OCV Model 108FC & 108FCA

Aquestia Directing the Flow

Pressure Reducing & Pressure Relief Valves

General representation

Fire Protection

Fire Pump Relief Valve

Description

An automatic, pilot controlled, pressure relief valve actuated by the pipeline pressure. The valve modulates to maintain a steady, predetermined pressure in the network. Should the upstream pressure exceed the required set point, the valve opens, releasing the excessive pressure. When the pressure falls below the set value, the valve closes drip tight.

Certification & Compliance

UL Listed under QXZQ category

ABS Type Approval

Lloyd's Register Approval

Factory Mutual Approved

ANSI FCI 70-2 Class VI seat leakage class

Features & Benefits

- Limits maximum pump discharge pressure
- Opens quickly; maintains pressure within close limits
- Adjustable: 60psi - 180psi (4.1 - 12.4 bar) or 100psi - 300psi (6.9 - 20.7 bar)
- Pilot operated main valve
- Simple field adjustable pressure setting, requiring no special tools or system downtime
- Factory tested & preset to requirements
- UL Listed & Factory Mutual Approved for both split case centrifugal & vertical turbine pumps
- Wide range of materials available
- Applicable for water, seawater & foam

Typical Applications

Pump & Water Tanks

Fire Suppression Systems

Petrochemical, Oil & Gas Installations

Tunnels

Power Generation, Transformer & Transmission Plants

Onshore/Offshore

Mining

Operation

The normally closed, spring loaded pilot, sensing pump discharge pressure, opens when pressure exceeds the spring setting, allowing the main valve to open. As the pump pressure increases the pilot controls the main valve to open further. Pressure is maintained at the controlled set point over a wide range of flows regardless of back pressure in the downstream piping. The valve closes gradually as pressures decrease below the set point.

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

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

[2] OCV 1330FC 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.

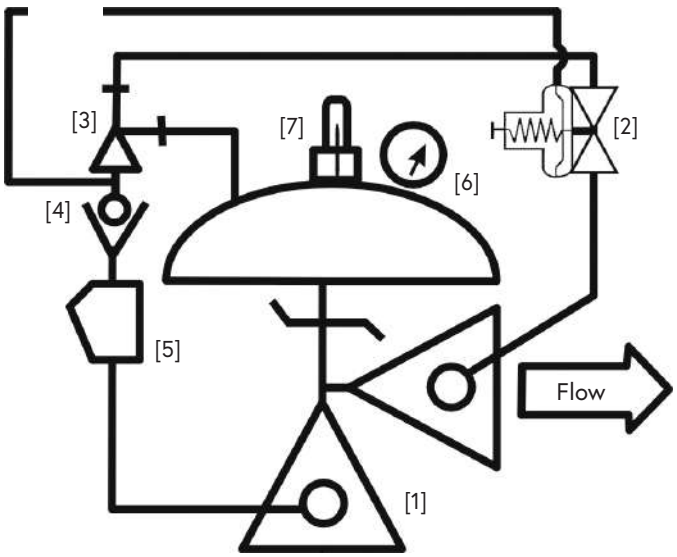
[3] OCV 126 Ejector, a "tee" fitting with a fixed orifice in its inlet port. It provides the proper pressure to the diaphragm chamber of the main valve, depending on the position of the pressure relief pilot.

[4] OCV 141-1 Check Valve, prevents the valve from opening under a vacuum condition that may occur with a vertical turbine pump.

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

[6] Pressure Gauge

{7} OCV 155 Visual Indicator (optional), provides indication of the valve's position at a glance.

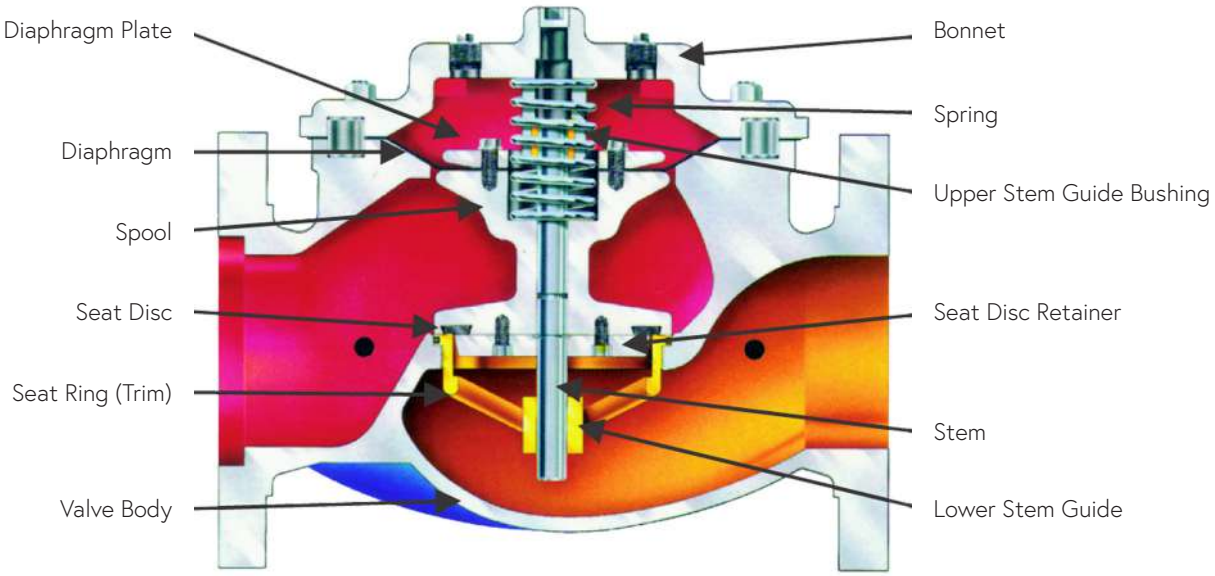


Resetting, maintenance, and periodic testing instructions must be followed as described in detail in the applicable OCV IOM (Installation, Operation & Maintenance) Manual.

Components & Typical Materials

The OCV 108FC & 108FCA 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	--
Diaphragm	Buna-N	EPDM
Seat Disc	Buna-N	EPDM
Pressure Reducing Pilot	Bronze	NAB
Tubing / Fittings	Copper, Bronze/Brass	Stainless Steel



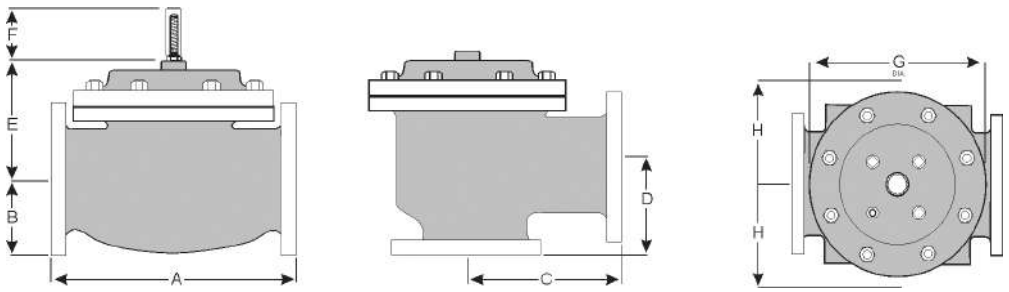
General Arrangement & Dimensions

Standard Sizes					
DIM	Flanges	3"	4"	6"	8"
A	150#	12	15	17 3/4	25 3/8
	300#	12 3/4	15 5/8	18 5/8	26 3/8
	300# x 150#	12 3/4	15 5/8	18 5/8	26 3/8
B	150#	3 3/4	4 1/2	5 1/2	6 3/4
	300#	4 1/8	5	6 1/4	7 1/2
	300# x 150#	4 1/8	5	6 1/4	7 1/2
C	150#	6	7 1/2	10	12 11/16
	300#	6 3/8	7 13/16	10 1/2	13 3/16
	300# x 150#	6 3/8	7 13/16	10	12 11/16
D	150#	4	5 1/2	6	8
	300#	4 3/8	5 13/16	6 1/2	8 1/2
	300# x 150#	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
G	All	8 3/4	11 3/4	14	21
H	All	11	12	13	14

Approximate Dimensions.

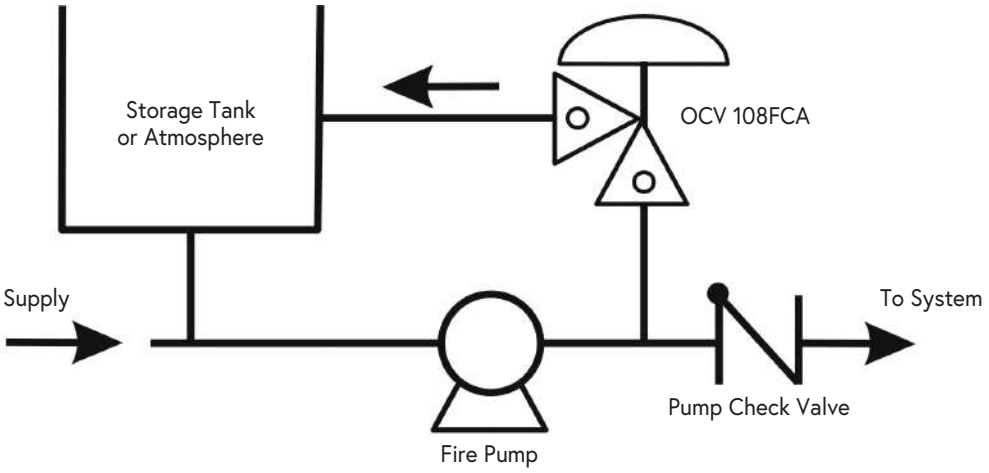
Metric Sizes					
DIM	Flanges	DN80	DN100	DN150	DN200
A	150#	305	381	451	645
	300#	324	397	473	670
	300# x 150#	324	397	473	670
B	150#	95	114	140	171
	300#	105	127	159	191
	300# x 150#	105	127	159	191
C	150#	152	191	254	322
	300#	162	198	267	335
	300# x 150#	162	198	254	322
D	150#	102	140	152	203
	300#	111	148	165	216
	300# x 150#	111	148	165	216
E	All	165	203	254	302
F	All	98	98	98	162
G	All	222	298	356	533
H	All	279	305	330	356

Approximate Dimensions.



Typical Installation

The typical installation of the OCV 108FC & 108FCA is as shown:



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

Flow Characteristics

Fire pump relief valves are sized per the guidelines in NFPA 20, and are based on the rated flow of the pump.
For more detailed sizing information, please contact OCV.

Standard		
Valve Size	Max. Pump Flow, GPM	Max. Pressure Setting, PSI
3"	500	300 (UL) 175 (FM)
4"	1000	300 (UL) 175 (FM)
6"	2500	300 (UL) 175 (FM)
8"	5000	175 (UL & FM)

Metric		
Valve Size	Max. Pump Flow, GPM	Max. Pressure Setting, PSI
DN80	114	20.7 (UL) 12.0 (FM)
DN100	227	20.7 (UL) 12.0 (FM)
DN150	568	20.7 (UL) 12.0 (FM)
DN200	1136	12.0 (UL & FM)

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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"
End Connections	
Flanged	ANSI Class 150#, Class 300#, & 300 inlet x 150 outlet

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	
Electrical features other than standard (24VDC, IP65/NEMA4)	
If explosion proof accessories are required such as solenoids, pressure switches, etc., please define classification	
Control trim material other than standard	
Required standards, certifications and approvals	

Engineering Specifications

The pressure relief valve shall be a single-seated, line pressure operated, diaphragm actuated, pilot-controlled globe or angle valve. The pressure relief 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 on-site 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 and set to a fixed relief pressure. Change of factory preset pressure setting can always be performed in-line following simple IOM instructions, without special tools or system down time. 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 pressure relief valve shall be an OCV 108FC & 108FCA, UL Listed under QXZQ category, Factory Mutual Approved under 1361 and 1363 categories, sized per NFPA 20 and as manufactured by OCV, an Aquestia Ltd. brand, Tulsa, OK, USA.