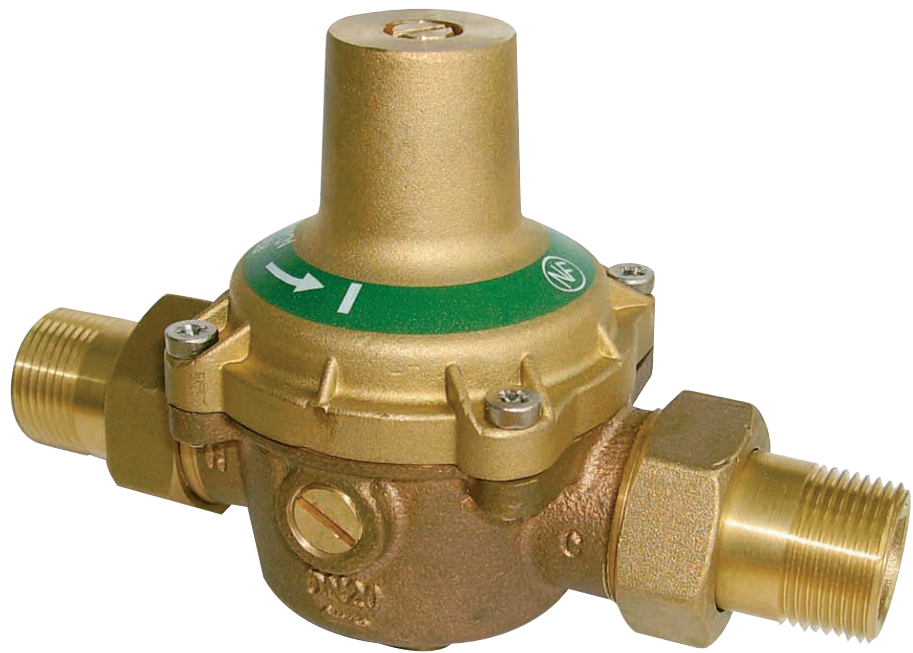


11 DO

Pressure reducing valves

Desbordes

Technical Data Sheet



Description

The Desbordes pressure reducing valves 11 DO bodies are made of bronze. Due to their design, they are not affected by scale or dirt and do not need any maintenance. They can be fitted on compressed air, neutral gases and fuel oil at ambient temperature circuits. For these cases of applications consult us.

- Control and maintain the downstream pressure at an adjustable reduced value, whether there is a flow or not
- Keep an outlet pressure at a constant value, even with variation of the upstream pressure (the downstream pressure cannot vary more than 10 % of the variation of the upstream pressure, according to the Standard)
- No maintenance required, not affected by scale or dirt
- Can be installed in any position
- Guarantee a high flow rate at a constant outlet pressure because of low head loss
- Work as pressure reducing valve (standard terminology) as well as “regulator” and as “pressure regulating valve” (when applies for gas)
- Downstream setting : 1bar to 5,5 bar; indicative value according to EN1567
- Pre-set at 3 bar
- 2 pressure gauge connections (DN1/4”) and drain at both sides of the casing



11 DO

Desbordes pressure reducing valves

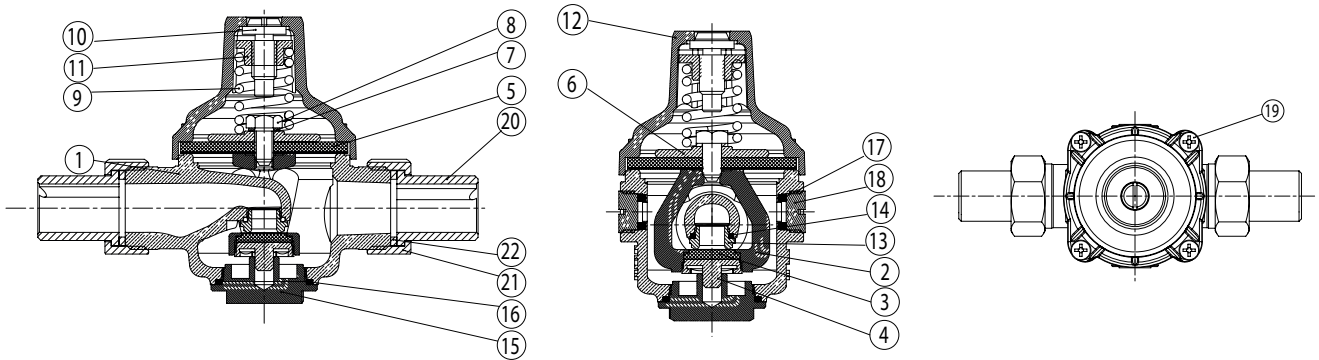
DN		PFA in bar	PS in bar				Cat.	Ref.		Weight Kg
"	mm		L1	L2	G1	G2		EPDM	NBR	
1/2	15	25	25	25	x	25	3.3	149B7640	149B7774	0,9
3/4	20	25	25	25	x	25	3.3	149B7641	149B7775	1,3
1	25	25	25	25	x	25	3.3	149B7228	149B7776	2,5
1 1/4	32	25	25	25	x	25	3.3	149B7550	149B7777	4,6
1 1/2	40	25	25	25	x	25	3.3	149B7559	149B7778	5
2	50	25	25	25	x	25	3.3	149B7562	149B7779	5,5

Important notice :

L1, L2, G1 and G2 correspond to liquids/gas classified into degree of danger according to the Pressure Equipment Directive (PED). The article 4.3 applies to equipments with no CE marking.

Technical features	
Operating temperature	Mini. : -10 °C / Maxi. in permanent service : 80 °C (40 °C domestic fuel oil)
Permissible operating pressure (PFA) in water	See table above
Maximum permissible pressure (PS) other mediums	See table above
Connection	Male/male, BSP
Gauge connection	1/4"
Mediums	Membrane EPDM : water Other medium : consult us

Nomenclature and materials



N°	Designation	Materials	EURO	ANSI
1	Body	Bronze	EN1982 CuSn5Zn5PB5-C-GS	ASTM B 505
2	Stirrup	DN 15-25 mm	Brass	EN12165 CuZn40Pb2 H080
		DN 32-50 mm	Brass	EN1982 CuAl9-C
3	Seal	NBR (Nitrile)		
4	Flange	Brass	EN12164 CuZn39Pb3 R360 mini	ASTM B 124
5	Membrane	Water	EPDM	
		Other medium	FKM	
6	Membrane washer	Brass	EN12164 CuZn39Pb3 R360 mini	ASTM B 124
7	Washer copper	Cuivre recuit		
8	Membrane screw	Stainless steel	EN10088-3 X5CrNi 18-10	AISI 304
9	Spring	Acier traité anti corrosion	EN10270-2 VD CrSi	
10	Adjusting screw	Brass	EN12164 CuZn39Pb3 R360 mini	ASTM B 124
11	Nut for spring pressing	Brass	EN12164 CuZn39Pb3 R360 mini	ASTM B 124
12	Stirrup	DN 15-25 mm	Polyamide reinforced	
		DN 32-50 mm	Bronze	EN1982 CuSn5Zn5PB5-C-GS
13	Seat	Stainless steel	EN10088-3 X8CrNiS18-09	AISI 303
14	O-ring	NBR (Nitrile)		
15	Plug cover	Brass	EN12164 CuZn39Pb3 R360 mini	ASTM B 124
16	O-ring	NBR (Nitrile)		
17	Seal	NBR (Nitrile)		
18	Plug	Brass	EN12164 CuZn39Pb3 R360 mini	ASTM B 124
19	Screw	Stainless steel	EN10088-3 X8CrNiS18-9	AISI 304
20	Socket	Brass	EN12164 CuZn39Pb3 R360 mini	ASTM B 124
21	Nut	Brass	EN12164 CuZn39Pb3 R360 mini	ASTM B 124
22	Seal	Tesnit BA-U		

Approvals



International construction Standards :

Pressure reducing valves EN 1567
 Thread connection NF EN ISO 228

Application

The Desbordes 11 DO is an ideal pressure reducing valves for industrial buildings and domestic water systems :

- For water distribution, domestic and individual for the protection of the whole sanitary installation (cold and hot water)
- Industrial applications such as : Machines and work stations, laundries, green houses, boiler rooms, compressed air pipeworks, fuel oil. For those applications, consult us.

Factory preset at 3 bar, it protects the whole installation, facilitates the setting of mixing valves, and decreases the hammering and helps to avoid cracks and vibrations in the piping.

Thanks to its weak head losses, it helps to obtain normal flow during simultaneous pumping.

Installation

In domestic water supply the DESBORDES 11 DO reducing valves are fitted just after the water meter and thus protect the whole installation. They can be fitted wherever a reducing pressure is needed.

If there is a frost risk, they should be drained.

It can be fitted in any positions (horizontal, upright, upside down, fluid ascending or reversed and inclined...) if you respect the direction of flow as indicated by the arrow engraved on the body.

However if the circuit present a risk of back pressure or hammering we recommend to protect the pressure reducing valve with a check valve directly after its output.

Fonctionnement

Flow :

During water flow, water pressure exercised on the diaphragm decreases, which allows the spring to relax. The piston disc-yoke assembly moves towards the bottom to allow the water to pass.

Flow stoppage :

When water flow stops, the downstream pressure pushes on the diaphragm again, the spring goes back to its initial position, which leads to the valve closing, stopping water from flowing freely.

Setting

The adjustment must be done without flow ie no downstream outflow. The 11 DO pressure reducing valves is factory pre-set at 3 bar.

They remain adjustable within a 1 bar to 5,5 bar range.

To increase the pressure, tighten the adjusting screw (clockwise as you look at the screw from above) To reduce the pressure, undo the adjusting screw (anticlockwise as you look at the screw from above), slightly open a tap for a moment, close again, then tighten the screw again until you obtain a desired pressure.

Water hammers can damage the reducing valve. When commissioning, open slowly and gradually the valve at the upstream side. A booster unit with a sudden start close to the pressure reducer requires the safety of an absorption tank. Just like by any intervention on the pipework, the circuits must be rinsed beforehand.

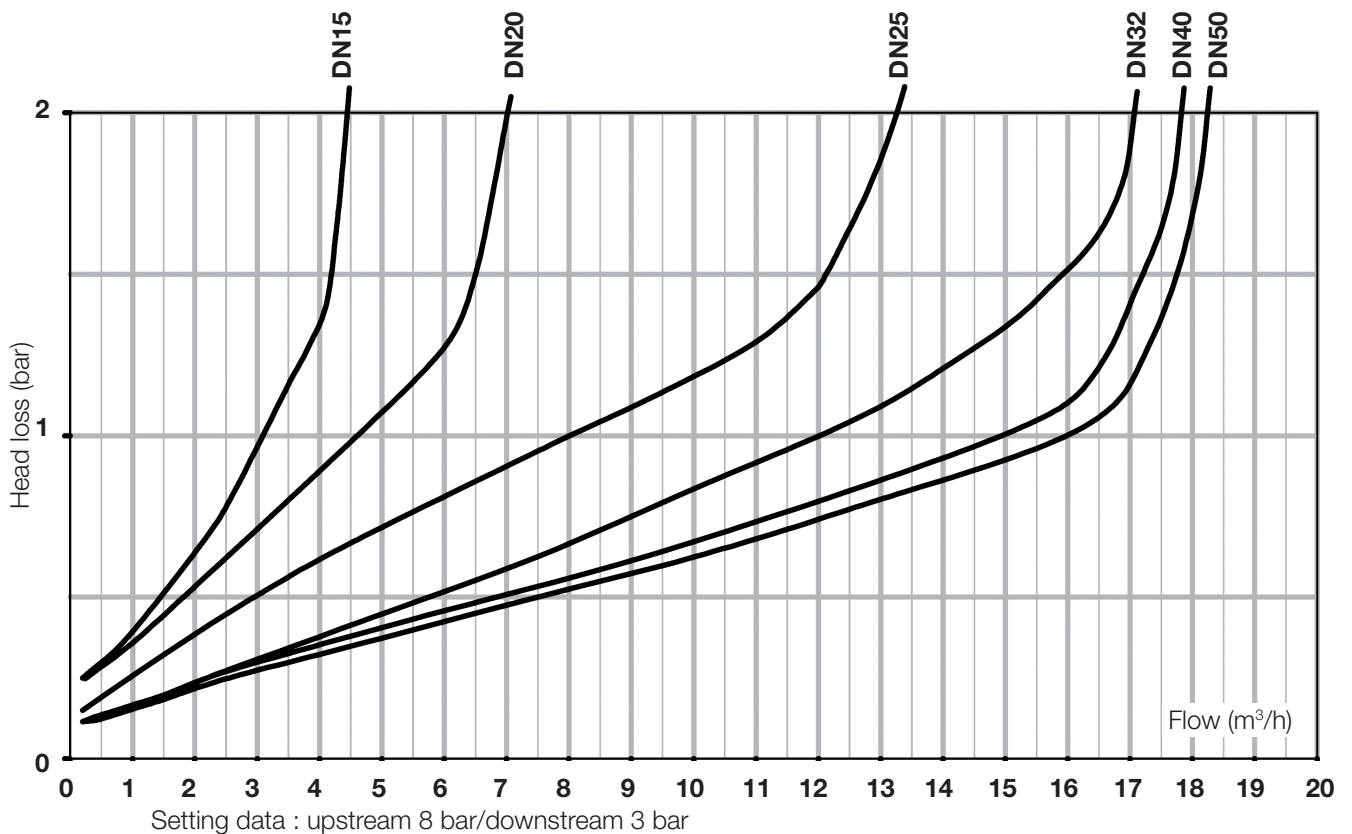
Max. upstream pressure : 25 bar.

Maintenance

Due to the special design, the Desbordes 11 DO pressure reducing valves is not affected by scale or dirt and does not need any maintenance if is fitted by a professional.

Diaphragm, spring, seat, valve are largely dimensioned to allow precise and constant adjustment allowing a high flow.

Operation



DN (mm)	Kv	Q max	Q at 2 m/s
15	3	5	1,6
20	4,5	8	2,8
25	8	14	3,6
32	12	18	5,8
40	15	18	9,1
50	16	18	14,2

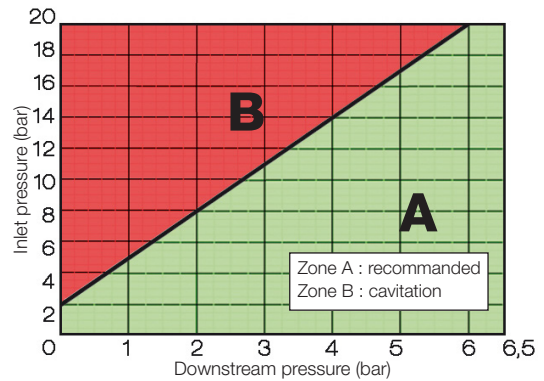
Kv : Flow in m³/h when the output pressure becomes 1 bar lower than its zero flow setting

11 DO- Headloss chart

Cavitation

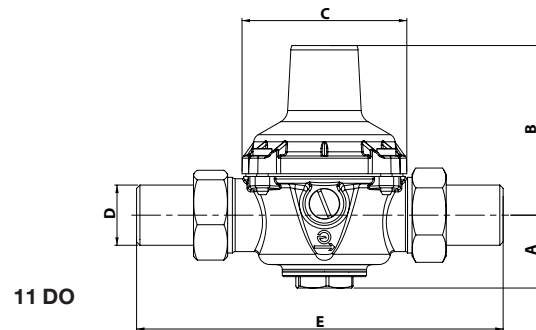
Checking if the differential of pressure, between the upstream and the desired downstream pressure, is not too large, is necessary to avoid cavitation risk. By putting in the graph hereafter, the upstream value and the desired downstream pressure, 2 results are possible :

- Zone A : The point is in the no-cavitation zone, normal duty
- Zone B : The point is in the cavitation zone : continuous operation in this zone can cause rapid damage of the internal parts. If the pressure reducing valve is to operate in this zone, contact us.



Sizing

DN	D		A	B	C	E
mm	"	mm	mm	mm	mm	mm
15	1/2	15/21	31	60	59	140
20	3/4	20/27	32	75	73	160
25	1	26/34	40	102	94	180
32	1 1/4	33/42	51	179	104	200
40	1 1/2	40/49	46	185	104	220
50	2	50/60	54	194	104	250



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