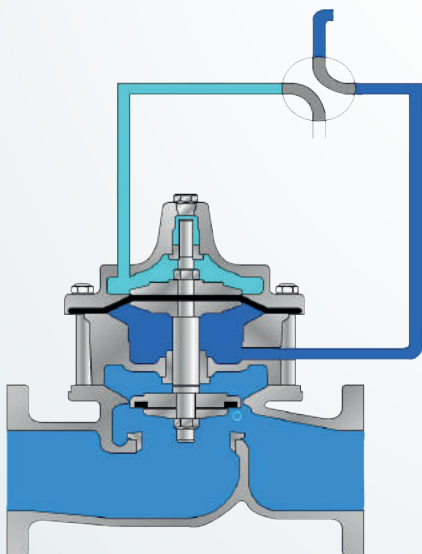
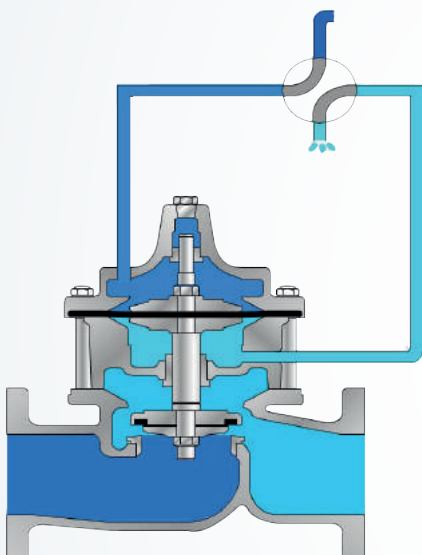
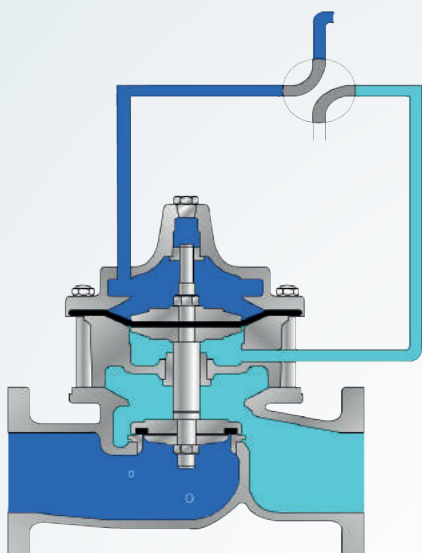


# VALVES



## HIDROMATIC VALVE



## Hydrodynamic design

The Hidromatic valve of Hidroconta is a piston hydraulic valve controlled with the same fluid of the conduction. Its balloon design improves its hydrodynamic characteristics, which reduces the internal turbulence of the water. Hidromatic has an gradual and slow opening and closing that eliminates the water hammer.



## Water Engineering

Introducing fluid into the top of the diaphragm, the diaphragm lowers the piston, so the valve will close. The opening is produced by evacuating the fluid from the chamber of the membrane. The piston will go up, and let the water will pass through the valve.



## Multifunctionality

HIDROVALVE valves are essential elements in any hydraulic installation due to its multifunctionality. Reduced pressure, sustainer, limiter, relief, and multifunctional regulations are some of the possibilities of this valve.



## Easy Maintenance

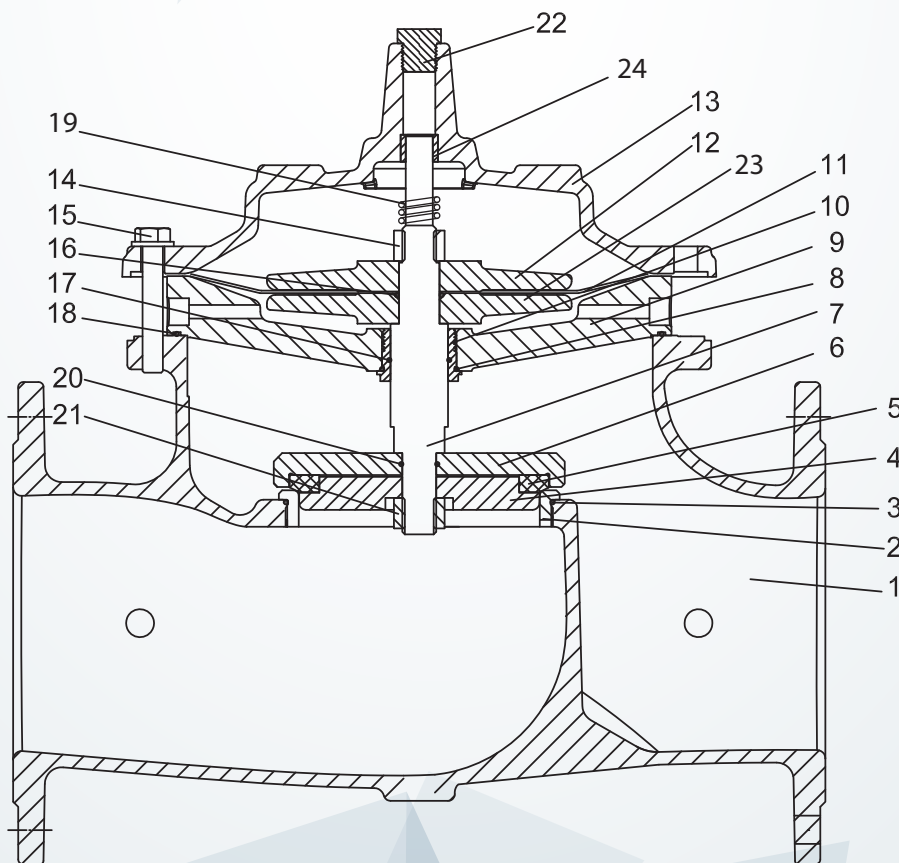
A simple assembly including few moving parts allows on-site maintenance without dismantling the installation, besides guaranteeing a long useful life.



## Disassembly

Nº	Description	Material
1	Body	GJS 500-7
2	Locking ring	AISI316
3	Gasket	NBR
4	Closing washer	AISI316
5	Seal	EPDM
6	Top lock washer	CS/1045
7	Axis	AISI316
8	Gasket	NBR
9	Double chamber	GJS 500-7
10	Bearing	C61900
11	Diaphragm	NBR + NYLON
12	Upper diaphragm washer	GJS 500-7

Nº	Description	Material
13	Lid	GJS 500-7
14	Nut	A2 -70
15	Screw	A2- 70
16	Gasket	NBR
17	Gasket	NBR
18	Gasket	NBR
19	Spring	AISI
20	Gasket	NBR
21	Nut	A2 - 70
22	Connection	AISI 316
23	Membrane Bottom Washer	GJS 500-7
24	Top Shaft Guide	C61900

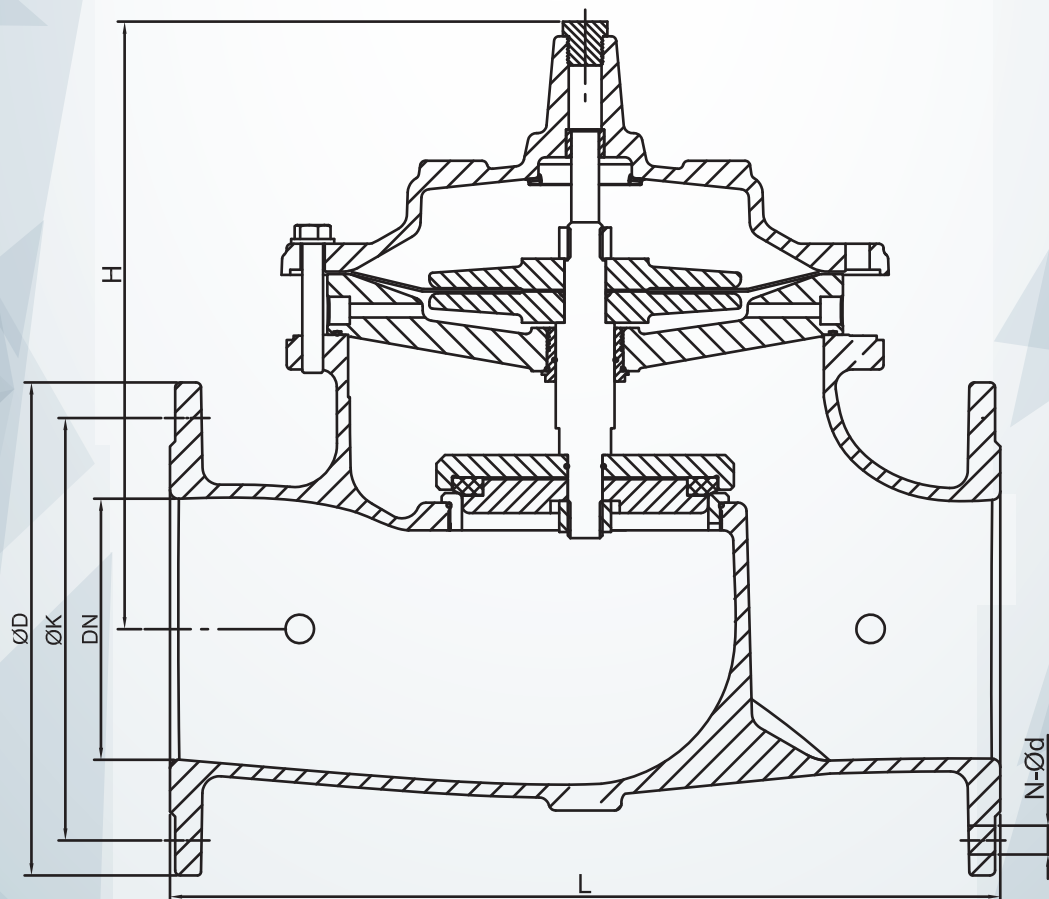






## Dimensions

Calibre		L	H	ØD	ØK	N- Ød	Weight	Conexions
mm	Inch		mm	PN16			Kg	FLANGED DIN
50	2"	230	195	165	125	4-Ø19	14	
65	2-1/2"	290	243	185	145	4-Ø19	19	
80	3"	310	255	200	160	8-Ø19	23	
100	4"	350	300	220	180	8-Ø19	32	
125	5"	400	350	250	210	8-Ø19	48,5	
150	6"	480	420	285	240	8-Ø23	68	
200	8"	600	495	340	295	12-Ø23	125	
250	10"	750	605	460	410	12-Ø28	200	
300	12"	850	650	460	410	12-Ø28	260	
350	14"	850	700	520	470	16-Ø28	310	
400	16"	1100	800	580	525	16-Ø31	560	
450	18"	1100	860	640	585	20-Ø28	620	
500	20"	1250	900	715	650	20-Ø34	880	
600	24"	1450	1150	840	770	20-Ø37	1300	





## Technical specifications

Calibre	Coupling	Maximum pressure	KV	CV
		bar	m³/h	US glm y psi
DN 50	Brida	PN16	42	49
DN 65	Brida	PN16	68	79
DN 80	Brida	PN16	95	110
DN 100	Brida	PN16	150	173
DN 125	Brida	PN16	150	173
DN 150	Brida	PN16	340	393
DN 200	Brida	PN16	620	717
DN 250	Brida	PN16	970	1121
DN 300	Brida	PN16	1300	1503
DN 350	Brida	PN16	1300	1503
DN 400	Brida	PN16	2700	3121
DN 450	Brida	PN16	2700	3121
DN 500	Brida	PN16	4200	4855
DN 600	Brida	PN16	6100	7052



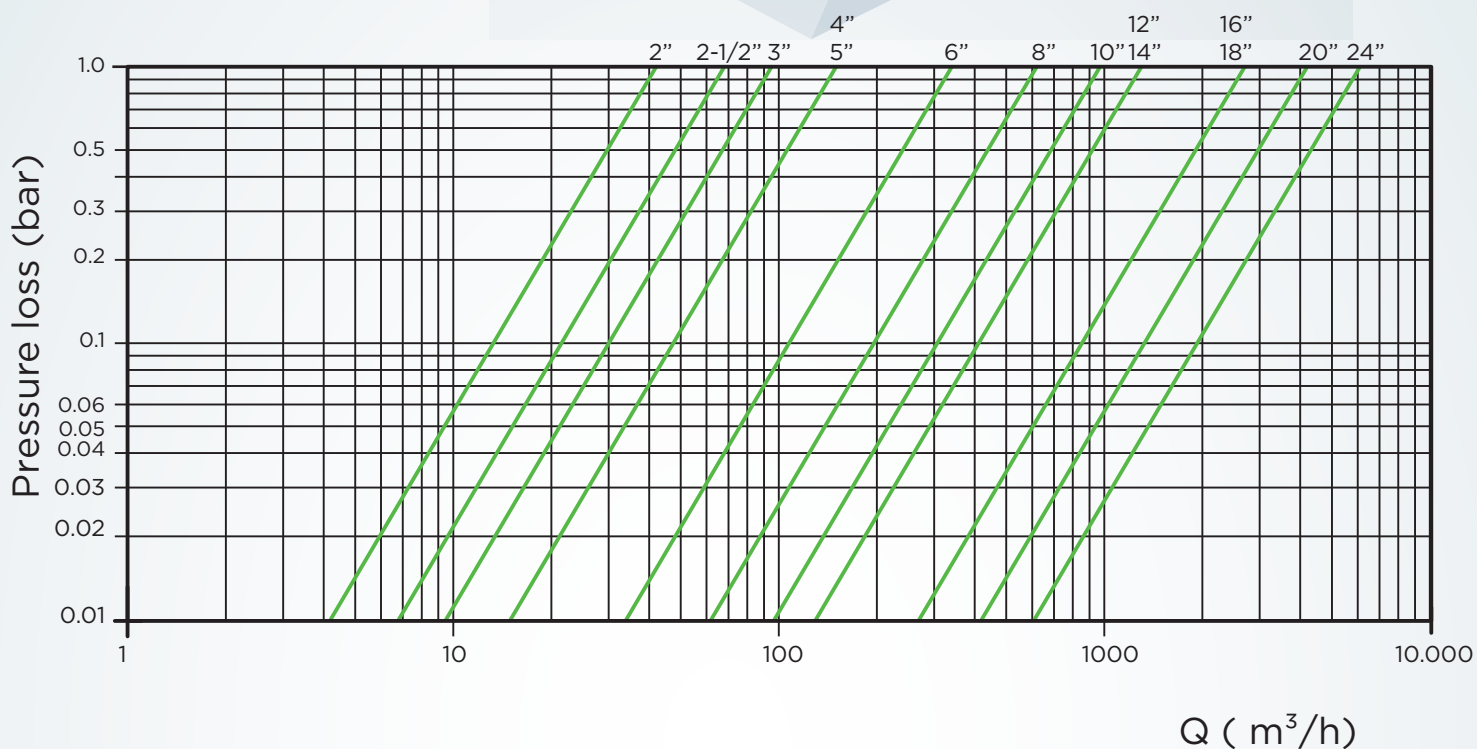
## Calculation of coefficient Kv

- $q_v$  is the flow rate in  $m^3 / h$   
 $\rho$  is the density of water in  $kg / m^3$   
 $\rho_0$  is the density of water at  $15^\circ C$  in  $kg / m^3$   
 $\Delta p_v$  is the loss pressure of the valve in bar

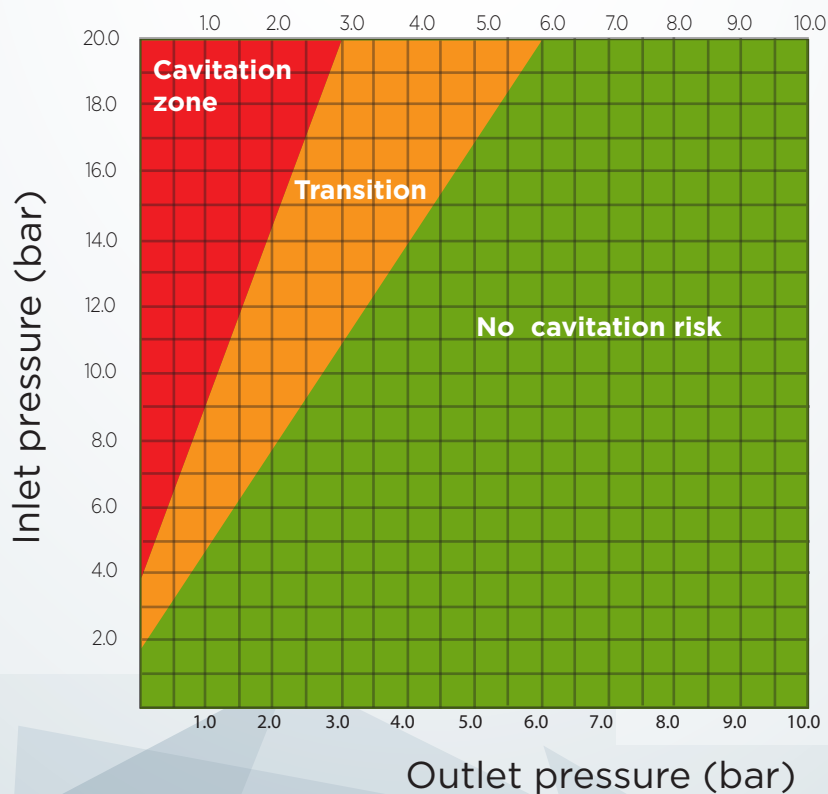
$$K_v = q_v \sqrt{\frac{\rho}{\Delta p_v \rho_0}}$$



## Pressure loss curve



## Cavitation



# REDUCING VALVE



## Applications

Used in places where pressure is needed for:

- ✓ - Adjust the pressure to consumption.
- ✓ - Protect instalations.
- ✓ - Break the static pressure.

The pilot acts on the valve so that it has a modulating function, in order to keep the downstream pressure constant for the setting value.



## Ratios

**Maximum reduction ratio:** inlet pressure x 1/3

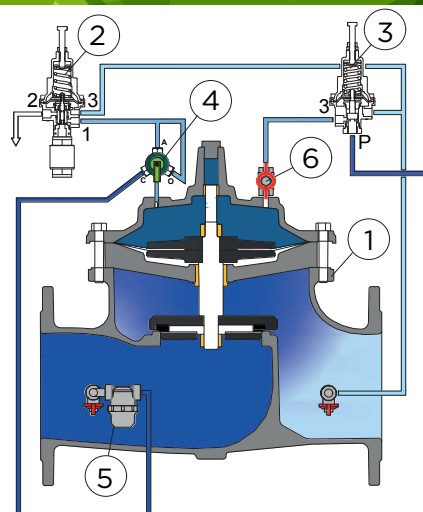
**Precision Ratio:** preset pressure  $\pm$  0.3 bar



## 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

### HIDROMATIC PRESSURE REDUCING



- 1.- Hidromatic valve.
- 2.- 3 ways reduction pilot .
- 3.- 2 ways accelerator pilot .
- 4 - 3 ways valve.
- 5.- Filter.
- 6.- Ball valve 1/4".

# FLOW LIMITER VALVE



## Applications

The installation of limited valve allow to:

- ✓ - Avoid excessive consumption.
- ✓ - Avoid pressure drops and therefore supply deficiencies at points away from the grid.

The flow limiting valves allow to limit the flow of circulating water, ensuring a flow equal or less than adjusted.



## Ratios

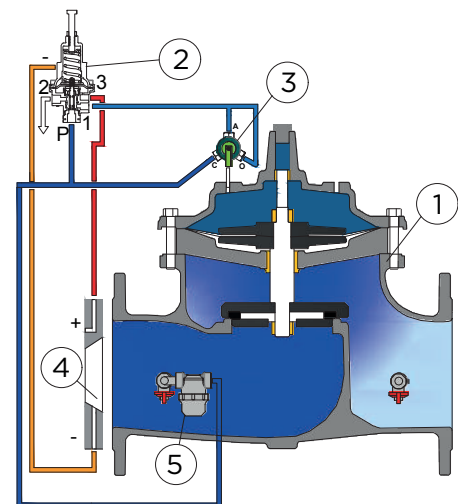
After preselecting the flow to be limited, the pilot is able to modify the flow rate set at  $\pm 15\%$ .



## Functioning

The pilot regulates the opening of the valve according to the differential pressure, providing the pre-set flow rate and maintaining the constant flow rate. By actuating the screw of the pilot's tare it is possible to vary the flow rate. With two sensors, installed on both sides of an orifice plate that produces a certain pressure drop, the circulating flow is obtained, closing the hydraulic valve partially until just a determined flow in case of overcome the predetermined flow.

### HIDROMATIC FLOW LIMITER



- 1.- Hidromatic valve.
- 2.- 3 ways limiting pilot.
- 3.- 3 ways valve.
- 4 - Hole disc.
- 5.- Filter.



# FLOW LIMITER AND PRESSURE REDUCER VALVE



## Applications

The combined reducing and limiting valve performs both functions independently. It prevents:

- ✓ - Excessive consumption.
- ✓ - Pressure drops and supply deficiencies at points away from the grid.

In addition it allows:

- ✓ - Adjust the pressure to the consumption.
- ✓ - Protect facilities.
- ✓ - Break the static pressure.



## Ratios

**Maximum reduction ratio:** inlet pressure x 1/3

**Accuracy:** tare pressure  $\pm 0,3$  bar

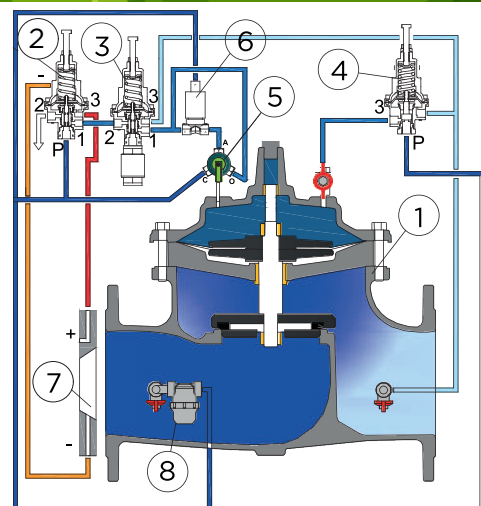
After preselecting the flow to be limited, the pilot is able to modify the flow rate set at  $\pm 15\%$ .



## Functioning

The limiting and reducing valve performs its function with a tapered orifice plate installed upstream. It includes a differential pilot that regulates the opening of the valve in function of the differential pressure, proportional to the flow, maintaining the constant flow. 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 control value.

HIDROMATIC FLOW LIMITER AND PRESURE REDUCER



- 1.- Hidromatic valve.
- 2.- 3 ways limiting pilot.
- 3.- 3 ways reduction pilot.
- 4 - 2 ways accelerator pilot.
- 5.- 3 ways valve.
- 6.- Solenoid.
- 7.- Hole Disc.
- 8.- Filter.

# SUSTAINING VALVE



## Applications

It is used in installations where it is desired to maintain a minimum hydraulic pressure, such as:

- ✓ - Pumping groups.
- ✓ - Pipe lines with different consumption.
- ✓ - Filtering equipment.

The installation of this type of valves allows to maintain a minimum pressure upstream set by the user.



## Ratios

**Standard working rate:** from 1 bar to 6.5 bar

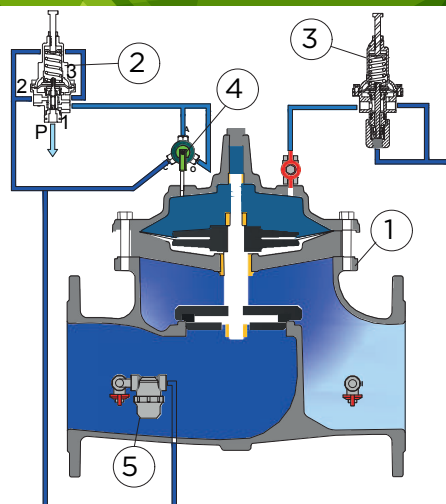
**Precision Ratio:** preset pressure  $\pm 0.3$  bar



## Functioning

The pressure holding valve is designed to maintain a minimum upstream pressure if the pressure is higher than the set value. Otherwise the valve will close until the upstream pressure is equal to or greater than the tare.

### HIDROMATIC PRESSURE SUSTAINING



- 1.- Hidromatic valve.
- 2.- 3 ways sustenance pilot.
- 3.- 5 ways accelerator pilot.
- 4 - 3 ways valve.
- 5.- Filter.

# REDUCING AND SUSTAINING VALVE



## Applications

The combined reducing and sustaining valve performs both functions independently. Prevents on-site generation:

- ✓ - Pressure drops.
- ✓ - Overpressures.

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



## Ratios

**Maximum reduction ratio:** inlet pressure x 1/3

**Precision Ratio:** preset pressure  $\pm$  0.3 bar

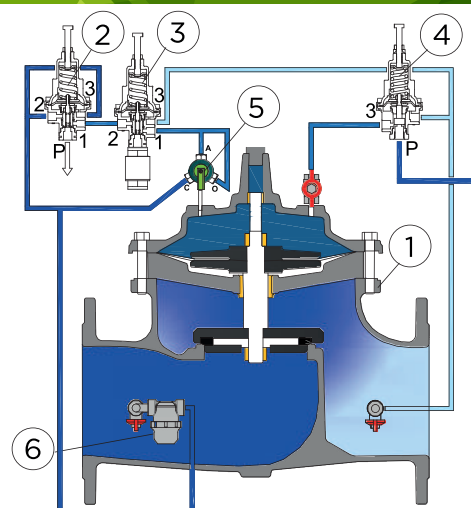
**Standard operating ratio:** 1 bar to 6.5 bar.



## Functioning

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 control value, the holding pilot acts on the valve so that it has a modulating function, in order to maintain the upstream pressure above the minimum control value.

### HIDROMATIC PRESSURE REDUCING AND SUSTAINING



- 1.- Hidromatic valve.
- 2.- Sustenance pilot.
- 3.- 3 ways reduction pilot.
- 4.- Accelerator pilot.
- 5.- 3 ways valve.
- 6.- Filter.

# PRESSURE RELIEF VALVE



## Aplications

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

- ✓ - Protection of hydraulic installations.



## Functioning

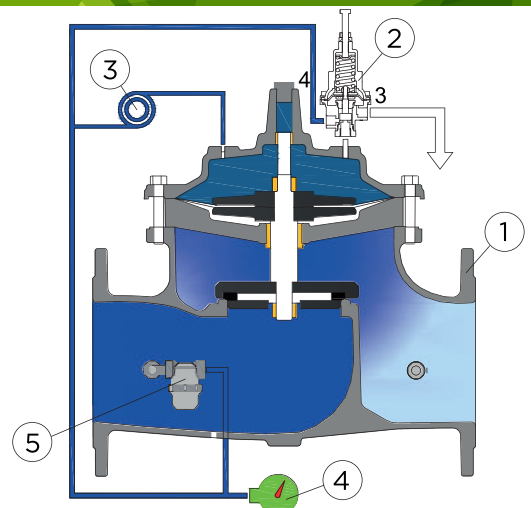
The pressure relief pilot sets the maximum tare pressure limit through a set screw. If the upstream pressure exceeds the set pressure, the valve is opened by communicating the valve chamber to the atmospheric pressure, so it relieves excess pressure in the line.



## Ratios

Working pressures: From 2-16 bar  
Precision Ratio:  $\pm 0.5$  bar

### HIDROMATIC PRESSURE RELIEF



- 1.- Hidromatic valve.
- 2.- 2 ways relief pilot.
- 3.- Copper spring 4 mm.
- 4 - Manometer 16mm.
- 5.- Filter.





## Information of order

### General characteristics

Valve diameter	DN / mm / inches
Valve type	membrane / piston
Maximum input pressure	bar / MPa
Fittings	plastic / metallic
Accesories	plastic / metallic
Pilots	plastic / metallic
Solenoid (Yes/Not)	latch/24VDC/24VAC/220VAC
Estado de la válvula en reposo	abierta/ cerrada

### Reducer valve characteristics

Output pressure	bar / MPa
Maximum flow	m <sup>3</sup> / h
Minimum flow	m <sup>3</sup> / h

### Sustaining valve characteristics

Pressure to hold	bar / MPa
Maximum flow	m <sup>3</sup> / h
Minimum flow	m <sup>3</sup> / h
Working flow	m <sup>3</sup> / h

### Electrovalve characteristics

Solenoid voltage	V
Nº of wires	2 / 3
Use of the valve	open / close

### Pressure relief characteristics

Pressure relief	bar / MPa
-----------------	-----------



## FAQ

### 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.



# VÁLVULA HIDROMATIC

WHEN WATER COUNTS

CUANDO EL AGUA ES LO QUE CUENTA

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