

# Clamping Unit

## HSK E20-B



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symbol explanation:



keep attention -  
dangerous!



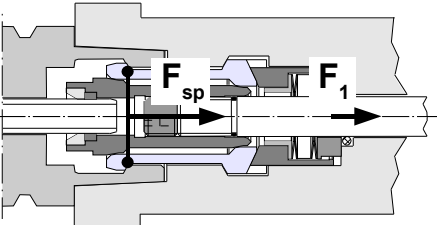
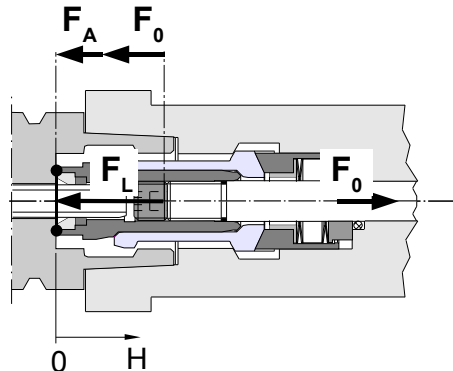
keep attention -  
malfunction!

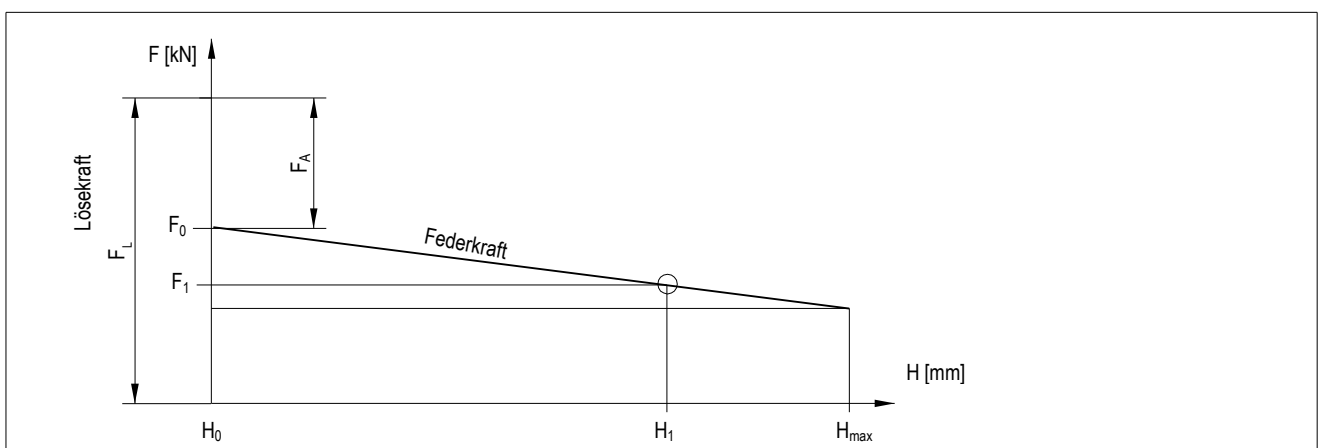
## 1 PRODUCT DESCRIPTION

### 1.1 TECHNICAL DATA

Ceiling speed	93799 min <sup>-1</sup>
Transferable torque	3 Nm

### 1.2 FORCES AT THE HSK-CLAMPING UNIT

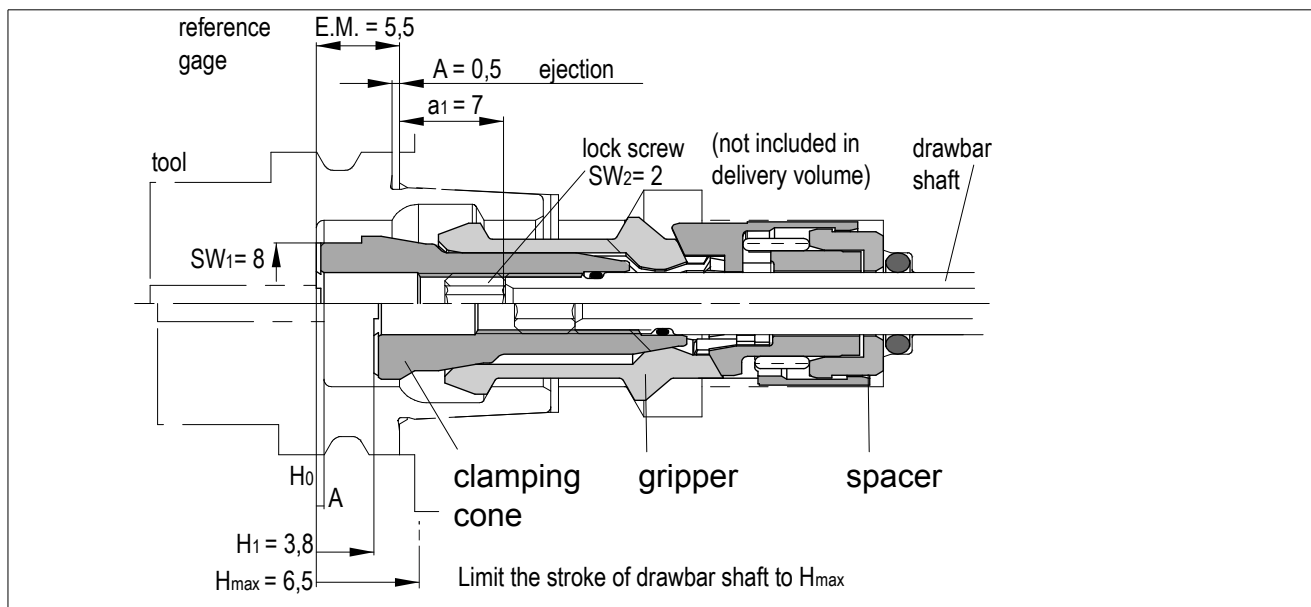
Clamped position	Unclamped position
	



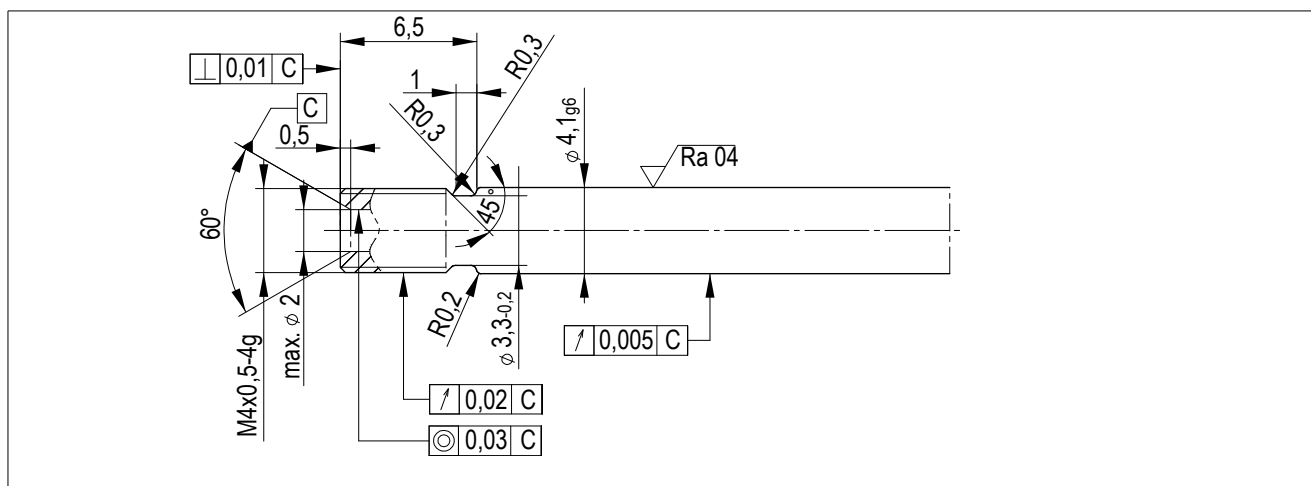
$F_{sp}$	1,8 kN
$F_1$ max.	0,6 kN

## 1.3 DIMENSIONS

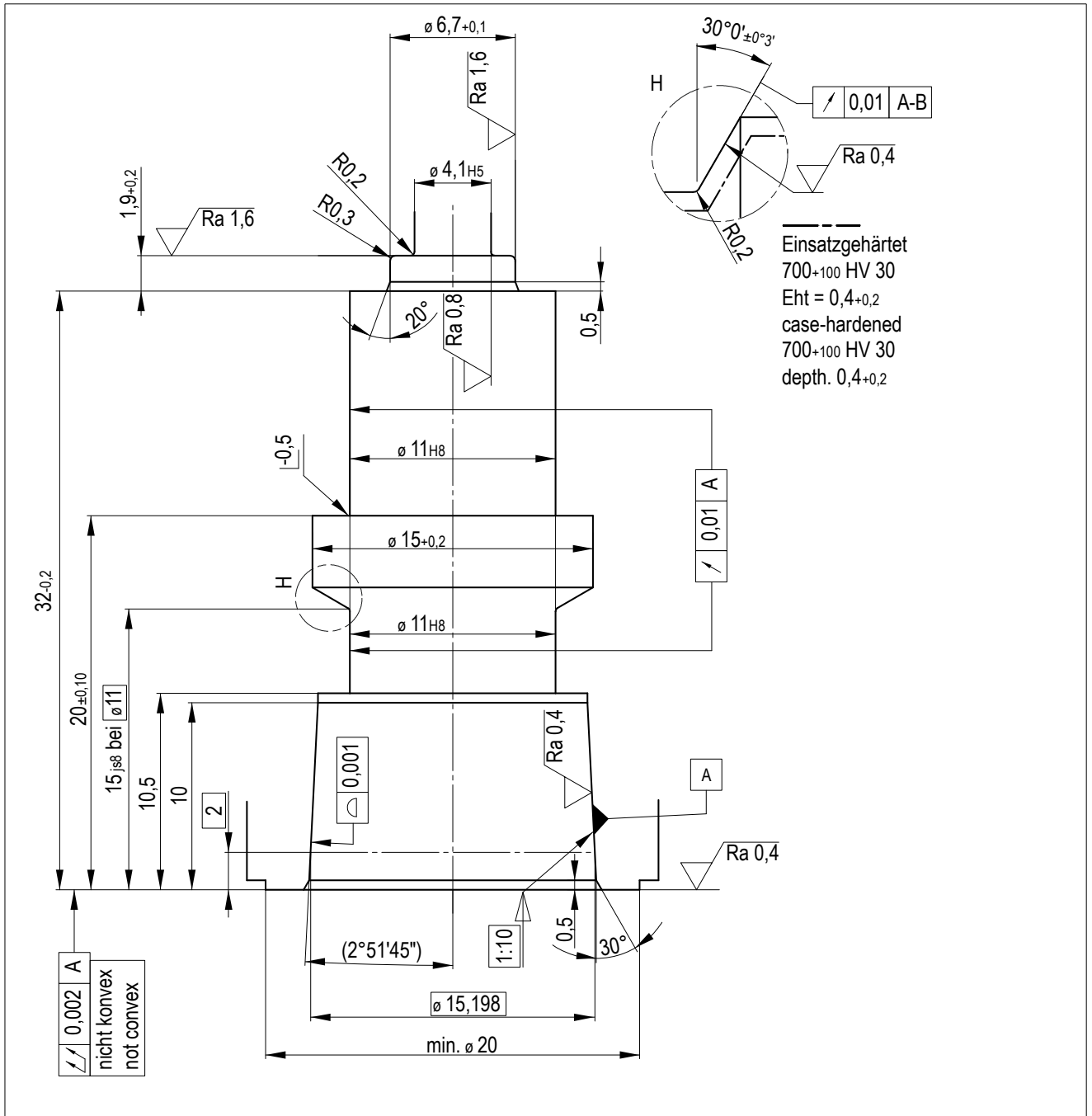
### 1.3.1 Clamping Unit



### 1.3.2 Drawbar



## 1.3.3 Spindle inside contour



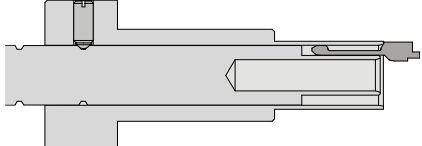
## 1.4 ORDER NUMBERS

designation	order numbers
clamping unit HSK E20-B	95.600.149.3.6
lock screw M4 x 0,5 SW 2	95.603.185.4.1

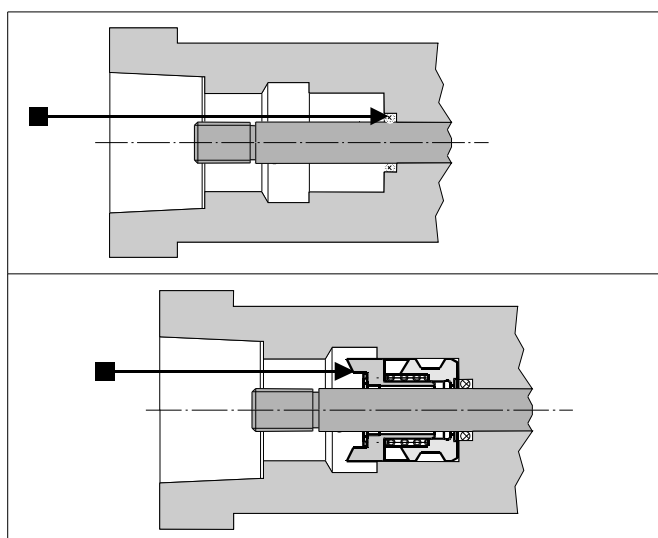
## 2 ASSEMBLY

### 2.1 ASSEMBLY TOOL FOR HSK CLAMPING UNIT

For easier assembly of the HSK gripper unit; not included with delivery!

	size	order numbers
	E 20	95.601.910.3.2

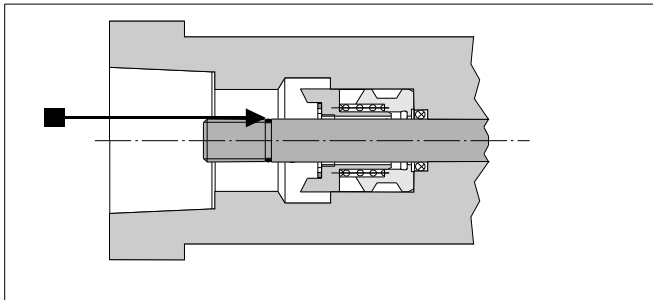
### 2.2 CLAMPING UNIT HSK E20-B



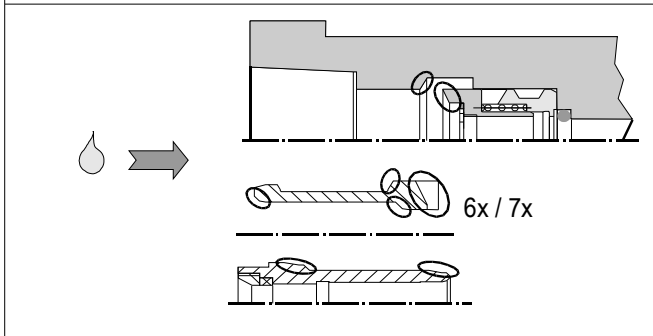
- ▲ Clean spindle inside contour
- ▲ make sure that edges are properly rounded
- ▲ grease O-rings
- ▲ mount o-ring in the spindle
  
- ▲ grease spacer with mounting grease
- ▲ push spacer into spindle and check for ease of movement

# PRODUCT INFORMATION

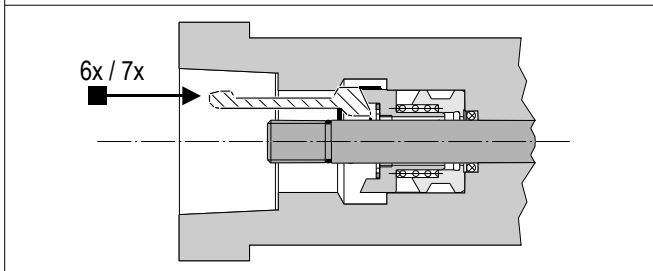
HSK E20-B



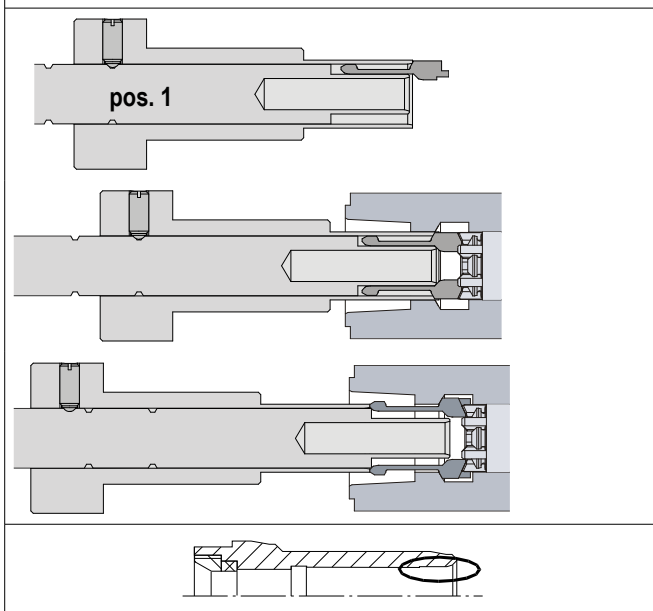
- ▲ mount o-ring on the drawbar



- ▲ grease area of contact  
→ KLÜBER-Paste ME 31-52

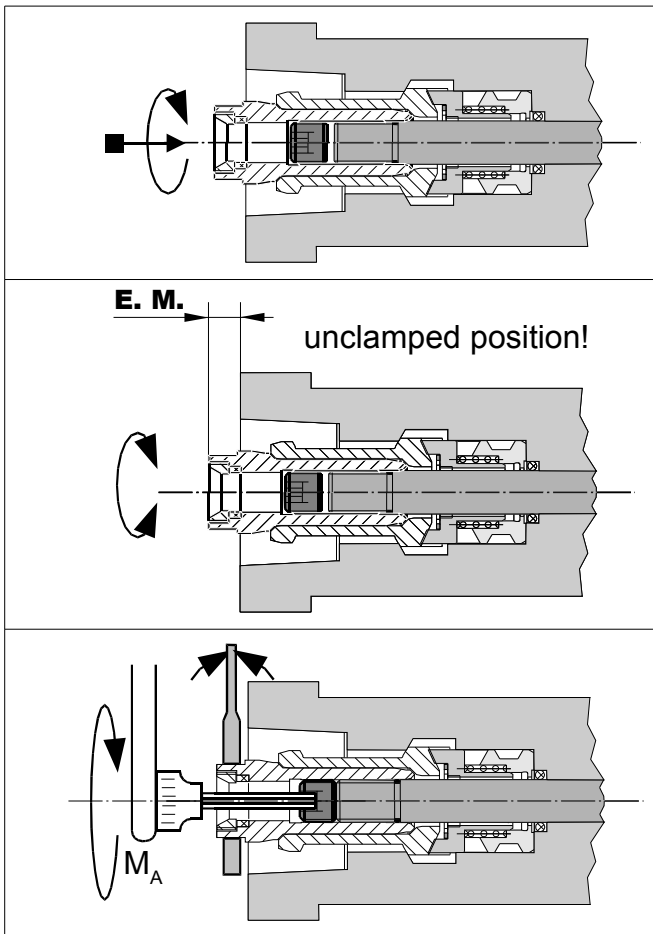


- ▲ snap gripper segments in the spacer;  
ensure that the numbers match



alternatively with fixture 95.601.910.3.2:

- ▲ fixture in pos. 1
  - ▲ put the segments into the fixture
- in position clamped without tool:
- ▲ insert the complete unit
  - ▲ snap it in the spacer
  - ▲ push slightly
- ▲ give the bolt of the fixture a push until the segments click in place
- ▲ 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.

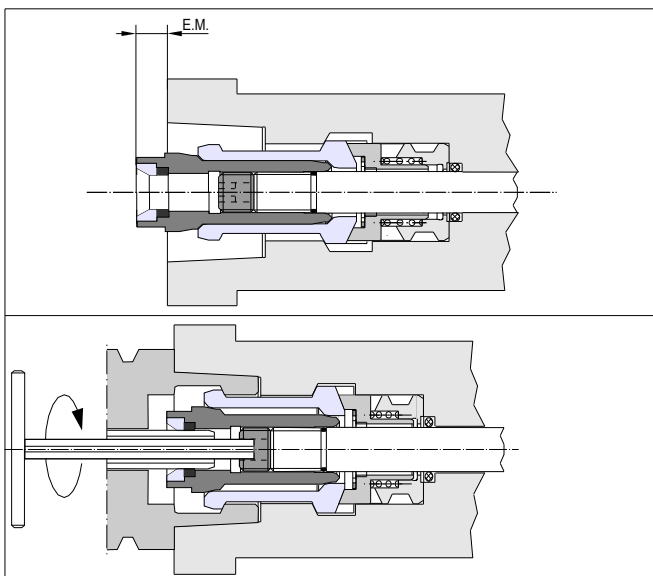
gauge dimension:

- E20: 5,5 mm

- ▲ tighten the lock screw
- starting torque::

- E20: 1,5 Nm

## 2.2.1 Check after aprox. 100 tool changes



In unclamped position:

- ▲ check dimension gauge E.M.

- ▲ re-tighten through a clamped tool

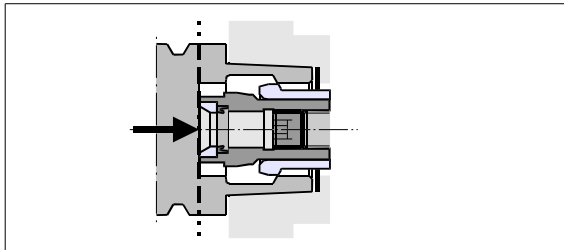


## 3 OPERATION

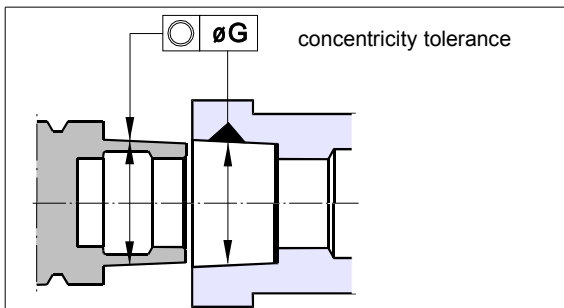


No rotation without clamped tool!  
Only use technically perfect tools!

### 3.1 TOOL INSERTING



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!



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 20
concentricity (øG) [mm]	0,4
tool changer force max. [kN]	0,8

### 3.2 OPERATING CONDITIONS



- The tool interface must be free of chips and substantial cooling lubricant residue
- allowable temperature 10° C (on the inside of the spindle)

### 3.3 GENERAL



- Recommendation: install a limit switch for the drawbar
- Follow maintenance intervals!

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## 4 MAINTENANCE

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### 4.1 MAINTENANCE INTERVALS

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

#### Every week

- ▲ Check the clamping unit if it is polluted or damaged; is it sufficient greased? (visual check)
  - ▲ Please see below:
    - 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
    - ▲ Regrease clamping unit → #4.3 // 11
- ▲
- ▲
- ▲ **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 ( → #4.3 // 11 ) and test pull-in force again
    - ▲ exchange clamping unit and test again
    - ▲ exchange drawbar completely
- ▲

### 4.2 BREAK OF A GRIPPER SEGMENT

- ▲ If one of the gripper segments should break, the complete clamping unit needs to be replaced!

## 4.3 REGREASE CLAMPING UNIT

If very dirty: take clamping unit out and clean.  
Then grease clamping unit and reassemble → # 2 // 6

## 4.4 WEARING PART LIST

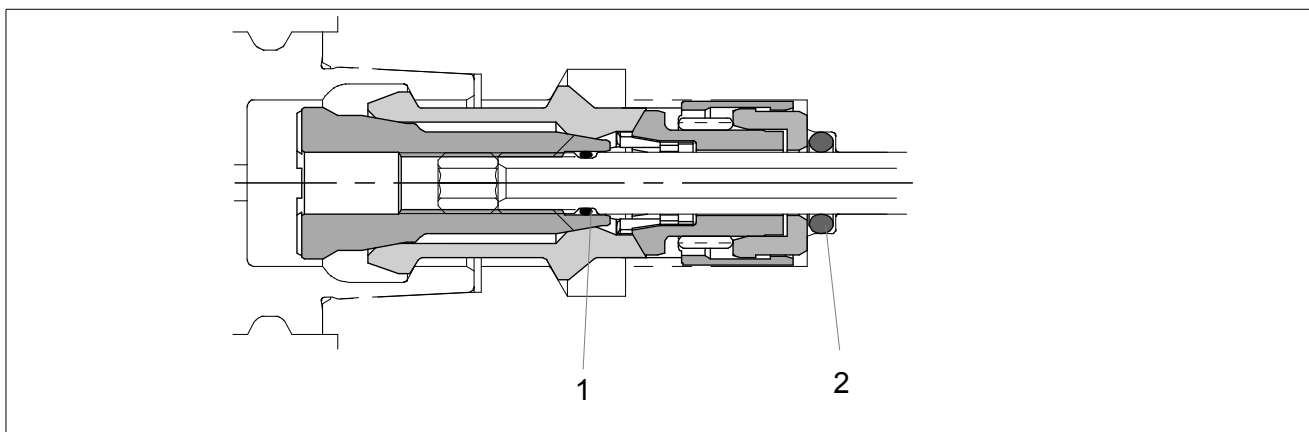
### 4.4.1 Grease for HSK-clamping unit

designation	quantity	order-no
* KLÜBER-grease-paste ME 31-52	10 g	06.21001.014
KLÜBER-spray ALTEMP Q NB 50	400 ml	06.21001.015

- first equipment

KLüber Lubrication München KG, Postfach 701047, D-81310 München, Tel.: (0 89) 78 76 -0, Fax: (0 89) 78 76 -333

### 4.4.2 O-rings HSK E20-B



clamping unit HSK B		O-rings	
nominal size	complete	1	2
E20	95.600.149.3.6	0.926010.285 2,8 x 0,8	0.926010.247 4,1 x 1,6
material: Viton, hardness 80 SHORE A			

## 4.5 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)
	clamping unit worn out
	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