



General representation



**TERMINAL SERVICES**

## OCV 115-2

### Solenoid Shut-Off Valve

The solenoid shut-off valve shall open and close via discrete electrical signals. The valve shall be equipped with a two-way solenoid valve that will allow the valve to open when energized/deenergized. The OCV 115-2 has an extremely wide range of applications - anywhere it is necessary to open and close a valve electrically, including the following:

- Process control
- Petroleum loading terminals
- Storage tank level control

## FEATURES & BENEFITS

- Electrically operated solenoid allows valve to open or close
- Can be maintained without removal from the line

## 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

- Adjustable response speed
- Factory tested and can be pre-set to your requirements



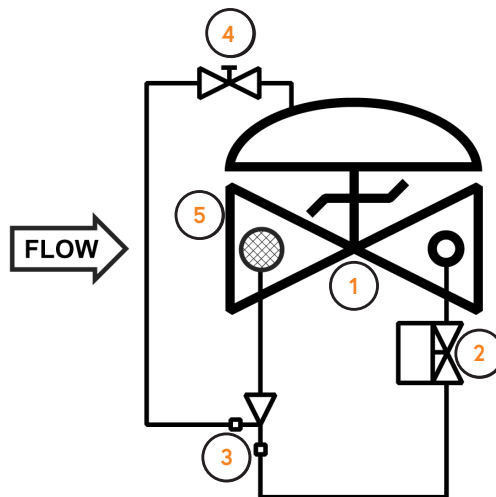
### OPERATION

A two-way solenoid, when closed, causes the main valve to close. Opening the solenoid opens the valve. The pilot system is equipped with a needle valve that allows the opening and closing speed of the valve to be adjusted.

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

The OCV 115-2 consists of the following components, arranged as shown on the schematic diagram:

- ① Model 65 Basic Valve
- ② Model 451 Two-Way Solenoid Pilot
- ③ Model 126 Ejector
- ④ Model 141-2 Needle Valve
- ⑤ Model 123 Inline Strainer



General representation of valve

### PRESSURE TABLE

END CONNECTIONS	DUCTILE IRON		STEEL/SST		ALUMINUM
<b>STANDARD</b> (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
<b>METRIC</b> (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"	18"	20"	24"
7.5 FT/SEC (MILITARY)	MAX. FLOW (GPM)	40	50	80	120	180	300	680	1200	1850	2650	3200	4150	5250	6550	9400
15 FT/SEC (MAX. RECOMMENDED)		70	100	160	230	350	600	1350	2350	3700	5250	6350	8300	10500	13100	18800
20 FT/SEC (MAX. CONTINUOUS)		100	130	210	300	470	800	1800	3150	4950	7000	8450	11100	14000	17400	25100
METRIC SIZE		DN32	DN40	DN50	DN65	DN80	DN100	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600
2.29 M/SEC (MILITARY)	MAX. FLOW (M3/HR)	9	11	18	27	41	68	154	272	420	602	726	942	1192	1487	2134
4.57 M/SEC (MAX. RECOMMENDED)		16	23	36	52	79	136	306	533	840	1192	1441	1884	2384	2974	4268
6.10 M/SEC (MAX. CONTINUOUS)		23	30	48	68	107	182	409	715	1124	1589	1918	2520	3178	3950	5698

The OCV 115-2 is normally sized to match the meter size; however, in no case should the maximum velocity exceed 20 ft/sec (metric: 6.10 meters/sec).

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



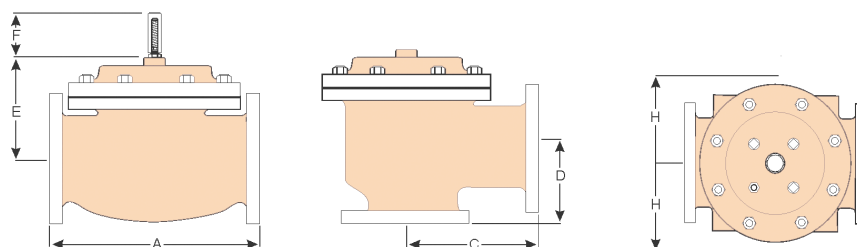
## TYPICAL MATERIALS

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 solenoid 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 needle valve, inline strainer and solenoid valve. The 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 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 solenoid shall have a stainless steel body, explosion-proof enclosure and be suitable for operation on <voltage> (see Technical Data section). The 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 solenoid shut-off valve shall be an OCV 115-2, as manufactured by OCV, Tulsa, OK, USA.

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