

SB17 Mini Back Pressure/Relief Valves



SERIES: SB17

SIZES: 1/4" to 3/8"

ENDS: Socket, Threaded or ChemFlare™¹

DIAPHRAGM: PTFE Bonded EPDM

O-RINGS: EPDM, FPM (Viton®)



The Chemline **SB Series** Back Pressure/Relief Valve has two functions. As a back pressure valve, installed in-line downstream of a pump, the back pressure below the metering pump is maintained. When installed in the branch of a tee it is a pressure relief valve. The valve stays closed until inlet pressure reaches the set pressure which is adjusted by turning the spring tensioning bolt. The "Mini" SB17 size relief valves offer high performance in a compact package.

Features

True Union Ends

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

Flow Rates

- Up to 500 l/hr

Recommended Viscosity

- Recommended for services with a maximum viscosity of 400cP

CRN Registration numbers by province

- Ontario: OC10134.5
- Newfoundland: OC10134.50
- Alberta: OC10134.52
- Saskatchewan/Manitoba/Quebec: OC10134.56
- New Brunswick: OC10134.57
- Nova Scotia: OC10134.58
- P.E.I.: OC10134.59
- British Columbia: not required

technical

Set Pressure Range

- 7.5 to 150 psi

Flow Rates

- Up to 500 l/hr (2.2 USGPM)

Maximum Viscosity:

- 400cP is maximum recommended service viscosity



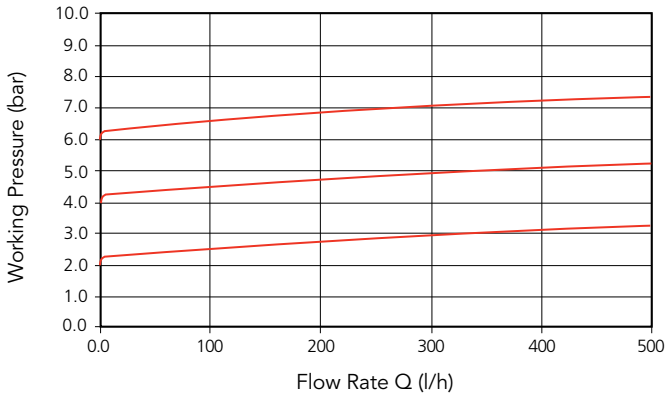
¹ For details on ChemFlare™ End Connectors, consult Chemline

SB17 Mini Back Pressure/Relief Valves

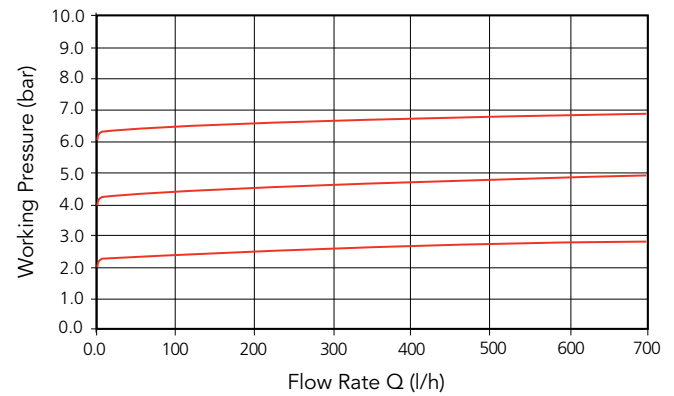


FLOW CURVES

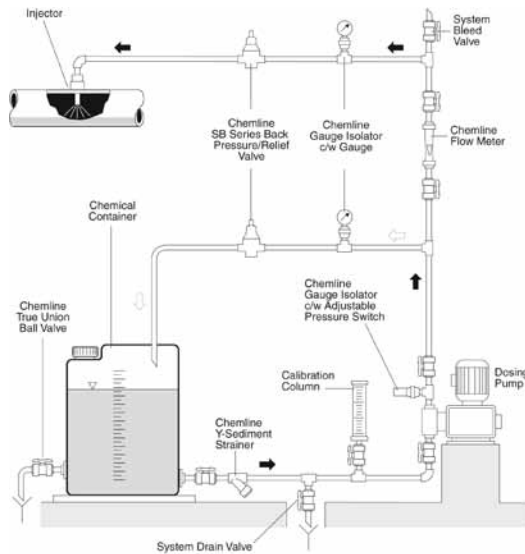
1/4" Valves



3/8" Valves



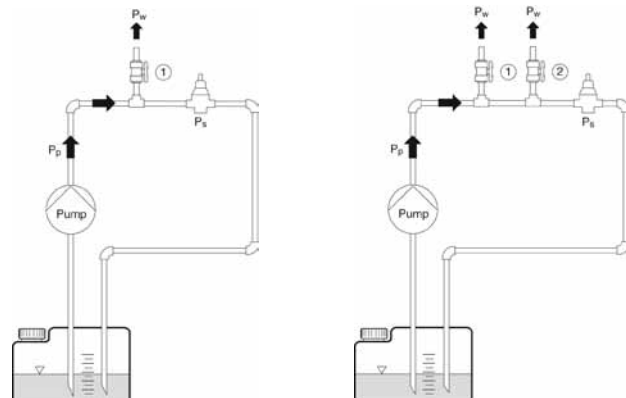
typical dosing system schematic



application of pressure relief valves

Constant System Pressure

Consumer 1 and/or 2 Open, Valve Closes

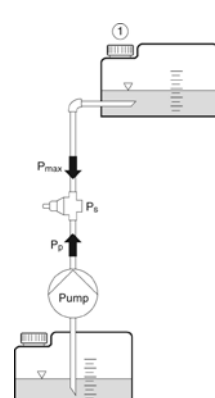


$$\begin{aligned}
 P_p &\geq P_w \\
 P_p &\geq P_s && \text{valve opens} \\
 P_p &\leq P_s && \Rightarrow \text{valve closed}
 \end{aligned}$$

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 P_p &\geq P_s && \text{valve opens} \\
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 \end{aligned}$$

Non-Return Valve

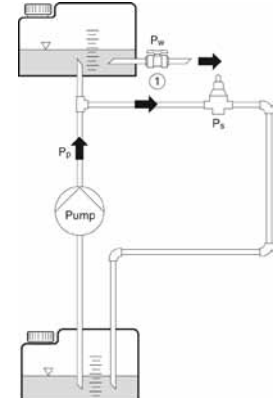
Container 1 is located above the pump



$$\begin{aligned}
 P_s &\geq P_{max} \\
 P_p &\geq P_s && \text{valve opens} \\
 P_p &\leq P_s && \Rightarrow \text{valve closed}
 \end{aligned}$$

Overflow Valve

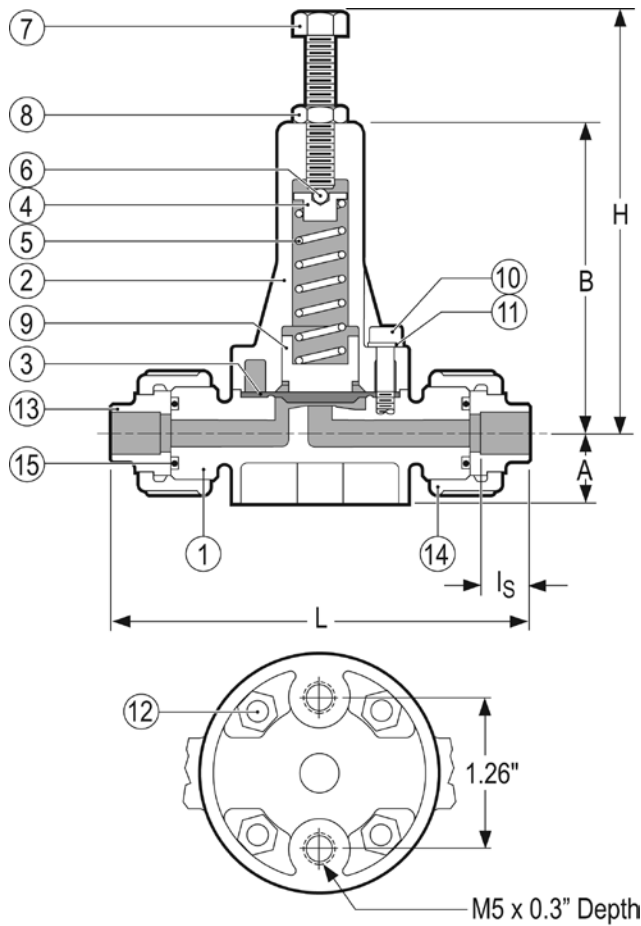
Pressure of container or application system should not exceed the maximum pressure value



$$\begin{aligned}
 P_s &\leq P_w \\
 P_p &\geq P_s && \text{valve opens} \\
 P_p &\leq P_s && \Rightarrow \text{valve closed}
 \end{aligned}$$

P_w = Working Pressure
 P_p = Pump Pressure
 P_s = Set Pressure

SB17 Mini Back Pressure/Relief Valves



PARTS

▲ Recommended Spare Parts

No.	Part	Pcs.	Materials
1	Body	1	PVC, PP, PVDF
2	Bonnet	1	PPG
3▲	Diaphragm	1	PTFE bonded EPDM
4	Spring Plate	1	Cadmium Plated Steel
5	Spring	2	Galvanized Steel
6	Ball	1	304 SS
7	Spring Tensioning Bolt	1	304 SS
8	Lock Nut	1	304 SS
9	Pressure Plate	1	Cadmium Plated Steel
10	Socket Head Bolt	4	304 SS
11	Washer	4	304 SS
12	Nut	4	304 SS
13	End Connector	2	PVC, PP, PVDF
14	Union Nut	2	PVC, PP, PVDF
15▲	Face O-Ring	2	EPDM, FPM(Viton®)

DIMENSIONS INCHES

WEIGHTS LBS.

Size	A	B	H	Is	L ¹	ChemFlare™		PVC	PP	PVDF
						L _{CF}	Tube ID			
1/4"	0.80	3.50	4.72	0.67	4.70	5.84	1/4"	0.5	0.4	0.6
3/8"	0.80	3.50	4.72	0.67	4.70	6.00	3/8"	0.5	0.4	0.6

¹For socket or threaded

MAXIMUM PRESSURES PSI

Size	PVC				PP						PVDF					
	20°C 68°F	30°C 86°F	40°C 104°F	50°C 122°F	20°C 68°F	30°C 86°F	40°C 104°F	50°C 122°F	60°C 140°F	70°C 158°F	30°C 86°F	50°C 122°F	70°C 158°F	80°C 176°F	90°C 194°F	100°C 212°F
1/4"	150	100	60	15	150	120	90	60	37.5	15	150	100	60	40	25	15
3/8"	150	100	60	15	150	120	90	60	37.5	15	150	100	60	40	25	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).

ORDERING EXAMPLE

Chemline Mini Back Pressure/Relief Valves	SB17	A	003	E	UT
Body Material	A – PVC B – PP K – PVDF				
Size	002 – 1/4" 003 – 3/8"				
O-Rings	E – EPDM V – FPM (Viton®)				
Ends	T – Threaded S – Socket B – Butt	CF4 – ChemFlare™ 1/4" tube	CF6 – ChemFlare™ 3/8" tube		

Example: Chemline SB17 Series, PVC, 3/8" diameter, PTFE bonded EPDM diaphragm, EPDM O-rings, True Union threaded ends.