



Pump Discharge Control Valves





Fueling



Terminal Services

Pump Discharge Control Valve



The rate of flow control/check valve (pump discharge control valve) shall function to control or limit the flow rate, regardless of fluctuations in upstream or downstream pressure. If downstream pressure becomes greater than upstream pressure, the valve will close fully to prevent reverse flow. The OCV 120-6 has a wide range of applications - anywhere the flow rate must be controlled or limited and reverse flow must be prevented.

Certification & Compliance

NSF-ISO Quality System (9001)



ABS Type Approval



Technical Standards & Safety Authority



American-Made: American Recovery & Reinvestment



Pressure Equipment Directive Certified 2014/68/EU



CE (Conformité Européenne) Compliance



Features & Benefits

- Controls or limits flow to a predetermined rate
- Built-in orifice plate for sensing flow rate
- Check feature closes valve on pressure reversal
- Extra-sensitive differential pilot
- Flow rate is adjustable with single screw
- Can be maintained without removal from the line
- Adjustable 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





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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. If downstream pressure become greater than the upstream pressure, the valve will fully close to prevent reverse flow.



The OCV 120-6 consists of the following components, arranged as shown on the schematic diagram: $\frac{1}{2}$

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

FLOW (3)

Pressure Table

End Connections	Ductile Iron	STEEL/SST	TEEL/SST STEEL LCB		Aluminum			
Standard (Maximum Working Pressures at 100°F)								
Screwed	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						
Metric (Maximum Wo	Metric (Maximum Working Pressures at 37.78°C)							
Screwed	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	19.0 bar	18.4 bar	19.7 bar	19.7 bar			
300# Flanged	44.1 bar	49.6 bar	48.0 bar	51.0 bar				

Based on ANSI flange ratings.







Standard Size Max. Flow (GPM)	1 1/4"	1 ½"	2"	2 ½"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
7.5 FT/SEC (Military)	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 Max. Flow (m³/hr)	DN32	DN40	DN50	DN65	DN80	DN100	DN150	DN200	DN250	DN300	DN350	DN400	DN450	DN500	DN600
2.29 M/SEC (Military)	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 120-6 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

Part	Standard Material
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





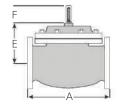


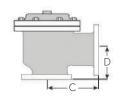
General Arrangement & Dimensions

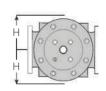
Standard	d Sizes												
DIM	END CONN.	1 1/4 - 1 1/2"	2"	2 1/2"	3"	4"	6"	8"	10"	12"	14"	16"	24"
	SCREWED	8 3/4	9 7/8	10 1/2	13								
A	GROOVED	8 3/4	9 7/8	10 1/2	13	15 ¹ / ₄	20						
A	150# FLGD	8 1/2	9 ³ / ₈	10 ¹ / ₂	12	15	17 ³ / ₄	25 ³/ ₈	29 ³ / ₄	34	39	40 ³ / ₈	62
	300# FLGD	8 3/4	9 7/8	11 ¹ / 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
	SCREWED	43/8	4 3/4	6	6 1/2								
С	GROOVED	4 3/8 *	4 3/4	6	6 1/2	7 5/8							
ANGLE	150# FLGD	4 1/4	4 3/4	6	6	71/2	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	
	SCREWED	3 1/8	3 7/8	4	4 1/2								
D	GROOVED	3 1/8 *	3 7/8	4	4 1/2	5 5/8							
ANGLE	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	
Е	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
Н	ALL	10	11	11	11	12	13	14	17	18	20	20	28 1/2

Metric S	iizes												
DIM	END CONN.	DN32-40	DN50	DN65	DN80	DN100	DN150	DN200	DN250	DN300	DN350	DN400	DN600
	SCREWED	222	251	267	330								
_	GROOVED	222	251	267	330	387	508						
A	150# FLGD	216	238	267	305	381	451	645	756	863	991	1026	1575
	300# FLGD	222	251	283	324	397	473	670	791	902	1029	1067	1619
	SCREWED	111	121	152	165								
С	GROOVED	111*	121	152	165	194							
ANGLE	150# FLGD	108	121	152	152	191	254	322	378	432		529	
	300# FLGD	111	127	162	162	198	267	335	395	451		549	
	SCREWED	79	98	102	114								
D	GROOVED	79*	98	102	114	143							
ANGLE	150# FLGD	76	98	102	102	140	152	203	289	279		398	
	300# FLGD	79	105	111	111	148	165	216	306	298		419	
Е	ALL	152	152	178	165	203	254	302	391	432	457	483	686
F (OPT)	ALL	98	98	98	98	98	98	162	162	162	162	162	203
Н	ALL	254	279	279	279	305	330	356	432	457	508	508	724

^{*}Grooved End not available in 1 1/4" (DN32).











Pump Discharge Control Valves

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	Pressure Rating (ANSI at 100°F)						
250psi for Class 150#	250psi for Class 150# ANSI Flanged Ductile Iron						
285psi for Steel/Stair	285psi for Steel/Stainless Steel & Aluminum						
300# ANSI Flanges ar	300# ANSI Flanges are available						
Solenoid Voltage	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 rate of flow control/check 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 and installed on the main valve, and include a needle valve speed control, pilot check valves, and an inline strainer. The rate of flow control/check 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 control pilot, orifice plate, opening speed control, check valves, and control line tubing shall be stainless steel. The rate of flow control/check valve shall be suitable for operation on <voltage> (see Technical Data section). The rate of flow control/check 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 rate of flow control/check valve shall be an OCV 120-6, as manufactured by OCV, Tulsa, OK, USA.

Aquestia Ltd. reserves the right to make product changes without prior notice. To ensure receiving updated information on parts specifications, please contact us at usa@aquestia.com. Aquestia Ltd. shall not be held liable for any errors.

