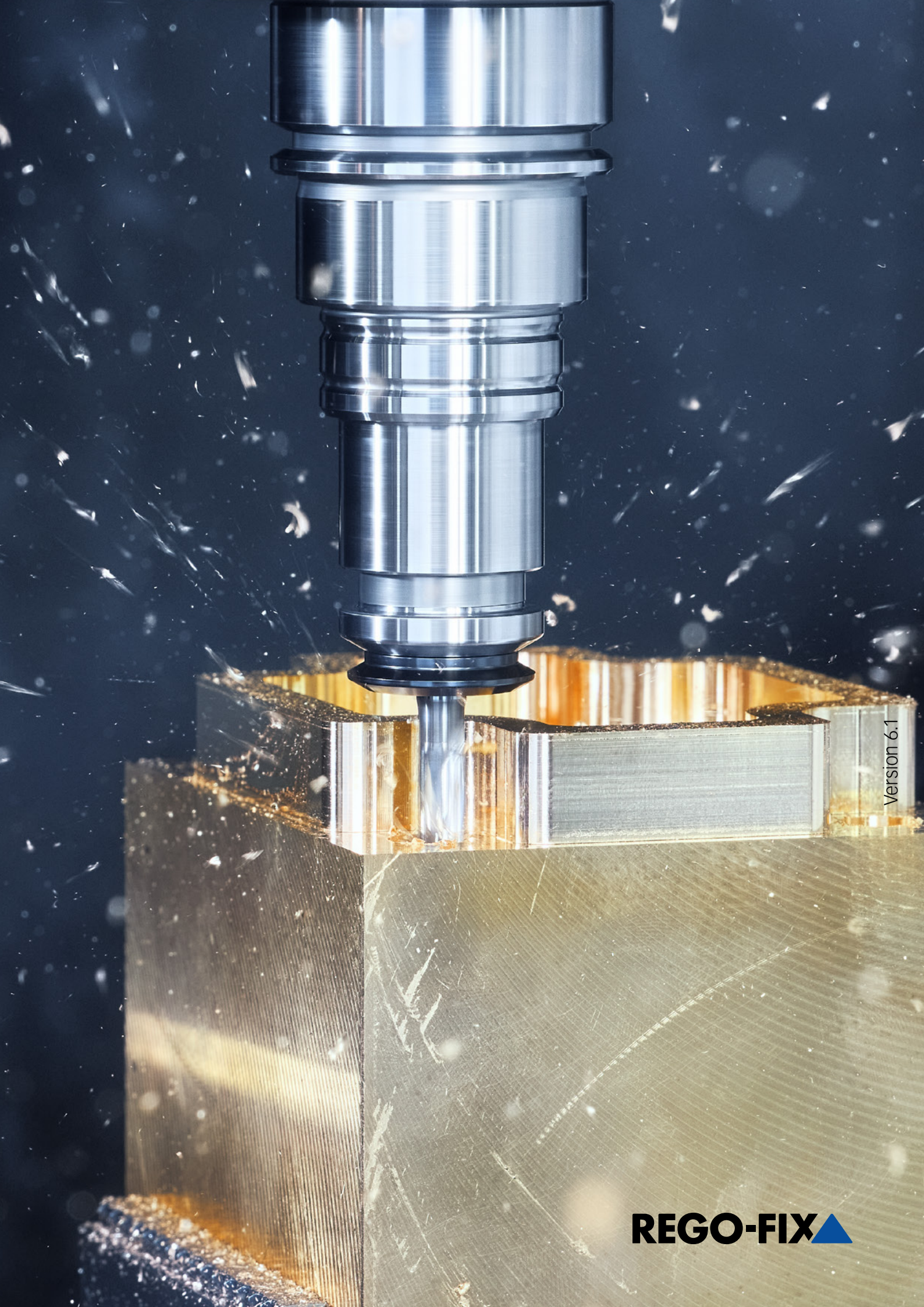




Version 6.1



REGO-FIX▲

High-performance toolholding from the inventor of the ER collet

Founded in 1950, REGO-FIX is an internationally active family business with over 350 employees. REGO-FIX, located in Tenniken in the Basel region of Switzerland, has been producing and selling high-precision tool clamping systems for over 75 years.

Sales partners in 50 countries and international subsidiaries ensure global distribution. The products are successfully implemented in the automotive, aerospace, mold and die, machine tool, medical, telecommunications and watchmaking industries.

A Swiss success story Its long-term business success is based on promoting employees and enabling them to shape the future together in a fast-paced environment. REGO-FIX

has a great mutual respect and maintains cross-cultural cooperation with the aim of developing innovative toolholding solutions together. Ongoing investments in research and development also lead to constantly new products and ensure a competitive product range. The trademark with the "triangle" is steadily gaining worldwide recognition: Today it is known throughout the industry and stands as a quality label for reliable and innovative products made in Switzerland!



Products that convince REGO-FIX unites different toolholding systems: the ER System, nowadays established worldwide as an industry standard according to DIN 6499, is considered to be the original from the inventor. The micRun® MR system is a trend-setting further development of the successful ER System. Thanks to a guaranteed overall system concentricity of $\leq 3\mu\text{m}$ at $3\times D$, it is the perfect solution for all high-performance applications. The powRgrip® system offers excellent concentricity, high vibration damping and simple and safe handling. The uniTec identifies itself as reliable tooling solutions for traditional machining. The common goal of the four systems is to optimize the machining process and to tailor the specific strengths to the individual requirements of modern machining.

Sustainable and successful Focused on the future and successful in the long term: REGO-FIX's sustainability strategy is based on a permanent focus on economic, ecological and social aspects. It represents the driver for sustainable corporate development and effectively promotes the corporate vision.



Driving innovations for over 75 years

Since 1950, we turn innovative thoughts into revolutionary products.



Standing together makes us stronger We manufacture products we can be proud of. Together we aim for excellence in every step we take: from the inspiring idea to the finished product.



Supreme Swiss quality standard Our products marked Swiss made are designed and manufactured at our headquarters in Tenniken, Switzerland.

Your application is our motivation

Rediscover modern machining Experience high-performance machining thanks to powRgrip®'s excellent runout, high vibration damping and easy as well as secure handling. Enjoy the advantages for high speeds, difficult-to-handle work materials and generally demanding applications.



The original from the inventor When REGO-FIX first introduced the ER System in 1972, it took the machining world by storm. With the DIN 6499 standardization twenty years later, the REGO-FIX ER collet became the industry standard. Today, the ER System is still the most used toolholding system.



The logical evolution A grooveless clamping nut for optimal vibration and a total system runout of $\leq 3\mu\text{m}$ at 3xD offer incomparable precision in a collet-based system. The inventor reinvents the ER collet.



Tradition is a matter of class The outstanding product design paired with our experienced engineering offer a wide program of toolholders for traditional machining applications. No compromise for highest quality needs.



Making precision measurable Precision is the foundation of high-quality machining. Our solutions make process reliability measurable: concentricity, clamping forces and tool positions are recorded reliably. Our measurement systems are optimally matched to production, intuitive, robust and uncompromisingly precise – for maximum performance in the clamping process.



Cleanliness for maximum performance Precision starts at the interface. Our products ensure clean connections between the tool and clamping system – the basis for consistent clamping force, maximum concentricity and long tool life. Dust, oil residues and microparticles are quickly, effectively and reliably removed.



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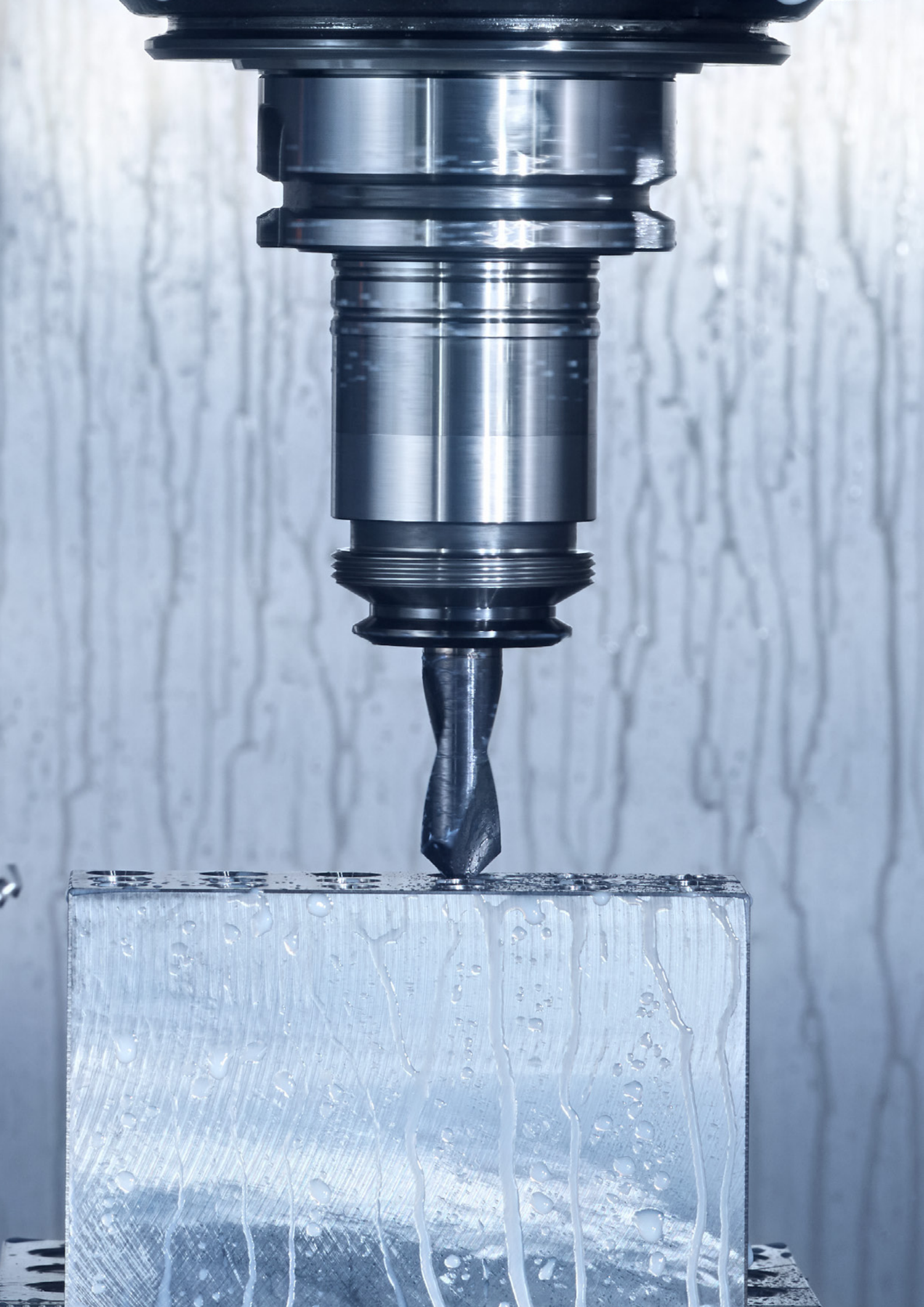
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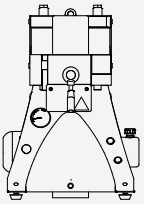
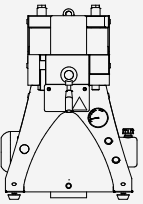
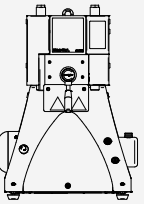
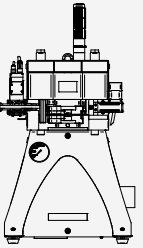
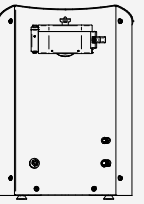
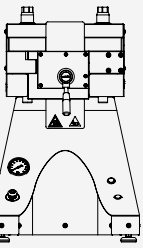
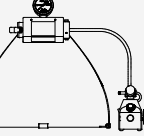
Technical information

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Experience the extensive powRgrip® offering

Clamping units

PGU 9500	PGU 9800	PGU 9900 ^{neo}	PGA 9500	PGS 10 15 25	PGS 48	PGC 2506
						
Page 8	Page 10	Page 12	Page 14	Page 16	Page 18	Page 20

Standard

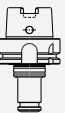
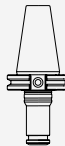
Cylindrical collet- holders

Pullout protection secuRgrip®

Colletholders for tapping

Grinding spindles

Collet adapters

HSK/ PG	SK/ PG	BT/ PG	CAT/ PG	CAPTO/ PG	ISO 20/ PG	CYL/ PG	PG-SG	HSK-A SSY	CYL SSY CYL GSF	HJNZ	PST, WTO, EWS, MT
											
Page 24	Page 32	Page 38	Page 46	Page 50	Page 53	Page 54	Page 56	Page 60	Page 60	Page 62	Page 64

Micro- machining	Standard	Cooling		MMS	Long shanks	Short shanks	Pullout protection secuRgrip®	Collets for tapping	Sealed collet head	Extra-short collets
PG-MB	PG	PG-CF	PG-CB	PG-MQL-N	PG-L	PG-S	PG-SG	PG-TAP	PG-SC	PGST
										
Page 70	Page 71	Page 74	Page 77	Page 80	Page 81	Page 82	Page 84	Page 85	Page 86	Page 87

Precision and optimum vibration dampening saves time and money

Ambitious toolholding Thanks to the unique clamping method, the clamped tools can be used in production quickly and safely. The advanced technology not only increases the work safety for the user, but also reflects our ecological thinking, which manifests itself – among other things – through low energy consumption during the clamping process. The clamping unit clamps the powRgrip® collet into the toolholder with high force.

The pressure fit provided between the collet and toolholder creates a radial force, which is concentrated on the tool shank via the slotted collet and holds the tool safely and with a high degree of concentricity.

The powRgrip® System consists of:

- // High-precision powRgrip® collet
- // powRgrip® toolholder
- // powRgrip® clamping unit (automatic or manual)

How the powRgrip® System works

- // Insert the cutting tool into the powRgrip® collet
- // Insert the powRgrip® collet into the powRgrip® toolholder
- // Clamp collet and cutting tool into the powRgrip® toolholder with a powRgrip® clamping unit PGU (automatic) or PGC (manual)



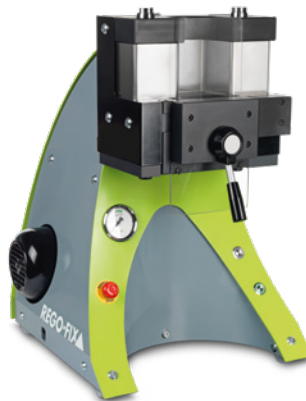
Cutting tool



powRgrip® collet



powRgrip® toolholder



Automatic clamping unit



Manual clamping unit

Toolholding made fast, safe and easy

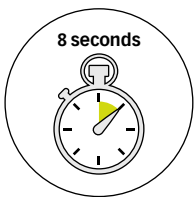
The clamping unit PGU 9500 has been awarded the Red Dot design award for industrial design, highlighting the good usability and outstanding design of the machine.



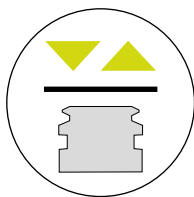
reddot award
honourable mention industrial design



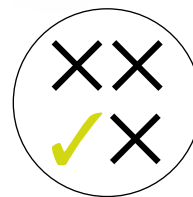
Key advantages



Clamp the tool safely and securely by pushing just one button. The clamping will take 8 seconds, without the use of heat.



Clamp tools with maximum clamping force and best runout in the powRgrip® collet and toolholder.



Smart System – no setting of parameters required. Clamping pressure is controlled by the insertion of the respective clamping insert (APG). There are five clamping inserts (APG) available for the clamping of different collet sizes.

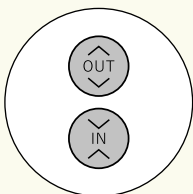
powRgrip® clamping unit PGU 9500

The **PGU 9500** is designed for maximum precision and efficiency, ensuring consistently high clamping force and optimal process reliability. It operates without heat, improving operator safety and reflecting the company's environmental commitment. Thanks to its unique clamping method, clamped tool

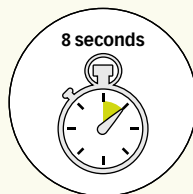
holders can be quickly and safely used in production. With extremely precise concentricity and system-based vibration damping, the powRgrip® system extends tool life while saving time and costs.



Key advantages



Simple 2-button operation:
Intuitive handling for maximum efficiency.



Ready-to-use tools in 8 seconds:
Fast and precise tool clamping.



No heat, no toxic fumes:
Safe clamping process without health risks for the operator.



Best-selling PGU:
Proven technology with top customer satisfaction.

Automatic clamping unit PGU 9500

Clamping inserts APG's for PGU 9500

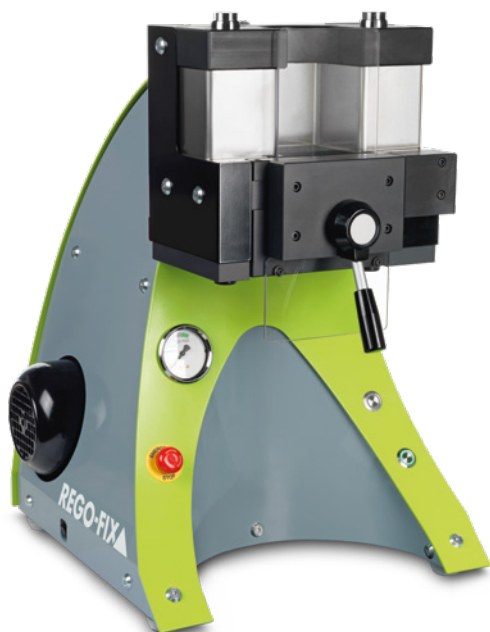
PGU 9500

APG

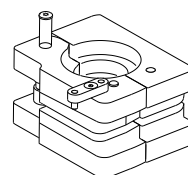
Type	Part no.	Dimensions W x D x H [mm]	Weight [kg]	V / Hz
PGU 9500				
PGU 9500 E	7610.95000	555 x 454 x 648	87	Europe 230V / 50Hz
PGU 9500 A	7610.95100	555 x 454 x 648	91	USA 115V / 60Hz
PGU 9500 J	7610.95200	555 x 454 x 648	91	Japan 100V / 50-60Hz

Clamping inserts APG not included

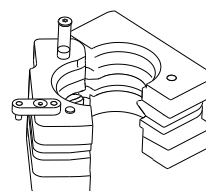
Type	Part no.	Dimensions W x D x H [mm]	Weight [kg]	Use for
Clamping inserts APG (incl. TKCP and CPS)				
APG 906	7611.06900	100 x 95 x 80	3	PG 6
APG 910	7611.10900	100 x 95 x 80	3	PG 10
APG 915	7611.15900	100 x 95 x 80	3	PG 15
APG 925	7611.25900	100 x 95 x 80	3	PG 25
APG 932	7611.32900	100 x 95 x 80	3	PG 32



PGU 9500



APG (closed)



APG (opened)

powRgrip® clamping unit PGU 9800

The **PGU 9800** from REGO-FIX is the logical advancement of the proven PGU 9500, setting new standards in tool clamping technology. Featuring an integrated LED touchscreen display

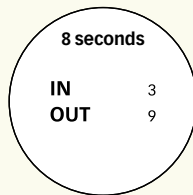
instead of a pressure gauge, it offers even easier operation, monitoring, and analysis.



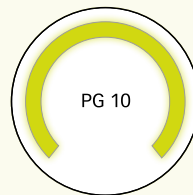
Key advantages



LED touchscreen display:
Displays key information, statistics, and error messages



Helpful usage statistics:
Fast and precise tool clamping.



Display of used PG size:
Clear information for more efficient use.



Easily identifiable error codes:
Faster error diagnosis



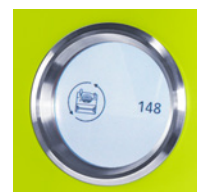
Start screen



"IN" cycles per PG size



Number of mode changes



Total APG changes

Automatic clamping unit PGU 9800

Clamping inserts APG's for PGU 9800

PGU 9800

APG

powRgrip®

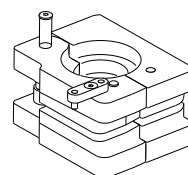
Type	Part no.	Dimensions W x D x H [mm]	Weight [kg]	V / Hz
PGU 9800				
PGU 9800 E	7610.98000	555 x 454 x 648	90	Europe 230V / 50Hz
PGU 9800 A	7610.98100	555 x 454 x 648	95	USA 115V / 60Hz
PGU 9800 J	7610.98200	555 x 454 x 648	95	Japan 100V / 50-60Hz

Clamping inserts APG not included

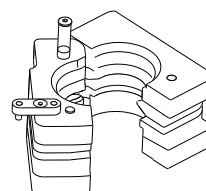
Type	Part no.	Dimensions W x D x H [mm]	Weight [kg]	Use for
Clamping inserts APG (incl. TKCP and CPS)				
APG 906	7611.06900	100 x 95 x 80	3	PG 6
APG 910	7611.10900	100 x 95 x 80	3	PG 10
APG 915	7611.15900	100 x 95 x 80	3	PG 15
APG 925	7611.25900	100 x 95 x 80	3	PG 25
APG 932	7611.32900	100 x 95 x 80	3	PG 32



PGU 9800



APG (closed)



APG (opened)

powRgrip® clamping unit PGU 9900^{neo}

The PGU 9900^{neo} is the first AI-supported powRgrip® clamping unit from REGO-FIX. Thanks to the internet connection, the clamping process is analyzed by our AI in the cloud, and feedback regarding the clamping quality is provided within seconds on the PGU 9900^{neo}. If your system is not properly

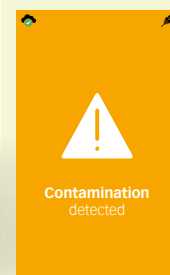
cleaned, damaged, or if other factors affect correct clamping, this is detected by our AI in the cloud and the PGU 9900^{neo} is informed. A clamping operation with optimal quality is confirmed by the ULTRA Press symbol, giving you full confidence in the clamping force and system runout.



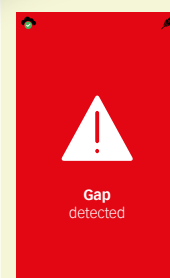
Start screen



Confirmation



Notice

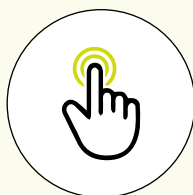


Warning

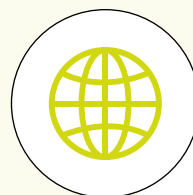
Key advantages



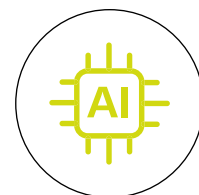
Fulfilled clamping, ensuring highest clamping force at lowest TIR runout – Guaranteed!



Touchscreen display to interact, access data and get video tutorials



Go online by Ethernet, Wi-Fi or LTE/Mobile Network and access your personal dashboard to manage stats, permission groups, charts and cycle information



AI with deep learning technology for best data prediction supported by the REGO-FIX cloud service

Automatic clamping unit PGU 9900^{neo}

Clamping inserts APG's for PGU 9900^{neo}

PGU 9900^{neo}

APG

powRgrip®

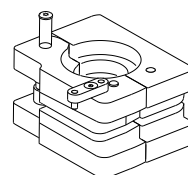
Type	Part no.	Dimensions W x D x H [mm]	Weight [kg]	V / Hz
PGU 9900^{neo}				
PGU 9900 ^{neo} E	7610.99000	555 x 454 x 648	90	Europe 230V / 50Hz
PGU 9900 ^{neo} A	7610.99100	555 x 454 x 648	95	USA 115V / 60Hz
PGU 9900 ^{neo} J	7610.99200	555 x 454 x 648	95	Japan 100V / 50-60Hz

Clamping inserts APG not included

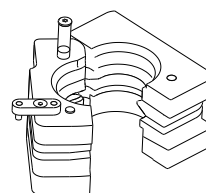
Type	Part no.	Dimensions W x D x H [mm]	Weight [kg]	Use for
Clamping inserts APG (incl. TKCP and CPS)				
APG 906	7611.06900	100 x 95 x 80	3	PG 6
APG 910	7611.10900	100 x 95 x 80	3	PG 10
APG 915	7611.15900	100 x 95 x 80	3	PG 15
APG 925	7611.25900	100 x 95 x 80	3	PG 25
APG 932	7611.32900	100 x 95 x 80	3	PG 32



PGU 9900^{neo}



APG (closed)



APG (opened)

powRgrip® clamping unit PGA 9500

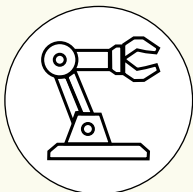
The clamping unit with Ethernet interface for automation systems

The PGA 9500 from REGO-FIX is the powRgrip® clamping unit specifically developed for integration into modern automation solutions. Bidirectional communication with machine controls

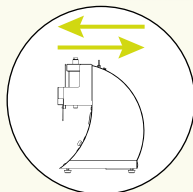
and higher-level automation systems is provided via Ethernet using the OPC UA protocol.



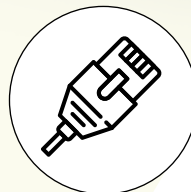
Key advantages



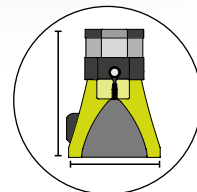
Compatible with robots:
The PGA 9500 can be easily integrated into robotic automation systems, offering maximum flexibility.



Pneumatic or electronic door opening mechanism:
Choose between a pneumatic or electronic mechanism for fast and secure opening of the clamping device.



Bidirectional communication via Ethernet, OPC UA protocol:
The PGA 9500 enables reliable bidirectional communication via Ethernet and the standard OPC UA protocol for precise real-time control.



Compact size – Easy installation:
The compact design allows easy integration into existing automation systems with minimal space requirements.

Automatic clamping unit PGA 9500

Clamping inserts APG's for PGA 9500

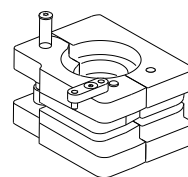
Type	Part no.	Dimensions W x D x H [mm]	Weight [kg]	V / Hz
PGA 9500				
PGA 9500 E	7630.95000	458 x 625 x 797	95	Europe 230V / 50Hz
PGA 9500 A	7630.95100	458 x 625 x 797	95	USA 115V / 60Hz
PGA 9500 J	7630.95200	458 x 625 x 797	95	Japan 100V / 50-60Hz

Clamping inserts APG not included

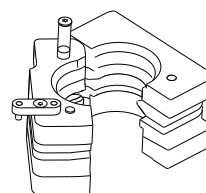
Type	Part no.	Dimensions W x D x H [mm]	Weight [kg]	Use for
Clamping inserts APG (incl. TKCP and CPS)				
APG 906	7611.06900	100 x 95 x 80	3	PG 6
APG 910	7611.10909	100 x 95 x 80	3	PG 10
APG 915	7611.15900	100 x 95 x 80	3	PG 15
APG 925	7611.25900	100 x 95 x 80	3	PG 25
APG 932	7611.32900	100 x 95 x 80	3	PG 32



PGA 9500



APG (closed)



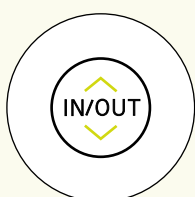
APG (opened)

powRgrip® clamping unit PGS 10|15|25

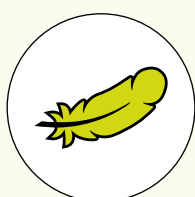
The automatic powRgrip® clamping units for efficient clamping of single powRgrip® sizes



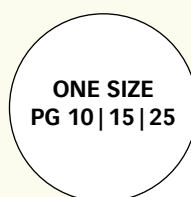
Key advantages



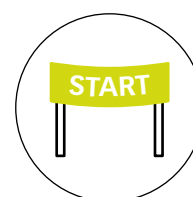
Simple one-button operation:
Tool clamping in just 5 seconds for maximum efficiency.



Lightweight and compact:
Less than 50 kg total weight for flexible use.



Optimized for single sizes:
Perfectly matched to a defined powRgrip® size PG 10 / PG 15 or PG 25.



Automatic entry-level unit:
Fully automatic clamping solution for simple and safe operation.

Automatic clamping unit PGS 10|15|25

Type	Part no.	Dimensions W x D x H [mm]	Weight [kg]	V / Hz
PGS 10				
PGS 10 E	7640.10000	406 x 531 x 591	48	Europe 230V / 50Hz
PGS 10 A	7640.10100	406 x 531 x 591	48	USA 115V / 60Hz
PGS 10 J	7640.10200	406 x 531 x 591	48	Japan 100V / 50-60Hz
PGS 15				
PGS 15 E	7640.15000	406 x 531 x 591	48	Europe 230V / 50Hz
PGS 15 A	7640.15100	406 x 531 x 591	48	USA 115V / 60Hz
PGS 15 J	7640.15200	406 x 531 x 591	48	Japan 100V / 50-60Hz
PGS 25				
PGS 25 E	7640.25000	406 x 531 x 591	48	Europe 230V / 50Hz
PGS 25 A	7640.25100	406 x 531 x 591	48	USA 115V / 60Hz
PGS 25 J	7640.25200	406 x 531 x 591	48	Japan 100V / 50-60Hz



PGS 10/15/25

powRgrip® clamping unit PGS 48

The automatic clamping unit for large diameters



All PG 48 tool holders are supplied with a secuRgrip® nut.

Key advantages



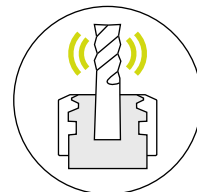
Process-reliable clamping of tools up to Ø 40 mm in just 20 seconds:
Fast and reliable tool clamping for maximum efficiency.



Energy-efficient with large tools:
Low power consumption during both clamping and unclamping.



Maximum clamping force for high torques:
Transmittable torque up to 2000 Nm for demanding machining tasks.



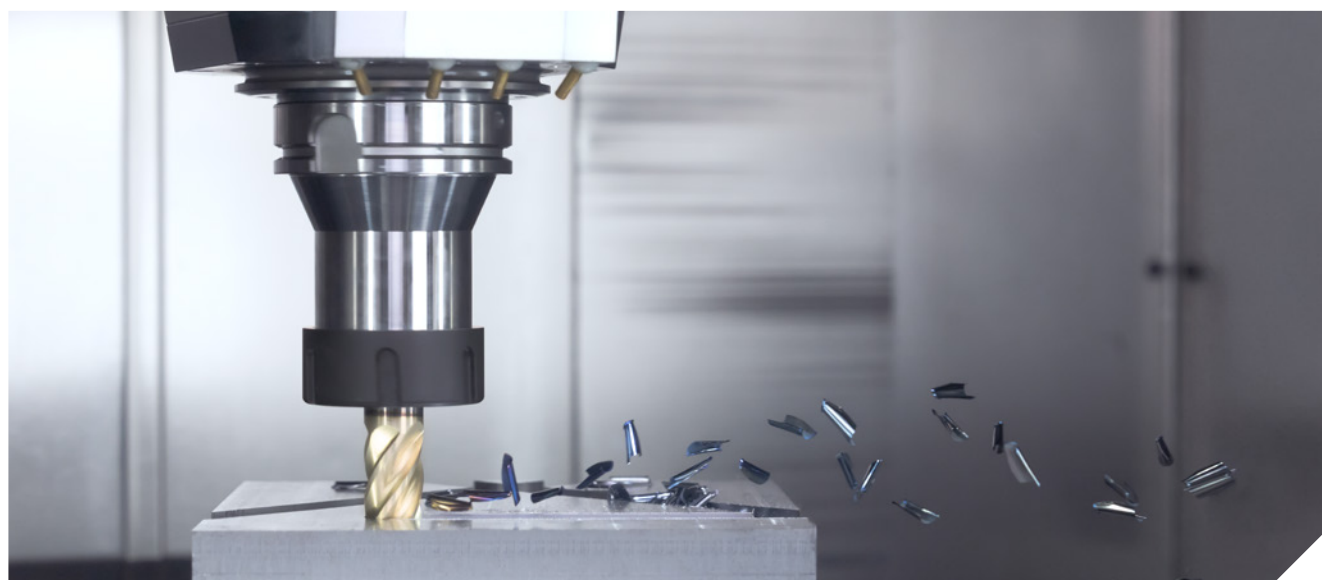
Optimal vibration damping through collet technology:
Reduces vibrations and improves surface quality and tool life.

Automatic clamping unit PGS 48

Type	Part no.	Dimensions W x D x H [mm]	Weight [kg]	V / Hz
PGS 48				
PGS 48 E	7640.48000	495 x 705 x 758	160	Europe 230V / 50Hz
PGS 48 A	7640.48100	495 x 705 x 758	160	USA 115V / 60Hz
PGS 48 J	7640.48200	495 x 705 x 758	160	Japan 100V / 50-60Hz



PGS 48

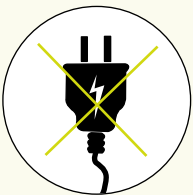


powRgrip® clamping unit PGC 2506

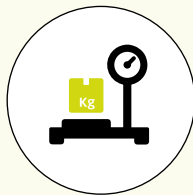
The manual clamping unit – ideal for mobile use and smaller workshops.



Key advantages



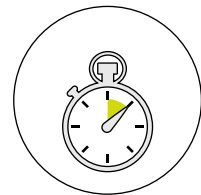
No electrical connection required:
Independent of power sources, perfect for flexible applications.



Lightweight and mobile:
Low weight for easy handling and versatile use.



System benefits at the best price:
The manual clamping unit PGC 2506 offers all the benefits of powRgrip® at the most attractive price.



Ready-to-use tools in 30 seconds

Manual clamping unit PGC 2506

Clamping inserts APC's for PGC 2506

Type	Part no.	Dimensions W x D x H [mm]	Weight [kg]
PGC			
SET PGC 2506	7621.25069	578 x 420 x 43	18,2

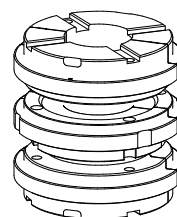
Includes clamping unit, hand pump and stand. APC not included

Type	Part no.	Dimensions Ø [mm]	Weight [kg]	Use for
Clamping inserts APC (incl. TKCP and CPS)				
APC 6*	7622.06000	30 x 60	0,8	PG 6
APC 10	7622.10000	30 x 60	0,8	PG 10
APC 15	7622.15000	30 x 60	0,8	PG 15
APC 25	7622.25000	30 x 60	0,8	PG 25

**APC 6 is only suited for SET PGC 2506. All other APC's can be used for SET PGC 2506 and 2510*



PGC 2506



APC

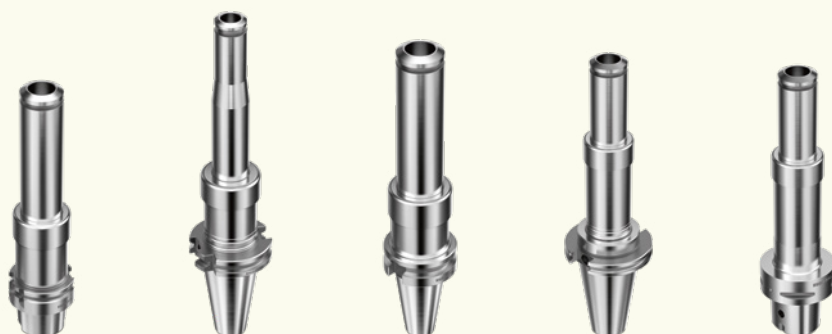
Standard					Cylindrical collet- holders	Pullout protection secuRgrip®	Colletholders for tapping	Grinding spindles	Collet adapters		
HSK/ PG	SK/ PG	BT/ PG	CAT/ PG	CAPTO/ PG	ISO 20/ PG	CYL/ PG	PG-SG	HSK-A SSY	CYL SSY CYL GSF	HJNZ	PST, WTO, EWS, MT
											
Page 24	Page 32	Page 38	Page 46	Page 50	Page 53	Page 54	Page 56	Page 60	Page 60	Page 62	Page 64



powRgrip® toolholders in Swiss quality



	HSK/PG	SK/PG	BT/PG	CAT/PG	CAPTO/PG
Norm	DIN 69893	DIN 69871	MAS 403 JIS B 6339	ASME B5.50	–
ISO	ISO 12164	ISO 7388-1	ISO 7388-2	–	ISO 26623
Balancing	G 2,5 @ 25,000 rpm or ≤1 gmm	G 2,5 @ 25,000 rpm or ≤1 gmm	G 2,5 @ 25,000 rpm or ≤1 gmm	G 2,5 @ 25,000 rpm or ≤1 gmm	G 2,5 @ 25,000 rpm or ≤1 gmm
Chip hole	HSK-A	•	–	•	–
Runout TIR	≤0,003 mm	≤0,003 mm	≤0,003 mm	≤0,003 mm	≤0,003 mm
Taper accuracy	DIN ISO	AT3	AT3	AT3	ISO 26623
Form A + AD	–	•	•	•	–
Form AD + B	–	optional	optional	optional	–
secuRgrip®	optional	optional	optional	optional	optional
REGO-PLUS available	–	•	•	•	–



	HSK-A / PG XL	SK / PG XL	BT / PG XL	CAT / PG XL	CAPTO / PG XL
Norm	DIN 69893	DIN 69871	MAS 403 JIS B 6339	ASME B5.50	–
ISO	ISO 12164	ISO 7388-1	ISO 7388-2	–	ISO 26623
Balancing	G 2,5 @ 5,000 rpm	G 2,5 @ 5,000 rpm	G 2,5 @ 5,000 rpm	G 2,5 @ 5,000 rpm	G 2,5 @ 5,000 rpm
Chip hole	HSK-A	•	–	–	–
Runout TIR	≤0,01 mm	≤0,01 mm	≤0,01 mm	≤0,01 mm	≤0,01 mm
Taper accuracy	DIN ISO	AT3	AT3	AT3	ISO 26623
MFD*	•	•	•	•	•
Form A + AD	–	•	•	•	–
Form AD + B	–	optional	optional	optional	–
secuRgrip®	optional	optional	optional	optional	optional

*Micro friction dampening technology

HSK toolholders

Designed for rotating applications, all our HSK toolholders are suited for high-speed applications where consistent performance is key.

DIN 69893/ISO 12164

Features and benefits

Total system runout TIR $\leq 3 \mu\text{m}$ @ 3xD

Our holistic system consists of a powRgrip® toolholder and collet. All components together ensure best runout and accuracy.

Toolholder runout TIR $\leq 1 \mu\text{m}$

Measured from collet cavity to outer taper.

Surface finish max. Ra 0.25

Achieve high clamping force and high transferable torque.

Hi-Q® balancing system

REGO-FIX HSK/PG toolholders are balanced to G 2.5 @ 25,000 rpm / <1gmm. Type H toolholders are ready to accept Hi-Q® balancing rings which allow precision-balancing of the system including cutting tool up to 80,000 rpm depending on the balancing rings used.

XL toolholders

Runout TIR $\leq 10 \mu\text{m}$

100% balanced to G 2.5 @ 5,000 rpm.

Vibration damping

Our holders offer excellent vibration damping to sustain a high surface finish and can prevent cutting force alterations.

Matched tooling system for best fit

For highest precision and best results the entire machining system counts. Therefore our components are carefully matched for optimum fit and accuracy. This guarantees the best runout and balance.

ID chip hole (only HSK form A)

In accordance with DIN 69873 for 10 mm diameter. Other HSK-forms available on request.

Accessories are not included in delivery. Other XL sizes available on request.

Balancing specifications

HSK-EZ / ATC 15	balanced to 90,000 rpm
HSK 20	balanced to 90,000 rpm
HSK 25	balanced to 90,000 rpm
HSK 32	balanced to 60,000 rpm
HSK 40	balanced to 45,000 rpm
HSK 50	balanced to 36,000 rpm
HSK 63	G 2.5 @ 25,000 rpm
HSK 80	G 2.5 @ 25,000 rpm
HSK 100	G 2.5 @ 25,000 rpm
HSK 125	G 2.5 @ 25,000 rpm



Expert advice

For all HSK-A and HSK-E form toolholders a range of coolant tubes (KSR) is available.

For KSR part numbers please refer to page 345.

HSK-A toolholders

HSK-AB	HSK-A
ISO 12164	DIN 69893
compatible	ISO 12164

Type	Part no.	Dimensions [mm]						Accessory
		BD1	BD2	BD3	LPR	LB1	LB2	FWR *
HSK-A 32								
HSK-A 32/PG 10 x 060	2532.71020	16	–	–	60	–	–	–
HSK-A 32/PG 15 x 075	2532.71530	24	–	–	75	–	–	–
HSK-A 40								
HSK-A 40/PG 6 x 048	2540.70610	10	–	–	48	–	–	–
HSK-A 40/PG 6 x 080 H	4540.70640	10	–	–	80	–	–	225
HSK-A 40/PG 10 x 062	2540.71020	16	–	–	62	–	–	–
HSK-A 40/PG 10 x 080 H	4540.71040	16	–	–	80	–	–	225
HSK-A 40/PG 10 x 100 H	4540.71050	16	–	–	100	–	–	225
HSK-A 40/PG 10 x 120 H	4540.71060	16	–	–	120	–	–	225
HSK-A 40/PG 15 x 074	2540.71530	24	–	–	74	–	–	–
HSK-A 40/PG 15 x 080 H	4540.71540	24	–	–	80	–	–	285
HSK-A 40/PG 15 x 100	4540.71550	24	–	–	100	–	–	–
HSK-A 40 / PG 25 x 090	2540.72540	40	–	–	90	–	–	–
HSK-A 40/PG 25 x 100 H	4540.72550	40	–	–	100	–	–	405
HSK-A 50								
HSK-A 50/PG 10 x 080 H	4550.71040	16	–	–	80	–	–	285
HSK-A 50/PG 10 x 100 H	4550.71050	16	–	–	100	–	–	285
HSK-A 50/PG 10 x 120 H	4550.71060	16	–	–	120	–	–	285
HSK-A 50/PG 15 x 080 H	4550.71540	24	–	–	80	–	–	285
HSK-A 50/PG 25 x 090 NL	2550.72540	40	–	–	90	–	–	–
HSK-A 50/PG 25 x 100 H	4550.72550	40	–	–	100	–	–	405
HSK-A 63								
HSK-A 63/PG 6 x 080 H	4563.70640	10	–	–	80	–	–	225
HSK-A 63/PG 10 x 080 H	4563.71040	16	–	–	80	–	–	325
HSK-A 63/PG 10 x 100 H	4563.71050	16	–	–	100	–	–	325
HSK-A 63/PG 10 x 120 H	4563.71060	16	–	–	120	–	–	325
HSK-A 63/PG 10 x 160 H	4563.71080	16	–	–	160	–	–	325
HSK-A 63/PG 10 x 200 H	4563.71090	16	–	–	200	–	–	325
HSK-A 63/PG 10 x 240 XL	8865.71070	16	28	46	240	31	140	–
HSK-A 63/PG 10 x 260 XL	8865.71090	16	28	46	260	31	140	–
HSK-A 63/PG 10 x 300 XL	8865.71130	16	28	46	300	31	140	–
HSK-A 63/PG 10 x 340 XL	8865.71170	16	28	46	340	31	240	–
HSK-A 63/PG 10 x 360 XL	8865.71190	16	28	46	360	31	240	–
HSK-A 63/PG 10 x 400 XL	8865.71230	16	28	46	400	31	240	–
HSK-A 63/PG 15 x 080 H	4563.71540	24	–	–	80	–	–	325
HSK-A 63/PG 15 x 100 H	4563.71550	24	–	–	100	–	–	325
HSK-A 63/PG 15 x 120 H	4563.71560	24	–	–	120	–	–	325
HSK-A 63/PG 15 x 160 H	4563.71580	24	–	–	160	–	–	325/285
HSK-A 63/PG 15 x 200 H	4563.71590	24	–	–	200	–	–	325/285
HSK-A 63/PG 15 x 240 XL	8865.73070	24	28	46	240	55	140	–
HSK-A 63/PG 15 x 260 XL	8865.73090	24	28	46	260	55	140	–

*Balancing rings H: Ready to accept balancing rings

HSK-A toolholders

HSK-AB	HSK-A
ISO 12164	DIN 69893
compatible	ISO 12164

Type	Part no.	Dimensions [mm]						Accessory
		BD1	BD2	BD3	LPR	LB1	LB2	FWR *
HSK-A 63/PG 15 x 300 XL	8865.73130	24	28	46	300	55	140	–
HSK-A 63/PG 15 x 340 XL	8865.73170	24	28	46	340	55	240	–
HSK-A 63/PG 15 x 360 XL	8865.73190	24	28	46	360	55	240	–
HSK-A 63/PG 15 x 400 XL	8865.73230	24	28	46	400	55	240	–
HSK-A 63/PG 25 x 085 H NL**	4563.72540	40	–	–	85	–	–	405
HSK-A 63/PG 25 x 100 H	4563.72550	40	–	–	100	–	–	405
HSK-A 63/PG 25 x 120 H	4563.72560	40	–	–	120	–	–	405
HSK-A 63/PG 25 x 160 H	4563.72580	40	–	–	160	–	–	405 / 405
HSK-A 63/PG 25 x 200 H	4563.72590	40	–	–	200	–	–	405 / 405
HSK-A 63/PG 25 x 240 XL	8865.76070	40	–	55	240	–	140	–
HSK-A 63/PG 25 x 260 XL	8865.76090	40	–	55	260	–	140	–
HSK-A 63/PG 25 x 340 XL	8865.76170	40	–	55	340	–	240	–
HSK-A 63/PG 25 x 360 XL	8865.76190	40	–	55	360	–	240	–
HSK-A 63/PG 25 x 440 XL	8865.76270	40	–	55	440	–	340	–
HSK-A 63/PG 25 x 460 XL	8865.76290	40	–	55	460	–	340	–
HSK-A 63/PG 32 x 100	2563.73250	50	–	–	100	–	–	–
HSK-A 63/PG 32 x 120 H	4563.73260	50	–	–	120	–	–	505
HSK-A 63/PG 32 x 240 XL	8865.78070	50	–	58	240	–	140	–
HSK-A 63/PG 32 x 260 XL	8865.78090	50	–	58	260	–	140	–
HSK-A 63/PG 32 x 340 XL	8865.78170	50	–	58	340	–	240	–
HSK-A 63/PG 32 x 360 XL	8865.78190	50	–	58	360	–	240	–
HSK-A 63/PG 32 x 440 XL	8865.78270	50	–	58	440	–	340	–
HSK-A 63/PG 32 x 460 XL	8865.78290	50	–	58	460	–	340	–

HSK-A 63 toolVibe***

HSK-A 63/PG 15 x 120 TV	5563.91560	24	–	–	120	–	–	–
HSK-A 63/PG 25 x 120 TV	5563.92560	40	–	–	120	–	–	–
HSK-A 63/PG 32 x 120 NL TV**	5563.93260	50	–	–	120	–	–	–

HSK-A 80

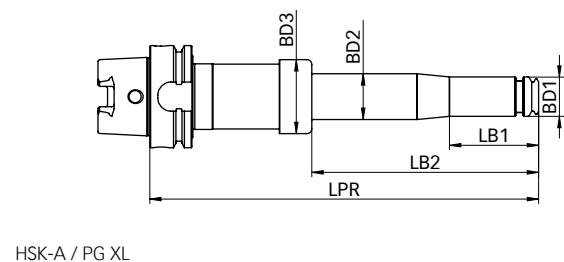
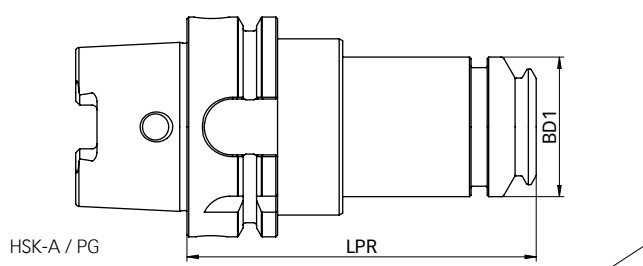
HSK-A 80/PG 15 x 085 H	4580.71540	24	–	–	85	–	–	325
HSK-A 80/PG 25 x 100 H	4580.72550	40	–	–	100	–	–	505
HSK-A 80/PG 32 x 105 H	4580.73250	50	–	–	105	–	–	505

*Balancing rings H: Ready to accept balancing rings

**Collets PG-L, PG-MQL and PG-CRYO cannot be used

***For more information on toolVibe, see page 304.

HSK-A: Hole for data carrier DIN STD 69873 in the flange available on request.



HSK-A toolholders

HSK-AB	HSK-A
ISO 12164	DIN 69893
compatible	ISO 12164

Type	Part no.	Dimensions [mm]						Accessory
		BD1	BD2	BD3	LPR	LB1	LB2	FWR *
HSK-A 100								
HSK-A 100/PG 10 x 085 H	4500.71040	16	–	–	85	–	–	405
HSK-A 100/PG 10 x 160 H	4500.71080	16	–	–	160	–	–	405
HSK-A 100/PG 10 x 240 XL	8885.71070	16	28	46	240	31	140	–
HSK-A 100/PG 10 x 300 XL	8885.71130	16	28	46	300	31	140	–
HSK-A 100/PG 10 x 340 XL	8885.71170	16	28	46	340	31	240	–
HSK-A 100/PG 10 x 400 XL	8885.71230	16	28	46	400	31	240	–
HSK-A 100/PG 15 x 085 H	4500.71540	24	–	–	85	–	–	405
HSK-A 100/PG 15 x 120 H	4500.71560	24	–	–	120	–	–	405
HSK-A 100/PG 15 x 160 H	4500.71580	24	–	–	160	–	–	405/285
HSK-A 100/PG 15 x 240 XL	8885.73070	24	28	46	240	55	140	–
HSK-A 100/PG 15 x 300 XL	8885.73110	24	28	46	300	55	140	–
HSK-A 100/PG 15 x 340 XL	8885.73170	24	28	46	340	55	240	–
HSK-A 100/PG 15 x 400 XL	8885.73230	24	28	46	400	55	240	–
HSK-A 100/PG 25 x 100 H	4500.72550	40	–	–	100	–	–	505
HSK-A 100/PG 25 x 120 H	4500.72560	40	–	–	120	–	–	505
HSK-A 100/PG 25 x 160 H	4500.72580	40	–	–	160	–	–	505/405
HSK-A 100/PG 25 x 200 H	4500.72590	40	–	–	200	–	–	505/405
HSK-A 100/PG 25 x 246 XL	8885.76070	40	–	55	246	–	140	–
HSK-A 100/PG 25 x 260 XL	8885.76090	40	–	55	260	–	140	–
HSK-A 100/PG 25 x 300 XL	8885.76130	40	–	55	300	–	140	–
HSK-A 100/PG 25 x 346 XL	8885.76170	40	–	55	346	–	240	–
HSK-A 100/PG 25 x 360 XL	8885.76190	40	–	55	360	–	240	–
HSK-A 100/PG 25 x 400 XL	8885.76230	40	–	55	400	–	240	–
HSK-A 100/PG 25 x 440 XL	8885.76270	40	–	55	440	–	240	–
HSK-A 100/PG 25 x 460 XL	8885.76290	40	–	55	460	–	340	–
HSK-A 100/PG 25 x 500 XL	8885.76330	40	–	55	500	–	340	–
HSK-A 100/PG 25 x 540 XL	8885.76370	40	–	55	540	–	340	–
HSK-A 100/PG 32 x 106 H	4500.73250	50	–	–	106	–	–	505
HSK-A 100/PG 32 x 120 H	4500.73260	50	–	–	120	–	–	505
HSK-A 100/PG 32 x 160 H	4500.73280	50	–	–	160	–	–	505
HSK-A 100/PG 32 x 200 H	4500.73290	50	–	–	200	–	–	505/505
HSK-A 100/PG 32 x 246 XL	8885.78070	50	–	58	246	–	140	–
HSK-A 100/PG 32 x 260 XL	8885.78090	50	–	58	260	–	140	–
HSK-A 100/PG 32 x 300 XL	8885.78130	50	–	58	300	–	140	–
HSK-A 100/PG 32 x 340 XL	8885.78170	50	–	58	340	–	140	–
HSK-A 100/PG 32 x 360 XL	8885.78190	50	–	58	360	–	240	–
HSK-A 100/PG 32 x 400 XL	8885.78230	50	–	58	400	–	240	–
HSK-A 100/PG 32 x 440 XL	8885.78270	50	–	58	440	–	240	–
HSK-A 100/PG 32 x 460 XL	8885.78290	50	–	58	460	–	340	–
HSK-A 100/PG 32 x 500 XL	8885.78330	50	–	58	500	–	340	–
HSK-A 100/PG 32 x 540 XL	8885.78370	50	–	58	540	–	340	–

*Balancing rings H: Ready to accept balancing rings

**For more information on toolVibe®, see page 304.

HSK-A: Hole for data carrier DIN STD 69873 in the flange available on request.

HSK-A toolholders

HSK-AB	HSK-A
ISO 12164	DIN 69893
compatible	ISO 12164

Type	Part no.	Dimensions [mm]						Accessory
		BD1	BD2	BD3	LPR	LB1	LB2	FWR *
HSK-A 100 toolVibe**								
HSK-A 100/PG 32 x 125 TV	5500.93260	50	–	–	125	–	–	–
HSK-A 125								
HSK-A 125/PG 15 x 245 XL	8895.73070	24	28	46	245	55	140	–
HSK-A 125/PG 15 x 345 XL	8895.73170	24	28	46	345	55	240	–
HSK-A 125/PG 25 x 252 XL	8895.76080	40	–	55	252	–	140	–
HSK-A 125/PG 25 x 352 XL	8895.76180	40	–	55	352	–	240	–
HSK-A 125/PG 32 x 252 XL	8895.78080	50	–	58	252	–	140	–
HSK-A 125/PG 32 x 352 XL	8895.78180	50	–	58	352	–	240	–

*Balancing rings H: Ready to accept balancing rings
 **For more information on toolVibe®, see page 304.

HSK-A: Hole for data carrier DIN STD 69873 in the flange available on request.



HSK-E toolholders

HSK-EZ 15	HSK-AB	HSK-E
ATC-E 15	ISO 12164	DIN 69893
DIN SPEC 28999	compatible	ISO 12164

Type	Part no.	Dimensions [mm]						Accessory
		BD1	BD2	BD3	LPR	LB1	LB2	FWR *
ATC-E 15								
ATC-E 15/PG 6 x 034	2915.70600	10	–	–	34	–	–	–
HSK-EZ 15								
HSK-EZ 15/PG 6 x 034	2515.70604	10	–	–	34	–	–	
HSK-E 20								
HSK-E 20/PG 6 x 043	2520.70614	10	–	–	43	–	–	–
HSK-E 25								
HSK-E 25/PG 6 x 043	2525.70614	10	–	–	43	–	–	–
HSK-E 25/PG 10 x 055	2525.71014	16	–	–	55	–	–	–
HSK-E 32								
HSK-E 32/PG 6 x 048	2532.70614	10	–	–	48	–	–	–
HSK-E 32/PG 6 x 080	2532.70644	10	–	–	80	–	–	–
HSK-E 32/PG 10 x 060	2532.71024	16	–	–	60	–	–	–
HSK-E 32/PG 10 x 080	2532.71044	16	–	–	80	–	–	–
HSK-E 32/PG 10 x 080 H	4532.71044	16	–	–	80	–	–	225
HSK-E 32/PG 15 x 075	2532.71534	24	–	–	75	–	–	–
HSK-E 40								
HSK-E 40/PG 6 x 048	2540.70614	10	–	–	48	–	–	–
HSK-E 40/PG 6 x 080 H	4540.70644	10	–	–	80	–	–	225
HSK-E 40 NCT/PG 10 x 052**	2540.71018	16	–	–	52	–	–	
HSK-E 40/PG 10 x 062	2540.71024	16	–	–	62	–	–	–
HSK-E 40/PG 10 x 080 H	4540.71044	16	–	–	80	–	–	225
HSK-E 40/PG 10 x 100 H	4540.71054	16	–	–	100	–	–	225
HSK-E 40/PG 10 x 120 H	4540.71064	16	–	–	120	–	–	225
HSK-E 40/PG 10 x 160 H	4540.71084	16	–	–	160	–	–	285
HSK-E 40 NCT/PG 15 x 064 NL**	2540.71528	24	–	–	64	–	–	–
HSK-E 40/PG 15 x 074	2540.71534	24	–	–	74	–	–	–
HSK-E 40/PG 15 x 080 H	4540.71544	24	–	–	80	–	–	285
HSK-E 40/PG 15 x 100 H	4540.71554	24	–	–	100	–	–	285
HSK-E 40/PG 15 x 120 H	4540.71564	24	–	–	120	–	–	285
HSK-E 40/PG 25 x 090	2540.72544	40	–	–	90	–	–	–
HSK-E 40/PG 25 x 100 H	4540.72554	40	–	–	100	–	–	405

*Balancing rings H: Ready to accept balancing rings

***For more information on toolVibe, see page 304.

**Without thread for coolant tube

Expert advice

All ATC-E 15 products are compatible with HSK-EZ according to DIN SPEC 28999:2023-5.

HSK-E toolholders

HSK-AB	HSK-E
ISO 12164	DIN 69893
compatible	ISO 12164

Type	Part no.	Dimensions [mm]						Accessory
		BD1	BD2	BD3	LPR	LB1	LB2	FWR *
HSK-E 50								
HSK-E 50/PG 6 x 080 H	4550.70644	10	–	–	80	–	–	225
HSK-E 50/PG 10 x 067	2550.71024	16	–	–	67	–	–	–
HSK-E 50/PG 10 x 080 H	4550.71044	16	–	–	80	–	–	285
HSK-E 50/PG 10 x 120 H	4550.71064	16	–	–	120	–	–	285
HSK-E 50/PG 10 x 160 H	4550.71084	16	–	–	160	–	–	285
HSK-E 50/PG 15 x 080 H	4550.71544	24	–	–	80	–	–	285
HSK-E 50/PG 15 x 100 H	4550.71554	24	–	–	100	–	–	285
HSK-E 50/PG 15 x 120 H	4550.71564	24	–	–	120	–	–	285
HSK-E 50/PG 25 x 100 H	4550.72554	40	–	–	100	–	–	405
HSK-E 63								
HSK-E 63/PG 15 x 080 H	4563.71544	24	–	–	80	–	–	325
HSK-E 63/PG 25 x 100 H	4563.72554	40	–	–	100	–	–	405

*Balancing rings H: Ready to accept balancing rings

**Without thread for coolant tube

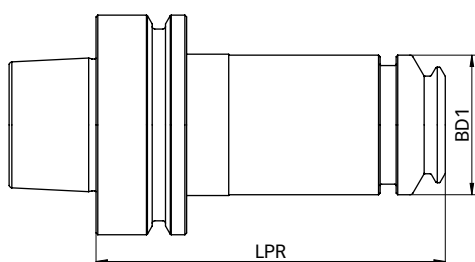
***For more information on toolVibe, see page 304.

HSK-F toolholders

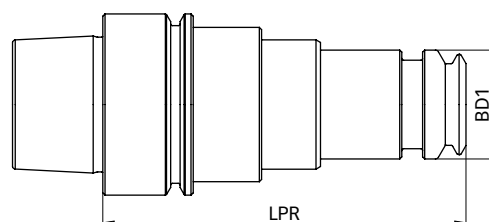
HSK-ES	HSK-F
ISO 12164	DIN 69893
compatible	ISO 12164

Type	Part no.	Dimensions [mm]						Accessory
		BD1	BD2	BD3	LPR	LB1	LB2	FWR *
HSK-F 63								
HSK-F 63/PG 10 x 080 H	4563.71045	16	–	–	80	–	–	325
HSK-F 63/PG 10 x 120 H	4563.71065	16	–	–	120	–	–	325
HSK-F 63/PG 10 x 160 H	4563.71085	16	–	–	160	–	–	325
HSK-F 63/PG 15 x 080 H	4563.71545	24	–	–	80	–	–	325
HSK-F 63/PG 15 x 120 H	4563.71565	24	–	–	120	–	–	325
HSK-F 63/PG 15 x 160 H	4563.71585	24	–	–	160	–	–	325/285
HSK-F 63/PG 25 x 100 H	4563.72555	40	–	–	100	–	–	405
HSK-F 63/PG 25 x 160 H	4563.72585	40	–	–	160	–	–	405
HSK-F 63/PG 32 x 100	2563.73255	50	–	–	100	–	–	

*Balancing rings H: Ready to accept balancing rings



HSK-F / PG



HSK-E / PG

SK steep taper toolholders

Universally suitable for different machining applications

DIN 69871 / DIN ISO 7388-1

Features and benefits

Total system runout TIR $\leq 3 \mu\text{m}$ @ 3xD

Our holistic system consists of a powRgrip® toolholder and collet. All components together ensure best runout and accuracy.

Toolholder runout TIR $\leq 1 \mu\text{m}$

Measured from collet cavity to outer taper.

Taper accuracy AT3

Better spindle-to-holder fit and accuracy.

Surface finish max. Ra 0.25

Achieve high clamping force and high transferable torque.

Balancing

100% balanced to G 2.5 @ 25,000 rpm / < 1gmm.

XL toolholders

Runout TIR $\leq 10 \mu\text{m}$

100% balanced to G 2.5 @ 5,000 rpm.

Hi-Q® balancing system

Ready to accept Hi-Q® balancing rings which allow for the offset of the imbalance introduced by the cutting tool up to 80,000 rpm depending on the balancing rings used. All toolholders with the additional type information "H" in the part number are designed for balancing rings.

Vibration damping

Our holders offer excellent vibration damping to sustain a high surface finish and can help prevent chatter.

ID chip hole

In accordance with DIN 69873 for 10 mm diameter.

Balancing specifications

SK 30	balanced to 30,000 rpm
SK 40	G 2.5 @ 25,000 rpm
SK 50	G 2.5 @ 25,000 rpm



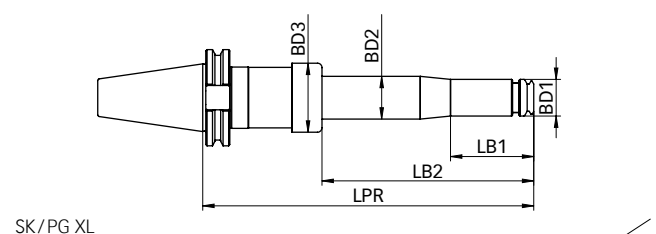
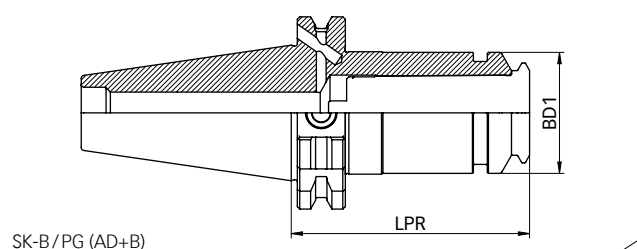
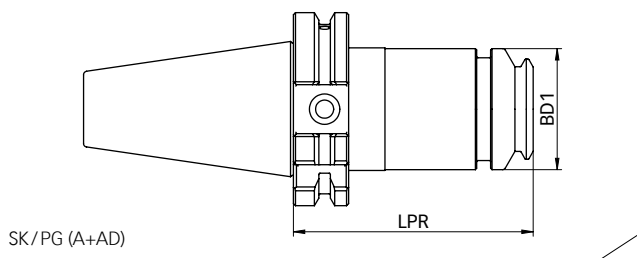
Accessories are not included in delivery. Other XL sizes available on request.

Type	Part no.	Dimensions [mm]						Accessory
		BD1	BD2	BD3	LPR	LB1	LB2	FWR *
SK 30								
SK 30/PG 6 x 080 H	4230.70640	10	–	–	80	–	–	225
SK 30/PG 10 x 060	2230.71020	16	–	–	60	–	–	–
SK 30/PG 10 x 073 H	4230.71030	16	–	–	73	–	–	285
SK 30/PG 15 x 060	2230.71520	24	–	–	60	–	–	–
SK 30/PG 15 x 080 H	4230.71540	24	–	–	80	–	–	285
SK 30/PG 25 x 080	2230.72540	40	–	–	80	–	–	–
SK 30/PG 25 x 160 H	4230.72580	40	–	–	160	–	–	405
SK 40								
SK 40/PG 6 x 080 H	4240.70640	10	–	–	80	–	–	225
SK 40/PG 10 x 080 H	4240.71040	16	–	–	80	–	–	285
SK 40/PG 10 x 120 H	4240.71060	16	–	–	120	–	–	285
SK 40/PG 10 x 160 H	4240.71080	16	–	–	160	–	–	325
SK 40/PG 10 x 220 XL	8842.71050	16	28	46	220	31	140	–
SK 40/PG 10 x 260 XL	8842.71090	16	28	46	260	31	140	–
SK 40/PG 10 x 300 XL	8842.71130	16	28	46	300	31	140	–
SK 40/PG 10 x 320 XL	8842.71150	16	28	46	320	31	240	–
SK 40/PG 10 x 360 XL	8842.71190	16	28	46	360	31	240	–
SK 40/PG 10 x 400 XL	8842.71230	16	28	46	400	31	240	–
SK 40/PG 15 x 072	2240.71530	24	–	–	72	–	–	–
SK 40/PG 15 x 080 H	4240.71540	24	–	–	80	–	–	285
SK 40/PG 15 x 120 H	4240.71560	24	–	–	120	–	–	325
SK 40/PG 15 x 160 H	4240.71580	24	–	–	160	–	–	325/285
SK 40/PG 15 x 220 XL	8842.73050	24	28	46	220	55	140	–
SK 40/PG 15 x 260 XL	8842.73090	24	28	46	260	55	140	–
SK 40/PG 15 x 300 XL	8842.73130	24	28	46	300	55	140	–
SK 40/PG 15 x 320 XL	8842.73150	24	28	46	320	55	240	–
SK 40/PG 15 x 360 XL	8842.73190	24	28	46	360	55	240	–
SK 40/PG 15 x 400 XL	8842.73230	24	28	46	400	55	240	–
SK 40/PG 25 x 072	2240.72530	40	–	–	72	–	–	–
SK 40/PG 25 x 080 H	4240.72540	40	–	–	80	–	–	405
SK 40/PG 25 x 120 H	4240.72560	40	–	–	120	–	–	405
SK 40/PG 25 x 160 H	4240.72580	40	–	–	160	–	–	405/405
SK 40/PG 25 x 220 XL	8842.76050	40	–	55	220	–	140	–
SK 40/PG 25 x 320 XL	8842.76150	40	–	55	320	–	240	–
SK 40/PG 32 x 080	2240.73240	50	–	–	80	–	–	–

*Balancing rings H: Ready to accept balancing rings

Type	Part no.	Dimensions [mm]						Accessory
		BD1	BD2	BD3	LPR	LB1	LB2	FWR *
SK-B 40								
SK-B 40/PG 10 x 080 H	4240.71043	16	–	–	80	–	–	285
SK-B 40/PG 10 x 120 H	4240.71063	16	–	–	120	–	–	285
SK-B 40/PG 15 x 080 H	4240.71543	24	–	–	80	–	–	285
SK-B 40/PG 15 x 120 H	4240.71563	24	–	–	120	–	–	325
SK-B 40/PG 15 x 160 H	4240.71583	24	–	–	160	–	–	325/285
SK-B 40/PG 25 x 072	2240.72533	40	–	–	72	–	–	–
SK-B 40/PG 25 x 080 H	4240.72543	40	–	–	80	–	–	405
SK-B 40/PG 25 x 120 H	4240.72563	40	–	–	120	–	–	405
SK-B 40/PG 25 x 160 H	4240.72583	40	–	–	160	–	–	405/405
SK-B 40/PG 32 x 080	2240.73243	50	–	–	80	–	–	–

*Balancing rings H: Ready to accept balancing rings



SK toolholders

SK-B toolholders

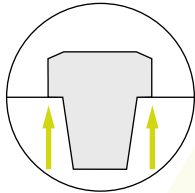
SK	SK-B
DIN 69871	DIN 69871
DIN ISO 7388-1	DIN ISO 7388-1

Type	Part no.	Dimensions [mm]						Accessory
		BD1	BD2	BD3	LPR	LB1	LB2	FWR *
SK 50								
SK 50/PG 10 x 240 XL	8852.71070	16	28	46	240	31	140	–
SK 50/PG 10 x 300 XL	8852.71130	16	28	46	300	31	140	–
SK 50/PG 10 x 340 XL	8852.71170	16	28	46	340	31	240	–
SK 50/PG 10 x 400 XL	8852.71230	16	28	46	400	31	240	–
SK 50/PG 15 x 120 H	4250.71560	24	32	–	120	–	42	325
SK 50/PG 15 x 240 XL	8852.73070	24	28	46	240	55	140	–
SK 50/PG 15 x 300 XL	8852.73130	24	28	46	300	55	140	–
SK 50/PG 15 x 340 XL	8852.73170	24	28	46	340	55	240	–
SK 50/PG 15 x 400 XL	8852.73230	24	28	46	400	55	240	–
SK 50/PG 25 x 081	2250.72540	40	–	–	81	–	–	–
SK 50/PG 25 x 100 H	4250.72550	40	–	–	100	–	–	505
SK 50/PG 25 x 120 H	4250.72560	40	–	–	120			505
SK 50/PG 25 x 160 H	4250.72580	40	–	–	160	–	–	505 / 405
SK 50/PG 25 x 200 H	4250.72590	40	–	–	200	–	–	505 / 405
SK 50/PG 25 x 300 XL	8852.76130	40	–	55	300	–	140	–
SK 50/PG 25 x 320 XL	8852.76150	40	–	55	320	–	240	–
SK 50/PG 25 x 400 XL	8852.76230	40	–	55	400	–	240	–
SK 50/PG 25 x 420 XL	8852.76250	40	–	55	420	–	340	–
SK 50/PG 25 x 500 XL	8852.76330	40	–	55	500	–	340	–
SK 50/PG 32 x 080	2250.73240	50	–	–	80	–	–	–
SK 50/PG 32 x 160 H	4250.73280	50	–	–	160	–	–	505
SK 50/PG 32 x 220 XL	8852.78050	50	–	58	220	–	140	–
SK 50/PG 32 x 300 XL	8852.78130	50	–	58	300	–	140	–
SK 50/PG 32 x 320 XL	8852.78150	50	–	58	320	–	240	–
SK 50/PG 32 x 400 XL	8852.78230	50	–	58	400	–	240	–
SK 50/PG 32 x 420 XL	8852.78250	50	–	58	420	–	340	–
SK 50/PG 32 x 500 XL	8852.78330	50	–	58	500	–	340	–
SK-B 50								
SK-B 50/PG 25 x 081	2250.72543	40	–	–	81	–	–	–
SK-B 50/PG 25 x 100 H	4250.72553	40	–	–	100	–	–	505
SK-B 50/PG 25 x 160 H	4250.72583	40	–	–	160	–	–	505 / 405
SK-B 50/PG 25 x 200 H	4250.72593	40	–	–	200	–	–	505 / 405
SK-B 50/PG 32 x 080	2250.73243	50	–	–	80	–	–	

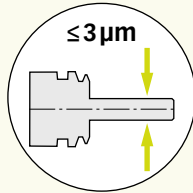
*Balancing rings H: Ready to accept balancing rings

REGO-FIX SK+ dual contact toolholders

Key advantages



Higher collet holder stiffness due to taper (AT1) and face contact



Improved machining accuracy and better surface finish

Certified The BIG PLUS SYSTEM – licensed by BIG Daishowa – is manufactured at REGO-FIX in Switzerland under license according to BIG PLUS specifications.

DIN 69871 / DIN ISO 7388-1

Features and benefits

Total system runout TIR $\leq 0.0001''$ (3 μm)

Our holistic system consists of a powRgrip® toolholder and collet. All components together ensure best runout and accuracy.

Surface finish max. Ra 0.25

Achieve high clamping force and high transferable torque.

Balancing

100% balanced to G 2.5 @ 25,000 rpm/ ≤ 1 gmm.

Hi-Q® balancing system

Ready to accept Hi-Q® balancing rings which allow for the offset of the imbalance introduced by the cutting tool up to 80,000 rpm depending on the balancing rings used. All collets holders with the additional type information "H" in the article name are designed for balancing rings.

Vibration damping

Our holders offer excellent vibration damping to sustain a high surface finish and can help prevent chatter.

ID chip hole

In accordance DIN 69873 with diameter 10 mm.



Accessories are not included in delivery. Form B available on request.

Type	Part no.	Dimensions [mm]		Accessory
		BD1	LPR	FWR*
SK+ 40				
SK+ 40/PG 10 x 080 H	4240.71046	16	80	285
SK+ 40/PG 15 x 080 H	4240.71546	24	80	285
SK+ 40/PG 15 x 120 H	4240.71566	24	120	285
SK+ 40 / PG 25 x 080 H	4240.72546	40	80	405
SK+ 40/PG 25 x 120 H	4240.72566	40	120	405
SK+ 40 / PG 32 x 080	2240.73246	50	80	

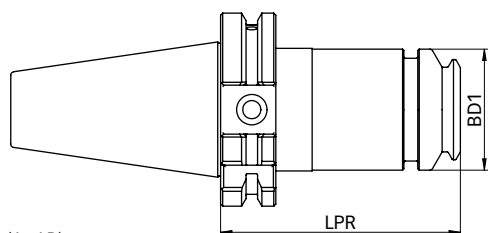
SK+ 40 toolVibe**				
SK+ 40 / PG 25 x 120 TV***	5540.92566	40	120	–

SK+ 50 toolVibe**				
SK+ 50 / PG 25 x 105 NL TV***	5550.92556	40	105	–

*Balancing rings H: Ready to accept balancing rings

**For more information on toolVibe, see page 304.

***Also fits standard spindle without dual contact.



SK+ / PG (A+AD)

BT steep taper toolholders

Universally suitable for different machining applications, the BT interface toolholders cater to different machining needs.

MAS 403/JIS B 6339/DIN ISO 7388-2

Features and benefits

Total system runout TIR $\leq 3 \mu\text{m}$ @ 3xD

Our holistic system consists of a powRgrip® toolholder and collet. All components together ensure best runout and accuracy.

Toolholder runout TIR $\leq 1 \mu\text{m}$

Measured from collet cavity to outer taper.

Taper accuracy AT3

Better spindle-to-holder fit and accuracy.

Surface finish max. Ra 0.25

Achieve high clamping force and high transferable torque.

Balancing

100% balanced to G 2.5 @ 25,000 rpm / < 1gmm.

XL toolholders

Runout TIR $\leq 10 \mu\text{m}$

100% balanced to G 2.5 @ 5,000 rpm.

Hi-Q® balancing system

Ready to accept Hi-Q® balancing rings which allow for the offset of the imbalance introduced by the cutting tool up to 80,000 rpm depending on the balancing rings used. All toolholders with the additional type information "H" in the part number are designed for balancing rings.

Vibration damping

Our holders offer excellent vibration damping to sustain a high surface finish and can help prevent chatter.

Balancing specifications

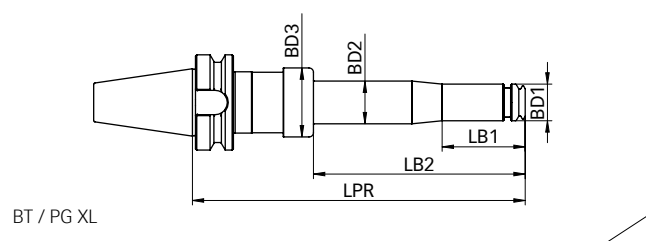
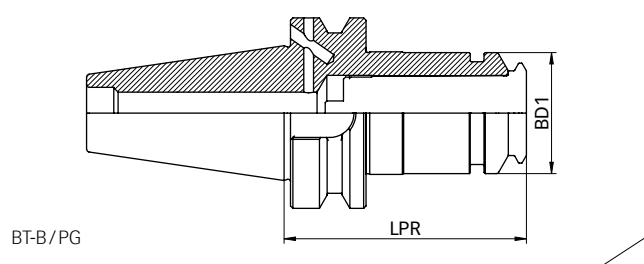
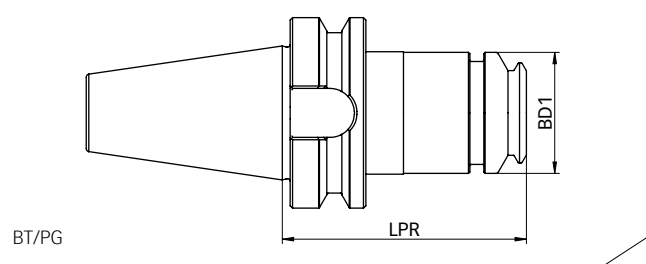
BT 30	balanced to 30,000 rpm
BT 40	G 2.5 @ 25,000 rpm
BT 50	G 2.5 @ 25,000 rpm



Accessories are not included in delivery. Other XL sizes available on request.

Type	Part no.	Dimensions [mm]						Accessory
		BD1	BD2	BD3	LPR	LB1	LB2	FWR *
BT 30								
BT 30/PG 6 x 050	2130.70610	10	–	–	50	–	–	–
BT 30/PG 6 x 080 H	4130.70640	10	–	–	80	–	–	225
BT 30/PG 10 x 062	2130.71020	16	–	–	62	–	–	–
BT 30/PG 10 x 080 H	4130.71040	16	–	–	80	–	–	285
BT 30/PG 10 x 120 H	4130.71060	16	–	–	120	–	–	285
BT 30/PG 10 x 160 H	4130.71080	16	–	–	160	–	–	285
BT 30/PG 15 x 065	2130.71520	24	–	–	65	–	–	–
BT 30/PG 15 x 070 H	4130.71530	24	–	–	70	–	–	285
BT 30/PG 15 x 120 H	4130.71560	24	–	–	120	–	–	285
BT 30/PG 25 x 075	2130.72530	40	–	–	75	–	–	–
BT 30/PG 25 x 080 H	4130.72540	40	–	–	80	–	–	405
BT 30/PG 25 x 120 H	4130.72560	40	–	–	120	–	–	405
BT 30/PG 25 x 160 H	4130.72580	40	–	–	160	–	–	405 / 405

*Balancing rings H: Ready to accept balancing rings



BT toolholders

BT-B toolholders

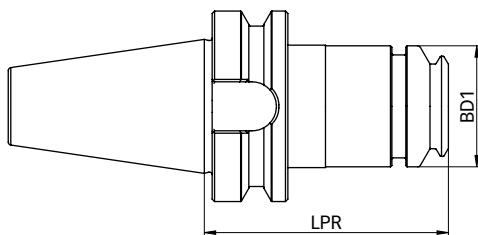
BT	BT-B
MAS 403	MAS 403
JIS B 6339	JIS B 6339
DIN ISO 7388-2	DIN ISO 7388-2

Type	Part no.	Dimensions [mm]						Accessory
		BD1	BD2	BD3	LPR	LB1	LB2	FWR *
BT 40								
BT 40/PG 10 x 080 H	4140.71040	16	–	–	80	–	–	285
BT 40/PG 10 x 120 H	4140.71060	16	–	–	120	–	–	325
BT 40/PG 10 x 160 H	4140.71080	16	–	–	160	–	–	325
BT 40/PG 10 x 220 XL	8841.71050	16	28	46	220	31	140	
BT 40/PG 10 x 260 XL	8841.71090	16	28	46	260	31	140	
BT 40/PG 10 x 300 XL	8841.71130	16	28	46	300	31	140	–
BT 40/PG 10 x 320 XL	8841.71150	16	28	46	320	31	240	–
BT 40/PG 10 x 360 XL	8841.71190	16	28	46	360	31	240	–
BT 40/PG 10 x 400 XL	8841.71230	16	28	46	400	31	240	–
BT 40/PG 15 x 075	2140.71530	24	–	–	75	–	–	–
BT 40/PG 15 x 080 H	4140.71540	24	–	–	80	–	–	285
BT 40/PG 15 x 120 H	4140.71560	24	–	–	120	–	–	325
BT 40/PG 15 x 160 H	4140.71580	24	–	–	160	–	–	325/285
BT 40/PG 15 x 220 XL	8841.73050	24	28	46	220	55	140	–
BT 40/PG 15 x 260 XL	8841.73090	24	28	46	260	55	140	–
BT 40/PG 15 x 300 XL	8841.73130	24	28	46	300	55	140	–
BT 40/PG 15 x 320 XL	8841.73150	24	28	46	320	55	240	–
BT 40/PG 15 x 360 XL	8841.73190	24	28	46	360	55	240	–
BT 40/PG 15 x 400 XL	8841.73230	24	28	46	400	55	240	–
BT 40/PG 25 x 080 H	4140.72540	40	–	–	80	–	–	405
BT 40/PG 25 x 120 H	4140.72560	40	–	–	120	–	–	405
BT 40/PG 25 x 160 H	4140.72580	40	–	–	160	–	–	405/405
BT 40/PG 25 x 226 XL	8841.76050	40	–	55	226	–	140	–
BT 40/PG 25 x 326 XL	8841.76150	40	–	55	326	–	240	–
BT 40/PG 32 x 086	2140.73240	50	–	–	86	–	–	
BT-B 40								
BT-B 40/PG 10 x 080 H	4140.71043	16	–	–	80	–	–	285
BT-B 40/PG 10 x 120 H	4140.71063	16	–	–	120	–	–	325
BT-B 40/PG 15 x 075	2140.71533	24	–	–	75	–	–	–
BT-B 40/PG 15 x 080 H	4140.71543	24	–	–	80	–	–	285
BT-B 40/PG 15 x 120 H	4140.71563	24	–	–	120	–	–	325
BT-B 40/PG 15 x 160 H	4140.71583	24	–	–	160	–	–	325/285
BT-B 40/PG 25 x 080 H	4140.72543	40	–	–	80	–	–	405
BT-B 40/PG 25 x 120 H	4140.72563	40	–	–	120	–	–	405
BT-B 40/PG 25 x 160 H	4140.72583	40	–	–	160	–	–	405/405
BT-B 40/PG 32 x 086	2140.73243	50	–	–	86	–	–	

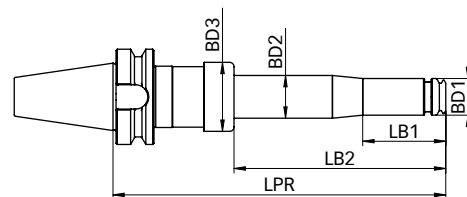
*Balancing rings H: Ready to accept balancing rings

Type	Part no.	Dimensions [mm]						Accessory
		BD1	BD2	BD3	LPR	LB1	LB2	FWR *
BT 50								
BT 50/PG 10 x 120 H	4150.71060	16	–	–	120	–	–	405
BT 50/PG 10 x 160 H	4150.71080	16	–	–	160	–	–	405
BT 50/PG 10 x 240 XL	8851.71070	16	28	46	240	31	140	
BT 50/PG 10 x 260 XL	8851.71090	16	28	46	260	31	140	–
BT 50/PG 10 x 300 XL	8851.71130	16	28	46	300	31	140	–
BT 50/PG 10 x 340 XL	8851.71170	16	28	46	340	31	240	–
BT 50/PG 10 x 360 XL	8851.71190	16	28	46	360	31	240	–
BT 50/PG 10 x 400 XL	8851.71230	16	28	46	400	31	240	–
BT 50/PG 15 x 120 H	4150.71560	24	–	–	120	–	–	325
BT 50/PG 15 x 160 H	4150.71580	24	–	–	160	–	–	325
BT 50/PG 15 x 240 XL	8851.73070	24	28	46	240	55	140	–
BT 50/PG 15 x 260 XL	8851.73090	24	28	46	260	55	140	–
BT 50/PG 15 x 300 XL	8851.73130	24	28	46	300	55	140	–
BT 50/PG 15 x 340 XL	8851.73170	24	28	46	340	55	240	–
BT 50/PG 15 x 360 XL	8851.73190	24	28	46	360	55	240	–
BT 50/PG 15 x 400 XL	8851.73230	24	28	46	400	55	240	–
BT 50/PG 25 x 100	2150.72550	40	–	–	100	–	–	–
BT 50/PG 25 x 120 H	4150.72560	40	–	–	120	–	–	505
BT 50/PG 25 x 160 H	4150.72580	40	–	–	160	–	–	505/405
BT 50/PG 25 x 200 H	4150.72590	40	–	–	200	–	–	505/405
BT 50/PG 25 x 240 XL	8851.76070	40	–	55	240	–	140	–
BT 50/PG 25 x 340 XL	8851.76170	40	–	55	340	–	240	–
BT 50/PG 25 x 440 XL	8851.76270	40	–	55	440	–	340	–
BT 50/PG 32 x 100	2150.73250	50	–	–	100	–	–	–
BT 50/PG 32 x 240 XL	8851.78070	50	–	58	240	–	140	–
BT 50/PG 32 x 340 XL	8851.78170	50	–	58	340	–	240	–
BT 50/PG 32 x 440 XL	8851.78270	50	–	58	440	–	340	–

*Balancing rings H: Ready to accept balancing rings



BT / PG



BT / PG XL

BT-OM toolholders

Type	Part no.	Dimensions [mm]				Accessory
		BD1	BD2	LPR	LB1	FWR*
BT-OM						
BT-OM 30/PG 10 x 062	2130.71028	16	–	62	–	–
BT-OM 30/PG 15 x 070 H	4130.71538	24	–	70	–	285
BT-OM 30/PG 25 x 080 H	4130.72548	40	–	80	–	405

*Balancing rings H: Ready to accept balancing rings

Information

BT-OM / PG toolholders without drive slots

Applications

This special toolholder without drive slots is designed for use on HAAS and HURCO CNC-machining centers, for High Speed Cutting (HSC) and High Performance Cutting (HPC). Use up to the max. power limit of the processing machine. The anti-vibration characteristics of the BT-OM / PG toolholder reduce the wear of spindle and tool.

Balancing

REGO-FIX BT-OM / PG toolholders are balanced to G 2.5 @ 30,000 rpm / <1gmm. Type H toolholders are compatible with Hi-Q® balancing rings which allow precision balancing of the entire system including cutting tool up to 80,000 rpm depending on the balancing rings used.

Cooling options

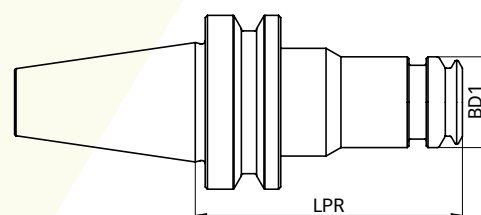
PG standard collets for tools with an internal coolant supply (metallic sealed).
Coolant flush collets PG-CF for peripheral cooling.

Matched tooling system for best fit

For highest precision and best results the entire machining system counts. Therefore REGO-FIX components are carefully matched for optimum fit and accuracy. This guarantees the best runout and balance.

For the influence of runout on tool life, please refer to page 353.

Accessories are not included in delivery.

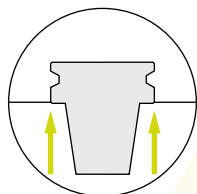


BT-OM / PG

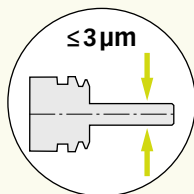


REGO-FIX BT+ dual contact toolholders

Key advantages



Higher collet holder stiffness due to taper (AT1) and face contact



Improved machining accuracy and better surface finish

Certified The BIG PLUS SYSTEM – licensed by BIG Daishowa – is manufactured at REGO-FIX in Switzerland under license according to BIG PLUS specifications.

Features and benefits

Total system runout TIR $\leq 0.0001''$ (3 μm)

Our holistic system consists of a powRgrip® toolholder and collet. All components together ensure best runout and accuracy.

Surface finish max. Ra 0.25

Achieve high clamping force and high transferable torque.

Balancing

100 % balanced to G 2.5 @ 25,000 rpm/ ≤ 1 gmm.

Hi-Q® balancing system

Ready to accept Hi-Q® balancing rings which allow for the offset of the imbalance introduced by the cutting tool up to 80,000 rpm depending on the balancing rings used. All collets holders with the additional type information "H" in the article name are designed for balancing rings.

Vibration damping

Our holders offer excellent vibration damping to sustain a high surface finish and can help prevent chatter.

Balancing specifications

BT+ 30	balanced to 30,000 rpm
BT+ 40	G 2.5 @ 25,000 rpm
BT+ 50	G 2.5 @ 25,000 rpm



Accessories are not included in delivery. Form B available on request.

Type	Part no.	Dimensions [mm]		Accessory
		BD1	LPR	FWR*
BT+ 30				
BT+ 30/PG 6 x 080 H	4130.70646	10	80	225
BT+ 30/PG 6 x 100 H	4130.70656	10	100	225
BT+ 30/PG 10 x 080 H	4130.71046	16	80	285
BT+ 30/PG 10 x 120 H	4130.71066	16	120	285
BT+ 30/PG 15 x 070 H	4130.71536	24	70	285
BT+ 30/PG 15 x 120 H	4130.71566	24	120	285
BT+ 30/PG 25 x 080 H	4130.72546	40	80	405
BT+ 30/PG 25 x 160 H	4130.72586	40	160	405/405

BT+ 30 toolVibe**				
BT+ 30 / PG15 x 100 TV***	5130.91556	24	100	–

BT+ 40				
BT+ 40/PG 10 x 080 H	4140.71046	16	80	285
BT+ 40/PG 10 x 120 H	4140.71066	16	120	325
BT+ 40/PG 15 x 080 H	4140.71546	24	80	285
BT+ 40/PG 15 x 120 H	4140.71566	24	120	325
BT+ 40/PG 25 x 080 H	4140.72546	40	80	405
BT+ 40/PG 25 x 120 H	4140.72566	40	120	405
BT+ 40/PG 25 x 160 H	4140.72586	40	160	405 / 405
BT+ 40/PG 32 x 086	2140.73246	50	86	–

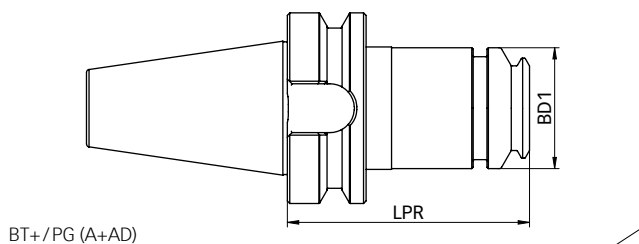
BT+ 40 toolVibe**				
BT+ 40 / PG 25 x 120 TV***	5140.92556	40	120	–

BT+ 50				
BT+ 50/PG 25 x 120 H	4150.72566	40	120	505
BT+ 50/PG 25 x 160 H	4150.72586	40	160	505 / 405

*Balancing rings H: Ready to accept balancing rings

**For more information on toolVibe, see page 304.

***Also fits standard spindle without dual contact.



CAT steep taper toolholders

Universally suitable for different machining applications

ASME B5.50

Features and benefits

Total system runout TIR $\leq 0.0001"$ (3 μm)

Our holistic system consists of a powRgrip® toolholder and collet. All components together ensure best runout and accuracy.

Toolholder runout TIR $\leq 1 \mu\text{m}$

Measured from collet cavity to outer taper.

Taper accuracy AT3

Better spindle-to-holder fit and accuracy.

Surface finish max. Ra 0.25

Achieve high clamping force and high transferable torque.

Balancing

100% balanced to G 2.5 @ 25,000 rpm.

Balancing in XL toolholders

Runout TIR $\leq 10 \mu\text{m}$

100% balanced to G 2.5 @ 5,000 rpm.

Hi-Q® balancing system

Ready to accept Hi-Q® balancing rings which allow for the offset of the imbalance introduced by the cutting tool up to 80,000 rpm depending on the balancing rings used. All toolholders with the additional type information "H" in the part number are designed for balancing rings.

Vibration damping

Our holders offer excellent vibration damping to sustain a high surface finish and can help prevent chatter.

ID chip hole

In accordance with DIN 69873 for 10 mm diameter.



Accessories are not included in delivery. Other XL sizes available on request.

CAT toolholders

CAT

ASME B5.50

CAT-B

ASME B5.50

Type	Part no.	Dimensions						Accessory
		BD1 [mm]	BD2 [mm]	BD3 [mm]	LPR [inch]	LB1 [mm]	LB2 [inch]	FWR *
CAT 40								
CAT 40/PG 6 x 3" H**	4340.70631	10	–	–	3"	–	–	285
CAT 40/PG 10 x 3,5" H	4340.71001	16	–	–	3,5"	–	–	285
CAT 40/PG 10 x 5" H	4340.71061	16	–	–	5"	–	–	285
CAT 40/PG 10 x 6" H	4340.71071	16	–	–	6"	–	–	285
CAT 40/PG 10 x 8" XL	8843.71031	16	28	42	8"	31	4"	–
CAT 40/PG 10 x 10" XL	8843.71081	16	28	42	10"	31	4"	–
CAT 40/PG 10 x 12" XL	8843.71131	16	28	42	12"	31	8"	–
CAT 40/PG 10 x 14" XL	8843.71181	16	28	42	14"	31	8"	–
CAT 40/PG 15 x 3,15" H	4340.71541	24	–	–	3,15"	–	–	285
CAT 40/PG 15 x 4" H	4340.71551	24	–	–	4"	–	–	285
CAT 40/PG 15 x 5" H	4340.71561	24	–	–	5"	–	–	285
CAT 40/PG 15 x 6" H	4340.71571	24	–	–	6"	–	–	325/285
CAT 40/PG 15 x 8" XL	8843.73031	24	28	42	8"	55	4"	–
CAT 40/PG 15 x 10" XL	8843.73081	24	28	42	10"	55	4"	–
CAT 40/PG 15 x 12" XL	8843.73131	24	28	42	12"	55	8"	–
CAT 40/PG 15 x 14" XL	8843.73181	24	28	42	14"	55	8"	–
CAT 40/PG 25 x 2,8"	2340.72531	40	–	–	2,8"	–	–	–
CAT 40/PG 25 x 3,15" H	4340.72541	40	–	–	3,15"	–	–	405
CAT 40/PG 25 x 4" H	4340.72551	40	–	–	4"	–	–	405
CAT 40/PG 25 x 6" H	4340.72571	40	–	–	6"	–	–	405/405
CAT 40/PG 25 x 8" H**	4340.72591	40	–	–	8"	–	–	405/405
CAT 40/PG 25 x 10" XL**	8843.76081	40	–	55	10"	–	4"	–
CAT 40/PG 25 x 14" XL	8843.76181	40	–	55	14"	–	8"	–
CAT 40/PG 32 x 3,5"	2340.73201	50	–	–	3,5"	–	–	–
CAT 40/PG 32 x 4,3" H	4340.73251	50	–	–	4,3"	–	–	505
CAT 40/PG 32 x 6" H	4340.73271	50	–	–	6"	–	–	505/505

CAT-B 40								
CAT-B 40/PG 10 x 3,5" H	4340.71004	16	–	–	3,5"	–	–	285
CAT-B 40/PG 10 x 6" H	4340.71074	16	–	–	6"	–	–	285
CAT-B 40/PG 15 x 3,15" H	4340.71544	24	–	–	3,15"	–	–	285
CAT-B 40/PG 15 x 4" H	4340.71554	24	–	–	4"	–	–	285
CAT-B 40/PG 15 x 6" H	4340.71574	24	–	–	6"	–	–	325/285
CAT-B 40/PG 25 x 2,8"***	2340.72534	40	–	–	2,8"	–	–	–
CAT-B 40/PG 25 x 3,15" H	4340.72544	40	–	–	3,15"	–	–	405
CAT-B 40/PG 25 x 4" H	4340.72554	40	–	–	4"	–	–	405
CAT-B 40/PG 25 x 6" H	4340.72574	40	–	–	6"	–	–	405/405
CAT-B 40/PG 32 x 4,3" H	4340.73254	50	–	–	4,3"	–	–	505
CAT-B 40/PG 32 x 6" H	4340.73274	50	–	–	6"	–	–	505/505

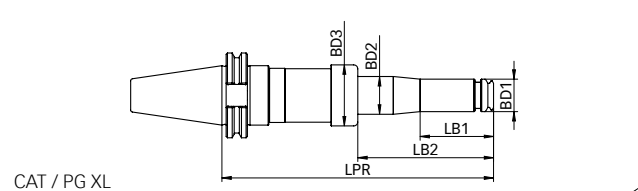
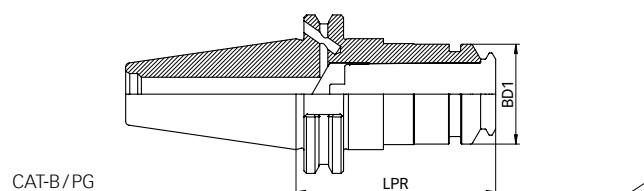
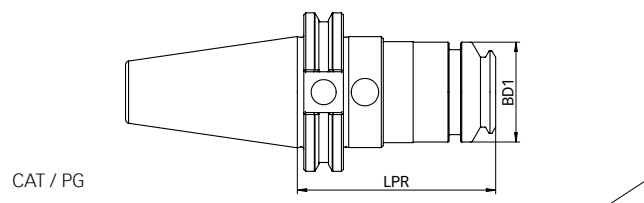
*Balancing rings H: Ready to accept balancing rings

**USA only

Type	Part no.	Dimensions						Accessory
		BD1 [mm]	BD2 [mm]	BD3 [mm]	LPR [inch]	LB1 [mm]	LB2 [inch]	FWR *
CAT 50								
CAT 50/PG 10 x 4" H	4350.71051	16	–	–	4"	–	–	405
CAT 50/PG 10 x 8" XL	8853.71031	16	28	46	8"	31	4"	
CAT 50/PG 10 x 10" XL	8853.71081	16	28	46	10"	31	4"	–
CAT 50/PG 10 x 12" XL	8853.71131	16	28	46	12"	31	8"	–
CAT 50/PG 10 x 14" XL	8853.71181	16	28	46	14"	31	8"	–
CAT 50/PG 15 x 4" H	4350.71551	24	–	–	4"	–	–	405
CAT 50/PG 15 x 8" XL	8853.73031	24	28	46	8"	55	4"	–
CAT 50/PG 15 x 10" XL	8853.73081	24	28	46	10"	55	4"	–
CAT 50/PG 15 x 12" XL	8853.73131	24	28	46	12"	55	8"	–
CAT 50/PG 15 x 14" XL	8853.73181	24	28	46	14"	55	8"	–
CAT 50/PG 25 x 4" H	4350.72551	40	–	–	4"	–	–	505
CAT 50/PG 25 x 6" H	4350.72571	40	–	–	6"	–	–	505/405
CAT 50/PG 25 x 8,3" XL**	8853.76041	40	–	55	8,3"	–	4"	–
CAT 50/PG 25 x 10" XL	8853.76081	40	–	55	10"	–	4"	–
CAT 50/PG 25 x 14" XL	8853.76181	40	–	55	14"	–	8"	–
CAT 50/PG 25 x 17,69" XL	8853.76271	40	–	55	17.69"	–	13.39"	–
CAT 50/PG 25 x 19,39" XL	8853.76321	40	–	55	19.39"	–	13.39"	
CAT 50/PG 32 x 3,1"	2350.73231	50	–	–	3,1"	–	–	–
CAT 50/PG 32 x 4,3" H	4350.73251	50	–	–	4,3"	–	–	505
CAT 50/PG 32 x 6" H	4350.73271	50	–	–	6"	–	–	505/505
CAT 50/PG 32 x 9,81" XL	8853.78071	50	–	58	9,81"	–	–	–
CAT 50/PG 32 x 11,51" XL	8853.78121	50	–	58	11,51"	–	–	–
CAT 50/PG 32 x 13,75" XL	8853.78171	50	–	58	13,75"	–	–	–
CAT 50/PG 32 x 15,45" XL	8853.78221	50	–	58	15,45"	–	–	–
CAT 50/PG 32 x 17,69" XL	8853.78271	50	–	58	17.69"	–	13.69"	–
CAT 50/PG 32 x 19,39" XL	8853.78321	50	–	58	19.39"	–	13.69"	

*Balancing rings H: Ready to accept balancing rings

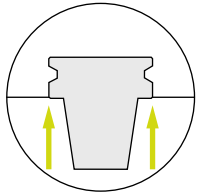
**USA only



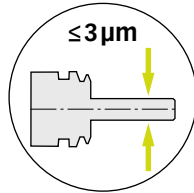
REGO-FIX CAT+ dual contact toolholders

REGO-PLUS
dual contact

Key advantages



Higher toolholder stiffness due to taper (AT1) and face contact



Total system runout
TIR ≤ 3µm at 3xD

Certified The BIG PLUS SYSTEM – licensed by BIG Daishowa – is manufactured at REGO-FIX in Switzerland under license according to BIG PLUS specifications.

Type	Part no.	Dimensions						Accessory
		BD1 [mm]	BD2 [mm]	BD3 [mm]	LPR [inch]	LB1 [mm]	LB2 [inch]	FWR *
CAT+ 40**								
CAT+ 40/PG 10 x 3,5" H	4340.71006	16	–	–	3,5"	–	–	285
CAT+ 40/PG 10 x 4" H	4340.71056	16	–	–	4"	–	–	285
CAT+ 40/PG 10 x 6" H	4340.71076	16	–	–	6"	–	–	285
CAT+ 40/PG 15 x 3,15" H	4340.71546	24	–	–	3,15"	–	–	285
CAT+ 40/PG 15 x 4" H	4340.71556	24	–	–	4"	–	–	285
CAT+ 40/PG 15 x 6" H	4340.71576	24	–	–	6"	–	–	325/285
CAT+ 40/PG 25 x 3,15" H	4340.72546	40	–	–	3,15"	–	–	405
CAT+ 40/PG 25 x 4" H	4340.72556	40	–	–	4"	–	–	405
CAT+ 40/PG 25 x 6" H	4340.72576	40	–	–	6"	–	–	405/405
CAT+ 40/PG 32 x 3,5"	2340.73206	50	–	–	3,5"	–	–	–
CAT+ 40/PG 32 x 4"	4340.73246	50	–	–	4"	–	–	505
CAT+ 40/PG 32 x 6" H	4340.73276	50	–	–	6"	–	–	505

CAT+ 40 toolVibe***								
CAT+ 40/PG 15 x 4" TV ¹⁾	5340.91556	24	–	–	4"	–	–	–
CAT+ 40/PG 25 x 4,3" TV ¹⁾	5340.92556	40	–	–	4,3"	–	–	–

CAT+ 50**								
CAT+ 50/PG 10 x 4" H	4350.71056	16	–	–	4"	–	–	405
CAT+ 50/PG 15 x 4" H	4350.71556	24	–	–	4"	–	–	405
CAT+ 50/PG 15 x 6" H	4350.71576	24	–	–	6"	–	–	405
CAT+ 50/PG 25 x 4" H	4350.72556	40	–	–	4"	–	–	505
CAT+ 50/PG 25 x 6" H	4350.72576	40	–	–	6"	–	–	505/405
CAT+ 50/PG 32 x 4,3" H	4350.73256	50	–	–	4,3"	–	–	505
CAT+ 50/PG 32 x 6" H	4350.73276	50	–	–	6"	–	–	505/505

*Balancing rings H: Ready to accept balancing rings

***For more information on toolVibe, see page 304.

¹⁾ Also fits standard spindle without dual contact.

**USA only

REGO-FIX CAPTO toolholders

These self-centering and balanced toolholders enable high-torque transmission and show a high-bending strength.

ISO 12164

Features and benefits

Total system runout TIR $\leq 3 \mu\text{m}$ @ 3xD

Our holistic system consists of a powRgrip® toolholder and collet. All components together ensure best runout and accuracy.

Toolholder runout TIR $\leq 1 \mu\text{m}$

Measured from collet cavity to outer taper.

Surface finish max. Ra 0.25

Achieve high clamping force and high transferable torque.

Balancing

100% balanced to G 2.5 @ 25,000 rpm / < 1gmm.

XL toolholders

Runout TIR $\leq 10 \mu\text{m}$

100% balanced to G 2.5 @ 5,000 rpm.

Hi-Q® balancing system

Ready to accept Hi-Q® balancing rings which allow for the offset of the imbalance introduced by the cutting tool up to 80,000 rpm depending on the balancing rings used. All toolholders with the additional type information "H" in the part number are designed for balancing rings.

Vibration damping

Our holders offer excellent vibration damping to sustain a high surface finish and can prevent cutting force alterations.

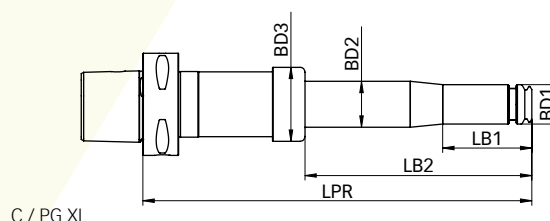
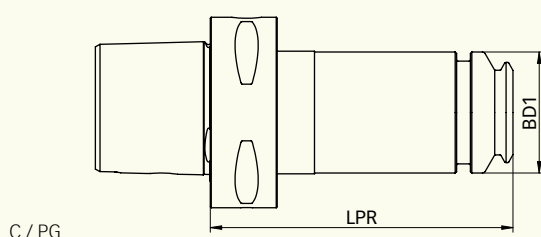
Balancing specifications

C3	balanced to 60,000 rpm
C4	balanced to 45,000 rpm
C5	balanced to 36,000 rpm
C6	G 2.5 @ 25,000 rpm
C8	G 2.5 @ 25,000 rpm

Certified REGO-FIX CAPTO – licensed by Sandvik Coromant – is manufactured at REGO-FIX Switzerland under license according to CAPTO specifications.



Accessories are not included in delivery. Other XL sizes available on request.



Type	Part no.	Dimensions [mm]						Accessory
		BD1	BD2	BD3	LPR	LB1	LB2	FWR *
C3								
C3/PG 6 x 045	2803.70610	10	–	–	45	–	–	–
C3/PG 10 x 055	2803.71010	16	–	–	55	–	–	–
C3/PG 15 x 067	2803.71520	24	–	–	67	–	–	–
C4								
C4/PG 6 x 048	2804.70610	10	–	–	48	–	–	–
C4/PG 10 x 060	2804.71020	16	–	–	60	–	–	–
C4/PG 10 x 080 H	4804.71040	16	–	–	80	–	–	225
C4/PG 15 x 062	2804.71520	24	–	–	62	–	–	–
C4/PG 15 x 080 H	4804.71540	24	–	–	80	–	–	285
C5								
C5/PG 6 x 080 H	4805.70640	10	–	–	80	–	–	225
C5/PG 10 x 060	2805.71020	16	–	–	60	–	–	–
C5/PG 10 x 080 H	4805.71040	16	–	–	80	–	–	285
C5/PG 10 x 120 H	4805.71060	16	–	–	120	–	–	285
C5/PG 15 x 065	2805.71520	24	–	–	65	–	–	–
C5/PG 15 x 080 H	4805.71540	24	–	–	80	–	–	285
C5/PG 15 x 120 H	4805.71560	24	–	–	120	–	–	325
C5/PG 25 x 080	2805.72540	40	–	–	80	–	–	–
C5/PG 25 x 100 H	4805.72550	40	–	–	100	–	–	405
C6								
C6/PG 10 x 070	2806.71030	16	–	–	70	–	–	–
C6/PG 10 x 080 H	4806.71040	16	–	–	80	–	–	325
C6/PG 10 x 120 H	4806.71060	16	–	–	120	–	–	325
C6/PG 10 x 160 H	4806.71080	16	–	–	160	–	–	325
C6/PG 10 x 225 XL	8886.71050	16	28	46	225	31	140	–
C6/PG 10 x 240 XL	8886.71070	16	28	46	240	31	140	–
C6/PG 10 x 260 XL	8886.71090	16	28	46	260	31	140	–
C6/PG 10 x 300 XL	8886.71130	16	28	46	300	31	140	–
C6/PG 10 x 325 XL	8886.71150	16	28	46	325	31	240	–
C6/PG 10 x 340 XL	8886.71170	16	28	46	340	31	240	–
C6/PG 10 x 360 XL	8886.71190	16	28	46	360	31	240	–
C6/PG 10 x 400 XL	8886.71230	16	28	46	400	31	240	–

*Balancing rings H: Ready to accept balancing rings

All REGO-FIX CAPTO holders are also available with an ID chip hole on request

Type	Part no.	Dimensions [mm]						Accessory
		BD1	BD2	BD3	LPR	LB1	LB2	FWR *
C6/PG 15 x 071	2806.71530	24	–	–	71	–	–	–
C6/PG 15 x 080 H	4806.71540	24	–	–	80	–	–	325
C6/PG 15 x 120 H	4806.71560	24	–	–	120	–	–	325
C6/PG 15 x 160 H	4806.71580	24	–	–	160	–	–	325
C6/PG 15 x 225 XL	8886.73050	24	28	46	225	55	140	–
C6/PG 15 x 240 XL	8886.73070	24	28	46	240	55	140	–
C6/PG 15 x 260 XL	8886.73090	24	28	46	260	55	140	–
C6/PG 15 x 300 XL	8886.73130	24	28	46	300	55	140	–
C6/PG 15 x 325 XL	8886.73150	24	28	46	325	55	240	–
C6/PG 15 x 340 XL	8886.73170	24	28	46	340	55	240	–
C6/PG 15 x 360 XL	8886.73190	24	28	46	360	55	240	–
C6/PG 15 x 400 XL	8886.73230	24	28	46	400	55	240	–
C6/PG 25 x 085	2806.72540	40	–	–	85	–	–	–
C6/PG 25 x 100 H	4806.72550	40	–	–	100	–	–	405
C6/PG 25 x 120 H	4806.72560	40	–	–	120	–	–	405
C6/PG 25 x 160 H	4806.72580	40	–	–	160	–	–	405
C6/PG 25 x 230 XL	8886.76060	40	–	55	230	–	140	–
C6/PG 25 x 330 XL	8886.76160	40	–	55	330	–	240	–
C6/PG 32 x 090	2806.73240	50	–	–	90	–	–	–
C6/PG 32 x 230 XL	8886.78060	50	–	58	230	–	140	–
C6/PG 32 x 330 XL	8886.78160	50	–	58	330	–	240	–

C6 toolVibe**

C6/PG 25 x 120 TV	5806.92560	40	–	–	120	–	–	–
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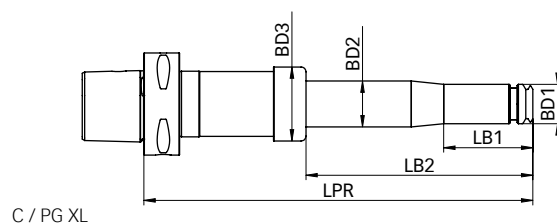
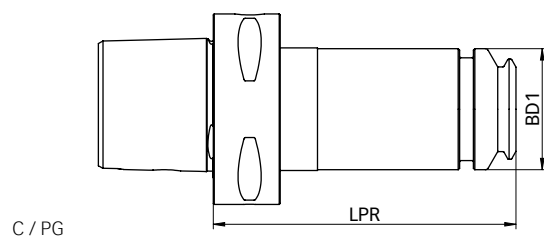
C8

C8/PG 10 x 232 XL	8888.71060	16	28	46	232	31	140	–
C8/PG 10 x 332 XL	8888.71160	16	28	46	332	31	240	–
C8/PG 15 x 232 XL	8888.73060	24	28	46	232	55	140	–
C8/PG 15 x 332 XL	8888.73160	24	28	46	332	55	240	–
C8/PG 25 x 092	2808.72540	40	–	–	92	–	–	–
C8/PG 25 x 230 XL	8888.76060	40	–	55	230	–	140	–
C8/PG 25 x 330 XL	8888.76160	40	–	55	330	–	240	–
C8/PG 32 x 090	2808.73240	50	–	–	90	–	–	–
C8/PG 32 x 230 XL	8888.78060	50	–	58	230	–	140	–
C8/PG 32 x 330 XL	8888.78160	50	–	58	330	–	240	–

*Balancing rings H: Ready to accept balancing rings

All REGO-FIX CAPTO holders are also available with an ID chip hole on request

**For more information on toolVibe, see page 304.



ISO 20 toolholder



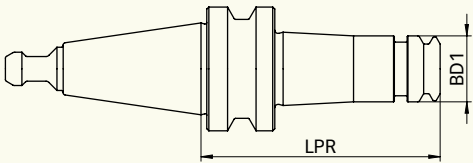
Applications The REGO-FIX ISO 20 toolholders are designed to work with the HAAS Office Mill. To utilize the full potential of your machine, use the REGO-FIX brand of holders and collets to see the difference quality can achieve in your machining operations

Balancing

// 100% balanced to 50,000 rpm.

Matched tooling system for best fit For highest precision and best results the whole system counts. Therefore REGO-FIX components are carefully matched for optimum fit and accuracy. This guarantees the best runout and balance.

More information about the influence of TIR on tool life see page 353.



ISO-HAAS / PG

Type	Part no.	Dimensions [mm]	
		BD1	LPR
ISO			
ISO-HAAS 20 / PG 6 x 075*	8020.24207	10	75
ISO-HAAS 20 / PG 10 x 058	2420.71015	16	58

*USA only

Cylindrical shank toolholders CYL

CYL

Features and benefits

Total system runout TIR $\leq 3 \mu\text{m}$ @ $3 \times D$

Our holistic system consists of a powRgrip® toolholder and collet. All components together ensure best runout and accuracy.

Toolholder runout TIR $\leq 1 \mu\text{m}$

Measured from collet cavity to outer shank.

Surface finish max. Ra 0.25

Achieve high clamping force and high transferable torque.

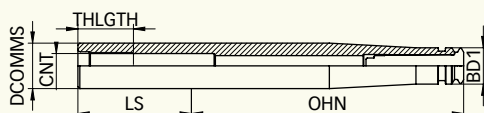
Minimal outside dimensions

Slim design provides more machining flexibility.

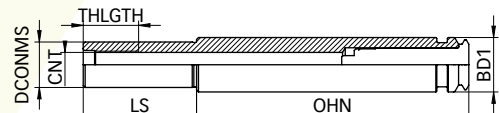
Extra length possible

CYL 10/PG and CYL 20/PG can be used as extensions.

When using cylindrical toolholders as extensions, the entire toolholder combination is subject to the same application limits as XL toolholders, regarding maximum permissible speeds and recommended machining methods.



Drawing 1



Drawing 2

Type	Part no.	Dimensions [mm]				THLGTH	CNT	Drawing
		BD1	OHN	LS	DCONMS			
CYL 10								
CYL 10/PG 6 x 120	2610.70620	10	120	30	10	13	M 5	1
CYL 10/PG 10 x 120	2610.71020	16	120	40	10	13	M 5	2
CYL 20								
CYL 20/PG 10 x 120	2620.71020	16	120	50	20	25	M 12 x 1	1
CYL 20/PG 10 x 160	2620.71040	16	160	50	20	25	M 12 x 1	1
CYL 20/PG 10 x 200	2620.71060	16	200	50	20	25	M 12 x 1	1
CYL 20/PG 15 x 120	2620.71520	24	120	50	20	25	M 12 x 1	2
CYL 25								
CYL 25/PG 15 x 160	2625.71540	24	160	56	25	25	M 12 x 1	1
CYL 25/PG 15 x 240*	8020.26257	24	240	56	25	25	M 12 x 1	1
CYL 25/PG 25 x 080*	8020.25080	40	80	56	25	25	M 12 x 1	2
CYL 25/PG 25 x 100*	8020.25100	40	100	56	25	25	M 12 x 1	2
CYL 25/PG 25 x 120*	8020.25120	40	120	56	25	25	M 12 x 1	2

*USA only

Form-fit for 100 % pullout protection

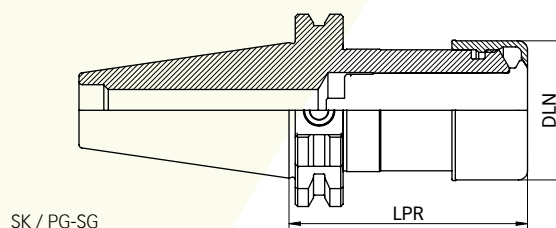
Form and force-fitting clamping system Tools and collets are 100% secured against tool pull-out, making secuRgrip® your safety net for successful machining. In high performance cutting (HPC), the tool can pull out of the clamping system during the milling operation and damage the workpiece. We developed the secuRgrip® locking system for operators who require 100% process security.

Process security Optimize your machining productivity by securing your processes.

Our secuRgrip® solution fits all standard tools with endmill flat according to DIN 6535-HB (metric). This means that no special tool shank form is required.

secuRgrip® system elements

- // secuRgrip® threaded insert
For all shanks with Weldon surface
- // secuRgrip® toolholder with thread
- // secuRgrip® PG 15-SG, PG 25-SG or PG 32-SG collet
For all secuRgrip® collet part numbers, please refer to page 84.
- // secuRgrip® safety nut
The tightening torques for the secuRgrip® safety nuts can be found on page 370.



Expert advice

Freewheel wrench head, grip bar or torque wrench are required to safely fasten the nut.

For all secuRgrip® accessories part numbers, please refer to page 338.

Included in delivery: secuRgrip® toolholder with secuRgrip® safety nut.

Type	Part no.	Dimensions [mm]		Accessory
		DLN	LPR	FWR*
HSK / PG-SG				
HSK-A 63/PG 15-SG x 080 H	5563.71540	28	80	325
HSK-A 63/PG 15-SG x 120 H	5563.71560	28	120	325
HSK-A 63/PG 25-SG x 085 H NL**	5563.72540	46	85	405
HSK-A 63/PG 25-SG x 100 H	5563.72550	46	100	405
HSK-A 63/PG 25-SG x 120 H	5563.72560	46	120	405
HSK-A 63/PG 25-SG x 160 H	5563.72580	46	160	405 / 405
HSK-A 63/PG 25-SG x 200 H	5563.72590	46	200	405 / 405
HSK-A 63/PG 32-SG x 100	5563.73250	55	100	–
HSK-A 63/PG 32-SG x 120 H	5563.73260	55	120	505
HSK-A 80/PG 32-SG x 105 H	5580.73250	55	105	505
HSK-A 100/PG 25-SG x 100 H	5500.72550	46	100	505
HSK-A 100/PG 25-SG x 120 H***	5500.72560	46	120	505
HSK-A 100/PG 25-SG x 160 H	5500.72580	46	160	505 / 405
HSK-A 100/PG 25-SG x 200 H	5500.72590	46	200	505 / 405
HSK-A 100/PG 32-SG x 106 H	5500.73250	55	106	505
HSK-A 100/PG 32-SG x 120 H***	5500.73260	55	120	505
HSK-A 100/PG 32-SG x 160 H	5500.73280	55	160	505
HSK-A 100/PG 32-SG x 200 H	5500.73290	55	200	505 / 505
HSK-A 100/PG 48-SG x 125	5500.74860	76	125	–
HSK-A 125/PG 48-SG x 130	5502.74860	76	130	–

SK / PG-SG				
SK 40/PG 25-SG x 080 H	5240.72540	46	80	405
SK 40/PG 25-SG x 120 H	5240.72560	46	120	405
SK 40/PG 25-SG x 160 H	5240.72580	46	160	405 / 405
SK 40/PG 32-SG x 080	5240.73240	55	80	–
SK 50/PG 32-SG x 080	5250.73240	55	80	–
SK 50/PG 48-SG x 120	5250.74860	76	120	–

BT / PG-SG				
BT 40/PG 25-SG x 080 H	5140.72540	46	80	405
BT 40/PG 25-SG x 120 H	5140.72560	46	120	405
BT 40/PG 32-SG x 086	5140.73240	55	86	–
BT 50/PG 25-SG x 100	5150.72550	46	100	–
BT 50/PG 25-SG x 120 H	5150.72560	46	120	505
BT 50/PG 32-SG x 100	5150.73250	55	100	–
BT 50/PG 48-SG x 115	5150.74850	76	115	–

BT+ / PG-SG				
BT+ 50/PG 25-SG x 120 H	5150.72566	46	120	505

*Balancing rings H: Ready to accept balancing rings
 ***USA only

**Collets PG-L, PG-MQL and PG-Cryo cannot be used.
 Additional lengths and interfaces available on request

Type	Part no.	Dimensions [mm]		Accessory
		DLN [mm]	LPR [inch]	FWR*
C/PG-SG				
C6/PG 25-SG x 100 H	5806.72550	46	100	405
C6/PG 32-SG x 090	5806.73240	55	90	–
C8/PG 25-SG x 092	5808.72540	46	92	–
C8/PG 32-SG x 090	5808.73240	55	90	
CAT/PG-SG**				
CAT 40/PG 25-SG x 2,8"	5340.72531	46	2,8"	–
CAT 40/PG 25-SG x 3,15" H	5340.72541	46	3,15"	405
CAT 40/PG 25-SG x 4" H	5340.72551	46	4"	405
CAT 40/PG 25-SG x 6" H	5340.72571	46	6"	405/405
CAT 40/PG 32-SG x 3,5"	5340.73201	55	3,5"	–
CAT 40/PG 32-SG x 4,3" H	5340.73251	55	4,3"	505
CAT 40/PG 32-SG x 6" H	5340.73271	55	6"	505/505
CAT 50/PG 25-SG x 4" H	5350.72551	46	4"	405
CAT 50/PG 25-SG x 6" H	5350.72571	46	6"	405/405
CAT 50/PG 32-SG x 3,1" H	5350.73231	55	3,1"	505
CAT 50/PG 32-SG x 4,3" H	5350.73251	55	4,3"	505
CAT 50/PG 32-SG x 6" H	5350.73271	55	6"	505/505
CAT 50/PG 48-SG x 4"	5350.74851	76	4"	–
CAT-B/PG-SG**				
CAT-B 50/PG 25-SG x 4" H	5350.72554	46	4"	405
CAT-B 50/PG 25-SG x 6" H	5350.72574	46	6"	405/405
CAT-B 50/PG 32-SG x 4,3" H	5350.73254	55	4,3"	505
CAT-B 50/PG 32-SG x 6" H	5350.73274	55	6"	505/505
CAT+ /PG-SG**				
CAT+ 40/PG 25-SG x 3,15" H	5340.72546	46	3,15"	405
CAT+ 40/PG 25-SG x 4" H	5340.72556	46	4"	405
CAT+ 40/PG 25-SG x 6" H	5340.72576	46	6"	405/405
CAT+ 40/PG 32-SG x 3,5"	5340.73206	55	3,5"	–
CAT+ 40/PG 32-SG x 4" H	5340.73246	55	4"	505
CAT+ 40/PG 32-SG x 6" H	5340.73276	55	6"	505/505
CAT+ 50/PG 25-SG x 4" H	5350.72556	46	4"	405
CAT+ 50/PG 25-SG x 6" H	5350.72576	46	6"	405/405
CAT+ 50/PG 32-SG x 4,3" H	5350.73256	55	4,3"	505
CAT+ 50/PG 32-SG x 6" H	5350.73276	55	6"	505/505

*Balancing rings H: Ready to accept balancing rings

**USA only

Included in delivery: secuRgrip® toolholder with secuRgrip® safety nut

Additional lengths and interfaces available on request.

PG HD-SG Holders Heavy Duty secuRgrip® toolholders are up to two times more rigid than standard holders. They include secuRgrip® safety nut for 100% protection against tool pullout.

Features

- // Includes secuRgrip® design to prevent pullout
- // Most designs retain the use of balance rings
- // Fits existing powRgrip® clamping units

Key Advantages

- // Up to 2 times more rigid than standard holders
- // Increases feed rates to maximize tooling efficiency
- // Better surface finish with less deflection

The tightening torques for the secuRgrip® safety nuts can be found on page 370.



Type	Part no.	Dimensions			Accessory
		DLN [mm]	LPR [mm]	LPR [inch]	FWR*
HSK-A/PG HD-SG					
HSK-A 63/PG 25 HD-SG x 100 H	5563.82550	46	100	–	405
HSK-A 100/PG 25 HD-SG x 100 H	5500.82550	46	100	–	405
HSK-A 100/PG 32 HD-SG x 106 H	5500.83250	55	106	–	505
HSK-A 100/PG 32 HD-SG x 160 H**	8020.55007	55	160	–	505
HSK-A 125/PG 25 HD-SG x 105 H	5502.82550	46	105	–	405
HSK-A 125/PG 32 HD-SG x 112 H	5502.83250	55	112	–	505
HSK-FP 80/PG HD-SG					
HSK-FP 80/PG 25 HD-SG x 085 H K***	8070.80250	46	85	–	405
HSK-FP 80/PG 32 HD-SG x 095 H K***	8070.80320	55	95	–	505
CAT/PG HD-SG**					
CAT 50/PG 25 HD-SG x 6" H	5350.82571	46	–	6"	405
CAT 50/PG 32 HD-SG x 4,3" H	5350.83251	55	–	4,3"	505
CAT 50/PG 32 HD-SG x 6" H	5350.83271	55	–	6"	505

*Balancing rings H: Ready to accept balancing rings

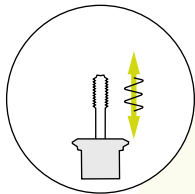
**USA only

***Supplied with pre-installed KSR coolant pipe

PG thread-cutting solutions

CYL SSY/HSK-A SSY Softsynchro® tapping holder

- // With **minimum length compensation**
- // Eliminates small synchronization errors of machines (Rigid Tapping)

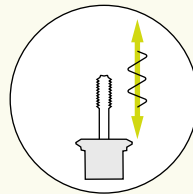


Applications

- // Machines for direct thread cutting
- // For all tapping tools with h9 shanks
- // The turning movement of the spindles can be offset with the feed axis and thus synchronized
- // Synchronization errors are created by the dynamics of the spindle and linear drives. The tapping holder is equipped with the minimum length compensation and compensates the synchronization errors
- // Depending on the application, the service life for the customer can be increased by up to 150 %
- // Guides coolant with up to 50 bar / 725 PSI of pressure to the tap, without compromising length compensation

CYL GSF tapping holder

- // With **length compensation**
- // Used on machines in which the feed movement is not synchronized with the thread pitch during processing



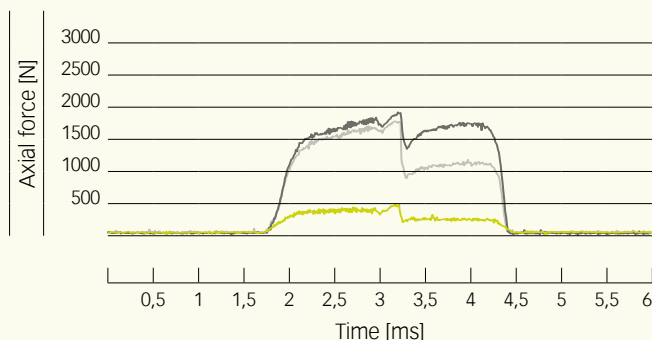
Applications

- // For machines without a tapping option
- // Ensures the compensation of differences between the thread pitch and spindle feed
- // Features a pressure-point mechanism
- // Safe tap cutting
- // Uniform, reproducible thread depths
- // Guides coolant with up to 50 bar / 725 PSI of pressure to the tap, without compromising length compensation
- // Universal use thanks to its compact design and low gauge length

Comparative axial force testing

Occurring axial forces with thread forms M10 in St37, Speed 500 rpm.

Source: In-house testing

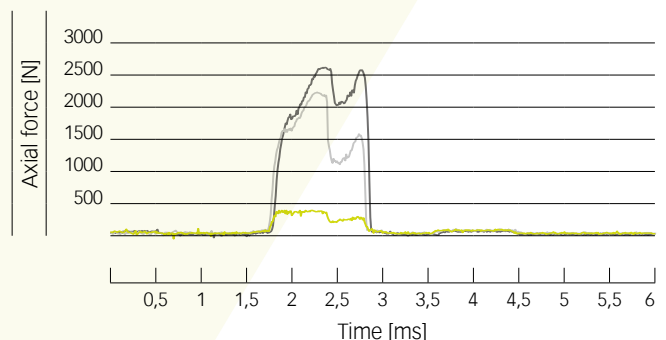


Summary The axial forces increase with increasing speed. With a rigid toolholder, the forces occurring when forming threads are considerably higher than with the Softsynchro® tapping holder. This allows for the optimum use of the synchronous spindle with the best possible service life and thread surface quality.

Comparative axial force testing

Occurring axial forces with thread forms M10 in St37, Speed 2.000 rpm.

Source: In-house testing



- REGO-FIX Softsynchro® tapping holders
- Competitor synchronous toolholder
- Rigid toolholder

PG tapping holders

HSK-A SSY

69893-A

ISO 12164

CYL SSY

DIN 1835 B+E

CYL GSF

DIN 1835 B+E

Type	Part no.	Dimensions [mm]		LCOMP	
		BD1	LPR	[mm]	[mm]
HSK-A SSY					
HSK-A 63 SSY / PG 15	2563.61507	24	114,5	- 0,5	+ 0,5
HSK-A 63 SSY / PG 25	2563.62507	40	131	- 0,5	+ 0,5

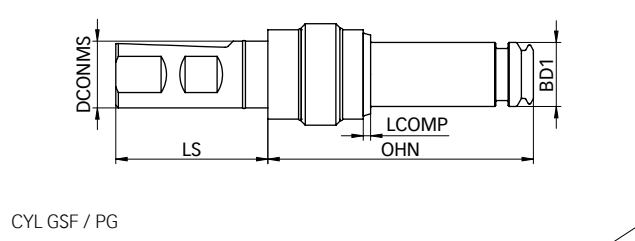
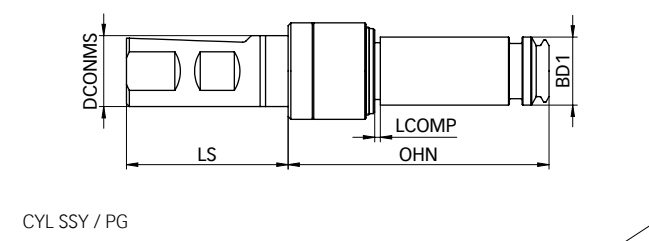
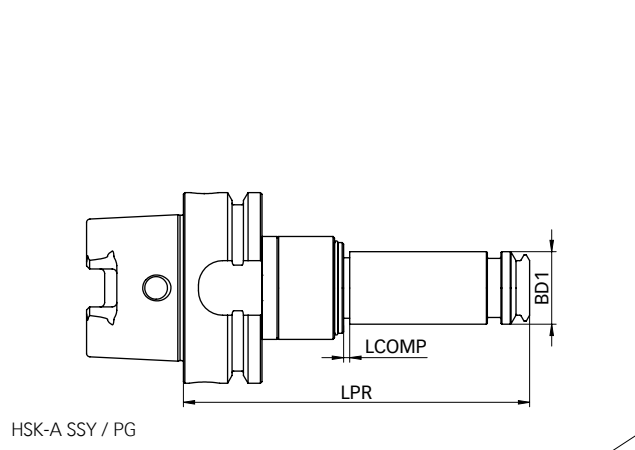
For tapping collets, please refer to page 85.

Type	Part no.	Dimensions [mm]				LCOMP	
		BD1	DCONMS	OHN	LS	[mm]	[mm]
CYL SSY							
CYL 25 SSY / PG 15	2625.61507	24	25	92	57	- 0,5	+ 0,5
CYL 25 SSY / PG 25	2625.62507	40	25	109,5	57	- 0,5	+ 0,5

For tapping collets, please refer to page 85.

Type	Part no.	Dimensions [mm]				LCOMP	
		BD1	DCONMS	OHN	LS	[mm]	[mm]
CYL GSF							
CYL 25 GSF / PG 15	2625.61508	24	25	99,5	57	- 5	+ 7,5
CYL 25 GSF / PG 25	2625.62508	40	25	134	57	- 7	+ 10

For tapping collets, please refer to page 85.



HJNZ interface

Grinding pins perfectly clamped with powRgrip®

Features and benefits

Total system runout $\leq 3 \mu\text{m}$ @ $3 \times D$

Our complete system consists of a powRgrip® collet holder and a collet. Together, these components ensure best-in-class runout and highest precision.

Surface finish max. Ra 0.25

For increased clamping force and higher transmittable torque.

Imbalance compensation

100% precision-balanced to
G 2.5 @ 25,000 rpm / $\leq 1 \text{ gmm}$.

Vibration damping

Our collet holders provide optimal vibration damping, contributing to superior surface finish and preventing chatter marks.



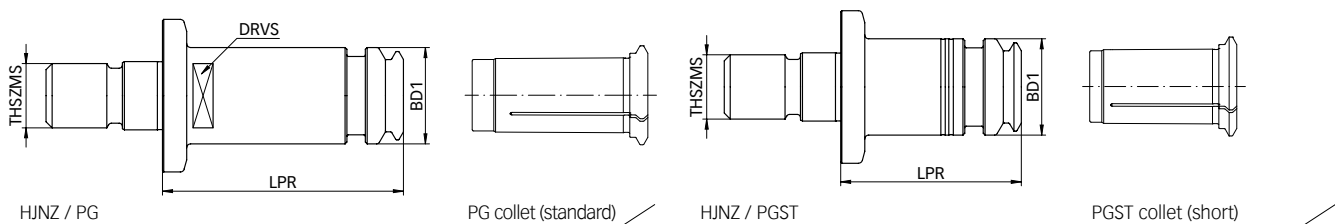
Advantages The advantages of powRgrip® in grinding applications with HSK interfaces have been proven many times. HJNZ holders, developed in close cooperation with grinding machine manufacturers, offer significant advantages over commonly used ER and expansion mandrel solutions.

Runout accuracy High runout accuracy improves the dressing process, while vibration damping ensures significantly better surface finishes. The high rigidity enables increased cutting parameters and more reliable dimensional accuracy. In addition, various cooling options in the powRgrip® collets ensure optimal coolant delivery.

In combination with the newly developed, extra-short PGST collets, a compact overall length is achieved. HJNZ holders are manufactured according to specifications from Fischer Spindle.

Type	Part no.	Dimensions [mm]				Nm
		THSZMS	BD1	LPR	DRVS	
HJNZ 60						
HJNZ 60/PG 6 x 033	8267.60060	M7	10	33	10	16
HJNZ 50						
HJNZ 50/PG 6 x 033	8267.50060	M8	10	33	10	16
HJNZ 50/PG 10 x 049	8267.50101	M8	16	49	17	16
HJNZ 28						
HJNZ 28/PG 15 x 060	8267.28152	M16x1.5	24	60	–	53
HJNZ 28/PG 25 x 075	8267.28253	M16x1.5	40	75	–	53
HJNZ 28/PGST 15 x 045*	8267.28151	M16x1.5	24	45	–	53
HJNZ 28/PGST 25 x 055*	8267.28251	M16x1.5	40	55	–	53
HJNZ 21						
HJNZ 21/PG 15 x 060	8267.21152	M22x1.5	24	60	24	72
HJNZ 21/PG 25 x 075	8267.21253	M22x1.5	40	75	–	72
HJNZ 21/PGST 25 x 055*	8267.21251	M22x1.5	40	55	–	72

*only with PGST collets



Type	Part no.	Type	Part no.
Freewheel wrench heads		Grip bars	
A-FLS Ø 24/MMR 16 (PG 15)	7855.16800	G-A	7655.99900
A-FLS Ø 40/MMR 25 (PG 25)	7855.25000	TORCO-FIX II (40.0-200.0 Nm)	7150.20200

Items without wrench size DRVS require a freewheel wrench with a corresponding torque wrench.
Items with wrench size DRVS can be tightened with standard hexagonal torque wrenches.

powRgrip® collet adapters

Our powRgrip® collet adapters for various quick-change systems

Features and benefits

Total system runout $\leq 3 \mu\text{m}$ @ $3 \times D$

Our complete system consists of a powRgrip® collet holder and a collet. Together, these components ensure optimal runout and the highest precision.

Surface finish max. Ra 0.25

For higher clamping force and therefore greater transmittable torque.

Vibration damping

Our collet holders offer excellent vibration damping, contributing to high surface quality and eliminating chatter marks.



PST – ISO 26623



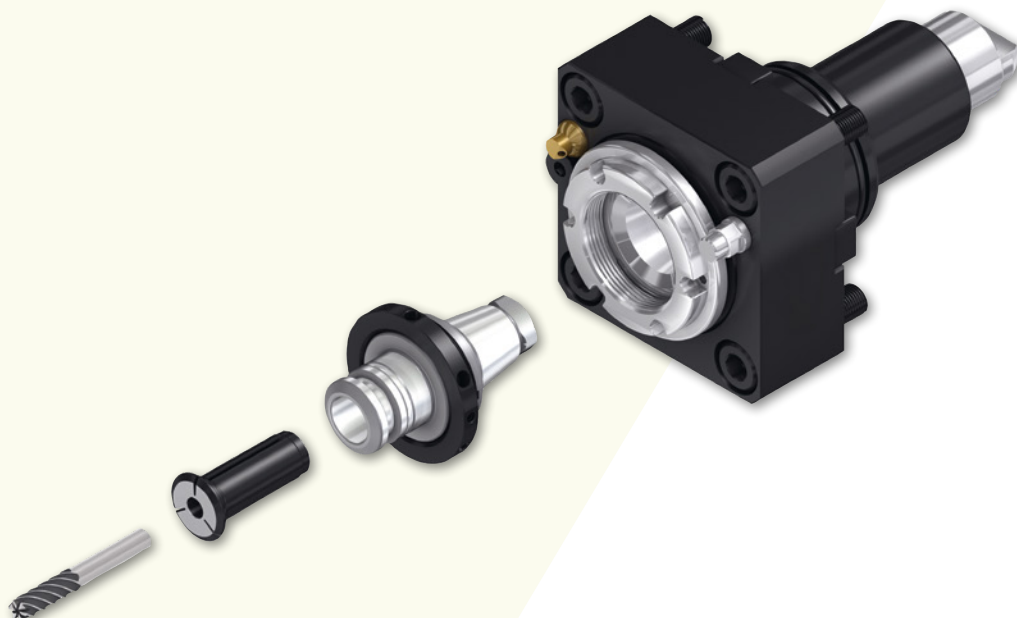
WTO – QF



EWS – Varia VX



MTSK – MT Marchetti

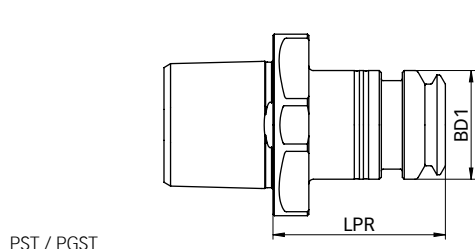


Dimensions [mm]

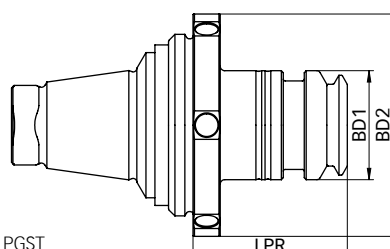
Type	Part no.	BD1	BD2	LPR	THSZMS
PST Adapter ISO 26623					
PST 3/PGST 15 x 038*	2803.71500	24	–	38	–
PST 4/PGST 15 x 038*	2804.71500	24	–	38	–
WTO QF-Adapter					
WTO ER 20-QF/PGST 15*	8040.20150	24	36	34	–
WTO ER 25-QF/PGST 15*	8040.25150	24	49	35	–
WTO ER 32-QF/PGST 25* ¹⁾	8040.32250	40	58	47	–
WTO ER 40-QF/PGST 25* ²⁾	8040.40250	40	71	48	–

¹⁾ compatible only with PGC / PGU 9XXX ²⁾ compatible only with PGU 9XXX *only with PGST collets

Only PGST collets can be used with powRgrip® PST adapters according to ISO 26623 and powRgrip® WTO QF adapters. PGST collets are up to 25% shorter than the conventional PG system.



PST / PGST



WTO ER-QF / PGST

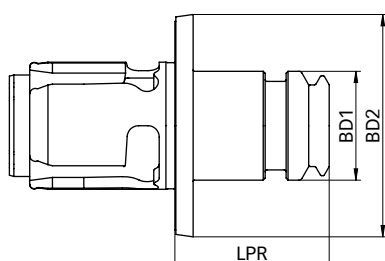
Dimensions [mm]

Type	Part no.	BD1	BD2	LPR	THSZMS
EWS Varia VX-Adapter					
VX 3/PG 15 x 034	8350.03150	24	49	34	–
VX 4/PG 25 x 045 ²⁾	8350.04251	40	64	45	–

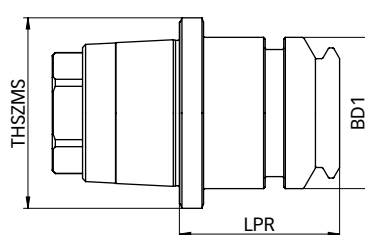
MT Marchetti MTSK

MTSK 50/PG 25 x 040 NL	8999.00901	40	–	40	M50 x 1,5
MTSK 63/PG 32 x 053	8999.00902	50	–	53	M63 x 2,0

¹⁾ compatible only with PGC / PGU 9XXX ²⁾ compatible only with PGU 9XXX



EWS VX / PG



MTSK / PG

Micro-machining	Standard	Cooling		MMS	Long shanks	Short shanks	Pullout protection secuRgrip®	Collets for tapping	Sealed collet head	Extra-short collets
PG-MB	PG	PG-CF	PG-CB	PG-MQL-N	PG-L	PG-S	PG-SG	PG-TAP	PG-SC	PGST
										
Page 70	Page 71	Page 74	Page 77	Page 80	Page 81	Page 82	Page 84	Page 85	Page 86	Page 87



powRgrip® collets

Precision and process reliability at the highest level – our holistic system approach ensures powerful clamping with a total system runout of less than 3 µm.

Maximum clamping force, excellent runout accuracy and consistently high process reliability – that's powRgrip® from REGO-FIX. Our innovative clamping system is designed to deliver top performance and efficiency

in machining. Thanks to its highly precise, vibration-damping tool clamping, powRgrip® ensures outstanding machining results and optimal tool life.

The advantages of powRgrip®

- // **High runout accuracy**
≤ 3 µm at 3 x D for maximum precision.
- // **Reliable clamping force**
Consistently high holding forces for safe and repeatable clamping.
- // **Durability and stability**
Constant clamping force over the entire service life with no material fatigue.
- // **Efficient handling**
Tool changes in seconds with intuitive operation for minimal setup times.

Tailor-made solutions for every application

powRgrip® collets are available in various designs to meet the specific requirements of your production. With different sizes and types, the powRgrip® system offers the ideal solution for every challenge.

Choose top quality and Swiss engineering – with powRgrip® from REGO-FIX, you invest in precision, reliability and efficiency.



powRgrip® collets in Swiss quality



MB



Std.



CF



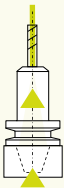
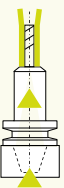
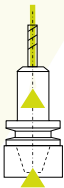
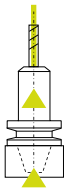
CB



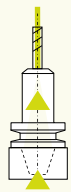
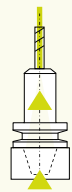
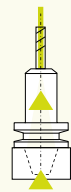
L



S

	microbore	standard	coolant flush	coolant flush	long	short
Main machining use	micromachining	general machining	peripheral cooling	peripheral cooling	longer than DIN 6535	shorter than DIN 6535
PG size	6–10	6–48	6–48	15–32	15–32	6–32
Shaft diameter range	0,2–0,9	1–40	2–40	4–20	4–25,4	3–25,4
Shaft tolerance	h6	h6	h6	h6	h6	h6
For tools with internal coolant supply	–	•	–	–	•	•
Metallic sealed	–	•	–	–	•	•
Internal square	–	–	–	–	–	–
secuRgrip® thread to prevent tool pullout	–	–	–	–	–	–
Technical illustration of cooling	–					
Warranty	5 Years 20,000 Cycles	5 Years 20,000 Cycles	5 Years 20,000 Cycles	5 Years 20,000 Cycles	5 Years 20,000 Cycles	5 Years 20,000 Cycles
Additional features	Screw for length presetting	Screw for length presetting	Screw for length presetting	Screw for length presetting	Without stop screw	Screw for length presetting

*CO₂-compatible collets available on request

					
	PG-SC	SG	TAP	MQL-N*	PGST
	Sealed collet head	secuRgrip®	tapping collet	minimum quantity lubrication	Shortened collet
Main machining use	Graphite, glass, carbide, ceramic	heavy machining	rigid tapping	milling	Driven tools
PG size	10–15	15–32	15–25	15–25	15–25
Shaft diameter range	3–10	10–25,4	3,5–16	5–20	3–20
Shaft tolerance	h6	h6	h9	h6	h6
For tools with internal coolant supply	•	•	•	•	•
Metallic sealed	•	•	–	•	•
Internal square	–	–	•	–	–
secuRgrip® thread to prevent tool pullout	–	•	–	–	–
Technical illustration of cooling					
Warranty	5 Years 20,000 Cycles	5 Years 20,000 Cycles	5 Years 20,000 Cycles	5 Years 20,000 Cycles	5 Years 20,000 Cycles
Additional features	Screw for length presetting	For all tools with endmill flat as per DIN 535-HB	Screw for length presetting	for MQL	Without stop screw

*CO₂-compatible collets available on request

Type	Part no.	Ø		
		[mm]	[decimal inch]	[inch]
PG 6-MB [mm]				
Ø 0,2 mm	1706.00209	0,2	0,0079	—
Ø 0,3 mm	1706.00309	0,3	0,0118	—
Ø 0,4 mm	1706.00409	0,4	0,0157	—
Ø 0,5 mm	1706.00509	0,5	0,0197	—
Ø 0,6 mm	1706.00609	0,6	0,0236	—
Ø 0,7 mm	1706.00709	0,7	0,0276	—
Ø 0,8 mm	1706.00809	0,8	0,0315	—
Ø 0,9 mm	1706.00909	0,9	0,0354	—
PG 10-MB [mm]				
Ø 0,2 mm	1710.00209	0,2	0,0079	—
Ø 0,3 mm	1710.00309	0,3	0,0118	—
Ø 0,4 mm	1710.00409	0,4	0,0157	—
Ø 0,5 mm	1710.00509	0,5	0,0197	—
Ø 0,6 mm	1710.00609	0,6	0,0236	—
Ø 0,7 mm	1710.00709	0,7	0,0276	—
Ø 0,8 mm	1710.00809	0,8	0,0315	—
Ø 0,9 mm	1710.00909	0,9	0,0354	—



Type	Part no.	Ø		
		[mm]	[decimal inch]	[inch]
PG 6 [mm]				
Ø 1,0 mm	1706.01000	1,0	0,0394	–
Ø 1,5 mm	1706.01500	1,5	0,1181	–
Ø 2,0 mm	1706.02000	2,0	0,0787	–
Ø 2,5 mm	1706.02500	2,5	0,0984	–
Ø 3,0 mm	1706.03000	3,0	0,1181	–
Ø 4,0 mm	1706.04000	4,0	0,1574	–

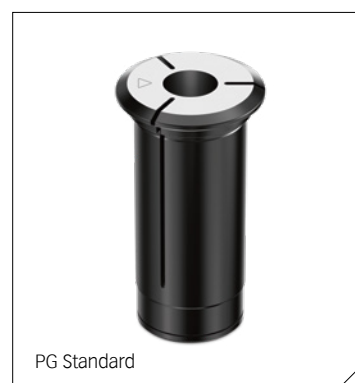
PG 6 [inch]				
Ø 1/16"	1706.01591	1,59	0,0625	1/16"
Ø 1/8"	1706.03181	3,175	0,125	1/8"

PG 10 [mm]				
Ø 1,0 mm	1710.01000	1,0	0,0394	–
Ø 1,5 mm	1710.01500	1,5	0,1181	–
Ø 2,0 mm	1710.02000	2,0	0,0787	–
Ø 2,5 mm	1710.02500	2,5	0,0984	–
Ø 3,0 mm	1710.03000	3,0	0,1181	–
Ø 3,5 mm	1710.03500	3,5	0,1378	–
Ø 4,0 mm	1710.04000	4,0	0,1575	–
Ø 4,5 mm	1710.04500	4,5	0,1772	–
Ø 5,0 mm	1710.05000	5,0	0,1969	–
Ø 5,5 mm	1710.05500	5,5	0,2165	–
Ø 6,0 mm	1710.06000	6,0	0,2362	–

PG 10 [inch]				
Ø 1/16"	1710.01591	1,59	0,0625	1/16"
Ø 1/8"	1710.03181	3,175	0,125	1/8"
Ø 3/16"	1710.04761	4,763	0,1875	3/16"
Ø 1/4"	1710.06351	6,35	0,25	1/4"

PG 15 [mm]				
Ø 3,0 mm	1715.03000	3,0	0,1181	–
Ø 3,5 mm	1715.03500	3,5	0,1378	–
Ø 4,0 mm	1715.04000	4,0	0,1575	–
Ø 4,5 mm	1715.04500	4,5	0,1772	–
Ø 5,0 mm	1715.05000	5,0	0,1969	–
Ø 5,5 mm	1715.05500	5,5	0,2165	–
Ø 6,0 mm	1715.06000	6,0	0,2362	–
Ø 7,0 mm	1715.07000	7,0	0,2756	–
Ø 8,0 mm	1715.08000	8,0	0,315	–
Ø 9,0 mm	1715.09000	9,0	0,3543	–
Ø 10,0 mm	1715.10000	10,0	0,3937	–

PG 15-TW [mm]				
Ø 12,00	1715.12006	12,0	0,4724	–



TW: Thin-wall collets are guaranteed 1 year or 2000 clamping cycles

Type	Part no.	Ø		
		[mm]	[decimal inch]	[inch]
PG 15 [inch]				
Ø 1/8"	1715.03181	3,175	0,125	1/8"
Ø 3/16"	1715.04761	4,763	0,1875	3/16"
Ø 1/4"	1715.06351	6,35	0,25	1/4"
Ø 5/16"	1715.07941	7,938	0,3125	5/16"
Ø 3/8"	1715.09521	9,525	0,375	3/8"

PG 15-TW [inch]				
Ø 1/2"	1715.12706	12,7	0,5	1/2"

TW: Thin-wall collets are guaranteed 1 year or 500 clamping cycles

PG 25 [mm]				
Ø 3,0 mm	1725.03000	3,0	0,1181	–
Ø 3,5 mm	1725.03500	3,5	0,1378	–
Ø 4,0 mm	1725.04000	4,0	0,1575	–
Ø 4,5 mm	1725.04500	4,5	0,1772	–
Ø 5,0 mm	1725.05000	5,0	0,1969	–
Ø 5,5 mm	1725.05500	5,5	0,2165	–
Ø 6,0 mm	1725.06000	6,0	0,2362	–
Ø 7,0 mm	1725.07000	7,0	0,2756	–
Ø 8,0 mm	1725.08000	8,0	0,315	–
Ø 9,0 mm	1725.09000	9,0	0,3543	–
Ø 10,0 mm	1725.10000	10,0	0,3937	–
Ø 11,0 mm	1725.11000	11,0	0,4331	–
Ø 12,0 mm	1725.12000	12,0	0,4724	–
Ø 13,0 mm	1725.13000	13,0	0,5118	–
Ø 14,0 mm	1725.14000	14,0	0,5512	–
Ø 15,0 mm	1725.15000	15,0	0,5906	–
Ø 16,0 mm	1725.16000	16,0	0,63	–
Ø 18,0 mm	1725.18000	18,0	0,7087	–
Ø 20,0 mm	1725.20000	20,0	0,7874	–

PG 25 [inch]				
Ø 1/8"	1725.03181	3,175	0,125	1/8"
Ø 3/16"	1725.04761	4,763	0,1875	3/16"
Ø 1/4"	1725.06351	6,35	0,25	1/4"
Ø 5/16"	1725.07941	7,938	0,3125	5/16"
Ø 3/8"	1725.09521	9,525	0,375	3/8"
Ø 7/16"	1725.11111	11,113	0,4375	7/16"
Ø 1/2"	1725.12701	12,7	0,5	1/2"
Ø 9/16"	1725.14291	14,288	0,5625	9/16"
Ø 5/8"	1725.15881	15,875	0,625	5/8"
Ø 11/16"*	1725.17461	17,4625	0,6875	11/16"
Ø 3/4"	1725.19051	19,05	0,75	3/4"

*USA only

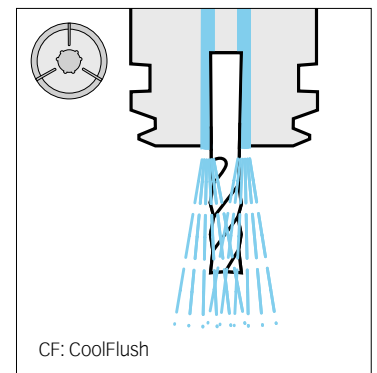
Type	Part no.	Ø		
		[mm]	[decimal inch]	[inch]
PG 32 [mm]				
Ø 6,0 mm	1732.06000	6,0	0,2362	–
Ø 7,0 mm	1732.07000	7,0	0,2756	–
Ø 8,0 mm	1732.08000	8,0	0,315	–
Ø 9,0 mm	1732.09000	9,0	0,3543	–
Ø 10,0 mm	1732.10000	10,0	0,3937	–
Ø 11,0 mm	1732.11000	11,0	0,4331	–
Ø 12,0 mm	1732.12000	12,0	0,4724	–
Ø 14,0 mm	1732.14000	14,0	0,5512	–
Ø 16,0 mm	1732.16000	16,0	0,63	–
Ø 18,0 mm	1732.18000	18,0	0,7087	–
Ø 20,0 mm	1732.20000	20,0	0,7874	–
Ø 22,0 mm	1732.22000	22,0	0,8661	–
Ø 25,0 mm	1732.25000	25,0	0,9843	–

PG 32 [inch]				
Ø 1/4"	1732.06351	6,35	0,25	1/4"
Ø 5/16"	1732.07941	7,938	0,3125	5/16"
Ø 3/8"	1732.09521	9,525	0,375	3/8"
Ø 7/16"	1732.11111	11,113	0,4375	7/16"
Ø 1/2"	1732.12701	12,7	0,5	1/2"
Ø 9/16"	1732.14291	14,288	0,5625	9/16"
Ø 5/8"	1732.15881	15,875	0,625	5/8"
Ø 3/4"	1732.19051	19,05	0,75	3/4"
Ø 7/8"	1732.22231	22,225	0,875	7/8"
Ø 1"	1732.25401	25,4	1,0	1"

PG 48 [mm]				
Ø 20,0 mm	1748.20000	20,0	0,7874	–
Ø 25,0 mm	1748.25000	25,0	0,9843	–
Ø 32,0 mm	1748.32000	32,0	1,2598	–
Ø 40,0 mm	1748.40000	40,0	1,5748	–

PG 48 [inch]				
Ø 3/4"	1748.19051	19,05	0,75	3/4"
Ø 1"	1748.25401	25,4	1,0	1"
Ø 1 1/4"	1748.31751	31,75	1,25	1 1/4"
Ø 1 1/2"	1748.38101	38,1	1,5	1 1/2"

Type	Part no.	[mm]	[decimal inch]	[inch]
PG 6-CF [mm]				
Ø 2,0 mm	1706.02002	2,0	0,0787	–
Ø 3,0 mm	1706.03002	3,0	0,1181	–
PG 6-CF [inch]				
Ø 1/8"	1706.03183	3,175	0,125	1/8"
PG 10-CF [mm]				
Ø 2,0 mm	1710.02002	2,0	0,0787	–
Ø 2,5 mm	1710.02502	2,5	0,0984	–
Ø 3,0 mm	1710.03002	3,0	0,1181	–
Ø 4,0 mm	1710.04002	4,0	0,1575	–
Ø 5,0 mm	1710.05002	5,0	0,1969	–
Ø 6,0 mm	1710.06002	6,0	0,2362	–
PG 10-CF [inch]				
Ø 1/8"	1710.03183	3,175	0,125	1/8"
Ø 3/16"	1710.04763	4,763	0,1875	3/16"
Ø 1/4"	1710.06353	6,35	0,25	1/4"
PG 15-CF [mm]				
Ø 3,0 mm	1715.03002	3,0	0,1181	–
Ø 4,0 mm	1715.04002	4,0	0,1575	–
Ø 5,0 mm	1715.05002	5,0	0,1969	–
Ø 6,0 mm	1715.06002	6,0	0,2362	–
Ø 7,0 mm	1715.07002	7,0	0,2756	–
Ø 8,0 mm	1715.08002	8,0	0,315	–
Ø 9,0 mm	1715.09002	9,0	0,3543	–
Ø 10,0 mm	1715.10002	10,0	0,3937	–
PG 15-CF [inch]				
Ø 1/8"	1715.03183	3,175	0,125	1/8"
Ø 3/16"	1715.04763	4,763	0,1875	3/16"
Ø 1/4"	1715.06353	6,35	0,25	1/4"
Ø 5/16"	1715.07943	7,938	0,3125	5/16"
Ø 3/8"	1715.09523	9,525	0,375	3/8"



Type	Part no.	Ø		
		[mm]	[decimal inch]	[inch]
PG 25-CF [mm]				
Ø 3,0 mm	1725.03002	3,0	0,1181	–
Ø 4,0 mm	1725.04002	4,0	0,1575	–
Ø 5,0 mm	1725.05002	5,0	0,1969	–
Ø 6,0 mm	1725.06002	6,0	0,2362	–
Ø 7,0 mm	1725.07002	7,0	0,2756	–
Ø 8,0 mm	1725.08002	8,0	0,315	–
Ø 9,0 mm	1725.09002	9,0	0,3543	–
Ø 10,0 mm	1725.10002	10,0	0,3937	–
Ø 11,0 mm	1725.11002	11,0	0,4331	–
Ø 12,0 mm	1725.12002	12,0	0,4724	–
Ø 13,0 mm	1725.13002	13,0	0,5118	–
Ø 14,0 mm	1725.14002	14,0	0,5512	–
Ø 15,0 mm	1725.15002	15,0	0,5906	–
Ø 16,0 mm	1725.16002	16,0	0,63	–
Ø 18,0 mm	1725.18002	18,0	0,7087	–
Ø 20,0 mm	1725.20002	20,0	0,7874	–
PG 25-CF [inch]				
Ø 1/8"	1725.03183	3,175	0,125	1/8"
Ø 3/16"	1725.04763	4,763	0,1875	3/16"
Ø 1/4"	1725.06353	6,35	0,25	1/4"
Ø 5/16"	1725.07943	7,938	0,3125	5/16"
Ø 3/8"	1725.09523	9,525	0,375	3/8"
Ø 7/16"	1725.11113	11,113	0,4375	7/16"
Ø 1/2"	1725.12703	12,7	0,5	1/2"
Ø 9/16"	1725.14293	14,288	0,5625	9/16"
Ø 5/8"	1725.15883	15,875	0,625	5/8"
Ø 3/4"	1725.19053	19,05	0,75	3/4"

Type	Part no.	Ø		
		[mm]	[decimal inch]	[inch]
PG 32-CF [mm]				
Ø 6,0 mm	1732.06002	6,0	0,2362	–
Ø 7,0 mm	1732.07002	7,0	0,2756	–
Ø 8,0 mm	1732.08002	8,0	0,315	–
Ø 9,0 mm	1732.09002	9,0	0,3543	–
Ø 10,0 mm	1732.10002	10,0	0,3937	–
Ø 11,0 mm	1732.11002	11,0	0,4331	–
Ø 12,0 mm	1732.12002	12,0	0,4724	–
Ø 14,0 mm	1732.14002	14,0	0,5512	–
Ø 16,0 mm	1732.16002	16,0	0,63	–
Ø 18,0 mm	1732.18002	18,0	0,7087	–
Ø 20,0 mm	1732.20002	20,0	0,7874	–
Ø 22,0 mm	1732.22002	22,0	0,8661	–
Ø 25,0 mm	1732.25002	25,0	0,9843	–

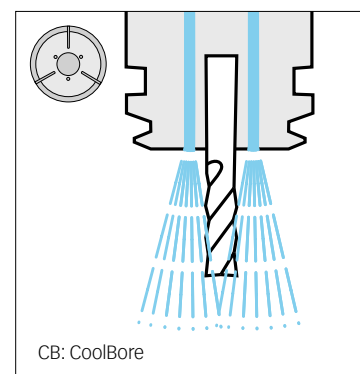
PG 32-CF [inch]				
Ø 1/4"	1732.06353	6,35	0,25	1/4"
Ø 5/16"	1732.07943	7,938	0,3125	5/16"
Ø 3/8"	1732.09523	9,525	0,375	3/8"
Ø 7/16"	1732.11113	11,113	0,4375	7/16"
Ø 1/2"	1732.12703	12,7	0,5	1/2"
Ø 9/16"	1732.14293	14,288	0,5625	9/16"
Ø 5/8"	1732.15883	15,875	0,625	5/8"
Ø 3/4"	1732.19053	19,05	0,75	3/4"
Ø 7/8"	1732.22233	22,225	0,875	7/8"
Ø 1"	1732.25403	25,4	1,0	1"

PG 48-CF [mm]				
Ø 20,0 mm	1748.20002	20,0	0,7874	–
Ø 25,0 mm	1748.25002	25,0	0,9843	–
Ø 32,0 mm	1748.32002	32,0	1,2598	–
Ø 40,0 mm	1748.40002	40,0	1,5748	–

PG 48-CF [inch]				
Ø 3/4"	1748.19053	19,05	0,75	3/4"
Ø 1"	1748.25403	25,4	1,0	1"
Ø 1 1/4"	1748.31753	31,75	1,25	1 1/4"
Ø 1 1/2"	1748.38103	38,1	1,5	1 1/2"

Type	Part no.	[mm]	[decimal inch]	[inch]
PG 15-CB [mm]				
Ø 4,0 mm	1715.04009	4,0	0,1575	–
Ø 6,0 mm	1715.06009	6,0	0,2362	–
Ø 8,0 mm	1715.08009	8,0	0,3150	–
PG 15-CB* [inch]				
Ø 1/8"	1715.03189	3,175	0,125	1/8"
Ø 3/16"	1715.04769	4,763	0,1875	3/16"
Ø 1/4"	1715.06359	6,35	0,25	1/4"
PG 25-CB [mm]				
Ø 6,0 mm	1725.06009	6,00	0,2362	–
Ø 8,0 mm	1725.08009	8,00	0,3150	–
Ø 10,0 mm	1725.10009	10,00	0,3937	–
Ø 12,0 mm	1725.12009	12,00	0,4724	–
Ø 16,0 mm	1725.16009	16,00	0,6300	–
PG 25-CB [inch]				
Ø 1/4"	1725.06359	6,35	0,2500	1/4"
Ø 3/8"	1725.09529	9,53	0,3750	3/8"
Ø 1/2"	1725.12709	12,70	0,5000	1/2"
Ø 5/8"	1725.15889	15,88	0,6250	5/8"
PG 32-CB [mm]				
Ø 12,0 mm	1732.12009	12,00	0,4724	–
Ø 16,0 mm	1732.16009	16,00	0,6300	–
Ø 20,0 mm	1732.20009	20,00	0,7874	–
PG 32-CB [inch]				
Ø 1/2"	1732.12709	12,70	0,5000	1/2"
Ø 5/8"	1732.15889	15,88	0,6250	5/8"
Ø 3/4"	1732.19059	19,05	0,7500	3/4"

*USA only

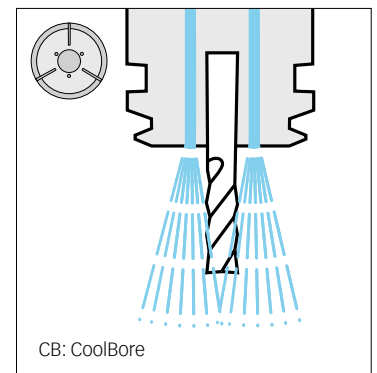


Collets for short shank tools with coolant channels for peripheral cooling PG-S-CB

PG-S-CB

Type	Part no.	[mm]	[decimal inch]	[inch]
PG 15-S-CB* [mm]				
Ø 4 mm	8415.04007	3,0	0,1575	
Ø 6 mm	8145.06007	6,0	0,2362	–
Ø 8 mm	8415.08007	8,0	0,315	–
PG 15-S-CB* [inch]				
Ø 1/8"	8415.03187	3,175	0,125	1/8"
Ø 3/16"	8415.04767	4,763	0,1875	3/16"
Ø 1/4"	8415.06357	6,35	0,25	1/4"
PG 25-S-CB* [inch]				
Ø 1/8"	8425.03187	3,175	0,125	1/8"
Ø 3/16"	8425.04767	4,763	0,1875	3/16"
Ø 1/4"	8425.06357	6,35	0,25	1/4"
Ø 5/16"	8425.07947	7,94	0,3126	5/16"
Ø 3/8"	8425.09527	9,52	0,3748	3/8"
Ø 1/2"	8425.12707	12,7	0,5	1/2"
Ø 5/8"	8425.15887	15,88	0,6252	5/8"

*USA only



CB: CoolBore



PG-S-CB

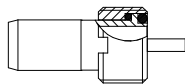


Collets for minimum quantity lubrication PG-MQL-N

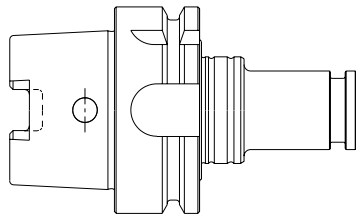
PG-MQL-N

Minimum quantity lubrication (MQL) refers to cooling lubrication systems that use a mixture of compressed air and a very small amount of oil (<50 ml/h) to ensure optimal machining.

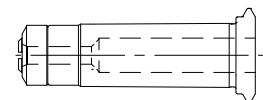
The powRgrip® solution for MQL applications consists of a coolant tube with lance, which guides the mixture through the collet directly to the tool. It is suitable for single-channel MQL systems and tool shanks according to DIN 69090-3.



Coolant tube KSR-MQL



Toolholder



PG MQL-N collet

Type	Part no.	Ø [mm]	Ø [decimal inch]	Ø [inch]
PG 15-MQL-N [mm]				
Ø 5,0 mm	8415.05001	5,00	0,1969	–
Ø 6,0 mm	8415.06001	6,00	0,2362	–
Ø 8,0 mm	8415.08001	8,00	0,3150	–
Ø 10,0 mm	8415.10001	10,00	0,3937	–
PG 25-MQL-N [mm]				
Ø 10,0 mm	8425.10001	10,00	0,3937	–
Ø 12,0 mm	8425.12001	12,00	0,4724	–
Ø 16,0 mm	8425.16001	16,00	0,6300	–
Ø 20,0 mm	8425.20001	20,00	0,7874	–
PG 25-MQL-N [inch]				
Ø 1/4"	8425.06351	6,35	0,2500	1/4"
Ø 1/2"	8425.12701	12,70	0,5000	1/2"
Ø 5/8"	8425.15881	15,88	0,6250	5/8"



PG-MQL-N

Type	Part no.	Suitable for toolholder	L1
MQL–Cooling lubricant tube			
KSR 40-MQL PG 15 x 074	7211.40153	HSK 40 / PG 15 x 074	42 mm
KSR 40-MQL PG 15 x 080	7211.40154	HSK 40 / PG 15 x 080	48 mm
KSR 40-MQL PG 15 x 100	7211.40155	HSK 40 / PG 15 x 100	68 mm
KSR 40-MQL PG 15 x 120	7211.40156	HSK 40 / PG 15 x 120	88 mm
KSR 50-MQL PG 15 x 080	7211.50154	HSK 50 / PG 15 x 080	48 mm
KSR 50-MQL PG 15 x 100	7211.50155	HSK 50 / PG 15 x 100	71 mm
KSR 50-MQL PG 15 x 120	7211.50156	HSK 50 / PG 15 x 120	90 mm
KSR 50-MQL PG 25 x 100	7211.50255	HSK 50 / PG 25 x 100	57 mm
KSR 63-MQL PG 15 x 080	7211.63154	HSK 63 / PG 15 x 080	49 mm
KSR 63-MQL PG 15 x 120	7211.63156	HSK 63 / PG 15 x 120	89 mm
KSR 63-MQL PG 15 x 160	7211.63158	HSK 63 / PG 15 x 160	129 mm
KSR 63-MQL PG 25 x 100	7211.63255	HSK 63 / PG 25 x 100	58 mm
KSR 63-MQL PG 25 x 120	7211.63256	HSK 63 / PG 25 x 120	78 mm
KSR 63-MQL PG 25 x 160	7211.63258	HSK 63 / PG 25 x 160	118 mm



KSR-MQL

Type	Part no.	Ø [mm]	[decimal inch]	[inch]
PG 15-L [mm]				
Ø 4,0 mm	1715.04001	4,0	0,1575	–
Ø 5,0 mm	1715.05001	5,0	0,1969	–
Ø 6,0 mm	1715.06001	6,0	0,2362	–
Ø 8,0 mm	1715.08001	8,0	0,315	–
Ø 10,0 mm	1715.10001	10,0	0,3937	–

PG 15-L [inch]				
Ø 1/4"	1715.06350	6,35	0,25	1/4"
Ø 5/16"	1715.07940	7,94	0,3126	5/16"
Ø 3/8"	1715.09520	9,52	0,3748	3/8"

PG 25-L [mm]				
Ø 6,0 mm	1725.06001	6,0	0,2362	–
Ø 8,0 mm	1725.08001	8,0	0,315	–
Ø 10,0 mm	1725.10001	10,0	0,3937	–
Ø 12,0 mm	1725.12001	12,0	0,4724	–
Ø 14,0 mm	1725.14001	14,0	0,5512	–
Ø 16,0 mm	1725.16001	16,0	0,6299	–
Ø 20,0 mm	1725.20001	20,0	0,7874	–

PG 25-L [inch]				
Ø 1/4"	1725.06350	6,35	0,25	1/4"
Ø 5/16"	1725.07940	7,94	0,3126	5/16"
Ø 3/8"	1725.09520	9,52	0,3748	3/8"
Ø 1/2"	1725.12700	12,7	0,5	1/2"
Ø 5/8"	1725.15880	15,88	0,6252	5/8"
Ø 3/4"	1725.19050	19,05	0,75	3/4"

PG 32-L [mm]				
Ø 12,0 mm	1732.12001	12,0	0,4724	–
Ø 16,0 mm	1732.16001	16,0	0,6299	–
Ø 20,0 mm	1732.20001	20,0	0,7874	–
Ø 25,0 mm	1732.25001	25,0	0,9843	–

PG 32-L [inch]				
Ø 1/2"	1732.12700	12,7	0,5	1/2"
Ø 3/4"	1732.19050	19,05	0,75	3/4"
Ø 1"	1732.25400	25,4	1,0	1"



PG-L

Type	Part no.	[mm]	[decimal inch]	[inch]
PG 6-S [mm]				
Ø 3,0 mm	1706.03008	3,0	0,1181	–
PG 6-S [inch]				
Ø 1/8"	1706.03188	3,175	0,125	1/8"
PG 10-S [mm]				
Ø 3,0 mm	1710.03008	3,0	0,1181	–
Ø 4,0 mm	1710.04008	4,0	0,1575	–
Ø 6,0 mm	1710.06008	6,0	0,2362	–
PG 10-S [inch]				
Ø 1/8"	1710.03188	3,175	0,125	1/8"
Ø 3/16"	1710.04768	4,763	0,1875	3/16"
Ø 1/4"	1710.06358	6,35	0,25	1/4"
PG 15-S [mm]				
Ø 4,0 mm	1715.04008	4,0	0,1575	–
Ø 5,0 mm	1715.05008	5,0	0,1969	–
Ø 6,0 mm	1715.06008	6,0	0,2362	–
Ø 8,0 mm	1715.08008	8,0	0,315	–
Ø 10,0 mm	1715.10008	10,0	0,3937	–
PG 15-S [inch]				
Ø 1/8"	1715.03188	3,175	0,125	1/8"
Ø 3/16"	1715.04768	4,763	0,1875	3/16"
Ø 1/4"	1715.06358	6,35	0,25	1/4"
Ø 5/16"	1715.07948	7,94	0,3126	5/16"
Ø 3/8"	1715.09528	9,52	0,3748	3/8"
PG 25-S [mm]				
Ø 4,0 mm	1725.04008	4,0	0,1575	–
Ø 6,0 mm	1725.06008	6,0	0,2362	–
Ø 8,0 mm	1725.08008	8,0	0,315	–
Ø 10,0 mm	1725.10008	10,0	0,3937	–
Ø 12,0 mm	1725.12008	12,0	0,4724	–
Ø 14,0 mm	1725.14008	14,0	0,5512	–
Ø 16,0 mm	1725.16008	16,0	0,6299	–
Ø 20,0 mm	1725.20008	20,0	0,7874	–

Type	Part no.	Ø		
		[mm]	[decimal inch]	[inch]
PG 25-S [inch]				
Ø 1/8"	1725.03188	3,175	0,125	1/8"
Ø 3/16"	1725.04768	4,763	0,1875	3/16"
Ø 1/4"	1725.06358	6,358	0,2503	1/4"
Ø 5/16"	1725.07948	7,94	0,3126	5/16"
Ø 3/8"	1725.09528	9,52	0,3748	3/8"
Ø 1/2"	1725.12708	12,7	0,5	1/2"
Ø 5/8"	1725.15888	15,88	0,6252	5/8"
Ø 3/4"	1725.19058	19,05	0,75	3/4"
PG 32-S [mm]				
Ø 12,0 mm	1732.12008	12,0	0,4724	–
Ø 16,0 mm	1732.16008	16,0	0,6299	–
Ø 20,0 mm	1732.20008	20,0	0,7874	–
Ø 25,0 mm	1732.25008	25,0	0,9843	–
PG 32-S [inch]				
Ø 1/2"	1732.12708	12,7	0,5	1/2"
Ø 3/4"	1732.19058	19,05	0,75	3/4"
Ø 1"	1732.25408	25,4	1,0	1"



PG-S

Type	Part no.	[mm]	[decimal inch]	[inch]
PG 15-SG [mm]				
Ø 10,0 mm	1715.10004	10,0	0,3937	–
PG 25-SG [mm]				
Ø 10,0 mm	1725.10004	10,0	0,3937	–
Ø 12,0 mm	1725.12004	12,0	0,4724	–
Ø 14,0 mm	1725.14004	14,0	0,5512	–
Ø 16,0 mm	1725.16004	16,0	0,63	–
Ø 18,0 mm	1725.18004	18,0	0,7087	–
Ø 20,0 mm	1725.20004	20,0	0,7874	–
PG 25-SG [inch]				
Ø 1/2"	1725.12704	12,7	0,5	1/2"
Ø 5/8"	1725.15884	15,875	0,625	5/8"
Ø 3/4"	1725.19054	19,05	0,75	3/4"
PG 32-SG [mm]				
Ø 10,0 mm	1732.10004	10,0	0,3937	–
Ø 12,0 mm	1732.12004	12,0	0,4724	–
Ø 14,0 mm	1732.14004	14,0	0,5512	–
Ø 16,0 mm	1732.16004	16,0	0,63	–
Ø 18,0 mm	1732.18004	18,0	0,7087	–
Ø 20,0 mm	1732.20004	20,0	0,7874	–
Ø 25,0 mm	1732.25004	25,0	0,9843	–
PG 32-SG [inch]				
Ø 1/2"	1732.12704	12,7	0,5	1/2"
Ø 5/8"	1732.15884	15,875	0,625	5/8"
Ø 3/4"	1732.19054	19,05	0,75	3/4"
Ø 1"	1732.25404	25,4	1,0	1"
Threaded insert SGI [mm]		Threaded insert SGI [inch]		
Ø 10,0 mm	7694.10000	Ø 1/2"	7694.12700	
Ø 12,0 mm	7694.12000	Ø 5/8"	7694.15880	
Ø 14,0 mm	7694.14000	Ø 3/4"	7694.19050	
Ø 16,0 mm	7694.16000	Ø 1"	7694.25400	
Ø 18,0 mm	7694.18000			
Ø 20,0 mm	7694.20000			
Ø 25,0 mm	7694.25000			



PG-SG



Threaded insert SGI

[Learn more](#)

For more information about secuRgrip® see page 361.

Tapping collet PG-TAP

PG-TAP

DIN 371

DIN 376

ANSI

Type	Part no.	Ø [mm]	Square [mm]	DIN norm
PG 15-TAP [mm]				
Ø 3,5/□ 2,7 mm	1715.03505	3,5	2,7	371/376
Ø 4,5/□ 3,4 mm	1715.04505	4,5	3,4	371/376
Ø 6,0/□ 4,9 mm	1715.06005	6,0	4,9	371/376
Ø 7,0/□ 5,5 mm	1715.07005	7,0	5,5	371/376
Ø 8,0/□ 6,2 mm	1715.08005	8,0	6,2	371/376
Ø 9,0/□ 7,0 mm	1715.09005	9,0	7,0	371/376
Ø 10,0/□ 8,0 mm	1715.10005	10,0	8,0	371

PG 25-TAP [mm]				
Ø 6,0/□ 4,9 mm	1725.06005	6,0	4,9	371/376
Ø 8,0/□ 6,2 mm	1725.08005	8,0	6,2	371/376
Ø 9,0/□ 7,0 mm	1725.09005	9,0	7,0	371/376
Ø 10,0/□ 8,0 mm	1725.10005	10,0	8,0	371
Ø 11,0/□ 9,0 mm	1725.11005	11,0	9,0	371/376
Ø 12,0/□ 9,0 mm	1725.12005	12,0	9,0	371/376
Ø 14,0/□ 11,0 mm	1725.14005	14,0	11,0	371/376
Ø 16,0/□ 12,0 mm	1725.16005	16,0	12,0	371/376

Type	Part no.	Ø [inch]	Square [inch]	DIN norm
PG 15-TAP [inch]				
Ø 0,141" / □ 0,110"	1715.03585	0,141	0,110	ANSI
Ø 0,168" / □ 0,131"	1715.04275	0,168	0,131	ANSI
Ø 0,194" / □ 0,152"	1715.04935	0,194	0,152	ANSI
Ø 0,220" / □ 0,165"	1715.05595	0,220	0,165	ANSI
Ø 0,255" / □ 0,191"	1715.06485	0,255	0,191	ANSI

PG 25-TAP [inch]				
Ø 0,318" / □ 0,238"	1725.08085	0,318	0,238	ANSI
Ø 0,367" / □ 0,275"	1725.09325	0,367	0,275	ANSI
Ø 0,381" / □ 0,286"	1725.09685	0,381	0,286	ANSI

Expert advice

For imperial thread sizes and corresponding squares [□] see page 420.



PG-TAP

The sealed PG-SC collets provide optimal protection against contamination of the toolholder. Machining demanding materials such as ceramic, sintered carbide, graphite or glass places high demands on both tool and machine. The role of the toolholder as the connecting element is a crucial part of efficient machining. In addition to the highest and most consistent runout accuracy, the vibration-damping properties

of the powRgrip® system significantly improve tool life and surface quality. Another challenge is the chips and dust particles generated during machining, which can penetrate the smallest gaps and accumulate over time. PG-SC collets with a completely sealed head prevent such deposits and ensure long service life and consistent performance.

Type	Part no.	Ø		
		[mm]	[decimal inch]	[inch]
PG 10-SC [mm]				
Ø 3,0 mm	8410.03004	3,00	0,1181	–
Ø 4,0 mm	8410.04004	4,00	0,1575	–
PG 15-SC [mm]				
Ø 3,0 mm	8415.03004	3,00	0,1181	–
Ø 4,0 mm	8415.04004	4,00	0,1575	–
Ø 6,0 mm	8415.06004	6,00	0,2362	–
Ø 8,0 mm	8415.08004	8,00	0,3150	–
Ø 10,0 mm	8415.10004	10,00	0,3937	–

Due to their design, PG 15-TW collets have no through-slots and are therefore sealed.

PG 15-TW [mm]				
Ø 12,00	1715.12006	12,0	0,4724	–

TW: Thin-wall collets are guaranteed 1 year or 2000 clamping cycles

PG 15-TW [inch]				
Ø 1/2"	1715.12706	12,7	0,5	1/2"

TW: Thin-wall collets are guaranteed 1 year or 500 clamping cycles



Extra-short collets for PGST collet holders

PGST

powRgrip®

The extra-short PGST collets are up to 25 % shorter than the conventional PG system. This enables a compact assembly length. Available for PST, HJNZ and WTO QuickFlex® collet holders with powRgrip® interface.

Type	Part no.	Ø		
		[mm]	[decimal inch]	[inch]
PGST 15 [mm]				
Ø 3,0 mm	1715.03006	3,00	0,1181	–
Ø 4,0 mm	1715.04006	4,00	0,1575	–
Ø 6,0 mm	1715.06006	6,00	0,2362	–
Ø 8,0 mm	1715.08006	8,00	0,3150	–
Ø 10,0 mm	1715.10006	10,00	0,3937	–

PGST 15 [inch]				
Ø 1/8"	1715.03186	3,18	0,1250	1/8"
Ø 3/16"	1715.04766	4,76	0,1875	3/16"
Ø 1/4"	1715.06356	6,35	0,2500	1/4"
Ø 5/16"	1715.07946	7,94	0,3125	5/16"
Ø 3/8"	1715.09526	9,53	0,3750	3/8"

PGST 25 [mm]				
Ø 3,0 mm	1725.03006	3,00	0,1181	–
Ø 4,0 mm	1725.04006	4,00	0,1575	–
Ø 6,0 mm	1725.06006	6,00	0,2362	–
Ø 8,0 mm	1725.08006	8,00	0,3150	–
Ø 10,0 mm	1725.10006	10,00	0,3937	–
Ø 12,0 mm	1725.12006	12,00	0,4724	–
Ø 16,0 mm	1725.16006	16,00	0,6299	–
Ø 20,0 mm	1725.20006	20,00	0,7874	–

PGST 25 [inch]				
Ø 1/8"	1725.03186	3,18	0,1250	1/8"
Ø 3/16"	1725.04766	4,76	0,1875	3/16"
Ø 1/4"	1725.06356	6,35	0,2500	1/4"
Ø 5/16"	1725.07946	7,94	0,3125	5/16"
Ø 3/8"	1725.09526	9,53	0,3750	3/8"
Ø 1/2"	1725.12706	12,70	0,5000	1/2"
Ø 5/8"	1725.15886	15,88	0,6250	5/8"
Ø 3/4"	1725.19056	19,05	0,7500	3/4"



Note PGST collets may only be used with corresponding PGST toolholders. These toolholders are visually marked by 2 grooves on the outer diameter.

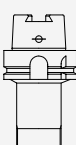
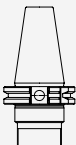
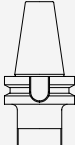
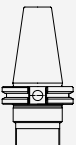
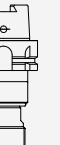


PGST



REGO-FIX▲

Experience the widest ER range

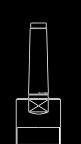
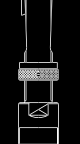
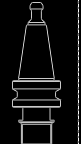
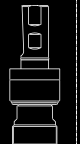
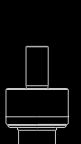
Standard					Cylindrical collets				Collet holders for tapping				Floating chucks		Collet reductions	
HSK/ ER	SK/ ER	BT/ ER	CAT/ ER	CAPTO/ ER	CYL/ ER	CYL/ ERM(X) CYL-F/ ERM(X)	CYL/ ER NC	CYL-DF/ ERM CYL-DF/ ERM(X)	MK/ ER	SH/ ER	ISO 20/ ER	HSK-A SSY	CYL SSY CYL GSF	PH/ER PHC/ER PHC-C/ER	MPH/ ERM(X) MPHC/ ERM(X)	ER(M)/ ERM ER(MX)/ ERM(X)
																
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SR collet	Micro-machining	Standard and ultraprecision	micRun®	Corrosion-resistant	Metallic sealed	CoolBore	Pullout protection secuRgrip®	Collets for tapping	
SR	ER-MB / ER-MBX	ER-Standard/ER-UP	ER-MR	ER-INOX	ER-DM	ER-CB	ER-SG	ER-GB	PCM ET1
									
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Standard		Standard with bearing		Mini nut		Slip-off proof mini nut		External thread				Sealing and coolant flush disks		
Hi-Q®/ ER	Hi-Q®/ ERC	Hi-Q®/ ERB	Hi-Q®/ ERBC	Hi-Q®/ ERM	Hi-Q®/ ERMC	Hi-Q®/ ERM intRlox®	Hi-Q®/ ERM intRlox®	ER MS	Hi-Q®/ ERAX	Hi-Q®/ ERAXC	reCool® RCR/RCS	reCool® RCR/ ERAX	DS/ER	KS/ER
														
Page 190	Page 192	Page 194	Page 194	Page 196	Page 196	Page 198	Page 198	Page 200	Page 202	Page 202	Page 208	Page 213	Page 322	Page 330

B: bearing C: cooling M: mini thread X: slip-off proof A: external thread

DS: sealing disk KS: coolant flush disk

Standard					Colletholders for tapping			Floating chucks		Collet reductions		
HSK/ ER	SK/ ER	BT/ ER	CAT/ ER	CAPTO/ ER	MK/ ER	SH/ ER	ISO 20/ ER	HSK-A SSY	CYL SSY CYL GSF	PH/ER PHC/ER PHC-C/ER	MPH/ ERMV MPHC/ ERMV	ER(M)/ ERM ER(MV)/ ERMV
												
Page 94	Page 100	Page 106	Page 114	Page 120	Page 136	Page 138	Page 140	Page 142	Page 142	Page 145	Page 149	Page 153



Swiss quality ER toolholders



	HSK/ER	SK/ER	BT/ER	BT+/ER	CAT/ER	CAT+/ER	CAPTO/ER
Norm	DIN 69893	DIN 69871	MAS 403 JIS B 6339	–	ASME B5.50	–	–
ISO	ISO 12164	ISO 7388-1	ISO 7388-2	–	–	–	ISO 26623
Balancing	G 2,5 @ 25 000 rpm	G 2,5 @ 25 000 rpm	G 2,5 @ 25 000 rpm	G 2,5 @ 25 000 rpm	G 2,5 @ 25 000 rpm	G 2,5 @ 25 000 rpm	G 2,5 @ 25 000 rpm
Chip hole	HSK-A	•	–	–	•	•	–
Runout TIR (outer taper to inner cone)	≤0,003 mm	≤0,003 mm	≤0,003 mm	≤0,003 mm	≤0,003 mm	≤0,003 mm	≤0,003 mm
Taper tolerance	DIN ISO	AT3	AT3	AT1	AT3	AT1	ISO 26623
MFD*	–	–	–	–	–	–	–
Form A + AD	–	•	•	•	•	•	–
Form AD + B	–	available on request	available on request	–	available on request	–	–

*Micro friction dampening technology



	HSK-A/ER XL	SK/ER XL	BT/ER XL	CAT/ER XL	CAPTO/ER XL
Norm	DIN 69893	DIN 69871	MAS 403 JIS B 6339	ASME B5.50	ISO 26623
ISO	ISO 12164	ISO 7388-1	ISO 7388-2	–	ISO 26623
Balancing	G 2,5 @ 5 000 rpm	G 2,5 @ 5 000 rpm	G 2,5 @ 5 000 rpm	G 2,5 @ 5 000 rpm	G 2,5 @ 5 000 rpm
Chip hole	HSK-A	•	–	•	–
Runout TIR (outer taper to inner cone)	≤0,01 mm	≤0,01 mm	≤0,01 mm	≤0,01 mm	≤0,01 mm
Taper tolerance	DIN ISO	AT3	AT3	AT3	ISO 26623
MFD*	•	•	•	•	•
Form A + AD	–	•	•	•	–
Form AD + B	–	–	–	–	–

*Micro friction dampening technology

Cylindrical collets

CYL/
ER

CYL/
ERM(X)
CYL-F/
ERM(X)

CYL/
ER NC

CYL-DF/
ERM
CYL-DF/
ERMX



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Page 134



Swiss quality ER toolholders



	CYL/ER	CYL/ERM	CYL/ERMX	CYL-F/ERM
Shank tolerance	h6	h6	h6	h6
Runout TIR (shank to cone)	≤0,003 mm	≤0,003 mm	≤0,003 mm	≤0,003 mm
Rotary applications	•	•	•	–
Clamping flat	–	–	–	•
Double ER	–	–	–	–
Slip-off proof	–	–	•	–
Minimal outer diameter	–	•	•	•



	CYL-F/ERMX	CYL-DF/ERM	CYL-DF/ERMX	CYL/ERNC
Shank tolerance	h6	h6	h6	h6
Runout TIR (shank to cone)	≤0,005 mm	≤0,005 mm	≤0,005 mm	≤0,005 mm
Rotary applications	–	–	–	–
Clamping flat	•	•	•	•
Double ER	–	•	•	–
Slip-off proof	•	–	•	–
Minimal outer diameter	•	•	•	–

HSK toolholders

Designed for rotating applications, all our HSK toolholders are suited for high-speed applications where consistent performance is key.

DIN 69893/ISO 12164

Features and benefits

Runout TIR $\leq 3 \mu\text{m}$

Measured from inner taper to outer taper.

Surface finish max. Ra 0.25

Achieve high clamping force and high transferable torque.

Balancing

100% balanced to G 2.5 @ 25,000 rpm/<1gmm.

XL toolholders

100% balanced to G 2.5 @ 5,000 rpm.
TIR from inner to outer taper <10 μm .

Hi-Q® balancing system

Ready to accept Hi-Q® balancing rings which allow for the offset of the imbalance introduced by the cutting tool up to 80,000 rpm depending on the balancing rings used. All toolholders with the additional type information "H" in the article name are designed for balancing rings.

Hi-Q®|ER clamping nut included in delivery

Guarantees highest clamping force and best balancing.

Vibration damping

Our holders offer a good vibration damping to sustain a high surface finish and can prevent cutting force alterations.

Special applications

When extra high clamping force is needed, e.g., when tapping with ER-GB, we recommend to use our friction-bearing clamping nuts Hi-Q®|ERB and Hi-Q®|ERBC.

ID chip hole (only HSK form A)

In accordance with DIN 69873 for 10 mm diameter.
Other HSK-forms available on request.

*Accessories are not included in delivery. HSK-A 125 available on request.
Other XL sizes available on request.*

Balancing specifications

HSK-AZ 15	balanced to 90,000 rpm
ATC-E 15	balanced to 90,000 rpm
HSK-EZ 15	balanced to 90,000 rpm
HSK 25	balanced to 90,000 rpm
HSK 32	balanced to 60,000 rpm
HSK 40	balanced to 45,000 rpm
HSK 50	balanced to 36,000 rpm
HSK 63	G 2.5 @ 25,000 rpm
HSK 80	G 2.5 @ 25,000 rpm
HSK 100	G 2.5 @ 25,000 rpm
HSK 125	G 2.5 @ 25,000 rpm



Expert advice

For all HSK-A and HSK-E form toolholders a range of coolant tubes (KSR) is available.

For KSR part numbers please refer to page 345.

HSK-A toolholders

HSK-AB	HSK-A
ISO 12164	DIN 69893
compatible	ISO 12164

Type	Part no.	Dimensions [mm]				Accessories	
		DLN	BD2	LPR	LB1	FWR*	Wrench
HSK-A 32							
HSK-A 32/ER 11 x 050	2532.11110	19	–	50	–	–	7112.11010
HSK-A 32/ER 16 x 060	2532.11620	28	–	60	–	–	7112.16010
HSK-A 32/ER 20 x 060	2532.12020	34	–	60	–	–	7112.20010
HSK-A 32/ER 25 x 065	2532.12520	42	–	65	–	–	7111.25000
HSK-A 40							
HSK-A 40/ER 16 x 060 H	4540.11620	28	–	60	–	225	7112.16010
HSK-A 40/ER 16 x 080 H	4540.11640	28	–	80	–	225	7112.16010
HSK-A 40/ER 25 x 080 H	4540.12540	42	–	80	–	325	7111.25000
HSK-A 50							
HSK-A 50/ER 16 x 100 H	4550.11650	28	–	100	–	325	7112.16010
HSK-A 50/ER 25 x 080 H	4550.12540	42	–	80	–	325	7111.25000
HSK-A 50/ER 25 x 100 H	4550.12550	42	–	100	–	325	7111.25000
HSK-A 50/ER 32 x 100 H	4550.13250	50	–	100	–	405	7111.32000
HSK-A 63							
HSK-A 63/ER 11 x 100 H	4563.11150	19	–	100	–	325	7112.11010
HSK-A 63/ER 16 x 080 H	4563.11640	28	–	80	–	325	7112.16010
HSK-A 63/ER 16 x 100 H	4563.11650	28	–	100	–	325	7112.16010
HSK-A 63/ER 16 x 160 H	4563.11680	28	–	160	–	325/225	7112.16010
HSK-A 63/ER 16 x 240 XL	8865.13070	28	46	240	140	–	7112.16010
HSK-A 63/ER 16 x 260 XL	8865.13090	28	46	260	140	–	7112.16010
HSK-A 63/ER 16 x 300 XL	8865.13130	28	46	300	140	–	7112.16010
HSK-A 63/ER 16 x 340 XL	8865.13170	28	46	340	240	–	7112.16010
HSK-A 63/ER 16 x 360 XL	8865.13190	28	46	360	240	–	7112.16010
HSK-A 63/ER 16 x 400 XL	8865.13230	28	46	400	240	–	7112.16010
HSK-A 63/ER 20 x 075	2563.12030	34	–	75	–	–	7112.20010
HSK-A 63/ER 25 x 080 H	4563.12540	42	–	80	–	325	7111.25000
HSK-A 63/ER 25 x 100 H	4563.12550	42	–	100	–	325	7111.25000
HSK-A 63/ER 25 x 160 H	4563.12580	42	–	160	–	325	7111.25000
HSK-A 63/ER 25 x 200 H	4563.12590	42	–	200	–	405/325	7111.25000
HSK-A 63/ER 32 x 080 H	4563.13240	50	–	80	–	405	7111.32000
HSK-A 63/ER 32 x 100 H	4563.13250	50	–	100	–	405	7111.32000
HSK-A 63/ER 32 x 160 H	4563.13280	50	–	160	–	405	7111.32000
HSK-A 63/ER 32 x 200 H	4563.13290	50	–	200	–	405/405	7111.32000
HSK-A 63/ER 32 x 240 XL	8865.16070	50	55	240	140	–	7111.32000
HSK-A 63/ER 32 x 260 XL	8865.16090	50	55	260	140	–	7111.32000
HSK-A 63/ER 32 x 340 XL	8865.16170	50	55	340	240	–	7111.32000
HSK-A 63/ER 32 x 360 XL	8865.16190	50	55	360	240	–	7111.32000

*Balancing rings H: Ready to accept balancing rings

Included in delivery: Toolholders with Hi-Q®|ER clamping nut and back-up screw

HSK-A toolholders

HSK-AB	HSK-A
ISO 12164	DIN 69893
compatible	ISO 12164

Type	Part no.	Dimensions [mm]				Accessories	
		DLN	BD2	LPR	LB1	FWR*	Wrench
HSK-A 63/ER 40 x 080	2563.14040	63	–	80	–	–	7111.40000
HSK-A 63/ER 40 x 120 H	4563.14060	63	–	120	–	505	7111.40000
HSK-A 63/ER 40 x 160 H	4563.14080	63	–	160	–	505	7111.40000

HSK-A 80

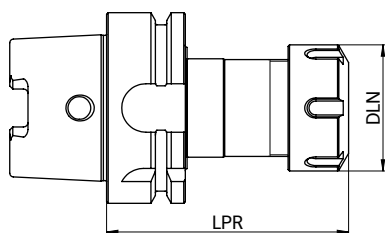
HSK-A 80/ER 16 x 100 H	4580.11650	28	–	100	–	325	7112.16010
HSK-A 80/ER 16 x 160 H	4580.11680	28	–	160	–	325/225	7112.16010
HSK-A 80/ER 32 x 100 H	4580.13250	50	–	100	–	405	7111.32000
HSK-A 80/ER 40 x 120 H	4580.14060	63	–	120	–	505	7111.40000

HSK-A 100

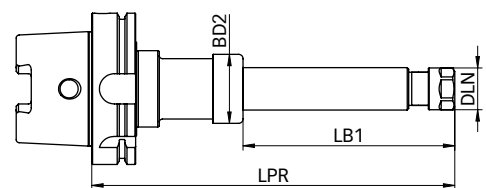
HSK-A 100/ER 16 x 100 H	4500.11650	28	–	100	–	405	7112.16010
HSK-A 100/ER 16 x 160 H	4500.11680	28	–	160	–	405/225	7112.16010
HSK-A 100/ER 16 x 200 H	4500.11690	28	–	200	–	405/225	7112.16010
HSK-A 100/ER 16 x 240 XL	8885.13070	28	46	240	140	–	7112.16010
HSK-A 100/ER 16 x 300 XL	8885.13130	28	46	300	140	–	7112.16010
HSK-A 100/ER 16 x 340 XL	8885.13170	28	46	340	240	–	7112.16010
HSK-A 100/ER 16 x 400 XL	8885.13230	28	46	400	240	–	7112.16010
HSK-A 100/ER 25 x 100 H	4500.12550	42	–	100	–	405	7111.25000
HSK-A 100/ER 25 x 160 H	4500.12580	42	–	160	–	405/325	7111.25000
HSK-A 100/ER 25 x 200 H	4500.12590	42	–	200	–	405/325	7111.25000
HSK-A 100/ER 32 x 100 H	4500.13250	50	–	100	–	405	7111.32000
HSK-A 100/ER 32 x 160 H	4500.13280	50	–	160	–	405	7111.32000
HSK-A 100/ER 32 x 246 XL	8885.16070	50	55	246	140	–	7111.32000
HSK-A 100/ER 32 x 346 XL	8885.16170	50	55	346	240	–	7111.32000
HSK-A 100/ER 40 x 120 H	4500.14060	63	–	120	–	505	7111.40000
HSK-A 100/ER 40 x 200 H	4500.14090	63	–	200	–	505/505	7111.40000

*Balancing rings H: Ready to accept balancing rings
 HSK-A: Hole for data carrier DIN STD 69873 in the flange

Included in delivery: Toolholders with Hi-Q®|ER clamping nut and back-up screw



HSK-A/ER



HSK-A/ER XL

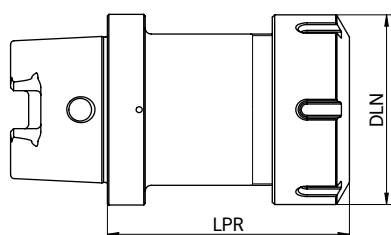
HSK-C toolholders

HSK-CB	HSK-C
ISO 12164	DIN 69893
compatible	ISO 12164

Type	Part no.	Dimensions [mm]				Accessories	
		DLN	BD2	LPR	LB1	FWR*	Wrench
HSK-C 32							
HSK-C 32/ER 16 x 060	2532.11622	28	–	60	–	–	7112.16010
HSK-C 32/ER 20 x 060	2532.12022	34	–	60	–	–	7112.20010
HSK-C 32/ER 25 x 070	2532.12532	42	–	70	–	–	7111.25000
HSK-C 40							
HSK-C 40/ER 20 x 060	2540.12022	34	–	60	–	–	7112.20010
HSK-C 40/ER 25 x 070	2540.12532	42	–	70	–	–	7111.25000
HSK-C 40/ER 32 x 075	2540.13232	50	–	75	–	–	7111.32000
HSK-C 50							
HSK-C 50/ER 25 x 070	2550.12532	42	–	70	–	–	7111.25000
HSK-C 50/ER 32 x 075	2550.13232	50	–	75	–	–	7111.32000
HSK-C 50/ER 40 x 080	2550.14042	63	–	80	–	–	7111.40000
HSK-C 63							
HSK-C 63/ER 32 x 075	2563.13232	50	–	75	–	–	7111.32000
HSK-C 63/ER 40 x 080	2563.14042	63	–	80	–	–	7111.40000

*Balancing rings H: Ready to accept balancing rings

Included in delivery: Toolholders with Hi-Q® | ER clamping nut and back-up screw



HSK-C/ER

HSK-E toolholders

HSK-F toolholders

HSK-AZ 15	HSK-EZ 15	HSK-EB	HSK-E
REGO-FIX	ATC-E 15	ISO 12164	DIN 69893
	DIN SPEC 28999	compatible	ISO 12164

Type	Part no.	Dimensions [mm]				Accessories	
		DLN	BD2	LPR	LB1	FWR*	Wrench
HSK-EZ 15							
HSK-EZ 15/SR 6 x 022	5515.20604	10	–	22	–	–	7864.06000
HSK-EZ 15/ERMS 8 x 021	2515.10804	12	–	21	–	–	7114.08000
HSK-EZ 15/ERMS 11 x 024	2515.11104	16	–	24	–	–	7114.11000
ATC-E 15							
ATC-E 15/SR 6 x 022	5915.20600	10	–	22	–	–	7864.06000
ATC-E 15/ERMS 8 x 021	2915.10800	12	–	21	–	–	7114.08000
ATC-E 15/ERMS 11 x 024	2915.11100	16	–	24	–	–	7114.11000
HSK-AZ 15							
HSK-AZ 15/ERMS 8 x 021	2915.10807	12	–	21	–	–	7114.08000
HSK-AZ 15/ERMS 11 x 024	2915.11107	16	–	24	–	–	7114.11000
HSK-E 25							
HSK-E 25/ERM 16 x 048	2525.11618	22	–	48	–	–	7113.16000
HSK-E 32							
HSK-E 32/ERMS 11 x 038	2532.11109	16	–	38	–	–	7114.11000
HSK-E 32/ERM 16 x 060	2532.11628	22	–	60	–	–	7113.16000
HSK-E 32/ERM 20 x 060	2532.12028	28	–	60	–	–	7113.20000
HSK-E 40							
HSK-E 40/ER 11 x 060 H	4540.11124	19	–	60	–	225	7112.11010
HSK-E 40/ER 16 x 060 H	4540.11624	28	–	60	–	225	7112.16010
HSK-E 40/ER 16 x 080 H	4540.11644	28	–	80	–	225	7112.16010
HSK-E 40/ERM 20 x 075 H	4540.12038	28	–	75	–	285	7113.20000
HSK-E 40/ERM 25 x 080 H	4540.12548	35	–	80	–	325	7113.25000
HSK-E 50							
HSK-E 50/ER 11 x 100 H	4550.11154	19	–	100	–	–	7112.11010
HSK-E 50/ER 16 x 060	2550.11624	28	–	60	–	–	7112.16010
HSK-E 50/ER 16 x 100 H	4550.11654	28	–	100	–	325	7112.16010
HSK-E 50/ER 16 x 160 H	4550.11684	28	–	160	–	325/225	7112.16010
HSK-E 50/ER 20 x 070 H	4550.12034	34	–	70	–	325	7112.20010
HSK-E 50/ER 25 x 080 H	4550.12544	42	–	80	–	325	7111.25000
HSK-E 50/ER 25 x 100 H	4550.12554	42	–	100	–	325	7111.25000
HSK-E 50/ER 32 x 100 H	4550.13254	50	–	100	–	405	7111.32000

*Balancing rings H: Ready to accept balancing rings

Included in delivery: Toolholders with Hi-Q®|ER clamping nut and back-up screw

Expert advice

All ATC-E 15 products are compatible with HSK-EZ according to DIN SPEC 28999:2023-5.

HSK-E toolholders

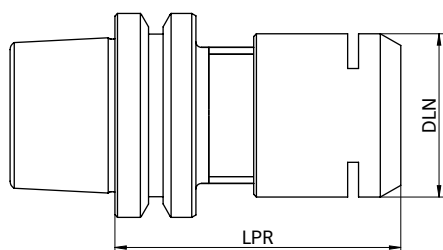
HSK-F toolholders

HSK-EB	HSK-ES	HSK-F
ISO 12164	ISO 12164	DIN 69893
compatible	compatible	ISO 12164

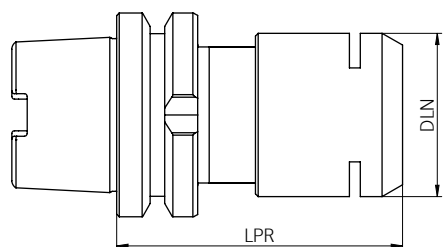
Type	Part no.	Dimensions [mm]				Accessories	
		DLN	BD2	LPR	LB1	FWR*	Wrench
HSK-E 63							
HSK-E 63/ER 32 x 090 H	4563.13244	50	–	90	–	405	7111.32000
HSK-E 63/ER 40 x 080	2563.14044	63	–	80	–	–	7111.40000
HSK-E 63/ER 40 x 120 H	4563.14064	63	–	120	–	505	7111.40000
HSK-F 63							
HSK-F 63/ER 16 x 100 H	4563.11655	28	–	100	–	325	7112.16010
HSK-F 63/ER 25 x 100 H	4563.12555	42	–	100	–	325	7111.25000
HSK-F 63/ER 32 x 100 H	4563.13255	50	–	100	–	405	7111.32000
HSK-F 63/ER 40 x 120 H	4563.14065	63	–	120	–	505	7111.40000

*Balancing rings H: Ready to accept balancing rings

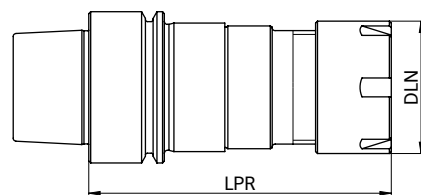
Included in delivery: Toolholders with Hi-Q® | ER clamping nut and back-up screw



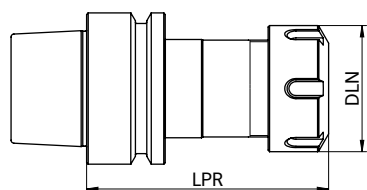
HSK-EZ 15 / ERMS | ATC-E 15 / ERMS



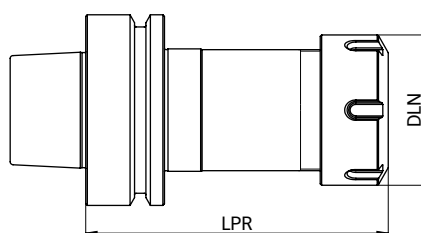
HSK-AZ / ERMS



HSK-E / ERM



HSK-E / ER



HSK-F / ER

Steep taper toolholders SK

Universally suitable for different machining applications

DIN 69871 / DIN ISO 7388-1

Features and benefits

Runout TIR $\leq 3 \mu\text{m}$

Measured from inner taper to outer taper.

Taper accuracy AT3

Better spindle-to-holder fit and accuracy.

Surface finish max. Ra 0.25

Achieve high clamping force and high transferable torque.

Balancing

100% balanced to G 2.5 @ 25,000 rpm / $< 1\text{gmm}$.

XL toolholders

100% balanced to G 2.5 @ 5,000 rpm.
TIR from inner to outer taper $< 10 \mu\text{m}$.

Hi-Q® balancing system

Ready to accept Hi-Q® balancing rings which allow for the offset of the imbalance introduced by the cutting tool up to 80,000 rpm depending on the balancing rings used. All toolholders with the additional type information "H" in the article name are designed for balancing rings.

Hi-Q®|ER clamping nut included in delivery

Guarantees highest clamping force and best balancing.

Vibration damping

Our holders offer good vibration damping to sustain a high surface finish and can help prevent chatter.

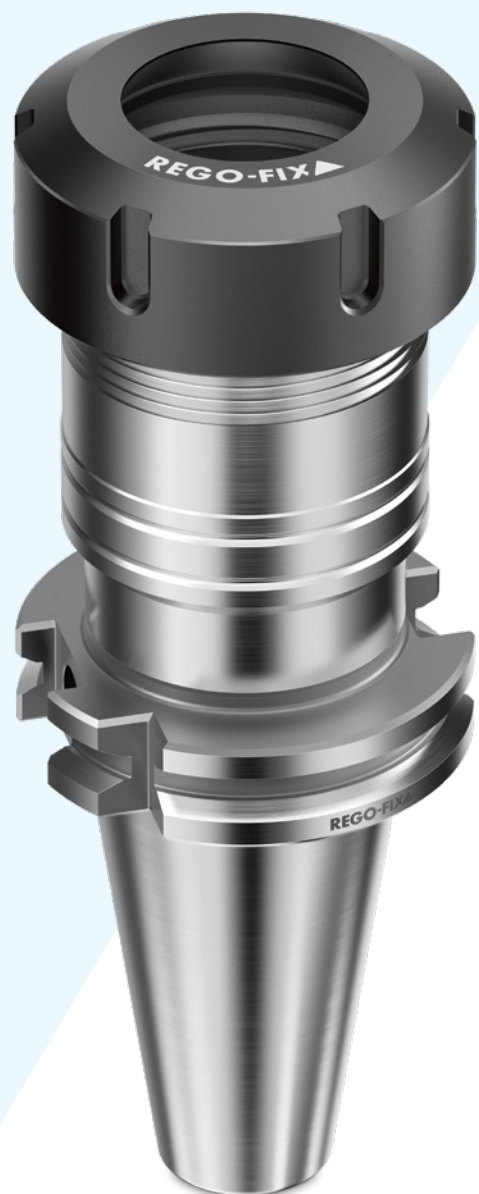
ID chip hole

In accordance with DIN 69873 for 10 mm diameter.

Accessories are not included in delivery. Other XL sizes available on request.

Balancing specifications

SK 30	balanced to 30,000 rpm
SK 40	G 2.5 @ 25,000 rpm
SK 50	G 2.5 @ 25,000 rpm



SK toolholders

ERA-Zero-Z® toolholders

SK

DIN 69871

DIN ISO 7388-1

Type	Part no.	Dimensions [mm]				Accessories	
		DLN	BD2	LPR	LB1	FWR*	Wrench
SK 30							
SK 30/ER 16 x 070 H	4230.11630	28	–	70	–	285	7112.16010
SK 30/ER 16 x 100 H	4230.11650	28	–	100	–	285	7112.16010
SK 30/ER 25 x 060 H	4230.12520	42	–	60	–	325	7111.25000
SK 30/ER 32 x 065	2230.13220	50	–	65	–	–	7111.32000
SK 40							
SK 40/ER 11 x 100 H	4240.11150	19	–	100	–	325	7112.11010
SK 40/ER 11 x 160 H	4240.11180	19	–	160	–	325	7112.11010
SK 40/ER 16 x 070 H	4240.11630	28	–	70	–	405	7112.16010
SK 40/ER 16 x 100 H	4240.11650	28	–	100	–	405	7112.16010
SK 40/ER 16 x 160 H	4240.11680	28	–	160	–	405 / 225	7112.16010
SK 40/ER 16 x 200 H	4240.11690	28	–	200	–	405 / 225	7112.16010
SK 40/ER 16 x 260 XL	8842.13090	28	46	260	140	–	7112.16010
SK 40/ER 16 x 300 XL	8842.13130	28	46	300	140	–	7112.16010
SK 40/ER 16 x 320 XL	8842.13150	28	46	320	240	–	7112.16010
SK 40/ER 16 x 360 XL	8842.13190	28	46	360	240	–	7112.16010
SK 40/ER 16 x 400 XL	8842.13230	28	46	400	240	–	7112.16010
SK 40/ER 20 x 070 H	4240.12030	34	–	70	–	325	7112.20010
SK 40/ER 20 x 100 H	4240.12050	34	–	100	–	325	7112.20010
SK 40/ER 25 x 070 H	4240.12530	42	–	70	–	405	7111.25000
SK 40/ER 25 x 100 H	4240.12550	42	–	100	–	405	7111.25000
SK 40/ER 25 x 160 H	4240.12580	42	–	160	–	405 / 325	7111.25000
SK 40/ER 25 x 200 H	4240.12590	42	–	200	–	405 / 325	7111.25000
SK 40/ERAX 32 x 019	2240.13207	–	–	19	–	–	7117.32000
SK 40/ER 32 x 070 H	4240.13230	50	–	70	–	405	7111.32000
SK 40/ER 32 x 100 H	4240.13250	50	–	100	–	405	7111.32000
SK 40/ER 32 x 160 H	4240.13280	50	–	160	–	405 / 405	7111.32000
SK 40/ER 32 x 200 H	4240.13290	50	–	200	–	405 / 405	7111.32000
SK 40/ER 32 x 320 XL	8842.16150	50	55	320	240	–	7111.32000
SK 40/ER 40 x 080	2240.14040	63	–	80	–	–	7111.40000
SK 40/ER 40 x 100 H	4240.14050	63	–	100	–	405	7111.40000
SK 40/ER 40 x 160 H	4240.14080	63	–	160	–	505 / 505	7111.40000

*Balancing rings H: Ready to accept balancing rings

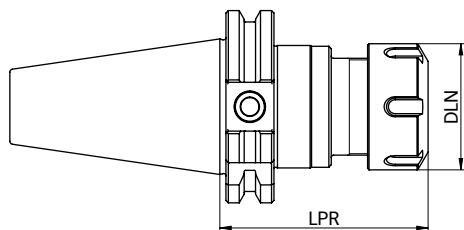
Included in delivery: ER toolholders come with Hi-Q®|ER clamping nut. ERA toolholders come with Hi-Q®|ERAX clamping nuts

Type	Part no.	Dimensions [mm]				Accessories	
		DLN	BD2	LPR	LB1	FWR*	Wrench
SK-B 40							
SK-B 40/ER 11 x 100 H	4240.11153	19	–	100	–	325	7112.11010
SK-B 40/ER 11 x 160 H	4240.11183	19	–	160	–	325	7112.11010
SK-B 40/ER 16 x 070 H	4240.11633	28	–	70	–	405	7112.16010
SK-B 40/ER 16 x 100 H	4240.11653	28	–	100	–	405	7112.16010
SK-B 40/ER 16 x 160 H	4240.11683	28	–	160	–	405 / 225	7112.16010
SK-B 40/ER 20 x 070 H	4240.12033	34	–	70	–	325	7112.20010
SK-B 40/ER 25 x 070 H	4240.12533	42	–	70	–	405	7111.25000
SK-B 40/ER 25 x 100 H	4240.12553	42	–	100	–	405	7111.25000
SK-B 40/ER 25 x 160 H	4240.12583	42	–	160	–	405 / 325	7111.25000
SK-B 40/ER 32 x 070 H	4240.13233	50	–	70	–	405	7111.32000
SK-B 40/ER 32 x 100 H	4240.13253	50	–	100	–	405	7111.32000
SK-B 40/ER 40 x 080	2240.14043	63	–	80	–	–	7111.40000

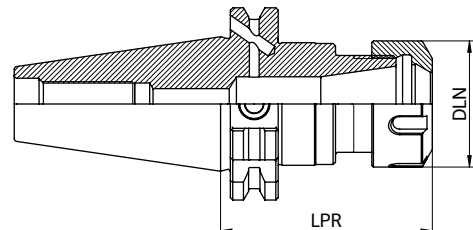
*Balancing rings

Included in delivery: ER toolholders come with Hi-Q®|ER clamping nut. ERA toolholders come with Hi-Q®|ERAX clamping nuts

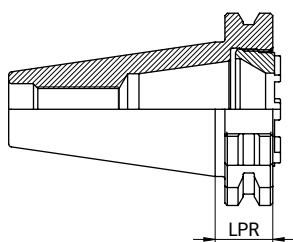
H: Ready to accept balancing rings



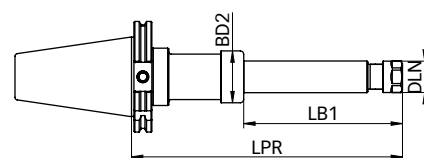
SK/ER (form A+AD)



SK-B/ER (form AD+B)



SK/ERA



SK/ER XL (form A+AD)

SK toolholders

SK-B toolholders

SK	SK-B
DIN 69871	DIN 69871
DIN ISO 7388-1	DIN ISO 7388-1

Type	Part no.	Dimensions [mm]				Accessories	
		DLN	BD2	LPR	LB1	FWR*	Wrench
SK 50							
SK 50/ER 16 x 100 H	4250.11650	28	–	100	–	505	7112.16010
SK 50/ER 16 x 160 H	4250.11680	28	–	160	–	505/225	7112.16010
SK 50/ER 16 x 200 H	4250.11690	28	–	200	–	505/225	7112.16010
SK 50/ER 16 x 240 XL	8852.13070	28	46	240	140	–	7112.16010
SK 50/ER 16 x 300 XL	8852.13130	28	46	300	140	–	7112.16010
SK 50/ER 16 x 340 XL	8852.13170	28	46	340	240	–	7112.16010
SK 50/ER 16 x 400 XL	8852.13230	28	46	400	240	–	7112.16010
SK 50/ER 20 x 070 H	4250.12030	34	–	70	–	325	7112.20010
SK 50/ER 25 x 070 H	4250.12530	42	–	70	–	405	7111.25000
SK 50/ER 25 x 100 H	4250.12550	42	–	100	–	405	7111.25000
SK 50/ER 25 x 160 H	4250.12580	42	–	160	–	405/325	7111.25000
SK 50/ER 25 x 200 H	4250.12590	42	–	200	–	405/325	7111.25000
SK 50/ER 32 x 100 H	4250.13250	50	–	100	–	505	7111.32000
SK 50/ER 32 x 160 H	4250.13280	50	–	160	–	505/405	7111.32000
SK 50/ER 32 x 200 H	4250.13290	50	–	200	–	505/405	7111.32000
SK 50/ER 32 x 320 XL	8852.16150	50	55	320	240	–	7111.32000
SK 50/ER 40 x 100 H	4250.14050	63	–	100	–	505	7111.40000
SK 50/ER 40 x 160 H	4250.14080	63	–	160	–	505/505	7111.40000
SK 50/ER 50 x 100	2250.15050	78	–	100	–	–	7111.50000
SK-B 50							
SK-B 50/ER 16 x 160 H	4250.11683	28	–	160	–	505/225	7112.16010
SK-B 50/ER 20 x 070 H	4250.12033	34	–	70	–	325	7112.20010
SK-B 50/ER 25 x 070 H	4250.12533	42	–	70	–	405	7111.25000
SK-B 50/ER 32 x 100 H	4250.13253	50	–	100	–	505	7111.32000
SK-B 50/ER 32 x 160 H	4250.13283	50	–	160	–	505/405	7111.32000
SK-B 50/ER 40 x 100 H	4250.14053	63	–	100	–	505	7111.40000

*Balancing rings

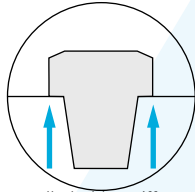
Included in delivery: ER toolholders come with Hi-Q®|ER clamping nut. ERA toolholders come with Hi-Q®|ERAX clamping nuts

H: Ready to accept balancing rings

REGO-FIX SK+ toolholders

Certified The BIG PLUS SYSTEM – licensed by BIG Daishowa – is manufactured at REGO-FIX in Switzerland under license according to BIG PLUS specifications.

Key advantages



Higher collet holder stiffness due to taper (AT1) and face contact

DIN 69871 / ISO 7388-2

Features and benefits

Runout TIR $\leq 3 \mu\text{m}$

Measured from inner taper to outer taper.

Surface finish max. Ra 0.25

Better spindle-to-holder fit and accuracy.

Balancing

100% balanced to G 2.5 @ 25,000 rpm/<1gmm.

Hi-Q® balancing system

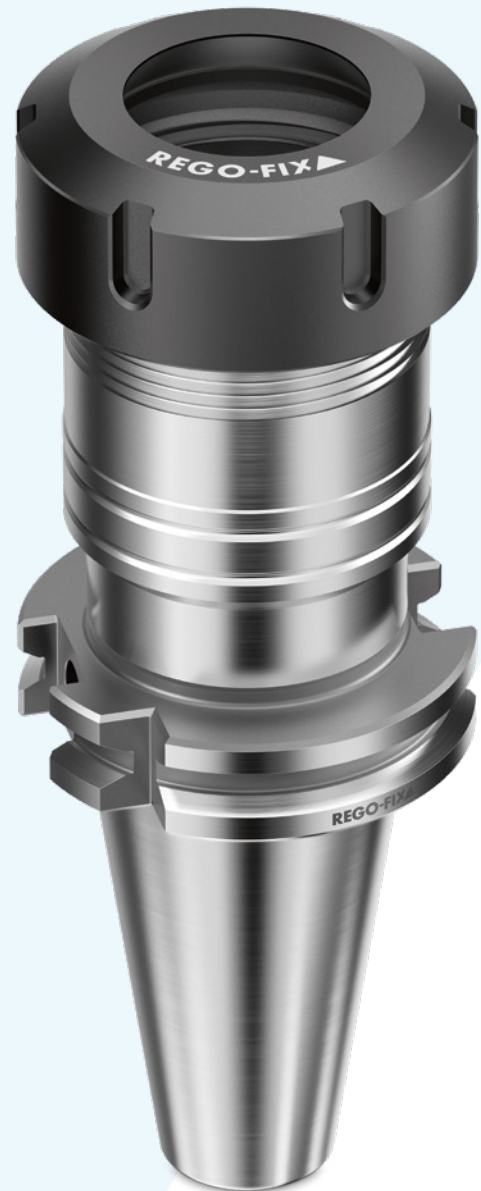
Ready to accept Hi-Q® balancing rings which allow for the offset of the imbalance introduced by the cutting tool up to 80,000 rpm depending on the balancing rings used. All toolholders with the additional type information "H" in the article name are designed for balancing rings.

Hi-Q® ER clamping nut included in delivery

Guarantees highest clamping force and best balancing.

Vibration damping

Our holders offer good vibration damping to sustain a high surface finish and can help prevent chatter.

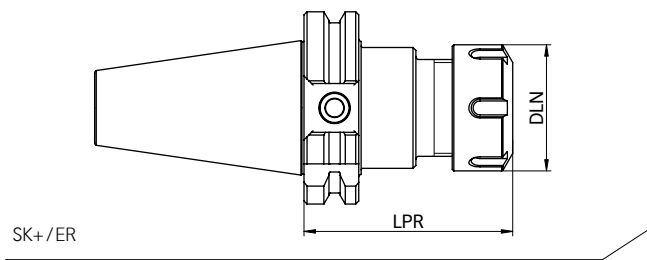


Accessories are not included in delivery. Form B available on request

Type	Part no.	Dimensions [mm]				Accessories	
		DLN	BD2	LPR	LB1	FWR*	Wrench
SK+ 40							
SK+ 40/ER 16 x 100 H	4240.11656	28	–	100	–	405	7112.16010
SK+ 40/ER 32 x 070 H	4240.13236	50	–	70	–	405	7111.32000

*Balancing rings H: Ready to accept balancing rings

Included in delivery: ER toolholders come with Hi-Q®|ER clamping nut. ERA toolholders come with Hi-Q®|ERAX clamping nuts



Steep taper toolholders BT

Universally suitable for different machining applications, the BT interface toolholders cater for different machining needs

MAS 403/JIS B 6339/DIN ISO 7388-2

Features and benefits

Runout TIR $\leq 3 \mu\text{m}$

Measured from inner taper to outer taper.

Taper accuracy AT3

Better spindle-to-holder fit and accuracy.

Surface finish max. Ra 0.25

Achieve high clamping force and high transferable torque.

Balancing

100% balanced to G 2.5 @ 25,000 rpm/ $<1\text{gmm}$.

XL toolholders

100% balanced to G 2.5 @ 5,000 rpm.
TIR from inner to outer taper $<10 \mu\text{m}$.

Hi-Q® balancing system

Ready to accept Hi-Q® balancing rings which allow for the offset of the imbalance introduced by the cutting tool up to 80,000 rpm depending on the balancing rings used. All toolholders with the additional type information "H" in the article name are designed for balancing rings.

Hi-Q®|ER clamping nut included in delivery

Guarantees highest clamping force and best balancing.

Vibration damping

Our holders offer good vibration damping to sustain a high surface finish and can help prevent chatter.

Accessories are not included in delivery. HSK-A 125 available on request. Other XL sizes available on request.

Balancing specifications

BT 30	balanced to 30,000 rpm
BT 40	G 2.5 @ 25,000 rpm
BT 50	G 2.5 @ 25,000 rpm



BT toolholders

ERA Zero-Z® toolholders

BT

MAS 403

JIS B 6339

DIN ISO 7388-2

Type	Part no.	Dimensions [mm]				Accessories	
		DLN	BD2	LPR	LB1	FWR*	Wrench
BT 30							
BT 30/ER 11 x 050	2130.11110	19	–	50	–	–	7112.11010
BT 30/ER 11 x 100 H	4130.11150	19	–	100	–	225	7112.11010
BT 30/ER 16 x 050	2130.11610	28	–	50	–	–	7112.16010
BT 30/ER 16 x 080 H	4130.11640	28	–	80	–	285	7112.16010
BT 30/ER 16 x 100 H	4130.11650	28	–	100	–	285	7112.16010
BT 30/ERAX 20 x 022	2130.12007	–	–	22	–	–	7117.20000
BT 30/ER 20 x 050	2130.12010	34	–	50	–	–	7112.20010
BT 30/ER 20 x 070 H	4130.12030	34	–	70	–	325	7112.20010
BT 30/ER 20 x 100 H	4130.12050	34	–	100	–	325	7112.20010
BT 30/ER 25 x 060 H	4130.12520	42	–	60	–	325	7111.25000
BT 30/ER 25 x 100 H	4130.12550	42	–	100	–	325	7111.25000
BT 30/ER 32 x 060	2130.13220	50	–	60	–	–	7111.32000
BT 30/ER 32 x 100 H	4130.13250	50	–	100	–	405	7111.32000

BT 30 ERM**

BT 30/ERM 8 x 100	2130.10855	12	–	100	–	–	7113.08000
BT 30/ERM 11 x 100 H	4130.11155	16	–	100	–	225	7113.11000

*Balancing rings

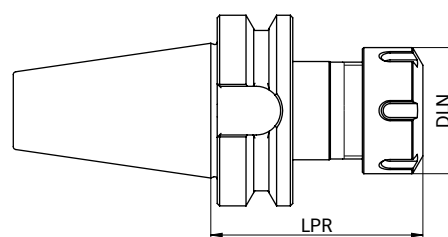
Included in delivery: ER toolholders come with Hi-Q®|ER clamping nut. ERA toolholders come with Hi-Q®|ERAX clamping nuts

H: Ready to accept balancing rings

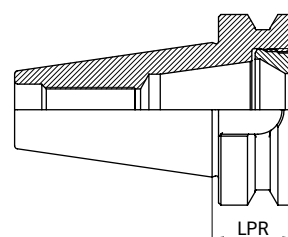
**USA only



BT/ER



BT/ER (form A+AD)



BT/ERAX

BT toolholders

ERA Zero-Z® toolholders

BT

MAS 403

JIS B 6339

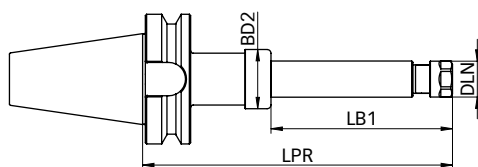
DIN ISO 7388-2

Type	Part no.	Dimensions [mm]				Accessories	
		DLN	BD2	LPR	LB1	FWR*	Wrench
BT 40							
BT 40/ER 11 x 100 H	4140.11150	19	–	100	–	285	7112.11010
BT 40/ER 11 x 160 H	4140.11180	19	–	160	–	285	7112.11010
BT 40/ER 16 x 070 H	4140.11630	28	–	70	–	285	7112.16010
BT 40/ER 16 x 100 H	4140.11650	28	–	100	–	285	7112.16010
BT 40/ER 16 x 160 H	4140.11680	28	–	160	–	285/225	7112.16010
BT 40/ER 16 x 220 XL	8841.13050	28	46	220	140	–	7112.16010
BT 40/ER 16 x 260 XL	8841.13090	28	46	260	140	–	7112.16010
BT 40/ER 16 x 300 XL	8841.13130	28	46	300	140	–	7112.16010
BT 40/ER 16 x 320 XL	8841.13150	28	46	320	240	–	7112.16010
BT 40/ER 16 x 360 XL	8841.13190	28	46	360	240	–	7112.16010
BT 40/ER 16 x 400 XL	8841.13230	28	46	400	240	–	7112.16010
BT 40/ER 20 x 070 H	4140.12030	34	–	70	–	325	7112.20010
BT 40/ER 20 x 100 H	4140.12050	34	–	100	–	285	7112.20010
BT 40/ER 20 x 160 H	4140.12080	34	–	160	–	405/285	7112.20010
BT 40/ER 25 x 070 H	4140.12530	42	–	70	–	325	7111.25000
BT 40/ER 25 x 100 H	4140.12550	42	–	100	–	405	7111.25000
BT 40/ER 25 x 160 H	4140.12580	42	–	160	–	405/325	7111.25000
BT 40/ERAX 32 x 027	2140.13207	–	–	27	–	–	7117.32000
BT 40/ER 32 x 070 H	4140.13230	50	–	70	–	405	7111.32000
BT 40/ER 32 x 100 H	4140.13250	50	–	100	–	405	7111.32000
BT 40/ER 32 x 160 H	4140.13280	50	–	160	–	405/405	7111.32000
BT 40/ER 32 x 226 XL	8841.16050	50	55	226	140	–	7111.32000
BT 40/ER 32 x 326 XL	8841.16150	50	55	326	240	–	7111.32000
BT 40/ER 40 x 080	2140.14040	63	–	80	–	–	7111.40000
BT 40/ER 40 x 100 H	4140.14050	63	–	100	–	505	7111.40000
BT 40/ER 40 x 160 H	4140.14080	63	–	160	–	505/505	7111.40000

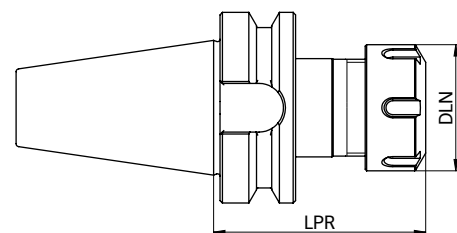
*Balancing rings

Included in delivery: ER toolholders come with Hi-Q®|ER clamping nut. ERA toolholders come with Hi-Q®|ERAX clamping nuts

H: Ready to accept balancing rings



BT/ER XL



BT/ER (form A+AD)

BT / BT-B toolholders

BT	BT-B
MAS 403	
JIS B 6339	
DIN ISO 7388-2	

Type	Part no.	Dimensions [mm]				Accessories	
		DLN	BD2	LPR	LB1	FWR*	Wrench
BT-B 40							
BT-B 40/ER 16 x 070 H	4140.11633	28	–	70	–	285	7112.16010
BT-B 40/ER 16 x 100 H	4140.11653	28	–	100	–	285	7112.16010
BT-B 40/ER 16 x 160 H	4140.11683	28	–	160	–	285 / 225	7112.16010
BT-B 40/ER 20 x 070 H	4140.12033	34	–	70	–	325	7112.20010
BT-B 40/ER 25 x 070 H	4140.12533	42	–	70	–	325	7111.25000
BT-B 40/ER 25 x 100 H	4140.12553	42	–	100	–	405	7111.25000
BT-B 40/ER 25 x 160 H	4140.12583	42	–	160	–	405 / 325	7111.25000
BT-B 40/ER 32 x 070 H	4140.13233	50	–	70	–	405	7111.32000
BT-B 40/ER 32 x 100 H	4140.13253	50	–	100	–	405	7111.32000
BT-B 40/ER 32 x 160 H	4140.13283	50	–	160	–	405 / 405	7111.32000
BT-B 40/ER 40 x 080	2140.14043	63	–	80	–	–	7111.40000
BT 50							
BT 50/ER 16 x 100 H	4150.11650	28	–	100	–	505	7112.16010
BT 50/ER 16 x 160 H	4150.11680	28	–	160	–	505 / 225	7112.16010
BT 50/ER 16 x 240 XL	8851.13070	28	46	240	140	–	7112.16010
BT 50/ER 16 x 260 XL	8851.13090	28	46	260	140	–	7112.16010
BT 50/ER 16 x 300 XL	8851.13130	28	46	300	140	–	7112.16010
BT 50/ER 16 x 340 XL	8851.13170	28	46	340	240	–	7112.16010
BT 50/ER 16 x 360 XL	8851.13190	28	46	360	240	–	7112.16010
BT 50/ER 16 x 400 XL	8851.13230	28	46	400	240	–	7112.16010
BT 50/ER 20 x 070	2150.12030	34	–	70	–	–	7112.20010
BT 50/ER 20 x 100 H	4150.12050	34	–	100	–	325	7112.20010
BT 50/ER 25 x 070	2150.12530	42	–	70	–	–	7111.25000
BT 50/ER 25 x 100 H	4150.12550	42	–	100	–	405	7111.25000
BT 50/ER 25 x 160 H	4150.12580	42	–	160	–	405 / 325	7111.25000
BT 50/ER 32 x 100 H	4150.13250	50	–	100	–	505	7111.32000
BT 50/ER 32 x 160 H	4150.13280	50	–	160	–	505 / 405	7111.32000
BT 50/ER 32 x 240 XL	8851.16070	50	55	240	140	–	7111.32000
BT 50/ER 32 x 340 XL	8851.16170	50	55	340	240	–	7111.32000
BT 50/ER 40 x 100 H	4150.14050	63	–	100	–	505	7111.40000
BT 50/ER 40 x 160 H	4150.14080	63	–	160	–	505 / 505	7111.40000
BT 50/ER 50 x 100	2150.15050	78	–	100	–	–	7111.50000

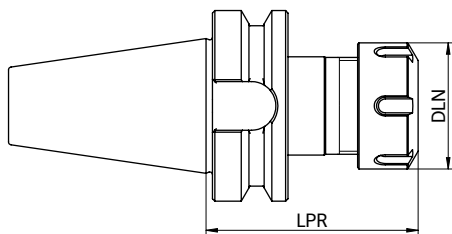
*Balancing rings

Included in delivery: ER toolholders come with Hi-Q®|ER clamping nut. ERA toolholders come with Hi-Q®|ERAX clamping nuts

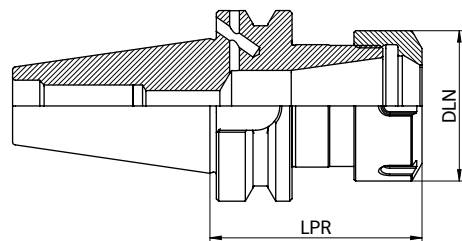
H: Ready to accept balancing rings

Type	Part no.	Dimensions [mm]				Accessories	
		DLN	BD2	LPR	LB1	FWR*	Wrench
BT-B 50							
BT-B 50/ER 16 x 160 H	4150.11683	28	–	160	–	505 / 225	7112.16010
BT-B 50/ER 20 x 100 H	4150.12053	34	–	100	–	325	7112.20010
BT-B 50/ER 32 x 100 H	4150.13253	50	–	100	–	505	7111.32000
BT-B 50/ER 40 x 100 H	4150.14053	63	–	100	–	505	7111.40000

*Balancing rings
Included in delivery: ER toolholders come with Hi-Q®|ER clamping nut. ERA toolholders come with Hi-Q®|ERAX clamping nuts
H: Ready to accept balancing rings



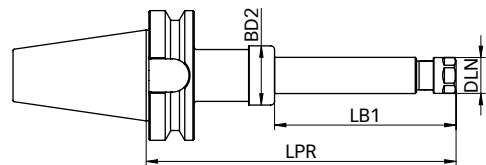
BT/ER (form A+AD)



BT-B/ER (form AD+B)

Expert advice

What is the difference between form A+AD and AD+B?
Form A+AD: coolant supply through the taper
Form AD+B: coolant supply through the flange



BT/ER XL

BT-OM toolholders

ERA Zero-Z® toolholder

BT-OM

HAAS

HURCO

Information

BT-OM/ER toolholders without drive slots

Applications

This special toolholder without drive slots is designed for use on HAAS and HURCO CNC-machining centers.

Special applications

When extra high clamping force is needed, e.g., when tapping with ER-GB, we recommend to use our friction-bearing clamping nuts Hi-Q®|ERB* and Hi-Q®|ERBC*.

**Not for use with ERA toolholders.*

Balancing

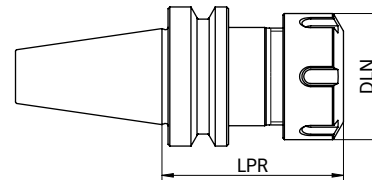
REGO-FIX BT-OM/ER(A) toolholders are balanced to G 2.5 @ 25,000 rpm/<1gmm. Type H toolholders are compatible with Hi-Q® balancing rings which allow precision balancing of the entire system including cutting tool up to 80,000 rpm depending on the balancing rings used.

Matched tooling system for best fit

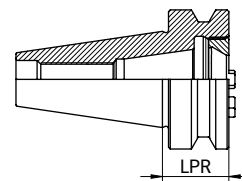
For highest precision and best results the entire machining system counts. Therefore REGO-FIX components are carefully matched for optimum fit and accuracy. This guarantees the best runout and balance.

For the influence of runout on tool life, please refer to page 384.

Accessories are not included in delivery.



BT-OM/ER



BT-OM/ERAX

Type	Part no.	Dimensions [mm]				Accessories	
		DLN	BD2	LPR	LB1	FWR*	Wrench
BT-OM							
BT-OM 30/ER 16 x 080 H	4130.11648	28	–	80	–	285	7112.16010
BT-OM 30/ER 25 x 060 H	4130.12528	42	–	60	–	325	7111.25000
BT-OM 30/ERAX 20 x 022	2130.12008	–	–	22	–	–	7117.20000

*Balancing rings

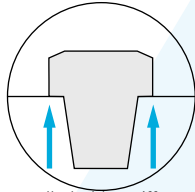
Included in delivery: ER toolholders come with Hi-Q®|ER clamping nut. ERA toolholders come with Hi-Q®|ERAX clamping nuts

H: Ready to accept balancing rings

REGO-FIX BT+ toolholders

Certified The BIG PLUS SYSTEM – licensed by BIG Daishowa – is manufactured at REGO-FIX in Switzerland under license according to BIG PLUS specifications.

Key advantages



Higher collet holder stiffness due to taper (AT1) and face contact

MAS 403 / JIS B 6339 / DIN ISO 7388-2

Features and benefits

Runout TIR $\leq 3 \mu\text{m}$

Measured from inner taper to outer taper.

Surface finish max. Ra 0.25

Better spindle-to-holder fit and accuracy.

Balancing

100% balanced to G 2.5 @ 25,000 rpm / <1gmm.

Hi-Q® balancing system

Ready to accept Hi-Q® balancing rings which allow for the offset of the imbalance introduced by the cutting tool up to 80,000 rpm depending on the balancing rings used. All toolholders with the additional type information "H" in the article name are designed for balancing rings.

Hi-Q® ER clamping nut included in delivery

Guarantees highest clamping force and best balancing.

Vibration damping

Our holders offer good vibration damping to sustain a high surface finish and can help prevent chatter.

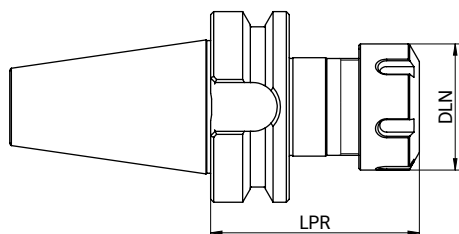


Accessories are not included in delivery. Form B available on request

Type	Part no.	Dimensions [mm]				Accessories	
		DLN	BD2	LPR	LB1	FWR*	Wrench
BT+ 30							
BT+ 30/ER 11 x 100 H	4130.11156	19	–	100	–	225	7112.11010
BT+ 30/ER 16 x 050	2130.11616	28	–	50	–	–	7112.16010
BT+ 30/ER 16 x 080 H	4130.11646	28	–	80	–	285	7112.16010
BT+ 30/ER 20 x 050	2130.12016	34	–	50	–	–	7112.20010
BT+ 30/ER 20 x 070 H	4130.12036	34	–	70	–	325	7112.20010
BT+ 30/ER 25 x 060 H	4130.12526	42	–	60	–	325	7111.25000
BT+ 30/ER 32 x 060	2130.13226	50	–	60	–	–	7111.32000
BT+ 40							
BT+ 40/ER 16 x 070 H	4140.11636	28	–	70	–	285	7112.16010
BT+ 40/ER 16 x 100 H	4140.11656	28	–	100	–	285	7112.16010
BT+ 40/ER 20 x 070 H	4140.12036	34	–	70	–	325	7112.20010
BT+ 40/ER 25 x 070 H	4140.12536	42	–	70	–	325	7111.25000
BT+ 40/ER 32 x 070 H	4140.13236	50	–	70	–	405	7111.32000
BT+ 40/ER 32 x 100 H	4140.13256	50	–	100	–	405	7111.32000
BT+ 40/ER 32 x 160 H	4140.13286	50	–	160	–	405/405	7111.32000
BT+ 50							
BT+ 50/ER 32 x 100 H	4150.13256	50	–	100	–	505	7111.32000
BT+ 50/ER 32 x 160 H	4150.13286	50	–	160	–	505/405	7111.32000

*Balancing rings H: Ready to accept balancing rings

Included in delivery: toolholders come with Hi-Q® | ER clamping nut



BT+/ER (A+AD)

Steep taper toolholders CAT

Universally suitable for different machining applications

ASME B5.50

Features and benefits

Runout $\leq 3\mu\text{m}$

Measured from inner taper to outer taper.

Taper accuracy AT3

Better spindle-to-holder fit and accuracy.

Surface finish max. Ra 0.25

Achieve high clamping force and high transferable torque.

Balancing

100% balanced to G 2.5 @ 25,000 rpm.

Balancing in XL toolholders

100% balanced to G 2.5 @ 5,000 rpm.

Hi-Q® balancing system

Ready to accept Hi-Q® balancing rings which allow for the offset of the imbalance introduced by the cutting tool up to 80,000 rpm depending on the balancing rings used. All toolholders with the additional type information "H" in the article name are designed for balancing rings.

Hi-Q®|ER clamping nut included in delivery

Guarantees highest clamping force and best balancing.

Vibration damping

Our holders offer good vibration damping to sustain a high surface finish and can help prevent chatter.

Accessories are not included in delivery. Form B available on request



CAT toolholders

ERA Zero-Z® toolholder

CAT

ASME B5.50

Type	Part no.	Dimensions				Accessories	
		DLN [mm]	BD2 [mm]	LPR [inch]	LB1 [inch]	FWR*	Wrench
CAT 40							
CAT 40/ER 11 x 3" H	4340.11131	19	–	3	–	325	7112.11010
CAT 40/ER 11 x 6" H	4340.11171	19	–	6	–	325	7112.11010
CAT 40/ER 16 x 3" H	4340.11631	28	–	3	–	325	7112.16010
CAT 40/ER 16 x 4" H	4340.11651	28	–	4	–	285	7112.16010
CAT 40/ER 16 x 6" H	4340.11671	28	–	6	–	325/225	7112.16010
CAT 40/ER 16 x 8" XL	8843.13031	28	46	8	4	–	7112.16010
CAT 40/ER 16 x 10" XL	8843.13101	28	46	10	4	–	7112.16010
CAT 40/ER 16 x 12" XL	8843.13131	28	46	12	8	–	7112.16010
CAT 40/ER 16 x 14" XL	8843.13181	28	46	14	8	–	7112.16010
CAT 40/ER 20 x 3" H	4340.12031	34	–	3	–	285	7112.20010
CAT 40/ER 20 x 4" H	4340.12051	34	–	4	–	325	7112.20010
CAT 40/ER 20 x 6" H	4340.12071	34	–	6	–	405/285	7112.20010
CAT 40/ER 25 x 4" H	4340.12551	42	–	4	–	325	7111.25000
CAT 40/ER 25 x 6" H	4340.12571	42	–	6	–	405/325	7111.25000
CAT 40/ERAX 32 x 019	2340.13200	35	–	19 mm	–	–	7117.32000
CAT 40/ER 32 x 3" H	4340.13231	50	–	3	–	405	7111.32000
CAT 40/ER 32 x 4" H	4340.13251	50	–	4	–	405	7111.32000
CAT 40/ER 32 x 5" H	4340.13261	50	–	5	–	405	7111.32000
CAT 40/ER 32 x 6" H	4340.13271	50	–	6	–	405/405	7111.32000
CAT 40/ER 32 x 10" XL	8843.16081	50	55	10	4	–	7111.32000
CAT 40/ER 32 x 14" XL	8843.16141	50	55	14	8	–	7111.32000
CAT 40/ER 40 x 3.5" H	4340.14041	63	–	3,5	–	505	7111.40000
CAT 40/ER 40 x 6" H	4340.14071	63	–	6	–	505/505	7111.40000

*Balancing rings

H: Ready to accept balancing rings

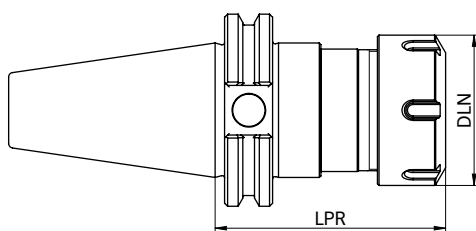
Included in delivery: ER toolholders come with Hi-Q®|ER clamping nut. ERA toolholders come with Hi-Q®|ERA clamping nuts

Type	Part no.	Dimensions				Accessories	
		DLN [mm]	BD2 [mm]	LPR [inch]	LB1 [inch]	FWR*	Wrench
CAT-B 40							
CAT-B 40/ER 11 x 3" H	4340.11134	19	–	3	–	325	7112.11010
CAT-B 40/ER 11 x 6" H	4340.11174	19	–	6	–	325	7112.11010
CAT-B 40/ER 16 x 3" H	4340.11634	28	–	3	–	325	7112.16010
CAT-B 40/ER 16 x 4" H	4340.11654	28	–	4	–	285	7112.16010
CAT-B 40/ER 16 x 6" H	4340.11674	28	–	6	–	325/225	7112.16010
CAT-B 40/ER 20 x 3" H	4340.12034	34	–	3	–	285	7112.20010
CAT-B 40/ER 20 x 4" H	4340.12054	34	–	4	–	325	7112.20010
CAT-B 40/ER 20 x 6" H	4340.12074	34	–	6	–	405/285	7112.20010
CAT-B 40/ER 25 x 4" H	4340.12554	42	–	4	–	325	7111.25000
CAT-B 40/ER 25 x 6" H	4340.12574	42	–	6	–	405/325	7111.25000
CAT-B 40/ER 32 x 3" H	4340.13234	50	–	3	–	405	7111.32000
CAT-B 40/ER 32 x 4" H	4340.13254	50	–	4	–	405	7111.32000
CAT-B 40/ER 32 x 5" H	4340.13264	50	–	5	–	405	7111.32000
CAT-B 40/ER 32 x 6" H	4340.13274	50	–	6	–	405/405	7111.32000
CAT-B 40/ER 40 x 3.5" H	4340.14044	63	–	3,5	–	505	7111.40000
CAT-B 40/ER 40 x 6" H	4340.14074	63	–	6	–	505/505	7111.40000

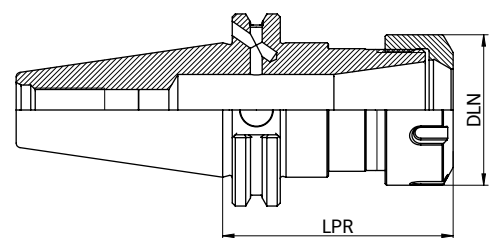
*Balancing rings

Included in delivery: ER toolholders come with Hi-Q®|ER clamping nut. ERA toolholders come with Hi-Q®|ERA clamping nuts

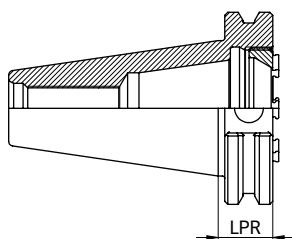
H: Ready to accept balancing rings



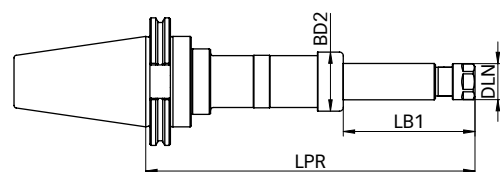
CAT/ER (Form A+AD)



CAT-B/ER (Form AD+B)



CAT/ERAX



CAT/ER XL (Form A+AD)

CAT toolholders

CAT-B toolholders

CAT

CAT-B

Type	Part no.	Dimensions				Accessories	
		DLN [mm]	BD2 [mm]	LPR [inch]	LB1 [inch]	FWR*	Wrench
CAT 50							
CAT 50/ER 16 x 4" H	4350.11651	28	–	4	–	505	7112.16010
CAT 50/ER 16 x 6" H	4350.11671	28	–	6	–	505/225	7112.16010
CAT 50/ER 16 x 8" XL	8853.13031	28	42	8	4	–	7112.16010
CAT 50/ER 16 x 10" XL	8853.13081	28	42	10	4	–	7112.16010
CAT 50/ER 16 x 12" XL	8853.13131	28	42	12	8	–	7112.16010
CAT 50/ER 16 x 14" XL	8853.13181	28	42	14	8	–	7112.16010
CAT 50/ER 20 x 4" H	4350.12051	34	–	4	–	505	7112.20010
CAT 50/ER 20 x 6" H	4350.12071	34	–	6	–	505/285	7112.20010
CAT 50/ER 25 x 4" H	4350.12551	42	–	4	–	505	7111.25000
CAT 50/ER 25 x 6" H	4350.12571	42	–	6	–	505/325	7111.25000
CAT 50/ER 32 x 4" H	4350.13251	50	–	4	–	505	7111.32000
CAT 50/ER 32 x 6" H	4350.13271	50	–	6	–	505/405	7111.32000
CAT 50/ER 32 x 10" XL	8853.16081	50	52	10	4	–	7111.32000
CAT 50/ER 32 x 14" XL	8853.16181	50	52	14	8	–	7111.32000
CAT 50/ERAX 40 x 019	2350.14007	44	–	19 mm	–	–	7117.40000
CAT 50/ER 40 x 4" H	4350.14051	63	–	4	–	505	7111.40000
CAT 50/ER 40 x 6" H	4350.14071	63	–	6	–	505/505	7111.40000
CAT-B 50							
CAT-B 50/ER 16 x 4" H	4350.11654	28	–	4	–	505	7112.16010
CAT-B 50/ER 16 x 6" H	4350.11674	28	–	6	–	505/225	7112.16010
CAT-B 50/ER 20 x 4" H	4350.12054	34	–	4	–	505	7112.20010
CAT-B 50/ER 20 x 6" H	4350.12074	34	–	6	–	505/285	7112.20010
CAT-B 50/ER 25 x 4" H	4350.12554	42	–	4	–	505	7111.25000
CAT-B 50/ER 25 x 6" H	4350.12574	42	–	6	–	505/325	7111.25000
CAT-B 50/ER 32 x 4" H	4350.13254	50	–	4	–	505	7111.32000
CAT-B 50/ER 32 x 6" H	4350.13274	50	–	6	–	505/405	7111.32000
CAT-B 50/ER 40 x 4" H	4350.14054	63	–	4	–	505	7111.40000
CAT-B 50/ER 40 x 6" H	4350.14074	63	–	6	–	505/505	7111.40000

*Balancing rings

Included in delivery: ER toolholders come with Hi-Q®|ER clamping nut. ERA toolholders come with Hi-Q®|ERA clamping nuts

H: Ready to accept balancing rings

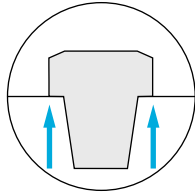
Expert advice

For additional technical drawings and details, see the REGO-FIX website at www.rego-fix.com

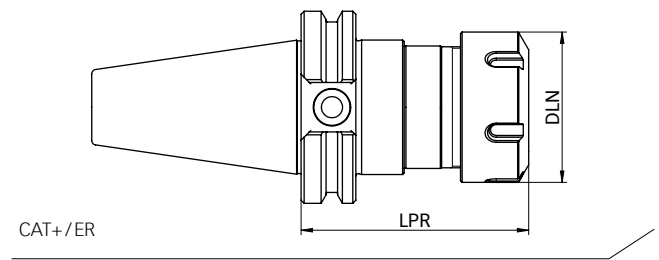
REGO-FIX CAT+ toolholders

Certified The BIG PLUS SYSTEM – licensed by BIG Daishowa – is manufactured at REGO-FIX in Switzerland under license according to BIG PLUS specifications.

Key advantages



Higher collotholder stiffness due to taper (AT1) and face contact



Type	Part no. AD+B	Dimensions				Accessories	
		DLN [mm]	BD2 [mm]	LPR [inch]	LB1 [inch]	FWR*	Wrench
CAT+ 40**							
CAT+ 40/ER 11 x 3" H	4340.11136	19	–	3	–	285	7112.11010
CAT+ 40/ER 16 x 3" H	4340.11636	28	–	3	–	325	7112.16010
CAT+ 40/ER 16 x 6" H	4340.11676	28	–	6	–	325/225	7112.16010
CAT+ 40/ER 20 x 3" H	4340.12036	34	–	3	–	285	7112.20010
CAT+ 40/ER 20 x 6" H	4340.12076	34	–	6	–	405/285	7112.20010
CAT+ 40/ER 25 x 4" H	4340.12556	42	–	4	–	325	7111.25000
CAT+ 40/ER 25 x 6" H	4340.12576	42	–	6	–	405/325	7111.25000
CAT+ 40/ER 32 x 3" H	4340.13236	50	–	3	–	405	7111.32000
CAT+ 40/ER 32 x 6" H	4340.13276	50	–	6	–	405/405	7111.32000
CAT+ 50**							
CAT+ 50/ER 16 x 4" H	4350.11656	28	–	4	–	505	7112.16010
CAT+ 50/ER 16 x 6" H	4350.11676	28	–	6	–	505/225	7112.16010
CAT+ 50/ER 20 x 4" H	4350.12056	34	–	4	–	505	7112.20010
CAT+ 50/ER 25 x 4" H	4350.12556	42	–	4	–	505	7111.25000
CAT+ 50/ER 32 x 4" H	4350.13256	50	–	4	–	505	7111.32000
CAT+ 50/ER 32 x 6" H	4350.13276	50	–	6	–	505/405	7111.32000
CAT+ 50/ER 40 x 4" H	4350.14056	63	–	4	–	505	7111.40000

*Balancing rings

**USA only

Included in delivery: ER toolholders come with Hi-Q®|ER clamping nut. ERA toolholders come with Hi-Q®|ERA clamping nuts

H: Ready to accept balancing rings



REGO-FIX CAPTO toolholders

These self-centering and balanced toolholders enable high-torque transmission and show a high-bending strength.

ISO 12164

Features and benefits

Runout TIR $\leq 3 \mu\text{m}$

Measured from inner taper to outer taper.

Surface finish max. Ra 0.25

Achieve high clamping force and high transferable torque.

Balancing

100% balanced to G 2.5 @ 25,000 rpm/<1gmm.

XL toolholders

100% balanced to G 2.5 @ 5,000 rpm.

TIR from inner to outer taper <10 μm .

Hi-Q® balancing system

Ready to accept Hi-Q® balancing rings which allow for the offset of the imbalance introduced by the cutting tool up to 80,000 rpm depending on the balancing rings used. All toolholders with the additional type information "H" in the article name are designed for balancing rings.

Hi-Q®|ER clamping nut included in delivery

Guarantees highest clamping force and best balancing.

Vibration damping

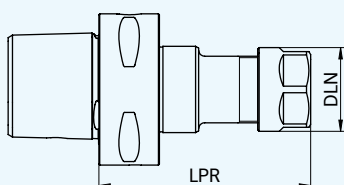
Our holders offer good vibration damping to sustain a high surface finish and can help prevent chatter.

Accessories are not included in delivery. Other XL sizes available on request. All REGO-FIX CAPTO toolholders are available with chip hole on request.

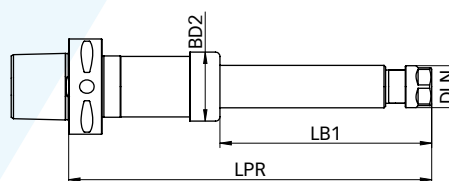
Balancing specifications

C3	balanced to 60,000 rpm
C4	balanced to 45,000 rpm
C5	balanced to 36,000 rpm
C6	G 2.5 @ 25,000 rpm
C8	G 2.5 @ 25,000 rpm

Certified REGO-FIX CAPTO – licensed by Sandvik Coromant – is manufactured at REGO-FIX Switzerland under license according to CAPTO specifications.



C/ER



C/ER XL

Type	Part no.	Dimensions [mm]				Accessories	
		DLN	BD2	LPR	LB1	FWR*	Wrench
C3							
C3/ER 16 x 045	2803.11610	28	–	45	–	–	7112.16010
C3/ER 20 x 045	2803.12010	34	–	45	–	–	7112.20010
C4							
C4/ER 16 x 070	2804.11630	28	–	70	–	–	7112.16010
C4/ER 20 x 052	2804.12010	34	–	52	–	–	7112.20010
C4/ER 25 x 052	2804.12510	42	–	52	–	–	7111.25000
C4/ER 32 x 054	2804.13210	50	–	54	–	–	7111.32000
C5							
C5/ER 16 x 070 H	4805.11630	28	–	70	–	285	7112.16010
C5/ER 16 x 100 H	4805.11650	28	–	100	–	285	7112.16010
C5/ER 20 x 055	2805.12010	34	–	55	–	–	7112.20010
C5/ER 20 x 100 H	4805.12050	34	–	100	–	325	7112.20010
C5/ER 25 x 055	2805.12510	42	–	55	–	–	7111.25000
C5/ER 25 x 100 H	4805.12550	42	–	100	–	405	7111.25000
C5/ER 32 x 057	2805.13210	50	–	57	–	–	7111.32000
C5/ER 32 x 070 H	4805.13230	50	–	70	–	405	7111.32000
C5/ER 32 x 100H	4805.13250	50	–	100	–	405	7111.32000
C6							
C6/ER 11 x 150 H	4806.11170	19	–	150	–	325	7112.11010
C6/ER 16 x 070 H	4806.11630	28	–	70	–	325	7112.16010
C6/ER 16 x 100 H	4806.11650	28	–	100	–	325	7112.16010
C6/ER 16 x 150 H	4806.11670	28	–	150	–	325	7112.16010
C6/ER 16 x 225 XL	8886.13050	28	46	225	140	–	7112.16010
C6/ER 16 x 240 XL	8886.13070	28	46	240	140	–	7112.16010
C6/ER 16 x 260 XL	8886.13090	28	46	260	140	–	7112.16010
C6/ER 16 x 300 XL	8886.13130	28	46	300	140	–	7112.16010
C6/ER 16 x 325 XL	8886.13150	28	46	325	240	–	7112.16010
C6/ER 16 x 340 XL	8886.13170	28	46	340	240	–	7112.16010
C6/ER 16 x 360 XL	8886.13190	28	46	360	240	–	7112.16010
C6/ER 16 x 400 XL	8886.13230	28	46	400	240	–	7112.16010
C6/ER 20 x 060	2806.12020	34	–	60	–	–	7112.20010

*Balancing rings H: Ready to accept balancing rings

Included in delivery: toolholders come with Hi-Q® | ER clamping nut
All REGO-FIX CAPTO toolholders are available with chip hole on request.

Type	Part no.	Dimensions [mm]				Accessories	
		DLN	BD2	LPR	LB1	FWR*	Wrench
C6 continued							
C6/ER 25 x 060	2806.12520	42	–	60	–	–	7111.25000
C6/ER 25 x 100 H	4806.12550	42	–	100	–	405	7111.25000
C6/ER 25 x 130 H	4806.12560	42	–	130	–	405	7111.25000
C6/ER 32 x 060	2806.13220	50	–	60	–	–	7111.32000
C6/ER 32 x 070 H	4806.13230	50	–	70	–	405	7111.32000
C6/ER 32 x 100 H	4806.13250	50	–	100	–	505	7111.32000
C6/ER 32 x 230 XL	8886.16060	50	55	230	140	–	7111.32000
C6/ER 32 x 330 XL	8886.16160	50	55	330	240	–	7111.32000
C6/ER 40 x 065	2806.14020	63	–	65	–	–	7111.40000

C8							
C8/ER 16 x 232 XL	8888.13060	28	46	232	140	–	7112.16010
C8/ER 16 x 332 XL	8888.13160	28	46	332	240	–	7112.16010
C8/ER 25 x 070	2808.12530	42	–	70	–	–	7111.25000
C8/ER 32 x 070	2808.13230	50	–	70	–	–	7111.32000
C8/ER 32 x 230 XL	8888.16060	50	55	230	140	–	7111.32000
C8/ER 32 x 330 XL	8888.16160	50	55	330	240	–	7111.32000
C8/ER 40 x 070	2808.14030	63	–	70	–	–	7111.40000
C8/ER 50 x 080	2808.15040	78	–	80	–	–	7111.50000

*Balancing rings H: Ready to accept balancing rings

Included in delivery: toolholders come with Hi-Q® |ER clamping nut
All REGO-FIX CAPTO toolholders are available with chip hole on request



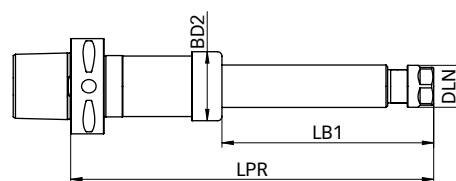
C/ER

Expert advice

We recommend tightening the clamping nuts with our TORCO-BLOCK or torque wrench. Get the best accuracy by respecting the suitable tightening forces.

For more information on TORCO-BLOCK, see page 342.

For tightening torque recommendations, please refer to page 377.



C/ER XL



Cylindrical shank toolholders CYL

CYL/CYL-F/CYL-DF

Features and benefits

Runout TIR $\leq 3\text{ }\mu\text{m}$ for CYL/ERM and CYL/ERMX

Measured from inner taper to outer shank.

Runout TIR $\leq 5\text{ }\mu\text{m}$ for CYL-F/ERM and CYL-F/ERMX

Measured from inner taper to outer shank.

Runout TIR $\leq 5\text{ }\mu\text{m}$ for CYL-DF/ERM and CYL-DF/ERMX

Measured from inner taper to outer shank.

Surface finish max. Ra 0.25

Achieve high clamping force and high transferable torque.

Sizes

ER 8–ER 40

h6 tolerance on shanks

Types

- // With or without clamping flat
- // Double-ended ER holders

Accessories are not included in delivery.

Expert advice

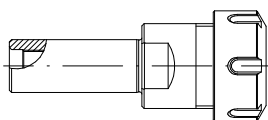
We recommend tightening the clamping nuts with our torque wrench.

For tightening torque recommendations, please refer to page 377.



Available CYL toolholders and their key characteristics

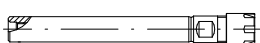
Cylindrical REGO-FIX toolholders are designed for automatic turning machines and can also be utilized as extensions. We offer many different product types to fit your machining needs.



CYL/ER

CYL/ER The short versions are particularly used on turret lathes, where a short overhang is often required.

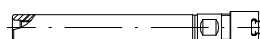
For technical dimensions, please refer to page 126.



CYL/ERM

CYL/ERM This type is suited for Swiss automatic machines, machining centers and conventional machines. Can be used as extension.

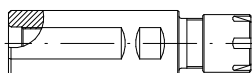
For technical dimensions, please refer to page 128.



CYL/ERMX

CYL/ERMX This type is suited for Swiss automatic machines, machining centers and conventional machines. The slip-off proof mini clamping nut intRlox® prevents injuries caused by slipping off while tightening the nut. Can be used as extension.

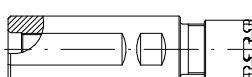
For technical dimensions, please refer to page 128.



CYL-F/ERM

CYL-F/ERM The line of cylindrical toolholders with clamping flat is particularly designed for Swiss automatic CNC machines, e.g., Citizen, Manurhin, Star or Tornos. Cannot be used as extension.

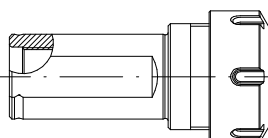
For technical dimensions, please refer to page 130.



CYL-F/ERMX

CYL-F/ERMX The line of cylindrical toolholders with clamping flat is particularly designed for Swiss automatic CNC machines, e.g., Citizen, Manurhin, Star or Tornos. The slip-off proof mini clamping nut intRlox® prevents injuries caused by slipping off while tightening the nut. Cannot be used as extension.

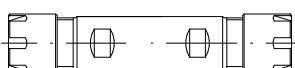
For technical dimensions, please refer to page 130.



CYL-NC/ER

CYL-NC/ER These toolholders are particularly suitable on Swiss automatic CNC turning machines, but can also be used on other turning machines.

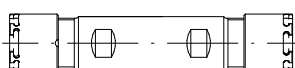
For technical dimensions, please refer to page 133.



CYL-DF/ERM

CYL-DF/ERM The line of double-ended toolholders with clamping flat has been designed for Swiss automatic CNC machines, e.g., Citizen, Manurhin, Star or Tornos and offers the possibility to hold two cutting tools on the same toolholder.

For technical dimensions, please refer to page 134.



CYL-DF/ERMX

CYL-DF/ERMX The line of double toolholders with clamping flat has been designed for Swiss Automatic CNC machines, e.g., Citizen, Manurhin, Star or Tornos, and offers the possibility to hold two cutting tools on the same toolholder. The slip-off proof mini clamping nut intRlox® prevents injuries caused by slipping off while tightening the nut.

For technical dimensions, please refer to page 134.

Type	Part no.	Dimensions [mm]					CNT	THLGTH	THID	Accessories
		DLN	DCONMS h6	LS	OHN	Wrench				
CYL 1/2 [inch]										
CYL 1/2" x 070/ER 11	2613.11141	19	12,7	70	28,5	M 6	15	M 6	7112.11010	
CYL 1/2" x 100/ER 16	2613.11661	28	12,7	100	36	M 6	15	M 6	7112.16010	
CYL 1/2" x 100/ER 20	2613.12061	34	12,7	100	44,5	M 6	15	M 6	7112.20010	
CYL 16 [mm]										
CYL 16 x 060/ER 16	2616.11630	28	16	60	36,5	M 8 x 1	46	–	7112.16010	
CYL 5/8 [inch]										
CYL 5/8" x 060/ER 16	2616.11631	28	15,875	60	36,5	M 8 x 1	66	–	7112.16010	
CYL 5/8" x 100/ER 20	2616.12061	34	15,875	100	44,5	M 8 x 1	20	M 8 x 1	7112.20010	
CYL 3/4 [inch]										
CYL 3/4" x 050/ER 16	2619.11621	28	19,05	50	30,5	M 12 x 1	45	–	7112.16010	
CYL 3/4" x 100/ER 16	2619.11661	28	19,05	100	30,5	M 12 x 1	40	M 11 x 1	7112.16010	
CYL 3/4" x 060/ER 20	2619.12031	34	19,05	60	36,5	M 12 x 1	60	–	7112.20010	
CYL 3/4" x 050/ER 25	2619.12521	42	19,05	50	47	M 12 x 1	55	–	7111.25000	
CYL 20 [mm]										
CYL 20 x 050/ER 16	2620.11620	28	20	50	30,5	M 12 x 1	45	–	7112.16010	
CYL 20 x 100/ER 16	2620.11660	28	20	100	30,5	M 12 x 1	40	M 11 x 1	7112.16010	
CYL 20 x 030/ER 20	2620.12010	34	20	30	36,5	M 12 x 1	30	–	7112.20010	
CYL 20 x 060/ER 20	2620.12030	34	20	60	36,5	M 12 x 1	60	–	7112.20010	
CYL 20 x 050/ER 25	2620.12520	42	20	50	47	M 12 x 1	55	–	7111.25000	
CYL 20 x 100/ER 25	2620.12560	42	20	100	47	M 12 x 1	25	M 12 x 1	7111.25000	
CYL 20 x 050/ER 32	2620.13220	50	20	50	54	M 12 x 1	55	–	7111.32000	
CYL 20 x 100/ER 32	2620.13260	50	20	100	54	M 12 x 1	25	M 12 x 1	7111.32000	
CYL 25 [mm]										
CYL 25 x 050/ER 25	2625.12520	42	25	50	47	M 18 x 1,5	60	–	7111.25000	
CYL 25 x 100/ER 25	2625.12560	42	25	100	47	M 18 x 1,5	41	M 18 x 1,5	7111.25000	
CYL 25 x 050/ER 32	2625.13220	50	25	50	54	M 18 x 1,5	56	–	7111.32000	
CYL 25 x 050/ER 40	2625.14020	63	25	50	60	M 18 x 1,5	53	–	7111.40000	

Included in delivery: toolholders come with Hi-Q® |ER clamping nut and back-up screw

Type	Part no.	Dimensions [mm]				CNT	THLGTH	THID	Accessories
		DLN	DCONMS h6	LS	OHN				Wrench
CYL 1 [inch]									
CYL 1" x 100/ER 20	2625.12061	34	25,4	100	39.5	M 14 x 1	40	M 14 x 1	7112.20010
CYL 1" x 050/ER 25	2625.12521	42	25,4	50	47	M 18 x 1,5	55	–	7111.25000
CYL 1" x 100/ER 25	2625.12561	42	25,4	100	47	M 18 x 1,5	41	M 18 x 1,5	7111.25000
CYL 1" x 050/ER 32	2625.13221	50	25,4	50	53	M 18 x 1,5	55	–	7111.32000
CYL 1" x 050/ER 40	2625.14021	63	25,4	50	60	M 18 x 1,5	55	–	7111.40000

CYL 1 1/4 [inch]										
CYL 1 1/4" x 060/ER 32	2632.13231	50	31,75	60	53		M 22 x 1,5	56	–	7111.32000

Included in delivery: toolholders come with Hi-Q®|ER clamping nut and back-up screw



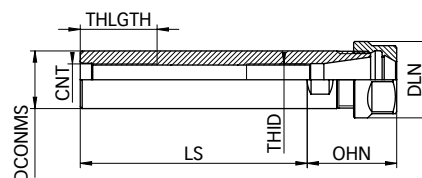
CYL/ER

Coolant adapters*

CGA M 12 x 1/1/8" NPT	7239.12181
CGA M 14 x 1/1/4" NPT	7239.14141
CGA M 18 x 1,5/1/4" NPT	7239.18141
CGA M 22 x 1,5/1/4" NPT	7239.22141

Converts back-up screw threads to coolant port for through coolant applications

*USA only



CYL/ER

CYL/ERM toolholders (mini clamping nut)

CYL

CYL/ERMX toolholders with intRlox® (slip-off proof mini clamping nut)

Type	Part no.	Dimensions [mm]					CNT	THLGTH	THID	Slip-off proof	Accessories
		DLN	DCONMS h6	LS	OHN	Wrench					
CYL 6 [mm]											
CYL 6 x 045/ERM 11	2606.21120	16	6	45	26,5	–	0	–	–		7113.11000
CYL 6 x 045/ERMX 11	4606.21120	16	6	45	26,5	–	0	–	•		7118.11000
CYL 7 [mm]											
CYL 7 x 045/ERM 11	2607.21120	16	7	45	26,5	–	0	–	–		7113.11000
CYL 7 x 045/ERMX 11	4607.21120	16	7	45	26,5	–	0	–	•		7118.11000
CYL 8 [mm]											
CYL 8 x 080/ERM 8	2608.20850	12	8	80	26	M 5	13	–	–		7113.08000
CYL 8 x 080/ERMX 8	4608.20850	12	8	80	26	M 5	13	–	•		7118.08000
CYL 8 x 056/ERM 11	2608.21130	16	8	56	26,5	M 5	13	–	–		7113.11000
CYL 8 x 056/ERMX 11	4608.21130	16	8	56	26,5	M 5	13	–	•		7118.11000
CYL 3/8 [inch]											
CYL 3/8" x 070/ERM 8	2609.20841	12	9,525	70	23	M 5	13	M 5	–		7113.08000
CYL 3/8" x 070/ERMX 8	4609.20841	12	9,525	70	23	M 5	13	M 5	•		7118.08000
CYL 10 [mm]											
CYL 10 x 060/ERM 16	2610.21630	22	10	60	38,5	M 5	13	–	–		7113.16000
CYL 10 x 060/ERMX 16	4610.21630	22	10	60	38,5	M 5	13	–	•		7118.16000
CYL 12 [mm]											
CYL 12 x 080/ERM 8	2612.20850	12	12	80	17	M 5	13	–	–		7113.08000
CYL 12 x 080/ERMX 8	4612.20850	12	12	80	17	M 5	13	–	•		7118.08000
CYL 12 x 080/ERM 16	2612.21650	22	12	80	38,5	M 5	13	–	–		7113.16000
CYL 12 x 080/ERMX 16	4612.21650	22	12	80	38,5	M 5	13	–	•		7118.16000
CYL 1/2 [inch]											
CYL 1/2" x 140/ERM 11	2613.21191	16	12,7	140	29,5	M 6	15	M 6	–		7113.11000
CYL 1/2" x 140/ERMX 11	4613.21191	16	12,7	140	29,5	M 6	15	M 6	•		7118.11000
CYL 1/2" x 140/ERM 16	2613.21691	22	12,7	140	37	M 6	15	M 6	–		7113.16000
CYL 1/2" x 140/ERMX 16	4613.21691	22	12,7	140	37	M 6	15	M 6	•		7118.16000
CYL 16 [mm]											
CYL 16 x 150/ERM 11	2616.21190	16	16	150	21	M 8 x 1	143	M 8 x 1	–		7113.11000
CYL 16 x 150/ERMX 11	4616.21190	16	16	150	21	M 8 x 1	40	M 8 x 1	•		7118.11000
CYL 16 x 100/ERM 20	2616.22060	28	16	100	42,5	M 8 x 1	20	–	–		7113.20000
CYL 16 x 100/ERMX 20	4616.22060	28	16	100	42,5	M 8 x 1	20	–	•		7118.20000

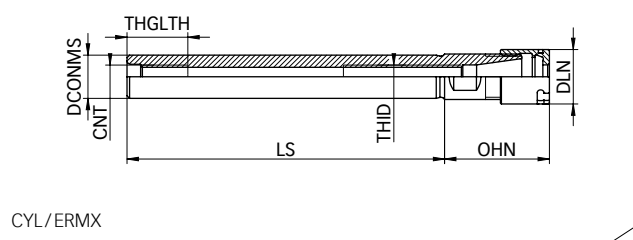
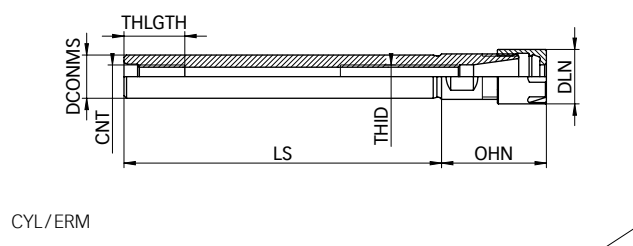
CYL/ERM toolholders (mini clamping nut)

CYL

CYL/ERMX toolholders with intrRlox® (slip-off proof mini clamping nut)

Type	Part no.	Dimensions [mm]					CNT	THLGTH	THID	Slip-off proof	Accessories
		DLN	DCONMS h6	LS	OHN						Wrench
CYL 5/8 [inch]											
CYL 5/8" x 150/ERM 11	2616.21191	16	15,875	150	19,5	M 8 x 1	40	M 8 x 1	–		7113.11000
CYL 5/8" x 150/ERMX 11	4616.21191	16	15,875	150	19,5	M 8 x 1	40	M 8 x 1	•		7118.11000
CYL 3/4 [inch]											
CYL 3/4" x 155/ERM 16	2619.21691	22	19,05	155	26,5	M 12 x 1	40	–	–		7113.16000
CYL 3/4" x 155/ERMX 16	4619.21691	22	19,05	155	26,5	M 12 x 1	40	–	•		7118.16000
CYL 3/4" x 100/ERM 25	2619.22561	35	19,05	100	47	M 12 x 1	40	M 12 x 1	–		7113.25000
CYL 3/4" x 100/ERMX 25	4619.22561	35	19,05	100	47	M 12 x 1	40	M 12 x 1	•		7118.25000
CYL 20 [mm]											
CYL 20 x 155/ERM 16	2620.21690	22	20	155	25,5	M 12 x 1	40	M 11 x 1	–		7113.16000
CYL 20 x 155/ERMX 16	4620.21690	22	20	155	25,5	M 12 x 1	40	M 11 x 1	•		7118.16000
CYL 25 [mm]											
CYL 25 x 155/ERM 20	2625.22090	28	25	155	27	M 14 x 1	40	M 14 x 1	–		7113.20000
CYL 25 x 155/ERMX 20	4625.22090	28	25	155	27	M 14 x 1	40	M 14 x 1	•		7118.20000
CYL 1 [inch]											
CYL 1" x 155/ERM 20	2625.22091	28	25,4	155	27	M 14 x 1	40	M 14 x 1	–		7113.20000
CYL 1" x 155/ERMX 20	4625.22091	28	25,4	155	27	M 14 x 1	40	M 14 x 1	•		7118.20000

Included in delivery: toolholders come with Hi-Q®|ERM or Hi-Q®|ERMX clamping nut and back-up screw



CYL-F/ERM toolholders (mini clamping nut)

CYL-F

CYL-F/ERMX toolholders with intRlox® (slip-off proof mini clamping nut)

Type	Part no.	Dimensions [mm]					CNT	THLGTH	THID	Slip-off proof	Accessories
		DLN	DCONMS h6	LS	OHN	Wrench					
CYL-F 12 [mm]											
CYL-F 12 x 043/ERM 8	2612.20822	12	12	43	17	M 5	13	–	–	7113.08000	
CYL-F 12 x 043/ERMX 8	4612.20822	12	12	43	17	M 5	13	–	•	7118.08000	
CYL-F 5/8 [inch]											
CYL-F 5/8" x 043/ERM 8	2616.20811	12	15,875	43	15,5	M 5	13	M 5	–	7113.08000	
CYL-F 5/8" x 043/ERMX 8	4616.20811	12	15,875	43	15,5	M 5	13	M 5	•	7118.08000	
CYL-F 16 [mm]											
CYL-F 16 x 038/ERM 11	2616.21112	16	16	38	19,5	M 8 x 1	30	–	–	7113.11000	
CYL-F 16 x 038/ERMX 11	4616.21112	16	16	38	16	M 8 x 1	30	–	•	7118.11000	
CYL-F 16 x 050/ERM 11	2616.21122	16	16	50	16	M 8 x 1	38	–	–	7113.11000	
CYL-F 16 x 050/ERMX 11	4616.21122	16	16	50	16	M 8 x 1	38	–	•	7118.11000	
CYL-F 16 x 140/ERM 11	2616.21192	16	16	140	19,5	M 8 x 1	40	M 8 x 1	–	7113.11000	
CYL-F 16 x 140/ERMX 11	4616.21192	16	16	140	19,5	M 8 x 1	40	M 8 x 1	•	7118.11000	
CYL-F 16 x 035/ERM 16	2616.21612	22	16	35	36	M 8 x 1	37	–	–	7113.16000	
CYL-F 16 x 035/ERMX 16	4616.21612	22	16	35	36	M 8 x 1	38	–	•	7118.16000	
CYL-F 3/4 [inch]											
CYL-F 3/4" x 115/ERM 11	2619.21173	16	19,05	115	19,5	M 8 x 1	40	M 8 x 1	–	7113.11000	
CYL-F 3/4" x 115/ERMX 11	4619.21173	16	19,05	115	19,5	M 8 x 1	40	M 8 x 1	•	7118.11000	
CYL-F 3/4" x 038/ERM 16	2619.21613	22	19,05	38	27,5	M 12 x 1	29	–	–	7113.16000	
CYL-F 3/4" x 038/ERMX 16	4619.21613	22	19,05	38	27,5	M 12 x 1	29	–	•	7118.16000	
CYL-F 3/4" x 050/ERM 16	2619.21623	22	19,05	50	25	M 12 x 1	41	–	–	7113.16000	
CYL-F 3/4" x 050/ERMX 16	4619.21623	22	19,05	50	25	M 12 x 1	41	–	•	7118.16000	
CYL-F 3/4" x 070/ERM 16	2619.21643	22	19,05	70	29,5	M 12 x 1	61	–	–	7113.16000	
CYL-F 3/4" x 070/ERMX 16	4619.21643	22	19,05	70	29,5	M 12 x 1	61	–	•	7118.16000	
CYL-F 3/4" x 120/ERM 16	2619.21683	22	19,05	120	27,5	M 12 x 1	40	M 11 x 1	–	7113.16000	
CYL-F 3/4" x 120/ERMX 16	4619.21683	22	19,05	120	27,5	M 12 x 1	40	M 11 x 1	•	7118.16000	
CYL-F 3/4" x 140/ERM 16	2619.21693	22	19,05	140	27,5	M 12 x 1	40	M 11 x 1	–	7113.16000	
CYL-F 3/4" x 140/ERMX 16	4619.21693	22	19,05	140	27,5	M 12 x 1	40	M 11 x 1	•	7118.16000	

Included in delivery: toolholders come with Hi-Q®|ERM or Hi-Q®|ERMX clamping nut and back-up screw

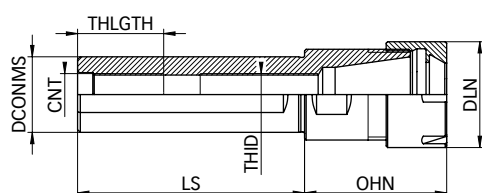
CYL-F/ERM toolholders (mini clamping nut)

CYL-F

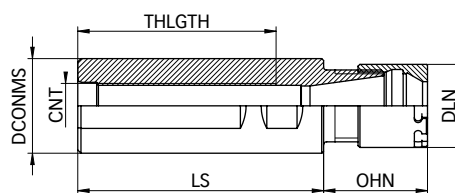
CYL-F/ERMX toolholders with intRlox® (slip-off proof mini clamping nut)

Type	Part no.	Dimensions [mm]					CNT	THLGTH	THID	Slip-off proof	Accessories
		DLN	DCONMS h6	LS	OHN	Wrench					
CYL-F 20 [mm]											
CYL-F 20 x 060/ERM 11	2620.21132	16	20	60	19,5	M 8 x 1	51	–	–		7113.11000
CYL-F 20 x 060/ERMX 11	4620.21132	16	20	60	19,5	M 8 x 1	51	–	•		7118.11000
CYL-F 20 x 038/ERM 16	2620.21612	22	20	38	26,5	M 12 x 1	25	–	–		7113.16000
CYL-F 20 x 038/ERMX 16	4620.21612	22	20	38	26,5	M 12 x 1	25	–	•		7118.16000
CYL-F 20 x 050/ERM 16	2620.21622	22	20	50	27,5	M 12 x 1	41	–	–		7113.16000
CYL-F 20 x 050/ERMX 16	4620.21622	22	20	50	27,5	M 12 x 1	41	–	•		7118.16000
CYL-F 20 x 070/ERM 16	2620.21642	22	20	70	27,5	M 12 x 1	61	–	–		7113.16000
CYL-F 20 x 070/ERMX 16	4620.21642	22	20	70	27,5	M 12 x 1	61	–	•		7118.16000
CYL-F 20 x 120/ERM 16	2620.21682	22	20	120	27,5	M 12 x 1	40	M 11 x 1	–		7113.16000
CYL-F 20 x 120/ERMX 16	4620.21682	22	20	120	27,5	M 12 x 1	40	M 11 x 1	•		7118.16000
CYL-F 20 x 140/ERM 16	2620.21692	22	20	140	27,5	M 12 x 1	40	M 11 x 1	–		7113.16000
CYL-F 20 x 140/ERMX 16	4620.21692	22	20	140	27,5	M 12 x 1	40	M 11 x 1	•		7118.16000
CYL-F 22 [mm]											
CYL-F 22 x 038/ERM 16	2622.21612	22	22	38	27,5	M 12 x 1	27.5	–	–		7113.16000
CYL-F 22 x 038/ERMX 16	4622.21612	22	22	38	27,5	M 12 x 1	27.5	–	•		7118.16000
CYL-F 22 x 070/ERM 16	2622.21642	22	22	70	27,5	M 12 x 1	59.5	–	–		7113.16000
CYL-F 22 x 070/ERMX 16	4622.21642	22	22	70	27,5	M 12 x 1	59.5	–	•		7118.16000
CYL-F 22 x 100/ERM 16	2622.21662	22	22	100	27,5	M 12 x 1	40	M 11 x 1	–		7113.16000
CYL-F 22 x 100/ERMX 16	4622.21662	22	22	100	27,5	M 12 x 1	40	M 11 x 1	•		7118.16000
CYL-F 22 x 080/ERM 20	2622.22052	28	22	80	39	M 12 x 1	40	M 12 x 1	–		7113.20000
CYL-F 22 x 080/ERMX 20	4622.22052	28	22	80	39	M 12 x 1	40	M 12 x 1	•		7118.20000

Included in delivery: toolholders come with Hi-Q®|ERM or Hi-Q®|ERMX clamping nut and sealing back-up screw



CYL-F/ERM



CYL-F/ERMX

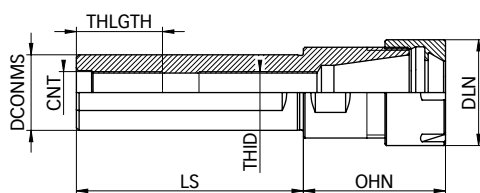
CYL-F/ERM toolholders (mini clamping nut)

CYL-F

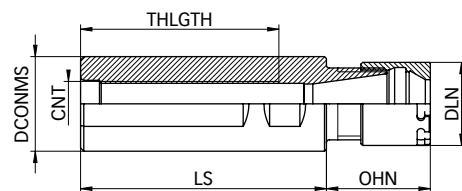
CYL-F/ERMX toolholders with intrRlox® (slip-off proof mini clamping nut)

Type	Part no.	Dimensions [mm]					CNT	THLGTH	THID	Slip-off proof	Accessories
		DLN	DCONMS h6	LS	OHN	Wrench					
CYL-F 25 [mm]											
CYL-F 25 x 065/ERM 16	2625.21642	22	25	65	27,5	M 12 x 1	54	–	–	7113.16000	
CYL-F 25 x 065/ERMX 16	4625.21642	22	25	65	27,5	M 12 x 1	54	–	•	7118.16000	
CYL-F 25 x 100/ERM 20	2625.22062	28	25	100	28	M 14 x 1	40	M 14 x 1	–	7113.20000	
CYL-F 25 x 100/ERMX 20	4625.22062	28	25	100	28	M 14 x 1	40	M 14 x 1	•	7118.20000	
CYL-F 25 x 154/ERM 20	2625.22002	28	25	154	28	M 14 x 1	40	M 14 x 1	–	7113.20000	
CYL-F 25 x 154/ERMX 20	4625.22002	28	25	154	28	M 14 x 1	40	M 14 x 1	•	7118.20000	
CYL-F 25 x 075/ERM 25	2625.22552	35	25	75	47	M 14 x 1	29	M 14 x 1	–	7113.25000	
CYL-F 25 x 075/ERMX 25	4625.22552	35	25	75	47	M 14 x 1	29	M 14 x 1	•	7118.25000	
CYL-F 25 x 145/ERM 25	2625.22592	35	25	145	36	M 14 x 1	29	M 14 x 1	–	7113.25000	
CYL-F 25 x 145/ERMX 25	4625.22592	35	25	145	36	M 14 x 1	29	M 14 x 1	•	7118.25000	
CYL-F 1 [inch]											
CYL-F 1" x 033/ERM 16	2625.21613	22	25,4	33	28	M 12 x 1	25.5	–	–	7113.16000	
CYL-F 1" x 033/ERMX 16	4625.21613	22	25,4	33	28	M 12 x 1	25	–	•	7118.16000	
CYL-F 1" x 065/ERM 16	2625.21643	22	25,4	65	27,5	M 12 x 1	54	–	–	7113.16000	
CYL-F 1" x 065/ERMX 16	4625.21643	22	25,4	65	27,5	M 12 x 1	54	–	•	7118.16000	
CYL-F 1" x 075/ERM 16	2625.21653	22	25,4	75	27,5	M 12 x 1	64	–	–	7113.16000	
CYL-F 1" x 075/ERMX 16	4625.21653	22	25,4	75	27,5	M 12 x 1	64	–	•	7118.16000	
CYL-F 1" x 100/ERM 16	2625.21663	22	25,4	100	27,5	M 12 x 1	40	M 11 x 1	–	7113.16000	
CYL-F 1" x 100/ERMX 16	4625.21663	22	25,4	100	27,5	M 12 x 1	40	M 11 x 1	•	7118.16000	
CYL-F 1" x 100/ERM 20	2625.22063	28	25,4	100	27,5	M 14 x 1	40	M 14 x 1	–	7113.20000	
CYL-F 1" x 100/ERMX 20	4625.22063	28	25,4	100	27,5	M 14 x 1	40	M 14 x 1	•	7118.20000	
CYL-F 1" x 140/ERM 20	2625.22093	28	25,4	140	27,5	M 14 x 1	40	M 14 x 1	–	7113.20000	
CYL-F 1" x 140/ERMX 20	4625.22093	28	25,4	140	27,5	M 14 x 1	40	M 14 x 1	•	7118.20000	
CYL-F 32 [mm]											
CYL-F 32 x 070/ERM 25	2632.22542	35	32	70	30	M 18 x 1,5	60	–	–	7113.25000	
CYL-F 32 x 070/ERMX 25	4632.22542	35	32	70	30	M 18 x 1,5	60	–	•	7118.25000	

Included in delivery: toolholders come with Hi-Q®|ERM or Hi-Q®|ERMX clamping nut and back-up screw



CYL-F/ERM

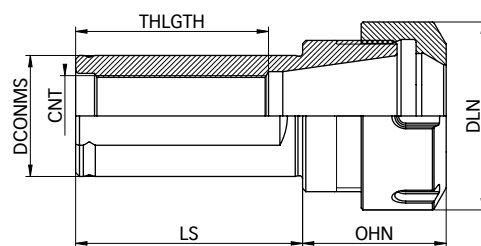


CYL-F/ERMX

Type	Part no.	Dimensions [mm]						Accessories	
		DLN	DCONMS h6	LS	OHN	CNT	THLGTH	Wrench	
CYL-NC 1 1/4 [inch]*									
CYL-NC 1 1/4" x 060/ER 25	2632.12533	42	31,75	60	32	M 18 x 1,5	0	7111.25000	
CYL-NC 1 1/4" x 060/ER 32	2632.13233	50	31,75	60	38	M 22 x 1,5	52	7111.32000	
CYL-NC 32 [mm]									
CYL-NC 32 x 060/ER 25	2632.12532	42	32	60	32	M 18 x 1,5	54	7111.25000	
CYL-NC 32 x 060/ER 32	2632.13232	50	32	60	38	M 22 x 1,5	54	7111.32000	
CYL-NC 1 1/2 [inch]*									
CYL-NC 1 1/2" x 080/ER 32	2638.13253	50	38,1	80	33	M 22 x 1,5	65	7111.32000	
CYL-NC 1 1/2" x 075/ER 40	2638.14053	63	38,1	75	55	M 22 x 1,5	75	7111.40000	
CYL-NC 40 [mm]									
CYL-NC 40 x 080/ER 32	2640.13252	50	40	80	39	M 22 x 1,5	65	7111.32000	
CYL-NC 40 x 075/ER 40	2640.14052	63	40	75	55	M 22 x 1,5	75	7111.40000	

Included in delivery: toolholders come with Hi-Q®|ER clamping nut and back-up screw

*USA only



CYL-DF/ERM toolholders (mini clamping nut)

CYL-DF

CYL-DF/ERMX toolholders with intrRlox® (slip-off proof mini clamping nut)

Type	Part no.	Dimensions [mm]						Slip-off proof	Accessories
		DLN	DCONMS h6	LS	OHN	CNT	THLGTH		Wrench
CYL-DF 12 [mm]									
CYL-DF 12 x 015/ERM 8	2612.20804	12	12	15	46	–	–	–	7113.08000
CYL-DF 12 x 015/ERMX 8	4612.20804	12	12	15	46	–	–	•	7118.08000
CYL-DF 12 x 025/ERM 8	2612.20814	12	12	25	56	–	–	–	7113.08000
CYL-DF 12 x 025/ERMX 8	4612.20814	12	12	25	56	–	–	•	7118.08000
CYL-DF 5/8 [inch]									
CYL-DF 5/8" x 025/ERM 8	2616.20895	12	15,875	25	56	–	–	–	7113.08000
CYL-DF 5/8" x 025/ERMX 8	4616.20895	12	15,875	25	56	–	–	•	7118.08000
CYL-DF 16 [mm]									
CYL-DF 16 x 040/ERM 11	2616.21114	16	16	40	79	–	–	–	7113.11000
CYL-DF 16 x 040/ERMX 11	4616.21114	16	16	40	79	–	–	•	7118.11000
CYL-DF 16 x 050/ERM 11	2616.21124	16	16	50	89	–	–	–	7113.11000
CYL-DF 16 x 050/ERMX 11	4616.21124	16	16	50	89	–	–	•	7118.11000
CYL-DF 3/4 [inch]									
CYL-DF 3/4" x 040/ERM 11	2619.21125	16	19,05	40	79	–	–	–	7113.11000
CYL-DF 3/4" x 040/ERMX 11	4619.21125	16	19,05	40	79	–	–	•	7118.11000
CYL-DF 3/4" x 070/ERM 11	2619.21145	16	19,05	70	109	–	–	–	7113.11000
CYL-DF 3/4" x 070/ERMX 11	4619.21145	16	19,05	70	109	–	–	•	7118.11000
CYL-DF 3/4" x 090/ERM 11	2619.21165	16	19,05	90	129	–	–	–	7113.11000
CYL-DF 3/4" x 090/ERMX 11	4619.21165	16	19,05	90	129	–	–	•	7118.11000
CYL-DF 3/4" x 055/ERM 16	2619.21635	22	19,05	55	107	–	–	–	7113.16000
CYL-DF 3/4" x 055/ERMX 16	4619.21635	22	19,05	55	107	–	–	•	7118.16000
CYL-DF 20 [mm]									
CYL-DF 20 x 030/ERM 11	2620.21114	16	20	30	69	–	–	–	7113.11000
CYL-DF 20 x 030/ERMX 11	4620.21114	16	20	30	69	–	–	•	7118.11000
CYL-DF 20 x 050/ERM 11	2620.21124	16	20	50	89	–	–	–	7113.11000
CYL-DF 20 x 050/ERMX 11	4620.21124	16	20	50	89	–	–	•	7118.11000
CYL-DF 20 x 055/ERM 16	2620.21634	22	20	55	107	–	–	–	7113.16000
CYL-DF 20 x 055/ERMX 16	4620.21634	22	20	55	107	–	–	•	7118.16000

Included in delivery: toolholders come with two Hi-Q®|ERM or Hi-Q®|ERMX clamping nuts and back-up screw

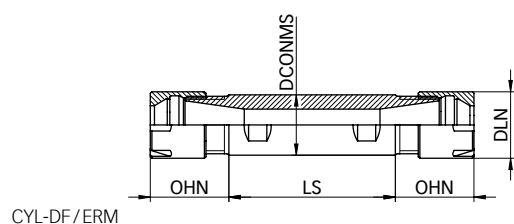
CYL-DF/ERM toolholders (mini clamping nut)

CYL-DF

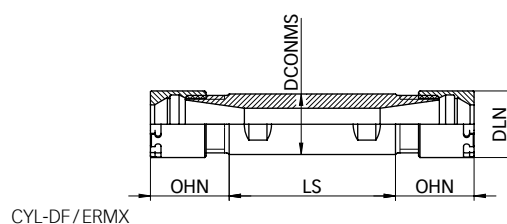
CYL-DF/ERMX toolholders with intrRlox® (slip-off proof mini clamping nut)

Type	Part no.	Dimensions [mm]					CNT	THLGTH	Slip-off proof	Accessories
		DLN	DCONMS h6	LS	OHN	Wrench				
CYL-DF 22 [mm]										
CYL-DF 22 x 150/ERM 11	2622.21194	16	22	150	189	–	–	–	7113.11000	
CYL-DF 22 x 055/ERM 16	2622.21634	22	22	55	110	–	–	–	7113.16000	
CYL-DF 22 x 055/ERMX 16	4622.21634	22	22	55	110	–	–	•	7118.16000	
CYL-DF 22 x 075/ERM 16	2622.21654	22	22	75	130	–	–	–	7113.16000	
CYL-DF 22 x 075/ERMX 16	4622.21654	22	22	75	130	–	–	•	7118.16000	
CYL-DF 25 [mm]										
CYL-DF 25 x 062/ERM 16	2625.21634	22	25	62	117	–	–	–	7113.16000	
CYL-DF 25 x 062/ERMX 16	4625.21634	22	25	62	117	–	–	•	7118.16000	
CYL-DF 1 [inch]										
CYL-DF 1" x 030/ERM 16	2625.21615	22	25,4	30	86	–	–	–	7113.16000	
CYL-DF 1" x 030/ERMX 16	4625.21615	22	25,4	30	86	–	–	•	7118.16000	
CYL-DF 1" x 062/ERM 16	2625.21635	22	25,4	62	117	–	–	–	7113.16000	
CYL-DF 1" x 062/ERMX 16	4625.21635	22	25,4	62	117	–	–	•	7118.16000	
CYL-DF 32 [mm]										
CYL-DF 32 x 055/ERM 20	2632.22034	28	32	55	110	–	–	–	7113.20000	
CYL-DF 32 x 055/ERMX 20	4632.22034	28	32	55	110	–	–	•	7118.20000	
CYL-DF 32 x 075/ERM 20	2632.22054	28	32	75	130	–	–	–	7113.20000	
CYL-DF 32 x 075/ERMX 20	4632.22054	28	32	75	130	–	–	•	7118.20000	

Included in delivery: toolholders come with two Hi-Q®|ERM or Hi-Q®|ERMX clamping nuts and back-up screw



CYL-DF/ERM



CYL-DF/ERMX

Morse taper toolholders MK



Applications Morse taper toolholders are designed for drawbar thread application. They can be used on milling or combined drilling-milling machines as well as on boring machines. For drilling machines we supply the corresponding tangs (ATL) on request.

Special applications When extra high clamping force is needed, e.g., when tapping with ER-GB, we recommend the use of our friction-bearing clamping nuts Hi-Q®|ERB and Hi-Q®|ERBC.

Matched tooling system for best fit For highest precision and best results the whole system counts. Therefore REGO-FIX components are carefully matched for optimum fit and accuracy. This guarantees the best runout and balance.

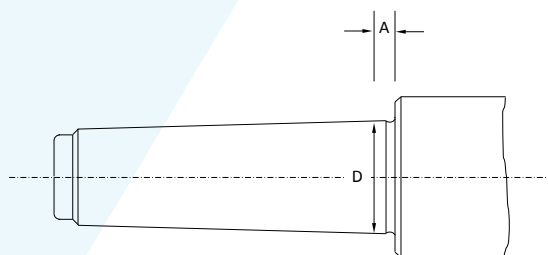
*For the influence of runout on tool life see the graph page 354.
Accessories are not included in delivery.*

Expert advice

We recommend tightening the clamping nuts with our torque wrench.

For tightening torque recommendations, please refer to page 377.

Type	Dimensions [mm]	
	D	A
MK		
MK 1	12.06	3.5
MK 2	17.78	5.0
MK 3	23.82	5.0
MK 4	31.26	6.5
MK 5	44.39	6.5



MK 1 – 5

Morse taper toolholders MK

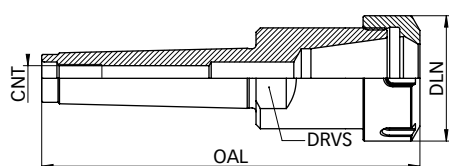
Tangs ATL

MK

DIN 228-A

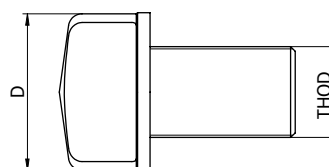
Type	Part no.	Dimensions [mm]		CNT	DRVS	Accessories
		DLN	OAL			Wrench
MK 1						
MK 1/ER 16 x 041	2701.11600	28	93,5	M 6	17	7112.16010
MK 2						
MK 2/ER 20 x 049	2702.12000	34	111,5	M 10	22	7112.20010
MK 2/ER 25 x 052	2702.12500	42	115	M 10	27	7111.25000
MK 2/ER 32 x 060	2702.13200	50	123	M 10	32	7111.32000
MK 3						
MK 3/ER 25 x 052	2703.12500	42	132	M 12	27	7111.25000
MK 3/ER 32 x 070	2703.13200	50	150	M 12	32	7111.32000
MK 4						
MK 4/ER 32 x 060	2704.13200	50	161,5	M 16	32	7111.32000
MK 4/ER 40 x 082	2704.14000	63	183	M 16	41	7111.40000
MK 5						
MK 5/ER 40 x 064	2705.14000	63	192	M 20	41	7111.40000

Included in delivery: toolholders come with Hi-Q® ER clamping nut and back-up screw



MK/ER

Type	Part no.	Dimensions [mm]	
		D	THOD
Tangs ATL			
ATL 6/MK 1	7221.01000	8,5	M 6
ATL 10/MK 2	7221.02000	13,5	M 10
ATL 12/MK 3	7221.03000	18,5	M 12
ATL 16/MK 4	7221.04000	24,5	M 16
ATL 20/MK 5	7221.05000	35	M 20



ATL/MK

Automotive shank toolholders SH



Applications Automotive shank toolholders with trapezoidal thread are supplied with a setting nut. With this type of toolholder, ER, ER-GB and PCM ET1 collets can be used.

Special applications A quick-change setting nut according to system BILZ is available as an option. This option must be ordered separately. When extra high clamping force is needed, e.g., when tapping with ER-GB, we recommend the use of our friction-bearing clamping nuts Hi-Q®|ERB and Hi-Q®|ERBC.

Matched tooling system for best fit For highest precision and best results the whole system counts. Therefore REGO-FIX components are carefully matched for optimum fit and accuracy. This guarantees the best runout and balance.

*For the influence of runout on tool life see the graph page 354.
Accessories are not included in delivery.*

Expert advice

We recommend tightening the clamping nuts with our torque wrench.

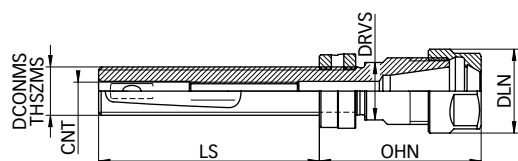
For tightening torque recommendations, please refer to page 377.

Type	Part no.	Dimensions [mm]			THSZMS	CNT	DRVS	Accessories
		DLN	OHN	LS				Wrench
SH 12								
SH 12 x 050/ER 11	2612.11104	19	50	46,6	Tr 12 x 1,5	M 5	12	7112.11010
SH 16								
SH 16 x 073/ER 16	2616.11604	28	73	53,5	Tr 16 x 1,5	M 6	19	7112.16010
SH 20								
SH 20 x 076/ER 20	2620.12004	34	76	59,5	Tr 20 x 2	M 8	22	7112.20010
SH 28								
SH 28 x 083/ER 25	2628.12504	42	83	57	Tr 28 x 2	M 18 x 2	28	7111.25000

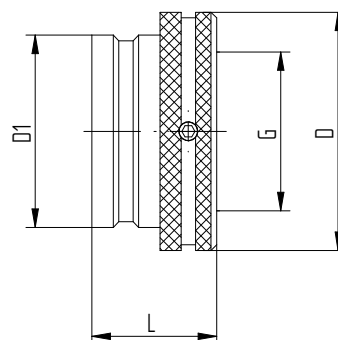
Included in delivery: toolholders come with Hi-Q® | ER clamping nut, back-up screw, setting nut and Woodruff-key

Save time with our quick-change setting nut.

Type	Part no.	Dimensions [mm]			G
		D	D1	L	
Quick-change setting nut (System BILZ)					
SSM 12	7238.12000	22	16,4	18	Tr 12 x 1,5
SSM 16	7238.16000	26	19,9	18,5	Tr 16 x 1,5
SSM 20	7238.20000	33	25,4	20	Tr 20 x 2
SSM 28	7238.28000	42	33,9	22	Tr 28 x 2



SH/ER



SSM

ISO 20 toolholders



Applications The REGO-FIX ISO 20 toolholders are designed to work with the HAAS Office Mill. To utilize the full potential of your machine, use the REGO-FIX brand of holders and collets to see the difference quality can achieve in your machining operations.

Balancing

// 100 % balanced to 50,000 rpm.

Matched tooling system for best fit For highest precision and best results the whole system counts. Therefore REGO-FIX components are carefully matched for optimum fit and accuracy. This guarantees the best runout and balance.

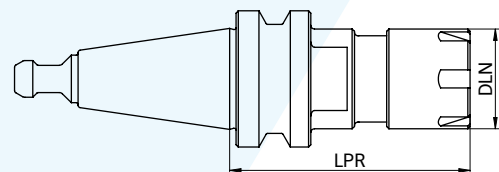
For the influence of runout on tool life see the graph page 354.

Accessories are not included in delivery.

Expert advice

We recommend tightening the clamping nuts with our torque wrench.

For tightening torque recommendations, please refer to page 377.



ISO-HAAS/ERM

Type	Part no.	Dimensions [mm]		Accessories
		DLN	LPR	Wrench
ISO-HAAS 20				
ISO-HAAS 20/ERM 11 x 048	2420.11116	16	48	7113.11000
ISO-HAAS 20/ERM 16 x 053	2420.11616	22	53	7113.16000
ISO-HAAS 20/ERM 20 x 055	2420.12016	28	55	7113.20000

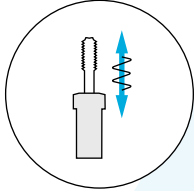
Included in delivery: ISO toolholder comes with Hi-Q®|ERM mini clamping nut and integral pull stud



ER thread-cutting solutions

CYL SSY/HSK-A SSY Softsynchro® tapping holder

- // With **minimum length compensation**
- // Eliminates small synchronization errors of machines (Rigid Tapping)

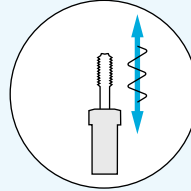


Applications

- // Machines for direct thread cutting
- // For all tapping tools with h9 shanks
- // The turning movement of the spindles can be offset with the feed axis and thus synchronized
- // Synchronization errors are created by the dynamics of the spindle and linear drives. The tapping holder is equipped with the minimum length compensation and compensates the synchronization errors
- // Depending on the application, the service life for the customer can be increased by up to 150%
- // Guides coolant with up to 50 bar / 725 PSI of pressure to the tap, without compromising length compensation

CYL GSF tapping holder

- // With **length compensation**
- // Used on machines in which the feed movement is not synchronized with the thread pitch during processing

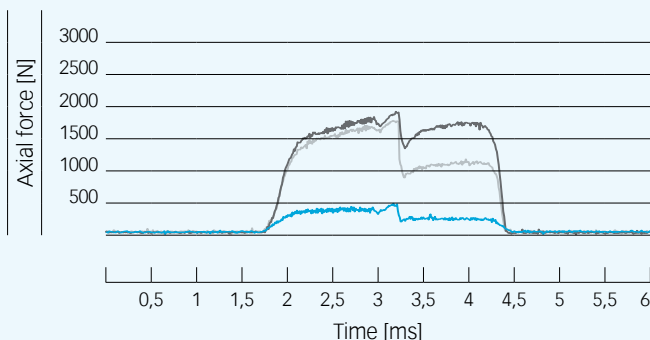


Applications

- // For machines without a tapping option
- // Ensures the compensation of differences between the thread pitch and spindle feed
- // Features a pressure-point mechanism
- // Safe tap cutting
- // Uniform, reproducible thread depths
- // Guides coolant with up to 50 bar / 725 PSI of pressure to the tap, without compromising length compensation
- // Universal use thanks to its compact design and low gauge length

Comparative axial force testing

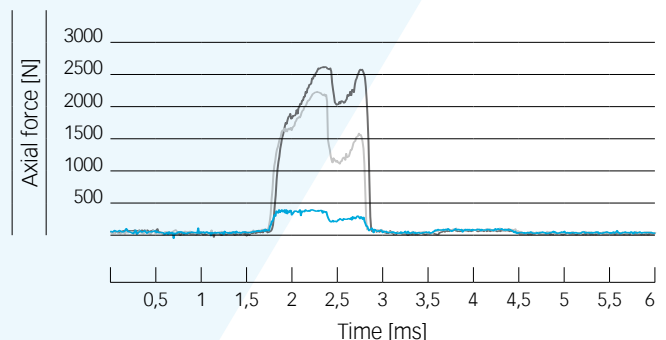
Occurring axial forces with thread forms M10 in St37, Speed 500 rpm.
Source: In-house testing



Summary The axial forces increase with increasing speed. With a rigid toolholder, the forces occurring when forming threads are considerably higher than with the Softsynchro® tapping holder. This allows for the optimum use of the synchronous spindle with the best possible service life and thread surface quality.

Comparative axial force testing

Occurring axial forces with thread forms M10 in St37, Speed 2.000 rpm.
Source: In-house testing



- REGO-FIX Softsynchro® tapping holders
- Competitor synchronous toolholder
- Rigid toolholder

ER tapping holders

HSK-A SSY

CYL SSY

CYL GSF

69893-A

DIN 1835 B+E

DIN 1835 B+E

ISO 12164

Type	Part no.	Dimensions [mm]		LCOMP		DRVS	Accessories
		DLN	LPR	[mm]	[mm]		Wrench
HSK-A 63 SSY							
HSK-A 63 SSY/ERC 20	2563.62000	34	95,5	- 0,5	+ 0,5	19	7112.20010
HSK-A 63 SSY/ERC 32	2563.63200	50	108,8	- 0,5	+ 0,5	32	7111.32000

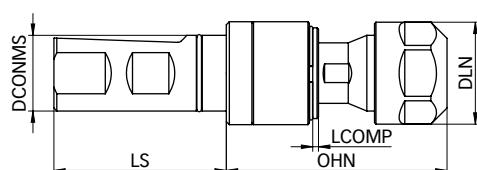
Included in delivery: Tapping holder comes with Hi-Q®|ERC clamping nut

Type	Part no.	Dimensions [mm]				LCOMP		DRVS	Accessories
		DLN	DCONMS	OHN	LS	[mm]	[mm]		Wrench
CYL 25 SSY									
CYL 25 SSY / ERC 20	2625.62000	34	25	73	57	- 0,5	+ 0,5	19	7112.20010
CYL 25 SSY / ERC 32	2625.63200	50	25	87,5	57	- 0,5	+ 0,5	32	7111.32000

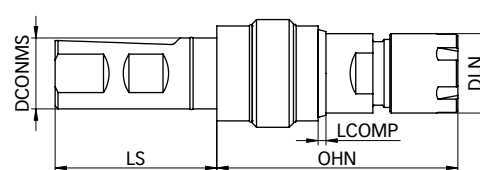
Included in delivery: Tapping holder comes with Hi-Q®|ERC clamping nut

Type	Part no.	Dimensions [mm]				LCOMP		DRVS	Accessories
		DLN	DCONMS	OHN	LS	[mm]	[mm]		Wrench
CYL 25 GSF									
CYL 25 GSF /ERMC 20	2625.62001	28	25	85	57	- 5	+ 7,5	28	7113.20000
CYL 25 GSF /ERC 32	2625.63201	50	25	115	57	- 7	+ 10	34	7111.32000

Included in delivery: Tapping holder comes with Hi-Q®|ERC or Hi-Q®|ERMC clamping nut



CYL SSY/ERC



CYL GSF/ERMC

ER floating chucks

When using reamers on lathes it is often necessary to compensate for axis error between the chuck and the bore to be machined. This error can be corrected by using a self-centering floating chuck.

PH/PHC/PHC-C/MPH

Features and benefits

Adjustable floating resistance

Continuously adjustable between auto-centering and free-floating. No restriction of the floating movement.

Adjustment for tool weight

Optimal setup by adjustment of floating resistance is possible.

Vertical and horizontal application

Adjustable self-centering keeps the tool at the center of the floating chuck, even in the horizontal position. Prevents chatter marks and extends tool life.

Combined ball- and friction-bearing

Combined ball and friction-bearing for easy floating:

- // Ball bearing for smooth reaming at low load applications
- // Friction-bearing to withstand high pressures at high load applications

Double sealing against dirt

Prevents coolant and chips from entering the floating chuck.

Excellent bore quality

Only parallel floatation of tool possible.

Floating chuck PH/ER

Features REGO-FIX floating chucks are excellent tools for reaming and tapping:

- // They are specially designed so the tool is self-centering in a vertical and horizontal position
- // The self-centering feature allows very precise positioning of the reaming or tapping tool. This is especially important in horizontal applications, where on ordinary floating chucks the weight of the tool tends to dislocate the tool from the rotational axis
- // The float is always parallel to the rotational axis and the rotation is both clockwise and counter clockwise

Floating chuck PHC/ER for coolant through tools

Features Floating chucks PHC/ER for coolant through tools are especially designed for internal cooling and have the same advantages as the PH/ER floating chucks.

Floating chuck PHC-C/ER REGO-FIX CAPTO

Features These REGO-FIX CAPTO floating chucks are manufactured with polygon interface – licensed by Sandvik Coromant.

Floating chuck MPH/ERMX for tight spaces

Application REGO-FIX MPH/ERMX floating chucks are an efficient solution for tight space applications.

MPHC/ERMXC for tight spaces with internal cooling

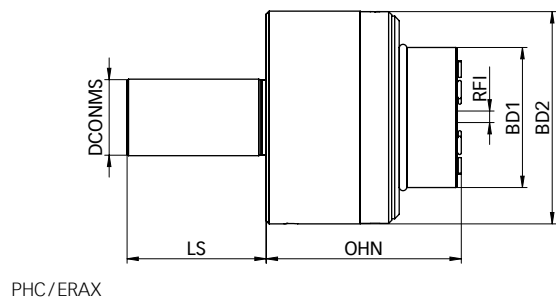
Application The MPHC floating chuck is the mini version with internal cooling, common with modern reaming applications.

PH floating chucks for non coolant through tools

PH

Type	Part no.	Dimensions [mm]					RFI	Accessories
		BD1	DCONMS h6	BD2	OHN	LS		Wrench
PH 5/8 [inch]								
PH 5/8" /ERAX 11	2616.91102	22	15,88	38	36	34	0,8	7117.11000
PH 16 [mm]								
PH 16/ERAX 11	2616.91100	22	16	38	36	34	0,8	7117.11000
PH 3/4 [inch]								
PH 3/4" /ERAX 11	2619.91102	22	19,05	38	36	34	0,8	7117.11000
PH 20 [mm]								
PH 20/ERAX 11	2620.91100	22	20	38	36	34	0,8	7117.11000

Included in delivery: Floating holder comes with Hi-Q®|ER clamping nut and wrench



PHC floating chucks for coolant through tools

PHC

Type	Part no.	Dimensions [mm]					Accessories	
		BD1	DCONMS h6	BD2	OHN	LS	RFI	Wrench
PHC 5/8 [inch]								
PHC 5/8" /ERAX 20	2616.92004	33	15,88	56	53,5	38	1	7117.20000
PHC 16 [mm]								
PHC 16/ERAX 20	2616.92003	33	16	56	53,5	38	1	7117.20000
PHC 3/4 [inch]								
PHC 3/4" /ERAX 20	2619.92004	33	19,05	56	53,5	38	1	7117.20000
PHC 3/4" /ERAX 32	2619.93204	46	19,05	70	64,5	46	1,5	7117.32000
PHC 20 [mm]								
PHC 20/ERAX 20	2620.92003	33	20	56	53,5	38	1	7117.20000
PHC 20/ERAX 32	2620.93203	46	20	70	64,5	46	1,5	7117.32000
PHC 22 [mm]								
PHC 22/ERAX 20	2622.92003	33	22	56	53,5	38	1	7117.20000
PHC 25 [mm]								
PHC 25/ERAX 20	2625.92003	33	25	56	53,5	38	1	7117.20000
PHC 25/ERAX 32	2625.93203	46	25	70	64,5	46	1,5	7117.32000
PHC 1 [inch]								
PHC 1" /ERAX 20	2625.92004	33	25,4	56	53,5	38	1	7117.20000
PHC 1" /ERAX 32	2625.93204	46	25,4	70	64,5	46	1,5	7117.32000
PHC 1 1/4 [inch]								
PHC 1 1/4" /ERAX 32	2632.93204	46	31,75	70	64,5	46	1,5	7117.32000
PHC 32 [mm]								
PHC 32/ERAX 32	2632.93203	46	32	70	64,5	46	1,5	7117.32000

Included in delivery: Floating holder comes with Hi-Q®|ERAX clamping nut, wrench and adjusting key

Expert advice

When using coolant through tools please order Hi-Q®|ERAXC clamping nuts and the corresponding sealing disks.

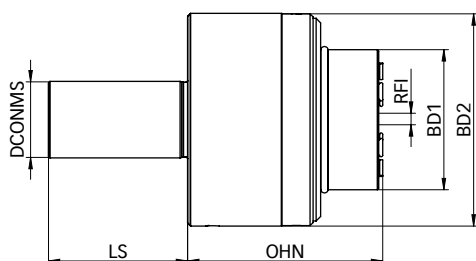
Floating holder with internal coolant supply for VDI interface

PHC-F

Quick clamping and unclamping of floating holders in VDI interfaces via adapter

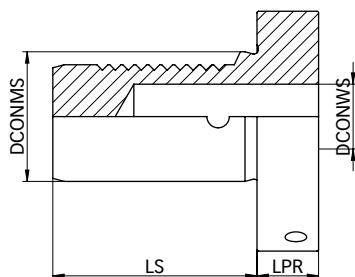
Type	Part no.	Dimensions [mm]					RFI	Accessories
		BD1	DCONMS h6	BD2	OHN	LS		Wrench
PHC-F 16 [mm]								
PHC-F 16/ERAX 20	2616.92002	33	16	56	53,5	38	1	7117.20000
PHC-F 20 [mm]								
PHC-F 20/ERAX 20	2620.92002	33	20	56	53,5	38	1	7117.20000
PHC-F 20/ERAX 32	2620.93202	46	20	70	64,5	46	1,5	7117.32000

Included in delivery: Floating holder comes with Hi-Q®/ERAX clamping nut, wrench and adjusting key

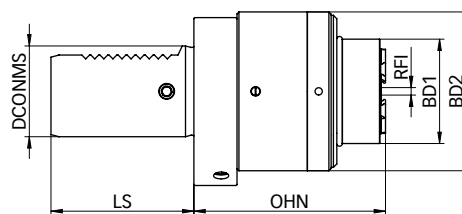


PHC/ERAX

Type	Part no.	Compatible floating holder PHC-F
VDI adapter		
ADP VDI 30/16	2930.31600	2616.92002
ADP VDI 40/20	2940.32000	2620.92002, 2620.93202



ADP VDI



ADP VDI with PHC-F

Expert advice

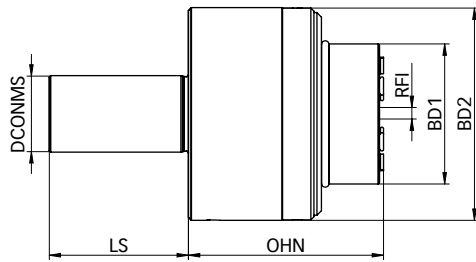
To ensure internal cooling, a flat surface is required on the shank. Other floating holders can also be clamped in the VDI adapter if they feature a flat (see MPHC 16 and MPHC 20).

PHC floating chucks for coolant through tools with REGO-FIX CAPTO interface

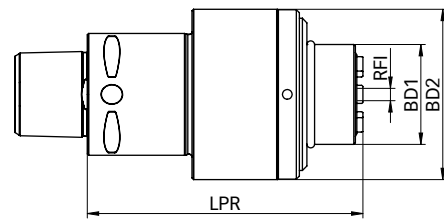
PHC-C

Type	Part no.	Dimensions [mm]			RFI	Accessories
		BD1	BD2	LPR		Wrench
PHC C3						
PHC C3/ERAX 20	2803.92003	33	56	91	0,8	7117.20000
PHC C4						
PHC C4/ERAX 20	2804.92003	33	56	91	0,8	7117.20000
PHC C4/ERAX 32	2804.93203	46	70	100	0,8	7117.32000

Included in delivery: Floating holder comes with Hi-Q®|ERAX clamping nut and wrench



PHC/ERAX



PHC C/ERAX

Certified REGO-FIX CAPTO – licensed by Sandvik Coromant – is manufactured at REGO-FIX Switzerland under license according to CAPTO specifications.

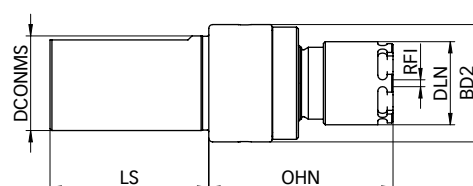
MPH mini floating chucks with intRlox®

(slip-off proof mini clamping nut)

MPH

Type	Part no.	Dimensions [mm]					Accessories	
		DLN	DCONMS h6	BD2	OHN	LS	RFI	Wrench
MPH 8 [mm]								
MPH 8/ERMX 11	4608.91107	16	8	25	35,5	42	0,5	7118.11000
MPH 10 [mm]								
MPH 10/ERMX 11	4610.91107	16	10	25	35,5	42	0,5	7118.11000
MPH 16 [mm]								
MPH 16/ERMX 11	4616.91107	16	16	25	35,5	42	0,5	7118.11000
MPH 3/4 [inch]								
MPH 3/4" /ERMX 11	4619.91108	16	19,05	25	35,5	70	0,5	7118.11000
MPH 20 [mm]								
MPH 20/ERMX 11	4620.91107	16	20	25	35,5	42	0,5	7118.11000
MPH 22 [mm]								
MPH 22/ERMX 11	4622.91107	16	22	25	35,5	42	0,5	7118.11000
MPH 25 [mm]								
MPH 25/ERMX 11	4625.91107	16	25	25	35,5	42	0,5	7118.11000
MPH 1 [inch]								
MPH 1" /ERMX 11	4625.91108	16	25,4	25	35,5	42	0,5	7118.11000

Included in delivery: Floating holder comes with Hi-Q®/ERMX clamping nut and wrench



MPHC/ERMX

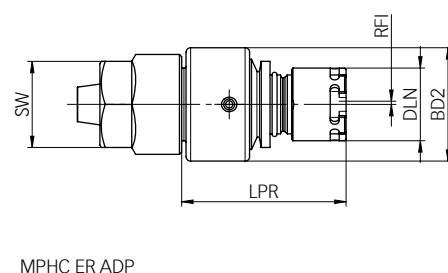
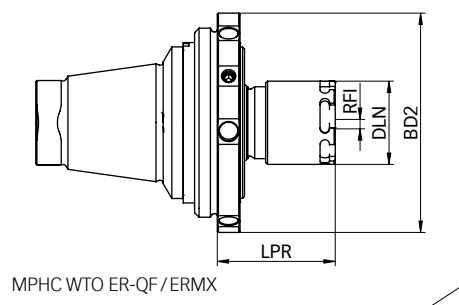
MPHC mini floating chucks with intRlox®

(slip-off proof mini clamping nut)

MPHC

Type	Part no.	Dimensions [mm]					RFI	Accessories
		DLN	DCONMS h6	BD2	OHN	LS		Wrench
MPHC 8 [mm]								
MPHC 8/ERMX 11	4608.91105	16	8	25	35,5	42	0,5	7118.11000
MPHC 10 [mm]								
MPHC 10/ERMX 11	4610.91105	16	10	25	35,5	42	0,5	7118.11000
MPHC 10/ERMX 16	4610.91605	22	10	31	48,7	42	0,5	7118.16000
MPHC 16 [mm]								
MPHC 16/ERMX 16	4616.91605	22	16	31	48,7	42	0,5	7118.16000
MPHC 3/4 [inch]								
MPHC 3/4" /ERMX 11	4619.91106	16	19,05	25	35,5	42	0,5	7118.11000
MPHC 3/4" /ERMX 16	4619.91606	22	19,05	31	48,7	42	0,5	7118.16000
MPHC 20 [mm]								
MPHC 20/ERMX 11	4620.91105	16	20	25	35,5	42	0,5	7118.11000
MPHC 20/ERMX 16	4620.91605	22	20	31	48,7	42	0,5	7118.16000
MPHC 22 [mm]								
MPHC 22/ERMX 16	4622.91605	22	22	31	48,7	42	0,5	7118.16000
MPHC 25 [mm]								
MPHC 25/ERMX 16	4625.91605	22	25	31	48,7	42	0,5	7118.16000
MPHC 1 [inch]								
MPH 1" /ERMX 16	4625.91606	22	25,4	31	48,7	42	0,5	7118.16000
Type	Part no.	DLN	SW	BD2	L	LPR	RFI	Wrench
MPHC ER ADP								
MPHC ER 11/ERMX 11	7168.11110	16	19	25	–	24	0,5	7118.11000
MPHC ERM 11/ERMX 11	7169.11110	16	19	25	–	24	0,5	7118.11000
Type	Part no.	DLN	SW	BD2	L	LPR	RFI	Wrench
MPHC WTO ER ADP								
MPHC WTO ER 25-QF/ERMX 11	8040.25115	16	–	49,5	–	24	0.5	7118.16000
MPHC WTO ER 32-QF/ERMX 16	8040.32165	22	–	58	–	33	0.5	7118.16000

Included in delivery: Mini holder, Hi-Q® / ERMX nut and wrench



Maintenance instructions for floating chucks

There are two main versions of floating chucks

MPHC

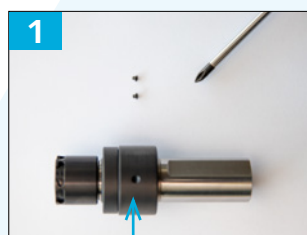
MPH



With 2 screws on the side of the flange.



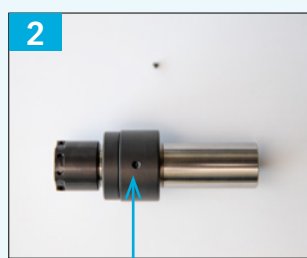
With one screw in the cylindrical shaft on the back of the floating chuck.



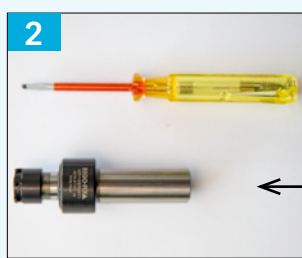
1 Take both screws out with a fitting screwdriver (PH0). Blow out with dry pressurized air.



1 Take the screw in the cylinder out with a fitting screwdriver (hex screw). Blow out with dry pressurized air. Fill with 10 drops of thin oil.



2 Put one screw back. Fill with 10 drops of thin oil.



2 Put the screw back in the back (do not forget the spring). Re-adjust the spring tension in the cylinder shaft.



3 Put the second screw back.

Collet reductions

ER/ERM ERM/ERM ER/ERMX ERMX/ERMX

Features and benefits

Surface finish max. Ra 0.25

Higher clamping force and higher transferable torque.

Applications

The collet reductions are mainly used on Swiss machines with live tooling.

Quick change system

Best suited for quick tool change as the cutting tools can be preinstalled

Length presetting

Tools can be preset outside of the machine.

Minimal external dimensions

Achieve minimal external dimensions by using Hi-Q®|ERM or Hi-Q®|ERMX clamping nuts.

Accessories are not included in delivery.



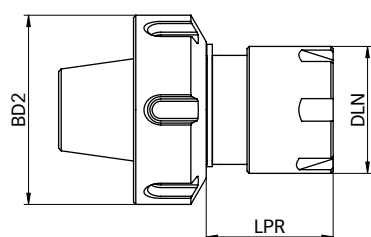
Expert advice

We recommend tightening the clamping nuts with our torque wrench.

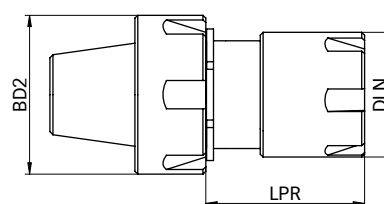
For tightening torque recommendations, please refer to page 377.

Type	Part no.	Dimensions [mm]			Accessories
		DLN	BD2	LPR	Wrench
ER 11					
ER 11/ERM 8	7162.11080	12	19	16,5	7112.11010 / 7113.08000
ER 16					
ER 16/ERM 11	7162.16110	16	28	18,5	7112.16010 / 7113.11000
ER 20					
ER 20/ERM 11*	7162.20110	16	34	16.5	7112.20010 / 7112.11010
ER 20/ERM 16	7162.20160	22	34	28	7112.20010 / 7113.16000
ER 25					
ER 25/ERM 11*	7162.25110	16	42	16,5	7111.25000 / 7113.11000
ER 25/ERM 16	7162.25160	22	42	28	7111.25000 / 7113.16000
ER 25/ERM 20	7162.25200	28	42	28	7111.25000 / 7113.20000
ERM 11					
ERM 11/ERM 8	7161.11080	12	16	16,5	7113.11000 / 7113.08000
ERM 16					
ERM 16/ERM 11	7161.16110	16	23	18,5	7113.11000 / 7113.11000
ERM 20					
ERM 20/ERM 16	7161.20160	22	28	28	7113.20000 / 7113.16000
ERM 25					
ERM 25/ERM 11	7161.25110	16	35	22	7113.25000 / 7113.11000
ERM 25/ERM 16	7161.25160	22	35	28	7113.25000 / 7113.16000
ERM 25/ERM 20	7161.25200	28	35	28	7113.25000 / 7113.20000
ER 32*					
ER 32/ER 16	7160.32160	28	50	29,5	7111.32000 / 7112.16010

*USA only



ER /ERM



ERM/ERM

Collet reductions with intRlox®

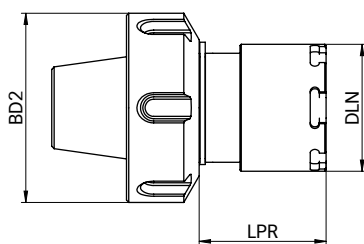
(slip-off proof mini clamping nut)

ER/ERMX

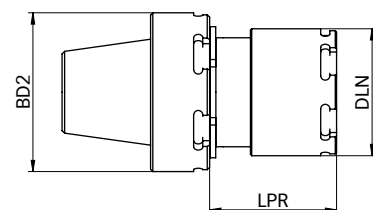
ERMX/ERMX

Type	Part no.	Dimensions [mm]			Accessories
		DLN	BD2	LPR	Wrench
ER 11					
ER 11/ERMX 8	7165.11080	12	19	16,5	7112.11010 / 7118.08000
ER 16					
ER 16/ERMX 11	7165.16110	16	28	18,5	7112.16010 / 7118.11000
ER 20					
ER 20/ERMX 11	7165.20110	16	34	16,5	7112.20010 / 7118.11000
ER 20/ERMX 16	7165.20160	22	34	28	7112.20010 / 7118.16000
ER 25					
ER 25/ERMX 16	7165.25160	22	42	28	7111.25000 / 7118.16000
ER 25/ERMX 20	7165.25200	28	42	28	7111.25000 / 7118.20000
ERMX 11					
ERMX 11/ERMX 8	7164.11080	12	16	16,5	7118.11000 / 7118.08000
ERMX 16					
ERMX 16/ERMX 11	7164.16110	16	23	18,5	7118.16000 / 7118.11000
ERMX 20					
ERMX 20/ERMX 16	7164.20160	22	28	28	7118.20000 / 7118.16000
ERMX 25					
ERMX 25/ERMX 16	7164.25160	22	35	28	7118.25000 / 7118.16000

*USA only



ER/ERMX



ERMX/ERMX

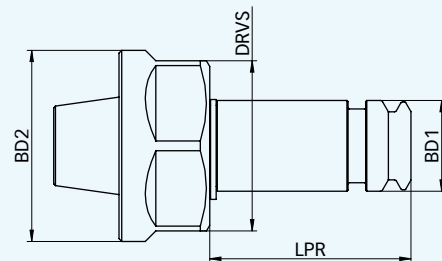


swissQuick powRgrip® adapter



What is it? The swissQuick ER-to-PG adapter is a short “mini-holder” with a solid ER body profile on the back, with a powRgrip® collet cavity on the front. This unique design allows for quick tool changes with an ER fixture while still receiving the benefits of the powRgrip® system.

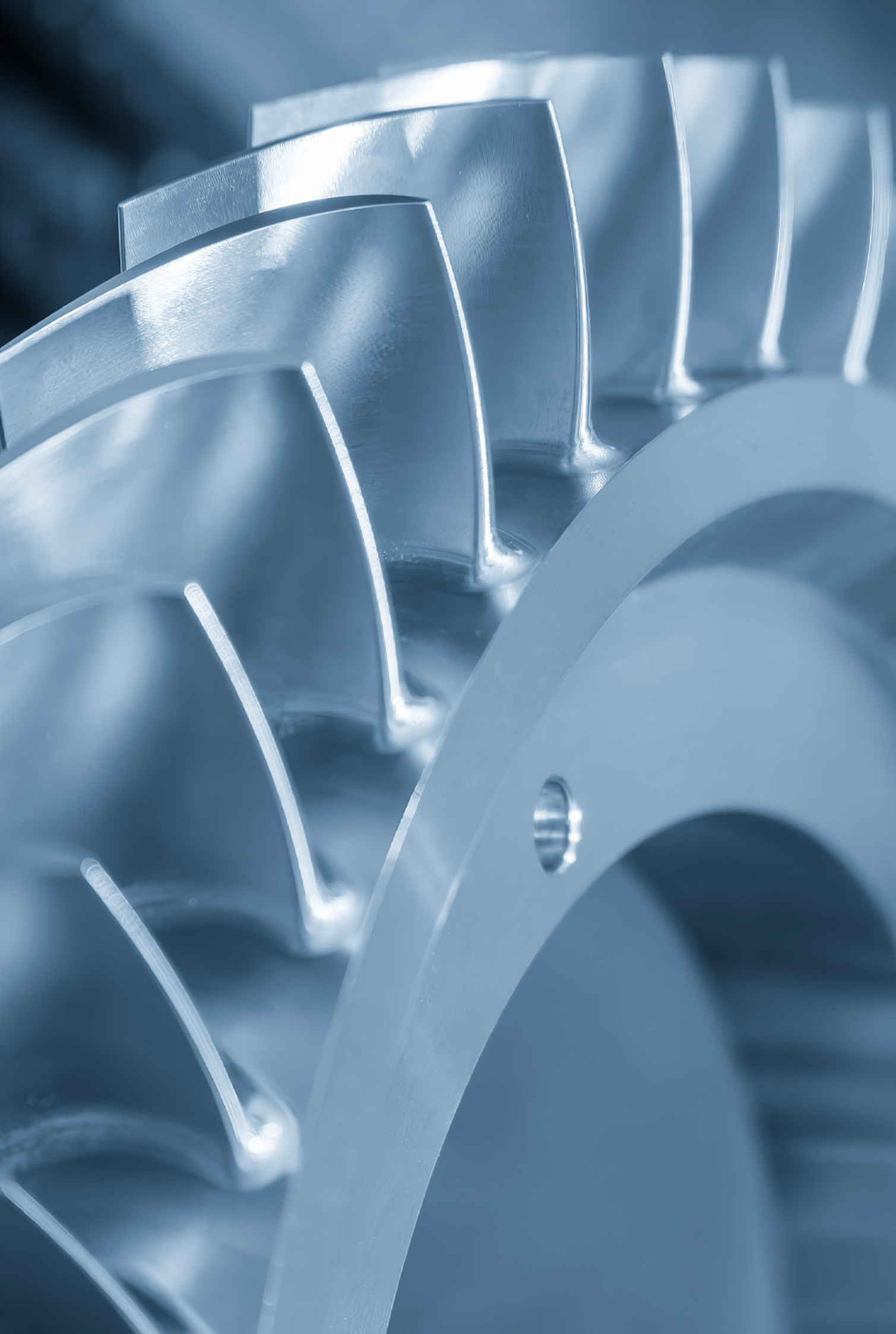
Locking ring The swissQuick is configured with a special locking ring to ensure that the collet body is removed with the nut.



ER-to-PG swissQuick

Type	Part no.	Dimensions [mm]				
		BD1	BD2	LPR	DRVS	ER nut thread
ER/PG*						
ER 20/PG 10 swissQuick	7660.20100	16	34	35,5	30	M 25 x 1,5
ER 25/PG 15 swissQuick	7660.25150	24	42	36	–	M 32 x 1,5
ERM/PG*						
ERM 20/PG 10 swissQuick	7661.20100	16	28	35,5	–	M 24 x 1
ERM 25/PG 15 swissQuick	7661.25150	24	35	36	–	M 30 x 1

*USA only



SR collet	Micro-machining	Standard and ultraprecision	micRun®	Corrosion-resistant	Metallic sealed	CoolBore	Pullout protection secuRgrip®	Collets for tapping	
SR	ER-MB / ER-MBX	ER-Standard/ ER-UP	ER-MR	ER-INOX	ER-DM	ER-CB	ER-SG	ER-GB	PCM ET1
									
Page 162	Page 162	Page 163	Page 243	Page 172	Page 174	Page 179	Page 180	Page 181	Page 184



ER collets

Choose the original ER collet! Outstanding design combined with our experience and technical know-how makes our ER products one of the most successful tool holding solutions worldwide.

Our broad product range offers the perfect collet for every application. ER collets are available in various versions to meet individual production requirements. With a wide range of sizes and variants, the ER system offers the ideal solution for every challenge.

// Applications

ER collets stand out for their high adaptability, as they can be tailored to the specific demands of each application. With customised solutions, they deliver optimal performance and precision in a wide variety of uses.

// Runout

ER collets are available in different runout accuracies to suit a wide range of application needs. This enables precise and reliable machining in any given situation.

// Corrosion protection

Some ER collets feature special corrosion protection to ensure reliable performance even in harsh environments. This coating ensures a longer service life and consistent performance under challenging conditions.

// Cooling options

ER collets offer a choice of different cooling methods, including both internal and peripheral cooling. Two solutions are available for each option.



Swiss quality ER collets



SR

Microbore



MB

Microbore



MBX

Microbore



Std.

Standard



UP

Ultra-precision



MR

micRun®

Main machining use	micro-machining	micro-machining	micro-machining	all	high precision	high precision
DIN ISO 15488: form ...	–	A	B	B	B	B
ER size	SR 6	8	11 – 16	8 – 50	8 – 50	11 – 32
Shaft diameter range	1,0 – 3,17	0,2 – 0,9	0,2 – 1,0	1,0 – 36,0	1,0 – 36,0	1,0 – 20,0
Clamping range (mm) or tolerance	h9	h7	0,05	1	1	h11
Runout (max)*	5 µm	6 µm	6 µm	10 µm	5 µm	2 µm
Anti-corrosion coating	–	–	–	available on request	available on request	–
Metallic sealed	–	–	–	–	–	–
Peripheral cooling with CoolBore	–	–	–	–	–	–
Internal square	–	–	–	–	–	–
Length compensation	–	–	–	–	–	–
secuRgrip® thread to prevent tool pullout	–	–	–	–	–	–
Collet-locking system	–	–	–	•	•	•

*For information about our measuring values, please refer to page 355.

Expert advice

Please note that DM collets are not compatible with Weldon or Whistle notch shafts.

To achieve internal cooling with Weldon or Whistle notch shafts, use the REGO-FIX sealing disks ER/DS with your REGO-FIX ER collet.

						
	DM	CB	INOX	SG	GB	PCM ET1
	Metallic sealed	CoolBore	Corrosion-resistant	secuRgrip®	Tapping collet	Tapping collet
Main machining use	internal cooling	internal cooling	Challenging environment	heavy machining	rigid tapping	rigid tapping with length compensation
DIN ISO 15488: form ...	B	B	B	B	A	A
ER size	11–40	16–32	11–16	32–40	11–50	11–40
Shaft diameter range	3,0–26,0	3,0–20,0	1,5–6,0	10,0–25,4	2,5–32,0	1,4–17,0
Clamping range (mm) or tolerance	0,5	0,5	0.25	h6	h9	h9
Runout (max)*	6µm	6µm	10µm	5µm	10µm	10µm
Anti-corrosion coating	available on request	available on request	•	–	available on request	–
Metallic sealed	•	–	–	–	–	–
Peripheral cooling with CoolBore	–	•	–	–	–	–
Internal square	–	–	–	–	•	•
Length compensation	–	–	–	–	–	•
secuRgrip® thread to prevent tool pullout	–	–	–	•	–	–
Collet-locking system	•	•	•	•	•	–

*For information about our measuring values, please refer to page 355.

Type	Part no.	Clamping range h7	
		[mm]	[decimal inch]
ER 8-MB			
Ø 0,2 mm	1308.00200	0,2	0,0079
Ø 0,3 mm	1308.00300	0,3	0,0118
Ø 0,4 mm	1308.00400	0,4	0,0157
Ø 0,5 mm	1308.00500	0,5	0,0197
Ø 0,6 mm	1308.00600	0,6	0,0236
Ø 0,7 mm	1308.00700	0,7	0,0276
Ø 0,8 mm	1308.00800	0,8	0,0315
Ø 0,9 mm	1308.00900	0,9	0,0354

ER 11-MBX			
Ø 0,2 mm	1311.00201	0,2 – 0,15	0,0079 – 0,0059
Ø 0,25 mm	1311.00251	0,25 – 0,2	0,0098 – 0,0079
Ø 0,3 mm	1311.00301	0,3 – 0,25	0,0118 – 0,0098
Ø 0,35 mm	1311.00351	0,35 – 0,3	0,0138 – 0,0118
Ø 0,4 mm	1311.00401	0,4 – 0,35	0,0157 – 0,0138
Ø 0,45 mm	1311.00451	0,45 – 0,4	0,0177 – 0,0157
Ø 0,5 mm	1311.00501	0,5 – 0,45	0,0197 – 0,0177
Ø 0,55 mm	1311.00551	0,55 – 0,5	0,0217 – 0,0197
Ø 0,6 mm	1311.00601	0,6 – 0,55	0,0237 – 0,0217
Ø 0,65 mm	1311.00651	0,65 – 0,6	0,0256 – 0,0237
Ø 0,7 mm	1311.00701	0,7 – 0,65	0,0276 – 0,0256
Ø 0,75 mm	1311.00751	0,75 – 0,7	0,0295 – 0,0275
Ø 0,8 mm	1311.00801	0,8 – 0,75	0,0315 – 0,0295
Ø 0,85 mm	1311.00851	0,85 – 0,8	0,0335 – 0,0315
Ø 0,9 mm	1311.00901	0,9 – 0,85	0,0354 – 0,0335
Ø 0,95 mm	1311.00951	0,95 – 0,9	0,0374 – 0,0354
Ø 1,0 mm	1311.01001	1,0 – 0,95	0,0394 – 0,0374

ER 16-MBX			
Ø 0,2 mm	1316.00201	0,2 – 0,15	0,0079 – 0,0059
Ø 0,25 mm	1316.00251	0,25 – 0,2	0,0098 – 0,0079
Ø 0,3 mm	1316.00301	0,3 – 0,25	0,0118 – 0,0098
Ø 0,35 mm	1316.00351	0,35 – 0,3	0,0138 – 0,0118
Ø 0,4 mm	1316.00401	0,4 – 0,35	0,0157 – 0,0138
Ø 0,45 mm	1316.00451	0,45 – 0,4	0,0177 – 0,0157
Ø 0,5 mm	1316.00501	0,5 – 0,45	0,0197 – 0,0177
Ø 0,55 mm	1316.00551	0,55 – 0,5	0,0217 – 0,0197
Ø 0,6 mm	1316.00601	0,6 – 0,55	0,0237 – 0,0217
Ø 0,65 mm	1316.00651	0,65 – 0,6	0,0256 – 0,0237
Ø 0,7 mm	1316.00701	0,7 – 0,65	0,0276 – 0,0256
Ø 0,75 mm	1316.00751	0,75 – 0,7	0,0295 – 0,0275
Ø 0,8 mm	1316.00801	0,8 – 0,75	0,0315 – 0,0295
Ø 0,85 mm	1316.00851	0,85 – 0,8	0,0335 – 0,0315
Ø 0,9 mm	1316.00901	0,9 – 0,85	0,0354 – 0,0335
Ø 0,95 mm	1316.00951	0,95 – 0,9	0,0374 – 0,0354
Ø 1,0 mm	1316.01001	1,0 – 0,95	0,0394 – 0,0374

For further technical information, please refer to page 384

Type	Part no.	Clamping range h9	
		[mm]	[decimal inch]
SR 6			
Ø 1.0 mm	1606.01000	1	0,0394
Ø 1.5 mm	1606.01500	1,5	0,0591
Ø 2.0 mm	1606.02000	2	0,0787
Ø 3.0 mm	1606.03000	3	0,1181
Ø 1/8"	1606.03180	1/8"	0,1250

Expert advice

Microbore collets have a runout of $\leq 6 \mu\text{m}$. They have been developed by REGO-FIX especially for smallest tool shank diameters.

For tool shanks with nominal diameter h7 tolerance only.

Expert advice

Various ER collets are available on request with an anti-corrosion coating for improved collet lifetime.



ER 8-MB

ER standard collets and ultraprecision collets ER-UP

ER std.	ER-UP
DIN 6499-B	DIN 6499-B
ISO 15488	ISO 15488

	Part no.		Clamping range			
Type	ER standard	ER-UP	[mm]	[decimal inch]	Ø [inch]	Included in set
ER 8 [mm]						
SET ER 8	1108.00000	1108.00001	0,5–5,0	0,0197–0,1969	–	–
Ø 1,0 mm	1108.01000	1108.01001	1,0–0,5	0,0394–0,0197	1/32"	•
Ø 1,25 mm	1108.01250	–	1,25–0,75	0,0492–0,0295	–	–
Ø 1,5 mm	1108.01500	1108.01501	1,5–1,0	0,0591–0,0394	–	•
Ø 1,75 mm	1108.01750	–	1,75–1,25	0,0688–0,0492	–	–
Ø 2,0 mm	1108.02000	1108.02001	2,0–1,5	0,0787–0,0591	1/16"*	•
Ø 2,25 mm	1108.02250	–	2,25–1,75	0,0885–0,0688	–	–
Ø 2,5 mm	1108.02500	1108.02501	2,5–2,0	0,0984–0,0787	3/32"	•
Ø 3,0 mm	1108.03000	1108.03001	3,0–2,5	0,1181–0,0984	–	•
Ø 3,5 mm	1108.03500	1108.03501	3,5–3,0	0,1378–0,1181	1/8"*	•
Ø 4,0 mm	1108.04000	1108.04001	4,0–3,5	0,1575–0,1378	5/32"	•
Ø 4,5 mm	1108.04500	1108.04501	4,5–4,0	0,1772–0,1575	–	•
Ø 5,0 mm	1108.05000	1108.05001	5,0–4,5	0,1969–0,1772	3/16"*	•
ER 8 [inch]						
INCH SET ER 8	1108.00002	1108.00003	1,09–4,76	0,0429–0,1875	–	–
Ø 1/16"	1108.01592	1108.01593	1,59–1,09	0,0625–0,0429	–	•
Ø 1/8"	1108.03182	1108.03183	3,18–2,68	0,125–0,1055	–	•
Ø 3/16"	1108.04762	1108.04763	4,76–4,25	0,1875–0,1675	–	•
ER 11 [mm]						
SET ER 11	1111.00000	1111.00001	0,5–7,0	0,0197–0,2756	–	–
Ø 1,0 mm	1111.01000	1111.01001	1,0–0,5	0,0394–0,0197	1/32"	•
Ø 1,25 mm	1111.01250	–	1,25–0,75	0,0492–0,0295	–	–
Ø 1,5 mm	1111.01500	1111.01501	1,5–1,0	0,0591–0,0394	–	•
Ø 1,75 mm	1111.01750	–	1,75–1,25	0,0688–0,0492	–	–
Ø 2,0 mm	1111.02000	1111.02001	2,0–1,5	0,0787–0,0591	1/16"*	•
Ø 2,25 mm	1111.02250	–	2,25–1,75	0,0885–0,0688	–	–
Ø 2,5 mm	1111.02500	1111.02501	2,5–2,0	0,0984–0,0787	3/32"*	•
Ø 3,0 mm	1111.03000	1111.03001	3,0–2,5	0,1181–0,0984	–	•
Ø 3,5 mm	1111.03500	1111.03501	3,5–3,0	0,1378–0,1181	1/8"*	•
Ø 4,0 mm	1111.04000	1111.04001	4,0–3,5	0,1575–0,1378	5/32"*	•
Ø 4,5 mm	1111.04500	1111.04501	4,5–4,0	0,1772–0,1575	–	•
Ø 5,0 mm	1111.05000	1111.05001	5,0–4,5	0,1969–0,1772	3/16"*	•
Ø 5,5 mm	1111.05500	1111.05501	5,5–5,0	0,2165–0,1969	–	•
Ø 6,0 mm	1111.06000	1111.06001	6,0–5,5	0,2362–0,2165	7/32"*	•
Ø 6,0 mm – ND	1111.06005	–	h11	0,2362	–	–
Ø 6,5 mm	1111.06500	1111.06501	6,5–6,0	0,2559–0,2362	1/4"*	•
Ø 7,0 mm	1111.07000	1111.07001	7,0–6,5	0,2756–0,2559	–	•

Included in the ER sets are all marked collets within that size and the matching collet tray ZWT
For further technical information, please refer to page 379

*Approx. inch sizing

ER standard collets and ultraprecision collets ER-UP

ER std.	ER-UP
DIN 6499-B	DIN 6499-B
ISO 15488	ISO 15488

Type	Part no.		Clamping range		Ø [inch]	Included in set
	ER standard	ER-UP	[mm]	[decimal inch]		
ER 11 [inch]						
INCH SET ER 11	1111.00002	1111.00003	1,09–6,35	0,0429–0,25	–	–
Ø 1/16"	1111.01592	1111.01593	1,59–1,09	0,0625–0,0429	1/16"	•
Ø 3/32"	1111.02382	1111.02383	2,38–1,87	0,0938–0,0738	3/32"	•
Ø 1/8"	1111.03182	1111.03183	3,18–2,67	0,125–0,105	1/8"	•
Ø 5/32"	1111.03972	1111.03973	3,97–3,46	0,1563–0,1363	5/32"	•
Ø 3/16"	1111.04762	1111.04763	4,76–4,25	0,1875–0,1675	3/16"	•
Ø 7/32"	1111.05562	1111.05563	5,56–5,04	0,2188–0,1988	7/32"	•
Ø 1/4"	1111.06352	1111.06353	6,35–5,84	0,25–0,23	1/4"	•

ER 16 [mm]						
SET ER 16	1116.00000	1116.00001	0,5 – 10,0	0,0197 – 0,3937	–	–
Ø 1,0 mm	1116.01000	1116.01001	1,0 – 0,5	0,0394 – 0,0197	1/32"	•
Ø 1,5 mm	1116.01500	1116.01501	1,5 – 1,0	0,0591 – 0,0394	–	–
Ø 2,0 mm	1116.02000	1116.02001	2,0 – 1,0	0,0787 – 0,0394	1/16"*	•
Ø 2,5 mm	1116.02500	1116.02501	2,5 – 1,5	0,0984 – 0,0591	3/32"*	–
Ø 3,0 mm	1116.03000	1116.03001	3,0 – 2,0	0,1181 – 0,0787	–	•
Ø 3,5 mm	1116.03500	1116.03501	3,5 – 2,5	0,1378 – 0,0984	1/8"*	–
Ø 4,0 mm	1116.04000	1116.04001	4,0 – 3,0	0,1575 – 0,1181	5/32"*	•
Ø 4,5 mm	1116.04500	1116.04501	4,5 – 3,5	0,1772 – 0,1378	–	–
Ø 5,0 mm	1116.05000	1116.05001	5,0 – 4,0	0,1969 – 0,1575	3/16"*	•
Ø 5,5 mm	1116.05500	1116.05501	5,5 – 4,5	0,2165 – 0,1772	–	–
Ø 6,0 mm	1116.06000	1116.06001	6,0 – 5,0	0,2362 – 0,1969	7/32"*	•
Ø 6,5 mm	1116.06500	1116.06501	6,5 – 5,5	0,2559 – 0,2165	1/4"*	–
Ø 7,0 mm	1116.07000	1116.07001	7,0 – 6,0	0,2756 – 0,2362	–	•
Ø 7,5 mm	1116.07500	1116.07501	7,5 – 6,5	0,2953 – 0,2559	9/32"*	–
Ø 8,0 mm	1116.08000	1116.08001	8,0 – 7,0	0,315 – 0,2756	5/16"*	•
Ø 8,5 mm	1116.08500	1116.08501	8,5 – 7,5	0,3346 – 0,2953	–	–
Ø 9,0 mm	1116.09000	1116.09001	9,0 – 8,0	0,3543 – 0,315	11/32"*	•
Ø 9,5 mm	1116.09500	1116.09501	9,5 – 8,5	0,374 – 0,3346	–	–
Ø 10,0 mm	1116.10000	1116.10001	10,0 – 9,0	0,3937 – 0,3543	3/8"*	•

ER 16 [inch]						
INCH SET ER 16	1116.00002	1116.00003	1,09 – 10,32	0,0429 – 0,4063	–	–
Ø 1/16"	1116.01592	1116.01593	1,59 – 1,09	0,0625 – 0,0429	1/16"	•
Ø 3/32"	1116.02382	1116.02383	2,38 – 1,87	0,0938 – 0,0738	3/32"	•
Ø 1/8"	1116.03182	1116.03183	3,18 – 2,16	0,125 – 0,085	1/8"	•
Ø 5/32"	1116.03972	1116.03973	3,97 – 2,95	0,1563 – 0,1163	5/32"	•
Ø 3/16"	1116.04762	1116.04763	4,76 – 3,75	0,1875 – 0,1475	3/16"	•
Ø 7/32"	1116.05562	1116.05563	5,56 – 4,54	0,2188 – 0,1788	7/32"	•

Included in the ER sets are all marked collets within that size and the matching collet tray ZWT

*Approx. inch sizing

ER standard collets and ultraprecision collets ER-UP

ER std.	ER-UP
DIN 6499-B	DIN 6499-B
ISO 15488	ISO 15488

Type	Part no.		Clamping range		Ø [inch]	Included in set
	ER standard	ER-UP	[mm]	[decimal inch]		
Ø 1/4"	1116.06352	1116.06353	6,35 – 5,33	0,25 – 0,21	1/4"	•
Ø 9/32"	1116.07142	1116.07143	7,15 – 6,13	0,2813 – 0,2413	9/32"	•
Ø 5/16"	1116.07942	1116.07943	7,94 – 6,92	0,3125 – 0,2725	5/16"	•
Ø 11/32"	1116.08732	1116.08733	8,73 – 7,72	0,3438 – 0,3038	11/32"	•
Ø 3/8"	1116.09532	1116.09533	9,53 – 8,51	0,375 – 0,335	3/8"	•
Ø 13/32"	1116.10322	1116.10323	10,32 – 9,3	0,4063 – 0,3663	13/32"	•

ER 20 [mm]						
SET ER 20	1120.00000	1120.00001	1,0 – 13,0	0,0394 – 0,5118	–	–
Ø 1,0 mm	1120.01000	1120.01001	1,0 – 0,5	0,0394 – 0,0197	1/32"	–
Ø 1,5 mm	1120.01500	1120.01501	1,5 – 1,0	0,0591 – 0,0394	–	–
Ø 2,0 mm	1120.02000	1120.02001	2,0 – 1,0	0,0787 – 0,0394	1/16"	•
Ø 2,5 mm	1120.02500	1120.02501	2,5 – 1,5	0,0984 – 0,0591	3/32"	–
Ø 3,0 mm	1120.03000	1120.03001	3,0 – 2,0	0,1181 – 0,0787	–	•
Ø 3,5 mm	1120.03500	1120.03501	3,5 – 2,5	0,1378 – 0,0984	1/8"	–
Ø 4,0 mm	1120.04000	1120.04001	4,0 – 3,0	0,1575 – 0,1181	5/32"	•
Ø 4,5 mm	1120.04500	1120.04501	4,5 – 3,5	0,1772 – 0,1378	–	–
Ø 5,0 mm	1120.05000	1120.05001	5,0 – 4,0	0,1969 – 0,1575	3/16"	•
Ø 5,5 mm	1120.05500	1120.05501	5,5 – 4,5	0,2165 – 0,1772	–	–
Ø 6,0 mm	1120.06000	1120.06001	6,0 – 5,0	0,2362 – 0,1969	7/32"	•
Ø 6,5 mm	1120.06500	1120.06501	6,5 – 5,5	0,2559 – 0,2165	1/4"	–
Ø 7,0 mm	1120.07000	1120.07001	7,0 – 6,0	0,2756 – 0,2362	–	•
Ø 7,5 mm	1120.07500	1120.07501	7,5 – 6,5	0,2953 – 0,2559	9/32"	–
Ø 8,0 mm	1120.08000	1120.08001	8,0 – 7,0	0,315 – 0,2756	5/16"	•
Ø 8,5 mm	1120.08500	1120.08501	8,5 – 7,5	0,3346 – 0,2953	–	–
Ø 9,0 mm	1120.09000	1120.09001	9,0 – 8,0	0,3543 – 0,315	11/32"	•
Ø 9,5 mm	1120.09500	1120.09501	9,5 – 8,5	0,374 – 0,3346	–	–
Ø 10,0 mm	1120.10000	1120.10001	10,0 – 9,0	0,3937 – 0,3543	3/8"	•
Ø 10,5 mm	1120.10500	1120.10501	10,5 – 9,5	0,4134 – 0,374	13/32"	–
Ø 11,0 mm	1120.11000	1120.11001	11,0 – 10,0	0,4331 – 0,3937	–	•
Ø 11,5 mm	1120.11500	1120.11501	11,5 – 10,5	0,4528 – 0,4134	7/16"	–
Ø 12,0 mm	1120.12000	1120.12001	12,0 – 11,0	0,4724 – 0,433	15/32"	•
Ø 12,5 mm	1120.12500	1120.12501	12,5 – 11,5	0,4921 – 0,4528	–	–
Ø 13,0 mm	1120.13000	1120.13001	13,0 – 12,0	0,5118 – 0,4724	1/2"	•

Included in the ER sets are all marked collets within that size and the matching collet tray ZWT
For further technical information, please refer to page 379

*Approx. inch sizing

ER standard collets and ultraprecision collets ER-UP

ER std.	ER-UP
DIN 6499-B	DIN 6499-B
ISO 15488	ISO 15488

	Part no.		Clamping range		Ø [inch]	Included in set
Type	ER standard	ER-UP	[mm]	[decimal inch]		
ER 20 [inch]						
INCH SET ER 20	1120.00002	1120.00003	2,16 – 12,7	0,085 – 0,5	–	–
Ø 1/8"	1120.03182	1120.03183	3,18 – 2,18	0,125 – 0,085	1/8"	•
Ø 3/16"	1120.04762	1120.04763	4,76 – 3,76	0,1875 – 0,1475	3/16"	•
Ø 1/4"	1120.06352	1120.06353	6,35 – 5,35	0,25 – 0,21	1/4"	•
Ø 5/16"	1120.07942	1120.07943	7,94 – 6,94	0,3125 – 0,2725	5/16"	•
Ø 3/8"	1120.09532	1120.09533	9,53 – 8,53	0,375 – 0,335	3/8"	•
Ø 7/16"	1120.11112	1120.11113	11,11 – 10,11	0,4375 – 0,3975	7/16"	•
Ø 1/2"	1120.12702	1120.12703	12,7 – 11,7	0,5 – 0,46	1/2"	•
ER 25 [mm]						
SET ER 25	1125.00000	1125.00001	2,0 – 16,0	0,0787 – 0,6299	–	–
Ø 1,0 mm	1125.01000	1125.01001	1,0 – 0,5	0,0394 – 0,0197	1/32"	–
Ø 1,5 mm	1125.01500	1125.01501	1,5 – 1,0	0,0591 – 0,0394	–	–
Ø 2,0 mm	1125.02000	1125.02001	2,0 – 1,0	0,0787 – 0,0394	1/16"	•
Ø 2,5 mm	1125.02500	1125.02501	2,5 – 1,5	0,0984 – 0,0591	3/32"	–
Ø 3,0 mm	1125.03000	1125.03001	3,0 – 2,0	0,1181 – 0,0787	–	•
Ø 3,5 mm	1125.03500	1125.03501	3,5 – 2,5	0,1378 – 0,0984	1/8"*	–
Ø 4,0 mm	1125.04000	1125.04001	4,0 – 3,0	0,1575 – 0,1181	5/32"	•
Ø 4,5 mm	1125.04500	1125.04501	4,5 – 3,5	0,1772 – 0,1378	–	–
Ø 5,0 mm	1125.05000	1125.05001	5,0 – 4,0	0,1969 – 0,1575	3/16"*	•
Ø 5,5 mm	1125.05500	1125.05501	5,5 – 4,5	0,2165 – 0,1772	–	–
Ø 6,0 mm	1125.06000	1125.06001	6,0 – 5,0	0,2362 – 0,1969	7/32"	•
Ø 6,5 mm	1125.06500	1125.06501	6,5 – 5,5	0,2559 – 0,2165	1/4"*	–
Ø 7,0 mm	1125.07000	1125.07001	7,0 – 6,0	0,2756 – 0,2362	–	•
Ø 7,5 mm	1125.07500	1125.07501	7,5 – 6,5	0,2953 – 0,2559	9/32"	–
Ø 8,0 mm	1125.08000	1125.08001	8,0 – 7,0	0,315 – 0,2756	5/16"*	•
Ø 8,5 mm	1125.08500	1125.08501	8,5 – 7,5	0,3346 – 0,2953	–	–
Ø 9,0 mm	1125.09000	1125.09001	9,0 – 8,0	0,3543 – 0,315	11/32"	•
Ø 9,5 mm	1125.09500	1125.09501	9,5 – 8,5	0,374 – 0,3346	–	–
Ø 10,0 mm	1125.10000	1125.10001	10,0 – 9,0	0,3937 – 0,3543	3/8"*	•
Ø 10,5 mm	1125.10500	1125.10501	10,5 – 9,5	0,4134 – 0,374	13/32"	–
Ø 11,0 mm	1125.11000	1125.11001	11,0 – 10,0	0,4331 – 0,3937	–	•
Ø 11,5 mm	1125.11500	1125.11501	11,5 – 10,5	0,4528 – 0,4134	7/16"*	–
Ø 12,0 mm	1125.12000	1125.12001	12,0 – 11,0	0,4724 – 0,4331	15/32"	•
Ø 12,5 mm	1125.12500	1125.12501	12,5 – 11,5	0,4921 – 0,4528	–	–
Ø 13,0 mm	1125.13000	1125.13001	13,0 – 12,0	0,5118 – 0,4724	1/2"*	•
Ø 13,5 mm	1125.13500	1125.13501	13,5 – 12,5	0,5315 – 0,4921	17/32"	–
Ø 14,0 mm	1125.14000	1125.14001	14,0 – 13,0	0,5512 – 0,5118	–	•
Ø 14,5 mm	1125.14500	1125.14501	14,5 – 13,5	0,5709 – 0,5315	9/16"*	–
Ø 15,0 mm	1125.15000	1125.15001	15,0 – 14,0	0,5906 – 0,5512	–	•
Ø 15,5 mm	1125.15500	1125.15501	15,5 – 14,5	0,6102 – 0,5709	19/32"	–
Ø 16,0 mm	1125.16000	1125.16001	16,0 – 15,0	0,6299 – 0,5905	5/8"*	•
Ø 17,0 mm	1125.17000	1125.17001	17,0 – 16,0	0,6693 – 0,6299	21/32"	–

Included in the ER sets are all marked collets within that size and the matching collet tray ZWT

*Approx. inch sizing

ER standard collets and ultraprecision collets ER-UP

ER std.	ER-UP
DIN 6499-B	DIN 6499-B
ISO 15488	ISO 15488

	Part no.		Clamping range			
Type	ER standard	ER-UP	[mm]	[decimal inch]	Ø [inch]	Included in set
ER 25 [inch]						
INCH SET ER 25	1125.00002	1125.00003	2,16 – 15,88	0,085 – 0,625	–	–
Ø 1/8"	1125.03182	1125.03183	3,18 – 2,16	0,125 – 0,085	1/8"	•
Ø 3/16"	1125.04762	1125.04763	4,76 – 3,75	0,1875 – 0,1475	3/16"	•
Ø 1/4"	1125.06352	1125.06353	6,35 – 5,33	0,25 – 0,21	1/4"	•
Ø 5/16"	1125.07942	1125.07943	7,94 – 6,92	0,3125 – 0,2725	5/16"	•
Ø 3/8"	1125.09532	1125.09533	9,53 – 8,51	0,375 – 0,335	3/8"	•
Ø 7/16"	1125.11112	1125.11113	11,11 – 10,11	0,4375 – 0,3975	7/16"	•
Ø 1/2"	1125.12702	1125.12703	12,70 – 11,68	0,5 – 0,46	1/2"	•
Ø 9/16"	1125.14292	1125.14293	14,29 – 13,27	0,5625 – 0,5225	9/16"	•
Ø 5/8"	1125.15882	1125.15883	15,88 – 14,78	0,625 – 0,582	5/8"	•
ER 32 [mm]						
SET ER 32	1132.00000	1132.00001	2,0 – 20,0	0,0787 – 0,7874	–	–
Ø 2,0 mm	1132.02000	1132.02001	2,0 – 1,0	0,0787 – 0,0394	1/16"	–
Ø 2,5 mm	1132.02500	1132.02501	2,5 – 1,5	0,0984 – 0,0591	3/32"	–
Ø 3,0 mm	1132.03000	1132.03001	3,0 – 2,0	0,1181 – 0,0787	–	•
Ø 3,5 mm	1132.03500	1132.03501	3,5 – 2,5	0,1378 – 0,0984	1/8"*	–
Ø 4,0 mm	1132.04000	1132.04001	4,0 – 3,0	0,1575 – 0,1181	5/32"	•
Ø 4,5 mm	1132.04500	1132.04501	4,5 – 3,5	0,1772 – 0,1378	–	–
Ø 5,0 mm	1132.05000	1132.05001	5,0 – 4,0	0,1969 – 0,1575	3/16"*	•
Ø 5,5 mm	1132.05500	1132.05501	5,5 – 4,5	0,2165 – 0,1772	–	–
Ø 6,0 mm	1132.06000	1132.06001	6,0 – 5,0	0,2362 – 0,1969	7/32"	•
Ø 6,5 mm	1132.06500	1132.06501	6,5 – 5,5	0,2559 – 0,2165	1/4"*	–
Ø 7,0 mm	1132.07000	1132.07001	7,0 – 6,0	0,2756 – 0,2362	–	•
Ø 7,5 mm	1132.07500	1132.07501	7,5 – 6,5	0,2953 – 0,2559	9/32"	–
Ø 8,0 mm	1132.08000	1132.08001	8,0 – 7,0	0,315 – 0,2756	5/16"*	•
Ø 8,5 mm	1132.08500	1132.08501	8,5 – 7,5	0,3346 – 0,2953	–	–
Ø 9,0 mm	1132.09000	1132.09001	9,0 – 8,0	0,3543 – 0,315	11/32"	•
Ø 9,5 mm	1132.09500	1132.09501	9,5 – 8,5	0,374 – 0,3346	–	–
Ø 10,0 mm	1132.10000	1132.10001	10,0 – 9,0	0,3937 – 0,3543	3/8"*	•
Ø 10,5 mm	1132.10500	1132.10501	10,5 – 9,5	0,4134 – 0,374	13/32"	–
Ø 11,0 mm	1132.11000	1132.11001	11,0 – 10,0	0,4331 – 0,3937	–	•
Ø 11,5 mm	1132.11500	1132.11501	11,5 – 10,5	0,4528 – 0,4134	7/16"*	–
Ø 12,0 mm	1132.12000	1132.12001	12,0 – 11,0	0,4724 – 0,4331	15/32"	•
Ø 12,5 mm	1132.12500	1132.12501	12,5 – 11,5	0,4921 – 0,4528	–	–
Ø 13,0 mm	1132.13000	1132.13001	13,0 – 12,0	0,5118 – 0,4724	1/2"*	•
Ø 13,5 mm	1132.13500	1132.13501	13,5 – 12,5	0,5315 – 0,4921	17/32"	–
Ø 14,0 mm	1132.14000	1132.14001	14,0 – 13,0	0,5512 – 0,5118	–	•
Ø 14,5 mm	1132.14500	1132.14501	14,5 – 13,5	0,5709 – 0,5315	9/16"*	–
Ø 15,0 mm	1132.15000	1132.15001	15,0 – 14,0	0,5906 – 0,5512	–	•
Ø 15,5 mm	1132.15500	1132.15501	15,5 – 14,5	0,6102 – 0,5709	19/32"	–
Ø 16,0 mm	1132.16000	1132.16001	16,0 – 15,0	0,63299 – 0,5906	5/8"*	•
Ø 16,5 mm	1132.16500	1132.16501	16,5 – 15,5	0,6496 – 0,6102	–	–

Included in the ER sets are all marked collets within that size and the matching collet tray ZWT
For further technical information, please refer to page 379

*Approx. inch sizing

ER standard collets and ultraprecision collets ER-UP

ER std.	ER-UP
DIN 6499-B	DIN 6499-B
ISO 15488	ISO 15488

Type	Part no.		Clamping range		Ø [inch]	Included in set
	ER standard	ER-UP	[mm]	[decimal inch]		
ER 32 [mm] continued						
Ø 17,0 mm	1132.17000	1132.17001	17,0–16,0	0,6693–0,6299	21/32"	•
Ø 17,5 mm	1132.17500	1132.17501	17,5–16,5	0,689–0,6496	11/16"*	–
Ø 18,0 mm	1132.18000	1132.18001	18,0–17,0	0,7087–0,6693	–	•
Ø 18,5 mm	1132.18500	1132.18501	18,5–17,5	0,7283–0,689	23/32"	–
Ø 19,0 mm	1132.19000	1132.19001	19,0–18,0	0,748–0,7078	–	•
Ø 19,5 mm	1132.19500	1132.19501	19,5–18,5	0,7677–0,7284	3/4"*	–
Ø 20,0 mm	1132.20000	1132.20001	20,0–19,0	0,7874–0,748	25/32"	•
Ø 21,0 mm	1132.21000	1132.21001	21,0–20,0	0,8268–0,7874	13/16"*	–
Ø 22,0 mm	1132.22000	1132.22001	22,0–21,0	0,8661–0,8268	–	–

ER 32 [inch]						
INCH SET ER 32	1132.00002	1132.00003	2,16 – 20,64	0,085 – 0,8125	–	–
Ø 1/8"	1132.03182	1132.03183	3,18 – 2,16	0,125 – 0,085	1/8"	•
Ø 3/16"	1132.04762	1132.04763	4,76 – 3,75	0,1875 – 0,1475	3/16"	•
Ø 1/4"	1132.06352	1132.06353	6,35 – 5,33	0,25 – 0,21	1/4"	•
Ø 5/16"	1132.07942	1132.07943	7,94 – 6,92	0,3125 – 0,2725	5/16"	•
Ø 3/8"	1132.09532	1132.09533	9,53 – 8,51	0,375 – 0,335	3/8"	•
Ø 7/16"	1132.11112	1132.11113	11,11 – 10,1	0,4375 – 0,3975	7/16"	•
Ø 1/2"	1132.12702	1132.12703	12,7 – 11,68	0,5 – 0,46	1/2"	•
Ø 9/16"	1132.14292	1132.14293	14,29 – 13,27	0,5625 – 0,5225	9/16"	•
Ø 5/8"	1132.15882	1132.15883	15,88 – 14,86	0,625 – 0,585	5/8"	•
Ø 11/16"	1132.17462	1132.17463	17,46 – 16,45	0,6875 – 0,6475	11/16"	•
Ø 3/4"	1132.19052	1132.19053	19,05 – 18,03	0,75 – 0,71	3/4"	•
Ø 13/16"	1132.20642	1132.20643	20,64 – 19,62	0,8125 – 0,7725	13/16"	•

Included in the ER sets are all marked collets within that size and the matching collet tray ZWT

*Approx. inch sizing

ER standard collets and ultraprecision collets ER-UP

ER std.	ER-UP
DIN 6499-B	DIN 6499-B
ISO 15488	ISO 15488

	Part no.		Clamping range			
Type	ER standard	ER-UP	[mm]	[decimal inch]	Ø [inch]	Included in set
ER 40 [mm]						
SET ER 40	1140.00000	1140.00001	3,0–26,0	0,1181–1,0236	–	–
Ø 3,0 mm	1140.03000	1140.03001	3,0–2,0	0,1181–0,0787	3/32"	–
Ø 3,5 mm	1140.03500	1140.03501	3,5–2,5	0,1378–0,0984	1/8"*	–
Ø 4,0 mm	1140.04000	1140.04001	4,0–3,0	0,1575–0,1181	5/32"	•
Ø 4,5 mm	1140.04500	1140.04501	4,5–3,5	0,1772–0,1378	–	–
Ø 5,0 mm	1140.05000	1140.05001	5,0–4,0	0,1969–0,1575	3/16"*	•
Ø 5,5 mm	1140.05500	1140.05501	5,5–4,5	0,2165–0,1772	–	–
Ø 6,0 mm	1140.06000	1140.06001	6,0–5,0	0,2362–0,1969	7/32"	•
Ø 6,5 mm	1140.06500	1140.06501	6,5–5,5	0,2559–0,2165	1/4"*	–
Ø 7,0 mm	1140.07000	1140.07001	7,0–6,0	0,2756–0,2362	–	•
Ø 7,5 mm	1140.07500	1140.07501	7,5–6,5	0,2953–0,2559	9/32"	–
Ø 8,0 mm	1140.08000	1140.08001	8,0–7,0	0,315–0,2756	5/16"*	•
Ø 8,5 mm	1140.08500	1140.08501	8,5–7,5	0,3346–0,2953	–	–
Ø 9,0 mm	1140.09000	1140.09001	9,0–8,0	0,3543–0,315	–	•
Ø 9,5 mm	1140.09500	1140.09501	9,5–8,5	0,374–0,3346	11/32"	–
Ø 10,0 mm	1140.10000	1140.10001	10,0–9,0	0,3937–0,3543	3/8"*	•
Ø 10,5 mm	1140.10500	1140.10501	10,5–9,5	0,4134–0,374	13/32"	–
Ø 11,0 mm	1140.11000	1140.11001	11,0–10,0	0,4331–0,3937	–	•
Ø 11,5 mm	1140.11500	1140.11501	11,5–10,5	0,4528–0,4134	7/16"*	–
Ø 12,0 mm	1140.12000	1140.12001	12,0–11,0	0,4724–0,4331	15/32"	•
Ø 12,5 mm	1140.12500	1140.12501	12,5–11,5	0,4921–0,4528	–	–
Ø 13,0 mm	1140.13000	1140.13001	13,0–12,0	0,5118–0,4724	1/2"*	•
Ø 13,5 mm	1140.13500	1140.13501	13,5–12,5	0,5315–0,4921	17/32"	–
Ø 14,0 mm	1140.14000	1140.14001	14,0–13,0	0,5512–0,5118	–	•
Ø 14,5 mm	1140.14500	1140.14501	14,5–13,5	0,5709–0,5315	9/16"*	–
Ø 15,0 mm	1140.15000	1140.15001	15,0–14,0	0,5906–0,5512	–	•
Ø 15,5 mm	1140.15500	1140.15501	15,5–14,5	0,6102–0,5709	19/32"	–
Ø 16,0 mm	1140.16000	1140.16001	16,0–15,0	0,6299–0,5906	5/8"*	•
Ø 16,5 mm	1140.16500	1140.16501	16,5–15,5	0,6496–0,6102	–	–
Ø 17,0 mm	1140.17000	1140.17001	17,0–16,0	0,6693–0,6299	21/32"	•
Ø 17,5 mm	1140.17500	1140.17501	17,5–16,5	0,689–0,6496	11/16"*	–
Ø 18,0 mm	1140.18000	1140.18001	18,0–17,0	0,7078–0,6693	–	•
Ø 18,5 mm	1140.18500	1140.18501	18,5–17,5	0,7283–0,689	23/32"	–
Ø 19,0 mm	1140.19000	1140.19001	19,0–18,0	0,748–0,7078	–	•
Ø 19,5 mm	1140.19500	1140.19501	19,5–18,5	0,7677–0,7283	3/4"*	–
Ø 20,0 mm	1140.20000	1140.20001	20,0–19,0	0,7874–0,748	25/32"	•
Ø 20,5 mm	1140.20500	1140.20501	20,5–19,5	0,8071–0,7677	–	–
Ø 21,0 mm	1140.21000	1140.21001	21,0–20,0	0,8268–0,7874	13/16"*	•
Ø 21,5 mm	1140.21500	1140.21501	21,5–20,5	0,8465–0,8071	27/32"	–
Ø 22,0 mm	1140.22000	1140.22001	22,0–21,0	0,8661–0,8268	–	•
Ø 22,5 mm	1140.22500	1140.22501	22,5–21,5	0,8858–0,8465	7/8"*	–
Ø 23,0 mm	1140.23000	1140.23001	23,0–22,0	0,9055–0,8661	–	•
Ø 23,5 mm	1140.23500	1140.23501	23,5–22,5	0,9252–0,8858	29/32"	–

Included in the ER sets are all marked collets within that size and the matching collet tray ZWT
For further technical information, please refer to page 379

*Approx. inch sizing

ER standard collets and ultraprecision collets ER-UP

ER std.	ER-UP
DIN 6499-B	DIN 6499-B
ISO 15488	ISO 15488

	Part no.		Clamping range			
Type	ER standard	ER-UP	[mm]	[decimal inch]	Ø [inch]	Included in set
ER 40 [mm] continued						
Ø 24,0 mm	1140.24000	1140.24001	24,0–23,0	0,9449–0,9055	15/16"	•
Ø 24,5 mm	1140.24500	1140.24501	24,5–23,5	0,9646–0,9252	–	–
Ø 25,0 mm	1140.25000	1140.25001	25,0–24,0	0,9843–0,9449	31/32"	•
Ø 25,5 mm	1140.25500	1140.25501	25,5–24,5	1,0039–0,9646	1"*	–
Ø 26,0 mm	1140.26000	1140.26001	26,0–25,0	1,0236–0,9843	–	•
Ø 27,0 mm	1140.27000	1140.27001	27,0–26,0	1,063–1,0236	1 – 1/16"	–
Ø 28,0 mm	1140.28000	1140.28001	28,0–27,0	1,1024–1,063	1 – 3/32"	–
Ø 29,0 mm	1140.29000	1140.29001	29,0–28,0	1,1417–1,1024	1 – 1/8"	–
Ø 30,0 mm	1140.30000	1140.30001	30,0–29,0	1,1811–1,1417	1 – 5/32"	–

ER 40 [inch]						
INCH SET ER 40	1140.00002	1140.00003	2,16–25,4	0,085–1,0	–	–
Ø 1/8"	1140.03182	1140.03183	3,18–2,16	0,125–0,085	1/8"	•
Ø 3/16"	1140.04762	1140.04763	4,76–3,75	0,1875–0,1475	3/16"	•
Ø 1/4"	1140.06352	1140.06353	6,35–5,33	0,25–0,21	1/4"	•
Ø 5/16"	1140.07942	1140.07943	7,94–6,92	0,3125–0,2725	5/16"	•
Ø 3/8"	1140.09532	1140.09533	9,53–8,51	0,375–0,335	3/8"	•
Ø 7/16"	1140.11112	1140.11113	11,11–10,1	0,4375–0,3975	7/16"	•
Ø 1/2"	1140.12702	1140.12703	12,70–11,68	0,5–0,46	1/2"	•
Ø 9/16"	1140.14292	1140.14293	14,29–13,27	0,5625–0,5225	9/16"	•
Ø 5/8"	1140.15882	1140.15883	15,88–14,86	0,625–0,585	5/8"	•
Ø 11/16"	1140.17462	1140.17463	17,46–16,45	0,6875–0,6475	11/16"	•
Ø 3/4"	1140.19052	1140.19053	19,05–18,03	0,75–0,71	3/4"	•
Ø 13/16"	1140.20642	1140.20643	20,64–19,62	0,8125–0,7725	13/16"	•
Ø 7/8"	1140.22232	1140.22233	22,23–21,21	0,875–0,835	7/8"	•
Ø 1"	1140.25402	1140.25403	25,40–24,38	1,0–0,96	1"	•

Included in the ER sets are all marked collets within that size and the matching collet tray ZWT

*Approx. inch sizing

ER standard collets and ultraprecision collets ER-UP

ER std.	ER-UP
DIN 6499-B	DIN 6499-B
ISO 15488	ISO 15488

Type	Part no.		Clamping range		Ø [inch]	Included in set
	ER standard	ER-UP	[mm]	[decimal inch]		
ER 50 [mm]						
SET ER 50	1150.00000	1150.00001	10,0–34,0	0,2362–1,3386	–	–
Ø 6,0 mm	1150.06000	1150.06001	6,0–4,0	0,2362–0,1575	3/16"	–
Ø 8,0 mm	1150.08000	1150.08001	8,0–6,0	0,315–0,2362	1/4"	–
Ø 10,0 mm	1150.10000	1150.10001	10,0–8,0	0,3937–0,315	3/8"	–
Ø 12,0 mm	1150.12000	1150.12001	12,0–10,0	0,4724–0,3937	7/16"	•
Ø 14,0 mm	1150.14000	1150.14001	14,0–12,0	0,5512–0,4724	1/2"	•
Ø 16,0 mm	1150.16000	1150.16001	16,0–14,0	0,63–0,5512	5/8"	•
Ø 18,0 mm	1150.18000	1150.18001	18,0–16,0	0,7087–0,6299	11/16"	•
Ø 20,0 mm	1150.20000	1150.20001	20,0–18,0	0,7874–0,7087	3/4"	•
Ø 22,0 mm	1150.22000	1150.22001	22,0–20,0	0,8661–0,7874	13/16"	•
Ø 24,0 mm	1150.24000	1150.24001	24,0–22,0	0,9449–0,8661	7/8"	•
Ø 25,0 mm	1150.25000	1150.25001	25,0–23,0	0,9843–0,9055	31/32"	–
Ø 26,0 mm	1150.26000	1150.26001	26,0–24,0	1,0236–0,9449	1"	•
Ø 28,0 mm	1150.28000	1150.28001	28,0–26,0	1,1024–1,0236	1 – 1/16"	•
Ø 30,0 mm	1150.30000	1150.30001	30,0–28,0	1,1811–1,1024	1 – 1/8"	•
Ø 32,0 mm	1150.32000	1150.32001	32,0–30,0	1,2598–1,1811	1 – 1/4"	•
Ø 34,0 mm	1150.34000	1150.34001	34,0–32,0	1,3386–1,2598	1 – 5/16"	•
Ø 36,0 mm	1150.36000	1150.36001	36,0–34,0	1,4173–1,3386	1 – 3/8"	–

Included in the ER sets are all marked collets within that size and the matching collet tray ZWT
For further technical information, please refer to page 379

*Approx. inch sizing



ER standard and ER-UP

Corrosion-resistant ER-INOX collets

Universally usable for a wide range of machining operations

DIN ISO 15488

Features and benefits

Stainless

REGO-FIX has introduced a broad range of stainless ER collets. They provide full corrosion protection in aggressive fluids and acidic or alkaline solutions.

For challenging environments

Corrosion can occur in many environments – including machining with fluids or EDM. A coating (plasma nitriding) on standard collets is often not sufficient to ensure long-term protection.

ER-INOX

Complete corrosion resistance thanks to high-quality martensitic stainless steel 1.4122 (X39CrMo17-1). Combine all the benefits of the ER collet with full corrosion protection – made in Switzerland.

Availability

All permanently corrosion-resistant ER-INOX collets are available from stock.



Corrosion-resistant ER-INOX collets

ER Inox

DIN 6499-B

ISO 15488

Type	Part no.	Clamping range		Ø [inch]	Included in set
		[mm]	[decimal inch]		
ER 11-INOX [mm]					
Ø 1.5 mm	1111.01504	1.5–1.25	0.0591–0.0492	–	–
Ø 2.0 mm	1111.02004	2.0–1.75	0.0787–0.0689	1/16"	–
Ø 2.5 mm	1111.02504	2.5–2.25	0.0984–0.0886	3/32"	–
Ø 3.0 mm	1111.03004	3.0–2.75	0.1181–0.1082	–	–
Ø 1/8"	1111.03184	3.18–2.93	0.125–0.1154	1/8"	–
Ø 4.0 mm	1111.04004	4.0–3.75	0.1575–0.1476	5/32"	–
Ø 6.0 mm	1111.06004	6.0–5.75	0.2362–0.2264	7/32"	–
Ø 6.5 mm	1111.06504	6.5–6.25	0.2559–0.2461	1/4"	–
ER 16-INOX [mm]					
Ø 3.0 mm	1116.03004	3.0–2.5	0.1181	–	–
Ø 4.0 mm	1116.04004	4.0–3.5	0.1575	5/32"	–
Ø 6.0 mm	1116.06004	6.0–5.5	0.2362	7/32"	–

Corrosion testing

Corrosion testing determines the resistance of materials to corrosion under certain environmental conditions as temperature, humidity and salt water. This examination helps to identify different corrodents and environmental factors responsible for corrosion problems. In the following test, collet raw material steels have been tested under an intensive 360 hours duration test process.

Test duration: **360 hours**



Standard ER Collet
Material: Conventional Spring Steel



Competitor Stainless Steel ER Collet
(Germany). Material: DIN 1.4034



REGO-FIX Stainless Steel ER Collet
Material: DIN 1.4122

Type	Part no.	Clamping range		Ø [inch]	Included in set
		[mm]	[decimal inch]		
ER 11-DM [mm]					
Ø 3,0 mm	1211.03000	3,0–2,75	0,1181–0,1083	–	–
Ø 4,0 mm	1211.04000	4,0–3,75	0,1575–0,1476	–	–
Ø 5,0 mm	1211.05000	5,0–4,75	0,1969–0,187	–	–
Ø 6,0 mm	1211.06000	6,0–5,75	0,2362–0,2264	–	–
Ø 7,0 mm	1211.07000	7,0–6,75	0,2756–0,2657	–	–
ER 11-DM [inch]					
Ø 1/8"	1211.03182	3,18–2,93	0,125–0,1154	1/8"	–
Ø 3/16"	1211.04762	4,76–4,51	0,1875–0,1776	3/16"	–
Ø 7/32"	1211.05562	5,56–5,31	0,2188–0,2091	7/32"	–
Ø 1/4"	1211.06352	6,35–6,1	0,25–0,2402	1/4"	–
ER 16-DM [mm]					
SET ER 16-DM	1216.00000	3,0–10,0	0,1181–0,3937	–	–
Ø 3,0 mm	1216.03000	3,0 h9	0,1181 h9	–	•
Ø 4,0 mm	1216.04000	4,0 h9	0,1575 h9	–	•
Ø 5,0 mm	1216.05000	5,0–4,5	0,1969–0,1772	–	•
Ø 6,0 mm	1216.06000	6,0–5,5	0,2362–0,2165	–	•
Ø 7,0 mm	1216.07000	7,0–6,5	0,2756–0,2559	–	•
Ø 8,0 mm	1216.08000	8,0–7,5	0,315–0,2953	–	•
Ø 9,0 mm	1216.09000	9,0–8,5	0,3543–0,3346	–	•
Ø 10,0 mm	1216.10000	10,0–9,5	0,3937–0,374	–	•

For further technical information, please refer to page 379

Expert advice

Please note that the ER-DM collets are not suitable for use with reCool®.

Type	Part no.	Clamping range		Ø [inch]	Included in set
		[mm]	[decimal inch]		
ER 16-DM [inch]					
INCH SET ER 16-DM	1216.00002	3,18 – 10,32	0,125 – 0,4063	–	–
Ø 1/8"	1216.03182	3,18 h9	0,125 h9	1/8"	•
Ø 5/32"	1216.03972	3,97 h9	0,1563 h9	5/32"	–
Ø 3/16"	1216.04762	4,76 h9	0,1875 h9	3/16"	•
Ø 7/32"	1216.05562	5,56 – 5,06	0,2188 – 0,1991	7/32"	–
Ø 1/4"	1216.06352	6,35 – 5,85	0,25 – 0,2303	1/4"	•
Ø 9/32"	1216.07142	7,14 – 6,64	0,2813 – 0,2616	9/32"	–
Ø 5/16"	1216.07942	7,94 – 7,44	0,3125 – 0,2928	5/16"	•
Ø 11/32"	1216.08732	8,73 – 8,23	0,3438 – 0,3241	11/32"	–
Ø 3/8"	1216.09532	9,53 – 9,02	0,375 – 0,3553	3/8"	•
Ø 13/32"	1216.10322	10,32 – 9,82	0,4063 – 0,3866	13/32"	–

ER 20-DM [mm]					
SET ER 20-DM	1220.00000	3,0 – 13,0	0,1181 – 0,5118	–	–
Ø 3,0 mm	1220.03000	3,0 h9	0,1181 h9	–	•
Ø 4,0 mm	1220.04000	4,0 h9	0,1575 h9	–	•
Ø 5,0 mm	1220.05000	5,0 h9	0,1969 h9	–	•
Ø 6,0 mm	1220.06000	6,0 h9	0,2362 h9	–	•
Ø 7,0 mm	1220.07000	7,0 – 6,5	0,2756 – 0,2559	–	•
Ø 8,0 mm	1220.08000	8,0 – 7,5	0,315 – 0,2953	–	•
Ø 9,0 mm	1220.09000	9,0 – 8,5	0,3543 – 0,3346	–	•
Ø 10,0 mm	1220.10000	10,0 – 9,5	0,3937 – 0,374	–	•
Ø 11,0 mm	1220.11000	11,0 – 10,5	0,4331 – 0,4134	–	•
Ø 12,0 mm	1220.12000	12,0 – 11,5	0,4724 – 0,4528	–	•
Ø 13,0 mm	1220.13000	13,0 – 12,5	0,5118 – 0,4921	–	•

ER 20-DM [inch]					
INCH SET ER 20-DM	1220.00002	3,18 – 12,7	0,125 – 0,5	–	–
Ø 1/8"	1220.03182	3,18 h9	0,125 h9	1/8"	•
Ø 5/32"	1220.03972	3,97 h9	0,1563 h9	5/32"	–
Ø 3/16"	1220.04762	4,76 h9	0,1875 h9	3/16"	•
Ø 7/32"	1220.05562	5,56 h9	0,2188 h9	7/32"	–
Ø 1/4"	1220.06352	6,35 h9	0,25 h9	1/4"	•
Ø 9/32"	1220.07142	7,14 – 6,64	0,2813 – 0,2616	9/32"	–
Ø 5/16"	1220.07942	7,94 – 7,44	0,3125 – 0,2928	5/16"	•
Ø 11/32"	1220.08732	8,73 – 8,23	0,3438 – 0,3241	11/32"	–
Ø 3/8"	1220.09532	9,53 – 9,02	0,375 – 0,3553	3/8"	•
Ø 13/32"	1220.10322	10,32 – 9,82	0,4063 – 0,3866	13/32"	–
Ø 7/16"	1220.11112	11,11 – 10,61	0,4375 – 0,4178	7/16"	•
Ø 15/32"	1220.11912	11,91 – 11,41	0,4687 – 0,4491	15/32"	–
Ø 1/2"	1220.12702	12,7 – 12,2	0,5 – 0,4803	1/2"	•

Type	Part no.	Clamping range		Ø [inch]	Included in set
		[mm]	[decimal inch]		
ER 25-DM [mm]					
SET ER 25-DM	1225.00000	6,0 – 16,0	0,2362 – 0,6299	–	–
Ø 6,0 mm	1225.06000	6,0 h9	0,2362 h9	–	•
Ø 7,0 mm	1225.07000	7,0 h9	0,2756 h9	–	–
Ø 8,0 mm	1225.08000	8,0 – 7,5	0,315 – 0,2953	–	•
Ø 9,0 mm	1225.09000	9,0 – 8,5	0,3543 – 0,3347	–	–
Ø 10,0 mm	1225.10000	10,0 – 9,5	0,3937 – 0,374	–	•
Ø 11,0 mm	1225.11000	11,0 – 10,5	0,4331 – 0,4134	–	–
Ø 12,0 mm	1225.12000	12,0 – 11,5	0,4724 – 0,4528	–	•
Ø 13,0 mm	1225.13000	13,0 – 12,5	0,5118 – 0,4921	–	–
Ø 14,0 mm	1225.14000	14,0 – 13,5	0,5512 – 0,5315	–	•
Ø 15,0 mm	1225.15000	15,0 – 14,5	0,5906 – 0,5709	–	–
Ø 16,0 mm	1225.16000	16,0 – 15,5	0,6299 – 0,6102	–	•
ER 25-DM [inch]					
INCH SET ER 25-DM	1225.00002	6,35 – 15,88	0,25 – 0,625	–	–
Ø 7/32"	1225.05562	5,56 h9	0,2188 h9	7/32"	–
Ø 1/4"	1225.06352	6,35 h9	0,2500 h9	1/4"	•
Ø 9/32"	1225.07142	7,14 h9	0,2813 h9	9/32"	–
Ø 5/16"	1225.07942	7,94 – 7,44	0,3125 – 0,2928	5/16"	•
Ø 11/32"	1225.08732	8,73 – 8,23	0,3438 – 0,3241	11/32"	–
Ø 3/8"	1225.09532	9,53 – 9,02	0,375 – 0,3553	3/8"	•
Ø 13/32"	1225.10322	10,32 – 9,82	0,4063 – 0,3866	13/32"	–
Ø 7/16"	1225.11112	11,11 – 10,61	0,4375 – 0,4178	7/16"	•
Ø 15/32"	1225.11912	11,91 – 11,41	0,4687 – 0,4491	15/32"	–
Ø 1/2"	1225.12702	12,7 – 12,2	0,5 – 0,4803	1/2"	•
Ø 17/32"	1225.13492	13,49 – 12,99	0,5313 – 0,5116	17/32"	–
Ø 9/16"	1225.14292	14,29 – 13,79	0,5625 – 0,5428	9/16"	•
Ø 19/32"	1225.15082	15,08 – 14,58	0,5934 – 0,5741	19/32"	–
Ø 5/8"	1225.15882	15,88 – 15,38	0,625 – 0,6055	5/8"	•
ER 32-DM [mm]					
SET ER 32-DM	1232.00000	6,0 – 20,0	0,2362 – 0,7874	–	–
Ø 6,0 mm	1232.06000	6,0 h9	0,2362 h9	–	•
Ø 7,0 mm	1232.07000	7,0 h9	0,2756 h9	–	–
Ø 8,0 mm	1232.08000	8,0 – 7,5	0,315 – 0,2953	–	•
Ø 9,0 mm	1232.09000	9,0 – 8,5	0,3543 – 0,3346	–	–
Ø 10,0 mm	1232.10000	10,0 – 9,5	0,3937 – 0,374	–	•
Ø 11,0 mm	1232.11000	11,0 – 10,5	0,4331 – 0,4134	–	–
Ø 12,0 mm	1232.12000	12,0 – 11,5	0,4724 – 0,4528	–	•
Ø 13,0 mm	1232.13000	13,0 – 12,5	0,5118 – 0,4921	–	–
Ø 14,0 mm	1232.14000	14,0 – 13,5	0,5512 – 0,5315	–	•
Ø 15,0 mm	1232.15000	15,0 – 14,5	0,5906 – 0,5709	–	–
Ø 16,0 mm	1232.16000	16,0 – 15,5	0,6299 – 0,6102	–	•

Type	Part no.	Clamping range		Ø [inch]	Included in set
		[mm]	[decimal inch]		
Ø 17,0 mm	1232.17000	17,0 – 16,5	0,6693 – 0,6496	–	–
Ø 18,0 mm	1232.18000	18,0 – 17,5	0,7087 – 0,689	–	•
Ø 19,0 mm	1232.19000	19,0 – 18,5	0,748 – 0,7283	–	–
Ø 20,0 mm	1232.20000	20,0 – 19,5	0,7874 – 0,7677	–	•

ER 32-DM [inch]

INCH SET ER 32-DM	1232.00002	6,35 – 19,05	0,25 – 0,75	–	–
Ø 1/4"	1232.06352	6,35 h9	0,25 h9	1/4"	•
Ø 9/32"	1232.07142	7,15 h9	0,2813 h9	9/32"	–
Ø 5/16"	1232.07942	7,94 – 7,44	0,3125 – 0,2928	5/16"	•
Ø 11/32"	1232.08732	8,73 – 8,23	0,3438 – 0,3241	11/32"	–
Ø 3/8"	1232.09532	9,53 – 9,02	0,375 – 0,3553	3/8"	•
Ø 13/32"	1232.10322	10,32 – 9,82	0,4063 – 0,3866	13/32"	–
Ø 7/16"	1232.11112	11,11 – 10,61	0,4375 – 0,4178	7/16"	•
Ø 15/32"	1232.11912	11,91 – 11,41	0,4687 – 0,4491	15/32"	–
Ø 1/2"	1232.12702	12,7 – 12,2	0,5 – 0,4803	1/2"	•
Ø 17/32"	1232.13492	13,5 – 12,99	0,5313 – 0,5116	17/32"	–
Ø 9/16"	1232.14292	14,29 – 13,79	0,5625 – 0,5428	9/16"	•
Ø 19/32"	1232.15082	15,07 – 14,58	0,5934 – 0,5741	19/32"	–
Ø 5/8"	1232.15882	15,88 – 15,38	0,625 – 0,6055	5/8"	•
Ø 21/32"	1232.16672	16,67 – 16,17	0,6563 – 0,6366	21/32"	–
Ø 11/16"	1232.17462	17,46 – 16,96	0,6875 – 0,6678	11/16"	•
Ø 23/32"	1232.18262	18,26 – 17,76	0,7188 – 0,6991	23/32"	–
Ø 3/4"	1232.19052	19,05 – 18,55	0,75 – 0,7303	3/4"	•

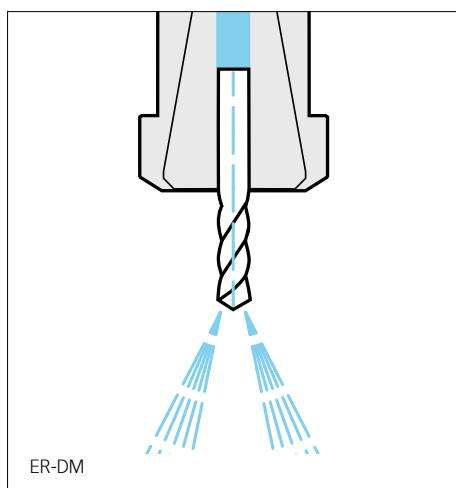
ER 40-DM [mm]

Ø 6,0 mm	1240.06000	6,0 h9	0,2362 h9	–	–
Ø 8,0 mm	1240.08000	8,0 h9	0,3150 h9	–	–
Ø 10,0 mm	1240.10000	10,0 – 9,5	0,3937 – 0,374	–	–
Ø 11,0 mm	1240.11000	11,0 – 10,5	0,4331 – 0,4134	–	–
Ø 12,0 mm	1240.12000	12,0 – 11,5	0,4724 – 0,4528	–	–
Ø 13,0 mm	1240.13000	13,0 – 12,5	0,5118 – 0,4921	–	–
Ø 14,0 mm	1240.14000	14,0 – 13,5	0,5512 – 0,5315	–	–
Ø 15,0 mm	1240.15000	15,0 – 14,5	0,5906 – 0,5709	–	–
Ø 16,0 mm	1240.16000	16,0 – 15,5	0,6299 – 0,6102	–	–
Ø 17,0 mm	1240.17000	17,0 – 16,5	0,6693 – 0,6496	–	–
Ø 18,0 mm	1240.18000	18,0 – 17,5	0,7087 – 0,689	–	–
Ø 19,0 mm	1240.19000	19,0 – 18,5	0,748 – 0,7283	–	–
Ø 20,0 mm	1240.20000	20,0 – 19,5	0,7874 – 0,7677	–	–
Ø 21,0 mm	1240.21000	21,0 – 20,5	0,8268 – 0,8071	–	–
Ø 22,0 mm	1240.22000	22,0 – 21,5	0,8661 – 0,8465	–	–
Ø 23,0 mm	1240.23000	23,0 – 22,5	0,9055 – 0,8858	–	–
Ø 24,0 mm	1240.24000	24,0 – 23,5	0,9449 – 0,9252	–	–
Ø 25,0 mm	1240.25000	25,0 – 24,5	0,9843 – 0,9646	–	–
Ø 26,0 mm	1240.26000	26,0 – 25,5	1,0236 – 1,0039	–	–

For further technical information, please refer to page 379

Type	Part no.	Clamping range		Ø [inch]	Included in set
		[mm]	[decimal inch]		
ER 40-DM [inch]					
Ø 1/4"	1240.06352	6,35 h9	0,25 h9	1/4"	–
Ø 5/16"	1240.07942	7,94 h9	0,3125 h9	5/16"	–
Ø 3/8"	1240.09532	9,53 – 9,02	0,375 – 0,3553	3/8"	–
Ø 7/16"	1240.11112	11,11 – 10,61	0,4375 – 0,4178	7/16"	–
Ø 1/2"	1240.12702	12,7 – 12,2	0,5 – 0,4803	1/2"	–
Ø 9/16"	1240.14292	14,29 – 13,79	0,5625 – 0,5428	9/16"	–
Ø 5/8"	1240.15882	15,88 – 15,38	0,62 – 0,6055	5/8"	–
Ø 11/16"	1240.17462	17,46 – 16,96	0,6875 – 0,6678	11/16"	–
Ø 3/4"	1240.19052	19,05 – 18,55	0,75 – 0,7303	3/4"	–
Ø 13/16"	1240.20642	20,64 – 20,14	0,8123 – 0,7928	13/16"	–
Ø 7/8"	1240.22232	22,23 – 21,72	0,875 – 0,8553	7/8"	–
Ø 1"	1240.25402	25,4 – 24,9	1,0 – 0,9803	1"	–

For further technical information, please refer to page 379



Expert advice

Please note that DM collets are not compatible with Weldon or Whistle notch shafts.

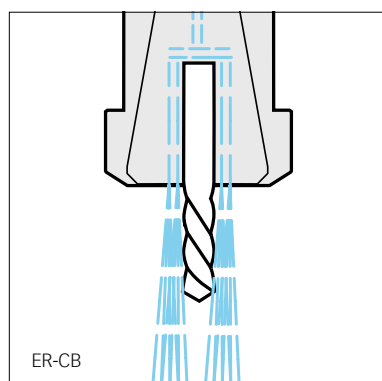
To achieve internal cooling with Weldon or Whistle notch shafts, use the REGO-FIX sealing disks ER/DS with your REGO-FIX ER collet.

Collets with coolant channels for peripheral cooling ER-CB

ER-CB

Type	Part no.	Clamping range		Ø [inch]	Included in set
		[mm]	[decimal inch]		
ER 16-CB					
Ø 3,0 mm	1216.03009	3,0 h9	0,1181		0,5 mm
Ø 1/8"	1216.03189	3,18 h9	–	1/8"	0,5 mm
Ø 4,0 mm	1216.04009	4,0 h9	0,1575		0,5 mm
Ø 6,0 mm	1216.06009	6,0–5,5	0,2362		0,5 mm
Ø 1/4"	1216.06359	6,35–5,85	–	1/4"	0,5 mm
Ø 8,0 mm	1216.08009	8,0–7,5	0,3150		0,5 mm
ER 20-CB					
Ø 3,0 mm	1220.03009	3,0 h9	0,1181	–	0,5 mm
Ø 4,0 mm	1220.04009	4,0 h9	0,1575	–	0,5 mm
Ø 6,0 mm	1220.06009	6,0 h9	0,2362	–	0,5 mm
Ø 8,0 mm	1220.08009	8,0–7,5	0,3150	–	0,5 mm
Ø 10,0 mm	1220.10009	10,0–9,5	0,3937	–	0,5 mm
ER 25-CB					
Ø 6,0 mm	1225.06009	6,0 h9	0,2362	–	0,5 mm
Ø 8,0 mm	1225.08009	8,0–7,5	0,3150	–	0,5 mm
Ø 3/8"	1225.09539	9,53–9,02	–	3/8"	0,5 mm
Ø 10,0 mm	1225.10009	10,0–9,5	0,3937	–	0,5 mm
Ø 12,0 mm	1225.12009	12,0–11,5	0,4724	–	0,5 mm
Ø 1/2"	1225.12709	12,7–12,2	–	1/2"	0,5 mm
Ø 16,0 mm	1225.16009	16,0–15,5	0,6299		0,5 mm
ER 32-CB					
Ø 6,0 mm	1232.06009	6,0 h9	0,2362	–	0,5 mm
Ø 8,0 mm	1232.08009	8,0–7,5	0,3150	–	0,5 mm
Ø 10,0 mm	1232.10009	10,0–9,5	0,3937	–	0,5 mm
Ø 12,0 mm	1232.12009	12,0–11,5	0,4724	–	0,5 mm
Ø 1/2"	1232.12709	12,7–12,2	–	1/2"	0,5 mm
Ø 5/8"	1232.15889	15,88–15,38	–	5/8"	0,5 mm
Ø 16,0 mm	1232.16009	16,0–15,5	0,6299	–	0,5 mm
Ø 3/4"	1232.19059	19,05–18,55	–	3/4"	0,5 mm
Ø 20,0 mm	1232.20009	20,0–19,5	0,7874	–	0,5 mm

For further technical information, please refer to page 379



Type	Part no.	[mm]	[decimal inch]
ER 32-SG [mm]			
Ø 10,0 mm	1332.10004	10	–
Ø 12,0 mm	1332.12004	12	–
Ø 16,0 mm	1332.16004	16	–

ER 32-SG [inch]			
Ø 1/2"	1332.12704	12,7	1/2"
Ø 5/8"	1332.15884	15,88	5/8"

ER 40-SG [mm]			
Ø 16,0 mm	1340.16004	16	–
Ø 20,0 mm	1340.20004	20	–
Ø 25,0 mm	1340.25004	25	–

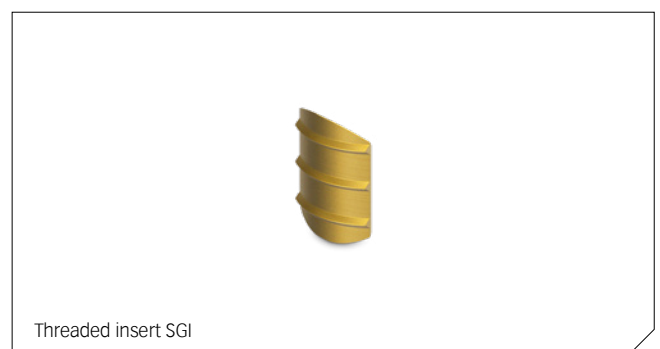
ER 40-SG [inch]			
Ø 5/8"	1340.15884	15,88	5/8"
Ø 3/4"	1340.19054	19,05	3/4"
Ø 1"	1340.25404	25,4	1"

Threaded insert SGI [mm]	
Ø 10,0 mm	7694.10000
Ø 12,0 mm	7694.12000
Ø 14,0 mm	7694.14000
Ø 16,0 mm	7694.16000
Ø 18,0 mm	7694.18000
Ø 20,0 mm	7694.20000
Ø 25,0 mm	7694.25000

Threaded insert SGI [inch]	
Ø 1/2"	7694.12700
Ø 5/8"	7694.15880
Ø 3/4"	7694.19050
Ø 1"	7694.25400

[Learn more](#)

For further information on secuRgrip®, please refer to page 361.



ER tapping collets ER-GB

Manufactured with a form-fitting internal square, the ER-GB collets successfully prevent the tap from slipping.

Tapping collets without axial compensation

Swiss quality

Made in Switzerland to ISO 9001/ISO 14001.

Marking

Type and size (reduced collet selection errors).

Traceability

Lot number marking on all products for traceability through the entire manufacturing process.

Original REGO-FIX

Our long-lasting machining experience results in a well-engineered system. When buying REGO-FIX products pay attention to our quality seal: The triangle is our seal for outstanding quality made in Switzerland.

Interchangeable

With standard ER collet DIN 6499/ISO 15488. No additional toolholders and clamping nuts necessary.

Wide product range

Sizes: ER-GB 11 to 50.

Standards: DIN, ISO, JIS, ANSI, NPT.

Strength: Square for tight grip of tap

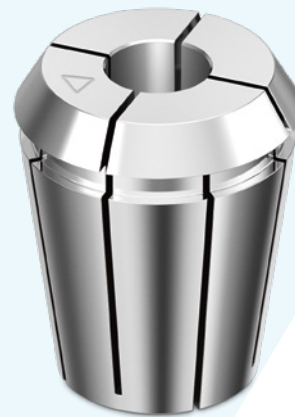
Eliminates tap slippage in collets.

Matched tooling system for best fit

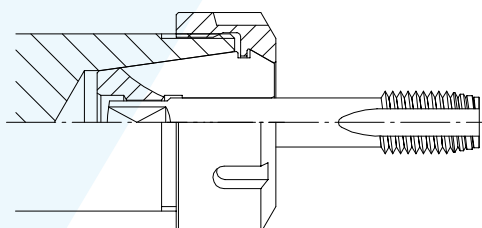
The compatibility of the entire system results in maximum precision, balance and tool life.

Tapping collets ER-GB These rigid tapping collets are compatible with taps per DIN, ISO, JIS and ANSI standards. The REGO-FIX ER-GB tapping collets are manufactured with an internal square. They are intended for use on CNC machines that have synchronized machine spindle speed and feed rate. Machines that have such rigid tapping capabilities require only minimal compensation. We recommend the use of our SSY Softsynchro® tapping holders. They compensate minimal synchronizing differences of CNC machines.

For machines without tapping option we recommend the use of our axial compensating GSF tapping holders. Please refer to page 142 for more information. For additional technical information and dimensions of taps on ER-GB, please refer to pages 383 and 420.



ER-GB

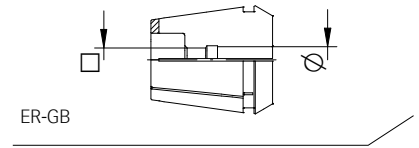


ER-GB

ER tapping collets

ER-GB

ER-GB [mm]

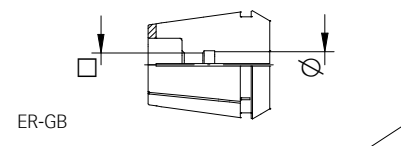


Dimensions [mm]		ER-GB							Standard
Ø	□	11	16	20	25	32	40	50	
2,5	2,1/2,0	1411.02500	–	–	–	–	–	–	DIN / ISO
2,8	2,1	1411.02800	1416.02800	–	–	–	–	–	DIN
3,5	2,7	1411.03500	1416.03500	1420.03500	–	–	–	–	DIN
4,0	3,0	1411.04000	–	–	–	–	–	–	DIN
4,0	3,15/3,2	1411.04002	1416.04002	1420.04002	1425.04002	1432.04002	–	–	ISO / JIS
4,5	3,4	1411.04500	1416.04500	1420.04500	1425.04500	1432.04500	–	–	DIN
5,0	4,0	1411.05002	1416.05002	1420.05002	1425.05002	1432.05002	–	–	ISO / JIS
5,5	4,3	–	1416.05500	1420.05500	1425.05500	1432.05500	–	–	DIN
5,5	4,5	–	1416.05501	1420.05501	1425.05501	1432.05501	–	–	JIS
6,0	4,5	–	1416.06001	1420.06001	1425.06001	1432.06001	1440.06001	–	JIS
6,0	4,9	1411.06000	1416.06000	1420.06000	1425.06000	1432.06000	1440.06000	–	DIN
6,2	5,0	–	1416.06201	1420.06201	1425.06201	1432.06201	1440.06201	–	JIS
7,0	5,5	–	1416.07000	1420.07000	1425.07000	1432.07000	1440.07000	–	DIN / JIS
8,0	6,2/6,3	–	1416.08000	1420.08000	1425.08000	1432.08000	1440.08000	–	DIN / ISO
8,5	6,5	–	1416.08501	1420.08501	1425.08501	1432.08501	1440.08501	–	JIS
9,0	7,0/7,1	–	1416.09000	1420.09000	1425.09000	1432.09000	1440.09000	–	DIN / ISO
10,0	8,0	–	–	1420.10000	1425.10000	1432.10000	1440.10000	–	DIN / ISO
10,5	8,0	–	–	1420.10501	1425.10501	1432.10501	1440.10501	–	JIS
11,0	9,0	–	–	1420.11000	1425.11000	1432.11000	1440.11000	–	DIN
12,0	9,0	–	–	1420.12000	1425.12000	1432.12000	1440.12000	–	DIN
12,5	10,0	–	–	–	1425.12502	1432.12502	1440.12502	–	ISO / JIS
14,0	11,0/11,2	–	–	–	1425.14000	1432.14000	1440.14000	–	DIN / ISO / JIS
15,0	12,0	–	–	–	–	1432.15001	1440.15001	–	JIS
16,0	12,0/12,5	–	–	–	1425.16000	1432.16000	1440.16000	–	DIN / ISO
17,0	13,0	–	–	–	–	1432.17001	–	–	JIS
18,0	14,0/14,5	–	–	–	–	1432.18000	1440.18000	–	DIN / ISO
20,0	16,0	–	–	–	–	1432.20000	1440.20000	–	DIN / ISO
22,0	18,0	–	–	–	–	–	1440.22000	1450.22000	DIN
25,0	20,0	–	–	–	–	–	–	1450.25000	DIN
28,0	22,0	–	–	–	–	–	–	1450.28000	DIN
32,0	24,0	–	–	–	–	–	–	1450.32000	DIN

ER tapping collets

ER-GB [inch]

ER-GB



Dimensions [decimal inch]		ER-GB							
Ø	□	11	16	20	25	32	40	50	Standard
0,141"	0,11"	1411.03585	1416.03585	–	–	–	–	–	ANSI
0,168"	0,131"	1411.04275	1416.04275	1420.04275	1425.04275	1432.04275	–	–	ANSI
0,194"	0,152"	1411.04935	1416.04935	1420.04935	1425.04935	1432.04935	–	–	ANSI
0,220"	0,165"	–	1416.05595	1420.05595	1425.05595	1432.05595	–	–	ANSI
0,255"	0,191"	–	1416.06485	1420.06485	1425.06485	1432.06485	1440.06485	–	ANSI
0,318"	0,238"	–	1416.08085	1420.08085	1425.08085	1432.08085	–	–	ANSI
0,323"	0,242"	–	–	1420.08215	1425.08215	1432.08215	1440.08215	–	ANSI
0,367"	0,275"	–	–	1420.09325	1425.09325	1432.09325	1440.09325	–	ANSI
0,381"	0,286"	–	–	1420.09685	1425.09685	1432.09685	1440.09685	–	ANSI
0,429"	0,322"	–	–	–	1425.10905	1432.10905	1440.10905	–	ANSI
0,437"	0,328"	–	–	–	1425.11104	1432.11104	1440.11104	–	ANSI / NPT
0,480"	0,36"	–	–	–	1425.12195	1432.12195	1440.12195	–	ANSI
0,542"	0,406"	–	–	–	–	1432.13775	1440.13775	–	ANSI
0,562"	0,421"	–	–	–	–	1432.14274	1440.14274	–	ANSI / NPT
0,590"	0,442"	–	–	–	1425.14995	1432.14995	1440.14995	–	ANSI
0,652"	0,489"	–	–	–	–	1432.16565	1440.16565	–	ANSI
0,687"	0,515"	–	–	–	–	–	1440.17454	–	ANSI / NPT
0,697"	0,523"	–	–	–	–	–	1440.17705	–	ANSI
0,700"	0,531"	–	–	–	–	–	1440.17784	–	ANSI / NPT
0,760"	0,57"	–	–	–	–	–	1440.19305	–	ANSI
0,800"	0,600"	–	–	–	–	–	1440.20325	–	ANSI
0,896"	0,672"	–	–	–	–	–	–	1450.22765	ANSI
1,021"	0,766"	–	–	–	–	–	–	1450.25935	ANSI
1,108"	0,831"	–	–	–	–	–	–	1450.28145	ANSI
1,233"	0,925"	–	–	–	–	–	–	1450.31325	ANSI

Thread	Ø [inch]	□	Thread	Ø [inch]	□	Thread	Ø [inch]	□
No 0 – 6	0,141"	0,110"	7/16	0,323"	0,242"	PT 1/2	0,687"	0,515"
1/16	0,141"	0,110"	1/2	0,367"	0,275"	7/8	0,697"	0,523"
3/32	0,141"	0,110"	3/8	0,381"	0,286"	PT 3/8	0,700"	0,531"
1/8	0,141"	0,110"	9/16	0,429"	0,322"	15/16	0,760"	0,570"
5/32	0,168"	0,131"	PT 1/8	0,437"	0,328"	1	0,800"	0,600"
No 8	0,168"	0,131"	5/8	0,480"	0,360"	1 1/8	0,896"	0,672"
3/16	0,194"	0,152"	11/16	0,542"	0,406"	1 1/16	0,896"	0,672"
No 10	0,194"	0,152"	PT 1/4	0,562"	0,421"	1 1/4	1,021"	0,766"
No 12	0,220"	0,165"	3/4	0,590"	0,442"	1 3/8	1,108"	0,831"
1/4	0,255"	0,191"	13/16	0,652"	0,489"	1 1/2	1,233"	0,925"
5/16	0,318"	0,238"						

PT = Pipe tap

ER tapping collets PCM ET1

PCM ET1 tapping collets with axial compensation offer a smart and cost-effective toolholding option for machines which need axial compensation for tapping.

Tapping collets with axial compensation

Interchangeable

With REGO-FIX standard ER collet DIN 6499/ISO 15488.

Compatibility

PCM ET1-12 is compatible with ER11 toolholders.

Cost saving

No expensive tapping tools necessary.

Spring tension

Adapted to tap size.

Compact

Very robust design with smallest space requirement.

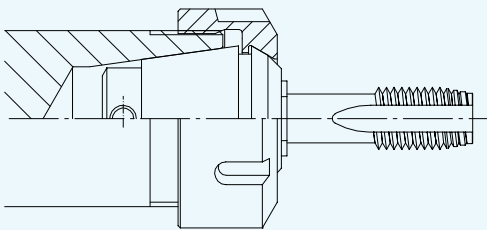
Directions for use The following tapping process is recommended for tapping collets PCM ET1:

Fast approach, then tapping feed with approximately 95% of the pitch value, which uses 20 to 30% of the compensation stroke when the spindle rotation and the feed movement are simultaneously reversed.

Return feed must be made with 100% of the pitch, which maintains the sleeve of the tapping collet in the compensation stroke up to the tap disengagement; quick return can then be programmed with usual stroke security. The relatively long axial compensation assists easy programming.

When tapping with very high speed, an appropriate programming compensation may be necessary to balance the differences of inertia between the spindle and the feed movement on reverse. In order to not disturb the axial compensation, use external coolant supply only.

Please refer to page 142 for additional information on REGO-FIX tapping holders. For additional technical information and dimensions of taps on PCM ET1, please refer to pages 384.



PCM ET1



PCM ET1

Expert advice

Not for coolant through tools and not for applications with sealing disks.

Expert advice

Further information about shaft diameters can be found on page 420.

ER tapping collets

PCM ET1

PCM ET1 [mm]

Shank Ø		PCM ET1					Standard
[mm]	12	16	20	25	32	40	
1,4	1512.01400	1516.01400	–	–	–	–	DIN / ISO
1,6	1512.01600	1516.01600	–	–	–	–	DIN
1,8	1512.01800	1516.01800	–	–	–	–	DIN
2,0	1512.02000	1516.02000	–	–	–	–	DIN
2,2	1512.02200	1516.02200	1520.02200	–	–	–	ISO / JIS
2,24	1512.02240	1516.02240	1520.02240	–	–	–	DIN
2,5	1512.02500	1516.02500	1520.02500	1525.02500	–	–	ISO / JIS
2,8	1512.02800	1516.02800	1520.02800	1525.02800	–	–	DIN
3,0	1512.03000	1516.03000	1520.03000	1525.03000	–	–	JIS
3,15	1512.03150	1516.03150	1520.03150	1525.03150	–	–	JIS
3,5	1512.03500	1516.03500	1520.03500	1525.03500	–	–	DIN
3,55	1512.03550	1516.03550	1520.03550	1525.03550	–	–	JIS
4,0	–	1516.04000	1520.04000	1525.04000	–	–	ISO
4,5	–	1516.04500	1520.04500	1525.04500	1532.04500	–	DIN / JIS
5,0	–	1516.05000	1520.05000	1525.05000	1532.05000	–	ISO
5,5	–	1516.05500	1520.05500	1525.05500	1532.05500	–	DIN / ISO
5,6	–	1516.05600	1520.05600	1525.05600	1532.05600	–	JIS
6,0	–	1516.06000	1520.06000	1525.06000	1532.06000	1540.06000	DIN / ISO
6,2	–	1516.06200	1520.06200	1525.06200	1532.06200	1540.06200	DIN / ISO
6,3	–	1516.06300	1520.06300	1525.06300	1532.06300	1540.06300	JIS
7,0	–	–	1520.07000	1525.07000	1532.07000	1540.07000	DIN
7,1	–	–	–	1525.07100	1532.07100	1540.07100	ISO
8,0	–	–	–	1525.08000	1532.08000	1540.08000	DIN
8,5	–	–	–	1525.08500	1532.08500	1540.08500	ISO / JIS
9,0	–	–	–	1525.09000	1532.09000	1540.09000	DIN / ISO / JIS
10,0	–	–	–	1525.10000	1532.10000	1540.10000	JIS
10,5	–	–	–	–	1532.10500	1540.10500	DIN / ISO
11,0	–	–	–	–	1532.11000	1540.11000	JIS
11,2	–	–	–	–	1532.11200	1540.11200	DIN / ISO
12,0	–	–	–	–	1532.12000	1540.12000	DIN / ISO
12,5	–	–	–	–	1532.12500	1540.12500	DIN
14,0	–	–	–	–	–	1540.14000	DIN
15,0	–	–	–	–	–	1540.15000	DIN
16,0	–	–	–	–	–	1540.16000	DIN
17,0	–	–	–	–	–	1540.17000	JIS

PCM ET1-ER 12 is technically identical to ER 11 and fits all ER11 toolholders

ER tapping collets

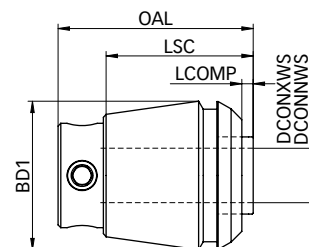
PCM ET1 [inch]

PCM ET1

Shank Ø		PCM ET1					
[inch]	[mm]	12	16	20	25	32	40
0,141	3,580	1512.03581	1516.03581	1520.03581	1525.03581	1532.03581	1540.03581
0,168	4,270	–	1516.04271	1520.04271	1525.04271	1532.04721	1540.04271
0,194	4,930	–	1516.04931	1520.04931	1525.04931	1532.04931	1540.04931
0,220	5,590	–	1516.05591	1520.05591	1525.05591	1532.05591	1540.05591
0,255	6,480	–	–	1520.06481	1525.06481	1532.06481	1540.06481
0,318	8,080	–	–	–	1525.08081	1532.08081	1540.08081
0,323	8,205	–	–	–	1525.08211	1532.08211	1540.08211
0,367	9,320	–	–	–	1525.09321	1532.09321	1540.09321
0,381	9,680	–	–	–	1525.09681	1532.09681	1540.09681
0,429	10,900	–	–	–	–	1532.10901	1540.10901
0,437	11,113	–	–	–	–	1532.11111	1540.11111
0,480	12,192	–	–	–	–	1532.12191	1540.12191
0,542	13,770	–	–	–	–	–	1540.13771
0,562	14,290	–	–	–	–	–	1540.14291
0,590	14,990	–	–	–	–	–	1540.14991
0,652	16,560	–	–	–	–	–	1540.16561
0,697	17,700	–	–	–	–	–	1540.17701

PCM ET1-ER 12 is technically identical to ER 11 and fits all ER11 toolholders

Type	Dimensions [mm]							
	d	D1	D2	L	L1	L2	L3	L4
PCM ET1-12	3,55	7	11,5	18	16,5	2,5	5	5,5
PCM ET1-16	6,3	11	17	22	20	2,8	7	7
PCM ET1-20	7,1	14	21	24	23	2,8	8	7
PCM ET1-25	10	19	26	26	24	3	10	8
PCM ET1-32	12,5	23	33	33	32	3	1	10
PCM ET1-40	17	28	41	42	42	3	12	13



PCM ET1

Thread	Ø [inch]	□
No 0 – 6	0,141	0,110
1/16	0,141	0,110
3/32	0,141	0,110
1/8	0,141	0,110
5/32	0,168	0,131
No 8	0,168	0,131
3/16	0,194	0,152
No 9	0,194	0,152

Thread	Ø [inch]	□
No 10	0,194	0,152
1/4	0,255	0,191
5/16	0,318	0,238
3/8	0,381	0,286
7/16	0,323	0,242
1/2	0,367	0,275
9/16	0,429	0,322

Thread	Ø [inch]	□
5/8	0,480	0,360
11/16	0,542	0,406
3/4	0,590	0,442
13/16	0,652	0,489
7/8	0,697	0,523
15/16	0,760	0,570
1	0,800	0,600

Expert advice

Do not use for coolant through tools and for applications with sealing disks.





Standard		Standard with bearing		Mini nut		Slip-off proof mini nut			External thread				Sealing and coolant flush disks	
Hi-Q®/ER	Hi-Q®/ERC	Hi-Q®/ERB	Hi-Q®/ERBC	Hi-Q®/ERM	Hi-Q®/ERMC	Hi-Q®/ERMX intrIlox®	Hi-Q®/ERMXC intrIlox®	ER MS	Hi-Q®/ERAX	Hi-Q®/ERAXC	reCool® RCR/RCS	reCool® RCR/ERAX	DS/ER	KS/ER
														
Page 190	Page 192	Page 194	Page 194	Page 196	Page 196	Page 198	Page 198	Page 200	Page 202	Page 202	Page 208	Page 213	Page 322	Page 330

B: bearing C: cooling M: mini thread X: slip-off proof A: external thread

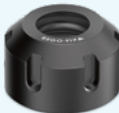
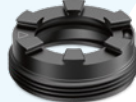
DS: sealing disk KS: coolant flush disk

Swiss quality ER clamping nuts

ER nuts						
	Hi-Q® ER	Hi-Q® ERB	Hi-Q® ERM	Hi-Q® ERMX intrRlox®	Hi-Q® ERAX	ER MS
Main feature	Standard nut	with friction-bearing for higher clamping force	Mini clamping nut	Slip-off proof mini clamping nut	External thread and slip-off proof	up to 80,000 rpm
Sizes	ER 11 – ER 50	ER 16 – ER 50	ER 8 – ER 25	ER 8 – ER 25	ER 11 – ER 40	ER 8 – ER 20
Compatibility	Compatible with all REGO-FIX ER collets					
Minimal outer diameter	–	–	•	•	–	•
Slip-off proof	–	–	–	•	•	–
Surface protection	•	•	•	•	•	–
Suitable wrench	A-E, E P, E, A-E P	A-E, E P, E, A-E P	A-E M, E M	A-E MX, E MX	A-E AX, E AX	A-E MS, E MS
Collet Locking System*	•	•	•	•	•	–

A: external thread B: bearing M: mini thread X: slip-off proof

*Collet Locking System is not available for size 8

ER nuts Type C for coolant through					
	Hi-Q® ERC	Hi-Q® ERBC	Hi-Q® ERMC	Hi-Q® ERMXC intrRlox®	Hi-Q® ERAXC
Main feature	Standard nut	with friction-bearing for higher clamping force	Mini clamping nut	Slip-off proof mini clamping nut	External thread and slip-off proof
Cooling option	Internal cooling with DS disks and peripheral cooling with KS disks to 150 bar / 2100 PSI				
Sizes	ER 11 – ER 50	ER 16 – ER 50	ER 11 – ER 25	ER 11 – ER 25	ER 11 – ER 40
Compatibility	Compatible with all REGO-FIX ER collets, except PCM ET1 collets				
Minimal outer diameter	–	–	•	•	–
Slip-off proof	–	–	–	•	•
Surface protection	•	•	•	•	•
Suitable wrench	A-E, E P, E, A-E P	A-E, E P, E, A-E P	A-E M, E M	A-E MX, E MX	A-E AX, E AX
Collet Locking System*	•	•	•	•	•

A: external thread B: bearing M: mini thread X: slip-off proof

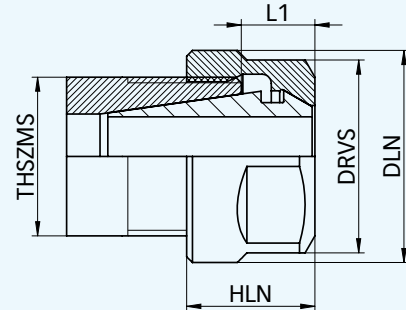
Expert advice

We recommend tightening the clamping nuts with our TORCO-BLOCK or torque wrench.

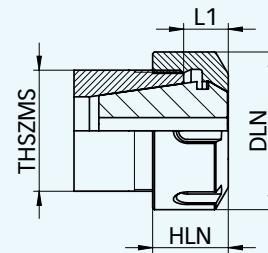
For more information on TORCO-BLOCK, see page 342. For tightening torque recommendations, please refer to page 377.

Hi-Q® | ER standard clamping nuts

Standard Hi-Q® |ER clamping nuts with corrosion-resistant surface are the standard nuts on all REGO-FIX ER toolholders.



Hi-Q® |ER 11 – ER 20



Hi-Q® |ER 25 – ER 50

Expert advice

Higher clamping force of the clamping nut at the same time means higher stress on the toolholder. We recommend the use of REGO-FIX torque wrench. REGO-FIX will not be responsible for damages to toolholders or spindles of other manufacturers.

Type	Part no.	Dimensions [mm]				THSZMS	Accessories
		DLN	HLN	L1	DRVS		Wrench
Hi-Q® ER 11							
Hi-Q® ER 11	3411.00000	19	11,3	4,9–6,6	17	M 14 x 0,75	7112.11010
Hi-Q® ER 11 L	3411.02000	19	11,3	4,9–6,6	17	M 14 x 0,75-LH	7112.11010
Hi-Q® ER 16							
Hi-Q® ER 16	3416.00000	28	17,5	7,0–10,5	25	M 22 x 1,5	7112.16010
Hi-Q® ER 16 L	3416.02000	28	17,5	7,0–10,5	25	M 22 x 1,5-LH	7112.16010
Hi-Q® ER 20							
Hi-Q® ER 20	3420.00000	34	19	8,0–11,5	30	M 25 x 1,5	7112.20010
Hi-Q® ER 20 L	3420.02000	34	19	8,0–11,5	30	M 25 x 1,5-LH	7112.20010
Hi-Q® ER 25							
Hi-Q® ER 25	3425.00000	42	20	8,5–12,0	–	M 32 x 1,5	7111.25000
Hi-Q® ER 25 L	3425.02000	42	20	8,5–12,0	–	M 32 x 1,5-LH	7111.25000
Hi-Q® ER 32							
Hi-Q® ER 32	3432.00000	50	22,5	9,5–13,0	–	M 40 x 1,5	7111.32000
Hi-Q® ER 32 L	3432.02000	50	22,5	9,5–13,0	–	M 40 x 1,5-LH	7111.32000
Hi-Q® ER 40							
Hi-Q® ER 40	3440.00000	63	25,5	11,5–15,0	–	M 50 x 1,5	7111.40000
Hi-Q® ER 40 L	3440.02000	63	25,5	11,5–15,0	–	M 50 x 1,5-LH	7111.40000
Hi-Q® ER 50							
Hi-Q® ER 50	3450.00000	78	35,3	14,0–21,0	–	M 64 x 2	7111.50000

L = left-threaded nuts

Hi-Q®|ERC for coolant through tools

Application with sealing disk/coolant flush disk The Hi-Q®|ERC clamping nut is intended for use with the sealing disk system DS/ER and the cool flush system KS/ER. The disk system allows the use of all standard ER collets, ultra-precision collets and tapping collets for coolant through tools.

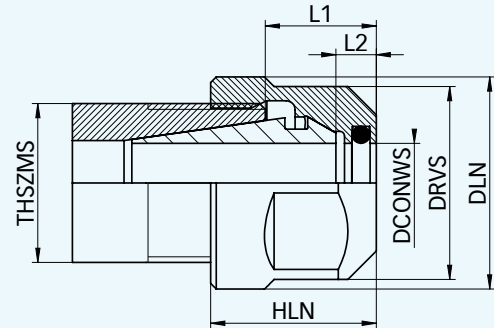
- // Up to 150 bar / 2100 PSI coolant pressure
- // Prevents dirt and chips from entering the collet

Hi-Q®|ERC 11 This clamping nut is recommended for use where minimal external diameters are important. The Hi-Q®|ERC 11 clamping nut for coolant through tools is the internal cooling version of the Hi-Q®|ER 11 clamping nut.

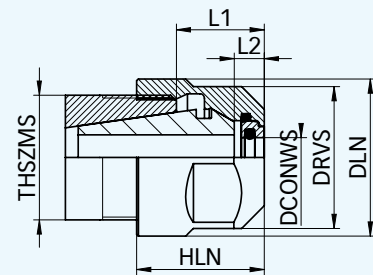
Hi-Q®|ERC 11 does not require sealing disks The sealing system is built into the clamping nut.

- // Up to 150 bar / 2100 PSI coolant pressure
- // Prevents dirt and chips from entering the collet

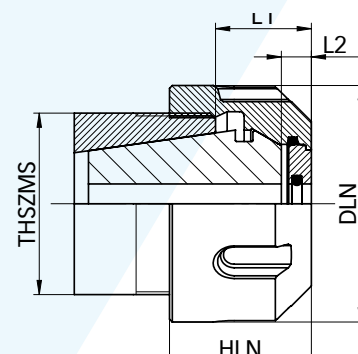
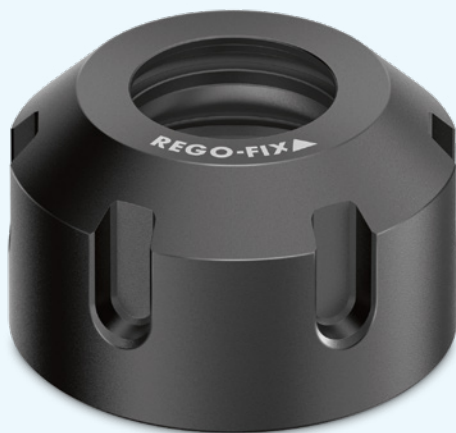
For peripheral cooling of non coolant through tools we recommend the coolant flush disks KS/ER. Please refer to page 330. Accessories are not included in delivery.



Hi-Q®|ERC 11



Hi-Q®|ERC 16 – ERC 20



Hi-Q®|ERC 25 – ERC 50

Type	Part no.	Dimensions [mm]						DCONWS		Accessories
		DLN	HLN	L1	L2	DRVS	THSZMS	[mm]	[inch]	Wrench
Hi-Q® ERC 11										
Hi-Q® ERC 11 Ø 3,0 mm	3411.20300	19	14,6	8,1–9,8	3,5	17	M 14 x 0,75	3,0–2,5	3/32"	7112.11010
Hi-Q® ERC 11 Ø 3,5 mm	3411.20350	19	14,6	8,1–9,8	3,5	17	M 14 x 0,75	3,5–3,0	1/8"	7112.11010
Hi-Q® ERC 11 Ø 4,0 mm	3411.20400	19	14,6	8,1–9,8	3,5	17	M 14 x 0,75	4,0–3,5	5/32"	7112.11010
Hi-Q® ERC 11 Ø 4,5 mm	3411.20450	19	14,6	8,1–9,8	3,5	17	M 14 x 0,75	4,5–4,0	–	7112.11010
Hi-Q® ERC 11 Ø 5,0 mm	3411.20500	19	14,6	8,1–9,8	3,5	17	M 14 x 0,75	5,0–4,5	3/16"	7112.11010
Hi-Q® ERC 11 Ø 5,5 mm	3411.20550	19	14,6	8,1–9,8	3,5	17	M 14 x 0,75	5,5–5,0	7/32"	7112.11010
Hi-Q® ERC 11 Ø 6,0 mm	3411.20600	19	14,6	8,1–9,8	3,5	17	M 14 x 0,75	6,0–5,5	–	7112.11010
Hi-Q® ERC 11 Ø 6,5 mm	3411.20650	19	14,6	8,1–9,8	3,5	17	M 14 x 0,75	6,5–6,0	1/4"	7112.11010
Hi-Q® ERC 11 Ø 7,0 mm	3411.20700	19	14,6	8,1–9,8	3,5	17	M 14 x 0,75	7,0–6,5	–	7112.11010

Hi-Q® ERC 11										
Hi-Q® ERC 11	3411.20000	19	14,6	8,1–9,8	3,5	17	M 14 x 0,75	3,0–6,0	–	7112.11010

Hi-Q® ERC 16										
Hi-Q® ERC 16	3416.20000	28	22,5	12,0–15,5	5	25	M 22 x 1,5	22,5	–	7112.16010

Hi-Q® ERC 20										
Hi-Q® ERC 20	3420.20000	34	24	13,0–16,5	5	30	M 25 x 1,5	24	–	7112.20010

Hi-Q® ERC 25										
Hi-Q® ERC 25	3425.20000	42	25	13,5–17,0	5	–	M 32 x 1,5	25	–	7111.25000

Hi-Q® ERC 32										
Hi-Q® ERC 32	3432.20000	50	27,5	14,5–18,0	5	–	M 40 x 1,5	27,5	–	7111.32000

Hi-Q® ERC 40										
Hi-Q® ERC 40	3440.20000	63	30,5	16,5–20,0	5	–	M 50 x 1,5	30,5	–	7111.40000

Hi-Q® ERC 50										
Hi-Q® ERC 50	3450.20000	78	42,5	19,0–26,0	5	–	M 64 x 2	40,3	–	7111.50000

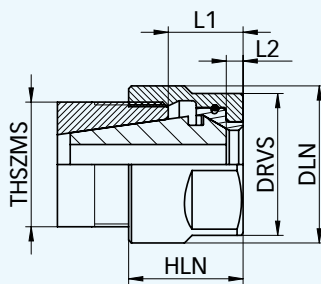
Hi-Q® | ERB friction-bearing Hi-Q® | ERBC for coolant through tools

Application The Hi-Q® | ERB is a friction-bearing nut that offers the highest clamping force available. It is interchangeable with all other nuts per DIN 6499.

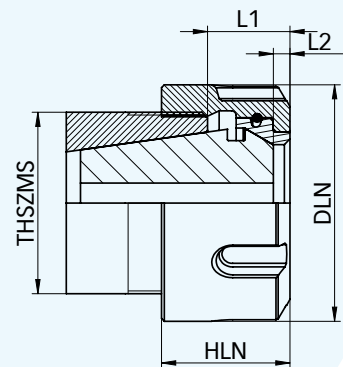
Application with sealing disk/coolant flush disk The Hi-Q® | ERBC clamping nut is intended for use with the sealing disk system DS/ER and the cool flush system KS/ER. The disk system allows the use of all standard ER collets, ultraprecision collets and tapping collets for coolant through tools.

- // Up to 150 bar / 2100 PSI coolant pressure
- // Prevents dirt and chips from entering the collet

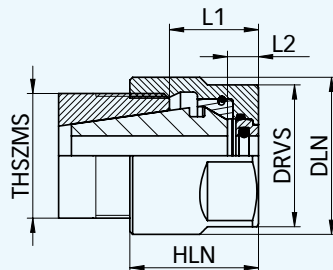
For peripheral cooling of non coolant through tools we recommend the coolant flush disks KS/ER. Please refer to page 330. Accessories are not included in delivery.



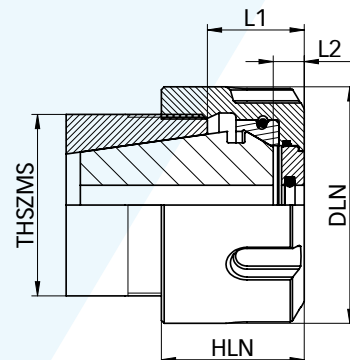
Hi-Q® | ERB 16 – ERB 20



Hi-Q® | ERB 25 – ERB 50



Hi-Q® | ERBC 16 – ERBC 20



Hi-Q® | ERBC 25 – ERBC 40

Type	Part no.	Dimensions [mm]					THSZMS	Accessories
		DLN	HLN	L1	L2	DRVS		Wrench
Hi-Q® ERB 16								
Hi-Q® ERB 16	3416.30000	28	20,2	10,0 – 13,6	3	25	M 22 x 1,5	7112.16010
Hi-Q® ERB 20								
Hi-Q® ERB 20	3420.30000	34	21,7	11,0 – 14,5	3	30	M 25 x 1,5	7112.20010
Hi-Q® ERB 25								
Hi-Q® ERB 25	3425.30000	42	22,6	11,5 – 15,0	3	–	M 32 x 1,5	7111.25000
Hi-Q® ERB 32								
Hi-Q® ERB 32	3432.30000	50	25	12,5 – 16,0	3	–	M 40 x 1,5	7111.32000
Hi-Q® ERB 40								
Hi-Q® ERB 40	3440.30000	63	28,2	14,5 – 18,0	3	–	M 50 x 1,5	7111.40000
Hi-Q® ERB 50								
Hi-Q® ERB 50	3450.30000	78	38,1	17,0 – 24,0	3	–	M 64 x 2	7111.50000

Type	Part no.	Dimensions [mm]					THSZMS	Accessories
		DLN	HLN	L1	L2	DRVS		Wrench
Hi-Q® ERBC 16								
Hi-Q® ERBC 16	3416.40000	28	22,7	12,5–16,0	5,5	25	M 22 x 1,5	7112.16010
Hi-Q® ERBC 20								
Hi-Q® ERBC 20	3420.40000	34	24,2	13,5–17,0	5,5	30	M 25 x 1,5	7112.20010
Hi-Q® ERBC 25								
Hi-Q® ERBC 25	3425.40000	42	25,2	14,0–17,5	5,5	–	M 32 x 1,5	7111.25000
Hi-Q® ERBC 32								
Hi-Q® ERBC 32	3432.40000	50	27,4	15,0–18,5	5,5	–	M 40 x 1,5	7111.32000
Hi-Q® ERBC 40								
Hi-Q® ERBC 40	3440.40000	63	30,7	17,0–20,5	5,5	–	M 50 x 1,5	7111.40000

Hi-Q® | ERM minimal external diameter Hi-Q® | ERMC for coolant through tools

Application The mini clamping nut Hi-Q®|ERM is recommended for use where minimal external diameters are essential (e.g., machining space is very limited). Thus, it is ideally suitable for multispindle drilling heads and toolholder extensions. The corresponding wrenches have the same external dimensions as the clamping nuts.

Application with sealing disk/coolant flush disk The Hi-Q®|ERMC clamping nut is intended for use with the sealing disk system DS/ER and the coolant flush system KS/ER. The disk system allows the use of all standard ER collets, ultraprecision collets and tapping collets for coolant through tools.

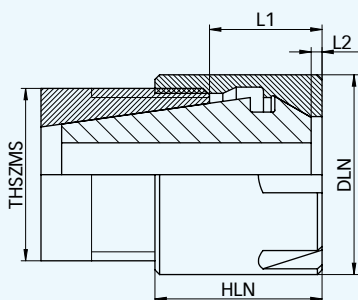
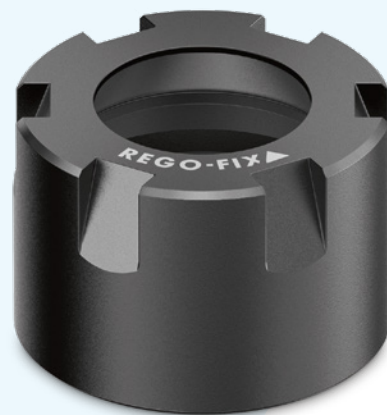
- // Up to 150 bar / 2100 PSI coolant pressure
- // Prevents dirt and chips from entering the collet

For peripheral cooling of non coolant through tools we recommend the coolant flush disks KS/ER. Please refer to page 330. Accessories are not included in delivery.

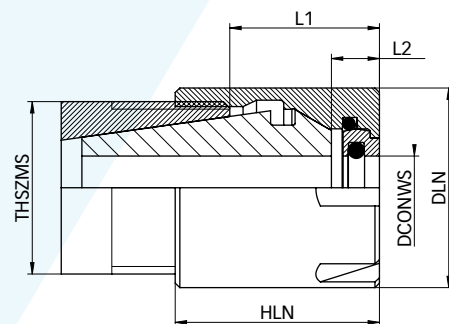
Hi-Q®|ERMC 11 This clamping nut is recommended for use where minimal external diameters are important. It is the coolant through tools version of the Hi-Q®|ERM 11 clamping nut.

Hi-Q®|ERMC 11 does not require sealing disks The sealing system is built into the clamping nut.

- // Up to 150 bar / 2100 PSI coolant pressure
- // Prevents dirt and chips from entering the collet
- // Not interchangeable with nuts according to DIN 6499 / ISO 15488



Hi-Q®|ERM



Hi-Q®|ERMC

Type	Part no.	Dimensions [mm]				THSZMS	DCONWS		Accessories
		DLN	HLN	L1	L2		[mm]	[inch]	Wrench
Hi-Q® ERM 8									
Hi-Q® ERM 8	3508.00000	12	10,8	4,3–6,1	1,5	M 10 x 0,75	–	–	7113.08000
Hi-Q® ERM 8 L	3508.02000	12	10,8	4,3–6,1	1,5	M 10 x 0,75-LH	–	–	7113.08000
Hi-Q® ERM 11									
Hi-Q® ERM 11	3511.00000	16	12	5,7–7,5	0,4	M 13 x 0,75	–	–	7113.11000
Hi-Q® ERM 11 L	3511.02000	16	12	5,7–7,5	0,4	M 13 x 0,75-LH	–	–	7113.11000
Hi-Q® ERM 16									
Hi-Q® ERM 16	3516.00000	22	18,4	8,0–11,5	0,9	M 19 x 1	–	–	7113.16000
Hi-Q® ERM 16 L	3516.02000	22	18,4	8,0–11,5	0,9	M 19 x 1-LH	–	–	7113.16000
Hi-Q® ERM 20									
Hi-Q® ERM 20	3520.00000	28	19	8,0–11,5	–	M 24 x 1	–	–	7113.20000
Hi-Q® ERM 20 L	3520.02000	28	19	8,0–11,5	–	M 24 x 1-LH	–	–	7113.20000
Hi-Q® ERM 25									
Hi-Q® ERM 25	3525.00000	35	20	8,5–12,0	–	M 30 x 1	–	–	7113.25000
Hi-Q® ERM 25 L	3525.02000	35	20	8,5–12,0	–	M 30 x 1-LH	–	–	7113.25000

L = left-threaded nuts

Type	Part no.	Dimensions [mm]				THSZMS	DCONWS		Accessories
		DLN	HLN	L1	L2		[mm]	[inch]	
Hi-Q® ERMC 11									
Hi-Q® ERMC 11 Ø 3,0 mm	3511.20300	16	14,6	8,1–9,8	3,5	M 13 x 0,75	3,0–2,5	3/32"	7113.11000
Hi-Q® ERMC 11 Ø 3,5 mm	3511.20350	16	14,6	8,1–9,8	3,5	M 13 x 0,75	3,5–3,0	1/8"	7113.11000
Hi-Q® ERMC 11 Ø 4,0 mm	3511.20400	16	14,6	8,1–9,8	3,5	M 13 x 0,75	4,0–3,5	5/32"	7113.11000
Hi-Q® ERMC 11 Ø 4,5 mm	3511.20450	16	14,6	8,1–9,8	3,5	M 13 x 0,75	4,5–4,0	–	7113.11000
Hi-Q® ERMC 11 Ø 5,0 mm	3511.20500	16	14,6	8,1–9,8	3,5	M 13 x 0,75	5,0–4,5	3/16"	7113.11000
Hi-Q® ERMC 11 Ø 5,5 mm	3511.20550	16	14,6	8,1–9,8	3,5	M 13 x 0,75	5,5–5,0	7/32"	7113.11000
Hi-Q® ERMC 11 Ø 6,0 mm	3511.20600	16	14,6	8,1–9,8	3,5	M 13 x 0,75	6,0–5,5	–	7113.11000
Hi-Q® ERMC 11 Ø 6,5 mm	3511.20650	16	14,6	8,1–9,8	3,5	M 13 x 0,75	6,5–6,0	1/4"	7113.11000
Hi-Q® ERMC 11 Ø 7,0 mm	3511.20700	16	14,6	8,1–9,8	3,5	M 13 x 0,75	7,0–6,5	–	7113.11000
Hi-Q® ERMC 16									
Hi-Q® ERMC 16	3516.20000	22	22	11,5–15,0	4,5	M 19 x 1	–	–	7113.16000
Hi-Q® ERMC 20									
Hi-Q® ERMC 20	3520.20000	28	24	13–16,5	5	M 24 x 1	–	–	7113.20000
Hi-Q® ERMC 25									
Hi-Q® ERMC 25	3525.20000	35	25	13,5–17,0	5	M 30 x 1	–	–	7113.25000

Hi-Q® | ERMX and Hi-Q® | ERMXC intRlox® Slip-off proof mini clamping nuts

Application For REGO-FIX ER toolholders with mini thread and cylindrical holders.

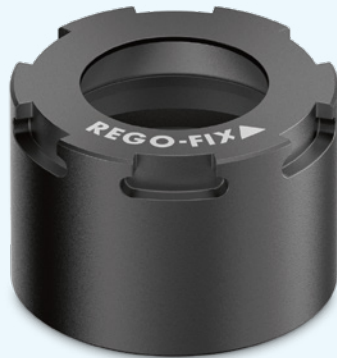
Key advantages

- // Design is ideally suited for lathes and Swiss turning machines
- // Very slim sizing proofs suitable for machines where space is limited
- // Safe handling thanks to the patented intRlox® profile
- // Slip-off proof design with all advantages of the regular mini clamping nuts
- // Easy and safe clamping with the MX wrench

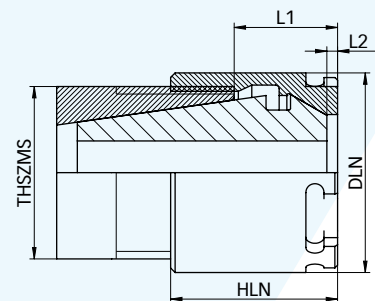
Application with sealing disk/coolant flush disk The Hi-Q® / ERMXC clamping nut is intended for use with the sealing disk system DS/ER and the coolant flush system KS/ER. The disk system allows the use of all standard ER collets, ultraprecision collets and tapping collets for coolant through tools.

- // Up to 150 bar / 2100 PSI coolant pressure
- // Prevents dirt and chips from entering the collet

For peripheral cooling of non coolant through tools we recommend the coolant flush disks KS/ER. Please refer to page 330. Accessories are not included in delivery.



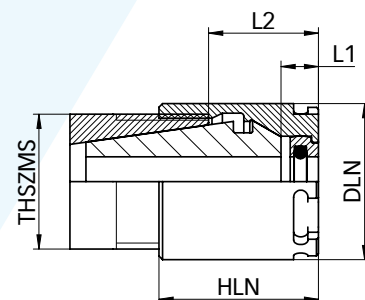
Hi-Q® | ERMX



Hi-Q® | ERMX



Hi-Q® | ERMXC



Hi-Q® | ERMXC

Type	Part no.	Dimensions [mm]				THSZMS	Accessories
		DLN	HLN	L1	L2		Wrench
Hi-Q® ERMX 8							
Hi-Q® ERMX 8	3508.60000	12	11	4,3–6,1	0,4	M 10 x 0,75	7118.08000
Hi-Q® ERMX 11							
Hi-Q® ERMX 11	3511.60000	16	12	5,7–7,5	0,4	M 13 x 0,75	7118.11000
Hi-Q® ERMX 16							
Hi-Q® ERMX 16	3516.60000	22	18,4	8,0–11,5	0,9	M 19 x 1	7118.16000
Hi-Q® ERMX 20							
Hi-Q® ERMX 20	3520.60000	28	19	8,0–11,5	0,0	M 24 x 1	7118.20000
Hi-Q® ERMX 25							
Hi-Q® ERMX 25	3525.60000	35	20	8,5–12,0	0,0	M 30 x 1	7118.25000

Type	Part no.	Dimensions [mm]				THSZMS	Accessories
		DLN	HLN	L1	L2		Wrench
Hi-Q® ERMXC 11							
Hi-Q® ERMXC 11	3511.70000	16	14,6	7,5–9,3	3,5	M 13 x 0,75	7118.11000
Hi-Q® ERMXC 16							
Hi-Q® ERMXC 16	3516.70000	22	22,5	11,5–15,0	4,5	M 19 x 1	7118.16000
Hi-Q® ERMXC 20							
Hi-Q® ERMXC 20	3520.70000	28	24	13,0–16,5	5	M 24 x 1	7118.20000
Hi-Q® ERMXC 25							
Hi-Q® ERMXC 25	3525.70000	35	25	13,0–17,0	5	M 30 x 1	7118.25000

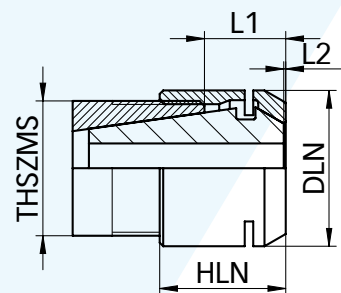
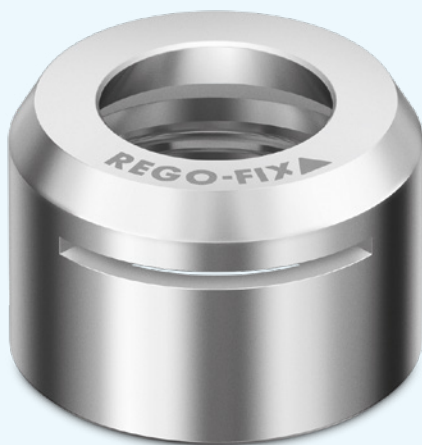
ER MS clamping nuts for highest RPM

Application The ER MS clamping nut for highest RPM with minimal external diameter does not have the collet-locking system and all the contours are ground. This provides best balancing for critical high-speed machining applications.

The collet is released with the corresponding E MS wrench. ER MS nuts are also interchangeable with the Hi-Q®|ERM and Hi-Q®|ERMC nuts. With the ER MS clamping nuts we recommend using ER-UP (ultra-precision) collets to achieve the highest runout TIR.

Key advantages

- // Precision-machined contours on all sides
- // Minimal residual unbalance
- // For high rpm up to 80,000



ER MS

Type	Part no.	Dimensions [mm]				THSZMS	Accessories
		DLN	HLN	L1	L2		Wrench
ER 6 MS							
SR 6 MS	3806.00000	10	9,5	–	–	M 8 x 0,75	7864.06000
ER 8 MS							
ER 8 MS	3208.50000	12	10,8	4,3–6,1	1,5	M 10 x 0,75	7114.08000
ER 11 MS							
ER 11 MS	3211.50000	16	11,5	4,6–6,8	0,4	M 13 x 0,75	7114.11000
ER 16 MS							
ER 16 MS	3216.50000	22	17,8	6,1–10,5	0,3	M 19 x 1	7114.16000
ER 20 MS							
ER 20 MS	3220.50000	28	19	7,1–11,5	0,6	M 24 x 1	7114.20000

Hi-Q® | ERAX with external thread Hi-Q® | ERAXC for coolant through tools

Application For REGO-FIX floating chucks and other ER toolholders with internal thread, e.g., ERA holders. These nuts can also be used on driven tools with internal threads.

Please refer to page 101 for the SK / ERA Zero-Z® toolholder.

Please refer to page 107 for the SK / ERA Zero-Z® toolholder.

Please refer to page 111 for the BT-OM / ERA-Zero-Z® toolholder.

Key advantages

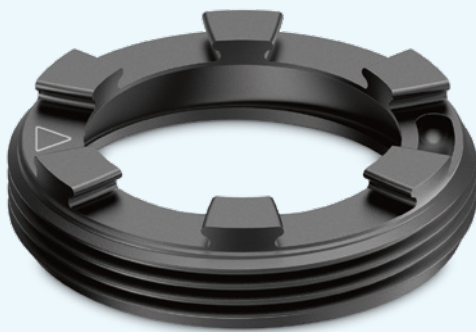
- // Space-saving design for ideal use on long-turning machines
- // intRlox wrench is self-centering on the nut and prevents slipping off while tightening the nut

Application with sealing disk / coolant flush disk The Hi-Q® / ERAXC clamping nut is intended for use with the sealing disk system DS / ER and the coolant flush system KS / ER. The disk system allows the use of all standard ER collets, ultraprecision collets and tapping collets for coolant through tools.

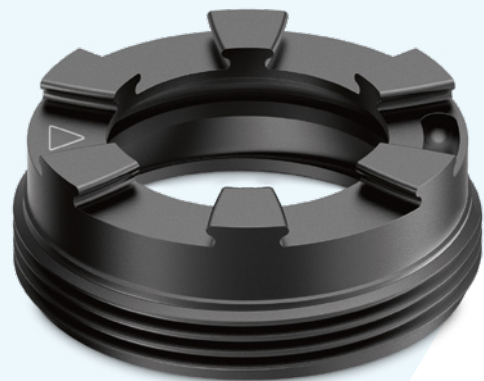
// Up to 150 bar / 2100 PSI coolant pressure

// Prevents dirt and chips from entering the collet

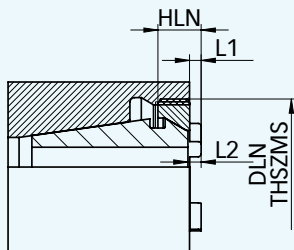
For peripheral cooling of non coolant through tools we recommend the coolant flush disks KS / ER. Please refer to page 330.



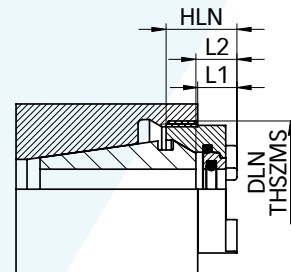
Hi-Q® | ERAX



Hi-Q® | ERAXC



Hi-Q® | ERAX



Hi-Q® | ERAXC

Type	Part no.	Dimensions [mm]			THSZMS	Accessories
		HLN	L1	L2		Wrench
Hi-Q® ERAX 11						
Hi-Q® ERAX 11	3311.60000	7,5	1,0–3,2	3,9	M 18 x 1	7117.11000
Hi-Q® ERAX 16						
Hi-Q® ERAX 16	3316.60000	7,6	0–2,6	2,3	M 24 x 1	7117.16000
Hi-Q® ERAX 20						
Hi-Q® ERAX 20	3320.60000	8,5	0–2,5	2,3	M 28 x 1,5	7117.20000
Hi-Q® ERAX 25						
Hi-Q® ERAX 25	3325.60000	8,8	0–1,9	2,3	M 32 x 1,5	7117.25000
Hi-Q® ERAX 32						
Hi-Q® ERAX 32	3332.60000	9,8	0–1,1	2,5	M 40 x 1,5	7117.32000
Hi-Q® ERAX 40						
Hi-Q® ERAX 40	3340.60000	11,7	0–1,0	2,4	M 50 x 1,5	7117.40000

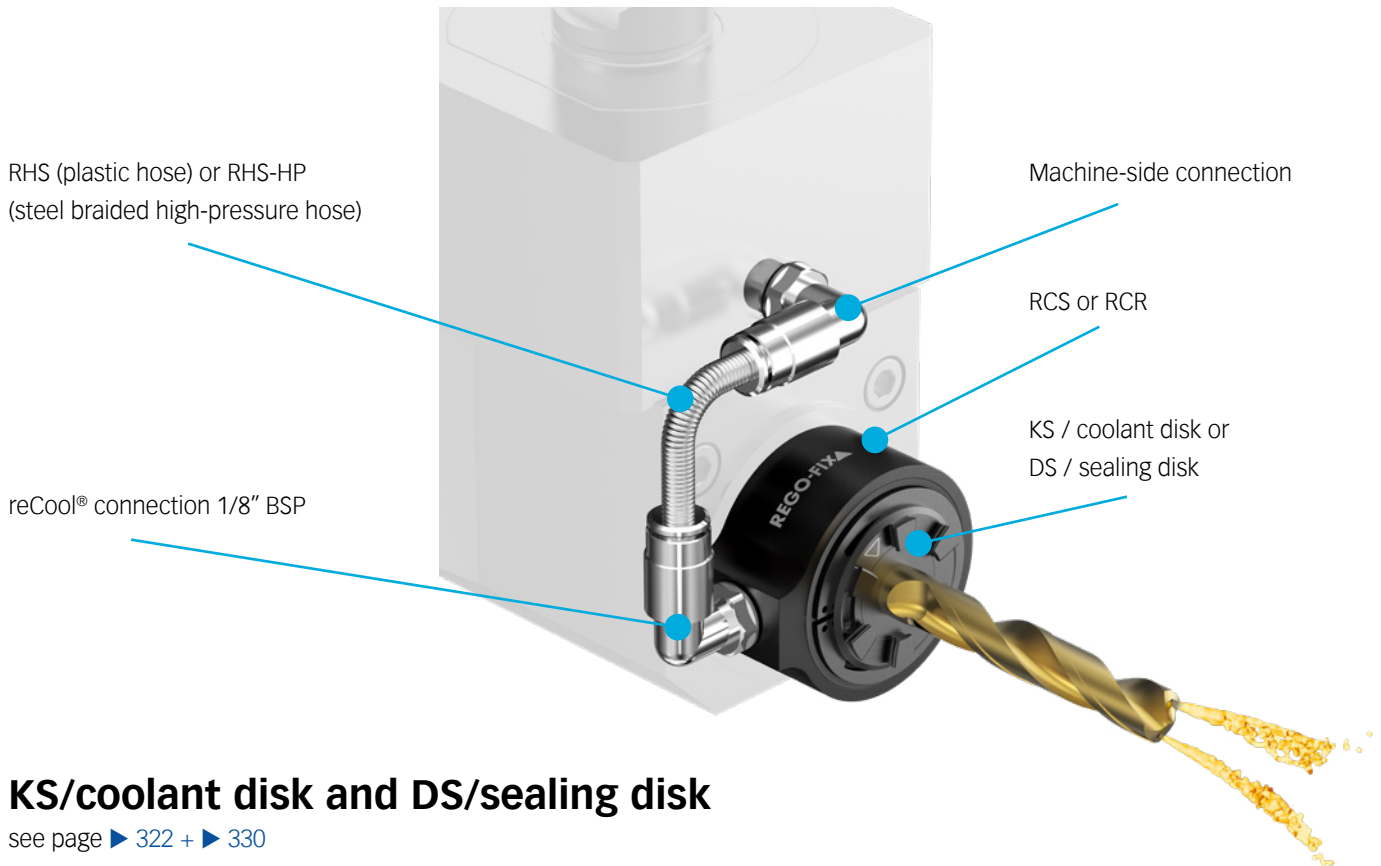
Type	Part no.	Dimensions [mm]			THSZMS	Accessories
		HLN	L1	L2		Wrench
Hi-Q® ERAXC 11						
Hi-Q® ERAXC 11	3311.70000	9,2	2,7–4,9	6,1	M 18 x 1	7117.11000
Hi-Q® ERAXC 16						
Hi-Q® ERAXC 16	3316.70000	12,5	3,1–7,5	7,2	M 24 x 1	7117.16000
Hi-Q® ERAXC 20						
Hi-Q® ERAXC 20	3320.70000	13,5	3,1–7,5	7,3	M 28 x 1,5	7117.20000
Hi-Q® ERAXC 25						
Hi-Q® ERAXC 25	3325.70000	13,8	2,5–6,9	7,3	M 32 x 1,5	7117.25000
Hi-Q® ERAXC 32						
Hi-Q® ERAXC 32	3332.70000	14,9	1,8–6,2	7,6	M 40 x 1,5	7117.32000
Hi-Q® ERAXC 40						
Hi-Q® ERAXC 40	3340.70000	16,6	1,5–5,9	7,3	M 50 x 1,5	7117.40000



reCool® RCR and RCS

RCS/RCR

Easy retrofit to internal coolant supply



KS/coolant disk and DS/sealing disk

see page ► 322 + ► 330

The reCool® system can be configured for internal cooling using sealing disks or for peripheral cooling using coolant disks.

Sealed collets (ER-DM) and collets with coolant holes (ER-CB) **cannot be used.**

Machine-side connection

see page ► 214

For applications up to 100 bar, the following connectors can be used:

- // RVG – straight quick coupling
- // RVA – 90° quick coupling
- // RBA – ball head adapter
- // RRA – aluminium ring adapter

For applications up to 150 bar, the connectors are factory-crimped to the hose.

reCool® connection

see page ► 214

- // RVG – straight quick coupling
- // RVA – 90° quick coupling

For applications up to 150 bar, the connectors are factory-crimped to the hose.

Hose

see page ► 214

- // RHS – plastic hose with anti-kink spring, up to 100 bar.
Can be shortened by user.
- // RHS-HP – steel braided hose for high-pressure applications up to 150 bar. **Cannot be shortened.**

reCool® RCR and RCS

Easy retrofit to internal coolant supply

Type	Part no.	Ø
Ball head adapter RBA*		
RBA 10	3799.93100	10 mm
RBA 11	3799.93110	11 mm
RBA 12	3799.93120	12 mm
RBA 13	3799.93130	13 mm
RBA 14	3799.93140	14 mm
RBA 15	3799.93150	15 mm
RBA 16	3799.93160	16 mm

* 1/8" BSP



Type	Part no.
Threaded fittings*	
SET RVG-100 1/8" – 0°	3799.96180
SET RVG-100 M8 x 1 – 0°	3799.96810
* 2 pieces per set	



Type	Part no.
Threaded fittings*	
SET RVA-100 1/8" – 90°	3799.96189
* 2 pieces per set	



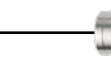
Type	Part no.
Threaded fittings*	
SET RVG-100 1/8" – 0°	3799.96180
* 2 pieces per set	



Type	Part no.
Threaded fittings*	
SET RVA-100 1/8" – 90°	3799.96189
* 2 pieces per set	

Type	Part no.	Ø
Ball head adapter RBA*		
RBA 10	3799.93100	10 mm
RBA 11	3799.93110	11 mm
RBA 12	3799.93120	12 mm
RBA 13	3799.93130	13 mm
RBA 14	3799.93140	14 mm
RBA 15	3799.93150	15 mm
RBA 16	3799.93160	16 mm

* 1/8" BSP



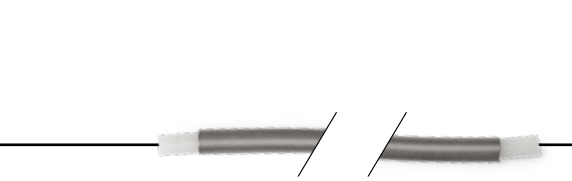
Type	Part no.	Ø
Aluminum ring adapter RRA*		
RRA 10	3799.94100	10 mm
RRA 11	3799.94110	11 mm
RRA 12	3799.94120	12 mm
RRA 13	3799.94130	13 mm
RRA 14	3799.94140	14 mm
RRA 15	3799.94150	15 mm
RRA 16	3799.94160	16 mm

* 1/8" BSP

Type	Part no.	Ø
Ball head adapter RBA*		
RBA 10	3799.93100	10 mm
RBA 11	3799.93110	11 mm
RBA 12	3799.93120	12 mm
RBA 13	3799.93130	13 mm
RBA 14	3799.93140	14 mm
RBA 15	3799.93150	15 mm
RBA 16	3799.93160	16 mm

* 1/8" BSP

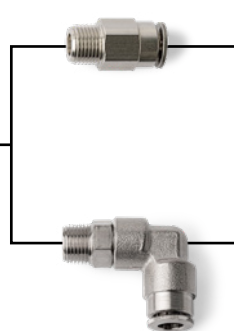




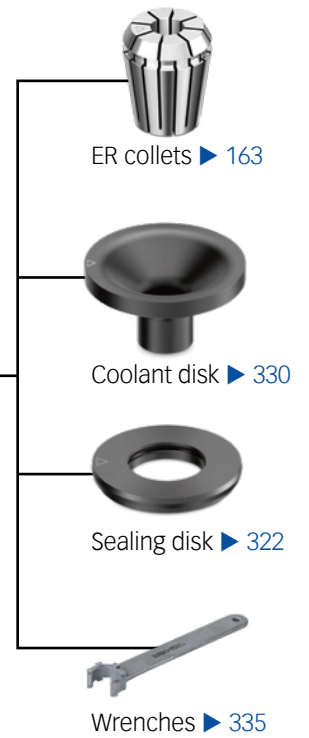
Standard hose set RHS*

SET RHS-100	3799.95000	400*
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* ≤100 bar; incl. spiral spring
Length can be individually shortened between
50 – 400 mm

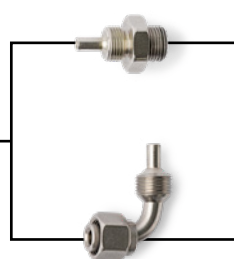


RCR | ER
RCR | ERM
RCR | Hi-S
RCS | ERMX

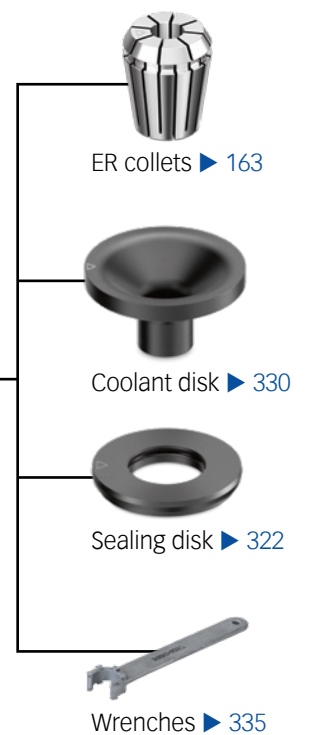
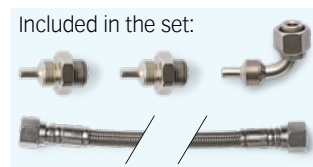


Type	Part no.	Length
High-pressure hoses*		
SET RHS-HP L100	3799.97100	100 mm
SET RHS-HP L200	3799.97200	200 mm
SET RHS-HP L300	3799.97300	300 mm
SET RHS-HP L400	3799.97400	400 mm
SET RHS-HP L500	3799.97500	500 mm
SET RHS-HP L600	3799.97600	600 mm
SET RHS-HP L700	3799.97700	700 mm

* ≤150 bar; incl. 1/8" threaded fitting



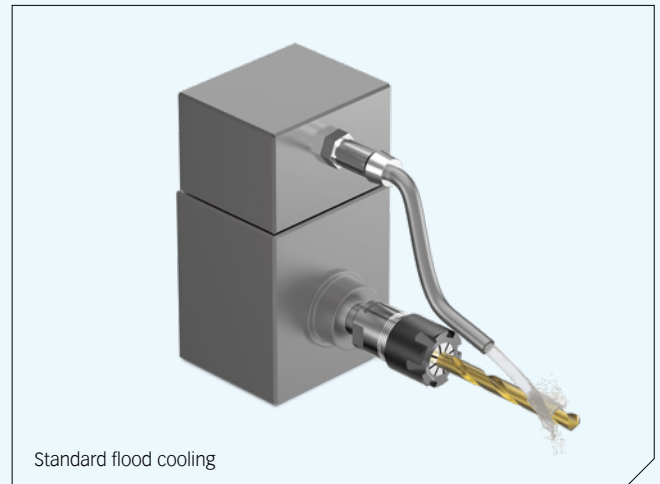
RCR | ER
RCR | ERM
RCS | ERMX



Fast and easy retrofitting: From external flood cooling to internal cooling



Retrofitted reCool® static RCS



Standard flood cooling

Key features of reCool® static RCS for use with static holders

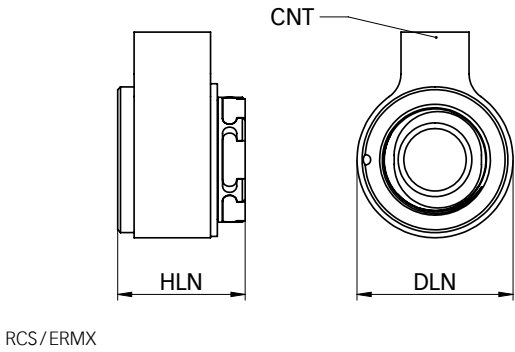
- // Cost-friendly conversion of existing static tooling systems to through coolant in only two minutes
- // For ER collets (DIN 6499 / ISO 15488) in stationary toolholders with external fine threads
- // Coolant pressures of up to 150 bar / 2100 PSI*
- // RCS/ERMx for emulsion and oil coolants
- // Low-maintenance design
- // For coolant through tools (with sealing disks DS) and for peripheral cooling (with coolant flush disks KS)
- // Not for use with sealed collets DM

* With high-pressure hoses RHS-HP: 100 bar / 1400 PSI with standard hose
Accessories are not included in delivery.

Advantages of internal cooling with reCool®

- // Optimized coolant supply to the cutting edge: increases tool life and reduces cycle time
- // Best chip removal
- // No scattering or spray losses

Type	Part no.	Dimensions [mm]		CNT	Accessories	Included in set RCS	
		HLN	DLN		Wrench	Type	Ex.
Set RCS (for emulsion- and oil-based coolants)						RCS/ERMX 16/20	1
SET RCS/ERMX 16	3716.50000	22,5	27,5	M 19 x 1	7118.16000	SET RHS x 400	1
SET RCS/ERMX 20	3720.50000	24	34,5	M 24 x 1	7118.20000	SET RVG / 1/8" BSP	2
RCS/ERMX nut (for emulsion- and oil-based coolants)						SET RVA 90° / 1/8" BSP	2
RCS/ERMX 16	3716.59000	22,5	27,5	M 19 x 1	7118.16000		
RCS/ERMX 20	3720.59000	24	34,5	M 24 x 1	7118.20000		



reCool® sets overview

reCool® RCS and reCool® RCR sets



RCS/ERMX

+



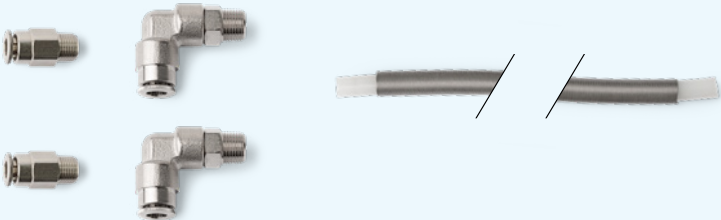
RCR/ER

+



RCR/ERM

+

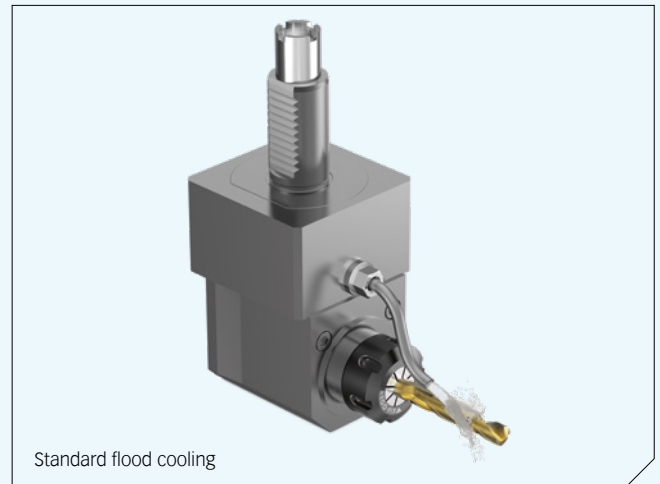


When ordering a set ("SET" in type name) you will receive the indicated reCool® nut as well as the accessories shown here.

Low-cost retrofitting to internal cooling



Retrofitted with reCool® rotary RCR/ER, RCR/ERM



Standard flood cooling

Key features of reCool® rotary RCR for use with spindles

- // Cost-friendly conversion of existing driven tooling systems to through coolant in only two minutes
- // For ER and ERM thread in driven tools and turning machines and for ER collets to DIN 6499/ISO 15488
- // Speeds up to 12.000 rpm*
- // Coolant pressures up to 150 bar with high-pressure hose, standard hose max. 100 bar / 1400 PSI
- // Low-maintenance coolant lubricated bearings
- // For coolant through tools (with sealing disks DS/ER) and for peripheral cooling (with coolant flush disks KS/ER)
- // RCR/ER(M) for emulsion and oil coolants
- // Not for use with sealed collets DM

* 6.000 rpm with RCR/ER 40.

Accessories are not included in delivery.

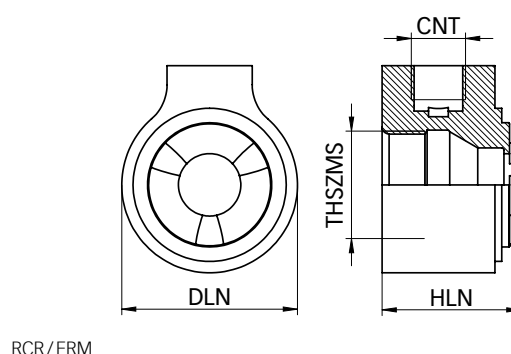
Advantages of internal cooling with reCool®

- // Optimized coolant supply to the cutting edge: increases tool life and reduces cycle time
- // Best chip removal
- // No scattering or spray losses

Type	Part no.	Dimensions [mm]		THSZMS	Accessories
		HLN	DLN		Wrench
Set RCR/ER (for emulsion- and oil-based coolants)					
SET RCR/ER 11	3711.10000	16,6	21,75	M 14 x 0,75	7117.11000
SET RCR/ER 16	3716.10000	24,5	34	M 22 x 1,5	7117.16000
SET RCR/ER 20	3720.10000	26	40	M 25 x 1,5	7117.20000
SET RCR/ER 25	3725.10000	27	50	M 32 x 1,5	7117.25000
SET RCR/ER 32	3732.10000	29,5	62,5	M 40 x 1,5	7117.32000
SET RCR/ER 40	3740.10000	32,5	72,5	M 50 x 1,5	7117.40000

Included in set RCR	
Type	Ex.
RCR/ER 11–40	1
SET RHS x 400	1
SET RVG / 1/8" BSP	2
SET RVA 90° / 1/8" BSP	2

RCR/ER nut (for emulsion- and oil-based coolants)					
RCR/ER 11	3711.19000	16,6	21,75	M 14 x 0,75	7117.11000
RCR/ER 16	3716.19000	24,5	34	M 22 x 1,5	7117.16000
RCR/ER 20	3720.19000	26	40	M 25 x 1,5	7117.20000
RCR/ER 25	3725.19000	27	50	M 32 x 1,5	7117.25000
RCR/ER 32	3732.19000	29,5	62,5	M 40 x 1,5	7117.32000
RCR/ER 40	3740.19000	32,5	72,5	M 50 x 1,5	7117.40000



Type	Part no.	Dimensions [mm]		THSZMS	Accessories
		HLN	DLN		Wrench
Set RCR/ERM (for emulsion- and oil-based coolants)					
SET RCR/ERM 11	3711.30000	16,6	21,75	M 13 x 0,75	7117.11000
SET RCR/ERM 16	3716.30000	24,5	31	M 19 x 1	7117.16000
SET RCR/ERM 20	3720.30000	26	38	M 24 x 1	7117.20000
SET RCR/ERM 25	3725.30000	27	46	M 30 x 1	7117.25000

Included in set RCR	
Type	Ex.
RCR/ERM 11–25	1
SET RHS x 400	1
SET RVG / 1/8" BSP	2
SET RVA 90° / 1/8" BSP	2

RCR/ER nut (for emulsion- and oil-based coolants)					
RCR/ERM 11	3711.39000	16,6	21,75	M 13 x 0,75	7117.11000
RCR/ERM 16	3716.39000	24,5	31	M 19 x 1	7117.16000
RCR/ERM 20	3720.39000	26	38	M 24 x 1	7117.20000
RCR/ERM 25	3725.39000	27	46	M 30 x 1	7117.25000

reCool® Hi-Speed

RCR Hi-S

Retrofit high-speed spindles to internal cooling

Features and benefits

Easy

High-speed spindles can now be easily retrofitted for internal cooling.

Fast

Improved design for higher speeds on high-speed and high-frequency spindles.

reCool® Hi-Speed

The patented solution for retrofitting spindles for internal cooling – new and improved.



Before

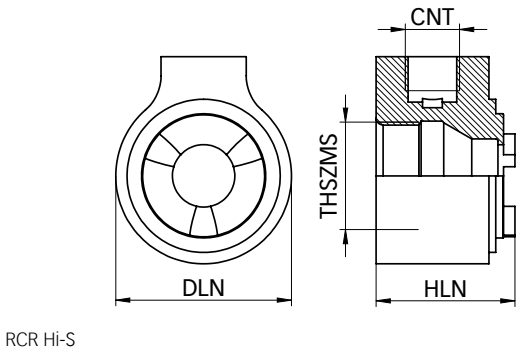


After

- // For high speed spindles
- // Tools shank diameter 3–10 mm
- // Maximum pressure 100 bar
- // Suited for emulsion and oil

- // Maximum RPM 40000 min⁻¹
- // For ER 11 and ER 16 including ERM (Mini)
- // Ceramic coating for reduced friction
- // To be used with KS/DS coolant disks

Type	Part no.	Dimensions [mm]		THSZMS	Accessories	Included in set RCR	
		HLN	DLN		Wrench	Type	Ex.
Set RCR Hi-S / ER (for emulsion- and oil-based coolants)						RCR/ER 11 – 40	1
SET RCR Hi-S ER 11	3711.60000	16,6	21,75	M 14 x 0.75	7117.11000	SET RHS x 400	1
SET RCR Hi-S ERM 11	3711.70000	16,6	21,75	M 13 x 0.75	7117.11000	SET RVG / 1/8" BSP	2
SET RCR Hi-S ER 16	3716.60000	24,5	34	M 22 x 1.5	7117.16000	SET RVA 90° / 1/8" BSP	2
SET RCR Hi-S ERM 16	3716.70000	24,5	34	M 19 x 1	7117.16000		
RCR Hi-S / ER nut (for emulsion- and oil-based coolants)							
RCR Hi-S ER 11	3711.69000	16,6	21,75	M 14 x 0.75	7117.11000		
RCR Hi-S ERM 11	3711.79000	16,6	21,75	M 13 x 0.75	7117.11000		
RCR Hi-S ER 16	3716.69000	24,5	34	M 22 x 1.5	7117.16000		
RCR Hi-S ERM 16	3716.79000	24,5	34	M 19 x 1	7117.16000		



Type	Part no.	Length [mm]
High-pressure hoses (≤ 150 bar) with threaded 1/8" ends		
SET RHS-HP x 100	3799.97100	100
SET RHS-HP x 200	3799.97200	200
SET RHS-HP x 300	3799.97300	300
SET RHS-HP x 400	3799.97400	400
SET RHS-HP x 500	3799.97500	500
SET RHS-HP x 600	3799.97600	600
SET RHS-HP x 700	3799.97700	700

Standard hose set (≤ 100 bar) incl. steel spiral

SET RHS x 400	3799.95000	400*
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*The length can be shortened individually between 50 - 400 mm

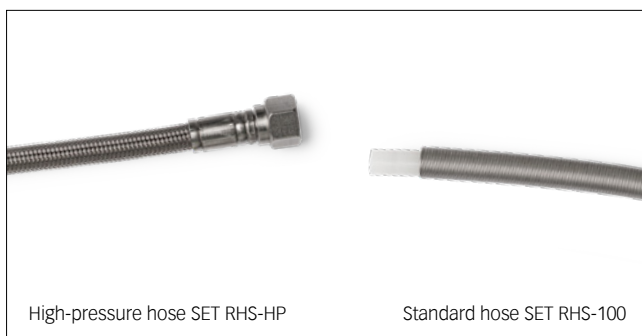
Fitting sets (2 pieces each)

SET RVG / 1/8" BSP	3799.96180	–
SET RVA 90° / 1/8" BSP	3799.96189	–
SET RVG / M8 x 1	3799.96810	–

Type	Part no.	Ø [mm]	Length [mm]
Ball adapters RBA (1/8" BSP)			
RBA 10	3799.93100	10	–
RBA 11	3799.93110	11	–
RBA 12	3799.93120	12	–
RBA 12 / M5 x 0.5	3799.93125	12	–
RBA 13	3799.93130	13	–
RBA 14	3799.93140	14	–
RBA 15	3799.93150	15	–
RBA 16	3799.93160	16	–

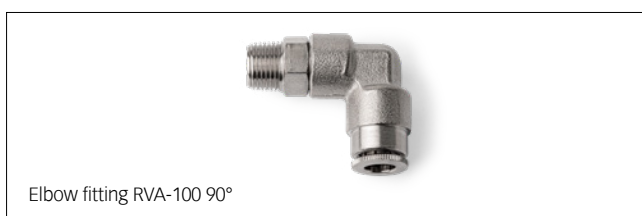
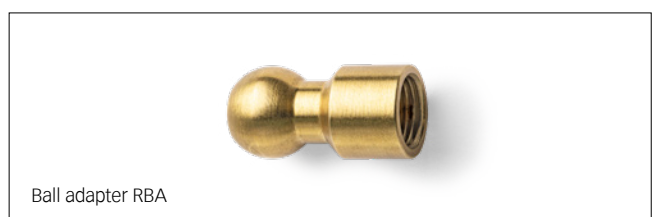
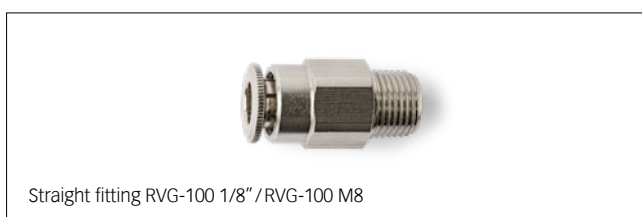
Aluminum ring adapters RRA (1/8" BSP)

RRA 10	3799.94100	10	–
RRA 11	3799.94110	11	–
RRA 12	3799.94120	12	–
RRA 13	3799.94130	13	–
RRA 14	3799.94140	14	–
RRA 15	3799.94150	15	–
RRA 16	3799.94160	16	–

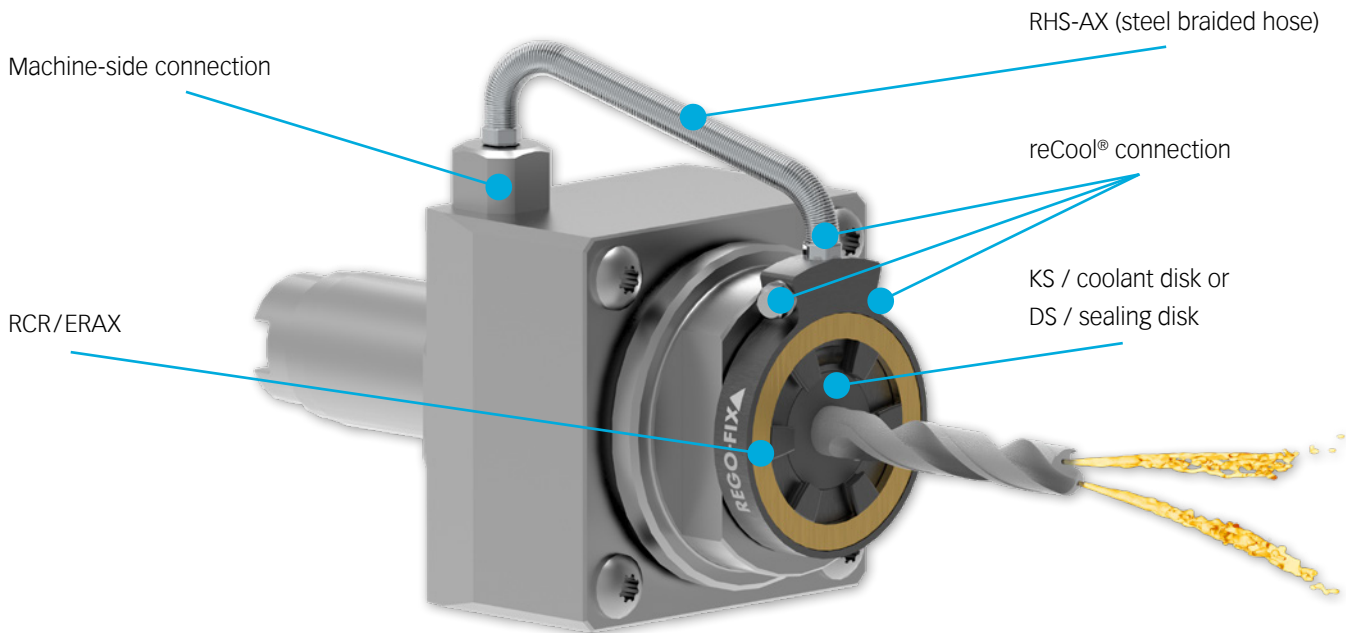

Expert advice

The ball adapter **RBA** is used when the driven tool has a ball connection. The fitting can then be used on the hose.

The aluminum ring adapter **RRA** can be used when the driven tool cooling connection uses the "press-in" principle.



Easy retrofit to internal coolant supply



KS/coolant disk and DS/sealing disk

see page ► 322 + ► 330

The reCool® system can be configured for internal cooling using sealing disks or for peripheral cooling using coolant disks.

Sealed collets (ER-DM) and collets with coolant holes (ER-CB) **cannot be used.**

Machine-side connection

see page ► 218

- // HB – Hollow bolts
- // RBA – Ball head adapter

reCool® connection

see page ► 218

- // Direct connection with RHS-AX steel braided hose

Hose

see page ► 218

- // RHS-AX – steel braided hose for applications up to 100 bar.
The hose length **cannot** be shortened by the user.

reCool® RCR/ERAX

Easy retrofit to internal coolant supply

Type	Part no.	Ø
Ball head adapter RBA*		
RBA 10	3799.93100	10 mm
RBA 11	3799.93110	11 mm
RBA 12	3799.93120	12 mm
RBA 13	3799.93130	13 mm
RBA 14	3799.93140	14 mm
RBA 15	3799.93150	15 mm
RBA 16	3799.93160	16 mm

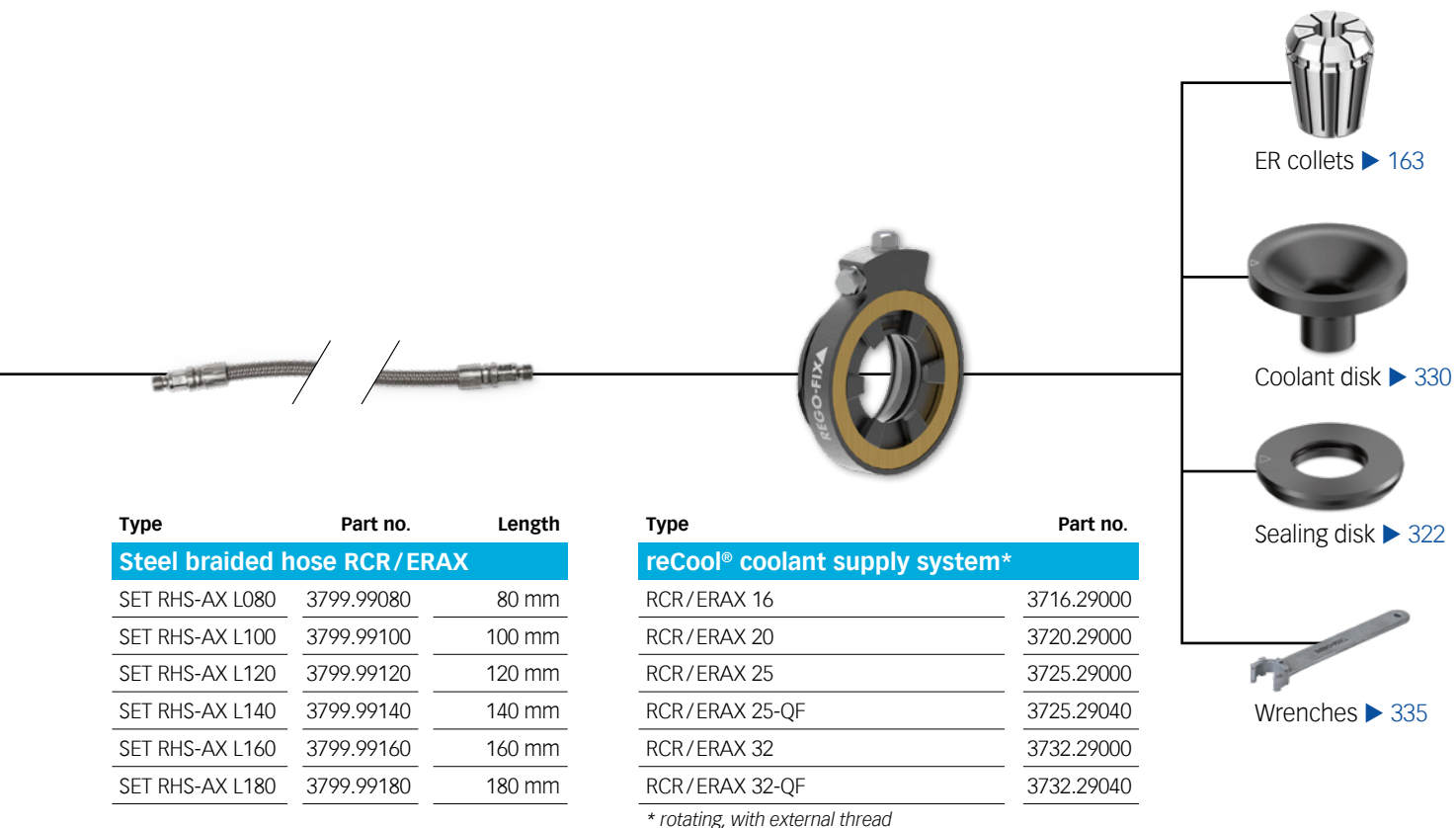
* 1/8" BSP

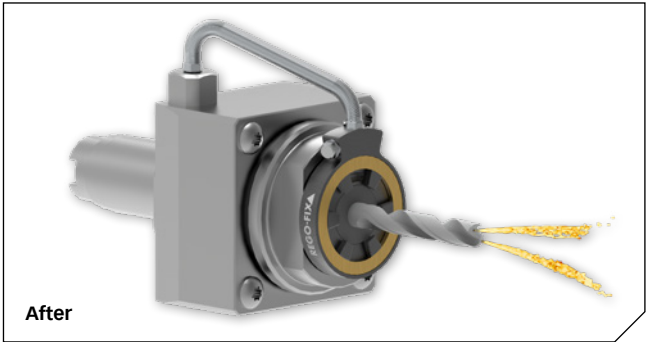
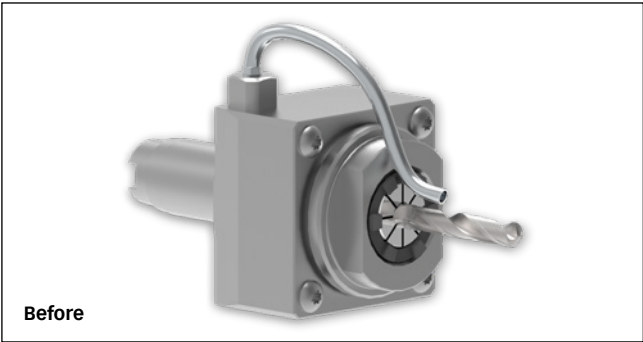
Type	Part no.	Ø
Ball head adapter RBA 1/8" BSP*		
RBA 12, M5x0.5	3799.93125	12 mm

*No RCR/ERAX QF included in the delivery.

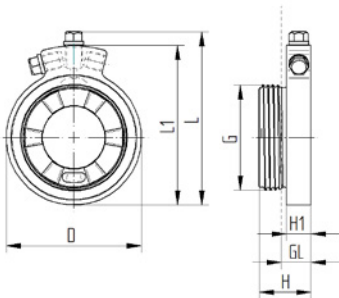
Type	Part no.
Hollow screws RCR / ERAX	
SET HB-AX M6 x 1	3799.90606
SET HB-AX M8 x 1	3799.90808
SET HB-AX M8 x 1,25	3799.90818
SET HB-AX M10 x 1	3799.91010
SET HB-AX / 1/8" BSP	3799.91810

Type	Part no.
Hollow screws RCR / ERAX	
SET HB-AX / 1/8" BSP	3799.91810





- // For driven tools with inner thread
- // Short design: optimising machining range
- // Maximum pressure 100 bar
- // Maximum RPM 12000 min⁻¹
- // Tools shank diameter 3 - 20 mm
- // Suited for emulsion and oil
- // For ER collets to ISO 15488/DIN 6499
- // To be used with KS/DS disks



Type	Part no.	d [mm]	L [mm]	L1 [mm]	H [mm]	H1 [mm]	GL [mm]	G
Coolant supply system with outer thread, rotational								
RCR/ERAX 16	3716.29000	34,0	46,0	41,5	14,5	7,6	9,0	M24x1,0
RCR/ERAX 20	3720.29000	37,5	49,5	45,0	15,5	7,6	9,0	M28x1,5
RCR/ERAX 25	3725.29000	41,0	53,0	48,5	15,8	7,6	9,0	M32x1,5
RCR/ERAX 32	3732.29000	49,0	61,0	56,5	16,9	7,6	9,0	M40x1,5

Included in delivery:
RBA12 M5x0.5, coolant connection suitable for WTO QuickFlex®, tool holders.



RCR/ERAX

Type	Part no.	d [mm]	L [mm]	L1 [mm]	H [mm]	H1 [mm]	GL [mm]	G
Coolant supply system with outer thread, rotational								
RCR/ERAX 25-QF	3725.29040	41,0	52,7	48,5	15,95	7,6	9,0	M40x1,5
RCR/ERAX 32-QF	3732.29040	50,0	61,2	57,0	18,05	7,6	9,0	M50x1,5

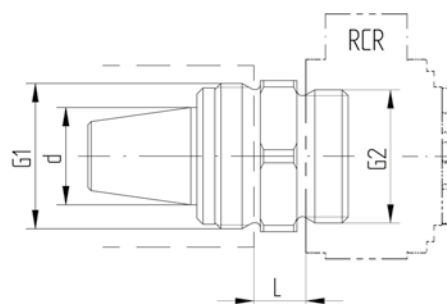
Included in delivery:
RBA12 M5x0.5, coolant connection suitable for WTO QuickFlex®, tool holders.

Matching accessories for your reCool®

Type	Part no.	Dimensions [mm]		Thread G1	Thread G2	Accessories
		d	L			Wrench
reCool® adapter						
RC-ADP 16	3799.81600	16	8,7	M 24 x 1	M 22 x 1,5	7112.16010
RC-ADP 20	3799.82000	20	8,2	M 28 x 1,5	M 25 x 1,5	7112.20010
RC-ADP 25	3799.82500	25	7,9	M 32 x 1,5	M 32 x 1,5	7111.25000
RC-ADP 32	3799.83200	32	8,7	M 40 x 1,5	M 40 x 1,5	7111.32000
RC-ADP 40	3799.84000	40	9,6	M 50 x 1,5	M 50 x 1,5	7111.40000

reCool® adapter The reCool® adapter RC-ADP easily converts inner-threaded driven tools to outer-threaded ones which enables the use of the reCool® rotary coolant supply system RCR with different types of driven tooling.

How to use? Just screw the adapter with advised tightening torque into the driven tool, use the correctly installed reCool® rotary coolant supply system RCR and clamp the tool.



RC-ADP

Type	Part no.	Length	Included
Steelflex hose for RCR/ERAX			
SET RHS-AX x 080	3799.99080	80 mm	Hollow bolt SET HB-AX M6 x 1
SET RHS-AX x 100	3799.99100	100 mm	Hollow bolt SET HB-AX M6 x 1
SET RHS-AX x 120	3799.99120	120 mm	Hollow bolt SET HB-AX M6 x 1
SET RHS-AX x 140	3799.99140	140 mm	Hollow bolt SET HB-AX M6 x 1
SET RHS-AX x 160	3799.99160	160 mm	Hollow bolt SET HB-AX M6 x 1
SET RHS-AX x 180	3799.99180	180 mm	Hollow bolt SET HB-AX M6 x 1



Steelflex hose

Type	Part no.	Description
Hollow bolt for RCR/ERAX		
SET HB-AX M8 x 1	3799.90808	Hollow bolt M8x1.00 mm and ringfitting Ø 8.00 mm
SET HB-AX M8 x 1.25	3799.90818	Hollow bolt M8x1.25 mm and ringfitting Ø 8.00 mm
SET HB-AX M6 x 1	3799.90606	Hollow bolt M6x1.00 mm and ringfitting Ø 6.00 mm
SET HB-AX M10 x 1	3799.91010	Hollow bolt M10x1.00 mm and ringfitting Ø 10.00 mm
SET HB-AX / 1/8" BSP	3799.91810	Hollow bolt M 1/8" and ringfitting Ø 10.00 mm



Hollow bolt set

Expert advice

reCool® is only applicable with the use of our sealing DS/ER and Coolant flush disks KS/ER. Please note, that neither DS/ER nor KS/ER are included in the reCool® sets.

Please refer to page 322 for sealing disks and to page 330 for coolant flush disks.

Use conditions RCR reCool®

reCool® is used exclusively for clamping tools with ER collets (DIN 6499 / ISO 15488). Only original collets, sealing and cooling disks REGO-FIX® are recommended to be used.

Technical data

The following parameters apply to reCool® rotation:

Max. Rotation speed: 12,000 rpm (6000 rpm with ER40)

Max. coolant pressure: 150 bar / 2175 PSI* (with high pressure hose)

Min. coolant pressure: depending on the rotational speed (see table)

	≤ 3,000 rpm	≤ 6,000 rpm	≤ 9,000 rpm	≤ 12,000 rpm
RCR/ER 11	5 bar / 73 PSI	7,5 bar / 109 PSI	10 bar / 145 PSI	15 bar / 218 PSI
RCR/ER 16	5 bar / 73 PSI	7,5 bar / 109 PSI	10 bar / 145 PSI	15 bar / 218 PSI
RCR/ER 20	5 bar / 73 PSI	7,5 bar / 109 PSI	10 bar / 145 PSI	15 bar / 218 PSI
RCR/ER 25	5 bar / 73 PSI	7,5 bar / 109 PSI	10 bar / 145 PSI	15 bar / 218 PSI
RCR/ER 32	5 bar / 73 PSI	7,5 bar / 109 PSI	10 bar / 145 PSI	15 bar / 218 PSI
RCR/ER 40	5 bar / 73 PSI	7,5 bar / 109 PSI	–	–
RCR/ERM 11	5 bar / 73 PSI	7,5 bar / 109 PSI	10 bar / 145 PSI	15 bar / 218 PSI
RCR/ERM 16	5 bar / 73 PSI	7,5 bar / 109 PSI	10 bar / 145 PSI	15 bar / 218 PSI
RCR/ERM 20	5 bar / 73 PSI	7,5 bar / 109 PSI	10 bar / 145 PSI	15 bar / 218 PSI
RCR/ERM 25	5 bar / 73 PSI	7,5 bar / 109 PSI	10 bar / 145 PSI	15 bar / 218 PSI

Cooling medium: Emulsion or oil up to viscosity ≤ ISO VG 46 (46 mm²/s 40°C) and filtered 20µm

Working temperature: 10° C to 60° C

*** The supplied hose and fittings are designed and tested for maximum coolant pressure of 100 bar / 1450 PSI.
For higher coolant pressures the High-pressure hose is mandatory.**

Dimensions

Type	Clamping range [mm]	D [mm]	L [mm]	H [mm]	G
RCR/ER 11	3,00 – 6,00	21,75	29,50	16,50	M14 x 0,75
RCR/ER 16	3,00 – 10,00	34,00	39,50	24,50	M22 x 1,5
RCR/ER 20	3,00 – 13,00	40,00	44,50	26,00	M25 x 1,5
RCR/ER 25	3,00 – 16,00	50,00	53,50	27,00	M32 x 1,5
RCR/ER 32	3,00 – 20,00	62,50	64,75	29,50	M40 x 1,5
RCR/ER 40	3,00 – 26,00	72,50	74,75	32,50	M50 x 1,5
RCR/ERM 11	3,00 – 6,00	21,75	29,50	16,50	M13 x 0,75
RCR/ERM 16	3,00 – 10,00	31,00	36,50	24,50	M19 x 1
RCR/ERM 20	3,00 – 13,00	38,00	43,00	26,00	M24 x 1
RCR/ERM 25	3,00 – 17,00	46,00	50,50	27,00	M30 x 1

Cleaning instructions

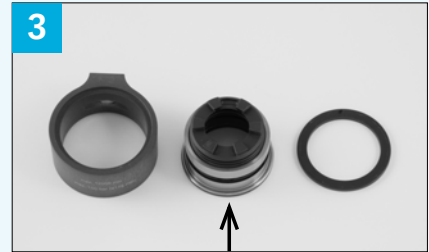
reCool® is designed with a wear resistant coating, eliminating the need for extensive maintenance. The only time cleaning is needed is when the RCR system no longer rotates lightly by hand.



Mark the position of the inner part to outer ring.



Remove the retaining ring with pliers.



Now slide out inner part.



Remove the disk.



Clean all parts intensively with a standard industrial cleaning agent.



Lightly oil the bearing surfaces with thin lubricating oil.



Put the parts in the correct position together.



Mount this retaining ring.



Pay attention that it snaps into place.



reCool® parts may not be swapped out. Original configuration must be maintained.



Never let the reCool® system run dry.



When starting the machine, make sure that coolant flows out of the tool or the coolant flush disk before rotating the reCool® System.



A coolant pressure below minimum may lead to inadequate cooling/lubrication and therefore could damage the reCool® bearings.



Inadequate coolant pressure results in considerable impairment in cooling the tool and chip removal.



Stop screws with coolant through bores must be replaced!



If the stop screw is not sealed nor replaced, there is danger that the coolant may get inside the gears which may result in damages of the driven tool.



For best cooling do not exploit the clamping range of the collet. E.g. clamp a Ø 6mm tool shank in Ø 6.0 – 5.0 mm collet.



Do not use metallic sealed ER-DM collets with reCool, because the coolant cannot reach the tool.



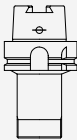
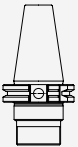
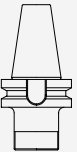
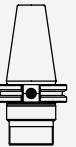
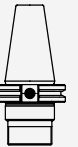
SWISS

max. 12000 min⁻¹

max. 58 bar (840 PSI)



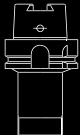
Experience the highest-precision ER toolholding

Standard						Cylindrical colletholders
HSK/MR HSK/MRM	SK/ MR	BT/ MR	BT+/ MR	CAT/ MR	CAT+/ MR	CYL/MR CYL/MRM
						
Page 226	Page 230	Page 232	Page 234	Page 236	Page 238	Page 240

Collets
ER-MR

Page 243

Standard		Mini nut		Sealing and coolant flush disks	
MR	MRC	MRM	MRMC	DS/MR	KS/MR
					
Page 248	Page 248	Page 248	Page 248	Page 322	Page 330

Standard						Cylindrical colletholders
HSK/MR HSK/MRM	SK/ MR	BT/ MR	BT+/ MR	CAT/ MR	CAT+/ MR	CYL/MR CYL/MRM
						
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Toolholders in Swiss quality



	HSK/MR	SK/MR	BT/MR	BT+/MR	CAT/MR	CAT+/MR	CYL/MR	CYL/MRM
Norm	DIN 69893 ISO 12164	DIN 69871 DIN ISO 7388-1	MAS 403 JIS B 6339 DIN-ISO 7388-2	–	DIN 6871 DIN ISO 7388-1	–	–	–
Balancing	G 2,5 @ 25 000 rpm	G 2,5 @ 25 000 rpm	G 2,5 @ 25 000 rpm	G 2,5 @ 25 000 rpm	G 2,5 @ 25 000 rpm	G 2,5 @ 25 000 rpm	–	–
Chip hole	•	•	–	–	•	•	–	–
Runout TIR	≤0,003 mm	≤0,003 mm	≤0,003 mm	≤0,003 mm	≤0,003 mm	≤0,003 mm	≤0,003 mm	≤0,003 mm
Taper accuracy	DIN ISO	AT3	AT3	AT1	AT3	AT1	–	–
Form A + AD	–	•	•	•	•	•	–	–
Form AD + B	–	–	–	–	–	–	–	–
Shank tolerance	–	–	–	–	–	–	h6	h6

HSK toolholders

Designed for rotating applications, all our HSK toolholders are suited for high-speed applications where a consistent performance is key.

DIN 69893/ISO 12164

Features and benefits

Total system runout TIR $\leq 3 \mu\text{m}$ @ 3xD

Our holistic system consists of an micRun® toolholder, collet and clamping nut. All components together ensure best runout and accuracy.

Toolholder runout TIR $\leq 1 \mu\text{m}$

Measured from inner taper to outer taper.

Surface finish max. Ra 0.25

Achieve high clamping force and high transferable torque.

Balancing

100% balanced to G 2.5 @ 25,000 rpm/<1gmm.

MR clamping nut included in delivery

Guarantees highest clamping force and best balancing.

Vibration damping

Our holders offer good vibration damping to sustain a high surface finish and can help prevent chatter.

Accessories are not included in delivery

Balancing specifications

HSK 25	balanced to 90,000 rpm
HSK 32	balanced to 60,000 rpm
HSK 40	balanced to 45,000 rpm
HSK 50	balanced to 36,000 rpm
HSK 63	G 2.5 @ 25,000 rpm
HSK 80	G 2.5 @ 25,000 rpm
HSK 100	G 2.5 @ 25,000 rpm
HSK 125	G 2.5 @ 25,000 rpm



Expert advice

For all HSK-A and HSK-E form toolholders a range of coolant tubes (KSR) is available.

For KSR part numbers please refer to page 345.

HSK-A toolholders

HSK-AB

ISO 12164

compatible

HSK-A

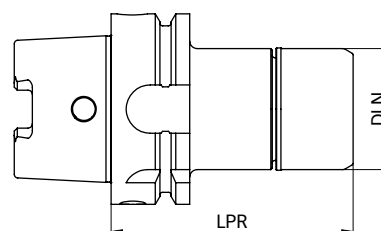
DIN 69893

ISO 12164

Type	Part no.	Dimensions [mm]		Accessories
		DLN	LPR	Freewheel wrench head
HSK-A 32				
HSK-A 32/MRM 16 x 060	5532.11620	24	60	7855.16800
HSK-A 32/MRM 16 x 100	5532.11650	24	100	7855.16800
HSK-A 40				
HSK-A 40/MR 11 x 050	5540.11110	16	50	7855.11000
HSK-A 40/MR 16 x 060	5540.11620	28	60	7855.16000
HSK-A 40/MR 16 x 100	5540.11650	28	100	7855.16000
HSK-A 40/MRM 16 x 055	5540.11617	24	55	7855.16800
HSK-A 40/MR 25 x 080	5540.12540	40	80	7855.25000
HSK-A 50				
HSK-A 50/MR 16 x 100	5550.11650	28	100	7855.16000
HSK-A 50/MR 25 x 080	5550.12540	40	80	7855.25000
HSK-A 63				
HSK-A 63/MR 11 x 100	5563.11150	16	100	7855.11000
HSK-A 63/MR 11 x 160	5563.11180	16	160	7855.11000
HSK-A 63/MR 16 x 100	5563.11650	28	100	7855.16000
HSK-A 63/MR 25 x 080	5563.12540	40	80	7855.25000
HSK-A 63/MR 25 x 160	5563.12580	40	160	7855.25000
HSK-A 63/MR 32 x 070	5563.13230	50	70	7855.32000
HSK-A 63/MR 32 x 100	5563.13250	50	100	7855.32000

Included in delivery: MR toolholders come with Hi-Q®/MR clamping nut

HSK-A: Hole for data carrier DIN STD 69873 in the flange available on request

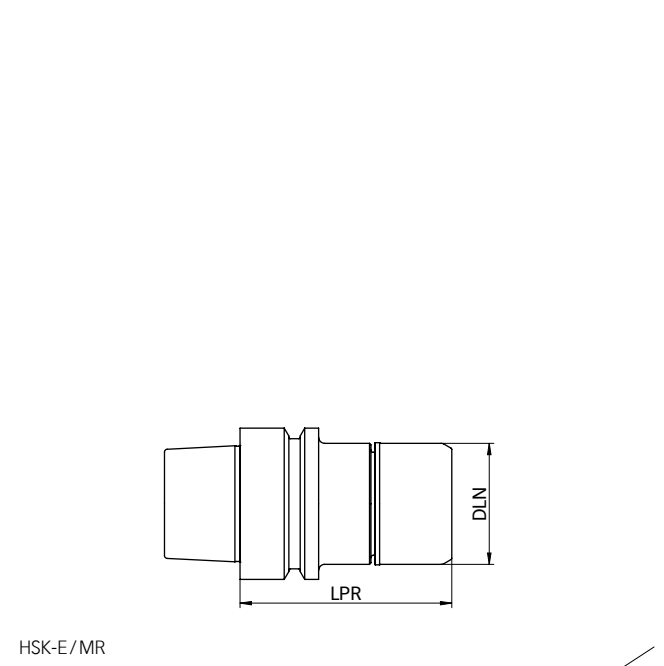


HSK-E toolholders

HSK-EB	HSK-E
ISO 12164	DIN 69893
compatible	ISO 12164

Type	Part no.	Dimensions [mm]		Accessories
		DLN	LPR	Freewheel wrench head
HSK-E 25				
HSK-E 25/MR 11 x 045	5525.11114	16	45	7855.11000
HSK-E 25/MRM 16 x 045	5525.11618	24	45	7855.16800
HSK-E 32				
HSK-E 32/MR 11 x 060	5532.11124	16	60	7855.11000
HSK-E 32/MRM 16 x 055	5532.11618	24	55	7855.16800
HSK-E 40				
HSK-E 40/MR 11 x 050	5540.11114	16	50	7855.11000
HSK-E 40/MR 11 x 100	5540.11154	16	100	7855.11000
HSK-E 40/MRM 16 x 055	5540.11618	24	55	7855.16800
HSK-E 40/MRM 16 x 080	5540.11648	24	80	7855.16800
HSK-E 40/MR 25 x 065	5540.12520	40	65	7855.25000
HSK-E 50				
HSK-E 50/MR 16 x 100	5550.11654	28	100	7855.16000
HSK-E 50/MR 25 x 070	5550.12534	40	70	7855.25000

Included in delivery: MR toolholders come with Hi-Q®/MR clamping nut





Steep taper toolholders SK

Universally suitable for different machining applications

DIN 69871 / DIN ISO 7388-1

Features and benefits

Total system runout TIR $\leq 3 \mu\text{m}$ @ 3xD

Our holistic system consists of an micRun® toolholder, collet and clamping nut. All components together ensure best runout and accuracy.

Toolholder runout TIR $\leq 1 \mu\text{m}$

Measured from inner taper to outer taper.

Taper accuracy AT3

Better spindle-to-holder fit and accuracy.

Surface finish max. Ra 0.25

Achieve high clamping force and high transferable torque.

Balancing

100% balanced to G 2.5 @ 25,000 rpm / <1gmm.

MR clamping nut included in delivery

Guarantees highest clamping force and best balancing.

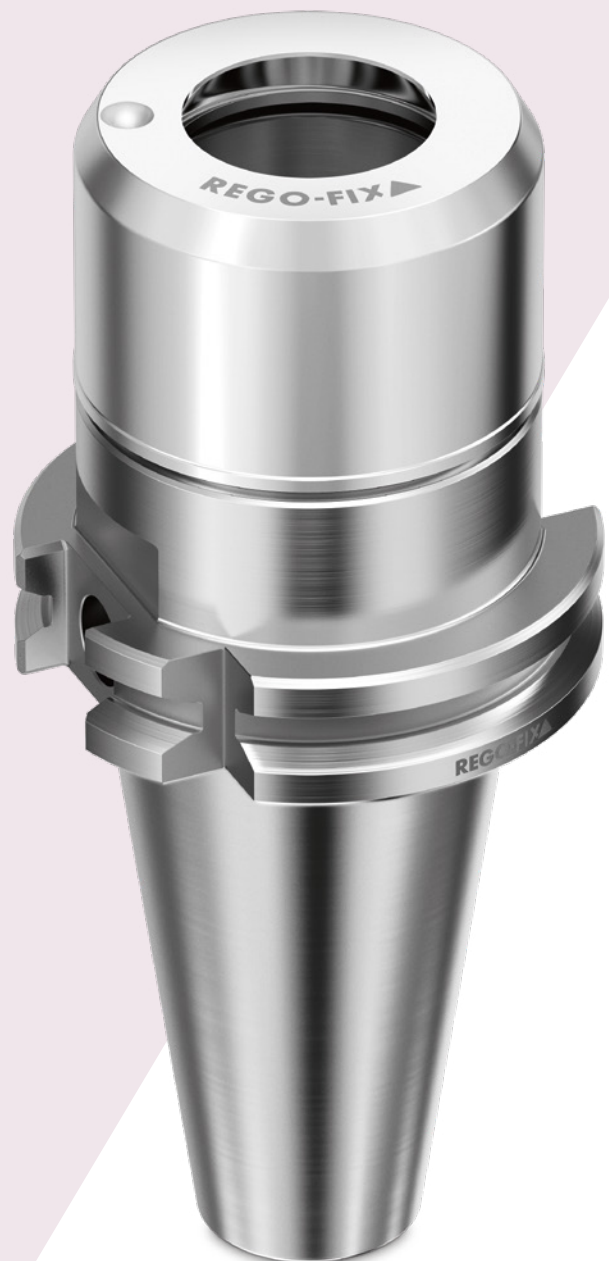
Vibration damping

Our holders offer good vibration damping to sustain a high surface finish and can help prevent chatter.

Accessories are not included in delivery

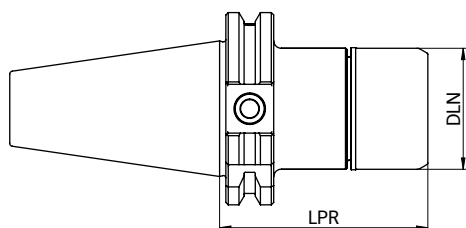
Balancing specifications

SK 30	balanced to 30,000 rpm
SK 40	G 2.5 @ 25,000 rpm
SK 50	G 2.5 @ 25,000 rpm



Type	Part no.	Dimensions [mm]		Accessories
		DLN	LPR	Freewheel wrench head
SK 30				
SK 30/MR 16 x 050	5230.11610	28	50	7855.16000
SK 30/MR 16 x 100	5230.11650	28	100	7855.16000
SK 30/MR 25 x 070	5230.12530	40	70	7855.25000
SK 30				
SK 40/MR 11 x 100	5240.11150	16	100	7855.11000
SK 40/MR 16 x 070	5240.11630	28	70	7855.16000
SK 40/MR 16 x 100	5240.11650	28	100	7855.16000
SK 40/MR 16 x 160	5240.11680	28	160	7855.16000
SK 40/MR 25 x 070	5240.12530	40	70	7855.25000
SK 40/MR 25 x 100	5240.12550	40	100	7855.25000
SK 40/MR 25 x 160	5240.12580	40	160	7855.25000
SK 40/MR 32 x 070	5240.13230	50	70	7855.32000
SK 40/MR 32 x 100	5240.13250	50	100	7855.32000
SK 40/MR 32 x 160	5240.13280	50	160	7855.32000

Included in delivery: MR toolholders come with Hi-Q®/MR clamping nut



SK/MR (Form A+AD)

Expert advice

We recommend tightening the clamping nuts with our TORCO-BLOCK or torque wrench. Get the best accuracy by respecting the suitable tightening forces.

For recommended REGO-FIX accessories, please refer to page 342.

Steep taper toolholders BT

Universally suitable different machining applications, the BT interface toolholders cater to different machining needs.

MAS 403/JIS B 6339/DIN ISO 7388-2

Features and benefits

Total system runout TIR $\leq 3 \mu\text{m}$ @ 3xD

Our holistic system consists of an micRun® toolholder, collet and clamping nut. All components together ensure best runout and accuracy.

Toolholder runout TIR $\leq 1 \mu\text{m}$

Measured from inner taper to outer taper.

Taper accuracy AT3

Better spindle-to-holder fit and accuracy.

Surface finish max. Ra 0.25

Achieve high clamping force and high transferable torque.

Balancing

100% balanced to G 2.5 @ 25,000 rpm/<1gmm.

MR clamping nut included in delivery

Guarantees highest clamping force and best balancing.

Vibration damping

Our holders offer good vibration damping to sustain a high surface finish and can help prevent chatter.

Accessories are not included in delivery

Balancing specifications

BT 30	balanced to 30,000 rpm
BT 40	G 2.5 @ 25,000 rpm



BT toolholders

BT

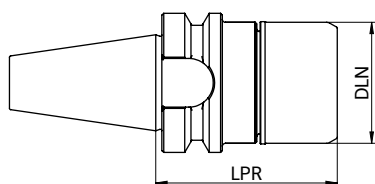
MAS 403

JIS B 6339

DIN ISO 7388-2

Type	Part no.	Dimensions [mm]		Accessories
		DLN	LPR	Freewheel wrench head
BT 30				
BT 30/MR 11 x 050	5130.11110	16	50	7855.11000
BT 30/MR 11 x 100	5130.11150	16	100	7855.11000
BT 30/MR 16 x 050	5130.11610	28	50	7855.16000
BT 30/MR 16 x 080	5130.11640	28	80	7855.16000
BT 30/MR 16 x 100	5130.11650	28	100	7855.16000
BT 30/MR 25 x 060	5130.12520	40	60	7855.25000
BT 30/MR 25 x 100	5130.12550	40	100	7855.25000
BT 30/MR 32 x 060	5130.13220	50	60	7855.32000
BT 40				
BT 40/MR 11 x 100	5140.11150	16	100	7855.11000
BT 40/MR 16 x 070	5140.11630	28	70	7855.16000
BT 40/MR 16 x 100	5140.11650	28	100	7855.16000
BT 40/MR 25 x 070	5140.12530	40	70	7855.25000
BT 40/MR 25 x 100	5140.12550	40	100	7855.25000
BT 40/MR 32 x 070	5140.13230	50	70	7855.32000
BT 40/MR 32 x 100	5140.13250	50	100	7855.32000

Included in delivery: MR toolholders come with Hi-Q®/MR clamping nut



BT /MR (Form A+AD)

Expert advice

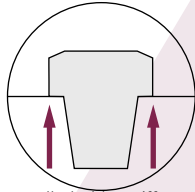
We recommend tightening the clamping nuts with our TORCO-BLOCK or torque wrench. Get the best accuracy by respecting the suitable tightening forces.

For recommended REGO-FIX accessories, please refer to page 342.

REGO-FIX dual contact toolholder BT+

Certified The BIG PLUS SYSTEM – licensed by BIG Daishowa – is manufactured at REGO-FIX in Switzerland under license according to BIG PLUS specifications.

Key advantages



Higher collet stiffness due to taper (AT1) and face contact

MAS 403 / JIS B 6339 / DIN ISO 7388-2

Features and benefits

Runout TIR $\leq 3 \mu\text{m}$

Measured from inner taper to outer taper.

Surface finish max. Ra 0.25

Better spindle-to-holder fit and accuracy.

Balancing

100% balanced to G 2.5 @ 25,000 rpm / <1gmm.

Hi-Q® balancing system

Ready to accept Hi-Q® balancing rings which allow for the offset of the imbalance introduced by the cutting tool up to 80,000 rpm depending on the balancing rings used. All toolholders with the additional type information "H" in the article name are designed for balancing rings.

Hi-Q® / MR clamping nut included in delivery

Guarantees highest clamping force and best balancing.

Vibration damping

Our holders offer good vibration damping to sustain a high surface finish and can help prevent chatter.



Accessories are not included in delivery. Form B available on request

BT+ dual contact toolholder

licensed by BIG Daishowa

BT+

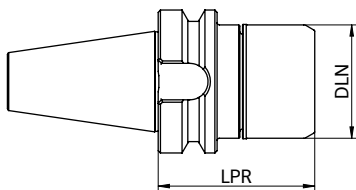
MAS 403

JIS B 6339

DIN ISO 7388-2

Type	Part no.	Dimensions [mm]		Accessories
		DLN	LPR	Freewheel wrench head
BT+ 30				
BT+ 30/MR 11 x 100	5130.11156	16	100	7855.11000
BT+ 30/MR 16 x 080	5130.11646	28	80	7855.16000
BT+ 30/MR 25 x 060	5130.12526	40	60	7855.25000
BT+ 30/MR 32 x 060	5130.13226	50	60	7855.32000
BT+ 40				
BT+ 40/MR 11 x 100	5140.11156	16	100	7855.11000
BT+ 40/MR 16 x 100	5140.11656	28	100	7855.16000
BT+ 40/MR 25 x 070	5140.12536	40	70	7855.25000
BT+ 40/MR 32 x 070	5140.13236	50	70	7855.32000

Included in delivery: MR toolholders come with Hi-Q®/MR clamping nut



BT+ /MR (Form A+AD)

Steep taper toolholders CAT

Universally suitable for different machining applications

ASME B5.50

Features and benefits

Total system runout TIR $\leq 0.0001''$ (3 μm)

Our holistic system consists of an micRun® toolholder, collet and clamping nut. All components together ensure best runout and accuracy.

Toolholder runout TIR $\leq 1 \mu\text{m}$

Measured from inner taper to outer taper.

Taper accuracy AT3

Better spindle-to-holder fit and accuracy.

Surface finish max. Ra 0.25

Achieve high clamping force and high transferable torque.

Balancing

100% balanced to G 2.5 @ 25,000 rpm.

MR clamping nut included in delivery

Guarantees highest clamping force and best balancing.

Vibration damping

Our holders offer good vibration damping to sustain a high surface finish and can help prevent chatter.

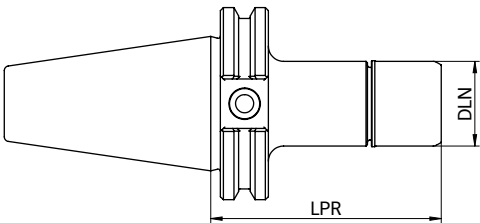
Accessories are not included in delivery



Type	Part no.	Dimensions [mm]		Accessories
		DLN	LPR	Freewheel wrench head
CAT 40*				
CAT 40/MR 16 x 3"	5340.11631	28	3"	7855.16000
CAT 40/MR 16 x 6"	5340.11671	28	6"	7855.16000
CAT 40/MR 32 x 3"	5340.13231	50	3"	7855.32000

*USA only

Included in delivery: MR toolholders come with Hi-Q®/MR clamping nut

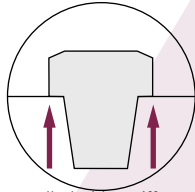


CAT /MR (form A+AD)

REGO-FIX dual contact toolholder CAT+

Certified The BIG PLUS SYSTEM – licensed by BIG Daishowa – is manufactured at REGO-FIX in Switzerland under license according to BIG PLUS specifications.

Key advantages



Higher colletholder stiffness due to taper (AT1) and face contact

MAS 403 / JIS B 6339 / DIN ISO 7388-2

Features and benefits

Runout TIR $\leq 3 \mu\text{m}$

Measured from inner taper to outer taper.

Surface finish max. Ra 0.25

Better spindle-to-holder fit and accuracy.

Balancing

100% balanced to G 2.5 @ 25,000 rpm / <1gmm.

Hi-Q® balancing system

Ready to accept Hi-Q® balancing rings which allow for the offset of the imbalance introduced by the cutting tool up to 80,000 rpm depending on the balancing rings used. All toolholders with the additional type information "H" in the article name are designed for balancing rings.

Hi-Q® / MR clamping nut included in delivery

Guarantees highest clamping force and best balancing.

Vibration damping

Our holders offer good vibration damping to sustain a high surface finish and can help prevent chatter.

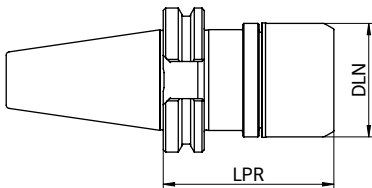


Accessories are not included in delivery. Form B available on request

Type	Part no.	Dimensions [mm]		Accessories
		DLN	LPR	Freewheel wrench head
CAT+ 40*				
CAT+ 40/MR 16 x 3"	5340.11636	28	3"	7855.16000
CAT+ 40/MR 16 x 6"	5340.11676	28	6"	7855.16000
CAT+ 40/MR 32 x 3"	5340.13236	50	3"	7855.32000

*USA only

Included in delivery: MR toolholders come with Hi-Q®/MR clamping nut



CAT+ / MR (form A+AD)

Cylindrical shank toolholders CYL

CYL

Features and benefits

Total system runout TIR $\leq 3 \mu\text{m}$ @ 3xD

Our holistic system consists of an micRun® toolholder, collet and clamping nut. All components together ensure best runout and accuracy.

Toolholder runout TIR $\leq 1 \mu\text{m}$

Measured from inner taper to cylindrical shank.

Surface finish max. Ra 0.25

Achieve high clamping force and high transferable torque.

Sizes

CYL/MR 11 and CYL/MRM 16

Application

CYL/MR is suited for Swiss automatic machines, machining centers and conventional machines.

MR clamping nut included in delivery

Guarantees maximum precision combined with slimmest diameter.

Vibration damping

Our holders offer good vibration damping to sustain a high surface finish and can help prevent chatter.

Accessories are not included in delivery



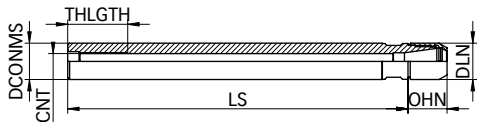
Expert advice

We recommend tightening the clamping nuts using a torque wrench. Get the best accuracy by respecting the suitable tightening forces.

For tightening torque recommendations, please refer to page 377.

Type	Part no.	Dimensions [mm]						CNT	Accessories
		DLN	DCONMS	LS	OHN	THLGTH	Freewheel wrench head		
CYL 16									
CYL 16 x 150/MR 11	5616.11190	16	16	150	17,2	20	M 8 x 1	7855.11000	
CYL 16 x 200/MR 11	5616.11100	16	16	200	17,2	20	M 8 x 1	7855.11000	
CYL 20									
CYL 20 x 150/MRM 16	5620.21690	24	20	150	25,2	25	M 12 x 1	7855.16800	
CYL 20 x 200/MRM 16	5620.21600	24	20	200	25,2	25	M 12 x 1	7855.16800	

Included in delivery: MR toolholders come with Hi-Q®/MR clamping nut



CYL/MR



Collets

ER-MR



Page 243



Swiss quality MR collets

MR

Type	Part no.	Ø		max. Shank tolerance
		[mm]	[inch]	
ER 11-MR [mm]				
Ø 1,0 mm	1111.01006	1,0	–	h11
Ø 2,0 mm	1111.02006	2,0	–	h11
Ø 3,0 mm	1111.03006	3,0	–	h11
Ø 4,0 mm	1111.04006	4,0	–	h11
Ø 5,0 mm	1111.05006	5,0	–	h11
Ø 6,0 mm	1111.06006	6,0	–	h11
ER 11-MR [inch]				
Ø 1/8"	1111.03186	3,175	1/8"	h11
Ø 3/16"	1111.04766	4,763	3/16"	h11
Ø 1/4"	1111.06356	6,35	1/4"	h11
ER 16-MR [mm]				
Ø 1,0 mm	1116.01006	1,0	–	h11
Ø 2,0 mm	1116.02006	2,0	–	h11
Ø 3,0 mm	1116.03006	3,0	–	h11
Ø 4,0 mm	1116.04006	4,0	–	h11
Ø 5,0 mm	1116.05006	5,0	–	h11
Ø 6,0 mm	1116.06006	6,0	–	h11
Ø 8,0 mm	1116.08006	8,0	–	h11
Ø 10,0 mm	1116.10006	10,0	–	h11
ER 16-MR [inch]				
Ø 1/8"	1116.03186	3,175	1/8"	h11
Ø 3/16"	1116.04766	4,763	3/16"	h11
Ø 1/4"	1116.06356	6,35	1/4"	h11
Ø 5/16"	1116.07946	7,938	5/16"	h11
Ø 3/8"	1116.09536	9,525	3/8"	h11

Expert advice

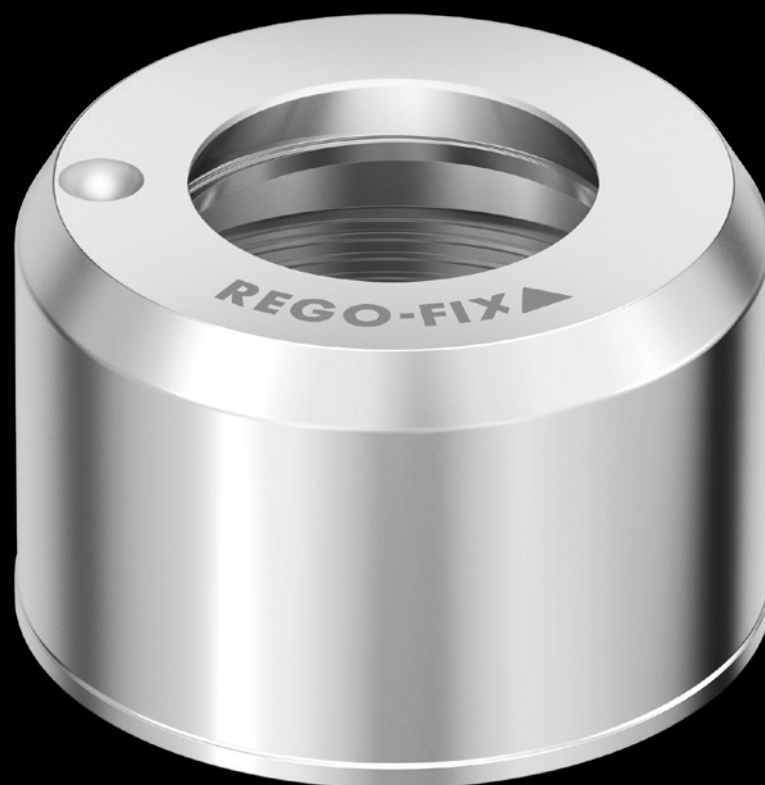
The micRun® MR collet represents the benchmark in precision: With a runout at (maximum) 2µm, it is the most accurate collet in the REGO-FIX lineup. MR collets are compatible with genuine REGO-FIX ER toolholders and increase the TIR of the entire system.

Type	Part no.	Ø		max. Shank tolerance
		[mm]	[inch]	
ER 25-MR [mm]				
Ø 1,0 mm	1125.01006	1,0	–	h11
Ø 2,0 mm	1125.02006	2,0	–	h11
Ø 3,0 mm	1125.03006	3,0	–	h11
Ø 4,0 mm	1125.04006	4,0	–	h11
Ø 5,0 mm	1125.05006	5,0	–	h11
Ø 6,0 mm	1125.06006	6,0	–	h11
Ø 8,0 mm	1125.08006	8,0	–	h11
Ø 10,0 mm	1125.10006	10,0	–	h11
Ø 12,0 mm	1125.12006	12,0	–	h11
Ø 14,0 mm	1125.14006	14,0	–	h11
Ø 16,0 mm	1125.16006	16,0	–	h11
ER 25-MR [inch]				
Ø 1/8"	1125.03186	3,175	1/8"	h11
Ø 1/4"	1125.06356	6,35	1/4"	h11
Ø 5/16"	1125.07946	7,938	5/16"	h11
Ø 3/8"	1125.09536	9,525	3/8"	h11
Ø 7/16"	1125.11116	11,113	7/16"	h11
Ø 1/2"	1125.12706	12,7	1/2"	h11
Ø 9/16"	1125.14296	14,288	9/16"	h11
Ø 5/8"	1125.15886	15,875	5/8"	h11
ER 32-MR [mm]				
Ø 2,0 mm	1132.02006	2,0	–	h11
Ø 3,0 mm	1132.03006	3,0	–	h11
Ø 4,0 mm	1132.04006	4,0	–	h11
Ø 5,0 mm	1132.05006	5,0	–	h11
Ø 6,0 mm	1132.06006	6,0	–	h11
Ø 8,0 mm	1132.08006	8,0	–	h11
Ø 10,0 mm	1132.10006	10,0	–	h11
Ø 12,0 mm	1132.12006	12,0	–	h11
Ø 14,0 mm	1132.14006	14,0	–	h11
Ø 16,0 mm	1132.16006	16,0	–	h11
Ø 18,0 mm	1132.18006	18,0	–	h11
Ø 20,0 mm	1132.20006	20,0	–	h11

Type	Part no.	Ø		max. Shank tolerance
		[mm]	[inch]	
ER 32-MR [inch]				
Ø 1/4"	1132.06356	6,35	1/4"	h11
Ø 5/16"	1132.07946	7,938	5/16"	h11
Ø 3/8"	1132.09536	9,525	3/8"	h11
Ø 7/16"	1132.11116	11,113	7/16"	h11
Ø 1/2"	1132.12706	12,7	1/2"	h11
Ø 9/16"	1132.14296	14,288	9/16"	h11
Ø 5/8"	1132.15886	15,875	5/8"	h11
Ø 11/16"	1132.17466	17,463	11/16"	h11
Ø 3/4"	1132.19056	19,05	3/4"	h11



MR 32



Standard		Mini nut		Sealing and coolant flush disks	
MR	MRC	MRM	MRMC	DS/MR	KS/MR
					
Page 248	Page 248	Page 248	Page 248	Page 322	Page 330

Grooveless MR nuts for high-end machining



Hi-Q/MR



Hi-Q/MRC



Hi-Q/MRM



Hi-Q/MRMC

Main feature	Standard micRun® nut	micRun® nut for coolant through	micRun® mini nut	micRun® mini nut for coolant through
Sizes	MR 11/16/25/32	MR 11/16/25/32	MRM 16	MRM 16
Minimal outer diameter	–	–	•	•
Grooveless	•	•	•	•
Suitable wrench	A-FLS	A-FLS	A-FLS	A-FLS
Compatible with DS	–	•	–	•
Compatible with KS	–	•	–	•

Expert advice

Due to the thread, micRun® MR-clamping nuts are only compatible with MR-toolholders.

MR Clamping nuts

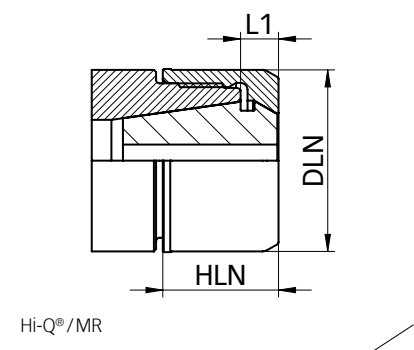
MR

MRM Mini clamping nuts

MRC and MRMC clamping nuts for coolant through tools (DS/KS)

Type	Part no.	Dimensions [mm]			Accessories
		DLN	HLN	L1	Freewheel wrench head
MR 11					
Hi-Q MR 11	3611.00000	16	16,2	4,5	7855.11000
MR 16					
Hi-Q MR 16	3616.00000	28	23,1	6,7	7855.16000
MR 25					
Hi-Q MR 25	3625.00000	40	25,5	8,1	7855.25000
MR 32					
Hi-Q MR 32	3632.00000	50	31,8	9,1	7855.32000

Type	Part no.	Dimensions [mm]			Accessories
		DLN	HLN	L1	Freewheel wrench head
MRM 16					
Hi-Q MRM 16	3616.80000	24	23,1	6,7	7855.16800



MR Clamping nuts

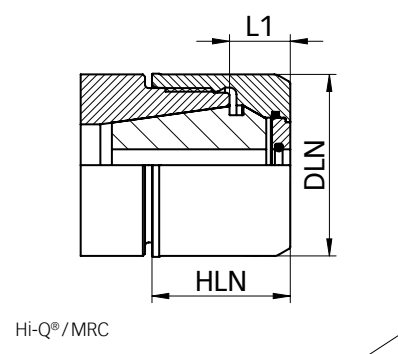
MR

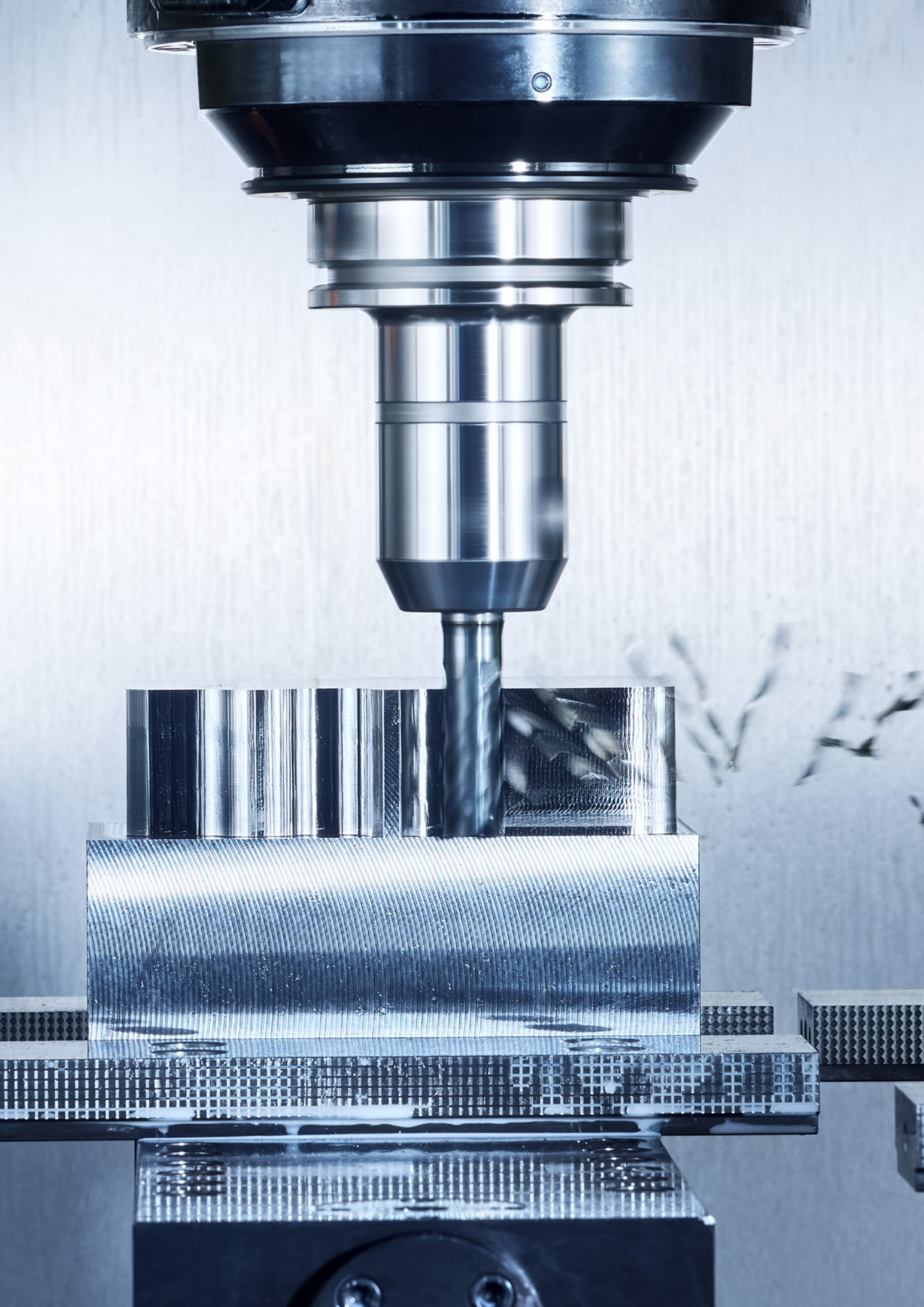
MRM Mini clamping nuts

MRC and MRMC clamping nuts for coolant through tools (DS/KS)

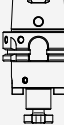
Type	Part no.	Dimensions [mm]			Accessories
		DLN	HLN	L1	Freewheel wrench head
MRC 16					
Hi-Q MRC 16	3616.20000	28	28,1	11,7	7855.16000
MRC 25					
Hi-Q MRC 25	3625.20000	40	30,5	13,1	7855.25000
MRC 32					
Hi-Q MRC 32	3632.20000	50	36,8	14,1	7855.32000

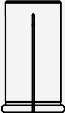
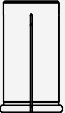
Type	Part no.	Dimensions [mm]			Accessories
		DLN	HLN	L1	Freewheel wrench head
MRMC 16					
Hi-Q MRMC 16	3616.90000	24	28,1	11,7	7855.16800





Experience uniTec

HSK holders			SK holders			BT holders			CAPTO holders	
HSK/ WD-CB	HSK/ MA-CB	HSK/ KBF	SK/ WD-CB	SK/ MA-CB	SK/ KBF	BT/ WD-CB	BT/ MA-CB	BT/ KBF	CAPTO/ WD	CAPTO/ MA
										
Page 256	Page 258	Page 259	Page 260	Page 262	Page 263	Page 264	Page 266	Page 267	Page 268	Page 272

Reduction sleeves for hydro chucks		
HS	HS-CF with coolant flush	HS-MB Micro-Bore
		
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HSK holders			SK holders			BT holders			CAPTO holders	
HSK/ WD-CB	HSK/ MA-CB	HSK/ KBF	SK/ WD-CB	SK/ MA-CB	SK/ KBF	BT/ WD-CB	BT/ MA-CB	BT/ KBF	CAPTO/ WD	CAPTO/ MA
										
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Toolholders



WD-CB



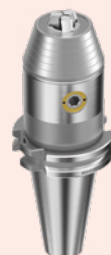
MA-CB



WD



MA



KBF

CoolBore	•	•	–	–	–
HSK	•	•	–	–	•
SK	•	•	–	–	•
BT	•	•	–	–	•
CAPTO	–	–	•	•	–
Balancing	Balanced by design	Balanced by design	Balanced by design	Balanced by design	Balanced by design
Diameter range	6–32	16–40	6–40	16–40	1–13

uniTec Weldon holders and shell mill arbors with CB – CoolBore



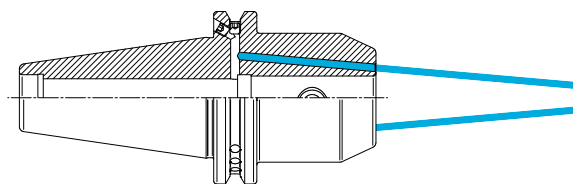
Features and benefits WD-CB

Application

Ideally suited for use with tools without internal coolant supply and for machining workpieces with poor chip evacuation.

Design

Two holes in the wall of the Weldon holder guide the coolant directly to the cutting edge of the tool.



Scope of delivery

With clamping screw and two M3 screw plugs to close the CoolBore holes if required (VS-CB).

Accessories

The diameter of the CoolBore holes can be reduced with two reducing nozzles. This allows a higher coolant pressure to be achieved (RD-CB).

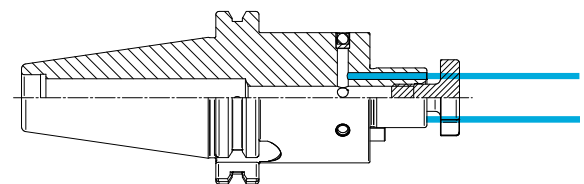
Features and benefits MA-CB

Application

For holding milling cutters with a cross groove, such as shell mill cutters. CoolBore allows the coolant to be fed through the tool directly to the cutting edge.

Design

Four holes in the holder to guide the coolant into the milling arbor.



Scope of delivery

With tensioning screw and permanently installed driving keys.

Expert advice

For all HSK Weldon holders and shell mill arbors a range of coolant tubes (KSR) is available.

Fitting the screw plug and reducing nozzle

Screw plugs or reducing nozzles can be screwed in through the threads in the CoolBore holes. The VS-CB and RD-CB are fitted using an Allen key.



25 bar



40 bar



If cooling through the tool shank is required, the screw plugs must be fitted. In addition, the outlet diameter of the CoolBore holes can be reduced to 0.5mm using reducing nozzles. This will increase the effect of the coolant jet.

uniTec CB

PG-CB

ER-CB



// Discover the CoolBore features also in powRgrip® and ER products.

Weldon end mill holders HSK/WD-CB

Designed for rotating applications, all our HSK holders are suited for high-speed applications where a consistent performance is key.

DIN 69893/ISO 12164

Features of end mill holders (Weldon)

Runout TIR $\leq 3 \mu\text{m}$

Measured from inner bore to outer taper.

Precision side locking screw

For highest transferable torque.

ID chip hole (only HSK form A)

In accordance with DIN 69873 for 10 mm diameter.

Other HSK-forms available on request.



Expert advice

For all HSK tool holders a range of coolant tubes (KSR) is available.

For KSR part numbers please refer to page 345.

Weldon end mill holders HSK-A/WD-CB

HSK/WD-CB

DIN 69893

ISO 12164

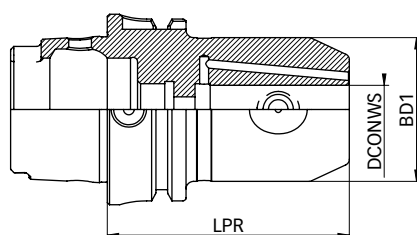
Type	Part no.	Dimensions [mm]		
		DCONWS	BD1	LPR
HSK-A 40				
HSK-A 40 / WD 6-CB x 060	5540.30630	6	25	60
HSK-A 40 / WD 8-CB x 060	5540.30830	8	28	60
HSK-A 40 / WD 10-CB x 060	5540.31030	10	35	60
HSK-A 40 / WD 12-CB x 070	5540.31240	12	42	70
HSK-A 40 / WD 16-CB x 075	5540.31640	16	48	75

HSK-A 63				
HSK-A 63 / WD 6-CB x 065	5563.30630	6	25	65
HSK-A 63 / WD 6-CB x 120	5563.30670	6	25	120
HSK-A 63 / WD 8-CB x 065	5563.30830	8	28	65
HSK-A 63 / WD 8-CB x 120	5563.30870	8	28	120
HSK-A 63 / WD 10-CB x 065	5563.31030	10	35	65
HSK-A 63 / WD 10-CB x 120	5563.31070	10	35	120
HSK-A 63 / WD 12-CB x 080	5563.31250	12	42	80
HSK-A 63 / WD 12-CB x 120	5563.31270	12	42	120
HSK-A 63 / WD 16-CB x 080	5563.31650	16	48	80
HSK-A 63 / WD 16-CB x 120	5563.31670	16	48	120
HSK-A 63 / WD 20-CB x 080	5563.32050	20	52	80
HSK-A 63 / WD 20-CB x 120	5563.32070	20	52	120
HSK-A 63 / WD 25-CB x 110	5563.32560	25	65	110
HSK-A 63 / WD 32-CB x 110	5563.33260	32	72	110

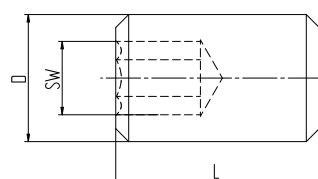
HSK-A 100				
HSK-A 100 / WD 12-CB x 080	5500.31250	12	42	80
HSK-A 100 / WD 16-CB x 100	5500.31660	16	48	100
HSK-A 100 / WD 20-CB x 100	5500.32060	20	52	100
HSK-A 100 / WD 25-CB x 100	5500.32560	25	65	100
HSK-A 100 / WD 32-CB x 100	5500.33260	32	72	100

Type	Part no.	Dimensions [mm]		
		D	L	SW
CoolBore nozzle				
SET VS-CB M3*	7781.03000	M3	6	1.5
SET RD-CB M3 Ø 0.5 mm	7788.03050	M3	6	1.5

*Included in delivery with each holder (2 pcs.)



HSK-A/WD-CB



VS-CB M3

Shell mill arbor HSK-A/MA-CB

HSK/MA-CB

DIN 69893

ISO 12164

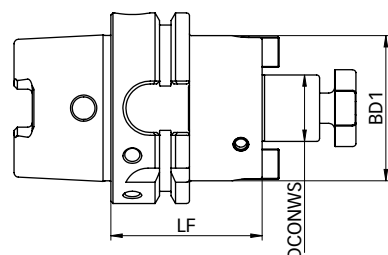
Type	Part no.	Dimensions [mm]			Accessories
		DCONWS	BD1	LF	Wrench
HSK-A 63					
HSK-A 63 / MA 16-CB x 050	5563.01620	16	38	50	FDS 16
HSK-A 63 / MA 16-CB x 100	5563.01660	16	38	100	FDS 16
HSK-A 63 / MA 22-CB x 050	5563.02220	22	48	50	FDS 22
HSK-A 63 / MA 22-CB x 100	5563.02260	22	48	100	FDS 22
HSK-A 63 / MA 27-CB x 060	5563.02730	27	60	60	FDS 27
HSK-A 63 / MA 27-CB x 100	5563.02760	27	60	100	FDS 27
HSK-A 63 / MA 32-CB x 060	5563.03230	32	78	60	FDS 32
HSK-A 63 / MA 32-CB x 100	5563.03260	32	78	100	FDS 32
HSK-A 63 / MA 40-CB x 060	5563.04030	40	89	60	FDS 40
HSK-A 63 / MA 40-CB x 100	5563.04060	40	89	100	FDS 40
HSK-A 100					
HSK-A 100 / MA 16-CB x 050	5500.01620	16	38	50	FDS 16
HSK-A 100 / MA 22-CB x 050	5500.02220	22	48	50	FDS 22
HSK-A 100 / MA 27-CB x 050	5500.02720	27	60	50	FDS 27
HSK-A 100 / MA 32-CB x 050	5500.03220	32	78	50	FDS 32
HSK-A 100 / MA 40-CB x 060	5500.04030	40	89	60	FDS 40

Included in delivery: Shell mill arbor and lock screw

HSK-A: Hole for data carrier DIN STD 69873 in the flange available on request



HSK-A/MA-CB



HSK-A/MA-CB

Drill chucks HSK-A/KBF

HSK-A/KBF

DIN 69893

ISO 12164

Type	Part no.	Dimensions [mm]		
		DCONWS	BD1	LPR
HSK-A 63/KBF				
HSK-A 63/KBF 1.0 – 13.0 mm	2563.50100	1–13	50	104

HSK-A: Hole for data carrier DIN STD 69873 in the flange available on request

Drill chucks HSK-A/KBF

Features and benefits

Clamping range

1–13 mm

Runout TIR

0.03 mm

Maximum tightening torque

20 Nm

Clamping force (at 20 Nm tightening torque)

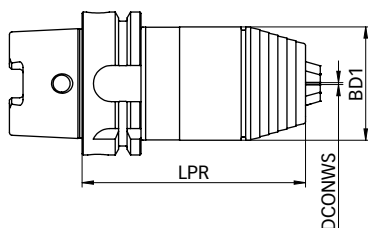
80 Nm

Maximum rpm

35 000 rpm



HSK-A/KBF



HSK-A/KBF

Weldon end mill holders SK/WD-CB

Universally suitable for different machining applications

DIN 69871 / DIN ISO 7388-1

Features of end mill holders (Weldon)

Runout TIR $\leq 3 \mu\text{m}$

Measured from inner bore to outer taper.

Taper accuracy AT3

Better spindle-to-holder fit and accuracy.

Precision side locking screw

For highest transferable torque.

Coolant supply

All toolholders with form AD/AF can be used for cooling. Form AD/AF delivers the coolant supply through the taper or via the flange at the gripper groove.

ID chip hole

In accordance with DIN 69873 for 10 mm diameter.



Weldon end mill holders SK/WD-CB

SK/WD-CB

DIN 69871

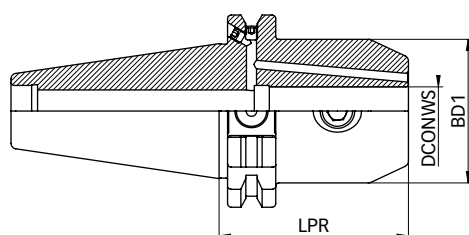
DIN ISO 7388-1

Type	Part no.	Dimensions [mm]			Form AD/AF
		DCONWS	BD1	LPR	
SK 40					
SK 40 / WD 6-CB x 050	5240.30620	6	25	50	•
SK 40 / WD 6-CB x 100	5240.30660	6	25	100	•
SK 40 / WD 8-CB x 050	5240.30820	8	28	50	•
SK 40 / WD 8-CB x 100	5240.30860	8	28	100	•
SK 40 / WD 10-CB x 050	5240.31020	10	35	50	•
SK 40 / WD 10-CB x 100	5240.31060	10	35	100	•
SK 40 / WD 12-CB x 050	5240.31220	12	42	50	•
SK 40 / WD 12-CB x 100	5240.31260	12	42	100	•
SK 40 / WD 16-CB x 063	5240.31630	16	48	63	•
SK 40 / WD 16-CB x 100	5240.31660	16	48	100	•
SK 40 / WD 20-CB x 063	5240.32030	20	52	63	•
SK 40 / WD 20-CB x 100	5240.32060	20	52	100	•
SK 40 / WD 25-CB x 100	5240.32560	25	65	100	•
SK 40 / WD 32-CB x 100	5240.33260	32	72	100	•

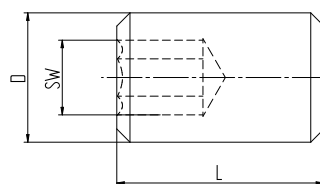
SK 50					
SK 50 / WD 12-CB x 063	5250.31230	12	42	63	•
SK 50 / WD 16-CB x 063	5250.31630	16	48	63	•
SK 50 / WD 20-CB x 063	5250.32030	20	52	63	•
SK 50 / WD 25-CB x 080	5250.33250	25	65	80	•
SK 50 / WD 32-CB x 100	5250.33260	32	72	100	•

Type	Part no.	Dimensions [mm]			
		D	L	SW	
CoolBore nozzle					
SET VS-CB M3*	7781.03000	M3	6	1.5	Screw plug for CoolBore drill hole
SET RD-CB M3 Ø 0.5 mm	7788.03050	M3	6	1.5	Reducing nozzle for CoolBore drill hole

*Included in delivery with each holder (2 pcs.)



SK/WD-CB



VS-CB M3

Shell mill arbor SK / MA-CB

SK/MA-CB

DIN 69871

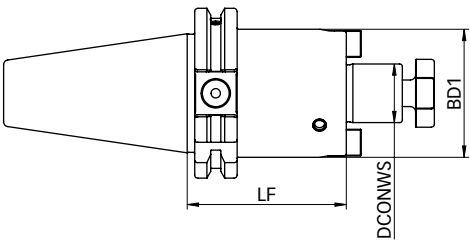
DIN ISO 7388-1

Type	Part no.	Dimensions [mm]				Accessories
		DCONWS	BD1	LF	Form AD/AF	Wrench
SK 40						
SK 40 / MA 16-CB x 060	5240.01630	16	38	60	•	FDS 16
SK 40 / MA 22-CB x 060	5240.02230	22	48	60	•	FDS 22
SK 40 / MA 27-CB x 060	5240.02730	27	50	60	•	FDS 27
SK 40 / MA 32-CB x 070	5240.03240	32	78	70	•	FDS 32
SK 40 / MA 40-CB x 070	5240.04040	40	89	70	•	FDS 40

Included in delivery: Shell mill arbor and lock screw



SK / MA-CB



SK / MA-CB

Drill chucks SK / KBF

SK / KBF

DIN 69871

DIN ISO 7388-1

Type	Part no.	Dimensions [mm]			Form A	Form A+AD
		DCONWS	BD1	LPR		
SK 30						
SK 30/KBF 1.0 – 13.0 mm	2230.50100	1–13	50	111	•	–
SK 40						
SK 40/KBF 1.0 – 13.0 mm	2240.50103	1–13	50	90	–	•
SK 50						
SK 50/KBF 1.0 – 13.0 mm	2250.50103	1–13	50	106	–	•

Drill chucks SK / KBF

Features and benefits

Clamping range

1–13 mm

Runout TIR

0.03 mm

Maximum tightening torque

20 Nm

Clamping force (at 20 Nm tightening torque)

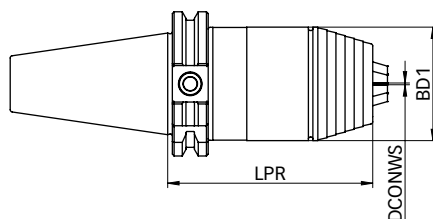
80 Nm

Maximum rpm

35 000 rpm



SK / KBF



SK / KBF

Weldon end mill holders BT /WD-CB

Universally suitable different machining applications, the BT interface toolholders cater to various machining needs.

MAS 403 / JIS B 6339 / DIN ISO 7388-2

Features of end mill holders (Weldon)

Runout TIR $\leq 3 \mu\text{m}$

Measured from inner bore to outer taper.

Taper accuracy AT3

Better spindle-to-holder fit and accuracy.

Precision side locking screw

For highest transferable torque.

Coolant supply

All toolholders with form JD/JF can be used for cooling. Form JD/JF delivers the coolant supply through the taper or via the flange at the gripper groove.



Weldon end mill holders BT /WD-CB

BT /WD-CB

MAS 403

JIS B 6339

DIN ISO 7388-2

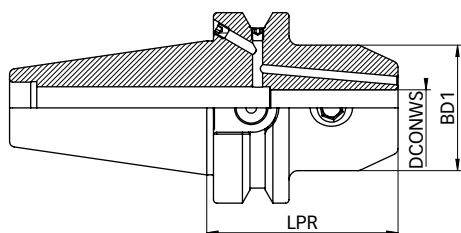
Type	Part no.	Dimensions [mm]			Form JD/JF
		DCONWS	BD1	LPR	
BT 30					
BT 30 / WD 6-CB x 050	5130.30620	6	25	50	•
BT 30 / WD 8-CB x 050	5130.30820	8	28	50	•
BT 30 / WD 10-CB x 050	5130.31020	10	35	50	•
BT 30 / WD 12-CB x 052	5130.31220	12	42	52	•
BT 30 / WD 16-CB x 063	5130.31630	16	48	63	•
BT 30 / WD 20-CB x 063	5130.32030	20	52	63	•

BT 40					
BT 40 / WD 6-CB x 050	5140.30620	6	25	50	•
BT 40 / WD 8-CB x 050	5140.30820	8	28	50	•
BT 40 / WD 10-CB x 063	5140.31030	10	35	63	•
BT 40 / WD 12-CB x 063	5140.31230	12	42	63	•
BT 40 / WD 16-CB x 063	5140.31630	16	48	63	•
BT 40 / WD 20-CB x 063	5140.32030	20	52	63	•
BT 40 / WD 25-CB x 090	5140.32550	25	65	90	•
BT 40 / WD 32-CB x 100	5140.33260	32	72	100	•

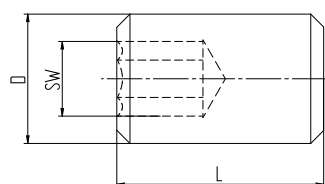
BT 50					
BT 50 / WD 16-CB x 080	5150.31650	16	48	80	•
BT 50 / WD 20-CB x 080	5150.32050	20	52	80	•
BT 50 / WD 25-CB x 100	5150.32560	25	65	100	•
BT 50 / WD 32-CB x 105	5150.33260	32	72	105	•
BT 50 / WD 40-CB x 110	5150.34060	40	80	110	•

Type	Part no.	Dimensions [mm]			
		D	L	SW	
CoolBore nozzle					
SET VS-CB M3*	7781.03000	M3	6	1.5	Screw plug for CoolBore drill hole
SET RD-CB M3 Ø 0.5 mm	7788.03050	M3	6	1.5	Reducing nozzle for CoolBore drill hole

*Included in delivery with each holder (2 pcs.)



BT/WD-CB



VS-CB M3

Shell mill arbor BT / MA-CB

BT / MA-CB

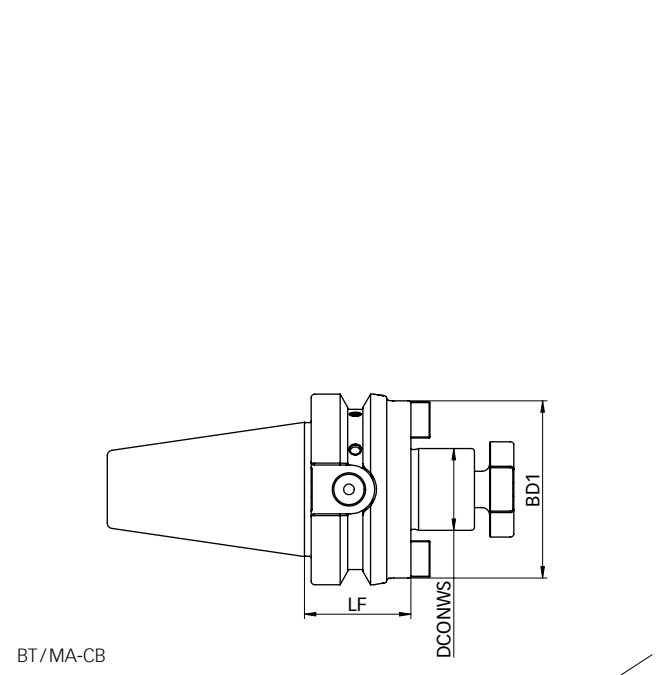
MAS 403

JIS B 6339

DIN ISO 7388-2

Type	Part no.	Dimensions [mm]			Form JD/JF	Accessories
		DCONWS	BD1	LF		Wrench
BT 30						
BT 30 / MA 16-CB x 035	5130.01610	16	38	35	•	FDS 16
BT 30 / MA 22-CB x 035	5130.02210	22	48	35	•	FDS 22
BT 30 / MA 27-CB x 035	5130.02710	27	60	35	•	FDS 27
BT 40						
BT 40 / MA 16-CB x 035	5140.01610	16	38	35	•	FDS 16
BT 40 / MA 16-CB x 100	5140.01660	16	38	100	•	FDS 16
BT 40 / MA 22-CB x 035	5140.02210	22	48	35	•	FDS 22
BT 40 / MA 22-CB x 100	5140.02260	22	48	100	•	FDS 22
BT 40 / MA 27-CB x 035	5140.02710	27	60	35	•	FDS 27
BT 40 / MA 27-CB x 100	5140.02760	27	60	100	•	FDS 27
BT 40 / MA 32-CB x 050	5140.03220	32	78	50	•	FDS 32
BT 40 / MA 32-CB x 100	5140.03260	32	78	100	•	FDS 32
BT 40 / MA 40-CB x 050	5140.04020	40	89	50	•	FDS 40
BT 50						
BT 50 / MA 22-CB x 055	5150.02220	22	48	55	•	FDS 22
BT 50 / MA 27-CB x 055	5150.02720	27	60	55	•	FDS 27
BT 50 / MA 32-CB x 055	5150.03220	32	78	55	•	FDS 32
BT 50 / MA 40-CB x 055	5150.04020	40	89	55	•	FDS 40

Included in delivery: Shell mill arbor and lock screw



Drill chucks BT /KBF

BT /KBF

MAS 403

JIS B 6339

DIN ISO 7388-2

Type	Part no.	Dimensions [mm]			Form A	Form A+AD
		DCONWS	BD1	LPR		
BT 30						
BT 30/KBF 1.0 – 13.0 mm	2130.50100	1–13	50	95	•	–
BT 40						
BT 40/KBF 1.0 – 13.0 mm	2140.50103	1– 13	50	98	–	•
BT 50						
BT 50/KBF 1.0 – 13.0 mm	2150.50103	1– 13	50	100	–	•

Drill chucks BT /KBF

Features and benefits

Clamping range

1–13 mm

Runout TIR

0.03 mm

Maximum tightening torque

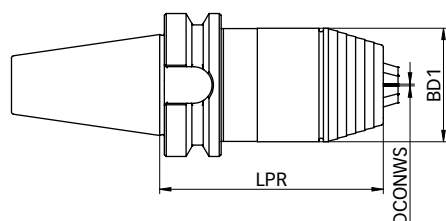
20 Nm

Clamping force (at 20 Nm tightening torque)

80 Nm

Maximum rpm

35 000 rpm



BT /KBF

REGO-FIX CAPTO licensed by Sandvik Coromant Weldon end mill holders REGO-FIX C/WD

These self-centering and balanced holders enable a high torque transmission and show a high bending strength.

ISO 26623

Features of end mill holders (Weldon)

Runout TIR $\leq 3 \mu\text{m}$

Measured from inner bore to outer taper.

Precision side locking screw

For highest transferable torque.

Certified REGO-FIX CAPTO – licensed by Sandvik Coromant – is manufactured at REGO-FIX Switzerland under license according to CAPTO specifications.



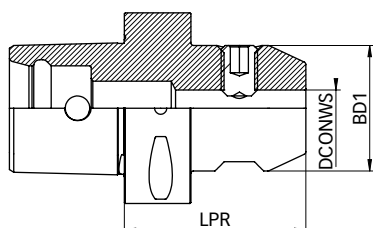
REGO-FIX CAPTO holders licensed by Sandvik Coromant

Weldon end mill holders REGO-FIX C/WD

C/WD

ISO 26623

Type	Part no.	Dimensions [mm]		
		DCONWS	BD1	LPR
C3				
C3/WD 6 x 045	2803.30610	6	25	45
C3/WD 8 x 045	2803.30810	8	28	45
C3/WD 10 x 050	2803.31020	10	35	50
C3/WD 12 x 055	2803.31220	12	42	55
C4				
C4/WD 6 x 050	2804.30620	6	25	50
C4/WD 8 x 050	2804.30820	8	28	50
C4/WD 10 x 050	2804.31020	10	35	50
C4/WD 12 x 055	2804.31220	12	42	55
C4/WD 14 x 055	2804.31420	14	44	55
C4/WD 16 x 055	2804.31620	16	48	55
C5				
C5/WD 6 x 050	2805.30620	6	25	50
C5/WD 8 x 050	2805.30820	8	28	50
C5/WD 10 x 055	2805.31020	10	35	55
C5/WD 12 x 060	2805.31230	12	42	60
C5/WD 14 x 060	2805.31430	14	44	60
C5/WD 16 x 060	2805.31630	16	48	60
C5/WD 18 x 060	2805.31830	18	50	60
C5/WD 20 x 060	2805.32030	20	52	60
C5/WD 25 x 080	2805.32550	25	65	80



C/WD

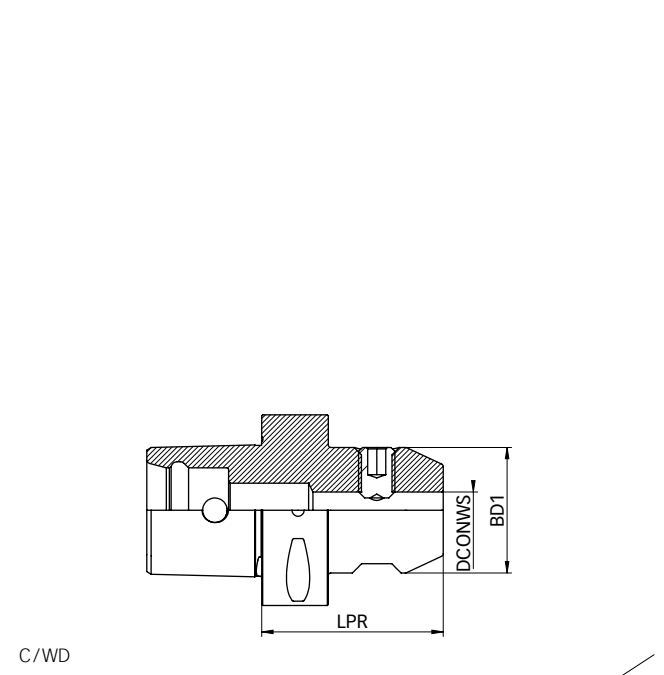
REGO-FIX CAPTO holders licensed by Sandvik Coromant

Weldon end mill holders REGO-FIX C/WD

C/WD
ISO 26623

Type	Part no.	Dimensions [mm]		
		DCONWS	BD1	LPR
C6				
C6/WD 6 x 055	2806.30620	6	25	55
C6/WD 8 x 055	2806.30820	8	28	55
C6/WD 10 x 060	2806.31030	10	35	60
C6/WD 12 x 060	2806.31230	12	42	60
C6/WD 14 x 060	2806.31430	14	44	60
C6/WD 16 x 065	2806.31630	16	48	65
C6/WD 18 x 065	2806.31830	18	50	65
C6/WD 20 x 065	2806.32030	20	52	65
C6/WD 25 x 080	2806.32550	25	65	80
C6/WD 32 x 090	2806.33250	32	72	90
C6/WD 40 x 100	2806.34060	40	80	100

C8				
C8/WD 6 x 070	2808.30640	6	25	70
C8/WD 8 x 070	2808.30840	8	28	70
C8/WD 10 x 070	2808.31040	10	35	70
C8/WD 12 x 070	2808.31240	12	42	70
C8/WD 14 x 070	2808.31440	14	44	70
C8/WD 16 x 070	2808.31640	16	48	70
C8/WD 18 x 070	2808.31840	18	50	70
C8/WD 20 x 070	2808.32040	20	52	70
C8/WD 25 x 080	2808.32550	25	65	80
C8/WD 32 x 080	2808.33250	32	72	80
C8/WD 40 x 110	2808.34060	40	80	110



REGO-FIX CAPTO holders licensed by Sandvik Coromant

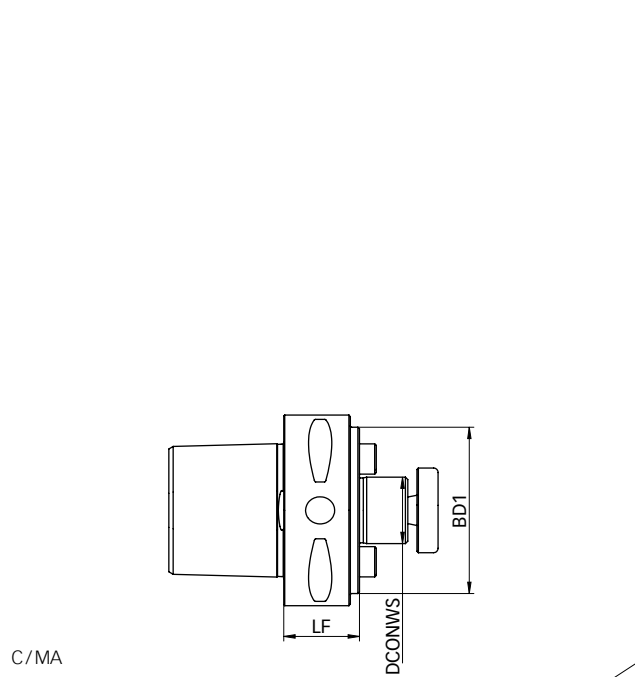
Shell mill arbor REGO-FIX C/MA

C/MA

ISO 26623

Type	Part no.	Dimensions [mm]		
		DCONWS	BD1	LF
C3				
C3/MA 16 x 030	2803.01610	16	36	30
C4				
C4/MA 16 x 032	2804.01610	16	36	32
C4/MA 16 x 055	2804.01620	16	36	55
C4/MA 22 x 025	2804.02210	22	48	25
C4/MA 22 x 055	2804.02220	22	48	55
C5				
C5/MA 16 x 035	2805.01610	16	36	35
C5/MA 16 x 070	2805.01640	16	36	70
C5/MA 22 x 025	2805.02210	22	50	25
C5/MA 22 x 070	2805.02240	22	48	70
C5/MA 27 x 025	2805.02710	27	56	25
C5/MA 32 x 040	2805.03210	32	65	40

Included in delivery: Shell mill arbor and lock screw



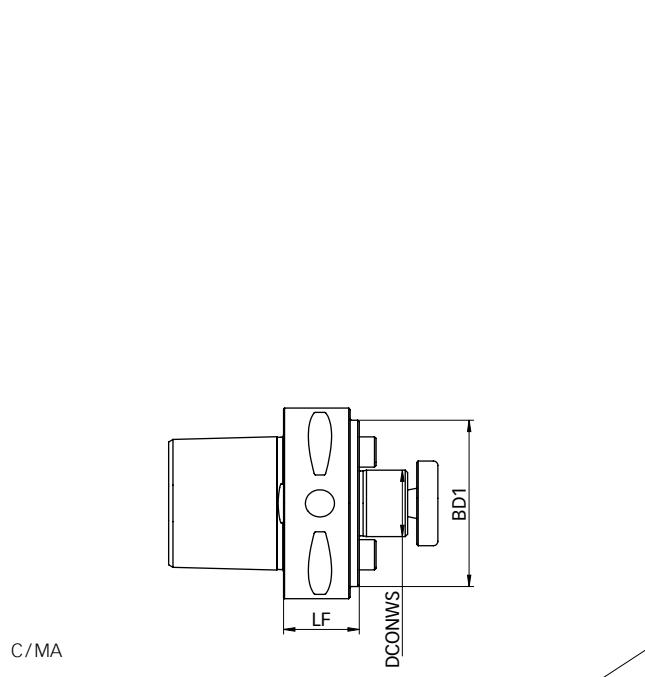
REGO-FIX CAPTO holders licensed by Sandvik Coromant

Shell mill arbor REGO-FIX C/MA

C/MA
ISO 26623

Type	Part no.	Dimensions [mm]		
		DCONWS	BD1	LF
C6				
C6/MA 16 x 040	2806.01610	16	36	40
C6/MA 22 x 025	2806.02210	22	55	25
C6/MA 27 x 025	2806.02710	27	63	25
C6/MA 32 x 025	2806.03210	32	65	25
C6/MA 40 x 040	2806.04010	40	80	40
C8				
C8/MA 16 x 050	2808.01620	16	36	50
C8/MA 22 x 030	2808.02210	22	55	30
C8/MA 27 x 030	2808.02710	27	65	30
C8/MA 32 x 030	2808.03210	32	80	30
C8/MA 40 x 030	2808.04010	40	80	30

Included in delivery: Shell mill arbor and lock screw



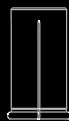


**Reduction sleeves
for hydro chucks**

HS

HS-CF
with coolant flush

HS-MB
Micro-Bore



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Page 275



Reduction sleeves for hydro chucks

Reduction sleeves are designed to fit hydro chucks of different manufacturers. They are specially suited for high-precision clamping of cylindrical tool shanks.

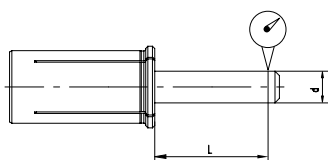
Reduction sleeves for hydro chucks Our reduction sleeves are designed to fit hydro chucks of different manufacturers. They are specially suited for high-precision clamping of cylindrical tool shanks per DIN 6535 form HA, HB and HE, as well as tool shanks per DIN 1835 form B, C, D and E.

The special design of REGO-FIX reduction sleeves allows an efficient use of coolant through cutting tools. This self-sealing system works with the most common hydraulic expansion chucks.

Correct assembly Improper assembly can damage the concentricity of the reduction sleeve.

- // Insert tools the full length of the reduction sleeve
- // Only clamp h6 tool shanks
- // Do not clamp reduction sleeve without a tool, as this could result in a damaged reduction sleeve

Concentricity (TIR) of REGO-FIX HS type reduction sleeves



Clamping diameter d [mm]			max. TIR
> d	≤ d	L	[mm]
3,0	6,0	16	0,003
6,0	10,0	25	0,003
10,0	18,0	40	0,003
18,0	26,0	50	0,003



Swiss quality standard

Our products marked Swiss made are manufactured at our headquarters in Tenniken, Switzerland.

Reductions sleeves for hydro chucks HS

Features and benefits

Accurate precision

Runout TIR < 3 μm

High flexibility

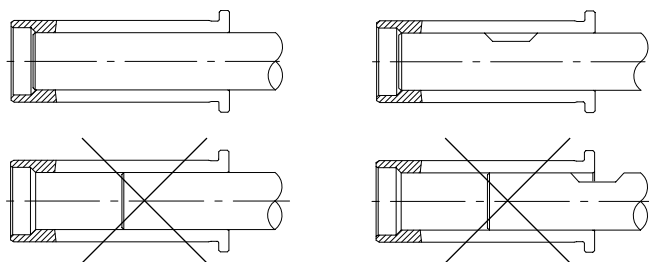
Clamp different tool shank diameters in hydro chucks: 12, 20, 25 and 32 mm.

Standard version HS suited for internal cooling

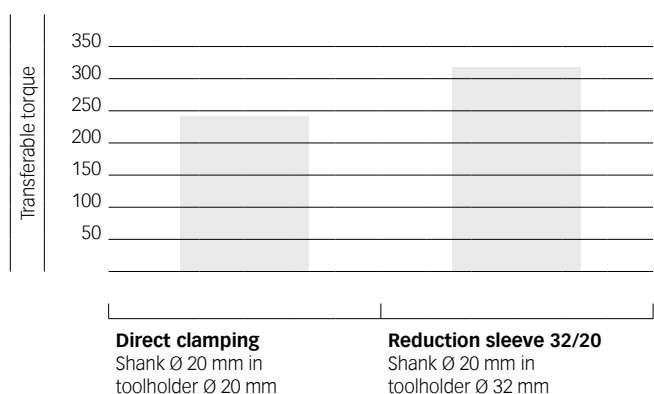
Metal-to-metal seal for cutting tools with internal coolant channels.

HS-CF suited for peripheral cooling

The coolant flush reductions sleeves HS-CF can be used for peripheral cooling due to their coolant channels.



Comparison of transferable torque at Ø 20 mm



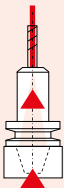
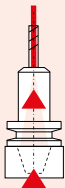
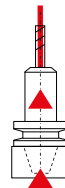
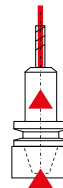
Reduction sleeves HS, HS-CF and HS-MB

A wide standard range of high-precision reduction sleeves: cutting tools with shanks from 1.0 mm to 25 mm can be reliably and securely clamped in any hydraulic chuck.

Metric

	HS 6	HS 8	HS 12-MB	HS 12	HS 12-CF	HS 16	HS 20	HS 20-CF	HS 25	HS 32	HS 32-CF
Outer diameter	Ø 6	Ø 8	Ø 12	Ø 12	Ø 12	Ø 16	Ø 20	Ø 20	Ø 25	Ø 32	Ø 32
Shank diameter	1–4 mm	6 mm	1–2.5 mm	3–10 mm	3–8 mm	3–12 mm	3–18 mm	3–16 mm	3–20 mm	3–25 mm	6–25 mm
Shank tolerance [mm]	All reduction sleeves are designed for tools with shank tolerance h6 or more accurate										
For internal coolant	•	•		•		•	•		•	•	
For peripheral coolant			•		•			•			•
Technical illustrations of cooling											
Safety note	Never clamp reduction sleeves without a tool, it can be permanently damaged										

Inch

	HS 12	HS 20	HS 25	HS 32	HS 1/2"	HS 3/4"	HS 1"	HS 1 1/4"
Outer diameter	Ø 12 mm	Ø 20 mm	Ø 25 mm	Ø 32 mm	Ø 1/2"	Ø 3/4"	Ø 1"	Ø 1 1/4"
Shank diameter	1/8–3/8"	1/8–5/8"	1/8–13/16"	3/16–1"	1/8–3/8"	1/8–5/8"	1/8–3/4"	3/16–1"
Shank tolerance [mm]	All reduction sleeves are designed for tools with shank tolerance h6 or more accurate							
For internal coolant	•	•	•	•	•	•	•	•
Technical illustrations of cooling								
Safety note	Never clamp reduction sleeves without a tool, it can be permanently damaged							

Reduction sleeves HS and HS-CF [metric]

HS

Ø bore											Part no.
[mm]	HS 6	HS 8	HS 12-MB	HS 12	HS 12-CF	HS 16	HS 20	HS 20-CF	HS 25	HS 32	HS 32-CF
1,0	1906.01000	–	1912.01009*	–	–	–	–	–	–	–	–
1,5	–	–	1912.01509*	–	–	–	–	–	–	–	–
2,0	1906.02000	–	1912.02009*	–	–	–	–	–	–	–	–
2,5	–	–	1912.02509*	–	–	–	–	–	–	–	–
3,0	1906.03000	–	–	1912.03000	1912.03002	1916.03000	1920.03000	1920.03002	1925.03000	1932.03000	–
4,0	1906.04000	–	–	1912.04000	1912.04002	1916.04000	1920.04000	1920.04002	1925.04000	1932.04000	–
5,0	–	–	–	1912.05000	1912.05002	–	1920.05000	1920.05002	1925.05000	1932.05000	–
6,0	–	1908.06000	–	1912.06000	1912.06002	1916.06000	1920.06000	1920.06002	1925.06000	1932.06000	1932.06002
7,0	–	–	–	1912.07000	–	–	1920.07000	–	1925.07000	1932.07000	–
8,0	–	–	–	1912.08000	1912.08002	1916.08000	1920.08000	1920.08002	1925.08000	1932.08000	1932.08002
9,0	–	–	–	1912.09000	–	–	1920.09000	–	1925.09000	1932.09000	–
10,0	–	–	–	1912.10000	–	1916.10000	1920.10000	1920.10002	1925.10000	1932.10000	1932.10002
11,0	–	–	–	–	–	–	1920.11000	–	–	1932.11000	–
12,0	–	–	–	–	–	1916.12000	1920.12000	1920.12002	1925.12000	1932.12000	1932.12002
13,0	–	–	–	–	–	–	1920.13000	–	–	1932.13000	–
14,0	–	–	–	–	–	–	1920.14000	1920.14002	1925.14000	1932.14000	1932.14002
15,0	–	–	–	–	–	–	1920.15000	–	–	1932.15000	–
16,0	–	–	–	–	–	–	1920.16000	1920.16002	1925.16000	1932.16000	1932.16002
17,0	–	–	–	–	–	–	–	–	–	1932.17000	–
18,0	–	–	–	–	–	–	1920.18000	–	1925.18000	1932.18000	1932.18002
19,0	–	–	–	–	–	–	–	–	–	1932.19000	–
20,0	–	–	–	–	–	–	–	–	1925.20000	1932.20000	1932.20002
21,0	–	–	–	–	–	–	–	–	–	–	–
22,0	–	–	–	–	–	–	–	–	–	1932.22000	–
23,0	–	–	–	–	–	–	–	–	–	–	–
24,0	–	–	–	–	–	–	–	–	–	–	–
25,0	–	–	–	–	–	–	–	–	–	1932.25000	1932.25002

*not metallic sealing

For further technical information, please refer to page 385 and 387



Reduction sleeves HS [inch]

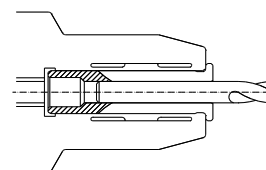
HS

Ø bore		Part no.			
[decimal inch]	[inch]	HS 12	HS 20	HS 25	HS 32
0,125	1/8"	1912.03181	1920.03181	1925.03181	–
0,1875	3/16"	1912.04761	1920.04761	–	1932.04761
0,25	1/4"	1912.06351	1920.06351	1925.06351	1932.06351
0,3125	5/16"	1912.07941	1920.07941	1925.07941	1932.07941
0,375	3/8"	1912.09521	1920.09521	–	1932.09521
0,4375	7/16"	–	1920.11111	1925.11111	1932.11111
0,5	1/2"	–	1920.12701	1925.12701	1932.12701
0,5625	9/16"	–	1920.14291	1925.14291	1932.14291
0,625	5/8"	–	1920.15881	1925.15881	1932.15881
0,6875	11/16"	–	–	–	1932.17461
0,75	3/4"	–	–	1925.19051	1932.19051
0,8125	13/16"	–	–	–	1932.20631
0,875	7/8"	–	–	–	1932.22221
0,9375	15/16"	–	–	–	1932.23811
1,0	1"	–	–	–	1932.25401

For further technical information, please refer to page 385 and 387

Expert advice

The outer diameter of the reduction sleeves corresponds to each type, e.g. HS 12 equals diameter 12 mm.



Drawing 1 HSK-A/WD-CB

Ø bore		Part no.			
[decimal inch]	[inch]	HS 1/2"	HS 3/4"	HS 1"	HS 1 1/4"
0,125	1/8"	1913.03182	1919.03182	1926.03182	–
0,1875	3/16"	1913.04762	1919.04762	1926.04762	1931.04762
0,25	1/4"	1913.06352	1919.06352	–	1931.06352
0,3125	5/16"	1913.07942	1919.07942	1926.07942	1931.07942
0,375	3/8"	1913.09522	1919.09522	1926.09522	1931.09522
0,4375	7/16"	–	1919.11112	1926.11112	1931.11112
0,5	1/2"	–	1919.12702	1926.12702	1931.12702
0,5625	9/16"	–	1919.14292	1926.14292	1931.14292
0,625	5/8"	–	1919.15882	–	1931.15882
0,6875	11/16"	–	–	1926.17462	–
0,75	3/4"	–	–	–	1931.19052
0,8125	13/16"	–	–	–	–
0,875	7/8"	–	–	–	–
0,9375	15/16"	–	–	–	–
1,0	1"	–	–	–	1931.25402

For further technical information, please refer to page 385 and 387

Expert advice

Our chip cover is ideally suited for the removal of chips. The cover can simply be clicked-in at the head of our reduction sleeves.

For part numbers and more information, please refer to page 279.

Expert advice

The coolant flush reductions sleeves HS-CF can be used for peripheral cooling due to their coolant channels.

Easy removing of the reduction sleeve from hydro chucks thanks to the extractor EHS.

For part numbers and more information, please refer to page 279.

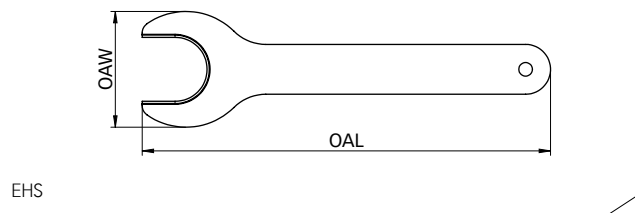
Extractors for reduction sleeves EHS

Chip covers for reduction sleeves CC CC-HS

EHS

CC-HS

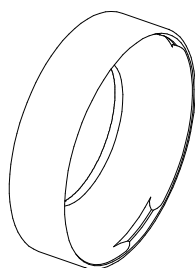
Type	Part no.	OAW [mm]	OAL [mm]
Extractors for reduction sleeves EHS			
EHS 12 1/2"	7321.12000	24	100
EHS 20 3/4"	7321.20000	38	160
EHS 25 1"	7321.25000	51	180
EHS 32 1 1/4"	7321.32000	63	200



EHS

Type	Part no.	Reduction sleeve Ø		
		Fits	[mm]	[inch]
Chip covers for reduction sleeves CC-HS 12				
CC-HS 12 1/2" / Ø 4.0 mm	7331.04200	HS 12, HS 1/2"	3–4	1/8"
CC-HS 12 1/2" / Ø 6.0 mm	7331.06600	HS 12, HS 1/2"	5–6	3/16"–1/4"
CC-HS 12 1/2" / Ø 10.0 mm	7331.10200	HS 12, HS 1/2"	7–10	5/16"–3/8"

Chip covers for reduction sleeves CC-HS 20				
CC-HS 20 3/4" / Ø 4.0 mm	7333.04200	HS 20, HS 3/4"	3-4	1/8"
CC-HS 20 3/4" / Ø 6.0 mm	7333.06600	HS 20, HS 3/4"	5-6	1/16"-1/4"
CC-HS 20 3/4" / Ø 10.0 mm	7333.10200	HS 20, HS 3/4"	7-10	5/16"-3/8"
CC-HS 20 3/4" / Ø 14.0 mm	7333.14200	HS 20, HS 3/4"	11-14	7/16"-1/2"
CC-HS 20 3/4" / Ø 16.0 mm	7333.16200	HS 20, HS 3/4"	15-16	9/16"-5/8"
CC-HS 20 3/4" / Ø 18.0 mm	7333.18200	HS 20, HS 3/4"	18	-



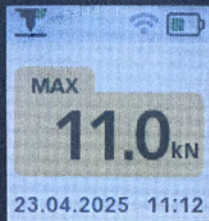
CC-HS



REGO-FIX▲

FMA/HSK50
7532.50500 102
Swiss made

REGO-FIX▲



Swiss made

Discover our diverse range of metrology products

ForceMaster

FMA

BT/BT+

CAT/CAT+

SK/SK+

HSK

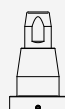
CAPTO



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MasterBar

ST

BT+

CAT

HSK-A

HSK-E



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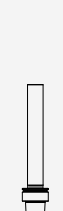
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3D-EdgeMaster

3D EMA-Metric

3D EMA-Inch

TE EMA-Short

TE EMA-Long

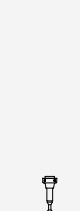
TE EMA-Cone



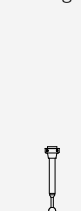
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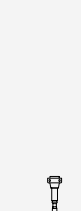
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Dial Test Indicator

DTI 0.002

MIB 287

MIB 11"



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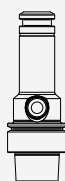


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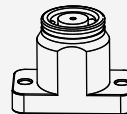
toolVibe®

Toolholder

Vibrations Sensor



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ForceMaster

FMA

BT/BT+

CAT/CAT+

SK/SK+

HSK

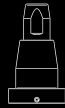
CAPTO



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ForceMaster FMA



FMA	
Measuring range	0-100 [kN]
Accuracy	± 0,5 [kN]
Enclosure protection class	IP67
Charging interface	USB Typ C



	HSK	SK	BT	CAT	PST
Fits standard	DIN 69893 ISO 12164	DIN 69871 ISO 7388-1	MAS 403 JIS B 6339 ISO 7388-2	ASME B5.50	ISO 26623
Sizes	25 – 100	30 – 50	30 – 50	40 – 50	4 – 8
Shape	A/B/C/D/E/F/T	Standard/Plus	Standard/Plus	Standard/Plus	–

REGO-FIX ForceMaster

An intact spindle is crucial to ensure consistent clamping force and maintain high quality.

Features and benefits

Modular

A versatile measuring device with adapters for all common spindle interfaces. It allows quick switching between machines and ensures maximum flexibility in various production environments.

Reliable

Accurate measurement of spindle pull force with a maximum deviation of $\pm 0.5\%$ of the permissible force.

App Features

The optional app offers comprehensive machine fleet management tools, a real-time monitoring dashboard, data management and export, and allows detailed PDF measurement reports to be generated.

Industry 4.0

Easily integrates into digital production environments to optimize manufacturing processes.

Swiss Made

Developed and manufactured in Switzerland.



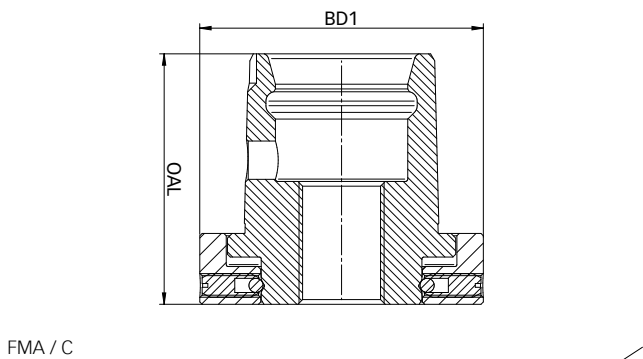
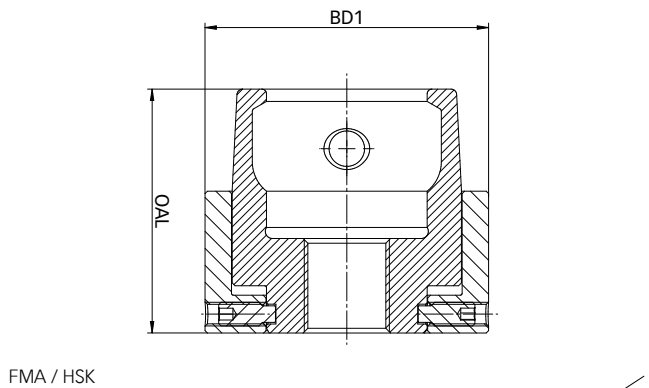
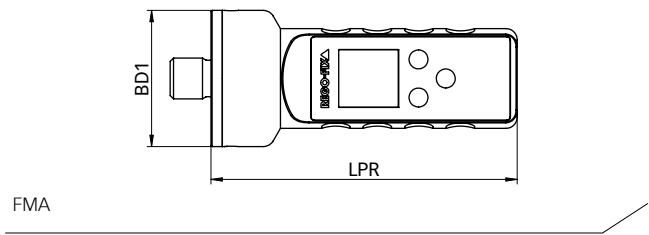
ForceMaster and available adapters

The right adapter for every interface

Type	Part no.	Dimensions [mm]	
		BD1	LPR
ForceMaster			
FMA	7530.00000	60	155

Type	Part no.	Dimensions [mm]		Interface
		BD1	OAL	
FMA HSK				
FMA / HSK 25	7532.25500	60	47	HSK-A C E T 25 + HSK-B D F 32
FMA / HSK 32	7532.32500	60	49	HSK-A C E T 32 + HSK-B D F 40
FMA / HSK 40	7532.40500	60	52	HSK-A C E T 40 + HSK-B D F 50
FMA / HSK 50	7532.50500	60	61	HSK-A C E T 50 + HSK-B D F 63
FMA / HSK 63	7532.63500	60	52	HSK-A C E T 63 + HSK-B D F 80
FMA / HSK 100	7532.00500	86	69	HSK-A C E T 100 + HSK-B D F 125

FMA CAPTO				
FMA / C4	7832.04400	60	39	–
FMA / C5	7832.05400	60	45	–
FMA / C6	7832.06400	60	53	–
FMA / C8	7832.08400	80	78	–

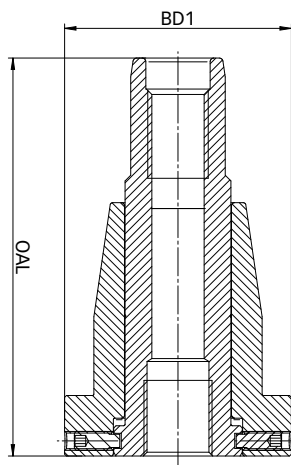


ForceMaster and available adapters

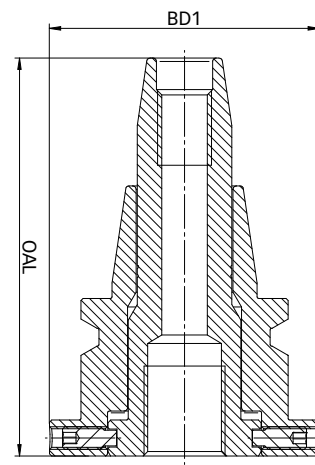
The right adapter for every interface

Type	Part no.	Dimensions [mm]		Interface
		BD1	OAL	
FMA CAT				
FMA / CAT 40	7832.40300	60	105	CAT 40 CAT+ 40
FMA / CAT 50	7832.50300	70	129	CAT 50 CAT+ 50
FMA SK				
FMA / SK 30	7832.30200	60	88	SK 30 SK+ 30
FMA / SK 40	7832.40200	60	105	SK 40 SK+ 40
FMA / SK 50	7832.50200	70	129	SK 50 SK+ 50
FMA BT				
FMA / BT 30*	7832.30100	60	89	BT 30 BT+ 30
FMA / BT 40	7832.40100	60	102	BT 40 BT+ 40
FMA / BT 50	7832.50100	70	129	BT 50 BT+ 50

*Compatible with automatic tool change systems

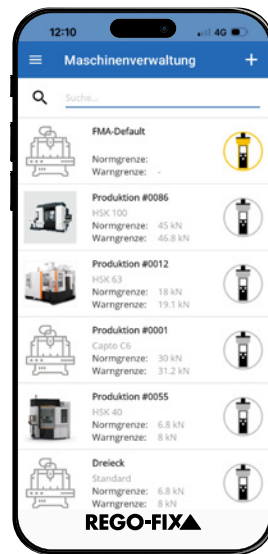


FMA / SK | BT | CAT



FMA / BT 30

ForceMaster App



Download the app here:



// Machine fleet management

Multiple machines can be added, and measurements are easily assigned via the app.

// Dashboard

The device screen can be mirrored to conveniently take measurements remotely.

// Data management and export

Measurements can be exported as non-editable PDF files for secure handling – especially useful for service staff.

// Measurement reports

Detailed reports can be generated directly in the app.

// Graphical display

Measurement results can be viewed and analyzed using clear graphics.

// Device documentation

Calibration certificate, user manual, and support are always accessible through the app.

// Swiss made

Developed and manufactured in Switzerland.

Nominal values for interfaces

Type	Force [kN]	Force [ft-lb]
HSK 25	1.5	340
HSK 32	5	1120
HSK 40	6.8	1530
HSK 50	11	2470
HSK 63	18	4050
HSK 80	28	6300
HSK 100	45	10120
SK 30	6	1350
SK 40	12	2700
SK 50	25	5620

Type	Force [kN]	Force [ft-lb]
CAT 40	12	2700
CAT 50	25	5620
BT 30	6	1350
BT 40	12	2700
BT 50	25	5620
Capto C3	15	3370
Capto C4	20	4500
Capto C5	25	5620
Capto C6	30	6740
Capto C8	40	8990

MasterBar

ST



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BT+



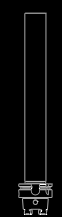
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CAT



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HSK-A



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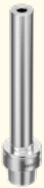
HSK-E



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MasterBar MBA

					
	ST	BT+	CAT	HSK-A	HSK-E
Standard		MAS 403 JIS B 6339 ISO 7388-2	ASME B5.50	DIN 69893 ISO 12164	DIN 69893 ISO 12164
Sizes	40/50	30/40	40	50 – 100	15 – 40
Shape	Standard	Standard/Plus	Standard/Plus	A	E (EZ)

MasterBar MBA

Increases process reliability and minimizes the risk of undetected spindle damage

Features and benefits

Precise

An intact spindle is the foundation of precision. Any runout deviation causes vibrations, reduced surface quality, and increased tool wear, up to tool breakage.

Test certificate

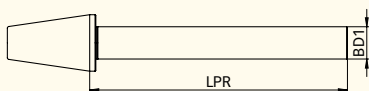
The MBA comes with both a printed and digital test certificate. This ensures traceable quality control and availability of results at any time.

QR code and serial number

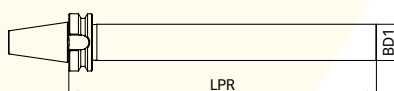
Product data and the certificate can be conveniently accessed using the QR code and unique serial number.

Periodic inspection

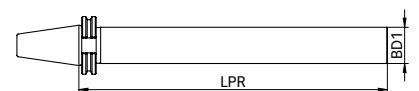
Regular checks improve process safety, help detect wear early, extend spindle life, and prevent costly breakdowns.



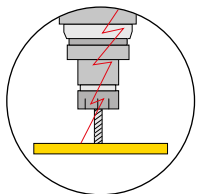
ST / MBA



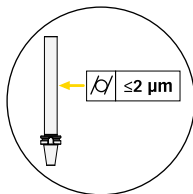
BT+ / MBA



CAT / MBA



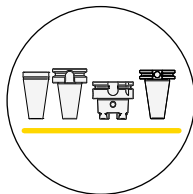
Avoid spindle errors thanks to regular inspection



Cylindricity of the test arbor $\leq 2 \mu\text{m}$



QR-Code and serial number on removable ring



Various interfaces, manufacturer-independent

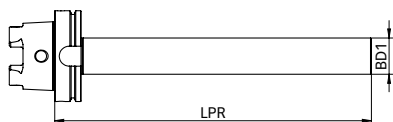


Type	Part no.	Dimensions [mm]	
		BD1	LPR
MasterBar ST			
ST 40 / MBA 40 x 330*	7550.40000	40	330
ST 50 / MBA 40 x 320*	7550.50000	40	320
MasterBar BT+			
BT+ 30 / MBA 32 x 235**	7551.30600	32	235
BT+ 40 / MBA 40 x 340**	7551.40600	40	340
MasterBar CAT			
CAT 40 / MBA 40 x 340	7553.40000	40	340
MasterBar HSK-A			
HSK-A 50 / MBA 32 x 240	7555.50000	32	240
HSK-A 63 / MBA 40 x 350	7555.63000	40	350
HSK-A 100 / MBA 40 x 349	7555.00300	40	349
MasterBar HSK-E			
ATC-E HSK-EZ 15 / MBA 10 x 070***	7556.15900	10	70
HSK-E 20 / MBA 15 x 090***	7556.20400	15	90
HSK-E 25 / MBA 20 x 175***	7556.25400	20	175
HSK-E 32 / MBA 24 x 180	7556.32400	24	180
HSK-E 40 / MBA 24 x 180	7556.40400	24	180

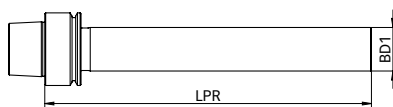
*ST stands for Steep Taper, usable with SK/CAT and BT with appropriate pull stud.

**BT+ is compatible with BT spindles.

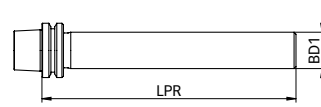
***No removable ring for dimensional reasons, serial number on flange.



HSK-A / MBA



HSK-E / MBA



ATC-E / MBA

3D-EdgeMaster

3D EMA-
Metric



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3D EMA-
Inch



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TE EMA-
Short



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TE EMA-
Long



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TE EMA-
Cone



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3D-EdgeMaster EMA



E3 EMA Metric

E3 EMA Inch

TE EMA Short

TE EMA Long

TE EMA Cone

Scale	0,01 mm	0,0005"	–	–	–
Repeatability	≤ 0,01 mm	≤ 0,0005"	–	–	–
Operating length	–	–	29 mm	53,5 mm	–

3D-EdgeMaster EMA

Reduced setup time and higher precision

Features and benefits

Metric and Imperial

The 3D-EdgeMaster is available in metric or imperial versions. The shank diameter is Ø 16 mm or Ø 5/8 inch, with a matching dial indicator.

Aluminum Housing

The aluminum body has a milled surface for improved grip and safe handling.

Test Certificate

Supplied with printed and digital test certificate.

QR Code and Serial Number

QR code and serial number allow digital access to product information and certificates.

Touch Probes

Short, long, and conical touch probes available as accessories for flexible application.

Safety Break Point

A ceramic break point protects the internal mechanics from damage.

Storage Case

Delivered in a high-quality case for safe storage and transport of the 3D-EdgeMaster and accessories.



Expert advice

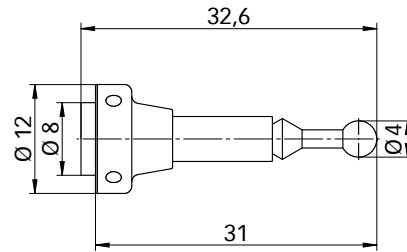
Check the runout every time you change the probe tip to avoid incorrect measurements.

Probes for 3D EdgeMaster

The right probe for your application

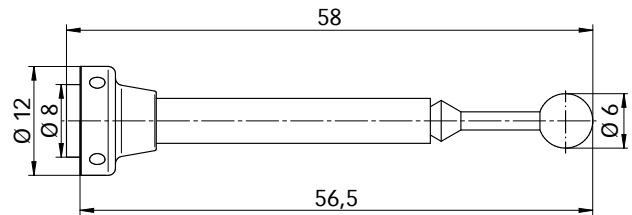
Flexibility for your application

Short The TE EMA Short is the standard probe for the EdgeMaster. With a usable length of 29 mm, it is suitable for most applications and offers a solid and reliable solution.



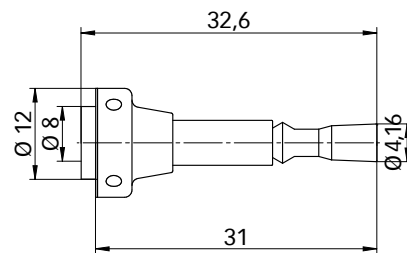
TE EMA Short

Long The TE EMA Long, with a usable length of 53.5 mm, is suitable for measurements that the Short version cannot perform. Its extended design allows access to hard-to-reach contours, making it ideal for measuring deeper or more complex geometries.



TE EMA Long

Cone The TE EMA Cone is the ideal solution for lathes without integrated tool measurement. Its conical shape enables precise tool measurement in X, Y, and Z axes. The probe ensures accurate positioning and reduces the need for manual adjustments. It can also be used for very thin workpieces, expanding its application range.



TE EMA Cone

The SET 3D-EdgeMaster includes:



Type	Part. No.	Description	Sizes Ø / L
3D-EdgeMaster			
SET 3D EMA-METRIC	7510.00005	3D edge finder Metric, 2 short + 2 long probe inserts	Ø 16 mm
3D EMA-METRIC	7510.00000	3D edge finder Metric + probe insert short	Ø 16 mm
SET 3D EMA-INCH	7510.00105	3D edge finder Inch, 2 short + 2 long probe inserts	Ø 5/8"
3D EMA-INCH	7510.00100	3D edge finder Inch + probe insert short	Ø 5/8"
TE EMA-SHORT	7515.00000	Probe insert short for 3D EMA	Ø 4 / L 31 mm
TE EMA-LONG	7515.00300	Probe insert long for 3D EMA	Ø 6 / L 56.5 mm
TE EMA-CONE	7515.00800	Probe insert cone for 3D EMA	Ø 4.16 / L 31 mm



Dial Test Indicator

DTI 0.002



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MIB 287



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MIB 11"



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Dial Test Indicator DTI

Magnetic Indicator Base MIB



	DTI 0.002	MIB 287	MIB 11"
Holding force jointed arm	–	>5 kg	>11 lb
Holding force magnetic base	–	800 N	180 lbf
Range of motion	–	287 mm	11"
Scale	2 µm	–	–
Measuring travel	0,2 mm	–	–

μ-touch Dial Indicator

For maximum measuring accuracy

Features and benefits

Clear Display

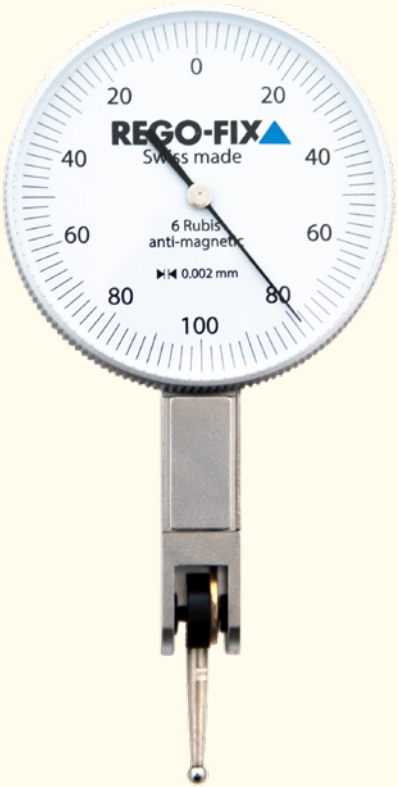
Large dial Ø 37 mm with 2 μm graduation ensures easy and accurate reading. Mounting via dovetail guide or Ø 8 mm stem.

Precise

With a repeatability of 1 μm and a total deviation of max. 3.5 μm, the REGO-FIX dial indicator is the ideal tool for precise measurements.

μ-touch Dial Test Indicator

Lever-type indicators are used to check tolerances, align machine tools, and inspect workpieces for deviations.



Type	Part. No.	Description	Probe insert Ø/L
μ-touch Dial Test Indicator			
DTI 0.002	7565.00200	μ-touch dial test indicator, 0.002mm scale	Ø 2 / L 12.5mm

Articulated stand with magnetic base

For quick and easy positioning of your dial indicator

Features and benefits

User-friendly

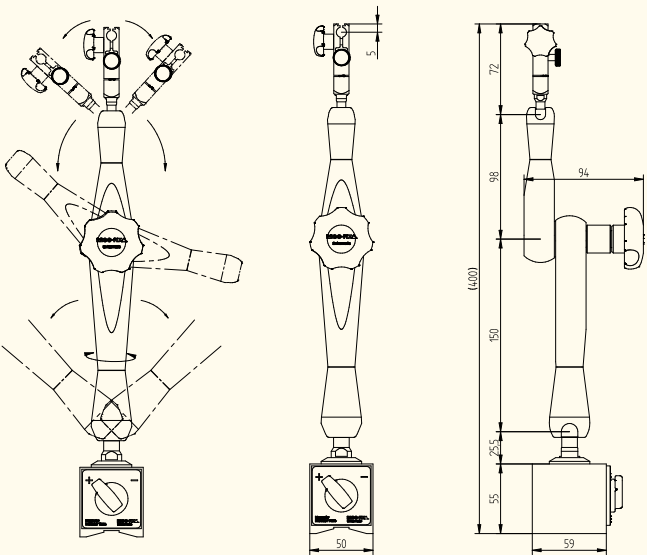
Simple and precise positioning via a single grip that locks the joints. The magnetic base provides a stable foundation.

Flexible

Dovetail mount and clamping diameter (Ø 8 mm or 3/8") offer maximum flexibility for mounting dial indicators or test indicators.

Magnetic indicator base

Ideal for use in production or quality control, where precise measurements are required. Easy operation allows for quick and accurate alignment of the dial indicator.



Movement range of the articulated stand

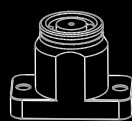
Type	Part. No.	Description	Operating range
Magnetic Indicator Base			
MIB 287	7561.00000	Magnetic Indicator Base with fine adjustment Metric	287 mm
MIB 11"	7561.00100	Magnetic Indicator Base with fine adjustment Inch	11"

toolVibe®

Toolholder Vibrations Sensor



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toolVibe® TV



Toolholder



Vibration Sensor



toolVibe® set

Interface	HSK-A E / SK+ / BT+ / CAT+ / C	Magnets or 2x M5	–
powRgrip® size	PG 15 – PG 32	–	–
Wireless connection to tablet	•	•	–
Maximum external coolant pressure	20 bar	20 bar	–
Maximum internal coolant pressure	80 bar	–	–
Scope of delivery	Toolholder	Vibration sensor	Charging cable toolVibe® Charging cable tablet toolVibe® software Operating instructions

REGO-FIX toolVibe®

Monitors the machining process in real time and delivers precise sensor data.

Features and benefits

Optimization

toolVibe® is an ideal tool to optimize workpiece clamping, cutting data, and machining strategies.

Monitoring

Tool, workpiece, and machine can be monitored using toolVibe®.

Cooling

The rotating and static toolVibe® products are IP67-rated and withstand high coolant pressures.

Temperature

Data is reliably recorded within a temperature range of 20 – 60 °C.

Balance quality

All toolholders are balanced to at least G2.5 @ 25,000 rpm. Maximum speed: 30,000 rpm.

Software

Enables configuration of process parameters for automatic recording.



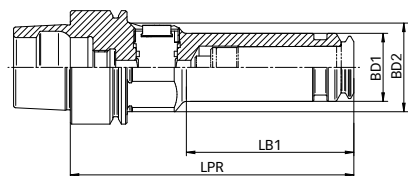
Expert advice

SK+, BT+ and CAT+ toolholders are also compatible with spindles without a contact face.

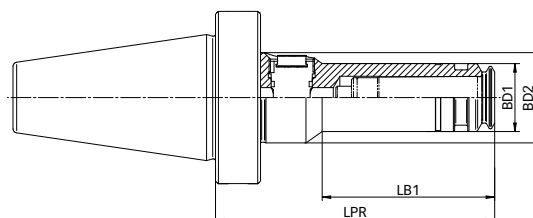
toolVibe® program overview

Type	Part no.	Balance quality	BD1 [mm]	BD2 [mm]	LPR [mm]	LB1 [mm]
toolVibe® Tool holder						
HSK-A 63/PG 15 × 120 TV	5563.91560	balanced G2.5 @ 25,000 rpm	24	32	–	42
HSK-A 63/PG 25 × 120 TV	5563.92560	balanced G2.5 @ 25,000 rpm	40	–	120	–
HSK-A 63/PG 32 × 120 NL TV ²⁾	5563.93260	balanced G2.5 @ 25,000 rpm	50	–	120	–
HSK-A 100/PG 32 × 125 TV	5500.93260	balanced G2.5 @ 25,000 rpm	50	–	125	–
HSK-E 40/PG 15 × 100 TV	5540.91550	balanced to 30,000 rpm	24	32	100	55
SK+ 40/PG 25 × 120 TV ¹⁾	5540.92566	balanced G2.5 @ 25,000 rpm	40	–	120	–
SK+ 50/PG 25 × 105 NL TV ^{1) 2)}	5550.92556	balanced G2.5 @ 25,000 rpm	40	44.5	105	60
BT+ 30/PG 15 × 100 TV ¹⁾	5130.91556	balanced to 30,000 rpm	24	32	100	55
BT+ 40/PG 25 × 120 TV ¹⁾	5140.92566	balanced G2.5 @ 25,000 rpm	40	–	120	–
CAT+ 40/PG 15 × 4" TV ¹⁾	5340.91556	balanced G2.5 @ 25,000 rpm	24	32	101.6	56
CAT+ 40/PG 25 × 4.3" NL TV ^{1) 2)}	5340.92556	balanced G2.5 @ 25,000 rpm	40	44.5	109.22	60
C6/PG 25 × 120 TV	5806.92560	balanced G2.5 @ 25,000 rpm	40	44.5	120	70

¹⁾ Also fits standard spindle without dual contact ²⁾ Collets PG-L, PG-MQL and PG-Cryo cannot be used

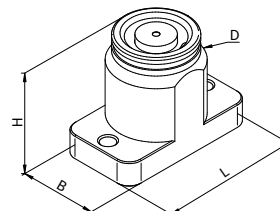


HSK



SK+, BT+, CAT+ (Interface simplified)

Type	Part no.	L [mm]	B [mm]	H [mm]	D [mm]	Note
toolVibe® Vibrations Sensor						
VS 22 × 40 TV	7581.22400	40	22	30	24	Mounting: Magnets or via 2× M5 threads



VS – Vibrations Sensor

Type	Part no.	Description
toolVibe® Set Contents		
SET toolVibe®	7580.00000	Software with tablet including integrated receiving station, charging cable, and hard case







Cleaning

Taper Cleaning Device	310
Spindle Taper Cleaner	312
Cleaning Swabs	314
Ultrasonic Cleaner	316

Accessories

powRgrip® accessories	318
Balancing rings	321
Sealing disks	322
Coolant flush disks	330
Wrenches	335
Torque wrenches	338
Toolholding fixtures	340
Mobile workbench for PGU	341
TORCO-BLOCK	342
Coolant tubes KSR	345
Trays for collets	346

The colored dots show the system affiliation.

Various products can be used with multiple systems.

- powRgrip®-System
- ER-System
- micRun®-System
- uniTec-System





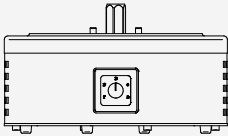
REGO-FIX ▲ **STC/HSK-E 50**
Swiss made 7831.50300

Discover our cleaning technology products

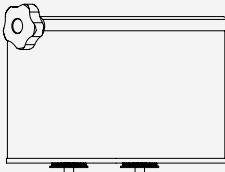
TCD Taper Cleaning Device

Base Unit

Cleaning attachments



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STC Spindle Taper Cleaner

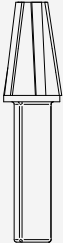
SK

HSK-A

HSK-E

STC-MK

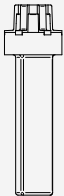
HSK-EZ



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CSW Cleaning Swabs

3mm

6 mm

11 mm



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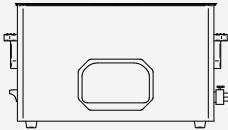
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UCD Ultrasonic Cleaner

UCD 22



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REGO-FIX▲ Accessories

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TCD – Taper Cleaning Device

For effortless cleaning and removal of dried emulsion, cutting oil and other partially hardened contaminants.

Features and benefits

Clean

Clean toolholders and undamaged spindles are essential for precise machining. Contamination at the spindle interface can impair accuracy. Regular cleaning extends toolholder life and ensures consistently high machining quality.

Standards-compliant

Common spindle interfaces are cleaned quickly and in accordance with tolerance standards. Cleaning is manufacturer-independent and works with all standardized toolholders.

Benefits

Solvent-free mechanical cleaning extends toolholder life and reduces replacement costs. This makes production more efficient and reduces operating costs.



Expert advice

Without proper cleaning, toolholders and spindles may be damaged.

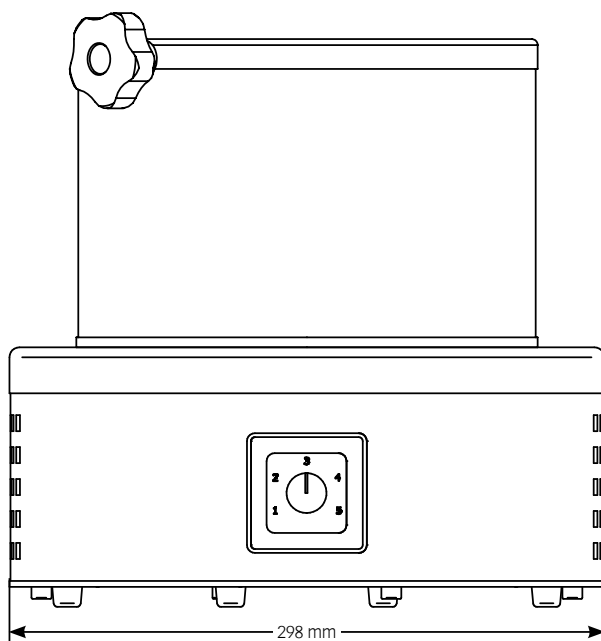
Taper cleaner



Cleaning Adapter



Base Unit



TCD - Taper cleaner

Type

Part no.

Taper Cleaning Device (Base Unit)

TCD-BU	7821.00000
--------	------------

TCD / SK

TCD / SK 30*	7822.30100
TCD / SK 40*	7822.40100
TCD / SK 50*	7822.50100

TCD / HSK-A | C | E

TCD / HSK-A C E 25	7822.25300
TCD / HSK-A C E 32	7822.32300
TCD / HSK-A C E 40	7822.40300
TCD / HSK-A C E 50	7822.50300
TCD / HSK-A C E 63	7822.63300
TCD / HSK-A C E 80	7822.80300
TCD / HSK-A C E 100	7822.00300

TCD / HSK-B | D | F

TCD / HSK-B D F 50	7822.50400
TCD / HSK-B D F 63	7822.63400

TCD / CAPTO

TCD / C4	7822.04700
TCD / C5	7822.05700
TCD / C6	7822.06700

*SK is compatible with all Steep taper like BT / CAT / ISO
Other cleaning adapters available on request

STC – Spindle Taper Cleaner

The tool for fast and easy spindle cleaning

Features and benefits

Clean

Regular spindle cleaning extends the life of both toolholders and the spindle itself. Only clean and undamaged interfaces ensure reliable machining and optimal part quality.

Precise

Perfect contact between the toolholder and spindle is critical for precise runout and efficient power transmission, ensuring maximum accuracy and performance in machining.

Benefits

Solvent-free spindle cleaning extends the life of toolholders and spindles while significantly reducing replacement and repair costs.



Expert advice

To ensure consistent cleaning performance of the STC, clean or replace it regularly. Use a material-compatible, grease-dissolving cleaner and keep the cleaning temperature below 40 °C.



Type	Description	Part. No.
Spindle taper cleaner – ST		
STC/ST 30	For BT/SK/CAT 30	7831.30100
STC/ST 40	For BT/SK/CAT 40	7831.40100
STC/ST 50	For BT/SK/CAT 50	7831.50100
Spindle taper cleaner – HSK-A+C		
STC/HSK-A+C 40	For HSK-A 40/HSK-C 40	7831.40200
STC/HSK-A+C 63	For HSK-A 63/HSK-C 63	7831.63200
STC/HSK-A+C 100	For HSK-A 100/HSK-C 100	7831.00200
Spindle taper cleaner – HSK-E		
STC/HSK-E 25	For HSK-E 25	7831.25300
STC/HSK-E 32	For HSK-E 32	7831.32300
STC/HSK-E 40	For HSK-E 40	7831.40300
STC/HSK-E 50	For HSK-E 50	7831.50300
Spindle taper cleaner – ATC-E / HSK-EZ		
STC/ATC-E 15	For ATC-E 15/HSK-EZ 15	7831.15300
Spindle taper cleaner – MK		
STC/MK 2	For MK 2	7831.02900
STC/MK 3	For MK 3	7831.03900
STC/MK 4	For MK 4	7831.04900



CSW – Cleaning Swabs

Sustainable cleaning even in hard-to-reach areas

Features and benefits

Properties

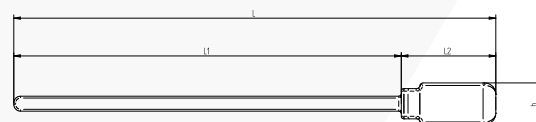
The material is extremely durable and withstands mechanical stress well. It releases very few particles or fibers, making it ideal for applications where cleanliness is critical. At the same time, it remains soft and non-abrasive to protect sensitive surfaces.

Benefits

The foam is thermally bonded to the handle, eliminating the need for adhesives that could cause contamination. This strong bond ensures high durability, even under mechanical stress. The foam is robust but allows gentle cleaning and protects against scratches or damage from excessive pressure.

Applications

The material is ideal for cleaning mechanical parts and assemblies that require precise and gentle handling. It effectively removes residues such as lubricants, dust, or small particles and enables maintenance of sensitive mechanical components to ensure their functionality and cleanliness.



Cleaning Swabs

Type	Part no.	Contents [pcs.]	Dimensions [mm]				
			L	L1	L2	B	H
Cleaning Swabs							
CSW Ø 3.0 mm	7841.03000	100	70,5	59,6	11	3	3,4
CSW Ø 6.0 mm	7841.06000	100	163,0	145	18	6	5
CSW Ø 12.0 mm	7841.12000	50	127,5	102,5	25	12	8



UCD – Ultrasonic Cleaner

Easy cleaning even in hard-to-reach areas

Features and benefits

Deep cleaning

An ultrasonic cleaning bath provides thorough yet gentle cleaning of toolholders and collets. High-frequency vibrations remove even the smallest particles and stubborn residues from inaccessible areas, ensuring precise fit and consistent machining quality.

Increased efficiency

The ultrasonic bath enables the simultaneous cleaning of multiple toolholders, speeding up the overall process. This reduces workload and machine downtime, enhancing production efficiency and lowering operating costs.

Versatile application

The device has a 22-liter capacity, with adjustable cleaning time and temperature control. The variable ultrasonic frequency allows adaptation to different materials and levels of contamination, making it suitable for both delicate and heavily soiled tools. An integrated heating element accelerates fluid warming, improving cleaning effectiveness and shortening the process.



Expert advice

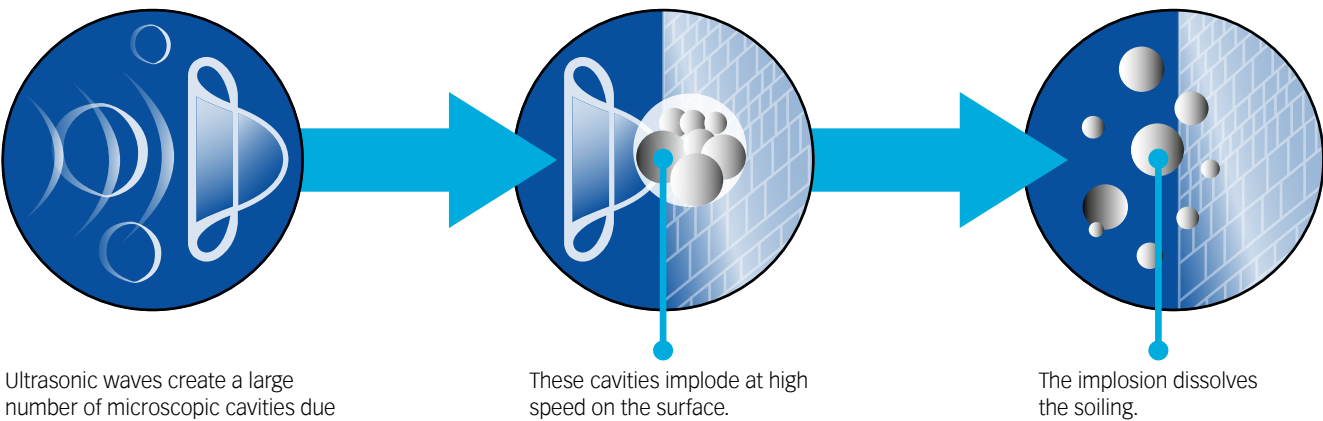
We recommend a cleaner with the following properties:

- // Water-based concentrate for removing oils, greases, and residues
- // Compatible with iron, steel, aluminum, non-ferrous metals, and sensitive surfaces
- // Low-foaming formula – ideal for immersion and ultrasonic baths
- // Thermally stable and effective even at high temperatures
- // Temporary corrosion protection after cleaning

Ultrasonic cleaning principle

Ultrasonic cleaning works by using high-frequency sound waves that create tiny gas bubbles in a liquid. These bubbles collapse due to changing pressure, generating microscopic shock waves that loosen contaminants such as oil, grease or metal chips from surfaces. As the process works without mechanical friction, even sensitive components are cleaned gently.

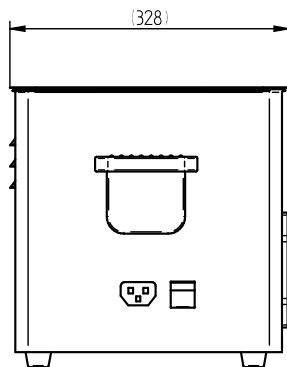
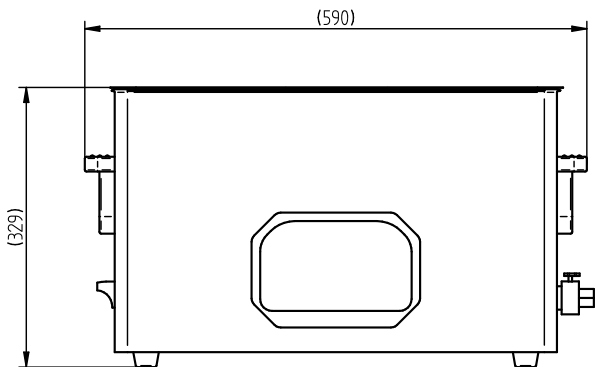
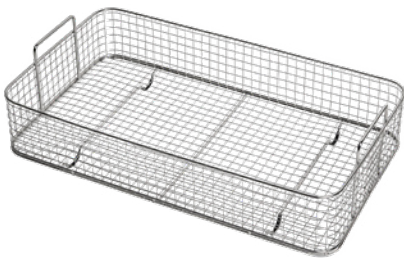
In the manufacturing industry, this technology is primarily used for precision parts. It reliably removes production residues and enables uniform cleaning even in hard-to-reach areas. By automating the cleaning process and reducing the use of chemical cleaning agents, it also contributes to efficient and more environmentally friendly production processes.



Type	Part no.	Volumen	V/Hz	Outer Dimensions [mm]		
				W	D	H
Ultrasonic Cleaner						
UCD 22 E	7825.22000	5.8 Gallons/22 Litres	230V / 50Hz	590	328	329
UCD 22 A/J	7825.22100	5.8 Gallons/22 Litres	100–120V / 50–60Hz	590	328	329

Scope of delivery: unit, lid, basket, and power cable

Type	Part no.	Inner Dimensions [mm]		
		W	D	H
Ultrasonic Cleaner accessories				
B-UCD 22	7825.22999	450	250	80

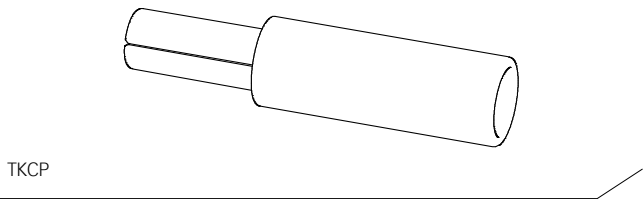


UCD 22 – Ultrasonic Cleaner 22 Litres

powRgrip® taper cleaner TKCP Cleaning paper set CPS

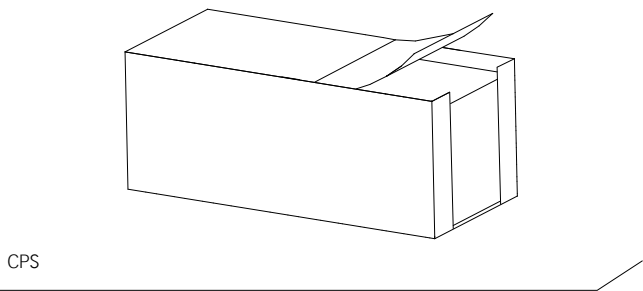
Type	Part no.	Use for
Taper cleaner TKCP		
TKCP 6	7657.06000	PG 6
TKCP 10	7657.10000	PG 10
TKCP 15	7657.15000	PG 15
TKCP 25	7657.25000	PG 25
TKCP 32	7657.32000	PG 32

Includes taper cleaner and cleaning paper set.



Type	Part no.
Cleaning paper set CPS	
CPS 6	7658.06000
CPS 10	7658.10000
CPS 15	7658.15000
CPS 25	7658.25000
CPS 32	7658.32000

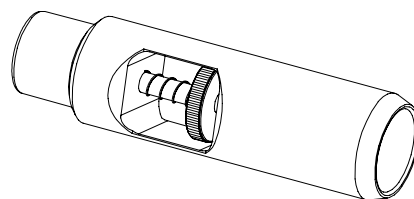
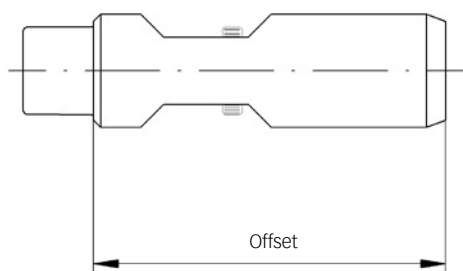
Each CPS contains 250 sheets. For single use only.





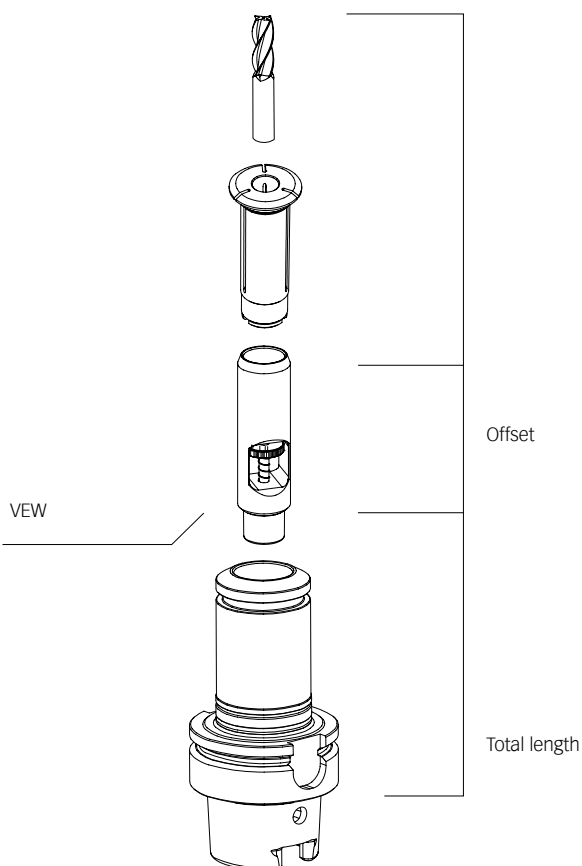
Type	Part no.	Offset
Length-presetting tool VEW		[mm]
VEW 6	7619.06000	80
VEW 10	7619.10000	100
VEW 15	7619.15000	100
VEW 25	7619.25000	100
VEW 32	7619.32000	100

Precise tool adjusting The powRgrip® presetting tool accommodates the powRgrip® collet and is inserted into the toolholder. The presetting tool has an adjustment wheel for precise tool adjustments.



VEW

Length-presetting tool VEW



How it works

- // Insert the length-presetting tool VEW into the powRgrip® toolholder
- // Insert the powRgrip® collet into the length presetting tool
- // Insert the cutting tool into the powRgrip® collet
- // Adjust the tool length by turning the adjustment wheel
- // Measure the total length of the cutting tool and subtract the length of the VEW (80 mm / 100 mm) from the total length
- // Remove the length-presetting tool VEW
- // Clamp collet and cutting tool into the powRgrip® toolholder with the powRgrip® clamping unit

Hi-Q® balancing rings FWR

Torque screwdriver TSD

FWR

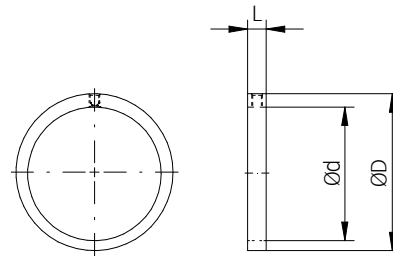
TSD

Type	Part no.	Dimensions [mm]			Balancing capacity [gmm]		max. rpm	System
		D	d	L	FWR Set	single FWR		
Hi-Q® balancing rings FWR								
SET FWR 225	7490.22500	30,5	22,5	6	16	8	80000	
SET FWR 285	7490.28500	36,5	28,5	6	32	16	70000	
SET FWR 325	7490.32500	40,5	32,5	6	44	22	60000	
SET FWR 405	7490.40500	48,5	40,5	6	52	26	50000	
SET FWR 505	7490.50500	60,5	50,5	7	130	65	42000	

Included in set: two Hi-Q® balancing rings per set



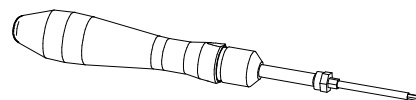
Balancing rings SET FWR



Single balancing ring

*Rotational diameter

Type	Part no.
TSD TORX 8 for balancing rings	
TSD 0.9 Nm	7159.09000



TSD

Expert advice

The torque screwdriver is a special TORX style wrench that is preset to the recommended torque rating of 0.9 Nm for tightening the REGO-FIX Hi-Q® balancing rings.



Effective solution for internal cooling

Our sealing disks allow you to use your regular collet for internal cooling, saving the need for new collets.

Key advantages

Swiss quality product

Sealing range

0.5 mm

ER 11 has no sealing range and can only be used nominally. Assembling with mounting tool MWZ.

High pressure

For applications up to 150 bar / 2100 PSI.

Protection

Protects against all kind of dirt and chips entering the slots of the collet.

Matched tooling system for best fit

Our long-lasting machining experience results in a well-engineered system. All components are fitted together to one system to maximize your machining potential.

Coolant resistant

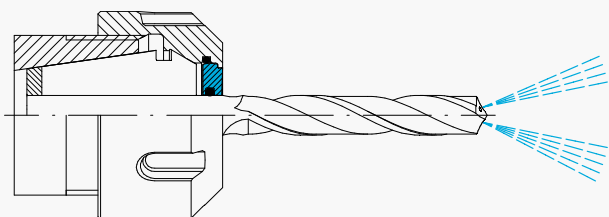
O-ring for aggressive coolant (VITON®-quality).

Interchangeable

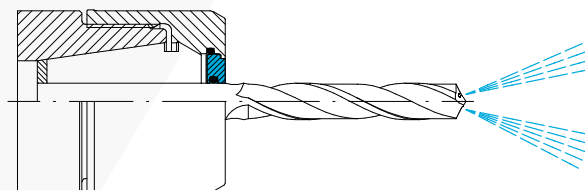
Quick change of sealing disks according to required tool shank diameter.

Coolant through

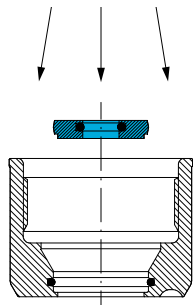
For better cooling and lubrication. Extends tool life and supports chip removal.



DS/ER



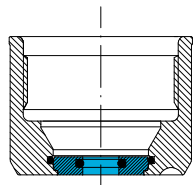
DS/MR



Assembling

Assembling Insert the small diameter of the disk into the center of the coolant nut. Apply an even pressure until the disk is properly seated into the nut.

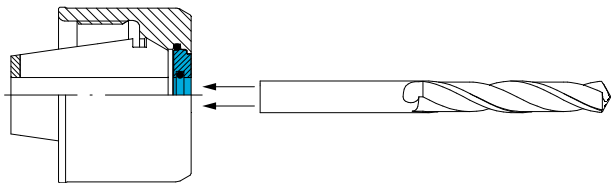
Removing To remove the disk, simply press on the outside of the disk evenly until it snaps out.



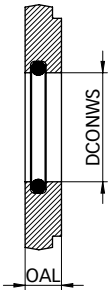
Inserted DS

Expert advice

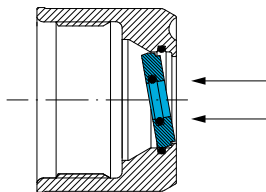
Insert tool with the shank side first. O-ring might be damaged if cutting tool is inserted from the back with the cutting edge side.



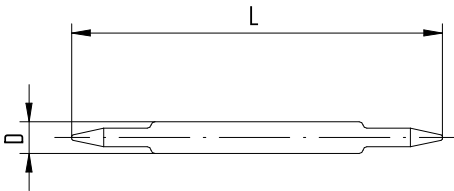
Insert tool



DS / ER



Disk removal



MWZ 11

Type	Part no.	D [mm]	L [mm]	System
MWZ 11 mounting tool for sealing disks				
MWZ 11	3911.88888	12	140	•

Sealing disks for ER/MR

DS / ER

DS / MR

Type	Part no.	Tool diameter			Incl. in set	System
		Ø [inch]	[mm]	[decimal inch]		
DS/ER 11						
Ø 3,0 mm	3911.00300	–	3,0	–	–	•
Ø 1/8"	3911.00318	1/8"	–	–	–	•
Ø 4,0 mm	3911.00400	5/32"	4,0	–	–	•
Ø 3/16"	3911.00476	3/16"	–	–	–	•
Ø 5,0 mm	3911.00500	–	5,0	–	–	•
Ø 6,0 mm	3911.00600	–	6,0	–	–	•
Ø 1/4"	3911.00635	1/4"	–	–	–	•
BLANK DS/ER 11	3911.09999	–	–	–	–	•

ER 11 has no sealing range and can only be used nominally. Assembling with mounting tool MWZ.

DS/ER 16						
SET DS/ER 16 (14 pcs.)	3916.00000	–	3,0–10,0	0,1378–0,3937	–	••
Ø 3,0 mm	3916.00300	3/32"	3,0–2,5	0,1181–0,0984	–	••
Ø 3,5 mm	3916.00350	1/8"	3,5–3,0	0,1378–0,1181	•	••
Ø 4,0 mm	3916.00400	5/32"	4,0–3,5	0,1575–0,1378	•	••
Ø 4,5 mm	3916.00450	–	4,5–4,0	0,1772–0,1575	•	••
Ø 5,0 mm	3916.00500	3/16"	5,0–4,5	0,1969–0,1772	•	••
Ø 5,5 mm	3916.00550	7/32"	5,5–5,0	0,2165–0,1969	•	••
Ø 6,0 mm	3916.00600	–	6,0–5,5	0,2362–0,2165	•	••
Ø 6,5 mm	3916.00650	1/4"	6,5–6,0	0,2559–0,2362	•	••
Ø 7,0 mm	3916.00700	–	7,0–6,5	0,2756–0,2559	•	••
Ø 7,5 mm	3916.00750	9/32"	7,5–7,0	0,2953–0,2756	•	••
Ø 8,0 mm	3916.00800	5/16"	8,0–7,5	0,315–0,2953	•	••
Ø 8,5 mm	3916.00850	–	8,5–8,0	0,3346–0,315	•	••
Ø 9,0 mm	3916.00900	11/32"	9,0–8,5	0,3543–0,3346	•	••
Ø 9,5 mm	3916.00950	3/8"	9,5–9,0	0,374–0,3543	•	••
Ø 10,0 mm	3916.01000	–	10,0–9,5	0,3937–0,374	•	••
BLANK DS/ER 16	3916.09999	–	–	–	–	••

Included in the DS/ER sets are all marked disks within that ER size and the matching disk try DSR

DS/ER 20						
SET DS/ER 20 (20 pcs.)	3920.00000	–	3,0–13,0	0,1378–0,5118	–	•
Ø 3,0 mm	3920.00300	3/32"	3,0–2,5	0,1181–0,0984	–	•
Ø 3,5 mm	3920.00350	1/8"	3,5–3,0	0,1378–0,1181	•	•
Ø 4,0 mm	3920.00400	5/32"	4,0–3,5	0,1575–0,1378	•	•
Ø 4,5 mm	3920.00450	–	4,5–4,0	0,2165–0,1969	•	•
Ø 5,0 mm	3920.00500	3/16"	5,0–4,5	0,1969–0,1772	•	•
Ø 5,5 mm	3920.00550	7/32"	5,5–5,0	0,1772–0,1575	•	•
Ø 6,0 mm	3920.00600	–	6,0–5,5	0,2362–0,2165	•	•
Ø 6,5 mm	3920.00650	1/4"	6,5–6,0	0,2559–0,2362	•	•
Ø 7,0 mm	3920.00700	–	7,0–6,5	0,2756–0,2559	•	•
Ø 7,5 mm	3920.00750	9/32"	7,5–7,0	0,2953–0,2756	•	•
Ø 8,0 mm	3920.00800	5/16"	8,0–7,5	0,315–0,2953	•	•
Ø 8,5 mm	3920.00850	–	8,5–8,0	0,3346–0,315	•	•

Sealing disks for ER/MR

DS / ER

DS / MR

Type	Part no.	Tool diameter			Incl. in set	System
		Ø [inch]	[mm]	[decimal inch]		
Ø 9,0 mm	3920.00900	11/32"	9,0–8,5	0,3543–0,3346	•	•
Ø 9,5 mm	3920.00950	3/8"	9,5–9,0	0,374–0,3543	•	•
Ø 10,0 mm	3920.01000	–	10,0–9,5	0,3937–0,374	•	•
Ø 10,5 mm	3920.01050	13/32"	10,5–10,0	0,4134–0,3937	•	•
Ø 11,0 mm	3920.01100	–	11,0–10,5	0,433–0,4134	•	•
Ø 11,5 mm	3920.01150	7/16"	11,5–11,0	0,4528–0,4331	•	•
Ø 12,0 mm	3920.01200	15/32"	12,0–11,5	0,4724–0,4528	•	•
Ø 12,5 mm	3920.01250	–	12,5–12,0	0,4921–0,4724	•	•
Ø 13,0 mm	3920.01300	1/2"	13,0–12,5	0,5118–0,4921	•	•
BLANK DS/ER 20	3920.09999	–	–	–	–	•

Included in the DS/ER sets are all marked disks within that ER size and the matching disk try DSR

DS/ER 25						
SET DS/ER 25 (26 pcs.)	3925.00000	–	3,0–16,0	0,1181–0,6299	–	••
Ø 3,0 mm	3925.00300	3/32"	3,0–2,5	0,1181–0,0984	–	••
Ø 3,5 mm	3925.00350	1/8"	3,5–3,0	0,1378–0,1181	•	••
Ø 4,0 mm	3925.00400	5/32"	4,0–3,5	0,1575–0,1378	•	••
Ø 4,5 mm	3925.00450	–	4,5–4,0	0,1772–0,1575	•	••
Ø 5,0 mm	3925.00500	3/16"	5,0–4,5	0,1969–0,1772	•	••
Ø 5,5 mm	3925.00550	7/32"	5,5–5,0	0,2165–0,1969	•	••
Ø 6,0 mm	3925.00600	–	6,0–5,5	0,2362–0,2165	•	••
Ø 6,5 mm	3925.00650	1/4"	6,5–6,0	0,2559–0,2362	•	••
Ø 7,0 mm	3925.00700	–	7,0–6,5	0,2756–0,2559	•	••
Ø 7,5 mm	3925.00750	9/32"	7,5–7,0	0,2953–0,2756	•	••
Ø 8,0 mm	3925.00800	5/16"	8,0–7,5	0,315–0,2953	•	••
Ø 8,5 mm	3925.00850	–	8,5–8,0	0,3346–0,315	•	••
Ø 9,0 mm	3925.00900	11/32"	9,0–8,5	0,3543–0,3347	•	••
Ø 9,5 mm	3925.00950	3/8"	9,5–9,0	0,374–0,3543	•	••
Ø 10,0 mm	3925.01000	–	10,0–9,5	0,3937–0,374	•	••
Ø 10,5 mm	3925.01050	13/32"	10,5–10,0	0,4134–0,3937	•	••
Ø 11,0 mm	3925.01100	–	11,0–10,5	0,433–0,4134	•	••
Ø 11,5 mm	3925.01150	7/16"	11,5–11,0	0,4528–0,433	•	••
Ø 12,0 mm	3925.01200	15/32"	12,0–11,5	0,4724–0,4528	•	••
Ø 12,5 mm	3925.01250	–	12,5–12,0	0,4921–0,4724	•	••
Ø 13,0 mm	3925.01300	1/2"	13,0–12,5	0,5118–0,4921	•	••
Ø 13,5 mm	3925.01350	17/32"	13,5–13,0	0,5315–0,5118	•	••
Ø 14,0 mm	3925.01400	–	14,0–13,5	0,5512–0,5315	•	••
Ø 14,5 mm	3925.01450	9/16"	14,5–14,0	0,5709–0,5512	•	••
Ø 15,0 mm	3925.01500	–	15,0–14,5	0,5906–0,5709	•	••
Ø 15,5 mm	3925.01550	19/32"	15,5–15,0	0,6102–0,5906	•	••
Ø 16,0 mm	3925.01600	5/8"	16,0–15,5	0,6299–0,6102	•	••
BLANK DS/ER 25	3925.09999	–	–	–	–	••

Included in the DS/ER sets are all marked disks within that ER size and the matching disk try DSR



Sealing disks for ER/MR

DS / ER

DS / MR

Type	Part no.	Tool diameter			Incl. in set	System
		Ø [inch]	[mm]	[decimal inch]		
DS/ER 32						
DS/ER 32 SET (34 pcs.)	3932.00000	–	3,0–20,0	0,1181–0,7874	–	••
Ø 3,0 mm	3932.00300	3/32"	3,0–2,5	0,1181–0,0984	–	••
Ø 3,5 mm	3932.00350	1/8"	3,5–3,0	0,1378–0,1181	•	••
Ø 4,0 mm	3932.00400	5/32"	4,0–3,5	0,1575–0,1378	•	••
Ø 4,5 mm	3932.00450	–	4,5–4,0	0,1772–0,1575	•	••
Ø 5,0 mm	3932.00500	3/16"	5,0–4,5	0,1969–0,1772	•	••
Ø 5,5 mm	3932.00550	7/32"	5,5–5,0	0,2165–0,1969	•	••
Ø 6,0 mm	3932.00600	–	6,0–5,5	0,2362–0,2165	•	••
Ø 6,5 mm	3932.00650	1/4"	6,5–6,0	0,2559–0,2362	•	••
Ø 7,0 mm	3932.00700	–	7,0–6,5	0,2756–0,2559	•	••
Ø 7,5 mm	3932.00750	9/32"	7,5–7,0	0,2953–0,2756	•	••
Ø 8,0 mm	3932.00800	5/16"	8,0–7,5	0,315–0,2953	•	••
Ø 8,5 mm	3932.00850	–	8,5–8,0	0,3346–0,315	•	••
Ø 9,0 mm	3932.00900	11/32"	9,0–8,5	0,3543–0,3346	•	••
Ø 9,5 mm	3932.00950	3/8"	9,5–9,0	0,374–0,3543	•	••
Ø 10,0 mm	3932.01000	–	10,0–9,5	0,3937–0,374	•	••
Ø 10,5 mm	3932.01050	13/32"	10,5–10,0	0,4134–0,3937	•	••
Ø 11,0 mm	3932.01100	–	11,0–10,5	0,4331–0,4134	•	••
Ø 11,5 mm	3932.01150	7/16"	11,5–11,0	0,4528–0,4331	•	••
Ø 12,0 mm	3932.01200	15/32"	12,0–11,5	0,4724–0,4528	•	••
Ø 12,5 mm	3932.01250	–	12,5–12,0	0,4921–0,4724	•	••
Ø 13,0 mm	3932.01300	1/2"	13,0–12,5	0,5118–0,4921	•	••
Ø 13,5 mm	3932.01350	17/32"	13,5–13,0	0,5315–0,5118	•	••
Ø 14,0 mm	3932.01400	–	14,0–13,5	0,5512–0,5315	•	••
Ø 14,5 mm	3932.01450	9/16"	14,5–14,0	0,5709–0,5512	•	••
Ø 15,0 mm	3932.01500	–	15,0–14,5	0,5905–0,5709	•	••
Ø 15,5 mm	3932.01550	19/32"	15,5–15,0	0,6102–0,5906	•	••
Ø 16,0 mm	3932.01600	5/8"	16,0–15,5	0,6299–0,6102	•	••
Ø 16,5 mm	3932.01650	–	16,5–16,0	0,6496–0,6299	•	••
Ø 17,0 mm	3932.01700	21/32"	17,0–16,5	0,6693–0,6496	•	••
Ø 17,5 mm	3932.01750	11/16"	17,5–17,0	0,689–0,6693	•	••
Ø 18,0 mm	3932.01800	–	18,0–17,5	0,7087–0,689	•	••
Ø 18,5 mm	3932.01850	23/32"	18,5–18,0	0,7283–0,7087	•	••
Ø 19,0 mm	3932.01900	3/4"	19,0–18,5	0,748–0,7283	•	••
Ø 19,5 mm	3932.01950	–	19,5–19,0	0,7677–0,748	•	••
Ø 20,0 mm	3932.02000	25/32"	20,0–19,5	0,7874–0,7677	•	••
BLANK DS/ER 32	3932.09999	–	–	–	–	••

Included in the DS/ER sets are all marked disks within that ER size and the matching disk try DSR

Type	Part no.	Tool diameter			Incl. in set	System
		Ø [inch]	[mm]	[decimal inch]		
DS / ER 40						
DS/ER 40 SET (46 pcs.)	3940.00000	–	3,0–26,0	0,1181–1,0236	–	•
Ø 3,0 mm	3940.00300	3/32"	3,0–2,5	0,1181–0,0984	–	•
Ø 3,5 mm	3940.00350	1/8"	3,5–3,0	0,1378–0,1181	•	•
Ø 4,0 mm	3940.00400	5/32"	4,0–3,5	0,1575–0,1378	•	•
Ø 4,5 mm	3940.00450	–	4,5–4,0	0,1772–0,1575	•	•
Ø 5,0 mm	3940.00500	3/16"	5,0–4,5	0,1969–0,1772	•	•
Ø 5,5 mm	3940.00550	7/32"	5,5–5,0	0,2165–0,1969	•	•
Ø 6,0 mm	3940.00600	–	6,0–5,5	0,2362–0,2165	•	•
Ø 6,5 mm	3940.00650	1/4"	6,5–6,0	0,2559–0,2362	•	•
Ø 7,0 mm	3940.00700	–	7,0–6,5	0,2756–0,2559	•	•
Ø 7,5 mm	3940.00750	9/32"	7,5–7,0	0,2953–0,2756	•	•
Ø 8,0 mm	3940.00800	5/16"	8,0–7,5	0,315–0,2953	•	•
Ø 8,5 mm	3940.00850	–	8,5–8,0	0,3347–0,315	•	•
Ø 9,0 mm	3940.00900	11/32"	9,0–8,5	0,3543–0,3347	•	•
Ø 9,5 mm	3940.00950	3/8"	9,5–9,0	0,374–0,3543	•	•
Ø 10,0 mm	3940.01000	–	10,0–9,5	0,3937–0,374	•	•
Ø 10,5 mm	3940.01050	13/32"	10,5–10,0	0,4134–0,3937	•	•
Ø 11,0 mm	3940.01100	–	11,0–10,5	0,433–0,4134	•	•
Ø 11,5 mm	3940.01150	7/16"	11,5–11,0	0,4528–0,433	•	•
Ø 12,0 mm	3940.01200	15/32"	12,0–11,5	0,4724–0,4528	•	•
Ø 12,5 mm	3940.01250	–	12,5–12,0	0,4921–0,4724	•	•
Ø 13,0 mm	3940.01300	1/2"	13,0–12,5	0,5118–0,4921	•	•
Ø 13,5 mm	3940.01350	17/32"	13,5–13,0	0,5315–0,5118	•	•
Ø 14,0 mm	3940.01400	–	14,0–13,5	0,5512–0,5315	•	•
Ø 14,5 mm	3940.01450	9/16"	14,5–14,0	0,5709–0,5512	•	•
Ø 15,0 mm	3940.01500	–	15,0–14,5	0,5905–0,5709	•	•
Ø 15,5 mm	3940.01550	19/32"	15,5–15,0	0,6102–0,5905	•	•
Ø 16,0 mm	3940.01600	5/8"	16,0–15,5	0,6299–0,6102	•	•
Ø 16,5 mm	3940.01650	–	16,5–16,0	0,6496–0,6299	•	•
Ø 17,0 mm	3940.01700	21/32"	17,0–16,5	0,6693–0,6496	•	•
Ø 17,5 mm	3940.01750	11/16"	17,5–17,0	0,689–0,6693	•	•
Ø 18,0 mm	3940.01800	–	18,0–17,5	0,7087–0,689	•	•
Ø 18,5 mm	3940.01850	23/32"	18,5–18,0	0,7283–0,7087	•	•
Ø 19,0 mm	3940.01900	3/4"	19,0–18,5	0,748–0,7283	•	•
Ø 19,5 mm	3940.01950	–	19,5–19,0	0,7677–0,748	•	•
Ø 20,0 mm	3940.02000	23/32"	20,0–19,5	0,7874–0,7677	•	•
Ø 20,5 mm	3940.02050	–	20,5–20,0	0,8071–0,7874	•	•
Ø 21,0 mm	3940.02100	13/16"	21,0–20,5	0,8268–0,8071	•	•
Ø 21,5 mm	3940.02150	25/32"	21,5–21,0	0,8465–0,8268	•	•



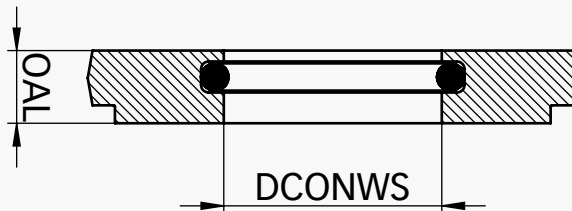
Type	Part no.	Tool diameter			Incl. in set	System
		Ø [inch]	[mm]	[decimal inch]		
Ø 22,0 mm	3940.02200	–	22,0–21,5	0,8661–0,8465	•	•
Ø 22,5 mm	3940.02250	7/8"	22,5–22,0	0,8858–0,8268	•	•
Ø 23,0 mm	3940.02300	29/32"	23,0–22,5	0,9055–0,8858	•	•
Ø 23,5 mm	3940.02350	–	23,5–23,0	0,9252–0,9055	•	•
Ø 24,0 mm	3940.02400	15/16"	24,0–23,5	0,9449–0,9252	•	•
Ø 24,5 mm	3940.02450	–	24,5–24,0	0,9646–0,9449	•	•
Ø 25,0 mm	3940.02500	31/32"	25,0–24,5	0,9843–0,9646	•	•
Ø 25,5 mm	3940.02550	1"	25,5–25,0	1,0039–0,9843	•	•
Ø 26,0 mm	3940.02600	–	26,0–25,5	1,0236–1,0039	•	•
BLANK DS/ER 40	3940.09999	–	–	–	–	•

Included in the DS/ER sets are all marked disks within that ER size and the matching disk try DSR

DS/ER 50

ADP ERC 50 / DS KS 40*	3950.40000	–	3,0–26,0	0,1181–1,0236	–	•
Ø 22,0 mm	3950.02200	–	22,0–21,5	0,8661–0,8465	–	•
Ø 25,0 mm	3950.02500	–	25,0–24,5	0,9842–0,9645	–	•
Ø 28,0 mm	3950.02800	–	28,0–27,5	1,1023–1,0827	–	•
Ø 32,0 mm	3950.03200	–	32,0–31,5	1,2598–1,2402	–	•
Ø 36,0 mm	3950.03600	–	36,0–35,5	1,4173–1,3976	–	•

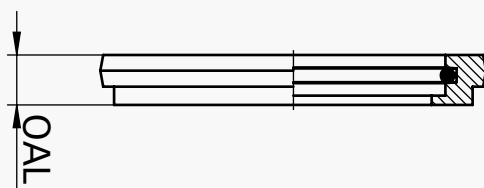
*The ADP ER 50-DS/ER 40 only works in combination with a sealing disk DS/ER 40. DS/ER 40 is not included in delivery



DS / ER

Expert advice

The BLANK DS/ER is used as machining blank for specific sizes or as sealing disk for double-sided driven tools.



ADP ERC / DS | KS

Expert advice

The adapter ADP ER 50–DS / ER 40 allows the use of DS/ER-40 sealing disks in ER-50 clamping nuts.



Our solution for peripheral cooling

The design of our coolant flush disks leads the coolant along the edge of the cutting tool, providing you with an easy way to achieve peripheral cooling.

Key advantages

Swiss quality product

Universal use

For all REGO-FIX collets and coolant nuts with interchangeable disk.

Interchangeable

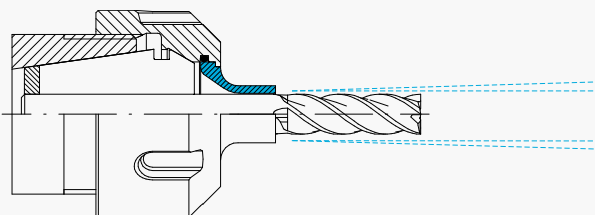
Quick change of coolant flush disks according to required tool shank diameter.

Peripheral cooling

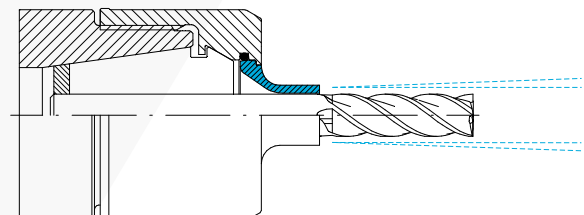
For better cooling and lubrication.
Extends tool life and supports chip removal.

Original REGO-FIX

Our long-lasting machining experience results in a well-engineered system. When buying ER coolant flush disks please pay attention to the REGO-FIX quality seal on the coolant flush disk: The triangle is our seal for outstanding quality made in Switzerland.



KS/ER

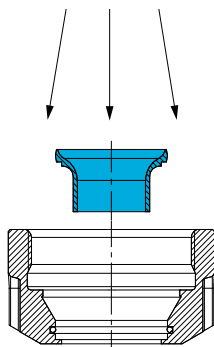


KS/MR

Coolant flush disks for ER/MR

KS / ER

KS / MR

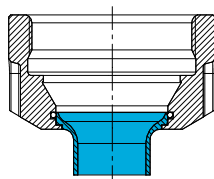


Assembling

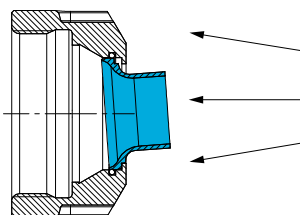
Assembling Insert the small diameter of the disk into the center of the coolant nut. Apply an even pressure until the disk is properly seated into the nut.

The disk must be flush with the outside of the nut and the marking on the disk must be visible inside of the nut.

Removing To remove the disk, simply press on the outside of the disk evenly until it snaps out.



Inserted KS/ER



Disk removal



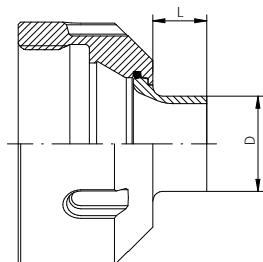
Coolant flush disks for ER / MR

KS / ER

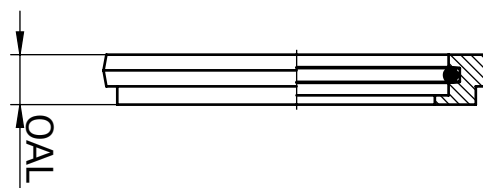
KS / MR

Type	Part no.	Dimensions [mm]		Ø		System
		D	L	[mm]	[inch]	
KS/ER 11 [mm]/[inch]						
Ø 3,0 mm / 1/8"	3911.30318	5,6	5,5	3	1/8"	•
Ø 4,0 mm	3911.20400	6,4	5,5	4	–	•
Ø 5,0 mm / 3/16"	3911.20500	7,5	5,5	5	3/16"	•
Ø 6,0 mm / 1/4"	3911.30635	7,5	5,5	6	1/4"	•
BLANK KS / ER 11*	3911.29999	7,5	8	–	–	•
KS/ER 16 [mm]						
Ø 3,0 mm	3916.20300	6,4	11	3	–	••
Ø 4,0 mm	3916.20400	7,4	11	4	–	••
Ø 5,0 mm	3916.20500	8,4	11	5	–	••
Ø 6,0 mm	3916.20600	9,4	11	6	–	••
Ø 7,0 mm	3916.20700	11	11	7	–	••
Ø 8,0 mm	3916.20800	11	11	8	–	••
Ø 9,0 mm	3916.20900	11	2	9	–	••
Ø 10,0 mm	3916.21000	11	2	10	–	••
BLANK KS / ER 16*	3916.29999	11	12	–	–	••
KS/ER 16 [inch]						
Ø 1/8"	3916.30318	6,6	11	3,175	1/8"	••
Ø 3/16"	3916.30476	8,2	11	4,763	3/16"	••
Ø 1/4"	3916.30635	9,7	11	6,35	1/4"	••
Ø 5/16"	3916.30794	11	11	7,938	5/16"	••
Ø 3/8"	3916.30953	11	2	9,525	3/8"	••
KS/ER 20 [mm]						
Ø 3,0 mm	3920.20300	6,4	11	3	–	•
Ø 4,0 mm	3920.20400	7,4	11	4	–	•
Ø 5,0 mm	3920.20500	8,4	11	5	–	•
Ø 6,0 mm	3920.20600	9,4	11	6	–	•
Ø 7,0 mm	3920.20700	10,4	11	7	–	•
Ø 8,0 mm	3920.20800	11,4	11	8	–	•
Ø 9,0 mm	3920.20900	12,4	11	9	–	•
Ø 10,0 mm	3920.21000	14	11	10	–	•
Ø 12,0 mm	3920.21200	14	3	12	–	•
BLANK KS / ER 20*	3920.29999	14	12	–	–	•

*Work material: 42CrMoS4 (1.7227)



KS/ER



ADP ERC / DS | KS

Coolant flush disks for ER/MR

KS / ER

KS / MR

Type	Part no.	Dimensions [mm]		Ø		System
		D	L	[mm]	[inch]	
KS / ER 20 [inch]						
Ø 1/8"	3920.30318	6,6	11	3,175	1/8"	•
Ø 3/16"	3920.30476	8,2	11	4,763	3/16"	•
Ø 1/4"	3920.30635	9,7	11	6,35	1/4"	•
Ø 5/16"	3920.30794	11,3	11	7,983	5/16"	•
Ø 3/8"	3920.30953	14	11	9,525	3/8"	•
Ø 7/16"	3920.31111	14	11	11,113	7/16"	•
Ø 1/2"	3920.31270	14	3	12,7	1/2"	•
KS / ER 25 [mm]						
Ø 3,0 mm	3925.20300	6,4	11	3	–	••
Ø 4,0 mm	3925.20400	7,4	11	4	–	••
Ø 5,0 mm	3925.20500	8,4	11	5	–	••
Ø 6,0 mm	3925.20600	9,4	11	6	–	••
Ø 7,0 mm	3925.20700	10,4	11	7	–	••
Ø 8,0 mm	3925.20800	11,4	11	8	–	••
Ø 9,0 mm	3925.20900	12,4	11	9	–	••
Ø 10,0 mm	3925.21000	13,4	11	10	–	••
Ø 12,0 mm	3925.21200	15,4	11	12	–	••
Ø 14,0 mm	3925.21400	17,4	11	14	–	••
Ø 16,0 mm	3925.21600	19	11	16	–	••
BLANK KS / ER 25*	3925.29999	19	12	–	–	••
KS / ER 25 [inch]						
Ø 1/8"	3925.30318	6,6	11	3,175	1/8"	••
Ø 3/16"	3925.30476	8,2	11	4,763	3/16"	••
Ø 1/4"	3925.30635	9,7	11	6,35	1/4"	••
Ø 5/16"	3925.30794	11,3	11	7,938	5/16"	••
Ø 3/8"	3925.30953	12,9	11	9,525	3/8"	••
Ø 7/16"	3925.31111	14,5	11	11,113	7/16"	••
Ø 1/2"	3925.31270	16,1	11	12,7	1/2"	••
Ø 9/16"	3925.31429	17,7	11	14,288	9/16"	••
Ø 5/8"	3925.31588	19	11	15,875	5/8"	••

*Work material: 42CrMoS4 (1.7227)



Coolant flush disks for ER / MR

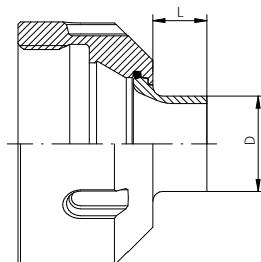
KS / ER

KS / MR

Type	Part no.	Dimensions [mm]		Ø		System
		D	L	[mm]	[inch]	
KS/ER 32 [mm]						
Ø 3,0 mm	3932.20300	6,4	11	3	–	 
Ø 4,0 mm	3932.20400	7,4	11	4	–	 
Ø 5,0 mm	3932.20500	8,4	11	5	–	 
Ø 6,0 mm	3932.20600	9,4	11	6	–	 
Ø 7,0 mm	3932.20700	10,4	11	7	–	 
Ø 8,0 mm	3932.20800	11,4	11	8	–	 
Ø 9,0 mm	3932.20900	12,4	11	9	–	 
Ø 10,0 mm	3932.21000	13,4	11	10	–	 
Ø 12,0 mm	3932.21200	15,4	11	12	–	 
Ø 14,0 mm	3932.21400	17,4	11	14	–	 
Ø 16,0 mm	3932.21600	19,4	11	16	–	 
Ø 18,0 mm	3932.21800	21,4	11	18	–	 
Ø 20,0 mm	3932.22000	24	11	20	–	 
BLANK KS / ER 32*	3932.29999	24	12	–	–	 
KS/ER 32 [inch]						
Ø 1/8"	3932.30318	6,6	11	3,175	1/8"	 
Ø 3/16"	3932.30476	8,2	11	4,763	3/16"	 
Ø 1/4"	3932.30635	9,7	11	6,35	1/4"	 
Ø 5/16"	3932.30794	11,3	11	7,938	5/16"	 
Ø 3/8"	3932.30953	12,9	11	9,525	3/8"	 
Ø 7/16"	3932.31111	14,5	11	11,113	7/16"	 
Ø 1/2"	3932.31270	16,1	11	12,7	1/2"	 
Ø 9/16"	3932.31429	17,7	11	14,288	9/16"	 
Ø 5/8"	3932.31588	19,3	11	15,875	5/8"	 
Ø 3/4"	3932.31905	24	11	19,05	3/4"	 

*Work material: 42CrMoS4 (1.7227).

KS/ER 40						
ADP ERC 40 / DS KS 32	3940.32000	–	–	3-20	1/8" - 3/4"	•



KS/ER

Wrenches

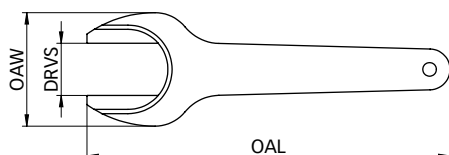
E MS

E AX

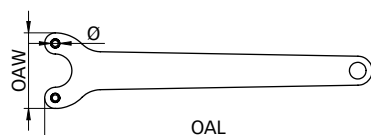
E A

Type	Part no.	OAW [mm]	OAL [mm]	DRVS	Suited wrench for Hi-Q®			System
					ER MS	ERAX	ERAXC	
E MS								
WMS 6	7864.06000	19	76	5.75	●	—	—	●
E 8 MS	7114.08000	19	76	7	●	—	—	●
E 11 MS	7114.11000	22	100	10	●	—	—	●
E 16 MS	7114.16000	33	130	15	●	—	—	●
E 20 MS	7114.20000	42	140	18.5	●	—	—	●
E AX								
E 11 AX	7117.11000	16	108		—	●	—	●
E 16 AX	7117.16000	22	131		—	●	●	●
E 20 AX	7117.20000	26	148		—	●	●	●
E 25 AX	7117.25000	30	165		—	●	●	●
E 32 AX	7117.32000	37	196		—	●	●	●
E 40 AX	7117.40000	47	220		—	●	●	●
Ø [mm]								
E A								
E 11 A	7115.11000	18,6	96		—	—	—	3
E 16 A	7115.16000	25	108		—	—	—	3
E 20 A	7115.20000	28	123		—	—	—	3
E 25 A	7115.25000	30,5	139		—	—	—	4
E 32 A	7115.32000	42	182		—	—	—	4

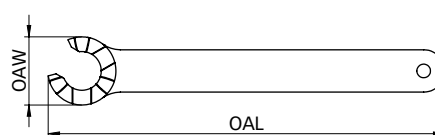
Ø [mm]



E MS



EA



E AX



Wrenches

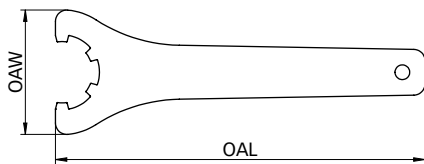
E

E P

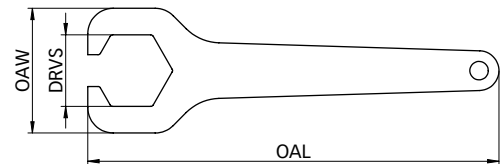
E M

E MX

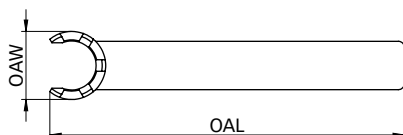
Type	Part no.	Dimensions [mm]			Suited wrench for Hi-Q®							System
		OAW	OAL	DRVS	ER	ERC	ERB	ERBC	ERMC	ERMX	ERMXC	
E												
E 16	7111.16000	55	163		—	—	—	—	—	—	—	•
E 20	7111.20000	60	183		—	—	—	—	—	—	—	•
E 25	7111.25000	70	203		•	•	•	•	—	—	—	•
E 32	7111.32000	80	253		•	•	•	•	—	—	—	•
E 40	7111.40000	96	283		•	•	•	•	—	—	—	•
E 50	7111.50000	111	350		•	—	•	—	—	—	—	•
E P												
E 11 P	7112.11010	32	95	19	•	•	—	—	—	—	—	•
E 16 P	7112.16010	44	145	28	•	•	•	•	—	—	—	•
E 20 P	7112.20010	52	170	34	•	•	•	•	—	—	—	•
E M												
E 8 M	7113.08000	12	74		—	—	—	—	—	—	—	•
E 11 M	7113.11000	17	95		—	—	—	—	•	—	—	•
E 16 M	7113.16000	22	117		—	—	—	—	•	—	—	•
E 20 M	7113.20000	29	129		—	—	—	—	•	—	—	•
E 25 M	7113.25000	36	141		—	—	—	—	•	—	—	•
E MX												
E 8 MX	7118.08000	12	74		—	—	—	—	—	•	—	•
E 11 MX	7118.11000	17	95		—	—	—	—	—	•	•	•
E 16 MX	7118.16000	22,5	117		—	—	—	—	—	•	•	•
E 20 MX	7118.20000	29	129		—	—	—	—	—	•	•	•
E 25 MX	7118.25000	36	141		—	—	—	—	—	•	•	•



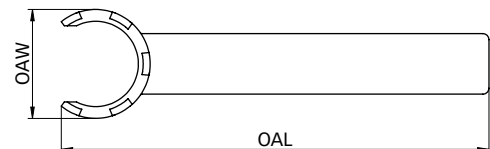
E



EP



EM



EMX

Wrench heads

A-E

A-E P

A-E M

A-E MX

A-E MS

A-E AX

Type	Part no.	OAW [mm]	OAL [mm]	DRVS [mm]	DCON	System
A-E						
A-E 16	7151.16000	55	62		16	•
A-E 20	7151.20000	60	62		16	•
A-E 25	7151.25000	70	72		16	•
A-E 32	7151.32000	80	72		16	•
A-E 40	7151.40000	96	82		16	•
A-E 50	7151.50000	111	94		16	•

A-SG						
A-SG 48	7653.48000				16	• •

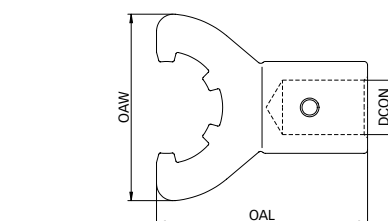
A-E P						
A-E 11 P	7152.11010	32	57	19	16	•
A-E 16 P	7152.16010	44	70	28	16	•
A-E 20 P	7152.20010	52	80	34	16	•

A-E M						
A-E 8 M	7153.08000	12	53		16	•
A-E 11 M	7153.11000	17	54		16	•
A-E 16 M	7153.16000	22	56		16	•
A-E 20 M	7153.20000	29	68		16	•
A-E 25 M	7153.25000	36	70		16	•

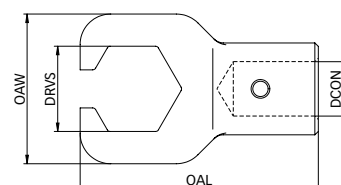
A-E MX						
A-E 8 MX	7158.08000	12	53		16	•
A-E 11 MX	7158.11000	17	54		16	•
A-E 16 MX	7158.16000	22	56		16	•
A-E 20 MX	7158.20000	29	68		16	•
A-E 25 MX	7158.25000	36	70		16	•

A-E MS						
A-E 8 MS	7154.08000	19	51		16	•
A-E 11 MS	7154.11000	22	57		16	•
A-E 16 MS	7154.16000	33	60		16	•
A-E 20 MS	7154.20000	42	73		16	•

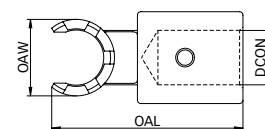
A-E AX						
A-E 11 AX	7157.11000	16	62		16	•
A-E 16 AX	7157.16000	22	63		16	•
A-E 20 AX	7157.20000	26	64		16	•
A-E 25 AX	7157.25000	29	93		16	•
A-E 32 AX	7157.32000	37	95		16	•
A-E 40 AX	7157.40000	47	99		16	•



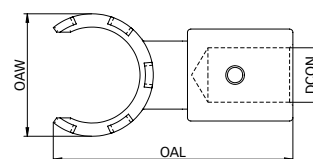
A-E



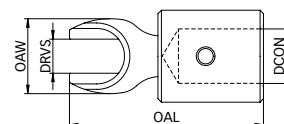
A-E P



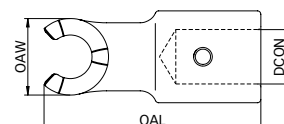
A-E M



A-E MX



A-E MS



A-E AX

Torque wrenches TORCO-FIX

Freewheel wrench heads A-FLS

Grip bar for wrench heads G-A

TORCO-FIX

A-FLS

G-A

Type	Part no.	L [mm]	Range [Nm]	Range [ft-lbs]	System
TORCO-FIX					
TORCO-FIX 0	7150.02025	290	5–25	3,5–18	••
TORCO-FIX I	7150.05050	335	10–50	7,5–36,5	••
TORCO-FIX II	7150.20200	465	40–200	26,5–147	•••
TORCO-FIX III	7150.60300	565	60–300	44,5–221	••

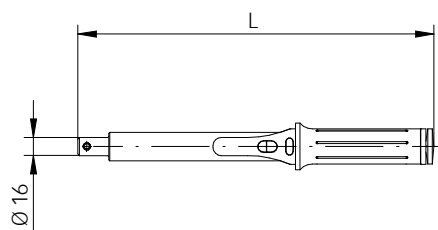
Type	Part no.	D [mm]	D1 [mm]	System
Freewheel wrench heads A-FLS				
A-FLS 16 / MR 11	7855.11000	16	34	•
A-FLS 24 / MRM 16	7855.16800	24	47	•
A-FLS 28 / MR 16 SG 15	7855.16000	28	47	••
A-FLS 40 / MR 25	7855.25000	40	61	•
A-FLS 46 / SG 25	7655.25000	46	68	•
A-FLS 50 / MR 32	7855.32000	50	77	•
A-FLS 55 / SG 32	7655.32000	55	77	•

Type	Part no.	L [mm]	System
Grip bar for wrench heads G-A			
G-A	7655.99900	308	•••
G-AS	7655.99500	120	•

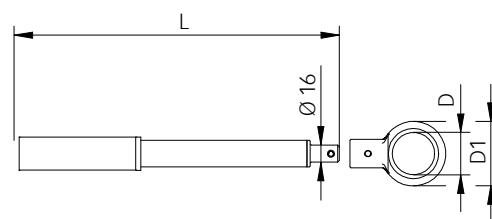
Expert advice

Grip bar short G-AS is specially designed to be used with:

- A-FLS ø 16/MR 11
- A-FLS ø 24/MRM 16
- A-FLS ø 28/MR 16



TORCO-FIX



G-A/G-AS with A-FLS

Slip-off proof extension V-E AX for E AX and A-E AX

Slip-off proof extension V-E MX for E MX and A-E MX

Wrenches for universal shell / face mill holders FDS

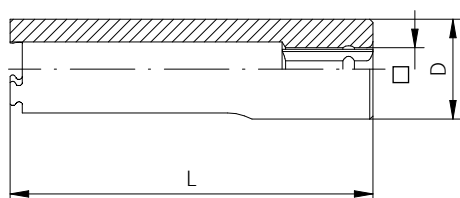
V-E AX

V-E MX

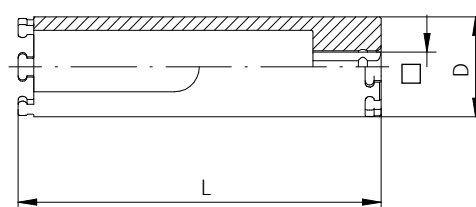
FDS

Type	Part no.	D [mm]	L [mm]	Square □		System
				[mm]	[inch]	
V-E AX						
V-E 11 AX	7155.11000	16,5	60	6,35	1/4"	•
V-E 16 AX	7155.16000	22,5	80	6,35	1/4"	•
V-E 20 AX	7155.20000	26	95	9,525	3/8"	•
V-E 25 AX	7155.25000	29,5	105	12,7	1/2"	•
V-E 32 AX	7155.32000	37,5	115	12,7	1/2"	•

Type	Part no.	D [mm]	L [mm]	Square □		System
				[mm]	[inch]	
V-E MX						
V-E 8 MX	7159.08000	17	60	6,35	1/4"	•
V-E 11 MX	7159.11000	17	60	6,35	1/4"	•
V-E 16 MX	7159.16000	22,5	80	6,35	1/4"	•
V-E 20 MX	7159.20000	29	95	12,7	1/2"	•
V-E 25 MX	7159.25000	35	105	19,05	3/4"	•

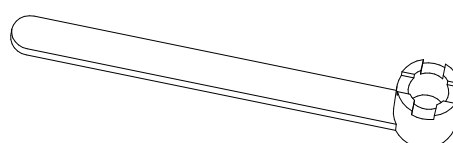


V-E AX



V-E MX

Type	Part no.	System
Wrenches FDS		
FDS 16	7711.16000	•
FDS 22	7711.22000	•
FDS 27	7711.27000	•
FDS 32	7711.32000	•
FDS 40	7711.40000	•
FDS 50	7711.50000	•



FDS



Toolholding fixtures

WMH

WA / SK

WA / HSK

WA / C

Type	Part no.	Fits this interface
Tool assembly WMH		
WMH-RF 45°	7813.00088	–

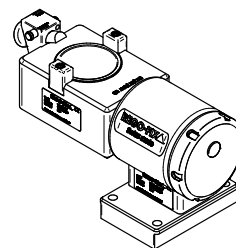
Tool adapter WA / SK		
WA/SK 30	7814.30100	BT / CAT / SK 30
WA/SK 40	7814.40100	BT / CAT / SK 40
WA/SK 50	7814.50100	BT / CAT / SK 50

Tool adapter WA / HSK-A / C / E		
WA / HSK-A C E 25	7814.25300	HSK-A / C / E 25

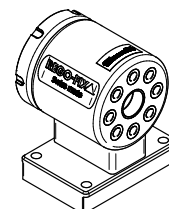
Tool adapter WA / HSK-A		
WA / HSK-A 32	7814.32200	HSK-A 32
WA / HSK-A 40	7814.40200	HSK-A 40
WA / HSK-A 50	7814.50200	HSK-A 50
WA / HSK-A 63	7814.63200	HSK-A 63
WA / HSK-A 80	7814.80200	HSK-A 80
WA / HSK-A 100	7814.00200	HSK-A 100

Tool adapter WA / HSK-C / E		
WA / HSK-C E 32	7814.32500	HSK-C / E 32
WA / HSK-C E 40	7814.40500	HSK-C / E 40
WA / HSK-C E 50	7814.50500	HSK-C / E 50
WA / HSK-C E 63	7814.63500	HSK-C / E 63

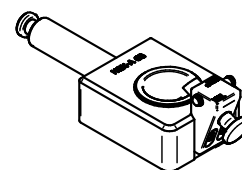
Tool adapter WA / C Capto		
WA / C3	7814.03700	CAPTO C3
WA / C4	7814.04700	CAPTO C4
WA / C5	7814.05700	CAPTO C5
WA / C6	7814.06700	CAPTO C6
WA / C8	7814.08700	CAPTO C8



WMH / WA



WMH – RF 45°



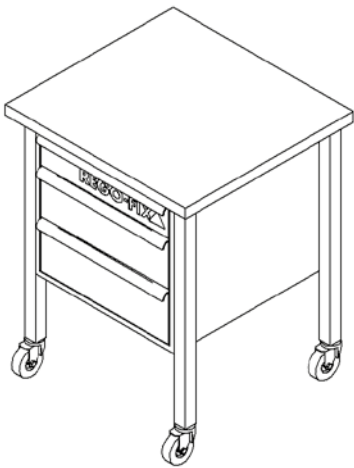
WA

Mobile workbench for PGU

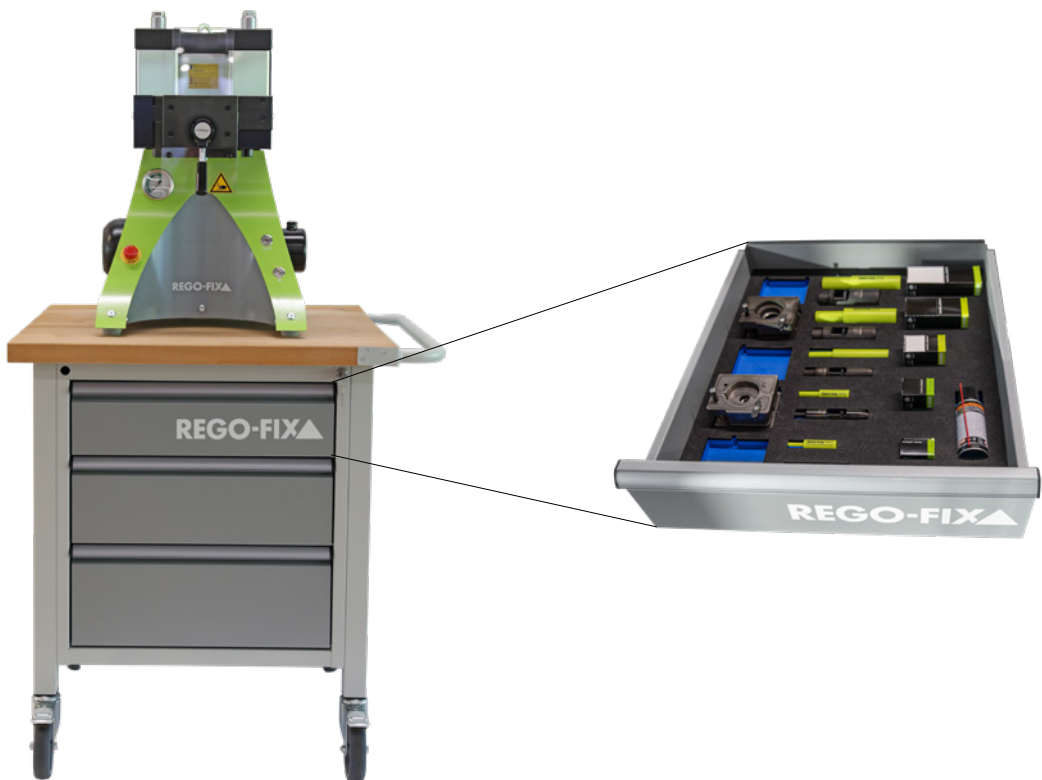
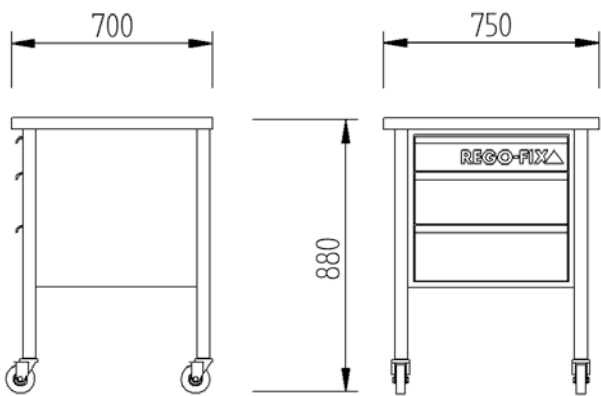
Description Mobile workbench for PGU with drawer-insert for APG and taper cleaner.

Type	Part no.	Width	Height	Depth
Mobile workbench for PGU				
MWB	7688.00000	750 mm	880 mm	700 mm

Back panel on request



MWB



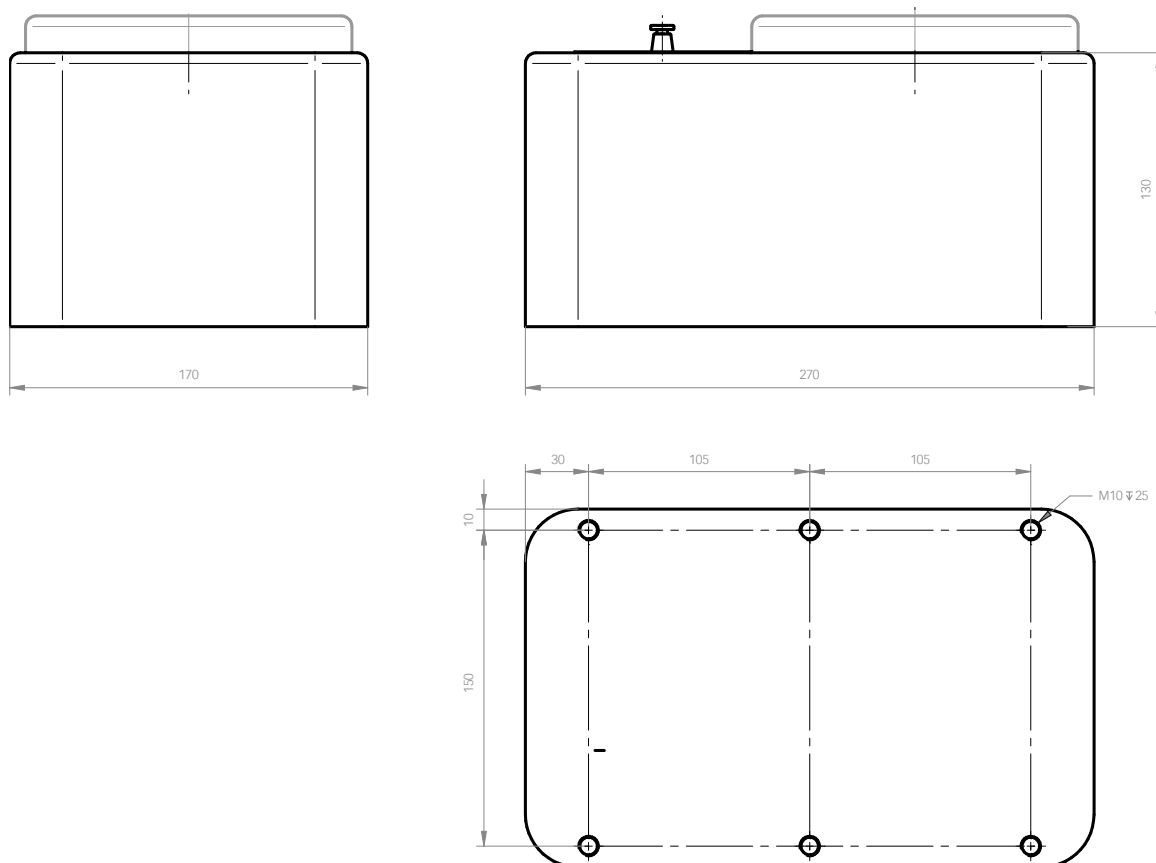
Achieve perfect torque with any wrench

TORCO-BLOCK The only tool assembly device in the market that is comfortable and safe to use with integrated torque measuring. Usability is given for all collet based systems and available for all standard machine interfaces.

TORCO-BLOCK provides

- // Use any wrench and still be able to correctly measure tightening torque
- // Minimal effort for toolclamping needed
- // Toolholder will not be overtorqued
- // Correct tightening torque guaranteed, no bad runout due to overtorquing
- // Quick-change function for different taper interfaces with only one 4 mm Allen-key within seconds
- // Safe assembling of cutting tools
- // Easy and quick toolholder and adapter handling
- // Required footprint 170 x 270 mm
- // Correct installation of pull studs with standard wrenches
- // Full or overhang mounting on a workbench possible
- // TORCO-BLOCK supplied inclusive 10 indicator rings TB/IR

Unit needs a stable workbench to be attached to with at least four M10 screws.



TORCO-BLOCK and it's components

Type	Part no.
Tool assembly with torque measurement	

TORCO-BLOCK	7815.00000
-------------	------------

Included in delivery: TORCO-BLOCK and indicator ring set (no tool adapters).

Indicator ring set / 11 rings

SET TB/IR	7816.99999
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Tool adapter for CAT spindle interfaces

TB/BT 30 + CAT 30	7816.30100
TB/SK 40 + CAT 40	7816.40200
TB/CAT 50	7816.50300

Tool adapter for SK spindle interface

TB/SK 30	7816.30200
TB/SK 40 + CAT 40	7816.40200
TB/SK 50	7816.50200

Tool adapter for BT spindle interface

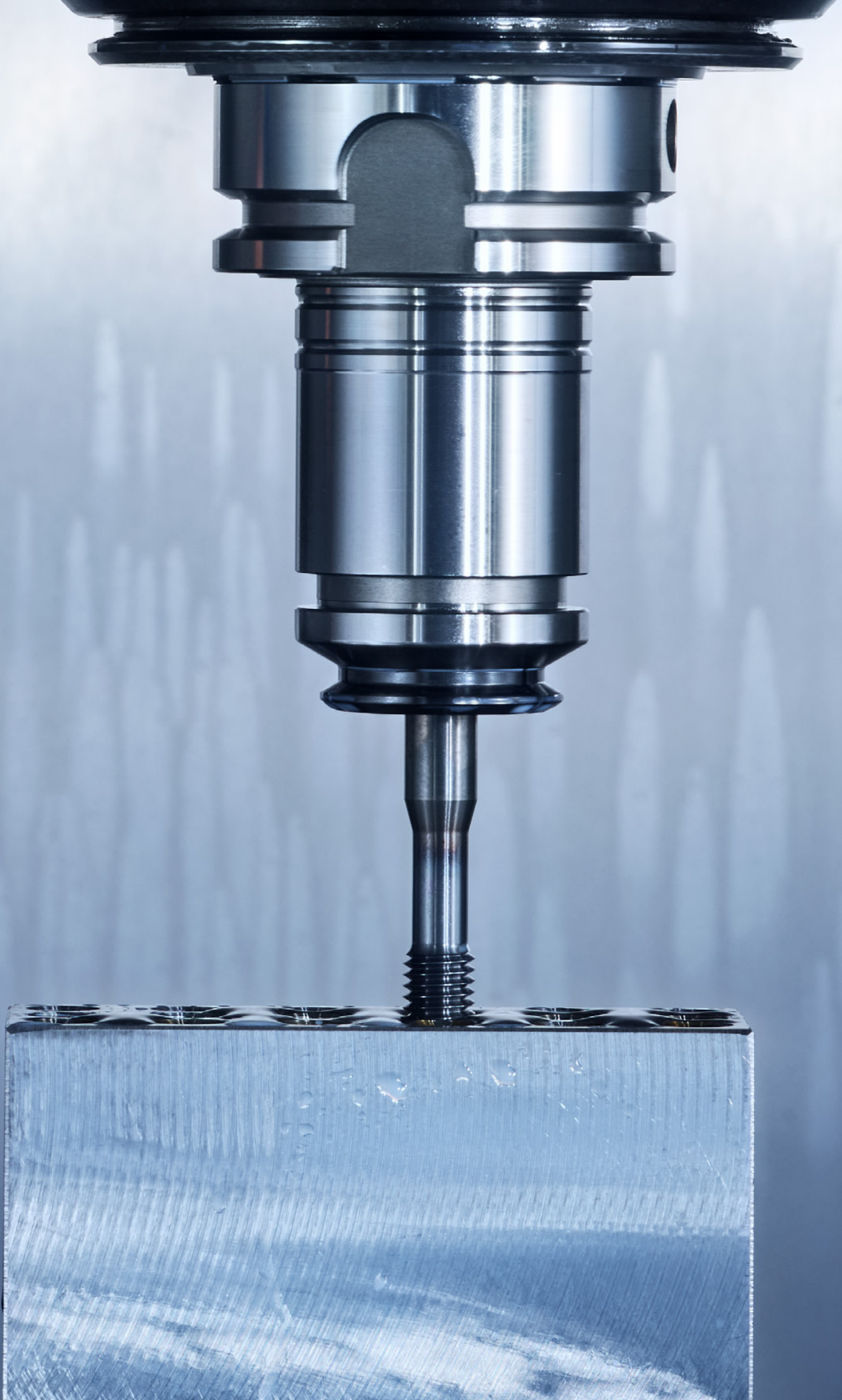
TB/BT 30 + CAT 30	7816.30100
TB/HSK 63 + C6 + BT 40	7816.63500
TB/HSK 100 + BT 50	7816.00500

Type	Part no.
Tool adapter for HSK + REGO-FIX CAPTO	

TB/HSK 25	7816.25500
TB/HSK 32 + C3	7816.32500
TB/HSK 40 + C4	7816.40500
TB/HSK 50 + C5	7816.50500
TB/HSK 63 + C6 + BT 40	7816.63500
TB/HSK 80 + C8	7816.80500
TB/HSK 100 + BT 50	7816.00500

REGO-FIX CAPTO – licensed by Sandvik Coromant.





Coolant tubes KSR

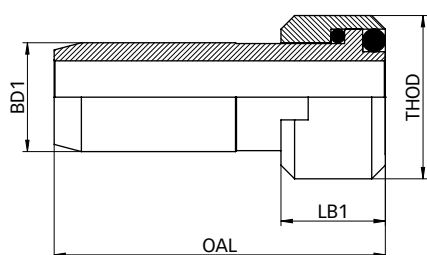
Wrenches for coolant tubes SKR

KSR

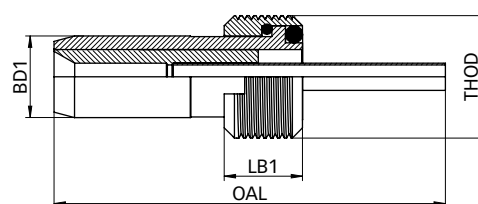
SKR

Type	Part no.	Dimensions [mm]			THOD	System
		BD1	LB1	OAL		
Coolant tubes KSR						
KSR 25	7211.25000	5	4,5	17	M 8 x 1	
KSR 32	7211.32000	6	5,5	25,7	M 10 x 1	
KSR 40	7211.40000	8	7,5	29,2	M 12 x 1	
KSR 50	7211.50000	10	9,5	32,7	M 16 x 1	
KSR 63	7211.63000	12	11,5	36,2	M 18 x 1	
KSR 80	7211.80000	14	13,5	39,7	M 20 x 1,5	
KSR 100	7211.00000	16	15,5	43,6	M 24 x 1,5	
KSR 125	7211.12500	16	15,5	43,6	M 24 x 1,5	

Coolant tubes KSR-MQL						
KSR 40-MQL PG 15 x 074	7211.40153	8	7,5	42	M 12 x 1	•
KSR 40-MQL PG 15 x 080	7211.40154	8	7,5	48	M 12 x 1	•
KSR 40-MQL PG 15 x 100	7211.40155	8	7,5	68	M 12 x 1	•
KSR 40-MQL PG 15 x 120	7211.40156	8	7,5	88	M 12 x 1	•
KSR 50-MQL PG 15 x 080	7211.50154	10	9,5	48,5	M 16 x 1	•
KSR 50-MQL PG 15 x 100	7211.50155	10	9,5	70,5	M 16 x 1	•
KSR 50-MQL PG 15 x 120	7211.50156	10	9,5	90,5	M 16 x 1	•
KSR 50-MQL PG 25 x 100	7211.50255	10	9,5	57,5	M 16 x 1	•
KSR 63-MQL PG 15 x 080	7211.63154	12	11,5	49	M 18 x 1	•
KSR 63-MQL PG 15 x 120	7211.63156	12	11,5	89	M 18 x 1	•
KSR 63-MQL PG 15 x 160	7211.63158	12	11,5	129	M 18 x 1	•
KSR 63-MQL PG 25 x 100	7211.63255	12	11,5	58	M 18 x 1	•
KSR 63-MQL PG 25 x 120	7211.63256	12	11,5	78	M 18 x 1	•
KSR 63-MQL PG 25 x 160	7211.63258	12	11,5	118	M 18 x 1	•
KSR 63-MQL PG 32 x 100	7211.63325	12	11,5	52,5	M 18 x 1	•

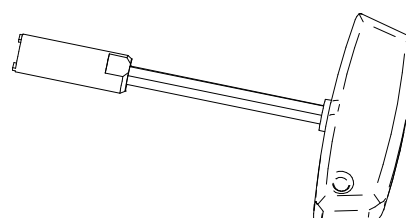


KSR



KSR-MQL

Type	Part no.	System
Wrenches SKR		
SKR 25	7212.25000	•••••
SKR 32	7212.32000	•••••
SKR 40	7212.40000	•••••
SKR 50	7212.50000	•••••
SKR 63	7212.63000	•••••
SKR 80	7212.80000	•••••
SKR 100	7212.00000	•••••
SKR 125	7212.12500	•••••



SKR

Trays for ER collet sets ZWT

Trays for ER collet sets ZZT [inch]

Trays for sealing disk sets DSR

Trays for PG collets CTPG

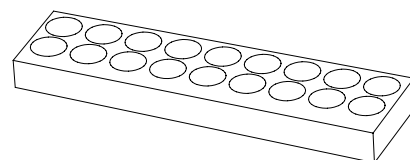
ZWT

ZZT

DSR

CTPG

Type	Part no.	fits ... items	System
Trays for ER collet sets ZWT			
ZWT 8	7121.08000	9	•
ZWT 11	7121.11000	13	••
ZWT 16	7121.16000	10	••
ZWT 20	7121.20000	12	•
ZWT 25	7121.25000	15	••
ZWT 32	7121.32000	18	••
ZWT 40	7121.40000	23	•
ZWT 50	7121.50000	12	•

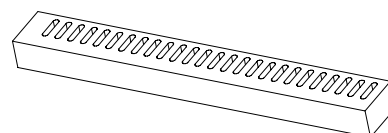


ZWT / ZZT

Trays for ER collet sets ZZT*			
ZZT 8	7121.08300	9	•
ZZT 11	7121.11300	13	••
ZZT 16	7121.16300	10	••
ZZT 20	7121.20300	12	•
ZZT 25	7121.25300	15	••
ZZT 32	7121.32300	18	••
ZZT 40	7121.40300	23	•

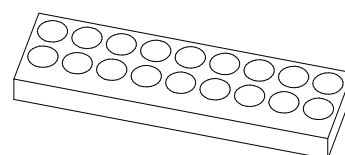
*USA only

Trays for sealing disk sets DSR			
DSR 16	7122.16000	14	••
DSR 20	7122.20000	20	•
DSR 25	7122.25000	26	••
DSR 32	7122.32000	34	••
DSR 40	7122.40000	46	•



DSR

Trays for PG collets CTPG			
CTPG 6	7698.06000	20	•
CTPG 10	7698.10000	14	•
CTPG 15	7698.15000	15	•
CTPG 25	7698.25000	16	•
CTPG 32	7698.32000	12	•



CTPG

Become a REGO-FIX▲ fan

Precision

at REGO-FIX is more than a standard – it's part of our identity and the foundation of our work. With our carefully selected merchandise items, you can express these values beyond the production floor.

Whether at the office, on the go or in your personal life – each product stands for quality, functionality and the unique character of REGO-FIX. Show your connection to a brand that represents innovation and precision.

Join our community and represent what REGO-FIX stands for.



 Additional merchandise items are available.



Meet our bestsellers



Technology meets play – the REGO-FIX PGU as a LEGO model

A small highlight with a big impact: to marvel at, build, and be inspired. The REGO-FIX PGU LEGO model is a detailed miniature version of our powRgrip® tool holding system – now available as a build-it-yourself set. A must-have for tech enthusiasts, apprentices, and partners who want to experience REGO-FIX up close.

- // **Special feature:** Limited edition
- // **Material:** Original LEGO® bricks
- // **Dimensions:** approx. 180 × 80 × 120 mm (L × W × H)
- // **Weight:** 295 g
- // **Part no.:** 0364.00346

Special
LIMITED EDITION

The REGO-FIX powRgrip® workplace mat – comfort and safety combined.

This high-quality mat combines ergonomic design with functionality: the textured surface ensures slip resistance, even when exposed to oil or chemicals. The comfort layer made from nitrile/PVC foam provides pleasant standing comfort, even during long shifts – ideal for workshops, production, or trade fair use.

- // **Special feature:** Structured surface with excellent resistance to oil and chemicals
Anti-slip profile for maximum footing safety
- // **Material:** Surface: statically dissipative nitrile rubber
Underside: high-density nitrile/PVC comfort foam
- // **Dimensions:** approx. 830 × 590 × 13 mm (L × W × H)
- // **Weight:** 2,385 kg
- // **Branding:** powRgrip®: green, REGO-FIX: white
- // **Color:** black
- // **Part no.:** 6000.12014



The REGO-FIX pocket knife – compact, versatile, essential.

With seven practical functions, this original Swiss knife is the perfect companion for your daily work and on the go. Blade, scissors, screwdriver – with the REGO-FIX pocket knife, you always have what matters most in a compact format.

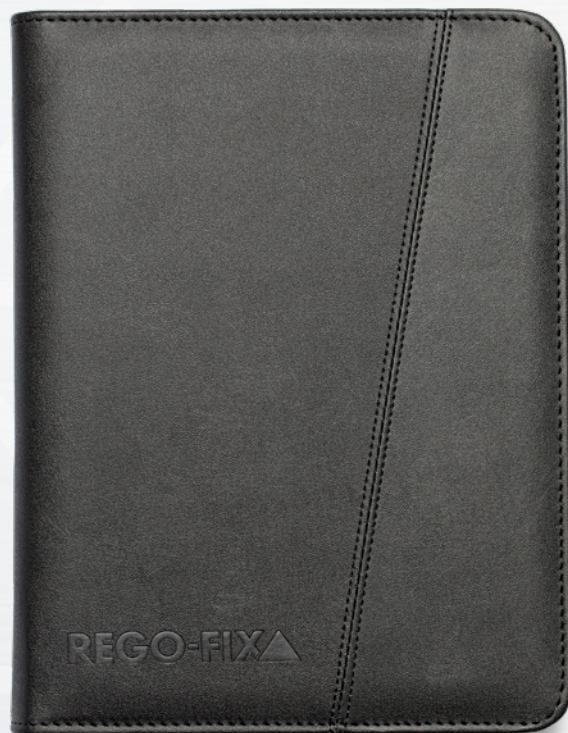
- // **Functions:** Blade, file, scissors, screwdriver, tweezers, toothpick
- // **Material:** ABS/Cellidor
- // **Dimensions:** approx. 58 × 18 × 9 mm (L × W × H)
- // **Weight:** 34 g (21 g)
- // **Branding:** white engraving
- // **Color:** blue
- // **Part no.:** 6000.08837



REGO-FIX conference folder – stylish and organized on the go.

Whether at customer meetings, trade fairs or in the office – this elegant conference folder combines functionality with a professional look. Featuring an inner pocket, card holder and pen loop, it keeps all essentials neatly organized. The embossed REGO-FIX logo adds a subtle and classy touch.

- // **Special feature:** Elegant, durable, representative
- // **Functions:** Inner pocket, pen loop, card holder
- // **Material:** Synthetic leather, REGO-FIX logo embossed
- // **Dimensions:** approx. 200 × 255 × 30 mm (L × W × H)
- // **Weight:** 340 g
- // **Branding:** black engraving
- // **Color:** black
- // **Part no.:** 0361.00086



REGO-FIX keychain – small, practical, unmistakable.

Whether on your keyring, backpack or tool case – this embroidered REGO-FIX keychain shows your commitment to precision and Swiss quality. Sturdy, lightweight and finely stitched – a stylish everyday companion.

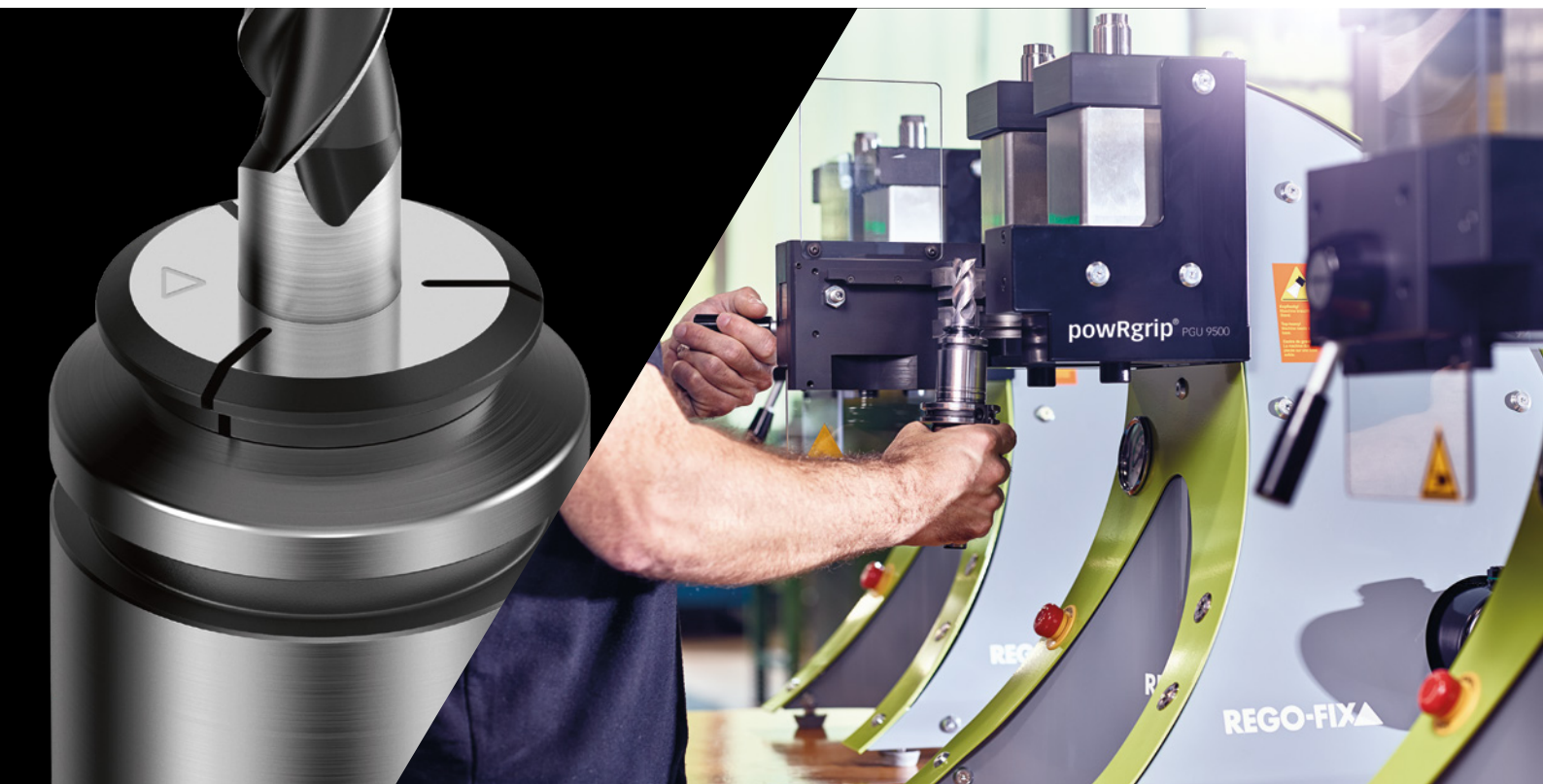
- // **Material:** Polyester
- // **Dimensions:** approx. 130 × 30 mm (L × W)
- // **Weight:** 7 g
- // **Branding:** white embroidery
- // **Color:** blue
- // **Part no.:** 0364.00235





Technical information

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Meeting high machining demands

The powRgrip® System provides excellent runout, high vibration damping as well as easy and secure handling for demanding high-speed milling and drilling.

Power and precision combined An outstanding tool runout is one of the most positive influences on enhancing your tool life.

SIMPLE

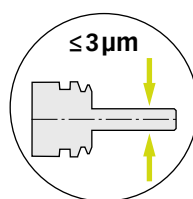
Tool is clamped in 8 seconds by pushing only one single button.

SAFE

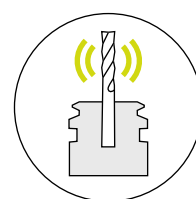
No heat up – high clamping force.

powRgrip®

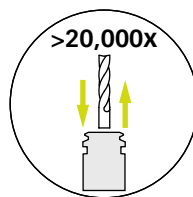
The tool clamping system of today and the future.



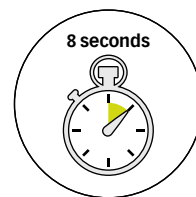
Total system runout TIR
≤3µm at 3xD



Excellent
vibration damping



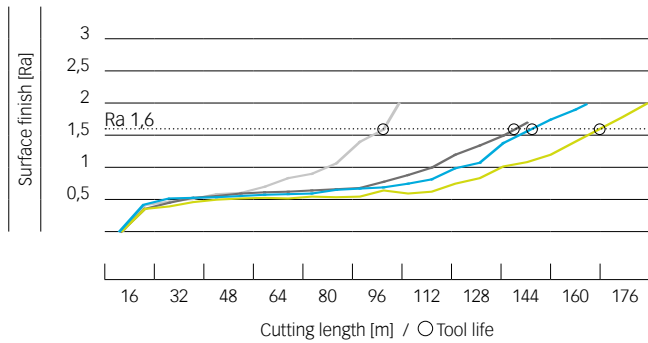
Maximum clamping
force and low runout, even
after 20,000 tool change



Tool ready for use in
8 seconds with PGU 9500

Increased cutter tool life with the powRgrip® System

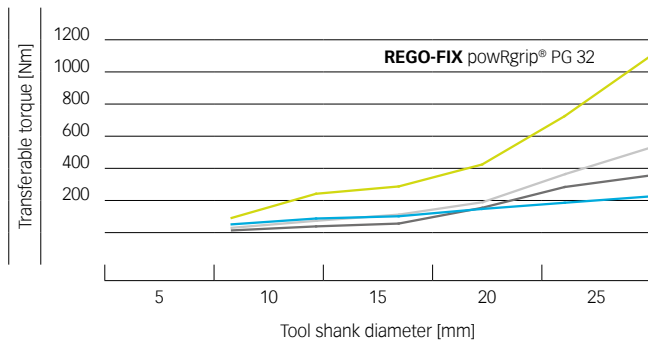
Influence of tool runout on tool life / Source: In-house testing.



- powRgrip®
- REGO-FIX ER system with Hi-Q® clamping nut
- Shrink-fit
- Hydro-chuck

Transferable torque of the powRgrip® System

Measured transferable torque per shank diameter / Source: In-house testing.



- powRgrip® PG 32
- Shrink-fit
- Hydro-chuck
- REGO-FIX ER 40



All tool shanks are clampable

All kind of materials such as carbide or HSS as of cylindrical, WELDON or Whistle notch can be clamped with powRgrip®.



Extensive collet range

Tools with shaft diameters from 0.2 up to 25.4 mm (1") can be clamped for milling, reaming, drilling and as well for turning applications. The possibilities of MQL, peripheral or internal cooling are given.

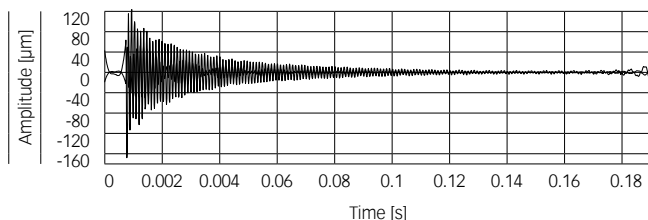


Wide range of toolholders

powRgrip®-toolholders are available for many spindle interfaces e.g. REGO-FIX CAPTO, BT, BT+, SK, SK+, HSK, CAT or cylindrical spindle interfaces. Discover our wide product range at www.rego-fix.com.

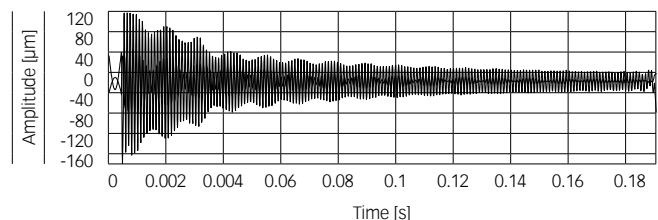
Measurement of vibrations | powRgrip®

Amplitude indication of the REGO-FIX powRgrip®-toolholder



Measurement of vibrations | Shrink-fit holder

Amplitude indication of a standard shrink-fit holder

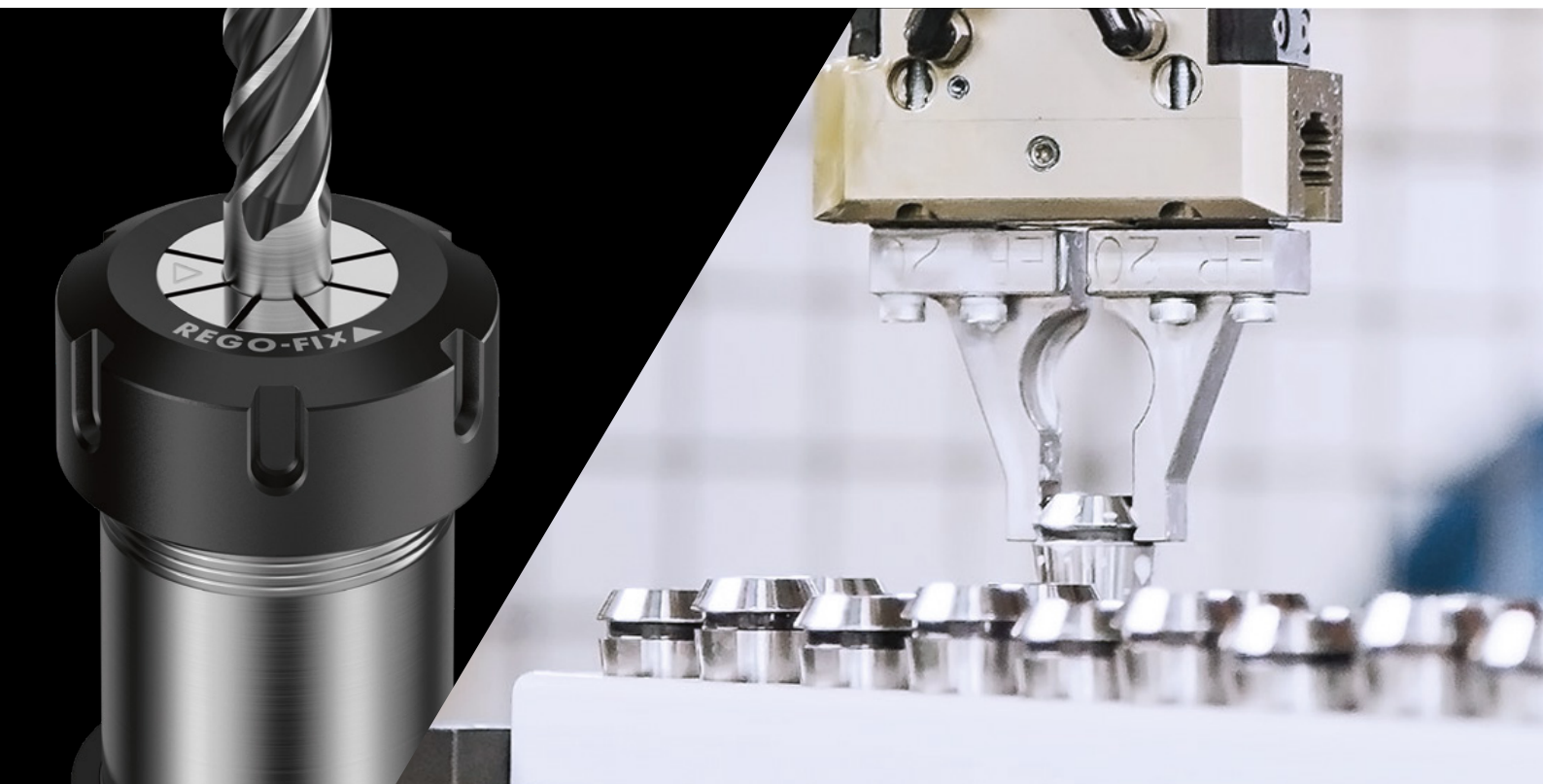


Test and comparison done by:



Expert advice

Test powRgrip® free of charge! Get more information at try.rego-fix.ch/toollife.



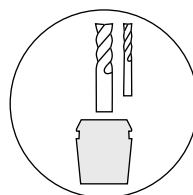
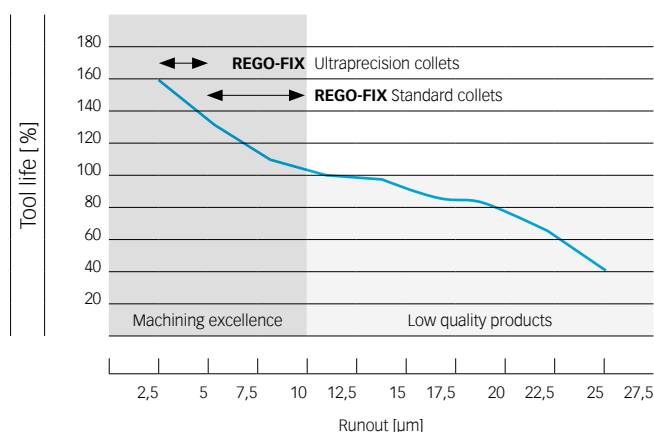
Defining toolholding standards

When REGO-FIX first introduced the ER System in 1972, it took the machining world by storm. With the DIN 6499 standardization twenty years later, the REGO-FIX ER collet became the industry standard. Today, the ER System is still the most used toolholding system worldwide.

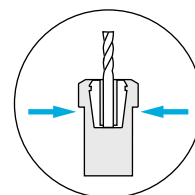
High quality matters An outstanding tool runout is one of the most positive influences on enhancing your tool life.

Extend tool life with the REGO-FIX ER range

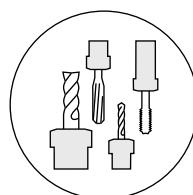
Influence of tool runout on tool life / Source: In-house testing.



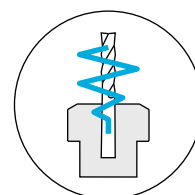
The widest ER product range: clamps all diameters from 0.2 mm–36 mm



Safe and accurate toolholding of all shank types and materials



Outstanding flexibility for use with all tool types



High vibration-damping results in longer tool life and best surface finish

Successful clamping since 1972

Combine our ER toolholders with our ER collets to ensure maximum precision and balance to maximize your tool life. All our products bear the REGO-FIX triangle – our seal for outstanding Swiss quality.

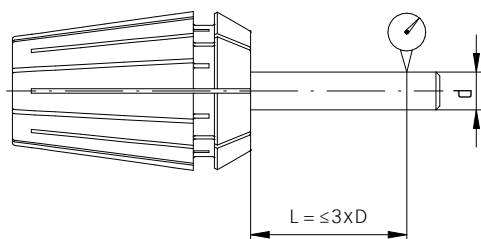
Meet highest requirements defined by Swiss standards Swiss people are known to be humble and conservative: All our measuring data are to be considered as maximum values. Many other manufacturers are showing the common

measured total internal runout (TIR average). With us, you get maximum guaranteed values – To your advantage most of the values are even considerably lower.

Runout TIR of ER standard, ER-UP and MR collets

Clamping diameter d [mm]			TIR max. [mm]			
>	≤	L	DIN 6499	ΔER-Std.	ΔER-UP	ΔMR
			ISO 15488 B			
1	1,6	6	0,015	0,01	0,005	0,002
1,6	3	10	0,015	0,01	0,005	0,002
3	6	16	0,015	0,01	0,005	0,002
6	10	25	0,015	0,01	0,005	0,002
10	18	40	0,02	0,01	0,005	0,002
18	26	50	0,02	0,01	0,005	0,002
26	36	60	0,025	0,01	0,005	0,002

$L = \leq 3 \times D$



Key advantages

Rely on the original

Wide clamping range

The slot design allows for a wide clamping range with best runout TIR along the entire clamping range.

Broad range of products

We offer sizes from ER 8 up to ER 50 and diameters from 0.2 mm up to 36 mm.

Up to 20 % more clamping length

Improve your runout with up to 20 % more clamping length in smaller diameters.

Matched tooling system for best fit

The compatibility of the entire system results in maximum precision, balance and tool life.

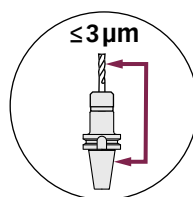


Every micron counts

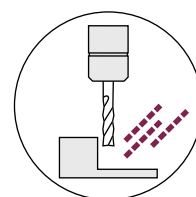
Closing the gap between the powRgrip® and the ER System, the micRun® System performs with a total system runout of $\leq 3\mu\text{m}$.

Swiss high precision An excellent runout accuracy paired with superior vibration damping, not only increases your machining quality, but enhances your overall productivity. It also increased your tool life, thus successfully lowering your cutter costs. With a total system runout of $\leq 3\mu\text{m}$ at $3\times D$, the micRun® System provides all the benefits of excellent runout accuracy.

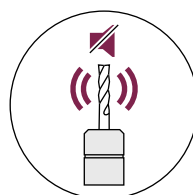
This is why micRun® is the ideal system for all micro machining applications and is successfully used in industries like watch-making or medical engineering. In addition, our unique collet-locking system retains the collet safely inside the nut. This minimizes your risk of faulty operations or possible damages which may occur if the collet accidentally falls to the ground. Another great benefit of our collet-locking system is the tool-free removal of the collet.



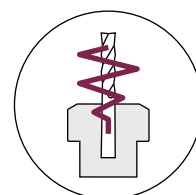
Total system TIR
 $\leq 3\mu\text{m}$ at $3\times D$



Designed for
high-speed cutting.



Silent and low vibration due
to grooveless clamping nut



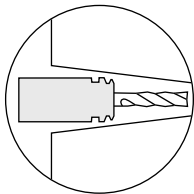
High vibration-damping
results in longer tool life and
best surface finish



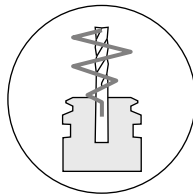
XL vibration damping

Optimize your surface finish and extend tool life by minimizing occurring vibrations during machining.

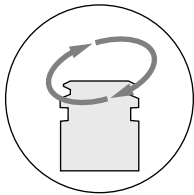
Minimize tool vibrations The MICRO-FRICTION Damping™ (MFD) technology (pat. pend.) by REGO-FIX allows our XL toolholders to dissipate vibrations faster than standard long-reach toolholders. Damping the vibrations faster means that your cutting tool, part and spindle will see less vibrations resulting in better surface finishes, longer tool life and less spindle wear. All REGO-FIX XL toolholders are balanced to G 2.5 @ 5,000 rpm.



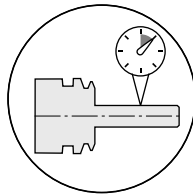
Minimal outside dimensions:
long and slim design



Exclusive
vibration-damping design



Balanced by design

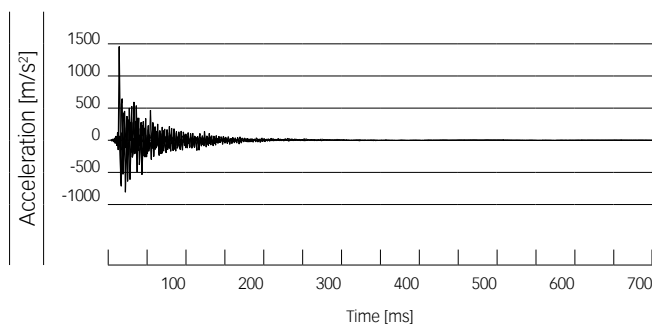


Total system runout
 $TIR \leq 10 \mu m$ at 3xD



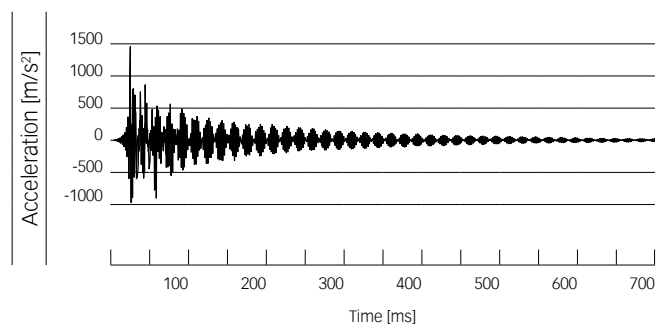
Vibration chart

Decay of REGO-FIX XL toolholder **with vibration-damping design**
Source: In-house testing.



Vibration chart

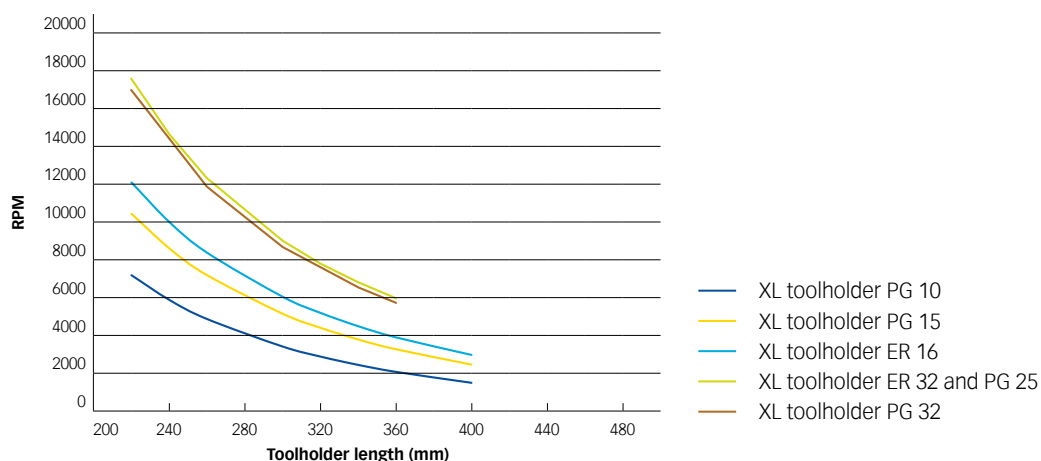
Monoblock standard toolholder **without vibration-damping design**
Source: In-house testing.





RPM recommendations for XL toolholders

Thanks to a wide XL toolholder program, we offer for each of your applications the right solution. Unleash the full potential by respecting the appropriate working conditions.



Calculation of the maximum speed of a shaft with cantilever bearing. Calculated values without consideration of:

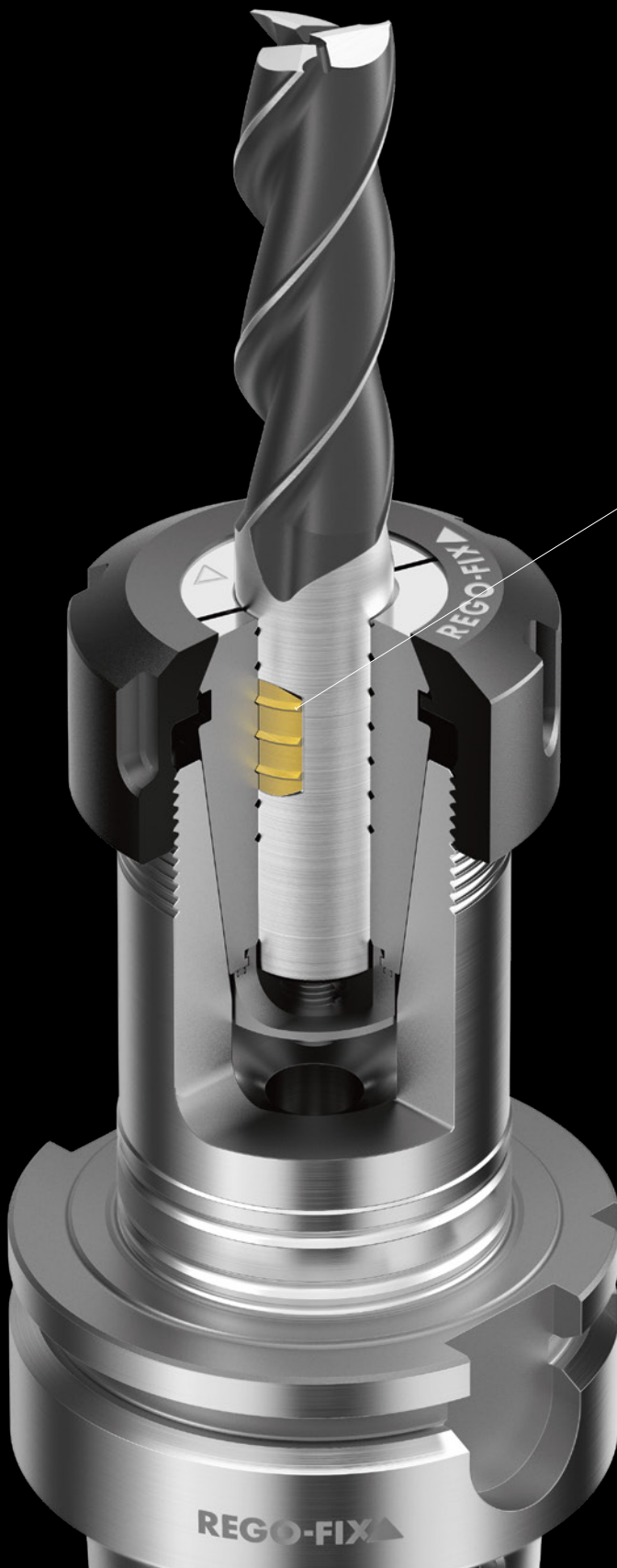
- // Balancing quality (Overall-system)
- // Machine spindle (Stability)
- // Projection length of the cutting tools

The maximum speeds are directly dependent on the properties of the spindle and the machining forces.

These are standard guidelines for REGO-FIX Xtended Length toolholders. No guarantee can be given for the maximum speeds of the entire system.

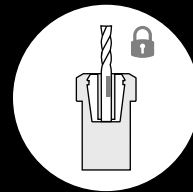
Form-fit for 100 % pullout protection

With our innovative secuRgrip® solution, we offer a total tool pullout protection for the ER and powRgrip® System.

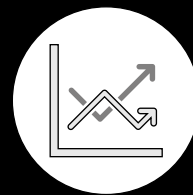


Threaded insert for end mill flat

Key advantages

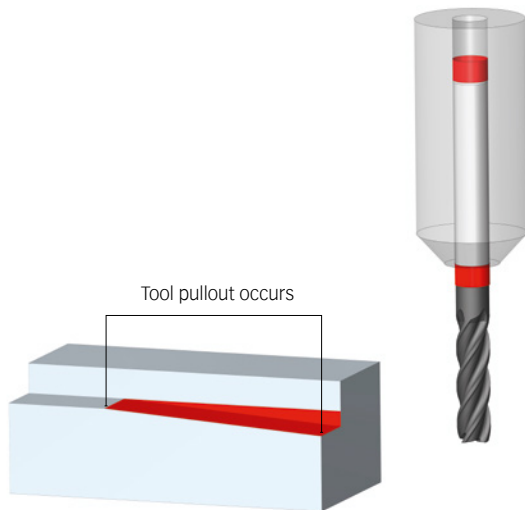


SecuRgrip® is available for all standard tools with Weldon flat (10 – 25.4 mm), without additional modifications.

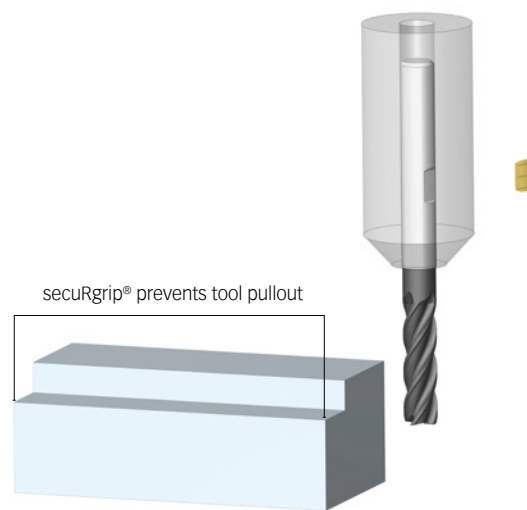


Increase productivity through process reliability.

Safe machining even for difficult-to-handle workpieces



Length alterations can lead to damage of the workpiece.



Prevent workpiece damage by using REGO-FIX secuRgrip®.

Full protection where you need it The secuRgrip® threaded insert is designed to fit in any tool with a Weldon flat. This way you can use the tool of your choice. In combination with our secuRgrip® collet, we offer the ultimate tool pullout protection at a competitive price.

Avoiding length alterations caused by tool pullout results in improved process reliability and ultimately improves your overall machining productivity. Our secuRgrip® solution is available for ER 32 and ER 40 as well as for PG 15, PG 25 and PG 32 – just the right sizes when it comes to rough machining.

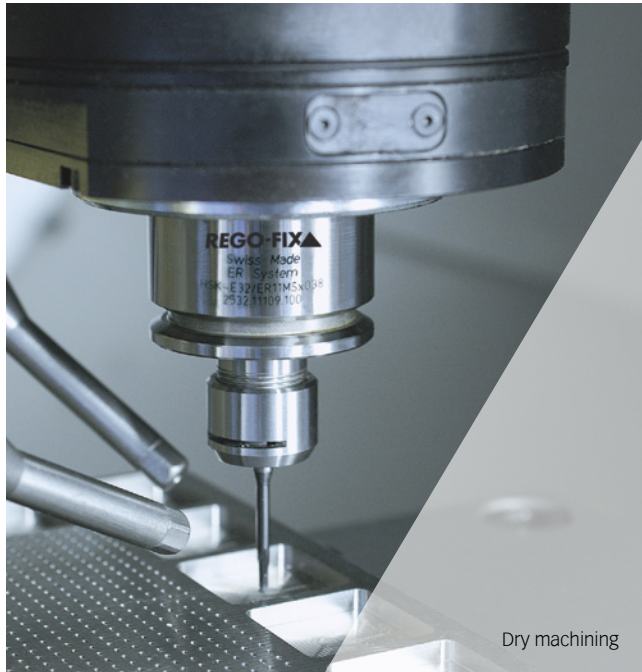
- // No additional costs for replacing damaged tools, thanks to ER and PG secuRgrip®
- // No modification of the tool shank is required
- // Extra protection for worry-free machining, especially with expensive work pieces

Expert advice

secuRgrip® is available for ER and powRgrip®.

Mastering both wet and dry applications

We offer efficient solutions for specific machining techniques and different work materials to maximize your machining.



Dry machining is mainly used for specific machining techniques and work materials, such as carbon, high-tensile plastics or wood.

Pros

- // Reduced initial machine investment costs
- // Simple and easy cleaning
- // Clear sight on point of action between tool and workpiece

Cons

- // Inadequate heat dissipation can lead to a reduced tool life
- // Increased tooling costs due to earlier wear and tear
- // Extended production cycles due to slower possible production speed



The cutting edge is subject to thermal strains. Wet machining thus helps to regulate the impact of high heat that occurs during milling, ultimately protecting the tool against total tool failure.

Pros

- // Fast and effective heat dissipation
- // Improved surfaces thanks to lubrication of cutting edge
- // Clean and easy chip removal
- // Production cycles can be increased leading to an overall increase of productivity
- // Lowered tool costs

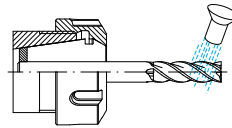
Cons

- // Additional costs for the acquisition of a pump
- // Limited view on point of action
- // Wet surroundings may present as an ideal bacteria breeding ground

Supplying the right amount of coolant to where it matters



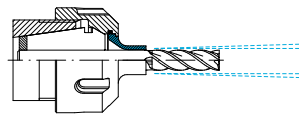
Key features of external flood cooling



- // Universal application possibilities
- // Problems may arise with deep cavities
- // Reduction of tool life because cooling is not right on the cutting edge
- // Suboptimal chip deflection
- // Limited adjustment of nozzles due to different tool lengths and diameters



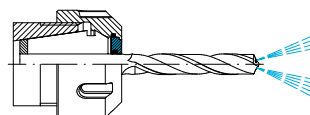
Key features of peripheral cooling



- // Coolant is fed along the side of the tool to the cutting edge
- // Can be used for moderate cavities
- // Achieve peripheral cooling with reCool® and the use of our coolant flush disk KS / ER or PG-CF collet



Key features of internal cooling



- // Precise cooling at the cutting edge and improved chip removal
- // Particularly suitable for deep cavities
- // Deep hole drilling and threading
- // Lubrication of cutting edge and cooling
- // Best surface quality
- // Achieve internal cooling with reCool® and the use of our sealing disk DS / ER



Cryogen: Coolant at the right spot

COOL

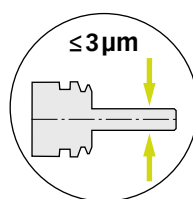
CO₂ cools the cutting edge in a safe and clean way, thanks to powRgrip® with an optimum dosage.

CLEAN

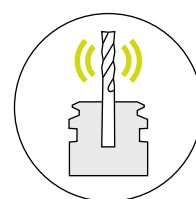
No contamination at all, therefore no necessity to do additional cleaning of the workpiece afterwards.

CRYO-powRgrip®

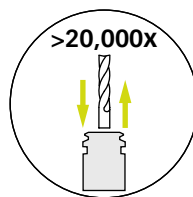
PG-CRYO collets offer the latest tool cooling technology for a clean chipping of workpieces (i.e. medical industries).



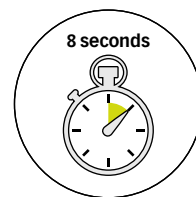
Total system runout TIR
≤ 3µm at 3xD



Excellent
vibration damping



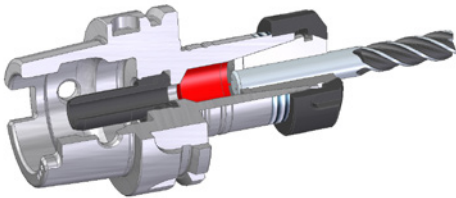
Maximum clamping
force and low runout, even
after 20,000 tool change



Tool ready for use in
8 seconds with PGU 9500

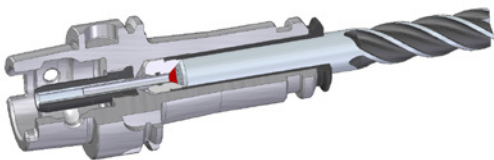
The major difference of toolholding systems

Solution: reducing of the condensation space



ER toolholder

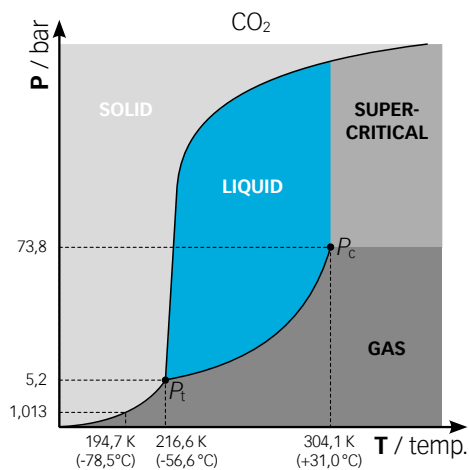
Typical tool clamping system, with the risk of icing of the holder, due to the gaseous state behaviour of CO₂.



PG-CRYO toolholder

The cooling medium will be directly led to the cutting edge through the cutting tool. The CO₂ expands at the cutting edge and the ice snow provides an efficient and clean chipping

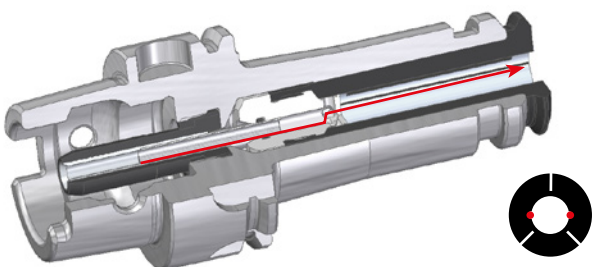
State of aggregation diagram CO₂



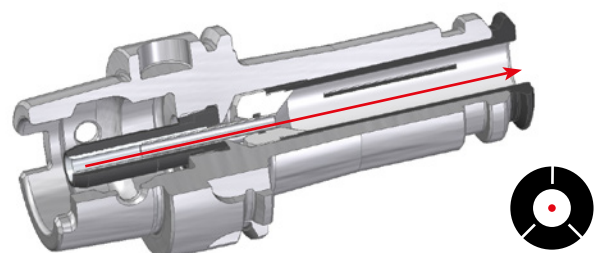
Benefit of CRYO-powRgrip®

- // Perfect guidance of the cooling medium to the cutting edge
- // Tool life increase
- // Productivity increase, due to higher cutting parameters
- // Better surface finishing
- // No disposal of the cooling fluid necessary
- // No necessity of workpiece cleaning
- // 100% recycling of the chips

For peripheral external cooling

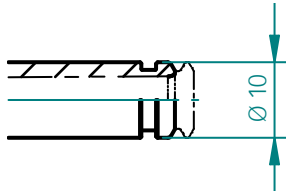


For internal cooling



powRgrip® System and secuRgrip® nose diameter comparison

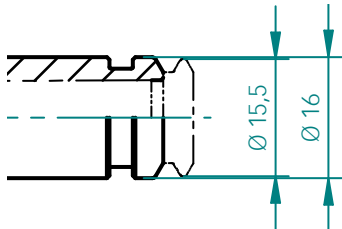
Standard nose diameter comparison



PG 6

Collet diameters:
0,2 – 4,0 mm / 1/16 – 1/8"

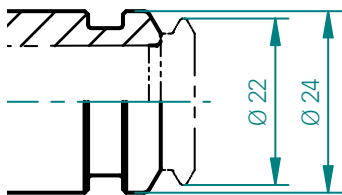
Collet options:
Std, CF, CB, L, S, SG, TAP,
SC, MQL, PGST



PG 10

Collet diameters:
0,2 – 6,0 mm / 1/16 – 1/4"

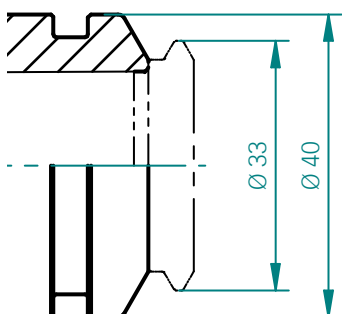
Collet options:
Std, CF, S, MB, SC



PG 15

Collet diameters:
3,0 – 12,0 mm / 1/8 – 1/2"

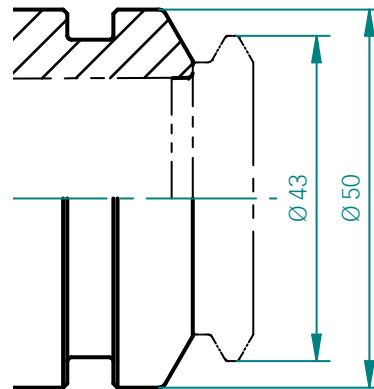
Collet options:
Std, CF, CB, L, S, SG, TAP,
SC, MQL, PGST



PG 25

Collet diameters:
3,0 – 20,0 mm / 1/8 – 3/4"

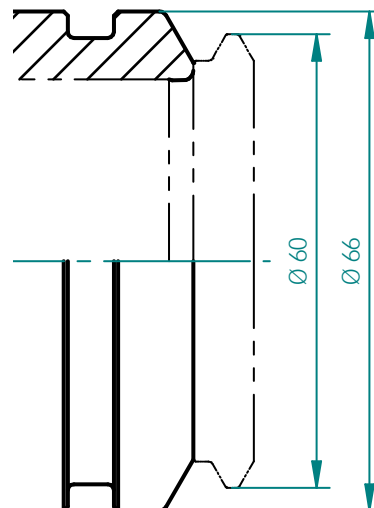
Collet options:
Std, CF, CB, L, S, SG, TAP,
MQL, PGST



PG 32

Collet diameters:
6,0 – 25,0 mm / 1/4 – 1"

Collet options:
Std, CF, CB, L, S, SG, PGST

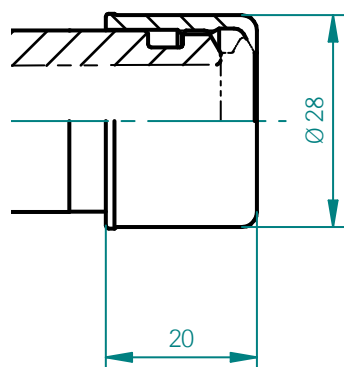


PG 48

Collet diameters:
20,0 – 40,0 mm / 3/4 – 1 1/2"

Collet options:
Std, CF

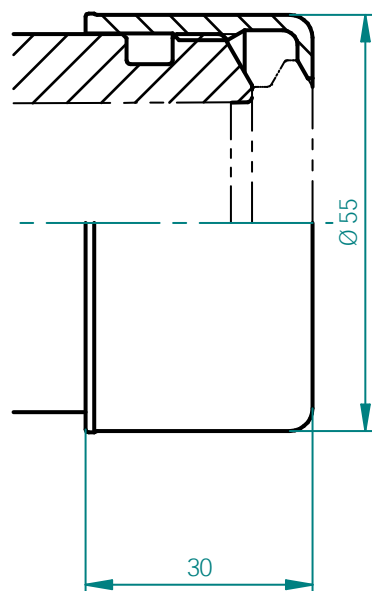
secuRgrip® nose diameter comparison



PG/SG 15

Collet diameters:
3,0 – 12,0mm / 1/8 – 1/2"

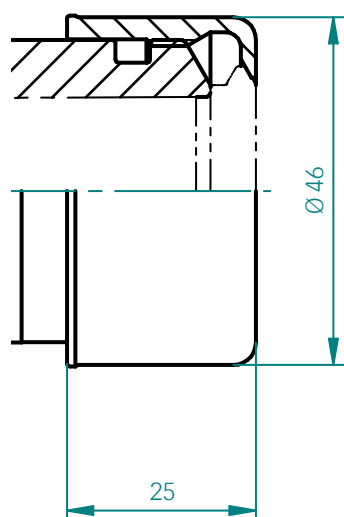
Collet options:
Std, CF, CB, L, S, SG, TAP,
SC, MQL, PGST



PG/SG 32

Collet diameters:
6,0 – 25,0mm / 1/4 – 1"

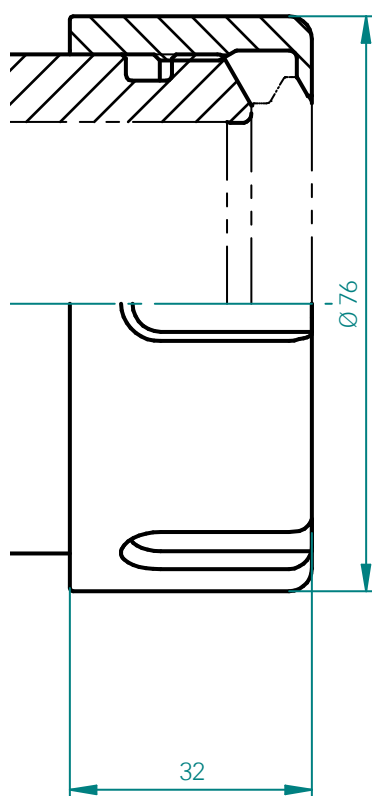
Collet options:
Std, CF, CB, L, S, SG, PGST



PG/SG 25

Collet diameters:
3,0 – 20,0mm / 1/8 – 3/4"

Collet options:
Std, CF, CB, L, S, SG, TAP,
MQL, PGST



PG/SG 48

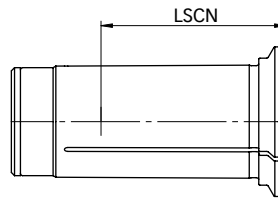
Collet diameters:
20,0 – 40,0mm / 3/4 – 1 1/2"

Collet options:
Std, CF

Presetting range of powRgrip® collets

		PG 6 Std./CF		PG 6 S		PG 10 Std./CF/SC		PG 10 S		PG 15 Std./TW/ CF/CB/ MQL/SC/SG		PG 15 S		PG 15 L**		PG 25 Std./CF/ CB/MQL/SG	
DCONXWS		LSCN [mm]		LSCN [mm]		LSCN [mm]		LSCN [mm]		LSCN [mm]		LSCN [mm]		LSCN [mm]		LSCN [mm]	
[mm]	[inch]	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.
0,2–1,0	–	21,5	26,5*	–	–	20	24*	–	–	–	–	–	–	–	–	–	–
1,5	–	23,5	26,5*	–	–	16	20*	–	–	–	–	–	–	–	–	–	–
–	1/16"	23,5	26,5*	–	–	16	20*	–	–	–	–	–	–	–	–	–	–
2,0	–	24	26,5	–	–	25	30	–	–	–	–	–	–	–	–	–	–
2,5	–	24	26,5*	–	–	25	30	–	–	–	–	–	–	–	–	–	–
3,0	–	24	26,5	17	20	25,5	30	20,5	26	25	30	–	–	–	–	25	32,5
–	1/8"	24	26,5	17	20	25,5	30	20,5	26	25	30	18	25	–	–	25	32,5
3,5	–	–	–	–	–	25,5	30	–	–	25	30	–	–	–	–	25	32,5
4,0	–	23,5	26,5*	–	–	25,5	30	20,5	26	25	30	18	25	25	53	25	32,5
4,5	–	–	–	–	–	25,5	30	–	–	25	30	–	–	–	–	25	32,5
–	3/16"	–	–	–	–	25,5	30	20,5	26	25	30	18	25	–	–	25	32,5
5,0	–	–	–	–	–	25,5	30	–	–	25	30	18	25	25	53	25	32,5
5,5	–	–	–	–	–	25,5	30	–	–	25	30	–	–	–	–	25	32,5
6,0	–	–	–	–	–	30	35	23,5	29	33	38	26	33	33	53	33	40,5
–	1/4"	–	–	–	–	30	35	23,5	29	33	38	26	33	33	53	33	40,5
7,0	–	–	–	–	–	–	–	–	–	33	38	–	–	–	–	33	40,5
–	5/16"	–	–	–	–	–	–	–	–	33	38	26	33	33	53	33	40,5
8,0	–	–	–	–	–	–	–	–	–	33	38	26	33	33	53	33	40,5
9,0	–	–	–	–	–	–	–	–	–	33	38	–	–	–	–	33	40,5
–	3/8"	–	–	–	–	–	–	–	–	37	40,5	31	38	37	53	37	44,5
10,0	–	–	–	–	–	–	–	–	–	37	40,5	31	38	37	53	37	44,5
11,0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	37	44,5
–	7/16"	–	–	–	–	–	–	–	–	–	–	–	–	–	–	37	44,5
12,0	–	–	–	–	–	–	–	–	–	41,5*	45*	–	–	–	–	42	49,5
–	1/2"	–	–	–	–	–	–	–	–	41,5*	45*	–	–	–	–	42	49,5
13,0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	42	49,5
14,0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	42	49,5
–	9/16"	–	–	–	–	–	–	–	–	–	–	–	–	–	–	42	49,5
15,0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	42	49,5
–	5/8"	–	–	–	–	–	–	–	–	–	–	–	–	–	–	45,5	50
16,0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	45,5	50
18,0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	45,5	50
–	3/4"	–	–	–	–	–	–	–	–	–	–	–	–	–	–	47,5	50
20,0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	47,5	50
22,0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	7/8"	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
25,0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	1"	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	1 1/4"	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
32,0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
–	1 1/2"	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
40,0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

*CF not available **PG-L without stop screw



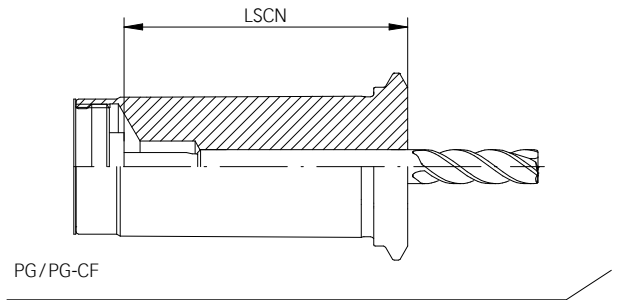
		PG 25 S		PG 25 L**		PG 32 Std./CF/ CB/SG		PG 32 S		PG 32 L**		PG 48 Std./CF		PGST 15	PGST 25
DCONXWS		LSCN [mm]		LSCN [mm]		LSCN [mm]		LSCN [mm]		LSCN [mm]		LSCN [mm]		LSCN [mm]	
[mm]	[inch]	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.		
0,2-1,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	1/16"	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,0	-	-	-	-	-	-	-	-	-	-	-	-	-	28	28
-	1/8"	18	25	-	-	-	-	-	-	-	-	-	-	28	28
3,5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,0	-	18	25	-	-	-	-	-	-	-	-	-	-	28	28
4,5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	3/16"	18	25	-	-	-	-	-	-	-	-	-	-	28	28
5,0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5,5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6,0	-	26	33	33	65	33,5	40,9	-	-	-	-	-	-	36	36
-	1/4"	26	33	33	65	33,5	40,9	-	-	-	-	-	-	36	36
7,0	-	-	-	-	-	33,5	40,9	-	-	-	-	-	-	-	-
-	5/16"	26	33	33	65	33,5	40,9	-	-	-	-	-	-	36	36
8,0	-	26	33	33	65	33,5	40,9	-	-	-	-	-	-	36	36
9,0	-	-	-	-	-	33,5	40,9	-	-	-	-	-	-	-	-
-	3/8"	30	38	37	65	35,5	44,9	-	-	-	-	-	-	40	40
10,0	-	30	38	37	65	35,5	44,9	-	-	-	-	-	-	40	40
11,0	-	-	-	-	-	35,5	44,9	-	-	-	-	-	-	-	-
-	7/16"	-	-	-	-	35,5	44,9	-	-	-	-	-	-	-	-
12,0	-	35	43	42	65	40,5	49,9	32	40,5	40,5	69	-	-	-	45
-	1/2"	35	43	42	65	40,5	49,9	32	40,5	40,5	69	-	-	-	45
13,0	-	-	-	-	-	40,5	49,9	-	-	-	-	-	-	-	-
14,0	-	35	43	42	65	40,5	49,9	35	43	40,5	69	-	-	-	-
-	9/16"	-	-	-	-	40,5	49,9	-	-	-	-	-	-	-	-
15,0	-	-	-	-	-	40,5	49,9	-	-	-	-	-	-	-	-
-	5/8"	38	46	45,5	65	43,5	52,9	35	43,5	-	-	-	-	-	48
16,0	-	38	46	45,5	65	43,5	52,9	35	43,5	43,5	69	-	-	-	48
18,0	-	-	-	-	-	43,5	52,9	-	-	-	-	-	-	-	-
-	3/4"	40	47,5	47,5	65	45,5	54,9	37	45,5	45,5	69	44	52	-	48
20,0	-	40	47,5	47,5	65	45,5	54,9	37	45,5	45,5	69	44	52	-	48
22,0	-	-	-	-	-	45,5	54,9	-	-	-	-	-	-	-	-
-	7/8"	-	-	-	-	45,5	54,9	-	-	-	-	-	-	-	-
25,0	-	-	-	-	-	49,5	58	41	49,5	49,5	69	52	60,5	-	-
-	1"	-	-	-	-	49,5	58	41	49,5	49,5	69	57	65,5	-	-
-	1 1/4"	-	-	-	-	-	-	-	-	-	-	57	65,5	-	-
32,0	-	-	-	-	-	-	-	-	-	-	-	57	65,5	-	-
-	1 1/2"	-	-	-	-	-	-	-	-	-	-	68	74	-	-
40,0	-	-	-	-	-	-	-	-	-	-	-	68	74	-	-

*CF not available **PG-L without stop screw

Maximum presetting range for powRgrip® standard collets and PG-CF collets

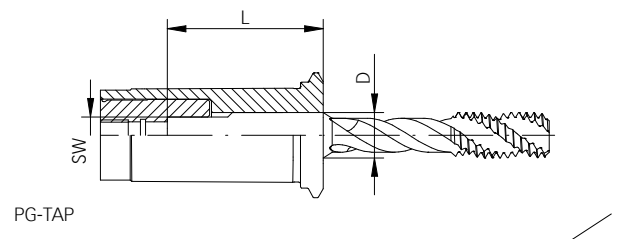
Sizes	PG 6	PG 10	PG 15	PG 25	PG 32
LSCN max.	26,5	35	40,5	50	58

LSCN: maximum depth (without stop screw)



Presetting range of PG-TAP collets with internal square

Dimensions [mm/inch]		PG 15-TAP [mm]		PG 25-TAP [mm]	
DCONXWS	□	LSCN min.	LSCN max.	LSCN min.	LSCN max.
3.5	2.7	27	29	–	–
0.141"	0.110"	27	29	–	–
0.168"	0.131"	27	29	–	–
4.5	3.4	27	29	–	–
0.194"	0.152"	27	29	–	–
0.220"	0.165"	28	30	–	–
6	4.9	29	31	33	35
0.255"	0.191"	29	31	–	–
7	5.5	29	31	–	–
8	6.2	34	36	34	36
0.318"	0.238"	–	–	34	36
9	7	35	37	35	37
0.367"	0.275"	–	–	35	37
0.381"	0.286"	–	–	39	41
10	8	36	38	39	41
11	9	–	–	40	42
12	9	–	–	40	42
14	11	–	–	42	44
16	12	–	–	43	45



Recommended tightening torque for secuRgrip® safety nuts

Safety nut type	Nut Ø [mm]	Recommended torque	Freewheel wrench head	TORCO-FIX
PG 15/SGN 15	28,00	50 Nm	A-FLS Ø 28,0/SG 15	II
PG 25/SGN 25	46,00	70 Nm	A-FLS Ø 46,0/SG 25	II
PG 32/SGN 32	55,00	80 Nm	A-FLS Ø 55,0/SG 32	II





The unbeatable advantages from the inventor of the ER collet

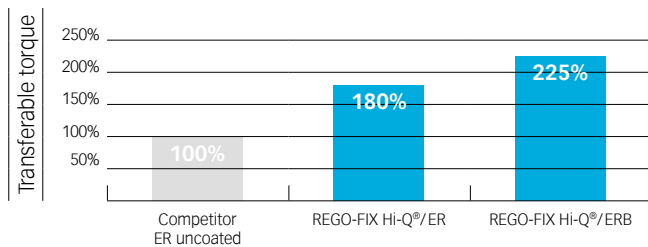
Wide selection available

- // Includes friction-bearing for higher clamping force
- // Available with sealing disk for coolant through tools
- // Mini nut with minimal external diameter
- // Clamping nut for high rpm
- // Externally threaded clamping nut for floating chucks, ERA Zero-Z® toolholder and live tooling
- // Slip-off proof mini clamping nut intrRlox® for safe assembling

Torque comparison of different clamping nuts

REGO-FIX Hi-Q®/ER and Hi-Q®/ERB vs. competitor nuts

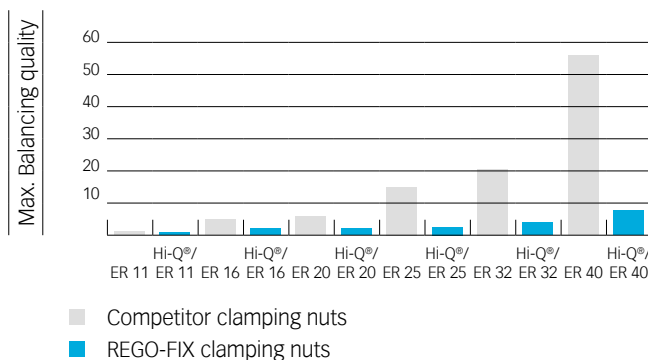
Source: In-house testing.



Balancing quality overview [gmm]

REGO-FIX clamping nuts vs. competitor nuts

Source: In-house testing.



Swiss quality standard

Our products marked Swiss made are manufactured at our headquarters in Tenniken, Switzerland.

Key advantages

Hi-Q® /ER System

Collet locking system

Retains collet in nut for easier assembly.

Balancing

Ideal for high-speed applications.

Higher transferable torque

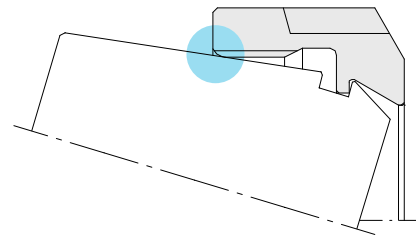
Lower frictional forces resulting in up to 80% higher gripping force over standard non-treated clamping nuts. With friction bearing nut up to 125%.

Protection against corrosion

With a special surface treatment for longer life.

Optimal contour

Rounded thread start prevents damaging of collets on tool changes.



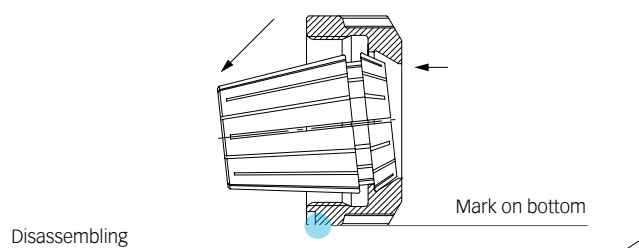
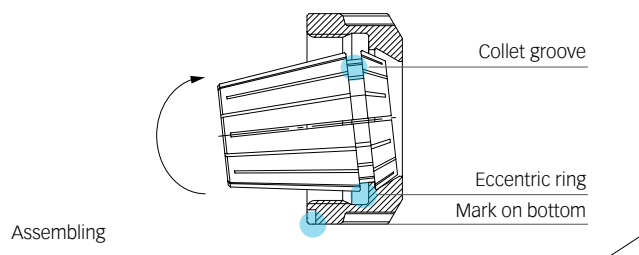
Assembly instructions for ER and MR collets

Collets ER 11–ER 50 and MR 11–MR 32 (with collet locking system)

Assembling Insert groove of the collet into eccentric ring of the clamping nut at the mark on the bottom of the nut. Push collet in the direction of the arrow until it clicks in. Insert tool. Screw nut with collet onto toolholder.

Disassembling After the nut is unscrewed from the toolholder, press on the face of the collet while simultaneously pushing sideways on the back of the collet opposite the mark until it disengages from the clamping nut.

Important Improper assembly can permanently damage the runout TIR of the collet and may result in the destruction of the clamping nut. Only mount nuts with correctly inserted collets. Never place the collet into the holder without first assembling into the nut.

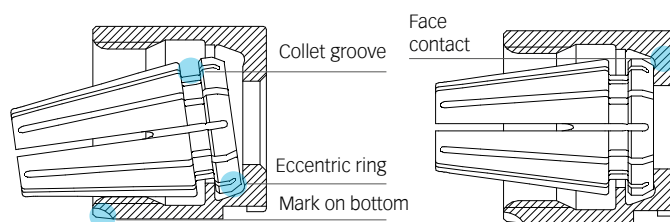
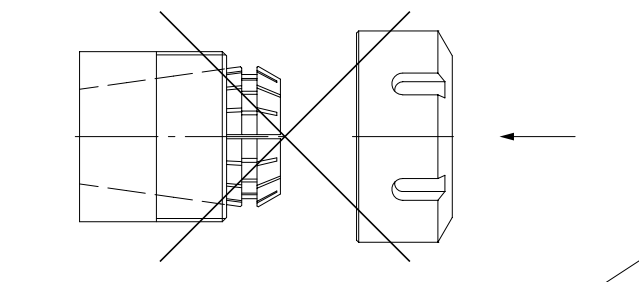


Collets ER 8 (without collet locking system)

Assembling Insert groove of the collet into eccentric ring of the clamping nut at the mark on the bottom of the nut. Insert tool. Hold nut with collet in horizontal position and screw onto toolholder.

Disassembling After unscrewing the clamping nut from the tool holder, the collet can easily be removed from the clamping nut.

Important The face of the ER 8 collet chuck must fit cleanly against the inner surface of the clamping nut. (ER 8 collets do not feature a 30° cone.)

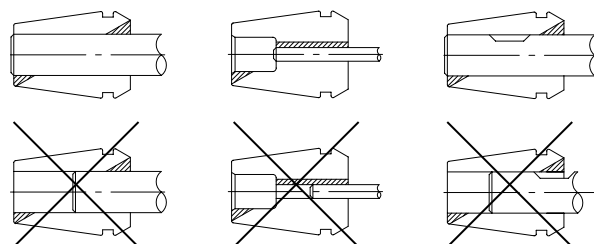


Expert advice

Never insert the tool less than $\frac{2}{3}$ of the collet length.
We recommend tightening the clamping nuts with our TORCO-BLOCK or torque wrench.

For more information on TORCO-BLOCK, see page 342.

For tightening torque recommendations, please refer to page 377.



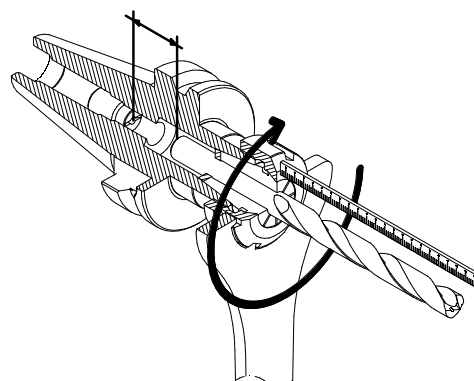
Instructions for correct clamping of tool shanks

Note

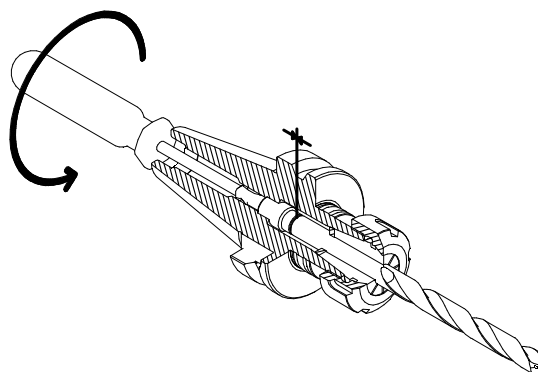
- // ER collet chucks – Exception: Toolholders with cylindrical shanks – are supplied without stop screws
- // Stop screws are supplied upon request
- // If ordering stop screw, specifying part no. (XXXX.XXXXX) and LOT no. (YYY). YYY of the toolholder is mandatory

Advice

- // Stop screws are used to secure tool shanks against axial displacement and may not be used as length adjustment screws
- // For trouble-free operation of the ER collet system, clamp tool shank first, then set stop screw
- // Incorrect handling of the stop screw may reduce runout accuracy and clamping force of the collet system
- // The use of stop screws may increase imbalance of the collet system



Set tool length with clearance to the stop screw, then clamp tool.



Apply stop screw to tool shank.

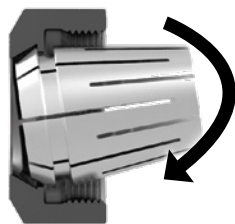
Increase collet and tool life

Optimize your surface finishes and extend tool life by minimizing occurring vibrations during machining.

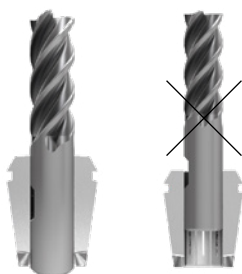
Always assemble correctly

First, clip the collet in the nut. Second, insert the tool shank more than $\frac{2}{3}$ into the collet.

1.



2.



Listen to the click

Do not tighten the torque wrench further after the first click is heard.



Get your TORCO-FIX. Check page 338 for order details.

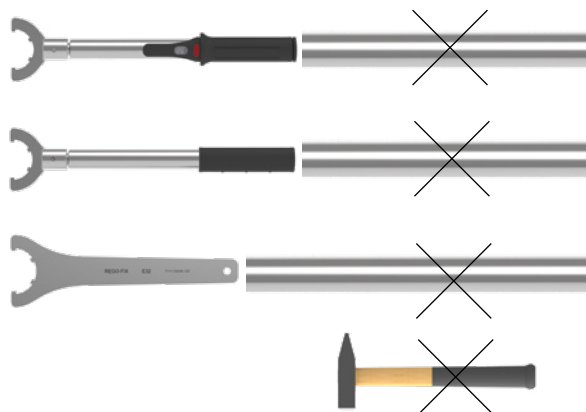
Only use REGO-FIX wrenches

To mount the collet in the toolholder please use one of these special wrenches- preferably the torque wrench, since it displays the amount of applied force.



Regular wrenches can also be used. Be aware that only the torque wrench will display the exact amount of applied force, making it the most exact tool to mount toolholders professionally.

Never use any extensions or hammers



Recommended tightening torque for ER and MR clamping nuts

Maximum torques for retention knobs (Nm)

			Hi-Q® / ER clamping nuts											
			ER / ERC		ERB / ERBC		ERM / ERMC		ERMx / ERMxC		ERAX / ERAXC		ER MS	
			Collets [Nm]										Collets [Nm]	
Collet size	Ø [mm]	Ø [decimal inch]	ER*	ER-GB	ER*	ER-GB	ER*	ER-GB	ER*	ER-GB	ER*	ER-GB	ER*	TORCO-FIX
ER 8 MB	0,2–0,9	0,0078–0,035	–	–	–	–	6	–	6	–	–	–	6	0
ER 8	1,0–5,0	0,039–0,196	–	–	–	–	6	–	6	–	–	–	6	0
ER 11 MB	0,2–0,9	0,0078–0,035	8	–	–	–	8	–	8	–	8	–	8	0, I
ER 11	1,0–2,9	0,039–0,098	8	8	–	–	8	8	8	8	8	8	10	0, I
	3,0–7,0	0,118–0,256	24	16	–	–	16	13	16	13	24	21	10	0, I
ER 16 MB	0,2–0,9	0,0078–0,035	8	–	–	–	8	–	8	–	8	–	12	0, I
ER 16	1,0	0,039	8	–	6,4	–	8	–	8	–	8	–	12	0, I
	1,5–3,5	0,059–0,138	20	–	16	–	20	–	20	–	20	–	20	0, I
	4,0–4,5	0,157–0,177	40	40	32	32	24	–	24	–	40	40	20	I, II
	5,0–10,0	0,197–0,394	56	44	56	44	24	–	24	–	40	40	20	I, II
ER 20	1,0	0,039	16	–	12	–	16	–	16	–	16	–	12	0, I
	1,5–6,5	0,059–0,256	32	32	24	24	28	28	28	28	52	35	20	I, II
	7,0–13,0	0,276–0,512	80	35	80	24	28	28	28	28	52	35	20	I, II
ER 25	1,0–3,5	0,059–0,138	24	–	20	–	24	–	24	–	24	–	–	I, II
	4,0–4,5	0,157–0,177	56	56	48	48	32	32	32	32	56	56	–	I, II
	5,0–7,5	0,196–0,295	80	80	72	72	32	32	32	32	80	80	–	II, III
	8,0–17,0	0,315–0,669	104	80	104	79	32	32	32	32	80	80	–	II, III
ER 32	2,0–2,5	0,078–0,098	24	24	20	–	–	–	–	–	24	–	–	I, II
	3,0–7,5	0,118–0,291	136	136	128	90	–	–	–	–	104	90	–	II, III
	8,0–22,0	0,315–0,787	136	136	136	90	–	–	–	–	104	90	–	II, III
ER 40	3,0–26,0	0,118–1,023	176	176	176	176	–	–	–	–	128	128	–	II, III
ER 50	6,0–36,0	0,236–1,417	240	300	240	300	–	–	–	–	–	–	–	III

*Includes ER standard and ER-UP

			micRun® clamping nuts					
			MR / MRC		MRM / MRMC			
			micRun® collets [Nm]					
Collet size	Ø [mm]	Ø [decimal inch]	MR	MRC	MRM	MRMC	Steep taper	maximum tightening torque
MR 11	1,0–2,9	0,039–0,098	8	8	–	–	SK, BT, CAT 30	25 Nm
	3,0–7,0	0,118–0,256	16	16	–	–	SK, BT, CAT 40	50 Nm
MR 16	1,0	0,039	8	8	8	8	SK, BT, CAT 50	100 Nm
	1,5–3,5	0,059–0,138	20	20	20	20	Higher tightening torques can lead to deformation of the steep taper and therefor to bad runout	
	4,0–4,5	0,157–0,177	40	40	24	24		
	5,0–10,0	0,197–0,394	56	56	24	24		
MR 25	1,0–3,5	0,059–0,138	24	24	–	–		
	4,0–4,5	0,157–0,177	56	56	–	–		
	5,0–7,5	0,196–0,295	80	80	–	–		
	8,0–17,0	0,315–0,669	80	80	–	–		
MR 32	2,0–2,5	0,078–0,098	24	24	–	–		
	3,0–22,0	0,118–0,2917	136	136	–	–		

Expert advice

We recommend tightening the clamping nuts with our TORCO-BLOCK or torque wrench

Expert advice

We recommend tightening the clamping nuts with our TORCO-BLOCK or torque wrench.

Original REGO-FIX accessories can be found on page 307.

Recommended tightening torque for ER and MR clamping nuts

Maximum torques for retention knobs (ft-lbs)

			Hi-Q®/ER clamping nuts											
			ER/ERC		ERB/ERBC		ERM/ERMC		ERMx/ERMxC		ERAx/ERAXC		ER MS	
			Collets [ft-lbs]										Collets [ft-lbs]	
Collet size	Ø [mm]	Ø [decimal inch]	ER*	ER-GB	ER*	ER-GB	ER*	ER-GB	ER*	ER-GB	ER*	ER-GB	ER*	TORCO-FIX*
ER 8 MB	0,2–0,9	0,0078–0,035	–	–	–	–	4	–	4	–	–	–	4	Micro
ER 8	1,0–5,0	0,039–0,196	–	–	–	–	4	–	4	–	–	–	4	Micro
ER 11 MB	0,2–0,9	0,0078–0,035	6	–	–	–	6	–	6	–	6	–	6	Micro, S
ER 11	1,0–2,9	0,039–0,098	6	6	–	–	6	6	6	6	6	6	7	Micro, S
	3,0–7,0	0,118–0,256	24	16	–	–	16	13	16	13	24	21	7	Micro, S
ER 16 MB	0,2–0,9	0,0078–0,035	6	–	–	–	6	–	6	–	6	–	9	Micro, S
ER 16	1,0	0,039	6	–	5	–	6	–	6	–	6	–	9	Micro, S
	1,5–3,5	0,059–0,138	15	–	12	–	15	–	15	–	15	–	15	Micro, S
	4,0–4,5	0,157–0,177	30	30	25	25	18	–	18	–	30	30	15	S, M
	5,0–10,0	0,197–0,394	46	32	40	21	18	–	18	–	30	30	–	M
ER 20	1,0	0,039	12	–	10	–	12	–	12	–	12	–	9	Micro, S
	1,5–6,5	0,059–0,256	25	25	20	20	21	21	21	21	40	25	14	S, M
	7,0–13,0	0,276–0,512	60	60	60	60	21	21	21	21	40	25	14	S, M
ER 25	1,0–3,5	0,059–0,138	18	–	15	–	18	–	18	–	18	–	–	S, M
	4,0–4,5	0,157–0,177	40	40	35	35	24	24	24	24	40	40	–	S, M
	5,0–7,5	0,196–0,295	60	60	55	55	24	24	24	24	60	60	–	M, L
	8,0–17,0	0,315–0,669	80	60	80	60	24	24	24	24	60	60	–	M, L
ER 32	2,0–2,5	0,078–0,098	18	18	15	–	–	–	–	–	20	–	–	S, M
	3,0–7,5	0,118–0,291	100	100	95	65	–	–	–	–	80	65	–	M, L
	8,0–22,0	0,315–0,787	100	100	100	65	–	–	–	–	80	65	–	M, L
ER 40	3,0–26,0	0,118–1,023	130	130	130	130	–	–	–	–	95	95	–	M, L
ER 50	6,0–36,0	0,236–1,417	180	220	180	220	–	–	–	–	–	–	–	L

*Includes ER standard and ER-UP

			micRun® clamping nuts					
			MR / MRC		MRM / MRMC			
			micRun® collets [ft-lbs]					
Collet size	Ø [mm]	Ø [decimal inch]	MR	MRC	MRM	MRMC	Steep taper	maximum tightening torque
MR 11	1,0–2,9	0,039–0,098	6	6	–	–	SK, BT, CAT 30	18 ft-lbs
	3,0–7,0	0,118–0,256	12	12	–	–	SK, BT, CAT 40	36 ft-lbs
MR 16	1,0	0,039	6	6	6	6	SK, BT, CAT 50	72 ft-lbs
	1,5–3,5	0,059–0,138	15	15	15	15	<i>Higher tightening torques can lead to deformation of the steep taper and therefor to bad runout</i>	
	4,0–4,5	0,157–0,177	30	30	18	18		
	5,0–10,0	0,197–0,394	41	41	18	18		
MR 20	1,0	0,039	12	12	–	–		
	1,5–6,5	0,059–0,256	24	24	–	–		
	7,0–13,0	0,276–0,512	60	60	–	–		
MR 25	1,0–3,5	0,059–0,138	18	18	–	–		
	4,0–4,5	0,157–0,177	42	42	–	–		
	5,0–7,5	0,196–0,295	60	60	–	–		
	8,0–17,0	0,315–0,669	78	78	–	–		
MR 32	2,0–2,5	0,078–0,098	18	18	–	–		
	3,0–22,0	0,118–0,2917	100	100	–	–		

Expert advice

We recommend tightening the clamping nuts with our TORCO-BLOCK or torque wrench.

Original REGO-FIX accessories can be found on page 307.

Expert advice

We recommend tightening the clamping nuts with our TORCO-BLOCK or torque wrench.

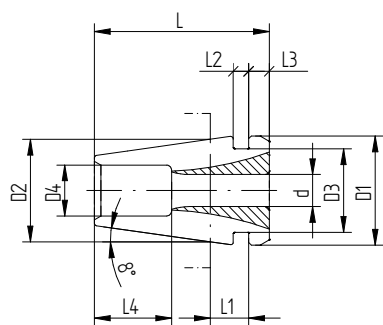
Original REGO-FIX accessories can be found on page 307.

ER collets dimensions

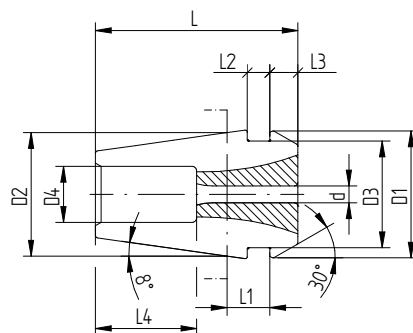
Size [mm]	Dimensions [mm]											Drawing
D2	d	D1	D2	D3	D4	L	L1**	LF	L2	L3	L4	
ER 8	1,0–2,5	8,5	8	6,5	4	13,6	2,98		1,2	1,5	6	1
ER 8	3,0–5,0	8,5	8	6,5	–	13,6	2,98		1,2	1,5	–	2
ER 11	1,0–2,5	11,5	11	9,5	5	18	3,8		2	2,5	9	3
ER 11	3,0–7,0	11,5	11	9,5	–	18	3,8		2	2,5	–	4
ER 16	1,0–1,59	17	16	13,8	7,5	27,5	6,26		2,7	4	13	3
ER 16	2,0–4,76	17	16	13,8	7,5	27,5	6,26		2,7	4	10	3
ER 16	5,0–10,0	17	16	13,8	–	27,5	6,26		2,7	4	–	4
ER 16	9,5–10,0	17	16	13,8	–	26*	6,26		2,7	4	–	4
ER 20	1,0–1,59	21	20	17,4	9	31,5	6,36		2,8	4,8	16	3
ER 20	2,0–6,50	21	20	17,4	9	31,5	6,36		2,8	4,8	13	3
ER 20	7,0–13,0	21	20	17,4	–	31,5	6,36		2,8	4,8	–	4
ER 25	1,0–1,59	26	25	22	12	34	6,66		3,1	5	18	3
ER 25	2,0–7,50	26	25	22	12	34	6,66		3,1	5	15	3
ER 25	8,0–17,0	26	25	22	–	34	6,66		3,1	5	–	4
ER 32	2,0–4,76	33	32	29,2	15	40	7,16		3,6	5,5	20	3
ER 32	5,0–7,5	33	32	29,2	15	40	7,16		3,6	5,5	15	3
ER 32	8,0–22,0	33	32	29,2	–	40	7,16		3,6	5,5	–	4
ER 40	3,0–4,76	41	40	36,2	20	46	7,66		4,1	7	24	3
ER 40	5,0–8,5	41	40	36,2	20	46	7,66		4,1	7	18	3
ER 40	9,0–30,0	41	40	36,2	–	46	7,66		4,1	7	–	4
ER 50	6,0–10,0	52	50	46	20	60	12,6		5,5	8,5	32	3
ER 50	12,0–36,0	52	50	46	–	60	12,6		5,5	8,5	–	4

*Up to 27.5 available, depending on production

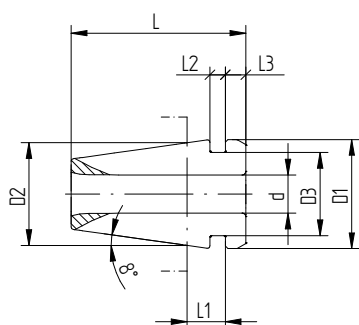
**L1 references to the top length of the ER collet in the toolholder.



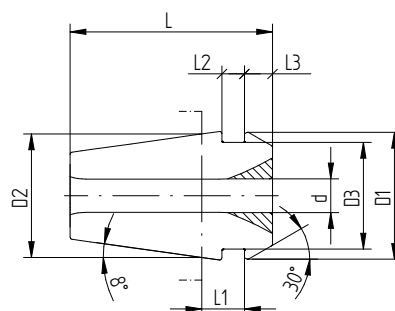
Drawing 1



Drawing 2



Drawing 3

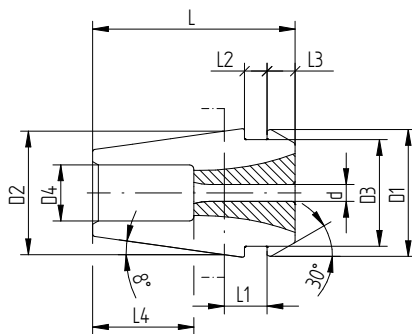


Drawing 4

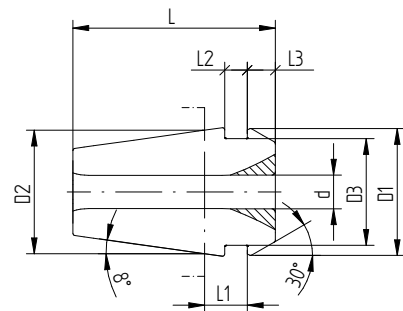
ER collets dimensions

Size [mm]	Dimensions [mm]										Drawing	
D2	d	D1	D2	D3	D4	L	L1	L2	L3	L4		
MR 11	1,0 – 2,0	11,5	11	9,5	5	18	3,8		2	2,5	9	1
MR 11	3,0 – 6,35	11,5	11	9,5	–	18	3,8		2	2,5	–	2
MR 16	1,0	17	16	13,8	7,5	27,5	6,26		2,7	4	13	1
MR 16	2,0 – 4,0	17	16	13,8	7,5	27,5	6,26		2,7	4	10	1
MR 16	5,0 – 10,0	17	16	13,8	–	26*	6,25		2,7	4	–	2
MR 25	1,0	26	25	22	12	34	6,66		3,1	5	18	1
MR 25	2,0 – 6,35	26	25	22	12	34	6,66		3,1	5	15	1
MR 25	8,0 – 16,0	26	25	22	–	34	6,66		3,1	5	–	2
MR 32	2,0 – 4,0	33	32	29,2	15	40	7,2		3,6	5,5	20	1
MR 32	5,0 – 6,35	33	32	29,2	15	40	7,2		3,6	5,5	15	1
MR 32	8,0 – 20,0	33	32	29,2	–	40	7,2		3,6	5,5	–	2

*Up to 27.5 available, depending on production



Drawing 1

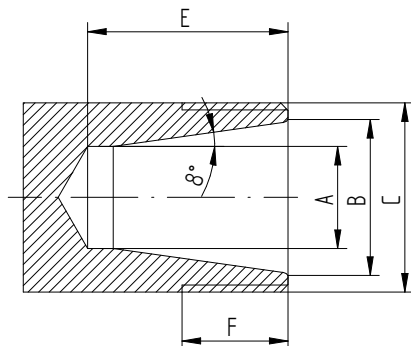


Drawing 2

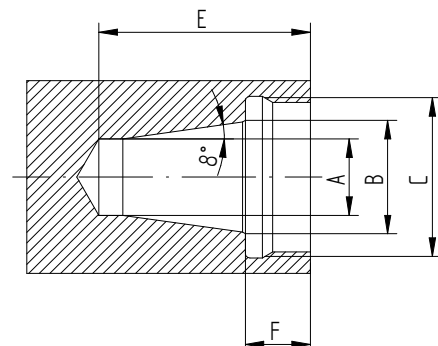


Dimensions for ER collet cavities in machine spindles and matching clamping nuts

ER size	Diameter range [mm]	Hi-Q®										Dimensions [mm]				
		ER	ERC	ERB	ERBC	ERM	ERMC	ERMx	ERMxC	AX	AXC	A	B	C	E	F
11	0,5–7,0	•	•	–	–	–	–	–	–	–	–	7,5	11	M 14 x 0,75	17	10
16	0,5–10,0	•	•	•	•	–	–	–	–	–	–	10,5	16	M 22 x 1,5	22	13
20	0,5–13,0	•	•	•	•	–	–	–	–	–	–	13,5	20	M 25 x 1,5	26,5	13,5
25	0,5–17,0	•	•	•	•	–	–	–	–	–	–	18,0	25	M 32 x 1,5	29	14
32	1,0–22,0	•	•	•	•	–	–	–	–	–	–	23,5	32	M 40 x 1,5	34	16
40	2,0–30,0	•	•	•	•	–	–	–	–	–	–	30,5	40	M 50 x 1,5	38	17
50	4,0–36,0	•	•	•	•	–	–	–	–	–	–	38	50	M 64 x 2	48	24
8	0,5–5,0	–	–	–	–	•	–	•	–	–	–	5,2	8	M 10 x 0,75	13	8
11	0,5–7,0	–	–	–	–	•	•	•	•	–	–	7,5	11	M 13 x 0,75	17	8,5
16	0,5–10,0	–	–	–	–	•	•	•	•	–	–	10,5	16	M 19 x 1	22	13
20	0,5–13,0	–	–	–	–	•	•	•	•	–	–	13,5	20	M 24 x 1	26,5	13,5
25	0,5–17,0	–	–	–	–	•	•	•	•	–	–	18	25	M 30 x 1	29	14
11	0,5–7,0	–	–	–	–	–	–	–	–	•	–	7,5	11	M 18 x 1	23	7
16	0,5–10,0	–	–	–	–	–	–	–	–	•	•	10,5	16	M 24 x 1	32	10
20	0,5–13,0	–	–	–	–	–	–	–	–	•	•	13,5	20	M 28 x 1,5	37,5	11
25	0,5–17,0	–	–	–	–	–	–	–	–	•	•	18	25	M 32 x 1,5	41	12
32	1,0–22,0	–	–	–	–	–	–	–	–	•	•	23,5	32	M 40 x 1,5	48	12
40	2,0–30,0	–	–	–	–	–	–	–	–	•	•	30,5	40	M 50 x 1,5	54	16



All other standard ER cavities



ER AX and ER AXC cavities

Technical information for tapping collets ER-GB

ER-GB

X: not available

X: not available			ER 11-GB		ER 16-GB		ER 20-GB		ER 25-GB		ER 32-GB		ER 40-GB		ER 50-GB	
			L = 18,0 L1 = 2,0 D1 = 11,3 D2 = 11,0		L = 27,5 L1 = 2,7 D1 = 16,8 D2 = 16,0		L = 31,5 L1 = 2,8 D1 = 20,8 D2 = 20,0		L = 34,0 L1 = 3,1 D1 = 25,8 D2 = 25,0		L = 40,0 L1 = 3,6 D1 = 32,8 D2 = 32,0		L = 46,0 L1 = 4,1 D1 = 40,8 D2 = 40,0		L = 60,0 L1 = 8,75 D1 = 51,8 D2 = 51,0	
d	SW	L2	L3	D3	L3	D3	L3	D3	L3	D3	L3	D3	L3	D3	L3	D3
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
2.5	2.1	12	2.8	4.0	x	x	x	x	x	x	x	x	x	x	x	x
2,8	2,1	12	2,8	4,0	x	x	x	x	x	x	x	x	x	x	x	x
3,5	2,7	14	2,8	4,0	x	x	x	x	x	x	x	x	x	x	x	x
4	3	14	1,8	4,5	x	x	x	x	x	x	x	x	x	x	x	x
4	3,15/ 3,2	ER 11=14 ER 16–32 =15	–	–	4,8	7,5	9,8	9	11,8	12	17,8	15	x	x	x	x
4,5	3,4	ER 11=14 ER 16–32 =15	–	–	4,8	7,5	9,8	9	11,8	12	17,8	15	x	x	x	x
5	4	ER 11=14 ER 16–32 =18	–	–	4,8	7,5	9,8	9	11,8	12	17,8	15	x	x	x	x
5,5	4,3	18	–	–	4,8	7,5	9,8	9	11,8	12	17,8	15	x	x	x	x
5,5	4,5	18	–	–	4,8	7,5	9,8	9	11,8	12	17,8	15	x	x	x	x
6	4,5	18	–	–	4,8	7,5	8,8	9	10,8	12	16,8	15	22,8	20	x	x
6	4,9	ER 11=14 ER 16–40 =18	–	–	4,8	7,5	8,8	9	10,8	12	16,8	15	22,8	20	x	x
6,2	5	18	x	x	4,8	7,5	8,8	9	10,8	12	16,8	15	22,8	20	x	x
6,3	5	18	x	x	4,8	7,5	8,8	9	10,8	12	16,8	15	22,8	20	x	x
7	5,5	18	x	x	3,8	8,0	7,8	9	9,8	12	15,8	15	21,8	20	x	x
7,1	5,6	18	x	x	3,8	8,0	7,8	9	9,8	12	15,8	15	21,8	20	x	x
8	6,2/ 6,3	22	x	x	–	–	2,8	10	4,8	12	10,8	15	16,8	20	x	x
8,5	6,5	22	x	x	–	–	2,8	10	4,8	12	10,8	15	16,8	20	x	x
9	7/ 7,1	22	x	x	–	–	2,8	10	3,8	12	9,8	15	15,8	20	x	x
10	8	25	x	x	x	x	–	–	–	–	6,8	15	12,8	20	x	x
10,5	8	25	x	x	x	x	–	–	–	–	6,8	15	12,8	20	x	x
11	9	25	x	x	x	x	–	–	–	–	5,8	15	11,8	20	x	x
11,2	9	25	x	x	x	x	–	–	–	–	5,8	15	11,8	20	x	x
12	9	25	x	x	x	x	–	–	–	–	5,8	15	11,8	20	x	x
12,5	10	25	x	x	x	x	x	x	–	–	4,8	15	10,8	20	x	x
14	11/ 11,2	25	x	x	x	x	x	x	–	–	3,8	17	9,8	20	x	x
15	12	25	x	x	x	x	x	x	–	–	3,8	17	9,8	20	x	x
16	12/ 12,5	25	x	x	x	x	x	x	–	–	2,8	18	8,8	20	x	x
17	13	25	x	x	x	x	x	x	x	x	2,8	19,5	8,8	20	x	x
18	14,5	25	x	x	x	x	x	x	x	x	2,8	21	7,8	21	x	x
20	16	28	x	x	x	x	x	x	x	x	2,8	21,5	3,8	22	x	x
22	18	ER 40 = 28 ER 50 = 41	x	x	x	x	x	x	x	x	–	–	3,8	24	x	x
25	20	41	x	x	x	x	x	x	x	x	x	x	–	–	–	–
28	22	41	x	x	x	x	x	x	x	x	x	x	x	x	–	–
32	24	41	x	x	x	x	x	x	x	x	x	x	x	x	–	–

Type	Dimensions [mm]							
	d	D1	D2	L	L1	L2	L3	L4
PCM ET1-12	3,55	7	11,5	18	16,5	2,5	5	5,5
PCM ET1-16	6,3	11	17	22	20	2,8	7	7
PCM ET1-20	7,1	14	21	24	23	2,8	8	7
PCM ET1-25	10	19	26	26	24	3	10	8
PCM ET1-32	12,5	23	33	33	32	3	1	10
PCM ET1-40	17	28	41	42	42	3	12	13

Expert advice

Do not use for coolant through tools and for applications with sealing disks.

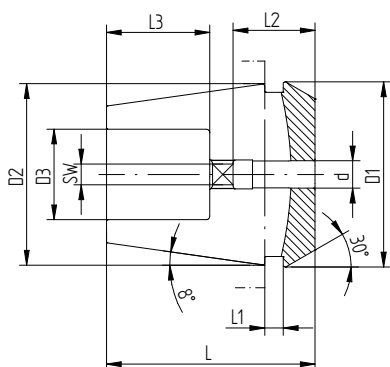
Technical information for microbore collets

Type	Dimensions [mm]									
	d	D1	D2	D3	D4	L	L1	L2	L3	L4
ER 8-MB	0,2-0,9	8,5	8	6,5	4	13,5	1,2	1,2	1,5	6
ER 11-MBX	0,2-0,9	11,5	11	9,5	5	18	2	2	2,5	9
ER 16-MBX	0,2-0,9	17	16	13,8	7,5	27,5	6,3	2,7	4	13

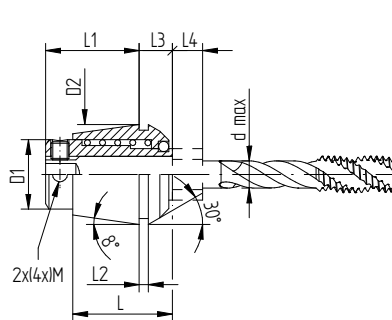
Expert advice

ER-MB collets have no clamping range.

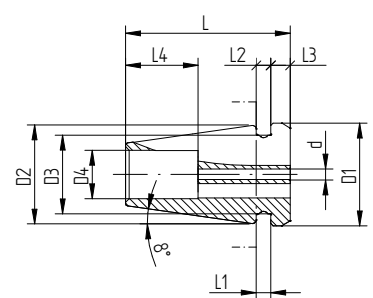
Only nominal diameters h7 can be clamped.



ER-GB, page 181

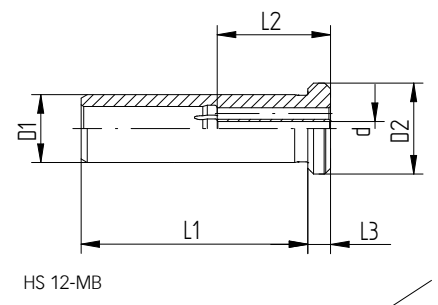
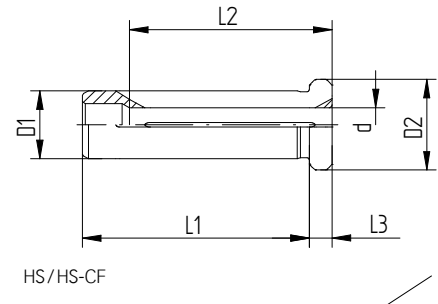


PCM ET1

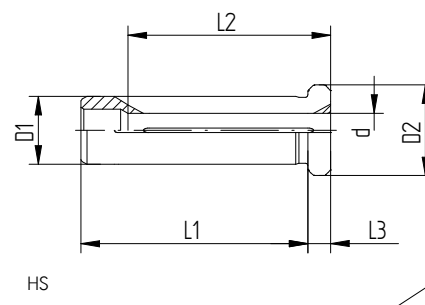


ER-MB

Type	Dimensions [mm]						
	d	d	D1	D2	L1	L2	L3
HS 12 HS 12-CF							
Ø 3,0	3	–	12	16	40	29	4
Ø 1/8"	3,175	1/8	12	16	40	29	4
Ø 4,0	4	–	12	16	40	29	4
Ø 3/16"	4,763	3/16	12	16	40	29	4
Ø 5,0	5	–	12	16	40	29	4
Ø 6,0	6	–	12	16	40	36	4
Ø 1/4"	6,35	1/4	12	16	40	36	4
Ø 7,0	7	–	12	16	40	37	4
Ø 5/16"	7,938	5/16	12	16	40	37	4
Ø 8,0	8	–	12	16	40	37	4
Ø 9,0	9	–	12	16	40	37	4
Ø 3/8"	9,525	3/8	12	16	40	40	4
Ø 10,0	10	–	12	16	40	40	4
HS 12-MB							
Ø 1,0	1	–	12	16	40	20	4
Ø 1,5	1,5	–	12	16	40	20	4
Ø 2,0	2	–	12	16	40	20	4
Ø 2,5	2,5	–	12	16	40	20	4
HS 16							
Ø 3	3	-	16	20	46	29	4
Ø 4	4	-	16	20	46	30	4
Ø 6	6	-	16	20	46	35,5	4
Ø 8	8	-	16	20	46	37	4
Ø 10	10	-	16	20	46	41	4
Ø 12	12	-	16	20	46	37	4
HS 20 HS 20-CF							
Ø 3,0	3	–	20	25	50	28	4
Ø 1/8"	3,175	1/8	20	25	50	28	4
Ø 4,0	4	–	20	25	50	28	4
Ø 3/16"	4,763	3/16	20	25	50	28	4
Ø 5,0	5	–	20	25	50	28	4
Ø 6,0	6	–	20	25	50	36	4
Ø 1/4"	6,35	1/4	20	25	50	36	4
Ø 7,0	7	–	20	25	50	38	4
Ø 5/16"	7,938	5/16	20	25	50	37	4
Ø 8,0	8	–	20	25	50	37	4
Ø 9,0	9	–	20	25	50	38	4
Ø 3/8"	9,525	3/8	20	25	50	36	4
Ø 10,0	10	–	20	25	50	40	4



Type	Dimensions [mm]						
	d	d	D1	D2	L1	L2	L3
Ø 11,0	11	–	20	25	50	40	4
Ø 12,0	12	–	20	25	50	45	4
Ø 1/2"	12,7	1/2	20	25	50	45	4
Ø 13,0	13	–	20	25	50	45	4
Ø 14,0	14	–	20	25	50	45	4
Ø 15,0	15	–	20	25	50	45	4
Ø 5/8"	15,875	5/8	20	25	50	48	4
Ø 16,0	16	–	20	25	50	48	4

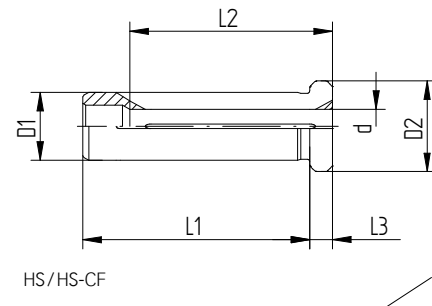


HS 25							
Ø 3,0	3	–	25	30	56	29	4
Ø 1/8"	3,175	1/8	25	30	56	29	4
Ø 4,0	4	–	25	30	56	29	4
Ø 3/16"	4,763	3/16	25	30	56	29	4
Ø 5,0	5	–	25	30	56	29	4
Ø 6,0	6	–	25	30	56	37	4
Ø 1/4"	6,35	1/4	25	30	56	37	4
Ø 7,0	7	–	25	30	56	37	4
Ø 5/16"	7,938	5/16	25	30	56	37	4
Ø 8,0	8	–	25	30	56	37	4
Ø 9,0	9	–	25	30	56	38	4
Ø 3/8"	9,525	3/8	25	30	56	38	4
Ø 10,0	10	–	25	30	56	40	4
Ø 7/16"	11,112	7/16	25	30	56	40	4
Ø 12,0	12	–	25	30	56	46	4
Ø 1/2"	12,7	1/2	25	30	56	46	4
Ø 14,0	14	–	25	30	56	47	4
Ø 9/16"	14,288	9/16	25	30	56	47	4
Ø 5/8"	15,875	5/8	25	30	56	48	4
Ø 16,0	16	–	25	30	56	48	4
Ø 11/16"	17,461	11/16	25	30	56	48	4
Ø 18,0	18	–	25	30	56	48	4
Ø 3/4"	19,05	3/4	25	30	56	48	4
Ø 20,0	20	–	25	30	56	50	4
Ø 13/16"	20,638	13/16	25	30	56	50	4

Expert advice

Reduction sleeve may be damaged, if clamped without a tool.

Type	Dimensions [mm]						
	d	d	D1	D2	L1	L2	L3
HS 32 HS 32-CF							
Ø 3/16"	4,763	3/16	32	36	60	29	4
Ø 5,0	5	–	32	36	60	29	4
Ø 6,0	6	–	32	36	60	36	4
Ø 1/4"	6,35	1/4	32	36	60	36	4
Ø 7,0	7	–	32	36	60	37	4
Ø 5/16"	7,938	5/16	32	36	60	36	4
Ø 8,0	8	–	32	36	60	36	4
Ø 9,0	9	–	32	36	60	37	4
Ø 3/8"	9,525	3/8	32	36	60	37	4
Ø 10,0	10	–	32	36	60	40	4
Ø 11,0	11	–	32	36	60	40	4
Ø 7/16"	11,112	7/16	32	36	60	45	4
Ø 12,0	12	–	32	36	60	45	4
Ø 1/2"	12,7	1/2	32	36	60	45	4
Ø 13,0	13	–	32	36	60	45	4
Ø 14,0	14	–	32	36	60	46	4
Ø 9/16"	14,288	9/16	32	36	60	46	4
Ø 15,0	15	–	32	36	60	46	4
Ø 5/8"	15,875	5/8	32	36	60	46	4
Ø 16,0	16	–	32	36	60	48	4
Ø 17,0	17	–	32	36	60	48	4
Ø 11/16"	17,461	11/16	32	36	60	48	4
Ø 18,0	18	–	32	36	60	49	4
Ø 19,0	19	–	32	36	60	49	4
Ø 3/4"	19,05	3/4	32	36	60	50	4
Ø 20,0	20	–	32	36	60	50	4
Ø 13/16"	20,638	13/16	32	36	60	50	4
Ø 22,0	22	–	32	36	60	50	4
Ø 7/8"	22,225	7/8	32	36	60	50	4
Ø 15/16"	23,813	15/16	32	36	60	52	4
Ø 25,0	25	–	32	36	60	56	4
Ø 1"	25,4	1	32	36	60	56	4



Spindle interface norms

HSK
DIN 69893

SK
DIN 69871

BT
MAS 403

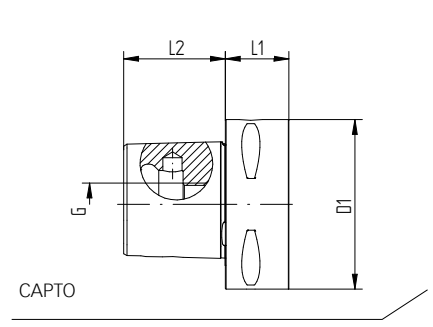
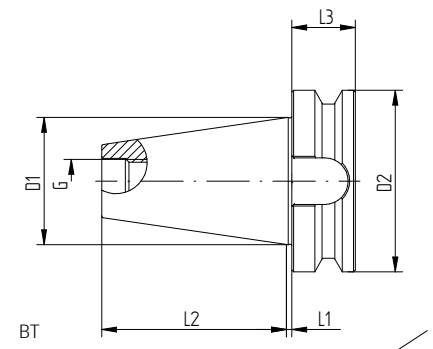
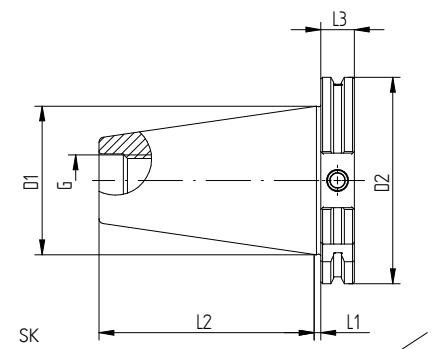
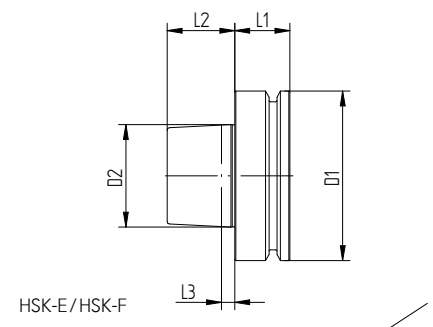
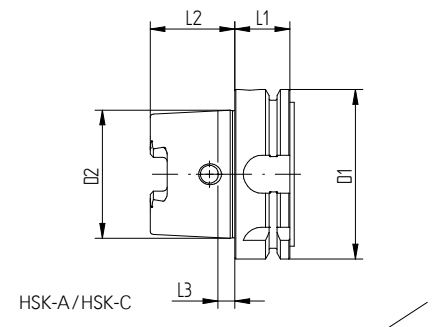
CAPTO
ISO 26623

Type	Dimensions [mm]					G
	D1	D2	L1	L2	L3	
HSK DIN 69893						
HSK-A 25	25	19	10	13	2,5	–
HSK-C 25	25	19	8	13	2,5	–
HSK-E 25	25	19	10	13	2,5	–
HSK-A 32	32	24	20	16	3,2	–
HSK-C 32	32	24	10	16	3,2	–
HSK-E 32	32	24	20	16	3,2	–
HSK-A 40	40	30	20	20	4	–
HSK-C 40	40	30	10	20	4	–
HSK-E 40	40	30	20	20	4	–
HSK-A 50	50	38	26	25	5	–
HSK-C 50	50	38	12,5	25	5	–
HSK-E 50	50	38	26	25	5	–
HSK-F 50	50	30	26	20	4	–
HSK-A 63	63	48	26	32	6,3	–
HSK-C 63	63	48	12,5	32	6,3	–
HSK-E 63	63	48	26	32	6,3	–
HSK-F 63	63	38	26	25	5	–
HSK-A 80	80	60	26	40	8	–
HSK-C 80	80	60	16	40	8	–
HSK-F 80	80	48	26	32	6,3	–
HSK-A 100	100	75	29	50	10	–
HSK-C 100	100	75	16	50	10	–
HSK-E 100	100	70	29	50	10	–

SK DIN 69871						
SK 30	31,75	50	3,2	47,8	15,85	M 12
SK 40	44,45	63,55	3,2	68,4	15,85	M 16
SK 50	69,85	97,5	3,2	101,75	15,85	M 24

BT MAS 403						
BT 30	31,75	46	2	48,4	20	M 12
BT 40	44,45	63	2	65,4	25	M 16
BT 50	69,85	100	3	101,8	35	M 24

Polygon shank CAPTO ISO 26623						
Polygonschaft C3	32	–	15	19	–	M 12 x 1,5
Polygonschaft C4	40	–	20	24	–	M 14 x 1,5
Polygonschaft C5	50	–	20	30	–	M 16 x 1,5
Polygonschaft C6	63	–	22	38	–	M 20 x 2
Polygonschaft C8	80	–	30	48	–	M 20 x 2

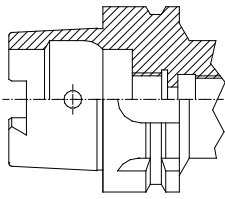


HSK forms and their key characteristics

HSK

DIN 69893

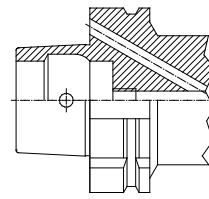
ISO 12164



Form A*

- // Standard type for machining centers and milling machines
- // For automatic tool change
- // Coolant supply through center via coolant tube
- // Drive keys at the end of HSK taper
- // Hole for data carrier DIN STD 69873 in the flange is available on request

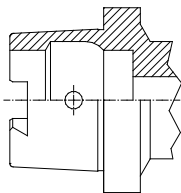
**Also usable in form C applications with side hole for manual tool change*



Form B

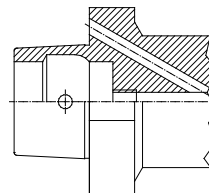
- // For machining centers, milling and turning machines
- // With enlarged flange size for higher radial rigidity
- // For automatic tool change
- // Coolant supply through the flange
- // Drive keys at the flange

Available on request



Form C

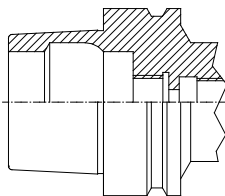
- // For transfer lines, special machines and modular tooling systems
- // For manual tool change
- // Drive keys at the end of HSK taper



Form D

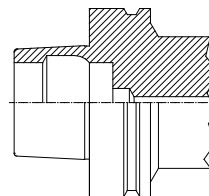
- // For special machines
- // With enlarged flange size for higher radial rigidity
- // For manual tool change
- // Coolant supply through the flange
- // Drive keys at the flange

Available on request



Form E

- // For high-speed applications
- // For automatic tool change
- // Coolant supply through center via coolant tube
- // Without any drive keys for absolute symmetry



Form F

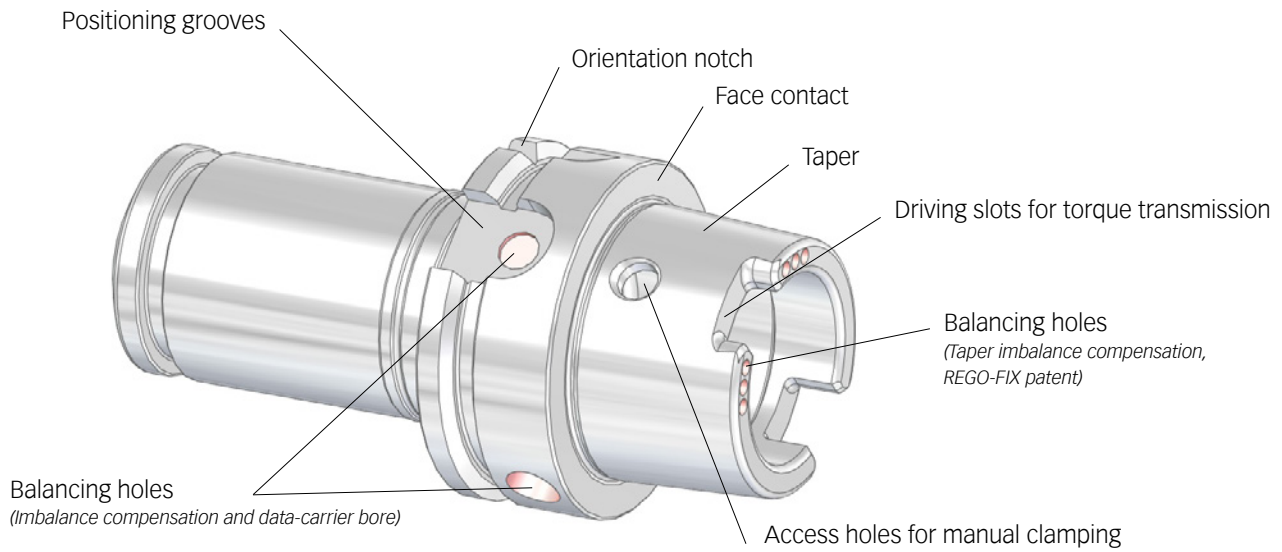
- // For high-speed applications
- // With enlarged flange size for higher radial rigidity
- // For automatic tool change
- // Without any drive keys for absolute symmetry

HSK interface

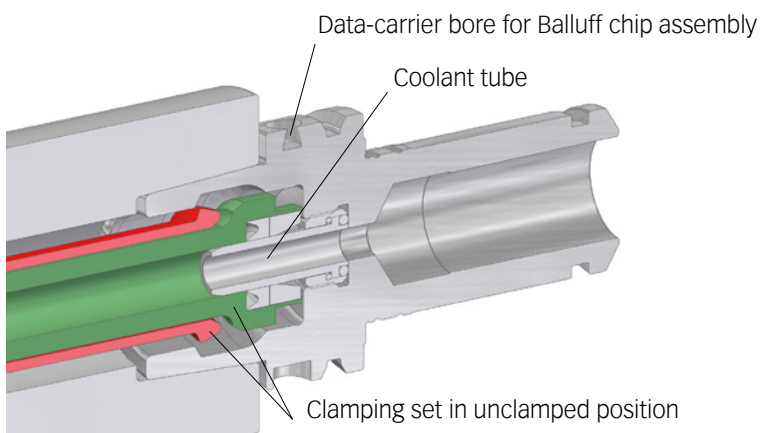
HSK

DIN 69893

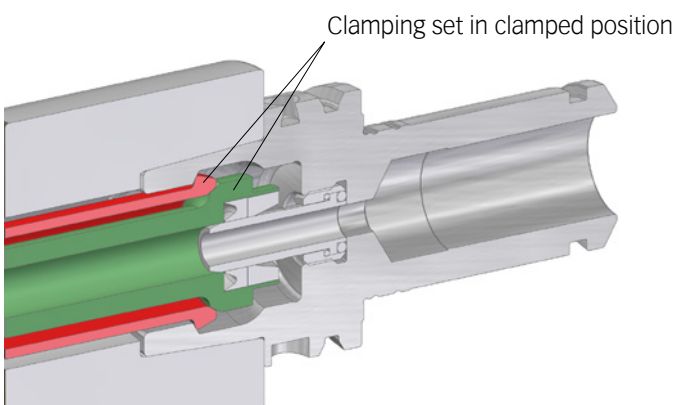
ISO 12164

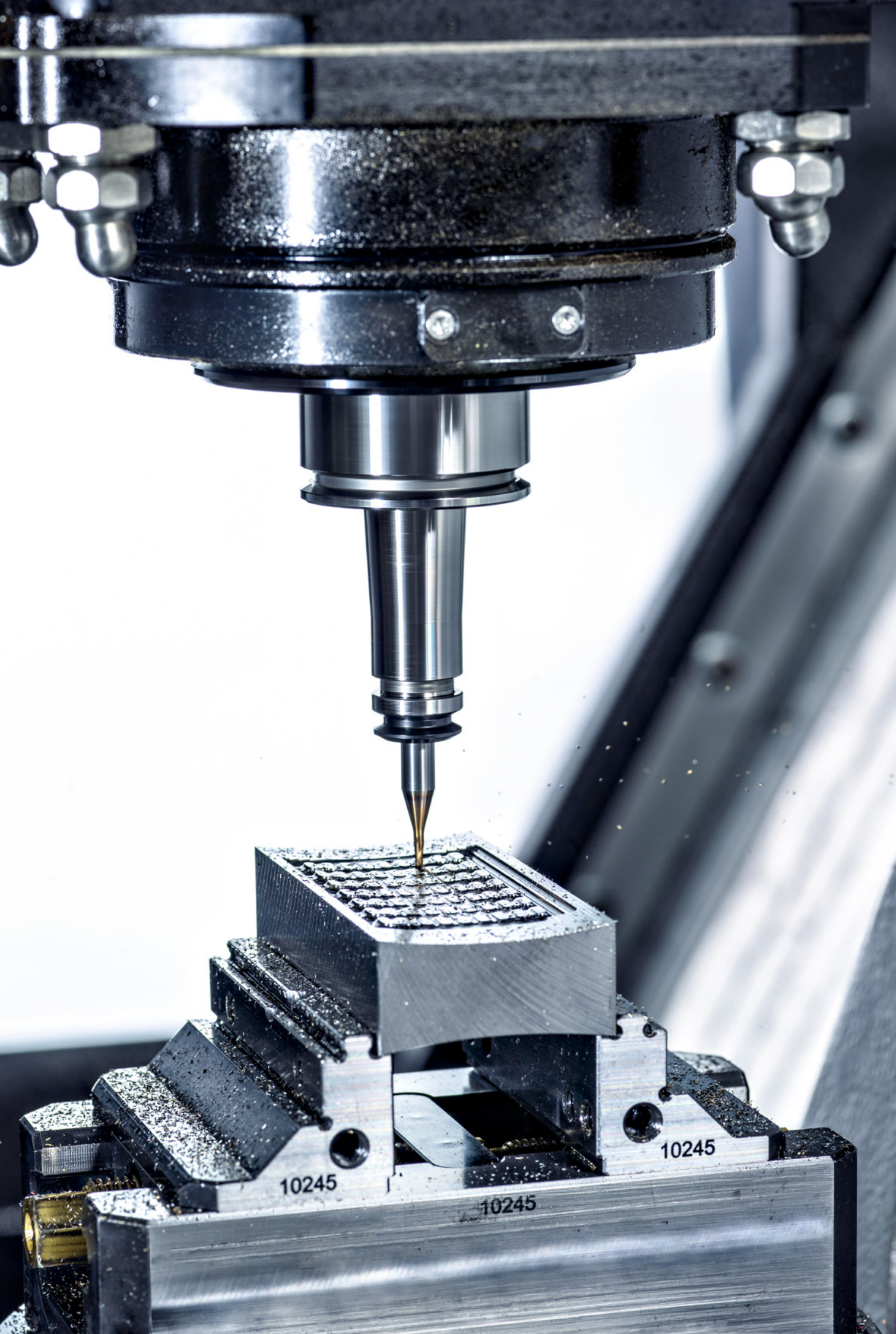


Position with unclamped HSK toolholder



Position with clamped HSK toolholder







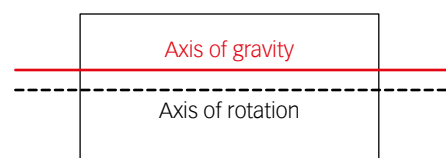
Balancing

The experience of REGO-FIX in the development and manufacturing of tool holding systems has provided us a large knowledge basis on the subject of balancing.

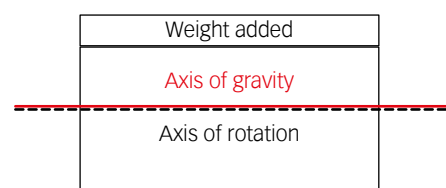
In our production we have the latest manufacturing equipment and testing methods available, but as with other manufacturers the physical limits of balancing have to be considered. Furthermore, it has to be considered whether a process is economically feasible and the imbalance measurable. The weights and interaction of the individual components of the tool holding system determines which options for balancing are practical. Therefore, we recommend that the entire assembly be considered as a whole, as it is stipulated in the DIN 69888.

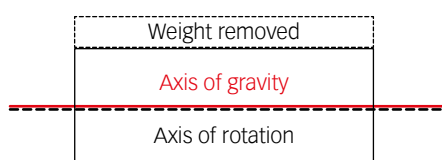
What is imbalance Imbalance occurs when the mass of a rotating body is not distributed rotationally symmetric. This leads to vibration and can cause increased wear or damage to cutting tools and or machine bearing components. The weight of each part of the tool holding system is critical to the question: At what speed is balancing economically producible? Speeds have a great influence on the centrifugal forces. Due to its nature the centrifugal force increase exponentially, which means when you double the speed you get four times the centrifugal force.

Static imbalance A static unbalance results when the axis of rotation does not pass through the center of gravity axis of the rotary body. The axis of rotation is parallel to the axis of gravity, but is displaced by some amount. This displacement (called eccentricity) produces a rotational circular vibration perpendicular to the rotational axis. This imbalance can be measured in a stationary position.



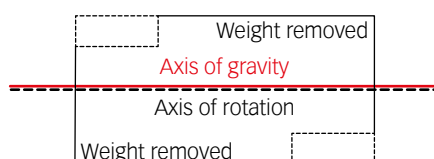
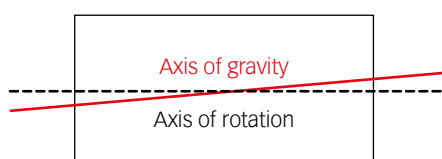
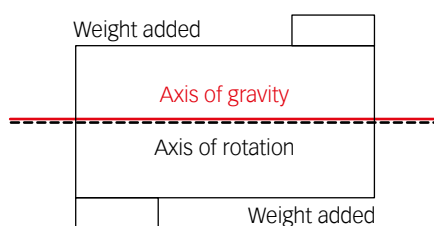
To reduce a static imbalance an appropriate weight is removed or adjusted perpendicular to the rotational axis.





To balance a dynamic imbalance, weight added, removed or adjusted at two levels.

Dynamic imbalance Dynamic imbalance occurs only during operation. It manifests itself in an unbalanced moment on the axis of rotation producing coupled forces and orbital oscillations. The center of gravity of the rotating body is in the rest position, while the axis for the coupled forces rotates in circular motions.



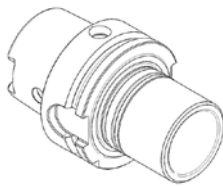
Influences on the imbalance

The whole toolholding system and spindle should be considered as well as any external influences such as dried-coolant film or dirt that has collected on the spindle. The weight of the individual components and the speeds are important factors to consider as well.



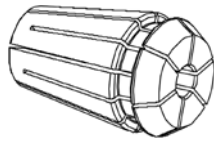
Machine spindle

The spindle rotors are supported in the spindle housing in several locations and have for the most part a weight of about 15 kg. Therefore, they can be balanced much more accurately than a small rotating body such as a toolholder of only 200 g.



Toolholder

The toolholder is the largest component in the interface between the spindle and the tool. These are balanced according to the manufacturer at the factory.



Collet

These are usually rotationally symmetrical parts and do not have to be balanced. Installation error (eg. not correct clamping) or pollution (chips, dried coolant etc.) can cause an imbalance.



Clamping nut

These are balanced according to manufacturer. Dirt, debris or damage can cause an imbalance.



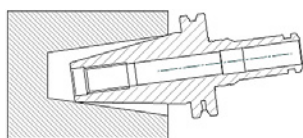
Accessories for clamping system

Accessories, such as coolant tubes, stop screws, pull studs, sealing and cooling disks may cause an additional imbalance.



Tool

Cutting tool design may (eg. single-edged, Weldon clamping surface, etc.) already have an imbalance.



Positioning error/Taper fit

The tool change position accuracy of toolholders can play a large role in the balancing and repeatability of the measured imbalance. An HSK holder has a position repeatability of between 2-4 microns while most steep taper holders can be up to 5 microns. Impurities on the cone or on the mating surface between the toolholder and the spindle can also lead to an imbalance and larger position inaccuracies. So as can be seen it is very important to clean all surfaces thoroughly as to minimize the position error that can occur.

Balancing quality

In recent years the cutting speeds have increased because of better materials and processes. This has resulted in new requirements on the balance of the whole system (machine spindle, clamping tool and tool).

General informations can be read in the Norm DIN ISO 19499:2008-03 "Mechanical vibration – Balancing – Guidance on the use and application of balancing standards".

Norms

Selection of DIN ISO 1940

This standard specifies the requirements on balancing as regulated grades of rotors in a constant (rigid) state. This standard is not applicable for tooling systems for the following reasons entire.

Spindles, tool holder systems and cutting tools have, in contrast to other rigid rotors (such as electric motor armatures, etc.) essential differences:

- Spindle, tool holder and cutting tool form a system with high temporal variation (for example, frequent tool change machining centers).
- Due to the radial angle and tension-related inaccuracies a repeated change of tool in the spindle leads to a change in the balancing state of the entire system.
- Fit tolerances of individual components (spindle, tool holder and cutting tool) set limits for balancing.

Selection of DIN 69888:2008-09

This standard specifies balancing requirements for tooling systems with HSK 25 to HSK 100 according DIN 69063-1, DIN 69063-2, DIN 69063-5, DIN 69063-6, DIN 69893-1, DIN 69893-2, DIN 69893-5 and DIN 69893-6 firmly based on their particular operating speed. In this standard the HSK 125 and HSK 160 are not given any consideration, so it is recommended to apply the limits for HSK 100. Correspondingly, the standard tool for systems with interfaces and tapers such as ABS, CAPTO, KM, SK and cylindrical shank are used. Here, the type-specific aspects of the interfaces and holders are taken into account.

The standard applies under the following conditions:

- In the area of operating speeds the tool systems are considered to be rigid.
- The limit of vibration mechanical stress is defined by the permissible bearing load of the machine spindle.
- So as not to unbalance-related impairments in the production is given in compliance with the procedures specified in the standard requirements (load bearing and thus the vibration velocity).

Importance of balance of quality

By balancing quality value G, the weight of the rotor (M), the speed (n) and the conversion factor (9.549), the permissible residual unbalance U_{zul} is calculated in gmm. It tells us how much mass asymmetrically distributed in the radial direction from the axis of rotation is still permissible. With the calculated value, the distance of this mass may be recalculated to gravitational axis.

Formulas

$$G = e \times w = \frac{U}{M} \times \frac{2 \times \pi \times n}{60} = \frac{U \times \pi \times n}{M \times 30}$$

$$\text{Result} \quad U = \frac{G \times M \times 30}{\pi \times n}$$

$$\text{Conversion factor} = 9.549$$

$$U_{zul} = \frac{G \times M \times 9.549}{n}$$

$$e_{zul} = \frac{U_{zul}}{M}$$

$$u = \frac{U_{zul}}{R}$$

$$\begin{array}{ll} U & = \text{Unbalance of the rotor} \quad (\text{gmm}) \\ G & = \text{Balance quality} \quad (\text{mm/s}) \end{array}$$

$$\begin{array}{ll} M & = \text{Weight of the rotor} \quad (\text{g}) \\ n & = \text{Speed of the rotors} \quad (1/\text{min}) \end{array}$$

$$\begin{array}{ll} e & = \text{Eccentricity of gravity} \quad (\mu\text{m}) \\ w & = \text{Angular speed} \quad (1/\text{sec}) \end{array}$$

$$\begin{array}{ll} U_{zul} & = \text{Permitted residual unbalance of the rotor} \quad (\text{gmm}) \\ e_{zul} & = \text{Permitted eccentricity} \quad (\mu\text{m}) \end{array}$$

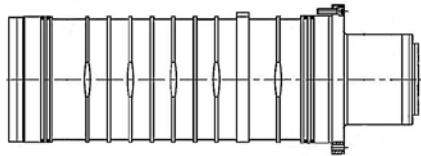
$$u = \text{Unbalance mass on the largest outer radius} \quad (\text{g})$$

$$R = \text{Radius at which the balancing is done} \quad (\text{mm})$$

Comparison

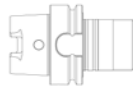
The comparison between the overall system and a single toolholder demonstrates that the balance of the individual component has a very small effect on the overall system.

Overall system



Machine spindle
for HSK-A 63

15 000 g



Toolholder
HSK-A 63
ER32X080-H
1035 g



Collet
ER 32-UP
6,00 – 5,00
150 g



Seal disk
DS/ER 32
6,00 – 5,50
15 g



Clamping nut
Hi-Q® ERC 32
15 g



Cutter with
internal cooling
ø 6 mm
30 g

Weight	16398 g	
Radius (R)	31,5 mm	
Speed	10 000 rpm	42 000 rpm
Balance quality (G)	2,5	2,5
Permitted residual unbalance (U_{zul})	39,146 gmm	9,321 gmm
Permitted eccentricity (e_{zul})	2,387 µm	0,568 µm

$$U_{zul10000} = \frac{2,5 \times 16398 \times 9,549}{10000} = 39,146 \text{ gmm}$$

$$U_{zul42000} = \frac{2,5 \times 16398 \times 9,549}{42000} = 9,321 \text{ gmm}$$

$$e_{zul10000} = \frac{39,146}{16398} = 2,387 \text{ µm}$$

$$e_{zul42000} = \frac{9,321}{16398} = 0,568 \text{ µm}$$

$$U_{10000} = \frac{39,146}{31,5} = 1,2 \text{ g}$$

$$U_{42000} = \frac{9,321}{31,5} = 0,3 \text{ g}$$

By calculation the entire system is allowed 1.2 g at 10,000 rpm and 0.3 g at 42,000 rpm and the permissible unbalanced mass is at its greatest diameter (in this case the spindle rotor). The following calculation is used to demonstrate how little unbalanced mass of a toolholder HSK-A 63/ER32 x 080 is acceptable in comparison to the overall system:

Weight	1035 g	
Radius (R)	31,5 mm	
Speed	10 000 rpm	42 000 rpm
Balance quality (G)	2,5	2,5
Permitted residual unbalance (U_{zul})	2,471 gmm	0,588 gmm
Permitted eccentricity (e_{zul})	2,387 µm	0,568 µm

$$U_{zul10000} = \frac{2,5 \times 1035 \times 9,549}{10000} = 2,471 \text{ gmm}$$

$$U_{zul42000} = \frac{2,5 \times 1035 \times 9,549}{42000} = 0,588 \text{ gmm}$$

$$e_{zul10000} = \frac{2,471}{1035} = 2,380 \text{ µm}$$

$$e_{zul42000} = \frac{0,588}{1035} = 0,568 \text{ µm}$$

$$U_{10000} = \frac{2,471}{31,5} = 0,078 \text{ g}$$

$$U_{42000} = \frac{0,588}{31,5} = 0,019 \text{ g}$$

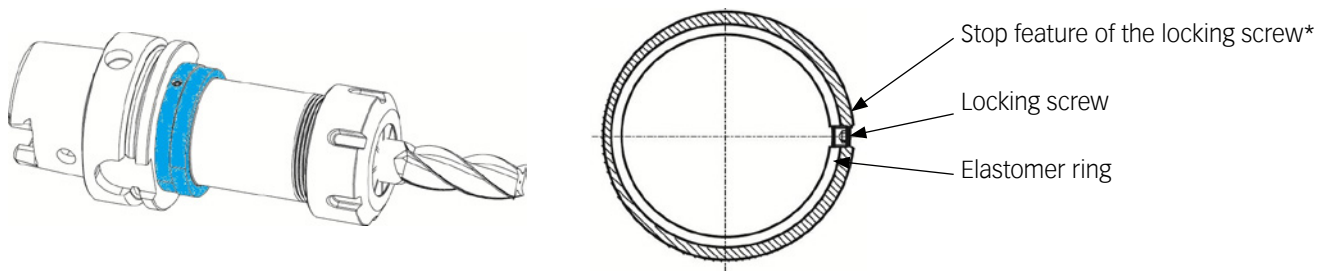
If now the allowable imbalance masses are compared, it is evident that in the overall system may be about 15 times larger than in the toolholder alone. The current state of balancing technology is not economically producible when just looking at the toolholder, but when the entire system is considered it may not necessary. An imbalance caused by positioning error can't be corrected or accounted for.

Balancing at REGO-FIX

All toolholders and clamping nuts from the production of REGO-FIX are balanced at the factory by design. In addition, the toolholders are fine balanced and 100% customized. The balancing data refer only to the toolholder. Most REGO-FIX toolholders are designed to accommodate the REGO-FIX Hi-Q® balancing rings for fine balancing when required.

Fine balance with Hi-Q® balancing rings

REGO-FIX Hi-Q® balancing rings (patented) are mounted on the grooves designed into the toolholder, making all the clamping system (holder, nut, tool, etc.) balanceable.



**The locking set screw has a feature that prevents it from backing out and being thrown into the machine, which can at high speeds and the resulting centrifugal forces cause serious injury and damage to machinery.*

Details of the balance values of toolholders

The stated REGO-FIX balance values (noted in packaging, catalogs, brochures, etc.) are the actual measured values from the state-of-the-art-balancers.

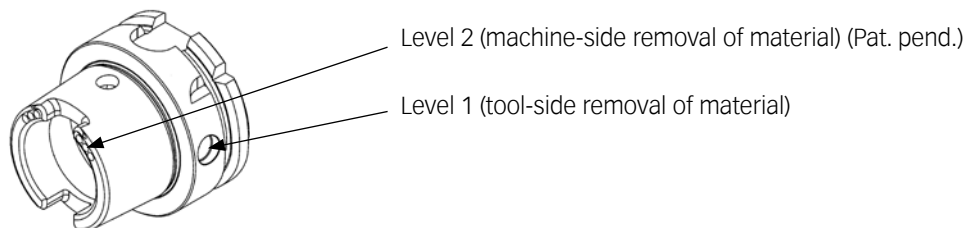
Toolholder

These toolholders are under production on a Level (static) as standard balanced at:

G 2.5 @ 25,000 rpm	SK 40 BT 40 CAT 40 SK 50 BT 50 CAT 50 CAT 50+ CAT 40+ BT 50+ BT 40+ HSK 100 HSK 125 HSK 80 HSK 63 Capto C6 and C8
balanced to 30,000 rpm	BT 30 SK 30 CAT 30 BT 30+ BT-OM 30
balanced to 33,000 rpm	HSK 80 F HSK 80 FP
balanced to 36,000 rpm	HSK 50 Capto C5
balanced to 45,000 rpm	HSK 40 Capto C4
balanced to 50,000 rpm	ISO 20 (HAAS) HSK 32-25/PG 6 x 046
balanced to 60,000 rpm	HSK 32 Capto C3
balanced to 90,000 rpm	HSK 20/HSK 25
G 2.5 @ 5,000 rpm	all XL toolholders

HSK – Toolholder

These toolholders are balanced by a special process (Pat. pend.), in which two axially spaced staggered levels material ablated.



*Other balance qualities are available on request at an additional cost. It can't be guaranteed that these values are reproducible due to positioning error and taper fit. See the section on Positioning Error and Taper Fit for more details, page 399.

Hi-Q® – Clamping nut

The REGO-FIX-Hi-Q® clamping nuts are balanced due to its design (patented) and are continuously tested during production.

Collets

Collets are rotationally symmetric and do not require balancing. To enable the best possible concentricity collets must be cleaned before each use.

Accessories (sealing disks, coolant disks, etc.)

These are rotationally symmetric and do not require balancing. To enable the best possible concentricity the accessories must be cleaned before each use. By improper handling or installation can lead to imbalance.

Interpreting the DIN 69888:2008-09

The accuracy of balancing machines is only partially dependent on the tool mass, i.e. for small tool masses (< 1,5kg), the inaccuracy of balancing machines is much more noticeable.

In addition to the error of the balancing machines, there is also the influence of the interface between the holder and the balancing machine. The following assumptions can be made:

Repeatable residual imbalances per balancing plane

max. mass of test piece (rotor) kg	repeatable residual unbalance ^a U_{wm} gmm
< 7.0	0.75
> 7.0 to 16.0	1.5

^a Depending on the clamping accuracy in the machine.

The clamping accuracy of the balancing machine is greater than that of the machine.

In addition to the repeated residual imbalances on a balancing machine (U_{wm}), further error lies in the limited repeatability of interfaces. As reference values for the common HSK interfaces, the values specified in the table can be assumed.

Joining accuracy of the HSK interface

HSK	25	32	40	50	63	80	100
e_{HSK}	2	2	2	2	2	3	4

In micrometers

Thus, the repeated achievable residual unbalance of the overall system can be calculated:

$$U_{min} \geq (m_{wkz} \cdot e_{HSK}) + U_{wm}$$

Example 1

Toolholder type: HSK-E 40/PG 10 x 062
 Mass of toolholder: $m_{wkz} = 0,250$ kg
 Joining accuracy HSK interface: $e_{HSK} = 2 \mu m$ for HSK 40
 Reproducible residual unbalance: $U_{wm} = 0,75$ gmm for mass < 7,0 kg

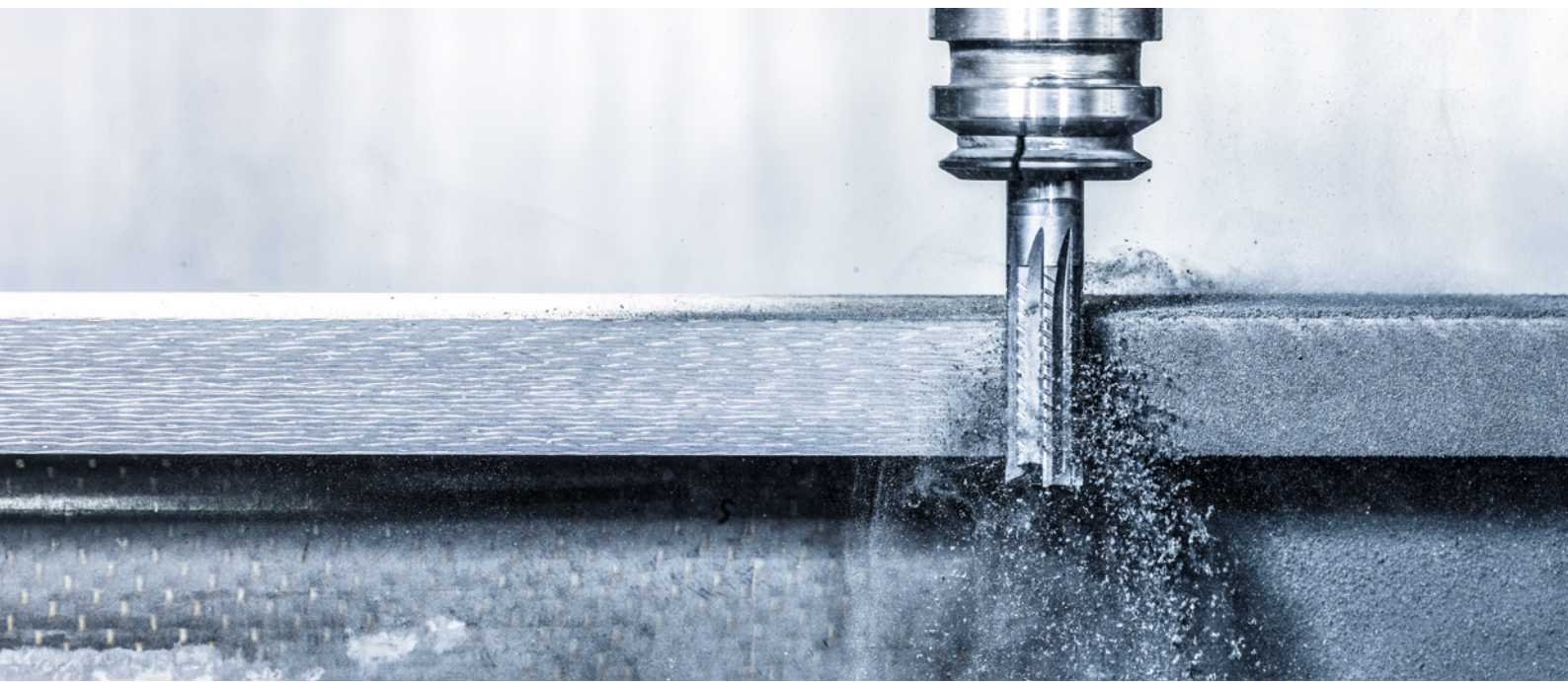
$$U_{min} \geq (0,25 \text{ kg} \cdot 2 \mu m) + 0,75 \text{ gmm} = 1,250 \text{ gmm}$$

Example 2

Toolholder type: HSK-A 63/PG 32 x 100
 Mass of toolholder: $m_{wkz} = 1,228$ kg
 Joining accuracy HSK interface: $e_{HSK} = 2 \mu m$ for HSK 63
 Reproducible residual unbalance: $U_{wm} = 0,75$ gmm for mass < 7,0 kg

$$U_{min} \geq (1,228 \text{ kg} \cdot 2 \mu m) + 0,75 \text{ gmm} = 3,206 \text{ gmm}$$

Compared to the permissible residual unbalance, which results at G 2.5 @ 25000 min⁻¹, the values calculated above for the reproducible residual unbalance are partially higher. As a result, not all G values are reproducible.



Milling strategies

Which milling strategy is the most suitable for my application? HSC, HPC or trochoidal milling? Am I focusing on a high chip removal rate or a perfectly finished surface? Choosing the most efficient method and reaching the maximum performance is the key to successful machining.

Depending on the type of machine, lot size, clamping equipment and many other factors, the fastest strategy might not be the most efficient. Sometimes, a conventional approach is faster for smaller quantities than a perfectly optimized CAM-program following the latest development.

Machines – 3, 5 or 5-axis simultaneous 3-axis and 5-axis are essentially different types of milling machines. The definition stands for the number of axes the machine can move, on a 3-axis machine it is usually X, Y and Z. If you add a rotary head and table to the machine, often called A- and C-axis, it becomes a 5-axis machine. It allows you to machine up to 5 sides of a workpiece in a single clamping as well as applications at any angle necessary. A 5-axis simultaneous machine is able to move all of its axes at the same time and is used for workpieces with complex 3D contours.

Down-milling In almost any application, down milling is the preferred method and base of modern milling strategies. Following the “thick to thin” rule, the feed is in the same direction as the rotation of the cutting tool. The maximum chip thickness is reached at the start of the cut and slowly decreases until the end of the cut. Results are better surface quality, longer tool life and less burr formation.

Up-milling If the cutting tool is fed in the opposite direction of the cutting tool rotation, an up-milling strategy is applied. The slowly increasing chip thickness causes high temperatures and a burnishing or rubbing effect due to friction, resulting in a reduced tool life. Different than in down-milling, the tool gets pulled towards the workpiece which was a welcoming effect in earlier years of milling machines. As the precision of spindles and guides couldn't reach modern standards, it helped stabilizing the milling process. In today's machining, up milling is used in workpieces with hardened, abrasive or forged surfaces, allowing the tool to start the cut in softer material to increase tool life.

Roughing The roughing process is mostly used at the beginning of a workpiece. Aiming at removing a large amount of material in the fastest and most process-safe way and get as close as possible to the final shape. Surface quality and dimensional accuracy are secondary requirements.

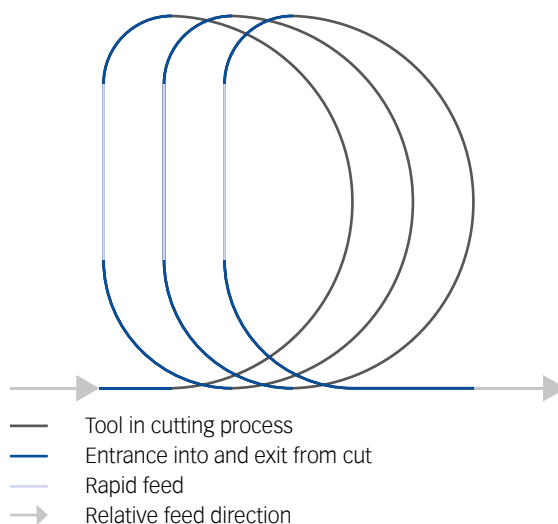
Finishing Following the roughing process, finishing operations are used to achieve the required specifications regarding dimensional and geometrical accuracy, surface quality, deburring and an optimal preparation for following processes such as grinding and surface treatments. Finishing tools are designed specifically for this purpose, allowing higher cutting speeds and developed to reach a long tool life for a stable process.



HSC HSC, short for High Speed Cutting, essentially increases the metal removal rate Q by practicing exceedingly higher speeds and feeds up to 10 times and very low cutting depth and width. Compared to conventional milling methods, HSC results in an up to 30% higher material removal rate while at the same time achieving better surface quality, lower cutting forces and less heat development due to short contact times. Applications can be found in thin-walled structural parts for the aerospace industry, turbine blades, moulds or electrodes. While HSC is generating lower forces on the spindle, the tooling machine has the requirement to be able to withstand high rpm and fast movements on long term.

HPC High Performance Cutting also has its target in reaching the highest possible metal removal rate Q , although using a different strategy. While the cutting speed V_c will not reach the levels of HSC, the increased cutting depth and cutting width will make the difference. While the rotational speeds and the feeds are suitable for almost any type of machines, strong forces will appear to the spindle. As the surface quality mostly is lower than in High Speed Cutting, HPC is mainly used in the roughing process. Also, it has fewer requirements to CAM and programming-systems.

Trochoidal Milling Similar to HSC, trochoidal milling is based on high speeds and feeds, small A_e and maximal A_p . Mainly used in roughing and semi-roughing, its application is found in slots, corners and deep pockets. Due to a constant circular-like movement it creates a flowing process that positively affects the spindle and guides. The small chip thickness allows narrower flutes and a close pitch on the milling tool, resulting in a stronger core and increased stability to prevent vibrations.



Troubleshooting when milling with end mill

Possible corrective measures when milling with end mill

	Adjust cutting speed (Vc)	Adjust feed per tooth (fz)	Increase milling depth	Reduce coolant supply	Review projecting length	Reduce tooling system	Review work mounting	Check lateral infeed	Review cooling strategy	Check tool wear	Review milling strategy*	
Problem												REGO-FIX Expert advice
Vibrations	↓	↑			•	•	•	•	•			• Strive for stable region (see stability chart) Improve result with the powRgrip® System
Low stability						•	•	•				Improve result with the powRgrip® System
Hevy deflection		↓				•	•		•	•		Use more stable tooling system (powRgrip®)
Poor surface quality	↑	↓			•	•	•	•	•	•		Improve runout and tool rigidity with the powRgrip® System
High tool wear	↓	↓			•	•	•	•	•			Improve runout with precision tools from REGO-FIX (ER, MR, powRgrip®)
Built-up edge	↑	↑			•			•		•		
Cutting edge chipping	↑	↓			•		•	•			•	
Tool breakage	↓	↓			•	•	•	•	•			•
Edge breakage on workpiece		↓					•	•	•	•		
Burrs	↓	↑								•		
Uneven surface						•	•			•		•
Non-parallel surface						•	•			•		•
Insufficient chip removal		↑			•			•	•		•	• For peripheral cooling use CF collet (powRgrip® System) or Coolant flush disk KS (ER System)
Chip jam (only with slot milling)		↓		•	•							•

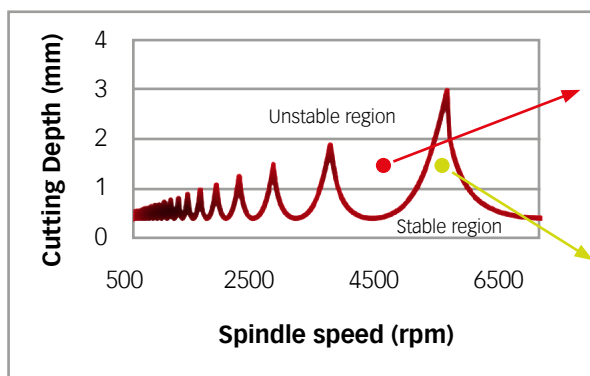
- *Corrective measures*

↑ Increase values ↓ Lower values

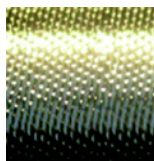
*Milling strategies:

- Down-milling
- Up-milling
- High Performance Cutting (HPC)
- High Speed Cutting (HSC)
- Trochoidal Milling (TBC)

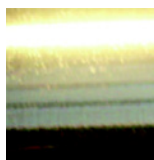
Stability chart



Chatter



No Chatter



Troubleshooting when drilling

Possible corrective measures when drilling

	Adjust cutting speed (Vc)	Increase feed per rotation (f)	Reduce coolant supply	Re-check choice or drilling tool	Review tooling length	Review choice or drilling system	Review spot-drilling tool	Review cutting data	Check tool wear			
Problem											REGO-FIX Expert advice	
Vibrations	↓	↑		•	•				•	•	Improve result with the vibration-damping and high-precision powRgrip® System	
Deflection		↓		•	•	•	•			•		
Poor surface quality	↑	↓	•	•	•				•	•	•	Improve runout and tool rigidity with the powRgrip® System
High tool wear	↓	↓	•	•	•	•			•	•		Improve runout with precision tools from REGO-FIX (ER, MR, powRgrip®)
Tool breakage	↓	↓	•		•	•			•	•		
Bore out-of-center		↓		•	•	•	•			•	•	
Bore diameter too big	↓	↓	•	•	•				•	•	•	
Cutting edge chipping	↓	↓	•				•		•			
Built-up edge	↑	↑	•				•		•			
Burrs		↓									•	
Long chips	↓	↑					•					
Chip jam	↑	↓	•				•					Use tools with internal cooling, together with REGO-FIX sealing disks DS
• Corrective measures												
↑ Increase values ↓ Lower values												

Troubleshooting when reaming

Possible corrective measures when reaming

	Adjust cutting speed (Vc)	Adjust feed per rotation (f)	Reduce projecting length	Increase bore diameter	Review coolant supply	Extend cutting data	Check tool wear	Check pilot bore depth	Check axial offset	
Problem										REGO-FIX Expert advice
Vibrations	↓	↑			•	•	•			
Poor surface quality			↓		•	•	•	•	•	Improve result with the self-centering REGO-FIX floating chuck
Built-up edge	↑	↑					•			
Cutting edge chipping	↓	↓	↑		•	•	•		•	
Tool breakage			↑		•	•		•	•	Improve result with the self-centering REGO-FIX floating chuck
High tool wear	↓	↓			•	•			•	
Bore not cylindrical								•	•	Improve result with the self-centering REGO-FIX floating chuck
Bore too small	↑	↓	↑				•	•	•	Eliminate radial forces with the self-centering REGO-FIX floating chuck
Bore too big	↓	↑	↓		•			•	•	Eliminate radial forces with the self-centering REGO-FIX floating chuck
Chip jam	↓	↓				•	•		•	
• Corrective measures ↑ Increase values ↓ Lower values										

Troubleshooting when tapping

Possible corrective measures when tapping

	Review feedrate or spindle synchronization	Check runout (TIR)	Review chamfering	Review tap tolerance	Review tool wear	Check tap supply	Increase coolant	Increase core hole diameter	Adjust cutting speed (Vc)	
Problem										REGO-FIX Expert advice
Toolshank is spinning				•	↑					Use REGO-FIX ER-GB/PCM ET1/PG-TAP tapping collets
Thread too big		•				•			↓	Improve dimensional accuracy with REGO-FIX tapping tools
Thread too small			•	•					↑	Improve dimensional accuracy with REGO-FIX tapping tools
Axial miscut thread						•				• Use REGO-FIX tapping tools with axial compensation
Rough thread sides			•	•					↑	Use REGO-FIX tapping tools with axial compensation
High tool wear									↓	Use REGO-FIX tapping tools with axial compensation
Cutting edge chipping			•							• Use REGO-FIX tapping tools with axial compensation
Tool breakage				•	•				↓	• Use REGO-FIX tapping tools with axial compensation

• Corrective measures

↑ Increase values

↓ Lower values

Formulas for cutting data

End mills

- d_1 Diameter of the cutting edge [mm]
- Z Number of cutting edges
- a_p Axial infeed depth [mm]
- a_e Radial infeed depth [mm]
- v_c Cutting speed [m/min]
- f_z Feed per tooth and revolution [mm]
- n Spindle speed [min⁻¹]
- v_f Feed rate [mm/min]
- f Feed per rotation [mm]
- Q Material removal rate [cm³/min]
- d_{eff} Effective engagement diameter [mm]
- β Setting angle «Beta» [° – DEG]

Spindle speed	$n = \frac{V_c \times 1000}{d_1 \times \pi} \left[\frac{1}{\text{min}} \right]$
Cutting speed	$V_c = \frac{d_1 \times n \times \pi}{1000} \left[\frac{\text{m}}{\text{min}} \right]$
Feed rate	$V_f = f_z \times Z \times n \left[\frac{\text{mm}}{\text{min}} \right]$
Feed per tooth	$f_z = \frac{V_f}{Z \times n} \left[\text{mm} \right]$
Feed per revolution	$f = f_z \times Z \left[\text{mm} \right]$
Material removal rate	$Q = \frac{a_p \times a_e \times V_f}{1000} \left[\frac{\text{cm}^3}{\text{min}} \right]$

Drills

- d_1 Diameter of the cutting edge [mm]
- v_c Cutting speed [m/min]
- f Feed per rotation [mm]
- n Spindle speed [min⁻¹]
- v_f Feed rate [mm/min]
- Q Material removal rate [cm³/min]
- T Primary processing time for the maximum drill depth of the tool [sec]
- L Effective drill depth [mm]

Spindle speed	$n = \frac{V_c \times 1000}{d_1 \times \pi} \left[\frac{1}{\text{min}} \right]$
Cutting speed	$V_c = \frac{d_1 \times n \times \pi}{1000} \left[\frac{\text{m}}{\text{min}} \right]$
Feed rate	$V_f = f \times n \left[\frac{\text{mm}}{\text{min}} \right]$
Material removal rate	$Q = \frac{d_1^2 \times \pi \times V_f}{4 \times 1000} \left[\frac{\text{cm}^3}{\text{min}} \right]$
Primary processing time	$T = \frac{L}{V_f} \times 60 \left[\text{sec} \right]$

Taps

- a Dimension of square end
- d Nominal diameter of the thread
- n Spindle speed
- P Thread pitch
- v_c Cutting speed
- v_f Feed rate

Spindle speed	$n = \frac{V_c \times 1000}{d \times \pi} \left[\frac{1}{\text{min}} \right]$
Cutting speed	$V_c = \frac{d \times \pi \times n}{1000} \left[\frac{\text{m}}{\text{min}} \right]$
Feed rate	$V_f = P \times n \left[\frac{\text{mm}}{\text{min}} \right]$

Cutting speed conversion table for threading

Ø d ₁	Vc m/min															
	1	2	3	4	5	6	8	10	12	15	20	25	30	40	50	60
rpm																
1	318	637	955	1273	1592	1910	2546	3183	3820	4775	6366	7958	9549	12732	15915	19099
2	159	318	477	637	796	955	1273	1592	1910	2387	3183	3979	4775	6366	7958	9549
3	106	212	318	424	531	637	849	1051	1273	1592	2122	2653	3183	2144	5305	6366
4	80	159	239	318	398	477	637	796	955	1194	1592	1989	2387	3163	3979	4775
5	64	127	191	255	318	382	509	637	764	955	1273	1592	1910	2546	3183	3820
6	53	106	159	212	265	318	424	531	637	796	1061	1326	1592	2122	26553	3183
8	40	80	119	159	199	239	318	398	477	597	796	995	1194	1592	1989	2387
10	32	64	95	127	159	191	255	318	382	477	637	796	955	1273	1592	1910
12	27	53	80	106	133	159	212	265	318	398	531	663	796	1061	1326	1592
14	23	45	68	91	114	136	183	227	273	341	455	568	682	909	1137	1364
16	20	40	60	80	99	119	159	199	239	298	398	497	597	796	995	1194
18	18	35	53	71	86	106	141	177	212	265	354	442	531	707	884	1061
20	16	32	48	64	80	95	127	159	191	239	318	398	477	637	796	955
25	13	25	38	51	64	76	102	127	153	191	255	318	382	509	637	764
30	11	21	32	42	53	64	85	106	127	159	212	265	318	424	531	637
35	9	18	27	36	45	55	73	91	109	136	182	227	273	364	455	546
40	8	16	24	32	40	48	64	80	95	119	159	199	239	318	398	477
45	7	14	21	28	35	42	57	71	85	106	141	177	212	283	354	424
50	6	13	19	25	32	38	51	64	76	95	127	159	191	255	318	382

Hardness comparison chart

HRC Hardness Rockwell	HB Hardness Brinell	HV Hardness Vickers	N / mm ² Mpa Tensile strenght
25	253	266	854
26	254	273	873
27	265	279	897
28	272	286	914
29	274	294	944
30	287	302	970
31	295	310	995
32	302	318	1024
33	311	327	1052
34	320	336	1082
35	329	345	1111
36	337	355	1139
37	346	364	1168
38	354	373	1198
39	363	382	1227
40	373	392	1262
41	382	402	1296
42	392	412	1327
43	402	423	1362
44	413	434	1401
45	424	446	1442
46	436	459	1481
47	448	471	1524
48	460	484	1572
49	474	499	1625
50	488	513	1668
51	502	528	1733
52	518	545	1793
53	532	560	1845
54	548	578	1912
55	566	596	1979
56	585	615	2050
57	603	634	2121
58		654	
59		675	
60		698	

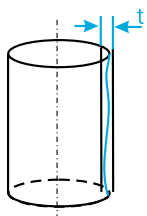
Conversion chart for hardness values, according to DIN 50150

Conversion table / inch-metric

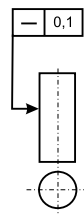
0" d ₁	Ø mm	0" d ₁	Ø mm	0" d ₁	Ø mm	0" d ₁	Ø mm	0" d ₁	Ø mm	0" d ₁	Ø mm
0	0	2-1/16	52.3876	4-1/16	103.188	6-1/16	153.988	8-1/16	204.788	10-1/16	255.588
1/16	1.5875	2-1/8	53.9751	4-1/8	104.775	6-1/8	155.575	8-1/8	206.375	10-1/8	257.176
3/32	2.3812	2-3/16	55.5626	4-3/16	106.363	6-3/16	157.163	8-3/16	207.963	10-3/16	258.763
1/8	3.1750	2-1/4	57.1501	4-1/4	107.950	6-1/4	158.750	8-1/4	209.550	10-1/4	260.351
5/32	3.9687	2-5/16	58.7376	4-5/16	109.538	6-5/16	160.338	8-5/16	211.138	10-5/16	261.938
3/16	4.7625	2-3/8	60.3251	4-3/8	111.125	6-3/8	161.925	8-3/8	212.725	10-3/8	263.526
7/32	5.5562	2-7/16	61.9126	4-7/16	112.713	6-7/16	163.513	8-7/16	214.313	10-7/16	265.113
1/4	6.3500	2-1/2	63.5001	4-1/2	114.300	6-1/2	165.100	8-1/2	215.900	10-1/2	266.701
5/16	7.9375	–	–	–	–	–	–	–	–	–	–
3/8	9.5250	–	–	–	–	–	–	–	–	–	–
7/16	11.1125	–	–	–	–	–	–	–	–	–	–
1/2	12.7000	–	–	–	–	–	–	–	–	–	–
9/16	14.2875	2-9/16	65.0876	4-9/16	115.888	6-9/16	166.688	8-9/16	217.488	10-9/16	268.288
5/8	15.8750	2-5/8	66.6751	4-5/8	117.475	6-5/8	168.275	8-5/8	219.075	10-5/8	269.876
11/16	17.4625	2-11/16	68.2626	4-11/16	119.063	6-11/16	169.863	8-11/16	220.663	10-11/16	271.463
3/4	19.0500	2-3/4	69.8501	4-3/4	120.650	6-3/4	171.450	8-3/4	222.250	10-3/4	273.051
13/16	20.6375	2-13/16	71.4376	4-13/16	122.238	6-13/16	173.038	8-13/16	223.838	10-13/16	274.638
7/8	22.2250	2-7/8	73.0251	4-7/8	123.825	6-7/8	174.625	8-7/8	225.425	10-7/8	276.226
15/16	23.8125	2-15/16	74.6126	4-15/16	125.413	6-15/16	176.213	8-15/16	227.013	10-15/16	277.813
1	25.4001	3	76.2002	5	127.00	7	177.800	9	228.600	11	279.401
1-1/16	26.9876	3-1/16	77.7877	5-1/16	128.588	7-1/16	179.388	9-1/16	230.188	11-1/16	280.988
1-1/8	28.5751	3-1/8	79.3752	5-1/8	130.175	7-1/8	180.975	9-1/8	231.775	11-1/8	282.576
1-3/16	30.1626	3-3/16	80.9627	5-3/16	131.763	7-3/16	182.563	9-3/16	233.363	11-3/16	284.163
1-1/4	31.7501	3-1/4	82.5502	5-1/4	133.350	7-1/4	184.150	9-1/4	234.950	11-1/4	285.751
1-5/16	33.3376	3-5/16	84.1377	5-5/16	134.938	7-5/16	184.738	9-5/16	236.538	11-5/16	287.338
1-3/8	34.9251	3-3/8	85.7252	5-3/8	136.525	7-3/8	187.325	9-3/8	238.125	11-3/8	288.926
1-7/16	36.5126	3-7/16	87.3127	5-7/16	138.113	7-7/16	188.913	9-7/16	239.713	11-7/16	290.513
1-1/2	38.1001	3-1/2	88.9002	5-1/2	139.700	7-1/2	190.500	9-1/2	241.300	11-1/2	292.101
1-9/16	39.6876	3-9/16	90.4877	5-9/16	141.288	7-9/16	192.088	9-9/16	242.888	11-9/16	293.688
1-5/8	41.2751	3-5/8	92.0752	5-5/8	142.875	7-5/8	193.675	9-5/8	244.475	11-5/8	295.276
1-11/16	42.8626	3-11/16	93.6627	5-11/16	144.463	7-11/16	195.263	9-11/16	246.063	11-11/16	296.863
1-3/4	44.4501	3-3/4	95.2502	5-3/4	146.051	7-3/4	196.850	9-3/4	247.650	11-3/4	298.451
1-13/16	46.0376	3-13/16	96.8377	5-13/16	147.638	7-13/16	198.438	9-13/16	249.238	11-13/16	300.038
1-7/8	47.6251	3-7/8	98.4252	5-7/8	149.225	7-7/8	200.025	9-7/8	250.825	11-7/8	301.626
1-15/16	49.2126	3-15/16	100.013	5-15/16	150.813	7-15/16	201.613	9-15/16	252.413	11-15/16	303.213
2	50.8001	4	101.600	6	152.400	8	203.200	10	254.001	12	304.801

Form and position tolerances in practice

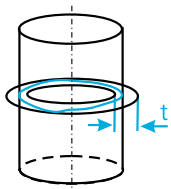
Form tolerances according to DIN EN ISO 1101



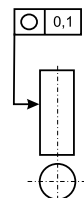
Straightness The tolerance zone is limited by two parallel lines at a distance t apart. Every envelope line of the tolerated cylinder must be between these two parallel lines.



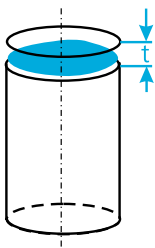
Example Every envelope line of the tolerated cylinder surface must be between two parallel lines at a distance apart of 0.1.



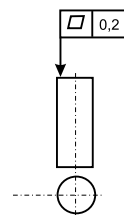
Roundness The tolerance zone is limited by two concentric circles at a distance t apart. The circumference line of the tolerated cylinder must be within a circle ring of the zone width t , in every radial section plane.



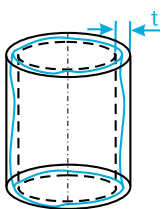
Example The circumference line of the tolerated cylinder must be within a circle ring of the zone width 0.1 in every radial section plane.



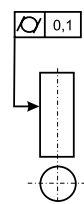
Flatness The tolerance zone is limited by two parallel planes at a distance t apart, the dimensions of which correspond to those of the tolerated area. The real workpiece area must be between the two parallel planes at distance t apart.



Example The real workpiece area must be between two parallel planes at a distance apart of 0.2.

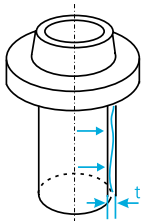


Cylindricity The tolerance zone for the cylinder envelope area limits the deviation of the roundness, the straightness of the envelope line and the parallelism of the envelope line to the cylinder axis. It is formed by two coaxial cylinders with the radial distance t .

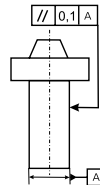


Example The tolerated cylindrical area must be between two coaxial cylinders with a radial distance of 0.1.

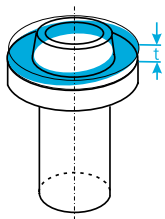
Position tolerances according to DIN EN ISO 1101



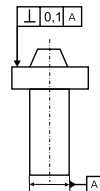
Parallelism The tolerance zone within which the envelope lines of the tolerated cylinder must lie is limited by two parallel lines at a distance t apart which run parallel to the datum plane.



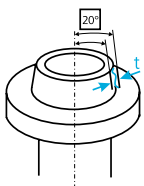
Example Every single envelope line of the tolerated area must be between two parallel lines that are at a distance of 0.1 apart, and are parallel to the center axis.



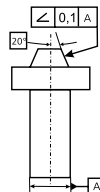
Perpendicularity The tolerance zone is limited by two parallel planes at a distance t apart, which are perpendicular to the datum axis. The tolerated plane face must be between these two planes.



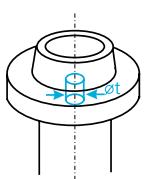
Example All points/circle lines of the tolerated area must be between two parallel planes that are at a distance of 0.1 apart, and are perpendicular to the datum plane.



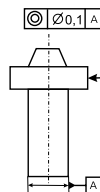
Angularity The tolerance zone is limited by two parallel planes at a distance t apart at the nominal angle to the datum axis.



Example All points of the tolerated area must be between two parallel planes that are at a distance apart of 0.1, and are angled at 20° to the datum axis.

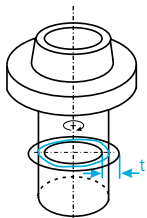


Coaxiality The tolerance zone is limited by a cylinder of diameter t , the axis of which matches the datum axis. The actual axis of the tolerated element must be within the tolerance zone.

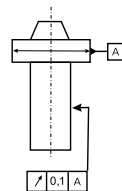


Example The axis of the tolerated cylinder must be within a cylinder that has a diameter of 0.1 and is coaxial to the datum axis A.

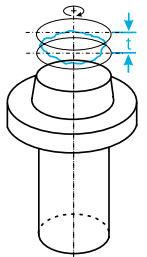
Run-out tolerances according to DIN EN ISO 1101



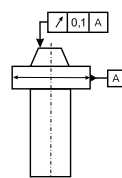
Radial run-out In every radial section plane perpendicular to the surface, the tolerance zone is limited by two concentric circles at a distance t apart, the common center point of which is on the datum axis. The radial run-out tolerance applies generally for a full revolution of the tolerated element around the datum axis.



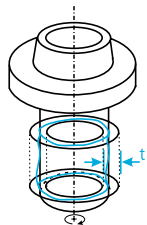
Example The circumference line of every radial section plane of the tolerated cylindrical area must be between two concentric circles at a distance apart of 0.1 with their common center point on the datum axis A.



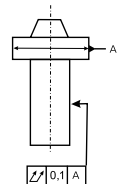
Axial run-out The tolerance zone is limited in every radial distance of two circles at a distance t apart. The circles are in a cylinder, the axis of which matches the datum axis. The diameter of the cylinder can adopt any value of the diameter of the plane face.



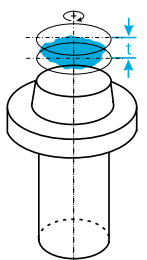
Example Every circle line of the tolerated area must be between two parallel circle planes at a distance apart of 0.1 with their common center point on the datum axis A.



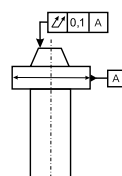
Total radial run-out The tolerance zone is limited by two coaxial cylinders at a distance t apart, the axes of which match the datum axis. After several rotations around the datum axis and axial shift of the transducer all points of the tolerated element must be within the tolerance zone.



Example The tolerated cylindrical area must be between two coaxial cylinders with a radial distance apart of 0.1 with their common axis on the datum axis.



Total axial run-out The tolerance zone is limited by two parallel planes at a distance t apart, which are perpendicular to the datum (rotational) axis. After several rotations round the datum axis and radial shift of the transducer, all points of the surface of the tolerance plane face must be within the tolerance zone.



Example The tolerated area must be between two parallel circle planes at a distance apart of 0.1 with their common center point on the datum axis A.



Tolerance charts

Outside dimensions (Shafts)

Tolerances on dimensions in μm

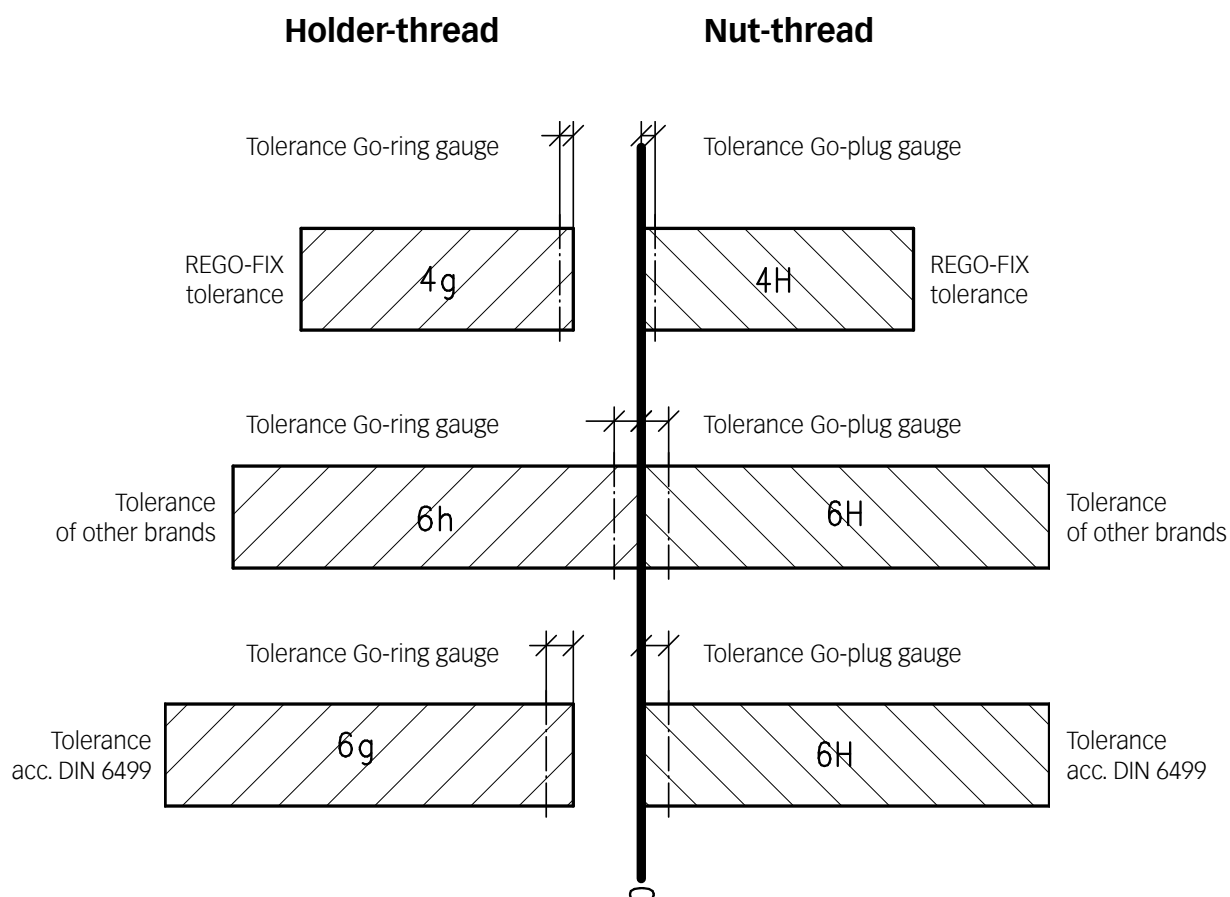
Nominal size range in mm		g4	g5	g6	g7	h4	h5	h6	h7	h8	h9	h10	h11	h13
from	1	-2	-2	-2	-2	0	0	0	0	0	0	0	0	0
to	3	-5	-6	-8	-12	-3	-4	-6	-10	-14	-25	-40	-60	-140
over	3	-4	-4	-4	-4	0	0	0	0	0	0	0	0	0
to	6	-8	-9	-12	-16	-4	-5	-8	-12	-18	-30	-48	-75	-180
over	6	-5	-5	-5	-5	0	0	0	0	0	0	0	0	0
to	10	-9	-11	-14	-20	-4	-6	-9	-15	-22	-36	-58	-90	-220
over	10	-6	-6	-6	-6	0	0	0	0	0	0	0	0	0
to	18	-11	-14	-17	-24	-5	-8	-11	-18	-27	-43	-70	-110	-270
over	18	-7	-7	-7	-7	0	0	0	0	0	0	0	0	0
to	30	-13	-16	-20	-28	-6	-9	-13	-21	-33	-52	-84	-130	-330
over	30	-9	-9	-9	-9	0	0	0	0	0	0	0	0	0
to	50	-16	-25	-20	-34	-7	-11	-16	-25	-39	-62	-100	-160	-390

Inside dimensions (Bores)

Tolerances on dimensions in μm

Nominal size range in mm		G4	G5	G6	G7	H4	H5	H6	H7	H8	H9	H10	H11	H13
from	1	+5	+6	+8	+12	+3	+4	+6	+10	+14	+25	+40	+60	+140
to	3	+2	+2	+2	+2	0	0	0	0	0	0	0	0	0
over	3	+8	+9	+12	+16	+4	+5	+8	+12	+18	+30	+48	+75	+180
to	6	+4	+4	+4	+4	0	0	0	0	0	0	0	0	0
over	6	+9	+11	+14	+20	+4	+6	+9	+15	+22	+36	+58	+90	+220
to	10	+5	+5	+5	+5	0	0	0	0	0	0	0	0	0
over	10	+11	+14	+17	+24	+5	+8	+11	+18	+27	+43	+70	+110	+270
to	18	+6	+6	+6	+6	0	0	0	0	0	0	0	0	0
over	18	+13	+16	+20	+28	+6	+9	+13	+21	+33	+52	+84	+130	+330
to	30	+7	+7	+7	+7	0	0	0	0	0	0	0	0	0
over	30	+16	+25	+20	+34	+7	+11	+16	+25	+39	+62	+100	+160	+390
to	50	+9	+9	+9	+9	0	0	0	0	0	0	0	0	0

Thread tolerances



Core hole diameters for thread cutting

M DIN 13, ISO 261, *5H/6H

d1	mm	Ø mini	Ø maxi	Ø guide line
*1	0.25	0.729	0.785	0.75
*1.1	0.25	0.829	0.885	0.85
*1.2	0.25	0.929	0.985	0.95
*1.4	0.30	1.075	1.142	1.10
1.6	0.35	1.221	1.321	1.25
1.7	0.35	1.321	1.421	1.35
1.8	0.35	1.421	1.521	1.45
2	0.40	1.567	1.679	1.60
2.2	0.45	1.713	1.838	1.75
2.3	0.40	1.867	1.979	1.90
2.5	0.45	2.013	2.138	2.05
2.6	0.45	2.113	2.238	2.15
3	0.50	2.459	2.599	2.50
3.5	0.60	2.850	3.010	2.90
4	0.70	3.242	3.422	3.30
4.5	0.75	3.688	3.878	3.75
5	0.80	4.134	4.334	4.20
6	1.00	4.917	5.153	5.00
7	1.00	5.917	6.153	6.00
8	1.25	6.647	6.912	6.80
9	1.25	7.647	7.912	7.80
10	1.50	8.376	8.676	8.50
11	1.50	9.376	9.676	9.50
12	1.75	10.106	10.441	10.20
14	2.00	11.835	12.210	12.00
16	2.00	13.835	14.210	14.00
18	2.50	15.294	15.744	15.50
20	2.50	17.294	17.744	17.50
22	2.50	19.294	19.744	19.50
24	3.00	20.752	21.252	21.00
27	3.00	23.752	24.252	24.00
30	3.50	26.211	26.771	26.50
33	3.50	29.211	29.771	29.50
36	4.00	31.670	32.270	32.00
39	4.00	34.670	35.270	35.00
42	4.50	37.129	37.799	37.50
45	4.50	40.129	40.799	40.50
48	5.00	42.587	43.297	43.00
52	5.00	46.587	47.297	47.00
56	5.50	50.046	50.796	50.50

MF DIN 13, ISO 261, 6H

d1	mm	Ø mini	Ø maxi	Ø guide line
4.5	0.50	3.959	4.099	4.00
5	0.50	4.459	4.599	4.50
5.5	0.50	4.959	5.099	5.00
6	0.75	5.188	5.378	5.25
7	0.75	6.188	6.378	6.25
8	0.75	7.188	7.378	7.25
8	1.00	6.917	7.153	7.00
9	0.75	8.188	8.378	8.25
9	1.00	7.917	8.153	8.00
10	0.75	9.188	9.378	9.25
10	1.00	8.917	9.153	9.00
10	1.25	8.647	8.912	8.80
11	0.75	10.188	10.378	10.25
11	1.00	9.917	10.153	10.00
12	1.00	10.917	11.153	11.00
12	1.25	10.647	10.912	10.80
12	1.50	10.376	10.676	10.50
14	1.00	12.917	13.153	13.00
14	1.25	12.647	12.912	12.80
14	1.50	12.376	12.676	12.50
15	1.00	13.917	14.153	14.00
15	1.50	13.376	13.676	13.50
16	1.00	14.917	15.153	15.00
16	1.50	14.376	14.676	14.50
17	1.00	15.917	16.153	16.00
17	1.50	15.376	15.676	15.50
18	1.00	16.917	17.153	17.00
18	1.50	16.376	16.676	16.50
18	2.00	15.835	16.210	16.00
20	1.00	18.917	19.153	19.00
20	1.50	18.376	18.676	18.50
20	2.00	17.835	18.210	18.00
22	1.00	20.917	21.153	21.00
22	1.50	20.376	20.676	20.50
22	2.00	19.835	20.210	20.00
24	1.00	22.917	23.153	23.00
24	1.50	22.376	22.676	22.50
24	2.00	21.835	22.210	22.00
25	1.00	23.917	24.153	24.00
25	1.50	23.376	23.676	23.50
25	2.00	22.835	23.210	23.00
27	1.50	25.376	25.676	25.50
27	2.00	24.835	25.210	25.00
28	1.00	26.917	27.153	27.00
28	1.50	26.376	26.676	26.50
28	2.00	25.835	26.210	26.00
30	1.00	28.917	29.153	29.00

MF DIN 13, ISO 261, 6H

d1	mm	Ø mini	Ø maxi	Ø guide line
2.5	0.35	2.121	2.221	2.15
3	0.35	2.621	2.721	2.65
3.5	0.35	3.121	3.221	3.15
4	0.50	3.459	3.599	3.50

MF DIN 13, ISO 261, 6H

d1	mm	Ø mini	Ø maxi	Ø guide line
30	1.50	28.376	28.676	28.50
30	2.00	27.835	28.210	28.00
32	1.50	30.376	30.676	30.50
32	2.00	29.835	30.210	30.00
33	1.50	31.376	31.676	31.50
33	2.00	30.835	31.210	31.00
35	1.50	33.376	33.676	33.50
36	1.50	34.376	34.676	34.50
36	2.00	33.835	34.210	34.00
36	3.00	32.752	33.252	33.00
39	1.50	37.376	37.676	37.50
39	2.00	36.835	37.210	37.00
39	3.00	35.752	36.252	36.00
40	1.50	38.376	38.676	38.50
40	2.00	37.835	38.210	38.00
40	3.00	36.752	37.252	37.00
42	1.50	40.376	40.676	40.50
42	2.00	39.835	40.210	40.00
42	3.00	38.752	39.252	39.00
45	1.50	43.376	43.676	43.50
45	2.00	42.835	43.210	43.00
45	3.00	41.752	42.252	42.00
48	1.50	46.376	46.676	46.50
48	2.00	45.835	46.210	46.00
48	3.00	44.752	45.252	45.00
50	1.50	48.376	48.676	48.50
50	2.00	47.835	48.210	48.00
50	3.00	46.752	47.252	47.00
52	1.50	50.376	50.676	50.50
52	2.00	49.835	50.210	50.00
52	3.00	48.752	49.252	49.00
55	2.00	52.835	53.210	53.00
60	2.00	57.835	58.210	58.00

MF EN 60423:1994, 7H

d1	mm	Ø mini	Ø maxi	Ø guide line
8	1.00	6.917	7.217	7.00
10	1.00	8.917	9.217	9.00
12	1.50	10.376	10.751	10.50
16	1.50	14.376	14.751	14.50
20	1.50	18.376	18.751	18.50
25	1.50	23.376	23.751	23.50
32	1.50	30.376	30.751	30.50
40	1.50	38.376	38.751	38.50
63	1.50	61.376	61.751	61.50

UNC ANSI B1.1, 2B

d1	TPI	mm	Ø mini	Ø maxi	Ø guide line
1	64	0.397	1.425	1.582	1.45
2	56	0.454	1.695	1.871	1.75
3	48	0.529	1.941	2.146	2.00
4	40	0.635	2.157	2.385	2.25
5	40	0.635	2.487	2.697	2.55
6	32	0.794	2.642	2.895	2.75
8	32	0.794	3.302	3.530	3.40
10	24	1.058	3.683	3.962	3.80
12	24	1.058	4.344	4.597	4.40
1/4"	20	1.270	4.979	5.257	5.10
5/16"	18	1.411	6.401	6.731	6.50
3/8"	16	1.588	7.798	8.153	8.00
7/16"	14	1.814	9.144	9.550	9.30
1/2"	13	1.954	10.592	11.023	10.80
9/16"	12	2.117	11.989	12.446	12.20
5/8"	11	2.309	13.386	13.868	13.60
3/4"	10	2.540	16.307	16.840	16.60
7/8"	9	2.822	19.177	19.761	19.50
1"	8	3.175	21.971	22.606	22.30
1 1/8"	7	3.629	24.638	25.349	25.00
1 1/4"	7	3.629	27.813	28.524	28.20
1 3/8"	6	4.233	30.353	31.115	30.80
1 1/2"	6	4.233	33.528	34.290	34.00
1 3/4"	5	5.080	38.964	39.827	39.50
2"	4.5	5.644	44.679	45.593	45.30

UNJC ISO 3161:1999, 3B

d1	TPI	mm	Ø mini	Ø maxi	Ø guide line
4	40	0.635	2.228	2.393	2.30
5	40	0.635	2.558	2.723	2.60
6	32	0.794	2.733	2.939	2.80
8	32	0.794	3.393	3.599	3.45
10	24	1.058	3.795	4.064	3.90
12	24	1.058	4.455	4.704	4.55
1/4"	20	1.270	5.113	5.387	5.20
5/16"	18	1.411	6.563	6.833	6.70
3/8"	16	1.588	7.978	8.255	8.10
7/16"	14	1.814	9.347	9.639	9.40
1/2"	13	1.954	10.798	11.095	10.90
9/16"	12	2.117	12.228	12.482	12.40
5/8"	11	2.309	13.627	13.904	13.80
3/4"	10	2.540	16.576	16.881	16.70

Core hole diameters for thread cutting

UNF ANSI B1.1, 2B

d1	TPI	mm	Ø mini	Ø maxi	Ø guide line
0	80	0.318	1.182	1.305	1.20
1	72	0.353	1.474	1.612	1.50
2	64	0.397	1.756	1.912	1.80
3	56	0.454	2.025	2.197	2.10
4	48	0.529	2.271	2.458	2.35
5	44	0.577	2.551	2.740	2.60
6	40	0.635	2.820	3.022	2.90
8	36	0.706	3.404	3.606	3.50
10	32	0.794	3.963	4.165	4.05
12	28	0.907	4.496	4.724	4.60
1/4"	28	0.907	5.360	5.588	5.50
5/16"	24	1.058	6.782	7.035	6.90
3/8"	24	1.058	8.382	8.636	8.50
7/16"	20	1.270	9.729	10.033	9.80
1/2"	20	1.270	11.329	11.607	11.40
9/16"	18	1.411	12.751	13.081	12.90
5/8"	18	1.411	14.351	14.681	14.50
3/4"	16	1.588	17.323	17.678	17.50
7/8"	14	1.814	20.270	20.675	20.40
1"	12	2.117	23.114	23.571	23.30
1 1/8"	12	2.117	26.289	26.746	26.50
1 1/4"	12	2.117	29.464	29.921	29.70
1 3/8"	12	2.117	32.639	33.096	32.80
1 1/2"	12	2.117	35.814	36.271	36.00

UNJF ISO 3161:1999, 3B

d1	TPI	mm	Ø mini	Ø maxi	Ø guide line
0	80	0.318	1.217	1.298	1.25
1	72	0.353	1.511	1.603	1.55
2	64	0.397	1.798	1.902	1.85
3	56	0.454	2.073	2.189	2.15
4	48	0.529	2.329	2.466	2.35
5	44	0.577	2.614	2.764	2.70
6	40	0.635	2.888	3.053	2.95
8	36	0.706	3.480	3.663	3.60
10	32	0.794	4.054	4.255	4.10
12	28	0.907	4.602	4.816	4.70
1/4"	28	0.907	5.466	5.662	5.55
5/16"	24	1.058	6.906	7.109	7.00
3/8"	24	1.058	8.494	8.679	8.60
7/16"	20	1.270	9.876	10.084	10.00
1/2"	20	1.270	11.463	11.661	11.55
9/16"	18	1.411	12.913	13.122	13.05
5/8"	18	1.411	14.501	14.702	14.60
3/4"	16	1.588	17.506	17.722	17.60
7/8"	14	1.814	20.460	20.706	20.50
1"	12	2.117	23.340	23.594	23.40

UNEF ANSI B1.1, 2B

d1	TPI	mm	Ø mini	Ø maxi	Ø guide line
12	32	0.794	4.623	4.826	4.70
1/4"	32	0.794	5.487	5.689	5.60
5/16"	32	0.794	7.087	7.264	7.20
3/8"	32	0.794	8.662	8.864	8.75
7/16"	28	0.907	10.135	10.337	10.25
1/2"	28	0.907	11.710	11.938	11.85
9/16"	24	1.058	13.132	13.385	13.20
5/8"	24	1.058	14.732	14.986	14.80
11/16"	24	1.058	16.307	16.560	16.40
3/4"	20	1.270	17.679	17.957	17.80
13/16"	20	1.270	19.254	19.558	19.40
7/8"	20	1.270	20.854	21.132	21.00
1"	20	1.270	24.029	24.307	24.10

UN ANSI B1.1, 2B

d1	TPI	mm	Ø mini	Ø maxi	Ø guide line
5/16"	20	1.270	6.554	6.858	6.70
3/8"	20	1.270	8.154	8.432	8.30
9/16"	20	1.270	12.904	13.208	13.00
5/8"	20	1.270	14.504	14.782	14.60
1 1/8"	8	3.175	25.146	25.781	25.50
1 1/4"	8	3.175	28.321	28.956	28.70
1 3/8"	8	3.175	31.496	32.131	31.80
1 1/2"	8	3.175	34.671	35.306	35.00
1 5/8"	8	3.175	37.846	38.481	38.20
1 3/4"	8	3.175	41.021	41.656	41.40
1 7/8"	8	3.175	44.196	44.831	44.50
2"	8	3.175	47.371	48.006	47.70
2 1/4"	8	3.175	53.721	54.356	54.10
2 1/2"	8	3.175	60.071	60.706	60.40

UNS ANSI B1.1, 2B

d1	TPI	mm	Ø mini	Ø maxi	Ø guide line
10	36	0.706	4.064	4.216	4.10
10	40	0.635	4.141	4.292	4.20
10	56	0.454	4.344	4.445	4.40
1/4"	36	0.706	5.588	5.740	5.65
1/4"	40	0.635	5.665	5.816	5.70
1/4"	48	0.529	5.766	5.892	5.80
1/4"	56	0.454	5.868	5.969	5.90
5/16"	36	0.706	7.163	7.340	7.25
3/8"	36	0.706	8.763	8.940	8.80
7/16"	24	1.058	9.957	10.210	10.00
1/2"	24	1.058	11.557	11.811	11.60
1"	14	1.814	23.445	23.825	23.60

G (BSP) DIN ISO 228

d1	TPI	mm	Ø mini	Ø maxi	Ø guide line
1/16"	28	0.907	6.561	6.843	6.75
1/8"	28	0.907	8.566	8.848	8.75
1/4"	19	1.337	11.445	11.890	11.60
3/8"	19	1.337	14.950	15.395	15.20
1/2"	14	1.814	18.631	19.172	18.90
5/8"	14	1.814	20.587	21.128	20.90
3/4"	14	1.814	24.117	24.658	24.40
7/8"	14	1.814	27.877	28.418	28.20
1"	11	2.309	30.291	30.931	30.70
1 1/8"	11	2.309	34.939	35.579	35.30
1 1/4"	11	2.309	38.952	39.592	39.30
1 3/8"	11	2.309	41.365	42.005	41.80
1 1/2"	11	2.309	44.845	45.485	45.20
1 3/4"	11	2.309	50.788	51.428	51.20
2"	11	2.309	56.656	57.296	57.00
2 1/4"	11	2.309	62.752	63.392	63.10
2 1/2"	11	2.309	72.226	72.866	72.60
3"	11	2.309	84.926	85.566	85.30

W (BSW) BS 84, (DIN11-1970)

d1	TPI	mm	Ø mini	Ø maxi	Ø guide line
3/32"	48				1.80
1/8"	40	0.635	2.362	2.591	2.50
5/32"	32				3.10
3/16"	24	1.058	3.406	3.744	3.60
7/32"	24				4.40
1/4"	20	1.270	4.724	5.156	4.90
5/16"	18	1.411	6.129	6.588	6.40
3/8"	16	1.588	7.493	7.988	7.70
7/16"	14	1.814	8.791	9.332	9.10
1/2"	12	2.117	9.987	10.589	10.30
5/8"	11	2.309	12.918	13.558	13.30
3/4"	10	2.540	15.799	16.484	16.20
7/8"	9	2.822	18.613	19.355	19.25
1"	8	3.175	21.336	22.149	21.90

PG DIN 40430

d1	TPI	mm	Ø mini	Ø maxi	Ø guide line
7	20	1.270	11.28	11.43	11.35
9	18	1.411	13.86	14.01	13.90
11	18	1.411	17.26	17.41	17.30
13.5	18	1.411	19.06	19.21	19.10
16	18	1.411	21.16	21.31	21.20
21	16	1.588	26.78	27.03	26.80
29	16	1.588	35.48	35.73	35.50
36	16	1.588	45.48	45.73	45.50
42	16	1.588	52.48	52.73	52.50
48	16	1.588	57.78	58.03	57.80

TR ISO 2901-2904, DIN 103, 7H

d1	TPI	mm	Ø mini	Ø maxi	Ø guide line
10	2		8	8.236	8.20
12	3		9	9.315	9.25
14	3		11	11.315	11.25
16	4		12	12.375	12.25
18	4		14	14.375	14.25
20	4		16	16.375	16.25
22	5		17	17.450	17.25
24	5		19	19.450	19.25
26	5		21	21.450	21.25
28	5		23	23.450	23.25
30	6		24	24.500	24.25
32	6		26	26.500	26.25

Shank diameter of taps

Thread		ISO 529*		ISO 2283		DIN 371		DIN 357/376		DIN 352		JIS B 4430 1998		ASME B 94,9 1999	
[mm]	[inch]	[Ø]	[□]	[Ø]	[□]	[Ø]	[□]	[Ø]	[□]	[Ø]	[□]	[Ø]	[□]	[Ø]	[□]
M 1	–	2,5	2	–	–	2,5	2,1	–	–	2,5	2,1	3	2,5	–	–
M 1,1	–	2,5	2	–	–	2,5	2,1	–	–	2,5	2,1	3	2,5	–	–
M 1,2	–	2,5	2	–	–	2,5	2,1	–	–	2,5	2,1	3	2,5	–	–
M 1,4	–	2,5	2	–	–	2,5	2,1	–	–	2,5	2,1	3	2,5	–	–
M 1,6	1/16	2,5	2	–	–	2,5	2,1	–	–	2,5	2,1	3	2,5	0,141	0,11
M 1,7	–	–	2	–	–	2,5	2,1	–	–	2,5	2,1	3	2,5	–	–
M 1,8	–	2,5	2	–	–	2,5	2,1	–	–	2,5	2,1	3	2,5	0,141	0,11
M 2	–	2,5	2	–	–	2,8	2,1	–	–	2,8	2,1	3	2,5	0,141	0,11
M 2,2	–	2,8	2,24	–	–	2,8	2,1	–	–	2,8	2,1	3	2,5	0,141	0,11
M 2,3	–	–	–	–	–	2,8	2,1	–	–	2,8	2,1	3	2,5	–	–
M 2,5	3/32	2,8	2,25	–	–	2,8	2,1	–	–	2,8	2,1	3	2,5	0,141	0,11
M 2,6	–	–	–	–	–	2,8	2,1	–	–	2,8	2,1	3	2,5	–	–
M 3	1/8	3,15	2,5	2,24	1,8	3,5	2,7	2,2	–	3,5	2,1	4	3,2	0,141	0,11
M 3,5	–	3,55	2,8	2,5	2	4	3	2,5	2,1	4	3	4	3,2	0,141	0,11
M 4	5/32	4	3,15	3,15	2,5	4,5	3,4	2,8	2,1	4,5	3,4	5	4	0,168	0,131
M 4,5	3/16	4,5	3,55	3,55	2,8	6	4,9	3,5	2,7	6	4,9	5	4	0,194	0,152
M 5	–	5	4	4	3,15	6	4,9	3,5	2,7	6	4,9	5,5	4,5	0,194	0,152
M 6	1/4	6,3	5	4,5	3,55	6	4,9	4,5	3,4	6	4,9	6	4,5	0,255	0,191
M 7	5/16	7,1	5,6	5,6	4,5	7	5,5	5,5	4,3	6	4,9	6,2	5	0,318	0,238
M 8	–	8	6,3	6,3	5	8	6,2	6	4,9	6	4,9	6,2	5	0,318	0,238
M 9	–	9	7,1	7,1	5,6	9	7	7	5,5	7	5,5	7	5,5	–	–
M 10	3/8	10	8	8	6,3	10	8	7	5,5	7	5,5	7	5,5	0,318	0,286
M 11	–	8	6,3	8	6,3	–	–	8	6,2	8	6,2	8	6	–	–
M 12	1/2	9	7,1	9	7,1	–	–	9	7	9	7	8,5	6,5	0,367	0,275
M 14	9/16	11,2	9	11,2	9	–	–	11	9	11	9	10,5	8	0,429	0,322
M 16	5/8	12,5	10	12,5	10	–	–	12	9	12	9	12,5	10	0,48	0,36
M 18	11/16	14	11,2	14	11,2	–	–	14	11	14	11	14	11	0,542	0,406
M 20	13/16	14	11,2	14	11,2	–	–	16	12	16	12	15	12	0,652	0,489
M 22	7/8	16	12,5	16	12,5	–	–	18	14,5	18	14,5	17	13	0,697	0,523
M 24	15/16	18	14	18	14	–	–	18	14,5	18	14,5	19	15	0,76	0,571
M 27	1/16	20	16	–	–	–	–	20	16	20	16	20	15	0,896	0,672

All dimensions in mm (except US standard ASME B 94.9 in inch)

*M3–M10 with reinforced shank

Material comparison chart

Material No.	DIN	AFNOR	BS	GOST	USA
1.2002	125Cr1	C120E3UCr4	–	–	–
1.2008	140 Cr 3	130 C 3	–	–	–
1.2067	102Cr6	100Cr6	BL 3	X (LUX15)	L 3 (AISI)
1.2080	X210Cr12	X200Cr12	BD 3	X12	D 3 (AISI)
1.2083	X40Cr14	X40Cr144	–	40X13	–
1.2201	G-X 165 Cr V 12	–	–	–	–
1.2208	31 Cr V 3	–	–	3X ϕ	–
1.2210	115CrV3	–	–	X ϕ	L 2 (AISI)
1.2235	80CrV2	–	–	8X ϕ	–
1.2241	51CrMnV4	–	–	5X ϕ	–
1.2249	45SiCrV6	45SiCrV6	–	–	–
1.2303	100CrMo5	–	–	–	L 7 (AISI)
1.2316	X36CrMo17	–	–	40X16M	–
1.2323	48CrMoV6-7	45 CDV 6	–	5XM ϕ	–
1.2330	35CrMo4	–	BP 20	–	P 20 (AISI)
1.2341	6CrMo15-5	–	–	–	P 4 (AISI)
1.2343	X37CrMoV5-1	X38CrMoV5	BH 11	4Ch5MFS	H 11 (AISI)
1.2344	X40CrMoV5-1	X40CrMoV5	BH 13	4Ch5MF1S	H 13 (AISI)
1.2357	50CrMoV13-14	50 CDV 13	–	–	–
1.2363	X100CrMoV5	X100CrMoV5	BA 2	X5ГМ	A 2 (AISI)
1.2365	32CrMoV12-28	32 CDV 12-28	BH 10	3Ch3M3F	H 10 (AISI)
1.2367	X38CrMoV5-3	X38CrMoV5-3	–	4X5M3 ϕ	–
1.2369	81MoCrV42-16	–	–	–	613 (AISI)
1.2379	X153CrMoV12	X160CrMoV12	BD 2	X12M ϕ	D 2 (AISI)
1.2419	105WCr6	105 WC 13	–	XБГ	–
1.2436	X210CrW12	X210CrW12-1	–	X12B	–
1.2510	100MnCrW4	90 MWCV 5	BO 1	XГБ ϕ	O 1 (AISI)
1.2542	45WCrV7	45 WCV 20	BS 1	5XB2C ϕ	S 1 (AISI)
1.2550	60WCrV7	–	–	6XB2C ϕ	–
1.2567	30WCrV17-2	X32WCrV5	–	3X2B4 ϕ	–
1.2581	X30WCrV9-3	X30WCrV9	BH 21	3X2B8 ϕ	H 21 (AISI)
1.2606	X37CrMoW5-1	X35CrWMoV5	BH 12	H 12 (AISI)	–
1.2662	X30WCrCoV9-3	–	–	4Ch3M2WFGS	–
1.2706	X 3 NiCoMo 18 8 5	–	–	03N18K8M5T-WD	–
1.2709	X3NiCoMoTi18-9-5	–	–	03N18K9M5T-WD	–
1.2713	55NiCrMoV6	55 NCDV 7	BH 224/5	5XH2M ϕ -Y	L 6 (AISI)
1.2714	55NiCrMoV7	–	–	5XH2M ϕ	L 6 (AISI)

Material No.	DIN	AFNOR	BS	GOST	USA
1.2735	15NiCr14	–	–	–	P 6 (AISI)
1.2742	55CrNiMoV4-2-4	55 CNDV 4	–	–	–
1.2764	X19NiCrMo4	–	–	20XH4M	–
1.2766	35NiCrMo16	–	BP 30	35XH4M	–
1.2767	45NiCrMo16	–	–	45X2H4M	–
1.2769	G45CrNiMo4-2	–	–	–	–
1.2779	X6NiCrTi26-15	–	–	–	660 (AISI)
1.2782	X16CrNiSi25-20	X15CrNiSi25-20	–	–	–
1.2786	X13NiCrSi36-16	X15NiCrSi37-18	–	–	–
1.2787	X23CrNi17	X21CrNi17	–	–	–
1.2833	100V1	100V2	BW 2	–	W 210 (AISI)
1.2842	90MnCrV8	90 MV 8	BO 2	9Г2Φ	O 2 (AISI)
1.2880	G-X 165 Cr Co Mo 12	–	–	–	–
1.3202	HS12-1-4-5	–	BT 15	P12MΦ4K5	T 15 (AISI)
1.3207	HS10-4-3-10	10-4-3-10	BT 42	P10M4Φ3K10	–
1.3243	HS6-5-2-5	6-5-2-5	BM 35	R6M5K5	–
1.3245	HS6-5-2-5S	–	–	–	–
1.3246	HS7-4-2-5	7-4-2-5	–	–	41 (AISI)
1.3247	HS2-9-1-8	2-9-1-8	BM 42	P2M10K8Φ	M 42 (AISI)
1.3249	HS2-9-2-8	–	BM 34	–	M 33 (AISI)
1.3255	HS18-1-2-5	18-1-1-5	BT 4	P18MΦ2K5	T 4 (AISI)
1.3257	HS18-1-2-15	–	–	–	–
1.3265	HS18-1-2-10	–	BT 5	–	T 5 (AISI)
1.3302	HS12-1-4	–	–	P12MΦ4	–
1.3318	HS12-1-2	–	–	P12MΦ2	–
1.3333	HS3-3-2	–	–	P12MΦ2	–
1.3339	HS6-5-2	–	–	–	–
1.3340	HS6-5-2CS	–	–	–	–
1.3341	HS6-5-2S	–	–	–	–
1.3342	HS6-5-2C	6-5-2 HC	–	P6M5Φ3	3 Class 1
1.3343	HS6-5-2	06.05.02	BM 2	R6M5	611 (AISI)
1.3344	HS6-5-3	06.05.03	–	P6M5Φ3	M 3 Class 1
1.3345	HS6-5-3C	–	–	–	–
1.3346	HS2-9-1	02.08.01	BM 1	P2M9Φ	H 41 (AISI)
1.3348	HS2-9-2	02.09.02	–	P2M9Φ2	M 7 (AISI)
1.3355	HS18-0-1	18-0-1	BT 1	R18	T 1 (AISI)
1.3401	X120Mn12	–	BW 10	110G13L	–
1.3402	X110Mn14	–	–	Np-G13A	–
1.3501	100Cr2	100Cr2	–	WX4	E 50100 (SAE)
1.3503	105 Cr 4	–	–	–	E 51100 (AISI)

Material No.	DIN	AFNOR	BS	GOST	USA
1.3505	100Cr6	100 C 6	2 S.135	WX15	E 52100 (SAE)
1.3520	100CrMn6	100 CM 6	–	WX15CГ	–
1.4000	X6Cr13	X6Cr13	403 S 17	08X13	403 (AISI)
1.4001	G-X 7 Cr 13	–	–	–	410 S (AISI)
1.4002	X6CrAl13	X6CrAl13	405 S 17	–	405 (AISI)
1.4003	X 2 Cr 11	X2CrNi12	X2CrNi12	–	–
1.4005	X12CrS13	X12CrS13	416 S 21	12X13-Y	416 (AISI)
1.4006	X12Cr13	X12Cr13	1630 grade A	12X13	410 (AISI)
1.4007	X35Cr14	–	–	Np-40Ch13	–
1.4008	GX7CrNiMo12-1	GX7CrNiMo12-1	GX7CrNiMo12-1	–	–
1.4010	X2Cr17	X2Cr17	–	–	–
1.4011	GX12Cr12	GX12Cr12	GX12Cr12	–	–
1.4016	X6Cr17	X6Cr17	430 S 15	08X17	430 (AISI)
1.4017	X6CrNi17-1	X6CrNi17-1	X6CrNi17-1	–	–
1.4021	X20Cr13	X20Cr13	420 S 37	20X13	420 (AISI)
1.4024	X15Cr13	Z 12 C 13 M	420 S 29	20X13	420 (SAE)
1.4027	GX20Cr14	X30Cr13	1630 grade B	28ГМ	–
1.4028	X30Cr13	X29CrS13	420 S 45	30X13	–
1.4029	X29CrS13	X39Cr13	X29CrS13	–	–
1.4031	X39Cr13	X46Cr13	X39Cr13	40X13	–
1.4034	X46Cr13	X45CrS13	X46Cr13	46X13	–
1.4035	X45CrS13	–	–	–	–
1.4037	X65Cr13	X17CrNi16-2	–	65Ch13	–
1.4057	X17CrNi16-2	Z 20 CN 17.2 M	431 S 29	17X16H2	431 (AISI)
1.4059	GX22CrNi17	–	ANC 2	–	–
1.4086	GX120Cr29	X6CrNiMo12	1648 grade B 1	–	–
1.4102	X6CrNiMo12	X14CrMoS17	–	–	–
1.4104	X14CrMoS17	X14CrMoS17	X14CrMoS17	–	430 F (AISI)
1.4105	X6CrMoS17	X6CrMoS17	X6CrMoS17	–	–
1.4106	X2CrMoSiS18-2-1	X2CrMoSiS18-2-1	–	–	–
1.4107	GX8CrNi12	–	GX8CrNi12	–	–
1.4109	X70CrMo15	X70CrMo15	X70CrMo15	–	–
1.4110	X55CrMo14	Z 50 CD 15 Cl	–	–	–
1.4112	X90CrMoV18	X 89 CrMoV 18-1	X90CrMoV18	90X18Mφ	440 B (AISI)
1.4114	X6CrMoS19-2	X6CrMoS19-2	–	–	–
1.4116	X50CrMoV15	X50CrMoV15	X50CrMoV15	–	–
1.4118	X40CrMo15	X40CrMo15	–	20XГМ	–
1.4120	GX20CrMo13	–	–	–	–
1.4121	X22CrMoNiS13-1	X22CrMoNiS13-1	–	–	–
1.4122	GX35CrMo17	X38CrMo16-1	X39CrMo17-1	39X17M	–

Material No.	DIN	AFNOR	BS	GOST	USA
1.4125	X105CrMo17	X105CrMo17	X105CrMo17	110Ch18M-SchD	440 C (AISI)
1.4136	GX70CrMo29-2	Z 60 CD 29.2 M	–	–	–
1.4300	X 12 CrNi 18 8	–	302 S 25	–	–
1.4301	X5CrNi18-10	X5CrNi18-10	302 S 17	08Ch18N10	304 (AISI)
1.4302	X5CrNi19-9	–	308 S 96	Sw-04Ch19N9	–
1.4303	X4CrNi18-12	X4CrNi18-12	305 S 17	06Ch18N11	305 (L) (AISI)
1.4305	X8CrNiS18-9	X8CrNiS18-9	303 S 22	10X18H9-Y	303 (AISI)
1.4306	X2CrNi19-11	X2CrNi19-11	1631 grade C	03Ch18N11	304 L (AISI)
1.4307	X2CrNi18-9	X2CrNi18-9	X2CrNi18-9	03X18H9	–
1.4308	GX5CrNi19-10	GX5CrNi19-10	1631 grade A	07Ch18N9L	304 H (SAE)
1.4309	GX2CrNi19-11	GX2CrNi19-11	1631 grade C	–	–
1.4310	X 12 CrNi 17 7	X10CrNi18-8	301 S 21	–	301 (AISI)
1.4311	X2CrNiN18-10	X2CrNiN18-10	304 S 61	–	304 LN (AISI)
1.4312	GX10CrNi18-8	Z 10 CN 18.9 M	1631 grade D	10Ch18N9L	–
1.4313	X3CrNiMo13-4	X3CrNiMo13-4	425 C 11	03X13H4M	S 41500 (AISI)
1.4316	X1CrNi19-9	Z 1 CN 20-10	308 S 92	Sw-01Ch19N9	–
1.4317	GXZ5CrNi13-4	X4CrNi13-4	425 C 11	–	–
1.4318	X2CrNiN18-7	X2CrNiN18-7	X2CrNiN18-7	–	–
1.4319	X3CrNiN17-8	X3CrNiN17-8	301 S 26	–	–
1.4324	–	–	302 S 26	–	302 (SAE)
1.4332	X2CrNi24-12	Z 2 CNS 25-13	309 S 92	–	–
1.4333	X 5 NiCr 32 21	–	–	–	330 (AISI)
1.4335	X1CrNi25-21	X1CrNi25-21	X1CrNi25-21	–	–
1.4337	X10CrNi30-9	Z 10 CN 30-09	312 S 94	–	–
1.4347	GX6CrNiN26-7	GX6CrNiN26-7	GX6CrNiN26-7	–	–
1.4361	X1CrNiSi18-15-4	X1CrNiSi18-15-4	X1CrNiSi18-15-4	–	–
1.4362	X2CrNiN23-4	X2CrNiN23-4	X2CrNiN23-4	–	–
1.4370	X15CrNiMn18-8	Z 8 CNM 19-09-07	307 S 98	–	–
1.4371	X2CrMnNiN17-7-5	X2CrMnNiN17-7-5	202 S 16	–	202 (AISI)
1.4372	X12CrMnNiN17-7-5	X12CrMnNiN17-7-5	X12CrMnNiN17-7-5	–	–
1.4373	X12CrMnNiN18-9-5	X12CrMnNiN18-9-5	284 S 16	–	–
1.4375	X2CrMnNiN20-9-7	X2CrMnNiN20-9-7	–	–	S 21904 (AISI)
1.4401	X5CrNiMo17-12-2	X5CrNiMo17-12-2	316 S 17	08X17H13M2	316 (AISI)
1.4403	X5CrNiMo19-11	–	316 S 96	–	–
1.4404	X2CrNiMo17-12-2	X2CrNiMo17-12-2	1632 grade F	03X17H13M2	–
1.4405	GX4CrNiMo16-5-1	GX4CrNiMo16-5-1	1632 grade F	–	–
1.4406	X2CrNiMoN17-11-2	X2CrNiMoN17-11-2	316 S 61	–	316 LN (AISI)
1.4408	GX5CrNiMo19-11-2	GX5CrNiMo19-11-2	1632 grade B	07Ch18N10G2S2M2L	–
1.4409	GX2CrNiMo19-11-2	GX2CrNiMo19-11-2	GX2CrNiMo19-11-2	–	–
1.4410	X2CrNiMoN25-7-4	X2CrNiMoN25-7-4	X2CrNiMoN25-7-4	–	S 32750 (AISI)

Material No.	DIN	AFNOR	BS	GOST	USA
1.4411	GX4CrNiMo16-5-2	GX4CrNiMo16-5-2	GX4CrNiMo16-5-2	–	–
1.4412	GX5CrNiMo19-11-3	GX5CrNiMo19-11-3	GX5CrNiMo19-11-3	–	–
1.4413	X 3 CrNiMo 13 4	X3CrNiMo13-4	–	–	S 41500 (AISI)
1.4416	GX2NiCrMoN25-20-5	GX2NiCrMoN25-20-5	GX2NiCrMoN25-20-5	–	–
1.4417	GX2CrNiMoN25-7-3	GX2CrNiMoN25-7-3	GX2CrNiMoN25-7-3	–	S 31500 (AISI)
1.4418	X4CrNiMo16-5-1	X4CrNiMo16-5-1	X4CrNiMo16-5-1	–	–
1.4420	X 5 CrNiMo 18 11	–	315 S 16	–	–
1.4429	X2CrNiMoN17-13-3	X2CrNiMoN17-13-3	316 S 63	–	316 LN (AISI)
1.4430	X2CrNiMo19-12	Z 2 CND 19-12-03	316 S 92	–	–
1.4431	X12CrNiMo19-10	Z 8 CND 18.10.3 M	–	–	–
1.4432	X2CrNiMo17-12-3	X2CrNiMo17-12-3	316 S 12	06Ch17N13M3-WD	–
1.4434	X2CrNiMoN18-12-4	X2CrNiMoN18-12-4	X2CrNiMoN18-12-4	–	–
1.4435	X2CrNiMo18-14-3	X2CrNiMo18-14-3	1632 grade F	03Ch17N14M3	316 L (AISI)
1.4436	X3CrNiMo17-13-3	X3CrNiMo17-13-3	316 S 19	05X17H13M3	316 (AISI)
1.4437	GX6CrNiMo18-12	Z 4 CND 19.13 M	–	08X17H13M2	316 (SAE)
1.4438	X2CrNiMo18-15-4	X2CrNiMo18-15-4	317 S 12	–	317 L (AISI)
1.4439	GX3CrNiMoN17-13-5	X2CrNiMoN17-13-5	X2CrNiMoN17-13-5	–	–
1.4441	X2CrNiMo18-15-3	X2CrNiMo18-15-3	–	–	–
1.4442	X2CrNiMoN18-15-4	Z 3 CND 19-14 Az	–	–	–
1.4446	GX2CrNiMoN17-13-4	GX2CrNiMoN17-13-4	GX2CrNiMoN17-13-4	–	–
1.4448	GX6CrNiMo17-13	–	1632 grade A	–	–
1.4449	X3CrNiMo18-12-3	–	317 S 16	–	317 (AISI)
1.4454	–	–	–	–	S 21900 (AISI)
1.4458	GX2NiCrMo28-20-2	GX2NiCrMo28-20-2	GX2NiCrMo28-20-2	–	–
1.4459	X8CrNiMo23-13	Z 3 CND 22-15-03	–	–	–
1.4460	X3CrNiMoN27-5-2	X3CrNiMoN27-5-2	X3CrNiMoN27-5-2	10Ch26N5M	329 (AISI)
1.4462	X2CrNiMoN22-5-3	X2CrNiMoN22-5-3	318 S 13	03X22H5AM3	S 31803 (AISI)
1.4465	X1CrNiMoN25-25-2	–	–	02Ch25N22AM2-PT	310 MoLN (AISI)
1.4466	X1CrNiMoN25-22-2	X1CrNiMoN25-22-2	X1CrNiMoN25-22-2	–	–
1.4468	GX2CrNiMoN25-6-3	GX2CrNiMoN25-6-3	GX2CrNiMoN25-6-3	03Ch24N6AM3	–
1.4469	GX2CrNiMoN26-7-4	GX2CrNiMoN26-7-4	GX2CrNiMoN26-7-4	–	S 32615 (AISI)
1.4470	GX2CrNiMoN22-5-3	GX2CrNiMoN22-5-3	GX2CrNiMoN22-5-3	–	–
1.4500	GX7NiCrMoCuNb25-20	Z 3 NCDU 25.20 M	332 C 11	–	–
1.4501	X2CrNiMoCuWN25-7-4	X2CrNiMoCuWN25-7-4	X2CrNiMoCuWN25-7-4	–	–
1.4502	X8CrTi18	X8CrTi18	–	–	–
1.4504	–	–	–	–	631 (AISI)
1.4507	X2CrNiMoCuN25-6-3	X2CrNiMoCuN25-6-3	X2CrNiMoCuN25-6-3	–	–
1.4508	GX2CrNiMoCuWN25-8-4	Z 4 CNUD 17-11-03 FF	–	–	–
1.4509	X2CrTiNb18	X2CrTiNb18	X2CrTiNb18	–	–
1.4510	X3CrTi17	X3CrTi17	X3CrTi17	05X17T	430 Ti (AISI)

Material No.	DIN	AFNOR	BS	GOST	USA
1.4511	X3CrNb17	X3CrNb17	X3CrNb17	–	–
1.4512	X2CrTi12	X2CrTi12	409 S 19	–	409 (AISI)
1.4513	X2CrMoTi17-1	X2CrMoTi17-1	X2CrMoTi17-1	–	–
1.4516	X6CrNiTi12	X6CrNiTi12	X6CrNiTi12	–	–
1.4517	GX2CrNiMoCuN25-6-3-3	GX2CrNiMoCuN25-6-3-3	GX2CrNiMoCuN25-6-3-3	–	–
1.4519	X2CrNiMoCu20-25	–	904 S 92	–	–
1.4520	X2CrTi17	X2CrTi17	X2CrTi17	–	–
1.4521	X2CrMoTi18-2	X2CrMoTi18-2	X2CrMoTi18-2	20XH2M	443 (AISI)
1.4522	X2CrMoNb18-2	–	–	–	443 (AISI)
1.4523	X2CrMoTiS18-2	X2CrMoTiS18-2	X2CrMoTiS18-2	–	–
1.4525	GX5CrNiCu16-4	GX5CrNiCu16-4	GX5CrNiCu16-4	–	–
1.4526	X6CrMoNb17-1	X6CrMoNb17-1	X6CrMoNb17-1	–	–
1.4527	GX4NiCrCuMo30-20-4	GX4NiCrCuMo30-20-4	GX4NiCrCuMo30-20-4	–	–
1.4529	X1NiCrMoCuN25-20-7	X1CrNiMoCuN25-20-7	X1NiCrMoCuN25-20-7	–	N 08926 (AISI)
1.4532	X8CrNiMoAl15-7-2	X8CrNiMoAl15-7-2	X8CrNiMoAl15-7-2	–	631 (AISI)
1.4533	X6CrNiTi18-10S	–	–	05Ch18N10T	–
1.4534	X3CrNiMoAl13-8-2	–	–	–	–
1.4537	X1CrNiMoCuN25-25-5	X1CrNiMoCuN25-25-5	X1CrNiMoCuN25-25-5	–	–
1.4539	X1NiCrMoCu25-20-5	X1NiCrMoCu25-20-5	904 S 13	–	904 L (AISI)
1.4540	GX4CrNiCuNb16-4	Z 4 CNUNb 16.4 M	–	–	–
1.4541	X6CrNiTi18-10	X6CrNiTi18-10	321 S 12	08X18H10T	321 (AISI)
1.4542	X5CrNiCuNb16-4	X5CrNiCuNb16-4	X5CrNiCuNb16-4	–	630 (AISI)
1.4543	X3CrNiCuTi12-9	–	2 T.66	–	–
1.4544	–	–	2 S.129	08X18H10T	321 (SAE)
1.4545	–	–	–	–	S 15500 (AISI)
1.4546	X5CrNiNb18-10	–	2 S.130	–	347 (SAE)
1.4547	X1CrNiMoCuN20-18-7	X1CrNiMoCuN20-18-7	X1CrNiMoCuN20-18-7	–	S 31254 (AISI)
1.4548	X5CrNiCuNb17-4-4	–	–	–	630 (AISI)
1.4550	X6CrNiNb18-10	X6CrNiNb18-10	347 S 20	08Ch18N12B	347 (AISI)
1.4551	X5CrNiNb19-9	Z 6 CNNb 20-10	–	–	–
1.4552	GX5CrNiNb19-11	GX5CrNiNb19-11	1631 grade B	–	–
1.4555	X2CrNiNb21-10	–	347 S 96	–	–
1.4557	GX2CrNiMoCuN20-18-6	GX2CrNiMoCuN20-18-6	GX2CrNiMoCuN20-18-6	–	–
1.4559	G-X 7 NiCrMoCuNb 42 20	–	–	–	–
1.4560	X3CrNiCu19-9-2	X3CrNiCu19-9-2	X3CrNiCu19-9-2	–	–
1.4563	X1NiCrMoCu31-27-4	X1NiCrMoCu31-27-4	X1NiCrMoCu31-27-4	–	–
1.4564	–	–	–	–	631 (AISI)
1.4565	X2CrNiMnMoNbN25-18-5-4	–	–	–	S 34565 (AISI)
1.4567	X 3 CrNiCu 18 9	X3CrNiCu18-9-4	394 S 17	–	–
1.4568	X7CrNiAl17-7	X7CrNiAl17-7	301 S 81	09Ch17N7Ju1	631 (AISI)

Material No.	DIN	AFNOR	BS	GOST	USA
1.4570	X6CrNiCuS18-9-2	X6CrNiCuS18-9-2	X6CrNiCuS18-9-2	–	–
1.4571	X6CrNiMoTi17-12-2	X6CrNiMoTi17-12-2	320 S 18	08Ch16N11M3T	316 Ti (AISI)
1.4573	GX3CrNiMoCuN24-6-5	–	320 S 33	08Ch17N13M2T	316 Ti (AISI)
1.4574	–	Z 9 CNDA 15-07	–	–	631 (AISI)
1.4575	X1CrNiMoNb28-4-2	–	–	–	S 32803 (AISI)
1.4576	X5CrNiMoNb19-12	Z 4 CNDSNb 19-12-03	18 S 96	–	–
1.4578	X3CrNiCuMo17-11-3-2	X3CrNiCuMo17-11-3-2	X3CrNiCuMo17-11-3-2	–	–
1.4580	G-X 10 CrNiMoNb 18 10	X6CrNiMoNb17-12-2	318 S 17	08X17H13M2T	316 Cb (AISI)
1.4581	X5CrNiMoNb19-11-2	GX5CrNiMoNb19-11-2	1632 grade C	–	–
1.4583	GX10CrNiMoNb18-12	–	–	–	–
1.4584	GX2NiCrMoCu25-20-5	GX2NiCrMoCu25-20-5	GX2NiCrMoCu25-20-5	–	–
1.4587	GX2NiCrMoCuN29-25-5	GX2NiCrMoCuN29-25-5	GX2NiCrMoCuN29-25-5	–	–
1.4588	GX2NiCrMoCuN25-20-6	GX2NiCrMoCuN25-20-6	GX2NiCrMoCuN25-20-6	–	–
1.4590	X2CrNbZr17	X2CrNbZr17	X2CrNbZr17	–	–
1.4592	X2CrMoTi29-4	X2CrMoTi29-4	X2CrMoTi29-4	–	–
1.4594	X5CrNiMoCuNb14-5	X5CrNiMoCuNb14-5	X5CrNiMoCuNb14-5	–	–
1.4601	X6CrNb12	–	–	–	–
1.4602	X4CrCu17-1	–	–	–	–
1.4603	X1CrTi17	–	–	–	–
1.4604	X2CrTi20	–	–	–	–
1.4605	X2CrAlTi18-2	–	X2CrAlTi18-2	–	–
1.4650	X2CrNiCu19-10	–	–	–	–
1.4651	6CrNiCuS18-9-4	–	–	–	HNV 2 (SAE)
1.4704	45SiCr16-11	–	–	–	–
1.4710	GX30CrSi6	–	–	–	–
1.4713	X10CrAl7	–	X10CrAlSi7	12X7C10	–
1.4718	G-X 45 CrSi 9 3	X45CrSi9-3	401 S 45	45X9C3	HNV 3 (SAE)
1.4720	X7CrTi12	–	–	–	409 (AISI)
1.4724	X10CrAl13	Z 13 C 13	X10CrAlSi13	10Ch13SJü	–
1.4725	CrAl 14 4	–	–	–	–
1.4731	X40CrSiMo10-2	X40CrSiMo10-2	X40CrSiMo10-2	40Ch10S2M	–
1.4736	X3CrAlTi18-2	–	X3CrAlTi18-2	–	–
1.4742	X10CrAl18	Z 12 CAS 18	X10CrAlSi18	15Ch18SJü	–
1.4745	GX40CrSi23	–	–	–	–
1.4747	X 80 CrNiSi 20	–	–	–	HNV 6 (SAE)
1.4748	X85CrMoV18-2	X85CrMoV18-2	X85CrMoV18-2	–	–
1.4749	X18CrN28	–	X18CrN28	–	–
1.4762	X10CrAl24	Z 12 CAS 25	X10CrAlSi25	–	446 (AISI)
1.4763	X8Cr24	X8Cr24	–	–	–
1.4765	CrAl 25 5	–	–	Ch23Ju5T	–

Material No.	DIN	AFNOR	BS	GOST	USA
1.4767	CrAl 20 5	–	–	–	–
1.4768	CrAl 21 6	–	–	–	–
1.4776	GX40CrSi28	–	–	–	–
1.4818	X6CrNiSiNc19-10	–	X6CrNiSiNc19-10	–	S 30415 (AISI)
1.4820	G-X 12 CrNi 26 5	–	–	–	–
1.4821	X15CrNiSi25-4	–	X15CrNiSi25-4	–	–
1.4825	GX25CrNiSi18-9	–	–	–	302 mod. (SAE)
1.4826	GX40CrNiSi22-10	–	–	–	–
1.4828	X15CrNiSi20-12	Z 17 CNS 20-12	309 S 24	20Ch20N14S2	309 (AISI)
1.4829	X12CrNi22-12	–	309 S 94	–	–
1.4832	GX25CrNiSi20-14	–	–	20Ch20N14S2L	–
1.4833	X 7 CrNi 23 14	Z 15 CN 23-13	309 S 24	–	309 S (AISI)
1.4835	X9CrNiSiNc21-11-2	–	X9CrNiSiNc21-11-2	–	S 30815 (AISI)
1.4837	GX40CrNiSi25-12	–	1648 grade E	40Ch24N12SL	–
1.4840	GX15CrNi25-20	–	–	15Ch23N18L	–
1.4841	X15CrNiSi25-20	Z 15 CNS 25-20	314 S 25	20Ch25N20S2	310 (AISI)
1.4842	X12CrNi25-20	Z 12 CN 26-21	310 S 94	–	–
1.4843	CrNi 25 20	–	–	ChN20JuS	–
1.4845	X12CrNi25-21	Z 12 CN 26-21	310 S 16	08X25H10	310 S (AISI)
1.4846	X40CrNi25-21	–	310 S 98	–	–
1.4847	X8CrNiAlTi20-20	–	–	–	334 (AISI)
1.4848	GX40CrNiSi25-20	–	1648 grade F	–	–
1.4849	GX40NiCrSiNb38-18	–	–	–	–
1.4852	G40NiCrSiNb35-26	–	–	–	–
1.4854	X6NiCrSiNc35-25	–	X6NiCrSiNc35-25	–	–
1.4855	GX30CrNiSiNb24-24	–	–	–	–
1.4857	GX40NiCrSi35-25	–	–	–	–
1.4859	GX10NiCrNb32-20	–	–	–	–
1.4860	NiCr 30 20	–	–	–	–
1.4864	X12NiCrSi35-16	Z 20 NCS 33-16	NA 17	–	330 (AISI)
1.4865	GX40NiCrSi38-18	–	330 C 11	–	–
1.4866	X33CrNiMnN23-8	X33CrNiMnN23-8	X33CrNiMnN23-8	–	EV 16 (SAE)
1.4870	X53CrMnNiNbN21-9	X53CrMnNiNbN21-9	352 S 52	–	–
1.4871	X53CrMnNiN21-9	X53CrMnNiN21-9	349 S 52	55Ch20G9AN4	EV 8 (SAE)
1.4872	X25CrMnNiN25-9-7	–	X25CrMnNiN25-9-7	–	–
1.4873	X45CrNiW18-9	–	–	–	–
1.4875	X55CrMnNiN20-8	X55CrMnNiN20-8	X55CrMnNiN20-8	–	EV 12 (SAE)
1.4876	X10NiCrAlTi32-20	Z 10 NC 32-21	NA 15	–	N 08800 (AISI)
1.4877	X6NiCrNbCe32-27	–	X6NiCrNbCe32-27	–	–
1.4878	X12CrNiTi18-9	Z 6 CNT 18-10	321 S 31	–	–

Material No.	DIN	AFNOR	BS	GOST	USA
1.4882	X50CrMnNiNbN21-9	–	X50CrMnNiNbN21-9	–	XEV-F (SAE)
1.4886	X10NiCrSi35-19	–	X10NiCrSi35-19	–	–
1.4887	X10NiCrSiNb35-22	–	X10NiCrSiNb35-22	–	–
1.4891	X 4 CrNiSiN 18 10	–	–	–	S 30415 (AISI)
1.4893	X 8 CrNiSiN 21 11	–	–	–	S 30815 (AISI)
1.4903	X10CrMoVNb9-1	X10CrMoV9-1	–	–	–
1.4909	X2CrNiMoN17-12-2	–	S.161	–	–
1.4910	X3CrNiMoBN17-13-3	–	X3CrNiMoBN17-13-3	–	–
1.4911	X8CrCoNiMo10-6	Z 9 CKD 11	S.152	–	–
1.4912	X7CrNiNb18-10	X7CrNiNb18-10	–	–	–
1.4913	X19CrMoNbVN11-1	Z 21 CDNbV 11	X19CrMoNbVN11-1	–	–
1.4919	X6CrNiMo17-13	X6CrNiMoB17-12-2	316 S 50	10X18H13M2	316 H (AISI)
1.4922	X20CrMoV11-1	X20CrMoV11-1	762	–	–
1.4923	X22CrMoV12-1	X19CrMoNbVN11-1	X22CrMoV12-1	–	–
1.4928	G-X 12 CrNiMoCoVN 12	–	–	–	–
1.4931	GX23CrMoV12-1	GX23CrMoV12-1	–	–	–
1.4935	X20CrMoWV12-1	–	–	–	422 (AISI)
1.4938	X11CrNiMoN12	X12CrNiMoV12-3	X12CrNiMoV12-3	–	–
1.4939	X12CrNiMo12	Z 12 CNDV 12-03	S.151	–	S 64152 (AISI)
1.4941	X6CrNiTiB18-10	X6CrNiTiB18-10	321 S 51	–	–
1.4943	X4NiCrTi25-15	Z 5 NCTDV 25-15 B	HR 251	–	660 (AISI)
1.4944	–	–	HR 51	–	660 (AISI)
1.4948	X6CrNi18-10	X6CrNi18-10	304 S 50	10X20H10	304 H (AISI)
1.4949	X3CrNiN18-11	–	304 S 51	–	–
1.4958	X5NiCrAlTi31-20	Z 8 NC 33-21	NA 15	–	N 08810 (AISI)
1.4959	X8NiCrAlTi32-21	Z 8 NC 33-21	NA 15	–	–
1.4961	X8CrNiNb16-13	–	347 S 51	–	–
1.4971	X12CrCoNi21-20	–	–	–	661 (AISI)
1.4980	X5NiCrTi26-15	–	–	–	–
1.4982	X10CrNiMoMnNbVB15-10-1	X10CrNiMoMnNbVB15-10-1	X10CrNiMoMnNbVB15-10-1	–	–
1.4986	X7CrNiMoBNb16-16	X7CrNiMoBNb16-16	X7CrNiMoBNb16-16	–	–
1.4988	G-X 8 CrNiMoVNb 16 13	–	–	–	–
1.5023	38Si7	40Si7	–	–	–
1.5024	46Si7	46 S 7	–	–	–
1.5025	51Si7	50 S 7	–	–	–
1.5026	55Si7	55 S 7	251 A 58	55S2	9255 (SAE)
1.5027	60Si7	60 S 7	251 A 60	60S2	9260 (SAE)
1.5029	71Si7	–	–	70S2ChA	–
1.5069	36Mn7	–	–	–	1340 H (SAE)
1.5121	46MnSi4	–	–	–	–

Material No.	DIN	AFNOR	BS	GOST	USA
1.5122	37MnSi5	38 MS 5	–	–	–
1.5128	10 MnSi 4 4	–	–	–	–
1.5403	17MnMoV6-4	–	271	–	–
1.5406	17MoV8-4	–	–	–	–
1.5415	15 Mo 3	15 D 3	16Mo3	15M	–
1.5419	G20Mo5	–	243-430	–	4422 (SAE)
1.5422	G18Mo5	–	G18Mo5	–	–
1.5423	16Mo5	–	–	–	4419 (SAE)
1.5430	G8MnMo7-4	–	–	–	–
1.5506	17MnB3	–	9/0	–	–
1.5509	23B2	25 B 3	–	–	–
1.5510	28B2	25 B 3	–	–	–
1.5511	35B2	35 B 3	35B2	–	–
1.5523	19MnB4	19MnB4	19MnB4	–	15B21 H (SAE)
1.5527	40MnB4	–	10. Jan	–	–
1.5530	20MnB5	20 MB 5	20MnB5	–	–
1.5531	30MnB5	30 MB 5	30MnB5	–	–
1.5532	38MnB5	38 MB 5	38MnB5	40GR	–
1.5621	G10Ni6	–	–	–	–
1.5622	14Ni6	16 N 6	–	–	–
1.5633	24Ni8	20 N 8	–	–	–
1.5636	G9Ni10	–	G9Ni10	–	–
1.5637	10 Ni 14	12 N 14	12Ni14	–	–
1.5638	G9Ni14	–	503 LT 60	–	–
1.5639	16 Ni 14	–	–	–	2317 (SAE)
1.5662	G-X 8 Ni 9	9 Ni	502-650	–	–
1.5663	X7Ni9	X7Ni9	510	–	–
1.5680	12Ni19	12Ni19	12Ni19	–	2515 (SAE)
1.5681	GS-10 Ni 19	–	–	–	2512 (SAE)
1.5710	36 NiCr 6	30 NC 6	–	–	3135 (SAE)
1.5711	40NiCr6	–	–	40ChN	3140 (SAE)
1.5713	13NiCr6	–	–	–	3115 (SAE)
1.5714	16NiCr4	16NiCr4	16NiCr4	16XГН	–
1.5715	16NiCrS4	16NiCrS4	16XГН-Y	–	–
1.5732	14NiCr10	16 NC 11	–	–	3415 (SAE)
1.5736	36NiCr10	30 NC 11	–	–	3435 (SAE)
1.5737	30NiCr11	30 NC 12	–	–	–
1.5752	14NiCr14	10 NC 12	15NiCr13	17XH3	3310 (SAE)
1.5755	31 NiCr 14	18 NC 13	–	–	–
1.5805	10NiCr5-4	10NiCr5-4	10NiCr5-4	10XГН1	–

Material No.	DIN	AFNOR	BS	GOST	USA
1.6523	20NiCrMo2-2	20 NCD 2	20NiCrMo2-2	20XГНМ	8615 (SAE)
1.6526	20NiCrMoS2-2	20NiCrMoS2-2	20NiCrMoS2-2	20XГНМ-Y	–
1.6528	GS-60 NiCrMo 2	–	–	–	8660 (SAE)
1.6541	23MnNiCrMo5-2	23 MNCD 5	–	–	–
1.6543	21 NiCrMo 2 2	–	805 A 20	–	8622 (SAE)
1.6545	30NiCrMo2-2	30 NCD 2	–	–	8630 (SAE)
1.6546	40NiCrMo2-2	40 NCD 2	7	38ChГНМ	8640 (SAE)
1.6552	G24CrNiMo3-2-5	–	–	–	–
1.6562	40 NiCrMo 8 4	–	817 M 40	–	4337 (SAE)
1.6563	41NiCrMo7-3-2	41NiCrMo7-3-2	41NiCrMo7-3-2	–	–
1.6565	40NiCrMo6	–	818 M 40	40XГН2М	4340 (SAE)
1.6566	17NiCrMo6-4	17NiCrMo6-4	17NiCrMo6-4	17XГН1М	–
1.6569	17NiCrMoS6-4	17NiCrMoS6-4	17NiCrMoS6-4	17XГН1М-Y	–
1.6570	G30NiCrMo8-5	–	–	–	–
1.6571	20NiCrMoS6-4	20NiCrMoS6-4	20NiCrMoS6-4	20XГН2М-Y	–
1.6580	30CrNiMo8	30 CND 8	30CrNiMo8	30X2H2М	–
1.6582	34CrNiMo6	34CrNiMo6	34CrNiMo6	34X2H2М	–
1.6587	17CrNiMo6	18 CND 6	18CrNiMo7-6	18X2ГН2М	–
1.6655	32NiCrMo12-5	30 NCD 12	–	–	–
1.6657	14NiCrMo13-4	14NiCrMo13-4	14NiCrMo13-4	14XH3М	9310 (SAE)
1.7015	15Cr3	12 C 3	523 M 15	–	5015 (SAE)
1.7016	17Cr3	17Cr3	17Cr3	17XГ	5117 (SAE)
1.7023	38CrS2	38 C 2 u	38 C 2 u	38X-Y	–
1.7025	46CrS2	46CrS2	46CrS2	46X-Y	–
1.7030	28Cr4	28Cr4	28Cr4	28XГ	5130 (SAE)
1.7033	34Cr4	32 C 4	32 C 4	35X	5132 (SAE)
1.7034	37Cr4	37Cr4	37Cr4	37X	5135 (SAE)
1.7035	41Cr4	41Cr4	41Cr4	40X	5140 (SAE)
1.7036	28CrS4	28CrS4	28CrS4	28XГ-Y	–
1.7037	34CrS4	32 C 4 u	34CrS4	34X-Y	–
1.7038	37CrS4	37CrS4	37CrS4	37X-Y	–
1.7039	41CrS4	41CrS4	41CrS4	40X-Y	–
1.7102	54SiCr6	54SiCr6	–	–	9254 (SAE)
1.7106	55SiCr7	–	251 A 60	–	–
1.7108	60SiCr7	56SiCr7	–	–	9261 (SAE)
1.7117	52SiCrNi5	52SiCrNi5	–	–	–
1.7131	16MnCr5	16 MC 5	16MnCr5	16XГ	5115 (SAE)
1.7137	60MnCrB3	–	–	–	–
1.7138	52MnCrB3	–	–	–	–
1.7139	16MnCrS5	16MnCrS5	16MnCrS5	16XГ-Y	–

Material No.	DIN	AFNOR	BS	GOST	USA
1.7147	20MnCr5	20 MC 5	20MnCr5	20XГ	5120 (SAE)
1.7149	20MnCrS5	20MnCrS5	20MnCrS5	20XГ-Y	–
1.7150	G20MnCr5	–	–	16XГP	–
1.7160	16MnCrB5	16MnCrB5	16MnCrB5	–	–
1.7176	55Cr3	55 C 3	525 A 58	50ChGA	5155 (SAE)
1.7182	27MnCrB5-2	27MnCrB5-2	27MnCrB5-2	–	–
1.7185	33MnCrB5-2	33MnCrB5-2	33MnCrB5-2	–	–
1.7189	39MnCrB6-2	39MnCrB6-2	39MnCrB6-2	–	–
1.7190	58 CrMnB 4	–	–	–	51B60 (SAE)
1.7213	25CrMoS4	25 CD 4 u	25CrMoS4	25XM-Y	–
1.7214	–	–	2 S.142	–	–
1.7218	25CrMo4	25 CD 4	25CrMo4	25XM	4130 (SAE)
1.7220	34CrMo4	34 CD 4	34CrMo4	34XM	4130 (SAE)
1.7221	G26CrMo4	–	–	–	–
1.7222	42CrMoPb4	–	–	35ChML	–
1.7223	41CrMo4	–	05. Jan	40ChFA	4142 (SAE)
1.7225	42CrMo4	40 CD 4	42CrMo4	42XM	4140 (SAE)
1.7226	34CrMoS4	34 CD 3 u	34CrMoS4	34XM-Y 35XM	–
1.7227	42CrMoS4	42 CD 4 u	42CrMoS4	42XM-Y	–
1.7228	50CrMo4	50CrMo4	50CrMo4	50XM	4147 (SAE)
1.7233	42CrMo5-6	42CrMo5-6	42CrMo5-6	–	–
1.7242	16CrMo4	15 CD 3.5	–	–	–
1.7243	18CrMo4	18 CD 4	18CrMo4	18XM	–
1.7244	18CrMoS4	18CrMoS4	18CrMoS4	18XM-Y	–
1.7262	15CrMo5	12 CD 4 FF	–	–	–
1.7276	10CrMo11	CD 10	–	–	–
1.7281	16CrMo9-3	20 CD 8	–	–	–
1.7311	20 CrMo 2	–	–	–	–
1.7315	37 CrMo 3	–	–	–	–
1.7319	20MoCrS3	20MoCrS3	20MoCrS3	20XM-Y	–
1.7320	20MoCr3	20MoCr3	20MoCr3	20XM	–
1.7321	20MoCr4	20MoCr4	20MoCr4	20XГM	4118 (SAE)
1.7323	20MoCrS4	20MoCrS4	20MoCrS4	20XГM-Y	–
1.7333	22CrMoS3-5	22CrMoS3-5	22CrMoS3-5	22XГM-Y	–
1.7335	13 CrMo 4 4	13CrMo4-5	13CrMo4-5	13X;	–
1.7341	G34CrMo4-4	–	–	–	–
1.7353	1.7353	–	B 5	–	–
1.7354	G22CrMo5-4	–	–	–	–
1.7355	G17CrMnMo5-5	–	–	–	–
1.7357	G17CrMo5-5	–	621	–	–

Material No.	DIN	AFNOR	BS	GOST	USA
1.7361	32CrMo12	–	722 M 24	–	–
1.7362	12 CrMo 19 5	X16CrMo5-1	625	12X5M	501 (AISI)
1.7363	GS-12 CrMo 19 5	–	–	–	–
1.7365	GX15CrMo5	–	625	–	–
1.7375	12CrMo9-10	12CrMo9-10	–	–	–
1.7377	G15CrMo9-10	–	–	–	–
1.7379	G17CrMo9-10	–	622	–	–
1.7380	10CrMo9-10	10CrMo9-10	10CrMo9-10	10X2M	–
1.7381	12CrMo12-10	12 CD 12.10	–	–	–
1.7383	11CrMo9-10	10 CD 9-10	11CrMo9-10	–	–
1.7386	X12CrMo9-1	–	629-470	–	504 (AISI)
1.7389	G-X 12 CrMo 10 1	–	B 6	–	–
1.7390	X15CrMo5-1	X15CrMo5-1	X15CrMo5-1	–	–
1.7503	67 CrV 2 2	–	–	70ChGFA	–
1.7511	22CrV3	–	–	–	6118 (SAE)
1.7701	51CrMoV4	51 CDV 4	–	–	–
1.7706	G17CrMoV5-10	–	G17CrMoV5-10	–	–
1.7707	30CrMoV9	–	–	30Ch3MF	–
1.7709	21CrMoV5-7	21CrMoV5-7	21CrMoV5-7	–	–
1.7711	40CrMoV4-6	40CrMoV4-6	40CrMoV4-6	–	–
1.7715	14MoV6-3	14Mo6	660	–	–
1.8159	50 CrV 4	50 CV 4	51CrV4	50XГФ	6150 (SAE)
1.8507	34CrAlMo5	CAD 6.12	–	–	–
1.8509	41CrAlMo7	–	905 M 39	38Ch2MJuA	E 71400 (SAE)
2.4631	NiCr20TiAl	–	2 HR 201	–	HEV 5 (SAE)
2.4632	NiCr20Co18Ti	–	2 HR 2	–	HEV 6 (SAE)
2.4636	NiCo15Cr15MoAlTi	–	HR 4	–	–
2.4639	SG-NiCr20	–	NA 34	–	–
2.4650	NiCo20Cr20MoTi	–	2 HR 1	–	–
2.4652	EL-NiCr26Mo	–	–	–	S 32654 (AISI)
2.4654	NiCr19Co14Mo4Ti	–	–	–	XEV-H (SAE)
2.4660	NiCr20CuMo	–	–	–	N 08020 (AISI)
2.4665	NiCr22Fe18Mo	–	HR 204	–	–
2.4667	SG-NiCr19NbMoTi	–	NA 51	–	–
2.4668	NiCr19Fe19Nb5Mo3	–	–	–	XEV-I (SAE)
2.4669	NiCr15Fe7TiAl	NiCr15Fe7TiAl	NiCr15Fe7TiAl	–	688 (AISI)
2.4806	SG-NiCr20Nb	–	NA 35	–	–
2.4810	NiMo 30	Ni-Mo 28	ANC 15	–	–
2.4816	NiCr15Fe	–	HR 208	–	–
2.4819	NiMo16Cr15W	Ni-Mo 16 Cr 15	–	–	–

Material No.	DIN	AFNOR	BS	GOST	USA
2.4831	SG-NiCr21Mo9Nb	–	–	–	–
2.4851	NiCr23Fe	–	NiCr23Fe	–	–
2.4854	NiFe33Cr25Co	–	–	–	S 35315 (AISI)
2.4856	NiCr22Mo9Nb	–	NA 21	–	–
2.4858	NiCr21Mo	–	NA 16	–	–
2.4867	NiCr60-15	–	–	Ch15N60	–
2.4869	NiCr 80 20	–	–	Ch20N80	–
2.4886	SG-NiMo16Cr16W	–	NA 48	–	–
1.4889	NiCr28FeSiCe	–	NiCr28FeSiCe	–	–
2.4951	NiCr20Ti	–	2 HR 504	–	–

Terminology A–E

A		D	
A-E	Wrench head for standard locknut	DS	Sealing disk
A-E AX	Wrench head for slip-off proof locknut	DSR	Tray for Sealing disks
A-E M	Wrench head for Mini locknut	DTI	Dial test indicator
A-E MS	Wrench head for Mini Speed locknut		
A-E MX	Wrench head for intRlox® locknut	E	
A-E P	Wrench head with profile for hexagon locknut	E	Wrench for standard locknut
A-FLS	Roller-wrench-head	E A	Wrench for locknut with external thread
ANSI	American national standards institute	E AX	Wrench for slip-off proof locknut
APC	Clamping insert for manual powRgrip® clamping unit PGC	E M	Wrench for Mini locknut
APG	Clamping insert for automatic powRgrip® clamping unit PGU	EMA	3D EdgeMaster edge finder
AT1	Taper angle tolerance – gauge quality	E MS	Wrench for Mini Speed locknut
AT3	taper angle tolerance	E MX	Wrench for intRlox® locknut
ATC	Interface for Meyrat spindles	E P	Wrench with profile for hexagon locknut
ATL	Tangs for Morsetaper shanks DIN 228-C	EHS	Extraction tool for reduction sleeves
B		ER	ER standard collet runout ≤ 10 µm
BT	Steep taper Norm BT MAS 403	ER	ER collet DIN 6499 (E collet REGO-FIX)
BT+	Steep taper Norm BT+ licensed by BIG Daishowa Seiki	ER MS	ER locknut Mini Speed
C		ER NC	Cylindrical toolholder with shank NC lathe
C3 – C8	REGO-FIX CAPTO sizes	ERA/Zero-Z®	Toolholder with minimal gauge length and internal locknut
CAPTO	Interface standard Capto licensed by Sandvik Coromant	ERAX	Slip-off proof locknut with external thread
CAT	Steep taper norm CAT (ASME 5.50)	ERAXC	Slip-off proof locknut with external thread for sealing disks
CB	CoolBore	ERB	Locknut with friction bearing
CC	Chip cover for reduction sleeves	ERBC	Locknut with friction bearing for sealing disks
CF	Coolant Flush	ERC	Locknut for sealing disks
CGA	Coolant thread adapter for cylindrical toolholders	ER-CB	ER collet with cooling holes for peripheral cooling
CHC	toolVibe® charging cable	ER-DM	ER collet metalically sealed
CPS	Cleaning paper set for powRgrip® taper cleaner	ER-GB	Tapping Collets with square without axial compensation
CRYO	Cryogen coolant	ERM	Locknut with Mini thread
CSW	Cleaning swab	ERMC	Locknut with Mini thread for sealing disks
CTPG	Collet tray for powRgrip® collets	ERMX	Slip-off proof Mini locknut intRlox®
CYL	Cylindrical shank toolholder	ERMXC	Slip-off proof Mini locknut intRlox® for sealing disks
CYL-DF	Cylindrical double collet holder with clamping surface	ER-UP	ER ultra precision collet runout ≤ 5 µm
CYL-F	Cylindrical collet holder with clamping surface		
CYL-NC	Cylindrical collet holder with clamping surface		

Terminology F–P

F

FDS	Wrench for Universal Shellmill / Facemill Holders
FMA	ForceMaster pull-out force measuring device
FWR	Balancing ring

G

G-A	Grip bar
G-AS	Grip bar short
GSF	Tapping holder

H

H	Designed for FWR
HB	Hollow screw for reCool®
HD	Heavy duty
Hi-Q®	Clamping nut balanced and surface treated (impregnated)
HJNZ	Interface for Fischer grinding spindles
HPC	High-performance-cutting
HS	Reduction sleeve
HSC	High-speed-cutting
HSK	Hollow taper shank norm DIN 69893 / ISO 12164
HSK-FP	Hollow taper shank form F with pin

I

IKZ	Coolant trough
INOX	Stainless steel
intRlox®	Slip-off proof nut and wrench
ISO 20 HAAS	Toolholders for HAAS Office Mill

K

K	Tool holder with built-in coolant pipe
KBF	Drill chuck
KFD	Universal Shellmill / Facemill Holders
KS	Coolant disk
KSR	Coolant tube

L

L	Clamping nut with left handed thread
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M

MA	Shell Mill Arbor
MA-CB	Shell Mill Arbor with cooling holes
MB	Microbore collet
MBA	MasterBar test arbors for machine spindles
MBX	Microbore collet with clamping range – stainless
MFD	Micro friction dampening
MIB	Articulated stand with magnetic base for dial test indicator
MK	Morse Taper DIN 228
ML	Multi Line
MPH	Mini floating chuck
MPHC	Mini floating chuck for internal coolant supply
MQL	Minimum quantity lubrication
MR	micRun® collet runout ≤ 2 µm
MRC	micRun® locknut for sealing disks
MRM	micRun® Mini locknut
MRMC	micRun® Mini locknut for sealing disks
MTSK	MT Marchetti quick change system
MWB	Mobile workbench
MWZ	Assembly tool for sealing disks DS / ER 11

N

NC	Cylindrical toolholder with shank NC lathe
NCT	No thread for coolant tube
NL	powRgrip® collets PG-L cannot be used
Nm	Newton meter

O

OM	Steep taper toolholders without drive key slots
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P

PCM ET1	Tapping collet with axial compensation
PG	powRgrip®
PGA	Automatic powRgrip® clamping unit for automated applications
PGA A	powRgrip® clamping unit for automated applications USA (115 V)
PGA E	powRgrip® clamping unit for automated applications Europe (230 V)
PGA J	powRgrip® clamping unit for automated applications Japan (100 V)

Terminology P–W

PGC	Manual powRgrip® clamping unit	REGO-FIX	Swiss company for tool holding solutions
PG-CB	powRgrip® collet with cooling holes for peripheral cooling	RHS	reCool® hose with protector spring
PG-CF	powRgrip® collet with cooling grooves for peripheral cooling	RRA	reCool® aluminium ring adapter
PG-L	powRgrip® collet for long tool shanks	RVA	reCool® 90° elbow push-in fitting
PG-MB	powRgrip® microbore collet	RVG	reCool® straight push-in fitting
PG-MQL-N	powRgrip® collet for minimum quantity lubrication		
PG-S	powRgrip® collet for short tool shanks	S	
PGS	Automatic powRgrip® clamping unit for single sizes	SG	secuRgrip® available for PG and ER
PGS ... A	powRgrip® clamping unit for single sizes USA (115 V)	SGI	secuRgrip® threaded insert
PGS ... E	powRgrip® clamping unit for single sizes Europe (230 V)	SGN-PG	secuRgrip® safety nut
PGS ... J	powRgrip® clamping unit for single sizes Japan (100 V)	SH	Automotive Shank toolholders DIN 6327-C
PG-SC	powRgrip® collet with sealed head	SK	Steep taper norme DIN 69871 / DIN ISO 7388-1
PG-SG	powRgrip® secuRgrip® collet for pull-out protection	SKR	Key for coolant tube
PGST	powRgrip® shortened collet for PGST system	SSM	Quick-change setting ring
PG-TAP	powRgrip® collet for threading tools	SSY	Soft-Synchro tapping holder
PG-TW	powRgrip® collet thin walled with limited life-time	STC	Spindle taper cleaner
PGU	Automatic powRgrip® clamping unit		
PGU A	powRgrip® clamping unit USA (115 V)	T	
PGU E	powRgrip® clamping unit Europe (230 V)	TB	TORCO-BLOCK tool assembly aid
PGU J	powRgrip® clamping unit Japan (100 V)	TCD	Brush head for taper cleaning device
PH	Floating chuck	TCD-BU	Base unit taper cleaning device
PHC	Floating chuck for internal coolant supply	TE	Probe insert for 3D-EMA edge finder
PHC-C	REGO-FIX CAPTO floating chuck for internal coolant supply	TKCP	powRgrip® taper cleaner with cleaning paper
PST	Polygon interface compatible with ISO 12164	TSD	TORX Torque screwdriver
		TV	toolVibe® sensory toolholder
Q		U	
QF	WTO QuickFlex® quick change system	UCD	Ultrasonic cleaning device
R		V	
Ra	Unit for surface finishing	V-E AX	Slip-off proof extension
RBA	reCool® ball adapter	V-E MX	Slip-off proof extension intrRlox®
RCR	reCool® rotary	VEW	Presetting tool for powRgrip® toolholders
RCR ERAX	reCool® rotating with external thread	VS	toolVibe® magnetic vibration sensor
RCR Hi-S®	reCool® rotating for high speeds	VS-CB	Sealing screw for WD-CB
RCS	reCool® static	VX	EWS Varia VX quick-change system
RD-CB	Reducer nozzle for WD-CB	W	
		WA	Tool adapter
		WD	Endmill toolholder (Weldon)
		WD-CB	Weldon tool holder with cooling holes
		WMH	Tool assembly indexing

Terminology X–Z

X

X	Slip-off proof
XL	Extra long toolholder

Z

ZWT	Tray for ER collets (metric)
ZZT	Tray for ER collets (inch)

Terminology ISO A–Z

B

BBD	Balanced by design
BBR	Balanced by rotational test
BD	Body diameter

C

CND	Coolant entry diameter
CNSC	Coolant entry style code
COATING	Coating
CNT	Coolant entry thread size
CP	Coolant pressure

D

DCOB	Recess diameter
DCON	Connection diameter
DCONMS	Connection diameter machine side
DCONWS	Connection diameter workpiece side
DCONNWS	Connection diameter minimum workpiece side
DCONXWS	Connection diameter maximum workpiece side
DCSFMS	Contact surface diameter machine side
DCSFWS	Contact surface diameter workpiece side
DFC	Functional diameter
DLN	Diameter lock nut
DRVS	Drive size

H

HLN	Height lock nut
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L

LB	Body length
LCOB	Recess length
LCOMP	Length compensation
LDG	Functional diameter distance
LF	Functional length
LFSF	Distance to face
LPR	Protruding length
LS	Shank length
LSC	Clamping length

LSCN	Clamping length minimum
LSCX	Clamping length maximum
LSD	Shank length

M

MKG	Morse taper size
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O

OAH	Overall height
OAL	Overall length
OAW	Overall width
OHN	Overhang minimum
OHX	Overhang maximum

R

RPMX	Rotational speed maximum
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T

TD	Thread diameter
TDZ	Thread diameter size
THFT	Form type
THID	Internal thread designation
THLGTH	Thread length
THSZMS	Thread size machine side
TP	Thread pitch
TPI	Threads per inch
TPIN	Threads per inch minimum
TPIX	Threads per inch maximum
TPN	Thread pitch minimum
TPX	Maximum thread pitch
TQ	Torque

W

WT	Weight of item
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