



▲ Model 108SA-3

The Model 108SA-3 operates as a pressure relief valve by opening at a pressure above its set point. In addition, it provides extra protection against surges associated with sudden stoppage of the pumps (e.g., power failure) by opening on the resulting low pressure wave, in "anticipation" of the high pressure wave to follow. By being already open when the high pressure wave hits, any potential surge is harmlessly bypassed to atmosphere.

Typical examples include:

- Pump systems
- Irrigation systems
- Municipal distribution systems

SERIES FEATURES

- ▶ Low pressure opening
- ▶ Relief Valve: Limits inlet pressure by relieving excess pressure
- ▶ Operates over a wide flow range
- ▶ Low and high pressures are adjustable
- ▶ Quick opening and adjustable closing speed
- ▶ Can be maintained without removal from the line
- ▶ Factory tested and can be pre-set to your requirements

OPERATION

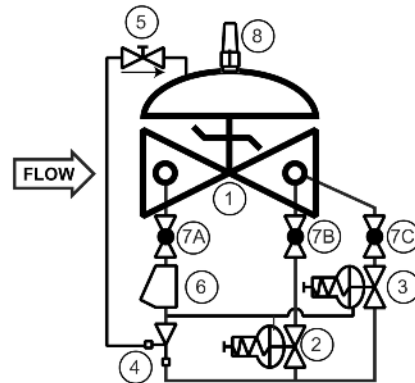
The control of the Model 108SA-3 is via two hydraulic control pilots. A normally open, low pressure pilot opens the valve when system pressure drops to its set point. This setting must be less than static pressure. The valve also opens when the set point of the normally closed, high pressure relief pilot is exceeded. The valve slowly closes (adjustable closing) when system pressure returns to normal (pressure is between the setting of the two pilots).

COMPONENTS

The Model 108SA-3 consists of the following components, arranged as shown on the schematic diagram:

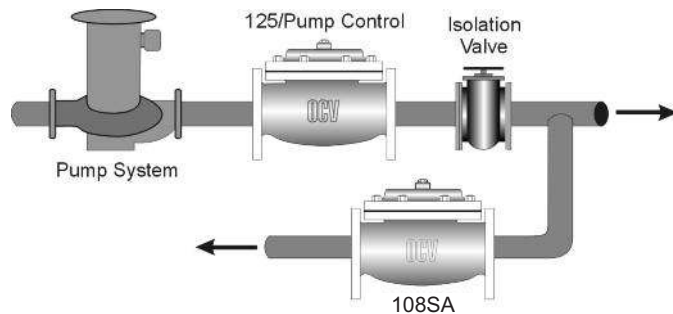
- 1.) Model 65 Basic Control Valve
- 2.) Model 1330 Pressure Relief Pilot
- 3.) Model 1340 Pressure Reducing Pilot
- 4.) Model 126 Ejector
- 5.) Model 141-3 Flow Control Valve (closing speed control)
- 6.) Model 159 Y-Strainer
- 7.) Model 141-4 Isolation Ball Valves
- 8.) Model 155 Visual Indicator (Optional)

SCHEMATIC



RECOMMENDED INSTALLATION

Installed in the bypass line the valve discharges to atmosphere. Valve opens on power failure, low pressure signal or as a high pressure relief valve.



MAX. PRESSURE

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

END CONNECTIONS	DUCTILE IRON	STEEL/STN STL	LOW-LEAD 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

SIZING

Definitive sizing information can be found in the OCV Catalog, Series 118 Surge Anticipation section and Engineering section Performance Charts. Consult the factory for assistance and a copy of the OCV ValveMaster Sizing program.

Model 108SA-3



SIZES GLOBE/ANGLE

Screwed Ends - 1 1/4" - 3"
 Grooved Ends - 1 1/2" - 6" (globe)
 1-1/2"-4" (angle)
 Flanged Ends - 1 1/4" - 24" (globe);
 1 1/4" - 16" (angle)

FLUID OPERATING TEMPERATURE RANGE

(Valve Elastomers)
 EPDM 32°F to 230°F*

SPRING RANGES

(Apply to both low and high pressure pilots)
 5-30 psi, 20-80 psi, 20-200 psi, 100-300 psi

MATERIALS - Consult factory for others.

Body/Bonnet: Ductile Iron (epoxy coated), Carbon Steel (epoxy coated), Stainless Steel, low-lead Bronze, Others available (consult factory)

Seat Ring: low-lead Bronze, Stainless Steel

Stem: Stainless Steel, Monel

Spring: Stainless Steel

Diaphragm: EPDM*

Seat Disc: EPDM*

Pilot: low-lead Bronze, Stainless Steel

Other pilot system components:

low-lead Bronze/Brass, All Stainless Steel

Tubing & Fittings: Copper/Brass, Stainless Steel

*Others available upon request.

**Valves 1-1/4" through 24" are certified to NSF/ANSI 372. Valves 4" through 24" are also certified to NSF/ANSI 61-G.

SPECIFICATIONS (Typical Water Application)

The surge anticipation valve shall be installed on a bypass line downstream of the pump check valve(s). It shall function to prevent potentially damaging pressure surges by (a) opening rapidly in the event of a drop in pressure below a predetermined set point and (b) opening rapidly if main line pressure should exceed a predetermined set point. In either event, the valve shall slowly close after pressure has returned to normal.

DESIGN

The valve shall be a single-seated, line pressure operated, diaphragm actuated, pilot controlled globe valve. The valve shall seal by means of a corrosion-resistant seat and a resilient, rectangular seat disc. These, and other parts, shall be replaceable without removing 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 the pistons be used as an operating means. The pilot system shall be furnished complete and installed on the main valve. It shall include a closing speed control, Y-strainer and isolation ball valves. The surge anticipation valve shall be operationally and hydrostatically tested prior to shipment.

MATERIALS OF CONSTRUCTION

The main valve body and bonnet shall be ductile iron per ASTM A536, Grade 65-45-12. All ferrous surfaces shall be coated with 4 mils of epoxy. The main valve seat ring shall be low-lead Bronze. Elastomers (diaphragms, resilient seats and O-rings) shall be EPDM. Control pilots shall be low-lead Bronze. The closing speed control and isolation ball valves shall be brass, and control line tubing shall be copper.

OPERATING CONDITIONS

The surge anticipation valve shall be capable of limiting main line pressure to a maximum of <X> psi, based on a main line maximum flow rate of <X> gpm and a static pressure of <X> psi, with valve discharge to atmosphere.

ACCEPTABLE PRODUCTS

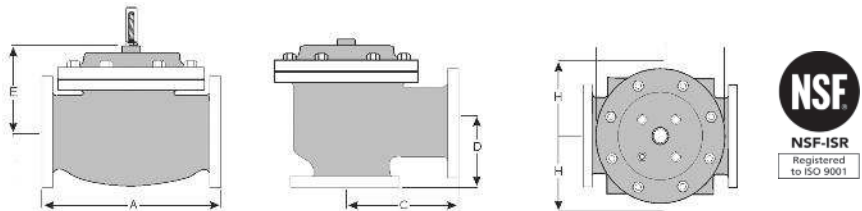
The surge anticipation valve shall be a <size> Model 108SA-3, <globe pattern, angle pattern>, with <150# flanged, 300# flanged, threaded, grooved> end connections, as manufactured by OCV Control Valves, Tulsa, Oklahoma, USA.

U.S. DIMENSIONS - INCHES

DIM	END CONN.	1 1/4-1 1/2	2	2 1/2	3	4	6	8	10	12	14	16	24
A	SCREWED	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# FLGD	8 1/2	9 3/8	10 1/2	12	15	17 3/4	25 3/8	29 3/4	34	39	40 3/8	62
	300# FLGD	8 3/4	9 7/8	11 1/8	12 3/4	15 5/8	18 5/8	26 3/8	31 1/8	35 1/2	40 1/2	42	63 3/4
C	SCREWED	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# FLGD	4 1/4	4 3/4	6	6	7 1/2	10	12 11/16	14 7/8	17	--	20 13/16	--
	300# FLGD	4 3/8	5	6 3/8	6 3/8	7 13/16	10 1/2	13 3/16	15 9/16	17 3/4	--	21 5/8	--
D	SCREWED	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# FLGD	3	3 7/8	4	4	5 1/2	6	8	11 3/8	11	--	15 11/16	--
	300# FLGD	3 1/8	4 1/8	4 3/8	4 3/8	5 13/16	6 1/2	8 1/2	12 1/16	11 3/4	--	16 1/2	--
E	ALL	6	6	7	6 1/2	8	10	11 7/8	15 3/8	17	18	19	27
	H	ALL	10	11	11	11	12	13	14	17	18	20	28 1/2

*GROOVED END NOT AVAILABLE IN 1 1/4"

For maximum efficiency, the OCV control valve should be mounted in a piping system so that the valve bonnet (cover) is in the top position. Other positions are acceptable but may not allow the valve to function to its fullest and safest potential. In particular, please consult the factory before installing 8" and larger valves, or any valves with a limit switch, in positions other than described. Space should be taken into consideration when mounting valves and their pilot systems.



A routine inspection & maintenance program should be established and conducted yearly by a qualified technician. Consult our factory @ 1-888-628-8258 for parts and service.

Represented by:

How to order your Model 108SA-3 valve

When Ordering please provide:

Fluid to be controlled -Model Number -Size -Globe or Angle -End Connection -Body Material -Trim Material -Pilot Options -High Pressure Setting or Spring Range -Static Pressure (used to determine low pressure setting) Special Requirements / Installation Requirements

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