Model 108-34 (Aviation Fueling) METRIC

Model 108-34 ▲

The Model 108-34 is applicable anywhere there is a need to maintain a minimum back pressure, combined with the requirement of backflow prevention and an on/off electrical operation.
Typical examples include:
▶Pump systems ▶Fuel distribution systems
▶Hydrant refueling system back pressure control valve (BPCV)

SERIES FEATURES

- ▶Pressure Sustaining: Prevents inlet pressure from dropping below a predetermined minimum
- ▶Electrically operated solenoid allows valve to open (control pressure) or shut off (close)
- ▶Automatic closure on pressure reversal
- ▶Operates over a wide flow range
- ▶Set pressure is adjustable with single screw
- ▶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

When closed, a two-way solenoid causes the main valve to close. Opening the solenoid opens the valve and allows the normally closed, spring-loaded pilot to sense upstream pressure and respond to changes in pressure levels, causing the main valve to do the same. The net result is a constant modulating action of the pilot and main valve to hold the upstream pressure constant. The pilot system is equipped with a closing speed control that fine tunes the valve's response to the system variables. The valve closes automatically if outlet pressure becomes greater than inlet pressure.

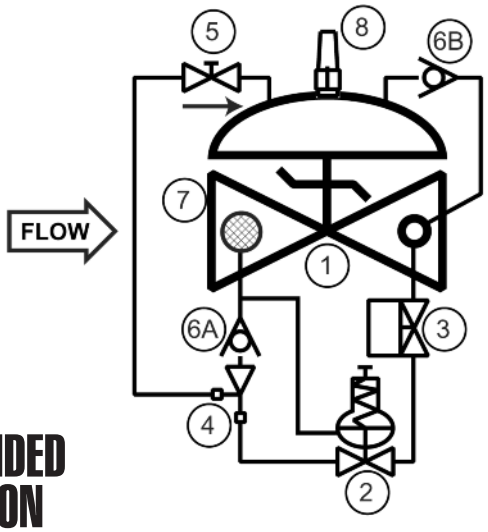
The solenoid may be supplied normally closed (energize to enable) or normally open (energize to close).

COMPONENTS

The Model 108-2 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 451 Two-Way Solenoid Pilot**
4.) **Model 126 Ejector**
5.) **Model 141-3 Flow Control Valve**
6.) **Model 141-1 Check Valve**
7.) **Model 123 Inline Strainer**
8.) **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" (DN200) 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.
- ▶Following main valve installation, the solenoid must be wired into the user's control system. This is a simple two-wire (plus ground) connection.

SIZING

Pressure sustaining valves should be limited to a maximum velocity of 7.5 meters/second. Definitive sizing information can be found in the OCV catalog, Series 108 section, and the Engineering section Performance Charts. Consult factory for assistance.

MAX. PRESSURE

(The pressures listed here are maximum working pressures at 37.78°C.)

END CONNECTIONS	DUCTILE IRON	STEEL WCB	STEEL LCB	STN. STL.	ALUMINUM
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	----

Note: Working pressures of solenoids vary greatly, consult factory on application of OCV Model 108-34.

SIZE, DN	32-40	50	65	80	100	150	200	250	300	350	400	600
FLOW@7.5 M/S, M3/HR	26-36	59	85	130	227	510	886	1390	1990	2410	3125	7100

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

Model 108-34 (Aviation Fueling) METRIC

SIZES
Screwed Ends - 1 1/4" - 3" (DN32 thru DN80)
Grooved Ends - 1 1/2" – 6" (globe) (DN40 thru DN150)
1-1/2"-6" (angle) (DN40 thru DN150)
Flanged Ends - 1 1/4" - 24" (globe) (DN32 thru DN600)
1 1/4" - 16" (angle) (DN32 thru DN400)

FLUID OPERATING TEMPERATURE RANGE (Valve Elastomers)
Buna-N -40°C to 82.22°C
Viton -6.67°C to 110°C
Fluorosilicone -40°C to 65.56°C
EPDM -17.78°C to 110°C

SPRING RANGES (inlet setting)
0.3-2.1 bar; 1.4-5.5 bar; 1.38-13.79 bar; 6.9-20.7 bar

SOLENOID
Enclosure: Explosion Proof NEMA 4X, 6P, 7, 9
Body: Stainless Steel, Brass
Voltages: 24, 120, 240, 480 VAC; 12, 24 VDC

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 back pressure control valve shall function to prevent the upstream pressure from falling below a predetermined minimum while closing to prevent reverse flow. The valve shall be equipped with a two-way solenoid valve that will allow the valve to open when <energized><deenergized>.

DESIGN
The back pressure 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, installed on the main valve and include a needle valve, inline strainer and solenoid valve. The back pressure 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 pilot, needle valve and control line tubing shall also be Stainless Steel. The solenoid shall have a stainless steel body, explosion-proof enclosure and be suitable for operation on <voltage>.

OPERATING CONDITIONS
The back pressure control valve shall be suitable for controlling the inlet pressure at <X> bar and flow rates ranging from <X to X> m3/hr.

ACCEPTABLE PRODUCTS
The back pressure control valve shall be a <size> Model 108-34, <globe pattern, angle pattern>, with <150# flanged, 300# flanged, threaded, grooved> end connections, as manufactured by OCV Control Valves, Tulsa, Oklahoma, USA.

METRIC DIMENSIONS - M.M.

DIM	END CONN.	DN32-DN40	DN50	DN65	DN80	DN100	DN150	DN200	DN250	DN300	DN350	DN400	DN600
A	SCREWED	222	251	267	330	--	--	--	--	--	--	--	--
	GROOVED	222	251	267	330	387	508	--	--	--	--	--	--
	150# FLGD	216	238	267	305	381	451 **	645	756	864	991	1026	1575
	300# FLGD	222	251	283	324	397	473 **	670	791	902	1029	1067	1619
C ANGLE	SCREWED	111	121	152	165	--	--	--	--	--	--	--	--
	GROOVED	111*	121	152	165	194	--	--	--	--	--	--	--
	150# FLGD	108	121	152	152	191	254	322	378	432	--	529	--
	300# FLGD	111	127	162	162	198	267	335	395	451	--	549	--
D ANGLE	SCREWED	79	98	102	114	--	--	--	--	--	--	--	--
	GROOVED	79*	98	102	114	143	--	--	--	--	--	--	--
	150# FLGD	76	98	102	102	140	152	203	289	279	--	398	--
	300# FLGD	79	105	111	111	148	165	216	306	298	--	419	--
E	ALL	152	152	178	165	203	254	302	391	432	457	483	686
F	ALL	98	98	98	98	98	98	162	162	162	162	162	203
H	ALL	254	279	279	279	305	330	356	432	457	508	508	724

*GROOVED END NOT AVAILABLE IN DN32

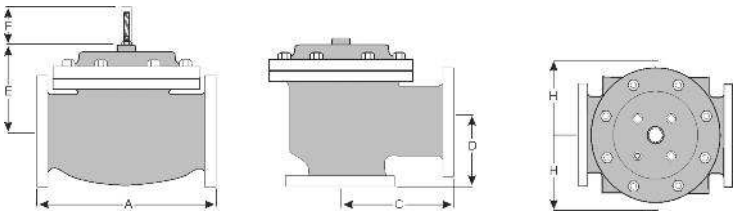
**Note: for military fueling valves, 6" (DN150) 150# flanges have 20" (20 mm) face to face dimensions and 6" (DN150) 300# flanges have 21" (533.4 mm) face to face dimensions.

CE Markings
Applies to fuel valves installed in the European Union in accordance with the Pressure Equipment Directive, 97/23/EC
CE-marked valves are available in LCB steel and CF8M stainless steel only
OCV is registered to the PED through Det Norske Veritas
The following valves will be CE-marked:
- 6" (DN150)and larger valves, 150# and 300# class, liquid fuel only
- 2" (DN50) thru 4" (DN100) valves, 300# class, liquid fuel
- 1 1/4" (DN32) thru 4" (DN100) valves, 300# class, LPG or Butane service
- 4" (DN100) and smaller valves in Class 150# (liquids) are furnished under SEP with no CE-mark

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" (DN200) 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 @ **1-918-627-1942** for parts and service.

How to order your Model 108-34 valve
When ordering please provide:
Fluid to be controlled - Model Number - Size - Globe or Angle - End Connection - Body Material -Trim Material - Pressure Setting or Spring Range - Solenoid Voltage - Energize to Open or Close Valve - Special Requirements / Installation Requirements



QUALITY SYSTEM REGISTERED TO ISO 9001

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