HPV Hydraulic Valve Specifications Sheet

The operating principle is as follows:
The fluid passes from the “inlet chamber” to the “intermediate chamber” through a hole in the cap and then through a dirt-proof filter. Then, it fills the “shutter chamber” through an orifice. Next, it reaches the solenoid valve holder block through a connecting hole. Inside the block the fluid finds two paths that run parallel to each other to reach the “discharge chamber”. The fluid undergoes to pressure drops along this path depending on the opening level of the orifices and on the opening of the valves. An intermediate pressure is established between the delivery pressure and the discharge pressure, as a result of these pressure drops in the “shutter chamber”. Together with the contrasting action of the spring, this pressure moves the axial position of the shutter, which, in turn, influences the upstream/downstream pressure values of the valve and therefore also the “shutter chamber” pressure. Consequently, the equilibrium of the forces is further modified, which regulates the position of the shutter itself. This phenomenon ceases once the position of equilibrium is reached, where the effect of the pressure of the “shutter chamber”, added to the force of the spring, is equal to the effect of the delivery pressure.

Materials

Part	Material
Body	Carbon steel or aluminium
Shutter	Alluminium
Fixed parts	Aluminium
Other details	Stainless steel or carbon steel
Dynamic sealing ring	PTFE loaded carbon
Shutter seal packing	Viton on incorporated metallic core
Rest of the packing	Viton

Other features

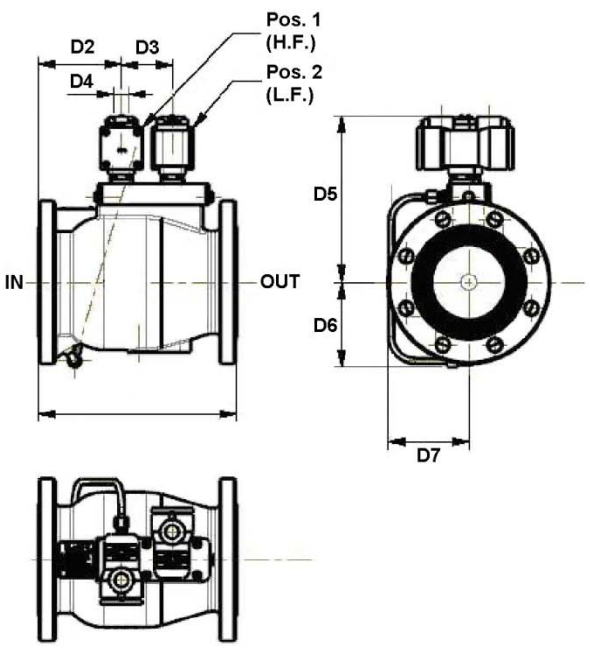
The valve works according to three operating regimes;
- Closed;
- Intermediate low flow position;
- High flow position.

The high flow position can, at worst, also coincide with the valve position completely open, but nonetheless it can be regulated to limit the capacity of the line. The high and low flow positions are regulated manually from the outside by means of needles for adjustment.

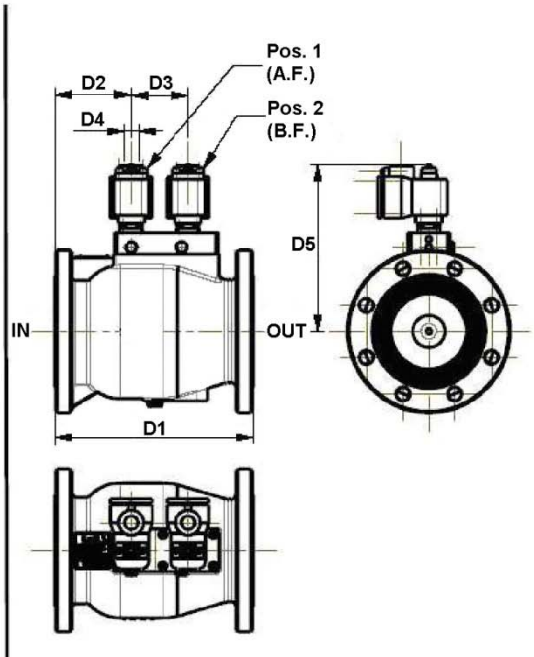
Specifications

Operating temperature range	-20°C to 70°C (-4°F to 158 °F)	
Max kinematic viscosity	40 cST	In the standard version
Max operating pressure (steel body)	10 bar (145 PSI)	Up to 70°C (158°F)
Max operating pressure (aluminium body)	10 bar (145 PSI)	Up to 70°C (158°F) – reduces to 5 bar (73 PSI) up to 125°C (257°F)
Min. valve opening pressure	0,09 bar (1.31 PSI)	
Max pressure in no-return function	1,5 bar (21.8 PSI)	
Capacity coefficient	Cv 270 GPM/PSI	
Max flow rate for 0,5 bar (7.3 PSI) pressure drop	2500 l/min (660 GPM)	With diesel and gasoline (it decrease in proportion to the viscosity)
Flanges	DN4" – ANSI 150 B 16.5 RF SF	
Closing time	< 4 sec.	Adjustable
Opening time	From 3 to 6 sec.	adjustable

Dimensions



Part.: 312607, 312608 *Digital Version*



Part.: 312601, 312603 *Two stage shut-off version*

Model	Version	Material (body)		D1	D2	D3	D4	D5	D6	D7	Flange	Weight Kg (lbs)
312601	Two stage	Aluminium	mm in	280 11.01	108 4.25	80 3.15	RP ½" ISO 7/1	234.5 9.23	-	-	DN 4" ANSI 150RF (Ø 229 mm – 9 in)	15 (33)
312603	Two stage	Carbon steel	mm in	280 11.01	108 4.25	80 3.15		234.5 9.23	-	-		35 (77)
312607	Digital	Carbon steel	mm in	280 11.01	117 4.60	71.5 2.81		234.5 9.23	117 4.60	126 4.96		35 (77)
312608	Digital	Aluminium	mm in	280 11.01	117 4.60	71.5 2.81		234.5 9.23	117 4.60	126 4.96		15 (33)

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