

# STAINLESS STEEL LOW PRESSURE OVERFLOW VALVE LBPV ELITE

## MAIN CHARACTERISTICS

The stainless steel LBPV elite low pressure over flow valve is intended for the discharge of fluids overflow when an upstream limitation of pressure is looked for, for example downstream to a pump. Stainless steel construction FPM tightness. The setting of the upstream pressure is made by means of the screw. The pressure gauge allows the direct reading of the upstream pressure. The flow is one-way indicated by an arrow on the body. The LBPV valve only suits with compatible fluids free of particles. It must be necessarily protected by a strainer installed upstream.

## AVAILABLE MODELS

Stainless steel LBPV : G 1/2" to G 2"

Stainless steel LBPV flange : PN 16 DN 15 to DN 50

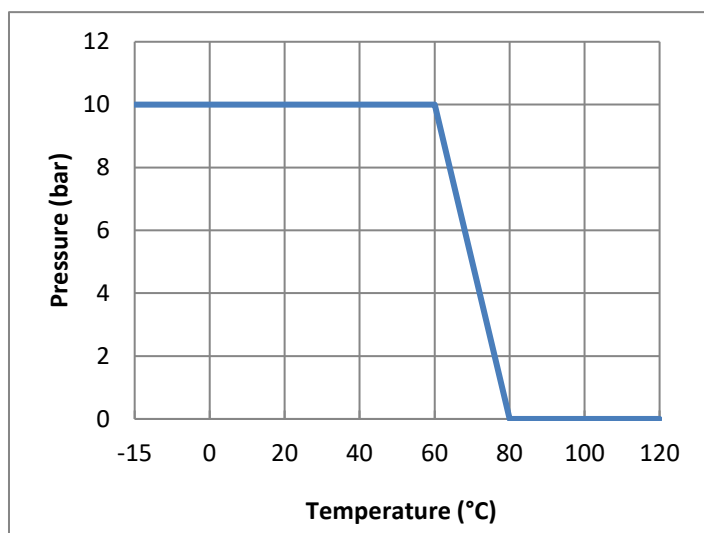
BSP screwed end connections.

Upstream pressure range : 0,2 to 1,5 bar.



## LIMITS OF USE

Max allowed fluid pressure : PS	10 bar
$\Delta P$ mini :	0,2 bar
$\Delta P$ maxi :	1,5 bar
Max allowed fluid temperature : TS	-15°C / +80°C



Flange type

Information given as an indication only, and subject to possible modifications

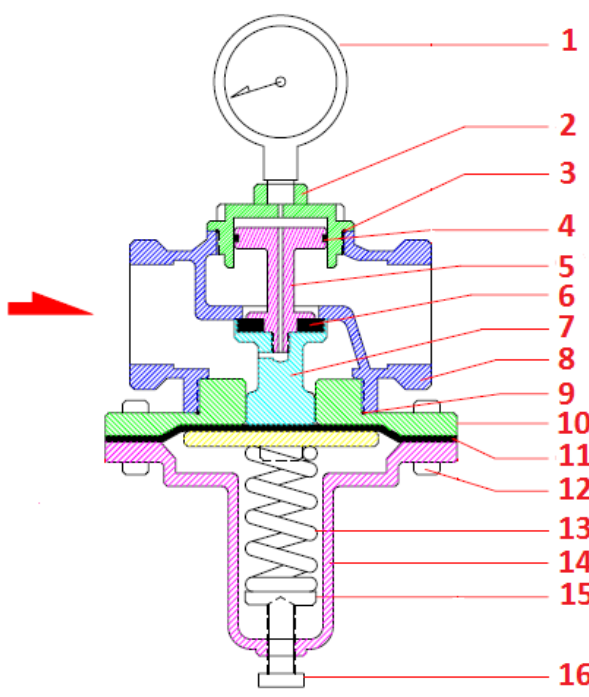
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## REGULATIONS AND STANDARDS OF CONSTRUCTION

Item	Standard	ON	Item	Standard
Pressure equipment Directive 2014/68	DN 15 to 25 : A4 § 3 excluded	0035	Conception	ANSI B16.34
	DN 32 to 50 : catégorie II		Final test	API 598
BSP thread	ISO 228		Flanges	EN 1092-1

## CONSTRUCTION

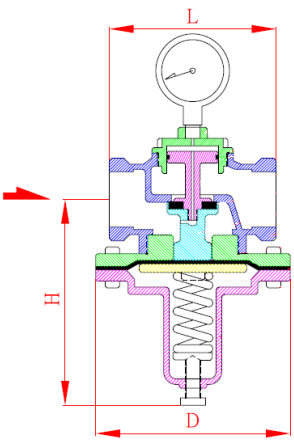
N°	Item	Material	Thread type - Flange type
1	Gauge Ø 63	All stainless steel - 1/4 "	
2	Upper cover	Stainless steel 1.4408	
3	Sealing cover (U-ring)	FPM	
4	U-H-ring	FPM	
5	Shaft	Stainless steel 1.4401	
6	Sealing spacer	FPM	
7	Shaft	Stainless steel 1.4401	
8	Body	Stainless steel 1.4408	
9	O-Ring	FPM	
10	Diaphragm cover	Stainless steel 1.4408	
11	Diaphragm	FPM	
12	Screw bolt	Stainless steel 1.4301	
13	Spring	Spring steel	
14	Spring box	Stainless steel 1.4308	
15	Spring washer	Brass	
16	Adjusting screw	Stainless steel 1.4301	

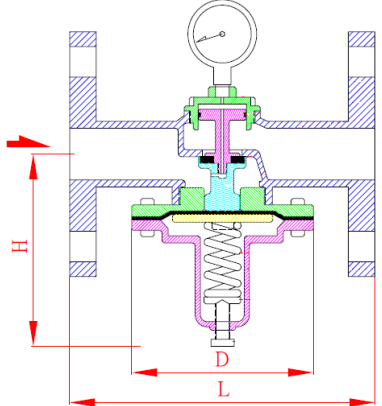
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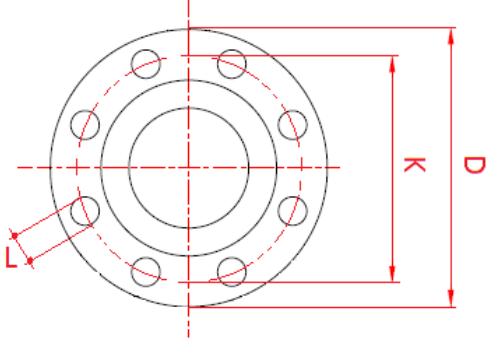
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## DIMENSIONS (mm)

DN	L	H	D	Gauge connection	Weight (kg)	Thread type
15	70	110	105	1/4" G	1,645	
20	85	125	105		1,750	
25	90	125	105		1,930	
40	115	155	145		4,060	
50	120	155	145		4,275	

DN	L	H	D	Gauge connection	Weight (kg)	Flange type
15	150	110	105	1/4" G	-	
20	150	125	105		-	
25	150	125	105		-	
40	190	155	145		-	
50	190	155	145		-	

DN	D	K	L	Qty	Ø	Flanges EN 1092-1 PN16 Dimensions
15	95	65	14	4	M12	
20	105	75	14	4	M12	
25	115	85	14	4	M12	
40	150	110	19	4	M16	
50	165	125	19	4	M16	

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## SIZING

**Selection of the size** : You should not necessarily choose an overflow valve which a size equal to pipe's size. To set the BVP size, you must calculate it by using abacuses and formulae of calculation presented below.

### Flow coefficients Kv (m<sup>3</sup>/h) of LBPV :

DN	15	20	25	40	50
Kv	2,05	7,7	9,4	17,9	21,3

### Formula of calculation for a liquid:

$$Kv = Q \times \sqrt{\frac{\rho}{\Delta P}}$$

*Kv* : flow coefficient in  
m<sup>3</sup>/h.

*Q* : flow in  
m<sup>3</sup>/h

*ΔP* : Difference of pressure  
upstream-downstream in  
bar

*ρ* : Volumic weight  
kg/dm<sup>3</sup>


### Formula of calculation for a gas :

$$\text{Si } P_2 > P_1/2 \quad Kv = \frac{Q}{445} \times \sqrt{\frac{d \times T}{\Delta P \times P_2}}$$

$$\text{Si } P_2 < P_1/2 \quad Kv = \frac{Q}{240 \times P_1} \times \sqrt{d \times T}$$

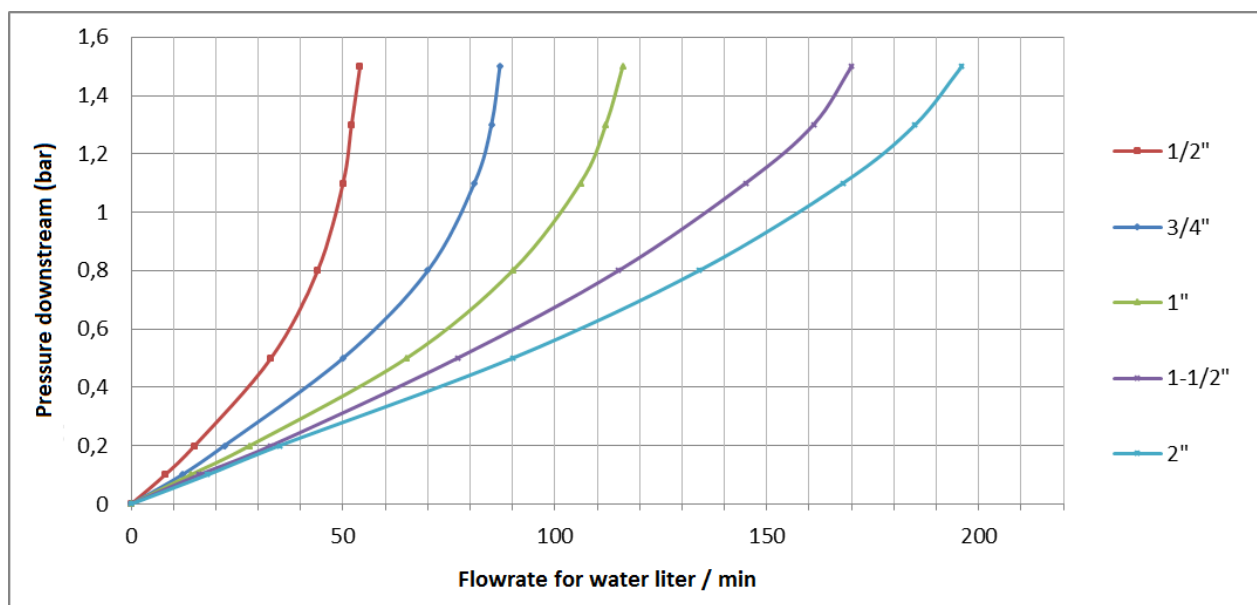
<i>Kv</i>	Flow coefficient	m <sup>3</sup> /h
<i>Q</i>	Flowrate in	m <sup>3</sup> /h
<i>d</i>	Volumic weight	Kg / m <sup>3</sup>
<i>T</i>	Absolute temperature	°K (°C +273)
<i>P1</i>	Upstream pressure	bar
<i>P2</i>	Downstream pressure	bar

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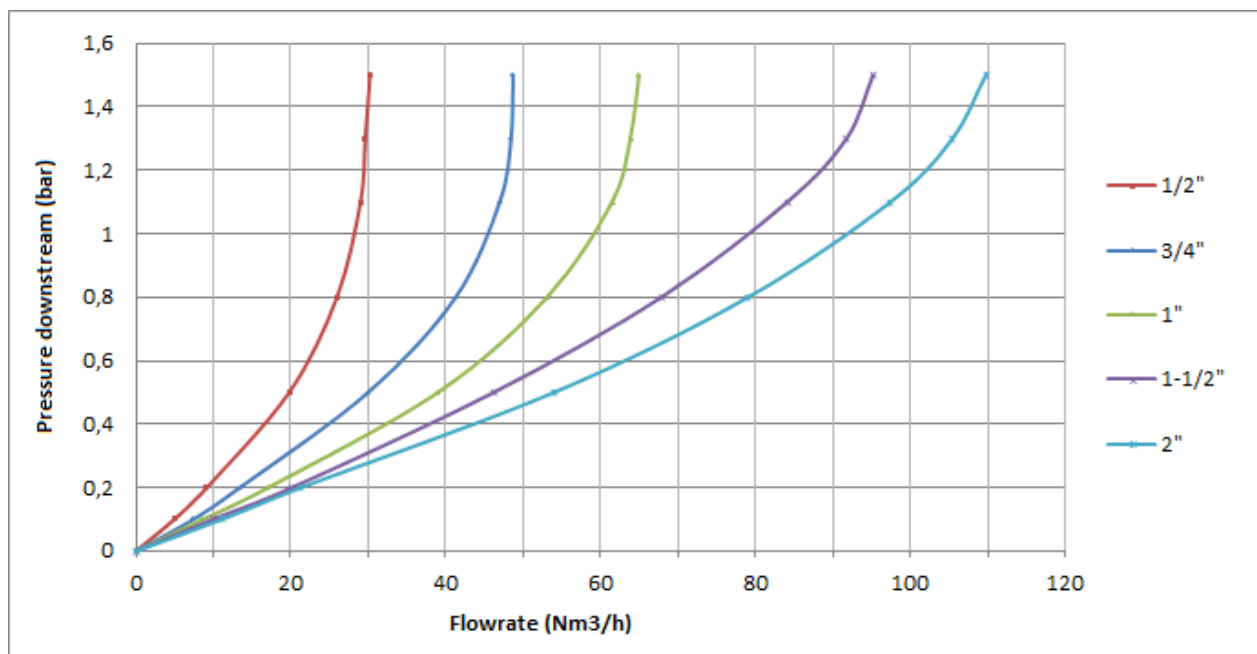
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## FLOWRATE DIAGRAM FOR WATER



## FLOWRATE DIAGRAM FOR COMPRESSED AIR



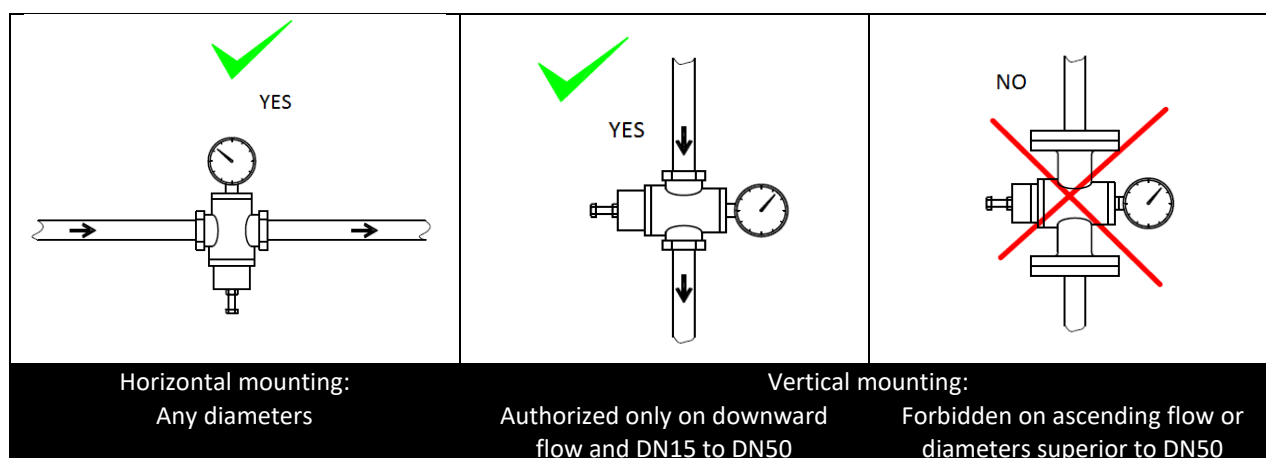
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## INSTALLATION

**Position of mounting :** The usual position of mounting of the LBPV is vertical on horizontal piping, manometer upward. Mounting on vertical piping : Although not recommended this mounting is possible for diameters DN 15 for DN 50, only on downward flow, this position of mounting is forbidden.

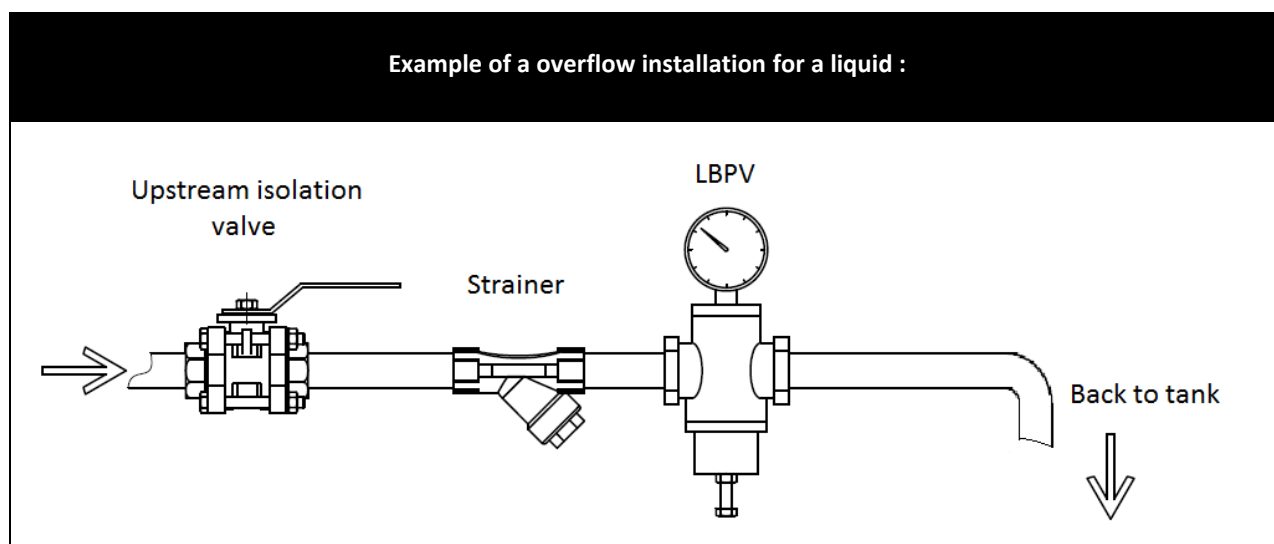


**Convergent and divergent :** If the diameter of the LBPV is lower than the diameter of the piping (see § sizing), install upstream a convergent.

For a use on a gas, It is necessary to plan at the exit of the LBPV a bigger sized pipe to that of the entrance and to link it by a divergent, The relaxed gas needing a bigger pipe's section.

**Upstream pipe isolation :** Plan a stop valve upstream to the overflow LBPV. The LBPV is necessarily tight when flow is equal to zero.

**Upstream filtration :** To protect the mechanism against impurities, plan a protection's strainer upstream to the LBPV with a 5/10° screen.




## OPTIONS

Thread NPT according to ANSI B1.20

ANSI 150 flanges according to ANSI B16.5

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## INSTRUCTIONS OF MOUNTING AND MAINTENANCE

### 1 - Mounting

Verify that the range of pressure indicated on the body is adequate with regard to the use. Before any installation, isolate the upstream pipe, depressurize the pipe and bring the installation at room temperature. Install a valve of isolation in the upstream. Install also a upstream strainer. Clean carefully the pipe of any particle by rinsing with water or a blowing with air. Install the overflow LBPV by respecting the sense of the arrow indicated on the body and with the pressure gauge upward. Make the tightness of the grip of the pressure gauge. Open slowly the upstream valve. Use the adjusting screw item (16) and read the indication of the pressure on the manometer to adjust the upstream pressure looked for.

### 2 - Maintenance


Before any intervention, isolate the upstream piping by using the valve intended for that purpose. Depressurize the pipe and bring the installation at room temperature. Unscrew completely the adjusting screw item (16). Remove screen the cork of the upstream strainer and clean or replace it. For a complete visit of the device, unscrew the parts (2) and (12). Verify the state of sealing parts (3), (4), (5), (6), (9) and (11). Replace them if needed. Verify also the state of the spring item (13). Replace it if it is broken or strongly corroded. Clean all the internal parts. Reassemble all the internal parts, in the inverse order of the dismantling. Put back the device in service by opening slowly the upstream valve. Adjust the upstream pressure by means of the screw item (16).

## SPARE PARTS

DN	Kit of sealing FPM
Thread type item	3, 4, 6, 9, 11
Flange type item	3, 4, 6, 9, 11
15	981870
20	981871
25	981872
40	981873
50	981874

Spare pressure gauge item 1
0,2 - 1,5 bar
F1616003

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