



VALFONTA



INSTRUCTIONS: OPERATION AND INSTALLATION
PRESSURE REDUCING VALVE MODEL **PRV44**

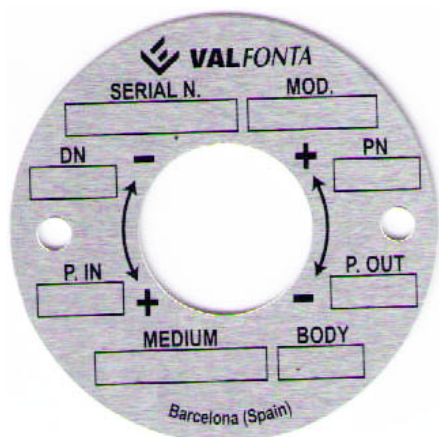


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1. IDENTIFICATION PLATE LEGEND




CE marked is NOT required in accordance with PED 2014/68/UE



SERIAL N.	VALVE IDENTIFICATION NUMBER. VALFONTA WILL NEEDS THIS NUMBER FOR SPARE PARTS OR COMMENTS RESPECT OF THIS VALVE.
MOD.	VALVE MODEL
DN	VALVE NOMINAL DIAMETER
PN	VALVE NOMINAL PRESSURE
MEDIUM	FLUID
P.IN	INLET PRESSURE (barg)
P.OUT	OUTLET PRESSURE (barg)
BODY	BODY MATERIAL



ATEX marked required according to DIRECTIVE 94/9/EC

	VALFONTA E 08915 – Badalona (ESPAÑA)	
TYPE:	PRESSURE REDUCING VALVES SELF - ACTUATED	
MANUFACTURING YEAR:	2014	MANUFACTURING NUMBER:
	II 2 G D	c IIC Tx c IIIC Tx°C 
TECHNICAL FILE IN CUSTODY : LOM CERTIFICATION NUMBER: LOM 14.034 U		

Reference	Denomination
II 2	ATEX category, zones 1 & 21
G	Class I application (flammable liquids and gases)
D	Class II application (combustible dust)
c IIC	Safety construction protection mode for substances IIC
C IIIC	Safety construction protection mode for substances IIIC
Tx / Tx°C	Termal class according fluid temp. used
LOM	Number of certification from ExNB (LOM)



2. MAIN FEATURES

Self-actuating pressure reducing valve balancing by bellows used to provide a constant downstream still there being oscillations in inlet pressure.

Easy to adjust and doesn't need any maintenance. It's possible to install the valve in any position.

Maximum inlet pressure 25 bar.

Pressure ranges:

0,3 - 5 barg | 1 - 8 barg | 4 - 12 barg

Temperature range -30 to 210 °C.

Fluids

Liquids and gases of group 1 and 2

Steam, compressed air, fuel-oil, water, nitrogen, neutral gases, ...

Body material → Stainless steel Aisi 316L

Trim material → Stainless steel Aisi 316L

Cover material → Stainless steel Aisi 316L

Connections → Screwed BSP or NPT
→ Flanges DIN or ANSI

Characteristics

Easy to adjust, Doesn't need any maintenance, It is possible to install the valve in any position, bellows of stainless steel (AISI-316 PN16) welded in micro-plasma, internal design conceived to provide an effective circulation of the fluid.

Under request:

- reduced Kv available to:
0,2 / 0,4 / 0,6 / 1 m3/h
- Bronze / Super duplex body/cover material
- Connection Socked weld or butt welding
- Connection Clamp
- Degreased valve for oxygen services
- Soft seals: EPDM, PEEK, Viton, Aflas, ...

3. OPERATING

PRV concept is direct action. Inlet pressure comes into the valve and closes it **because of the sections difference**.

When we compress the spring (10) through the regulating screw (9), the stem-seal (11, 17 and 3) opens the valve and allows the regulation.

When any downstream valve is closed and flow=0, PRV will absorb the oscillations and keep the outlet pressure according to the regulation.

The valve closes when the downstream pressure exceeds the regulating set pressure.

It is recommended to leave a space (between 0,5 and 1 meter) until the check valve, for a better compensation.

To increase outlet pressure, the regulating screw (9) should be turned anticlockwise.



Special ATEX instructions

- No limitation of use due to the ATEX substance.
- Limitations due to thermal class:

Class I (flammable liquids and gases)

TEMPERATURE CLASS	MAX. SURFACE TEMPERATURE	APPROPRIATE FOR SUBSTANCES WITH IGNITION TEMPERATURE
T1	450°C	Ti >450°C
T2	300°C	Ti >300°C
T3	200°C	Ti >200°C
T4	135°C	Ti >135°C
T5	100°C	Ti >100°C
T6	85°C	Ti >85°C

- Class II (combustible dust)

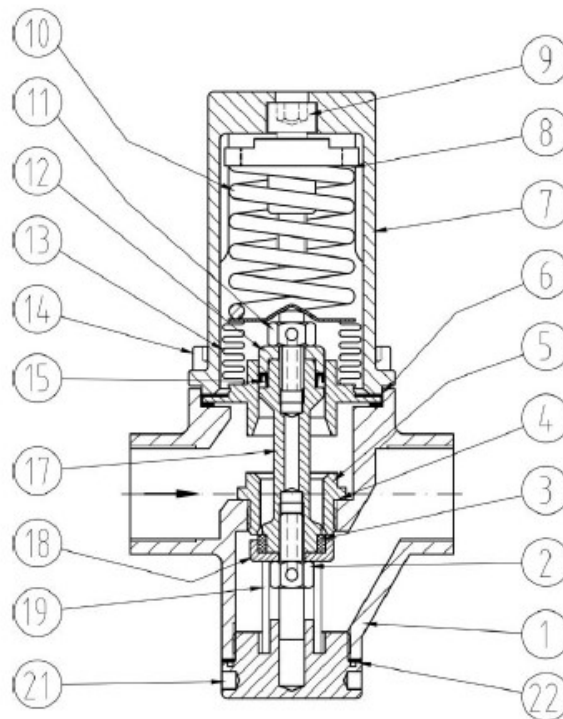
$$T(x) \leq 2/3 MIT_{cloud}$$

$$T(x) \leq 5 \text{ mm } MIT_{layer} - 75 \text{ K}$$



4. SCHEME

	Description	Material
1	Body	Stainless steel Aisi 316L
2	Seal screw	Stainless steel Aisi 316L
3	Seal	Graphited PTFE
5	Seat	Stainless steel Aisi 316L
6	Gasket (x2)	PTFE
7	Spring cover	Stainless steel Aisi 316L
8	Washer spring	Galvanized steel 1.1191
9	Regulation screw	Stainless steel A2-70
10	Regulation spring	Spring steel 52SiCrNi5 (epoxy painted 60-100 micras)
11	Bellow screw	Stainless steel Aisi 316L
12	Gasket cover	Stainless steel Aisi 316L
13	Bellow kit	Stainless steel Aisi 316L
14	Allen screw	Stainless steel A2-70
15	Gasket	Graphited PTFE
17	Stem	Stainless steel Aisi 316L
18	Guide seal	Stainless steel Aisi 316L
19	Seal spring	Stainless steel 302
21	Lower Cover	Stainless steel Aisi 316L
22	Gasket	Viton
Special gaskets for special fluid on demand		



5. RECOMMENDED SPARE PARTS

Reference	Description	Item
PRV44.SP1	Seal Kit and balancing system	2 + 3 + 11 + 12 + 15 + 17
PRV44.SP2	Gasket kit	6 + 22
PRV44.SP3	Bellow	13
PRV44.SP4	Springs kit	10 + 19
PRV44.SP5	Seat kit	5
PRV44.SP6	Gasket + seal kit	3 + 6 + 15 + 22



This device must be installed by specialized personnel with knowledge and experience. They must know about the current regulations in order to judge the risks that may involve this work.

Important: Be sure that the valve never exceeds the service temperature for which has been designed.



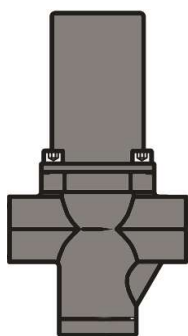
6. ASSEMBLY

The pipe must be cleaned carefully before installing the valve, to prevent that any small element or impurity may affect the reducing valve work.

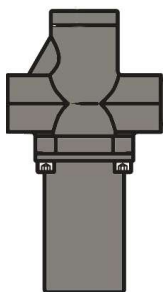
It is also very important to install a strainer in front of the valve in order to protect it.

Reducing valve must be installed in a horizontal pipe and the direction of the flow should be in the same direction that shows the valve body.

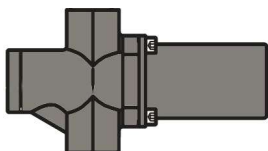
Assembly Position



Standard position for liquids, compressed air and neutral gases.



Position permitted

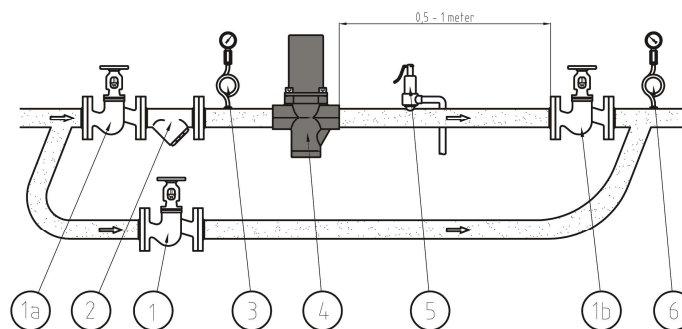


This situation is allowed but not recommended (the valve will not work perfectly)

The supports holding the valve will be done in the pipe and as close as possible to the valve but never fixed in the valve or the actuator, to eliminate unnecessary tensions.

Installation in bypass

If you install a valve in bypass, which is highly recommended, it must spliced back to the main pipe after the control line, and with their check valves, according to the scheme:

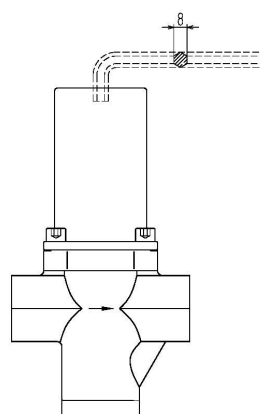


- 1, 1a y 1b → Isolation valves
- 2 → Filter
- 3 → Inlet pressure Manometer
- 4 → Pressure reducing valve PRV
- 5 → Safety valve
- 6 → Outlet pressure Manometer

Start-up

Open the check valves slowly (to prevent water hammer).

To adjust the set pressure (downstream pressure), turn the regulating screw with an allen tool (8 mm).



Compressing the spring (**anticlockwise**) increases the outlet pressure

Decompressing the spring (**clockwise**) decreases the outlet pressure



ATEX requirements

- **IMPORTANT!** The respective national regulations as well as general engineering rules governing the installation and operation of equipment in explosive atmospheres must be observed.
- The valves are ATEX category "II 2 GD" according to 100a ATEX Directive (94/9/EC).
- **IMPORTANT!** The device can only be used in potentially explosive locations Class I (gases, vapors or liquids) Zones 1 and 2 and Class II (combustible dusts) areas 21 and 22, according to the specifications in the Directive 1999/92/EC, as well as the Electro technical Regulations.

Electrostatic discharges

Under certain conditions, electrostatic discharges that are capable of ignite explosive atmospheres, can be produced. The most important measure of protection is equipotential bonding of all conductive parts and earthing.

In order to avoid electrostatics discharges, the installation of devices and control elements must be earthing.

- **IMPORTANT!** Connecting the valves to process: it should be ensured electrical continuity of $<10^6 \Omega$.
- **IMPORTANT!** National regulations on maintenance, service, inspection and repair of apparatus and equipment for explosive atmospheres, as well as general engineering rules must be observed.

COMMISSIONING

IMPORTANT! User is the only responsible for a safe use of the devices.

In use, parts that affect the explosion protection of the valves must be checked and act accordingly, f.e.:

- Fixing Elements -screws, nuts, shafts, etc.- see technical documentation of the product supplied. It must be ensure its tightening, proper operation and / or change when necessary. After 2.500h of working or 6 natural months (whichever comes first).
- The seals will be replaced by original spare parts: every 25,000 hours or when periodic inspections result said (the lower range).
- Any other action arising from inspection and maintenance plan, set by the user
- **IMPORTANT!** If repainting the valves and / or spare parts, ensure there is no paint on moving parts, mounting flange and closure sealing.

INSPECTIONS

- **IMPORTANT!** National Regulations must be observed. It is user's responsibility to establish an inspection and maintenance plan for these devices in order to ensure their proper use.
- Inspections must be performed by "qualified staff" because of the kind of equipment and / or installation.
- Purposes can be used to guide the requirements of the UNE-EN 60079-17, in order to establish the inspection plan.
- **IMPORTANT!** When inspections are "Detailed" or it is degree is "Close", the devices will be completely shut out.

MAINTENANCE

Spare parts are subject to normal wear. They must be inspected and replaced when necessary.

The frequency of the inspections and maintenance depends on the severity of the service conditions. This section provides instructions about replacement, packing, stem, plug and seat.

All maintenance operations can be performed with the valve body installed.

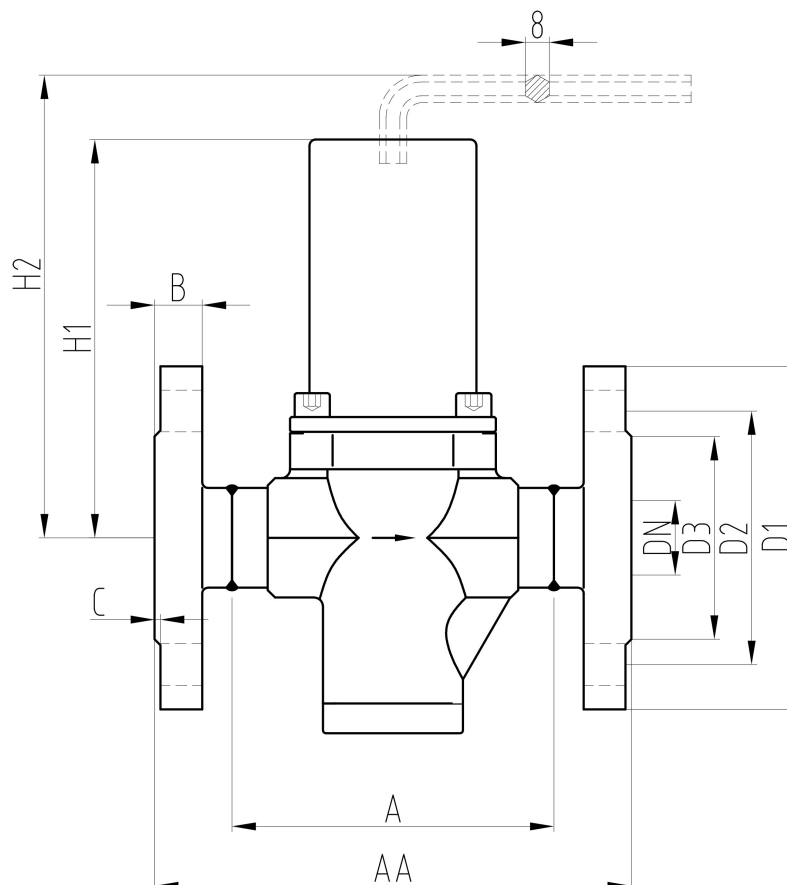
Before any maintenance, ensure the valve is depressurised and clear of media, and isolate it both upstream and downstream. Be sure the temperature isn't dangerous.

IMPORTANT! Use only genuine parts or recommended by VALFONTA, SL



7. DIMENSIONS

DN	1/2"	3/4"	1"	15	20	25	15	20	25
Connection	Threaded			Flanged EN PN16/25			Flanged ANSI CL150		
Kv value (m3/h)	2	2.5	3.5	2	2.5	3.5	2	2.5	3.5
A	108	108	108	-	-	-	-	-	-
AA	-	-	-	130	150	160	184	184	184
H1	135			135			135		
H2	185			185			185		
D1	-	-	-	95	105	115	89	98	108
D2	-	-	-	65	75	85	60.5	70	79.5
D3	-	-	-	45	58	68	35	43	51
B	-	-	-	16	16	16	12	12	12
C	-	-	-	2	2	2	2	2	2
N° holes	-	-	-	4	4	4	4	4	4
Ø hole	-	-	-	14	14	14	16	16	16
Weight (Kg)	3.5	3.5	3.5	5	5	5	5	5	5



All sizes in millimeters.



8. RECEIPT ON SITE

ATTENTION! Transport and storage of these devices should be in their original packaging.

RECEIPT ONSITE

When receiving the equipment on site, it should be unpacked to check that they agree with the request and delivery notes. At least, verification shall be performed:

- Visual,
- Mechanical

After these checks, if it will not be installed immediately, it will keep in dry and protected atmosphere.

Visual Inspection

Check that during transport, unloading and installation, the devices have not been damaged.

Mechanical Verification

Check all moving parts of the apparatus, as well as screws and other elements fulfill their mission.

IMPORTANT! If is observed abnormality during these guidelines reception, contact urgently VALFONTA to clarify responsibilities and put the devices in correct status.

The contents of that document are subject to change without notice.