

General representation



OCV 127-9S

Two-Stage Preset Valve

The two-stage preset valve shall open in one stage and close in two stages based on signals from the preset register. The OCV 127-9S is specifically designed for fuel loading systems and performs the following functions:

- Electrical opening – full flow delivery
- Pressure Reducing – valve will control downstream (delivery) pressure at a predetermined point during high flow filling process
- Two-Stage shutdown

FEATURES & BENEFITS

- Opens on signal from preset register
- Can be controlled by mechanical or electronic presets
- Adjustable flow setting for 2nd stage dwell
- Factory tested
- Junction box options are available, with explosion proof ratings

TYPICAL APPLICATIONS



Metering Systems



Loading Terminals



Storage Tanks



Truck/Rail Car Loading & Unloading Systems

CERTIFICATION & COMPLIANCE



- NSF-ISO Quality System (9001)
- Technical Standards & Safety Authority
- ABS Type Approval
- American-Made: American Recovery & Reinvestment
- Pressure Equipment Directive Certified 97/23/EC
- CE (Conformité Européenne) Compliance

- Two-stage electronic opening options are available
- Standard Class 1 Div 1 (Optional Class I Div 2, ATEX, IECEx)

OPERATION

The OCV 127-9S control valve opens to fill the system at a high flow rate while maintaining a constant downstream pressure. Near the end of the load, the valve rapidly closes down in 2 stages to top off the reservoir:

Opening, Full Flow: The main valve (1) opens to supply a constant pressure when the preset controller energizes the solenoid (2). The pressure reducing pilot (4), sensing downstream pressure, will modulate the main valve to prevent the downstream pressure from exceeding the predetermined maximum. The needle valve (5) is adjusted for optimum performance of the pilot (4).

- HI output applies power and opens the N.C. solenoid, activating flow control function.

1st Stage Shutdown: The main valve begins closing at a predetermined number of gallons before the end of the load.

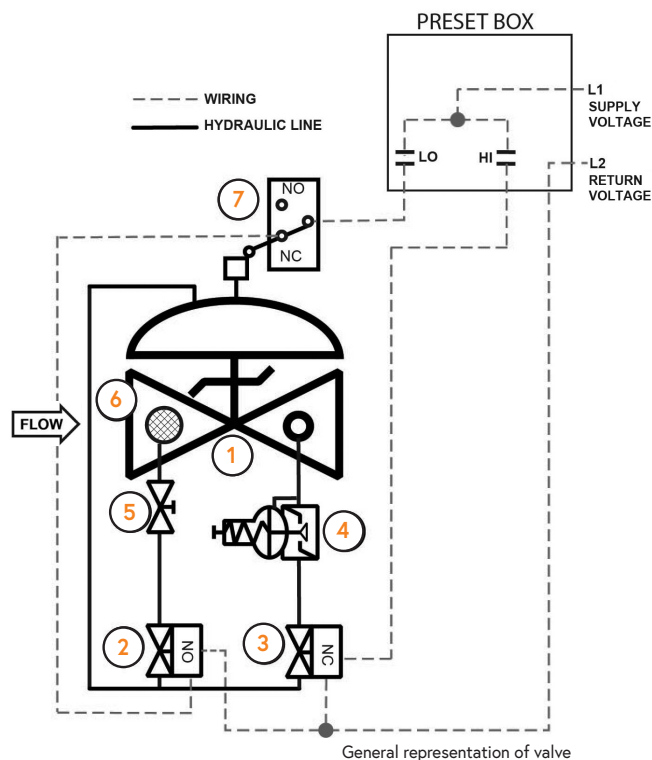
- HI output removes power and closes the N.C. solenoid. HI output remains off through load.
- LO output sends power to the limit switch. The N.O. solenoid remains open (de-energized) because limit switch contact is open.

Low (Dwell) Flow: The main valve closes far enough to trip the limit switch contact and holds this position for low flow filling.

- LO output sends power through limit switch contact and closes the N.O. solenoid. This hydraulically locks the valve into a low flow mode.

Final Closure: The main valve will close fully when the load is complete.

- LO output removes power from the limit switch and N.O. solenoid. The N.O. solenoid opens and allows the main valve to close fully.



The OCV 127-9S consists of the following components, arranged as shown on the schematic diagram:

- (1) Model 65 Basic Valve (fail closed)
- (2) Two-Way Solenoid Pilot, N.O.
- (3) Two-Way Solenoid Pilot, N.C.
- (4) Model 1340 Pressure Reducing Pilot
- (5) Needle Valve (closing speed)
- (6) Inline Strainer
- (7) Limit Switch (low flow setting)

PRESSURE TABLE

Pressure Table

END CONNECTIONS	DUCTILE IRON	STEEL/SST		ALUMINUM	
STANDARD (Maximum Working Pressures at 100°F)					
THREADED	640 psi	640 psi		285 psi	
GROOVED	300 psi	300 psi		200 psi	
150# FLANGED	250 psi	285 psi		285 psi	
300# FLANGED	640 psi	740 psi		--	
END CONNECTIONS	DUCTILE IRON	STEEL WCB	STEEL LCB	STEEL/SST	ALUMINUM
METRIC (Maximum Working Pressures at 37.78°C)					
THREADED	44.1 bar	44.1 bar	44.1 bar	44.1 bar	19.7 bar
GROOVED	20.7 bar	20.7 bar	20.7 bar	20.7 bar	13.8 bar
150# FLANGED	17.2 bar	19.7 bar	18.4 bar	19.0 bar	19.7 bar
300# FLANGED	44.1 bar	51.0 bar	48.0 bar	49.6 bar	--

Based on ANSI flange ratings.

FLOW CHART

STANDARD SIZE	1 1/4"- 1 1/2"	2"	2 1/2"	3"	4"	6"	8"	10"
MAX. FLOW (GPM)	120	200	280	460	800	1800	3000	4200
METRIC SIZE	DN32 - DN40	DN50	DN65	DN80	DN100	DN150	DN200	DN250
MAX. FLOW (M3/HR)	27	45	64	105	182	409	681	954

The OCV 127-9S is normally sized to match the meter size; however, in no case should the maximum velocity exceed 20 ft/sec (metric: 6 meters/sec).

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



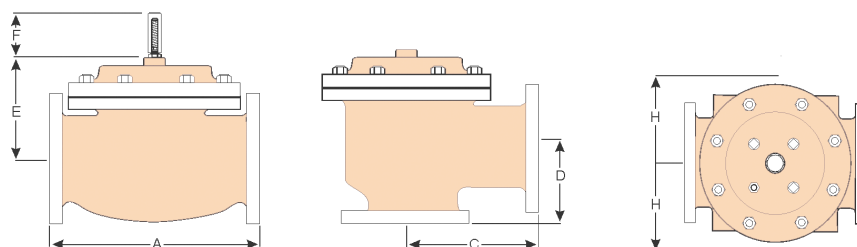
TYPICAL MATERIALS

DESCRIPTION	STANDARD
Body/Bonnet	Ductile Iron (epoxy coated), Carbon Steel (epoxy coated), Stainless Steel, Aluminum
Seat Ring	Stainless Steel, Bronze
Stem	Stainless Steel, Monel
Spring	Stainless Steel
Diaphragm	Buna-N, Viton (Nylon Reinforced)
Seat Disc	Buna-N, Viton
Pilot	Stainless Steel, Bronze
Other Pilot System Components	Stainless Steel, Bronze/Brass
Tubing & Fittings	Stainless Steel, Copper/Brass

GENERAL ARRANGEMENT & DIMENSIONS

DIM	END CONN.	1 1/4" - 1 1/2" (DN32-40)	2" (DN50)	2 1/2" (DN65)	3" (DN80)	4" (DN100)	6" (DN150)	8" (DN200)	10" (DN250)
A	SCREWED	8 3/4 (222)	9 7/8 (251)	10 1/2 (267)	13 (330)	--	--	--	--
	GROOVED	8 3/4 (222)	9 7/8 (251)	10 1/2 (267)	13 (330)	15 1/4 (387)	20 (508)	--	--
	150# FLGD	8 1/2 (216)	9 3/8 (238)	10 1/2 (267)	12 (305)	15 (381)	17 3/4 (451)	25 3/8 (645)	29 3/4 (756)
	300# FLGD	8 3/4 (222)	9 7/8 (251)	11 1/8 (283)	12 3/4 (324)	15 5/8 (397)	18 5/8 (473)	26 3/8 (670)	31 1/8 (791)
C ANGLE	SCREWED	4 3/8 (111)	4 3/4 (121)	6 (152)	6 1/2 (165)	--	--	--	--
	GROOVED	4 3/8 * (111*)	4 3/4 (121)	6 (152)	6 1/2 (165)	7 5/8 (194)	--	--	--
	150# FLGD	4 1/4 (108)	4 3/4 (121)	6 (152)	6 (152)	7 1/2 (191)	10 (254)	12 11/16 (322)	14 7/8 (378)
	300# FLGD	4 3/8 (111)	5 (127)	6 3/8 (162)	6 3/8 (162)	7 13/16 (198)	10 1/2 (267)	13 3/16 (335)	15 9/16 (395)
D ANGLE	SCREWED	3 1/8 (79)	3 7/8 (98)	4 (102)	4 1/2 (114)	--	--	--	--
	GROOVED	3 1/8* (79*)	3 7/8 (98)	4 (102)	4 1/2 (114)	5 5/8 (143)	--	--	--
	150# FLG	3 (76)	3 7/8 (98)	4 (102)	4 (102)	5 1/2 (140)	6 (152)	8 (203)	11 3/8 (289)
	300# FLGD	3 1/8 (79)	4 1/8 (105)	4 3/8 (111)	4 3/8 (111)	5 13/16 (148)	6 1/2 (165)	8 1/2 (216)	12 1/16 (306)
E	ALL	6 (152)	6 (152)	7 (178)	6 1/2 (165)	8 (203)	10 (254)	11 7/8 (302)	15 3/8 (391)
F (opt)	ALL	3 7/8 (98)	3 7/8 (98)	3 7/8 (98)	3 7/8 (98)	3 7/8 (98)	3 7/8 (98)	6 3/8 (162)	6 3/8 (162)
H	ALL	10 (254)	11 (279)	11 (279)	11 (279)	12 (305)	13 (330)	14 (356)	17 (432)

Metric Sizes shown in parenthesis (). *Grooved End not available in 1 1/4" (DN32).



General
representation
of valve



TECHNICAL DATA

Temperature:

(Elastomers)

- Buna-N -40°F to 180°F
- Viton 20°F to 230°F
- Fluorosilicone -40°F to 150°F
- EPDM 0°F to 230°F

Sizes:

- Screwed Ends: 1-1/4" - 3"
- Grooved Ends: 1-1/2" - 6" (globe & angle)
- Flanged Ends: 1-1/4" - 10" (globe); 1-1/4" - 6" (angle)

Pressure Rating:

(ANSI at 100°F)

- 250psi for Class 150# ANSI Flanged Ductile Iron
- 285psi for Steel/Stainless Steel & Aluminum
- 300# ANSI Flanges are available

Solenoid Voltage:

- Enclosure: Explosion Proof NEMA 4, 4X, 6P, 7, 9
Class I, Div I (standard)
Class I, Div 2 - ATEX, IECEX (opt)
- Body: Brass, Stainless Steel
- Voltages: 24, 120, 240, 480 VAC; 12, 24 VDC

Body & Cover Material:

- Ductile Iron
- Carbon Steel
- Stainless Steel
- Aluminum

Trim Material:

- Bronze/Brass
- Stainless Steel
- Copper

Optional Components:

- Two-Stage Opening
- Visual Indicator
- Pre-Wired Junction Box

Items to Specify:

- Fluid Type
- Model Number
- Size
- Body & Trim Material
- Solenoid Voltage
- Globe or Angle
- Special Installation Requirements

ENGINEERING SPECIFICATIONS

The two-stage preset 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, installed on the main valve and include two solenoid pilots, a needle valve and an inline strainer. The two-stage preset valve shall be operationally and hydrostatically tested prior to shipment. The main valve body and bonnet shall be Ductile Iron. All ferrous surfaces shall be coated with 4 mils of epoxy. The main valve seat ring shall be stainless steel. Elastomers (diaphragms, resilient seats and O-rings) shall be Buna-N. Solenoid pilots shall be Stainless Steel, as shall the needle valve and control line tubing. The solenoid and limit switch enclosure shall be explosion-proof and suitable for operation on <voltage> (see Technical Data section). The two-stage preset valve shall be suitable for operation at <X> psi (see Pressure Table) at flow rates up to <X> gpm (see Flow Chart). The two-stage preset valve shall be an OCV 127-9S, as manufactured by OCV, Tulsa, OK, USA.

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