(800) 562-0900

BILZ

we hold our promise

THERMOGRIP®
SHRINK FIT TECHNOLOGY

INNOVATION | PERFORMANCE | QUALITY

www.bilzusa.com

INFO@SWIFTTOOL.COM

WWW.SWIFTTOOL.COM

BILZ

we hold our promise

The Foundation. For over 90 years, Bilz has been a leading supplier of tool holders, tapping technology and shrink fit systems. The main reason for this success is our people. Bilz has over 350 experienced and motivated individuals working every day to improve and enhance the products we offer. Our goal is to improve your manufacturing processes with a complete set of solutions that are efficient and dependable. As a result, we have become an innovative and trusted partner to companies around the world in industries including aerospace, automotive, die mold & machining, medical equipment and power generation.

reddot design award
winner 2012

TOP 100
2011
Top-Innovator

Dear Reader,

As everyone knows, money is made at the “cutting edge”. The productivity of this cutting edge influences the total costs of cutting processes, while its share of total manufacturing costs amounts to only 4–6%. Most production and cutting experts will agree with these statements.

What is required to fully profit from the performance of the cutting edge and increase tool life? This catalog will support you in selecting the optimal clamping tools for your “cutting edges”.

Our long experience as a traditional family-run company helps us to develop products you can rely on . BIlz has compiled a comprehensive product range in this catalog. Many improvements have been included.

“Always better” is not just a slogan for us. It is a promise, our commitment to quality. We and our products keep our promises. In addition to this product range we can offer you various custom-designed solutions.

Please talk to us about new solutions for your applications.

Many people react, we act.

On behalf of the whole Bilz Team,

BILZ—FIT FOR THE FUTURE

TAPPING

For decades, Bilz has been the global leader in tapping technology. Quality engineered and well designed, Bilz tap holders are the industry standard.

Special features like length compensation (tension/compression), quick change, parallel float, internal coolant or external coolant are incorporated in many different combinations in our chucks.

ADVANTAGES
- Faster Tool Set-ups
- Increased Tap Life
- Improved Thread Quality
- Faster Tool Changes

APPLICATIONS
- Tapping and thread forming on all possible applications with many different machine spindle connections.

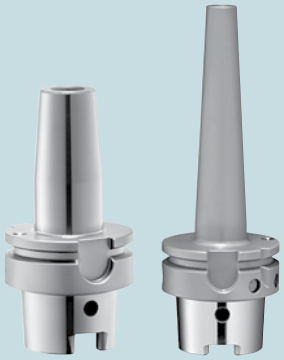
(MQL) MINIMUM QUANTITY LUBRICANT

Minimum Quantity Lubricant (MQL) technology provides unmatched efficiency in coolant delivery. The system delivers coolant immediately upon start-up with consistent pressure, and the optimized sealed design provides a leak-free coolant stream.

Reduced coolant usage and coolant handling leads to a safer workplace, lower maintenance costs, and a smaller impact on the environment. MQL is available in Shrink Fit holders and Synchro Chuck holders.

ADVANTAGES
- More efficient coolant consumption
- Environmentally friendly
- Up to 100% increase in tool life
- Reduce coolant costs up to 19%

APPLICATIONS
- Perfect for any application where safer and more-efficient coolant usage is desired. Specific industries include Aerospace, Automotive, Die & Mold, Medical Equipment and more.



INDUCTION SHRINK-FIT SYSTEM

The finest shrink fit holders available. Precise manufacturing and our exclusive “counter bore” technology optimize the advantages of using shrink fit tooling. Combine the Bilz ThermoGrip holders with the Bilz ThermoGrip machines and you have the ultimate shrink fit system.

Bilz holders offer the best part finish quality, longer tool life, and higher feed rates and speeds. All of this is accomplished due to micrometer accuracy in runout, high cutting tool rigidity and extremely high clamping forces.

TOOL OPTIONS
- Standard chucks
- Slimline chucks
- Heavy duty (thick walled) chucks
- JetSleeve
- TER shrink-fit collets

APPLICATIONS
- Milling, drilling and reaming
- Milling and reaming on driven tooling
- Micro milling applications

CNC HOLDERS

Our CNC Holder line provides options for all industry-standard sizes and configurations for collet chucks, end mill holders, shell mill holders, hi-power milling chucks, and face mill holders.

Each product represents the latest technology, and reflects our commitment to quality and innovation. We also support our products with unmatched application expertise and customer service.

ADVANTAGES

- Latest tool holding technology
- Extensive product line
- Strong, high-quality products
- Very accurate and durable

APPLICATIONS

- CNC holders are used in a variety of industries including Aerospace, Automotive, Die & Mold, Medical Equipment and more.

FLOATING HOLDERS

Bilz Floating Holders enable the serial production of perfectly aligned reamed bores with the automatic centering of the reamer after every cycle, protecting the reamer from any side forces.

Our Floating Holders can be used horizontally or vertically and can be delivered with internal coolant supply and integrated length adjustment.

ADVANTAGES

- Axial float without play
- Maintenance free
- Adjustable centering
- High coolant pressure

APPLICATIONS

- Using reamer tools where the machining spindle and the bore in the workpiece are not 100% aligned.
- Used in transfer lines, lathes and custom machinery

SPECIAL TOOL HOLDERS

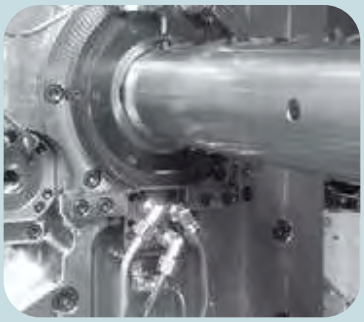
Our Specialty Holders represent a unique set of products that offer cost-effective capabilities you won't find from any other manufacturer. In fact, nearly all Special Holders can demonstrate a substantial cost savings when compared to other methods.

ADVANTAGES

- Expand your capabilities
- Make your spindle more productive
- Meet unique customer requirements
- Open a new range of potential

APPLICATIONS

- Specialty tool holders can be used to help machine unique profiles, provide critical part ID and marking, and even set and drive studs.



Make More Money at the Cutting Edge

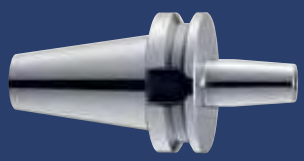
The ThermoGrip® tool holding system uses an inductive heating concept to provide stronger, more-concentric tool clamping. This leads to increased tool life, better surface finishes and improved cost efficiency. Our offering covers machines, holders (including heavy duty), extensions, collets and accessories—everything you need to maximize profits!

Thermogrip® Heat Shrink Machines

ISG is a full line of shrink machines. Our devices grow with your needs. Whether entry level, low volume shrinking or High-End solutions for High Performance Manufacturing: the versatile product range ThermoGrip® provides the optimal solution for every application.

- Table Units
- Water Cooling
- High-end Solutions
- Air Cooling
- Accessories

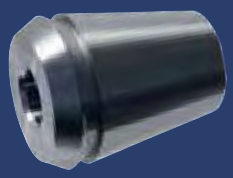
- Longest Tool Life of any Holding System
- Highest Concentricity (< .003mm)
- Maximum Clamping Security



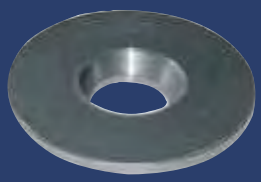
STANDARD THERMOGRIP® HOLDERS
- Extensive range of sizes and configurations
- Patented counterbore design on all holders
- Highest possible rigidity and concentricity
- Full array of accessories and machine options

SLIM DESIGN THERMOGRIP® HOLDERS
- Outside geometry is designed with a 3 stroke
- Chucks have a concentricity of < .003mm
- Fine-balanced at < 1g/mm
- Machines are programmed to match “slim” holders
- Options available for applications on standard spindles

THD HEAVY DUTY HOLDERS
- Short, rigid design delivers high retention forces
- Higher torque transmission
- High radial rigidity for best form stability at highest abrasion rate.



TER SHRINK COLLET
- Areas of application include collet chucks, driven tool holders, direct clamping
- Highest possible run-out and repeatability accuracy
- Increase cutting speeds an average of 20%
- Increase life of cutting tools up to 300%



COUNTERBORES AND POLE DISCS

Patented Counterbore:
- Pre-centering of the tool
- 15% to 20% lower energy consumption

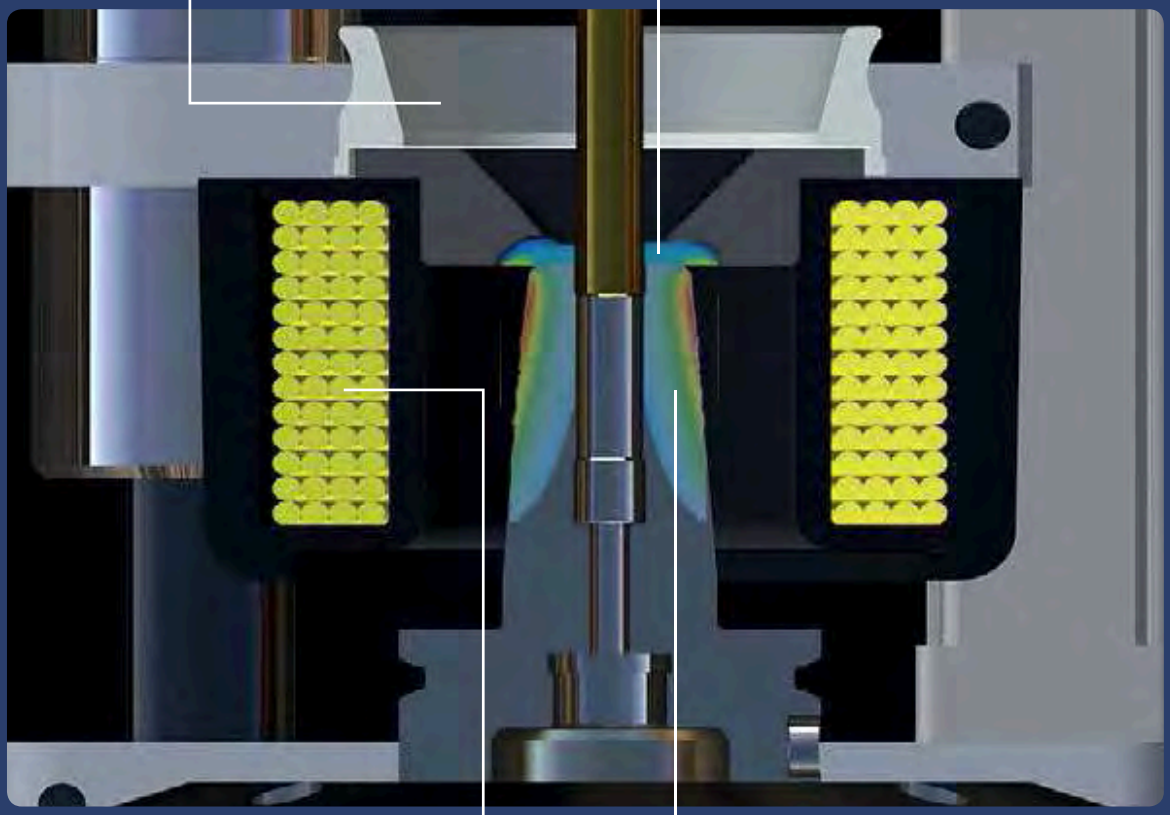
Patented Pole Disc:
- Precise, targeted heating of the chuck
- No expansion of the shank during heating
- Tools are “hand warm” with no risk of injury

BILZ Induction Technology

Advantages of the Change Disc

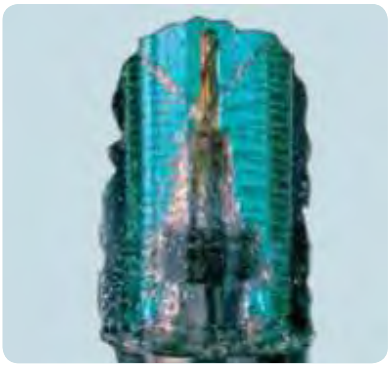
By means of the patented ferrite disc system the tool is prevented from heating solid carbide and HSS-tools can be easily clamped within a range of 3–50 mm.

Local heating preserves the shrink chuck and allows quick cooling down.



Efficiency increase by appropriate adaption of the alternating magnetic field

Moving the Hot Spot into the optimum area – this makes the shrinking out easy.



ISG LIQUID COOLING TECHNIQUE

The “Cool Down” units are a combination of induction shrinking and water cooling. Due to the all-in-one solution both the shrinking and the cooling process are effected on one position. Liquid Emulsion cooling makes the tool change time as short as possible, thus hot shrink fit holders do not have to be handled or moved preventing any risk to operator of burn or injury. ThermoGrip technology is the safest Shrink Fit technology on the market today. The tried and tested ThermoGrip® emulsion prevents corrosion of the shrink holders.

QUICK CHANGE SYSTEM

The coil system can be equipped with a quick change mechanism as an option. Therefore tools with special dimensions can also be shrunk in and out at any time with an adjusted coil. The range of performance can be adjusted permanently to modified conditions without the need of constant investments in new machine technology. The option is available for the ISG 3400 series only.

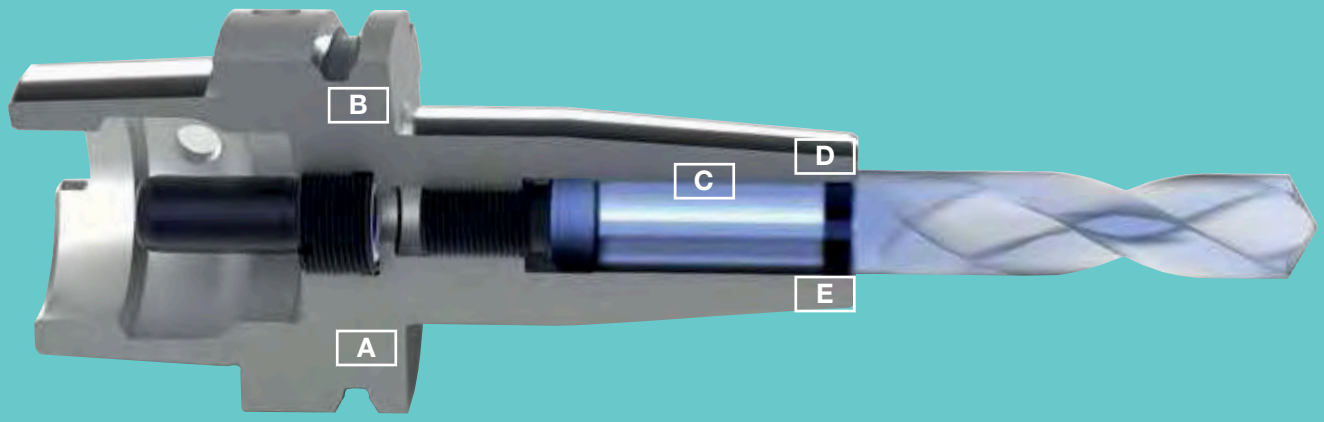
CONTROL PANEL

The appeal of the ThermoGrip® operation concept lies in the simple selection of the fixed parameters for all standardized ThermoGrip® shrink chuck geometries. By using these parameters overheating of the shrink chucks can be avoided. The generator power and the heating time can be manually selected for various special applications. A tool memory can store up to 50 special parameters.

Precision Components combine for an Unbeatable Clamping System

Our “Shrink Fit” technology can be adapted to the most challenging machine and tool requirements.

The advantage of our system stems from an umatched level of tool holding expertise combined with a complete understanding of our customers’ application requirements—we can customize a solution to any of your needs!



A **SPECIAL, HIGHLY HEAT-RESISTANT STEEL PROVIDES STABILITY**

- High radial rigidity
- Low Deflection
- Higher rate of infeeds
- Longer Tool Life!

B "Balanced by Design" for maximum stability

- Better surface finish
- Low wear on the machine spindle
- Ideal for HPC/HSC processing

C Highest holding security possible

- All standard shanks can be clamped
- No loss of clamping force with greasy or oily shanks

D Our patented Counterbore concept

- Allows insertion of tool prior to shrink cycle
- Automatic shrinking process and simplified handling
- 15% - 20% less heat required when heating
- Enables HSS shrinking and removal

E Highest concentricity possible

- < .003mm and precise taper tolerances
- Reduced tool costs due to improved tool life
- Reduced chatter marks

CONTENTS

CONTENTS

LEGEND

≤ 3 µm — Concentricity of the ThermoGrip® shrink holders

12 000 U/min R.P.M. | 18 000 U/min R.P.M. | 20 000 U/min R.P.M. | 25 000 U/min R.P.M. | 30 000 U/min R.P.M. | 35 000 U/min R.P.M. | 42 000 U/min R.P.M.

Suitable for the corresponding RPM. You will find more information regarding “Balancing” in the chapter “Technical information”.

CHIP — With data carrier bore hole

bar — Suitable for internal cooling max. 50 bar

4,5° | 3° — External geometry of the shrink holders. “T” Style holders 4.5° – Slim holders 3°

coated — Corrosion protected – coated

Suitable for deep cavities – especially for the mold and die industry

Definition ThermoGrip® designations

T = ThermoGrip® Standard
4.5° external geometry

TSF = ThermoGrip® slim chucks
3° external geometry

TSFV = ThermoGrip® slim shrink-fit extension
3° external geometry

TUS = ThermoGrip® ultra slim chucks
3° external geometry

THD = ThermoGrip® heavy duty shrink-fit holder
4.5° external geometry

The following applies for all ThermoGrip® shrink holders:

Shank tolerance: Ø 3, 4 = h4 / Ø 5 = h5 / Ø ≥ 6 = h6

Delivery includes presetting screw

Please order coolant tube separately

CoolJet on request 

MQL version on request

THERMOGRIP® SHRINK FIT MACHINE

BILZ THERMOGRIP MACHINES

An award-winning line of shrink fit machines, all using the patented Bilz Disc System for optimal machine performance.

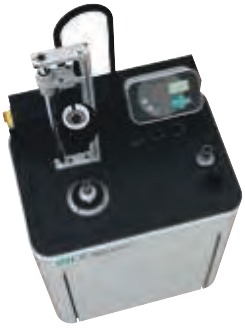
ISG1000	Entry level model. No cooling. For tools with a shank size up to 3/4"
ISG2200WK	Mid level model. Water cooled. For tools with a shank size up to 3/4"
ISG3400TLK	Top level model. Table top, air cooled. For shank sizes up to 1-1/4"
ISG3400TWK	Top level model. Table top, water cooled. For shank size up to 1-1/4"
ISG3400WK	The “Ultimate” Shrinker. Water cooled. For tools with a shank size up to 2"
ISG3400WK-HL	Large tool shrinker. Water cooled. For large and heavy shrink fit toolholders.

VIEW THE DEMO

THERMOGRIP® MODELS

			STARTER
MACHINE TYPE & FEATURES	**ISG1000** The cost-effective, compace starter ALL MANUAL	**ISG2200** The entry model in the class of inductive shink units AUTOMATIC TIMING	**ISG3400TLK-WS** The performance class for continual tool changing AUTOMATIC PROGRAMMING
Clamping Range SC	3-20mm (1/8"-3/4")	3-20mm (1/8"-3/4")	3-32mm (1/8"-1-1/4")
Clamping Range HSS	N/A	N/A	6-32mm (1/4"-1-1/4")
Coil	Fixed	Fixed	Quick Change
Max. Tool Length	290mm 11.42"	290mm 11.42"	350mm 13.77"
Max. Cooling Length	290mm 11.42"	290mm 11.42"	350mm 13.77"
Cooling Type	not included – use accessory	air/cooling adapter	air/cooling adapter
Cooling Time	N/A	300 sec	300 sec
Geometry Inde-pendent Cooling	optional FKS03	optional FKS03	optional FKS04
Max. Machine Interface	HSK 100 CAT 50	HSK 100 CAT 50	HSK 100 CAT 50
Electric Current Supply	3x208V-15A 3.5 kW	3x208V-15A 3.5 kW	3x480V-16A 11 kW
Dimensions	390 x 310 x 640mm 15.5" x 12.5" x 25.5"	390 x 310 x 640mm 15.5" x 12.5" x 25.5"	780 x 535 x 950mm 31" x 22" x 38"
Required Accessories	setting pot / cooling adapter external cooling station	setting pot cooling adapter	setting pot cooling adapter
Optional Accessories	water cooler air cooler	water cooler air cooler	water cooler
For more information	see page 18	see page 19	see page 20

THERMOGRIP® MODELS



ALL ROUNDER	PROFESSIONAL	HEAVY WEIGHT	
ISG3400TWK-WS Lowest cost, liquid-cooled system on the market AUTOMATIC PROGRAMMING	**ISG3400WK-WS** Free-standing, fully automotated system with liquid cooling and air drying	**ISG3400WK-HL** Free-standing, fully automotated system with liquid cooling and air drying	MACHINE TYPE & FEATURES
3-32mm (1/8"-1-1/4")	3-50mm (1/8"-2")	3-50mm (1/8"-2")	Clamping Range SC
6-32mm (1/4"-1-1/4")	6-50mm (1/4"-2")	6-50mm (1/4"-2")	Clamping Range HSS
Quick Change	Quick Change	Quick Change	Coil
400mm 15.75"	700 mm / 27.5"	750mm 29"	Max. Tool Length
160mm 6.3"	400mm	500mm 19.6"	Max. Cooling Length
liquid/emulsion	liquid/emulsion	liquid/emulsion	Cooling Type
20 sec	20 sec	20 sec	Cooling Time
yes	yes	yes	Geometry Inde-pendent Cooling
HSK 100 CAT 50	HSK 100 CAT 50	HSK 160 CAT 60	Max. Machine Interface
3x480V-16A 11 kW	3x480V-16A 11 kW	3x 480V / 20A 11 kW	Electric Current Supply
800 x 560 x 950mm 31.5" x 22" x 38"	800 x 560 x 1950mm 31.5" x 22" x 77"	1150 x 770 x 2110mm 45.5" x 30.5" x 83"	Dimensions
setting pot	setting pot	setting pot	Required Accessories
setting pot	#2 coil 32mm-50mm	coils for heavy-wall holders	Optional Accessories
see page 21	see page 22	see page 24	For more information

ISG1000 LOW COST • COMPACT • ENTRY LEVEL

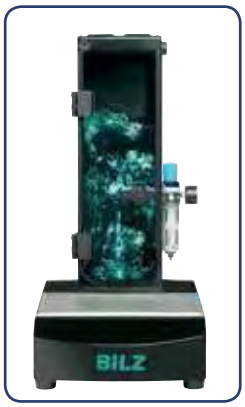
Designed for new starters, those who rarely shrink, and those on a small budget, ISG1000 offers easy, rapid handling. It is suitable for all major tool spindles with a maximum tool length of 290 mm from taper gauge line.

*Optional Air Cooling Pad available

Technical Data: ISG1000			
SAP No.	5048225	**Max. Tool Length**	290 mm 11.42"
Dimensions D x W x H	390mm x 310mm x 640mm 15.5" x 12.5" x 25.5"	**Max. Cooling Length**	290 mm 11.42"
Clamping Range SC	3-20mm 1/8"-3/4"	**Cooling Type**	not included – use accessory
Clamping Range HSS	N/A	**Cooling Time**	N/A
Coil	Fixed	**Geometry Independent Cooling**	optional FKS03
Electric Current Supply	3x208V-15A	**Max. Machine Interface**	HSK 100 CAT 50
Power kW	3kW	**Required Accessories**	setting pot cooling adapter external cooling station
Weight	55 lbs / 25 kg	**Optional Accessories**	water cooler air cooler

TABLE TOP • AIR COOLED ISG2200

The mobile shrink unit ISG2200 represents an affordable transition to inductive shrinking technology. The low weight of the ISG2200 permits flexibly. Despite the compact design, a new processor-controlled, high-frequency generator and the optimized coil geometry allow tool change times of a few seconds for solid carbide tools from Ø 3–20 mm. Due to the use of predetermined parameters, the overheating of chucks is not possible when handled correctly. After the heating operation, the coil returns to the start position automatically and an integrated fan quickly cools the heated clamping chucks.



*Optional FKS03 Water Cooler

Technical Data: ISG2200			
SAP No.	9070042	**Max. Tool Length**	290 mm 11.42"
Dimensions D x W x H	390mm x 310mm x 640mm 15.5" x 12.5" x 25.5"	**Max. Cooling Length**	290 mm 11.42"
Clamping Range SC	3-20mm 1/8"-3/4"	**Cooling Type**	air/cooling adapter
Clamping Range HSS	N/A	**Cooling Time**	300 sec
Coil	Fixed	**Geometry Independent Cooling**	optional FKS03
Electric Current Supply	3x208V-15A	**Max. Machine Interface**	HSK 100 CAT 50
Power kW	3kW	**Required Accessories**	setting pot cooling adapter
Weight	55 lbs / 25 kg	**Optional Accessories**	water cooler air cooler

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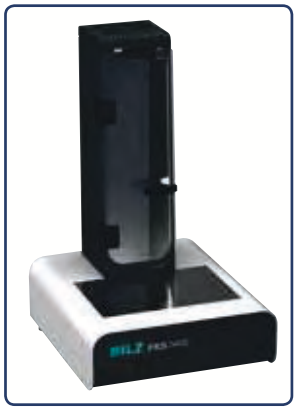
ISG3400TLK-WS TABLE TOP • AIR COOLED

This controlled ISG3400TLK unit is simple to use. All that needs to be done is to select the tool diameter range. After the induction coil is positioned around the tool holder, push the start button and the coil heats the tool holder sufficiently. When heat cycle is completed, move the coil upward away from tool. Press the cooling button and allow the tool to cool in minutes.

*Optional FKS04 Water Cooler



Technical Data: ISG3400TLK-WS			
SAP No.	5046884	**Max. Tool Length**	350 mm 13.77"
Dimensions D x W x H	780mm x 535mm x 950mm 31" x 22" x 38"	**Max. Cooling Length**	350 mm 13.77"
Clamping Range SC	3mm–32mm 1/8"–1-1/4"	**Cooling Type**	air/cooling adapter
Clamping Range HSS	6mm–32mm 1/4"–1-1/4"	**Cooling Time**	300 sec
Coil	Quick Change	**Geometry Independent Cooling**	optional FKS03
Electric Current Supply	3x480V-16A	**Max. Machine Interface**	HSK 100 CAT 50
Power kW	11 kW	**Required Accessories**	setting pot cooling adapter
Weight	100 lbs	**Optional Accessories**	water cooler

TABLE TOP • WATER COOLED

ISG3400TWK-WS

ISG3400TWK: It is universal shrinking unit for the professional use of shrinking technology. With its unique coil changing system, the amount of power transferred to different clamping chucks is guaranteed within a short period of time. Compared to other systems, this makes it possible to clamp even the smallest diameter tools. This allows for a constant preparation of a high number of tools. Guaranteed.

Universal Table Unit: This controlled ISG3400TWK unit is simple to use. All that needs to be done is to select the tool diameter range. After the induction coil is positioned around the tool holder, push the start button and the coil heats the tool holder appropriately. When heat cycle is completed, move the coil upward away from tool, raise the cooling sleeve and press the cooling button, allowing the tool to cool in seconds.

Technical Data: ISG3400TLK-WS			
SAP No.	5043379	**Max. Tool Length**	400mm 15.75"
Dimensions D x W x H	800mm x 560mm x 950mm 31.5" x 22" x 38"	**Max. Cooling Length**	160mm 6.3"
Clamping Range SC	3-32mm 1/8"–1-1/4"	**Cooling Type**	liquid/emulsion
Clamping Range HSS	6-32mm 1/4"–1-1/4"	**Cooling Time**	20 sec
Coil	Quick Change	**Geometry Independent Cooling**	yes
Electric Current Supply	3x480V-16A	**Max. Machine Interface**	HSK 100 CAT 50
Power kW	11 kW	**Required Accessories**	setting pot
Weight	115 lbs	**Optional Accessories**	setting pot

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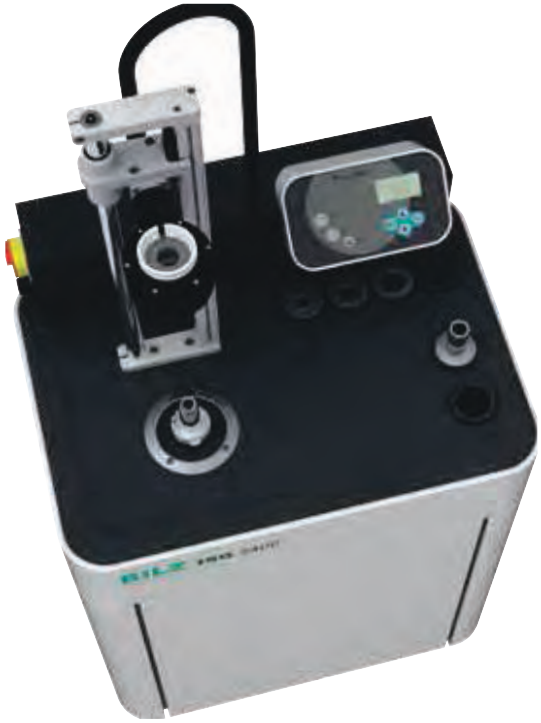
ISG3400WK-WS FREE STANDING • WATER COOLED



ISG3400WK-WS: It is universal shrinking unit for the professional use of shrinking technology. With its unique coil changing system, the power transfer adjusted to different clamping chucks is guaranteed within a short period of time. Compared to other systems, this makes it possible to clamp even the smallest diameter tools. This means that the constant preparation of a high number of tools regardless of size, can be guaranteed.

Free-standing Unit: This controlled ISG3400WK-WS unit is simple to use. All that needs to be done is to select the tool diameter range. Fully automated system allows you to load tool and operate the system almost hands-free. Load diameter of tool, select style of shrink chuck, press the start button and 45 seconds later you tool is installed and cooled to room temperature.

Technical Data: ISG3400WK-WS			
SAP No.	5043375	**Max. Tool Length**	700 mm / 27.5"
Dimensions D x W x H	800mm x 560mm x 1950mm 31.5" x 22" x 77"	**Max. Cooling Length**	400mm
Clamping Range SC	3-50mm (1/8"-2")	**Cooling Type**	liquid/emulsion
Clamping Range HSS	6-50mm (1/4"-2")	**Cooling Time**	20 sec
Coil	Quick Change	**Geometry Independent Cooling**	yes
Electric Current Supply	3x480V-16A	**Max. Machine Interface**	HSK 100 CAT 50
Power kW	11 kW	**Required Accessories**	setting pot
Weight	115 lbs.	**Optional Accessories**	#2 coil 32mm-50mm

TABLE TOP • AIR COOLED ISG3400TLK-FS

This controlled ISG3400TLK unit is simple to use. All that needs to be done is to select the tool diameter range. After the induction coil is positioned around the tool holder, push the start button and the coil heats the tool holder sufficiently. When heat cycle is completed, move the coil upward away from tool. Press the cooling button and allow the tool to cool in minutes.

Technical Data: ISG3400TLK-FS			
SAP No.	5046884	**Max. Tool Length**	350 mm 13.77"
Dimensions D x W x H	780mm x 535mm x 950mm 31" x 22" x 38"	**Max. Cooling Length**	350 mm 13.77"
Clamping Range SC	3mm–32mm 1/8"–1-1/4"	**Cooling Type**	air/cooling adapter
Clamping Range HSS	6mm–32mm 1/4"–1-1/4"	**Cooling Time**	300 sec
Coil	Fixed	**Geometry Independent Cooling**	optional FKS3400
Electric Current Supply	3x480V-16A	**Max. Machine Interface**	HSK 100 CAT 50
Power kW	11 kW	**Required Accessories**	setting pot cooling adapter
Weight	100 lbs	**Optional Accessories**	water cooler

ISG3400WK-HL FREE STANDING • WATER COOLED

The ThermoGrip® ISG3400WK-HL is a high end unit for the process of shrinking large diameter tools in holders up to HSK-160 and CAT-60 including the THD heavy duty thick wall holders.

The ISG3400WK-HL has been especially designed for heavy roughing tools. Due to the shrinking and cooling positions the process area is accessible from 3 sides, loading and unloading with a lever system is made easy.

With the high weight capacity of 40kg, the cooling process has been designed where the tool stays stationary and the cooling tower raises from the housing surrounding the tool with 360° of coolant.

Technical Data: ISG3400WK-HL			
SAP No.	5028680	**Max. Tool Length**	750mm 29"
Dimensions D x W x H	1150mm x 770mm x 2110mm 45.5" x 30.5" x 83"	**Max. Cooling Length**	560mm 22"
Clamping Range SC	3-50mm 1/8"–2"	**Cooling Type**	liquid/emulsion
Clamping Range HSS	6–50mm 1/4"–2"	**Cooling Time**	20 sec
Coil	Quick Change	**Geometry Independent Cooling**	yes
Electric Current Supply	3x 480V / 20A	**Max. Machine Interface**	HSK 160 CAT 60
Power kW	11 kW	**Required Accessories**	setting pot
Weight	300 kg	**Optional Accessories**	coils for heavy-wall holders

Pole Disc One-Piece

For optimal shielding of the magnetic field between coil and tool shank.

SAP No.				
ISG1000/ISG2200 208 Volt	ISG1000/ISG2200 400 Volt	ISG3400 Series	Designation	Clamping-Ø
9070801	–	–	ISGS2202-1	3.0 – 5.9 mm
9070800	–	–	ISGS2202-2	6.0 – 12 mm
9070802	–	–	ISGS2202-3	12.1 – 20 mm
–	6725758	–	ISGS2201-1	3.0 – 5.9 mm
–	6725759	–	ISGS2201-2	6.0 – 12 mm
–	6725760	–	ISGS2201-3	12.1 – 20 mm
–	–	6726157	ISGS3201-0	3.0 – 5.9 mm
–	–	6726143	ISGS3201-1	6.0 – 12 mm
–	–	6726144	ISGS3201-2	12.1 – 22 mm
–	–	6726145	ISGS3201-3	22.1 – 32 mm

Pole Disc Two-Piece

For use when the cutting diameter is bigger than the shrinking diameter.

SAP No.				
ISG1000	ISG2200 Series	ISG3400 Series	Designation	Clamping-Ø
9074537	9074537	–	ISGS2201GT-1	3.0 – 5.9 mm
9074538	9074538	–	ISGS2201GT-2	6.0 – 12.0 mm
9074539	9074539	–	ISGS2201GT-3	12.1 – 20.0 mm
–	–	9074540	ISGS3201GT-0	3.0 – 5.9 mm
–	–	9074541	ISGS3201GT-1	6.0 – 12.0 mm
–	–	9074542	ISGS3201GT-2	12.1 – 20.0 mm
–	–	9074543	ISGS3201GT-3	20.1 – 32.0 mm

Pole Disc TSF

The TSF set allows TSF adaptors to be shrunk using the shrink machine. The TSF discs provide optimal shielding of the magnetic field between coil and tool shank. This guarantees safe and reliable shrinking of the TSF adaptors.

SAP No.				
ISG1000	ISG2200 Series	ISG3400 Series	Designation	Clamping-Ø
9102759	9102759	9102645	ISGS...201-TSF-SET consists of the following parts	
6955194	6955194	6955194	TVP-ISG-TSF storage box	
9102727	9102727	9088924	ISGS...201-TSF03	3 mm
9102728	9102728	9088925	ISGS...201-TSF04	4 mm
9102749	9102749	9102646	ISGS...201-TSF05	5 mm
9102750	9102750	9088926	ISGS...201-TSF06	6 mm
9102752	9102752	9088927	ISGS...201-TSF08	8 mm
9102753	9102753	9088928	ISGS...201-TSF10	10 mm
9102754	9102754	9088980	ISGS...201-TSF12	12 mm
9102755	9102755	9102647	ISGS...201-TSF14	14 mm
9102756	9102756	9088981	ISGS...201-TSF16	16 mm
9102757	9102757	9102648	ISGS...201-TSF18	18 mm
9102758	9102758	9088982	ISGS...201-TSF20	20 mm
–	–	9088983	ISGS3201-TSF25	25 mm

Tool Holders Water Cooled

For holding and positioning of the shrink chuck on the shrink unit.

SAP No.		
ISG2200WK	ISG3400(T)WK	Designation
9070110	9075293	T..-WWK/HSK25
9206404	9073950	T..-WWK/HSK32-15
9206403	9073952	T..-WWK/HSK40-15
6725777	9073953	T..-WWK/HSK50
6725778	9073954	T..-WWK/HSK63
6725779	9073956	T..-WWK/HSK80
6725780	9073957	T..-WWK/HSK100
9075270	–	T..-WWK/SK25
6725785	9073958	T..-WWK/SK30, CAT30, BT30
9206406	9073959	T..-WWK/SK40-10, CAT40, BT40
6725782	9073961	T..-WWK/SK50, CAT50, BT50
9071851	9079542	T..-WWK/C3
9077794	9076662	T..-WWK/C4
9077795	9076663	T..-WWK/C5
6773336	9076664	T..-WWK/C6
–	9076907	T3-WWK/C8
–	6954754	TGK 301-WWK/100, Extension of tool holders

Tool Holders Air Cooled

For holding and correct positioning of the shrink chuck on the shrink unit.

SAP No.			
ISG1000	ISG2200	ISG3400TLK	Designation
6725939	6725939	6725939	T3-W/HSK32
6725940	6725940	6725940	T3-W/HSK40
6725941	6725941	6725941	T3-W/HSK50
6725942	6725942	6725942	T3-W/HSK63
6725943	6725943	6725943	T3-W/HSK80
6725938	6725938	6725938	T3-W/HSK100
6725958	6725958	6725958	T3-W/SK30, CAT, BT
6725944	6725944	6725944	T3-W/SK40, CAT, BT
6725945	6725945	6725945	T3-W/SK50, CAT, BT
6725933	6725933	6725933	T3-W/25, ABS25
6725934	6725934	6725934	T3-W/32, ABS32, CAPTO C3
6725935	6725935	6725935	T3-W/40, ABS40, CAPTO C4
6725936	6725936	6725936	T3-W/50, ABS50, CAPTO C5
6725937	6725937	6725937	T3-W/63, ABS63, CAPTO C6
6726048	6726048	6726048	T3-W/SCA1
6726050	6726050	6726050	T3-W/SCA2
6725948	6725948	6725948	T3-W/WE1
6725949	6725949	6725949	T3-W/WE2

All ISG3400WK-WS and ISG3400TWK-WS accessories compatible with accessories from ISG3200WK-WS.
All ISG3400TLK-WS and ISG3400TLK-FS accessories compatible with accessories from ISG3200 air cooled units.

Cooling Adaptor Air Cooled Unit

For fast cooling of the heated shrink chucks. Due to the precise design and the enclosure of the clamping area, the heat is rapidly diverted to the outside via the fins of the adaptor.

SAP No.						
ISG1000	ISG2200	ISG2200WK	ISG3200	ISG3200WK	Designation	Clamping-Ø
Projection length up to 120 mm						
6725996	6725996	–	6725996	–	T3-K/3–5.9	3.0–5.9 mm
6725955	6725955	–	6725955	–	T3-K/6–9	6.0– 9.0 mm
6725956	6725956	–	6725956	–	T3-K/9.1–12	9.1–12.0 mm
6725951	6725951	–	6725951	–	T3-K/12.1–16	12.1–16.0 mm
6725953	6725953	–	6725953	–	T3-K/16.1–22	16.1–22.0 mm
–	–	–	6725954	–	T3-K/22.1–32	22.1–32.0 mm
Projection length 120–200 mm						
6726049	6726049	–	6726049	–	T3-K/3–5.9, L200	3.0–5.9 mm
6726024	6726024	–	6726024	–	T3-K/6–9, L200	6.0–9.0 mm
6726025	6726025	–	6726025	–	T3-K/9,1–12, L200	9.1–12.0 mm
6726026	6726026	–	6726026	–	T3-K/12,1–16, L200	12.1–16.0 mm
6726027	6726027	–	6726027	–	T3-K/16,1–22, L200	16.1–22.0 mm
–	–	–	6726028	–	T3-K/22,1–32, L200	22.1–32.0 mm

Cooling Adaptor Blanks

For fast cooling of the heated shrink chucks. Due to the precise design and the enclosure of the clamping area, the heat is rapidly diverted to the outside via the fins of the adaptor.

SAP No.						
ISG1000	ISG2200	ISG2200WK	ISG3200	ISG3200WK	Designation	Clamping-Ø
6726039	6726039	–	6726039	–	T3-K/0-R	0
6726031	6726031	–	6726031	–	T3-K/18-R	18
6726032	6726032	–	6726032	–	T3-K/35-R	35

Protective Cover

For protection of the unit against dirt.

SAP No.					Designation
ISG1000	ISG2200	ISG2200WK	ISG3200	ISG3200WK	
6725799	6725799	6725799	9081381	9081381	ISG..200–SH

Stop Block

Fixture used for special applications like pole discs two pieces. Used as a stopper for positioning the coil when no correct positioning between pole disc and chuck front end will be possible.

SAP No.					Designation
ISG3200	ISG3200WK	ISG3400TLK-WS	ISG3400TWK-WS	ISG3400WK-WS	
9093048	9093048	–	–	–	ISGF3200.3
–	–	5049287	5049287	5049287	ISGF3414

Induction Coils

For 3 - 32 mm

For 32 - 50 mm

Induction coils for the previous models ISG 3000, ISG 3100, and 3200. Special coils for special applications are available on request.

SAP No.					Designation	Description
ISG3200	ISG3200WK	ISG3400TLK-WS	ISG3400TWK-WS	ISG3400WK-WS		
6726155	6726155	–	–	6726155	ISGS3200-0	small coil
6726141	6726141	6726141	6726141	6726141	ISGS3200-1	standard coil 3-32mm
6726142	6726142	–	–	6726142	ISGS3200-2	large coil 32-50mm
6773722	6773722	6773722	–	6773722	ISGS3200-3.1	inverse coil, 65mm ID
5029693	5029693	5029693	-	5029693	ISGS3200-6	shorter standard coil

Additional Kit “Inverse”

The additional kit consisting of the special coil, stop block and extension for inverse shrinking of large head diameters.

SAP No.					Designation
ISG3200	ISG3200WK	ISG3400TLS-WS	ISG3400TWK-WS	ISG3400WK-WS	
6773731					ISGS3200-BG2
	9082137				ISGS3200WK-BG1
			5051051	5051051	ISGZ 3400WK-INV
		5051052			ISGZ 3400TLK-INV

FKS Liquid Cooler

The liquid cooler is a separate unit for cooling chucks which have been heated up during the shrinking process. With the start-button the cycle cooling and drying runs automatically.

SAP No.	Designation	Dimensions	Air Pressure
6726169	FKS03-450	350mm x 520mm x 220mm	6 bar/87 psi
5050874	FKS3400	424mm x 516mm x 700mm	4 bar/58 psi

Ejection Device (Shrink Units) for Broken Tools

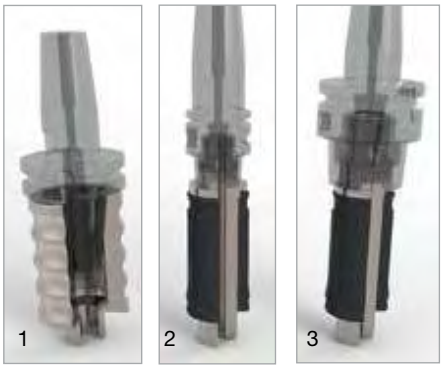
The ejection unit enables broken tools to be removed easily from chucks. Even tools where the point of breakage is in the tool holder can be removed without difficulty. The basic tool holder can be adapted to all customary machine interfaces (HSK, SK, ABS) by means of different adaptors. Even with a tight fit (bore diameter/tool shank) the shrunk-in shanks can be removed without difficulty. Further interfaces on request.

SAP No.	Designation
9091116	T3-WSG/HSK32
9091118	T3-WSG/HSK40
9091119	T3-WSG/HSK50
9091120	T3-WSG/HSK63
9091121	T3-WSG/HSK80
9091124	T3-WSG/HSK100
9128634	T3-WSG/SK30
9091127	T3-WSG/SK40
9091128	T3-WSG/SK50

Modification Set from HSK-63 to . . .

SAP No.	Designation
9102761	T3-WSG/HSK63-HSK32
9102762	T3-WSG/HSK63-HSK40
5022799	T3-WSG/HSK63-HSK50

FKS3400 Tool Holders



For holding and correct positioning of the shrink chuck on the liquid cooler.

SAP No.	Designation		Image
6773728	FKS03-SK30/40	SK30/40, CAT30/40, BT30/40	1
6773725	FKS03-HSK25/32	HSK-25/32	2
6773726	FKS03-HSK40/50	HSK-40/50/F63	3

Coolant Emulsion – 5 l

Coolant emulsion for protecting clamping chucks against corrosion.

SAP No.					Designation
ISG2200WK	ISG3200WK	ISG3400TWK	ISG3400WK	ISG3400HL	
9106091	9106091	6725795	6725795	6725795	Zetasol 120/5 – 1 L
5045596	5045596	5045596	5045596	5045596	Zetasol 120/5 – 5 L

Deposit Plate

For safe depositing of pole discs, tool holders and shrunk out tools.

SAP No.					Designation
ISG1000	ISG2200	ISG2200WK	ISG3200	ISG3200WK	
–	–	–	–	9074029	ISG338-BG

Cooling Plate

For depositing of shrunk out tools.

SAP No.					Designation
ISG1000	ISG2200	ISG2200WK	ISG3200	ISG3200WK	
6726004	6726004	6726004	6726004	6726004	T3-Z/WZ

Sintered Plate Blanks

Customization for special sizes.

SAP No.					
ISG1000	ISG2200	ISG2200WK	ISG3200	ISG3200WK	Designation
6706744	6706744	6706744	6706744	6706744	72 x 10.0 R0462301
6706747	6706747	6706747	6706747	6706747	72 x 20.0 R0462309

Clamping Ring

For secure holding of the pole disc inside the coil.

SAP No.					
ISG1000	ISG2200	ISG2200WK	ISG3200	ISG3200WK	Designation
6950431	6950431	6950431	6950431	6950431	ISGS309

Protective Gloves

For protection against possible burns and cutting injuries.

SAP No.					
ISG1000	ISG2200	ISG2200WK	ISG3200	ISG3200WK	Designation
6947666	6947666	6947666	6947666	6947666	VA662-10

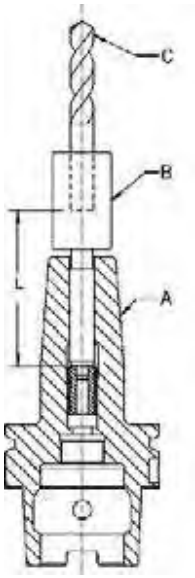
Measuring Adaptor for Length Presetting

BILZ

Low Price – Big Effect
The ThermoGrip® measuring adaptor is the low cost entry in presetting and stands out due to its simple handling and versatility. The length in the tool holder can be preset independently of the clamping device.

One for All
The ThermoGrip® measuring adaptor works on all standard length presetting units.

Cost Reduction
Due to its simplicity handling time, can be saved. The ThermoGrip® measuring adaptor guarantees process security in production due to higher dimensional accuracy at the length presetting.



T3-M... – Metric

SAP No.	Designation	Dimensions (mm)		
		d_1	L	SW
6725959	T3-M0600	6	80	2.5
6725962	T3-M0800	8	80	3
6725963	T3-M1000	10	80	4
6726111	T3-M1200	12	80	5
6726112	T3-M1400	14	80	5
6725967	T3-M1600	16	80	6
6725968	T3-M1800	18	80	6
6725969	T3-M2000	20	80	8
6725970	T3-M2500	25	80	8
6725971	T3-M3200	32	80	8

T3-M... – Inch

SAP No.	Designation	Dimensions (inch)		
		d_1	L	SW
6725960	T3-M0635	6.35	80	2.5
6726033	T3-M0953	9.525	80	4
6725965	T3-M1270	12.7	80	5
6726088	T3-M1588	15.875	80	6
6726078	T3-M1905	19.05	80	8
6726087	T3-M2223	22.225	80	8
6726079	T3-M2540	25.4	80	8
6726080	T3-M3175	31.75	80	8

Measurement Process

The measuring adaptor (B) is put into the ThermoGrip® shrink chuck (A) and locks into the hexagon of the length presetting screw.

The tool (C) is inserted in the measuring adaptor (B).

By turning the measuring adaptor (B) the tool length is determined via the adjusting screw in the chuck with the help of a presetting device.

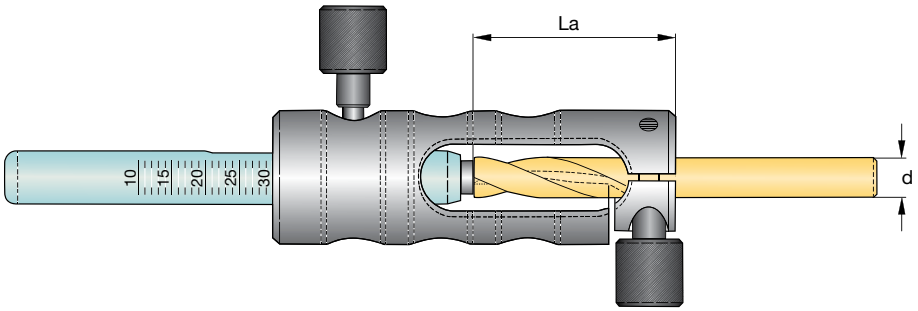
The measuring adaptor (B) is then taken out of the ThermoGrip® shrink chuck.

The differential dimension (L) (L = 80 mm) has to be considered during adjusting. This stored value has to be deducted from the total length.

Tip: Take care not to turn the measuring adaptor (B) when taking it out. Otherwise the length adjusting screw is displaced and the total length is readjusted.

As a last step, put the tool (C) without the measuring adaptor into the counterbore of the ThermoGrip® shrink chuck (A) and shrink it on the ISG unit of your choice.

The length adjusting sleeve makes it possible to determine exactly how far the cutting tools come out of the shrink chuck. The pusher is adjusted to the required length and clamped in. The cutting tool is then inserted into the bore hole, pressed against the plastic stop and clamped. That way the cutter is inserted into the hot shrink chuck up to the stop.



T3-LS...			
d	**La**	**Designation**	**SAP No.**
3 mm	5 – 25 mm	T3-LS0300-5-25	5021284
3 mm	30 – 50 mm	T3-LS0300-30-50	5032090
4 mm	5 – 25 mm	T3-LS0400-5-25	5021285
4 mm	30 – 50 mm	T3-LS0400-30-50	5032091
5 mm	5 – 25 mm	T3-LS0500-5-25	5021286
5 mm	30 – 50 mm	T3-LS0500-30-50	5032092
6 mm	10 – 35 mm	T3-LS0600-10-35	5021287
6 mm	35 – 60 mm	T3-LS0600-35-60	5032093

THERMOGRIP® TOOL HOLDING SYSTEM

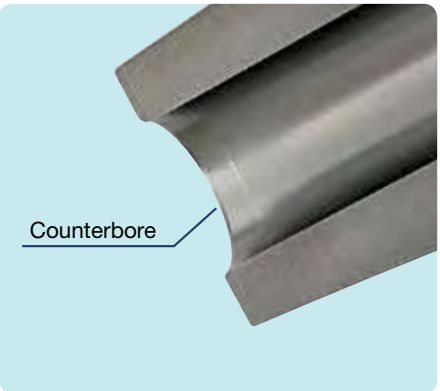
MAKE MORE MONEY AT THE CUTTING EDGE

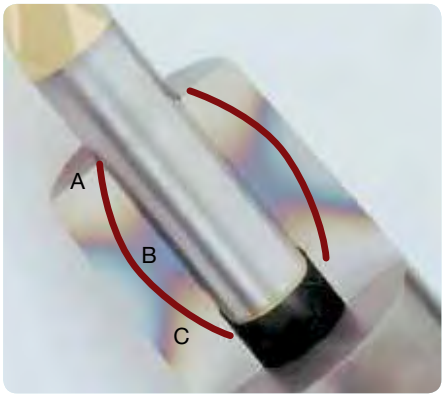
The ThermoGrip® tool holding system uses an inductive heating concept to provide stronger, more-concentric tool clamping. This leads to increased tool life, better surface finishes and improved cost efficiency. Our offering covers machines, holders (including heavy duty), extensions, collets and accessories—everything you need to maximize profits!

- Longest tool life of any holding system
- Highest concentricity (<.003mm)
- Maximum clamping security

VIEW THE WEBSITE

T THERMOGRIP® STANDARD





- Precentering of the tool for an automatic shrinking process
- 15%–20% less heat needed during heating – low wear
- Optimal shrinking out of HSS shanks

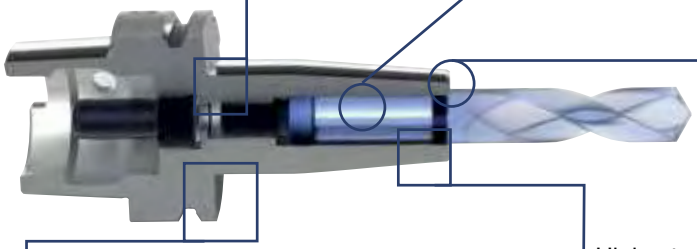
A - Critical position during release. Cold corners prevent the release of the tool shank
B - Barrel shaped bore opening (banana effect)
C - Hot Spot

The picture above shows the cross section of an inductively heated shrink holder. The surface of the chuck mainly heats in the hot spot area very quickly. This area is situated in the middle of the coil spindle. As the temperature is always higher on the surface of the chuck than in the inner part, the chuck opens by micrometres—similar to a banana—slightly outwards. Therefore the chuck is always slightly more open at the hot spot than at the boring entry. The cylindrical counterbore bypasses this critical area securely at reduced energy requirement. Due to this low wear heating process, a longer tool life of the shrink holders is guaranteed.

MADE IN GERMANY 100%

Optimized stability through “balanced by design” and subsequent fine balancing
- Better surface quality
- Ideal for HPC/HSC processing
- Low wear of the machine spindle

Security
- All standard shanks can be clamped
- No loss of clamping force with greasy and oily shanks

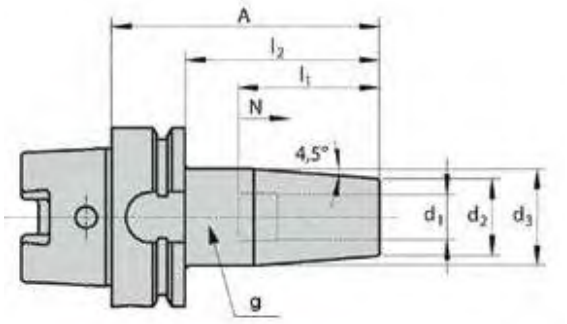


The patented counterbore allows the insertion of the tool under cold condition as well as an automatic shrinking process and simplifies the handling. 15 %–20 % less heat required when heating the shrink chuck

Longest tool life and form stability due to the use of highly heat resisting special purpose steel
- High radial rigidity
- Low deflection
- High rate of infeeds possible

Highest concentricity
< 0.003 mm and precise taper tolerances, manufactured in an air-conditioned production area
- Reduced tool costs due to improved tool life, allows constant cutting edge contact
- Reduced chatter marks

HSK-A40 | ThermoGrip® Standard



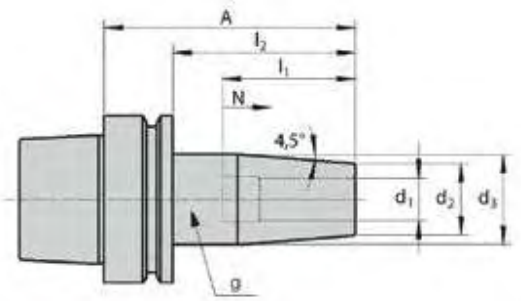
HSK-A40 – Metric								
		Dimensions (mm)						
SAP No.	Designation	d_1	A	d_2	d_3	l_1	N	g
STANDARD PROJECTION								
6726615	T0300-60/HSK-A40	3	60	15	21	20	5	M6
6726616	T0400-60/HSK-A40	4	60	15	21	20	5	M6
6726617	T0500-60/HSK-A40	5	60	15	21	25	5	M6
6726222	T0600-80/HSK-A40	6	80	21	27	36	10	M5
6726223	T0800-80/HSK-A40	8	80	21	27	36	10	M6
6726224	T1000-80/HSK-A40	10	80	24	32	42	10	M8x1
6726225	T1200-90/HSK-A40	12	90	24	32	47	10	M10x1
6726226	T1400-90/HSK-A40	14	90	27	34	47	10	M10x1
6726227	T1600-90/HSK-A40	16	90	27	34	50	10	M12x1

All holders can be run with internal coolant
Please Order Coolant Tube Catalog No. HSK40-12 separately
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

HSK-A50 | ThermoGrip® Standard

HSK-A50 – Metric								
		Dimensions (mm)						
SAP No.	Designation	d_1	A	d_2	d_3	l_1	N	g
STANDARD PROJECTION								
5038902	T0300-80/HSK-A50	3	80	15	21	20	5	M6
9179308	T0400-80/HSK-A50	4	80	15	21	20	5	M6
5000253	T0500-80/HSK-A50	5	80	15	21	25	5	M6
6726232	T0600-80/HSK-A50	6	80	21	27	36	10	M5
6726233	T0800-80/HSK-A50	8	80	21	27	36	10	M6
6726234	T1000-85/HSK-A50	10	85	24	32	42	10	M8x1
6726235	T1200-90/HSK-A50	12	90	24	32	47	10	M10x1
6726236	T1400-90/HSK-A50	14	90	27	34	47	10	M10x1
6726237	T1600-95/HSK-A50	16	95	27	34	50	10	M12x1
6726238	T1800-95/HSK-A50	18	95	33	42	50	10	M12x1
6726239	T2000-100/HSK-A50	20	100	33	42	52	10	M16x1

All holders can be run with internal coolant
Please Order Coolant Tube Catalog No. HSK50-16 separately
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

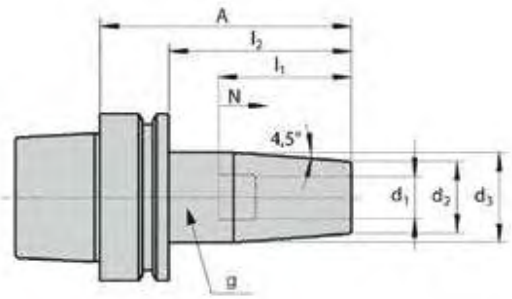


HSK-E40 – Inch								
		Dimensions (inch)						
SAP No.	Designation	d_1	A	d_2	d_3	l_1	N	g
STANDARD PROJECTION								
9079262	T0318-60/HSK-E40	0.125	2.36	0.83	1.06	1.42	0.39	M6
9079269	T0476-60/HSK-E40	0.187	2.36	0.83	1.06	1.42	0.39	M6
9079208	T0635-80/HSK-E40	0.250	3.15	0.83	1.06	1.42	0.39	M5
9079215	T0953-80/HSK-E40	0.375	3.15	0.95	1.26	1.65	0.39	M8x1
9079243	T1270-90/HSK-E40	0.500	3.54	1.06	1.34	1.85	0.39	M10x1
9079248	T1588-90/HSK-E40	0.625	3.54	1.06	1.34	1.97	0.39	M12x1
LONG PROJECTION								
9079263	T0318-120/HSK-E40	0.125	4.72	0.83	1.06	1.42	0.39	M6
9079270	T0476-120/HSK-E40	0.187	4.72	0.83	1.06	1.42	0.39	M6
9079210	T0635-120/HSK-E40	0.250	4.72	0.83	1.06	1.42	0.39	M5
9079216	T0953-120/HSK-E40	0.375	4.72	0.95	1.26	1.65	0.39	M8x1
9079244	T1270-120/HSK-E40	0.500	4.72	1.06	1.34	1.85	0.39	M10x1
9079249	T1588-120/HSK-E40	0.625	4.72	1.06	1.34	1.97	0.39	M12x1

All holders can be run with internal coolant
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

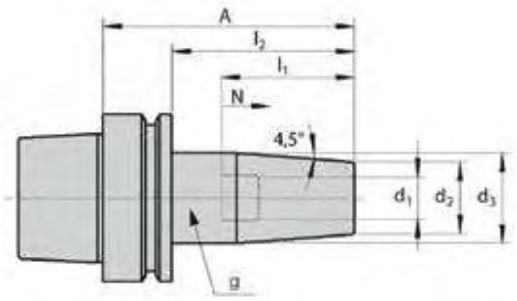
HSK-E40 – Metric								
		Dimensions (mm)						
SAP No.	Designation	d_1	A	d_2	d_3	l_1	N	g
STANDARD PROJECTION								
6726576	T0300-60/HSK-E40	3	60	15	21	20	5	M6
6726577	T0400-60/HSK-E40	4	60	15	21	20	5	M6
6726578	T0500-60/HSK-E40	5	60	15	21	25	5	M6
6726299	T0600-80/HSK-E40	6	80	21	27	36	10	M5
6726300	T0800-80/HSK-E40	8	80	21	27	36	10	M6
6726301	T1000-80/HSK-E40	10	80	24	32	42	10	M8x1
6726302	T1200-90/HSK-E40	12	90	24	32	47	10	M10x1
6726303	T1400-90/HSK-E40	14	90	27	34	47	10	M10x1
6726304	T1600-90/HSK-E40	16	90	27	34	50	10	M12x1
LONG PROJECTION								
6726989	T0600-120/HSK-E40	6	120	21	27	36	10	M5
6726990	T0800-120/HSK-E40	8	120	21	27	36	10	M6
6726991	T1000-120/HSK-E40	10	120	24	32	42	10	M8x1
6726992	T1200-120/HSK-E40	12	120	24	32	47	10	M10x1
6726993	T1400-120/HSK-E40	14	120	27	34	47	10	M10x1
6726994	T1600-120/HSK-E40	16	120	27	34	50	10	M12x1

All holders can be run with internal coolant
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm



HSK-E50 – Inch								
		Dimensions (inch)						
SAP No.	Designation	d_1	A	d_2	d_3	l_1	N	g
STANDARD PROJECTION								
9079264	T0318-80/HSK-E50	0.125	3.15	0.83	1.06	1.42	0.39	M6
9079271	T0476-80/HSK-E50	0.187	3.15	0.83	1.06	1.42	0.39	M6
6727386	T0635-80/HSK-E50	0.250	3.15	0.83	1.06	1.42	0.39	M5
6727388	T0953-85/HSK-E50	0.375	3.34	0.95	1.26	1.65	0.39	M8x1
6727390	T1270-90/HSK-E50	0.500	3.54	1.06	1.34	1.85	0.39	M10x1
9079250	T1588-95/HSK-E50	0.625	3.74	1.06	1.34	1.97	0.39	M12x1
9079256	T1905-100/HSK-E50	0.750	3.94	1.30	1.65	2.05	0.39	M16x1
LONG PROJECTION								
9079265	T0318-160/HSK-E50	0.125	6.30	0.83	1.26	1.42	0.39	M6
9079272	T0476-160/HSK-E50	0.187	6.30	0.83	1.26	1.42	0.39	M6
9079211	T0635-160/HSK-E50	0.250	6.30	0.83	1.26	1.42	0.39	M5
9079218	T0953-160/HSK-E50	0.375	6.30	0.95	1.34	1.65	0.39	M8x1
9079245	T1270-160/HSK-E50	0.500	6.30	1.06	1.65	1.85	0.39	M10x1
9079252	T1588-160/HSK-E50	0.625	6.30	1.06	1.65	1.97	0.39	M12x1
9079257	T1905-160/HSK-E50	0.750	6.30	1.30	2.01	2.05	0.39	M16x1

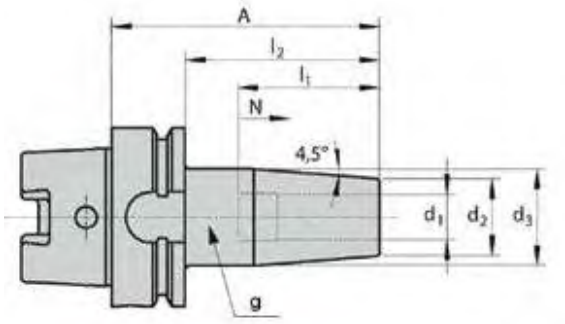
All holders can be run with internal coolant
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm



HSK-E50 – Metric								
		Dimensions (mm)						
SAP No.	Designation	d_1	A	d_2	d_3	l_1	N	g
STANDARD PROJECTION								
6726654	T0300-80/HSK-E50	3	80	15	21	20	5	M6
6726655	T0400-80/HSK-E50	4	80	15	21	20	5	M6
6726656	T0500-80/HSK-E50	5	80	15	21	25	5	M6
6726309	T0600-80/HSK-E50	6	80	21	27	36	10	M5
6726310	T0800-80/HSK-E50	8	80	21	27	36	10	M6
6726311	T1000-85/HSK-E50	10	85	24	32	42	10	M8x1
6726312	T1200-90/HSK-E50	12	90	24	32	47	10	M10x1
6726313	T1400-90/HSK-E50	14	90	27	34	47	10	M10x1
6726314	T1600-95/HSK-E50	16	95	27	34	50	10	M12x1
6726315	T1800-95/HSK-E50	18	95	33	42	50	10	M12x1
6726316	T2000-100/HSK-E50	20	100	33	42	52	10	M16x1
LONG PROJECTION								
6726888	T0600-120/HSK-E50	6	120	21	27	36	10	M5
6726891	T0800-120/HSK-E50	8	120	21	27	36	10	M6
6726756	T1000-120/HSK-E50	10	120	24	32	42	10	M8x1
6726896	T1200-120/HSK-E50	12	120	24	32	47	10	M10x1
6726899	T1400-120/HSK-E50	14	120	27	34	47	10	M10x1
6726964	T1600-120/HSK-E50	16	120	27	34	50	10	M12x1
6726965	T1800-120/HSK-E50	18	120	33	42	50	10	M12x1
6726966	T2000-120/HSK-E50	20	120	33	42	52	10	M16x1
EXTRA LONG PROJECTION								
6726889	T0600-160/HSK-E50	6	160	21	32	36	10	M5
6726892	T0800-160/HSK-E50	8	160	21	32	36	10	M6
6726894	T1000-160/HSK-E50	10	160	24	34	42	10	M8x1
6726897	T1200-160/HSK-E50	12	160	24	34	47	10	M10x1
6726900	T1400-160/HSK-E50	14	160	27	42	47	10	M10x1
6726902	T1600-160/HSK-E50	16	160	27	42	50	10	M12x1
6726904	T1800-160/HSK-E50	18	160	33	51	50	10	M12x1
6726906	T2000-160/HSK-E50	20	160	33	51	52	10	M16x1

All holders can be run with internal coolant
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

HSK-A63 | ThermoGrip® Standard



HSK-A63 – Inch								
		Dimensions (inch)						
SAP No.	Designation	d_1	A	d_2	d_3	l_1	N	g
STANDARD PROJECTION								
9079266	T0318-80/HSK-A63	0.125	3.15	0.59	0.79	1.42	0.39	M6
9079278	T0476-80/HSK-A63	0.187	3.15	0.83	1.06	1.42	0.39	M6
6726420	T0635-80/HSK-A63	0.250	3.15	0.83	1.06	1.42	0.39	M5
6726422	T0953-85/HSK-A63	0.375	3.34	0.95	1.26	1.65	0.39	M8x1
6726424	T1270-90/HSK-A63	0.500	3.54	1.06	1.34	1.85	0.39	M10x1
6726426	T1588-95/HSK-A63	0.625	3.74	1.06	1.34	1.97	0.39	M12x1
6726428	T1905-100/HSK-A63	0.750	3.94	1.30	1.65	2.05	0.39	M16x1
LONG PROJECTION								
9079267	T0318-120/HSK-A63	0.125	4.72	0.83	1.06	1.42	0.39	M6
9079279	T0476-120/HSK-A63	0.187	4.72	0.83	1.06	1.42	0.39	M6
6727392	T0635-120/HSK-A63	0.250	4.72	0.83	1.06	1.42	0.39	M5
6727393	T0953-120/HSK-A63	0.375	4.72	0.95	1.26	1.65	0.39	M8x1
6727394	T1270-120/HSK-A63	0.500	4.72	1.06	1.34	1.85	0.39	M10x1
9079254	T1588-120/HSK-A63	0.625	4.72	1.06	1.34	1.97	0.39	M12x1
6726430	T2540-120/HSK-A63	1.000	4.72	1.73	2.09	2.44	0.39	M16x1
6726431	T3175-120/HSK-A63	1.250	4.72	1.73	2.09	2.28	0.39	M16x1
EXTRA LONG PROJECTION								
9079268	T0318-160/HSK-A63	0.125	6.30	0.83	1.26	1.42	0.39	M6
9079280	T0476-160/HSK-A63	0.187	6.30	0.83	1.26	1.42	0.39	M6
6726614	T0635-160/HSK-A63	0.250	6.30	0.83	1.26	1.42	0.39	M5
9079221	T0953-160/HSK-A63	0.375	6.30	0.95	1.34	1.65	0.39	M8x1
9079247	T1270-160/HSK-A63	0.500	6.30	1.06	1.65	1.85	0.39	M10x1
9079255	T1588-160/HSK-A63	0.625	6.30	1.06	1.65	1.97	0.39	M12x1
9079258	T1905-160/HSK-A63	0.750	6.30	1.30	2.01	2.05	0.39	M16x1
9079259	T2540-160/HSK-A63	1.000	6.30	1.73	2.09	2.44	0.39	M16x1
9079261	T3175-160/HSK-A63	1.250	6.30	1.73	2.09	2.28	0.39	M16x1

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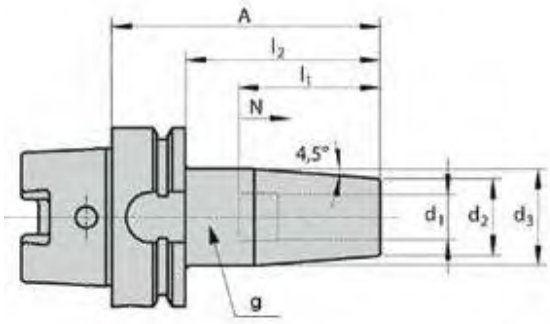

HSK-A63 – Metric								
		Dimensions (mm)						
SAP No.	Designation	d_1	A	d_2	d_3	l_1	N	g
STANDARD PROJECTION								
6726618	T0300-80/HSK-A63	3	80	15	20	20	5	M6
6726619	T0400-80/HSK-A63	4	80	15	20	20	5	M6
6726620	T0500-80/HSK-A63	5	80	15	20	25	5	M6
6726201	T0600-80/HSK-A63	6	80	21	27	36	10	M5
6726202	T0800-80/HSK-A63	8	80	21	27	36	10	M6
6726203	T1000-85/HSK-A63	10	85	24	32	42	10	M8x1
6726204	T1200-90/HSK-A63	12	90	24	32	47	10	M10x1
6726205	T1400-90/HSK-A63	14	90	27	34	47	10	M10x1
6726206	T1600-95/HSK-A63	16	95	27	34	50	10	M12x1
6726211	T1800-95/HSK-A63	18	95	33	42	50	10	M12x1
6726207	T2000-100/HSK-A63	20	100	33	42	52	10	M16x1
6726208	T2500-115/HSK-A63	25	115	44	53	58	10	M16x1
LONG PROJECTION								
6726388	T0600-120/HSK-A63	6	120	21	27	36	10	M5
6726391	T0800-120/HSK-A63	8	120	21	27	36	10	M6
6726392	T1000-120/HSK-A63	10	120	24	32	42	10	M8x1
6726410	T1200-120/HSK-A63	12	120	24	32	47	10	M10x1
6726401	T1400-120/HSK-A63	14	120	27	34	47	10	M10x1
6726399	T1600-120/HSK-A63	16	120	27	34	50	10	M12x1
6726539	T1800-120/HSK-A63	18	120	33	42	50	10	M12x1
6726662	T2000-120/HSK-A63	20	120	33	42	52	10	M16x1
6726209	T3200-120/HSK-A63	32	120	44	53	58	10	M16x1
EXTRA LONG PROJECTION								
6726411	T0600-160/HSK-A63	6	160	21	32	36	10	M5
6726402	T0800-160/HSK-A63	8	160	21	32	36	10	M6
6726403	T1000-160/HSK-A63	10	160	24	34	42	10	M8x1
6726404	T1200-160/HSK-A63	12	160	24	34	47	10	M10x1
6726405	T1400-160/HSK-A63	14	160	27	42	47	10	M10x1
6726406	T1600-160/HSK-A63	16	160	27	42	50	10	M12x1
6726407	T1800-160/HSK-A63	18	160	33	51	50	10	M12x1
6726468	T2000-160/HSK-A63	20	160	33	51	52	10	M16x1
6726408	T2500-160/HSK-A63	25	160	44	53	58	10	M16x1
6726409	T3200-160/HSK-A63	32	160	44	53	62	10	M16x1

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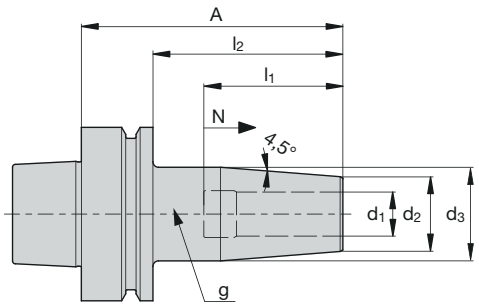
HSK-F63 | ThermoGrip® Standard



HSK-F63 – Inch									
		Dimensions (inch)							
SAP No.	Designation	d_1	A	l_2	d_2	d_3	l_1	N	g
STANDARD PROJECTION									
5057126	T0635-90/HSK-F63	0.250	3.54	2.52	0.83	1.06	1.42	0.39	M5
5057131	T0953-90/HSK-F63	0.375	3.54	2.52	0.95	1.26	1.65	0.39	M8x1
5057133	T1270-90/HSK-F63	0.500	3.74	2.52	1.06	1.34	1.85	0.39	M10x1
5057140	T1588-95/HSK-F63	0.625	3.74	2.72	1.06	1.34	1.97	0.39	M12x1
5057142	T1905-100/HSK-F63	0.750	3.94	2.91	1.30	1.65	2.05	0.39	M16x1
5057148	T2540-115/HSK-F63	1.000	4.53	3.50	1.73	2.09	2.44	0.39	M16x1
LONG PROJECTION									
	T0635-120/HSK-F63	0.250	4.73	3.70	0.83	1.06	1.42	0.20	M5
	T0953-120/HSK-F63	0.375	4.73	3.70	0.95	1.26	1.65	0.20	M8x1
	T1270-120/HSK-F63	0.500	4.73	3.70	0.95	1.26	1.85	0.39	M10x1
	T1588-120/HSK-F63	0.625	4.73	3.70	1.06	1.34	1.97	0.39	M12x1
	T1905-120/HSK-F63	0.750	4.73	3.70	1.30	1.65	2.05	0.39	M16x1
EXTRA LONG PROJECTION									
	T0635-160/HSK-F63	0.250	6.30	5.28	0.83	1.26	1.42	0.20	M5
	T0953-160/HSK-F63	0.375	6.30	5.28	0.95	1.34	1.65	0.20	M8x1
	T1270-160/HSK-F63	0.500	6.30	5.28	0.95	1.34	1.85	0.39	M10x1
	T1588-160/HSK-F63	0.625	6.30	5.28	1.06	1.65	1.97	0.39	M12x1
	T1905-160/HSK-F63	0.750	6.30	5.28	1.30	2.01	2.05	0.39	M16x1

All holders can be run with internal coolant
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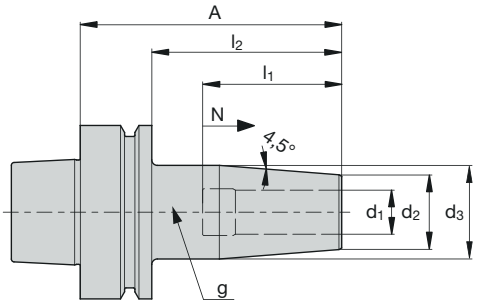
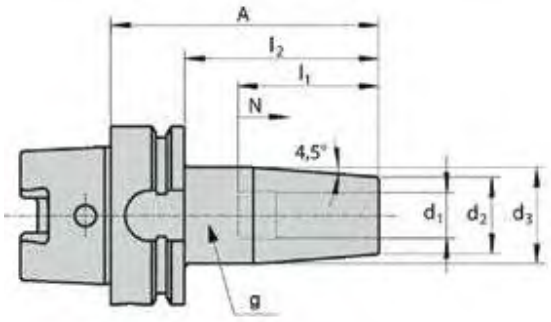


HSK-F63 – Metric									
		Dimensions (mm)							
SAP No.	Designation	d_1	A	l_2	d_2	d_3	l_1	N	g
STANDARD PROJECTION									
9107682	T0300/HSK-F63	3	90	64	15	20	20	5	M6
6773733	T0400/HSK-F63	4	90	64	15	20	20	5	M6
9091580	T0500/HSK-F63	5	90	64	15	20	25	5	M6
9122311	T0600-90/HSK-F63	6	90	64	20	27	36	10	M5
9122312	T0800-90/HSK-F63	8	90	64	21	27	36	10	M6
6726373	T1000/HSK-F63	10	90	64	24	32	42	10	M8x1
6726374	T1200/HSK-F63	12	95	69	24	32	47	10	M10x1
6726393	T1400/HSK-F63	14	95	69	27	34	47	10	M10x1
6726414	T1600/HSK-F63	16	95	69	27	34	50	10	M12x1
6726415	T1800/HSK-F63	18	95	69	33	42	50	10	M12x1
6726375	T2000/HSK-F63	20	100	74	33	42	52	10	M16x1
6727436	T2500/HSK-F63	25	115	89	44	53	58	10	M16x1
LONG PROJECTION									
9115118	T0300-120/HSK-F63	3	120	94	15	20	20	5	M6
9115149	T0400-120/HSK-F63	4	120	94	15	20	20	5	M6
9115150	T0500-120/HSK-F63	5	120	94	15	20	25	5	M6
9075284	T0600-120/HSK-F63	6	120	94	21	27	36	10	M5
6726841	T0800-120/HSK-F63	8	120	94	21	27	36	10	M6
6727435	T1000-120/HSK-F63	10	120	94	24	32	42	10	M8x1
6726810	T1200-120/HSK-F63	12	120	94	24	32	47	10	M10x1
9115151	T1400-120/HSK-F63	14	120	94	27	34	47	10	M10x1
9077033	T1600-120/HSK-F63	16	120	94	27	34	50	10	M12x1
9115152	T1800-120/HSK-F63	18	120	94	33	42	50	10	M12x1
9115153	T2000-120/HSK-F63	20	120	94	33	42	52	10	M16x1
EXTRA LONG PROJECTION									
9115154	T0300-160/HSK-F63	3	160	134	15	27	20	5	M6
9115155	T0400-160/HSK-F63	4	160	134	15	27	20	5	M6
9115156	T0500-160/HSK-F63	5	160	134	15	27	25	5	M6
9115158	T0600-160/HSK-F63	6	160	134	21	32	36	10	M5
9080135	T0800-160/HSK-F63	8	160	134	21	32	36	10	M6
9080136	T1000-160/HSK-F63	10	160	134	24	34	42	10	M8x1
6727465	T1200-160/HSK-F63	12	160	134	24	34	47	10	M10x1
9115160	T1400-160/HSK-F63	14	160	134	27	42	47	10	M10x1
9097804	T1600-160/HSK-F63	16	160	134	27	42	50	10	M12x1
9115162	T1800-160/HSK-F63	18	160	134	33	51	50	10	M12x1
9075282	T2000-160/HSK-F63	20	160	134	33	51	52	10	M16x1

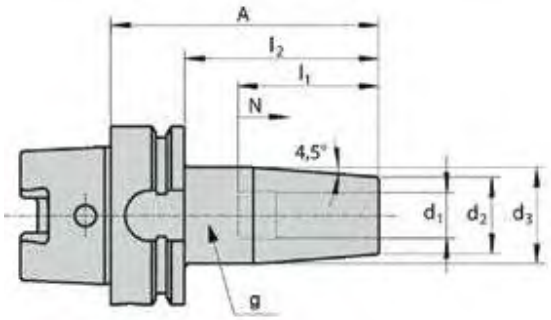
All holders can be run with internal coolant
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

HSK-A80 | ThermoGrip® Standard



HSK-A80 – Inch									
		Dimensions (inch)							
SAP No.	Designation	d_1	A	l_2	d_2	d_3	l_1	N	g
STANDARD PROJECTION									
6726687	T0635-85/HSK-A80	0.250	3.35	2.11	0.83	1.06	1.42	0.39	M5
6726688	T0953-90/HSK-A80	0.375	3.54	2.34	0.94	1.26	1.65	0.39	M8x1
6726689	T1270-95/HSK-A80	0.500	3.74	2.72	1.06	1.34	1.85	0.39	M10x1
6726690	T1588-100/HSK-A80	0.625	3.94	2.91	1.06	1.34	1.97	0.39	M12x1
6726691	T1905-105/HSK-A80	0.750	4.13	3.11	1.30	1.65	2.05	0.39	M16x1
6726692	T2540-115/HSK-A80	1.000	4.53	3.50	1.73	2.09	2.44	0.39	M16x1
6726693	T3175-120/HSK-A80	1.250	4.72	3.70	1.73	2.09	2.44	0.39	M16x1

All holders can be run with internal coolant
Please Order Coolant Tube Catalog No. HSK80-18 separately
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

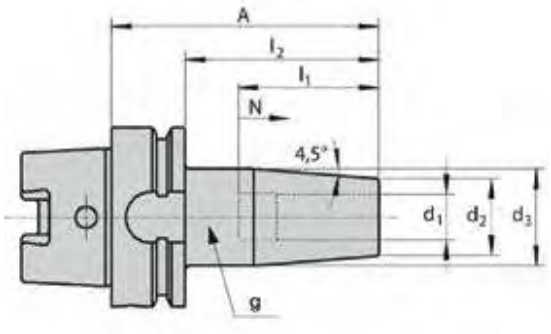


HSK-A80 – Metric									
		Dimensions (mm)							
SAP No.	Designation	d_1	A	l_2	d_2	d_3	l_1	N	g
STANDARD PROJECTION									
6726455	T0800/HSK-A80	6	85	59	21	27	36	10	M5
6726396	T0800/HSK-A80	8	85	59	21	27	36	10	M6
6726985	T1000/HSK-A80	10	90	64	24	32	42	10	M8x1
6726397	T1200/HSK-A80	12	95	69	24	32	47	10	M10x1
6727004	T1400/HSK-A80	14	95	69	27	34	47	10	M10x1
6726658	T1600/HSK-A80	16	100	74	27	34	50	10	M12x1
6726874	T1800/HSK-A80	18	100	74	33	42	50	10	M12x1
6726659	T2000/HSK-A80	20	105	79	33	42	52	10	M16x1
6726488	T2500/HSK-A80	25	115	89	44	53	58	10	M16x1
6726882	T3200/HSK-A80	32	120	94	44	53	62	10	M16x1

All holders can be run with internal coolant
Please Order Coolant Tube Catalog No. HSK80-18 separately
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

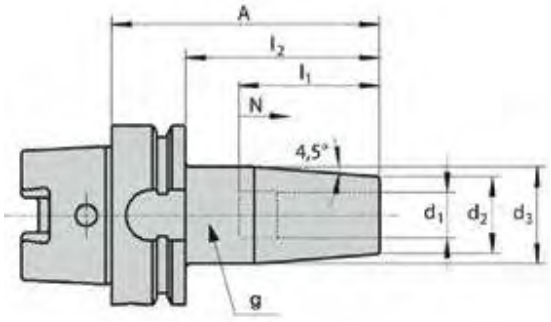
HSK-A100 | ThermoGrip® Standard

BILZ



HSK-A100 – Inch								
		Dimensions (inch)						
SAP No.	Designation	d_1	A	d_2	d_3	l_1	N	g
STANDARD PROJECTION								
6726432	T0635-85/HSK-A100	0.250	3.35	0.83	1.06	1.42	0.39	M5
6726434	T0953-90/HSK-A100	0.375	3.54	0.94	1.26	1.65	0.39	M8X1
6726436	T1270-95/HSK-A100	0.500	3.74	1.06	1.34	1.85	0.39	M10X1
6726438	T1588-95/HSK-A100	0.625	3.94	1.06	1.34	1.97	0.39	M12X1
6726497	T1905-105/HSK-A100	0.750	4.13	1.30	1.65	2.05	0.39	M16X1
LONG PROJECTION								
5057074	T0635-120/HSK-A100	0.250	4.72	0.83	1.06	1.42	0.39	M5
5057076	T0953-120/HSK-A100	0.375	4.72	0.94	1.26	1.65	0.39	M8X1
5057079	T1270-120/HSK-A100	0.500	4.72	1.06	1.34	1.85	0.39	M10X1
5057081	T1588-120/HSK-A100	0.625	4.72	1.06	1.34	1.97	0.39	M12X1
5057083	T1905-120/HSK-A100	0.750	4.72	1.30	1.65	2.05	0.39	M16X1
6726442	T2540-120/HSK-A100	1.000	4.72	1.73	2.09	2.44	0.39	M16X1
6726444	T3175-120/HSK-A100	1.250	4.72	1.73	2.09	2.44	0.39	M16X1
EXTRA LONG PROJECTION								
5057075	T0635-160/HSK-A100	0.250	6.30	0.83	1.26	1.42	0.39	M5
5057077	T0953-160/HSK-A100	0.375	6.30	0.94	1.34	1.65	0.39	M8X1
5057080	T1270-160/HSK-A100	0.500	6.30	1.06	1.65	1.85	0.39	M10X1
5057082	T1588-160/HSK-A100	0.625	6.30	1.06	1.65	1.97	0.39	M12X1
5057084	T1905-160/HSK-A100	0.750	6.30	1.30	2.01	2.05	0.39	M16X1
5057093	T2540-160/HSK-A100	1.000	6.30	1.73	2.36	2.44	0.39	M16X1

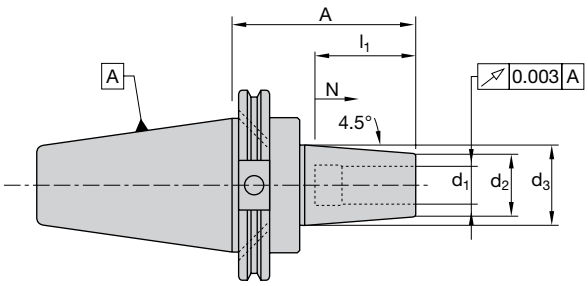
All holders can be run with internal coolant
Please Order Coolant Tube Catalog No. HSK100-24 separately
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm
*Non-stocked items Price on application



HSK-A100 – Metric								
		Dimensions (mm)						
SAP No.	Designation	d_1	A	d_2	d_3	l_1	N	g
STANDARD PROJECTION								
6726342	T0600-85/HSK-A100	6	85	21	27	36	10	M5
6726343	T0800-85/HSK-A100	8	85	21	27	36	10	M6
6726344	T1000-90/HSK-A100	10	90	24	32	42	10	M8x1
6726345	T1200-95/HSK-A100	12	95	24	32	47	10	M10x1
6726346	T1400-95/HSK-A100	14	95	27	34	50	10	M10x1
6726347	T1600-100/HSK-A100	16	100	27	34	50	10	M12x1
6726348	T1800-100/HSK-A100	18	100	33	42	50	10	M12x1
6726349	T2000-105/HSK-A100	20	105	33	42	52	10	M16x1
6726350	T2500-115/HSK-A100	25	115	44	53	58	10	M16x1
LONG PROJECTION								
6726478	T0600-120/HSK-A100	6	120	21	27	36	10	M5
6726479	T0800-120/HSK-A100	8	120	21	27	36	10	M6
6726755	T1000-120/HSK-A100	10	120	24	32	42	10	M8x1
6726480	T1200-120/HSK-A100	12	120	24	32	47	10	M10x1
6726833	T1400-120/HSK-A100	14	120	27	34	50	10	M10x1
6726820	T1600-120/HSK-A100	16	120	27	34	50	10	M12x1
6727035	T1800-120/HSK-A100	18	120	33	42	50	10	M12x1
6726821	T2000-120/HSK-A100	20	120	33	42	52	10	M16x1
6727037	T2500-120/HSK-A100	25	120	44	53	58	10	M16x1
6726351	T3200-120/HSK-A100	32	120	44	53	62	10	M16x1
EXTRA LONG PROJECTION								
6726645	T0600-160/HSK-A100	6	160	21	32	36	10	M5
6726646	T0800-160/HSK-A100	8	160	21	32	36	10	M6
6726647	T1000-160/HSK-A100	10	160	24	34	42	10	M8x1
6726648	T1200-160/HSK-A100	12	160	24	34	47	10	M10x1
6726649	T1400-160/HSK-A100	14	160	27	42	47	10	M10x1
6726650	T1600-160/HSK-A100	16	160	27	42	50	10	M12x1
6727036	T1800-160/HSK-A100	18	160	33	51	52	10	M12x1
6726643	T2000-160/HSK-A100	20	160	33	51	52	10	M16x1
6726644	T2500-160/HSK-A100	25	160	44	53	58	10	M16x1
6727038	T3200-160/HSK-A100	32	160	44	53	62	10	M16x1

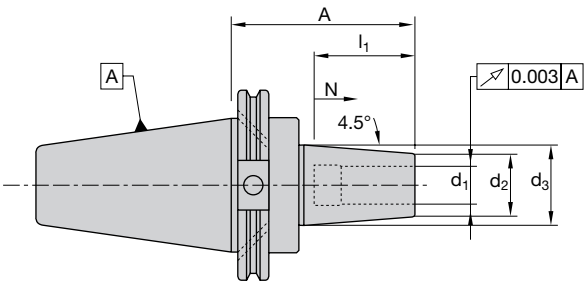
All holders can be run with internal coolant
Please Order Coolant Tube Catalog No. HSK100-24 separately
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

CAT40 | ThermoGrip® Standard



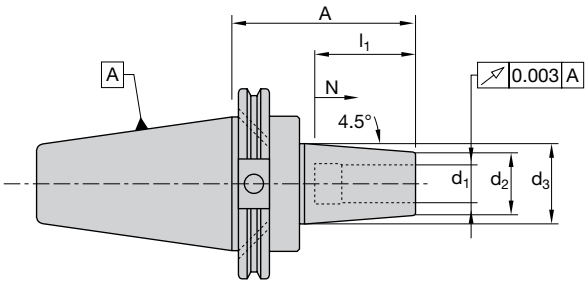
CAT40 – Inch								
		Dimensions (inch)						
SAP No.	Designation	d_1	A	d_2	d_3	l_1	N	g
STANDARD PROJECTION								
9087264	T0318-95/CAT-40	0.125	3.74	0.59	0.79	0.79	0.20	M6
9087265	T0476-95/CAT-40	0.187	3.74	0.59	0.79	0.79	0.20	M6
9075136	T0635-95/CAT-40	0.250	3.74	0.83	1.06	1.42	0.39	M5
9074678	T0953-95/CAT-40	0.375	3.74	0.95	1.26	1.65	0.39	M8x1
9074679	T1270-95/CAT-40	0.500	3.74	1.06	1.34	1.85	0.39	M10x1
9074680	T1588-95/CAT-40	0.625	3.74	1.06	1.34	1.97	0.39	M12x1
9074681	T1905-95/CAT-40	0.750	3.74	1.30	1.65	2.05	0.39	M16x1
9074675	T2540-100/CAT-40	1.000	3.94	1.73	2.09	2.44	0.39	M16x1
9074647	T3175-100/CAT-40	1.250	3.94	1.73	2.09	2.44	0.39	M16x1
LONG PROJECTION								
9087267	T0318-120/CAT-40	0.125	4.73	0.59	0.79	0.79	0.20	M6
9087268	T0476-120/CAT-40	0.187	4.73	0.59	0.79	0.79	0.20	M6
9074633	T0635-120/CAT-40	0.250	4.73	0.83	1.06	1.42	0.39	M5
9074635	T0953-120/CAT-40	0.375	4.73	0.95	1.26	1.65	0.39	M8x1
9074637	T1270-120/CAT-40	0.500	4.73	1.06	1.34	1.85	0.39	M10x1
9074639	T1588-120/CAT-40	0.625	4.73	1.06	1.34	1.97	0.39	M12x1
9074641	T1905-120/CAT-40	0.750	4.73	1.30	1.65	2.05	0.39	M16x1
9074645	T2540-120/CAT-40	1.000	4.73	1.73	2.09	2.44	0.39	M16x1
9074648	T3175-120/CAT-40	1.25	4.73	1.73	2.09	2.44	0.39	M16x1
EXTRA LONG PROJECTION								
9087270	T0318-160/CAT-40	0.125	6.30	0.59	0.79	0.79	0.20	M6
9087271	T0476-160/CAT-40	0.187	6.30	0.59	0.79	0.79	0.20	M6
9074634	T0635-160/CAT-40	0.250	6.30	0.83	1.26	1.42	0.39	M5
9074636	T0953-160/CAT-40	0.375	6.30	0.95	1.34	1.65	0.39	M8x1
9074638	T1270-160/CAT-40	0.500	6.30	1.06	1.65	1.85	0.39	M10x1
9074640	T1588-160/CAT-40	0.625	6.30	1.06	1.65	1.97	0.39	M12x1
9074642	T1905-160/CAT-40	0.750	6.30	1.30	1.75	2.05	0.39	M16x1
9074646	T2540-160/CAT-40	1.000	6.30	1.73	2.09	2.44	0.39	M16x1
9074649	T3175-160/CAT-40	1.250	6.30	1.73	2.09	2.44	0.39	M16x1

NOTE: All Holders Have 5/8-11 UNC Thread for Retention Knob & DIN FORM B Flange Coolant Delivery Option Standard
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm



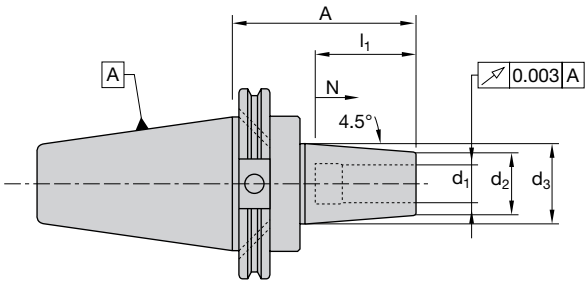
CAT40 – Metric								
		Dimensions (mm)						
SAP No.	Designation	d_1	A	d_2	d_3	l_1	N	g
STANDARD PROJECTION								
9087273	T0300-95/CAT-40	3	95	15	20	20	5	M6
9087286	T0400-95/CAT-40	4	95	15	20	20	5	M6
9087287	T0500-95/CAT-40	5	95	15	20	25	5	M6
9074627	T0600-95/CAT-40	6	95	21	27	36	10	M5
9074628	T0800-95/CAT-40	8	95	21	27	36	10	M6
9074629	T1000-95/CAT-40	10	95	24	32	42	10	M8x1
9074630	T1200-95/CAT-40	12	95	24	32	47	10	M10x1
9074658	T1400-95/CAT-40	14	95	27	34	47	10	M10x1
9074631	T1600-95/CAT-40	16	95	27	34	50	10	M12x1
9074664	T1800-95/CAT-40	18	95	33	42	50	10	M12x1
9074632	T2000-95/CAT-40	20	95	33	42	52	10	M16x1
9074760	T2500-100/CAT-40	25	100	44	53	58	10	M16x1
9074672	T3200-100/CAT-40	32	100	44	53	62	10	M16x1
LONG PROJECTION								
9074650	T0600-120/CAT-40	6	120	21	27	36	10	M5
9074652	T0800-120/CAT-40	8	120	21	27	36	10	M6
9074654	T1000-120/CAT-40	10	120	24	32	42	10	M8x1
9074656	T1200-120/CAT-40	12	120	24	32	47	10	M10x1
9074659	T1400-120/CAT-40	14	120	27	34	47	10	M10x1
9074662	T1600-120/CAT-40	16	120	27	34	50	10	M12x1
9074665	T1800-120/CAT-40	18	120	33	42	50	10	M12x1
9074667	T2000-120/CAT-40	20	120	33	42	52	10	M16x1
9074669	T2500-120/CAT-40	25	120	44	53	58	10	M16x1
9074673	T3200-120/CAT-40	32	120	44	53	62	10	M16x1
EXTRA LONG PROJECTION								
9074651	T0600-160/CAT-40	6	160	21	32	36	10	M5
9074653	T0800-160/CAT-40	8	160	21	32	36	10	M6
9074655	T1000-160/CAT-40	10	160	24	34	42	10	M8x1
9074657	T1200-160/CAT-40	12	160	24	34	47	10	M10x1
9074661	T1400-160/CAT-40	14	160	27	42	47	10	M10x1
9074663	T1600-160/CAT-40	16	160	27	42	50	10	M12x1
9074666	T1800-160/CAT-40	18	160	33	44	50	10	M12x1
9074668	T2000-160/CAT-40	20	160	44	53	52	10	M16x1
9074671	T2500-160/CAT-40	25	160	44	53	58	10	M16x1
9074674	T3200-160/CAT-40	32	160	44	53	62	10	M16x1

NOTE: All Holders Have 5/8-11 UNC Thread for Retention Knob & DIN FORM B Flange Coolant Delivery Option Standard
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm



CAT50 – Inch								
		Dimensions (inch)						
SAP No.	Designation	d_1	A	d_2	d_3	l_1	N	g
STANDARD PROJECTION								
9074085	T0635-95/CAT-50	0.250	3.74	0.83	1.06	1.42	0.39	M5
9074102	T0953-95/CAT-50	0.375	3.74	0.95	1.26	1.65	0.39	M8x1
9074105	T1270-95/CAT-50	0.500	3.74	1.06	1.34	1.85	0.39	M10x1
9074108	T1588-95/CAT-50	0.625	3.74	1.06	1.34	1.97	0.39	M12x1
9074111	T1905-95/CAT-50	0.750	3.74	1.30	1.65	2.05	0.39	M16x1
9074115	T2540-105/CAT-50	1.000	4.13	1.73	2.09	2.44	0.39	M16x1
9074118	T3175-105/CAT-50	1.250	4.13	1.73	2.09	2.44	0.39	M16x1
EXTRA LONG PROJECTION								
9074101	T0635-160/CAT-50	0.250	6.30	0.83	1.26	1.42	0.39	M5
9074104	T0953-160/CAT-50	0.375	6.30	0.95	1.34	1.65	0.39	M8x1
9074107	T1270-160/CAT-50	0.500	6.30	1.06	1.65	1.85	0.39	M10x1
9074110	T1588-160/CAT-50	0.625	6.30	1.06	1.65	1.97	0.39	M12x1
9074113	T1905-160/CAT-50	0.750	6.30	1.30	2.01	2.05	0.39	M16x1
9074117	T2540-160/CAT-50	1.000	6.30	1.73	2.36	2.44	0.39	M16x1
9074120	T3175-160/CAT-50	1.250	6.30	1.73	2.36	2.44	0.39	M16x1

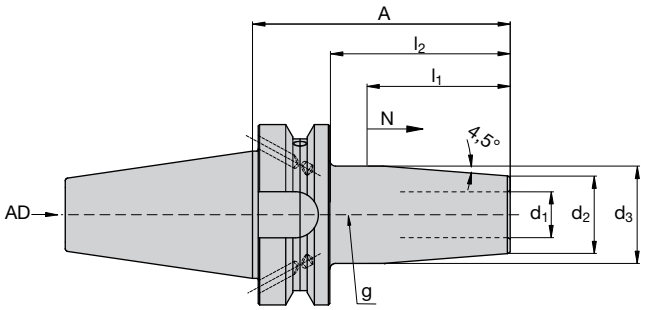
NOTE: All Holders Have 1-8 UNC Thread for Retention Knob & DIN FORM B Flange Coolant Delivery Option-Standard
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm



CAT50 – Metric								
		Dimensions (mm)						
SAP No.	Designation	d_1	A	d_2	d_3	l_1	N	g
STANDARD PROJECTION								
9074144	T0600-95/CAT-50	6	95	21	27	36	10	M5
9074147	T0800-95/CAT-50	8	95	21	27	36	10	M6
9074150	T1000-95/CAT-50	10	95	24	32	42	10	M8x1
9074153	T1200-95/CAT-50	12	95	24	32	47	10	M10x1
9074156	T1400-95/CAT-50	14	95	27	34	47	10	M10x1
9074160	T1600-95/CAT-50	16	95	27	34	50	10	M12x1
9074163	T1800-95/CAT-50	18	95	33	42	50	10	M12x1
9074166	T2000-95/CAT-50	20	95	33	42	52	10	M16x1
9074170	T2500-105/CAT-50	25	105	44	53	58	10	M16x1
9074173	T3200-105/CAT-50	32	105	44	53	62	10	M16x1
EXTRA LONG PROJECTION								
9074146	T0600-160/CAT-50	6	160	21	32	36	10	M5
9074149	T0800-160/CAT-50	8	160	21	32	36	10	M6
9074152	T1000-160/CAT-50	10	160	24	34	42	10	M8x1
9074155	T1200-160/CAT-50	12	160	24	34	47	10	M10x1
9074159	T1400-160/CAT-50	14	160	27	42	47	10	M10x1
9074162	T1600-160/CAT-50	16	160	27	42	50	10	M12x1
9074165	T1800-160/CAT-50	18	160	33	51	50	10	M12x1
9074168	T2000-160/CAT-50	20	160	33	51	52	10	M16x1
9074172	T2500-160/CAT-50	25	160	44	60	58	10	M16x1
9074175	T3200-160/CAT-50	32	160	44	60	62	10	M16x1

NOTE: All Holders Have 1-8 UNC Thread for Retention Knob & DIN FORM B Flange Coolant Delivery Option-Standard
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

BT30 | ThermoGrip® Standard

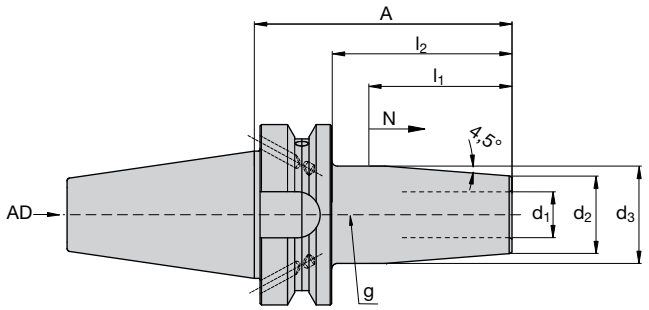


BT30 – Inch									
		Dimensions (inch)							
SAP No.	Designation	d_1	A	l_2	d_2	d_3	l_1	N	g
STANDARD PROJECTION									
5057109	T0318-80/BT30	0.125	3.15	2.28	0.59	0.79	0.79	0.20	M6
5057110	T0476-80/BT30	0.187	3.15	2.28	0.59	0.79	0.98	0.20	M6
5057111	T0635-80/BT30	0.250	3.15	2.28	0.83	1.06	1.42	0.39	M5
5057112	T0953-80/BT30	0.375	3.15	2.28	0.95	1.26	1.65	0.39	M8x1
5057113	T1270-80/BT30	0.500	3.15	2.28	1.06	1.34	1.85	0.39	M10x1
5057114	T1588-80/BT30	0.625	3.15	2.28	1.06	1.34	1.97	0.39	M12x1

Note: All holders have a 12mm x 1 thread for retention knob
Note: All holders have DIN Form "B" coolant delivery option as a standard feature.
Note: Cutting tool shank tolerance must be h6 or better, h4 for all holders with ID bores smaller than 5mm.

BT30 – Metric									
		Dimensions (mm)							
SAP No.	Designation	d_1	A	l_2	d_2	d_3	l_1	N	g
STANDARD PROJECTION									
5020062	T0300-80/BT30	3	80	58	15	25	20	5	M6
5020063	T0400-80/BT30	4	80	58	15	25	20	5	M6
5020064	T0500-80/BT30	5	80	58	15	25	25	5	M6
5020065	T0600-80/BT30	6	80	58	21	31	36	10	M5
5020066	T0800-80/BT30	8	80	58	21	31	36	10	M6
5020067	T1000-80/BT30	10	80	58	24	34	42	10	M8x1
5020068	T1200-80/BT30	12	80	58	24	34	47	10	M10x1
5020069	T1600-80/BT30	16	80	58	27	37	50	10	M12x1
5020070	T2000-80/BT30	20	80	58	33	43	52	10	M16x1

Note: All holders have a 12mm x 1 thread for retention knob
Note: All holders have DIN Form “B” coolant delivery option as a standard feature.
Note: Cutting tool shank tolerance must be h6 or better, h4 for all holders with ID bores smaller than 5mm.

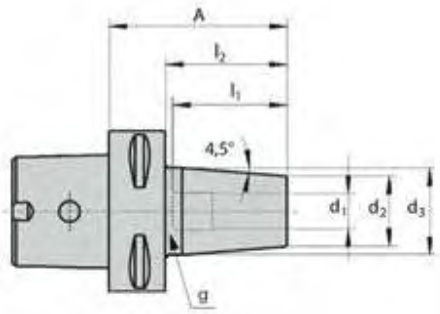


BT40 – Metric									
		Dimensions (mm)							
SAP No.	Designation	d_1	A	l_2	d_2	d_3	l_1	N	g
STANDARD PROJECTION									
6726807	T0300/BT40	3	90	63	15	20	20	5	M6
6726621	T0400/BT40	4	90	63	15	20	20	5	M6
6726622	T0500/BT40	5	90	63	15	20	25	5	M6
6726499	T0600/BT40	6	90	63	21	27	36	10	M5
6726484	T0800/BT40	8	90	63	21	27	36	10	M6
6726485	T1000/BT40	10	90	63	24	32	42	10	M8x1
6726486	T1200/BT40	12	90	63	24	32	47	10	M10x1
6726500	T1400/BT40	14	90	63	27	34	47	10	M10x1
6726470	T1600/BT40	16	90	63	27	34	50	10	M12x1
6726501	T1800/BT40	18	90	63	33	42	50	10	M12x1
6726469	T2000/BT40	20	90	63	33	42	52	10	M16x1
6726502	T2500/BT40	25	100	73	44	53	58	10	M16x1
9117365	T3200/BT40	32	100	73	44	53	62	10	M16x1
LONG PROJECTION									
6727101	T0600-120/BT40	6	120	94	21	27	36	10	M5
6727102	T0800-120/BT40	8	120	94	21	27	36	10	M6
6727103	T1000-120/BT40	10	120	94	24	32	42	10	M8x1
6727104	T1200-120/BT40	12	120	94	24	32	47	10	M10x1
6727105	T1400-120/BT40	14	120	94	27	34	47	10	M10x1
6727106	T1600-120/BT40	16	120	94	27	34	50	10	M12x1
6727107	T1800-120/BT40	18	120	94	33	42	50	10	M12x1
6727108	T2000-120/BT40	20	120	94	33	42	52	10	M16x1
6727109	T2500-120/BT40	25	120	94	44	52	58	10	M16x1
9126834	T3200-120/BT40	32	120	94	44	52	62	10	M16x1
EXTRA LONG PROJECTION									
6726811	T0600-160/BT40	6	160	134	21	32	36	10	M5
6726812	T0800-160/BT40	8	160	134	21	32	36	10	M6
6726813	T1000-160/BT40	10	160	134	24	34	42	10	M8x1
6726814	T1200-160/BT40	12	160	134	24	34	47	10	M10x1
6726815	T1400-160/BT40	14	160	134	27	42	47	10	M10x1
6726816	T1600-160/BT40	16	160	134	27	42	50	10	M12x1
6726817	T1800-160/BT40	18	160	134	33	51	50	10	M12x1
6726818	T2000-160/BT40	20	160	134	33	51	52	10	M16x1
6726819	T3200-160/BT40	25	160	134	44	52.5	62	10	M16x1

Polygon Shank “CAPTO” Compatible | ThermoGrip® Standard

BILZ

25 000 U/min R.P.M.



Polygon Shank “CAPTO” Compatible – C4 – Inch

SAP No.	Designation	Dimensions (inch)							
		d_1	A	l_2	d_2	d_3	l_1	N	g
5054325	T0635-75/C4	0.250	2.95	2.17	0.83	1.06	1.42	0.39	M5
5054328	T0953-75/C4	0.375	2.95	2.17	0.94	1.26	1.65	0.39	M8x1
5054329	T1270-80/C4	0.500	3.15	2.36	1.06	1.34	1.85	0.39	M10x1
5054330	T1588-80/C4	0.625	3.15	2.36	1.06	1.34	1.97	0.39	M12x1
5054331	T1905-85/C4	0.750	3.35	2.56	1.30	1.65	2.05	0.39	M16x1

For carbide and HSS tools
All clamping chucks are suitable for central coolant
Delivery including backup screw
Shank tolerance 3; 4 = h 4 / 5 = h 5 / 6 = h 6

Polygon Shank “CAPTO” Compatible – C5 – Inch

SAP No.	Designation	Dimensions (inch)							
		d_1	A	l_2	d_2	d_3	l_1	N	g
5054268	T0635-75/C5	0.250	2.95	2.17	0.83	1.06	1.42	0.39	M5
5054274	T0953-75/C5	0.375	2.95	2.17	0.94	1.26	1.65	0.39	M8x1
5054275	T1270-80/C5	0.500	3.15	2.36	1.06	1.34	1.85	0.39	M10x1
5054376	T1588-80/C5	0.625	3.15	2.36	1.06	1.34	1.97	0.39	M12x1
5054277	T1905-85/C5	0.750	3.35	2.56	1.30	1.65	2.05	0.39	M16x1

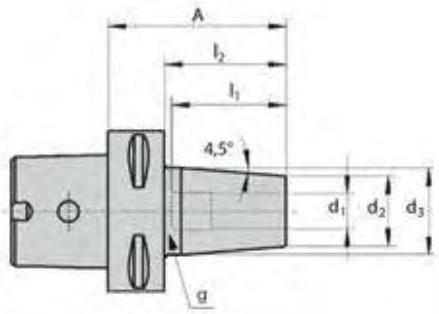
For carbide and HSS tools
All clamping chucks are suitable for central coolant
Delivery including backup screw
Shank tolerance 3; 4 = h 4 / 5 = h 5 / 6 = h 6

Polygon Shank “CAPTO” Compatible – C6 – Inch

SAP No.	Designation	Dimensions (inch)							
		d_1	A	l_2	d_2	d_3	l_1	N	g
5054341	T0635-80/C6	0.250	3.15	2.28	0.83	1.06	1.42	0.39	M5
5054343	T0953-80/C6	0.375	3.15	2.28	0.94	1.26	1.65	0.39	M8x1
5054344	T1270-85/C6	0.500	3.35	2.48	1.06	1.34	1.85	0.39	M10x1
5054345	T1588-85/C6	0.625	3.35	2.48	1.06	1.34	1.97	0.39	M12x1
5054347	T1905-85/C6	0.750	3.35	2.48	1.30	1.65	2.05	0.39	M16x1
5054348	T2540-95/C6	1.000	3.74	2.87	1.73	2.09	2.44	0.39	M16x1
5054349	T3175-95/C6	1.250	3.74	2.87	1.73	2.09	2.44	0.39	M16x1

For carbide and HSS tools
All clamping chucks are suitable for central coolant
Delivery including backup screw
Shank tolerance 3; 4 = h 4 / 5 = h 5 / 6 = h 6

25 000 U/min R.P.M.



Polygon Shank “CAPTO” Compatible – C4 – Metric									
		Dimensions (inch)							
SAP No.	Designation	d_1	A	l_2	d_2	d_3	l_1	N	g
6727402	T0600-75/C4	6	75	55	21	27	36	10	M5
6727403	T0800-75/C4	8	75	55	21	27	36	10	M6
6727404	T1000-75/C4	10	75	55	24	32	42	10	M8x1
6727334	T1200-75/C4	12	75	55	24	32	47	10	M10x1
6727405	T1400-80/C4	14	80	60	27	34	47	10	M10x1
6727406	T1600-80/C4	16	80	60	27	34	50	10	M12x1
6727407	T1800-80/C4	18	80	60	33	42	50	10	M12x1
6727408	T2000-85/C4	20	85	60	33	42	52	10	M16x1

Polygon Shank “CAPTO” Compatible – C5 – Metric									
		Dimensions (inch)							
SAP No.	Designation	d_1	A	l_2	d_2	d_3	l_1	N	g
6727409	T0600-75/C5	6	75	55	21	27	36	10	M5
6727410	T0800-75/C5	8	75	55	21	27	36	10	M6
6727411	T1000-75/C5	10	75	55	24	32	42	10	M8x1
6727412	T1200-75/C5	12	75	55	24	32	47	10	M10x1
6727413	T1400-80/C5	14	80	60	27	34	47	10	M10x1
6727414	T1600-80/C5	16	80	60	27	34	50	10	M12x1
6727415	T1800-80/C5	18	80	60	33	42	50	10	M12x1
6727416	T2000-85/C5	20	85	65	33	42	52	10	M16x1
6727417	T2500-90/C5	25	90	70	44	53	58	10	M16x1

Polygon Shank “CAPTO” Compatible – C6 – Metric									
		Dimensions (inch)							
SAP No.	Designation	d_1	A	l_2	d_2	d_3	l_1	N	g
6727324	T0600-80/C6	6	80	58	21	27	36	10	M5
6727325	T0800-80/C6	8	80	58	21	27	36	10	M6
6727326	T1000-80/C6	10	80	58	24	32	42	10	M8x1
6727327	T1200-80/C6	12	80	58	24	32	47	10	M10x1
6727328	T1400-85/C6	14	85	63	27	34	47	10	M10x1
6727329	T1600-85/C6	16	85	63	27	34	50	10	M12x1
6727330	T1800-85/C6	18	85	63	33	42	50	10	M12x1
6727331	T2000-85/C6	20	85	63	33	42	52	10	M16x1
6727332	T2500-90/C6	25	90	68	44	53	58	10	M16x1
6727333	T3200-95/C6	32	95	73	44	53	62	10	M16x1

SLIM DESIGN THERMOGRIP® HOLDERS

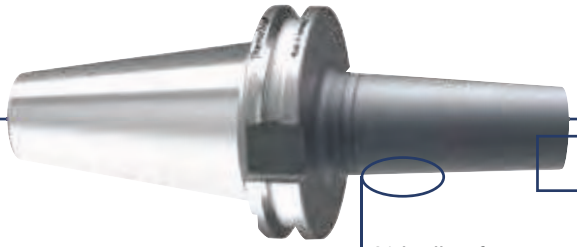
DESIGNED FOR DEEP CAVITIES AND DIFFICULT CONTOURS

Slim Design Tool Holders utilize our ThermoGrip® technology and were developed specifically for the die and mold industry. Today but they also fit aerospace and medical applications as well. Like all BILZ tools, they maintain precision and productivity—even at extended lengths over a full range of sizes.

- Perfect for Die & Mold, Aerospace Industries
- Line includes extensions to 10" long
- The most complete product range available

VIEW THE WEBSITE

TSF THERMOGRIP® SLIMLINE



3° incline for overcoming deep cavities in the mold and die industry

Optimum combination of smallest possible interference contour, high radial rigidity and high torques

Indication of the TSF geometry by 2 grooves

Non-corroding coating for mold and die chucks TSF as well as all shrink holders HSK-E and HSK-F

Shanks with a length of 200 mm and 250 mm both in h6 quality. Special lengths can be resolved quickly

Optimum combination of smallest possible interference contour, high radial rigidity and high torques

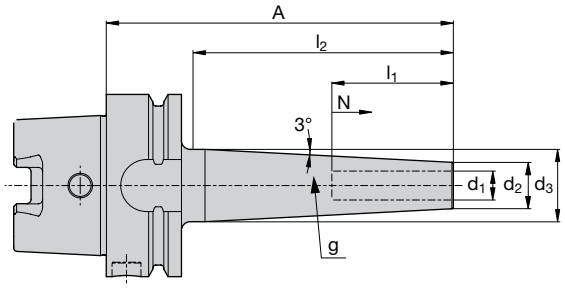
Shanks for modular build up to access deep and restricting cavities

Introducing the new shrink chuck TSF ThermoGrip®—the slim version is specially developed for the mold and die industry. This chuck type is used for induction shrinking of carbide tools with shank tolerance h6. Due to the slim shape of this new chuck, interfering edges are a thing of the past.

The outside geometry of the new shrink chuck TSF is designed **with a 3° slope**, compatible to dies and molds. The chucks have a **concentricity < 0.003 mm and are fine balanced at < 1 gmm/kg**. Specifically for these slim chucks all new ThermoGrip® shrinking units are programmed with the parameters of heating time and generator output for the shrinking of all possible shank diameters. The previous shrinking units can be upgraded with these parameters. As a result, these thin-walled chucks can be shrunk with the highest reliability and without the risk of overheating.

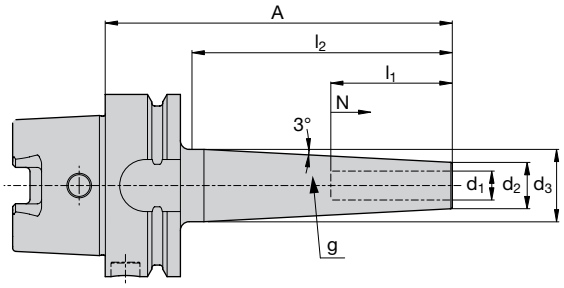
Due to the broad product range, chucks with different lengths are available **for all applications on all standard spindles**.

HSK-A63 | ThermoGrip® SlimLine



HSK-A63 SlimLine – Inch									
		Dimensions (inch)							
SAP No.	Designation	d_1	A	l_2	d_2	d_3	l_1	N	g
STANDARD PROJECTION									
5053808	TSF0318-70/HSK-A63	0.125	2.76	1.57	0.39	0.55	0.79	0.20	M6
5053812	TSF0476-90/HSK-A63	0.187	3.54	2.36	0.47	0.71	0.98	0.20	M6
5053814	TSF0635-90/HSK-A63	0.250	3.54	2.36	0.47	0.71	1.42	0.20	M5
5048183	TSF0953-90/HSK-A63	0.375	3.54	2.36	0.63	0.87	1.65	0.20	M8x1
5053816	TSF1270-90/HSK-A63	0.500	3.54	2.36	0.79	1.02	1.85	0.20	M10x1
5053817	TSF1588-90/HSK-A63	0.625	3.54	2.36	0.87	1.10	1.97	0.20	M12x1
LONG PROJECTION									
5053818	TSF0318-100/HSK-A63	0.125	3.94	2.76	0.39	0.67	0.79	0.20	M6
5053819	TSF0476-120/HSK-A63	0.187	4.72	3.54	0.47	0.83	0.98	0.20	M6
5053821	TSF0635-120/HSK-A63	0.250	4.72	3.54	0.47	0.83	1.42	0.20	M5
5053822	TSF0953-120/HSK-A63	0.375	4.72	3.54	0.63	0.98	1.65	0.20	M8x1
5053823	TSF1270-120/HSK-A63	0.500	4.72	3.54	0.79	1.14	1.85	0.20	10x1
5053824	TSF1588-120/HSK-A63	0.625	4.72	3.54	0.87	1.22	1.97	0.20	M12x1
EXTRA LONG PROJECTION									
5053825	TSF0318-130/HSK-A63	0.125	5.12	3.94	0.39	0.79	0.79	0.20	M6
5053826	TSF0476-150/HSK-A63	0.187	5.91	4.72	0.47	0.94	0.98	0.20	M6
5053827	TSF0635-150/HSK-A63	0.250	5.91	4.72	0.47	0.94	1.42	0.20	M5
5053828	TSF0953-150/HSK-A63	0.375	5.91	4.72	0.63	1.10	1.65	0.20	M8x1
5053829	TSF1270-150/HSK-A63	0.500	5.91	4.72	0.79	1.26	1.85	0.20	M10x1
5053830	TSF1588-150/HSK-A63	0.625	5.91	4.72	0.87	1.34	1.97	0.20	12x1

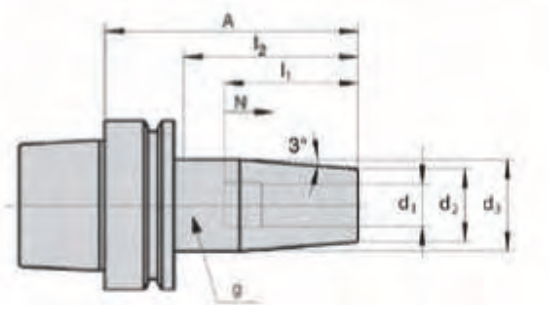
Only for HM and solid carbide tools
All clamping chucks are suitable for central coolant
Please Order Coolant Tube Catalog No. HSK63-18 separately
Delivery including backup screw
Shank tolerance 3; 4 = h 4 / 5 = h 5 / 6 = h 6
Including data carrier bore



HSK-A63 SlimLine – Metric									
		Dimensions (mm)							
SAP No.	Designation	d_1	NL	A	d_2	d_3	l_1	N	g
STANDARD PROJECTION									
9078617	TSF0300-70/HSK-A63	3	40	70	11	13	20	5	M6
9078654	TSF0400-70/HSK-A63	4	40	70	11	14	20	5	M6
9078658	TSF0600-90/HSK-A63	6	60	90	12	18	36	5	M5
9078670	TSF0800-90/HSK-A63	8	60	90	14	20	36	5	M6
9078676	TSF1000-90/HSK-A63	10	60	90	16	22	42	5	M8x1
9078725	TSF1200-90/HSK-A63	12	60	90	18	24	47	5	M10x1
9078728	TSF1600-90/HSK-A63	16	60	90	22	28	50	5	M12x1
LONG PROJECTION									
9078652	TSF0300-100/HSK-A63	3	70	100	11	16	20	5	M6
9078655	TSF0400-100/HSK-A63	4	70	100	11	17	20	5	M6
9078660	TSF0600-120/HSK-A63	6	90	120	12	21	36	5	M5
9078673	TSF0800-120/HSK-A63	8	90	120	14	23	36	5	M6
9078677	TSF1000-120/HSK-A63	10	90	120	16	25	42	5	M8x1
9078726	TSF1200-120/HSK-A63	12	90	120	18	27	47	5	M10x1
9078729	TSF1600-120/HSK-A63	16	90	120	22	31	50	5	M12x1
EXTRA LONG PROJECTION									
9078653	TSF0300-130/HSK-A63	3	100	130	11	19	20	5	M6
9078657	TSF0400-130/HSK-A63	4	100	130	11	20	20	5	M6
9078661	TSF0600-150/HSK-A63	6	120	150	12	24	36	5	M5
9078674	TSF0800-150/HSK-A63	8	120	150	14	26	36	5	M6
9078678	TSF1000-150/HSK-A63	10	120	150	16	28	42	5	M8x1
9078624	TSF1200-150/HSK-A63	12	120	150	18	30	47	5	M10x1
9078730	TSF1600-150/HSK-A63	16	120	150	22	34	50	5	M12x1

Only for HMand solid carbide tools
All clamping chucks are suitable for central coolant
Please Order Coolant Tube Catalog No. HSK63-18 separately
Delivery including backup screw
Shank tolerance 3; 4 = h 4 / 5 = h 5 / 6 = h 6
Including data carrier bore

HSK-E32 | ThermoGrip® SlimLine

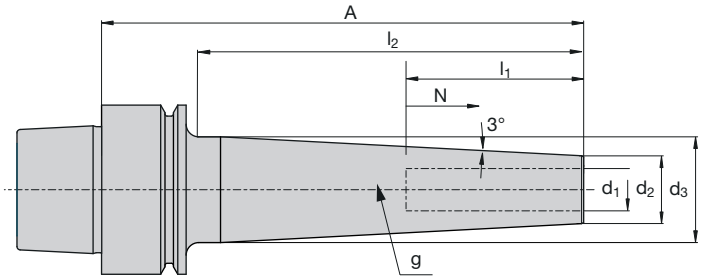


HSK-E32 SlimLine – Inch									
		Dimensions (inch)							
SAP No.	Designation	d_1	A	l_2	d_2	d_3	l_1	N	g
STANDARD PROJECTION									
5057306	TSF0318-64/HSK-E32	0.125	2.52	1.57	0.39	0.55	0.79	0.20	M6
5057311	TSF0476-64/HSK-E32	0.187	2.52	1.57	0.43	0.55	0.98	0.20	M6
5057313	TSF0635-74/HSK-E32	0.250	2.91	1.97	0.47	0.67	1.42	0.20	M5
5057317	TSF0953-78/HSK-E32	0.375	3.07	2.17	0.63	0.83	1.65	0.20	M8x1
LONG PROJECTION									
5057309	TSF0318-94/HSK-E32	0.125	3.70	2.76	0.39	0.67	0.79	0.20	M6
5057312	TSF0476-94/HSK-E32	0.187	3.70	2.76	0.43	0.71	0.98	0.20	M6
5057315	TSF0635-104/HSK-E32	0.250	4.09	3.15	0.47	0.79	1.42	0.20	M5
5057318	TSF0953-104/HSK-E32	0.375	4.09	3.15	0.63	0.87	1.65	0.20	M8x1

Only for HM and solid carbide tools
All clamping chucks are suitable for central coolant
Delivery including backup screw
Shank tolerance 3; 4 = h 4 / 5 = h 5 / 6 = h 6

HSK-E32 SlimLine – Metric									
		Dimensions (mm)							
SAP No.	Designation	d_1	A	l_2	d_2	d_3	l_1	N	g
STANDARD PROJECTION									
9078742	TSF0300-40/HSK-E32	3	64	40	9	13	20	5	M6
9078744	TSF0400-40/HSK-E32	4	64	40	10	14	20	5	M6
9078746	TSF0600-50/HSK-E32	6	74	50	12	17	36	5	M5
9078748	TSF0800-50/HSK-E32	8	74	50	12	17	36	5	M6
9078750	TSF1000-55/HSK-E32	10	78	55	16	21	42	5	M8x1
LONG PROJECTION									
9078743	TSF0300-70/HSK-E32	3	94	70	9	16	20	5	M6
9078745	TSF0400-70/HSK-E32	4	94	70	10	17	20	5	M6
9078747	TSF0600-80/HSK-E32	6	104	80	12	20	36	5	M5
9078749	TSF0800-80/HSK-E32	8	104	80	12	20	36	5	M6
9079751	TSF1000-80/HSK-E32	10	104	80	16	22	42	5	M8x1

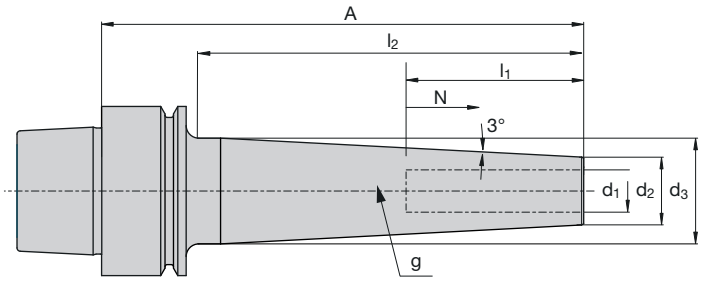
Only for HM and solid carbide tools
All clamping chucks are suitable for central coolant
Delivery including backup screw
Shank tolerance 3; 4 = h 4 / 5 = h 5 / 6 = h 6



HSK-E40 SlimLine – Inch									
		Dimensions (inch)							
SAP No.	Designation	d_1	A	l_2	d_2	d_3	l_1	N	g
SHORT PROJECTION									
5054359	TSF0318-64/HSK-E40	0.125	2.52	1.65	0.39	0.55	0.79	0.20	M6
5054361	TSF0476-64/HSK-E40	0.187	2.52	1.57	0.39	0.55	0.98	0.20	M6
	TSF0635-65/HSK-E40	0.250	2.56	1.50	0.47	0.63	1.42	–	–
	TSF0953-65/HSK-E40	0.375	2.56	1.50	0.63	0.79	1.65	–	–
	TSF1270-65/HSK-E40	0.500	2.56	1.50	0.71	0.87	1.65	–	–
STANDARD PROJECTION									
5054360	TSF0318-94/HSK-E40	0.125	3.70	2.76	0.39	0.67	0.79	0.20	M6
5054362	TSF0476-94/HSK-E40	0.187	3.70	2.76	0.43	0.71	0.98	0.20	M6
5054363	TSF0635-90/HSK-E40	0.250	3.31	2.36	0.47	0.71	1.42	0.20	M5
5054367	TSF0953-84/HSK-E40	0.375	3.31	2.36	0.63	0.87	1.65	0.20	M8x1
	TSF1270-90/HSK-E40	0.500	3.54	2.36	0.71	0.94	1.85	0.20	M10x1
LONG PROJECTION									
	TSF0318-120/HSK-E40	0.125	4.72	2.76	0.35	0.63	0.79	0.20	M6
	TSF0476-120/HSK-E40	0.187	4.72	2.76	0.39	0.67	0.79	0.20	M6
5054364	TSF0635-114/HSK-E40	0.250	4.49	3.54	0.47	0.83	1.42	0.20	M5
5054368	TSF0953-114/HSK-E40	0.375	4.49	3.54	0.63	0.98	1.65	0.20	M8x1
	TSF1270-120/HSK-E40	0.500	4.72	3.54	0.71	1.06	1.85	0.20	M10x1
EXTRA LONG PROJECTION									
5054365	TSF0635-144/HSK-E40	0.250	5.67	4.72	0.47	0.94	1.42	0.20	M5
5054369	TSF0965-144/HSK-E40	0.375	5.67	4.72	0.63	1.10	1.65	0.20	M8x1
	TSF1270-160/HSK-E40	0.500	6.30	4.72	0.71	1.18	1.85	0.20	M12x1

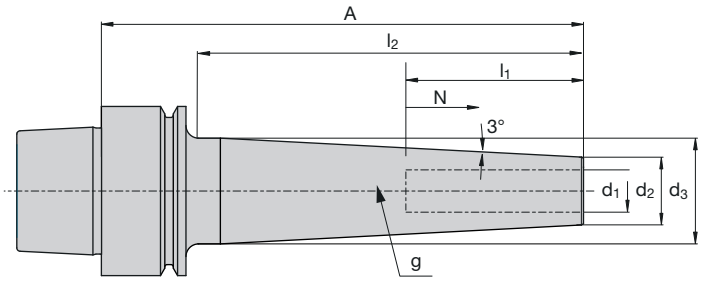
Only for HM and solid carbide tools
All clamping chucks are suitable for central coolant
Delivery including backup screw
Shank tolerance 3; 4 = h 4 / 5 = h 5 / 6 = h 6

HSK-E50 | ThermoGrip® SlimLine



HSK-E50 SlimLine – Inch									
		Dimensions (inch)							
SAP No.	Designation	d_1	A	l_2	d_2	d_3	l_1	N	g
SHORT PROJECTION									
5054183	TSF0318-70/HSK-E50	0.125	2.76	1.65	0.39	0.55	0.79	0.20	M6
5054185	TSF0476-70/HSK-E50	0.187	2.76	1.65	0.39	0.55	0.98	0.20	M6
5054196	TSF0635-70/HSK-E50	0.250	2.76	1.65	0.47	0.63	1.42	0.20	M5
5054200	TSF0953-70/HSK-E50	0.375	2.76	1.65	0.63	0.79	1.65	0.20	–
	TSF1270-70/HSK-E50	0.500	2.76	1.65	0.71	0.87	1.85	–	–
	TSF1588-70/HSK-E50	0.625	2.76	1.65	0.87	1.02	1.85	–	–
STANDARD PROJECTION									
5054197	TSF0635-90/HSK-E50	0.250	3.54	2.36	0.47	0.71	1.42	0.20	M5
5054201	TSF0953-90/HSK-E50	0.375	3.54	2.36	0.63	0.87	1.65	0.20	M8x1
5054205	TSF1270-90/HSK-E50	0.500	3.54	2.36	0.79	1.02	1.85	0.20	M10x1
5054208	TSF1588-90/HSK-E50	0.625	3.54	2.36	0.87	1.10	1.97	0.20	M10x1
LONG PROJECTION									
5054184	TSF0318-100/HSK-E50	0.125	3.94	2.76	0.39	0.67	0.79	0.20	M6
5054186	TSF0476-100/HSK-E50	0.187	3.94	2.76	0.43	0.71	0.98	0.20	M6
5054198	TSF0635-120/HSK-E50	0.250	4.72	3.54	0.47	0.83	1.42	0.20	M5
5054202	TSF0953-120/HSK-E50	0.375	4.72	3.54	0.63	0.98	1.65	0.20	M8x1
5054206	TSF1270-120/HSK-E50	0.500	4.72	3.54	0.79	1.14	1.85	0.20	M10x1
5054209	TSF1588-120/HSK-E50	0.625	4.72	3.54	0.87	1.22	1.97	0.20	M10x1
EXTRALONG PROJECTION									
5054199	TSF0635-150/HSK-E50	0.250	5.91	4.88	0.47	0.94	1.42	0.20	M5
5054203	TSF0953-150/HSK-E50	0.375	5.91	4.72	0.63	1.10	1.65	0.20	M8x1
5054207	TSF1270-150/HSK-E50	0.500	5.91	4.72	0.79	1.26	1.85	0.20	M10x1
5054210	TSF1588-150/HSK-E50	0.625	5.91	4.72	0.87	1.34	1.97	0.20	M10x1

Only for HM and solid carbide tools
All clamping chucks are suitable for central coolant
Delivery including backup screw
Shank tolerance 3; 4 = h 4 / 5 = h 5 / 6 = h 6



HSK-E50 SlimLine – Metric									
		Dimensions (mm)							
SAP No.	Designation	d_1	A	l_2	d_2	d_3	l_1	N	g
SHORT PROJECTION									
9078910	TSF0600-60/HSK-E40	6	60	38	12	16	36	5	M5
9078925	TSF0800-60/HSK-E40	8	60	38	14	18	36	5	M6
9078926	TSF1000-60/HSK-E40	10	60	38	16	20	42	5	M8x1
9078927	TSF1200-60/HSK-E40	12	60	38	18	22	47	5	M10x1
STANDARD PROJECTION									
9078566	TSF0300-64/HSK-E40	3	64	40	11	13	20	5	M6
9078570	TSF0400-64/HSK-E40	4	64	40	11	14	20	5	M6
9078572	TSF0600-84/HSK-E40	6	84	60	12	18	36	5	M5
9078576	TSF0800-84/HSK-E40	8	84	60	14	20	36	5	M6
9078579	TSF1000-84/HSK-E40	10	84	60	16	22	42	5	M8x1
9078582	TSF1200-84/HSK-E40	12	84	60	18	24	47	5	M10x1
LONG PROJECTION									
9078569	TSF0300-94/HSK-E40	3	94	70	11	16	20	5	M6
9078571	TSF0400-94/HSK-E40	4	94	70	11	17	20	5	M6
9078573	TSF0600-114/HSK-E40	6	114	90	12	21	36	5	M5
9078577	TSF0800-114/HSK-E40	8	114	90	14	23	36	5	M6
9078580	TSF1000-114/HSK-E40	10	114	90	16	25	42	5	M8x1
9078583	TSF1200-114/HSK-E40	12	114	90	18	27	47	5	M10x1
EXTRALONG PROJECTION									
9078574	TSF0600-144/HSK-E40	6	144	120	12	24	36	5	M5
9078578	TSF0800-144/HSK-E40	8	144	120	14	26	36	5	M6
9078581	TSF1000-144/HSK-E40	10	144	120	16	28	42	5	M8x1
9078584	TSF1200-144/HSK-E40	12	144	120	18	30	47	5	M10x1

Only for HM and solid carbide tools
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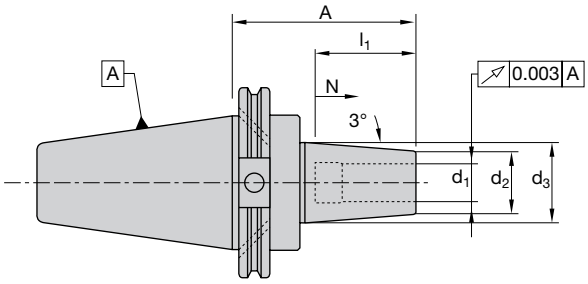
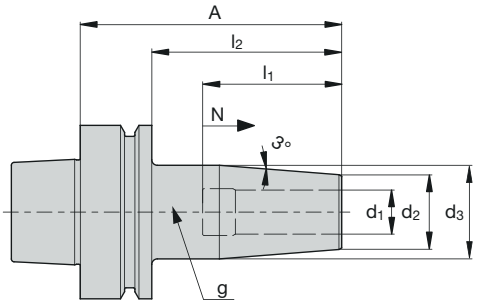
Delivery including backup screw
Shank tolerance 3; 4 = h 4 / 5 = h 5 / 6 = h 6

18000 U/min R.P.M.



CAT40 SlimLine – Inch							
		Dimensions (inch)					
SAP No.	Designation	d_1	A	d_2	d_3	l_1	N
STANDARD PROJECTION							
5057638	TSF0318-99/CAT-40	0.125	3.90	0.39	0.67	0.79	0.20
5057641	TSF0476-99/CAT-40	0.187	3.90	0.43	0.71	0.98	0.20
5057642	TSF0635-99/CAT-40	0.250	3.90	0.47	0.71	1.42	0.20
5057643	TSF0953-99/CAT-40	0.375	3.90	0.63	0.87	1.65	0.20
5057644	TSF1270-99/CAT-40	0.500	3.90	0.79	1.02	1.85	0.20
5057645	TSF1588-99/CAT-40	0.625	3.90	0.87	1.10	1.97	0.20

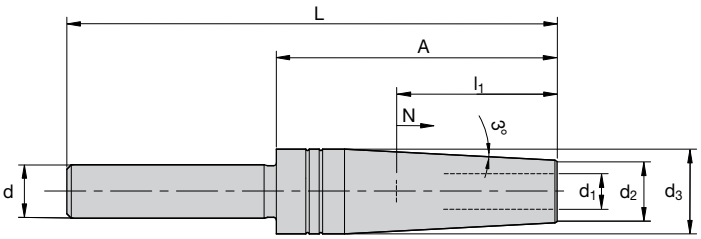
NOTE: All Holders Have 5/8-11 UNC Thread for Retention Knob & DIN FORM B Flange Coolant Delivery Option Standard
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm



HSK63F SlimLine – Inch									
SAP No.	Designation	Dimensions (inch)							
		d_1	A	l_2	d_2	d_3	l_1	N	g
STANDARD PROJECTION									
5057252	TSF0318-70/HSK-F63	0.125	2.76	1.73	0.39	0.55	0.79	0.20	M6
5057147	TSF0476-90/HSK-F63	0.187	3.54	2.52	0.43	0.71	0.98	0.20	M6
5057162	TSF0635-90/HSK-F63	0.250	3.54	2.52	0.47	0.71	1.42	0.20	M5
5057165	TSF0953-90/HSK-F63	0.375	3.54	2.52	0.63	0.87	1.65	0.20	M8X1
5057167	TSF1270-90/HSK-F63	0.500	3.54	2.52	0.79	1.02	1.85	0.20	M10X1
5053815	TSF1588-90/HSK-F63	0.625	3.54	2.52	0.87	1.10	1.97	0.20	M12X1

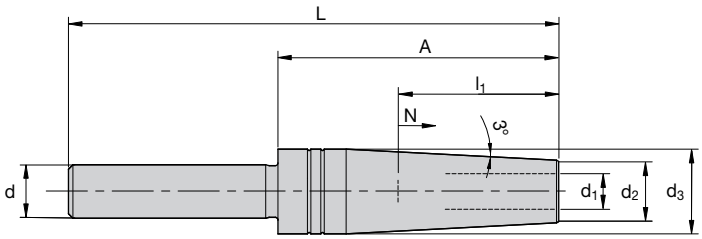
All holders can be run with internal coolant
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

TSFV Shrink Extensions | ThermoGrip® SlimLine



TSFV SlimLine – Inch										
		Dimensions (inch)								
SAP No.	Designation	d_1	A	D	L	l1	d_2	d_3	N	g
STANDARD PROJECTION										
5051691	TSFV0318-110/1270	0.125	2.48	0.50	4.33	20	0.39	0.50	0.20	M6
5051697	TSFV0318-110/1905	0.125	2.28	0.75	4.33	20	0.39	0.75	0.20	M6
5051695	TSFV0476-110/1270	0.187	2.48	0.50	4.33	25	0.43	0.50	0.20	M6
5051698	TSFV0476-110/1905	0.187	2.28	0.75	4.33	25	0.43	0.75	0.20	M6
5051696	TSFV0635-110/1270	0.250	2.48	0.50	4.33	36	0.47	0.50	0.39	M6
5051699	TSFV0635-110/1905	0.250	2.28	0.75	4.33	36	0.47	0.75	0.39	M6
5051700	TSFV0953-110/1905	0.375	2.28	0.75	4.33	42	0.63	0.75	0.39	M8x1
	0									
EXTRA LONG PROJECTION										
5051735	TSFV0318-250/1905	0.125	7.79	0.75	9.84	20	0.39	0.75	0.20	M6
5051736	TSFV0476-250/1905	0.187	7.79	0.75	9.84	25	0.43	0.75	0.20	M6
5051737	TSFV0635-250/1905	0.250	7.79	0.75	9.84	36	0.47	0.75	0.39	M6
5051738	TSFV0953-250/1905	0.375	7.79	0.75	9.84	42	0.63	0.75	0.39	M8x1
5051740	TSFV1270-250/2540	0.500	7.59	1.00	9.84	47	0.79	1.00	0.39	M10x1
5051500	TSFV1588-250/2540	0.625	7.59	1.00	9.84	50	0.87	1.00	0.39	M10x1

All holders can be run with internal coolant
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

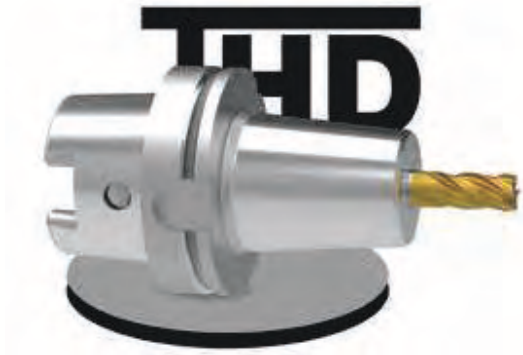


TSFV SlimLine – Metric

SAP No.	Designation	Dimensions (mm)								
		d_1	A	D	L	l1	d_2	d_3	N	g
STANDARD PROJECTION										
9195953	TSFV0300-110/12	3	63	12	110	20	9	11.8	5	M6
9196066	TSFV0300-110/16	3	60	16	110	20	9	13	5	M6
9196082	TSFV0300-110/20	3	58	20	110	20	9	13	5	M6
9195985	TSFV0400-110/12	4	63	12	110	20	10	11.8	5	M6
9196068	TSFV0400-110/16	4	60	16	110	20	10	14	5	M6
9196083	TSFV0400-110/20	4	58	20	110	20	10	14	5	M6
9195986	TSFV0500-110/12	5	63	12	110	25	11	11.8	5	M6
9196069	TSFV0500-110/16	5	58	16	110	25	11	15	5	M6
9196084	TSFV0500-110/20	5	58	20	110	25	11	15	5	M6
9196015	TSFV0600-110/12	6	63	12	110	36	12	17	10	M5
9196070	TSFV0600-110/16	6	60	16	110	36	12	15.8	10	M5
9196085	TSFV0600-110/20	6	58	20	110	36	12	16	10	M5
9196016	TSFV0800-110/12	8	63	12	110	36	14	19	10	M6
9196081	TSFV0800-110/16	8	60	16	110	36	14	19	10	M6
9196086	TSFV0800-110/20	8	58	20	110	36	14	19	10	M6
9196088	TSFV1000-110/20	10	58	20	110	42	16	19.8	10	M8x1
9196112	TSFV1200-110/20	12	58	20	110	47	18	19.8	10	M10x1
EXTRA LONG PROJECTION										
9196118	TSFV0300-200/16	3	150	16	200	20	9	16	5	M6
9196130	TSFV0400-200/16	4	150	16	200	20	10	16	5	M6
9196134	TSFV0500-200/16	5	150	16	200	25	11	16	5	M6
9196138	TSFV0600-200/16	6	150	16	200	36	12	16	10	M5
9196139	TSFV0600-250/20	6	198	20	250	36	12	20	10	M5
9196141	TSFV0800-250/20	8	198	20	250	36	14	20	10	M6
9196142	TSFV1000-250/20	10	198	20	250	42	16	20	10	M8x1
9196144	TSFV1200-250/25	12	193	25	250	47	18	25	10	M10x1
9196147	TSFV1600-250/25	16	193	25	250	50	22	25	10	M12x1

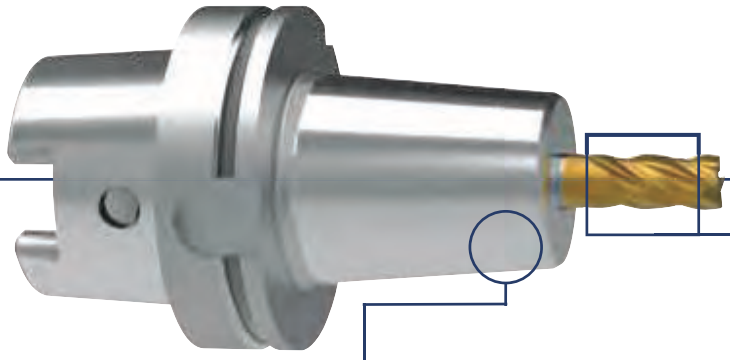
All holders can be run with internal coolant
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

HEAVY DUTY THERMOGRIP® HOLDERS



VIEW
THE
WEBSITE

THD THERMOGRIP® HEAVY DUTY



Due to the short and rigid design highest retention forces and torque transmission are guaranteed permanently.

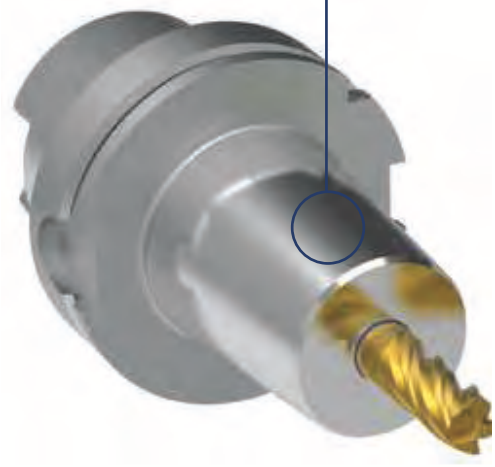
High radial rigidity for best form stability at highest Metal removal rate.

Up to 50 % more overlap – Suited for *HPC cutting

* High Performance Cutting

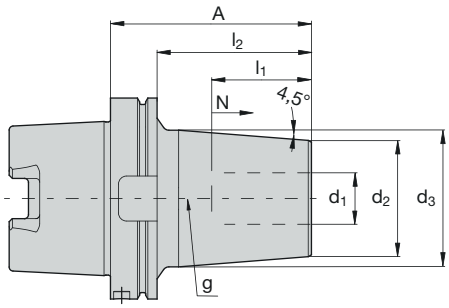
THD VS T STYLE

- Standard “THD” style – Thicker wall for increased gripping strength.
- Greater ID bore tolerance overlap for increase gripping strength
- Reduced or elimination of cutting tool slippage or “pullout” for high cutting forces



- Standard “T” style - DIN standard wall thickness for everyday applications
- Smaller nose diameter for closer part clearances and smaller cavities
- Excellent cutting tool gripping strength for all “normal/everyday applications”

THD HSK-A63 | ThermoGrip® Heavy Duty

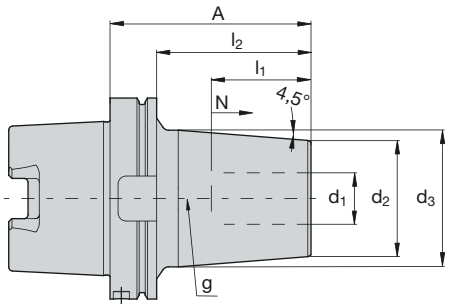


THD HSK-A63 Heavy Duty – Inch									
		Dimensions (inch)							
SAP No.	Designation	d_1	A	l_2	d_2	d_3	l_1	N	g
STANDARD PROJECTION									
5054387	THD1588-95/HSK-A63	0.625	3.74	2.72	1.97	57.50	1.97	0.04	M12x1
5054389	THD1905-100/HSK-A63	0.750	3.94	2.91	2.28	64.50	2.05	0.39	M16x1

All holders can be run with internal coolant
Please Order Coolant Tube Catalog No. HSK63-18 separately
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

THD HSK-A63 Heavy Duty – Metric									
		Dimensions (mm)							
SAP No.	Designation	d_1	A	l_2	d_2	d_3	l_1	N	g
STANDARD PROJECTION									
5025871	THD1600-95/HSK-A63	16	95	69	50	57.5	50	10	M12x1
5028975	THD2000-100/HSK-A63	20	100	74	58	63	52	10	M16x1

All holders can be run with internal coolant
Please Order Coolant Tube Catalog No. HSK63-18 separately
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm



THD HSK-A100 Heavy Duty – Inch

SAP No.	Designation	Dimensions (inch)							
		d_1	A	l_2	d_2	d_3	l_1	N	g
STANDARD PROJECTION									
5054390	THD1588-105/HSK-A100	0.625	4.13	2.99	1.97	2.40	1.97	0.39	M12x1
5054391	THD1905-110/HSK-A100	0.750	4.33	3.19	2.28	2.76	2.05	0.39	M16x1
5054392	THD2540-120/HSK-A100	1.00	4.72	3.58	2.52	2.99	2.28	0.39	M16x1
5054393	THD3175-120/HSK-A100	1.250	4.72	3.58	2.83	3.35	2.44	0.39	M16x1

All holders can be run with internal coolant
Please Order Coolant Tube Catalog No. HSK100-18 separately
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

THD HSK-A100 Heavy Duty – Metric

SAP No.	Designation	Dimensions (mm)							
		d_1	A	l_2	d_2	d_3	l_1	N	g
STANDARD PROJECTION									
5029007	THD1600-105/HSK-A100	16	105	76	50	61	50	10	M12x1
5025872	THD2000-110/HSK-A100	20	110	81	58	70	52	10	M16x1
5026038	THD2500-110/HSK-A100	25	110	81	64	76	58	10	M16x1
5028982	THD3200-120/HSK-A100	32	120	91	72	85	62	10	M16x1

All holders can be run with internal coolant
Please Order Coolant Tube Catalog No. HSK100-18 separately
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

THD HSK-A125 | ThermoGrip® Heavy Duty

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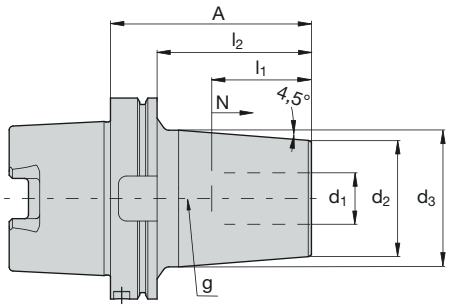


THD HSK-A125 Heavy Duty – Inch

SAP No.	Designation	Dimensions (inch)							
		d_1	A	l_2	d_2	d_3	l_1	N	g
STANDARD PROJECTION									
5054394	THD1588-110/HSK-A125	0.625	4.33	3.19	1.97	2.36	1.97	0.39	M12x1
5054395	THD1905-115/HSK-A125	0.750	4.53	3.39	2.28	2.68	2.05	0.39	M16x1
5054396	THD2540-120/HSK-A125	1.000	4.72	3.58	2.52	2.99	2.44	0.39	M16x1
5054397	THD3175-125/HSK-A125	1.250	4.92	3.78	2.83	3.35	2.44	0.39	M16x1

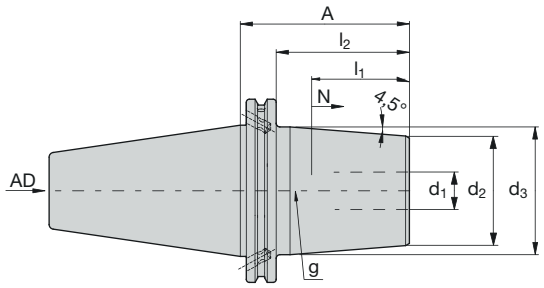
All holders can be run with internal coolant
Please Order Coolant Tube Catalog No. HSK125-18 separately
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

THD HSK-A125 Heavy Duty – Metric

SAP No.	Designation	Dimensions (mm)							
		d_1	A	l_2	d_2	d_3	l_1	N	g
STANDARD PROJECTION									
5029874	THD1600-110/HSK-A125	16	110	81	50	60	50	10	M12x1
5031102	THD2000-115/HSK-A125	20	115	86	58	68	52	10	M16x1
5029870	THD2500-120/HSK-A125	25	120	91	64	76	58	10	M16x1
5031105	THD3200-125/HSK-A125	32	125	96	72	72	62	10	M16x1

All holders can be run with internal coolant
Please Order Coolant Tube Catalog No. HSK125-18 separately
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

THD CAT40 | ThermoGrip® Heavy Duty



THD CAT40 Heavy Duty – Inch									
SAP No.	Designation	Dimensions (inch)							
		d_1	A	l_2	d_2	d_3	l_1	N	g
STANDARD PROJECTION									
	THD1270-95/CAT40	0.500	3.74	2.99	1.30	1.65	1.85	0.39	M12x1
5057676	THD1588-110/CAT40	0.625	4.33	3.58	1.97	2.36	1.97	0.39	M12x1
5057677	THD1905-110/CAT40	0.750	4.33	3.58	2.28	2.68	2.05	0.39	M16x1

All holders can be run with internal coolant
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

THD CAT50 | ThermoGrip® Heavy Duty

THD CAT50 Heavy Duty – Inch									
SAP No.	Designation	Dimensions (mm)							
		d_1	A	l_2	d_2	d_3	l_1	N	g
STANDARD PROJECTION									
	THD1588-110/CAT50	0.625	4.33	3.58	1.97	2.36	1.97	0.39	M12x1
	THD1905-110/CAT50	0.750	4.33	3.58	2.28	2.68	2.05	0.39	M12x1
5057678	THD2540-110/CAT50	1.000	4.33	3.58	2.52	2.99	2.44	0.39	M16x1
5057679	THD3175-110/CAT50	1.250	4.33	3.58	2.83	3.35	2.44	0.39	M16x1

All holders can be run with internal coolant
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

COLLETS TO DIN 6499

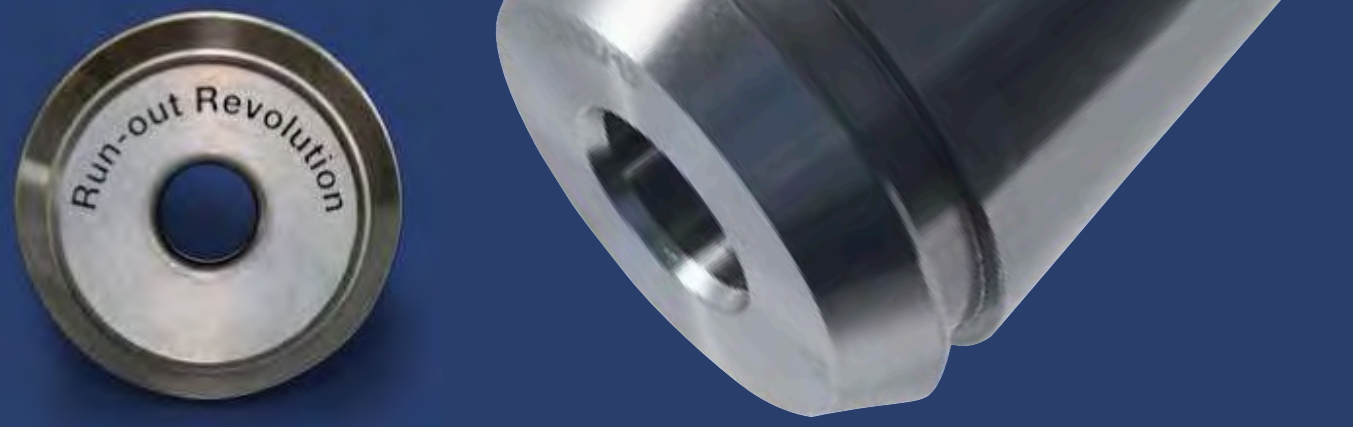
A PERFECT FIT

With the development of the patented TER shrink collet, we have been able to revolutionise the use of collets and collet chucks in the production process.

USING TER MEANS PROFITING FROM THE ADVANTAGES OF COLLET SHRINKING:

- Run-out < 3 µm at 3 x D (diameter)
- Maximum holding forces
- Rigidity
- Low-wear monoblock properties without the need to replace existing collet chucks or spindles.

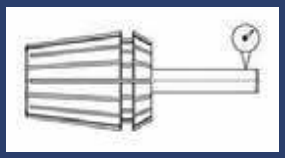
The short and extremly stable tool clamping with TER achieves a run-out of < 3µm. Tool life is considerably improved due to the precise guidance of the tool and ultra-precise change accuracy.
Your length adjustement is maintained even after many cycles—with optimum results.



VIEW THE WEBSITE

TER THERMOGRIP® COLLETS

Using high efficiency to reduce production costs – TER to DIN 6499 makes it possible!	
Increase productivity in a short period of time	**High quality machining for top results**
High-speed machining • High transmittable torque • Stable clamping • Maximum holding forces • Ultra-precise, quick tool changes (< 30s)	**High precision and process-secure** • Excellent run-out properties (< 3 µm) • High repeatability due to precise clamping
Machine longer due to less wear	**Improve manufacturing without changing production processes**
Increase of tool life for cutting tools up to 300% • High stability of the system • Minimum load from axial forces • Precise clamping means less damage • Resistant to dirt (sealed monoblock system)	**No need to retool . . .** • Existing collet chucks can still be used • Universal toolholder for all sizes • Sealing disc is no longer required – cost and logistics saving



> 10 µm

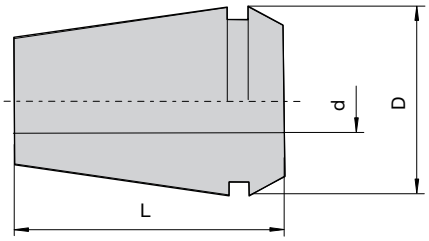
< 3 µm

Highest possible run-out and repeatability accuracy.
When shrunk in, cutting tool and shrink fit collet form a unit (monoblock) as measured from the face of the collet at 3 x D (diameter of tool shank).

Result:
A very high transmittable torque, best possible run-out properties and highest possible stability

Increase of tool life for cutting tools up to 300 %
Due to the precise clamping of the tool with the TER shrink collets, all cutters enter the workpiece simultaneously, avoiding “knocking” of the cutting edge.

Result:
Better surface finishes & improved accuracy

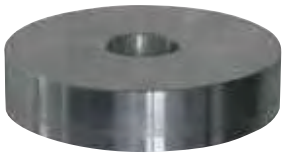


TER – Inch				
		Dimensions (inch)		
SAP No.	Designation	d	D	L
TER16				
5059311	TER0318/16	0.125	0.67	1.22
5068405	TER0476/16	0.180	0.67	1.22
5059313	TER0635/16	0.250	0.67	1.22
TER20				
5059315	TER0635/20	0.250	0.83	1.22
5059316	TER0953/20	0.375	0.83	1.22
TER25				
5059311	TER0318/25	0.125	1.02	1.38
5068417	TER0476/25	0.187	1.02	1.38
5068419	TER0635/25	0.250	1.02	1.38
5068420	TER0953/25	0.375	1.02	1.38
5060472	TER1270/25	0.500	1.02	1.38
5068421	TER1588/25	0.625	1.02	1.38
TER32				
5059317	TER0635/32	0.250	1.30	1.57
5059318	TER0953/32	0.375	1.30	1.57
5059319	TER1270/32	0.500	1.30	1.57
5060473	TER1588/32	0.625	1.30	1.57
5068422	TER1905/32	0.750	1.30	1.57

TER – Metric				
		Dimensions (mm)		
SAP No.	Designation	d	D	L
TER16				
5004694	TER0300/16	3	17	31
5004696	TER0400/16	4	17	31
5004697	TER0600/16	6	17	31
5004698	TER0800/16	8	17	31
TER20				
5004699	TER0600/20	6	21	31
5004700	TER0800/20	8	21	31
5004701	TER1000/20	10	21	31
TER25				
5004702	TER0300/25	3	26	35
5004703	TER0400/25	4	26	35
5004705	TER0600/25	6	26	35
5004706	TER0800/25	8	26	35
5004707	TER1000/25	10	26	35
5004708	TER1200/25	12	26	35
5004709	TER1400/25	14	26	35
5004710	TER1600/25	16	26	35
TER32				
5004711	TER0600/32	6	33	40
5004712	TER0800/32	8	33	40
5004713	TER1000/32	10	33	40
5004714	TER1200/32	12	33	40
5004715	TER1400/32	14	33	40
5004716	TER1500/32	15	33	40
5004717	TER1600/32	16	33	40
5004718	TER1800/32	18	33	40
5004719	TER2000/32	20	33	40

Basic Adaptor TER with Length Adjustment

T3-WWK/TER



T3-W/TER

Variable, mechanical length adjustment, precise, adjustable to the required tool length. For all clamping sizes with suitable shrink adaptor. For water cooled shrink units ISG...TWK and ISG...WK only the basic adaptor T...-WWK/TER is needed. An additional reduction in combination with the basic holder T...-WWK/TER is required for the table shrink machines ISG1000 and ISG...TLK.

SAP No.				
ISG1000	ISG...TLK	ISG...TWK	ISG...WK	Designation
		5020330		T3-WWK/TER
5020330	5020330			T3-WWK/TER
+	+	–	–	+
5020992	5020992			T3-W/TER

Adaptors for Shrink Fit Collets TER

TER 16 TER 20 TER 25 TER 32

For safe holding of the TER shrink fit collet. Suitable for basic adaptor T...-WWK/TER

SAP No.	Designation
5020718	TER 16/1
5020719	TER 20/1
5020720	TER 25/1
5020721	TER 32/1

Pole Disc for Shrink Fit Collets TER

For optimal shielding of the magnetic field between coil and tool shank.

SAP No.	Designation	Clamping Ø	Measure
5022010	ISGS2201-TER16	3 – 8 mm	40x10x20
5022011	ISGS2201-TER20	6 – 10 mm	40x12x20
5022012	ISGS2201-TER25	3 – 16 mm	40x18x20
5022013	ISGS2201-TER32	6 – 20 mm	40x22x10
5022014	ISGS3201-TER16	3 – 8 mm	54x10x20
5022015	ISGS3201-TER20	6 – 10 mm	54x12x20
5022016	ISGS3201-TER25	3 – 16 mm	54x18x20
5022017	ISGS3201-TER32	6 – 26 mm	54x22x10

JET SLEEVE™ COOLANT SYSTEM

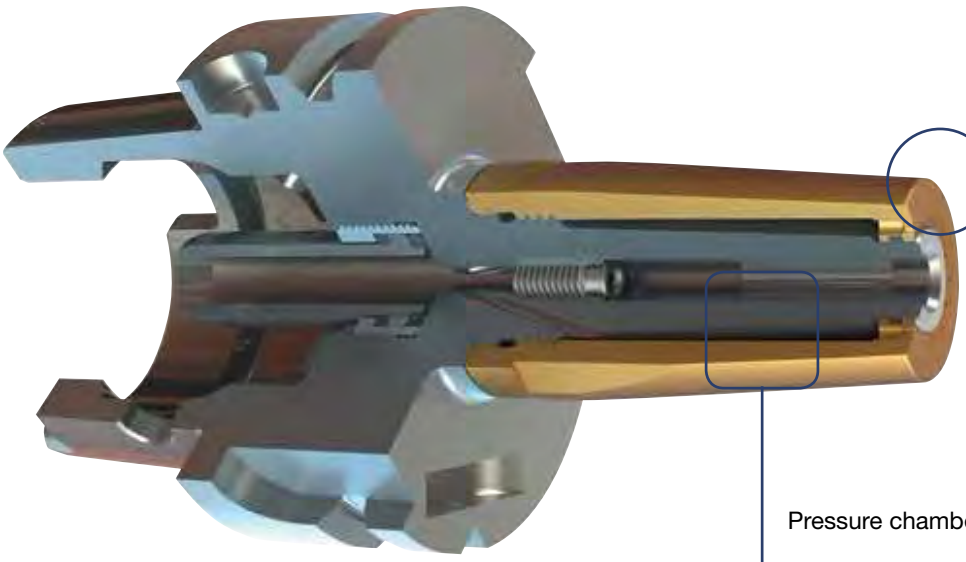
SUPPLY COOLANT DIRECTLY TO THE CUTTING EDGE

Jet Sleeve™ offers an innovative coolant system which supplies coolant directly to the cutting edge. This design prevents chips from building up under the cutting edge. As a result, tool life is greatly increased and you'll also benefit from improved surface finish. You can also reduce the cost for air and coolant usage by up to 80%.

- Reduce coolant requirements up to 70%
- Improve surface finish up to 25%
- Increase tool life up to 28%

VIEW THE WEBSITE

TJS THERMOGRIP® JETSLEEVE®



The JetSleeve® shrink-fit holder are available in two versions:

Slim Version – JetSleeve®
holder without aluminium sleeve corresponds to the slim geometry TSF…

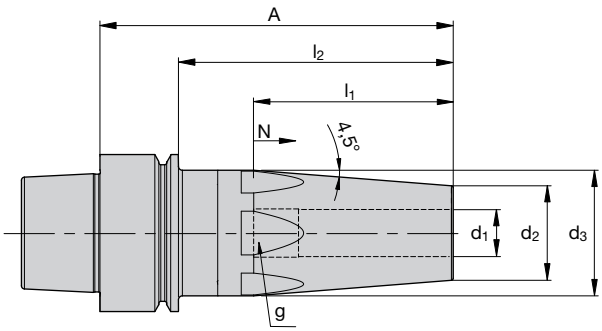
Reinforced version – JetSleeve®
holder without aluminium sleeve corresponds to the standard geometry T...

JetSleeve® offers an innovative coolant system which supplies the coolant directly to the cutting edge. The advantages of this system are:

- Increased tool life
- Improved surface finish
- Reduced coolant requirements up to 70 %

The ThermoGrip® JetSleeve® holder is comprised of a shrink-fit holder and an aluminium sleeve, which is screwed on to the holder. The sleeve is equipped with 16 tiny holes, making it possible to accelerate the pressurized medium to high speed. This pressure created in the sleeve, in combination with the rotation of the tool, creates a Venturi-effect to the cutting edge. This effect creates an “adherence” of the coolant to the cutting edge. This means that chips do not get caught under the cutting edge, they are blown away from the operation area with high pressure coolant delivered to the cutting area.

TJS HSK-E40 | ThermoGrip® Standard JetSleeve®



TJS HSK-E40 Standard JetSleeve – Inch

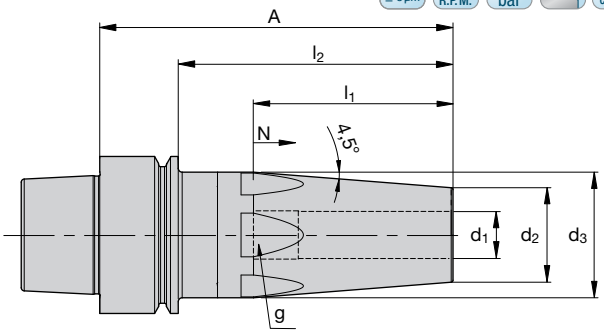
SAP No.	Designation	Dimensions (inch)							RIng Wrench
		d_1	d_2	d_3	l_1	A	N	g	
	TJS0953/HSK-E40	0.375	1.10	1.34	1.65	3.15	0.39	M8x1	32
	TJS1270/HSK-E40	0.500	1.10	1.34	1.65	3.35	0.39	M8x1	32

All holders can be run with internal coolant
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

TJS HSK-E40 Standard JetSleeve – Metric

SAP No.	Designation	Dimensions (mm)							RIng Wrench
		d_1	d_2	d_3	l_1	A	N	g	
5039025	TJS0800/HSK-E40	8	24	29	36	80	10	M6	27
5039026	TJS1000/HSK-E40	10	28	34	42	80	10	M8x1	32
5039027	TJS1200/HSK-E40	12	28	34	42	85	10	M8x1	32

All holders can be run with internal coolant
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm



TJS HSK-E50 Standard JetSleeve – Inch

SAP No.	Designation	Dimensions (inch)							RIng Wrench
		d_1	d_2	d_3	l_1	A	N	g	
	TJS0953/HSK-E50	0.375	0.375	1.10	1.34	1.65	3.35	0.24	32
	TJS1270/HSK-E50	0.500	0.500	1.30	1.50	1.85	3.74	0.39	36
	TJS1588/HSK-E50	0.625	0.625	1.50	1.65	1.97	3.74	0.39	40

All holders can be run with internal coolant
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

TJS HSK-E50 Standard JetSleeve – Metric

SAP No.	Designation	Dimensions (mm)							RIng Wrench
		d_1	d_2	d_3	l_1	A	N	g	
5040242	TJS0800/HSK-E50	8	24	29	36	80	10	M6	27
5040243	TJS1000/HSK-E50	10	28	34	42	85	10	M8x1	32
5040244	TJS1200/HSK-E50	12	33	38	47	95	10	M10x1	36
5040245	TJS1600/HSK-E50	16	38	42	50	95	10	M12x1	40

All holders can be run with internal coolant
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

TJS HSK-A63 | ThermoGrip® Standard JetSleeve®

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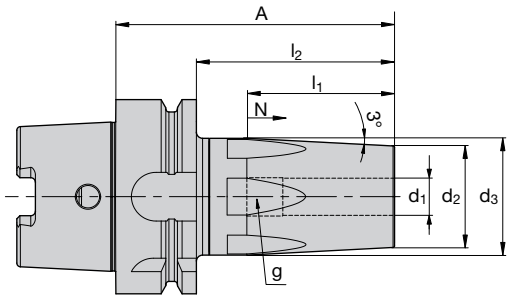


TJS HSK-A63 Standard JetSleeve – Inch

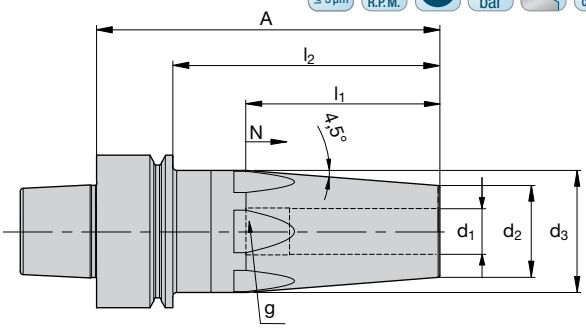
SAP No.	Designation	Dimensions (inch)							RIng Wrench
		d_1	d_2	d_3	l_1	A	N	g	
	TJS0953/HSK-A63	0.375	1.10	1.34	1.65	3.35	0.39	M8x1	32
	TJS1270/HSK-A63	0.500	1.30	1.50	1.85	3.54	0.39	M10x1	36
	TJS1588/HSK-A63	0.625	1.50	1.58	1.97	3.54	0.39	M12x1	40
	TJS1905/HSK-A63	0.750	1.73	2.01	2.05	3.94	0.67	M16x1	50

All holders can be run with internal coolant
Please Order Coolant Tube Catalog No. HSK63-18 separately
120mm and 160mm Projection Holders have 52mm Diameter Shoulder
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

TJS HSK-A63 Standard JetSleeve – Metric

SAP No.	Designation	Dimensions (mm)							RIng Wrench
		d_1	d_2	d_3	l_1	A	N	g	
–	TJS0600/HSK-A63	6	22	29	36	80	10	M5	32
5036776	TJS0800/HSK-A63	8	24	29	36	80	10	M6	27
5036777	TJS1000/HSK-A63	10	28	34	42	85	10	M8x1	32
5036778	TJS1200/HSK-A63	12	33	38	47	90	10	M10x1	36
5035904	TJS1600/HSK-A63	16	38	40	50	95	10	M12x1	40
5035905	TJS2000/HSK-A63	20	44	51	52	100	10	M16x1	50

All holders can be run with internal coolant
Please Order Coolant Tube Catalog No. HSK63-18 separately
120mm and 160mm Projection Holders have 52mm Diameter Shoulder
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm



TJS HSK-F63 Standard JetSleeve – Inch

SAP No.	Designation	Dimensions (inch)							RIng Wrench
		d_1	d_2	d_3	l_1	A	N	g	
	TJS0953/HSK-F63	0.375	1.10	1.34	1.65	3.54	0.32	M8x1	32
	TJS1270/HSK-F63	0.500	1.30	1.50	1.85	3.54	0.39	M10x1	36
	TJS1588/HSK-F63	0.625	1.50	1.65	1.97	3.74	0.39	M12x1	40
	TJS1905/HSK-F63	0.750	1.73	2.09	2.05	3.94	0.67	M16x1	50

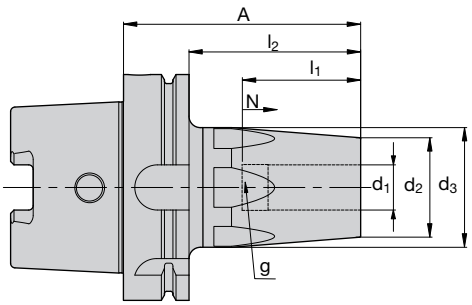
All holders can be run with internal coolant
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

TJS HSK-F63 Standard JetSleeve – Metric

SAP No.	Designation	Dimensions (mm)							RIng Wrench
		d_1	d_2	d_3	l_1	A	N	g	
5038878	TJS0800/HSK-F63	8	24	29	36	90	10	M6	27
5038879	TJS1000/HSK-F63	10	28	34	42	90	10	M8x1	32
5038880	TJS1200/HSK-F63	12	33	38	47	90	10	M10x1	36
5038881	TJS1600/HSK-F63	16	38	42	50	95	10	M12x1	40
5038882	TJS2000/HSK-F63	20	44	53	52	100	10	M16x1	50

All holders can be run with internal coolant
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

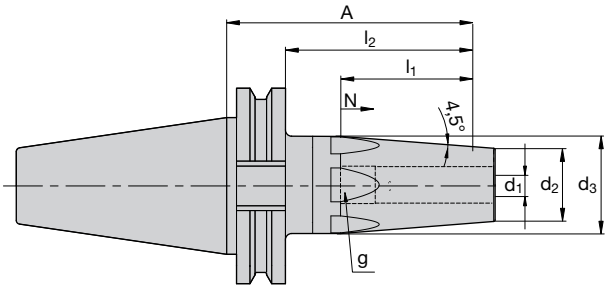
TJS HSK-A100 | ThermoGrip® Standard JetSleeve®



TJS HSK-A100 Standard JetSleeve – Metric

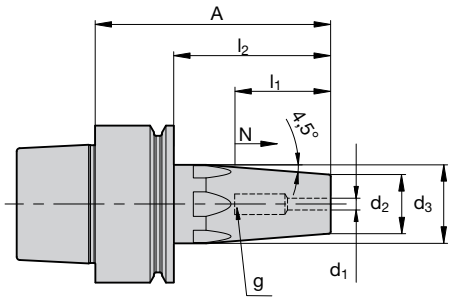
SAP No.	Designation	Dimensions (mm)								Ring Wrench
		d_1	d_2	d_3	l_1	A	V	N	g	
5048267	TJS0600/HSK-A100	6	27	34	36.5	85	14	10	M5	32
5048168	TJS0800/HSK-A100	8	27	34	36.5	85	10	10	M6	32
5048169	TJS1000/HSK-A100	10	28	34	42.5	90	11	10	M8x1	32
5048170	TJS1200/HSK-A100	12	33	38	47.5	95	11	10	M10x1	36
5048171	TJS1600/HSK-A100	16	38	42	50.5	100	11	10	M12x1	40
5048172	TJS2000/HSK-A100	20	44	53	52.5	105	11	10	M16x1	50

TJS CAT40 | ThermoGrip® Standard JetSleeve®



TJS CAT40 Standard JetSleeve – Inch

SAP No.	Designation	Dimensions (inch)								Ring Wrench
		d_1	d_2	d_3	l_1	A	V	N	g	
	TJS0953/CAT40	0.375	1.10	1.34	1.65	3.74	0.67	M8x1	M8x1	32
	TJS1270/CAT40	0.500	1.30	1.50	1.85	3.74	0.67	M10x1	M10x1	36
	TJS1588/CAT40	0.625	1.50	1.65	1.97	3.74	0.67	M12x1	M12x1	40



TJSS HSK-E40 Slim JetSleeve – Inch

SAP No.	Designation	Dimensions (inch)							RIng Wrench
		d_1	d_2	d_3	l_1	A	N	g	
	TJSS0318/HSK-E40	0.125	0.6	0.8	0.8	2.4	0.40	M6	19
	TJSS0476/HSK-E40	0.187	0.6	0.8	0.8	2.4	0.40	M6	19
	TJSS0635/HSK-E40	0.250	0.7	1.1	1.4	3.2	0.40	M5	25
	TJSS0953/HSK-E40	0.375	0.9	1.3	1.7	3.2	0.40	M8x1	30
	TJSS1270/HSK-E40	0.500	0.9	1.3	1.9	3.5	0.20	M10x1	30

All holders can be run with internal coolant
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

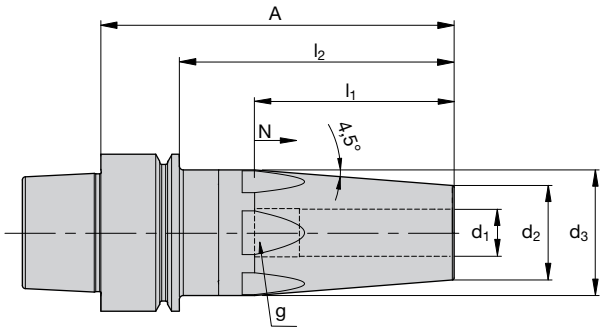
TJSS HSK-E40 Slim JetSleeve – Metric

SAP No.	Designation	Dimensions (mm)							RIng Wrench
		d_1	d_2	d_3	l_1	A	N	g	
5039016	TJSS0300/HSK-E40	3	15	20	20	60	5	M6	19
5039017	TJSS0400/HSK-E40	4	15	20	20	60	5	M6	19
5039018	TJSS0500/HSK-E40	5	15	20	25	60	5	M6	19
5039019	TJSS0600/HSK-E40	6	20	27	36	80	5	M5	25
5039020	TJSS0800/HSK-E40	8	20	27	36	80	5	M6	25
5039021	TJSS1000/HSK-E40	10	24	32	42	80	5	M8x1	30
5039022	TJSS1200/HSK-E40	12	24	32	47	90	5	M10x1	30

All holders can be run with internal coolant
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

TJSS HSK-E50 | ThermoGrip® Slim JetSleeve®

BILZ



TJSS HSK-E50 Slim JetSleeve – Inch

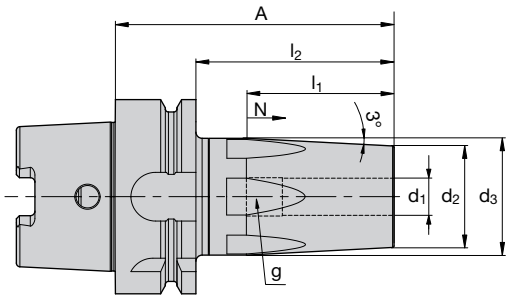
SAP No.	Designation	Dimensions (inch)							RIng Wrench
		d_1	d_2	d_3	l_1	A	N	g	
	TJSS0318/HSK-E50	0.125	0.59	0.79	0.79	3.15	0.35	M6	19
	TJSS0476/HSK-E50	0.187	0.59	0.79	0.79	3.15	0.35	M6	19
	TJSS0635/HSK-E50	0.250	0.79	1.06	1.42	3.15	0.35	M5	25
	TJSS0953/HSK-E50	0.375	0.95	1.26	1.65	3.35	0.20	M8x1	30
	TJSS1270/HSK-E50	0.500	0.95	1.26	1.85	3.54	0.28	M10x1	30

All holders can be run with internal coolant
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

TJSS HSK-E50 Slim JetSleeve – Metric

SAP No.	Designation	Dimensions (mm)							RIng Wrench
		d_1	d_2	d_3	l_1	A	N	g	
5040234	TJSS0300/HSK-E50	3	15	20	20	80	5	M6	19
5040235	TJSS0400/HSK-E50	4	15	20	20	80	5	M6	19
5040236	TJSS0500/HSK-E50	5	15	20	25	80	5	M6	19
5040237	TJSS0600/HSK-E50	6	20	27	36	80	5	M5	25
5040238	TJSS0800/HSK-E50	8	20	27	36	80	5	M6	25
5040239	TJSS1000/HSK-E50	10	24	32	42	85	5	M8x1	30
5040240	TJSS1200/HSK-E50	12	24	32	47	90	5	M10x1	30

All holders can be run with internal coolant
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm



TJSS HSK-A63 Slim JetSleeve – Inch

SAP No.	Designation	Dimensions (inch)							RIng Wrench
		d_1	d_2	d_3	l_1	A	N	g	
	TJSS0318/HSK-A63	0.125	0.59	0.79	0.79	3.15	0.35	M6	19
	TJSS0476/HSK-A63	0.187	0.59	0.79	0.79	3.15	0.35	M6	19
	TJSS0635/HSK-A63	0.250	0.79	1.06	1.42	3.15	0.35	M5	25
	TJSS0953/HSK-A63	0.375	0.95	1.26	1.42	3.35	0.20	M8x1	30
	TJSS1270/HSK-A63	0.500	0.95	1.26	1.85	3.54	0.35	M10x1	30

All holders can be run with internal coolant
Please Order Coolant Tube Catalog No. HSK63-18 separately
120mm and 160mm Projection Holders have 52mm Diameter Shoulder
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

TJSS HSK-A63 Slim JetSleeve – Metric

SAP No.	Designation	Dimensions (mm)							RIng Wrench
		d_1	d_2	d_3	l_1	A	N	g	
5038868	TJSS0300/HSK-A63	3	15	20	20	80	5	M6	19
5038869	TJSS0400/HSK-A63	4	15	20	20	80	5	M6	19
5038870	TJSS0500/HSK-A63	5	15	25	25	80	5	M6	19
5035906	TJSS0600/HSK-A63	6	20	27	36	80	5	M5	25
5036771	TJSS0800/HSK-A63	8	20	27	36	80	5	M6	25
5036772	TJSS1000/HSK-A63	10	24	32	42	85	5	M8x1	30
5036774	TJSS1200/HSK-A63	12	24	32	47	90	5	M10x1	30

All holders can be run with internal coolant
Please Order Coolant Tube Catalog No. HSK63-18 separately
120mm and 160mm Projection Holders have 52mm Diameter Shoulder
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

TJSS HSK-F63 | ThermoGrip® Slim JetSleeve®

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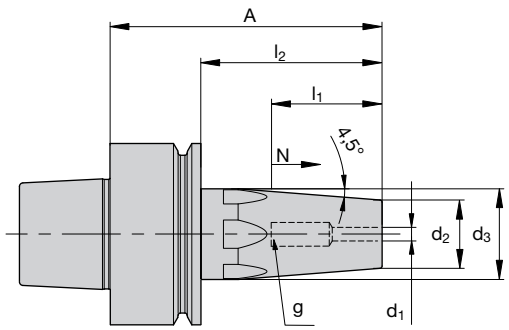
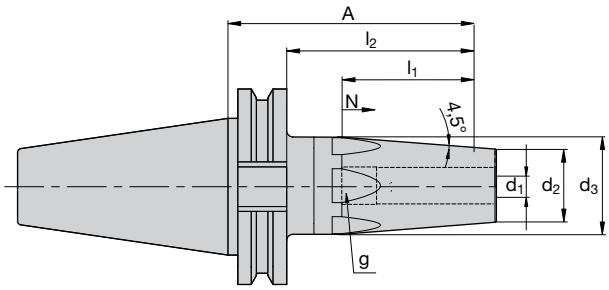


TJSS HSK-F63 Slim JetSleeve – Inch									
SAP No.	Designation	Dimensions (inch)							RIng Wrench
		d_1	d_2	d_3	l_1	A	N	g	
	TJSS0318/HSK-F63	0.125	0.59	0.79	0.59	3.15	0.35	M6	19
	TJSS0476/HSK-F63	0.187	0.59	0.79	0.59	3.15	0.35	M6	19
	TJSS0635/HSK-F63	0.250	0.83	1.06	1.42	3.15	0.35	M5	25
	TJSS0953/HSK-F63	0.375	0.95	1.26	1.65	3.54	0.35	M8x1	30
	TJSS1270/HSK-F63	0.500	0.95	1.26	1.85	3.54	0.35	M10x1	30

All holders can be run with internal coolant
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

TJSS HSK-F63 Slim JetSleeve – Metric									
SAP No.	Designation	Dimensions (mm)							RIng Wrench
		d_1	d_2	d_3	l_1	A	N	g	
5038871	TJSS0300/HSK-F63	3	15	20	15	80	5	M6	19
5038872	TJSS0400/HSK-F63	4	15	20	15	80	5	M6	19
5038873	TJSS0500/HSK-F63	5	15	20	20	80	5	M6	19
5038874	TJSS0600/HSK-F63	6	21	27	36	80	5	M5	25
5038875	TJSS0800/HSK-F63	8	21	27	36	90	5	M6	25
5037261	TJSS1000/HSK-F63	10	24	32	42	90	5	M8x1	30
5037262	TJSS1200/HSK-F63	12	24	32	47	90	5	M10x1	30

All holders can be run with internal coolant
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm



TJSS CAT40 Slim JetSleeve – Inch

SAP No.	Designation	Dimensions (inch)							RIng Wrench
		d_1	d_2	d_3	l_1	A	N	g	
5060477	TJSS0318/CAT40	0.125	0.59	0.79	0.79	3.15	0.35	M6	19
5060480	TJSS0635/CAT40	0.250	0.83	1.06	1.42	3.15	0.35	M5	25
5060483	TJSS0953/CAT40	0.375	0.95	1.26	1.65	3.15	0.35	M8x1	30
5063935	TJSS1270/CAT40	0.500	0.95	1.26	1.85	3.77	0.28	M10x1	30

TJSV Straight Shank | ThermoGrip® JetSleeve®

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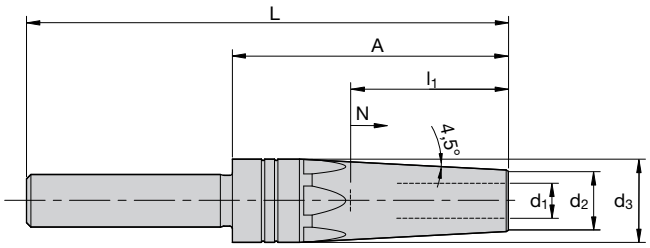

TJSV Straight Shank – Inch								
		Dimensions (inch)						
SAP No.	Designation	d_1	d_2	d_3	L	A	N	g
5050769	TJSV0318-60/1588	0.125	0.59	0.79	4.33	2.36	0.39	M6
5050771	TJSV0635-60/1588	0.250	0.83	1.06	4.33	2.36	0.39	M5
5050772	TJSV0953-60-1905	0.375	0.94	1.26	4.33	2.36	0.39	M8x1
5050773	TJSV1270-60/1905	0.500	1.06	1.34	4.33	2.36	0.39	M10x1
5050774	TJSV0625-60/1905	0.625	1.06	1.34	4.33	2.36	0.39	M12x1

All holders can be run with internal coolant
NOTE: Tool Shank Tolerance must be h6 or better, h4 for holders with ID smaller than 5mm

TJSV Straight Shank – Metric										
		Dimensions (mm)								RIng
SAP No.	Designation	d_1	d_2	d_3	l_1	L	A	N	g	Wrench
5042755	TJSV0300/16	3	15	20	20	110	60	5	M6	10
5042756	TJSV0400/16	4	15	20	20	110	60	5	M6	10
5042757	TJSV0600/16	6	21	27	36	110	60	10	M5	10
5042758	TJSV0800/16	8	21	27	36	110	60	10	M6	10
5042759	TJSV1000/20	10	24	32	42	110	60	10	M8x1	10
5042760	TJSV1200/20	12	24	32	47	110	60	10	M10x1	10

Torque wrench for JetSleeve			
SAP No.	Designation	Range	L
5035908	T3-JS-DS	4 – 40 Nm	280

Ring wrench for torque wrench			
SAP No.	Designation	Hexagon	Nm
5040246	T3-JS-DS-SW19	SW 19	10
5040247	T3-JS-DS-SW25	SW 25	12
5040248	T3-JS-DS-SW27	SW 27	14
5040249	T3-JS-DS-SW30	SW 30	16
5035909	T3-JS-DS-SW32	SW 32	18
5040250	T3-JS-DS-SW36	SW 36	20
5035910	T3-JS-DS-SW40	SW 40	22
5040251	T3-JS-DS-SW50	SW 50	24

Set torque wrench for JetSleeve			
	SAP No.	Designation	Hexagon
Contains: • protective case • torque wrench 4 – 40 Nm • plug tool 3/8" • ring wrench SW 19, 25, 27, 30, 32, 36, 40, 50	5040252	T3-JS-DS-SET	SW 19 – SW 50

MQL MINIMUM QUANTITY LUBRICANT TECHNOLOGY

IMPROVED COOLANT DELIVERY REDUCES COSTS

Minimum Quantity Lubricant (MQL) technology represents a significant improvement in the delivery of coolant during machining. Applications which once required 1,000's of gallons of coolant in circulation can now be done with just a few ounces of lubricant per hour for each spindle. You'll spend far less on coolant while also improving work environment and safety.

- Huge reductions in coolant consumption
- Environmentally friendly
- Up to 100% increase in tool life

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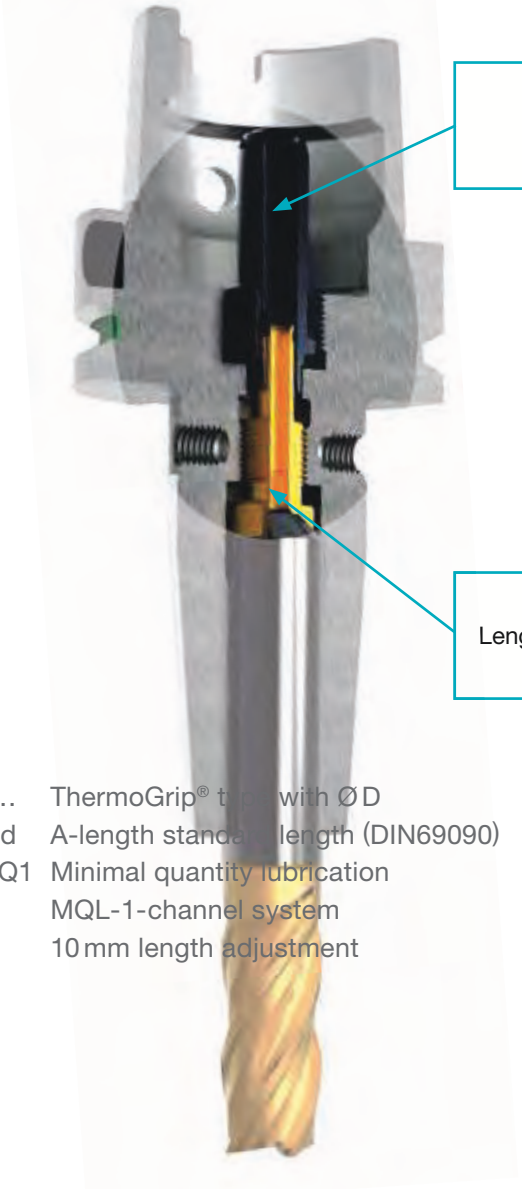
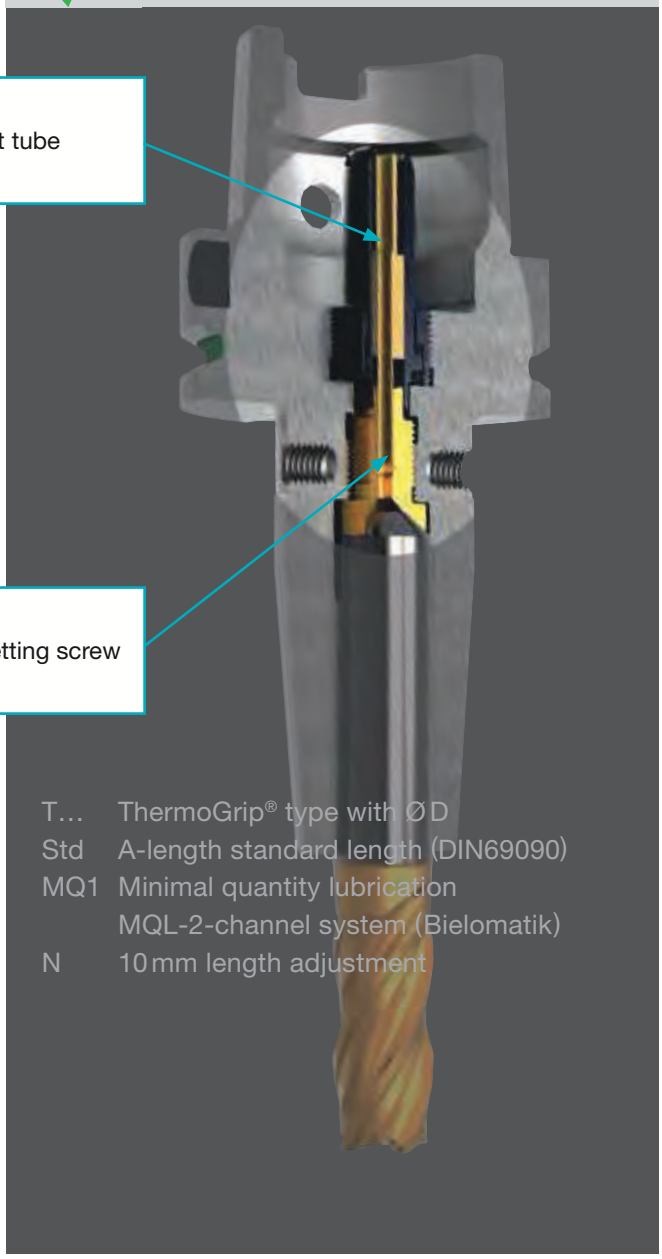
MQL MINIMUM QUANTITY LUBRICANT TECHNOLOGY

1 1-channel system licence of Horkos Corp.



T… ThermoGrip® type with Ø D
Std A-length standard length (DIN69090)
MQ1 Minimal quantity lubrication
MQL-1-channel system
N 10 mm length adjustment

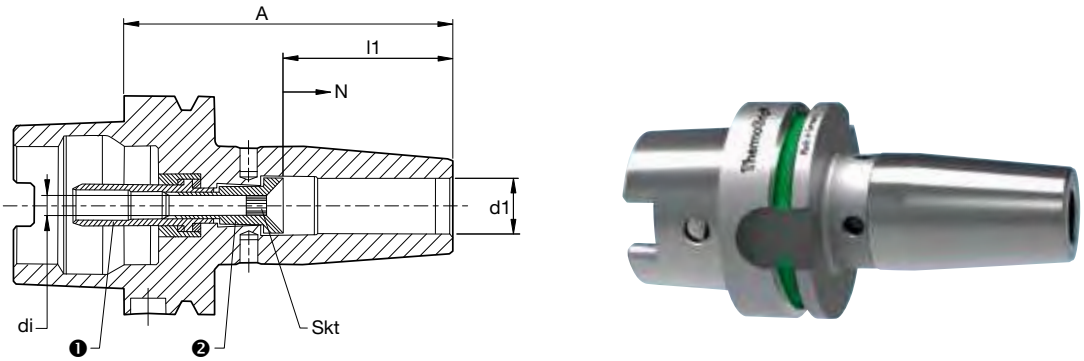
2 2-channel system



T… ThermoGrip® type with Ø D
Std A-length standard length (DIN69090)
MQ1 Minimal quantity lubrication
MQL-2-channel system (Bielomatik)
N 10 mm length adjustment

T...-MQ1.../HSK-A63, DIN 69893 | MQL 1-Channel System

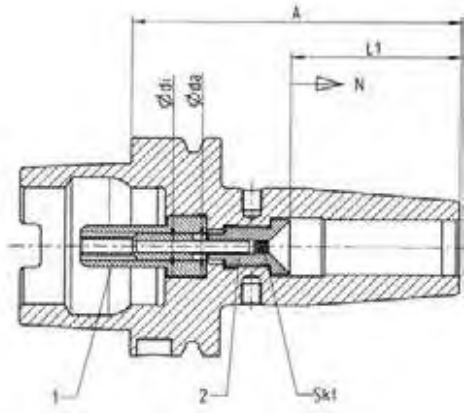
BILZ



MQL 1-Channel System

Toolholders					Supply unit ❶			Setting screw ❷		
d1 (mm)	A (mm)	l1 (mm)	Designation	SAP No.	di	UE-Type BILZ	SAP No.	Skt	AES-Type BILZ	SAP No.
STANDARD PROJECTION										
6	80	36	T0600-MQ1-80/HSK-A63/0001	–	4.6	UE6-HSK63	–	4	T0600-3B-63	–
8	80	36	T0800-MQ1-80/HSK-A63/0001	–			–		T0800-3B-63	–
10	85	40	T1000-MQ1-85/HSK-A63/0001	–			–		T1000-3B-63	–
12	90	45	T1200-MQ1-90/HSK-A63/0001	–	5.8		–	5	T1200-3B-63	–
14	90	45	T1400-MQ1-90/HSK-A63/0001	–			–		T1400-3B-63	–
16	95	48	T1600-MQ1-95/HSK-A63/0001	–			–		T1600-3B-63	–
18	95	48	T1800-MQ1-95/HSK-A63/0001	–			–		T1800-3B-63	–
20	100	50	T2000-MQ1-100/HSK-A63/0001	–			–		T2000-3B-63	–
25	115	56	T2500-MQ1-105/HSK-A63/0001	–			–		T2500-3B-63	–
32	120	60	T3200-MQ1-120/HSK-A63/0001	–			–		T3200-3B-63	–
LONG PROJECTION										
6	120	36	T0600-MQ1-120/HSK-A63/0001	–	2.3	UE6-HSK63	–	2	T0600-3B-32	–
8		36	T0800-MQ1-120/HSK-A63/0001	–	3.45		–	3	T0800-3B-40	–
10		40	T1000-MQ1-120/HSK-A63/0001	–	4.6		–	4	T1000-3B-50	–
12	120	45	T1200-MQ1-120/HSK-A63/0001	–	5.8		–	5	T1200-3B-63	–
14		45	T1400-MQ1-120/HSK-A63/0001	–			–		T1400-3B-63	–
16		48	T1600-MQ1-120/HSK-A63/0001	–			–		T1600-3B-63	–
18		48	T1800-MQ1-120/HSK-A63/0001	–			–		T1800-3B-63	–
20		50	T2000-MQ1-120/HSK-A63/0001	–			–		T2000-3B-63	–
25		56	T2500-MQ1-120/HSK-A63/0001	–			–		T2500-3B-63	–
EXTRA LONG PROJECTION										
6	160	36	T0600-MQ1-160/HSK-A63/0001	–	4.3	UE6-HSK63	–	2	T0600-3B-32	–
8		36	T0800-MQ1-160/HSK-A63/0001	–	3.45		–	3	T0800-3B-40	–
10		40	T1000-MQ1-160/HSK-A63/0001	–	4.6		–	4	T1000-3B-50	–
12	160	45	T1200-MQ1-160/HSK-A63/0001	–	5.8		–	5	T1200-3B-63	–
14		45	T1400-MQ1-160/HSK-A63/0001	–			–		T1400-3B-63	–
16		48	T1600-MQ1-160/HSK-A63/0001	–			–		T1600-3B-63	–
18		48	T1800-MQ1-160/HSK-A63/0001	–			–		T1800-3B-63	–
20		50	T2000-MQ1-160/HSK-A63/0001	–			–		T2000-3B-63	–
25		56	T2500-MQ1-160/HSK-A63/0001	–			–		T2500-3B-63	–
32		60	T3200-MQ1-160/HSK-A63/0001	–			–		T3200-3B-63	–

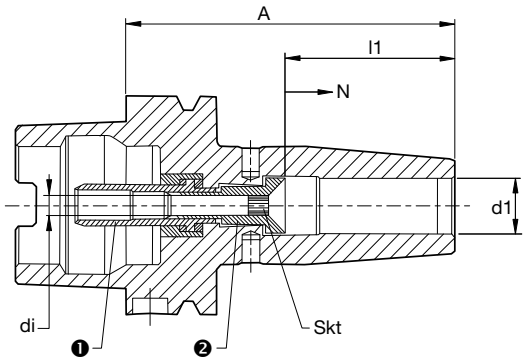
Note: Adjustment screws and coolant tubes may vary depending on 1-Channel or 2-Channel MQL delivery system and applications of cutting tools.



MQL 2-Channel System

Toolholders					Supply unit ❶				Setting screw ❷		
d1 (mm)	A (mm)	l1 (mm)	Designation	SAP No.	da	di	UE-Type BILZ	SAP No.	Skt	AES-Type BILZ	SAP No.
STANDARD PROJECTION											
6	80	36	T0600-MQ2-80/HSK-A63/0001	5043587	1.9	1.6	UE5-HSK63-50/1	5037176	1.5	T0600-2B-63/1	5037179
			T0600-MQ2-80/HSK-A63/0002	5043590	2.8	2.3	UE5-HSK63-50/2	5037289	2	T0600-2B-63/2	5041227
8	80	36	T0800-MQ2-80/HSK-A63/0001	5043818	1.9	1.6	UE5-HSK63-50/1	5037176	1.5	T0800-2B-63/1	5037263
			T0800-MQ2-80/HSK-A63/0002	5043819	2.8	2.3	UE5-HSK63-50/2	5037289	2	T0800-2B-63/2	5041243
10	85	40	T1000-MQ2-85/HSK-A63/0001	5043820	1.9	1.6	UE5-HSK63-50/1	5037176	1.5	T1000-2B-63/1	5041380
			T1000-MQ2-85/HSK-A63/0002	5043821	2.8	2.3	UE5-HSK63-50/2	5037289	2	T1000-2B-63/2	5037285
12	90	45	T1200-MQ2-90/HSK-A63/0001	5043823	1.9	1.6	UE5-HSK63-49/1	5043830	1.5	T1200-2B-63/1	5041379
			T1200-MQ2-90/HSK-A63/0002	5043824	2.8	2.3	UE5-HSK63-49/2	5039864	2	T1200-2B-63/2	5037301
			T1200-MQ2-90/HSK-A63/0003	5043825	4	3.4	UE5-HSK63-49/3	5038801	3	T1200-2B-63/3	5041250
14	90	45	T1400-MQ2-90/HSK-A63/0001	5043826	1.9	1.6	UE5-HSK63-49/1	5043830	1.5	T1400-2B-63/1	5041377
			T1400-MQ2-90/HSK-A63/0002	5043827	2.8	2.3	UE5-HSK63-49/2	5039864	2	T1400-2B-63/2	5041378
			T1400-MQ2-90/HSK-A63/0003	5043828	4	3.4	UE5-HSK63-49/3	5038801	3	T1400-2B-63/3	5037323
16	95	48	T1600-MQ2-95/HSK-A63/0001	5043934	1.9	1.6	UE5-HSK63-49/1	5043830	1.5	T1600-2B-63/1	5041376
			T1600-MQ2-95/HSK-A63/0002	5043935	2.8	2.3	UE5-HSK63-49/2	5039864	2	T1600-2B-63/2	5037356
			T1600-MQ2-95/HSK-A63/0003	5043936	4	3.4	UE5-HSK63-49/3	5038801	3	T1600-2B-63/3	5037325
18	95	48	T1800-MQ2-95/HSK-A63/0001	5043937	1.9	1.6	UE5-HSK63-49/1	5043830	1.5	T1800-2B-63/1	5041375
			T1800-MQ2-95/HSK-A63/0002	5043939	2.8	2.3	UE5-HSK63-49/2	5039864	2	T1800-2B-63/2	5041236
			T1800-MQ2-95/HSK-A63/0003	5043940	4	3.4	UE5-HSK63-49/3	5038801	3	T1800-2B-63/3	5037329
20	100	50	T2000-MQ2-100/HSK-A63/0002	5043953	2.8	2.3	UE5-HSK63-49/2	5039864	2	T2000-2B-63/2	5041382
			T2000-MQ2-100/HSK-A63/0003	5043954	4	3.4	UE5-HSK63-49/3	5038801	3	T2000-2B-63/3	5041400
			T2000-MQ2-100/HSK-A63/0004	5043955	5.3	4.6	UE5-HSK63-50/4	5037339	4	T2000-2B-63/4	5037338
25	115	56	T2500-MQ2-115/HSK-A63/0002	5043956	2.8	2.3	UE5-HSK63-54/2	5043968	2	T2500-2B-63/2	5041384
			T2500-MQ2-115/HSK-A63/0003	5043957	4	3.4	UE5-HSK63-54/3	5043939	3	T2500-2B-63/3	5041385
			T2500-MQ2-115/HSK-A63/0004	5043958	5.3	4.6	UE5-HSK63-54/4	5039132	4	T2500-2B-63/4	5037344
32	120	60	T3200-MQ2-120/HSK-A63/0002	5043965	2.8	2.3	UE5-HSK63-54/2	5043968	2	T3200-2B-63/2	5041386
			T3200-MQ2-120/HSK-A63/0003	5043966	4	3.4	UE5-HSK63-54/3	5043969	3	T3200-2B-63/3	5041387
			T3200-MQ2-120/HSK-A63/0004	5043967	5.3	4.6	UE5-HSK63-54/4	5039132	4	T3200-2B-63/4	5041388

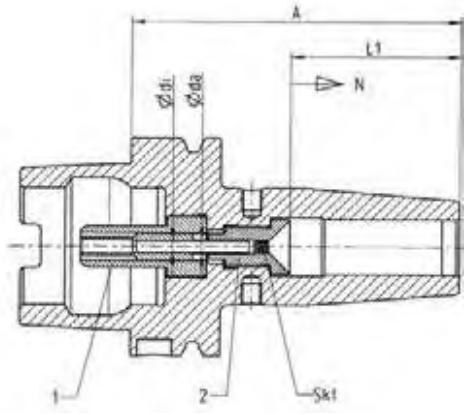
Note: Adjustment screws and coolant tubes may vary depending on 1-Channel or 2-Channel MQL delivery system and applications of cutting tools.



MQL 2-Channel System

Toolholders					Supply unit ❶				Setting screw ❷		
d1 (mm)	A (mm)	l1 (mm)	Designation	SAP No.	da	di	UE-Type BILZ	SAP No.	Skt	AES-Type BILZ	SAP No.
LONG PROJECTION											
6	120	36	T0600-MQ2-120/HSK-A63/0001	–	1.9	1.6	UE5-HSK63-90/1	5037264	1.5	T0600-2B-32/1	5037207
			T0600-MQ2-120/HSK-A63/0002	–	2.8	2.3	UE5-HSK63-90/2	5039009	2	T0600-2B-32/2	5041398
8	120	36	T0800-MQ2-120/HSK-A63/0001	–	1.9	1.6	UE5-HSK63-90/1	5037264	1.5	T0800-2B-40/1	5037266
			T0800-MQ2-120/HSK-A63/0002	–	2.8	2.3	UE5-HSK63-90/2	5039009	2	T0800-2B-40/2	5038976
10	120	40	T1000-MQ2-120/HSK-A63/0001	–	1.9	1.6	UE5-HSK63-84/1	–	1.5	T1000-2B-50/1	5041389
			T1000-MQ2-120/HSK-A63/0002	–	2.8	2.3	UE5-HSK63-84/2	-	2	T1000-2B-50/2	5037290
12	120	45	T1200-MQ2-120/HSK-A63/0001	–	1.9	1.6	UE5-HSK63-79/1	5045174	1.5	T1200-2B-63/1	5041379
			T1200-MQ2-120/HSK-A63/0002	–	2.8	2.3	UE5-HSK63-79/2	5039011	2	T1200-2B-63/2	5037301
			T1200-MQ2-120/HSK-A63/0003	–	4	3.4	UE5-HSK63-79/3	-	3	T1200-2B-63/3	5041250
14	120	45	T1400-MQ2-120/HSK-A63/0001	–	1.9	1.6	UE5-HSK63-79/1	5045174	1.5	T1400-2B-63/1	5041377
			T1400-MQ2-120/HSK-A63/0002	–	2.8	2.3	UE5-HSK63-79/2	5039011	2	T1400-2B-63/2	5041378
			T1400-MQ2-120/HSK-A63/0003	–	4	3.4	UE5-HSK63-79/3	5037303	3	T1400-2B-63/3	5037323
16	120	48	T1600-MQ2-120/HSK-A63/0001	–	1.9	1.6	UE5-HSK63-74/1	–	1.5	T1600-2B-63/1	5041376
			T1600-MQ2-120/HSK-A63/0002	–	2.8	2.3	UE5-HSK63-74/2	5039010	2	T1600-2B-63/2	5037356
			T1600-MQ2-120/HSK-A63/0003	–	4	3.4	UE5-HSK63-74/3	5037327	3	T1600-2B-63/3	5037325
18	120	48	T1800-MQ2-120/HSK-A63/0001	–	1.9	1.6	UE5-HSK63-74/1	–	1.5	T1800-2B-63/1	5041375
			T1800-MQ2-120/HSK-A63/0002	–	2.8	2.3	UE5-HSK63-74/2	5039010	2	T1800-2B-63/2	5041236
			T1800-MQ2-120/HSK-A63/0003	–	4	3.4	UE5-HSK63-74/3	5037327	3	T1800-2B-63/3	5037329
20	120	50	T2000-MQ2-120/HSK-A63/0002	–	2.8	2.3	UE5-HSK63-69/2	–	2	T2000-2B-63/2	5041382
			T2000-MQ2-120/HSK-A63/0003	–	4	3.4	UE5-HSK63-69/3	–	3	T2000-2B-63/3	5041400
			T2000-MQ2-120/HSK-A63/0004	–	5.3	4.6	UE5-HSK63-70/4	–	4	T2000-2B-63/4	5037338
25	120	56	T2500-MQ2-120/HSK-A63/0002	–	2.8	2.3	UE5-HSK63-59/2	–	2	T2500-2B-63/2	5041384
			T2500-MQ2-120/HSK-A63/0003	–	4	3.4	UE5-HSK63-59/3	–	3	T2500-2B-63/3	5041385
			T2500-MQ2-120/HSK-A63/0004	–	5.3	4.6	UE5-HSK63-59/4	-	4	T2500-2B-63/4	5037344

Note: Adjustment screws and coolant tubes may vary depending on 1-Channel or 2-Channel MQL delivery system and applications of cutting tools.



MQL 2-Channel System

Toolholders					Supply unit ❶				Setting screw ❷		
d1 (mm)	A (mm)	l1 (mm)	Designation	SAP No.	da	di	UE-Type BILZ	SAP No.	Skt	AES-Type BILZ	SAP No.
EXTRA LONG PROJECTION											
6	160	36	T0600-MQ2-160/HSK-A63/0001	–	1.9	1.6	UE5-HSK63-130/1	5037370	1.5	T0600-2B-32/1	5037207
			T0600-MQ2-160/HSK-A63/0002	–	2.8	2.3	UE5-HSK63-130/2	5039133	2	T0600-2B-32/2	5041398
8	160	36	T0800-MQ2-160/HSK-A63/0001	–	1.9	1.6	UE5-HSK63-130/1	5037370	1.5	T0800-2B-40/1	5037266
			T0800-MQ2-160/HSK-A63/0002	–	2.8	2.3	UE5-HSK63-130/2	5039133	2	T0800-2B-40/2	5038976
10	160	40	T1000-MQ2-160/HSK-A63/0001	–	1.9	1.6	UE5-HSK63-124/1	–	1.5	T1000-2B-50/1	5041389
			T1000-MQ2-160/HSK-A63/0002	–	2.8	2.3	UE5-HSK63-124/2	5041254	2	T1000-2B-50/2	5037290
12	160	45	T1200-MQ2-160/HSK-A63/0001	–	1.9	1.6	UE5-HSK63-119/1	–	1.5	T1200-2B-63/1	5041379
			T1200-MQ2-160/HSK-A63/0002	–	2.8	2.3	UE5-HSK63-119/2	5041246	2	T1200-2B-63/2	5037301
			T1200-MQ2-160/HSK-A63/0003	–	4	3.4	UE5-HSK63-119/3	5041251	3	T1200-2B-63/3	5041250
14	160	45	T1400-MQ2-160/HSK-A63/0001	–	1.9	1.6	UE5-HSK63-119/1	–	1.5	T1400-2B-63/1	5041377
			T1400-MQ2-160/HSK-A63/0002	–	2.8	2.3	UE5-HSK63-119/2	–	2	T1400-2B-63/2	5041378
			T1400-MQ2-160/HSK-A63/0003	–	4	3.4	UE5-HSK63-119/3	5041251	3	T1400-2B-63/3	5037323
16	160	48	T1600-MQ2-160/HSK-A63/0001	–	1.9	1.6	UE5-HSK63-114/1	–	1.5	T1600-2B-63/1	5041376
			T1600-MQ2-160/HSK-A63/0002	–	2.8	2.3	UE5-HSK63-114/2	–	2	T1600-2B-63/2	5037356
			T1600-MQ2-160/HSK-A63/0003	–	4	3.4	UE5-HSK63-114/3	–	3	T1600-2B-63/3	5037325
18	160	48	T1800-MQ2-160/HSK-A63/0001	–	1.9	1.6	UE5-HSK63-114/1	–	1.5	T1800-2B-63/1	5041375
			T1800-MQ2-160/HSK-A63/0002	–	2.8	2.3	UE5-HSK63-114/2	–	2	T1800-2B-63/2	5041236
			T1800-MQ2-160/HSK-A63/0003	–	4	3.4	UE5-HSK63-114/3	–	3	T1800-2B-63/3	5037329
20	160	50	T2000-MQ2-160/HSK-A63/0002	–	2.8	2.3	UE5-HSK63-109/2	–	2	T2000-2B-63/2	5041382
			T2000-MQ2-160/HSK-A63/0003	–	4	3.4	UE5-HSK63-109/3	–	3	T2000-2B-63/3	5041400
			T2000-MQ2-160/HSK-A63/0004	–	5.3	4.6	UE5-HSK63-110/4	–	4	T2000-2B-63/4	5037338
25	160	56	T2500-MQ2-160/HSK-A63/0002	–	2.8	2.3	UE5-HSK63-99/2	–	2	T2500-2B-63/2	5041384
			T2500-MQ2-160/HSK-A63/0003	–	4	3.4	UE5-HSK63-99/3	–	3	T2500-2B-63/3	5041385
			T2500-MQ2-160/HSK-A63/0004	–	5.3	4.6	UE5-HSK63-99/4	5037346	4	T2500-2B-63/4	5037344
32	160	60	T3200-MQ2-160/HSK-A63/0002	–	2.8	2.3	UE5-HSK63-94/2	–	2	T3200-2B-63/2	5041386
			T3200-MQ2-160/HSK-A63/0003	–	4	3.4	UE5-HSK63-94/3	–	3	T3200-2B-63/3	5041387
			T3200-MQ2-160/HSK-A63/0004	–	5.3	4.6	UE5-HSK63-94/4	–	4	T3200-2B-63/4	5041388

Note: Adjustment screws and coolant tubes may vary depending on 1-Channel or 2-Channel MQL delivery system and applications of cutting tools.

HARDWARE

T – Adjusting Screws

SAP No.	Designation	for bore size (mm)	Shrink depth	Thread	Screw dimension	Adjustment	SW
6954747	BN158-0616-1.5	3	20	M6	M6x16	10	3
6946782	BN158-0610	4	20	M6	M6x10	10	3
6946782	BN158-0610	5	25	M6	M6x10	10	3
6947302	T0600-2-M5x18	6	36	M5	M5x18	10	2.5
6947303	T0800-2-M6x20	8	36	M6	M6x20	10	3
6952015	T1000-2-M8x1x20	10	42	M8x1	M8x20	10	4
6952015	T1000-2-M8x1x20	11	47	M8x1	M8x20	10	5
6952444	T1200-2-M10x1x15	12	47	M10x1	M10x15	10	5
6952444	T1200-2-M10x1x15	14	47	M10x1	M10x15	10	5
6952017	T1600-2-M12x1x20	15	50	M12x1	M12x20	10	6
6952017	T1600-2-M12x1x20	16	50	M12x1	M12x20	10	6
6952017	T1600-2-M12x1x20	18	50	M12x1	M12x20	10	6
6952018	T2000-2-M16x1x20	20	52	M16x1	M16x20	10	8
6952018	T2000-2-M16x1x20	22	52	M16x1	M16x20	10	8
6952018	T2000-2-M16X1x20	25	58	M16x1	M16x20	10	8
6952018	T2000-2-M16X1x20	28	62	M16x1	M16x20	10	8
6952018	T2000-2-M16X1x20	32	62	M16x1	M16x20	10	8

TSF – Adjusting Screws

SAP No.	Designation	for bore size (mm)	Shrink depth	Thread	Screw dimension	Adjustment	SW
6954747	BN158-0616-1.5	3	20	M6	M6x16	5	3
6946782	BN158-0610	4	20	M6	M6x10	5	3
6946782	BN158-0610	5	25	M6	M6x10	5	3
6952890	T0600-2-M5x18	6	36	M5	M5x15	5	2.5
6950028	T0800-2-M6x16	8	36	M6	M6x16	5	3
6952442	T1000-2-M8x1x15	10	42	M8x1	M8x15	5	4
6952444	T1200-2-M10x1x15	12	47	M10x1	M10x15	5	5
6952444	T1200-2-M10x1x15	14	47	M10x1	M10x15	5	5
6952445	T1600-2-M12x1x15	16	50	M12x1	M12x15	5	6
6952017	T1600-2-M12x1x20	18	50	M12x1	M12x20	5	6
6952529	T2000-2-M16x1x20	20	52	M16x1	M16x15	5	8
6952529	T2000-2-M16x1x20	25	58	M16x1	M16x15	5	8

THD – Adjusting Screws

SAP No.	Designation	for bore size (mm)	Shrink depth	Thread	Screw dimension	Adjustment	SW
6952017	T1600-2-M12x1x20	16	50	M12x1	M12x20	10	6
6952018	T2000-2-M16x1x20	20	52	M16x1	M16x20	10	8
6952018	T2000-2-M16x1x20	25	58	M16x1	M16x20	10	8
6952018	T2000-2-M16x1x20	32	62	M16x1	M16x20	10	8

TECHNICAL

BILZ QUALITY FEATURES

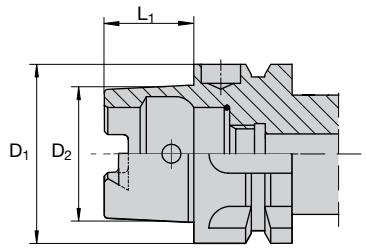
MADE IN GERMANY: All tool holders are manufactured in a temperature controlled environment in Ostfildern-Nellingen and in the factory in Horb-Betra which is near the black forest.

MATERIAL: We use high-tensile heat-treated steel, heat resistant steel or special purpose steel with minimally tolerated alloy parts. Tensile strength in the core > 900 N/mm2.

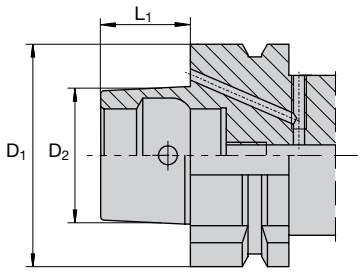
HARDENING: The hardening process and the hardening depth are harmonised with the corresponding chuck type and size, so that even thin-walled HSK-tapers do not full-harden. The risk of breaking or cracking can be virtually eliminated.

DESIGN: Tool surface is eco-friendly blasted with chilled iron and protected against corrosion. Hollow taper shanks are ground with precision Ra ≤ 0.2. Holder sides are ground with precision Ra ≤ 0.4. Shrink chucks HSK-E and HSK-F as well as mold makers' shrink chucks TSF are non-corrosion coated.

Shape A

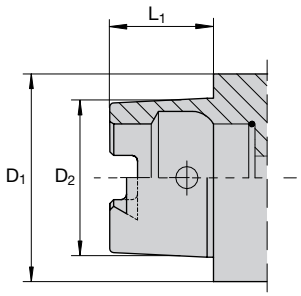


Shape B

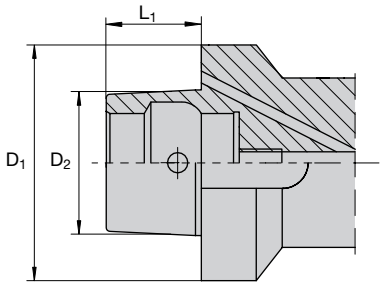


Hollow-shank taper for automatic tool changing with gripping and locating groove. Manual operation is possible through the access hole in the taper. Torque is transmitted both positively and non-positively.

Shape C

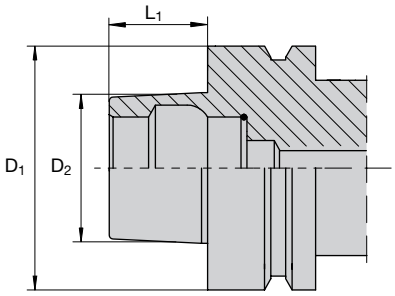


Shape D

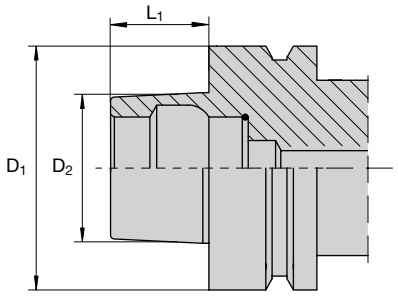


Hollow-shank taper for manual tool changing. Operation is possible through the access hole in the taper. Torque is transmitted both positively and non-positively.

Shape E



Shape F



Hollow-shank taper for automatic tool changing (manual operation through access hole in taper not possible). Torque is transmitted non-positively.

HSK Shape A, C, E			HSK Shape B, D, F		
Nominal Size D_1 (mm)	D_2 (mm)	L_1 (mm)	Nominal Size D_1 (mm)	D_2 (mm)	L_1 (mm)
25	19	13	—	—	—
32	24	16	—	—	—
40	30	20	40	24	16
50	38	25	50	30	20
63	48	32	63	38	25
80	60	40	80	48	32
100	75	50	100	60	40

Hollow Shank Taper 1264-1

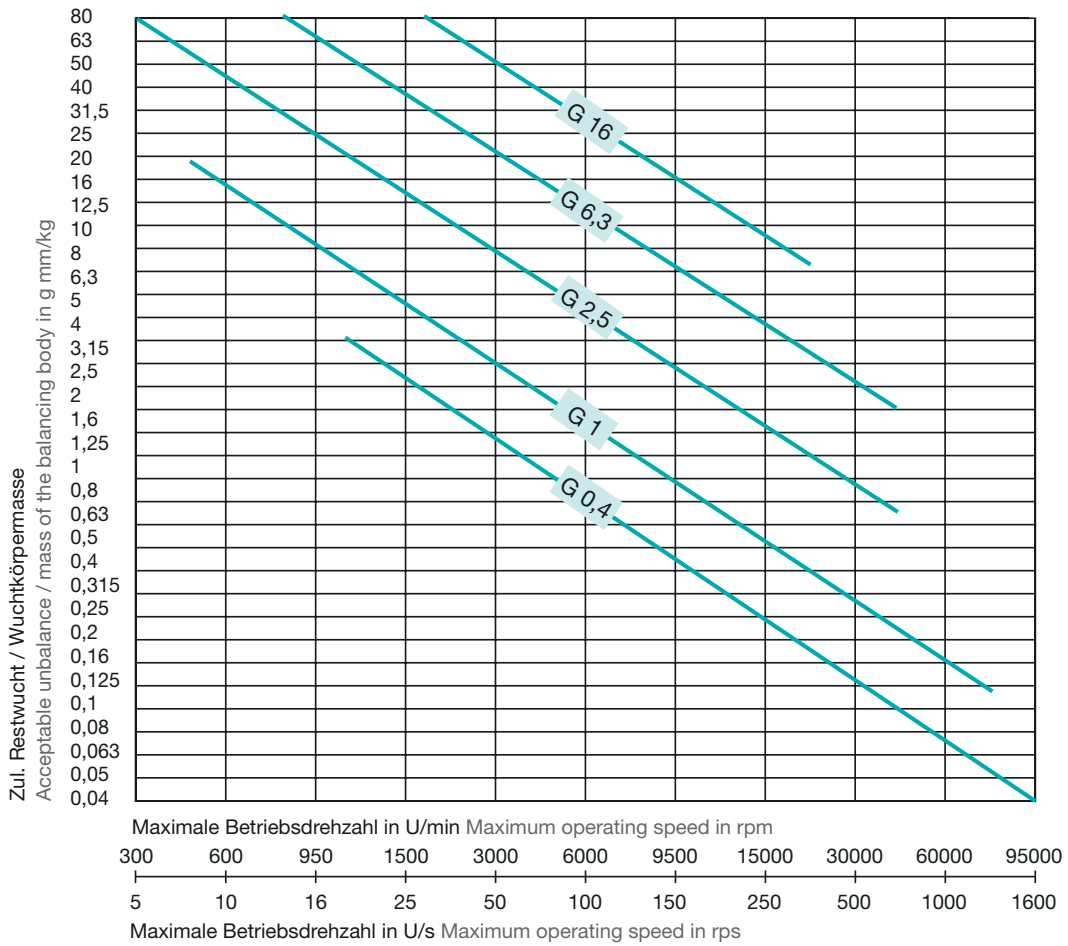
Balancing:
All Bilz HSK tool holders are design prebalanced and fine-balanced to the best possible and reproducible balancing quality after grinding.

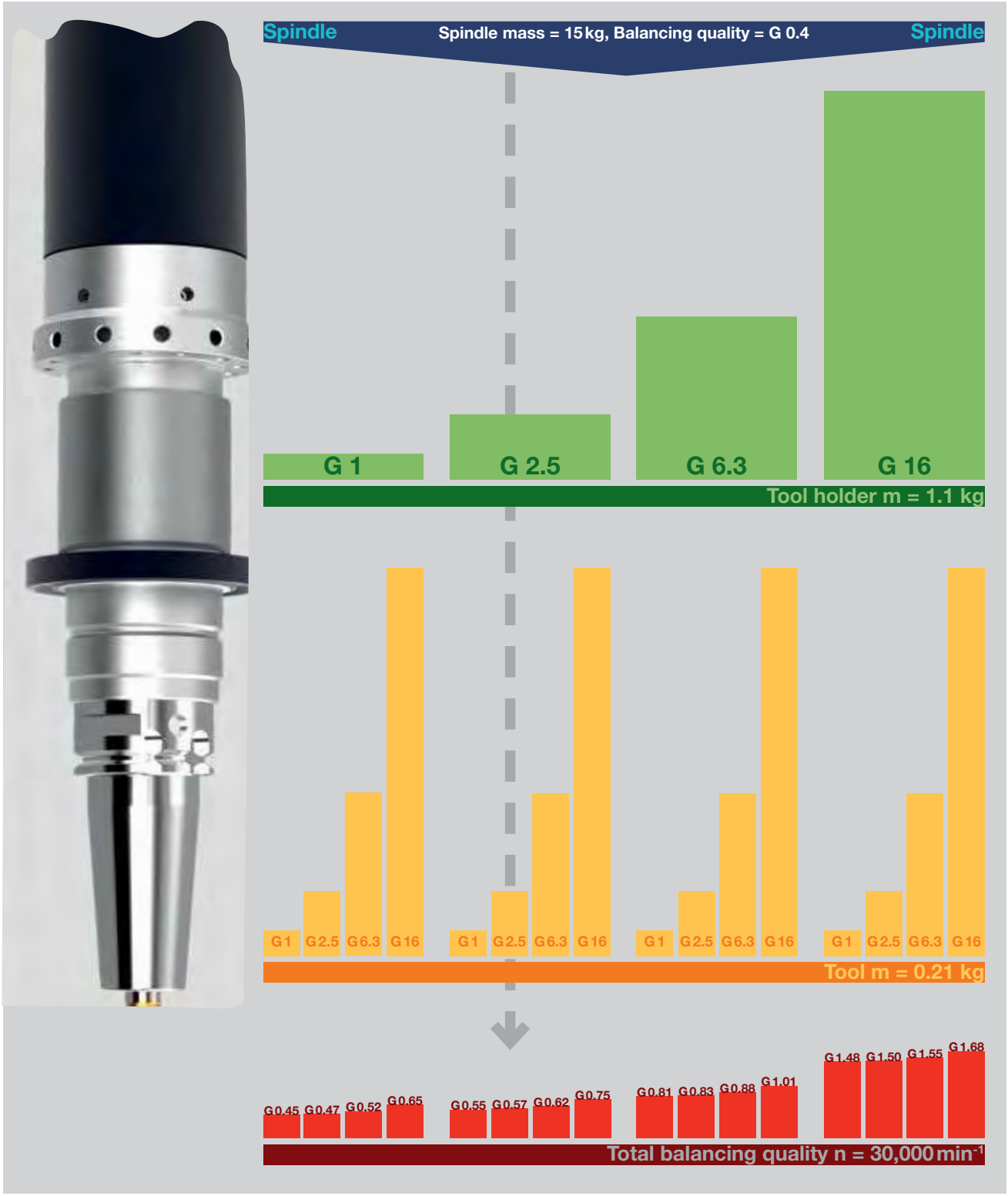
HSK-A	HSK-C	HSK-E	HSK-F
< 1.6 gmm/kg	< 1.6 gmm/kg	< 1.0 gmm/kg	< 1.0 gmm/kg

Tool Holders Taper ISO 7388-1

Balancing quality:
All Bilz ISO tool holders are design prebalanced and fine-balanced to the highest possible reproducible balancing quality < 1.6 gmm/kg after grinding.

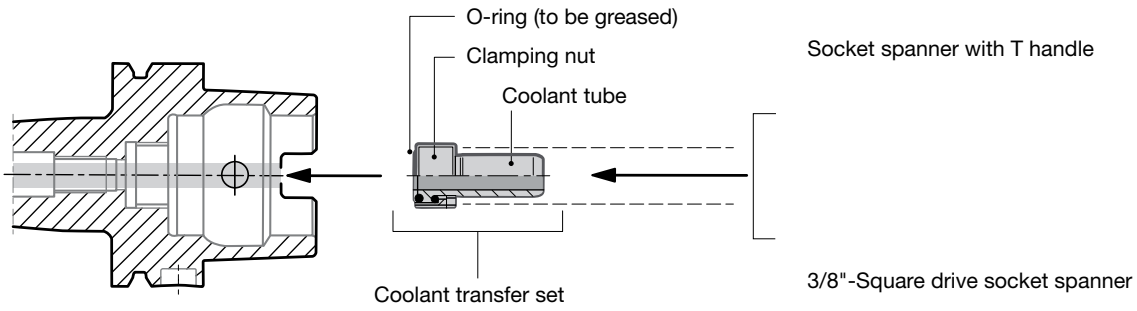
CAT 40	CAT 50	BT 30	BT 40
< 1.6 gmm/kg	< 1.6 gmm/kg	< 1.6 gmm/kg	< 1.6 gmm/kg




Spindle
Spindle mass = 15 kg, Balancing quality = G 0.4
Spindle
G 1
G 2.5
G 6.3
G 16
Tool holder m = 1.1 kg
G1 G2.5 G6.3 G16
G1 G2.5 G6.3 G16
G1 G2.5 G6.3 G16
G1 G2.5 G6.3 G16
Tool m = 0.21 kg
G0.45 G0.47 G0.52 G0.65
G0.55 G0.57 G0.62 G0.75
G0.81 G0.83 G0.88 G1.01
G1.48 G1.50 G1.55 G1.68
Total balancing quality n = 30,000 min-1

1. The HSK shank must be clean and free from swarf and damage
2. Grease the O-rings before assembly.
3. Completely insert the coolant transfer set (coolant tube, clamping nut and 2 O-rings) centrically into the HSK.
4. Screw in the coolant transfer set/unit.
5. Check the coolant tube for radial movement.

Assembly Instructions Coolant Transfer Set 4949



Maximum torque for coolant adapter		
HSK - Ø	Ø D of the adapter	Max. torque [Nm]
HSK 32	6	7
HSK 40	8	11
HSK 50	10	15
HSK 63	12	20
HSK 80	14	25
HSK 100	16	30

Lightly grease the O-rings before assembly



diameter range		tolerances				
dimensions in (mm)		h4	h5	h6	h7	examples
from to	1 3	0 –0.003	0 –0.004	0 –0.006	0 –0.010	for our 3mm ThermoGrip holder
above to	3 6	0 –0.004	0 –0.005	0 –0.008	0 –0.012	for our 5mm ThermoGrip holder
above to	6 10	0 –0.004	0 –0.006	0 –0.009	0 –0.015	for our 1/4" ThermoGrip holder
above to	10 18	0 –0.005	0 –0.008	0 –0.011	0 –0.018	
above to	18 30	0 –0.006	0 –0.009	0 –0.013	0 –0.021	for our 3/4" ThermoGrip holder
above to	30 50	0 –0.007	0 –0.011	0 –0.016	0 –0.025	
above to	50 65	0 –0.008	0 –0.013	0 –0.019	0 –0.030	

Tool Clamping Options and Values | Technical Information

CHARACTERISTIC	END MILL HOLDER	DA COLLET CHUCKS	SC COLLET CHUCKS	ER COLLET CHUCKS
PRECISION Toolholder precision is based on run out or TIR from centerline on rotation axis at the shank and cutting tool tip/edge	1 Lowest precision due to bore tolerances, diametrical clearance and side lock screw forces.	1 Lower precision due to design and gripping accuracy.	2 Single angle design lends itself to high gripping strength and accuracy.	3 Highest single angle collet accuracy and solid carbide tool shank grip.
VERSATILITY Expanse of use is based on the capability to clamp multiple tool shank diameters and styles	1 One size per tool limited to same size tool shank.	3 The DA (double angle) collet system has three collet size ranges accommodating shank sizes to 3/4" maximum diameter.	5 SC (PG or TG) single angle collet systems have three series sizes accommodating tool shank sizes to a maximum of 1.500" diameter tool shank.	5 ER collet system is based on metric nominal sizes and has a tool angle different than the SC collet system. ER collets are available in six different sizes and can accommodate tool shanks to a maximum of 1.181" diameter shank.
TOOL CLAMPING RIGIDITY How rigid is the cutting tool shank secured in the body of the holder under cutting tool loads and RPM changes.	1 Minimal rigidity due to set screw design clamp cutting tool shank off center.	2 Median tool rigidity due to limit tool shank clamping force of DA collet design.	4 Best collet grip strength due to design. 3 to 1 torque value on tool shank.	3 Good collet grip strength due to design. 2 to 1 torque value on tool shank.
EASE OF USE Ease of use is based on the simplicity of the "clamping system" to be assembled and disassembled with the cutting tools.	4 1 or 2 set screws required to secure tool shank in tool holder.	3 May assemble tool, collet and collet nut in any sequence.	2 Requires collet to be inserted in collet nut before tool shank can be inserted into collet and then into tool holder body.	2 Requires collet to be inserted in collet nut before tool shank can be inserted into collet and then into tool holder body.
RELIABILITY How reliable is the "clamping system" to maintain the required optimal precision for the assembled system.	3 End mill holders require minimal maintenance other than ID bore integrity.	3 Regular cleaning of collet surface and collet body surfaces. Care of collets is most critical.	3 Regular cleaning of collet surface and collet body surfaces. Care of collets is most critical.	3 Regular cleaning of collet surface and collet body surfaces. Care of collets is most critical.
HIGH RPM/ TOOL BALANCE As machining RPM increase, tool balance is important. Value based on ability to maintain tool balance at high RPM.	1 End mill holders by design are unbalanced and unstable at high RPM.	1 Lack of collet precision design and collet nut design makes DA system weak at high RPM.	2 Concentric collet and collet body design allow for moderate RPM use but collet nut design limits high RPM usage.	3 Concentric collet and collet body design allow for moderate RPM use but collet nut design limits high RPM usage.
ECONOMY/COST Cost or purchased value of the tool clamping system.	5 Lowest cost tool holder system.	4 Lowest cost collet system due to lower precision system.	4 Median price tool holding system but must secure collet as well TG/PG collets price similar to ER collets.	3 Median price tool holding system but must secure collet as well TG/PG collets price similar to ER collets.
VALUE Value of the productivity and tool performance gained from the assembled system.	1 While the most economical purchase, this tool style can be the most costly due to it's low TIR and limited applications of tool sizes and RPM capabilities.	2 While this was the "original collet chuck system" it is limited in its accuracy and rigidity. It is great for narrow clearances and drilling applications.	2 This product was the 2nd generation of collet systems and is widely used today. Its gripping strength is the highest of SC or ER collet systems. One issue still remains and that is the shank engagement required for carbide shank tools.	3 The most flexible and accurate of the collet systems that are considered "industry standard" today. Good tool shank gripping strength and high accuracy with regards to TIR.

HP COLLET CHUCKS	MILLING CHUCKS	HYDRAULICS CHUCKS	SHRINK FIT	CHARACTERISTIC
4 Highest single angle collet accuracy with close tolerance collet ID sizes for TIR improvement	4 Precision achieved is based on collet accuracy and torque value of assembled system	5 High TIR accuracy due system design and manufacturing tolerances to rotational centerline	5 Highest TIR accuracy of all clamping systems.	**PRECISION** Toolholder precision is based on run out or TIR from centerline on rotation axis at the shank and cutting tool tip/edge
4 Same as ER collet system but with highest TIR accuracy through a controlled manufacturing process.	4 Reduction collet system designed to operate in conjunction with the roller bearing clamping system design in the collet nut	1 Single size ID per tool clamping system. Accommodates a single shank size	1 Single size ID that accommodates a single size tool shank requiring H6 or H7 shank tolerance	**VERSATILITY** Expanse of use is based on the capability to clamp multiple tool shank diameters and styles
3 Good collet grip strength due to design. 2 to 1 torque value on tool shank. Collet collapse restriction limits rigidity	4 Strongest gripping collet system. Gripping strength is nearest thermal clamping strength	4 Good clamping rigidity for “Z” axis use only. Radial loads can damage internal hydraulic sleeve design.	5	**TOOL CLAMPING RIGIDITY** How rigid is the cutting tool shank secured in the body of the holder under cutting tool loads and RPM changes.
1 Requires collet to be inserted in collet nut before tool shank can be inserted into collet and then into tool holder body. HP ER collets have limited collet collapse range.	3 Reduction collet system.	2 Tool insertion is completed and then pressure clamp screw is adjusted to increase “hydraulic” camp forces surrounding the sleeve holding the tool shank.	4 Requires shrink fit machine to heat the tool clamping bore allowing tool shank insertion.	**EASE OF USE** Ease of use is based on the simplicity of the “clamping system” to be assembled and disassembled with the cutting tools.
4 Regular cleaning of collet surface and collet body surfaces. Care of collets is most critical.	4 Regular cleaning of collet surface and collet body surfaces. Care of collets is most critical.	4 Regular cleaning of bore required. Only solid and cylindrical shanks with no voids can be used in this system.	5 No mechanical parts to wear out or be maintained.	**RELIABILITY** How reliable is the “clamping system” to maintain the required optimal precision for the assembled system.
4 Concentric collet and collet body design allow for moderate RPM use but collet nut design limits high RPM usage.	3 Concentric collet and collet body design allow for moderate RPM use but collet nut design limits high RPM usage.	4 Body design and “fluid clamping” system limits high RPM usage.	5 No mechanical parts and designed for balance stability at high RPM.	**HIGH RPM/ TOOL BALANCE** As machining RPM increase, tool balance is important. Value based on ability to maintain tool balance at high RPM.
2 Median price tool holding system but must secure collet. HP (PG/TG HP or ER HP) are higher cost than standard collets.	2 Higher cost of holder due to design and clamping system.	5 Most expensive tool clamping system.	3 Median price of tool holder but shrink fit machine needs to be purchased to support the system.	**ECONOMY/COST** Cost or purchased value of the tool clamping system.
4 Same as the ER collet system but with higher TIR accuracy. Much more costly collets that standard ER style collets.	4 Great tool shank gripping strength and excellent TIR accuracy. Excellent value for large shank tools and high radial tool loads when using heavy feed rates. Large nose limits clearances in pockets.	3 Highest accuracy for “Z” axis drilling. Expensive tool that usually needs replacement every 3- 5 years. Limited uses for end milling as radial lows must be light to reduce risk of damaging holder bore.	5 After investment is made, this system offers all the productivity benefits for milling, drilling, and reaming. Most rigid, highest TIR accuracy, and best tool gripping strength of all clamping systems. Best overall value when considering tooling cost with productivity and part accuracy achievements.	**VALUE** Value of the productivity and tool performance gained from the assembled system.

Bilz ThermoGrip® Technology

Bilz ThermoGrip technology began in 1998 with the introduction of our first induction coil shrink fit product. Since this date, Bilz has been a market-leader in shrink fit technology innovation and development under the brand name “ThermoGrip”. Bilz is committed to continuous improvement and development of the shrink fit technology utilizing the induction coil technology for tool clamping.

As Bilz continues into the 21st Century, we are committed to further development and improvement of the ThermoGrip shrink fit technology as we strive to make the system more efficient, higher quality, and more energy efficient. ThermoGrip technology has proven it is the right tool clamping system for every cutting tool application where maximum productivity, highest part finish, and lower manufacturing cost are your goals.

With the Bilz ThermoGrip system, it is all about the centerline on the “tool unit” – tool clamping and cutting tool assembly, in other words optimization of cutting parameters through the accurate cutting edge flight path.

KEYS BENEFITS OF THE BILZ THERMOGRIP TOOL CLAMPING SYSTEM:

- Most accurate TIR of any tool clamping system
- Highest quality tool product material
- Most accurate grind – Bore, Outside Dimensions, and taper
- Most accurate and tightest tool clamping bore in diameter, axial run-out, and bore tolerance
- Induction Coil Technology
- Broadest product offering – shanks, gage lengths, styles, bore diameters

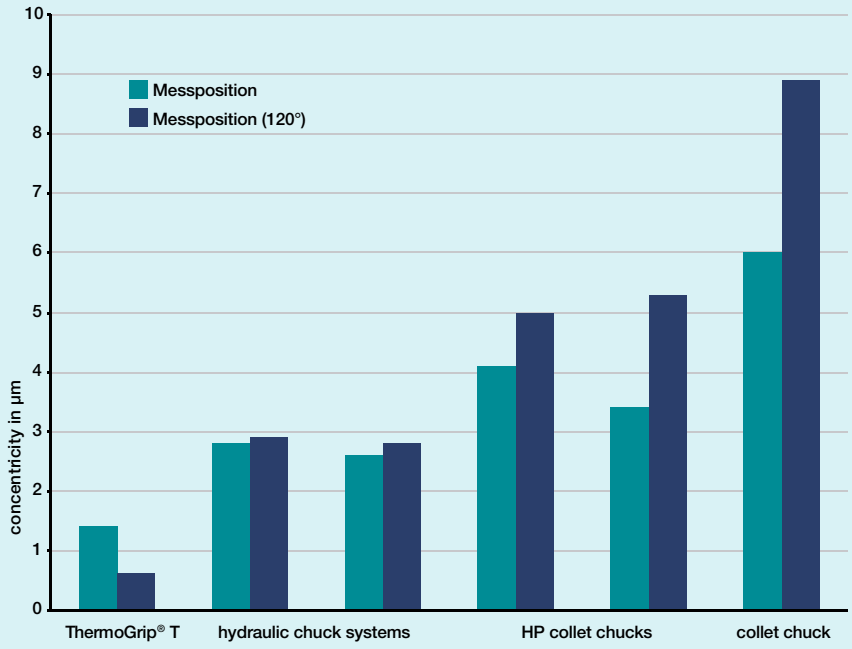
“T” STYLE	“TSF” STYLE	“THD” STYLE	“TSFV” STYLE	“TER” STYLE	JETSLEEVE
Standard	Slimline	Heavy-duty	Slimline Extension	Thermo ER collet	New Innovation

- Fastest shrink and cooling cycle time in the market – Liquid Emulsion system
- Highest balance standard of all shrink fit technology
  12,000rpm to 42,000rpm depending on shank taper size and style
- Ease of use – ease of operation
  Operator safety – no “hot” chucks to handle – safest system on the market
  Liquid Emulsion guarantees cold tool
  Not contact with cooling adapters and cutting tool edges
- Highest cutting tool rigidity of any tool clamping system
  No moving parts, no mechanical connection
- Use with High Speed Steel shank and/or Carbide shank cutting tools
  Bilz patented Pole Disc and Bilz patented ID Counterbore allows Bilz ThermoGrip to shrink both shank materials. More importantly it allows the user to extract the used cutting tool from the shrink chuck; this is not always guaranteed from other manufacturers who do not benefit from the patented counter-bore.

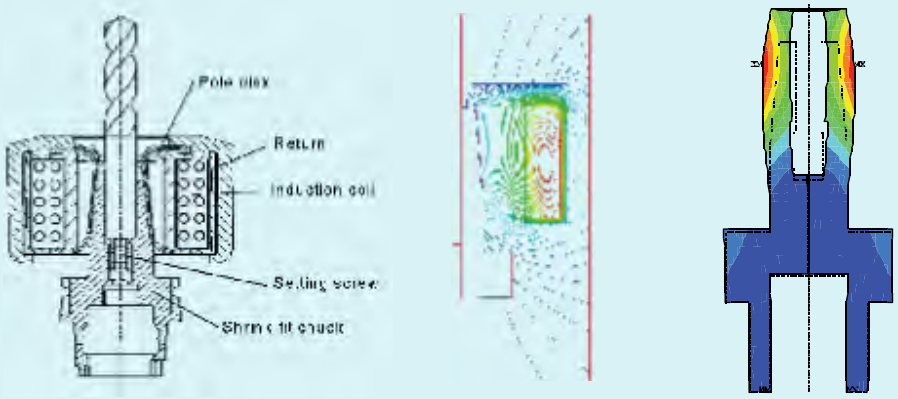
WHY BILZ THERMOGRIP TECHNOLOGY FOR YOUR MANUFACTURING APPLICATIONS?

- Longer cutting tool life
- Improved workpiece surface finish quality
- Machine spindle friendly – less wear on machine spindles
  Best tool balance of any clamping system on the market
  Reduce/eliminate spindle/tool harmonics
- Maintenance of machining tolerances for longer periods
  Strongest tool rigidity – reduce cutting tool wear, increased cutting tool life
  Most accurate TIR – rotational accuracy unsurpassed by any other mechanical clamping system
  Maximized operator safety, never any contact with hot chucks!

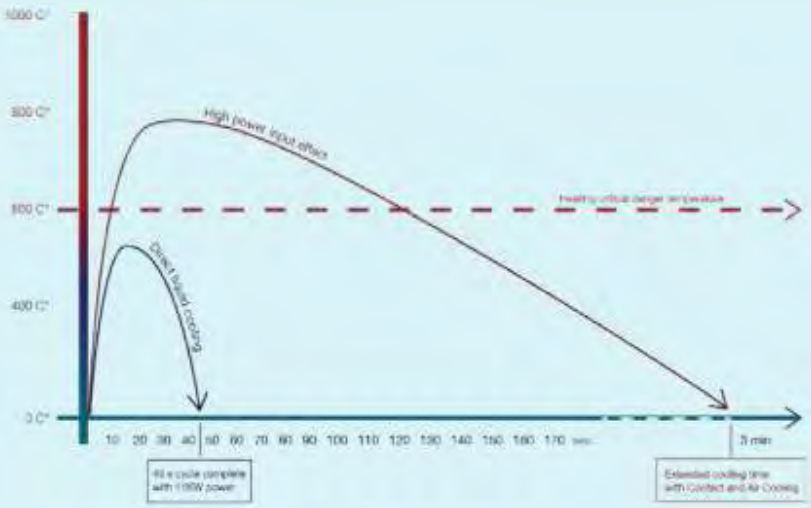
MOST ACCURATE AND TIGHTEST TOOL CLAMPING BORE IN DIAMETER, AXIALT RUN-OUT, AND BORE TOLERANCE



INDUCTION COIL TECHNOLOGY

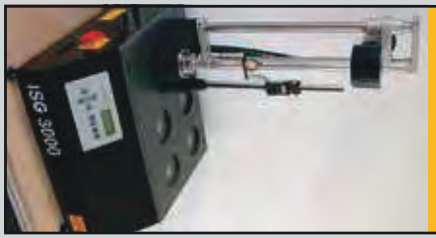


LIQUID EMULSION SYSTEM



1998

Metav
First shrink machine



1999

ISG 3000

EMO
First table machine worldwide-interchangeable coil technique
For the first time HSS shanks are also shrinkable along with solid carbide shanks.

ThermoGrip®

2000

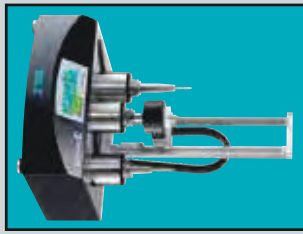
ISG 2000

First compact Bilz table machine
230 V connection, - 3,6 kW power

2001

ISG 3100

For the first time clamping range possible up to 50 mm
Innovative graphic display



2002

ISG 3200

For the first time all diameters are shrinkable with only 1 coil from 3 mm – 32 mm. Generator power 10 kW

2003

ISG 2200

Compact machine with parameter handling for comfortable shrinking.
Generator power 8 kW

BILZ

BILZ

2004

ISVG 4200 PR

The high end shrinking system with precise tool presetting

ISG 2200 WK

First water cooling system worldwide

TSF

First slim shrink chucks TSF
for the mold and die industry

ISG 3200 WK

The big brother of the water cooling system!

2007

AllGrip

AllGrip System
For the first time shrinking of h9 shanks in the range of 3 mm up to 6 mm is possible.

2008

TSFV

Slim shrink extensions
Lengths of 110 mm up to 250 mm available

2009

TER

The innovation for driven tools
Collet similar to ER geometry

2011

ISG3400 HL

The heavy weight champion – shrinking of tools up to 40 kg and for the first time also up to HSK-A160

BILZ

we hold our promise

We'll Take You Where You Need to Go.

All of our products are "best in class" technologies that help our customers remain competitive and profitable. We have something that can help you too! Learn more at **www.bilzusa.com**.

The Latest Technology. The Best Quality. Extensive Product Support.

We hold our promise in three important ways: First, by delivering the most advanced tool clamping technology available; Second, by maintaining the highest level of quality; Third, by providing the strongest product, application and engineering support in the industry. **Let us prove it! Bilz Tool Company, Inc.**

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2/2014