

SSV-Actuator RMG 673 (K 1a, K 2a)



**Operation and Maintenance,
Spare Parts**

673.20
edition 11/1993



CONTROLS SUPPLY CHAIN
VALVES ACTUATORS INSTRUMENTATIONS

Serving the Gas Industry - WORLDWIDE



1. General

Our leaflet 720.00 gives full information with technical data, different versions, and dimensions of the complete safety shut-off valve type RMG 720.

Our brochure "General Operating Instructions for Gas Pressure Regulators and Safety Devices" will be useful to fit the valve into the line, put it into service and find faults that might disturb its operation.

The construction, set-up, supervision and maintenance of gas pressure regulating stations are subject to special national technical rules which should be strictly observed, for example those given by the German DVGW Worksheets G 490, G 491, and G 495.

The frequency of periodical maintenance to be foreseen for the safety shut-off unit RMG 673 should be determined according to the prevailing service conditions and the type and composition of the gaseous medium. We, therefore, abstain from imposing any fixed intervals. In Germany please refer to the recommendations given by the DVGW Worksheet G 495 on "Gas Pressure Regulating Stations and Metering Stations for High Gas Volumes - Supervision and Maintenance".

For maintenance all parts are to be cleaned and subjected to a thorough visual inspection. A visual inspection should not be omitted when the course of operation or performance tests have shown lack of response accuracy.

Particular care should be given to the checking of sealings and diaphragms, as well as all carrying and movable parts. Damaged parts should be replaced by new ones.

The item numbers referred to in the maintenance instructions are identical with those of the spare parts drawings and spare parts lists.

We recommend to keep all parts that are specially marked "W" in the spare parts lists in stock for prompt maintenance availability.

This safety shut-off unit is used in the following main bodies. Therefore please refer also to the relevant manuals for "Operation and Maintenance, Spare Parts" stated below:

valve type	manual: "Operation and Maintenance, Spare Parts"
RMG 300	300.20
RMG 330	330.20
RMG 332	332.20
RMG 402	402.20
RMG 703	703.20
RMG 704	703.20
RMG 720	720.20

2. Special operating hints

2.1. Opening the safety shut-off unit (SSV)

The SAV is provided with underpressure shut-off release. Re-engagement is possible only after the pressure prevailing at the measuring point comes up to the service pressure p_a . The pressure compensation necessary for re-opening is automatically effected by the pressure compensating valve integrated in the valve plate.

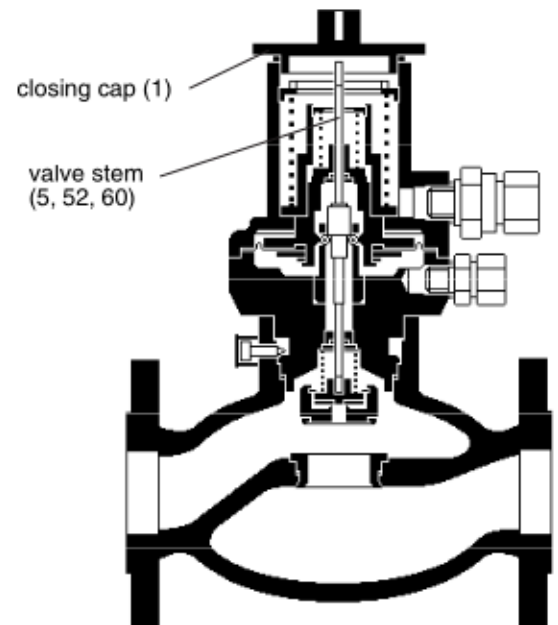
actuator K 1a, K 2a for RMG 720 DN 25 and for RMG 300, RMG 330, RMG 332 RMG 402

The pressure compensation is effected automatically when the valve plate is opened:

Screw out closing cap (1) , turn upside-down, screw it on to the valve stem (5, 52, 60) and turn the lid slowly towards the body. The pressure compensation will respond. Pull the locking cap back to the stop and let it glide back slowly: The SSV re-engages and stays in the "OPEN" position.

ATTENTION:

In order to ensure perfectly reliable SAV-release performance after re-engagement, it is **indispensable** to screw the locking cap (1) back into its normal position.

actuator K 1a, K 2a for RMG 703 and RMG 704

The necessary pressure compensation is effected by opening the by-pass valve (ball valve or needle valve type RMG 913) situated at the side of the main valve body.

ATTENTION: The by-pass ball valve must be closed again after re-engagement.

Screw off the closing cap (107), turn it around and place it on the valve stem (112). Push down the valve stem to the stop and let it glide slowly upwards again. The SSV re-engages and stays in the "OPEN" position.

3. Special maintenance instructions

Trip the SAV before you remove it from the body. SAV valves provided with underpressure release (standard version) will close automatically.

- Prior to dismantling the tripping mechanism, the valve plate and the valve stem (5, 52, 60, 112) of a measuring unit released by underpressure should be moved back to reach at least its re-engagement position (this refers to RMG 703 and RMG 704).
- It is important that the valve stem (5, 52, 60, 112) can be moved easily and smoothly. Should any faults or damages of material (e.g. ridges or flaws) be detected at the valve stem shoulder, the valve stem has to be replaced by a new one.
- The contact surfaces between spring retainer (8) and diaphragm plate (26), or switch bush (12, 136), should be kept free from grease.
- When mounting the ball release mechanism, pull back valve stem (5, 52, 60, 112) or - for RMG 703, RMG 704 - press it down, and then push the diaphragm plate (26) or the retaining bush (12, 136) over the balls (into the same position as underpressure release).



3.1 test switching

Test switching may only be carried out if the control elements are mounted in the main valve body, otherwise mechanical damages could result.

ATTENTION: closing cap (1) must be removed from the valve stem (5, 52, 60) for test switching and during normal operation (screw off cap immediately after re-engagement).

3.2 torque table

screw item no.	torque M _A in Nm		remarks
	K 1a	K 2a	
10	12	12	
33	-	20	
109	25	15	version PN 63
131	65	65	version PN 100

3.3 lubricants

parts (apply thinly)	lubricant	RMG stock no.
all o-rings, diaphragm clamping rim all moving areas	silicone grease	00 027 081
thread of the valve plate (3), thread of the closing lid (1, 107)	assembly paste	00 027 091
all screws and screwed pipe connections	high duty grease	00 027 058

3.4 assembly and adjusting tools

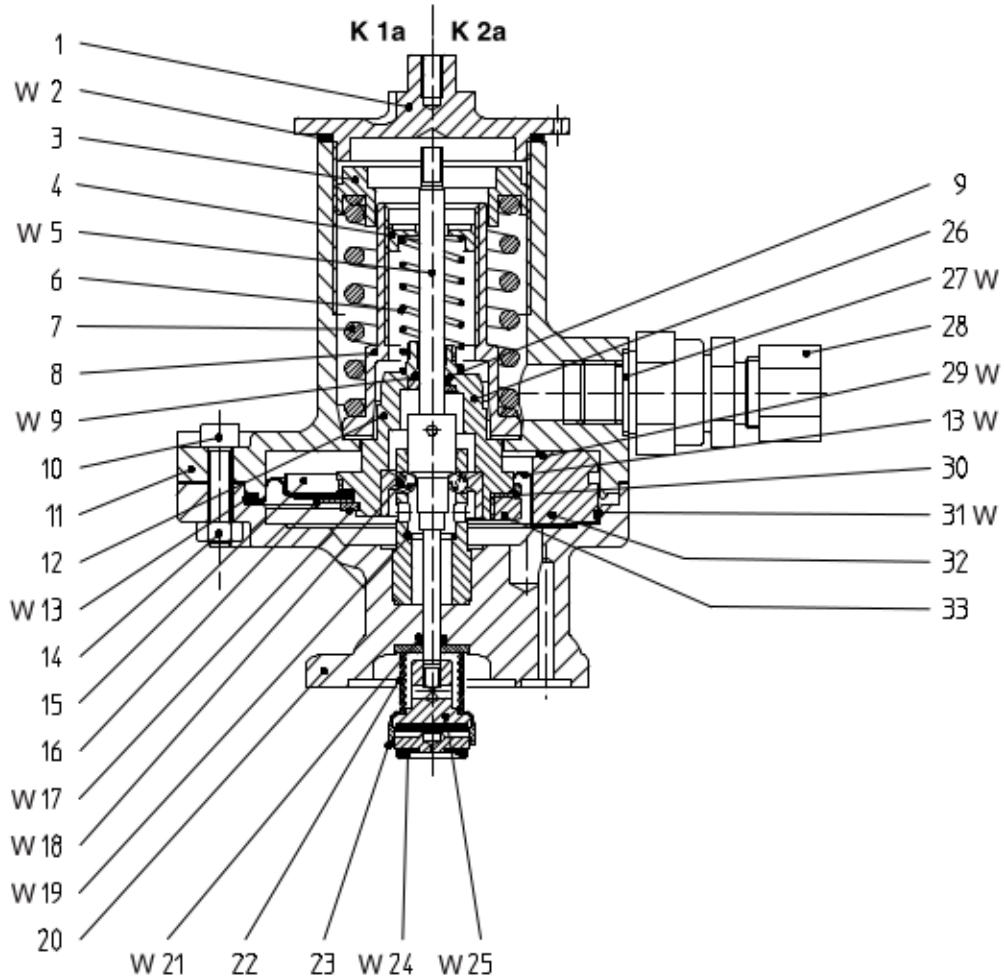
tool	RMG part no.	for item no.	remarks
tongs A 19 DIN 5254	00 026 531	17	
tongs D 19 DIN 5256	00 026 532	51	not necessary for RMG 300, RMG 703, and RMG 704
SSV setpoint adjuster	10 004 912	3 and 4	



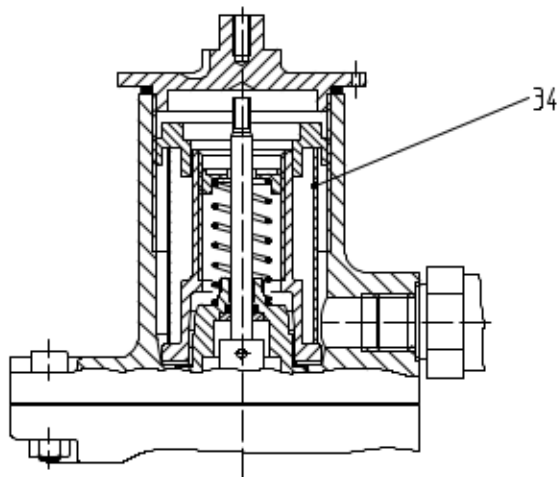
4. spare parts

4.1 spare parts drawing RMG 673 K 1a and K 2a actuator unit for RMG 300

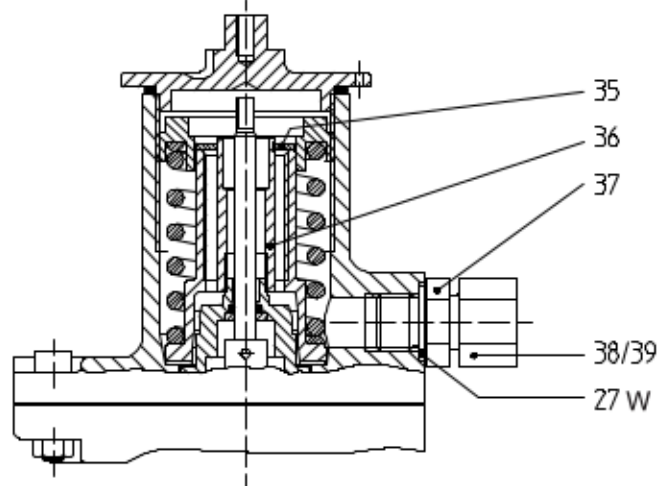
version for overpressure nad underpressure release



version for underpressure release



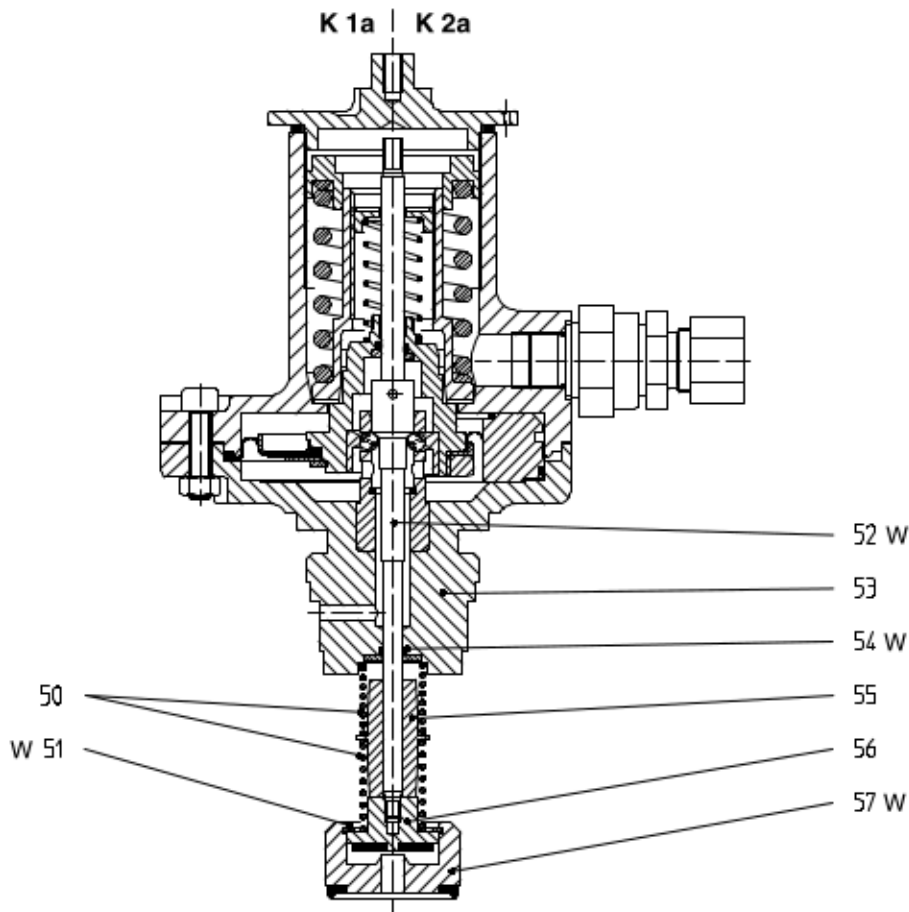
special version for overpressure release only (without reaction at diaphragm rupture)



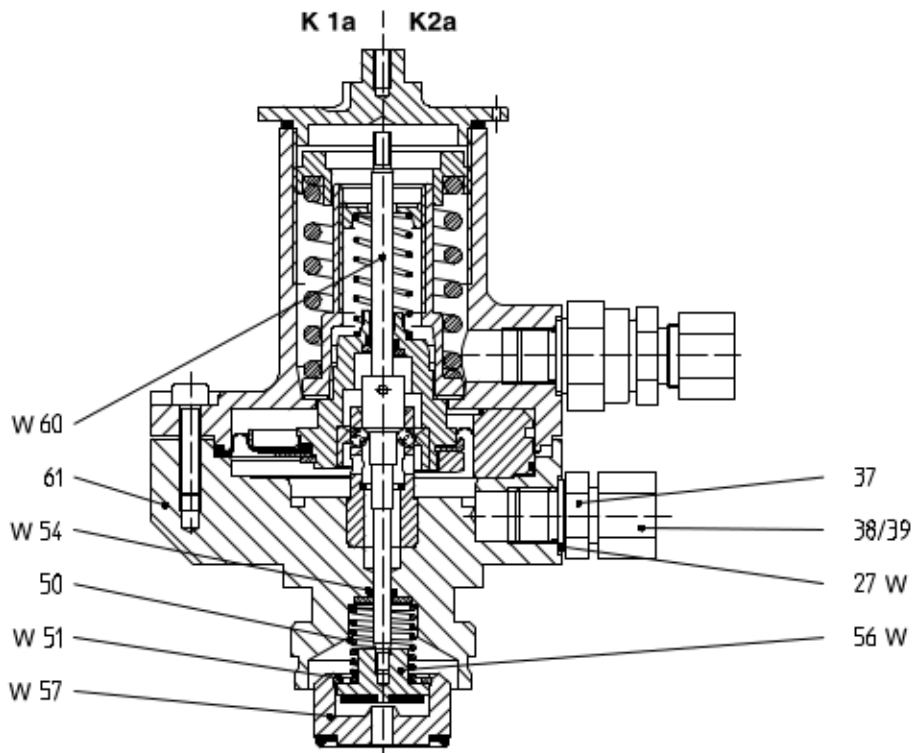
Parts marked "W" are to be held in stock for maintenance



actuator unit for RMG 330 and RMG 332



actuator unit for RMG 402 and RMG 720



Parts marked "W" are to be held in stock for maintenance
Parts without item no. see page 5



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VALVES ACTUATORS INSTRUMENTATIONS

item no.	description	material	RMG part no.	
			K 1a	K 2a
1	closing cap	LM	10 000 854	10 000 854
2 W	sealing washer	K	00 020 343	00 020 343
3	spring plate	Ms	10 001 844	10 001 844
4	spring plate	K	10 000 856	10 000 856
5 W	valve stem, complete	NSt	10 010 614	10 010 614
6	spring for underpressure release, at option			
-	Ø 1,1 mm (light blue)	FSt	10 000 868	10 000 868
-	Ø 1,2 mm (white)	FSt	10 001 837	-
-	Ø 1,4 mm (black)	FSt	10 001 760	10 001 760
7	spring for overpressure release, at option			
-	Ø 2,5 mm (yellow)	FSt	10 001 838	-
-	Ø 3,2 mm (bright red)	FSt	10 000 866	10 000 866
-	Ø 3,6 mm (dark red)	FSt	10 000 867	10 000 867
-	Ø 4,75 mm (white)	FSt	10 001 839	10 001 839
8	spring retainer	K	10 008 563	10 008 563
9 W	o-ring	KG	00 021 069	-
10	cylindrical screw	St	00 010 150	00 010 150
11	spring housing	GLM	10 010 608	10 010 608
12	arresting sleeve, complete	LM/NSt/KG	10 010 619	-
13 W	diaphragm	KG	10 010 610	18 354 902
14	hexagonal nut	St	00 003 399	00 003 399
15	diaphragm plate	St	10 010 611	-
16	pressure disc	LM	10 004 882	-
17 W	safety washer	FSt	00 019 131	-
18 W	ball	NSt	00 005 108	00 005 108
19 W	o-ring	KG	00 020 371	00 020 371
20	SSV bottom cover, complete	GLM	10 010 605	10 010 605
21 W	o-ring	KG	00 020 563	00 020 563
22	spring	FSt	10 011077	10 011077
23	connecting pipe	St	10 011 080	10 011 080
24 W	valve plate with Überströmdüse	LM/KG	10 011 081	10 011 081
25 W	valve plate, vulkanized	LM/KG	10 011 076	10 011 076
26	diaphragm plate, complete	LM/St/KG	-	10 004 929
27 W	sealing washer	LM	00 018 694	00 018 694
28	switching valve RMG 919-1		89 190 000	89 190 000
29 W	o-ring	KG	-	00 020 361
30	supporting ring	LM	-	10 004 938
31 W	ring	KG	-	00 021 005
32	intermediate ring	LM	-	10 010 598
33	hexagonal nut	St	-	10 004 924
34	arresting pipe	LM	10 001 784	10 001 784
35	Seeger circlip	FSt	00 019 183	00 019 183

Parts marked "W" are to be held in stock for maintenance
material key:

St	... steel	LM	...aluminium alloy	K	... plastic material
NSt	... stainless steel	Ms	... brass	KG	... rubber-like plastic material
FSt	... spring steel	GLM	... cast aluminium		



item no.	description	material	RMG part no.	
			K 1a	K 2a
36	retaining pipe	LM	10 010 584	10 010 584
37	adapter	St	00 030 113	00 030 113
38	cap nut	St	00 030 804	00 030 804
39	compression joint	St	00 030 904	00 030 904
actuator unit for RMG 330, RMG 332, and RMG 720/402				
50	spring	FSt	10 009 227	10 009 227
51 W	safety washer	FSt	00 019 093	00 019 093
52 W	valve stem, complete	NSt	10 004 923	10 004 923
53	SAV-Boden, vollständig	LM	10 010 595	10 010 595
54 W	o-ring	KG	00 020 345	00 020 345
55	intermediate piece	LM	10 004 933	10 004 933
56 W	valve plate, vulkanized	LM/KG	10 003 580	10 003 580
57 W	valve plate, vulkanized	LM/KG	10 004 942	10 004 942
60 W	valve stem, complete	NSt	10 008 635	10 008 635
61	SSV bottom cover, complete	LM/St/NSt/KG	10 010 585	10 010 585

Parts marked "W" are to be held in stock for maintenance

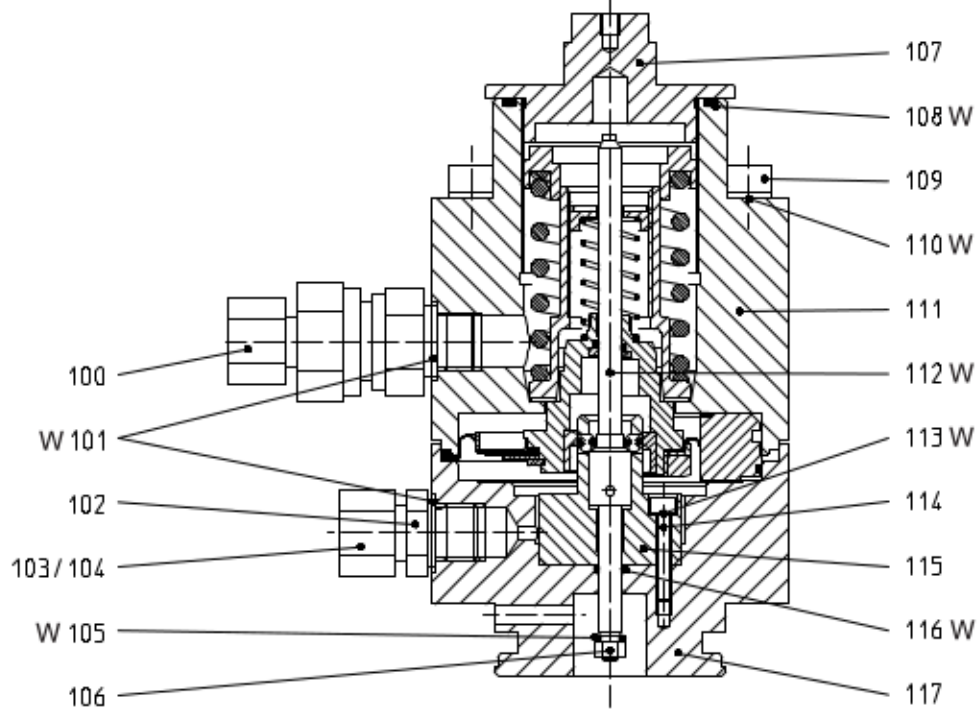
material key:

St ... steel LM ...aluminium alloy KG ... rubber-like plastic material
 NSt ... stainless steel FSt ... spring steel



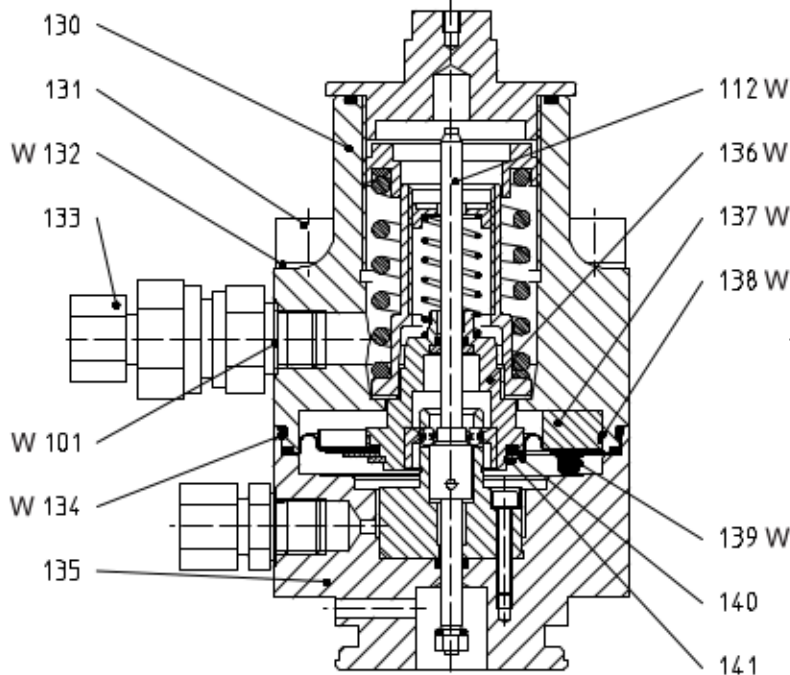
version PN 63

K 1a K 2a



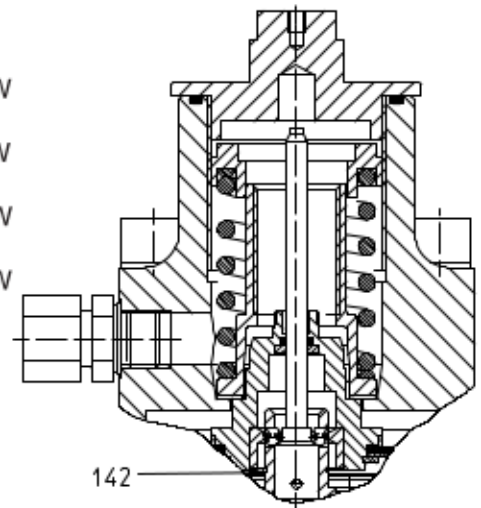
version PN 100

K 1a K 2a



version PN100

special version for overpressure release only
(without reaction upon diaphragm rupture)



Parts marked "W" are to be held in stock for maintenance
Parts without item no. see page 5



item no.	description	material	RMG part no.	
			K 1a	K 2a
100	switching valve RMG 919-2		89 191 000	89 191 000
101 W	sealing ring	LM	00 018 694	00 018 694
102	connecting piece	St	00 030 113	00 030 113
103	cap nut	St	00 030 804	00 030 804
104	compression joint	St	00 030 904	00 030 904
105 W	o-ring	KG	00 020 309	00 020 309
106	hexagonal nut	St	00 003 020	00 003 020
107	locking screw	St	10 001 789	10 001 789
108 W	o-ring	KG	00 020 244	00 020 244
109	cylindrical screw	St	00 010 369	00 010 369
110 W	safety ring	St	00 014 112	00 014 112
111	diaphragm lid	LM	10 001 743	10 001 743
112 W	valve stem, complete	NSt	10 005 553	10 005 553
113 W	safety washer	St	00 014 125	00 014 125
114	cylindrical screw	St	00 010 370	00 010 370
115	guide bush	NSt	10 005 549	10 005 549
116 W	o-ring	KG	00 020 226	00 020 226
117	actuator housing	LM	10 005 546	10 005 546
130	diaphragm lid	LM	10 022 523	10 022 523
131	cylindrical screw	St	00 010 594	00 010 594
132 W	safety washer	St	00 014 114	00 014 114
133	switching valve RMG 919-1		89 190 000	89 190 000
134 W	o-ring	KG	00 020 518	00 020 518
135	actuator housing	LM	10 005 552	10 005 552
136	retaining bush, complete		-	10 022 512
137	intermediate ring	LM	-	10 022 514
138 W	o-ring	KG	-	00 021 005
139 W	diaphragm	KG	-	10 022 515
140	pressure disc	LM	-	10 022 516
141 W	safety washer	FSt	-	00 019 187
142 W	Seeger ring	FSt	00 019 182	00 019 182

Parts marked "W" are to be held in stock for maintenance work

material key:

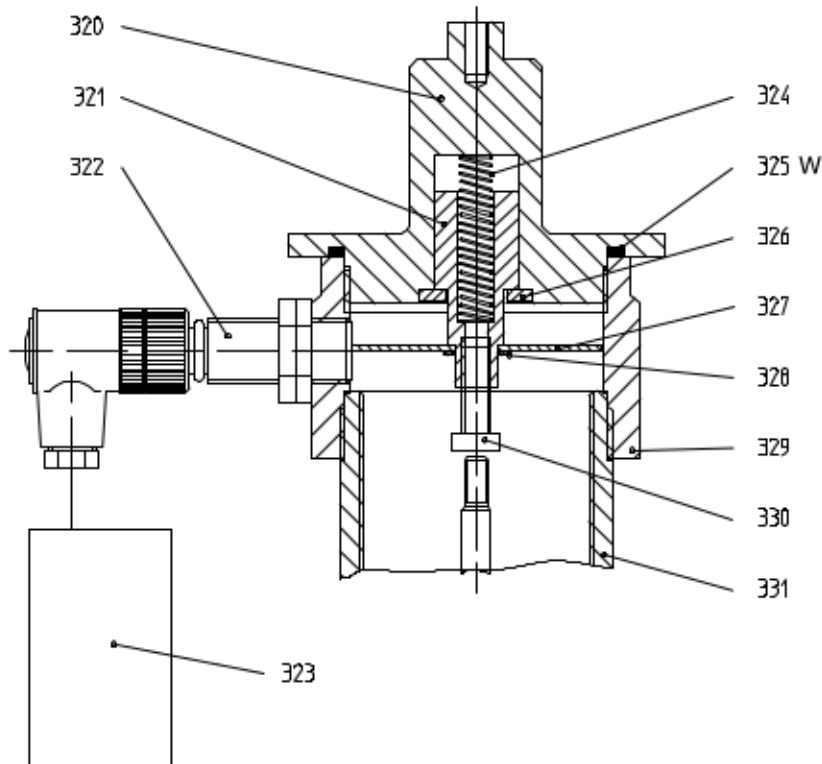
St ... steel

LM ...aluminium alloy

KG ... rubber-like plastic material

NSt ... stainless steel

FSt ... spring steel



Parts marked "W" are to be held in stock for maintenance purposes

4.6 Spare parts list for electric remote indication

item no.	description	material	RMG part no.
320	closing lid	LM	10 004 793
321	spring guide	LM	10 004 794
322	proximity switch		00 024 046
323	relais		00 024 047
324	spring	FSt	10 014 020
325 W	o-ring	KG	00 020 425
326	metal ring	St	00 008 271
327	disc	St	10 004 795
328	Seeger ring	FSt	00 019 188
329	intermediate piece	LM	10 004 792
330	cylindrical screw	St	00 011 020
331	spring housing	GLM	10 010 616

Parts marked "W" are to be held in stock for maintenance purposes

material key:

St ... steel LM ... aluminium alloy KG ... rubber-like plastic material
 FSt ... spring steel GLM ... cast aluminium