

10 BIS BZ

Pressure reducing valves

Desbordes

Technical Data Sheet



Description

The Desbordes pressure reducing valves 10 BIS BZ are equipped with an all-bronze inner mechanism, more specially adapted at the sea water and very aggressive water. Due to their design, they are not affected by scale or dirt and do not need any maintenance.

- Control and maintain the downstream pressure at an adjustable reduced value, whether there is a flow or not
- Guarantee a high flow rate at a constant outlet pressure because of low head loss
- Downstream setting : 1 bar to 6 bar; indicative value according to EN1567
- Keep an outlet pressure at a constant value, even by variation of the upstream pressure (the downstream pressure cannot vary more than 10 % of the variation of the upstream pressure, according to the Standard)
- Pre-set at 3 bar
- 2 pressure gauge connections 1/4" and drain at the bottom of the casing



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Desbordes pressure reducing valves

DN		PFA in bar	PS in bar				Cat.	Ref.	Weight Kg
"	mm		L1	L2	G1	G2			
1	25	25	25	25	x	25	4.3	149B7013	2,70
1 1/4	32	25	25	25	x	25	4.3	149B7014	4,80
1 1/2	40	25	25	25	x	25	4.3	149B7015	6,50
2	50	25	25	25	x	20	4.3	149B7016	9,80
2 1/2	65	25	25	25	x	15	4.3	149B7017	13,50
3	80	25	25	25	x	12	4.3	149B7018	17,90

Important notice :

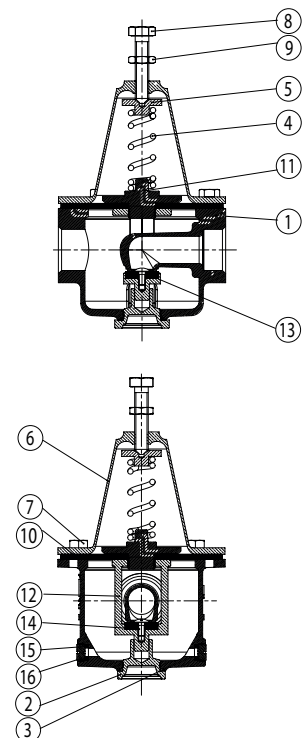
L1, L2, G1 and G2 correspond to liquids/gas classified into degree of danger according to the Pressure Equipment Directive (PED). The article 4.3 applies to equipments with no CE marking.

Technical features

Operating temperature	Mini. : -10 °C / Maxi. in permanent service : 80 °C
Permissible operating pressure (PFA) in water	See table above
Maximum permissible pressure (PS) other mediums	See table above
Connection	Female/female, BSP thread
Gauge connection	1/4"
Mediums	Water, other medium : consult us

Nomenclature and materials

N°	Designation	Materials	EURO	ANSI
1	Body	Bronze	EN1982 CuSn5Zn5Pb5-C GS	ASTM B 505
2	Plug cover	Bronze	EN1982 CuSn5Zn5Pb5-C GS	ASTM B 505
3	Seal	NBR (Nitrile) or fibre		
4	Spring	Anticorrosive steel	EN10270-1-SH ou VDCrSi EN10270-2	
5	Plate	Brass	EN12164 CuZn39Pb3 R360 mini	
6	Cap	Laiton or Alu-bronze or Bronze	EN1982 CuZn39Pb1 Al-C GM ou EN1982 CuAl9-C ou EN1982 CuSn5Zn5Pb5-C GS	
7	Screw	Stainless steel	EN10088-3 X5CrNi 18-10	AISI 304
8	Adjusting screw	Stainless steel	EN10088-3 X5CrNi 18-10	AISI 304
9	Nut	Stainless steel	EN10088-3 X5CrNi 18-10	AISI 304
10	Membrane	EPDM		
11	Membrane washer	Bronze	EN1982 CuSn5Zn5Pb5-C GS	ASTM B 505
12	Stirrup	Alu bronze or DZR brass or Bronze	EN12165 CuZn36Pb2As H070 ou EN1982 CuAl9-C ou EN1982 CuSn5Zn5Pb5-C	
13	Seal	NBR (Nitrile)		
14	Screw	Stainless steel	EN10088-3 X5CrNi 18-10	AISI 304
15	Seal	NBR (Nitrile)		
16	Plug	DZR Brass	EN12165 CuZn36Pb2As H070	



ACS

International construction Standards :

Pressure reducing valves EN 1567

Thread connection EN ISO 228

Application

10 BIS BZ is an ideal pressure reducing valves for marine and industrial applications.

Is suitable for sea water and very aggressive water.

Installation

In domestic water supply, the 10 BIS BZ reducing valves is generally fitted just after the water meter and thus protect the whole installation.

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

They can be fitted in ANY POSITIONS (horizontal, upside down, fluid ascending or reversed and inclined) but the direction of flow indicated by the engraved arrow on the valve body must be respected.

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 10 BIS BZ pressure reducing valves is not factory pre-set.

They remain adjustable within a 1,5 bar to 6 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.

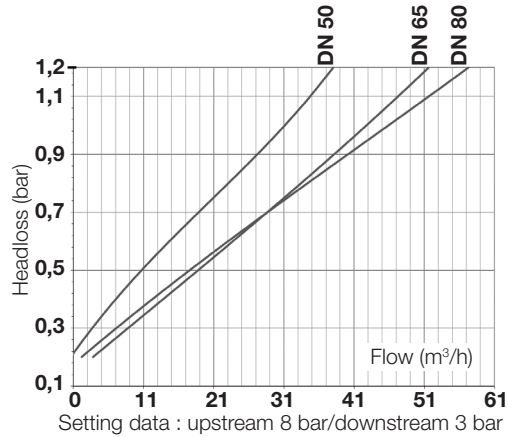
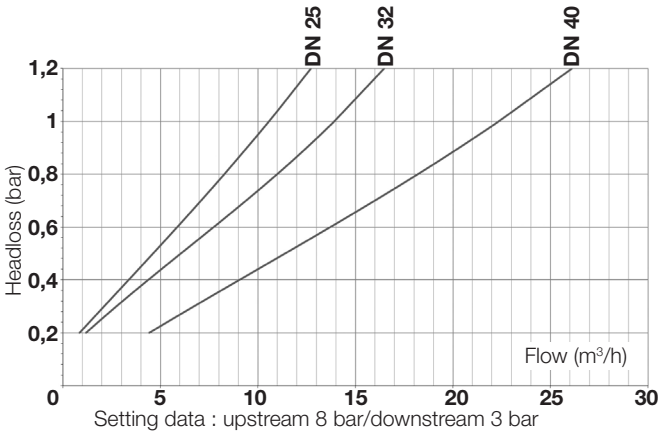
Max. upstream pressure : 25 bar.

Maintenance

Due to the special design, the Desbordes 10 BIS BZ pressure reducing valve 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.

Operations



DN (mm)	Q1(m³/h) v=1m/s	Q2(m³/h) v=2m/s	Kv
25	1,8	3,5	10,5
32	2,9	5,8	14
40	4,5	9	22,5
50	7	14	31
65	12	24	42,5
80	18	36	46

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

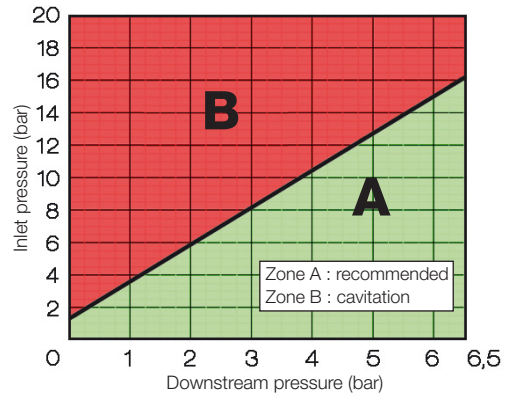
10 BIS BZ - Headloss chart

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.

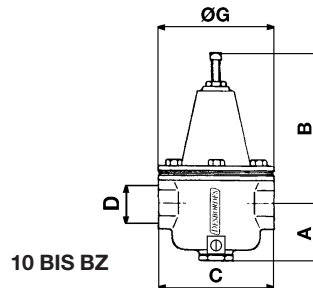
By putting into the graph hereafter, the upstream value and the desired downstream pressure, 2 results are possible :

- 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	G
mm	"	mm	mm	mm	mm	mm
25	1	26/34	60	160	123	123
32	1 1/4	33/42	77	180	155	155
40	1 1/2	40/49	84	205	172	172
50	2	50/60	105	235	198	198
65	2 1/2	66/76	118	270	215	215
80	3	80/90	143	300	234	234



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ISO 9001 version 2015 / ISO 18001