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OUR PRODUCT RANGE:

1. DRILLING TOOLS in High Speed Steel and Carbide

Twist drills
Ratio drills
Micro-precision drills
Oil feed drills
Subland drills
Centre drills
Core drills
Gun drills
Drilling systems with interchangeable inserts

2. THREAD CUTTING TOOLS in High Speed Steel and Carbide

Machine taps and fluteless taps
Oil feed taps and oil feed fluteless taps
Hand taps
Thread milling cutters
Dies

3. MILLING CUTTERS in High Speed Steel and Carbide

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Slot drills
End mills
Radius profile cutters
Hard profile cutters
Diesinking cutters

4. REAMING TOOLS in High Speed Steel and Carbide

NC machine chucking reamers
Machine and machine chucking reamers
Taper pin reamers
Hand reamers

5. COUNTERSINKING TOOLS in High Speed Steel and Carbide

Countersinks, counterbores and spot facers
Short counterbores, back spot facers
De-burring tools

6. CUTTING TOOLS in ultra-hard materials

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Cermet and ceramic tools
PCD- and PCB-tipped tools

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A-tools, TiAlN-coated
SuperA-tools, AlTiN-coated
C-tools, TiCN-coated
F-tools, FIRE-coated (allround)
P-tools, AlCrNN-coated
S-tools, TiN-coated (allround)
M-tools, MolyGlide-coated

8. MODULAR TOOLING SYSTEMS

Tooling system GM 300
Tool holders, clamping systems and accessories to
ISO 12164, DIN 69893 and DIN 69871 for transfer
lines, machining and turning centres

Flexible tooling system GE 100
a tooling system for the combined machining
operations facing, chamfering, boring, centering etc.

**ISO indexable inserts, short clamping
holders and KV 400 cartridges**

9. SPECIAL TOOLS

to sketch or drawing, the more complex, the better

10. CARBIDES for precision cutting tools

11. CARBIDE SPECIAL PARTS for the forming, machining and wear protection industry

Cold heading dies, ribbed rolls, dies, mandrels,
drawing dies, gear cutters, etc.

12. TOOL RESTORATION SERVICE Re-grinding, re-coating, tool management



GM 300

HSK/ISO TOOL HOLDERS, HSK CLAMPING SYSTEMS AND ACCESSORIES

– to ISO 12164, DIN 69893 and DIN 69871
– for transfer lines, machining and turning centres

2010 edition



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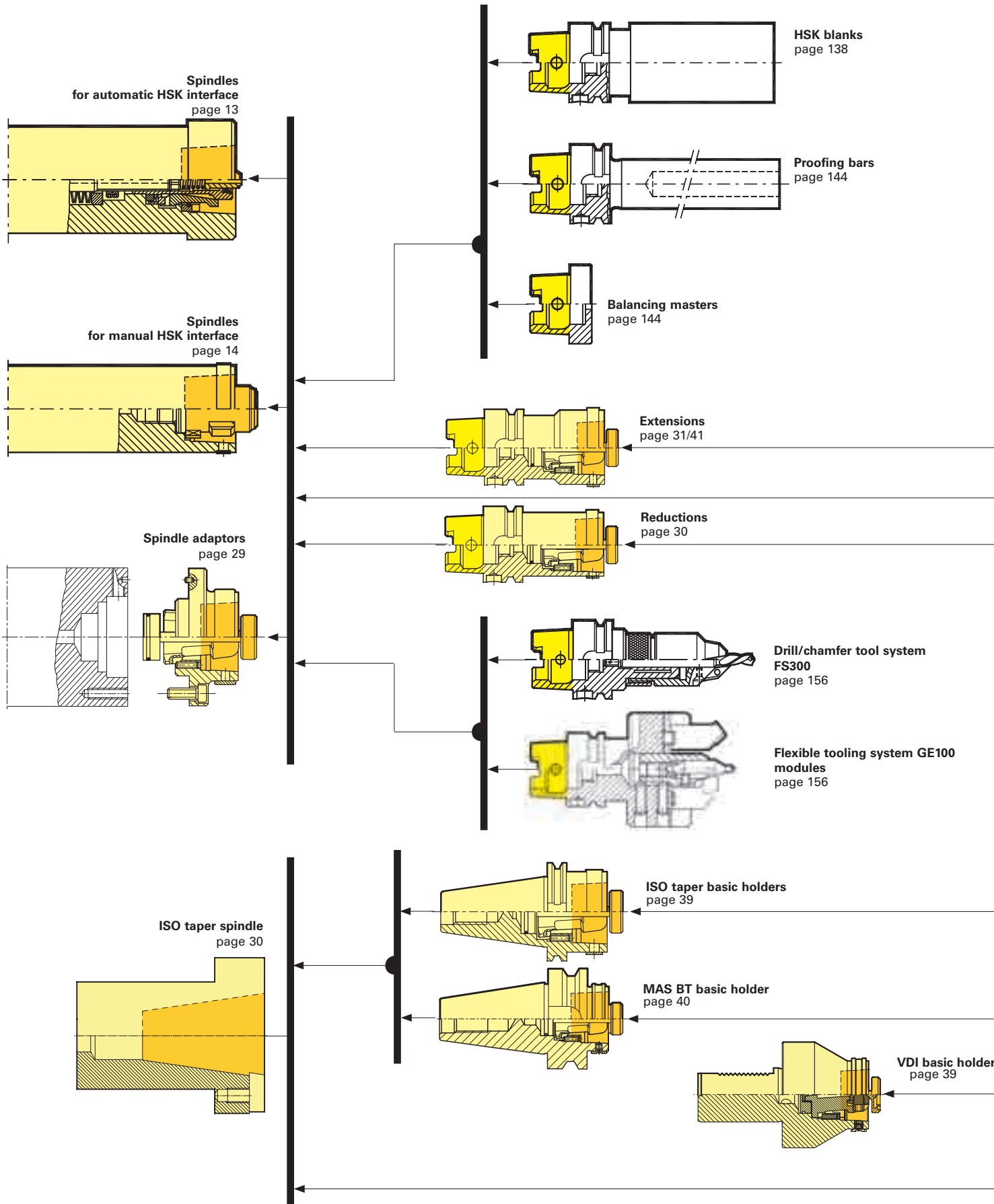
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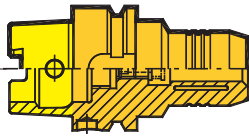
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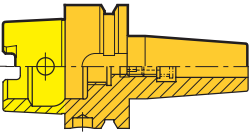
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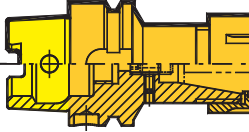




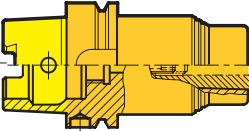
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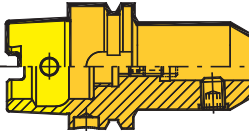
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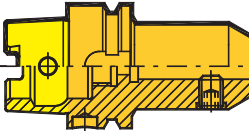
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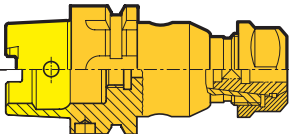
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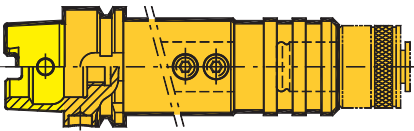
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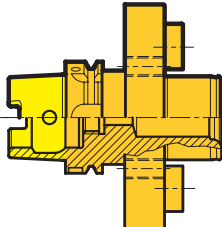
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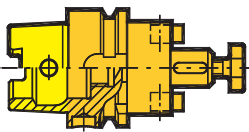
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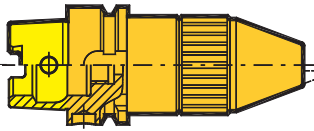
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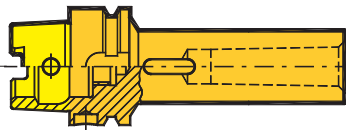
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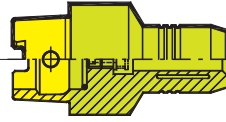
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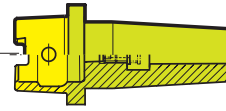
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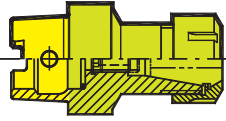
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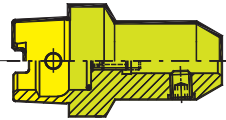
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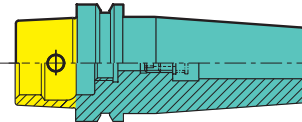
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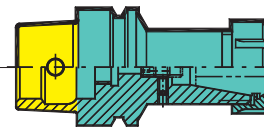
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Tool holders
DIN 69893-5

HSK-E



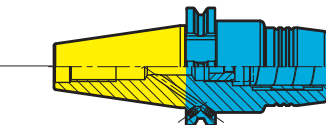
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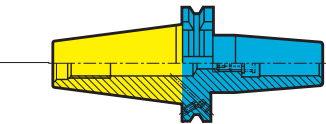
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Tool holders
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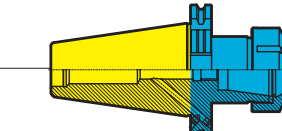
SK/MAS BT



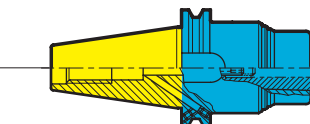
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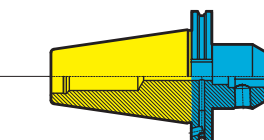
Shrink fit chucks
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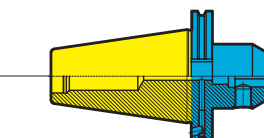
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Side lock holders
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Side lock holders
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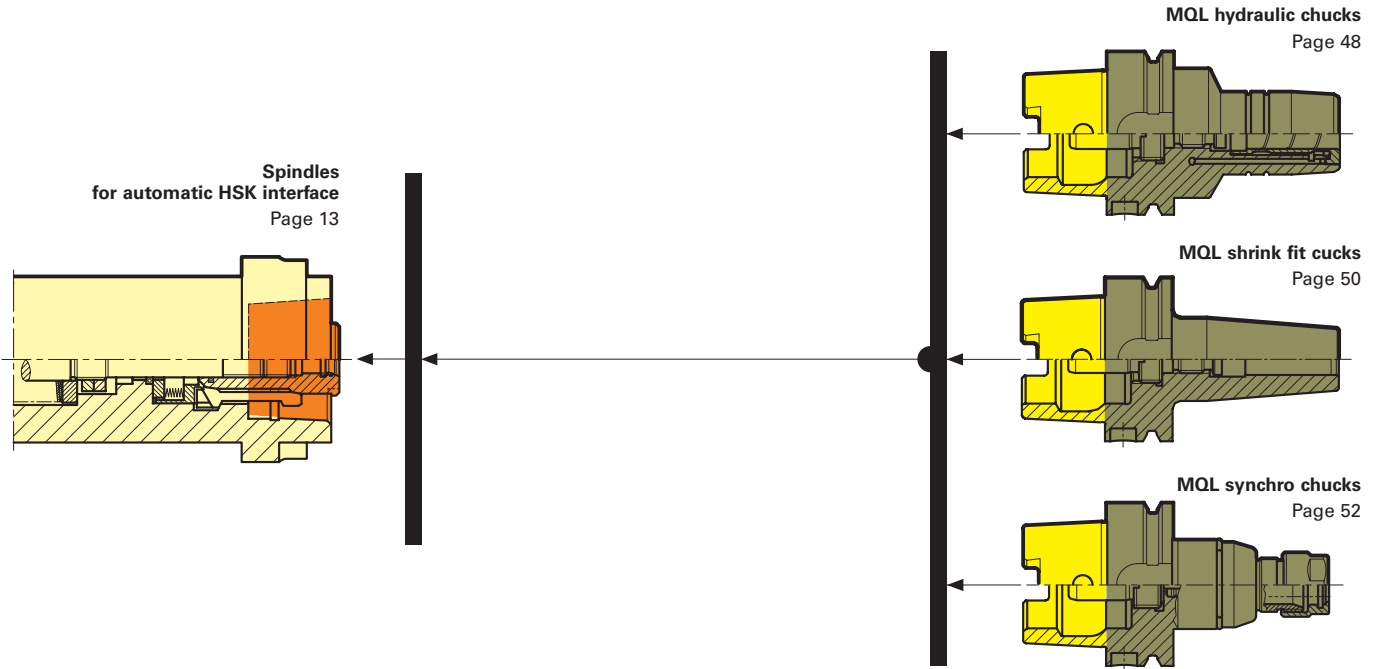
System summary for MQL

Spindle clamping systems

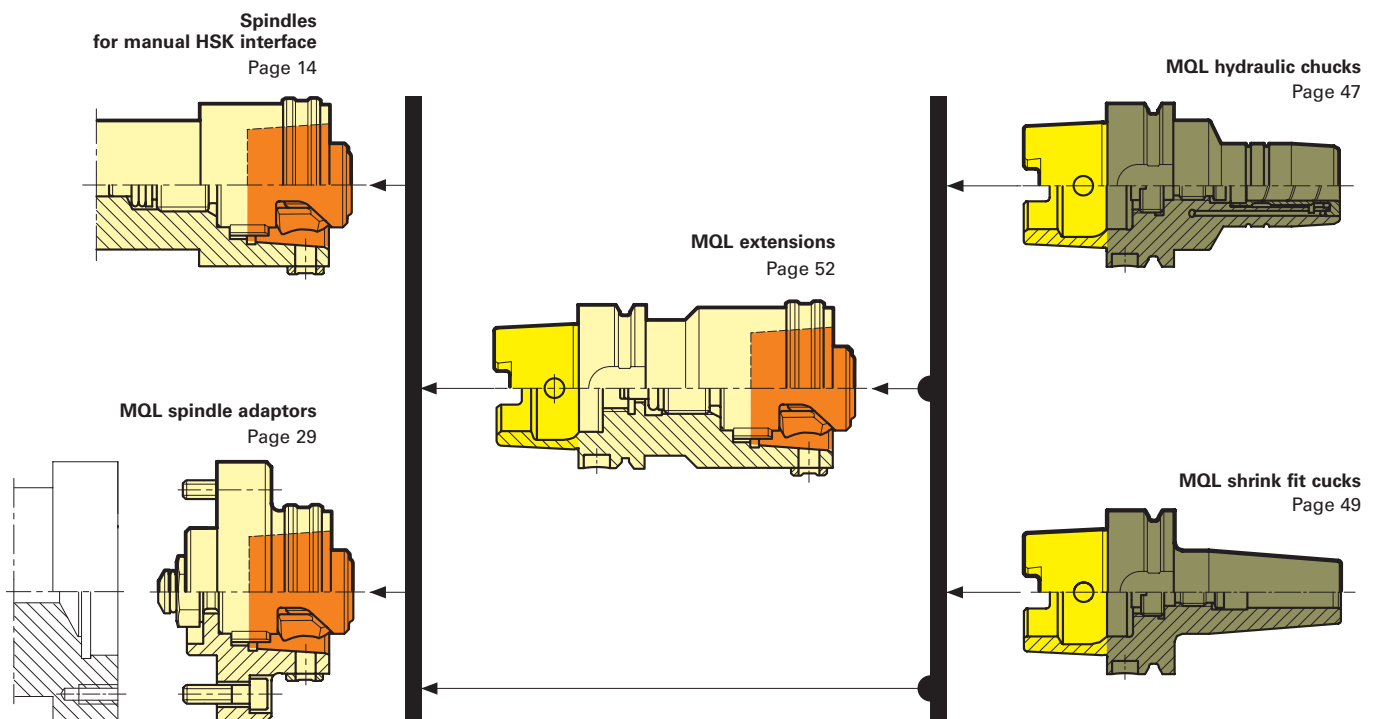
Tool holders
ISO 12164-1/DIN 69893-1

HSK-A

Automatic tool clamping



Manual tool clamping



TECHNICAL INFORMATION



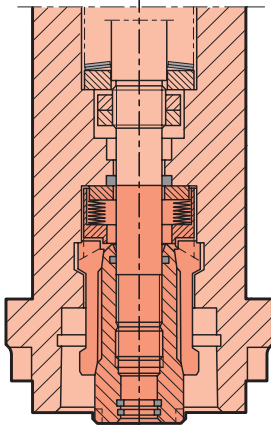
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Automatic tool clamping

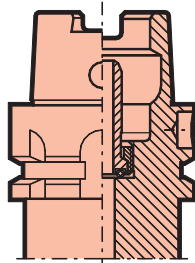
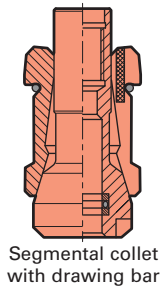
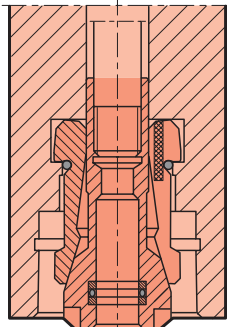
Spindle clamping systems with draw bar

Application in machining centers, milling and turning machines

Suppliers:
Ott
RÖHM (Lic. Gühring)
BERG (Lic. Gühring)



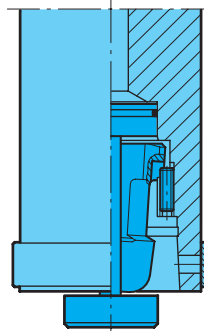
Supplier:
Ortlieb (Lic. Gühring)



Tool shanks
DIN 69893 part 1 form A
(with coolant supply set)

Direct installation in the spindle

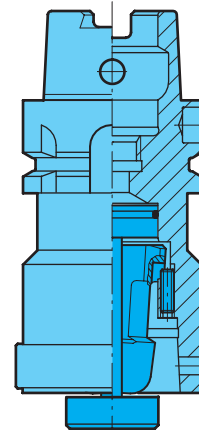
Application in transfer lines, fixtures, setting equipment (e.g. in drilling spindles), in multi spindle drilling heads



Installation in tool holders (examples)

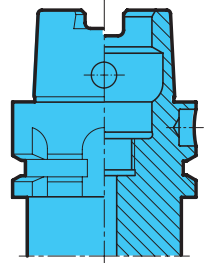
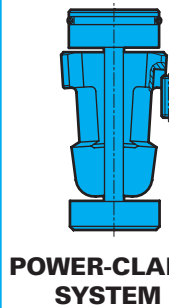
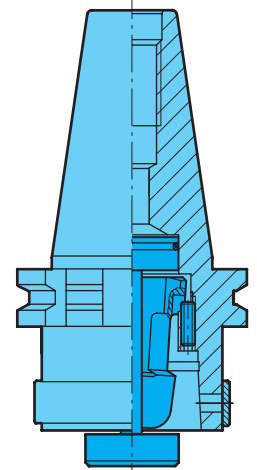
Application in machining centers, milling and turning machines

Extensions



Application in existing machines using ISO taper spindles

ISO taper basic adaptors



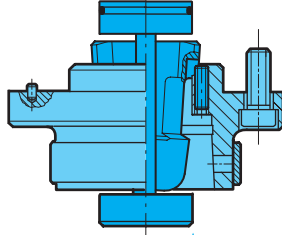
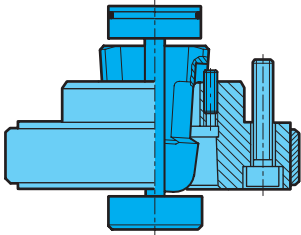
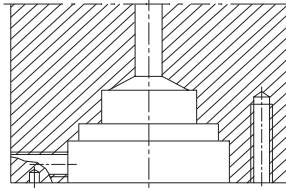
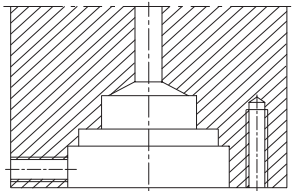
Manual tool clamping

Installation with adaptors

Application in transfer lines, fixtures, setting equipment, for universal use, e.g. milling

adaptor (integrated)

adaptor (in front)

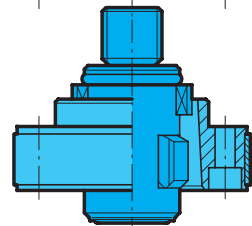
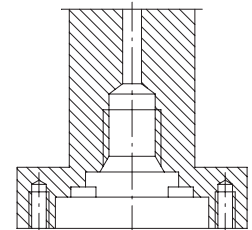
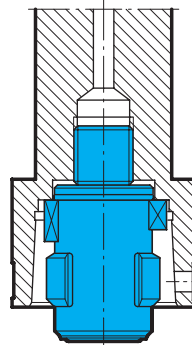


Direct installation in the spindle

Application in transfer lines, fixtures, setting equipment (e.g. in drilling spindles), in multi spindle drilling heads

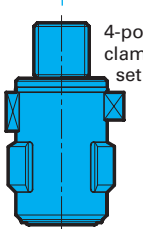
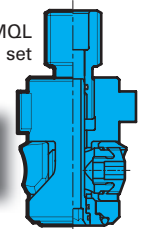
Installation with adaptors

Installation via adaptors



MQL clamping set

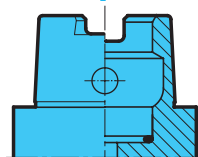
4-point clamping set



4-POINT CLAMPING SYSTEM

PowerClamp

Tool shanks
DIN 69893 part 1 form A
(without coolant supply set)



Tool shanks
DIN 69893 part 1 form C
with manual tool change

Technical information and advantages



Fig. 1:
HSK-A 63 interface,
automatic tool change

Our modular tooling system GM 300 has been developed for the application of rotating and stationary tools. In 1987 we developed the GM 300 coupling. Standardization for this interface (DIN 69893) was obtained in 1991. Since 12/2001 the HSK interface is also standard to ISO 12164-1/-2. The unique design of the clamping method offers not only an ideal interface for manual clamping within the tooling system, but also an ideal interface for automatic clamping directly to the machine spindle (fig. 1) or tool holder.

Characteristic feature:

Tapered hollow shank (HSK) with axial plane clamping mechanism according to DIN 69893. The most important advantages are as follows:

• **High static and dynamic rigidity**

The radial and axial forces generated in the tool shank provide the clamping force necessary for extreme rigidity (fig. 2). Recommended values for the GM-300 module for manual clamping (see page 21 + 23 + 35).

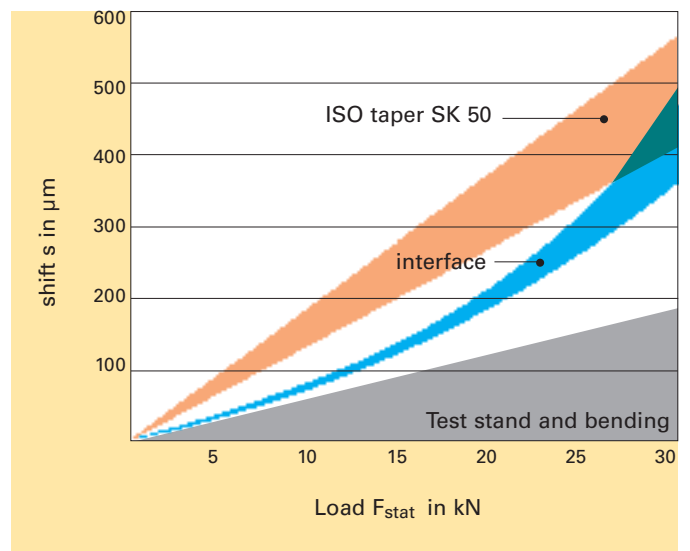
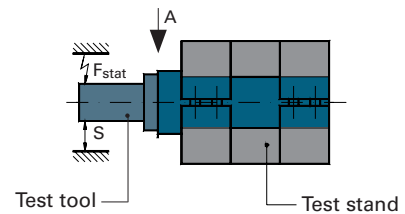


Fig. 2
Static deflection: Comparison between ISO taper 50 and automatic interface HSK-A 100 (A)

| ISO taper DIN 2080 DIN 69871 | HSK form A/C/(E) DIN 69893 part 1 | HSK form B/D/(F) DIN 69893 part 2 |
|------------------------------------|---|---|
| - | HSK 40 | HSK 50 |
| SK30 | HSK 50 | HSK 63 |
| SK40 | HSK 63 | HSK 80 |
| SK45 | HSK 80 | HSK 100 |
| SK50 | HSK 100 | HSK 125 |

Association between ISO taper - hollow taper shank

Technical information and advantages

- **High torque transmission and defined radial positioning**

The wedging effect between the hollow taper shank and the holder or spindle causes a friction contact over the full taper surface and the plane supporting face (fig. 3). Two keys engage with the shank end of the tool holder and provide form-closed, radial positioning, thereby excluding any possible setting errors.

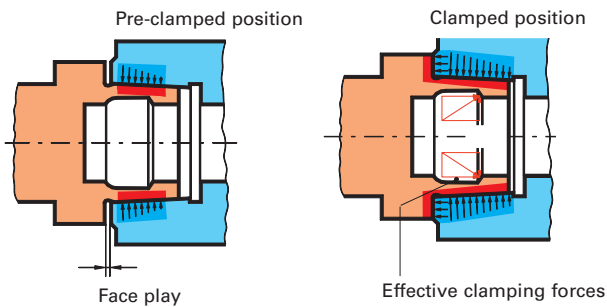
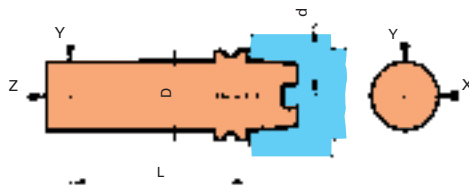


Fig. 3 Prestressing and frictional forces of hollow taper shank at the interface.

- **High tool change accuracy and repeatability**

The circular form engagement of the clamping claws within the hollow tool shank provides a totally tight connection between the shank and spindle or holder respectively (fig. 3 and 4).



| HSK-size D | d mm | L mm | X mm | Y mm | Z mm |
|------------|------|------|-------|-------|-------|
| 32 | 24 | 50 | 0,002 | 0,002 | 0,002 |
| 40 | 30 | 60 | 0,002 | 0,002 | 0,002 |
| 50 | 38 | 75 | 0,002 | 0,002 | 0,002 |
| 63 | 48 | 100 | 0,002 | 0,002 | 0,002 |
| 100 | 75 | 150 | 0,002 | 0,002 | 0,002 |

Fig. 4 Radial and axial repeatability of interface for manual and automatic clamping

- **High speed machining performance**

The higher the number of revolutions the better, as this increases both the power and effectiveness of the locking of the clamping mechanism. The direct initial stress between the hollow taper shank and the spindle holder compensates for the spindle expansion generated by the centrifugal force so that there is absolutely no radial play (fig. 3). The plane clamping position prevents any slipping in the axial direction.

- **Short tool changing time**

Efficient tool change due to a short shank length (approx. 1/3 of the conventional ISO taper) and light weight (approx. 50% of the ISO taper).

- **Simple, cost-efficient shank design**

No moving components at the tool shank means no wearing parts.

- **Insensitive to foreign matter**

The uninterrupted design of the ring-shaped axial plane clamping simplifies the cleaning of the coupling. During automatic tool change compressed air provides ideal cleaning in the interface.

- **Coding and identification**

To allow for the attachment of common identification systems, a hole of 10 mm dia. and 4.5 mm depth is provided for the data media (coding chips) in the vicinity of the collar.

- **Standardising of interface**

GM 300 corresponds to ISO 12164-1/DIN 69893 (fig. 5).

- **Coolant feed**

The tools for automatic clamping, HSK-A and E, are designed for a central coolant feed by means of a duct. Tools with manual change behind the GM 300 interface also operate with a central coolant feed. The clamping elements are entirely sealed against the entry of coolant so that fouling is prevented.

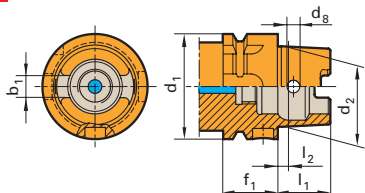
- **Installation of the coolant supply set**

Coolant supply sets are to be ordered separately for all GM 300 modules. The installation of the coolant duct must be carried out by the user as shown on page 141.

General overview of HSK shanks ISO 12164-1/DIN 69893

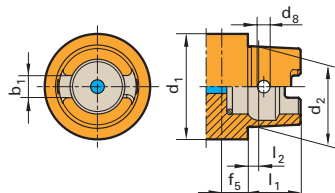
Form A DIN 69893 part 1

HSK-sizes 32...160



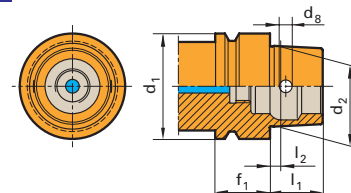
Form C DIN 69893 part 1

HSK-sizes 32...160



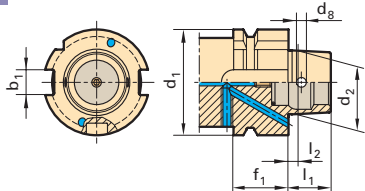
Form E DIN 69893 part 5

HSK-sizes 25...63



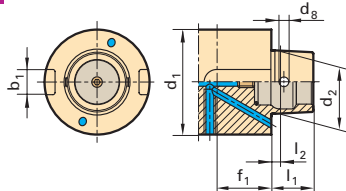
Form B DIN 69893 part 2

HSK-sizes 40...160



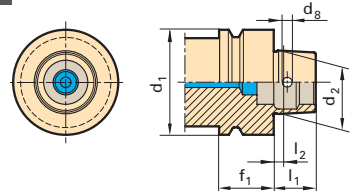
Form D DIN 69893 part 2

HSK-sizes 40...160



Form F DIN 69893 part 6

HSK-sizes 50...80



HSK for automatic tool change with gripper groove and index notch. Manual operation is via access hole in taper. Form B relies on driving dogs on the joint face as shank isn't slotted. Torque is transmitted through highly accurate connection.

HSK for manual tool change. Operation is via access hole in taper. Form D relies on driving dogs on the joint face as shank isn't slotted. Torque is transmitted through highly accurate connection.

HSK for automatic tool change. Torque is transmitted through highly accurate connection. Version with access hole acc. to DIN 69893-1 by arrangement.

| HSK form A C E | | | | | | | |
|-----------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Nominal Ø d ₁ mm | d ₂ mm | l ₁ mm | l ₂ mm | f ₁ mm | f ₅ mm | d ₈ mm | b ₁ mm |
| 25 | 19.000 | 13 | 2.5 | 10 | - | - | - |
| 32 | 24.007 | 16 | 3.2 | 20 | 10.0 | 4.0 | 7.05 |
| 40 | 30.007 | 20 | 4.0 | 20 | 10.0 | 4.6 | 8.05 |
| 50 | 38.009 | 25 | 5.0 | 26 | 12.5 | 6.0 | 10.54 |
| 63 | 48.010 | 32 | 6.3 | 26 | 12.5 | 7.5 | 12.54 |
| 80 | 60.012 | 40 | 8.0 | 26 | 16.0 | 8.5 | 16.04 |
| 100 | 75.013 | 50 | 10.0 | 29 | 16.0 | 12.0 | 20.02 |
| 125 | 95.016 | 63 | 12.5 | 29 | - | - | 25.02 |
| 160 | 120.016 | 90 | 16.0 | 31 | - | - | 30.02 |

| HSK form B D F | | | | | | |
|-----------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Nominal Ø d ₁ mm | d ₂ mm | l ₁ mm | l ₂ mm | f ₁ mm | d ₈ mm | b ₁ mm |
| 25 | - | - | - | - | - | - |
| 32 | - | - | - | - | - | - |
| 40 | 24.007 | 16 | 3.2 | 20 | 4.0 | 10 |
| 50 | 30.007 | 20 | 4.0 | 26 | 4.6 | 12 |
| 63 | 38.009 | 25 | 5.0 | 26 | 6.0 | 16 |
| 80 | 48.010 | 32 | 6.3 | 26 | 7.5 | 18 |
| 100 | 60.012 | 40 | 8.0 | 29 | 8.5 | 20 |
| 125 | 75.013 | 50 | 10.0 | 29 | 12.0 | 25 |
| 160 | 95.016 | 63 | 12.5 | 31 | 12.0 | 32 |

Because the rotational speed is the largest influencing factor together with the limits regarding the spindle or spindle bearing interface, the following r.p.m. limits for HSK interfaces have been recommended as guidelines within the HSK standards:

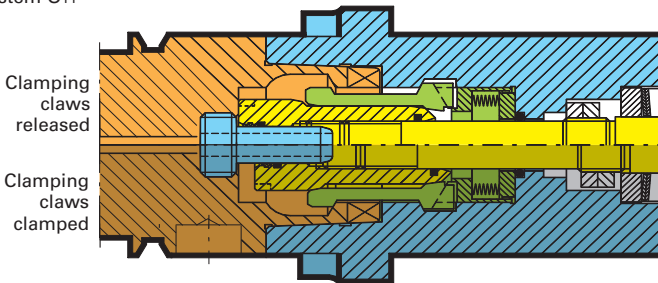
| | |
|-------------|--------------------|
| HSK-A/C 32 | to 50.000 rev./min |
| HSK-A/C 40 | to 42.000 rev./min |
| HSK-A/C 50 | to 30.000 rev./min |
| HSK-A/C 63 | to 25.000 rev./min |
| HSK-A/C 80 | to 20.000 rev./min |
| HSK-A/C 100 | to 16.000 rev./min |

The automatic tool clamping

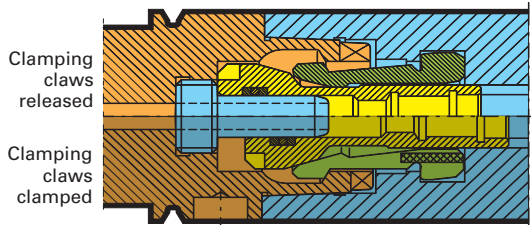
For the automatic interface the forces are introduced axially via a draw bar. A clamping taper simultaneously causes a radial movement of the clamping segments which, in turn, engage with the clamping shoulder of the tool shank and lock the coupling absolutely play-free. The clamping mechanism increases the draw-in force on the plane face by a factor of 3.5. General application in machining centers and turning centres using an automatic tool changing method. Such clamping systems are currently being offered by Messrs. Ott, Ortlieb, Berg and Röhm (fig. 6).

Fig. 6
Spindle interfaces with clamping devices

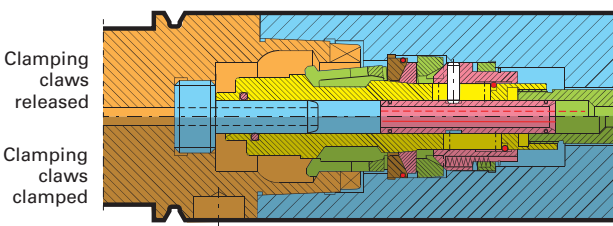
System OTT



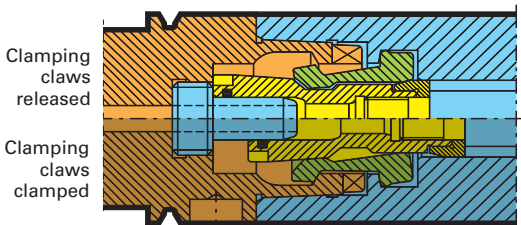
System ORTLIEB (licence Fa. Guhring)



System BERG (licence Fa. Guhring)

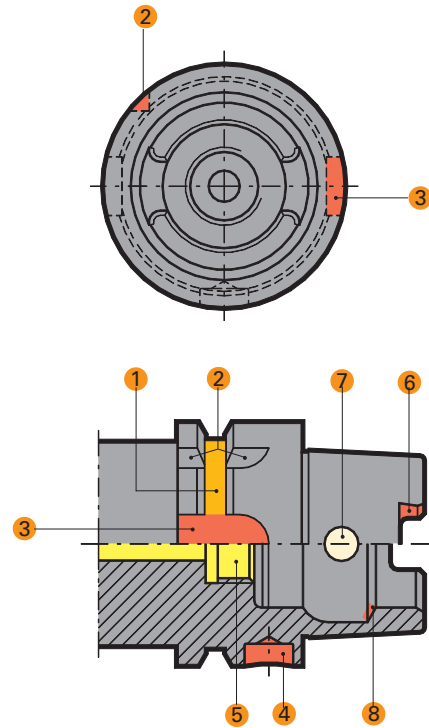


System RÖHM (licence Fa. Guhring)



Term definitions of HSK-A interface for automatic tooling systems

- 1 Gripper groove: circular groove
- 2 Index notch: sickle-shaped notch across gripper groove
- 3 Keyway on collar: index notch or for attachment in tool magazine or grippers. With HSK-B/D also provides form closed torque transmission to spindle.
- 4 Coding/identification: bore in collar for attachment of identification system (coding chip)
- 5 Thread for coolant: for attachment of coolant supply set
- 6 Keyway on taper shank: form closed torque transmission to spindle
- 7 Radial bore in taper shank: necessary for manual clamping systems
- 8 Clamping shoulder: circular chamfer for drawing in the tool



Note:

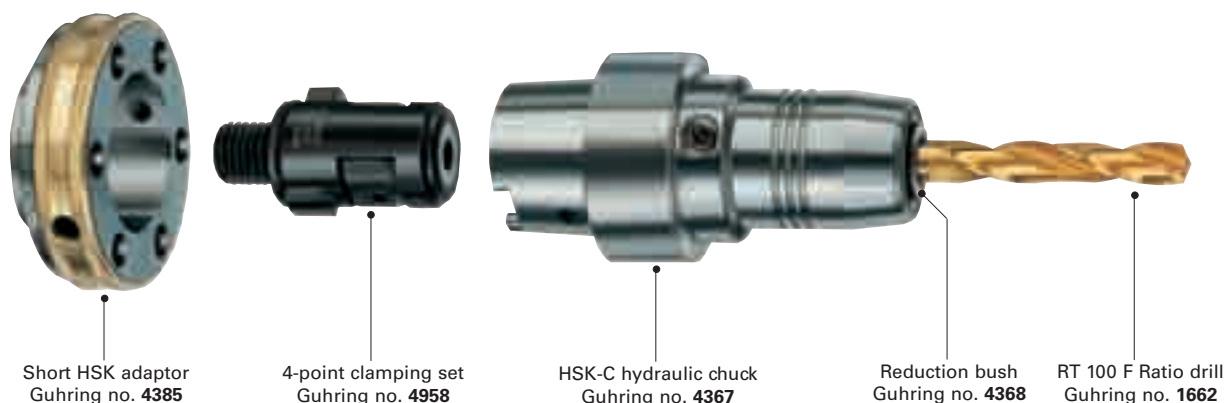
We like to point out, that HSK-A can be used alternatively to HSK-C with manual clamping systems e.g. 4-point clamping set or PowerClamp. The only difference is the overall length, which is slightly longer. That is why we have decided to have certain tool holders only as form A as standard.

The manual tool clamping

Operating instructions for manual tool clamping

- Do not exceed the maximum torque figures for the clamping screw of the 4-point clamping set and the PowerClamp system.
- The thread of the clamping screw of the manual clamping set is supplied pre-greased. Following pro-longed operating periods it may be necessary grease otherwise the require clamping force cannot be obtained.
- At tool changing the plane surface and spindle has to be cleaned. Dirt will restrain the perfect function of the tool system. The inner taper of the spindle can be cleaned with cleaning unit, Guhring no. 4914.
- The spindle should be sealed with a plug, Guhring no. 4985, when running without tool to prevent the ingress of foreign matter into the clamping sets and HSK tool systems.

Exemplary interface design



Spindle connection dimensions see page 158/159

Detailed drawings of the spindle connection contours are available on request for the following:

| | | | |
|--|--|---|--|
| Guhring no. 4385 Short HSK adaptor | | Guhring no. 4554 PowerClamp clamping set | |
| Guhring no. 4386 HSK adaptor (in front) | | Guhring no. 4958 4-point clamping set | |
| Guhring no. 4582 HSK adaptor (in front) for turning centres | | Guhring no. 4930 MQL 4-point clamping set | |
| Guhring no. 4584 HSK adaptors (integrated axial plane) | | Guhring no. 4553 Al collar for adjustment | |
| Guhring no. 4586 HSK adaptor (in front) | | Guhring no. 4953 Brass collar | |

Technical information and advantages

Guhring has considerably expanded its ISO taper and MAS-BT tool holder program. Naturally, the tool holders are of the usual high Guhring quality. This means: ISO taper and MAS-BT tool holders are produced in a special, alloyed case hardened steel with a minimum tensile strength at the core of 900 N/mm², hardened in a low distortion hardening process to HRC 58 at a case hardening depth of 0.8 to 1.0 mm. For reasons of longevity, the surface of the tool holder is subjected to an abrasive blasting process and protected against corrosion..

Quality through precision

Guhring's demand for highest precision also applies to tool holders. Therefore, ISO taper and MAS-BT chucks are precision ground: in the vicinity of the ISO taper to Ra ≤ 0.2, at the holder face to Ra ≤ 0.4. The taper tolerance is better than AT 3 with a measuring accuracy of ≤ 1µm. Detailed information regarding the form and positional tolerances can be found for the individual tool holders on the respective pages in the catalogue. The tolerances of the holder bore and the spigot are approximately 2/3 of the DIN tolerance.

Balancing

Tool holders suitable for increased speeds are generally pre-balanced. For this purpose, we have determined the imbalance and entered the balancing areas as well as balancing bores on the drawings. This levels out the imbalance to a large extent and up to approximately 8000 rev./min precision balancing is unnecessary. For higher revolutions, the pre-balanced tool holders must be precision balanced to G 6.3 or G 2.5 respectively.

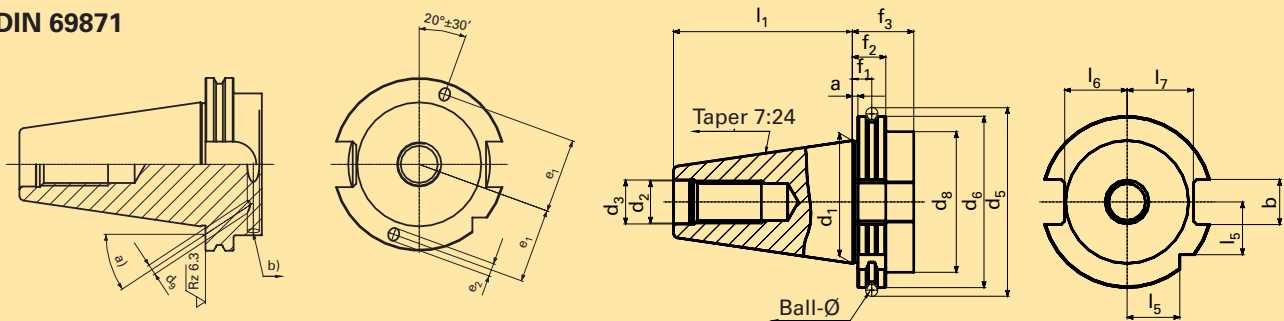
Type AD/B

ISO taper tool holders generally produced are type AD/B. Supplied is type AD, the coolant bores at the collar are sealed with screws.

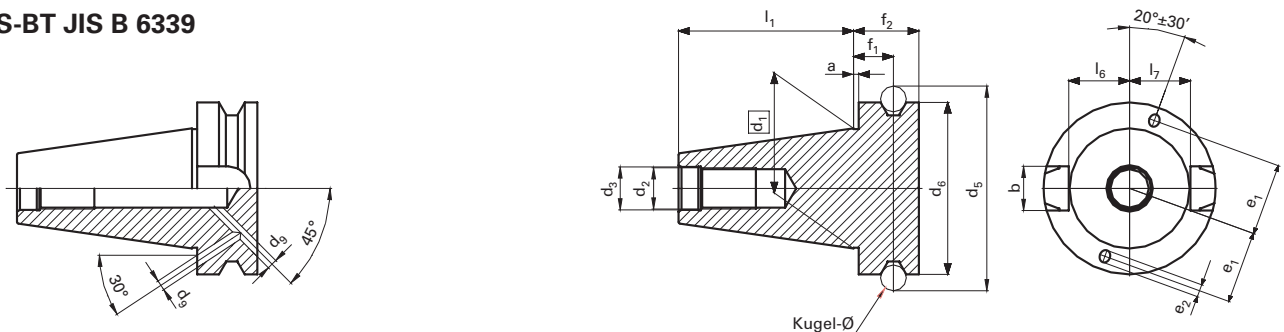
General dimensions and tolerances

The following dimensions apply to our ISO taper and MAS-BT tool holders:

SK DIN 69871



MAS-BT JIS B 6339

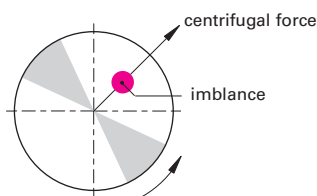


| ISO taper | a | Ball Ø | b | d ₁ | d ₂ | d ₃ | d ₅ | d ₆ | d ₈ | d ₉ | e ₁ | f ₁ | f ₂ | f ₃ | l ₁ | l ₅ | l ₆ | l ₇ |
|-----------|-----|--------|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm | mm |
| SK40 | 3.2 | 7 | 16.1 | 44.45 | M16 | 17 | 72.3 | 63.55 | 50 | 4 | 27 | 11.1 | 19.1 | 35 | 68.4 | 18.5 | 22.8 | 25.0 |
| SK50 | 3.2 | 7 | 25.7 | 69.85 | M24 | 25 | 107.25 | 97.50 | 80 | 6 | 42 | 11.1 | 19.1 | 35 | 101.75 | 30.0 | 35.5 | 37.7 |
| BT40 | 2.0 | 10 | 16.1 | 44.45 | M16 | 17 | 75.679 | 63.00 | - | 4 | 27 | 16.6 | 27.0 | - | 65.35 | - | 22.6 | 22.6 |
| BT50 | 3.0 | 15 | 25.7 | 69.85 | M24 | 25 | 119.019 | 100.00 | - | 5.4 | 42 | 23.2 | 38.0 | - | 101.75 | - | 35.4 | 35.4 |

Imbalance

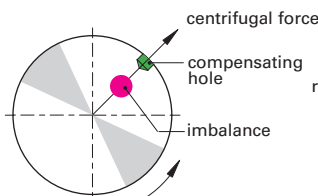
An imbalance produces a centrifugal force during the rotation of the spindle impeding the smooth running of the tool. This imbalance influences the working process and the life span of the spindle bearings. The centrifugal force F increases linear with the imbalance U and squared with the number of revolutions according to the formula below.

$$F = U \cdot \omega$$



Counter balancing

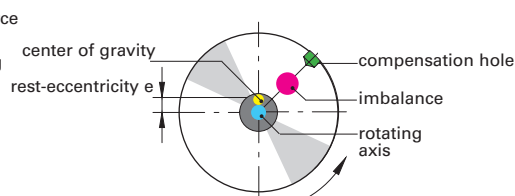
To compensate for unwanted centrifugal forces, the symmetrical distribution of mass must be restored with the aim of eliminating any centrifugal forces influencing the spindle bearing. Tool holders generally have compensation holes or areas which assist in directing the total amount of all centrifugal forces influencing the axis towards zero (see DIN ISO 1940).



Eccentricity of center of gravity

The imbalance of a spindle causes its center of gravity to deviate a certain distance from the rotating axis in direction of the imbalance. This distance is called rest-eccentricity e or eccentricity of center of gravity. The heavier the weight of the balance body mass m , the greater the rest-imbalance U permissible.

$$e = \frac{U}{m}$$



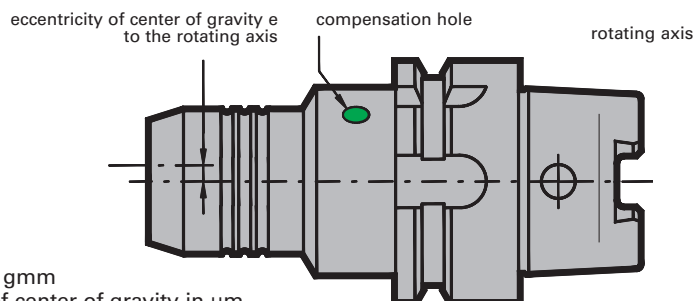
Calculation imbalance

Imbalance is a measure, specifying how much unsymmetrical distributed mass deviates radially from the rotating axis.

Imbalance is measured in gmm. The measure of distance e determines the distance of the center of gravity of an element to the rotating axis. Imbalance is calculated as follows:

$$U = m \cdot e$$

U = imbalance in gmm
 e = eccentricity of center of gravity in μm
 m = mass in kg



Balancing limits

In accordance with DIN ISO 1940 the balance grade is denoted with G as well as the units gmm/kg or μm respectively and is relative to the number of revolutions. At a speed of 15.000 rev./min and a weight of 1 kg, $G6.3$ corresponds with a permissible center deviation between rotational axis and center of gravity axis of the spindle of 4 μm .

At twice the speed of 30,000 rev./min it would be 2 μm . If the tool holder was

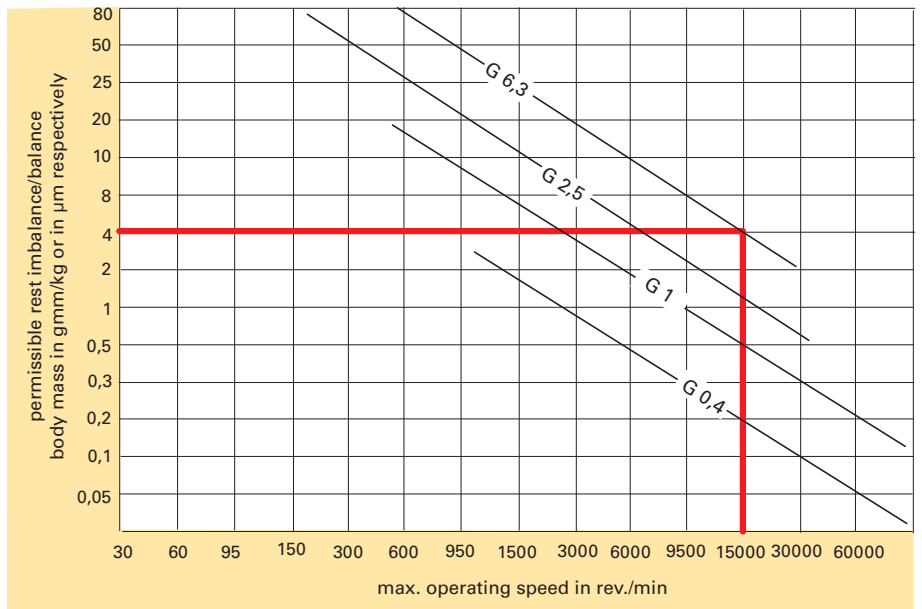
only half the weight, i.e. 0.5 kg, the permissible counter balancing tolerance is also halved.

Aim of counter balancing is to find a compromise between the technically feasible and the economically efficient. Because the radial interchange accuracy for a brand-new HSK holder can be 2 to 3 μm and for an ISO taper shank holder can be 5 to 10 μm , it means an initial quality limit of $G2.5$ or $G6.3$ respectively at 10,000 rev./min. The following diagram shows the qua-

lity grades to DIN ISO 1940-1, i.e. the permissible rest imbalance in relation to the balance body mass for different counter balance qualities G relative to the maximum operating speed.



Balancing machine



Guhring tool holders are balanced to G6.3/15,000 rev./min. As an option, i.e. when specified by the machine tool manufacturer, it is possible to precision balance including balancing protocol to a rest imbalance of 0.3 gmm.

Calculation the balancing grade total of the assembled system:

Spindle - tool holder - tool

Illustration of balancing grade total

$$IB_{total} = IB_{Spindle} + IB_{tool\ holder} + IB_{tool}$$

Example:

$$IB_{total} = IB_{Spindle\ (G\ 0.4)} + IB_{tool\ holder\ (G2.5)} + IB_{tool\ (G6.3)}$$

Calculation of rest imbalance

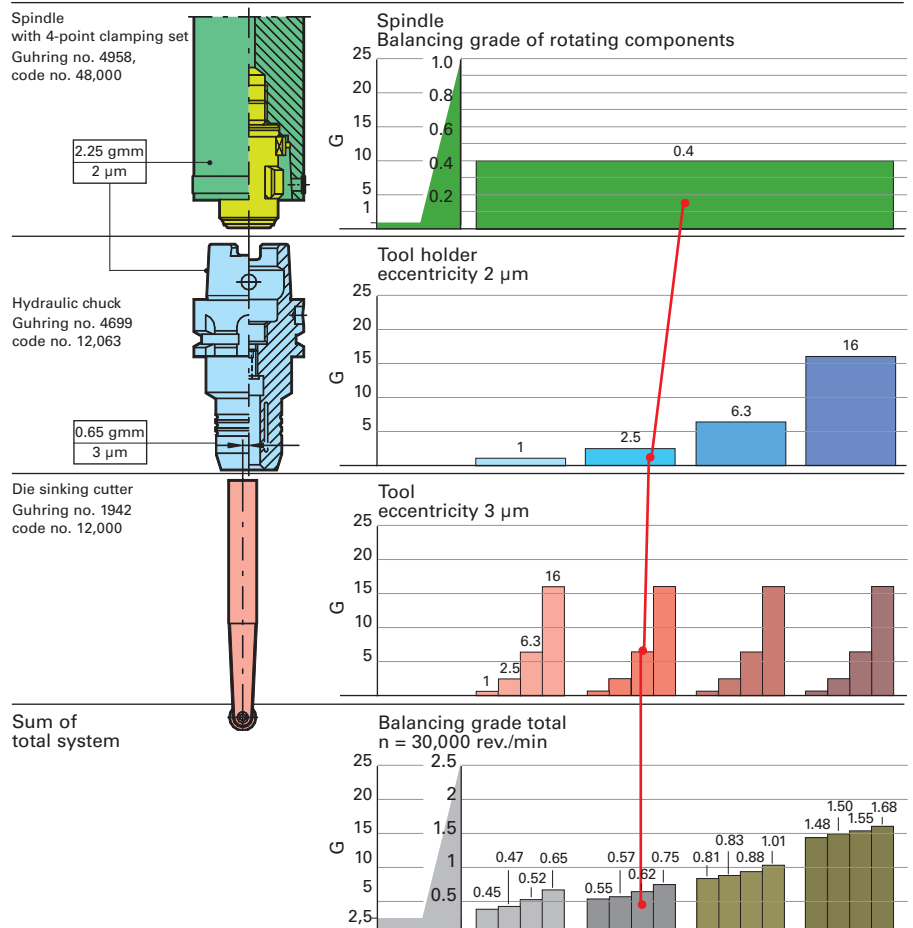
$$U = \frac{G \cdot 60}{2 \cdot \pi \cdot n} \cdot m$$

$IB_{Spindle} = \frac{0.4 \cdot 60}{2 \cdot \pi \cdot 30.000} \cdot \frac{15.000\ m\ in\ g}{16.340\ m\ total\ in\ g} = 1.910\ U\ in\ gmm$
 $IB_{tool\ holder} = \frac{2.5 \cdot 60}{2 \cdot \pi \cdot 30.000} \cdot 1125 = 0.895$
 $IB_{tool} = \frac{6.3 \cdot 60}{2 \cdot \pi \cdot 30.000} \cdot 215 = 0.431$
 $IB_{total}\ in\ gmm: 3.236$

Balancing grade conversion of the total system

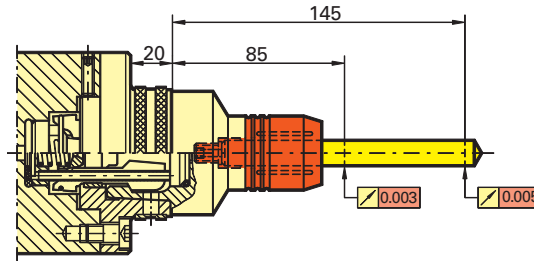
$$G = IB_{total} \cdot 2 \cdot \pi \cdot \frac{n}{60 \cdot m_{ges}}$$

Example:

$$G = 3.236\ gmm \cdot 2 \cdot \pi \cdot \frac{30.000\ \frac{U}{min}}{60\ s \cdot 16340\ g} = 0,62$$


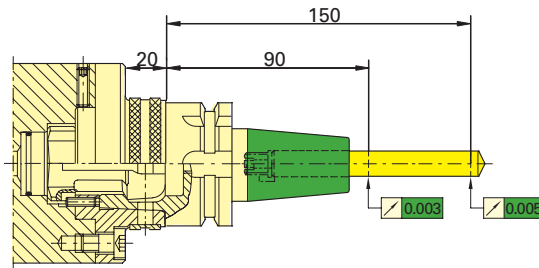
1 Hydraulic chuck

HSK-C 63 clamping-Ø 12.0 mm
 Guhring no. 4267, code no. 12,063
 with solid carbide proofing bar
 Ø 12.0 mm



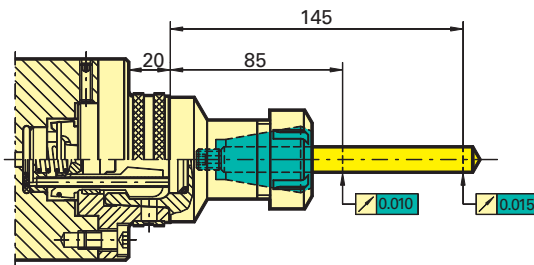
2 Shrink fit chuck

HSK-A63, clamping-Ø 12.0 mm
 Guhring no. 4736, code no. 12,063
 with solid carbide proofing bar
 Ø 12.0 mm



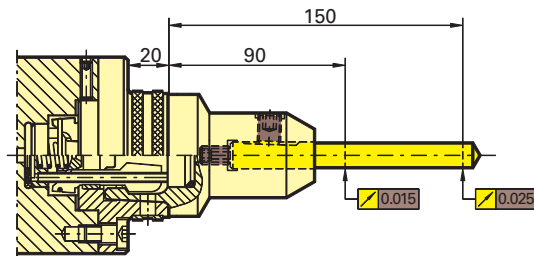
3 Collet holder

HSK-C 63 ER 40
 Guhring no. 4303 code no. 40,063
 and collet DIN 6499 B ER 40; clamping-Ø
 12,0 mm
 Guhring no. 4307, code no. 12,040
 with solid carbide proofing bar
 Ø 12.0 mm



4 Side lock holder DIN 1835 E

HSK-C 63 clamping-Ø 12.0 mm
 Guhring no. 4333 code no. 12,063
 with solid carbide proofing bar
 Ø 12.0 mm

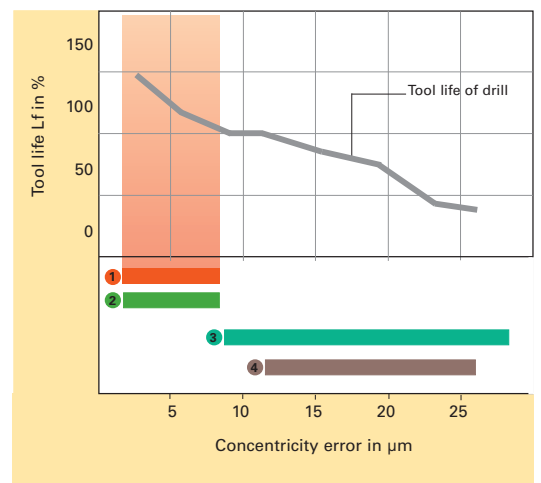


Influence of concentricity on tool life

Spindle concentricity errors place heavy loads (asymmetric and dynamic) on the drill (abruptly). The greater the concentricity error, the shorter the tool life of the drill. As general recommendation, the concentricity error measured at the cutting edges should be < 0.02 mm (with the tool clamped in the machine spindle). The total concentricity error measured at the cutting edge of the drill is the aggregate of the total of the individual errors of

- machine spindle
- tool holder
- interface
- tool

When applying quality tools in well maintained machines, the concentricity error will not normally exceed 0.01 mm. In modern practice the tool holder contributes most to the total concentricity error. The diagram shows the typical deviations of the 4 most common clamping methods used in solid carbide drill applications.



MQL 4-POINT CLAMPING SETS



MQL
by GÜHRING
.....

• 4-point clamping technique for MQL

- Technique and advantages
- MQL 4-point clamping sets
- Component parts

from page 20

from page 22

from page 23

Technical information and advantages

Our 4-point clamping system is suitable for radial manual clamping. Primarily designed for installation in spindles (short drilling spindles, multiple-spindle drilling heads). Most prominent features:

- simple and hence more economic spindle manufacture
- short, small diameter spindles with constricted spindle bearing spacing.

Two clamping segments displaced by 180° with 2 clamping planes each are uniformly moved outwards with a differential threaded spindle, thereby generating the necessary clamping force.

For conventional cooling our 4-point clamping sets are suitable for a pressure up to 80 bar.

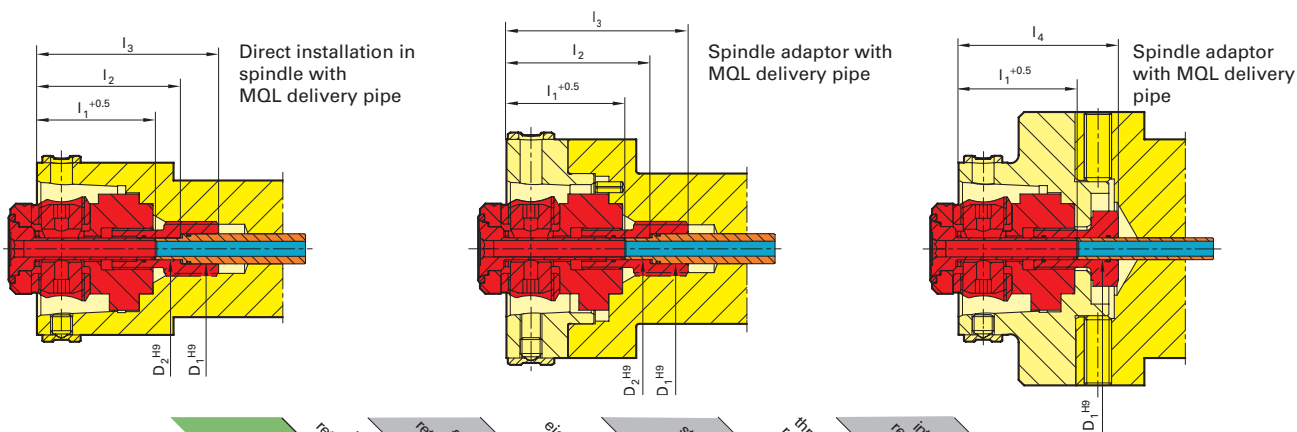
We have included a new 4-point clamping set in the GM 300 program specifically for the application with MQL and with our MQL optimised tools. The set offers the following special features and advantages:

- A central, coaxial minimal quantity lubrication duct with a consistent internal diameter ensures a MQL coolant delivery to the tool without coolant pockets and offers quick operating times.
- Naturally, the fitting contour and application is compatible with our 4-point clamping set for conventional cooling applications.

MQL 4-point clamping sets



MQL 4-point clamping set connection dimensions for new designs



| for HSK code | holder-Ø in retention spindle D1/H9 | fitting-Ø in retention spindle D2/H9 | ejector position I1+0.5 | stop coolant delivery pipe I2 | threading depth retention spindle I3 | internal-Ø of retention spindle I4 |
|----------------------|--|---|----------------------------|----------------------------------|---|---------------------------------------|
| 32 24,000 | 4 | 4 | 31.8 | - | 39.8 | 36.0 |
| 40 30,000 | 7 | 5 | 30.5 | 34.8 | 41.8 | 39.0 |
| 50 38,000 | 9 | 6 | 35.8 | 41.8 | 49.5 | 46.5 |
| 63 48,000 | 11 | 8 | 43.3 | 52.5 | 66.5 | 58.5 |
| 80 60,000 | 13 | 10 | 53.9 | 69.9 | 85.9 | 71.1 |
| 100 75,000 | 15 | 12 | 67.9 | 85.5 | 105.5 | 89.0 |

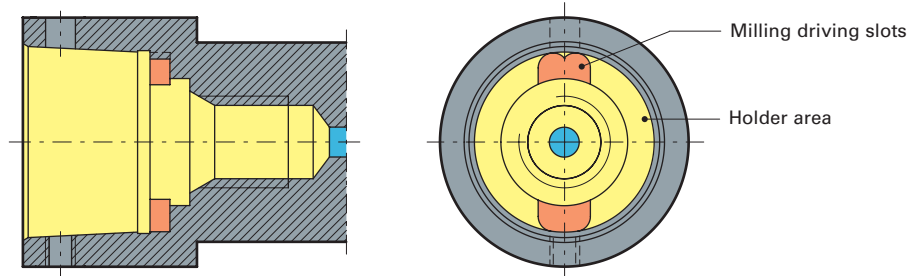
Measure without tolerance to DIN ISO 2768 M

Technical information and advantages

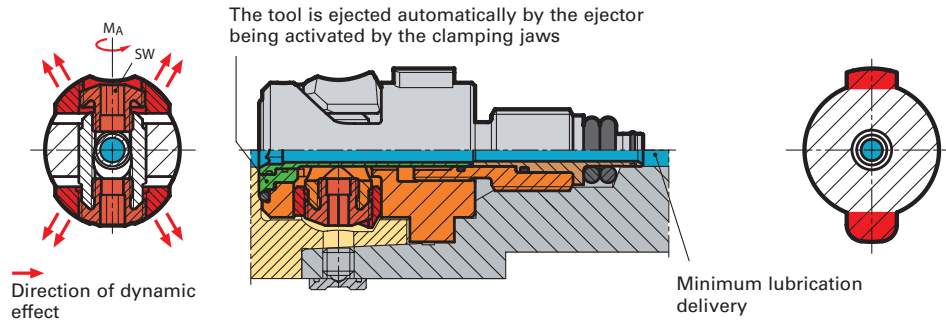
General notes: Our manual clamping sets must **not** be operated with motor-driven tools (impulse screwdriver or similar). The hexagonal key should not exceed the key size over its entire length, this largely prevents excessive torque being transferred. We recommend the T-handle hexagonal key, Guhring no. 4912. For accurate setting of the maximum torque and achieving the maximum interface rigidity, we recommend the application of a torque wrench, Guhring no. 4915 with hexagonal sockets, Guhring no. 4916. Production drawings of the spindle contour to suit direct installation are available on request, including .dxf.

MQL 4-point clamping sets

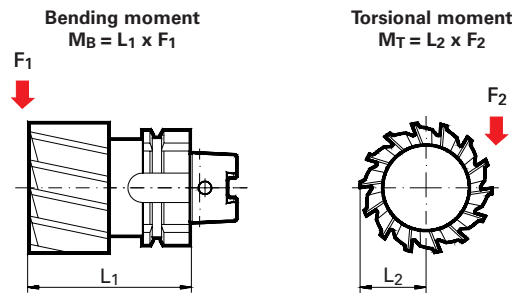
Internal contour of spindle



Installation and principle of operation



Bending, torsional and tightening moment for 4-point clamping sets for MQL



① We recommend M_A max. for rough machining and milling operations. For drilling and reaming operations a lower deviation of M_A max. up to 30% is permissible. Please check the torque with a torque wrench.

② Depending on temperature and lubricating conditions these values can be up to 15% lower.

③ Due to the screwed connection, M_T max. can be lower with adaptors.

| HSK-C | max. torque M_A [Nm] ① | Key size | max. drawing force [kN] ② | max. linear bending moment M_B [Nm] ② | max. transferrable torsional moment M_T [Nm] ② ③ |
|-------|--------------------------|----------|---------------------------|---|--|
| 32 | 3.0 | 2.5 | 8.5 | 72 | 105 |
| 40 | 6.0 | 3.0 | 12.5 | 135 | 180 |
| 50 | 12.0 | 4.0 | 24.0 | 330 | 390 |
| 63 | 24.0 | 5.0 | 32.0 | 570 | 680 |
| 80 | 40.0 | 6.0 | 45.0 | 1000 | 1570 |
| 100 | 60.0 | 8.0 | 53.0 | 1620 | 4200 |

MQL 4-point clamping sets

Product information

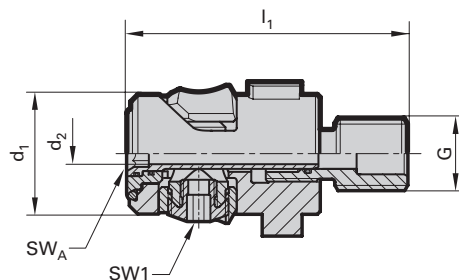
- The central and coaxial MQL supply with constant internal diameter prevents coolant from consolidating
- for a coolant pressure up to 80 bar

Scope of delivery

- complete as shown in illustration
- Installation and operating instructions

Guhring no.

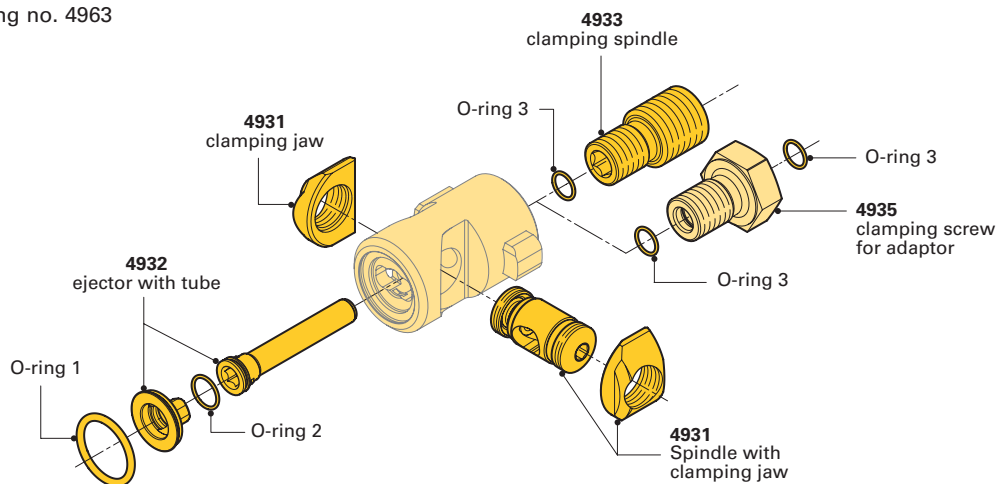
4930



| for HSK-C | d ₁ mm | d ₂ mm | l ₁ mm | G | SW1 | SW _A | kg | Code no. | Availability |
|-----------|----------------------|----------------------|----------------------|-----|-----|-----------------|------|----------|--------------|
| 32 | 16.7 | 3 | 39.5 | M10 | 2.5 | 3 | 0.05 | 24,000 | ● |
| 40 | 20.6 | 4 | 49.5 | M12 | 3 | 4 | 0.09 | 30,000 | ● |
| 50 | 25.5 | 5 | 59.0 | M16 | 4 | 5 | 0.18 | 38,000 | ● |
| 63 | 33.0 | 6 | 76.0 | M20 | 5 | 6 | 0.37 | 48,000 | ● |
| 80 | 41.0 | 8 | 98.0 | M24 | 6 | 8 | 0.70 | 60,000 | ● |
| 100 | 52.0 | 10 | 117.5 | M24 | 8 | 10 | 1.30 | 75,000 | ● |

Component parts for MQL 4-point clamping sets Guhring no. 4930

- Clamping screw only for adaptor
- If spindle cannot be locked, please use torque socket Guhring no. 4963



| for HSK-C | O-rings | | | 4931 | 4932 | 4933 | 4935 | Availability |
|-----------|-------------|-------------|-------------|---------------------------------|-------------------------|---------------------|-------------------|--------------|
| | 1 NBR 70 | 2 NBR 70 | 3 NBR 70 | Spindle with clamping jaw | Ejector with tube | Clamping spindle | Clamping screw | |
| 32 | 10.82x1.78 | 4.0x1.0 | - | 24,000 | 24,000 | 24,000 | 24,000 | ● |
| 40 | 13.0x2.0 | 6.0x1.0 | 5.0x1.0 | 30,000 | 30,000 | 30,000 | 30,000 | ● |
| 50 | 16.0x2.0 | 8.0x1.0 | 6.0x1.0 | 38,000 | 38,000 | 38,000 | 38,000 | ● |
| 63 | 20.3x2.4 | 10.0x1.0 | 8.0x1.0 | 48,000 | 48,000 | 48,000 | 48,000 | ● |
| 80 | 24.0x3.0 | 12.0x1.5 | 10.0x1.5 | 60,000 | 60,000 | 60,000 | 60,000 | ● |
| 100 | 31.34x3.53 | 4.0x1.0 | 12.0x1.70 | 75,000 | 75,000 | 75,000 | 75,000 | ● |

Clamping spindles for MQL 4-point clamping sets

Product information

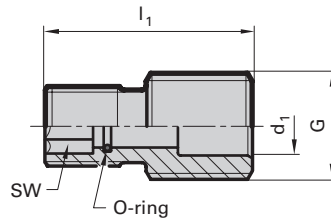
- Retention spindle for direct installation in spindle

Scope of delivery

- complete as shown in illustration

Guhring no.

4933



| for HSK-C | l_1 mm | d_1 mm | G | SW | O-ring NBR 70 | Code no. | Availability |
|-----------|----------|----------|------|----|---------------|----------|--------------|
| 32 | 17 | - | M 10 | 4 | - | 24,000 | • |
| 40 | 23 | 7 | M 12 | 5 | 5x1.0 | 30,000 | • |
| 50 | 27 | 9 | M 16 | 6 | 6x1.0 | 38,000 | • |
| 63 | 39 | 11 | M 20 | 8 | 8x1.0 | 48,000 | • |
| 80 | 50 | 13 | M 24 | 10 | 10x1.5 | 60,000 | • |
| 100 | 60 | 15 | M 24 | 12 | 12x1.7 | 75,000 | • |

MQL 4-point clamping sets

Adaptor for MQL 4-point clamping sets

Product information

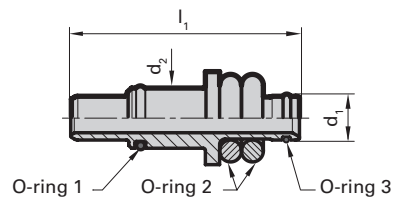
- Adaptor for direct installation in spindle and spindle adaptors in existing spindles

Scope of delivery

- complete as shown in illustration
- O-ring

Guhring no.

4934



| for HSK-C | d_1 mm | d_2 mm | l_1 mm | O-ring 1 NBR70 | O-ring 2 2xNBR70 | O-ring 3 NBR70 | Code no. | Availability |
|-----------|----------|----------|----------|----------------|------------------|----------------|----------|--------------|
| 32 | 4.0 | - | 19 | 4.0x1.0 | - | 2x1 | 24,000 | • |
| 40 | 5.0 | 7 | 28 | 4.5x1.0 | 4x2.5 | 3x1 | 30,000 | • |
| 50 | 6.0 | 9 | 32 | 5.5x1.5 | 5x4.0 | 4x1 | 38,000 | • |
| 63 | 8.0 | 11 | 42 | 7.5x1.5 | 8x4.0 | 6x1 | 48,000 | • |
| 80 | 10.2 | 13 | 56 | 9.0x1.5 | 10x5.0 | 8x1 | 60,000 | • |
| 100 | 12.0 | 15 | 58.5 | 12.0x1.5 | 12.0x4.0 | 10x1 | 75,000 | • |

Clamping screw for MQL 4-point clamping sets

Product information

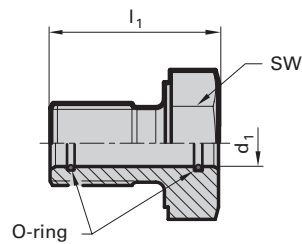
- necessary for installation of MQL 4-point clamping set in spindle adaptors Guhring no. 4386 and 4387
- change against standard retention bolt

Scope of delivery

- complete as shown in illustration

Guhring no.

4935



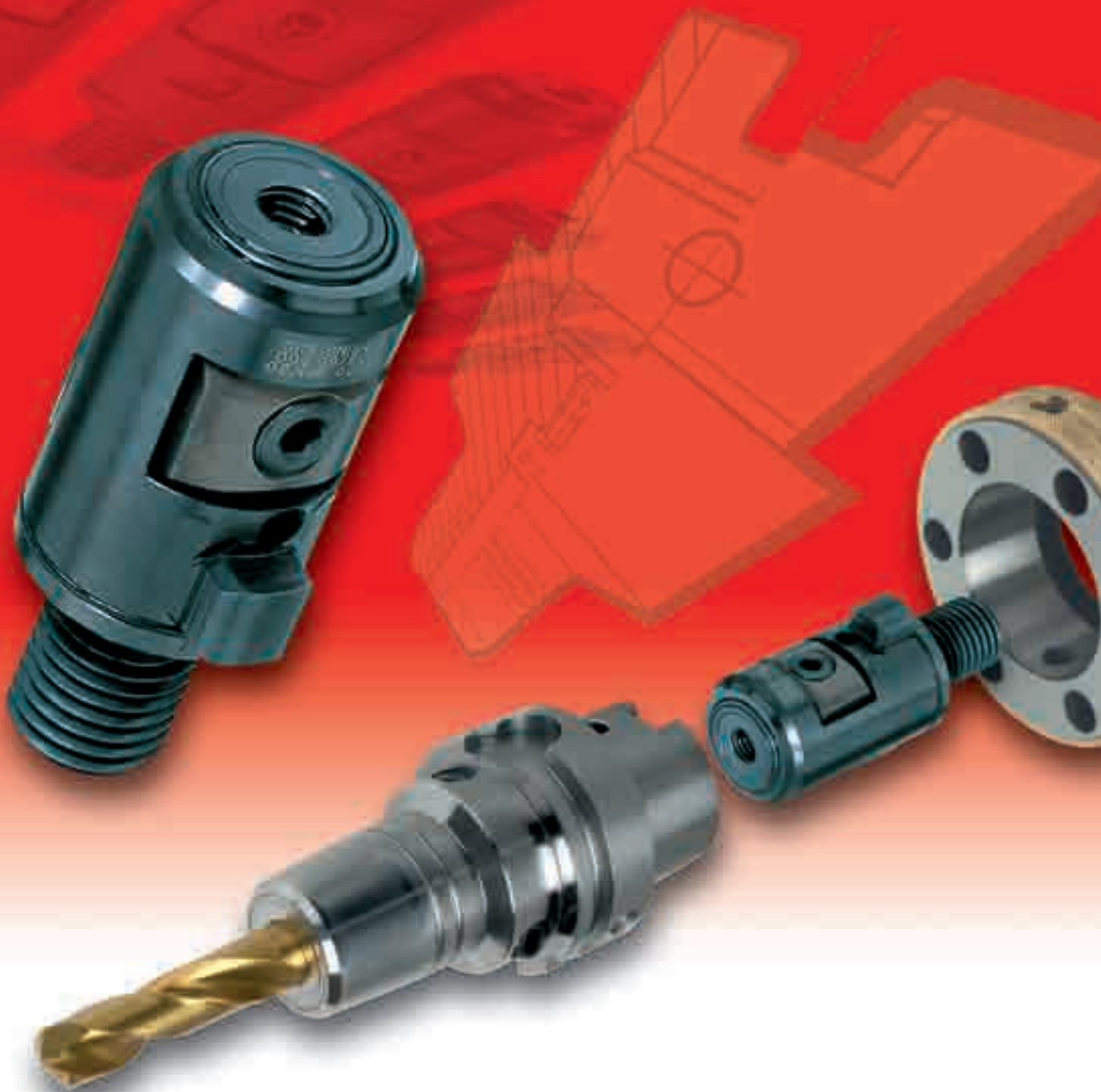
| for HSK-C | d_1 mm | l_1 mm | SW | O-ring 2 x NBR 70 | Code no. | Availability |
|-----------|----------|----------|----|----------------------|----------|--------------|
| 32 | - | 21.5 | 13 | - | 24,000 | • |
| 40 | 5.0 | 21 | 16 | 5x1.0 | 30,000 | • |
| 50 | 6.0 | 25 | 18 | 6x1.0 | 38,000 | • |
| 63 | 8.0 | 31 | 24 | 8x1.0 | 48,000 | • |
| 80 | 10.0 | 36 | 24 | 10x1.5 | 60,000 | • |
| 100 | 12.0 | 40 | 32 | 12x1.7 | 75,000 | • |



The top MQL clamping set from Guhring – now for many spindle contours!

- **The Genuine Article: the clamping set with Guhring contour**
- **New: Guhring M contour**
- **New: PowerClamp/KomLoc®**

4-POINT CLAMPING SETS



• 4-point clamping technique for conventional coolant

- | | |
|---|--------------|
| - Technique and advantages | from page 26 |
| - 4-point clamping sets and component parts | from page 28 |
| - Adaptors | from page 29 |
| - Reductions and extensions | from page 30 |
| - Locking rings and torque sockets | from page 31 |

Technical information and advantages

Our 4-point clamping system is suitable for radial manual HSK tool clamping. Primarily designed for the installation in spindles (short drilling spindles, multiple spindle drilling heads). The most prominent features:

- simple and hence more economic spindle manufacture
- short, small diameter spindles with constricted spindle bearing spacing.

Two clamping segments displaced by 180° with 2 clamping planes each are uniformly moved outwards with a differential threaded spindle, thereby generating the necessary clamping force. For conventional cooling our 4-point clamping sets are suitable for a pressure up to 80 bar.

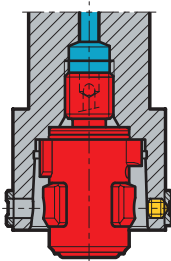


4-point clamping sets

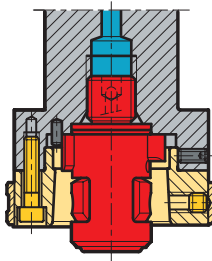
Application examples

Spindle interface

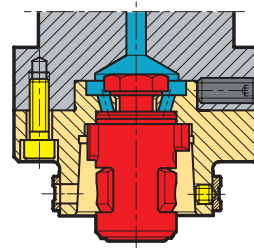
Direct installation in spindle



Spindle adaptor (integrated)

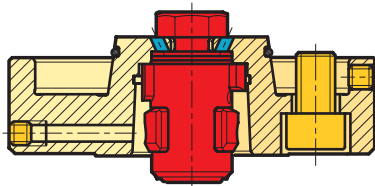


Spindle adaptor (in front)

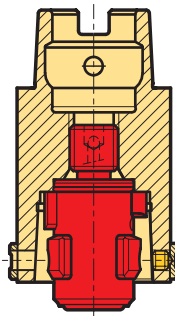


Adaptors

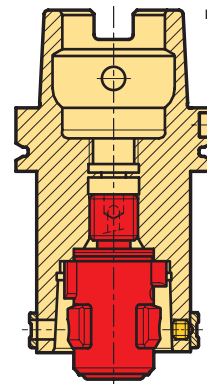
Basic adaptor for ISO taper spindles



HSK-C extension



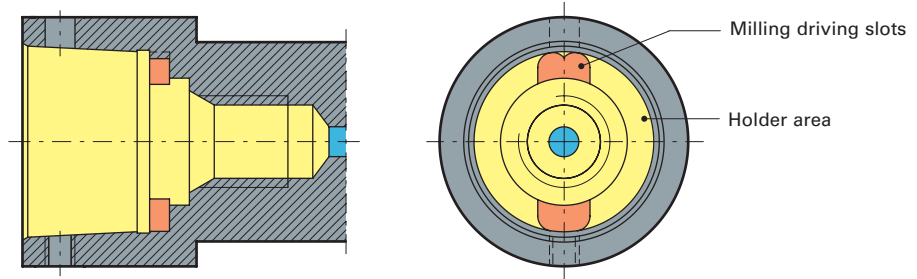
HSK-A reduction



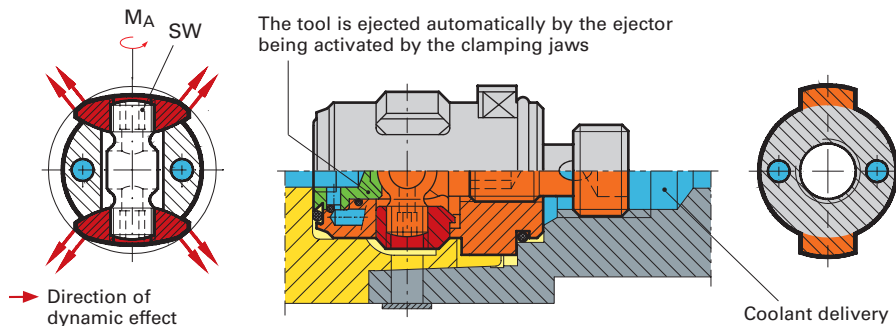
Technical information and advantages

General notes: Our manual clamping sets must **not** be operated with motor-driven tools (impulse screwdriver or similar). The hexagonal key should not exceed the key size over its entire length, this largely prevents excessive torque being transferred. We recommend the T-handle hexagonal key, Guhring no. 4912. For accurate setting of the maximum torque and achieving the maximum interface rigidity, we recommend the application of a torque wrench, Guhring no. 4915 with hexagonal sockets, Guhring no. 4916. Removal of the locking ring is made by releasing the pressure ball screw. This is achieved with the use of an Allen key inserted through the opposite access hole and through the hollow threaded spindle and turned anti-clockwise. Once released, the locking ring will slide axially off. Production drawings of the spindle contour to suit direct installation are available on request, including .dxf.

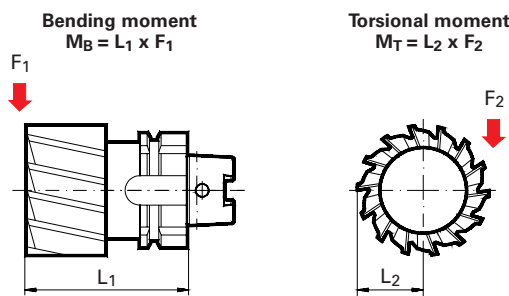
Internal contour of spindle



Installation and principle of operation



Bending, torsional and tightening moment for 4-point clamping sets for conventional cooling



- ① We recommend M_A max. for rough machining and milling operations. For drilling and reaming operations a lower deviation of M_A max. up to 30% is permissible. Please check the torque with a torque wrench.
- ② Depending on temperature and lubricating conditions these values can be up to 15% lower.
- ③ Due to the screwed connection, M_T max. can be lower with adaptors.

| HSK-C | max. torque M_A [Nm] ① | Key size | max. drawing force [kN] ② | max. linear bending moment M_B [Nm] ② | max. transferable torsional moment M_T [Nm] ② ③ |
|-------|--------------------------|----------|---------------------------|---|---|
| 25 | 1.5 | 2.5 | 4.5 | 30 | 30 |
| 32 | 3.0 | 2.5 | 7.0 | 60 | 100 |
| 40 | 6.0 | 3.0 | 12.0 | 130 | 170 |
| 50 | 14.0 | 4.0 | 20.0 | 280 | 350 |
| 63 | 27.0 | 5.0 | 28.0 | 500 | 640 |
| 80 | 54.0 | 6.0 | 40.0 | 900 | 1330 |

4-point clamping sets for conventional cooling

Product information

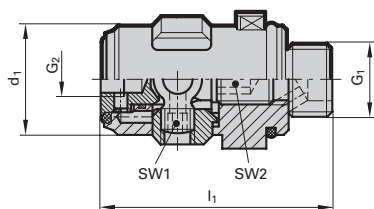
- for a coolant pressure up to 80 bar

Scope of delivery

- including installation and operating instructions

Guhring no.

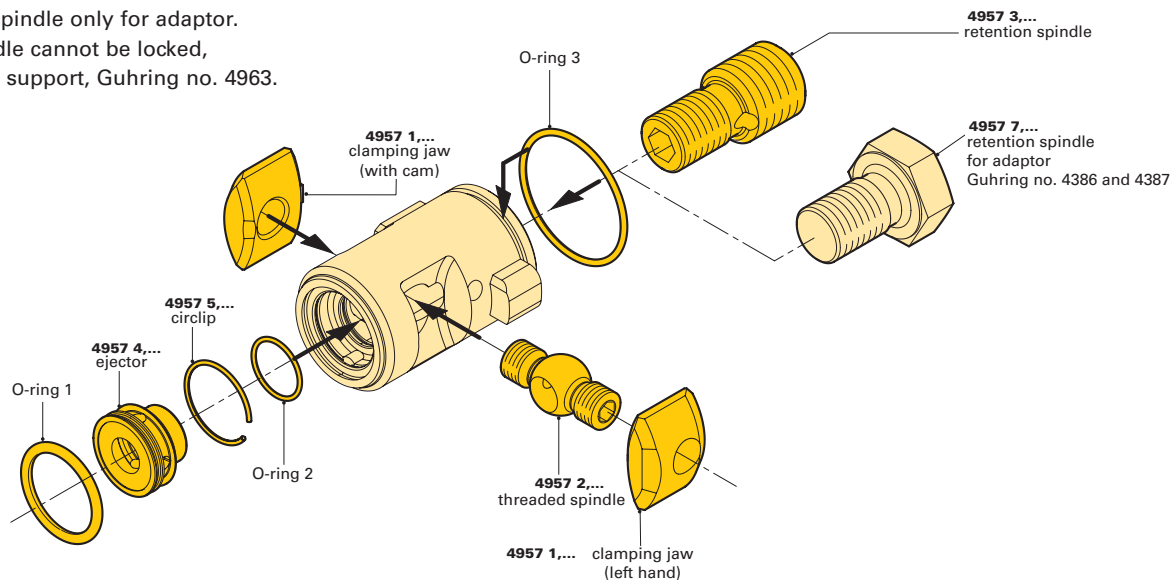
4958



| for HSK-C | d ₁ mm | l ₁ mm | G1 | G2 | SW1 | SW2 | kg | Code no. | Availability |
|-----------|-------------------|-------------------|-----|-----|-----|-----|-------|----------|--------------|
| 25 | 13.8 | 34 | M 8 | M 4 | 2.5 | 3 | 0.025 | 19,000 | ● |
| 32 | 16.7 | 40 | M10 | M 5 | 2.5 | 4 | 0.050 | 24,000 | ● |
| 40 | 20.6 | 49 | M12 | M 6 | 3.0 | 5 | 0.080 | 30,000 | ● |
| 50 | 25.5 | 59 | M16 | M 8 | 4.0 | 6 | 0.150 | 38,000 | ● |
| 63 | 33.0 | 72 | M20 | M10 | 5.0 | 8 | 0.310 | 48,000 | ● |
| 80 | 41.0 | 97 | M24 | M12 | 6.0 | 10 | 0.640 | 60,000 | ● |

Component parts for 4-point clamping set Guhring no. 4958, separate or set

- retention spindle only for adaptor.
- if the spindle cannot be locked, use torque support, Guhring no. 4963.



| for HSK-C | O-rings 1 Viton 75 | O-rings 2 NBR 70 | O-rings 3 NBR 70 | Guhring no. 4957 | | | | | Guhring no. 4959 | | |
|-----------|--------------------|------------------|------------------|------------------|------------------|-------------------|---------|---------|------------------|--------|--------------|
| | | | | Clamping jaw set | Threaded spindle | Retention spindle | Ejector | Circlip | Retention screw | Set | Availability |
| 25 | 9.0 × 1.2 | 6.0 × 0.8 | 11.0 × 1.0 | 1,019 | 2,019 | 3,019 | 4,019 | 5,019 | 7,019 | 19,000 | ● |
| 32 | 11.0 × 1.5 | 7.0 × 1.0 | 14.0 × 1.0 | 1,024 | 2,024 | 3,024 | 4,024 | 5,024 | 7,024 | 24,000 | ● |
| 40 | 13.0 × 1.5 | 9.0 × 1.0 | 17.0 × 1.0 | 1,030 | 2,030 | 3,030 | 4,030 | 5,030 | 7,030 | 30,000 | ● |
| 50 | 16.0 × 2.0 | 11.0 × 1.0 | 22.0 × 1.0 | 1,038 | 2,038 | 3,038 | 4,038 | 5,038 | 7,038 | 38,000 | ● |
| 63 | 20.3 × 2.4 | 14.0 × 1.0 | 28.0 × 1.5 | 1,048 | 2,048 | 3,048 | 4,048 | 5,048 | 7,048 | 48,000 | ● |
| 80 | 24.2 × 3.0 | 17.0 × 1.0 | 35.0 × 1.5 | 1,060 | 2,060 | 3,060 | 4,060 | 5,060 | 7,060 | 60,000 | ● |

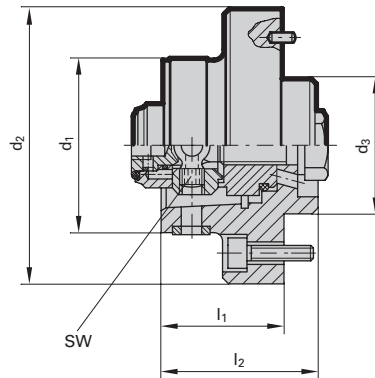
HSK spindle adaptors (in front)

Product information

- the interface between spindle and flange must be taken into consideration for the transferable torsional moment

Scope of delivery

- including clamping set Guhring no. 4958 for conventional cooling
- incl. brass locking ring Guhring no. 4953
- incl. indexing pin and retention screws
- for MQL application, order as special adaptor with MQL clamping set Guhring no. 4930 and MQL retention nut, Guhring no. 4935



Guhring no.

4386



| HSK-C d_1 | d_2 mm | d_3 mm | l_1 mm | l_2 mm | SW | kg | Code no. | Availability |
|----------------|-------------|-------------|-------------|-------------|-----|------|----------|--------------|
| 25 | 45 | 23 | 20 | 28 | 2.5 | 0.22 | 19,000 | ● |
| 32 | 60 | 30 | 26 | 36 | 2.5 | 0.38 | 24,000 | ● |
| 40 | 70 | 35 | 30 | 40 | 3.0 | 0.60 | 30,000 | ● |
| 50 | 80 | 40 | 35 | 45 | 4.0 | 0.92 | 38,000 | ● |
| 63 | 100 | 50 | 43 | 55 | 5.0 | 1.75 | 48,000 | ● |
| 80 | 117 | 60 | 50 | 62 | 6.0 | 2.79 | 60,000 | ● |

4-point
clamping sets

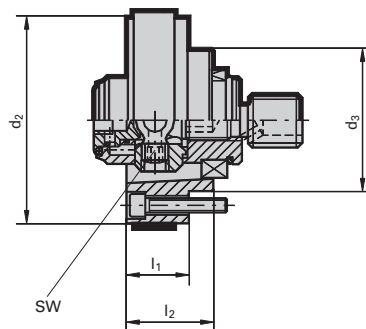
Short HSK spindle adaptors (integrated)

Product information

- the interface between spindle and flange must be taken into consideration for the transferable torsional moment

Scope of delivery

- including clamping set Guhring no. 4958 for conventional cooling
- incl. brass locking ring Guhring no. 4953
- incl. indexing pin and retention screws
- for MQL application, order as special adaptor with MQL clamping set Guhring no. 4930



Guhring no.

4385



| for HSK-C | d_2 mm | d_3 mm | l_1 mm | l_2 mm | SW | kg | Code no. | Availability |
|--------------|-------------|-------------|-------------|-------------|-----|------|----------|--------------|
| 32 | 40 | 27.0 | 12.5 | 16 | 2.5 | 0.14 | 24,000 | ● |
| 40 | 50 | 33.5 | 15.0 | 20 | 3.0 | 0.26 | 30,000 | ● |
| 50 | 63 | 42.0 | 17.5 | 25 | 4.0 | 0.48 | 38,000 | ● |
| 63 | 80 | 55.0 | 22.5 | 32 | 5.0 | 0.99 | 48,000 | ● |
| 80 | 100 | 68.0 | 27.5 | 40 | 6.0 | 1.88 | 60,000 | ● |

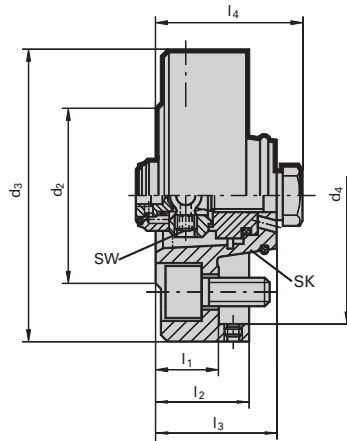
ISO taper/HSK-C basic adaptor for spindles to DIN 2079

Scope of delivery

- incl. clamping set Guhring no. 4958 for conventional cooling
- incl. retention screws

Guhring no.

4387



| for SK | for HSK-C | d ₂ mm | d ₃ mm | d ₄ mm | l ₁ mm | l ₂ mm | l ₃ mm | l ₄ mm | SW | kg | Code no. | Availability |
|--------|-----------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|----|------|----------|--------------|
| 30 | 40 | 50 | 85 | 69.83 | 25 | 35 | 37.0 | 39.0 | 3 | 1.08 | 30,030 | • |
| 40 | 50 | 63 | 100 | 88.88 | 20 | 30 | 39.5 | 46.5 | 4 | 1.40 | 40,038 | • |
| 50 | 63 | 80 | 150 | 128.57 | 25 | 40 | 48.5 | 58.5 | 5 | 1.96 | 50,048 | • |
| 50 | 80 | 100 | 150 | 128.57 | 40 | 55 | 61.1 | 71.1 | 6 | 2.20 | 50,060 | • |

4-point clamping sets

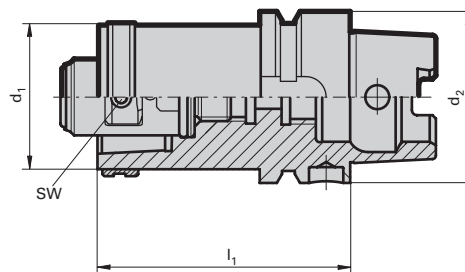
HSK-A/HSK-C reductions

Scope of delivery

- incl. clamping set Guhring no. 4958 for conventional cooling
- incl. brass locking ring Guhring no. 4953

Guhring no.

4355



| HSK-A d ₂ | HSK-C d ₁ | l ₁ mm | SW | kg | Code no. | Availability |
|----------------------|----------------------|-------------------|-----|------|----------|--------------|
| 40 | 32 | 60 | 2.5 | 0.42 | 32,040 | ○ |
| 50 | 32 | 60 | 2.5 | 0.54 | 32,050 | • |
| 50 | 40 | 70 | 3.0 | 0.69 | 40,050 | • |
| 63 | 32 | 60 | 2.5 | 1.08 | 32,063 | • |
| 63 | 40 | 70 | 3.0 | 1.15 | 40,063 | • |
| 63 | 50 | 80 | 4.0 | 1.23 | 50,063 | • |
| 80 | 50 | 90 | 4.0 | 2.00 | 50,080 | ○ |
| 80 | 63 | 100 | 5.0 | 2.69 | 63,080 | ○ |
| 100 | 50 | 90 | 4.0 | 2.80 | 50,100 | • |
| 100 | 63 | 100 | 5.0 | 3.31 | 63,100 | • |

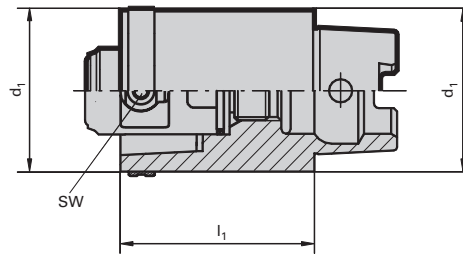
HSK-C extensions

Scope of delivery

- incl. clamping set Guhring no. 4958 for conventional cooling
- incl. brass locking ring Guhring no. 4953

Guhring no.

4351



| HSK-C d_1 | l_1 mm | SW | kg | Code no. | Availability |
|----------------|-------------|-----|------|----------|--------------|
| 25 | 40 | 2.5 | 0.14 | 40,025 | ● |
| 32 | 40 | 2.5 | 0.22 | 40,032 | ● |
| 40 | 50 | 3.0 | 0.44 | 50,040 | ● |
| 50 | 60 | 4.0 | 0.81 | 60,050 | ● |
| 63 | 80 | 5.0 | 1.74 | 80,063 | ● |

4-point
clamping sets

Brass locking rings

Product information

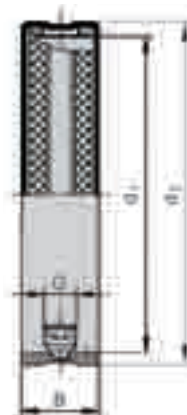
- The pressure ball screw must be secured with Loctite 222

Scope of delivery

- incl. pressure ball screw, Guhring no. 4961

Guhring no.

4953



| form | for HSK size | d_1 mm | d_2 mm | B mm | G | Code no. | Availability |
|------|-----------------|-------------|-------------|---------|------|----------|--------------|
| C | 25 | 25 | 28.0 | 7 | M3.5 | 25,000 | ● |
| C | 32 | 32 | 35.0 | 7 | M4 | 32,000 | ● |
| C | 40 | 40 | 43.5 | 9 | M5 | 40,000 | ● |
| C | 50 | 50 | 54.0 | 11 | M6 | 50,000 | ● |
| C | 63 | 63 | 68.0 | 14 | M8 | 63,000 | ● |
| C | 80 | 80 | 85.0 | 17 | M10 | 80,000 | ● |
| C | 100 | 100 | 105.0 | 23 | M12 | 100,000 | ● |
| D | 32 | 32 | 35.0 | 7 | M3.5 | 32,019 | ● |
| D | 40 | 40 | 43.5 | 9 | M4 | 40,024 | ● |
| D | 50 | 50 | 54.0 | 11 | M5 | 50,030 | ● |
| D | 63 | 63 | 68.0 | 14 | M6 | 63,038 | ● |
| D | 80 | 80 | 85.0 | 17 | M8 | 80,048 | ● |
| D | 100 | 100 | 105.0 | 23 | M10 | 100,060 | ● |
| D | 125 | 125 | 130.0 | 23 | M12 | 125,075 | ● |

Pressure ball screws

Product information

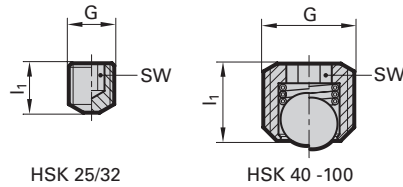
- for brass locking rings

Scope of delivery

- minimum order quantity 5

Guhring no.

4961



| for HSK | l ₁ mm | G | SW | Code no. | Availability |
|---------|-------------------|------|-----|----------|--------------|
| 25 | 3.4 | M3.5 | 2.0 | 3,500 | • |
| 32 | 4.3 | M4 | 2.0 | 4,000 | • |
| 32 | 4.0 | M4 | 2.0 | 4,001 | • |
| 40 | 4.6 | M5 | 2.5 | 5,000 | • |
| 50 | 5.4 | M6 | 3.0 | 6,000 | • |
| 63 | 7.0 | M8 | 4.0 | 8,000 | • |
| 80 | 9.2 | M10 | 5.0 | 10,000 | • |
| 100 | 11.4 | M12 | 6.0 | 12,000 | • |

4-point clamping sets

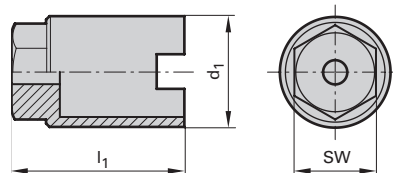
Torque supports

Product information

- for the installation of 4-point clamping sets, if there are difficulties locking the spindle

Guhring no.

4963



| for HSK-C | d ₁ mm | l ₁ mm | SW | Code no. | Availability |
|-----------|-------------------|-------------------|----|----------|--------------|
| 25 | 17.5 | 25 | 15 | 19,000 | • |
| 32 | 22.5 | 32 | 17 | 24,000 | • |
| 40 | 28.0 | 40 | 19 | 30,000 | • |
| 50 | 36.0 | 50 | 24 | 38,000 | • |
| 63 | 45.0 | 60 | 30 | 48,000 | • |
| 80 | 56.0 | 80 | 36 | 60,000 | • |
| 100 | 70.0 | 95 | 50 | 75,000 | • |

POWERCLAMP



• PowerClamp clamping technique

- Technique and advantages from page 34
- Clamping sets PowerClamp from page 36
- Adaptors for PowerClamp from page 37
- Basic adaptors and extensions PowerClamp from page 39
- Locking rings from page 41

Technical information and advantages

Guhring's PowerClamp system is designed for universal applications in transfer lines, machining centres, turning centres and setting equipment, e.g. direct applications in

- multiple spindle heads and short drilling spindles
- adaptors (integrated and in front)
- extensions, reductions or ISO taper adaptors

Advantages

- cost-effective, simple fitting because of uncomplicated spindle contour
- few moving components, therefore optimal transmission of energy
- high clamping forces, therefore, excellent bending characteristics
- excellent rotation symmetries, therefore, especially suitable for high speed machining (HSC)
- internal coolant supply
- safe eject function

HPC suitability

The PowerClamp system is suitable for difficult machining operations thanks to the

high clamping forces generated by the clamping jaws and is predestined for applications applying high revolutions thanks to the centrifugal forces generated radially outwards by the clamping jaws. The collet has a complete rotation symmetrical design.

Assembly

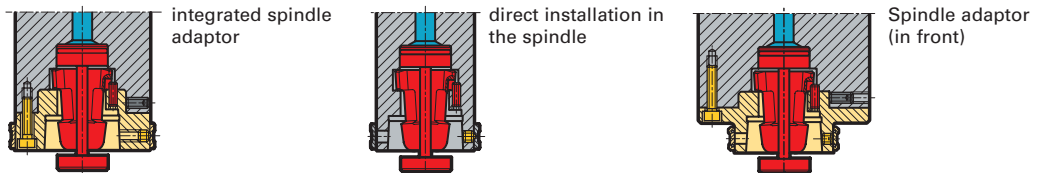
The assembly of the collet is simple: Insert collet, turn 90°, secure with threaded pin. The side of operation may be chosen freely. Adjustments are not necessary.



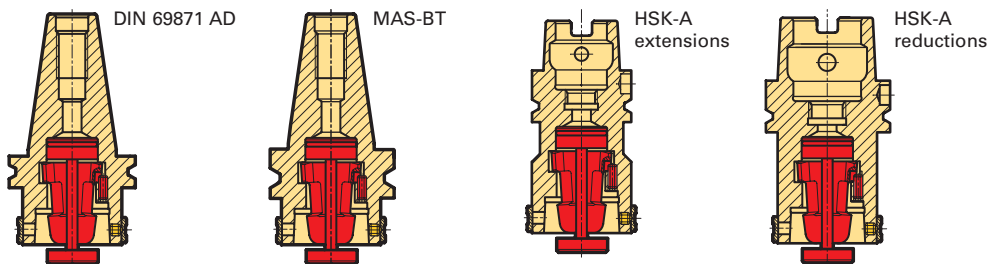
PowerClamp

Application examples

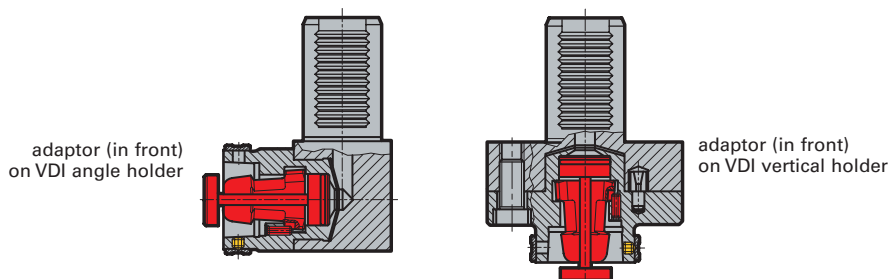
Spindle interface



Adaptors



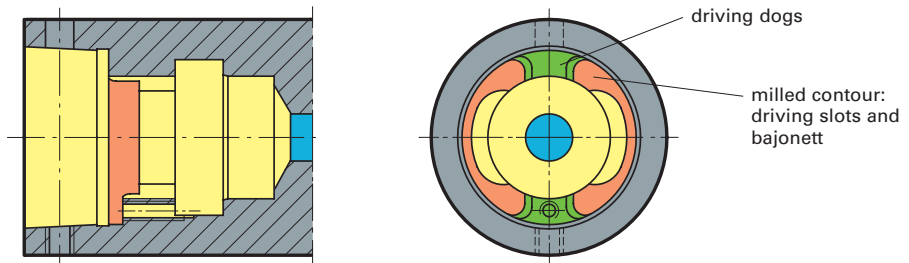
Tool holder for turning centers



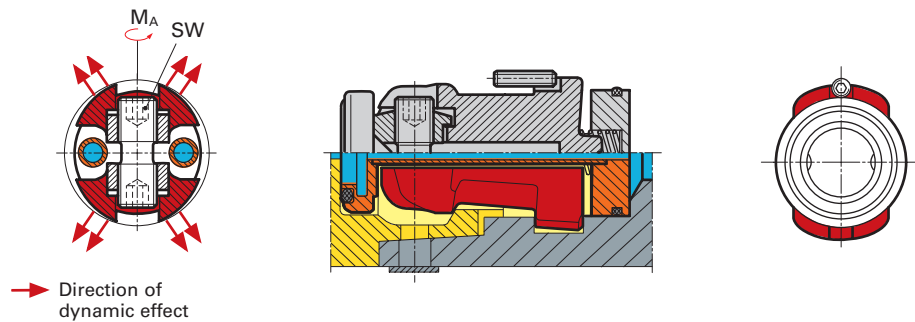
Technical information and advantages

General notes: Our manual clamping sets must **not** be operated with motor-driven tools (impulse screwdriver or similar). The hexagonal key should not exceed the key size over its entire length, this largely prevents excessive torque being transferred. We recommend the T-handle hexagonal key, Guhring no. 4912. For accurate setting of the maximum torque and achieving the maximum interface rigidity, we recommend the application of a torque wrench, Guhring no. 4915 with hexagonal sockets, Guhring no. 4916. Production drawings of the spindle contour to suit direct installation are available on request, including .dxf.

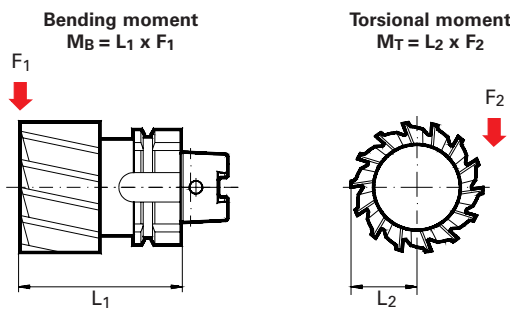
Internal contour of spindle



Installation and principle of operation



Bending, torsional and tightening moment for PowerClamp



① We recommend M_A max. for rough machining and milling operations. For drilling and reaming operations a lower deviation of M_A max. up to 30% is permissible. Please check the torque with a torque wrench.

② Depending on temperature and lubricating conditions these values can be up to 15% lower.

③ Due to the threaded connection, M_T max. can be lower with adaptors.

| HSK-C | max. torque M_A [Nm] ① | SW | max. drawing force [kN] ② | max. linear bending moment M_B [Nm] ② | max. transferable torsional moment M_T [Nm] ② ③ |
|-------|--------------------------|-----|---------------------------|---|---|
| 25 | 1.5 | 2.0 | 5 | 45 | 50 |
| 32 | 2.5 | 2.5 | 8 | 74 | 120 |
| 40 | 6.0 | 3.0 | 18 | 213 | 360 |
| 50 | 10.0 | 4.0 | 27 | 431 | 1000 |
| 63 | 15.0 | 5.0 | 35 | 703 | 1300 |
| 80 | 25.0 | 6.0 | 50 | 1100 | 2800 |
| 100 | 50.0 | 8.0 | 60 | 1620 | 4800 |

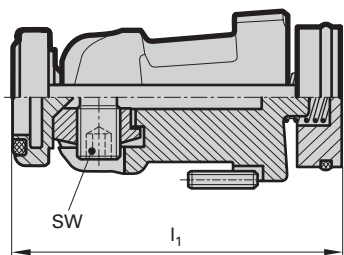
PowerClamp sets

Product information

- the internal coolant delivery is via the cage. It is floating mounted and ensures a coolant seal above 6 bar pressure.
- coolant leak-proof up to 80 bar
- the coolant sets are not suitable for MQL

Scope of delivery

- incl. installation and operating instructions
- incl. threaded pin Guhring no. 4551



Guhring no.

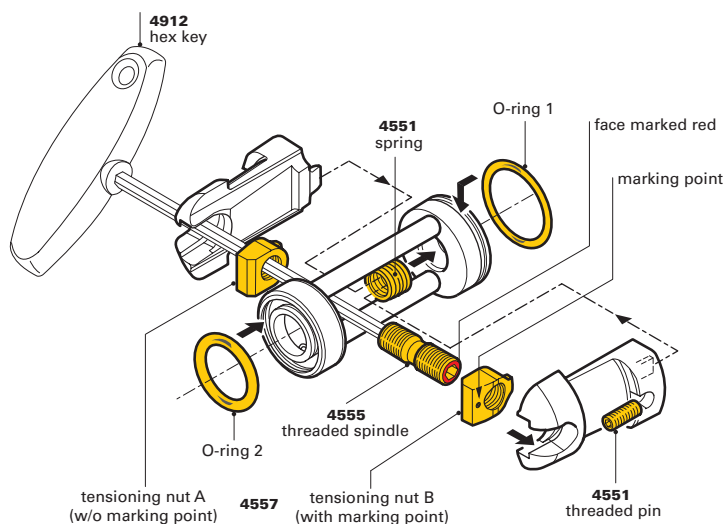
4554



| for HSK-C | l_1 mm | SW | kg | Code no. | Availability |
|-----------|-------------|-----|------|----------|--------------|
| 25 | 32.1 | 2.0 | 0.02 | 19,000 | • |
| 32 | 41.6 | 2.5 | 0.05 | 24,000 | • |
| 40 | 49.7 | 3.0 | 0.09 | 30,000 | • |
| 50 | 62.2 | 4.0 | 0.18 | 38,000 | • |
| 63 | 74.1 | 5.0 | 0.37 | 48,000 | • |
| 80 | 96.1 | 6.0 | 0.73 | 60,000 | • |
| 100 | 117.0 | 8.0 | 1.36 | 75,000 | • |

PowerClamp

Component parts for PowerClamp sets



| for HSK-C | O-rings 1 Ø/thickness | O-rings 2 Ø/thickness | Guhring no. 4555 | | Guhring no. 4557 | | Guhring no. 4551 | |
|-----------|--------------------------|--------------------------|------------------|--------------|--------------------|--------------|-------------------------|--------------|
| | | | Threaded spindle | Availability | Tensioning nut set | Availability | Spring and threaded pin | Availability |
| 25 | 11.5 × 1.0 | 7.0 × 2.0 | 2,019 | • | 1,019 | • | 3,019 | • |
| 32 | 14.0 × 1.5 | 10.0 × 2.5 | 2,024 | • | 1,024 | • | 3,024 | • |
| 40 | 18.0 × 1.5 | 12.5 × 2.5 | 2,030 | • | 1,030 | • | 3,030 | • |
| 50 | 22.0 × 1.5 | 16.0 × 3.0 | 2,038 | • | 1,038 | • | 3,038 | • |
| 63 | 28.0 × 2.0 | 21.0 × 3.0 | 2,048 | • | 1,048 | • | 3,048 | • |
| 80 | 36.0 × 3.0 | 25.0 × 4.0 | 2,060 | • | 1,060 | • | 3,060 | • |
| 100 | 45.0 × 3.0 | 32.0 × 5.0 | 2,075 | • | 1,075 | • | 3,075 | • |

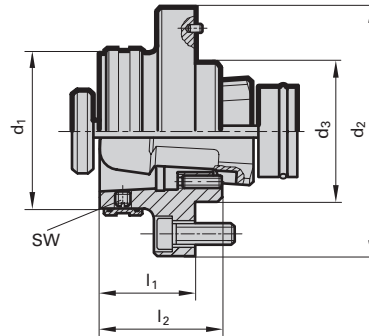
HSK adaptors (in front)

Product information

- the interface between spindle and flange must be taken into consideration for the transferable torsional moment.

Scope of delivery

- incl. clamping set, Guhring no. 4554
- incl. brass locking ring, Guhring no. 4953
- incl. indexing pin and retention screw



Guhring no.

4581



| HSK-C d_1 | d_2 mm | d_3 mm | l_1 mm | l_2 mm | SW | kg | Code no. | Availability |
|----------------|-------------|-------------|-------------|-------------|-----|------|----------|--------------|
| 25 | 45 | 23 | 20.0 | 26.5 | 2.0 | 0.17 | 19,000 | ● |
| 32 | 55 | 28 | 17.5 | 23.0 | 2.5 | 0.22 | 24,000 | ● |
| 40 | 63 | 36 | 22.5 | 29.0 | 3.0 | 0.40 | 30,000 | ● |
| 50 | 80 | 46 | 27.5 | 36.0 | 4.0 | 0.74 | 38,000 | ● |
| 63 | 100 | 56 | 35.0 | 46.0 | 5.0 | 1.50 | 48,000 | ● |
| 80 | 125 | 66 | 45.0 | 58.0 | 6.0 | 2.94 | 60,000 | ● |
| 100 | 160 | 86 | 57.0 | 72.0 | 8.0 | 5.90 | 75,000 | ● |

PowerClamp

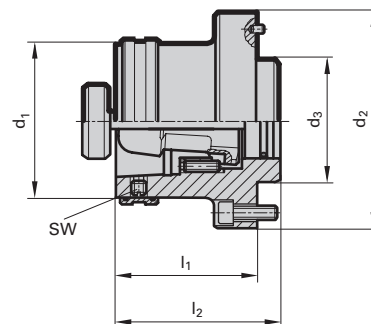
HSK adaptors (in front)

Product information

- the interface between spindle and flange must be taken into consideration for the transferable torsional moment.

Scope of delivery

- incl. clamping set, Guhring no. 4554
- incl. Al locking ring, Guhring no. 4553
- incl. indexing pin and retention screws



Guhring no.

4586



| HSK-C d_1 | d_2 mm | d_3 mm | l_1 mm | l_2 mm | SW | kg | Code no. | Availability |
|----------------|-------------|-------------|-------------|-------------|----|------|----------|--------------|
| 40 | 70 | 35 | 32.5 | 42.5 | 3 | 0.55 | 30,000 | ● |
| 50 | 80 | 40 | 43.0 | 53.0 | 4 | 1.00 | 38,000 | ● |
| 63 | 100 | 50 | 53.0 | 65.0 | 5 | 1.90 | 48,000 | ● |
| 80 | 117 | 60 | 73.0 | 85.0 | 6 | 3.60 | 60,000 | ● |
| 100 | 140 | 80 | 94.0 | 106.0 | 8 | 7.20 | 75,000 | ● |

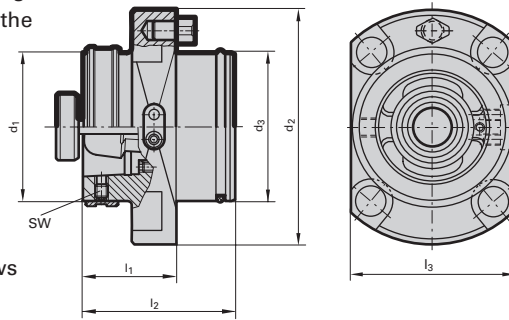
HSK adaptors for turning centres

Product information

- for fixed tools
- incl. setting element to eliminate drive play with vertical tools
- the interface between spindle and flange must be taken into consideration for the transferable torsional moment.

Scope of delivery

- incl. clamping set, Guhring no. 4554
- incl. brass locking ring, Guhring no. 4953
- incl. indexing pin and retention screws



Guhring no.

4582



| HSK-C d ₁ | d ₂ mm | d ₃ mm | l ₁ mm | l ₂ mm | l ₃ mm | SW | kg | Version | Code no. | Availability |
|-------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----|------|---------|----------|--------------|
| 50 | 84 | 50 | 35 | 55,0 | 55 | 4 | 0,98 | left | 38,100 | • |
| 50 | 84 | 50 | 35 | 55,0 | 55 | 4 | 0,98 | right | 38,200 | • |
| 63 | 100 | 63 | 40 | 64,5 | 70 | 5 | 1,74 | left | 48,100 | • |
| 63 | 100 | 63 | 40 | 64,5 | 70 | 5 | 1,74 | right | 48,200 | • |

PowerClamp

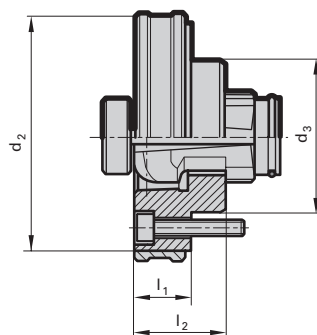
HSK-C spindle adaptors (integrated)

Product information

- with larger axial plane
- the interface between spindle and flange must be taken into consideration for the transferable torsional moment.

Scope of delivery

- incl. clamping set, Guhring no. 4554
- incl. brass locking ring, Guhring no. 4953
- incl. indexing pin and retention screws



Guhring no.

4584



| for HSK-C | d ₂ mm | d ₃ mm | l ₁ mm | l ₂ mm | SW | kg | Code no. | Availability |
|--------------|----------------------|----------------------|----------------------|----------------------|-----|------|----------|--------------|
| 32 | 40 | 27,0 | 12,5 | 21,10 | 2,5 | 0,16 | 24,000 | • |
| 40 | 50 | 33,5 | 15,0 | 25,70 | 3,0 | 0,28 | 30,000 | • |
| 50 | 63 | 42,0 | 17,5 | 32,10 | 4,0 | 0,55 | 38,000 | • |
| 63 | 80 | 55,0 | 22,5 | 40,05 | 5,0 | 1,14 | 48,000 | • |
| 80 | 100 | 68,0 | 27,5 | 51,40 | 6,0 | 2,20 | 60,000 | • |
| 100 | 125 | 88,0 | 30,0 | 64,00 | 8,0 | 4,00 | 75,000 | • |

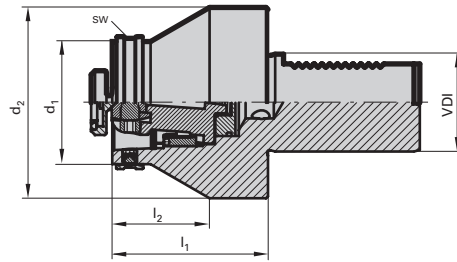
VDI DIN 69880-1/HSK-C basic adaptors

Product information

- for fixed, centred tools

Scope of delivery

- incl. clamping set, Guhring no. 4554
- incl. brass locking ring, Guhring no. 4953



Guhring no.

4510



| VDI | HSK-C d ₁ | d ₂ mm | l ₁ mm | l ₂ mm | SW | kg | Code no. | Availability |
|-----|-------------------------|----------------------|----------------------|----------------------|----|------|----------|--------------|
| 40 | 63 | 83 | 80 | 50 | 5 | 2.83 | 40,063 | • |
| 50 | 63 | 98 | 80 | 50 | 5 | 4.21 | 50,063 | • |
| 50 | 80 | 98 | 100 | 70 | 6 | 5.00 | 50,080 | • |
| 60 | 80 | 123 | 100 | 62 | 6 | 8.10 | 60,080 | • |
| 60 | 100 | 123 | 125 | 87 | 8 | 9.70 | 60,100 | • |

PowerClamp

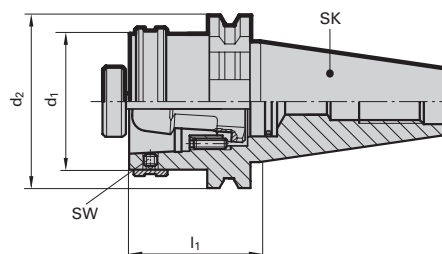
ISO taper basic adaptors DIN 69871 form AD/HSK-C

Product information

- form B available on request
- Code no. 50,100 only applies to presetting unit

Scope of delivery

- incl. clamping set, Guhring no. 4554
- incl. brass locking ring, Guhring no. 4953
- order clamping key and draw-in bolt separately



Guhring no.

4512



| SK | HSK-C d ₁ | d ₂ mm | l ₁ mm | SW | kg | Code no. | Availability |
|----|-------------------------|----------------------|----------------------|-----|------|----------|--------------|
| 40 | 32 | 63.5 | 40 | 2.5 | 0.89 | 40,032 | • |
| 40 | 40 | 63.5 | 40 | 3.0 | 0.90 | 40,040 | • |
| 40 | 50 | 63.5 | 40 | 4.0 | 0.91 | 40,050 | • |
| 40 | 63 | 63.5 | 70 | 5.0 | 1.38 | 40,063 | • |
| 50 | 32 | 97.5 | 40 | 2.5 | 2.65 | 50,032 | • |
| 50 | 40 | 97.5 | 40 | 3.0 | 2.67 | 50,040 | • |
| 50 | 50 | 97.5 | 40 | 4.0 | 2.71 | 50,050 | • |
| 50 | 63 | 97.5 | 40 | 5.0 | 2.73 | 50,063 | • |
| 50 | 80 | 97.5 | 70 | 6.0 | 3.70 | 50,080 | • |
| 50 | 100 | 97.5 | 100 | 8.0 | 4.87 | 50,100 | • |
| 60 | 100 | 155.0 | 50 | 8.0 | 9.70 | 60,100 | • |

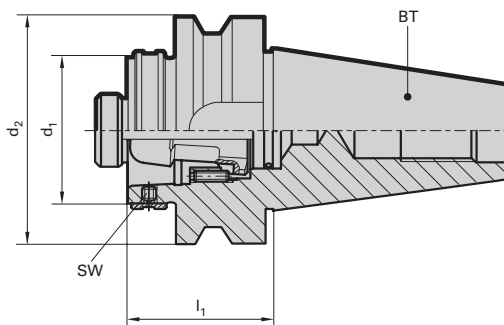
MAS 403 BT/HSK-C basic adaptors

Scope of delivery

- incl. clamping set, Guhring no. 4554
- incl. brass locking ring, Guhring no. 4953
- order clamping key and draw in bolt separately

Guhring no.

4514



| BT | HSK-C d ₁ | d ₂ mm | l ₁ mm | SW | kg | Code no. | Availability |
|----|-------------------------|----------------------|----------------------|----|------|----------|--------------|
| 40 | 40 | 63 | 40 | 3 | 0.92 | 40,040 | ○ |
| 40 | 50 | 63 | 40 | 4 | 0.95 | 40,050 | ● |
| 50 | 40 | 100 | 50 | 3 | 2.90 | 50,040 | ● |
| 50 | 50 | 100 | 60 | 4 | 3.15 | 50,050 | ● |
| 50 | 63 | 100 | 60 | 5 | 3.69 | 50,063 | ● |
| | | | | | | | |
| | | | | | | | |

PowerClamp

ISO taper DIN 2080 form A/HSK-C basic adaptors

Product information

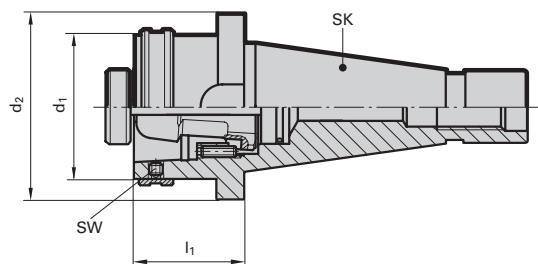
- with ring notch for Ott clamping system

Scope of delivery

- incl. clamping set, Guhring no. 4554
- incl. brass locking ring, Guhring no. 4953
- order clamping key and draw-in bolt separately

Guhring no.

4509



| SK | HSK-C d ₁ | d ₂ mm | l ₁ mm | SW | kg | Code no. | Availability |
|----|-------------------------|----------------------|----------------------|----|-----|----------|--------------|
| 40 | 50 | 63.0 | 40 | 4 | 1.3 | 40,050 | ● |
| 50 | 50 | 97.5 | 40 | 4 | 3.0 | 50,050 | ● |
| 50 | 63 | 97.5 | 40 | 5 | 3.3 | 50,063 | ● |
| | | | | | | | |
| | | | | | | | |

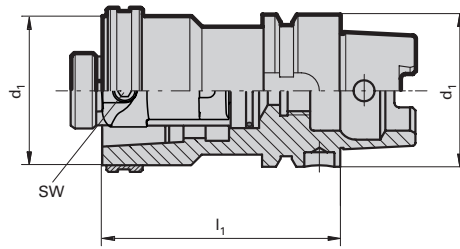
HSK-A/HSK-C extensions

Product information

- incl. clamping set, Guhring no. 4554
- incl. brass locking ring, Guhring no. 4953

Scope of delivery

- order coolant delivery set, Guhring no. 4949 separately



Guhring no.

4549



| HSK-A/ HSK-C d_1 | l_1 mm | SW | kg | Code no. | Availability |
|-----------------------|-------------|-----|-------|----------|--------------|
| 32 | 60 | 2.5 | 0.26 | 60,032 | ● |
| 40 | 80 | 3.0 | 0.65 | 80,040 | ● |
| 50 | 80 | 4.0 | 0.90 | 80,050 | ● |
| 50 | 100 | 4.0 | 1.13 | 100,050 | ● |
| 63 | 100 | 5.0 | 1.84 | 100,063 | ● |
| 63 | 140 | 5.0 | 2.30 | 140,063 | ● |
| 80 | 120 | 6.0 | 3.90 | 120,080 | ○ |
| 80 | 160 | 6.0 | 5.40 | 160,080 | ○ |
| 100 | 140 | 8.0 | 7.80 | 140,100 | ● |
| 100 | 200 | 8.0 | 10.54 | 200,100 | ● |

PowerClamp

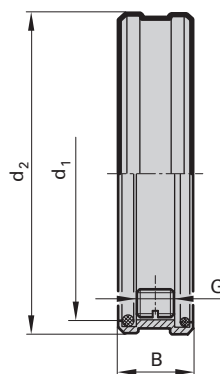
Al locking rings

Product information

- for HSK adaptor Art.-Nr. 4586

Scope of delivery

- with threaded pin and O-rings



Guhring no.

4553



| for HSK-C | d_1 mm | d_2 mm | B mm | G | Code no. | Availability |
|--------------|-------------|-------------|---------|----------|----------|--------------|
| 25 | 25.10 | 28.0 | 7.95 | M3.5x2.5 | 25,000 | ● |
| 32 | 32.12 | 35.2 | 8.10 | M4x3.5 | 32,000 | ● |
| 40 | 40.16 | 44.0 | 10.50 | M5x4 | 40,000 | ● |
| 50 | 50.20 | 55.0 | 12.60 | M6x5 | 50,000 | ● |
| 63 | 63.24 | 69.2 | 15.75 | M8x6 | 63,000 | ● |
| 80 | 80.32 | 88.0 | 20.00 | M10x8 | 80,000 | ● |
| 100 | 100.40 | 110.0 | 25.20 | M12x10 | 100,000 | ● |

Brass locking rings

Product information

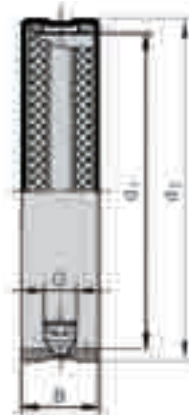
- the pressure ball screw must be secured with Loctite 222

Scope of delivery

- incl. pressure ball screw, Guhring no. 4961

Guhring no.

4953



| for HSK-form | for HSK-size | d ₁ mm | d ₂ mm | B mm | G | Code no. | Availability |
|--------------|--------------|-------------------|-------------------|------|------|----------|--------------|
| C | 25 | 25 | 28.0 | 7 | M3.5 | 25,000 | ● |
| C | 32 | 32 | 35.0 | 7 | M4 | 32,000 | ● |
| C | 40 | 40 | 43.5 | 9 | M5 | 40,000 | ● |
| C | 50 | 50 | 54.0 | 11 | M6 | 50,000 | ● |
| C | 63 | 63 | 68.0 | 14 | M8 | 63,000 | ● |
| C | 80 | 80 | 85.0 | 17 | M10 | 80,000 | ● |
| C | 100 | 100 | 105.0 | 23 | M12 | 100,000 | ● |
| D | 32 | 32 | 35.0 | 7 | M3.5 | 32,019 | ● |
| D | 40 | 40 | 43.5 | 9 | M4 | 40,024 | ● |
| D | 50 | 50 | 54.0 | 11 | M5 | 50,030 | ● |
| D | 63 | 63 | 68.0 | 14 | M6 | 63,038 | ● |
| D | 80 | 80 | 85.0 | 17 | M8 | 80,048 | ● |
| D | 100 | 100 | 105.0 | 23 | M10 | 100,060 | ● |
| D | 125 | 125 | 130.0 | 23 | M12 | 125,075 | ● |

PowerClamp

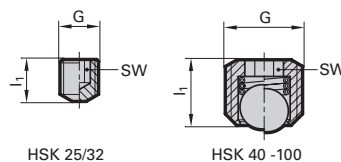
Pressure ball screws

Product information

- minimum order quantity 5

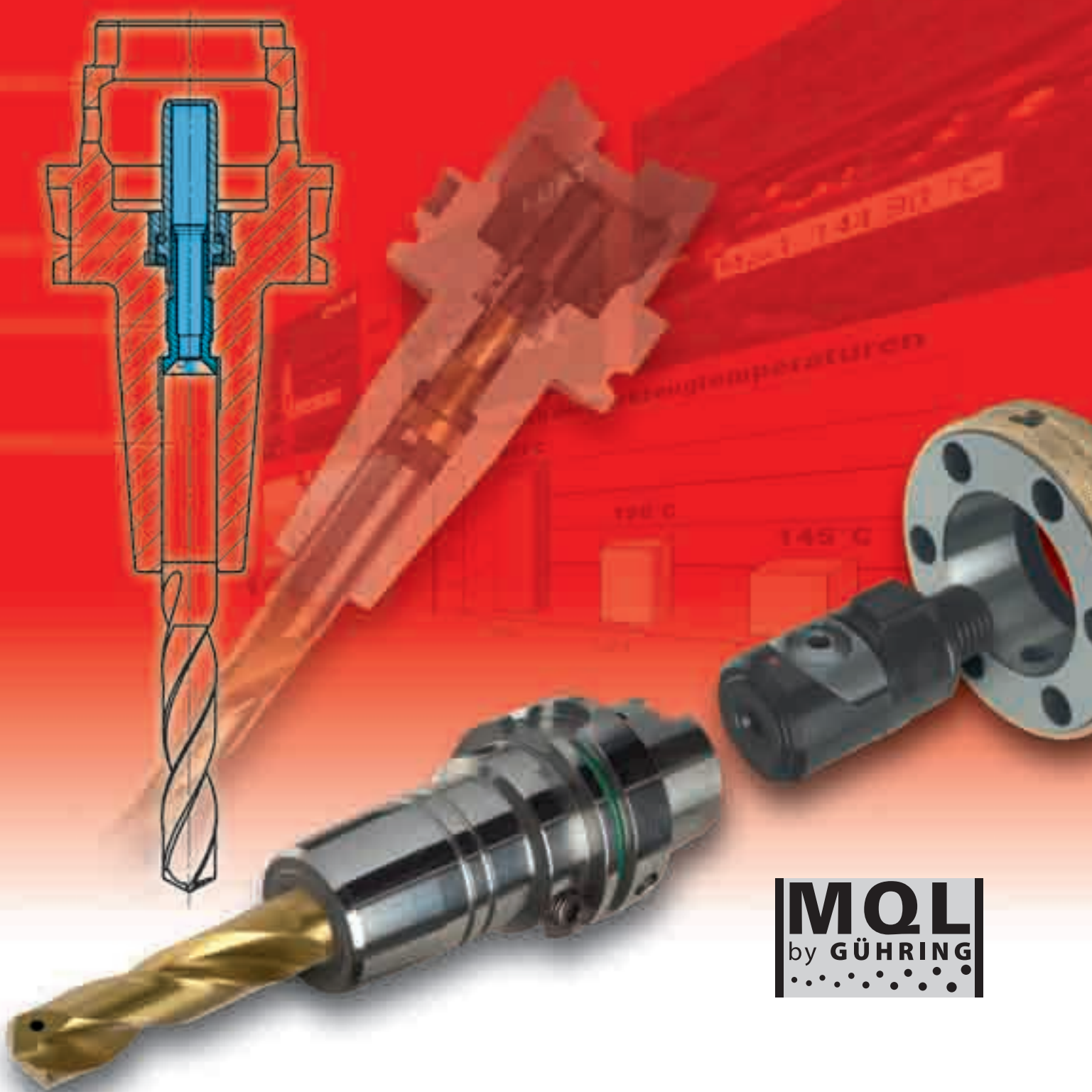
Guhring no.

4961



| for HSK | l ₁ mm | G | SW | Code no. | Availability |
|---------|-------------------|------|-----|----------|--------------|
| 25 | 3.4 | M3.5 | 2.0 | 3,500 | ● |
| 32 | 4.3 | M4 | 2.0 | 4,000 | ● |
| 32 | 4.0 | M4 | 2.0 | 4,001 | ● |
| 40 | 4.6 | M5 | 2.5 | 5,000 | ● |
| 50 | 5.4 | M6 | 3.0 | 6,000 | ● |
| 63 | 7.0 | M8 | 4.0 | 8,000 | ● |
| 80 | 9.2 | M10 | 5.0 | 10,000 | ● |
| 100 | 11.4 | M12 | 6.0 | 12,000 | ● |

MQL PROGRAM



MQL Program

- System summary
- Technology and advantages
- Chucks and collets
- Accessories

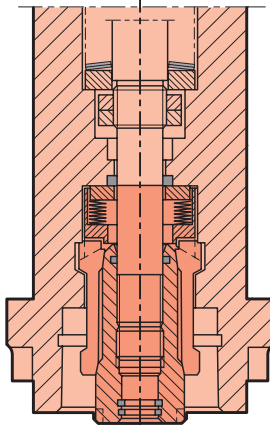
from page 44
from page 45
from page 47
from page 53

Automatic tool clamping with MQL

Spindle clamping systems with draw bar

Application in machining centres, milling and turning machines

Suppliers:
Ott
RÖHM (Lic. Guhring)
BERG (Lic. Guhring)

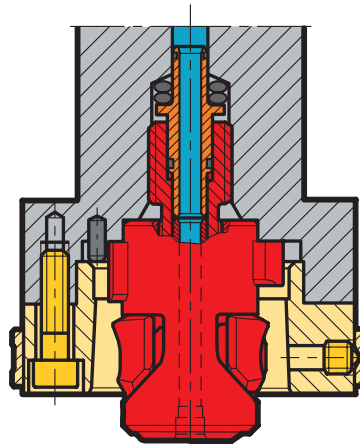


Manual tool clamping with MQL

Installation with adaptors

Application in transfer lines, fixtures, setting equipment (e.g. in drilling spindles), in multiple drilling heads

adaptor (integrated)

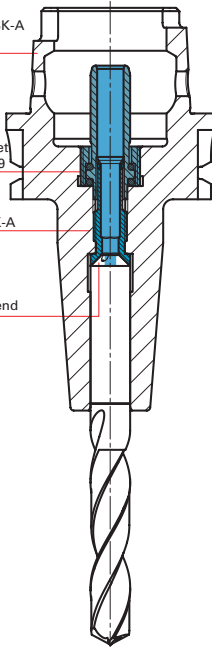


MQL shrink fit chuck HSK-A
Guhring no. 4741

MQL coolant delivery set
HSK-A Guhring no. 4939

MQL adjustment screw
with sealing lip for HSK-A

MQL optimised shank end

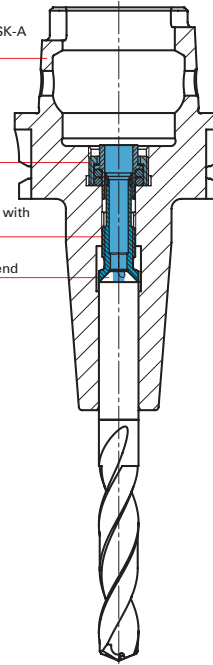


MQL shrink fit chuck HSK-A
Guhring no. 4735

MQL filler HSK-A
Guhring no. 4940

MQL adjustment screw with
sealing lip for HSK-A

MQL optimised shank end



Technology and advantages

Guhring is heavily engaged in the subject of minimal quantity lubrication and occupies one of the top positions in this technology. In addition to the suitable MQL geometry, our priority lies especially in the optimal delivery of the coolant in the vicinity of the tool holder. Therefore, we have developed a suitable MQL shank end for our cutting tools and a suitable MQL coolant delivery system for the application with our tool holders.

Shank end suitable for MQL

Because an extremely low volume of lubricant is applied with minimal quantity lubrication, the delivery of these low coolant quantities to the effective area is of utmost importance. Hereby, the geometric design of the shank end is of main significance for a secure delivery of the lubricant.

In a comprehensive series of tests we have thoroughly investigated different geometric designs of the shank end and subsequently determined the optimal design. The Guhring developed conical shank end optimally satisfies the relevant MQL conditions:

- no lubricant pockets
- minimal dead area
- simple operation
- cost-efficient production

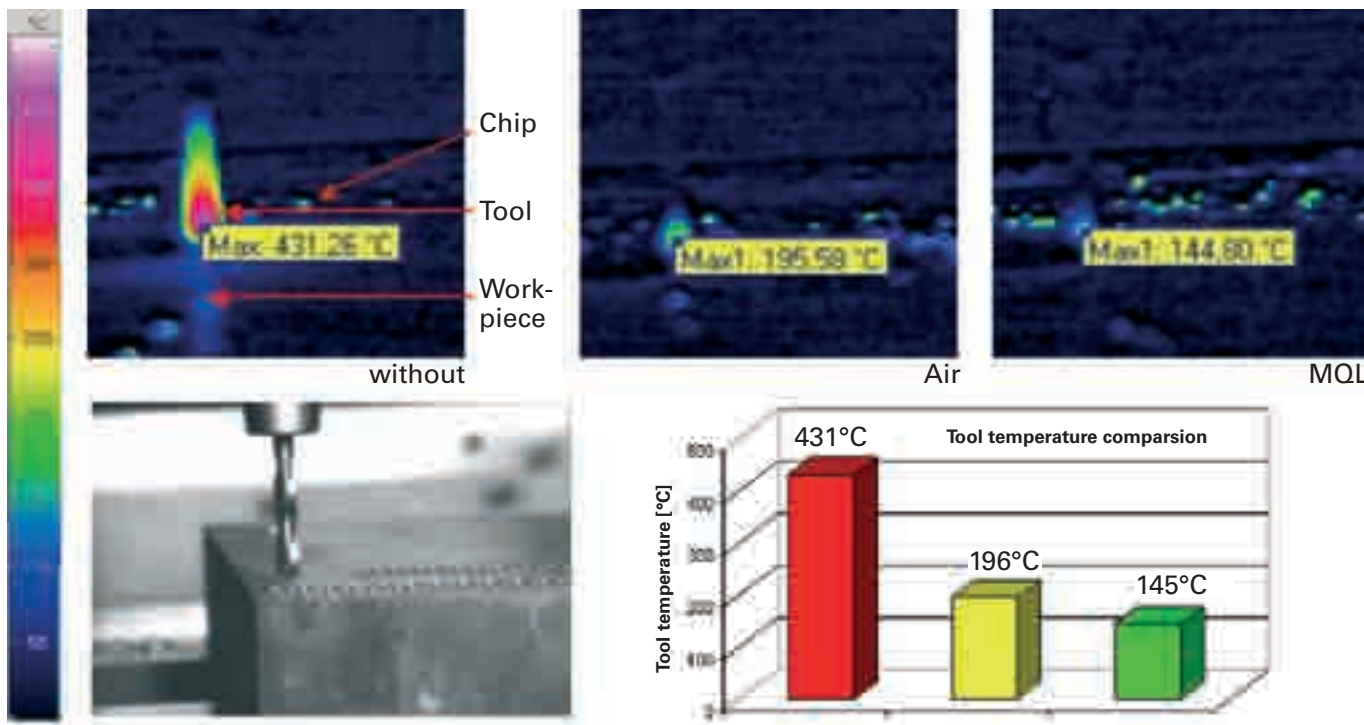
MQL suitable coolant delivery

The coolant delivery has also been subject to an indepth analysis. The result is the recently developed MQL delivery system consisting of a one-piece delivery pipe, with a thin-walled stainless steel pipe glued-inside and a MQL adjustment screw. The advantages of this solution are as follows:

- simple installation
- optimal flow conditions
- the compliancy of the delivery pipe
- cost-efficiency

MQL considerably reduces the operating temperature

In comparison to entirely dry machining, MQL can considerably reduce machining temperatures. The result is longer tool life and increased process reliability. Thermographic experiments at Guhring showed that cooling with dry air reduces the temperature at the tool point by more than 200 degrees. The addition of a few millilitres of neat oil per hour, hence MQL, resulted in an even lower temperature thanks to the reduced friction.



Effective cooling

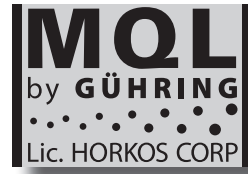
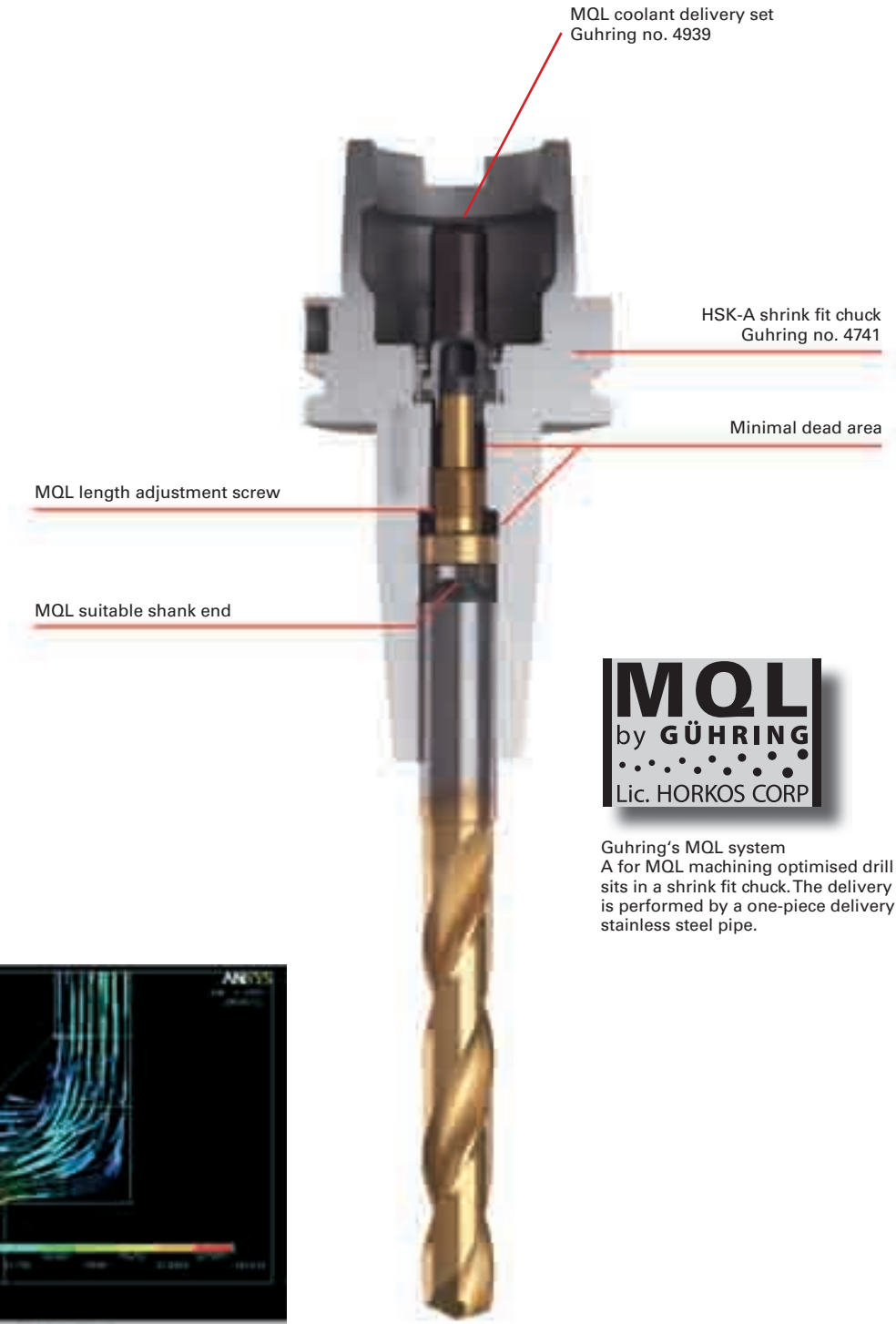
Guhring has determined the heat development at the drill point when applied without cooling or with internal cooling with air or MQL respectively. With MQL, the temperature of the tool and subsequently the transfer of heat to the workpiece is considerably reduced.

Technology and advantages

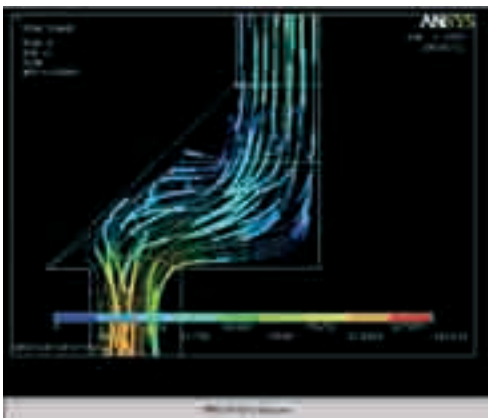
Installation and application of Guhring's MQL system

For the successful application of MQL, a consistent synchronisation of tool, tool holder, coolant delivery, clamping, coolant system and machine peripherals is paramount. MQL suitable equipment is available on the market, numerous machine tool manufacturers offer machining centers that are optimised for the production under MQL conditions.

Within the scope of Guhring's tool, tool holder and clamping competences, there are also MQL solutions available that are indicated in this catalogue with a special symbol. The following diagram shows an example of a suitable MQL installation:



Guhring's MQL system A for MQL machining optimised drill with a MQL shank end sits in a shrink fit chuck. The delivery of the MQL mixture is performed by a one-piece delivery pipe with a glued-in stainless steel pipe.



Optimal flow
An examination of the flow characteristics at the shank end shows an optimal flow for the Guhring solution without lubricant pockets or interfering turbulence. This ensures a fast and secure delivery of the oil/air mixture to the tool point.

MQL HSK-A shrink fit chuck for manual tool change

Product information

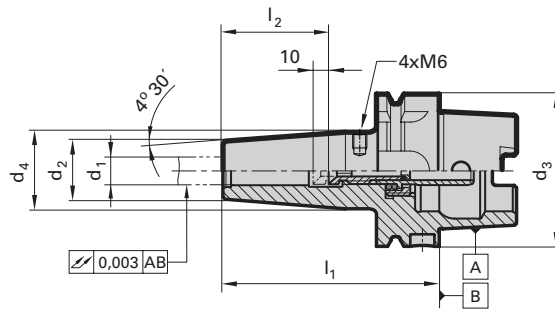
- new MQL standard, l2 is plug-in depth at DIN 6535
- for 1-channel systems
- balancing quality: G 6.3 / 15,000 rev./min
- for shank tolerance h6

Scope of delivery

- incl. MQL length adjustment screw with sealing lip and coolant delivery set
Guhring no. 4940
- incl. clamping key Guhring no. 4912

Guhring no.

4735



• special dimensions on request

| HSK-A d ₃ | for clamping-Ø d ₁ h6 mm | d ₂ mm | d ₄ mm | l ₁ mm | l ₂ mm | kg | Code no. | Availability |
|-------------------------|---|----------------------|----------------------|----------------------|----------------------|------|----------|--------------|
| 40 | 6 | 21 | 27 | 80 | 36 | 0.40 | 6,040 | • |
| 40 | 8 | 21 | 27 | 80 | 36 | 0.40 | 8,040 | • |
| 40 | 10 | 24 | 32 | 80 | 40 | 0.50 | 10,040 | • |
| 40 | 12 | 24 | 32 | 90 | 45 | 0.50 | 12,040 | • |
| 40 | 14 | 27 | 33.5 | 90 | 45 | 0.60 | 14,040 | • |
| 40 | 16 | 27 | 33.5 | 90 | 48 | 0.50 | 16,040 | • |
| 50 | 6 | 21 | 27 | 80 | 36 | 0.60 | 6,050 | • |
| 50 | 8 | 21 | 27 | 80 | 36 | 0.60 | 8,050 | • |
| 50 | 10 | 24 | 32 | 85 | 40 | 0.70 | 10,050 | • |
| 50 | 12 | 24 | 32 | 90 | 45 | 0.70 | 12,050 | • |
| 50 | 14 | 27 | 34 | 90 | 45 | 0.70 | 14,050 | • |
| 50 | 16 | 27 | 34 | 95 | 48 | 0.70 | 16,050 | • |
| 50 | 18 | 33 | 41.5 | 95 | 48 | 0.90 | 18,050 | • |
| 50 | 20 | 33 | 41.5 | 100 | 50 | 0.90 | 20,050 | • |
| 63 | 6 | 21 | 27 | 80 | 36 | 0.70 | 6,063 | • |
| 63 | 8 | 21 | 27 | 80 | 36 | 0.70 | 8,063 | • |
| 63 | 10 | 24 | 32 | 85 | 40 | 0.70 | 10,063 | • |
| 63 | 12 | 24 | 32 | 90 | 45 | 0.80 | 12,063 | • |
| 63 | 14 | 27 | 34 | 90 | 45 | 0.80 | 14,063 | • |
| 63 | 16 | 27 | 34 | 95 | 48 | 0.90 | 16,063 | • |
| 63 | 18 | 33 | 42 | 95 | 48 | 0.90 | 18,063 | • |
| 63 | 20 | 33 | 42 | 100 | 50 | 1.00 | 20,063 | • |
| 63 | 25 | 44 | 52.5 | 115 | 56 | 1.00 | 25,063 | • |
| 63 | 32 | 44 | 52.5 | 120 | 60 | 1.10 | 32,063 | • |
| 63 | 6 | 21 | 27 | 120 | 36 | 0.90 | 206,063 | • |
| 63 | 8 | 21 | 27 | 120 | 36 | 1.00 | 208,063 | • |
| 63 | 10 | 24 | 32 | 120 | 40 | 1.10 | 210,063 | • |
| 63 | 12 | 24 | 32 | 120 | 45 | 1.20 | 212,063 | • |
| 63 | 6 | 21 | 27 | 160 | 36 | 0.80 | 106,063 | • |
| 63 | 8 | 21 | 27 | 160 | 36 | 0.80 | 108,063 | • |
| 63 | 10 | 24 | 32 | 160 | 40 | 0.90 | 110,063 | • |
| 63 | 12 | 24 | 32 | 160 | 45 | 0.90 | 112,063 | • |
| 63 | 14 | 27 | 34 | 160 | 45 | 1.00 | 114,063 | • |
| 63 | 16 | 27 | 34 | 160 | 48 | 1.00 | 116,063 | • |
| 63 | 18 | 33 | 42 | 160 | 48 | 1.20 | 118,063 | • |
| 63 | 20 | 33 | 42 | 160 | 50 | 1.20 | 120,063 | • |
| 63 | 25 | 44 | 52.5 | 160 | 56 | 1.80 | 125,063 | • |
| 63 | 32 | 44 | 52.5 | 160 | 60 | 1.70 | 132,063 | • |
| 80 | 6 | 21 | 27 | 85 | 36 | 1.30 | 6,080 | • |
| 80 | 8 | 21 | 27 | 85 | 36 | 1.30 | 8,080 | • |
| 80 | 10 | 24 | 32 | 90 | 40 | 1.40 | 10,080 | • |
| 80 | 12 | 24 | 32 | 95 | 45 | 1.40 | 12,080 | • |
| 80 | 14 | 27 | 34 | 95 | 45 | 1.50 | 14,080 | • |

MQL Program

MQL HSK-A shrink fit chuck for manual tool change

| | | | | | | | Guhring no. | 4735 | |
|-------------------------|---|----------------------|----------------------|----------------------|----------------------|------|-------------|--------------|--|
| HSK-A d ₃ | for clamping-Ø d ₁ h6 mm | d ₂ mm | d ₄ mm | l ₁ mm | l ₂ mm | kg | Code no. | Availability | |
| 80 | 16 | 27 | 34 | 100 | 48 | 1.50 | 16,080 | ● | |
| 80 | 18 | 33 | 42 | 100 | 48 | 1.70 | 18,080 | ● | |
| 80 | 20 | 33 | 42 | 105 | 50 | 1.70 | 20,080 | ● | |
| 80 | 25 | 44 | 53 | 115 | 56 | 2.20 | 25,080 | ● | |
| 80 | 32 | 44 | 53 | 120 | 60 | 2.10 | 32,080 | ● | |
| 100 | 6 | 21 | 27 | 85 | 36 | 2.10 | 6,100 | ● | |
| 100 | 8 | 21 | 27 | 85 | 36 | 2.20 | 8,100 | ● | |
| 100 | 10 | 24 | 32 | 90 | 40 | 2.30 | 10,100 | ● | |
| 100 | 12 | 24 | 32 | 95 | 45 | 2.30 | 12,100 | ● | |
| 100 | 14 | 27 | 34 | 95 | 45 | 2.30 | 14,100 | ● | |
| 100 | 16 | 27 | 34 | 100 | 48 | 2.30 | 16,100 | ● | |
| 100 | 18 | 33 | 42 | 100 | 48 | 2.50 | 18,100 | ● | |
| 100 | 20 | 33 | 42 | 105 | 50 | 2.50 | 20,100 | ● | |
| 100 | 25 | 44 | 53 | 115 | 56 | 3.00 | 25,100 | ● | |
| 100 | 32 | 44 | 53 | 120 | 60 | 3.00 | 32,100 | ● | |

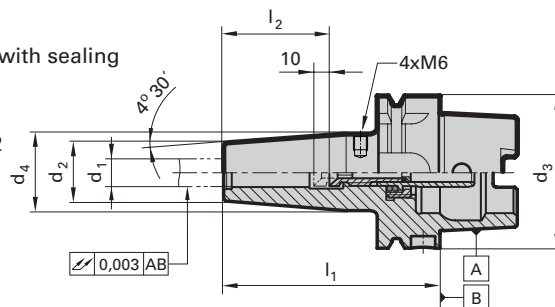
MQL HSK-A shrink fit chuck for automatic tool change

Product information

- new MQL standard,
l₂ is plug-in depth at DIN 6535
- for 1-channel systems
- balancing quality G 6.3 / 15,000 rev./min
- for shank tolerance h6

Scope of delivery

- incl. MQL length adjustment screw with sealing lip and coolant delivery set
Guhring no. 4939
- incl. clamping key Guhring no. 4912



Guhring no.

4741



- special dimensions on request

| HSK-A d ₃ | for clamping-Ø d ₁ h6 mm | d ₂ mm | d ₄ mm | l ₁ mm | l ₂ mm | kg | Code no. | Availability |
|-------------------------|---|----------------------|----------------------|----------------------|----------------------|------|----------|--------------|
| 40 | 6 | 21 | 27 | 80 | 36 | 0.40 | 6,040 | ● |
| 40 | 8 | 21 | 27 | 80 | 36 | 0.40 | 8,040 | ● |
| 40 | 10 | 24 | 32 | 80 | 40 | 0.50 | 10,040 | ● |
| 40 | 12 | 24 | 32 | 90 | 45 | 0.50 | 12,040 | ● |
| 40 | 14 | 27 | 33.5 | 90 | 45 | 0.60 | 14,040 | ● |
| 40 | 16 | 27 | 33.5 | 90 | 48 | 0.50 | 16,040 | ● |
| 50 | 6 | 21 | 27 | 80 | 36 | 0.60 | 6,050 | ● |
| 50 | 8 | 21 | 27 | 80 | 36 | 0.60 | 8,050 | ● |
| 50 | 10 | 24 | 32 | 85 | 40 | 0.70 | 10,050 | ● |
| 50 | 12 | 24 | 32 | 90 | 45 | 0.70 | 12,050 | ● |

HSK-A shrink fit chuck MQL for the automatic tool change

| HSK-A d ₃ | for clamping-Ø d ₁ h ₆ mm | d ₂ mm | d ₄ mm | l ₁ mm | l ₂ mm | kg | Guhring no. 4741 | |
|-------------------------|---|----------------------|----------------------|----------------------|----------------------|------|------------------|--------------|
| | | | | | | | Code no. | Availability |
| 50 | 14 | 27 | 34 | 90 | 45 | 0.70 | 14,050 | ● |
| 50 | 16 | 27 | 34 | 95 | 48 | 0.70 | 16,050 | ● |
| 50 | 18 | 33 | 41.5 | 95 | 48 | 0.90 | 18,050 | ● |
| 50 | 20 | 33 | 41.5 | 100 | 50 | 0.90 | 20,050 | ● |
| 63 | 6 | 21 | 27 | 80 | 36 | 0.70 | 6,063 | ● |
| 63 | 8 | 21 | 27 | 80 | 36 | 0.70 | 8,063 | ● |
| 63 | 10 | 24 | 32 | 85 | 40 | 0.70 | 10,063 | ● |
| 63 | 12 | 24 | 32 | 90 | 45 | 0.80 | 12,063 | ● |
| 63 | 14 | 27 | 34 | 90 | 45 | 0.80 | 14,063 | ● |
| 63 | 16 | 27 | 34 | 95 | 48 | 0.90 | 16,063 | ● |
| 63 | 18 | 33 | 42 | 95 | 48 | 0.90 | 18,063 | ● |
| 63 | 20 | 33 | 42 | 100 | 50 | 1.00 | 20,063 | ● |
| 63 | 25 | 44 | 52.5 | 115 | 56 | 1.00 | 25,063 | ● |
| 63 | 32 | 44 | 52.5 | 120 | 60 | 1.10 | 32,063 | ● |
| 63 | 6 | 21 | 27 | 120 | 36 | 0.90 | 206,063 | ● |
| 63 | 8 | 21 | 27 | 120 | 36 | 1.00 | 208,063 | ● |
| 63 | 10 | 24 | 32 | 120 | 40 | 1.10 | 210,063 | ● |
| 63 | 12 | 24 | 32 | 120 | 45 | 1.20 | 212,063 | ● |
| 63 | 6 | 21 | 27 | 160 | 36 | 0.80 | 106,063 | ● |
| 63 | 8 | 21 | 27 | 160 | 36 | 0.80 | 108,063 | ● |
| 63 | 10 | 24 | 32 | 160 | 40 | 0.90 | 110,063 | ● |
| 63 | 12 | 24 | 32 | 160 | 45 | 0.90 | 112,063 | ● |
| 63 | 14 | 27 | 34 | 160 | 45 | 1.00 | 114,063 | ● |
| 63 | 16 | 27 | 34 | 160 | 48 | 1.00 | 116,063 | ● |
| 63 | 18 | 33 | 42 | 160 | 48 | 1.20 | 118,063 | ● |
| 63 | 20 | 33 | 42 | 160 | 50 | 1.20 | 120,063 | ● |
| 63 | 25 | 44 | 52.5 | 160 | 56 | 1.80 | 125,063 | ● |
| 63 | 32 | 44 | 52.5 | 160 | 60 | 1.70 | 132,063 | ● |
| 80 | 6 | 21 | 27 | 85 | 36 | 1.30 | 6,080 | ● |
| 80 | 8 | 21 | 27 | 85 | 36 | 1.30 | 8,080 | ● |
| 80 | 10 | 24 | 32 | 90 | 40 | 1.40 | 10,080 | ● |
| 80 | 12 | 24 | 32 | 95 | 45 | 1.40 | 12,080 | ● |
| 80 | 14 | 27 | 34 | 95 | 45 | 1.50 | 14,080 | ● |
| 80 | 16 | 27 | 34 | 100 | 48 | 1.50 | 16,080 | ● |
| 80 | 18 | 33 | 42 | 100 | 48 | 1.70 | 18,080 | ● |
| 80 | 20 | 33 | 42 | 105 | 50 | 1.70 | 20,080 | ● |
| 80 | 25 | 44 | 53 | 115 | 56 | 2.20 | 25,080 | ● |
| 80 | 32 | 44 | 53 | 120 | 60 | 2.10 | 32,080 | ● |
| 100 | 6 | 21 | 27 | 85 | 36 | 2.10 | 6,100 | ● |
| 100 | 8 | 21 | 27 | 85 | 36 | 2.20 | 8,100 | ● |
| 100 | 10 | 24 | 32 | 90 | 40 | 2.30 | 10,100 | ● |
| 100 | 12 | 24 | 32 | 95 | 45 | 2.30 | 12,100 | ● |
| 100 | 14 | 27 | 34 | 95 | 45 | 2.30 | 14,100 | ● |
| 100 | 16 | 27 | 34 | 100 | 48 | 2.30 | 16,100 | ● |
| 100 | 18 | 33 | 42 | 100 | 48 | 2.50 | 18,100 | ● |
| 100 | 20 | 33 | 42 | 105 | 50 | 2.50 | 20,100 | ● |
| 100 | 25 | 44 | 53 | 115 | 56 | 3.00 | 25,100 | ● |
| 100 | 32 | 44 | 53 | 120 | 60 | 3.00 | 32,100 | ● |

MQL Program

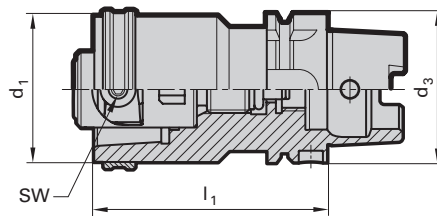
HSK-A/HSK-C extensions with MQL 4 point clamping set

Product information

- MQL suitable
- for single channel systems

Scope of delivery

- incl. MQL 4 point clamping set
Guhring no. 4930 and
Adaptor Guhring no. 4934
- incl. brass locking ring
Guhring no. 4953
- order coolant delivery set
separately



Guhring no.

4350



| HSK-A/HSK-C d ₁ / d ₃ | l ₁ mm | SW | kg | Code no. | Availability |
|--|----------------------|-----|------|----------|--------------|
| 32 | 60 | 2.5 | 0.30 | 60,032 | ○ |
| 40 | 80 | 3.0 | 0.70 | 80,040 | ● |
| 50 | 80 | 4.0 | 0.90 | 80,050 | ● |
| 50 | 100 | 4.0 | 1.10 | 100,050 | ● |
| 63 | 100 | 5.0 | 1.80 | 100,063 | ● |
| 63 | 140 | 5.0 | 2.30 | 140,063 | ● |
| 80 | 120 | 6.0 | 4.20 | 120,080 | ● |
| 80 | 160 | 6.0 | 5.80 | 160,080 | ● |
| 100 | 140 | 8.0 | 8.00 | 140,100 | ● |

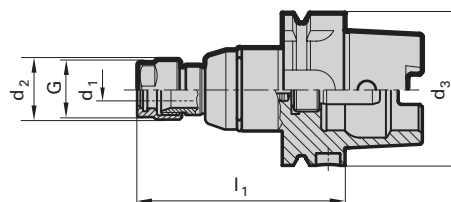
MQL synchro tapping chucks

Produkt-Informationen

- for single channel systems
- compensate synchronisation errors
- guarantees with minimal length compensation
- high thread quality and optimal tool life
- MQL pressure up to max. 10 bar
- max. torque of the clamping nut 30 Nm
- mounted MQL coolant supply pipe

Scope of delivery

- incl. clamping nut
- incl. MQL supply (special solution)
- Guhring no. 4330, 18,063
incl. clamping key BMK 18
- for Guhring no. 4330, 18,063 order tap collet
Guhring no. 4310 18,063 separatly
- order tap collet
for Guhring no. 4330 20,063 separately
- for Guhring no. 4330 20,063 order sealing washer,
Guhring no.4335 and clamping key ER 20,
Guhring no. 4913 separately



Guhring no.

4330



| HSK-A d ₃ | retention nut | for thread | G | d ₁ mm | d ₂ mm | l ₁ mm | tensile force/ pressure ± mm | kg | Code no. | Availability |
|-------------------------|------------------|---------------|---------|----------------------|----------------------|----------------------|------------------------------------|------|----------|--------------|
| 63 | BM18 | M3.5-M14 | M21x1 | 4.0-11 | 25 | 86 | 0.15 | 1.10 | 18,063 | ○ |
| 63 | ER20 | M3.5-M14 | M25x1.5 | 4.0-11 | 34 | 95.5 | 0.15 | 1.30 | 20,063 | ● |
| 63 | ER32 | M3.5-M28 | M40x2.5 | 4.0-20 | 50 | 111 | 0.15 | 1.70 | 32,063 | ● |

Collets for MQL

Product information

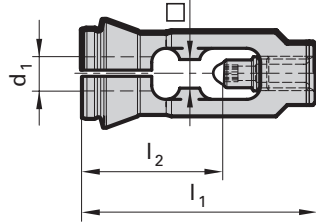
- MQL or conventional cooling

Scope of delivery

- incl. setting screw with taper
- without sealing disc

Guhring no.

4310



| size | d ₁ x □ mm | l ₁ mm | plug-in depth l ₂ mm | Code no. | Availability |
|------|--------------------------|----------------------|---------------------------------------|----------|--------------|
| BZ18 | 4.5 x 3.4 | 41 | 23 | 4,518 | ● |
| BZ18 | 6.0 x 4.9 | 41 | 25 | 6,018 | ● |
| BZ18 | 7.0 x 5.5 | 41 | 25 | 7,018 | ● |
| BZ18 | 8.0 x 6.2/6.3 | 41 | 26 | 8,018 | ● |
| BZ18 | 9.0 x 7.0/7.1 | 41 | 27 | 9,018 | ● |
| BZ18 | 10.0 x 8.0 | 41 | 28 | 10,018 | ● |
| BZ18 | 11.0 x 9.0 | 41 | 29 | 11,018 | ● |

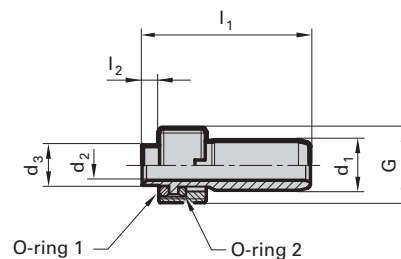
MQL HSK-A coolant delivery set

Product information

- to DIN draft E-DIN 69090-3
- acc. to Guhring's new MQL standard
- for single channel systems
- for automatic interface

Guhring no.

4939



| for HSK-A | d ₁ mm | d ₂ mm | d ₃ mm | l ₁ mm | l ₂ mm | G | O-ring 1 Viton 75 | O-ring 2 Viton 75 | Code no. | Availability |
|--------------|----------------------|----------------------|----------------------|----------------------|----------------------|---------|----------------------|----------------------|----------|--------------|
| 40 | 8 | 5.4 | 6.5 | 35.0 | 5.5 | M12x1.0 | 7.5x1.5 | 7.5x1.5 | 12,040 | ● |
| 50 | 10 | 6.5 | 7.5 | 38.5 | 5.5 | M16x1.0 | 9.0x2.0 | 9.0x2.0 | 16,050 | ● |
| 63 | 12 | 8.0 | 9.5 | 40.5 | 4.0 | M18x1.0 | 10.0x2.5 | 10.0x2.0 | 18,063 | ● |
| 80 | 14 | 8.0 | 9.7 | 44.0 | 4.0 | M20x1.5 | 13.0x2.0 | 13.0x2.0 | 20,080 | ● |
| 100 | 16 | 8.0 | 11.5 | 46.0 | 2.0 | M24x1.5 | 14.0x3.0 | 14.0x3.0 | 24,100 | ● |

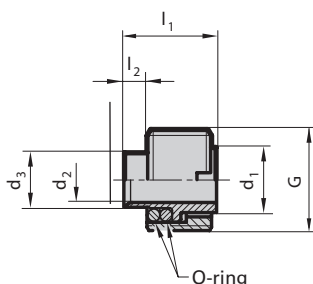
MQL HSK-A coolant delivery set (filler)

Product information

- according to new Guhring MQL standard
- for single channel systems
- for manual tool change

Guhring no.

4940



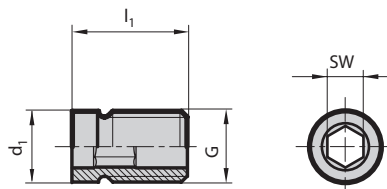
| for HSK-A | d1 mm | d2 mm | d3 mm | l1 mm | l2 mm | G | O-ring 1 & 2 NBR 70 | Code no. | Availability |
|-----------|-------|-------|-------|-------|-------|---------|------------------------|----------|--------------|
| 40 | 7.6 | 5.4 | 6.8 | 13.8 | 5.5 | M12x1.0 | 7.5x1.5 | 12,040 | ● |
| 50 | 9.6 | 6.5 | 7.8 | 15.8 | 5.5 | M16x1.0 | 9.0x2.0 | 16,050 | ● |
| 63 | 11.6 | 8.0 | 9.7 | 16.3 | 4.0 | M18x1.0 | 10.0x2.5 | 18,063 | ● |
| 80 | 13.6 | 8.0 | 9.7 | 18.4 | 4.0 | M20x1.5 | 13.0x2.0 | 20,080 | ● |
| 100 | 15.6 | 8.0 | 11.7 | 18.4 | 2.0 | M24x1.5 | 14.0x3.0 | 24,100 | ● |

Length adjustment screw for conventional cooling

To adapt MQL tool holders to meet the requirements of conventional wet machining. For plain end shanks. The height of screw head compensates the height of MQL taper.

Product information

- for MQL HSK-A shrink fit chucks
- for MQL HSK-A hydraulic chucks
- for use with shank according to DIN 6535 with plain shank end for conventional cooling



Guhring no.

4941



| for HSK-A | clamping- Ø | G | d1 mm | l1 mm | SW 1 | SW 2 | Code no. | Availability |
|---------------------|----------------|-------|-------|-------|------|------|----------|--------------|
| 40 | 6 | M7x1 | 6 | 15 | 2.5 | 2.5 | 6,040 | ● |
| 40 | 8 | M7x1 | 6 | 18 | 3.0 | 3.0 | 8,040 | ● |
| 50 | 6 | M8x1 | 8 | 14 | 2.5 | 2.5 | 6,050 | ● |
| 50 | 8 | M8x1 | 7 | 18 | 3.0 | 3.0 | 8,050 | ● |
| 40/50 | 10 | M8x1 | 10 | 17.7 | 4.0 | 4.0 | 10,050 | ● |
| 63/80/100 | 6 | M10x1 | 9 | 22 | 2.5 | 2.5 | 6,100 | ● |
| 63/80/100 | 8 | M10x1 | 9 | 22 | 3.0 | 3.0 | 8,100 | ● |
| 63/80/100 | 10 | M10x1 | 10 | 16.2 | 4.0 | 4.0 | 10,100 | ● |
| 40/ 50/ 63/ 80/ 100 | 12 | M10x1 | 10 | 16.2 | 5.0 | 5.0 | 12,100 | ● |
| 40/ 50/ 63/ 80/ 100 | 14 | M10x1 | 10 | 17.2 | 5.0 | 5.0 | 14,100 | ● |
| 50/ 63/ 80/ 100 | 16 | M12x1 | 16 | 18.2 | 6.0 | 6.0 | 16,100 | ● |
| 50/ 63/ 80/ 100 | 18 | M12x1 | 16 | 19.2 | 6.0 | 6.0 | 18,100 | ● |
| 50/ 63/ 80/ 100 | 20 | M16x1 | 16 | 19.2 | 8.0 | 6.0 | 20,100 | ● |
| 63/ 80/ 100 | 25 | M16x1 | 16 | 22.7 | 8.0 | 6.0 | 25,100 | ● |
| 63/ 80/ 100 | 32 | M16x1 | 16 | 26.7 | 8.0 | 6.0 | 32,100 | ● |

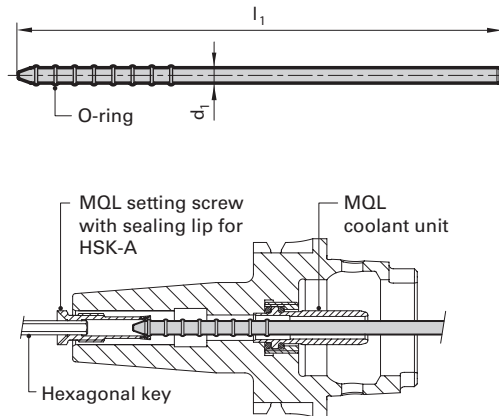
Mounting adaptor for MQL length setting screw

Product information

- for mounting the MQL length setting screw with sealing lip

Scope of delivery

- incl. operating manual



Guhring no.

4972



| size | d1 mm | l1 mm | Code no. | Availability |
|---------------|-------|-------|----------|--------------|
| HSK 40 | 5.4 | 200 | 5,040 | • |
| HSK 50 | 6.5 | 200 | 6,050 | • |
| HSK 63/80/100 | 8 | 250 | 8,100 | • |
| | | | | |
| | | | | |

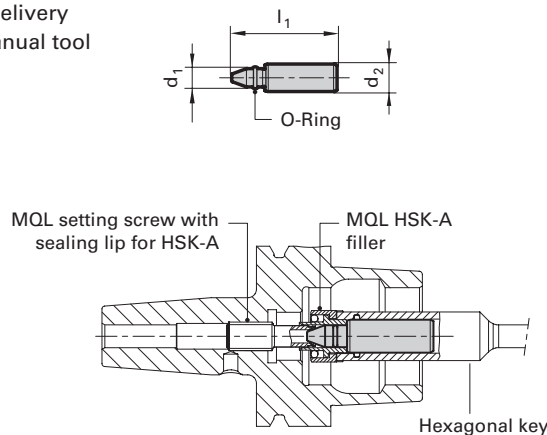
Mounting adaptor for MQL length setting screw

Product information

- adaptor for socket spanner, Guhring no. 4911
- for mounting MQL HSK-A coolant delivery set (filler), Guhring no. 4940, for manual tool change

Scope of delivery

- incl. operating manual



Guhring no.

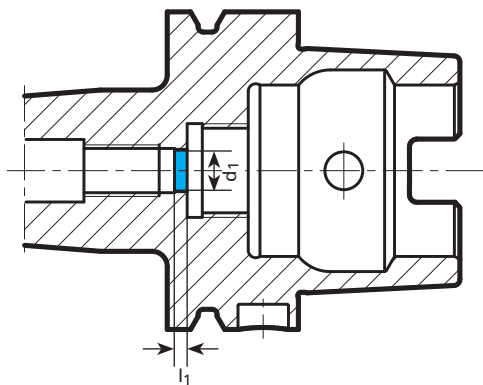
4948



| size | d1 mm | d2 mm | l1 mm | Code no. | Availability |
|---------|-------|-------|-------|----------|--------------|
| HSK 40 | 5.4 | 8 | 38.5 | 8,040 | • |
| HSK 50 | 6.5 | 10 | 42 | 10,050 | • |
| HSK 63 | 8 | 12 | 46 | 12,063 | • |
| HSK 80 | 8 | 14 | 48.5 | 14,080 | • |
| HSK 100 | 8 | 16 | 51.5 | 16,100 | • |
| | | | | | |
| | | | | | |

Technical information to the new Guhring MQL standard

With HSK-tool holders to the new Guhring MQL standard, the diameter d6 is modified to DIN 69893-1 to a length l1 with the diameter d1.



| Nom. size HSK | 40 | 50 | 63 | 80 | 100 |
|---------------|----------|----------|-----------|------|-----|
| d1 | 7,0 +0,1 | 8,0 +0,1 | 10,0 +0,1 | 10,2 | 12 |
| l1min | 8 | 8 | 6 | 6 | 4 |

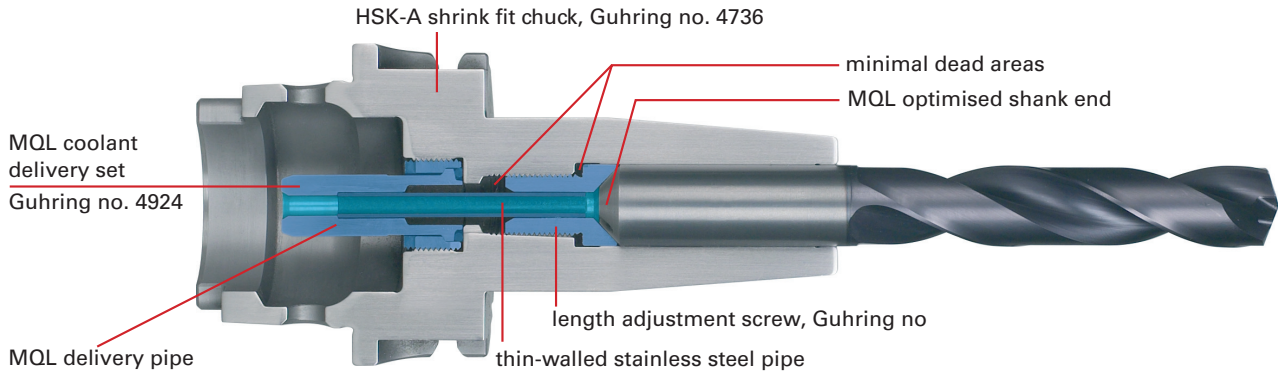
Table 1: modified dimensions – HSK to DIN 69893-1

Within the HSK sizes MQL tool holders are listed the respective threads for the MQL length adjustment screw and the respective width across flats. Some of these dimensions do not correspond with dimensions of tool holders for conventional cooling.

| HSK-A... | Clamping-Ø | d1 mm | G | SW |
|---------------|------------|-------|--------|----|
| 40 | 6 | - | M 7x1 | 3 |
| 40 | 8 | 8 | M 7x1 | 3 |
| 40 | 10 | 10 | M 8x1 | 3 |
| 40 | 12 | 12 | M 10x1 | 3 |
| 40 | 14 | 14 | M 10x1 | 3 |
| 40 | 16 | 16 | M 12x1 | 3 |
| 50 | 6 | - | M 8x1 | 4 |
| 50 | 8 | 8 | M 8x1 | 4 |
| 50 | 10 | 10 | M 8x1 | 4 |
| 50 | 12 | 12 | M 10x1 | 4 |
| 50 | 14 | 14 | M 10x1 | 4 |
| 50 | 16 | 16 | M 12x1 | 4 |
| 50 | 18 | 18 | M 12x1 | 4 |
| 50 | 20 | 20 | M 16x1 | 4 |
| 63 / 80 / 100 | 6 | - | M 10x1 | 4 |
| 64 / 80 / 100 | 8 | - | M 10x1 | 4 |
| 63 / 80 / 100 | 10 | 10 | M 10x1 | 4 |
| 63 / 80 / 100 | 12 | 12 | M 10x1 | 5 |
| 63 / 80 / 100 | 14 | 14 | M 10x1 | 5 |
| 63 / 80 / 100 | 16 | 16 | M 12x1 | 5 |
| 63 / 80 / 100 | 18 | 18 | M 12x1 | 5 |
| 63 / 80 / 100 | 20 | 20 | M 16x1 | 5 |
| 63 / 80 / 100 | 25 | 25 | M 16x1 | 5 |
| 63 / 80 / 100 | 32 | 32 | M 16x1 | 5 |

Table 2: Threads and widths across flats of MQL length adjustment screw

The application of Guhring's MQL technology does not necessarily require the conversion of the complete stock of hydraulic chucks and shrink fit chucks to the new Guhring MQL standard for tool holders. With the assistance of Guhring's MQL length adjustment screw, Guhring no. 4919, and MQL coolant delivery set, Guhring no. 4924, tool holders such as hydraulic chucks, Guhring no. 4299 and 4399, or shrink fit chucks, Guhring no. 4736, from Guhring's GM 300 program can be converted for application under MQL conditions and automatic tool clamping.

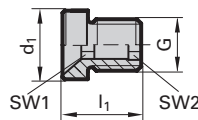


Assembly of conventional MQL system

MQL length adjustment screws

Product information

- for hydraulic chucks and shrink fit chucks
- with special geometry optimised for MQL
- with conical end for tapered MQL shank ends



Guhring no.

4919



| G | d1 mm | l1 mm | SW1 | SW2 | Code no. | Availability |
|-------|----------|----------|-----|-----|----------|--------------|
| M5 | 6 | 14.8 | 2.5 | 2.5 | 6,000 | ● |
| M6 | 8 | 15.6 | 3.0 | 3.0 | 8,000 | ● |
| M8x1 | 10 | 16.1 | 4.0 | 4.0 | 10,000 | ● |
| M8x1 | 10 | 16.6 | 3.0 | 3.0 | 10,040 | ● |
| M6 | 10 | 16.6 | 3.0 | 3.0 | 10,032 | ● |
| M10x1 | 12 | 16.6 | 5.0 | 5.0 | 12,000 | ● |
| M6 | 12 | 17.6 | 3.0 | 3.0 | 12,032 | ● |
| M10x1 | 14 | 17.6 | 5.0 | 5.0 | 14,000 | ● |
| M6 | 14 | 18.6 | 3.0 | 3.0 | 14,040 | ● |
| M12x1 | 16 | 18.6 | 5.0 | 5.0 | 16,000 | ● |
| M6 | 16 | 19.6 | 3.0 | 3.0 | 16,040 | ● |
| M12x1 | 18 | 19.6 | 5.0 | 5.0 | 18,000 | ● |
| M16x1 | 20 | 20.6 | 5.0 | 5.0 | 20,000 | ● |
| M16x1 | 25 | 22.6 | 8.0 | 6.0 | 25,000 | ● |
| M16x1 | 32 | 26.1 | 8.0 | 6.0 | 32,000 | ● |

MQL coolant delivery sets

Product information

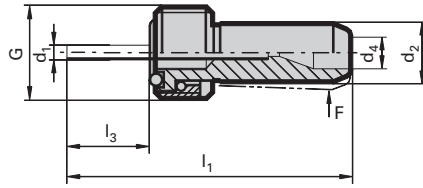
- replace conventional coolant delivery sets, Guhring no. 4949, when applying MQL

Scope of delivery

- complete MQL coolant delivery set consisting of :
coolant pipe, cap nut
MQL tube and O-rings

DSF = hydraulic chucks

WSF = shrink fit chucks



Guhring no.

4924



| for HSK-A | WSF DSF | clamping- Ø mm | d1 mm | d2 mm | d4 mm | l1 mm | l3 mm | G | Code no. | Availability |
|-----------|---------|----------------------|----------|----------|----------|----------|----------|-------|----------|--------------|
| 32 | DSF | 6 | 2,5 | 6 | 3,5 | 54,2 | 28,0 | M10x1 | 32,010 | • |
| 32 | WSF | 6 | 2,5 | 6 | 3,5 | 45,1 | 18,9 | M10x1 | 32,020 | • |
| 32 | DSF | 8 | 3,0 | 6 | 3,5 | 54,3 | 28,1 | M10x1 | 32,030 | • |
| 32 | DSF | 10 | 3,0 | 6 | 3,5 | 55,8 | 29,6 | M10x1 | 32,050 | • |
| 32 | WSF | 10 | 3,0 | 6 | 3,5 | 45,7 | 19,5 | M10x1 | 32,060 | • |
| 32 | DSF | 12 | 3,0 | 6 | 3,5 | 56,6 | 30,4 | M10x1 | 32,070 | • |
| 32 | WSF | 8/12 | 3,0 | 6 | 3,5 | 45,2 | 19,0 | M10x1 | 32,080 | • |
| 40 | DSF | 6 | 2,5 | 8 | 4,0 | 45,1 | 16,0 | M12x1 | 40,010 | • |
| 40 | WSF | 6 | 2,5 | 8 | 4,0 | 56,0 | 26,9 | M12x1 | 40,020 | • |
| 40 | DSF | 8 | 3,0 | 8 | 4,0 | 56,2 | 15,8 | M12x1 | 40,030 | • |
| 40 | WSF | 8 | 3,0 | 8 | 4,0 | 56,2 | 27,0 | M12x1 | 40,040 | • |
| 40 | DSF | 10 | 3,0 | 8 | 4,0 | 46,3 | 17,1 | M12x1 | 40,050 | • |
| 40 | WSF | 10 | 3,0 | 8 | 4,0 | 51,7 | 22,5 | M12x1 | 40,060 | • |
| 40 | DSF | 12 | 3,0 | 8 | 4,0 | 46,7 | 17,5 | M12x1 | 40,070 | • |
| 40 | WSF | 12/14 | 3,0 | 8 | 4,0 | 57,2 | 28,0 | M12x1 | 40,100 | • |
| 40 | WSF | 16 | 3,0 | 8 | 4,0 | 54,2 | 25,0 | M12x1 | 40,120 | • |
| 50 | DSF | 6 | 2,5 | 10 | 4,0 | 44,6 | 11,9 | M16x1 | 50,010 | • |
| 50 | WSF | 6 | 2,5 | 10 | 4,0 | 55,4 | 22,7 | M16x1 | 50,020 | • |
| 50 | DSF | 8 | 3,0 | 10 | 4,0 | 46,1 | 13,4 | M16x1 | 50,030 | • |
| 50 | WSF | 8 | 3,0 | 10 | 4,0 | 46,5 | 13,8 | M16x1 | 50,040 | • |
| 50 | DSF | 10 | 4,0 | 10 | 4,0 | 45,7 | 13,0 | M16x1 | 50,050 | • |
| 50 | WSF | 10 | 4,0 | 10 | 4,0 | 46,1 | 13,4 | M16x1 | 50,060 | • |
| 50 | DSF | 12 | 5,0 | 10 | 4,0 | 46,1 | 13,4 | M16x1 | 50,070 | • |
| 50 | WSF | 12 | 5,0 | 10 | 4,0 | 55,7 | 23,0 | M16x1 | 50,080 | • |
| 50 | DSF | 14 | 5,0 | 10 | 4,0 | 51,5 | 18,8 | M16x1 | 50,090 | • |
| 50 | WSF | 14 | 5,0 | 10 | 4,0 | 55,7 | 22,9 | M16x1 | 50,100 | • |
| 50 | DSF | 16 | 5,0 | 10 | 4,0 | 52,8 | 20,1 | M16x1 | 50,110 | • |
| 50 | DSF | 18 | 5,0 | 10 | 4,0 | 53,2 | 20,5 | M16x1 | 50,130 | • |
| 50 | WSF | 16/18 | 5,0 | 10 | 4,0 | 57,7 | 25,0 | M16x1 | 50,140 | • |
| 50 | DSF | 20 | 5,0 | 10 | 4,0 | 51,5 | 18,8 | M16x1 | 50,150 | • |
| 50 | WSF | 20 | 5,0 | 10 | 4,0 | 60,7 | 28,0 | M16x1 | 50,160 | • |
| 63 | DSF | 6 | 2,5 | 12 | 4,0 | 45,7 | 9,5 | M18x1 | 63,010 | • |
| 63 | DSF | 6 | 2,5 | 12 | 4,0 | 126,9 | 90,6 | M18x1 | 63,011 | • |
| 63 | DSF | 6 | 2,5 | 12 | 4,0 | 176,9 | 140,6 | M18x1 | 63,012 | • |
| 63 | WSF | 6 | 2,5 | 12 | 4,0 | 56,7 | 20,5 | M18x1 | 63,020 | • |
| 63 | WSF | 6 | 2,5 | 12 | 4,0 | 137,7 | 101,4 | M18x1 | 63,021 | • |
| 63 | DSF | 8 | 3,0 | 12 | 4,0 | 46,0 | 9,8 | M18x1 | 63,030 | • |
| 63 | DSF | 8 | 3,0 | 12 | 4,0 | 126,1 | 89,9 | M18x1 | 63,031 | • |
| 63 | DSF | 8 | 3,0 | 12 | 4,0 | 176,2 | 139,9 | M18x1 | 63,032 | • |
| 63 | WSF | 8 | 3,0 | 12 | 4,0 | 57,0 | 20,8 | M18x1 | 63,040 | • |
| 63 | WSF | 8 | 3,0 | 12 | 4,0 | 137,0 | 100,7 | M18x1 | 63,041 | • |
| 63 | DSF | 10 | 4,0 | 12 | 4,0 | 51,7 | 15,5 | M18x1 | 63,050 | • |
| 63 | DSF | 10 | 4,0 | 12 | 4,0 | 122,2 | 86,0 | M18x1 | 63,051 | • |
| 63 | DSF | 10 | 4,0 | 12 | 4,0 | 172,2 | 135,9 | M18x1 | 63,052 | • |
| 63 | WSF | 10 | 4,0 | 12 | 4,0 | 55,7 | 19,5 | M18x1 | 63,060 | • |
| 63 | WSF | 10 | 4,0 | 12 | 4,0 | 132,2 | 95,9 | M18x1 | 63,061 | • |
| 63 | DSF | 12/14/20 | 5,0 | 12 | 4,0 | 52,1 | 15,9 | M18x1 | 63,070 | • |

1. The HSK holder must be clean, free of swarf and undamaged.
2. Grease the O-rings prior to assembly.
3. Centrally insert the complete coolant delivery set (coolant pipe, union nut and 2 O-rings) in the HSK with the assistance of the socket spanner.

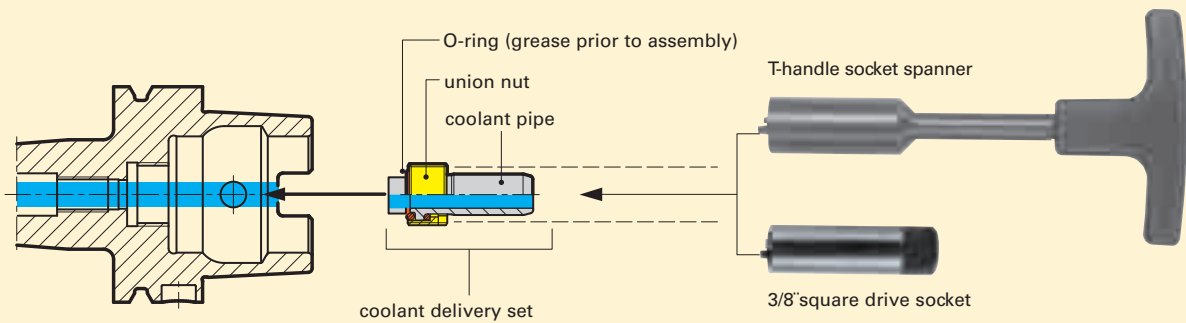
When inserting the MQL coolant delivery unit, it is paramount to ensure that the MQL pipe is inserted centrally and undamaged into the MQL length setting screw (do not kink).

4. Screw in the coolant delivery set/coolant delivery unit and tighten (see table for torque figures)
5. Check coolant pipe for radial mobility.

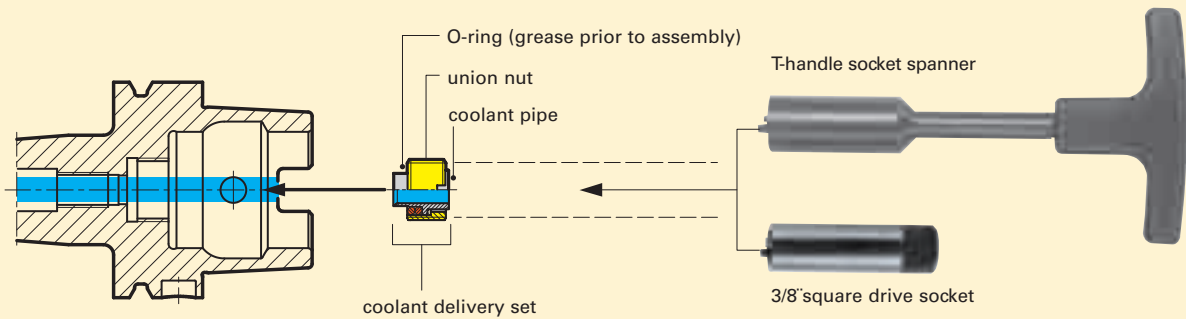
Torque figures

| für HSK | MA Nm |
|---------|-------|
| 32 | 7 |
| 40 | 11 |
| 50 | 15 |
| 63 | 20 |
| 80 | 25 |
| 100 | 30 |

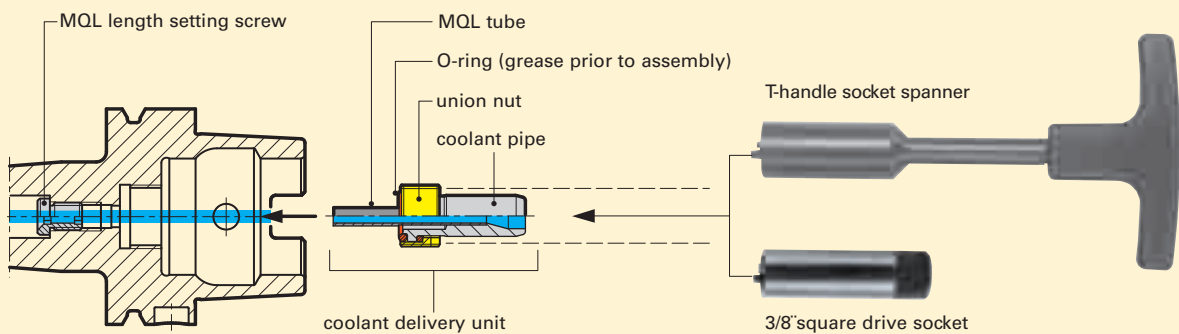
Installation of MQL coolant delivery set 4939



Installation of MQL coolant delivery set filler 4940



Installation of MQL coolant delivery unit 4924



HYDRAULIC CHUCKS



• Hydraulic chucks

- Technology and advantages from page 62
- Hydraulic expansion chucks HSK, ISO taper and BT from page 64
- Reduction bushes from page 75
- Clamping force measuring instrument SENSO 3000 from page 77
- Adaptors from page 78
- Adjustment screws from page 80

Technology and advantages

Operating instructions for Hydraulic chucks

Clamping standard tool shanks to DIN 6535 in hydraulic chucks

Direct clamping of tool preferred
run-out ≤ 0.003 mm

Form HA $\varnothing 6 \dots 20$ mm



Form HA $\varnothing 25 \dots 32$ mm



Form HB $\varnothing 6 \dots 20$ mm

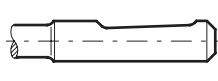


Clamping of tool shank only with reduction bushes
run-out ≤ 0.005 mm

Form HB $\varnothing 25 \dots 32$ mm



Form HE $\varnothing 6 \dots 20$ mm



Form HE $\varnothing 25 \dots 32$ mm



General notes:

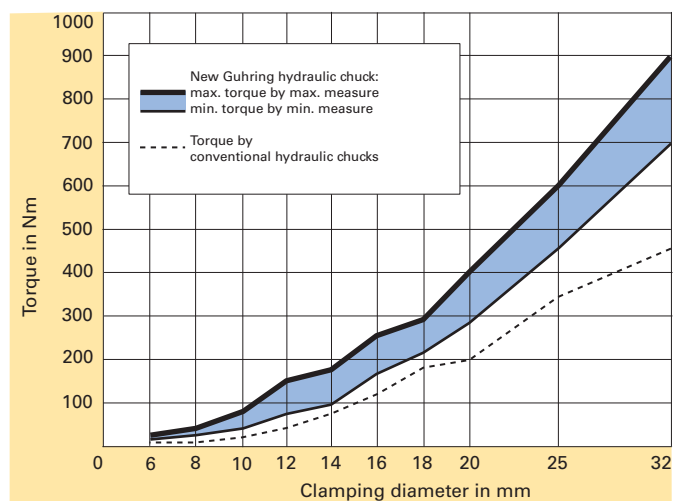
Our hydraulic chucks must **not** be operated with motor-driven tools (impulse screwdrivers or similar). The hexagonal key should not exceed the key size over its entire length, this largely prevents excessive torque being transferred. We recommend the hexagon clamping key, Guhring no. Art. 4912. A tightening moment of 10 Nm must not be exceeded.

Guhring Hydraulic chucks with increased clamping force

Hydraulic chucks are suitable for clamping rotary symmetrical tools or workpieces. Straight shank tools without drive flats may be clamped up to $\varnothing 32$ mm, but also shanks according to DIN 6535 form HA and HB up to $\varnothing 20$ mm without reduction bushes. The given values in the table below are not to be exceeded. If the inserted length is less than the given minimum insertion depth or other tool shanks than specified above are applied, lower accuracy and breakage may occur!

Above all it is the high revolutions with High-Speed-Cutting operations that puts special demands on the tool holder. The clamping of the tool in a hydraulic chuck is, therefore, especially significant. Guhring has developed a hydraulic chuck that offers reliable and powerful clamping with higher torque figures, guaranteeing excellent tool clamping in the tool holder.

Combined with precise concentricity (max. 3 μm deviation from concentricity), a very fast and simple tool change as well as the vibration cushioning effect of the pressure chamber, the new hydraulic chuck can tackle the most demanding of machining tasks. The result is optimal tool life and excellent surface qualities or dimensional accuracy of the workpiece respectively.



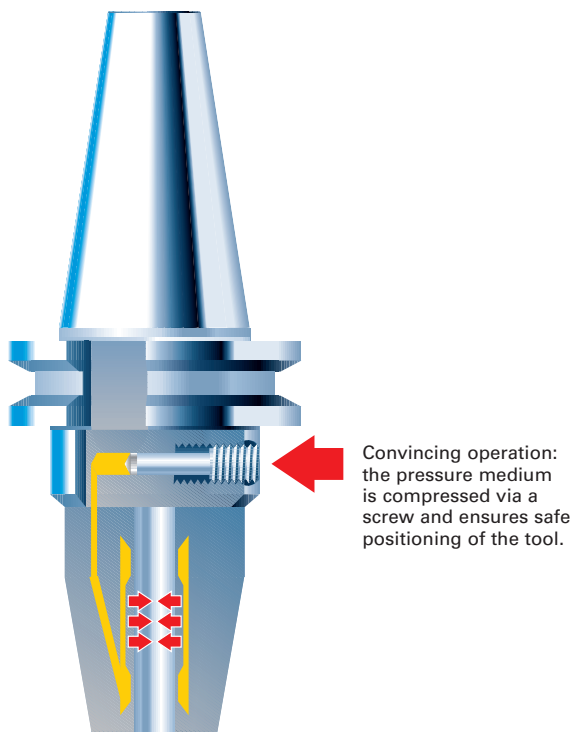
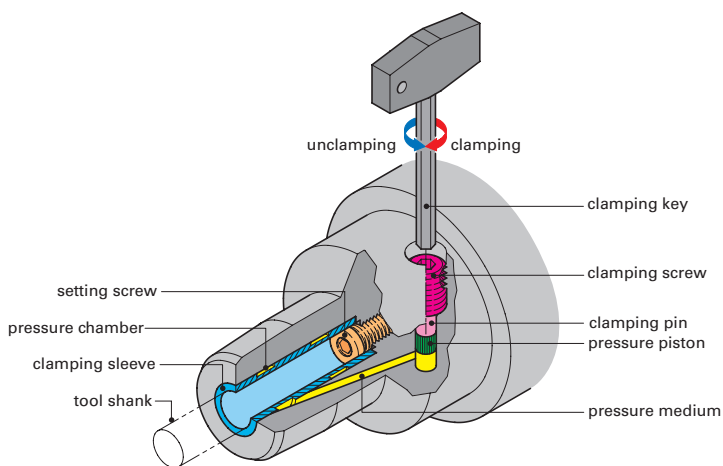
Considerably higher:
The clamping force of Guhring's new HSK-A hydraulic chuck in comparison to conventional chucks.

Technology and advantages

Modern machining processes place heavy demands on tool holding. Hydraulic chucks provides excellent clamping characteristics combined with precise concentricity. Furthermore, they enable a simple and fast tool change, with the assistance of a special extraction key. Turning the pressure screw generates sufficient pressure in the pressure chamber resulting in an elastic deformation of the clamping bush, providing powerful tool clamping and precise concentricity. A safe and powerful fit is guaranteed. If reduction bushes are applied that are able to hold varying tool diameters, the tool application may be extended without problem. If such bushes are not applied, it is essential to observe the minimum clamping length!

A summary of the advantages:

- precise tool clamping with a maximum 3 µm deviation from concentricity
- transmission of high torque through (excellent clamping) optimised bush clamping system
- high speed compatibility (no centrifugal forces from clamping segments)
- precise concentricity, therefore excellent surface qualities and dimensional accuracy of the workpiece
- rapid tool change thanks to simple operation of the clamping screw
- optimal tool life
- hydraulic cushioning has vibration absorbing effect



| Clamping Ø | max. r.p.m. | max. transferable torque in Nm | Min. insertion depth in mm | max. adjustment l ₃ mm | max. rad. force F on chuck with 50 mm from the nose in N | Operating-temperature in °C | max. coolant pressure in bar | Shank-Ø in mm |
|------------|-------------|--------------------------------|----------------------------|-----------------------------------|--|-----------------------------|------------------------------|-------------------|
| Ø 6 | 50 000 | 16 | 27 | 10 | 225 | 20 - 50 | 80 | 6 h ⁶ |
| Ø 8 | 50 000 | 26 | 27 | 10 | 370 | 20 - 50 | 80 | 8 h ⁶ |
| Ø 10 | 50 000 | 50 | 31 | 10 | 540 | 20 - 50 | 80 | 10 h ⁶ |
| Ø 12 | 50 000 | 82 | 36 | 10 | 650 | 20 - 50 | 80 | 12 h ⁶ |
| Ø 14 | 50 000 | 125 | 36 | 10 | 900 | 20 - 50 | 80 | 14 h ⁶ |
| Ø 16 | 50 000 | 190 | 39 | 10 | 1410 | 20 - 50 | 80 | 16 h ⁶ |
| Ø 18 | 50 000 | 275 | 39 | 10 | 1580 | 20 - 50 | 80 | 18 h ⁶ |
| Ø 20 | 50 000 | 310 | 41 | 10 | 1860 | 20 - 50 | 80 | 20 h ⁶ |
| Ø 25 | 25 000 | 520 | 47 | 10 | 4400 | 20 - 50 | 80 | 25 h ⁶ |
| Ø 32 | 25 000 | 770 | 51 | 10 | 6500 | 20 - 50 | 80 | 32 h ⁶ |

HSK-A hydraulic chucks with increased clamping force

Product information

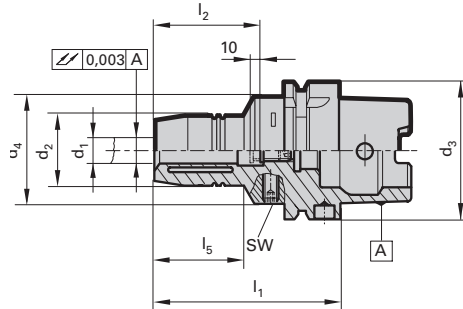
- increased torque
- direct tool clamping
with shanks to DIN 6535 HA
- max. deviation f. concentricity 3 µm
- balancing quality: G6.3 / 15,000 rev./min
- MQL suitable
- axial length setting
- clamping-Ø for shank tolerance h6
- to DIN 69882-7
- also available in the overlength
l₁ = 150 mm und 200 mm lieferbar

Scope of delivery

- incl. setting screw Guhring no. 4900
- incl. clamping key Guhring no. 4912
- for conventional cooling, order coolant delivery set, Guhring no. 4949 separatly
- for MQL application, order as special tool holder with coolant delivery set, Guhring no. 4924 and setting screw Guhring no. 4919

Guhring no.

4299



| HSK-A d ₃ | for clamping-Ø d ₁ h6 mm | d ₂ mm | d ₄ mm | l ₁ mm | l ₂ mm | l ₅ mm | incl. setting screw 4900 ... | SW | kg | Code no. | Availability |
|-------------------------|---|----------------------|----------------------|----------------------|----------------------|----------------------|------------------------------------|----|------|----------|--------------|
| 32 | 6 | 26 | 40.0 | 80 | 37 | 29 | 6.014 | 4 | 0.44 | 6,032 | ● |
| 32 | 8 | 28 | 40.0 | 80 | 37 | 29 | 8.014 | 4 | 0.40 | 8,032 | ● |
| 32 | 10 | 30 | 40.0 | 85 | 41 | 35 | 8.014 | 4 | 0.40 | 10,032 | ● |
| 32 | 12 | 32 | 40.0 | 90 | 46 | 40 | 8.014 | 4 | 0.40 | 12,032 | ● |
| 40 | 6 | 26 | 33.5 | 70 | 37 | 36 | 6.014 | 4 | 0.60 | 6,040 | ● |
| 40 | 8 | 28 | 33.5 | 70 | 37 | 36 | 8.014 | 4 | 0.60 | 8,040 | ● |
| 40 | 10 | 30 | 33.5 | 75 | 41 | 42 | 8.014 | 4 | 0.60 | 10,040 | ● |
| 40 | 12 | 32 | 33.5 | 80 | 46 | 48 | 8.014 | 4 | 0.60 | 12,040 | ● |
| 50 | 6 | 26 | 40.0 | 70 | 37 | 28 | 6.014 | 4 | 0.80 | 6,050 | ● |
| 50 | 8 | 28 | 40.0 | 70 | 37 | 28 | 8.014 | 4 | 0.80 | 8,050 | ● |
| 50 | 10 | 30 | 40.0 | 75 | 41 | 34 | 10.014 | 4 | 0.80 | 10,050 | ● |
| 50 | 12 | 32 | 40.0 | 85 | 46 | 44 | 12.014 | 4 | 0.80 | 12,050 | ● |
| 50 | 14 | 34 | 40.0 | 85 | 46 | 44 | 12.014 | 5 | 0.80 | 14,050 | ● |
| 50 | 16 | 38 | 40.0 | 90 | 49 | 30 | 16.014 | 5 | 1.10 | 16,050 | ● |
| 50 | 18 | 40 | 40.0 | 90 | 49 | 30 | 16.014 | 5 | 1.10 | 18,050 | ● |
| 50 | 20 | 42 | 40.0 | 90 | 51 | 29 | 20.014 | 5 | 1.10 | 20,050 | ● |
| 63 | 6 | 26 | 50.0 | 70 | 37 | 24.5 | 6.014 | 5 | 0.97 | 6,063 | ● |
| 63 | 8 | 28 | 50.0 | 70 | 37 | 24.5 | 8.014 | 5 | 0.97 | 8,063 | ● |
| 63 | 10 | 30 | 50.0 | 80 | 41 | 35.5 | 10.014 | 5 | 1.00 | 10,063 | ● |
| 63 | 12 | 32 | 50.0 | 85 | 46 | 41.5 | 12.014 | 5 | 1.12 | 12,063 | ● |
| 63 | 14 | 34 | 50.0 | 85 | 46 | 41.5 | 12.014 | 5 | 1.08 | 14,063 | ● |
| 63 | 16 | 38 | 50.0 | 90 | 49 | 45.5 | 16.014 | 5 | 1.18 | 16,063 | ● |
| 63 | 18 | 40 | 50.0 | 90 | 49 | 48.5 | 16.014 | 5 | 1.18 | 18,063 | ● |
| 63 | 20 | 42 | 50.0 | 90 | 51 | 47.5 | 20.114 | 5 | 1.20 | 20,063 | ● |
| 63 | 25 | 57 | 63.0 | 120 | 57 | 55.3 | 20.114 | 6 | 2.11 | 25,063 | ● |
| 63 | 32 | 64 | 75.0 | 125 | 61 | 63 | 20.114 | 6 | 2.43 | 32,063 | ● |
| 63 | 6 | 26 | 50.0 | 150 | 37 | 103 | 6.014 | 5 | 1.50 | 6,163 | ○ |
| 63 | 8 | 28 | 50.0 | 150 | 37 | 104 | 8.014 | 5 | 1.50 | 8,163 | ○ |
| 63 | 10 | 30 | 50.0 | 150 | 41 | 104 | 10.014 | 5 | 1.50 | 10,163 | ○ |
| 63 | 12 | 32 | 50.0 | 150 | 46 | 105 | 12.014 | 5 | 1.50 | 12,163 | ○ |
| 63 | 14 | 34 | 50.0 | 150 | 46 | 105 | 12.014 | 5 | 1.70 | 14,163 | ○ |
| 63 | 16 | 38 | 50.0 | 150 | 49 | 106 | 16.014 | 5 | 1.80 | 16,163 | ○ |
| 63 | 18 | 40 | 50.0 | 150 | 49 | 107 | 16.014 | 5 | 1.90 | 18,163 | ○ |
| 63 | 20 | 42 | 50.0 | 150 | 51 | 108 | 20.114 | 5 | 1.90 | 20,163 | ○ |
| 63 | 6 | 26 | 50.0 | 200 | 37 | 153 | 6.014 | 5 | 1.70 | 6,263 | ○ |
| 63 | 8 | 28 | 50.0 | 200 | 37 | 154 | 8.014 | 5 | 1.70 | 8,263 | ○ |
| 63 | 10 | 30 | 50.0 | 200 | 41 | 154 | 10.014 | 5 | 1.80 | 10,263 | ○ |
| 63 | 12 | 32 | 50.0 | 200 | 46 | 155 | 12.014 | 5 | 1.80 | 12,263 | ○ |
| 63 | 14 | 34 | 50.0 | 200 | 46 | 155 | 12.014 | 5 | 2.00 | 14,263 | ○ |
| 63 | 16 | 38 | 50.0 | 200 | 49 | 156 | 16.014 | 5 | 2.20 | 16,263 | ○ |
| 63 | 18 | 40 | 50.0 | 200 | 49 | 157 | 16.014 | 5 | 2.30 | 18,263 | ○ |
| 63 | 20 | 42 | 50.0 | 200 | 51 | 158 | 20.114 | 5 | 2.50 | 20,263 | ○ |

HSK-A hydraulic chucks with increased clamping force

| | | | | | | | | | | Guhring no. 4299 | |
|----------------------|-------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------------------|----|------|------------------|--------------|
| HSK-A d ₃ | for clamping-Ø d ₁ h6 mm | d ₂ mm | d ₄ mm | l ₁ mm | l ₂ mm | l ₅ mm | incl. clamping screw 4900 ... | SW | kg | Code no. | Availability |
| 80 | 6 | 26 | 50.0 | 70 | 37 | 24 | 6.014 | 5 | 1.50 | 6,080 | ● |
| 80 | 8 | 28 | 50.0 | 70 | 37 | 24 | 8.014 | 5 | 1.50 | 8,080 | ● |
| 80 | 10 | 30 | 50.0 | 80 | 41 | 35 | 10.014 | 5 | 1.50 | 10,080 | ● |
| 80 | 12 | 32 | 50.0 | 85 | 46 | 40 | 12.014 | 5 | 1.60 | 12,080 | ● |
| 80 | 14 | 34 | 50.0 | 85 | 46 | 40 | 12.014 | 5 | 1.60 | 14,080 | ● |
| 80 | 16 | 38 | 50.0 | 95 | 49 | 51 | 16.014 | 5 | 1.70 | 16,080 | ● |
| 80 | 18 | 40 | 50.0 | 95 | 49 | 51 | 16.014 | 5 | 1.80 | 18,080 | ● |
| 80 | 20 | 42 | 50.0 | 95 | 51 | 52 | 20.114 | 5 | 1.80 | 20,080 | ● |
| 80 | 25 | 57 | 63.0 | 110 | 57 | 65 | 20.114 | 6 | 2.60 | 25,080 | ● |
| 80 | 32 | 64 | 75.0 | 125 | 61 | 63 | 20.114 | 6 | 3.20 | 32,080 | ● |
| 100 | 6 | 26 | 50.0 | 75 | 37 | 26 | 6.014 | 5 | 2.40 | 6,100 | ● |
| 100 | 8 | 28 | 50.0 | 75 | 37 | 26 | 8.014 | 5 | 2.40 | 8,100 | ● |
| 100 | 10 | 30 | 50.0 | 90 | 41 | 42 | 10.014 | 5 | 2.50 | 10,100 | ● |
| 100 | 12 | 32 | 50.0 | 95 | 46 | 47 | 12.014 | 5 | 2.50 | 12,100 | ● |
| 100 | 14 | 34 | 50.0 | 95 | 46 | 47 | 12.014 | 5 | 2.50 | 14,100 | ● |
| 100 | 16 | 38 | 50.0 | 100 | 49 | 53 | 16.014 | 5 | 2.70 | 16,100 | ● |
| 100 | 18 | 40 | 50.0 | 100 | 49 | 53 | 16.014 | 5 | 2.70 | 18,100 | ● |
| 100 | 20 | 42 | 50.0 | 105 | 51 | 59 | 20.114 | 5 | 3.20 | 20,100 | ● |
| 100 | 25 | 57 | 63.0 | 110 | 57 | 62 | 20.114 | 6 | 3.30 | 25,100 | ● |
| 100 | 32 | 64 | 75.0 | 110 | 61 | 62 | 20.114 | 6 | 3.80 | 32,100 | ● |

HSK-A hydraulic chucks

Product information

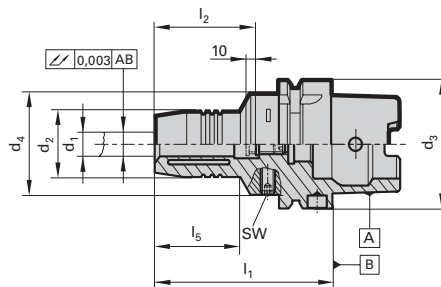
- balancing quality: G6.3 / 15,000 rev./min
- MQL suitable
- axial length setting
- clamping-Ø for shank tolerance h6
- to DIN 69882-7
- also available in the overlength
l₁ 150mm und 200 mm

Scope of delivery

- incl. setting screw Guhring no. 4900
- incl. clamping key Guhring no. 4912
- for conventional cooling, order coolant delivery set, Guhring no. 4949 separately
- for MQL application, order as special tool holder with coolant delivery set, Guhring no. 4924 and setting screw, Guhring no. 4919

Guhring no.

4399



Hydraulic chucks

| | | | | | | | | | | Guhring no. 4399 | |
|----------------------|-------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------------------------|----|------|------------------|--------------|
| HSK-A d ₃ | for clamping-Ø d ₁ h6 mm | d ₂ mm | d ₄ mm | l ₁ mm | l ₂ mm | l ₅ mm | incl. setting screw 4900 ... | SW | kg | Code no. | Availability |
| 32 | 6 | 26 | 40.0 | 80 | 37 | 29 | 6.014 | 4 | 0.44 | 6,032 | ○ |
| 32 | 8 | 28 | 40.0 | 80 | 37 | 29 | 8.014 | 4 | 0.40 | 8,032 | ○ |
| 32 | 10 | 30 | 40.0 | 85 | 41 | 35 | 8.014 | 4 | 0.40 | 10,032 | ○ |
| 32 | 12 | 32 | 40.0 | 90 | 46 | 40 | 8.014 | 4 | 0.40 | 12,032 | ○ |

HSK-A hydraulic chucks with radial length setting

Product information

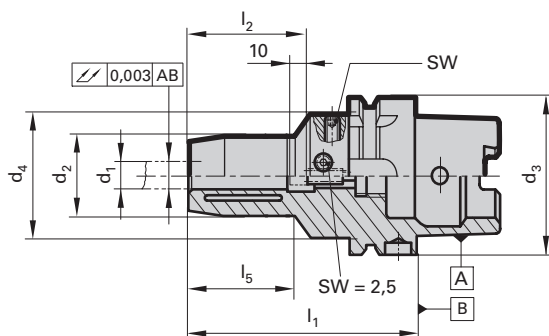
- balancing quality: G6.3 / 15,000 rev./min
- robust, radially operated length setting
- clamping- \emptyset for shank tolerance h6
- to DIN 69882-7

Scope of delivery

- incl. clamping key Guhring no. 4912
- incl. hexagon key inserts for radial length setting
- order coolant delivery set, Guhring no. 4949, separately

Guhring no.

4296



| HSK-A d ₃ | for clamping- \emptyset d ₁ h6 mm | d ₂ mm | d ₄ mm | l ₁ mm | l ₂ mm | l ₅ mm | SW | kg | Code no. | Availability |
|----------------------|--|-------------------|-------------------|-------------------|-------------------|-------------------|----|-----|----------|--------------|
| 50 | 6 | 26 | 40 | 80 | 37 | 35 | 5 | 0.8 | 6,050 | ● |
| 50 | 8 | 28 | 40 | 80 | 37 | 36 | 5 | 0.8 | 8,050 | ● |
| 50 | 10 | 30 | 40 | 85 | 41 | 41 | 5 | 0.9 | 10,050 | ● |
| 50 | 12 | 32 | 40 | 90 | 46 | 47 | 5 | 0.9 | 12,050 | ● |
| 63 | 6 | 26 | 50 | 80 | 37 | 33 | 5 | 1.1 | 6,063 | ● |
| 63 | 8 | 28 | 50 | 80 | 37 | 33.5 | 5 | 1.1 | 8,063 | ● |
| 63 | 10 | 30 | 50 | 85 | 41 | 39 | 5 | 1.1 | 10,063 | ● |
| 63 | 12 | 32 | 50 | 90 | 46 | 44.5 | 5 | 1.2 | 12,063 | ● |
| 63 | 14 | 34 | 50 | 90 | 46 | 46 | 5 | 1.2 | 14,063 | ● |
| 63 | 16 | 38 | 50 | 95 | 49 | 51.5 | 5 | 1.3 | 16,063 | ● |
| 63 | 18 | 40 | 50 | 95 | 49 | 52 | 5 | 1.3 | 18,063 | ● |
| 63 | 20 | 42 | 50 | 100 | 51 | 58 | 5 | 1.4 | 20,063 | ● |
| 63 | 25 | 50 | 63 | 120 | 57 | 51 | 6 | 2.3 | 25,063 | ● |
| 63 | 32 | 60 | 63 | 125 | 61 | 59 | 6 | 2.3 | 32,063 | ● |
| 80 | 6 | 26 | 50 | 85 | 37 | 35 | 5 | 1.5 | 6,080 | ○ |
| 80 | 8 | 28 | 50 | 85 | 37 | 36 | 5 | 1.5 | 8,080 | ○ |
| 80 | 10 | 30 | 50 | 90 | 41 | 38 | 5 | 1.5 | 10,080 | ○ |
| 80 | 12 | 32 | 50 | 95 | 46 | 43 | 5 | 1.6 | 12,080 | ○ |
| 80 | 14 | 34 | 50 | 95 | 46 | 43 | 5 | 1.6 | 14,080 | ○ |
| 80 | 16 | 38 | 50 | 100 | 49 | 46 | 5 | 1.6 | 16,080 | ○ |
| 80 | 18 | 40 | 50 | 100 | 49 | 48 | 5 | 1.8 | 18,080 | ○ |
| 80 | 20 | 42 | 50 | 105 | 51 | 54 | 5 | 1.8 | 20,080 | ○ |
| 80 | 25 | 50 | 63 | 115 | 57 | 51 | 6 | 2.6 | 25,080 | ○ |
| 80 | 32 | 60 | 63 | 125 | 61 | 59 | 6 | 2.6 | 32,080 | ○ |
| 100 | 6 | 26 | 63 | 85 | 37 | 33 | 5 | 2.5 | 6,100 | ● |
| 100 | 8 | 28 | 63 | 85 | 37 | 33 | 5 | 2.7 | 8,100 | ● |
| 100 | 10 | 30 | 63 | 90 | 41 | 36 | 5 | 2.8 | 10,100 | ● |
| 100 | 12 | 32 | 63 | 95 | 46 | 40.5 | 5 | 2.8 | 12,100 | ● |
| 100 | 14 | 34 | 63 | 95 | 46 | 42 | 5 | 2.7 | 14,100 | ● |
| 100 | 16 | 38 | 63 | 100 | 49 | 47.5 | 5 | 2.9 | 16,100 | ● |
| 100 | 18 | 40 | 63 | 100 | 49 | 48 | 5 | 2.8 | 18,100 | ● |
| 100 | 20 | 42 | 63 | 105 | 51 | 54 | 5 | 3.2 | 20,100 | ● |
| 100 | 25 | 50 | 63 | 115 | 57 | 51 | 6 | 3.4 | 25,100 | ● |
| 100 | 32 | 60 | 63 | 120 | 61 | 59 | 6 | 3.4 | 32,100 | ● |

Hydraulic chucks

HSK-A hydraulic chucks with radial length setting

Product information

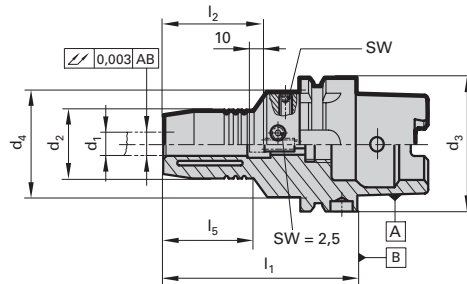
- balancing quality: G6.3 / 15,000 rev./min
- robust, radially operated length setting
- clamping-Ø for shank tolerance h6

Scope of delivery

- incl. clamping key Art.-Nr. 4912
- incl. hexagon key inserts for radial length setting
- order coolant delivery set, Guhring no. 4949 separately

Guhring no.

4396



| HSK-A d_3 | for clamping-Ø d_1 h6 mm | d_2 mm | d_4 mm | l_1 mm | l_2 mm | l_5 mm | SW | kg | Code no. | Availability |
|-------------|----------------------------|----------|----------|----------|----------|----------|----|------|----------|--------------|
| 50 | 6 | 26 | 40 | 80 | 37.0 | 35.0 | 4 | 0.80 | 6,050 | ○ |
| 50 | 8 | 28 | 40 | 80 | 37.0 | 36.0 | 4 | 0.80 | 8,050 | ○ |
| 50 | 10 | 30 | 40 | 85 | 41.0 | 38.0 | 4 | 0.90 | 10,050 | ○ |
| 50 | 12 | 32 | 40 | 90 | 46.0 | 40.0 | 4 | 0.90 | 12,050 | ○ |
| 50 | 14 | 34 | 40 | 90 | 46.0 | 46.0 | 5 | 0.90 | 14,050 | ○ |
| 50 | 16 | 38 | 53 | 95 | 49.0 | 36.5 | 5 | 1.20 | 16,050 | ○ |
| 50 | 18 | 40 | 57 | 95 | 49.0 | 36.5 | 5 | 1.20 | 18,050 | ○ |
| 50 | 20 | 42 | 60 | 100 | 51.0 | 39.0 | 5 | 1.30 | 20,050 | ○ |
| 63 | 6 | 26 | 50 | 80 | 37.0 | 33.0 | 5 | 1.10 | 6,063 | ○ |
| 63 | 8 | 28 | 50 | 80 | 37.0 | 33.0 | 5 | 1.10 | 8,063 | ○ |
| 63 | 10 | 30 | 50 | 85 | 41.0 | 38.0 | 5 | 1.10 | 10,063 | ○ |
| 63 | 12 | 32 | 50 | 90 | 46.0 | 40.0 | 5 | 1.20 | 12,063 | ○ |
| 63 | 14 | 34 | 50 | 90 | 46.0 | 46.0 | 5 | 1.20 | 14,063 | ○ |
| 63 | 16 | 38 | 50 | 95 | 49.0 | 51.0 | 5 | 1.30 | 16,063 | ○ |
| 63 | 18 | 40 | 50 | 95 | 49.0 | 52.0 | 5 | 1.30 | 18,063 | ○ |
| 63 | 20 | 42 | 50 | 100 | 51.0 | 51.0 | 5 | 1.40 | 20,063 | ○ |
| 63 | 25 | 57 | 63 | 120 | 57.0 | 54.5 | 6 | 2.30 | 25,063 | ○ |
| 63 | 32 | 64 | 75 | 125 | 61.0 | 57.5 | 6 | 2.70 | 32,063 | ○ |
| 80 | 6 | 26 | 50 | 85 | 37.2 | 35.5 | 5 | 1.50 | 6,080 | ○ |
| 80 | 8 | 28 | 50 | 85 | 37.2 | 36.0 | 5 | 1.50 | 8,080 | ○ |
| 80 | 10 | 30 | 50 | 90 | 41.0 | 38.0 | 5 | 1.50 | 10,080 | ○ |
| 80 | 12 | 32 | 50 | 95 | 46.0 | 40.0 | 5 | 1.60 | 12,080 | ○ |
| 80 | 14 | 34 | 50 | 95 | 46.0 | 41.0 | 5 | 1.60 | 14,080 | ○ |
| 80 | 16 | 38 | 50 | 100 | 49.0 | 46.0 | 5 | 1.60 | 16,080 | ○ |
| 80 | 18 | 40 | 50 | 100 | 49.0 | 46.0 | 5 | 1.80 | 18,080 | ○ |
| 80 | 20 | 42 | 50 | 105 | 51.0 | 51.0 | 5 | 1.80 | 20,080 | ○ |
| 80 | 25 | 57 | 63 | 115 | 57.0 | 58.5 | 6 | 2.60 | 25,080 | ○ |
| 80 | 32 | 64 | 75 | 125 | 61.0 | 58.5 | 6 | 3.20 | 32,080 | ○ |
| 100 | 6 | 26 | 63 | 85 | 37.0 | 33.0 | 5 | 2.50 | 6,100 | ○ |
| 100 | 8 | 28 | 63 | 85 | 37.0 | 33.0 | 5 | 2.70 | 8,100 | ○ |
| 100 | 10 | 30 | 63 | 90 | 41.0 | 36.0 | 5 | 2.80 | 10,100 | ○ |
| 100 | 12 | 32 | 63 | 95 | 46.0 | 40.0 | 5 | 2.80 | 12,100 | ○ |
| 100 | 14 | 34 | 63 | 95 | 46.0 | 41.0 | 5 | 2.70 | 14,100 | ○ |
| 100 | 16 | 38 | 63 | 100 | 49.0 | 46.0 | 5 | 2.90 | 16,100 | ○ |
| 100 | 18 | 40 | 63 | 100 | 49.0 | 46.0 | 5 | 2.80 | 18,100 | ○ |
| 100 | 20 | 42 | 75 | 105 | 51.0 | 51.0 | 5 | 3.20 | 20,100 | ○ |
| 100 | 25 | 57 | 75 | 115 | 57.3 | 55.5 | 6 | 3.90 | 25,100 | ○ |
| 100 | 32 | 64 | 75 | 120 | 61.0 | 63.5 | 6 | 4.10 | 32,100 | ○ |

Hydraulic chucks

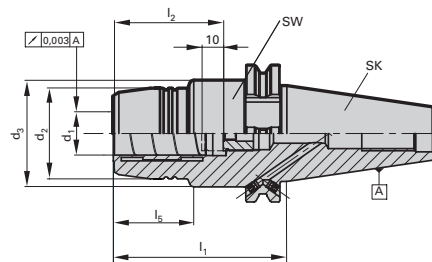
ISO taper hydraulic chucks DIN 69871 with increased clamping force

Product information

- for ISO40/50 to DIN 69871 AD/B
- form B supplied with threaded pins in bores
- balancing quality: G6.3 / 15,000 rev./min
- axial length setting
- clamping-Ø for shank tolerance h6

Scope of delivery

- incl. setting screw Guhring no. 4900
- incl. clamping key Guhring no. 4912
- order draw bolt Guhring no. 4925, 4926 separately



Guhring no.

4213



| SK | for clamping-Ø d1 h6 mm | d2 mm | d3 mm | l1 mm | l2 mm | l5 mm | incl. setting screw 4900 ... | SW | kg | Code no. | Availability |
|----|-------------------------|-------|-------|-------|-------|-------|------------------------------|----|-----|----------|--------------|
| 40 | 12 | 32.0 | 49.5 | 80.5 | 46 | 31.5 | 12,014 | 5 | 1.4 | 12,040 | ● |
| 40 | 20 | 49.5 | 49.5 | 64.5 | 51 | – | 20,114 | 6 | 1.4 | 20,040 | ● |
| 40 | 20 | 42.0 | 49.5 | 80.5 | 51 | 34.0 | 20,114 | 6 | 1.5 | 20,140 | ● |
| 40 | 20 | 42.0 | 49.5 | 110.0 | 51 | 34.0 | 20,114 | 6 | 1.9 | 20,240 | ● |
| 50 | 20 | 42.0 | 49.5 | 80.5 | 51 | 34.0 | 20,114 | 6 | 4.1 | 20,050 | ● |
| 50 | 20 | 42.0 | 49.5 | 110.0 | 51 | 34.0 | 20,114 | 6 | 3.7 | 20,150 | ● |
| 50 | 32 | 72.0 | 72.0 | 81.0 | 61 | – | 20,114 | 6 | 4.1 | 32,050 | ● |

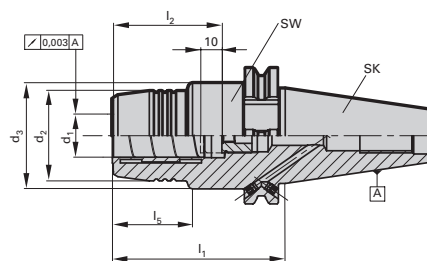
ISO taper hydraulic chucks DIN 69871

Product information

- for ISO40/50 to DIN 69871 AD/B
- form B supplied with threaded pins in bores
- balancing quality: G6.3 / 15,000 rev./min
- axial length setting
- clamping-Ø for shank tolerance h6

Scope of delivery

- incl. setting screw Guhring no. 4900
- incl. clamping key Guhring no. 4912
- order draw bolt Guhring no. 4925, 4926 separately



Guhring no.

4313



| SK | for clamping-Ø d1 h6 mm | d2 mm | d3 mm | l1 mm | l2 mm | l5 mm | incl. setting screw 4900 ... | SW | kg | Code no. | Availability |
|----|-------------------------|-------|-------|-------|-------|-------|------------------------------|----|-----|----------|--------------|
| 40 | 12 | 32.0 | 49.5 | 80.5 | 46 | 31.5 | 12,014 | 5 | 1.4 | 12,040 | ○ |
| 40 | 20 | 49.5 | 49.5 | 64.5 | 51 | – | 20,014 | 6 | 1.4 | 20,040 | ○ |
| 40 | 20 | 42.0 | 49.5 | 80.5 | 51 | 34.0 | 20,014 | 6 | 1.5 | 20,140 | ○ |
| 40 | 20 | 42.0 | 49.5 | 110.0 | 51 | 34.0 | 20,014 | 6 | 1.9 | 20,240 | ○ |
| 50 | 20 | 42.0 | 49.5 | 80.5 | 51 | 34.0 | 20,014 | 6 | 4.1 | 20,050 | ○ |
| 50 | 20 | 42.0 | 49.5 | 110.0 | 51 | 34.0 | 20,014 | 6 | 3.7 | 20,150 | ○ |
| 50 | 32 | 72.0 | 72.0 | 81.0 | 61 | – | 20,014 | 6 | 4.1 | 32,050 | ○ |

MAS/BT hydraulic chucks with increased clamping force

Product information

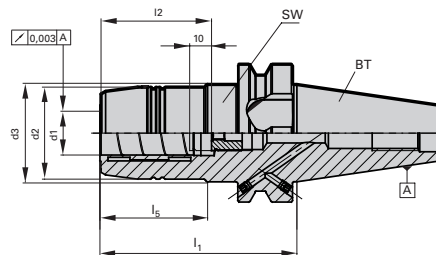
- MAS BT to JIS B 6339
- coolant delivery to DIN 69871 AD/B
- form B supplied with threaded pins in bores
- balancing quality: G6.3 / 15,000 rev./min
- clamping-Ø for shank tolerance h6

Scope of delivery

- incl. setting screw, Guhring no. 4900
- incl. clamping key, Guhring no. 4912
- order draw bolt, Guhring no. 4927, 4928 separately

Guhring no.

4221



| BT | for clamping-Ø d1 h6 mm | d2 mm | d3 mm | l1 mm | l2 mm | l5 mm | incl. setting screw 4900 ... | SW | kg | Code no. | Availability |
|----|----------------------------|----------|----------|----------|----------|----------|------------------------------------|----|-----|----------|--------------|
| 40 | 12 | 32 | 44.5 | 90.0 | 46 | 44.5 | 12,014 | 5 | 1.4 | 12,040 | ● |
| 40 | 20 | – | 49.5 | 72.5 | 51 | – | 20,114 | 6 | 1.4 | 20,040 | ● |
| 40 | 20 | 42 | 44.5 | 90.0 | 51 | 47.5 | 20,114 | 6 | 1.5 | 20,140 | ● |
| 50 | 20 | 42 | 44.5 | 90.0 | 51 | 34.0 | 20,114 | 6 | 4.0 | 20,050 | ● |
| 50 | 32 | – | 72.0 | 90.0 | 61 | – | 20,114 | 6 | 4.1 | 32,050 | ● |

MAS/BT hydraulic chucks

Product information

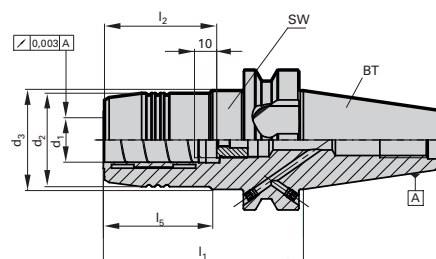
- MAS BT to JIS B 6339
- coolant delivery to DIN 69871 AD/B
- form B supplied with threaded pins in bores
- balancing quality: G6.3 / 15,000 rev./min
- clamping-Ø for shank tolerance h6

Scope of delivery

- incl. setting screw, Guhring no. 4900
- incl. clamping key, Guhring no. 4912
- order draw bolt, Guhring no. 4927, 4928 separately

Guhring no.

4321



| BT | for clamping-Ø d1 h6 mm | d2 mm | d3 mm | l1 mm | l2 mm | l5 mm | incl. setting screw 4900 ... | SW | kg | Code no. | Availability |
|----|----------------------------|----------|----------|----------|----------|----------|------------------------------------|----|-----|----------|--------------|
| 40 | 12 | 32 | 44.5 | 90.0 | 46 | 44.5 | 12,014 | 5 | 1.4 | 12,040 | ○ |
| 40 | 20 | – | 49.5 | 72.5 | 51 | – | 20,014 | 6 | 1.4 | 20,040 | ○ |
| 40 | 20 | 42 | 44.5 | 90.0 | 51 | 47.5 | 20,014 | 6 | 1.5 | 20,140 | ○ |
| 50 | 20 | 42 | 44.5 | 90.0 | 51 | 34.0 | 20,014 | 6 | 4.0 | 20,050 | ○ |
| 50 | 32 | – | 72.0 | 90.0 | 61 | – | 20,014 | 6 | 4.1 | 32,050 | ○ |

Extraction key for reduction bushes

Product information

- for Guhring no. 4368 and 4369
- for the simple removal of reduction bushes

Guhring no.

4099



| for reduction bushes d ₁ | Code no. | Availability |
|---|----------|--------------|
| 12 to 32 | 1,000 | • |
| | | |
| | | |

Senso 3000

Product information

- accurate, quick and simple measuring of the clamping force of hydraulic chucks
- mobility allows measuring within machines and fixtures
- determines clamping force via a pressure sensitive plug gauge
- display of absolute measuring value or percentage clamping force in relation to reference value

Scope of delivery

- incl. carbide proofing bar for determining the torque
- incl. type CR 2430 battery
- incl. sturdy case

Guhring no.

4038



| clamping diameter mm | kg | Code no. | Availability |
|-------------------------|-----|----------|--------------|
| 6.0 | 1.1 | 6,000 | • |
| 8.0 | 1.1 | 8,000 | • |
| 10.0 | 1.3 | 10,000 | • |
| 12.0 | 1.3 | 12,000 | • |
| 14.0 | 1.3 | 14,000 | • |
| 16.0 | 1.3 | 16,000 | • |
| 18.0 | 1.5 | 18,000 | • |
| 20.0 | 1.5 | 20,000 | • |
| 25.0 | 2.0 | 25,000 | • |
| 32.0 | 2.5 | 32,000 | • |

Hydraulic chucks

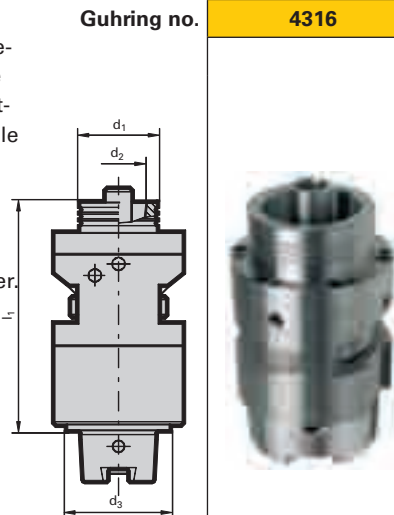
Universal HSK length pre-setting adaptors

Product information

- for application with pre-setting facilities for the accurate length pre-setting of axially adjustable chucks.
- thanks to precise clamping also suitable for measuring and setting the diameter.

Scope of delivery

- order plug insert, Guhring no. 4993, separately



| HSK-C d ₃ | for HSK-A/C/E d ₁ | d ₂ mm | l ₁ mm | Code no. | Availability |
|----------------------|------------------------------|-------------------|-------------------|----------|--------------|
| 63 | 50 | 38 | 104.6 | 63,050 | ● |
| 63 | 63 | 48 | 111.6 | 63,063 | ● |
| | | | | | |
| | | | | | |

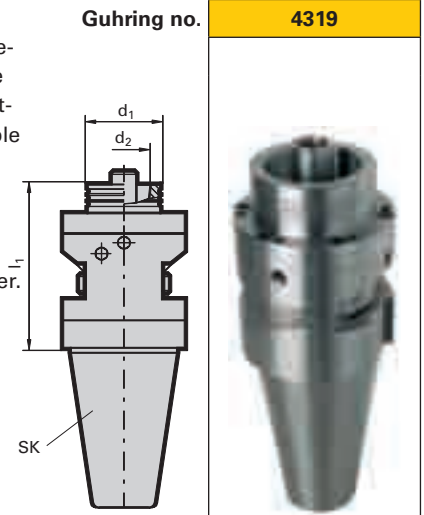
Universal ISO taper length pre-setting adaptors

Product information

- for application with pre-setting facilities for the accurate length pre-setting of axially adjustable chucks.
- thanks to precise clamping also suitable for measuring and setting the diameter.

Scope of delivery

- order plug insert, Guhring no. 4993, separately

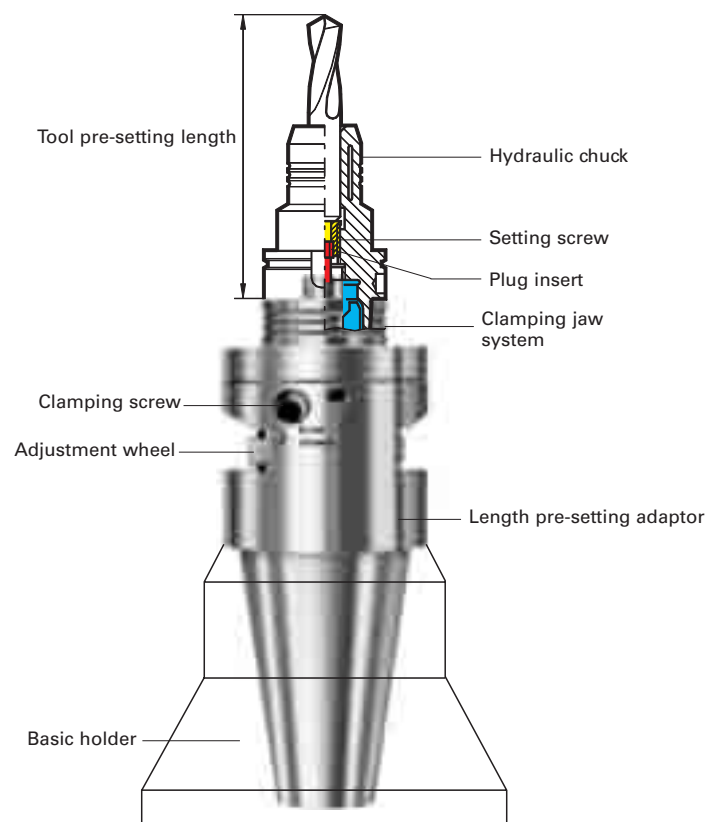


| SK | for HSK-A/C/E d ₁ | d ₂ mm | l ₁ mm | Code no. | Availability |
|----|------------------------------|-------------------|-------------------|----------|--------------|
| 40 | 50 | 38 | 99.3 | 40,050 | ● |
| 40 | 63 | 48 | 106.3 | 40,063 | ● |
| 50 | 32 | 24 | 90.5 | 50,032 | ● |
| 50 | 40 | 30 | 93.8 | 50,040 | ● |
| 50 | 50 | 38 | 99.3 | 50,050 | ● |
| 50 | 63 | 48 | 106.3 | 50,063 | ● |
| 50 | 100 | 75 | 128.3 | 50,100 | ● |

Design features

of the universal length pre-setting adaptor

- tool length pre-setting via an external adjustment wheel
- tool length optimally pre-set in the universal length pre-setting adaptor via 3-point clamping system similar to a tool spindle.
- controlling concentricity of cutting edges and simultaneous axial length pre-setting possible on pre-setting adaptor.
- applicable are tool holders such as **hydraulic chucks**, collet holders, side lock holders DIN 1835 E
- access hole in taper not required, all HSK forms from HSK-A to HSK-F can be applied.
- axial length pre-setting via plug insert set, Guhring no. 4993.
- if a radial rotation of your pre-setting equipment is not possible, a rotatable version of the universal length pre-setting adaptor is available (on request).
- cannot be applied for cutting operations.
- not necessary to remove coolant supply.



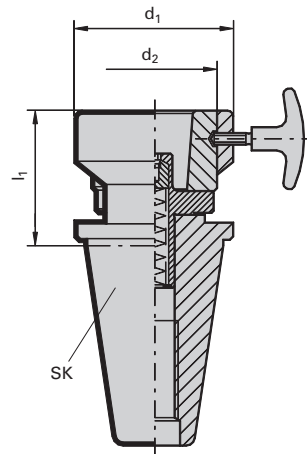
ISO taper length pre-setting adaptor

Product information

- application without removal of coolant supply
- simple design with radial clamping for measuring tool length
- for the application on pre-setting equipment for precise length pre-setting of axially adjustable chucks

Scope of delivery

- incl. taper insert, Guhring no. 4992
- order separately:
plug inserts, Guhring no. 4993



Guhring no.

4315

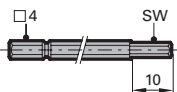


| SK | for HSK-A/C/E | d ₁ mm | d ₂ mm | l ₁ mm | Code no. | Availability |
|----|---------------|-------------------|-------------------|-------------------|----------|--------------|
| 40 | 32 | 80 | 63 | 68.2 | 40,032 | • |
| 40 | 40 | 80 | 63 | 68.2 | 40,040 | • |
| 40 | 50 | 80 | 63 | 68.2 | 40,050 | • |
| 40 | 63 | 80 | 63 | 68.2 | 40,063 | • |
| 50 | 25 | 80 | 63 | 68.2 | 50,025 | • |
| 50 | 32 | 80 | 63 | 68.2 | 50,032 | • |
| 50 | 40 | 80 | 63 | 68.2 | 50,040 | • |
| 50 | 50 | 80 | 63 | 68.2 | 50,050 | • |
| 50 | 63 | 80 | 63 | 68.2 | 50,063 | • |
| 50 | 80 | 120 | 100 | 88.2 | 50,080 | • |
| 50 | 100 | 120 | 100 | 88.2 | 50,100 | • |

Plug inserts

Product information

- for length pre-setting adaptors, Guhring nos. 4316, 4319 and 4315



Guhring no.

4993

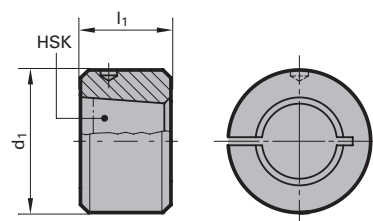


| for HSK | Set with key sizes | Code no. | Availability |
|-------------|--------------------|----------|--------------|
| C | 2.5/3/4/5/6 | 100,000 | • |
| A/E | 2.5/3/4/5/6 | 200,000 | • |
| A (for MQL) | 3/4/5 | 300,000 | • |

Taper inserts

Product information

- for length pre-setting adaptor, Guhring no. 4315



Guhring no.

4992

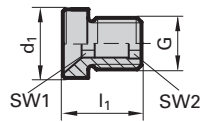


| for HSK-A/C/E | d mm | L mm | Code no. | Availability |
|---------------|------|------|----------|--------------|
| 25 | 63 | 40 | 25,000 | • |
| 32 | 63 | 40 | 32,000 | • |
| 40 | 63 | 40 | 40,000 | • |
| 50 | 63 | 40 | 50,000 | • |
| 63 | 63 | 40 | 63,000 | • |
| 80 | 100 | 55 | 80,000 | • |
| 100 | 100 | 55 | 100,000 | • |

MQL length pre-setting screws

Product information

- for hydraulic chucks and shrink fit chucks
- optimised for MQL with special geometry
- with tapered stop for MQL taper shank ends



Guhring no.

4919

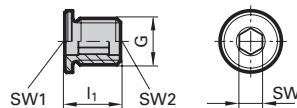


| G | d ₁ mm | l ₁ mm | SW1 | SW2 | Code no. | Availability |
|-------|----------------------|----------------------|-----|-----|----------|--------------|
| M5 | 6 | 14,8 | 2,5 | 2,5 | 6,000 | • |
| M6 | 8 | 15,6 | 3,0 | 3,0 | 8,000 | • |
| M8x1 | 10 | 16,1 | 4,0 | 4,0 | 10,000 | • |
| M8x1 | 10 | 16,6 | 3,0 | 3,0 | 10,040 | • |
| M6 | 10 | 16,6 | 3,0 | 3,0 | 10,032 | • |
| M10x1 | 12 | 16,6 | 5,0 | 5,0 | 12,000 | • |
| M6 | 12 | 17,6 | 3,0 | 3,0 | 12,032 | • |
| M10x1 | 14 | 17,6 | 5,0 | 5,0 | 14,000 | • |
| M6 | 14 | 18,6 | 3,0 | 3,0 | 14,040 | • |
| M12x1 | 16 | 18,6 | 5,0 | 5,0 | 16,000 | • |
| M6 | 16 | 19,6 | 3,0 | 3,0 | 16,040 | • |
| M12x1 | 18 | 19,6 | 5,0 | 5,0 | 18,000 | • |
| M16x1 | 20 | 20,6 | 5,0 | 5,0 | 20,000 | • |
| M16x1 | 25 | 22,6 | 8,0 | 6,0 | 25,000 | • |
| M16x1 | 32 | 26,1 | 8,0 | 6,0 | 32,000 | • |

Adjustment screws

Product information

- for hydraulic chucks and shrink fit chucks
- for conventional internal cooling
- with facing stop for standard shank ends
- for DSF-HSK 32/40 with clamping-Ø 10,0 and 12,0 mm use code no. 8,014



Guhring no.

4900



| for clamping-Ø | G | l ₁ mm | SW1 | SW2 | Code no. | Availability |
|-------------------|-------|----------------------|-----|-----|----------|--------------|
| 6 | M5 | 14 | 2,5 | 2,5 | 6,014 | • |
| 8 | M6 | 14 | 3,0 | 3,0 | 8,014 | • |
| 10 | M8x1 | 14 | 4,0 | 4,0 | 10,014 | • |
| 12/14 | M10x1 | 14 | 5,0 | 5,0 | 12,014 | • |
| 16/18 | M12x1 | 14 | 6,0 | 6,0 | 16,014 | • |
| 20/25/32 | M16x1 | 14 | 6,0 | 6,0 | 20,014 | • |
| 20/25/32 | M16x1 | 14 | 8,0 | 6,0 | 20,114 | • |

SHRINK FIT TECHNOLOGY



- **Shrink fit technology**

- Technology and advantages
- Shrink fit chucks and extensions
- Shrink fit systems

from page 82

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from page 95

Technology and advantages

Guhring's shrink fit chucks ensure an optimal connection between shrink fit chuck and shank tool.

While some manufacturers use conventional case hardened steel, Guhring applies a special, application orientated tool steel. The result is an increased expansion rate as well as improved temperature adaptability. There is no limit to the number of shrink fit insertion or withdrawal operations.

Advantages:

- short shrink fit times
- maximum clamping force
- shrink fit chucks available for tool shank diameters from 3 mm to 32 mm
- longevity

These advantages are of particular interest in the field of HSC milling, difficult and rough cutting operations, drilling, reaming and internal grinding operations as well as for woodworking.

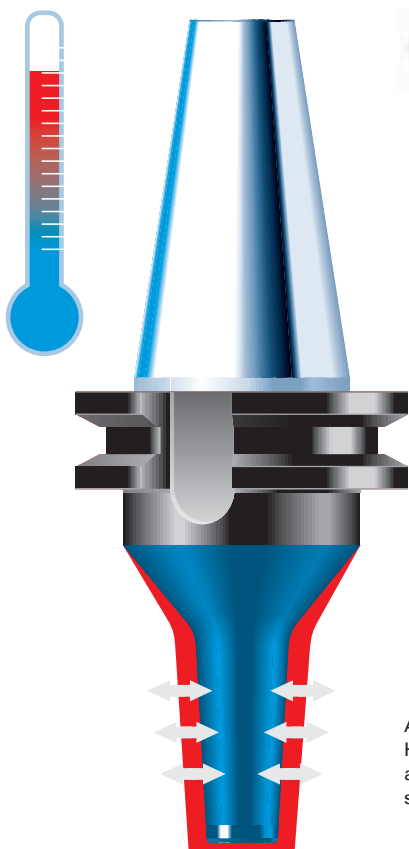
Convincing characteristics:

- excellent concentricity
- extreme clamping force and rigidity
- improved tool life
- insignificant imbalance through rotation symmetry
- economic efficiency

Perfect team: Guhring shrink fit chucks and shrink fit systems

For the shrink fitting for withdrawal and insertion of tools in our shrink fit chucks we offer various shrink fit systems to satisfy individual customer requirements: From high-tech solutions with integrated, highly accurate length pre-setting and special shrink fit systems for extra long tools to the cost-efficient HSV 2000 hot-air shrink fit system:

- GISS 5000
- GISS 4000
- GISS 3000
- GISS 2500
- GISS 2000
- HSV 2000

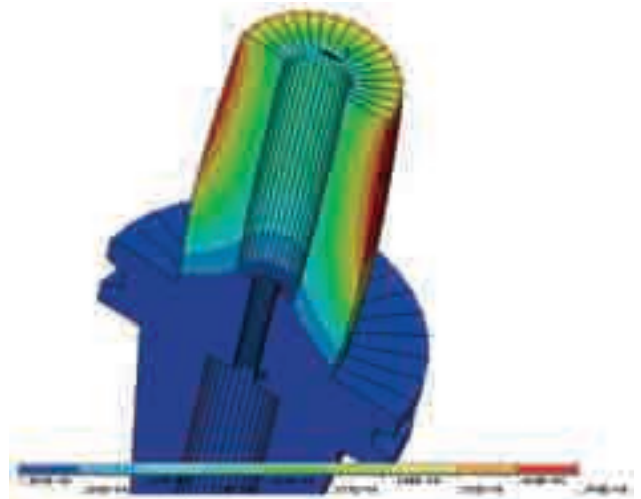


A gripping principle: Heating and cooling ensures an optimal connection between shrink fit chuck and shank tool.

A gripping principle

When shrink fitting tools in shrink fit chucks, the decisive factors for ensuring the safe clamping of the tool in the tool holder are solely the heating and cooling of the tool holder. The heating process expands the shrink fit chuck enabling a tool to be inserted or withdrawn respectively. During the cooling process it contracts again and clamps the inserted tool with maximum clamping force.

Because the shrink fit chucks can become extremely hot in localised areas during the heating process and the tools shrink fitted for insertion or withdrawal respectively possess very sharp cutting edges, it is paramount that the operator wears Kevlar gloves during the shrink fit operation to prevent burns and cuts to the hands.



Shrink fit extensions: Increase performance

Shrink fit extensions increase the scope of a tool's performance and reduce tool surface imperfections. As with shrink fit chucks, the tool is clamped in the shrink fit extension and ideally in an hydraulic chuck. Naturally, shrink fit extensions can also be clamped in shrink fit chucks.



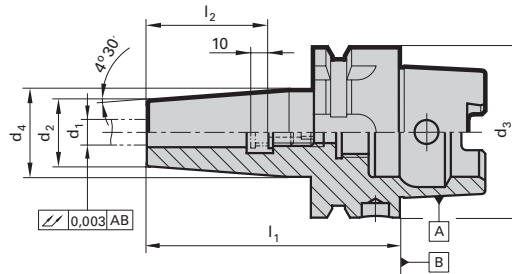
HSK-A shrink fit chucks

Produkt-Informationen

- balancing quality G6.3 at 15,000 rev./min
- MQL suitable
- for tool shank tolerance h6
- to DIN 69882-8
- also available in the lengths $l_1 = 120$ mm and 160 mm (concentricity 5 μ m)

Scope of delivery

- incl. setting screw, Guhring no. 4977 or 4904
- for conventional cooling order coolant delivery set, Guhring no. 4949, separately
- for MQL application order as special tool holder with coolant delivery set, Guhring no. 4924 and setting screw, Guhring no. 4919
- special dimensions on request



Guhring no.

4736



| HSK-A d ₃ | for clamping-Ø d ₁ h6 mm | d ₂ mm | d ₄ mm | l ₁ mm | l ₂ mm | incl. setting screw Guh.no. Code no. | | kg | Code no. | Availability |
|-------------------------|---|----------------------|----------------------|----------------------|----------------------|--|--------|------|----------|--------------|
| 32 | 6 | 21 | 25.5 | 70 | 36 | 4977 | 6,014 | 0.29 | 6,032 | ● |
| 32 | 8 | 21 | 25.5 | 70 | 36 | 4977 | 8,014 | 0.28 | 8,032 | ● |
| 32 | 10 | 24 | 30.0 | 75 | 41 | 4977 | 10,014 | 0.33 | 10,032 | ● |
| 32 | 12 | 24 | 30.0 | 80 | 46 | 4977 | 12,014 | 0.33 | 12,032 | ● |
| 40 | 6 | 21 | 27.0 | 80 | 36 | 4977 | 6,014 | 0.40 | 6,040 | ● |
| 40 | 8 | 21 | 27.0 | 80 | 36 | 4977 | 8,014 | 0.40 | 8,040 | ● |
| 40 | 10 | 24 | 32.0 | 80 | 41 | 4977 | 10,014 | 0.47 | 10,040 | ● |
| 40 | 12 | 24 | 32.0 | 90 | 46 | 4977 | 12,014 | 0.51 | 12,040 | ● |
| 40 | 14 | 27 | 33.5 | 90 | 46 | 4977 | 12,014 | 0.56 | 14,040 | ● |
| 40 | 16 | 27 | 33.5 | 90 | 49 | 4977 | 16,014 | 0.54 | 16,040 | ● |
| 50 | 6 | 21 | 27.0 | 80 | 36 | 4977 | 6,014 | 0.57 | 6,050 | ● |
| 50 | 8 | 21 | 27.0 | 80 | 36 | 4977 | 8,014 | 0.58 | 8,050 | ● |
| 50 | 10 | 24 | 32.0 | 85 | 41 | 4977 | 10,014 | 0.65 | 10,050 | ● |
| 50 | 12 | 24 | 32.0 | 90 | 46 | 4977 | 12,014 | 0.67 | 12,050 | ● |
| 50 | 14 | 27 | 34.0 | 90 | 46 | 4977 | 12,014 | 0.72 | 14,050 | ● |
| 50 | 16 | 27 | 34.0 | 95 | 49 | 4977 | 16,014 | 0.73 | 16,050 | ● |
| 50 | 18 | 33 | 41.5 | 95 | 49 | 4977 | 16,014 | 0.90 | 18,050 | ● |
| 50 | 20 | 33 | 41.5 | 100 | 51 | 4977 | 20,114 | 0.92 | 20,050 | ● |
| 63 | 3 | 10 | 18.0 | 80 | 30 | 4904 | 5,016 | 0.70 | 3,063 | ● |
| 63 | 4 | 10 | 18.0 | 80 | 35 | 4904 | 6,016 | 0.70 | 4,063 | ● |
| 63 | 5 | 10 | 18.0 | 80 | 40 | 4904 | 8,018 | 0.70 | 5,063 | ● |
| 63 | 6 | 21 | 27.0 | 80 | 36 | 4977 | 6,014 | 0.83 | 6,063 | ● |
| 63 | 8 | 21 | 27.0 | 80 | 36 | 4977 | 8,014 | 0.82 | 8,063 | ● |
| 63 | 10 | 24 | 32.0 | 85 | 41 | 4977 | 10,014 | 0.91 | 10,063 | ● |
| 63 | 12 | 24 | 32.0 | 90 | 46 | 4977 | 12,014 | 0.92 | 12,063 | ● |
| 63 | 14 | 27 | 34.0 | 90 | 46 | 4977 | 12,014 | 0.97 | 14,063 | ● |
| 63 | 16 | 27 | 34.0 | 95 | 49 | 4977 | 16,014 | 0.98 | 16,063 | ● |
| 63 | 18 | 33 | 42.0 | 95 | 49 | 4977 | 16,014 | 1.16 | 18,063 | ● |
| 63 | 20 | 33 | 42.0 | 100 | 51 | 4977 | 20,114 | 1.18 | 20,063 | ● |
| 63 | 25 | 44 | 52.5 | 115 | 57 | 4977 | 20,114 | 1.77 | 25,063 | ● |
| 63 | 32 | 44 | 52.5 | 120 | 61 | 4977 | 20,114 | 1.69 | 32,063 | ● |
| 63 | 3 | 10 | 25.0 | 120 | 30 | 4904 | 5,016 | 0.80 | 203,063 | ● |
| 63 | 4 | 10 | 25.0 | 120 | 35 | 4904 | 6,016 | 0.80 | 204,063 | ● |
| 63 | 5 | 10 | 25.0 | 120 | 40 | 4904 | 8,018 | 0.80 | 205,063 | ● |
| 63 | 6 | 21 | 27.0 | 120 | 36 | 4977 | 6,014 | 0.90 | 206,063 | ● |
| 63 | 8 | 21 | 27.0 | 120 | 36 | 4977 | 8,014 | 0.95 | 208,063 | ● |
| 63 | 10 | 24 | 32.0 | 120 | 41 | 4977 | 10,014 | 1.10 | 210,063 | ● |
| 63 | 12 | 24 | 32.0 | 120 | 46 | 4977 | 12,014 | 1.20 | 212,063 | ● |
| 63 | 3 | 10 | 31.0 | 160 | 30 | 4904 | 5,016 | 0.90 | 103,063 | ● |
| 63 | 4 | 10 | 31.0 | 160 | 35 | 4904 | 6,016 | 0.90 | 104,063 | ● |
| 63 | 5 | 10 | 31.0 | 160 | 40 | 4904 | 8,018 | 0.90 | 105,063 | ● |
| 63 | 6 | 21 | 27.0 | 160 | 36 | 4977 | 6,014 | 0.83 | 106,063 | ● |
| 63 | 8 | 21 | 27.0 | 160 | 36 | 4977 | 8,014 | 0.82 | 108,063 | ● |

GUHROJET HSK-A shrink fit chucks with peripheral cooling

Product information

- Optimised cooling for tools without internal coolant ducts
- Good chip evacuation and increased process reliability
- balancing quality G6.3 / 15,000 rev./min
- for tool shank tolerance h6

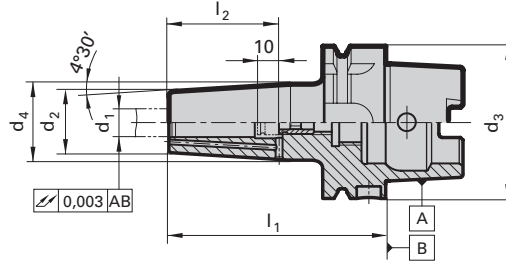
Scope of delivery

- incl. setting screw (special)
- for application with internal cooling, order coolant delivery set Guhring no. 4949 separately
- Special dimensions on request

Guhring no.

4755

GÜHROJET



| HSK-A d ₃ | for clamping-Ø d ₁ h6 mm | d ₂ mm | d ₄ mm | l ₁ mm | l ₂ mm | kg | Code no. | Availability |
|-------------------------|---|----------------------|----------------------|----------------------|----------------------|-----|----------|--------------|
| 63 | 6 | 21 | 27.0 | 80 | 36 | 0.8 | 6,063 | • |
| 63 | 8 | 21 | 27.0 | 80 | 36 | 0.8 | 8,063 | • |
| 63 | 10 | 24 | 32.0 | 85 | 41 | 0.9 | 10,063 | • |
| 63 | 12 | 24 | 32.0 | 90 | 46 | 0.9 | 12,063 | • |
| 63 | 14 | 27 | 34.0 | 90 | 46 | 1.0 | 14,063 | • |
| 63 | 16 | 27 | 34.0 | 95 | 49 | 1.0 | 16,063 | • |
| 63 | 18 | 33 | 42.0 | 95 | 49 | 1.2 | 18,063 | • |
| 63 | 20 | 33 | 42.0 | 100 | 51 | 1.2 | 20,063 | • |



**The perfect combination
from one reliable supplier:
High performance milling cutters
and GühroJet shrink fit chucks
made by Guhring**

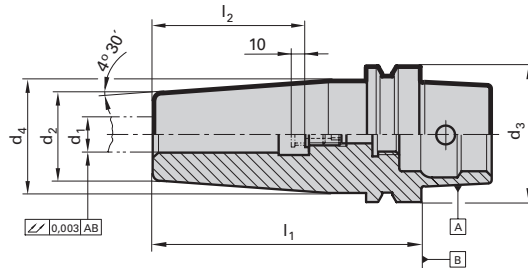
HSK-E shrink fit chucks

Product information

- balancing quality G6.3 / 15.000 rev./min
- for tool shank tolerance h6

Scope of delivery

- incl. setting screw Guhring no. 4977 or 4904 respectively
- for conventional cooling, order coolant delivery set Guhring no. 4949, separately
- special dimensions on request



Guhring no.

4737



| HSK-E d ₃ | for clamping-Ø d ₁ h6 mm | d ₂ mm | d ₄ mm | l ₁ mm | l ₂ mm | incl. setting screw Guh.no. Code no. | kg | Code no. | Availability |
|-------------------------|---|----------------------|----------------------|----------------------|----------------------|--|------|----------|--------------|
| 32 | 3 | 10 | 16 | 60 | - | - | 0.16 | 3,032 | • |
| 32 | 4 | 10 | 16 | 60 | - | - | 0.16 | 4,032 | • |
| 32 | 5 | 10 | 16 | 60 | - | - | 0.16 | 5,032 | • |
| 32 | 6 | 21 | 26 | 70 | 36 | 4977 6,014 | 0.18 | 6,032 | • |
| 32 | 8 | 21 | 26 | 70 | 36 | 4977 8,014 | 0.20 | 8,032 | • |
| 32 | 10 | 24 | 29 | 75 | 41 | 4977 10,014 | 0.25 | 10,032 | • |
| 32 | 12 | 24 | 29 | 80 | 46 | 4977 12,014 | 0.25 | 12,032 | • |
| 40 | 3 | 10 | 19 | 80 | - | - | 0.28 | 3,040 | • |
| 40 | 4 | 10 | 19 | 80 | - | - | 0.28 | 4,040 | • |
| 40 | 5 | 10 | 19 | 80 | - | - | 0.27 | 5,040 | • |
| 40 | 6 | 21 | 27 | 80 | 36 | 4977 6,014 | 0.41 | 6,040 | • |
| 40 | 8 | 21 | 27 | 80 | 36 | 4977 8,014 | 0.41 | 8,040 | • |
| 40 | 10 | 24 | 32 | 80 | 41 | 4977 10,014 | 0.48 | 10,040 | • |
| 40 | 12 | 24 | 32 | 90 | 46 | 4977 12,014 | 0.52 | 12,040 | • |
| 40 | 14 | 27 | 34 | 90 | 46 | 4977 12,014 | 0.57 | 14,040 | • |
| 40 | 16 | 27 | 34 | 90 | 49 | 4977 16,014 | 0.55 | 16,040 | • |
| 50 | 3 | 10 | 18 | 80 | 30 | 4904 5,016 | 0.49 | 3,050 | • |
| 50 | 4 | 10 | 18 | 80 | 35 | 4904 6,016 | 0.49 | 4,050 | • |
| 50 | 5 | 10 | 18 | 80 | - | - | 0.49 | 5,050 | • |
| 50 | 6 | 21 | 27 | 80 | 36 | 4977 6,014 | 0.59 | 6,050 | • |
| 50 | 8 | 21 | 27 | 80 | 36 | 4977 8,014 | 0.58 | 8,050 | • |
| 50 | 10 | 24 | 32 | 85 | 41 | 4977 10,014 | 0.57 | 10,050 | • |
| 50 | 12 | 24 | 32 | 90 | 46 | 4977 12,014 | 0.69 | 12,050 | • |
| 50 | 14 | 27 | 34 | 90 | 46 | 4977 12,014 | 0.74 | 14,050 | • |
| 50 | 16 | 27 | 34 | 95 | 49 | 4977 16,014 | 0.75 | 16,050 | • |
| 50 | 18 | 33 | 42 | 95 | 49 | 4977 16,014 | 0.92 | 18,050 | • |
| 50 | 20 | 33 | 42 | 100 | 51 | 4977 20,114 | 0.94 | 20,050 | • |
| 63 | 6 | 21 | 27 | 80 | 36 | 4977 6,014 | 0.86 | 6,063 | • |
| 63 | 8 | 21 | 27 | 80 | 36 | 4977 8,014 | 0.85 | 8,063 | • |
| 63 | 10 | 24 | 32 | 85 | 41 | 4977 10,014 | 0.94 | 10,063 | • |
| 63 | 12 | 24 | 32 | 90 | 46 | 4977 12,014 | 0.96 | 12,063 | • |
| 63 | 14 | 27 | 34 | 90 | 46 | 4977 12,014 | 1.01 | 14,063 | • |
| 63 | 16 | 27 | 34 | 95 | 49 | 4977 16,014 | 1.02 | 16,063 | • |
| 63 | 18 | 33 | 42 | 95 | 49 | 4977 16,014 | 1.19 | 18,063 | • |
| 63 | 20 | 33 | 42 | 100 | 51 | 4977 20,114 | 1.21 | 20,063 | • |
| 63 | 25 | 44 | 53 | 115 | 57 | 4977 20,114 | 1.80 | 25,063 | • |
| 63 | 32 | 44 | 53 | 120 | 61 | 4977 20,114 | 1.73 | 32,063 | • |

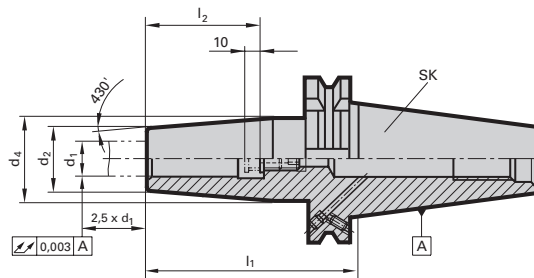
ISO taper shrink fit chucks DIN 69871 form AD/B

Product information

- balancing quality G6.3 / 15,000 rev./min
- for ISO40/50 to DIN 69871 form AD/B
- form B supplied with threaded pins in bores
- for tool shank tolerance h6
- also available in the lengths $l_1 = 120$ mm and 160 mm (concentricity 5 μ m)

Scope of delivery

- incl. setting screw Guhring no. 4977 or 4904 respectively
- order draw bolt Guhring nos. 4925, 4926 separately
- special dimensions on request



Guhring no.

4738



| SK | for clamping- \emptyset d_1 h6 mm | d_2 mm | d_4 mm | l_1 mm | l_2 mm | incl. setting screw Guh.no. Code no. | | kg | Code no. | Availability |
|----|---------------------------------------|----------|----------|----------|----------|--------------------------------------|--------|------|----------|--------------|
| 40 | 3 | 10 | 18 | 80 | 30 | 4904 | 5,016 | 0.90 | 3,040 | ● |
| 40 | 4 | 10 | 18 | 80 | 35 | 4904 | 6,016 | 0.90 | 4,040 | ● |
| 40 | 5 | 10 | 18 | 80 | 40 | 4904 | 8,018 | 0.90 | 5,040 | ● |
| 40 | 6 | 21 | 27 | 80 | 36 | 4977 | 6,014 | 1.00 | 6,040 | ● |
| 40 | 8 | 21 | 27 | 80 | 36 | 4977 | 8,014 | 1.00 | 8,040 | ● |
| 40 | 10 | 24 | 32 | 80 | 41 | 4977 | 10,014 | 1.10 | 10,040 | ● |
| 40 | 12 | 24 | 32 | 80 | 46 | 4977 | 12,014 | 1.00 | 12,040 | ● |
| 40 | 14 | 27 | 34 | 80 | 46 | 4977 | 12,014 | 1.10 | 14,040 | ● |
| 40 | 16 | 27 | 34 | 80 | 49 | 4977 | 16,014 | 1.10 | 16,040 | ● |
| 40 | 18 | 33 | 42 | 80 | 49 | 4977 | 16,014 | 1.20 | 18,040 | ● |
| 40 | 20 | 33 | 42 | 80 | 51 | 4977 | 20,114 | 1.50 | 20,040 | ● |
| 40 | 25 | 44 | 53 | 100 | 57 | 4977 | 20,114 | 1.50 | 25,040 | ● |
| 40 | 32 | 44 | 53 | 100 | 61 | 4977 | 20,114 | 1.50 | 32,040 | ● |
| 40 | 3 | 10 | 24 | 120 | 30 | 4904 | 5,016 | 1.00 | 203,040 | ● |
| 40 | 4 | 10 | 24 | 120 | 35 | 4904 | 6,016 | 1.00 | 204,040 | ● |
| 40 | 5 | 10 | 24 | 120 | 40 | 4904 | 8,018 | 1.00 | 205,040 | ● |
| 40 | 6 | 21 | 27 | 120 | 36 | 4977 | 6,014 | 1.10 | 206,040 | ● |
| 40 | 8 | 21 | 27 | 120 | 36 | 4977 | 8,014 | 1.10 | 208,040 | ● |
| 40 | 10 | 24 | 32 | 120 | 41 | 4977 | 10,014 | 1.20 | 210,040 | ● |
| 40 | 12 | 24 | 32 | 120 | 46 | 4977 | 12,014 | 1.20 | 212,040 | ● |
| 40 | 14 | 27 | 34 | 120 | 46 | 4977 | 12,014 | 1.35 | 214,040 | ● |
| 40 | 16 | 27 | 34 | 120 | 49 | 4977 | 16,014 | 1.35 | 216,040 | ● |
| 40 | 18 | 33 | 42 | 120 | 49 | 4977 | 16,014 | 1.50 | 218,040 | ● |
| 40 | 20 | 33 | 42 | 120 | 51 | 4977 | 20,114 | 1.50 | 220,040 | ● |
| 40 | 3 | 10 | 31 | 160 | 30 | 4904 | 5,016 | 1.10 | 103,040 | ● |
| 40 | 4 | 10 | 31 | 160 | 35 | 4904 | 6,016 | 1.10 | 104,040 | ● |
| 40 | 5 | 10 | 31 | 160 | 40 | 4904 | 8,018 | 1.10 | 105,040 | ● |
| 40 | 6 | 21 | 27 | 160 | 36 | 4977 | 6,014 | 1.30 | 106,040 | ● |
| 40 | 8 | 21 | 27 | 160 | 36 | 4977 | 8,014 | 1.30 | 108,040 | ● |
| 40 | 10 | 24 | 32 | 160 | 41 | 4977 | 10,014 | 1.50 | 110,040 | ● |
| 40 | 12 | 24 | 32 | 160 | 46 | 4977 | 12,014 | 1.50 | 112,040 | ● |
| 40 | 14 | 27 | 34 | 160 | 46 | 4977 | 12,014 | 1.70 | 114,040 | ● |
| 40 | 16 | 27 | 34 | 160 | 49 | 4977 | 16,014 | 1.70 | 116,040 | ● |
| 40 | 18 | 33 | 42 | 160 | 49 | 4977 | 16,014 | 1.90 | 118,040 | ● |
| 40 | 20 | 33 | 42 | 160 | 51 | 4977 | 20,114 | 1.90 | 120,040 | ● |
| 40 | 25 | 44 | 53 | 160 | 57 | 4977 | 20,114 | 2.20 | 125,040 | ● |
| 50 | 3 | 10 | 18 | 80 | 30 | 4904 | 5,016 | 2.60 | 3,050 | ● |
| 50 | 4 | 10 | 18 | 80 | 35 | 4904 | 6,016 | 2.60 | 4,050 | ● |
| 50 | 5 | 10 | 18 | 80 | 40 | 4904 | 8,018 | 2.60 | 5,050 | ● |
| 50 | 6 | 21 | 27 | 80 | 36 | 4977 | 6,014 | 2.90 | 6,050 | ● |
| 50 | 8 | 21 | 27 | 80 | 36 | 4977 | 8,014 | 2.90 | 8,050 | ● |
| 50 | 10 | 24 | 32 | 80 | 41 | 4977 | 10,014 | 2.90 | 10,050 | ● |
| 50 | 12 | 24 | 32 | 80 | 46 | 4977 | 12,014 | 2.90 | 12,050 | ● |
| 50 | 14 | 27 | 34 | 80 | 46 | 4977 | 12,014 | 3.00 | 14,050 | ● |
| 50 | 16 | 27 | 34 | 80 | 49 | 4977 | 16,014 | 3.00 | 16,050 | ● |

Shrink fit technology

Product information

- Optimised cooling for tools without internal coolant ducts
- Good chip evacuation and increased process reliability
- balancing quality G6.3 / 15,000 rev./min
- for tool shank tolerance h6

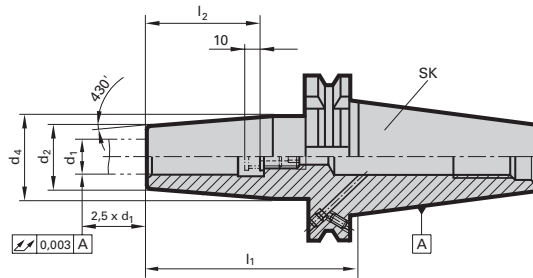
Scope of delivery

- incl. setting screw (special)
- special dimensions on request

Guhring no.

4729

GUHROJET



| SK | for clamping- \emptyset d_1 h6 mm | d_2 mm | d_4 mm | l_1 mm | l_2 mm | kg | Code no. | Availability |
|----|---------------------------------------|----------|----------|----------|----------|------|----------|--------------|
| 40 | 6 | 21 | 27 | 80 | 36 | 1.00 | 6,040 | • |
| 40 | 8 | 21 | 27 | 80 | 36 | 1.00 | 8,040 | • |
| 40 | 10 | 24 | 32 | 80 | 41 | 1.10 | 10,040 | • |
| 40 | 12 | 24 | 32 | 80 | 46 | 1.00 | 12,040 | • |
| 40 | 14 | 27 | 34 | 80 | 46 | 1.10 | 14,040 | • |
| 40 | 16 | 27 | 34 | 80 | 49 | 1.10 | 16,040 | • |
| 40 | 18 | 33 | 42 | 80 | 49 | 1.20 | 18,040 | • |
| 40 | 20 | 33 | 42 | 80 | 51 | 1.50 | 20,040 | • |



The perfect combination from one reliable supplier: High performance milling cutters and GühroJet shrink fit chucks made by Guhring

Shrink fit technology

MAS-BT shrink fit chucks

Product information

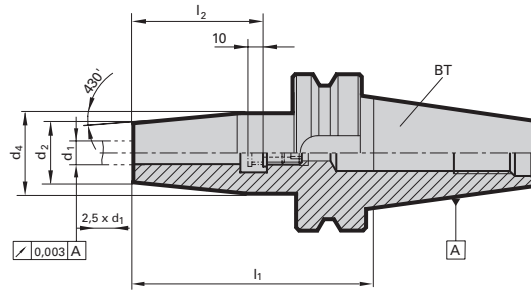
- balancing quality G6.3 / 15,000 rev./min
- MAS BT to JIS B 6339
- for tool shank tolerance h6

Scope of delivery

- incl. setting screw Guhring no. 4977 or 4904 respectively
- order draw bolt Guhring no. 4927, 4928 separately
- special dimensions on request
- MAS-BT 50 on request

Guhring no.

4739



| BT | for clamping-Ø d_1 h6 mm | d_2 mm | d_4 mm | l_1 mm | l_2 mm | incl. setting screw Guh.no. Code no. | | kg | Code no. | Availability |
|----|-------------------------------|-------------|-------------|-------------|-------------|---|--------|-----|----------|--------------|
| 40 | 3 | 10 | 18 | 85 | 30 | 4904 | 5,016 | 1.0 | 3,040 | • |
| 40 | 4 | 10 | 18 | 85 | 35 | 4904 | 6,016 | 1.0 | 4,040 | • |
| 40 | 5 | 10 | 18 | 85 | 40 | 4904 | 8,018 | 1.0 | 5,040 | • |
| 40 | 6 | 21 | 27 | 90 | 36 | 4977 | 6,014 | 1.2 | 6,040 | • |
| 40 | 8 | 21 | 27 | 90 | 36 | 4977 | 8,014 | 1.2 | 8,040 | • |
| 40 | 10 | 24 | 32 | 90 | 41 | 4977 | 10,014 | 1.3 | 10,040 | • |
| 40 | 12 | 24 | 32 | 90 | 46 | 4977 | 12,014 | 1.3 | 12,040 | • |
| 40 | 14 | 27 | 34 | 90 | 46 | 4977 | 12,014 | 1.4 | 14,040 | • |
| 40 | 16 | 27 | 34 | 90 | 49 | 4977 | 16,014 | 1.4 | 16,040 | • |
| 40 | 18 | 33 | 42 | 90 | 49 | 4977 | 16,014 | 1.7 | 18,040 | • |
| 40 | 20 | 33 | 42 | 90 | 51 | 4977 | 20,114 | 1.7 | 20,040 | • |
| 40 | 25 | 44 | 53 | 100 | 57 | 4977 | 20,114 | 1.8 | 25,040 | • |

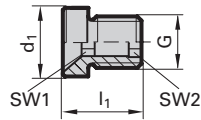


Guhring's precision clamping chucks offer highest clamping force particularly for milling operations but also for drilling and reaming as well as under HSC and HPC conditions (page 126).

MQL length setting screws

Product information

- for hydraulic chucks and shrink fit chucks
- optimised for MQL with special geometry
- with tapered stop for tapered MQL shank ends



Guhring no.

4919

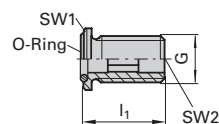


| G | d ₁ mm | l ₁ mm | SW1 | SW2 | Code no. | Availability |
|-------|----------------------|----------------------|-----|-----|----------|--------------|
| M5 | 6 | 14.8 | 2.5 | 2.5 | 6,000 | ● |
| M6 | 8 | 15.6 | 3.0 | 3.0 | 8,000 | ● |
| M8x1 | 10 | 16.1 | 4.0 | 4.0 | 10,000 | ● |
| M6 | 10 | 16.6 | 3.0 | 3.0 | 10,032 | ● |
| M10x1 | 12 | 16.6 | 5.0 | 5.0 | 12,000 | ● |
| M6 | 12 | 17.6 | 3.0 | 3.0 | 12,032 | ● |
| M10x1 | 14 | 17.6 | 5.0 | 5.0 | 14,000 | ● |
| M6 | 14 | 18.6 | 3.0 | 3.0 | 14,040 | ● |
| M12x1 | 16 | 18.6 | 5.0 | 5.0 | 16,000 | ● |
| M6 | 16 | 19.6 | 3.0 | 3.0 | 16,040 | ● |
| M12x1 | 18 | 19.6 | 5.0 | 5.0 | 18,000 | ● |
| M16x1 | 20 | 20.6 | 5.0 | 5.0 | 20,000 | ● |
| M16x1 | 25 | 22.6 | 8.0 | 6.0 | 25,000 | ● |
| M16x1 | 32 | 26.1 | 8.0 | 6.0 | 32,000 | ● |

Shrink fit chuck length setting screw with axial force damping

Product information

- for shrink fit chucks
- for conventional internal cooling
- with facing stop for standard shank ends
- O-ring reduces the concentricity error when shrink fitting on the setting screw
- patent applied for solution



Guhring no.

4977



| for clamping-Ø | G | l ₁ mm | SW1 | SW2 | O-Ring | Code no. | Availability |
|----------------|-------|----------------------|-----|-----|---------|----------|--------------|
| 6 | M5 | 14 | 2,5 | 2,5 | 3x1 | 6,014 | ● |
| 8 | M6 | 14 | 3,0 | 3,0 | 3,5x1 | 8,014 | ● |
| 10 | M8x1 | 14 | 4,0 | 4,0 | 6x1 | 10,014 | ● |
| 12/14 | M10x1 | 14 | 5,0 | 5,0 | 6x1 | 12,014 | ● |
| 16/18 | M12x1 | 14 | 6,0 | 6,0 | 7,5x1,5 | 16,014 | ● |
| 20/25/32 | M16x1 | 14 | 8,0 | 6,0 | 12x1,5 | 20,114 | ● |

Shrink fitting, pre-setting and measuring

Pre-setting, shrink fitting and measuring, all possible with one system, the GISS 2500 shrink fit system. In addition to tool pre-setting and induction shrink fitting, it is capable of also measuring the shrink fitting tools thanks to an optical measuring unit and intelligent software.

Furthermore, the GISS 2500 shrink fit system offers the following advantages:

- flexibility, the system can either be used as standard tool pre-setting and measuring facility or as a stand-alone facility for shrink fitting tools for insertion or withdrawal.
- high economic efficiency thanks to universal application as pre-setting, shrink fitting and measuring facility.

- consistent and excellent results thanks to precise and automatic length pre-adjustment of tools to $\pm 20 \mu\text{m}$.
- ahead of the competition thanks to high level quality assurance.
- motivated personnel thanks to an ultra modern, ergonomic and absolutely safe work station.

Thanks to the numerous options available for the system's measuring facility, software and technology features etc., the GISS 2500 shrink fit system can be specifically adapted to individual customer requirements. Please contact Guhring for further information!



Accessories including pre-setting adaptors for shank-Ø 6 to 32 mm

Technical Data:

| | |
|----------------------------------|------------------------|
| Measuring range, longitudinal | 400 mm |
| Measuring diameter | 240 mm |
| Repeat accuracy | $\pm 0,003 \text{ mm}$ |
| Pre-setting accuracy | $3 \mu\text{m}$ |
| Length accuracy (shrink fitting) | $\pm 0,020 \text{ mm}$ |
| Display accuracy | $0,001 \text{ mm}$ |
| Concentricity | $0,005 \text{ mm}$ |

Equipment:

- "Saturn Set" image processing
- 13 KW induction shrink fit system
- automatic zero point monitoring
- ISO/50 tool holder
(other ISO taper and HSK adaption optional)
- manual length stop system
- water cooling system
- 12,1" TFT colour display with touchscreen
- cabinet, label printer (optional)

The new dimension in shrink fit

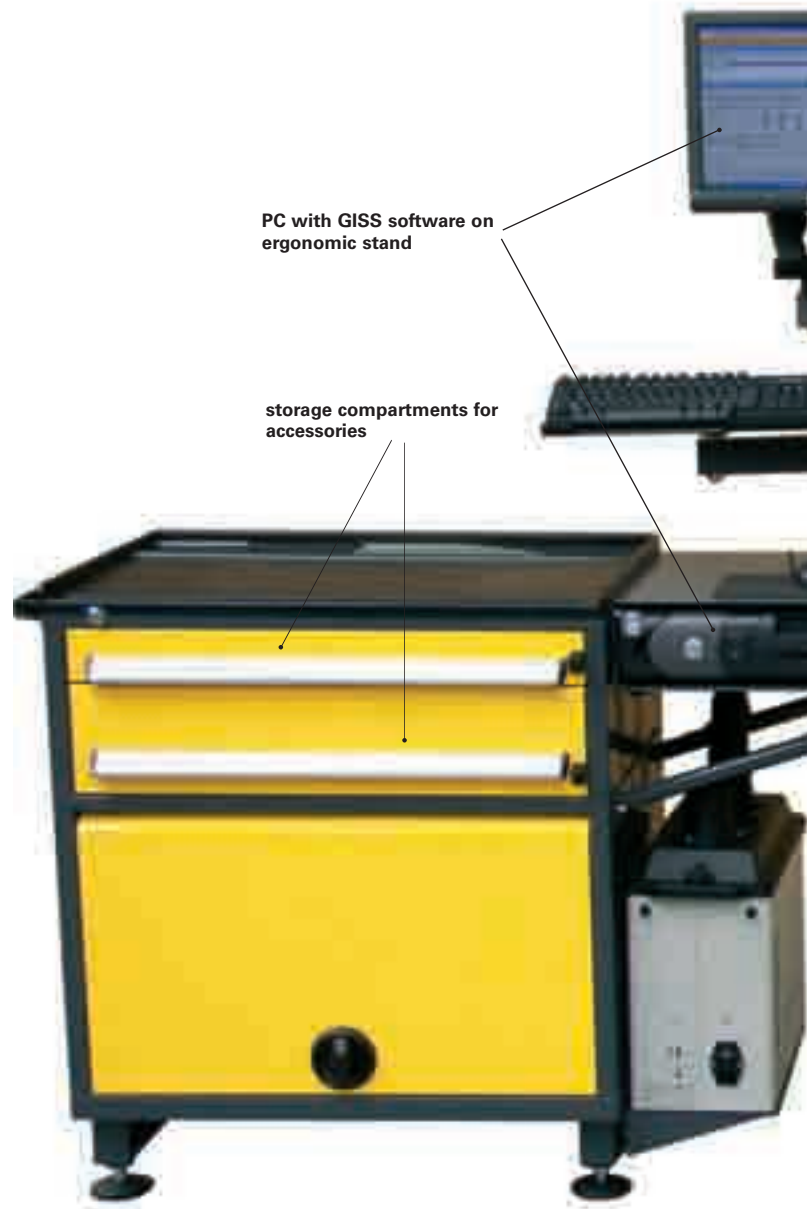
Using shrink fit chucks as tool holders offers numerous advantages. Simple handling and above all excellent concentricity, extremely low imbalance as well as extreme clamping force, rigidity, longevity and short shrink fitting for insertion times are convincing attributes.

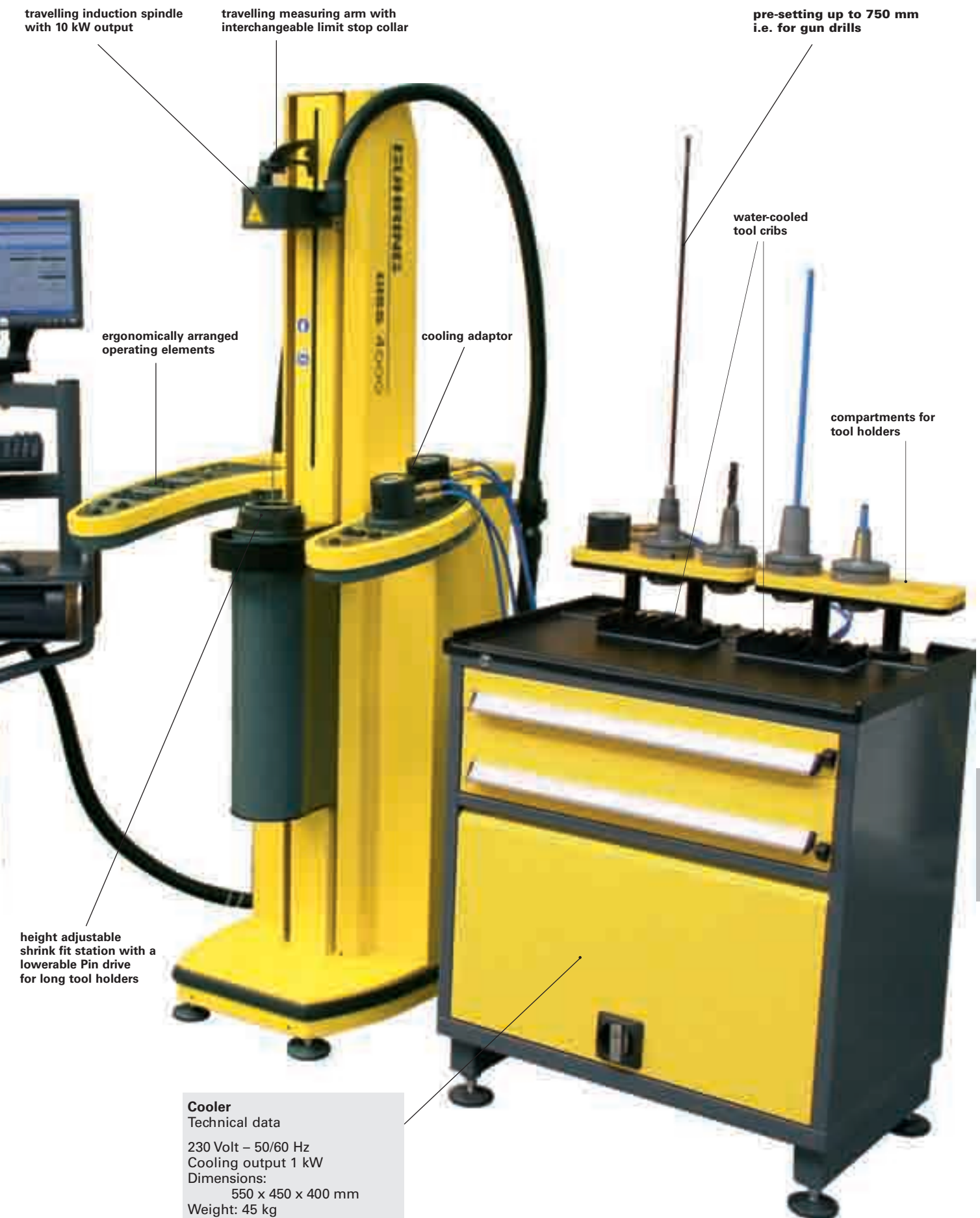
With the new GISS 4000 shrink fit system, Guhring is introducing a new dimension in shrink fitting. GISS 4000 is especially designed for shrink fitting long tools and the application of special chucks:

- thanks to its high column, GISS 4000 enables the shrink fitting of tools up to a total length of 750 mm. This makes it possible to clamp and pre-set the length of, for example, gun drills or other extra long tools in shrink fit chucks.
- GISS 4000 is extremely flexible and can be easily adapted to individual customer requirements. It enables the application of special chucks as well as user orientated software.
- the layout of the shrink fit system is extremely ergonomic for easy operation.
- to shrink fit for insertion or removal respectively, tools and shrink fit chucks can simply be inserted or withdrawn because the PIN-drive unit can travel downwards.
- the GISS 4000 system includes an integrated PC with a modern flatscreen monitor on an ergonomic stand.
- the GISS Parameter Management Software administrates all internal and customer tool parameters and is able to communicate with the customer tooling system.
- the tool administration software possesses an integrated label print function.
- GISS 4000 can be further optimised by incorporating a read/write facility for tool data storage.

In addition, GISS 4000 is especially suitable for the automated production with multi-spindle machines and in transfer lines in the automotive and aerospace industry as well as for volume production and offers all the well-known advantages of the GISS 3000 shrink fit system:

- clamping time: approx. 5 seconds
- regulated, energy efficient heating of shrink fit chucks
- no heating of taper
- incorporated, electronically controlled setting
- highly accurate length pre-setting of +/- 0.02 mm during the heating phase
- concentrated cooling within 30 seconds
- water-cooled, integrated cooling elements
- optimal process parameters
- simple operation thanks to intelligent software
- good mobility as well as workshop suitability
- excellent cost-efficiency ratio
- optimal health & safety features





travelling induction spindle with 10 kW output

travelling measuring arm with interchangeable limit stop collar

pre-setting up to 750 mm i.e. for gun drills

ergonomically arranged operating elements

cooling adaptor

water-cooled tool cribs

compartments for tool holders

height adjustable shrink fit station with a lowerable Pin drive for long tool holders

Cooler
Technical data
230 Volt – 50/60 Hz
Cooling output 1 kW
Dimensions:
550 x 450 x 400 mm
Weight: 45 kg

Shrink fit technology

Intelligent technology for perfect tool clamping

Like the GISS 2500 system, GISS 5000 allows pre-setting, shrink fitting and measuring with one facility. In addition, GISS 5000 also offers the possibility of a fully automatic, highly accurate cutting edge form recognition and length pre-setting facility.

Further advantages are:

- automatic shrink fitting process in order to achieve the highest, personnel independent accuracy
- wide measuring range up to 800 mm (depending on options fitted)
- large measuring diameter up to 600 mm (depending on options fitted)
- highly accurate pre-setting and measuring

Naturally, the GISS 5000 shrink fit system can be specifically adapted to individual customer requirements. Please contact Guhring!

Equipment:

- "Saturn 1" or "Saturn 2" (optional) image processing with cutting edge inspection and fully automatic cutting edge form recognition
- 13 KW induction shrink fit system
- automatic zero point monitoring
- tool holder available for various systems
- automatic length stop system
- water cooling system
- 15" TFT colour display with touchscreen
- cabinet, label printer (optional)
- high accuracy spindle with autofocus and power clamping
- automatic "Z" length stop system
- 3-axis-CNC-control with autofocus (optional with "Saturn 2" image processing)
- flue gas extraction (optional)

At a glance:
Colour display informs of all parameters and allows simple operation via the touchscreen

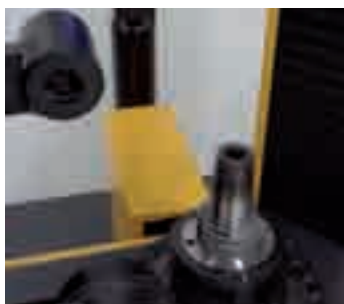


Technical Data:

| | |
|----------------------------------|----------------|
| Measuring range, longitudinal | 600 to 800 mm* |
| Measuring diameter | 320 to 600 mm* |
| Repeatability | ± 0.002 mm |
| Pre-setting accuracy | < 2 µm |
| Length accuracy (shrink fitting) | ± 0.015 mm |
| Display accuracy | 0.001 mm |
| Positional accuracy | 0.002 mm |
| Concentricity | 0.002 mm |
| (* depending on options fitted) | |



Shrink fitting tools for insertion



Insert tool holder



Read chip



Insert tool with adaptor in tool holder



Optical measurement of tool
b.l.: Inspect cutting edge under light
b.r.: Measure cutting edge

for withdrawal



Insert tool with tool holder and read chip



Heat coil and withdraw tool



Cool tool holder – finished!

Display of cooling process development



Heat coil and insert tool



Cool inserted tool



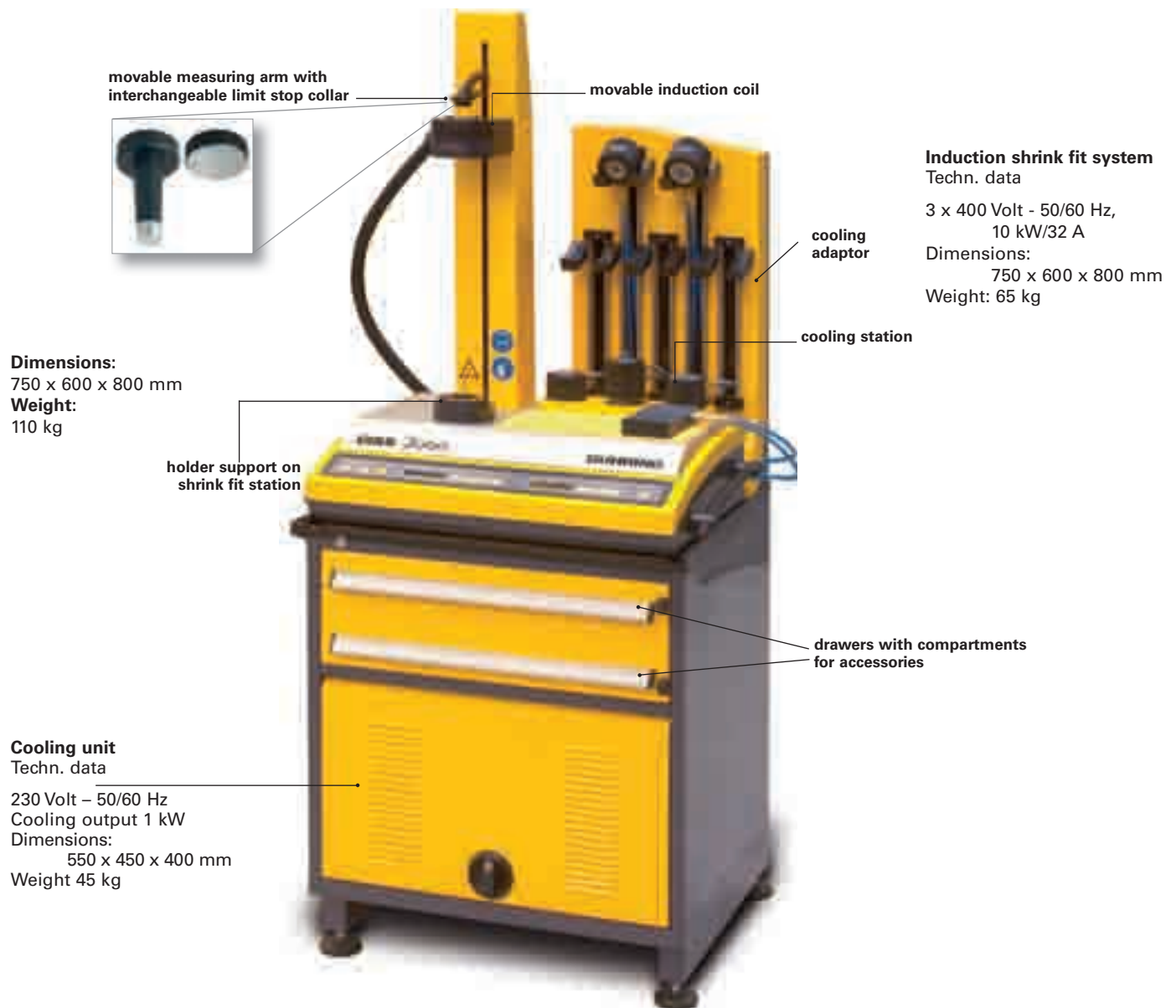
Visually measure tool



Write chip – finished!

Shrink f it
technology

Induction shrink fit system with automatic length pre-setting



For the first time GISS 3000 offers the operations shrink fitting, cooling and high precision length pre-setting in one system. GISS 3000 is developed to shrink fit solid carbide tools (\varnothing 3...32 mm) and high speed tools (\varnothing 6...32) into Guhring shrink fit chucks using only one induction coil. This is possible thanks to a controlled energy supply, fast cooling, simple operation thanks to advanced software and a for the first time integrated, highly accurate length pre-setting. GISS 3000 is especially suitable for the automated production in multi-spindle machines and transfer lines in the automotive industry, in the aerospace industry as well as in volume production.

The advantages in brief:

- clamping time: approx. 5 seconds
- controlled, energy-saving heating of the shrink fit chuck
- no heating of taper
- integrated, electronically controlled pre-setting
- highly accurate length pre-setting to ± 0.02 mm during the heating phase
- tactile measuring system with glass measuring scale
- concentrated cooling within 30 seconds
- water-cooled, integrated cooling elements
- optimal process parameters
- simple operation thanks to advanced software
- integrated PC interface (PC and GISS Parameter-Management optional)
- integrated printer interface (label printer optional)
- good mobility as well as workshop suitability
- excellent cost-performance ratio
- optimal health and safety features
- special accessories available and possibility of adapting system to specific customer requirements

GISS 3000 induction shrink fit system

Guhring no.

4753

Product information

- with axial adjustment pin
- setting accuracy $\pm 0,02$ mm
- max. setting dimension 450 mm
- adjustment stroke 20 mm

Scope of delivery

- incl. cooling unit
- incl. 1 cooling adaptor set (5 adaptors for shank- \varnothing 6 up to 32 mm)
- incl. induction coil
- incl. limit stop collars for measuring arm
- incl. limit stop collars for induction coil
- incl. 1 pair of protective gloves
- incl. 1 water-cooled tool depository



| | Code no. | Availability |
|--|----------------|--------------|
| German version 50 Hz/400 V Export version 60 Hz/up to 480 V | 1,000 2,000 | • • |
| | | |
| | | |

Cooling adaptor

Guhring no.

4773

Product information

- for GISS 3000 and GISS 4000
- cooling adaptor for standard shrink fit chucks to DIN 69882-8
- with quick-release coupling



| for shank diameter | Code no. | Availability |
|--------------------|----------|--------------|
| 6 - 8 mm | 8,000 | • |
| 10 - 12 mm | 12,000 | • |
| 14 - 16 mm | 16,000 | • |
| 18 - 20 mm | 20,000 | • |
| 25 - 32 mm | 32,000 | • |
| | | |

Limit stop collars

Guhring no.

4769

Product information

- for induction coil
- suitable for all GISS shrink fit systems
- for extra short standard shrink fit chucks with Code no.,100



| for tool shank diameter | Code no. | Availability |
|-------------------------|----------|--------------|
| 3 - 5 mm | 5,000 | • |
| 6 - 12 mm | 12,000 | • |
| 14 - 16 mm | 16,000 | • |
| 18 - 20 mm | 20,000 | • |
| 25 - 32 mm | 32,000 | • |
| 6 - 12 mm | 12,100 | • |
| 14 - 20 mm | 20,100 | • |
| 25 - 32 mm | 32,100 | • |
| | | |

HSK-A/E accessory sets

Guhring no.

4774

Product information

- for GISS 3000
- incl. support collars for shrink fit station
- incl. support collars for cooling station
- incl. adjustment gauge
- incl. adjustment pins for standard chucks



| for holder | size | Code no. | Availability |
|------------|------|----------|--------------|
| HSK-A/E | 32 | 32,000 | • |
| HSK-A/E | 40 | 40,000 | • |
| HSK-A/E | 50 | 50,000 | • |
| HSK-A/E | 63 | 63,000 | • |
| HSK-A/E | 80 | 80,000 | • |
| HSK-A/E | 100 | 100,000 | • |

HSK-C accessory sets

Guhring no.

4775

Product information

- for GISS 3000
- incl. support collar for shrink fit station
- incl. support collars for cooling station
- incl. setting gauge
- incl. adjustment pins for standard chucks



| for holder | size | Code no. | Availability |
|------------|------|----------|--------------|
| HSK-C | 32 | 32,000 | • |
| HSK-C | 40 | 40,000 | • |
| HSK-C | 50 | 50,000 | • |
| HSK-C | 63 | 63,000 | • |

ISO taper accessory sets

Guhring no.

4776

Product information

- for GISS 3000
- incl. support collar for shrink fit station
- incl. support collar for cooling station
- incl. setting gauge
- incl. adjustment pins for standard chucks



| for holder | size | Code no. | Availability |
|------------|------|----------|--------------|
| SK AD/B | SK40 | 40,000 | • |
| SK AD/B | SK50 | 50,000 | • |

MAS BT accessory sets

Guhring no.

4777

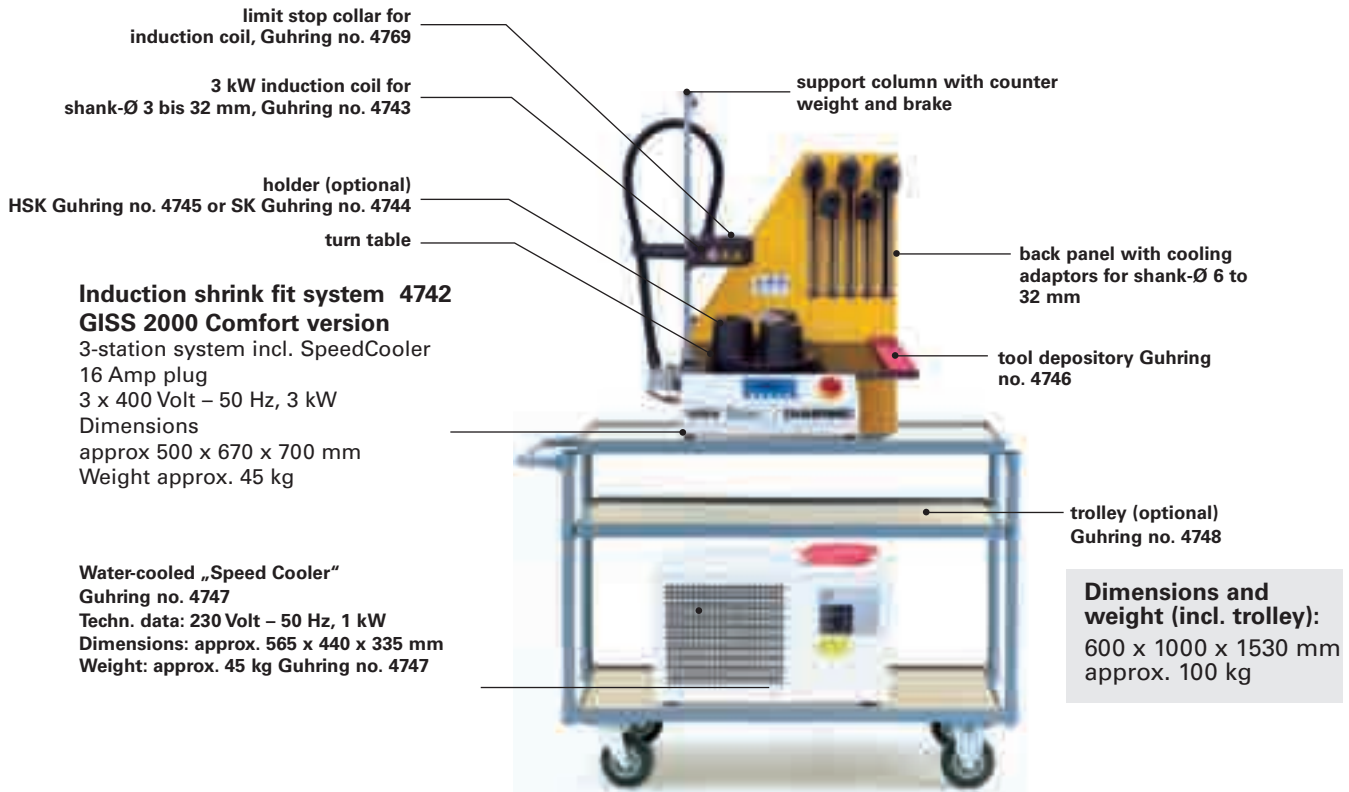
Product information

- for GISS 3000
- incl. support collar for shrink fit station
- incl. support collar for cooling station
- incl. setting gauge
- incl. adjustment pins for standard chucks



| for holder | size | Code no. | Availability |
|------------|------|----------|--------------|
| MAS BT | BT40 | 40,000 | • |

GISS 2000 shrink fit system



Induction shrink fit system 4742

GISS 2000 Comfort version

3-station system incl. SpeedCooler
16 Amp plug
3 x 400 Volt – 50 Hz, 3 kW
Dimensions
approx 500 x 670 x 700 mm
Weight approx. 45 kg

Water-cooled „Speed Cooler“

Guhring no. 4747
Techn. data: 230 Volt – 50 Hz, 1 kW
Dimensions: approx. 565 x 440 x 335 mm
Weight: approx. 45 kg Guhring no. 4747

Dimensions and weight (incl. trolley):
600 x 1000 x 1530 mm
approx. 100 kg



4730

Induction shrink fit system BASIC

Single station system w/o cooling
Code no. 10,000



4752

Induction shrink fit system ECO-Plus

Single station system, with „SpeedCooler“
Code no. 10,000

Guhring's GISS 2000 shrink fit system was designed to shrink fit carbide and high speed steel tools in GM 300 shrink fit chucks using only one induction coil. Heating and cooling are well regulated to protect tool and system as well as in the sense of efficient energy consumption. The result is a perfect connection between tool and shrink fit chuck. With GISS 2000 your tools are "under control".

In addition to the GISS 2000 Comfort version, the GISS 2000 BASIC ECO version and the ECO Plus version with less fixtures are available on request. Please contact Guhring for further information.

The advantages in brief:

- short clamping time: approx. 5 seconds
- simple adaptor system makes it possible to fit all ISO taper sizes and HSK
- cooling time (with SpeedCooler): approx. 30 seconds
- no heating HSK/ISO taper
- simple operation
- excellent cost-performance ratio
- workshop suitability
- optimal protection against burns
- insignificant heating of tool
- efficient energy consumption as energy supply is regulated
- very short shrink fit times and
- minimal heating through manual operation
- concentrated and very fast cooling capacity thanks to contact cooling
- water cooled cooling adaptors (cooling sleeves) for shrink fit chucks DIN 69 882-8

Guhring no.

4742



Product information

- Comfort version
- 3-station system with turntable

Scope of delivery

- incl. base system with turntable, induction coil Guh. no. 4743,
- 1 limit stop collar set Guh. no. 4769,
- SpeedCooler (230V) Guh. no. 4747,
- depository Guh. no. 4746,
- 1 pair of gloves Guh. no. 4750,
- order HSK-/ISO-holders Guh. nos. 4745, 4744 separately!

| | Code no. | Availability |
|--|------------------|--------------|
| German version 50 Hz/400 V Export version 60 Hz/bis 500 V | 10,000 20,000 | • • |
| | | |
| | | |
| | | |

SpeedCooler Cooling system

Guhring no.

4747

Product information

- for GISS 2000
- incl. 5 cooling adaptors for shrink fit chucks Ø 6-32mm to DIN 69882-8 and back panel



| | Code no. | Availability |
|--|----------------|--------------|
| German version 50 Hz/230 V Export version 60 Hz/100-230 V | 1,000 2,000 | • • |
| | | |
| | | |

SpeedCooler Manager

Guhring no.

4759

Product information

- for automatic switch on and off of the SpeedCooler
- preserves the cooling system and reduce the service intervals



| | Code no. | Availability |
|--|----------------|--------------|
| German version 50Hz/230V Export version 60 Hz/100-230 V | 1,000 2,000 | • • |
| | | |
| | | |

Induction coil

Guhring no.

4743

Product information

- for GISS 2000
- HSS for Ø 6...32 mm, carbide for Ø 3...32 mm



| Ø-range mm | Code no. | Availability |
|---------------|----------|--------------|
| 3...32 | 32,000 | • |

Limit stop collars

Guhring no.

4769

Product information

- for Induction coil
- suitable for all GISS systems
- for extra short standard shrink fit chucks with Code no.,100



| for tool shank diameter | Code no. | Availability |
|-------------------------------|----------|--------------|
| 3 - 5 mm | 5,000 | • |
| 6 - 12 mm | 12,000 | • |
| 14 - 16 mm | 16,000 | • |
| 18 - 20 mm | 20,000 | • |
| 25 - 32 mm | 32,000 | • |
| 6 - 12 mm | 12,100 | • |
| 14 - 20 mm | 20,100 | • |
| 25 - 32 mm | 32,100 | • |

GISS 2000 HSK holders

Guhring no.

4745

Product information

- for GISS 2000
- holder (spider) for turn-table to hold max. 3 tools: spiders are also available with 3 different holders (i.e. 1 spider with 1 ISO 40, 1 ISO 50 and 1 HSK 63)



| for HSK size | Code no. | Availability |
|-----------------|----------|--------------|
| 32 | 32,000 | • |
| 40 | 40,000 | • |
| 50 | 50,000 | • |
| 63 | 63,000 | • |
| 80 | 80,000 | • |
| 100 | 100,000 | • |

GISS 2000 ISO taper holders

Guhring no.

4744

Product information

- for GISS 2000
- also suitable for MAS-BT
- holder (spider) for turn-table to hold max. 3 tools: spiders are also available with 3 different holders (i.e. 1 spider with 1 ISO 40, 1 ISO 50 and 1 HSK 63)



| for ISO taper size | Code no. | Availability |
|-----------------------|----------|--------------|
| 40 | 40,000 | • |
| 50 | 50,000 | • |

Trolley

Guhring no.

4748

Product information

- for GISS 2000
- for mobile and stationary application



| | Code no. | Availability |
|---------|----------|--------------|
| trolley | 1,000 | • |
| | | |
| | | |
| | | |

Tongs

Guhring no.

4749

Product information

- for the safe handling of hot tools



| | Code no. | Availability |
|-------|----------|--------------|
| tongs | 1,000 | • |
| | | |
| | | |

Protective gloves

Guhring no.

4750

Product information

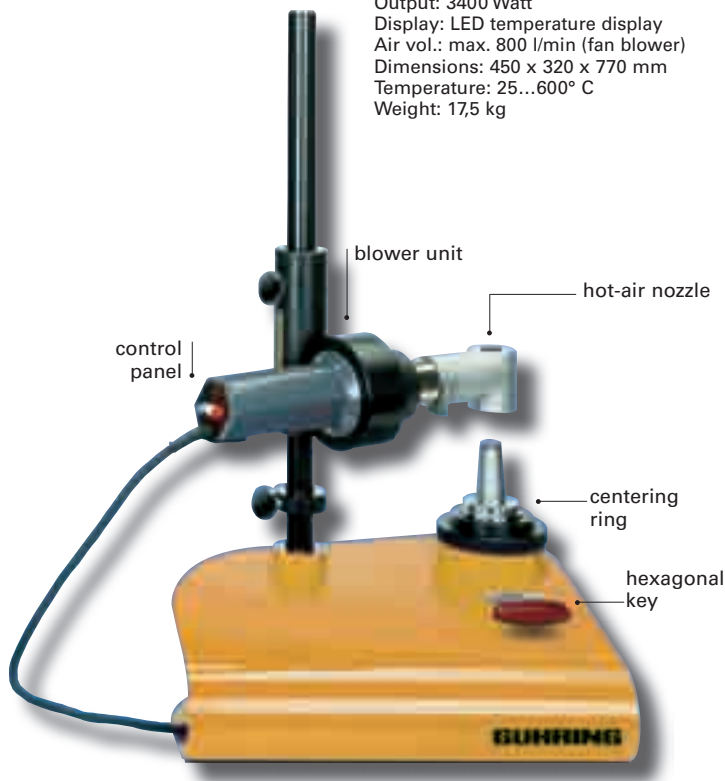
- Kevlar gloves providing protection against sharp cutting edges and high temperatures
- as specified for all shrink fit applications



| | Code no. | Availability |
|-----------------------------|----------|--------------|
| 1 pair of protective gloves | 1,000 | • |
| | | |
| | | |

HSV 2000 hot-air shrink fit system

Guh. no 4721 Code 2,000
 Technical data:
 230V/50Hz/16A
 Control panel: temperature and
 air-flow regulator
 Output: 3400 Watt
 Display: LED temperature display
 Air vol.: max. 800 l/min (fan blower)
 Dimensions: 450 x 320 x 770 mm
 Temperature: 25...600° C
 Weight: 17,5 kg



The hot-air shrink fit technology is ideally suitable for shrink fitting tools with **carbide shanks** for insertion and withdrawal. Air is the only element applied, in hot and cold form. Created by a fan blower, the incoming hot air causes the expansion of the shrink fit chuck. The undermeasure of the bore in the holder expands allowing the shank tool to be inserted. The following cold air then contracts the bore and the tool is securely clamped. When the shrink fit chuck is heated up again, the bore expands and the solid carbide tool can be withdrawn. Heating and cooling is carried out solely using ambient air. Attention: HSS tool shanks can only be shrink fitted for insertion, a withdrawal is not possible as they have similar expansion coefficient properties to shrink fit chucks.

The hot-air shrink fit technology is suitable for all current HSK, ISO taper and MAS BT shrink fit chucks with clamping-Ø 3 to 20 mm and up to an overall dimension of 200 mm, but also for shrink fit extensions with a shank-Ø 16 to 20 mm with shrink fit times of approx. 1 to 3 minutes according to the configuration.

The main advantages:

- compressed air not required, therefore cost-efficient
- location-independent; only mains supply required
- internal fan cooling
- low energy consumption
- problem-free tool length pre-setting (Ø 3 to 12 mm)
- uncomplicated operation

Centering ring

Product information

- heat insulated centering ring for HSV 2000
- with locking screw to fixate shrink fit chuck

Guhring no.

4720

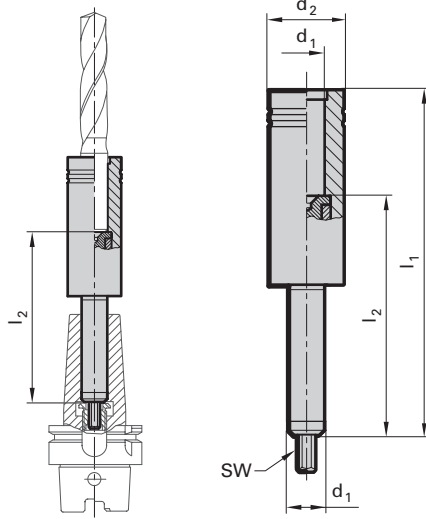


| HSK | SK | BT | extension Ø mm | Code no. | Availability |
|-----|----|----|-------------------|----------|--------------|
| - | - | - | 16 | 16,000 | • |
| - | - | - | 20 | 20,000 | • |
| 25 | - | - | - | 25,000 | • |
| 32 | - | - | - | 32,000 | • |
| 40 | - | - | - | 40,000 | • |
| 50 | 30 | 30 | - | 50,000 | • |
| 63 | 40 | 40 | - | 63,000 | • |
| 80 | - | - | - | 80,000 | • |
| 100 | 50 | 50 | - | 100,000 | • |

Universal length setting adaptor

Product information

- for shrink fit chuck to DIN 69 882-8
- for length pre-setting of the setting screw Guhring no. 4977 with the cutting tool (less difference dimension l_2 , see sketch)
- suitable with standard screw Guhring no. 4977 and with MQL setting screw Guhring no. 4919



Guhring no.

4718



| d_1 mm | d_2 mm | l_1 mm | l_2 mm | SW | Code no. | Availability |
|-------------|-------------|-------------|-------------|---------|----------|--------------|
| 6 | 25 | 115 | 80 | 2.5 | 6,000 | • |
| 8 | 25 | 115 | 80 | 3.0 | 8,000 | • |
| 10 | 25 | 115 | 80 | 4.0 | 10,000 | • |
| 12 | 25 | 115 | 80 | 5.0 | 12,000 | • |
| 14 | 25 | 115 | 80 | 5.0 | 14,000 | • |
| 16 | 25 | 120 | 85 | 6.0/5.0 | 16,000 | • |
| 18 | 28 | 120 | 85 | 6.0/5.0 | 18,000 | • |
| 20 | 30 | 135 | 90 | 8.0/5.0 | 20,000 | • |
| 25 | 35 | 140 | 100 | 8.0/5.0 | 25,000 | • |
| 32 | 45 | 150 | 100 | 8.0/5.0 | 32,000 | • |

TOOL HOLDERS



- Collet holders from page 110
- Tapping chucks from page 119
- Präzisionsspannfutter from page 126
- Side lock holders from page 128
- Milling arbor from page 134
- Morse taper holders from page 137
- NC-drilling chucks from page 137
- Blanks from page 138

HSK-A collet holders

Product information

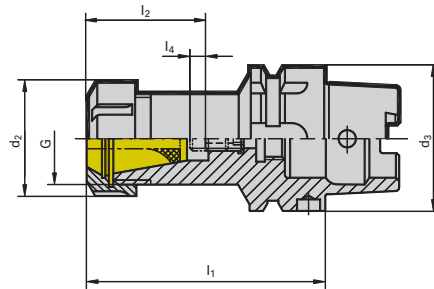
- balancing quality: G6.3 / 15.000 rev./min

Scope of delivery

- incl. retaining nut and setting screw
- order collet, Guhring no. 4307, clamping key, Guhring no. 4913 and coolant delivery set, Guhring no. 4949 separately

Guhring no.

4304



| HSK-A d ₃ | Nom. size | d ₂ mm | G | l ₁ mm | l ₂ mm | l ₄ mm | incl. setting screw Guh.no. Code no. | kg | Code no. | Availability |
|-------------------------|--------------|----------------------|------------|----------------------|----------------------|----------------------|--|------|----------|--------------|
| 32 | ER 11 | 19 | M14 x 0.75 | 55 | 25 | 6 | 4902 11,012 | 0.16 | 11,032 | ● |
| 32 | ER 16 | 28 | M22 x 1.5 | 80 | 34 | 6 | 4902 16,012 | 0.30 | 16,032 | ● |
| 32 | ER 20 | 34 | M25 x 1.5 | 70 | 40 | 6 | 4902 16,012 | 0.27 | 20,032 | ● |
| 40 | ER 16 | 28 | M22 x 1.5 | 80 | 34 | 6 | 4902 16,012 | 0.40 | 16,040 | ● |
| 40 | ER 25 | 42 | M32 x 1.5 | 80 | 44 | 6 | 4902 25,014 | 0.51 | 25,040 | ● |
| 40 | ER 32 | 50 | M40 x 1.5 | 100 | 50 | 10 | 4902 32,020 | 0.72 | 32,040 | ● |
| 50 | ER 16 | 28 | M22 x 1.5 | 100 | 34 | 6 | 4902 16,012 | 0.74 | 16,050 | ● |
| 50 | ER 25 | 42 | M32 x 1.5 | 100 | 44 | 6 | 4902 25,014 | 0.83 | 25,150 | ● |
| 50 | ER 25 | 42 | M32 x 1.5 | 80 | 44 | 6 | 4902 25,014 | 0.66 | 25,050 | ● |
| 50 | ER 32 | 50 | M40 x 1.5 | 100 | 50 | 10 | 4902 32,020 | 0.93 | 32,050 | ● |
| 63 | ER 16 | 28 | M22 x 1.5 | 100 | 34 | 6 | 4902 16,012 | 0.95 | 16,063 | ● |
| 63 | ER 16 | 28 | M22 x 1.5 | 160 | 34 | 6 | 4902 16,012 | 1.40 | 16,163 | ● |
| 63 | ER 25 | 42 | M32 x 1.5 | 80 | 42 | 6 | 4902 25,014 | 0.94 | 25,063 | ● |
| 63 | ER 25 | 42 | M32 x 1.5 | 100 | 42 | 6 | 4902 25,014 | 1.08 | 25,163 | ● |
| 63 | ER 32 | 50 | M40 x 1.5 | 100 | 50 | 10 | 4902 32,020 | 1.20 | 32,063 | ● |
| 63 | ER 40 | 63 | M50 x 1.5 | 120 | 56 | 10 | 4902 32,020 | 1.80 | 40,063 | ● |
| 80 | ER 32 | 50 | M40 x 1.5 | 100 | 50 | 10 | 4902 32,020 | 2.75 | 32,080 | ● |
| 80 | ER 32 | 50 | M40 x 1.5 | 160 | 50 | 10 | 4902 32,020 | 3.45 | 32,180 | ● |
| 80 | ER 40 | 63 | M50 x 1.5 | 120 | 56 | 10 | 4902 32,020 | 2.93 | 40,080 | ● |
| 100 | ER 32 | 50 | M40 x 1.5 | 100 | 50 | 10 | 4902 32,020 | 2.70 | 32,100 | ● |
| 100 | ER 32 | 50 | M40 x 1.5 | 160 | 50 | 10 | 4902 32,020 | 4.30 | 32,101 | ● |
| 100 | ER 40 | 63 | M50 x 1.5 | 120 | 56 | 10 | 4902 32,020 | 3.20 | 40,100 | ● |
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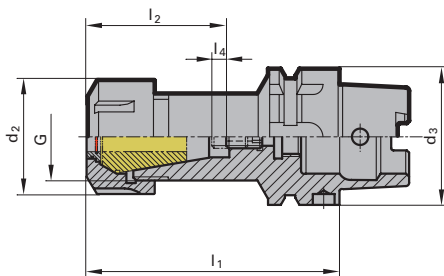
HSK-A collet holders, sealed version

Product information

- sealed, suitable for coolant pressure up to 100 bar
- balancing quality: G6.3 / 15,000 rev./min

Scope of delivery

- incl. retaining nut for sealing washers and setting screw
- order sealing washer, Guhring no. 4335, collet, Guhring no. 4307, clamping key, Guhring no. 4913 and coolant delivery set Guhring no. 4949 separately



Guhring no.

4324



| HSK-A d3 | Nom. size | d2 mm | G | l1 mm | l2 mm | l4 mm | incl. setting screw Guh.no. Code no. | kg | Code no. | Availability |
|----------|-----------|-------|-----------|-------|-------|-------|---|------|----------|--------------|
| 32 | ER 16 | 28 | M22 x 1.5 | 85 | 39 | 6 | 4902 16,012 | 0.32 | 16,032 | ● |
| 32 | ER 20 | 34 | M25 x 1.5 | 75 | 45 | 6 | 4902 16,012 | 0.31 | 20,032 | ● |
| 40 | ER 16 | 28 | M22 x 1.5 | 85 | 39 | 6 | 4902 16,012 | 0.41 | 16,040 | ● |
| 40 | ER 25 | 42 | M32 x 1.5 | 85 | 49 | 6 | 4902 25,014 | 0.51 | 25,040 | ● |
| 40 | ER 32 | 50 | M40 x 1.5 | 105 | 55 | 10 | 4902 32,020 | 0.72 | 32,040 | ● |
| 50 | ER 16 | 28 | M22 x 1.5 | 105 | 39 | 6 | 4902 16,012 | 0.78 | 16,050 | ● |
| 50 | ER 25 | 42 | M32 x 1.5 | 105 | 49 | 10 | 4902 25,014 | 0.86 | 25,150 | ● |
| 50 | ER 25 | 42 | M32 x 1.5 | 85 | 49 | 6 | 4902 25,014 | 0.66 | 25,050 | ● |
| 50 | ER 32 | 50 | M40 x 1.5 | 105 | 55 | 10 | 4902 32,020 | 0.93 | 32,050 | ● |
| 63 | ER 16 | 28 | M22 x 1.5 | 105 | 39 | 6 | 4902 16,012 | 1.00 | 16,063 | ● |
| 63 | ER 16 | 28 | M22 x 1.5 | 165 | 39 | 6 | 4902 16,012 | 1.45 | 16,163 | ● |
| 63 | ER 25 | 42 | M32 x 1.5 | 85 | 47 | 6 | 4902 25,014 | 0.94 | 25,063 | ● |
| 63 | ER 25 | 42 | M32 x 1.5 | 105 | 47 | 6 | 4902 25,014 | 1.08 | 25,163 | ● |
| 63 | ER 32 | 50 | M40 x 1.5 | 105 | 55 | 10 | 4902 32,020 | 1.20 | 32,063 | ● |
| 63 | ER 40 | 63 | M50 x 1.5 | 125 | 61 | 10 | 4902 32,020 | 1.80 | 40,063 | ● |
| 80 | ER 32 | 50 | M40 x 1.5 | 105 | 55 | 10 | 4902 32,020 | 2.80 | 32,080 | ● |
| 80 | ER 32 | 50 | M40 x 1.5 | 165 | 55 | 10 | 4902 32,020 | 3.50 | 32,180 | ● |
| 80 | ER 40 | 63 | M50 x 1.5 | 125 | 61 | 10 | 4902 32,020 | 2.98 | 40,080 | ● |
| 100 | ER 32 | 50 | M40 x 1.5 | 105 | 55 | 10 | 4902 32,020 | 2.70 | 32,100 | ● |
| 100 | ER 32 | 50 | M40 x 1.5 | 165 | 55 | 10 | 4902 32,020 | 4.30 | 32,101 | ● |
| 100 | ER 40 | 63 | M50 x 1.5 | 125 | 61 | 10 | 4902 32,020 | 3.20 | 40,100 | ● |
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Tool holders

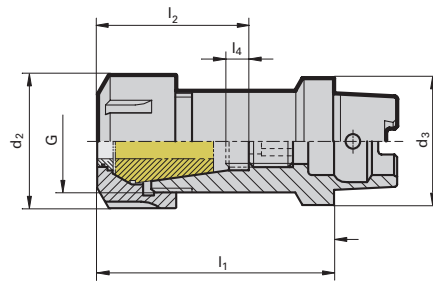
HSK-C collet holders

Product information

- balancing quality: G6.3 / 15,000 rev./min

Scope of delivery

- incl. retaining nut and setting screw
- order collet, Guhring no. 4307, clamping key, Guhring no. 4913 separately



Guhring no.

4303



| HSK-C d ₃ | Nom. size | d ₂ mm | G | l ₁ mm | l ₂ mm | l ₄ mm | incl. setting screw Guh.no. Code | kg | Code no. | Availability |
|----------------------|------------|-------------------|-----------|-------------------|-------------------|-------------------|-------------------------------------|------|----------|--------------|
| 25 | ER 16 mini | 22 | M19 x 1.0 | 50 | 30 | 4 | 4901 16,012 | 0.10 | 16,025 | ● |
| 32 | ER 16 | 28 | M22 x 1.5 | 55 | 32 | 4 | 4901 16,012 | 0.19 | 16,032 | ● |
| 32 | ER 20 | 34 | M25 x 1.5 | 60 | 38 | 5 | 4901 16,012 | 0.23 | 20,032 | ● |
| 32 | ER 25 | 42 | M32 x 1.5 | 70 | 44 | 6 | 4901 25,014 | 0.36 | 25,032 | ● |
| 40 | ER 20 | 34 | M25 x 1.5 | 60 | 38 | 5 | 4901 16,012 | 0.28 | 20,040 | ● |
| 40 | ER 25 | 42 | M32 x 1.5 | 70 | 44 | 6 | 4901 25,014 | 0.41 | 25,040 | ● |
| 40 | ER 32 | 50 | M40 x 1.5 | 75 | 49 | 6 | 4901 25,014 | 0.59 | 32,040 | ● |
| 50 | ER 16 | 28 | M22 x 1.5 | 60 | 34 | 6 | 4901 16,012 | 0.45 | 16,050 | ● |
| 50 | ER 25 | 42 | M32 x 1.5 | 70 | 44 | 6 | 4901 25,014 | 0.54 | 25,050 | ● |
| 50 | ER 32 | 50 | M40 x 1.5 | 75 | 49 | 6 | 4901 25,014 | 0.68 | 32,050 | ● |
| 50 | ER 40 | 63 | M50 x 1.5 | 80 | 54 | 6 | 4901 25,014 | 0.98 | 40,050 | ● |
| 63 | ER 40 | 63 | M50 x 1.5 | 80 | 54 | 6 | 4901 25,014 | 1.17 | 40,063 | ● |

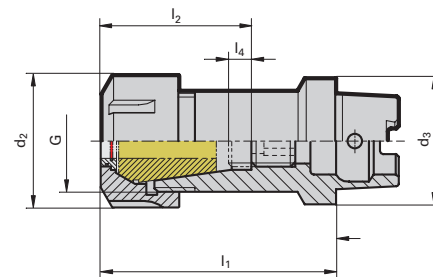
HSK-C collet holders, sealed version

Product information

- sealed, suitable for coolant pressure up to 100 bar
- balancing quality: G6.3 / 15,000 rev./min

Scope of delivery

- incl. retaining nut for sealing washers and setting screw
- order sealing washer, Guhring no. 4335, collet, Guhring no. 4307, clamping key Art.-Nr. 4913 separately



Guhring no.

4323



| HSK-C d ₃ | Nom. size | d ₂ mm | G | l ₁ mm | l ₂ mm | l ₄ mm | incl. setting screw Guh.no. Code | kg | Code no. | Availability |
|----------------------|------------|-------------------|-----------|-------------------|-------------------|-------------------|-------------------------------------|------|----------|--------------|
| 25 | ER 16 mini | 22 | M19 x 1.0 | 55 | 37 | 4 | 4901 16,012 | 0.10 | 16,025 | ● |
| 32 | ER 16 | 28 | M22 x 1.5 | 60 | 37 | 4 | 4901 16,012 | 0.20 | 16,032 | ● |
| 32 | ER 20 | 34 | M25 x 1.5 | 65 | 43 | 5 | 4901 16,012 | 0.26 | 20,032 | ● |
| 32 | ER 25 | 42 | M32 x 1.5 | 75 | 49 | 6 | 4901 25,014 | 0.42 | 25,032 | ● |
| 40 | ER 20 | 34 | M25 x 1.5 | 65 | 43 | 5 | 4901 16,012 | 0.30 | 20,040 | ● |
| 40 | ER 25 | 42 | M32 x 1.5 | 75 | 49 | 6 | 4901 25,014 | 0.47 | 25,040 | ● |
| 40 | ER 32 | 50 | M40 x 1.5 | 80 | 54 | 6 | 4901 25,014 | 0.64 | 32,040 | ● |
| 50 | ER 16 | 28 | M22 x 1.5 | 65 | 39 | 6 | 4901 16,012 | 0.46 | 16,050 | ● |
| 50 | ER 25 | 42 | M32 x 1.5 | 75 | 49 | 6 | 4901 25,014 | 0.59 | 25,050 | ● |
| 50 | ER 32 | 50 | M40 x 1.5 | 80 | 54 | 6 | 4901 25,014 | 0.74 | 32,050 | ● |
| 50 | ER 40 | 63 | M50 x 1.5 | 85 | 61 | 6 | 4901 25,014 | 1.12 | 40,050 | ● |
| 63 | ER 40 | 63 | M50 x 1.5 | 85 | 61 | 6 | 4901 25,014 | 1.30 | 40,063 | ● |

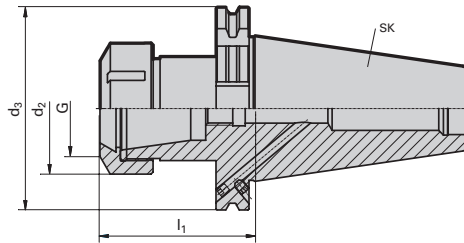
ISO taper DIN 69871 form AD/B collet holders

Product information

- balancing quality: G6.3 / 15,000 rev./min
- for ISO 40/SK 50 to DIN 69871 form AD/B
- bores closed with form B when supplied with threaded pins

Scope of delivery

- incl. clamping nut and setting screw
- order collet, Guhring no. 4307, clamping key, Guhring no. 4913 and pull studs, Guhring no. 4925 or 4926 separately



Guhring no.

4318



| SK | clamping range | d ₂ mm | d ₃ mm | l ₁ mm | G | kg | Code no. | Availability |
|----|----------------|-------------------|-------------------|-------------------|---------|-----|----------|--------------|
| 40 | ER25 1-16 | 42 | 63 | 60 | M32x1.5 | 1.4 | 25,040 | • |
| 40 | ER32 2-20 | 50 | 63 | 70 | M40x1.5 | 1.4 | 32,040 | • |
| 50 | ER32 2-20 | 50 | 100 | 70 | M40x1.5 | 3.1 | 32,050 | • |
| 50 | ER40 3-26 | 63 | 100 | 80 | M50x1.5 | 3.1 | 40,050 | • |

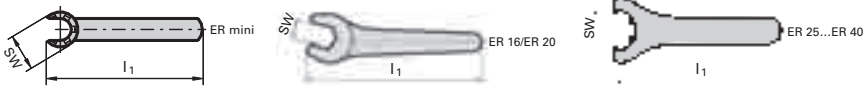
Clamping keys

Product information

- for collet holders
- ER11 - clamping key SW17

Guhring no.

4913

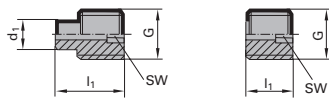


| nominal size mm | l ₁ mm | SW | Code no. | Availability |
|-----------------|-------------------|----|----------|--------------|
| ER16 mini | 120 | 22 | 16,200 | • |
| ER20 mini | 130 | 28 | 20,200 | • |
| ER25 mini | 130 | 35 | 25,200 | • |
| ER16 | 220 | 25 | 16,000 | • |
| ER20 | 260 | 30 | 20,000 | • |
| ER25 | 200 | 42 | 25,000 | • |
| ER32 | 255 | 50 | 32,000 | • |
| ER40 | 285 | 63 | 40,000 | • |

Setting screws for HSK-A/HSK-E collet holders

Product information

- with code nos. 16,012, 25,014 and 32,020 screws for the largest clamping diameter are without dog point



Guhring no.

4902

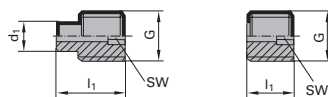


| for nominal size | for clamping range | G | d ₁ mm | l ₁ mm | SW | Code no. | Availability |
|------------------|--------------------|-----|-------------------|-------------------|----|----------|--------------|
| ER11 | 1- 7 | M6 | – | 12 | 3 | 11,012 | • |
| ER16 | 1.2- 6 | M10 | 3.5 | 18 | 3 | 16,018 | • |
| ER16 | 6-10 | M10 | – | 12 | 3 | 16,012 | • |
| ER20 | 3- 6 | M10 | 4.5 | 24 | 3 | 20,024 | • |
| ER20 | 6-10 | M10 | 5.5 | 18 | 3 | 20,018 | • |
| ER20 | 10-13 | M10 | – | 12 | 3 | 16,012 | • |
| ER25 | 3- 7 | M16 | 4.5 | 26 | 4 | 25,026 | • |
| ER25 | 7-10 | M16 | 6.5 | 20 | 4 | 25,020 | • |
| ER25 | 10-16 | M16 | – | 14 | 4 | 25,014 | • |
| ER32 | 3-10 | M16 | 6.5 | 36 | 5 | 32,036 | • |
| ER32 | 10-16 | M16 | 9.5 | 28 | 5 | 32,028 | • |
| ER32 | 16-20 | M16 | – | 20 | 5 | 32,020 | • |
| ER40 | 3- 8 | M16 | 6.5 | 44 | 5 | 40,044 | • |
| ER40 | 8-10 | M16 | 6.5 | 36 | 5 | 32,036 | • |
| ER40 | 10-16 | M16 | 9.5 | 28 | 5 | 32,028 | • |
| ER40 | 16-26 | M16 | – | 20 | 5 | 32,020 | • |

Setting screws for HSK-C collet holders

Product information

- with code nos. 16,012 and 32,020 screws for the largest clamping diameter are without dog point



Guhring no.

4901



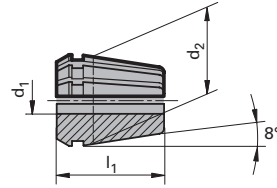
| for nominal size | for clamping range | G | d ₁ mm | l ₁ mm | SW | Code no. | Availability |
|------------------|--------------------|-----|-------------------|-------------------|----|----------|--------------|
| ER16 | 1.2- 6 | M10 | 3.5 | 16 | 3 | 16,016 | • |
| ER16 | 6-10 | M10 | – | 12 | 3 | 16,012 | • |
| ER20 | 3- 6 | M10 | 4.5 | 20 | 3 | 20,020 | • |
| ER20 | 6-10 | M10 | 5.5 | 16 | 3 | 20,016 | • |
| ER20 | 10-13 | M10 | – | 12 | 3 | 16,012 | • |
| ER25 | 3- 7 | M16 | 4.5 | 26 | 4 | 25,026 | • |
| ER25 | 7-10 | M16 | 6.5 | 20 | 4 | 25,020 | • |
| ER25 | 10-16 | M16 | – | 14 | 4 | 25,014 | • |
| ER32 | 3- 7 | M16 | 6.5 | 32 | 5 | 32,032 | • |
| ER32 | 7-10 | M16 | 6.5 | 26 | 5 | 32,026 | • |
| ER32 | 10-16 | M16 | 9.5 | 20 | 5 | 32,020 | • |
| ER32 | 16-20 | M16 | – | 14 | 4 | 25,014 | • |
| ER40 | 3- 6 | M16 | 6.5 | 38 | 5 | 40,038 | • |
| ER40 | 6- 8 | M16 | 6.5 | 32 | 5 | 32,032 | • |
| ER40 | 8-10 | M16 | 6.5 | 26 | 5 | 32,026 | • |
| ER40 | 10-16 | M16 | 9.5 | 20 | 5 | 32,020 | • |
| ER40 | 16-26 | M16 | – | 14 | 4 | 25,014 | • |

Product information

- the application range of collet, Guhring no. 4307, is from nom.- \varnothing d_1 to the next dimension below, i.e. for \varnothing 6.3 mm (nom. size ER20) order collet $d_1 = 7.0$ mm (code no. 07,020).

Ordering example:

\varnothing d_1 = 2.5
 nom. size = ER 20
 Guh. no/code no. = 4307 02,520



Guhring no.

4307



| nominal size d_2 | d_1 mm | l_1 mm | Code no. | Availability |
|--------------------|----------|----------|----------|--------------|
| ER11 (4008E) | 1.0 | 18.0 | 1,011 | ● |
| ER11 (4008E) | 1.5 | 18.0 | 1,511 | ● |
| ER11 (4008E) | 2.0 | 18.0 | 2,011 | ● |
| ER11 (4008E) | 2.5 | 18.0 | 2,511 | ● |
| ER11 (4008E) | 3.0 | 18.0 | 3,011 | ● |
| ER11 (4008E) | 4.0 | 18.0 | 4,011 | ● |
| ER11 (4008E) | 5.0 | 18.0 | 5,011 | ● |
| ER11 (4008E) | 6.0 | 18.0 | 6,011 | ● |
| ER11 (4008E) | 7.0 | 18.0 | 7,011 | ● |
| ER16 (426E) | 1.0 | 27.5 | 1,016 | ● |
| ER16 (426E) | 1.5 | 27.5 | 1,516 | ● |
| ER16 (426E) | 2.0 | 27.5 | 2,016 | ● |
| ER16 (426E) | 2.5 | 27.5 | 2,516 | ● |
| ER16 (426E) | 3.0 | 27.5 | 3,016 | ● |
| ER16 (426E) | 4.0 | 27.5 | 4,016 | ● |
| ER16 (426E) | 5.0 | 27.5 | 5,016 | ● |
| ER16 (426E) | 6.0 | 27.5 | 6,016 | ● |
| ER16 (426E) | 7.0 | 27.5 | 7,016 | ● |
| ER16 (426E) | 8.0 | 27.5 | 8,016 | ● |
| ER16 (426E) | 9.0 | 27.5 | 9,016 | ● |
| ER16 (426E) | 10.0 | 27.5 | 10,016 | ● |
| ER20 (428E) | 1.0 | 31.5 | 1,020 | ● |
| ER20 (428E) | 1.5 | 31.5 | 1,520 | ● |
| ER20 (428E) | 2.0 | 31.5 | 2,020 | ● |
| ER20 (428E) | 2.5 | 31.5 | 2,520 | ● |
| ER20 (428E) | 3.0 | 31.5 | 3,020 | ● |
| ER20 (428E) | 4.0 | 31.5 | 4,020 | ● |
| ER20 (428E) | 5.0 | 31.5 | 5,020 | ● |
| ER20 (428E) | 6.0 | 31.5 | 6,020 | ● |
| ER20 (428E) | 7.0 | 31.5 | 7,020 | ● |
| ER20 (428E) | 8.0 | 31.5 | 8,020 | ● |
| ER20 (428E) | 9.0 | 31.5 | 9,020 | ● |
| ER20 (428E) | 10.0 | 31.5 | 10,020 | ● |
| ER20 (428E) | 11.0 | 31.5 | 11,020 | ● |
| ER20 (428E) | 12.0 | 31.5 | 12,020 | ● |
| ER20 (428E) | 13.0 | 31.5 | 13,020 | ● |
| ER25 (430E) | 1.0 | 34.0 | 1,025 | ● |
| ER25 (430E) | 1.5 | 34.0 | 1,525 | ● |
| ER25 (430E) | 2.0 | 34.0 | 2,025 | ● |
| ER25 (430E) | 2.5 | 34.0 | 2,525 | ● |
| ER25 (430E) | 3.0 | 34.0 | 3,025 | ● |
| ER25 (430E) | 4.0 | 34.0 | 4,025 | ● |
| ER25 (430E) | 5.0 | 34.0 | 5,025 | ● |
| ER25 (430E) | 6.0 | 34.0 | 6,025 | ● |
| ER25 (430E) | 7.0 | 34.0 | 7,025 | ● |

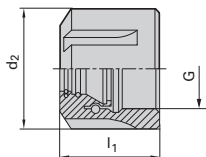
Retaining nuts, system DIN ISO 15488

Product information

- for collets DIN ISO 15488
- for increased clamping version with glide ring
- for application with internal cooling with sealing washer Guhring no. 4335

Scope of delivery

- increased clamping force version: incl. glide ring
- version for internal cooling: order sealing washer Guhring no. 4335 separately



Guhring no.

4306



| for sealing washer Guh. no. 4335 | with glide ring | nominal size | d ₂ mm | G | l ₁ mm | Code no. | Availability |
|-------------------------------------|--------------------|-----------------|----------------------|----------|----------------------|----------|--------------|
| – | – | ER16 mini | 22 | M19x1.0 | 18.0 | 16,200 | ● |
| – | – | ER20 mini | 28 | M24x1.0 | 19.0 | 20,200 | ● |
| – | – | ER25 mini | 35 | M30x1.0 | 20.0 | 25,200 | ● |
| – | – | ER11 (4008E) | 19 | M14x0.75 | 11.3 | 11,000 | ● |
| – | – | ER16 (426E) | 28 | M22x1.5 | 17.5 | 16,000 | ● |
| – | – | ER20 (428E) | 34 | M25x1.5 | 19.0 | 20,000 | ● |
| – | – | ER25 (430E) | 42 | M32x1.5 | 20.0 | 25,000 | ● |
| – | – | ER32 (470E) | 50 | M40x1.5 | 22.5 | 32,000 | ● |
| – | – | ER40 (472E) | 63 | M50x1.5 | 25.5 | 40,000 | ● |
| x | – | IC/ER16 mini | 22 | M19x1.0 | 18.4 | 16,300 | ● |
| x | – | IC/ER20 mini | 28 | M24x1.0 | 19.0 | 20,300 | ● |
| x | – | IC/ER25 mini | 35 | M30x1.0 | 20.0 | 25,300 | ● |
| x | – | IC/ER16 | 28 | M22x1.5 | 22.5 | 16,600 | ● |
| x | – | IC/ER20 | 34 | M25x1.5 | 24.0 | 20,600 | ● |
| x | – | IC/ER25 | 42 | M32x1.5 | 25.0 | 25,600 | ● |
| x | – | IC/ER32 | 50 | M40x1.5 | 27.5 | 32,600 | ● |
| x | – | IC/ER40 | 63 | M50x1.5 | 30.5 | 40,600 | ● |
| – | x | ER16 | 28 | M22x1.5 | 20.3 | 16,400 | ● |
| – | x | ER20 | 34 | M25x1.5 | 21.8 | 20,400 | ● |
| – | x | ER25 | 42 | M32x1.5 | 22.4 | 25,400 | ● |
| – | x | ER32 | 50 | M40x1.5 | 25.0 | 32,400 | ● |
| – | x | ER40 | 63 | M50x1.5 | 28.3 | 40,400 | ● |
| x | x | IC/ER16 | 28 | M22x1.5 | 25.3 | 16,500 | ● |
| x | x | IC/ER20 | 34 | M25x1.5 | 26.7 | 20,500 | ● |
| x | x | IC/ER25 | 42 | M32x1.5 | 28.5 | 25,500 | ● |
| x | x | IC/ER32 | 50 | M40x1.5 | 31.5 | 32,500 | ● |
| x | x | IC/ER40 | 63 | M50x1.5 | 35.0 | 40,500 | ● |

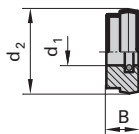
Sealing washers

Product information

- the application range of sealing washer, Guhring no. 4325, is from nom.-Ø d₁ to the next dimension below, i.e. for Ø 6.3 mm (nom. size ER20) order sealing washer d₁ = 6.5 mm (code no. 06,520).

Ordering-example:

Ø d₁ = 3.5
 nominal size = ER 20
 Guh.no./code no. = 4325 03,520



Guhring no.

4335

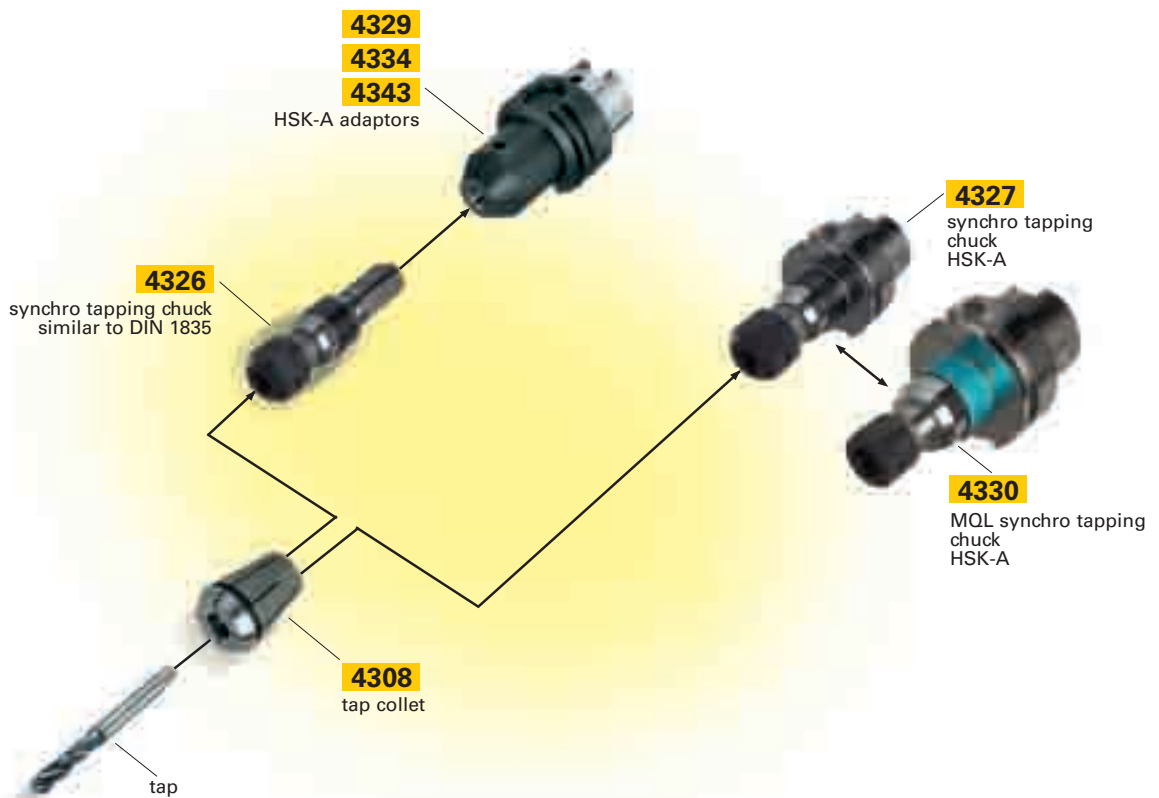


| nominal size | d ₁ mm | d ₂ mm | B mm | Code no. | Availability |
|-----------------|-----------------------------|----------------------|---------|----------------|--------------|
| ER16 | 3.0...10 in incr. of 0.5 mm | 13 | 4 | 3,016 - 10,016 | ● |
| ER20 | 3.0...13 in incr. of 0.5 mm | 16 | 4 | 3,020 - 13,020 | ● |
| ER25 | 3.0...16 in incr. of 0.5 mm | 21 | 4 | 3,025 - 16,025 | ● |
| ER32 | 3.0...20 in incr. of 0.5 mm | 27 | 4 | 3,032 - 20,032 | ● |
| ER40 | 3.5...26 in incr. of 0.5 mm | 33.5 | 4 | 3,540 - 26,040 | ● |

Configuration of quick change tapping chucks



Configuration of synchro tapping chucks



HSK-A adaptors for tapping chucks

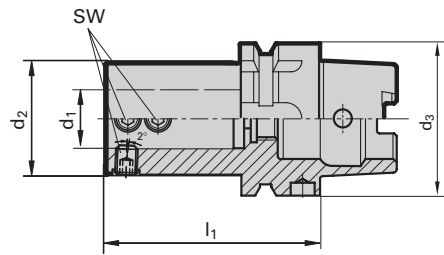
Product information

- for quick change chucks and synchro tapping chucks with straight shank

Scope of delivery

- incl. clamping screws Guhring no. 4903, code no. 12,001
- order coolant delivery set Guhring no. 4949 separately

by use of ISO adaptor DIN 69871, form A/D/HSK-C, Guhring no. 4512, please order from our GM 300 catalogue



Guhring no.

4343

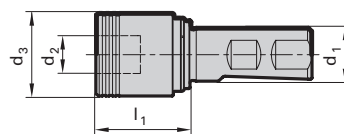


| HSK-A d ₃ | d ₁ mm | d ₂ mm | l ₁ mm | SW | kg | Code no. | Availability |
|-------------------------|----------------------|----------------------|----------------------|----|------|----------|--------------|
| 50 | 25 | 50 | 80 | 6 | 0.89 | 25,050 | ● |
| 63 | 25 | 50 | 82 | 6 | 1.26 | 25,063 | ● |
| 80 | 25 | 50 | 87 | 6 | 3.10 | 25,080 | ● |
| 100 | 25 | 50 | 89 | 6 | 4.08 | 25,100 | ● |

Quick change tapping chucks without internal cooling

Product information

- quick change tapping chucks are provided with a ball guided length compensator that compensates any length difference between spindle feed and pitch of tap thread



Guhring no.

4340

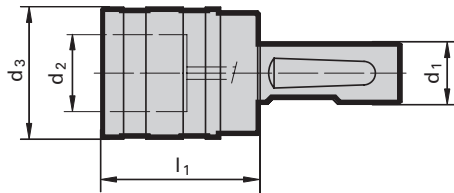


| for thread | d ₁ mm | d ₂ mm | d ₃ mm | l ₁ mm | pull/push mm | kg | Code no. | Availability |
|---------------|----------------------|----------------------|----------------------|----------------------|-----------------|-----|----------|--------------|
| M3-M12 | 25 | 19 | 36 | 39 | ± 7.5 | 0.4 | 19,025 | ● |
| M8-M20 | 25 | 31 | 53 | 63 | ±10.0 | 0.9 | 31,025 | ● |

Quick change tapping chucks with internal cooling

Product information

- quick change tapping chucks are provided with a ball guided length compensator that compensates any length difference between spindle feed and pitch of tap thread
- provided with internal coolant supply feeding the coolant through the chuck and adaptor into the shank of the tap. All functional elements are sealed
- max. coolant pressure up to 50 bar



Guhring no.

4342

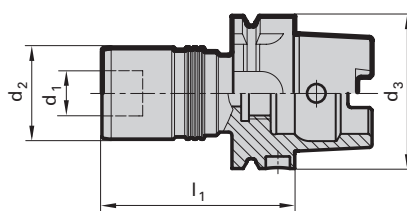


| for thread | d_1 mm | d_2 mm | d_3 mm | l_1 mm | pull/push mm | kg | Code no. | Availability |
|------------|----------|----------|----------|----------|--------------|-----|----------|--------------|
| M3-M12 | 25 | 19 | 40 | 66 | 7.0/3.0 | 0.6 | 19,025 | • |
| M8-M20 | 25 | 31 | 56 | 102 | 10.0/5.0 | 1.2 | 31,025 | • |
| | | | | | | | | |
| | | | | | | | | |

HSK-A Quick change tapping chucks with internal cooling

Product information

- quick change tapping chucks are provided with a ball guided length compensator that compensates any length difference between spindle feed and pitch of tap thread
- guarantee high thread quality and optimal tool life with conventional taps
- max. coolant pressure up to 50 bar



Guhring no.

4328



| HSK-A d_3 mm | for thread | d_1 mm | d_2 mm | l_1 mm | pull/push mm | kg | Code no. | Availability |
|----------------|------------|----------|----------|----------|--------------|-----|----------|--------------|
| 63 | M3-M12 | 19 | 39 | 105 | ± 7.5 | 0.9 | 19,063 | • |
| 63 | M8-M20 | 31 | 60 | 140 | ± 10.0 | 1.0 | 31,063 | • |

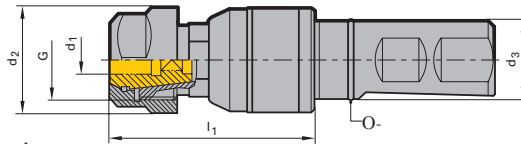
Synchro tapping chucks with straight shank

Product information

- compensate synchronisation errors
- guarantee high thread quality and optimal tool life with conventional taps
- minimal length compensation in push and pull direction balances very small pitch differences between synchro spindle and tap, which can cause high frictional forces on the thread flanks
- length-setting screw allows 2 to 3 mm readjustment
- suitable for internal cooling
- max. coolant pressure up to 100 bar

Scope of delivery

- incl. retention nut Guhring no. 4306 IC/ER
- incl. 1 set of length-setting screws
- incl. socket wrench SW 2.5 for length setting screws
- order tapping collet, Guhring no. 4308, sealing washer, Guhring no. 4325 and clamping key, Guhring no. 4913 separately



Guhring no.

4326



| d ₃ ~DIN 1835 mm | retention nut | for thread | d ₁ mm | d ₂ mm | l ₁ mm | pull/push mm | G | kg | Code no. | Availability |
|-----------------------------------|------------------|---------------|----------------------|----------------------|----------------------|-----------------|---------|------|----------|--------------|
| 25 | ER20 | M3.5-M14 | 4-11.0 | 34 | 73 | 0.15 | M25x1.5 | 0.54 | 20,025 | • |
| 25 | ER32 | M3.5-M28 | 4-20.0 | 50 | 88 | 0.15 | M40x1.5 | 1.31 | 32,025 | • |

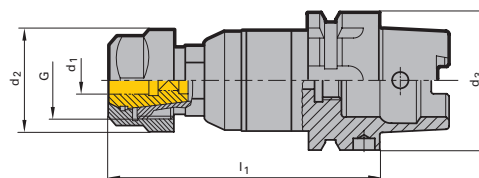
HSK-A synchro tapping chucks

Product information

- compensate synchronisation errors
- guarantee high thread quality and optimal tool life with conventional taps
- minimal length compensation in push and pull direction balances very small pitch differences between synchro spindle and tap, which can cause high frictional forces on the thread flanks
- length-setting screw allows 2 to 3 mm readjustment
- suitable for internal cooling
- max. coolant pressure up to 100 bar

Scope of delivery

- incl. retention nut Guhring no. 4306 IC/ER
- incl. 1 set of length-setting screws
- incl. socket wrench SW 2.5 for length setting screws
- order tapping collet, Guhring no. 4308, sealing washer, Guhring no. 4325 and clamping key, Guhring no. 4913 separately



Guhring no.

4327



| d ₃ ~DIN 1835 mm | retention nut | for thread | d ₁ mm | d ₂ mm | l ₁ mm | pull/push mm | G | kg | Code no. | Availability |
|-----------------------------------|------------------|---------------|----------------------|----------------------|----------------------|-----------------|---------|------|----------|--------------|
| 63 | ER20 | M3.5-M14 | 4-11.0 | 34 | 95.5 | ± 0.15 | M25x1.5 | 1.03 | 20,063 | • |
| 63 | ER20 | M3.5-M14 | 4-11.0 | 34 | 160.0 | ± 0.15 | M25x1.5 | 1.58 | 20,163 | • |
| 63 | ER32 | M3.5-M28 | 4-20.0 | 50 | 111.0 | ± 0.15 | M40x1.5 | 1.70 | 32,063 | • |
| 100 | ER20 | M3.5-M14 | 4-11.0 | 34 | 102.0 | ± 0.15 | M25x1.5 | 2.50 | 20,100 | • |
| 100 | ER32 | M3.5-M28 | 4-20.0 | 50 | 115.5 | ± 0.15 | M40x1.5 | 2.70 | 32,100 | • |

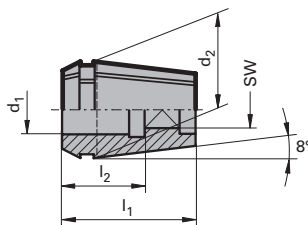
Tapping collets

Product information

- for synchro tapping chucks and collet holders

Guhring no.

4308



Correspondence shank / square dimensions in mm

| | | | | | | | | | | | | | | |
|----------------|-----|-----|-----|-----|-----|-----|----|----|----|----|----|------|----|----|
| d ₁ | 4.5 | 5.5 | 6.0 | 7.0 | 8.0 | 9.0 | 10 | 11 | 12 | 14 | 16 | 18 | 20 | 22 |
| SW | 3.4 | 4.3 | 4.9 | 5.5 | 6.2 | 7 | 8 | 9 | 9 | 11 | 12 | 14.5 | 16 | 18 |
| l ₂ | 18 | 18 | 18 | 18 | 22 | 22 | 25 | 25 | 25 | 25 | 25 | 25 | 28 | 28 |

| nominal size d ₂ | d ₁ mm | l ₁ mm | Code no. | Availability |
|--------------------------------|----------------------|----------------------|----------|--------------|
| ER16 | 4.5 | 27.5 | 4,516 | • |
| ER16 | 5.5 | 27.5 | 5,516 | • |
| ER16 | 6.0 | 27.5 | 6,016 | • |
| ER16 | 7.0 | 27.5 | 7,016 | • |
| ER16 | 8.0 | 27.5 | 8,016 | • |
| ER20 | 4.0 | 31.5 | 4,020 | • |
| ER20 | 4.5 | 31.5 | 4,520 | • |
| ER20 | 5.5 | 31.5 | 5,520 | • |
| ER20 | 6.0 | 31.5 | 6,020 | • |
| ER20 | 7.0 | 31.5 | 7,020 | • |
| ER20 | 8.0 | 31.5 | 8,020 | • |
| ER20 | 9.0 | 31.5 | 9,020 | • |
| ER20 | 10.0 | 31.5 | 10,020 | • |
| ER20 | 11.0 | 31.5 | 11,020 | • |
| ER25 | 4.5 | 34.0 | 4,525 | • |
| ER25 | 5.5 | 34.0 | 5,525 | • |
| ER25 | 6.0 | 34.0 | 6,025 | • |
| ER25 | 7.0 | 34.0 | 7,025 | • |
| ER25 | 8.0 | 34.0 | 8,025 | • |
| ER25 | 9.0 | 34.0 | 9,025 | • |
| ER25 | 10.0 | 34.0 | 10,025 | • |
| ER25 | 11.0 | 34.0 | 11,025 | • |
| ER25 | 12.0 | 34.0 | 12,025 | • |
| ER32 | 4.0 | 40.0 | 4,032 | • |
| ER32 | 4.5 | 40.0 | 4,532 | • |
| ER32 | 5.5 | 40.0 | 5,532 | • |
| ER32 | 6.0 | 40.0 | 6,032 | • |
| ER32 | 7.0 | 40.0 | 7,032 | • |
| ER32 | 8.0 | 40.0 | 8,032 | • |
| ER32 | 9.0 | 40.0 | 9,032 | • |
| ER32 | 10.0 | 40.0 | 10,032 | • |
| ER32 | 11.0 | 40.0 | 11,032 | • |
| ER32 | 12.0 | 40.0 | 12,032 | • |
| ER32 | 14.0 | 40.0 | 14,032 | • |
| ER32 | 16.0 | 40.0 | 16,032 | • |
| ER32 | 18.0 | 40.0 | 18,032 | • |
| ER32 | 20.0 | 40.0 | 20,032 | • |
| ER40 | 7.0 | 46.0 | 7,040 | • |
| ER40 | 8.0 | 46.0 | 8,040 | • |
| ER40 | 9.0 | 46.0 | 9,040 | • |
| ER40 | 10.0 | 46.0 | 10,040 | • |
| ER40 | 11.0 | 46.0 | 11,040 | • |
| ER40 | 12.0 | 46.0 | 12,040 | • |
| ER40 | 14.0 | 46.0 | 14,040 | • |
| ER40 | 16.0 | 46.0 | 16,040 | • |
| ER40 | 18.0 | 46.0 | 18,040 | • |
| ER40 | 20.0 | 46.0 | 20,040 | • |
| ER40 | 22.0 | 46.0 | 22,040 | • |

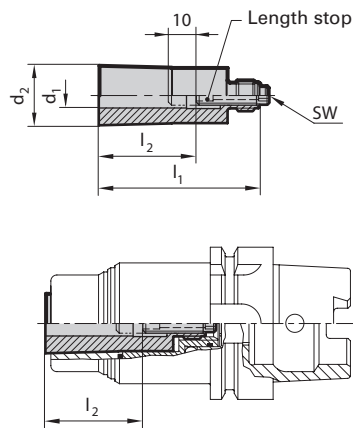
Clamping sleeves for precision clamping chucks

Product information

- for clamping tools with shank-Ø d1 h6
- for maximum holding torque
- design with peripheral cooling
- with length setting

Guhring no.

4302



| nom. size | d1 mm | d2 mm | l1 mm | l3 mm | SW | Code no. | Availability |
|-----------|-------|-------|-------|-------|----|----------|--------------|
| 20 | 6 | 24.6 | 66 | 36 | 4 | 6,020 | • |
| 20 | 8 | 24.6 | 66 | 36 | 4 | 8,020 | • |
| 20 | 10 | 24.6 | 66 | 40 | 4 | 10,020 | • |
| 20 | 12 | 24.6 | 66 | 45 | 4 | 12,020 | • |
| 20 | 14 | 24.6 | 66 | 45 | 4 | 14,020 | • |
| 20 | 16 | 24.6 | 66 | 48 | 4 | 16,020 | • |
| 20 | 18 | 24.6 | 66 | 48 | 4 | 18,020 | • |
| 20 | 20 | 24.6 | 66 | 50 | 4 | 20,020 | • |

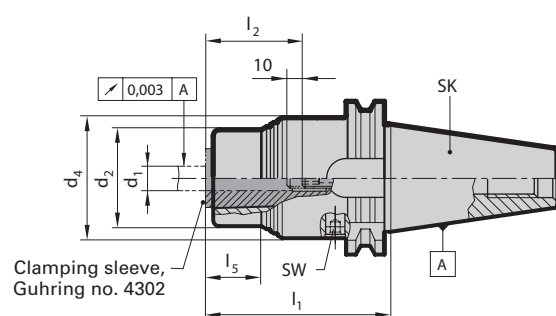
SK-A precision clamping chucks

Product information

- for heavy-duty cutting as well as HSC and HPC
- balancing quality G6.3/15,000 rev./min
- highest clamping force and stability thanks to mech. tension gearing
- with length setting
- suitable for internal cooling up to 80 bar

Guhring no.

4301



| SK | for bore-Ø d1 h6 mm | d2 mm | d4 mm | l1 mm | l2 mm | kg | Code no. | Availability |
|----|---------------------|-------|-------|-------|-------|------|----------|--------------|
| 40 | 3-20 | 40 | 50 | 63 | 20 | 0.54 | 20,040 | • |

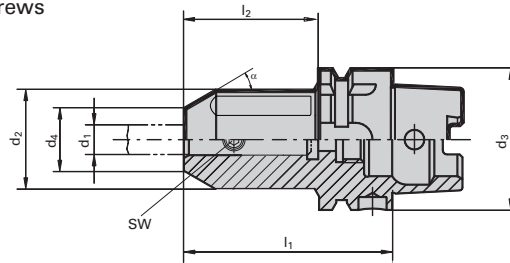
HSK-A side lock holders

Product information

- balancing quality: G6.3 / 15,000 rev./min
- with bore to DIN 1835-2 form B „Weldon“
- from bore $d_1 = 25$ with two clamping screws

Scope of delivery

- incl. clamping screw
Guhring no. 4903
- order coolant delivery set,
Guhring no. 4949 separately
- angle α :
25° at $\varnothing 6 - 20$
45° at $\varnothing 25 - 40$



Guhring no.

4329



| HSK-A d_3 | bore- \varnothing d_1 mm | d_2 mm | d_4 mm | l_1 mm | l_2 mm | SW | kg | Code no. | Availability |
|----------------|------------------------------------|-------------|-------------|-------------|-------------|----|------|----------|--------------|
| 32 | 6 | 25 | 15 | 60 | 37 | 3 | 0.24 | 6,032 | • |
| 32 | 8 | 28 | 20 | 60 | 37 | 4 | 0.27 | 8,032 | • |
| 32 | 10 | 35 | 25 | 65 | 41 | 5 | 0.31 | 10,032 | • |
| 32 | 12 | 42 | 30 | 65 | 46 | 6 | 0.41 | 12,032 | • |
| 40 | 6 | 25 | 15 | 60 | 37 | 3 | 0.33 | 6,040 | • |
| 40 | 8 | 28 | 20 | 60 | 37 | 4 | 0.35 | 8,040 | • |
| 40 | 10 | 35 | 25 | 60 | 41 | 5 | 0.47 | 10,040 | • |
| 40 | 12 | 42 | 30 | 70 | 46 | 6 | 0.58 | 12,040 | • |
| 40 | 14 | 44 | 32 | 75 | 46 | 6 | 0.59 | 14,040 | • |
| 40 | 16 | 48 | 36 | 75 | 49 | 6 | 0.64 | 16,040 | • |
| 50 | 6 | 25 | 15 | 65 | 37 | 3 | 0.52 | 6,050 | • |
| 50 | 8 | 28 | 20 | 65 | 37 | 4 | 0.55 | 8,050 | • |
| 50 | 10 | 35 | 25 | 65 | 41 | 5 | 0.62 | 10,050 | • |
| 50 | 12 | 42 | 30 | 80 | 46 | 6 | 0.87 | 12,050 | • |
| 50 | 14 | 44 | 32 | 80 | 46 | 6 | 0.90 | 14,050 | • |
| 50 | 16 | 48 | 36 | 80 | 49 | 6 | 0.94 | 16,050 | • |
| 50 | 18 | 50 | 38 | 80 | 49 | 6 | 0.96 | 18,050 | • |
| 50 | 20 | 52 | 40 | 80 | 51 | 8 | 0.97 | 20,050 | • |
| 63 | 6 | 25 | 15 | 65 | 37 | 3 | 0.81 | 6,063 | • |
| 63 | 8 | 28 | 20 | 65 | 37 | 4 | 0.83 | 8,063 | • |
| 63 | 10 | 35 | 25 | 65 | 41 | 5 | 0.89 | 10,063 | • |
| 63 | 12 | 42 | 30 | 80 | 46 | 6 | 1.20 | 12,063 | • |
| 63 | 14 | 44 | 32 | 80 | 46 | 6 | 1.20 | 14,063 | • |
| 63 | 16 | 48 | 36 | 80 | 49 | 6 | 1.30 | 16,063 | • |
| 63 | 18 | 50 | 38 | 80 | 49 | 6 | 1.35 | 18,063 | • |
| 63 | 20 | 52 | 40 | 80 | 51 | 8 | 1.40 | 20,063 | • |
| 63 | 25 | 65 | 45 | 110 | 59 | 10 | 2.40 | 25,063 | • |
| 63 | 32 | 72 | 56 | 110 | 63 | 10 | 2.70 | 32,063 | • |
| 80 | 6 | 25 | 15 | 80 | 37 | 3 | 1.75 | 6,080 | • |
| 80 | 8 | 28 | 20 | 80 | 37 | 4 | 1.90 | 8,080 | • |
| 80 | 10 | 35 | 25 | 80 | 41 | 5 | 2.10 | 10,080 | • |
| 80 | 12 | 42 | 30 | 80 | 46 | 6 | 2.10 | 12,080 | • |
| 80 | 14 | 44 | 32 | 80 | 46 | 6 | 2.30 | 14,080 | • |
| 80 | 16 | 48 | 36 | 100 | 49 | 6 | 2.50 | 16,080 | • |
| 80 | 18 | 50 | 38 | 100 | 49 | 6 | 2.50 | 18,080 | • |
| 80 | 20 | 52 | 40 | 100 | 51 | 8 | 2.70 | 20,080 | • |
| 80 | 25 | 65 | 45 | 100 | 59 | 10 | 2.80 | 25,080 | • |
| 80 | 32 | 72 | 56 | 110 | 63 | 10 | 2.85 | 32,080 | • |
| 80 | 40 | 80 | 60 | 120 | 73 | 10 | 2.98 | 40,080 | • |
| 100 | 6 | 25 | 15 | 80 | 37 | 3 | 3.00 | 6,100 | • |
| 100 | 8 | 28 | 20 | 80 | 37 | 4 | 3.20 | 8,100 | • |
| 100 | 10 | 35 | 25 | 80 | 41 | 5 | 3.40 | 10,100 | • |
| 100 | 12 | 42 | 30 | 80 | 46 | 6 | 3.40 | 12,100 | • |
| 100 | 14 | 44 | 32 | 80 | 46 | 6 | 3.50 | 14,100 | • |
| 100 | 16 | 48 | 36 | 100 | 49 | 6 | 3.80 | 16,100 | • |
| 100 | 18 | 50 | 38 | 100 | 49 | 6 | 3.80 | 18,100 | • |
| 100 | 20 | 52 | 40 | 100 | 51 | 8 | 3.90 | 20,100 | • |
| 100 | 25 | 65 | 45 | 100 | 59 | 10 | 3.90 | 25,100 | • |
| 100 | 32 | 72 | 56 | 100 | 63 | 10 | 4.20 | 32,100 | • |
| 100 | 40 | 80 | 60 | 110 | 73 | 10 | 4.60 | 40,100 | • |

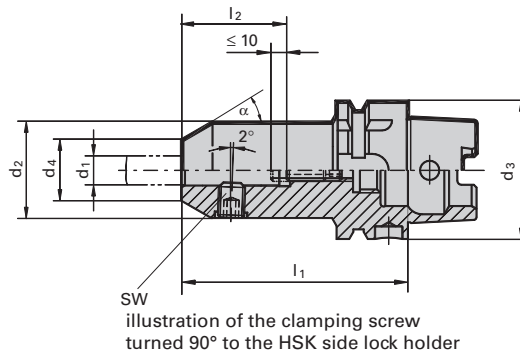
HSK-A side lock holders

Product information

- balancing quality: G6.3 / 15,000 rev./min
- with bore DIN 1835-2 form E „Whistle Notch“
- from bore $d_1 = 25$ with two clamping screws

Scope of delivery

- incl. clamping screw
Guhring no. 4903 and setting screw Guhring no. 4904
- order coolant delivery set
Guhring no. 4949 separately
- angle α :
25° at $\varnothing 6 - 20$
45° at $\varnothing 25 - 32$



Guhring no.

4334



| HSK-A d_3 | bore- \varnothing d_1 mm | d_2 mm | d_4 mm | l_1 mm | l_2 mm | SW | incl. setting screw 4904 ... | kg | Code no. | Availability |
|----------------|------------------------------------|-------------|-------------|-------------|-------------|----|------------------------------------|------|----------|--------------|
| 32 | 6 | 25 | 15 | 80 | 36 | 3 | 5.016 | 0.32 | 6,032 | • |
| 32 | 8 | 28 | 20 | 80 | 36 | 4 | 6.016 | 0.36 | 8,032 | • |
| 32 | 10 | 35 | 25 | 80 | 40 | 5 | 8.012 | 0.46 | 10,032 | • |
| 32 | 12 | 42 | 30 | 80 | 45 | 6 | 10.017 | 0.57 | 12,032 | • |
| 40 | 6 | 25 | 15 | 80 | 36 | 3 | 5.016 | 0.36 | 6,040 | • |
| 40 | 8 | 28 | 20 | 80 | 36 | 4 | 6.016 | 0.40 | 8,040 | • |
| 40 | 10 | 35 | 25 | 80 | 40 | 5 | 8.012 | 0.50 | 10,040 | • |
| 40 | 12 | 42 | 30 | 90 | 45 | 6 | 10.017 | 0.68 | 12,040 | • |
| 40 | 14 | 44 | 32 | 90 | 45 | 6 | 10.017 | 0.72 | 14,040 | • |
| 40 | 16 | 48 | 36 | 90 | 48 | 6 | 12.014 | 0.77 | 16,040 | • |
| 50 | 6 | 25 | 15 | 80 | 36 | 3 | 5.020 | 0.58 | 6,050 | • |
| 50 | 8 | 28 | 20 | 80 | 36 | 4 | 6.020 | 0.62 | 8,050 | • |
| 50 | 10 | 35 | 25 | 80 | 40 | 5 | 8.018 | 0.73 | 10,050 | • |
| 50 | 12 | 42 | 30 | 90 | 45 | 6 | 10.020 | 0.97 | 12,050 | • |
| 50 | 14 | 44 | 32 | 90 | 45 | 6 | 10.020 | 1.00 | 14,050 | • |
| 50 | 16 | 48 | 36 | 90 | 48 | 6 | 12.020 | 1.09 | 16,050 | • |
| 50 | 18 | 50 | 38 | 90 | 48 | 6 | 12.020 | 1.12 | 18,050 | • |
| 50 | 20 | 52 | 40 | 100 | 50 | 8 | 16.025 | 1.30 | 20,050 | • |
| 63 | 6 | 25 | 15 | 80 | 36 | 3 | 5.020 | 0.86 | 6,063 | • |
| 63 | 8 | 28 | 20 | 80 | 36 | 4 | 6.020 | 0.90 | 8,063 | • |
| 63 | 10 | 35 | 25 | 80 | 40 | 5 | 8.018 | 1.00 | 10,063 | • |
| 63 | 12 | 42 | 30 | 90 | 45 | 6 | 10.020 | 1.24 | 12,063 | • |
| 63 | 14 | 44 | 32 | 90 | 45 | 6 | 10.020 | 1.28 | 14,063 | • |
| 63 | 16 | 48 | 36 | 100 | 48 | 6 | 12.020 | 1.53 | 16,063 | • |
| 63 | 18 | 50 | 38 | 100 | 48 | 6 | 12.020 | 1.60 | 18,063 | • |
| 63 | 20 | 52 | 40 | 100 | 50 | 8 | 16.025 | 1.65 | 20,063 | • |
| 63 | 25 | 65 | 45 | 110 | 56 | 10 | 20.025 | 2.34 | 25,063 | • |
| 63 | 32 | 72 | 56 | 110 | 60 | 10 | 20.025 | 2.54 | 32,063 | • |
| 80 | 6 | 25 | 15 | 90 | 36 | 3 | 5.020 | 2.20 | 6,080 | • |
| 80 | 8 | 28 | 20 | 90 | 36 | 4 | 6.020 | 2.25 | 8,080 | • |
| 80 | 10 | 35 | 25 | 90 | 40 | 5 | 8.018 | 2.56 | 10,080 | • |
| 80 | 12 | 42 | 30 | 100 | 45 | 6 | 10.020 | 2.60 | 12,080 | • |
| 80 | 14 | 44 | 32 | 100 | 45 | 6 | 10.020 | 2.85 | 14,080 | • |
| 80 | 16 | 48 | 36 | 100 | 48 | 6 | 12.020 | 2.88 | 16,080 | • |
| 80 | 18 | 50 | 38 | 100 | 48 | 6 | 12.020 | 2.90 | 18,080 | • |
| 80 | 20 | 52 | 40 | 110 | 50 | 8 | 16.025 | 3.05 | 20,080 | • |
| 80 | 25 | 65 | 45 | 110 | 56 | 10 | 20.025 | 3.10 | 25,080 | • |
| 80 | 32 | 72 | 56 | 120 | 60 | 10 | 20.025 | 3.20 | 32,080 | • |
| 100 | 6 | 25 | 15 | 90 | 36 | 3 | 5.020 | 2.60 | 6,100 | • |
| 100 | 8 | 28 | 20 | 90 | 36 | 4 | 6.020 | 2.60 | 8,100 | • |
| 100 | 10 | 35 | 25 | 90 | 40 | 5 | 8.018 | 2.60 | 10,100 | • |
| 100 | 12 | 42 | 30 | 100 | 45 | 6 | 10.020 | 2.80 | 12,100 | • |
| 100 | 14 | 44 | 32 | 100 | 45 | 6 | 10.020 | 2.85 | 14,100 | • |
| 100 | 16 | 48 | 36 | 100 | 48 | 6 | 12.020 | 2.97 | 16,100 | • |
| 100 | 18 | 50 | 38 | 100 | 48 | 6 | 12.020 | 3.10 | 18,100 | • |
| 100 | 20 | 52 | 40 | 110 | 50 | 8 | 16.025 | 3.23 | 20,100 | • |
| 100 | 25 | 65 | 45 | 120 | 56 | 10 | 20.025 | 4.06 | 25,100 | • |
| 100 | 32 | 72 | 56 | 120 | 60 | 10 | 20.025 | 4.40 | 32,100 | • |

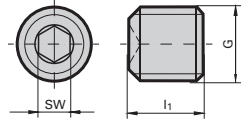
Clamping screws

Product information

- for side lock holders with bore to DIN 1835-2, B and E, and HSK-A adaptors for tapping chucks, Guhring nos. 4317/4322/4329/4333/4334/4343
- Guhring no. 4903 12,001 (M12) only for Guhring no. 4343

Scope of delivery

- minimum order quantity 5



Guhring no.

4903

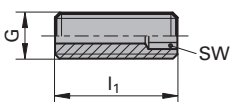


| für Aufnahme- Ø | G | l ₁ mm | SW | Code no. | Availability |
|--------------------|-------|----------------------|----|----------|--------------|
| 6 | M6 | 10 | 3 | 6,000 | • |
| 8 | M8 | 10 | 4 | 8,000 | • |
| 10 | M10 | 12 | 5 | 10,000 | • |
| 12/14 | M12 | 16 | 6 | 12,000 | • |
| 25 | M12 | 12 | 6 | 12,001 | • |
| 16/18 | M14 | 16 | 6 | 14,000 | • |
| 20 | M16 | 16 | 8 | 16,000 | • |
| 25 | M18x2 | 20 | 10 | 18,000 | • |
| 32 | M20x2 | 20 | 10 | 20,000 | • |
| 40 | M20x2 | 25 | 10 | 20,001 | • |

Setting screws

Product information

- for HSK-A side lock holders with bore to DIN 1835-2, form E, shrink fit chuck and shrink fit extensions
- minimum order quantity 5



Guhring no.

4904

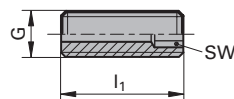


| G | l ₁ mm | SW | Code no. | Availability |
|-----|----------------------|-----|----------|--------------|
| M5 | 16 | 2.5 | 5,016 | • |
| M5 | 20 | 2.5 | 5,020 | • |
| M6 | 16 | 3.0 | 6,016 | • |
| M6 | 20 | 3.0 | 6,020 | • |
| M8 | 12 | 3.0 | 8,012 | • |
| M8 | 18 | 4.0 | 8,018 | • |
| M10 | 17 | 3.0 | 10,017 | • |
| M10 | 20 | 5.0 | 10,020 | • |
| M12 | 14 | 3.0 | 12,014 | • |
| M12 | 20 | 5.0 | 12,020 | • |
| M16 | 25 | 5.0 | 16,025 | • |
| M20 | 25 | 6.0 | 20,025 | • |

Setting screws

Product information

- for HSK-C side lock with bore to DIN 1835-2, form E, Guhring nos. 4333 / 4322
- minimum order quantity 5



Guhring no.

4905



| G | l ₁ mm | SW | Code no. | Availability |
|-----|----------------------|-----|----------|--------------|
| M5 | 14 | 2.5 | 5,014 | • |
| M5 | 16 | 2.5 | 5,016 | • |
| M6 | 14 | 3.0 | 6,014 | • |
| M6 | 16 | 3.0 | 6,016 | • |
| M8 | 15 | 4.0 | 8,015 | • |
| M8 | 17 | 4.0 | 8,017 | • |
| M10 | 17 | 5.0 | 10,017 | • |
| M10 | 20 | 5.0 | 10,020 | • |
| M12 | 19 | 6.0 | 12,019 | • |
| M12 | 22 | 6.0 | 12,022 | • |
| M16 | 20 | 6.0 | 16,020 | • |
| M20 | 26 | 6.0 | 20,026 | • |

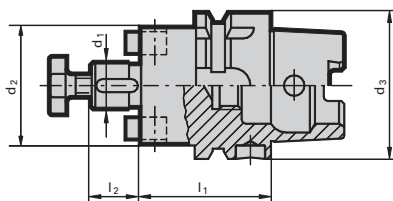
HSK-A shell milling arbors

Product information

- to hold shell mills DIN 841, arbor-type single angle cutters DIN 842 with keyway, shell mills DIN 1880 with keyway an milling cutters with inserts DIN 1830
- bore-Ø 40 mm has four additional holes with internal thread for milling heads with tool attachment DIN 2079

Scope of delivery

- completely assembled with milling cutter retaining screw, Guhring no. 4908, drive dogs, Guhring no. 4922 and feather key Guhring no. 4923



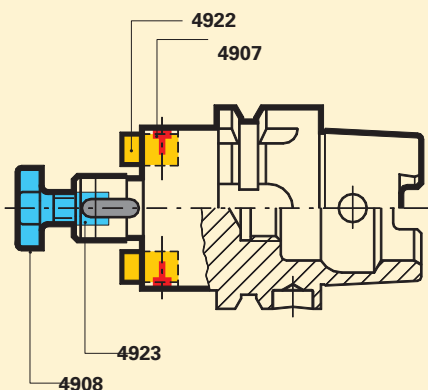
Guhring no.

4361



| HSK-A d ₃ | arbor-Ø d ₁ mm | d ₂ mm | l ₁ mm | l ₂ mm | kg | Code no. | Availability |
|----------------------|---------------------------|-------------------|-------------------|-------------------|------|----------|--------------|
| 32 | 16 | 40 | 45 | 17 | 0.27 | 16,032 | ● |
| 32 | 22 | 50 | 50 | 19 | 0.40 | 22,032 | ● |
| 40 | 16 | 40 | 45 | 17 | 0.43 | 16,040 | ● |
| 40 | 22 | 50 | 50 | 19 | 0.53 | 22,040 | ● |
| 50 | 16 | 40 | 45 | 17 | 0.61 | 16,050 | ● |
| 50 | 22 | 50 | 50 | 19 | 0.79 | 22,050 | ● |
| 50 | 27 | 60 | 55 | 21 | 0.96 | 27,050 | ● |
| 63 | 16 | 40 | 45 | 17 | 0.87 | 16,063 | ● |
| 63 | 22 | 50 | 50 | 19 | 1.08 | 22,063 | ● |
| 63 | 27 | 60 | 55 | 21 | 1.32 | 27,063 | ● |
| 63 | 32 | 78 | 55 | 24 | 1.61 | 32,063 | ● |
| 63 | 40 | 89 | 60 | 27 | 2.11 | 40,063 | ● |
| 80 | 16 | 40 | 45 | 17 | 2.10 | 16,080 | ● |
| 80 | 22 | 50 | 50 | 19 | 2.30 | 22,080 | ● |
| 80 | 27 | 60 | 55 | 21 | 2.45 | 27,080 | ● |
| 80 | 32 | 78 | 55 | 24 | 2.55 | 32,080 | ● |
| 80 | 40 | 89 | 60 | 27 | 3.40 | 40,080 | ● |
| 100 | 22 | 50 | 50 | 19 | 2.51 | 22,100 | ● |
| 100 | 27 | 60 | 55 | 21 | 2.76 | 27,100 | ● |
| 100 | 32 | 78 | 55 | 24 | 3.16 | 32,100 | ● |
| 100 | 40 | 89 | 60 | 27 | 3.72 | 40,100 | ● |
| 100 | 50 | 120 | 70 | 30 | 5.59 | 50,100 | ● |

Positioning of accessories



Feather keys DIN 6885 A

Product information

- minimum order quantity 10

Guhring no.

4923



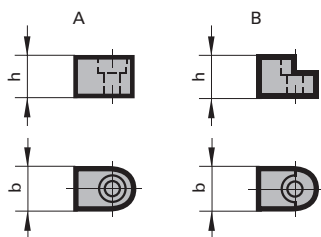
| for arbor-Ø mm | l ₁ mm | b mm | Code no. | Availability |
|----------------|-------------------|------|----------|--------------|
| 16 | 14 | 4 | 4,016 | ● |
| 22 | 16 | 6 | 6,022 | ● |
| 27 | 19 | 7 | 7,027 | ● |
| 32 | 22 | 8 | 8,032 | ● |
| 40 | 25 | 10 | 10,040 | ● |
| 50 | 28 | 12 | 12,050 | ○ |

Drive dog sets for shell milling arbors

Product information

- minimum order quantity 4

Guhring no. **4922**



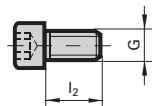
| for arbor-Ø mm | form | h mm | b mm | Code no. | Availability |
|----------------|------|-------|------|----------|--------------|
| 16 | B | 9.25 | 8 | 16,000 | ● |
| 22 | B | 11.00 | 10 | 22,000 | ● |
| 27 | A | 12.75 | 12 | 27,000 | ● |
| 32 | A | 16.50 | 14 | 32,000 | ● |
| 40 | A | 20.00 | 16 | 40,000 | ● |
| 50 | A | 27.50 | 18 | 50,000 | ○ |

Screws DIN EN ISO 4762 (former DIN 912)

Product information

- minimum order quantity 10

Guhring no. **4907**



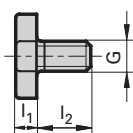
| for arbor-Ø mm | G | l ₂ | class of strength | Code no. | Availability |
|----------------|-----|----------------|-------------------|----------|--------------|
| 16 | M4 | 10 | 8.8 | 4,100 | ● |
| 22/27 | M5 | 12 | 8.8 | 5,120 | ● |
| 32 | M6 | 16 | 8.8 | 6,160 | ● |
| 40 | M6 | 20 | 8.8 | 6,200 | ● |
| 50 | M8 | 25 | 8.8 | 8,250 | ○ |
| 40 | M12 | 12 | 10.9 | 12,650 | ● |

Retaining screws DIN 6367 for internal cooling

Product information

- minimum order quantity 3
- to DIN 6367

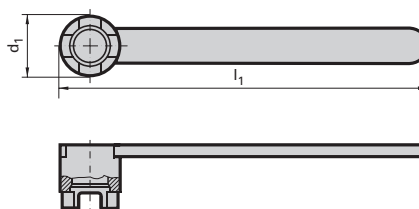
Guhring no. **4908**



| for arbor-Ø mm | G | l ₁ mm | l ₂ mm | Code no. | Availability |
|----------------|-----|-------------------|-------------------|----------|--------------|
| 16* | M8 | 6 | 16 | 16,000 | ● |
| 22* | M10 | 7 | 18 | 22,000 | ● |
| 27* | M12 | 8 | 22 | 27,000 | ● |
| 32* | M16 | 9 | 26 | 32,000 | ● |
| 40* | M20 | 10 | 30 | 40,000 | ● |
| 50* | M24 | 12 | 36 | 50,000 | ○ |

Socket wrenches for retaining screws

Guhring no. **4909**



| for arbor-Ø mm | d ₁ mm | l ₁ mm | Code no. | Availability |
|----------------|-------------------|-------------------|----------|--------------|
| 16 | 22 | 180 | 16,000 | ● |
| 22 | 28 | 200 | 22,000 | ● |
| 27 | 35 | 225 | 27,000 | ● |
| 32 | 42 | 250 | 32,000 | ● |
| 40 | 52 | 280 | 40,000 | ● |
| 50 | 63 | 315 | 50,000 | ○ |

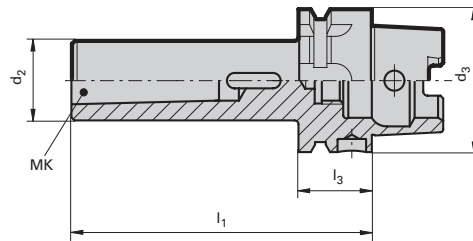
HSK-A morse taper holders

Product information

- for holding Morse tapers with tang to DIN 228, form B

Guhring no.

4320



| HSK-A d ₃ | Morse taper | d ₂ mm | l ₁ mm | l ₃ mm | kg | Code no. | Availability |
|----------------------|-------------|-------------------|-------------------|-------------------|------|----------|--------------|
| 50 | 1 | 25 | 100 | 26 | 0.80 | 1,050 | ● |
| 50 | 2 | 32 | 120 | 26 | 0.83 | 2,050 | ● |
| 50 | 3 | 40 | 140 | 26 | 1.20 | 3,050 | ● |
| 63 | 1 | 25 | 100 | 26 | 0.90 | 1,063 | ● |
| 63 | 2 | 32 | 120 | 26 | 1.11 | 2,063 | ● |
| 63 | 3 | 40 | 140 | 26 | 1.46 | 3,063 | ● |
| 63 | 4 | 48 | 160 | 26 | 1.88 | 4,063 | ● |
| 80 | 1 | 25 | 110 | 26 | 1.50 | 1,080 | ● |
| 80 | 2 | 32 | 120 | 26 | 1.68 | 2,080 | ● |
| 80 | 3 | 40 | 140 | 26 | 2.08 | 3,080 | ● |
| 80 | 4 | 48 | 170 | 26 | 2.60 | 4,080 | ● |
| 100 | 2 | 32 | 120 | 29 | 2.50 | 2,100 | ● |
| 100 | 3 | 40 | 140 | 29 | 2.80 | 3,100 | ● |
| 100 | 4 | 48 | 170 | 29 | 4.20 | 4,100 | ● |
| 100 | 5 | 63 | 200 | 29 | 4.50 | 5,100 | ● |

HSK-A NC drilling chucks with internal cooling

Product information

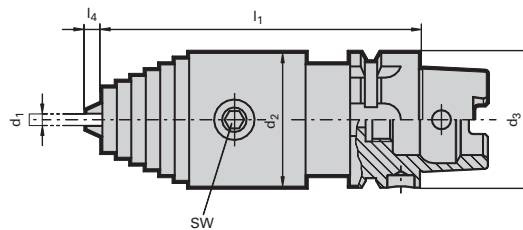
- for clamping all straight shank tools
- continuous Ø-range
- max. coolant pressure 50 bar

Scope of delivery

- inkl. clamping key
- order coolant delivery set, Guhring no. 4949 separately

Guhring no.

4346



| HSK-A d ₃ | clamping range d ₁ mm | d ₂ mm | l ₁ mm | l ₄ max. mm | SW | kg | Code no. | Availability |
|----------------------|----------------------------------|-------------------|-------------------|------------------------|----|------|----------|--------------|
| 50 | 1.0 - 13 | 50 | 116 | 6 | 6 | 0.94 | 13,050 | ● |
| 50 | 2.5 - 16 | 57 | 116 | 11 | 6 | 1.64 | 16,050 | ● |
| 63 | 1.0 - 13 | 50 | 104 | 6 | 6 | 1.60 | 13,063 | ● |
| 63 | 2.5 - 16 | 57 | 104 | 11 | 6 | 1.85 | 16,063 | ● |
| 80 | 1.0 - 13 | 50 | 109 | 6 | 6 | 2.40 | 13,080 | ● |
| 80 | 2.5 - 16 | 57 | 109 | 11 | 6 | 2.70 | 16,080 | ● |
| 100 | 1.0 - 13 | 50 | 110 | 6 | 6 | 3.00 | 13,100 | ● |
| 100 | 2.5 - 16 | 57 | 110 | 11 | 6 | 3.30 | 16,100 | ● |

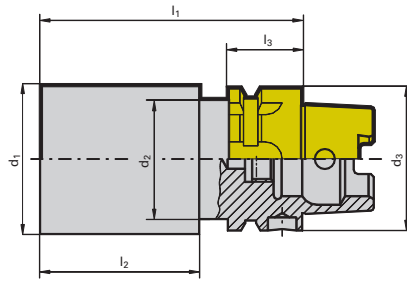
HSK-A blanks

Product information

- material: nitrided steel, hardened and ground taper (yellow in scale drawing), blank unhardened for further machining

Guhring no.

4983



| HSK-A d ₃ | d ₁ mm | d ₂ mm | l ₁ mm | l ₂ mm | l ₃ mm | kg | Code no. | Availability |
|-------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-------|----------|--------------|
| 32 | 41 | 26 | 175 | 140 | 20 | 1.62 | 175,032 | • |
| 40 | 51 | 34 | 205 | 170 | 20 | 3.02 | 205,040 | • |
| 50 | 64 | 42 | 235 | 193 | 26 | 5.42 | 235,050 | • |
| 63 | 63 | 53 | 150 | 108 | 26 | 3.55 | 150,063 | • |
| 63 | 81 | 53 | 235 | 193 | 26 | 8.71 | 235,063 | • |
| 80 | 101 | 67 | 235 | 193 | 26 | 13.63 | 235,080 | • |
| 100 | 126 | 85 | 250 | 205 | 29 | 22.71 | 250,100 | • |

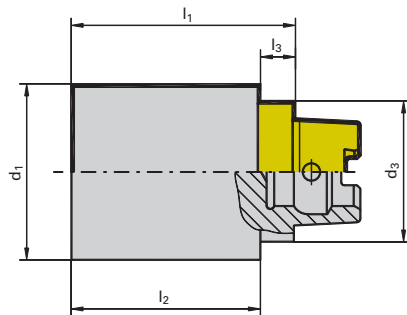
HSK-C blanks

Product information

- material: nitrided steel, hardened and ground taper (yellow in scale drawing), blank unhardened for further machining
- machining not permitted in l₃ area

Guhring no.

4982



| HSK-C d ₃ | d ₁ mm | l ₁ mm | l ₂ mm | l ₃ mm | kg | Code no. | Availability |
|-------------------------|----------------------|----------------------|----------------------|----------------------|-------|----------|--------------|
| 32 | 41 | 150 | 139 | 11 | 1.50 | 50,032 | • |
| 40 | 51 | 180 | 169 | 11 | 2.81 | 63,040 | • |
| 50 | 64 | 200 | 186 | 14 | 4.92 | 80,050 | • |
| 50 | 64 | 90 | 76 | 14 | 2.15 | 100,050 | • |
| 63 | 81 | 200 | 186 | 14 | 7.90 | 112,063 | • |
| 63 | 81 | 100 | 86 | 14 | 3.89 | 125,063 | • |
| 80 | 101 | 210 | 193 | 17 | 12.90 | 120,080 | • |
| 100 | 124 | 225 | 208 | 17 | 21.70 | 145,100 | • |

MEASURING TOOLS



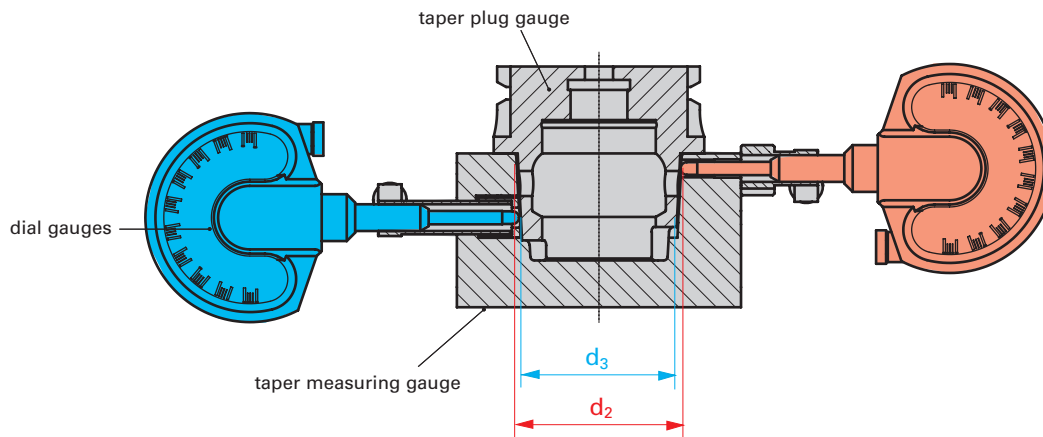
- **Measuring gauges** from page 140
- **Clamping force measuring instruments** from page 142
- **Taper proofing bars and balancing masters** from page 144
- **Coolant supply measuring instruments** from page 145

Measuring gauges for HSK tool shanks

To ensure sustained accuracy at HSK interfaces, we recommend comparison measuring of the geometry of HSK tool shanks and spindles at regular intervals. These checks should become more frequent with an increased change rate at the interface.

Measuring gauges for HSK tool shanks

for nominal taper diameter d_2 and d_3



Taper measuring gauge for HSK tool shanks

Product information

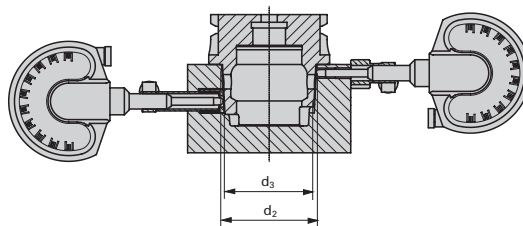
- calibration on request

Scope of delivery

- incl. calibrated taper plug gauge and measuring instructions
- supplied in wooden case with inspection protocol

Guhring no.

4968



| for HSK | d_2 mm | d_3 mm | Code no. | Availability |
|---------|-------------|-------------|----------|--------------|
| 25 | 19 | 18.4 | 19,100 | ○ |
| 32 | 24 | 23.2 | 24,100 | ● |
| 40 | 30 | 29.0 | 30,100 | ● |
| 50 | 38 | 36.9 | 38,100 | ● |
| 63 | 48 | 46.5 | 48,100 | ● |
| 80 | 60 | 58.1 | 60,100 | ● |
| 100 | 75 | 72.6 | 75,100 | ● |

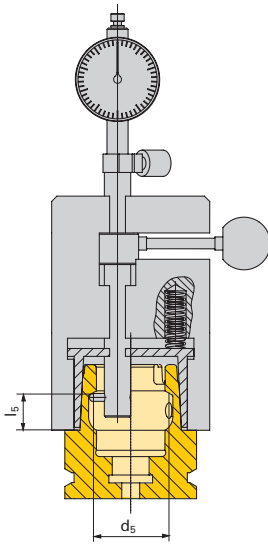
Measuring gauges for HSK clamping shoulders

Product information

- calibration on request

Scope of delivery

- incl. calibrated setting gauge and measuring instructions
- supplied in plastic case with inspection protocol



Guhring no.

4978



| for HSK A/C/E | l_1 mm | d_1 mm | Code no. | Availability |
|---------------|-------------|-------------|----------|--------------|
| 25 | 7.21 | 15 | 19,000 | ○ |
| 32 | 8.92 | 19 | 24,000 | ● |
| 40 | 11.42 | 23 | 30,000 | ● |
| 50 | 14.13 | 29 | 38,000 | ● |
| 63 | 18.13 | 37 | 48,000 | ● |
| 80 | 22.85 | 46 | 60,000 | ● |
| 100 | 28.56 | 58 | 75,000 | ● |

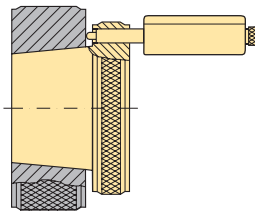
Measuring gauges for HSK spindles

Product information

- calibration on request

Scope of delivery

- incl. calibrated setting gauge and measuring instructions
- supplied in wooden case with inspection protocol



Guhring no.

4969



| for HSK | kg | Code no. | Availability |
|---------|------|----------|--------------|
| 25 | 0.60 | 19,000 | ● |
| 32 | 0.91 | 24,000 | ● |
| 40 | 1.13 | 30,000 | ● |
| 50 | 1.60 | 38,000 | ● |
| 63 | 3.02 | 48,000 | ● |
| 80 | 4.94 | 60,000 | ● |
| 100 | 8.10 | 75,000 | ● |

Clamping force measuring instrument for HSK / SK clamping systems

The accuracy of the HSK connection does not only depend on the geometry but also on the drawing force of the HSK clamping system which plays an important part in ensuring a powerful and dimensionally accurate connection.

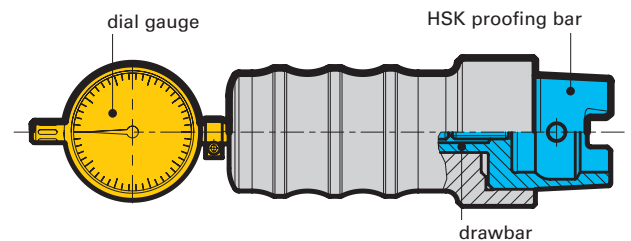
To ensure operational safety, a regular clamping force check of the HSK interface is recommended. An entirely mechanical clamping force measuring instrument is now available from Guhring. Its operation is based on components, which are linear adjustable in length and positioned proportional to the force. A force is associated with the alteration in length which is displayed via an analogue dial gauge.

Specifications:

- few components, therefore cost-efficient
- robust design
- battery or mains connection not required
- patented operating principle which is also adaptable to other spindle designs

Minimum required pull forces for clamping systems

| | |
|-------------------|--------|
| taper size HSK32 | 5 kN |
| taper size HSK40 | 6,8 kN |
| taper size HSK50 | 11 kN |
| taper size HSK63 | 18 kN |
| taper size HSK80 | 28 kN |
| taper size HSK100 | 45 kN |
| taper size SK30 | 6 kN |
| taper size SK40 | 12 kN |
| taper size SK50 | 25 kN |



Clamping force measuring instrument

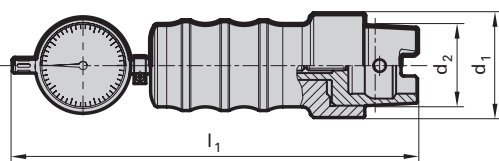
Product information

- calibration on request

Scope of delivery

- supplied in wooden case with inspection protocol, calibrated, with measuring instructions

Guhring no.



| HSK-A/C d1 | ISO | d2 mm | l1 mm | Code no. | Availability | Code no. | Availability |
|---------------|-----|----------|----------|----------|--------------|----------|--------------|
| — | 40 | 30 | 260 | 40,000 | • | | |
| — | 50 | 38 | 300 | 50,000 | • | | |
| 25 | — | 19 | 196 | | | 19,000 | • |
| 32 | — | 24 | 201 | | | 24,000 | • |
| 40 | — | 30 | 205 | | | 30,000 | • |
| 50 | — | 38 | 213 | | | 38,000 | • |
| 63 | — | 48 | 246 | | | 48,000 | • |
| 80 | — | 60 | 260 | | | 60,000 | • |
| 100 | — | 75 | 270.5 | | | 75,000 | • |

Clamping force proofing instrument Senso 3000

The hydraulic clamping technology is a well-known, proven and reliable method for the clamping of tools. Thanks to its completely closed design the system is sealed and impervious, requires extremely low maintenance and guarantees longevity. Following many years of general use, however, thermal and mechanical influences can lead to a reduction in clamping force. The result can be a poor tool life and a diminished surface quality including expensive tool breakages during machining operations.

Determining the loss of clamping force was until now extremely costly and inaccurate. It involved either determining the number of clamping screw rotations or the torque with the assistance of a proofing bar and a torque key or the expansion rate applying an accurate internal measuring instrument.

The new Guhring SENSO 3000 measuring instrument offers a precise, quick and simple as well as consistent method of measuring the clamping force. An added advantage is the mobility of the system, i.e. for measuring within machines and fixtures.

SENSO 3000 determines the clamping force of the hydraulic chuck via a pressure sensitive plug gauge. The entire length of the plug gauge is clamped in the hydraulic chuck so that when tightening the clamping screw the clamping pressure of the chuck is optimally applied. The clamping force measuring instrument displays the clamping force as an absolute measurement value on the one hand and as a percentage clamping force in relation to a reference value that can be set individually on the other. This way, SENSO

3000 can be adapted to customer specific application conditions and requirements.

The clamping force measuring instrument is supplied with a plug gauge for the respective clamping diameter as well as a carbide proofing bar for calibration purposes and a CR 2430 type battery – all in a sturdy and handy case.




SENSO 3000

Scope of delivery

- supplied respectively with measuring arbor, carbide proofing arbor, battery and case

Guhring no.

| Guhring no. | | |
|-------------------------|---|--------------|
| |  | |
| clamping diameter mm | Code no. | Availability |
| 6.0 | 6,000 | • |
| 8.0 | 8,000 | • |
| 10.0 | 10,000 | • |
| 12.0 | 12,000 | • |
| 14.0 | 14,000 | • |
| 16.0 | 16,000 | • |
| 18.0 | 18,000 | • |
| 20.0 | 20,000 | • |
| 25.0 | 25,000 | • |
| 32.0 | 32,000 | • |

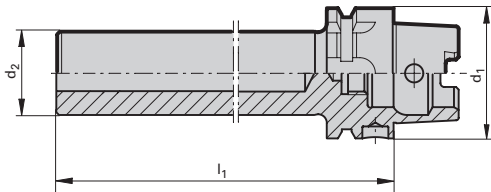
Taper proofing bars HSK/ISO

Product information

- to proof concentricity at machine spindles
- for HSK and ISO taper to DIN 69871
- calibration on request

Scope of delivery

- supplied in wooden case for vertical storage with inspection protocol



| HSK d_1 | ISO taper | d_2 mm | l_1 mm | Code no. | Availability | Code no. | Availability |
|-----------|-----------|----------|----------|----------|--------------|----------|--------------|
| – | 40 | 40 | 320 | 300,040 | • | | |
| – | 50 | 40 | 320 | 300,050 | • | | |
| 25 | – | 20 | 140 | | | 125,025 | • |
| 32 | – | 24 | 180 | | | 150,032 | • |
| 40 | – | 24 | 180 | | | 150,040 | • |
| 50 | – | 32 | 236 | | | 200,050 | • |
| 63 | – | 40 | 346 | | | 300,063 | • |
| 80 | – | 40 | 346 | | | 300,080 | • |
| 100 | – | 40 | 349 | | | 300,100 | • |

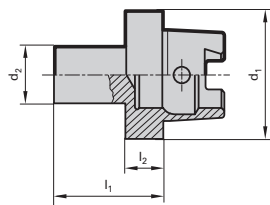
Balancing masters for HSK spindles

Product information

- calibration on request Anfrage
- balancing quality:
G=2.5 / 20,000 rev./min

Scope of delivery

- supplied in wooden case with inspection protocol



Guhring no.

4975



| HSK-C d_1 | d_2 mm | l_1 mm | l_2 mm | Code no. | Availability |
|-------------|----------|----------|----------|----------|--------------|
| 25 | 12 | 23.0 | 8.0 | 25,000 | • |
| 32 | 14 | 40.0 | 10.0 | 32,000 | • |
| 40 | 16 | 40.0 | 10.0 | 40,000 | • |
| 50 | 18 | 42.5 | 12.5 | 50,000 | • |
| 63 | 20 | 41.0 | 12.5 | 63,000 | • |
| 80 | – | – | 16.0 | 80,000 | • |
| 100 | – | – | 16.0 | 100,000 | • |

Flow rate measuring instrument PQ 3000

Guhring's PQ 3000 enables quick and simple measuring of pressure and volume of coolant flow directly in the machine using the actual tool applied.

Guhring has developed the PQ 3000 instrument for quick, simple and direct measuring of the existing coolant pressure and rate of flow for tools with internal cooling.

PQ 3000 enables the measuring of pressure and rate of flow of coolant when the actual tool is clamped directly in the stationary tool spindle. This way, it is possible to establish the real conditions of the relevant machine and



tool configuration and measure the resulting actual rate of flow.

PQ 3000 provides the following information:

- pressure and volume flow of the coolant pump, the so-called P/Q characteristic curve
- possible pump or seal wear as well as rotary transmission losses
- possible narrowed cross sections in the line through machine, spindle and tool holder
- possible blocked filters
- possible narrowed cross sections resulting from deposits on the surface of the coolant ducts in the tool
- the coolant duct layout in the tool

to identify and rectify possible weak points in the overall system, this way, the tool life of the applied tool can be optimised preventing tool breakage as well as chip congestion and jamming!

PQ 3000 provides data of sensors and indicates the measuring results on the display fixture. A data interface enables an evaluation via software on your PC (interface and software are available on request).

PQ 3000

Product information

- pressure checking range: 1 to 120 bar
- rate of flow checking range: 2 to 40 l/min
- diameter holder shank: 16 mm
- diameter range tool holder: ER 32 / 6 to 20 mm
- display for existing pressure P in bar also rate of flow volume Q in l/min

Scope of delivery

- clamping fixture and checking instrument
- display fixture with grip and connection socket
- checking data cable with connector plug, length 3 m
- ER 32 collet holder and sealing washer set for standard shanks with collets from 6 to 20 mm diameter
- clamping key for tensioning nut

Guhring no.

4068



| | Code no. | Availability |
|--|----------|-----------------|
| case complete interface and PC-Software | 10,000 | • on request |
| | | |
| | | |

Coolant supply measuring instrument CC 3000

With Guhring's CC 3000 you can quickly and simply check the filtering efficiency of the coolant system.

Guhring has developed the inspection instrument CC 3000 for quick, simple and direct check of the coolant filtering efficiency.

Thanks to replaceable stainless steel filters, the user can adapt the instrument specifically to the filtering of the coolant system.

CC 3000 establishes the present condition of the individual system and displays the actual filter efficiency.

In order to analyse and rectify possible weak points of the filter system, the following information is provided:

- perfect operation of the coolant filtering system
- defective filters
- insufficient filtering for the applied tool

In addition, it is possible to determine the oil concentration of the applied soluble oil with the included refractometer.

Thus, it is possible to optimise the tool life of the applied tool, to prevent tool breakage and subsequent production stoppage!



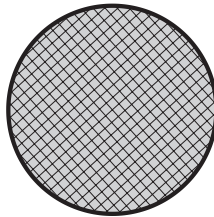
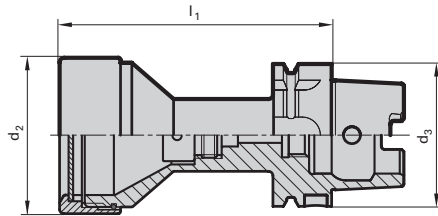
CC 3000

Product information

- range of application 50 - 500 min⁻¹
- suitable for coolant pressure up to 80 bar

Scope of delivery

- inspection instrument with HSK 63-A interface
- high-grade steel filter sizes 100, 200 and 300 µm
- refractometer including accessories
- magnifying glass, 8-fold magnification
- coolant delivery set guhring no. 4949 code 18,063
- order high-grade steel filter size 60µm separately



| 4076 | | 4077 | |
|--|--------------|---|--------------|
|  | |  | |
| Code no. | Availability | Code no. | Availability |
| 10,063 | • | | |
| | | 60,000 | • |
| | | 100,000 | • |
| | | 200,000 | • |
| | | 300,000 | • |

| | | | | | |
|--|--|--------|---|---------|---|
| case complete | | 10,063 | • | | |
| high-grade steel filter size 60, Guhring no. 4077 | | | | 60,000 | • |
| high-grade steel filter size 100, Guhring no. 4077 | | | | 100,000 | • |
| high-grade steel filter size 200, Guhring no. 4077 | | | | 200,000 | • |
| high-grade steel filter size 300, Guhring no. 4077 | | | | 300,000 | • |

GENERAL ACCESSORIES



- **Coolant delivery sets for MQL and flood applications** from page 148
- **Cleaning mandrels/setting blocks** from page 150
- **Torque wrenches/pull studs** from page 153

HSK-A coolant delivery sets for conventional cooling

Product information

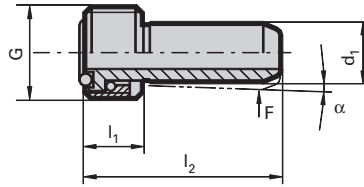
- leak-proof screwed connection tested to 80 bar
- to DIN 69895

Scope of delivery

- incl. union nut and O-rings

Guhring no.

4949



| for HSK-A | d ₁ mm | α ° | F | G | l ₁ mm | l ₂ mm | Code no. | Availability |
|-----------|-------------------|-----|----|---------|-------------------|-------------------|----------|--------------|
| 32 | 6 | 1.2 | 5N | M10x1 | 26.0 | 5.5 | 10,032 | • |
| 40 | 8 | 1.4 | 5N | M12x1 | 29.5 | 7.5 | 12,040 | • |
| 50 | 10 | 1.3 | 6N | M16x1 | 33.0 | 9.5 | 16,050 | • |
| 63 | 12 | 1.3 | 6N | M18x1 | 36.5 | 11.5 | 18,063 | • |
| 80 | 14 | 1.4 | 7N | M20x1.5 | 40.0 | 13.5 | 20,080 | • |
| 100 | 16 | 1.4 | 7N | M24x1.5 | 44.0 | 15.5 | 24,100 | • |

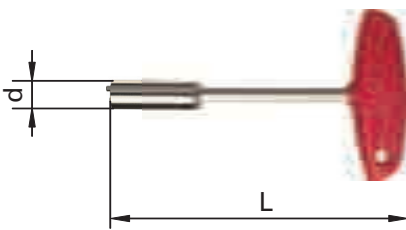
Sockets

Product information

- with T-handle
- for coolant delivery sets for conventional cooling and MQL coolant delivery unit

Guhring no.

4911



| for HSK | d mm | L mm | Code no. | Availability |
|---------|------|------|----------|--------------|
| 32 | 13.0 | 120 | 24,000 | • |
| 40 | 13.0 | 120 | 30,000 | • |
| 50 | 15.0 | 125 | 38,000 | • |
| 63 | 17.0 | 145 | 48,000 | • |
| 80 | 20.0 | 145 | 60,000 | • |
| 100 | 22.5 | 165 | 75,000 | • |

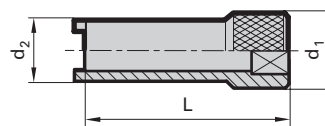
Sockets

Product information

- suitable for torque wrench
- Guhring no. 4915, drive 3/8"
- for coolant delivery sets

Guhring no.

4910



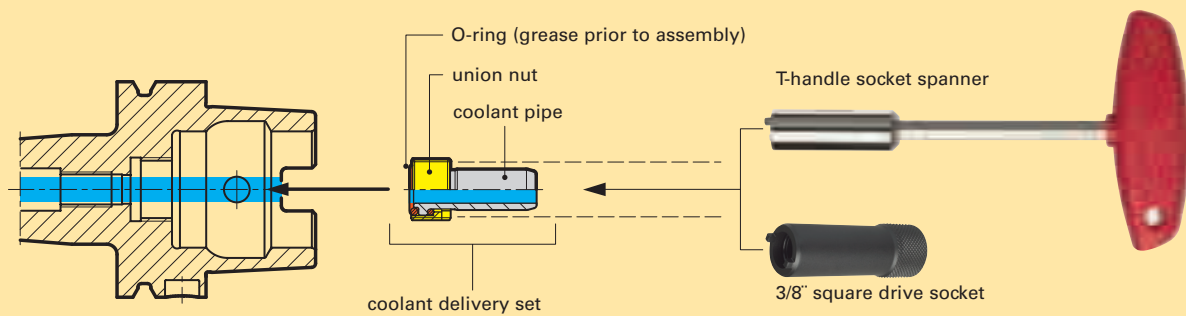
| for HSK | MA Nm | d ₁ mm | d ₂ mm | L mm | Code no. | Availability |
|---------|-------|-------------------|-------------------|------|----------|--------------|
| 32 | 7 | 20 | 14 | 60 | 24,000 | • |
| 40 | 11 | 20 | 16 | 60 | 30,000 | • |
| 50 | 15 | 20 | 18 | 60 | 38,000 | • |
| 63 | 20 | 20 | 18 | 60 | 48,000 | • |
| 80 | 25 | 20 | 20 | 75 | 60,000 | • |
| 100 | 30 | 22 | 22 | 80 | 75,000 | • |

1. The HSK holder must be clean, free of swarf and undamaged.
2. Grease the O-rings prior to assembly.
3. Centrally insert the complete coolant delivery set (coolant pipe, union nut and 2 O-rings) in the HSK with the assistance of the socket spanner.
4. Screw in the coolant delivery set/coolant delivery unit and tighten (see table for torque figures)
5. Check coolant pipe for radial mobility.

Torque figures

| for HSK | MA Nm |
|---------|-------|
| 32 | 7 |
| 40 | 11 |
| 50 | 15 |
| 63 | 20 |
| 80 | 25 |
| 100 | 30 |

Installation of coolant delivery set 4949



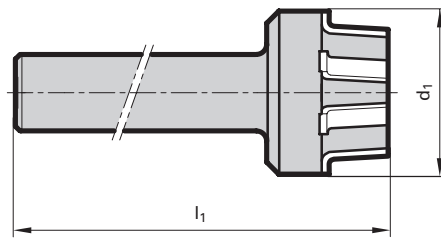
HSK cleaning mandrels

Product information

- for cleaning the internal taper and face

Guhring no.

4914



| for HSK-A/C/E | d_1 mm | l_1 mm | Code no. | Availability |
|------------------|-------------|-------------|----------|--------------|
| 25 | 32 | 125 | 19,000 | • |
| 32 | 46 | 140 | 24,000 | • |
| 40 | 46 | 145 | 30,000 | • |
| 50 | 55 | 155 | 38,000 | • |
| 63 | 67 | 170 | 48,000 | • |
| 80 | 85 | 180 | 60,000 | • |
| 100 | 105 | 200 | 75,000 | • |

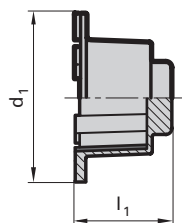
HSK cleaning cap

Product information

- for cleaning the external taper and face

Guhring no.

4947

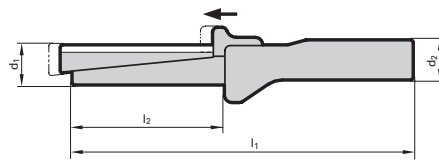


| for HSK-A/C/E | d_1 mm | l_1 mm | Code no. | Availability |
|------------------|-------------|-------------|----------|--------------|
| 40 | 53 | 36 | 1,040 | • |
| 50 | 66 | 42 | 1,050 | • |
| 63 | 83 | 53 | 1,063 | • |
| 80 | 103 | 58 | 1,080 | • |
| 100 | 125 | 77 | 1,100 | • |

Cylindrical cleaning mandrels

Product information

- for cleaning the bore of the tool holder
- e.g. hydraulic chucks and shrink fit chucks



Guhring no.

4918

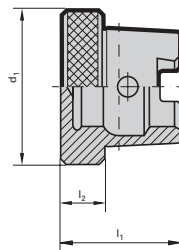


| d ₁ mm | d ₂ mm | l ₂ mm | l ₁ mm | Code no. | Availability |
|----------------------|----------------------|----------------------|----------------------|----------|--------------|
| 6 | 24 | 37 | 158 | 6,000 | • |
| 8 | 24 | 37 | 158 | 8,000 | • |
| 10 | 24 | 47 | 168 | 10,000 | • |
| 12 | 24 | 47 | 168 | 12,000 | • |
| 14 | 24 | 47 | 168 | 14,000 | • |
| 16 | 24 | 70 | 176 | 16,000 | • |
| 18 | 24 | 70 | 176 | 18,000 | • |
| 20 | 24 | 70 | 176 | 20,000 | • |
| 25 | 24 | 80 | 186 | 25,000 | • |
| 32 | 30 | 100 | 221 | 32,000 | • |
| 40 | 30 | 105 | 226 | 40,000 | • |

HSK-C sealing plugs

Product information

- with high coolant pressure applications, it is imperative to seal the spindle with the sealing plug for safety reasons when the machine spindle is not fitted with a tool. The sealing plug protects the spindle from contamination.



Guhring no.

4985



| HSK-C | d ₁ mm | l ₁ mm | l ₂ mm | kg | Code no. | Availability |
|-------|----------------------|----------------------|----------------------|------|----------|--------------|
| 32 | 34 | 26.0 | 10.0 | 0.07 | 32,000 | • |
| 40 | 42 | 30.0 | 10.0 | 0.11 | 40,000 | • |
| 50 | 52 | 37.5 | 12.5 | 0.23 | 50,000 | • |
| 63 | 65 | 44.5 | 12.5 | 0.39 | 63,000 | • |
| 80 | 82 | 56.0 | 16.0 | 0.81 | 80,000 | • |
| 100 | 102 | 66.0 | 16.0 | 1.36 | 100,000 | • |

Tool setting fixture

Product information

- for HSK shanks HSK 32, 40, 50 and 63, form A, C, E and F
- the HSK shanks are clamped vertically and horizontally at the collar. Therefore, all tapers with the same diameter of the collar can be clamped with one fixture.

Scope of delivery

- incl. holder adaptors

Guhring no.

4946



| for HSK-A/C | length mm | width mm | height mm | kg | Code no. | Availability |
|-------------|-----------|----------|-----------|----|----------|--------------|
| 32 | 260 | 130 | 160 | 9 | 450,032 | • |
| 40 | 260 | 130 | 160 | 9 | 450,040 | • |
| 50 | 260 | 130 | 160 | 9 | 450,050 | • |
| 63 | 260 | 130 | 160 | 9 | 450,063 | • |

Tool setting fixture

Scope of delivery

- incl. interchangeable discs
Guhring no. 4991

Guhring no.

4990



| for HSK-A/C | for ISO taper | length mm | width mm | height mm | kg | Code no. | Availability |
|-------------|---------------|-----------|----------|-----------|----|----------|--------------|
| - | 40 | 260 | 130 | 160 | 9 | 400,040 | • |
| - | 50 | 260 | 130 | 160 | 9 | 400,050 | • |
| 63 | - | 260 | 130 | 160 | 9 | 450,063 | • |
| 80 | - | 260 | 130 | 160 | 9 | 450,080 | • |
| 100 | - | 260 | 130 | 160 | 9 | 450,100 | • |

Interchangeable discs

Product information

- for tool setting fixture,
Guhring no. 4990

Scope of delivery

- 1 pair

Guhring no.

4991



| for HSK-A/C | for ISO taper | kg | Code no. | Availability |
|-------------|---------------|------|----------|--------------|
| - | 40 | 1.50 | 400,100 | • |
| - | 50 | 1.50 | 400,200 | • |
| 32 | - | 0.82 | 450,100 | • |
| 40 | - | 0.85 | 450,200 | • |
| 50 | - | 0.09 | 450,300 | • |
| 63 | - | 0.12 | 450,400 | • |
| 80 | - | 0.27 | 450,500 | • |
| 100 | - | 0.46 | 450,600 | • |

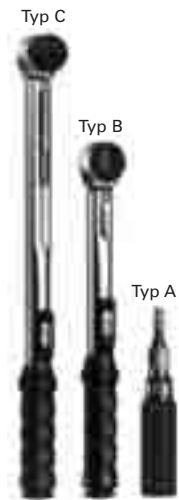
Torque wrenches

Product information

- with ratchet
- torque range
1...200 Nm; with automatic short distance release; can be heard, seen and felt when the set value is reached. Release accuracy $\pm 4\%$ of the scale value.

Guhring no.

4915



| type | drive | L mm | torque Nm | Code no. | Availability |
|------|-------|---------|--------------|-------------|--------------|
| A | 1/4" | 160 | 1-5 | 5,001 | • |
| B | 3/8" | 390 | 5-50 | 50,000 | • |
| C | 1/2" | 480 | 20-200 | 200,000 | • |

Socket/attachments

Product information

- for hexagon socket screws

Guhring no.

4916

Type A



Type B



Type C



Typ A: 1/4" hexagon drive

Typ B: 3/8" square drive

Typ C: 1/2" square drive

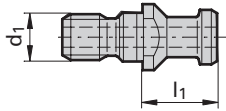


| drive | SW | L mm | Code no. | Availability |
|-------|-----|---------|-------------|--------------|
| 1/4" | 2 | 40 | 2,019 | • |
| 1/4" | 2.5 | 45 | 2,524 | • |
| 1/4" | 3 | 50 | 3,030 | • |
| 3/8" | 3 | 50 | 3,038 | • |
| 3/8" | 4 | 100 | 4,038 | • |
| 3/8" | 5 | 100 | 5,048 | • |
| 3/8" | 6 | 100 | 6,060 | • |
| 3/8" | 8 | 75 | 8,075 | • |
| 1/2" | 6 | 90 | 6,038 | • |
| 1/2" | 8 | 90 | 8,048 | • |
| 1/2" | 10 | 140 | 10,060 | • |

Pull studs DIN 69872, form A

Product information

- for ISO taper tool holders to DIN 69871 for form AD



Guhring no.

4925

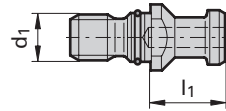


| for holder size | d ₁ mm | l ₁ mm | Code no. | Availability |
|-----------------|-------------------|-------------------|----------|--------------|
| 40 | M16 | 26 | 40,000 | ● |
| 50 | M24 | 34 | 50,000 | ● |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Pull studs DIN 69872, form B

Product information

- for ISO taper tool holders to DIN 69871 for form B



Guhring no.

4926

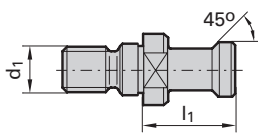


| for holder size | d ₁ mm | l ₁ mm | Code no. | Availability |
|-----------------|-------------------|-------------------|----------|--------------|
| 40 | M16 | 26 | 40,000 | ● |
| 50 | M24 | 34 | 50,000 | ● |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Pull studs

Product information

- for tool holders to MAS 403 BT



Guhring no.

4927

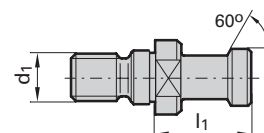


| for holder size | d ₁ mm | l ₁ mm | Code no. | Availability |
|-----------------|-------------------|-------------------|----------|--------------|
| 40 | M16 | 35 | 40,000 | ● |
| 50 | M24 | 45 | 50,000 | ● |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Pull studs

Product information

- for tool holders to MAS 403 BT



Guhring no.

4928



| for holder size | d ₁ mm | l ₁ mm | Code no. | Availability |
|-----------------|-------------------|-------------------|----------|--------------|
| 40 | M16 | 35 | 40,000 | ● |
| 50 | M24 | 45 | 50,000 | ● |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Flexible tooling system GE 100

A modular system for end machining or multiple cutting operations.

Most diverse operations, such as facing, chamfering, turning, form drilling, centering, butting and face piercing can be economically combined. The main application is to be found on machines for end operations, multiple spindle machines, machining centers and special machines.

Detailed information about the flexible applications and the complete tooling system can be found in our GE 100 brochure.



FS 300 drilling and chamfering tooling system

Providing an economical solution for combined drilling and chamfering operations, Guhring offers the FS 300 system with HSK-A, HSK-C and ISO taper holders and hydraulic chucks. FS 300 is a high-tech system for modern machining centres and satisfies high accuracy requirements. It offers play-free, concentric tool clamping and is therefore suitable for HSC. Further advantages are:

- application with standard drills, with or without coolant ducts and with varying effective cutting angles
- drilling depth infinitely variable and precisely adjustable
- wear of 2-fluted carbide drill and insert practically identical
- always optimal positioning of indexable chamfer insert to the drill body
- simple operation
- for standard 90° chamfer, application of DIN ISO-indexable inserts with minor modifications
- especially suitable for the machining of cast, AISi-alloys, but also structural and heat treatable steels



The GM300 system forms the basis of Guhring's comprehensive tooling solutions to specific customer requirements. We would like to show you a few examples. Guhring can provide these and similar solutions on request!

Step drills with inter-changeable insert for drilling – countersinking-facing operations in brake cylinders, with adjustment facility for finish machining



Drilling – countersinking-facing tool for one machining cycle

Drill/chamfer combination for the machining of con rods
Core drilling and circular advance and return chamfering operations with one tool

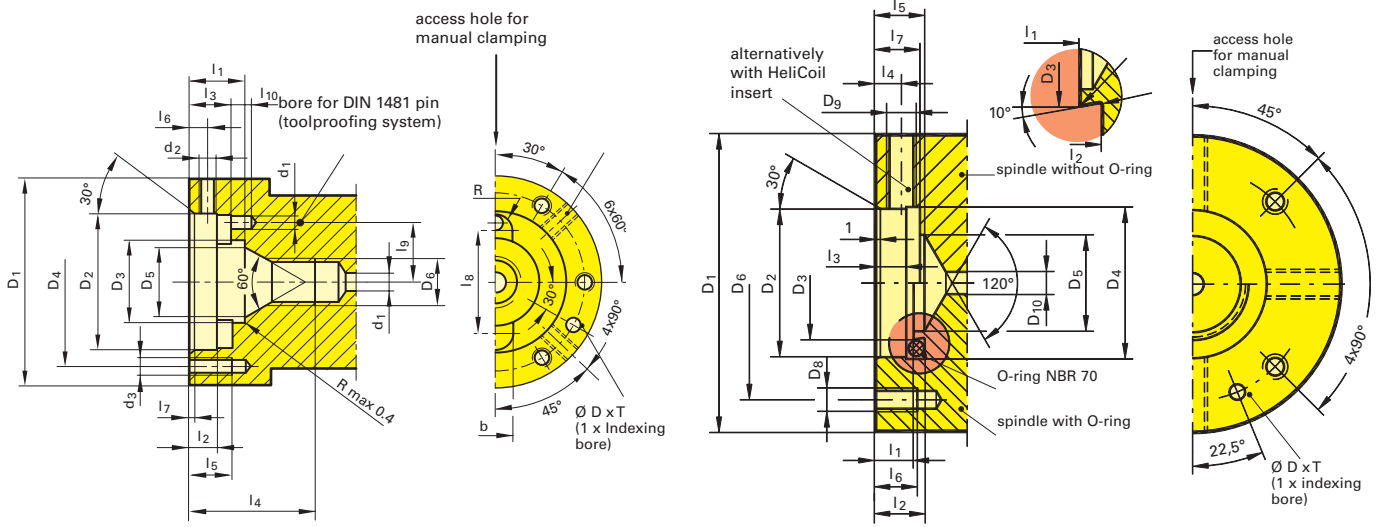
Drill/countersink combination for volume production of brake cylinders, carbide-, cermet- and PCD-tipped inserts

Additional technical information

Detailed production drawing on request

Short spindle adaptor (integr.) Guh.no. 4385

HSK adaptor (in front) Guh.no. 4386/4586



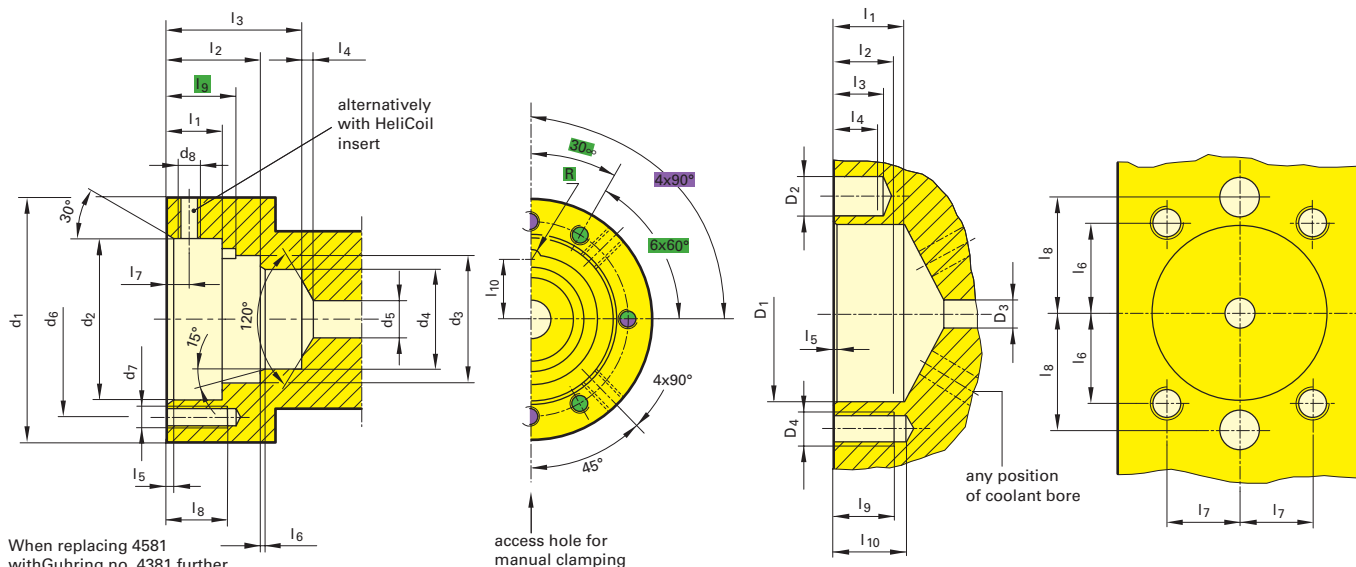
| 4385 for HSK code no. | holder-Ø | | | holder-Ø D3 | pitch circle-Ø D4 | counter sinking-Ø D5 | thread D6 | coolant bore d1 | thread d2 | thread d3 | locating pin d4 |
|--------------------------------|------------------|------|---------------|----------------|----------------------|----------------------------|--------------|--------------------|--------------|--------------|--------------------|
| | external-Ø D1 | D2 | tolerance | | | | | | | | |
| 32 24,000 | 40 | 27.0 | +0.15...+0.10 | 16.7 | 32.0 | 12.5 | M 10 | 4.0 | M 3 | M 3 | 2 |
| 40 30,000 | 50 | 33.5 | +0.15...+0.10 | 20.6 | 40.5 | 16.0 | M 12 | 5.0 | M 4 | M 4 | 3 |
| 50 38,000 | 63 | 42.0 | +0.15...+0.10 | 25.5 | 52.0 | 20.0 | M 16 | 6.0 | M 5 | M 5 | 4 |
| 63 48,000 | 80 | 55.0 | +0.15...+0.10 | 33.0 | 66.0 | 25.0 | M 20 | 8.0 | M 6 | M 6 | 4 |
| 80 60,000 | 100 | 68.0 | +0.15...+0.10 | 41.0 | 82.0 | 32.0 | M 24 | 10.2 | M 8 | M 8 | 5 |

| 4385 continued | clamping depth tolerance l1 | holder-length l2 | milling length l3 | thread depth l4 | thread depth l5 | thread dist. l6 | chamfer length l7 | centre dist. l8 | bore distance l9 | depth of bore l10 | width of keyway b | keyway radius R | bore-Ø D | depth of bore D | depth of bore DIN 1481 T | locating pin DIN 1481 |
|---------------------|-----------------------------------|---------------------|----------------------|--------------------|--------------------|--------------------|-------------------------|--------------------|---------------------|----------------------|-------------------------|-----------------------|-------------|--------------------|--------------------------------|--------------------------|
| | | | | | | | | | | | | | | | | |
| 40 30,000 | 12.0 | ±0.02 | 5.5 | 8.7 | 30 | 11 | 3.5 | 0.6 | 25.0 | 14.5 | 5.0 | 8.0 | 4.0 | 4.0 | 3.5 | 3 x 8 |
| 50 38,000 | 16.0 | ±0.03 | 8.0 | 12.0 | 36 | 12 | 5.0 | 0.8 | 31.5 | 18.3 | 6.0 | 10.5 | 5.0 | 4.0 | 3.5 | 4 x 10 |
| 63 48,000 | 20.0 | ±0.04 | 10.0 | 15.0 | 48 | 15 | 6.0 | 1.0 | 41.0 | 22.5 | 5.0 | 12.5 | 6.0 | 4.0 | 3.5 | 4 x 10 |
| 80 60,000 | 25.6 | ±0.04 | 13.0 | 19.3 | 60 | 14 | 7.5 | 1.0 | 50.0 | 28.0 | 6.0 | 16.0 | 7.5 | 5.0 | 4.5 | 5 x 12 |

| 4386 4586 for HSK code no. | holder-Ø | | holder-Ø D3 | pitch circle-Ø D4 | counter sinking-Ø D5 | thread D6 | indexing bore D7 | thread D8 | threaded bore D9 | coolant bore D10 | clamping depth l1 | holder-length l2 | milling depth l3 | thread depth l4 | thread depth l5 | thread dist. l6 | chamfer length l7 | depth of bore l7 | O-ring T | |
|-------------------------------------|------------------|----|----------------|----------------------|----------------------------|--------------|---------------------|--------------|---------------------|---------------------|-------------------------|---------------------|---------------------|--------------------|--------------------|--------------------|----------------------|---------------------|-------------|-----------|
| | external-Ø D1 | D2 | | | | | | | | | | | | | | | | | | tolerance |
| 25 19,000 | 45 | 23 | +0.053..0.020 | 16.5 | 24 | - | 35 | - | M5 | M5 | 3.2 | 8.2 | 9.5 | 6.2 | 4.5 | - | 14 | 9 | - | 16x2 |
| 32 24,000 | 60 | 30 | +0.053..0.020 | 23.5 | 31 | - | 44 | 5 | M5 | M8x1 | 4.0 | 10.3 | 12.4 | 8.3 | 7.0 | - | 11 | 12 | 3.5 | 23x3 |
| 40 30,000 | 70 | 35 | +0.064..0.025 | 28.5 | 36 | 22 | 53 | 5 | M6 | M8x1 | 5.0 | 10.3 | 12.4 | 8.3 | 7.0 | 12 | 14 | 12 | 3.5 | 28x3 |
| 50 38,000 | 80 | 40 | +0.064..0.025 | 30.5 | 41 | 26 | 63 | 5 | M6 | M8x1 | 6.0 | 10.3 | 13.3 | 8.3 | 7.0 | 12 | 14 | 12 | 3.5 | 30x4 |
| 63 48,000 | 100 | 50 | +0.064..0.025 | 38.5 | 51 | 34 | 79 | 5 | M8 | M10x1 | 8.0 | 12.3 | 16.1 | 10.3 | 8.0 | 15 | 15 | 14 | 3.5 | 38x5 |
| 80 60,000 | 117 | 60 | +0.076..0.030 | 47.5 | 61 | 38 | 96 | 6 | M8 | M10x1 | 10.2 | 12.3 | 16.1 | 10.3 | 8.0 | 20 | 15 | 14 | 4.5 | 47x5 |
| 100 75,000 | 140 | 80 | +0.076..0.030 | 65 | 81 | 53 | 119 | 6 | M10 | M10x1 | 12.0 | 12.3 | 16.1 | 10.3 | 8.0 | 20 | 20 | 14 | 4.5 | 65x5 |

HSK adaptor (in front) Guh.no. 4581/4584

HSK adaptor (in front) Guh.no. 4582



When replacing 4581 with Guhring no. 4381 further machining of spindle contour required

| 4581 for HSK | | external- Φ | holder- Φ | counter-sinking- Φ | counter-sinking- Φ | coolant bore | graduated-circle- Φ | 4 x thread | thread | holder length | counter-sinking length | counter-sinking length | depth of bore | chamfer length | chamfer length | thread dist. | thread length |
|---------------|--|------------------|----------------|-------------------------|-------------------------|----------------|--------------------------|----------------|----------------|----------------|------------------------|------------------------|----------------|----------------|----------------|----------------|----------------|
| code no. | | d ₁ | d ₂ | d ₃ | d ₄ | d ₅ | d ₆ | d ₇ | d ₈ | l ₁ | l ₂ | l ₃ | l ₄ | l ₅ | l ₆ | l ₇ | l ₈ |
| 25 19,000 | | 45 | 23 | - | - | 5 | 35 | M5 | M4 | 6.8 | - | - | 1.5 | 1 | - | 3.5 | min.8 |
| 32 24,000 | | 55 | 28 | 21.12 | 17 | 6.4 | 43.5 | M6 | M4 | 6 | 9.75 | 16.75 | 2 | 1 | 0.6 | 3.5 | 10 |
| 40 30,000 | | 63 | 36 | 23.4 | 21 | 8 | 51.5 | M6 | M4 | 7 | 11.3 | 19.9 | 2.5 | 1 | 1 | 4 | 12 |
| 50 38,000 | | 80 | 46 | 33 | 26 | 10 | 65 | M8 | M5 | 9 | 14.7 | 25.5 | 3 | 15 | 1 | 5 | 16 |
| 63 48,000 | | 100 | 56 | 42.5 | 34 | 16 | 81.5 | M10 | M6 | 12 | 17.8 | 30 | 3.5 | 1.5 | 1 | 6 | 16 |
| 80 60,000 | | 125 | 66 | 52.8 | 42 | 16 | 103 | M12 | M8 | 14 | 22.7 | 39.8 | 4 | 2 | 1.5 | 8 | 16 |
| 100 75,000 | | 160 | 86 | 66 | 53 | 20 | 130 | M16 | M10 | 16 | 27.4 | 49 | 4.5 | 2 | 2 | 10 | 20 |

| 4584 for HSK | | external- Φ | holder- Φ | counter-sinking- Φ | counter-sinking- Φ | coolant bore | graduated-circle- Φ | thread | 6 x thread | holder length | counter-sinking length | counter-sinking length | depth of bore | chamfer length | chamfer length | thread dist. | thread length | length of recess | recess dist. | recess radius |
|---------------|--|------------------|----------------|-------------------------|-------------------------|----------------|--------------------------|----------------|----------------|----------------|------------------------|------------------------|----------------|----------------|----------------|----------------|----------------|------------------|-----------------|---------------|
| code no. | | d ₁ | d ₂ | d ₃ | d ₄ | d ₅ | d ₆ | d ₇ | d ₈ | l ₁ | l ₂ | l ₃ | l ₄ | l ₅ | l ₆ | l ₇ | l ₈ | l ₉ | l ₁₀ | R |
| 32 24,000 | | 40 | 27.0 | 21.12 | 17 | 6.4 | 32.0 | M 3 | M 4 | 8.8 | 14.80 | 21.75 | 2.0 | 1.0 | 0.6 | 3.5 | 10.0 | 11.9 | 10.10 | 2.0 |
| 40 30,000 | | 50 | 33.5 | 26.40 | 21 | 8.0 | 40.5 | M 4 | M 4 | 11.0 | 18.85 | 27.40 | 2.5 | 1.0 | 1.0 | 4.0 | 12.0 | 13.9 | 12.40 | 2.0 |
| 50 38,000 | | 63 | 42.0 | 33.00 | 26 | 10.0 | 52.0 | M 5 | M 5 | 15.5 | 24.75 | 35.50 | 3.0 | 1.5 | 1.0 | 5.0 | 12.0 | 18.4 | 15.56 | 2.5 |
| 63 48,000 | | 80 | 55.0 | 42.50 | 34 | 16.0 | 66.0 | M 6 | M 6 | 17.9 | 30.35 | 42.50 | 3.5 | 1.5 | 1.0 | 6.0 | 16.0 | 23.9 | 20.00 | 3.0 |
| 80 60,000 | | 100 | 68.0 | 52.80 | 42 | 16.0 | 82.0 | M 8 | M 8 | 24.3 | 40.25 | 57.30 | 4.0 | 2.0 | 1.5 | 8.0 | 16.0 | 32.9 | 24.80 | 3.5 |
| 100 75,000 | | 125 | 88.0 | 66.00 | 53 | 20.0 | 106.0 | M10 | M10 | 34.4 | 54.45 | 76.00 | 4.5 | 1.5 | 2.0 | 10.0 | 16.0 | 42.4 | 31.40 | 4.5 |

| 4582 for HSK | | connection- Φ | fit- Φ | coolant bore- Φ | thread | depth of bore | length of fit | depth of bore | length of fit | chamfer length | thread distance | thread distance | thread depth | thread depth | depth of bore |
|--------------|--|--------------------|----------------|----------------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|----------------|----------------|-----------------|
| code no. | | d ₁ | d ₂ | d ₃ | d ₄ | l ₁ | l ₂ | l ₃ | l ₄ | l ₅ | l ₆ | l ₇ | l ₈ | l ₉ | l ₁₀ |
| 50 38,000 | | 50 | 7.95 | 10 | M10 | 20.55 | 20 | 15 | 11 | 1 | 27.44 | 19.22 | 33.5 | 20 | 25 |
| 63 48,000 | | 63 | 14.00 | 10 | M12 | 25.00 | 21 | 18 | 16 | 1 | 31.70 | 26.00 | 41.0 | 22 | 26 |