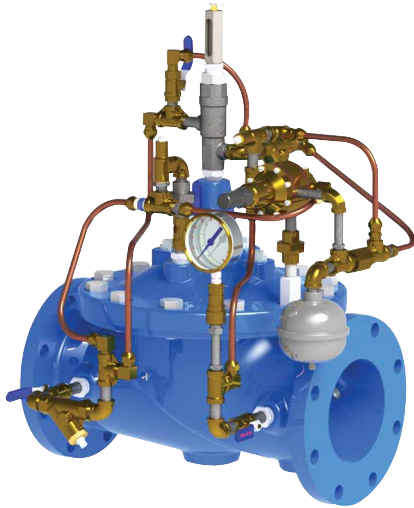


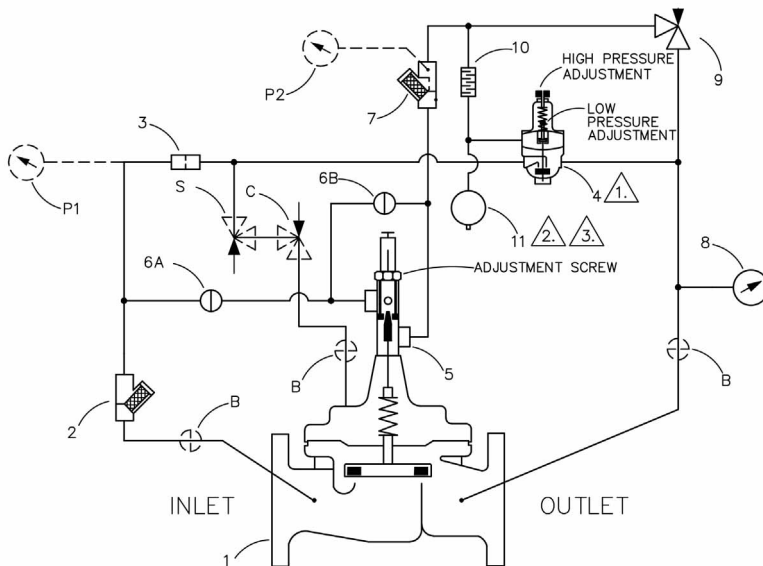


— MODEL — **698-06**

Hydraulic Pressure Management/ Water Savings Valve with Dual Setpoints



- Simple means to achieve measurable water savings
- Helps reduce consumption
- 100% hydraulic control
- Two adjustable downstream set points for high and low pressure
- Smooth transition between set point pressures
- Simple set-up
- Retrofits to existing valve without removal from pipeline



Schematic Diagram

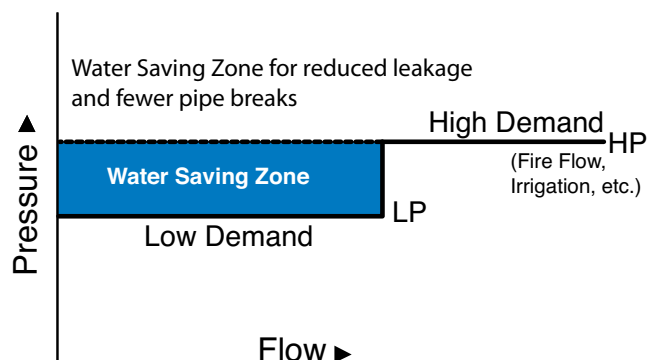
| Item | Description |
|------|--|
| 1 | 100-20 Hytrol Main Valve |
| 2 | X43 "Y" Strainer |
| 3 | X58C Restriction Assembly |
| 4 | CPM-A Pressure Management Control |
| 5 | X78-4 Stem Assembly + X101 Valve Position Indicator Assembly |
| 6 | CK2 (Isolation Valve) |
| 7 | X44A Strainer Orifice Assembly |
| 8 | X141 Gage Assembly |
| 9 | CV Speed Control |
| 10 | X58E Restriction Assembly |
| 11 | Accumulator (Air Charged) |

Optional Features

| Item | Description |
|------|---------------------------|
| B | CK2 Isolation Valve |
| C | CV Flow Control (Closing) |
| P | X141 Gage Assembly |
| S | CV Flow Control (Opening) |

Typical Performance

A dual system pressure with reduced system pressure during low demand periods is illustrated in the chart. At low flows, a minimum pressure is maintained and as flow increases to the switch point, delivery pressure increases to the maximum pressure set point for switch. The point between low pressure and high pressure setpoints is adjustable to fine-tune the valve to system requirements. The "water saving zone" below maximum pressure line represents valve effectiveness in reducing water losses and frequency of pipe breaks in a system.

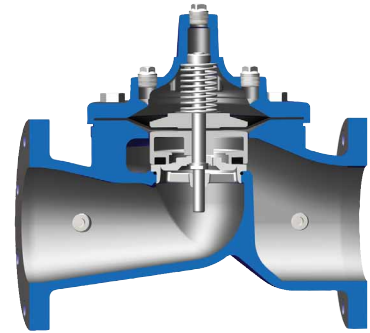


Model 698-06 (Uses 100-20 Hytrol Main Valve)

Pressure Ratings (Recommended Maximum Pressure - psi)

| Valve Body & Cover | | Pressure Class | | | | |
|--------------------|--------------|-----------------|-----------|-----------|-----------|--------------|
| | | Flanged | | | Grooved | Threaded |
| Grade | Material | ANSI Standards* | 150 Class | 300 Class | 300 Class | End‡ Details |
| ASTM A536 | Ductile Iron | B16.42 | 250 | 400 | 400 | 400 |
| ASTM A216-WCB | Cast Steel | B16.5 | 285 | 400 | 400 | 400 |
| UNS 87850 | Bronze | B16.24 | 225 | 400 | 400 | 400 |

Note: * ANSI standards are for flange dimensions only.
 Flanged valves are available faced but not drilled.
 ‡ End Details machined to ANSI B2.1 specifications.
Valves for higher pressure are available; consult factory for details



Model 100-20 Reduced Port Hytrol Main Valve

Materials

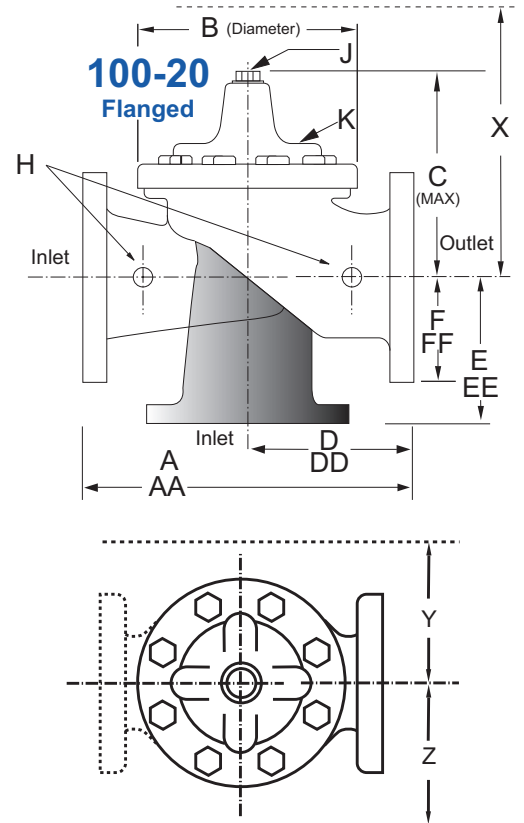
| Component | Standard Material Combinations | | |
|--|---|------------------------|------------------------|
| Body & Cover | Ductile Iron | Cast Steel | Bronze |
| Available Sizes | 3" - 12" 80 - 300mm | 3" - 12" 80 - 300mm | 3" - 12" 80 - 300mm |
| Disc Retainer & Diaphragm Washer | Cast Iron | Cast Steel | Bronze |
| Trim: Disc Guide, Seat & Cover Bearing | Bronze is Standard Stainless Steel is Optional | | |
| Disc | Buna-N® Rubber | | |
| Diaphragm | Nylon Reinforced Buna-N® Rubber | | |
| Stem, Nut & Spring | Stainless Steel | | |

For material options not listed, consult factory.
 Cla-Val manufactures valves in more than 50 different alloys.



Model 698-06 Dimensions (In Inches)

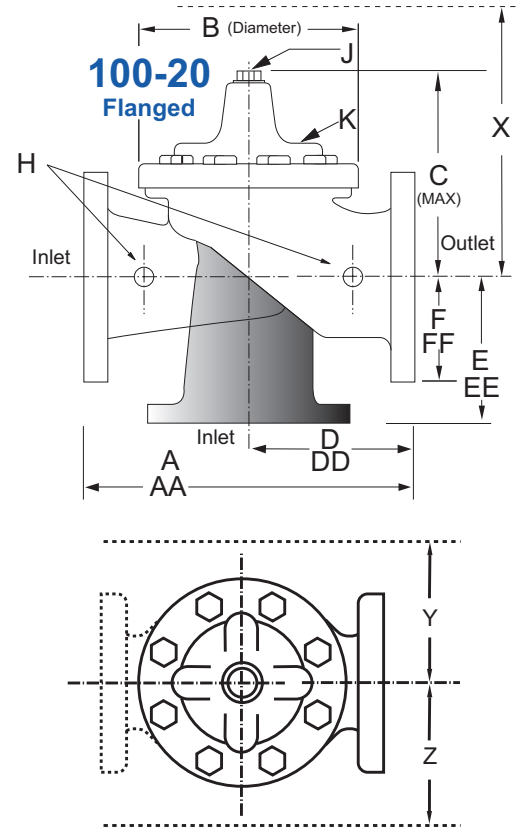
| Valve Size (Inches) | 3 | 4 | 6 | 8 | 10 | 12 |
|---------------------------|-------|-------|-------|-------|-------|-------|
| A 150 ANSI | 10.25 | 13.88 | 17.75 | 21.38 | 26.00 | 30.00 |
| AA 300 ANSI | 11.00 | 14.50 | 18.62 | 22.38 | 27.38 | 31.50 |
| B Diameter | 6.62 | 9.12 | 11.50 | 15.75 | 20.00 | 23.62 |
| C Maximum | 7.00 | 8.62 | 11.62 | 15.00 | 17.88 | 21.00 |
| D 150 ANSI | — | 6.94 | 8.88 | 10.69 | 12.75 | 14.94 |
| DD 300 ANSI | — | 7.25 | 9.38 | 11.19 | — | — |
| E 150 ANSI | — | 5.50 | 6.75 | 7.25 | 8.06 | 8.68 |
| EE 300 ANSI | — | 5.81 | 7.25 | 7.75 | — | — |
| F 150 ANSI | 3.75 | 4.50 | 5.50 | 6.75 | 8.00 | 9.50 |
| FF 300 ANSI | 4.12 | 5.00 | 6.25 | 7.50 | 8.75 | 10.25 |
| H NPT Body Tapping | 0.375 | 0.50 | 0.75 | 0.75 | 1.00 | 1.00 |
| J NPT Cover Center Plug | 0.50 | 0.50 | 0.75 | 0.75 | 1.00 | 1.00 |
| K NPT Cover Tapping | 0.375 | 0.50 | 0.75 | 0.75 | 1.00 | 1.00 |
| Stem Travel | 0.60 | 0.80 | 1.10 | 1.70 | 2.30 | 2.80 |
| Approx. Ship Weight (lbs) | 45 | 85 | 195 | 330 | 625 | 900 |
| Approx. X Pilot System | 13 | 15 | 27 | 30 | 33 | 36 |
| Approx. Y Pilot System | 10 | 11 | 18 | 20 | 22 | 24 |
| Approx. Z Pilot System | 10 | 11 | 18 | 20 | 22 | 24 |



Model 698-06 Metric Dimensions (Uses 100-20 Hytrol Main Valve)

Dimensions (In mm)

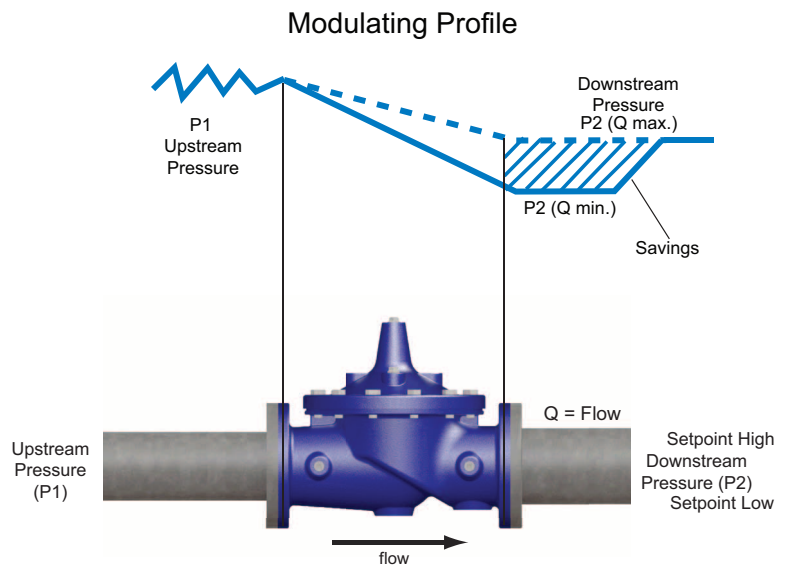
| Valve Size (mm) | 80 | 100 | 150 | 200 | 250 | 300 |
|---------------------------|-------|------|------|------|------|------|
| A 150 ANSI | 260 | 353 | 451 | 543 | 660 | 762 |
| AA 300 ANSI | 279 | 368 | 473 | 568 | 695 | 800 |
| B Diameter | 168 | 232 | 292 | 400 | 508 | 600 |
| C Maximum | 178 | 219 | 295 | 381 | 454 | 533 |
| D 150 ANSI | — | 176 | 226 | 272 | 324 | 380 |
| DD 300 ANSI | — | 184 | 238 | 284 | — | — |
| E 150 ANSI | — | 140 | 171 | 184 | 205 | 349 |
| EE 300 ANSI | — | 148 | 184 | 197 | — | — |
| F 150 ANSI | 95 | 114 | 140 | 171 | 203 | 241 |
| FF 300 ANSI | 105 | 127 | 159 | 191 | 222 | 260 |
| H NPT Body Tapping | 0.375 | 0.50 | 0.75 | 0.75 | 1.00 | 1.00 |
| J NPT Cover Center Plug | 0.50 | 0.50 | 0.75 | 0.75 | 1.00 | 1.00 |
| K NPT Cover Tapping | 0.375 | 0.50 | 0.75 | 0.75 | 1.00 | 1.00 |
| Stem Travel | 15 | 20 | 28 | 43 | 58 | 71 |
| Approx. Ship Weight (kgs) | 20 | 39 | 89 | 150 | 284 | 409 |
| Approx. X Pilot System | 331 | 381 | 686 | 762 | 839 | 915 |
| Approx. Y Pilot System | 254 | 280 | 458 | 508 | 559 | 610 |
| Approx. Z Pilot System | 254 | 280 | 458 | 508 | 559 | 610 |



How It Works

The Cla-Val Model 698-06 Water Saving Valve is a pressure reducing valve that uses two downstream set points to achieve optimum system pressure; i.e. the capability delivering only the pressure that is needed to meet current demand.

A high pressure set point is selected for high flow demand and a low pressure set point is selected for low demand. This dual set point arrangement allows for reduction in water consumption as well as unintentional water loss by keeping system piping from being over-pressurized during periods of low demand. It does this without inhibiting adequate pressure during high or fire demand. The design is 100% hydraulic and, in addition, to the dual pressure set points, the transition point at which the pressure changes based on the flow is also adjustable. The patented design of the valve allows for smooth transition from one set point to the other, providing optimum performance and measurable water savings by reducing consumption, minimizing leaks and lessening the potential for pipe breaks.



| 698-06 Valve Selection | 100-20 Pattern: Globe (G), Angle (A), End Connections: Flanged (F) Indicate Available Sizes | | | | | | |
|-----------------------------------|--|-----|------|------|------|------|------|
| | Inches | 3 | 4 | 6 | 8 | 10 | 12 |
| | mm | 80 | 100 | 150 | 200 | 250 | 300 |
| Main Valve 100-20 | Pattern | G | G, A | G, A | G, A | G | G |
| | End Detail | F | F | F | F | F | F |
| Suggested Flow (gpm) | Maximum | 260 | 580 | 1025 | 2300 | 4100 | 6400 |
| | Minimum | 1 | 2 | 4 | 10 | 15 | 35 |
| Suggested Flow (Liters/Sec) | Maximum | 16 | 37 | 65 | 145 | 258 | 403 |
| | Minimum | .06 | .13 | .25 | .63 | .95 | 2.2 |
| | 100-20 Series is the reduced internal port size version of the 100-01 Series. Lower Flows Consult Factory | | | | | | |

Many factors should be considered in sizing pressure reducing valves including inlet pressure, outlet pressure and flow rates. For sizing questions or cavitation analysis, consult Cla-Val with system details.

Not Recommended for Dead-end Service

Pilot System Specifications



Temperature Range

Water: to 180°F

Consult factory for hot water applications.

Materials

Standard Pilot System Materials

Pilot Control: Stainless Steel & Low Lead Bronze

Trim: Stainless Steel Type 303

Rubber: Buna-N® Synthetic Rubber

**Go to www.cla-val.com for
Purchase Specification**

When Ordering, Specify:

- Catalog No. 698-06
- Valve Size
- Pattern - Globe or Angle
- Pressure Class
- Threaded or Flanged
- Trim Material
- Desired Options
- When Vertically Installed



E-698-06 (R-08/2024)

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