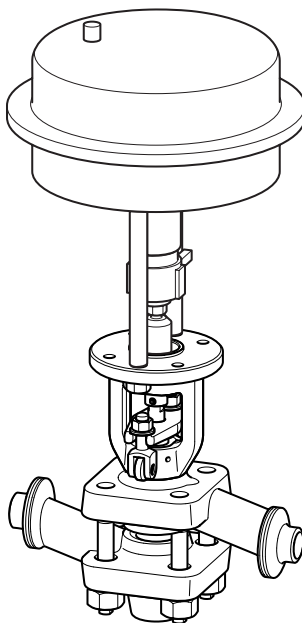


PA 110



MPA 110

Rapid-Action Intermittent Blowdown Valve

PA 110, MPA 110

PN 160/250, CL 600/900/1500

DN 25

Description

The following rapid-action intermittent blowdown valves are installed in pipes to discharge boiler blowdown water.

- Rapid-action intermittent blowdown valve PA 110 (manually operated)
- Rapid-action intermittent blowdown valve MPA 110 (automatically operated)

The equipment must only be used within the allowable pressure and temperature limits and only if the chemical and corrosive influences on the equipment are taken into account.

Function

The PA110 is intended for manual operation. To blow down the boiler the lever of the intermittent blowdown valve is completely opened manually for two or three seconds. The spring-loaded valve cone is forced out of the valve seat. As a result accumulated sludge and sediments rush out of the open valve.

When the lever is slowly released the spring forces the valve cone back into the valve seat and the valve is closed rapidly.

The MPA110 is equipped with a diaphragm actuator for automatic operation. Compressed air is used as control fluid. The diaphragm actuator opens the intermittent blowdown valve to perform a short blowdown.

The diaphragm actuator comes in two versions. The diaphragm actuator NII is designed for differential pressures up to 160 bar and the diaphragm actuator NIIL for differential pressures up to 220 bar.

The opening of the valve can be triggered by:

- the programme-controlled blowdown unit TA, see data sheet TA,
- the intermittent blowdown controller LRR 1-40, see data sheet LRR 1-40 or
- SPECTOR^{control} with CAN bus

Materials of construction

Component parts	EN	ASTM
Body ¹⁾	13CrMo4-5 (1.7335)	A182-F12
Yoke	P250GH (1.0460)	A105
Seat bushing for valve cone ¹⁾	X6CrNiMoTi17-12-2 (1.4571)	AISI316Ti
Threaded bolt ¹⁾	21CrMoV 5-7 (1.7709)	–
Nut ¹⁾	21CrMoV 5-7 (1.7709)	–
Packing	Graphite	–
Bonnet	EN-GJMW-350-4 (0.8035)	–
Compression spring	EN 10270-1	–

¹⁾ Pressure parts

Optional extras

The following add-on equipment is available:

- Retrofitting kit 332614 for converting PA110 so that it can use a diaphragm actuator

End connections

- Butt-weld end EN 12627, weld joint geometry ISO 9692-1, code number 1.3 (30° chamfer), for tube 33.7 × ≥ 3.6
- Butt-weld end ASME B 16.25 ASME B 36.10 Sched 80
- Butt-weld end ASME B 16.25 ASME B 36.10 Sched 160
- Flange EN 1092-1 B2 PN 160
- Flange EN 1092-1 B2 PN 250
- Flange ASME B 16.5 CLASS 400/600 RF
- Flange ASME B 16.5 CLASS 900/1500 RF
- Flange ASME B 16.5 CLASS 900/1500 RJ
- Socket-weld end DIN EN 12760/ASME B 16.11 CLASS 6000
- Special butt-weld end DIN EN 12627, weld joint geometry ISO 9692-1, code number 1.3 (30° chamfer), for tube 33.7 × ≥ 2.6

Other end connections available on request.

Pressure and temperature ratings

End connection		Flange PN 160 and Butt-weld end EN (for tube $33.7 \times \geq 2.6$)				
Pressure ¹⁾ p	[barg]	160	160	160	160	144
Temperature ¹⁾ T	[°C]	20	100	200	300	400
Max. pressure at boiling point	[bar/°C]	154/344				

1) Resistance limits for body/cover to EN 1092-1

End connection		Flange PN 250 and Butt-weld end EN (for tube $33.7 \times \geq 3.6$)				
Pressure ¹⁾ p	[barg]	250	250	250	250	225
Temperature ¹⁾ T	[°C]	20	100	200	300	400
Max. pressure at boiling point	[bar/°C]	220/374				

1) Resistance limits for body/cover to EN 1092-1

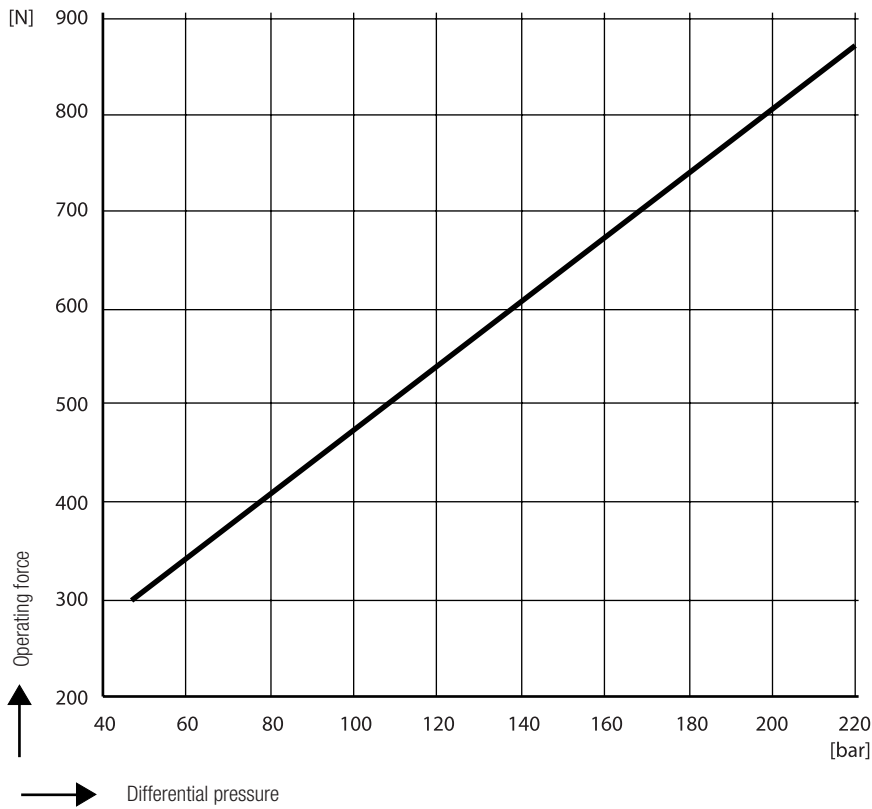
End connection		Flange CLASS 400/600				
Pressure ¹⁾ p	[barg]	103.0	100.9	92.5	85.7	73.3
Temperature ¹⁾ T	[°C]	38	100	200	300	400
Max. pressure at boiling point	[bar/°C]	85/300				

1) Resistance limits for body/cover to ASME B 16.5

End connection		Flansch CLASS 1500, Butt-weld end Sched. 80 and Sched. 160 Socket-weld end CLASS 6000				
Pressure ¹⁾ p	[barg]	258.6	252.2	231.3	214.4	183.1
Temperature ¹⁾ T	[°C]	38	100	200	300	400
Max. pressure at boiling point	[bar/°C]	195/364				

1) Resistance limits for body/cover to ASME B 16.5

Operating force for PA



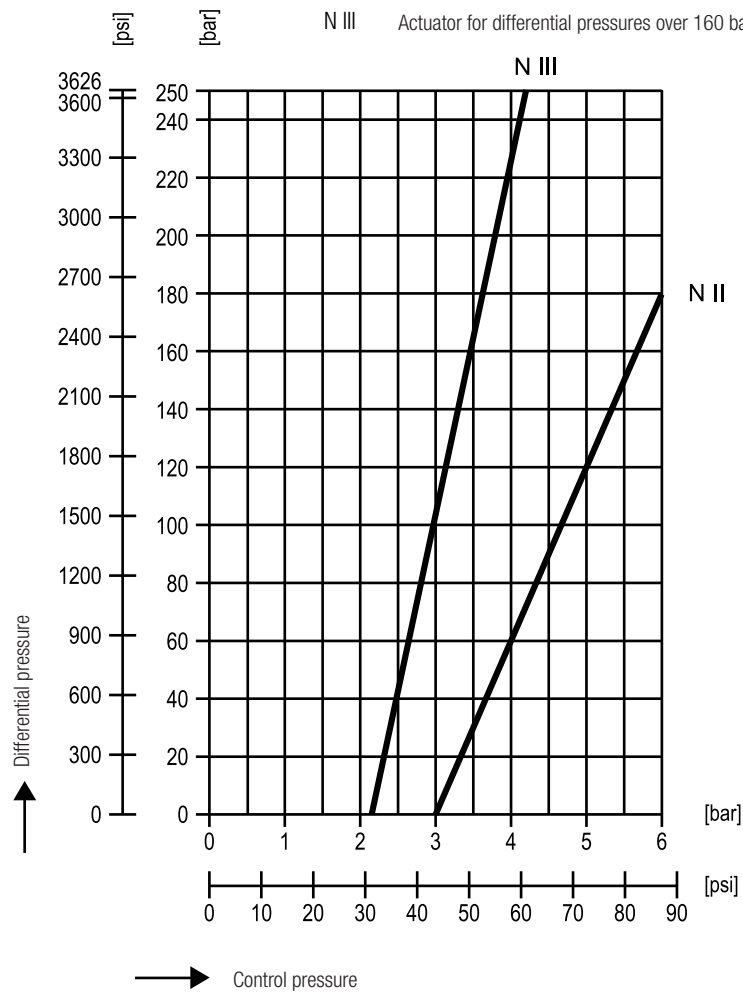
Control pressure for MPA 110

The diaphragm actuator is actuated by means of compressed air. The control pressure must not exceed 6 bar.

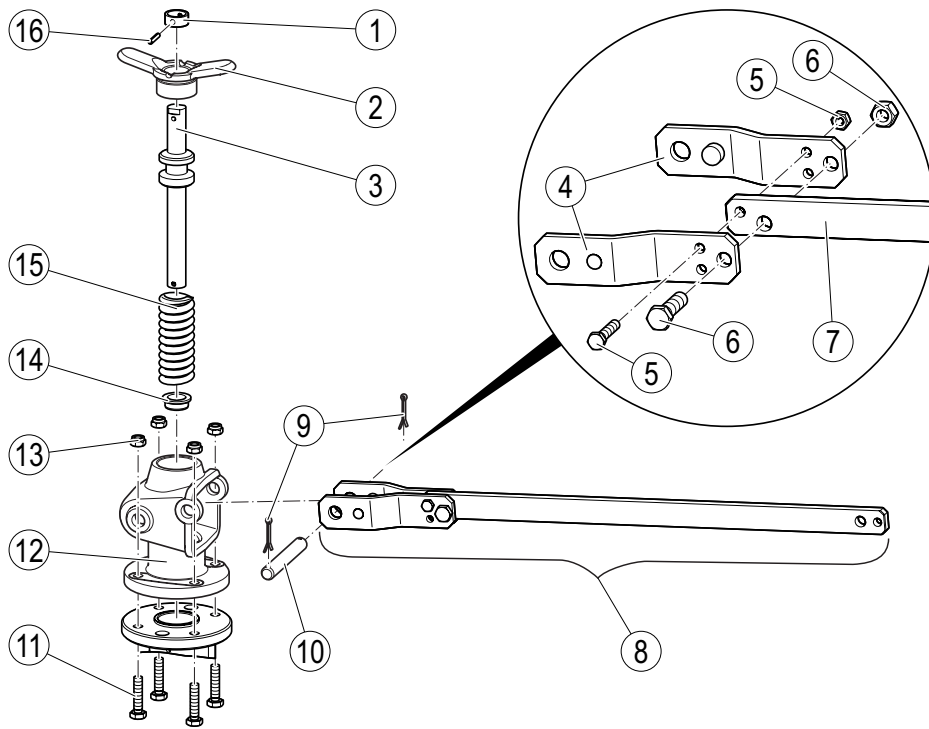
■ Use the following diagram to ascertain the minimum control pressure as a function of the differential pressure and the type of actuator.

N II Actuator for differential pressures up to 160 bar/2320 psi

N III Actuator for differential pressures over 160 bar/2320 psi



Design
Actuator PA

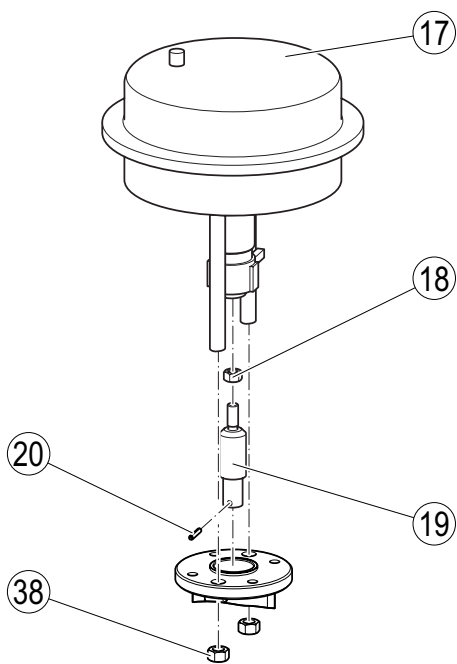


Item no.	Designation
1	Spindle bush
2	Toggle handle
3	Stem
4	Lever brackets
5	Nut M8 and bolt
6	Nut M12 and bolt
7	Lever extension
8	Lever assembly

Item no.	Designation
9	Split pin
10	Joint bolt
11	Bolt
12	Bonnet
13	Lock nut
14	Sleeve
15	Compression spring
16	Spring pin

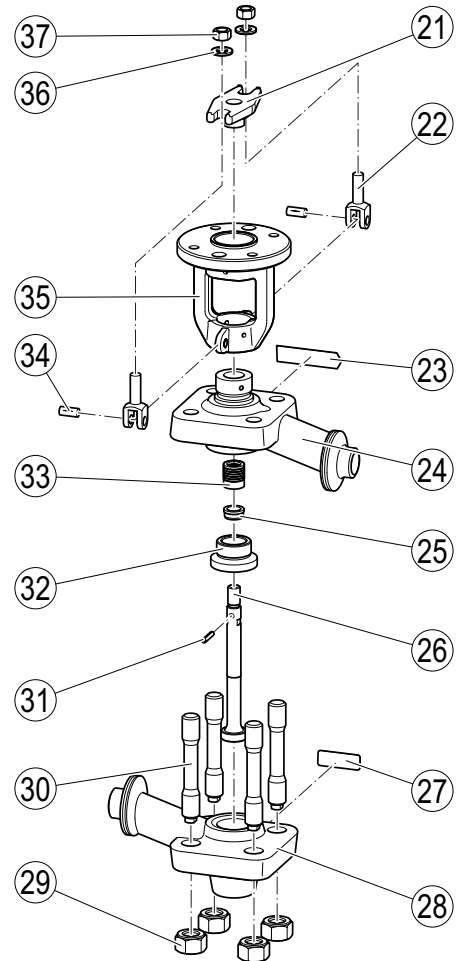
Actuator MPA

The MPA 110 is available with two different types of diaphragm actuator N II or N III. The main difference between these actuators is the size of the diaphragm.



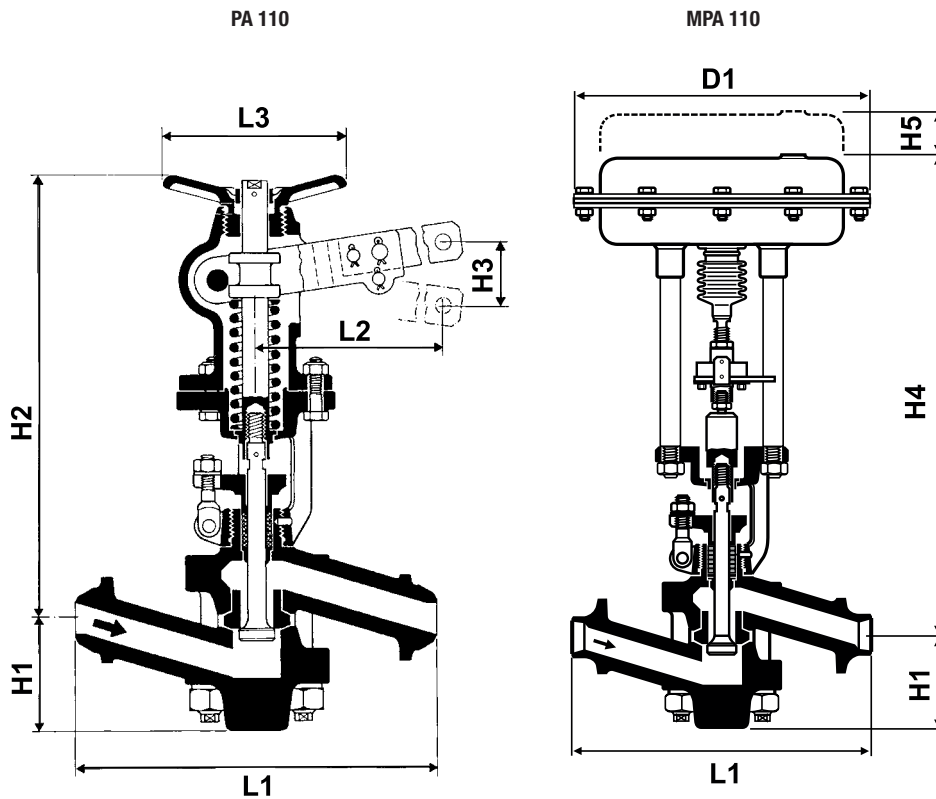
Item no.	Designation
17	Diaphragm actuator
18	Nut
19	Spindle extension
20	Spring pin
38	Nut

Body PA/MPA110



Item no.	Designation
21	Stuffing box
22	Hinged bolt
23	Name plate on upper body
24	Upper body
25	Bushing
26	Valve plug
27	Name plate on lower body
28	Lower body
29	Nut
30	Stud bolts
31	Spring pin
32	Seat bushing
33	Packing rings
34	Grooved pin
35	Yoke
36	Washer
37	Nut

Dimensions and weights



Dimensions [mm]	N II*)	N III*)
D1	300	405
H1	90	
H2	370	
H3	180	
H4	520	586
H5 (space required for servicing)	40	
L1	See the following table	
L2	645	
L3	150	

*) Diaphragm actuator

End connection	Dimension L1 [mm]	Weight, approx. [kg]		
		PA 110	MPA 110/NII	MPA 110/NIII
Flange PN 63/100/160, DN25	390	29	49	74
Flange PN 250, DN25	410	30	50	75
Flange Class 400/600, DN25	410	29	49	74
Flange Class 900/1500, DN25	440	30	50	75
Butt-weld end, EN or ASME DN25	300	23	43	68
Special butt-weld ends via transition pieces, DN25	400	24	44	69
Socket-weld end	280	29	49	74

*) Diaphragm actuator

Rapid-Action Intermittent
Blowdown Valve
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Application of European Directives
Pressure Equipment Directive (PED)

The equipment conforms to this directive and can be used for the following media:

- Fluids of group 2

ATEX Directive

The equipment has classification: CE Ex II 2G/D c X.

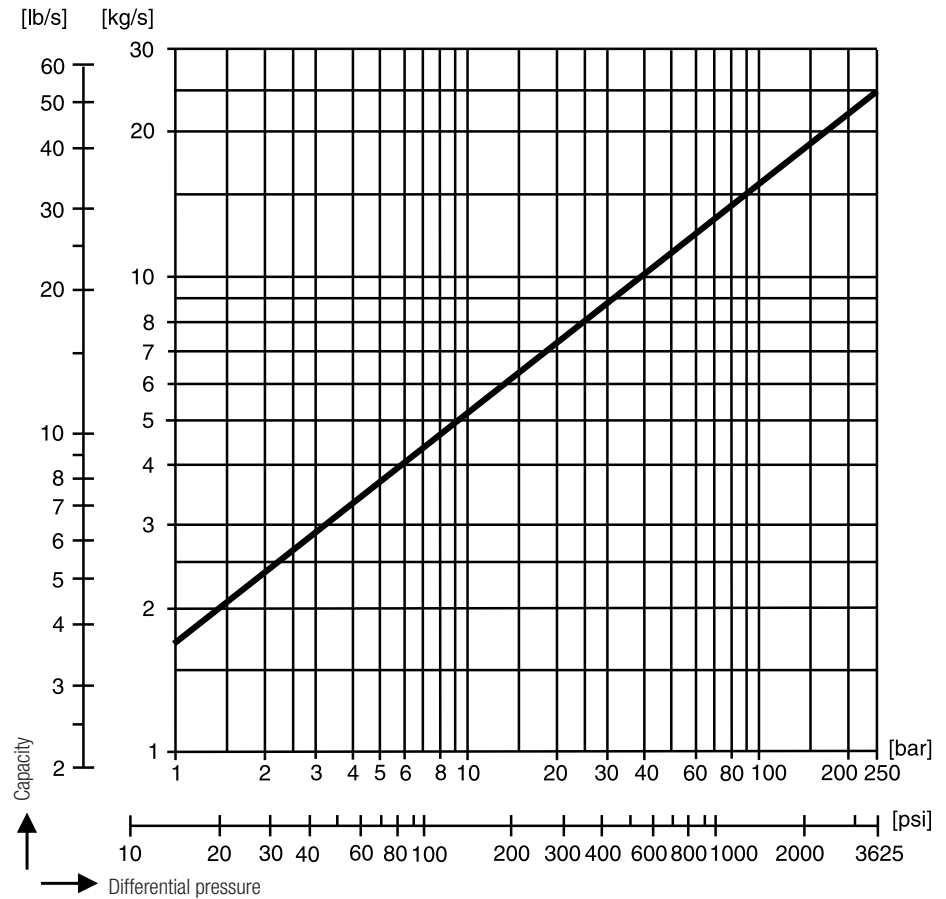
For use in potentially explosive atmospheres in zones (surrounding atmosphere to Directive 1999/92/EC) 1, 2, 21 and 22, please read and observe the following information: The sign "X" in the Ex label signifies that operation at an excessive surface temperature caused by the medium must be avoided. The equipment itself does not generate additional surface temperatures.

When installed, static electricity may arise between the equipment and the connected system. During use in potentially explosive atmospheres, the discharge or prevention of possible electrostatic charging is the responsibility of the manufacturer or owner of the system. If there is a possibility that medium might escape, e.g. via actuating devices or leaks in screwed couplings, the manufacturer or owner of the system must take this into consideration when dividing the area into zones.

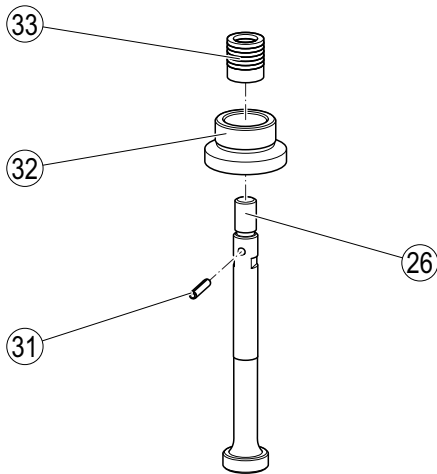
If the MPA has a pneumatic drive, if incorrectly discharged the exhaust air (compressed air) required for operation can lead to swirls of potentially explosive dust.

Capacity Chart

The chart shows the maximum capacity for hot water. The capacity is a function of the differential pressure (= inlet pressure minus outlet back pressure).



Spare Parts



Item no.	Designation	Qty.	Stock code #
33, 31	Spare part kit, consisting of: 6 packing rings 1 spring pin	1	333712
33, 31, 26, 32	Spare part kit, consisting of: 6 packing rings 1 spring pin 1 valve cone 1 seat bushing	1	333571
17	Diaphragm actuator NII	1	332610
	Diaphragm actuator NIII	1	332611
-	Diaphragm for NII actuator (only for MPA 110)	1	147599
-	Diaphragm for NIII actuator (only for MPA 110)	1	1503257

Supply in accordance with our general terms of business.

GESTRA AG

Münchener Straße 77, 28215 Bremen, Germany
Telefon +49 421 3503-0, Telefax +49 421 3503-393
E-mail info@de.gestra.com, Web www.gestra.de

