

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 703 and/or 704 safety shut-off valves must read and understand all of the following documents:

- **Technical product information 703.00** – it contains the technical data and dimensions of the equipment as well as instructions concerning construction 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 703.20** – this document contains more detailed information on assembly and operation of HON 703 / HON 704 safety shut-off valves.
- The various components and units are described in separate booklets "Operating and maintenance instructions, spare parts":

Actuator system	K 1a, K 2a/1, K 2a/2	673.20
Actuator system	K 16, K 17, K 18	670.20

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 working instructions 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 fixed rules or recommendations for intervals. For Germany, we recommend you start by complying with maintenance intervals as stated in DVGW, working instruction G 495. However, in the mid-term, intervals must be adapted to the requirements of each specific station.

During maintenance, components must be cleaned and then checked thoroughly. This is necessary even if there have been any unusual observations during operation and/or operation and performance tests. Checks must focus, in particular, on diaphragms and sealing rings 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 dismantling.

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

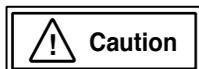
In this manual, safety information is marked by means of the following titles and eye catchers:

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

3. Specific operating instructions

3.1 Opening the safety shut-off valve

- Equalise the pressure at the final control element by slowly opening the bypass valve (ball valve - 30, 230 - or push button valve - 39, 239 - or 42, 242).



Be sure to close the ball valve again after pressure compensation is complete.

- Engaging actuators HON 673 - K1a and K2a
Screw out the locking screw of the actuator, turn it around and put it on the stem of the actuator. Push down the stem all the way to the stop and let it slip back slowly.

Note

The design of the actuators includes an underpressure shut-off. They can be engaged only if the pressure at the measuring point corresponds to the operating pressure.

- Engaging actuators HON 670 - K 16 and K 18 as well as HON 671 - K17
Push down all the way the switch stem (63) in the tripping device body (64) or mushroom grip.

Note

The SSV is in the open position when the flap (16, 216) stands out of the cover (12, 212).

3.2 Manually close the safety shut-off valve (standard version only)

Note

The manual release system is an accessory

- Operate actuator HON 673 - K1a and K2a with push button valve (130)
- Operate actuator HON 673 - K1a and K2a with solenoid valve
Turn knurled thumb screw at the solenoid valve (150) clockwise until it will turn no further

Note

Before engaging actuator, turn knurled thumb screw back.

- Actuator HON 670 - K16 and K18 as well as HON 671 - K 17
Pull release handle (116) all the way out

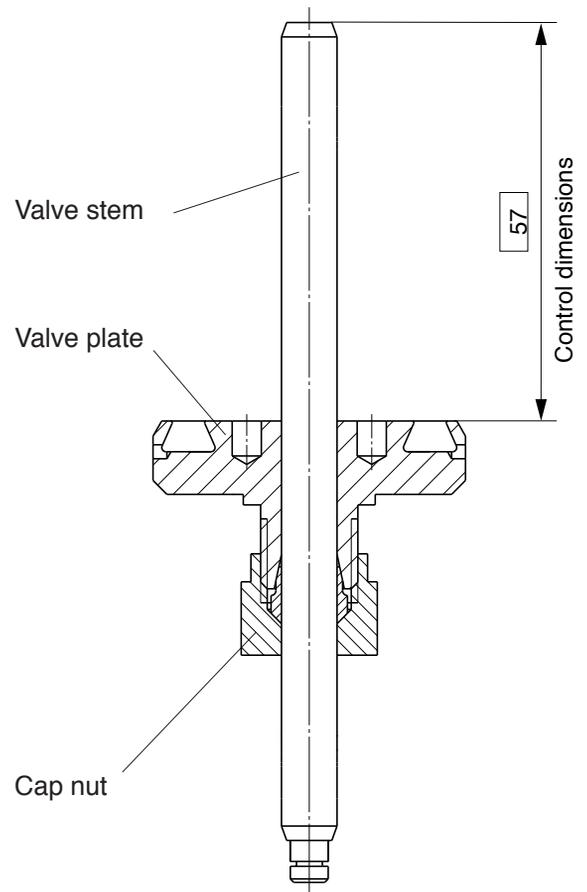
4. Specific maintenance instructions



Before dismantling, chambers pressurised with gas must be depressurised.

Valve plate

- When you insert a new, well greased O-ring (7, 207) into the groove of the valve plate, press it down gently into the groove at three or four evenly distanced points along the circumference. Only then should you press it down completely.
- The valve plate is an essential component of the valve stem (8, 208).
- That means the unit must be replaced as a whole. Very precise positioning of the valve plate is essential. Therefore, do not loosen the cap nut during maintenance.



4.1 Screw – tightening torques M_A

Screws & bolts – item #	Tightening torques M_A in Nm
14, 214	35
50	20
289	20

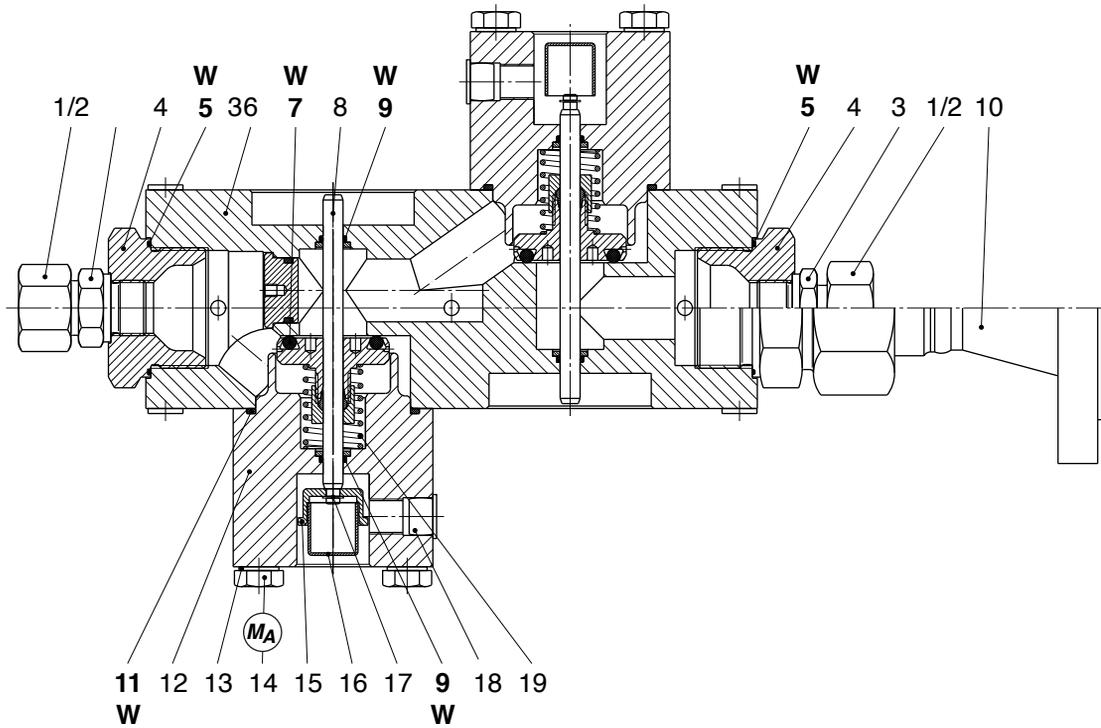
Note

For the HON 703/704 structural design "-" tighten the screws (pos. no. 14) to a torque of 25 Nm.

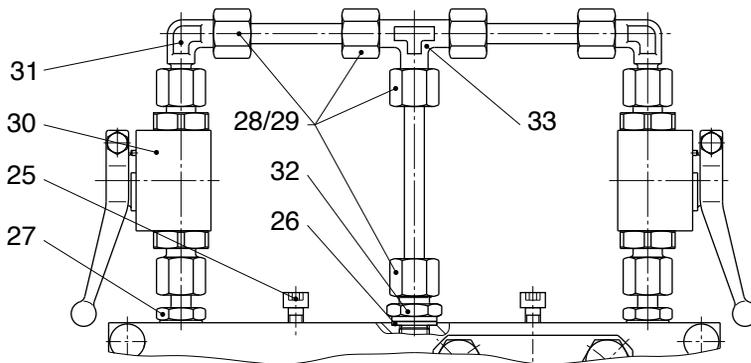
4.2 Lubricants

Components	Lubricants	HON part no.
All O rings, slip guides, sliding surfaces and switching elements	Silicone grease	27,081 (tube 0.1 kg)
All fastening screws and screwed pipe connections	Assembly grease	28 267

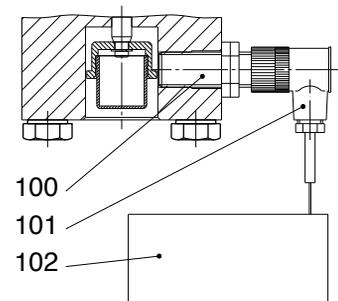
5.1.1 Actuator assembly HON 703a



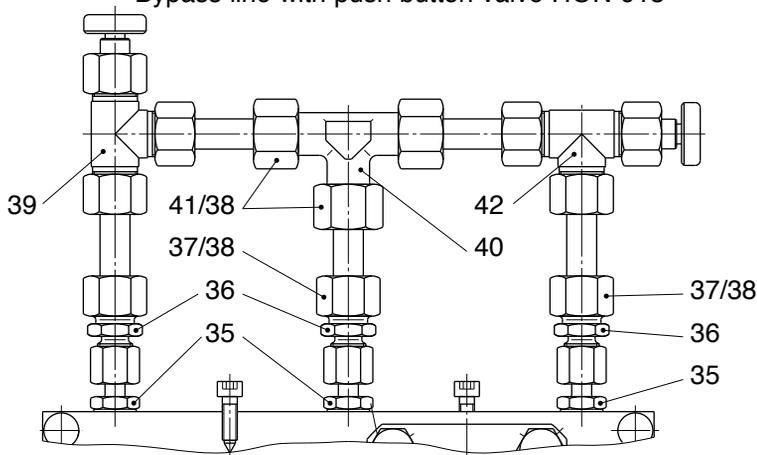
Bypass line with ball valve



Electrical position indicator (accessories)

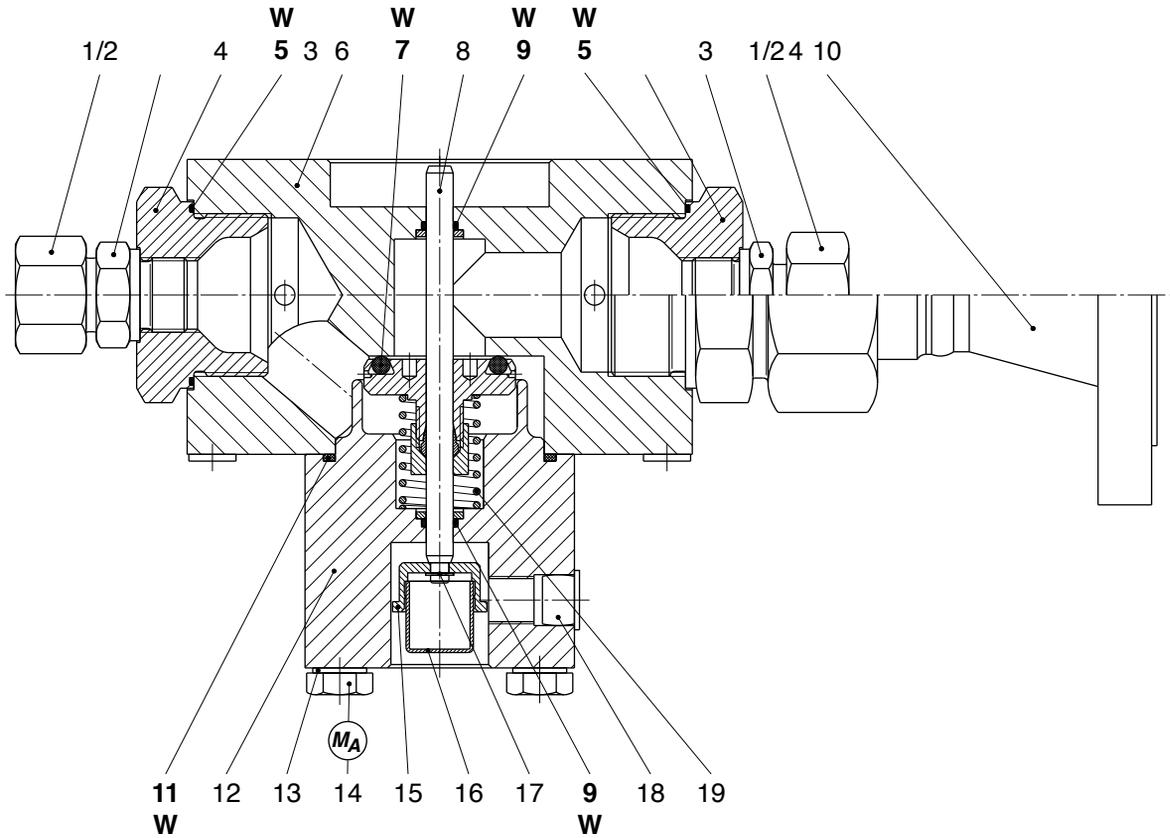


Bypass line with push button valve HON 913

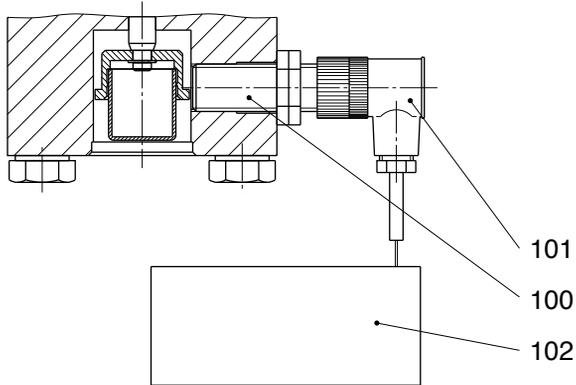


M_A Be sure to comply with torque figures in table on page 5.
 W Parts should be held in stock for maintenance purposes.

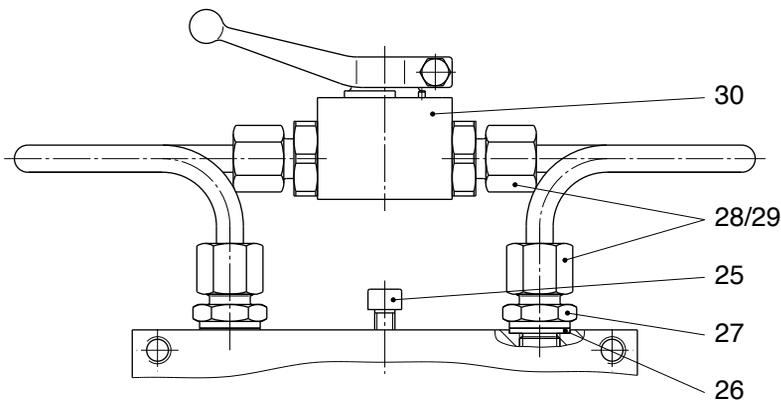
5.1.2 Actuator assembly HON 704a



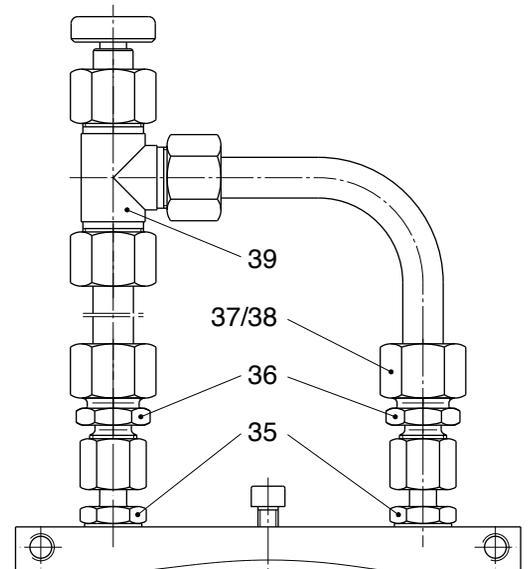
Electrical position indicator (accessories)



Bypass line with ball valve



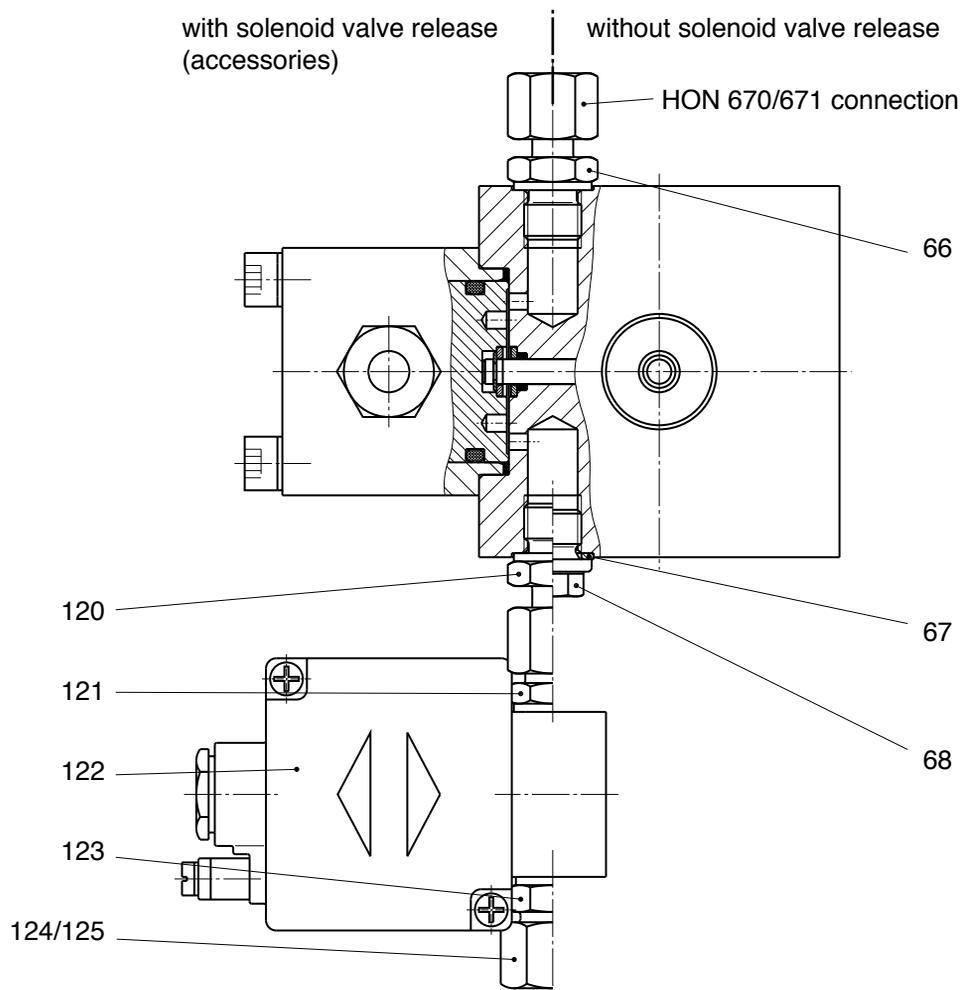
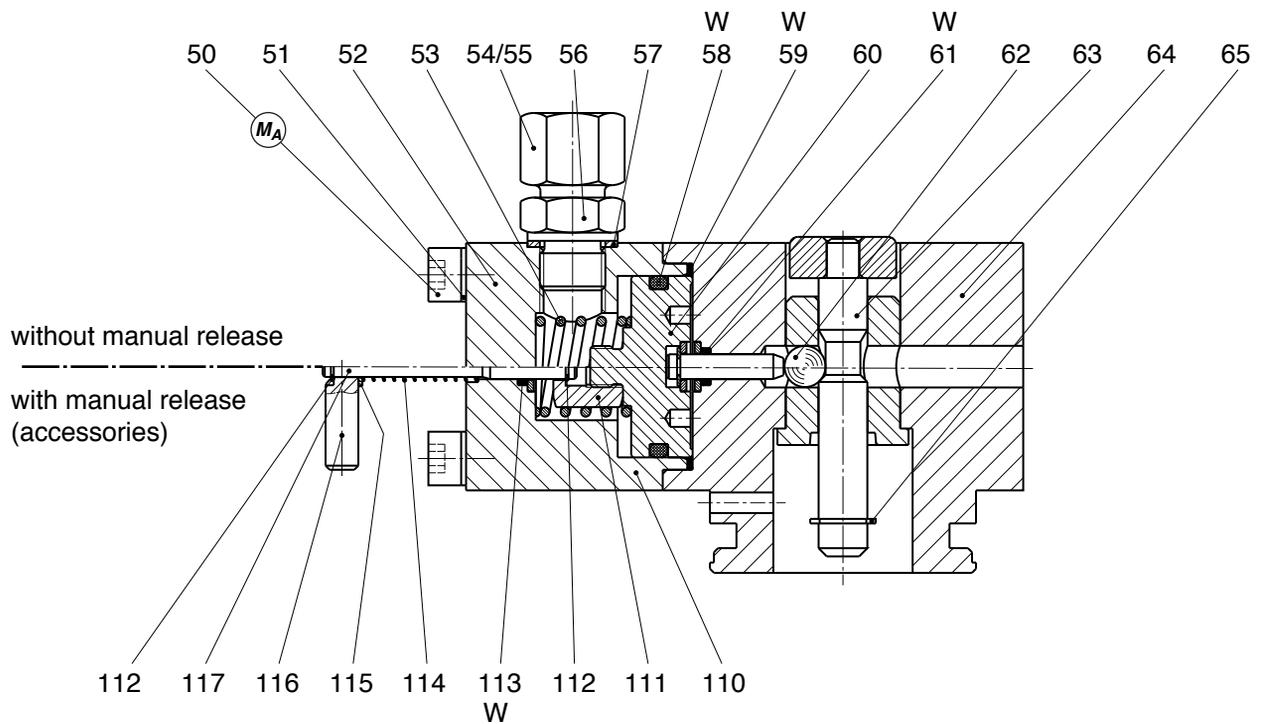
Bypass line with push button valve HON 913



MA Be sure to comply with torque figures in table on page 5.

W Parts should be held in stock for maintenance purposes.

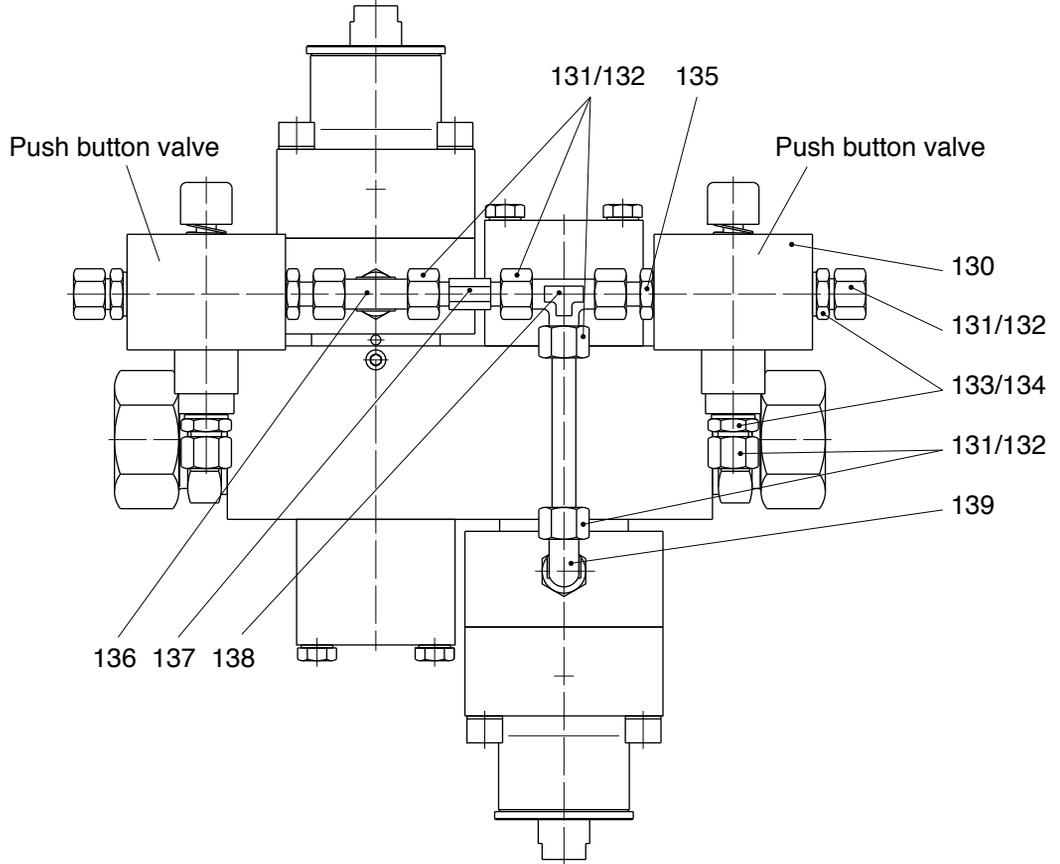
**5.1.3 Tripping device with and without accessories
for HON 703a / 704a with HON 670 / 671 (K 16, K 17, K 18)**



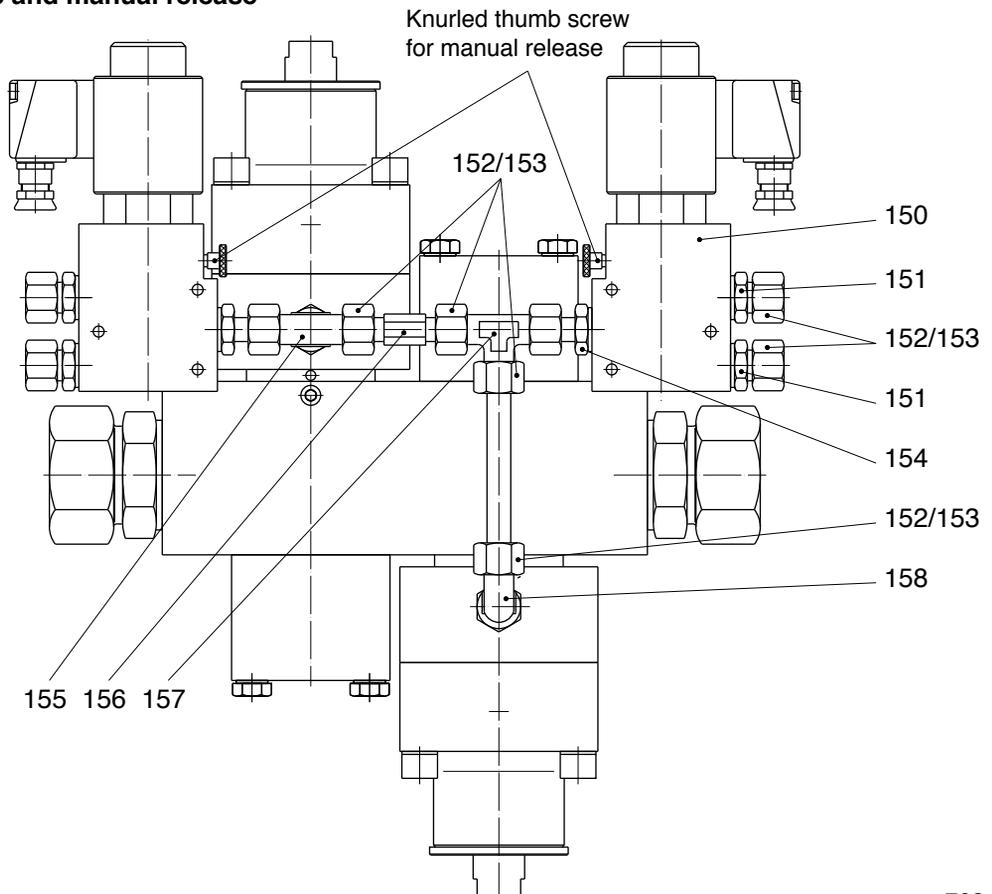
MA Be sure to comply with torque figures in table on page 5.
W Parts should be held in stock for maintenance purposes.

5.1.4 Accessories for HON 703a with HON 673 (K1a / K2a)

Manual release using push button valve

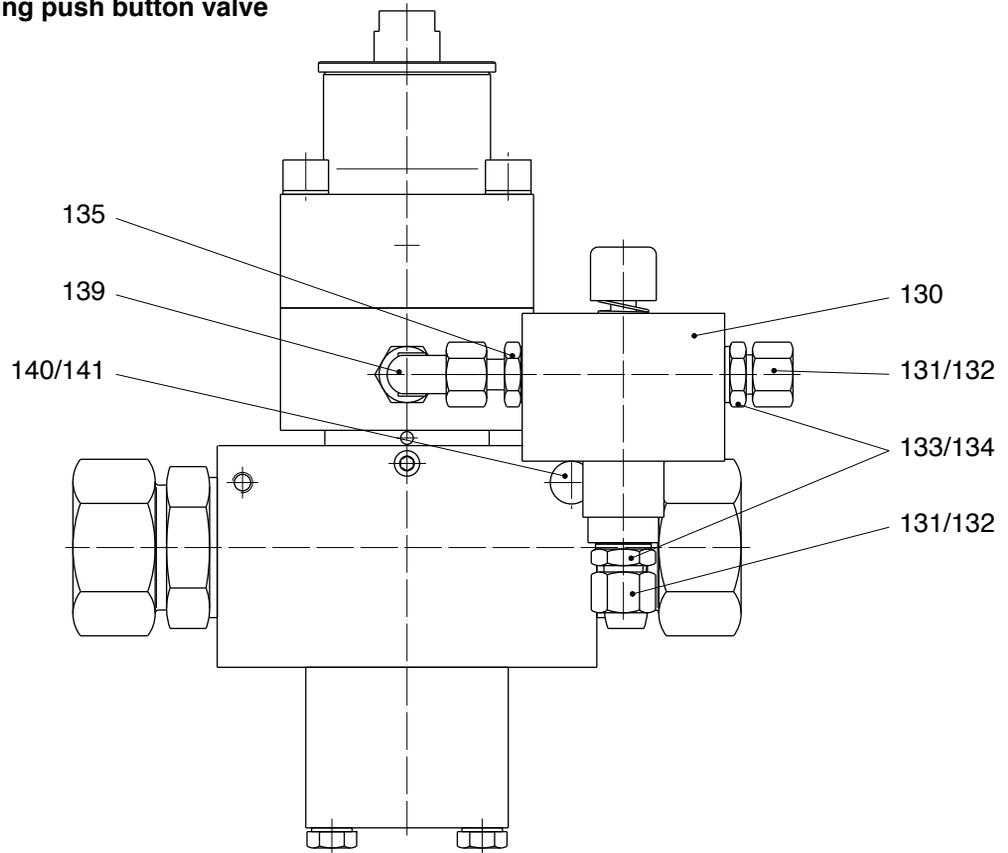


Solenoid valve and manual release

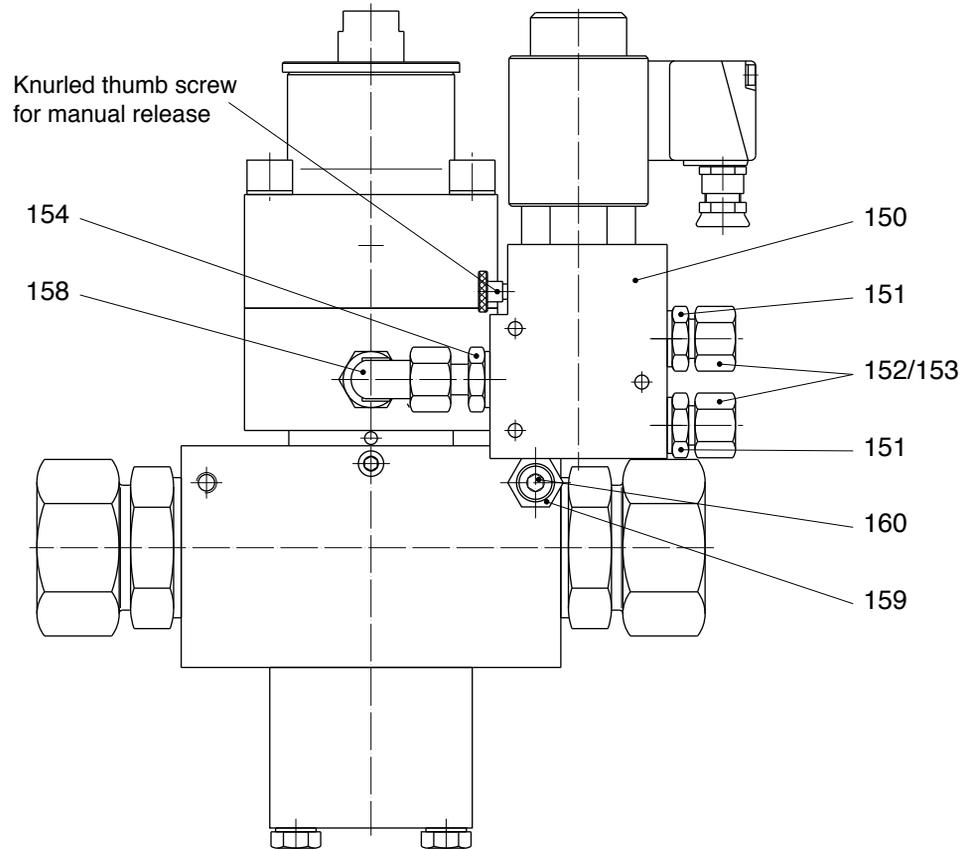


5.1.5 Accessories for HON 704a with HON 673 (K 1a / K 2a)

Manual release using push button valve



Solenoid valve and manual release



5.2.1 Spare parts list for HON 703a / 704a - standard version

Item no.	Denomination	Number		W	Materials	Part number	
		HON 703a	HON 704a			HON 703a	HON 704a
1	Cap nut, optional:						
1	for pipe E 10	1	1		St		30802
1	for pipe E 12	1	1		St		30804
1	for pipe E 16	1	1		St		30807
1	for pipe E 18	1	1		St		30808
1	for pipe E 22	1	1		St		30810
1	for pipe E 25	1	1		St		30811
1	for pipe E 28	1	1		St		30812
1	for pipe E 38	1	1		St		30814
1	for pipe E 42	1	1		St		30815
2	Compression joint, optional:						
2	for pipe E 10	1	1		St		30903
2	for pipe E 12	1	1		St		30904
2	for pipe E 16	1	1		St		30906
2	for pipe E 18	1	1		St		30907
2	for pipe E 22	1	1		St		30909
2	for pipe E 25	1	1		St		30910
2	for pipe E 28	1	1		St		30911
2	for pipe E 38	1	1		St		30913
2	for pipe E 42	1	1		St		30914
3	Nozzle, optional:						
3	for pipe E 10	1	1		St		30154
3	for pipe E 12	1	1		St		30155
3	for pipe E 16	1	1		St		30156
3	for pipe E 18	1	1		St		30157
3	for pipe E 22	1	1		St		30158
3	for pipe E 25	1	1		St		30159
3	for pipe E 28	1	1		St		30160
3	for pipe E 38	1	1		St		30161
3	for pipe E 42	1	1		St		30162
3	for use with HON 200	1	1		St		30098
3	for use with HON 201	1	1		St		32640
4	Reduction nozzle, optional:						
4	for pipe E 10 and E 12	1	1		St		10005921
4	for pipe E 16 and E 18	1	1		St		10005922
4	for pipe E 22	1	1		St		10005923
4	for pipe E 25 and E 28	1	1		St		10005924
5	O ring	2	2	W	KG		20375

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

Item no.	Denomination	Number		W	Materials	Part number	
		HON 703a	HON 704a			HON 703a	HON 704a
6	Body, optional:						
6	Light alloy model	1	1		LM	10030317	10030327
6	Steel model	1	1		St	10030319	10030329
7	O ring	2	1	W	KG	20572	
8	Valve stem, compl., at option:						
8	for light alloy model	2	1		Ni	10005513	
8	for steel model	2	1		Al/Bz	10005645	
9	O ring	4	2	W	KG	20658	
10	Flange transition piece, optional:						
10	DN 25 PN 25 and PN 40	1	1		St	10009536	
10	DN 25 ANSI 300 RF	1	1		St	10009445	
10	DN 25 ANSI 300 RJ	1	1		St	10009442	
10	DN 25 ANSI 600 RF	1	1		St	10009537	
10	DN 25 ANSI 600 RJ	1	1		St	10009538	
10	DN 40 PN 25 and PN 40	1	1		St	10009539	
10	DN 40 ANSI 300 RF	1	1		St	10009447	
10	DN 40 ANSI 300 RJ	1	1		St	10009448	
10	DN 40 ANSI 600 RF	1	1		St	10009540	
10	DN 40 ANSI 600 RJ	1	1		St	10009541	
10	DN 50 PN 25 and PN 40	1	1		St	10009542	
10	DN 50 ANSI 300 RF	1	1		St	10009449	
10	DN 50 ANSI 300 RJ	1	1		St	10009444	
10	DN 50 ANSI 600 RF	1	1		St	10009543	
10	DN 50 ANSI 600 RJ	1	1		St	10009544	
11	O ring	2	1	W	KG	20461	
12	Cover, optional:						
12	Light alloy model	2	1		LM	10030321	
12	Steel model	2	1		St	10030323	
13	Lock washer	8	4		St	14113	
14	Hex screw	8	4		St	10603	
15	Bush	2	1		Ni	10005613	
16	Cap	2	1		K	26332	
17	Sealing ring	2	1		St	19140	
18	Plug	2	1		K	26067	
19	Control spring	2	1		NFSt	10005526	
25	Cylinder screw	4	2		St	10004895	
26	Sealing ring	1	2		LM	18704	
27	Nozzle	2	2		St	30050	30164
28	Cap nut	6	4		St	30801	
29	Cutting ring	6	4		St	30901	

Item no.	Denomination	Number		W	Materials	Part number	
		HON 703a	HON 704a			HON 703a	HON 704a
30	Ball valve	2	1		St	26456	
31	Nozzle	2	-		St	31206	-
32	Nozzle	1	-		St	30164	-
33	Nozzle	1	-		St	31411	-
35	Nozzle	3	2		St	30050	
36	Nozzle	3	2		St	31842	
37	Cap nut	2	1		St	30804	
38	Cutting ring	4	1		St	30904	
39	Push button valve	1	1			10005200	
40	Nozzle	1	-		St	31403	-
41	Cap nut	2	-		St	30805	-
42	Push button valve	1	-			10005201	-
50	Cylinder screw	8	4		St	10552	
51	Lock washer	8	4		St	14112	
52	Cover	2	1		LM	10005638	
53	Control spring	2	1		NFSt	10005516	
54	Cap nut	2	1		St	30802	
55	Cutting ring	2	1		St	30903	
56	Nozzle	2	1		St	30114	
57	Sealing ring	2	1		LM	18694	
58	O ring	2	1	W	KG	20336	
59	O ring	2	1	W	KG	20398	
60	Piston, complete	2	1		Ms/Ni	10005639	
61	O ring	2	1	W	KG	20226	
62	Ball	2	1		St	26267	
63	Valve stem, complete	2	1		St/LM	10005560	
64	Tripping device body, complete	2	1		LM/Ms/St	10005636	
65	Sealing ring	2	1		FSt	19139	
66	Nozzle	2	1		St	30023	
67	Sealing ring	2	1		LM	18842	
68	Locking screw	2	1		St	26175	

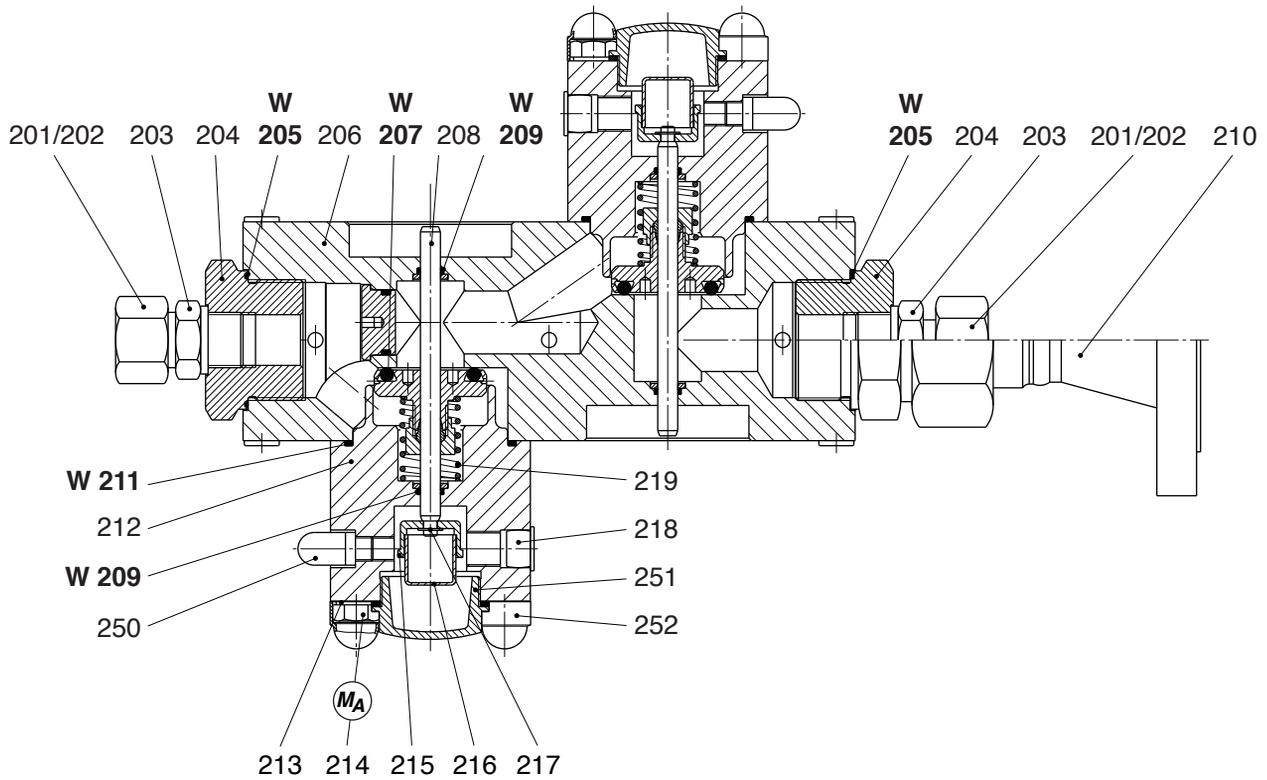
5.2.2 Spare parts list -- accessories

Item no.	Denomination	Number		W	Materials	Part number	
		HON 703a	HON 704a			HON 703a	HON 704a
100	Proximity switch	2	1			24160	
101	Cable box	2	1			24099	
102	Relay	1	1			24403	24402
110	Cover	2	1		LM	10005583	
111	Cap nut	2	1		St	10005586	
112	Sealing ring	4	2		FSt	19140	
113	O ring	2	1	W	KG	20226	
114	Control spring	2	1		NFSt	10014020	
115	Washer	2	1		St	6 157	
116	Release handle	2	1		LM	10005588	
117	Release rod	2	1		NiSt	10005587	
120	Nozzle	2	1		St	30023	
121	Nozzle	2	1		St	30110	
122	2/2-port directional control valve	2	1			24311	
123	Nozzle	2	1		St	30151	
124	Cap nut	2	1		St	30804	
125	Cutting ring	2	1		St	30904	
130	Push button valve	2	1			89121000	
131	Cap nut	8	2		St	30804	
132	Cutting ring	8	2		St	30904	
133	Nozzle	4	2		St	30113	
134	Sealing ring	4	2		LM	18694	
135	Nozzle	2	1		St	30038	
136	Nozzle	1	-		St	31429	-
137	Connecting piece	1	-		St	10005631	-
138	Nozzle	1	-		St	31402	-
139	Nozzle	1	1		St	31213	
140	Hex screw	-	1		St	-	8168
141	Cap	-	1		K	-	26336
150	Solenoid valve	2	1			24300	
151	Nozzle	4	2		St	30155	
152	Cap nut	10	2		St	30804	
153	Cutting ring	10	2		St	30904	
154	Nozzle	2	1		St	30038	
155	Nozzle	1	-		St	31429	-
156	Connecting piece	1	-		St	10005631	-
157	Nozzle	1	-		St	31402	-
158	Nozzle	1	1		St	31213	
159	Support sleeve	-	1		LM	-	10005699
160	Cylinder screw	-	1		St	-	10552

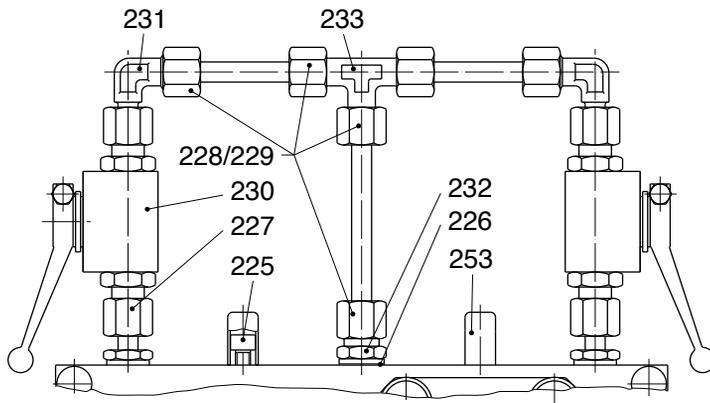
5.3 Parts for maintenance purposes

Item no.	Denomination	Number		Part number
		HON 703a	HON 704a	
Main valve HON 703a and HON 704a				
5	O ring	2	2	20375
7	O ring	2	1	20572
9	O ring	4	2	20658
11	O ring	2	1	20461
Tripping device without manual release for HON 703a / 704a with HON 670 (K 16, K 18) HON 671 (K 17)				
58	O ring	2	1	20336
59	O ring	2	1	20398
61	O ring	2	1	20226
Tripping device with manual release for HON 703a / 704a with HON 670 (K 16, K 18) HON 671 (K 17)				
58	O ring	2	1	20336
59	O ring	2	1	20398
61	O ring	2	1	20226
113	O ring	2	1	20226

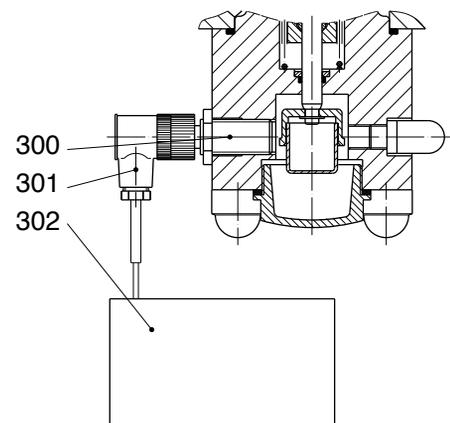
6.1.1 Actuator assembly HON 703a – open-air version



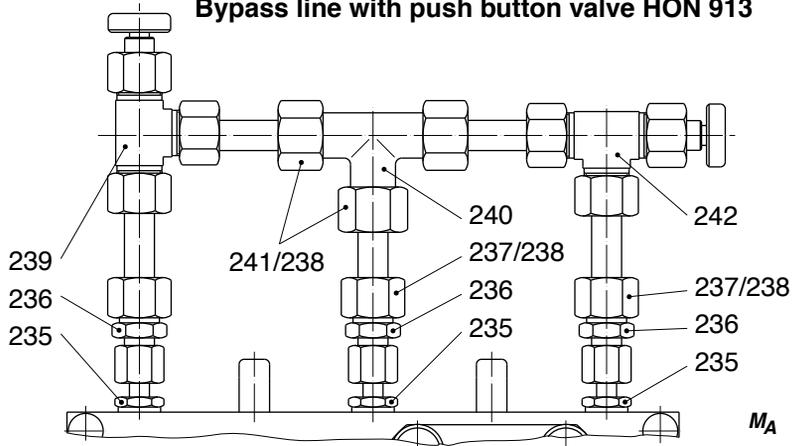
Bypass line with ball valve



Electrical position indicator (accessories)



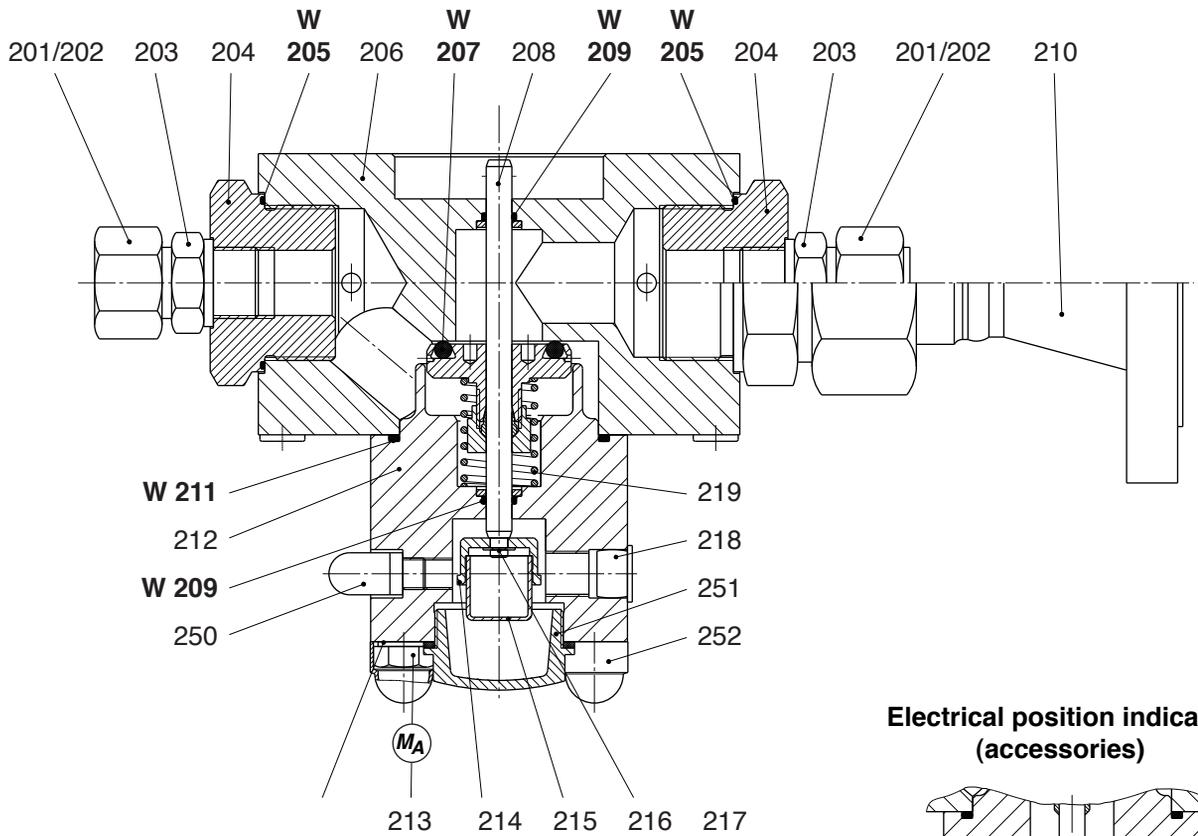
Bypass line with push button valve HON 913



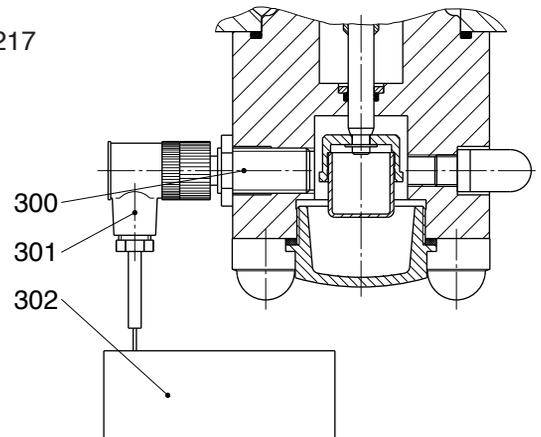
MA Be sure to comply with torque figures in table on page 5.

W Parts should be held in stock for maintenance purposes.

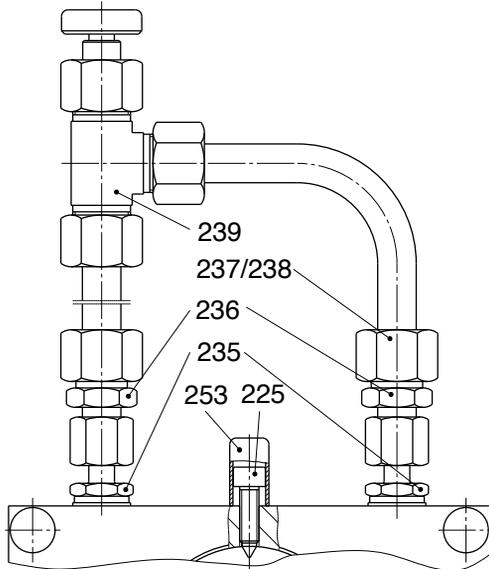
6.1.2 Actuator assembly HON 704a – open-air version



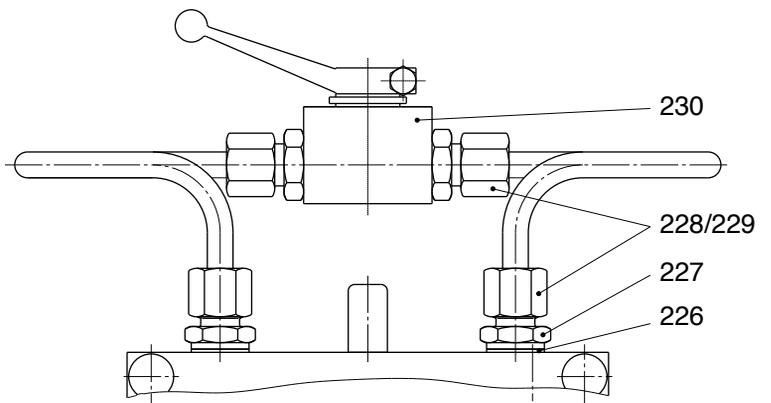
Electrical position indicator
(accessories)



Bypass line with push button valve HON 913



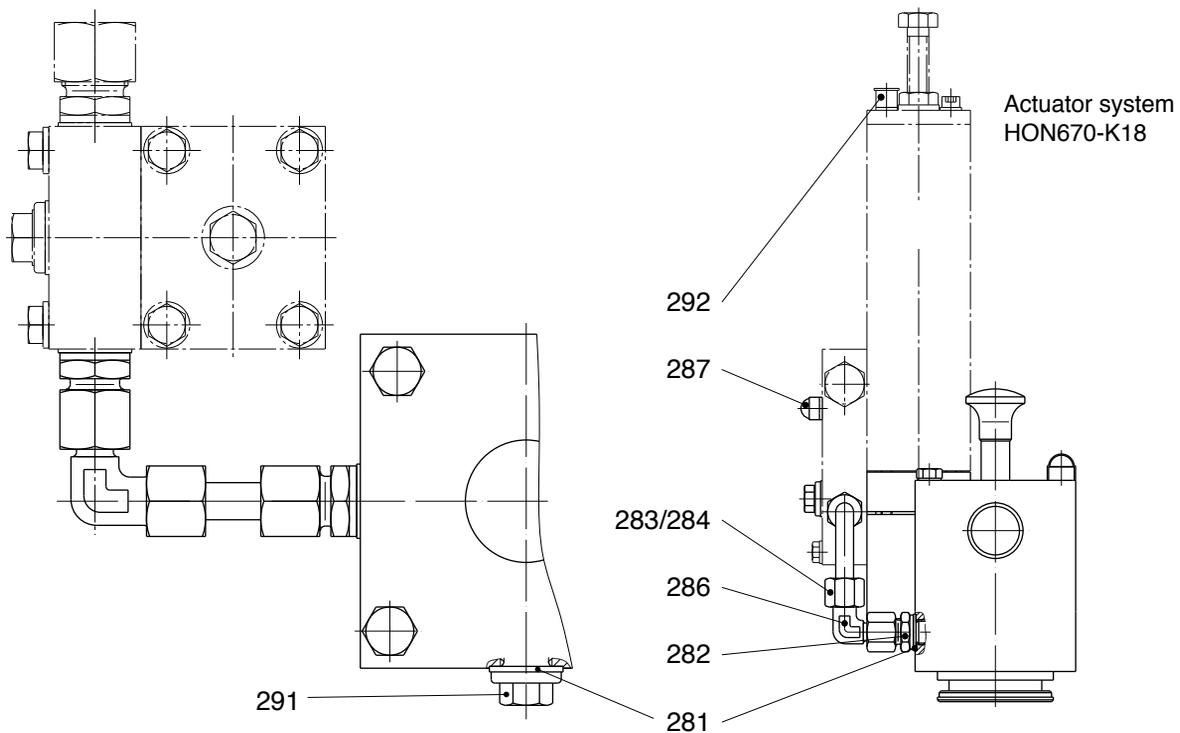
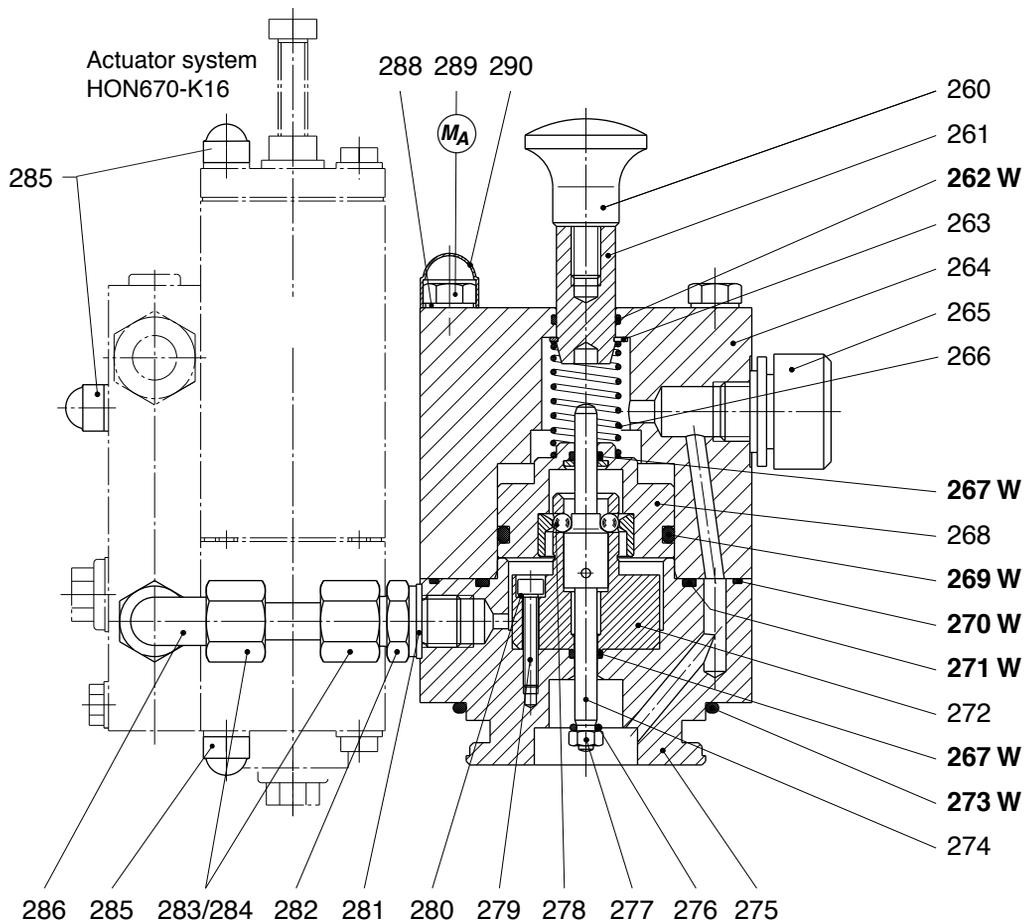
Bypass line with ball valve



M_A Be sure to comply with torque figures in table on page 5.

W Parts should be held in stock for maintenance purposes.

6.1.3 Tripping device for HON 703a / 704a with HON 670



M_A Be sure to comply with torque figures in table on page 5.
W Parts should be held in stock for maintenance purposes.

6.2 Spare parts list for HON 703a / 704a – open-air version

Item no.	Denomination	Number		W	Materials	Part number	
		HON 703a	HON 704a			HON 703a	HON 704a
201	Cap nut, optional:						
201	for pipe E 10	1	1		St		30802
201	for pipe E 12	1	1		St		30804
201	for pipe E 16	1	1		St		30807
201	for pipe E 18	1	1		St		30808
201	for pipe E 22	1	1		St		30810
201	for pipe E 25	1	1		St		30811
201	for pipe E 28	1	1		St		30812
201	for pipe E 38	1	1		St		30814
201	for pipe E 42	1	1		St		30815
202	Compression joint, optional:						
202	for pipe E 10	1	1		St		30903
202	for pipe E 12	1	1		St		30904
202	for pipe E 16	1	1		St		30906
202	for pipe E 18	1	1		St		30907
202	for pipe E 22	1	1		St		30909
202	for pipe E 25	1	1		St		30910
202	for pipe E 28	1	1		St		30911
202	for pipe E 38	1	1		St		30913
202	for pipe E 42	1	1		St		30914
203	Nozzle, optional:						
203	for pipe E 10	1	1		St		30154
203	for pipe E 12	1	1		St		30155
203	for pipe E 16	1	1		St		30156
203	for pipe E 18	1	1		St		30157
203	for pipe E 22	1	1		St		30158
203	for pipe E 25	1	1		St		30159
203	for pipe E 28	1	1		St		30160
203	for pipe E 38	1	1		St		30161
203	for pipe E 42	1	1		St		30162
203	for use with HON 200	1	1		St		30098
203	for use with HON 201	1	1		St		32640
204	Reduction nozzle, optional:						
204	for pipe E 10 and E 12	1	1		St		10005921
204	for pipe E 16 and E 18	1	1		St		10005922
204	for pipe E 22	1	1		St		10005923
204	for pipe E 25 and E 28	1	1		St		10005924
205	O ring	2	2	W	KG		20375

Item no.	Denomination	Number		W	Materials	Part number	
		HON 703a	HON 704a			HON 703a	HON 704a
206	Body, optional:						
206	Light alloy model	1	1		LM	10005905	18356534
206	Steel model	1	1		St		18360018
207	O ring	2	1	W	KG	20572	
208	Valve stem, compl., at option:						
208	for light alloy model	2	1		Ni	18358507	
208	for steel model	2	1		Al/Bz	10005645	
209	O ring	4	2	W	KG	20658	
210	Flange transition piece, optional:						
210	DN 25 PN 25 and PN 40	1	1		St	18356527	
210	DN 25 ANSI 300 RF	1	1		St	18356598	
210	DN 25 ANSI 600 RF	1	1		St	18355830	
210	DN 25 ANSI 600 RJ	1	1		St	12132205	
210	DN 50 PN 25 and PN 40	1	1		St	18357472	
210	DN 50 ANSI 600 RF	1	1		St	18357605	
210	DN 50 ANSI 600 RJ	1	1		St	18355558	
211	O ring	2	1	W	KG	20461	
212	Cover, optional:						
212	Light alloy model	2	1		LM	10005910	
212	Steel model	2	1		St	18360020	
213	Lock washer	8	4		St	14113	
214	Hex screw	8	4		St	10603	
215	Bush	2	1		Ni	10005613	
216	Cap	2	1		K	26332	
217	Sealing ring	2	1		St	19140	
218	Plug	2	1		K	26067	
219	Control spring	2	1		NFSt	10005526	
225	Cylinder screw	4	2		St	10004895	
226	Sealing ring	1	2		LM	18704	
227	Nozzle	2	2		St	30050	30164
228	Cap nut	6	4		St	30801	
229	Cutting ring	6	4		St	30901	
230	Ball valve	2	1		St	26456	
231	Nozzle	2	–		St	31206	–
232	Nozzle	1	–		St	30164	–
233	Nozzle	1	–		St	31411	–
235	Nozzle	3	2		St	30050	
236	Nozzle	3	2		St	31842	
237	Cap nut	2	1		St	30804	
238	Cutting ring	4	1		St	30904	
239	Push button valve	1	1			10005200	
240	Nozzle	1	–		St	31403	–
241	Cap nut	2	–		St	30805	–
242	Push button valve	1	–			10005201	–

Item no.	Denomination	Number		W	Materials	Part number	
		HON 703a	HON 704a			HON 703a	HON 704a
250	Silencer	2	1				26535
251	Inspection glass	2	1		K		27716
252	Protective cap	8	4		K		26338
253	Protective cap	4	2		K		26903
260	Mushroom grip	2	1		K		27708
261	Locking pin	2	1		Ni		10005491
262	O ring	2	1	W	KG		20333
263	Sealing ring	2	1		St		19116
264	Tripping device body cover	2	1		LM		10005938
265	Vent plug	2	1		K		18355509
266	Control spring	2	1		NFSt		10011929
267	O ring	4	2	W	KG		20226
268	Lock bushing	2	1		Al/Bz		10005939
269	O ring	2	1	W	KG		21034
270	O ring	2	1	W	KG		20320
271	O ring	2	1	W	KG		20244
272	Spindle bush	2	1		Al/Bz		10005549
273	O ring	2	1	W	KG		20840
274	Rod	2	1		Ni		10005943
275	Switch housing	2	1		LM		10005937
276	O ring	2	1		KG		20309
277	Hex nut	2	1		St		3020
278	Ball	12	6		St		5108
279	Cylinder screw	6	3		St		10370
280	Lock washer	6	3		St		14125
281	Sealing ring	4	2		LM		18842
282	Nozzle	2	1		St		30111
283	Cap nut	4	2		St		30803
284	Cutting ring	4	2		St		30903
285	Protective cap	16	8		K		26337
286	Nozzle	2	1		St		31207
287	Protective cap	8	4		K		26337
288	Lock washer	8	4		St		14112
289	Hex screw	8	4		St		10604
290	Protective cap	8	4		K		26336
291	locking screw	2	1		St		26175
292	Protective cap	16	8		K		26066
300	Proximity switch	2	1				24160
301	Cable box	2	1				24099
302	Relay	1	1			24403	24402

6.3 Parts for maintenance purposes

Item no.	Denomination	Number		Part number
		HON 703a	HON 704a	
Main valve HON 703a and HON 704a				
205	O ring	2	2	20375
207	O ring	2	1	20572
209	O ring	4	2	20658
211	O ring	2	1	20461
Tripping device for HON 703a / 704a with HON 670 (K 16, K 18)				
262	O ring	2	1	20333
267	O ring	4	2	20226
269	O ring	2	1	21034
270	O ring	2	1	20320
271	O ring	2	1	20244
273	O ring	2	1	20840

For More Information

To learn more about Honeywell's
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HON 703.20
2017-01
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