# 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<sup>®</sup> 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



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®)



<sup>2</sup> PP and PVDF spigot ends have DIN dimensions and will butt fuse

directly to Chemline PP and PVDF piping systems.

# **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.











8 10 12

Flow Rate (USGPM)

6

14 16 18 20 22

0

0 2 4

## Pressure Regulating Valves 1/2" – 2" ♂



**True Union Body** 





No.PartPcs.Materials1Body1PVC, PP, PVD2Bonnet1PPG3Spring1Galvanized Sta4Control Diaphragm1Teflon® PTFE bonded EPDD5aPiston1PVC, PP, PVD5bSeat1PVC, PP, PVD5bSeat Retainer1PVC, PP, PVD6Lower Spring Retainer1PPG7aUpper Spring Retainer1Cad. Plated Steel7bBall1304 SS8Spring Tensioning Bolt1304 SS9Lock Nut1304 SS10Spring Bolt Cap1PE11aPiston Bolt Washer1304 SS12bHex Bolt4/61304 SS12cHex Nut4/61304 SS12dWasher8/121PE12aPiston Guide1PVC, PP, PVD14aSmall Guide O-Ring1EPDM, FPM(Vito	arts
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11a     Piston Bolt     1     304 SS       11b     Piston Bolt Washer     1     304 SS       12a     Bolt/Nut Caps     8/12'     PE       12b     Hex Bolt     4/6'     304 SS       12c     Hex Nut     4/6'     304 SS       12d     Washer     8/12'     304 SS       12d     Washer     8/12'     304 SS       12d     Small Guide O-Ring     1     PVC, PP, PVD	
11b     Piston Bolt Washer     1     304 SS       12a     Bolt/Nut Caps     8/121     PE       12b     Hex Bolt     4/61     304 SS       12c     Hex Nut     4/61     304 SS       12d     Washer     8/121     304 SS       12d     Washer     8/121     304 SS       12a     Sind Guide O-Ring     1     PVC, PP, PVD	
12a     Bolt/Nut Caps     8/121     PE       12b     Hex Bolt     4/61     304 SS       12c     Hex Nut     4/61     304 SS       12d     Washer     8/121     304 SS       13     Piston Guide     1     PVC, PP, PVD       14a     Small Guide O-Ring     1     EPDM, FPM(Vitor	
12b     Hex Bolt     4/61     304 SS       12c     Hex Nut     4/61     304 SS       12d     Washer     8/121     304 SS       13     Piston Guide     1     PVC, PP, PVD       14a     Small Guide O-Ring     1     EPDM, FPM(Vitor	
12c     Hex Nut     4/61     304 SS       12d     Washer     8/121     304 SS       13     Piston Guide     1     PVC, PP, PVD       14a     Small Guide O-Ring     1     EPDM,FPM(Vitor	
12d     Washer     8/121     304 SS       13     Piston Guide     1     PVC, PP, PVD       14a_     Small Guide O-Ring     1     EPDM, FPM(Vitor	
13 Piston Guide 1 PVC, PP, PVD   14a▲ Small Guide O-Ring 1 EPDM, FPM(Vito)	
14a▲ Small Guide O-Ring 1 EPDM, FPM(Vito	F
	า®)
14b Large Guide O-Ring 1 EPDM, FPM(Vito	า®)
14c▲ Med. Guide O-Ring 1 EPDM, FPM(Vito	า®)
14d▲ Pilot Port O-Ring 1 EPDM, FPM(Vito	ר®)
16 Union Nut 2 PVC, PP, PVD	F
17 End Connector 2 PVC, PP, PVD	F
18 Face O-Ring 2 EPDM, FPM(Vito	า®)

1/2" size / 3/4" to 2" sizes.

DIMENS	SIONS	INC	HES											WEIGH	TS	LB.	C <sub>V</sub> VALUES
				PVC							PP and PVDF						USGPM Flow
Size	D	н	Α	ls	<b>L</b> <sub>τυ</sub> †	L <sub>SP</sub> *	Ls	LT	L <sub>F</sub>	L <sub>CF</sub>	Α	$L_{SP}^{*}$	<b>L</b> <sub>τυ</sub> †	PVC	PP	PVDF	at 1 psi ∆P
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
True Union bodies can standard with secket ands. Threaded union ands are available										ncult Ch	omlino						

<sup>†</sup> True Union bodies come standard with socket ends. Threaded union ends are available. \* Consult Chemline.
\* 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

		P\	/C		РР					PVDF					
Cine	20°C	30°C	40°C	50°C	30°C	40°C	50°C	60°C	70°C	30°C	50°C	70°C	80°C	90°C	100°C
Size	00'F	00°F	104°F	IZZF	00°F	104°F	IZZF	140°F	120.1	00°F	IZZ	120.1	170°F	194°F	ZIZF
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 10 to 70°C (50 to 158°F), PVDF -30 to 100°C (-22 to 212°F).

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



**Spigot Body** 

#### NON UNION ENDS





Flanged

	Recommended Spare Par									
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 <sup>®</sup> PTFE bonded EPDM							
5a <b></b> ⊾	Piston	1	PVC, PP, PVDF							
5b <b></b> ▲	Seat	1	EPDM, FPM(Viton®)							
5c <b>▲</b>	Seat Retainer	1	PVC, PP, PVDF							
5d <b>▲</b>	Retainer Plug	1	PVC, PP, PVDF							
5e <b>▲</b>	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®)							
2 large upper bolts, 2 shorter lower bolts, 8 studs.										

WEIGHTS I R

#### DIMENSIONS INCHES

				PVC				PP and	PVDF				
Size	Α	D	н	Ls	LT	LF	ls	L <sub>SP</sub> †	I <sub>SP</sub>	PVC	PP	PVDF	
2-1/2"	4.8	7.7	10.4	14.5	14.0	11.7	1.7	11.2	1.7	27.5	26.2	31.0	
3"	5.6	9.8	13.4	16.0	15.5	14.7	2.2	14.2	2.2	33.0	29.7	37.8	

<sup>+</sup> Plain spigot ends in PP and PVDF may be butt fused directly to Chemline PP and PVDF piping systems.

#### **ORDERING EXAMPLE**

Chemline Press Regulating Val	sure S ves	5R50		A	005	V	U
Body Material	A – PVC	<b>B</b> – PP	К-	- PVDF			
Size	<b>003</b> – 3/8" <b>010</b> – 1" <b>020</b> – 2"	005 – 012 – 025 –	1/2" 1-1/4" 2-1/2"	007 – 015 – 030 –	3/4" 1-1/2" 3"		
Elastomers	E – EPDM	V – FP	M (Vit	on®)			
Ends	<b>S</b> – Socket <b>CFx</b> – Chen	T – Th nFlare™	readeo	l F – Fla Blank	nged <b>U</b> – Spigot	– Union S (Butt)	ocket

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.



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#### Your Pipeline To Quality Valves, Piping, Flow Meters and Controls

#### **OPTIONS**

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

#### **ChemFlare™ Ends**



