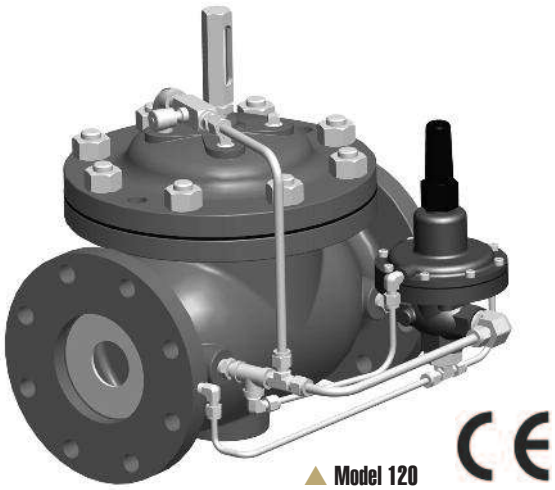
Model 120 (Aviation Fueling) METRIC



▲ Model 120

The Model 120 has a wide range of applications: anywhere the flow rate must be controlled or limited.
Typical examples include:
- ▶Pump systems
- ▶Fuel metering systems

SERIES FEATURES

- ▶Controls or limits flow to a predetermined rate
- ▶Built-in orifice plate for sensing flow rate
- ▶Extra-sensitive differential pilot
- ▶Flow rate is adjustable with single screw
- ▶Adjustable response speed
- ▶Can be maintained without removal from the line
- ▶Factory tested and can be pre-set to your requirements

OPERATION

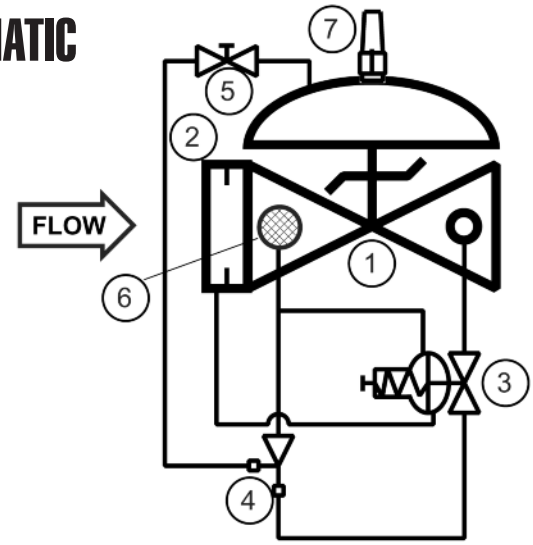
The normally open, spring loaded pilot, sensing the differential across the integral orifice plate which is located in the valve inlet flange, responds to changes in differential and causes the main valve to do the same. Increased differential (flow rate) works to close the pilot and main valve, whereas decreased differential works to open them. The net result is a constant modulating action of the pilot and main valve to hold the differential, hence the flow rate, constant. The pilot system is equipped with a needle valve that fine tunes the valve's response to the system variables.

COMPONENTS

The Model 120 consists of the following components, arranged as shown on the schematic diagram:

1.) **Model 65 Basic Control Valve**
2.) **Orifice Plate**
3.) **Model 2450 Rate of Flow Control Pilot**
4.) **Model 126 Ejector**
5.) **Model 141-2 Needle Valve**
6.) **Model 123 Inline Strainer**
7.) **Model 155 Visual Indicator (optional)**

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.
- ▶In order to properly set the flow rate, a meter, or some other means of measuring flow, should be installed in series with the control valve.

SIZING

The following chart states the minimum and maximum flow rate with standard bore orifice plate, based on a fluid specific gravity of 0.8. This means the valve can be adjusted to control within the ranges shown. Lower flow ranges are possible through the use of smaller orifice plate bore and all ranges are adjustable within a 4:1 ratio (high to low flow). Consult the 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
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	----

SIZE, DN	32-40	50	65	80	100	150	200	250	300	350	400	600
MIN FLOW, M3/HR	9	14	22	33	57	127	214	300	425	510	680	1990
MAX. FLOW, M3/HR	36	56	88	132	228	508	856	1200	1700	2040	2720	7960

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

Model 120 Rate of Flow Control Valve METRIC

Model 120 (Aviation Fueling) METRIC

SIZES GLOBE/ANGLE
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

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 rate of flow control valve shall function to control or limit the flow rate, regardless of fluctuations in upstream or downstream pressure.

DESIGN
The rate of flow 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 orifice plate shall be integrally-installed in the valve inlet flange. The pilot system shall be furnished complete, installed on the main valve and include a needle valve speed control and an inline strainer. The rate of flow 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 shall be stainless steel, while the opening speed control and control line tubing shall be stainless steel. The orifice plate shall also be stainless steel.

OPERATING CONDITIONS
The rate of flow control valve shall be suitable for controlling the flow rate over a range of <X to X (limited to 4:1)> m3/hr at pressures ranging from <X to X> bar.

ACCEPTABLE PRODUCTS
The rate of flow control valve shall be a <size> Model 120, <globe pattern, angle pattern>, with <150# flanged, 300# flanged> 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	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	150# FLGD	108	121	152	152	191	254	322	378	432	--	529	--
ANGLE	300# FLGD	111	127	162	162	198	267	335	395	451	--	549	--
D	150# FLGD	76	98	102	102	140	152	203	289	279	--	398	--
ANGLE	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

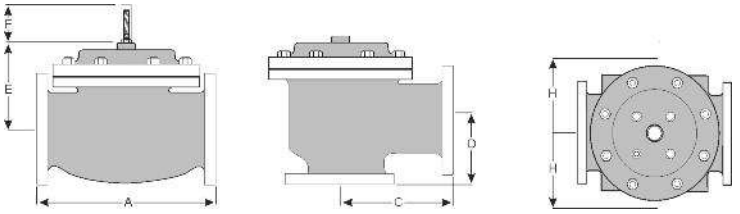
*Note: for military fueling valves, 6" (DN150) 150# flanges have 20" (20 mm) face to face dimensions and 6" (DN150) 300# flanges have 21" (533.4 mm) face to face dimensions.

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 120 valve
When ordering please provide:
Fluid to be controlled - Model Number - Size - Globe or Angle - End Connection - Body Material -Trim Material - Pilot Options - Flow Rate Setting or Range - Special Requirements / Installation Requirements



QUALITY SYSTEM REGISTERED TO ISO 9001

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