



General representation



Fire  
Protection

## Series 100 Basic Valve (Models 44, 68, 77)

### Description

The OCV Series 100 control valves are automatic, hydraulically actuated, direct diaphragm sealing globe/weir type valves with a proven and reliable design. These valves are designed for use in fire protection applications including deluge, pre-action, pressure relief, monitors, hydrants and are suitable for water, foam and seawater systems. The valves consist of three major components: body, cover and diaphragm assembly.

Model 44: Up to 230psi working pressure, threaded.

Model 68: Up to 375psi working pressure, flanged & grooved with drain port.

Model 77: Up to 230psi working pressure, flanged & grooved.

### Certification & Compliance

UL Listed under categories:  
QXZQ (Models 44 & 77), VLFT (Model 68)

ABS Type Approval

Lloyd's Type Approval

CCCf - Model 68 DE\EL(CN)

GOST-R

Fire Tested to EN ISO 6182-5:2006 - Model 68 (2"-6")

Manufacture & Conformity Assessment of  
Pressure Equipment & Assemblies Directive (97/23/EC / EN1074)



### Features & Benefits

- Listed & approved for use in fire protection systems by various global standards
- Quick opening; Non-slam closing operation
- Drip-tight shut off to ANSI FCI 70-2 VI seat leakage class
- Simple & reliable construction
- Low lifelong maintenance costs due to straightforward design
- Easy installation & inline maintenance
- High grade construction materials
- Exceptionally low pressure losses
- Optional remote or manual reset
- Optional manual, electric, hydraulic, pneumatic & combined control trims
- Optional explosion proof, SIL redundant solenoids & trim accessories
- Optional seawater & foam concentrate service

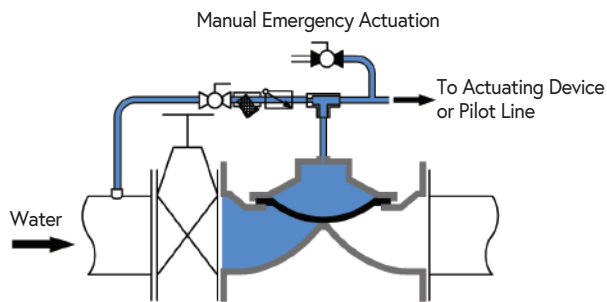
Consult the UL Listing Guide, or contact Aquestia USA for a complete list of approved applications & valve sizes.

## Operation

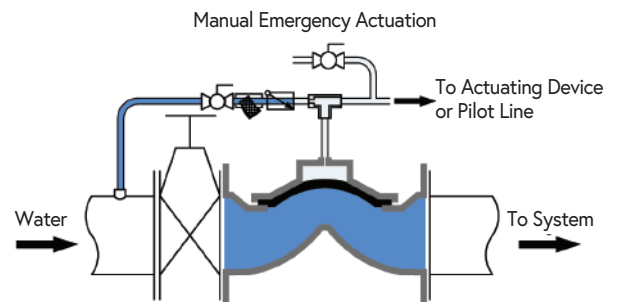
Figure showing OCV Model 68. Same principle of operation is applicable for OCV Models 44 & 77.

### Standard Operation:

Standby Position (Valve Closed)

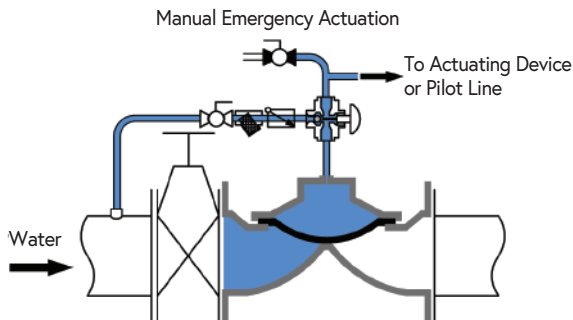


Fire Event (Valve Actuated Automatically or Manually)

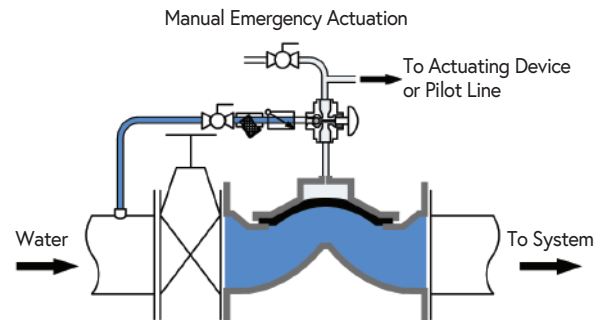


### Manual Reset Operation:

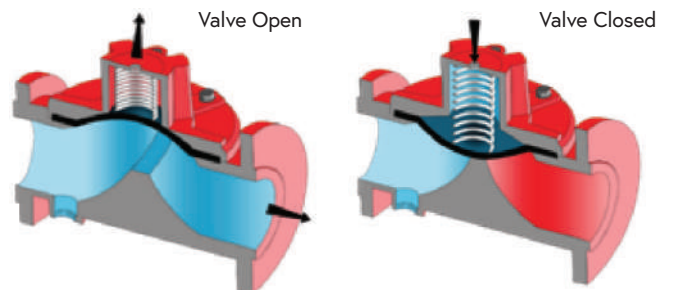
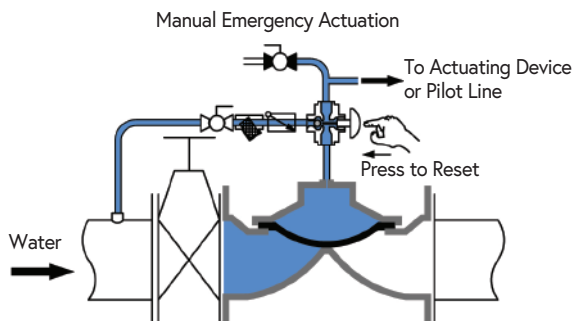
Standby Position (Valve Closed)



Fire Event (Valve Actuated Automatically or Manually)



Reset to Close

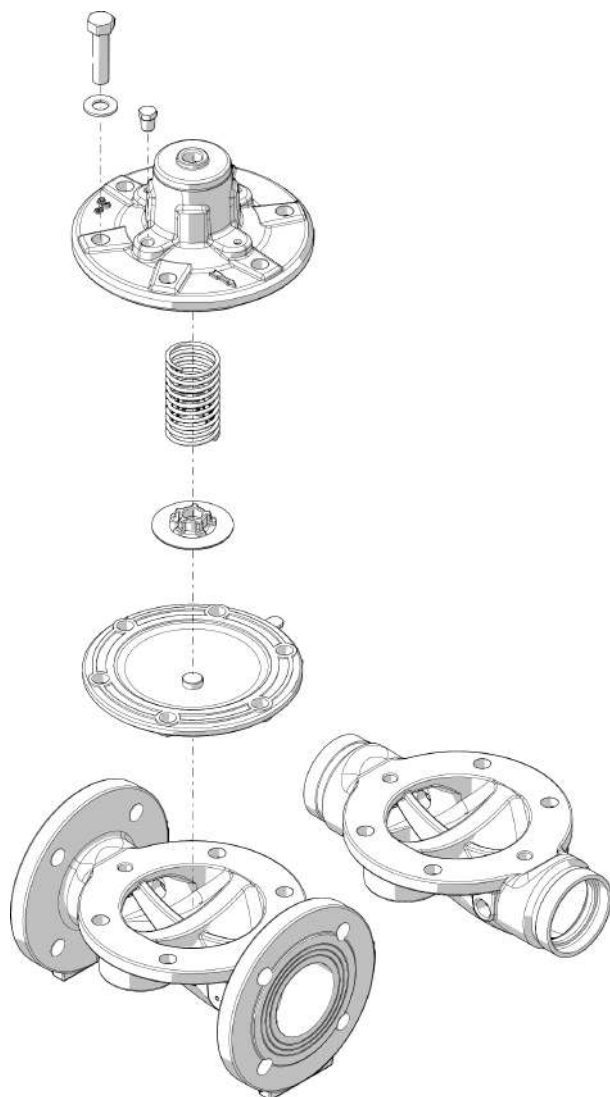
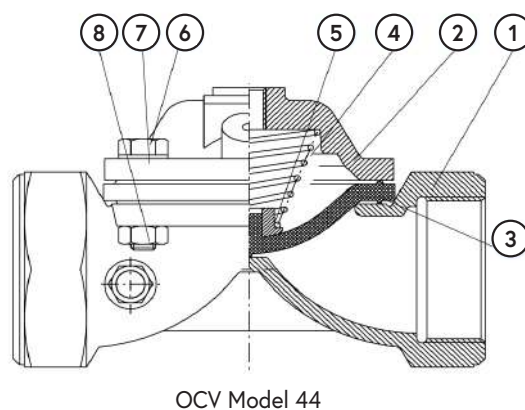
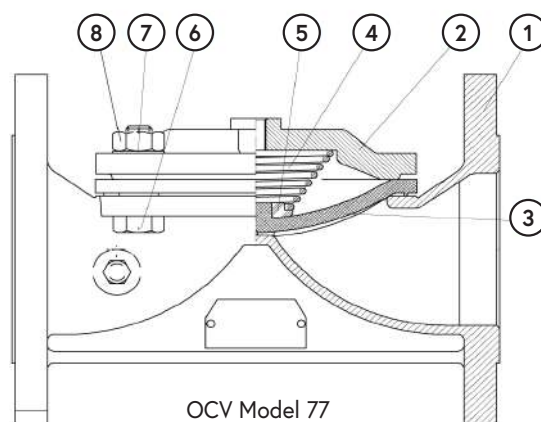
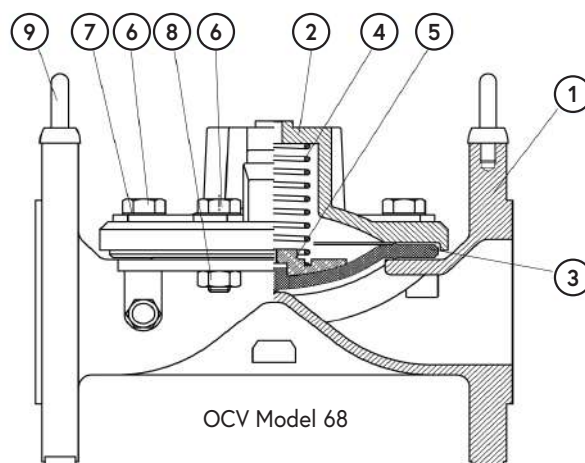


Resetting, maintenance, and periodic testing instructions must be followed as described in detail in the applicable OCV IOM (Installation, Operation & Maintenance) Manual.

## Components

| ID | Part            |
|----|-----------------|
| 1  | Valve Body      |
| 2  | Bonnet          |
| 3  | Diaphragm       |
| 4  | Spring*         |
| 5  | Seat Disc*      |
| 6  | Bolts           |
| 7  | Washer          |
| 8  | Nut             |
| 9  | Suspension Hook |

\*Spring & Seat Disc Optional for OCV Model 68

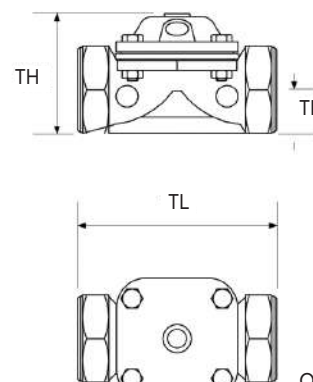
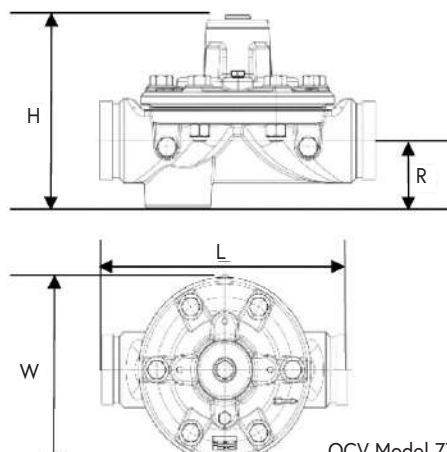
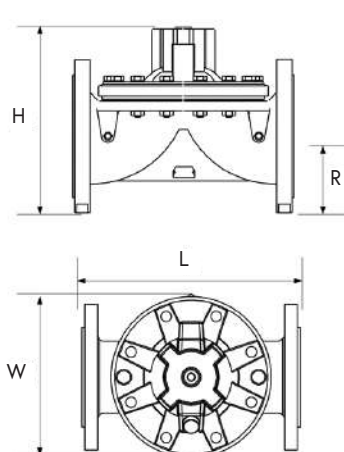


## General Arrangement & Dimensions

| 68 (Flanged)   | 2" (50) |     | 2 1/2" (65) |        | 3" (80) |      | 4" (100) |        | 6" (150) |      | 8" (200) |     | 10" (250) |     | 12" (300) |     |
|----------------|---------|-----|-------------|--------|---------|------|----------|--------|----------|------|----------|-----|-----------|-----|-----------|-----|
| DIM            | inch    | mm  | inch        | mm     | inch    | mm   | inch     | mm     | inch     | mm   | inch     | mm  | inch      | mm  | inch      | mm  |
| L              | 9 5/8   | 243 | 9 3/16      | 233    | 12 3/16 | 310  | 14       | 356    | 17 1/8   | 436  | 20 13/16 | 530 | 25        | 636 | NA        |     |
| H              | 6 5/8   | 169 | 7 5/16      | 185    | 9 5/16  | 237  | 10 5/16  | 263    | 14 13/16 | 378  | 18 7/8   | 481 | 21 1/2    | 546 |           |     |
| R              | 3 5/16  | 85  | 3 11/16     | 92 1/2 | 4 1/8   | 105  | 4 11/16  | 120    | 5 7/8    | 150  | 7        | 180 | 8 3/8     | 215 |           |     |
| W*             | 6 7/8   | 175 | 7 5/16      | 185    | 7 13/16 | 200  | 10 3/16  | 260    | 12 5/8   | 320  | 15 11/16 | 400 | 19 3/8    | 495 |           |     |
| Approx. Weight | lbs     | kg  | lbs         | kg     | lbs     | kg   | lbs      | kg     | lbs      | kg   | lbs      | kg  | lbs       | kg  | lbs       | kg  |
|                | 22      | 10  | 32          | 14.5   | 66.1    | 30   | 83.8     | 38     | 165.3    | 75   | 271      | 123 | 419       | 190 | NA        |     |
| 68 (Grooved)   | 2" (50) |     | 2.5" (65)   |        | 3" (80) |      | 4" (100) |        | 6" (150) |      | 8" (200) |     | 10" (250) |     | 12" (300) |     |
| L              | 9 5/8   | 243 | 10          | 253    | 13 3/16 | 336  | 15       | 380    | 17 5/16  | 440  | 21 7/8   | 556 | NA        |     |           |     |
| H              | 5 5/8   | 143 | 5 5/8       | 143    | 8 11/16 | 220  | 9        | 229    | 13 5/16  | 337  | 17       | 433 |           |     |           |     |
| R              | 2 3/16  | 55  | 2 3/16      | 55     | 3       | 77   | 3 3/8    | 86 1/2 | 4 1/2    | 114  | 5 1/2    | 139 |           |     |           |     |
| W*             | 6 13/16 | 172 | 6 13/16     | 172    | 9 5/16  | 236  | 10 5/16  | 261    | 12 13/16 | 326  | 15 11/16 | 400 |           |     |           |     |
| Approx. Weight | lbs     | kg  | lbs         | kg     | lbs     | kg   | lbs      | kg     | lbs      | kg   | lbs      | kg  | lbs       | kg  | lbs       | kg  |
|                | 13.7    | 6.2 | 14          | 6.4    | 32      | 14.5 | 46.3     | 21     | 85       | 38.5 | 145.5    | 66  | NA        |     |           |     |
| 77 (Flanged)   | 2" (50) |     | 2.5" (65)   |        | 3" (80) |      | 4" (100) |        | 6" (150) |      | 8" (200) |     | 10" (250) |     | 12" (300) |     |
| L              | 7 13/16 | 200 | 8 3/8       | 214    | 11 3/16 | 285  | 12       | 305    | 15 5/16  | 390  | 18 1/8   | 460 | 21        | 535 | 22 13/16  | 580 |
| H              | 6 1/2   | 166 | 7 5/16      | 185    | 7 13/16 | 200  | 9        | 230    | 12 5/16  | 314  | 15 11/16 | 400 | 17 1/2    | 445 | 19 3/8    | 495 |
| R              | 3 5/16  | 85  | 3 5/8       | 92 1/2 | 4 1/8   | 105  | 4 5/16   | 110    | 5 11/16  | 145  | 6 5/8    | 170 | 8         | 205 | 9 3/8     | 240 |
| W*             | 6 1/2   | 166 | 7 5/16      | 185    | 7 13/16 | 200  | 9        | 230    | 11 13/16 | 300  | 14 3/8   | 365 | 17 5/16   | 440 | 19 5/16   | 490 |
| Approx. Weight | lbs     | kg  | lbs         | kg     | lbs     | kg   | lbs      | kg     | lbs      | kg   | lbs      | kg  | lbs       | kg  | lbs       | kg  |
|                | 17      | 7.7 | 22.7        | 10.3   | 40.1    | 18.2 | 53       | 24     | 108      | 49   | 190      | 86  | 276       | 125 | 368       | 167 |
| 44 (Threaded)  | 2" (50) |     | 2.5" (65)   |        | 3" (80) |      |          |        |          |      |          |     |           |     |           |     |
| TL             | 7 3/8   | 188 | 8 5/8       | 219    | 12 3/8  | 316  |          |        |          |      |          |     |           |     |           |     |
| TH             | 4 1/2   | 115 | 4 11/16     | 118    | 5 5/16  | 135  |          |        |          |      |          |     |           |     |           |     |
| TR             | 1 5/8   | 42  | 1 13/16     | 46     | 2       | 53   |          |        |          |      |          |     |           |     |           |     |
| W*             | 4 3/8   | 112 | 4 3/8       | 112    | 7 13/16 | 200  |          |        |          |      |          |     |           |     |           |     |
| Approx. Weight | lbs     | kg  | lbs         | kg     | lbs     | kg   |          |        |          |      |          |     |           |     |           |     |
|                | 7       | 3.2 | 7.9         | 3.6    | 24      | 11   |          |        |          |      |          |     |           |     |           |     |

Approximate dimensions. Contact OCV for information on additional valve sizes & models.

\*Valve Width



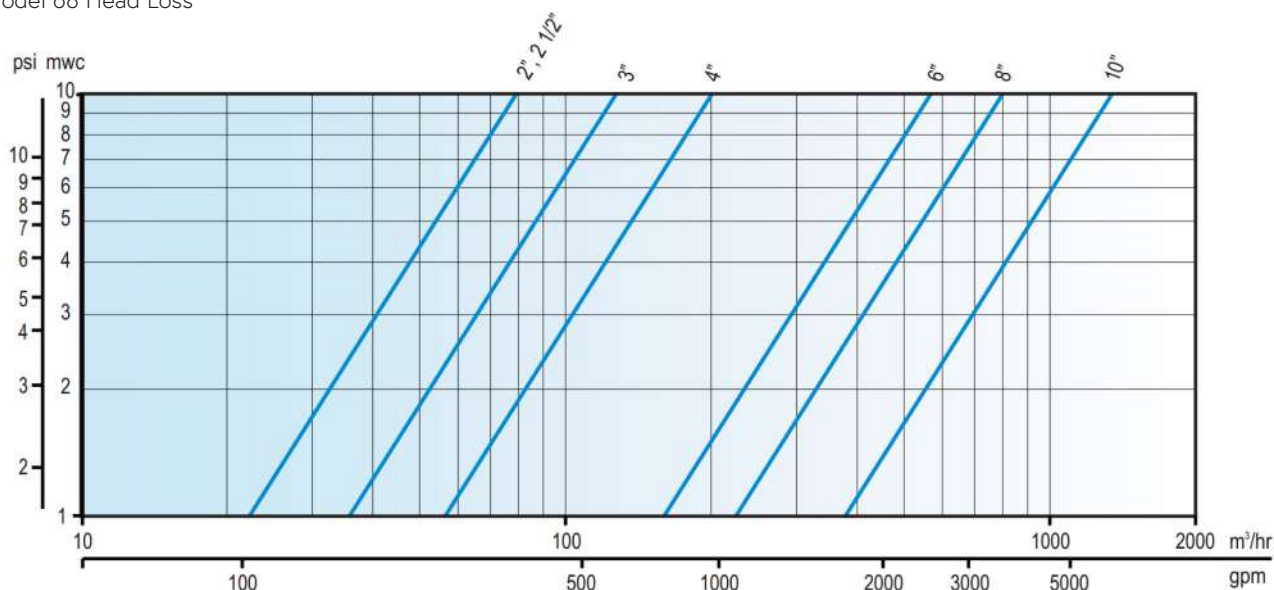
OCV Model 77/68

OCV Model 44

\* General representation of valve

## Head Loss & Hydraulic Characteristics

OCV Model 68 Head Loss



OCV Model 68 Hydraulic Characteristics

(UL Listed diameters shown in chart)

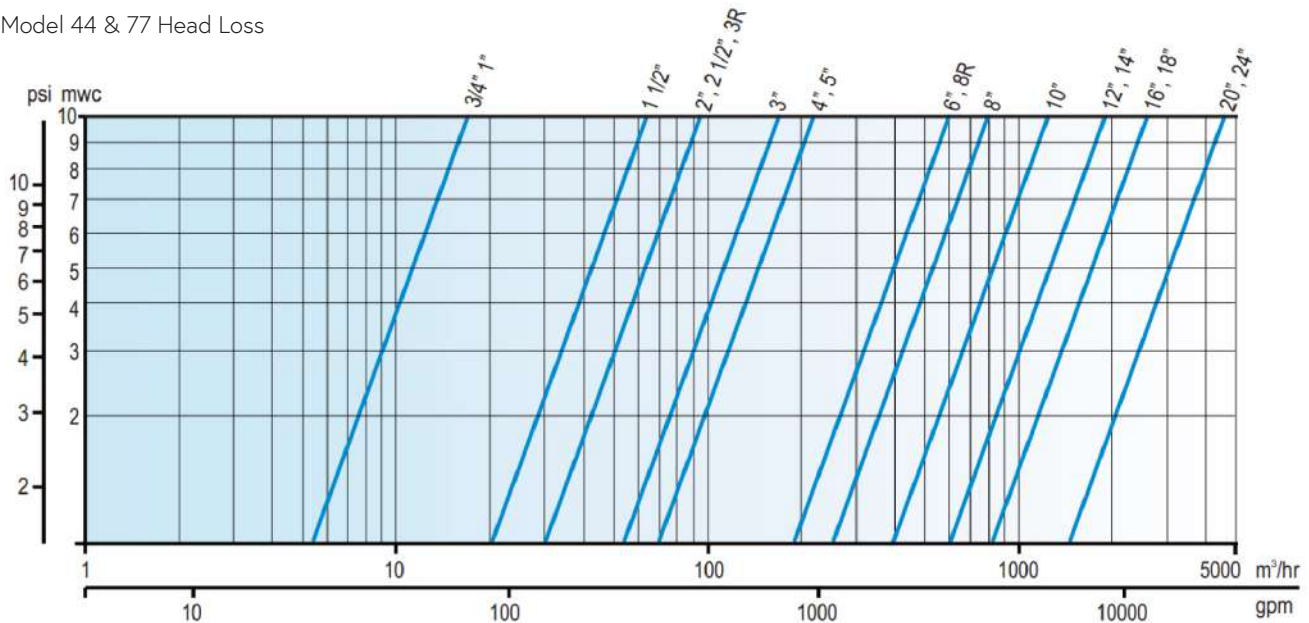
| Valve Size                                        |               | 2" (50) | 2 1/2" (65) | 3" (80) | 4" (100) | 6" (150) | 8" (200) | 10" (250) |
|---------------------------------------------------|---------------|---------|-------------|---------|----------|----------|----------|-----------|
| Kv                                                | m³/hr @ 1 bar | 78      | 78          | 120     | 200      | 550      | 800      | 1300      |
| Cv                                                | gpm @ 1 psi   | 91      | 91          | 140     | 234      | 643      | 935      | 1519      |
| K Factor                                          | NA            | 1 7/10  | 1 7/10      | 3 7/10  | 4 1/5    | 2 4/5    | 4 1/5    | 3 9/10    |
| Equivalent Pipe Length<br>@ C <sub>HW</sub> = 120 | Meters        | 3.7     | 13.3        | 16.4    | 18.9     | 20.9     | 42.5     | 51.2      |
|                                                   | Feet          | 12      | 44          | 54      | 62       | 69       | 139      | 168       |
| Control Chamber<br>Displacement Volume            | Liters        | 0.18    | 0.18        | 0.3     | 0.5      | 2        | 4.8      | 6.2       |
|                                                   | Gallons       | 0.5     | 0.5         | 0.8     | 1.3      | 0.53     | 1.27     | 1.64      |





## Head Loss & Hydraulic Characteristics

OCV Model 44 & 77 Head Loss



OCV Model 44 & 77 Hydraulic Characteristics  
(UL Listed diameters shown in chart)

| Valve Size                                        |               | 1" (25) | 1 1/2" (40) | 2" (50) | 2 1/2" (65) | 3" (80) | 4" (100) | 6" (150) | 8" (200) | 10" (250) | 12" (300) |
|---------------------------------------------------|---------------|---------|-------------|---------|-------------|---------|----------|----------|----------|-----------|-----------|
| Kv                                                | m³/hr @ 1 bar | 17      | 64          | 95      | 95          | 170     | 220      | 600      | 800      | 1250      | 1900      |
| Cv                                                | gpm @ 1 psi   | 20      | 75          | 110     | 110         | 200     | 260      | 700      | 930      | 1460      | 2220      |
| K Factor                                          | NA            | 2 1/5   | 1           | 1 1/10  | 3 1/5       | 2 3/10  | 3 3/10   | 2 1/5    | 4        | 4         | 3 3/5     |
| Equivalent Pipe Length<br>@ C <sub>HW</sub> = 120 | Meters        | 2       | 2           | 3       | 9           | 9       | 16       | 18       | 42       | 55        | 62        |
|                                                   | Feet          | 7       | 6           | 8       | 30          | 28      | 52       | 58       | 139      | 181       | 202       |
| Control Chamber<br>Displacement Volume            | Liters        | .03     | .07         | .16     | .16         | .6      | .6       | 1.8      | 4.7      | 6.5       | 9.4       |
|                                                   | Gallons       | .01     | .02         | .04     | .04         | .16     | .16      | .48      | 1.24     | 1.72      | 2.48      |



OCV 77 PS\UL  
Fire Pump Pressure  
Relief Valve  
  
UL Listed  
Lloyd's Type Approved



OCV 44 HY\PR1  
Hydrant Pressure  
Reducing Valve  
  
Lloyd's Type Approved

## Pressure Rating

Recommended nominal system pressure to flange class for typical materials as:

- Ductile Iron ASTM A536
- Stainless Steel ASTM CF8M
- Cast Steel ASTM A216 & ASTM A352 LCB
- NAB ASTM B148 C-95800
- 250psi nominal system pressure for flanges ANSI B16.42 & ANSI B16.50 Class 150# accordingly
- 375psi maximal system pressure for flanges ANSI B16.42 & ANSI B16.50 Class 300# accordingly

| Material                                                                                                |          | End Connections | Valve Sizes | Standard             | Max. Recommended Working Pressure |
|---------------------------------------------------------------------------------------------------------|----------|-----------------|-------------|----------------------|-----------------------------------|
| Ductile Iron ASTM A536                                                                                  | Flanged  | 150# RF (or FF) | 2"-12"      | ASME / ANSI B16.42   | 250psi / 17.2 bar                 |
|                                                                                                         |          | 300# RF (or FF) | 2"-12"      | ASME / ANSI B16.42   | 375psi / 25.8 bar                 |
|                                                                                                         |          | PN16            | 2"-12"      | ISO 7005-2           | 230psi / 16 bar                   |
|                                                                                                         |          | PN25            | 2"-12"      | ISO 7005-2           | 360psi / 25 bar                   |
|                                                                                                         | Grooved  | PN16            | 2"-8"       | ASME / ANSI AWWA 606 | 230psi / 16 bar                   |
|                                                                                                         |          | PN25            | 2"-8"       | ASME / ANSI AWWA 606 | 360psi / 25 bar                   |
|                                                                                                         | Threaded | PN16            | 2"-3"       | BSP / NPT            | 230psi / 16 bar                   |
|                                                                                                         |          | PN25            | 2"-3"       | BSP / NPT            | 360psi / 25 bar                   |
| Cast Steel WCB ASTM A216<br>LCB ASTM A352<br><br>Stainless Steel ASTM CF8M<br><br>NAB ASTM B148 C-95800 | Flanged  | 150# RF (or FF) | 2"-10"      | ASME / ANSI B16.50   | 250psi / 17.2 bar                 |
|                                                                                                         |          | 300# RF (or FF) | 2"-10"      | ASME / ANSI B16.50   | 375psi / 25.8 bar                 |
|                                                                                                         |          | PN16            | 2"-10"      | ISO 7005-2           | 230psi / 16 bar                   |
|                                                                                                         |          | PN25            | 2"-10"      | ISO 7005-2           | 360psi / 25 bar                   |

For exact pressure & temperature ratings see relevant ASME/ANSI B16 Standards for Pipes and Fittings. Contact OCV for information on additional materials and standards.

## Technical Data

| Temperature (Elastomers)                           |    |                                               |      |
|----------------------------------------------------|----|-----------------------------------------------|------|
| Water                                              |    | up to 85°C / 185°F max                        |      |
| Sizes                                              |    |                                               |      |
| Straight Flow                                      |    | 1/4" - 24" / 20-600mm                         |      |
| UL Listed                                          |    | 2"-10" / 50-250mm                             |      |
| Lloyd's Type Approved                              |    | 1"- 24" / 25-600mm                            |      |
| End Connections                                    |    |                                               |      |
| Flanged<br>(OCV Models 68 & 77)<br>1"-24"          |    | ISO-PN16 & ISO-PN25                           |      |
|                                                    |    | ASME/ANSI B16.42 & B16.5<br>Class 150# & 300# |      |
|                                                    |    | Additional options available upon request     |      |
| Grooved<br>(OCV Models 68 & 77)<br>2"- 8"          |    | ASME/ANSI AWWA 606                            |      |
| Threaded<br>(OCV Model 44)<br>1/4"- 3"             |    | BSP/NPT                                       |      |
| Elastomers                                         |    |                                               |      |
| Neoprene                                           | NR | NBR                                           | EPDM |
| Coating Material                                   |    |                                               |      |
| High Built, Fusion Bonded Epoxy                    |    |                                               |      |
| Optional Coating Material                          |    |                                               |      |
| UV Protection                                      |    | Polyester                                     |      |
| Other coatings conforming to ISO-12944C4, C5 & C5M |    |                                               |      |
| Internal Trim Material                             |    |                                               |      |
| Stainless Steel                                    |    |                                               |      |

| Body & Cover Material                                                                                                |                                                   |
|----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| Ductile Iron ASTM A536                                                                                               | Stainless Steel ASTM CF8M                         |
| Cast Steel ASTM A216 & A352 LCB                                                                                      | NAB ASTM B148 C-958000                            |
| Control Trim & Accessories                                                                                           |                                                   |
| Brass                                                                                                                | Stainless Steel                                   |
| Bronze                                                                                                               | Monel                                             |
| NAB                                                                                                                  | Super Duplex                                      |
| Optional Components                                                                                                  |                                                   |
| Pressure Switch                                                                                                      | Alarm Test Trim                                   |
| Pressure Reducing Feature                                                                                            | Position Indicator                                |
| Drain Valve                                                                                                          | Explosion Proof                                   |
| Open/Close Speed Control                                                                                             | Block & Bleed Valves for Pressure Sensing Control |
| PPCS (Pneumatic Pressure Control System for Pneumatically Actuated Models)                                           | Limit Proximity Switch Assembly                   |
| Items to Specify                                                                                                     |                                                   |
| Electrical features other than standard (24VDC, IP65/NEMA4)                                                          |                                                   |
| If explosion proof accessories are required such as solenoids, pressure switches, etc., please define classification |                                                   |
| Control trim material other than standard                                                                            |                                                   |
| Required standards, certifications and approvals                                                                     |                                                   |