

10 and 10 RC

Pressure reducing valves

Desbordes

Technical Data Sheet



Description

The Desbordes pressure reducing valves 10 and 10 RC 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 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)
- 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
- Downstream setting is possible from 0,5 bar with a compensating spring on RC type
- Pre-set at 3 bar
- 1/4" pressure gauge connection at the bottom of the casing

10 et 10 RC

Desbordes pressure reducing valves



DN		PFA in bar	PS in bar				Cat.	Ref.		Weight Kg
"	mm		L1	L2	G1	G2		Water	Other mediums	
1/2	15	25	25	25	x	25	4.3	149B7000	149B7747	1,3
3/4	20	25	25	25	x	25	4.3	149B7001	149B7748	1,9
1	25	25	25	25	x	25	4.3	149B7002	149B7749	2,6

Type RC

1/2	15	25	25	25	x	25	4.3	149B7029	(consult us)	1,3
3/4	20	25	25	25	x	25	4.3	149B7030	(consult us)	1,9
1	25	25	25	25	x	25	4.3	149B7031	(consult us)	2,6

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.

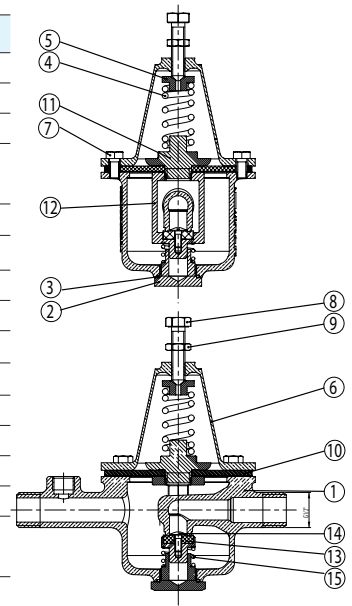
Technical features

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	Male/male, BSP
Gauge connection	1/4"
Mediums	Membrane EPDM : water Other mediums : consult us

Nomenclature and materials

N°	Designation	Materials	EURO	ANSI
1	Body	Bronze	EN1982 CuSn5Zn5Pb5-C GS	ASTM B 505
2	Plug	Brass	EN12164 CuZn39Pb3 R360 mini	
3	O-ring	NBR		
4	Spring	Anticorrosive steel	EN10270-1-SH	
5	Plate	Brass	EN12164 CuZn39Pb3 R360 mini	
6	Cap	Brass	EN1982 CuZn39Pb1Al-C GM	
7-8	Screw	Stainless steels	EN10088-3 X5CrNi 18-10	AISI 304
9	Nut	Stainless steels	EN10088-3 X5CrNi 18-10	AISI 304
10	Membrane	Water	EPDM	
		Other mediums	FKM	
11	Plate	Brass	EN12165 CuZn40Pb2-H080	ASTM B 124
12	Stirrup	Brass	EN12165 CuZn36Pb2As -H070	ASTM B 124
13	Seal	NBR		
14	Vis	Stainless steels	EN10088-3 X5CrNi 18-10	AISI 304
15*	Compensating spring	Stainless steels	EN10270-3 X10CrNi 18-8	AISI 302

* on type 10 RC



Approvals

ACS  : specific references consult us

International construction Standards :

Pressure reducing valves EN 1567
Thread connection NF EN ISO 228

Application

The Desbordes 10 et 10RC 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 10 and 10 RC 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 10 and 10 RC pressure reducing valve is factory pre-set at 3 bar.

They remain adjustable within a 1 bar to 6 bar range.

RC type (compensating spring) allow an upstream setting from 0.5 bar

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.

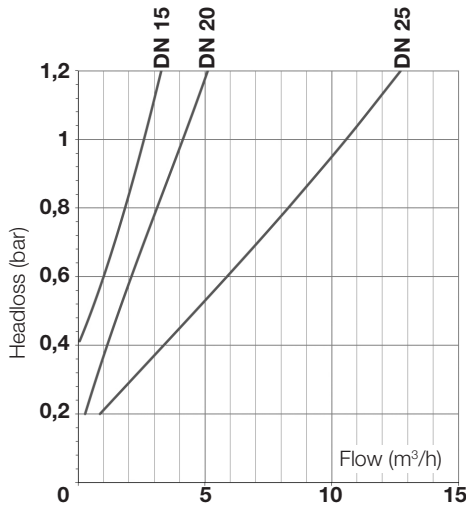
Max. upstream pressure : 25 bar.

Maintenance

Due to the special design, the Desbordes 10 and 10 RC 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.

Operation



Setting data : upstream 8 bar/downstream 3 bar

DN (mm)	Q1 (m³/h) v=1m/s	Q2 (m³/h) v=2m/s	Kv
15	0,65	1,3	2,6
20	1,1	2,25	4
25	1,8	3,5	10,5

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

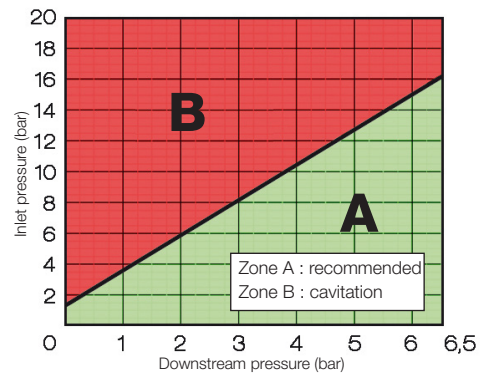
10 and 10 RC - Headloss chart

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.

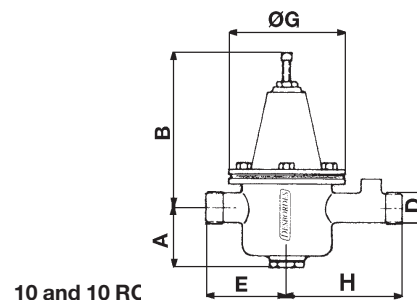
By putting into the graph hereafter, the upstream value and the desired downstream pressure, 2 results are possible :

- 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	E	G	H
mm	"	mm	mm	mm	mm	mm	mm
15	1/2	15/21	48	120	65	92	95
20	3/4	20/27	55	130	78	108	102
25	1	26/34	60	160	88	123	116



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ISO 9001 version 2015 / ISO 18001