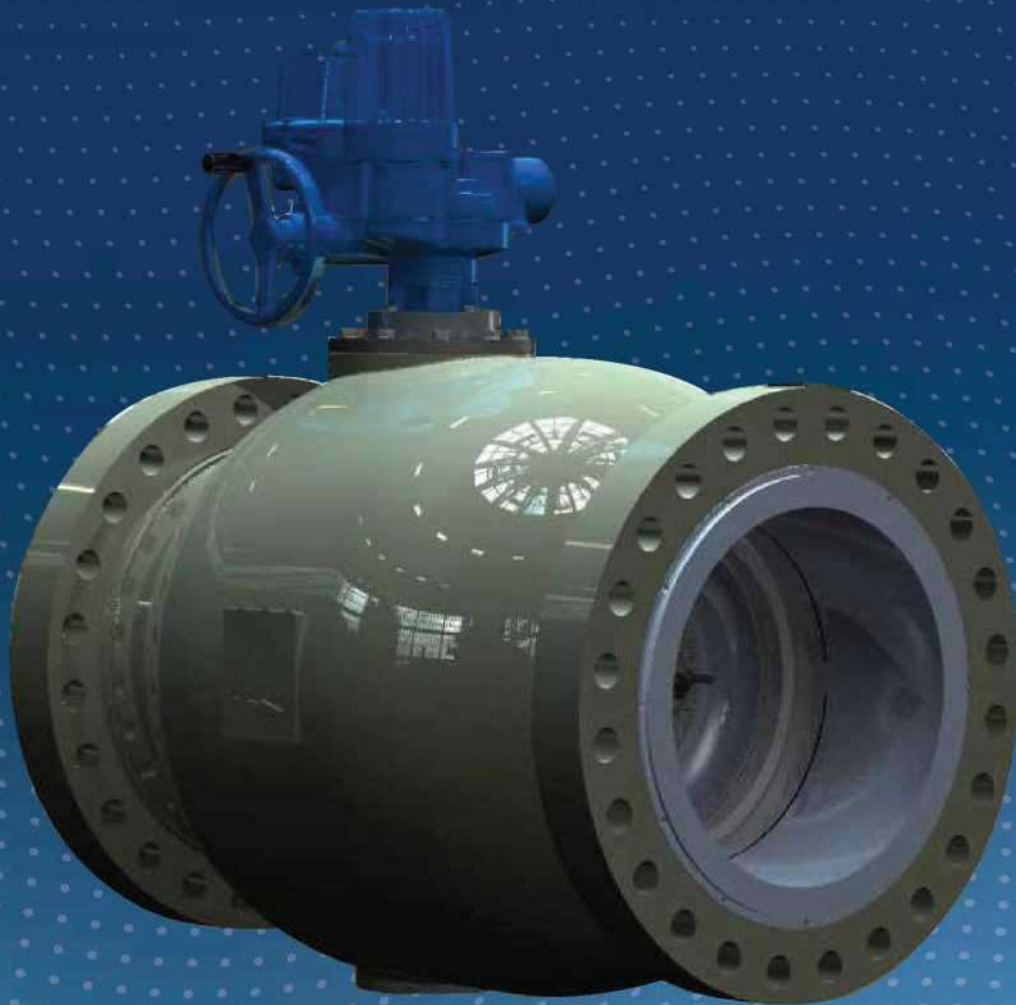


**DN 500 / VS 480**



OPERATING AND MAINTENANCE INSTRUCTIONS/  
SPARE PARTS

ISSUE DATE 02/2021

Serving the Gas Industry  
Worldwide

**Honeywell**

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## 1. General information

Anybody entrusted with the installation, operation or maintenance of the flow control valve HON530a is required to read the following documents in full and carefully in advance:

- **Technical Product Information 530-E-WG.00** – this contains technical data, dimensions and a description of the design and function.
- **Operating and Maintenance Instructions, Spare Parts 530.25** – this contains further details of the installation, maintenance and operation of the flow control valve.

Furthermore, the appropriate **national regulations** for planning inspections, function tests and maintenance of gas pressure regulating stations must be observed (in Germany, see also DVGW Codes of Practice G 600, G 260, G 491, and G 495).

The intervals for the work to monitor and maintain the system depend heavily on the operating conditions and the properties of the gas. For Germany, we recommend initially that at least the maintenance periods set out in the information in DVGW Code of Practice G 495 are observed. The maintenance interval must then be identified individually for each station in the medium term.

When carrying out servicing and maintenance work, the components must be cleaned and undergo a careful inspection. This is also necessary if irregularities in behaviour have been identified during operation or function checks. The inspection must in particular extend to gaskets and all moving parts and their bearings. Damaged parts and the O-rings removed during the dismantling work must be replaced with new ones.

Do not use spare parts or lubricants other than those which are expressly listed in these Honeywell operating and maintenance instructions.



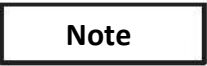
In the event that spare parts and lubricants other than those listed are used, Honeywell cannot accept any liability for defects and consequential damage resulting from the use of unauthorized spare parts and/or lubricants.

The item numbers used in the specific operating and maintenance instructions are the same as those in the spare parts drawing and spare parts list.

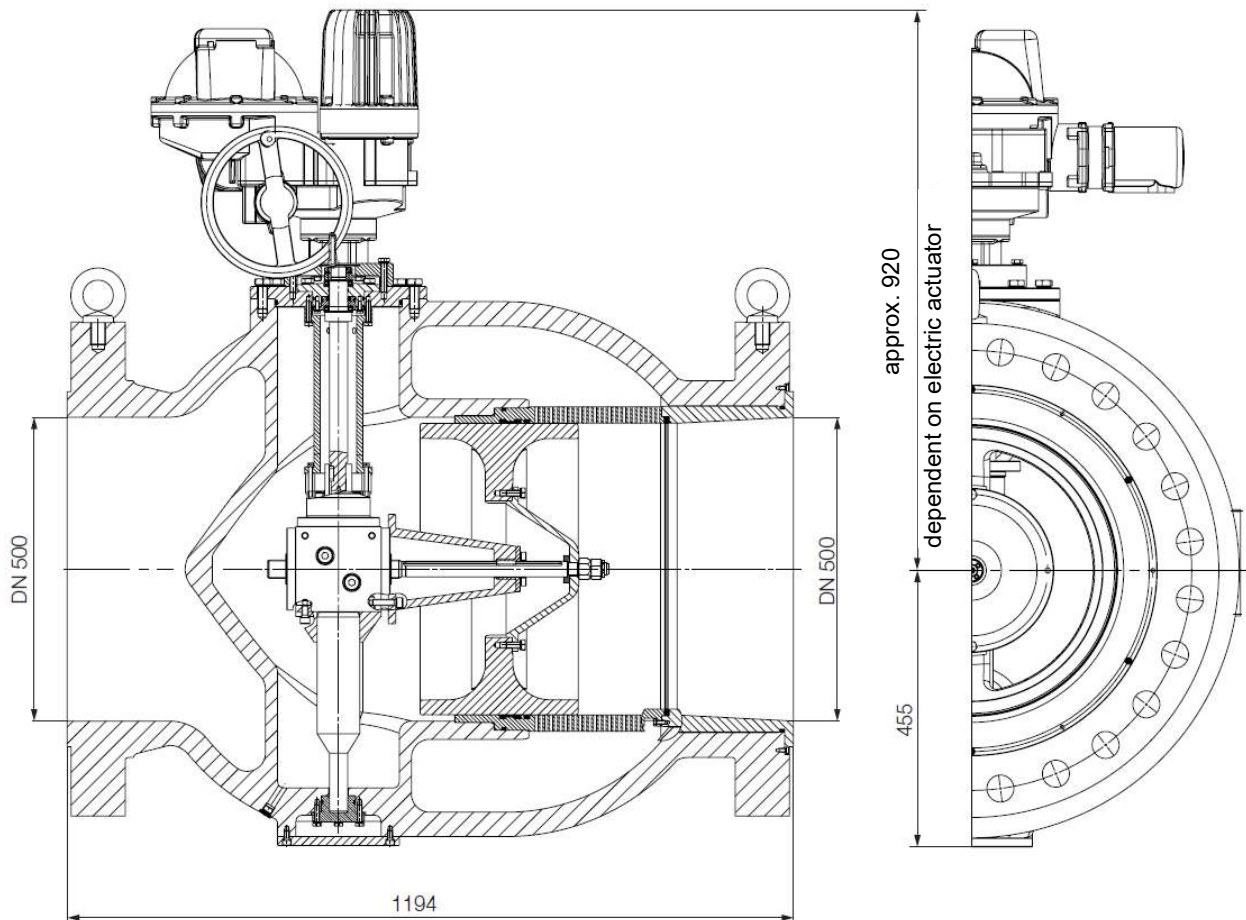
We recommend that you keep the parts marked with a "W" in the spare parts drawings and spare parts lists in stock for maintenance work. These parts are listed on a separate sheet at the end of the spare parts lists.

### 1.1 Safety information

Safety information is identified by the following signal words and symbols.

Identification	Use for:
	Danger of personal injury
	Danger of property and environmental damage
	Important additional information

## 1.2 Dimensions



**Fig. 1:** HON 530-E-WG

## 1.3 Weight

Flow control valve completely assembled: approx. 1850 kg

## 2. Special information

Note the following special information before installing and commissioning the flow control valve.

### 2.1 Transport



The weight of the device is around 1700 kg. Appropriate lifting gear is to be provided to transport it. The device can be removed from and installed in the line using the ring bolts installed on it.

### 2.2 Foreign bodies



During the commissioning procedure for new systems, the possibility cannot be ruled out that foreign bodies (for example chips, weld splatter, scale and the like) from the area upstream of the flow control valve will be carried into it. These can damage the gaskets. We therefore recommend that you install an inlet screen upstream of the flow control valve.

### 2.3 Control actuator



The relevant instructions in the operating and maintenance manual supplied by the actuator manufacturer apply to the connection and commissioning of the control actuator. During the wiring work, ensure that the cables have sufficient length to enable maintenance work to be carried out. Before commissioning, check the direction of rotation of the motor drive shaft for closing and opening the valve using the information sign on the motor. The actuator must be connected by an electrician.

## 3. Maintenance



***Maintenance may only be carried out after the device has been depressurized***

Maintenance work may be required sooner depending on the level of contamination in the gas. If the device is not used with natural gas which complies with DVGW G 260, premature maintenance work will be required.

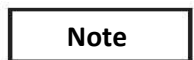
### 3.1 Dismantling the device

The device must be removed from the line to service the appropriate gaskets and guides within the device. Use the following instructions to do this work.

### 3.2 Dismantling the control actuator (electric actuator)

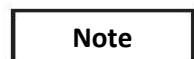
Move the valve sleeve (11) to the "CLOSED" position. Remove the screws (35). Remove the cover (6) together with the control actuator (5) from the actuator housing (1).

### 3.3 Shaft gasket



The device does not have to be removed from the control line to service the shaft gasket. The gaskets must only be replaced after the device has been depressurized.

The shaft gasket (32) can be replaced after removing the insert plate (61). To do this, the hexagon screws (60) must first be removed. Using two M10 screws, the insert plate (61) together with the shaft (9), bearing unit and all sealing elements can be pressed off the plate (61) and then pulled out of the device. The adjusting nut can be removed by undoing the lock screws on the face of the adjusting nut. Pull the shaft (9) out of the insert plate (61) and undo the hexagon screws (55). Removing the bearing bush (34) will allow access to the sealing element (32) of the shaft.



During installation, ensure that the O-rings (33 and 62) are installed with zero torsion. Insert the gasket (32) into the bearing bush (34) without angling it. Tighten the adjusting nut with a torque of around 5 to 8 Nm and then lock it.

### 3.4 Removing the housing



*Maintenance may only be carried out after the device has been depressurized*

The actuator housing (1) must be removed from the line after being depressurized using the existing ring bolts in order to service the zero shut-off gasket (53) and inlet pressure gasket (51). After removing the flow control valve using suitable lifting gear, the device must be placed on the inlet flange.

The next step is to undo the castle nut (45) and locking nut (44).

Then the valve sleeve (11) must be pulled out of the device using suitable lifting gear and M10 ring bolts.

The screws (56) must be removed to expose the sealing ring/flow restrictor unit (10, 14) and the unit can be pulled out of the device using two M8 ring bolts.

**Note**

Six M8 screws can be used to release the sealing ring/flow restrictor unit (10, 14) in its seat. They must be turned through half a turn each in a crosswise sequence until the unit has moved out of its seat.

### 3.5 Zero shut-off and inlet pressure gasket

The zero shut-off gasket (53, 54) between the flow restrictor (14) and the sealing ring (10) must be exposed by removing the screws (55) and can then be replaced. When assembling the flow restrictor (14) and the sealing ring (10), ensure that the gasket (53) is not crushed and damaged.

When replacing the inlet pressure gasket (51), ensure that the support rings are correctly inserted into the groove and are not sheared when the valve sleeve (11) is installed.

### 3.6 Lubrication

The items listed in the lubricant table must be greased as described in the specifications.

**Lubricant**

Component	Lubricant	Part No.
The following components must be greased: valve sleeve (11), sealing elements (32, 51, 53), bearing (29), slide elements (31, 50), spindle (16) and parallel key(42); apply a thick layer to all O-rings	Silicone grease	27052
All fastening and screw plugs	Installation paste	27091

### 3.7 Tightening torques $M_A$

Item No.	8	12	27	35	37	39	44	45	48	55	56	58	60
Tightening torque $M_A$ in Nm	210	45	8	45	25	25	90	50	25	10	10	12	85

After installing the various components, the parts must be tightened using the appropriate torque. They must be tightened in the sequence shown in Figure 2.

### 3.8 Tightening sequence

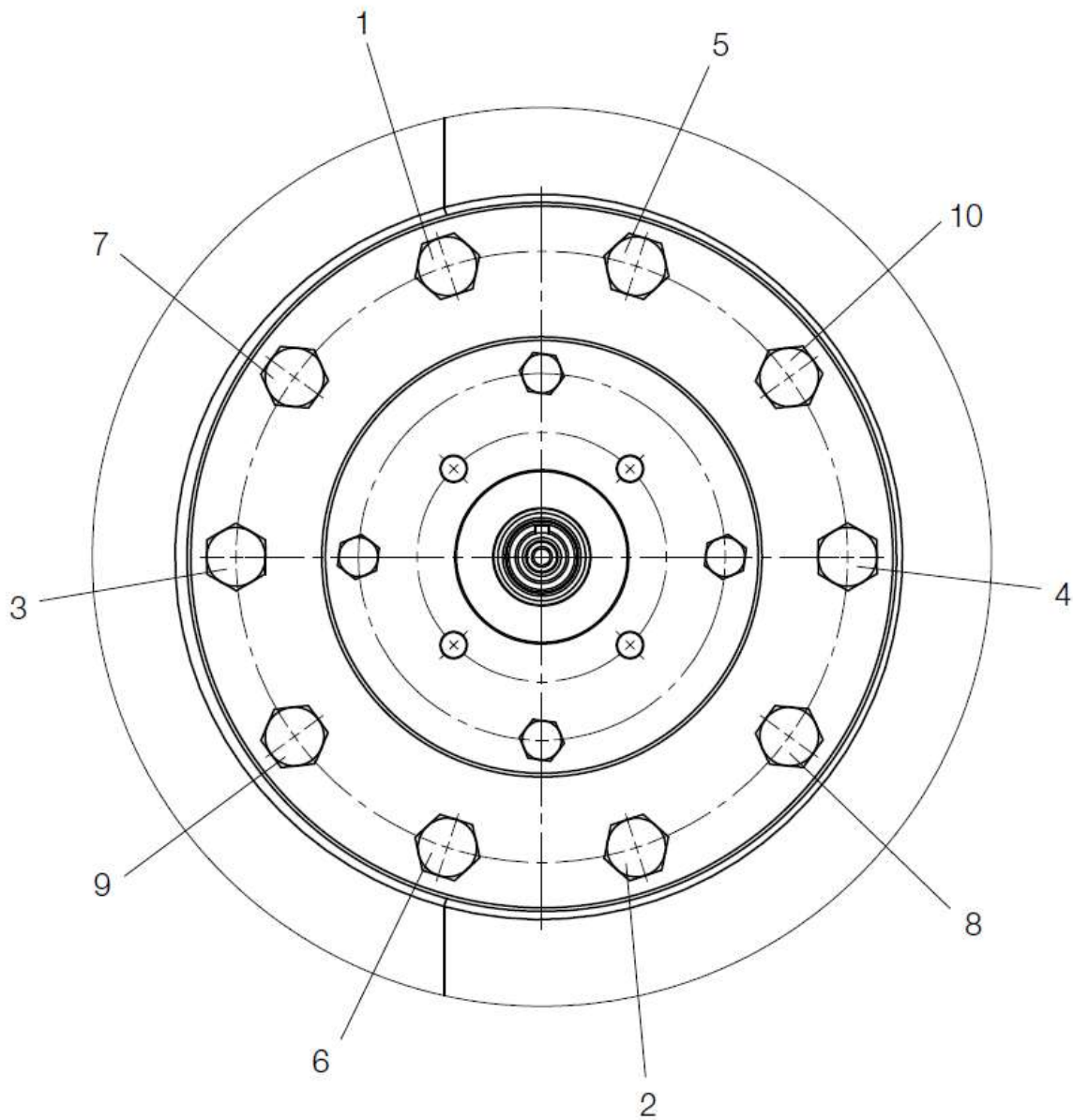


Fig. 2

Tightening the screws (for example item No. 8):

1. Tighten the screws in the number sequence (crosswise) with a torque of up to  $M_A = 60 \text{ Nm}$  (30% of the specified tightening torque). Then check whether the flange connection is supported uniformly on the gasket.
2. Tighten the screws in the number sequence (crosswise) with a torque of up to  $M_A = 170 \text{ Nm}$  (80% of the specified tightening torque).
3. Tighten the screws in the number sequence (crosswise) with a torque of up to  $M_A = 210 \text{ Nm}$ .
4. Tighten the screws clockwise using the specified torque and check them.

## 4. Setting the control actuator

### 4.1 Setting the travel switch WE (“OPEN” and “CLOSED”) on the control actuator (make: DREHMO)

The limit switch for clockwise and anticlockwise operation on the control actuator are supplied ready-set from the factory. The “OPEN” and “CLOSED” travel limit switch is set as specified by the control actuator manufacture (see DREHMO manual).

To reset the travel limit switch, the valve sleeve must be moved to the mechanical stop in the “OPEN” position. From the mechanical stop, the shaft must be turned back through one turn and the travel limit switch set to “OPEN”. The same procedure must be used to set the “CLOSED” position.

**Note**

A 15 mm open-ended spanner or auxiliary tool Part No. 18 357 199 can be used to adjust the valve sleeve.

After the device has been serviced, the position of the travel limit switch on the control actuator must be checked by adjusting the opening range of the control actuator from 0% to 100%.

A number of 72 shaft revolutions is required from the 0% valve sleeve position (zero shut-off) to 100% fully open.

### 4.2 Torque settings on the control actuator

The torque switch in the “OPEN” direction and the torque switch in the “CLOSED” direction are set at the factory to  $M_A = 200$  Nm. Information about adjusting this setting is provided in the operating manual supplied by Drehmo.

## 5. Checking the device for tightness

Checking the pressurized compartments (see page 9)

Checking compartment A against compartment B

The tightness test of compartment A\* against compartment B\*\* is carried out using the system’s operating pressure OP

$$* p_u = OP$$

$$** p_d = p_{amb}$$



**Comply with the safety regulations**

Checking compartment B against compartment A

The tightness test of compartment B\* against compartment A\*\* is carried out using the system’s operating pressure OP

$$* p_u = OP$$

$$** p_d = p_{amb}$$

**Bubble-free tightness must be maintained for a test duration of 5 seconds. The test can be carried out by applying a foaming product or using an equivalent process.**

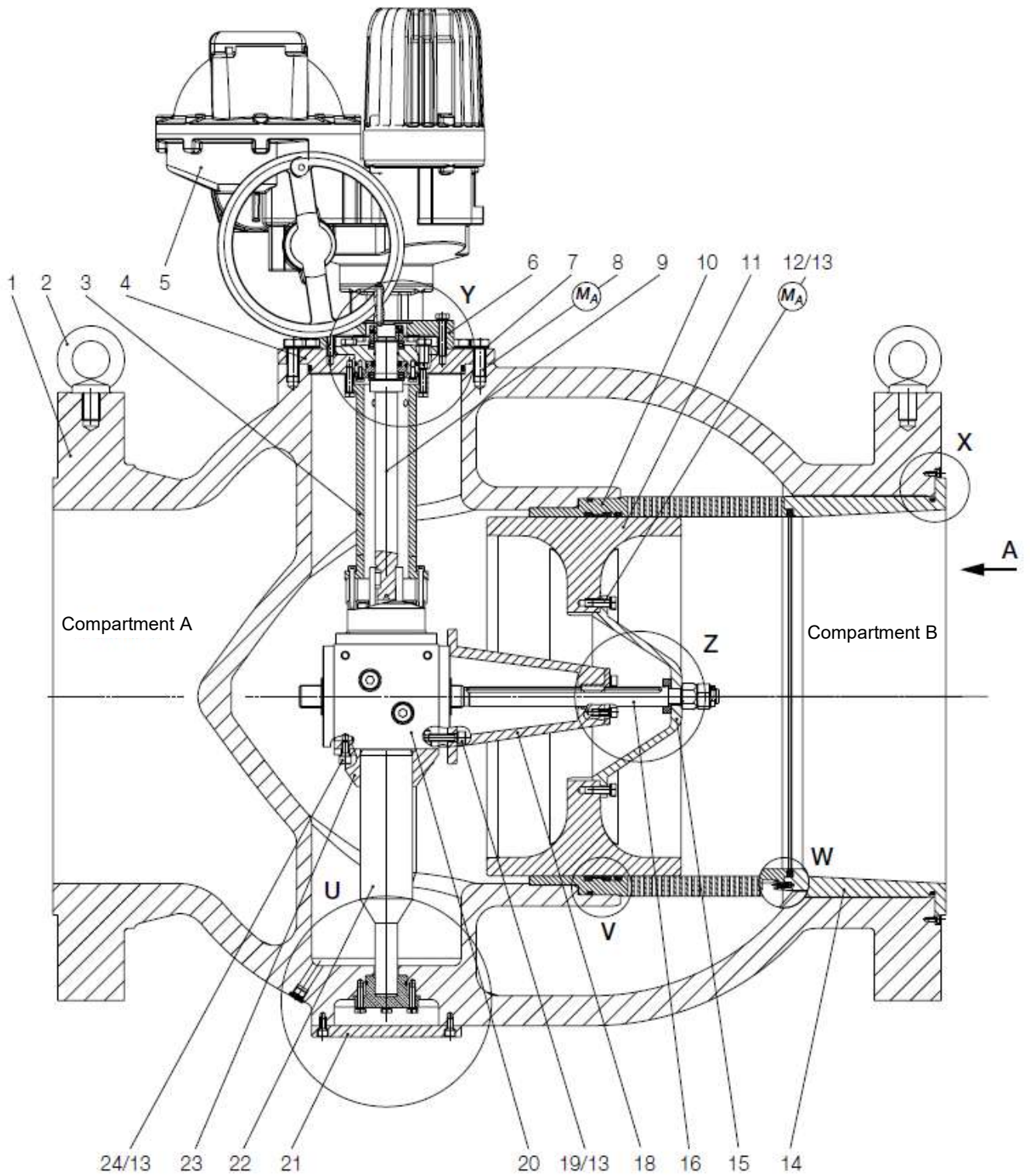


**Comply with the safety regulations**



## 6. Spare parts

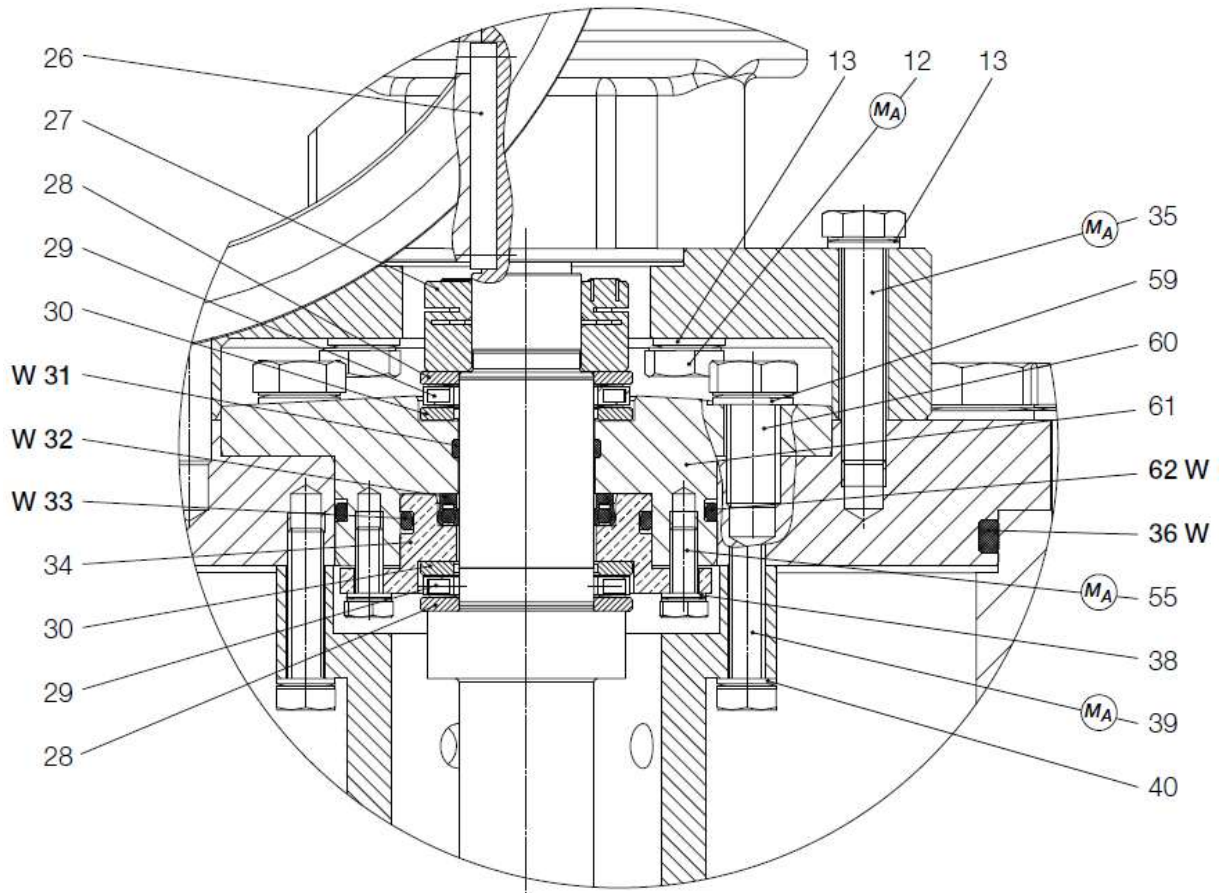
### 6.1 Front view



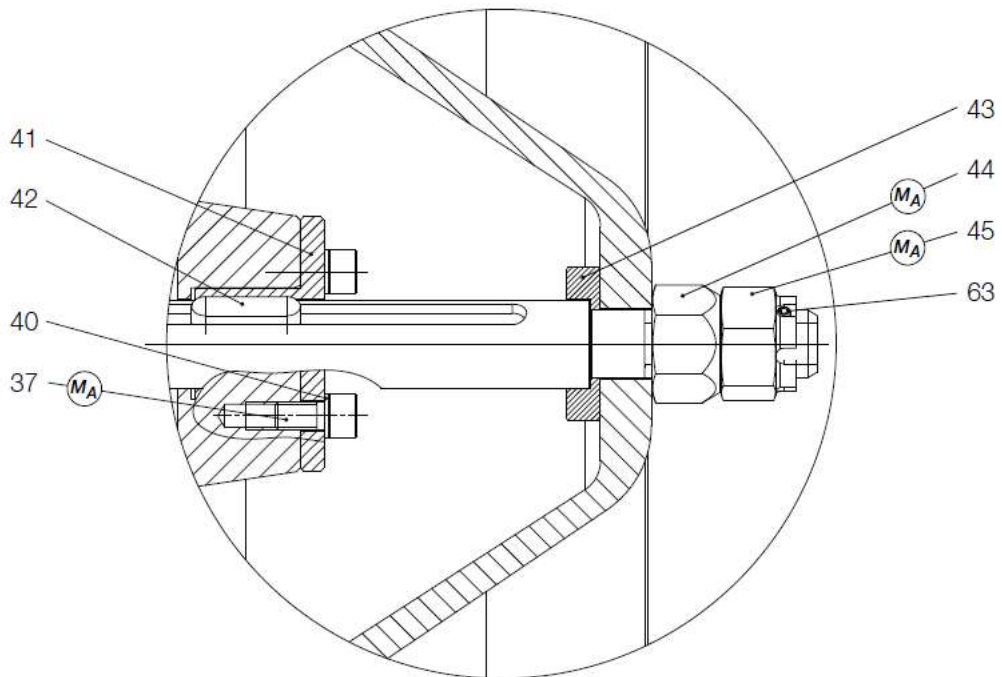
$M_A$  Refer to the tightening torque shown in the table on page 7.

6.2 Details

Detail Y

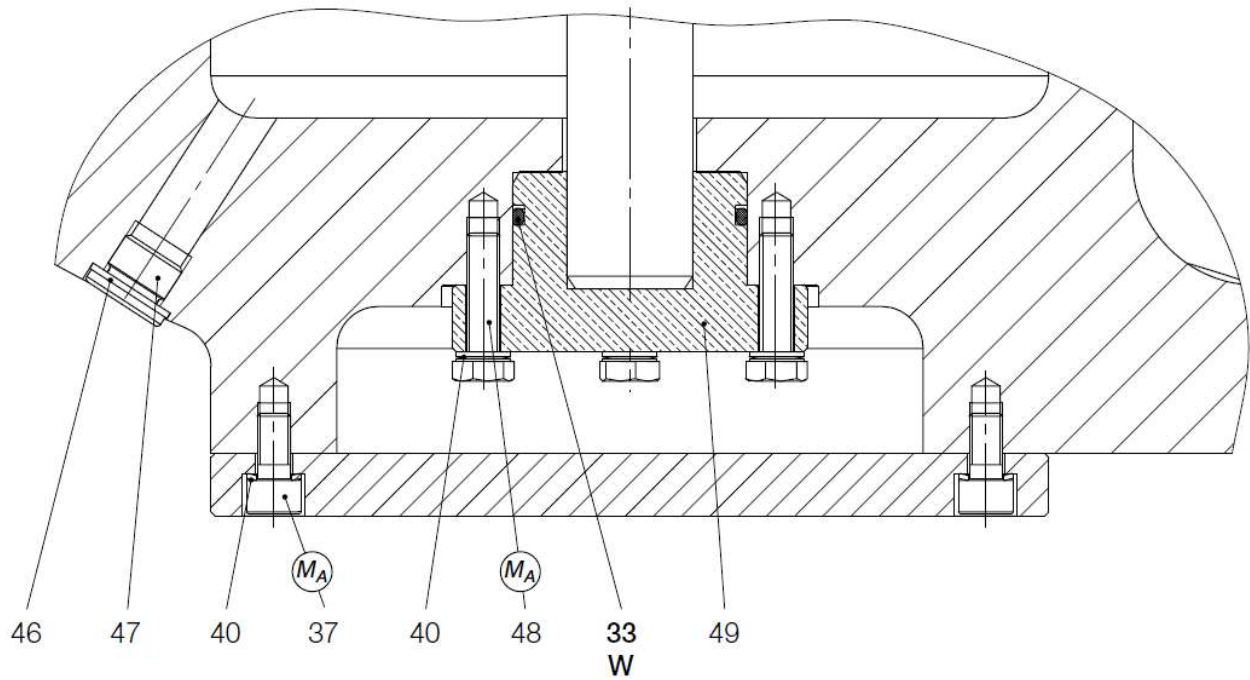


Detail Z

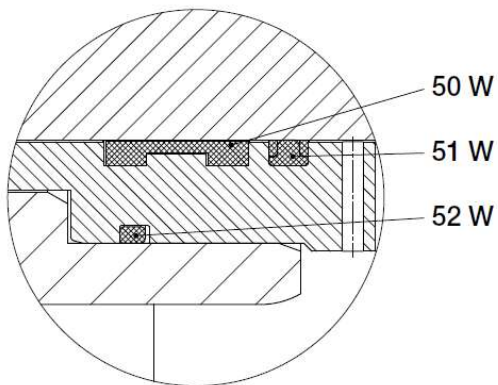


**MA** Refer to the tightening torque shown in the table on page 7.  
**W** Parts to be kept in stock for maintenance work

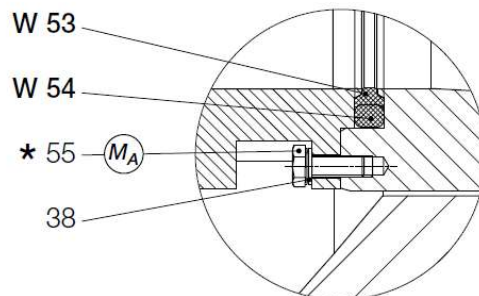
Detail U



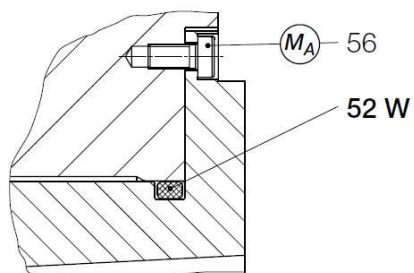
Detail V



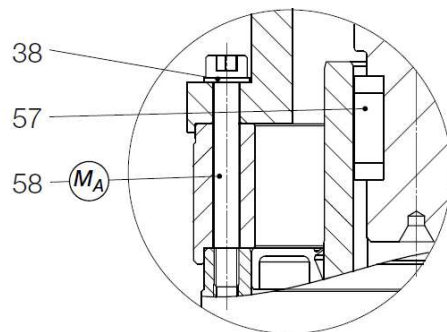
Detail W



Detail X



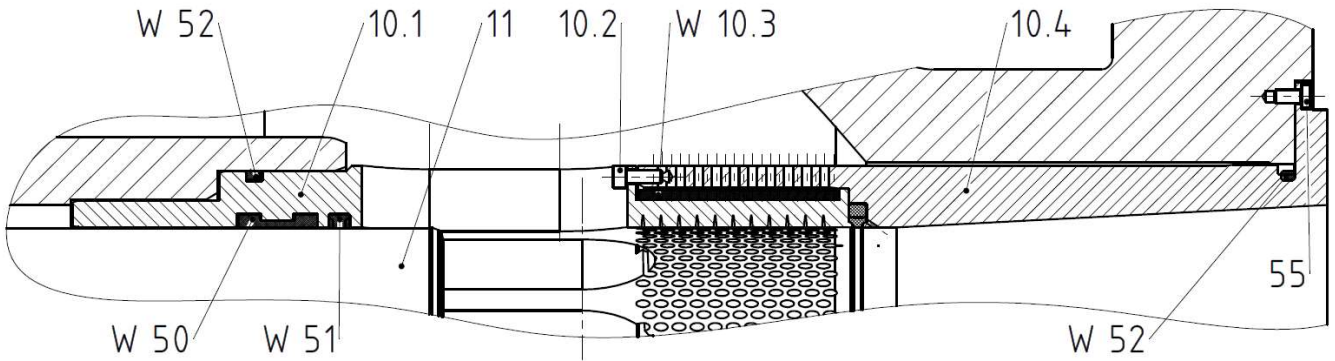
Detail Q



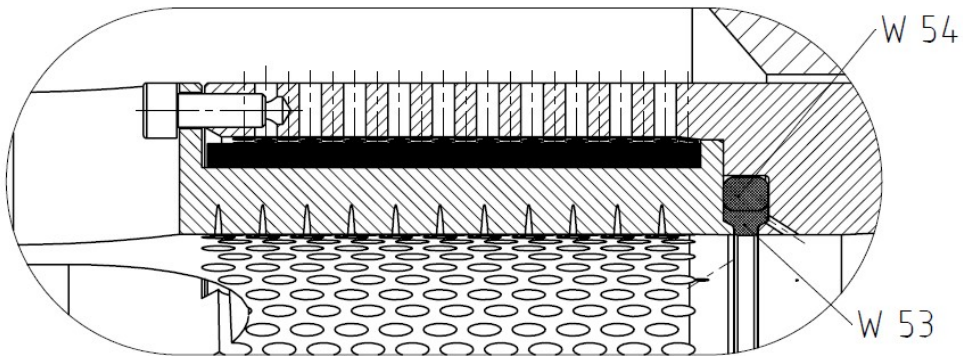
- $M_A$  Refer to the tightening torque shown in the table on page 7.
- W** Parts to be kept in stock for maintenance work
- \* Secure with Loctite thread lock 221

### 6.3 Flow restrictor – silencer (version with additional noise reduction)

Various flow restrictors are installed depending on the configuration of the flow control valve. The standard flow restrictor has a single-piece design and its maintenance comprises cleaning and, if necessary, also checking for damage. The “Silencer” noise-reducing version consists of several components and its maintenance comprises its dismantling and cleaning. Position 10.3 can be replaced if necessary. The sealing and guide elements are identical on both versions of the flow restrictor.



**Note** The fastening element, item No.10.2, should be secured with thread lock, for example Loctite 243. Tightening torque – 10 Nm



## 6.4 Spare parts list

Item No.	Designation	No.	W	Material	Part No.
1	Actuator housing	1		St	10031432
2	Ring bolt	2		St	10047
3	Top support	1		St	10031655
4	Plate	1		St	10031427
5	Rotary actuator	1		St	101347
6	Cover	1		LM	10031428
7	Locking washer	10		St	14116
8	Hexagon screw	10		St	101440
9	Shaft	1		St	10031650
10	Flow restrictor	1		LM	10031514
10	Flow restrictor – silencer consists of items 10.1 – 10.4	1			
10.1	Restrictor sleeve	1		LM	18362382
10.1	Restrictor sleeve	1		NSt	18362405
10.2	Cylinder screw	6		St	10477
<b>10.3</b>	<b>Metal foam insert</b>	<b>1</b>		<b>St</b>	<b>18362384</b>
10.4	Sealing ring with expansion sleeve, RF flange	1		NSt	18362383
10.4	Sealing ring with expansion sleeve, RTJ flange			NSt	18362406
11	Valve sleeve	1		St	10031426
12	Hexagon screw	6		St	3873
13	Locking washer	18		FSt	14113
14	Sealing ring, RF flange	1		NSt	10031436
15	Mounting bushing	1		St	10031653
16	Stem	1		St	10031651
18	Bushing 1	1		St	10031652
19	Cylinder screw	4		St	10274
20	Angular gear	1		St	100680
21	Baseplate	1		St	10031444
22	Bottom support	1		St	10031656
23	Support plate	1		St	10031657
24	Cylinder screw	4		St	8174
26	Parallel key	1		St	26241
27	Adjusting nut	1		St	21195
28	Shaft washer	2		St	21197
29	Axial bearing	2		St/K	21196

### W Parts to be kept in stock for maintenance work

#### Material codes

St ... Steel	LM ... Alloy	GMs ... Cast brass
NSt ... Stainless steel	Ms ... Brass	GZn ... Cast zinc
FSt ... Spring steel	GS ... Cast steel	AlBz ... Aluminium bronze
NFSt ... Stainless spring steel	GGG ... Spheroidal graphite cast iron	K ... Plastic
Bz ... Bronze	GBz ... Cast bronze	KG ... Rubber-type plastic
Cu ... Copper	GLM ... Cast alloy	SSt ... Foam

Item No.	Designation	No.	W	Material	Part No.
30	Housing washer	2		St	21219
<b>31</b>	<b>Guide band</b>	<b>1</b>	<b>W</b>	<b>KG</b>	<b>21194</b>
<b>32</b>	<b>Gasket</b>	<b>1</b>	<b>W</b>	<b>KG</b>	<b>21297</b>
<b>33</b>	<b>O-ring</b>	<b>2</b>	<b>W</b>	<b>KG</b>	<b>20325</b>
34	Bearing bush	1		AIBz	10031429
35	Hexagon screw	4		St	10455
<b>36</b>	<b>O-ring</b>	<b>1</b>	<b>W</b>	<b>KG</b>	<b>21367</b>
37	Cylinder screw	6		St	8176
38	Locking washer	14		FSt	14111
39	Hexagon screw	6		St	8168
40	Locking washer	16		FSt	14112
41	Bushing 2	1		St	10031654
42	Parallel key	2		St	100685
43	Special washer	1		St	10032039
44	Locking nut	1		St	102524
45	Castle nut	1		St	102527
46	Sealing ring	1		LM	18694
47	Screw plug	1		St	10522
48	Hexagon screw	4		St	8179
49	Bearing bush 2	1		AIBz	10031430
<b>50</b>	<b>Guide ring</b>	<b>1</b>	<b>W</b>	<b>KG</b>	<b>101324</b>
<b>51</b>	<b>Gasket</b>	<b>1</b>	<b>W</b>	<b>KG</b>	<b>101325</b>
<b>52</b>	<b>O-ring</b>	<b>1</b>	<b>W</b>	<b>KG</b>	<b>101328</b>
<b>53</b>	<b>Gasket</b>	<b>1</b>	<b>W</b>	<b>KG</b>	<b>101326</b>
<b>54</b>	<b>O-ring</b>	<b>1</b>	<b>W</b>	<b>KG</b>	<b>101327</b>
55	Hexagon screw	10		St	8172
56	Cylinder screw	6		St	10596
57	Parallel key	1		St	100684
58	Cylinder screw M6 x 50	6		St	Component of angular gear
59	Locking washer	6		FSt	14114
60	Hexagon screw M12 x 25	6		St	TE 134387
61	Insert plate	1		St	10031811
<b>62</b>	<b>O-ring</b>	<b>1</b>	<b>W</b>	<b>KG</b>	<b>20337</b>
<b>63</b>	<b>Clamping sleeve</b>	<b>1</b>	<b>W</b>	<b>St</b>	<b>102528</b>

## 7. Parts for maintenance work

General maintenance covers the entire device and must be carried out as required (level of dirt, type of operation, etc.)

Item No.	Designation	Quantity	Part No.
31	Guide band	1	21194
32	Gasket	1	21297
33	O-ring	2	20325
36	O-ring	1	21367
50	Guide ring	1	101324
51	Gasket	1	101325
52	O-ring	2	101328
53	Gasket	1	101326
54	O-ring	1	101327
62	O-ring	1	20337
63	Clamping sleeve	1	102528
10.3	Metal foam insert	1	18362384
-	Lubricant	1	27052

## 8. Special installation tools

Designation	Part No.
Auxiliary tool, drive shaft	18357199

#### **Further information**

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