

# Pressure Regulating (Reducing) Valves

The Chemline SR 50 Series Pressure Regulating (Reducing) Valves maintains a set downstream pressure independent of higher variable upstream pressures. As downstream pressure increases reaching the set pressure, the valve closes. It opens as soon as the downstream pressure decreases below set pressure.

The SR 50 is sensitive and provides precise control. One application is to protect filters from damaging pressure surges.

## True Union Ends

## Designed for Long Life

## Sensitive and Reliable

### Features

#### True Union Ends

- Easy installation and maintenance
- Eliminate chemical leakage problems common with old fashioned threaded connections

#### Long Cycling Life

- Dynamic seal is Teflon® bonded EPDM for high chemical resistance
- This moulded diaphragm is designed for superior sealing and flex life

#### Designed for Superior Performance

- Designed for minimum hysteresis
- Seat is hydraulically designed to eliminate chatter

### Technical

#### Downstream Set Pressure Ranges:

- 1/2" to 2" – 15 to 130 psi
- 2-1/2" and 3" – 15 to 90 psi

#### Maximum Viscosity:

- 120cP is maximum recommended service viscosity

<sup>1</sup> For ChemFlare™ end connectors, consult Chemline.

<sup>2</sup> PP and PVDF spigot ends have DIN dimensions and will butt fuse directly to Chemline PP and PVDF piping systems.

<sup>3</sup> 316 SS and Teflon® PTFE bodies are also available. Consult Chemline.



**CHEMLINE**  
Plastics Limited

*Your Pipeline To Quality*

**PVC, PP, PVDF<sup>3</sup>**

**SERIES:** SR50

**SIZES:** 3/8" – 3"

**ENDS:** True Union Socket, Threaded or ChemFlare™<sup>1</sup> Spigot<sup>2</sup> Bodies with Plain, Socket, Threaded or Flanged ends

**DIAPHRAGM:** Teflon® Bonded EPDM

**SEALS:** EPDM, FPM (Viton®)

**CRN**  
REGISTERED  
CONSULT CHEMLINE



# Pressure Regulating Valves



## HOW THEY WORK

The SR 50 controls downstream pressure, which must always be below the inlet pressure. It is normally open until the downstream pressure (which acts on the control diaphragm) reaches the set pressure, adjustable with the spring tensioning bolt. At this point the valve closes. It opens again as soon as downstream pressure decreases slightly below the set pressure.

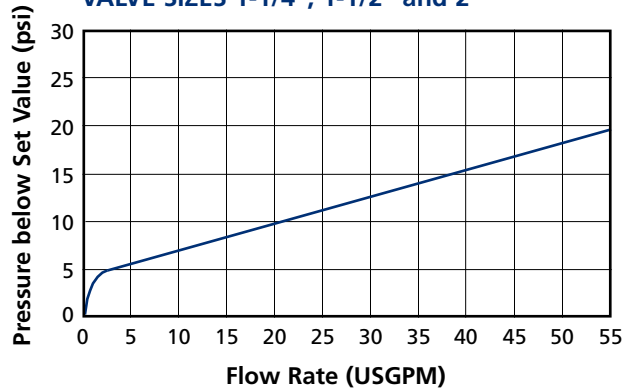
The large diaphragm provides for sensitive and precise control. The valve seat opens and closes until a balance is achieved between the spring force (set pressure) and the downstream pressure.

## WORKING PRESSURE VS. FLOW RATE

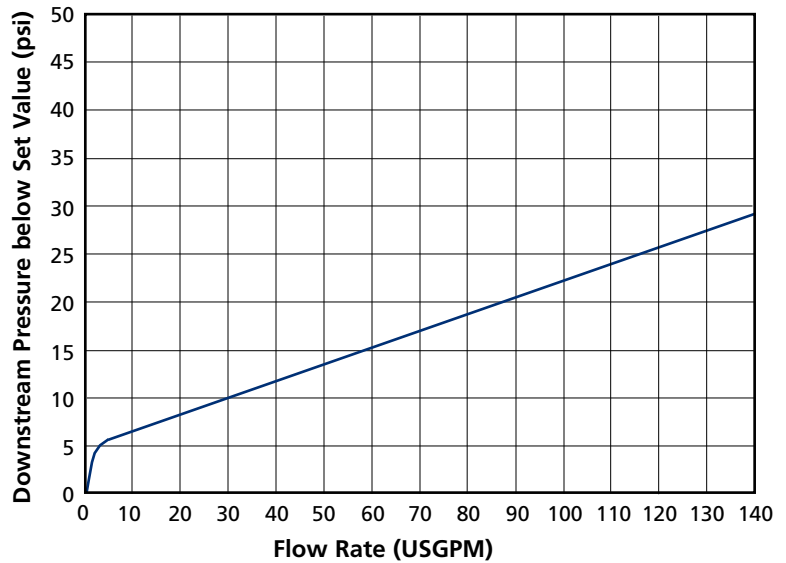
The curves show the relationship between the **downstream** pressure below set pressure and the approximate flow rate through the valve for water at 20°C (68°F). These values will vary depending on:

- The configuration of the piping and the pressure losses associated with it.
- The fluid if not water at 20°C (68°F).
- Whether the pressure is rising or falling. **Hysteresis** is approximately 3 psi.

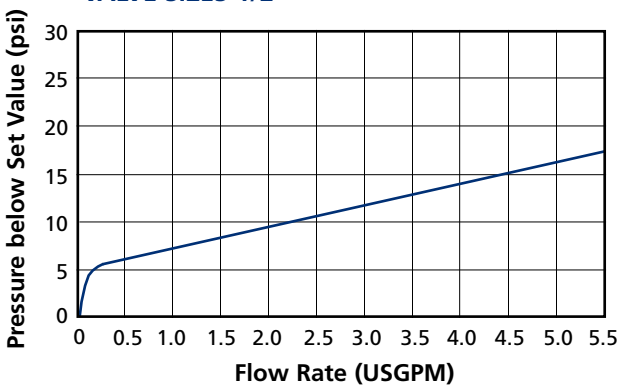
VALVE SIZES 1-1/4", 1-1/2" and 2"



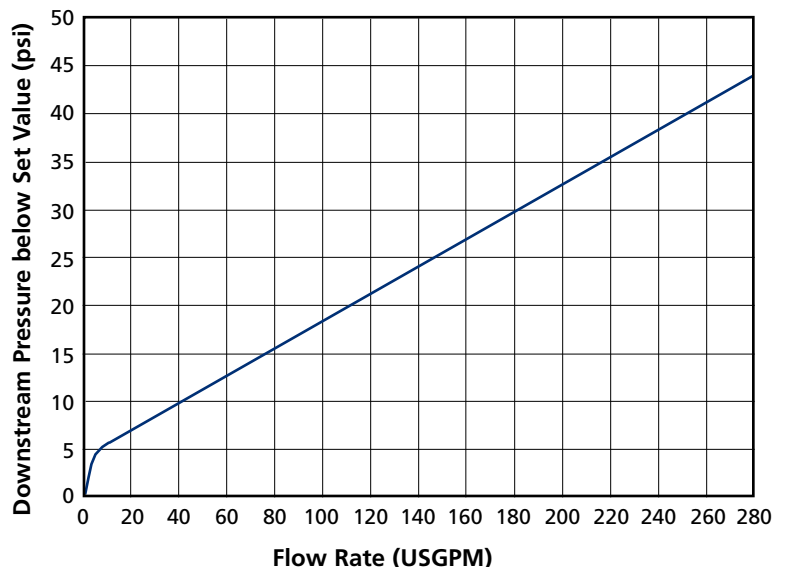
VALVE SIZE 2-1/2"



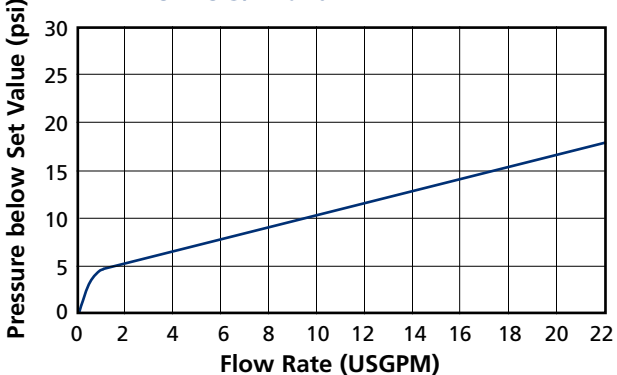
VALVE SIZES 1/2"



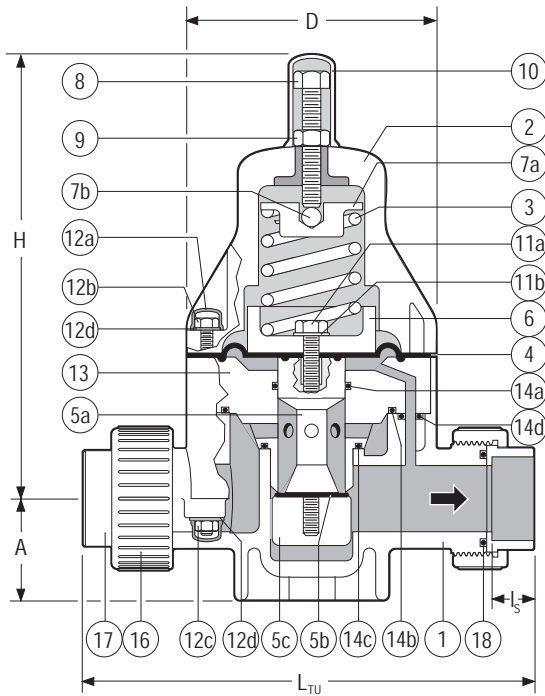
VALVE SIZE 3"



VALVE SIZES 3/4" and 1"

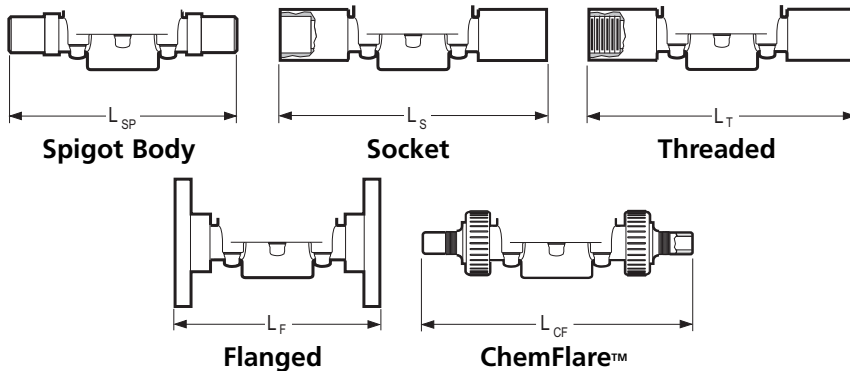


# Pressure Regulating Valves 1/2" – 2" $\bar{O}$



**True Union Body**

**OTHER ENDS**



**PARTS**

▲ Recommended Spare Parts

| No.  | Part                   | Pcs.              | Materials                |
|------|------------------------|-------------------|--------------------------|
| 1    | Body                   | 1                 | PVC, PP, PVDF            |
| 2    | Bonnet                 | 1                 | PPG                      |
| 3    | Spring                 | 1                 | Galvanized Steel         |
| 4▲   | Control Diaphragm      | 1                 | Teflon® PTFE bonded EPDM |
| 5a▲  | Piston                 | 1                 | PVC, PP, PVDF            |
| 5b▲  | Seat                   | 1                 | EPDM, FPM(Viton®)        |
| 5c▲  | Seat Retainer          | 1                 | PVC, PP, PVDF            |
| 6    | Lower Spring Retainer  | 1                 | PPG                      |
| 7a   | Upper Spring Retainer  | 1                 | Cad. Plated Steel        |
| 7b   | Ball                   | 1                 | 304 SS                   |
| 8    | Spring Tensioning Bolt | 1                 | 304 SS                   |
| 9    | Lock Nut               | 1                 | 304 SS                   |
| 10   | Spring Bolt Cap        | 1                 | PE                       |
| 11a  | Piston Bolt            | 1                 | 304 SS                   |
| 11b  | Piston Bolt Washer     | 1                 | 304 SS                   |
| 12a  | Bolt/Nut Caps          | 8/12 <sup>†</sup> | PE                       |
| 12b  | Hex Bolt               | 4/6 <sup>†</sup>  | 304 SS                   |
| 12c  | Hex Nut                | 4/6 <sup>†</sup>  | 304 SS                   |
| 12d  | Washer                 | 8/12 <sup>†</sup> | 304 SS                   |
| 13   | Piston Guide           | 1                 | PVC, PP, PVDF            |
| 14a▲ | Small Guide O-Ring     | 1                 | EPDM, FPM(Viton®)        |
| 14b▲ | Large Guide O-Ring     | 1                 | EPDM, FPM(Viton®)        |
| 14c▲ | Med. Guide O-Ring      | 1                 | EPDM, FPM(Viton®)        |
| 14d▲ | Pilot Port O-Ring      | 1                 | EPDM, FPM(Viton®)        |
| 16   | Union Nut              | 2                 | PVC, PP, PVDF            |
| 17   | End Connector          | 2                 | PVC, PP, PVDF            |
| 18▲  | Face O-Ring            | 2                 | EPDM, FPM(Viton®)        |

<sup>†</sup> 1/2" size / 3/4" to 2" sizes.

**DIMENSIONS INCHES**

**WEIGHTS LB. Cy VALUES**

| Size   | D   | H    | PVC |                |                              |                              |                |                |                |                  |     | PP and PVDF                  |                              |      | USGPM Flow at 1 psi ΔP |      |      |
|--------|-----|------|-----|----------------|------------------------------|------------------------------|----------------|----------------|----------------|------------------|-----|------------------------------|------------------------------|------|------------------------|------|------|
|        |     |      | A   | I <sub>S</sub> | L <sub>TU</sub> <sup>†</sup> | L <sub>SP</sub> <sup>*</sup> | L <sub>S</sub> | L <sub>T</sub> | L <sub>F</sub> | L <sub>CF</sub>  | A   | L <sub>SP</sub> <sup>*</sup> | L <sub>TU</sub> <sup>†</sup> | PVC  | PP                     | PVDF |      |
| 3/8"   | 3.2 | 6.9  | 1.0 | 0.6            | 6.5                          | 5.7                          | 7.4            | 7.2            | 4.5            | –                | 0.9 | 5.7                          | **                           | 1.8  | 1.5                    | 2.2  | 2.1  |
| 1/2"   | 3.2 | 6.9  | 1.0 | 0.6            | 6.8                          | 5.7                          | 8.0            | 7.8            | 6.3            | 8.3 <sup>‡</sup> | 0.9 | 5.7                          | 7.1                          | 1.9  | 1.6                    | 2.4  | 3.0  |
| 3/4"   | 4.2 | 8.0  | 1.5 | 0.7            | 8.3                          | 6.9                          | 9.3            | 8.9            | 7.4            | 9.7              | 1.4 | 6.9                          | 8.4                          | 4.1  | 3.5                    | 4.6  | 6.6  |
| 1"     | 4.2 | 8.0  | 1.5 | 0.9            | 8.5                          | 6.9                          | 9.6            | 9.3            | 7.4            | 10.2             | 1.4 | 6.9                          | 8.7                          | 4.2  | 3.5                    | 4.7  | 8.7  |
| 1-1/4" | 5.8 | 10.3 | 2.2 | 1.0            | 10.9                         | 8.8                          | 11.6           | 11.2           | 9.2            | –                | 2.1 | 8.8                          | 10.9                         | 11.0 | 9.0                    | 12.0 | 18.0 |
| 1-1/2" | 5.8 | 10.3 | 2.2 | 1.2            | 11.1                         | 8.8                          | 12.2           | 11.5           | 9.5            | –                | 2.1 | 8.8                          | 11.2                         | 11.2 | 9.2                    | 12.2 | 20.0 |
| 2"     | 5.8 | 10.3 | 2.2 | 1.5            | 11.3                         | 9.6                          | 12.9           | 12.0           | 10.0           | –                | 2.1 | 9.6                          | 13.2                         | 11.4 | 9.4                    | 12.4 | 21.4 |

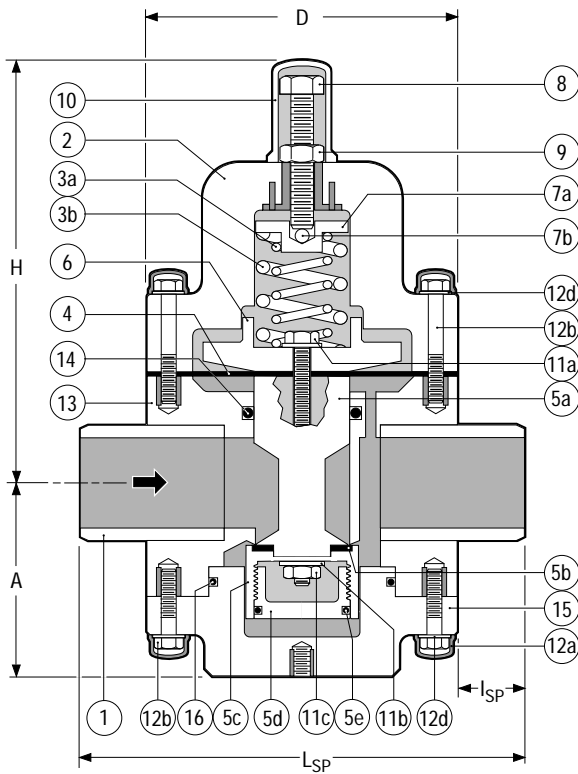
<sup>†</sup> True Union bodies come standard with socket ends. Threaded union ends are available. **\*\* Consult Chemline.**  
<sup>\*</sup> Spigot bodies are used for non union socket, threaded or flanged ends. All spigot ends have metric dimensions and the PP and PVDF spigots butt fuse directly to Chemline PP and PVDF piping. <sup>‡</sup> Tube size can be reduced to 1/4" tube, L<sub>CF</sub> = 7.74" for 1/4", 8.26" for 3/8".

**MAXIMUM PRESSURES PSI**

| Size    | PVC          |              |               |               | PP           |               |               |               |               | PVDF         |               |               |               |               |                |
|---------|--------------|--------------|---------------|---------------|--------------|---------------|---------------|---------------|---------------|--------------|---------------|---------------|---------------|---------------|----------------|
|         | 20°C<br>68°F | 30°C<br>86°F | 40°C<br>104°F | 50°C<br>122°F | 30°C<br>86°F | 40°C<br>104°F | 50°C<br>122°F | 60°C<br>140°F | 70°C<br>158°F | 30°C<br>86°F | 50°C<br>122°F | 70°C<br>158°F | 80°C<br>176°F | 90°C<br>194°F | 100°C<br>212°F |
| 1/2"–2" | 150          | 105          | 60            | 15            | 150          | 90            | 60            | 37.5          | 15            | 150          | 100           | 60            | 45            | 30            | 15             |

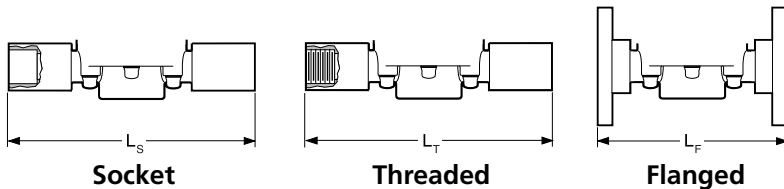
Temperature Ranges: PVC 0 to 50°C (–32 to 122°F), PP –20 to 70°C (–4 to 158°F), PVDF –40 to 100°C (–40 to 212°F).

# Pressure Regulating Valves 2-1/2", 3"



**Spigot Body**

**NON UNION ENDS**



**PARTS**

▲ Recommended Spare Parts

| No.   | Part                  | Pcs.            | Materials                |
|-------|-----------------------|-----------------|--------------------------|
| 1     | Body                  | 1               | PVC, PP, PVDF            |
| 2     | Bonnet                | 1               | PPG                      |
| 3a/3b | Spring Set            | 2               | Galvanized Steel         |
| 4▲    | Control Diaphragm     | 1               | Teflon® PTFE bonded EPDM |
| 5a▲   | Piston                | 1               | PVC, PP, PVDF            |
| 5b▲   | Seat                  | 1               | EPDM, FPM(Viton®)        |
| 5c▲   | Seat Retainer         | 1               | PVC, PP, PVDF            |
| 5d▲   | Retainer Plug         | 1               | PVC, PP, PVDF            |
| 5e▲   | Plug O-Ring           | 1               | EPDM, FPM(Viton®)        |
| 6     | Lower Spring Retainer | 1               | PPG                      |
| 7a    | Upper Spring Retainer | 1               | Cad. Plated Steel        |
| 7b    | Ball                  | 1               | 304 SS                   |
| 8     | Tensioning Bolt       | 1               | 304 SS                   |
| 9     | Lock Nut              | 1               | 304 SS                   |
| 10    | Spring Bolt Cap       | 1               | PE                       |
| 11a   | Piston Bolt           | 1               | 304 SS                   |
| 11b   | Piston Bolt Washer    | 1               | 304 SS                   |
| 11c   | Piston Nut            | 1               | 304 SS                   |
| 12a   | Bolt/Nut Cap          | 20              | PE                       |
| 12b   | Bolt/Stud Set         | 12 <sup>1</sup> | 304 SS                   |
| 12c   | Hex Nut               | 16              | 304 SS                   |
| 12d   | Washer                | 20              | 304 SS                   |
| 13    | Piston Guide          | 1               | PVC, PP, PVDF            |
| 14▲   | Guide O-Ring          | 1               | EPDM, FPM(Viton®)        |
| 15    | Base                  | 1               | PVC, PP, PVDF            |
| 16    | Base O-Ring           | 1               | EPDM, FPM(Viton®)        |

<sup>1</sup>2 large upper bolts, 2 shorter lower bolts, 8 studs.

**DIMENSIONS INCHES**

**WEIGHTS LB.**

| Size   | A   | D   | H    | PVC  |      |      |     | PP and PVDF |     | PVC  | PP   | PVDF |
|--------|-----|-----|------|------|------|------|-----|-------------|-----|------|------|------|
|        |     |     |      | Ls   | Lt   | Lf   | Is  | LSP†        | ISP |      |      |      |
| 2-1/2" | 4.8 | 7.7 | 10.4 | 14.5 | 14.0 | 10.9 | 1.7 | 11.2        | 1.7 | 27.5 | 26.2 | 31.0 |
| 3"     | 5.6 | 9.8 | 13.4 | 16.0 | 15.5 | 12.2 | 2.2 | 14.2        | 2.2 | 33.0 | 29.7 | 37.8 |

† Plain spigot ends in PP and PVDF may be butt fused directly to Chemline PP and PVDF piping systems.

**ORDERING EXAMPLE**

|  |  |          |            |          |          |
|--|--|----------|------------|----------|----------|
| <b>Chemline Pressure Regulating Valves</b> | <b>SR50</b>  | <b>A</b> | <b>005</b> | <b>V</b> | <b>U</b> |
| Body Material                              | A – PVC    B – PP    K – PVDF  |          |            |          |          |
| Size                                       | 003 – 3/8"    005 – 1/2"    007 – 3/4"<br>010 – 1"    012 – 1-1/4"    015 – 1-1/2"<br>020 – 2"    025 – 2-1/2"    030 – 3" |          |            |          |          |
| Elastomers                                 | E – EPDM    V – FPM (Viton®)   |          |            |          |          |
| Ends                                       | S – Socket    T – Threaded    F – Flanged    U – Union Socket<br>CFx – ChemFlare™    Blank – Spigot (Butt)                 |          |            |          |          |

Example: Chemline SR 50 Series, PVC, 1/2" diameter, FPM (Viton®) seals, union socket ends. x = 4 for 1/4", 6 for 3/8", 8 for 1/2", 12 for 1" ID tube connections.

**OPTIONS**

**Optional Pressure Gauge**  
• For inlet and/or outlet

**ChemFlare™ Ends**

• For connection to Teflon® tube. Leak-free connections for difficult services such as sodium hypochlorite

