



General representation



## OCV 127-80

### Two-Stage Preset Valve

The pressure reducing/solenoid shut-off valve shall function to reduce a higher upstream pressure to a constant, lower downstream pressure regardless of fluctuations in supply or demand. The valve shall be equipped with a two-way solenoid valve that will allow the valve to open when energized/de-energized. The OCV 127-80 has a wide range of applications - anywhere pressure must be reduced to a manageable level, combined with a need for an on/off electrical operation, including the following:

- Pump systems
- Process pressure control
- Truck loading terminals

## 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

## FEATURES & BENEFITS

- Reduces a higher inlet pressure to a lower outlet pressure
- Constant outlet pressure over wide flow range
- Electrically operated solenoid allows valve to open (reduce pressure) or shut-off (close)
- Pilot-operated main valve not subject to pressure fall-off

- Outlet pressure is adjustable with single screw
- Can be maintained without removal from the line
- Adjustable opening/response speed
- Factory tested and can be pre-set to your requirements

## TYPICAL APPLICATIONS



Metering Systems



Loading Terminals



Storage Tanks



Truck/Rail Car Loading & Unloading Systems



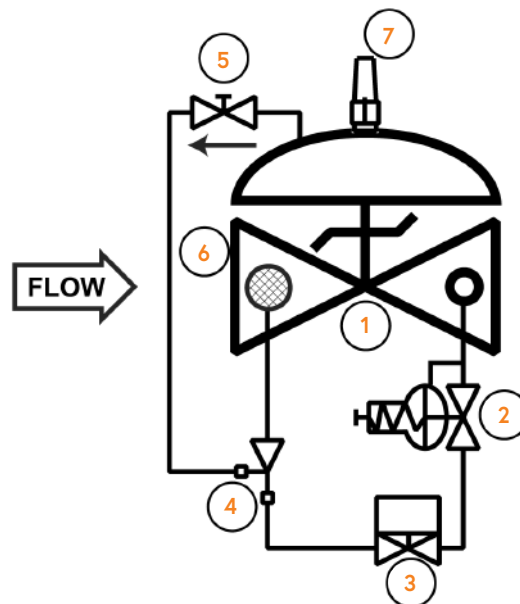
## OPERATION

A two-way solenoid acts as an override and when closed, causes the main valve to close. Opening the solenoid allows the spring loaded, normally open pilot, sensing downstream pressure to respond to changes in pressure and causes the main valve to do the same. The net result is a constant modulating action of the pilot and main valve to hold the downstream pressure constant. The pilot system is equipped with an opening speed control that fine tunes the valve's response to the system variables.

The solenoid can be supplied normally closed (energize to enable) or normally open (energize to close).

The OCV 127-80 consists of the following components, arranged as shown on the schematic diagram:

- ① Model 65 Basic Valve (fail closed)
- ② Model 1340 Pressure Reducing Pilot
- ③ Model 451 Two-Way Solenoid Pilot
- ④ Model 126 Ejector
- ⑤ Model 141-3 Flow Control Valve (opening speed control) \*NOTE: Model 141-2 Needle Valve used on sizes 1-1/4"-3"
- ⑥ Model 123 Inline Strainer
- ⑦ Model 155L Visual Indicator



General representation of valve

## 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"	12"	14"	16"	24"
MAX. FLOW (GPM)	120	200	280	460	800	1800	3000	4200	1875	2250	3000	8750
METRIC SIZE	DN32 - DN40	DN50	DN65	DN80	DN100	DN150	DN200	DN250	DN250	DN250	DN250	DN250
MAX. FLOW (M3/HR)	27	45	64	105	182	409	681	954	7500	9000	12000	35000

The OCV 127-80 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.

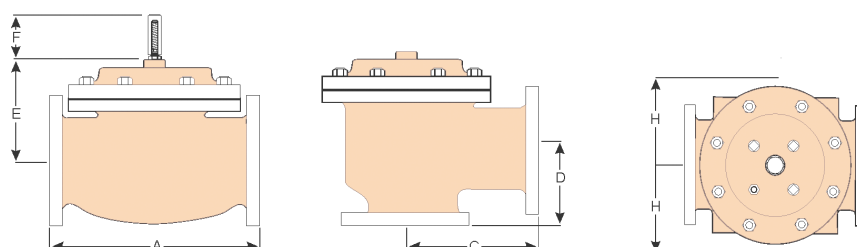
### TYPICAL MATERIALS

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)	12" (DN300)	14" (DN350)	16" (DN400)	24" (DN600)
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)	34 (863)	39 (991)	40 3/8 (1026)	62 (1575)
	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)	35 1/2 (902)	40 1/2 (1029)	42 (1067)	63 3/4 (1619)
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)	17 (432)	--	20 13/16 (529)	--
	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)	17 3/4 (451)	--	21 5/8 (549)	--
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)	11 (279)	--	15 11/16 (398)	--
	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)	11 3/4 (298)	--	16 1/2 (419)	--
E	ALL	6 (152)	6 (152)	7 (178)	6 1/2 (165)	8 (203)	10 (254)	11 7/8 (302)	15 3/8 (391)	17 (432)	18 (457)	19 (483)	27 (686)
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)	6 3/8 (162)	6 3/8 (162)	6 3/8 (162)	8 (203)
H	ALL	10 (254)	11 (279)	11 (279)	11 (279)	12 (305)	13 (330)	14 (356)	17 (432)	18 (457)	20 (508)	20 (508)	28 1/2 (724)

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" - 24" (globe); 1-1/4" - 16" (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 4X, 6P, 7, 9
- 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 pressure reducing/solenoid shut-off 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 two needle valves, an inline strainer and two solenoid valves. The pressure reducing/solenoid shut-off 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. The needle valve and control line tubing shall be stainless steel. The pressure reducing/solenoid shut-off valves shall have stainless steel bodies, explosion-proof enclosures and be suitable for operation on <voltage> (see Technical Data section). The pressure reducing/solenoid shut-off valve shall be suitable for pressures of <X to X> psi (see Pressure Table) at flow rates up to <X> gpm (see Flow Chart). The pressure reducing/solenoid shut-off valve shall be an OCV 127-80, as manufactured by OCV, Tulsa, OK, USA.

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7400 East 42nd Place • Tulsa, Oklahoma 74145 • USA  
Phone: 1-918-627-1942 • Toll Free: 1-888-OCV-VALV (628-8258)  
Web: [www.controlvalves.com](http://www.controlvalves.com) • Email: [usa@aquestia.com](mailto:usa@aquestia.com)