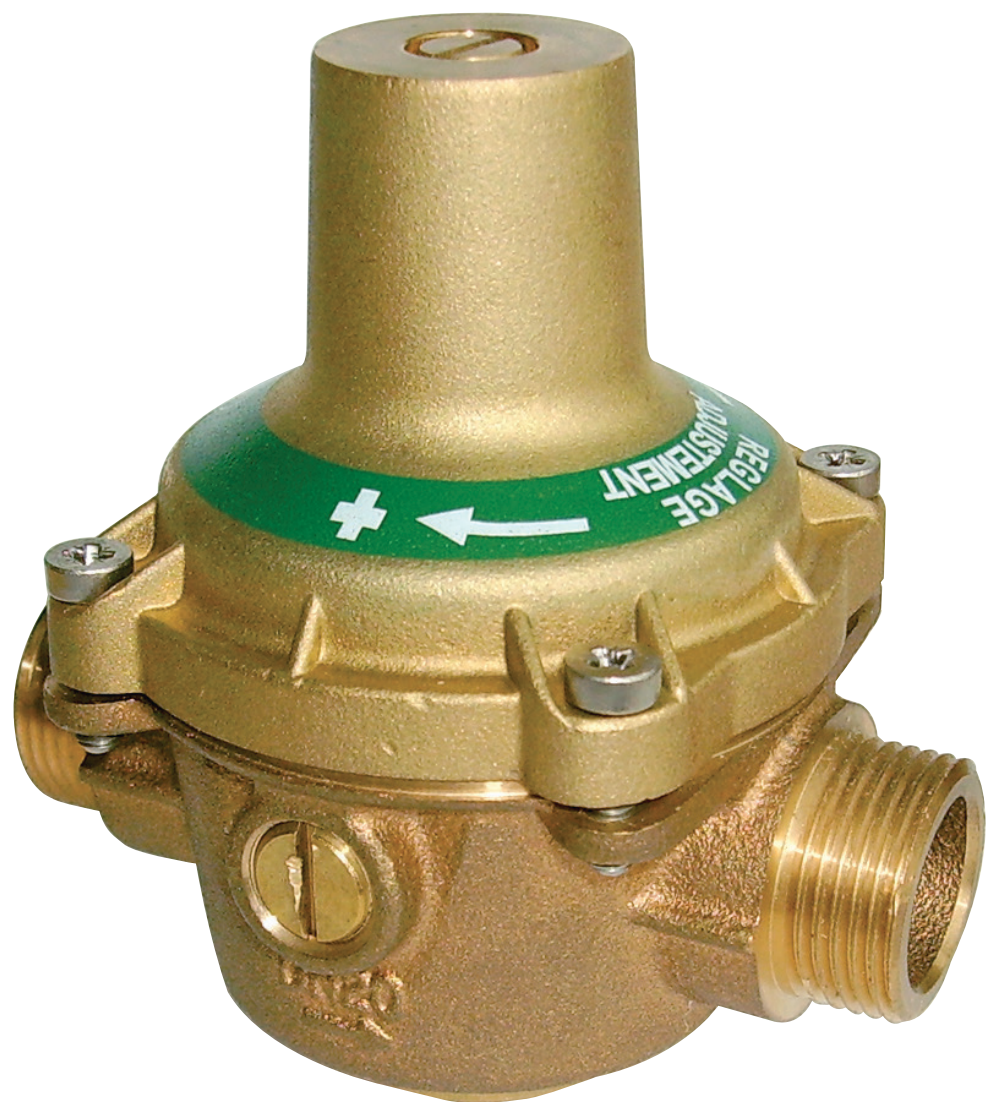


# 11 and 11 RC

Pressure reducing valves

**Desbordes**

**Technical Data Sheet**



## Description

The Desbordes pressure reducing valves 11 and 11 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 5,5 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 and drain on both sides of the casing.
- Also available with compensating spring : type 11 RC, for lower downstream pressure. (DN 15 and 20mm)



## 11 and 11 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	<b>149B7054</b>	<b>149B7762</b>	0,70
3/4	20	25	25	25	x	25	4.3	<b>149B7055</b>	<b>149B7763</b>	0,90
1	25	25	25	25	x	25	4.3	<b>149B7489</b>	<b>149B7764</b>	2,00
1 1/4	32	25	25	25	x	25	4.3	<b>149B7548</b>	<b>149B7765</b>	3,90
1 1/2	40	25	25	25	x	25	4.3	<b>149B7567</b>	<b>149B7766</b>	5,00
2	50	25	25	25	x	25	4.3	<b>149B7565</b>	<b>149B7767</b>	5,30

### Type RC

1/2	15	25	25	25	x	25	4.3	<b>149B7068</b>	(consult us)	0,70
3/4	20	25	25	25	x	25	4.3	<b>149B7069</b>	(consult us)	0,90

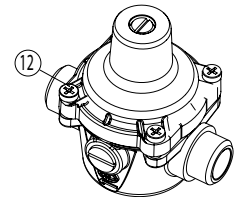
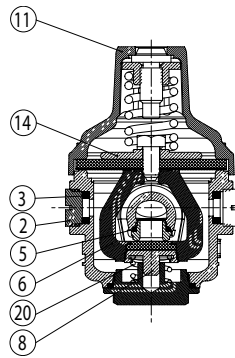
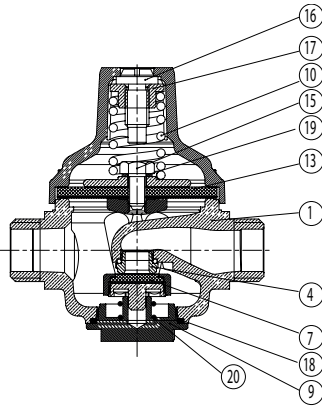
### Important notice :

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	Male/male, BSP
Gauge connection	1/4"
Mediums	Membrane EPDM : water Membrane NBR : other mediums (consult us)

## Nomenclature and materials



N°	Designation	Materials	EURO	ANSI	
1	Body	DN 15 at DN 25	Bronze	EN1982 CuSn5Zn5PB5-C-GS	ASTM B 505
		DN 32 at DN 50	Bronze	EN1982 CuSn5Zn5PB2-C-GS	
2	Pressure gauge plug	Brass	EN12164 CW617N R360 mini 4MS	ASTM B 124	
3	Seal	NBR (Nitrile)			
4	Seat	Stainless steel	EN10088-3 X8CrNiS18-09	AISI 303	
5	O-ring	NBR (Nitrile)			
6	Stirrup	DN 15 at DN 25	Brass	EN12165 CuZn40PB2 H080	ASTM B 124
		DN 32 at DN 50	Brass	EN1982 CuAl9-C	ASTM B 124
7	Flate seal	NBR (Nitrile)			
8	Flange	Brass	EN12164 CuZn39Pb3 R360 mini	ASTM B 124	
9	Plug cover	DN 15 at DN 20	Brass	EN12164 CW617N R360 mini 4MS	ASTM B 124
		DN 25 at DN 50	Brass	EN12164 CuZn39Pb3 R360 mini	
10	Spring	Anticorrosive steel	EN 10270-2		
11	Cap	DN 25	Brass	EN12165 CuZn39Pb2	
		Others DN	Brass or Bronze	EN12165 CuZn40PB2 H080 ou EN1982 CuSn5Zn5Pb5-C GS	
12	Screw	Stainless steel	EN10088-3 X5CrNi 18-10	AISI 304	
13	Membrane	Water	EPDM		
		Other mediums	FKM		
14	Plate	DN 25	Brass	EN12165 CuZn40Pb2-H080 4MS	
		Others DN	Brass	EN12164 Cuzn39Pb3 R360 mini	ASTM B 124
15	Membrane screw	Stainless steel	EN10088-3 X5CrNi 18-10	AISI 304	
16	Adjusting screw	Brass	EN12164 CuZn39Pb3 R360 mini	ASTM B 124	
17	Nut for spring pressing	Brass	EN12164 CuZn39Pb3 R360 mini	ASTM B 124	
18	O-ring	NBR (Nitrile)			
19	Copper washer	Copper annealed			
20*	Compensating spring	Stainless steel	EN10270-3 X10CrNi18-08	AISI 302	

\* Type 11RC only (DN 15 and 20mm)

## Approvals

**ACS**  (DN15-20-25)

### International construction Standards :

Pressure reducing valves EN 1567  
Thread connection NF EN ISO 228

## Application

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The Desbordes 11 and 11 RC 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

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In domestic water supply the DESBORDES 11 and 11 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

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### 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

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The adjustment must be done without flow ie no downstream outflow. The 11 and 11 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.

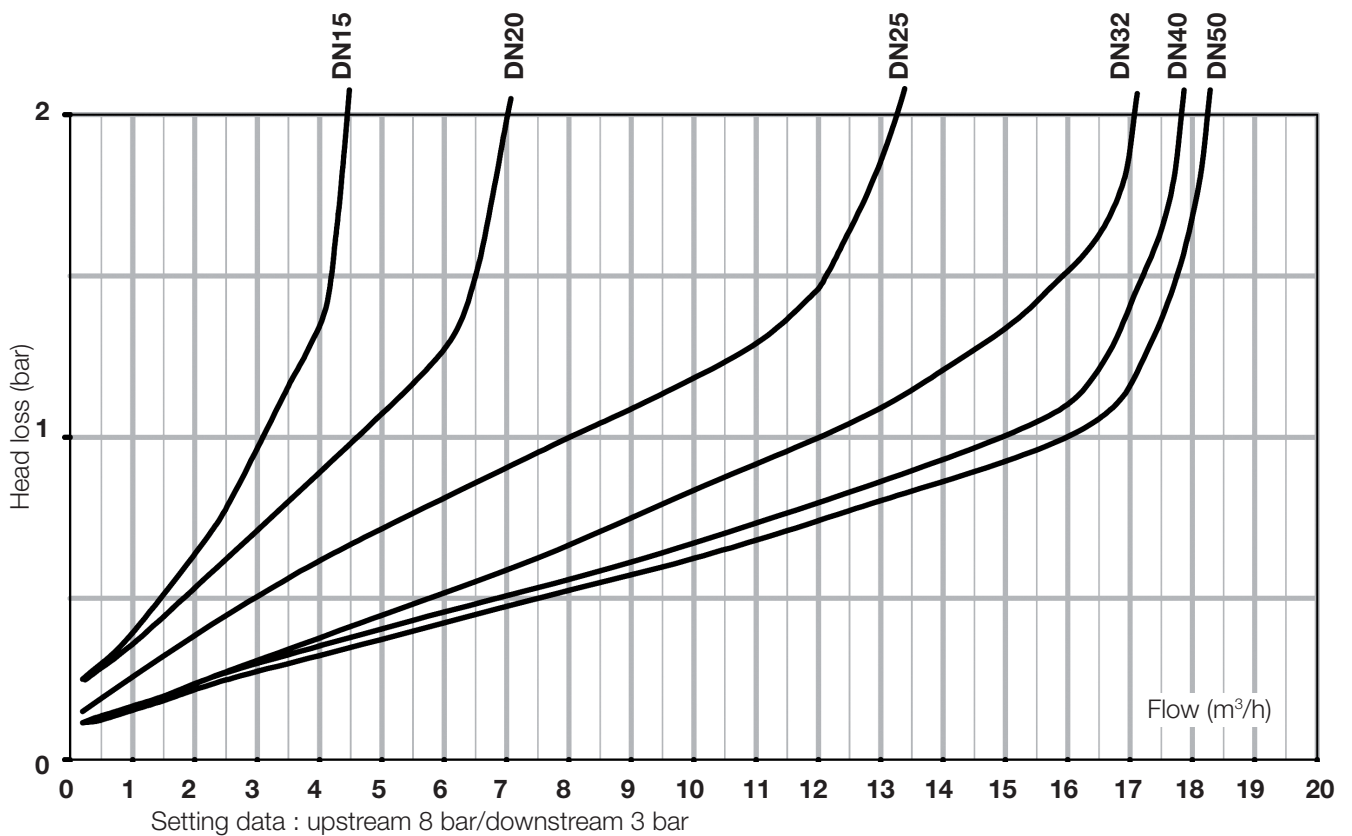
Max. upstream pressure : 25 bar.

## Maintenance

Due to the special design, the Desbordes 11 and 11 RC 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

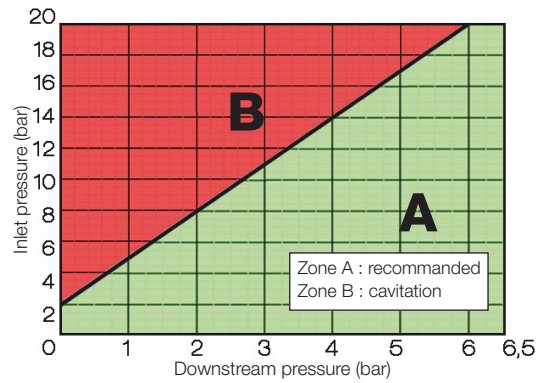
Kv : Flow in m<sup>3</sup>/h when the output pressure becomes 1 bar lower than its zero flow setting

**11 and 11RC - Headloss chart**

# Cavitation

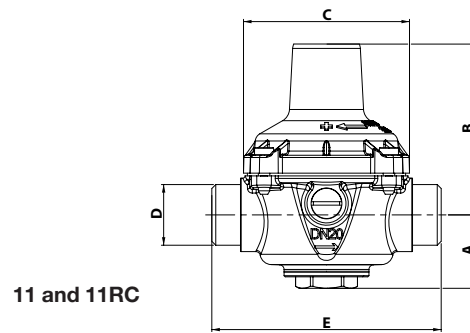
Checking if the differential of pressure, between the upstream and the desired downstream pressure, is not too large, is necessary to avoid cavitation risk. By putting in the graph hereafter, the upstream value and the desired downstream pressure, 2 results are possible :

- 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	85
20	3/4	20/27	32	75	73	100
25	1	26/34	40	102	94	122
32	1 1/4	33/42	51	179	104	132
40	1 1/2	40/49	46	185	104	132
50	2	50/60	54	194	104	146



11 and 11RC

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