OCV Model 108FPS

Pressure Reducing & Pressure Relief Valves

Aquestia
Directing the Flow

General representation

Fire Protection

Pump Suction Control Valve

Description

This valve prevents the fire pump from outdrawing the available supply. It protects the pump suction supply from damage associated with low pressure and assures adequate supply pressure to the fire system components.

Features & Benefits

- Maintains minimum pump suction pressure
- Installs on fire pump discharge; senses pump suction
- Suction pressure is adjustable with single screw
- Adjustable range 5psi - 30psi (.34 - 2.0 bar)
- Pilot operated main valve
- Easily maintained without removal from the line
- Adjustable opening speed
- Factory tested & preset to requirements
- Applicable for water & seawater

Certification & Compliance

ABS Type Approval

Factory Mutual Approved

ANSI FCI 70-2 Class VI seat leakage class

Typical Applications

Pump & Water Tanks

Fire Suppression Systems

Petrochemical, Oil & Gas Installations

Tunnels

Power Generation, Transformer & Transmission Plants

Onshore/Offshore

Mining

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Operation

The normally closed, spring loaded pilot, sensing pump suction pressure, opens when supply pressure exceeds the spring setting, allowing the main valve to open. Should suction pressure lower to the set point, the pilot and the main valve will begin modulating (throttling) to prevent the suction pressure from falling any lower. The pilot system is equipped with an opening speed control that fine tunes the valve's response to the system variables.

The OCV 108FPS consists of the following components, arranged as shown on the schematic diagram:

[1] OCV 65 Basic Control Valve, a hydraulically operated, diaphragm actuated, globe or angle valve which closes with an elastomer-on-metal seal.

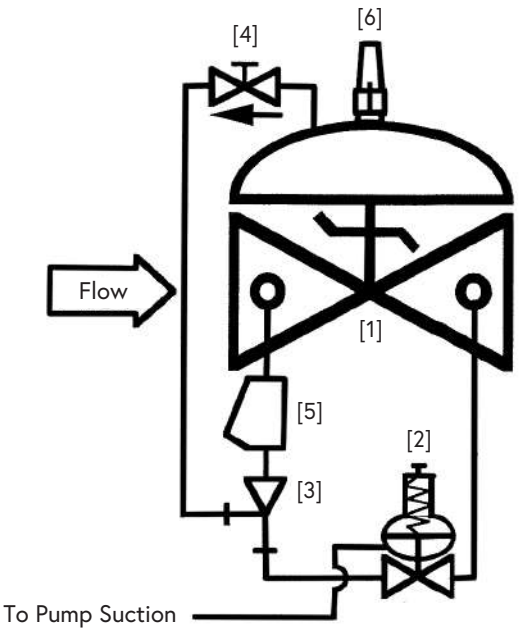
[2] OCV 1330HB Pressure Relief Pilot, a 2-way, normally closed pilot valve which senses upstream pressure under its diaphragm and balances it against an adjustable spring load. An increase in upstream pressure tends to make the pilot open.

[3] OCV 126 Ejector, a "tee" fitting with a fixed orifice in its inlet port. It provides the proper pressure to the diaphragm chamber of the main valve depending on the position of the pressure relief pilot.

[4] OCV 141-3 Flow Control Valve, a needle type valve which provides adjustable, restricted flow in one direction, and free flow in the opposite direction. On the OCV 108FPS, the flow control valve is connected as an opening speed control.

[5] OCV 159 Y-Strainer, protects the pilot system from solid contaminants in the line fluid.

[6] OCV 155 Visual Indicator (optional), provides indication of the valve's position at a glance.

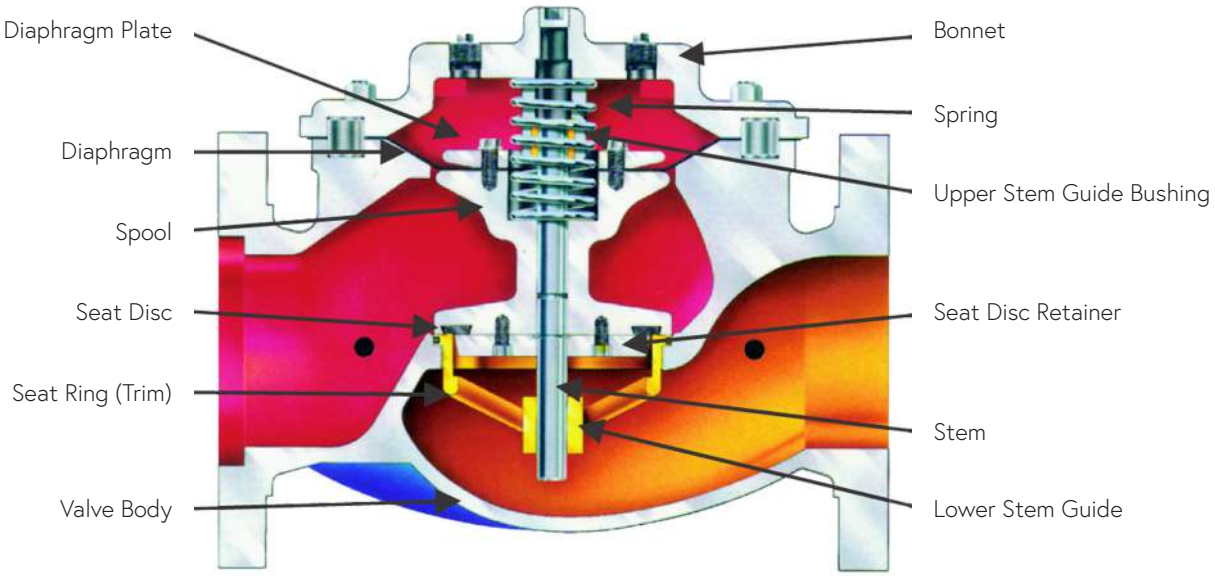


Resetting, maintenance, and periodic testing instructions must be followed as described in detail in the applicable OCV IOM (Installation, Operation & Maintenance) Manual.

Components & Typical Materials

The OCV 108FPS consists of the following components, arranged as shown on the schematic diagram below.

Part	Standard Material	Optional
Valve Body	Ductile Iron	Cast Steel, Stainless Steel, NAB
Seat Ring	Bronze	Stainless Steel, NAB
Stem	Stainless Steel	Monel
Spring	Stainless Steel	Elgiloy / MP35N
Diaphragm	Buna-N	EPDM
Seat Disc	Buna-N	EPDM
Pressure Reducing Pilot	Bronze	Stainless Steel, NAB
Tubing / Fittings	Copper, Bronze/Brass	Stainless Steel



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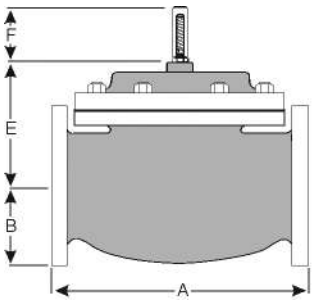
General Arrangement & Dimensions

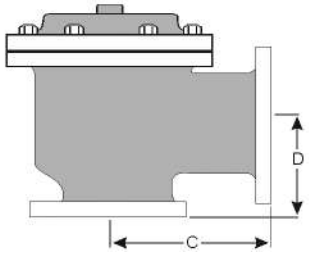
Standard Sizes					
DIM	End Connections	3"	4"	6"	8"
A	150# Flanged	12	15	17 3/4	25 3/8
	300# Flanged	12 3/4	15 5/8	18 5/8	26 3/8
B	150# Flanged	3 3/4	4 1/2	5 1/2	6 3/4
	300# Flanged	4 1/8	5	6 1/4	7 1/2
C	150# Flanged	6	7 1/2	10	12 11/16
	300# Flanged	6 3/8	7 13/16	10 1/2	13 3/16
D	150# Flanged	4	5 1/2	6	8
	300# Flanged	4 3/8	5 13/16	6 1/2	8 1/2
E	All	6 1/2	8	10	11 7/8
F	All	3 7/8	3 7/8	3 7/8	6 3/8
H	All	11	12	13	14

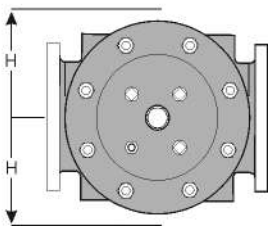
Approximate Dimensions.

Metric Sizes					
DIM	End Connections	DN80	DN100	DN150	DN200
A	150# Flanged	305	381	451	645
	300# Flanged	324	397	473	670
B	150# Flanged	95	114	140	171
	300# Flanged	105	127	159	191
C	150# Flanged	152	191	254	322
	300# Flanged	162	198	267	335
D	150# Flanged	102	140	152	203
	300# Flanged	111	148	165	216
E	All	165	203	254	302
F	All	98	98	98	162
H	All	279	305	330	356

Approximate Dimensions.







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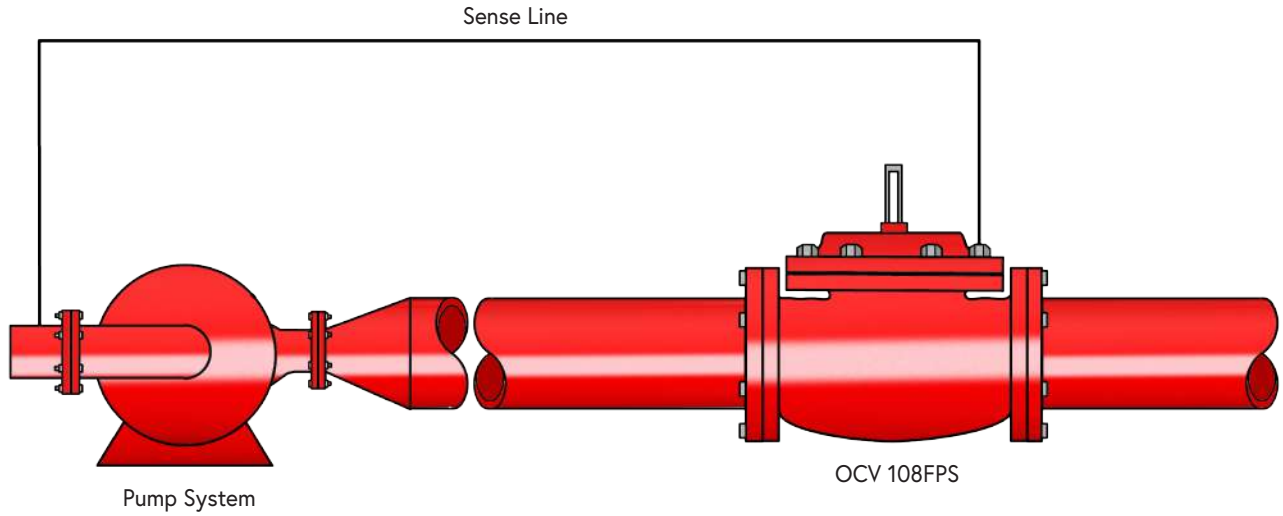
Typical Installation

The typical installation of the OCV 108FPS is as shown:



General representation.
Not all items pictured reflect products sold by OCV.

Flow Characteristics

Standard		
Valve Size	Globe Cv	Angle Cv
3"	120	160
4"	200	270
6"	450	550
8"	760	1000

Metric		
Valve Size	Globe Kv	Angle Kv
DN80	103 4/5	138 2/5
DN100	173	233 3/5
DN150	389 3/10	432 1/2
DN200	657 2/5	865

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Technical Data

Temperature (Elastomers)	
Buna-N	32°F to 180°F
EPDM	32°F to 230°F
Sizes	
Globe or Angle	3", 4", 6", 8"
Pressure Rating (Ductile Iron at 100°F)	
ANSI 150#: 250psi	
ANSI 300#: 450psi	
ANSI 300# x 150#: 250psi	
End Connections	
Flanged	150#, 300#, & 300# x 150#

Body & Cover Material	
Ductile Iron	Stainless Steel
Cast Steel	NAB
Trim Material	
Brass/Bonze - Copper	Monel
Stainless Steel	
Optional Components	
Pressure Switch	
Visual Indicator	
Items to Specify	
Pressure Class	
Control trim material other than standard	
Required standards, certifications and approvals	

Engineering Specifications

The fire pump suction control valve shall be a single-seated, line pressure operated, diaphragm actuated, pilot-controlled globe or angle valve. The fire pump suction control valve shall seal by means of a corrosion-resistant seat and resilient, rectangular seat disc. Maintenance, disassembly and reassembly of all the valve's components shall be made possible onsite and in-line, without the need to remove the valve from the line. The stem of the main valve shall be guided top and bottom by integral bushings. Alignment of the body, bonnet and diaphragm assembly shall be by precision dowel pins. The diaphragm shall not be used as a seating surface, nor shall pistons be used as an operating means. The valve shall be fully trimmed, hydrostatically and operationally tested at the factory. Change of factory preset pressure setting can always be performed in-line following simple IOM instructions, without special tools or system downtime. The main valve body and bonnet shall be ductile iron (other materials available upon request). All internal ferrous surfaces shall be coated with epoxy. External surfaces shall be coated with epoxy and fire red paint. The main valve seat ring shall be bronze (other materials available upon request). Elastomers (diaphragms, resilient seats, and o-rings) shall be Buna-N or EPDM. Control pilot shall be bronze or stainless steel. The control line tubing shall be copper (other materials available upon request). Additional coatings and special materials are available upon request. The fire pump suction control valve shall be an OCV 108FPS, Factory Mutual Approved under 1363 category, as manufactured by OCV, an Aquestia Ltd. brand, Tulsa, OK, USA.

Aquestia USA

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