

OCV Model 108-2

Pressure Relief/Defuel/Flush/Back Pressure Control Valves

Aquestia
Directing the Flow



General representation



Fueling



Aviation
Fueling

Pressure Relief/Pressure Sustaining Valve

Description

The pressure relief/pressure sustaining valve shall function to prevent main line pressure from exceeding a predetermined maximum, preventing the upstream pressure from falling below a predetermined minimum.

The OCV 108-2 has a wide range of applications - anywhere a system must be protected from pressures that are too high (relief) or too low (sustaining). Typical applications include:

- Pump systems
- Fuel distribution systems

Features & Benefits

- Relief Valve - limits inlet pressure by relieving excess pressure
- Pressure Sustaining - prevents inlet pressure from dropping below a predetermined minimum
- Operates over a wide flow range
- Inlet pressure is adjustable with a single screw
- Quick opening; adjustable closing speed
- Can be maintained without removal from the line
- Factory tested and can be preset to your requirements

Typical Applications

Commercial Airports



Military Bases



Bulk Fuel Storage Tanks



Truck On/Off Loading



Certification & Compliance

NSF-ISO Quality System (9001)



ABS Type Approval



Joint Certification Program



UFGS-33 52 43.14 Guide Specifications



CE (Conformité Européenne) Compliance



Fuel Farms



Hydrant Systems



Mobile Refueling Equipment (Carts/Trucks/Tankers)



Refineries



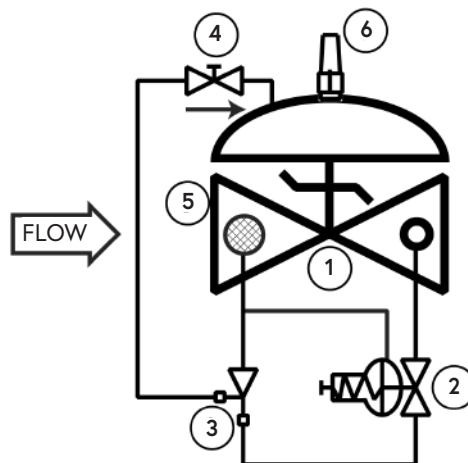
Operation

The normally closed, spring-loaded pilot, sensing upstream pressure, 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 upstream pressure constant. The pilot system is equipped with a closing speed control that fine tunes the valve response to the system variables.

Components

The OCV 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/Back Pressure Pilot
- 3 Model 126 Ejector
- 4 Model 141-3 Flow Control Valve
- 5 Model 123 Inline Strainer
- 6 Model 155 Visual Indicator (optional)



Pressure Table

| End Connections | Ductile Iron | STEEL/SST | STEEL LCB | STEEL WCB | 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 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.

Flow Chart

| Standard Size Max. Flow (GPM) | 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) | 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 (m ³ /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 108-2 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

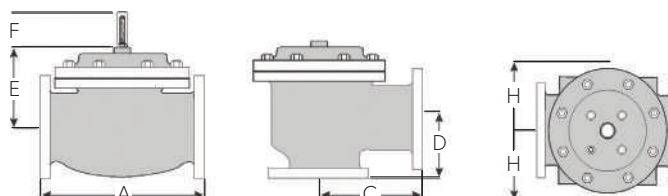
| Part | Standard Material |
|-------------------------------|---|
| Body/Bonnet | Ductile Iron (epoxy coated), Carbon Steel (epoxy coated), Stainless Steel, Aluminum |
| Seat Ring | Stainless Steel, Bronze |
| Stem | Stainless Steel, Monel |
| Spring | Stainless Steel |
| Diaphragm | Buna-N, Viton (Nylon 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 Sizes | | | | | | | | | | | | | |
|----------------|-----------|-----------------|-------|--------|--------|---------|--------|----------|---------|--------|--------|----------|--------|
| 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 |

| Metric Sizes | | | | | | | | | | | | | |
|--------------|-----------|---------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| DIM | END CONN. | DN32-40 | 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 | 863 | 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 (OPT) | 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 1 1/4" (DN32).



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 pressure relief/pressure sustaining valve shall be a single-seated, line pressure operated, diaphragm actuated, pilot controlled 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 closing speed control and an inline strainer. The pressure relief/pressure sustaining 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. Control pilots shall be stainless steel. The closing speed control shall be stainless steel, as shall the control line tubing and fittings. The pressure relief/pressure sustaining valve shall be suitable on <voltage> (see Technical Data section). The pressure relief/pressure sustaining 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 pressure relief/pressure sustaining valve shall be an OCV 108-2, as manufactured by OCV, Tulsa, OK, USA.