PRESSURE REGULATOR WITHOUT AUXILIARY ENERGY

VALFONTA

EXCESS PRESSURE VALVE (PRESSURE RELIEF VALVE) MODEL S1

MAIN CHARACTERISTICS

The S1 model is self-operated bellows sealed pressure excess valve.

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

It has a very quick response to the demand.

Globe valve, single seat, outlet pressure compensated by diaphragm and inlet pressure compensated by the gasket (from DN65).

The stem is sealed by the double layer bellow. It is made in stainless steel 316Ti.

To avoid any damage on the bellows, S1 series is provided of an anti rotation system.

The diaphragm is enhanced with an intermediate lining.

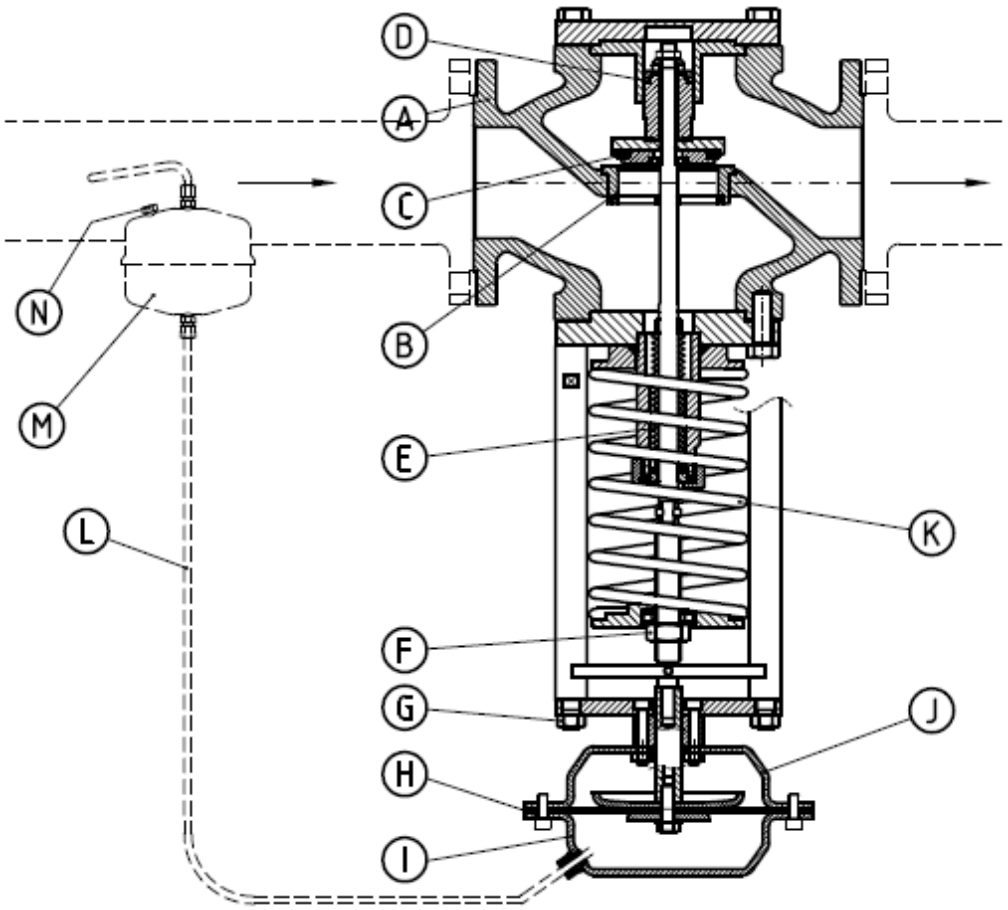
Regulation range between 0,5 and 16 barg with different actuators. Valve opens when the upstream pressure increases. Maximum inlet pressure 16 barg.

Fluids
Liquids, compressed air, neutral gases and steam.

Nominal pressure	PN25 – PN40 Class 150 – Class 300
Sizes	DN15 to DN100 DN125 to DN200, consult
Body material	Nodular Iron (GGG40.3) Carbon steel (GSC25N) Stainless steel (1.4408)
Connections	Flanged DIN PN16-PN40 Flanged ANSI 150 / 300 Threaded BSP / NPT, consult
Trim material	Stainless steel AISI 316L
Diaphragm Material	EPDM -40ºC to 125ºC EPDM + PTFE 125ºC to 250ºC

Other configurations:

- Kv or CV reduced.
- 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 ºC, to protect the diaphragm against excessive temperature.
- NBR Diaphragm



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

OPERATION

To control the pressure with the excess pressure valve S1 model, the diaphragm (H) is compressed by the springs (K) through the adjusting nut (F).
The valve is always closed upstream pressure = downstream pressure.

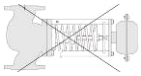
When upstream pressure arrives to the diaphragm via external control line (L), and rises above the adjusted set point, valve opens proportionally to the change in pressure. This set point can be adjusted with the adjusting nut (F).

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

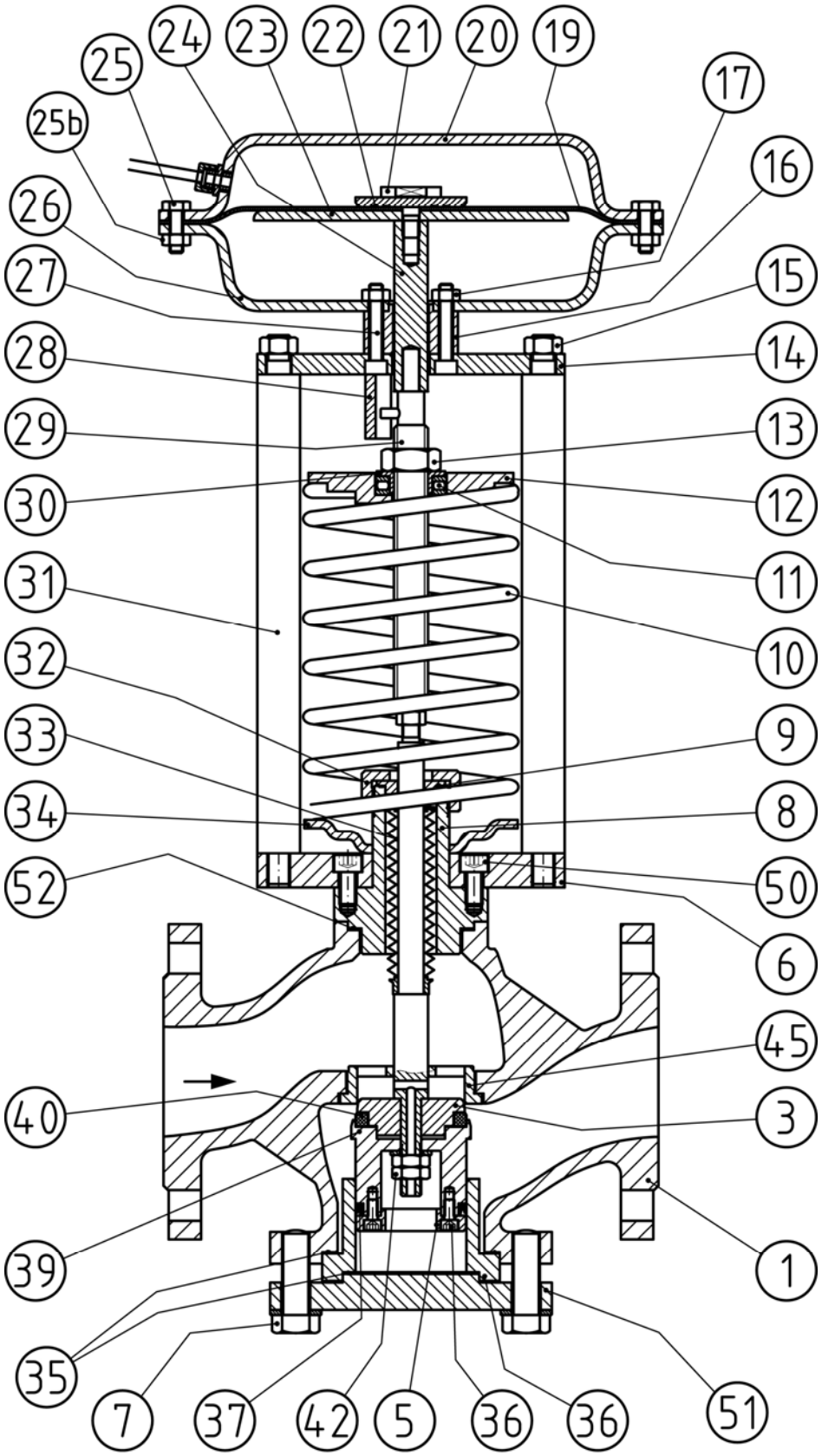
The valve opens when inlet pressure increases.

Standard installation when temperature is upper 0ºC

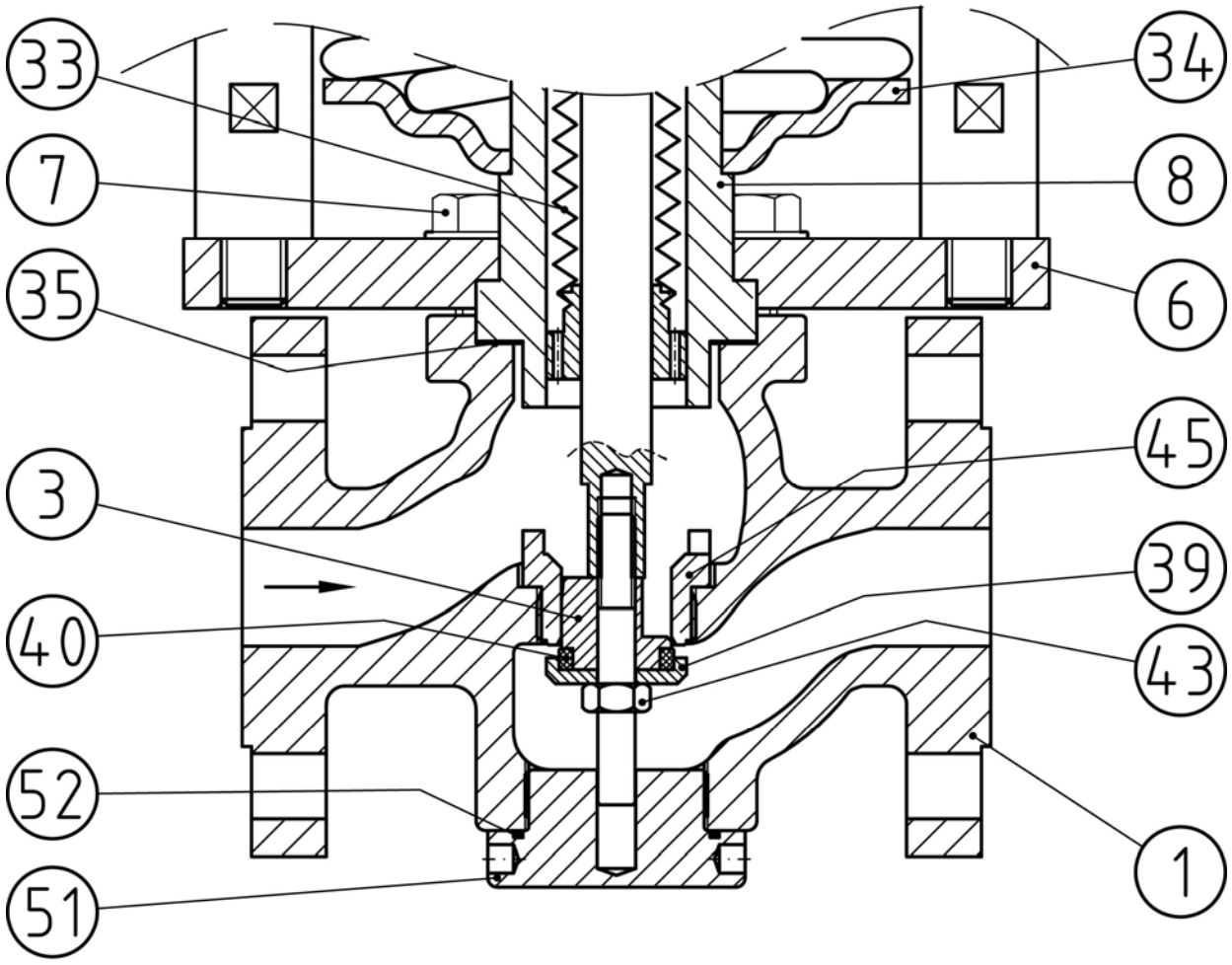
Another option for liquids and neutral gases until 80 ºC



This position is not admitted



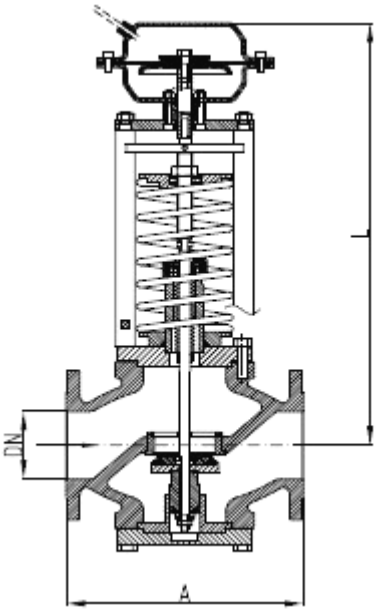
DN65 to DN150



DN15 to DN50

Ref	Description	Material	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)	24	Diaphragm stem	1.1191 - Carbon steel
3	Lower support seal	Stainless steel 1.4404 - 316L	25	Hexagonal screw M8	A-2 Stainless steel
4	Allen screw	A-2 Stainless steel	25b	Hexagonal Nut M8	A-2 Stainless steel
5	Balancing gasket Cover	Stainless steel 1.4404 - 316L	26	Actuator casing (lower)	1.0335 (Steel sheet with epoxy paint) or Stainless steel sheet AISI 316
6	Cover	1.1191 - Carbon steel 1.4404 – Stainless steel AISI 316L	27	Allen screw	8.8 - Carbon steel
7	Screw	8.8 - Carbon steel A-2 Stainless St. (A-4 optionally)	28	Antirotation system	1.1191 - Carbon steel
8	Bellow guide	1.0570 or 1.1191 - Carbon steel 1.4404 – Stainless steel AISI 316L	29	Regulation stem	1.4301 (Stainless steel AISI 304)
9	O-ring	Viton	30	Guide ball bearing	1.4307 (Stainless steel AISI 304L)
10	Springs	1.0904 (Spring Carbon steel 55 Si 7)	31	Column	1.1191 - Carbon steel
11	Ball bearing	1.3505 (Bearing steel 100 Cr 6)	32	Nut bellow	1.1191 - Carbon steel
12	Upper support springs	1.1191 - Carbon steel	33	Bellow	1.4404 (Stainless steel AISI 316Ti)
13	Adjusting nut	8.8 - Carbon steel	34	Lower support springs	1.1191 - Carbon steel
14	Support plate	1.1191 - Carbon steel	35	Gasket	Graphite with metal (x2)
15	Nut M12	8.8 - Carbon steel	36	Guide	1.4404 – Stainless steel AISI 316L
16	Support screws M8	8.8 - Carbon steel	37	Balancing Gasket	Graphited PTFE
17	Nut M8	8.8 - Carbon steel	39	Bush	1.4404 – Stainless steel AISI 316L
18	Coupling	Brass	40	Seal	Graphited PTFE (others on request)
19	Diaphragm	EPDM or EPDM+PTFE	42	Nut	A2-70 (x2)
20	Actuator casing (upper)	1.0335 (Steel sheet with epoxy paint) or Stainless steel sheet AISI 316	45	Seat	1.4404 – Stainless steel AISI 316L
21	Diaphragm screw	1.4301 (Stainless steel AISI 304)	50	Allen screw	Steel 8.8 / Stainless steel A2-70
22	O-ring	Viton	51	Cover	1.4404 – Stainless steel AISI 316L
23	Diaphragm plate	1.1191 - Carbon steel	52	Gasket	

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	consult	
A DIN (mm)	130	150	160	180	200	230	290	310	350		
A ANSI150 (mm) (inches)	○	○	184 7,25"	-	222 8,75"	254 10"	276 10,9"	298.5 11,75"	352.5 13,88"		
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		
Weight (kg.)	20	22	24	28	32	35	52	57	68		

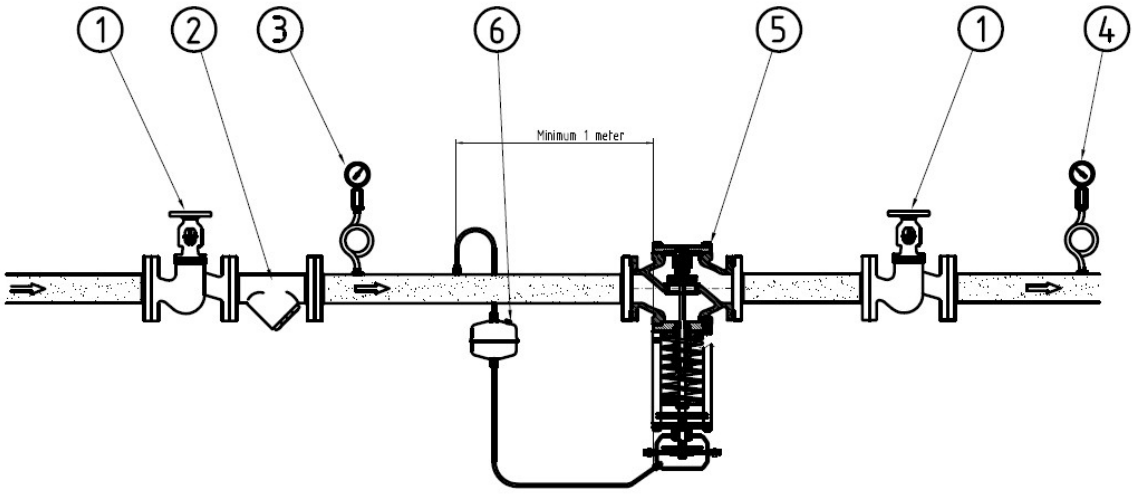
○ available on request

Approx. Downstream pressure ranges (D)

Range (bar g)	DN15 a DN50	DN65 a DN100	DN125 a DN150
0,5 - 1,5	295	295	295
1 - 3	230	230	230
2 - 5	195	195	195
4 - 8	175	175	175
7 - 16	175	175	175

Approximate diameter of the recommended actuator (mm)

Typical installation



1.- Check valve
2.- Filter
3.- Pressure gauge (inlet pressure)
4.- Pressure gauge (outlet pressure)
5.- Excess pressure valve S1
6.- Tank (if necessary)