

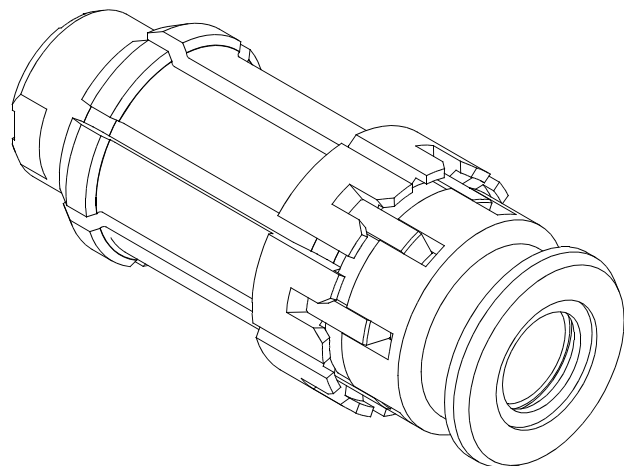
OTT

Spanntechnik

JAKOB

Operating Instructions

Clamping Unit HSK B



95.600.043.M.E / 2006-08

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GRUPPE

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symbol explanation:



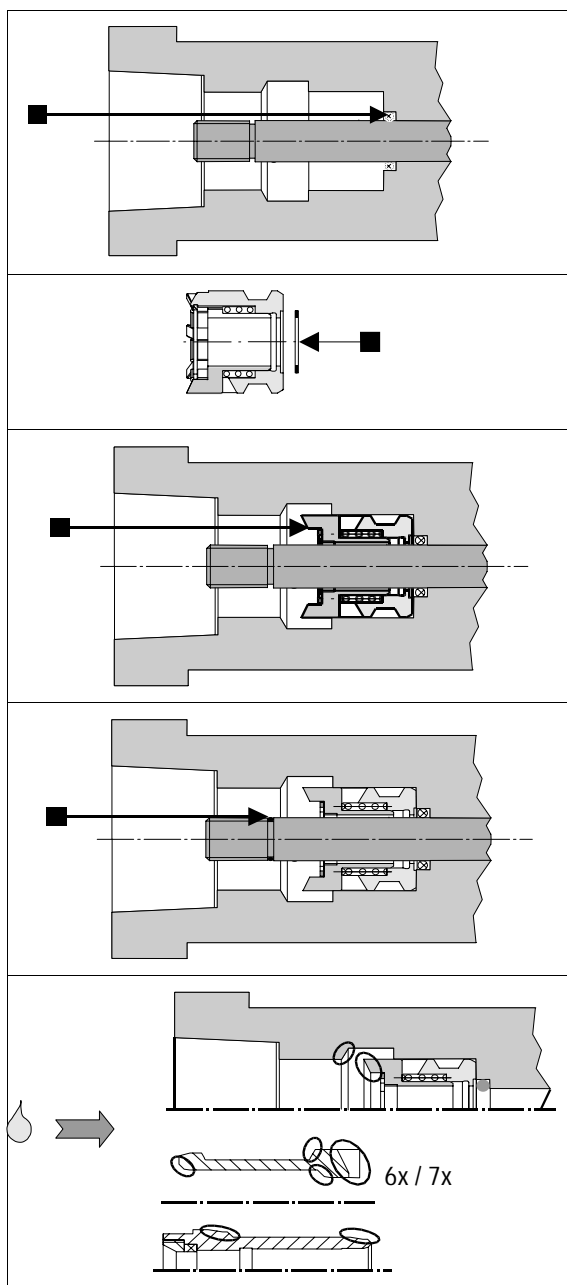
keep attention -
dangerous



keep attention - malfunction

1 Assembly

1.1 Clamping unit HSK B



- Clean spindle inside contour
- make sure that edges are properly rounded
- grease O-rings
- mount o-ring in the spindle

only HSK A63 / B80 / E63:

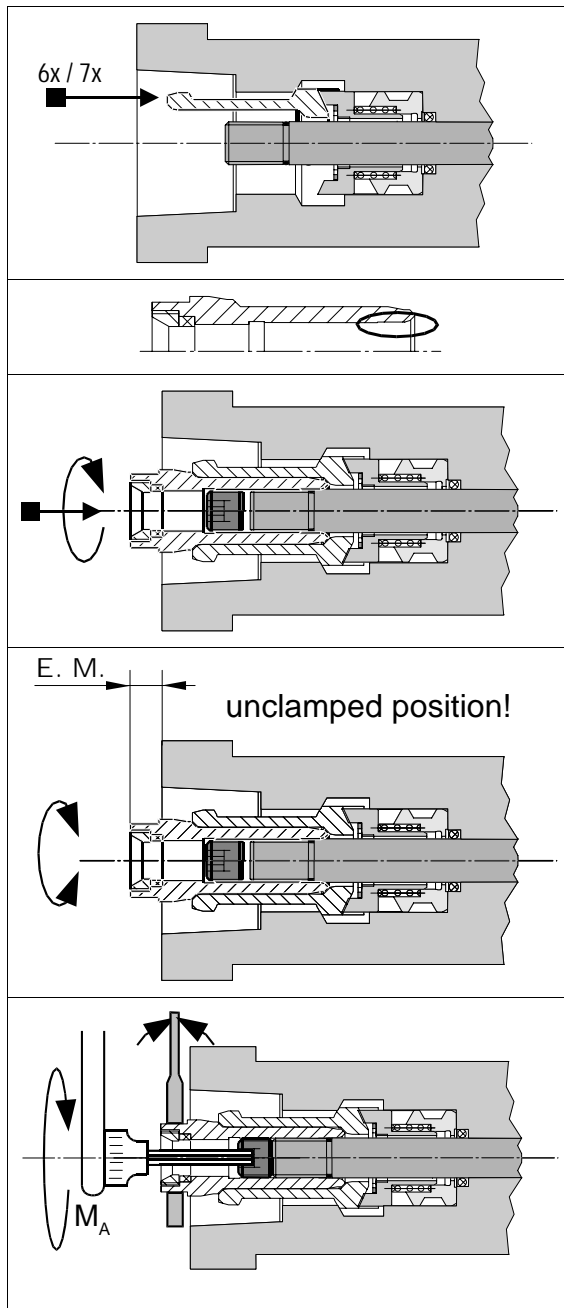
- mount disc

- push spacer into spindle and check for ease of movement

- mount o-ring on the drawbar

Protective sleeve obtainable:
HSK A 63: 95.601.169.4.1

- grease area of contact
 - ➔ METAFLUX-Paste 70-8508
 - or
 - ➔ KLÜBER-Paste ME 31-52
- do not mix the grease!



➤ snap gripper segments in the spacer; ensure that the numbers match

➤ grease clamping cone with mounting grease

➤ Screw the clamping cone (pre-assembled with seal, protective sleeve and lock screw) onto the drawbar. Maximum screw in depth is the gauge dimension, the O-ring is damaged on the drawbar otherwise

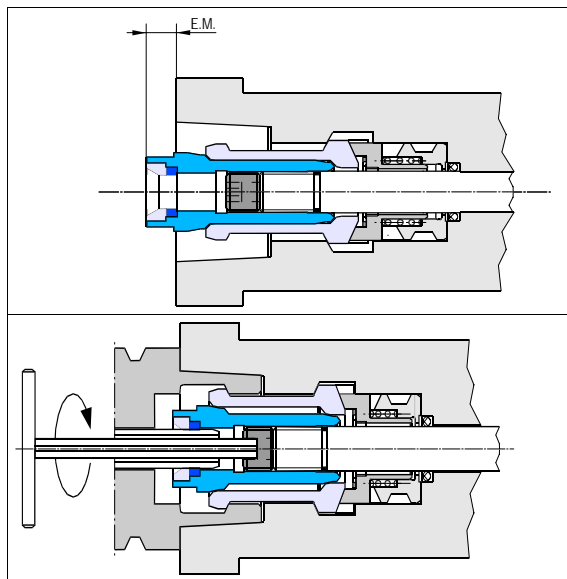
➤ adjust gauge dimension E.M.

➤ tighten the lock nut

starting torque::

- E25: 7 Nm
- A32 / B40 / E32: 10 Nm
- A40 / B50 / E40 / F50: 15 Nm
- A50 / B63 / E50/ F63: 20 Nm
- A63 / B80 / E63 / F80: 30 Nm
- A80 / B100: 30 Nm
- A100: 50 Nm

1.1.1 Check after aprox. 100 tool changes



In unclamped position:

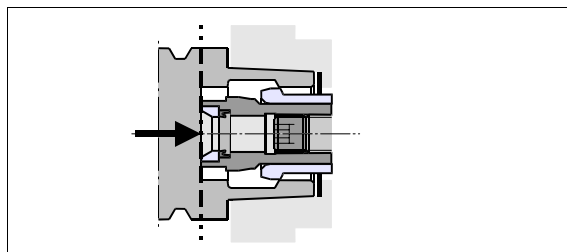
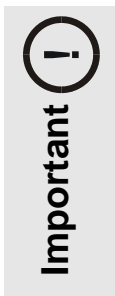
- check dimension guage E.M.

- re-tighten through a clamped tool

2 Operation



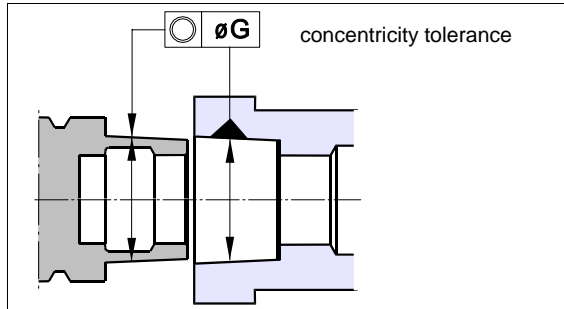
No rotation without clamped tool!



Do not insert tool into the spindle taper when rotating!

The tool has to be inserted all the way to the plane surface of the clamping cone to prevent misclamping!

Important !



Our recommendation for the concentricity tolerance for tool changing as well as the maximum force on the plane surface on the clamping cone is shown in the table below:

standard size	E 25	A 32 B 40 E 32	A 40 B 50 E 40 F 50	A 50 B 63 E 50 F 63	A 63 B 80 E 63 F 80	A 80 B 100	A 100 B 125	A 125 B 160	A 160
concentricity ($\varnothing G$) [mm]	0,6	0,7	0,7	0,8	0,8	1,0	1,0	1,0	1,2
tool changer force max. [kN]	1	1	1,4	2,2	3,6	5,6	9	9	9

Recommendation: install a limit switch for the drawbar

In order to minimize wear, the coolant tube at the interface of the gripper assembly and tool should be shaped as follows:

- minimum and easy going and angular flexing (per ISO/DIS 12164-1)
- ground

Operation with coolant is only permitted if free flow is guaranteed. Therefore, you must only use tool holders with coolant tubes and tools with coolant thru holes. Otherwise, it is possible that the spindle gets flooded or the seals are damaged by the pressure spikes.

Follow preventive maintenance schedule!

3 Maintenance

3.1 Preventive maintenance schedule

To guarantee the function of the power drawbar the following preventive maintenance schedule must be adhered to.

Every week

- Check the packing ring in the clamping unit (visual check)
- Check the gripper, is it damaged or dirty, is it sufficient greased (visual check) ?
Pay attention to:
The regrease cycle depends on the loss of lubrication of the clamping unit.
Cause for the loss of lubrication:
 - Seal in the clamping cone is defective
 - Type of medium used can desolve grease
 - Cleaning spray from outside directly on the clamping unit etc
- Note: METAFLEX Moly-Spray No.70-82 is recommended for a quick regreasing of the clamping unit without gripper-disassembly .

Every six month or after 200.000 tool changes at the latest

- In unclamped position: Check dimension gauge E.M.
- counter through a clamped tool again.
- Test Pull-in-force (we recommend:use Power-Check):
If the pull-in-force is smaller than 70% of the nominal value, following procedures have to be performed in the following sequence:
 - regrease and test pull-in force again
 - exchange gripper and test again
 - exchange drawbar completely

Every year or after 500.000 tool changes at the latest

- Exchange the packing ring ⇒ 3.5 / S.12

3.2 Wearing part list

3.2.1 Grease for HSK-clamping unit

<i>name</i>	<i>quantity</i>	<i>order-no.</i>
* METAFLUX-grease-paste Nr. 70-8508	4 g	0.929100.012
METAFLUX-moly-spray Nr. 70-82	400 ml	06.21001.010
KLÜBER-grease-paste ME 31-52	10 g	06.21001.014
KLÜBER-spray ALTEMP Q NB 50	400 ml	06.21001.015

* original lubrication and first equipment



Important

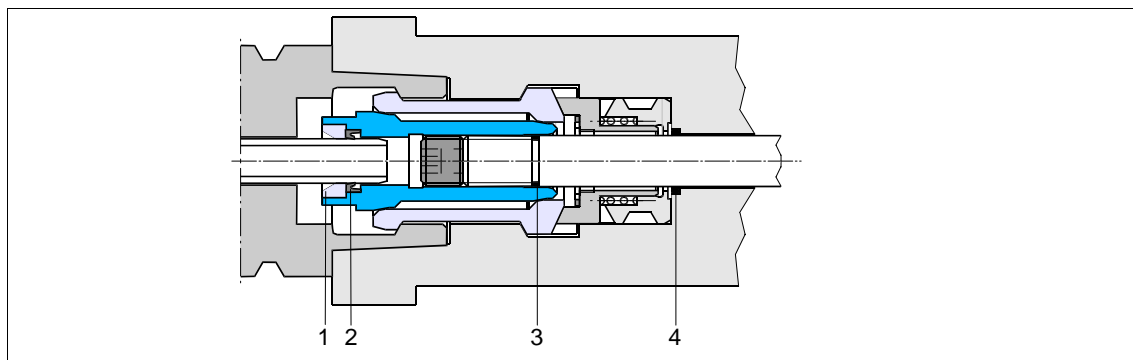
Note: take only grease of one company; do not mix the grease!

METAFLUX	Metaflux AG Industriestraße 11 CH-4313 Möhlin Tel.: +41-61-851 08 00 Fax: +41-61-851 08 08	KLÜBER	Klüber Lubrication München KG Postfach 701047 D-81310 München Tel.: (0 89) 78 76 -0 Fax: (0 89) 78 76 -333
	TECHNO-SERVICE GmbH Detmolder Straße 515 D-33605 Bielefeld Tel.: (05 21) 9 24 44 -0 Fax: (05 21) 20 74 32		

Aid for regreasing with paste in mounted state (clamped without tool):

<i>name</i>	<i>HSK-size</i>	<i>order-no.</i>
Bürste	A50 - A100	06.16001.001

3.2.2 O-rings and lip seal parts HSK B



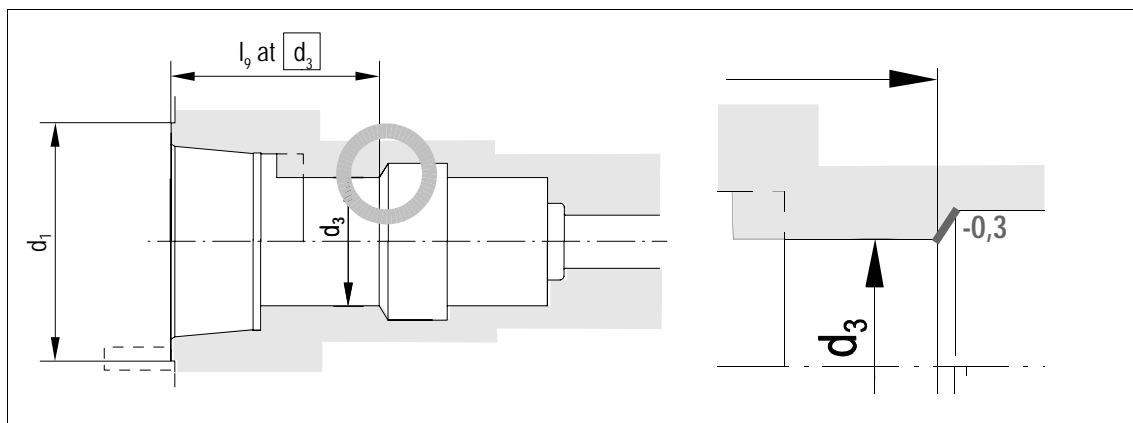
clamping unit HSK B		ring	lip seal	O-rings	
nominal size	complete	1	2	3	4
E25	95.600.038.3.6	-	-	0.926010.166 4,5 x 1,0	-
A32 / B40 / E32	95.600.113.3.6	95.601.246.4.1 -	0.926030.110 6 x 10 x 3	0.926010.205 4,5 x 1,0	0.926010.233 6,3 x 2,4
A40 / B50 / E40	95.600.034.3.6	95.601.271.4.1 -	0.926030.112 8 x 14 x 4	0.926010.044 6,0 x 1,5	0.926010.047 8,0 x 3,0
A50 / B63 / E50	95.600.035.3.6	95.600.334.4.1 -	0.926030.111 10 x 15 x 3,5	0.926010.170 8,0 x 1,5	0.926010.172 10,0 x 3,0
A63 / B80 / E63	95.600.033.2.6	95.600.850.4.1 -	0.926030.103 12 x 18,5 x 4,5	0.926010.156 12,0 x 1,5	0.926010.164 13,87 x 3,53
A80 / B100	95.600.036.2.6	95.601.050.4.1 -	0.926030.108 14 x 20 x 4,8	0.926010.167 14,0 x 1,5	0.926010.173 16,0 x 3,5
A100 / B125	95.600.037.2.6	95.601.189.4.1 -	0.926030.109 16 x 24 x 5,5	0.926010.167 14,0 x 1,5	0.926010.169 18,0 x 3,5

material: Viton, hardness 80 SHORE A

3.2.3 Repair-clamping-units HSK B-E

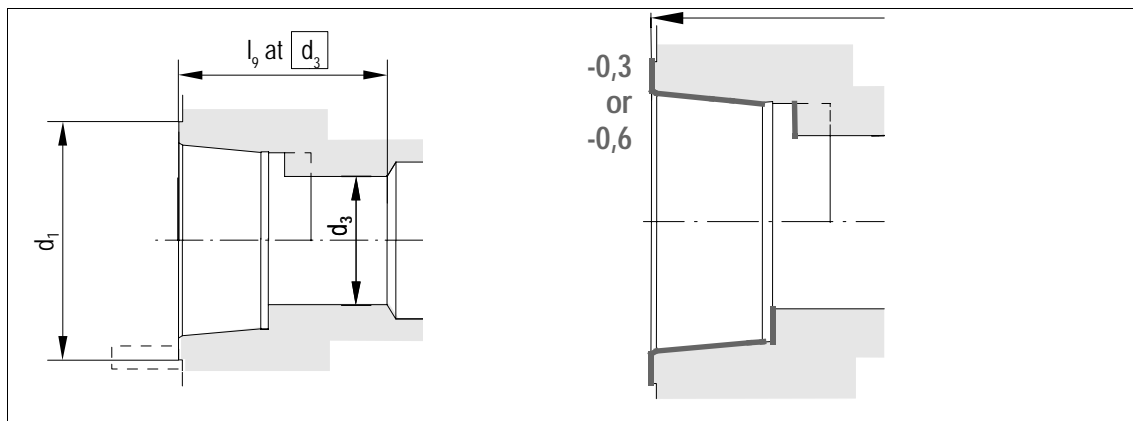
If fashioning necessary, we have repair-clamping-units.

Fashioning edge



nominal size	clamping unit HSK B		repair-clamping-unit HSK B-E1	
	complete	l_9	complete	l_9
E25	95.600.038.3.6	18,5	95.600.120.9.6	18,2
E25 coolant	95.600.063.3.6	18,5	95.600.078.9.6	18,2
A32 / B40 / E32	95.600.113.3.6	30	95.600.121.9.6	29,7
A40 / B50 / E40	95.600.034.3.6	44	95.600.122.9.6	43,7
A50 / B63 / E50	95.600.035.3.6	45	95.600.123.9.6	44,7
A63 / B80 / E63	95.600.033.2.6	52	95.600.124.9.6	51,7
A80 / B100	95.600.036.2.6	56	95.600.125.9.6	55,7
A100 / B125	95.600.037.2.6	70	95.600.126.9.6	69,7

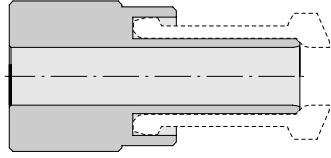
Fashioning receiver



nominal size	clamping unit HSK B		repair- clamping unit HSK B-E 0,3		repair- clamping unit HSK B-E 0,6	
	complete	l_9	complete	l_9	complete	l_9
E25	95.600.038.3.6	18,5	95.600.071.9.6	18,2	95.600.087.9.6	17,9
E25 coolant	95.600.063.3.6	18,5	95.600.070.9.6	18,2	95.600.094.9.6	17,9
A32 / B40 / E32	95.600.113.3.6	30	95.600.072.9.6	29,7	95.600.088.9.6	29,4
A40 / B50 / E40	95.600.034.3.6	44	95.600.073.9.6	43,7	95.600.090.9.6	43,4
A50 / B63 / E50	95.600.035.3.6	45	95.600.074.9.6	44,7	95.600.091.9.6	44,4
A63 / B80 / E63	95.600.033.2.6	52	95.600.075.9.6	51,7	95.600.095.9.6	51,4
A80 / B100	95.600.036.2.6	56	95.600.076.9.6	55,7	95.600.096.9.6	55,4
A100 / B125	95.600.037.2.6	70	95.600.077.9.6	69,7	95.600.097.9.6	69,4

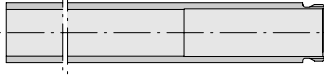
3.3 Assembly tool for HSK clamping unit

for easier assembly of the HSK gripper unit
(not included with delivery of HSK clamping unit!)

	size	order-no.
	A63 / B80 / E63 / F80	95.601.114.3.1

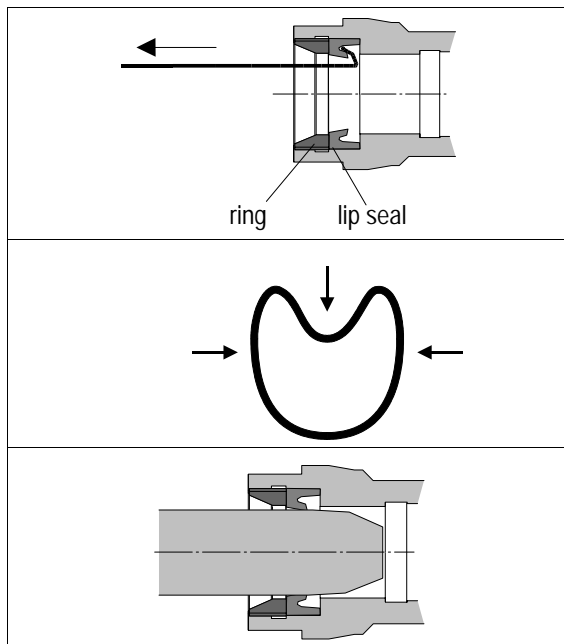
3.4 Dismounting tool for the spacer HSK B

Not included in delivery volume!

	size	order-no.
	A63 / B80 / E63 / F80	95.601.283.3.1

3.5 Exchange of the lip seal

For dismounting the lip seal it is not necessary to take away the ring. Only when the ring is damaged it must be exchanged.



- Take away the damaged lip seal with a hook or pliers
- Compress the lip ring and build in; look for the build in position
- press the seal with a blunt object against the lining
- take a mandrel to bring it in the final position

3.6 Break of a gripper segment

- If one of the gripper segments should break, the complete set of grippers needs to be replaced (we recommend: replace the complete clamping unit) !

3.7 Trouble shooting HSK

trouble	reason
tool is not pulled in correctly:	gage dimension out of adjustment
	lock screw got loose
	wrong or faulty spindle-inside-contour
	wrong or faulty tool-inside-contour
	spring stack broken (travel not sufficient)
	wear of clamping unit
	tool feed not correct
	air blow off prevents tool from seating during tool change
tool is pulled out during work cycle:	gripper segments, clamping cone or drawbar broken
	tool shank broken
	springs broken
	pull-in force not sufficient
Loss of pull force:	lack of lubrication on clamping set
recommendation: check pull-in force!	