

Gripper with Holder
SK Form 1



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symbol explanation:



keep attention -
dangerous!



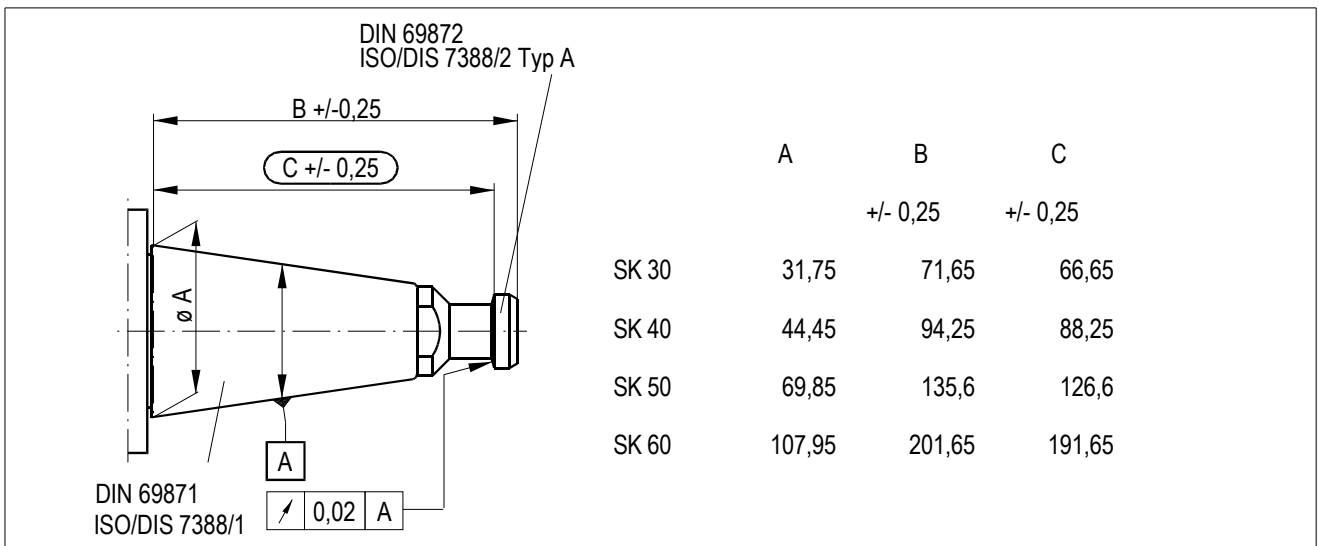
keep attention -
malfunction!

1 PRODUCT DESCRIPTION

1.1 STANDARD

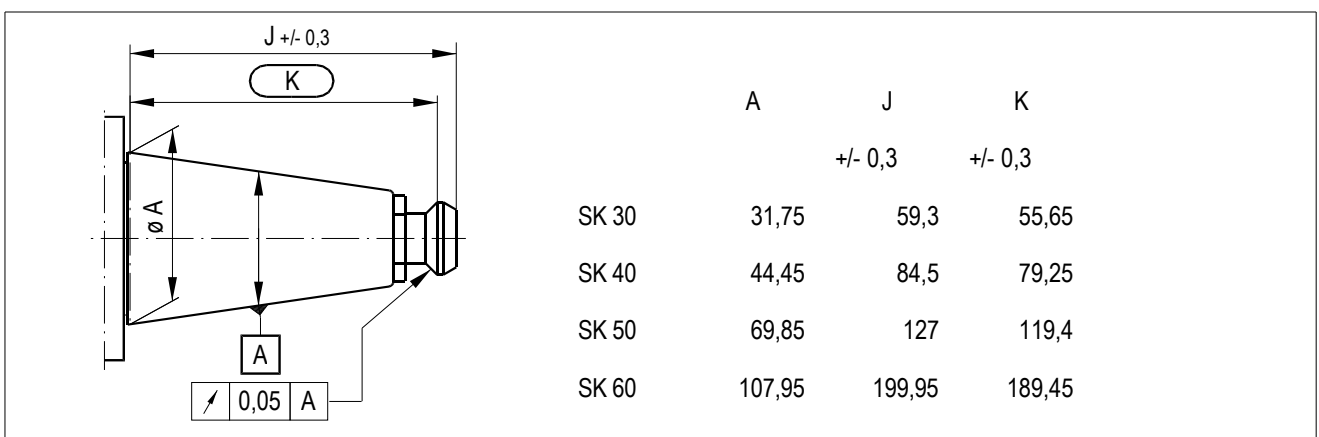
A

DIN 69 871 / 69 872 - ISO / DIS 7388 / 1 / 2; Typ A



C

ANSI B5.50 - ISO / DIS 7388 / 1 / 2; Typ B

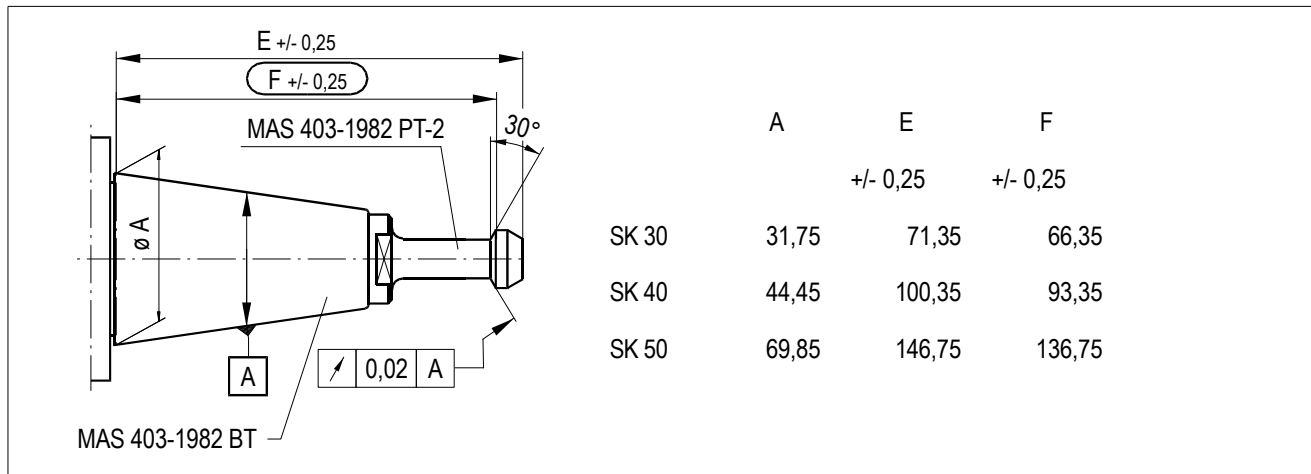


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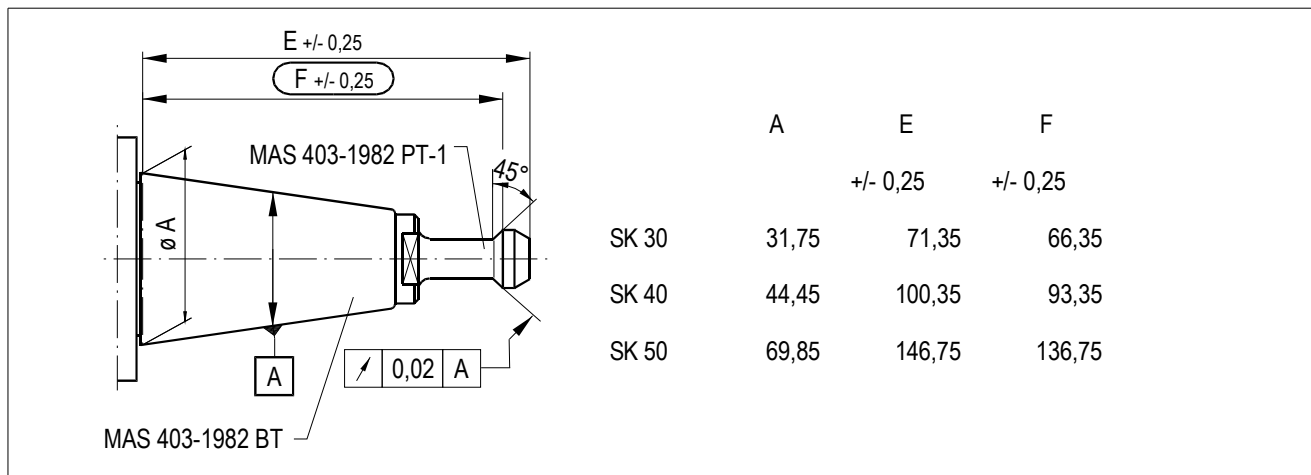
E

MAS 403-1982 BT/PT-2 (30°)



F

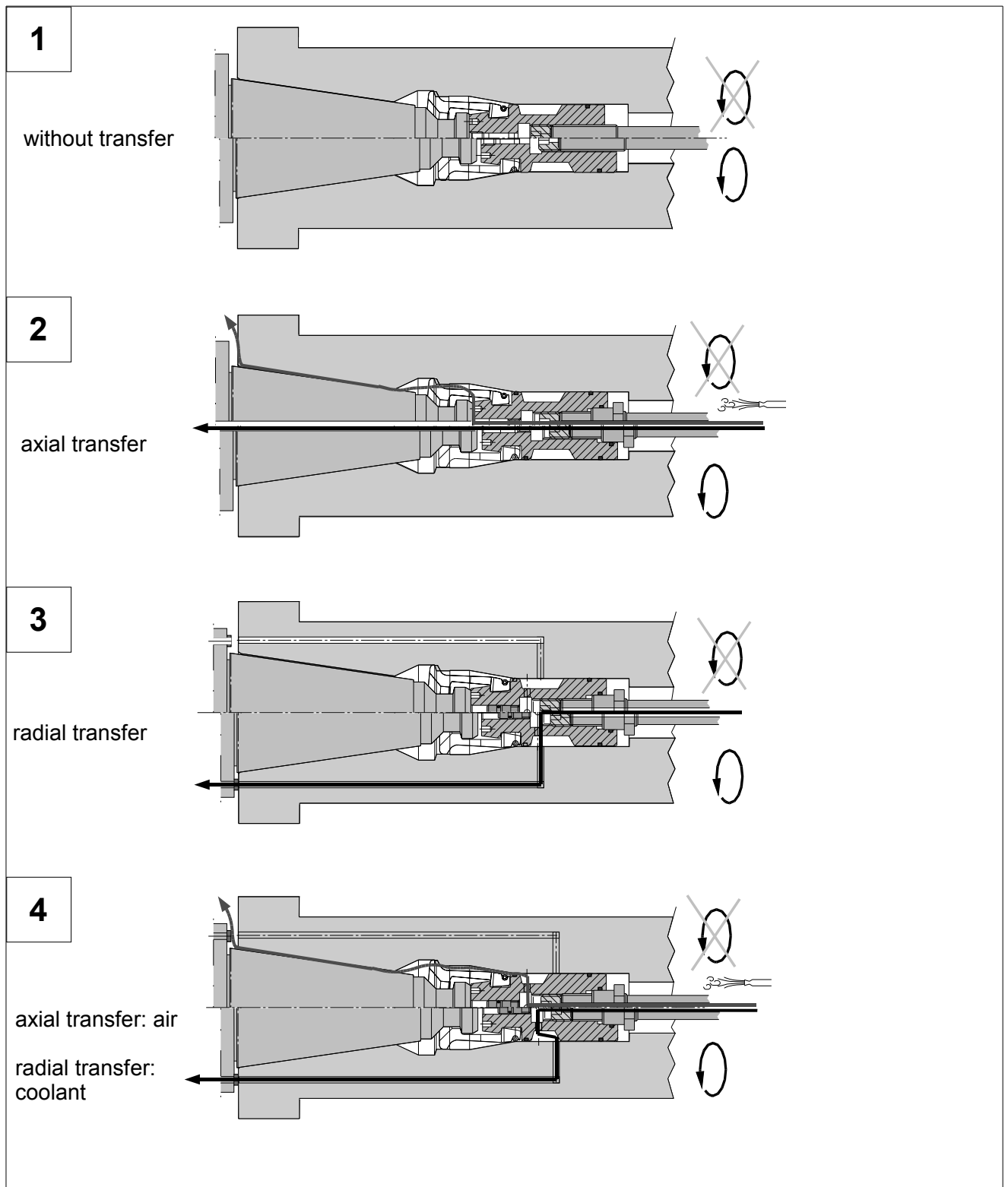
MAS 403-1982 BT/PT-1 (45°)



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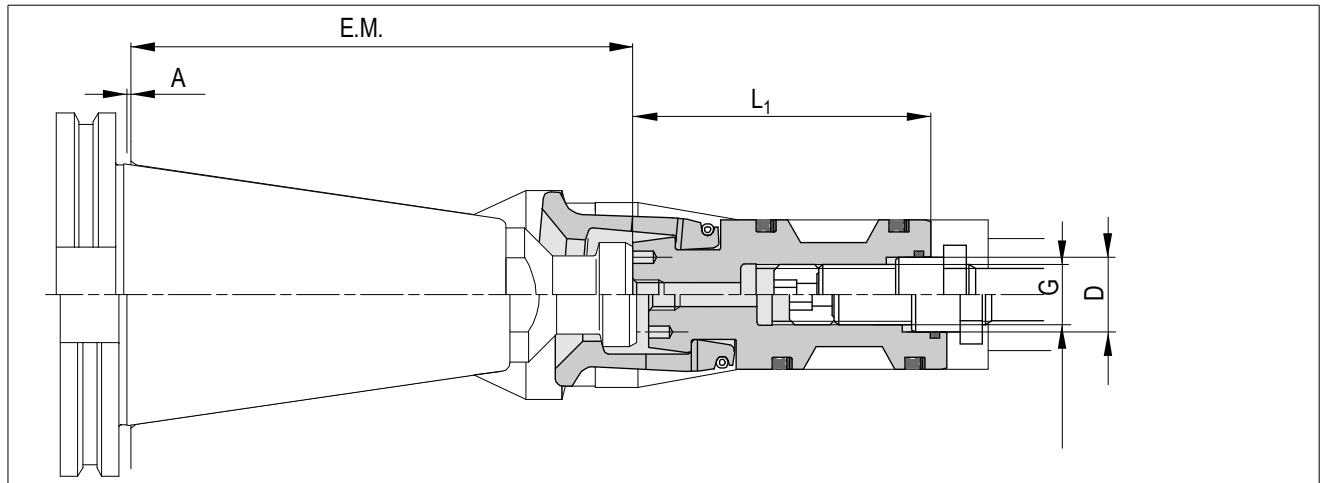
1.2 MEDIUM TRANSFER



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1.3 DIMENSIONS



Nominal size	Standard	Medium-transfer	L ₁	E.M.	A	D	G	
30	A	1 / 2 / 3	57,1	70,7	0,95	Ø12 ^{H8}	M10	
	C		69,8	57,7	1,6			
	E		57,8	70,4	0,95			
	F		57,8	70,4	0,95			
40	A	1	67,1	93,6	0,65	-	M14x1,5	
			2			66,4		Ø18 ^{H8}
			3			67,4		
			4			67,4		
	C	1	77,9	82,9	1,6	-	Ø18 ^{H8}	
			2			77,5		
			3			77,9		
			4			78,2		
E	1 / 2	60,3	99,7	0,65	Ø18 ^{H8}			
F								
50	A	1 / 2	79,7	134,6	1	Ø20 ^{H8}	M16x1,5	
								3
								4
	C	1 / 2	87,9	126				
								4
	E	1 / 2	68,8	145,75				
F								
50 reinforced	A	1 / 2 / 3	95	134,6	1	(Ø22 ^{H8})	(M25x1,5)	
	C		103	126				
60	A	1 / 2	130,5	200,5	1,15	Ø26 ^{H8}	M30x1,5	
	C		132,2	199	0,95			

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1.4 ORDER NUMBER

nominal size	Standard	Mediumtransfer	gripper with holder	lock screw
30	A	1 / 2 / 3	95.101.452.3.2	
	C		95.101.450.3.2	
	E		95.101.453.3.2	
	F		95.101.451.3.2	
40	A	1	95.101.288.3.2	95.101.372.5.1
		2	95.101.216.3.2	
		3	95.101.202.3.2	
		4	95.101.223.3.2	
	C	1	95.101.287.3.2	
		2	95.101.233.3.2	
		3	95.101.290.3.2	
		4	95.101.295.3.2	
	E	1 / 2	95.101.485.3.2	
	F		95.101.486.3.2	
50	A	1 / 2	95.101.297.3.2	95.103.636.5.1
		3	95.101.298.3.2	
		4	95.101.356.3.2	
	C	1 / 2	95.101.306.3.2	
		4	95.101.522.3.2	
	E	1 / 2	95.101.476.3.2	
	F		95.101.506.3.2	
50 reinforced	A	1 / 2 / 3	95.101.781.3.2	95.101.273.4.1
	C		95.101.782.3.2	
60	A	1 / 2	95.101.308.3.2	95.101.092.4.1
	C		95.101.307.3.2	

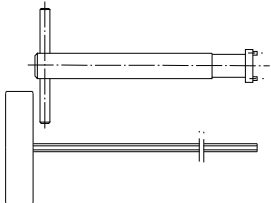
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2 ASSEMBLY

2.1 MOUNTING TOOL SK GRIPPER

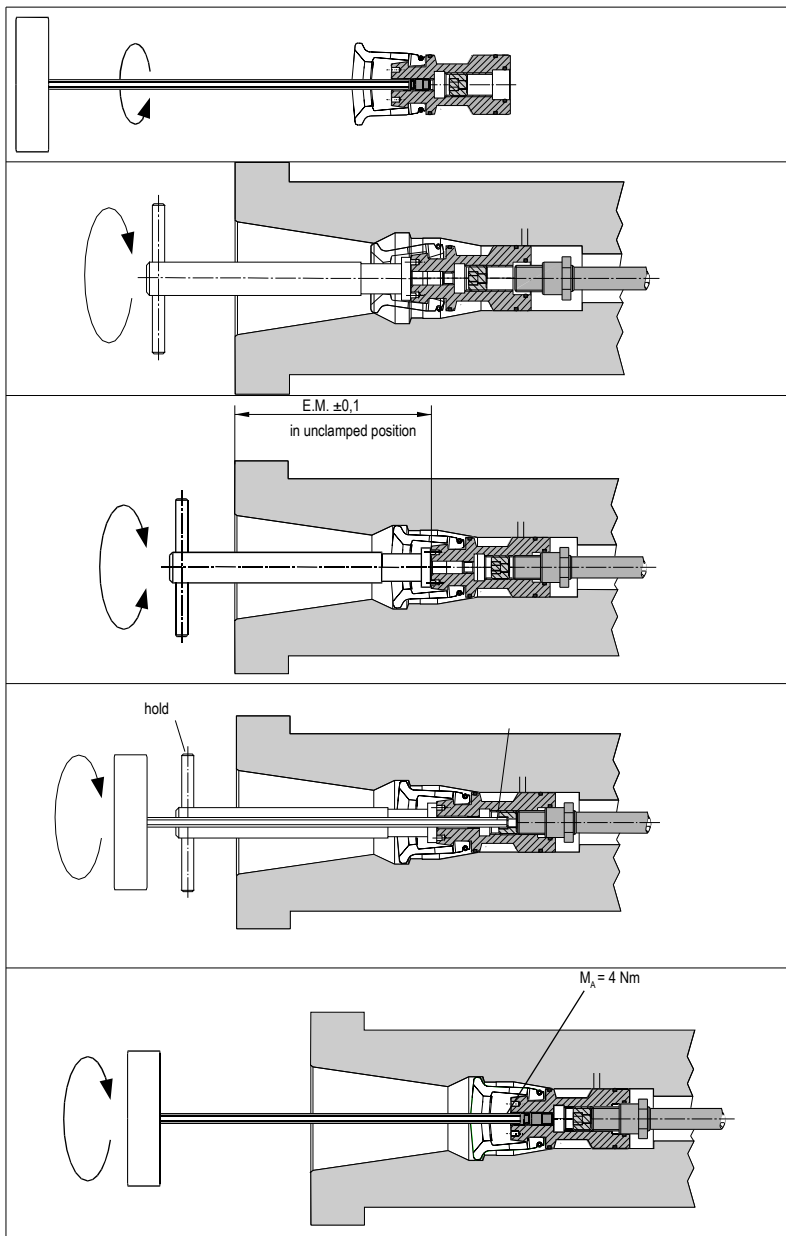
(not included with delivery)

	nominal size	order-no.
	SK 30	95.101.280.9.2
	SK 40	95.101.281.9.2
	SK 50	95.101.337.9.2
	SK 50 reinforced	95.101.336.9.2
	SK 60	95.101.284.9.2

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2.2 GRIPPER WITH HOLDER SK



if necessary:

▲ Remove sealing screw

▲ mount the gripper with holder on the drawbar

▲ adjust at gauge dimension E.M.

▲ fix gripper with holder in place: tighten lock screw firmly

if necessary:

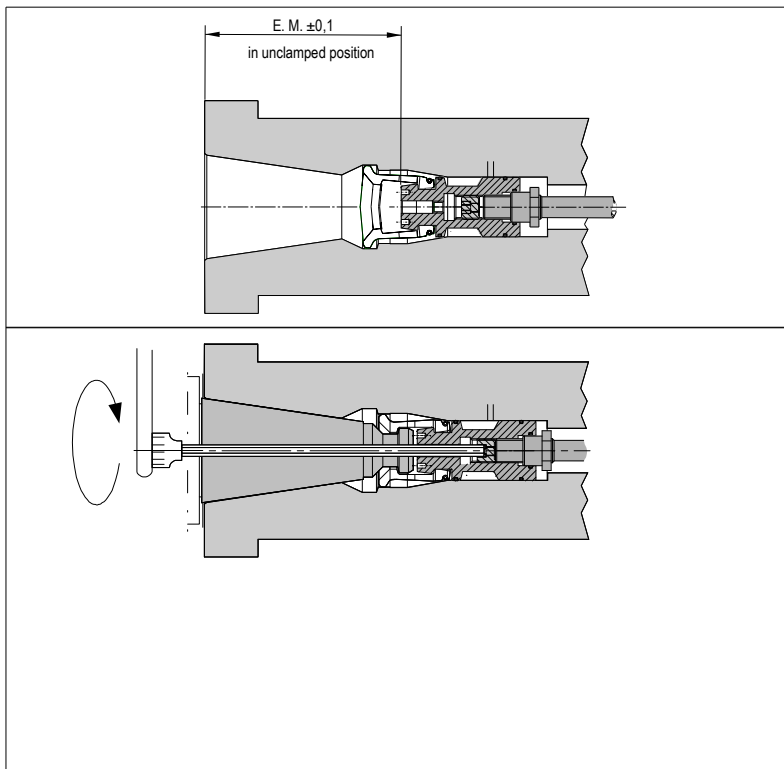
▲ screw in seal screw and tighten it

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2.3 FINALY INSPECTION

Check after approx. 100 strokes



▲ Check dimension gauge E.M.

▲ Tighten lock screw through a clamped tool

tightening torque M_A :

- SK 30: 10 Nm (M8)
- SK 30: 20 Nm
- SK 40: 30 Nm
- SK 50: 50 Nm
- SK 60: 100 Nm

check valve

tightening torque M_A :

- SK 40: 18 Nm
- SK 50: 18 Nm

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
- During tool changes it is very important that the tool must be pushed into the spindle taper and held in place until the drawbar starts pulling

3.2 INTERN COOLING SUPPLY



- during installation of tool:
pressure in clamp chamber $p < 0,5 \text{ bar}$

3.3 OPERATING CONDITIONS



- Avoid additional stress contributed to force from brackets or any other connection and or support, proximity switches
- impact loads < 25 g
- the spring must be protected against corrosive media and dirt exposure
- the tool interface must be free of chips and substantial cooling lubricant residue
- allowable temperature 10° C (on the inside of the spindle)

3.4 UNCLAMP FORCE

In our file, you will find calculated values of the minimum unclamp force and unclamp pressure to eject the tool. This is based on a well serviced interface of male and female taper. ; ⇒ Preventive maintenance schedule - Every week.

In rare cases the unclamp force may exceed the theoretical values and malfunction may occur.

Unclamp force depends on:

- Unclamp speed (In pulse)
- Thermal condition of spindle
- Surface quality of taper in spindle
- Contact pattern of spindle/steep taper shaft.
(See test records of steep taper obtainable thru techdoku@ott-jakob.de)
- Mechanical overload of the interface

3.5 GENERAL



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

3.6 COOLANT



Guidelines and technical specifications for the coolant use in the machine:

Coolant use must conform to the current regulations of the legislation and the professional association.

Our products are to the greatest possible extent protected by the materials used or by means of a passivated surface against corrosion and therefore suited for use with water. The rate of corrosion is strongly dependent on the contents of the media (e.g. chlorine is very much increasing the rate of corrosion), as well as the environment in which the products are being operated (e.g. the difference in electrical potential between rotor and stator in spindles).

Suitable protective measures such as the utilization of corrosion inhibitors will extend the service life in every way.

Furthermore, you must only use coolants which conform with the specs listed on the table below.

Parameter / test procedure	Limited values
Corrosion protection according to DIN 51360 section 2	No corrosion after 2 hours
Elastomer compatibility	No change of the shore hardness and/or the elongation OTT-JAKOB applies FKM (VITON®)
Nonferrous metal compatibility	No corrosion on copper, brass and aluminum parts
Glue residue after slow evaporation at 50 degrees	Non sticky! No residue! Easily removable.

4 MAINTENANCE

4.1 MAINTENANCE INTERVALS

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

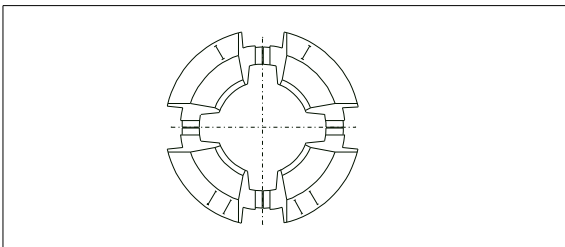
Every week

- ▲ Check the gripper if it is polluted or damaged (visual check)
- ▲ Apply *Klueber Altemp Q NB50* to Spindle taper for service

Every six month or after 200.000 tool changes at the latest

- ▲ In unclamped position: Check dimension gauge E.M.
- ▲ check the secure fit of the lock screw through a clamped tool
- ▲ test pull-in-force
(we recommend: use **Power-Check**)
If the pull-in-force is smaller than 70% of the nominal value, the following procedures have to be performed in the following sequence:
 - check gripper if it is polluted or damaged;
clean it if necessary; test again
 - exchange gripper and test again
 - exchange drawbar completely

4.2 BREAK OF A GRIPPER SEGMENT



- ▲ If one of the gripper segments should break, the complete set of grippers needs to be replaced. On assembly mind the order of the segments.

4.3 WEARING PART LIST

4.3.1 Gripper SK

code	standard	nominal size	order number	sign
A	DIN 69871 / 69872 ISO 7388/1/2 Typ A	SK 30	95.103.597.2.1	9
		SK 40	95.102.437.2.1	36
		SK 50	95.102.914.2.1	69
		SK 50 reinforced	95.102.104.2.1	66
		SK 60	95.102.327.2.1	83
B	DIN 2080 - OTT-Rille	SK 30	95.103.599.2.1	91
		SK 40	95.102.432.2.1	32
		SK 50	95.102.916.2.1	70
		SK 50 reinforced	-	
		SK 60	-	
C	ANSI B5.50 - 78 ISO 7388/1/2 Typ B	SK 30	95.103.598.2.1	90
		SK 40	95.102.436.2.1	35
		SK 50	95.102.915.2.1	71
		SK 50 reinforced	95.102.183.2.1	68
		SK 60	95.102.328.2.1	84
E	MAS 403-1982 BT/PT 2 (30°)	SK 30	95.103.595.2.1	7
		SK 40	95.103.514.2.1	38
		SK 50	95.103.535.2.1	73
		SK 50 reinforced	-	
		SK 60	-	
F	MAS 403-1982 BT/PT 1 (45°)	SK 30	95.103.596.2.1	8
		SK 40	95.103.513.2.1	37
		SK 50	95.103.534.2.1	72
		SK 50 reinforced	-	
		SK 60	-	

4.4 TROUBLE SHOOTING SK

Malfunction	Reason
Tool is not pulled in correctly	gauge dimension out of adjustment
	lock screw got loose
	wrong gripper installed (tool standard)
	wrong or faulty spindle-inside-contour
	spring set broken (travel not sufficient)
	contaminated intensifying mechanism
	retention knob not correct or faulty
	tool not sufficiently pressed in during clamping
	air blow off prevents tool from seating during tool change
Tool is not released	piston seals are defective
	rotary union is leaking
	no or not enough hydraulic pressure
	insufficient service of the steep taper interface
	accumulated rust on the steep taper
	spring space filled with oil
Tool is pulled out during working cycle	gripper, clamping cone or drawbar shaft broken
	retention knob or steep taper broken
	tool too long / short