Model 114-1E (Aviation Fueling)

Model 114-1E▲

The OCV Model 114-1E is a control valve specifically designed for aircraft refueling service. Known as either a refueling or a hydrant control valve, it performs the following functions:

- ▶Opens and closes electrically via a solenoid pilot.
- ▶While open, modulates to control downstream pressure at a predetermined set point.
- ▶Closes rapidly to prevent undue pressure buildup due to a rapid reduction in demand.

SERIES FEATURES

- ▶Electrical deadman control
- ▶Pressure reducing pilot senses valve outlet or pressure compensating venturi
- ▶High capacity surge control minimizes pressure buildup on reduction of flow
- ▶Opening speed control
- ▶Automatically opens for downstream thermal relief or defueling
- ▶Equipped with visual indicator to monitor valve position
- ▶Can be maintained without removal from the line
- ▶Factory tested and can be pre-set to your requirements

OPERATION

The two-way, normally closed solenoid, wired into the deadman control system, closes the main valve when deenergized. Energizing the solenoid opens the valve and allows it to come under control of the pressure reducing pilot. The reducing pilot responds 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.

In the event of a sudden decrease in flow, downstream pressure will increase. The normally closed surge control pilot opens on the increased pressure, causing the main valve to move further closed at a much faster rate than would be accomplished through the normal control circuit. As a result, pressure buildup is minimized.

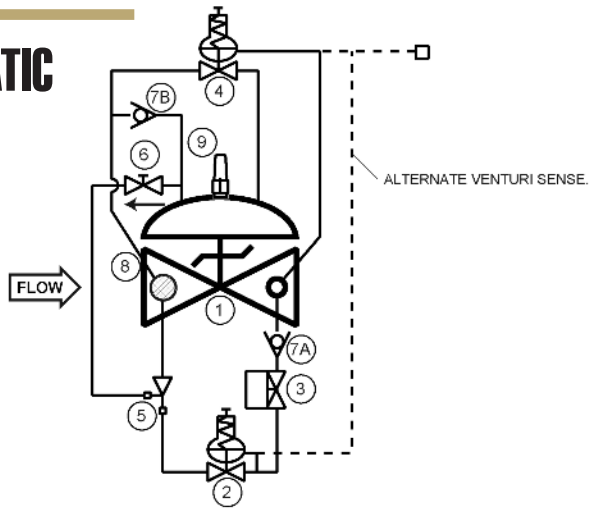
In the event downstream pressure becomes higher than upstream pressure, the valve will automatically open to provide thermal pressure relief or defueling flow.

COMPONENTS

The Model 114-1E consists of the following components, arranged as shown on the schematic diagram:

1.) **Model 65 Basic Valve Assembly**
2.) **Model 1340 Pressure Reducing Pilot**
3.) **Model 451 Two-Way Solenoid Pilot, N.C.**
4.) **Model 1330 or 2470 Surge Control Pilot**
5.) **Model 126 Ejector**
6.) **Model 141-3 Flow Control Valve**
(opening speed control)
7.) **Model 141-1 Check Valve**
8.) **Model 123 Inline Strainer**
9.) **Model 155 Visual Indicator**

SCHEMATIC



RECOMMENDED INSTALLATION

- ▶Install the valve with adequate space above and around the valve to facilitate servicing. Refer to the Dimension Table.
- ▶Valve should be installed with the bonnet (cover) at the top, particularly 8" and larger valves, and any valve with a limit switch.
- ▶Shut-off valves should be installed upstream and downstream of the control valve. These are used to isolate the valve during start-up and maintenance.
- ▶Install a pressure gauge downstream of the valve to enable adjustment to the required pressure setting. This gauge may be installed in the downstream side port of the valve body.
- ▶Make necessary pressure sensing connections to venture if used.
- ▶Following main valve installation, the solenoid must be wired into the user's deadman control system. This is a simple two-wire (plus ground) connec-

MAX. PRESSURE

(The pressures listed here are maximum working pressures at 100°F)

END CONNECTIONS	DUCTILE IRON	STEEL/STN STL	ALUMINUM
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	---

SIZING

Maximum velocity should not exceed 20 ft/sec as shown in chart below. For more definitive sizing information consult factory.

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	6000	7200	9600	28000

TOLL FREE 1.888.628.8258 ● **phone:** (918)627.1942 ● **fax:** (918)622.8916 ● 7400 East 42nd Place, Tulsa, OK 74145
email: sales@controlvalves.com ● **website:** www.controlvalves.com

Model 114-1E Refueling Control Valve

Model 114-1E (Aviation Fueling)

SIZES GLOBE/ANGLE
Screwed Ends - 1 1/4" - 3"
Grooved Ends - 1 1/2" - 4" (globe)
1-1/2" - 4" (angle)
Flanged Ends - 1 1/4" - 24" (globe)
1 1/4" - 16" (angle)

FLUID OPERATING TEMPERATURE RANGE
(Valve 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

SPRING RANGES
(outlet setting and surge control setting)
5-30 psi, 20-80 psi, 20-200 psi, 100-300 psi

SOLENOID
Enclosure: Explosion Proof NEMA 4X, 6P, 7, 9
Body: Brass, Stainless Steel
Voltages: 24, 120, 240, 480 VAC; 12, 24 VDC
Note: working pressures of solenoids vary greatly, consult factory on application of OCV Model 114-1E valves.

MATERIALS
Consult factory for others.
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

SPECIFICATIONS (Typical Aviation Fueling Application)

The refueling control 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. The valve shall also be equipped with a high capacity surge control pilot to close the valve quickly in the event of sudden reduction in flow. The valve will also open automatically in the event of pressure reversal.

DESIGN
The refueling control 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 an opening speed control, an inline strainer, pilot check valves, a valve position indicator and a solenoid valve. The refueling control valve shall be operationally and hydrostatically tested prior to shipment.

MATERIALS OF CONSTRUCTION
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 control pilots shall be stainless steel. The opening speed control, check valves, and control line tubing shall be stainless steel. The solenoid shall have an explosion-proof enclosure and be suitable for operation on <voltage>.

OPERATING CONDITIONS
The refueling control valve shall be suitable for reducing inlet pressures of <X to X> psi to a constant outlet pressure of <X> psi at flow rates ranging from <X to X> gpm.

ACCEPTABLE PRODUCTS
The refueling control valve shall be a <size> Model 114-1E, <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 ANGLE	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 ANGLE	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
F (OPT)	ALL	3 7/8	3 7/8	3 7/8	3 7/8	3 7/8	3 7/8	6 3/8	6 3/8	6 3/8	6 3/8	6 3/8	8
H	ALL	10	11	11	11	12	13	14	17	18	20	20	28 1/2

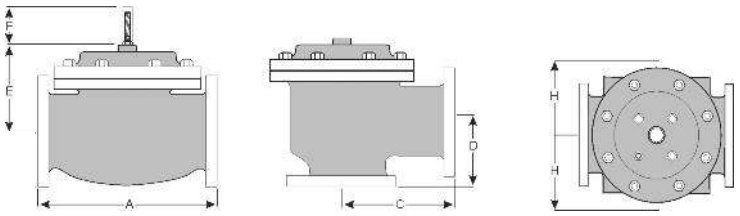
*GROOVED END NOT AVAILABLE IN 1 1/4"

**Note: for military fueling valves, 6" 150# flanges have 20" face to face dimensions and 6" 300# flanges have 21" face to face dimensions.

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.

How to order your Model 114-1E valve
When ordering please provide:
Fluid to be controlled - Model Number - Size - Globe or Angle - End Connection - Body Material - Trim Material - Pilot Options - Pressure Setting or Spring Range - Solenoid Voltage - Special Requirements / Installation Requirements



QUALITY SYSTEM REGISTERED TO ISO 9001

United States/Canada Joint Certification Program (JCP) Certification Number 0073030

Represented by:

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