



OPERATING AND MAINTENANCE INSTRUCTIONS/
SPARE PARTS

EDITION 01/2017

**Serving the Gas Industry
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Honeywell

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1. General information

All persons involved with the assembly, operation and/or maintenance of HON 720 safety shut-off valves must read and understand all of the following documents:

- Technical product information 720.00 - it contains the technical data and dimensions of the equipment as well as instructions concerning set-up and mode of operation.
- General operating manual for gas pressure regulators and safety devices - this Honeywell document contains information on assembly and operation as well as general information on troubleshooting.
- Operating and maintenance instructions / spare parts 720.20 - this document contains more detailed information on assembly and operation of HON 720 safety shut-off valves.

There are national laws and regulations for all sorts of jobs on gas pressure regulators, from planning to maintenance. Be sure to comply. (In Germany, for instance, DVGW work sheets G 600, G 459/II, G 491 and G 495.)

Inspection and maintenance intervals depend mostly on operating conditions and the nature and properties of the gas. There are no general rules or recommendations for intervals. For Germany, we recommend to consider maintenance intervals as stated in DVGW work sheet G 495 in a first instance. However, in the mid-term, intervals must be adapted to the requirements of each specific equipment.



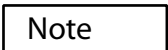
During maintenance, components must be cleaned and then checked thoroughly. This is necessary even if there have not been any unusual observations during operation and/or functional testing. Checks must focus, in particular, on diaphragms and seals and all movable parts and their respective bearings. Any and all defective parts must be replaced with new ones. The same applies to O rings removed during disassembly.

Item numbers mentioned in the specific operating and maintenance instructions correspond with the numbers in the spare parts lists and drawings.

Some parts in the lists and drawings are marked with a letter "W". We recommend you always have a reserve of those parts in stock for maintenance purposes. Those spare parts are put together in another separate list at the end of the spare parts list.

1.1 Safety information

In this manual, safety information is highlighted by means of the following titles and eye catchers:

Eye catchers	used for:
	danger to life and limb
	danger of damage to property and/ or the environment
	important additional information

2. Specific operating instructions

2.1 Opening the safety shut-off valve (SAV in German)

The SAV is equipped with an underpressure shut-off. It can be engaged only if the pressure at the measuring point corresponds to the operating pressure p_a .

When opening, the pressure compensation valve in the valve disc will equalise the pressure automatically.

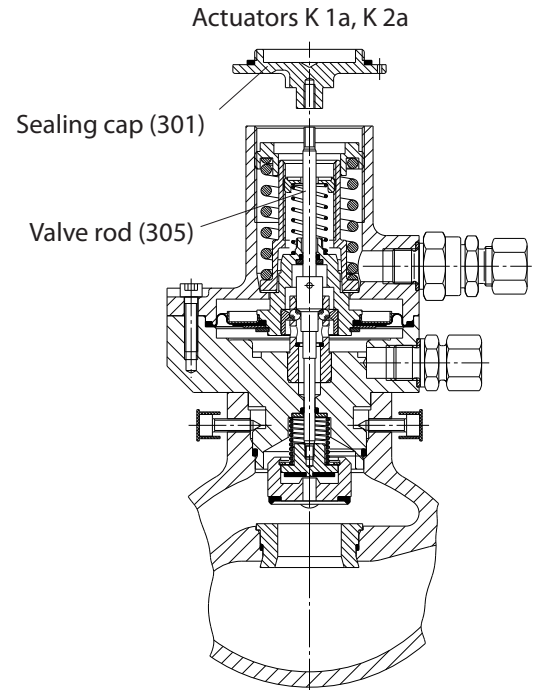
Actuators K 1a, K 2a

Screw off sealing cap (301), turn it around and screw it onto valve rod (305) and SLOWLY turn it against the housing:

The pressure compensation valve is being actuated.

Pull the sealing cap all the way to the limit stop and let it slip back slowly.

The SAV is now open and will engage.

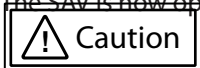


Actuators K 4, K 5, K 6

Push the valve rod towards the actuator housing. To accomplish that you may use e.g. cap (448) and a suitable tool (e.g. a screw driver) as a lever.

Push slowly and wait for the equalisation of pressure to happen. Push the valve rod all the way to the limit stop and let it slip back slowly.

The SAV is now open and will engage.



In order to make sure the SAV works properly and to avoid damage to the valve rod, you must be absolutely sure to properly screw sealing cap

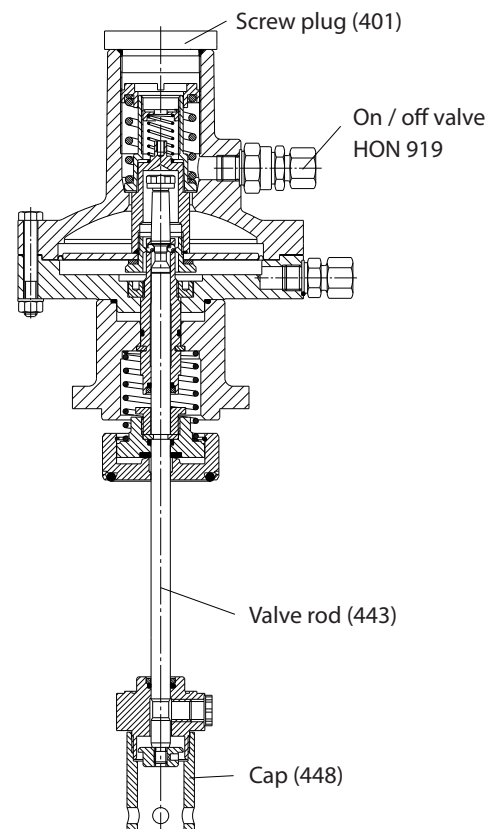
(301)

(for K 1a, K 2a) and/or screw plug (401) (for K 4, K 5, K 6) back in in their normal positions when finished.



Adjust setpoints only when engaged in order to avoid damage to the diaphragm.

Actuators K 4, K 5, K 6



2.2 Actuation tests

Actuation tests may be carried out only if the actuators are properly installed on the switch housing. Otherwise, there is a danger of mechanical damage.

3. Specific maintenance instructions

- Actuators

You must release the SAV before you can dismount it. Devices with underpressure release (standard version) are released automatically.

Note

If you want to dismount the switch mechanism, you must first initiate the underpressure release and then push or pull back valve rod (305, 403) at least to its engaging position ('push' for K4, K 5, K6, 'pull' for K1a, K 2a).

Retrofitting from K4 to K5/K6 and/or K5/K6 to K4 would require to re-zero the device with spacer disc (413). Therefore, it cannot be easily done on the spot.

- Valve rod (305, 443)

The valve rod must move easily. If you should find any damages to the switching face (dents, burs etc.), build in a new valve rod.

If you install a new valve rod on actuators (K 4, K 5, K 6), model 1989 or older, you must also install a new guide cylinder (416) and closing spring (417).

The result will be a device without relief mechanism.

Before you push valve rod (443) into guide cylinder (416), you must push apart the relieving spheres (where old design still exists) from the top side, using assembly bolt W4.

- Spring support (308, 404)

K 1a, K 2a: The contact faces between the spring support and diaphragm disc (312, 326) must be free of grease and oil at all times (K 4, K 5, K 6: between spring support and guide sleeve

[405]).

-

- Relief springs

Actuators supplied before July 1986: Install new relief springs during maintenance on principle (item no. 10 008 640).

-

- Valve disc (420)

To insert O ring (442) into the groove of the valve disc, proceed as follows:

- Grease O ring well and place on groove. Then, push down gently at several, evenly spaced places along the circumference.
- Only then push the O ring completely into the groove.

-

- Compensation disc (413)

The housing consists of the following components: meter works cap (409), meter work flange (412) and SAV connection flange (435). Together with compensation disc (413), they constitute a 'tolerance group'. The purpose of the compensation disc is to precisely zero the device. After the installation of a new diaphragm, the disc must be replaced precisely as it was. Housing

Note

ents, too, may not be replaced with new ones.

If compensation disc (413) must be replaced with a new one, you must transfer its precise thickness onto the new disc (HON part no. 00 014 135). Proceed as follows: Place the two discs side by side. Use a sharp knife to cut away excessive material. (The disc is made up of 0.1 mm layers of aluminium foil.)

-

- Switch bush (433)

Be sure to replace the switch bush immediately as soon as you detect any damage (e.g. dents, burs etc.).

-

- Pipe (336)

Be sure to tighten the pipe for pressure deficiency blocking while ENGAGED (SAV OPEN).

3.1 Tightening torques M_A

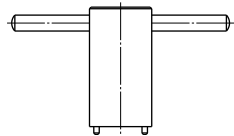
Screws & bolts – item #	57	310	333	411
M_A in Nm	20	12	20	10

3.2 Lubricants

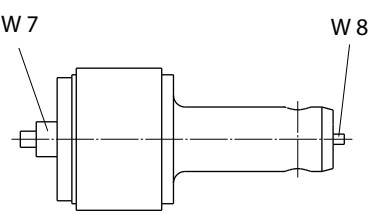

Components (cover with thin layer)	Lubricant	HON part no.
Setpoint adjusting screw (303, 422)	Assembly paste	27091
All O rings Valve-rod guide faces Locking spheres and locking bushes	Silicone grease	27081
Pipe connections	Assembly grease	28267

3.3 Assembling and adjusting tools

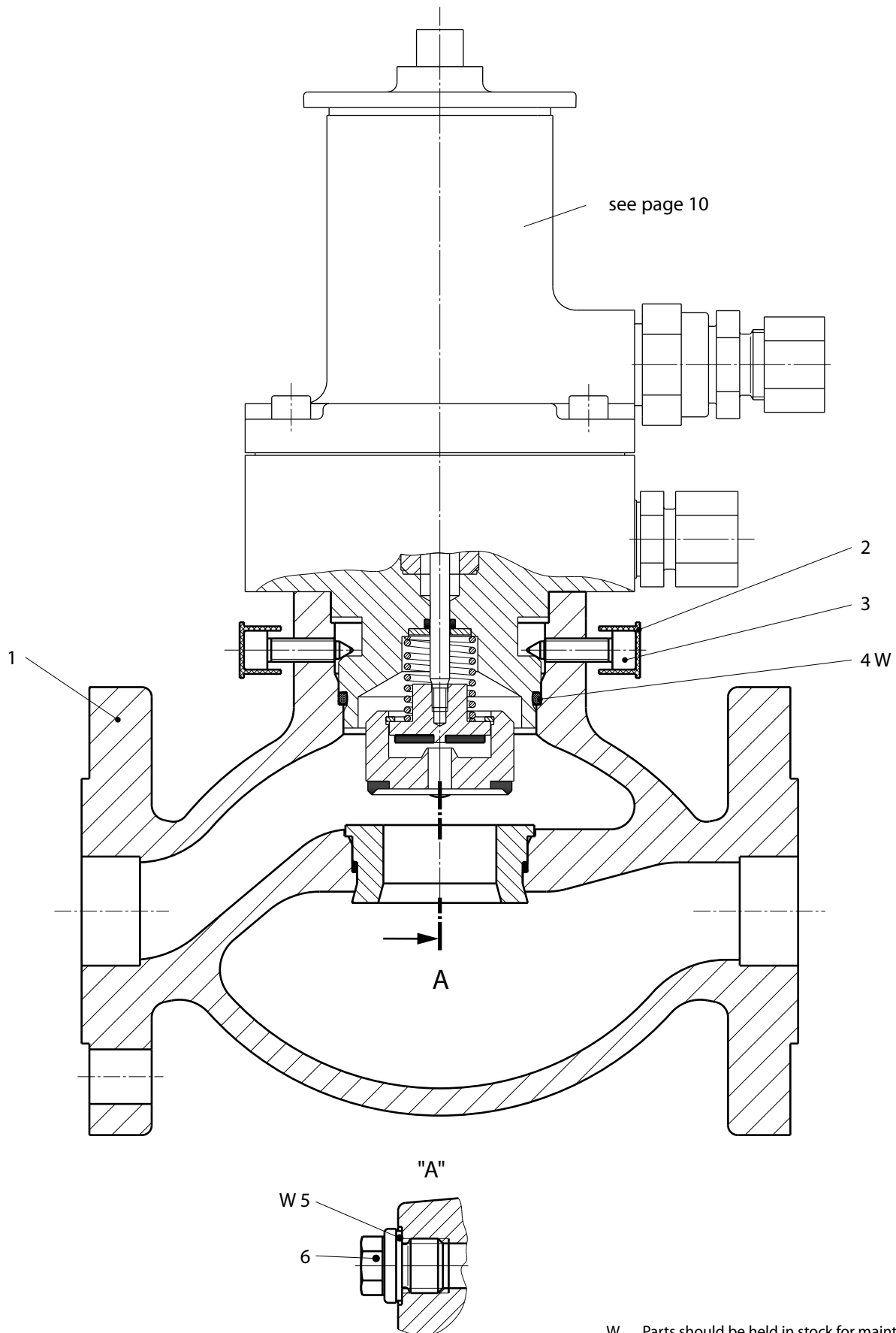
3.3.1 Assembly tools

Nominal width	for item no.	Tool no.	Denomination	Part no.
DN 25	317	W1	Pliers A 19 DIN 5254	26531
DN 25	325	W2	Pliers D 19 DIN 5256	26532
DN 50 thru DN 100	440			
DN 50 thru DN 100	415	W5		10008582

3.3.2 Adjusting tools

Nominal width	for item no.	Tool no.	Denomination	Part no.
DN 25	303	W7		10 004 912
DN 50 thru DN 100	422	W7		
All versions	304, 423	W8		
DN 50 thru DN 100		W9		10 008 580

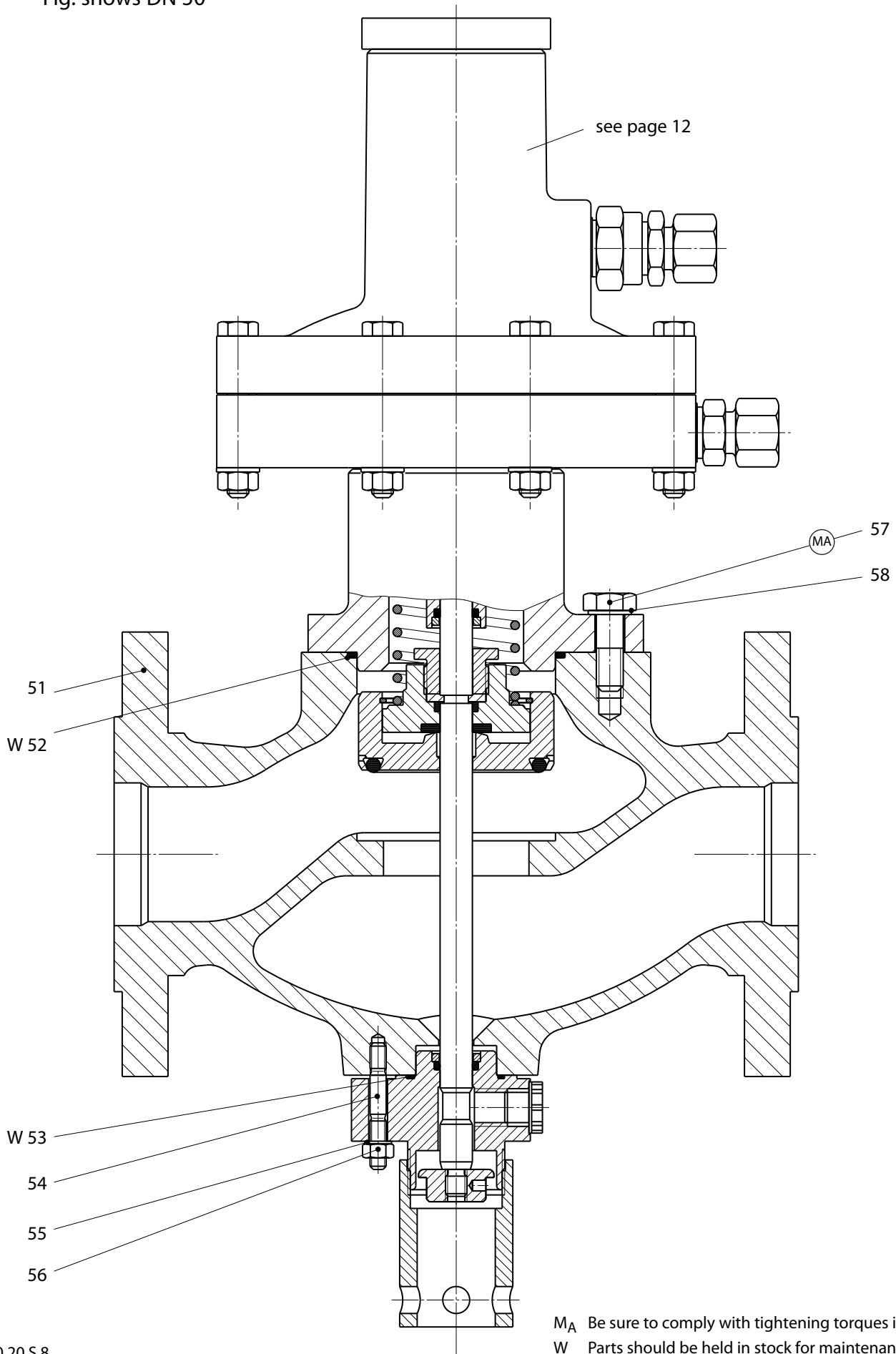
4. Spare parts
4.1.1 Spare parts drawing DN 25



W Parts should be held in stock for maintenance purposes.

4.1.2 Spare parts drawings DN 50 thru DN 100

Fig. shows DN 50



M_A Be sure to comply with tightening torques in table on page 6.
W Parts should be held in stock for maintenance purposes.

4.1.3 Spare parts list DN 25

Item No.	Denomination	No.	W	Material	Part no.
1	Housing, at option:				
1	PN 16	1		GS	10 008 454
1	ANSI 150 (pzul 16 bar)	1		GS	10 008 455
2	Plug	4		K	00 026 066
3	Allen screw	4		St	10 004 895
4	O ring	1	W	KG	00 020 243
5	Sealing ring	1	W	LM	00 018 689
6	Sealing cap	1		St	00 026 175

DN 50 thru DN 100

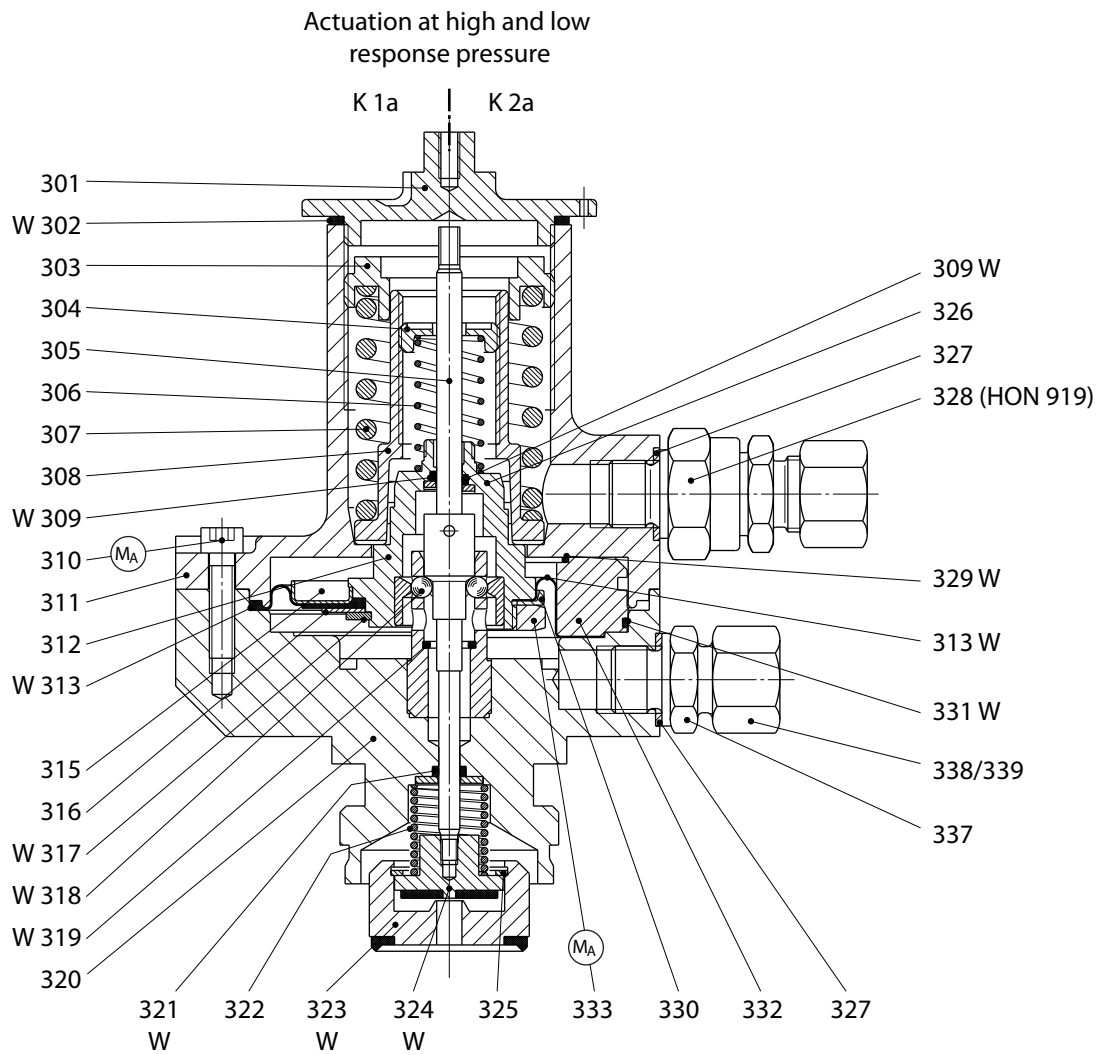
Item No.	Denomination	No.	W	Materials	Part no.		
					DN 50	DN 80	DN 100
51	Housing, at option:						
51	PN 16	1		GGG		10 008 427	10 008 427
51	PN 16	1		GS	10 008 462	10 008 464	10 008 464
51	PN 25	1		GS	10 008 462	10 008 465	10 008 468
51	ANSI 150	1		GS	10 008 463	10 008 466	10 008 466
52	O ring	1	W	KG	00 020 246	00 020 427	00 020 427
53	O ring	1	W	KG	00 020 281	00 020 281	00 020 281
54	Locking screw	4		St	00 012 324	00 012 324	00 012 324
55	Lock washer	4		St	00 014 123	00 014 123	00 014 123
56	Hex nut	4		St	00 003 399	00 003 99	00 003 399
57	Hex screw	4		St	00 010 032	00 010 445	00 010 445
58	Lock washer	4		St	00 014 113	00 014 115	00 014 115

W Parts should be held in stock for maintenance purposes.

German abbreviations stand for the following materials:

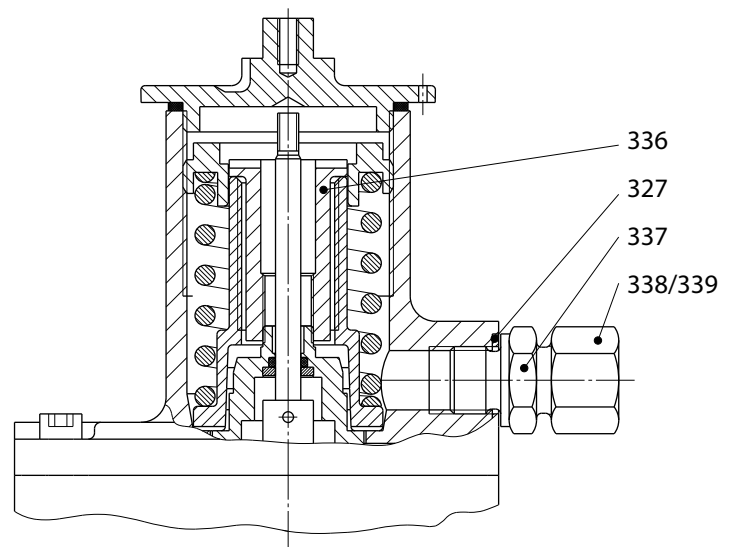
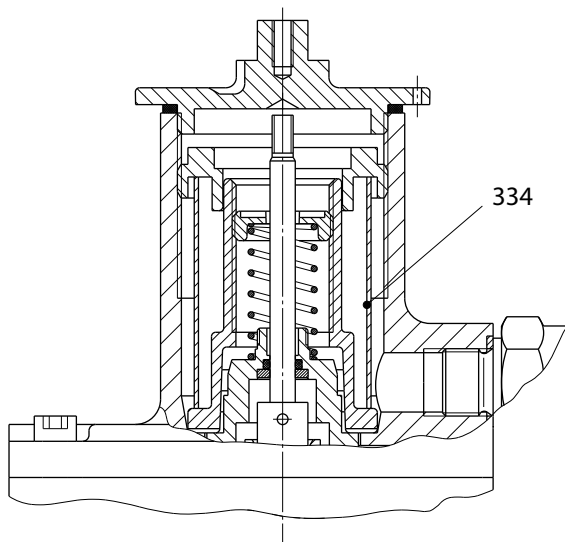
St ... steel	LM ... light metal / alloy	GMs ... cast brass
NSt ... stainless steel	Ms ... brass	GZn ... cast zinc
FSt ... spring steel	GS ... cast steel	AlBz ... aluminium bronze
NFSt ... stainless spring steel	GGG ... spheroidal graphite cast iron	K ... synthetic materials
Bz ... bronze	GBz ... cast bronze	KG ... gummos synthetic materials
Cu ... copper	GLM ... cast light metal	SSt ... foamed materials

4.2.1 Actuators K 1a, K 2a



Actuation at low response pressure only

Actuation at high response pressure only
Special design (without diaphragm-break safety device)



MA Be sure to comply with tightening torques in table on page 6.

W Parts should be held in stock for maintenance purposes.

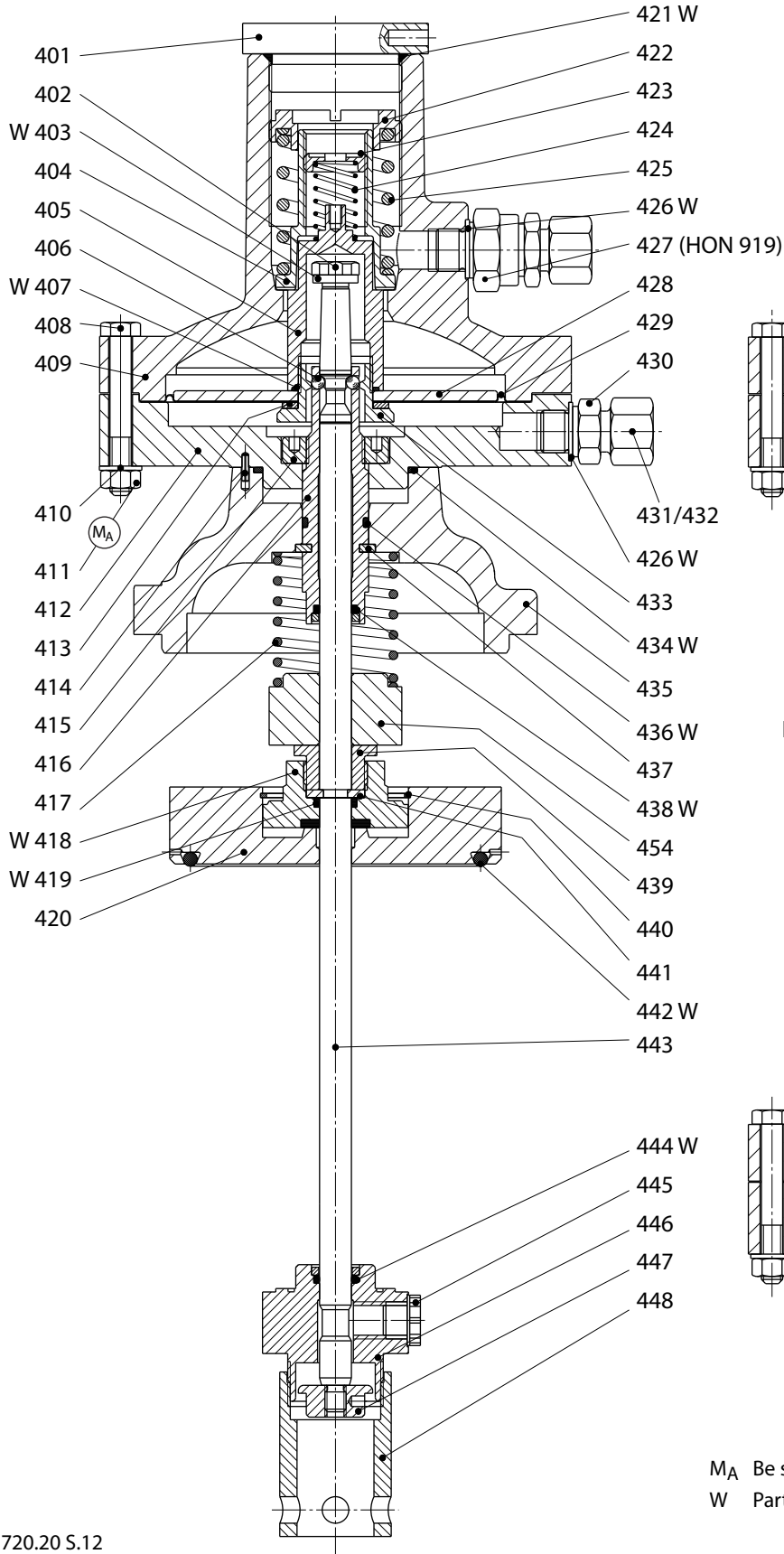
4.2.2 Spare parts list

Item No.	Denomination	No.	W	Material	Part no.	
					K 1a	K 2a
301	Sealing cap	1		LM	10000854	10000854
302	Sealing ring	1	W	K	20343	20343
303	Spring plate	1		Ms	10001844	10001844
304	Spring plate	1		K	10000856	10000856
305	Rod, complete	1		NSt	10008635	10008635
306	Pressure spring for low response pressure, optionally:					
306	Wire – 1.1 (light blue)	1		SF	10000868	10000 868
306	Wire – 1.2 (white)	1		SF	10001837	
306	Wire – 1.4 (black)	1		SF	10001760	10001760
307	Pressure spring for high response pressure, optionally:					
307	Wire – 2.5 (yellow)	1		SF	10001838	
307	Wire – 3.2 (light red)	1		SF	10000866	10000866
307	Wire – 3.6 (dark red)	1		SF	10000867	10000867
307	Wire – 4.75 (white)	1		SF	10001839	10001839
308	Spring support	1		K	10008563	10008563
309	O ring	1	W	KG	21069	21069
310	Cheese head screw	4		St	10150	10150
311	Spring housing	1		GLM	10010608	10000608
312	Lock bushing, complete	1		LM/NSt/St	10010619	
313	Diaphragm	1	W	KG	10010610	18354902
315	Diaphragm disc	1		St	10010611	
316	Pressure disc	1		LM	10004882	
317	Sealing ring	1	W	FSt	19131	
318	Sphere	4	W	NSt	5108	5108
319	O ring	1	W	KG	20371	20371
320	SAV bottom, complete	1		LM/NSt ...	10010585	10010585
321	O ring	1	W	KG	20345	20345
322	Pressure spring	1		FSt	10008227	10009227
323	Valve disc, vulcanised	1	W	LM/KG	10004842	10004842
324	Valve disc, vulcanised	1	W	LM/KG	10003580	10003580
325	Sealing ring	1	W	FSt	19093	19093
326	Diaphragm disc, complete	1		LM/KG		10004929
327	Sealing ring	1	W	LM	18694	18694
328	On / off valve HON 919-1	1			10022971	10022971
329	O ring	1	W	KG		20361
330	Support ring	1	W	LM		10004938
331	O ring	1	W	KG		21005
332	Intermediate ring	1		LM		10010598
333	Hex nut	1		St		10004924
334	Stopping pipe	1		LM	10001784	10001784
336	Pipe	1		LM	10024060	10024060
337	Screwed socket	1		St	10007642	10007642
338	Union nut	1		St	30804	30804
339	Cutting ring	1		St	30904	30904

4.2.3 Actuators K 4, K 5, K 6

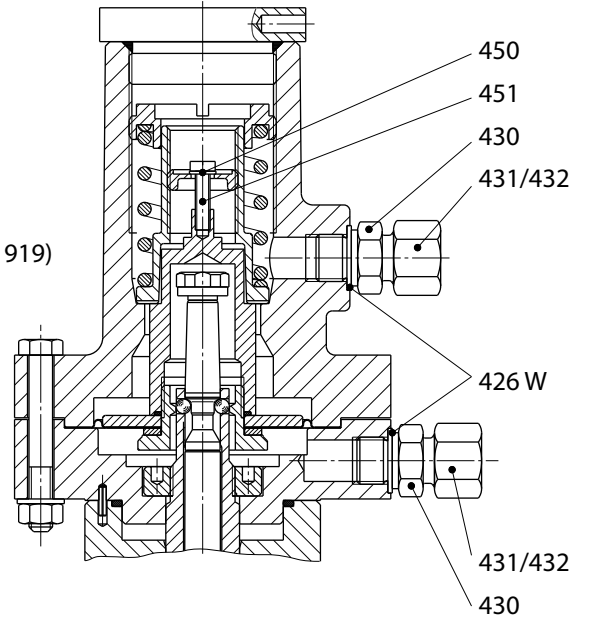
K4

Fig. shows actuation at high and low response pressure



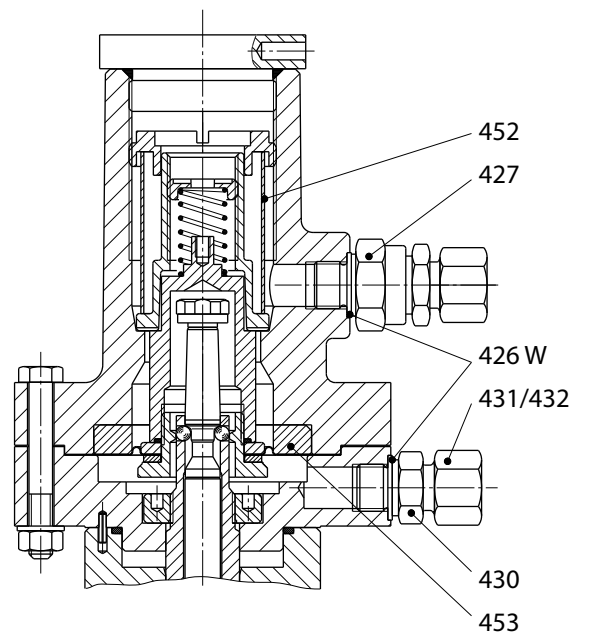
K5

Fig. shows actuation at high response pressure only



K6

Fig. shows actuation at low response pressure only



M_A Be sure to comply with tightening torques in table on page 6.
W Parts should be held in stock for maintenance purposes.

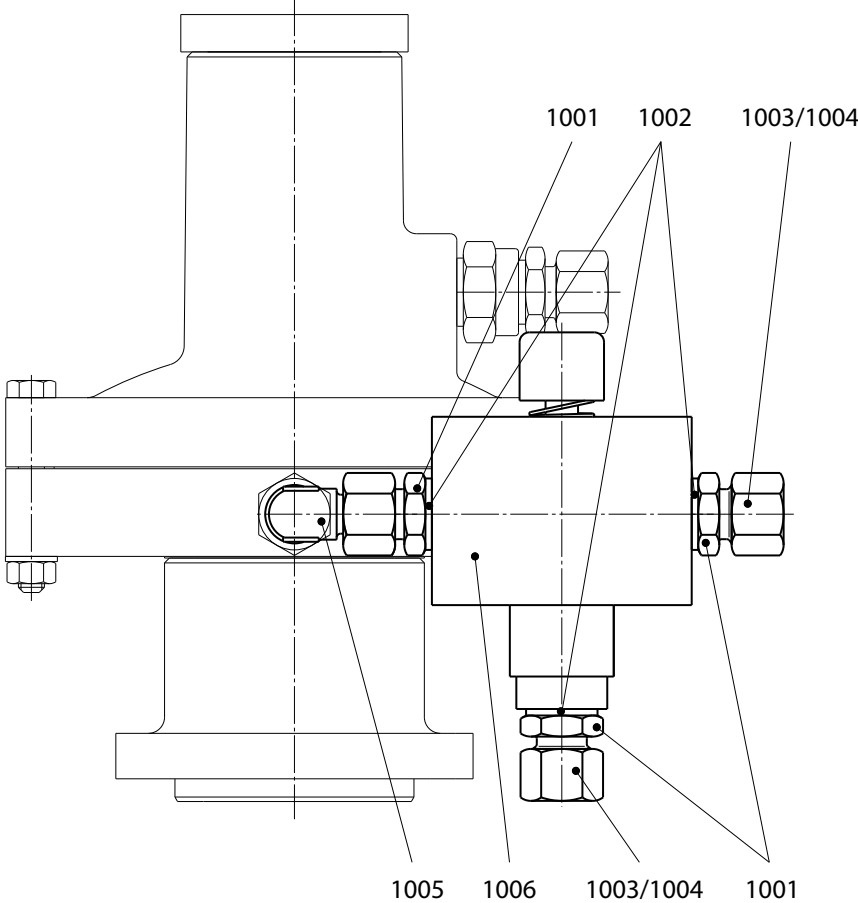
4.2.4 Spare parts list

Item No.	Denomination	No.	W	Material	Part no.		
					DN 50	DN 80	DN 100
401	Sealing cap	1		LM	10008569	10008569	10008569
402	Hex nut	1		St	10021404	10021404	10021404
403	Buffer disc	1	W	KG	10022115	10022115	10022115
404	Spring support	1		K	10008563	10008563	10008563
405	Guide sleeve	1		Ms	10008564	10008564	10008564
406	Sphere			NSt	5108	5108	5108
407	O ring	1	W	KG	20430	20430	20430
408	Hex screw, at option:						
408	for K4	10		St	10043	10043	10043
408	for K5, K6	6		St	10043	10043	10043
409	Meter works cap, at option:						
409	for K 4	1		GLM	10008533	10008533	10008533
409	for K5 and K6	1		GLM	10008535	10008535	10008535
410	Disc, at option:						
410	for K4	10		St	8281	8281	8281
410	for K5, K6	6		St	8281	8281	8281
411	Hex nut, at option:						
411	for K4	10		St	5559	5559	5559
411	for K5, K6	6		St	5559	5559	5559
412	Meter works flange, at option:						
412	for K 4	1		LM	10008521	10008521	10008521
412	for K 5 and K 6	1		LM	10008523	10008523	10008523
413	Compensation disc	1		LM	CAUTION Read info page 5.		
414	Straight pin	1		St	17201	17201	17201
415	Round nut with drilled holes in one face	1		St	10008567	10008567	10008567
416	Guide cylinder, complete	1		Al/St/KG	10008557	10008557	10008557
417	Pressure spring	1		FSt	10008577	10008577	10008577
418	Valve plate, vulcanised	1	W	LM/KG	10008606	10008606	10008606
419	O ring	1	W	KG	20412	20412	20412
420	Valve plate	1		LM	10 008 599	10008601	10 008 601
421	O ring	1	W	KG	20243	20243	20243
422	Spring plate	1		Ms	10001844	10001844	10001844
423	Spring plate	1		K	10000856	10000856	10000856
424	Pressure spring for low response pressure, optionally:						
424	Ø 1.1 light blue	1		FSt	10000868	10000868	10000868
424	Ø 1.4 black	1		FSt	10001760	10001760	10001760

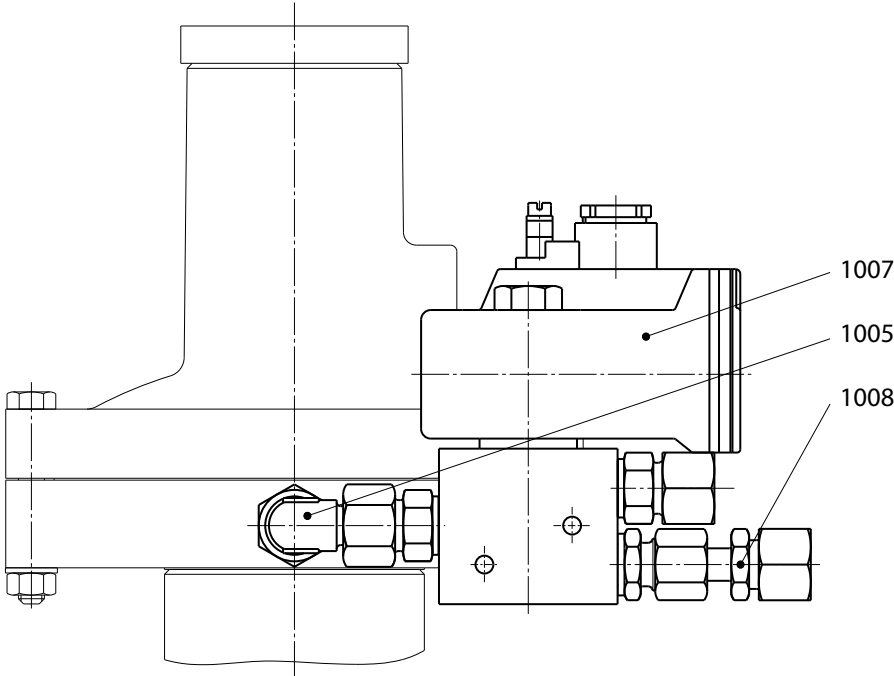
Item No.	Denomination	No.	W	Material	Part no.		
					DN 50	DN 80	DN 100
425	Pressure spring for high response pressure, optionally:						
425	Ø 3.2 light red	1		FSt	10000866	10000866	10000866
425	Ø 3.6 dark red	1		FSt	10000867	10000867	10000867
425	Ø 4.5 black	1		FSt	10001761	10001761	10001761
426	Sealing ring	2	W	LM	18694	18694	1894
427	On / off valve HON 919	1		-	10022971	10022971	10022971
428	Diaphragm disc, at option:						
428	for K 4	1		LM	10008551	10008551	10008551
428	for K 5	1		LM	10008552	10008552	10008552
428	for K 6	1		LM	10008553	10008553	10008553
429	Diaphragm, at option:						
429	for K 4	1	W	KG	10008545	10008545	10008545
429	for K 5	1	W	KG	10008547	10008547	10008547
429	for K 6	1	W	KG	10008549	10008549	10008549
430	Connection pipe	1		St	10113	30113	30113
430	Connection pipe (without diaphragm-break safety device)	2		St	10113	30113	30113
431	Union nut	1		St	30804	30804	30804
431	Union nut (without diaphragm-break safety device)	2		St	30804	30804	30804
432	Cutting ring	1		St	30904	30904	30904
432	Cutting ring (without diaphragm-break safety device)	2		St	30904	30904	30904
433	Switch bush	1		NSt	10008616	10008616	10008616
434	O ring	1	W	KG	20413	20413	20413
435	SAV connection flange	1		St	10008500	10008502	10 008 502
436	O ring	1	W	KG	20383	20383	20383
437	Ring segment	2		St	10007589	10007589	10007589
438	O ring	1	W	KV	20752	20752	20752
439	Nut	1		St	10008614	10008614	10008614
440	Snap ring	1		FSt	19127	19127	19127
441	Ring segment	2		St	10008612	10008612	10008612
442	O ring	1	W	KG	20596	20266	20268
443	Valve rod, complete	1		NSt/St	10026331	10026337	10026337
444	O ring	1	W	KV	20752	20752	20752
445	Screwed plug	1		K	26550	26550	26550
446	Valve rod guide	1		LM	10008571	10008571	10008571
447	Valve rod cap	1		LM	10008579	10008579	10008579
448	Cap	1		LM	10008581	10008581	10008581
450	Disc	1		St	6157	6157	6157
451	Cheese head screw	1		St	11084	11084	11084
452	Stopping pipe	1		LM	10001784	10001784	10001784
453	Meter works ring (only for K6)	1		LM	10008538	10008538	10008538
454	Spring-loaded intermediate piece	1		LM	10008641	10008641	10 008 641

4.3 Accessories

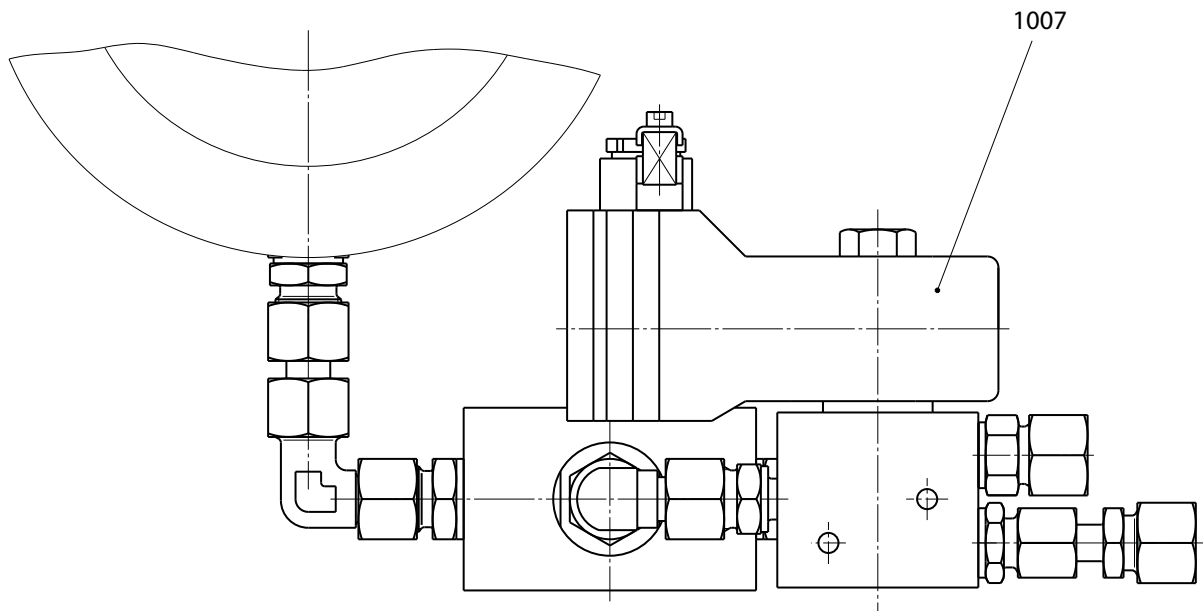
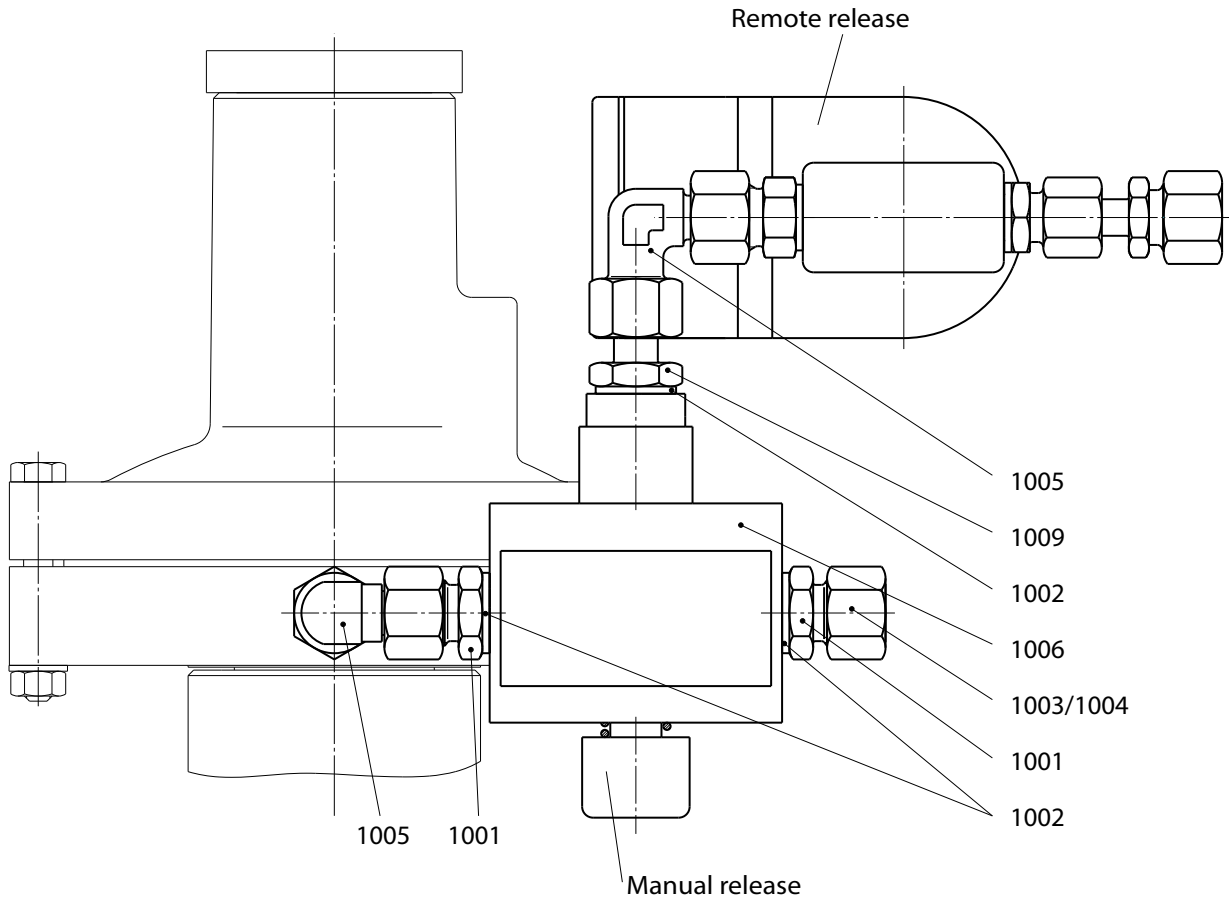
Manual release



Remote release when power is online

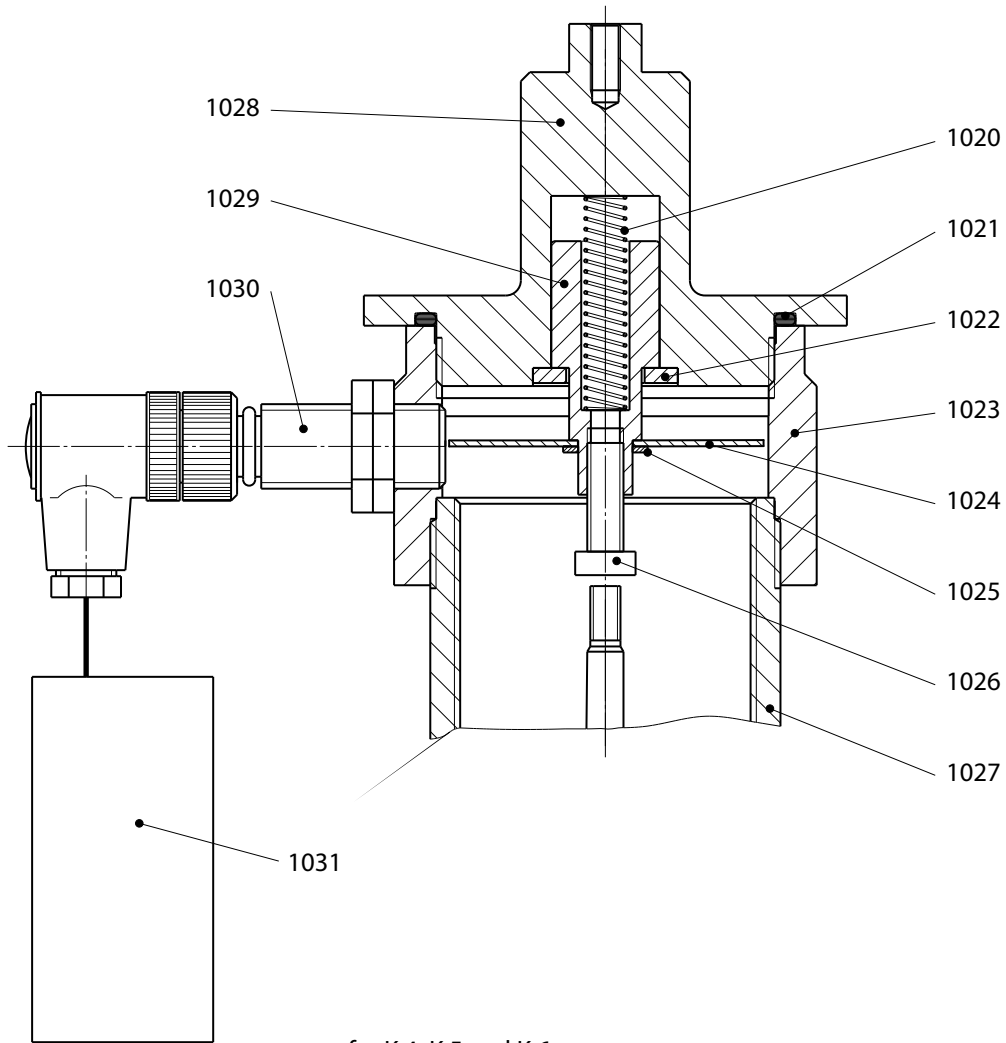


Remote / manual release when power is online

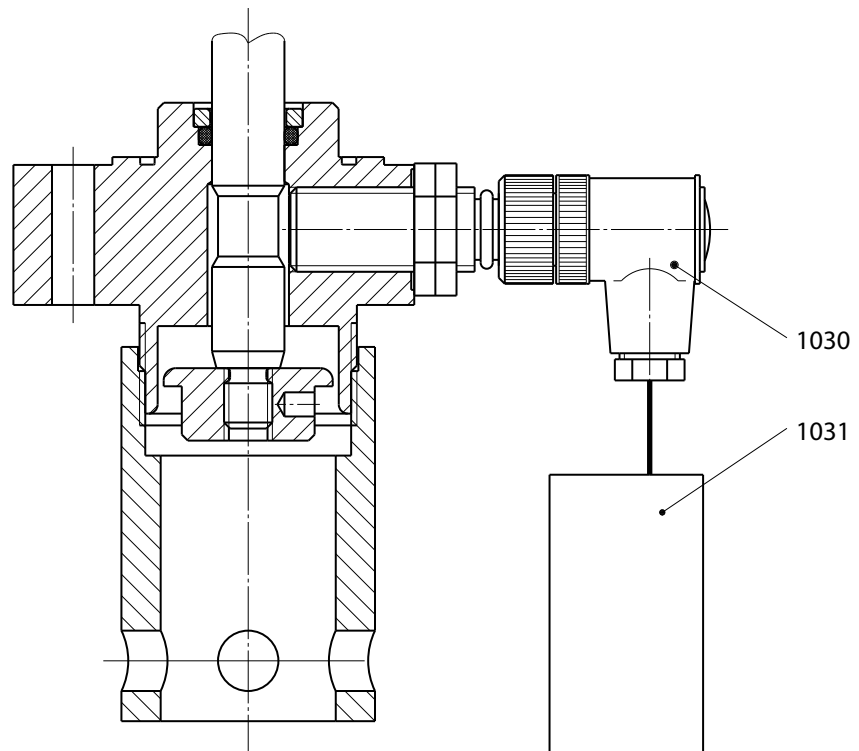


Electrical remote control

for K 1a and K 2a



for K 4, K 5 and K 6



4.3.2 Accessories

Manual release

Item No.	Denomination	Number	W	Material	Part no.
1001	Connection pipe	3		St	31113
1002	Sealing ring	3		LM	18694
1003	Union nut	2		St	30804
1004	Cutting ring	2		St	30904
1005	Connection pipe	1		St	31213
1006	Push button valve HON 912	1			10005070

Remote release when power is online

1005	Connection pipe	1		St	31213
1007	3/2-port directional control valve, at option:				
1007	24 V DC	1			24505
1007	230 V AC	1			24506
1008	Screwed reducing connection	1		St	31893

Remote / manual release when power is online

1001	Connection pipe	3		St	31113
1002	Sealing ring	3		LM	18694
1003	Union nut	2		St	30804
1004	Cutting ring	2		St	30904
1005	Connection pipe	1		St	31213
1006	Push button valve HON 912	1			10005070
1007	3/2-port directional control valve, at option:				
1007	24 V DC	1			24505
1007	230 V AC	1			24506
1009	Connection pipe	1		St	30038

Electrical remote control

1020	Pressure spring	1		FSt	10014020
1021	O ring	1	W	KG	20425
1022	Disc	1		St	8271
1023	Intermediate ring	1		LM	10004792
1024	Disc	1		St	10004795
1025	Seeger indented ring	1		FSt	19188
1026	Cheese head screw	1		St	11020
1027	Spring housing	1		GLM	10010616
1028	Sealing cap	1		LM	10004793
1029	Spring guide	1		LM	10004794
1030	Proximity switch	1			24046
1031	Disconnection device, at option:				
1031	24 V DC	1			24400
1031	230V AC	1			24402

4.4 Parts for maintenance purposes

Item No.	Denomination		Number	Part no.			
				DN 25	DN 50	DN 80	DN 100
4	O ring		1	20243			
5	Sealing ring		1	18689			
50	O ring		1		20246	20427	20427
53	O ring		1		20281	20281	20281
302	Sealing ring	1	K	20343			
309	O ring	1	KG	21069			
313	Diaphragm, at option:						
313	for K 1a	1	KG	10010610			
313	for K 2a	1	KG	18354902			
317	Sealing ring (K 1a)	1	FSt	19131			
318	Sphere	4	NSt	5108			
319	O ring	1	KG	20317			
321	O ring	1	KG	203454			
323	Valve disc, vulcanised	1	LM/KG	10004942			
324	Valve disc, vulcanised	1	LM/KG	10003580			
325	Sealing ring	1	FSt	19093			
327	Sealing ring	1	LM	18694			
329	O ring (K 2a)	1	KG	20361			
330	Support ring (K 2a)	1	LM	10004938			
331	O ring (K 2a)	1	KG	21005			
403	Buffer disc	1	KG		10022115	10022115	10022115
407	O ring	1	KG		20430	20430	20430
418	Valve plate, vulcanised	1	LM/KG		10008606	10008606	10008606
419	O ring	1	KG		20412	20412	20412
421	O ring	1	KG		20243	20243	20243
426	Sealing ring	2	LM		18694	18694	18694
429	Diaphragm, at option:						
429	for K 4	1	KG		10008545	10008545	10008545
429	for K 5	1	KG		10008547	10008547	10008547
429	for K 6	1	KG		10008549	10008549	10008549
434	O ring	1	KG		20413	20413	20413
436	O ring	1	KG		20383	20383	20383
438	O ring	1	KV		20752	20752	20752
442	O ring	1	KG		20596	20266	20268
444	O ring	1	KG			20 752	
1021	O ring	1	KG			20 425	

For More Information

To learn more about Honeywell's
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