

Gas Pressure Regulator RMG 322



**Operation and Maintenance,
Spare Parts**

322.20

edition 11/93

Serving the Gas Industry - WORLDWIDE



1. General matters

For the pressure regulator RMG 322 the detailed information leaflet 322.00 containing the specifications, designs and dimensions, is available.

Accessories are described in the following brochures:

pilot:	RS 10d	general brochure	610.00
		operation and maintenance instructions/spare parts	610.20
	RMG 650	general brochure	650.00
		operation and maintenance instructions/spare parts	650.20
filter:	RMG 905	general brochure	905.00
		operation and maintenance instructions/spare parts	905.20

The RMG publication "General operating instruction for gas pressure regulators and safety devices" provides information on the installation, commissioning, and operation as well as notices on fault finding.

For the constructing, equipping, monitoring and maintaining gas pressure regulator systems the relevant regulations, especially the DVGW worksheets G 490, G 491, and G 495 must be observed.

The time intervals for maintenance works on the pressure regulator RMG 322 depend largely on the operating conditions and the composition of the gas. Therefore, no fixed maintenance intervals are being prescribed. It is recommended to keep to the maintenance cycles stated in the DVGW worksheet G 495.

During maintenance all components must be cleaned and thoroughly checked for safety. A visual check is required even if irregularities were found during operation or functional checks.

The check must cover seals and membranes in particular as well as any guiding components. Damaged components must be renewed.

The item numbers mentioned in the maintenance notices correspond to those in the spare part drawing and spare parts list.

It is recommended to keep the parts marked EV in the spare parts list in stock for maintenance purposes.

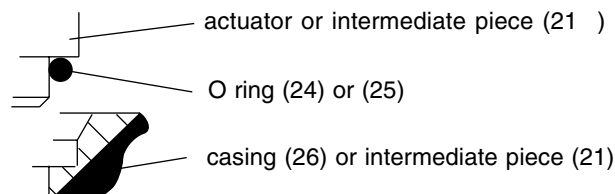
2. Special maintenance notices

O rings (170, 219)

Note! These O rings must be fitted without lubrication. They are only intended to stop the reducing adapter (169, 220).

O rings (24, 25)

The O ring must be positioned as shown in the following diagram when fitting the actuator or intermediate piece.

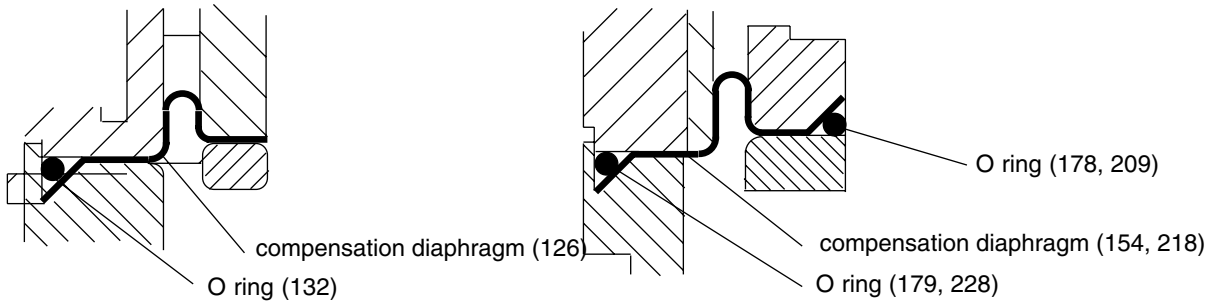


compensation diaphragm (126, 154, 218)

During fitting the correct position of the compensation diaphragm must be observed

see page 9

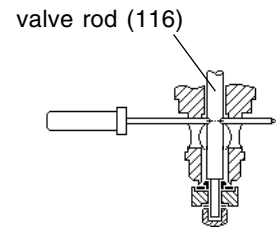
see pages 11, 13



valve rod (116, 172, 222)

To avoid distortion of the diaphragms, the valve rod must be secured against twisting when loosening or tightening the screws (177, 227) or nuts (108, 131, 161, 210).

To do this, the valve rod (116) is fitted with a cross hole and valve rod (172, 222) with a key guide surface.



pan head screw (177, 227)

The pan head screw has a longitudinal hole for pressure compensation. Therefore, it must not be replaced by an ordinary pan head screw.

valve disk (129, 159)

Over time different construction designs have been delivered.

		design			
		till Sept. 1987	till March 1992	from April 1992	from August 1995
valve seat - \varnothing in mm	20				
	33				
	25				
	31				
	41				
	50				
	60				
	80				
	100				

Today the valve disk - 20 is being supplied with a start vulcanised seal. The disks for the valve seat - 25, 31, 33, 41, 50, 60, 80, 100 have been fitted with an additional relief hole.

It is recommended to upgrade older devices with the new components during maintenance works.

Devices supplied prior to September 1987 with valve seat - 20 or 33 do not need upgrading.

seal (128, 175) for valve seat - 33, 25, 31

Dependent on the gas medium used there are different sealing materials available. From January 1995 the material NBR was changed to Viton for the whole production. Especially when using L gas it is recommended to insert Viton seals during maintenance works.

tightening moments

item no.	torque M_A in Nm
171, 199	5
108, 152, 158, 208	10
104, 144, 194	12
119, 131	15
161, 210	18
177, 195, 207	20
17, 200, 227	40
11	40 (for DN 50)
19	70 (for DN 80, DN 100)

lubricants

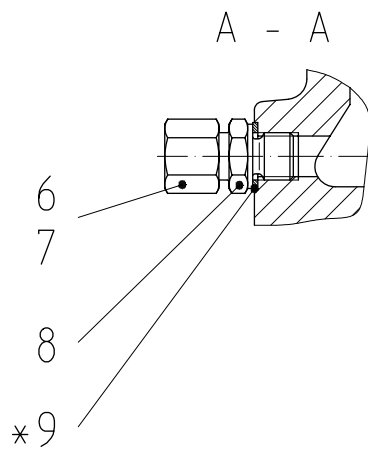
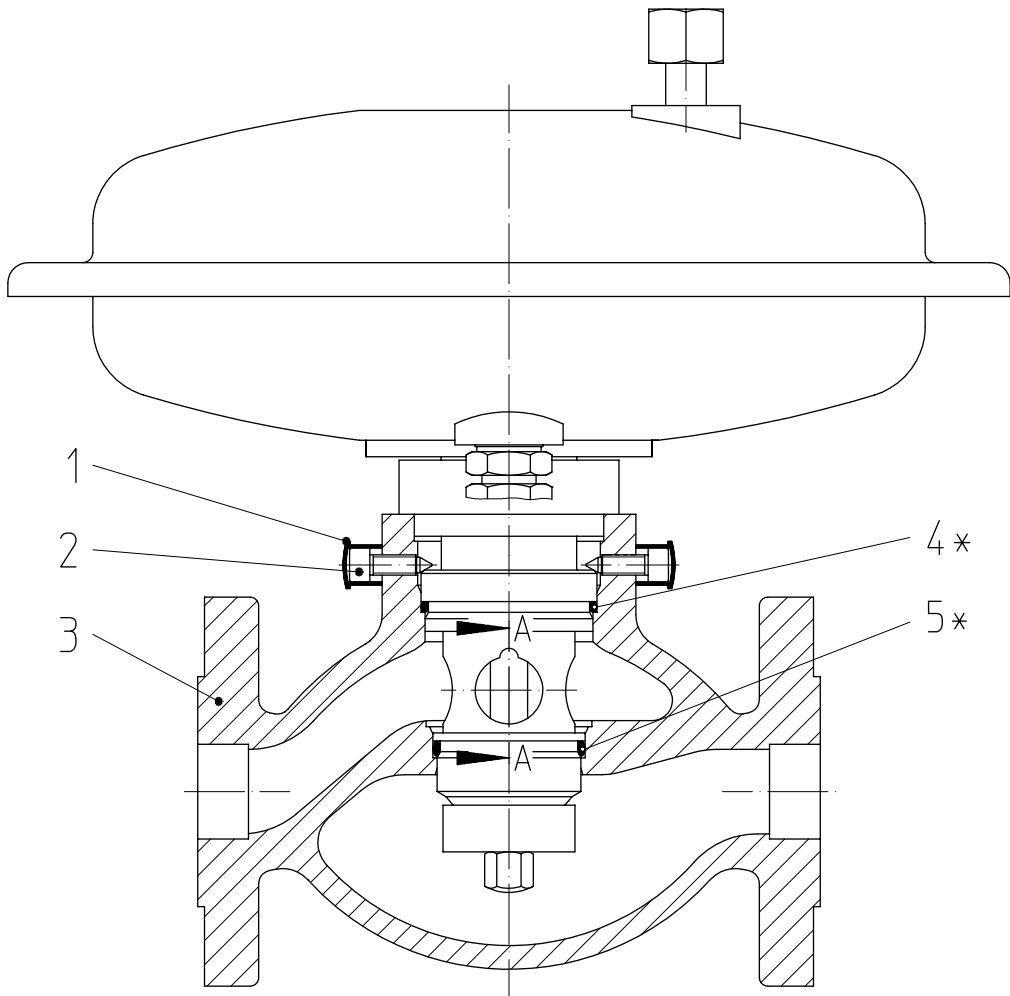
component (brush lightly)	lubricant	RMG - part no.
all rings (except items 170, 219)	silicon grease	00 027 081
all sliding faces		
clamping and loop areas of the working diaphragm (103, 143, 193)		
all fastening screws and screwed pipe connections	high duty grease	00 027 058

screw locking

component	locking agent	RMG - part no.
cap nut (131) pan head screw (177, 227)	LOCTITE	00 026 688

3. Spare parts

3.1 spare part drawing RMG 322 DN 25 with actuator 1



* stock parts for maintenance purposes

3.2 Spare part list RMG 322 DN 25 with actuator 1

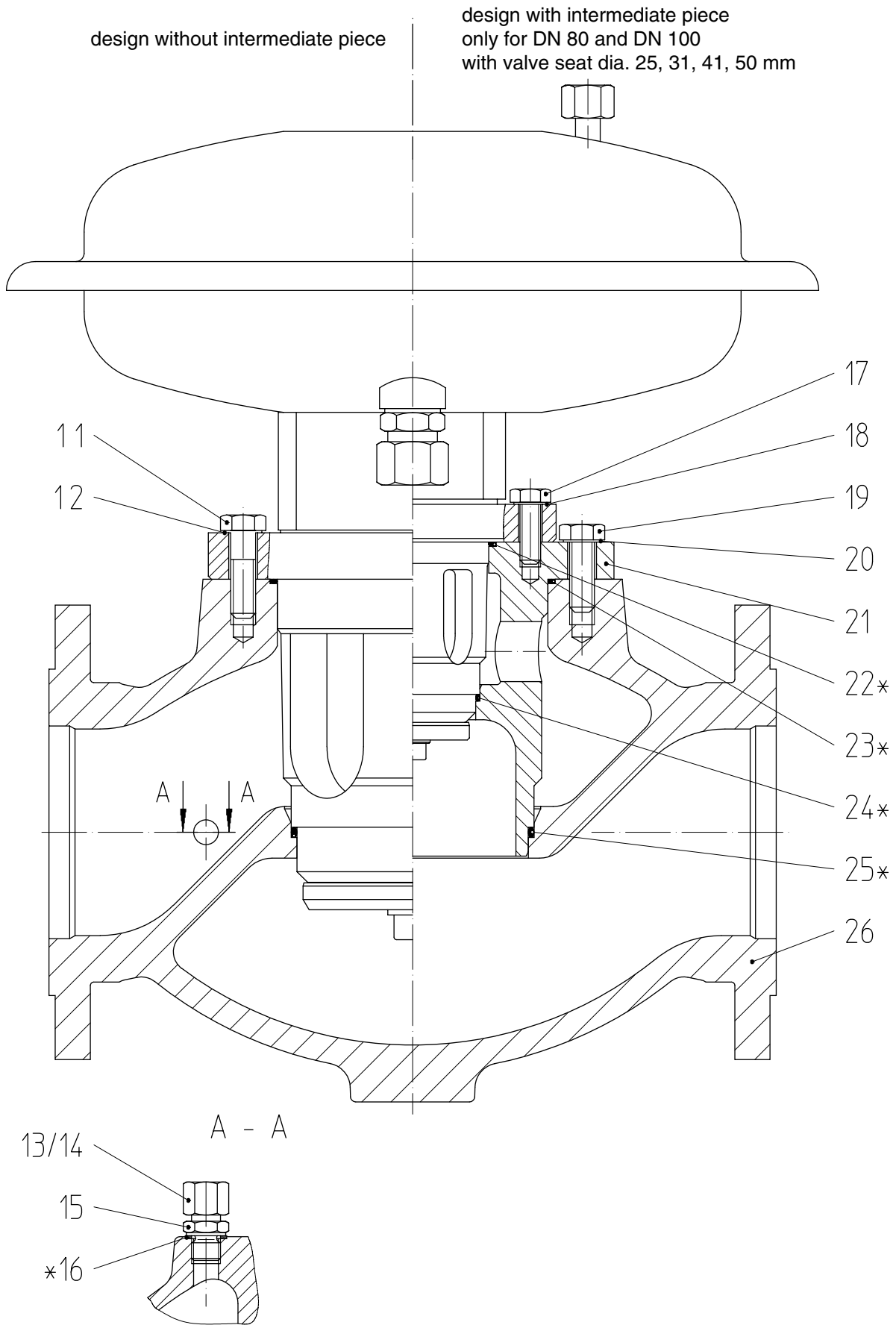
item no.	designation	material	part no.
1	plug	K	00 026 066
2	pan head screw	St	10 004 895
3	casing, optional		
-	PN 16	GS	10 008 454
-	ANSI 150 RF	GS	10 008 455
4*	O ring	KG	00 020 243
5*	O ring	KG	00 020 241
6	union nut	St	00 030 803
7	cutting ring	St	00 030 903
8	connection piece	St	00 030 111
9*	packing ring	LM	00 018 842

Parts marked * should be kept in stock for maintenance purposes

material identifications

St	... steel	K	... plastic
LM	... light alloy	KG	... rubbery plastic
GS	... steel cast		

3.3 Spare part drawing RMG 322 DN 50, DN 80, DN 100 with actuator 2



* stock parts for maintenance purposes

3.4 Spare part list RMG 322
DN 50, DN 80, DN 100 with actuator 2

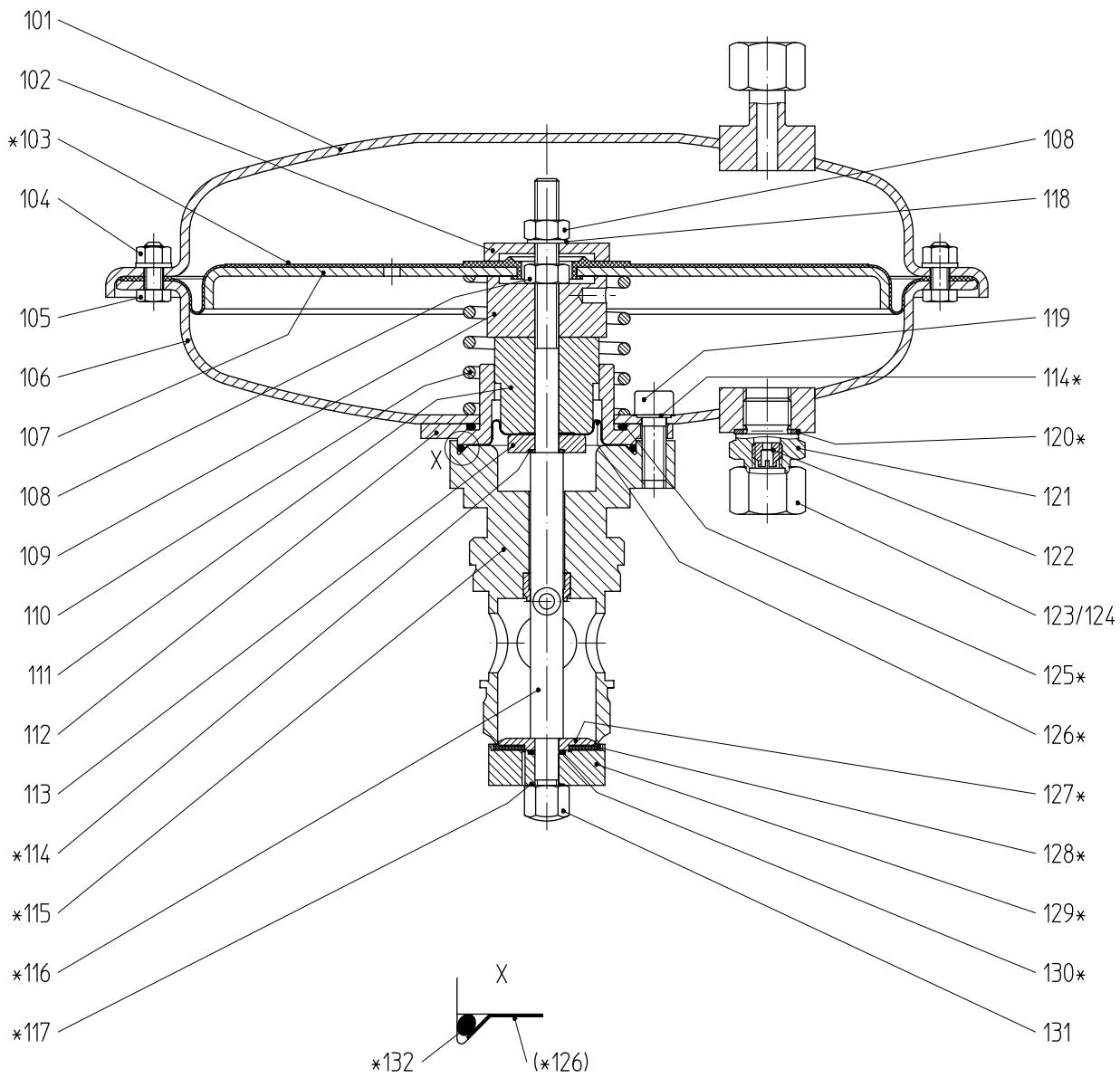
item no.	designation	material	part no.		
			DN 50	DN 80	DN 100
11	hexagonal screw	St	00 003 873	00 008 182	00 008 182
12	washer	FSt	00 014 121	00 014 119	00 014 119
13	union nut	St	00 030 803	00 030 803	00 030 803
14	cutting ring	St	00 030 903	00 030 903	00 030 903
15	connection piece	St	00 030 111	00 030 111	00 030 111
16*	packing ring	LM	00 018 842	00 018 842	00 018 842
17	hexagonal screw	St		00 010 032	00 010 032
18	washer	FSt		00 014 121	00 014 121
19	hexagonal screw	St		00 010 463	00 010 463
20	washer	FSt		00 014 119	00 014 119
21	intermediate piece	LM		10 007 204	10 007 204
22*	O ring	KG		00 020 246	00 020 246
23*	O ring	KG	00 020 246	00 020 427	00 020 427
24*	O ring	KG		00 020 425	00 020 425
25*	O ring	KG	00 020 425	00 020 259	00 020 259
26	casing, optional				
-	PN 16	GGG		10 007 079	10 007 085
-	PN 16	GS	10 008 456	10 008 458	10 008 460
-	ANSI 150 RF	GS	10 008 457	10 008 459	10 008 461

Parts marked * should be kept in stock for maintenance purposes

material identifications

St	... steel	GGG	... steel cast with spheroidal graphite
LM	... light alloy	FSt	... spring steel
GS	... steel cast	KG	... rubbery plastic

**3.5 Spare part drawing RMG 322 actuator 1
with valve seat dia. 20 and 33 mm**



* stock parts for maintenance purposes

3.6 Spare part list RMG 322 actuator 1 with valve seat diameter 20 and 33 mm

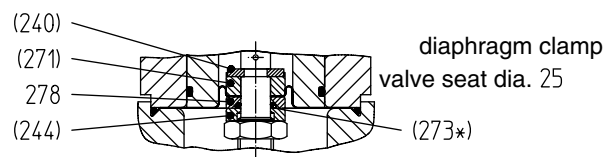
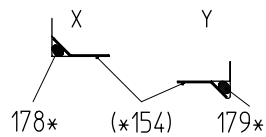
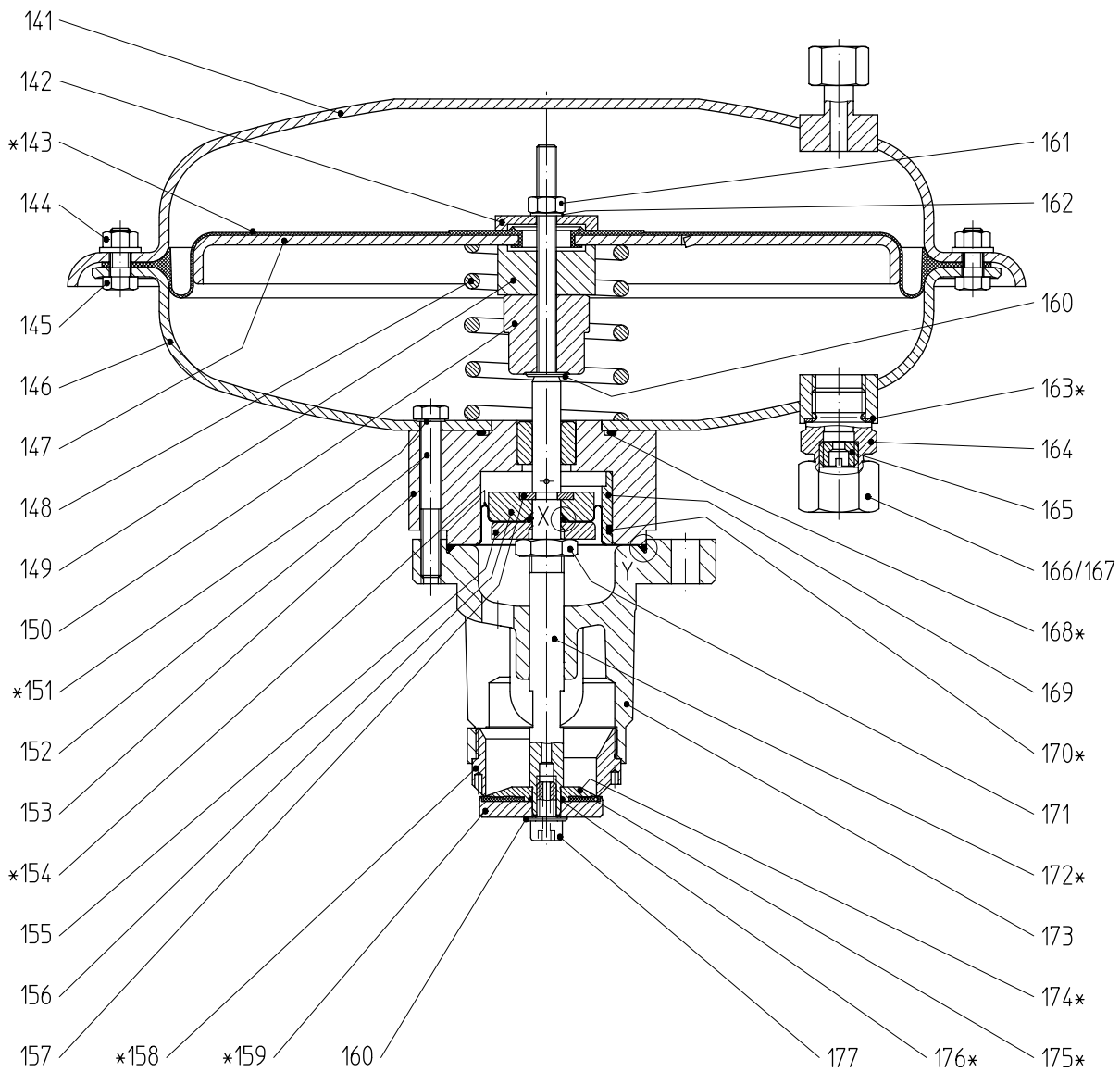
item no.	designation	material	part no.	
			- 20	- 33
101	diaphragm cover, complete	St	10 004 983	10 004 983
102	pressure piece	LM	10 004 992	10 004 992
103*	rolling diaphragm	KG	10 003 606	10 003 606
104	hexagonal collar nut	St/K	00 013 138	00 013 138
105	hexagonal screw	St	00 008 172	00 008 172
106	diaphragm body, complete	St	10 007 171	10 007 171
107	diaphragm disk	LM	10 003 625	10 003 625
108	hexagonal nut	St	00 005 559	00 005 559
109	spacer	LM	10 004 991	10 004 991
110	pressure spring	FSt	10 004 978	10 004 978
111	guide piece	Ms	10 004 860	10 004 861
112	distance plate	LM	10 004 858	10 004 859
113	pressure disk	LM	10 003 609	10 003 608
114*	packing ring (4 off)	LM	00 018 710	00 018 710
115*	nozzle, complete	LM/ALBz	10 004 862	10 004 863
116*	valve rod	NSt	10 004 878	10 004 878
117*	packing ring	LM	00 018 710	00 018 710
118	locking washer	FSt	00 014 112	00 014 112
119	pan head screw	St	00 010 323	00 010 323
120*	packing ring	LM	00 018 694	00 018 694
121	connection piece	St	10 007 642	10 007 642
122	dosing screw - 3 mm	NSt	10 005 098	10 005 098
123	union nut	St	00 030 804	00 030 804
124	cutting ring	St	00 030 904	00 030 904
125*	O ring	KG	00 020 306	00 020 306
126*	compensation diaphragm	KG	10 003 619	10 003 618
127*	pressure piece	LM	10 003 603	10 003 602
128*	gasket	FPM		10 003 552
129*	valve disk	LM/KG, LM	10 023 461	10 023 465
130*	O ring	KG		00 020 595
131	cap nut	St	00 013 015	00 013 015
132*	O ring	KG	00 021 161	00 021 161

The parts marked * should be kept in stock for maintenance purposes

material identifications

St	... steel	LM	... light alloy	KG	... rubbery plastic
FSt	... spring steel	Ms	... brass	K	... plastic
NSt	... rustproof steel	ALBz	... aluminium bronze	FPMV...	synthetic rubber

**3.7 Spare part drawing RMG 322 actuator 2
with valve seat dia. 25, 31, 41, and 50 mm**



* stock parts for maintenance purposes

3.8 Spare part list RMG 322 actuator 2 with valve seat diameter 25, 31, 41 and 50 mm

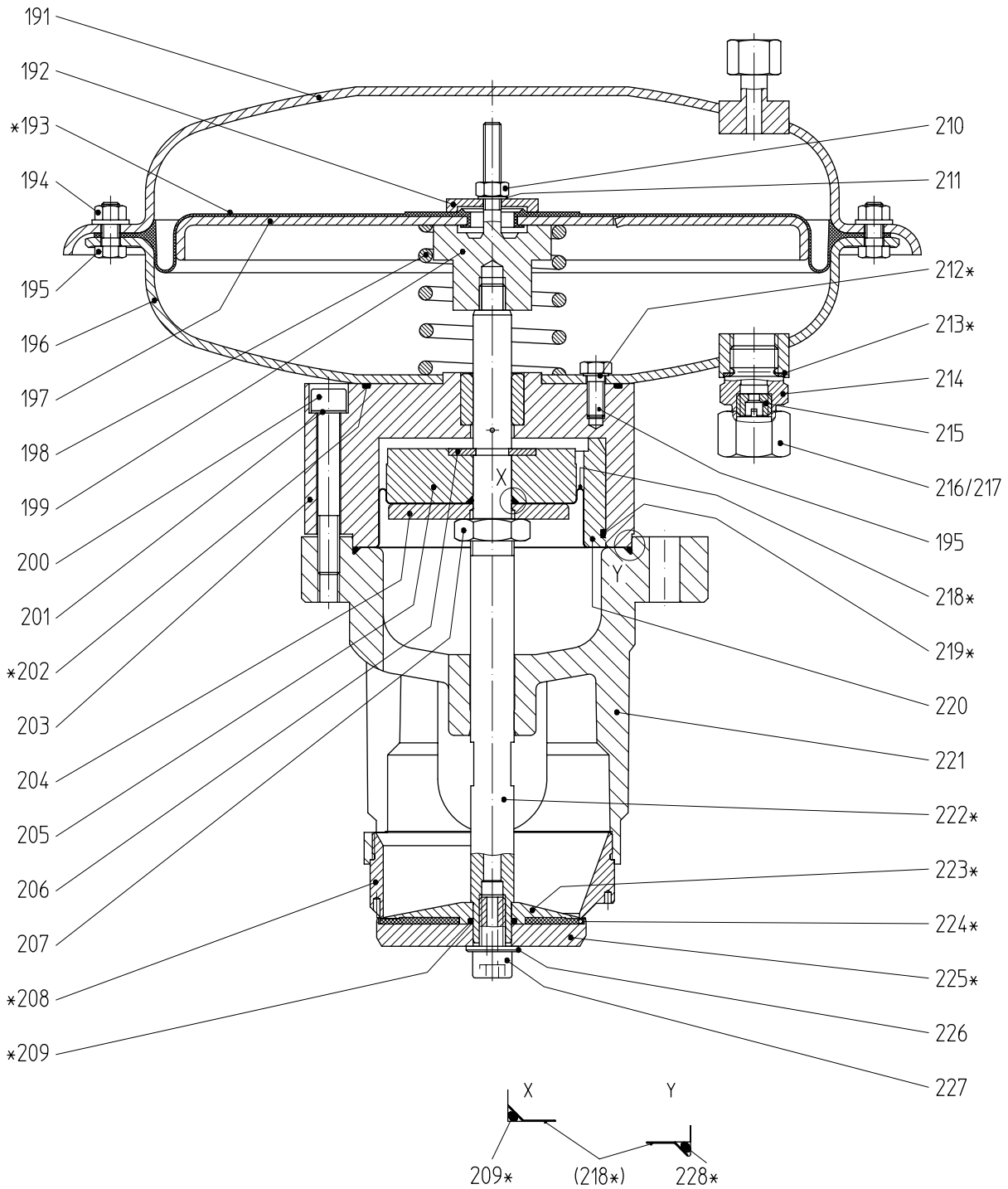
item no.	designation	material	part no.			
			25	31	41	50
141	diaphragm cover, complete	St	10 008 989	10 008 989	10 008 989	10 008 989
142	pressure piece	LM	10 004 992	10 004 992	10 004 992	10 004 992
143*	rolling diaphragm	KG	10 009 046	10 009 046	10 009 046	10 009 046
144	hexagonal collar nut	St/K	00 013 136	00 013 136	00 013 136	00 013 136
145	hexagonal screw	St	00 010 065	00 010 065	00 010 065	00 010 065
146	diaphragm body, complete	St	10 008 982	10 008 982	10 008 982	10 008 982
147	diaphragm disk	LM	10 009 168	10 009 168	10 009 168	10 009 168
148	pressure spring	FSt	10 008 983	10 008 983	10 008 983	10 008 983
149	distance washer	LM	10 004 991	10 004 991	10 004 991	10 004 991
150	guide piece	Ms	10 004 861	10 004 861	10 004 861	10 004 861
151*	packing ring	LM	00 018 710	00 018 710	00 018 710	00 018 710
152	hexagonal screw	St	00 010 277	00 010 277	00 010 277	00 010 277
153	intermediate piece, complete	LM/NSt	10 009 180	10 009 180	10 009 180	10 009 180
154*	compensation diaphragm	KG	10 006 186	10 009 086	10 009 087	10 009 188
155	pressure washer	LM	10 009 297	10 009 089	10 009 091	10 009 187
156	diaphragm disk	LM	10 009 295	10 009 088	10 009 090	10 009 186
157	ring segment (2 off)	St	10 008 612	10 008 612	10 008 612	10 008 612
158*	orifice	LM	10 006 181	10 009 064	10 009 063	10 009 162
159*	valve disk	LM	10 023 463	10 023 464	10 023 450	10 023 451
160	disk	St	00 008 281	00 008 281	00 008 281	00 008 281
161	hexagonal nut	St	00 013 140	00 013 140	00 013 140	00 013 140
162	locking washer	FSt	00 014 112	00 014 112	00 014 112	00 014 112
163*	packing ring	LM	00 018 787	00 018 787	00 018 787	00 018 787
164	connection piece	St	10 007 641	10 007 641	10 007 641	10 007 641
165	dosing screw 5mm	Ms	10 014 038	10 014 038	10 014 038	10 014 038
166	union nut	St	00 030 807	00 030 807	00 030 807	00 030 807
167	cutting ring	St	00 030 906	00 030 906	00 030 906	00 030 906
168*	O ring	KG	00 020 325	00 020 325	00 020 325	00 020 325
169	reducer	LM	10 006 188	10 009 082	10 009 083	
170*	O ring	KG	00 020 243	00 020 243	00 020 243	
171	hexagonal nut	St	10 009 045	10 009 045	10 009 045	10 009 045
172*	valve rod, complete	Ms/St	10 008 987	10 008 987	10 008 987	10 008 987
173	valve support	GG	10 009 161	10 009 161	10 009 161	10 009 161
174*	pressure piece	LM	10 006 184	10 009 199	10 009 198	10 009 197
175*	gasket	KG/KV	18 355 853	10 009 205	10 009 216	10 009 217
176*	O ring	KG	00 020 451	00 020 451	00 020 451	00 020 451
177	pan head screw	St	10 009 099	10 009 099	10 009 099	10 009 099
178*	O ring	KG	00 020 234	00 020 234	00 020 234	00 020 234
179*	O ring	KG	00 020 246	00 020 246	00 020 246	00 020 246
180	sealing washer	LM	10 009 296			

Parts marked * should be kept in stock for maintenance purposes

material identifications:

St	... steel	LM	... light alloy	KG	... rubbery plastic
FSt	... spring steel	Ms	... brass	GG	... cast iron with lamellar graphite
NSt	... rustproof steel	K	... plastic	FPM	...synthetic rubber

**3.9 Spare part drawing RMG 322 actuator 2
with valve seat dia. 60, 80, 100 mm**



* stock parts for maintenance purposes
322.20 S.13

3.10 Spare part list RMG 322 actuator 2 with valve seat diameter 60, 80, 100 mm

item no.	designation	material	part no.		
			~ 60	~ 80	~ 100
191	diaphragm cover, complete	St	10 008 989	10 008 989	10 008 989
192	pressure piece	LM	10 004 992	10 004 992	10 004 992
193*	rolling diaphragm	KG	10 009 046	10 009 046	10 009 046
194	hexagonal collar nut	St/K	00 013 136	00 013 136	00 013 136
195	hexagonal screw	St	00 010 065	00 010 065	00 010 065
196	diaphragm body, complete	St	10 008 982	10 008 982	10 008 982
197	diaphragm disk	LM	10 009 168	10 009 168	10 009 168
198	pressure spring	St	10 008 983	10 008 983	10 008 983
199	guide piece	St	10 008 994	10 008 994	10 008 994
200	pan head screw	St	00 010 386	00 010 386	00 010 386
201	locking washer	FSt	00 014 121	00 014 121	00 014 121
202*	O ring	KG	00 020 335	00 020 335	00 020 335
203	intermediate piece, complete	LM/NSt	10 009 139	10 009 139	10 009 139
204	pressure disk	LM	10 009 124	10 009 125	10 009 128
205	diaphragm disk	LM	10 009 142	10 009 141	10 009 127
206	ring segment (2 off)	St	10 009 129	10 009 129	10 009 129
207	hexagonal nut	St	10 009 109	10 009 109	10 009 109
208*	nozzle	LM	10 009 105	10 009 106	10 009 123
209*	O ring (2 off)	KG	00 020 442	00 020 442	00 020 442
210	hexagonal nut	St	00 013 140	00 013 140	00 013 140
211	locking washer	FSt	00 014 112	00 014 112	00 014 112
212*	packing ring (4 off)	LM	00 018 710	00 018 710	00 018 710
213*	packing ring	LM	00 018 787	00 018 787	00 018 787
214	connection piece	St	10 007 641	10 007 641	10 007 641
215	dosing screw ~ 5 mm	Ms	10 014 038	10 014 038	10 014 038
216	union nut	St	00 030 807	00 030 807	00 030 807
217	cutting ring	St	00 030 906	00 030 906	00 030 906
218*	compensation diaphragm	KG	10 009 120	10 009 134	10 009 137
219*	O ring	KG	00 020 449	00 020 449	
220	reducer	LM	10 009 114	10 009 115	
221	valve support	GG	10 009 133	10 009 133	10 009 133
222*	valve rod, complete	Ms/St	10 009 155	10 009 155	10 009 155
223*	pressure piece	LM	10 009 208	10 009 207	10 009 206
224*	gasket	KG	10 009 218	10 009 219	10 009 220
225*	valve disk	LM	10 023 452	10 023 453	10 023 454
226	disk	St	00 008 271	00 008 271	00 008 271
227	pan head screw	St	10 009 122	10 009 122	10 009 122
228*	O ring	KG	00 020 428	00 020 428	00 020 428

Parts marked * should be kept in stock for maintenance purposes

material identifications:

St	... steel	LM	... light alloy	KG	... rubbery plastic
FSt	... spring steel	Ms	... brass	GG	... cast iron with lamellar graphite
NSt	... rustproof steel	K	... plastic		

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