



Your technology partner for cost-effective machining

# CLAMPING

## TOOL AND PROCESS SOLUTIONS COMBINED WITH COMPREHENSIVE SERVICES

We see ourselves as a technology partner ready to support you in the development of efficient and resource-saving manufacturing processes with standard tools, individual tool concepts and tool detail optimisation. Our tools meet the requirements for process reliability, offer high levels of precision and are easy to handle. How do we achieve this? Through advanced development and construction methods and production at state-of-the-art manufacturing facilities.

You're looking for the perfect tool for your task but also want to find a partner who can take over and manage the entire planning stage of your process? If that sounds familiar, we're here for you. We support you during all phases of production and keep your manufacturing processes at the highest level – by being highly productive, economical and process-reliable. We also offer you complete networked solutions for all peripheral tasks related to the actual machining process.



### Sectors

- 1 Automotive
- 2 Aerospace
- 3 Machine engineering
- 4 Power generation
- 5 Electric mobility
- 6 Medical technology
- 7 Die & Mould sector
- 8 Shipbuilding
- 9 Rail transport



## Product lines

- 1 Reaming and fine boring
- 2 Drilling from solid, boring and countersinking
- 3 Milling
- 4 Turning
- 5 Actuating
- 6 Clamping
- 7 Setting, measuring and dispensing
- 8 Services



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# CLAMPING TECHNOLOGY

## Perfect clamping for every application

Application-oriented chucks have evolved to play a crucial role in the overall process. In combination with our tools, this results, for example, in higher process reliability and maximum radial run-out accuracy. Your needs are our priority.

You benefit from our state-of-the-art technology, years of experience and the resulting expertise. The MAPAL clamping technology

range offers a perfect solution and connection for every application, which ensures the required performance, radial run-out and changeover accuracy for the tool used.

Starting with manual hollow shank taper clamping technology through hydraulic expansion clamping and shrinking technology to adapters, the MAPAL standard range includes a wide variety of systems and technologies.

## BORE MACHINING

### DRILLING FROM SOLID

Additively manufactured hydraulic chucks enable drilling in contour-critical areas.



### REAMING AND FINE BORING

Highest radial run-out accuracy guarantees the manufacturing of precise bores.





## BORING AND TURNING

High flexibility thanks to a wide range of extensions, reducers and adapters for every machining situation.



## MILLING

Maximum milling performance through high torque transmission.



# OVERVIEW OF PRODUCT RANGE



## 1 | Hydraulic clamping technology

1.1 UNIQ Chuck (from page 26)

1.2 HighTorque Chuck | HTC (from page 32)

1.3 HydroChuck | MHC (from page 46)

## 2 | Shrinking technology

2.1 ThermoChuck | MTC (from page 60)

## 3 | Mechanical tool clamping technology

3.1 Side lock chuck | MWC/MNC (from page 82)

3.2 Collet chuck | MCC (from page 88)

3.3 Precision drill chuck | MPC (from page 92)





#### 4 | Milling cutter arbors

4.1 Milling cutter arbor (from page 112)

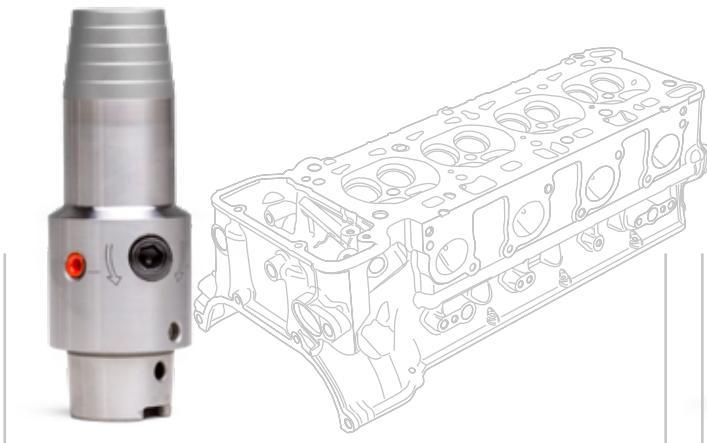
#### 5 | Manual HSK clamping technology

5.1 KS flange adapter (from page 144)

#### 6 | Extensions, reducers, adapters and blanks

6.1 Hydraulic extension (from page 156)

# SPECIAL SOLUTIONS: APPLICATION-ORIENTED HYDRAULIC CLAMPING TECHNOLOGY



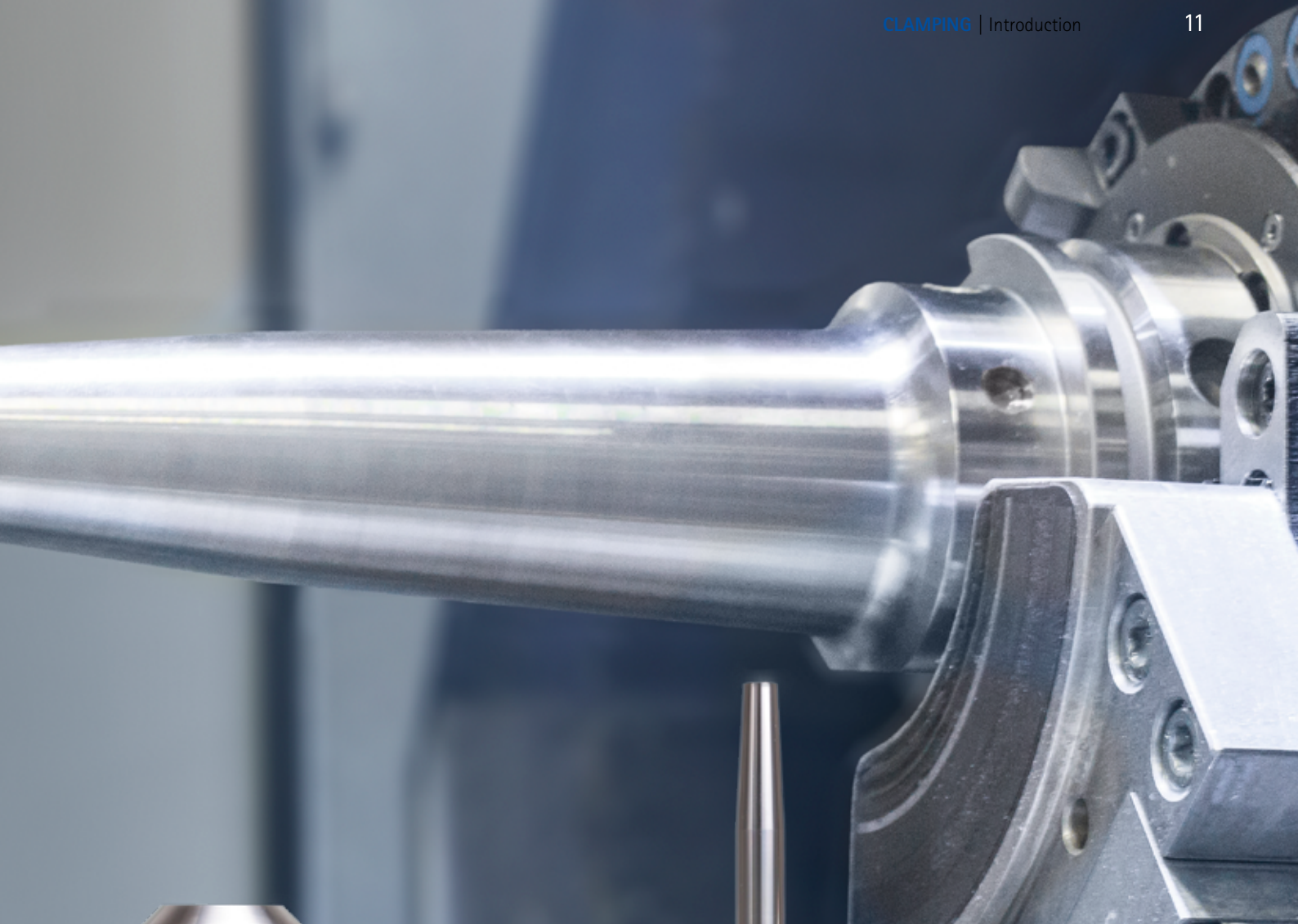
## Machining the injector bore

When machining injector bores, hydraulic chucks improve surfaces, reduce non-productive times and extend tool life compared to collet chucks. Thanks to an improved supply of cooling lubricant and the highly accurate radial run-out, the quality of the bore is also significantly higher.



## Machining the valve housing

Compact hydraulic chucks with integrated radial adjustment in the collar make it easy to set the tools to the exact length in the machine on high-production machines; in addition, changes in length can be compensated for, for example, with reconditioned PCD tools.



### Milling wheel suspension

The additively manufactured hydraulic chuck can be used for milling wheel suspensions, as it does not require a brazed connection, which represents a weak point. This guarantees maximum bending resistance and torque transmission in a process-reliable manner, even at the highest machining temperatures.



### Drilling stack materials

If additively manufactured hydraulic chucks with standard length drills are used instead of standard shrink fit chucks with extra long special drills when drilling stack materials, the bore quality improves, handling is much easier and the chuck has many times the tool life.

# CHUCKS

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Hydraulic chucks, shrink chucks and mechanical chucks





# PRODUCT OVERVIEW

## Chucks for cylindrical shanks

MAPAL's clamping technology range guarantees performance and process reliability as well as radial run-out and changeover accuracy for every application. Manufactured using latest technologies, our specialists are continuously developing our chucks further.

In response to customers' requirements and situations, a large variety of systems have been made available in the standard range: from hydraulic clamping and shrink chucks to mechanical clamping systems.



### Hydraulic clamping technology:

- High level of torque transmission
- Tool change in seconds without peripheral devices
- Extended tool life due to maximum radial run-out and repetition accuracy
- High flexibility when using reducing sleeves







### Shrinking technology:

- High level of torque transmission and radial rigidity
- Long tool life through the use of high-temperature tool steel



### Mechanical tool clamping technology:

- Simpler construction
- Easy handling
- High flexibility

Hydraulic clamping technology		Shrinking technology	
			
<p><b>UNIQU Chuck</b></p> <p>Both hydraulic chuck series (UNIQU Mill Chuck and UNIQU DReAM Chuck) clearly combine the performance promise of quality and function in their new design. This is achieved through an optimal interplay of geometric and functional properties.</p> <ul style="list-style-type: none"> <li>- <b>UNIQU Mill Chuck:</b> Temperature resistant up to 80 °C even with very long milling cycles (over 240 minutes)</li> <li>- <b>UNIQU DReAM Chuck:</b> Hydraulic expansion chuck with the original dimensions of a shrink chuck (DIN contour with 4.5°)</li> </ul>	<p><b>HighTorque Chuck   HTC</b></p> <p>The hydraulic HighTorque Chuck offers a high level of torque transmission, along with ideal damping properties, outstanding system rigidity and a radial run-out accuracy of &lt; 3 µm.</p> <ul style="list-style-type: none"> <li>- <b>3° slim design</b> with a back taper of three degrees to avoid tool restrictions for use in contour-critical applications</li> <li>- <b>Short heavy-duty design</b> optionally available with resealable cooling channel bores and optimal damping properties for long tool life even with demanding milling operations</li> </ul>	<p><b>HydroChuck   MHC</b></p> <p>The HydroChuck hydraulic chuck is characterised by excellent vibration dampening and high radial run-out accuracy, guaranteeing optimum workpiece surfaces.</p> <ul style="list-style-type: none"> <li>- <b>Standard design</b></li> <li>- <b>Ultra-short design:</b> Compact design for high rigidity</li> <li>- <b>Hydro DReam Chuck:</b> Long, cylindrical hydraulic chuck for use in contour-critical applications for reduced vibrations and optimised process parameters</li> <li>- <b>HydroChuck Compensation:</b> Compensation of radial run-out errors across the entire system with easy handling</li> </ul>	<p><b>ThermoChuck   MTC</b></p> <p>With the ThermoChuck shrink chuck, tools for almost all milling operations can be clamped precisely. The high level of torque transmission and radial rigidity sets this chuck apart from the rest.</p> <ul style="list-style-type: none"> <li>- <b>3° slim design</b> with a back taper of three degrees to avoid tool restrictions for use in contour-critical applications</li> <li>- <b>Design with two cooling channel bores</b> – resealable design</li> <li>- <b>4.5° standard design</b></li> </ul>
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## Mechanical tool technology



### Side lock chuck | MWC/MNC

This mill chuck is an impressive option with strong clamping ability, easy handling and a very good radial run-out.

- Easy to handle thanks to use of a differential screw
- Axial tool positioning can be defined using a spring system
- Decentralised coolant outlets for maximum process reliability



### Collet chuck | MCC

Collet chucks impress due to their simple design and uncomplicated handling. The clamping is reliably guaranteed independent of the direction of rotation, even at high spindle speeds.

- Available with clamping nut according to ISO 15488 or with clamping nut for internal coolant supply HI-Q/ERC
- With axial tool length adjustment
- Flexibility through clamping of different tool diameters



### Precision drill chuck | MPC

MAPAL's Precision-DrillChuck convinces with its simple design and easy, straightforward handling. The clamping is reliably guaranteed independent of the direction of rotation, even at high spindle speeds.

- Voltage independent of direction of rotation even at high speeds
- Simple construction, straightforward to handle
- High degree of spindle speed strength
- Modular design allows drill chuck heads to be used with all tool connections



### Softsynchro tapping chuck | MSC

For clamping tap drills quickly and securely. For compensating for any differences in pitch between the spindle and the tap drill.

- Suitable for internal cooling
- Synchro tapping chucks compensate for synchronisation errors
- Minimum length compensation in compression and tension direction between spindle and tap drill reduces high thread flange friction



## Hydraulic clamping technology



### Industrial design with added value | UNIQ

Up to now, industrial and product design have played a subordinate role during the development of chucks at MAPAL. The focus was primarily on reliable function. As a result, the developers have gradually built up a broad portfolio that, however, did not have a uniform appearance. To change this situation, MAPAL involved experts in industrial design.

#### Carefully considered design taps potential

Not only the appearance of the chucks was to be revised, above all added value for the customer was to be generated by means of carefully considered industrial design. Because ingenious design isn't only about creating visual highlights – it also taps economic and ecological potential. Based on this premise, product designers prepared, together with those responsible for the products at MAPAL, a new concept that is also based on functional and FEM analyses. The chucks designed according to this concept shine in a new splendour. One of the elements of the new concept is the brilliant surface finish. This surface finish, produced by a specially developed polishing method, ensures that the chucks are more resistant to corrosion than in the past.

#### Easy, self-explanatory "foolproof" handling

A further requirement on the new design was so-called foolproof handling – i.e., the easy, self-explanatory handling of the chucks. Controls were to be identifiable as such more quickly, handling information directly understandable. These requirements were addressed, on the one hand, by the blue colour for the controls (such as the actuating screw on a hydraulic chuck) and, on the other hand, by internally developed symbols that provide nonverbal information.

#### ADVANTAGES

- Corrosion-resistant chucks
- Self-explanatory, simple and foolproof handling
- Maximum stability at optimal use of resources





## HighTorque Chuck HTC

The new HighTorque Chuck (HTC) hydraulic chucks combine the damping properties of hydraulic clamping technology with the high holding forces of shrinking technology. Thanks to an innovative manufacturing process, the chucks impress due to high torque transmission, ideal damping properties, outstanding system rigidity and a radial run-out accuracy of  $< 3 \mu\text{m}$ . The bending resistance is 1.4 times greater than a conventional shrink chuck in accordance with DIN 69882-8. In production, these advantages guarantee a high surface finish on the part, significantly higher machining speeds and therefore short machining times. The HTC properties prevent damage flaws on the cutting edge of the tool and extend tool lives.

### ADVANTAGES

- High level of torque transmission
- Thermal stability up to 170 °C
- Tool change in seconds without peripheral devices



## HydroChuck MHC

Due to their high radial run-out accuracy and the resulting even cutting action as well as the excellent vibration damping, MAPAL's hydraulic HydroChuck guarantees optimal workpiece finishes. In addition, microstructure cracking on the tool's cutting edge is prevented by the hydraulic system, the tool lives are extended and therefore are costs reduced. High clamping reliability is ensured even at high spindle speeds. The chucks can be adjusted to the  $\mu$  thanks to axial and radial length adjustment.

### ADVANTAGES

- Radial or axial length adjustment to the  $\mu$
- No reduction in the clamping forces at high spindle speeds
- Extended tool life due to maximum radial run-out and repetition accuracy
- Tool change in seconds without peripheral devices



## Shrinking technology



### ThermoChuck MTC

With ThermoChuck shrink chucks, tools can be accurately clamped for almost all milling operations. The high level of torque transmission and radial rigidity sets this chuck apart from the rest. Long-term radial run-out accuracy and accuracy of repetition of  $< 3 \mu\text{m}$  in the location bore guarantee high dimensional accuracy on the workpiece. The shrink chucks are finely balanced as standard so that high surface finishes and long tool lives are ensured. The standard range of ThermoChuck

MTC shrink chucks includes designs with  $4.5^\circ$  contours with slim outer contours of  $3^\circ$  as well as with resealable cooling channel bores.

#### ADVANTAGES

- High level of torque transmission and radial rigidity
- Long tool life through the use of high-temperature tool steel
- Wide range of possible combinations of shrink chucks and extensions



## Mechanical tool clamping technology



### MillChuck, HB

The new side lock chuck MillChuck HB impresses with strong clamping, simple handling and a high radial run-out accuracy. The location bore is created with significantly more precision. This reduces the radial play of the clamped tool and considerably improves the radial run-out. The large tolerance on the lateral clamping surface is also compensated. To achieve this, MAPAL uses a spring element in the adapter that enables a defined form fit between the tool and adapter. Coolant channels parallel to the axis in the clamping range also ensure an improved coolant supply.

#### ADVANTAGES

- Easy to handle thanks to use of a differential screw
- Maximum cost-effectiveness and precision
- Axial tool positioning can be defined using a spring system
- Decentralised coolant outlets for maximum coolant flow



### MPC Precision-DrillChuck | MCC collet chuck Weldon and Whistle notch chucks – MWC/MNC









Mechanical chucks impress due to their simple design and the uncomplicated handling. The clamping is reliably guaranteed independent of the direction of rotation, even at high spindle speeds. The standard range for mechanical tool clamping includes precision drill chucks that are also available in a micro design with direct clamping from 0.2 mm. Drill chucks are available with all forms of machine-side tool bodies. Collet chucks and Weldon and Whistle notch chucks round off the range of mechanical chucks.

#### ADVANTAGES

- Simple design, straightforward to handle
- Safe clamping independent of direction of rotation
- High degree of spindle speed strength
- Modular design allows drill chuck heads to be used with all tool connections

# Selection of a chuck

The optimal chuck for every application – four steps to the right chuck

1 TECHNOLOGY		2 DESIGN		3 APPLICATION				
				MILLING			DRILLING	REAMING
				HPC	Roughing	Finishing		
								
 Hydraulic clamping technology	UNIQ Chuck	UNIQ Mill Chuck, HA	■	★	★	■	■	
		UNIQ DReaM Chuck, 4.5°	▣	▣	■	★	★	
	HighTorque Chuck HTC	Narrow design, 3°	□	□	▣	■	■	
		Short heavy-duty design <sup>1)</sup>	■	■	■	■	■	
		Short heavy-duty design with cooling channel bores <sup>2)</sup>	■	■	■	■	■	
	HydroChuck MHC	With axial length adjustment	□	□	■	■	■	
		With radial length adjustment	□	□	■	■	■	
		Hydro DReam Chuck, cylindrical slim	□	□	□	■	■	
		with compensation technology <sup>3)</sup>	□	□	■	▣	■	
	 Shrinking technology	ThermoChuck MTC	Narrow design, 3°	□	□	▣	■	■
4,5°			▣	▣	■	■	■	
with cooling channel bores <sup>2)</sup>			▣	▣	■	■	■	
 Mechanical tool clamping technology	Mechanical systems	MillChuck, HB   MWC	★	■	▣	▣	▣	
		with side clamping surface   MWC	■	■	▣	▣	▣	
		with angled clamping surface   MWC	■	■	▣	▣	▣	
		with collet   MCC	□	▣	▣	▣	▣	
		Precision drill chuck   MPC	□	□	□	■	▣	
		Softsynchro   MSC	□	□	□	□	□	
		Milling cutter arbor   MCA	■	■	■	□	□	
		Milling cutter arbor, vibration-dampened   MDA	★	★	★	□	□	

★ = 1. Choice | ■ = highly suitable | ▣ = suitable in some situations | □ = not suitable

<sup>1)</sup> Short/heavy-duty design: Compact design for high rigidity.

<sup>2)</sup> With cooling channel bores: Chuck with additional decentral coolant outlets that, optionally, are resealable.

<sup>3)</sup> With compensation technology: Alignment feature on the chuck for radial alignment to compensate for radial run-out errors on the overall system.

**4** CONNECTION



**HSK-A**



**SK**



**BT**



**Module**



**Cylindrical shank**

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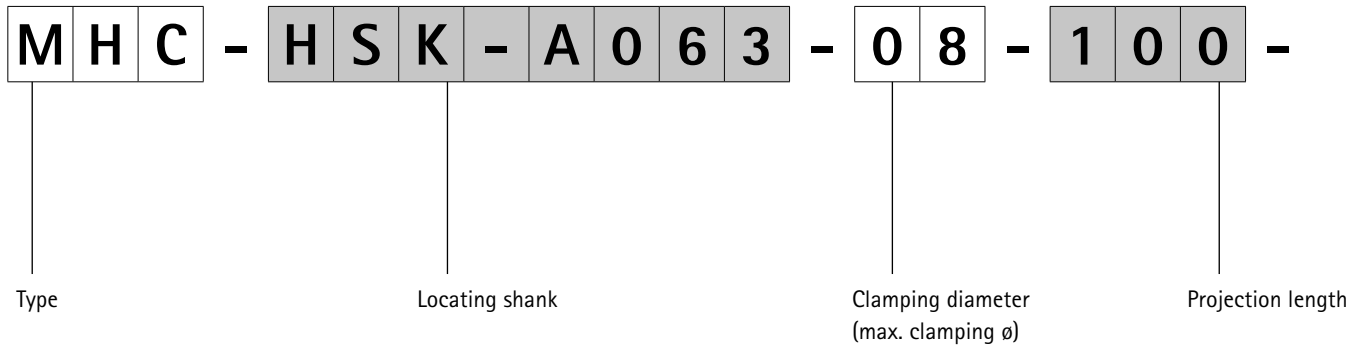
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# Product ID code for chuck specification

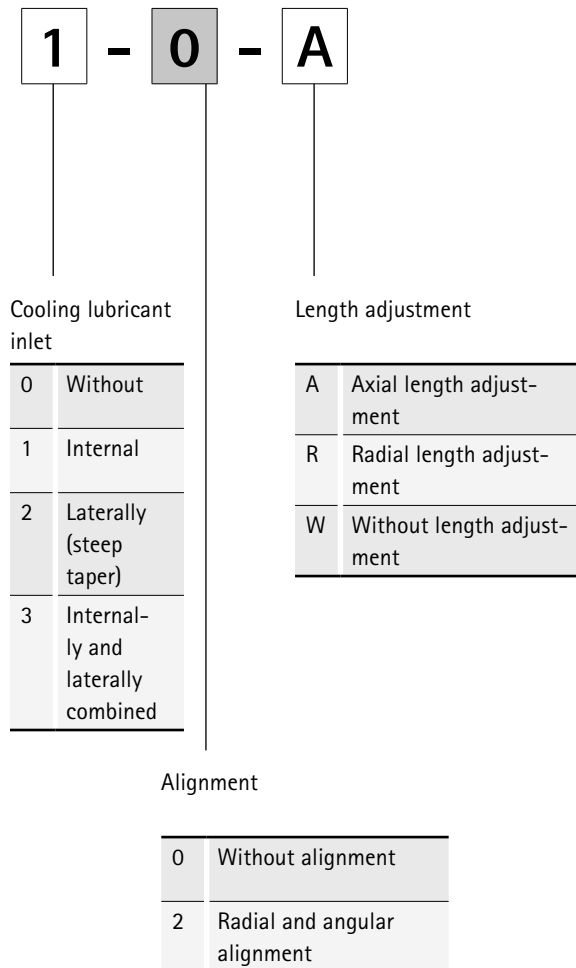


HTC	HighTorque Chuck
MHC	Hydraulic chuck (HydroChuck)
MTC	Shrink chuck (ThermoChuck)
MWC	Weldon chuck / Mill Chuck
MNC	Chucks Whistle notch
MCC	Chucks for collets
MPC	Precision drill chuck (Precision-DrillChuck)
MSC	Synchro tapping chuck
MDA	Milling cutter arbor, vibration-dampened
MCA	Milling cutter arbor

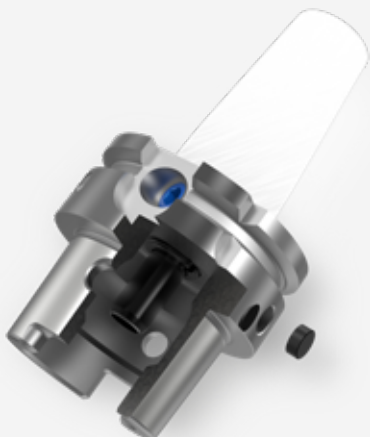
HSK-A	Hollow shank taper Form A
MOD	Module connection
ZYL	Cylindrical shank
Steep taper	Taper shank in form A According to ISO
AD-FC	Taper shank in form A According to ISO
BT	Taper shank in form J According to ISO
JD-FC	Taper shank in form J similar to ISO with face connection

The following configurations are possible:

- VS: Coding system
- FB: Finely balanced
- FAS: Milling cutter clamping screw
- BC: Chip version
- CT: Coolant tube



## Designs with code carrier



All HSK-A chucks are available as chip version:

- Balluff
- Siemens
- Boie

For available RFID code carrier, see chapter "Accessories, spare parts and measuring equipment".





# HYDRAULIC CLAMPING TECHNOLOGY

## UNIQ<sup>®</sup> Chuck

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## HighTorque Chuck

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## HydroChuck

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Hydro DReam Chuck, cylindrical slim .....	54
HydroChuck Compensation .....	55

# INDUSTRIAL DESIGN WITH ADDED VALUE – UNIQ<sup>®</sup> CHUCK

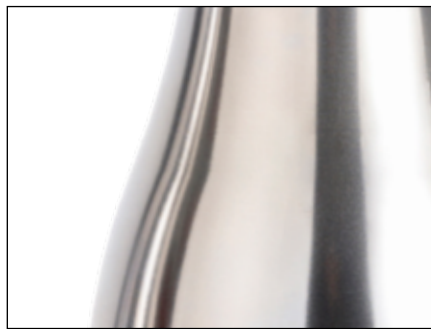
The newly-developed hydraulic expansion clamping system enables high machining parameters through excellent stability and accuracy. It minimises self-excited vibration so that clamped tools are not exposed to micro-vibration. This in turn leads to a reduced spindle load of up to 5 per cent, enables significantly longer tool life and guarantees optimal surface quality.

In addition, the brilliant surface, which MAPAL creates using a specially developed polishing process, ensures, that the chucks are more resistant to dirt and corrosion than previous chucks. Users can safely

clamp the tool in the adapter with little force. This is ensured by “foolproof handling”, i.e. simple and self-explanatory handling of the chucks. A lot of time is saved compared to other clamping mechanisms, especially with the UNIQ DReaM Chuck 4.5°.



## Design features in detail



### Use of form | Bionic contours

- Higher stability and accuracy of the overall system
- Less displacement of the tool
- Less weight through minimal use of resources
- Good handling when setting up the tool magazine
- Self-excited vibrations are minimised

### Polished surfaces

- Dirt resistance (corrosion resistance) increased
- Highest balancing qualities due to compacted surfaces

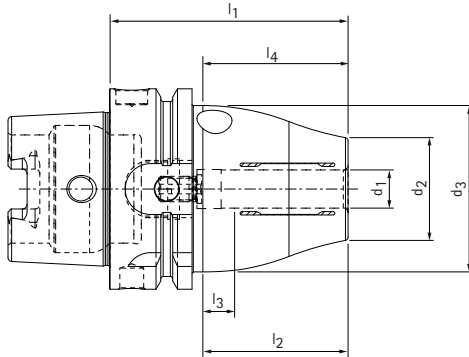
### Blue actuator screw | Signature elements

- Actuator screw clearly identifiable and easier actuation of the tightening torque, which is reduced by up to 70%
- Clear arrangement on the product, important functional and product information immediately visible

# UNIQ<sup>®</sup> Mill Chuck, HA

with axial tool length adjustment

HSK-A (hollow shank taper form A) shank according to DIN 69893-1



HSK-A	Dimensions							G	Torque* [Nm]	Specification	Order no.
	$d_1$	$d_2$	$d_3$	$l_1$	$l_2$	$l_3$	$l_4$				
63	6,0	26,0	50,0	65,0	37,0	10,0	35,2	M5	22	MHC-HSK-A063-06-065-1-0-A	31270591
63	8,0	28,0	50,0	65,0	37,0	10,0	35,2	M6	47	MHC-HSK-A063-08-065-1-0-A	31270593
63	10,0	30,0	50,0	75,0	41,0	10,0	45,2	M8x1	85	MHC-HSK-A063-10-075-1-0-A	31270595
63	12,0	32,0	52,5	75,0	46,0	10,0	45,2	M8x1	130	MHC-HSK-A063-12-075-1-0-A	31229418
63	16,0	38,0	52,5	79,0	49,0	10,0	49,2	M8x1	350	MHC-HSK-A063-16-079-1-0-A	31270598
63	20,0	38,0	52,5	79,0	51,0	10,0	49,2	M8x1	520	MHC-HSK-A063-20-079-1-0-A	31229438

\* Permissible transferable torque.

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks according to DIN 1835 form A, DIN 6535 form HA as well as with recesses according to DIN 1835 form B, E and DIN 6535 form HB, HE directly and with reducing sleeve in the clamping diameter. The clamping diameter is designed for a shank tolerance of h6.

Scope of delivery: With length adjustment screw, without coolant tube.

Design: Highest tool life and production quality when using smooth cylindrical shanks according to DIN 1835 form A and DIN 6535 form HA. With a projection length of 2.5xD (max. 50 mm) radial run-out accuracy 3  $\mu$ m. When using cylindrical shanks with an in-

clined clamping surface (form E and form HE), the accuracy may be impaired. Torque transmission perfectly tailored to the respective application.

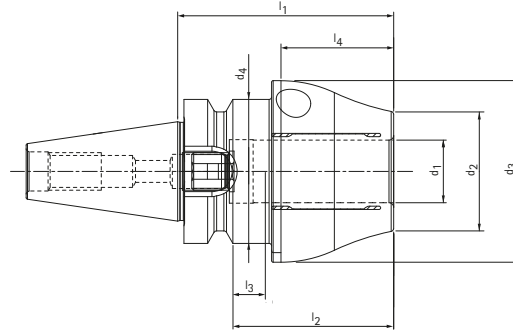
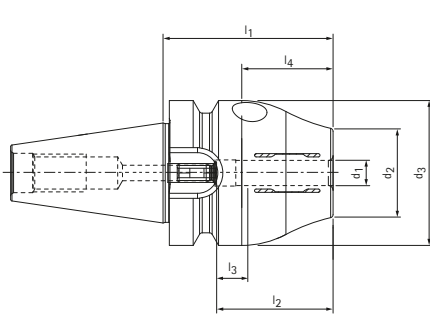
Note: Coolant supply via central through hole. Coolant tubes, code carrier, reducing sleeves to reduce the clamping diameter (if the reducing sleeve is used, the accuracy may be impaired), see chapter "Accessories, spare parts and measuring equipment". Length adjustment screws available on request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

# UNIQ<sup>®</sup> Mill Chuck, HA

with axial tool length adjustment

Shaft BT according to ISO 7388-2 form JD/JF (JIS B 6339)



BT	Dimensions								G	Torque* [Nm]	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>				
30**	6,0	26,0	46,0	-	54,0	37,0	10,0	29,0	M5	22	MHC-BT030-06-054-1-0-A	31280342
30**	8,0	28,0	46,0	-	54,0	37,0	10,0	29,0	M6	47	MHC-BT030-08-054-1-0-A	31280343
30**	10,0	30,0	50,0	46,0	54,0	41,0	10,0	23,5	M8x1	85	MHC-BT030-10-054-1-0-A	31280344
30**	12,0	32,0	50,0	46,0	54,0	46,0	10,0	23,5	M10x1	130	MHC-BT030-12-054-1-0-A	31280345
30**	16,0	38,0	55,0	46,0	69,0	49,0	10,0	38,5	M12x1	350	MHC-BT030-16-069-1-0-A	31280346
30**	20,0	38,0	58,0	46,0	69,0	51,0	10,0	38,5	M12x1	520	MHC-BT030-20-069-1-0-A	31280347

\* Permissible transferable torque.

\*\* Design: Taper shank size is not available in the JD/JF combination design

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks according to DIN 1835 form A, DIN 6535 form HA as well as with recesses according to DIN 1835 form B, E and DIN 6535 form HB, HE directly and with reducing sleeve in the clamping diameter. The clamping diameter is designed for a shank tolerance of h6.

Scope of delivery: With length adjustment screw, without pull stud.

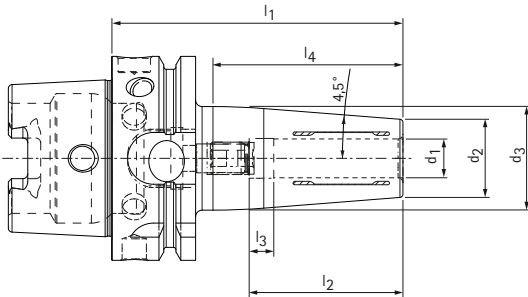
Design: Highest tool life and production quality when using smooth cylindrical shanks according to DIN 1835 form A and DIN 6535 form HA. With a projection length of 2.5xD

(max. 50 mm) radial run-out accuracy 3 µm. When using cylindrical shanks with an inclined clamping surface (form E and form HE), the accuracy may be impaired. Torque transmission perfectly tailored to the respective application.

Note: Coolant supply via central through hole. Pull stud, reducing sleeves to reduce the clamping diameter (if the reducing sleeve is used, the accuracy may be impaired), see chapter "Accessories and spare parts". Length adjustment screws available on request. Balancing quality: G 2.5 with 25,000 rpm in delivery status.

## UNIQ<sup>®</sup> DReaM Chuck, 4.5°

with axial tool length adjustment, clamping initiation in collar  
HSK-A (hollow shank taper form A) shank according to DIN 69893-1



HSK-A	Dimensions							G	Torque* [Nm]	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>				
63	6,0	21,0	27,0	80,0	37,0	10,0	48,9	M5	18	MHC-HSK-A063-06-080-1-0-A	31270515
63	8,0	21,0	27,0	80,0	37,0	10,0	48,9	M6	35	MHC-HSK-A063-08-080-1-0-A	31270525
63	10,0	24,0	32,0	85,0	41,0	10,0	53,7	M8x1	60	MHC-HSK-A063-10-085-1-0-A	31270550
63	12,0	24,0	32,0	90,0	46,0	10,0	58,6	M10x1	90	MHC-HSK-A063-12-090-1-0-A	31229439
63	16,0	27,0	34,0	95,0	49,0	10,0	63,1	M12x1	200	MHC-HSK-A063-16-095-1-0-A	31270555
63	20,0	33,0	42,0	100,0	51,0	10,0	68,9	M16x1	330	MHC-HSK-A063-20-100-1-0-A	31229440

\* Permissible transferable torque.

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks according to DIN 1835 form A, DIN 6535 form HA as well as with recesses according to DIN 1835 form B, E and DIN 6535 form HB, HE directly and with reducing sleeve in the clamping diameter. The clamping diameter is designed for a shank tolerance of h6.

Scope of delivery: With length adjustment screw, without coolant tube.

Design: Highest tool life and production quality when using smooth cylindrical shanks according to DIN 1835 form A and DIN 6535 form HA. With a projection length of 2.5xD (max. 50 mm) radial run-out accuracy 3 µm. When using cylindrical shanks with an in-

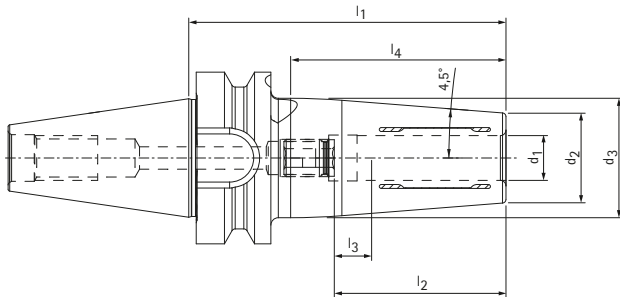
clined clamping surface (form E and form HE), the accuracy may be impaired. Torque transmission perfectly tailored to the respective application.

Note: Coolant supply via central through hole. Coolant tubes, code carrier, reducing sleeves to reduce the clamping diameter (if the reducing sleeve is used, the accuracy may be impaired), see chapter "Accessories, spare parts and measuring equipment". Length adjustment screws available on request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

# UNIQ<sup>®</sup> DReaM Chuck, 4.5°

with axial tool length adjustment, clamping initiation in collar  
Shaft BT according to ISO 7388-2 form JD/JF (JIS B 6339)



BT	Dimensions							G	Torque* [Nm]	Specification	Order no.
	$d_1$	$d_2$	$d_3$	$l_1$	$l_2$	$l_3$	$l_4$				
30**	6,0	21,0	27,0	85,0	37,0	10,0	57,7	M5	18	MHC-BT030-06-085-1-0-A	31280360
30**	8,0	21,0	27,0	85,0	37,0	10,0	57,7	M6	35	MHC-BT030-08-085-1-0-A	31280361
30**	10,0	24,0	32,0	85,0	41,0	10,0	57,7	M8x1	60	MHC-BT030-10-085-1-0-A	31280362
30**	12,0	24,0	32,0	85,0	46,0	10,0	57,7	M10x1	90	MHC-BT030-12-085-1-0-A	31280365
30**	16,0	27,0	34,0	85,0	49,0	10,0	57,2	M10x1	200	MHC-BT030-16-085-1-0-A	31280366
30**	20,0	33,0	42,0	85,0	51,0	10,0	57,5	M10x1	330	MHC-BT030-20-085-1-0-A	31280367

\* Permissible transferable torque.

\*\* Design: Taper shank size is not available in the JD/JF combination design

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks according to DIN 1835 form A, DIN 6535 form HA as well as with recesses according to DIN 1835 form B, E and DIN 6535 form HB, HE directly and with reducing sleeve in the clamping diameter. The clamping diameter is designed for a shank tolerance of h6.

Scope of delivery: With length adjustment screw, without pull stud.

Design: Highest tool life and production quality when using smooth cylindrical shanks according to DIN 1835 form A and DIN 6535 form HA. With a projection length of 2.5xD

(max. 50 mm) radial run-out accuracy 3  $\mu$ m. When using cylindrical shanks with an inclined clamping surface (form E and form HE), the accuracy may be impaired. Torque transmission perfectly tailored to the respective application.

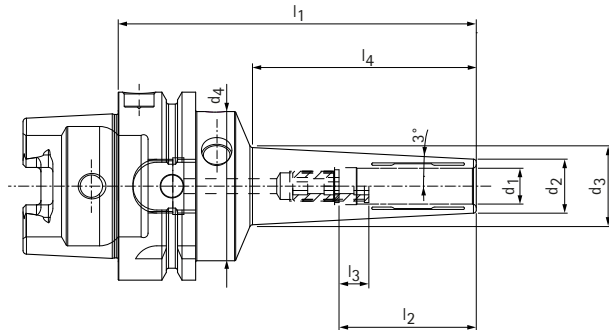
Note: Coolant supply via central through hole. Pull stud, reducing sleeves to reduce the clamping diameter (if the reducing sleeve is used, the accuracy may be impaired), see chapter "Accessories and spare parts". Length adjustment screws available on request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

# HighTorque Chuck HTC

with axial tool length adjustment

HSK-A (hollow shank taper form A) shank according to DIN 69893-1



## 3° slim design

HSK-A	Dimensions								G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>			
40	3,0	9,0	13,8	33,5	85,0	28,0	16,0	45,0	M2,5	HTC-HSK-A040-03-85-1-0-A	30817979
40	4,0	10,0	14,8	33,5	85,0	28,0	12,0	45,0	M2,5	HTC-HSK-A040-04-85-1-0-A	30817980
40	5,0	11,0	15,8	33,5	85,0	28,0	8,0	45,0	M2,5	HTC-HSK-A040-05-85-1-0-A	30817981
40	6,0	12,0	16,9	33,5	85,0	37,0	10,0	46,0	M5	HTC-HSK-A040-06-85-1-0-A	30817982
40	8,0	14,0	18,9	33,5	85,0	37,0	10,0	46,0	M6	HTC-HSK-A040-08-85-1-0-A	30817983
40	10,0	16,0	21,0	33,5	85,0	41,0	10,0	47,0	M5	HTC-HSK-A040-10-85-1-0-A	30817984
40	12,0	18,0	23,0	33,5	85,0	46,0	10,0	47,0	M5	HTC-HSK-A040-12-85-1-0-A	30817985
63	3,0	9,0	16,7	50,0	120,0	28,0	16,0	73,0	M2,5	HTC-HSK-A063-03-120-1-0-A	30639848
63	4,0	10,0	17,7	50,0	120,0	28,0	12,0	73,0	M2,5	HTC-HSK-A063-04-120-1-0-A	30702807
63	5,0	11,0	18,7	50,0	120,0	28,0	8,0	73,0	M2,5	HTC-HSK-A063-05-120-1-0-A	30702808
63	6,0	12,0	19,8	50,0	120,0	37,0	10,0	74,0	M5	HTC-HSK-A063-06-120-1-0-A	30639849
63	7,0	13,0	20,8	50,0	120,0	37,0	10,0	74,0	M5	HTC-HSK-A063-07-120-1-0-A	30856736
63	8,0	14,0	21,8	50,0	120,0	37,0	10,0	74,0	M6	HTC-HSK-A063-08-120-1-0-A	30639851
63	9,0	15,0	22,8	50,0	120,0	37,0	10,0	74,0	M6	HTC-HSK-A063-09-120-1-0-A	30856737
63	10,0	16,0	23,8	50,0	120,0	41,0	10,0	74,0	M8x1	HTC-HSK-A063-10-120-1-0-A	30639852
63	11,0	17,0	24,8	50,0	120,0	41,0	10,0	74,0	M8x1	HTC-HSK-A063-11-120-1-0-A	30856738
63	12,0	18,0	25,9	50,0	120,0	46,0	10,0	75,0	M10x1	HTC-HSK-A063-12-120-1-0-A	30639853
63	13,0	20,0	27,9	50,0	120,0	46,0	10,0	75,0	M10x1	HTC-HSK-A063-13-120-1-0-A	30856739
63	14,0	22,0	29,5	50,0	120,0	46,0	10,0	71,0	M10x1	HTC-HSK-A063-14-120-1-0-A	30782686
63	16,0	24,0	31,5	50,0	120,0	49,0	10,0	71,5	M12x1	HTC-HSK-A063-16-120-1-0-A	30699883
63	18,0	26,0	33,6	50,0	120,0	49,0	10,0	72,0	M12x1	HTC-HSK-A063-18-120-1-0-A	30699886
63	20,0	28,0	35,6	50,0	120,0	51,0	10,0	72,0	M16x1	HTC-HSK-A063-20-120-1-0-A	30699888
100	3,0	9,0	16,4	50,0	120,0	28,0	16,0	70,0	M2,5	HTC-HSK-A100-03-120-1-0-A	30856740
100	4,0	10,0	17,4	50,0	120,0	28,0	12,0	70,0	M2,5	HTC-HSK-A100-04-120-1-0-A	30856741
100	5,0	11,0	18,4	50,0	120,0	28,0	8,0	70,0	M2,5	HTC-HSK-A100-05-120-1-0-A	30856742
100	6,0	12,0	19,4	50,0	120,0	37,0	10,0	70,0	M5	HTC-HSK-A100-06-120-1-0-A	30856743
100	8,0	14,0	21,5	50,0	120,0	37,0	10,0	71,0	M6	HTC-HSK-A100-08-120-1-0-A	30856745
100	10,0	16,0	23,5	50,0	120,0	41,0	10,0	71,0	M8x1	HTC-HSK-A100-10-120-1-0-A	30856747
100	12,0	18,0	25,6	50,0	120,0	46,0	10,0	72,0	M10x1	HTC-HSK-A100-12-120-1-0-A	30856749
100	14,0	22,0	29,2	50,0	120,0	46,0	10,0	68,0	M10x1	HTC-HSK-A100-14-120-1-0-A	30856751
100	16,0	24,0	31,2	50,0	120,0	49,0	10,0	68,0	M12x1	HTC-HSK-A100-16-120-1-0-A	30856752
100	18,0	26,0	33,3	50,0	120,0	49,0	10,0	69,0	M12x1	HTC-HSK-A100-18-120-1-0-A	30856753
100	20,0	28,0	35,3	50,0	120,0	51,0	10,0	69,0	M16x1	HTC-HSK-A100-20-120-1-0-A	30856754

Dimensions in mm.

Additional dimensions available upon request.

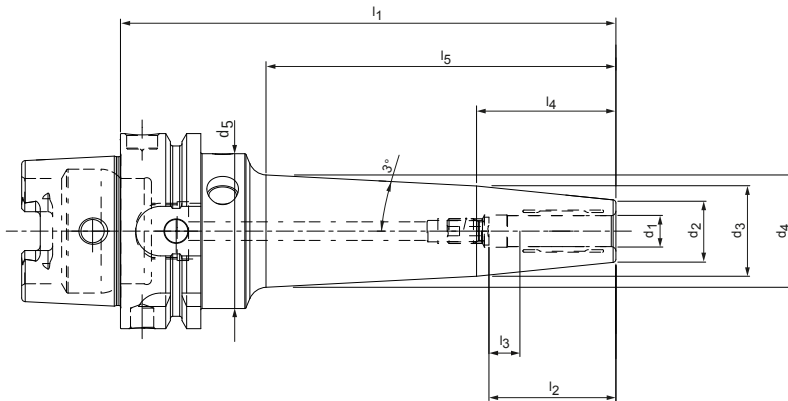
For information on use, scope of delivery and design as well as further notes on the product, see the following page.



# HighTorque Chuck HTC

with axial tool length adjustment

HSK-A (hollow shank taper form A) shank according to DIN 69893-1



Slim design 3°, optimised contour for maximum bending resistance

HSK-A	Dimensions										G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	l <sub>5</sub>			
63	3,0	13,0	27,3	31,5	50,0	160,0	28,0	16,0	70,0	110,0	M2,5	HTC-HSK-A063-03-160-1-0-A	30858322
63	3,0	13,0	27,3	35,8	50,0	200,0	28,0	16,0	70,0	151,0	M2,5	HTC-HSK-A063-03-200-1-0-A	30858329
63	4,0	14,0	28,3	32,5	50,0	160,0	28,0	12,0	70,0	110,0	M2,5	HTC-HSK-A063-04-160-1-0-A	30858323
63	4,0	14,0	28,3	36,8	50,0	200,0	28,0	12,0	70,0	151,0	M2,5	HTC-HSK-A063-04-200-1-0-A	30858330
63	5,0	15,0	29,3	33,5	50,0	160,0	28,0	8,0	70,0	110,0	M2,5	HTC-HSK-A063-05-160-1-0-A	30858324
63	5,0	15,0	29,3	37,8	50,0	200,0	28,0	8,0	70,0	151,0	M2,5	HTC-HSK-A063-05-200-1-0-A	30858331
63	6,0	16,0	28,2	33,6	50,0	160,0	37,0	10,0	60,0	111,0	M5	HTC-HSK-A063-06-160-1-0-A	30727647
63	6,0	16,0	28,2	37,9	50,0	200,0	37,0	10,0	60,0	152,0	M5	HTC-HSK-A063-06-200-1-0-A	30720812
63	8,0	18,0	28,2	34,6	50,0	160,0	37,0	10,0	50,0	111,0	M6	HTC-HSK-A063-08-160-1-0-A	30727648
63	8,0	18,0	28,2	38,9	50,0	200,0	37,0	10,0	50,0	152,0	M6	HTC-HSK-A063-08-200-1-0-A	30720815
63	10,0	20,0	29,2	36,3	50,0	160,0	41,0	10,0	45,0	113,0	M8x1	HTC-HSK-A063-10-160-1-0-A	30727650
63	10,0	20,0	29,2	40,6	50,0	200,0	41,0	10,0	45,0	154,0	M8x1	HTC-HSK-A063-10-200-1-0-A	30720816
63	12,0	22,0	30,2	37,8	50,0	160,0	46,0	10,0	40,0	113,0	M10x1	HTC-HSK-A063-12-160-1-0-A	30727651
63	12,0	22,0	30,2	42,1	50,0	200,0	46,0	10,0	40,0	154,0	M10x1	HTC-HSK-A063-12-200-1-0-A	30720817
63	14,0	26,0	34,2	41,8	50,0	160,0	46,0	10,0	40,0	113,0	M10x1	HTC-HSK-A063-14-160-1-0-A	30858325
63	14,0	26,0	34,2	46,1	50,0	200,0	46,0	10,0	40,0	154,0	M10x1	HTC-HSK-A063-14-200-1-0-A	30858332
63	16,0	28,0	36,2	43,8	50,0	160,0	49,0	10,0	40,0	113,0	M12x1	HTC-HSK-A063-16-160-1-0-A	30858326
63	16,0	28,0	36,2	48,1	50,0	200,0	49,0	10,0	40,0	154,0	M12x1	HTC-HSK-A063-16-200-1-0-A	30858333
63	18,0	30,0	36,1	45,1	50,0	160,0	49,0	10,0	30,0	115,0	M12x1	HTC-HSK-A063-18-160-1-0-A	30858327
63	18,0	30,0	36,1	49,4	50,0	200,0	49,0	10,0	30,0	156,0	M12x1	HTC-HSK-A063-18-200-1-0-A	30858334
63	20,0	32,0	38,1	47,1	50,0	160,0	51,0	10,0	30,0	115,0	M16x1	HTC-HSK-A063-20-160-1-0-A	30858328
63	20,0	32,0	38,1	49,1	50,0	200,0	51,0	10,0	30,0	156,0	M16x1	HTC-HSK-A063-20-200-1-0-A	30858335

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks according to DIN 1835 form A, DIN 6535 form HA as well as with recesses according to DIN 1835 form B, E and DIN 6535 form HB, HE directly and with reducing sleeve in the clamping diameter. The clamping diameter is designed for a shank tolerance of h6.

Scope of delivery: With length adjustment screw, without coolant tube.

Design: Highest tool life and production quality when using smooth cylindrical shanks according to DIN 1835 form A and DIN 6535 form HA. With a projection length of 2.5xD

(max. 50 mm) radial run-out accuracy 3 µm. When using cylindrical shanks with an inclined clamping surface (form E and form HE), the accuracy may be impaired.

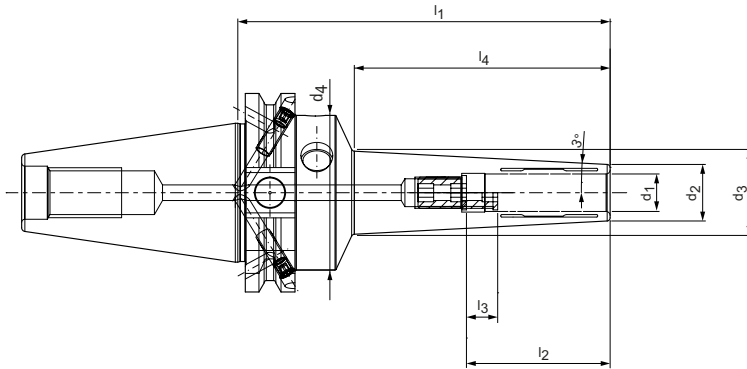
Note: Coolant supply via central through hole. Coolant tubes, code carrier, reducing sleeves to reduce the clamping diameter (if the reducing sleeve is used, the accuracy may be impaired), see chapter "Accessories, spare parts and measuring equipment". Length adjustment screws available on request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

# HighTorque Chuck HTC

with axial tool length adjustment

Shank SK according to ISO 7388-1 Form AD/AF



### 3° slim design

Steep taper	Dimensions								G	Specification	Order no.
	$d_1$	$d_2$	$d_3$	$d_4$	$l_1$	$l_2$	$l_3$	$l_4$			
30°	3,0	9,0	13,2	40,0	80,0	28,0	16,0	40,0	M2,5	HTC-SK030-03-80-1-0-A	30817986
30°	4,0	10,0	14,2	40,0	80,0	28,0	12,0	40,0	M2,5	HTC-SK030-04-80-1-0-A	30817987
30°	5,0	11,0	15,3	40,0	80,0	28,0	8,0	41,0	M2,5	HTC-SK030-05-80-1-0-A	30817988
30°	6,0	12,0	16,3	40,0	80,0	37,0	10,0	41,0	M5	HTC-SK030-06-80-1-0-A	30817989
30°	8,0	14,0	18,3	40,0	80,0	37,0	10,0	41,0	M6	HTC-SK030-08-80-1-0-A	30817990
30°	10,0	16,0	20,5	40,0	80,0	41,0	10,0	42,0	M8x1	HTC-SK030-10-80-1-0-A	30817991
30°	12,0	18,0	22,5	40,0	80,0	46,0	10,0	42,0	M8x1	HTC-SK030-12-80-1-0-A	30817992
40	3,0	9,0	17,4	49,5	120,0	28,0	16,0	80,0	M2,5	HTC-SK040-03-120-3-0-A	30781267
40	4,0	10,0	18,4	49,5	120,0	28,0	12,0	80,0	M2,5	HTC-SK040-04-120-3-0-A	30781270
40	5,0	11,0	19,4	49,5	120,0	28,0	8,0	80,0	M2,5	HTC-SK040-05-120-3-0-A	30781273
40	6,0	12,0	20,4	49,5	120,0	37,0	10,0	80,0	M5	HTC-SK040-06-120-3-0-A	30655457
40	8,0	14,0	22,4	49,5	120,0	37,0	10,0	80,0	M6	HTC-SK040-08-120-3-0-A	30655458
40	10,0	16,0	24,5	49,5	120,0	41,0	10,0	81,0	M8x1	HTC-SK040-10-120-3-0-A	30655459
40	12,0	18,0	26,6	49,5	120,0	46,0	10,0	82,0	M10x1	HTC-SK040-12-120-3-0-A	30655460
40	14,0	22,0	30,3	49,5	120,0	46,0	10,0	79,0	M10x1	HTC-SK040-14-120-3-0-A	30782699
40	16,0	24,0	32,3	49,5	120,0	49,0	10,0	79,0	M12x1	HTC-SK040-16-120-3-0-A	30782702
40	18,0	26,0	34,4	49,5	120,0	49,0	10,0	80,0	M12x1	HTC-SK040-18-120-3-0-A	30782708
40	20,0	28,0	36,4	49,5	120,0	51,0	10,0	80,0	M16x1	HTC-SK040-20-120-3-0-A	30782712

\* Design: Taper shank size is not available in the AD/AF combination design

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks according to DIN 1835 form A, DIN 6535 form HA as well as with recesses according to DIN 1835 form B, E and DIN 6535 form HB, HE directly and with reducing sleeve in the clamping diameter. The clamping diameter is designed for a shank tolerance of h6.

Scope of delivery: With length adjustment screw, without pull stud.

Design: Highest tool life and production quality when using smooth cylindrical shanks according to DIN 1835 form A and DIN 6535 form HA. With a projection length of 2.5xD

(max. 50 mm) radial run-out accuracy 3  $\mu$ m. When using cylindrical shanks with an inclined clamping surface (form E and form HE), the accuracy may be impaired. Basic setting Form AD; if Form AF is required, please specify this when placing your order.

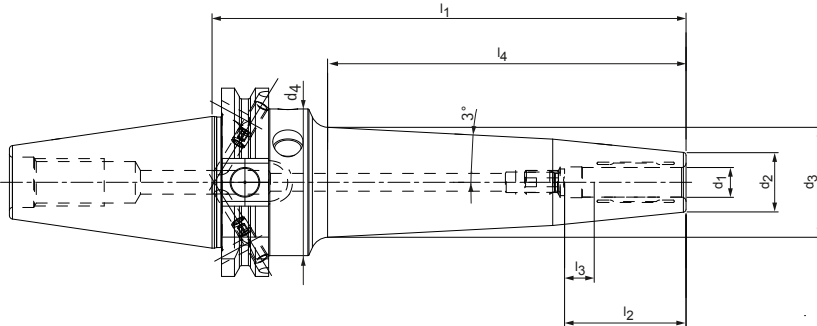
Note: Coolant supply via central through hole. Pull stud, reducing sleeves to reduce the clamping diameter (if the reducing sleeve is used, the accuracy may be impaired), see chapter "Accessories and spare parts". Length adjustment screws available on request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

# HighTorque Chuck HTC

with axial tool length adjustment

Shank SK according to ISO 7388-1 Form AD/AF



Slim design 3°, optimised contour for maximum bending resistance

Steep taper	Dimensions								G	Specification	Order no.
	$d_1$	$d_2$	$d_3$	$d_4$	$l_1$	$l_2$	$l_3$	$l_4$			
40	3,0	13,0	32,2	49,5	160,0	28,0	16,0	117,0	M2,5	HTC-SK040-03-160-3-0-A	30858308
40	3,0	13,0	36,5	49,5	200,0	28,0	16,0	158,0	M2,5	HTC-SK040-03-200-3-0-A	30858315
40	4,0	14,0	33,2	49,5	160,0	28,0	12,0	117,0	M2,5	HTC-SK040-04-160-3-0-A	30858309
40	4,0	14,0	37,5	49,5	200,0	28,0	12,0	158,0	M2,5	HTC-SK040-04-200-3-0-A	30858316
40	5,0	15,0	34,2	49,5	160,0	28,0	8,0	117,0	M2,5	HTC-SK040-05-160-3-0-A	30858310
40	5,0	15,0	38,5	49,5	200,0	28,0	8,0	158,0	M2,5	HTC-SK040-05-200-3-0-A	30858317
40	6,0	16,0	34,4	49,5	160,0	37,0	10,0	119,0	M5	HTC-SK040-06-160-3-0-A	30817993
40	6,0	16,0	38,8	49,5	200,0	37,0	10,0	160,5	M5	HTC-SK040-06-200-3-0-A	30817997
40	8,0	18,0	35,5	49,5	160,0	37,0	10,0	119,5	M6	HTC-SK040-08-160-3-0-A	30817994
40	8,0	18,0	39,8	49,5	200,0	37,0	10,0	160,5	M6	HTC-SK040-08-200-3-0-A	30817998
40	10,0	20,0	37,2	49,5	160,0	41,0	10,0	121,0	M8x1	HTC-SK040-10-160-3-0-A	30817995
40	10,0	20,0	41,5	49,5	200,0	41,0	10,0	162,0	M8x1	HTC-SK040-10-200-3-0-A	30817999
40	12,0	22,0	38,8	49,5	160,0	46,0	10,0	122,0	M10x1	HTC-SK040-12-160-3-0-A	30817996
40	12,0	22,0	43,1	49,5	200,0	46,0	10,0	163,0	M10x1	HTC-SK040-12-200-3-0-A	30818000
40	14,0	26,0	42,7	49,5	160,0	46,0	10,0	121,0	M10x1	HTC-SK040-14-160-3-0-A	30858311
40	14,0	26,0	47,0	49,5	200,0	46,0	10,0	162,0	M10x1	HTC-SK040-14-200-3-0-A	30858318
40	16,0	28,0	44,7	49,5	160,0	49,0	10,0	121,0	M12x1	HTC-SK040-16-160-3-0-A	30858312
40	16,0	28,0	46,8	49,5	200,0	49,0	10,0	162,0	M12x1	HTC-SK040-16-200-3-0-A	30858319
40	18,0	30,0	45,7	49,5	160,0	49,0	10,0	122,0	M12x1	HTC-SK040-18-160-3-0-A	30858313
40	18,0	30,0	47,8	49,5	200,0	49,0	10,0	163,0	M12x1	HTC-SK040-18-200-3-0-A	30858320
40	20,0	32,0	47,8	49,5	160,0	51,0	10,0	122,0	M16x1	HTC-SK040-20-160-3-0-A	30858314
40	20,0	32,0	47,4	49,5	200,0	51,0	10,0	163,0	M16x1	HTC-SK040-20-200-3-0-A	30858321

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks according to DIN 1835 form A, DIN 6535 form HA as well as with recesses according to DIN 1835 form B, E and DIN 6535 form HB, HE directly and with reducing sleeve in the clamping diameter. The clamping diameter is designed for a shank tolerance of h6.

Scope of delivery: With length adjustment screw, without pull stud.

Design: Highest tool life and production quality when using smooth cylindrical shanks according to DIN 1835 form A and DIN 6535 form HA. With a projection length of 2.5xD

(max. 50 mm) radial run-out accuracy 3  $\mu$ m. When using cylindrical shanks with an inclined clamping surface (form E and form HE), the accuracy may be impaired. Basic setting Form AD; if Form AF is required, please specify this when placing your order.

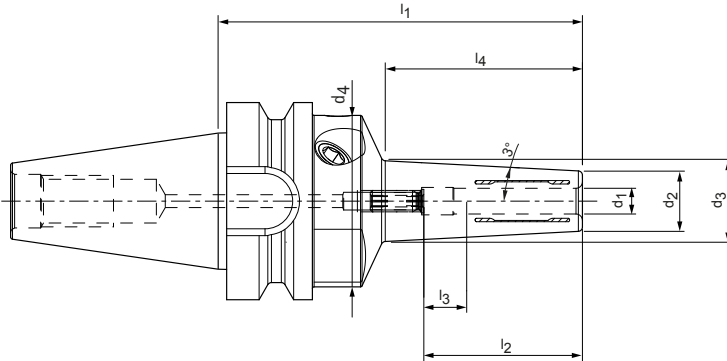
Note: Coolant supply via central through hole. Pull stud, reducing sleeves to reduce the clamping diameter (if the reducing sleeve is used, the accuracy may be impaired), see chapter "Accessories and spare parts". Length adjustment screws available on request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

# HighTorque Chuck HTC

with axial tool length adjustment

Shank BT according to ISO 7388-2 Form JD/JS (JIS B 6339)



### 3° slim design

BT	Dimensions								G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>			
30*	3,0	10,0	14,8	40,0	85,0	28,0	16,0	45,0	M2,5	HTC-BT030-03-85-1-0-A	30819403
30*	4,0	12,0	16,8	40,0	85,0	28,0	12,0	45,0	M2,5	HTC-BT030-04-85-1-0-A	30819404
30*	5,0	13,0	17,8	40,0	85,0	28,0	8,0	45,0	M2,5	HTC-BT030-05-85-1-0-A	30819405
30*	6,0	14,0	18,9	40,0	85,0	37,0	10,0	46,0	M5	HTC-BT030-06-85-1-0-A	30819406
30*	8,0	16,0	20,9	40,0	85,0	37,0	10,0	46,0	M6	HTC-BT030-08-85-1-0-A	30819407
30*	10,0	18,0	23,0	40,0	85,0	41,0	10,0	47,0	M8x1	HTC-BT030-10-85-1-0-A	30819408
30*	12,0	20,0	25,0	40,0	85,0	46,0	10,0	47,0	M8x1	HTC-BT030-12-85-1-0-A	30819409
30*	14,0	24,0	29,0	40,0	85,0	46,0	10,0	47,0	M8x1	HTC-BT030-14-85-1-0-A	30819410
30*	16,0	26,0	31,1	40,0	85,0	49,0	10,0	48,0	M8x1	HTC-BT030-16-85-1-0-A	30819411
30*	18,0	28,0	33,1	40,0	85,0	49,0	10,0	48,0	M8x1	HTC-BT030-18-85-1-0-A	30819412
30*	20,0	30,0	35,2	40,0	85,0	51,0	10,0	49,0	M8x1	HTC-BT030-20-85-1-0-A	30819413
40	3,0	9,0	16,6	49,5	120,0	28,0	16,0	72,0	M2,5	HTC-BT040-03-120-3-0-A	30781286
40	4,0	10,0	17,6	49,5	120,0	28,0	12,0	72,0	M2,5	HTC-BT040-04-120-3-0-A	30781287
40	5,0	11,0	18,6	49,5	120,0	28,0	8,0	72,0	M2,5	HTC-BT040-05-120-3-0-A	30781290
40	6,0	12,0	19,6	49,5	120,0	37,0	10,0	72,0	M5	HTC-BT040-06-120-3-0-A	30757078
40	8,0	14,0	21,6	49,5	120,0	37,0	10,0	72,0	M6	HTC-BT040-08-120-3-0-A	30757080
40	10,0	16,0	23,7	49,5	120,0	41,0	10,0	73,0	M8x1	HTC-BT040-10-120-3-0-A	30757081
40	12,0	18,0	25,8	49,5	120,0	46,0	10,0	74,0	M10x1	HTC-BT040-12-120-3-0-A	30757082
40	14,0	22,0	29,5	49,5	120,0	46,0	10,0	71,0	M10x1	HTC-BT040-14-120-3-0-A	30858267
40	16,0	24,0	31,5	49,5	120,0	49,0	10,0	71,0	M12x1	HTC-BT040-16-120-3-0-A	30858268
40	18,0	26,0	33,6	49,5	120,0	49,0	10,0	72,0	M12x1	HTC-BT040-18-120-3-0-A	30858269
40	20,0	28,0	35,6	49,5	120,0	51,0	10,0	72,0	M16x1	HTC-BT040-20-120-3-0-A	30858270

\* Design: Taper shank size is not available in the JD/JF combination design

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks according to DIN 1835 form A, DIN 6535 form HA as well as with recesses according to DIN 1835 form B, E and DIN 6535 form HB, HE directly and with reducing sleeve in the clamping diameter. The clamping diameter is designed for a shank tolerance of h6.

Scope of delivery: With length adjustment screw, without pull stud.

Design: Highest tool life and production quality when using smooth cylindrical shanks according to DIN 1835 form A and DIN 6535 form HA. With a projection length of 2.5xD (max. 50 mm) radial run-out accuracy 3 µm. When using cylindrical shanks with an in-

clined clamping surface (form E and form HE), the accuracy may be impaired.

Basic setting Form JD; if Form JF is required, please state with the order.

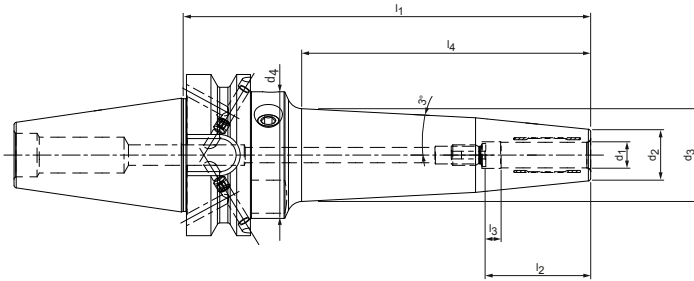
Note: Coolant supply via central through hole. Pull stud, reducing sleeves to reduce the clamping diameter (if the reducing sleeve is used, the accuracy may be impaired), see chapter "Accessories, spare parts and measuring equipment". Length adjustment screws available on request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

# HighTorque Chuck HTC

with axial tool length adjustment

Shank BT according to ISO 7388-2 Form JD/JS (JIS B 6339)



Slim design 3°, optimised contour for maximum bending resistance

BT	Dimensions								G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>			
40	3,0	13,0	31,4	49,5	160,0	28,0	16,0	109,0	M2,5	HTC-BT040-03-160-3-0-A	30858271
40	3,0	13,0	35,7	49,5	200,0	28,0	16,0	150,0	M2,5	HTC-BT040-03-200-3-0-A	30858283
40	4,0	14,0	32,4	49,5	160,0	28,0	12,0	109,0	M2,5	HTC-BT040-04-160-3-0-A	30858272
40	4,0	14,0	36,7	49,5	200,0	28,0	12,0	150,0	M2,5	HTC-BT040-04-200-3-0-A	30858284
40	5,0	15,0	33,4	49,5	160,0	28,0	8,0	109,0	M2,5	HTC-BT040-05-160-3-0-A	30858273
40	5,0	15,0	37,7	49,5	200,0	28,0	8,0	150,0	M2,5	HTC-BT040-05-200-3-0-A	30858285
40	6,0	16,0	33,6	49,5	160,0	37,0	10,0	111,0	M5	HTC-BT040-06-160-3-0-A	30858274
40	6,0	16,0	37,9	49,5	200,0	37,0	10,0	152,5	M5	HTC-BT040-06-200-3-0-A	30858286
40	8,0	18,0	34,7	49,5	160,0	37,0	10,0	111,5	M6	HTC-BT040-08-160-3-0-A	30858275
40	8,0	18,0	39,0	49,5	200,0	37,0	10,0	152,5	M6	HTC-BT040-08-200-3-0-A	30858287
40	10,0	20,0	36,3	49,5	160,0	41,0	10,0	113,0	M8x1	HTC-BT040-10-160-3-0-A	30858277
40	10,0	20,0	40,6	49,5	200,0	41,0	10,0	154,0	M8x1	HTC-BT040-10-200-3-0-A	30858288
40	12,0	22,0	37,9	49,5	160,0	46,0	10,0	114,0	M10x1	HTC-BT040-12-160-3-0-A	30858278
40	12,0	22,0	42,2	49,5	200,0	46,0	10,0	155,0	M10x1	HTC-BT040-12-200-3-0-A	30858289
40	14,0	26,0	41,8	49,5	160,0	46,0	10,0	113,0	M10x1	HTC-BT040-14-160-3-0-A	30858279
40	14,0	26,0	46,1	49,5	200,0	46,0	10,0	154,0	M10x1	HTC-BT040-14-200-3-0-A	30858290
40	16,0	28,0	43,8	49,5	160,0	49,0	10,0	113,0	M12x1	HTC-BT040-16-160-3-0-A	30858280
40	16,0	28,0	46,1	49,5	200,0	49,0	10,0	154,0	M12x1	HTC-BT040-16-200-3-0-A	30858291
40	18,0	30,0	44,9	49,5	160,0	49,0	10,0	114,0	M12x1	HTC-BT040-18-160-3-0-A	30858281
40	18,0	30,0	47,1	49,5	200,0	49,0	10,0	155,0	M12x1	HTC-BT040-18-200-3-0-A	30858292
40	20,0	32,0	46,9	49,5	160,0	51,0	10,0	114,0	M16x1	HTC-BT040-20-160-3-0-A	30858282
40	20,0	32,0	46,9	49,5	200,0	51,0	10,0	155,0	M16x1	HTC-BT040-20-200-3-0-A	30858293

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks according to DIN 1835 form A, DIN 6535 form HA as well as with recesses according to DIN 1835 form B, E and DIN 6535 form HB, HE directly and with reducing sleeve in the clamping diameter. The clamping diameter is designed for a shank tolerance of h6.

Scope of delivery: With length adjustment screw, without pull stud.

Design: Highest tool life and production quality when using smooth cylindrical shanks according to DIN 1835 form A and DIN 6535 form HA. With a projection length of 2.5xD (max. 50 mm) radial run-out accuracy 3 µm. When using cylindrical shanks with an in-

clined clamping surface (form E and form HE), the accuracy may be impaired.

Basic setting Form JD; if Form JF is required, please state with the order.

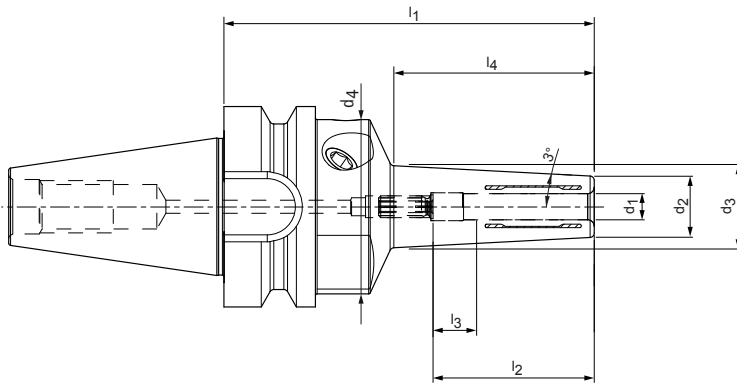
Note: Coolant supply via central through hole. Pull stud, reducing sleeves to reduce the clamping diameter (if the reducing sleeve is used, the accuracy may be impaired), see chapter "Accessories, spare parts and measuring equipment". Length adjustment screws available on request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

# HighTorque Chuck HTC

with axial tool length adjustment

Shank similar to ISO 7388-2 Form JD (with face connection)



## 3° slim design

BT-FC	Dimensions								G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>			
30	3,0	10,0	14,8	40,0	85,0	28,0	16,0	45,0	M2,5	HTC-JD-FC030-03-85-1-0-A	30819441
30	4,0	12,0	16,8	40,0	85,0	28,0	12,0	45,0	M2,5	HTC-JD-FC030-04-85-1-0-A	30819442
30	5,0	13,0	17,8	40,0	85,0	28,0	8,0	45,0	M2,5	HTC-JD-FC030-05-85-1-0-A	30819443
30	6,0	14,0	18,9	40,0	85,0	37,0	10,0	46,0	M5	HTC-JD-FC030-06-85-1-0-A	30819444
30	8,0	16,0	20,9	40,0	85,0	37,0	10,0	46,0	M6	HTC-JD-FC030-08-85-1-0-A	30819445
30	10,0	18,0	23,0	40,0	85,0	41,0	10,0	47,0	M8x1	HTC-JD-FC030-10-85-1-0-A	30819446
30	12,0	20,0	25,0	40,0	85,0	46,0	10,0	47,0	M8x1	HTC-JD-FC030-12-85-1-0-A	30819448
30	14,0	24,0	29,0	40,0	85,0	46,0	10,0	47,0	M8x1	HTC-JD-FC030-14-85-1-0-A	30819449
30	16,0	26,0	31,1	40,0	85,0	49,0	10,0	48,0	M8x1	HTC-JD-FC030-16-85-1-0-A	30819450
30	18,0	28,0	33,1	40,0	85,0	49,0	10,0	48,0	M8x1	HTC-JD-FC030-18-85-1-0-A	30819451
30	20,0	30,0	35,2	40,0	85,0	51,0	10,0	49,0	M8x1	HTC-JD-FC030-20-85-1-0-A	30819452

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks according to DIN 1835 form A, DIN 6535 form HA as well as with recesses according to DIN 1835 form B, E and DIN 6535 form HB, HE directly and with reducing sleeve in the clamping diameter. The clamping diameter is designed for a shank tolerance of h6.

Scope of delivery: With length adjustment screw, without pull stud.

Design: Highest tool life and production quality when using smooth cylindrical shanks according to DIN 1835 form A and DIN 6535 form HA. With a projection length of 2.5xD

(max. 50 mm) radial run-out accuracy 3 µm. When using cylindrical shanks with an inclined clamping surface (form E and form HE), the accuracy may be impaired.

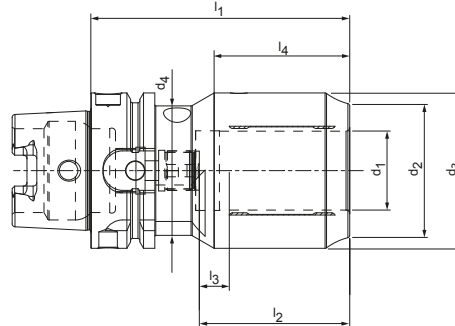
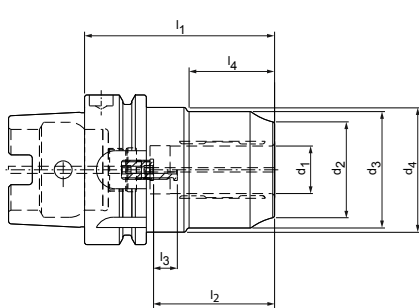
Note: Coolant supply via central through hole. Pull stud, reducing sleeves to reduce the clamping diameter (if the reducing sleeve is used, the accuracy may be impaired), see chapter "Accessories, spare parts and measuring equipment". Length adjustment screws available on request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

# HighTorque Chuck HTC

with axial tool length adjustment

HSK-A (hollow shank taper form A) shank according to DIN 69893-1



## Short heavy-duty design

HSK-A	Dimensions								G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>			
63	12,0	32,0	42,0	52,5	80,0	46,0	10,0	34,0	M8x1	HTC-HSK-A063-12-080-1-0-A	30524702
63	20,0	38,0	49,0	52,5	80,0	51,0	10,0	36,0	M8x1	HTC-HSK-A063-20-080-1-0-A	30490553
63*	32,0	54,0	63,0	52,5	105,0	61,0	10,0	55,0	M16x1	HTC-HSK-A063-32-105-1-0-A	30588142
100	12,0	32,0	42,0	52,5	85,0	46,0	10,0	34,0	M8x1	HTC-HSK-A100-12-085-1-0-A	30524703
100	20,0	38,0	49,0	52,5	85,0	51,0	10,0	36,0	M8x1	HTC-HSK-A100-20-085-1-0-A	30490554
100	32,0	57,0	68,0	72,0	100,0	61,0	10,0	42,0	M8x1	HTC-HSK-A100-32-100-1-0-A	30490555

\* Hammerhead variant see drawing above right

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks according to DIN 1835 form A, DIN 6535 form HA as well as with recesses according to DIN 1835 form B, E and DIN 6535 form HB, HE directly and with reducing sleeve in the clamping diameter. The clamping diameter is designed for a shank tolerance of h6.

Scope of delivery: With length adjustment screw, without coolant tube.

Design: Highest tool life and production quality when using smooth cylindrical shanks according to DIN 1835 form A and DIN 6535 form HA. With a projection length of 2.5xD

(max. 50 mm) radial run-out accuracy 3 µm. When using cylindrical shanks with an inclined clamping surface (form E and form HE), the accuracy may be impaired.

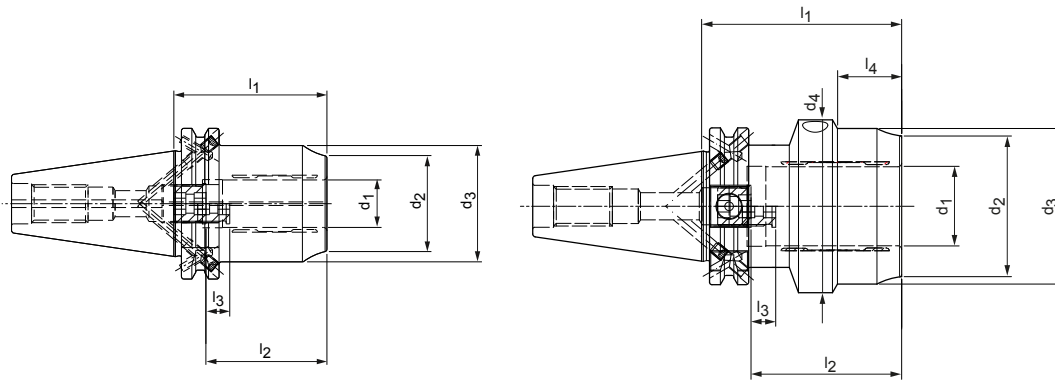
Note: Coolant supply via central through hole. Coolant tubes, code carrier, reducing sleeves to reduce the clamping diameter (if the reducing sleeve is used, the accuracy may be impaired), see chapter "Accessories, spare parts and measuring equipment". Length adjustment screws available on request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

# HighTorque Chuck HTC

with axial tool length adjustment

Shank SK according to ISO 7388-1 Form AD/AF



## Short heavy-duty design

Steep taper	Dimensions								G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>			
40	12,0	32,0	42,0	-	50,0	46,0	10,0	-	M8x1	HTC-SK040-12-050-3-0-A	30524698
40	20,0	38,0	49,0	-	64,5	51,0	10,0	-	M16x1	HTC-SK040-20-065-3-0-A	30490556
40	32,0	57,0	63,0	70,0	81,0	61,0	10,0	26,0	M16x1	HTC-SK040-32-081-3-0-A	30986272
50	12,0	32,0	42,0	-	50,0	46,0	10,0	-	M8x1	HTC-SK050-12-050-3-0-A	30524699
50	20,0	38,0	49,0	-	64,5	51,0	10,0	-	M16x1	HTC-SK050-20-065-3-0-A	30490557
50	32,0	57,0	68,0	72,0	81,0	61,0	10,0	35,0	M16x1	HTC-SK050-32-081-3-0-A	30490558

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks according to DIN 1835 form A, DIN 6535 form HA as well as with recesses according to DIN 1835 form B, E and DIN 6535 form HB, HE directly and with reducing sleeve in the clamping diameter. The clamping diameter is designed for a shank tolerance of h6.

Scope of delivery: With length adjustment screw, without pull stud.

Design: Highest tool life and production quality when using smooth cylindrical shanks according to DIN 1835 form A and DIN 6535 form HA. With a projection length of 2.5xD (max. 50 mm) radial run-out accuracy 3 µm. When using cylindrical shanks with an in-

clined clamping surface (form E and form HE), the accuracy may be impaired.

Basic setting Form AD, if Form AF is required, please specify this when placing your order.

Note: Coolant supply via central through hole. Pull stud, reducing sleeves to reduce the clamping diameter (if the reducing sleeve is used, the accuracy may be impaired), see chapter "Accessories, spare parts and measuring equipment". Length adjustment screws available on request.

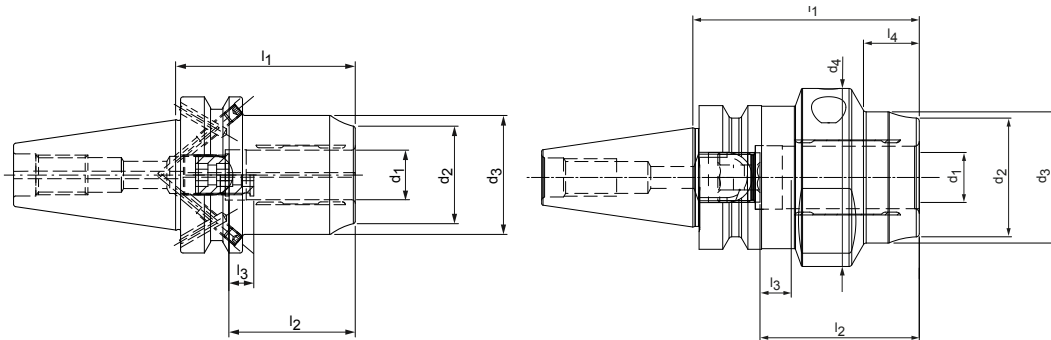
Balancing quality: G 2.5 with 25,000 rpm in delivery status.



# HighTorque Chuck HTC

with axial tool length adjustment

Shank BT according to ISO 7388-2 Form JD/JF (JIS B 6339)



## Short heavy-duty design

BT	Dimensions								G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>			
30*	12,0	32,0	42,0	-	58,0	46,0	10,0	-	M8x1	HTC-BT030-12-058-1-0-A	30986273
30*	20,0	38,0	42,0	57,0	72,5	51,0	10,0	17,0	M16x1	HTC-BT030-20-073-1-0-A	30986274
40	12,0	32,0	42,0	-	58,0	46,0	10,0	-	M8x1	HTC-BT040-12-058-3-0-A	30524705
40	20,0	38,0	49,0	-	72,5	51,0	10,0	-	M16x1	HTC-BT040-20-073-3-0-A	30490572
50	12,0	32,0	42,0	-	69,0	46,0	10,0	-	M8x1	HTC-BT050-12-069-3-0-A	30524707
50	20,0	38,0	49,0	-	83,5	51,0	10,0	-	M16x1	HTC-BT050-20-084-3-0-A	30490573
50	32,0	57,0	68,0	72,0	90,0	61,0	10,0	35,0	M16x1	HTC-BT050-32-090-3-0-A	30490574

\* Design: Taper shank size is not available in the JD/JF combination design.

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks according to DIN 1835 form A, DIN 6535 form HA as well as with recesses according to DIN 1835 form B, E and DIN 6535 form HB, HE directly and with reducing sleeve in the clamping diameter. The clamping diameter is designed for a shank tolerance of h6.

Scope of delivery: With length adjustment screw, without pull stud.

Design: Highest tool life and production quality when using smooth cylindrical shanks according to DIN 1835 form A and DIN 6535 form HA. With a projection length of 2.5xD (max. 50 mm) radial run-out accuracy 3 µm. When using cylindrical shanks with an in-

clined clamping surface (form E and form HE), the accuracy may be impaired.

Basic setting Form JD; if Form JF is required, please state with the order.

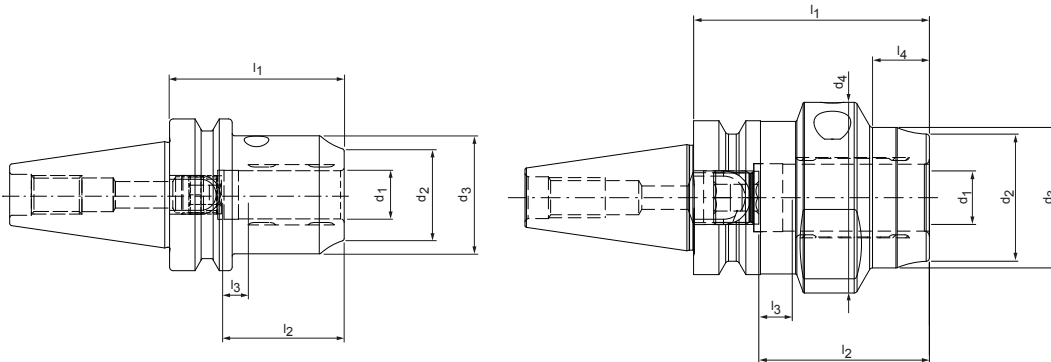
Note: Coolant supply via central through hole. Pull stud, reducing sleeves to reduce the clamping diameter (if the reducing sleeve is used, the accuracy may be impaired), see chapter "Accessories, spare parts and measuring equipment". Length adjustment screws available on request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

# HighTorque Chuck HTC

with axial tool length adjustment

Shank similar to ISO 7388-2 Form JD (with face connection)



## Short heavy-duty design

BT-FC	Dimensions								G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>			
30	12,0	32,0	42,0	-	58,0	46,0	10,0	-	M8x1	HTC-JD-FC030-12-058-1-0-A	30986275
30	20,0	38,0	42,0	57,0	72,5	51,0	10,0	17,0	M16x1	HTC-JD-FC030-20-073-1-0-A	30986276
40	12,0	32,0	42,0	-	58,0	46,0	10,0	-	M8x1	HTC-JD-FC040-12-058-1-0-A	30970592
40	20,0	38,0	49,0	-	72,5	51,0	10,0	-	M16x1	HTC-JD-FC040-20-073-1-0-A	30717002
40	32,0	54,0	62,0	63,0	90,0	61,0	10,0	48,0	M16x1	HTC-JD-FC040-32-090-1-0-A	30717003
50	12,0	32,0	42,0	-	69,0	46,0	10,0	-	M8x1	HTC-JD-FC050-12-069-1-0-A	30970593
50	20,0	38,0	49,0	-	83,5	51,0	10,0	-	M16x1	HTC-JD-FC050-20-084-1-0-A	30728340
50	32,0	57,0	68,0	72,0	90,0	61,0	10,0	35,0	M16x1	HTC-JD-FC050-32-090-1-0-A	30970594

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks according to DIN 1835 form A, DIN 6535 form HA as well as with recesses according to DIN 1835 form B, E and DIN 6535 form HB, HE directly and with reducing sleeve in the clamping diameter. The clamping diameter is designed for a shank tolerance of h6.

Scope of delivery: With length adjustment screw, without pull stud.

Design: Highest tool life and production quality when using smooth cylindrical shanks according to DIN 1835 form A and DIN 6535 form HA. With a projection length of 2.5xD

(max. 50 mm) radial run-out accuracy 3 µm. When using cylindrical shanks with an inclined clamping surface (form E and form HE), the accuracy may be impaired.

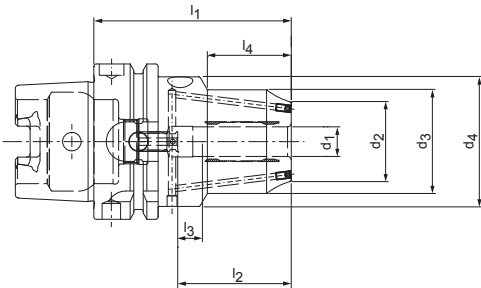
Note: Coolant supply via central through hole. Pull stud, reducing sleeves to reduce the clamping diameter (if the reducing sleeve is used, the accuracy may be impaired), see chapter "Accessories, spare parts and measuring equipment". Length adjustment screws available on request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

# HighTorque Chuck HTC

with axial tool length adjustment

HSK-A (hollow shank taper form A) shank according to DIN 69893-1



Short heavy design with two cooling channel bores, resealable

HSK-A	Dimensions								G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>			
63	12,0	32,0	42,0	52,5	80,0	46,0	10,0	34,0	M8x1	HTC-HSK-A063-12-080-1-0-A	30655666
63	16,0	38,0	46,0	52,5	80,0	49,0	10,0	35,0	M8x1	HTC-HSK-A063-16-080-1-0-A	30655667
63	20,0	41,0	49,0	52,5	80,0	51,0	10,0	36,0	M8x1	HTC-HSK-A063-20-080-1-0-A	30655668
100	12,0	32,0	42,0	52,5	90,0	46,0	10,0	34,0	M8x1	HTC-HSK-A100-12-090-1-0-A	31038802
100	20,0	41,0	49,0	52,5	90,0	51,0	10,0	36,0	M8x1	HTC-HSK-A100-20-090-1-0-A	31038803
100	32,0	57,0	68,0	72,0	105,0	61,0	10,0	42,0	M8x1	HTC-HSK-A100-32-105-1-0-A	31038804

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks according to DIN 1835 form A, DIN 6535 form HA as well as with recesses according to DIN 1835 form B, E and DIN 6535 form HB, HE directly and with reducing sleeve in the clamping diameter. The clamping diameter is designed for a shank tolerance of h6.

Scope of delivery: With length adjustment screw, without coolant tube.

Design: Highest tool life and production quality when using smooth cylindrical shanks according to DIN 1835 form A and DIN 6535 form HA. With a projection length of 2.5xD

(max. 50 mm) radial run-out accuracy 3 µm. When using cylindrical shanks with an inclined clamping surface (form E and form HE), the accuracy may be impaired.

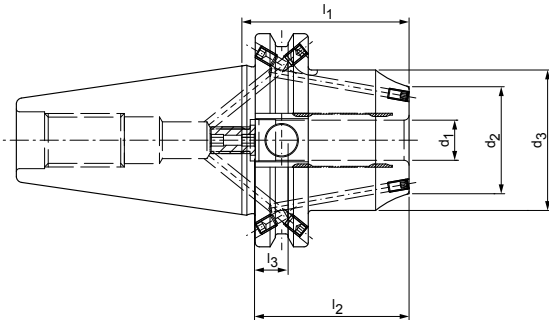
Note: Coolant supply via central through hole. Coolant tubes, code carrier, reducing sleeves to reduce the clamping diameter (if the reducing sleeve is used, the accuracy may be impaired), see chapter "Accessories, spare parts and measuring equipment". Length adjustment screws available on request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

# HighTorque Chuck HTC

with axial tool length adjustment

Shank SK according to ISO 7388-1 Form AD/AF



Short heavy design with two cooling channel bores, resealable

Steep taper	Dimensions						G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>			
40	12,0	32,0	42,0	50,0	46,0	10,0	M8x1	HTC-SK040-12-050-3-0-A	30655663
40	16,0	38,0	46,0	64,5	49,0	10,0	M12x1	HTC-SK040-16-065-3-0-A	30655664
40	20,0	41,0	49,0	64,5	51,0	10,0	M16x1	HTC-SK040-20-065-3-0-A	30655665

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks according to DIN 1835 form A, DIN 6535 form HA as well as with recesses according to DIN 1835 form B, E and DIN 6535 form HB, HE directly and with reducing sleeve in the clamping diameter. The clamping diameter is designed for a shank tolerance of h6.

Scope of delivery: With length adjustment screw, without pull stud.

Design: Highest tool life and production quality when using smooth cylindrical shanks according to DIN 1835 form A and DIN 6535 form HA. With a projection length of 2.5xD (max. 50 mm) radial run-out accuracy 3 µm. When using cylindrical shanks with an in-

clined clamping surface (form E and form HE), the accuracy may be impaired.

Basic setting Form AD, if Form AF is required, please specify this when placing your order.

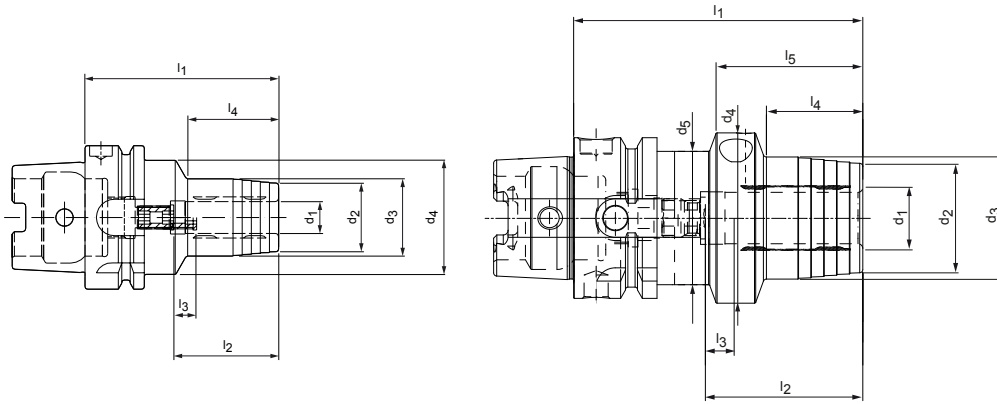
Note: Coolant supply via central through hole. Pull stud, reducing sleeves to reduce the clamping diameter (if the reducing sleeve is used, the accuracy may be impaired), see chapter "Accessories, spare parts and measuring equipment". Length adjustment screws available on request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.



# HydroChuck

in accordance with DIN 69882-7 with axial tool length adjustment  
 HSK-A (hollow shank taper form A) shank according to DIN 69893-1



HSK-A	Dimensions										G	Specification	Order no.
	$d_1$	$d_2$	$d_3$	$d_4$	$d_5$	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$			
32	6,0	22,0	26,0	40,0	-	80,0	37,0	10,0	29,0	-	M5	MHC-HSK-A032-06-080-1-0-A	30250998
32	8,0	24,0	28,0	40,0	-	80,0	37,0	10,0	29,0	-	M6	MHC-HSK-A032-08-080-1-0-A	30250999
32	10,0	26,0	30,0	40,0	-	85,0	41,0	10,0	35,0	-	M6	MHC-HSK-A032-10-085-1-0-A	30251000
32	12,0	28,0	32,0	40,0	-	90,0	46,0	10,0	40,0	-	M6	MHC-HSK-A032-12-090-1-0-A	30251001
40	6,0	22,0	26,0	33,5	-	70,0	37,0	10,0	36,0	-	M5	MHC-HSK-A040-06-070-1-0-A	30251002
40	8,0	24,0	28,0	33,5	-	70,0	37,0	10,0	36,0	-	M6	MHC-HSK-A040-08-070-1-0-A	30251003
40	10,0	26,0	30,0	33,5	-	75,0	41,0	10,0	42,0	-	M6	MHC-HSK-A040-10-075-1-0-A	30251004
40	12,0	28,0	32,0	33,5	-	80,0	46,0	10,0	48,0	-	M6	MHC-HSK-A040-12-080-1-0-A	30251005
50	6,0	22,0	26,0	40,0	-	70,0	37,0	10,0	28,0	-	M5	MHC-HSK-A050-06-070-1-0-A	30251006
50	8,0	24,0	28,0	40,0	-	70,0	37,0	10,0	28,0	-	M6	MHC-HSK-A050-08-070-1-0-A	30251007
50	10,0	26,0	30,0	40,0	-	75,0	41,0	10,0	34,0	-	M8x1	MHC-HSK-A050-10-075-1-0-A	30251008
50	12,0	28,0	32,0	40,0	-	85,0	46,0	10,0	44,0	-	M10x1	MHC-HSK-A050-12-085-1-0-A	30251009
50	14,0	30,0	34,0	40,0	-	85,0	46,0	10,0	44,0	-	M10x1	MHC-HSK-A050-14-085-1-0-A	30251010
50	16,0	34,0	38,0	53,0	41,5	90,0	49,0	10,0	30,0	45,5	M12x1	MHC-HSK-A050-16-090-1-0-A	30251011
50	18,0	36,0	40,0	53,0	41,5	90,0	49,0	10,0	30,0	45,5	M12x1	MHC-HSK-A050-18-090-1-0-A	30251012
50	20,0	38,0	42,0	57,0	41,5	90,0	51,0	10,0	29,0	45,5	M16x1	MHC-HSK-A050-20-090-1-0-A	30251013
63	6,0	22,0	26,0	50,0	-	70,0	37,0	10,0	24,0	-	M5	MHC-HSK-A063-06-070-1-0-A	30251014
63	6,0	22,0	26,0	50,0	-	120,0	37,0	10,0	73,0	-	M5	MHC-HSK-A063-06-120-1-0-A	30273801
63	6,0	22,0	26,0	50,0	-	150,0	37,0	10,0	103,0	-	M5	MHC-HSK-A063-06-150-1-0-A	30251144
63	6,0	22,0	26,0	50,0	-	200,0	37,0	10,0	153,0	-	M5	MHC-HSK-A063-06-200-1-0-A	30251152
63	8,0	24,0	28,0	50,0	-	70,0	37,0	10,0	25,0	-	M6	MHC-HSK-A063-08-070-1-0-A	30251015
63	8,0	24,0	28,0	50,0	-	120,0	37,0	10,0	74,0	-	M6	MHC-HSK-A063-08-120-1-0-A	30273802
63	8,0	24,0	28,0	50,0	-	150,0	37,0	10,0	104,0	-	M6	MHC-HSK-A063-08-150-1-0-A	30251145
63	8,0	24,0	28,0	50,0	-	200,0	37,0	10,0	154,0	-	M6	MHC-HSK-A063-08-200-1-0-A	30251153
63	10,0	26,0	30,0	50,0	-	80,0	41,0	10,0	35,0	-	M8x1	MHC-HSK-A063-10-080-1-0-A	30251016
63	10,0	26,0	30,0	50,0	-	120,0	41,0	10,0	74,0	-	M8x1	MHC-HSK-A063-10-120-1-0-A	30273803
63	10,0	26,0	30,0	50,0	-	150,0	41,0	10,0	104,0	-	M8x1	MHC-HSK-A063-10-150-1-0-A	30251146
63	10,0	26,0	30,0	50,0	-	200,0	41,0	10,0	154,0	-	M8x1	MHC-HSK-A063-10-200-1-0-A	30251154
63	12,0	28,0	32,0	50,0	-	85,0	46,0	10,0	40,0	-	M10x1	MHC-HSK-A063-12-085-1-0-A	30251017
63	12,0	28,0	32,0	50,0	-	120,0	46,0	10,0	75,0	-	M10x1	MHC-HSK-A063-12-120-1-0-A	30273804
63	12,0	28,0	32,0	50,0	-	150,0	46,0	10,0	105,0	-	M10x1	MHC-HSK-A063-12-150-1-0-A	30251147
63	12,0	28,0	32,0	50,0	-	200,0	46,0	10,0	155,0	-	M10x1	MHC-HSK-A063-12-200-1-0-A	30251155
63	14,0	30,0	34,0	50,0	-	85,0	46,0	10,0	40,0	-	M10x1	MHC-HSK-A063-14-085-1-0-A	30251018
63	14,0	30,0	34,0	50,0	-	120,0	46,0	10,0	75,0	-	M10x1	MHC-HSK-A063-14-120-1-0-A	30273805
63	14,0	30,0	34,0	50,0	-	150,0	46,0	10,0	105,0	-	M10x1	MHC-HSK-A063-14-150-1-0-A	30251148
63	14,0	30,0	34,0	50,0	-	200,0	46,0	10,0	155,0	-	M10x1	MHC-HSK-A063-14-200-1-0-A	30251156
63	16,0	34,0	38,0	50,0	-	90,0	49,0	10,0	46,0	-	M12x1	MHC-HSK-A063-16-090-1-0-A	30251019
63	16,0	34,0	38,0	50,0	-	120,0	49,0	10,0	76,0	-	M12x1	MHC-HSK-A063-16-120-1-0-A	30273806
63	16,0	34,0	38,0	50,0	-	150,0	49,0	10,0	106,0	-	M12x1	MHC-HSK-A063-16-150-1-0-A	30251149

## HydroChuck | as per DIN 69882-7 | with axial tool length adjustment | HSK-A shank as per DIN 69893-1

HSK-A	Dimensions										G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	l <sub>5</sub>			
63	16,0	34,0	38,0	50,0	-	200,0	49,0	10,0	156,0	-	M12x1	MHC-HSK-A063-16-200-1-0-A	30251157
63	18,0	36,0	40,0	50,0	-	90,0	49,0	10,0	47,0	-	M12x1	MHC-HSK-A063-18-090-1-0-A	30251020
63	18,0	36,0	40,0	50,0	-	120,0	49,0	10,0	77,0	-	M12x1	MHC-HSK-A063-18-120-1-0-A	30273807
63	18,0	36,0	40,0	50,0	-	150,0	49,0	10,0	107,0	-	M12x1	MHC-HSK-A063-18-150-1-0-A	30251150
63	18,0	36,0	40,0	50,0	-	200,0	49,0	10,0	157,0	-	M12x1	MHC-HSK-A063-18-200-1-0-A	30251158
63	20,0	38,0	42,0	50,0	-	90,0	51,0	10,0	48,0	-	M16x1	MHC-HSK-A063-20-090-1-0-A	30251021
63	20,0	38,0	42,0	50,0	-	120,0	51,0	10,0	78,0	-	M16x1	MHC-HSK-A063-20-120-1-0-A	30273808
63	20,0	38,0	42,0	50,0	-	150,0	51,0	10,0	108,0	-	M16x1	MHC-HSK-A063-20-150-1-0-A	30251151
63	20,0	38,0	42,0	50,0	-	200,0	51,0	10,0	158,0	-	M16x1	MHC-HSK-A063-20-200-1-0-A	30251159
63	25,0	53,0	57,0	52,5	-	120,0	57,0	10,0	63,0	-	M16x1	MHC-HSK-A063-25-120-1-0-A	30251022
63	25,0	53,0	57,0	52,5	-	150,0	57,0	10,0	63,0	-	M16x1	MHC-HSK-A063-25-150-1-0-A	30785029
63	25,0	53,0	57,0	52,5	-	200,0	57,0	10,0	63,0	-	M16x1	MHC-HSK-A063-25-200-1-0-A	30882168
63	32,0	59,0	63,0	59,0	52,5	125,0	61,0	10,0	61,0	77,0	M16x1	MHC-HSK-A063-32-125-1-0-A	30251023
63	32,0	59,0	63,0	59,0	52,5	150,0	61,0	10,0	65,0	77,0	M16x1	MHC-HSK-A063-32-150-1-0-A	30882169
63	32,0	59,0	63,0	59,0	52,2	200,0	61,0	10,0	65,0	77,0	M16x1	MHC-HSK-A063-32-200-1-0-A	30882171
80	6,0	22,0	26,0	50,0	-	70,0	37,0	10,0	24,0	-	M5	MHC-HSK-A080-06-070-1-0-A	30355067
80	8,0	24,0	28,0	50,0	-	70,0	37,0	10,0	24,0	-	M6	MHC-HSK-A080-08-070-1-0-A	30355068
80	10,0	26,0	30,0	50,0	-	80,0	41,0	10,0	35,0	-	M8x1	MHC-HSK-A080-10-080-1-0-A	30355069
80	12,0	28,0	32,0	50,0	-	85,0	46,0	10,0	40,0	-	M10x1	MHC-HSK-A080-12-085-1-0-A	30355071
80	14,0	30,0	34,0	50,0	-	85,0	46,0	10,0	40,0	-	M10x1	MHC-HSK-A080-14-085-1-0-A	30355072
80	16,0	34,0	38,0	50,0	-	95,0	49,0	10,0	51,0	-	M12x1	MHC-HSK-A080-16-095-1-0-A	30355074
80	18,0	36,0	40,0	50,0	-	95,0	49,0	10,0	51,0	-	M12x1	MHC-HSK-A080-18-095-1-0-A	30355075
80	20,0	38,0	42,0	50,0	-	95,0	51,0	10,0	51,0	-	M16x1	MHC-HSK-A080-20-095-1-0-A	30355077
80	25,0	53,0	57,0	63,0	-	110,0	57,0	10,0	65,0	-	M16x1	MHC-HSK-A080-25-110-1-0-A	30355078
80	32,0	59,0	63,0	66,5	-	125,0	61,0	10,0	63,0	-	M16x1	MHC-HSK-A080-32-125-1-0-A	30355080
100	6,0	22,0	26,0	50,0	-	75,0	37,0	10,0	26,0	-	M5	MHC-HSK-A100-06-075-1-0-A	30251024
100	6,0	22,0	26,0	50,0	-	120,0	37,0	10,0	71,0	-	M5	MHC-HSK-A100-06-120-1-0-A	30273809
100	6,0	22,0	26,0	50,0	-	165,0	37,0	10,0	116,0	-	M5	MHC-HSK-A100-06-165-1-0-A	30273810
100	8,0	24,0	28,0	50,0	-	75,0	37,0	10,0	26,0	-	M6	MHC-HSK-A100-08-075-1-0-A	30251025
100	8,0	24,0	28,0	50,0	-	120,0	37,0	10,0	71,0	-	M6	MHC-HSK-A100-08-120-1-0-A	30273811
100	8,0	24,0	28,0	50,0	-	165,0	37,0	10,0	116,0	-	M6	MHC-HSK-A100-08-165-1-0-A	30273812
100	10,0	26,0	30,0	50,0	-	90,0	41,0	10,0	42,0	-	M8x1	MHC-HSK-A100-10-090-1-0-A	30251026
100	10,0	26,0	30,0	50,0	-	120,0	41,0	10,0	72,0	-	M8x1	MHC-HSK-A100-10-120-1-0-A	30273813
100	10,0	26,0	30,0	50,0	-	165,0	41,0	10,0	117,0	-	M8x1	MHC-HSK-A100-10-165-1-0-A	30273814
100	12,0	28,0	32,0	50,0	-	95,0	46,0	10,0	47,0	-	M10x1	MHC-HSK-A100-12-095-1-0-A	30251027
100	12,0	28,0	32,0	50,0	-	120,0	46,0	10,0	72,0	-	M10x1	MHC-HSK-A100-12-120-1-0-A	30273816
100	12,0	28,0	32,0	50,0	-	165,0	46,0	10,0	117,0	-	M10x1	MHC-HSK-A100-12-165-1-0-A	30273817
100	14,0	30,0	34,0	50,0	-	95,0	46,0	10,0	47,0	-	M10x1	MHC-HSK-A100-14-095-1-0-A	30251028
100	16,0	34,0	38,0	50,0	-	100,0	49,0	10,0	53,0	-	M12x1	MHC-HSK-A100-16-100-1-0-A	30251029
100	16,0	34,0	38,0	50,0	-	135,0	49,0	10,0	88,0	-	M12x1	MHC-HSK-A100-16-135-1-0-A	30273818
100	16,0	34,0	38,0	50,0	-	165,0	49,0	10,0	118,0	-	M12x1	MHC-HSK-A100-16-165-1-0-A	30273819
100	18,0	36,0	40,0	50,0	-	100,0	49,0	10,0	53,0	-	M12x1	MHC-HSK-A100-18-100-1-0-A	30251030
100	20,0	38,0	42,0	50,0	-	105,0	51,0	10,0	59,0	-	M16x1	MHC-HSK-A100-20-105-1-0-A	30251031
100	20,0	38,0	42,0	50,0	-	135,0	51,0	10,0	89,0	-	M16x1	MHC-HSK-A100-20-135-1-0-A	30273820
100	20,0	38,0	42,0	50,0	-	165,0	51,0	10,0	119,0	-	M16x1	MHC-HSK-A100-20-165-1-0-A	30273821
100	25,0	53,0	57,0	63,0	-	110,0	57,0	10,0	62,0	-	M16x1	MHC-HSK-A100-25-110-1-0-A	30251032
100	25,0	53,0	57,0	63,0	-	165,0	57,0	10,0	117,0	-	M16x1	MHC-HSK-A100-25-165-1-0-A	30882185
100	32,0	59,0	63,0	67,0	-	110,0	61,0	10,0	62,0	-	M16x1	MHC-HSK-A100-32-110-1-0-A	30251033
100	32,0	59,0	63,0	67,0	-	165,0	61,0	10,0	117,0	-	M16x1	MHC-HSK-A100-32-165-1-0-A	30882187

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks according to DIN 1835 form A, DIN 6535 form HA as well as with recesses according to DIN 1835 form B, E and DIN 6535 form HB, HE directly and with reducing sleeve in the clamping diameter. The clamping diameter is designed for a shank tolerance of h6.

Scope of delivery: With length adjustment screw, without coolant tube.

Design: Highest tool life and production quality when using smooth cylindrical shanks according to DIN 1835 form A and DIN 6535 form HA. With a projection length of 2.5xD (max. 50 mm) radial run-out accuracy 3 µm. When using cylindrical shanks with an in-

clined clamping surface (form E and form HE), the accuracy may be impaired.

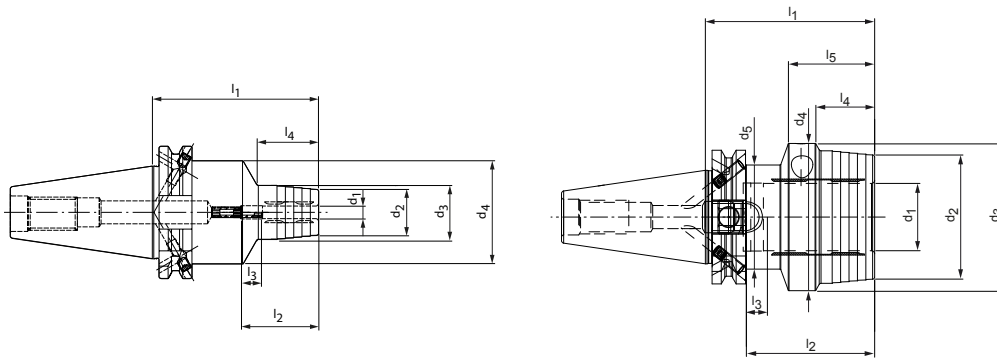
Note: Coolant supply via central through hole. Coolant tubes, code carrier, reducing sleeves to reduce the clamping diameter (if the reducing sleeve is used, the accuracy may be impaired), see chapter "Accessories, spare parts and measuring equipment". Length adjustment screws available on request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

# HydroChuck

with axial tool length adjustment

Shank SK according to ISO 7388-1 Form AD/AF



Steep taper	Dimensions										G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	l <sub>5</sub>			
30*	6,0	23,0	26,0	44,5	-	55,0	37,0	10,0	20,0	-	M5	MHC-SK030-06-055-1-0-A	30559118
30*	8,0	24,0	28,0	44,5	-	55,0	37,0	10,0	20,0	-	M6	MHC-SK030-08-055-1-0-A	30559119
30*	10,0	27,0	30,0	44,5	-	55,0	41,0	10,0	21,0	-	M8x1	MHC-SK030-10-055-1-0-A	30559120
30*	12,0	28,0	32,0	44,5	-	55,0	46,0	10,0	22,0	-	M8x1	MHC-SK030-12-055-1-0-A	30559121
30*	14,0	30,0	34,0	44,5	-	90,0	46,0	10,0	42,0	-	M8x1	MHC-SK030-14-090-1-0-A	30559122
30*	16,0	34,0	38,0	44,5	-	90,0	49,0	10,0	50,0	-	M8x1	MHC-SK030-16-090-1-0-A	30559123
30*	18,0	36,0	40,0	44,5	-	90,0	49,0	10,0	50,0	-	M8x1	MHC-SK030-18-090-1-0-A	30559124
30*	20,0	38,0	42,0	44,5	-	90,0	51,0	10,0	50,0	-	M8x1	MHC-SK030-20-090-1-0-A	30559125
40	6,0	22,0	26,0	49,5	-	80,5	37,0	10,0	29,5	-	M5	MHC-SK040-06-081-3-0-A	30250958
40	8,0	24,0	28,0	49,5	-	80,5	37,0	10,0	30,0	-	M6	MHC-SK040-08-081-3-0-A	30250959
40	10,0	26,0	30,0	49,5	-	80,5	41,0	10,0	35,0	-	M8x1	MHC-SK040-10-081-3-0-A	30250960
40	12,0	28,0	32,0	49,5	-	80,5	46,0	10,0	40,0	-	M10x1	MHC-SK040-12-081-3-0-A	30250961
40	14,0	30,0	34,0	49,5	-	80,5	46,0	10,0	40,0	-	M10x1	MHC-SK040-14-081-3-0-A	30250962
40	16,0	34,0	38,0	49,5	-	80,5	49,0	10,0	45,0	-	M12x1	MHC-SK040-16-081-3-0-A	30250963
40	18,0	36,0	40,0	49,5	-	80,5	49,0	10,0	46,0	-	M12x1	MHC-SK040-18-081-3-0-A	30250964
40	20,0	38,0	42,0	49,5	-	80,5	51,0	10,0	47,0	-	M16x1	MHC-SK040-20-081-3-0-A	30250965
40	25,0	51,0	55,0	63,0	49,5	80,5	57,0	10,0	28,0	42,0	M16x1	MHC-SK040-25-081-3-0-A	30250966
40	32,0	59,0	63,0	70,0	49,5	80,5	61,0	10,0	20,0	41,0	M16x1	MHC-SK040-32-081-3-0-A	30250967
50	6,0	22,0	26,0	49,5	-	80,5	37,0	10,0	29,5	-	M5	MHC-SK050-06-081-3-0-A	30250968
50	8,0	24,0	28,0	49,5	-	80,5	37,0	10,0	30,0	-	M6	MHC-SK050-08-081-3-0-A	30250969
50	10,0	26,0	30,0	49,5	-	80,5	41,0	10,0	35,0	-	M8x1	MHC-SK050-10-081-3-0-A	30250970
50	12,0	28,0	32,0	49,5	-	80,5	46,0	10,0	40,0	-	M10x1	MHC-SK050-12-081-3-0-A	30250971
50	14,0	30,0	34,0	49,5	-	80,5	46,0	10,0	40,0	-	M10x1	MHC-SK050-14-081-3-0-A	30250972
50	16,0	34,0	38,0	49,5	-	80,5	49,0	10,0	45,0	-	M12x1	MHC-SK050-16-081-3-0-A	30250973
50	18,0	36,0	40,0	49,5	-	80,5	49,0	10,0	46,0	-	M12x1	MHC-SK050-18-081-3-0-A	30250974
50	20,0	38,0	42,0	49,5	-	80,5	51,0	10,0	42,0	-	M16x1	MHC-SK050-20-081-3-0-A	30250975
50	25,0	51,0	55,0	63,0	-	100,0	57,0	10,0	48,0	-	M16x1	MHC-SK050-25-100-3-0-A	30250976
50	32,0	59,0	63,0	70,0	-	100,0	61,0	10,0	61,0	-	M16x1	MHC-SK050-32-100-3-0-A	30250977

\* Design: Taper shank size is not available in the AD/AF combination design

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks according to DIN 1835 form A, DIN 6535 form HA as well as with recesses according to DIN 1835 form B, E and DIN 6535 form HB, HE directly and with reducing sleeve in the clamping diameter. The clamping diameter is designed for a shank tolerance of h6.

Scope of delivery: With length adjustment screw, without pull stud.

Design: Highest tool life and production quality when using smooth cylindrical shanks according to DIN 1835 form A and DIN 6535 form HA. With a projection length of 2.5xD (max. 50 mm) radial run-out accuracy 3 µm. When using cylindrical shanks with an in-

clined clamping surface (form E and form HE), the accuracy may be impaired. Basic setting Form AD, if Form AF is required, please specify this when placing your order.

Note: Coolant supply via central through hole. Pull stud, reducing sleeves to reduce the clamping diameter (if the reducing sleeve is used, the accuracy may be impaired), see chapter "Accessories, spare parts and measuring equipment". Length adjustment screws available on request.

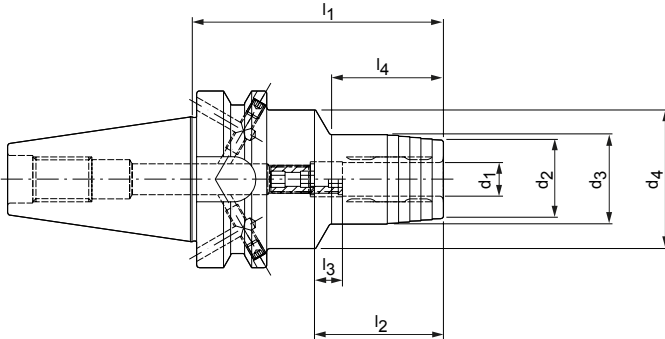
Balancing quality: G 2.5 with 25,000 rpm in delivery status.



# HydroChuck

with axial tool length adjustment

Shank BT according to ISO 7388-2 Form JD/JF (JIS B 6339)



BT	Dimensions								G	Specification	Order no.
	$d_1$	$d_2$	$d_3$	$d_4$	$l_1$	$l_2$	$l_3$	$l_4$			
30*	6,0	23,0	26,0	45,0	50,8	37,0	10,0	12,3	M5	MHC-BT030-06-051-1-0-A	30270438
30*	8,0	25,0	28,0	45,0	50,8	37,0	10,0	12,5	M6	MHC-BT030-08-051-1-0-A	30270439
30*	10,0	27,0	30,0	45,0	50,8	41,0	10,0	13,0	M8x1	MHC-BT030-10-051-1-0-A	30270440
30*	12,0	29,0	32,0	45,0	50,8	46,0	10,0	14,0	M8x1	MHC-BT030-12-051-1-0-A	30270441
30*	14,0	30,0	34,0	45,0	90,0	46,0	10,0	45,0	M8x1	MHC-BT030-14-090-1-0-A	30270442
30*	16,0	34,0	38,0	45,0	90,0	49,0	10,0	50,0	M8x1	MHC-BT030-16-090-1-0-A	30270443
30*	18,0	36,0	40,0	45,0	90,0	49,0	10,0	50,0	M8x1	MHC-BT030-18-090-1-0-A	30270444
30*	20,0	38,0	42,0	45,0	90,0	51,0	10,0	50,0	M8x1	MHC-BT030-20-090-1-0-A	30270445
40	6,0	22,0	26,0	49,5	90,0	37,0	10,0	29,0	M5	MHC-BT040-06-090-3-0-A	30251037
40	8,0	24,0	28,0	49,5	90,0	37,0	10,0	30,0	M6	MHC-BT040-08-090-3-0-A	30251038
40	10,0	26,0	30,0	49,5	90,0	41,0	10,0	35,0	M8x1	MHC-BT040-10-090-3-0-A	30251039
40	12,0	28,0	32,0	49,5	90,0	46,0	10,0	40,0	M10x1	MHC-BT040-12-090-3-0-A	30251040
40	14,0	30,0	34,0	49,5	90,0	46,0	10,0	40,0	M10x1	MHC-BT040-14-090-3-0-A	30251041
40	16,0	34,0	38,0	49,5	90,0	49,0	10,0	45,0	M12x1	MHC-BT040-16-090-3-0-A	30251042
40	18,0	36,0	40,0	49,5	90,0	49,0	10,0	46,0	M12x1	MHC-BT040-18-090-3-0-A	30251043
40	20,0	38,0	42,0	49,5	90,0	51,0	10,0	47,0	M16x1	MHC-BT040-20-090-3-0-A	30251044
40	25,0	51,0	55,0	52,0	90,0	57,0	10,0	50,0	M16x1	MHC-BT040-25-090-3-0-A	30251045
40	32,0	59,0	63,0	62,0	90,0	61,0	10,0	48,0	M16x1	MHC-BT040-32-090-3-0-A	30251046
50	6,0	22,0	26,0	49,5	90,0	37,0	10,0	29,0	M5	MHC-BT050-06-090-3-0-A	30251047
50	8,0	24,0	28,0	49,5	90,0	37,0	10,0	30,0	M6	MHC-BT050-08-090-3-0-A	30251048
50	10,0	26,0	30,0	49,5	90,0	41,0	10,0	34,0	M8x1	MHC-BT050-10-090-3-0-A	30251049
50	12,0	28,0	32,0	49,5	90,0	46,0	10,0	34,0	M10x1	MHC-BT050-12-090-3-0-A	30251050
50	14,0	30,0	34,0	49,5	90,0	46,0	10,0	35,0	M10x1	MHC-BT050-14-090-3-0-A	30251051
50	16,0	34,0	38,0	49,5	90,0	49,0	10,0	35,0	M12x1	MHC-BT050-16-090-3-0-A	30251052
50	18,0	36,0	40,0	49,5	90,0	49,0	10,0	35,0	M12x1	MHC-BT050-18-090-3-0-A	30251053
50	20,0	38,0	42,0	49,5	90,0	51,0	10,0	35,0	M16x1	MHC-BT050-20-090-3-0-A	30251054
50	25,0	51,0	55,0	63,0	110,0	57,0	10,0	48,0	M16x1	MHC-BT050-25-110-3-0-A	30251055
50	32,0	59,0	63,0	70,0	110,0	61,0	10,0	50,0	M16x1	MHC-BT050-32-110-3-0-A	30251056

\* Design: Taper shank size is not available in the JD/JF combination design

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks according to DIN 1835 form A, DIN 6535 form HA as well as with recesses according to DIN 1835 form B, E and DIN 6535 form HB, HE directly and with reducing sleeve in the clamping diameter. The clamping diameter is designed for a shank tolerance of h6.

Scope of delivery: With length adjustment screw, without pull stud.

Design: Highest tool life and production quality when using smooth cylindrical shanks according to DIN 1835 form A and DIN 6535 form HA. With a projection length of 2.5xD (max. 50 mm) radial run-out accuracy 3  $\mu$ m. When using cylindrical shanks with an in-

clined clamping surface (form E and form HE), the accuracy may be impaired. Basic setting Form JD; if Form JF is required, please state with the order.

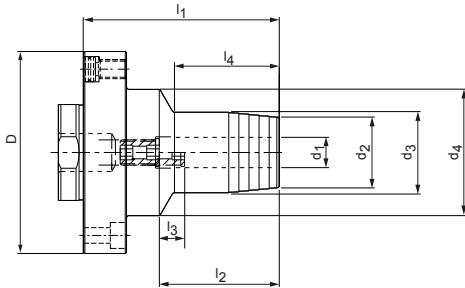
Note: Coolant supply via central through hole. Pull stud, reducing sleeves to reduce the clamping diameter (if the reducing sleeve is used, the accuracy may be impaired), see chapter "Accessories, spare parts and measuring equipment". Length adjustment screws available on request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

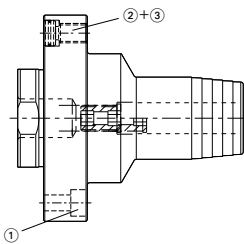
# HydroChuck

with radial and angular alignment and axial tool length adjustment

Module connection sizes in accordance with MN5000-14



Adapter diameter Module D	Dimensions								G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>			
60	6,0	22,0	26,0	42,0	65,0	37,0	10,0	34,0	M5	MHC-MOD060-06-065-1-2-A	30712231
60	8,0	24,0	28,0	42,0	65,0	37,0	10,0	35,0	M6	MHC-MOD060-08-065-1-2-A	30712232
60	10,0	26,0	30,0	42,0	70,0	41,0	10,0	40,0	M8x1	MHC-MOD060-10-070-1-2-A	30712234
60	12,0	28,0	32,0	42,0	75,0	46,0	10,0	46,0	M10x1	MHC-MOD060-12-075-1-2-A	30712235
80	12,0	28,0	32,0	50,0	77,5	46,0	10,0	41,5	M10x1	MHC-MOD080-12-078-1-2-A	30320043
80	16,0	34,0	38,0	50,0	82,5	49,0	10,0	47,5	M12x1	MHC-MOD080-16-083-1-2-A	30320044
80	20,0	38,0	42,0	50,0	82,5	51,0	10,0	50,0	M16x1	MHC-MOD080-20-083-1-2-A	30320045
100	25,0	53,0	57,0	63,0	100,0	57,0	10,0	61,0	M16x1	MHC-MOD100-25-100-1-2-A	30320046
117	32,0	60,0	64,0	75,0	103,0	61,0	10,0	61,0	M16x1	MHC-MOD117-32-103-1-2-A	30320047



## Spare parts for HydroChucks with radial and angular alignment

Module diameter D	Quantity required	① Cylinder head screw in accordance with ISO 4762		② Thrust pad		③ Threaded pin	
		Size	Order no.	Specification	Order no.	Specification	Order no.
60	4	M5x16 - 12.9	10003601	∅10.6x5	10040108	M8x1x8	10040109
80	4	M6x20 - 12.9	10003619	∅10.6x5	10040108	M8x1x11.5	10075074
100	4	M8x25 - 12.9	10003637	∅12.8x5	10075116	M10x1x14	10075100
117	4	M8x25 - 12.9	10003637	∅12.8x5	10075116	M10x1x14	10075100

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks according to DIN 1835 form A, DIN 6535 form HA as well as with recesses according to DIN 1835 form B, E and DIN 6535 form HB, HE directly and with reducing sleeve in the clamping diameter. The clamping diameter is designed for a shank tolerance of h6.

Scope of delivery: With length adjustment screw, clamping screw, cylinder head screws (for fastening the chuck) and alignment screws (thrust pad and threaded pin).

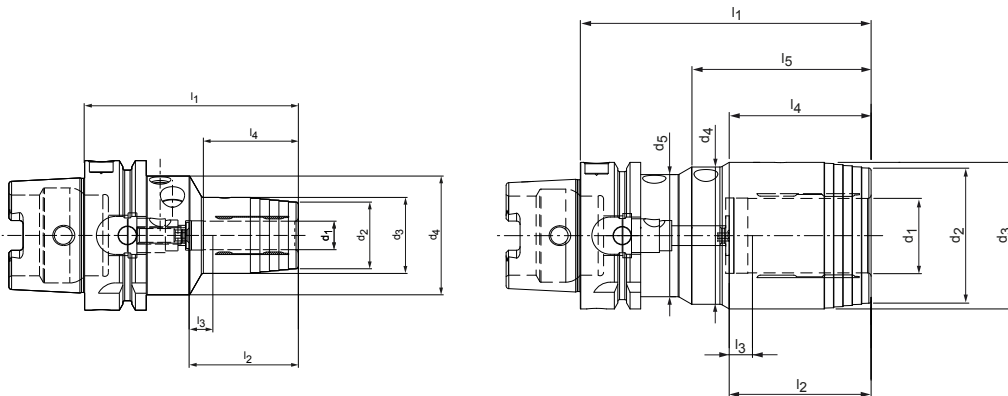
Design: Highest tool life and production quality when using smooth cylindrical shanks ac-

ording to DIN 1835 form A and DIN 6535 form HA. With a projection length of 2.5xD (max. 50 mm) radial run-out accuracy 3 µm. The radial run-out is adjustable thanks to threaded pins (for alignment) in the machine spindle and in the HSK (hollow shank taper) or SK (steep taper) adapter. Adjustable for axial run-out due to thrust pad and threaded pin in the hydraulic chuck. When using cylindrical shanks with an inclined clamping surface (form E and form HE), the accuracy may be impaired.

Balancing quality: Balancing quality: G 2.5 with 16,000 rpm in delivery status.

# HydroChuck

in accordance with DIN 69882-7 with radial tool length adjustment  
HSK-A (hollow shank taper form A) shank according to DIN 69893-1



HSK-A	Dimensions										G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	l <sub>5</sub>			
63	6,0	22,0	26,0	50,0	-	80,0	37,0	10,0	33,0	-	M6	MHC-HSK-A063-06-080-1-0-R	30349205
63	8,0	24,0	28,0	50,0	-	80,0	37,0	10,0	33,0	-	M6	MHC-HSK-A063-08-080-1-0-R	30349206
63	10,0	26,0	30,0	50,0	-	85,0	41,0	10,0	38,0	-	M8x1	MHC-HSK-A063-10-085-1-0-R	30349207
63	12,0	28,0	32,0	50,0	-	90,0	46,0	10,0	40,0	-	M8x1	MHC-HSK-A063-12-090-1-0-R	30349208
63	14,0	30,0	34,0	50,0	-	90,0	46,0	10,0	46,0	-	M8x1	MHC-HSK-A063-14-090-1-0-R	30349209
63	16,0	34,0	38,0	50,0	-	95,0	49,0	10,0	51,0	-	M8x1	MHC-HSK-A063-16-095-1-0-R	30349210
63	18,0	36,0	40,0	50,0	-	95,0	49,0	10,0	52,0	-	M8x1	MHC-HSK-A063-18-095-1-0-R	30349211
63	20,0	38,0	42,0	50,0	-	100,0	51,0	10,0	51,0	-	M8x1	MHC-HSK-A063-20-100-1-0-R	30349212
63	25,0	53,0	57,0	52,5	-	120,0	57,0	10,0	54,5	-	M8x1	MHC-HSK-A063-25-120-1-0-R	30349213
63	32,0	58,0	63,0	59,0	52,5	125,0	61,0	10,0	61,0	77,0	M8x1	MHC-HSK-A063-32-125-1-0-R	30349214
100	6,0	22,0	26,0	63,0	-	85,0	37,0	10,0	33,0	-	M6	MHC-HSK-A100-06-085-1-0-R	30349215
100	8,0	24,0	28,0	63,0	-	85,0	37,0	10,0	33,0	-	M6	MHC-HSK-A100-08-085-1-0-R	30349216
100	10,0	26,0	30,0	63,0	-	90,0	41,0	10,0	36,0	-	M8x1	MHC-HSK-A100-10-090-1-0-R	30349217
100	12,0	28,0	32,0	63,0	-	95,0	46,0	10,0	40,0	-	M8x1	MHC-HSK-A100-12-095-1-0-R	30349218
100	14,0	30,0	34,0	63,0	-	95,0	46,0	10,0	41,0	-	M8x1	MHC-HSK-A100-14-095-1-0-R	30349219
100	16,0	34,0	38,0	63,0	-	100,0	49,0	10,0	46,0	-	M8x1	MHC-HSK-A100-16-100-1-0-R	30349220
100	18,0	36,0	40,0	63,0	-	100,0	49,0	10,0	46,0	-	M8x1	MHC-HSK-A100-18-100-1-0-R	30349221
100	20,0	38,0	42,0	75,0	-	105,0	51,0	10,0	51,0	-	M8x1	MHC-HSK-A100-20-105-1-0-R	30349222
100	25,0	53,0	57,0	75,0	-	115,0	57,0	10,0	55,5	-	M8x1	MHC-HSK-A100-25-115-1-0-R	30349223
100	32,0	58,0	63,0	75,0	-	120,0	61,0	10,0	63,5	-	M8x1	MHC-HSK-A100-32-120-1-0-R	30349224

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks according to DIN 1835 form A, DIN 6535 form HA as well as with recesses according to DIN 1835 form B, E and DIN 6535 form HB, HE directly and with reducing sleeve in the clamping diameter. The clamping diameter is designed for a shank tolerance of h6.

Scope of delivery: With length adjustment screw, without coolant tube.

Design: Highest tool life and production quality when using smooth cylindrical shanks according to DIN 1835 form A and DIN 6535 form HA. With a projection length of 2.5xD (max. 50 mm) radial run-out accuracy 3 µm. When using cylindrical shanks with an in-

clined clamping surface (form E and form HE), the accuracy may be impaired. Basic setting Form JD; if Form JF is required, please state with the order.

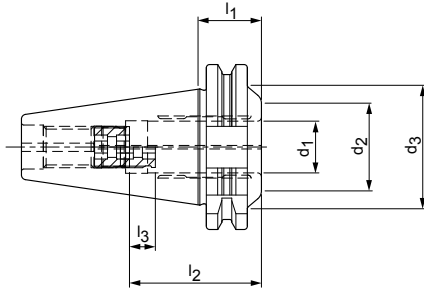
Note: Coolant supply via central through hole. Coolant tube, code carrier, reducing sleeves to reduce the clamping diameter (if the reducing sleeve is used, the accuracy may be impaired), see chapter "Accessories, spare parts and measuring equipment". Length adjustment screws available upon request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

# HydroChuck

with axial tool length adjustment

Shank SK according to ISO 7388-1 Form AD



## Ultra-short design

Steep taper	Dimensions						G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>			
40	20,0	34,0	48,0	24,5	51,0	10,0	M16x1	MHC-SK040-20-025-1-0-A	30524709

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks according to DIN 1835 form A, DIN 6535 form HA as well as with recesses according to DIN 1835 form B, E and DIN 6535 form HB, HE directly and with reducing sleeve in the clamping diameter. The clamping diameter is designed for a shank tolerance of h6.

Scope of delivery: With length adjustment screw, without pull stud.

Design: Highest tool life and production quality when using smooth cylindrical shanks according to DIN 1835 form A and DIN 6535 form HA. With a projection length of 2.5xD (max. 50 mm) radial run-out accuracy 3 µm. When using cylindrical shanks with an

inclined clamping surface (form E and form HE), the accuracy may be impaired.

Basic setting Form AD, if Form AF is required, please specify this when placing your order.

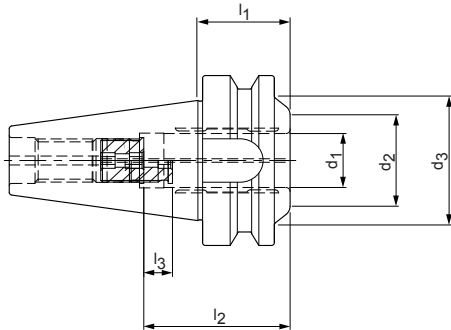
Note: Coolant supply via central through hole. Pull stud, reducing sleeves to reduce the clamping diameter (if the reducing sleeve is used, the accuracy may be impaired), see chapter "Accessories, spare parts and measuring equipment". Length adjustment screws available on request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

# HydroChuck

with axial tool length adjustment

Shank BT according to ISO 7388-2 Form JD (JIS B 6339)



## Ultra-short design

BT	Dimensions						G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>			
40	20,0	38,0	48,0	32,5	51,0	10,0	M16x1	MHC-BT040-20-033-1-0-A	30524713

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks according to DIN 1835 form A, DIN 6535 form HA as well as with recesses according to DIN 1835 form B, E and DIN 6535 form HB, HE directly and with reducing sleeve in the clamping diameter. The clamping diameter is designed for a shank tolerance of h6.

Scope of delivery: With length adjustment screw, without pull stud.

Design: Highest tool life and production quality when using smooth cylindrical shanks according to DIN 1835 form A and DIN 6535 form HA. With a projection length of 2.5xD (max. 50 mm) radial run-out accuracy 3 µm. When using cylindrical shanks with an in-

clined clamping surface (form E and form HE), the accuracy may be impaired. Basic setting Form JD; if Form JF is required, please state with the order.

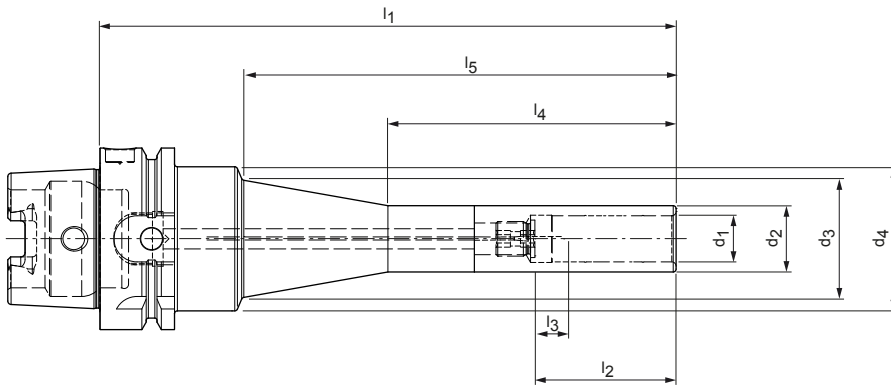
Note: Coolant supply via central through hole. Pull stud, reducing sleeves to reduce the clamping diameter (if the reducing sleeve is used, the accuracy may be impaired), see chapter "Accessories, spare parts and measuring equipment". Length adjustment screws available on request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

# Hydro DReam Chuck, cylindrical slim

with axial tool length adjustment

HSK-A (hollow shank taper form A) shank according to DIN 69893-1



HSK-A	Dimensions									G	Specification	Order no.
	$d_1$	$d_2$	$d_3$	$d_4$	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$			
63	6,0	15,0	32,6	50,0	200,0	37,0	10,0	100,0	150,0	M5	MHC-HSK-A063-06-200-1-0-A	30887670
63	8,0	17,0	34,6	50,0	200,0	37,0	10,0	100,0	150,0	M6	MHC-HSK-A063-08-200-1-0-A	30887671
63	10,0	19,0	36,6	50,0	200,0	41,0	10,0	100,0	150,0	M8x1	MHC-HSK-A063-10-200-1-0-A	30887012
63	12,0	21,0	38,5	50,0	200,0	46,0	10,0	100,0	150,0	M10x1	MHC-HSK-A063-12-200-1-0-A	30887014
63	14,0	23,0	40,6	50,0	200,0	46,0	10,0	100,0	150,0	M10x1	MHC-HSK-A063-14-200-1-0-A	31015415
63	16,0	25,0	42,6	50,0	200,0	49,0	10,0	100,0	150,0	M12x1	MHC-HSK-A063-16-200-1-0-A	31015417
63	18,0	27,0	42,8	50,0	200,0	49,0	10,0	100,0	150,0	M12x1	MHC-HSK-A063-18-200-1-0-A	31015516
63	20,0	29,0	46,6	50,0	200,0	51,0	10,0	100,0	150,0	M16x1	MHC-HSK-A063-20-200-1-0-A	30887015
100	6,0	15,0	32,6	50,0	200,0	37,0	10,0	100,0	150,0	M5	MHC-HSK-A100-06-200-1-0-A	30887016
100	8,0	17,0	34,6	50,0	200,0	37,0	10,0	100,0	150,0	M6	MHC-HSK-A100-08-200-1-0-A	30887017
100	10,0	19,0	36,6	50,0	200,0	41,0	10,0	100,0	150,0	M8x1	MHC-HSK-A100-10-200-1-0-A	30887019
100	12,0	21,0	38,5	50,0	200,0	46,0	10,0	100,0	150,0	M10x1	MHC-HSK-A100-12-200-1-0-A	30887020
100	14,0	23,0	40,6	50,0	200,0	46,0	10,0	100,0	150,0	M10x1	MHC-HSK-A100-14-200-1-0-A	31015418
100	16,0	25,0	42,6	50,0	200,0	49,0	10,0	100,0	150,0	M12x1	MHC-HSK-A100-16-200-1-0-A	31015420
100	18,0	27,0	42,8	50,0	200,0	49,0	10,0	100,0	150,0	M12x1	MHC-HSK-A100-18-200-1-0-A	31015519
100	20,0	29,0	46,6	50,0	200,0	51,0	10,0	100,0	150,0	M16x1	MHC-HSK-A100-20-200-1-0-A	30887021

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks according to DIN 1835 form A, DIN 6535 form HA as well as with recesses according to DIN 1835 form B, E and DIN 6535 form HB, HE directly and with reducing sleeve in the clamping diameter. The clamping diameter is designed for a shank tolerance of h6.

Scope of delivery: With length adjustment screw, without coolant tube.

Design: Highest tool life and production quality when using smooth cylindrical shanks according to DIN 1835 form A and DIN 6535 form HA. With a projection length of 2.5xD

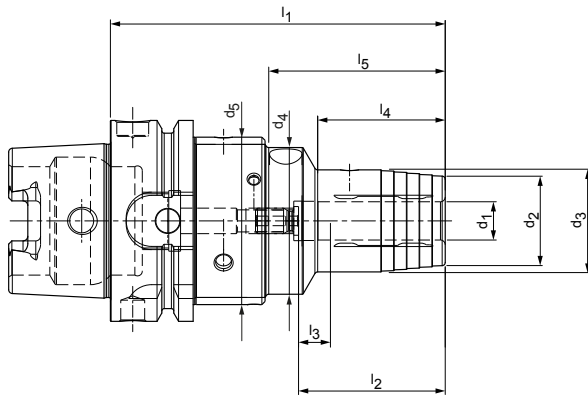
(max. 50 mm) radial run-out accuracy 3  $\mu$ m. When using cylindrical shanks with an inclined clamping surface (form E and form HE), the accuracy may be impaired.

Note: Coolant supply via central through hole. Coolant tubes, code carrier, reducing sleeves to reduce the clamping diameter (if the reducing sleeve is used, the accuracy may be impaired), see chapter "Accessories, spare parts and measuring equipment". Length adjustment screws available on request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

# HydroChuck Compensation

with axial tool length adjustment and radial alignment feature  
 HSK-A (hollow shank taper form A) shank according to DIN 69893-1



HSK-A	Dimensions										G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	l <sub>5</sub>			
63	12,0	28,0	32,0	46,0	52,5	105,0	46,0	10,0	40,0	55,0	M8x1	MHC-HSK-A063-12-105-1-1-A	30631558
63	16,0	34,0	38,0	46,0	52,5	110,0	49,0	10,0	45,0	60,0	M8x1	MHC-HSK-A063-16-110-1-1-A	30631560
63	20,0	38,0	42,0	46,0	52,5	115,0	51,0	10,0	50,0	65,0	M8x1	MHC-HSK-A063-20-115-1-1-A	30631563
63	25,0	53,0	57,0	64,0	70,0	145,0	57,0	10,0	55,0	69,5	M16x1	MHC-HSK-A063-25-145-1-1-A	30631566
63	32,0	59,0	63,0	64,0	70,0	150,0	61,0	10,0	60,0	74,5	M16x1	MHC-HSK-A063-32-150-1-1-A	30631567
100	12,0	28,0	32,0	46,0	52,5	110,0	46,0	10,0	40,0	55,0	M8x1	MHC-HSK-A100-12-110-1-1-A	30871667
100	16,0	34,0	38,0	46,0	52,5	115,0	49,0	10,0	45,0	60,0	M8x1	MHC-HSK-A100-16-115-1-1-A	30871668
100	20,0	38,0	42,0	46,0	52,5	120,0	51,0	10,0	50,0	65,0	M8x1	MHC-HSK-A100-20-120-1-1-A	30871669
100	25,0	53,0	57,0	64,0	70,0	130,0	57,0	10,0	55,0	69,5	M16x1	MHC-HSK-A100-25-130-1-1-A	30871670
100	32,0	59,0	63,0	64,0	70,0	135,0	61,0	10,0	60,0	74,5	M16x1	MHC-HSK-A100-32-135-1-1-A	30871671

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks according to DIN 1835 form A, DIN 6535 form HA as well as with recesses according to DIN 1835 form B, E and DIN 6535 form HB, HE directly and with reducing sleeve in the clamping diameter. The clamping diameter is designed for a shank tolerance of h6.

Scope of delivery: With length adjustment screw, without coolant tube.

Design: Highest tool life and production quality when using smooth cylindrical shanks according to DIN 1835 form A and DIN 6535 form HA. With a projection length of 2.5xD

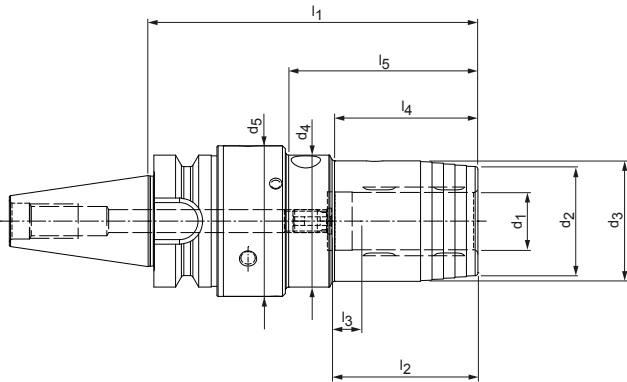
(max. 50 mm) radial run-out accuracy 3 µm. When using cylindrical shanks with an inclined clamping surface (form E and form HE), the accuracy may be impaired.

Note: Coolant supply via central through hole. Coolant tubes, code carrier, reducing sleeves to reduce the clamping diameter (if the reducing sleeve is used, the accuracy may be impaired), see chapter "Accessories, spare parts and measuring equipment". Length adjustment screws available on request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

# HydroChuck Compensation

with axial tool length adjustment and radial alignment feature  
Shank SK according to ISO 7388-1 Form AD/AF



Steep taper	Dimensions										G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	l <sub>5</sub>			
40	12,0	28,0	32,0	46,0	52,5	120,0	46,0	10,0	40,0	55,0	M8x1	MHC-SK040-12-120-3-1-A	30871662
40	16,0	34,0	38,0	46,0	52,5	125,0	49,0	10,0	45,0	60,0	M8x1	MHC-SK040-16-125-3-1-A	30871663
40	20,0	38,0	42,0	46,0	52,5	130,0	51,0	10,0	50,0	67,0	M8x1	MHC-SK040-20-130-3-1-A	30871664
40	25,0	51,0	55,0	64,0	70,0	140,0	57,0	10,0	50,0	64,5	M16x1	MHC-SK040-25-140-3-1-A	30871665
40	32,0	59,0	63,0	64,0	70,0	145,0	61,0	10,0	60,0	74,5	M16x1	MHC-SK040-32-145-3-1-A	30871666
50	12,0	28,0	32,0	46,0	52,5	100,0	46,0	10,0	40,0	55,0	M8x1	MHC-SK050-12-100-3-1-A	30871659
50	16,0	34,0	38,0	46,0	52,5	105,0	49,0	10,0	45,0	60,0	M8x1	MHC-SK050-16-105-3-1-A	30871660
50	20,0	38,0	42,0	46,0	52,5	110,0	51,0	10,0	50,0	67,0	M8x1	MHC-SK050-20-110-3-1-A	30631601
50	25,0	51,0	55,0	64,0	70,0	115,0	57,0	10,0	50,0	64,5	M16x1	MHC-SK050-25-115-3-1-A	30631604
50	32,0	59,0	63,0	64,0	70,0	125,0	61,0	10,0	60,0	74,5	M16x1	MHC-SK050-32-125-3-1-A	30631608

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks according to DIN 1835 form A, DIN 6535 form HA as well as with recesses according to DIN 1835 form B, E and DIN 6535 form HB, HE directly and with reducing sleeve in the clamping diameter. The clamping diameter is designed for a shank tolerance of h6.

Scope of delivery: With length adjustment screw, without pull stud.

Design: Highest tool life and production quality when using smooth cylindrical shanks according to DIN 1835 form A and DIN 6535 form HA. With a projection length of 2.5xD (max. 50 mm) radial run-out accuracy 3 µm. When using cylindrical shanks with an

inclined clamping surface (form E and form HE), the accuracy may be impaired.

Basic setting Form AD, if Form AF is required, please specify this when placing your order.

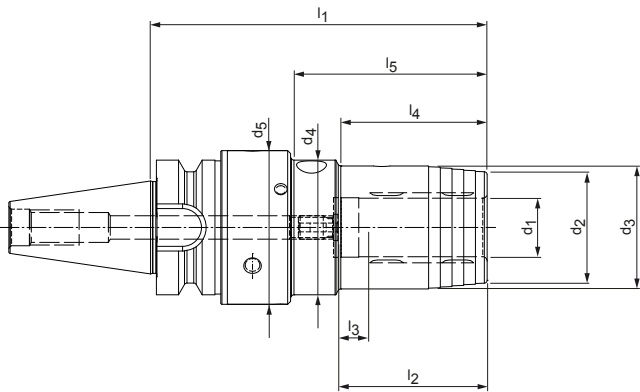
Note: Coolant supply via central through hole. Pull stud, reducing sleeves to reduce the clamping diameter (if the reducing sleeve is used, the accuracy may be impaired), see chapter "Accessories, spare parts and measuring equipment". Length adjustment screws available on request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.



# HydroChuck Compensation

with axial tool length adjustment and radial alignment feature  
Shank BT according to ISO 7388-2 Form JD/JF (JIS B 6339)



BT	Dimensions										G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	l <sub>5</sub>			
30*	12,0	28,0	32,0	46,0	52,5	112,0	46,0	10,0	40,0	56,0	M8x1	MHC-BT030-12-112-1-1-A	30998200
30*	20,0	38,0	42,0	46,0	52,5	122,0	51,0	10,0	50,0	66,0	M8x1	MHC-BT030-20-122-1-1-A	30998202

\* Design: Taper shank size is not available in the JD/JF combination design

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks according to DIN 1835 form A, DIN 6535 form HA as well as with recesses according to DIN 1835 form B, E and DIN 6535 form HB, HE directly and with reducing sleeve in the clamping diameter. The clamping diameter is designed for a shank tolerance of h6.

Scope of delivery: With length adjustment screw, without pull stud.

Design: Highest tool life and production quality when using smooth cylindrical shanks according to DIN 1835 form A and DIN 6535 form HA. With a projection length of 2.5xD (max. 50 mm) radial run-out accuracy 3 µm. When using cylindrical shanks with an in-

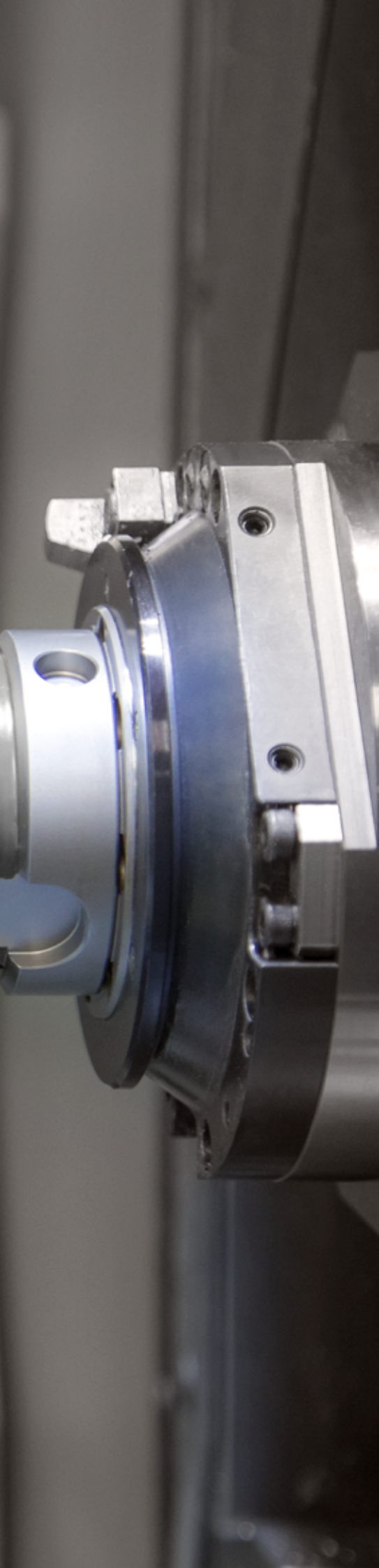
clined clamping surface (form E and form HE), the accuracy may be impaired.

Basic setting Form JD; if Form JF is required, please state with the order.

Note: Coolant supply via central through hole. Pull stud, reducing sleeves to reduce the clamping diameter (if the reducing sleeve is used, the accuracy may be impaired), see chapter "Accessories, spare parts and measuring equipment". Length adjustment screws available on request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.





# SHRINKING TECHNOLOGY

## ThermoChuck

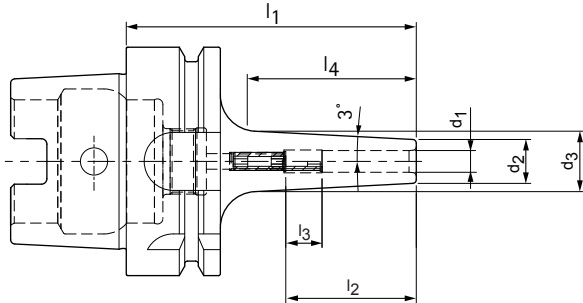
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3° slim design with axial length adjustment _____	60
4.5° design with axial length adjustment _____	66
Design with cooling channel bores and axial length adjustment —	77

# ThermoChuck

with axial tool length adjustment

HSK-A (hollow shank taper form A) shank according to DIN 69893-1



## 3° slim design

HSK-A	Dimensions							G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>			
63	3,0	9,0	13,7	80,0	28,0	16,0	-	M6	MTC-HSK-A063-03-080-1-0-A	30385147
63*	3,0	9,0	16,0	120,0	12,0	-	66,7	.	MTC-HSK-A063-03-120-1-0-W	30385148
63	4,0	10,0	14,7	80,0	28,0	12,0	-	M6	MTC-HSK-A063-04-080-1-0-A	30385150
63*	4,0	10,0	17,0	120,0	16,0	-	66,7	.	MTC-HSK-A063-04-120-1-0-W	30385151
63	5,0	11,0	15,7	80,0	30,0	10,0	-	M6	MTC-HSK-A063-05-080-1-0-A	30385153
63*	5,0	11,0	18,0	120,0	20,0	-	66,7	.	MTC-HSK-A063-05-120-1-0-W	30385154
63	6,0	12,0	16,7	80,0	36,0	10,0	-	M5	MTC-HSK-A063-06-080-1-0-A	30385156
63	6,0	12,0	20,9	120,0	36,0	10,0	-	M5	MTC-HSK-A063-06-120-1-0-A	30385157
63	6,0	12,0	24,0	160,0	36,0	10,0	-	M5	MTC-HSK-A063-06-160-1-0-A	30385158
63	6,0	12,0	24,0	200,0	36,0	10,0	-	M5	MTC-HSK-A063-06-200-1-0-A	30782721
63	8,0	14,0	18,7	80,0	36,0	10,0	-	M6	MTC-HSK-A063-08-080-1-0-A	30385159
63	8,0	14,0	22,9	120,0	36,0	10,0	-	M6	MTC-HSK-A063-08-120-1-0-A	30385160
63	8,0	14,0	26,0	160,0	36,0	10,0	-	M6	MTC-HSK-A063-08-160-1-0-A	30385161
63	8,0	14,0	26,0	200,0	36,0	10,0	-	M6	MTC-HSK-A063-08-200-1-0-A	30782722
63	10,0	16,0	21,2	85,0	41,0	10,0	-	M8x1	MTC-HSK-A063-10-085-1-0-A	30385162
63	10,0	16,0	24,9	120,0	41,0	10,0	-	M8x1	MTC-HSK-A063-10-120-1-0-A	30385163
63	10,0	16,0	28,0	160,0	41,0	10,0	-	M8x1	MTC-HSK-A063-10-160-1-0-A	30385164
63	10,0	16,0	28,0	200,0	41,0	10,0	-	M8x1	MTC-HSK-A063-10-200-1-0-A	30782723
63	12,0	18,0	23,8	90,0	47,0	10,0	-	M10x1	MTC-HSK-A063-12-090-1-0-A	30385165
63	12,0	18,0	26,9	120,0	47,0	10,0	-	M10x1	MTC-HSK-A063-12-120-1-0-A	30385166
63	12,0	18,0	30,0	160,0	47,0	10,0	-	M10x1	MTC-HSK-A063-12-160-1-0-A	30385167
63	12,0	18,0	30,0	200,0	47,0	10,0	-	M10x1	MTC-HSK-A063-12-200-1-0-A	30782724
63	14,0	20,0	25,8	90,0	47,0	10,0	-	M10x1	MTC-HSK-A063-14-090-1-0-A	30385168
63	14,0	20,0	28,9	120,0	47,0	10,0	-	M10x1	MTC-HSK-A063-14-120-1-0-A	30385169
63	14,0	20,0	32,0	160,0	47,0	10,0	-	M10x1	MTC-HSK-A063-14-160-1-0-A	30385170
63	14,0	20,0	32,0	200,0	47,0	10,0	-	M10x1	MTC-HSK-A063-14-200-1-0-A	30782725
63	16,0	22,0	28,5	95,0	50,0	10,0	-	M12x1	MTC-HSK-A063-16-095-1-0-A	30385171
63	16,0	22,0	31,2	120,0	50,0	10,0	-	M12x1	MTC-HSK-A063-16-120-1-0-A	30385172
63	16,0	22,0	34,0	160,0	50,0	10,0	-	M12x1	MTC-HSK-A063-16-160-1-0-A	30385173
63	16,0	22,0	34,0	200,0	50,0	10,0	-	M12x1	MTC-HSK-A063-16-200-1-0-A	30774763
63	18,0	24,0	30,5	95,0	50,0	10,0	-	M12x1	MTC-HSK-A063-18-095-1-0-A	30385174
63	18,0	24,0	33,2	120,0	50,0	10,0	-	M12x1	MTC-HSK-A063-18-120-1-0-A	30385175
63	18,0	24,0	36,0	160,0	50,0	10,0	-	M12x1	MTC-HSK-A063-18-160-1-0-A	30385176
63	18,0	24,0	36,0	200,0	50,0	10,0	-	M12x1	MTC-HSK-A063-18-200-1-0-A	30782726

**ThermoChuck | HSK-A shank as per DIN 69893-1 | With axial tool length adjustment | 3° slim design**

HSK-A	Dimensions							G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>			
63	20,0	26,0	33,1	100,0	52,0	10,0	-	M16x1	MTC-HSK-A063-20-100-1-0-A	30385177
63	20,0	26,0	35,2	120,0	52,0	10,0	-	M16x1	MTC-HSK-A063-20-120-1-0-A	30385178
63	20,0	26,0	38,0	160,0	52,0	10,0	-	M16x1	MTC-HSK-A063-20-160-1-0-A	30385179
63	20,0	26,0	38,0	200,0	52,0	10,0	-	M16x1	MTC-HSK-A063-20-200-1-0-A	30782727

\* Without axial tool length adjustment

Dimensions in mm.

Additional dimensions available upon request.

Scope of delivery: With built-in, drilled through length adjustment screw. Without fine balancing screws and coolant tube.

Design: Permissible run-out variation of the hollow taper shank to the clamping diameter d<sub>1</sub> = 3 µm. The clamping diameter is designed for a shank tolerance of h6.

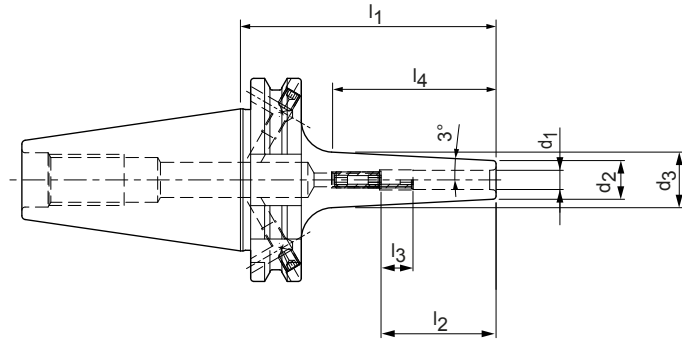
Note: Coolant tube and code carrier, see chapter "Accessories, spare parts and measuring equipment". Length adjustment screws and fine balancing screws available on request. For notes on coding system, see chapter "Technical appendix".

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

# ThermoChuck

with axial tool length adjustment

Shank SK according to ISO 7388-1 Form AD/AF



## 3° slim design

Steep taper	Dimensions							G	Specification	Order no.
	$d_1$	$d_2$	$d_3$	$l_1$	$l_2$	$l_3$	$l_4$			
40	3,0	9,0	14,4	80,0	28,0	16,0	-	M6	MTC-SK040-03-080-3-0-A	30385180
40*	3,0	9,0	16,0	120,0	12,0	-	66,7	-	MTC-SK040-03-120-3-0-W	30385181
40	4,0	10,0	15,4	80,0	28,0	12,0	-	M6	MTC-SK040-04-080-3-0-A	30385183
40*	4,0	10,0	17,0	120,0	16,0	-	66,7	-	MTC-SK040-04-120-3-0-W	30385184
40	5,0	11,0	16,4	80,0	30,0	10,0	-	M6	MTC-SK040-05-080-3-0-A	30385186
40*	5,0	11,0	18,0	120,0	20,0	-	66,7	-	MTC-SK040-05-120-3-0-W	30385187
40	6,0	12,0	17,4	80,0	36,0	10,0	-	M5	MTC-SK040-06-080-3-0-A	30385189
40	6,0	12,0	21,6	120,0	36,0	10,0	-	M5	MTC-SK040-06-120-3-0-A	30385190
40	6,0	12,0	24,0	160,0	36,0	10,0	-	M5	MTC-SK040-06-160-3-0-A	30385191
40	6,0	12,0	24,0	200,0	36,0	10,0	-	M5	MTC-SK040-06-200-3-0-A	30797077
40	8,0	14,0	19,4	80,0	36,0	10,0	-	M6	MTC-SK040-08-080-3-0-A	30385192
40	8,0	14,0	23,6	120,0	36,0	10,0	-	M6	MTC-SK040-08-120-3-0-A	30385193
40	8,0	14,0	26,0	160,0	36,0	10,0	-	M6	MTC-SK040-08-160-3-0-A	30385194
40	8,0	14,0	26,0	200,0	36,0	10,0	-	M6	MTC-SK040-08-200-3-0-A	30797078
40	10,0	16,0	21,4	80,0	41,0	10,0	-	M8x1	MTC-SK040-10-080-3-0-A	30385195
40	10,0	16,0	25,6	120,0	41,0	10,0	-	M8x1	MTC-SK040-10-120-3-0-A	30385196
40	10,0	16,0	28,0	160,0	41,0	10,0	-	M8x1	MTC-SK040-10-160-3-0-A	30385197
40	10,0	16,0	28,0	200,0	41,0	10,0	-	M8x1	MTC-SK040-10-200-3-0-A	30797080
40	12,0	18,0	23,4	80,0	47,0	10,0	-	M10x1	MTC-SK040-12-080-3-0-A	30385198
40	12,0	18,0	27,9	120,0	47,0	10,0	-	M10x1	MTC-SK040-12-120-3-0-A	30385199
40	12,0	18,0	30,0	160,0	47,0	10,0	-	M10x1	MTC-SK040-12-160-3-0-A	30385200
40	12,0	18,0	30,0	200,0	47,0	10,0	-	M10x1	MTC-SK040-12-200-3-0-A	30797081
40	14,0	20,0	25,7	80,0	47,0	10,0	-	M10x1	MTC-SK040-14-080-3-0-A	30385201
40	14,0	20,0	30,1	120,0	47,0	10,0	-	M10x1	MTC-SK040-14-120-3-0-A	30385202
40	14,0	20,0	32,0	160,0	47,0	10,0	-	M10x1	MTC-SK040-14-160-3-0-A	30385203
40	14,0	20,0	32,0	200,0	47,0	10,0	-	M10x1	MTC-SK040-14-200-3-0-A	30797082
40	16,0	22,0	27,7	80,0	50,0	10,0	-	M12x1	MTC-SK040-16-080-3-0-A	30385204
40	16,0	22,0	32,1	120,0	50,0	10,0	-	M12x1	MTC-SK040-16-120-3-0-A	30385205
40	16,0	22,0	34,0	160,0	50,0	10,0	-	M12x1	MTC-SK040-16-160-3-0-A	30385206
40	16,0	22,0	34,0	200,0	50,0	10,0	-	M12x1	MTC-SK040-16-200-3-0-A	30797083
40	18,0	24,0	29,7	80,0	50,0	10,0	-	M12x1	MTC-SK040-18-080-3-0-A	30385207
40	18,0	24,0	34,4	120,0	50,0	10,0	-	M12x1	MTC-SK040-18-120-3-0-A	30385208
40	18,0	24,0	36,0	160,0	50,0	10,0	-	M12x1	MTC-SK040-18-160-3-0-A	30385209
40	18,0	24,0	36,0	200,0	50,0	10,0	-	M12x1	MTC-SK040-18-200-3-0-A	30797086
40	20,0	26,0	31,9	80,0	52,0	10,0	-	M16x1	MTC-SK040-20-080-3-0-A	30385210

**ThermoChuck | SK shank in accordance with ISO 7388-1 Form AD/AF | with axial tool length adjustment | 3° slim design**

Steep taper	Dimensions							G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>			
40	20,0	26,0	36,4	120,0	52,0	10,0	-	M16x1	MTC-SK040-20-120-3-0-A	30385211
40	20,0	26,0	38,0	160,0	52,0	10,0	-	M16x1	MTC-SK040-20-160-3-0-A	30385212
40	20,0	26,0	38,0	200,0	52,0	10,0	-	M16x1	MTC-SK040-20-200-3-0-A	30797087

\* Without axial tool length adjustment

Dimensions in mm.

Additional dimensions available upon request.

Scope of delivery: With built-in, drilled through length adjustment screw. Without fine balancing screws or pull studs.

Design: Permissible run-out variation on the taper shank in relation to the clamping diameter d<sub>1</sub> = 3 µm. The clamping diameter is designed for a shank tolerance of h6.

Basic setting Form AD, if Form AF is required, please specify this when placing your order. Note: For pull studs, see chapter "Accessories, spare parts and measuring equipment".

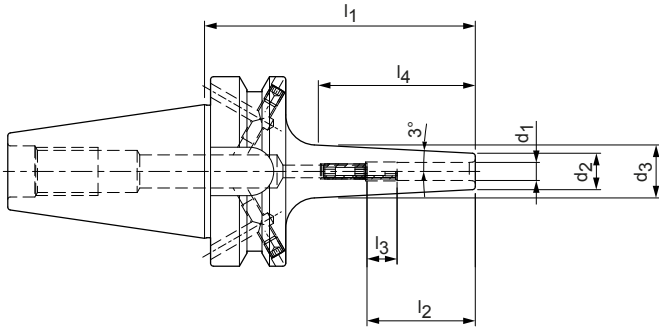
Length adjustment screws and fine balancing screws available on request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

# ThermoChuck

with axial tool length adjustment

Shank BT according to ISO 7388-2 Form JD/JF (JIS B 6339)



## 3° slim design

BT	Dimensions							G	Specification	Order no.
	$d_1$	$d_2$	$d_3$	$l_1$	$l_2$	$l_3$	$l_4$			
40	3,0	9,0	14,7	90,0	28,0	16,0	-	M6	MTC-BT040-03-090-3-0-A	30385213
40*	3,0	9,0	16,0	120,0	12,0	-	66,7	-	MTC-BT040-03-120-3-0-W	30385214
40	4,0	10,0	15,7	90,0	28,0	12,0	-	M6	MTC-BT040-04-090-3-0-A	30385216
40*	4,0	10,0	17,0	120,0	16,0	-	66,7	-	MTC-BT040-04-120-3-0-W	30385217
40*	5,0	11,0	16,7	90,0	30,0	10,0	-	M6	MTC-BT040-05-090-3-0-A	30385219
40*	5,0	11,0	18,0	120,0	20,0	-	66,7	-	MTC-BT040-05-120-3-0-W	30385220
40	6,0	12,0	17,7	90,0	36,0	10,0	-	M5	MTC-BT040-06-090-3-0-A	30385222
40	6,0	12,0	20,8	120,0	36,0	10,0	-	M5	MTC-BT040-06-120-3-0-A	30385223
40	6,0	12,0	24,0	160,0	36,0	10,0	-	M5	MTC-BT040-06-160-3-0-A	30385224
40	6,0	12,0	24,0	200,0	36,0	10,0	-	M5	MTC-BT040-06-200-3-0-A	30654918
40	8,0	14,0	19,7	90,0	36,0	10,0	-	M6	MTC-BT040-08-090-3-0-A	30385225
40	8,0	14,0	22,8	120,0	36,0	10,0	-	M6	MTC-BT040-08-120-3-0-A	30385226
40	8,0	14,0	26,0	160,0	36,0	10,0	-	M6	MTC-BT040-08-160-3-0-A	30385227
40	8,0	14,0	26,0	200,0	36,0	10,0	-	M6	MTC-BT040-08-200-3-0-A	30654919
40	10,0	16,0	21,7	90,0	41,0	10,0	-	M8x1	MTC-BT040-10-090-3-0-A	30385228
40	10,0	16,0	24,8	120,0	41,0	10,0	-	M8x1	MTC-BT040-10-120-3-0-A	30385229
40	10,0	16,0	28,0	160,0	41,0	10,0	-	M8x1	MTC-BT040-10-160-3-0-A	30385230
40	10,0	16,0	28,0	200,0	41,0	10,0	-	M8x1	MTC-BT040-10-200-3-0-A	30654920
40	12,0	18,0	23,7	90,0	47,0	10,0	-	M10x1	MTC-BT040-12-090-3-0-A	30385231
40	12,0	18,0	27,0	120,0	47,0	10,0	-	M10x1	MTC-BT040-12-120-3-0-A	30385232
40	12,0	18,0	30,0	160,0	47,0	10,0	-	M10x1	MTC-BT040-12-160-3-0-A	30385233
40	12,0	18,0	30,0	200,0	47,0	10,0	-	M10x1	MTC-BT040-12-200-3-0-A	30654921
40	14,0	20,0	25,9	90,0	47,0	10,0	-	M10x1	MTC-BT040-14-090-3-0-A	30385234
40	14,0	20,0	29,3	120,0	47,0	10,0	-	M10x1	MTC-BT040-14-120-3-0-A	30385235
40	14,0	20,0	32,0	160,0	47,0	10,0	-	M10x1	MTC-BT040-14-160-3-0-A	30385236
40	14,0	20,0	32,0	200,0	47,0	10,0	-	M10x1	MTC-BT040-14-200-3-0-A	30654922
40	16,0	22,0	27,9	90,0	50,0	10,0	-	M12x1	MTC-BT040-16-090-3-0-A	30385237
40	16,0	22,0	31,3	120,0	50,0	10,0	-	M12x1	MTC-BT040-16-120-3-0-A	30385238



## ThermoChuck | With axial tool length adjustment | BT shank as per ISO 7388-2 Form JD/JF (JIS B 6339)

BT	Dimensions							G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>			
40	16,0	22,0	34,0	160,0	50,0	10,0	-	M12x1	MTC-BT040-16-160-3-0-A	30385239
40	16,0	22,0	34,0	200,0	50,0	10,0	-	M12x1	MTC-BT040-16-200-3-0-A	30654923
40	18,0	24,0	29,9	90,0	50,0	10,0	-	M12x1	MTC-BT040-18-090-3-0-A	30385240
40	18,0	24,0	33,5	120,0	50,0	10,0	-	M12x1	MTC-BT040-18-120-3-0-A	30385241
40	18,0	24,0	36,0	160,0	50,0	10,0	-	M12x1	MTC-BT040-18-160-3-0-A	30385242
40	18,0	24,0	36,0	200,0	50,0	10,0	-	M12x1	MTC-BT040-18-200-3-0-A	30654924
40	20,0	26,0	32,2	90,0	52,0	10,0	-	M16x1	MTC-BT040-20-090-3-0-A	30385243
40	20,0	26,0	35,5	120,0	52,0	10,0	-	M16x1	MTC-BT040-20-120-3-0-A	30385244
40	20,0	26,0	38,0	160,0	52,0	10,0	-	M16x1	MTC-BT040-20-160-3-0-A	30385245
40	20,0	26,0	38,0	200,0	52,0	10,0	-	M16x1	MTC-BT040-20-200-3-0-A	30654925

\* Without axial tool length adjustment

Dimensions in mm.

Additional dimensions available upon request.

Scope of delivery: With built-in, drilled through length adjustment screw. Without fine balancing screws or pull studs.

Design: Permissible run-out variation on the taper shank in relation to the clamping diameter d<sub>1</sub> = 3 µm. The clamping diameter is designed for a shank tolerance of h6.

Basic setting Form JD; if Form JF is required, please state with the order.

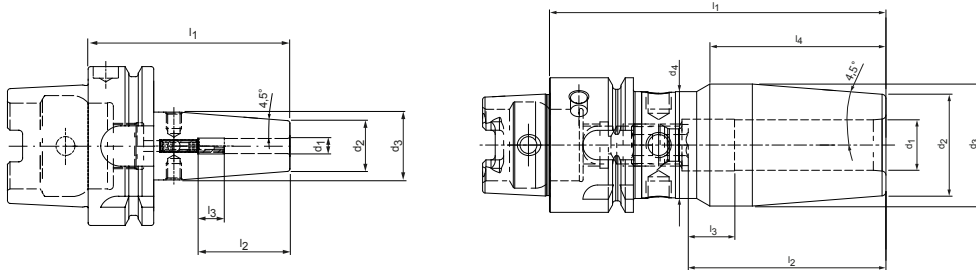
Note: For pull studs, see chapter "Accessories, spare parts and measuring equipment".

Length adjustment screws and fine balancing screws available on request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

# ThermoChuck

in accordance with DIN 69882-8 with axial tool length adjustment  
 HSK-A (hollow shank taper form A) shank according to DIN 69893-1



HSK-A	Dimensions								G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>			
32	3,0	10,0	15,0	-	60,0	28,0	16,0	-	M5	MTC-HSK-A032-03-060-1-0-A	30261650
32	4,0	10,0	15,0	-	60,0	28,0	12,0	-	M5	MTC-HSK-A032-04-060-1-0-A	30261651
32	5,0	10,0	15,0	-	60,0	30,0	10,0	-	M6	MTC-HSK-A032-05-060-1-0-A	30261652
32	6,0	21,0	25,0	-	70,0	36,0	10,0	-	M5	MTC-HSK-A032-06-070-1-0-A	30261653
32	8,0	21,0	25,0	-	70,0	36,0	10,0	-	M6	MTC-HSK-A032-08-070-1-0-A	30261654
32	10,0	24,0	29,0	25,4	75,0	41,0	10,0	37,0	M8x1	MTC-HSK-A032-10-075-1-0-A	30261655
32	12,0	24,0	29,0	25,4	80,0	47,0	10,0	42,0	M10x1	MTC-HSK-A032-12-080-1-0-A	30261656
40	3,0	10,0	15,0	-	60,0	28,0	16,0	-	M6	MTC-HSK-A040-03-060-1-0-A	30261657
40	4,0	10,0	15,0	-	60,0	28,0	12,0	-	M6	MTC-HSK-A040-04-060-1-0-A	30258468
40	5,0	10,0	15,0	-	60,0	30,0	10,0	-	M6	MTC-HSK-A040-05-060-1-0-A	30261663
40	6,0	21,0	27,0	-	80,0	36,0	10,0	-	M5	MTC-HSK-A040-06-080-1-0-A	30261666
40	8,0	21,0	27,0	-	80,0	36,0	10,0	-	M6	MTC-HSK-A040-08-080-1-0-A	30261669
40	10,0	24,0	32,0	-	80,0	41,0	10,0	-	M8x1	MTC-HSK-A040-10-080-1-0-A	30261672
40	12,0	24,0	32,0	-	90,0	47,0	10,0	-	M10x1	MTC-HSK-A040-12-090-1-0-A	30261675
40	14,0	27,0	33,5	-	90,0	47,0	10,0	-	M10x1	MTC-HSK-A040-14-090-1-0-A	30261678
40	16,0	27,0	33,5	-	90,0	50,0	10,0	-	M12x1	MTC-HSK-A040-16-090-1-0-A	30261681
50	3,0	10,0	15,0	-	80,0	28,0	16,0	-	M6	MTC-HSK-A050-03-080-1-0-A	30261684
50	4,0	15,0	22,0	-	80,0	28,0	12,0	-	M6	MTC-HSK-A050-04-080-1-0-A	30261687
50	5,0	15,0	22,0	-	80,0	30,0	10,0	-	M6	MTC-HSK-A050-05-080-1-0-A	30261690
50	6,0	21,0	27,0	-	80,0	36,0	10,0	-	M5	MTC-HSK-A050-06-080-1-0-A	30259972
50	8,0	21,0	27,0	-	80,0	36,0	10,0	-	M6	MTC-HSK-A050-08-080-1-0-A	30261696
50	10,0	24,0	32,0	-	85,0	41,0	10,0	-	M8x1	MTC-HSK-A050-10-085-1-0-A	30261699
50	12,0	24,0	32,0	-	90,0	47,0	10,0	-	M10x1	MTC-HSK-A050-12-090-1-0-A	30261702
50	14,0	27,0	34,0	-	90,0	47,0	10,0	-	M10x1	MTC-HSK-A050-14-090-1-0-A	30261705
50	16,0	27,0	34,0	-	95,0	50,0	10,0	-	M12x1	MTC-HSK-A050-16-095-1-0-A	30261708
50	18,0	33,0	41,5	-	95,0	50,0	10,0	-	M12x1	MTC-HSK-A050-18-095-1-0-A	30261712
50	20,0	33,0	41,5	-	100,0	52,0	10,0	-	M16x1	MTC-HSK-A050-20-100-1-0-A	30261715
63	3,0	10,0	15,0	-	80,0	28,0	16,0	-	M6	MTC-HSK-A063-03-080-1-0-A	30261718
63*	3,0	10,0	20,0	-	120,0	12,0	-	-	-	MTC-HSK-A063-03-120-1-0-W	30261731
63*	3,0	10,0	20,0	-	130,0	12,0	-	-	-	MTC-HSK-A063-03-130-1-0-W	30872496
63	4,0	15,0	22,0	-	80,0	28,0	12,0	-	M6	MTC-HSK-A063-04-080-1-0-A	30260639
63*	4,0	15,0	22,0	-	120,0	16,0	-	-	-	MTC-HSK-A063-04-120-1-0-W	30261733
63*	4,0	15,0	22,0	-	130,0	16,0	-	-	-	MTC-HSK-A063-04-130-1-0-W	30872497
63	5,0	15,0	22,0	-	80,0	30,0	10,0	-	M6	MTC-HSK-A063-05-080-1-0-A	30261720
63*	5,0	15,0	22,0	-	120,0	20,0	-	-	-	MTC-HSK-A063-05-120-1-0-W	30261735
63*	5,0	15,0	22,0	-	130,0	20,0	-	-	-	MTC-HSK-A063-05-130-1-0-W	30872498

## ThermoChuck | as per DIN 69882-8 | with axial tool length adjustment | HSK-A shank as per DIN 69893-1

HSK-A	Dimensions								G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>			
63	6,0	21,0	27,0	-	80,0	36,0	10,0	-	M5	MTC-HSK-A063-06-080-1-0-A	30261721
63	6,0	21,0	27,0	-	120,0	36,0	10,0	-	M5	MTC-HSK-A063-06-120-1-0-A	30261737
63	6,0	21,0	27,0	-	130,0	36,0	10,0	-	M5	MTC-HSK-A063-06-130-1-0-A	30872499
63	6,0	21,0	27,0	-	160,0	36,0	10,0	-	M5	MTC-HSK-A063-06-160-1-0-A	30261738
63	6,0	21,0	27,0	-	200,0	36,0	10,0	-	M5	MTC-HSK-A063-06-200-1-0-A	30529026
63	8,0	21,0	27,0	-	80,0	36,0	10,0	-	M6	MTC-HSK-A063-08-080-1-0-A	30261722
63	8,0	21,0	27,0	-	120,0	36,0	10,0	-	M6	MTC-HSK-A063-08-120-1-0-A	30261739
63	8,0	21,0	27,0	-	130,0	36,0	10,0	-	M6	MTC-HSK-A063-08-130-1-0-A	30872500
63	8,0	21,0	27,0	-	160,0	36,0	10,0	-	M6	MTC-HSK-A063-08-160-1-0-A	30261740
63	8,0	21,0	27,0	-	200,0	36,0	10,0	-	M6	MTC-HSK-A063-08-200-1-0-A	30488595
63	10,0	24,0	32,0	-	85,0	41,0	10,0	-	M8x1	MTC-HSK-A063-10-085-1-0-A	30261723
63	10,0	24,0	32,0	-	120,0	41,0	10,0	-	M8x1	MTC-HSK-A063-10-120-1-0-A	30261741
63	10,0	24,0	32,0	-	130,0	41,0	10,0	-	M8x1	MTC-HSK-A063-10-130-1-0-A	30872501
63	10,0	24,0	32,0	-	160,0	41,0	10,0	-	M8x1	MTC-HSK-A063-10-160-1-0-A	30261742
63	10,0	24,0	32,0	-	200,0	41,0	10,0	-	M8x1	MTC-HSK-A063-10-200-1-0-A	30529032
63	12,0	24,0	32,0	-	90,0	47,0	10,0	-	M10x1	MTC-HSK-A063-12-090-1-0-A	30261724
63	12,0	24,0	32,0	-	120,0	47,0	10,0	-	M10x1	MTC-HSK-A063-12-120-1-0-A	30261743
63	12,0	24,0	32,0	-	130,0	47,0	10,0	-	M10x1	MTC-HSK-A063-12-130-1-0-A	30872502
63	12,0	24,0	32,0	-	160,0	47,0	10,0	-	M10x1	MTC-HSK-A063-12-160-1-0-A	30259973
63	12,0	24,0	32,0	-	200,0	47,0	10,0	-	M10x1	MTC-HSK-A063-12-200-1-0-A	30529033
63	14,0	27,0	34,0	-	90,0	47,0	10,0	-	M10x1	MTC-HSK-A063-14-090-1-0-A	30261725
63	14,0	27,0	34,0	-	120,0	47,0	10,0	-	M10x1	MTC-HSK-A063-14-120-1-0-A	30261745
63	14,0	27,0	34,0	-	130,0	47,0	10,0	-	M10x1	MTC-HSK-A063-14-130-1-0-A	30872503
63	14,0	27,0	34,0	-	160,0	47,0	10,0	-	M10x1	MTC-HSK-A063-14-160-1-0-A	30261746
63	14,0	27,0	34,0	-	200,0	47,0	10,0	-	M10x1	MTC-HSK-A063-14-200-1-0-A	30529043
63	16,0	27,0	34,0	-	95,0	50,0	10,0	-	M12x1	MTC-HSK-A063-16-095-1-0-A	30261726
63	16,0	27,0	34,0	-	120,0	50,0	10,0	-	M12x1	MTC-HSK-A063-16-120-1-0-A	30261747
63	16,0	27,0	34,0	-	130,0	50,0	10,0	-	M12x1	MTC-HSK-A063-16-130-1-0-A	30872504
63	16,0	27,0	34,0	-	160,0	50,0	10,0	-	M12x1	MTC-HSK-A063-16-160-1-0-A	30261748
63	16,0	27,0	34,0	-	200,0	50,0	10,0	-	M12x1	MTC-HSK-A063-16-200-1-0-A	30529044
63	18,0	33,0	42,0	-	95,0	50,0	10,0	-	M12x1	MTC-HSK-A063-18-095-1-0-A	30261727
63	18,0	33,0	42,0	-	120,0	50,0	10,0	-	M12x1	MTC-HSK-A063-18-120-1-0-A	30261749
63	18,0	33,0	42,0	-	130,0	50,0	10,0	-	M12x1	MTC-HSK-A063-18-130-1-0-A	30872505
63	18,0	33,0	42,0	-	160,0	50,0	10,0	-	M12x1	MTC-HSK-A063-18-160-1-0-A	30261750
63	18,0	33,0	42,0	-	200,0	50,0	10,0	-	M12x1	MTC-HSK-A063-18-200-1-0-A	30529045
63	20,0	33,0	42,0	-	100,0	52,0	10,0	-	M16x1	MTC-HSK-A063-20-100-1-0-A	30261728
63	20,0	33,0	42,0	-	120,0	52,0	10,0	-	M16x1	MTC-HSK-A063-20-120-1-0-A	30261751
63	20,0	33,0	42,0	-	130,0	52,0	10,0	-	M16x1	MTC-HSK-A063-20-130-1-0-A	30872506
63	20,0	33,0	42,0	-	160,0	52,0	10,0	-	M16x1	MTC-HSK-A063-20-160-1-0-A	30261752
63	20,0	33,0	42,0	-	200,0	52,0	10,0	-	M16x1	MTC-HSK-A063-20-200-1-0-A	30529046
63	25,0	44,0	52,5	-	115,0	58,0	10,0	-	M16x1	MTC-HSK-A063-25-115-1-0-A	30261729
63	25,0	44,0	52,5	-	120,0	58,0	10,0	-	M16x1	MTC-HSK-A063-25-120-1-0-A	30261753
63	25,0	44,0	52,5	-	130,0	58,0	10,0	-	M16x1	MTC-HSK-A063-25-130-1-0-A	30872507
63	25,0	44,0	52,5	-	160,0	58,0	10,0	-	M16x1	MTC-HSK-A063-25-160-1-0-A	30261754
63	25,0	44,0	52,5	-	200,0	58,0	10,0	-	M16x1	MTC-HSK-A063-25-200-1-0-A	30529047
63	32,0	44,0	52,5	-	120,0	62,0	10,0	-	M16x1	MTC-HSK-A063-32-120-1-0-A	30261730
63	32,0	44,0	52,5	-	130,0	62,0	10,0	-	M16x1	MTC-HSK-A063-32-130-1-0-A	30872508
63	32,0	44,0	52,5	-	160,0	62,0	10,0	-	M16x1	MTC-HSK-A063-32-160-1-0-A	30261755
63	32,0	44,0	52,5	-	200,0	62,0	10,0	-	M16x1	MTC-HSK-A063-32-200-1-0-A	30529048
80	6,0	21,0	27,0	-	85,0	36,0	10,0	-	M5	MTC-HSK-A080-06-085-1-0-A	30261756
80	8,0	21,0	27,0	-	85,0	36,0	10,0	-	M6	MTC-HSK-A080-08-085-1-0-A	30261759
80	10,0	24,0	32,0	-	90,0	41,0	10,0	-	M8x1	MTC-HSK-A080-10-090-1-0-A	30261762
80	12,0	24,0	32,0	-	95,0	47,0	10,0	-	M10x1	MTC-HSK-A080-12-095-1-0-A	30261765
80	14,0	27,0	34,0	-	95,0	47,0	10,0	-	M10x1	MTC-HSK-A080-14-095-1-0-A	30261768

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## ThermoChuck | as per DIN 69882-8 | with axial tool length adjustment | HSK-A shank as per DIN 69893-1

HSK-A	Dimensions								G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>			
80	16,0	27,0	34,0	-	100,0	50,0	10,0	-	M12x1	MTC-HSK-A080-16-100-1-0-A	30261771
80	18,0	33,0	42,0	-	100,0	50,0	10,0	-	M12x1	MTC-HSK-A080-18-100-1-0-A	30261774
80	20,0	33,0	42,0	-	105,0	52,0	10,0	-	M16x1	MTC-HSK-A080-20-105-1-0-A	30261777
80	25,0	44,0	53,0	-	115,0	58,0	10,0	-	M16x1	MTC-HSK-A080-25-115-1-0-A	30261780
80	32,0	44,0	53,0	-	120,0	62,0	10,0	-	M16x1	MTC-HSK-A080-32-120-1-0-A	30261783
100	6,0	21,0	27,0	-	85,0	36,0	10,0	-	M5	MTC-HSK-A100-06-085-1-0-A	30261785
100	6,0	21,0	27,0	-	120,0	36,0	10,0	-	M5	MTC-HSK-A100-06-120-1-0-A	30261786
100	6,0	21,0	27,0	-	130,0	36,0	10,0	-	M5	MTC-HSK-A100-06-130-1-0-A	30872509
100	6,0	21,0	27,0	-	160,0	36,0	10,0	-	M5	MTC-HSK-A100-06-160-1-0-A	30261787
100	6,0	21,0	27,0	-	200,0	36,0	10,0	-	M5	MTC-HSK-A100-06-200-1-0-A	30558360
100	8,0	21,0	27,0	-	85,0	36,0	10,0	-	M6	MTC-HSK-A100-08-085-1-0-A	30261788
100	8,0	21,0	27,0	-	120,0	36,0	10,0	-	M6	MTC-HSK-A100-08-120-1-0-A	30261789
100	8,0	21,0	27,0	-	130,0	36,0	10,0	-	M6	MTC-HSK-A100-08-130-1-0-A	30872510
100	8,0	21,0	27,0	-	160,0	36,0	10,0	-	M6	MTC-HSK-A100-08-160-1-0-A	30261790
100	8,0	21,0	27,0	-	200,0	36,0	10,0	-	M6	MTC-HSK-A100-08-200-1-0-A	30558361
100	10,0	24,0	32,0	-	90,0	41,0	10,0	-	M8x1	MTC-HSK-A100-10-090-1-0-A	30261791
100	10,0	24,0	32,0	-	120,0	41,0	10,0	-	M8x1	MTC-HSK-A100-10-120-1-0-A	30261792
100	10,0	24,0	32,0	-	130,0	41,0	10,0	-	M8x1	MTC-HSK-A100-10-130-1-0-A	30872511
100	10,0	24,0	32,0	-	160,0	41,0	10,0	-	M8x1	MTC-HSK-A100-10-160-1-0-A	30261793
100	10,0	24,0	32,0	-	200,0	41,0	10,0	-	M8x1	MTC-HSK-A100-10-200-1-0-A	30558363
100	12,0	24,0	32,0	-	95,0	47,0	10,0	-	M10x1	MTC-HSK-A100-12-095-1-0-A	30261794
100	12,0	24,0	32,0	-	120,0	47,0	10,0	-	M10x1	MTC-HSK-A100-12-120-1-0-A	30261795
100	12,0	24,0	32,0	-	130,0	47,0	10,0	-	M10x1	MTC-HSK-A100-12-130-1-0-A	30872512
100	12,0	24,0	32,0	-	160,0	47,0	10,0	-	M10x1	MTC-HSK-A100-12-160-1-0-A	30261796
100	12,0	24,0	32,0	-	200,0	47,0	10,0	-	M10x1	MTC-HSK-A100-12-200-1-0-A	30558364
100	14,0	27,0	34,0	-	95,0	47,0	10,0	-	M10x1	MTC-HSK-A100-14-095-1-0-A	30261797
100	14,0	27,0	34,0	-	120,0	47,0	10,0	-	M10x1	MTC-HSK-A100-14-120-1-0-A	30261798
100	14,0	27,0	34,0	-	130,0	47,0	10,0	-	M10x1	MTC-HSK-A100-14-130-1-0-A	30872513
100	14,0	27,0	34,0	-	160,0	47,0	10,0	-	M10x1	MTC-HSK-A100-14-160-1-0-A	30261799
100	14,0	27,0	34,0	-	200,0	47,0	10,0	-	M10x1	MTC-HSK-A100-14-200-1-0-A	30558366
100	16,0	27,0	34,0	-	100,0	50,0	10,0	-	M12x1	MTC-HSK-A100-16-100-1-0-A	30261800
100	16,0	27,0	34,0	-	120,0	50,0	10,0	-	M12x1	MTC-HSK-A100-16-120-1-0-A	30261801
100	16,0	27,0	34,0	-	130,0	50,0	10,0	-	M12x1	MTC-HSK-A100-16-130-1-0-A	30872514
100	16,0	27,0	34,0	-	160,0	50,0	10,0	-	M12x1	MTC-HSK-A100-16-160-1-0-A	30261802
100	16,0	27,0	34,0	-	200,0	50,0	10,0	-	M12x1	MTC-HSK-A100-16-200-1-0-A	30558367
100	18,0	33,0	42,0	-	100,0	50,0	10,0	-	M12x1	MTC-HSK-A100-18-100-1-0-A	30261803
100	18,0	33,0	42,0	-	120,0	50,0	10,0	-	M12x1	MTC-HSK-A100-18-120-1-0-A	30261804
100	18,0	33,0	42,0	-	130,0	50,0	10,0	-	M12x1	MTC-HSK-A100-18-130-1-0-A	30872515
100	18,0	33,0	42,0	-	160,0	50,0	10,0	-	M12x1	MTC-HSK-A100-18-160-1-0-A	30261805
100	18,0	33,0	42,0	-	200,0	50,0	10,0	-	M12x1	MTC-HSK-A100-18-200-1-0-A	30558368
100	20,0	33,0	42,0	-	105,0	52,0	10,0	-	M16x1	MTC-HSK-A100-20-105-1-0-A	30259975
100	20,0	33,0	42,0	-	120,0	52,0	10,0	-	M16x1	MTC-HSK-A100-20-120-1-0-A	30261807
100	20,0	33,0	42,0	-	130,0	52,0	10,0	-	M16x1	MTC-HSK-A100-20-130-1-0-A	30872516
100	20,0	33,0	42,0	-	160,0	52,0	10,0	-	M16x1	MTC-HSK-A100-20-160-1-0-A	30261808
100	20,0	33,0	42,0	-	200,0	52,0	10,0	-	M16x1	MTC-HSK-A100-20-200-1-0-A	30558369
100	25,0	44,0	53,0	-	115,0	58,0	10,0	-	M16x1	MTC-HSK-A100-25-115-1-0-A	30261809
100	25,0	44,0	53,0	-	120,0	58,0	10,0	-	M16x1	MTC-HSK-A100-25-120-1-0-A	30261810
100	25,0	44,0	53,0	-	130,0	58,0	10,0	-	M16x1	MTC-HSK-A100-25-130-1-0-A	30872517

## ThermoChuck | as per DIN 69882-8 | with axial tool length adjustment | HSK-A shank as per DIN 69893-1

HSK-A	Dimensions								G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>			
100	25,0	44,0	53,0	-	160,0	58,0	10,0	-	M16x1	MTC-HSK-A100-25-160-1-0-A	30261811
100	25,0	44,0	53,0	-	200,0	58,0	10,0	-	M16x1	MTC-HSK-A100-25-200-1-0-A	30558371
100	32,0	44,0	53,0	-	120,0	62,0	10,0	-	M16x1	MTC-HSK-A100-32-120-1-0-A	30261812
100	32,0	44,0	53,0	-	130,0	62,0	10,0	-	M16x1	MTC-HSK-A100-32-130-1-0-A	30872518
100	32,0	44,0	53,0	-	160,0	62,0	10,0	-	M16x1	MTC-HSK-A100-32-160-1-0-A	30261813
100	32,0	44,0	53,0	-	200,0	62,0	10,0	-	M16x1	MTC-HSK-A100-32-200-1-0-A	30558372

\* Without axial tool length adjustment

Dimensions in mm.

Additional dimensions available upon request.

Scope of delivery: With built-in, drilled through length adjustment screw. Without fine balancing screws and coolant tube.

Design: Permissible run-out variation of the hollow taper shank to the clamping diameter d<sub>1</sub> = 3 µm. The clamping diameter is designed for a shank tolerance of h6.

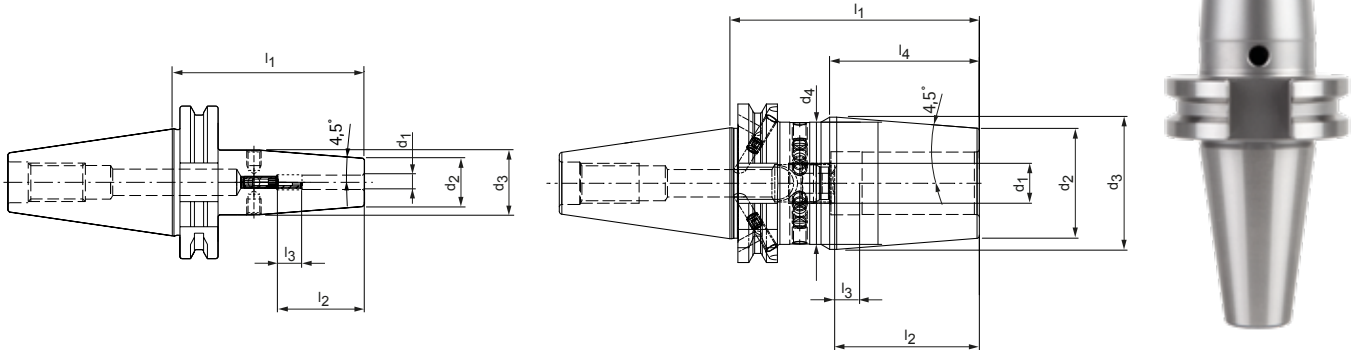
Note: Coolant tube and code carrier, see chapter "Accessories, spare parts and measuring equipment". Length adjustment screws and fine balancing screws available on request. For notes on coding system, see chapter "Technical appendix".

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

# ThermoChuck

with axial tool length adjustment

Shank SK according to ISO 7388-1 Form AD/AF



Steep taper	Dimensions								G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>			
30*	3,0	10,0	17,0	-	80,0	28,0	16,0	-	M6	MTC-SK030-03-080-1-0-A	30261560
30*	4,0	15,0	22,0	-	80,0	28,0	12,0	-	M6	MTC-SK030-04-080-1-0-A	30261561
30*	5,0	15,0	22,0	-	80,0	30,0	10,0	-	M6	MTC-SK030-05-080-1-0-A	30261562
30*	6,0	21,0	27,0	-	80,0	36,0	10,0	-	M5	MTC-SK030-06-080-1-0-A	30261563
30*	8,0	21,0	27,0	-	80,0	36,0	10,0	-	M6	MTC-SK030-08-080-1-0-A	30261564
30*	10,0	24,0	32,0	-	80,0	41,0	10,0	-	M8x1	MTC-SK030-10-080-1-0-A	30261565
30*	12,0	24,0	32,0	-	80,0	47,0	10,0	-	M10x1	MTC-SK030-12-080-1-0-A	30261566
30*	14,0	27,0	34,0	-	80,0	47,0	10,0	-	M10x1	MTC-SK030-14-080-1-0-A	30261567
30*	16,0	27,0	34,0	-	80,0	50,0	10,0	-	M12x1	MTC-SK030-16-080-1-0-A	30261568
30*	18,0	33,0	42,0	-	80,0	50,0	10,0	-	M12x1	MTC-SK030-18-080-1-0-A	30261569
30*	20,0	33,0	42,0	-	80,0	52,0	10,0	-	M16x1	MTC-SK030-20-080-1-0-A	30261570
40	3,0	10,0	17,0	-	80,0	28,0	16,0	-	M6	MTC-SK040-03-080-3-0-A	30261571
40**	3,0	10,0	20,0	-	120,0	12,0	-	-	-	MTC-SK040-03-120-3-0-W	30261584
40**	3,0	10,0	20,0	-	130,0	12,0	-	-	-	MTC-SK040-03-130-3-0-W	30872519
40	4,0	15,0	22,0	-	80,0	28,0	12,0	-	M6	MTC-SK040-04-080-3-0-A	30261572
40**	4,0	15,0	22,0	-	120,0	16,0	-	-	-	MTC-SK040-04-120-3-0-W	30261586
40**	4,0	15,0	22,0	-	130,0	16,0	-	-	-	MTC-SK040-04-130-3-0-W	30872520
40	5,0	15,0	22,0	-	80,0	30,0	10,0	-	M6	MTC-SK040-05-080-3-0-A	30261573
40**	5,0	15,0	22,0	-	120,0	20,0	-	-	-	MTC-SK040-05-120-3-0-W	30261588
40	5,0	15,0	22,0	-	130,0	20,0	0,0	-	-	MTC-SK040-05-130-3-0-W	30872521
40	6,0	21,0	27,0	-	80,0	36,0	10,0	-	M5	MTC-SK040-06-080-3-0-A	30261574
40	6,0	21,0	27,0	-	120,0	36,0	10,0	-	M5	MTC-SK040-06-120-3-0-A	30261590
40	6,0	21,0	27,0	-	130,0	36,0	10,0	-	M5	MTC-SK040-06-130-3-0-A	30872522
40	6,0	21,0	27,0	-	160,0	36,0	10,0	-	M5	MTC-SK040-06-160-3-0-A	30261591
40	6,0	21,0	27,0	-	200,0	36,0	10,0	-	M5	MTC-SK 040-06-200-3-0-A	30655715
40	8,0	21,0	27,0	-	80,0	36,0	10,0	-	M6	MTC-SK040-08-080-3-0-A	30261575
40	8,0	21,0	27,0	-	120,0	36,0	10,0	-	M6	MTC-SK040-08-120-3-0-A	30261592
40	8,0	21,0	27,0	-	130,0	36,0	10,0	-	M6	MTC-SK040-08-130-3-0-A	30872523
40	8,0	21,0	27,0	-	160,0	36,0	10,0	-	M6	MTC-SK040-08-160-3-0-A	30261593
40	8,0	21,0	27,0	-	200,0	36,0	10,0	-	M6	MTC-SK 040-08-200-3-0-A	30655716
40	10,0	24,0	32,0	-	80,0	41,0	10,0	-	M8x1	MTC-SK040-10-080-3-0-A	30261576
40	10,0	24,0	32,0	-	120,0	41,0	10,0	-	M8x1	MTC-SK040-10-120-3-0-A	30261594
40	10,0	24,0	32,0	-	130,0	41,0	10,0	-	M8x1	MTC-SK040-10-130-3-0-A	30872524
40	10,0	24,0	32,0	-	160,0	41,0	10,0	-	M8x1	MTC-SK040-10-160-3-0-A	30261595
40	10,0	24,0	32,0	-	200,0	41,0	10,0	-	M8x1	MTC-SK 040-10-200-3-0-A	30655717
40	12,0	24,0	32,0	-	80,0	47,0	10,0	-	M10x1	MTC-SK040-12-080-3-0-A	30261577
40	12,0	24,0	32,0	-	120,0	47,0	10,0	-	M10x1	MTC-SK040-12-120-3-0-A	30261596
40	12,0	24,0	32,0	-	130,0	47,0	10,0	-	M10x1	MTC-SK040-12-130-3-0-A	30872525

## ThermoChuck | With axial tool length adjustment | SK shank in accordance ISO 7388-1 Form AD/AF

Steep taper	Dimensions								G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>			
40	12,0	24,0	32,0	-	160,0	47,0	10,0	-	M10x1	MTC-SK040-12-160-3-0-A	30261597
40	12,0	24,0	32,0	-	200,0	47,0	10,0	-	M10x1	MTC-SK 040-12-200-3-0-A	30655711
40	14,0	27,0	34,0	-	80,0	47,0	10,0	-	M10x1	MTC-SK040-14-080-3-0-A	30261578
40	14,0	27,0	34,0	-	120,0	47,0	10,0	-	M10x1	MTC-SK040-14-120-3-0-A	30261598
40	14,0	27,0	34,0	-	130,0	47,0	10,0	-	M10x1	MTC-SK040-14-130-3-0-A	30872526
40	14,0	27,0	34,0	-	160,0	47,0	10,0	-	M10x1	MTC-SK040-14-160-3-0-A	30261599
40	14,0	27,0	34,0	-	200,0	47,0	10,0	-	M10x1	MTC-SK 040-14-200-3-0-A	30655718
40	16,0	27,0	34,0	-	80,0	50,0	10,0	-	M12x1	MTC-SK040-16-080-3-0-A	30261579
40	16,0	27,0	34,0	-	120,0	50,0	10,0	-	M12x1	MTC-SK040-16-120-3-0-A	30261600
40	16,0	27,0	34,0	-	130,0	50,0	10,0	-	M12x1	MTC-SK040-16-130-3-0-A	30872527
40	16,0	27,0	34,0	-	160,0	50,0	10,0	-	M12x1	MTC-SK040-16-160-3-0-A	30261601
40	16,0	27,0	34,0	-	200,0	50,0	10,0	-	M12x1	MTC-SK 040-16-200-3-0-A	30655719
40	18,0	33,0	42,0	-	80,0	50,0	10,0	-	M12x1	MTC-SK040-18-080-3-0-A	30260195
40	18,0	33,0	42,0	-	120,0	50,0	10,0	-	M12x1	MTC-SK040-18-120-3-0-A	30261602
40	18,0	33,0	42,0	-	130,0	50,0	10,0	-	M12x1	MTC-SK040-18-130-3-0-A	30872528
40	18,0	33,0	42,0	-	160,0	50,0	10,0	-	M12x1	MTC-SK040-18-160-3-0-A	30261603
40	18,0	33,0	42,0	-	200,0	50,0	10,0	-	M12x1	MTC-SK 040-18-200-3-0-A	30655720
40	20,0	33,0	42,0	-	80,0	52,0	10,0	-	M16x1	MTC-SK040-20-080-3-0-A	30261581
40	20,0	33,0	42,0	-	120,0	52,0	10,0	-	M16x1	MTC-SK040-20-120-3-0-A	30261604
40	20,0	33,0	42,0	-	130,0	52,0	10,0	-	M16x1	MTC-SK040-20-130-3-0-A	30872529
40	20,0	33,0	42,0	-	160,0	52,0	10,0	-	M16x1	MTC-SK040-20-160-3-0-A	30261605
40	20,0	33,0	42,0	-	200,0	52,0	10,0	-	M16x1	MTC-SK 040-20-200-3-0-A	30655721
40	25,0	44,0	49,0	53,0	100,0	58,0	10,0	60,0	M16x1	MTC-SK040-25-100-3-0-A	30261582
40	25,0	44,0	53,0	49,0	120,0	58,0	10,0	60,0	M16x1	MTC-SK040-25-120-3-0-A	30261606
40	25,0	44,0	53,0	49,0	130,0	58,0	10,0	70,0	M16x1	MTC-SK040-25-130-3-0-A	30872530
40	25,0	44,0	53,0	49,0	160,0	58,0	10,0	60,0	M16x1	MTC-SK040-25-160-3-0-A	30261607
40	25,0	44,0	53,0	49,0	200,0	58,0	10,0	60,0	M16x1	MTC-SK 040-25-200-3-0-A	30655722
40	32,0	44,0	49,0	53,0	100,0	62,0	10,0	60,0	M16x1	MTC-SK040-32-100-3-0-A	30261583
40	32,0	44,0	53,0	49,0	120,0	62,0	10,0	60,0	M16x1	MTC-SK040-32-120-3-0-A	30261608
40	32,0	44,0	53,0	49,0	130,0	62,0	10,0	70,0	M16x1	MTC-SK040-32-130-3-0-A	30872532
40	32,0	44,0	53,0	49,0	160,0	62,0	10,0	60,0	M16x1	MTC-SK040-32-160-3-0-A	30261610
40	32,0	44,0	53,0	49,0	200,0	62,0	10,0	60,0	M16x1	MTC-SK 040-32-200-3-0-A	30655723
50**	3,0	10,0	17,0	-	80,0	12,0	-	-	-	MTC-SK050-03-080-3-0-W	30261611
50**	3,0	10,0	20,0	-	120,0	12,0	-	-	-	MTC-SK050-03-120-3-0-W	30261612
50**	4,0	15,0	22,0	-	80,0	16,0	-	-	-	MTC-SK050-04-080-3-0-W	30261614
50**	4,0	15,0	22,0	-	120,0	16,0	-	-	-	MTC-SK050-04-120-3-0-W	30261615
50**	5,0	15,0	22,0	-	80,0	20,0	-	-	-	MTC-SK050-05-080-3-0-W	30261617
50**	5,0	15,0	22,0	-	120,0	20,0	-	-	-	MTC-SK050-05-120-3-0-W	30261618
50	6,0	21,0	27,0	-	80,0	36,0	10,0	-	M5	MTC-SK050-06-080-3-0-A	30261620
50	6,0	21,0	27,0	-	120,0	36,0	10,0	-	M5	MTC-SK050-06-120-3-0-A	30261621
50	6,0	21,0	27,0	-	160,0	36,0	10,0	-	M5	MTC-SK050-06-160-3-0-A	30261622
50	8,0	21,0	27,0	-	80,0	36,0	10,0	-	M6	MTC-SK050-08-080-3-0-A	30261623
50	8,0	21,0	27,0	-	120,0	36,0	10,0	-	M6	MTC-SK050-08-120-3-0-A	30261624
50	8,0	21,0	27,0	-	160,0	36,0	10,0	-	M6	MTC-SK050-08-160-3-0-A	30261625
50	10,0	24,0	32,0	-	80,0	41,0	10,0	-	M8x1	MTC-SK050-10-080-3-0-A	30261626
50	10,0	24,0	32,0	-	120,0	41,0	10,0	-	M8x1	MTC-SK050-10-120-3-0-A	30261627
50	10,0	24,0	32,0	-	160,0	41,0	10,0	-	M8x1	MTC-SK050-10-160-3-0-A	30261628
50	12,0	24,0	32,0	-	80,0	47,0	10,0	-	M10x1	MTC-SK050-12-080-3-0-A	30261629
50	12,0	24,0	32,0	-	120,0	47,0	10,0	-	M10x1	MTC-SK050-12-120-3-0-A	30261630
50	12,0	24,0	32,0	-	160,0	47,0	10,0	-	M10x1	MTC-SK050-12-160-3-0-A	30261631
50	14,0	27,0	34,0	-	80,0	47,0	10,0	-	M10x1	MTC-SK050-14-080-3-0-A	30261632
50	14,0	27,0	34,0	-	120,0	47,0	10,0	-	M10x1	MTC-SK050-14-120-3-0-A	30261633
50	14,0	27,0	34,0	-	160,0	47,0	10,0	-	M10x1	MTC-SK050-14-160-3-0-A	30261634
50	16,0	27,0	34,0	-	80,0	50,0	10,0	-	M12x1	MTC-SK050-16-080-3-0-A	30261635
50	16,0	27,0	34,0	-	120,0	50,0	10,0	-	M12x1	MTC-SK050-16-120-3-0-A	30261636
50	16,0	27,0	34,0	-	160,0	50,0	10,0	-	M12x1	MTC-SK050-16-160-3-0-A	30261637

Continued on next page.

## ThermoChuck | With axial tool length adjustment | SK shank in accordance ISO 7388-1 Form AD/AF

Steep taper	Dimensions								G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>			
50	18,0	33,0	42,0	-	80,0	50,0	10,0	-	M12x1	MTC-SK050-18-080-3-0-A	30261638
50	18,0	33,0	42,0	-	120,0	50,0	10,0	-	M12x1	MTC-SK050-18-120-3-0-A	30261639
50	18,0	33,0	42,0	-	130,0	50,0	10,0	-	M12x1	MTC-SK050-18-130-3-0-A	30872533
50	18,0	33,0	42,0	-	160,0	50,0	10,0	-	M12x1	MTC-SK050-18-160-3-0-A	30261640
50	20,0	33,0	42,0	-	80,0	52,0	10,0	-	M16x1	MTC-SK050-20-080-3-0-A	30261641
50	20,0	33,0	42,0	-	120,0	52,0	10,0	-	M16x1	MTC-SK050-20-120-3-0-A	30261642
50	20,0	33,0	42,0	-	130,0	52,0	10,0	-	M16x1	MTC-SK050-20-130-3-0-A	30872534
50	20,0	33,0	42,0	-	160,0	52,0	10,0	-	M16x1	MTC-SK050-20-160-3-0-A	30261643
50	25,0	44,0	53,0	-	100,0	58,0	10,0	-	M16x1	MTC-SK050-25-100-3-0-A	30261644
50	25,0	44,0	53,0	-	120,0	58,0	10,0	-	M16x1	MTC-SK050-25-120-3-0-A	30261645
50	25,0	44,0	53,0	-	130,0	58,0	10,0	-	M16x1	MTC-SK050-25-130-3-0-A	30872535
50	25,0	44,0	53,0	-	160,0	58,0	10,0	-	M16x1	MTC-SK050-25-160-3-0-A	30261646
50	32,0	44,0	53,0	-	100,0	62,0	10,0	-	M16x1	MTC-SK050-32-100-3-0-A	30261647
50	32,0	44,0	53,0	-	120,0	62,0	10,0	-	M16x1	MTC-SK050-32-120-3-0-A	30261648
50	32,0	44,0	53,0	-	130,0	62,0	10,0	-	M16x1	MTC-SK050-32-130-3-0-A	30872536
50	32,0	44,0	53,0	-	160,0	62,0	10,0	-	M16x1	MTC-SK050-32-160-3-0-A	30261649

\* Design: Taper shank size is not available in the AD/AF combination design

\*\* Without axial tool length adjustment

Dimensions in mm.

Additional dimensions available upon request.

Scope of delivery: With built-in, drilled through length adjustment screw. Without fine balancing screws or pull studs.

Design: Permissible run-out variation on the taper shank in relation to the clamping diameter d<sub>1</sub> = 3 µm. The clamping diameter is designed for a shank tolerance of h6.

Basic setting Form AD, if Form AF is required, please specify this when placing your order. Note: For pull studs, see chapter "Accessories, spare parts and measuring equipment".

Length adjustment screws and fine balancing screws available on request.

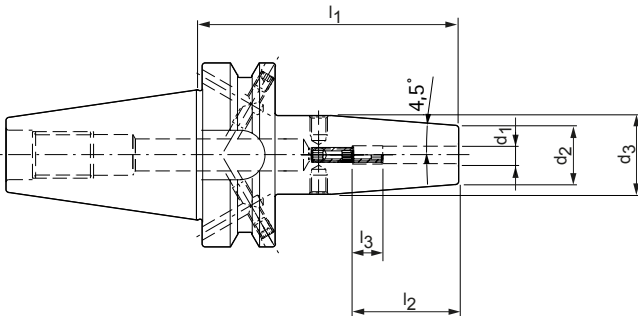
Balancing quality: G 2.5 with 25,000 rpm in delivery status.



# ThermoChuck

with axial tool length adjustment

Shank BT according to ISO 7388-2 Form JD/JF (JIS B 6339)



BT	Dimensions						G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>			
30*	3,0	10,0	17,0	85,0	28,0	16,0	M6	MTC-BT030-03-085-1-0-A	30329402
30*	4,0	15,0	22,0	85,0	28,0	12,0	M6	MTC-BT030-04-085-1-0-A	30329453
30*	5,0	15,0	22,0	85,0	30,0	10,0	M6	MTC-BT030-05-085-1-0-A	30329454
30*	6,0	21,0	27,0	85,0	36,0	10,0	M5	MTC-BT030-06-085-1-0-A	30329455
30*	8,0	21,0	27,0	85,0	36,0	10,0	M6	MTC-BT030-08-085-1-0-A	30308274
30*	10,0	24,0	32,0	85,0	41,0	10,0	M8x1	MTC-BT030-10-085-1-0-A	30308275
30*	12,0	24,0	32,0	85,0	47,0	10,0	M10x1	MTC-BT030-12-085-1-0-A	30325011
30*	14,0	27,0	34,0	85,0	47,0	10,0	M10x1	MTC-BT030-14-085-1-0-A	30329458
30*	16,0	27,0	34,0	85,0	50,0	10,0	M12x1	MTC-BT030-16-085-1-0-A	30329447
30*	18,0	33,0	42,0	85,0	50,0	10,0	M12x1	MTC-BT030-18-085-1-0-A	30329460
30*	20,0	33,0	42,0	85,0	52,0	10,0	M16x1	MTC-BT030-20-085-1-0-A	30300170
40	3,0	10,0	17,0	90,0	28,0	16,0	M6	MTC-BT040-03-090-3-0-A	30261814
40**	3,0	10,0	20,0	120,0	12,0	-	-	MTC-BT040-03-120-3-0-W	30261815
40	4,0	15,0	22,0	90,0	28,0	12,0	M6	MTC-BT040-04-090-3-0-A	30261817
40**	4,0	15,0	22,0	120,0	16,0	-	-	MTC-BT040-04-120-3-0-W	30261818
40	5,0	15,0	22,0	90,0	30,0	10,0	M6	MTC-BT040-05-090-3-0-A	30261820
40**	5,0	15,0	22,0	120,0	20,0	-	-	MTC-BT040-05-120-3-0-W	30261821
40	6,0	21,0	27,0	90,0	36,0	10,0	M5	MTC-BT040-06-090-3-0-A	30261823
40	6,0	21,0	27,0	120,0	36,0	10,0	M5	MTC-BT040-06-120-3-0-A	30261824
40	6,0	21,0	27,0	160,0	36,0	10,0	M5	MTC-BT040-06-160-3-0-A	30261825
40	8,0	21,0	27,0	90,0	36,0	10,0	M6	MTC-BT040-08-090-3-0-A	30261826
40	8,0	21,0	27,0	120,0	36,0	10,0	M6	MTC-BT040-08-120-3-0-A	30261827
40	8,0	21,0	27,0	160,0	36,0	10,0	M6	MTC-BT040-08-160-3-0-A	30261828
40	10,0	24,0	32,0	90,0	41,0	10,0	M8x1	MTC-BT040-10-090-3-0-A	30261829
40	10,0	24,0	32,0	120,0	41,0	10,0	M8x1	MTC-BT040-10-120-3-0-A	30261830
40	10,0	24,0	32,0	160,0	41,0	10,0	M8x1	MTC-BT040-10-160-3-0-A	30261831
40	12,0	24,0	32,0	90,0	47,0	10,0	M10x1	MTC-BT040-12-090-3-0-A	30261832
40	12,0	24,0	32,0	120,0	47,0	10,0	M10x1	MTC-BT040-12-120-3-0-A	30261833
40	12,0	24,0	32,0	160,0	47,0	10,0	M10x1	MTC-BT040-12-160-3-0-A	30261834
40	14,0	27,0	34,0	90,0	47,0	10,0	M10x1	MTC-BT040-14-090-3-0-A	30261835
40	14,0	27,0	34,0	120,0	47,0	10,0	M10x1	MTC-BT040-14-120-3-0-A	30261836
40	14,0	27,0	34,0	160,0	47,0	10,0	M10x1	MTC-BT040-14-160-3-0-A	30261837
40	16,0	27,0	34,0	90,0	50,0	10,0	M12x1	MTC-BT040-16-090-3-0-A	30261838
40	16,0	27,0	34,0	120,0	50,0	10,0	M12x1	MTC-BT040-16-120-3-0-A	30261839
40	16,0	27,0	34,0	160,0	50,0	10,0	M12x1	MTC-BT040-16-160-3-0-A	30261840
40	18,0	33,0	42,0	90,0	50,0	10,0	M12x1	MTC-BT040-18-090-3-0-A	30261841
40	18,0	33,0	42,0	120,0	50,0	10,0	M12x1	MTC-BT040-18-120-3-0-A	30261842

## ThermoChuck | With axial tool length adjustment | BT shank as per ISO 7388-2 Form JD/JF (JIS B 6339)

BT	Dimensions						G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>			
40	18,0	33,0	42,0	160,0	50,0	10,0	M12x1	MTC-BT040-18-160-3-0-A	30261843
40	20,0	33,0	42,0	90,0	52,0	10,0	M16x1	MTC-BT040-20-090-3-0-A	30261844
40	20,0	33,0	42,0	120,0	52,0	10,0	M16x1	MTC-BT040-20-120-3-0-A	30261845
40	20,0	33,0	42,0	160,0	52,0	10,0	M16x1	MTC-BT040-20-160-3-0-A	30261846
40	25,0	44,0	53,0	100,0	58,0	10,0	M16x1	MTC-BT040-25-100-3-0-A	30261847
40	25,0	44,0	53,0	120,0	58,0	10,0	M16x1	MTC-BT040-25-120-3-0-A	30261848
40	25,0	44,0	53,0	160,0	58,0	10,0	M16x1	MTC-BT040-25-160-3-0-A	30261849
40	32,0	44,0	53,0	100,0	62,0	10,0	M16x1	MTC-BT040-32-100-3-0-A	30261850
40	32,0	44,0	53,0	120,0	62,0	10,0	M16x1	MTC-BT040-32-120-3-0-A	30261851
40	32,0	44,0	53,0	160,0	62,0	10,0	M16x1	MTC-BT040-32-160-3-0-A	30261852
50	6,0	21,0	27,0	100,0	36,0	10,0	M5	MTC-BT050-06-100-3-0-A	30261862
50	8,0	21,0	27,0	100,0	36,0	10,0	M6	MTC-BT050-08-100-3-0-A	30261865
50	10,0	24,0	32,0	100,0	41,0	10,0	M8x1	MTC-BT050-10-100-3-0-A	30261868
50	12,0	24,0	32,0	100,0	47,0	10,0	M10x1	MTC-BT050-12-100-3-0-A	30261871
50	14,0	27,0	34,0	100,0	47,0	10,0	M10x1	MTC-BT050-14-100-3-0-A	30261874
50	16,0	27,0	34,0	100,0	50,0	10,0	M12x1	MTC-BT050-16-100-3-0-A	30259977
50	18,0	33,0	42,0	100,0	50,0	10,0	M12x1	MTC-BT050-18-100-3-0-A	30261880
50	20,0	33,0	42,0	100,0	52,0	10,0	M16x1	MTC-BT050-20-100-3-0-A	30261883
50	25,0	44,0	53,0	110,0	58,0	10,0	M16x1	MTC-BT050-25-110-3-0-A	30261886
50	32,0	44,0	53,0	110,0	62,0	10,0	M16x1	MTC-BT050-32-110-3-0-A	30261889

\* Design: Taper shank size BT30 is not available in the JD/JF combination design

\*\* Without axial tool length adjustment

Dimensions in mm.

Additional dimensions available upon request.

Scope of delivery: With built-in, drilled through length adjustment screw. Without fine balancing screws or pull studs.

Design: Permissible run-out variation on the taper shank in relation to the clamping diameter d<sub>1</sub> = 3 µm. The clamping diameter is designed for a shank tolerance of h6.

Basic setting Form JD; if Form JF is required, please state with the order.

Note: For pull studs, see chapter "Accessories, spare parts and measuring equipment".

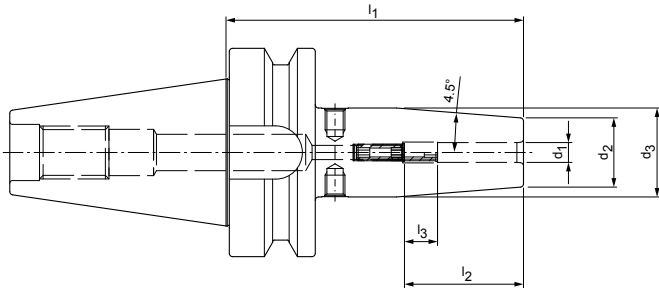
Length adjustment screws and fine balancing screws available on request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

# ThermoChuck

with axial tool length adjustment

Shank similar to ISO 7388-2 Form JD (with face connection)



BT-FC	Dimensions						G	Specification	Order no.
	$d_1$	$d_2$	$d_3$	$l_1$	$l_2$	$l_3$			
30	3,0	10,0	17,0	85,0	28,0	16,0	M6X14	MTC-JD-FC030-03-085-1-0-A	30660218
30	4,0	15,0	22,0	85,0	28,0	12,0	M6X14	MTC-JD-FC030-04-085-1-0-A	30660219
30	5,0	15,0	22,0	85,0	30,0	10,0	M6X14	MTC-JD-FC030-05-085-1-0-A	30660220
30	6,0	21,0	27,0	85,0	36,0	10,0	M5	MTC-JD-FC030-06-085-1-0-A	30660221
30	8,0	21,0	27,0	85,0	36,0	10,0	M6	MTC-JD-FC030-08-085-1-0-A	30660222
30	10,0	24,0	32,0	85,0	41,0	10,0	M8x1	MTC-JD-FC030-10-085-1-0-A	30660223
30	12,0	24,0	32,0	85,0	47,0	10,0	M10x1	MTC-JD-FC030-12-085-1-0-A	30660224
30	14,0	27,0	34,0	85,0	47,0	10,0	M10x1	MTC-JD-FC030-14-085-1-0-A	30660225
30	16,0	27,0	34,0	85,0	50,0	10,0	M12x1	MTC-JD-FC030-16-085-1-0-A	30660226
30	18,0	33,0	42,0	85,0	50,0	10,0	M12x1	MTC-JD-FC030-18-085-1-0-A	30660227
30	20,0	33,0	42,0	85,0	52,0	10,0	M16x1	MTC-JD-FC030-20-085-1-0-A	30660228
40	3,0	10,0	17,0	90,0	28,0	16,0	M6X14	MTC-JD-FC040-03-090-1-0-A	30660229
40	4,0	15,0	22,0	90,0	28,0	12,0	M6X14	MTC-JD-FC040-04-090-1-0-A	30660230
40	5,0	15,0	22,0	90,0	30,0	10,0	M6X14	MTC-JD-FC040-05-090-1-0-A	30660231
40	6,0	21,0	27,0	90,0	36,0	10,0	M5	MTC-JD-FC040-06-090-1-0-A	30660232
40	8,0	21,0	27,0	90,0	36,0	10,0	M6	MTC-JD-FC040-08-090-1-0-A	30660233
40	10,0	24,0	32,0	90,0	41,0	10,0	M8x1	MTC-JD-FC040-10-090-1-0-A	30660234
40	12,0	24,0	32,0	90,0	47,0	10,0	M10x1	MTC-JD-FC040-12-090-1-0-A	30660235
40	14,0	27,0	34,0	90,0	47,0	10,0	M10x1	MTC-JD-FC040-14-090-1-0-A	30660236
40	16,0	27,0	34,0	90,0	50,0	10,0	M12x1	MTC-JD-FC040-16-090-1-0-A	30660237
40	18,0	33,0	42,0	90,0	50,0	10,0	M12x1	MTC-JD-FC040-18-090-1-0-A	30660238
40	20,0	33,0	42,0	90,0	52,0	10,0	M16x1	MTC-JD-FC040-20-090-1-0-A	30660239
40	25,0	44,0	53,0	100,0	58,0	10,0	M16x1	MTC-JD-FC040-25-100-1-0-A	30660240
40	32,0	44,0	53,0	100,0	62,0	10,0	M16x1	MTC-JD-FC040-32-100-1-0-A	30660241

Dimensions in mm.

Additional dimensions available upon request.

Scope of delivery: With built-in, drilled through length adjustment screw. Without fine balancing screws or pull studs.

Design: Permissible run-out variation on the taper shank in relation to the clamping diameter  $d_1 = 3 \mu\text{m}$ . The clamping diameter is designed for a shank tolerance of h6.

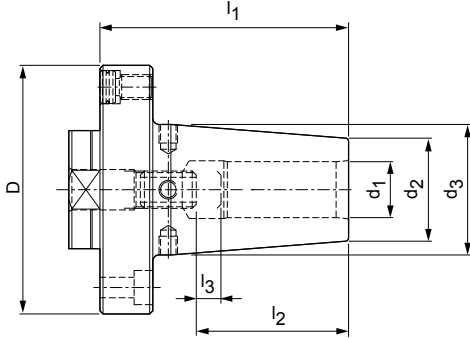
Note: For pull studs, see chapter "Accessories, spare parts and measuring equipment". Length adjustment screws and fine balancing screws available on request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

# ThermoChuck

with radial and angular alignment and axial tool length adjustment

Module connection sizes in accordance with MN5000-14



Adapter diameter Module D	Dimensions						G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>			
60	6,0	21,0	27,0	70,0	36,0	10,0	M5	MTC-MOD060-06-070-1-2-A	30320048
60	8,0	21,0	27,0	70,0	36,0	10,0	M6	MTC-MOD060-08-070-1-2-A	30320049
60	10,0	24,0	32,0	70,0	41,0	10,0	M8x1	MTC-MOD060-10-070-1-2-A	30327443
60	12,0	24,0	32,0	70,0	47,0	10,0	M10x1	MTC-MOD060-12-070-1-2-A	30320050
70	14,0	27,0	34,0	75,0	47,0	10,0	M10x1	MTC-MOD070-14-075-1-2-A	30320051
70	16,0	27,0	34,0	75,0	50,0	10,0	M12x1	MTC-MOD070-16-075-1-2-A	30320052
80	18,0	33,0	42,0	80,0	50,0	10,0	M12x1	MTC-MOD080-18-080-1-2-A	30320053
80	20,0	33,0	42,0	80,0	52,0	10,0	M16x1	MTC-MOD080-20-080-1-2-A	30320054
100	25,0	44,0	53,0	80,0	58,0	10,0	M16x1	MTC-MOD100-25-080-1-2-A	30320055
100	32,0	44,0	53,0	80,0	62,0	10,0	M16x1	MTC-MOD100-32-080-1-2-A	30320056

## Spare parts for shrink chucks ThermoChuck with radial and angular alignment

Module diameter D	Quantity required	Cylinder head screw in accordance with ISO 4762		Thrust pad		Threaded pin	
		Size	Order no.	Specification	Order no.	Specification	Order no.
60	4	M5x16 – 12.9	10003601	ø10.6x5	10040108	M8x1x8	10040109
70	4	M6x20 – 12.9	10003619	ø10.6x5	10040108	M8x1x8	10040109
80	4	M6x20 – 12.9	10003619	ø10.6x5	10040108	M8x1x11.5	10075074
100	4	M8x25 – 12.9	10003637	ø12.8x5	10075116	M10x1x14	10075100

Module diameter D	Specification	Length adjustment screw	
		Specification	Order no.
60	MTC-MOD060-06-070-1-2-A	M5x16-45H	10049051
60	MTC-MOD060-08-070-1-2-A	M6x16-45H	10049052
60	MTC-MOD060-10-070-1-2-A	M8x1x16-45H	10049053
60	MTC-MOD060-12-070-1-2-A	M10x1x18-45H	10049056
70	MTC-MOD070-14-075-1-2-A	M10x1x18-45H	10049056
70	MTC-MOD070-16-075-1-2-A	M12x1x18-45H	10049059
80	MTC-MOD080-18-080-1-2-A	M12x1x18-45H	10049059
80	MTC-MOD080-20-080-1-2-A	M16x1x18-45H	10067787
100	MTC-MOD100-25-080-1-2-A	M16x1x22-45H	10067681
100	MTC-MOD100-32-080-1-2-A	M16x1x22-45H	10067681

Dimensions in mm.

Additional dimensions available upon request.

Scope of delivery: With built-in, drilled through length adjustment screw. Without fine balancing screws.

Design: The radial run-out is adjustable thanks to threaded pins (for alignment) in the machine spindle and in the HSK (hollow shank taper) or SK (steep taper) adapter. Adjustable

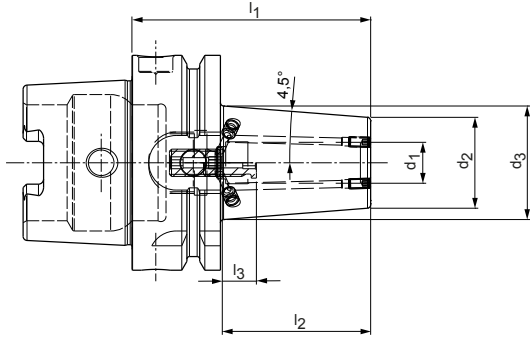
for axial run-out due to thrust pad and threaded pin in the shrink chuck. The clamping diameter is designed for a shank tolerance of h6. With built-in, drilled through length adjustment screw. Without fine balancing screws.

Balancing quality: G 2.5 with 16,000 rpm in delivery status.

# ThermoChuck

similar to DIN 69882-8 with axial tool length adjustment

HSK-A (hollow shank taper form A) shank according to DIN 69893-1



Design with two cooling channel bores, resealable

HSK-A	Dimensions						G	Specification	Order no.
	$d_1$	$d_2$	$d_3$	$l_1$	$l_2$	$l_3$			
63	3,0	10,0	15,0	80,0	28,0	16,0	M6	MTC-HSK-A063-03-080-1-0-A	30654272
63*	3,0	10,0	20,0	120,0	12,0	-	-	MTC-HSK-A063-03-120-1-0-W	30654273
63	4,0	15,0	22,0	80,0	28,0	12,0	M6	MTC-HSK-A063-04-080-1-0-A	30654274
63*	4,0	15,0	22,0	120,0	16,0	-	-	MTC-HSK-A063-04-120-1-0-W	30654275
63	5,0	15,0	22,0	80,0	30,0	10,0	M6	MTC-HSK-A063-05-080-1-0-A	30654277
63*	5,0	15,0	22,0	120,0	20,0	-	-	MTC-HSK-A063-05-120-1-0-W	30654279
63	6,0	21,0	27,0	80,0	36,0	10,0	M5	MTC-HSK-A063-06-080-1-0-A	30654280
63	6,0	21,0	27,0	120,0	36,0	10,0	M5	MTC-HSK-A063-06-120-1-0-A	30654281
63	8,0	21,0	27,0	80,0	36,0	10,0	M6	MTC-HSK-A063-08-080-1-0-A	30654282
63	8,0	21,0	27,0	120,0	36,0	10,0	M6	MTC-HSK-A063-08-120-1-0-A	30654283
63	10,0	24,0	32,0	85,0	41,0	10,0	M8x1	MTC-HSK-A063-10-085-1-0-A	30654284
63	10,0	24,0	32,0	120,0	41,0	10,0	M8x1	MTC-HSK-A063-10-120-1-0-A	30654285
63	12,0	24,0	32,0	90,0	47,0	10,0	M10x1	MTC-HSK-A063-12-090-1-0-A	30654286
63	12,0	24,0	32,0	120,0	47,0	10,0	M10x1	MTC-HSK-A063-12-120-1-0-A	30654287
63	14,0	27,0	34,0	90,0	47,0	10,0	M10x1	MTC-HSK-A063-14-090-1-0-A	30654288
63	14,0	27,0	34,0	120,0	47,0	10,0	M10x1	MTC-HSK-A063-14-120-1-0-A	30654289
63	16,0	27,0	34,0	95,0	50,0	10,0	M12x1	MTC-HSK-A063-16-095-1-0-A	30654290
63	16,0	27,0	34,0	120,0	50,0	10,0	M12x1	MTC-HSK-A063-16-120-1-0-A	30654291
63	18,0	33,0	42,0	95,0	50,0	10,0	M12x1	MTC-HSK-A063-18-095-1-0-A	30654293
63	18,0	33,0	42,0	120,0	50,0	10,0	M12x1	MTC-HSK-A063-18-120-1-0-A	30654295
63	20,0	33,0	42,0	100,0	52,0	10,0	M16x1	MTC-HSK-A063-20-100-1-0-A	30654296
63	20,0	33,0	42,0	120,0	52,0	10,0	M16x1	MTC-HSK-A063-20-120-1-0-A	30654297
63	25,0	44,0	52,5	115,0	58,0	10,0	M16x1	MTC-HSK-A063-25-115-1-0-A	30654298
63	25,0	44,0	52,5	120,0	58,0	10,0	M16x1	MTC-HSK-A063-25-120-1-0-A	30654299
63	32,0	44,0	52,5	120,0	62,0	10,0	M16x1	MTC-HSK-A063-32-120-1-0-A	30654300

\* Without axial tool length adjustment

Dimensions in mm.

Additional dimensions available upon request.

Scope of delivery: With length adjustment screw with through hole fitted, screws for sealing the cooling channel bores. Without fine balancing screws and coolant tube.

Design: Permissible run-out variation of the hollow taper shank to the clamping diameter  $d_1 = 3 \mu\text{m}$ . The clamping diameter is designed for a shank tolerance of h6.

Standard design with two cooling channel bores. Other cooling channel bores on request.

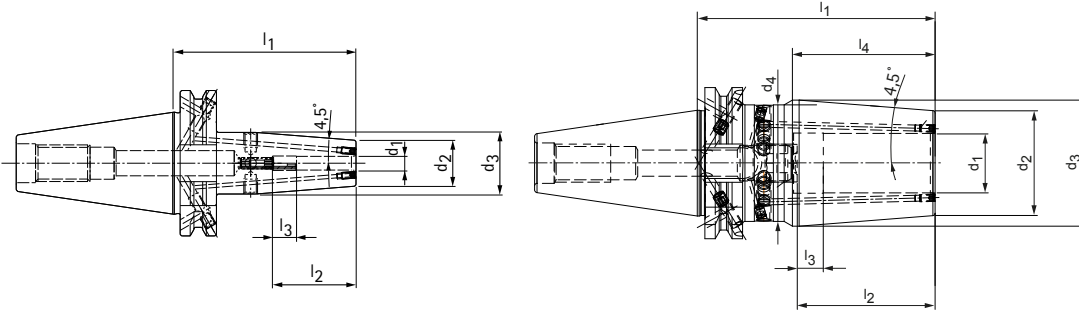
Note: Coolant tube and code carrier, see chapter "Accessories, spare parts and measuring equipment". Length adjustment screws and fine balancing screws available on request. For notes on coding system, see chapter "Technical appendix".

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

# ThermoChuck

with axial tool length adjustment

Shank SK according to ISO 7388-1 Form AD/AF



## Design with two cooling channel bores, resealable

Steep taper	Dimensions								G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>			
40	3,0	10,0	17,0	-	80,0	28,0	16,0	-	M6	MTC-SK 040-03-080-3-0-A	30655352
40*	3,0	10,0	20,0	-	120,0	12,0	-	-	-	MTC-SK 040-03-120-3-0-W	30655355
40	4,0	15,0	22,0	-	80,0	28,0	12,0	-	M6	MTC-SK 040-04-080-3-0-A	30655353
40*	4,0	15,0	22,0	-	120,0	16,0	-	-	-	MTC-SK 040-04-120-3-0-W	30655356
40	5,0	15,0	22,0	-	80,0	30,0	10,0	-	M6	MTC-SK 040-05-080-3-0-A	30655354
40*	5,0	15,0	22,0	-	120,0	20,0	-	-	-	MTC-SK 040-05-120-3-0-W	30655357
40	6,0	21,0	27,0	-	80,0	36,0	10,0	-	M5	MTC-SK 040-06-080-3-0-A	30655332
40	6,0	21,0	27,0	-	120,0	36,0	10,0	-	M5	MTC-SK 040-06-120-3-0-A	30655342
40	8,0	21,0	27,0	-	80,0	36,0	10,0	-	M6	MTC-SK 040-08-080-3-0-A	30655333
40	8,0	21,0	27,0	-	120,0	36,0	10,0	-	M6	MTC-SK 040-08-120-3-0-A	30655343
40	10,0	24,0	32,0	-	80,0	41,0	10,0	-	M8x1	MTC-SK 040-10-080-3-0-A	30655334
40	10,0	24,0	32,0	-	120,0	41,0	10,0	-	M8x1	MTC-SK 040-10-120-3-0-A	30655344
40	12,0	24,0	32,0	-	80,0	47,0	10,0	-	M10x1	MTC-SK 040-12-080-3-0-A	30655335
40	12,0	24,0	32,0	-	120,0	47,0	10,0	-	M10x1	MTC-SK 040-12-120-3-0-A	30655345
40	14,0	27,0	34,0	-	80,0	47,0	10,0	-	M10x1	MTC-SK 040-14-080-3-0-A	30655336
40	14,0	27,0	34,0	-	120,0	47,0	10,0	-	M10x1	MTC-SK 040-14-120-3-0-A	30655346
40	16,0	27,0	34,0	-	80,0	50,0	10,0	-	M12x1	MTC-SK 040-16-080-3-0-A	30655337
40	16,0	27,0	34,0	-	120,0	50,0	10,0	-	M12x1	MTC-SK 040-16-120-3-0-A	30655347
40	18,0	33,0	42,0	-	80,0	50,0	10,0	-	M12x1	MTC-SK 040-18-080-3-0-A	30655338
40	18,0	33,0	42,0	-	120,0	50,0	10,0	-	M12x1	MTC-SK 040-18-120-3-0-A	30655348
40	20,0	33,0	42,0	-	80,0	52,0	10,0	-	M16x1	MTC-SK 040-20-080-3-0-A	30655339
40	20,0	33,0	42,0	-	120,0	52,0	10,0	-	M16x1	MTC-SK 040-20-120-3-0-A	30655349
40	25,0	44,0	53,0	49,0	100,0	58,0	10,0	60,0	M16x1	MTC-SK 040-25-100-3-0-A	30655340
40	25,0	44,0	53,0	49,0	120,0	58,0	10,0	60,0	M16x1	MTC-SK 040-25-120-3-0-A	30655350
40	32,0	44,0	53,0	49,0	100,0	62,0	10,0	60,0	M16x1	MTC-SK 040-32-100-3-0-A	30655341
40	32,0	44,0	53,0	49,0	120,0	62,0	10,0	60,0	M16x1	MTC-SK 040-32-120-3-0-A	30655351

\* Without axial tool length adjustment

Dimensions in mm.

Additional dimensions available upon request.

Scope of delivery: With built-in, drilled through length adjustment screw. Without fine balancing screws or pull studs.

Design: Permissible run-out variation on the taper shank in relation to the clamping diameter d<sub>1</sub> = 3 μm. The clamping diameter is designed for a shank tolerance of h6.

Standard design with two cooling channel bores. Other cooling channel bores on request.

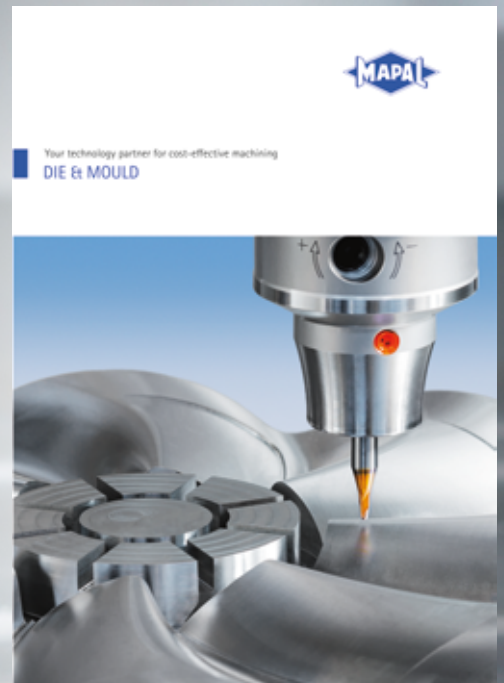
Basic setting Form AD, if Form AF is required, please specify this when placing your order.

Note: For pull studs, see chapter "Accessories, spare parts and measuring equipment".

Length adjustment screws and fine balancing screws available on request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

Further chucks for use in the Die & Mould sector can be found in the "Die & Mould sector" catalogue.







# MECHANICAL TOOL CLAMPING TECHNOLOGY

## Chucks for cylindrical shanks

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Chucks for cylindrical shanks ..... 86

## Chucks for collets

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Chucks for collets ..... 88

## Precision drill chucks

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Precision-DrillChuck ..... 92

Micro-Precision-DrillChuck ..... 101

## Tapping chucks

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Softsynchro tapping chucks ..... 105

# MillChuck, HB

## Side lock chucks for high-performance milling operations

The new side lock chucks from MAPAL impresses with its strong clamping ability, easy handling and significantly improved radial run-out. The location bore is therefore manufactured with significantly more precision. This reduces the radial play of the clamped tool and considerably improves the radial run-out. The large tolerance on the lateral clamping surface is also compensated for.

To achieve this, MAPAL uses a spring element in the adapter that enables a defined form fit between the tool and adapter. Coolant channels parallel to the axis in the clamping range also ensure an improved coolant supply.

A two-part clamping element is used to considerably simplify handling. This reduces the tightening torque while maintaining the same clamping force, allowing the tool to be clamped in the adapter with manual force in a process-reliable manner.

### AT A GLANCE

- Significantly preciser location bores
- Available with clamping diameters from 6 to 32 mm for hollow shank taper form A (HSK-A) and steep taper (SK)
- Balancing quality of G 2.5 at 16,000 rpm
- Can be easily combined with MAPAL high performance milling cutters

### ADVANTAGES

- Easy to handle thanks to use of a differential screw
- Maximum cost-effectiveness and precision
- Axial tool positioning can be defined using a spring system
- Decentralised coolant outlets for maximum process reliability



# Tool features in detail

## 1 Decentralised coolant channels

- Optimal coolant supply

## 2 Differential screw

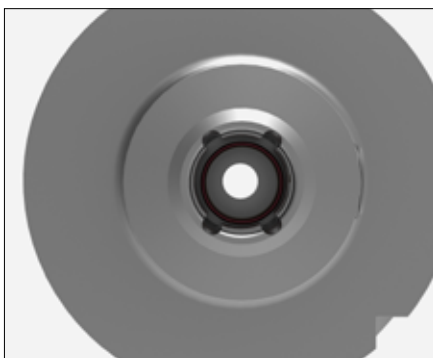
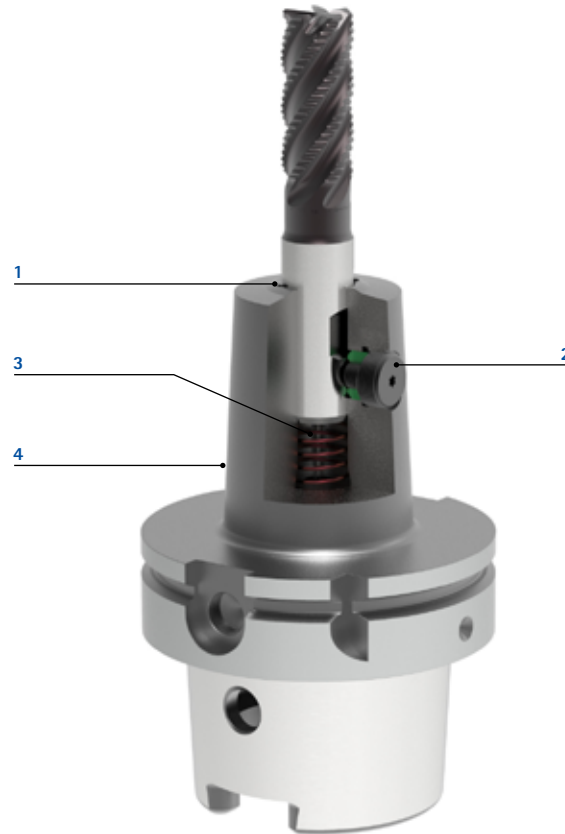
- Easy to handle

## 3 Spring package

- Perfect connection to the HB clamping surface

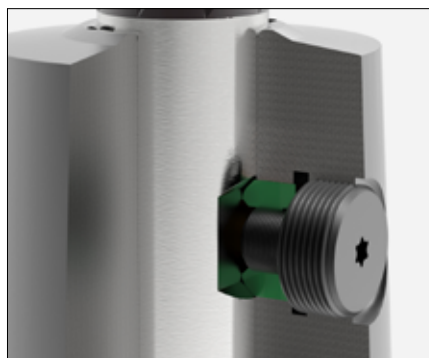
## 4 Contour

- Application-optimised contour for maximum rigidity



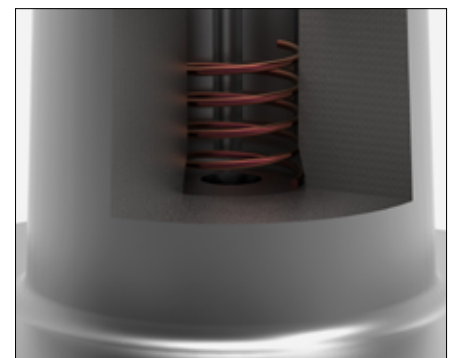
### Optimal coolant supply

- Decentralised coolant channels
- Use of standard tools without internal cooling
- Tool life improved thanks to optimal cooling



### Process-reliable tool clamping

- High clamping force thanks to two-part clamping element
- Differential screw for reduced tightening torque
- Process-reliable clamping through self-locking

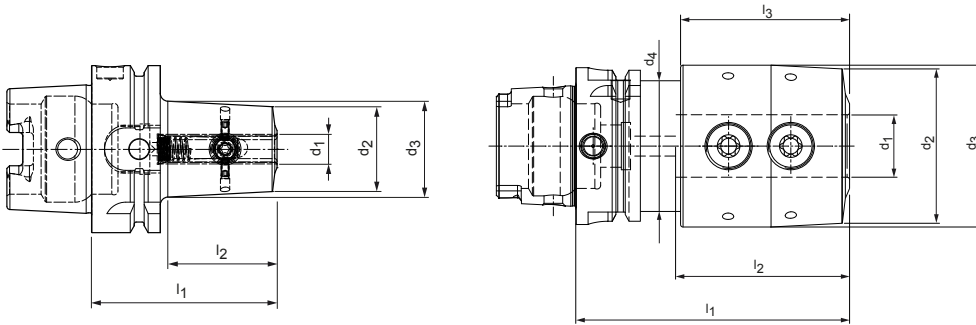


### Defined milling cutter positioning

- Perfect connection to the HB clamping surface
- Form fit between tool and adapter
- Prevents any pull-out during machining

# MillChuck, HB

HSK-A (hollow shank taper form A) shank according to DIN 69893-1



HSK-A	Dimensions							Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>		
63	6,0	22,5	26,2	-	65,0	36,2	-	MWC-HSK-A063-06-065-1-0-W	30941344
63	8,0	25,0	28,7	-	65,0	36,2	-	MWC-HSK-A063-08-065-1-0-W	30941345
63	10,0	32,0	36,2	-	70,0	41,2	-	MWC-HSK-A063-10-070-1-0-W	30941346
63	12,0	37,5	42,7	-	80,0	51,2	-	MWC-HSK-A063-12-080-1-0-W	30941347
63	16,0	43,0	48,3	-	80,0	52,2	-	MWC-HSK-A063-16-080-1-0-W	30941349
63	20,0	46,5	52,0	-	80,0	54,0	-	MWC-HSK-A063-20-080-1-0-W	30941371
63	25,0	62,0	65,0	52,5	110,0	69,9	68,0	MWC-HSK-A063-25-110-1-0-W	30941372
63	32,0	69,0	72,0	52,5	110,0	69,9	68,0	MWC-HSK-A063-32-110-1-0-W	30941373
100	6,0	22,5	27,5	-	80,0	48,2	-	MWC-HSK-A100-06-080-1-0-W	30941374
100	8,0	25,0	30,0	-	80,0	48,2	-	MWC-HSK-A100-08-080-1-0-W	30941375
100	10,0	32,0	36,9	-	80,0	48,2	-	MWC-HSK-A100-10-080-1-0-W	30941376
100	12,0	37,5	42,9	-	85,0	53,2	-	MWC-HSK-A100-12-085-1-0-W	30941377
100	16,0	43,0	50,0	-	100,0	68,2	-	MWC-HSK-A100-16-100-1-0-W	30941379
100	20,0	46,5	53,5	-	100,0	68,2	-	MWC-HSK-A100-20-100-1-0-W	30941381
100	25,0	62,0	65,0	-	100,0	68,1	-	MWC-HSK-A100-25-100-1-0-W	30941382
100	32,0	69,0	72,0	-	110,0	78,1	-	MWC-HSK-A100-32-110-1-0-W	30925430

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping milling cutters with cylindrical shank and lateral drive area according to DIN 1835 Form B and DIN 6535 Form HB.

Scope of delivery: With built-in clamping screw, without coolant tube.

Design: Permissible run-out variation of the taper to the location bore  $d_1 = 3 \mu\text{m}$ .

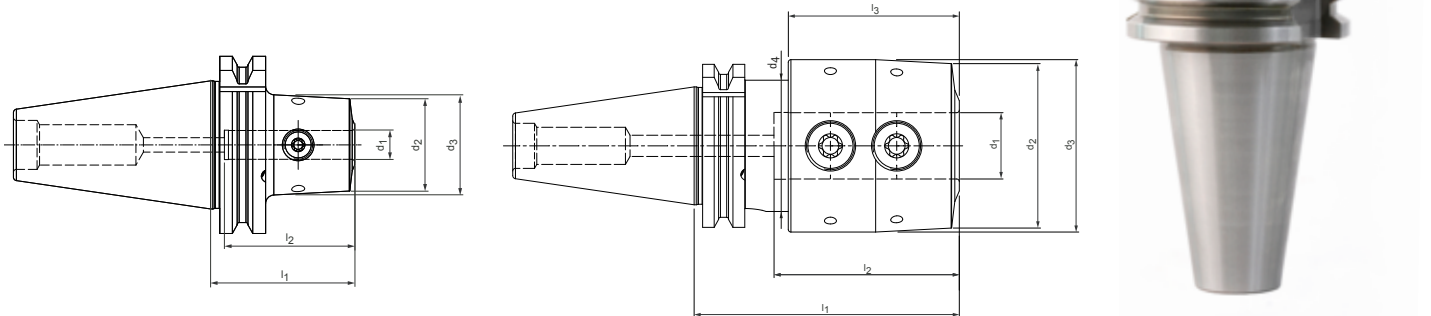
The bore tolerance is much more restricted than DIN 1835 in order to achieve machining accuracies of the highest quality.

Note: There are two clamping screws from clamping diameter  $d_1 = 25 \text{ mm}$ .

Balancing quality: G 2.5 with 16,000 rpm in delivery status.

# MillChuck, HB

Shank SK according to ISO 7388-1 Form AD/AF



Steep taper	Dimensions							Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>		
40	6,0	22,5	25,4	-	50,0	28,1	-	MWC-SK040-06-050-3-0-W	31059420
40	8,0	25,0	27,9	-	50,0	28,1	-	MWC-SK040-08-050-3-0-W	31059421
40	10,0	32,0	34,8	-	50,0	28,1	-	MWC-SK040-10-050-3-0-W	31059422
40	12,0	37,5	40,3	-	50,0	28,1	-	MWC-SK040-12-050-3-0-W	31059423
40	16,0	43,0	47,3	-	63,0	43,0	-	MWC-SK040-16-063-3-0-W	31059425
40	20,0	46,5	49,5	-	63,0	43,0	-	MWC-SK040-20-063-3-0-W	31059427
40	25,0	62,0	65,0	49,5	100,0	69,9	64,5	MWC-SK040-25-100-3-0-W	31059428
40	32,0	69,0	72,0	49,5	100,0	69,9	64,5	MWC-SK040-32-100-3-0-W	31059429
50	6,0	22,5	26,7	-	63,0	41,1	-	MWC-SK050-06-063-3-0-W	31059430
50	8,0	25,0	29,2	-	63,0	41,1	-	MWC-SK050-08-063-3-0-W	31059431
50	10,0	32,0	36,2	-	63,0	41,1	-	MWC-SK050-10-063-3-0-W	31059432
50	12,0	37,5	41,7	-	63,0	41,1	-	MWC-SK050-12-063-3-0-W	31059433
50	16,0	43,0	47,1	-	63,0	41,1	-	MWC-SK050-16-063-3-0-W	31059435
50	20,0	46,5	50,6	-	63,0	41,1	-	MWC-SK050-20-063-3-0-W	31059437
50	25,0	62,0	67,8	-	80,0	58,1	-	MWC-SK050-25-080-3-0-W	31059438
50	32,0	69,0	76,9	-	100,0	78,1	-	MWC-SK050-32-100-3-0-W	31059439

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping milling cutters with cylindrical shank and lateral drive area according to DIN 1835 Form B and DIN 6535 Form HB.

Scope of delivery: Built-in clamping screw, does not include pull stud.

Design: Permissible run-out variation of the taper to the location bore  $d_1 = 3 \mu\text{m}$ . The bore

tolerance is much more restricted than DIN 1835 in order to achieve machining accuracies of the highest quality.

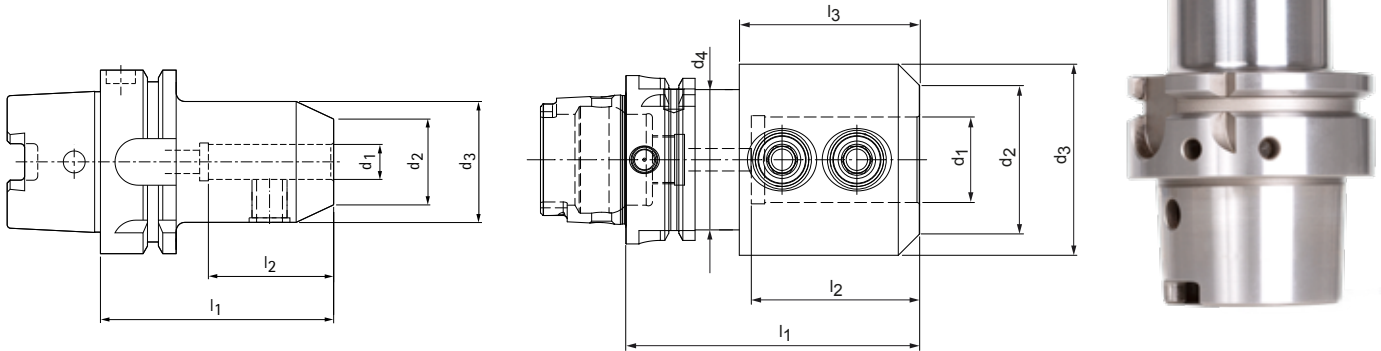
Note: There are two clamping screws from clamping diameter  $d_1 = 25 \text{ mm}$ .

Balancing quality: G 2.5 with 16,000 rpm in delivery status.

# Chucks for cylindrical shanks

with lateral drive area in accordance with DIN 69882-4

HSK-A (hollow shank taper form A) shank according to DIN 69893-1



HSK-A	Dimensions							Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>		
63	6,0	14,5	24,5	-	65,0	37,0	-	MWC-HSK-A063-06-065-1-0-W	30319203
63	8,0	19,5	27,5	-	65,0	37,0	-	MWC-HSK-A063-08-065-1-0-W	30319204
63	10,0	24,5	34,5	-	65,0	41,0	-	MWC-HSK-A063-10-065-1-0-W	30319205
63	12,0	29,5	41,5	-	80,0	46,0	-	MWC-HSK-A063-12-080-1-0-W	30319206
63	14,0	31,5	43,5	-	80,0	46,0	-	MWC-HSK-A063-14-080-1-0-W	30319207
63	16,0	35,5	47,5	-	80,0	49,0	-	MWC-HSK-A063-16-080-1-0-W	30319208
63	18,0	37,5	49,5	-	80,0	49,0	-	MWC-HSK-A063-18-080-1-0-W	30319209
63	20,0	39,5	51,5	-	80,0	51,0	-	MWC-HSK-A063-20-080-1-0-W	30319210
63	25,0	44,5	64,5	52,5	110,0	59,0	67,5	MWC-HSK-A063-25-110-1-0-W	30319211
63	32,0	55,5	71,5	52,5	110,0	63,0	67,5	MWC-HSK-A063-32-110-1-0-W	30319212
100	6,0	14,5	24,5	-	80,0	37,0	-	MWC-HSK-A100-06-080-1-0-W	30319223
100	8,0	19,5	27,5	-	80,0	37,0	-	MWC-HSK-A100-08-080-1-0-W	30319224
100	10,0	24,5	34,5	-	80,0	41,0	-	MWC-HSK-A100-10-080-1-0-W	30319225
100	12,0	29,5	41,5	-	80,0	46,0	-	MWC-HSK-A100-12-080-1-0-W	30319226
100	14,0	31,5	43,5	-	80,0	46,0	-	MWC-HSK-A100-14-080-1-0-W	30319227
100	16,0	35,5	47,5	-	100,0	49,0	-	MWC-HSK-A100-16-100-1-0-W	30319228
100	18,0	37,5	49,5	-	100,0	49,0	-	MWC-HSK-A100-18-100-1-0-W	30319229
100	20,0	39,5	51,5	-	100,0	51,0	-	MWC-HSK-A100-20-100-1-0-W	30319230
100	25,0	44,5	64,5	-	100,0	59,0	-	MWC-HSK-A100-25-100-1-0-W	30319231
100	32,0	55,5	71,5	-	100,0	63,0	-	MWC-HSK-A100-32-100-1-0-W	30319232

## Spare parts

For location bore d <sub>1</sub>	Clamping screw in accordance with DIN 1835-B	
	Size	Order no.
6	M6x9	10060983
8	M8x9	10042517
10	M10x12	10004134
12	M12x14	30002947
14	M12x14	30002947

For location bore d <sub>1</sub>	Clamping screw in accordance with DIN 1835-B	
	Size	Order no.
16	M14x16	10004136
18	M14x16	10004136
20	M16x16	10004137
25	M18x2x20	10004141
32	M20x2x20	10004129

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping milling cutters and drills with cylindrical shank and lateral drive area in accordance with DIN 1835 Form B and in accordance with DIN 6535 Form HB.

Scope of delivery: With built-in clamping screw, without coolant tube.

Design: Permissible run-out variation on the hollow taper shank in relation to the location bore d<sub>1</sub> = 3 µm. The bore tolerance is much tighter than DIN 1835 (dH4) to obtain ma-

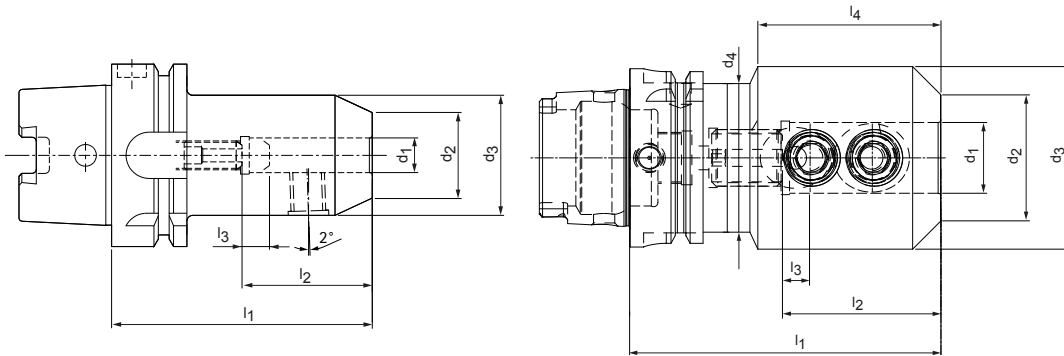
chining accuracies of the highest quality.

Note: Coolant tube and code carrier, see chapter "Accessories, spare parts and measuring equipment". Fine balancing screws on request. You will find information on the coding system in the chapter "Technical appendix".

Balancing quality: G 2.5 with 16,000 rpm in delivery status.

# Chucks for cylindrical shanks

with angled clamping surface in accordance with DIN 69882-5 and axial tool length adjustment  
HSK-A (hollow shank taper form A) shank according to DIN 69893-1



HSK-A	Dimensions								G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>			
63	6,0	14,5	24,5	-	80,0	36,0	10,0	-	M5	MNC-HSK-A063-06-080-1-0-A	30319241
63	8,0	19,5	27,5	-	80,0	36,0	10,0	-	M6	MNC-HSK-A063-08-080-1-0-A	30319242
63	10,0	24,5	34,5	-	80,0	40,0	10,0	-	M8	MNC-HSK-A063-10-080-1-0-A	30319243
63	12,0	29,5	41,5	-	90,0	45,0	10,0	-	M10	MNC-HSK-A063-12-090-1-0-A	30319244
63	14,0	31,5	43,5	-	90,0	45,0	10,0	-	M10	MNC-HSK-A063-14-090-1-0-A	30319245
63	16,0	35,5	47,5	-	100,0	48,0	10,0	-	M12	MNC-HSK-A063-16-100-1-0-A	30319246
63	18,0	37,5	49,5	-	100,0	48,0	10,0	-	M12	MNC-HSK-A063-18-100-1-0-A	30319247
63	20,0	39,5	51,5	-	100,0	50,0	10,0	-	M16	MNC-HSK-A063-20-100-1-0-A	30319248
63	25,0	44,5	64,5	52,5	110,0	56,0	10,0	64,7	M20	MNC-HSK-A063-25-110-1-0-A	30319249
63	32,0	55,5	71,5	52,5	110,0	60,0	10,0	63,0	M20	MNC-HSK-A063-32-110-1-0-A	30319250
100	6,0	14,5	24,5	-	90,0	36,0	10,0	-	M5	MNC-HSK-A100-06-090-1-0-A	30319261
100	8,0	19,5	27,5	-	90,0	36,0	10,0	-	M6	MNC-HSK-A100-08-090-1-0-A	30319262
100	10,0	24,5	34,5	-	90,0	40,0	10,0	-	M8	MNC-HSK-A100-10-090-1-0-A	30319263
100	12,0	29,5	41,5	-	100,0	45,0	10,0	-	M10	MNC-HSK-A100-12-100-1-0-A	30319264
100	14,0	31,5	43,5	-	100,0	45,0	10,0	-	M10	MNC-HSK-A100-14-100-1-0-A	30319265
100	16,0	35,5	47,5	-	100,0	48,0	10,0	-	M12	MNC-HSK-A100-16-100-1-0-A	30319266
100	18,0	37,5	49,5	-	100,0	48,0	10,0	-	M12	MNC-HSK-A100-18-100-1-0-A	30319267
100	20,0	39,5	51,5	-	110,0	50,0	10,0	-	M16	MNC-HSK-A100-20-110-1-0-A	30319268
100	25,0	44,5	64,5	-	120,0	56,0	10,0	-	M20	MNC-HSK-A100-25-120-1-0-A	30319269
100	32,0	55,5	71,5	-	120,0	60,0	10,0	-	M20	MNC-HSK-A100-32-120-1-0-A	30319270

## Spare parts

For location bore d <sub>1</sub>	Order no. length adjustment screw		Clamping screw in accordance with DIN 1835-B	
	HSK-A63 order no.	HSK-A100 order no.	Size	Order no.
6	30326223	30326223	M6x9	10060983
8	30326223	30326223	M8x9	10042517
10	30326225	30326225	M10x12	10004134
12	30326232	30326231	M12x14	30002947
14	30326232	30326231	M12x14	30002947
16	30326237	30326236	M14x16	10004136
18	30326237	30326236	M14x16	10004136
20	30326239	30326240	M16x16	10004137
25	30326241	30326243	M18x2x20	10004141
32	30326241	30326243	M20x2x20	10004129

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping milling cutters and drills with cylindrical shank and lateral drive area in accordance with DIN 1835 Form B and in accordance with DIN 6535 Form HB.

Scope of delivery: With built-in clamping screw, without coolant tube.

Design: Permissible run-out variation on the hollow taper shank in relation to the location bore d<sub>1</sub> = 3 µm. The bore tolerance is much tighter than DIN 1835 (dH4) to obtain ma-

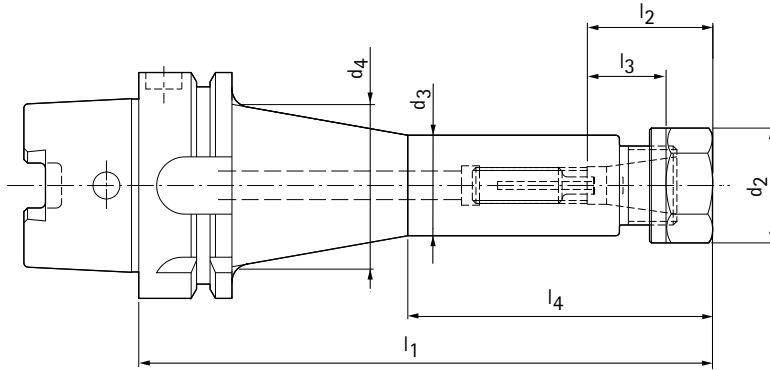
chining accuracies of the highest quality.

Note: Coolant tube and code carrier, see chapter "Accessories, spare parts and measuring equipment". Fine balancing screws on request. You will find information on the coding system in the chapter "Technical appendix".

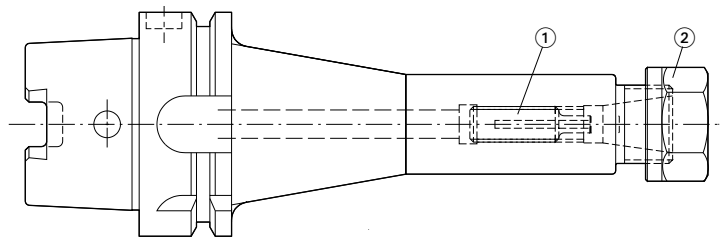
Balancing quality: G 2.5 with 16,000 rpm in delivery status.

## Chucks for collets

in accordance with DIN 69882-6 with axial tool length adjustment  
 HSK-A (hollow shank taper form A) shank according to DIN 69893-1



HSK-A	Dimensions									G	Specification	Order no.
	Nominal size	Clamping range	$d_2$	$d_3$	$d_4$	$l_1$	$l_2$	$l_3$	$l_4$			
63	ER16	0,5-10,0	28,0	28,0	-	100,0	27,0	10,0	-	M10	MCC-HSK-A063-16-100-1-0-A	30319272
63	ER16	0,5-10,0	28,0	28,0	45,0	160,0	27,0	10,0	85,0	M10	MCC-HSK-A063-16-160-1-0-A	30319273
100	ER16	0,5-10,0	28,0	28,0	-	100,0	27,0	10,0	-	M12	MCC-HSK-A100-16-100-1-0-A	30319276
100	ER16	0,5-10,0	28,0	28,0	45,0	160,0	27,0	10,0	85,0	M12	MCC-HSK-A100-16-160-1-0-A	30319277



### Spare parts

For nominal size HSK-A	Length adjustment screw (with through hole for coolant) clamping diameter			Clamping nut in accordance with ISO 15488	
	$\varnothing$ 2.8 - 5 Order no.	$\varnothing$ 4.8 - 7 Order no.	$\varnothing$ 6.8 - 10 Order no.	Nominal size	Order no.
63	30326191	30326192	30326193	ER-16	10013273
100	30326201	30326202	30326203	ER-16	10013273

Dimensions in mm.

Additional dimensions available upon request.

Scope of delivery: With clamping nut in accordance with ISO 15488. Without length adjustment screw, coolant tube or collet.

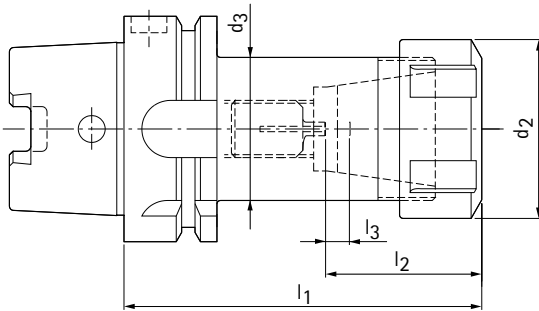
Design: The permissible run-out variation on the hollow taper shank in relation to the internal taper is 3  $\mu$ m.

Note: Chucks have a through hole with internal thread for length adjustment screws. For suitable collets and tapping collets, coolant tubes, code carrier and assembly tools, see chapter "Accessories, spare parts and measuring equipment".  
 Balancing quality: G 2.5 with 16,000 rpm in delivery status.

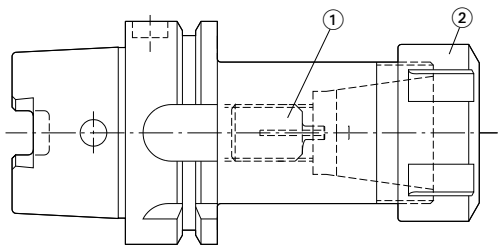


# Chucks for collets

in accordance with DIN 69882-6 with axial tool length adjustment  
HSK-A (hollow shank taper form A) shank according to DIN 69893-1



HSK-A	Dimensions							G	Specification	Order no.
	Nominal size	Clamping range	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>			
63	ER32	2,0-20,0	50,0	40,0	100,0	40,0	10,0	M16	MCC-HSK-A063-32-100-1-0-A	30319286
63	ER40	3,0-26,0	63,0	50,0	120,0	58,0	10,0	M16	MCC-HSK-A063-40-120-1-0-A	30319287
100	ER32	2,0-20,0	50,0	40,0	100,0	40,0	10,0	M16	MCC-HSK-A100-32-100-1-0-A	30319290
100	ER40	3,0-26,0	63,0	50,0	120,0	58,0	10,0	M16	MCC-HSK-A100-40-120-1-0-A	30319291



## Spare parts

For nominal size HSK-A	Clamping range	Length adjustment screw (with through hole for coolant) clamping diameter					Clamping nut in accordance with ISO 15488	
		∅ 3.8 - 7 Order no.	∅ 6.8 - 10 Order no.	∅ 9.8 - 13 Order no.	∅ 12.8 - 20 Order no.	∅ 19.9 - 26 Order no.	Nominal size	Order no.
63	2,0-20,0	30326213	30326214	30326215	30326217	-	ER-32	10023401
63	3,0-26,0	30326213	30326214	30326215	30326217	30326210	ER-40	10022176
100	2,0-20,0	30326212	30326211	30326216	30326218	-	ER-32	10023401
100	3,0-26,0	30326212	30326211	30326216	30326218	30326209	ER-40	10022176

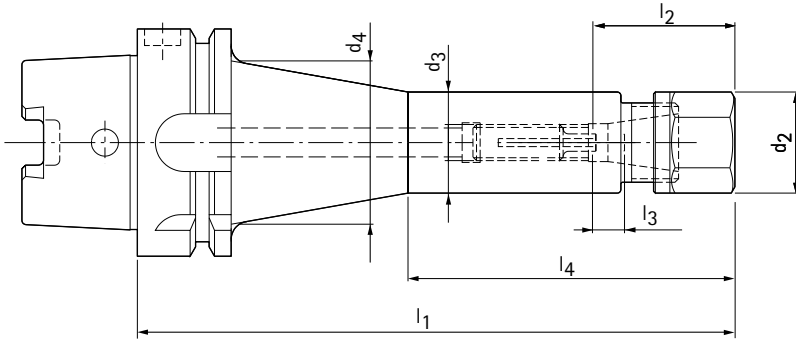
Dimensions in mm.  
Additional dimensions available upon request.

Scope of delivery: With clamping nut in accordance with ISO 15488. Without length adjustment screw, coolant tube or collet.  
Design: The permissible run-out variation on the hollow taper shank in relation to the internal taper is 3 µm.

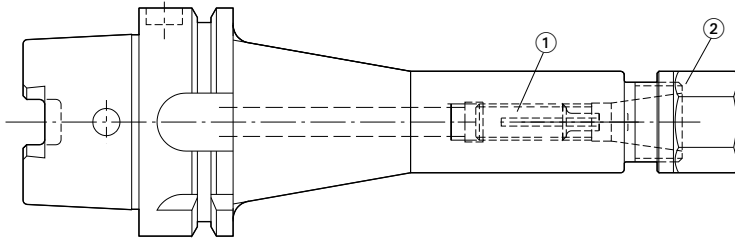
Note: Chucks have a through hole with internal thread for length adjustment screws.  
For suitable collets and tapping collets, coolant tubes, code carrier and assembly tools, see chapter "Accessories, spare parts and measuring equipment".  
Balancing quality: G 2.5 with 16,000 rpm in delivery status.

# Chucks for collets

with clamping nut for internal coolant supply (HI-Q/ERC) and axial tool length adjustment  
 HSK-A (hollow shank taper form A) shank according to DIN 69893-1



HSK-A	Dimensions									G	Specification	Order no.
	Nominal size	Clamping range	$d_2$	$d_3$	$d_4$	$l_1$	$l_2$	$l_3$	$l_4$			
63	ER16	0,5-10,0	28,0	28,0	-	105,0	32,0	10,0	-	M10	MCC-HSK-A063-16-105-1-0-A	30319279
63	ER16	0,5-10,0	28,0	28,0	45,0	165,0	32,0	10,0	90,0	M10	MCC-HSK-A063-16-165-1-0-A	30319280
100	ER16	0,5-10,0	28,0	28,0	-	105,0	32,0	10,0	-	M12	MCC-HSK-A100-16-105-1-0-A	30319283
100	ER16	0,5-10,0	28,0	28,0	45,0	165,0	32,0	10,0	90,0	M12	MCC-HSK-A100-16-165-1-0-A	30319284



## Spare parts

For nominal size HSK-A	Length adjustment screw (with through hole for coolant) clamping diameter			HI-Q / ERC clamping nut in accordance with ISO 15488	
	$\varnothing$ 2.8 - 5 Order no.	$\varnothing$ 4.8 - 7 Order no.	$\varnothing$ 6.8 - 10 Order no.	Nominal size	Order no.
63	30326191	30326192	30326193	ERC-16	10007862
100	30326201	30326202	30326203	ERC-16	10007862

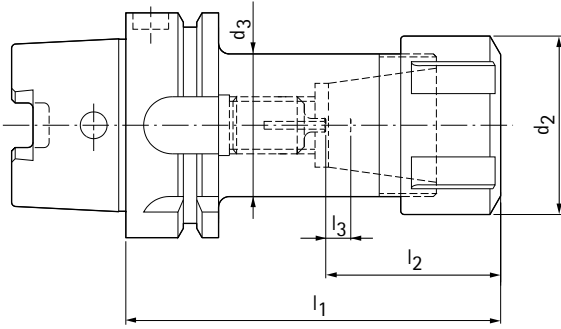
Dimensions in mm.  
 Additional dimensions available upon request.

Scope of delivery: With clamping nut for internal coolant supply (HI-Q/ERC). Without sealing disc, length adjustment screw, coolant tube or collet.  
 Design: The permissible run-out variation on the hollow taper shank in relation to the internal taper is 3  $\mu$ m. Note: Chucks have a through hole with internal thread for length adjustment screws.

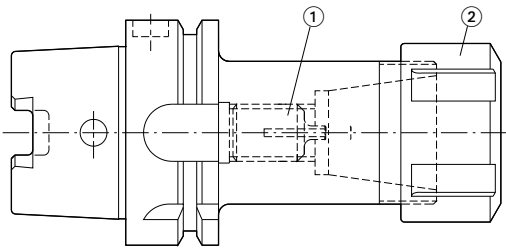
For suitable collets, tapping collets, sealing discs for internal coolant supply, assembly tools, coolant tubes and Balluff code carriers, see chapter "Accessories, spare parts and measuring equipment".  
 Balancing quality: G 2.5 with 16,000 rpm in delivery status.

## Chucks for collets

with clamping nut for internal coolant supply (HI-Q/ERC) and axial tool length adjustment  
 HSK-A (hollow shank taper form A) shank according to DIN 69893-1



HSK-A	Dimensions							G	Specification	Order no.
	Nominal size	Clamping range	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>			
63	ER32	2,0-20,0	50,0	40,0	105,0	45,0	10,0	M16	MCC-HSK-A063-32-105-1-0-A	30319293
63	ER40	3,0-26,0	63,0	50,0	125,0	63,0	10,0	M16	MCC-HSK-A063-40-125-1-0-A	30319294
100	ER32	2,0-20,0	50,0	40,0	105,0	45,0	10,0	M16	MCC-HSK-A100-32-105-1-0-A	30319297
100	ER40	3,0-26,0	63,0	50,0	125,0	63,0	10,0	M16	MCC-HSK-A100-40-125-1-0-A	30319298



### Spare parts

For nominal size HSK-A	Clamping range	Length adjustment screw (with through hole for coolant) clamping diameter					HI-Q / ERC clamping nut in accordance with ISO 15488	
		∅ 3.8 - 7 Order no.	∅ 6.8 - 10 Order no.	∅ 9.8 - 13 Order no.	∅ 12.8 - 20 Order no.	∅ 19.9 - 26 Order no.	Nominal size	Order no.
63	2,0-20,0	30326213	30326214	30326215	30326217	-	ERC-32	10007923
63	3,0-26,0	30326213	30326214	30326215	30326217	30326210	ERC-40	10008010
100	2,0-20,0	30326212	30326211	30326216	30326218	-	ERC-32	10007923
100	3,0-26,0	30326212	30326211	30326216	30326218	30326209	ERC-40	10008010

Dimensions in mm.

Additional dimensions available upon request.

Scope of delivery: With clamping nut for internal coolant supply (HI-Q/ERC). Without sealing disc, length adjustment screw, coolant tube or collet.

Design: The permissible run-out variation on the hollow taper shank in relation to the internal taper is 3 µm.

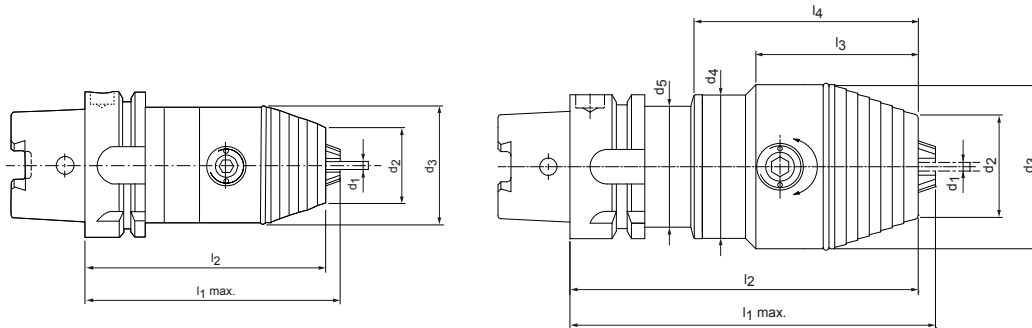
Note: Chucks have a through hole with internal thread for length adjustment screws.

For suitable collets, tapping collets, sealing discs for internal coolant supply, assembly tools, coolant tubes and Balluff code carriers, see chapter "Accessories, spare parts and measuring equipment".

Balancing quality: G 2.5 with 16,000 rpm in delivery status.

# Precision-DrillChuck

with radial actuation, without internal coolant supply  
 HSK-A (hollow shank taper form A) shank according to DIN 69893-1



HSK-A	Dimensions										Specification	Order no.
	Clamping range $d_1$	$d_2$	$d_3$	$d_4$	$d_5$	$l_1$	$l_2$	$l_3$	$l_4$			
32	0,3-8,0	23,0	36,0	25,4	-	93,0	90,0	53,0	-	MPC-HSK-032-08-093-0-0-W	30259858	
40	0,3-8,0	23,0	36,0	33,5	-	94,0	91,0	55,0	-	MPC-HSK-A040-08-094-0-0-W	30259859	
50	0,3-8,0	23,0	36,0	.	-	98,0	95,0	-	-	MPC-HSK-A050-08-098-0-0-W	30259860	
50	0,5-13,0	35,0	50,0	41,5	-	122,0	116,0	73,0	-	MPC-HSK-A050-13-122-0-0-W	30259862	
50	2,5-16,0	36,0	57,0	50,0	41,5	127,0	121,0	56,5	78,0	MPC-HSK-A050-16-127-0-0-W	30259866	
63	0,3-8,0	23,0	36,0	.	-	99,0	96,0	-	-	MPC-HSK-A063-08-099-0-0-W	30259861	
63	0,5-13,0	35,0	50,0	.	-	110,0	104,0	-	-	MPC-HSK-A063-13-110-0-0-W	30259863	
63	2,5-16,0	36,0	57,0	49,8	-	115,0	109,0	56,5	-	MPC-HSK-A063-16-115-0-0-W	30259867	
100	0,5-13,0	35,0	50,0	.	-	117,0	111,0	-	-	MPC-HSK-A100-13-117-0-0-W	30259865	
100	2,5-16,0	36,0	57,0	50,0	-	122,0	116,0	56,5	-	MPC-HSK-A100-16-122-0-0-W	30259869	

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks.

Scope of delivery: Including hexagonal wrench with T-handle. Without sealing disc and coolant tube.

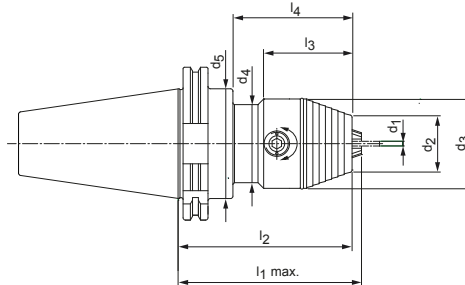
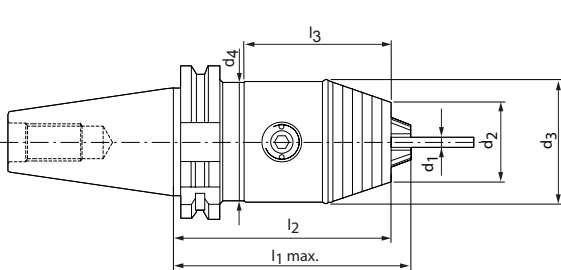
Design: No internal coolant supply.

Note: Spare parts and accessories can be found via the spare part code in chapter "Accessories, spare parts and measuring equipment".

Balancing quality: G 6.3 with 25,000 rpm in delivery status.

# Precision-DrillChuck

with radial actuation, without internal coolant supply  
SK (steel taper) shank similar to ISO 7388-1 Form A



Steep taper	Dimensions									Specification	Order no.
	Clamping range $d_1$	$d_2$	$d_3$	$d_4$	$d_5$	$l_1$	$l_2$	$l_3$	$l_4$		
30	0,3-8,0	23,0	36,0	.	-	73,0	70,0	-	-	MPC-SK030-08-073-0-0-W	30259829
30	0,5-13,0	35,0	50,0	45,0	-	117,0	111,0	72,0	-	MPC-SK030-13-117-0-0-W	30259831
40	0,3-8,0	23,0	36,0	.	-	73,0	70,0	-	-	MPC-SK040-08-073-0-0-W	30259830
40	0,5-13,0	35,0	50,0	.	-	96,0	90,0	-	-	MPC-SK040-13-096-0-0-W	30259832
40	2,5-16,0	36,0	57,0	49,8	-	101,0	95,0	56,5	-	MPC-SK040-16-101-0-0-W	30259835
50	0,5-13,0	35,0	50,0	70,0	-	112,0	106,0	70,0	-	MPC-SK050-13-112-0-0-W	30259834
50	2,5-16,0	36,0	57,0	49,8	70,0	117,0	111,0	56,5	75,5	MPC-SK050-16-117-0-0-W	30259837

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks.

Scope of delivery: Including hexagonal wrench with T-handle. Without sealing disc and pull stud.

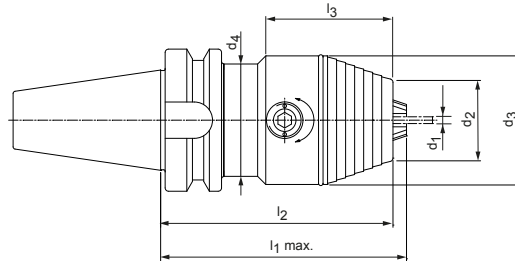
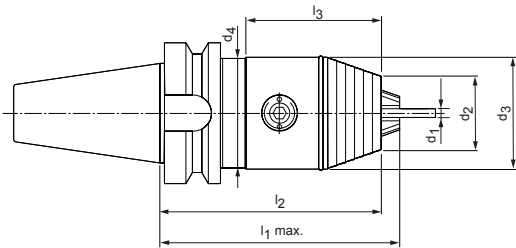
Design: No internal coolant supply.

Note: Spare parts and accessories can be found via the spare part code in chapter "Accessories, spare parts and measuring equipment".

Balancing quality: G 6.3 with 25,000 rpm in delivery status.

# Precision-DrillChuck

with radial actuation, without internal coolant supply  
BT shank to ISO 7388-2 Form J (JIS B 6339)



BT	Dimensions							Specification	Order no.
	Clamping range $d_1$	$d_2$	$d_3$	$d_4$	$l_1$	$l_2$	$l_3$		
30	0,3-8,0	23,0	36,0	-	77,0	74,0	-	MPC-BT030-08-077-0-0-W	30259913
30	0,5-13,0	35,0	50,0	-	102,0	96,0	-	MPC-BT030-13-102-0-0-W	30259915
40	0,3-8,0	23,0	36,0	-	81,0	78,0	-	MPC-BT040-08-081-0-0-W	30259914
40	0,5-13,0	35,0	50,0	-	104,0	98,0	-	MPC-BT040-13-104-0-0-W	30259916
40	2,5-16,0	36,0	57,0	49,8	109,0	103,0	56,5	MPC-BT040-16-109-0-0-W	30259918
50	0,5-13,0	35,0	50,0	-	116,0	110,0	-	MPC-BT050-13-116-0-0-W	30259917
50	2,5-16,0	36,0	57,0	49,8	121,0	115,0	56,5	MPC-BT050-16-121-0-0-W	30259919

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks.

Scope of delivery: Including hexagonal wrench with T-handle. Without sealing disc and pull stud.

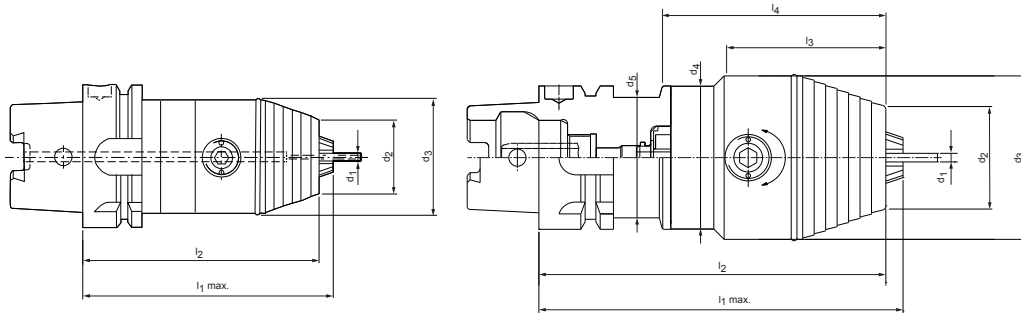
Design: No internal coolant supply.

Note: Spare parts and accessories can be found via the spare part code in chapter "Accessories and spare parts".

Balancing quality: G 6.3 with 25,000 rpm in delivery status.

# Precision-DrillChuck

with radial actuation and internal coolant supply  
 HSK-A (hollow shank taper form A) shank according to DIN 69893-1



HSK-A	Dimensions										Specification	Order no.
	Clamping range $d_1$	$d_2$	$d_3$	$d_4$	$d_5$	$l_1$	$l_2$	$l_3$	$l_4$			
32	0,3-8,0	23,0	36,0	25,4	-	93,0	90,0	53,0	-	MPC-HSK-032-08-093-1-0-W	30259870	
40	0,3-8,0	23,0	36,0	33,5	-	94,0	91,0	55,0	-	MPC-HSK-A040-08-094-1-0-W	30259871	
50	0,3-8,0	23,0	36,0	-	-	98,0	95,0	-	-	MPC-HSK-A050-08-098-1-0-W	30259872	
50	0,5-13,0	35,0	50,0	41,5	-	122,0	116,0	73,0	-	MPC-HSK-A050-13-122-1-0-W	30259874	
50	2,5-16,0	36,0	57,0	50,0	41,5	127,0	121,0	56,5	78,0	MPC-HSK-A050-16-127-1-0-W	30259878	
63	0,3-8,0	23,0	36,0	-	-	99,0	96,0	-	-	MPC-HSK-A063-08-099-1-0-W	30259873	
63	0,5-13,0	35,0	50,0	-	-	110,0	104,0	-	-	MPC-HSK-A063-13-110-1-0-W	30259875	
63	2,5-16,0	36,0	57,0	49,8	-	115,0	109,0	56,5	-	MPC-HSK-A063-16-115-1-0-W	30259879	
100	0,5-13,0	35,0	50,0	-	-	117,0	111,0	-	-	MPC-HSK-A100-13-117-1-0-W	30259877	
100	2,5-16,0	36,0	57,0	49,8	-	122,0	116,0	56,5	-	MPC-HSK-A100-16-122-1-0-W	30259881	

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks.

Scope of delivery: Including hexagonal wrench with T-handle. Without sealing disc and coolant tube.

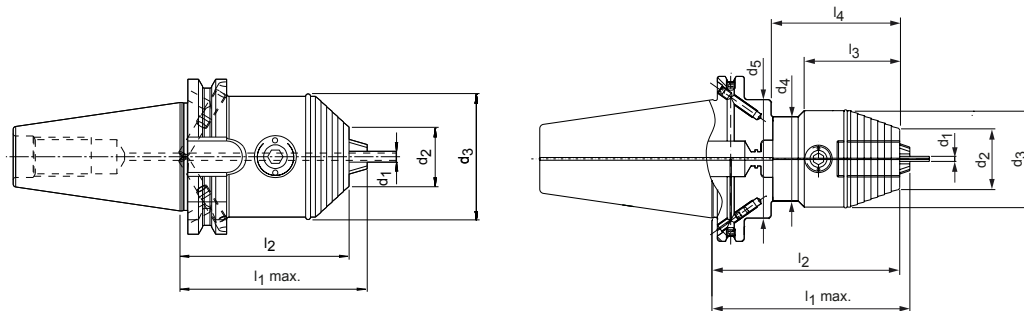
Design: With internal coolant supply.

Note: Spare parts and accessories can be found via the spare part code in chapter "Accessories, spare parts and measuring equipment".

Balancing quality: G 6.3 with 25,000 rpm in delivery status.

# Precision-DrillChuck

with radial actuation and internal coolant supply  
Shank SK according to ISO 7388-1 Form AD/AF



Steep taper	Dimensions									Specification	Order no.
	Clamping range $d_1$	$d_2$	$d_3$	$d_4$	$d_5$	$l_1$	$l_2$	$l_3$	$l_4$		
40	0,3-8,0	23,0	36,0	-	-	76,0	73,0	-	-	MPC-SK040-08-076-3-0-W	30259844
40	0,5-13,0	35,0	50,0	-	-	96,0	90,0	-	-	MPC-SK040-13-096-3-0-W	30259845
40	2,5-16,0	36,0	57,0	49,8	-	101,0	95,0	56,5	-	MPC-SK040-16-101-3-0-W	30259848
50	0,5-13,0	35,0	50,0	70,0	-	112,0	105,0	73,0	-	MPC-SK050-13-112-3-0-W	30259847
50	2,5-16,0	36,0	57,0	49,8	70,0	117,0	111,0	56,5	77,1	MPC-SK050-16-117-3-0-W	30259850

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks.

Scope of delivery: Including hexagonal wrench with T-handle. Without sealing disc and pull stud.

Design: With internal coolant supply. Basic setting Form AD, if Form AF is required, please

specify this when placing your order.

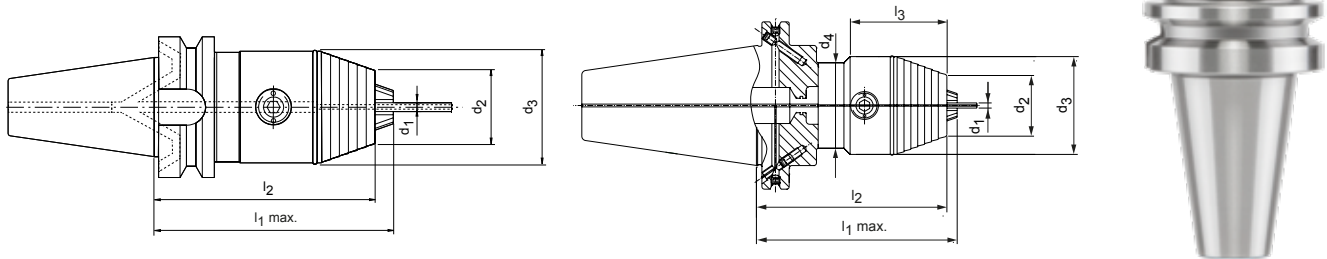
Note: Spare parts and accessories can be found via the spare part code in chapter "Accessories, spare parts and measuring equipment".

Balancing quality: G 6.3 with 25,000 rpm in delivery status.



# Precision-DrillChuck

with radial actuation and internal coolant supply  
Shank BT according to ISO 7388-2 Form JD/JF (JIS B 6339)



BT	Dimensions							Specification	Order no.
	Clamping range $d_1$	$d_2$	$d_3$	$d_4$	$l_1$	$l_2$	$l_3$		
40	0,3-8,0	23,0	36,0	-	84,0	81,0	-	MPC-BT040-08-084-3-0-W	30259920
40	0,5-13,0	35,0	50,0	-	104,0	98,0	-	MPC-BT040-13-104-3-0-W	30259921
40	2,5-16,0	36,0	57,0	49,8	109,0	103,0	56,5	MPC-BT040-16-109-3-0-W	30259923
50	0,5-13,0	35,0	50,0	-	116,0	110,0	-	MPC-BT050-13-116-3-0-W	30259922
50	2,5-16,0	36,0	57,0	49,8	121,0	115,0	46,5	MPC-BT050-16-121-3-0-W	30259924

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks.

Scope of delivery: Including hexagonal wrench with T-handle. Without sealing disc and pull stud.

Design: With internal coolant supply. Basic setting Form JD; if Form JF is required, please

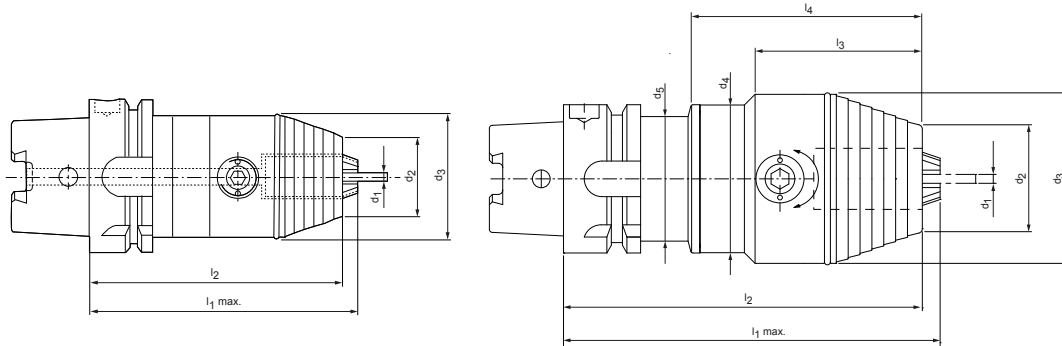
state with the order.

Note: Spare parts and accessories can be found via the spare part code in chapter "Accessories, spare parts and measuring equipment".

Balancing quality: G 6.3 with 25,000 rpm in delivery status.

# Precision-DrillChuck

with radial actuation and internal coolant supply with decentral coolant outlet  
 HSK-A (hollow shank taper form A) shank according to DIN 69893-1



HSK-A	Dimensions									Specification	Order no.
	Clamping range $d_1$	$d_2$	$d_3$	$d_4$	$d_5$	$l_1$	$l_2$	$l_3$	$l_4$		
32	0,3-8,0	23,0	36,0	25,4	-	93,0	90,0	53,0	-	MPC-HSK-A032-08-093-1-0-W	30259882
40	0,3-8,0	23,0	36,0	33,5	-	94,0	91,0	55,0	-	MPC-HSK-A040-08-094-1-0-W	30259883
50	0,3-8,0	23,0	36,0	-	-	98,0	95,0	-	-	MPC-HSK-A050-08-098-1-0-W	30259884
50	0,5-13,0	35,0	50,0	41,5	-	122,0	116,0	73,0	-	MPC-HSK-A050-13-122-1-0-W	30259886
50	2,5-16,0	36,0	57,0	50,0	41,5	127,0	121,0	56,5	78,0	MPC-HSK-A050-16-127-1-0-W	30259890
63	0,3-8,0	23,0	36,0	-	-	99,0	96,0	-	-	MPC-HSK-A063-08-099-1-0-W	30259885
63	0,5-13,0	35,0	50,0	-	-	110,0	104,0	-	-	MPC-HSK-A063-13-110-1-0-W	30259887
63	2,5-16,0	36,0	57,0	49,8	-	115,0	109,0	56,5	-	MPC-HSK-A063-16-115-1-0-W	30259891
100	0,5-13,0	35,0	50,0	-	-	117,0	111,0	-	-	MPC-HSK-A100-13-117-1-0-W	30259889
100	2,5-16,0	36,0	57,0	49,8	-	122,0	116,0	56,5	-	MPC-HSK-A100-16-122-1-0-W	30259893

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks.

Scope of delivery: Including hexagonal wrench with T-handle. Without sealing disc and coolant tube.

Design: With central coolant supply and decentral coolant outlet for tools without coolant

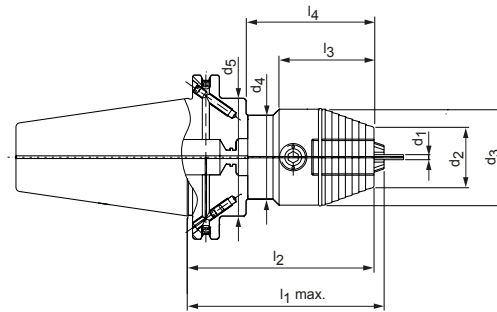
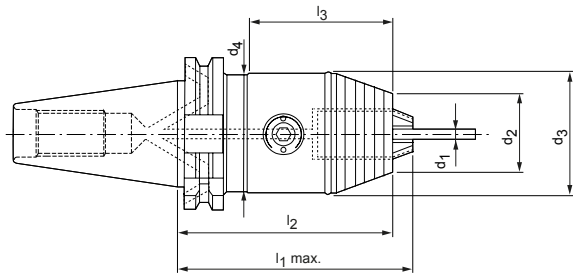
channels.

Note: Spare parts and accessories can be found via the spare part code in chapter "Accessories, spare parts and measuring equipment".

Balancing quality: G 6.3 with 25,000 rpm in delivery status.

# Precision-DrillChuck

with radial actuation and internal coolant supply with decentral coolant outlet  
Shank SK according to ISO 7388-1 Form AD/AF



Steep taper	Dimensions									Specification	Order no.
	Clamping range $d_1$	$d_2$	$d_3$	$d_4$	$d_5$	$l_1$	$l_2$	$l_3$	$l_4$		
40	0,3-8,0	23,0	36,0	40,0	-	76,0	73,0	50,0	-	MPC-SK040-08-076-3-0-W	30259851
40	0,5-13,0	35,0	50,0	-	-	96,0	90,0	-	-	MPC-SK040-13-096-3-0-W	30259852
40	2,5-16,0	36,0	57,0	49,8	-	101,0	95,0	56,5	-	MPC-SK040-16-101-3-0-W	30259855
50	0,5-13,0	35,0	50,0	70,0	-	112,0	105,0	70,8	-	MPC-SK050-13-112-3-0-W	30259854
50	2,5-16,0	36,0	57,0	49,8	70,0	117,0	111,0	56,5	76,0	MPC-SK050-16-117-3-0-W	30259857

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks.

Scope of delivery: Including hexagonal wrench with T-handle. Without sealing disc and pull stud.

Design: Basic setting Form AD, if Form AF is required, please specify this when placing your order. With central coolant supply and decentral coolant outlet for tools without

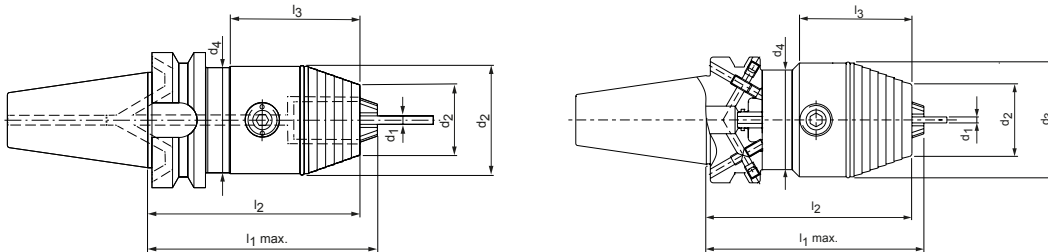
coolant channels.

Note: Spare parts and accessories can be found via the spare part code in chapter "Accessories, spare parts and measuring equipment".

Balancing quality: G 6.3 with 25,000 rpm in delivery status.

# Precision-DrillChuck

with radial actuation and internal coolant supply with decentral coolant outlet  
Shank BT according to ISO 7388-2 Form JD/JF (JIS B 6339)



BT	Dimensions							Specification	Order no.
	Clamping range $d_1$	$d_2$	$d_3$	$d_4$	$l_1$	$l_2$	$l_3$		
40	0,3-8,0	23,0	36,0	-	84,0	81,0	-	MPC-BT040-08-084-3-0-W	30259925
40	0,5-13,0	35,0	50,0	-	104,0	98,0	-	MPC-BT040-13-104-3-0-W	30259926
40	2,5-16,0	36,0	57,0	49,8	109,0	103,0	56,5	MPC-BT040-16-109-3-0-W	30259928
50	0,5-13,0	35,0	50,0	-	116,0	110,0	-	MPC-BT050-13-116-3-0-W	30259927
50	2,5-16,0	36,0	57,0	49,8	121,0	115,0	56,5	MPC-BT050-16-121-3-0-W	30259929

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks.

Scope of delivery: Including hexagonal wrench with T-handle. Without sealing disc and pull stud.

Design: Basic setting Form JD; if Form JF is required, please state with the order.

With central coolant supply and decentral coolant outlet for tools without coolant channels.

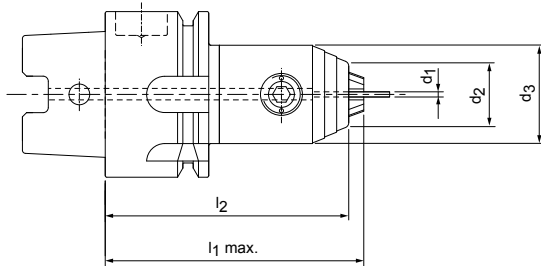
Note: Spare parts and accessories can be found via the spare part code in chapter "Accessories, spare parts and measuring equipment".

Balancing quality: G 6.3 with 25,000 rpm in delivery status.

# Micro-Precision-DrillChuck

with radial actuation and internal coolant supply

HSK-A (hollow shank taper form A) shank according to DIN 69893-1



HSK-A	Dimensions					Specification	Order no.
	Clamping range $d_1$	$d_2$	$d_3$	$l_1$	$l_2$		
32	0,2-3,4	12,5	19,0	49,0	46,0	MPC-HSK-032-03-049-1-0-W	30551128
32	0,2-6,4	16,0	25,0	58,0	54,0	MPC-HSK-032-06-058-1-0-W	30608019
40	0,2-3,4	12,5	19,0	49,0	46,0	MPC-HSK-A040-03-049-1-0-W	30551129
40	0,2-6,4	16,0	25,0	58,0	54,0	MPC-HSK-A040-06-058-1-0-W	30608021
50	0,2-3,4	12,5	19,0	55,0	52,0	MPC-HSK-A050-03-055-1-0-W	30551130
50	0,2-6,4	16,0	25,0	65,0	61,0	MPC-HSK-A050-06-065-1-0-W	30608022

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks. Without sealing disc and coolant tube.

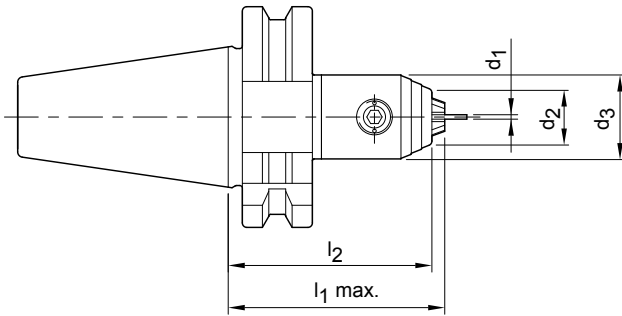
Design: With internal coolant supply.

Note: Spare parts and accessories can be found via the spare part code in chapter "Accessories, spare parts and measuring equipment".

Balancing quality: G 6.3 with 25,000 rpm in delivery status.

# Micro-Precision-DrillChuck

with radial actuation and internal coolant supply  
Shank SK according to ISO 7388-1 Form AD



Steep taper	Dimensions					Specification	Order no.
	Clamping range $d_1$	$d_2$	$d_3$	$l_1$	$l_2$		
30	0,2-3,4	12,5	19,0	48,0	45,0	MPC-SK030-03-048-1-0-W	30551228
30	0,2-6,4	16,0	25,0	59,0	55,0	MPC-SK030-06-059-1-0-W	30608018

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks.

Scope of delivery: Including hexagonal wrench with T-handle. Without sealing disc and pull stud.

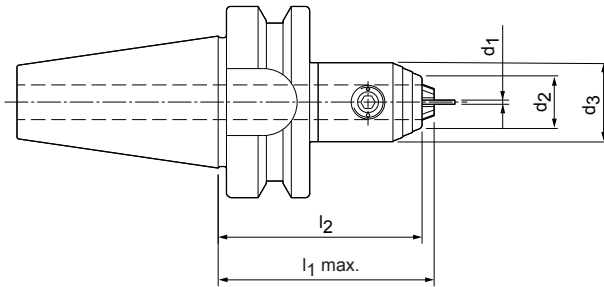
Note: Spare parts and accessories can be found via the spare part code in chapter "Accessories, spare parts and measuring equipment".

Balancing quality: G 6.3 with 25,000 rpm in delivery status.

# Micro-Precision-DrillChuck

with radial actuation and internal coolant supply

Shank BT according to ISO 7388-2 Form JD (JIS B 6339)



BT	Dimensions					Specification	Order no.
	Clamping range $d_1$	$d_2$	$d_3$	$l_1$	$l_2$		
30	0,2-3,4	12,5	19,0	51,0	48,0	MPC-BT030-03-051-1-0-W	30551229
30	0,2-6,4	16,0	25,0	62,0	58,0	MPC-BT030-06-062-1-0-W	30608027

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tools with smooth cylindrical shanks.

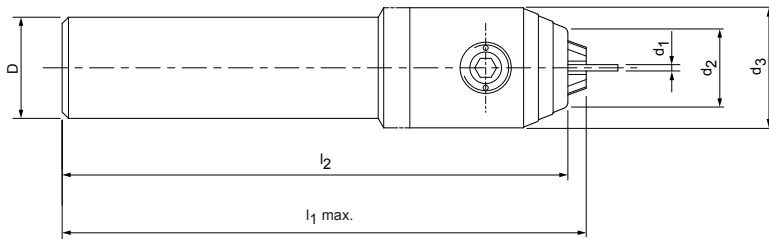
Scope of delivery: Including hexagonal wrench with T-handle. Without sealing disc and pull stud.

Note: Spare parts and accessories can be found via the spare part code in chapter "Accessories, spare parts and measuring equipment".

Balancing quality: G 6.3 with 25,000 rpm in delivery status.

# Micro-Precision-DrillChuck

with radial actuation and internal coolant supply  
Cylindrical shank similar to DIN 1835-A



Shaft diameter cylindrical shank D	Dimensions					Specification	Order no.
	Clamping range $d_1$	$d_2$	$d_3$	$l_1$	$l_2$		
10	0,2-3,4	12,5	19,0	73,0	70,0	MPC-ZYL010-03-073-1-0-W	30551745
10	0,2-3,4	12,5	19,0	103,0	100,0	MPC-ZYL010-03-103-1-0-W	30551746
10	0,2-3,4	12,5	19,0	163,0	160,0	MPC-ZYL010-03-163-1-0-W	30551747
16	0,2-3,4	12,5	19,0	83,0	80,0	MPC-ZYL016-03-083-1-0-W	30551222
16	0,2-3,4	12,5	19,0	103,0	100,0	MPC-ZYL016-03-103-1-0-W	30551223
16	0,2-3,4	12,5	19,0	163,0	160,0	MPC-ZYL016-03-163-1-0-W	30551224
20	0,2-3,4	12,5	19,0	83,0	80,0	MPC-ZYL020-03-083-1-0-W	30551225
20	0,2-3,4	12,5	19,0	103,0	100,0	MPC-ZYL020-03-103-1-0-W	30551226
20	0,2-3,4	12,5	19,0	163,0	160,0	MPC-ZYL020-03-163-1-0-W	30551227
20	0,2-6,4	16,0	25,0	104,0	100,0	MPC-ZYL020-06-0104-1-0-W	30608032
20	0,2-6,4	16,0	25,0	154,0	150,0	MPC-ZYL020-06-0154-1-0-W	30608033
20	0,2-6,4	16,0	25,0	204,0	200,0	MPC-ZYL020-06-0204-1-0-W	30608034

Dimensions in mm.

Additional dimensions available upon request.

Scope of delivery: Including hexagonal wrench with T-handle. Without sealing disc.

Design: With internal coolant supply.

Note: Spare parts and accessories can be found via the spare part code in chapter "Accessories, spare parts and measuring equipment".

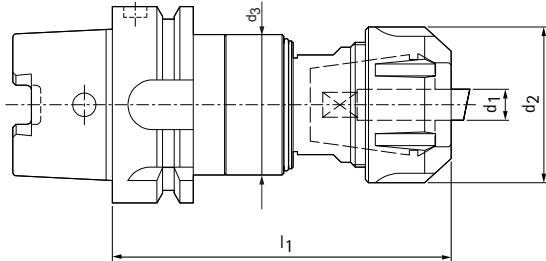
series, spare parts and measuring equipment".

Balancing quality: G 6.3 with 25,000 rpm in delivery status.



# Softsynchro tapping chucks

HSK-A (hollow shank taper form A) shank according to DIN 69893-1



HSK-A	Dimensions						Specification	Order no.
	Nominal size	Clamping range $d_1$	$d_2$	$d_3$	$l_1$	$l_2$		
50	ER 20 (GB)	1,0-13,0	34,0	34,0	93,5	24,0	MSC-HSK-A050-20-093-1-0-W	10021638
50	ER 32 (GB)	2,0-20,0	50,0	45,0	116,3	27,5	MSC-HSK-A050-32-116-1-0-W	10079476
63	ER 20 (GB)	1,0-13,0	34,0	34,0	95,5	24,0	MSC-HSK-A063-20-095-1-0-W	10026941
63	ER 32 (GB)	2,0-20,0	50,0	45,0	108,8	27,5	MSC-HSK-A063-32-108-1-0-W	10035367
63	ER 40 (GB)	3,0-26,0	63,0	63,0	146,5	30,5	MSC-HSK-A063-40-146-1-0-W	10034751
80	ER 20 (GB)	1,0-13,0	34,0	34,0	100,0	24,0	MSC-HSK-A080-20-100-1-0-W	10051778
80	ER 32 (GB)	2,0-20,0	50,0	45,0	113,3	27,5	MSC-HSK-A080-32-113-1-0-W	10079477
80	ER 40 (GB)	3,0-26,0	63,0	63,0	136,0	30,5	MSC-HSK-A080-40-136-1-0-W	10079478
100	ER 20 (GB)	1,0-13,0	34,0	34,0	102,0	24,0	MSC-HSK-A100-20-102-1-0-W	10022511
100	ER 32 (GB)	2,0-20,0	50,0	45,0	115,3	27,5	MSC-HSK-A100-32-115-1-0-W	10023150
100	ER 40 (GB)	3,0-26,0	63,0	63,0	138,0	30,5	MSC-HSK-A100-40-138-1-0-W	10079479

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tap drills quickly and securely. For compensating for any differences in pitch between the synchronous spindle and the tap drill.

Scope of delivery: With clamping nut for internal coolant supply and open-ended wrench. Without collet, sealing disc or coolant tube.

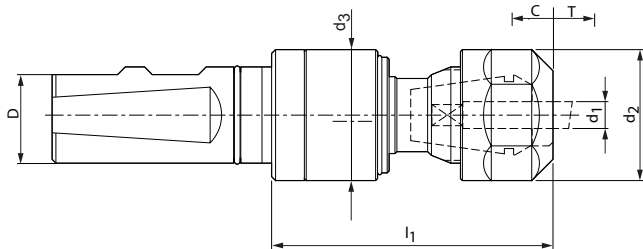
Design: With internal coolant supply.

Note: For suitable tapping collets and sealing discs for internal coolant-supply, coolant tube, code carrier and open-ended wrenches, see chapter "Accessories, spareparts and measuring equipment".

Balancing quality: G 6.3 with 3,000 rpm in delivery status.

# Softsynchro tapping chucks

Shank in accordance with DIN 1835 B+E



Shaft diameter cylindrical shank D	Nominal size	Clamping range $d_1$	Dimensions				Specification	Order no.
			$d_2$	$d_3$	$l_1$	$l_2$		
20	ER 20 (GB)	1,0-13,0	34,0	34,0	73,0	24,0	MSC-ZYL-020-20-073-1-0-W	30531488
25	ER 20 (GB)	1,0-13,0	34,0	34,0	73,0	24,0	MSC-ZYL-025-20-073-1-0-W	10015373
25	ER 32 (GB)	2,0-20,0	50,0	45,0	87,3	27,5	MSC-ZYL-025-32-088-1-0-W	10063621
32	ER 40 (GB)	3,0-26,0	63,0	63,0	113,5	30,5	MSC-ZYL-032-40-114-1-0-W	10057697

Dimensions in mm.

Additional dimensions available upon request.

Use: For clamping tap drills quickly and securely. For compensating for any differences in pitch between the synchronous spindle and the tap drill.

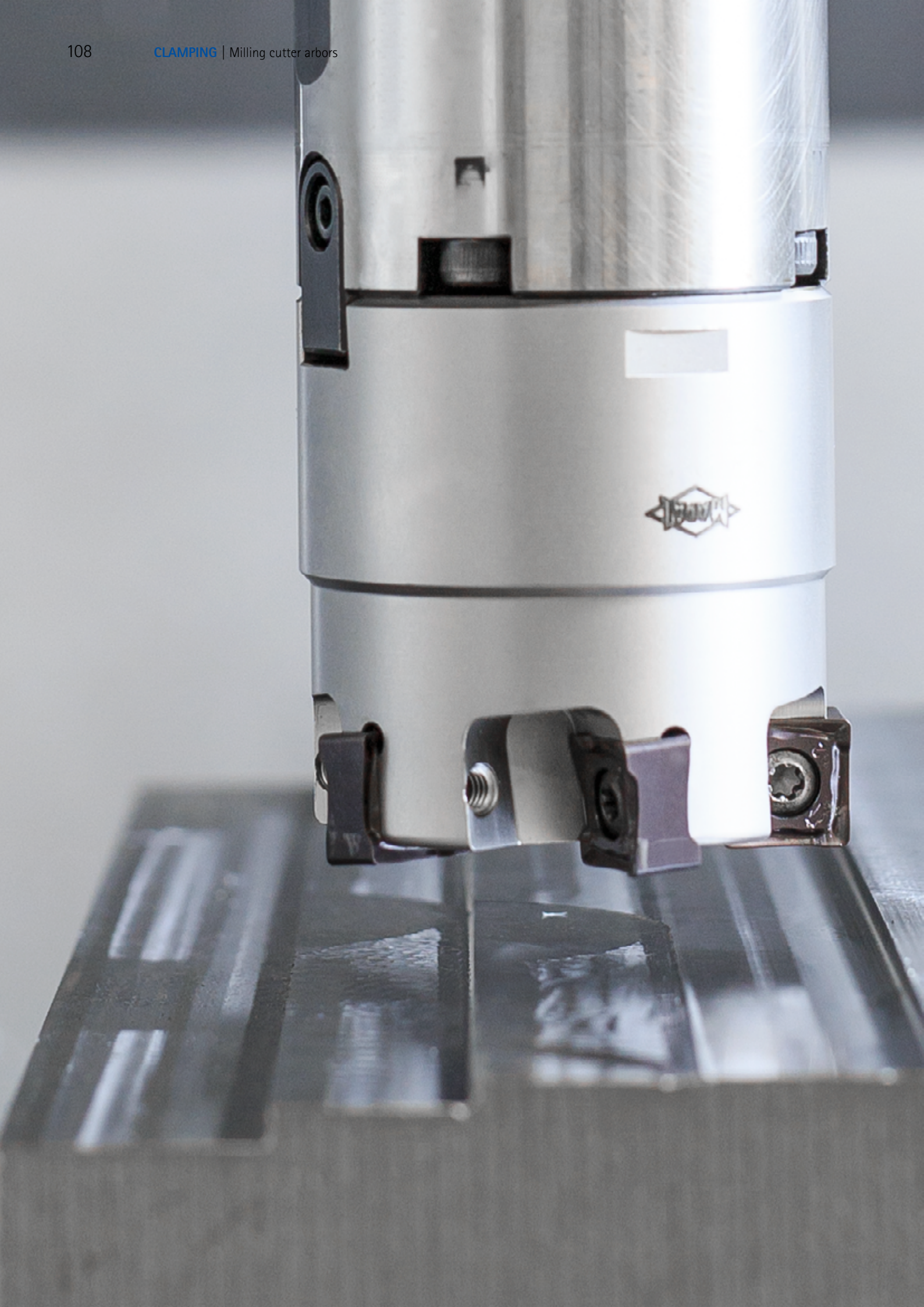
Scope of delivery: With clamping nut for internal coolant supply and open-ended wrench. Without collet or sealing disc.

Design: With internal coolant supply.

Note: For suitable tapping collets and sealing discs for internal coolant-supply and open-ended wrenches, see chapter "Accessories, spare parts and measuring equipment".

Balancing quality: G 6.3 with 3,000 rpm in delivery status.

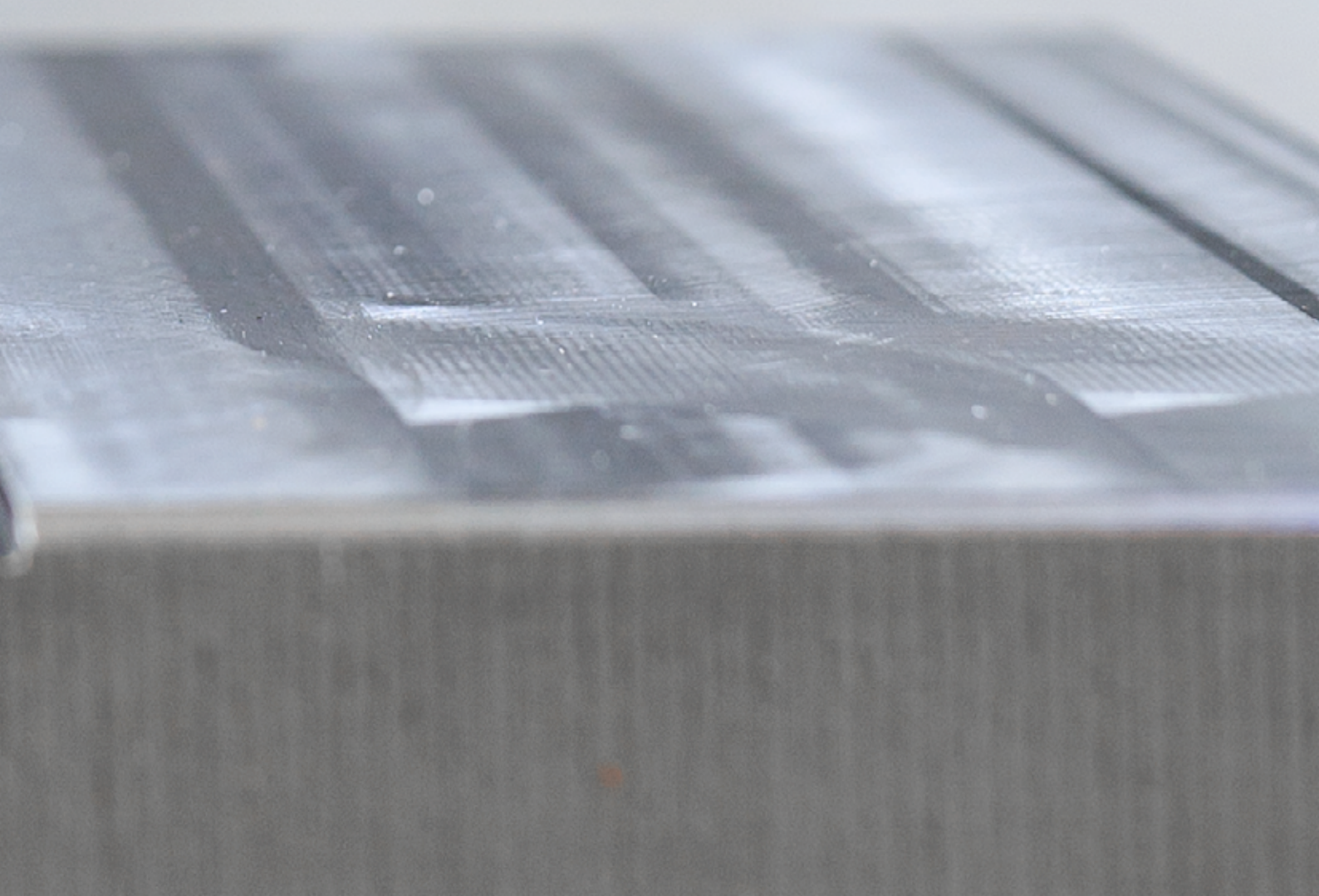




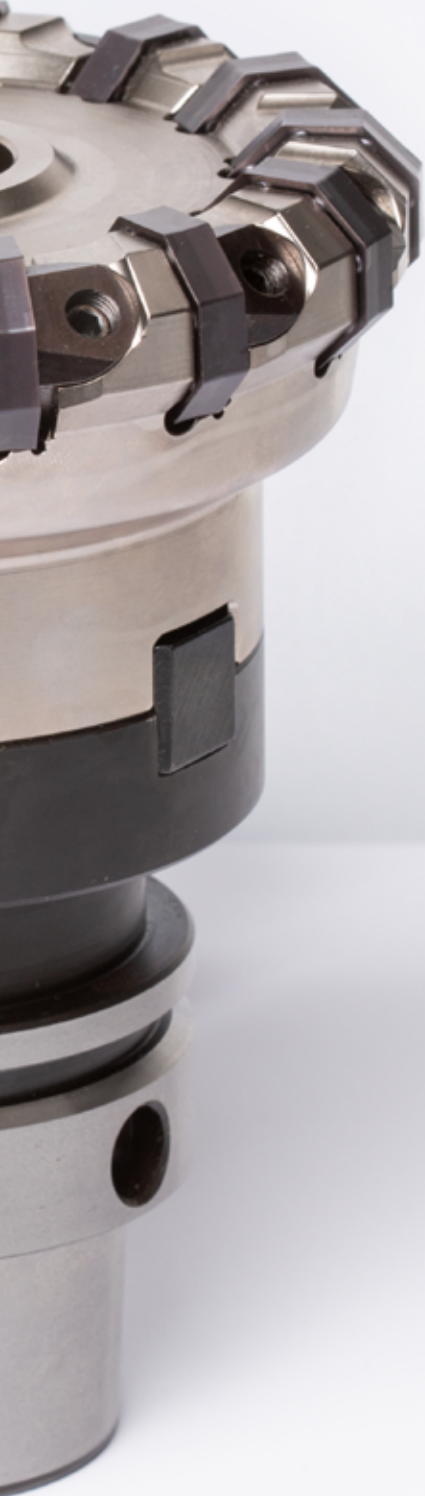
# MILLING CUTTER ARBOR

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Standard and vibration dampened design







# MILLING CUTTER ARBORS

## Milling cutter arbors

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Vibration dampened design .....	112
For milling cutters with cross slot or longitudinal groove as per DIN 69882-2 .....	117
For milling cutters with cross slot as per DIN 69882-3 .....	118
For milling cutters with enlarged face connection diameter as per DIN 69882-3 .....	121

## Vibration damping – significantly improved surface finishes

Vibrations often occur during machining. They cause the system to become dynamically unstable. This can result in unacceptable surface quality, insufficient accuracy, high levels of machining noise, shortened tool life and, in extreme cases, broken tools and cutting edges.

To minimise these vibrations and their consequences, MAPAL has developed an innovative system for vibration dampening in the tool shank. In particular, tools for boring and milling with very long projections tend to vibrate due to the insufficient dynamic rigidity of the overall system. When designing the new system, the developers took into account all the factors resulting from the interaction between the machine tool, the tool and its clamp, and the part. The result: a vibration dampening system that is calibrated

to the rigidity of all common machine types. It can be used for the machining of a range of workpiece materials with various different tools.

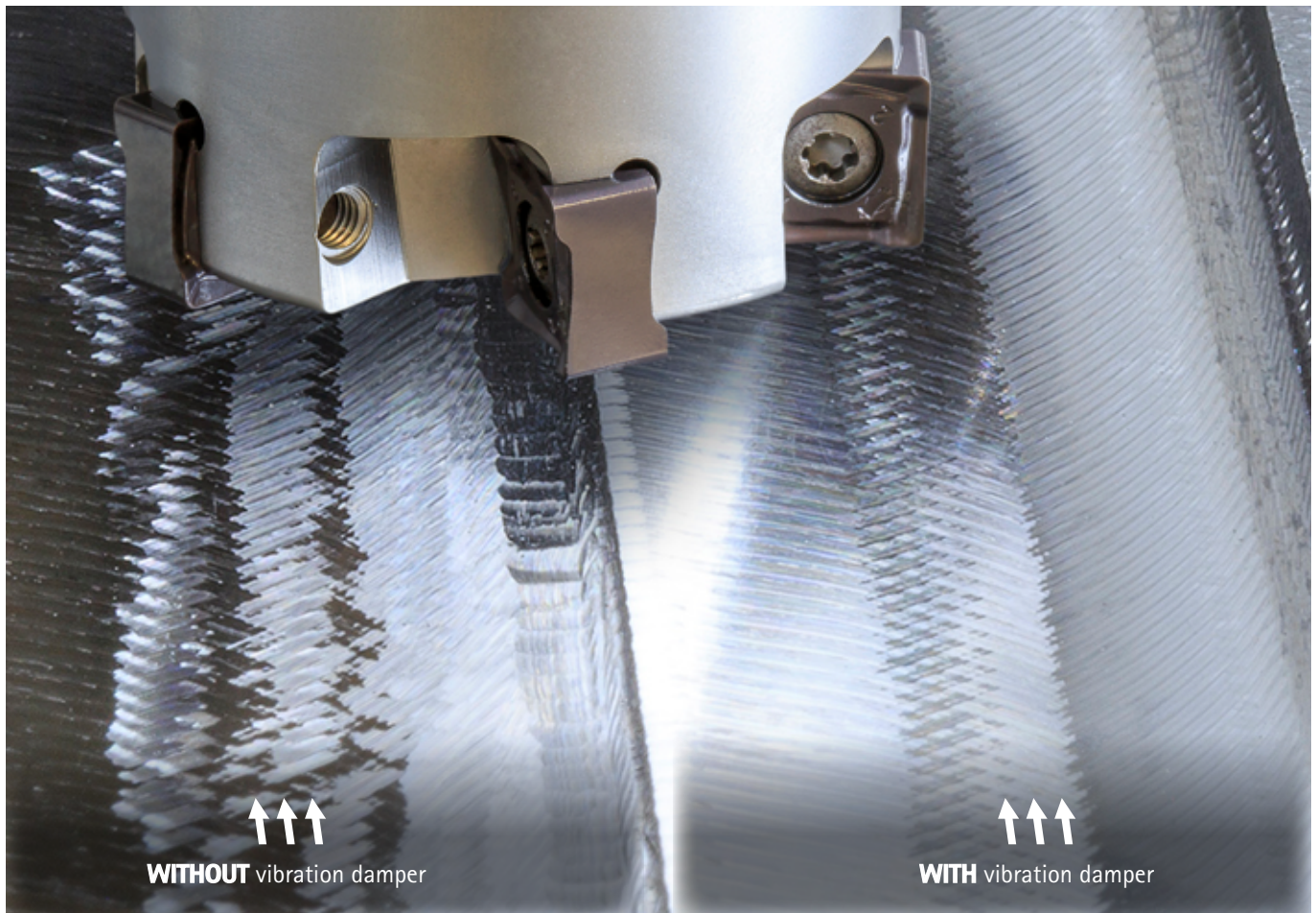
The self-contained system made of auxiliary mass and several steel spring packages counteracts and minimises the displacement of the tool body. Compared to tools without an absorber system, the vibration amplitudes can be up to 1,000 times lower. As such, a smooth, stable run is achieved even with long projections. This allows higher cutting speeds to be used and the material removal rate to be significantly increased. In addition, considerably better surface finishes are achieved thanks to the vibration dampening.

### AT A GLANCE

- System for vibration dampening in tools with long projections directly in the tool shank.
- Adapted to the rigidity of all common machine types
- Available with internal coolant supply for the clamping diameters 16, 22 and 27 mm with a length of 200 and 300 mm for the SK40, SK50, HSK-A63 and HSK-A100 connections

### ADVANTAGES

- Smooth, stable running despite long projections
- Higher cutting speeds, higher material removal rate
- Better surface qualities





## Tool features in detail

### 1 Internal coolant channels

- Optimal coolant supply

### 2 Standardised connection according to DIN 69882-3

- Suitable for standard milling cutters with cross slot

### 3 Hard-turned surface

- Improved corrosion resistance

### 4 Cylindrical contour

- Best accessibility



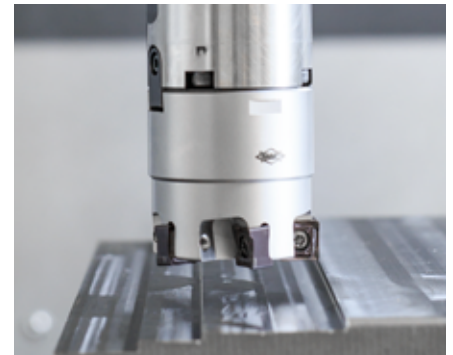
### Vibration dampening in the milling cutter arbor

- Smooth, steady running despite long projection length
- Protection of spindle and machine with lower energy consumption than with an undamped system
- Minimisation of noise during the machining process



### Internal coolant supply

- Higher cutting speeds thanks to internal cooling with better material removal rate
- Less blade chipping
- Optimal cooling of the cutting edge makes deep machining positions possible

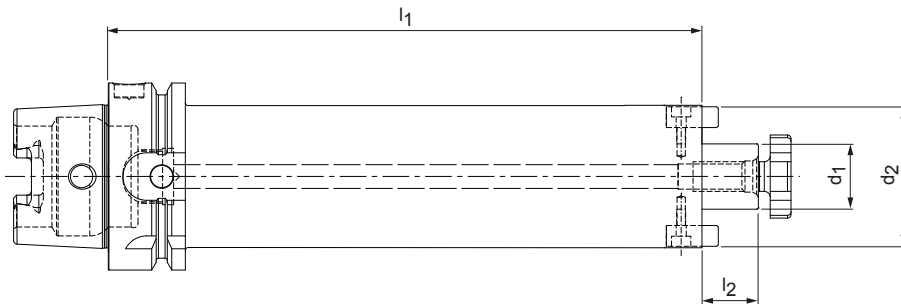


### Better surface qualities thanks to vibration dampening

- Significantly improved surface with identical cutting data
- Optimal chip breaking, no scratching of the surface finish

# Milling cutter arbor

mechanical tool clamping, for milling cutters with cross slot according to DIN 69882-3  
 HSK-A (hollow shank taper form A) shank according to DIN 69893-1



## Vibration dampened design

HSK-A	Dimensions				Specification	Order no.
	$d_1$	$d_2$	$l_1$	$l_2$		
63	16,0	38,0	200,0	17,0	MDA-HSK-A063-16-200-1-0-W	31045047
63	16,0	38,0	300,0	17,0	MDA-HSK-A063-16-300-1-0-W	31045049
63	22,0	48,0	200,0	19,0	MDA-HSK-A063-22-200-1-0-W	31045048
63	22,0	48,0	300,0	19,0	MDA-HSK-A063-22-300-1-0-W	31045120
100	16,0	38,0	200,0	17,0	MDA-HSK-A100-16-200-1-0-W	31045121
100	16,0	38,0	300,0	17,0	MDA-HSK-A100-16-300-1-0-W	31045124
100	22,0	48,0	200,0	19,0	MDA-HSK-A100-22-200-1-0-W	31045122
100	22,0	48,0	300,0	19,0	MDA-HSK-A100-22-300-1-0-W	31045125
100	27,0	58,0	200,0	21,0	MDA-HSK-A100-27-200-1-0-W	31045123
100	27,0	58,0	300,0	21,0	MDA-HSK-A100-27-300-1-0-W	31045126

## Technical data of the milling cutter arbor with hollow shank taper connection

HSK	$l_1$ [mm]	$d_1$ [mm]	$d_2$ [mm]	Max. operating speed [rpm]	Recommended weight for milling cutter [kg]	Total mass [kg]	Moment of tilt with milling cutter nominal weight [Nm]	Permissible transmit- table torque [Nm]	Max. cutting force [N]
31045047				8.000	0,2 ( $\pm 0,1$ )	2,3	1,89	200	1.300
31045049				5.000	0,2 ( $\pm 0,1$ )	3,2	4,22	200	900
31045048				8.000	0,6 ( $\pm 0,15$ )	3,5	4,08	270	1.300
31045120				5.500	0,6 ( $\pm 0,15$ )	4,9	8,32	270	900
31045121				8.000	0,2 ( $\pm 0,1$ )	3,6	1,57	200	3.400
31045124				5.800	0,2 ( $\pm 0,1$ )	4,5	3,95	200	2.400
31045122				8.000	0,6 ( $\pm 0,15$ )	4,7	3,65	270	3.400
31045125				6.000	0,6 ( $\pm 0,15$ )	6	7,61	270	2.400
31045123				8.000	0,9 ( $\pm 0,2$ )	5,8	5,23	500	3.400
31045126				6.000	0,9 ( $\pm 0,2$ )	8	11,37	500	2.400

Dimensions in mm.

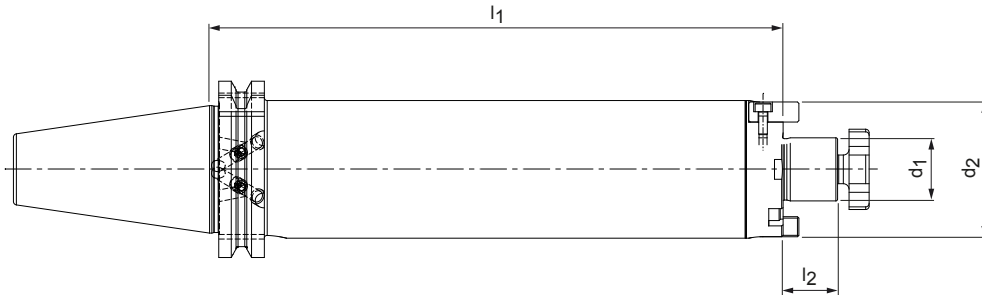
Scope of delivery: With screwed-on key blocks and milling cutter clamping screw according to DIN 6367. Without coolant tube.

Design: Permissible run-out variation of the taper to the arbor diameter  $d_1 = 5 \mu\text{m}$ .

Note: Milling cutter clamping screw supplied without internal cooling. For coolant tube and assembly tool, see chapter "Accessories, spare parts and measuring equipment".

# Milling cutter arbor

mechanical tool clamping, for milling cutters with cross slot according to DIN 69882-3  
SK (steel taper) shank according to ISO 7388-1 Form AD/AF



## Vibration dampened design

Steep taper	Dimensions				Specification	Order no.
	$d_1$	$d_2$	$l_1$	$l_2$		
40	16,0	38,0	200,0	17,0	MDA-SK040-16-200-3-0-W	31045127
40	16,0	38,0	300,0	17,0	MDA-SK040-16-300-3-0-W	31045129
40	22,0	48,0	200,0	19,0	MDA-SK040-22-200-3-0-W	31045128
40	22,0	48,0	300,0	19,0	MDA-SK040-22-300-3-0-W	31045130
50	16,0	38,0	200,0	17,0	MDA-SK050-16-200-3-0-W	31045131
50	16,0	38,0	300,0	17,0	MDA-SK050-16-300-3-0-W	31045134
50	22,0	48,0	200,0	19,0	MDA-SK050-22-200-3-0-W	31045132
50	22,0	48,0	300,0	19,0	MDA-SK050-22-300-3-0-W	31045135
50	27,0	58,0	200,0	21,0	MDA-SK050-27-200-3-0-W	31045133
50	27,0	58,0	300,0	21,0	MDA-SK050-27-300-3-0-W	31045136

## Technical data of the milling cutter arbor with steep taper connection

Steep taper	$l_1$ [mm]	$d_1$ [mm]	$d_2$ [mm]	Max. operating speed [rpm]	Recommended weight for milling cutter [kg]	Total mass [kg]	Moment of tilt with milling cutter nominal weight [Nm]	Permissible transmittable torque [Nm]	Max. cutting force [N]
31045127				8.000	0,2 ( $\pm 0,1$ )	2,5	1,90	200	650
31045129				4.500	0,2 ( $\pm 0,1$ )	3,4	4,32	200	450
31045128				5.500	0,6 ( $\pm 0,15$ )	3,7	4,19	270	650
31045130				3.500	0,6 ( $\pm 0,15$ )	5,1	8,85	270	450
31045131				8.000	0,2 ( $\pm 0,1$ )	4,2	1,22	200	1.700
31045134				6.000	0,2 ( $\pm 0,1$ )	5,1	3,67	200	1.200
31045132				8.000	0,6 ( $\pm 0,15$ )	5,3	3,34	270	1.700
31045135				5.500	0,6 ( $\pm 0,15$ )	6,9	7,87	270	1.200
31045133				8.000	0,9 ( $\pm 0,2$ )	6,6	5,13	500	1.700
31045136				5.000	0,9 ( $\pm 0,2$ )	8,8	11,59	500	1.200

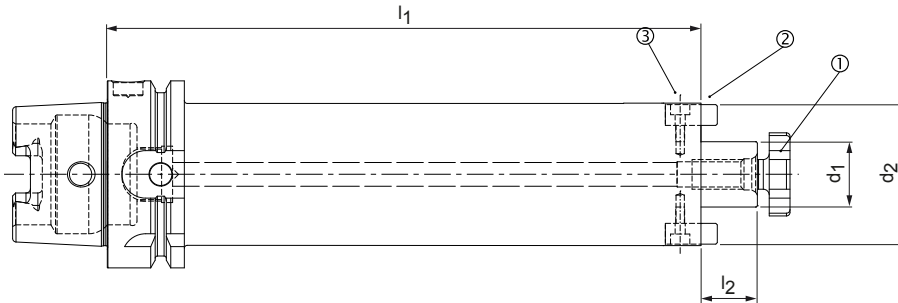
Dimensions in mm.

Scope of delivery: With screwed-on key blocks and milling cutter clamping screw according to DIN 6367. Without pull stud.

Design: Permissible run-out variation of the taper to the arbor diameter  $d_1 = 5 \mu\text{m}$ .

Basic setting Form AD, if Form AF is required, please specify this when placing your order. Note: Milling cutter clamping screw supplied without internal cooling. For pull stud and assembly tool, see chapter "Accessories, spare parts and measuring equipment".

## Spare parts for milling cutter arbors



### For milling cutter arbors with enlarged face connection diameter according to DIN 69882-3

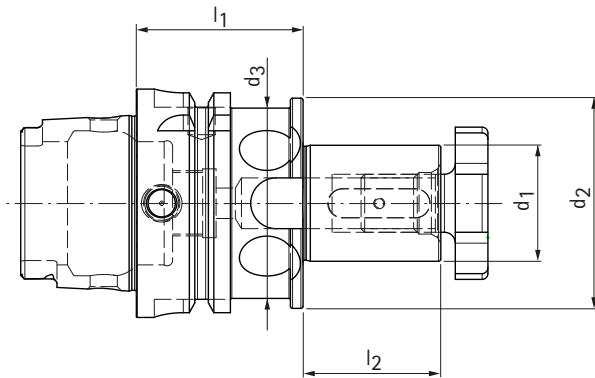
Connection HSK-A	For arbor diameter $d_1$	① Milling cutter clamping screw according to DIN 6367		③ Cylinder screw according to ISO 4762 (2x)	
		Size	Order no.	Size	Order no.
63	16	M12	10005164	M4x12-12.9	10003584
63	22	M10	10006016	M3x8-12.9	10003570
100	16	M12	10005164	M4x12-12.9	10003584
100	22	M10	10006016	M3x8-12.9	10003570
100	27	M8	10007286	M3x8-12.9	10003570

### For milling cutter arbors with enlarged face connection diameter according to DIN 69882-3

Connection Steep taper	For arbor diameter $d_1$	① Milling cutter clamping screw according to DIN 6367		③ Cylinder screw according to ISO 4762 (2x)	
		Size	Order no.	Size	Order no.
40	16	M12	10005164	M4x12-12.9	10003584
40	22	M10	10006016	M3x8-12.9	10003570
50	16	M12	10005164	M4x12-12.9	10003584
50	22	M10	10006016	M3x8-12.9	10003570
50	27	M8	10007286	M3x8-12.9	10003570

## Milling cutter arbor

mechanical tool clamping for milling cutters with longitudinal or cross slot in accordance with DIN 69882-2, with milling cutter clamping screw HSK-A (hollow shank taper form A) shank according to DIN 69893-1



HSK-A	Dimensions					G	Specification	Order no.
	$d_1$	$d_2$	$d_3$	$l_1$	$l_2$			
63	16,0	32,0	-	50,0	27,0	M8	MCA-HSK-A063-16-050-1-0-W	30319348
63	22,0	40,0	-	48,0	31,0	M10	MCA-HSK-A063-22-048-1-0-W	30319349
63	27,0	48,0	-	48,0	33,0	M12	MCA-HSK-A063-27-048-1-0-W	30319350
63	32,0	58,0	52,5	46,0	38,0	M16	MCA-HSK-A063-32-046-1-0-W	30319352
63	40,0	70,0	52,5	56,0	41,0	M20	MCA-HSK-A063-40-056-1-0-W	30319353
100	16,0	32,0	-	50,0	27,0	M8	MCA-HSK-A100-16-050-1-0-W	30319359
100	22,0	40,0	-	48,0	31,0	M10	MCA-HSK-A100-22-048-1-0-W	30319360
100	27,0	48,0	-	48,0	33,0	M12	MCA-HSK-A100-27-048-1-0-W	30319361
100	32,0	58,0	-	46,0	38,0	M16	MCA-HSK-A100-32-046-1-0-W	30319362
100	40,0	70,0	-	48,0	33,0	M20	MCA-HSK-A100-40-056-1-0-W	30319363

Dimensions in mm.

Scope of delivery: With milling cutter clamping screw, feather key with jacking thread and driving ring. Without coolant tube.

Design: Permissible run-out variation of the hollow taper shank to the arbor  $d_1 = 8 \mu\text{m}$ .

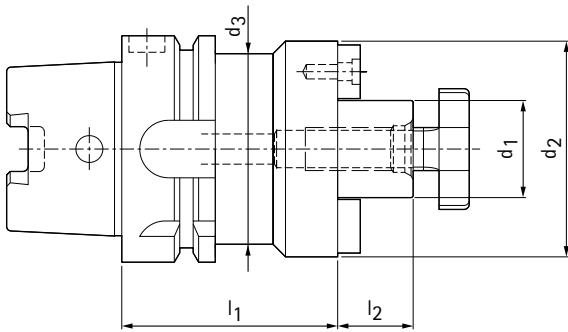
Note: Milling cutter clamping screw supplied without internal cooling. Coolant tubes and

assembly tool, see chapter "Accessories, spare parts and measuring equipment". Milling adapter rings according to DIN 2084 available upon request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

## Milling cutter arbor

mechanical tool clamping, with enlarged face connection diameter in accordance with DIN 69882-3, with milling cutter clamping screw HSK-A (hollow shank taper form A) shank according to DIN 69893-1



HSK-A	Dimensions					G	Specification	Order no.
	$d_1$	$d_2$	$d_3$	$l_1$	$l_2$			
63	22,0	48,0	-	50,0	19,0	M10	MCA-HSK-A063-22-050-1-0-W	30329254
63	27,0	60,0	52,5	60,0	21,0	M12	MCA-HSK-A063-27-060-1-0-W	30329256
63	32,0	78,0	52,5	60,0	24,0	M16	MCA-HSK-A063-32-060-1-0-W	30329257
63*	40,0	89,0	52,5	60,0	27,0	M20	MCA-HSK-A063-40-060-1-0-W	30329259
100	22,0	48,0	-	50,0	19,0	M10	MCA-HSK-A100-22-050-1-0-W	30329270
100	27,0	60,0	-	50,0	21,0	M12	MCA-HSK-A100-27-050-1-0-W	30329271
100	32,0	78,0	-	50,0	24,0	M16	MCA-HSK-A100-32-050-1-0-W	30329272
100	40,0	89,0	84,5	60,0	27,0	M20	MCA-HSK-A100-40-060-1-0-W	30329274
100	60,0	140,0	84,5	70,0	40,0	M30	MCA-HSK-A100-60-070-1-0-W	30329276

\* marked sizes have four additional threaded bores for mounting cutter heads with tool fastening in accordance with DIN 2079.

Dimensions in mm.

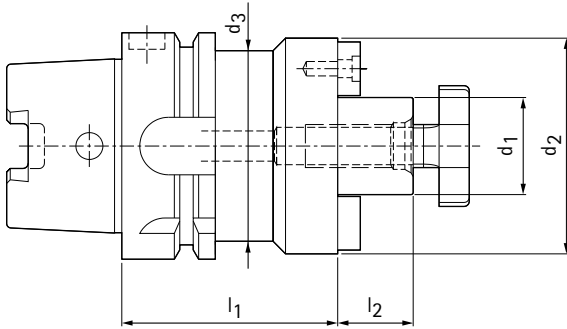
Scope of delivery: With screwed-on key blocks and milling cutter clamping screw according to DIN 6367. Without coolant tube.

Design: Permissible run-out variation of the hollow taper shank to the arbor  $d_1 = 8 \mu\text{m}$ . Six balancing bores on the periphery.

Note: Milling cutter clamping screw supplied without internal cooling. For coolant tubes, assembly tool, see chapter "Accessories, spare parts and measuring equipment". Milling adapter rings according to DIN 2084 available upon request. Balancing quality: G 2.5 with 25,000 rpm in delivery status.

## Milling cutter arbor

mechanical tool clamping, with enlarged face connection diameter in accordance with DIN 69882-3, without milling cutter clamping screw  
 HSK-A (hollow shank taper form A) shank according to DIN 69893-1



HSK-A	Dimensions					G	Specification	Order no.
	$d_1$	$d_2$	$d_3$	$l_1$	$l_2$			
63	22,0	48,0	-	50,0	19,0	M10	MCA-HSK-A063-22-050-1-0-W	10066802
63	27,0	60,0	52,5	60,0	21,0	M12	MCA-HSK-A063-27-060-1-0-W	10066803
63	32,0	78,0	52,5	60,0	24,0	M16	MCA-HSK-A063-32-060-1-0-W	10066804
63*	40,0	89,0	52,5	60,0	27,0	M20	MCA-HSK-A063-40-060-1-0-W	10066805
63*	60,0**	140,0	52,5	70,0	40,0	M30	MCA-HSK-A063-60-070-1-0-W	10067153
100	22,0	48,0	-	50,0	19,0	M10	MCA-HSK-A100-22-050-1-0-W	10066812
100	27,0	60,0	-	50,0	21,0	M12	MCA-HSK-A100-27-050-1-0-W	10066813
100	32,0	78,0	-	50,0	24,0	M16	MCA-HSK-A100-32-050-1-0-W	10066814
100	40,0	89,0	84,5	60,0	27,0	M20	MCA-HSK-A100-40-060-1-0-W	10066815
100	60,0	140,0	84,5	70,0	40,0	M30	MCA-HSK-A100-60-070-1-0-W	10066817

\* marked sizes have four additional threaded bores for mounting cutter heads with tool fastening in accordance with DIN 2079.

\*\* $d_1 = 60$  mm for nominal size HSK-A 63: maximum milling head diameter 250 mm. No balancing bores on the periphery.

Dimensions in mm.

Scope of delivery: With screwed-on key blocks. Without coolant tube.

Design: Permissible run-out variation of the hollow taper shank to the arbor  $d_1 = 8 \mu\text{m}$ .

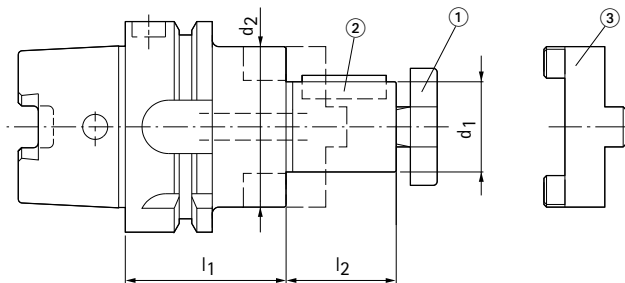
Six balancing bores on the periphery.

Note: For coolant tubes, assembly tool, see chapter "Accessories, spare parts and measuring equipment". Milling adapter rings according to DIN 2084 available upon request.

Without milling cutter clamping screw.

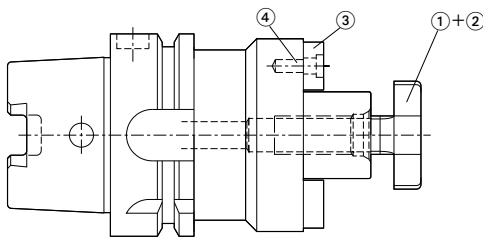
Balancing quality: G 2.5 with 25,000 rpm in delivery status.

## Spare parts for milling cutter arbors



### For milling cutter arbors for milling cutters with long/cross slot according to DIN 69882-2

For arbor diameter $d_1$	① Milling cutter clamping screw according to DIN 6367		② Feather key DIN 6885 Form AS (however with jacking thread)		③ Driving ring in accordance with DIN 6366-1	
	Size	Order no.	Size	Order no.	Size	Order no.
16	M8	10007286	4x4x20	30433907	Gr.16	10008712
22	M10	10006016	6x6x25	10059420	Gr.22	10032860
27	M12	10005164	7x7x25	30433909	Gr.27	10018128
32	M16	10004065	8x7x28	30433910	Gr.32	10076829
40	M20	10004066	10x8x32	30433912	Gr.40	10004785



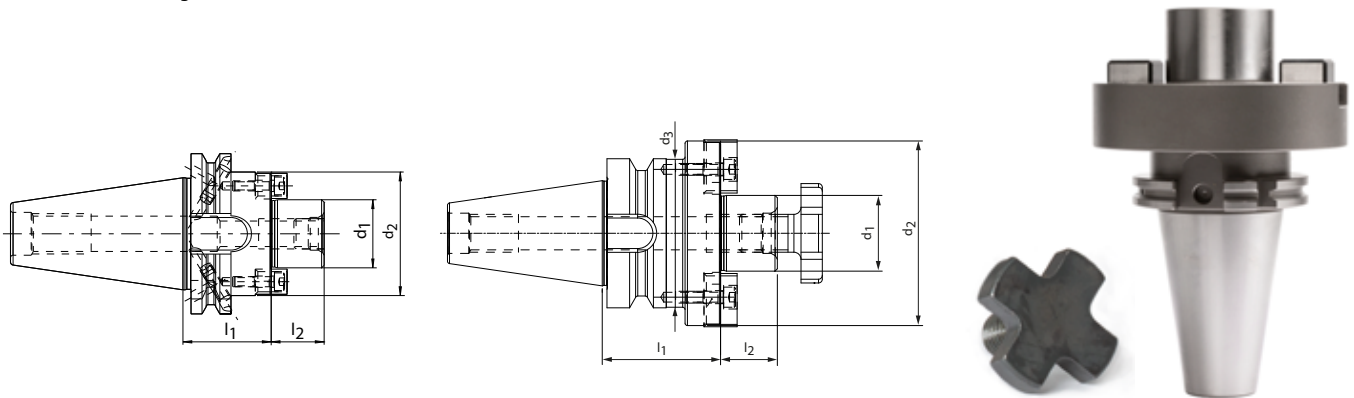
### For milling cutter arbors with enlarged face connection diameter according to DIN 69882-3

For arbor diameter $d_1$	① Milling cutter clamping screw according to DIN 6367		Milling cutter clamping screw with internal coolant supply (e.g. for MAPAL WWS milling heads)	② Key block (2x)		Fastening screw in accordance with ISO 4762 (2x)	
	Size	Order no.		Specification	Order no.	Size	Order no.
22	M10	10006016	30326178	MT1013-01	10005640	M4x10 - 12.9	10003583
27	M12	10005164	30326179	MT1215-01	10005165	M4x16 - 12.9	10003586
32	M16	10004065	30326180	MT1422-01	10004063	M5x16 - 12.9	10003601
40	M20	10004066	30326181	MT1623-01	10004064	M5x16 - 12.9	10003601
60	M30	10017544	-	MT2625-01	10010103	M12x25 - 12.9	10003675



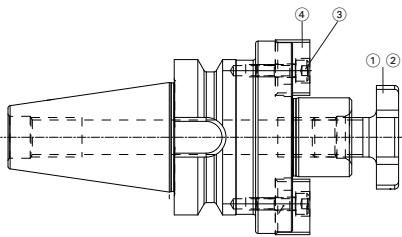
# Milling cutter arbor

mechanical tool clamping, with enlarged face connection diameter, with milling cutter clamping screw  
Shank SK according to ISO 7388-1 Form AD/AF



Steep taper	Dimensions					G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>			
40	22,0	48,0	-	35,0	19,0	M10	MCA-SK040-22-035-3-0-W	10066833
40	27,0	49,0	-	35,0	21,0	M12	MCA-SK040-27-035-3-0-W	10066834
40	32,0	78,0	49,5	50,0	24,0	M16	MCA-SK040-32-050-3-0-W	10066835
40*	40,0	89,0	49,5	50,0	27,0	M20	MCA-SK040-40-050-3-0-W	10066836
50	22,0	48,0	-	35,0	19,0	M10	MCA-SK050-22-035-3-0-W	10073552
50	27,0	60,0	-	35,0	21,0	M12	MCA-SK050-27-035-3-0-W	10073743
50	32,0	78,0	-	35,0	24,0	M16	MCA-SK050-32-035-3-0-W	10073744
50*	40,0	89,0	79,5	50,0	27,0	M20	MCA-SK050-40-050-3-0-W	10073745

\* marked sizes have four additional threaded bores for mounting cutter heads with tool fastening in accordance with DIN 2079.



## Spare parts

For arbor diameter d <sub>1</sub>	① Milling cutter clamping screw in accordance with DIN 6367		② Milling cutter clamping screw with internal coolant supply (e.g. for MAPAL WWS milling heads)		③ Key block		④ Fastening screw in accordance with ISO 4762	
	Size	Order no.	Order no.	Specification	Order no.	Size	Order no.	
22	M10	10006016	30326178	MT1013-01	10005640	M4x10 - 12.9	10003583	
27	M12	10005164	30326179	MT1215-01	10005165	M4x16 - 12.9	10003586	
32	M16	10004065	30326180	MT1422-01	10004063	M5x16 - 12.9	10003601	
40	M20	10004066	30326181	MT1623-01	10004064	M5x16 - 12.9	10003601	

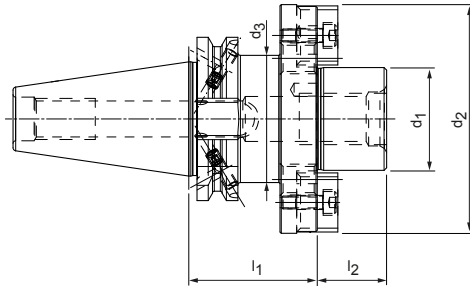
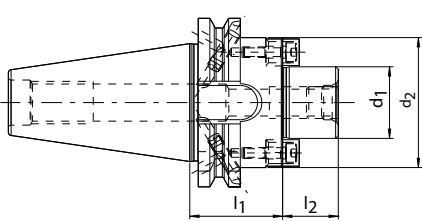
Dimensions in mm.

Scope of delivery: With screwed-on key blocks. Without pull stud.  
Design: Permissible run-out variation of the hollow taper shank to the arbor d<sub>1</sub> = 8 µm.  
Basic setting Form AD, if Form AF is required, please specify this when placing your order.

Note: For pull stud, assembly tool, see chapter "Accessories, spare parts and measuring equipment". Milling adapter rings according to DIN 2084 available upon request.  
Balancing quality: G 2.5 with 25,000 rpm in delivery status.

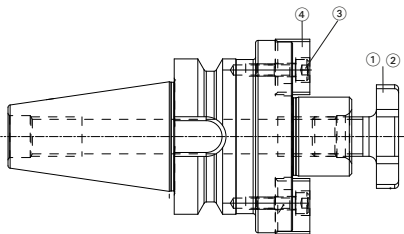
# Milling cutter arbor

mechanical tool clamping, with enlarged face connection diameter, without milling cutter clamping screw  
Shank SK according to ISO 7388-1 Form AD/AF



Steep taper	Dimensions					G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>			
40	22,0	48,0	-	35,0	19,0	M10	MCA-SK040-22-035-3-0-W	10066837
40	27,0	49,0	-	35,0	21,0	M12	MCA-SK040-27-035-3-0-W	10066838
40	32,0	78,0	49,5	50,0	24,0	M16	MCA-SK040-32-050-3-0-W	10066839
40*	40,0	89,0	49,5	50,0	27,0	M20	MCA-SK040-40-050-3-0-W	10066840
50	22,0	48,0	-	35,0	19,0	M10	MCA-SK050-22-035-3-0-W	10073747
50	27,0	60,0	-	35,0	21,0	M12	MCA-SK050-27-035-3-0-W	10073748
50	32,0	78,0	-	35,0	24,0	M16	MCA-SK050-32-035-3-0-W	10073749
50*	40,0	89,0	79,5	50,0	27,0	M20	MCA-SK050-40-050-3-0-W	10073750

\* marked sizes have four additional threaded bores for mounting cutter heads with tool fastening in accordance with DIN 2079.



## Spare parts

For arbor diameter d <sub>1</sub>	① Milling cutter clamping screw in accordance with DIN 6367		② Milling cutter clamping screw with internal coolant supply (e.g. for MAPAL WWS milling heads)		③ Key block		④ Fastening screw in accordance with ISO 4762	
	Size	Order no.	Order no.	Specification	Order no.	Size	Order no.	
22	M10	10006016	30326178	MT1013-01	10005640	M4x10 - 12.9	10003583	
27	M12	10005164	30326179	MT1215-01	10005165	M4x16 - 12.9	10003586	
32	M16	10004065	30326180	MT1422-01	10004063	M5x16 - 12.9	10003601	
40	M20	10004066	30326181	MT1623-01	10004064	M5x16 - 12.9	10003601	

Dimensions in mm.

Scope of delivery: With screwed-on key blocks. Without pull stud.

Design: Permissible run-out variation of the hollow taper shank to the arbor d<sub>1</sub> = 8 μm.

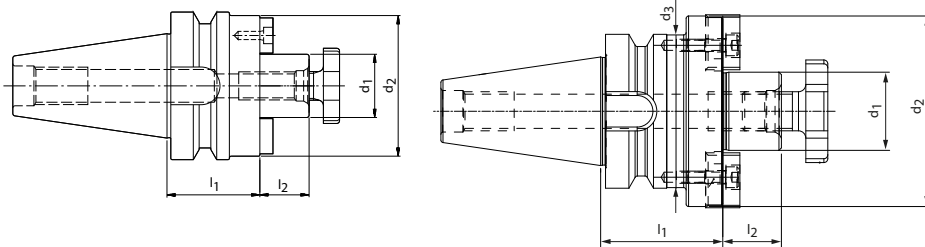
Basic setting Form AD, if Form AF is required, please specify this when placing your order.

Note: For pull stud, assembly tool, see chapter "Accessories, spare parts and measuring equipment". Milling adapter rings according to DIN 2084 available upon request.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

# Milling cutter arbor

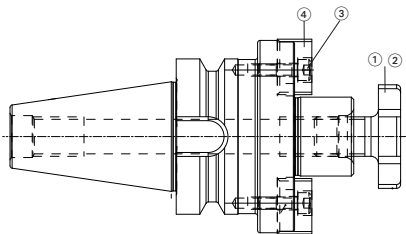
mechanical tool clamping, with enlarged face connection diameter  
Shank BT according to ISO 7388-2 Form JD (JIS B 6339)



BT	Dimensions					G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>			
30**	27,0	46,0	-	35,0	21,0	M12	MCA-BT030-27-035-1-0-W	50016666
40	22,0	48,0	-	35,0	19,0	M10	MCA-BT040-22-035-3-0-W	10073629
40	27,0	60,0	-	35,0	21,0	M12	MCA-BT040-27-035-3-0-W	10073630
40	32,0	78,0	62,5	50,0	24,0	M16	MCA-BT040-32-050-3-0-W	10073631
40*	40,0	89,0	62,5	50,0	27,0	M20	MCA-BT040-40-050-3-0-W	10073632

\* marked sizes have four additional threaded bores for mounting cutter heads with tool fastening in accordance with DIN 2079.

\*\* without milling cutter clamping screw



## Spare parts

For arbor diameter	① Milling cutter clamping screw in accordance with DIN 6367		② Milling cutter clamping screw with internal coolant supply	③ Key block	④ Fastening screw for key block in accordance with ISO 4762	
	Size	Order no.			Order no.	Order no.
d <sub>1</sub>						
22	M10	10006016	30326178	10005640	M4x10 - 12.9	10003583
27	M12	10005164	30326179	10005165***	M4x16 - 12.9	10003586
32	M16	10004065	30326180	10004063	M5x16 - 12.9	10003601
40	M20	10004066	30326181	10004064	M5x16 - 12.9	10003601

\*\*\* For milling cutter arbor BT 30 for key block use order no. 31293926.

Dimensions in mm.

Scope of delivery: With screwed-on key blocks. Without pull stud.  
Design: Permissible run-out variation of the hollow taper shank to the arbor d<sub>1</sub> = 8 µm.  
Basic setting Form JD; if Form JF is required, please state with the order.

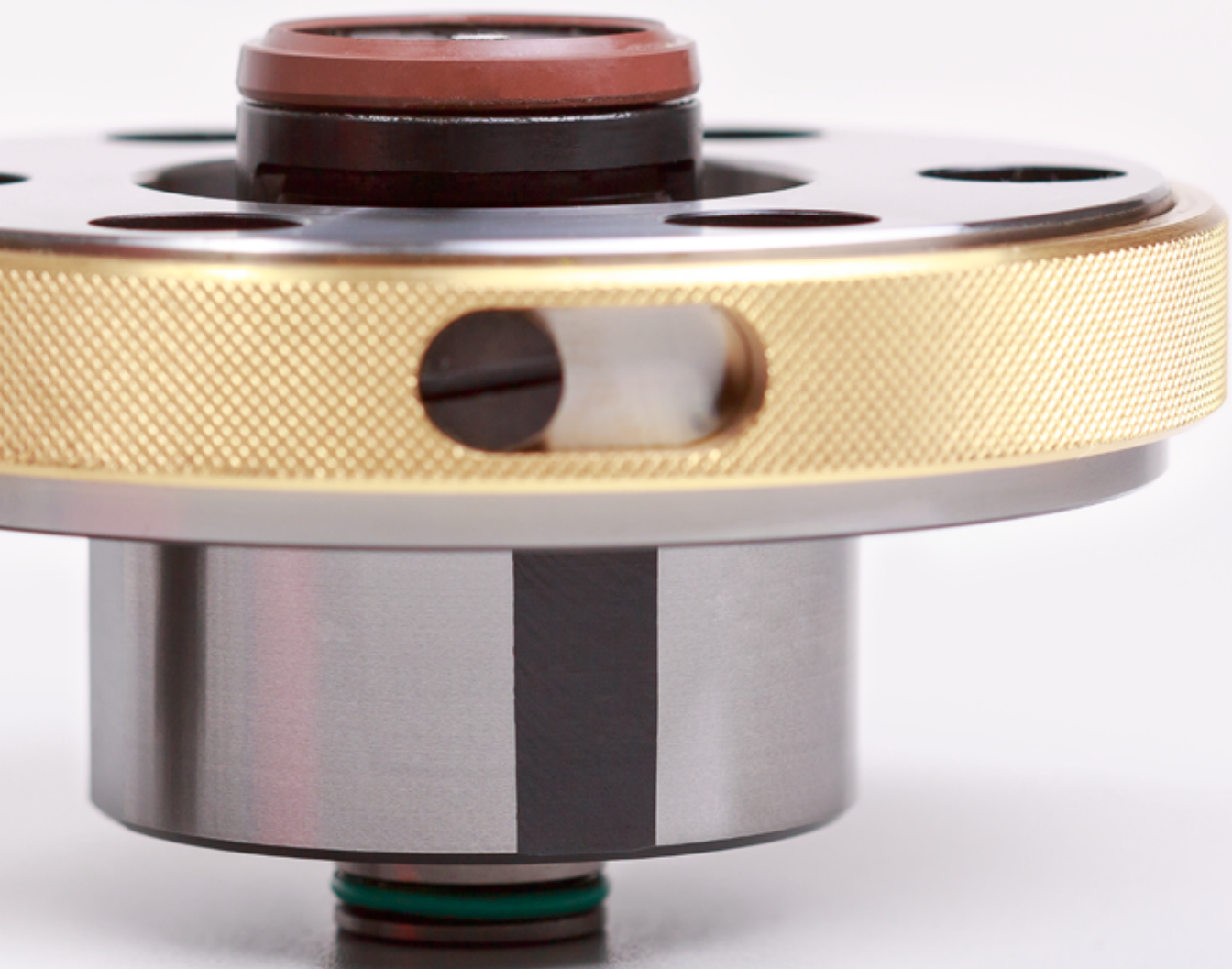
Note: For pull stud, assembly tool, see chapter "Accessories, spare parts and measuring equipment". Milling adapter rings according to DIN 2084 available upon request.  
Balancing quality: G 2.5 with 25,000 rpm in delivery status.



# MANUAL HSK CLAMPING TECHNOLOGY

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Clamping cartridges and flanges







# MANUAL HSK CLAMPING TECHNOLOGY

## Introduction

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## Clamping cartridges

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# PRODUCT OVERVIEW

## Clamping cartridges and flanges

An important element of MAPAL HSK (hollow shank taper) clamping technology is the KS clamping cartridge. The manual clamping mechanism provides maximum clamping forces that can be achieved reliably due to the simple, robust construction. The KS clamping cartridge is used in spindles and basic holders, directly or via adapter flanges. The rigid construction with optimal force application via bayonet and cartridge body to the clamping jaws underlines the effectiveness of the KS clamping cartridges. The easy assembly of the cartridges via a 90° rotation against a heavy-duty clamping pin ensures secure assembly. The gentle ejection of the tool via the

two ejector pins distributes the force and the wear is significantly reduced. The KS clamping cartridges in the designs for full lubrication, high pressure lubrication and MQL are cross compatible. This feature makes it easier to re-tool the machine for new machining tasks with different lubrication. MAPAL offers the MQL1 clamping cartridge as a universal solution for MQL applications with HSK-A and HSK-C. Due to the large central through-bore, the aerosol can be transported without losses with optimised flow characteristics. In this way separation of the aerosol is prevented. The MQL clamping cartridge was especially developed for HSK-C. Through the modification of the

face seal the recess in this area is minimised. With this selection of MAPAL clamping systems it is possible to securely clamp all hollow shank taper forms.

Standard	High pressure	MQL1
		
<p>The standard version of the KS clamping cartridge is the proven all-round model and is suitable for almost all machining situations.</p> <ul style="list-style-type: none"> <li>- High rigidity independent of the load direction</li> <li>- Not susceptible to distorted HSK (hollow shank taper) bases</li> <li>- High clamping force far higher than the standard</li> </ul>	<p>The clamping cartridge for high-pressure applications is suitable for coolant pressures up to 150 bar. It is also equipped with an optimised stop ring for even more reliable sealing of the system.</p> <ul style="list-style-type: none"> <li>- Use up to 150 bar</li> <li>- Improves clamping jaw geometry</li> <li>- High clamping force far higher than the standard</li> </ul>	<p>MAPAL offers the MQL1 clamping cartridge as a universal solution for applications with HSK-A and HSK-C. Due to the large central through-bore, the aerosol can be transported without losses with optimised flow characteristics. In this way separation of the aerosol is prevented.</p> <ul style="list-style-type: none"> <li>- Large central through-bore</li> <li>- Universal system MQL1 for HSK-A and HSK-C</li> </ul>
from page 134	from page 135	from page 136





## MQL



The MQL clamping cartridge was especially developed for HSK-C. The stop ring on the face has been adapted to minimise the blind end.

- Large central through-bore
- With special sealing geometry only for HSK-C

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## KS adapter flange



For installation in the machine spindle for mounting hollow shank taper (HSK) tools

- With radial and angular alignment
- Radial run-out can be set
- Also available as high-pressure and MQL variant
- Module connection sizes for internal spindle contour MN5000-12

from page 140

## KS flange adapter

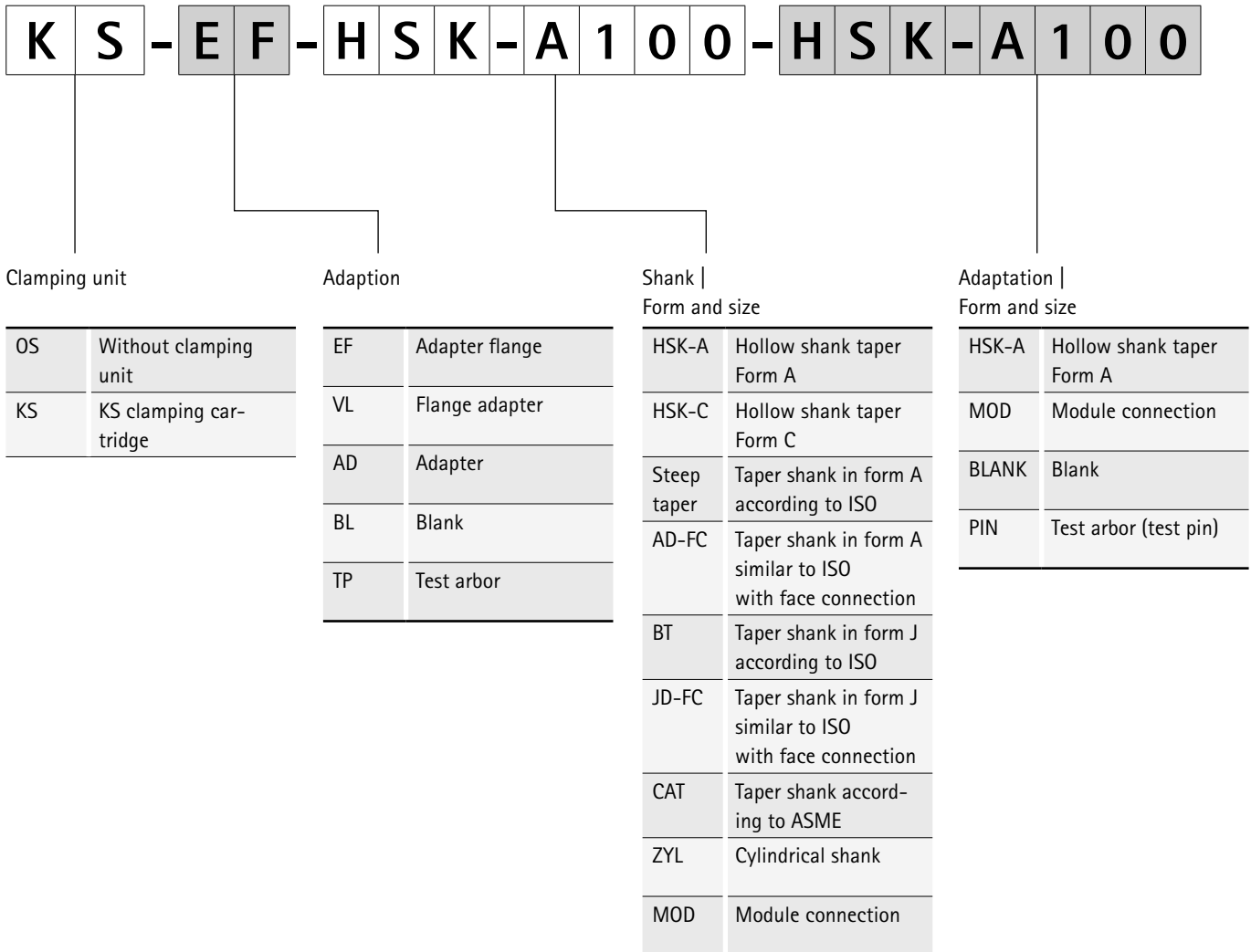


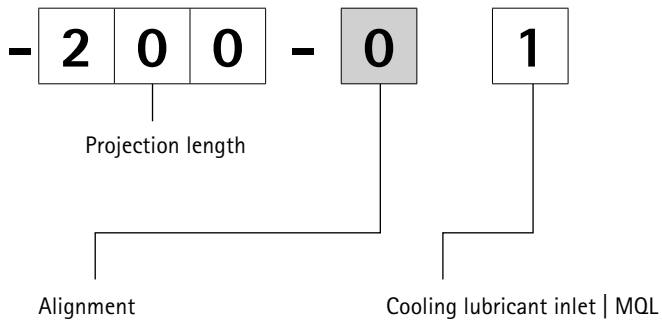
For fitting in the machine spindle or in HSK or steep taper (SK) adapter for mounting HSK tools.

- With radial and angular alignment
- Radial run-out can be set
- Axial run-out can be set
- Also available as high-pressure and MQL variant
- Module connection sizes for internal spindle contour MN5000-14

from page 144

# Product ID code for adapter specification





0	Without alignment
2	Radial and angular alignment

0	Without
1	Internal
2	Laterally (steep taper)
3	Internally and laterally combined
7	with MQL clamping cartridge MQL 1
8	with MQL clamping cartridge MQL
9	With high pressure, HD clamping cartridge

## Overview of manual HSK clamping units



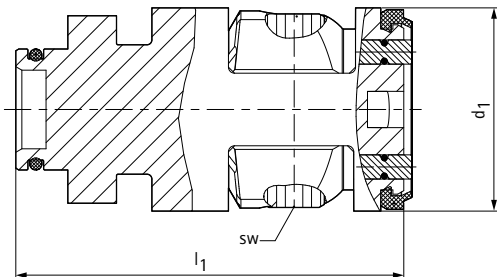
Clamping systems	KS clamping cartridge Standard		KS clamping cartridge High pressure	
Type of actuation	3-4 turns with torque wrench		3-4 turns with torque wrench	
Actuation point (HSK63)	Radial, 9 mm behind face surface		Radial, 9 mm behind face surface	
Clamping force (HSK63)	30 kN		30 kN	
Actuation torque (HSK63)	20 Nm		20 Nm	
Central through-bore (HSK63)	2 x $\varnothing$ 6 mm Internal coolant supply on HSK-C tools and HSK-A tools without coolant tube		2 x $\varnothing$ 6 mm Internal coolant supply up to 150 bar on HSK-C tools and HSK-A tools without coolant tube	
Direct mounting in the spindle	yes		yes	
HSK designs suitable for clamping	HSK-A HSK-B HSK-C	HSK-D HSK-T	HSK-A HSK-B HSK-C	HSK-D HSK-T
HSK sizes	HSK32 to HSK100		HSK32 to HSK100	
Application	Standard system		System for high coolant pressures	



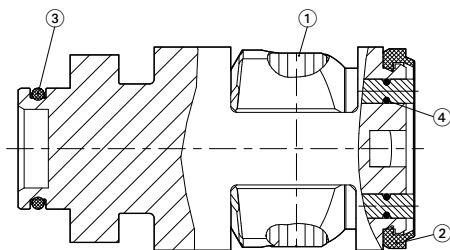
KS clamping cartridge MQL1		KS clamping cartridge MQL	
3-4 turns with torque wrench		3-4 turns with torque wrench	
Radial, 9 mm behind face surface		Radial, 9 mm behind face surface	
30 kN		30 kN	
20 Nm		20 Nm	
ø 7 mm central		ø 7 mm central	
yes		yes	
HSK-A HSK-B HSK-C	HSK-D HSK-T	HSK-C	HSK-D
HSK40 to HSK100		HSK40 to HSK100	
System for MQL applications		System for MQL applications	

# KS clamping cartridges

Standard design



HSK-C	Dimensions		sw	Specification	Order no.
	d <sub>1</sub>	l <sub>1</sub>			
32	16,6	43,1	3	KS32-05	30325945
40	20,6	48,1	3	KS40-06	30325947
50	25,6	55,1	4	KS50-07	30325951
63	33,6	64,15	5	KS63-08	30325955
80	41,6	74,65	6	KS80-09	30325959
100	52,6	94,35	8	KS100-10	30325941



## Spare parts for KS clamping cartridges in standard design

HSK-C	① Threaded spindle	② Sealing ring (Viton®)	③ O-ring (Viton®)	④ O-ring (Viton®)	
	Order no.	Order no.	Order no.	Order no.	Number
32	30358733	30358727	10092414	10041145	2
40	30358734	30358728	10092367	10092366	2
50	30358735	30358729	10093466	10092833	2
63	30358736	30358730	10092421	10092833	2
80	30358737	30358731	10093227	10093216	4
100	30358738	30358732	10093229	10074199	4

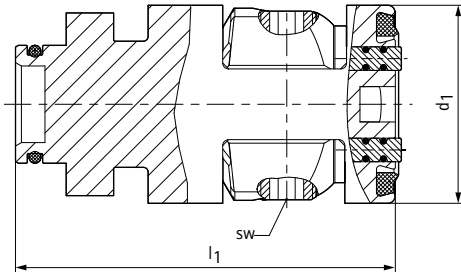
Dimensions in mm.

Use: For fitting in machine spindles and adapters, for manually clamping HSK (hollow shank taper) shanks. For use with coolant pressures up to 50 bar.  
 Note: In case of damage or wear, the clamping cartridge must be sent to MAPAL to be ex-

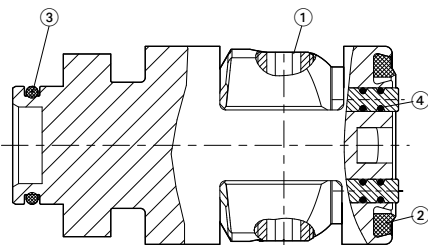
changed. Further information about the exchange service, direct spindle mounting and KS clamping cartridges, see the chapter "Technical appendix".

# KS clamping cartridges

Design for high pressure applications



HSK-C	Dimensions		sw	Specification	Order no.
	d <sub>1</sub>	l <sub>1</sub>			
32	16,6	43,4	3	KS32-05-D	30325946
40	20,6	48,4	3	KS40-06-D	30325948
50	25,6	55,4	4	KS50-07-D	30325952
63	33,6	64,45	5	KS63-08-D	30325956
80	41,6	74,95	6	KS80-09-D	30325960
100	52,6	94,55	8	KS100-10-D	30325942



## Spare parts for KS clamping cartridges in high pressure design

HSK-C	① Threaded spindle	② Sealing ring	③ O-ring (Viton®)	④ O-ring (Viton®)	
	Order no.	Order no.	Order no.	Order no.	Number
32	30358733	30359919	10092414	10041145	4
40	30358734	30359926	10092367	10092366	4
50	30358735	30359927	10093466	10092833	4
63	30358736	30359928	10092421	10092833	4
80	30358737	30359930	10093227	10093216	4
100	30358738	30359931	10093229	10074199	4

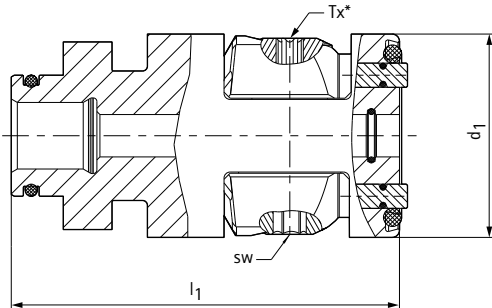
Dimensions in mm.

Use: For fitting in machine spindles and adapters, for manually clamping HSK (hollow shank taper) shanks. For use with coolant pressures up to 150 bar.  
 Note: In case of damage or wear, the clamping cartridge must be sent to MAPAL to be ex-

changed. Further information about the exchange service, direct spindle mounting and KS clamping cartridges, see the chapter "Technical appendix".

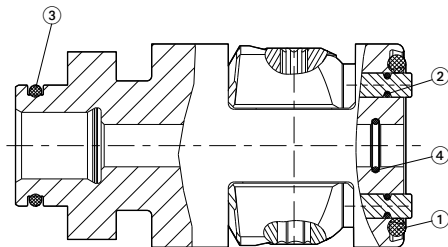
# KS clamping cartridges

Design for MQL applications MQL1



## KS clamping cartridges with outer O-ring – version MQL1 for HSK-A and HSK-C

HSK-C	Dimensions		sw	Torx*	Specification	Order no.
	d <sub>1</sub>	l <sub>1</sub>				
40	20,6	48,1	3	T10	KS40-06-MQL1	30325950
50	25,6	55,1	4	T20	KS50-07-MQL1	30325954
63	33,6	64,15	5	T25	KS63-08-MQL1	30325958
80	41,6	74,65	6	T30	KS80-09-MQL1	30325962
100	52,6	94,35	8	T45	KS100-10-MQL1	30325944



## Spare parts for KS clamping cartridges MQL with outer O-ring – version MQL1 for HSK-A and HSK-C

HSK-C	① O-ring (Viton®)	② O-ring (Viton®)	③ O-ring (Viton®)	④ O-ring (Viton®)
	Order no.	Order no.	Order no.	Order no.
40	10074228	10092366	10092367	10093218
50	30288127	10092833	10074222	10093220
63	10095044	10092833	10092421	10093222
80	10093231	10093216	10093227	10038475
100	10093232	10092420	10093229	10093224

Dimensions in mm.

Use: For fitting in machine spindles and adapters, for optimal, central supply of the MQL medium on manually clamping HSK shanks. Suitable for 1-channel and 2-channel variants.

Scope of delivery: Adapter tube not included in scope of delivery, see following pages.

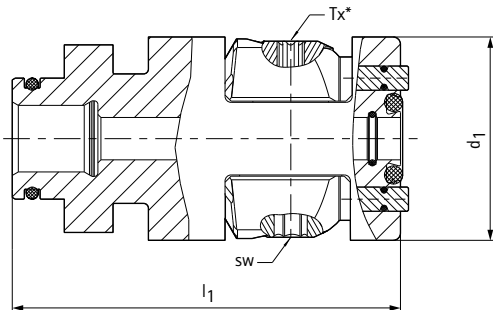
Note: In case of damage or wear, the clamping cartridge must be sent to MAPAL to be exchanged.

\* Is used only for the emergency release function. After actuation of the emergency release function, the cartridge must be sent to MAPAL to be exchanged. Further information on exchange service, direct mounting in the spindle and KS clamping cartridges as well as a selection guide for the MQL clamping cartridges can be found in the chapter "Technical appendix".



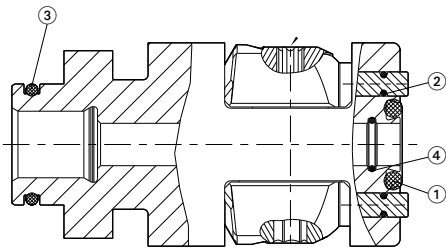
# KS clamping cartridges

Design for MQL applications



## KS clamping cartridges with inner O-ring – MQL version for HSK-C

HSK-C	Dimensions		sw	Torx*	Specification	Order no.
	d <sub>1</sub>	l <sub>1</sub>				
40	20,6	48,1	3	T10	KS40-06-MQL	30325949
50	25,6	55,1	4	T20	KS50-07-MQL	30325953
63	33,6	64,15	5	T25	KS63-08-MQL	30325957
80	41,6	74,65	6	T30	KS80-09-MQL	30325961
100	52,6	94,35	8	T45	KS100-10-MQL	30325943



## Spare parts for KS clamping cartridges MQL with inner O-ring – MQL version for HSK-C

HSK-C	① O-ring (Viton®)	③ O-ring (Viton®)	③ O-ring (Viton®)	③ O-ring (Viton®)
	Order no.	Order no.	Order no.	Order no.
40	10093221	10092366	10092367	10093218
50	10074202	10092833	10074222	10093220
63	10093223	10092833	10092421	10093222
80	30275900	10093216	10093227	10038475
100	10093226	10092420	10093229	10093224

Dimensions in mm.

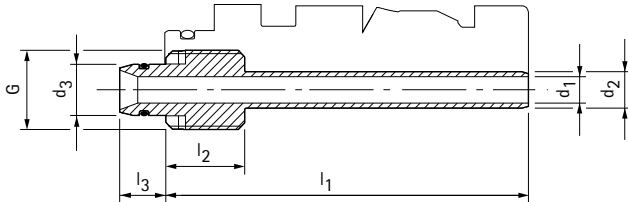
Use: For fitting in machine spindles and adapters, for optimal, central supply of the MQL medium on manually clamping HSK shanks. Suitable for 1-channel and 2-channel variants.

Scope of delivery: Adapter tube not included in scope of delivery, see following pages.

Note: In case of damage or wear, the clamping cartridge must be sent to MAPAL to be exchanged.

\* Is used only for the emergency release function. After actuation of the emergency release function, the cartridge must be sent to MAPAL to be exchanged. Further information on exchange service, direct mounting in the spindle and KS clamping cartridges as well as a selection guide for the MQL clamping cartridges can be found in the chapter "Technical appendix".

# KS MQL clamping cartridge accessories



## Adapter tubes with spigot connection

HSK-C	Dimensions							Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub> *	G	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	
40	3,5	4,5	5,8	M10x1	48,05	10	7	10079503
50	4	5,5	7,8	M12x1	55,05	12	7	10079504
63	4	7	7,8	M12x1	64,05	14	7	10077739
80	8	10	11,3	M16x1	74,55	14	8	10080904
100	10	12	13,8	M18x1	94,25	14	10	10080905

\* For spindle side connection bore d<sub>3</sub> H9

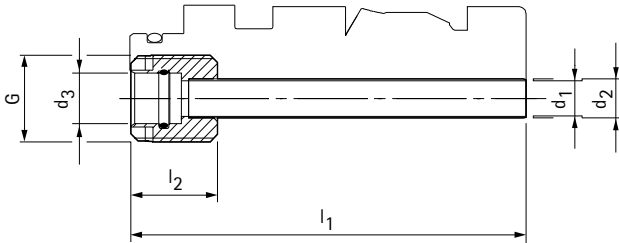
HSK inner contours in accordance with MN5000-40-02-M	Dimensions		
	d <sub>1</sub> H9	l <sub>1</sub> min.	l <sub>1</sub> max
40	6	49	43,5
50	8	54	48,5
63	8	62,5	57,5
80	11,5	72	65,5
100	14	94	87

Dimensions in mm.

Use: For blind end-free transfer and provision of the MQL medium.

Note: For suitable assembly spanners, see chapter "Accessories, spare parts and measuring equipment".

## KS MQL clamping cartridge accessories



### Adapter tubes with bore transition

HSK-C	Dimensions						Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub> *	G	l <sub>1</sub>	l <sub>2</sub>	
40	4	4,5	5	M10x1	48,05	10	10080906
50	5	5,5	7	M12x1	55,05	12	10080907
63	6	7	7	M12x1	64,05	14	10080908
80	8	10	10	M16x1	74,55	14	10080909
100	10	12	12	M18x1	94,25	14	10080910

\* For spindle supply tube with connection diameter d<sub>3</sub>

Dimensions in mm.

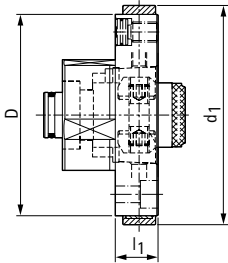
Use: For KS MQL clamping cartridges, if these are used without adapter tube.

Note: For suitable assembly spanners, see chapter "Accessories, spare parts and measuring equipment".

# KS adapter flanges

with radial and angular alignment

Module connection sizes for internal spindle contour MN5000-12



## With KS clamping cartridge

D	HSK-C	Dimensions		Specification	Order no.
		d <sub>1</sub>	l <sub>1</sub>		
55	32	61	13	KS-EF-MOD055-HSK-C032-013-21	30320028
63	40	70	15	KS-EF-MOD063-HSK-C040-015-21	30320029
80	50	87	17	KS-EF-MOD080-HSK-C050-017-21	30320030
100	63	108	21	KS-EF-MOD100-HSK-C063-021-21	30320031
117	80	125	21	KS-EF-MOD117-HSK-C080-021-21	30320032
140	100	150	28	KS-EF-MOD140-HSK-C100-028-21	30320033

## With KS clamping cartridge for high pressure

D	HSK-C	Dimensions		Specification	Order no.
		d <sub>1</sub>	l <sub>1</sub>		
55	32	61	13	KS-EF-MOD055-HSK-C032-013-29	30381932
63	40	70	15	KS-EF-MOD063-HSK-C040-015-29	30381935
80	50	87	17	KS-EF-MOD080-HSK-C050-017-29	30381937
100	63	108	21	KS-EF-MOD100-HSK-C063-021-29	30381940
117	80	125	21	KS-EF-MOD117-HSK-C080-021-29	30381942
140	100	150	28	KS-EF-MOD140-HSK-C100-028-29	30381945

Dimensions in mm.

Use: For installation in the machine spindle for clamping HSK tools.

Scope of delivery: With KS clamping cartridge, thrust pad and threaded pin, stop ring and cylinder head screws (for fastening the KS adapter flange).

Design: The radial run-out is adjustable to threaded pins (for alignment) in the machine spindle. Adjustable for axial run-out due to thrust pad and threaded pin in the adapter

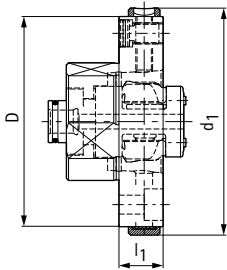
flange.

Note: You will find the matching KS clamping cartridges in the chapter "Clamping cartridges". For stop ring, see chapter "Accessories, spare parts and measuring equipment". For information on the fitting dimensions, see the chapter "Technical appendix".

# KS adapter flanges

with radial and angular alignment

Module connection sizes for internal spindle contour MN5000-12



## HSK-A, HSK-C with MQL clamping cartridge MQL1 with outer O-ring

D	HSK-C	Dimensions		Specification	Order no.
		d <sub>1</sub>	l <sub>1</sub>		
63	40	70	15	KS-EF-MOD063-HSK-C040-015-27	30381613
80	50	87	17	KS-EF-MOD080-HSK-C050-017-27	30381616
100	63	108	21	KS-EF-MOD100-HSK-C063-021-27	30381620
117	80	125	21	KS-EF-MOD117-HSK-C080-021-27	30381624
140	100	150	28	KS-EF-MOD140-HSK-C100-028-27	30381626

## Only for HSK-C: With MQL clamping cartridge MQL with inner O-ring

D	HSK-C	Dimensions		Specification	Order no.
		d <sub>1</sub>	l <sub>1</sub>		
63	40	70	15	KS-EF-MOD063-HSK-C040-015-28	30381612
80	50	87	17	KS-EF-MOD080-HSK-C050-017-28	30381614
100	63	108	21	KS-EF-MOD100-HSK-C063-021-28	30381618
117	80	125	21	KS-EF-MOD117-HSK-C080-021-28	30381623
140	100	150	28	KS-EF-MOD140-HSK-C100-028-28	30381625

Dimensions in mm.

Use: For installation in the machine spindle for clamping HSK tools.

Scope of delivery: With MQL clamping cartridge, thrust pad and threaded pin, stop ring and cylinder head screws (for fastening the KS adapter flange).

Design: The radial run-out is adjustable to threaded pins (for alignment) in the machine spindle. Adjustable for axial run-out due to thrust pad and threaded pin in the adapter

flange.

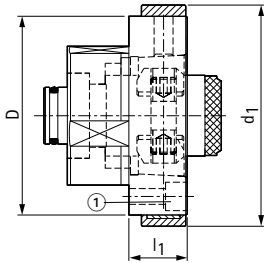
Note: You will find the matching MQL clamping cartridge in the chapter "Clamping cartridges". For stop ring, see chapter "Accessories, spare parts and measuring equipment".

You will find information on the fitting dimensions see the chapter "Technical appendix".

# KS adapter flanges

for short spindles with radial alignment

Module connection sizes for internal spindle contour MN5000-13



## With KS clamping cartridge

D	HSK-C	Dimensions		Specification	Order no.
		d <sub>1</sub>	l <sub>1</sub>		
40	32	45	12	KS-EF-MOD040-HSK-C032-012-11	30320034
50	40	55	15	KS-EF-MOD050-HSK-C040-015-11	30320035
63	50	70	18,5	KS-EF-MOD063-HSK-C050-018-11	30320036
80	63	87	24	KS-EF-MOD080-HSK-C063-024-11	30320037

## With KS clamping cartridge for high pressure

D	HSK-C	Dimensions		Specification	Order no.
		d <sub>1</sub>	l <sub>1</sub>		
40	32	45	12	KS-EF-MOD040-HSK-C032-012-19	30381802
50	40	55	15	KS-EF-MOD050-HSK-C040-015-19	30381806
63	50	70	18,5	KS-EF-MOD063-HSK-C050-018-19	30381809
80	63	87	24	KS-EF-MOD080-HSK-C063-024-19	30381813

Dimensions in mm.

Use: For fitting in short spindles (DIN 69002) for clamping HSK tools.

Scope of delivery: With standard KS clamping cartridge, stop ring and cylinder head screws (for fastening the KS adapter flange).

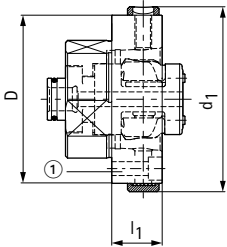
Design: The radial run-out is adjustable to threaded pins (for alignment) in the machine spindle.

Note: You will find the matching KS clamping cartridges in the chapter "Clamping cartridges". For stop ring, see chapter "Accessories, spare parts and measuring equipment". You will find information on the fitting dimensions see the chapter "Technical appendix". Balancing quality: G 6.3 with 3,000 rpm in delivery status.

# KS adapter flanges / spare parts

for short spindles with radial alignment

Module connection sizes for internal spindle contour MN5000-13



## HSK-A, HSK-C with MQL clamping cartridge MQL1 with outer O-ring

D	HSK-C	Dimensions		Specification	Order no.
		d <sub>1</sub>	l <sub>1</sub>		
50	40	55	15	KS-EF-MOD050-HSK-C040-015-17	30381570
63	50	70	18,5	KS-EF-MOD063-HSK-C050-018-17	30368528
80	63	87	24	KS-EF-MOD080-HSK-C063-024-17	30374580

## Only for HSK-C: With MQL clamping cartridge MQL with inner O-ring

D	HSK-C	Dimensions		Specification	Order no.
		d <sub>1</sub>	l <sub>1</sub>		
50	40	55	15	KS-EF-MOD050-HSK-C040-015-18	30322617
63	50	70	18,5	KS-EF-MOD063-HSK-C050-018-18	30377261
80	63	87	24	KS-EF-MOD080-HSK-C063-024-18	30359866

## Spare parts for KS adapter flanges with radial and angular alignment

D	Quantity required	Cylinder head screw in accordance with ISO 4762		Thrust pad		Threaded pin	
		Size	Order no.	Specification	Order no.	Specification	Order no.
55	6	M5x16 - 12.9	10003601	ø7.6x4	10075115	M6x8-KLF	10075101
63	6	M5x20 - 12.9	10003603	ø7.6x4	10075115	M6x8-KLF	10075101
80	6	M6x20 - 12.9	10003619	ø10.6x5	10040108	M8x1x11.5-KLR	10075074
100	6	M8x25 - 12.9	10003637	ø12.8x5	10075116	M10x1x14-KLR	10075100
117	6	M8x25 - 12.9	10003637	ø12.8x5	10075116	M10x1x14-KLR	10075100
140	6	M10x30 - 12.9	10003660	ø12.8x5	10075116	M10X1X20-45H-KLR	10075099

## Spare parts for KS adapter flanges for short spindles

D	Quantity required	Cylinder head screw in accordance with ISO 4762	
		Size	Order no.
40	6	M3x16 - 12.9	10003572
50	6	M4x20 - 12.9	10003588
63	6	M5x25 - 12.9	10003605
80	6	M6x30 - 12.9	10003621

Dimensions in mm.

Use: For fitting in short spindles (DIN 69002) for clamping HSK tools.

Scope of delivery: Standard MQL clamping cartridge, stop ring and cylinder head screws (for fastening the KS adapter flange).

Design: The radial run-out is adjustable to threaded pins (for alignment) in the machine spindle.

Note: For the matching MQL clamping cartridge, see the section on "Clamping cartridges".

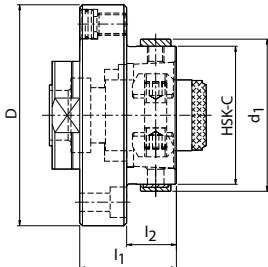
For stop ring, see chapter "Accessories, spare parts and measuring equipment". For information on the fitting dimensions, see the chapter "Technical appendix".

Balancing quality: G 6.3 with 3,000 rpm in delivery status.

# KS flange adapter

with radial and angular alignment

Module connection sizes in accordance with MN5000-14



## With KS clamping cartridge long design

Module diameter D	HSK-C	Dimensions			Specification	Order no.
		$d_1$	$l_1$	$l_2$		
60	32	37	26	13	KS-VL-MOD060-HSK-C032-026-21	30320016
70	40	45	30	15	KS-VL-MOD070-HSK-C040-030-21	30320017
80	50	55	35	18	KS-VL-MOD080-HSK-C050-035-21	30320018
80	50	55	100	83	KS-VL-MOD080-HSK-C050-100-21	30327001
80	50	55	150	133	KS-VL-MOD080-HSK-C050-150-21	30327002
80	50	55	200	183	KS-VL-MOD080-HSK-C050-200-21	30327004
100	63	70	43	22	KS-VL-MOD100-HSK-C063-043-21	30320019
100	63	70	100	79	KS-VL-MOD100-HSK-C063-100-21	30327005
100	63	70	150	129	KS-VL-MOD100-HSK-C063-150-21	30327007
100	63	70	200	179	KS-VL-MOD100-HSK-C063-200-21	30327008
117	80	87	50	29	KS-VL-MOD117-HSK-C080-050-21	30320020
117	80	87	100	79	KS-VL-MOD117-HSK-C080-100-21	30327009
117	80	87	150	129	KS-VL-MOD117-HSK-C080-150-21	30327010
117	80	87	200	179	KS-VL-MOD117-HSK-C080-200-21	30327012
140	100	110	70	42	KS-VL-MOD140-HSK-C100-070-21	30320021
140	100	110	100	72	KS-VL-MOD140-HSK-C100-100-21	30327013
140	100	110	150	122	KS-VL-MOD140-HSK-C100-150-21	30327014
140	100	110	200	172	KS-VL-MOD140-HSK-C100-200-21	30327015

Dimensions in mm.

Use: For fitting in the machine spindle or in HSK or steep taper (SK) adapter for clamping HSK tools.

Scope of delivery: With standard KS clamping cartridge, stop ring and cylinder head screws (for fastening the KS adapter flange).

Design: The radial run-out is adjustable thanks to threaded pins (for alignment) in the machine spindle and in the HSK (hollow shank taper) or SK (steep taper) adapter. Adjustable

for axial run-out due to thrust pad and threaded pin in the flange adapter.

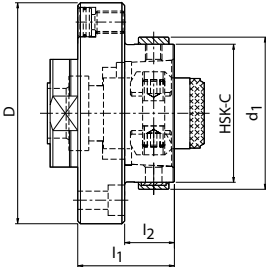
Note: You will find the matching KS clamping cartridges in the chapter "Clamping cartridges". For stop ring, see chapter "Accessories, spare parts and measuring equipment". You will find information on the fitting dimensions see the chapter "Technical appendix". Balancing quality: G 6.3 with 3,000 rpm in delivery status.



# KS flange adapter

with radial and angular alignment

Module connection sizes in accordance with MN5000-14



## With KS clamping cartridge for high pressure

Module diameter D	HSK-C	Dimensions			Specification	Order no.
		d <sub>1</sub>	l <sub>1</sub>	l <sub>2</sub>		
60	32	37	26	13	KS-VL-MOD060-HSK-C032-026-29	30381819
70	40	45	30	15	KS-VL-MOD070-HSK-C040-030-29	30381827
80	50	55	35	18	KS-VL-MOD080-HSK-C050-035-29	30381829
100	63	70	43	22	KS-VL-MOD100-HSK-C063-043-29	30381832
117	80	87	50	29	KS-VL-MOD117-HSK-C080-050-29	30381834
140	100	110	70	42	KS-VL-MOD140-HSK-C100-070-29	30381847

Dimensions in mm.

Use: For fitting in the machine spindle or in HSK or steep taper (SK) adapter for clamping HSK tools.

Scope of delivery: With standard KS clamping cartridge for high pressure, stop ring and cylinder head screws (for fastening the KS adapter flange).

Design: The radial run-out is adjustable thanks to threaded pins (for alignment) in the machine spindle and in the HSK (hollow shank taper) or SK (steep taper) adapter. Adjustable

for axial run-out due to thrust pad and threaded pin in the flange adapter.

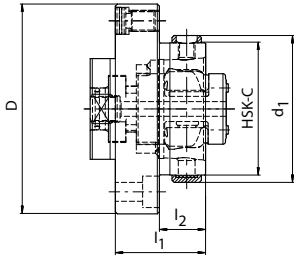
Note: You will find the matching KS clamping cartridges for high pressure, in the chapter "Clamping cartridges". For stop ring, see chapter "Accessories, spare parts and measuring equipment". You will find information on the fitting dimensions see the chapter "Technical appendix".

Balancing quality: G 6.3 with 3,000 rpm in delivery status.

# KS flange adapter

with radial and angular alignment

Module connection size in accordance with MN5000-14



## HSK-A, HSK-C with MQL clamping cartridge MQL1 with outer O-ring

Module diameter D	HSK-A/C	Dimensions			Specification	Order no.
		$d_1$	$l_1$	$l_2$		
70	40	45	30	15	KS-VL-MOD070-HSK-C040-030-27	30381576
80	50	55	35	18	KS-VL-MOD080-HSK-C050-035-27	30381578
100	63	70	43	22	KS-VL-MOD100-HSK-C063-043-27	30308614
117	80	87	50	29	KS-VL-MOD117-HSK-C080-050-27	30381594
140	100	110	70	42	KS-VL-MOD140-HSK-C100-070-27	30381602

## Only for HSK-C: With MQL clamping cartridge MQL with inner O-ring

Module diameter D	HSK-C	Dimensions			Specification	Order no.
		$d_1$	$l_1$	$l_2$		
70	40	45	30	15	KS-VL-MOD070-HSK-C040-030-28	30350872
80	50	55	35	18	KS-VL-MOD080-HSK-C050-035-28	30381577
100	63	70	43	22	KS-VL-MOD100-HSK-C063-043-28	30381581
117	80	87	50	29	KS-VL-MOD117-HSK-C080-050-28	30381589
140	100	110	70	42	KS-VL-MOD140-HSK-C100-070-28	30381600

Dimensions in mm.

Use: For fitting in the machine spindle or in HSK or steep taper (SK) adapter for clamping HSK tools.

Scope of delivery: With standard MQL clamping cartridge, stop ring and cylinder head screws (for fastening the KS adapter flange).

Design: The radial run-out is adjustable thanks to threaded pins (for alignment) in the machine spindle and in the HSK (hollow shank taper) or SK (steep taper) adapter. Adjustable

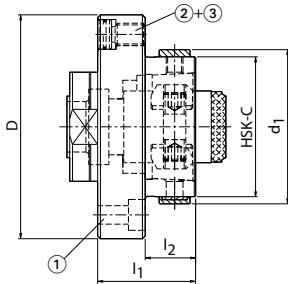
for axial run-out due to thrust pad and threaded pin in the flange adapter.

Note: You will find the matching MQL clamping cartridge in the chapter "Clamping cartridges". For stop ring, see chapter "Accessories, spare parts and measuring equipment".

You will find information on the fitting dimensions see the chapter "Technical appendix".

Balancing quality: G 6.3 with 3,000 rpm in delivery status.

## Spare parts for KS flange adapters



### Spare parts for KS flange adapter with radial alignment in accordance with MN 5000-14

Module diameter D	Quantity required	① Cylinder head screw in accordance with ISO 4762		② Thrust pad		③ Threaded pin	
		Size	Order no.	Specification	Order no.	Specification	Order no.
60	4	M5x16 - 12.9	10003601	ø10.6x5	10040108	M8x1x8-KLR	10040109
70	4	M6x20 - 12.9	10003619	ø10.6x5	10040108	M8x1x8-KLR	10040109
80	4	M6x20 - 12.9	10003619	ø10.6x5	10040108	M8x1x11.5-KLR	10075074
100	4	M8x25 - 12.9	10003637	ø12.8x5	10075116	M10x1x14-KLR	10075100
117	4	M8x25 - 12.9	10003637	ø12.8x5	10075116	M10x1x14-KLR	10075100
140	4	M10x30 - 12.9	10003660	ø12.8x5	10075116	M10x1x20-45H-KLR	10075099

# EXTENSIONS, REDUCERS, ADAPTERS AND BLANKS







# EXTENSIONS, REDUCERS, ADAPTER AND BLANKS

## Introduction

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## Extensions

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# PRODUCT OVERVIEW

## Extensions, reducers, adapter and blanks

To enable further projection lengths, MAPAL offers hollow shank taper (HSK) extensions, hydraulic extensions and tool extension for thermal expanding chucks in various designs and diameters. In this way, standard tools can be flexibly extended.

MAPAL offers a wide range of reducers and adapters for the HSK | SK | BT | CAT connections to change to different connections or connection sizes. The portfolio also includes blanks made of the workpiece material 42CrMoS4, the front part of which is unpolished and unhardened – perfectly suited for further processing.



### Extensions



#### Hydraulic extensions

- For clamping tools with smooth cylindrical shanks directly and without a reducing sleeve in the clamping diameter
- With axial tool length adjustment  
d1 = 20 | 32

from page 156



#### Tool extensions for thermal expanding chucks

- With axial tool length adjustment from clamping diameter  $d_1 = 6$  mm
- d1 = 12 | 16 | 20 | 25 | 32

from page 157



#### HSK extensions

- For extending HSK tools
- HSK-A50 | 63 | 80 | 100
  - HSK-C32 | 40 | 50 | 63 | 80 | 100

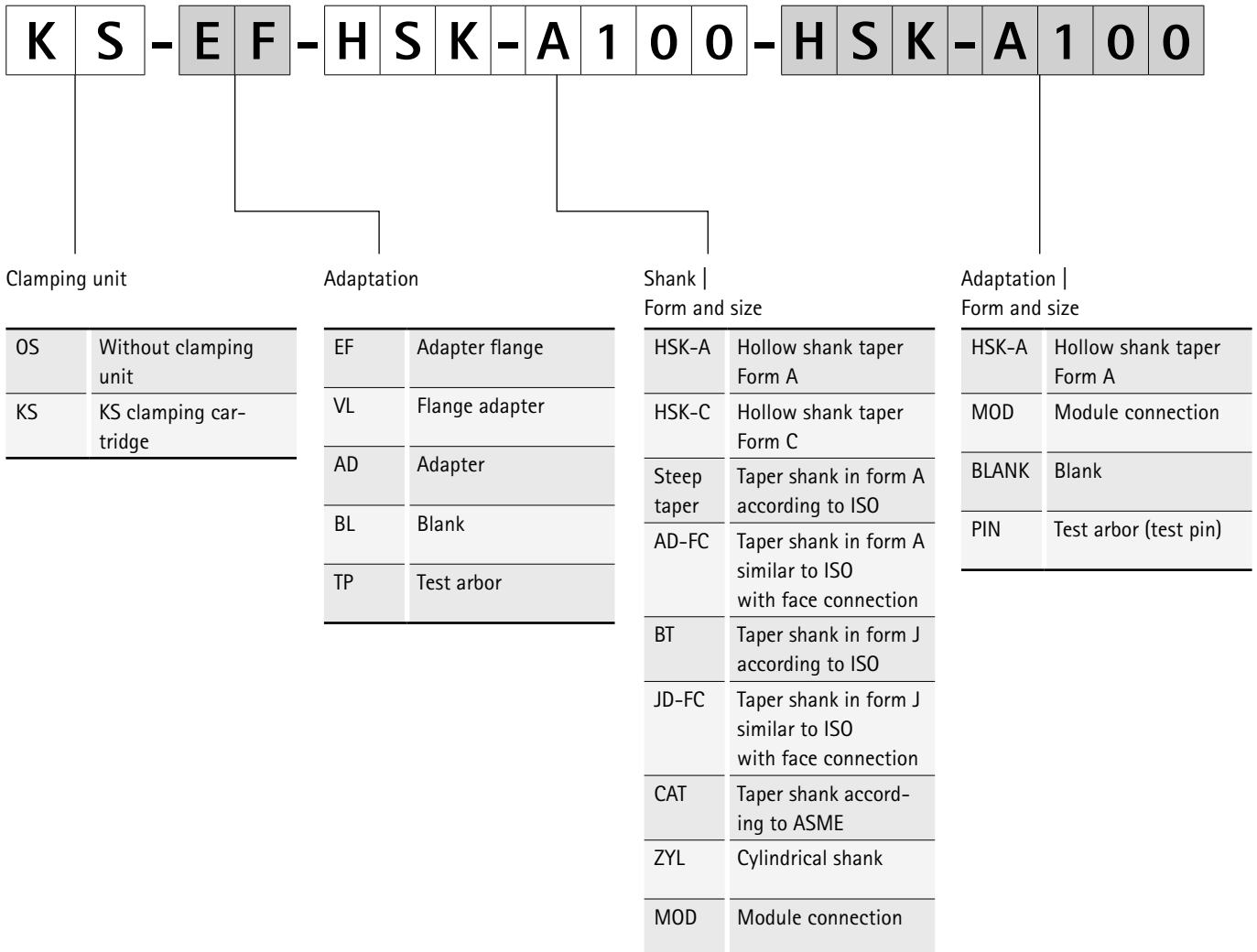
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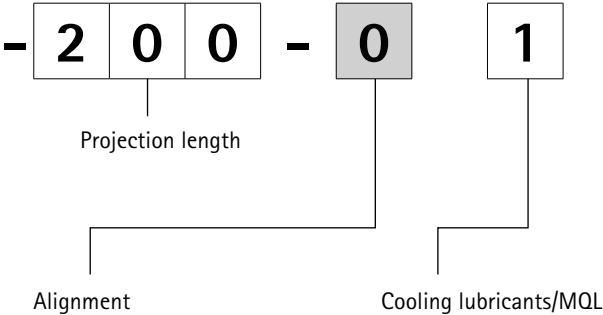




Reducers	Adapter	Blanks
		
<p><b>HSK reducers</b></p> <p>For reducing to another connection size</p> <ul style="list-style-type: none"> <li>- HSK-A50   63   80   100</li> <li>- HSK-C40   50   63   80   100</li> </ul>	<p><b>KS steep taper adapter</b> SK 30   40   50</p> <p><b>HSK adapter</b> - HSK-A40   50   63   80   100</p> <p><b>Steep taper adapters</b></p> <ul style="list-style-type: none"> <li>- For use in the machine spindle</li> <li>- For connecting chucks or tools with module connection</li> <li>- SK30   40   50 – BT30   40   50 – CAT30   40   50 with face connection</li> <li>- SK30   40   50 – BT30   40   50</li> </ul>	<p><b>Blanks</b></p> <p>Design 1: Rough turned and milled.</p> <p>Design 2: Taper including collar hardened and finish ground.</p> <ul style="list-style-type: none"> <li>- HSK-A32   40   50   63   80   100</li> <li>- HSK-C32   40   50   63   80   100</li> </ul>
<p>from page 160</p>	<p>from page 162</p>	<p>from page 172</p>

## Product ID code for adapter specification





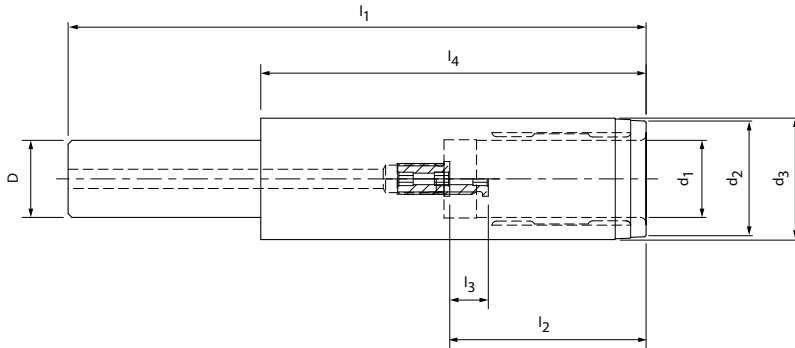
0	Without alignment
2	Radial and angular alignment

0	Without
1	Internal
2	Laterally (steep taper)
3	Internally and laterally combined
7	with MQL clamping cartridge MQL 1
8	with MQL clamping cartridge MQL
9	With high pressure, HD clamping cartridge

# Hydraulic extension

with axial tool length adjustment

Cylindrical shank according to DIN 1835-A



Cylindrical shank shaft diameter D	Dimensions							G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>			
20	12,0	22,0	25,0	150,0	46,0	10,0	100,0	M10x1	20x12x150	30479014
20	20,0	30,0	31,5	150,0	51,0	10,0	100,0	M16x1	20x20x150	30479015
32	20,0	30,0	31,5	150,0	51,0	10,0	90,0	M16x1	32x20x150	30479016
32	20,0	30,0	31,5	200,0	51,0	10,0	90,0	M16x1	32x20x200	30479018

Dimensions in mm.

Use: For clamping tools with smooth cylindrical shanks according to DIN 1835 form A and DIN 6535 form HA as well as with recesses according to DIN 1835 form B, E and DIN 6535 form HB, HE directly and without reducing sleeve in the clamping diameter.

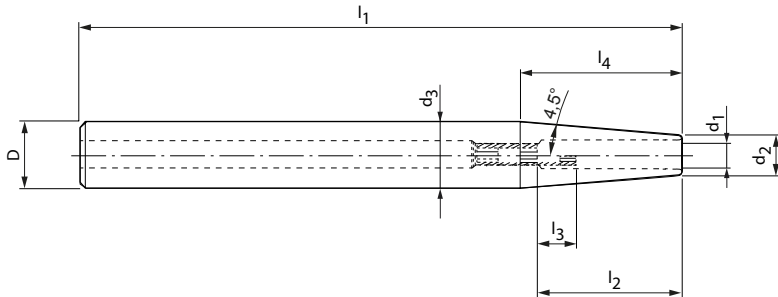
The clamping diameter is designed for a shank tolerance of h6. For increasing the torque transmission, suitable for all MAPAL hydraulic chucks.

Scope of delivery: With length adjustment screw.

Balancing quality: G 2.5 with 25,000 rpm in delivery status.

# Tool extension for thermal expanding chucks

with axial tool length adjustment from clamping diameter  $d_1 = 6 \text{ mm}$   
Cylindrical shank according to DIN 1835-A



Cylindrical shank shaft diameter D	Dimensions							G	Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>			
12	3,0	8,0	11,6	150,0	12,0	-	22,9	-	12X3X150	30251111
12	4,0	8,0	11,6	150,0	16,0	-	22,9	-	12X4X150	30251112
12	5,0	10,0	11,6	150,0	20,0	-	10,2	-	12X5X150	30251113
12	6,0	10,0	11,6	150,0	36,0	10,0	10,2	M5	12X6X150	30251114
16	3,0	10,0	15,6	150,0	12,0	-	35,6	-	16X3X150	30251115
16	4,0	10,0	15,6	150,0	16,0	-	35,6	-	16X4X150	30251116
16	5,0	10,0	15,6	150,0	20,0	-	35,6	-	16X5X150	30251117
16	6,0	10,0	15,6	150,0	36,0	10,0	35,6	M5	16X6X150	30251118
16	8,0	12,0	15,6	150,0	36,0	10,0	22,9	M6	16X8X150	30251119
20	3,0	10,0	19,6	150,0	12,0	-	61,0	-	20X3X150	30251120
20	4,0	10,0	19,6	150,0	16,0	-	61,0	-	20X4X150	30251121
20	5,0	10,0	19,6	150,0	20,0	-	61,0	-	20X5X150	30251122
20	6,0	10,0	19,6	150,0	36,0	10,0	61,0	M5	20X6X150	30251123
20	8,0	12,0	19,6	150,0	36,0	10,0	48,3	M6	20X8X150	30251124
20	10,0	14,0	19,6	150,0	41,0	10,0	35,6	M8x1	20X10X150	30251125
20	12,0	16,0	19,6	150,0	47,0	10,0	22,9	M10x1	20X12X150	30251126
25	6,0	20,0	24,6	150,0	36,0	10,0	29,2	M5	25X6X150	30251130
25	8,0	20,0	24,6	150,0	36,0	10,0	29,2	M6	25X8X150	30251131
25	10,0	20,0	24,6	150,0	41,0	10,0	29,2	M8x1	25X10X150	30251132
25	12,0	20,0	24,6	150,0	47,0	10,0	29,2	M10x1	25X12X150	30251133
25	14,0	20,0	24,6	150,0	47,0	10,0	29,2	M10x1	25X14X150	30251134
25	16,0	22,0	24,6	150,0	50,0	10,0	16,5	M10x1	25X16X150	30251135
32	6,0	20,0	29,0	150,0	36,0	10,0	56,7	M5	32X6X150	30251136
32	8,0	20,0	29,0	150,0	36,0	10,0	56,7	M6	32X8X150	30251137
32	10,0	24,0	31,6	150,0	41,0	10,0	48,3	M8x1	32X10X150	30251138
32	12,0	24,0	31,6	150,0	47,0	10,0	48,3	M10x1	32X12X150	30251139
32	14,0	27,0	31,6	150,0	47,0	10,0	29,2	M10x1	32X14X150	30251140
32	16,0	27,0	31,6	150,0	50,0	10,0	29,2	M10x1	32X16X150	30251141
32	18,0	27,0	31,6	150,0	50,0	10,0	29,2	M10x1	32X18X150	30251142
32	20,0	27,0	31,6	150,0	52,0	10,0	29,2	M10x1	32X20X150	30251143

Dimensions in mm.

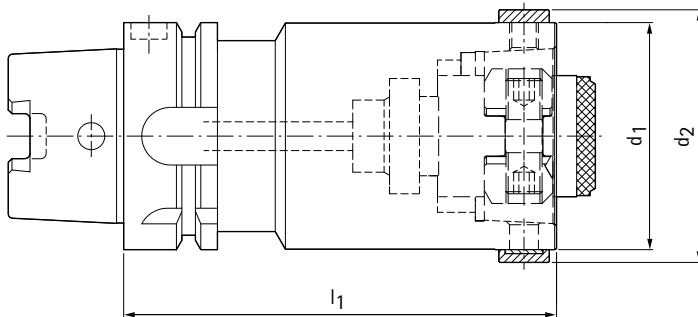
Extensions may only be shortened on the shank.

The minimum clamping depth required is  $2-3 \times D$ .

The clamping diameter is designed for a shank tolerance of h6. We assume no liability for changes to tool adapters and the consequences of this.

## HSK extensions

HSK-A (hollow shank taper form A) shank according to DIN 69893-1



HSK-A	Dimensions			Specification	Order no.
	$d_1$	$d_2$	$l_1$		
50	50	55	80	KS-AD-HSK-A050-HSK-C050-080-01	30319365
50	50	55	100	KS-AD-HSK-A050-HSK-C050-100-01	30319366
63	63	70	80	KS-AD-HSK-A063-HSK-C063-080-01	30319367
63	63	70	120	KS-AD-HSK-A063-HSK-C063-120-01	30319368
80	80	87	100	KS-AD-HSK-A080-HSK-C080-100-01	30319369
80	80	87	160	KS-AD-HSK-A080-HSK-C080-160-01	30319370
100	100	110	140	KS-AD-HSK-A100-HSK-C100-140-01	30319371
100	100	110	200	KS-AD-HSK-A100-HSK-C100-200-01	30319372

Dimensions in mm.

Use: For use in the machine spindle for connecting to hollow shank taper tools.

Scope of delivery: With standard KS clamping cartridge and stop ring.

Without coolant tube.

Design: Permissible run-out variation of the hollow taper shank to the hollow shank taper

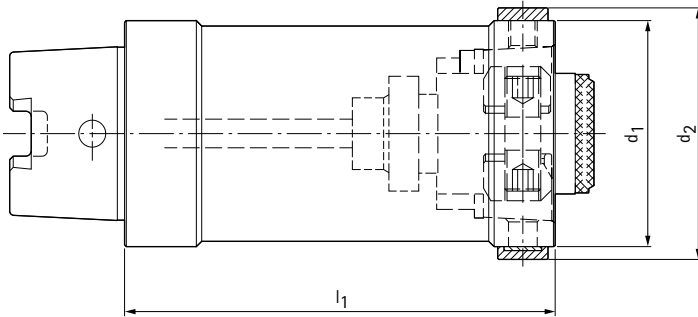
inner taper = 3  $\mu$ m.

Note: For clamping cartridges, see chapter "Manual HSK clamping technology". For stop rings and coolant tubes, see chapter "Accessories, spare parts and measuring equipment".

Balancing quality: G 6.3 with 3,000 rpm in delivery status.

# HSK extensions

HSK-C shank in accordance with DIN 69893-1



HSK-C	Dimensions			Specification	Order no.
	d <sub>1</sub>	d <sub>2</sub>	l <sub>1</sub>		
32	32	37	50	KS-AD-HSK-C032-HSK-C032-050-01	30319647
32	32	37	70	KS-AD-HSK-C032-HSK-C032-070-01	30319648
40	40	45	60	KS-AD-HSK-C040-HSK-C040-060-01	30319649
40	40	45	80	KS-AD-HSK-C040-HSK-C040-080-01	30319650
50	50	55	60	KS-AD-HSK-C050-HSK-C050-060-01	30319651
50	50	55	100	KS-AD-HSK-C050-HSK-C050-100-01	30319652
63	63	70	80	KS-AD-HSK-C063-HSK-C063-080-01	30319653
63	63	70	120	KS-AD-HSK-C063-HSK-C063-120-01	30319654
80	80	87	80	KS-AD-HSK-C080-HSK-C080-080-01	30319655
80	80	87	120	KS-AD-HSK-C080-HSK-C080-120-01	30319656
100	100	110	100	KS-AD-HSK-C100-HSK-C100-100-01	30319657
100	100	110	160	KS-AD-HSK-C100-HSK-C100-160-01	30319658

Dimensions in mm.

Use: For use in the machine spindle for connecting to hollow shank taper tools.

Scope of delivery: With standard KS clamping cartridge and stop ring.

Without coolant tube.

Design: Permissible run-out variation of the hollow taper shank to the hollow shank taper

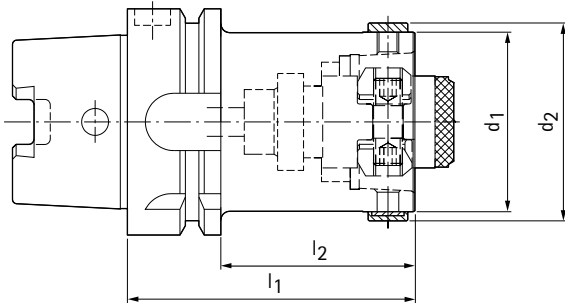
inner taper = 3 µm.

Note: For clamping cartridges, see chapter "Manual HSK clamping technology". For stop rings and coolant tubes, see chapter "Accessories, spare parts and measuring equipment".

Balancing quality: G 6.3 with 3,000 rpm in delivery status.

## HSK reducers

HSK-A (hollow shank taper form A) shank according to DIN 69893-1



HSK-A	Dimensions				Specification	Order no.
	$d_1$	$d_2$	$l_1$	$l_2$		
50	32	37	60	34	KS-AD-HSK-A050-HSK-C032-060-01	30319373
50	40	45	70	44	KS-AD-HSK-A050-HSK-C040-070-01	30319374
63	32	37	70	44	KS-AD-HSK-A063-HSK-C032-070-01	30319375
63	40	45	80	54	KS-AD-HSK-A063-HSK-C040-080-01	30319376
63	50	55	80	54	KS-AD-HSK-A063-HSK-C050-080-01	30319377
80	40	45	80	54	KS-AD-HSK-A080-HSK-C040-080-01	30319378
80	50	55	80	54	KS-AD-HSK-A080-HSK-C050-080-01	30319379
80	63	70	90	64	KS-AD-HSK-A080-HSK-C063-090-01	30319380
100	50	55	80	51	KS-AD-HSK-A100-HSK-C050-080-01	30319381
100	63	70	100	71	KS-AD-HSK-A100-HSK-C063-100-01	30319382
100	80	87	100	71	KS-AD-HSK-A100-HSK-C080-100-01	30319383

Dimensions in mm.

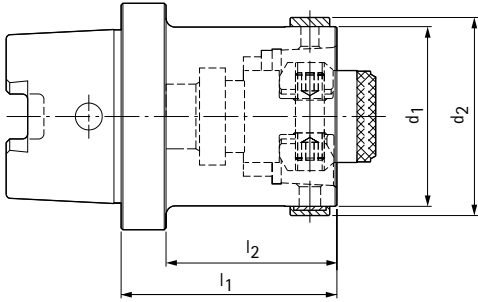
Use: For use in the machine spindle for connecting to hollow shank taper tools.  
 Scope of delivery: With standard KS clamping cartridge and stop ring.  
 Without coolant tube.

Design: Permissible run-out variation of the hollow taper shank to the inner taper = 5  $\mu$ m.  
 Note: For clamping cartridges, see chapter "Manual HSK clamping technology". For stop rings and coolant tubes, see chapter "Accessories, spare parts and measuring equipment".  
 Balancing quality: G 6.3 with 3,000 rpm in delivery status.



# HSK reducers

HSK-C shank in accordance with DIN 69893-1



HSK-C	Dimensions				Specification	Order no.
	$d_1$	$d_2$	$l_1$	$l_2$		
40	32	37	50	40	KS-AD-HSK-C040-HSK-C032-050-01	30319659
50	32	37	50	37,5	KS-AD-HSK-C050-HSK-C032-050-01	30319660
50	40	45	60	47,5	KS-AD-HSK-C050-HSK-C040-060-01	30319661
63	32	37	50	30	KS-AD-HSK-C063-HSK-C032-050-01	30319662
63	40	45	60	47,5	KS-AD-HSK-C063-HSK-C040-060-01	30319663
63	50	55	60	47,5	KS-AD-HSK-C063-HSK-C050-060-01	30319664
80	40	45	60	44	KS-AD-HSK-C080-HSK-C040-060-01	30319665
80	50	55	80	64	KS-AD-HSK-C080-HSK-C050-080-01	30319666
80	63	70	80	64	KS-AD-HSK-C080-HSK-C063-080-01	30319667
100	50	55	80	64	KS-AD-HSK-C100-HSK-C050-080-01	30319668
100	63	70	80	64	KS-AD-HSK-C100-HSK-C063-080-01	30319669
100	80	87	100	84	KS-AD-HSK-C100-HSK-C080-100-01	30319670

Dimensions in mm.

Use: For use in the machine spindle for connecting to hollow shank taper tools.

Scope of delivery: With standard KS clamping cartridge and stop ring.

Without coolant tube.

Design: The permissible run-out variation on the hollow taper shank in relation to the

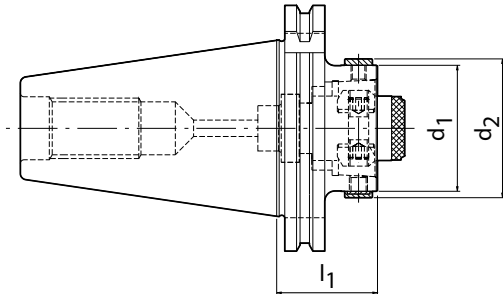
internal taper is 5  $\mu\text{m}$  for extensions and reducers.

Note: For clamping cartridges, see chapter "Manual HSK clamping technology". For stop rings and coolant tubes, see chapter "Accessories, spare parts and measuring equipment".

Balancing quality: G 6.3 with 3,000 rpm in delivery status.

# KS steep taper adapter

Shank SK according to ISO 7388-1 Form AD



Steep taper	Dimensions			Specification	Order no.
	$d_1$	$d_2$	$l_1$		
30	32	37	40	KS-AD-SK030-HSK-C032-040-01	30319737
30	40	45	60	KS-AD-SK030-HSK-C040-060-01	30319738
40	32	37	40	KS-AD-SK040-HSK-C032-040-01	30319739
40	40	45	40	KS-AD-SK040-HSK-C040-040-01	30319740
40	50	55	60	KS-AD-SK040-HSK-C050-060-01	30319741
40	63	70	75	KS-AD-SK040-HSK-C063-075-01	30319742
50	32	37	40	KS-AD-SK050-HSK-C032-040-01	30319748
50	40	45	40	KS-AD-SK050-HSK-C040-040-01	30319749
50	50	55	40	KS-AD-SK050-HSK-C050-040-01	30319750
50	63	70	40	KS-AD-SK050-HSK-C063-040-01	30319751
50	80	87	80	KS-AD-SK050-HSK-C080-080-01	30319752
50	100	110	95	KS-AD-SK050-HSK-C100-095-01	30319753

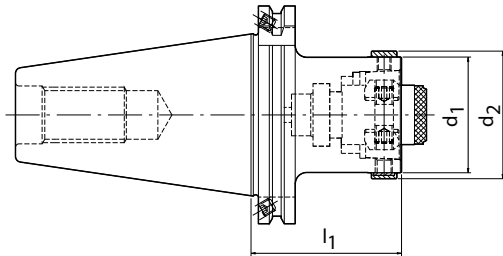
Dimensions in mm.

Use: For use in the machine spindle for connecting to hollow shank taper tools.  
 Scope of delivery: With standard KS clamping cartridge and stop ring. Without pull stud.  
 Design: Permissible run-out variation on the taper shank in relation to the hollow shank taper inner taper = 3  $\mu\text{m}$ .

Note: For clamping cartridges, see chapter "Manual HSK clamping technology". For stop rings and pull stud, see chapter "Accessories, spare parts and measuring equipment".  
 Balancing quality: G 6.3 with 3,000 rpm in delivery status.

# KS steep taper adapter

SK shank in accordance with ISO 7388-1 Form AF



Steep taper	Dimensions			Specification	Order no.
	$d_1$	$d_2$	$l_1$		
30	32	37	55	KS-AD-SK030-HSK-C032-055-02	30319754
30	40	45	60	KS-AD-SK030-HSK-C040-060-02	30319755
40	32	37	55	KS-AD-SK040-HSK-C032-055-02	30319756
40	40	45	60	KS-AD-SK040-HSK-C040-060-02	30319757
40	50	55	65	KS-AD-SK040-HSK-C050-065-02	30319758
40	63	70	75	KS-AD-SK040-HSK-C063-075-02	30319759
50	32	37	55	KS-AD-SK050-HSK-C032-055-02	30319765
50	40	45	60	KS-AD-SK050-HSK-C040-060-02	30319766
50	50	55	65	KS-AD-SK050-HSK-C050-065-02	30319767
50	63	70	75	KS-AD-SK050-HSK-C063-075-02	30319768
50	80	87	85	KS-AD-SK050-HSK-C080-085-02	30319769
50	100	110	100	KS-AD-SK050-HSK-C100-100-02	30319770

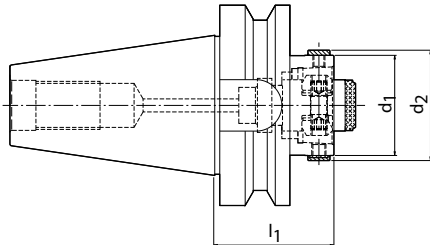
Dimensions in mm.

Use: For use in the machine spindle for connecting to hollow shank taper tools.  
 Scope of delivery: With standard KS clamping cartridge and stop ring. Without pull stud.  
 Design: Permissible run-out variation on the taper shank in relation to the hollow shank taper inner taper = 3  $\mu\text{m}$ .

Note: For clamping cartridges, see chapter "Manual HSK clamping technology". For stop rings and pull stud, see chapter "Accessories, spare parts and measuring equipment".  
 Balancing quality: G 6.3 with 3,000 rpm in delivery status.

# KS steep taper adapter

Shank BT according to ISO 7388-2 Form JD (JIS B 6339)



BT	Dimensions			Specification	Order no.
	$d_1$	$d_2$	$l_1$		
30	32	37	40	KS-AD-BT030-HSK-C032-040-01	30320067
30	40	45	40	KS-AD-BT030-HSK-C040-040-01	30320068
40	32	37	40	KS-AD-BT040-HSK-C032-040-01	30320069
40	40	45	40	KS-AD-BT040-HSK-C040-040-01	30320070
40	50	55	50	KS-AD-BT040-HSK-C050-050-01	30320071
40	63	70	70	KS-AD-BT040-HSK-C063-070-01	30320072
50	32	37	50	KS-AD-BT050-HSK-C032-050-01	30320078
50	40	45	50	KS-AD-BT050-HSK-C040-050-01	30320079
50	50	55	60	KS-AD-BT050-HSK-C050-060-01	30320080
50	63	70	60	KS-AD-BT050-HSK-C063-060-01	30320081
50	80	87	60	KS-AD-BT050-HSK-C080-060-01	30320082
50	100	110	90	KS-AD-BT050-HSK-C100-090-01	30320083

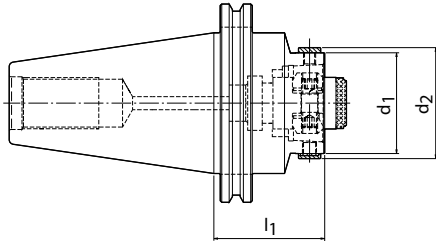
Dimensions in mm.

Use: For use in the machine spindle for connecting to hollow shank taper tools.  
 Scope of delivery: With standard KS clamping cartridge and stop ring. Without pull stud.  
 Design: Permissible run-out variation on the taper shank in relation to the hollow shank taper inner taper = 3  $\mu\text{m}$ .

Note: For clamping cartridges, see chapter "Manual HSK clamping technology". For stop rings and pull stud, see chapter "Accessories, spare parts and measuring equipment".  
 Balancing quality: G 6.3 at 3,000 rpm in delivery status.

# KS steep taper adapter

"CAT" shank in accordance with ASME B5.50-1994



CAT	Dimensions			Specification	Order no.
	$d_1$	$d_2$	$l_1$		
30	32	37	45	KS-AD-CAT030-HSK-C032-045-01	30320107
30	40	45	60	KS-AD-CAT030-HSK-C040-060-01	30320108
40	32	37	50	KS-AD-CAT040-HSK-C032-050-01	30320109
40	40	45	50	KS-AD-CAT040-HSK-C040-050-01	30320110
40	50	55	60	KS-AD-CAT040-HSK-C050-060-01	30320111
40	63	70	75	KS-AD-CAT040-HSK-C063-075-01	30320112
50	32	37	50	KS-AD-CAT050-HSK-C032-050-01	30320118
50	40	45	50	KS-AD-CAT050-HSK-C040-050-01	30320119
50	50	55	55	KS-AD-CAT050-HSK-C050-055-01	30320120
50	63	70	55	KS-AD-CAT050-HSK-C063-055-01	30320121
50	80	87	80	KS-AD-CAT050-HSK-C080-080-01	30320122
50	100	110	95	KS-AD-CAT050-HSK-C100-095-01	30320123

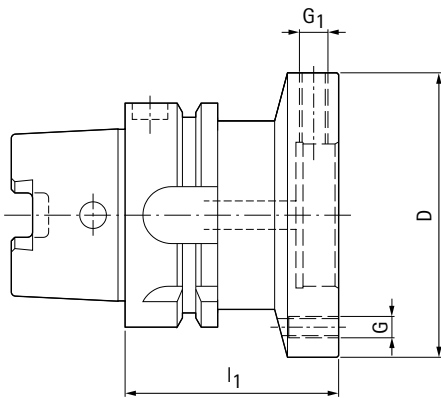
Dimensions in mm.

Use: For use in the machine spindle for connecting to hollow shank taper tools.  
 Scope of delivery: With standard KS clamping cartridge and stop ring. Without pull stud.  
 Design: Permissible run-out variation on the taper shank in relation to the hollow shank taper inner taper = 3  $\mu\text{m}$ .

Note: For clamping cartridges, see chapter "Manual HSK clamping technology". For stop rings and pull stud, see chapter "Accessories, spare parts and measuring equipment".  
 Balancing quality: G 6.3 with 3,000 rpm in delivery status.

# HSK adapter

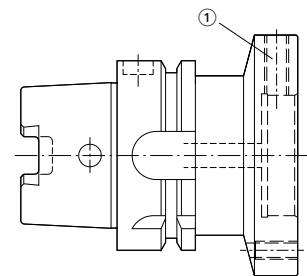
HSK-A (hollow shank taper form A) shank according to DIN 69893-1



HSK-A	Module diameter D	Dimensions			Specification	Order no.
		l <sub>1</sub>	G	G <sub>1</sub>		
40	60	60	M5	M8x1	OS-AD-HSK-A050-MOD060-060-11	30344525
50	60	60	M5	M8x1	OS-AD-HSK-A050-MOD060-060-11	30319384
50	70	60	M6	M8x1	OS-AD-HSK-A050-MOD070-060-11	30319385
50	80	60	M6	M8x1	OS-AD-HSK-A050-MOD080-060-11	30319386
63	60	60	M5	M8x1	OS-AD-HSK-A063-MOD060-060-11	30319387
63	70	60	M6	M8x1	OS-AD-HSK-A063-MOD070-060-11	30319388
63	80	60	M6	M8x1	OS-AD-HSK-A063-MOD080-060-11	30319389
63	100	65	M8	M10x1	OS-AD-HSK-A063-MOD100-065-11	30319390
63	117	65	M8	M10x1	OS-AD-HSK-A063-MOD117-065-11	30319391
80	60	50	M5	M8x1	OS-AD-HSK-A080-MOD060-050-11	30319392
80	70	60	M6	M8x1	OS-AD-HSK-A080-MOD070-060-11	30319393
80	80	60	M6	M8x1	OS-AD-HSK-A080-MOD080-060-11	30319394
80	100	65	M8	M10x1	OS-AD-HSK-A080-MOD100-065-11	30319395
80	117	65	M8	M10x1	OS-AD-HSK-A080-MOD117-065-11	30319396
80	140	75	M10	M10x1	OS-AD-HSK-A080-MOD140-075-11	30319397
100	60	55	M5	M8x1	OS-AD-HSK-A100-MOD060-055-11	30319398
100	70	55	M6	M8x1	OS-AD-HSK-A100-MOD070-055-11	30319399
100	80	55	M6	M8x1	OS-AD-HSK-A100-MOD080-055-11	30319400
100	100	65	M8	M10x1	OS-AD-HSK-A100-MOD100-065-11	30319401
100	117	65	M8	M10x1	OS-AD-HSK-A100-MOD117-065-11	30319402
100	140	75	M10	M10x1	OS-AD-HSK-A100-MOD140-075-11	30319403

## Spare parts

For module diameter D	Quantity re-quired	① Threaded pin		
		Size		Order no.
60 - 80	4	M8x1x16		10075355
100 - 140	4	M10x1x20	K2865-34	10075099



Dimensions in mm

Use: For use in the machine spindle for mounting KS flange adapters, shrink chucks, hydraulic chucks, chucks for cylindrical shanks or tools with a module shank in accordance with MAPAL factory standard.

Design: The radial run-out of a fitted connection or a tool can be adjusted in relation to the hollow taper shank due over threaded pins.

Scope of delivery: With threaded pins for aligning the radial run-out, does not include coolant tube.

Note: For KS flange adapter, HydroChucks and ThermoChucks, see chapter "Hydraulic chuck, shrink chuck and manual HSK clamping technology".

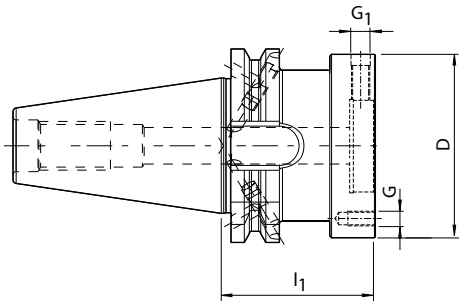
Coolant tube and code carrier, see chapter "Accessories, spare parts and measuring equipment".

You will find information on the coding system in the chapter "Technical appendix".

Balancing quality: G 2.5 with 16,000 rpm in delivery status.

# Steep taper adapters

Shank SK according to ISO 7388-1 Form AD/AF

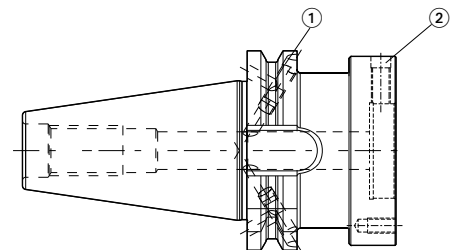


Steep taper	Module diameter D	l <sub>1</sub>	G	G <sub>1</sub>	Shape	Specification	Order no.
30*	60	50	M5	M8x1	AD	OS-AD-SK030-MOD060-050-11	30319771
30*	60	50	M5	M8x1	AF	OS-AD-SK030-MOD060-050-12	30319772
30*	70	50	M6	M8x1	AD	OS-AD-SK030-MOD070-050-11	30319773
30*	70	50	M6	M8x1	AF	OS-AD-SK030-MOD070-050-12	30319774
40	60	50	M5	M8x1	AD/AF	OS-AD-SK040-MOD060-050-13	10058658
40	70	50	M6	M8x1	AD/AF	OS-AD-SK040-MOD070-050-13	10058660
40	80	55	M6	M8x1	AD/AF	OS-AD-SK040-MOD080-055-13	10058661
40	100	60	M8	M10x1	AD/AF	OS-AD-SK040-MOD100-060-13	10058662
50	60	50	M5	M8x1	AD/AF	OS-AD-SK050-MOD060-050-13	10058669
50	70	50	M6	M8x1	AD/AF	OS-AD-SK050-MOD070-050-13	10058670
50	80	50	M6	M8x1	AD/AF	OS-AD-SK050-MOD080-050-13	10058671
50	100	60	M8	M10x1	AD/AF	OS-AD-SK050-MOD100-060-13	10058672
50	117	60	M8	M10x1	AD/AF	OS-AD-SK050-MOD117-060-13	10058673
50	140	60	M10	M10x1	AD/AF	OS-AD-SK050-MOD140-060-13	10058675

\* Taper shank size SK30 is not available in combined design AD/AF.

## Spare parts

For module diameter D	Quantity required	Size	② Threaded pin Order no.
60 - 80	4	M8 x1x16	10075355
100 - 140	4	M10x1x20	10075099



Dimensions in mm.

Use: For use in the machine spindle for mounting KS flange adapters, shrink chucks, hydraulic chucks, chucks for cylindrical shanks or tools with a module shank in accordance with MAPAL factory standard.

Design: The radial run-out of a fitted connection or a tool can be adjusted in relation to the taper shank over threaded pins.

Basic setting Form AD, if Form AF is required, please specify this when placing your order.

Scope of delivery: With threaded pins for aligning the radial run-out, without pull stud.

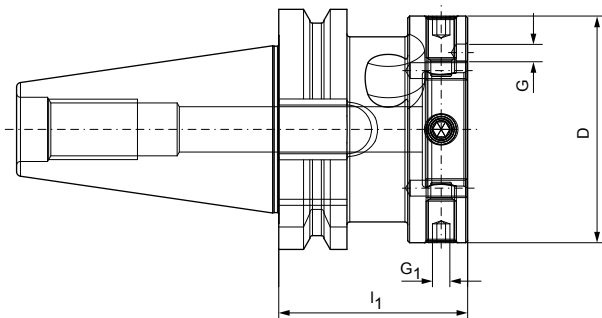
Note: For KS flange adapter, HydroChucks and ThermoChucks, see chapter "Hydraulic chuck, shrink chuck and manual HSK clamping technology". For pull stud, see chapter "Accessories, spare parts and measuring equipment".

You will find information on the coding system in the chapter "Technical appendix".

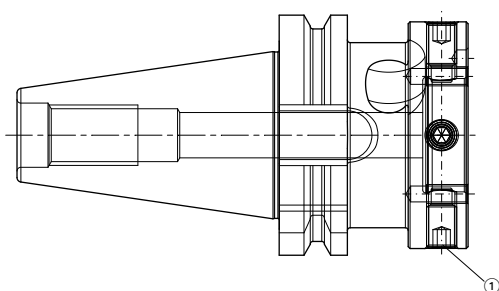
Balancing quality: G 6.3 with 3,000 rpm in delivery status.

# Steep taper adapters

Form AD similar to ISO 7388-1, with face connection



SK-FC	Module diameter D	l <sub>1</sub>	G	G <sub>1</sub>	Specification	Order no.
30	60	50	M5	M8x1	OS-AD-AD-FC030-MOD060-050-11	30630793
30	70	50	M6	M8x1	OS-AD-AD-FC030-MOD070-050-11	30630794
40	60	50	M5	M8x1	OS-AD-AD-FC040-MOD060-050-11	30630796
40	70	50	M6	M8x1	OS-AD-AD-FC040-MOD070-050-11	30630797
40	80	55	M6	M8x1	OS-AD-AD-FC040-MOD080-055-11	30630798
40	100	60	M8	M10x1	OS-AD-AD-FC040-MOD100-060-11	30630799
50	60	50	M5	M8x1	OS-AD-AD-FC050-MOD060-050-11	30630800
50	70	50	M6	M8x1	OS-AD-AD-FC050-MOD070-050-11	30630801
50	80	50	M6	M8x1	OS-AD-AD-FC050-MOD080-050-11	30630802
50	100	60	M8	M10x1	OS-AD-AD-FC050-MOD100-060-11	30630803
50	117	60	M8	M10x1	OS-AD-AD-FC050-MOD117-060-11	30630804
50	140	60	M10	M10x1	OS-AD-AD-FC050-MOD140-060-11	30630805



## Spare parts

For module diameter D	Quantity required	Size	Threaded pin Order no.
60 – 80	4	M8x1x16	10075355
100 – 140	4	M10x1x20	10075099

Dimensions in mm.

Use: For use in the machine spindle for mounting KS flange adapters, shrink chucks, hydraulic chucks, chucks for cylindrical shanks or tools with a module shank in accordance with MAPAL factory standard.

Design: The radial run-out of a fitted connection or a tool can be adjusted in relation to the taper shank over threaded pins.

Basic setting Form AD, if Form AF is required, please specify this when placing your order.

Scope of delivery: With threaded pins for aligning the radial run-out, without pull stud.

Note: For KS flange adapter, HydroChucks and ThermoChucks, see chapter "Hydraulic chuck, shrink chuck and manual HSK clamping technology".

For pull stud, see chapter "Accessories, spare parts and measuring equipment".

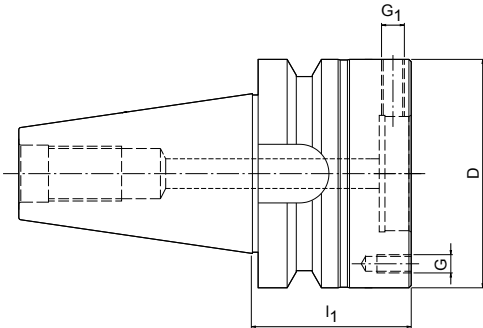
You will find information on the coding system in the chapter "Technical appendix".

Balancing quality: G 6.3 with 3,000 rpm in delivery status.

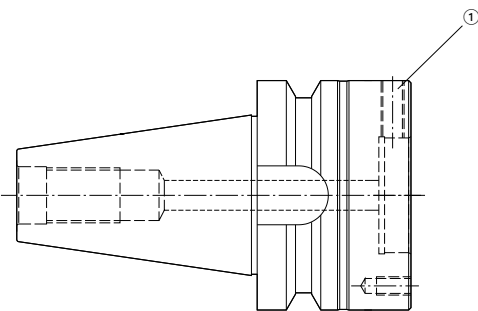


# Steep taper adapters

Shank BT according to ISO 7388-2 Form JD (JIS B 6339)



BT	Module diameter D	Dimensions			Specification	Order no.
		l <sub>1</sub>	G	G <sub>1</sub>		
30	60	40	M5	M8x1	OS-AD-BT030-MOD060-040-11	30320084
30	70	40	M6	M8x1	OS-AD-BT030-MOD070-040-11	30320085
40	60	55	M5	M8x1	OS-AD-BT040-MOD060-055-11	30320086
40	70	55	M6	M8x1	OS-AD-BT040-MOD070-055-11	30320087
40	80	65	M6	M8x1	OS-AD-BT040-MOD080-065-11	30320088
40	100	70	M8	M10x1	OS-AD-BT040-MOD100-070-11	30320089
50	60	70	M5	M8x1	OS-AD-BT050-MOD060-070-11	30320095
50	70	70	M6	M8x1	OS-AD-BT050-MOD070-070-11	30320096
50	80	70	M6	M8x1	OS-AD-BT050-MOD080-070-11	30320097
50	100	70	M8	M10x1	OS-AD-BT050-MOD100-070-11	30320098
50	117	80	M8	M10x1	OS-AD-BT050-MOD117-080-11	30320099
50	140	80	M10	M10x1	OS-AD-BT050-MOD140-080-11	30320100



## Spare parts

For module diameter D	Quantity required	Size	① Threaded pin Order no.
60 – 80	4	M8x1x16	10075355
100	4	M10x1x20	10075099
117	4	M10x1x20	10075099
140	4	M10x1x20	10075099

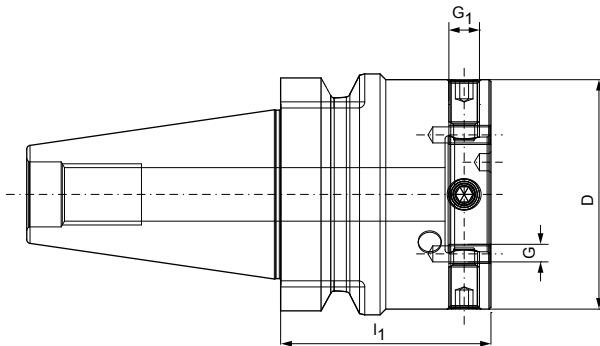
Dimensions in mm.

Use: For use in the machine spindle for connecting to hollow shank taper tools.  
Scope of delivery: With standard KS clamping cartridge and stop ring. Without pull stud.  
Design: Permissible run-out variation on the taper shank in relation to the hollow shank taper inner taper = 3 µm.

Note: For clamping cartridges, see chapter "Manual HSK clamping technology". For stop rings and pull stud, see chapter "Accessories, spare parts and measuring equipment".  
Balancing quality: G 6.3 with 3,000 rpm in delivery status.

## Steep taper adapters

BT shank similar to ISO 7388-2 Form JD (JIS B 6339) with face connection



BT-FC	Module diameter D	Dimensions			Specification	Order no.
		$l_1$	G	$G_1$		
30	60	40	M5	M8x1	OS-AD-JD-FC030-MOD060-040-11	30630780
30	70	40	M6	M8x1	OS-AD-JD-FC030-MOD070-040-11	30630781
40	60	55	M5	M8x1	OS-AD-JD-FC040-MOD060-055-11	30630782
40	70	55	M6	M8x1	OS-AD-JD-FC040-MOD070-055-11	30630783
40	80	65	M8	M8x1	OS-AD-JD-FC040-MOD080-065-11	30630784
40	100	70	M5	M10x1	OS-AD-JD-FC040-MOD100-070-11	30630785
50	60	70	M6	M8x1	OS-AD-JD-FC050-MOD060-070-11	30630786
50	70	70	M6	M8x1	OS-AD-JD-FC050-MOD070-070-11	30630787
50	80	70	M6	M8x1	OS-AD-JD-FC050-MOD080-070-11	30630788
50	100	70	M8	M10x1	OS-AD-JD-FC050-MOD100-070-11	30630789
50	117	80	M8	M10x1	OS-AD-JD-FC050-MOD117-080-11	30630790
50	140	80	M10	M10x1	OS-AD-JD-FC050-MOD140-080-11	30630791

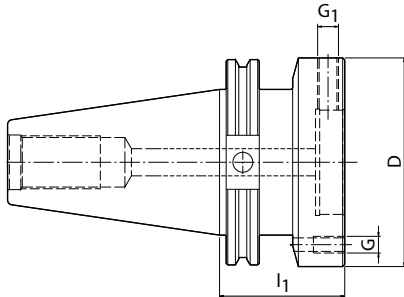
Dimensions in mm.

Use: For use in the machine spindle for connecting to hollow shank taper tools.  
 Scope of delivery: With standard KS clamping cartridge and stop ring. Without pull stud.  
 Design: Permissible run-out variation on the taper shank in relation to the hollow shank taper inner taper = 3  $\mu\text{m}$ .

Note: For clamping cartridges, see chapter "Manual HSK clamping technology". For stop rings and pull stud, see chapter "Accessories, spare parts and measuring equipment".  
 Balancing quality: G 6.3 with 3,000 rpm in delivery status.

# Steep taper adapters

"CAT" shank in accordance with ASME B5.50-1994



CAT	Module diameter D	Dimensions			Specification	Order no.
		l <sub>1</sub>	G	G <sub>1</sub>		
30	60	50	M5	M8x1	OS-AD-CAT030-MOD060-050-11	30320124
30	70	50	M6	M8x1	OS-AD-CAT030-MOD070-050-11	30320125
40	60	50	M5	M8x1	OS-AD-CAT040-MOD060-050-11	30320126
40	70	50	M6	M8x1	OS-AD-CAT040-MOD070-050-11	30320127
40	80	55	M6	M8x1	OS-AD-CAT040-MOD080-055-11	30320128
40	100	60	M8	M10x1	OS-AD-CAT040-MOD100-060-11	30320129
50	60	50	M5	M8x1	OS-AD-CAT050-MOD060-050-11	30320135
50	70	50	M6	M8x1	OS-AD-CAT050-MOD070-050-11	30320136
50	80	50	M6	M8x1	OS-AD-CAT050-MOD080-050-11	30320137
50	100	60	M8	M10x1	OS-AD-CAT050-MOD100-060-11	30320138
50	117	60	M8	M10x1	OS-AD-CAT050-MOD117-060-11	30320139
50	140	60	M10	M10x1	OS-AD-CAT050-MOD140-060-11	30320140

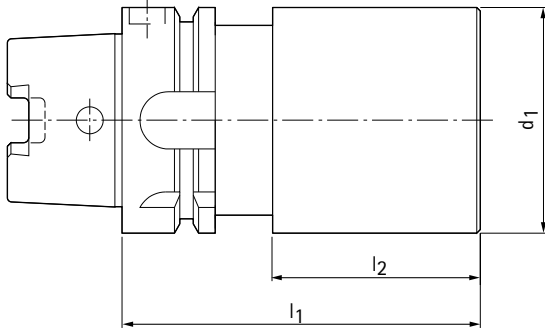
Dimensions in mm.

Use: For use in the machine spindle for connecting to hollow shank taper tools.  
 Scope of delivery: With standard KS clamping cartridge and stop ring. Without pull stud.  
 Design: Permissible run-out variation on the taper shank in relation to the hollow shank taper inner taper = 3 µm.

Note: For clamping cartridges, see chapter "Manual HSK clamping technology". For stop rings and pull stud, see chapter "Accessories, spare parts and measuring equipment".  
 Balancing quality: G 6.3 with 3,000 rpm in delivery status.

# HSK blanks

HSK-A (hollow shank taper form A) shank according to DIN 69893-1



HSK-A	Dimensions			Specification	Order no. Design 1	Order no. Design 2
	$l_1$	$l_2$	$d_1$			
32	100	80	34	OS-BL-HSK-A032-BLANK034-100-00	30312301	30312314
32	150	130	53	OS-BL-HSK-A032-BLANK053-150-00	30312333	30312334
32	200	180	34	OS-BL-HSK-A032-BLANK034-200-00	30312318	30312320
40	100	80	40	OS-BL-HSK-A040-BLANK040-100-00	30312335	30312336
40	150	130	63	OS-BL-HSK-A040-BLANK063-150-00	30312339	30312340
40	200	180	40	OS-BL-HSK-A040-BLANK040-200-00	30312337	30312338
50	100	74	53	OS-BL-HSK-A050-BLANK053-100-00	30319404	30319416
50	175	149	83	OS-BL-HSK-A050-BLANK083-175-00	30319405	30319417
50	200	174	53	OS-BL-HSK-A050-BLANK053-200-00	30319406	30319418
63	100	74	63	OS-BL-HSK-A063-BLANK063-100-00	30319407	30319419
63	175	149	102	OS-BL-HSK-A063-BLANK102-175-00	30319408	30319420
63	200	174	63	OS-BL-HSK-A063-BLANK063-200-00	30319409	30319421
80	100	74	83	OS-BL-HSK-A080-BLANK083-100-00	30319410	30319422
80	200	174	83	OS-BL-HSK-A080-BLANK083-200-00	30319411	30319423
80	200	174	127	OS-BL-HSK-A080-BLANK127-200-00	30319412	30319424
100	100	71	102	OS-BL-HSK-A100-BLANK102-100-00	30319413	30319425
100	200	171	102	OS-BL-HSK-A100-BLANK102-200-00	30319414	30319426
100	200	171	127	OS-BL-HSK-A100-BLANK127-200-00	30319415	30319427

Dimensions in mm.

Scope of delivery: Without coolant tube.

Design 1: Rough turned and milled. In the range of the HSK grinding allowance from HSK32 to HSK80 = 0.2 mm, from HSK100 = 0.3 mm at the taper or 0.15 mm at the face surface. Not hardened and not ground. Front part of blank not hardened or ground for further processing.

Design 2: Taper including collar hardened and finish ground. Front part of blank not hardened or ground for further processing.

Important note on design 2: Excessive machining and any heat treatments of the complet-

ed blank may cause unacceptable distortion of the HSK shank. Claims against the warranty can therefore only be made for blanks that have not been processed.

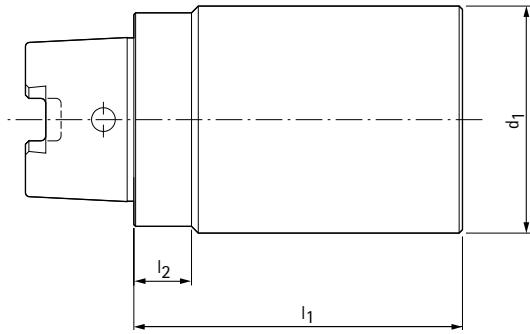
Note: In case of extensive machining on the front of the blank, it is recommended to use design 1. The hollow shank taper should be finish ground as the last machining step.

Additional dimensions available upon request. For coolant tubes, see chapter "Accessories, spare parts and measuring equipment".

Workpiece material: 42CrMoS4

# HSK blanks

HSK-C shank in accordance with DIN 69893-1



HSK-C	Dimensions			Specification	Order no. Design 1	Order no. Design 2
	$d_1$	$l_1$	$l_2$			
32	34	100	10	OS-BL-HSK-C032-BLANK034-100-00	30319671	30320293
32	34	200	10	OS-BL-HSK-C032-BLANK034-200-00	30319672	30320294
32	53	150	10	OS-BL-HSK-C032-BLANK053-150-00	30319673	30320295
40	40	100	10	OS-BL-HSK-C040-BLANK040-100-00	30319674	30320296
40	40	200	10	OS-BL-HSK-C040-BLANK040-200-00	30319675	30320297
40	63	150	10	OS-BL-HSK-C040-BLANK063-150-00	30319676	30320298
50	53	100	12,5	OS-BL-HSK-C050-BLANK053-100-00	30319677	30320299
50	53	200	12,5	OS-BL-HSK-C050-BLANK053-200-00	30319678	30320300
50	82	175	12,5	OS-BL-HSK-C050-BLANK083-175-00	30319679	30320301
63	63	100	12,5	OS-BL-HSK-C063-BLANK063-100-00	30319680	30320302
63	63	200	12,5	OS-BL-HSK-C063-BLANK063-200-00	30319681	30320303
63	102	175	12,5	OS-BL-HSK-C063-BLANK102-175-00	30319682	30320304
80	83	100	16	OS-BL-HSK-C080-BLANK083-100-00	30319683	30320305
80	83	200	16	OS-BL-HSK-C080-BLANK083-200-00	30319684	30320306
80	127	200	16	OS-BL-HSK-C080-BLANK127-200-00	30319685	30320307
100	102	100	16	OS-BL-HSK-C100-BLANK102-100-00	30319686	30320308
100	102	200	16	OS-BL-HSK-C100-BLANK102-200-00	30319687	30320309
100	127	200	16	OS-BL-HSK-C100-BLANK127-200-00	30319688	30320310

Dimensions in mm.

Scope of delivery: Without coolant tube.

Design 1: Rough turned and milled. In the range of the HSK grinding allowance from HSK32 to HSK80 = 0.2 mm, from HSK100 0.3 mm at the taper or 0.15 mm at the face surface.

Not hardened and not ground. Front part of blank not hardened or ground for further processing.

Design 2: Taper including collar hardened and finish ground. Front part of blank not hardened or ground for further processing.

Important note on design 2: Excessive machining and any heat treatments of the completed blank may cause unacceptable distortion of the HSK shank. Claims against the warranty can therefore only be made for blanks that have not been processed.

Note: In case of extensive machining on the front of the blank, it is recommended to use design 1. The hollow shank taper should be finish ground as the last machining step. Additional dimensions available upon request. For coolant tubes, see chapter "Accessories, spare parts and measuring equipment".

Workpiece material: 42CrMoS4



# ACCESSORIES

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Accessories, spare parts and measuring equipment







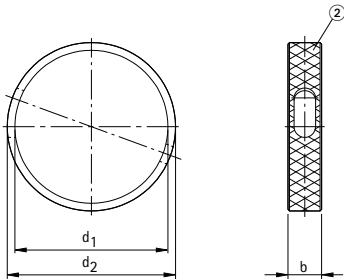


# ACCESSORIES, SPARE PARTS AND MEASURING EQUIPMENT

## Accessories, spare parts and measuring equipment

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## RE sealing rings



HSK-C	Dimensions			② Holding screw Order no.	② Stop ring Order no.
	d <sub>1</sub>	d <sub>2</sub>	b		
32	32	37	9	30326173	30326064
32	40	45	9	30326173	30326066
32	55	61	9	30326173	30326065
40	40	45	9	30326173	30326066
40	50	55	11	30326176	30326068
40	63	70	10	30326173	30326067
50	50	55	11	30326174	30326068
50	63	70	14	30373220	30326070
50	80	87	13	30326174	30326069
63	63	70	14	30326175	30326070
63	80	87	14	30326175	30326072
63	100	108	15	30326175	30326071
80	80	87	14	30326175	30326072
80	100	110	18	30326177	30326061
80	117	125	17	30326175	30326073
100	100	110	18	30326172	30326061
100	125	135	18	30326172	30326063
100	140	150	18	30326172	30326062

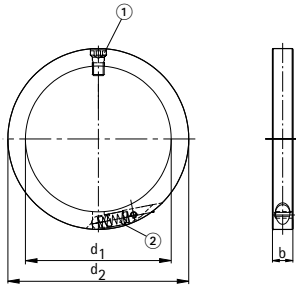
Dimensions in mm.

Use: For manually sealing the clamping bore on HSK spindles and adapters.  
 Scope of delivery: Stop rings, without holding screw. Suitable holding screw (see table) is to be ordered separately.

Note: When selecting stop rings and holding screws, pay attention to HSK nominal size and dimension d<sub>2</sub>.

Workpiece material: Stop rings – brass  
 Holding screws – steel

# Sealing rings



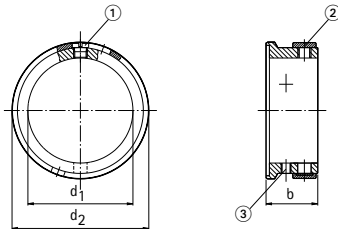
HSK-C	Dimensions			Stop ring complete Order no.	Holding screw Order no.	② Fastener Order no.
	d <sub>1</sub>	d <sub>2</sub>	b			
32	32	43	9	30326047	30325932	30325926
32	55	68	9	30326048	30325932	30325926
32	40	52	9	30326049	30325932	30325926
40	40	55	9	30326050	30325932	30325927
40	63	79	9	30326051	30325932	30325927
40	50	65	9	30326052	30325932	30325927
50	50	67	11	30326053	30325933	30325928
50	80	98	11	30326054	30325933	30325928
50	63	80	11	30326055	30325933	30325928
63	63	85	14	30326056	30325934	30325929
63	100	124	14	30326057	30325934	30325929
63	80	103	14	30326058	30325934	30325929
80	80	105	14	30326059	30325934	30325930
80	117	143	14	30326060	30325934	30325930
100	100	130	18	30326044	30325935	30325931
100	140	170	18	30326045	30325935	30325931
125	125	155	18	30326046	30325935	30325931

Dimensions in mm.

Use: For automatically sealing the clamping bore on HSK spindles and adapters.  
Scope of delivery: With complete seal and holding screw.

Note: On selecting stop rings pay attention to HSK nominal size and dimension d<sub>2</sub>.  
Workpiece material: Steel (seal and screw)

# Sealing rings



## SE centrifugal rings

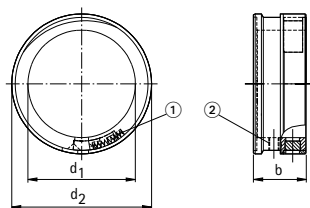
HSK-C	Dimensions			Complete centrifugal ring Order no.	① Holding screw Order no.	② Stop ring Order no.	③ Threaded pin in accordance with ISO 4027	
	d <sub>1</sub>	d <sub>2</sub>	b				Size	Order no.
25	25	38	15,5	30326080	30325925	30325940	M4x5-45H	10003897
32	32	43	19,5	30326081	30325923	30325936	M4x5-45H	10003897
32	32	48	19,5	30326082	30325923	30325936	M4x5-45H	10003897
40	40	57	21	30326083	30326173	30325937	M5x6-45H	10003905
50	50	70	24	30326084	30326174	30325938	M6x8-45H	10003912
63	63	82	31	30326085	30325924	30325939	M6x8-45H	10003912

Use: For manually sealing the clamping bore on HSK spindles in accordance with DIN 69002.

Scope of delivery: With stop ring, holding screw and threaded pins.

Note: The centrifugal ring is fastened using 3 threaded pins. Please note on ordering.

Workpiece material: Centrifugal ring body + holding screw: Steel, stop ring: Brass



## SE centrifugal rings

HSK-C	Dimensions			① Fastener Order no.	② Threaded pin in accordance with ISO 4027 (3x)		Complete centrifugal ring Order no.
	d <sub>1</sub>	d <sub>2</sub>	b		Size	Order no.	
25	25	38	15,5	available upon request	M4x5-45H	10003897	available upon request
32	32	43	18,8	30325926	M4x5-45H	10003897	30326167
32	32	48	18,8	30325926	M4x5-45H	10003897	30326168
40	40	57	20,8	30325927	M5x6-45H	10003905	30326169
50	50	70	23,8	30325928	M6x8-45H	10003912	30326170
63	63	82	30,8	available upon request	M6x8-45H	10003912	30326171

Dimensions in mm.

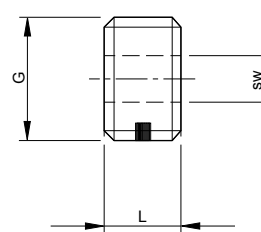
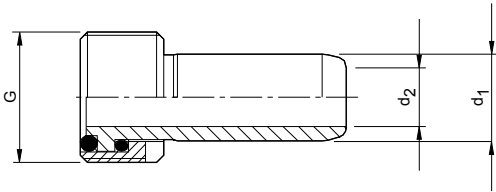
Use: For automatically sealing the clamping bore on HSK spindles in accordance with DIN 69002.

Scope of delivery: Complete seal and threaded pins.

Note: The centrifugal ring is fastened using 3 threaded pins.

Workpiece material: Steel

## Coolant tubes, blind screws



### Coolant tubes according to DIN 69895

HSK	Dimensions			Order no.
	G	d <sub>1</sub>	d <sub>2</sub>	
32	M10x1	6	3,5	30326003
40	M12x1	8	5	30326004
50	M16x1	10	6,4	30326005
63	M18x1	12	8	30326006
80	M20x1,5	14	10	30326007
100	M24x1,5	16	12	30326008

### Blind screws

HSK	Dimensions			Order no.
	G	L	sw	
32	M10x1	5,5	4	30326075
40	M12x1	7,5	5	30326076
50	M16x1	9,5	6	30326077
63	M18x1	11,5	8	30326078
80	M20x1,5	13,5	10	30326079
100	M24x1,5	15,5	12	30326074

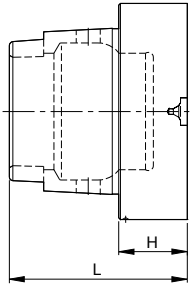
Dimensions in mm.

Scope of delivery: Coolant tube with two O-rings and clamping nut.  
Design: Smooth angular movement 1° self-centering, axially sealed.  
Note: Designed according to DIN 69895. Tightness tested to 80 bar.

Use: For closing the thread bore in hollow shank taper tool shanks if no coolant tube is used.

Design: With Nylok insert for screw retention.  
Workpiece material: Corrosion-resistant steel.

## Balance gauges



HSK	Dimensions		Order no.
	L	H	
32	31	15	30326032
40	35	15	30326033
50	43	18	30326034
63	52	20	30326035
80	65	25	30326036
100	75	25	30326037

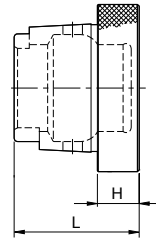
Use: For balancing HSK spindles and adapters as well as for sealing fast-rotating HSK spindles and adapters without a tool fitted.

Design: Permissible residual imbalance in accordance with DIN ISO 1940 Part 1.

Workpiece material: Stainless steel.

Balancing quality: G 2.5 at 8,000 rpm

## Blanking caps

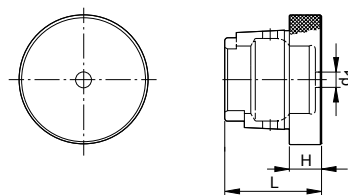


HSK	Dimensions		Order no.
	L	H	
32	23	10	30326020
40	26	10	30326021
50	33	12,5	30326022
63	38	12,5	30326023
80	48	16	30326024
100	56	16	30326025

Use: For sealing spindle mountings without a tool fitted.

Design: Unbalanced.

Note: HSK balance gauges are recommended for sealing fast-rotating HSK adapters.



HSK	Dimensions			Order no.
	d <sub>1</sub>	L	H	
32	3	23	10	30326027
40	3	26	10	30326028
50	4	33	12,5	30326029
63	6	38	12,5	30326030
80	7	48	16	30326031
100	7	56	16	30326026

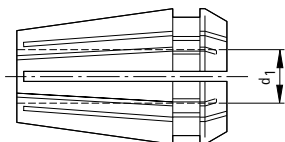
Use: For sealing spindle mountings without a tool fitted.

Design: Unbalanced, with central coolant bore.

Note: HSK balance gauges are recommended for sealing fast-rotating HSK adapters.

# ER collets

ISO 15488-B



Clamping range	Nominal size	Clamping diameter $d_1$	Order no.
0,5 - 10	ER-16	1 - 0,5	30326086
0,5 - 10	ER-16	2 - 1	30326087
0,5 - 10	ER-16	3 - 2	30326088
0,5 - 10	ER-16	4 - 3	30326089
0,5 - 10	ER-16	5 - 4	30326090
0,5 - 10	ER-16	6 - 5	30326091
0,5 - 10	ER-16	7 - 6	30326092
0,5 - 10	ER-16	8 - 7	30326093
0,5 - 10	ER-16	9 - 8	30326094
0,5 - 10	ER-16	10 - 9	30326095
1 - 13	ER-20	1 - 0,5	30326301
1 - 13	ER-20	2 - 1	30326300
1 - 13	ER-20	3 - 2	30326299
1 - 13	ER-20	4 - 3	30326099
1 - 13	ER-20	5 - 4	30326100
1 - 13	ER-20	6 - 5	30326101
1 - 13	ER-20	7 - 6	30326102
1 - 13	ER-20	8 - 7	30326103
1 - 13	ER-20	9 - 8	30326104
1 - 13	ER-20	10 - 9	30326105
1 - 13	ER-20	11 - 10	30326106
1 - 13	ER-20	12 - 11	30326107
1 - 13	ER-20	13 - 12	30326108

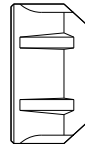
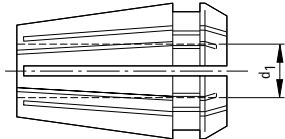
Clamping range	Nominal size	Clamping diameter $d_1$	Order no.
1 - 16	ER-25	1 - 0,5	30326109
1 - 16	ER-25	2 - 1	30326110
1 - 16	ER-25	3 - 2	30326111
1 - 16	ER-25	4 - 3	30326112
1 - 16	ER-25	5 - 4	30326113
1 - 16	ER-25	6 - 5	30326114
1 - 16	ER-25	7 - 6	30326115
1 - 16	ER-25	8 - 7	30326116
1 - 16	ER-25	9 - 8	30326117
1 - 16	ER-25	10 - 9	30326118
1 - 16	ER-25	11 - 10	30326119
1 - 16	ER-25	12 - 11	30326120
1 - 16	ER-25	13 - 12	30326121
1 - 16	ER-25	14 - 13	30326122
1 - 16	ER-25	15 - 14	30326123
1 - 16	ER-25	16 - 15	30326124
2 - 20	ER-32	3 - 2	30326125
2 - 20	ER-32	4 - 3	30326126
2 - 20	ER-32	5 - 4	30326127
2 - 20	ER-32	6 - 5	30326128
2 - 20	ER-32	7 - 6	30326129
2 - 20	ER-32	8 - 7	30326130
2 - 20	ER-32	9 - 8	30326131
2 - 20	ER-32	10 - 9	30326132
2 - 20	ER-32	11 - 10	30326133
2 - 20	ER-32	12 - 11	30326134
2 - 20	ER-32	13 - 12	30326135
2 - 20	ER-32	14 - 13	30326136
2 - 20	ER-32	15 - 14	30326137
2 - 20	ER-32	16 - 15	30326138
2 - 20	ER-32	17 - 16	30326139
2 - 20	ER-32	18 - 17	30326140
2 - 20	ER-32	19 - 18	30326141
2 - 20	ER-32	20 - 19	30326142

Dimensions in mm.

Note: Never clamp shanks with oversize!

# ER collets

ISO 15488-B



Clamping range	Nominal size	Clamping diameter $d_1$	Order no.
3 - 26	ER-40	4 - 3	30326143
3 - 26	ER-40	5 - 4	30326144
3 - 26	ER-40	6 - 5	30326145
3 - 26	ER-40	7 - 6	30326146
3 - 26	ER-40	8 - 7	30326147
3 - 26	ER-40	9 - 8	30326148
3 - 26	ER-40	10 - 9	30326149
3 - 26	ER-40	11 - 10	30326150
3 - 26	ER-40	12 - 11	30326151
3 - 26	ER-40	13 - 12	30326152
3 - 26	ER-40	14 - 13	30326153
3 - 26	ER-40	15 - 14	30326154
3 - 26	ER-40	16 - 15	30326155
3 - 26	ER-40	17 - 16	30326156
3 - 26	ER-40	18 - 17	30326157
3 - 26	ER-40	19 - 18	30326158
3 - 26	ER-40	20 - 19	30326159
3 - 26	ER-40	21 - 20	30326160
3 - 26	ER-40	22 - 21	30326162
3 - 26	ER-40	23 - 22	30326163
3 - 26	ER-40	24 - 23	30326164
3 - 26	ER-40	25 - 24	30326165
3 - 26	ER-40	26 - 25	30326166

## Clamping nuts for internal coolant supply

Clamping range	Nominal size	Order no.
0,5 - 10	ERC-16	10007862
1 - 13	ERC-20	10008009
1 - 16	ERC-25	10014123
2 - 20	ERC-32	10007923
3 - 26	ERC-40	10008010

Use: For use up to 150 bar coolant pressure.

Design: The Hi-Q/ERC clamping nut is the version for internal coolant supply. Together with the sealing discs DS/ER, using this clamping nut it is also possible to use existing collets for tools with internal coolant supply.

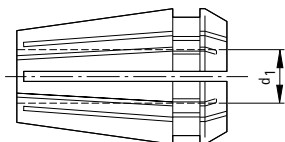
Dimensions in mm.

Note: Never clamp shanks with oversize!



# Ultraprecision collets

compatible with ISO 15488-B



Clamping range	Nominal size	Clamping diameter $d_1$	Order no.
0,5 - 10	ER-16	1 - 0,5	30281150
0,5 - 10	ER-16	1,5 - 1	30480431
0,5 - 10	ER-16	2 - 1	10030696
0,5 - 10	ER-16	2,5 - 1,5	10030697
0,5 - 10	ER-16	3 - 2	10030698
0,5 - 10	ER-16	3,5 - 2,5	10030699
0,5 - 10	ER-16	4 - 3	10030700
0,5 - 10	ER-16	4,5 - 3,5	10030701
0,5 - 10	ER-16	5 - 4	10030722
0,5 - 10	ER-16	5,5 - 4,5	10030723
0,5 - 10	ER-16	6 - 5	10030724
0,5 - 10	ER-16	6,5 - 5,5	10030725
0,5 - 10	ER-16	7 - 6	10030726
0,5 - 10	ER-16	7,5 - 6,5	10030727
0,5 - 10	ER-16	8 - 7	10030728
0,5 - 10	ER-16	8,5 - 7,5	10030729
0,5 - 10	ER-16	9 - 8	10030730
0,5 - 10	ER-16	9,5 - 8,5	10030731
0,5 - 10	ER-16	10 - 9	10030732
1 - 13	ER-20	1 - 0,5	10030733
1 - 13	ER-20	1,5 - 1	10030734
1 - 13	ER-20	2 - 1	10030735
1 - 13	ER-20	2,5 - 1,5	10030736
1 - 13	ER-20	3 - 2	10030737
1 - 13	ER-20	3,5 - 2,5	10030738
1 - 13	ER-20	4 - 3	10030739
1 - 13	ER-20	4,5 - 3,5	10030740
1 - 13	ER-20	5 - 4	10030741
1 - 13	ER-20	5,5 - 4,5	10030742
1 - 13	ER-20	6 - 5	10030743
1 - 13	ER-20	6,5 - 5,5	10030744
1 - 13	ER-20	7 - 6	10030745
1 - 13	ER-20	7,5 - 6,5	10030746
1 - 13	ER-20	8 - 7	10030747
1 - 13	ER-20	8,5 - 7,5	10030748

Clamping range	Nominal size	Clamping diameter $d_1$	Order no.
1 - 13	ER-20	9 - 8	10030749
1 - 13	ER-20	9,5 - 8,5	10030750
1 - 13	ER-20	10 - 9	10030751
1 - 13	ER-20	10,5 - 9,5	10030752
1 - 13	ER-20	11 - 10	10030753
1 - 13	ER-20	11,5 - 10,5	10030754
1 - 13	ER-20	12 - 11	10030755
1 - 13	ER-20	12,5 - 11,5	10030756
1 - 13	ER-20	13 - 12	10030757
1 - 16	ER-25	1 - 0,5	10030758
1 - 16	ER-25	1,5 - 1	10030759
1 - 16	ER-25	2 - 1	10030760
1 - 16	ER-25	2,5 - 1,5	10030761
1 - 16	ER-25	3 - 2	10030762
1 - 16	ER-25	3,5 - 2,5	10030763
1 - 16	ER-25	4 - 3	10030764
1 - 16	ER-25	4,5 - 3,5	10030765
1 - 16	ER-25	5 - 4	10030766
1 - 16	ER-25	5,5 - 4,5	10030767
1 - 16	ER-25	6 - 5	10030768
1 - 16	ER-25	6,5 - 5,5	10030769
1 - 16	ER-25	7 - 6	10030770
1 - 16	ER-25	7,5 - 6,5	10030771
1 - 16	ER-25	8 - 7	10030772
1 - 16	ER-25	8,5 - 7,5	10030773
1 - 16	ER-25	9 - 8	10030774
1 - 16	ER-25	9,5 - 8,5	10030775
1 - 16	ER-25	10 - 9	10030776
1 - 16	ER-25	10,5 - 9,5	10030777
1 - 16	ER-25	11 - 10	10030778
1 - 16	ER-25	11,5 - 10,5	10030779
1 - 16	ER-25	12 - 11	10030780
1 - 16	ER-25	12,5 - 11,5	10030781
1 - 16	ER-25	13 - 12	10030782
1 - 16	ER-25	13,5 - 12,5	10030783

Continued on next page.

## Ultraprecision collets | Compatible with ISO 15488-B

Clamping range	Nominal size	Clamping diameter d <sub>1</sub>	Order no.
1 - 16	ER-25	14 - 13	10030784
1 - 16	ER-25	14,5 - 13,5	10030785
1 - 16	ER-25	15 - 14	10030786
1 - 16	ER-25	15,5 - 14,5	10030787
1 - 16	ER-25	16 - 15	10030788
2 - 20	ER-32	2 - 1	10030789
2 - 20	ER-32	2,5 - 1,5	10030790
2 - 20	ER-32	3 - 2	10030791
2 - 20	ER-32	3,5 - 2,5	10030792
2 - 20	ER-32	4 - 3	10030793
2 - 20	ER-32	4,5 - 3,5	10030794
2 - 20	ER-32	5 - 4	10030795
2 - 20	ER-32	5,5 - 4,5	10030796
2 - 20	ER-32	6 - 5	10030797
2 - 20	ER-32	6,5 - 5,5	10030798
2 - 20	ER-32	7 - 6	10030799
2 - 20	ER-32	7,5 - 6,5	10030800
2 - 20	ER-32	8 - 7	10030801
2 - 20	ER-32	8,5 - 7,5	10030802
2 - 20	ER-32	9 - 8	10030803
2 - 20	ER-32	9,5 - 8,5	10030804
2 - 20	ER-32	10 - 9	10030805
2 - 20	ER-32	10,5 - 9,5	10030806
2 - 20	ER-32	11 - 10	10030807
2 - 20	ER-32	11,5 - 10,5	10030808
2 - 20	ER-32	12 - 11	10030809
2 - 20	ER-32	12,5 - 11,5	10030810
2 - 20	ER-32	13 - 12	10030811
2 - 20	ER-32	13,5 - 12,5	10030812
2 - 20	ER-32	14 - 13	10030813
2 - 20	ER-32	14,5 - 13,5	10030814
2 - 20	ER-32	15 - 14	10030815
2 - 20	ER-32	15,5 - 14,5	10030816
2 - 20	ER-32	16 - 15	10030817
2 - 20	ER-32	16,5 - 15,5	10030818
2 - 20	ER-32	17 - 16	10030819
2 - 20	ER-32	17,5 - 16,5	10030820
2 - 20	ER-32	18 - 17	10030821
2 - 20	ER-32	18,5 - 17,5	10030822
2 - 20	ER-32	19 - 18	10030823
2 - 20	ER-32	19,5 - 18,5	10030824
2 - 20	ER-32	20 - 19	10030825
3 - 26	ER-40	4 - 3	10030826
3 - 26	ER-40	4,5 - 3,5	10030827
3 - 26	ER-40	5 - 4	10030828
3 - 26	ER-40	5,5 - 4,5	10030829

Clamping range	Nominal size	Clamping diameter d <sub>1</sub>	Order no.
3 - 26	ER-40	6 - 5	10030830
3 - 26	ER-40	6,5 - 5,5	10030831
3 - 26	ER-40	7 - 6	10030832
3 - 26	ER-40	7,5 - 6,5	10030833
3 - 26	ER-40	8 - 7	10030834
3 - 26	ER-40	8,5 - 7,5	10030835
3 - 26	ER-40	9 - 8	10030836
3 - 26	ER-40	9,5 - 8,5	10030837
3 - 26	ER-40	10 - 9	10030838
3 - 26	ER-40	10,5 - 9,5	10030839
3 - 26	ER-40	11 - 10	10030840
3 - 26	ER-40	11,5 - 10,5	10030841
3 - 26	ER-40	12 - 11	10030842
3 - 26	ER-40	12,5 - 11,5	10030843
3 - 26	ER-40	13 - 12	10030844
3 - 26	ER-40	13,5 - 12,5	10030845
3 - 26	ER-40	14 - 13	10030846
3 - 26	ER-40	14,5 - 13,5	10030847
3 - 26	ER-40	15 - 14	10030848
3 - 26	ER-40	15,5 - 14,5	10030849
3 - 26	ER-40	16 - 15	10030850
3 - 26	ER-40	16,5 - 15,5	10030851
3 - 26	ER-40	17 - 16	10030862
3 - 26	ER-40	17,5 - 16,5	10030863
3 - 26	ER-40	18 - 17	10030864
3 - 26	ER-40	18,5 - 17,5	10030865
3 - 26	ER-40	19 - 18	10030866
3 - 26	ER-40	19,5 - 18,5	10030867
3 - 26	ER-40	20 - 19	10030868
3 - 26	ER-40	20,5 - 19,5	10030869
3 - 26	ER-40	21 - 20	10030870
3 - 26	ER-40	21,5 - 20,5	10030871
3 - 26	ER-40	22 - 21	10030872
3 - 26	ER-40	22,5 - 21,5	10030873
3 - 26	ER-40	23 - 22	10030874
3 - 26	ER-40	23,5 - 22,5	10030875
3 - 26	ER-40	24 - 23	10030876
3 - 26	ER-40	24,5 - 23,5	10030877
3 - 26	ER-40	25 - 24	10030878
3 - 26	ER-40	25,5 - 24,5	10030879
3 - 26	ER-40	26 - 25	10030880
3 - 26	ER-40	27 - 26	10030881
3 - 26	ER-40	28 - 27	10030882
3 - 26	ER-40	29 - 28	10030883
3 - 26	ER-40	30 - 29	10030884

Dimensions in mm.

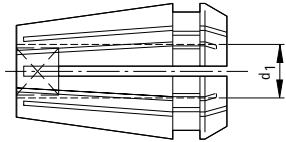
Design: The collet combines the advantages of ISO 15488 A+B in one collet. It has a clamping range like the standard collets in accordance with ISO 15488 Form B. In addition, this collet has high radial run-out accuracy in accordance with ISO 15488 Form A.

Use: Primarily in high-speed machining for which very high radial run-out accuracies are required.

Note: Never clamp shanks with oversize! E.g. never press a shank with  $\varnothing$  12.2 mm into a collet with  $\varnothing$  12-11 mm. Use the next collet size up (here  $\varnothing$  11.5-12.5 mm).

# Tapping collets

Similar to ISO 15488 with square drive



Clamping range	Nominal size	Clamping diameter $d_1$	sw DIN mm	Order no.
0,5 - 10	ER-16	4,5	3,4	10007899
0,5 - 10	ER-16	5,5	4,3	10076832
0,5 - 10	ER-16	6,0	4,9	10007047
0,5 - 10	ER-16	7,0	5,5	10007049
0,5 - 10	ER-16	8,0	6,2	10013102
0,5 - 10	ER-16	9,0	7	10022149
1 - 13	ER-20	4,5	3,4	10050677
1 - 13	ER-20	5,5	4,3	10079513
1 - 13	ER-20	6,0	4,9	10007329
1 - 13	ER-20	7,0	5,5	10006519
1 - 13	ER-20	8,0	6,2	10006520
1 - 13	ER-20	9,0	7	10006521
1 - 13	ER-20	10,0	8	10009228
1 - 13	ER-20	11,0	9	10024811
1 - 16	ER-25	4,5	3,4	10079512
1 - 16	ER-25	5,5	4,3	10079511
1 - 16	ER-25	6,0	4,9	10020035
1 - 16	ER-25	7,0	5,5	10020033
1 - 16	ER-25	8,0	6,2	10040822
1 - 16	ER-25	9,0	7	10021684
1 - 16	ER-25	10,0	8	10020034
1 - 16	ER-25	11,0	9	10041407
1 - 16	ER-25	12,0	9	10040836
1 - 16	ER-25	14,0	11	10040838
1 - 16	ER-25	16,0	12	10079470

Clamping range	Nominal size	Clamping diameter $d_1$	sw DIN mm	Order no.
2 - 20	ER-32	4,5	3,4	10006783
2 - 20	ER-32	5,5	4,3	10076843
2 - 20	ER-32	6,0	4,9	10006801
2 - 20	ER-32	7,0	5,5	10006836
2 - 20	ER-32	8,0	6,2	10006683
2 - 20	ER-32	9,0	7	10006684
2 - 20	ER-32	10,0	8	10006685
2 - 20	ER-32	11,0	9	10008264
2 - 20	ER-32	12,0	9	10009677
2 - 20	ER-32	14,0	11	10017137
2 - 20	ER-32	16,0	12	10045058
2 - 20	ER-32	18,0	14,5	10020678
2 - 20	ER-32	20,0	16	10040083
3 - 26	ER-40	6,0	4,9	10038386
3 - 26	ER-40	7,0	5,5	10012631
3 - 26	ER-40	8,0	6,2	10007012
3 - 26	ER-40	9,0	7	10007009
3 - 26	ER-40	10,0	8	10007014
3 - 26	ER-40	11,0	9	10025161
3 - 26	ER-40	12,0	9	10007011
3 - 26	ER-40	14,0	11	10016524
3 - 26	ER-40	16,0	12	10076844
3 - 26	ER-40	18,0	14,5	10008214
3 - 26	ER-40	20,0	16	10047594
3 - 26	ER-40	22,0	18	10076845

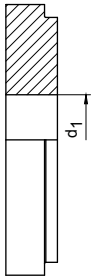
Dimensions in mm.

Design: Suitable for tap drills in accordance with DIN, ISO and JIS standards.

Note: Never clamp shanks with oversize! E.g. never press a shank with  $\varnothing 9.2$  mm into a collet with  $\varnothing 9.0$  mm. Use the next collet size up (here  $\varnothing 10.0$  mm).

## ER sealing discs

For clamping nuts with internal coolant supply



Clamping range	Nominal size	Clamping diameter $d_1$	Order no.
0,5 - 10	ER-16	3,0 - 2,5	30325796
0,5 - 10	ER-16	3,5 - 3,0	30325797
0,5 - 10	ER-16	4,0 - 3,5	30325798
0,5 - 10	ER-16	4,5 - 4,0	30325799
0,5 - 10	ER-16	5,0 - 4,5	30325800
0,5 - 10	ER-16	5,5 - 5,0	30325801
0,5 - 10	ER-16	6,0 - 5,5	30325802
0,5 - 10	ER-16	6,5 - 6,0	30325803
0,5 - 10	ER-16	7,0 - 6,5	30325804
0,5 - 10	ER-16	7,5 - 7,0	30325805
0,5 - 10	ER-16	8,0 - 7,5	30325806
0,5 - 10	ER-16	8,5 - 8,0	30325807
0,5 - 10	ER-16	9,0 - 8,5	30325808
0,5 - 10	ER-16	9,5 - 9,0	30325809
0,5 - 10	ER-16	10,0 - 9,5	30325810
1 - 13	ER-20	3,0 - 2,5	30325811
1 - 13	ER-20	3,5 - 3,0	30325812
1 - 13	ER-20	4,0 - 3,5	30325813
1 - 13	ER-20	4,5 - 4,0	30325814
1 - 13	ER-20	5,0 - 4,5	30325815
1 - 13	ER-20	5,5 - 5,0	30325816
1 - 13	ER-20	6,0 - 5,5	30325817
1 - 13	ER-20	6,5 - 6,0	30325818
1 - 13	ER-20	7,0 - 6,5	30325819
1 - 13	ER-20	7,5 - 7,0	30325820
1 - 13	ER-20	8,0 - 7,5	30325821
1 - 13	ER-20	8,5 - 8,0	30325822
1 - 13	ER-20	9,0 - 8,5	30325823
1 - 13	ER-20	9,5 - 9,0	30325824
1 - 13	ER-20	10,0 - 9,5	30325825
1 - 13	ER-20	10,5 - 10,0	30325826
1 - 13	ER-20	11,0 - 10,5	30325827
1 - 13	ER-20	11,5 - 11,0	30325828
1 - 13	ER-20	12,0 - 11,5	30325829
1 - 13	ER-20	12,5 - 12,0	30325830
1 - 13	ER-20	13,0 - 12,5	30325831

Clamping range	Nominal size	Clamping diameter $d_1$	Order no.
1 - 16	ER-25	3,0 - 2,5	30325832
1 - 16	ER-25	3,5 - 3,0	30325833
1 - 16	ER-25	4,0 - 3,5	30325834
1 - 16	ER-25	4,5 - 4,0	30325835
1 - 16	ER-25	5,0 - 4,5	30325836
1 - 16	ER-25	5,5 - 5,0	30325837
1 - 16	ER-25	6,0 - 5,5	30325838
1 - 16	ER-25	6,5 - 6,0	30325839
1 - 16	ER-25	7,0 - 6,5	30325840
1 - 16	ER-25	7,5 - 7,0	30325841
1 - 16	ER-25	8,0 - 7,5	30325842
1 - 16	ER-25	8,5 - 8,0	30325843
1 - 16	ER-25	9,0 - 8,5	30325844
1 - 16	ER-25	9,5 - 9,0	30325845
1 - 16	ER-25	10,0 - 9,5	30325846
1 - 16	ER-25	10,5 - 10,0	30325847
1 - 16	ER-25	11,0 - 10,5	30325848
1 - 16	ER-25	11,5 - 11,0	30325849
1 - 16	ER-25	12,0 - 11,5	30325850
1 - 16	ER-25	12,5 - 12,0	30325851
1 - 16	ER-25	13,0 - 12,5	30325852
1 - 16	ER-25	13,5 - 13,0	30325853
1 - 16	ER-25	14,0 - 13,5	30325854
1 - 16	ER-25	14,5 - 14,0	30325855
1 - 16	ER-25	15,0 - 14,5	30325856
1 - 16	ER-25	15,5 - 15,0	30325857
1 - 16	ER-25	16,0 - 15,5	30325858
2 - 20	ER-32	3,0 - 2,5	30325859
2 - 20	ER-32	3,5 - 3,0	30325860
2 - 20	ER-32	4,0 - 3,5	30325861
2 - 20	ER-32	4,5 - 4,0	30325862
2 - 20	ER-32	5,0 - 4,5	30325863
2 - 20	ER-32	5,5 - 5,0	30325864
2 - 20	ER-32	6,0 - 5,5	30325865
2 - 20	ER-32	6,5 - 6,0	30325866
2 - 20	ER-32	7,0 - 6,5	30325867

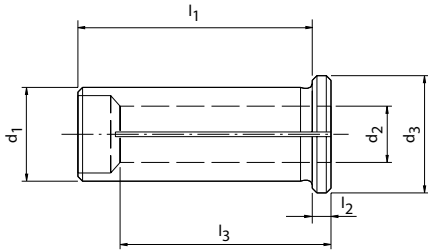
## ER sealing discs | for clamping nuts with internal coolant supply

Clamping range	Nominal size	Clamping diameter d <sub>1</sub>	Order no.
2 - 20	ER-32	7,5 - 7,0	30325868
2 - 20	ER-32	8,0 - 7,5	30325869
2 - 20	ER-32	8,5 - 8,0	30325870
2 - 20	ER-32	9,0 - 8,5	30325871
2 - 20	ER-32	9,5 - 9,0	30325872
2 - 20	ER-32	10,0 - 9,5	30325873
2 - 20	ER-32	10,5 - 10,0	30325874
2 - 20	ER-32	11,0 - 10,5	30325875
2 - 20	ER-32	11,5 - 11,0	30325876
2 - 20	ER-32	12,0 - 11,5	30325877
2 - 20	ER-32	12,5 - 12,0	30325878
2 - 20	ER-32	13,0 - 12,5	30325879
2 - 20	ER-32	13,5 - 13,0	30325880
2 - 20	ER-32	14,0 - 13,5	30325881
2 - 20	ER-32	14,5 - 14,0	30325882
2 - 20	ER-32	15,0 - 14,5	30325883
2 - 20	ER-32	15,5 - 15,0	30325884
2 - 20	ER-32	16,0 - 15,5	30325885
2 - 20	ER-32	16,5 - 16,0	30325886
2 - 20	ER-32	17,0 - 16,5	30325887
2 - 20	ER-32	17,5 - 17,0	30325888
2 - 20	ER-32	18,0 - 17,5	30325889
2 - 20	ER-32	18,5 - 18,0	30325890
2 - 20	ER-32	19,0 - 18,5	30325891
2 - 20	ER-32	19,5 - 19,0	30325892
2 - 20	ER-32	20,0 - 19,5	30325893
3 - 26	ER-40	3,0 - 2,5	30325894
3 - 26	ER-40	3,5 - 3,0	30325895
3 - 26	ER-40	4,0 - 3,5	30325896
3 - 26	ER-40	4,5 - 4,0	30325897
3 - 26	ER-40	5,0 - 4,5	30325898
3 - 26	ER-40	5,5 - 5,0	30325899
3 - 26	ER-40	6,0 - 5,5	30325900
3 - 26	ER-40	6,5 - 6,0	30325901
3 - 26	ER-40	7,0 - 6,5	30325902
3 - 26	ER-40	7,5 - 7,0	30325903

Clamping range	Nominal size	Clamping diameter d <sub>1</sub>	Order no.
3 - 26	ER-40	8,0 - 7,5	30325904
3 - 26	ER-40	8,5 - 8,0	30325905
3 - 26	ER-40	9,0 - 8,5	30325906
3 - 26	ER-40	9,5 - 9,0	30325907
3 - 26	ER-40	10,0 - 9,5	30325908
3 - 26	ER-40	10,5 - 10,0	30325909
3 - 26	ER-40	11,0 - 10,5	30325910
3 - 26	ER-40	11,5 - 11,0	30325911
3 - 26	ER-40	12,0 - 11,5	30325912
3 - 26	ER-40	12,5 - 12,0	30325913
3 - 26	ER-40	13,0 - 12,5	30325914
3 - 26	ER-40	13,5 - 13,0	30325915
3 - 26	ER-40	14,0 - 13,5	30325916
3 - 26	ER-40	14,5 - 14,0	30325917
3 - 26	ER-40	15,0 - 14,5	30325918
3 - 26	ER-40	15,5 - 15,0	30325919
3 - 26	ER-40	16,0 - 15,5	30325920
3 - 26	ER-40	16,5 - 16,0	30325921
3 - 26	ER-40	17,0 - 16,5	30325922
3 - 26	ER-40	17,5 - 17,0	30347836
3 - 26	ER-40	18,0 - 17,5	30347837
3 - 26	ER-40	18,5 - 18,0	30347838
3 - 26	ER-40	19,0 - 18,5	30347839
3 - 26	ER-40	19,5 - 19,0	30347840
3 - 26	ER-40	20,0 - 19,5	30347841
3 - 26	ER-40	20,5 - 20,0	30347842
3 - 26	ER-40	21,0 - 20,5	30347843
3 - 26	ER-40	21,5 - 21,0	30347844
3 - 26	ER-40	22,0 - 21,5	30347845
3 - 26	ER-40	22,5 - 22,0	30347846
3 - 26	ER-40	23,0 - 22,5	30347847
3 - 26	ER-40	23,5 - 23,0	30347848
3 - 26	ER-40	24,0 - 23,5	30347849
3 - 26	ER-40	24,5 - 24,0	30347850
3 - 26	ER-40	25,0 - 24,5	30347851
3 - 26	ER-40	25,5 - 25,0	30347852
3 - 26	ER-40	26,0 - 25,5	30347853

# Reducing sleeve for hydraulic chuck

without length adjustment, coolant seal



Dimensions						Order no.
d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	
12	3	16	40	4	29	30251059
12	4	16	40	4	29	30251060
12	5	16	40	4	29	30251061
12	6	16	40	4	36	30251062
12	7	16	40	4	37	30251063
12	8	16	40	4	37	30251064
12	9	16	40	4	37	30251065
12	10	16	40	4	40	30251066
20	3	25	50	4	28	30251067
20	4	25	50	4	28	30251068
20	5	25	50	4	28	30251069
20	6	25	50	4	36	30251070
20	7	25	50	4	38	30251071
20	8	25	50	4	37	30251072
20	9	25	50	4	38	30251073
20	10	25	50	4	40	30251074
20	11	25	50	4	40	30251075
20	12	25	50	4	45	30251076
20	13	25	50	4	45	30251077
20	14	25	50	4	45	30251078
20	15	25	50	4	45	30251079
20	16	25	50	4	48	30251080
20	18	25	50	4	48	30486538
25	3	30	56	4	29	30251081
25	4	30	56	4	29	30251082
25	5	30	56	4	29	30251083
25	6	30	56	4	37	30251084
25	7	30	56	4	37	30251085
25	8	30	56	4	37	30251086
25	9	30	56	4	38	30251087
25	10	30	56	4	40	30251088
25	12	30	56	4	46	30251089

## Reducing sleeve for hydraulic chuck | without length adjustment, coolant seal

Dimensions						Order no.
d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	
25	14	30	56	4	47	30251090
25	16	30	56	4	48	30251091
25	18	30	56	4	48	30251092
25	20	30	56	4	50	30251093
32	6	36	60	4	36	30251094
32	7	36	60	4	37	30251095
32	8	36	60	4	36	30251096
32	9	36	60	4	37	30251097
32	10	36	60	4	40	30251098
32	11	36	60	4	40	30251099
32	12	36	60	4	45	30251100
32	13	36	60	4	45	30251101
32	14	36	60	4	46	30251102
32	15	36	60	4	46	30251103
32	16	36	60	4	48	30251104
32	17	36	60	4	48	30251105
32	18	36	60	4	49	30251106
32	19	36	60	4	49	30251107
32	20	36	60	4	50	30251108
32	22	36	60	4	50	30251109
32	25	36	60	4	56	30251110

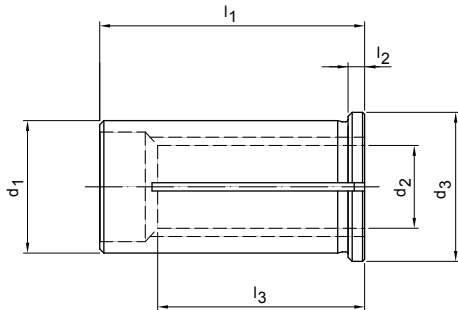
Dimensions in mm.

Design: Suitable for taps according to DIN, ISO and JIS standards.

Note: Never clamp shanks with oversize! E.g. never press a shank with  $\varnothing$  9.2 mm into a collet with  $\varnothing$  9.0 mm. Always use the next larger collet (here  $\varnothing$  10.0 mm).

# Reducing sleeve for hydraulic chuck

without length adjustment, with cooling channel bores



Dimensions						Order no.
d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	
12*	1	16	40	4	20	30503691
12*	1,5	16	40	4	20	30503718
12*	2	16	40	4	20	30503725
12*	2,5	16	40	4	20	30503728
12	3	16	44	4	29	30557343
12	4	16	44	4	29	30557344
12	5	16	44	4	29	30557345
12	6	16	44	4	36	30557346
12	8	16	44	4	37	30557347
20	3	25	54	4	28	30557348
20	4	25	54	4	28	30557350
20	5	25	54	4	28	30557351
20	6	25	54	4	36	30557352
20	8	25	54	4	37	30557353
20	10	25	54	4	40	30557354
20	12	25	54	4	45	30557355
20	14	25	54	4	45	30557356
20	16	25	54	4	48	30557358
32	6	36	64	4	36	30557359
32	8	36	64	4	36	30557360
32	10	36	64	4	40	30557361
32	12	36	64	4	45	30557362
32	14	36	64	4	46	30557364
32	16	36	64	4	48	30557365
32	18	36	64	4	49	30557366
32	20	36	64	4	50	30557367
32	25	36	64	4	56	30557369

Dimensions in mm.

For diameter reduction specially for hydraulic chucks – suitable for all hydraulic chucks. Metallic sealing for hydraulic chucks without dirt discharge groove, coolant pressure to 80 bar, long service life due to use of high-quality hardened spring steel, radial run-out accuracy 3 µm, high diameter flexibility of the hydraulic chucks.

Note: Matching extraction wrench for simple removal of the reducing sleeves can be found in this section. Length adjustment via AAS can be found in this section. Inch diameters also available upon request.



## Reducing sleeves for hydraulic chucks with 10 mm length adjustment, coolant seal

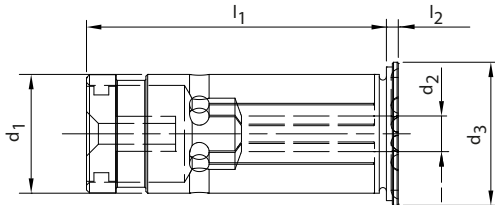
Dimensions					Order no.
d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	
12	3	16,5	45,0	2,0	30317206
12	4	16,5	45,0	2,0	30317207
12	5	16,5	45,0	2,0	30317208
12	6	16,5	45,0	2,0	30317209
12	8	16,5	45,0	2,0	30317211
20	3	24,1	50,5	2,0	30317212
20	4	24,1	50,5	2,0	30317213
20	5	24,1	50,5	2,0	30317214
20	6	24,1	50,5	2,0	30317215
20	7	24,1	50,5	2,0	30317216
20	8	24,1	50,5	2,0	30317217
20	9	24,1	50,5	2,0	30317218
20	10	24,1	50,5	2,0	30317219
20	11	24,1	50,5	2,0	30317220
20	12	24,1	50,5	2,0	30317221
20	13	24,1	50,5	2,0	30317222
20	14	24,1	50,5	2,0	30317223
20	15	24,1	50,5	2,0	30317224
20	16	24,1	50,5	2,0	30317225
22	6	25	50,5	2,0	30317227
22	8	25	50,5	2,0	30317228
22	10	25	50,5	2,0	30317229
22	12	25	50,5	2,0	30317230
22	14	25	50,5	2,0	30317231
22	16	25	50,5	2,0	30317232
25	6	29	54,5	2,0	30317233
25	8	29	54,5	2,0	30317234
25	10	29	54,5	2,0	30317235
25	12	29	54,5	2,0	30317236
25	14	29	54,5	2,0	30317237
25	16	29	54,5	2,0	30317238
25	18	29	54,5	2,0	30317239
25	20	29	54,5	2,0	30317240
32	6	35,5	60,5	2,0	30317241
32	8	35,5	60,5	2,0	30317242
32	10	35,5	60,5	2,0	30317243
32	12	35,5	60,5	2,0	30317244
32	14	35,5	60,5	2,0	30317245
32	16	35,5	60,5	2,0	30317246
32	18	35,5	60,5	2,0	30317247
32	20	35,5	60,5	2,0	30317248
32	25	35,5	60,5	2,0	30317249

Dimensions in mm.

Note: For diameter reduction on hydraulic chucks and polygon chucks, coolant pressure to 80 bar. Radial run-out accuracy 3 µm. High diameter flexibility of the chuck.

# Reducing sleeve for hydraulic chuck

with 10 mm length adjustment



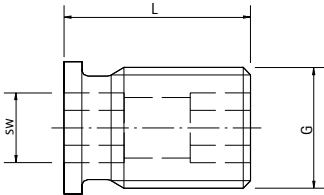
Dimensions					Order no.
d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>2</sub>	
12	3	16,5	45,0	2,0	30317177
12	4	16,5	45,0	2,0	30317178
12	6	16,5	45,0	2,0	30317180
12	8	16,5	45,0	2,0	30317182
20	3	24,1	50,5	2,0	30317183
20	4	24,1	50,5	2,0	30317184
20	5	24,1	50,5	2,0	30317185
20	6	24,1	50,5	2,0	30317186
20	7	24,1	50,5	2,0	30317187
20	8	24,1	50,5	2,0	30317188
20	9	24,1	50,5	2,0	30317189
20	10	24,1	50,5	2,0	30317190
20	11	24,1	50,5	2,0	30317191
20	12	24,1	50,5	2,0	30317192
20	14	24,1	50,5	2,0	30317193
20	15	24,1	50,5	2,0	30317194
20	16	24,1	50,5	2,0	30317195
32	6	35,5	60,5	2,0	30317197
32	8	35,5	60,5	2,0	30317198
32	10	35,5	60,5	2,0	30317199
32	12	35,5	60,5	2,0	30317200
32	14	35,5	60,5	2,0	30317201
32	16	35,5	60,5	2,0	30317202
32	18	35,5	60,5	2,0	30317203
32	20	35,5	60,5	2,0	30317204
32	25	35,5	60,5	2,0	30317205

Dimensions in mm.

Note: For diameter reduction on hydraulic chucks and polygon chucks, no coolant seal.  
Radial run-out accuracy 3 µm. High diameter flexibility of the chuck.

## Stop screws direct clamping

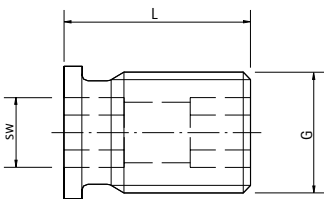
for axial length adjustment



G	sw	L	Weight [kg]	Order no.
M5	2	14	0,001	30336661
M5	2,5	12,5	0,001	30252539
M6	2	14	0,002	30252537
M6	3	12,5	0,002	30252540
M8x1	3	13,5	0,004	30252541
M10x1	5	13,5	0,006	30252542
M12x1	5	13,5	0,011	30252543
M16x1	5	13,5	0,017	30252544
M16x1	8	13,5	0,021	30252547

## Stop screw direct clamping

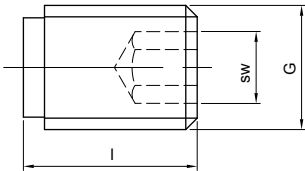
for HTC, suitable for MQL, for axial length adjustment



G	sw	L	Weight [kg]	Order no.
M5	2,5	15	0,001	30340240
M6	3	15	0,002	30340241
M8x1	3	15,5	0,005	30340242
M10x1	5	15,5	0,006	30340243
M10x1	5	16,5	0,008	30340244
M12x1	5	18	0,015	30340245
M12x1	5	20	0,02	30340246
M16x1	5	18,5	0,03	30340247
M16x1	5	22	0,05	30340249
M16x1	5	25	0,07	30340250

# Clamping screw HTC

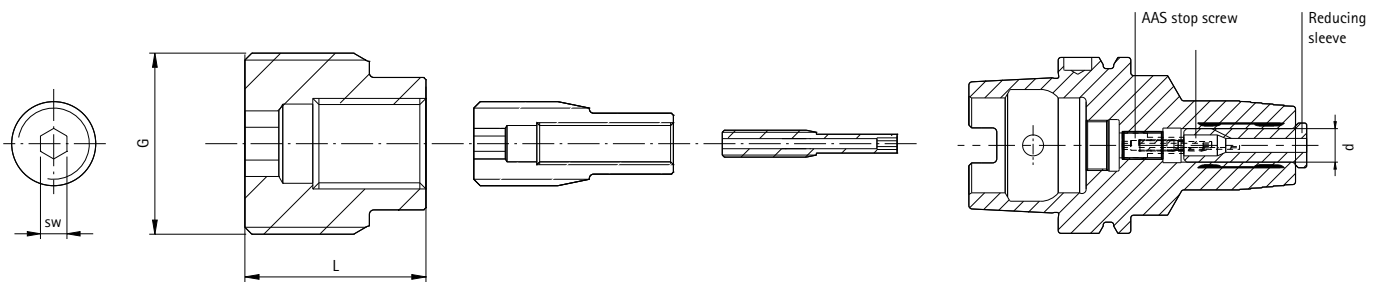
for application of pressure



G	sw	L	Weight [kg]	Order no.
M10	5	10	0,006	10003470
M10	5	14	0,009	10070217

# AAS stop screws

On the usage of reducing sleeves for axial length adjustment and secure axial fixing

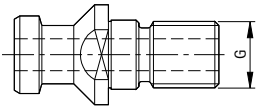


G	Ø d	sw	L	Order no.
M4x0,5	12	2	26	30308901
M10x1	12	3	16	30308896
M16x1	20	5	16	30308897
M8x1	20	2,5	19	30308899
M4x0,5	20	2	26	30308901
M8x1	25	2,5	19	30308899
M4x0,5	25	2	26	30308901
M16x1	25	5	20	30308904
M8x1	32	2,5	19	30308899
M16x1	32	5	20	30308904

Dimensions in mm.

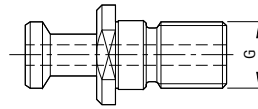
Note: For usage with reducing sleeves for hydraulic chucks.

## Pull studs for steep taper adapter



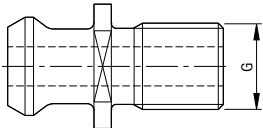
Pull studs for taper shank according to  
ISO 7388-3 Form AD/AF

Steep taper	Shape	G	Order no.
30	AD	M12	10017955
30	AF	M12	10061282
40	AD	M16	10004416
40	AF	M16	10007995
50	AD	M24	10006581
50	AF	M24	10021618



Pull studs for taper shank according to  
ISO 7388-3 Form JD 30°/45°

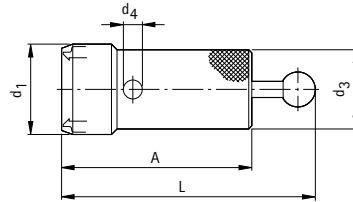
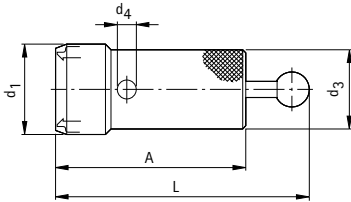
BT	Shape	G	Order no.
30	30°	M12	10017954
30	45°	M12	10066211
40	30°	M16	10022405
40	45°	M16	10018129
50	30°	M24	10020619
50	45°	M24	10013983



Pull studs for taper shank in accordance with  
ASME B 5.50 (CAT)

CAT	G	Order no.
30	1/2" - UNC	10066205
40	5/8" - UNC	10066206
50	1" - UNC	10066210

## KS assembly tools



### KS assembly tools

HSK-C	Dimensions					Order no.
	A	L	d <sub>1</sub>	d <sub>3</sub>	d <sub>4</sub>	
32	74	95	24	24	6	30326009
40	85	105	30	30	7	30326010
50	96	115	38	38	8	30326011
63	107	130	48	48	10	30326012
80	120	150	57	50	12	30326013
100	135	168	73	52	14	30326014

### KS assembly tools for MQL applications

HSK-C	Dimensions					Order no.
	A	L	d <sub>1</sub>	d <sub>3</sub>	d <sub>4</sub>	
40	85	105	30	30	7	30326015
50	96	115	38	38	8	30326016
63	107	130	48	48	10	30326017
80	120	150	57	50	12	30326018
100	135	168	73	52	14	30326019

Dimensions in mm.

Use: For locking and unlocking or removing KS clamping cartridges (standard and high pressure cartridges). Fitting and removing clamping cartridges is very easy using the assembly tool, even in multiple spindle heads.

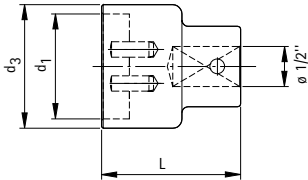
Note: Locking and unlocking the clamping cartridges can be made easier by using an ex-

tension bar that is inserted through the bore d<sub>4</sub>.

Scope of delivery: Without extension bar.

Workpiece material: Gripper jaws and assembly blade made of hardened steel.

## KS assembly sockets



### KS assembly sockets

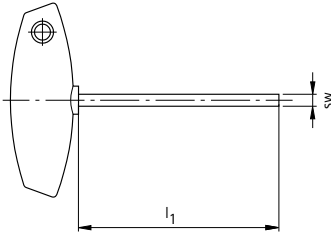
HSK-C	Dimensions			Order no.
	d <sub>1</sub>	d <sub>3</sub>	L	
32	17	22	45	30325992
40	21	26	45	30325993
50	26	32	45	30325994
63	34	40	45	30325995
80	42	48	45	30325996
100	53	60	45	30325997

Dimensions in mm.

Use: For locking and unlocking KS clamping cartridges.

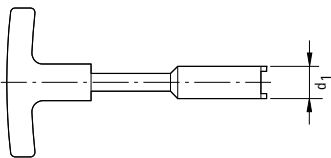
Note: With the reducer 3/8" - 1/2" (Order No MN5216-20) the assembly socket fits the torque wrench.

# Assembly tool



## Hexagonal T-key

sw	Short design			Long design	
	l <sub>1</sub>	Specification	Order no.	l <sub>1</sub>	Order no.
2,0	100	-	10006942	200	10034235
2,5	100	-	10006233	200	10032722
3	100	MN5221-31	10006234	200	10025313
4	100	MN5221-32	10006235	200	10018010
5	100	MN5221-33	10006236	200	10013350
6	100	MN5221-34	10006237	-	-
8	100	MN5221-35	10006238	-	-
10	100	-	30353270	-	-

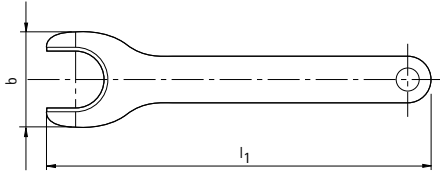


## Assembly tools for fitting and removing coolant tubes or adapter tubes on the KS MQL clamping cartridges

HSK	d <sub>1</sub>	For coolant tube in accordance with DIN 69895		For blanking plugs/adapter tube on the KS clamping cartridges for MQL applications	
		Specification	Order no.	Specification	Order no.
32	9	MAT-HSK-A032-1	10074750	MAT-KS032-040-G	10079521
40	11	MAT-HSK-A040-1	10074751	MAT-KS032-040-G	10079521
50	15	MAT-HSK-A050-1	10074752	MAT-KS050-063-G	10079522
63	17	MAT-HSK-A063-1	10040110	MAT-KS050-063-G	10079522
80	18	MAT-HSK-A080-1	10074774	MAT-KS080-G	10079523
100	22	MAT-HSK-A100-1	10074775	MAT-KS100-G	10079525



## Assembly tool



Extraction wrench for simple removal of the reducing sleeves from the MAPAL hydraulic chucks

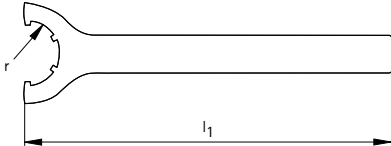
Nominal size	Dimensions		Specification	Order no.
	b	$l_1$		
HS12	24,6	100	MN5425-99	30251198
HS20	38	160	MN5427-99	30251199
HS25	51	180	MN5428-99	30251200
HS32	63	200	MN5429-99	30251201



Open-ended wrench DIN 894 for chucks for collets as per DIN 69882-6 and softsynchro tapping chucks

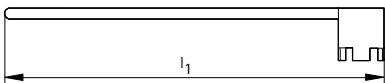
Clamping range	Nominal size	Dimensions		Specification	Order no.
		$l_1$	sw		
0,5 - 10	ER-16	215	25	MN5221-01	10074776
1 - 13	ER-20	260	30	MN5221-02	10080923

# Assembly tool



Open-ended wrench for chucks for collets as per DIN 69882-6 and softsynchro tapping chucks

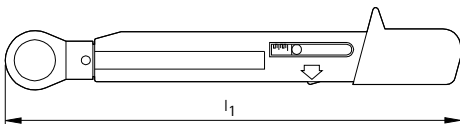
Clamping range	Nominal size	Dimensions		Specification	Order no.
		$l_1$	$r$		
1 - 16	ER-25	210	65	MN5221-10	10080922
2 - 20	ER-32	250	75	MN5221-11	10074777
3 - 26	ER-40	290	90	MN5221-12	10074955



Open-ended wrench DIN 6368 for milling cutter arbors

Arbor diameter $d_1$	Dimension $l_1$	Specification	Order no.
16	180	MN5221-21	10074778
22	200	MN5221-22	10074779
27	225	MN5221-23	10074780
32	250	MN5221-24	10074781
40	280	MN5221-25	10074782
50	315	MN5221-26	10074785
60	355	MN5221-27	10080921

# Torque wrench

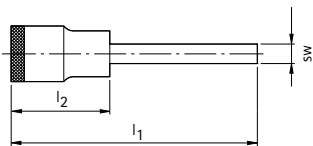


## Torque wrench

HSK-C	$l_1$	Torque range [Nm]	Order no.	Design Reversible ratchet
32 - 40	210	4 - 20	30149002*	1/4"
32 - 40	210	4 - 20	10040125**	1/4"
50 - 80	240	8 - 40	30148986***	3/8"
50 - 80	240	8 - 40	10040126**	3/8"
100	333	10 - 60	30149001****	3/8"
-	333	10 - 60	10074788**	3/8"
-	435	25 - 130	30353267**	1/2"

### Scope of delivery:

- \* As set with replaceable hexagonal insert (wrench size 3).
- \*\* Torque wrench without hexagonal insert.
- \*\*\* As set with replaceable hexagonal inserts (wrench size 4, 5, 6).
- \*\*\*\* As set with replaceable hexagonal insert (wrench size 8).

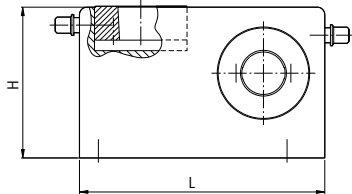


## Hexagonal inserts

Nominal size	Dimensions			Order no.	Design Input
	$l_1$	$l_2$	sw		
HSK-C	$l_1$	$l_2$	sw		
32 - 40	55	25	3	10040122	1/4"
50	63	28	4	10040123	3/8"
63	73	28	5	10040124	3/8"
80	78	28	6	10074792	3/8"
100	95	32	8	10074793	3/8"
-	140	38	10	30353265	1/2"
-	140	38	12	30353266	1/2"
-	140	38	14	30707823	1/2"

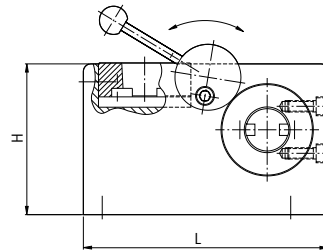
# Tool mounting blocks

for tools with hollow shank taper HSK32-100, Form A-F, T



**Design 1**

HSK	Dimensions			Order no.
	L	T	H	
32	260	130	160	30326038
40	260	130	160	30326039
50	260	130	160	30326040
63	260	130	160	30326041



**Design 2**

HSK	Dimensions			Order no.
	L	T	H	
80	260	130	160	30326287
100	260	130	160	30326043

Dimensions in mm.

**Design 1:** The tool adapters are clamped vertically and horizontally at the collar. In this way, all taper forms with the same collar diameter can be clamped in one block. The torque is transmitted via friction locking.

Scope of delivery: With horizontal and vertical adapter sleeve fitted, including actuation key.

Note: Design 1 can be used for all HSK forms in the nominal size.

**Design 2:** The tool adapter is simply inserted vertically and held in place by its own weight. The tool is held horizontally by the pivoting screw. The torque is transmitted via the driving element on the end of the taper.

Scope of delivery: With horizontal and vertical adapter sleeve fitted.

Note: Design 2 can only be used for the HSK Forms A and C in the related nominal size.

# Code carrier

according to DIN 69873-D10



Name	Manufacturer	Storage capacity	Dimensions		Order no.
			d <sub>1</sub>	l <sub>1</sub>	
BIS C-122-04/L	Balluff	511 Byte	10	4,5	10004178
BIS M-122-01/A	Balluff	752 Byte	10	4,5	30433956
BIS C-122-11/L	Balluff	2000 Byte	10	4,5	30532418
BIS M-122-02/A	Balluff	1000 Byte	10	4,5	30546468
BIS C-122-05/L	Balluff	752 Byte	10	4,5	30854698
MDS E623	Siemens	2047 Byte	10	4,5	10058310
MDS D421	Siemens	2000 Byte	10	4,5	30415066
V680-D1KP53M	Boie	1023 Byte	10	4,5	30430859

Dimensions in mm.

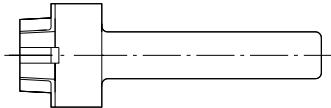
Use: For fitting in tool shanks.

Chuck with HSK-A (hollow shank taper form A) shank in accordance with DIN 69893.

Note: The code carriers can be written as often as necessary. The code carrier does not

need a battery to supply power. The power and data required by the code carrier are coupled inductively by the read/write head. The data transfer is safeguarded by a plausibility check. On request tool shanks / chucks are available with a code carrier bonded in place.

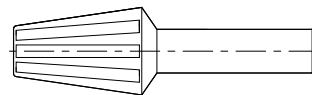
# Taper wipers



## For HSK connections

HSK	Order no.
32	30325980
40	30325981
50	30325982
63	30325983
80	30325984
100	30325985

Use: For cleaning taper and face connection on machine spindles and tool adapters.  
 Note: Face surface and taper are cleaned at the same time.

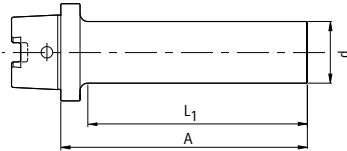


## For SK connections

HSK	Order no.
30	10013439
40	10013427
50	10007567

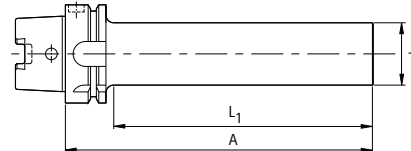
Use: For cleaning the taper shank on machine spindles and tool adapters.

# Test arbors



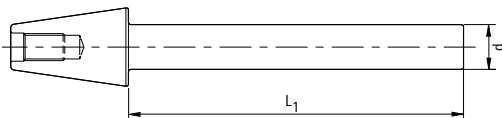
**HSK-C test arbors**

HSK-C	Dimensions			Weight [kg]	Order no.
	d	A	$l_1$		
32	25	125	110	0,5	30326244
40	25	125	110	0,6	30326245
50	32	125	107,5	0,8	30326246
63	40	160	137,5	1,6	30326247
80	40	160	130	1,8	30326248
100	40	160	130	2,0	30326249



**HSK-A test arbors**

HSK-A	Dimensions			Weight [kg]	Order no.
	d	A	$l_1$		
32	25	176	150	0,5	30326250
40	25	180	150	0,6	30326251
50	32	236	200	0,8	30326252
63	40	346	300	1,6	30326253
80	40	346	300	1,8	30326254
100	40	349	300	2,0	30326255

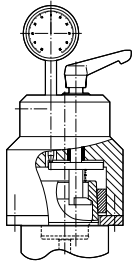


**SK test arbors**

Steep taper	Dimensions		Weight [kg]	Order no.
	d	$l_1$		
40	40	320	1,8	30326256
50	40	320	3,3	30326257

Use: For the acceptance test on machine tools.

## Gauges for HSK shanks



### Gauges for 30° clamping angle

HSK	Order no.
32	30325974
40	30325975
50	30325976
63	30325977
80	30325978
100	30325979

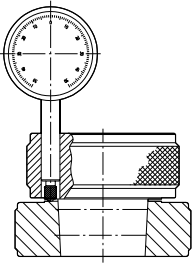
Dimensions in mm.

Use: For direct comparative measurement between calibrated taper plug gauge and tool shank or HSK external taper. With the taper measuring rings set using the taper plug gauge, the deviation on the shank from the nominal taper diameter  $d_2$  or the measuring point diameter  $d_k$  can be read on the dial gauges.

Scope of delivery: Measuring device mounted on a board in wooden case with two precision dial gauges for  $d_2$  and  $d_k$ , including master gauge in wooden box.



# Gauges for HSK spindles



## Mechanical gauges

HSK	Order no.
32	30325968
40	30325969
50	30325970
63	30325971
80	30325972
100	30325973

Dimensions in mm.

Use: For direct comparative measurement between calibrated setting gauge and tool shank or HSK external taper. Using the gauge calibrated with the setting gauge, the deviation on the shank from the clamping point distance  $L_6$  can be read on the dial gauge.

Scope of delivery: Setting gauge and dial gauge as set in wooden box.

Use: For checking the principal function dimensions in one process.

1.  $d_2$  large taper diameter (direct measurement)
2.  $d_k$  small taper diameter (direct measurement)
3.  $L_5$  clamping shoulder distance  $30^\circ$
4.  $L_6$  bottom of the bore

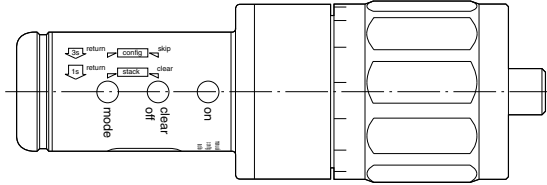
Roundness:  $d_2$ ,  $d_3$ ,  $L_5$  by rotating the workpiece in the measuring fixture

5.  $d_{11}$ ,  $f_3$  gripper groove

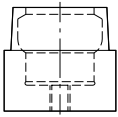
Scope of delivery: Gauge with measuring head including six dial gauges.

Note: The gauge is of modular design and is therefore available in various versions and combinations on request.

# Clamping force measuring device

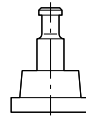


	Order no.
Basic device	30290047



## HSK adapter

HSK-A/-C	Order no.
32	30353380
40	30353383
50	30353387
63	30353418
80	30353420
100	30340278



## SK adapter

Steep taper	Order no.
30	30353422
40	30353423
45	30353424
50	30353426

Dimensions in mm.

Use: For measuring clamping forces on tool spindles with HSK (hollow shank taper) and SK (steep taper) connection. Using various adapters, the measuring device can be adjusted to the following spindle sizes:

HSK-A32/B40 to HSK-A100/B160 SK 30 to SK 50 (in accordance with DIN/ISO).

Design:

- Universal usage for all common taper shanks and hollow shank standards due to replaceable adapters
- Complete force measuring unit in the basic device
- Does not require mains power
- Auto-power off
- Displayed in kilonewtons
- Internal data memory for a large number of measurements
- Can be used at any time due to storage in the tool magazine
- Standby mode for low power consumption and as a result long battery life
- USB connection for reading the memory and charging the integrated Li-ion battery

Note: Further adapters available on request.

Technical data:

Measuring range: 10-75 kN

Measuring system: strain gauge sensor

Accuracy: < 1 % of the maximum value

Weight: approx. 3 kg

# Notes

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# TECHNICAL APPENDIX

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Notes on standards, application and handling







# TECHNICAL APPENDIX

Important technical notes and background information on MAPAL clamping technology are given in the following. Along with the standards on hollow shank taper forms A and C (HSK-A and HSK-C) as well as the various steep taper (SK) variants, the fitting dimensions for the flange modules are documented. Subsequently, there are important technical notes on the individual clamping tools and clamping systems in the catalogue.

The performance data on the KS clamping cartridges include information on clamping force and bending moment. The torques that can be transferred, radial run-out accuracy and accuracy of repetition as well as the spindle speed limits for the HSK connection are also explained. There follows information on the coding system for hollow taper shanks provided by MAPAL as an option to prevent operating errors during a tool change. Finally, there are helpful practical tips with notes on setting and handling related to the installation and assembly of the KS clamping cartridge, as well as the assembly and alignment of KS flange adapters, MAPAL Module connections and hydraulic clamping tools.

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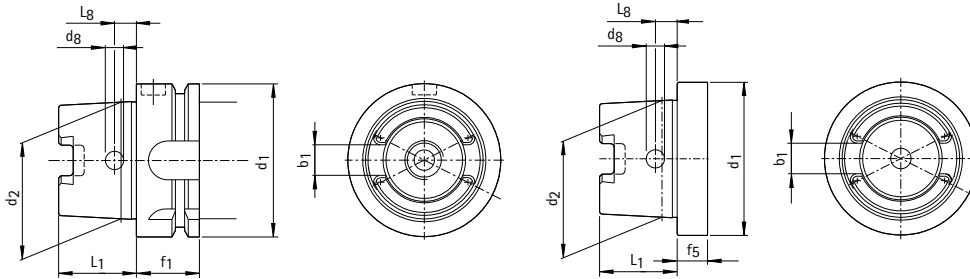
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# Hollow shank taper standard

for hollow shanks DIN 69893-1 HSK-A, HSK-C



HSK-A for automatic and manual tool change

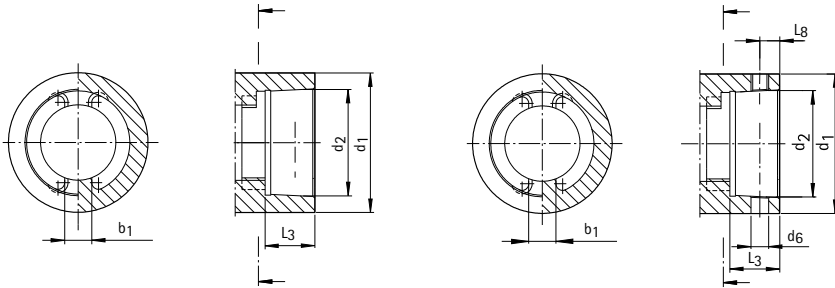
HSK-C for manual tool change

		Hollow shank taper size					
Nominal size	$d_1$ h10	32	40	50	63	80	100
Taper diameter	$d_2$	24,007	30,007	38,009	48,01	60,012	75,013
Shank length	$L_1$ 0/-0,2	16	20	25	32	40	50
Groove width	$b_1$ +/-0,04	7,05	8,05	10,54	12,54	16,04	20,02
Bore diameter	$d_8$	4	4,6	6	7,5	8,5	12
Bore spacing	$L_8$ +/-0,1	5	6	7,5	9	12	15
Flange width hollow shank taper A	$f_1$ 0/-0,1	20	20	26	26	26	29
Flange width hollow shank taper C	$f_5$	10	10	12,5	12,5	16	16



# Hollow shank taper standard

for connections DIN 69093-1 HSK-A, HSK-C



HSK-A for automatic tool change

HSK-C for manual tool change

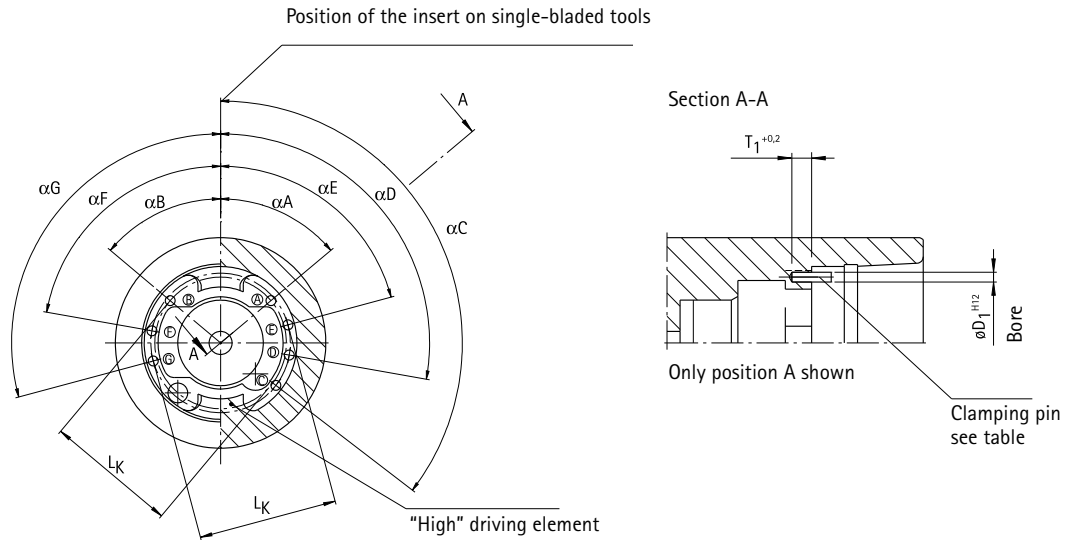
		Hollow shank taper size					
Nominal size	$d_1$	32	40	50	63	80	100
Taper diameter	$d_2$	23,998	29,998	37,998	47,998	59,997	74,997
Depth	$L_3 +0,2$	11,4	14,4	17,9	22,4	28,4	35,4
Driving element width	$b_1 \pm 0,05$	6,8	7,8	10,3	12,3	15,8	19,78
Additional for HSK-C							
Bore diameter	$d_6$	4	5	6	8	9	11
Bore spacing	$L_8 \pm 0,1$	5	6	7,5	9	12	15

# Coding system for hollow taper shanks

Multiple spindle drill heads are often used in custom machines. In this case a large number of spindles are arranged in a small space. So that operating errors can be excluded during the tool change, the DIN 69894 coding system for hollow taper shanks has been developed. Additional

pins in the tool spindles and slots on the end of the HSK shank ensure unambiguous allocation of a tool to a specific spindle.

## Coding system for tool spindles:

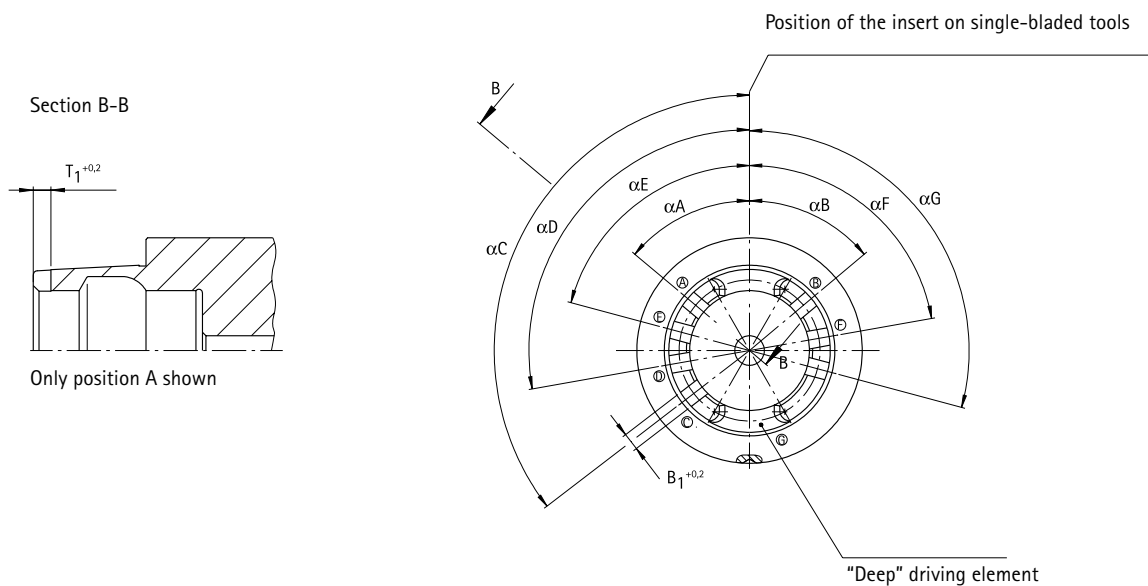


Position HSK	Ⓐ α A	Ⓑ α B	Ⓒ α C	Ⓓ α D	Ⓔ α E	Ⓕ α F	Ⓖ α G	D <sub>1</sub>	T <sub>1</sub>	L <sub>K</sub>	Clamping pin
32	50°	50°	127,5°	100°	75°	80°	105°	1,5	3		ISO 8752-1,5x6
40	52,5°	52,5°	127,5°	100°	75°	80°	105°	2	3		ISO 8752-2x6
50	55°	55°	125°	100°	75°	80°	105°	2,5	3		ISO 8752-2,5x6
63	60°	60°	120°	105°	75°	75°	105°	3,5	4		ISO 8752-3,5x8
80	60°	60°	120°	105°	75°	75°	105°	4,5	5		ISO 8752-4,5x10
100	45°	45°	135°	105°	75°	75°	105°	4,5	7		ISO 8752-4,5x12
125	45°	45°	135°	105°	75°	75°	105°	4,5	7		ISO 8752-4,5x12
160	45°	45°	135°	105°	75°	75°	105°	4,5	7		ISO 8752-4,5x12

■ = preferable

# Coding system for hollow taper shanks

## Coding system for tool shanks:

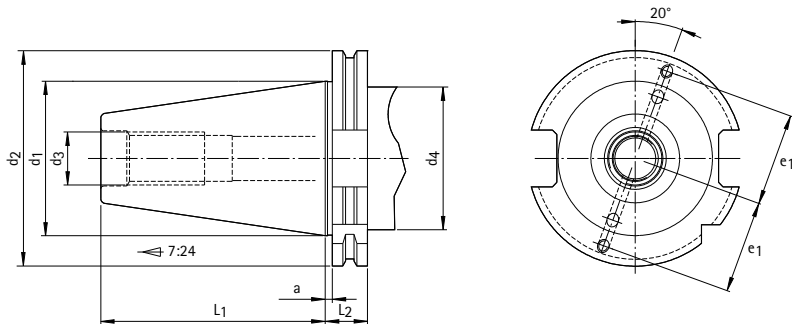


Position HSK	Ⓐ $\alpha A$	Ⓑ $\alpha B$	Ⓒ $\alpha C$	Ⓓ $\alpha D$	Ⓔ $\alpha E$	Ⓕ $\alpha F$	Ⓖ $\alpha G$	$B_1$	$T_1$
32	50°	50°	127,5°	100°	75°	80°	105°	2,5	2,5
40	52,5°	52,5°	127,5°	100°	75°	80°	105°	3	2,5
50	55°	55°	125°	100°	75°	80°	105°	3,5	2,5
63	60°	60°	120°	105°	75°	75°	105°	4,5	3,5
80	60°	60°	120°	105°	75°	75°	105°	5,5	4,5
100	45°	45°	135°	105°	75°	75°	105°	5,5	5
125	45°	45°	135°	105°	75°	75°	105°	5,5	5
160	45°	45°	135°	105°	75°	75°	105°	5,5	5

■ = preferable

# Standard

for steep taper tool shanks according to ISO 7388-1

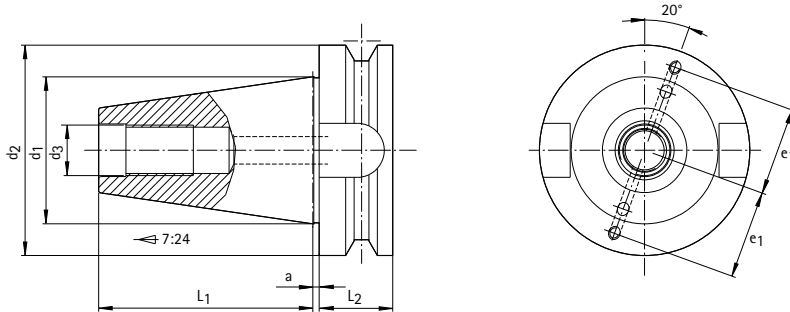


For automatic tool change Form A, Form AD, Form AF and design with data carrier

	Size			
	30	40	45	50
a +/-0.1	3.2	3.2	3.2	3.2
d <sub>1</sub>	31.75	44.45	57.15	69.85
d <sub>2</sub> 0/-0.1	50	63.55	82.55	97.5
d <sub>3</sub>	M 12	M 16	M 20	M 24
d <sub>4</sub> max.	45	50	63	80
e <sub>1</sub> +/-0.1	21	27	35	42
L <sub>1</sub> 0/-0.3	47.8	68.4	82.7	101.75
L <sub>2</sub> 0/-0.1	19.1	19.1	19.1	19.1

# Standard

for BT tool shanks according to ISO 7388-2



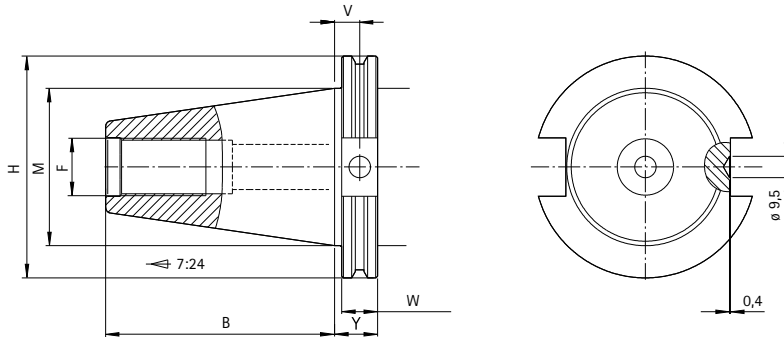
For automatic tool change Form J, Form JF, Form JD and design with data carrier

	Size		
	30	40	50
$a \pm 0.4^*$	2	2	3
$d_1$	31.75	44.45	69.85
$d_2$ h8	46	63	100
$d_3$	M 12	M 16	M 24
$e_1 \pm 0.1$	20	27	42
$L_1 \pm 0.2$	48.4	65.4	101.8
$L_2$ min.	22	27	38

\* + 0.1 for Form JF

# Steep taper standard

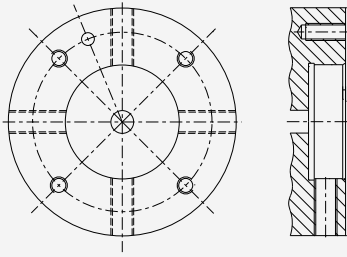
for taper shanks with V-flange module according to ASME B5.50-1994



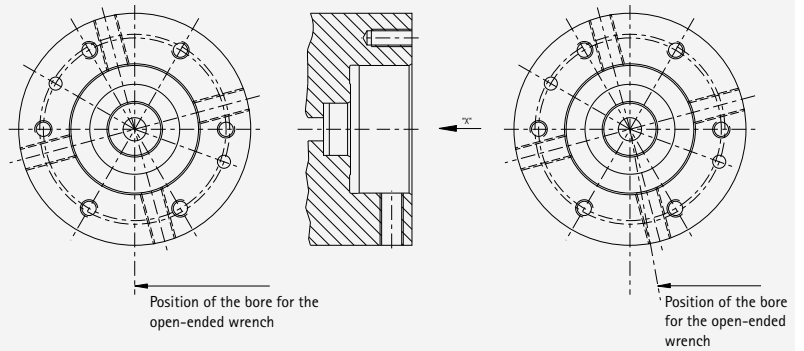
		Taper shank size			
		30	40	45	50
B	+/-0,1	47,65	68,25	82,55	101,6
F	UNC-2B	1/2"-13	5/8"-11	3/4"-10	1"-8
H	+/-0,5	46,02	63,5	82,55	98,43
M	+/-0,13	31,75	44,45	57,15	69,85
V	+/-0,25	11,2	11,2	11,2	11,2
W	+/-0,05	15,88	15,88	15,88	15,88
Y	+/-0,05	19,05	19,05	19,05	19,05

# Fitting dimensions for KS flanges

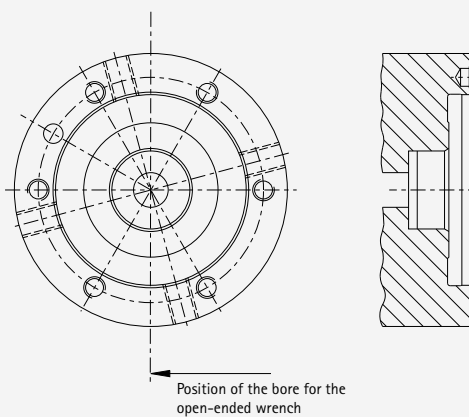
Spindle connection contour for flange adapter in accordance with MN5000-14



Spindle connection contour for adapter flange according to MN5000-12

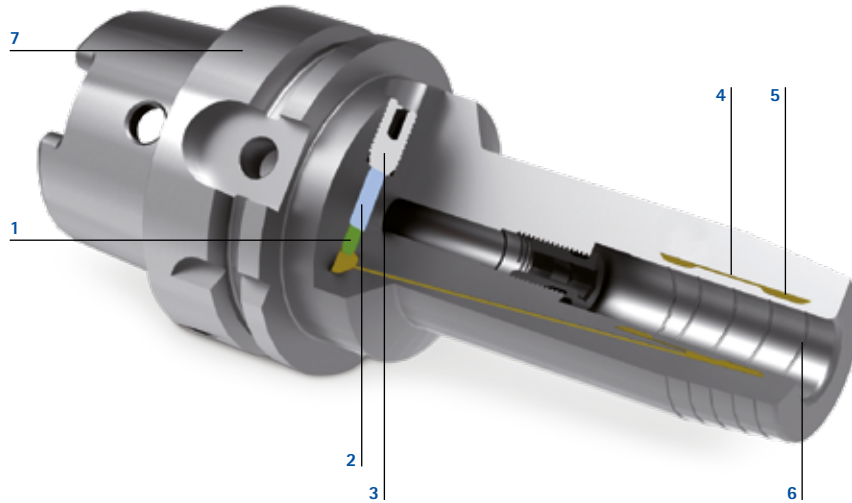


Spindle connection contour for adapter flange for short spindles in accordance with MN5000-13



# Hydraulic clamping technology

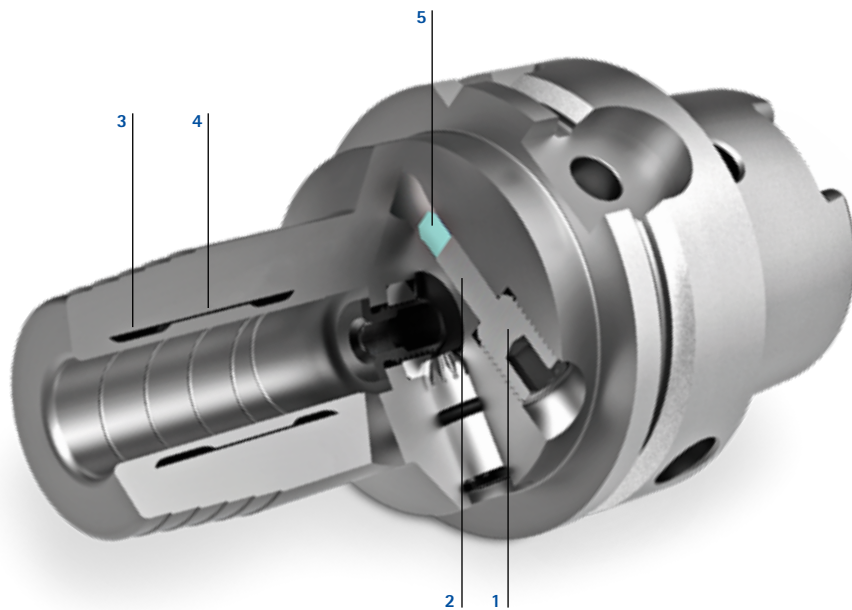
## 1. Hydraulic clamping technology elements



- 1 Sealing element** Seepage losses in the clamping bore are prevented by the lip seal.
- 2 Piston** Presses the hydraulic medium into the chamber system.
- 3 Clamping screw** Necessary to actuate the piston. Can be actuated without a torque wrench.
- 4 Expanding sleeve** Clamps the tool shank centrally with evenly applied pressure.
- 5 Chamber system** Is produced by the connection of the expanding sleeve and body. Has a damping effect on the tool thanks to the hydraulic medium and, in this way, reduces wear and tear.
- 6 Groove** Oil, grease or lubricant residue is displaced into the groove by the high clamping pressure. The clamping surfaces remain largely dry and the transmission of the torques is guaranteed.
- 7 Body material** MAPAL hydraulic chucks are available for all common machine-side connections (HSK-A, SK, BT and flange module).

When clamping using hydraulic clamping technology, even pressure is built up in a sealed chamber system using a clamping screw and a piston. This pressure is transmitted to the tool via the built-in expanding sleeve.

## 2. Operating principle



- 1 The clamping screw** is screwed in to the stop using a hex-wrench.
- 2 The piston** presses the hydraulic medium into the **3 expansion chamber** and causes the pressure to increase.
- 4 The thin-walled expanding sleeve** bows evenly against the tool shank. The tool shank is centred and then clamped powerfully and uniformly across its entire surface during this clamping process.
- 5 The sealing element** ensures absolute freedom from leaks and a long service life.

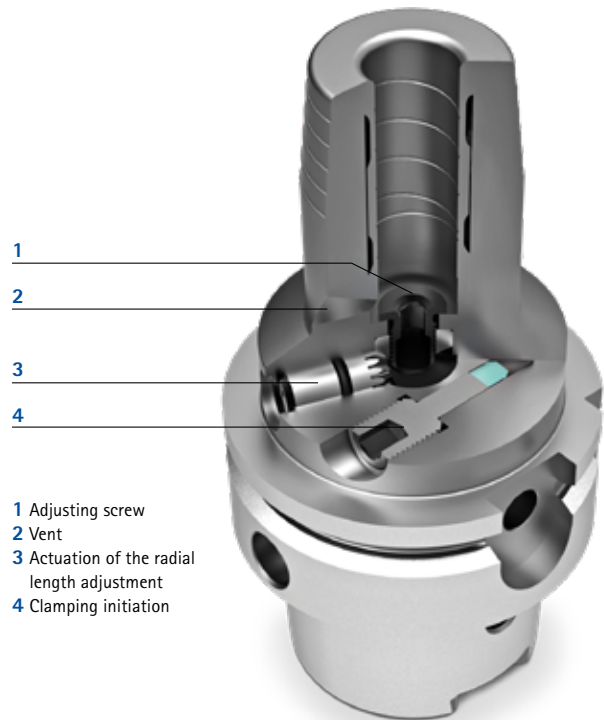
### Technical data

- Material 1600-1800 N/mm<sup>2</sup> tensile strength
- Adjustment path 10 mm
- Hardness 52 + 2 HRc
- DIN 1835 Form A, B, C, D
- Finely balanced tool holder
- DIN 6535 Form HA, HB, HE
- Laser inscription
- Coolant pressure max. 80 bar
- Max. spindle speed 40,000 rpm (pay attention to spindle speed limit connection)
- Optimal operating temperature 20-50 °C; do not use above 80 °C
- Shanks suitable for clamping (tolerance h6) with and without reducing sleeves:
  - DIN 1835 Form A, B, E
  - DIN 6535 Form HA, HB, HE



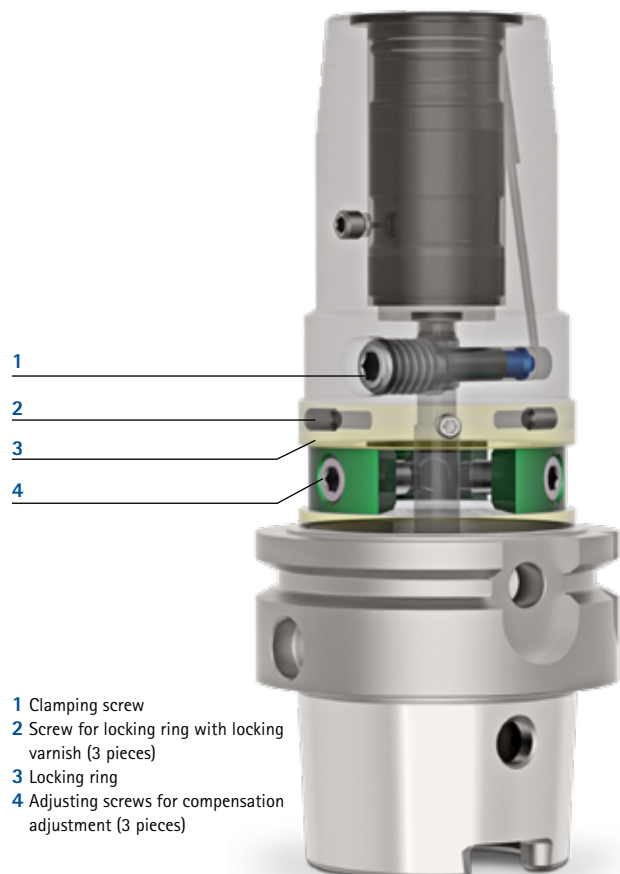
### 3. Radial tool length adjustment

MAPAL offers hydraulic chucks with radial tool length adjustment for clamping tools with hollow shank taper connections. Even with this adjustment method, radial run-out accuracies of  $\leq 3 \mu\text{m}$  are guaranteed.



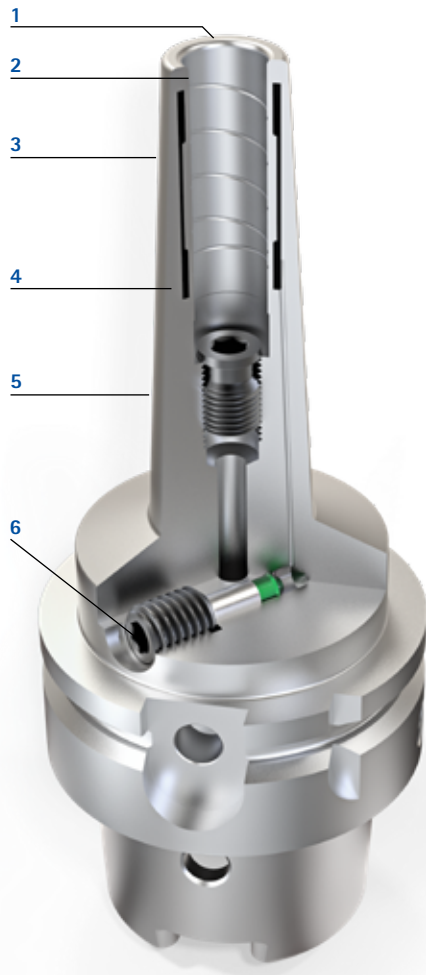
### 4. Hydraulic clamping technology with compensation technology

The "Compensation" chuck is perfectly suited for light machining tasks with multi-bladed reamers. It builds on hydraulic clamping technology and the radial run-out can be set exactly using three adjustment elements. The radial run-out is corrected straightforwardly and quickly using a hex-wrench depending on the direction of the error. The setting range is down to  $15 \mu\text{m}$ . Wedges in the chuck align the tool, which prevents jamming. The system is self-locking, which makes unintentional movement during fine machining impossible. A fixed ring seals the alignment system. It is therefore low maintenance and not susceptible to dirt.



# Hydraulic clamping technology

## 5. Additive-manufactured hydraulic clamping technology



- 1 Optimal radial run-out as the clamping range is located close to the chuck tip
- 2 High torque transmission and thermal stability
- 3 Back taper of 3° in the outer contour enables machining in the contour-critical area
- 4 All-in-one – no brazed joint between sleeve and tool body
- 5 High flexural strength despite slender design
- 6 Quick and simple clamping thanks to hexagon head screw



## 6. Torque transmission

### HydroChuck

Please use the respective transmittable torque from the table.

The specified torques are valid for cylindrical shanks according to DIN 6535 Form A and DIN 1835.

#### Transmittable torques with direct clamping, oiled shank, clamping diameter hydraulic chuck $d_1 = 6\text{--}32\text{ mm}$

$d_1$ [mm]	6	8	10	12	14	16	18	20	25	32
Minimum/maximum size [Nm] for shank $h_6$	20/30	30/45	47/85	80/140	100/160	160/230	200/270	330/400	400/470	650/730

#### Transmittable torques measured with reducing sleeve, oiled shank, clamping diameter hydraulic chuck $d_1 = 32\text{ mm}$

$d_1$ [mm]	6	8	10	12	14	16	18	20	25
Minimum/maximum size [Nm] for shank $h_6$	30/45	45/65	60/110	120/170	120/170	180/230	220/300	250/320	360/440

#### Clamping diameter hydraulic chuck $d_1 = 20\text{ mm}$

$d_1$ [mm]	3	4	5	6	7	8	9	10	11	12
Minimum dimension/maximum dimension [Nm] for shank $h_6$	6/10	9/12	16/22	30/40		55/75		90/120		120/150

$d_1$ [mm]	13	14	15	16	17
Minimum dimension/maximum dimension [Nm] for shank $h_6$		135/170		190/260	

$d_1$ [mm]	3	4	5	6	8
Minimum dimension/maximum dimension [Nm] for shank $h_6$	3/4	4/8	7/12	12/20	18/26

### HighTorque Chuck HTC

All HTC chucks except 3° slim design at operating temperature: 20–80 °C

Clamping diameter [mm]	Permissible transmittable torque for shank $h_6$ minimum dimension [Nm]
6	30
8	50
10	100
12	150
14	210
16	280
18	360
20	550
25	650
32	800

3° slim design with operating temperature: 20–120 °C

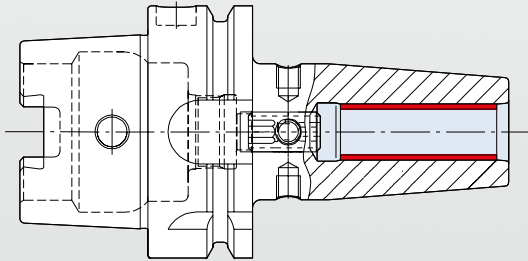
Clamping diameter [mm]	Permissible transmittable torque for shank $h_6$ minimum dimension [Nm]
3	3
4	6
5	10
6	20
8	35
10	65
12	110
14	120
16	160
18	200
20	260

Dimensions in mm.

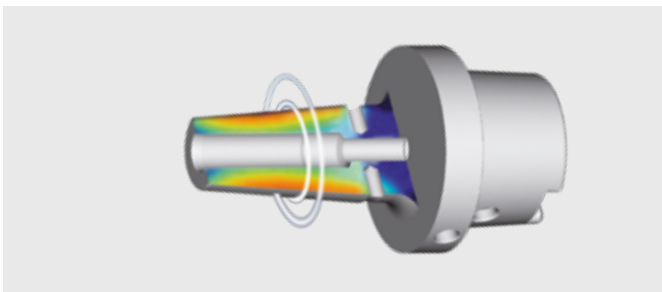
## Shrinking technology

Shrinking technology uses heat-related material expansion for tool clamping. An induction coil heats the shrink chuck. The chuck expands and the cold tool shank can be inserted. The shrink chuck is cooled

down again, contracts and forms a force-locking connection with the tool due to the oversize of the tool shank.



### Operating principle



#### 1. Heating up the chuck

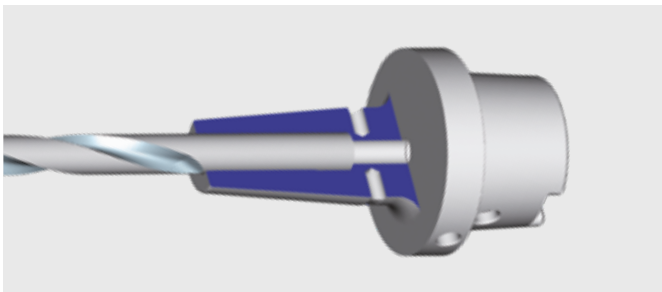
The chuck is heated at the clamping point using the latest induction technology. An induction coil generates rapidly changing eddy currents that act directly on the shrink chuck and heat it up exactly where the tool shank is located. The bore diameter increases.

#### 2. Inserting the tool shank

The cold tool shank is inserted into the heated shrink chuck.

#### 3. Cooling down

The shrink chuck is cooled down and the clamping diameter returns to its original dimension and clamps the tool shank. A powerful unit with water-cooled cooling elements enables rapid cooling within 30 seconds. This means that the tapers and data chips do not heat up. Adapters that can be inserted into the heat sink enable the cooling of extensions as well as non-standard shrink chucks.



#### The result

Due to the inductive heating, tool changes can now be carried out within seconds. The shrink chuck and tool shank form a force-locking connection. Both solid carbide and HSS tools can be clamped. The tool is clamped precisely in the tool adapter with the maximum clamping force.

# Precision drilling technology



## Technical data

Clamping range	0.2 - 3.4 mm	0.3 - 8 mm	0.5 - 13 mm	2.5 - 16 mm
Max. run-out variation at a tightening torque	< 5 $\mu\text{m}$ * of 1.5 Nm	0.03 mm * of 8 Nm	0.03 mm * of 15 Nm	0.03 mm * of 15 Nm
Holding torque at a tightening torque	4.5 Nm ** of 1.5 Nm	18 Nm ** of 8 Nm	40 Nm ** of 15 Nm	45 Nm ** of 15 Nm
Maximum permissible tightening torque	2 Nm	10 Nm	20 Nm	20 Nm
Holding torque at a tightening torque	6 Nm ** of 2 Nm	30 Nm ** of 10 Nm	80 Nm ** of 20 Nm	90 Nm ** of 20 Nm
Max. permissible spindle speed	60,000 $\text{min}^{-1}$ ***	35,000 $\text{min}^{-1}$ ***	35,000 $\text{min}^{-1}$ ***	35,000 $\text{min}^{-1}$ ***

\* Run-out variation check as per MAPAL "Precision" inspection report.

\*\* All precision drill chucks are clamped at the side via a bevel gear using a hexagonal T-key (see operating manual).

A tightening torque of 8 Nm or 15 Nm on the hexagonal T-key is sufficient to use the drill chuck. The higher holding torques that can be achieved with the precision drill chucks are for additional safety and are not necessary for normal usage.

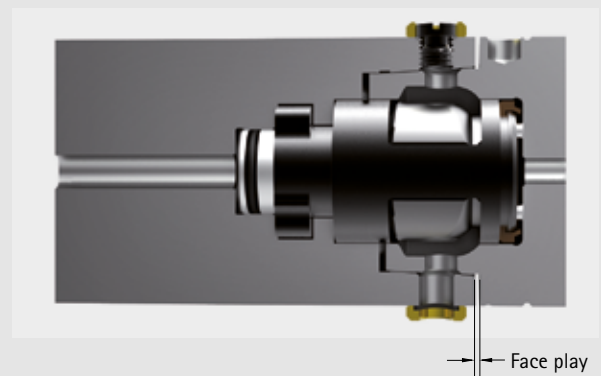
\*\*\* The precision drill chucks are fine balanced as per the catalogue data.

For the use of high spindle speeds, the drill chuck must also be balanced as per the balancing classes – taking into account the spindle speed and balancing value.

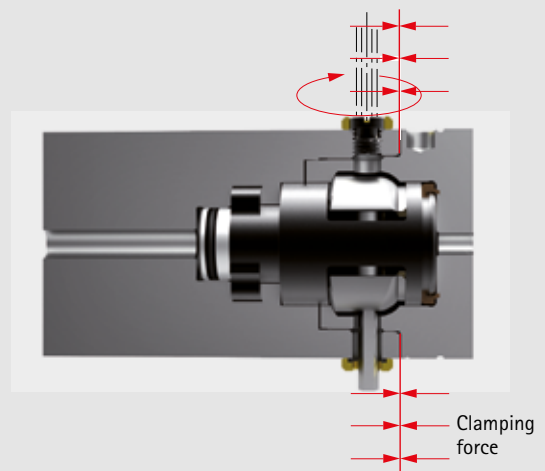
# Features of the KS clamping cartridge

## Clamping force and bending moment

The pre-loaded HSK (hollow shank taper) connection is effective due to the high clamping force acting on the face connection with force acting simultaneously on the taper shank. The tolerances on the HSK shank and connection result in oversizes. Most of the clamping force acts on the face connection and, along with the face connection diameter, is responsible for the absorption of high bending moments.

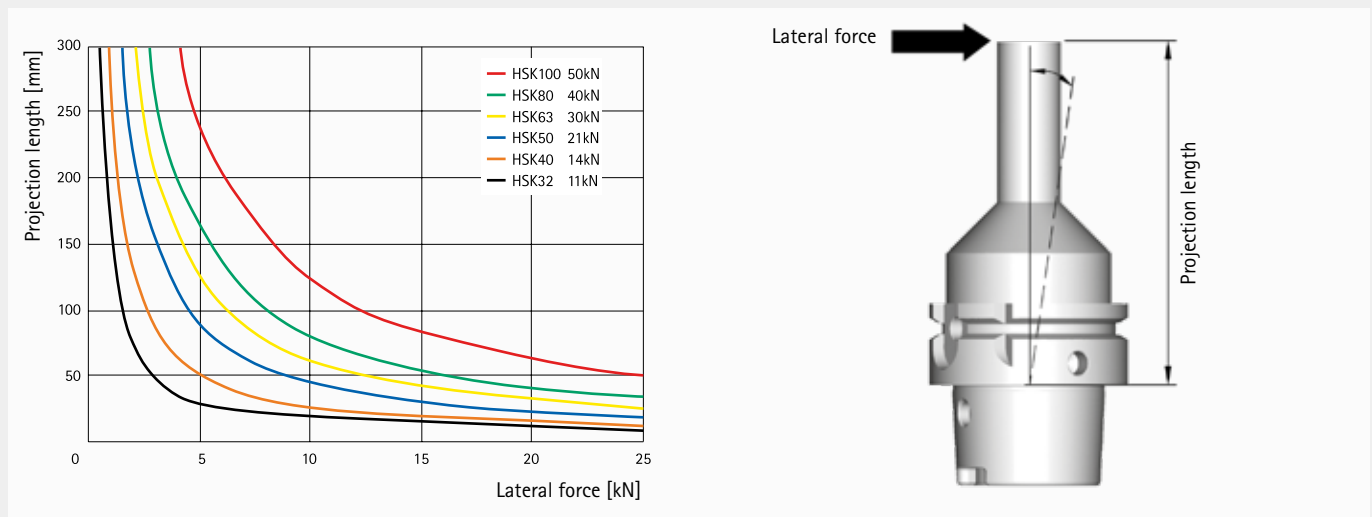


Unclamped face connection-taper joint



Clamped face connection-taper joint

# Features of the KS clamping cartridge



Permissible bending load on the HSK connection when using the KS cartridge

The MAPAL KS clamping permits higher clamping forces than recommended in accordance with DIN due to the particularly compact design of the clamping mechanism. As a result, an extremely high bending moment load can be applied and the connection has high rigidity.

In practical use this means: Absorption of high machining forces even at high projection lengths as well as longer tool life and therefore maximum productivity. Depending on the external load, the lower DIN clamping forces may also be sufficient.

The values given in the table are the result of extensive tests in research

and practice and represent an orientation aid for the user. Depending on the specific case, even higher loads may be possible.

## Clamping force and lifting moment

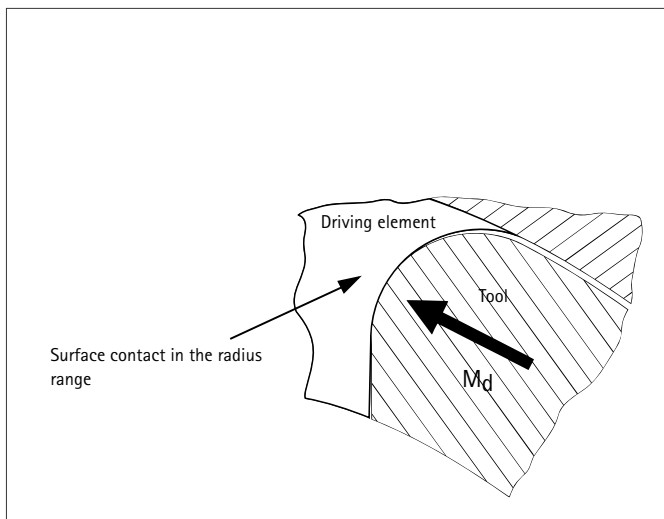
HSK nominal size	32	40	50	63	80	100
Shank diameter $d_1$ [mm]	24	30	38	48	60	75
Clamping force (DIN 69893) [kN]	4,5	6,8	11	18	29	45
Clamping force (MAPAL KS) [kN]	11	14	21	30	40	50
Clamping moment [Nm]	6	7	15	20	30	50
Lifting moment $M_{Lifting}$ [Nm]	150	260	460	625	1.005	1.400

# Features of the KS clamping cartridge

## Transferable torque

HSK (hollow shank taper) connections transmit both force-locking and positive torques. The high clamping force of the MAPAL KS clamping results in high friction forces on the taper and face connection, and therefore in correspondingly high friction moments ( $M_d$ , friction).

The positive torque transmission features compact driving elements in the connections; the radii on these driving elements adapt exactly and therefore permit the highest transferable values.



On tools made of 16MnCr5/1.7131, the positive torque transmission on its own permits a very high maximum permissible torque ( $M_d$ , max). When using high-quality materials, for instance 1.6582 or 1.2343, these values increase.

Ideal torque transmission with meshing in the radius range

## Radial run-out and accuracy of repetition

The accuracy of the HSK connection is the highlight of this standardised connection system. In conjunction with the non-coercive KS clamping, changeover accuracies and accuracies of repetition in the  $\mu\text{m}$  range are possible, which opens up new possibilities for improving quality.

The accuracy of repetition of the HSK connection is  $< 1 \mu\text{m}$  axially and  $< 3 \mu\text{m}$  radially.

### Transferable torques

HSK nominal size	32	40	50	63	80	100
Clamping force [kN]	11	14	21	30	40	50
Torque $M_d$ , friction [Nm]	35	57	115	250	450	900
Torque $M_d$ , max [Nm]	275	500	900	1.600	3.300	6.000

## Spindle speed limits

The spindle speed limit for the HSK connection is defined by numerous factors. The length of the location taper, the oversize between taper shank and taper holder, and also the clamping system used have a major effect. For applications at high spindle speeds, it is therefore necessary to determine the spindle speed limit on a case-by-case basis. The adjacent guide values can be used as rough estimates.

### Estimated spindle speed limits for HSK connections

Nominal size HSK	Spindle speed limit [rpm]
32	50.000
40	42.000
50	30.000
63	24.000
80	20.000
100	16.000



## Checking the minimum revolutions for hydraulic chucks



Figure 1:  
Turn the clamping screw and the tool test piece

1. Clean and degrease the tool test piece and the location bore (for more information see the brief instructions for the corresponding hydraulic chuck).
2. Insert the tool test piece into the chuck to be tested.
3. Turn the clamping screw with a hex-wrench until the tool test piece in the chuck can no longer be turned by hand (see figure 1).
4. Tighten the clamping screw as far as it will go with a hex-wrench. Refer to the corresponding table for the minimum revolutions.



Figure 2:  
Tighten the clamping screw and observe the minimum revolutions

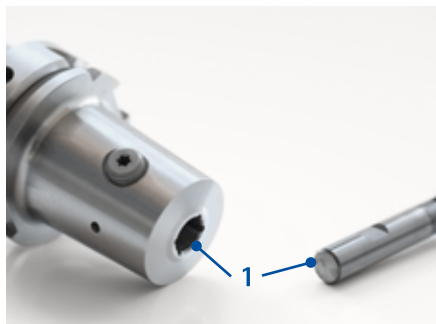
Order no.	Checking the minimum revolutions for hydraulic chucks
31212898	MEASURE__~ø3x70 mm TU cylindrical
31212910	MEASURE__~ø4x70 mm TU cylindrical
31212911	MEASURE__~ø5x70 mm TU cylindrical
30844163	MEASURE__~ø6x70 mm
30844164	MEASURE__~ø8x70 mm
30844166	MEASURE__~ø10x70 mm
30844167	MEASURE__~ø12x70 mm
30844168	MEASURE__~ø14x70 mm
30844170	MEASURE__~ø16x70 mm
30844171	MEASURE__~ø18x70 mm
30844173	MEASURE__~ø20x70 mm
30844174	MEASURE__~ø25x100 mm
30844175	MEASURE__~ø32x100 mm

# Handling notes for MillChuck, System HB

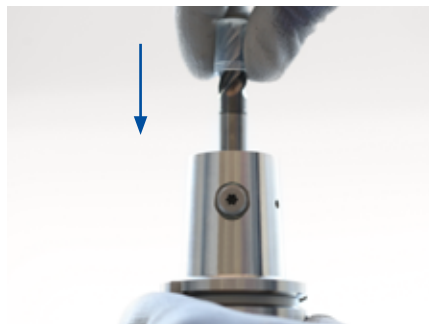
## Clamping a tool

### Note:

Only clamp undamaged tools and tools that are free from burrs.



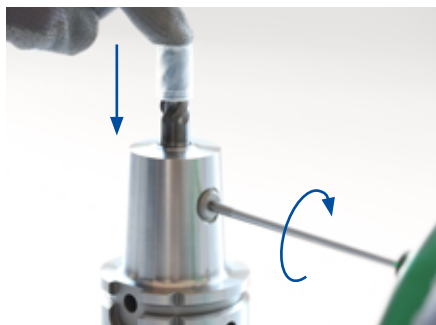
1. Clean the location bore and the tool shank (position 1).



### Note:

To ensure correct tool clamping, the HB surface of the tool must face the clamping screw.

2. Push the tool, starting with the shank, into the location bore of the mill chuck. The recess on the tool must be directed towards the clamping screw.



3. Press on the tool from above. At the same time, turn the clamping screw clockwise until it stops.
  - The clamping screw is abut with the HB surface of the tool.
4. Turn the clamping screw back half a turn.



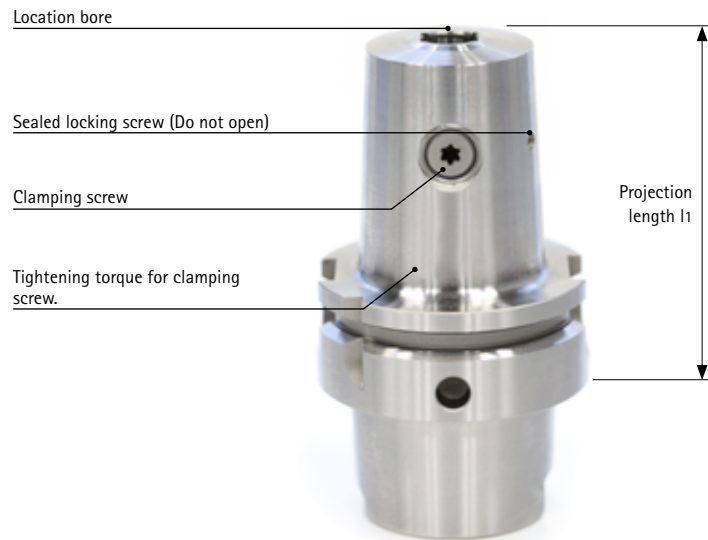
5. Set a torque wrench to the specified tightening torque (see table "Tightening torques for the clamping screw").
6. Tighten the clamping screw until it stops using the torque wrench.

### Comment:

- Only for trained personnel.
- Wear protective gloves.
- It is recommended that you handle the tool with a protective cap.

### Result:

The tool is completely clamped in the mill chuck and can be used.



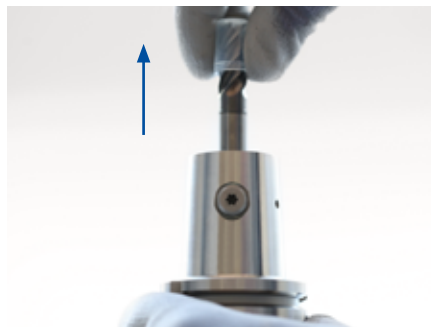
## Unclamping a tool

### Note:

The clamping screw is not secured from accidentally falling out.



1. Loosen the clamping screw by turning it anticlockwise.



2. Remove the tool from the mill chuck's location bore.

### Result:

The tool has been removed.

## Tightening torques for clamping screw

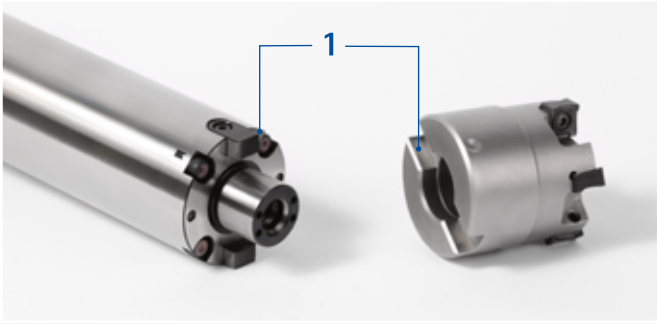
Diameter tool shank [mm]	Tightening torque [Nm]	Torx size
6	10	T15
8	10	T25
10	7	T25
12	13	T30
14	13	T30
16	23	T40
18	23	T40
20	25	T40
25	47	T50
32	50	T50

# Instructions for handling the milling cutter arbor with vibration damper

## Mounting a tool

### Note:

Whenever you change tools, make sure that all components of the milling cutter arbor and tool are free of dirt, grease and damage.



1. Clean the connection areas of the milling cutter arbor and the tool (1).

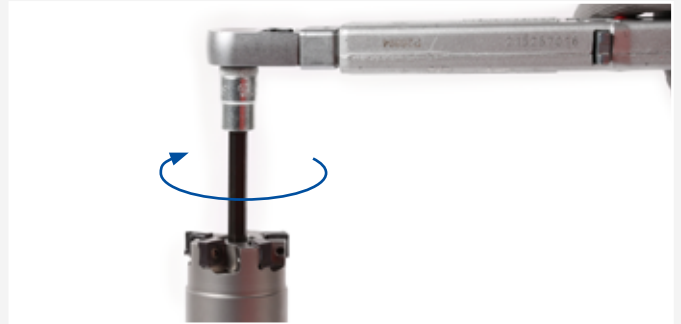


2. Clamp the milling cutter arbor in a changing device.

3. Place the tool, with bore and face connection in front, on the face connection of the milling cutter arbor.  
 → The key block slot of the tool is positioned on the key block of the milling cutter arbor.



4. Lightly screw the milling cutter clamping screw into the thread bore of the milling cutter arbor by hand.



5. Adjust a torque wrench to the tightening torque required by the milling cutter manufacturer.

6. Use the torque wrench to tighten the milling cutter clamping screw until it stops.

### Result:

The tool is clamped onto the milling cutter arbor with the milling cutter clamping screw and can be used.

## Removing a tool



1. Loosen the milling cutter clamping screw, for example by using the torque wrench.



2. Unscrew the milling cutter clamping screw from the thread bore and remove it.



3. Remove the tool from the milling cutter arbor.

**Result: The tool has been removed.**



1 Milling cutter clamping screw

2 Key block

3 Connection arbor

4 Vibration dampening thanks to tilting system

5 Thread bore

6 Colour-sealed sealing screw

## Handling instructions for KS clamping cartridge

Installing the KS clamping cartridge in the machine spindle, the chuck or adapter with the assembly tool



Opening the KS assembly tool



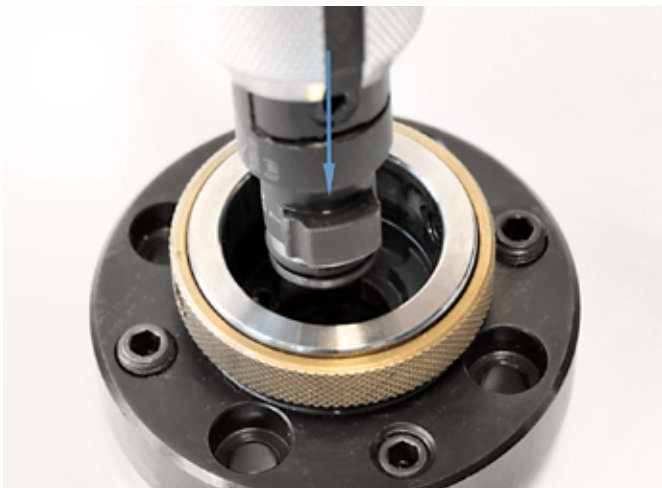
Inserting the KS clamping cartridge into the KS assembly tool

### NOTE

- For the KS clamping cartridge in standard and high-pressure design, only use the KS assembly tool for standard and high-pressure designs with the flute.
- For the MQL-design KS clamping cartridges, only use the KS assembly tool for the MQL design with the two pins.

1. Open the KS assembly tool gripper jaws by pushing down the ball head.
2. Keep the ball head pressed down.
3. Insert the KS clamping cartridge into the KS assembly tool.
4. Release the ball head.

The KS clamping cartridge is connected to the KS assembly tool.



Inserting the KS clamping cartridge

#### NOTE

- Make sure that the corresponding contours of the clamping cartridge and the machine spindle or the adapter match each other. The KS clamping cartridge can only be inserted into the machine spindle or into the adapter in one position.



Locking the KS clamping cartridge

5. Insert the KS clamping cartridge into the machine spindle or the adapter in the correct position.
6. Rotate the KS assembly tool clockwise until the lug of the KS clamping cartridge audibly and noticeably engages.
7. Press the ball head of the KS assembly tool down to pull the assembly tool back off.

# Notes on setting and handling KS flange adapter

## Installing the KS clamping cartridge in the machine spindle, the chuck or adapter with the assembly tool



1. Insert clamping cartridge in the spindle or in the adapter.



2. Fit socket to the clamping cartridge.



3. Turn clockwise until the lug on the clamping cartridge engages with the clamping pin.

### Clamping the tool

Tightening torque and clamping force for the individual nominal sizes of the KS clamping cartridge, standard design.

Nominal size	HSK32	HSK40	HSK50	HSK63	HSK80	HSK100
Tightening torque [Nm]	6	7	15	20	30	50
Clamping force [kN]	11	14	21	30	40	50

Tightening torque and clamping force for the individual nominal sizes of the KS clamping cartridge, high-pressure design

Nominal size	HSK32	HSK40	HSK50	HSK63	HSK80	HSK100
Tightening torque [Nm]	6	7	15	20	30	50
Clamping force [kN]	11	14	21	30	40	50

Tightening torque and clamping force for the individual nominal sizes of the KS clamping cartridge, MQL design

Nominal size	HSK32	HSK40	HSK50	HSK63	HSK80	HSK100
Tightening torque [Nm]		6	15	20	30	50
Clamping force [kN]		11	21	30	40	50

### Notes on the use of the KS clamping system

When operating spindles or adapters that are equipped with a clamping cartridge and that are operated without a tool, a cap should always be used. In this way the system and user are protected and soiling is prevented. In case of tool usage with low radial loads, e.g. drilling and reaming operations, it is allowed to drop approx. 25% below the maximum tightening torque.

### Maintenance and care

During each tool change, the taper should be cleaned using a taper wiper.

The clamping cartridge should be regreased after extended use. This interval depends on the frequency of tool changing, the type of machining and the coolant. However, regreasing should take place at least once every six months.



# 100 per cent service – the new exchange service

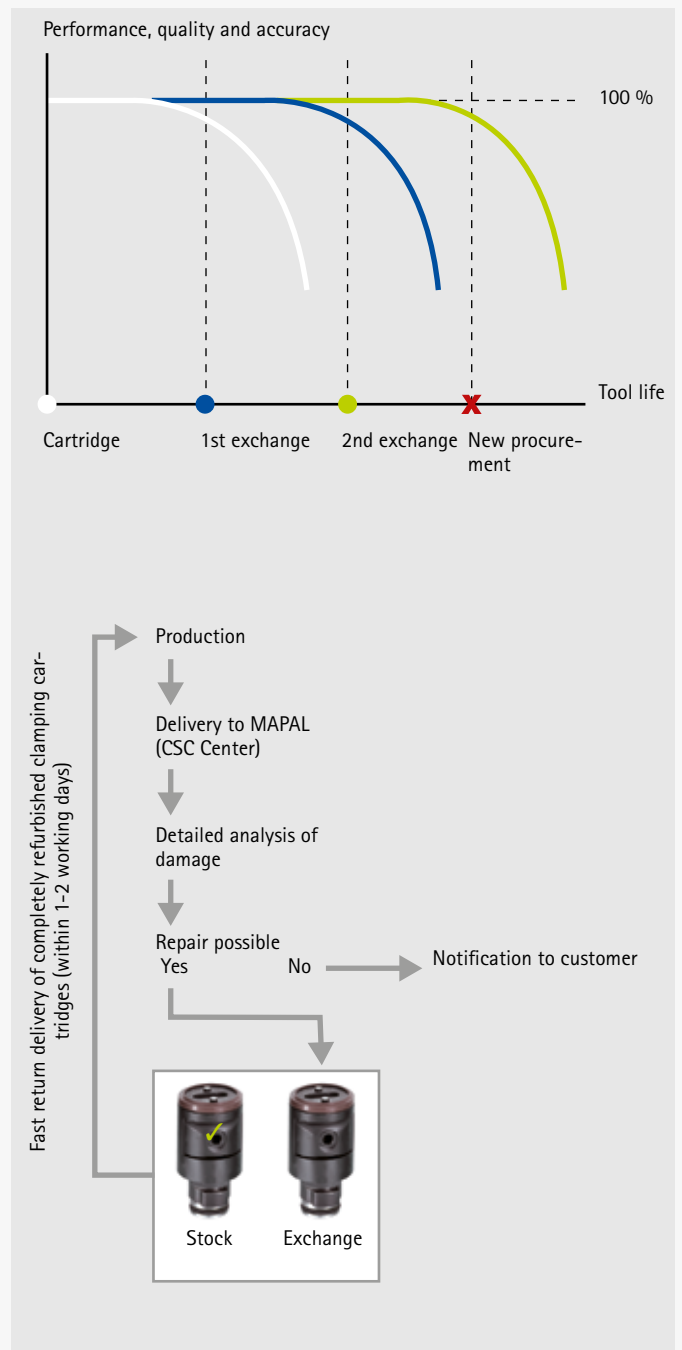
## Exchange service – straightforward:

MAPAL offers an exchange service for the KS clamping cartridges to ensure consistent function and reliability in the process. In this way, mistakes during assembly are avoided and the need to stock spare parts and the logistics effort are minimised.

## Reconditioning – possible twice:

All individual parts are checked and wearing parts replaced. After a thorough function check, a completely refurbished clamping cartridge is shipped within 1-2 working days.

The completely refurbished clamping cartridges are no different to new cartridges in relation to clamping force behaviour, radial run-out accuracy and sealing.



## Notes on setting and handling KS flange adapter

### Assembling and aligning KS flange adapters and MAPAL module adaptors with radial and angular alignment



1. Clean face surfaces on flange adapter and adapter. Ensure that the face surface on the alignment screw does not protrude beyond the face surface in the flange adapter.



2. Insert flange adapter. Place fastening screws in contact.



3. Clean taper and face surface on the test arbor carefully. Insert test arbor or tool.



4. Position the dial gauge at radial run-out checkpoint. On MAPAL tools, it is also possible to use the HSK collar for alignment. Take lowest measuring point and set dial gauge to "zero". Align radially.



5. For the angular alignment, the dial gauge is positioned at the upper point to be checked or approx. 100 mm from the connection. Align angularly using alignment screws. Do not loosen the alignment screws after actuation.

6. Once the angular alignment is set to  $< 3 \mu\text{m}$ , check the radial alignment again at the radial run-out checkpoint on the collar and correct if necessary. Should it be necessary to correct the radial alignment, check the angular alignment again afterwards.

**Tightening torques**

Nominal size	Module diameter [mm]	Fastening screw	Tightening torque [Nm]
HSK32	60	ISO 4762 – M5x16 – 12.9	8,7
HSK40	70	ISO 4762 – M6x20 – 12.9	15
HSK50	80	ISO 4762 – M6x20 – 12.9	15
HSK63	100	ISO 4762 – M8x25 – 12.9	36
HSK80	117	ISO 4762 – M8x25 – 12.9	36
HSK100	140	ISO 4762 – M10x30 – 12.9	72

The basis for the maximum tightening torque of the cylinder head screws in accordance with DIN 912 is the general DIN standard for property class 10.9.

MAPAL only uses cylinder head screws in accordance with ISO 4762 with the property class 12.9.



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