

Pressure Reducing & Pressure Relief Valves



General representation



Fire
Protection

Fire Foam Pressure Relief Valve

Description

This valve automatically relieves excess foam pump discharge pressure to prevent the pressure from exceeding the rating of the fire system components. The engineered SLF (sense line flush) feature assures accurate pressure control by continuously flushing the pilot sensing chamber (flow through design).

Certification & Compliance

ABS Type Approval



ANSI FCI 70-2 Class VI seat leakage class

Features & Benefits

- Limits maximum foam system pressure
- Opens quickly; accurately maintains pressure
- Adjustable: 20-80, 65-180, or 100-300 psi
- Pilot operated main valve
- Pressure setting is adjustable with single screw
- Sense line flush can be manually selected
- Factory tested and pre-set to requirements
- Globe or angle pattern
- Wide range of materials available

Typical Applications

Pump & Water Tanks

Fire Suppression Systems

Petrochemical, Oil & Gas Installations

Tunnels



Power Generation, Transformer & Transmission Plants

Onshore/Offshore

Mining

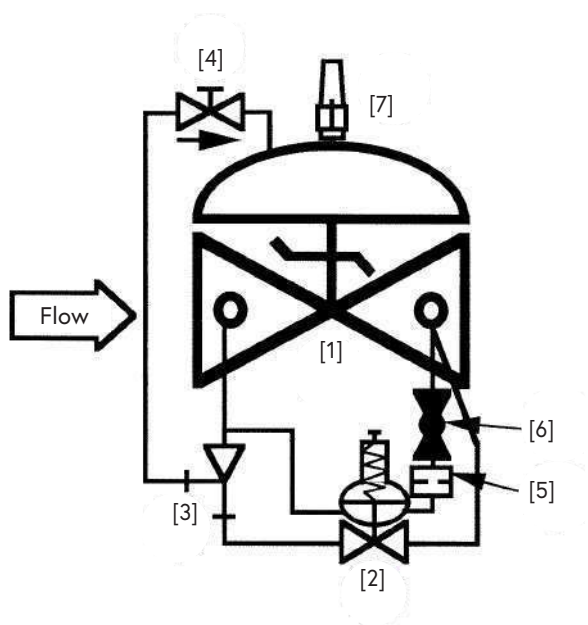


Operation

The normally closed, spring-loaded pilot, sensing pump downstream pressure, opens when pressure exceeds the spring setting, allowing the main valve to open. As the pump pressure increases, the pilot opens further, causing the main valve to do the same. 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 decreases below the set point.

The OCV 108-2SLF consists of the following components, arranged as shown on the schematic diagram:

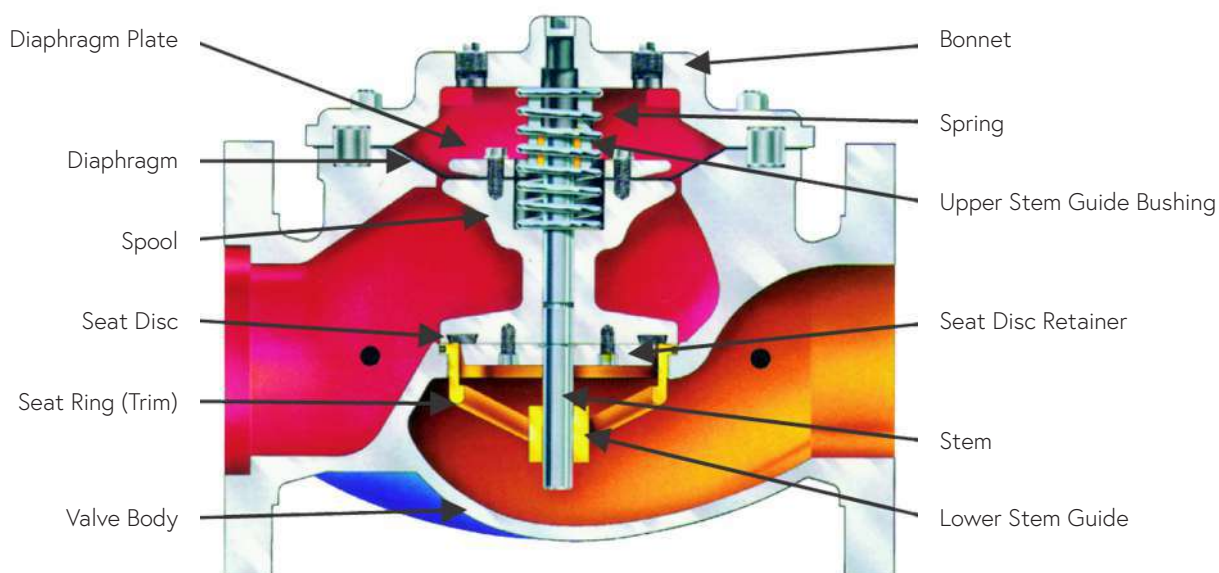
- [1] OCV 65 Basic Control Valve, a hydraulically operated, diaphragm actuated, globe or angle valve that closes with an elastomers-on-metal seal.
- [2] OCV 1330SLF Pressure Relief Pilot, a 2-way, normally closed pilot valve that senses upstream pressure under its diaphragm and balances it against an adjustable spring load. An increase in 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 upon the position of the pressure relief pilot.
- [4] OCV 141-3 Flow Control Valve, a needle-type valve that provides adjustable restricted flow in one direction and free flow in the opposite direction. On the OCV 108-2SLF it acts as a closing speed control.
- [5] OCV 300777 Orifice Fitting, a key component of the sense line flush design.
- [6] OCV 141-4 Ball Valve, provides manual selection of the sense line flush feature. It is normally closed and is opened to flush the sense line and pilot diaphragm chamber.
- [7] OCV 155 Visual Indicator (optional), provides indication of the valve's position at a glance.



Components & Typical Materials

The OCV 108-2SLF 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, Duplex Stainless Steel
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 Relief Pilot	Stainless Steel	NAB
Tubing / Fittings	Stainless Steel	Monel



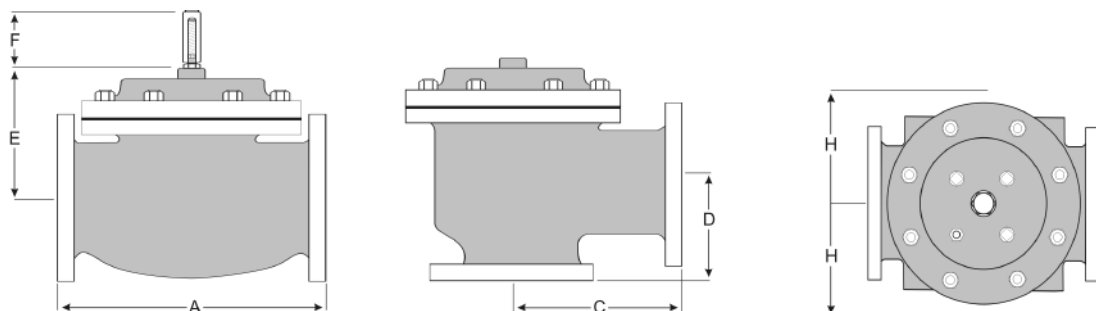
General Arrangement & Dimensions

Standard Sizes							
DIM	End Connection	1 1/4" - 1 1/2"	2"	2 1/2"	3"	4"	6"
A	Threaded	8 3/4	9 7/8	10 1/2	13	---	---
	Grooved	8 3/4	9 7/8	10 1/2	13	15 1/4	20
	150# Flanged	8 1/2	9 3/8	10 1/2	12	15	17 3/4
	300# Flanged	8 3/4	9 7/8	11 1/8	12 3/4	15 5/8	18 5/8
C	Threaded	4 3/8	4 3/4	6	6 1/2	---	---
	Grooved	4 3/8*	4 3/4	6	6 1/2	7 5/8	---
	150# Flanged	4 1/4	4 3/4	6	6	7 1/2	10
	300# Flanged	4 3/8	5	6 3/8	6 3/8	7 13/16	10 1/2
D	Threaded	3 1/8	3 7/8	4	4 1/2	---	---
	Grooved	3 1/8*	3 7/8	4	4 1/2	5 5/8	---
	150# Flanged	3	3 7/8	4	4	5 1/2	6
	300# Flanged	3 1/8	4 1/8	4 3/8	4 3/8	5 13/16	6 1/2
E	All	6	6	7	6 1/2	8	10
F (optional)	All	3 7/8	3 7/8	3 7/8	3 7/8	3 7/8	3 7/8
H	All	10	11	11	11	12	13

Approximate Dimensions. *Grooved end not available in 1 1/4".

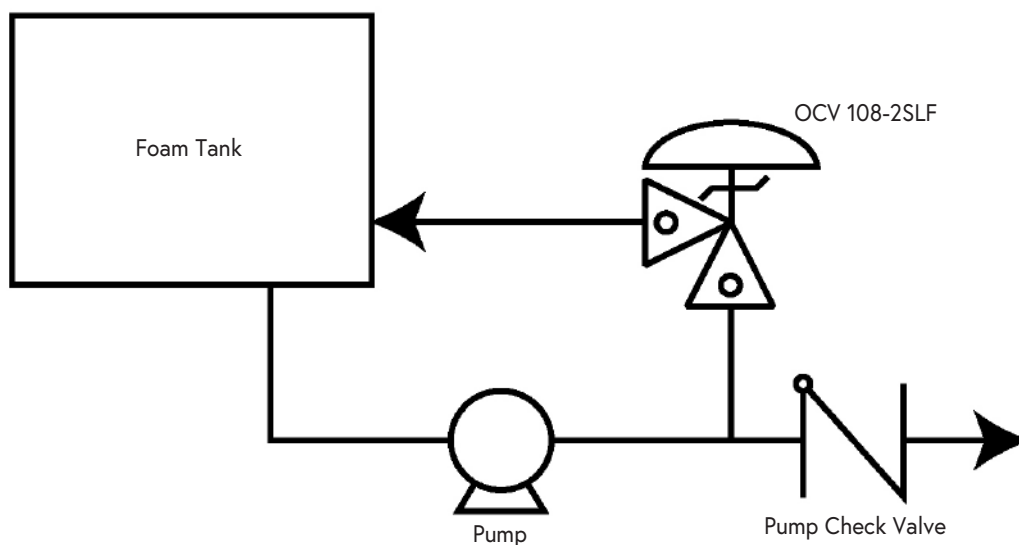
Metric Sizes							
DIM	End Connections	DN40	DN50	DN65	DN80	DN100	DN150
A	Threaded	222	251	267	330	--	--
	Grooved	222	251	267	330	387	508
	150# Flanged	216	238	267	305	381	451
	300# Flanged	222	251	283	324	397	437
C	Threaded	111	121	152	165	--	--
	Grooved	111*	121	152	165	194	--
	150# Flanged	108	121	152	152	191	254
	300# Flanged	111	127	162	162	198	267
D	Threaded	79	98	114	114	--	--
	Grooved	79*	98	114	114	143	--
	150# Flanged	76	98	102	102	140	152
	300# Flanged	79	105	111	111	148	165
E	All	171	171	197	197	248	292
F	All	98	98	98	98	98	98
H	All	254	279	279	279	305	330

Approximate Dimensions. *Grooved end not available in 1 1/4".



Typical Installation

The typical installation of the OCV 108-2SLF is as shown:



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

Pressure Ratings

The pressures listed here are maximum pressures at 100°F.

End Connections	Ductile Iron	Steel/Stainless Steel	Bronze
Threaded	640 psi	640 psi	500 psi
Grooved	300 psi	300 psi	300 psi
150# Flanged	250 psi	285 psi	225 psi
300# Flanged	640 psi	740 psi	500 psi

Technical Data

Temperature (Elastomers)	
Buna-N	32°F to 180°F
EPDM	32°F to 230°F
Sizes	
Globe or Angle	1 ¼" - 6" (consult factory for others)
End Connections	
Flanged (ANSI Class 150#, Class 300#)	
Threaded	
Grooved	

Body & Cover Material	
Ductile Iron	Stainless Steel
Cast Steel	NAB
Duplex Stainless Steel	
Trim Material	
Tubing & Fitting: Stainless Steel	Monel
Pilot: Stainless Steel (NAB optional)	
Optional Components	
Pressure Switch	
Visual Indicator	
Items to Specify	
Pressure Class	
Control trim material other than standard	

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 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 stainless steel. The control line tubing shall be stainless steel (other materials available upon request). Additional coatings and special materials are available upon request. The pressure relief valve shall be an OCV 108-2SLF as manufactured by OCV, an Aquestia Ltd. brand, Tulsa, OK, USA.