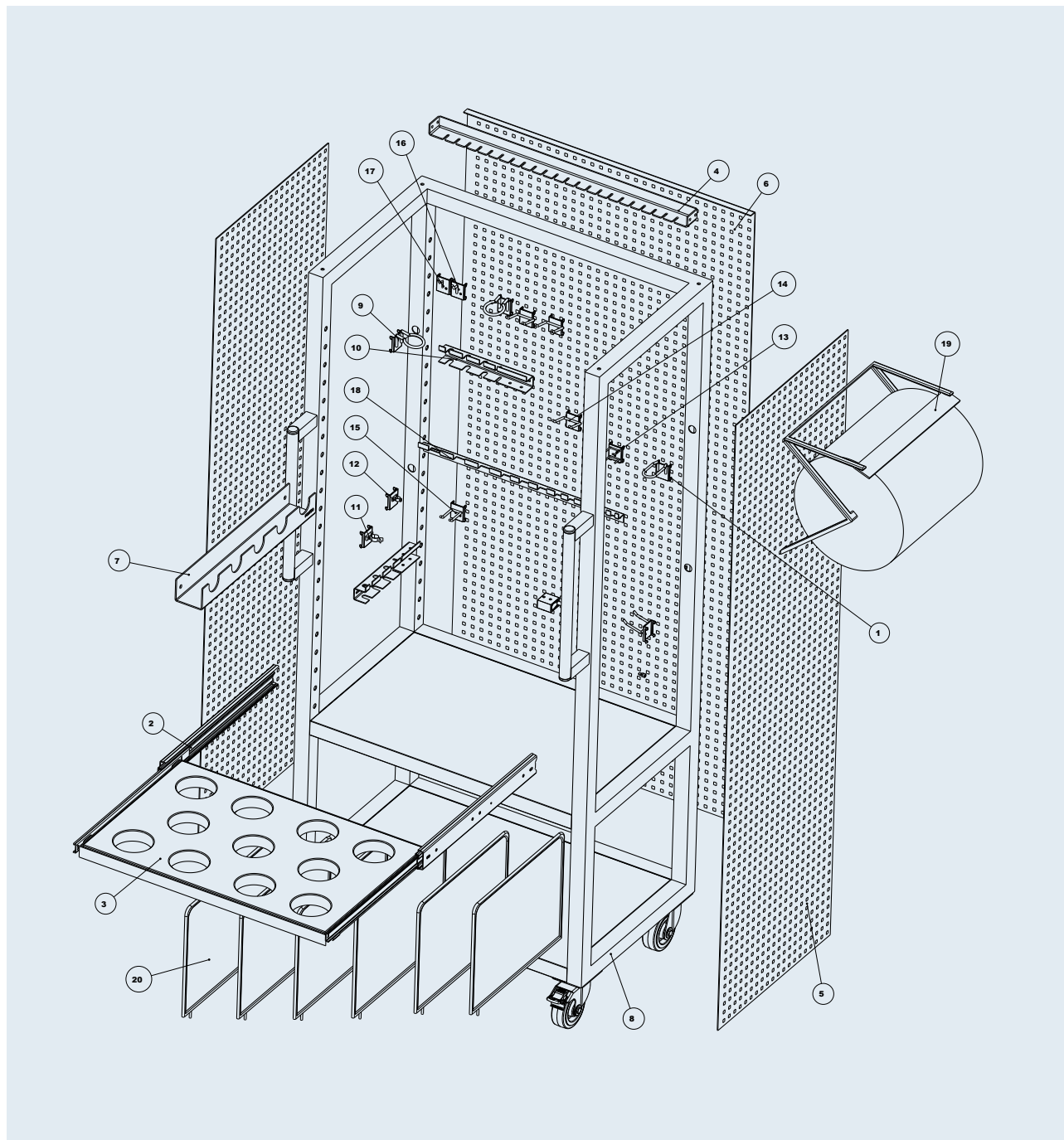
Accessories	Order No.
Storage shelf (Can be mounted variably in height)	84.808.00.02

## TOOL HOLDER CART

Tool holder cart – Configuration examples



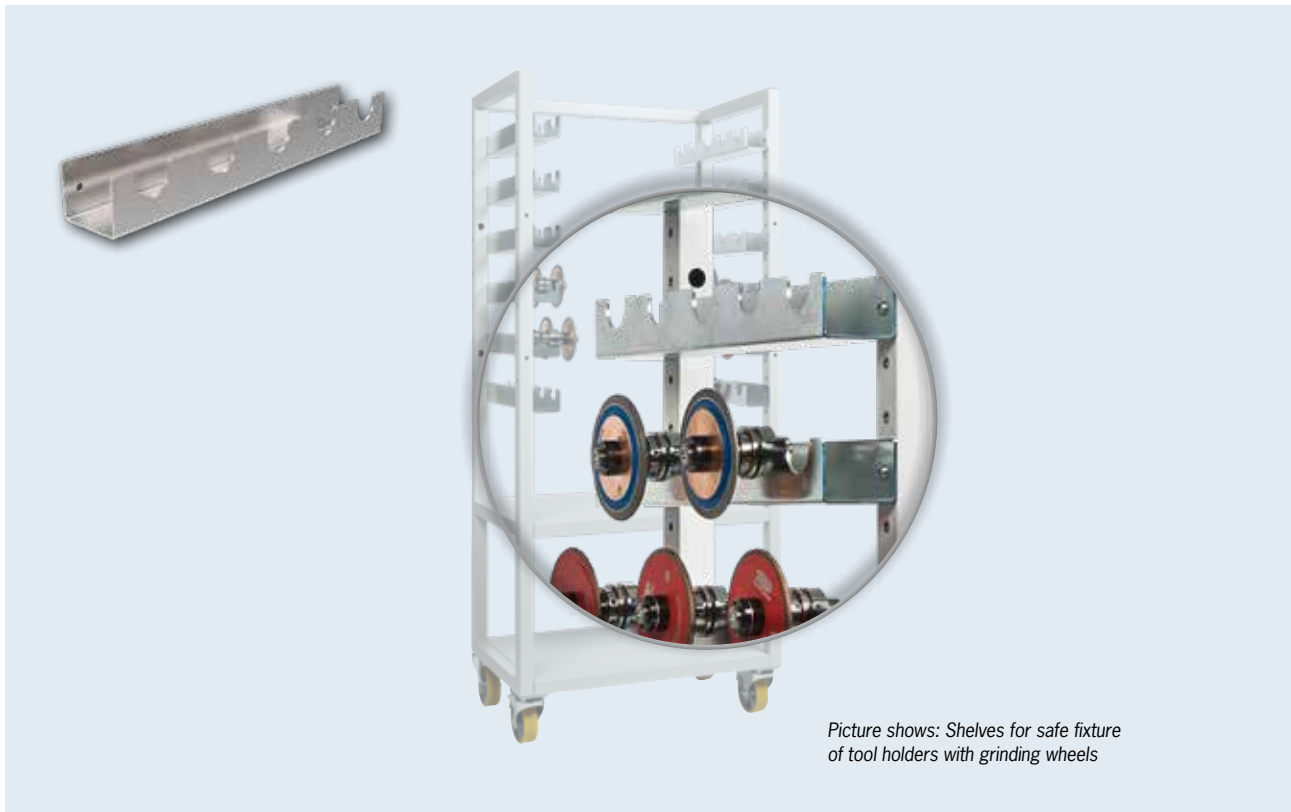
## TOOL HOLDER CART DESIGN



1	Pliers holder 7x40	11	Tool clip Ø 25 mm
2	Drawer slide	12	Tool clip Ø 12 mm
3	Shelf for balancing adapters	13	Articulated wrench hook (28 mm x Ø 3 mm)
4	Shelf for collets	14	Double hook (50 mm x 40 mm)
5	Perforated plate long version (side)	15	Double hook (55 mm x 25 mm)
6	Perforated plate long version (back)	16	Hook (24 mm x Ø 5)
7	Shelf for tool holders	17	Hook (22 mm x Ø 3)
8	Base cart	18	Screw wrench holder
9	Ring holder (inside Ø 40 mm)	19	Paper dispenser (without paper roll)
10	Screwdriver holder	20	Partition wall



## TOOL HOLDER CART – ACCESSORIES SHELVES



Picture shows: Shelves for safe fixture of tool holders with grinding wheels

**Use:**

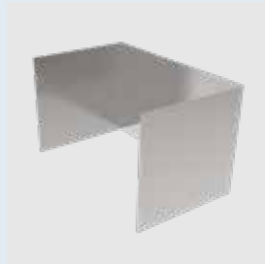
– Shelves for safe tool holder fixture

Description	Order No.
<b>Shelves for tool holder cart</b>	
<b>8 pieces without recess</b>	<b>84.808.00.01</b>
<b>Shelves SK</b>	
<b>SK30: 8 pcs. for 5 pcs. tool holders each</b>	<b>84.808.00.030</b>
<b>SK40: 8 pcs. for 5 pcs. tool holders each</b>	<b>84.808.00.040</b>
<b>SK50: 8 pcs. for 4 pcs. tool holders each</b>	<b>84.808.00.050</b>
<b>Shelves BT</b>	
<b>BT30: 8 pcs. for 5 pcs. tool holders each</b>	<b>84.808.00.130</b>
<b>BT40: 8 pcs. for 4 pcs. tool holders each</b>	<b>84.808.00.140</b>
<b>BT50: 8 pcs. for 4 pcs. tool holders each</b>	<b>84.808.00.150</b>
<b>Shelves CAT</b>	
<b>CAT40: 8 pcs. for 4 pcs. tool holders each</b>	<b>84.808.00.240</b>
<b>CAT50: 8 pcs. for 4 pcs. tool holders each</b>	<b>84.808.00.250</b>
<b>Shelves HSK</b>	
<b>HSK-A/E 32: 8 pcs. for 5 pcs. tool holders each</b>	<b>84.808.00.332</b>
<b>HSK-A/E/F 40: 8 pcs. for 5 pcs. tool holders each</b>	<b>84.808.00.340</b>
<b>HSK-A/E/F 50: 8 pcs. for 5 pcs. tool holders each</b>	<b>84.808.00.350</b>
<b>HSK-A/E/F 63: 8 pcs. for 5 pcs. tool holders each</b>	<b>84.808.00.363</b>
<b>HSK-A/E/F 80: 8 pcs. for 4 pcs. tool holders each</b>	<b>84.808.00.380</b>
<b>HSK-A 100: 8 pcs. for 4 pcs. tool holders each</b>	<b>84.808.00.310</b>
<b>Shelves PSC 63</b>	
<b>PSC 63: 8 pcs. for 5 pcs. tool holders each</b>	<b>84.808.00.460</b>

TOOL HOLDER CART – ACCESSORIES



Base frame



Metal cover plate



Drawer insert for balancing adapters



Perforated plate



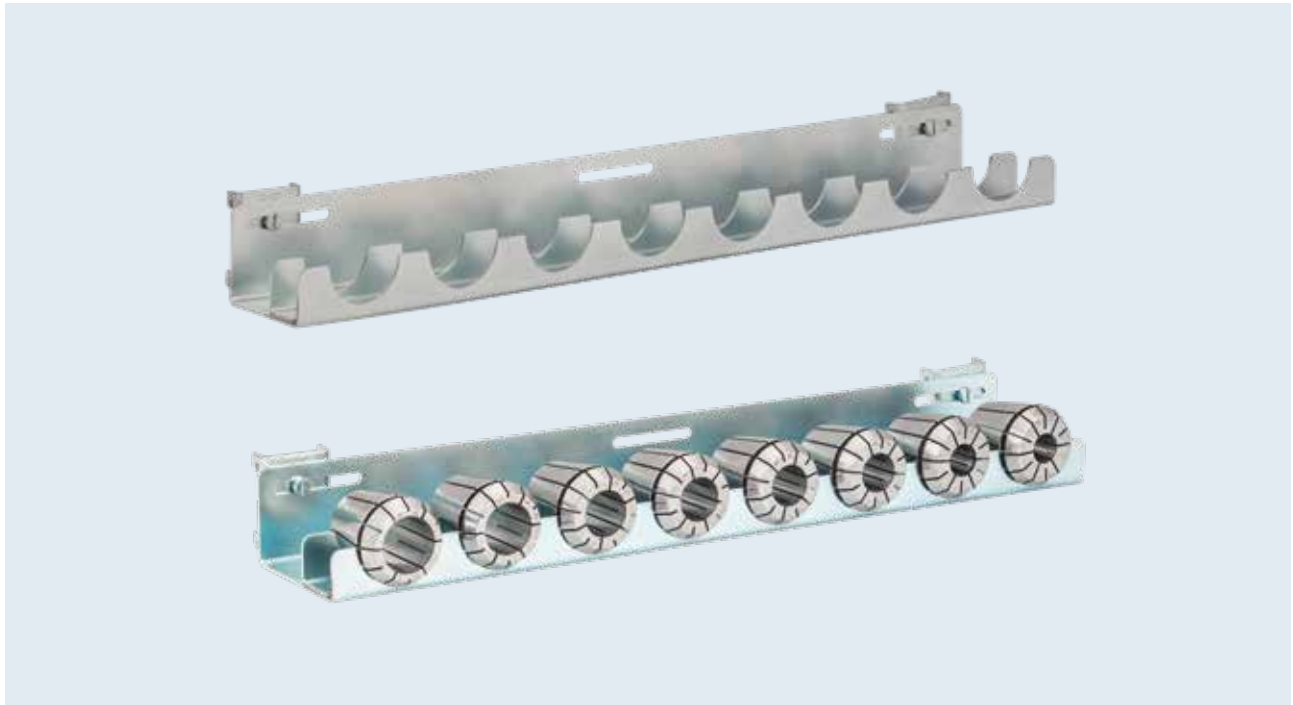
Partition wall



Paper dispenser

Description	Order No.
<b>Perforated plate</b>	
Back long	140056-0013
Back short	140056-0009
Side long	140056-0014
Side short	140056-0010
<b>Metal cover plate</b>	
Long	140056-0008
Short	140956-0005
<b>Drawer insert for balancing adapters</b>	
Shelf	140056-0007
Drawer slide with angle plate frame	140956-0006
<b>Partition wall</b>	
Partition wall (6 piece bottom plate)	140056-0015
<b>Paper dispenser</b>	
Paper dispenser without paper roll	84.810.23

## PERFORATED PLATE – ACCESSORIES HOLDER RACKS



### Use:

– Holder racks for secure storage of collets

Description	Order No.
<b>Holder Racks for ER Collets</b>	
Holder rack for 21 pcs. ER 11 collets	84.809.011
Holder rack for 17 pcs. ER 16 collets and ER 16 Power Collets	84.809.016
Holder rack for 12 pcs. ER 20 collets	84.809.020
Holder rack for 12 pcs. ER 25 collets and ER 25 Power Collets	84.809.025
Holder rack for 11 pcs. ER 32 collets and ER 32 Power Collets	84.809.032
Holder rack for 8 pcs. ER 40 collets	84.809.040
<b>Holder Racks for OZ Collets</b>	
Holder rack for 15 pcs. OZ collets Ø 2–16 mm	84.809.116
Holder rack for 11 pcs. OZ collets Ø 2–25 mm	84.809.125
Holder rack for 8 pcs. OZ collets Ø 6–32 mm	84.809.132
Holder rack for 7 pcs. OZ collets Ø 8–40 mm	84.809.140
Holder rack for 6 pcs. OZ collets Ø 4–50 mm	84.809.150
<b>Holder Racks for HG Collets</b>	
Holder rack for 16 pcs. HG 01 collets	84.809.201
Holder rack for 16 pcs. HG 02 collets	84.809.202
Holder rack for 13 pcs. HG 03 collets	84.809.203

## ACCESSORIES



Hook single



Hook double



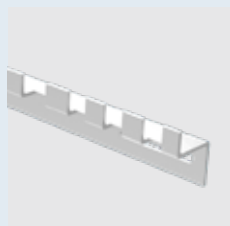
Ring holder



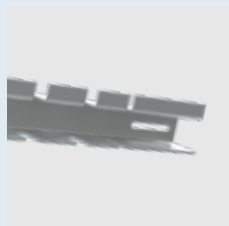
Articulated wrench hook



Tool clip



HG Collet fixture



Screwdriver holder

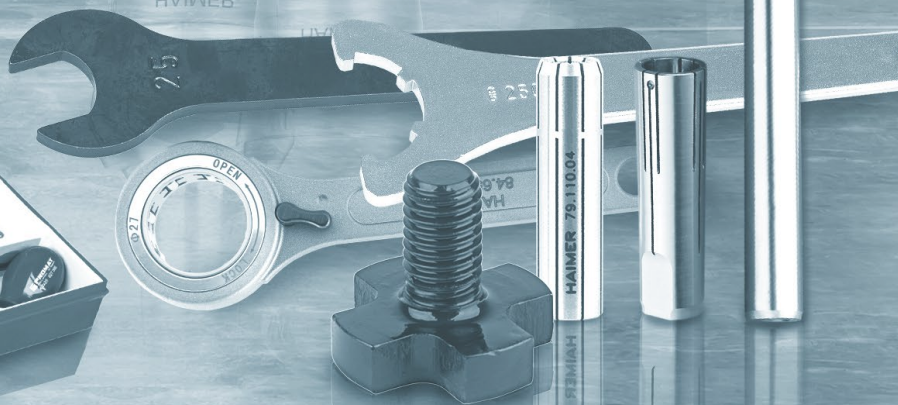
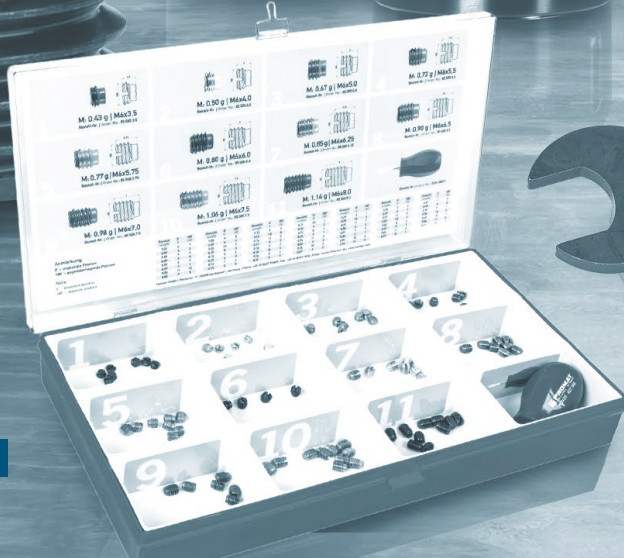
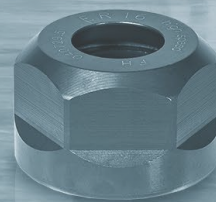
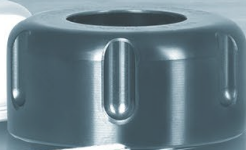


Paper dispenser

Description	Order No.
<b>Accessories for perforated plate</b>	
Hook single Ø 3 mm	84.810.01
Hook single Ø 5 mm	84.810.02
Hook double 55 x 25 mm	84.810.03
Hook double 50 x 40 mm	84.810.04
Articulated wrench hook	84.810.05
Tool clip Ø 12 mm	84.810.06
Tool clip Ø 15 mm	84.810.07
Ring holder	84.810.08
Base holder	84.810.09
Screwdriver holder for 6 screwdrivers	84.810.10
Wrenchholder for 12 wrenches	84.810.11
Holder for clear film	84.810.12
Storage place (440 mm x 300 mm x 100 mm)	84.810.13.3
Pliers holder	84.810.16
Paper dispenser (without paper roll)	84.810.23
HG Collet fixture	140056-0005
<b>Accessories for electronics</b>	
Electronic connection set with transformer	84.811.00
Transformer	140051-0108
Lamp	140051-0111
Lamp socket	140051-0110
Pipe set for cable laying (Electric/Air)	84.811.10
Country-specific power outlets available on request	
<b>Starter Sets</b>	
Starter set mini	84.810.17
Starter set medium	84.810.17.1
Starter set large	84.810.17.2
<b>Work pads</b>	
Work pad for work bench 600 mm x 1500 mm (transparent, soft PVC)	84.810.18
Work pad for corner module (transparent, soft PVC)	84.810.19
Work pad 690 mm x 500 mm (transparent, soft PVC)	84.810.20
Work pad for assembly station (transparent, soft PVC)	84.810.29

Further accessories available upon request

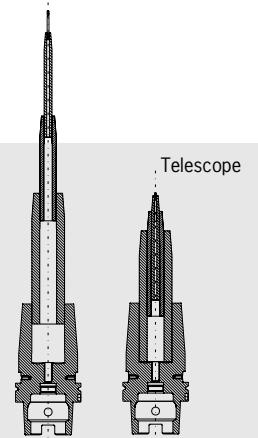
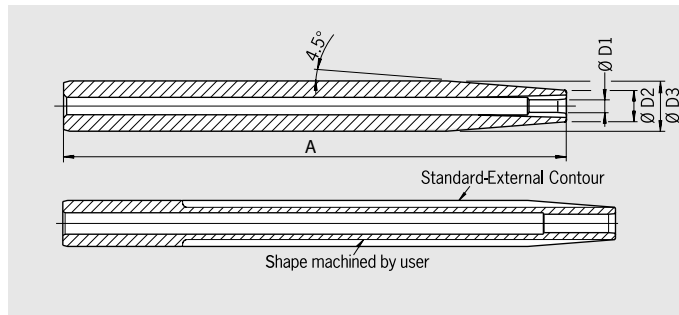
# ACCESSORIES FOR TOOL HOLDERS



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## SHRINK FIT EXTENSIONS INCH



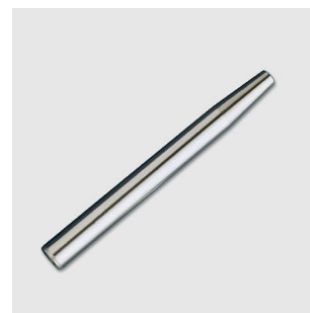
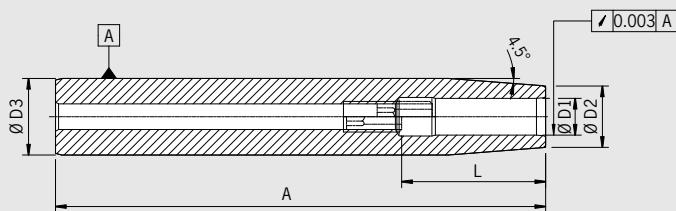
### The universal solution for your machining applications

- Highest runout accuracy
- Optimal and nearly unlimited extensions possible
- Versatile to use and always re-usable
- The most economic way for special machining requirements
- For carbide steel and HSS shanks
- Delivery without cooling adapter

- Telescope version (drilled through, without back-up screw)
- For shank tolerance h6

INCH		$\varnothing D3$	$\varnothing D2$	Clamping $\varnothing D1$	Gage length A	Cooling body	Adapter
Order No.	<b>78.1/2Z0.1/8Z.2</b>	1/2"	0.31"	1/8"	6.30"	$\varnothing 14-16$	80.105.14.1.1
Order No.	<b>78.1/2Z0.3/16Z.2</b>	1/2"	0.31"	3/16"	6.30"	$\varnothing 14-16$	80.105.14.1.1
Order No.	<b>78.5/8Z0.1/8Z.2</b>	5/8"	0.39"	1/8"	6.30"	$\varnothing 14-16$	80.105.14.1.1
Order No.	<b>78.5/8Z0.3/16Z.2</b>	5/8"	0.39"	3/16"	6.30"	$\varnothing 14-16$	80.105.14.1.1
Order No.	<b>78.5/8Z0.1/4Z.1</b>	5/8"	0.39"	1/4"	6.30"	$\varnothing 14-16$	80.105.14.1.1
Order No.	<b>78.3/4Z0.1/4Z.1</b>	3/4"	0.55"	1/4"	6.30"	$\varnothing 14-16$	80.105.14.1.2
Order No.	<b>78.3/4Z0.3/8Z.1</b>	3/4"	0.55"	3/8"	6.30"	$\varnothing 14-16$	80.105.14.1.2
Order No.	<b>78.1Z0.3/8Z.1</b>	1"	0.79"	3/8"	6.30"	$\varnothing 6-8$	-
Order No.	<b>78.1Z0.1/2Z.1</b>	1"	0.79"	1/2"	6.30"	$\varnothing 6-8$	-
Order No.	<b>78.1Z0.5/8Z.1</b>	1"	0.87"	5/8"	6.30"	$\varnothing 10-12$	-
Order No.	<b>78.11/4Z0.3/8Z.1</b>	1 1/4"	0.94"	3/8"	6.30"	$\varnothing 14-16$	-
Order No.	<b>78.11/4Z0.1/2Z.1</b>	1 1/4"	0.94"	1/2"	6.30"	$\varnothing 14-16$	-
Order No.	<b>78.11/4Z0.5/8Z.1</b>	1 1/4"	1.06"	5/8"	6.30"	$\varnothing 14-16$	-

# SHRINK FIT EXTENSIONS METRIC



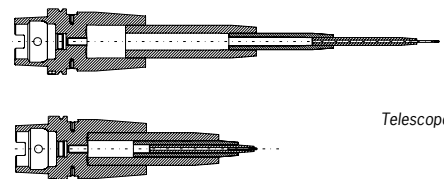
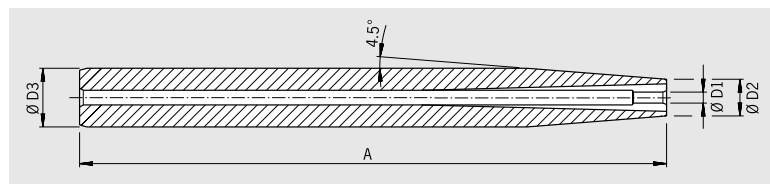
### The universal solution for your machining applications

- Highest runout accuracy
- Optimal and nearly unlimited extensions possible
- Versatile to use and always re-usable
- The most economic way for special machining requirements
- For carbide steel and HSS shanks
- Delivery without cooling adapter

### Version:

- With set screw (adjustment range 10 mm)

Order No.	L [mm]	Length A [mm]	Outer Ø D3 [mm]	Shank tolerance	Clamping Ø D1 [mm]	D2 [mm]	Cooling body	Adapter
78.160.06	28	160	16	h6	6	10	Ø 14-16	80.105.14.1.1
78.200.06	28	160	20	h6	6	14	Ø 14-16	80.105.14.1.2
78.200.08	34	160	20	h6	8	14	Ø 14-16	80.105.14.1.2
78.250.08	34	160	25	h6	8	19	Ø 6-8	—
78.250.10	42	160	25	h6	10	20	Ø 6-8	—
78.250.12	47	160	25	h6	12	20	Ø 6-8	—
78.250.14	47	160	25	h6	14	20	Ø 6-8	—
78.250.16	50	160	25	h6	16	22	Ø 6-8	—
78.320.10	42	160	32	h6	10	24	Ø 10-12	—
78.320.12	47	160	32	h6	12	24	Ø 10-12	—
78.320.14	47	160	32	h6	14	27	Ø 14-16	—
78.320.16	50	160	32	h6	16	27	Ø 14-16	—
78.320.18	50	160	32	h6	18	27	Ø 14-16	—
78.320.20	52	160	32	h6	20	27	Ø 14-16	—



Telescope

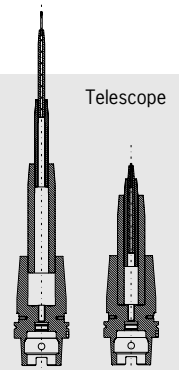
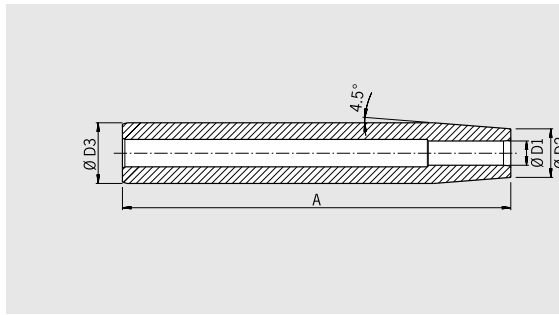
### Version:

- Without set screw
- With slits along the clamping bore for proper clamping and coolant around the cutting tool
- Variable length setting (telescope)

Order No.	L [mm]	Length A [mm]	Outer Ø D3 [mm]	Shank tolerance	Clamping Ø D1 [mm]	D2 [mm]	Cooling body	Adapter
78.120.03.2	—	160	12	h6	3	8	Ø 14-16	80.105.14.1.1
78.120.04.2	—	160	12	h6	4	8	Ø 14-16	80.105.14.1.1
78.160.03.2	—	160	16	h6	3	10	Ø 14-16	80.105.14.1.1
78.160.04.2	—	160	16	h6	4	10	Ø 14-16	80.105.14.1.1
78.160.05.2	—	160	16	h6	5	10	Ø 14-16	80.105.14.1.1
78.200.05.2	—	160	20	h6	5	14	Ø 14-16	80.105.14.1.2



## SHRINK FIT EXTENSIONS METRIC

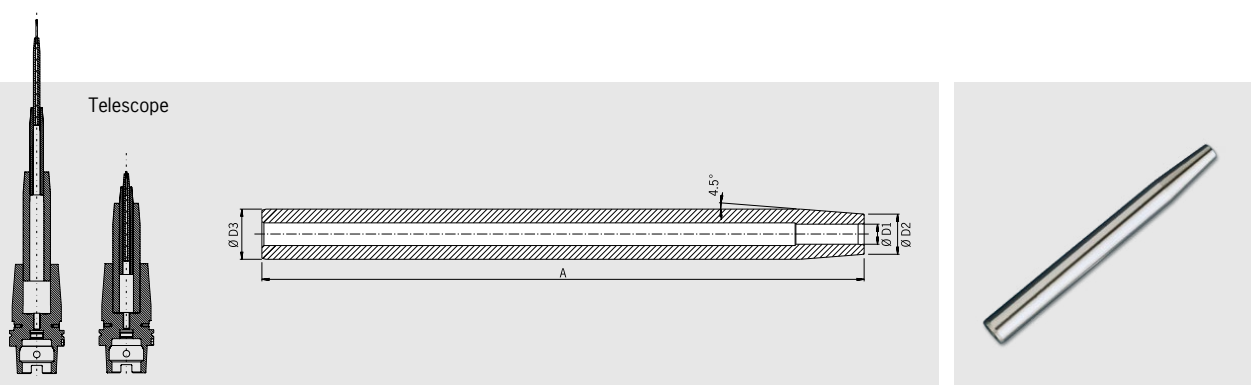


**Version:**

- Without set screw
- Variable length setting (telescope)

Order No.	L [mm]	Length A [mm]	Outer Ø D3 [mm]	Shank tolerance	Clamping Ø D1 [mm]	D2 [mm]	Cooling body	Adapter
78.120.03.1	—	160	12	h4	3	8	Ø 14-16	80.105.14.1.1
78.120.04.1	—	160	12	h4	4	8	Ø 14-16	80.105.14.1.1
78.160.03.1	—	160	16	h4	3	10	Ø 14-16	80.105.14.1.1
78.160.04.1	—	160	16	h4	4	10	Ø 14-16	80.105.14.1.1
78.160.05.1	—	160	16	h4	5	10	Ø 14-16	80.105.14.1.1
78.160.06.1	—	160	16	h6	6	10	Ø 14-16	80.105.14.1.1
78.200.05.1	—	160	20	h4	5	14	Ø 14-16	80.105.14.1.2
78.200.06.1	—	160	20	h6	6	14	Ø 14-16	80.105.14.1.2
78.200.08.1	—	160	20	h6	8	14	Ø 14-16	80.105.14.1.2
78.250.08.1	—	160	25	h6	8	19	Ø 6-8	—
78.250.10.1	—	160	25	h6	10	20	Ø 6-8	—
78.250.12.1	—	160	25	h6	12	20	Ø 6-8	—
78.250.14.1	—	160	25	h6	14	20	Ø 6-8	—
78.250.16.1	—	160	25	h6	16	22	Ø 6-8	—
78.320.10.1	—	160	32	h6	10	24	Ø 10-12	—
78.320.12.1	—	160	32	h6	12	24	Ø 10-12	—
78.320.14.1	—	160	32	h6	14	27	Ø 14-16	—
78.320.16.1	—	160	32	h6	16	27	Ø 14-16	—
78.320.18.1	—	160	32	h6	18	27	Ø 14-16	—
78.320.20.1	—	160	32	h6	20	27	Ø 14-16	—

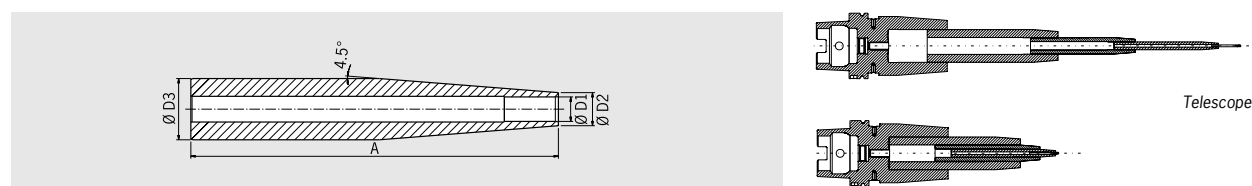
## SHRINK FIT EXTENSIONS METRIC



### Version: Extension length 300 mm

- Without set screw
- Variable length setting (telescope)

Order No.	L [mm]	Length A [mm]	Outer Ø D3 [mm]	Shank tolerance	Clamping Ø D1 [mm]	D2 [mm]	Cooling body	Adapter
78.161.06.1	—	300	16	h6	6	10	Ø 14-16	80.105.14.1.1
78.201.06.1	—	300	20	h6	6	14	Ø 14-16	80.105.14.1.2
78.201.08.1	—	300	20	h6	8	14	Ø 14-16	80.105.14.1.2
78.251.08.1	—	300	25	h6	8	19	Ø 6-8	—
78.251.10.1	—	300	25	h6	10	20	Ø 6-8	—
78.251.12.1	—	300	25	h6	12	20	Ø 6-8	—
78.251.14.1	—	300	25	h6	14	20	Ø 6-8	—
78.251.16.1	—	300	25	h6	16	22	Ø 6-8	—
78.321.10.1	—	300	32	h6	10	24	Ø 10-12	—
78.321.12.1	—	300	32	h6	12	24	Ø 10-12	—
78.321.14.1	—	300	32	h6	14	27	Ø 14-16	—
78.321.16.1	—	300	32	h6	16	27	Ø 14-16	—
78.321.20.1	—	300	32	h6	20	27	Ø 14-16	—

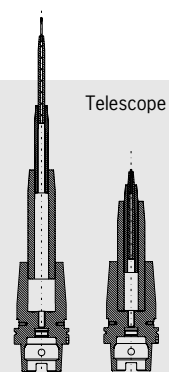
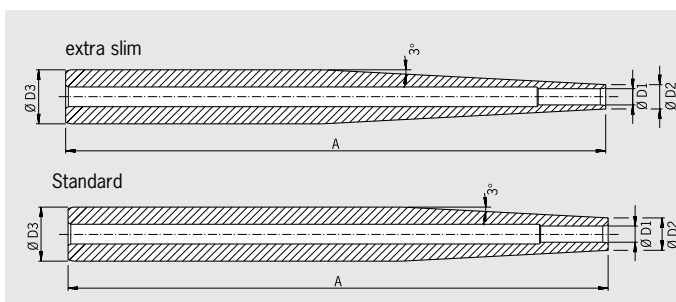


### Version: Extension with diameter 50 mm (Shrinking only with Power Clamp Profi Plus)

- HSS + solid carbide

Order No.	L [mm]	Length A [mm]	Outer Ø D3 [mm]	Shank tolerance	Clamping Ø D1 [mm]	D2 [mm]	Cooling body
78.501.10.1	—	300	50	h6	10	24	Ø 10-12
78.501.12.1	—	300	50	h6	12	24	Ø 10-12
78.501.14.1	—	300	50	h6	14	27	Ø 14-16
78.501.16.1	—	300	50	h6	16	27	Ø 14-16
78.501.18.1	—	300	50	h6	18	27	Ø 14-16
78.501.20.1	—	300	50	h6	20	33	Ø 25-32
78.501.25.1	—	300	50	h6	25	44	Ø 25-32
78.501.32.1	—	300	50	h6	32	44	Ø 25-32

## MINI SHRINK EXTENSIONS INCH



- Extremely slim design
- No disturbing edges
- Ideal for the HAIMER Power Clamp
- For all solid carbide tools with shank tolerance h6
- With 3° angle for die and mold

**Standard version:** with higher clamping forces

**Extra slim version:** extremely slim for fine machining and for jobs which are very difficult to reach

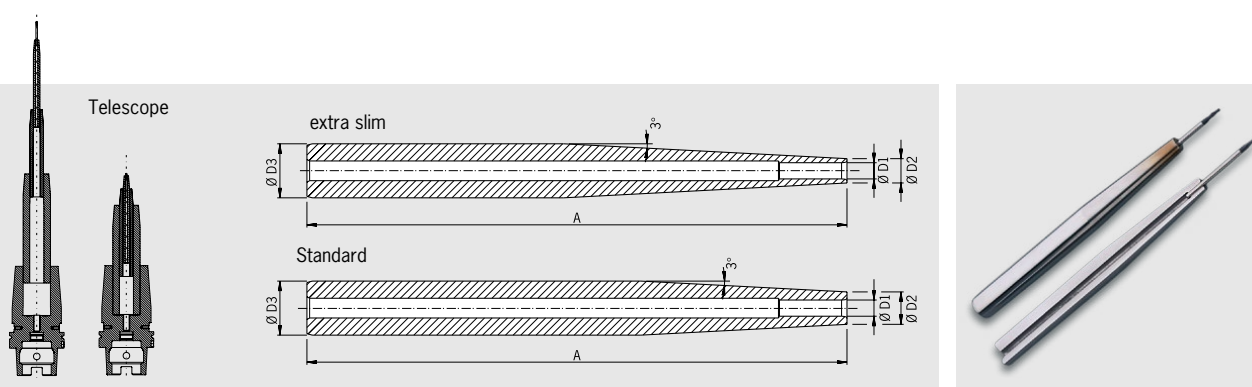
**Attention:** Heating and cooling only with shrink and cooling sleeves. It is imperative that the correct adapter be used for both heating and cooling with all Mini Shrink chucks in order to prevent overheating of the chuck.

However, when using the Power Clamp i4.0 Sprint/Air or Nano machines with the motorized coil and scanner, sleeves are not necessary.

Standard version Order No.	Length A [inch]	Outer Ø D3 [inch]	Shank tolerance	Clamping Ø D1 [inch]	Ø D2 [inch]	Cooling body	Adapter
77.5/8Z2.1/8Z	6.30"	5/8"	h6	1/8"	0.35"	Ø 6-8	80.105.14.2.04
77.5/8Z2.3/16Z	6.30"	5/8"	h6	3/16"	0.43"	Ø 6-8	80.105.14.2.05
77.5/8Z2.1/4Z <sup>1)</sup>	6.30"	5/8"	h6	1/4"	0.47"	Ø 6-8	80.105.14.2.09
77.5/8Z2.3/8Z <sup>1)</sup>	6.30"	5/8"	h6	3/8"	0.63"	Ø 6-8	80.105.14.2.11
77.3/4Z2.1/4Z	7.87"	3/4"	h6	1/4"	0.47"	Ø 6-8	80.105.14.2.09
77.3/4Z2.3/8Z	7.87"	3/4"	h6	3/8"	0.63"	Ø 6-8	80.105.14.2.11
77.3/4Z2.1/2Z	7.87"	3/4"	h6	1/2"	0.71"	Ø 6-8	80.105.14.2.12
<b>Extra slim</b>							
77.5/8Z0.1/8Z	6.30"	5/8"	h6	1/8"	0.24"	Ø 6-8	80.105.14.2.01
77.5/8Z0.3/16Z	6.30"	5/8"	h6	3/16"	0.32"	Ø 6-8	80.105.14.2.03
77.5/8Z0.1/4Z <sup>1)</sup>	6.30"	5/8"	h6	1/4"	0.35"	Ø 6-8	80.105.14.2.04
77.5/8Z0.3/8Z <sup>1)</sup>	6.30"	5/8"	h6	3/8"	0.51"	Ø 6-8	80.105.14.2.06
77.3/4Z0.1/4Z	7.87"	3/4"	h6	1/4"	0.35"	Ø 6-8	80.105.14.2.04
77.3/4Z0.3/8Z	7.87"	3/4"	h6	3/8"	0.51"	Ø 6-8	80.105.14.2.06
77.3/4Z0.1/2Z	7.87"	3/4"	h6	1/2"	0.59"	Ø 6-8	80.105.14.2.07

1) With adjustment screw

## MINI SHRINK EXTENSION METRIC



- Extremely slim design
- No disturbing edges
- Ideal for the HAIMER Power Clamp
- For all solid carbide tools with shank tolerance h6
- With 3° angle for die and mold

**Standard version:** with higher clamping forces

**Extra slim version:** extremely slim for fine machining

and for jobs which are very difficult to reach

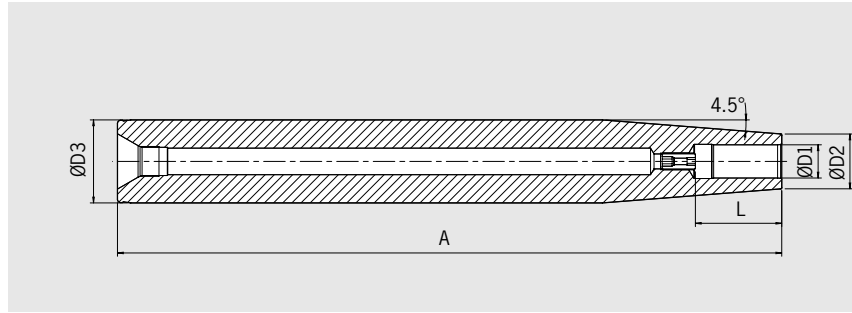
**Attention:** Heating and cooling only with shrink and cooling sleeves. It is imperative that the correct adapter be used for both heating and cooling with all Mini Shrink chucks in order to prevent overheating of the chuck.

However, when using the Power Clamp i4.0 Sprint/Air or Nano machines with the motorized coil and scanner, sleeves are not necessary.

Standard version Order No.	Length A [mm]	Outer Ø D3 [mm]	Shank tolerance	Clamping Ø D1 [mm]	Ø D2 [mm]	Cooling body	Adapter
77.162.03	160	16	h6	3	9	Ø 6-8	80.105.14.2.04
77.162.04	160	16	h6	4	10	Ø 6-8	80.105.14.2.08
77.162.05	160	16	h6	5	11	Ø 6-8	80.105.14.2.05
77.162.06 <sup>1)</sup>	160	16	h6	6	12	Ø 6-8	80.105.14.2.09
77.162.08 <sup>1)</sup>	160	16	h6	8	14	Ø 6-8	80.105.14.2.10
77.162.10 <sup>1)</sup>	160	16	h6	10	16	—	—
77.202.06	200	20	h6	6	12	Ø 6-8	80.105.14.2.09
77.202.08	200	20	h6	8	14	Ø 6-8	80.105.14.2.10
77.202.10	200	20	h6	10	16	Ø 6-8	80.105.14.2.11
77.202.12	200	20	h6	12	18	Ø 6-8	80.105.14.2.12
<b>Extra slim</b>							
77.160.03	160	16	h6	3	6	Ø 6-8	80.105.14.2.01
77.160.04	160	16	h6	4	7	Ø 6-8	80.105.14.2.02
77.160.05	160	16	h6	5	8	Ø 6-8	80.105.14.2.03
77.160.06 <sup>1)</sup>	160	16	h6	6	9	Ø 6-8	80.105.14.2.04
77.160.08 <sup>1)</sup>	160	16	h6	8	11	Ø 6-8	80.105.14.2.05
77.160.10 <sup>1)</sup>	160	16	h6	10	13	Ø 6-8	80.105.14.2.06
77.200.06	200	20	h6	6	9	Ø 6-8	80.105.14.2.04
77.200.08	200	20	h6	8	11	Ø 6-8	80.105.14.2.05
77.200.10	200	20	h6	10	13	Ø 6-8	80.105.14.2.06
77.200.12	200	20	h6	12	15	Ø 6-8	80.105.14.2.07

1) With adjustment screw

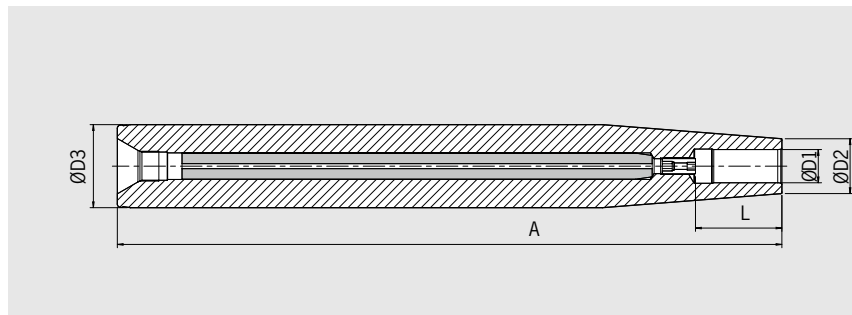
## HEAVY DUTY SHRINK FIT EXTENSIONS



- Extremely stable Heavy Duty Extension with 50 mm outer diameter
- Safe support of the tool with set screws
- Heavy machining also in hidden angles: Lengths of 400 and 600 mm
- The extensions can be shortened to customer's needs upon request
- Solid carbide inserts for vibration dampening upon request

### Heavy Duty Shrink Fit Extensions without solid carbide core

METRIC	Clamping Ø D1 [mm]	16	20	25
	Ø D2 [mm]	27	33	44
	Ø D3 [mm]	50	50	50
	L [mm]	50	52	58
Gage length A [mm]	oversize	400	400	400
<b>Order No.</b>	<b>78.502...</b>	<b>.16</b>	<b>.20</b>	<b>.25</b>
Gage length A [mm]	ZG600	600	600	600
<b>Order No.</b>	<b>78.506...</b>	<b>.16</b>	<b>.20</b>	<b>.25</b>

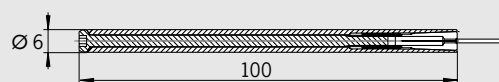


### Heavy Duty Shrink Fit Extensions with solid carbide core

METRIC	Clamping Ø D1 [mm]	16	20	25
	Ø D2 [mm]	27	33	44
	Ø D3 [mm]	50	50	50
	L [mm]	50	52	58
Gage length A [mm]	oversize	400	400	400
<b>Order No.</b>	<b>78.502...</b>	<b>.16.9</b>	<b>.20.9</b>	<b>.25.9</b>
Gage length A [mm]	ZG600	600	600	600
<b>Order No.</b>	<b>78.506...</b>	<b>.16.9</b>	<b>.20.9</b>	<b>.25.9</b>

## HG MINI EXTENSIONS

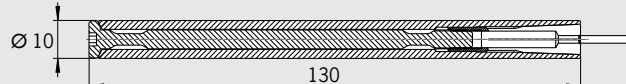
**HG Mini 01**  
cylindrical



**HG Mini 01**  
conical



**HG Mini 02**  
cylindrical



For clamping tools with cylindrical shank with utmost precision.

– For tools with shank tolerance h6

	HG Mini 01 cylindrical	HG Mini 01 conical	HG Mini 02 cylindrical
Size	A= 100 mm	A= 100 mm	A= 130 mm
Outer diam.	6 mm cylindrical	6–8 mm conical	10 mm cylindrical
Clamping range Ø	1–2.5 mm	1–2.5 mm	2.0–4.5 mm
<b>Order No.</b>	<b>82.611.01</b>	<b>82.621.01</b>	<b>82.610.02</b>

### Collets for HG Mini 01

Clamping	Ø D [mm]	1	1,5	2	2,5
<b>Order No.</b>	<b>82.650...</b>	<b>.010</b>	<b>.015</b>	<b>.020</b>	<b>.025</b>

### Collets for HG Mini 02

Clamping	Ø D [mm]	2	2,5	3	3,5	4	4,5
<b>Order No.</b>	<b>82.660...</b>	<b>.020</b>	<b>.025</b>	<b>.030</b>	<b>.035</b>	<b>.040</b>	<b>.045</b>



HG Mini with torque wrench and assembly device

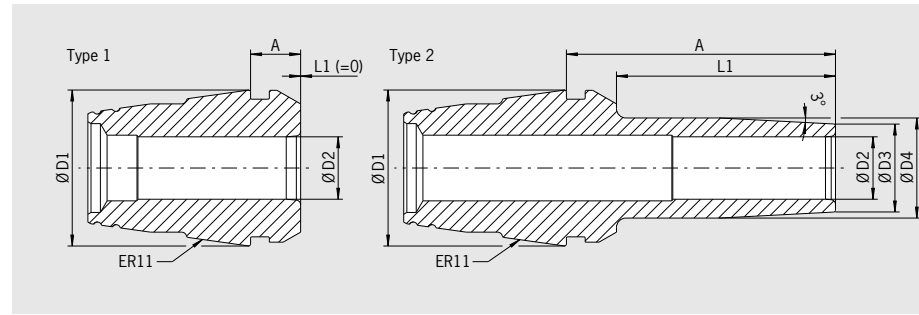


Assembly device for HG Mini

### Accessories

Torque wrench for HG Mini (pre-adjusted)		
Size	01	02
<b>Order No.</b>	<b>82.576.00</b>	<b>82.577.00</b>
Assembly device for HG Mini		
<b>Order No.</b>	<b>82.578.00</b>	

## SHRINK FIT COLLETS ER11 (8°) INCH



### Version

- Compatible with all established ER nuts
- Optional with slits along the clamping bore for cooling from outside
- For solid carbide tools with shank tolerance h6

### INCH Version

Order No.	Type	ER Size	D1 [inch]	A [inch]	L1 [inch]	D2 [inch]	D3 [inch]	D4 [inch]	Insertion depth [inch]
81.110.000.1/8z	1	ER11	0.433	0.179	0	1/8	-	-	-
81.110.000.3/16z <sup>1)</sup>	1	ER11	0.433	0.179	0	3/16	-	-	-
81.110.000.1/4z <sup>1)</sup>	1	ER11	0.433	0.179	0	1/4	-	-	-
81.110.020.1/8z	2	ER11	0.433	0.967	0.787	1/8	0.276	0.291	-
81.110.020.3/16z	2	ER11	0.433	0.967	0.787	3/16	-	0.291	-

### METRIC Version

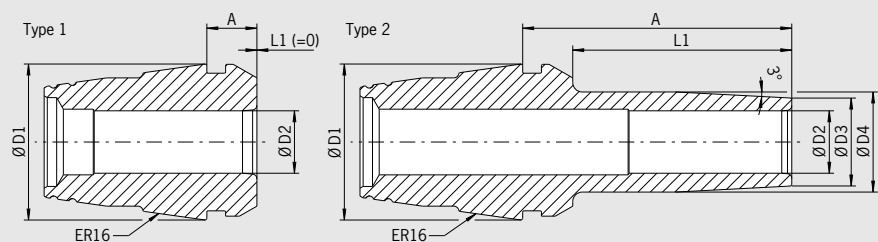
Order No.	Type	ER Size	D1 [mm]	A [mm]	L1 [mm]	D2 [mm]	D3 [mm]	D4 [mm]	Insertion depth [mm]
81.110.000.03	1	ER11	11	4.55	0	3	-	-	-
81.110.010.03	2	ER11	11	14.55	10	3	7	7.4	-
81.110.020.03	2	ER11	11	24.55	20	3	7	7.4	-
81.110.000.04	1	ER11	11	4.55	0	4	-	-	-
81.110.010.04	2	ER11	11	14.55	10	4	7	7.4	-
81.110.020.04	2	ER11	11	24.55	20	4	7	7.4	-
81.110.000.05 <sup>1)</sup>	1	ER11	11	4.55	0	5	-	-	-
81.110.000.06 <sup>1)</sup>	1	ER11	11	4.55	0	6	-	-	17

### Coolant slots

Order No. 91.100.42

<sup>1)</sup> Mounting of slits not possible

## SHRINK FIT COLLETS ER16 (8°) INCH



### Version

- Compatible with all established ER nuts
- Optional with slits along the clamping bore for cooling from outside
- For solid carbide tools with shank tolerance h6

### INCH Version

Order No.	Type	ER Size	D1 [inch]	A [inch]	L1 [inch]	D2 [inch]	D3 [inch]	D4 [inch]	Insertion depth [inch]
81.160.000.1/8z	1	ER16	0.630	0.264	0	1/8	–	–	–
81.160.000.3/16z	1	ER16	0.630	0.264	0	3/16	–	–	–
81.160.000.1/4z	1	ER16	0.630	0.264	0	1/4	–	–	–
81.160.000.5/16z <sup>1)</sup>	1	ER16	0.630	0.264	0	5/16	–	–	–
81.160.000.3/8z <sup>1)</sup>	1	ER16	0.630	0.264	0	3/8	–	–	–
81.160.035.1/8z	2	ER16	0.630	1.642	1.378	1/8	0.276	0.374	–
81.160.035.3/16z	2	ER16	0.630	1.642	1.378	3/16	0.315	0.374	–
81.160.035.1/4z	2	ER16	0.630	1.642	1.378	1/4	0.354	0.394	–

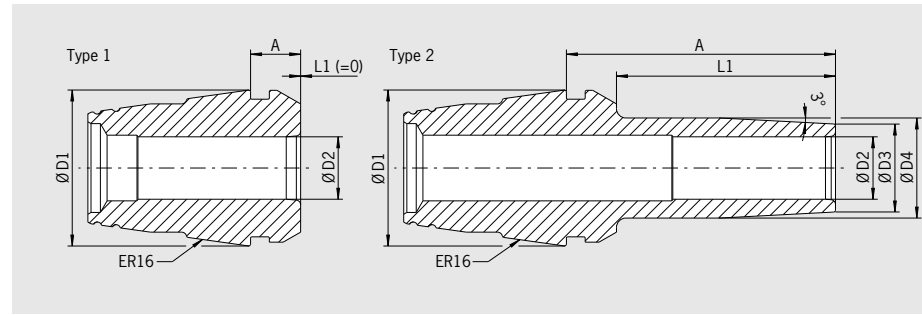
### Coolant slots

Order No. 91.100.42

1) Mounting of slits not possible



## SHRINK FIT COLLETS ER16 (8°) METRIC



### Version

- Compatible with all established ER nuts
- Optional with slits along the clamping bore for cooling from outside
- For solid carbide tools with shank tolerance h6

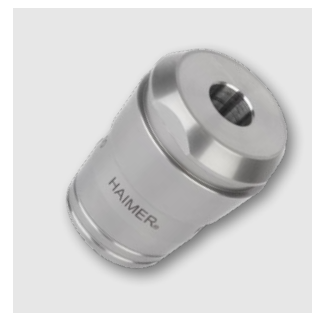
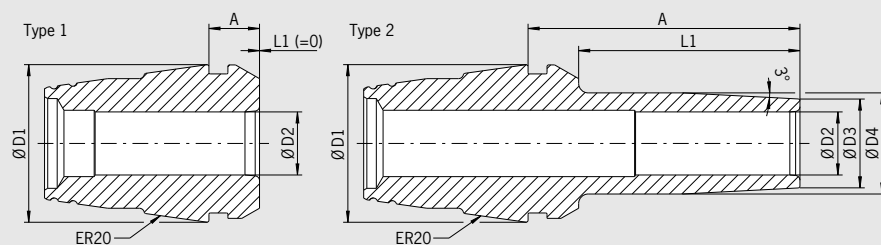
Order No.	Type	ER Size	D1 [mm]	A [mm]	L1 [mm]	D2 [mm]	D3 [mm]	D4 [mm]	Insertion depth [mm]
81.160.000.03	1	ER16	16	6.7	0	3	-	-	-
81.160.010.03	2	ER16	16	16.7	10	3	7	-	-
81.160.020.03	2	ER16	16	26.7	20	3	7	-	-
81.160.025.03	2	ER16	16	31.7	25	3	7	-	-
81.160.030.03	2	ER16	16	36.7	30	3	7	9.5	-
81.160.035.03	2	ER16	16	41.7	35	3	7	9.5	-
81.160.000.04	1	ER16	16	6.7	0	4	-	-	-
81.160.010.04	2	ER16	16	16.7	10	4	7	-	-
81.160.020.04	2	ER16	16	26.7	20	4	7	-	-
81.160.025.04	2	ER16	16	31.7	25	4	7	-	-
81.160.030.04	2	ER16	16	36.7	30	4	7	9.5	-
81.160.035.04	2	ER16	16	41.7	35	4	7	9.5	-
81.160.000.05	1	ER16	16	6.7	0	5	-	-	-
81.160.010.05	2	ER16	16	16.7	10	5	8	-	-
81.160.020.05	2	ER16	16	26.7	20	5	8	9.5	-
81.160.025.05	2	ER16	16	31.7	25	5	8	9.5	-
81.160.030.05	2	ER16	16	36.7	30	5	8	9.5	-
81.160.035.05	2	ER16	16	41.7	35	5	8	9.5	-
81.160.000.06	1	ER16	16	6.7	0	6	-	-	-
81.160.010.06	2	ER16	16	16.7	10	6	9	-	-
81.160.020.06	2	ER16	16	26.7	20	6	9	10	-
81.160.025.06	2	ER16	16	31.7	25	6	9	10	-
81.160.030.06	2	ER16	16	36.7	30	6	9	10	-
81.160.035.06	2	ER16	16	41.7	35	6	9	10	-
81.160.000.08 <sup>1)</sup>	1	ER16	16	6.7	0	8	-	-	-
81.160.000.10 <sup>1)</sup>	1	ER16	16	6.7	0	10	-	-	23

### Coolant slots

Order No. 91.100.42

<sup>1)</sup> Mounting of slits not possible

## SHRINK FIT COLLETS ER20 (8°) INCH



### Version

- Compatible with all established ER nuts
- Optional with slits along the clamping bore for cooling from outside
- For solid carbide tools with shank tolerance h6

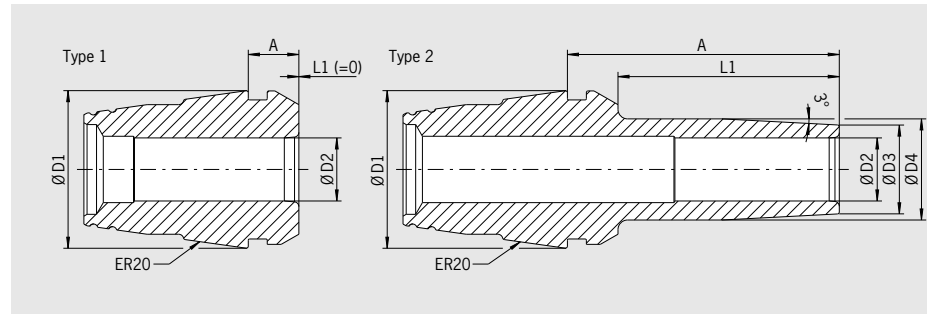
Order No.	Type	ER Size	D1 [inch]	A [inch]	L1 [inch]	D2 [inch]	D3 [inch]	D4 [inch]	Insertion depth [inch]
81.200.000.1/8z	1	ER20	0.787	0.296	0	1/8	–	–	–
81.200.000.3/16z	1	ER20	0.787	0.296	0	3/16	–	–	–
81.200.000.1/4z	1	ER20	0.787	0.296	0	1/4	–	–	–
81.200.000.5/16z	1	ER20	0.787	0.296	0	5/16	–	–	–
81.200.000.3/8z	1	ER20	0.787	0.296	0	3/8	–	–	–
81.200.000.7/16z	1	ER20	0.787	0.296	0	7/16	–	–	–
81.200.000.1/2z <sup>1)</sup>	1	ER20	0.787	0.296	0	1/2	–	–	–
81.200.035.1/8z	2	ER20	0.787	1.674	1.378	1/8	0.276	0.531	–
81.200.035.3/16z	2	ER20	0.787	1.674	1.378	3/16	0.315	0.531	–
81.200.035.1/4z	2	ER20	0.787	1.674	1.378	1/4	0.354	0.531	–
81.200.035.5/16z	2	ER20	0.787	1.674	1.378	5/16	0.433	0.531	–

### Coolant slots

Order No. 91.100.42

1) Mounting of slits not possible

## SHRINK FIT COLLETS ER20 (8°) METRIC



### Version

- Compatible with all established ER nuts
- Optional with slits along the clamping bore for cooling from outside
- For solid carbide tools with shank tolerance h6

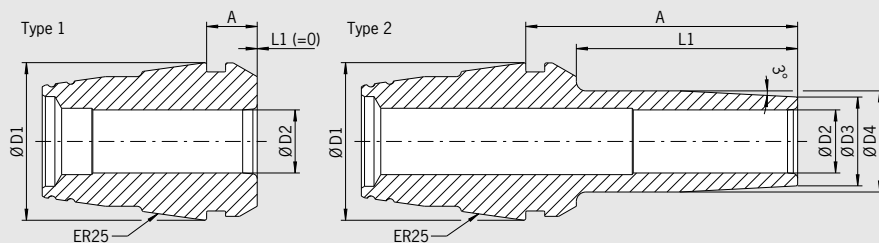
Order No.	Type	ER Size	D1 [mm]	A [mm]	L1 [mm]	D2 [mm]	D3 [mm]	D4 [mm]	Insertion depth [mm]
81.200.000.03	1	ER20	20	7.52	0	3	-	-	-
81.200.025.03	2	ER20	20	32.52	25	3	7	12.5	-
81.200.035.03	2	ER20	20	42.52	35	3	7	13.5	-
81.200.000.04	1	ER20	20	7.52	0	4	-	-	-
81.200.025.04	2	ER20	20	32.52	25	4	7	12.5	-
81.200.035.04	2	ER20	20	42.52	35	4	7	13.5	-
81.200.000.05	1	ER20	20	7.52	0	5	-	-	-
81.200.025.05	2	ER20	20	32.52	25	5	8	13.5	-
81.200.035.05	2	ER20	20	42.52	35	5	8	13.5	-
81.200.000.06	1	ER20	20	7.52	0	6	-	-	-
81.200.025.06	2	ER20	20	32.52	25	6	9	13.5	-
81.200.035.06	2	ER20	20	42.52	35	6	9	13.5	-
81.200.000.08	1	ER20	20	7.52	0	8	-	-	-
81.200.025.08	2	ER20	20	32.52	25	8	11	14	-
81.200.035.08	2	ER20	20	42.52	35	8	11	14	-
81.200.000.10	1	ER20	20	7.52	0	10	-	-	-
81.200.000.12 <sup>1)</sup>	1	ER20	20	7.52	0	12	-	-	29.5

Coolant slots

Order No. 91.100.42

1) Mounting of slits not possible

## SHRINK FIT COLLETS ER25 (8°) INCH



### Version

- Compatible with all established ER nuts
- Optional with slits along the clamping bore for cooling from outside
- For solid carbide tools with shank tolerance h6

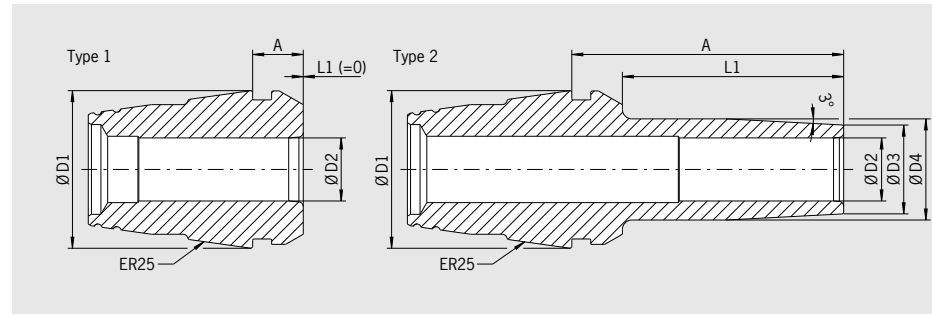
Order No.	Type	ER Size	D1 [inch]	A [inch]	L1 [inch]	D2 [inch]	D3 [inch]	D4 [inch]	Insertion depth [inch]
81.250.000.1/8z	1	ER25	0.984	0.315	0.000	1/8	–	–	–
81.250.000.3/16z	1	ER25	0.984	0.315	0.000	3/16	–	–	–
81.250.000.1/4z	1	ER25	0.984	0.315	0.000	1/4	–	–	–
81.250.000.5/16z	1	ER25	0.984	0.315	0.000	5/16	–	–	–
81.250.000.3/8z	1	ER25	0.984	0.315	0.000	3/8	–	–	–
81.250.000.7/16z	1	ER25	0.984	0.315	0.000	7/16	–	–	–
81.250.000.1/2z	1	ER25	0.984	0.315	0.000	1/2	–	–	–
81.250.000.9/16z	1	ER25	0.984	0.315	0.000	9/16	–	–	–
81.250.000.5/8z <sup>1)</sup>	1	ER25	0.984	0.315	0.000	5/8	–	–	–
81.250.035.1/8z	2	ER25	0.984	1.693	1.378	1/8	0.276	0.531	–
81.250.035.3/16z	2	ER25	0.984	1.693	1.378	3/16	0.315	0.531	–
81.250.035.1/4z	2	ER25	0.984	1.693	1.378	1/4	0.354	0.610	–
81.250.035.5/16z	2	ER25	0.984	1.693	1.378	5/16	0.433	0.657	–
81.250.035.3/8z	2	ER25	0.984	1.693	1.378	3/8	0.551	0.630	–
81.250.035.7/16z	2	ER25	0.984	1.693	1.378	7/16	0.591	0.630	–

### Coolant slots

Order No. 91.100.42

1) Mounting of slits not possible

## SHRINK FIT COLLETS ER25 (8°) METRIC



### Version

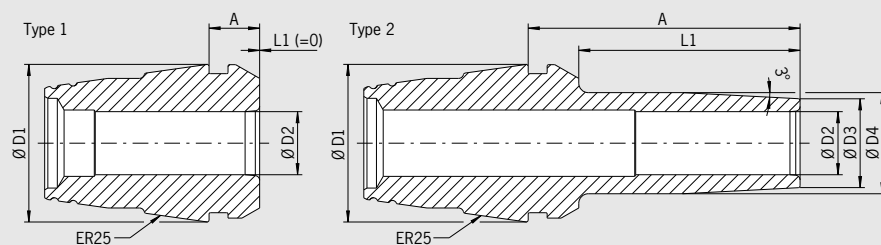
- Compatible with all established ER nuts
- Optional with slits along the clamping bore for cooling from outside
- For solid carbide tools with shank tolerance h6

Order No.	Type	ER Size	D1 [mm]	A [mm]	L1 [mm]	D2 [mm]	D3 [mm]	D4 [mm]	Insertion depth [mm]
81.250.000.03	1	ER25	25	8	0	3	-	-	-
81.250.010.03	2	ER25	25	18	10	3	7	12.5	-
81.250.020.03	2	ER25	25	28	20	3	7	12.5	-
81.250.025.03	2	ER25	25	33	25	3	7	12.5	-
81.250.030.03	2	ER25	25	38	30	3	7	13.5	-
81.250.035.03	2	ER25	25	43	35	3	7	13.5	-
81.250.000.04	1	ER25	25	8	0	4	-	-	-
81.250.010.04	2	ER25	25	18	10	4	7	12.5	-
81.250.020.04	2	ER25	25	28	20	4	7	12.5	-
81.250.025.04	2	ER25	25	33	25	4	7	12.5	-
81.250.030.04	2	ER25	25	38	30	4	7	13.5	-
81.250.035.04	2	ER25	25	43	35	4	7	13.5	-
81.250.000.05	1	ER25	25	8	0	5	-	-	-
81.250.010.05	2	ER25	25	18	10	5	8	13.5	-
81.250.020.05	2	ER25	25	28	20	5	8	13.5	-
81.250.025.05	2	ER25	25	33	25	5	8	13.5	-
81.250.030.05	2	ER25	25	38	30	5	8	14.5	-
81.250.035.05	2	ER25	25	43	35	5	8	14.5	-
81.250.000.06	1	ER25	25	8	0	6	-	-	-
81.250.010.06	2	ER25	25	18	10	6	9	14.5	-
81.250.020.06	2	ER25	25	28	20	6	9	14.5	-
81.250.025.06	2	ER25	25	33	25	6	9	14.5	-
81.250.030.06	2	ER25	25	38	30	6	9	15.5	-
81.250.035.06	2	ER25	25	43	35	6	9	15.5	-
81.250.000.08	1	ER25	25	8	0	8	-	-	-
81.250.010.08	2	ER25	25	18	10	8	11	16	-

### Coolant slots

Order No. 91.100.42

## SHRINK FIT COLLETS ER25 (8°) METRIC



### Version

- Compatible with all established ER nuts
- Optional with slits along the clamping bore for cooling from outside
- For solid carbide tools with shank tolerance h6

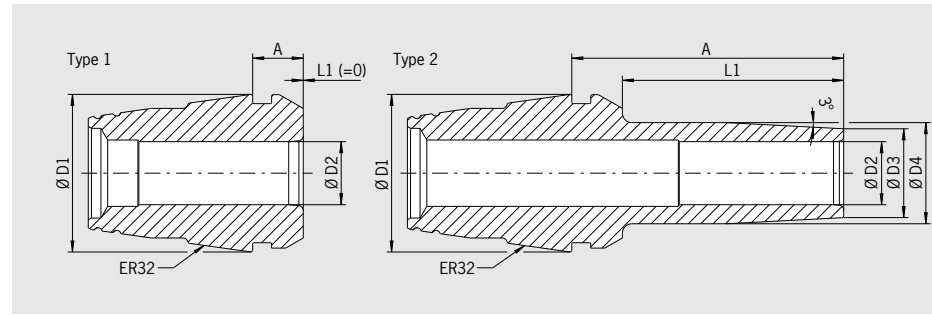
Order No.	Type	ER Size	D1 [mm]	A [mm]	L1 [mm]	D2 [mm]	D3 [mm]	D4 [mm]	Insertion depth [mm]
81.250.020.08	2	ER25	25	28	20	8	11	16	–
81.250.025.08	2	ER25	25	33	25	8	11	16	–
81.250.030.08	2	ER25	25	38	30	8	11	16.7	–
81.250.035.08	2	ER25	25	43	35	8	11	16.7	–
81.250.000.10	1	ER25	25	8	0	10	–	–	–
81.250.010.10	2	ER25	25	18	10	10	14	–	–
81.250.020.10	2	ER25	25	28	20	10	14	–	–
81.250.025.10	2	ER25	25	33	25	10	14	–	–
81.250.030.10	2	ER25	25	38	30	10	14	16	–
81.250.035.10	2	ER25	25	43	35	10	14	16	–
81.250.000.12	1	ER25	25	8	0	12	–	–	–
81.250.000.14	1	ER25	25	8	0	14	–	–	–
81.250.000.16 <sup>1)</sup>	1	ER25	25	8	0	16	–	–	33

### Coolant slots

Order No. 91.100.42

1) Mounting of slits not possible

## SHRINK FIT COLLETS ER32 (8°) INCH



### Version

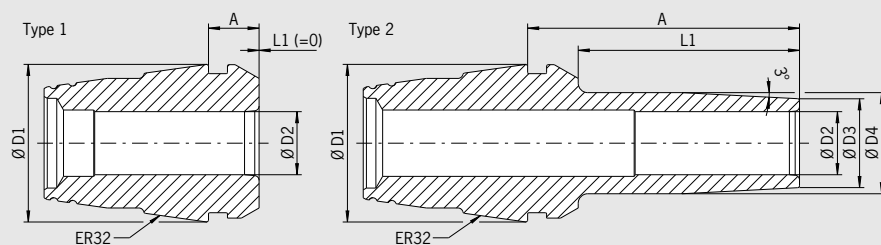
- Compatible with all established ER nuts
- Optional with slits along the clamping bore for cooling from outside
- For solid carbide tools with shank tolerance h6

Order No.	Type	ER Size	D1 [inch]	A [inch]	L1 [inch]	D2 [inch]	D3 [inch]	D4 [inch]	Insertion depth [inch]
81.320.000.1/8z	1	ER32	1.260	0.354	0.000	1/8	-	-	-
81.320.000.3/16z	1	ER32	1.260	0.354	0.000	3/16	-	-	-
81.320.000.1/4z	1	ER32	1.260	0.354	0.000	1/4	-	-	-
81.320.000.5/16z	1	ER32	1.260	0.354	0.000	5/16	-	-	-
81.320.000.3/8z	1	ER32	1.260	0.354	0.000	3/8	-	-	-
81.320.000.7/16z	1	ER32	1.260	0.354	0.000	7/16	-	-	-
81.320.000.1/2z	1	ER32	1.260	0.354	0.000	1/2	-	-	-
81.320.000.9/16z	1	ER32	1.260	0.354	0.000	9/16	-	-	-
81.320.000.5/8z	1	ER32	1.260	0.354	0.000	5/8	-	-	-
81.320.000.3/4z	1	ER32	1.260	0.354	0.000	3/4	-	-	-
81.320.035.1/8z	2	ER32	1.260	1.732	1.378	1/8	0.276	0.591	-
81.320.035.3/16z	2	ER32	1.260	1.732	1.378	3/16	0.315	0.591	-
81.320.035.1/4z	2	ER32	1.260	1.732	1.378	1/4	0.354	0.669	-
81.320.035.5/16z	2	ER32	1.260	1.732	1.378	5/16	0.433	0.748	-
81.320.035.3/8z	2	ER32	1.260	1.732	1.378	3/8	0.551	0.866	-
81.320.035.7/16z	2	ER32	1.260	1.732	1.378	7/16	0.591	0.866	-
81.320.035.1/2z	2	ER32	1.260	1.732	1.378	1/2	0.630	0.945	-
81.320.035.9/16z	2	ER32	1.260	1.732	1.378	9/16	0.669	0.945	-
81.320.035.5/8z	2	ER32	1.260	1.732	1.378	5/8	0.748	0.945	-

Coolant slots

Order No. 91.100.42

## SHRINK FIT COLLETS ER32 (8°) METRIC



### Version

- Compatible with all established ER nuts
- Optional with slits along the clamping bore for cooling from outside
- For solid carbide tools with shank tolerance h6

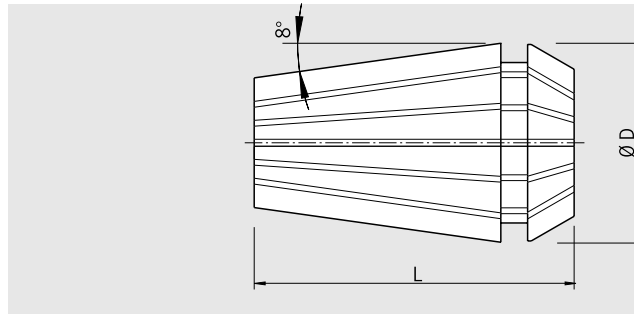
Order No.	Type	ER Size	D1 [mm]	A [mm]	L1 [mm]	D2 [mm]	D3 [mm]	D4 [mm]	Insertion depth [mm]
81.320.000.03	1	ER32	32	9	0	3	–	–	–
81.320.035.03	2	ER32	32	44	35	3	7	15	–
81.320.000.04	1	ER32	32	9	0	4	–	–	–
81.320.035.04	2	ER32	32	44	35	4	7	15	–
81.320.000.05	1	ER32	32	9	0	5	–	–	–
81.320.035.05	2	ER32	32	44	35	5	8	16	–
81.320.000.06	1	ER32	32	9	0	6	–	–	–
81.320.035.06	2	ER32	32	44	35	6	9	17	–
81.320.000.08	1	ER32	32	9	0	8	–	–	–
81.320.035.08	2	ER32	32	44	35	8	11	19	–
81.320.000.10	1	ER32	32	9	0	10	–	–	–
81.320.035.10	2	ER32	32	44	35	10	14	22	–
81.320.000.12	1	ER32	32	9	0	12	–	–	–
81.320.035.12	2	ER32	32	44	35	12	15	24	–
81.320.000.14	1	ER32	32	9	0	14	–	–	–
81.320.035.14	2	ER32	32	44	35	14	17	24	–
81.320.000.16	1	ER32	32	9	0	16	–	–	–
81.320.035.16	2	ER32	32	44	35	16	19	24	–
81.320.000.18	1	ER32	32	9	0	18	–	–	–
81.320.000.20	1	ER32	32	9	0	20	–	–	–

### Coolant slots

Order No. 91.100.42



## HIGH PRECISION ER COLLETS METRIC



- High polished finish for extra accuracy and long life, especially when clamped in HAIMER ER collet chucks
- ISO 15488 (formerly DIN 6499)
- Superior clamping strength
- Fits all brands of ER collet holders
- Run-out accuracy 0.0002" (5 µm)

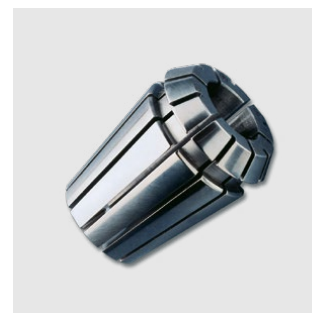
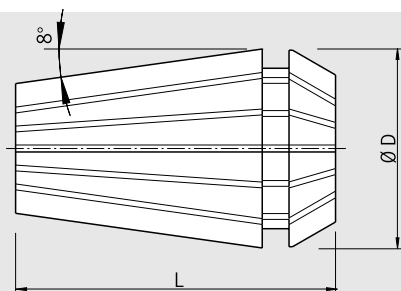
ER 11 Clamping Ø		[mm]	Ø D	L
<b>Order No.</b>	<b>81.110.1.0</b>	0.50 ... 1.00	11.5	18
	<b>81.110.1.5</b>	1.00 ... 1.50	11.5	18
	<b>81.110.2.0</b>	1.50 ... 2.00	11.5	18
	<b>81.110.2.5</b>	2.00 ... 2.50	11.5	18
	<b>81.110.3.0</b>	2.50 ... 3.00	11.5	18
	<b>81.110.3.5</b>	3.00 ... 3.50	11.5	18
	<b>81.110.4.0</b>	3.50 ... 4.00	11.5	18
	<b>81.110.4.5</b>	4.00 ... 4.50	11.5	18
	<b>81.110.5.0</b>	4.50 ... 5.00	11.5	18
	<b>81.110.5.5</b>	5.00 ... 5.50	11.5	18
	<b>81.110.6.0</b>	5.50 ... 6.00	11.5	18
	<b>81.110.6.5</b>	6.00 ... 6.50	11.5	18
	<b>81.110.7.0</b>	6.50 ... 7.00	11.5	18

ER 16 Clamping Ø		[mm]	Ø D	L
<b>Order No.</b>	<b>81.160.01</b>	0.50 ... 1.00	17	27
	<b>81.160.1.5</b>	1.00 ... 1.50	17	27
	<b>81.160.2.0</b>	1.50 ... 2.00	17	27
	<b>81.160.2.5</b>	2.00 ... 2.50	17	27
	<b>81.160.3.0</b>	2.50 ... 3.00	17	27
	<b>81.160.3.5</b>	3.00 ... 4.00	17	27
	<b>81.160.4.0</b>	4.00 ... 5.00	17	27
	<b>81.160.4.5</b>	5.00 ... 6.00	17	27
	<b>81.160.5.0</b>	6.00 ... 7.00	17	27
	<b>81.160.5.5</b>	7.00 ... 8.00	17	27
	<b>81.160.6.0</b>	8.00 ... 9.00	17	27
	<b>81.160.6.5</b>	9.00 ... 10.00	17	27

ER 20 Clamping Ø		[mm]	Ø D	L
<b>Order No.</b>	<b>81.200.02</b>	1.50 ... 2.00	21	31.5
	<b>81.200.03</b>	2.00 ... 3.00	21	31.5
	<b>81.200.04</b>	3.00 ... 4.00	21	31.5
	<b>81.200.05</b>	4.00 ... 5.00	21	31.5
	<b>81.200.06</b>	5.00 ... 6.00	21	31.5
	<b>81.200.07</b>	6.00 ... 7.00	21	31.5
	<b>81.200.08</b>	7.00 ... 8.00	21	31.5
	<b>81.200.09</b>	8.00 ... 9.00	21	31.5
	<b>81.200.10</b>	9.00 ... 10.00	21	31.5
	<b>81.200.11</b>	10.00 ... 11.00	21	31.5
	<b>81.200.12</b>	11.00 ... 12.00	21	31.5
	<b>81.200.13</b>	12.00 ... 13.00	21	31.5

ER 25 Clamping Ø		[mm]	Ø D	L
<b>Order No.</b>	<b>81.250.1.5</b>	1.00 ... 1.50	26	35
	<b>81.250.2.0</b>	1.50 ... 2.00	26	35
	<b>81.250.2.5</b>	2.00 ... 2.50	26	35
	<b>81.250.3.0</b>	2.50 ... 3.00	26	35
	<b>81.250.3.5</b>	3.00 ... 4.00	26	35
	<b>81.250.4.0</b>	4.00 ... 5.00	26	35
	<b>81.250.4.5</b>	5.00 ... 6.00	26	35
	<b>81.250.5.0</b>	6.00 ... 7.00	26	35
	<b>81.250.5.5</b>	7.00 ... 8.00	26	35
	<b>81.250.6.0</b>	8.00 ... 9.00	26	35
	<b>81.250.6.5</b>	9.00 ... 10.00	26	35
	<b>81.250.7.0</b>	10.00 ... 11.00	26	35
	<b>81.250.7.5</b>	11.00 ... 12.00	26	35
	<b>81.250.8.0</b>	12.00 ... 13.00	26	35
	<b>81.250.8.5</b>	13.00 ... 14.00	26	35
	<b>81.250.9.0</b>	14.00 ... 15.00	26	35
	<b>81.250.9.5</b>	15.00 ... 16.00	26	35

## HIGH PRECISION ER COLLETS METRIC

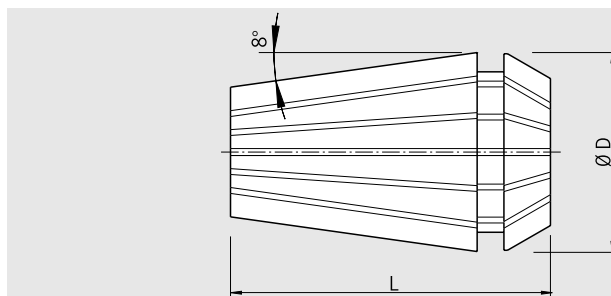


- High polished finish for extra accuracy and long life, especially when clamped in HAIMER ER collet chucks
- ISO 15488 (formerly DIN 6499)
- Superior clamping strength
- Fits all brands of ER collet holders
- Run-out accuracy 0.0002" (5 µm)

ER 32 Clamping Ø		[mm]	Ø D	L
<b>Order No.</b>	<b>81.320.02</b>	1.50 ... 2.00	33	40
	<b>81.320.2.5</b>	2.00 ... 2.50	33	40
	<b>81.320.03</b>	2.50 ... 3.00	33	40
	<b>81.320.04</b>	3.00 ... 4.00	33	40
	<b>81.320.05</b>	4.00 ... 5.00	33	40
	<b>81.320.06</b>	5.00 ... 6.00	33	40
	<b>81.320.07</b>	6.00 ... 7.00	33	40
	<b>81.320.08</b>	7.00 ... 8.00	33	40
	<b>81.320.09</b>	8.00 ... 9.00	33	40
	<b>81.320.10</b>	9.00 ... 10.00	33	40
	<b>81.320.11</b>	10.00 ... 11.00	33	40
	<b>81.320.12</b>	11.00 ... 12.00	33	40
	<b>81.320.13</b>	12.00 ... 13.00	33	40
	<b>81.320.14</b>	13.00 ... 14.00	33	40
	<b>81.320.15</b>	14.00 ... 15.00	33	40
	<b>81.320.16</b>	15.00 ... 16.00	33	40
	<b>81.320.17</b>	16.00 ... 17.00	33	40
	<b>81.320.18</b>	17.00 ... 18.00	33	40
	<b>81.320.19</b>	18.00 ... 19.00	33	40
	<b>81.320.20</b>	19.00 ... 20.00	33	40

ER 40 Clamping Ø		[mm]	Ø D	L
<b>Order No.</b>	<b>81.400.03</b>	2.50 ... 3.00	41	46
	<b>81.400.04</b>	3.00 ... 4.00	41	46
	<b>81.400.05</b>	4.00 ... 5.00	41	46
	<b>81.400.06</b>	5.00 ... 6.00	41	46
	<b>81.400.07</b>	6.00 ... 7.00	41	46
	<b>81.400.08</b>	7.00 ... 8.00	41	46
	<b>81.400.09</b>	8.00 ... 9.00	41	46
	<b>81.400.10</b>	9.00 ... 10.00	41	46
	<b>81.400.11</b>	10.00 ... 11.00	41	46
	<b>81.400.12</b>	11.00 ... 12.00	41	46
	<b>81.400.13</b>	12.00 ... 13.00	41	46
	<b>81.400.14</b>	13.00 ... 14.00	41	46
	<b>81.400.15</b>	14.00 ... 15.00	41	46
	<b>81.400.16</b>	15.00 ... 16.00	41	46
	<b>81.400.17</b>	16.00 ... 17.00	41	46
	<b>81.400.18</b>	17.00 ... 18.00	41	46
	<b>81.400.19</b>	18.00 ... 19.00	41	46
	<b>81.400.20</b>	19.00 ... 20.00	41	46
	<b>81.400.21</b>	20.00 ... 21.00	41	46
	<b>81.400.22</b>	21.00 ... 22.00	41	46
	<b>81.400.23</b>	22.00 ... 23.00	41	46
	<b>81.400.24</b>	23.00 ... 24.00	41	46
	<b>81.400.25</b>	24.00 ... 25.00	41	46
	<b>81.400.26</b>	25.00 ... 26.00	41	46

## HIGH PRECISION ER COLLETS INCH



- High polished finish for extra accuracy and long life, especially when clamped in HAIMER ER collet chucks
- ISO 15488 (formerly DIN 6499)
- Superior clamping strength
- Fits all brands of ER collet holders
- Run-out accuracy 0.0002" (5 µm)

ER 16 Clamping Ø		[inch]	Ø D	L
Order No.	<b>81.160.1/16Z</b>	0.0425 – 0.0625	0.67	1.06
	<b>81.160.1/8Z</b>	0.085 – 0.125	0.67	1.06
	<b>81.160.3/16Z</b>	0.1475 – 0.1875	0.67	1.06
	<b>81.160.1/4Z</b>	0.21 – 0.25	0.67	1.06
	<b>81.160.5/16Z</b>	0.2725 – 0.3125	0.67	1.06
	<b>81.160.3/8Z</b>	0.335 – 0.375	0.67	1.06

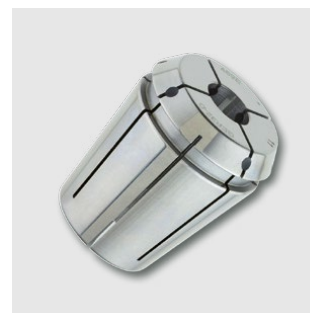
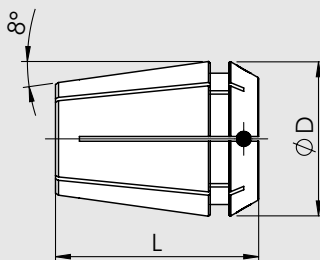
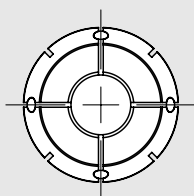
ER 20 Clamping Ø		[inch]	Ø D	L
Order No.	<b>81.200.1/8Z</b>	0.085 – 0.125	0.83	1.24
	<b>81.200.3/16Z</b>	0.1475 – 0.1875	0.83	1.24
	<b>81.200.1/4Z</b>	0.21 – 0.25	0.83	1.24
	<b>81.200.5/16Z</b>	0.2725 – 0.3125	0.83	1.24
	<b>81.200.3/8Z</b>	0.335 – 0.375	0.83	1.24
	<b>81.200.7/16Z</b>	0.3975 – 0.4375	0.83	1.24
	<b>81.200.1/2Z</b>	0.46 – 0.50	0.83	1.24

ER 25 Clamping Ø		[inch]	Ø D	L
Order No.	<b>81.250.1/8Z</b>	0.085 – 0.125	1.02	1.38
	<b>81.250.3/16Z</b>	0.1475 – 0.1875	1.02	1.38
	<b>81.250.1/4Z</b>	0.21 – 0.25	1.02	1.38
	<b>81.250.5/16Z</b>	0.2725 – 0.3125	1.02	1.38
	<b>81.250.3/8Z</b>	0.335 – 0.375	1.02	1.38
	<b>81.250.7/16Z</b>	0.3975 – 0.4375	1.02	1.38
	<b>81.250.1/2Z</b>	0.46 – 0.50	1.02	1.38
	<b>81.250.9/16Z</b>	0.5225 – 0.5625	1.02	1.38
	<b>81.250.5/8Z</b>	0.585 – 0.625	1.02	1.38

ER 32 Clamping Ø		[inch]	Ø D	L
Order No.	<b>81.320.1/8Z</b>	0.085 – 0.125	1.3	1.57
	<b>81.320.3/16Z</b>	0.1475 – 0.1875	1.3	1.57
	<b>81.320.1/4Z</b>	0.21 – 0.25	1.3	1.57
	<b>81.320.5/16Z</b>	0.2725 – 0.3125	1.3	1.57
	<b>81.320.3/8Z</b>	0.335 – 0.375	1.3	1.57
	<b>81.320.7/16Z</b>	0.3975 – 0.4375	1.3	1.57
	<b>81.320.1/2Z</b>	0.46 – 0.50	1.3	1.57
	<b>81.320.9/16Z</b>	0.5225 – 0.5625	1.3	1.57
	<b>81.320.5/8Z</b>	0.585 – 0.625	1.3	1.57
	<b>81.320.11/16Z</b>	0.6475 – 0.6875	1.3	1.57
	<b>81.320.3/4Z</b>	0.71 – 0.75	1.3	1.57

ER 40 Clamping Ø		[inch]	Ø D	L
Order No.	<b>81.400.1/4Z</b>	0.21 – 0.25	1.61	1.81
	<b>81.400.5/16Z</b>	0.2725 – 0.3125	1.61	1.81
	<b>81.400.3/8Z</b>	0.335 – 0.375	1.61	1.81
	<b>81.400.7/16Z</b>	0.3975 – 0.4375	1.61	1.81
	<b>81.400.1/2Z</b>	0.46 – 0.50	1.61	1.81
	<b>81.400.9/16Z</b>	0.5225 – 0.5625	1.61	1.81
	<b>81.400.5/8Z</b>	0.585 – 0.625	1.61	1.81
	<b>81.400.3/4Z</b>	0.71 – 0.75	1.61	1.81
	<b>81.400.7/8Z</b>	0.835 – 0.875	1.61	1.81
	<b>81.400.1Z</b>	0.96 – 1	1.61	1.81

## HIGH PRECISION ER COLLETS – SEALED METRIC



- High polished finish for extra accuracy and long life, especially when clamped in HAIMER ER collet chucks
- ISO 15488 (formerly DIN 6499)
- Superior clamping strength

- Fits all brands of ER collet holders
- Run-out accuracy 0.0002" (5 µm)
- Sealed for internal coolant tools

ER 16 Clamping Ø		[mm]	Ø D	L
Order No.	<b>81.165.03</b>	03	16.70	30
	<b>81.165.04</b>	04	16.70	30
	<b>81.165.05</b>	05	16.70	30
	<b>81.165.06</b>	06	16.70	30
	<b>81.165.07</b>	07	16.70	30
	<b>81.165.08</b>	08	16.70	30
	<b>81.165.09</b>	09	16.70	30
	<b>81.165.10</b>	10	16.70	30

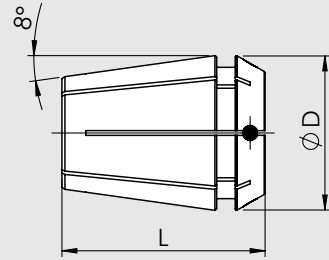
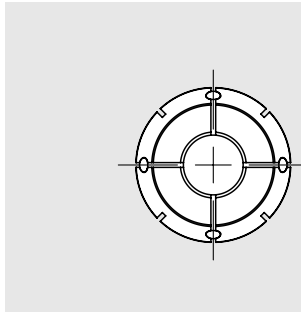
ER 20 Clamping Ø		[mm]	Ø D	L
Order No.	<b>81.205.03</b>	03	20.70	30
	<b>81.205.04</b>	04	20.70	30
	<b>81.205.05</b>	05	20.70	30
	<b>81.205.06</b>	06	20.70	30
	<b>81.205.07</b>	07	20.70	30
	<b>81.205.08</b>	08	20.70	30
	<b>81.205.09</b>	09	20.70	30
	<b>81.205.10</b>	10	20.70	30
	<b>81.205.11</b>	11	20.70	30
	<b>81.205.12</b>	12	20.70	30

ER 25 Clamping Ø		[mm]	Ø D	L
Order No.	<b>81.255.03</b>	03	25.70	37
	<b>81.255.04</b>	04	25.70	37
	<b>81.255.05</b>	05	25.70	37
	<b>81.255.06</b>	06	25.70	37
	<b>81.255.07</b>	07	25.70	37
	<b>81.255.08</b>	08	25.70	37
	<b>81.255.09</b>	09	25.70	37
	<b>81.255.10</b>	10	25.70	37
	<b>81.255.11</b>	11	25.70	37
	<b>81.255.12</b>	12	25.70	37
	<b>81.255.13</b>	13	25.70	37
	<b>81.255.14</b>	14	25.70	37
	<b>81.255.15</b>	15	25.70	37
	<b>81.255.16</b>	16	25.70	37

ER 32 Clamping Ø		[mm]	Ø D	L
Order No.	<b>81.325.03</b>	03	32.70	45
	<b>81.325.04</b>	04	32.70	45
	<b>81.325.05</b>	05	32.70	45
	<b>81.325.06</b>	06	32.70	45
	<b>81.325.07</b>	07	32.70	45
	<b>81.325.08</b>	08	32.70	45
	<b>81.325.09</b>	09	32.70	45
	<b>81.325.10</b>	10	32.70	45
	<b>81.325.11</b>	11	32.70	45
	<b>81.325.12</b>	12	32.70	45
	<b>81.325.13</b>	13	32.70	45
	<b>81.325.14</b>	14	32.70	45
	<b>81.325.15</b>	15	32.70	45
	<b>81.325.16</b>	16	32.70	45
	<b>81.325.17</b>	17	32.70	45
	<b>81.325.18</b>	18	32.70	45
	<b>81.325.19</b>	19	32.70	45
	<b>81.325.20</b>	20	32.70	45

ER 40 Clamping Ø		[mm]	Ø D	L
Order No.	<b>81.405.06</b>	06	40.70	30
	<b>81.405.08</b>	08	40.70	30
	<b>81.405.10</b>	10	40.70	30
	<b>81.405.12</b>	12	40.70	30
	<b>81.405.14</b>	14	40.70	30
	<b>81.405.16</b>	16	40.70	30
	<b>81.405.18</b>	18	40.70	30
	<b>81.405.20</b>	20	40.70	30
	<b>81.405.22</b>	22	40.70	30
	<b>81.405.25</b>	25	40.70	30

## HIGH PRECISION ER COLLETS – SEALED INCH



- High polished finish for extra accuracy and long life, especially when clamped in HAIMER ER collet chucks
- ISO 15488 (formerly DIN 6499)
- Superior clamping strength
- Fits all brands of ER collet holders
- Run-out accuracy 0.0002" (5 µm)
- Sealed for internal coolant tools

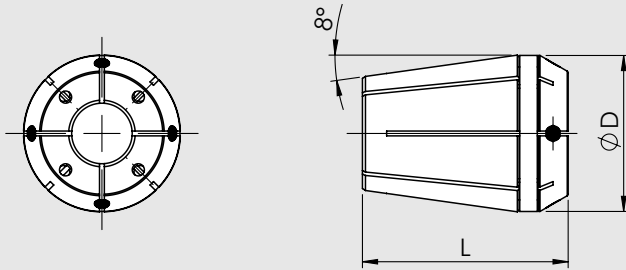
ER 16 Clamping Ø		[inch]	Ø D	L
Order No.	81.165.1/8z	1/8	0.65	1.18
	81.165.3/16z	3/16	0.65	1.18
	81.165.1/4z	1/4	0.65	1.18
	81.165.5/16z	5/16	0.65	1.18
	81.165.3/8z	3/8	0.65	1.18

ER 20 Clamping Ø		[inch]	Ø D	L
Order No.	81.205.1/8z	1/8	1.001	1.46
	81.205.3/16z	3/16	1.001	1.46
	81.205.1/4z	1/4	1.001	1.46
	81.205.5/16z	5/16	1.001	1.46
	81.205.3/8z	3/8	1.001	1.46
	81.205.7/16z	7/16	1.001	1.46
	81.205.1/2z	1/2	1.001	1.46

ER 25 Clamping Ø		[inch]	Ø D	L
Order No.	81.255.1/8z	1/8	1.001	1.46
	81.255.3/16z	3/16	1.001	1.46
	81.255.1/4z	1/4	1.001	1.46
	81.255.5/16z	5/16	1.001	1.46
	81.255.3/8z	3/8	1.001	1.46
	81.255.7/16z	7/16	1.001	1.46
	81.255.1/2z	1/2	1.001	1.46
	81.255.9/16z	9/16	1.001	1.46
	81.255.5/8z	5/8	1.001	1.46

ER 32 Clamping Ø		[inch]	Ø D	L
Order No.	81.325.1/8z	1/8	1.28	1.77
	81.325.3/16z	3/16	1.28	1.77
	81.325.1/4z	1/4	1.28	1.77
	81.325.5/16z	5/16	1.28	1.77
	81.325.3/8z	3/8	1.28	1.77
	81.325.7/16z	7/16	1.28	1.77
	81.325.1/2z	1/2	1.28	1.77
	81.325.9/16z	9/16	1.28	1.77
	81.325.5/8z	5/8	1.28	1.77
	81.325.3/4z	3/4	1.28	1.77

## HIGH PRECISION COLLETS ER – SEALED WITH COOL JET



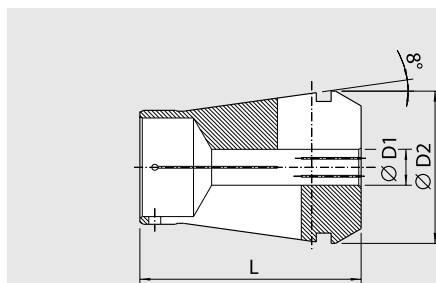
- High polished finish for extra accuracy and long life, especially when clamped in HAIMER ER collet chucks
- ISO 15488 (formerly DIN 6499)
- Superior clamping strength
- Fits all brands of ER collet holders
- Run-out accuracy 0.00012" (3 µm)
- With Cool Jet bores for optimal coolant supply
- For cylindrical shanks with tolerance h8 or better

ER 25 Clamping Ø		[mm]	Ø D	L
Order No.	<b>81.252.04</b>	04	26	37
	<b>81.252.06</b>	06	26	37
	<b>81.252.08</b>	08	26	37
	<b>81.252.10</b>	10	26	37
	<b>81.252.12</b>	12	26	37
	<b>81.252.14</b>	14	26	37

ER 32 Clamping Ø		[mm]	Ø D	L
Order No.	<b>81.322.04</b>	04	33	45
	<b>81.322.06</b>	06	33	45
	<b>81.322.08</b>	08	33	45
	<b>81.322.10</b>	10	33	45
	<b>81.322.12</b>	12	33	45
	<b>81.322.14</b>	14	33	45
	<b>81.322.16</b>	16	33	45
	<b>81.322.18</b>	18	33	45
	<b>81.322.20</b>	20	33	45

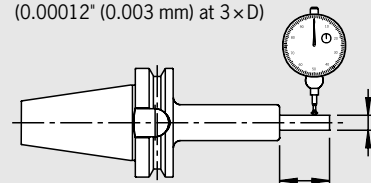
**Attention: Blue plastic ring is for identification purposes only and must be removed before use.**

## POWER COLLET FOR HAIMER POWER/HIGH PRECISION COLLET CHUCK INCH



### Power ER Collet

- For ultra precision machining
- High runout accuracy (0.00012" (0.003 mm) at 3×D)



Runout accuracy < 0.00012"

- High runout accuracy: < 0.00012" (3 µm) at 3×D
- Superior clamping strength
- Fits HAIMER Power Collet Chucks and High Precision Collet Chucks
- For cylindrical shanks with tolerance h10
- Optional: Cool Jet bores at self-sealing collets

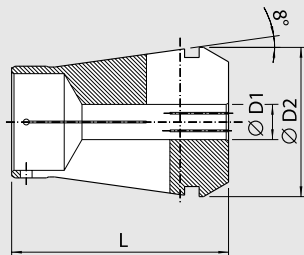
ER 16	Clamping	Ø D1 [inch]	Ø D2 [inch]	L [inch]
Order No.	81.163.1/8z	1/8	0.65	1.18
	81.163.3/16z	3/16	0.65	1.18
	81.163.1/4z <sup>1)</sup>	1/4	0.65	1.18
	81.163.5/16z <sup>1)</sup>	5/16	0.65	1.18
	81.163.3/8z <sup>1)</sup>	3/8	0.65	1.18

ER 25	Clamping	Ø D1 [inch]	Ø D2 [inch]	L [inch]
Order No.	81.253.1/8z	1/8	1.001	1.46
	81.253.3/16z	3/16	1.001	1.46
	81.253.1/4z <sup>1)</sup>	1/4	1.001	1.46
	81.253.5/16z <sup>1)</sup>	5/16	1.001	1.46
	81.253.3/8z <sup>1)</sup>	3/8	1.001	1.46
	81.253.7/16z <sup>1)</sup>	7/16	1.001	1.46
	81.253.1/2z <sup>1)</sup>	1/2	1.001	1.46
	81.253.9/16z <sup>1)</sup>	9/16	1.001	1.46
	81.253.5/8z <sup>1)</sup>	5/8	1.001	1.46

ER 32	Clamping	Ø D1 [inch]	Ø D2 [inch]	L [inch]
Order No.	81.323.1/8z	1/8	1.28	1.77
	81.323.3/16z	3/16	1.28	1.77
	81.323.1/4z <sup>1)</sup>	1/4	1.28	1.77
	81.323.5/16z <sup>1)</sup>	5/16	1.28	1.77
	81.323.3/8z <sup>1)</sup>	3/8 <sup>1)</sup>	1.28	1.77
	81.323.7/16z <sup>1)</sup>	7/16	1.28	1.77
	81.323.1/2z <sup>1)</sup>	1/2 <sup>1)</sup>	1.28	1.77
	81.323.9/16z <sup>1)</sup>	9/16	1.28	1.77
	81.323.5/8z <sup>1)</sup>	5/8 <sup>1)</sup>	1.28	1.77
	81.323.3/4z <sup>1)</sup>	3/4	1.28	1.77

1) Sealed for internal coolant

## POWER COLLET FOR HAIMER POWER/HIGH PRECISION COLLET CHUCK METRIC



- High runout accuracy:  $< 0.00012''$  ( $3 \mu\text{m}$ ) at  $3 \times D$
- Superior clamping strength
- Fits HAIMER Power Collet Chucks and High Precision Collet Chucks
- For cylindrical shanks with tolerance h10
- Optional: Cool Jet bores at self-sealing collets

ER 16 Clamping Ø [mm]		D1	D2	L
Order No.	<b>81.163.02</b> <sup>1)</sup>	2	16.45	30
	<b>81.163.03</b>	3	16.45	30
	<b>81.163.04</b> <sup>1)</sup>	4	16.45	30
	<b>81.163.05</b> <sup>1)</sup>	5	16.45	30
	<b>81.163.06</b> <sup>1)</sup>	6	16.45	30
	<b>81.163.08</b> <sup>1)</sup>	8	16.45	30
	<b>81.163.10</b> <sup>1)</sup>	10	16.45	30

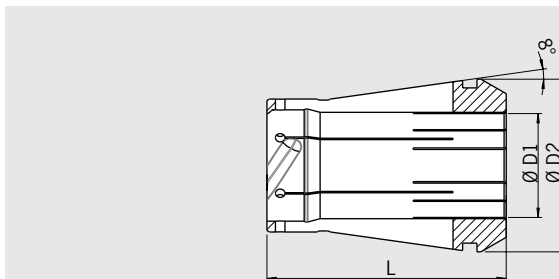
ER 25 Clamping Ø [mm]		D1	D2	L
Order No.	<b>81.253.02</b> <sup>1)</sup>	2	25.45	37
	<b>81.253.03</b>	3	25.45	37
	<b>81.253.04</b>	4	25.45	37
	<b>81.253.05</b> <sup>1)</sup>	5	25.45	37
	<b>81.253.06</b> <sup>1)</sup>	6	25.45	37
	<b>81.253.08</b> <sup>1)</sup>	8	25.45	37
	<b>81.253.10</b> <sup>1)</sup>	10	25.45	37
	<b>81.253.12</b> <sup>1)</sup>	12	25.45	37
	<b>81.253.14</b> <sup>1)</sup>	14	25.45	37
	<b>81.253.16</b> <sup>1)</sup>	16	25.45	37

ER 32 Clamping Ø [mm]		D1	D2	L
Order No.	<b>81.323.02</b> <sup>1)</sup>	2	32.48	45
	<b>81.323.03</b>	3	32.48	45
	<b>81.323.04</b>	4	32.48	45
	<b>81.323.05</b> <sup>1)</sup>	5	32.48	45
	<b>81.323.06</b> <sup>1)</sup>	6	32.48	45
	<b>81.323.08</b> <sup>1)</sup>	8	32.48	45
	<b>81.323.10</b> <sup>1)</sup>	10	32.48	45
	<b>81.323.12</b> <sup>1)</sup>	12	32.48	45
	<b>81.323.14</b> <sup>1)</sup>	14	32.48	45
	<b>81.323.16</b> <sup>1)</sup>	16	32.48	45
	<b>81.323.18</b> <sup>1)</sup>	18	32.48	45
	<b>81.323.20</b> <sup>1)</sup>	20	32.48	45

1) Sealed for internal coolant



## POWER COLLET WITH SAFE-LOCK



- High-precision Power Collets with stabilization and concentricity through pilot of collet
- High torque due to form closed clamping
- No pull out and no spinning of the tool
- Groove on tool shank is directed so that the tool will be pulled into the chuck (depending on direction of rotation)
- Sealed for internal coolant

INCH ER 16 (0.47–0.63)	Ø D1 [inch]	Ø D2 [inch]	L [inch]
Order No. 81.163.3/8z.7	3/8	1.001	1.46

INCH ER 25 (0.47–0.63)	Ø D1 [inch]	Ø D2 [inch]	L [inch]
Order No. 81.253.3/8z.7	3/8	1.001	1.46
81.253.1/2z.7	1/2	1.001	1.46
81.253.5/8z.7	5/8	1.001	1.46

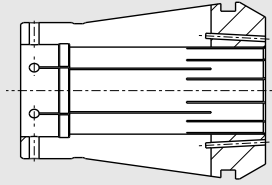
INCH ER 32 (0.63–0.79)	Ø D1 [inch]	Ø D2 [inch]	L [inch]
81.323.3/8z.7	3/8	1.28	1.77
81.323.1/2z.7	1/2	1.28	1.77
81.323.5/8z.7	5/8	1.28	1.77
81.323.3/4z.7	3/4	1.28	1.77

METRIC ER 16 Clamping Ø [mm]	D1	D2	L
Order No. 81.163.06.7	6	16.45	30
81.163.08.7	8	16.45	30
81.163.10.7	10	16.45	30

METRIC ER 25 Clamping Ø [mm]	D1	D2	L
Order No. 81.253.06.7	6	25.45	37
81.253.08.7	8	25.45	37
81.253.10.7	10	25.45	37
81.253.12.7	12	25.45	37
81.253.14.7	14	25.45	37
81.253.16.7	16	25.45	37

METRIC ER 32 Clamping Ø [mm]	D1	D2	L
Order No. 81.323.06.7	6	32.48	45
81.323.08.7	8	32.48	45
81.323.10.7	10	32.48	45
81.323.12.7	12	32.48	45
81.323.14.7	14	32.48	45
81.323.16.7	16	32.48	45
81.323.18.7	18	32.48	45
81.323.20.7	20	32.48	45

## COOL JET BORES FOR POWER COLLETS



### Optional: Cool Jet for Power Collets

- Optimized coolant bores, aimed at center of the collet
- Coolant directly to the cutting edge
- Extended tool life up to 100%
- Higher reliability of cutting process
- Eliminates chips packing and chip welding
- Available for self-sealing Power Collets

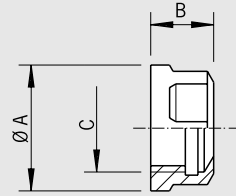
Cool Jet bores for Power Collets

Order No. 91.100.27

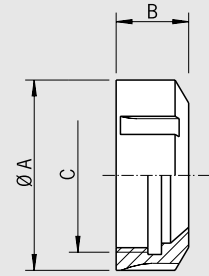
## LOCKNUTS FOR ER COLLET CHUCKS



**ER 11-20  
for fork wrench**



**ER 25-40  
for ER spanner  
clamping wrench**

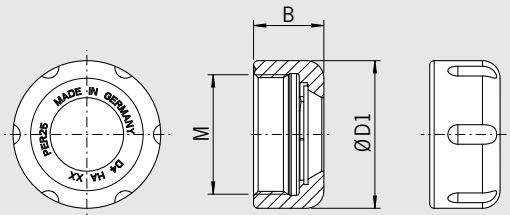


**Locknuts ER:**

- Highest runout accuracy
- No wear and high clamping force due to special slide coating
- Small vibrations due to pre-balancing
- Version HS fine-balanced

ER	ER 11	ER 16	ER 20	
Order No.	83.912...	.11	.16	.20
HS Version				
Order No.	83.912...		.16.HS	.20.HS
Ø A	19	28	34	
B	11,3	17	19	
C	M 14 x 0.75	M 22 x 1.5	M 25 x 1.5	
ER		ER 25	ER 32	ER 40
Order No.	83.912...	.25	.32	.40
HS Version				
Order No.	83.912...	.25.HS	.32.HS	.40.HS
Ø A		42	50	63
B		20	22.5	25.5
C		M 32 x 1.5	M 40 x 1.5	M 50 x 1.5

## LOCKNUTS FOR POWER COLLET CHUCKS

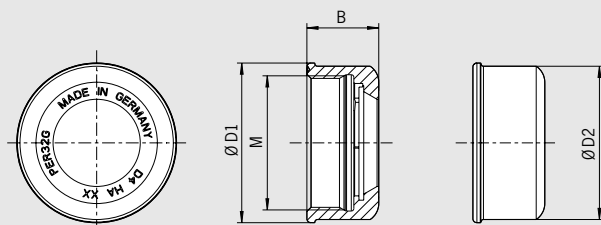


### Power Collet locknuts:

- Highest runout accuracy
- No wear and high clamping force due to special slide coating
- Less vibrations due to pre-balancing

ER		ER 16	ER 25	ER 32
Order No.	83.914...	.16	.25	.32
Ø D1		28	42	50
M		M 23 x 1.5	M 34 x 1.5	M 42 x 1.5
B		17.8	20	22.5

## SMOOTH LOCKNUTS FOR HIGH PRECISION COLLET CHUCKS

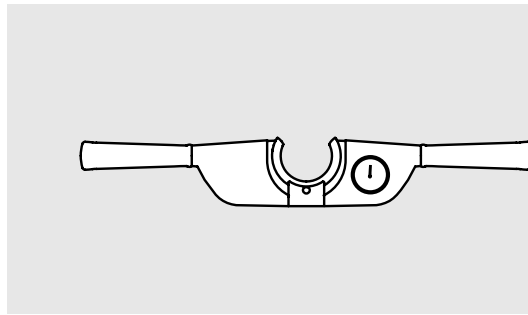


### High Precision Smooth Locknuts ER:

- Highest runout accuracy
- No wear and high clamping force due to special slide coating
- Less vibrations due to pre-balancing
- Noise reducing

ER		ER 16	ER 25	ER 32
Order No.	83.914...	.16.1	.25.1	.32.1
Ø D1		28	42	50
Ø D2		27	40	48
M		M 23 x 1.5	M 34 x 1.5	M 42 x 1.5
B		17.8	20	22.5

## TORQUE MASTER TORQUE WRENCH FOR HAIMER POWER COLLET CHUCKS AND STANDARD ER CHUCKS

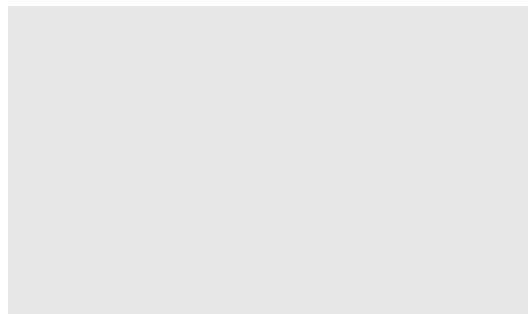


### Two-armed clamping wrench and torque wrench for Collet Chucks:

- For highest runout accuracy, no one-sided clamping
- Optimal power transmission by consistent force application
- Torque wrench for highest clamping accuracy and repeatability with dial gauge
- Maximum torque for highest clamping force
- No overloading of smaller clamping diameters
- Changeable inserts, useable also for standard ER Collets

Torque Master Torque Wrench	Order No.
Torque Master with case	84.600.00
Torque Master without case	84.600.00.S
Torque Master torque wrench set with case and 3 inserts for Standard ER Chucks in ER16, ER25, ER32	84.600.00.AK

## INSERTS FOR TORQUE MASTER TORQUE WRENCH



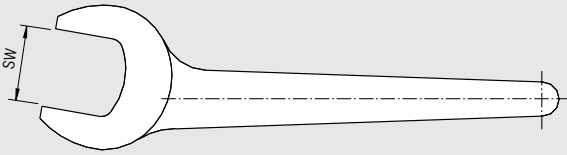
Inserts for Torque Master Wrench		
for Power Collet Chucks	Size	
Order No.		
84.610.16	ER16	
84.610.25	ER25	
84.610.32	ER32	
for Standard ER Chucks	Size	Wrench size SW
84.620.11	ER11	SW17
84.620.16	ER16	SW25
84.620.20	ER20	SW30
84.620.25	ER25	
84.620.32	ER32	
for Standard ER Chucks ER Mini	Size	Wrench size SW
84.620.16.1	ER16 Mini	

## WRENCHES



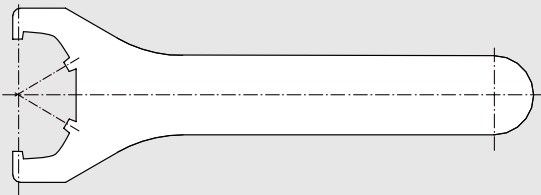
Power Collet clamping wrench for ER 16, ER 25 and ER 32

ER	ER 16	ER 25	ER 32	
Order No.	84.650...	.16	.25	.32



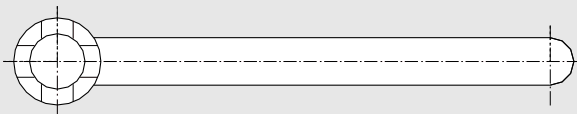
Wrench for locknuts ER 11, ER 16 and ER 20

ER	ER 11	ER 16	ER 20	
Wrench size	17	25	30	
Order No.	84.200...	.11	.16	.20



Wrench for locknuts ER 25-40

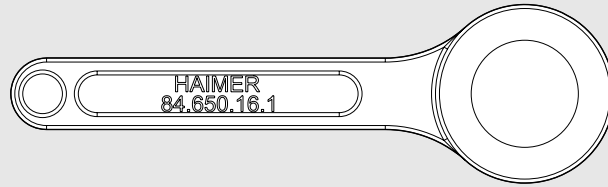
ER	ER 25	ER 32	ER 40	ER 50	
Order No.	84.200...	.25	.32	.40	.50



Wrench for tightening bolts for face mill arbors and combination shell end mill adapters Ø 16-60

Ø	16	22	27	32	40	50	60	
Order No.	84.400...	.16	.22	.27	.32	.40	.50	.60

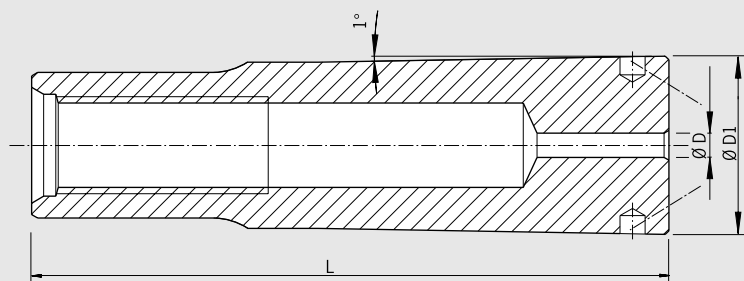
## ROLLER BEARING WRENCH FOR HIGH PRECISION COLLET CHUCKS



Roller bearing wrench for clamping of locknuts for High Precision Collet Chucks.

Roller bearing wrench for ER 16, ER 25 and ER 32				
ER		ER 16	ER 25	ER 32
Order No.	84.650...	.16.1	.25.1	.32.1

## HG COLLETS AND HG SPINDLE WIPER



### HG Collets

For clamping tools with cylindrical shank with utmost precision in High-Precision Chucks.  
For tools with shank tolerance h6.

<b>HG 01</b>	<b>Ø D [inch]</b>		<b>1/8</b>	<b>3/16</b>	<b>1/4</b>	<b>5/16</b>
	<b>Ø D1 [inch]</b>		<b>0.579</b>	<b>0.579</b>	<b>0.579</b>	<b>0.579</b>
HG 01	L [inch]		2.067	2.067	2.067	2.067
<b>Order No.</b>	<b>82.510...</b>		<b>.03.175</b>	<b>.04.763</b>	<b>.06.35</b>	<b>.07.938</b>
<b>HG 02</b>	<b>Ø D [inch]</b>		<b>3/8</b>	<b>7/16</b>	<b>1/2</b>	<b>9/16</b>
	<b>Ø D1 [inch]</b>		<b>0.704</b>	<b>0.704</b>	<b>0.704</b>	<b>0.704</b>
HG 02	L [inch]		2.528	2.528	2.528	2.528
<b>Order No.</b>	<b>82.520...</b>		<b>.09.525</b>	<b>.11.112</b>	<b>.12.7</b>	<b>.14.287</b>
<b>HG 03</b>	<b>Ø D [inch]</b>		<b>5/8</b>	<b>3/4</b>		
	<b>Ø D1 [inch]</b>		<b>1.029</b>	<b>1.029</b>		
HG 03	L [inch]		2.744	2.744		
<b>Order No.</b>	<b>82.530...</b>		<b>.15.875</b>	<b>.19.05</b>		

<b>HG 01</b>	<b>Ø D [mm]</b>	<b>2</b>	<b>2.5</b>	<b>3</b>	<b>4</b>	<b>4.5</b>	<b>5</b>	<b>5.5</b>	<b>5.6</b>	<b>6</b>	<b>6.3</b>	<b>7</b>	<b>7.1</b>	<b>8</b>	<b>9</b>
	<b>Ø D1 [mm]</b>	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
	<b>L [mm]</b>	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5
<b>Order No.</b>	<b>82.510...</b>	<b>.02</b>	<b>.02.5</b>	<b>.03</b>	<b>.04</b>	<b>.04.5</b>	<b>.05</b>	<b>.05.5</b>	<b>.05.6</b>	<b>.06</b>	<b>.06.3</b>	<b>.07</b>	<b>.07.1</b>	<b>.08</b>	<b>.09</b>
<b>HG 02</b>	<b>Ø D [mm]</b>	<b>10</b>		<b>11</b>		<b>12</b>		<b>12.5</b>		<b>14</b>					
	<b>Ø D1 [mm]</b>	17.87		17.87		17.87		17.87		17.87					
	<b>L [mm]</b>	64.2		64.2		64.2		64.2		64.2					
<b>Order No.</b>	<b>82.520...</b>	<b>.10</b>		<b>.11</b>		<b>.12</b>		<b>.12.5</b>		<b>.14</b>					
<b>HG 03</b>	<b>Ø D [mm]</b>	<b>16</b>		<b>18</b>		<b>20</b>									
	<b>Ø D1 [mm]</b>	26.147		26.147		26.147									
	<b>L [mm]</b>	69.7		69.7		69.7									
<b>Order No.</b>	<b>82.530...</b>	<b>.16</b>		<b>.18</b>		<b>.20</b>									

### Accessories

#### Pull-out hook

HG

**Order No.** 82.570.00



#### Lubrication paste

**Order No.** 82.585.00

### Spindle wiper

For cleaning tool holder I.D. of High-Precision Chucks

<b>HG</b>		<b>for HG 01</b>	<b>for HG 02</b>	<b>for HG 03</b>
<b>Order No.</b>	<b>82.590...</b>	<b>.01</b>	<b>.02</b>	<b>03</b>



## SET OF BALANCING SCREWS



For fine-balancing all tool holders with balancing threads M6 (e.g. shrink fit chucks from HAIMER).

The screws have different weights in a fine graduation.

They are screwed into the balancing threads of the tool holder so that their weight compensates the unbalance of the tool holder.

- Set consisting of screws in 11 different sizes and weights
  - Screws are screwed to the bottom of the thread and tightened.  
No additional fixing of screws necessary
  - Balance quickly and precisely
  - No damage to tool holders
  - Can be repeated as often as necessary
  - Suitable for tool holders of all brands
  - The balancing machine calculates the necessary weight of the screws (e.g. HAIMER Tool Dynamic)
- Included in delivery: Case with 11 x 10 balancing screws, screw driver

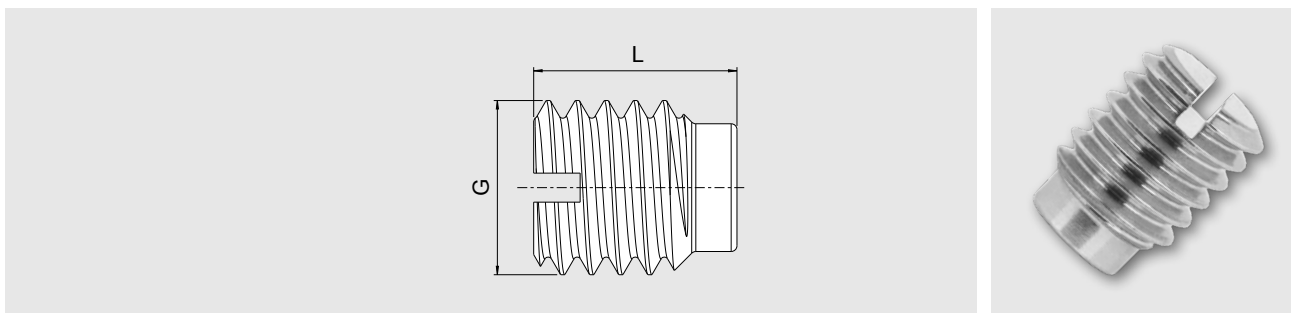
### Accessories

Set of Balancing Screws

Order No.

80.203.00

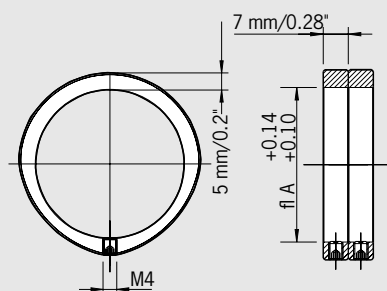
## HEAVY METAL BALANCING SCREWS



Heavy metal balancing screws (thread M6) for manual balancing of tool holders.

Length L [mm]	07	07	08	08	10	10
Size G [mm]	M6x7	M6x7 (5 pcs.)	M6x8	M6x8 (5 pcs.)	M6x10	M6x10 (5 pcs.)
Mass	ca. 2.3g	ca. 2.3g	ca. 2.7g	ca. 2.7g	ca. 3.5g	ca. 3.5g
Order No.	85.502...	.7.0	.7.0.SET	.8.0	.8.0.SET	.10.0
					.10.0	.10.0.SET

## BALANCING RINGS



For fine-balancing all tool holders with cylindrical outer diameter (diam. A).

The balancing index rings have a defined unbalance in themselves. They are turned in such a position that the unbalance of the tool holder will be compensated. There are always 2 rings needed per balancing plane.

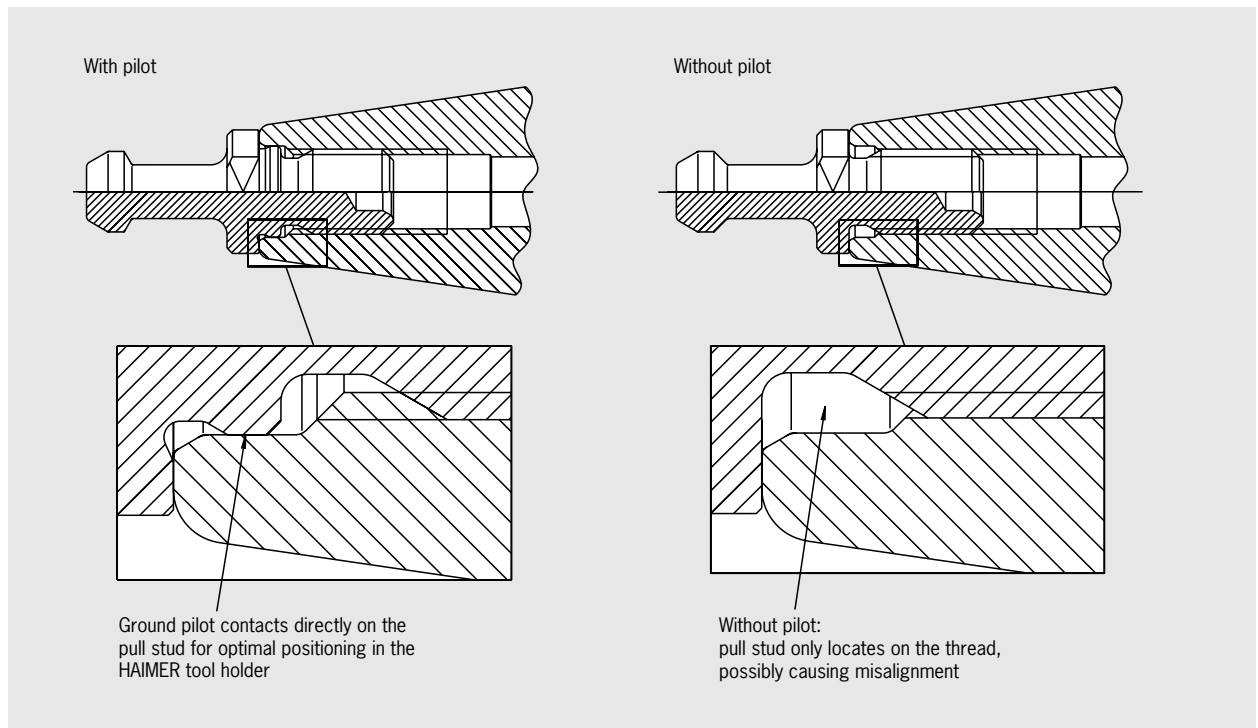
- Balancing quickly and precisely
- No damage to tool holder
- Can be repeated as often as necessary
- Simply fixed by clamping screw
- Suitable for tool holders of all brands
- The balancing machine determines the position of the rings
- Included in delivery: 2 balancing index rings with screws (without hex wrench)
- Tightening torque: 1 ft lb (1.4 Nm)

Order No.	Ø A [mm]	Ø A [inch]	unbalance <sup>1)</sup>	rpm [1/min]
79.350.15	15	0.59	14 g·mm	max. 55,000
79.350.16	16	0.63	14 g·mm	max. 55,000
79.350.17	17	0.67	16 g·mm	max. 55,000
79.350.18	18	0.71	17 g·mm	max. 55,000
79.350.19	19	0.75	19 g·mm	max. 55,000
79.350.20	20	0.79	21 g·mm	max. 55,000
79.350.22	22	0.87	23 g·mm	max. 55,000
79.350.23	23	0.91	25 g·mm	max. 55,000
79.350.24	24	0.94	27 g·mm	max. 55,000
79.350.25	25	0.98	28 g·mm	max. 55,000
79.350.26	26	1.02	32 g·mm	max. 50,000
79.350.27	27	1.06	32.5 g·mm	max. 50,000
79.350.28	28	1.10	34 g·mm	max. 50,000
79.350.30	30	1.18	37 g·mm	max. 45,000
79.350.32	32	1.26	43 g·mm	max. 45,000
79.350.34	34	1.34	46 g·mm	max. 40,000
79.350.35	35	1.38	48 g·mm	max. 40,000
79.350.36	36	1.42	51 g·mm	max. 40,000
79.350.38	38	1.50	56 g·mm	max. 35,000
79.350.40	40	1.57	60 g·mm	max. 35,000
79.350.42	42	1.65	65 g·mm	max. 35,000
79.350.43	43	1.69	69 g·mm	max. 35,000
79.350.1.71Z	43.45	1.71	68 g·mm	max. 35,000
79.350.44	44	1.73	72 g·mm	max. 35,000
79.350.46	46	1.81	80 g·mm	max. 35,000
79.350.48	48	1.89	85 g·mm	max. 30,000
79.350.50	50	1.97	90 g·mm	max. 30,000
79.350.52	52	2.05	100 g·mm	max. 30,000
79.350.53	53	2.09	100 g·mm	max. 30,000
79.350.54	54	2.13	103 g·mm	max. 30,000

Order No.	Ø A [mm]	Ø A [inch]	unbalance <sup>1)</sup>	rpm [1/min]
79.350.55	55	2.17	105 g·mm	max. 30,000
79.350.56	56	2.20	110 g·mm	max. 30,000
79.350.58	58	2.28	120 g·mm	max. 30,000
79.350.60	60	2.36	128 g·mm	max. 25,000
79.350.62	62	2.44	132 g·mm	max. 25,000
79.350.63	63	2.48	135 g·mm	max. 25,000
79.350.64	64	2.52	147 g·mm	max. 25,000
79.350.65	65	2.56	147 g·mm	max. 25,000
79.350.66	66	2.60	145 g·mm	max. 25,000
79.350.68	68	2.68	161 g·mm	max. 25,000
79.350.70	70	2.76	165 g·mm	max. 25,000
79.350.72	72	2.83	170 g·mm	max. 25,000
79.350.74	74	2.91	184 g·mm	max. 25,000
79.350.76	76	2.99	186 g·mm	max. 20,000
79.350.78	78	3.07	206 g·mm	max. 20,000
79.350.80	80	3.15	215 g·mm	max. 20,000
79.350.82	82	3.23	213 g·mm	max. 20,000
79.350.84	84	3.31	229 g·mm	max. 20,000
79.350.86	86	3.39	249 g·mm	max. 20,000
79.350.87	87	3.43	256 g·mm	max. 20,000
79.350.88	88	3.46	251 g·mm	max. 20,000
79.350.89	89	3.50	260 g·mm	max. 20,000
79.350.90	90	3.54	265 g·mm	max. 20,000
79.350.92	92	3.62	275 g·mm	max. 20,000
79.350.94	94	3.70	286 g·mm	max. 20,000
79.350.96	96	3.78	300 g·mm	max. 20,000
79.350.98	98	3.86	305 g·mm	max. 20,000
79.350.100	100	3.94	320 g·mm	max. 15,000
79.350.125	125	4.92	500 g·mm	max. 15,000

1) Unbalance g·mm are reference values, small variances possible  
Additional sizes may be available – please contact Haimer USA for more information

## CAT40/CAT50 PULL STUD INFORMATION

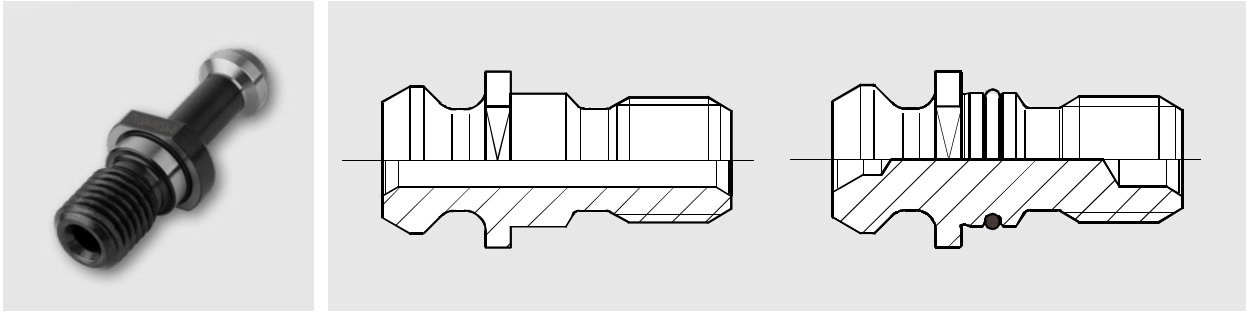


HAIMER goes far beyond the requirements of CAT40 tooling. Our experience with tool holders and balancing have merged together to successfully create far superior CAT tapered tooling.

In addition to our contact and 100% inspection process of our tapers, HAIMER has developed a special feature to greatly increase your tool holder balance repeatability and your machine tool spindle draw mechanism repeatability.

We have added a ground pilot in the rear of all our CAT40 tool holders. This ground pilot fits perfectly with the special HAIMER pull stud to maximize your tool holder to machine tool connection. The ground pilot is larger than the standard ANSI dimension, so you can easily use any pull stud from any manufacturer. However, for those serious about balance and machine tool spindle draw repeatability, HAIMER has the answer for you with our special pull stud/pilot connection!

# PULL STUDS INCH

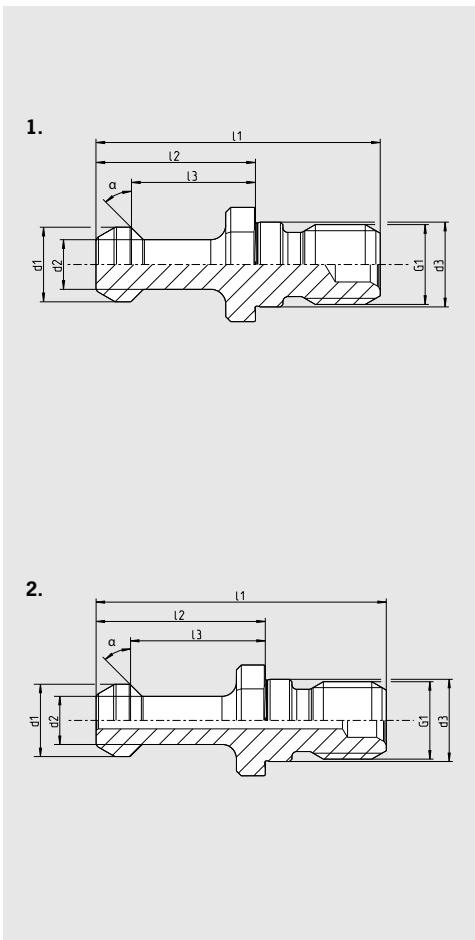


Pull studs are an important link between machine and tool. The requirements concerning accuracy, rigidity and reliability are very high. Pull studs of poor quality not only decrease the performance of the machine, they are even a safety risk. A breaking pull stud might cause severe damage on the machine, work piece and even serious injuries.

Benefits of HAIMER pull studs:

- Made of special steel with high rigidity
- Costly heat treatment in several steps
- High impact strength
- All functional surfaces fine finished after hardening
- Highest security and reliability

Version with ground pilot is used to help consistently locate the pull stud in the tool holder. Great for runout accuracy, balance repeatability and machine tool draw bar consistency. All HAIMER tool holders are provided with ground center-bore to match pull stud pilot (all standard pull studs can be used as well). All metric pull studs come with a ground pilot.

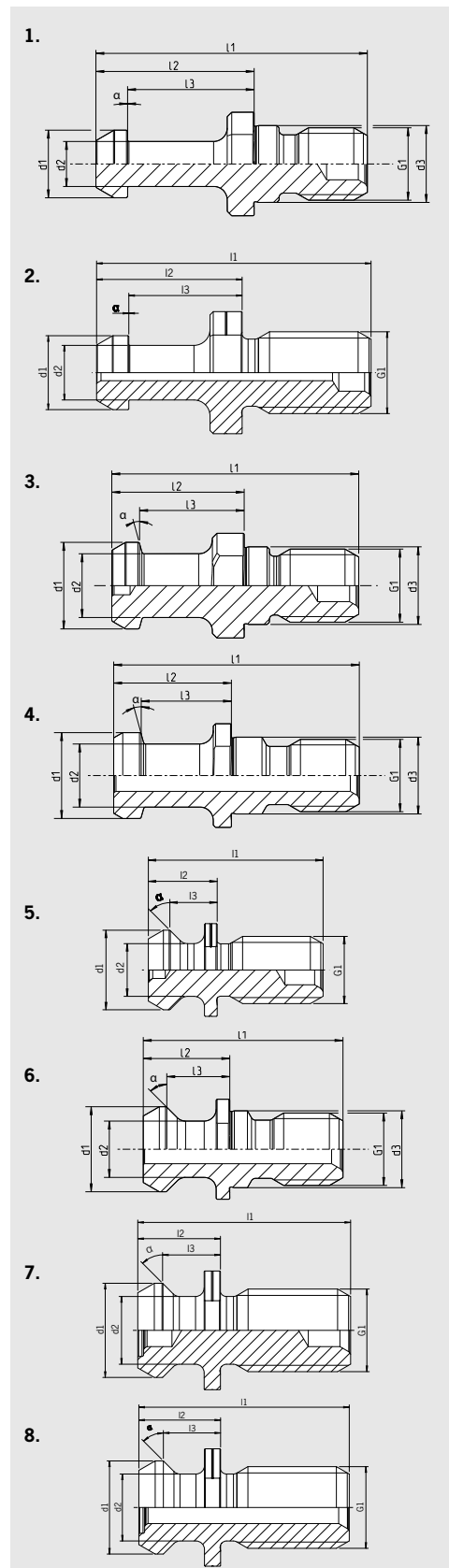


1. Similar ISO 7388-3 Form JF (MAS 403) without coolant through										
Order No.	D1	D2	D3	L1	L2	L3	G1	$\alpha$	pilot	
<b>CAT40</b>										
88.614.40	0.59"	0.39"	—	2.25"	1.27"	0.99"	5/8"-11UNC"	30°	—	
88.624.40	0.59"	0.39"	0.67"	2.25"	1.27"	0.99"	5/8"-11UNC"	30°	yes	
88.611.40	0.59"	0.39"	—	2.25"	1.27"	0.99"	5/8"-11UNC"	45°	—	
88.621.40	0.59"	0.39"	0.67"	2.25"	1.27"	0.99"	5/8"-11UNC"	45°	yes	
88.631.40*	0.59"	0.39"	—	2.42"	1.44"	1.16"	5/8"-11UNC"	45°	—	
<b>CAT50</b>										
88.614.50	0.91"	0.67"	—	3.35"	1.78"	1.39"	1"-8UNC"	30°	—	
88.624.50	0.91"	0.67"	1.06"	3.35"	1.78"	1.39"	1"-8UNC"	30°	yes	
88.611.50	0.91"	0.67"	—	3.35"	1.78"	1.39"	1"-8UNC"	45°	—	
88.621.50	0.91"	0.67"	1.06"	3.35"	1.78"	1.39"	1"-8UNC"	45°	yes	

2. Similar ISO 7388-3 Form JD (MAS 403) with coolant through										
Order No.	D1	D2	D3	L1	L2	L3	G1	$\alpha$	pilot	
<b>CAT40</b>										
88.615.40	0.59"	0.39"	—	2.25"	1.27"	0.99"	5/8"-11UNC"	30°	—	
88.625.40	0.59"	0.39"	0.67"	2.25"	1.27"	0.99"	5/8"-11UNC"	30°	yes	
88.613.40	0.59"	0.39"	—	2.25"	1.27"	0.99"	5/8"-11UNC"	45°	—	
88.623.40	0.59"	0.39"	0.67"	2.25"	1.27"	0.99"	5/8"-11UNC"	45°	yes	
88.627.40*	0.59"	0.39"	—	2.42"	1.44"	1.16"	5/8"-11UNC"	45°	—	
<b>CAT50</b>										
88.615.50	0.91"	0.67"	—	3.35"	1.78"	1.39"	1"-8UNC"	30°	—	
88.625.50	0.91"	0.67"	1.06"	3.35"	1.78"	1.39"	1"-8UNC"	30°	yes	
88.613.50	0.91"	0.67"	—	3.35"	1.78"	1.39"	1"-8UNC"	45°	—	
88.623.50	0.91"	0.67"	1.06"	3.35"	1.78"	1.39"	1"-8UNC"	45°	yes	

\* Special

# PULL STUDS INCH



**1. MORI - SEIKI MAS 90° without coolant through**

Order No.	D1	D2	D3	L1	L2	L3	G1	$\alpha$	pilot
<b>CAT40</b>									
88.111.40	0.59"	0.39"	—	2.25"	1.27"	0.99"	5/8"-11UNC"	0°	—
88.121.40	0.59"	0.39"	0.67"	2.25"	1.27"	0.99"	5/8"-11UNC"	0°	yes
88.131.40*	0.59"	0.39"	—	1.94"	0.96"	0.68"	5/8"-11UNC"	0°	—
<b>CAT50</b>									
88.111.50	0.91"	0.67"	—	3.35"	1.78"	1.39"	1"-8UNC"	0°	—
88.121.50	0.91"	0.67"	1.06"	3.35"	1.78"	1.39"	1"-8UNC"	0°	yes

**2. MORI - SEIKI MAS 90° with coolant through**

Order No.	D1	D2	D3	L1	L2	L3	G1	$\alpha$	pilot
<b>CAT50</b>									
88.113.50	0.91"	0.67"	—	3.35"	1.78"	1.39"	1"-8UNC"	0°	—

**3. JIS B 6339 without coolant through**

Order No.	D1	D2	D3	L1	L2	L3	G1	$\alpha$	pilot
<b>CAT40</b>									
88.711.40	0.75"	0.55"	—	2.01"	1.03"	0.79"	5/8"-11UNC"	15°	—
<b>CAT50</b>									
88.710.50	1.1"	0.83"	—	2.93"	1.35"	0.99"	1"-8UNC"	15°	—
88.720.50	1.1"	0.83"	1.06"	2.93"	1.35"	0.99"	1"-8UNC"	15°	yes

**4. JIS B 6339 with coolant through**

Order No.	D1	D2	D3	L1	L2	L3	G1	$\alpha$	pilot
<b>CAT40</b>									
88.710.40	0.75"	0.55"	—	2.01"	1.03"	0.79"	5/8"-11UNC"	15°	—
88.720.40	0.75"	0.55"	0.67"	2.01"	1.03"	0.79"	5/8"-11UNC"	15°	yes

**5. ANSI B5.50 Mazak without coolant through**

Order No.	D1	D2	D3	L1	L2	L3	G1	$\alpha$	pilot
<b>CAT40</b>									
88.511.40	0.74"	0.49"	—	1.62"	0.64"	0.44"	5/8"-11UNC"	45°	—

**6. ANSI B5.50 Mazak with coolant through**

Order No.	D1	D2	D3	L1	L2	L3	G1	$\alpha$	pilot
<b>CAT40</b>									
88.510.40	0.74"	0.49"	—	1.62"	0.64"	0.44"	5/8"-11UNC"	45°	—
88.520.40	0.74"	0.49"	0.67"	1.62"	0.64"	0.44"	5/8"-11UNC"	45°	yes

**7. ANSI B5.50 Mazak without coolant through (Sealing with O-Ring on face side)**

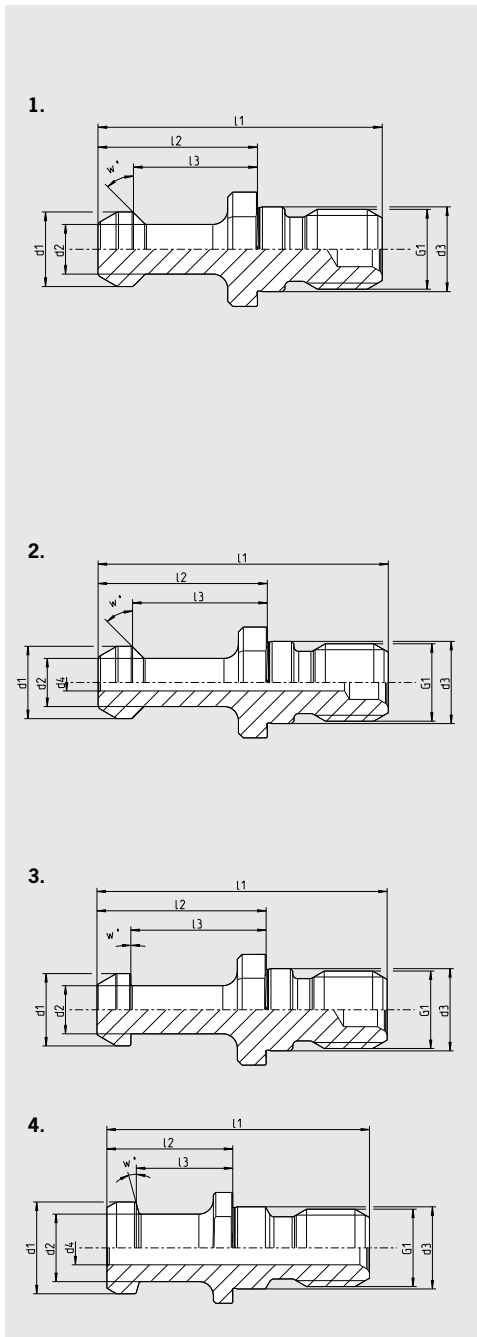
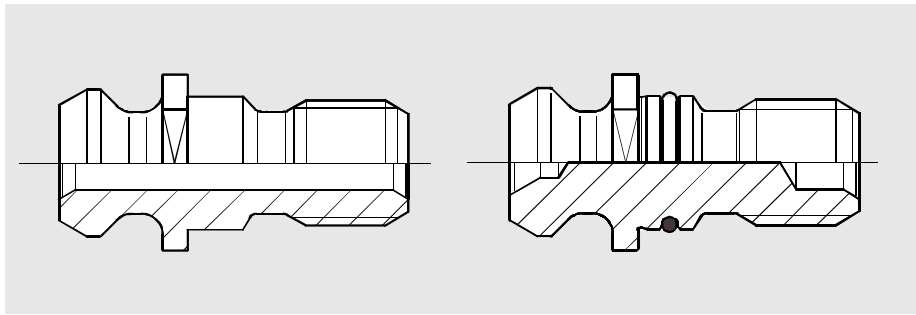
Order No.	D1	D2	D3	L1	L2	L3	G1	$\alpha$	pilot
<b>CAT50</b>									
88.511.50	1.14"	0.82"	—	2.57"	1"	0.70"	1"-8UNC"	45°	—

**8. ANSI B5.50 Mazak with coolant through (Sealing with O-Ring on face side)**

Order No.	D1	D2	D3	L1	L2	L3	G1	$\alpha$	pilot
<b>CAT50</b>									
88.510.50	1.14"	0.82"	—	2.57"	1"	0.70"	1"-8UNC"	45°	—
88.520.50	1.14"	0.82"	1.06"	2.57"	1"	0.70"	1"-8UNC"	45°	yes

\* Special

# PULL STUDS METRIC



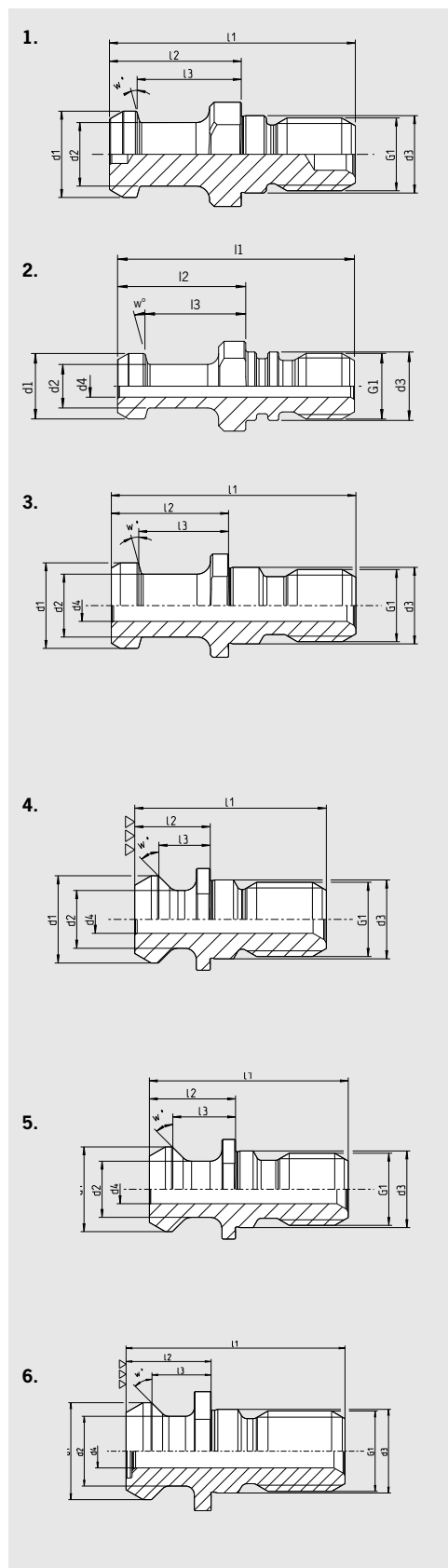
1. ISO 7388-3 Form JF without coolant through (former norm MAS 403 30°/45°)									
[mm]	d1	d2	d3	d4	l1	l2	l3	G1	w°
<b>BT30</b>									
<b>Order No. 88.604.30</b>	11	7	12.5	—	43	23	18	M12	30°
<b>BT30</b>									
<b>Order No. 88.601.30</b>	11	7	12.5	—	43	23	18	M12	45°
<b>BT40</b>									
<b>Order No. 88.604.40</b>	15	10	17	—	60	35	28	M16	30°
<b>BT40</b>									
<b>Order No. 88.601.40</b>	15	10	17	—	60	35	28	M16	45°
<b>BT50</b>									
<b>Order No. 88.604.50</b>	23	17	25	—	85	45	35	M24	30°
<b>BT50</b>									
<b>Order No. 88.601.50</b>	23	17	25	—	85	45	35	M24	45°

2. ISO 7388-3 Form JD with coolant through (former norm MAS 403 30°/45°)									
[mm]	d1	d2	d3	d4	l1	l2	l3	G1	w°
<b>BT30</b>									
<b>Order No. 88.605.30</b>	11	7	12.5	2.5	43	23	18	M12	30°
<b>BT30</b>									
<b>Order No. 88.600.30</b>	11	7	12.5	2.5	43	23	18	M12	45°
<b>BT40</b>									
<b>Order No. 88.605.40</b>	15	10	17	3.5	60	35	28	M16	30°
<b>BT40</b>									
<b>Order No. 88.603.40</b>	15	10	17	3.5	60	35	28	M16	45°
<b>BT50</b>									
<b>Order No. 88.605.50</b>	23	17	25	6	85	45	35	M24	30°
<b>BT50</b>									
<b>Order No. 88.603.50</b>	23	17	25	6	85	45	35	M24	45°

3. MORI – SEIKI MAS 90° without coolant through									
[mm]	d1	d2	d3	d4	l1	l2	l3	G1	w°
<b>BT40</b>									
<b>Order No. 88.101.40</b>	15	10	17	—	60	35	28	M16	0°
<b>BT50</b>									
<b>Order No. 88.101.50</b>	23	17	25	—	85	45	35	M24	0°

4. JIS B 6339 with coolant through									
[mm]	d1	d2	d3	d4	l1	l2	l3	G1	w°
<b>BT40</b>									
<b>Order No. 88.700.40</b>	19	14	17	7	54	29	23	M16	15°
<b>BT50</b>									
<b>Order No. 88.700.50</b>	28	21	25	10	74	34	25	M24	15°

# PULL STUDS METRIC



1. JIS B 6339 sealed [mm]	d1	d2	d3	d4	l1	l2	l3	G1	w°
<b>BT40</b>									
<b>Order No. 88.701.40</b>	19	14	17	—	54	29	23	M16	15°

2. Special: Similar ISO 7388-3 Form JD coolant through [mm] with pilot	d1	d2	d3	d4	l1	l2	l3	G1	w°
<b>BT40 shortened</b>									
<b>Order No. 88.702.30</b>	0.47	0.31	0.49	—	1.69	0.92	0.79	M12	15°

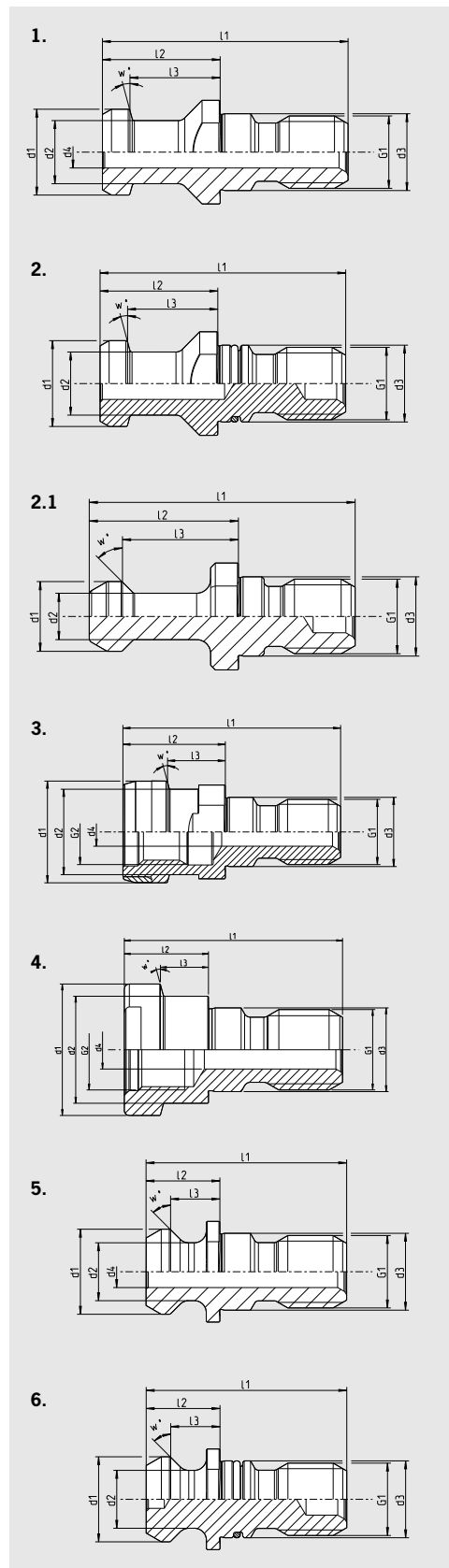
3. ISO 7388-2 Type A with coolant through [mm]	d1	d2	d3	d4	l1	l2	l3	G1	w°
<b>SK40</b>									
<b>Order No. 88.800.40</b>	19	14	17	7	54	26	20	M16	15°
<b>SK50</b>									
<b>Order No. 88.800.50</b>	28	21	25	11.5	74	34	25	M24	15°

4. ANSI B5.50 Mazak with coolant through sealing on face side and pilot [mm]	d1	d2	d3	d4	l1	l2	l3	G1	w°
<b>CAT40</b>									
<b>Order No. 88.500.40</b>	18.80	12.45	17	6	41.26	16.26	11.18	M16	45°
<b>CAT40 with pilot</b>									
<b>Order No. 88.500.40.1</b>	18.80	12.45	17	7	41.26	16.26	11.18	M16	45°
<b>CAT50</b>									
<b>Order No. 88.501.50N</b>	28.96	20.83	25	10	65.4	25.4	17.78	M24	45°

5. ANSI B5.50 Mazak with coolant through sealing on face side and pilot [mm]	d1	d2	d3	d4	l1	l2	l3	G1	w°
<b>CAT40 extended</b>									
<b>Order No. 88.900.40.1</b>	18.8	12.45	17	6.4	44.11	19.11	14.03	M16	45°

6. ANSI B5.50 Mazak with coolant through sealing on face side and pilot [mm]	d1	d2	d3	d4	l1	l2	l3	G1	w°
<b>CAT50</b>									
<b>Order No. 88.500.50</b>	28.96	20.83	25	10	65.4	25.4	17.78	M24	45°

# PULL STUDS METRIC



**1. ISO 7388-3 Form AD with coolant through (former norm DIN 69872 Form A)**

[mm]	d1	d2	d3	d4	l1	l2	l3	G1	w°
<b>SK 40</b>									
<b>Order No. 88.200.40</b>	19	14	17	7	54	26	20	M16	15°
<b>SK 50</b>									
<b>Order No. 88.200.50</b>	28	21	25	11.5	74	34	25	M24	15°

**2. ISO 7388-3 Form AF sealed (former norm DIN 69872 Form B)**

[mm]	d1	d2	d3	d4	l1	l2	l3	G1	w°
<b>SK 40</b>									
<b>Order No. 88.202.40</b>	19	14	17	—	54	26	20	M16	15°
<b>SK 50</b>									
<b>Order No. 88.202.50</b>	28	21	25	—	74	34	25	M24	15°

**2.1 Special:**  
Similar ISO 7388-3 Form JF without coolant through

[mm]	d1	d2	d3	d4	l1	l2	l3	G1	w°
<b>BT40 shortened</b>									
<b>Order No. 88.601.40.1</b>	15	10	17	—	57.1	32.15	25.15	M16	45°

**3. Ott-groove with inner thread**  
SK40 with protective ring of brass

[mm]	d1	d2	d3	d4	l1	l2	l3	G1	G2	w°
<b>SK40</b>										
<b>Order No. 88.303.40</b>	25	21.1	17	7	53	25	13.6	M16	M16	15°

**4. Ott-groove with inner thread**

[mm]	d1	d2	d3	d4	l1	l2	l3	G1	G2	w°
<b>SK50</b>										
<b>Order No. 88.303.50</b>	39.3	32	25	11.5	65	25	13.35	M24	M24	15°

**5. ISO 7388-3 Form UD with coolant through (former norm ISO 7388-2 Form B)**

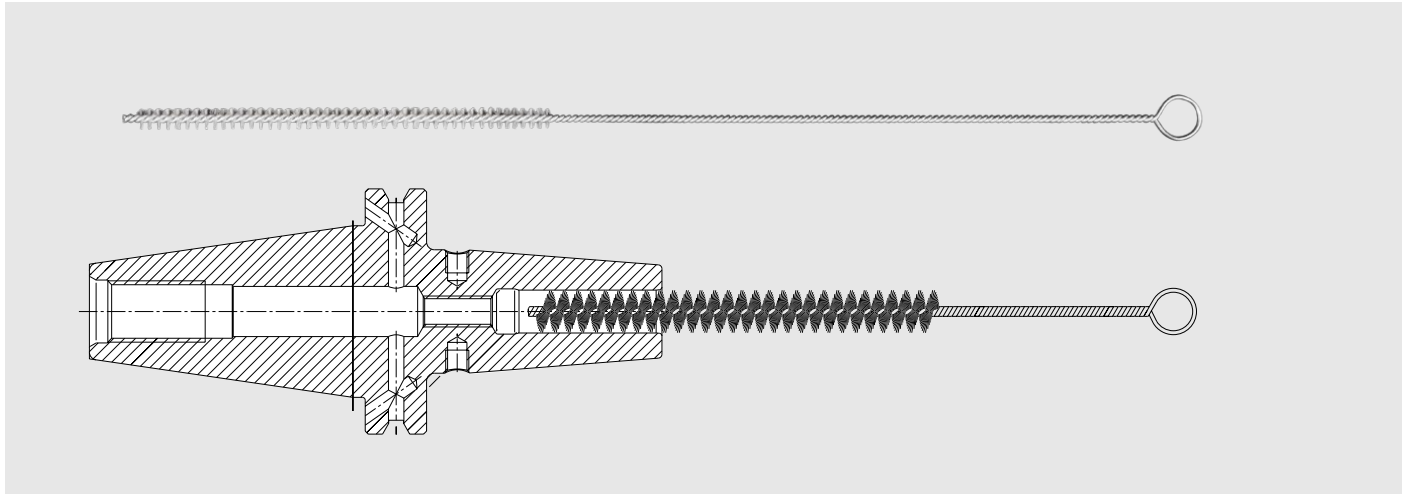
[mm]	d1	d2	d3	d4	l1	l2	l3	G1	w°
<b>SK 40</b>									
<b>Order No. 88.400.40</b>	18.95	12.95	17	7	44.5	16.4	11.15	M16	45°
<b>SK 50</b>									
<b>Order No. 88.400.50</b>	29.1	19.6	25	11.5	65.5	25.55	17.95	M24	45°

**6. ISO 7388-3 Form UF sealed (former norm ISO 7388-2 Form B)**

[mm]	d1	d2	d3	d4	l1	l2	l3	G1	w°
<b>SK 40</b>									
<b>Order No. 88.402.40</b>	18.95	12.95	17	—	44.5	16.4	11.15	M16	45°
<b>SK 50</b>									
<b>Order No. 88.402.50</b>	29.1	19.6	25	—	65.5	25.55	17.95	M24	45°



## SHRINK FIT BRUSHES

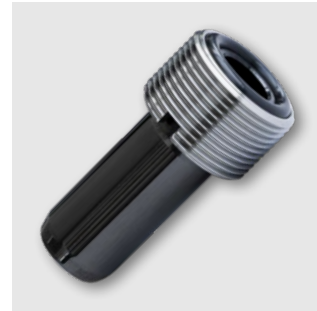
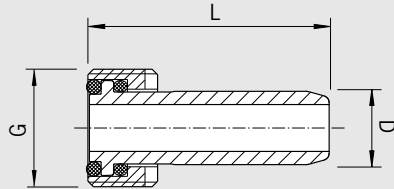


In order to achieve the best possible shrink fit connection, a grease free socket and shank is necessary. The cleaning can be done by a cold solvent (e.g. brake cleaner). An appropriate cleaning brush is necessary to clean the socket of the Shrink Fit Chuck.

Shrink Fit Brush Order No.	Ø [inch]
86.200.01	1/8" (3.175 mm)
86.200.02	3/16" (4.762 mm)
86.200.03	1/4" (6.35 mm)
86.200.03	5/16" (7.93 mm)
86.200.04	3/8" (9.525 mm)
86.200.04	7/16" (11.11 mm)
86.200.05	1/2" (12.7 mm)
86.200.06	5/8" (15.87 mm)
86.200.07	3/4" (19.05 mm)
86.200.08	1" (25.4 mm)

Shrink Fit Brush Order No.	Ø [mm]
86.200.01	3
86.200.02	3.5
86.200.02	4
86.200.02	4.5
86.200.02	5
86.200.03	6
86.200.03	8
86.200.04	10
86.200.04	12
86.200.06	14
86.200.06	16
86.200.07	18
86.200.07	20
86.200.08	25

## COOLANT TUBES

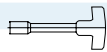


- Dual o-ring design makes tube slightly movable
- Coated steel with smooth surface for trouble-free insertion into the machine spindle
- Fits all brands of HSK holders
- Must be used with all coolant through HSK spindles

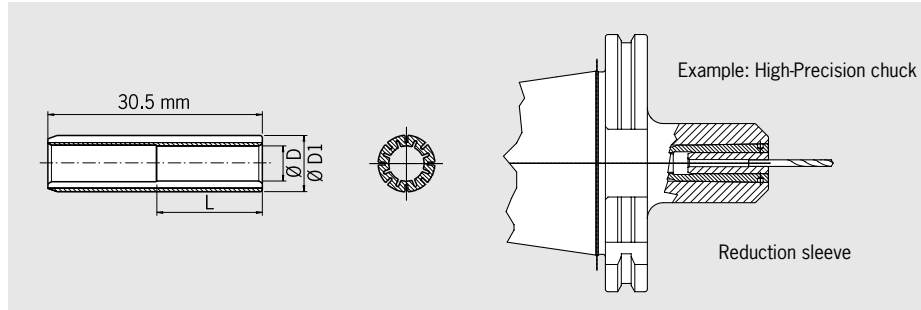
Coolant tube with 2 o-rings	HSK-E25	HSK-A32 HSK-E32	HSK-A40 HSK-E40	HSK-A50 HSK-E50	HSK-A63	HSK-A80	HSK-A100	HSK-A125
	<b>Order No. 85.700...</b>	<b>.25</b>	<b>.32</b>	<b>.40</b>	<b>.50</b>	<b>.63</b>	<b>.80</b>	<b>.10</b>
Length G [mm]	M8 x 1	M10 x 1	M12 x 1	M16 x 1	M18 x 1	M20 x 1.5	M24 x 1.5	M30 x 1.5
Length D [mm]	5	6	8	10	12	14	16	18
Length L [mm]	17	26	29,5	33	36,5	40	44	48

### Accessories

Wrench	HSK 25	HSK 32	HSK 40	HSK 50	HSK 63	HSK 80	HSK 100	HSK 125
<b>Order No. 84.500...</b>	<b>.25</b>	<b>.32</b>	<b>.40</b>	<b>.50</b>	<b>.63</b>	<b>.80</b>	<b>.100</b>	<b>.125</b>



## REDUCTION SLEEVES



**Use:**

For clamping small shanks in chucks with  $\varnothing 5/16"$  or 8 mm ID's.

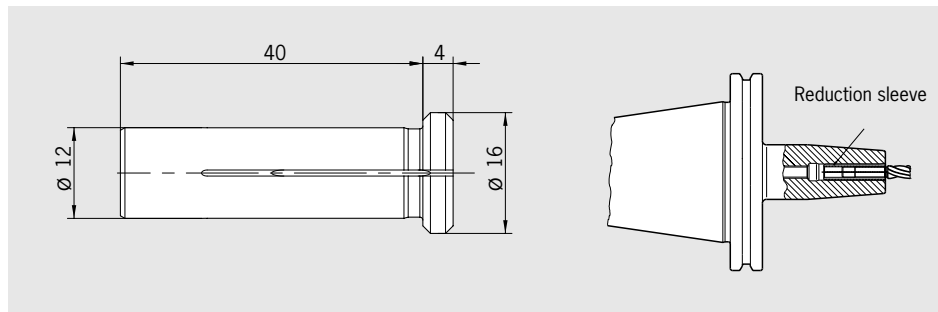
**For use in all chucks as reducers**

- High-Precision chucks
- Collet chucks
- Hydraulic chucks
- Shrink fit chucks
- Other high precision mechanical chucks

INCH		Ø D	Ø D1	L
Order No.	79.110.3/32Z	3/32"	5/16"	0.27"
Order No.	79.110.1/8Z	1/8"	5/16"	0.35"
Order No.	79.110.5/32Z	5/32"	5/16"	0.47"
Order No.	79.110.3/16Z	3/16"	5/16"	0.56"
Order No.	79.110.7/32Z	7/32"	5/16"	0.65"

METRIC		Ø D [mm]	Ø D1 [mm]	L [mm]
Order No.	79.110.2.5	2.5	8	7.5
Order No.	79.110.03	3	8	9
Order No.	79.110.3.5	3.5	8	10.5
Order No.	79.110.04	4	8	12
Order No.	79.110.4.5	4.5	8	13.5
Order No.	79.110.05	5	8	15
Order No.	79.110.5.5	5.5	8	16.5

## REDUCTION SLEEVES FOR SHRINK FIT CHUCKS



**Use:**

For clamping small shanks in chucks with 12 mm ID's.  
Shank tolerance h6.

First step: Insert reduction sleeve into bore of chuck by shrink process.  
Second step: clamp tool shank in reduction sleeve.

METRIC		Clamping Ø D [mm]
Order No.	79.150.03	3
Order No.	79.150.04	4
Order No.	79.150.06	6

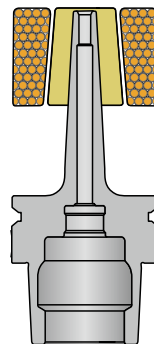
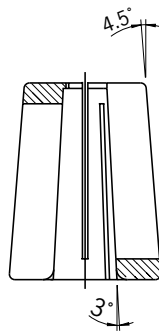
# MINI SHRINK SHRINK AND COOLING SLEEVES



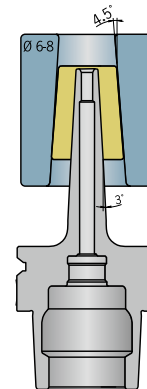
### For shrinking and cooling of Mini Shrink chucks.

- Protects Mini Shrink chucks from overheating
- Extends lifetime of shrink fit chucks
- Secure and user friendly handling
- Cooling with standard cooling body 6 mm – 8 mm

### Function



**Heat up**  
With shrink and cooling sleeve

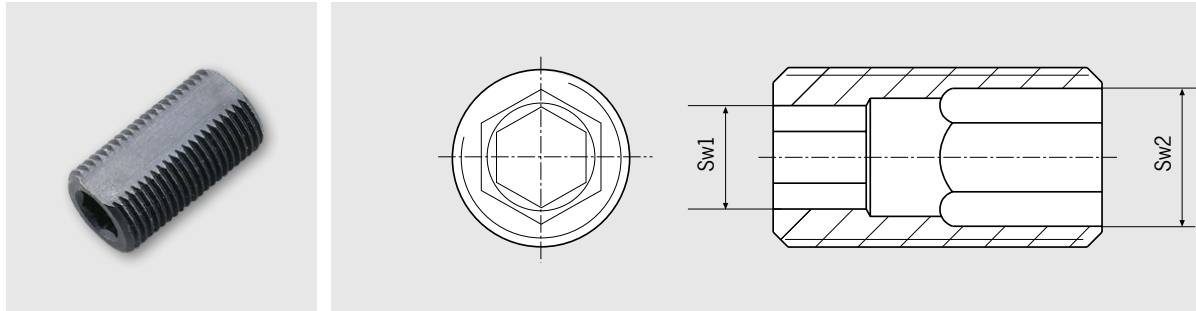


**Cool down**  
With shrink and cooling sleeve  
and cooling body  $\varnothing$  6–8 mm



Shrinking and cooling sleeves for Mini Shrink chucks								Order No.	
<b>Extra slim</b>									
Size [mm]	$\varnothing$ 03	$\varnothing$ 04	$\varnothing$ 05	$\varnothing$ 06	$\varnothing$ 08	$\varnothing$ 10	$\varnothing$ 12		
Size [inch]	$\varnothing$ 1/8	—	$\varnothing$ 3/16	$\varnothing$ 1/4	$\varnothing$ 5/16	$\varnothing$ 3/8	$\varnothing$ 1/2		
Order No. 80.105.14...	.2.01	.2.02	.2.03	.2.04	.2.05	.2.06	.2.07		
<b>Standard</b>									
Size [mm]	$\varnothing$ 03	$\varnothing$ 04	$\varnothing$ 05	$\varnothing$ 06	$\varnothing$ 08	$\varnothing$ 10	$\varnothing$ 12	$\varnothing$ 16	
Size [inch]	$\varnothing$ 1/8	—	$\varnothing$ 3/16	$\varnothing$ 1/4	$\varnothing$ 5/16	$\varnothing$ 3/8	$\varnothing$ 1/2	$\varnothing$ 5/8	
Order No. 80.105.14...	.2.04	.2.08	.2.05	.2.09	.2.10	.2.11	.2.12	.2.16	
<b>Base</b>								80.105.14.2.99	
<b>Set with base (12 pcs., diameter 3 – 12 mm)</b>								80.105.14.2.00	

## BACK-UP SCREWS FOR SHRINK FIT CHUCKS & POWER COLLET CHUCKS



- Hexagon socket on each end – can always be reached
- Flats on sides for optimized coolant drainage
- Fine thread for maximum accuracy

### For Shrink Fit Chucks

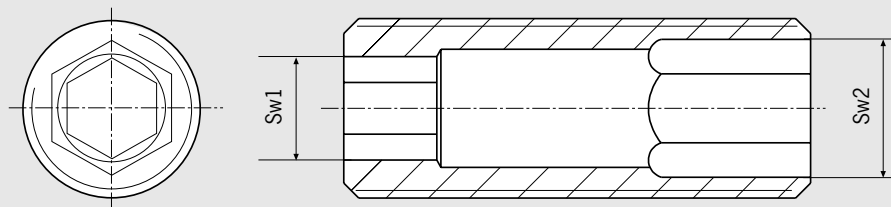
Clamping Ø		CAT40/50 SK 40/50 BT 40/50	HSK-A 32/E 32 A 40/E 40	HSK-A50/ E 50	HSK-A63	HSK-F 63	HSK-A 80	HSK-A 100
6 mm / ¼"	<b>Length Order No. 85.810...</b>	.12.1	.12.1	.12.1	.12.1	.12.1	.12.1	.12.1
8 mm / 5/16"		.15.1	.15.1	.15.1	.15.1	.15.1	.15.1	.15.1
10 mm / 3/8"	short other	.18.2 .18.2	.18.2 .36.2	.18.2 .36.2	.18.2 .36.2	.18.2 .36.2	.18.2 .36.2	.18.2 .36.2
12 mm / ½"	short other	.24.2 .24.2	.24.2 .24.2	.39.2 .24.2	.39.2 .24.2	.39.2 .24.2	.21.2 .24.2	.21.2 .24.2
14 mm / 9/16"	short ZG130/oversize	.24.2 .24.2	.24.2 .24.2	.39.2 .24.2	.39.2 .24.2	- -	.21.2 .24.2	.21.2 .24.2
16 mm / 5/8"	short ZG130/oversize	.46.2 .46.2	.27.2 .27.2	.25.2 .38.2	.25.2 .46.2	.25.2 <sup>1)</sup> .46.2 <sup>1)</sup>	.27.2 .46.2	.40.1 .46.2
18 mm	short ZG130/oversize	.46.2 .46.2	- -	.25.2 .38.2	.25.2 .46.2	- -	.27.2 .46.2	.40.1 .46.2
20 mm / ¾"	short ZG130/oversize	.52.2 .52.2	- -	.51.2 .52.2	.51.2 .52.2	.51.2 <sup>1)</sup> .52.2 <sup>1)</sup>	.51.2 .52.2	.51.2 .52.2
25 mm / 1"	short ZG130/oversize	.52.2 .52.2	- -	- -	.52.2 .52.2	.52.2 <sup>1)</sup> .52.2 <sup>1)</sup>	.52.2 .52.2	.52.2 .52.2
32 mm / 1¼"	short ZG130/oversize	.52.2 .52.2	- -	- -	.52.2 .52.2	- -	.52.2 .52.2	.52.2 .52.2

### For Shrink Fit Chucks & Power Collet Chucks

Order No.	SW1	SW2	Thread	Also usable for Power Collet Chucks	Order No.	SW1	SW2	Thread	Also usable for Power Collet Chucks
85.810.12.1	SW2.5	SW2.5	M5x0.8x16		85.810.21.2	SW4	SW5	M10x1x16	
85.810.15.1	SW3	SW3	M6x1x16		85.810.38.2	SW5	SW6	M12x1x22	ER25
85.810.18.2	SW3	SW4	M8x1x16	ER16	85.810.39.2	SW4	SW5	M10x1x18	
85.810.24.2	SW4	SW5	M10x1x20		85.810.40.1	SW6	SW6	M12x1x16	ER25
85.810.25.2	SW5	SW6	M12x1x18	ER25	85.810.43.2	SW5	SW8	M12x1x18	ER25
85.810.27.2	SW4	SW6	M12x1x18	ER25	85.810.44.2	SW5	SW8	M12x1x22	ER25
85.810.36.2	SW3	SW4	M8x1x20	ER16	85.810.45.2	SW6	SW8	M12x1x18	ER25
85.810.46.2	SW6	SW6	M12x1x20	ER25	85.810.51.2	SW5	SW8	M16x1x18	ER32
					85.810.52.2	SW6	SW8	M16x1x22	ER32

1) Only adjustable through clamping bore

## BACK-UP SCREWS FOR SHRINK FIT CHUCKS & POWER COLLET CHUCKS



- Hexagon socket on each end – can always be reached
- Flats on sides for optimized coolant drainage
- Fine thread for maximum accuracy

### For Shrink Fit Chucks

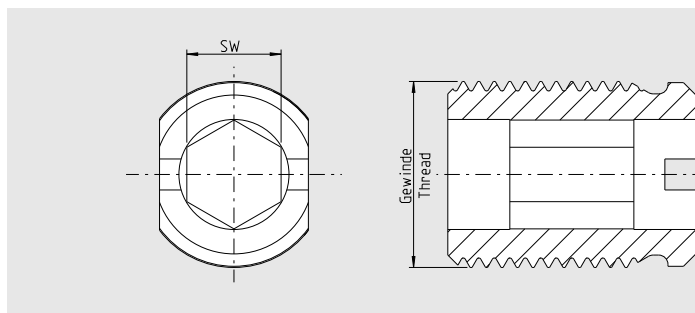
Clamping Ø		CAT40/50 SK 40/50 BT 40/50	HSK-A 32/E 32 A 40/E 40	HSK-A 50 E 50	HSK-A 63	HSK-F 63	HSK-A 80	HSK-A 100
6 mm / ¼"	Length Order No. 85.810...	.12.4	.12.4	.12.4	.12.4	.12.4	.12.4	.12.4
8 mm / 5/16"		.15.4	.15.4	.15.4	.15.4	.15.4	.15.4	.15.4
10 mm / 3/8"		.18.4	.18.4	.18.4	.18.4	.18.4	.18.4	.18.4
12 mm / ½"		.21.4	.21.4 <sup>1)</sup>	.21.4	.21.4	.21.4	.21.4	.21.4
14 mm / 9/16"		.21.4	.21.4	.21.4	.21.4	.21.4	.21.4	.21.4
16 mm / 5/8"	short	.37.4	.27.4	.25.4	.25.4	.25.4 <sup>1)</sup>	.27.4	.40.4
	ZG130/oversize	.37.4	.27.4	.25.4	.37.4	.37.4 <sup>1)</sup>	.37.4	.37.4
18	short	.37.4	–	.25.4	.25.4	.25.4 <sup>1)</sup>	.27.4	.40.4
	ZG130/oversize	.37.4	–	.25.4	.37.4	.37.4 <sup>1)</sup>	.37.4	.37.4
20 mm / ¾"	short	.52.4	–	.52.4	.52.4	.52.4 <sup>1)</sup>	.52.4	.52.4
	ZG130/oversize	.52.4	–	.52.4	.52.4	.52.4 <sup>1)</sup>	.52.4	.52.4
25 mm / 1"		.52.4	–	–	.52.4	.52.4 <sup>1)</sup>	.52.4	.52.4
32 mm / 1¼"		.52.4	–	–	.52.4	.52.4 <sup>1)</sup>	.52.4	.52.4

### For Shrink Fit Chucks & Power Collet Chucks

Order No.	SW1	SW2	Thread	Also usable for Power Collet Chucks
85.810.12.4	SW2.5	SW2.5	M5x0.8x24	
85.810.15.4	SW3	SW3	M6x1x24	
85.810.18.4	SW3	SW4	M8x1x24	ER16
85.810.21.4	SW4	SW5	M10x1x28	
85.810.37.4	SW6	SW8	M12x1x34	ER25
85.810.43.4	SW5	SW8	M12x1x34	ER25
85.810.25.4	SW5	SW6	M12x1x34	ER25
85.810.27.4	SW4	SW6	M12x1x34	ER25
85.810.52.4	SW6	SW8	M16x1x34	ER32

1) Only adjustable through clamping bore

## BACK-UP SCREWS FOR POWER SHRINK CHUCKS



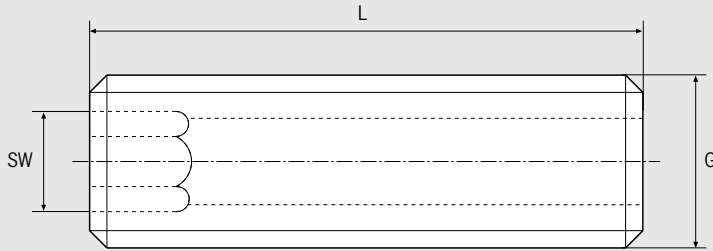
- Optimized for Shrink Fit Chucks with Cool Jet
- Guaranteed coolant supply via transverse groove
- Hexagon socket on each end – can always be reached
- Flats on sides for optimized coolant drainage
- Fine thread for maximum accuracy

[mm]	Type	CAT40/50 SK40/50 BT40/50	HSK-A32/E32 A40/E40	HSK-A50/ E50	HSK-A63	HSK-F63	HSK-A80	HSK-A100
	<b>Length Order No.</b>							
6 mm / ¼"	<b>85.810...</b>	.12.3	.12.3	.12.3	.12.3	.12.3	.12.3	.12.3
8 mm / 5/16"		.15.3	.15.3	.15.3	.15.3	.15.3	.15.3	.15.3
10 mm / 3/8"		.18.3	.18.3	.18.3	.18.3	.18.3	.18.3	.18.3
12 mm / ½"	ultra short	.48.3	.48.3	.48.3	.48.3	.48.3	.48.3	.48.3
		.48.3.1	—	—	—	—	—	—
14 mm / 9/16"		.21.3	.21.3	.21.3	.21.3	—	.21.3	.21.3
16 mm / 5/8"	ultra short	.49.3	.49.3	.49.3	.49.3	.49.3	.49.3	.49.3
		.49.3.1	—	—	—	—	—	—
18 mm		.40.3	—	.40.3	.40.3	—	.40.3	.40.3
20 mm / ¾"		.51.3	—	.51.3	.51.3	.51.3	.51.3	.51.3
25 mm / 1"		.52.3	—	—	.52.3	—	.52.3	.52.3
32 mm / 1¼"		.52.3	—	—	.52.3	—	.52.3	.52.3

Order No.	SW	Thread
<b>85.810.12.3</b>	SW2.5	M5x0.8x16
<b>85.810.15.3</b>	SW3	M6x1x16
<b>85.810.18.3</b>	SW4	M8x1x16
<b>85.810.21.3</b>	SW5	M10x1x16
<b>85.810.40.3</b>	SW6	M12x1x16
<b>85.810.43.3</b>	SW6	M12x1x18
<b>85.810.46.3</b>	SW6	M12x1x20
<b>85.810.48.3</b>	SW5	M10x1x16

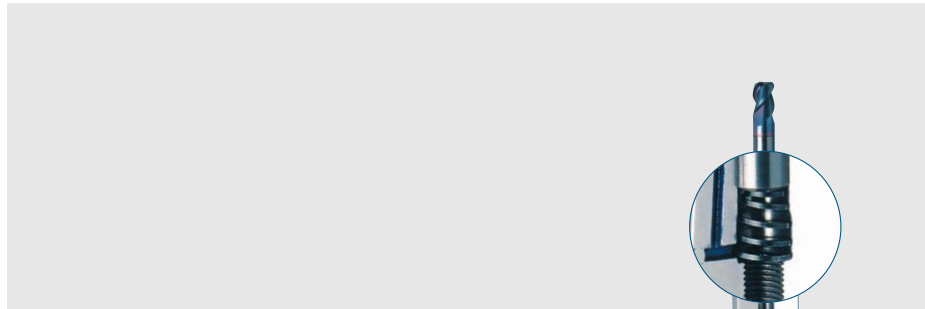
Order No.	SW	Thread
<b>85.810.48.3.1</b>	SW5	M10x1x28
<b>85.810.49.3</b>	SW6	M12x1x16
<b>85.810.49.3.1</b>	SW6	M12x1x20
<b>85.810.51.3</b>	SW6	M16x1x18
<b>85.810.52.3</b>	SW6	M16x1x20

## BACK-UP SCREWS FOR COLLET CHUCKS



Size Ø [mm]	HSK-32, 40, 50, 63, 80, 100	SW	L [mm]	Thread
ER 16	<b>Order No. 85.800.34</b>	3	25	M6
ER 20	<b>85.800.34</b>	3	25	M6
ER 25	<b>85.800.34</b>	3	25	M6
ER 32	<b>85.800.35</b>	5	25	M10
ER 40	<b>85.800.35</b>	5	25	M10

## TENSION SPRINGS FOR SHRINK FIT CHUCKS



- Spring is set into clamping bore
- Spring presses tool against stop disk
- Fits all common shrink fit chucks
- Back-up screw can remain in chuck

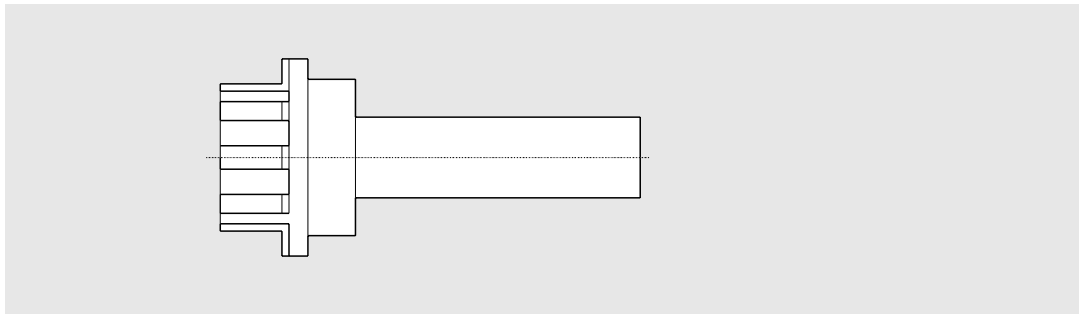


Tension spring for length presetting

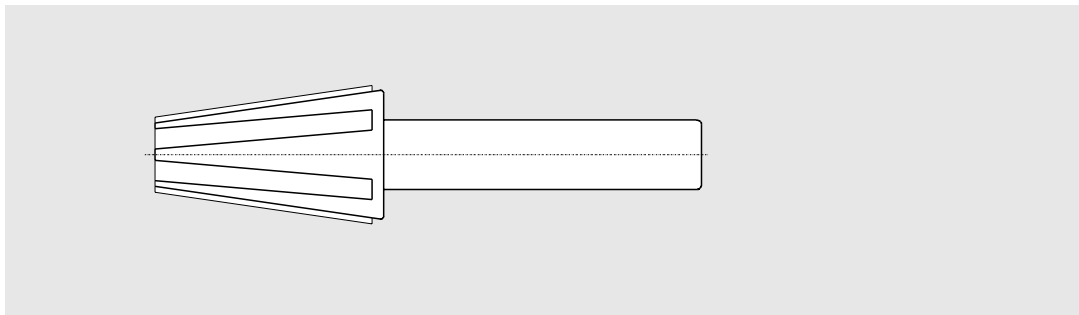
Tension springs										Order No.	
Size [mm]	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20	Ø 25	Ø 32	
Size [inch]	Ø ¼	Ø 5/16	Ø 3/8	Ø ½	—	Ø 5/8	—	Ø ¾	Ø 1	Ø 1 ¼	
Order No.	<b>85.830...</b>	<b>.06</b>	<b>.08</b>	<b>.10</b>	<b>.12</b>	<b>.14</b>	<b>.16</b>	<b>.18</b>	<b>.20</b>	<b>.25</b>	<b>.32</b>
Tension spring set (10 pcs. of each size) incl. pull-out gripper											<b>85.830.00</b>



CONE WIPER

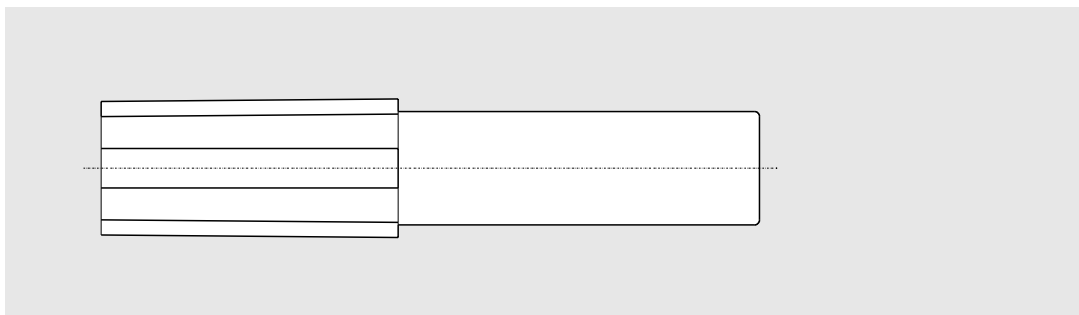


Cone wiper HSK	HSK-32	HSK-40	HSK-50	HSK-63	HSK-80	HSK-100
Order No. 85.820...	.32	.40	.50	.63	.80	.10



Cone wiper CAT, BT, SK	CAT/BT/SK 30	CAT/BT/SK 40	CAT/BT/SK 50
Order No. 86.100...	.30	.40	.50

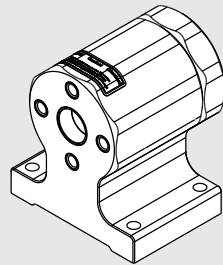
Cone wiper MK	MK 01	MK 02	MK 03	MK 04
Order No. 86.100...	.01	.02	.03	.04



Cone wiper HG	HG 01	HG 02	HG 03
Order No. 82.590...	.01	.02	.03

For cleaning the inner cone of HG chucks

## TOOL ASSEMBLY DEVICE TOOL CLAMP WITH VARIOUS ADAPTERS



### Tool Clamp – Tool-assembly device:

- Secure tool assembly with minimal physical effort
- Quick-change function for different taper interfaces – without additional tools
- Accident-free assembly of cutting tools
- Elastic locking bolt
- Mechanical security pin
- Better tool clamping, thanks to optimum ergonomics
- Replaceable brass inserts protect the taper surface
- Required space 140 x 100 mm



Tool Clamp

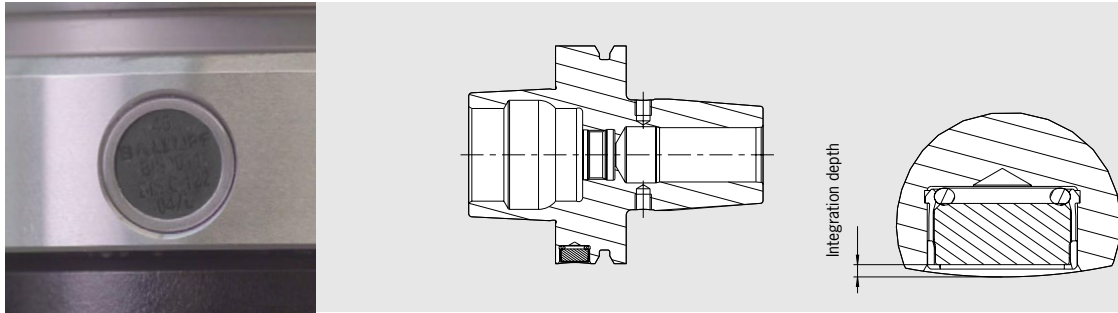


Tool holder SK

Tool Clamp – without tool holder, 4 x 90° indexable	
Order No.	84.700.00
Tool holder CAT/BT/SK	
Order No.	Type
84.701.30	CAT/BT/SK 30
84.701.40	CAT/BT/SK 40
84.701.50	CAT/BT/SK 50
Tool holder HSK-A	
Order No.	Type
84.702.40	HSK-A40
84.702.50	HSK-A50
84.702.63	HSK-A63
84.702.80	HSK-A80
84.702.10	HSK-A100
Tool holder HSK-C/HSK-E	
Order No.	Type
84.703.25	HSK-C/E25
84.703.32	HSK-C/E32
84.703.40	HSK-C/E40
84.703.50	HSK-C/E50
84.703.63	HSK-C/E63
84.703.80	HSK-C/E80
Tool holder HSK-F	
Order No.	Type
84.704.63.M	HSK-F63 MAKINO
84.704.80.M	HSK-F80 MAKINO
Tool holder PSC	
Order No.	Type
84.705.32	PSC 32
84.705.40	PSC 40
84.705.50	PSC 50
84.705.60	PSC 63
Tool holder KM4X100*	
Order No.	Type
84.706.4X100	KM4X*

\*KM4X is a registered trademark/tradename of Kennametal Inc.

## DATA-LOCK MECHANICAL DATA CARRIER LOCKING SYSTEM



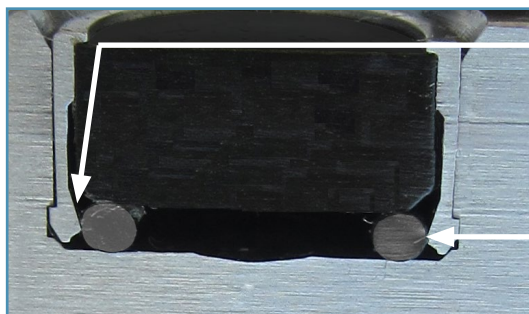
The mechanical RFID data carrier locking system locks the data carrier by a form and press fit into the tool holder. Especially for higher rpm ranges the new system provides high process reliability.

**Advantages:**

- Process reliability even at high rotations thanks to mechanical locking
- Less integration depth than comparable mechanical locking systems
- Process reliability at the reading/writing process thanks to the reduced integration depth
- Fine balanced tool holder after data carrier assembly
- Immediately ready to use
- Possible also for non-HAIMER holders
- Patent pending

**Delivery includes:**

- Modification of the data carrier bore
- Sleeve for the data carrier
- Seal ring
- Mounting of data carrier
- Fine balancing



Sleeve is clamped by form and press fit into the tool holder

Seal ring locks data carrier in the sleeve



Detail Data-Lock cut-away model

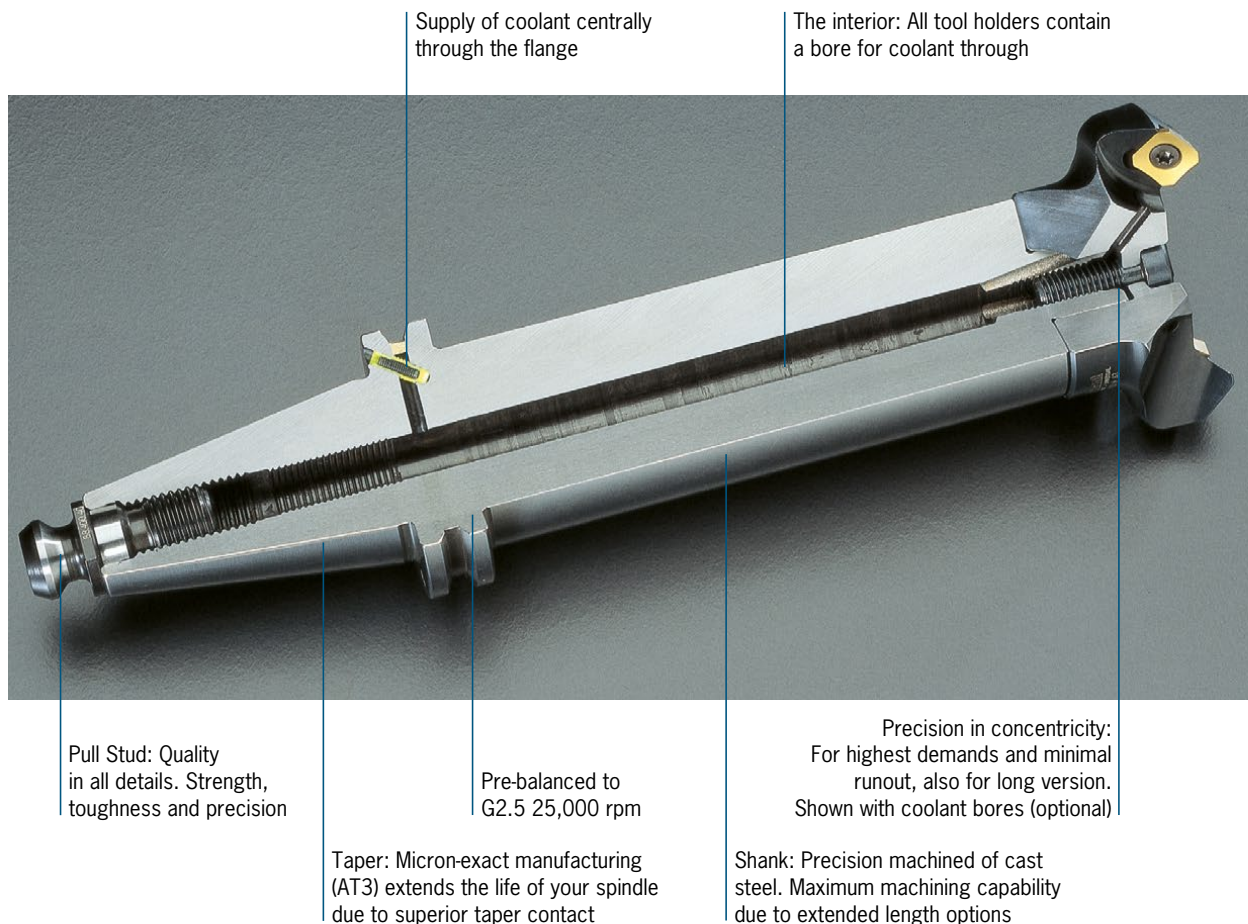
	Order No.
Mounting on HAIMER holders incl. fine balancing	91.100.06
Mounting on different holders incl. fine balancing	91.100.07

## TECHNICAL DATA

## TAPER AND HOLDER SPECIFICATIONS

**Features and Benefits:**

- Taper: Micron-exact manufacturing (AT3) extends the life of your spindle due to superior taper contact
- All tapers inspected during production to ensure maximum taper contact = maximum accuracy
- All tool holders easily balanceable
- Tapers Form ADF. Central coolant supply through the pull stud (Form AD, pull stud drilled through) and coolant channels through the flange (Form AF, pull stud sealed) which can be sealed again
- Minimal runout
- All holders marked with an identification number
- All holders come standard with pocket for data chip (Except BT, HSK-E and HSK-F tapers)
- Pre-balanced to G 2.5 at 25,000 RPMs
- Fine balancing optional
- Many tapers available
- 3 piece minimum order quantity on specials or discontinued items



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In general all order transactions and deliveries are based on our terms of delivery and payment.

# IMPORTANT SAFETY INSTRUCTIONS FOR METAL CUTTING AND MACHINE OPERATION

**Please read the following information prior to using the products in this catalog**

## **Sudden Projectile and Shattering Hazards:**

High spindle speeds, cutter speeds, high temperatures, cutting forces, and a variety of liquids and oils are all part of metal cutting operations today.

For example, during the machining process, hot metal chips may fly off the work piece and, even though cutting tools are created to tolerate high temperatures and cutting forces, they can sometimes break or chip especially if they are exposed to overstraining during the cutting process, extreme impact or other abuse.

## **Avoid injury by:**

- Using appropriate personal protection equipment when working with or being near a metal cutting machine
- Ensuring all machine guards are in place
- Confirming all products are adhering to the product manufacturer's instructions and safety guidelines

## **Respiratory and Physical Contact Hazards:**

Grinding carbide or other cutting tool materials and working with cooling systems create a dust containing harmful metallic particles. Breathing in this dust, especially over a long period of time, can cause short term or permanent lung infections, disease or make preexisting medical conditions more intolerable. In addition, this dust may irritate eyes, skin and may make skin conditions worse.

## **Avoid injury by:**

- Wearing a face shield or mask and safety goggles when grinding or working next to someone who is grinding materials
- Using ventilation control and cooling while grinding and properly collect/dispose of dust or sludge.
- Avoiding skin contact with the dust by wearing safety clothes with long sleeves and pants.

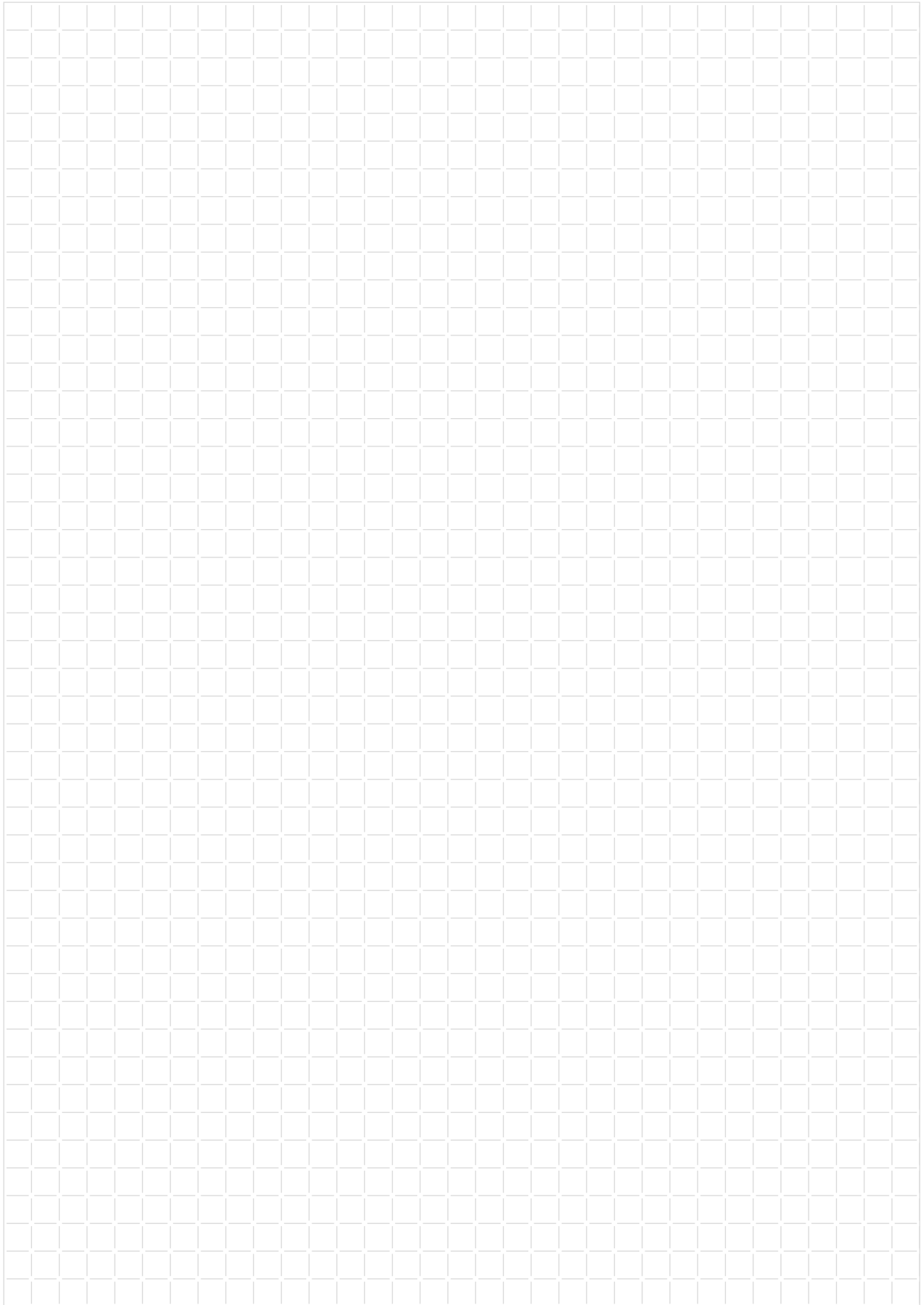
## **Machine Operation Safety:**

Before operating any of the displayed HAIMER machines please carefully read the instruction manual and comply with the safety instructions and provisions. Any HAIMER machine shall only be used by competent staff, which is accordingly instructed in the machine handling as described in the user's manual and during training and installation of the machine.

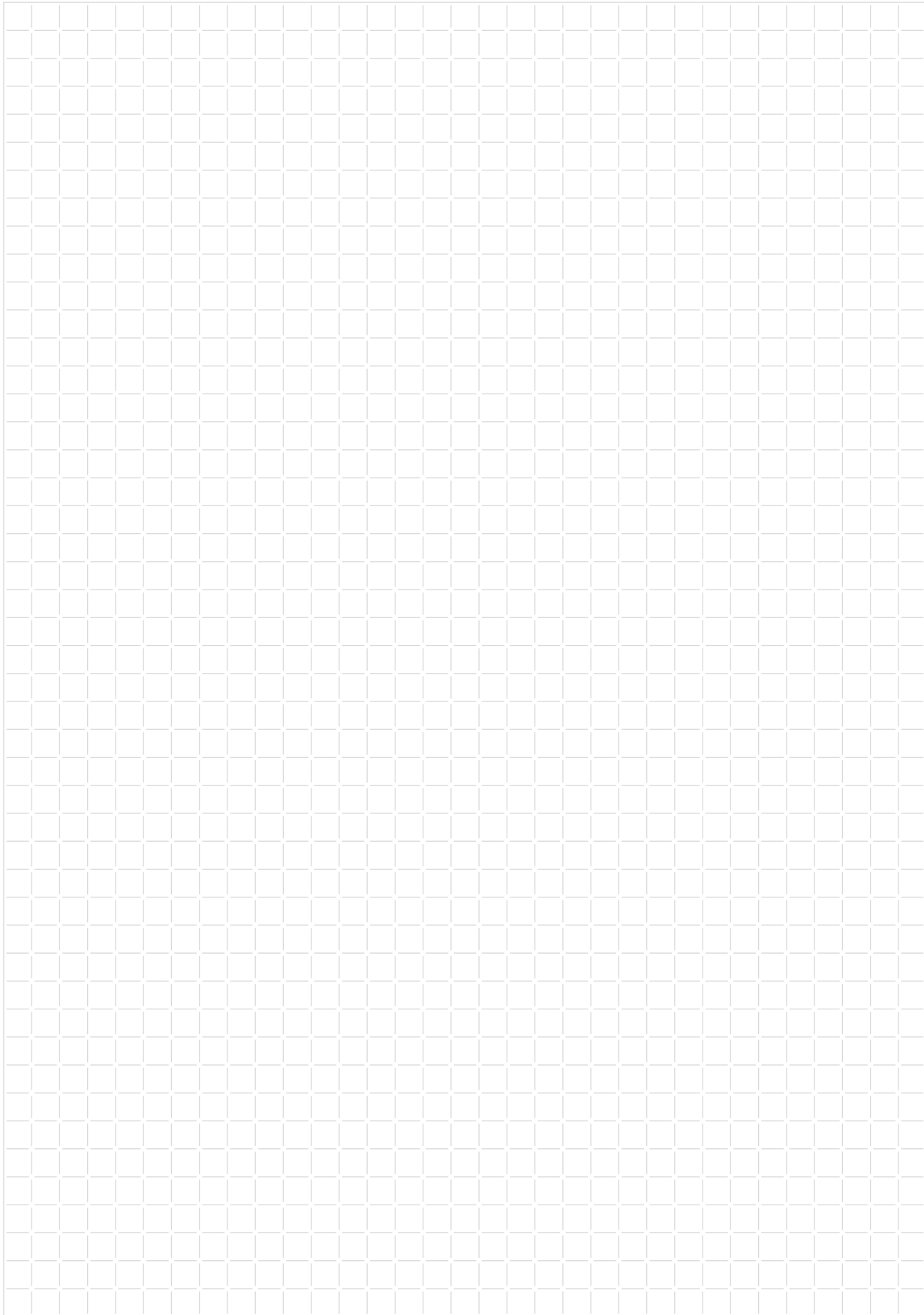
For more information, consult General Industry Safety and Health Regulations, Part 1910, Title 29 of the Code of Federal Regulations.

Please consider these safety instructions as general guidelines. It is impossible to cover every specific situation because there are many variables that affect machining operations. Please also consider that the technical information included in this catalog and recommendations on machining practices may not be applicable for your particular operation. For more information, product safety and environmental questions, contact your local HAIMER office. Contact addresses can be found at our official homepage [www.haimer.com](http://www.haimer.com).

FOR YOUR NOTES



FOR YOUR NOTES



# TERMS OF DELIVERY AND PAYMENT (OCTOBER 2020)

## I. Generalities

The following conditions apply to all business transactions - also those in the future - with the customer. Our sales and shipping conditions apply exclusively; we do not recognize other conditions as well as especially contrary or otherwise differing conditions on the part of the customer, unless we explicitly approve of the validity of those conditions. Our sales and shipping conditions also apply in the event that we acknowledge contrary or differing conditions on the side of the customer and unreservedly fulfill the order. All agreements reached between ourselves and the customer must be in written form in order to be valid. Our sales and shipping conditions apply exclusively towards registered businessmen/businesswomen if the contract is integrated in operating their business and towards legal entities under public law and separate estates or assets under public law.

## II. Prices/Price changes, shipping

- Our prices offered are US dollar prices, and do not include value-added tax. Therefore, value-added tax must be added to the prices at the rate determined by the law applicable at the time. If not agreed specifically otherwise, our prices are only applied to self-off claims if his counterclaims have become res judicata, are uncontested or recognized by ourselves. In the event of contested counterclaims, the customer has no right of retention.
- Our prices offered are applicable only for the dates of order upon which the offers are based. Subsequent changes or additions upon request or at the instigation of the customer, including additional costs incurred by the above, shall be charged additionally. The same applies for additional costs which might arise as the result of the above from machine down-time. In the event of changes in wages or material costs which arise either between making the offer and the placing of the order, or at any time exceeding four months following completion of contract, we reserve the right to adjust the price accordingly.
- Shipping of goods occurs at the expense and risk of the customer in which they always assume the additional cost of packaging following the current valid price of Haimer or the relevant valid offer. Inasmuch as goods are shipped at cost and risk of the customer at the customer's request, our liability, as far as is legally permissible, is limited to damage caused intentionally or by gross negligence. At the customer's written request, and at his own expense, goods may be shipped insured by ourselves against theft, breakage, damage to or loss of goods in transit, fire and water damage, or against such other risks as may be expressed explicitly by the customer insofar as such are insurable.
- As far as can be reasonably expected on the part of the customer, partial shipments are permissible.

## III. Payment

- The goods are to be paid in full, no deductions, within 30 calendar days of date of invoice.
- Bills of exchange are only accepted upon special agreement and on account of performance without allowance for discount. Discounting and bill charges shall be borne by the customer and become due for payment immediately. We are not liable for the timely presentation of a bill of exchange, its due protest, due notice, or the return of an unpaid bill, unless we or our vicarious agents are guilty of damage by intention or gross negligence.
- The customer is only entitled to set-off claims if his counterclaims have become res judicata, are uncontested or recognized by ourselves. In the event of contested counterclaims, the customer has no right of retention.
- In the case of uncontested counterclaims, the customer can only claim a right of retention regarding asserted claims which are based upon the same contractual relationship.

## IV. Delay in Payment & Force Majeur

- In the event of delay in payment, we are entitled to charge the legal rate of interest on overdue payments, i.e. the rate of 9% plus the basic annual interest rate current at the time in question and a lump sum of \$ 45.00 per overdue amount; this notwithstanding, we explicitly reserve the right to assert claims regarding additional damages. If the rate of interest is not claimed initially this shall not exclude a later enforcement in the frames of the legal limitation; in this regard a forfeiture is excluded.
- Should we become aware of circumstances which call into question the customer's creditworthiness and therefore deem our claim for payment to be at risk, particularly if the initiation of insolvency proceedings are filed for - or if insolvency proceedings are opened against the customer's property, or if a check is not honored, or the customer stops payments respectively is in extensive default of the payment with collection threat, then we are entitled to declare the residual debt due immediately and to demand immediate payment. Further, we are then entitled to demand advance payment or provisions of security, and to retain the goods until payment, advance payment, or provisions of security are made, and to discontinue processing running orders until the same. If a change of the order required by the customer affects the production time, we can claim for a new delivery time adjusted to the new circumstances.
- Delay of delivery or performance caused by force majeure, caused by circumstances that are beyond our control and caused by incidents which do make the delivery not only temporarily difficult or impossible - this is especially strike, lock out, intervention of public administration, act of war, riots, pandemic, lack of energy, destruction or damage of our production and operating units, which were beyond our control as well as stoppage of transportation means, restrictions of work, etc., even though this occurs at our supplier or their sub-supplier we are not responsible even if we agreed on binding delivery deadlines. You allow us to prolong the delivery respectively performance time for the time of interference and an additional initial period. Additionally in such cases we have the right to adjust the price. The above mentioned circumstances do also fall beyond our control if they occur during an already existing delay. Begin and end of such interference will be communicated to the customer as soon as possible. The delivery time is observed in case the product left the premise or we communicated the readiness of shipment to the customer at the end of the delivery time.

## V. Reservation of title

- Until all claims arising from the business relationship with the customer are fulfilled, the customer is required to grant the following securities, which we will release at the customer's request and at our own free will if the securities' value consistently exceeds that of the claims by more than 10%.
- All goods delivered to the customer remain our property until all claims arising from the business relationship with the customer are paid in full.
- The object delivered may be neither pledged nor transferred for security to a third party before it is paid in full. In the event of attachment by a third party to the object of delivery, particularly as a pledge, the customer shall refer to our ownership and inform us in writing immediately, so that we can enforce our rights of ownership. The customer is liable for costs which arise judicially or extra-judicially should the third party not be in a position to repay us such costs as arise in relation to the above mentioned.
- The customer is permitted to sell and process the goods within the context of proper business transactions, as long as he is not in arrears with fulfilling the claims which he owes. We can revoke this permission if the customer is overdue in payments or comes into a state of forfeiture of assets, particularly if insolvency proceedings are opened against his property.
- The processing or transforming of the goods by the customer shall always be done for us. In the event that the goods are joined, mixed, or blended with other items, we acquire co-ownership in proportion with the value of the goods (sum total of invoice including legal value-added tax) to the remaining items which were joined, mixed, or blended together at the time when they were joined, mixed, or blended together.
- For the event that ownership of the goods be lost inasmuch as the goods become an integral or necessary part of another item, the customer hereby concedes to us now, in advance, co-ownership of the main item equal to the share which corresponds with the proportion of the value of the goods delivered (sum total of invoice including legal value-added tax) to the value of the main item at the time of said joining, mixing, or blending.
- In the event that the goods are sold, the customer now and hereby, for the security of our claims arising from the whole of the business relationship, assigns all claims which arise for the customer from resale or from other legal grounds (insurance, tortious act, or the like) against the buyer or third parties, independently of whether the goods, of which we have (partial) ownership, are resold with or without processing. Upon our request, which may be made at any time, the customer must inform us regarding the state of the claim, and allow us or anyone authorized by us to inspect those business records relevant to the above. We grant the customer permission, subject to revocation, to collect the sums due for the claims we assigned, to his own account and in his own name. This direct debit authorization can only be revoked if the customer does not meet his financial obligations in a proper manner. Our authority to collect ourselves the sums due remains unaffected by the above. However, we bind ourselves not to collect the sums due as long as the customer meets his financial obligations with the collected sales revenue, is not overdue for payments, and especially if no initiation for insolvency proceedings has been filed or cessation of payments has been noted. If this is the case, however, we can require that the customer makes known to us immediately the claims assigned and their debtors, including all information required for collection purposes, providing us with all records necessary therefore, and informing the debtors (third parties) of the assignment of claims. We as well have the right of disclosure of assignments against debtors. The customer, however, is not entitled to assign this claim to third parties.
- Contrary to position 3, the customer is not entitled to sell the goods, even within the context of proper, standard business transactions, if the customer excludes assigning claims based on the sale of the goods to us.
- In the event of actions contrary to the terms of contract, particularly in the case of delay of payment, we are entitled to rescission of the contract. Following rescission, we can demand return of the goods from the customer.

## VI. Delivery time

- Delivery dates and delivery periods are only binding if they are confirmed by us explicitly in writing.
- The confirmed delivery dates and delivery periods start when the following cumulative conditions are met: the clarification of all technical questions; the fulfillment of the customer's contractual obligations, particularly that of furnishing records, authorizations, and release statements. When alterations ordered by the customer have an influence upon the duration of production time, we are entitled to insist upon agreeing to a new delivery time which is adjusted to the changed circumstances. We are not liable for delays in delivery and performance, even if binding dates and times have been agreed upon, in case of acts of God, in case of circumstances which we are not responsible for, and in the event of incidents which not only temporarily substantially impede delivery or make it impossible - this includes in particular strike, lock-out, sovereign intervention, acts of war, riots, pandemic, electrical shortage, destruction or damage to our production or works fixtures for which we are not liable, as well as transportation failure, work limitations etc., also when the above affect our suppliers or their sub-suppliers. Such circumstances entitle us to postpone delivery or performance for the duration of the impediment plus a reasonable starting-up time. Furthermore, such a case entitles us, for our part, to adjust the price accordingly. We are also not liable for the circumstances mentioned if they arise during an already existing delay. In important cases, we will inform the customer as soon as possible regarding the beginning and end of such hindrances. The delivery deadline is met if by date of its expiry the goods have left the works or the customer has received notice of readiness of dispatch.

## VII. Sample

Samples of all kinds, whether designs, models, etc., are prepared especially for the customer according to his instructions and only by prior written commission for the same. In every case, these samples will be billed separately to the customer.

## VIII. Storage of documents and items for further use

The storage of the customer's papers and other objects such as may serve some future purpose is undertaken only upon prior written agreement and in exchange for special compensation beyond the date of delivery of the goods ordered. The above mentioned goods a/o objects, if they are placed at our disposal by the customer, shall be handled with care up to the delivery date. In this case as well, storage beyond the delivery date is only granted upon prior written agreement and in return for special compensation. Should the above mentioned documents a/o objects be insured against water, fire, theft, or other dangers, the customer must provide the necessary insurance himself. Further, within legally permissible limits, we are exempt from liability for the loss of, damage to, or destruction of these documents a/o objects.

## IX. Company print

On objects of our manufacture, we can, with the customer's permission, make reference to our company in an appropriate manner. The customer can only withhold his permission in the event that he has a justifiable interest in so doing.

## X. Time limit for making a claim

Upon delivery, the customer must inspect the goods without delay, and in the event that the goods have obvious defects, these must be reported to us within a period of two weeks following receipt of the goods, in the case of shipping from the point of taking delivery from the shipper or carrier; otherwise, the customer's claims regarding defects are excluded. Claims for non-obvious defects can only be asserted within a period of one year upon receipt of the goods, in the case of shipping upon taking delivery from the shipper or carrier.

## XI. Warranty

The warranty period is 1 year after passing of the risk. In the event of defects, we are entitled to choose between rectifying the defects or delivering a substitute, up to the amount of the contractual value, unless we or our vicarious agents are guilty of damage by intent or gross negligence, or if we have given a guarantee for the condition of the goods. If two attempts at rectifying the defects or at delivering a substitute fail, or if rectification or substitution is not possible, not to be reasonably expected for the customer, or finally refused by ourselves, then the customer can demand a reasonable reduction in price or withdraw from the contract. For substantial third-party products, our liability is limited initially to the assignment of liability claims to which we are entitled against the supplier of the third-party products. Any liability ensuing on our part in this instance can only be secondary and requires prior recourse to the courts for the supplier of the third-party product. We will reimburse such costs as may arise if they cannot be collected from the supplier and if they were necessary for prosecution. Guarantee and damage claims which exceed the above are excluded, so far as is permissible by law.

## XII. Compensation for Damages

The following liability limits apply for damage claims, within the parameters of the law:  
For all damages arising from culpable breach of contract, we are liable if we ourselves or our vicarious agents are at fault, but only in case of damage by intention or gross negligence. Within the limits of the law, this also applies in cases of default or when performance becomes impossible. Insofar as we are considered liable for damages due to breach of contract which results from a slight degree of negligence on our part or on the part of our vicarious agents, liability for indirect damages is excluded. When delay damages arise due to delay in our performance, we are only liable to the extent of contractual value (our own work excluding advance performance and material) if we or our vicarious agents are only at fault for slight negligence. This limitation of liability also applies for damages in connection with services of Haimer for goods of customers (e.g. Balancing, Cool Jet, Cool Flash, Duo-Lock, Safe-Lock, Data-Lock or RFID chipping), whereupon the liability is limited to the extent of the contractual value of the service by Haimer.

## XIII. Taking Delivery; Passing of Risk

The customer must take delivery of the goods at the completion time agreed upon if the goods are ready for acceptance. If the customer is in default of acceptance, regardless of article III.1 the price agreed upon is due immediately. If the customer does not meet this obligation, we are entitled to withdraw from the contract and to make other use of the goods, whereby the sales revenues gained in this case are credited to the price agreed upon. We must be compensated for profit lost. If the seller is in default of acceptance or fails to perform other participation duties, then we are entitled to demand compensation for damages thus caused, including any additional expenditures which may arise from our behalf. In case of default or delay in acceptance by the buyer, or other failure to perform participation duties on the part of the buyer, then the risk of accidental loss of the goods or of accidental worsening of the state of the goods passes over to the buyer from the point in which he entered into the state of default in acceptance or debtor's delay.

## XIV. Ownership, Copyright, Duty of Secrecy

Those articles of the trade which we use to manufacture the product of the contract, in particular special means of operation (tools, devices) remain our property and shall not be delivered. We reserve for ourselves the ownership and copyrights of estimates of cost, drawings, and other documents. They may only then be made available to unauthorized third parties if we give our prior explicit written permission. The customer is solely liable if, in the process of executing orders, any rights, particularly copyrights, trademarks, or patents of third parties are infringed upon. The customer indemnifies us against claims of third parties in the event of such violations of rights. All ideas and documents drawn up by ourselves, in particular samples, sketches, designs, technical information, models, technical drawings etc. are under the protection of our intellectual property, have to be treated confidential and may not be used or applied in any manner without our prior written consent.

## XV. Export

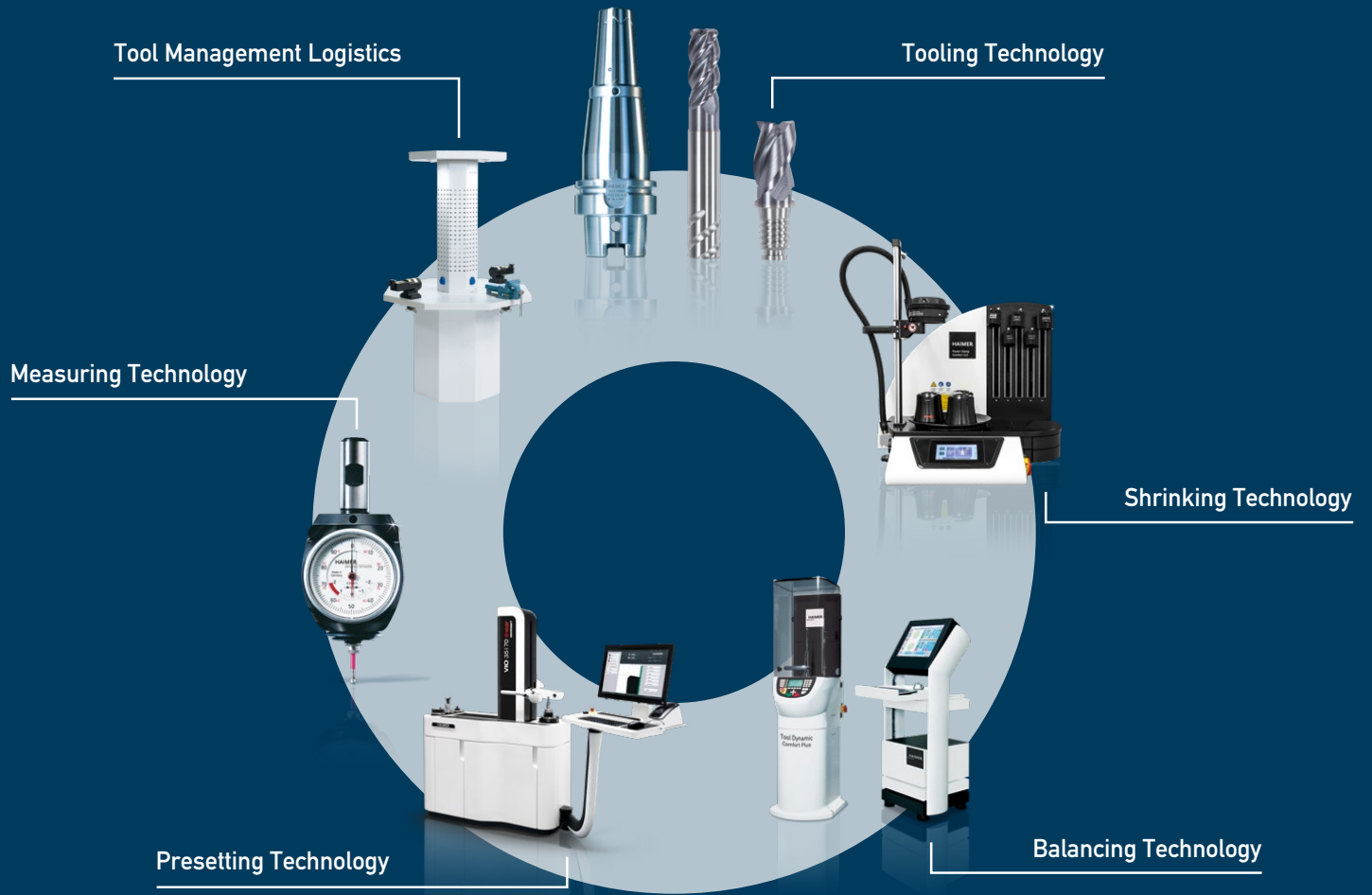
The customer (Buyer) confirms if he resells Haimer products that he complies with all provisions and regulations of international export controls as well as with the US re-export regulations. The customer (Buyer) declares with his order his compliance with this kind of laws and regulations. Additionally the customer (Buyer) confirms with his order that the products will remain in the delivery country respectively will not be delivery out of North America a/o Central America.

## XVI. Applicability of United States of America Law

The customer (Buyer) shall comply exclusively with all of the laws and regulations in the US law. All legal discussions and actions will take place in the state of Illinois if a dispute arises. Application of the UN Convention on Contracts for the International Sale of Goods, dated January 1, 1991, is precluded.

## XVII. Place of Performance, Place of Jurisdiction, and Validity

The place of performance for all claims arising from this contractual relationship is place of business of the seller. The place of business of the seller is also the place of jurisdiction for all legal disputes arising from this business connection. We are, however, entitled to bring grievances beyond the legal place of jurisdiction as well. The partial or complete invalidity of any provision in these terms of sales and delivery, or of any provision within the context of other agreements, whether now or in the future, shall not affect the validity of any part of the remaining provisions or agreements. The invalid provision is then replaced by that lawfully permissible provision which is closest to the meaning of the invalid provision.



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