

**hidroconta**  
metering technology

WHEN WATER COUNTS



hydraulic valve

**leopard**

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**Low  
maintenance**

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**Very low pressure  
loss and high KV**

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**Nominal pressure  
PN16**

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**Available  
DIN / ANSI**

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**Available  
BSP / NPT**

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**Internal spring  
optional**

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REV.4

## Multifunctional character

Leopard valves are essential elements in any hydraulic installation due to their multifunctionality. Pressure reducing, limiting, relief, throttle and multifunctional regulations are some of the possibilities of this valve.

## Easy Maintenance

Its simple construction with few moving parts allows on-site maintenance without dismantling the system and guarantees a long service life.

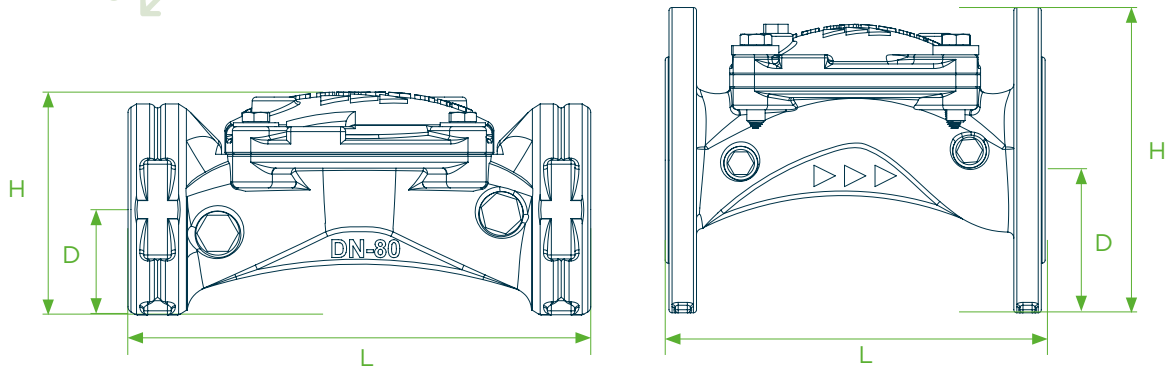
## Hydrodynamic design

La válvula Leopard de Hidroconta está desarrollada para eliminar el golpe de ariete por su lenta apertura y cierre. Además, su diseño hidrodinámico disminuye la posible turbulencia interna y su cuerpo genera bajas pérdidas de carga.

## Water engineering

It uses the energy of the circulating fluid itself, with a single activation chamber and where the closure is produced by the diaphragm itself. The assembly of all its components constitutes a conduit through which the water will pass and which we will throttle as we wish through the diaphragm.

## Dimensions

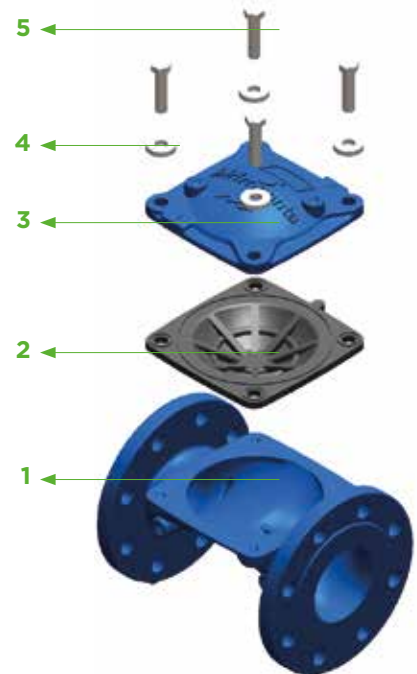


DN	L	D	H	WEIGHT	CONNECTIONS	
mm	in	mm	kg			
20	3/4"	184	32	94	3,0	Thread
25	1"	184	32	94	2,7	Thread
32	1-1/4"	180	31	94	3,1	Thread
40	1-1/2"	180	31	94	2,8	Thread
50	2"	186	38	100	3,2	Thread
65	2-1/2"	186	46	117	3,8	Thread
80	3"	235	55	113	5,4	Thread
50	2"	189	82	166	6,6	Flange
65	2-1/2"	202	93	186	9,98	Flange
80	3"	250	100	201	10,8	Flange
100	4"	311	110	222	16,2	Flange
125	5"	335	125	250	25,4	Flange
150	6"	410	145	290	51,0	Flange
200	8"	465	170	340	57,0	Flange
250	10"	650	230	460	149,0	Flange
300	12"	650	230	460	135,0	Flange



## Exploded view

Nº	DESCRIPTION	MATERIAL
1	Body	Cast iron
2	Membrane	Natural rubber
3	Cover	Cast iron
4	Washer	Zinc plated steel / stainless steel
5	Screw	Zinc plated steel / stainless steel



## Technical specifications

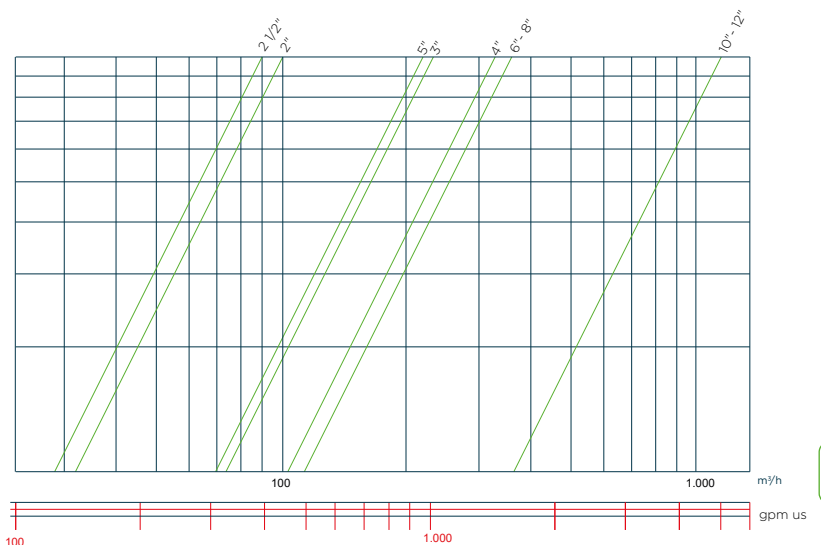
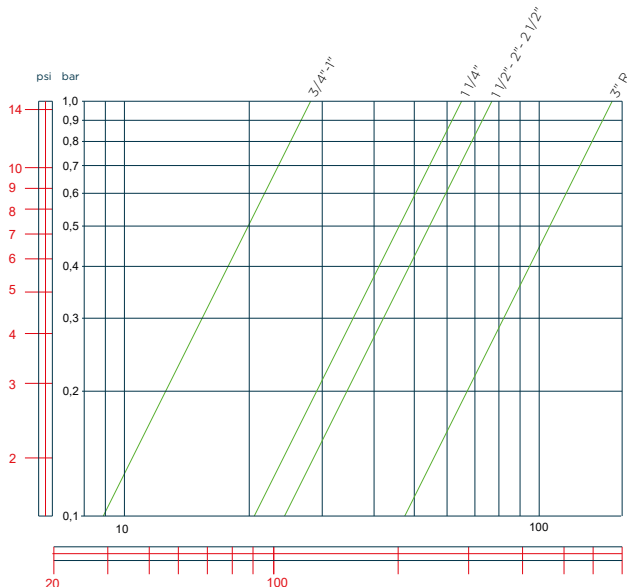
DN		MINIMUM WORKING PRESSURE	MAXIMUM PRESSURE	KV	CV	CONNECTIONS
mm	in	Bar		m <sup>3</sup> /h	US glm y psi	
20	3/4"	0,75	16	28,1	32,6	Thread
25	1"	0,75	16	28,1	32,6	Thread
32	1-1/4"	0,80	16	65,0	75,4	Thread
40	1-1/2"	1,10	16	77,0	89,3	Thread
50	2"	1,20	16	77,0	89,3	Thread
65	2-1/2"	1,50	16	77,0	89,3	Thread
80	3"	0,3	16	150	174,0	Thread
50	2"	1,20	16	101,0	117,15	Flange
65	2-1/2"	0,3	16	90	104,4	Flange
80	3"	0,3	16	233,0	270,28	Flange
100	4"	0,3	16	328,0	380,48	Flange
125	5"	2,30	16	220,0	255,2	Flange
150	6"	1,60	16	360,0	417,6	Flange
200	8"	2,10	16	360,0	417,6	Flange
250	10"	0,50	16	1.150,0	1.334,0	Flange
300	12"	0,8	16	1.150,0	1.334,0	Flange

$$\rho_0 K_v = q_v \sqrt{\frac{\rho}{\Delta p_v \rho_0}}$$

q<sub>v</sub> = flow rate in m<sup>3</sup>/h  
 ρ = density of water in kg/m<sup>3</sup>  
 ρ<sub>0</sub> = density of water at 15 °C in kg/m<sup>3</sup>  
 Δp<sub>v</sub> = loss pressure of the valve in bar



## Pressure loss curve



## PRESSURE REDUCING VALVE

### Applications

Recommended for locations where pressure reduction is required for the following reasons for the following reasons:

To adjust pressure to consumption.

To protect installations.

In the reducing valve, the pilot acts on the valve the valve in such a way that it has a modulating modulating function, in order to keep the in order to keep the downstream pressure downstream for the control value. control value.

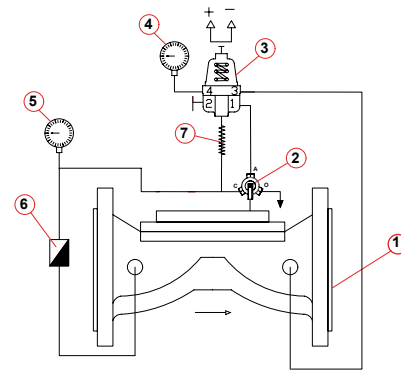
### Functioning

The pilot sets the downstream pressure regardless the inlet pressure. If the outlet pressure is less than the preset pressure, the valve is completely open. If the upstream pressure is less than the calibrated, the pilot will open the valve, it will act just when the pressure exceeds the set pressure

### Ratios

Maximum reduction ratio: inlet pressure x 1/3

Precision Ratio: preset pressure ± 0.5 bar



TWO-WAY PRESSURE REDUCING VALVE

1.- Leopard valve.

2.- 3-way valve.

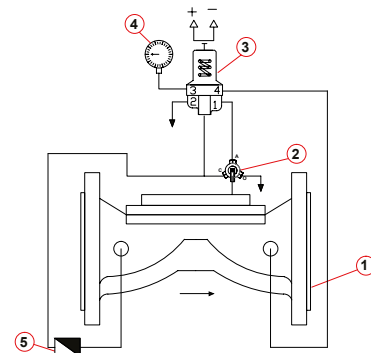
3.- 2-way Pressure Reducing Pilot Valve.

4.- Inlet Pressure Gauge.

5.- Outlet Pressure Gauge.

6.- Filter.

7.- Spiral.



THREE-WAY PRESSURE REDUCING VALVE

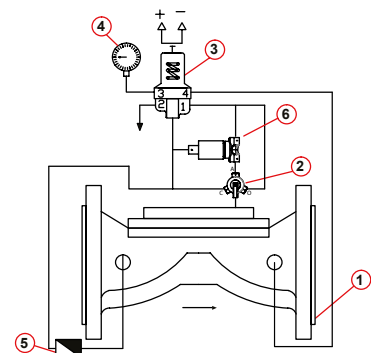
1.- Leopard valve.

2.- 3-way valve.

3.- 3-Way Reducing Pilot.

4.- Outlet Pressure Gauge.

5.- Filter.



THREE WAY PRESSURE REDUCING VALVE WITH SOLENOID

1.- Leopard valve.

2.- 3-way valve.

3.- 3-way reducing pilot valve.

4.- Outlet Pressure Gauge.

5.- Filter.

6.- Solenoid NA/Lacth.

## SUSTAINING VALVE

### Applications

It is used in installations where it is necessary to maintain a minimum hydraulic pressure, for example:

- Pumping groups.
- Pipe branches with different consumptions.
- Filtering equipment.

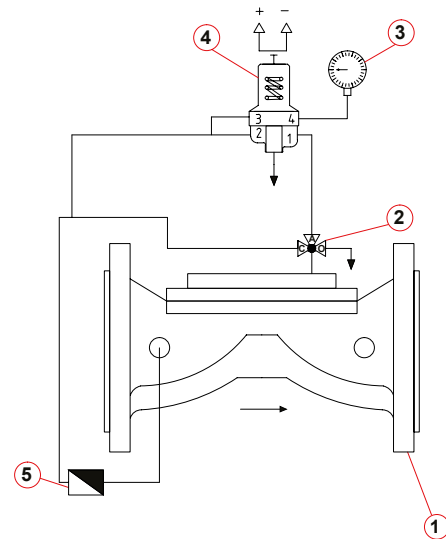
The installation of this type of valve allows a minimum pressure to be maintained upstream of the valve established by the user.

### Operation

The pressure sustaining valve is designed to maintain a minimum pressure upstream, if the pressure is higher than the regulation value, the valve opens fully, otherwise the valve will close until the upstream pressure is equal or higher than the set pressure.

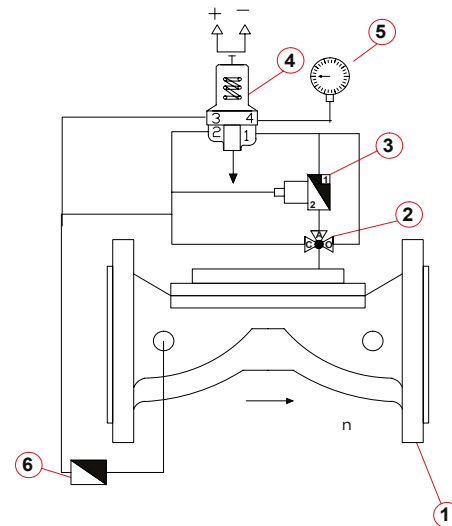
### Ratios

Standard working ratio: from 1 bar to 6,5 bar.  
Precision ratio: set pressure  $\pm 0,3$  bar



PRESSURE SUSTAINING VALVE

- 1.- Leopard valve.
- 2.- 3-way valve.
- 3.- Inlet Pressure Gauge.
- 4.- 3-way Pressure Holding Pilot.
- 5.- Filter.



PRESSURE SUSTAINING VALVE WITH SOLENOID

- 1.- Leopard valve.
- 2.- 3-way valve.
- 3.- Solenoid.
- 4.- 3-Way Pilot Pressure Holding Valve.
- 5.- Inlet Pressure Gauge.
- 6.- Filter

## Reducing and sustaining valve

### Applications

The combined reducing and sustaining valve performs both functions independently of each other. It avoids the generation of:  
Pressure drops.  
Overpressure.

Overpressure.

It is mainly used to automatically reduce downstream pressure in the distribution network and to maintain a minimum pressure in the main high pressure line regardless of the distribution demand.

### Operation

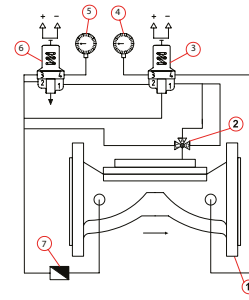
The reducing pilot acts on the valve so that it has a modulating function, in order to keep the downstream pressure constant for the set regulation value, the sustaining pilot acts on the valve so that it has a modulating function, in order to keep the upstream pressure above the minimum regulation value.

### Ratios

Max. reduction ratio: inlet pressure  $\times 1/3$

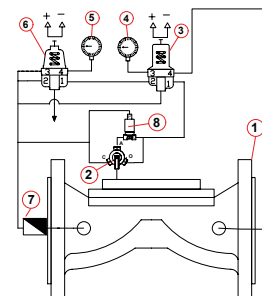
Accuracy ratio: set pressure  $\pm 0,3$  bar

Standard working ratio holding function: from 1 bar to 6,5 bar.



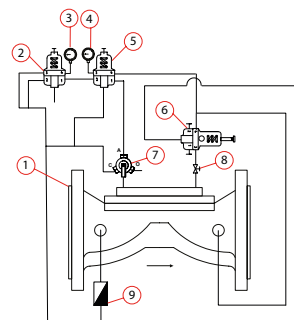
PRESSURE REDUCING AND PRESSURE SUSTAINING VALVE

- 1.- Leopard valve.
- 2.- 3-way valve.
- 3.- Reducing pilot.
- 4.- Outlet pressure gauge.
- 5.- Inlet pressure gauge.
- 6.- Holding pilot.
- 7.- Filter.



PRESSURE REDUCING AND PRESSURE SUSTAINING SOLENOID VALVE

- 1.- Leopard valve.
- 2.- 3-way valve.
- 3.- Reducing pilot.
- 4.- Outlet pressure gauge.
- 5.- Inlet pressure gauge.
- 6.- Holding pilot.
- 7.- Filter.
- 8.- Solenoid.



PRESSURE REDUCING AND SUSTAINING VALVE  
(with accelerator pilot)

- 1.- Leopard valve (DN150-DN300).
- 2.- Holding pilot.
- 3.- Inlet pressure gauge.
- 4.- Outlet pressure gauge.
- 5.- Reducer pilot.
- 6.- Accelerator pilot.
- 7.- 3-way valve.
- 8.- Hydraulic shut-off valve.
- 9.- Filter.

## Flow-limiting valve

### Applications

With the installation of limiting valves it is possible to:

Avoid excessive consumption.

Avoid pressure drops and therefore supply deficiencies at points far from the network.

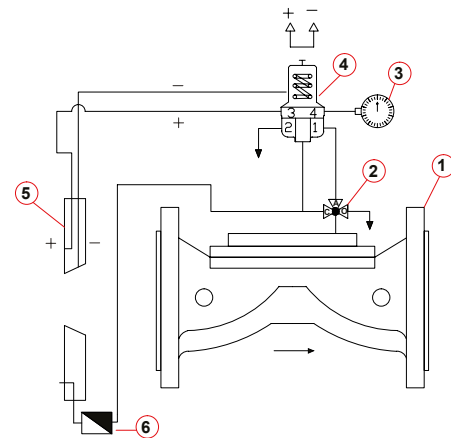
The flow limiting valves limit the flow of circulating water, ensuring that it is equal to or less than the set flow rate.

### Operation

The pilot regulates the opening of the valve according to the differential pressure, providing the pre-set flow rate and maintaining a constant flow rate. The flow rate can be varied by operating the tare screw on the pilot. By means of two sensors, installed on both sides of an orifice plate that produces a certain pressure drop, the circulating flow rate is obtained, closing the hydraulic valve partially until only allowing the determined flow rate in the event that an attempt is made to exceed this flow rate.

### Ratios

Once the flow rate to be limited has been preselected, the pilot is capable of modifying the set flow rate by  $\pm 15\%$ .



#### FLOW LIMITING VALVE

1.- Leopard valve.

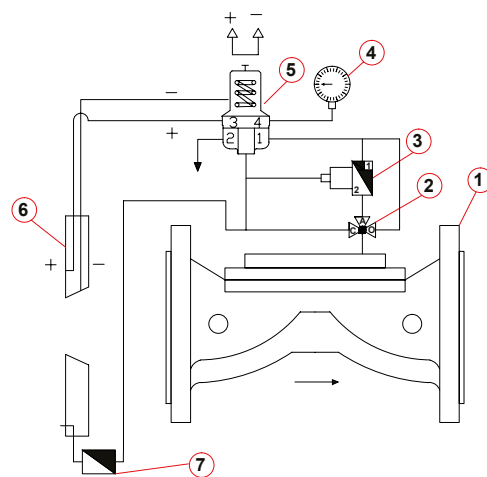
2.- 3-way valve.

3.- Inlet Pressure Gauge.

4.- 3-way limiting pilot.

5.- Orifice disc.

6.- Filter.



#### SOLENOID FLOW LIMITING VALVE

1.- Leopard valve.

2.- 3-way valve.

3.- Solenoid.

4.- Inlet Pressure Gauge.

5.- 3-way flow limiter pilot.

6.- Orifice disc.

7.- Filter.



## Limiting and reducing valve

### Applications

The combined reducing and limiting valve performs both functions independently of each other. It prevents the following from occurring in installations

- Excessive consumption
- Pressure drops and therefore supply deficiencies at points far from the network.
- Adjusting pressure to consumption.
- Protecting installations.

### Operation

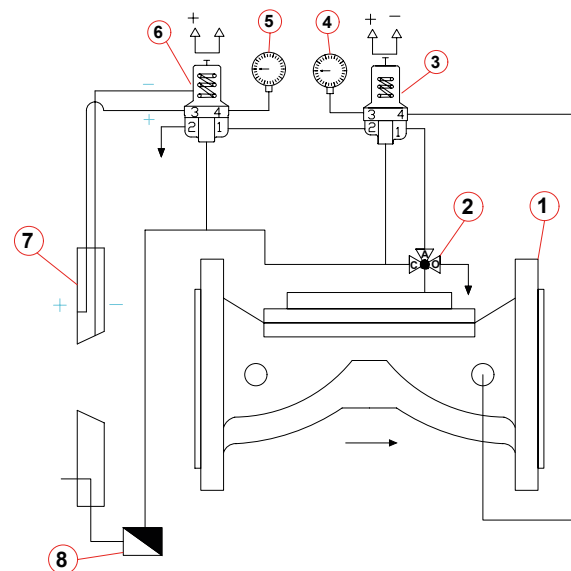
The limiting and reducing valve performs its function with the aid of a calibrated orifice plate installed upstream. It includes a differential pilot that regulates the opening of the valve according to the differential pressure, proportional to the flow rate, keeping the flow rate constant. The reducing pilot acts on the valve so that it has a modulating function in order to keep the downstream pressure constant for the set regulation value.

### Ratios

Maximum reduction ratio: inlet pressure  $\times 1/3$ .

Precision ratio: set pressure  $\pm 0.3$  bar.

Once the flow rate to be limited has been preselected, the pilot is able to modify the set flow rate by  $\pm 15$  %.



LIMITING AND REDUCING VALVE

1- Leopard valve.

2- 3-way valve.

3- 3- Way reducing pilot valve.

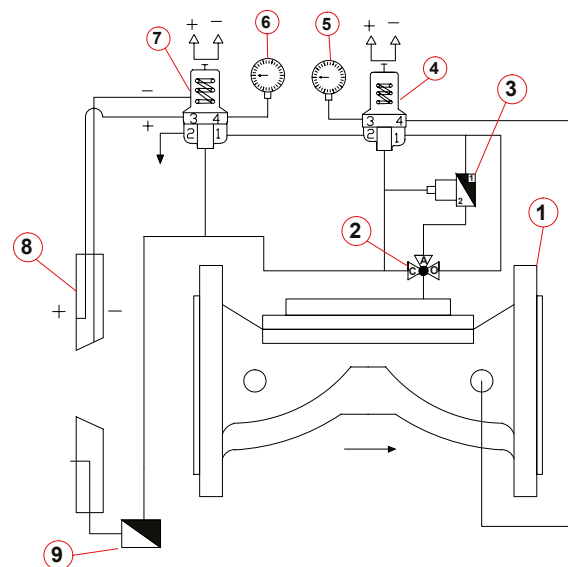
4- Outlet pressure gauge.

5- Inlet pressure gauge.

6- 3- Way limiting pilot valve.

7- Orifice disc.

8- Filter.



LIMITING AND REDUCING VALVE WITH SOLENOID

1- Leopard valve.

2- 3-way valve.

3- Solenoid.

4- 3-way reducing pilot valve.

5- Outlet Pressure Gauge.

6- Inlet Pressure Gauge.

7- 3-way limiting pilot valve.

8- Orifice disc.

9- Filter.

## Electrovalve

### Applications

The installation of electrovalves allows us to act on the valve remotely, we can control the opening and closing of the valve automatically.

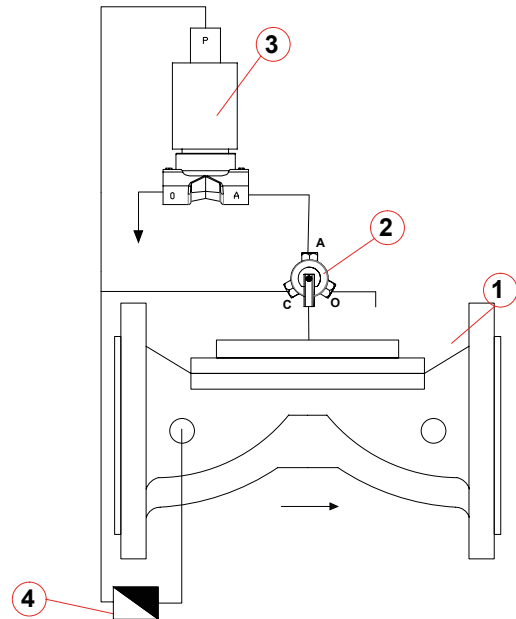
### Operation

The electrovalve or solenoid valve is an on/off valve.

The valve will operate fully open or fully closed when the solenoid is energised.

It uses its own mains pressure for operation.

In case of low mains pressure any external source of pressure can be used..



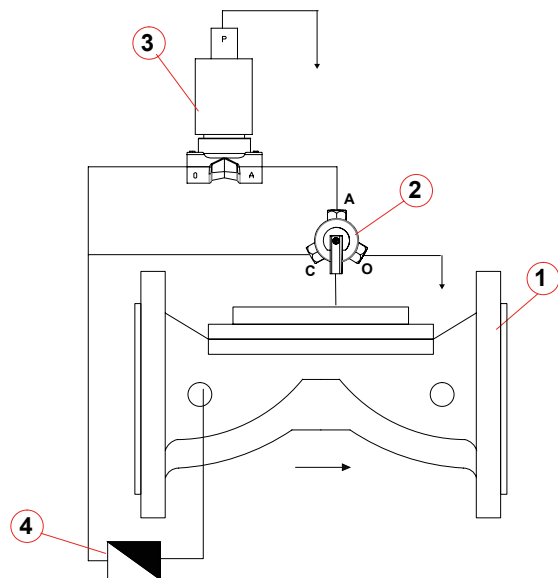
#### ELECTROVALVE NC

1.- Leopard valve.

2.- 3-way valve

3.- Solenoid NA

4.- Filter.



#### SOLENOID VALVE NA

1.- Leopard valve.

2.- 3-way valve

3.- NC solenoid.

4.- Filter.

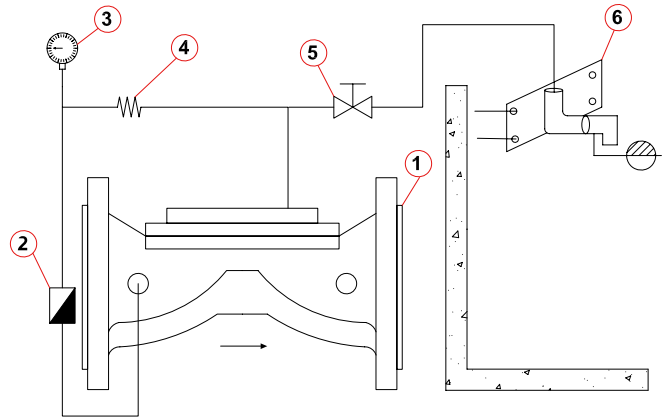
## Float valve

### Applications

Pilot float valves are used in water reservoirs or regulating manholes. It is designed to open fully when the water level reaches a pre-selected low point and closes tightly when it reaches the selected high level.

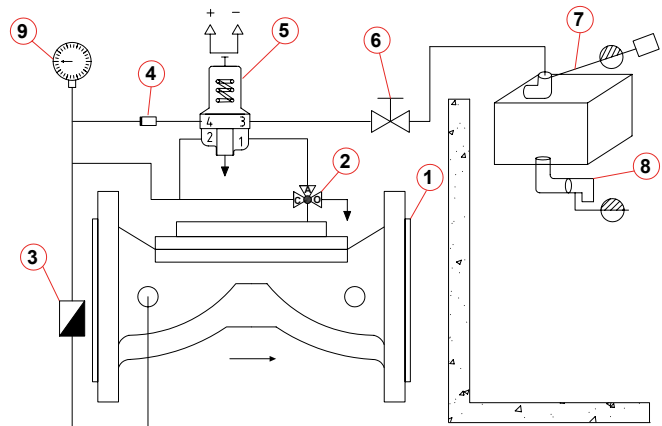
### Operation

When the water level in the tank reaches its maximum point, the buoy pilot closes the water passage, building up water pressure in the valve chamber and closing the valve. When the water level in the tank drops due to consumption, the float pilot also drops, opening the water passage and draining the chamber, which opens the hydraulic valve.



#### 1 LEVEL FLOAT VALVE

- 1.- Leopard valve.
- 2.- Filter.
- 3.- Inlet pressure gauge.
- 4.- Spiral 4 mm.
- 5.- Hydraulic shut-off valve.
- 6.- Float with 1 level support.



#### FLOAT VALVE 2 LEVEL

- 1.- Leopard valve.
- 2.- 3-way valve.
- 3.- Filter.
- 4.- Needle valve pilot.
- 5.- 3 way float valve pilot.
- 6.- Hydraulic shut-off valve.
- 7.- Float with maximum level support.
- 8.- Hydraulic change float.
- 9.- Pressure gauge.

## Pressure relief Valve

### Applications

The relief valve is designed to open in case of exceeding a preset maximum pressure. This valve is installed with an outlet to the atmosphere, relieving the excess pressure in the pipeline by opening.

- Protection of hydraulic installations.

### Operation

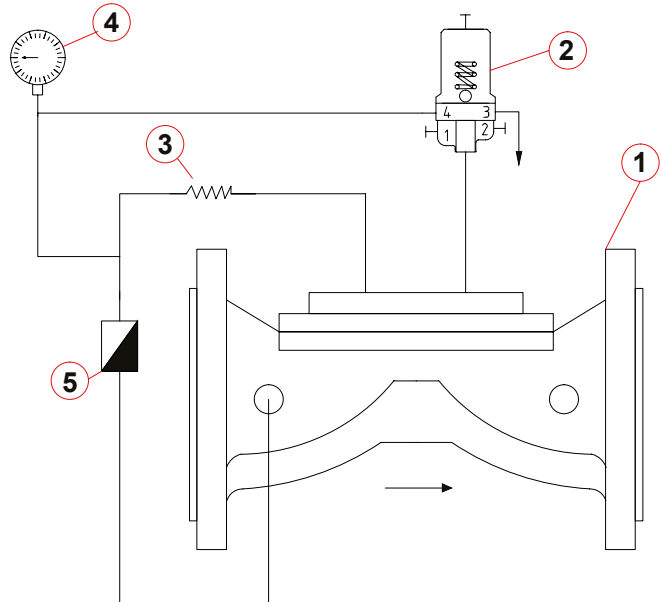
The pressure relief pilot valve sets the maximum tare pressure limit by means of a regulating screw.

If the upstream pressure exceeds the set pressure, the piston moves upwards, bringing the valve chamber into communication with the atmospheric pressure. In this way the valve opens to reduce the excess pressure.

### Ratios

Working pressures: From 2-16 bar

Accuracy ratio:  $\pm 0,5$  bar



#### RELIEF VALVE

1.- Leopard Valve.

2.- 2-Way Quick Relief Pilot.

3.- Spiral needle. copper 4 mm.

4.- Glycerine pressure gauge 0-16 Bar.

5.- Filter.



## Ordering information

General characteristics	
Valve diameter	DN / mm / inch
Valve type	diaphragm / piston
Maximum inlet pressure	bar / MPa
Fittings	plastic / metallic
Accessories	plastic / metallic
Pilots	plastic / metallic
Solenoid (Y/N)	latch/24VDC/24VAC/220VAC
Valve status at rest	open/closed

Features reducing/limiting valve	
Outlet pressure	bar / MPa
Maximum flow rate	m <sup>3</sup> / h
Minimum flow rate	m <sup>3</sup> / h

Features sustaining valve	
Holding pressure	bar / MPa
Maximum flow rate	m <sup>3</sup> / h
Minimum flow rate	m <sup>3</sup> / h
Working flow rate m <sup>3</sup> / h	m <sup>3</sup> / h

Electrovalve features	
Solenoid voltage	V
No. of wires	2 / 3
Valve use	open / closed

Float valve features	
Filling levels	1/ 2

Relief valve features	
Relief pressure	bar / MPa



### **1- Why does not the valve open?**

There may be insufficient pressure at the inlet pressure valve, you should examine the insulation valves of the system upstream and downstream, if they are closed open to allow the passage of water and generate pressure. Another reason may be that the solenoid is calcified, clean it and replace parts as necessary.

### **2- Why does not the valve regulate at the desired control point?**

It may be caused by the pilot because it is not adjusted properly, check it by tightening and loosening the screwdriver to see if there is a pilot reaction, so you can adjust the pilot to the desired opening and closing speed.

Check if the upstream filter is clogged and causes insufficient pressure to reach the pilot to activate the valve at the desired control point.

### **3- Why does not the valve close?**

It may be that the filter is clogged, to check it, disconnect the copper line from the lid to see if there is water flow in the inlet. In this case clean the filter mesh. If the main valve membrane fails, it can also give this result, replace the membrane for repair.

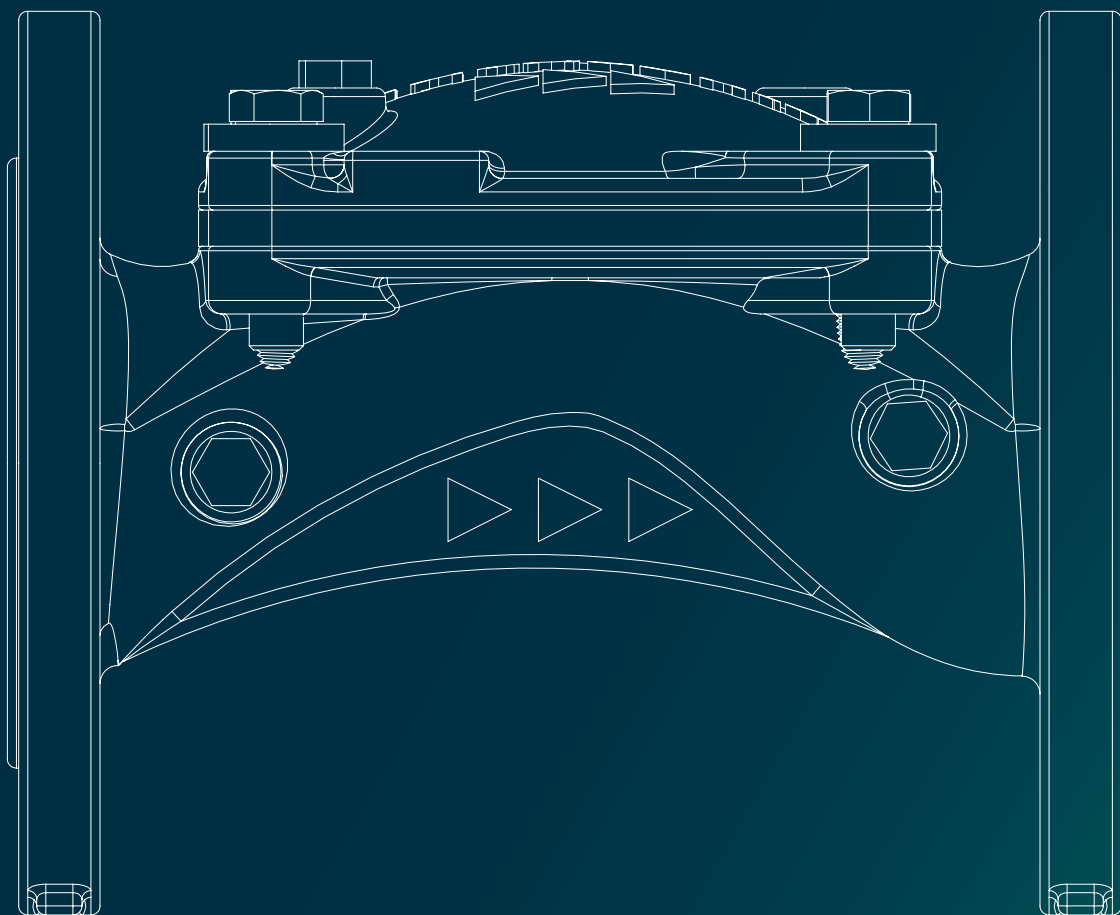
Another reason may be that the solenoid is calcified, clean it and replace parts as necessary.

### **4- Why does the membrane leak water?**

It is usually produced by the accumulation of dirt between the membrane and its closing support, closing the valve manually, if the problem persists open the valve to clean the area.

**hidroconta**  
metering technology

WHEN WATER COUNTS



hydraulic valve  
**leopard**

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