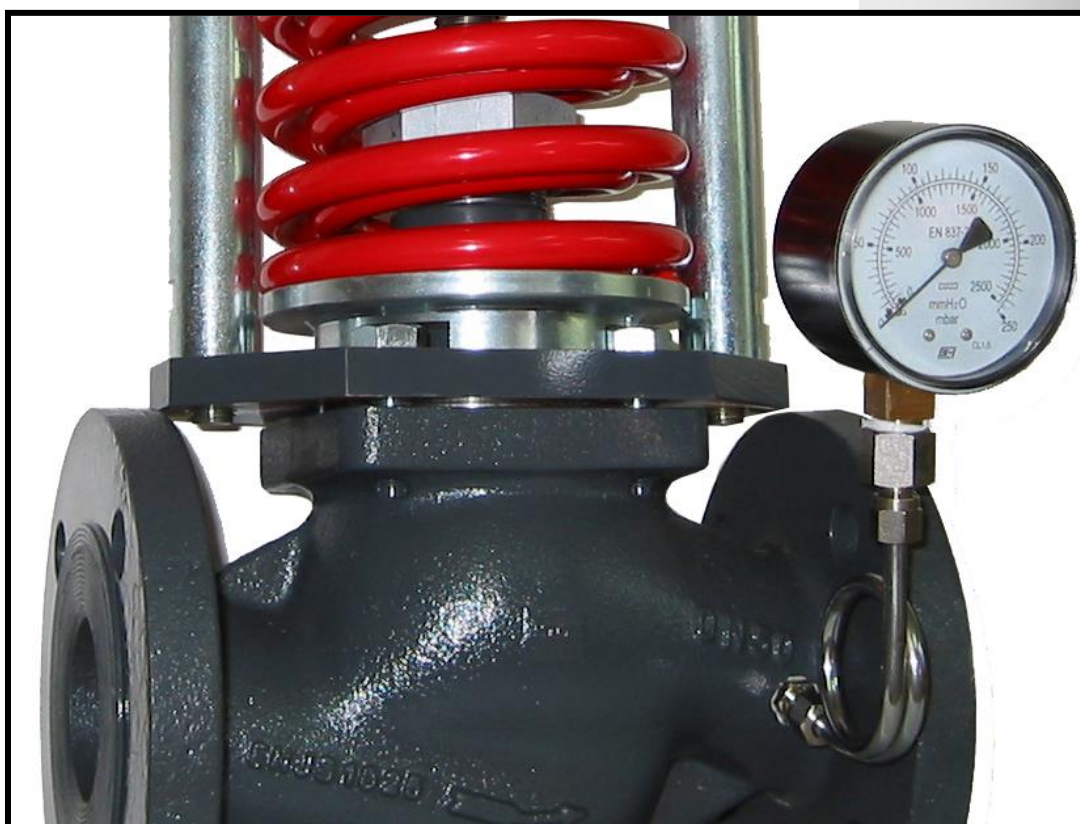




VALFONTA



SELF-ACTING PRESSURE REDUCING VALVE **M1**

PRESSURE REDUCING VALVE

MODEL **M1**

MAIN CHARACTERISTICS

The M1 model is self-operated bellows sealed pressure reducing valve.

This series of regulators is suitable for steam, compressed air, gases and liquids.

Very quick response to the demand.

Globe valve, single seat, outlet pressure regulated by diaphragm and inlet pressure balanced (from DN65).

Stem sealed by bellow of double layer in stainless steel.

To avoid any damage on the bellows M1 series is provided of anti rotation system.

Actuator mounts diaphragm with intermediate reinforced lining.

Regulation range between 0,1 and 15 barg with different actuators.

Fluids

Liquids, compressed air, neutral gases and steam.

Max. inlet pressure 40 barg (DN15 to DN50)
25 barg (DN65 to DN150)

Sizes DN15 to DN150

Body material Nodular Iron GGG40.3
Carbon steel A216 WCB
Stainless steel A351 CF3M
Bronze RG10, on request

Connections Flanged DIN PN16-PN40
Flanged ANSI 150 / 300
Threaded BSP / NPT

Trim material Stainless steel Aisi 316L

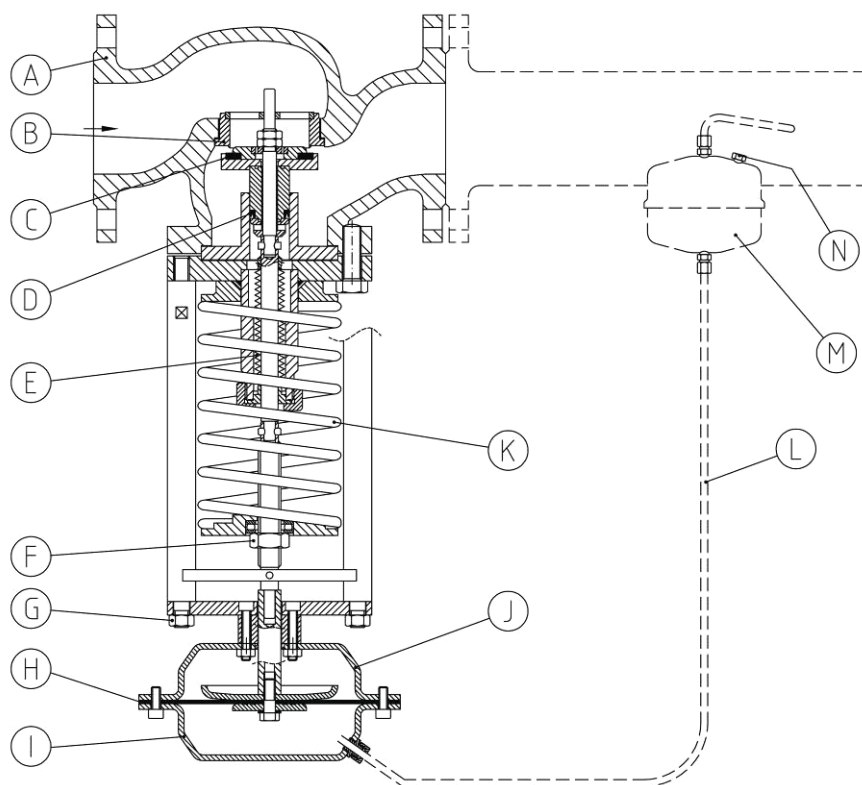
Diaphragm Material EPDM -40°C to 125°C
EPDM + PTFE 125°C to 250°C

Seal material Graphited PTFE
NBR, PEEK, EPDM, ...



Other configurations:

- Kv or CV reduced.
- Trim material: Monel, Bronze or others
- A control line kit for pressure tapping directly at the body is available on request (optionally with or without condensation tank) for set points > 1 bar.
- Condensation tank (pot) is available and necessary for steam or fluid upper to 125 °C, to protect the diaphragm against excessive temperature.
- Pressure excess valve (see [S1 model](#)).



- A – Body valve
- B – Seat (replaceable)
- C – Seal
- D – Compensation gasket
- E – Bellows
- F – Adjusting nut
- G – Nut
- H – Diaphragm
- I – Actuator casing (Upper)
- J – Actuator casing (Lower)
- K – Springs
- L – Impulse pipe
- M – Tank
- N – Coupling

HOW DOES IT WORKS

When the downstream demand increases, downstream pressure will drop. The pressure on the diaphragm drops, allowing the regulator to open further. Because of the unbalance of the measuring element and the loading element, the restricting element will move up to allow passage of more flow.

When the downstream demand for flow decreases, downstream pressure increases. In this case, unbalance causes the restricting element to move up to pass less flow or lockup.

When the pipeline is full filled we have to match the required outlet pressure (Set) acting on the adjusting nut (F).

If this pressure overcomes set value, the valve will close proportionally to maintain outlet pressure.

Starting from size DN65 valve is provided with a compensation gasket (D) to regulate inlet pressure.

RECOMMENDATIONS

This series must be used only as a pressure reducing valve because any variation will be absorbed by the diaphragm and compensated.

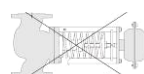
Valve close when outlet pressure increases.



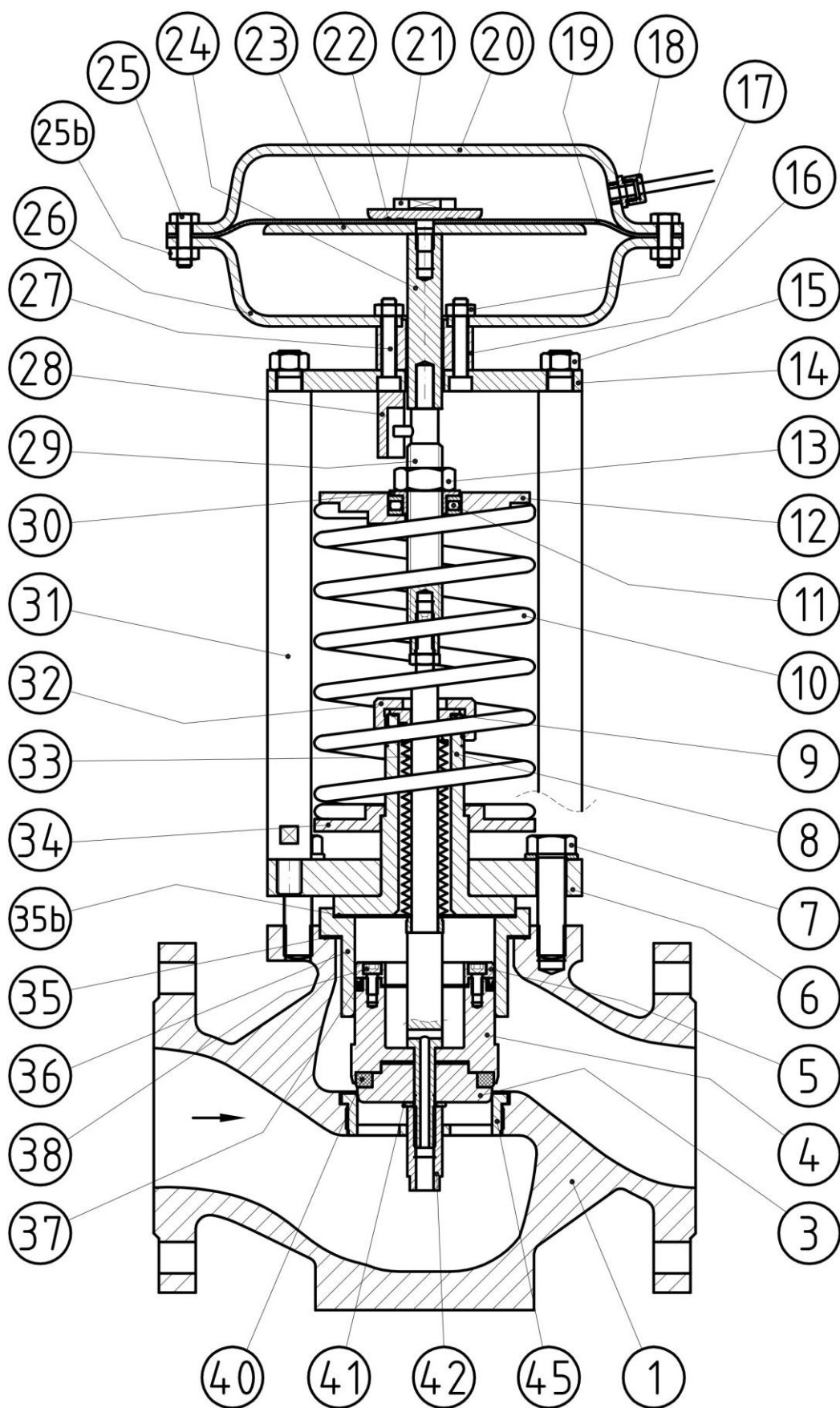
Standard instalation when temperature is upper 0°C



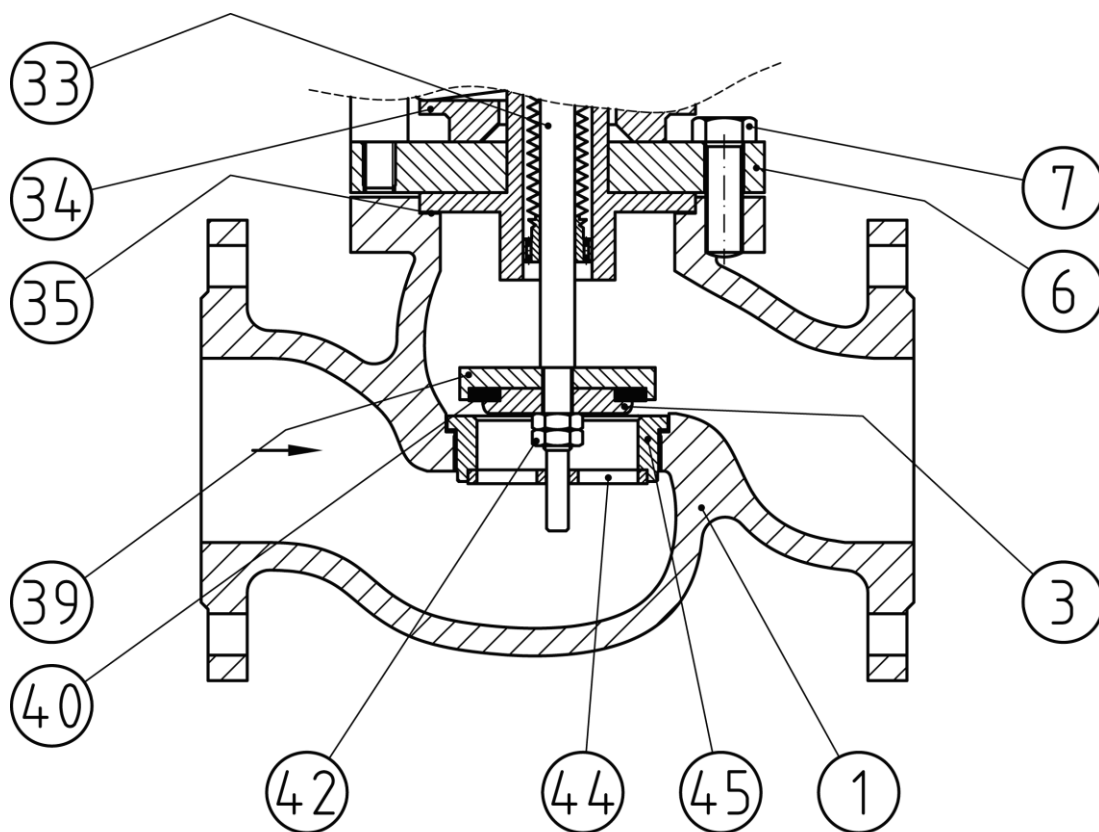
Another option for liquids and neutral gases until 80 °C



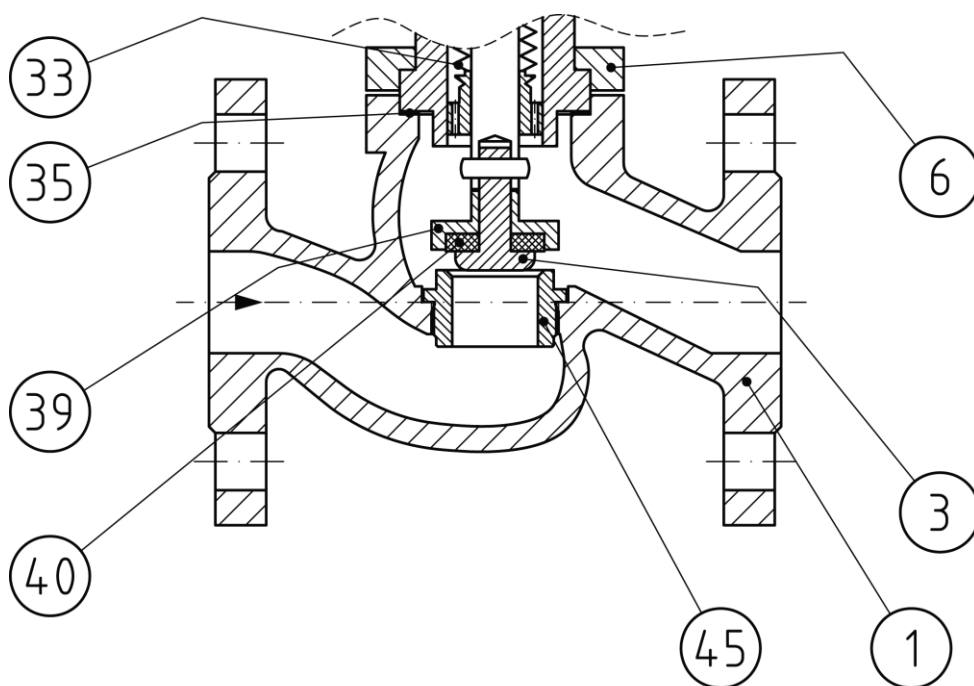
This position is not admitted



DN65 – DN150



DN40– DN50



DN15 – DN32



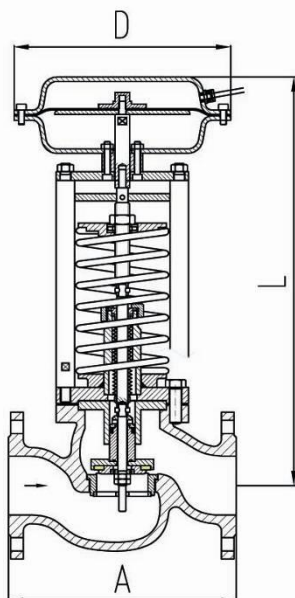
REF	DESCRIPTION	MATERIAL
1	Body	Nodular Iron EN-JS1049 (GGG40.3), Bronze RG10, Carbon Steel 1.0619 (GSC-25N), Stainless steel 1.4408 (AISI 316)
3	Lower support seal	1.4404 - SS 316L
4	Bush	1.4404 - SS 316L
5	Washer guide stem	1.4404 - SS 316L
6	Cover	1.1191 - Carbon steel
7	Screw	8.8 - Carbon steel
8	Bellow guide	1.0570 or 1.1191 - Carbon steel
9	O-ring	Viton or Graphite+SS304
10	Springs	1.0904 (Spring Carbon steel 55 Si 7)
11	Ball bearing	1.3505 (Bearing steel 100 Cr 6)
12	Upper support springs	1.1191 - Carbon steel
13	Adjusting nut	8.8 - Carbon steel
14	Support plate	1.1191 - Carbon steel
15	Nut M12	8.8 - Carbon steel
16	Support screws M8	8.8 - Carbon steel
17	Nut M8	8.8 - Carbon steel
18	Coupling	Brass / Stainless steel
19	Diaphragm	EPDM, EPDM+PTFE, NBR, VITON, ...
20	Actuator casing (upper)	1.0335 (Steel sheet with epoxy paint) or Stainless steel sheet AISI 316
21	Diaphragm screw	1.4301 (Stainless steel AISI 304)
22	O-ring	Viton
23	Diaphragm plate	1.1191 - Carbon steel
24	Diaphragm stem	1.1191 - Carbon steel
25	Hexagonal screw	A-2 Stainless steel
25b	Hexagonal Nut	A-2 Stainless steel
26	Actuator casing (lower)	1.0335 (Steel sheet with epoxy paint) or Stainless steel sheet AISI 316
27	Allen screw	8.8 - Carbon steel
28	Antirotation system	1.1191 - Carbon steel
29	Regulation stem	1.4301 (Stainless steel AISI 304)
30	Guide ball bearing	1.4307 (Stainless steel AISI 304L)
31	Column	1.1191 - Carbon steel
32	Nut guide bellow	1.1191 - Carbon steel
33	Bellow	1.4404 (Stainless steel AISI 316Ti)
34	Lower support springs	1.1191 - Carbon steel
35	Body Gasket	Graphite with SS304
35b	Guide Gasket	Graphite with SS304
36	Bush guide	1.4404 - SS 316L
37	Balancing Gasket	Graphited PTFE
38	Allen screw	A-2 Stainless steel
39	Support seal	1.4404 - SS 316L
40	Seal	Graphited PTFE (Consult for others)
41	Washer	A-2 Stainless steel
42	Nut	1.4404 - SS 316L
45	Seat	1.4404 - SS 316L



Technical data

Nominal pressure	PN16-PN25-PN40 or CLASS 150-CLASS 300		
Nominal size	DN15 to DN50	DN65 to DN80	DN100 to DN150
Max. permissible differential pressure Δp	25 bar	20 bar	16 bar
Max. permissible temperature: body	Refer to technical sheet HT-101		
Max. permissible temperature: plug	metal: 250°C PTFE+GR: 220°C PEEK: 250°C EPDM: 125°C FPM: 150°C NBR: 80°C	metal: 220°C PTFE+GR: 220°C PEEK: 250°C EPDM: 125°C FPM: 150°C NBR: 80°C	
Max. permissible temperature: actuator	Diaphragm EPDM till 125°C Diaphragm EPDM+PTFE and condensation tank till 250°C		

Dimensions, weight and Kv value



DN	15	20	25	32	40	50	65	80	100	125	150
Kv (m³/h)	3.5	5	9	13.5	22	32	57	82	115	190	240
A EN (mm)	130	150	160	180	200	230	290	310	350	400	480*
A ANSI150 (mm) (inches)	○	○	184 7,25"	-	222 8,75"	254 10"	276 10,9"	298.5 11,75"	352.5 13,88"	-	451 17,75"
A ANSI300 (mm) (inches)	○	○	197 7,76"	-	235 9,25"	267 10,51"	292 11,5"	317.5 12,50"	368 14,49"	-	-
L (mm)	440	445	450	455	463	475	560	560	575	600	640
Weight (kg.)	20	22	24	28	32	35	52	57	68	85	105

* DN150 face to face: optionally 450 mm

Approx. Downstream pressure ranges (D)

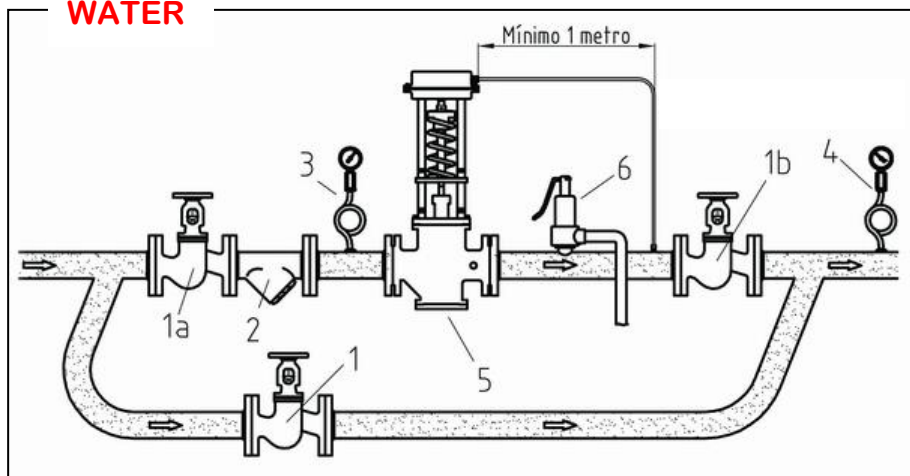
Range (bar g)	DN15 DN20	DN25 DN32	DN40 DN50	DN65	DN80	DN100	DN125	DN150
0,1 - 1,5	295	295	295	295	350	350	-	-
1 - 3	255	255	255	255	295	295	295	350
2 - 5	230	230	230	230	255	255	255	295
4 - 8	195	195	195	195	230	230	230	255
7 - 15	175	175	175	175	195	195	195	230

Approximate diameter of the recommended actuator (mm)



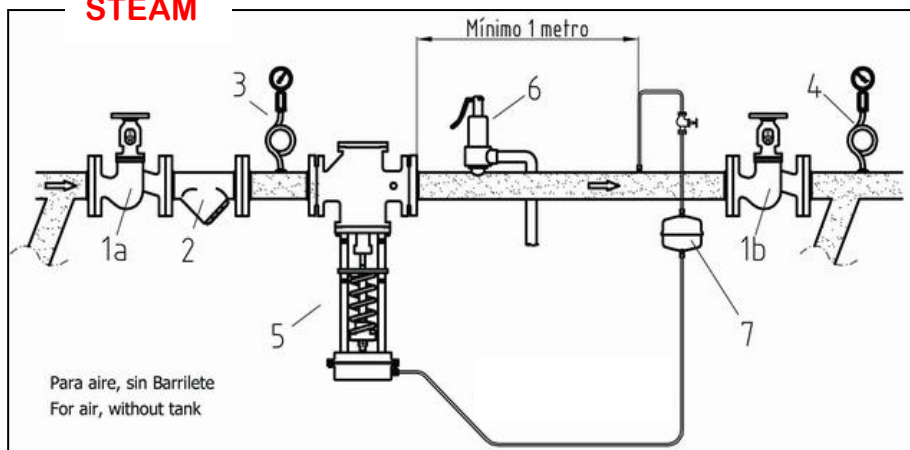
Typical installation

WATER



- 1.- Isolation valve
- 2.- Filter
- 3.- Pressure gauge (inlet pressure)
- 4.- Pressure gauge (outlet pressure)
- 5.- Reducing valve M1
- 6.- Safety valve
- 7.- Tank

STEAM



Distributor