

MILLING TOOLS MADE BY JONGEN

JONGEN UNI-MILL



Hydraulic Expansion Toolholder



JONGEN Hydraulic Expansion Toolholders

The new JONGEN Hydraulic Expansion Toolholder is the answer to the increasing demands in volume machining, which is characterised by narrow tolerances, enormous cost pressure and high quality requirements.

In contrast to ER-collets, heatshrink toolholders, Weldon holders and also low-priced hydraulic chucks, the new JONGEN Hydraulic Expansion Toolholder combines all high-performance parameters as a tool holder which not only meets all the requirements, but also exceeds them.

Characteristics	Advantages
Highest torque values due to compact design - To 900 Nm at Ø 20 mm under dry expansion conditions - 520 Nm with oily tool-shank	- Holding forces and thus a high torque transmission-capacity are permanently guaranteed - Higher machining volume
Optimal radial rigidity due to a robust basic body	- No lateral deflection - High shape accuracy on the workpiece with concurrently highest removal rates
Permanent concentricity and preciseness in changeover repeatability <0.003 mm	- Best surface-quality results by even cutting action - Most precise machining - Secure mode of working procedure
Easy handling: - Rapid tool change without peripheral devices - Simply turn the fixing screw until the stop	- Time-saving due to reduced setup time - No costs for additional clamping devices
Excellent vibration dampening by hydraulic system	- Absolute smooth running - High surface quality - Protects the machine spindle - Longer tool life
All commercially available tools (Ø 3 to 20 mm) can be clamped directly or via intermediate sleeves	- Universal application possibilities - High flexibility
Precision-balanced as standard HSK-A63: balance quality of G 2.5 at 25.000 min ⁻¹	- High speeds are possible - Especially suitable for HPC / HSC-machining
The closed system prevents intrusion of dirt, machining coolants and lubricants or metal chips	- No damage of the clamping range - Function remains unaffected - No maintenance required - Long tool life

JONGEN Hydraulic Expansion Toolholders

Range of Application

The JONGEN Hydraulic Expansion Toolholder sets new standards. High performance in torque transmission-capacity, excellent damping properties, rigidity and precise concentricity make the JONGEN Hydraulic Expansion Toolholder to a perfect clamping device for a highly precise and fast machining – in its full meaning.

Volume Cutting

The JONGEN Hydraulic Expansion Toolholder is perfectly qualified for heavy volume cutting and provides, for example, up to $400 \text{ cm}^3 / \text{min}^* \text{ 42CrMo4}$.

* depending on the machine and tool

Friction

The outstanding vibration damping of the JONGEN Hydraulic Expansion Toolholder ensures the best workpiece surfaces and a long-lasting concentricity for high dimensional accuracy.

Boring

The JONGEN Hydraulic Expansion Toolholder convinces also by boring operations through the vibration damping and concentricity $<0.003 \text{ mm}$.

Countersinking/ Chamfering

The quality of countersinking and chamfering is largely decided by precision and concentricity. Both guarantees the JONGEN Hydraulic Expansion Toolholder.

Threads

The JONGEN Hydraulic Expansion Toolholder is ideally qualified for thread-cutting due to its high torque values (up to 900 Nm at $\text{Ø } 20 \text{ mm}$) and excellent vibration damping.

JONGEN Hydraulic Expansion Toolholders

Tool Structure

Basic Body

HSK, SK, BT

Clamping Piston

to press the hydraulic medium into the chamber system

Expanding Sleeve and Chamber System

The expanding sleeve bends evenly over the tool shank. The tool shank is centred and then clamped uniformly and powerfully across the entire surface during this clamping process. The chamber system filled with the hydraulic-medium has a damping effect on the clamped tool. The wear of the cutting edge is minimised, the tool life increased up to 40%.

Clamping Screw

for operating of the clamping piston.
The clamping screw can be tightened until the stop without torque wrench

Length-Adjustment Screw

for a fast and easy adjustment of the tool setting-stage

Dirt Groove

The enormous clamping pressure of the JONGEN Hydraulic Expansion Toolholder produces a displacement of oil, grease or lubricant residues into the dirt groove so that the clamping surfaces remain dry.

The Tool

The tool is clamped centrally to the axle centre - the highest concentricity and preciseness in changeover repeatability <math><0.003\text{ mm}</math>

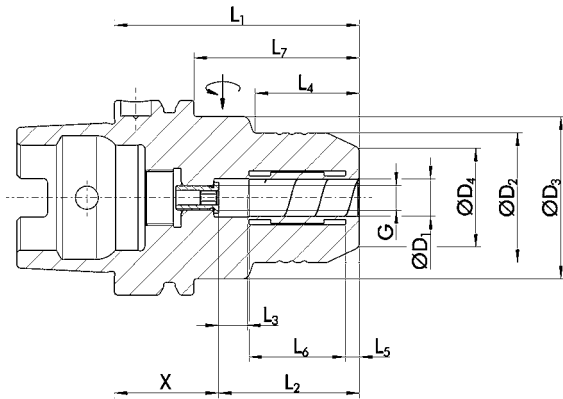
Intermediate Sleeve

Intermediate sleeves allow the clamping of different shank diameters from 3 up to 20 mm with only one tool holder. Intermediate sleeves J-RT are coolant-proof up to 80 bar

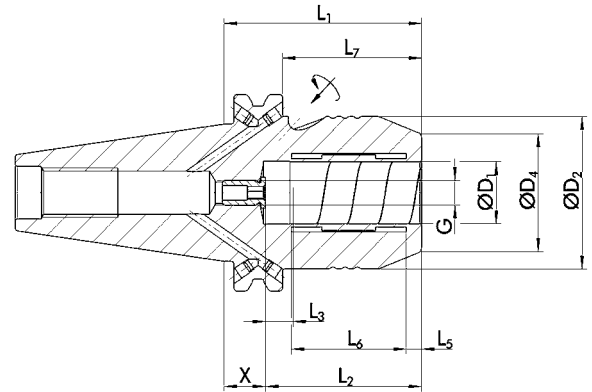
JONGEN Hydraulic Expansion Toolholders

Technical Data- Hydraulic Expansion Toolholder

HSK-A63

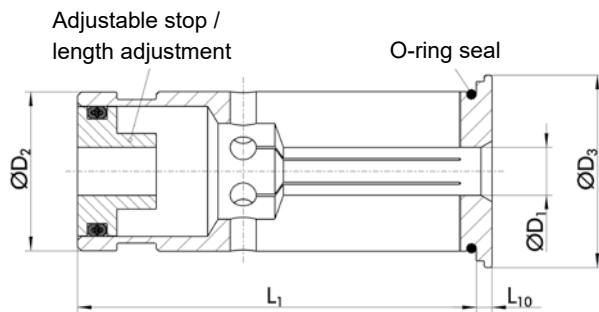


SK40 / BT40



Order number	Interface	D ₁	D ₂	D ₃	D ₄	L ₁	L ₂	L ₃	L ₄	L ₅	L ₆	L ₇	X	G
J-HT-HSK63-20	HSK63	20.0	52.50	-	38.00	80.00	51.00	10.00	-	5.00	37.00	54.00	29.00	M8x1
J-HT-SK40-20	SK40	20.0	49.25	-	38.00	64.50	51.00	10.00	-	5.00	37.00	45.50	13.50	M8x1
J-HT-BT40-20	BT40	20.0	49.25	-	38.00	72.50	51.00	10.00	-	5.00	37.00	45.50	21.50	M8x1

Technical Data- Intermediate Sleeves



Order number	Product name	List price
J-RT-20-03	Intermediate Sleeve ø3/20x50.5	69,00 €*
J-RT-20-04	Intermediate Sleeve ø4/20x50.5	69,00 €*
J-RT-20-05	Intermediate Sleeve ø5/20x50.5	69,00 €*
J-RT-20-06	Intermediate Sleeve ø6/20x50.5	59,00 €*
J-RT-20-08	Intermediate Sleeve ø8/20x50.5	59,00 €*
J-RT-20-10	Intermediate Sleeve ø10/20x50.5	72,00 €*
J-RT-20-12	Intermediate Sleeve ø12/20x50.5	72,00 €*
J-RT-20-16	Intermediate Sleeve ø16/20x50.5	72,00 €*

On all intermediate sleeves the tool length can be flexibly adjusted through a movable intermediate piece

Spare Parts



Order number	Product name	List price
SW-5	Allen T-key	6,45 €*

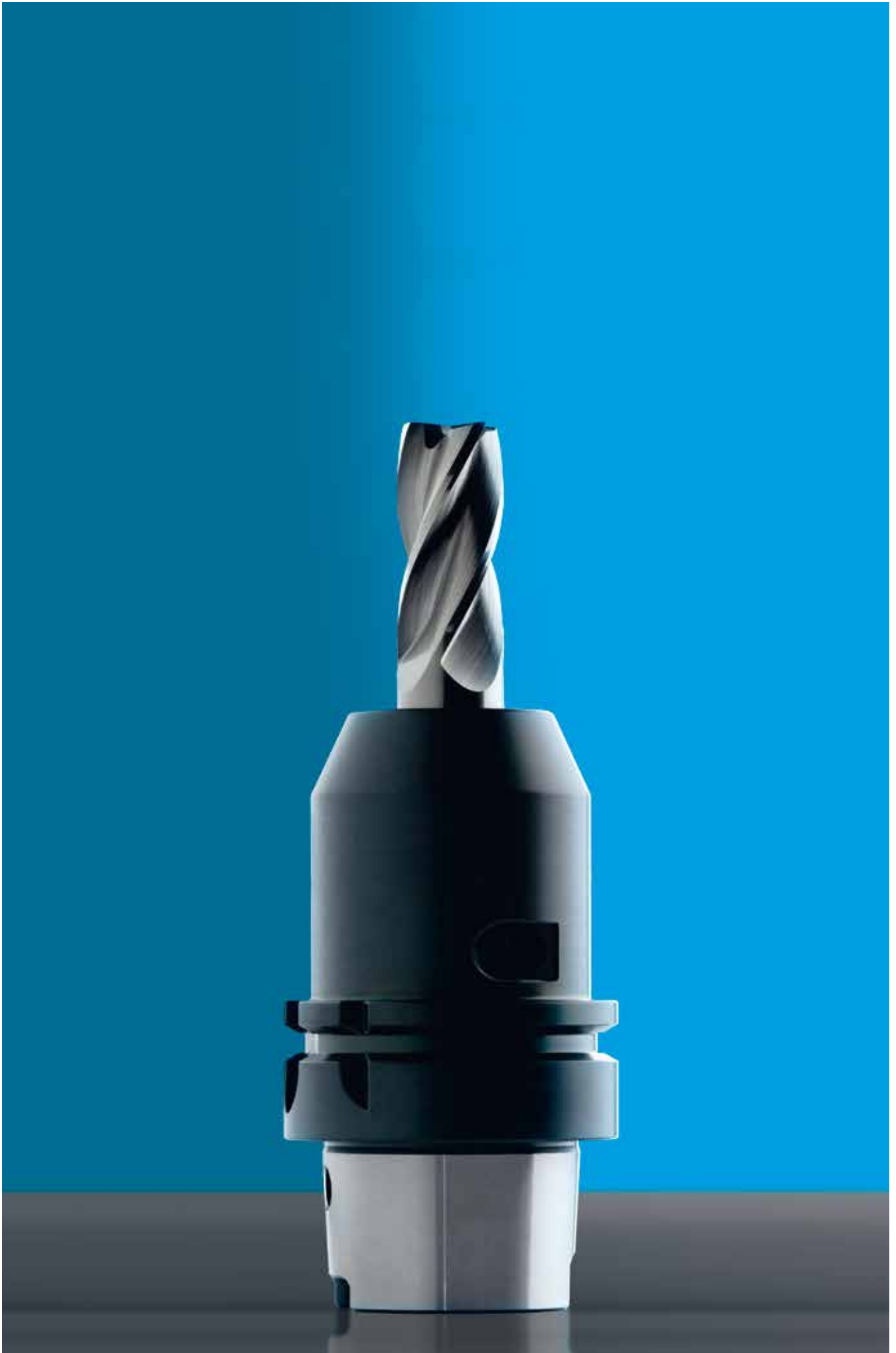
* prices excluding VAT.

JONGEN Hydraulic Expansion Toolholders

Different Hydraulic Expansion Toolholders in Comparison

Characteristics	JONGEN Hydraulic Expansion Toolholder	ER-collet	Weldon	Heatshrink Toolholder
Concentricity - Even cutting action - Influence on damping and balance quality - Cost reduction	++ 0.003 mm (measured at 2.5xD permanently)	- 0.01 – 0.02 mm	- 0.01 – 0.02 mm	+ 0.003 mm (measured in the borehole)
Secure Mode of Working Procedure - Steady constant concentricity	++	-	-	-
Torque at Ø 20 mm - Highest volume machining - Secure mode of working procedure	++ up to 900 Nm	○ 220 Nm	++ form closure	+ 420 Nm
Radial Rigidity - Increased shape accuracy on the workpiece by powerfull machining - Reduced operating costs for finishing	++	-	++	-
Damping - Increased tool life - Protects machine spindle - Reduced operating costs for finishing - Avoidance of chatter marks	++	○	-	-
Variable due to intermediate sleeves - Extended application areas - Cost reduction - Higher clamping force at a given shank - Peripheral cooling	++	++ (Collets)	-	-
Clamping of all shanks (Weldon, Whistle Notch, ...)	++	++	-	-
Handling and operation - No training required - Avoidance of clamping errors - Low set-up costs	++	+	+	-
Dirt resistance - No maintenance - Less costs	++	-	+	-
Accurate length pre-adjustment	++	-	-	-
Necessary peripheral devices (in terms of cost)	++ Allen T-key	○ Hook spanner + mounting block	○ Allen T-key + mounting block	- Induction system

++ very good + good ○ neutral – bad





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