

PRESSURE REDUCING VALVE

**M1
(EN)**

ENG

CARACTERÍSTICAS PRINCIPALES

Self-actuated diaphragm pressure reducing valve that controls outlet pressure. Does not require auxiliary power.

This gearbox model is suitable for working with steam, compressed air and non-hazardous gases and liquids.

Quick and effective response to a change in demand.

Single seat globe valve with outlet pressure compensated by the diaphragm. Inlet pressure compensated by piston from DN65.

Sealing of the shaft of the closure by double-layer bellows in stainless steel.

Bellows anti-torsion system.

Pressure chamber with membranes reinforced with intermediate fabric.

Wide range of outlet pressure regulation (between 0.1 and 15 barg).



fluids

Liquids, compressed air, neutral gases, steam.

Maximum inlet pressure DN15-50 40 barg
DN65-150 25 barg

Nominal steps DN15 to DN150

Body material Nodular GGG40.3
Carbon Steel A216 WCB
Stainless Steel A351 CF3M
Bronze RG10, consult

Connections EN1092 PN16-PN40 flanges
ANSI 150 / 300 flanges BSP /
NPT thread

Interior material Acero Inoxidable Aisi 316L

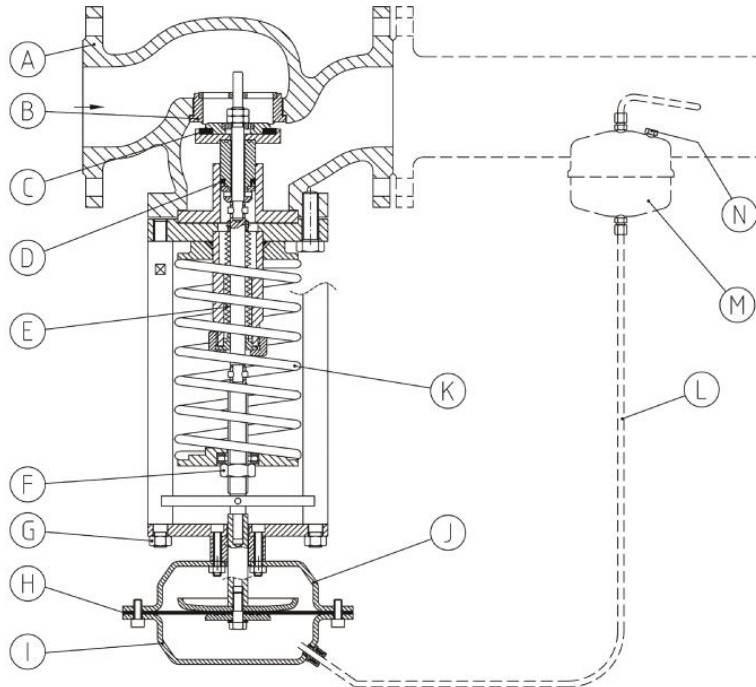
Material Membrane EPDM de -40°C a 125°C
EPDM + PTFE de 125°C a 250°C

Sealing material Teflón grafitado.

NBR, PEEK, EPDM,...

Other possibilities:

- Kv reduction for small flows
- Monel or Bronze internals
- Control kit to directly install the pressure tap to the valve body (optionally with or without condensation tank) for set pressures > 1 bar.
- Condensation tank available for steam, or when the fluid temperature is greater than 125 °C, to protect the membrane from excessive temperature.
- Inlet pressure maintainer (modell S1)



- A – Valve Body
- B – Seat (replaceable)
- C – Plug
- D – Compensation piston
- E – Bellows
- F – Adjustment nut
- G – Nut
- H – Membrane
- I – Upper actuator
- J – Lower Actuator
- K – Springs
- L – Control pipe
- M – Kite
- N – Filling fitting

FUNCTIONING

By opening the corresponding isolation valve, the fluid enters the reducing valve in the direction of the arrow and displaces the obturator (C). The resulting position between plug (C) and seat (B) influences the flow rate.

Once the installation is saturated and, by means of the regulation nut (F), we adjust the value of the required outlet pressure. In this way, the outlet pressure is transmitted to the diaphragm (H) through the control pipe (L) where it exerts a force that moves the spindles and the obturator (C) according to the tension accumulated in the springs.

If this pressure exceeds the adjusted value, the valve will close proportionally to the pressure variation to maintain the requested outlet pressure.

In valves from DN65, a compensation piston (D) is mounted that compensates the inlet pressure, absorbing possible oscillations.

RECOMMENDATIONS

It is recommended for installations where it is important to control the downstream pressure, since any variation will be absorbed by the membrane. The valve closes when downstream pressure increases.



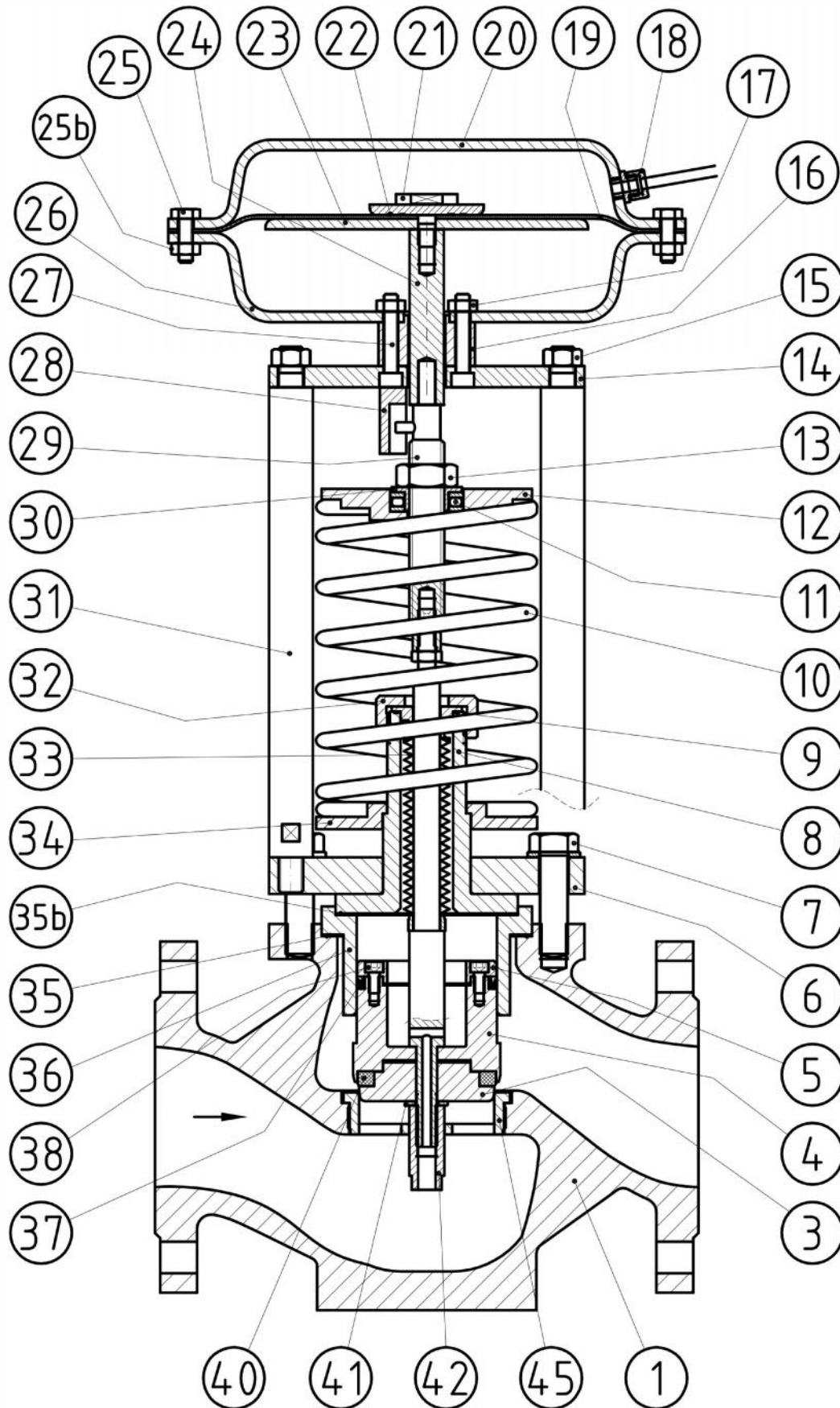
Standard mounting for temperatures above 0 °C



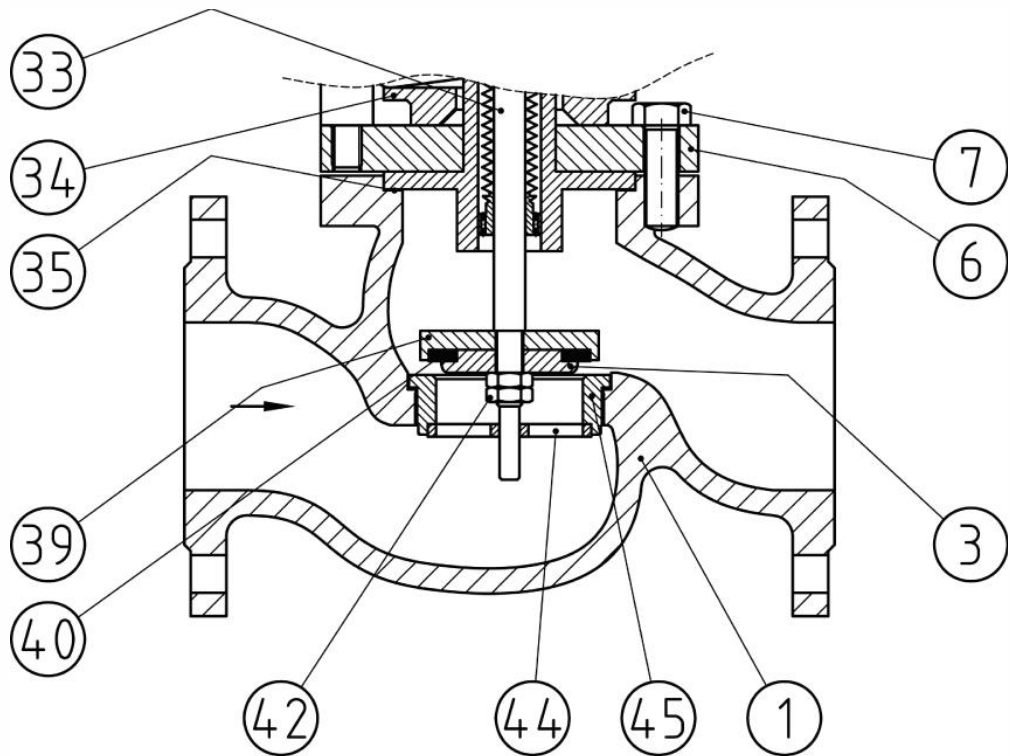
Possibility of assembly for liquids and gases up to 80 °C



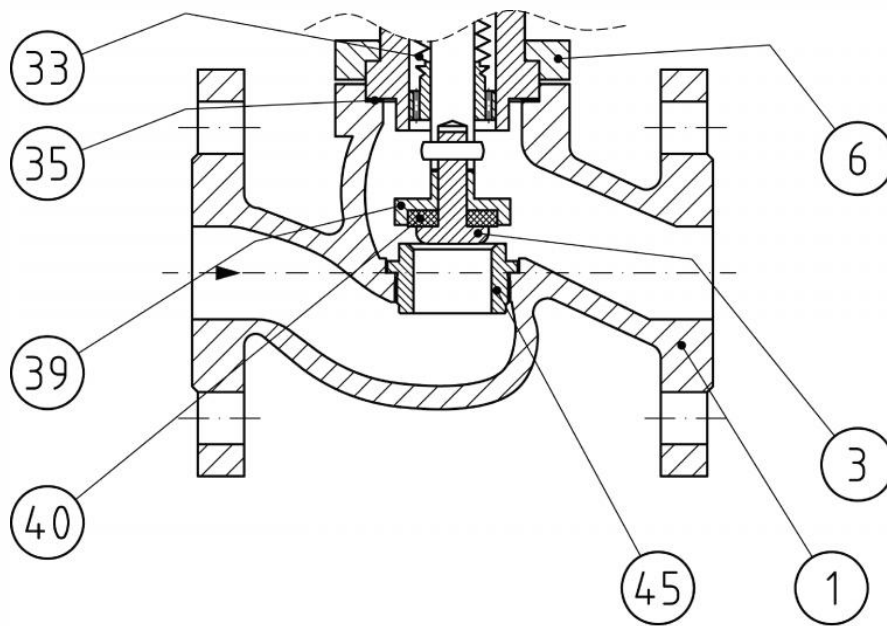
Mounting is not supported in this situation



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	Closing guide	1.4404 - SS 316L	
4	Bushing	1.4404 - SS 316L	
5	Bushing washer	1.4404 - SS 316L	
6	Cover	1.1191 - Carbon steel	1.4404 - SS 316L
7	Screws	8.8 - Carbon steel	A-2 Stainless St. (A-4 optionally)
8	Guide bellows	1.0570 or 1.1191 - Carbon steel	1.4404 - SS 316L
9	O-ring or gasket	Viton o Grafito+SS304	
10	Docks	1.0904 (Spring Carbon steel 55 Si 7)	
11	Bearing	1.3505 (Bearing steel 100 Cr 6)	
12	Upper spring support	1.1191 - Carbon steel	
13	Adjustment nut	8.8 - Carbon steel	
14	Platen	1.1191 - Carbon steel	
15	Nut M12	8.8 - Carbon steel	
16	Membrane shaft guide	1.1191 - Carbon steel	
17	Nut	8.8 - Carbon steel	
18	Fitting	Brass / Stainless steel	
19	Membrane	EPDM, EPDM+PTFE, NBR, VITON, ...	
20	Upper actuator	1.0335 (Steel sheet with epoxy paint) or Stainless steel sheet AISI 316	
21	Diaphragm nut	1.4301 (Stainless steel AISI 304)	
22	Toric	Viton	
23	Membrane plate	1.1191 - Carbon steel	
24	Diaphragm axis	1.1191 - Carbon steel	
25	Screw	A-2 Stainless steel	
25b	Nut	A-2 Stainless steel	
26	Bottom actuator	1.0335 (Steel sheet with epoxy paint) or Stainless steel sheet AISI 316	
27	Screw	8.8 - Carbon steel	
28	Anti-twist system	1.1191 - Carbon steel	
29	Regulation axis	1.4301 (Stainless steel AISI 304)	
30	Bearing guide	1.4307 (Stainless steel AISI 304L)	
31	Column	1.1191 - Carbon steel	
32	Bellows guide nut	1.1191 - Carbon steel	1.4404 (Stainless steel AISI 316L)
33	Bellows	1.4404 (Stainless steel AISI 316Ti)	
34	Lower spring support	1.1191 - Carbon steel	
35	Body gasket	Graphite with SS304	
35b	Guide seal	Graphite with SS304	
36	Bushing Guide	1.4404 - SS 316L	
37	Balanced collar	Graphited PTFE	
38	Allen screw	A-2 Stainless steel	
39	Closing support	1.4404 - SS 316L	
40	Obturator closure	Graphited PTFE (Consult for others)	
41	Washer	A-2 Stainless steel	
42	Nut	1.4404 - SS 316L	
45	Closing cap	1.4404 - SS 316L	

Technical data table

Nominal pressure	PN16-PN25-PN40 o CLASS 150-CLASS 300		
Nominal diameter	DN15 a DN50	DN65 a DN80	DN100 a DN150
Maximum admissible differential pressure p	25 bar	20 bar	16 bar
Maximum allowable body temperature	Request technical sheet HT-101		
Maximum temperature according to shutter	metal: 250°C PTFE +GR: 220°C PEEK: 250°C EPDM, FPM: 150°C NBR: 80°C	metal: 220°C PTFE +GR: 220°C PEEK: 250°C EPDM, FPM: 150°C NBR: 80°C	
Maximum temperature in actuator	EPDM membrane up to 125°C EPDM+PTFE membrane and condensation tank up to 250°C		

Dimensions, weight y Kv

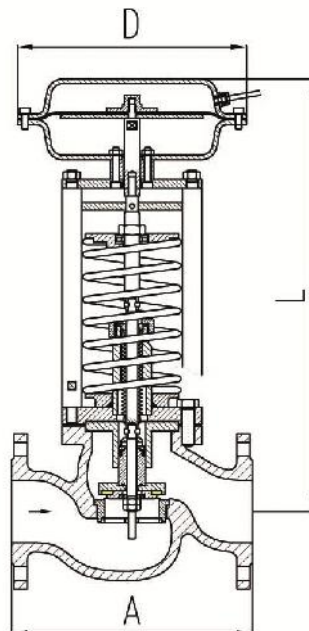
DN	15	20	25	32	40	50	65	80	100	125	150
Kv (m ³ /h)	3.5	5	9	13.5	22	32	57	82	115	190	240
A EN (mm)	130	150	160	180	200	230	290	310	350	400	450
A ANSI150 (mm) (inches)			184 7,25"	-	222 8,75"	254 10"	276 10,9"	298.5 11,75"	352.5 13,88"	-	451 17,75"
A ANSI300 (mm) (inches)			197 7,76"	-	235 9,25"	267 10,51"	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

available on request

Outlet pressure ranges

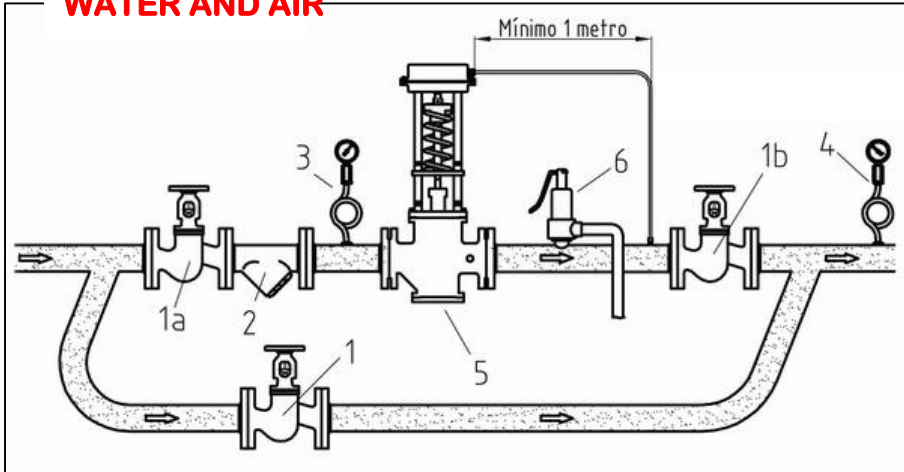
Range (bar g)	DN15 DN20	DN25 DN32	DN40 DN50	DN65	DN80	DN100	DN125	DN150
0,1 - 1,5	295	295	295	295	350	350	-	-
1 - 3	255	255	255	255	295	295	295	350
2 - 5	230	230	230	230	255	255	255	295
4 - 8	195	195	195	195	230	230	230	255
7 - 15	175	175	175	175	195	195	195	230

Approximate Recommended Actuator Diameter (mm)



Installation schemes

WATER AND AIR



- 1.- Interruption valve
- 2.- Filter
- 3.- Inlet pressure gauge
- 4.- Outlet pressure gauge
- 5.- M1 reducer
- 6.- Safety valve
- 7.- Condensation tank

STEAM

