

**PILOT OPERATED PRESSURE REDUCING VALVES  
M2**

ENG

**MAIN FEATURES**

Direct acting pressure reducing valve, without auxiliary energy and compensated by membrane. It controls the outlet pressure even if there are oscillations in the inlet pressure.

The valve closes when downstream pressure increases. Suitable for gases (air, nitrogen,...), liquids and steam. Pressure range from 0.02 to 8 barg with several different actuators. Membrane with intermediate reinforcement fabric.

The condensation tank is available and is necessary when the fluid is steam or for liquids with a temperature higher than 125°C, to protect the membrane from overheating. The reducing valve is not a safety valve and, when necessary, overpressure protection must be installed.

The M2 pressure reducing valves are perfectly suitable for the control of gases in the temperature range between -10 and +80°C (or 0 to 180°C when the obturator is PTFE+GR and the membrane is EPDM +PTFE).



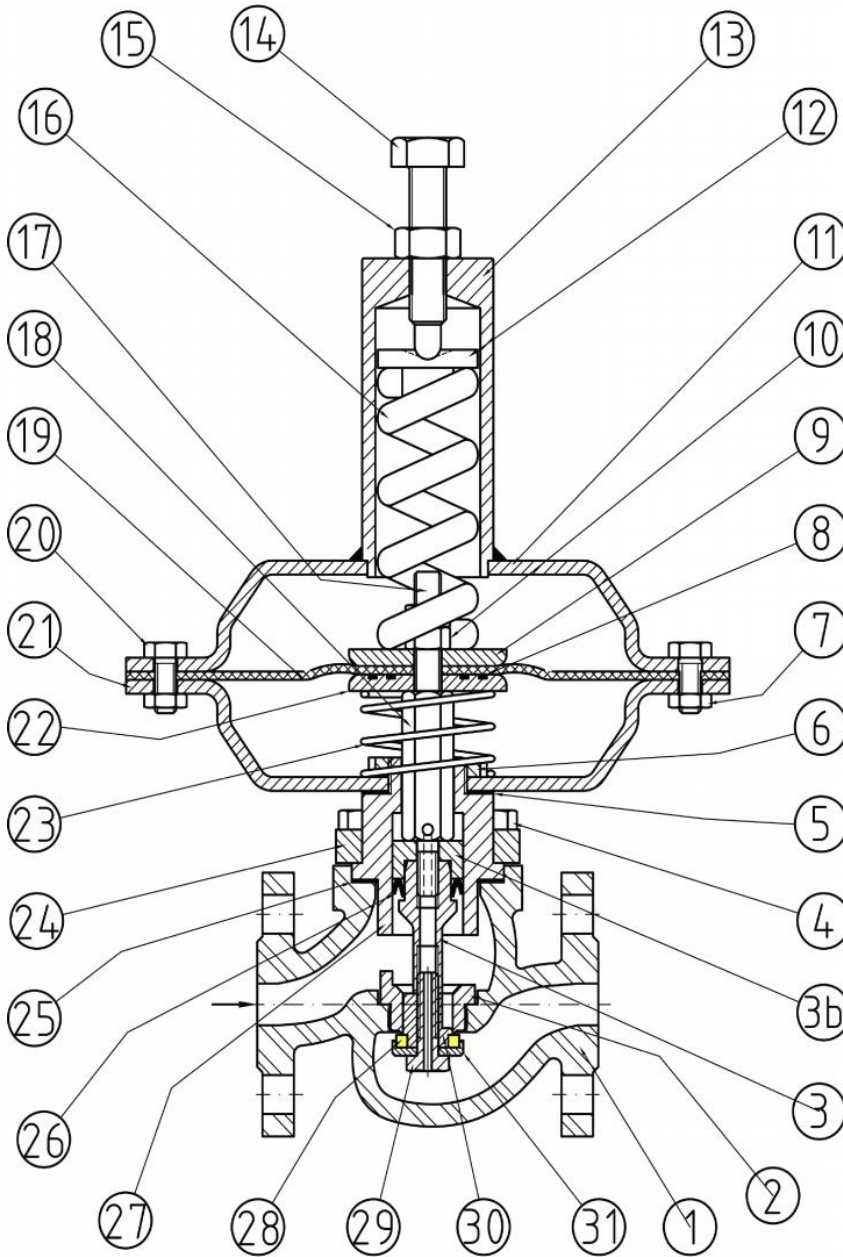
Maximum allowable inlet pressure	25 barg
maximum allowable temperature	-10 to 80°C (gases and liquids) Up to 180°C (steam)
sizes	DN15 a DN100
body material	PN25: Nodular (GGG40.3) PN40: Carbon Steel WCB (GSC25N) Stainless Steel CF8M (1.4408)
connections	Flanges EN PN16-PN40 Flanges ANSI 150 / 300 Threads BSP / NPT, consult
interior material	AISI 316L Stainless Steel
Membrane material	EPDM -40°C a 125°C EPDM + PTFE 125°C a 180°C
Sealing material	NBR, EPDM, PEEK, ... PTFE+GR

**Applications**

Chemical laboratory facilities, water distribution networks, sanitary, industrial, compressed air, fire-fighting facilities, inert gas control, protection of the tank product from oxidation,...

**Special constructions**

Steam installations up to 180°C, seals of different composition for food applications, stainless steel actuator, AISI316 interiors, PTFE seal, internal compensation socket,...



**PRINCIPLE OF FUNCTIONING**

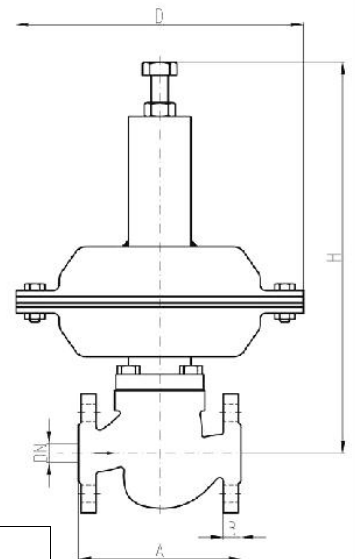
The "VALFONTA M2" pressure reducing valves work by means of the direct action principle.

The upstream pressure reaches the valve and pushes the shaft-piston-piston assembly (3, 26, 3b) closing it automatically.

Once the gearbox is closed, the adjustment screw (14) must be turned clockwise.

This produces the displacement of the spring (16), which also acts on the membrane (19) and the closure (30 and 31), opening the passage of the valve until it reaches the requested downstream pressure.

Any variation in pressure upstream will be absorbed by the reducer by compensating the piston (26) and downstream by the membrane (19).



DN	15	20	25	32	40	50	65	80	100	
Kv value	3,5	5	9	13,5	22	32	57	82	115	m <sup>3</sup> /h
A (EN PN40)	130	150	160	180	200	230	290	350	350	mm
A (ANSI 150 LB)			7,25	-	8,75	10	10,86	13,88	352,5	In.
A (ANSI 300 LB)			7,76	-	9,25	10,5	11,5	14,49	368	In.
H	315	315	325	325	360	360	390	390	410	mm
Aprox. Weight	8	9	12	13	15	20	30	42	55	kg

Available on request

Description			Material			Description			Material		
1	Body	Nodular EN-JS1049 (GGG40.3), Bronze RG10, Carbon Steel 1.0619 (GSC-25N), Stainless Steel 1.4408 (CF8M)	16	regulation spring	Spring steel 52SiCrNi5						
2	Seat	Stainless Steel 1.4404 - SS 316L	17	Screw	A-2 Stainless Steel						
3	bushing foot	Stainless Steel 1.4404 - SS 316L	18	Axis	1.4404 - SS 316L						
3b	Bushing guide	Stainless Steel 1.4404 - SS 316L	19	Membrane	EPDM / EPDM+PTFE						
4	Screw	A-2 Stainless Steel	20	M8 screw	A-2 Stainless Steel						
5	Council	PTFE	21	bottom actuator	1.0335 (Steel sheet with Epoxy paint) or AISI 316L Stainless Steel						
6	Nut	AISI 316L Stainless Steel	22	lower plate membrane	Stainless Steel 1.4404 - SS 316L						
7	Nut	A-2 Stainless Steel	23	Dock	AISI 302 Stainless Steel						
8	o-ring	NBR / Viton / EPDM	24	Cover	Galvanized steel 1.1141						
9	dock support	1.0035 sheet steel galvanized	25	Council	Graphite						
10	Nut	A-2 Stainless Steel	26	compensation plunger	PTFE + Graphite + stainless steel spring						
11	upper actuator	1.0335 (Steel sheet with Epoxy paint) or AISI 316L Stainless Steel	27	Bushing Guide	Stainless Steel 1.4404 - SS 316L						
12	spring guide	1.1191 – Galvanized carbon steel	28	Closing	PTFE + Graphite						
13	dock cover	1.1191 (Steel with Epoxy paint) or AISI 316L Stainless Steel	29	Closing screw	A-2 Stainless Steel						
14	regulation screw	8.8 – Galvanized Carbon Steel	30	Closing guide	Stainless Steel 1.4404 - SS 316L						
15	regulation nut	8.8-Galvanized Carbon Steel	31	Closing support	Stainless Steel 1.4404 - SS 316L						
Recommended spare parts											

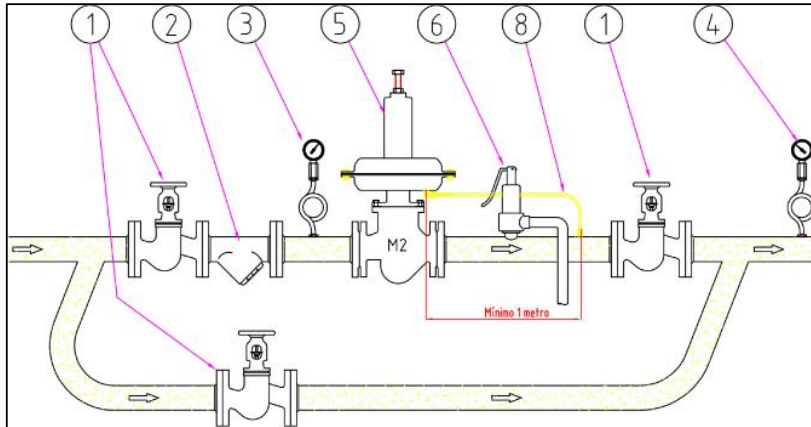
## Approximate Pressure Ranges and Actuator Size



DN	15	20	25	32	40	50	65	80	100
20 - 40 mbar	D350				-	-	-	-	-
30 - 100 mbar	D295				D350		-	-	-
0,08 – 0,3 bar	D295						D350		
0,2 – 1,2 bar	D230						D295		
0,8 – 3 bar	D195						D230		
2 – 8 bar	D175						D195		
5 – 20 bar	D175 - CONSULT						D175 - CONSULT		

## FACILITY

Installation according to the following diagrams is recommended:



Esquema para agua y gases neutros (toma de presión opcional, bajo pedido)

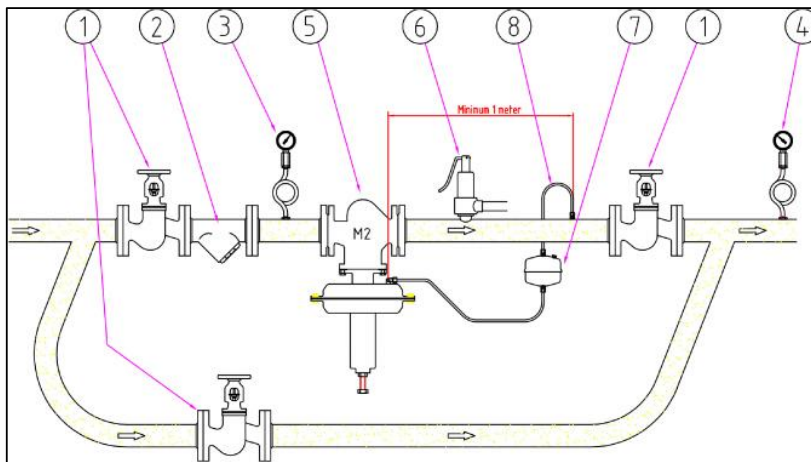


Diagram for steam (compulsory pressure tapping and barrel)

Mounting on horizontal pipes is preferable, with the actuator at the top, as indicated in figure 4.

On the other hand, for steam installations, the actuator must be installed in the lower part (figure 5) and must be accompanied (provided the temperature exceeds 125°C) by a barrel filled with water to protect the membrane.

It is essential to install a filter (item 2) at the valve inlet to avoid excessive maintenance of the compensation pipe.

The distance between the valve and the pressure tapping point must be approximately 6 x DN minimum.

- 1.- Stop valve
- 2.- Filter
- 3.- Inlet pressure gauge
- 4.- Outlet pressure gauge
- 5.- "VALFONTA" pressure reducing valve
- 6.- Safety valve
- 7.- Membrane protection barrel
- 8.- Pressure tap

### Technical data table

Nominal Pressure	PN16-PN25-PN40 o CLASE 150-CLASE 300		
Nominal diameter	DN15 a DN50	DN65 a DN80	DN100
Maximum admissible differential pressure $\Delta p$	25 bar	20 bar	16 bar
Maximum allowable body temperature	Request technical sheet HT-101		
Maximum temperature according to shutter	metallic: 180°C PTFE+GR: 180°C PEEK: 180°C EPDM, FPM: 150°C NBR: 80°C	metallic: 180°C PTFE+GR: 180°C PEEK: 180°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 180°C		

