

**Note:**

- During sweating of inlet lines do not overheat casting. Overheating may cause damage to internal mechanisms and void the manufacturer's warranty as well as increase the risk of scalding.
- Do not use plumber's putty, chemical cleaners or any product with ammonia on any of the brass components. This will cause the finish to tarnish and void the warranty. A non-corrosive 100% silicone is recommended.

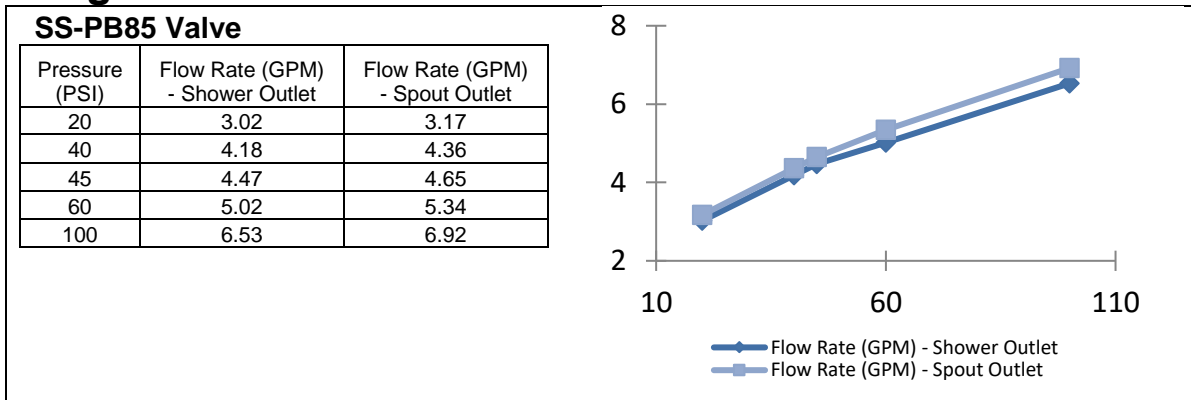
**Features:**

- Diaphragm cartridge maintains water temperature within  $\pm 2^\circ\text{F}$
- Compensates for water pressure fluctuations preventing scalding

**Specifications:**

Operating pressure is 20 PSI to 145 PSI  
 Temperature range is 50°F to 180°F  
 All inlets and outlets are 1/2" NPT

### Diagram 1



### Diagram 2

Specification from Finished Wall to Tip of Broach Stem			
Handle Trim	Measurement (in.)	Handle Trim	Measurement (in.)
A	4	CC40/ 41/ 42	4 1/4
AA	4 1/4	CC51	3 3/4
AQ	4	CC61	3 1/2
AX	4	CL14/ CL15	4 5/8
AZ1	3 1/2	CL16	3 1/8
B4/ B5	4	CRY4	4 1/8
B9	4 1/8	CRY5	3 7/8
BB/ CC	4 1/4	D	4
BG4/BG5	3 3/4	D5/ D6	3 1/2
BL1	3 3/8	DD	4 1/4
BL2/ BL3	3 1/2	DD2/ DD3	3 7/8
BK	3 3/4	E/ F/G	4
BV01/ BV02	4	E1♦/ E2♦	3
BV05	4	ED1/ ED4	3 1/4
BV09	4	ED2/ ED3	3 3/8
BV13	4 1/2	EV4	3 7/8
BV81	3 1/4	H	4 1/4
CC11	3 1/2	H4	4 1/4
CC20/ 21/ 22	4 1/4	HH/ I	4
CC30/ CC31	4	IN14/IN16	4
		J5/ J6	3 1/2
		KK	4 1/4
		L4/ L5/ L6/L8	3 3/4
		MZ4/MZ5	3 7/8
		N2/ N3/ N4	4 1/4
		N5	3 1/2
		R1/ R2	3 1/2
		R3	4 1/4
		RG4/ RG5	2 5/8
		S	3 3/4
		S1/S1A/S2/S3	4 1/4
		SA1	3 3/4
		SA2/ SW	4
		SP4/ SP5	3 1/8
		T/ T1/ T4	3 1/2
		T6/ T7/ T8/ T9	4
		TIA/ TIB	3 3/4
		TL5	2 3/8
		TR14/ TR15	4
		TR24/ TR25	3 1/8
		U	3 1/2
		U1	4 1/2
		U3 to U7	4 1/4
		U8	3 3/4
		V	4 1/4
		V1	3 1/2
		V2/W	4
		WA/ WB/WC/WD	3 1/2
		WW	4 1/2
		X	3 3/4
		XJ/ XM/ XN	3
		XO/ XQ	3
		XX	4
		Y	3 3/4
		Y2	4 1/4
		YY	4
		Z	3 3/4
		ZZ	3 1/8
		ZEN	

Note: When fitting handle it may be necessary to shorten broach stem and/or threaded nipple to eliminate gap between handle and escutcheon.

### Installation Steps:

1. Flush the lines of all dirt and debris. Failure to completely flush the lines will cause valve failure and will void the manufacturer's warranty.
2. Position valve in wall with the shower outlet (outlet above diverter) up, pointing to "12 O'clock", and the tub outlet (outlet below main valve body) down, pointing to "6 O'clock". Refer to diagram 2 for proper installation depth.  
**Note:** Protective cover (mud guard) may be removed to ensure proper installation depth but must be replaced on valve for plastering and/or tiling. Diameter of wall cut-out hole around valve is 6 1/4". Minimum diameter of hole around valve (after installed in wall) should be kept to 2 1/4" to maintain access to cartridge.
3. Test pipe joints and inspect for any possible leaks, pressuring both the hot and cold inlets, before attaching the outer trim components.
4. For back to back installations or where the hot and cold water supplies are reversed, turn off the hot/cold water supplies and then simply take out the cartridge, rotate it 180° and re-insert.
5. Install decorative trim. Fit faceplate onto valve.  
**Note:** for tub/shower valves with diverter, screw diverter knob onto diverter stem.
6. Insert handle trim onto stem broach so that escutcheon rests against faceplate and slight clearance is left for handle to rotate freely.  
**Note:** When fitting handle it may be necessary to shorten broach stem and/or threaded nipple to eliminate gap between handle and escutcheon.

### Shower head with hand shower installation

1. Choose your primary function device (i.e. where you want the water to first come out of when turning on the valve).
2. Pipe the bottom outlet (outlet below main valve body) to this device
3. Pipe the secondary function device to the top outlet (outlet above diverter)

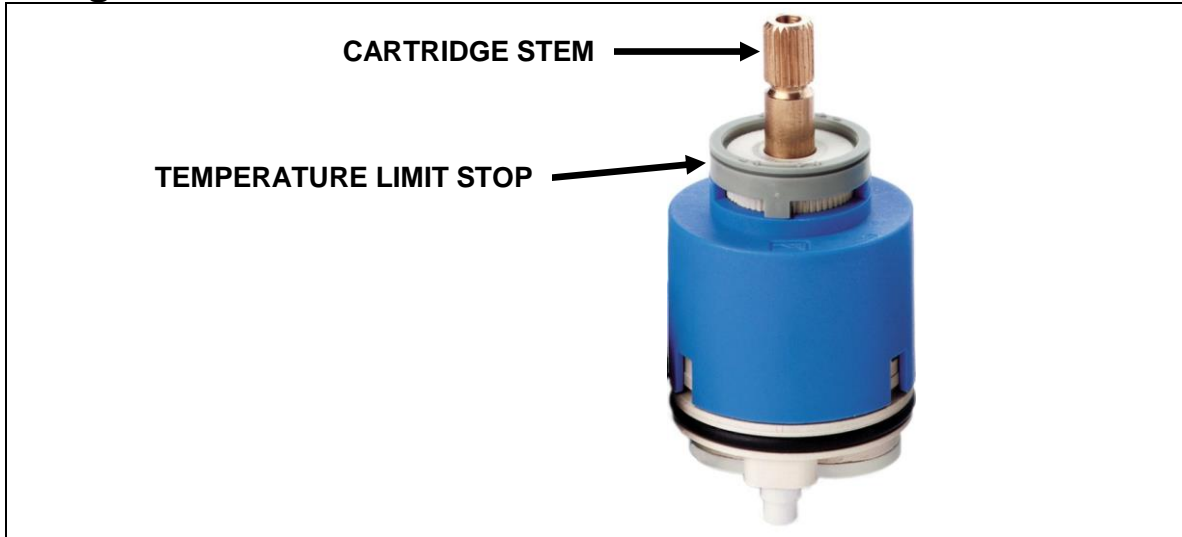
**Note:** The secondary outlet must have a maximum outlet volume of no more than 2.5 GPM.

### Adjusting the Temperature Range:

The temperature limit stop is found within the cartridge and is set at the factory in a neutral position. It can be adjusted to limit the maximum temperature of water delivered by the valve.

1. Remove all decorative trim.
2. Remove stem broach and nipple from cartridge stem to expose cartridge face.
3. Lift off temperature limit stop.
4. Rotate cartridge stem to desired maximum temperature. Place temperature limit stop back on cartridge.
5. Rotate the cartridge stem fully clockwise to close valve.
6. Reinstall stem broach and nipple onto cartridge stem.
7. Reinstall trim.

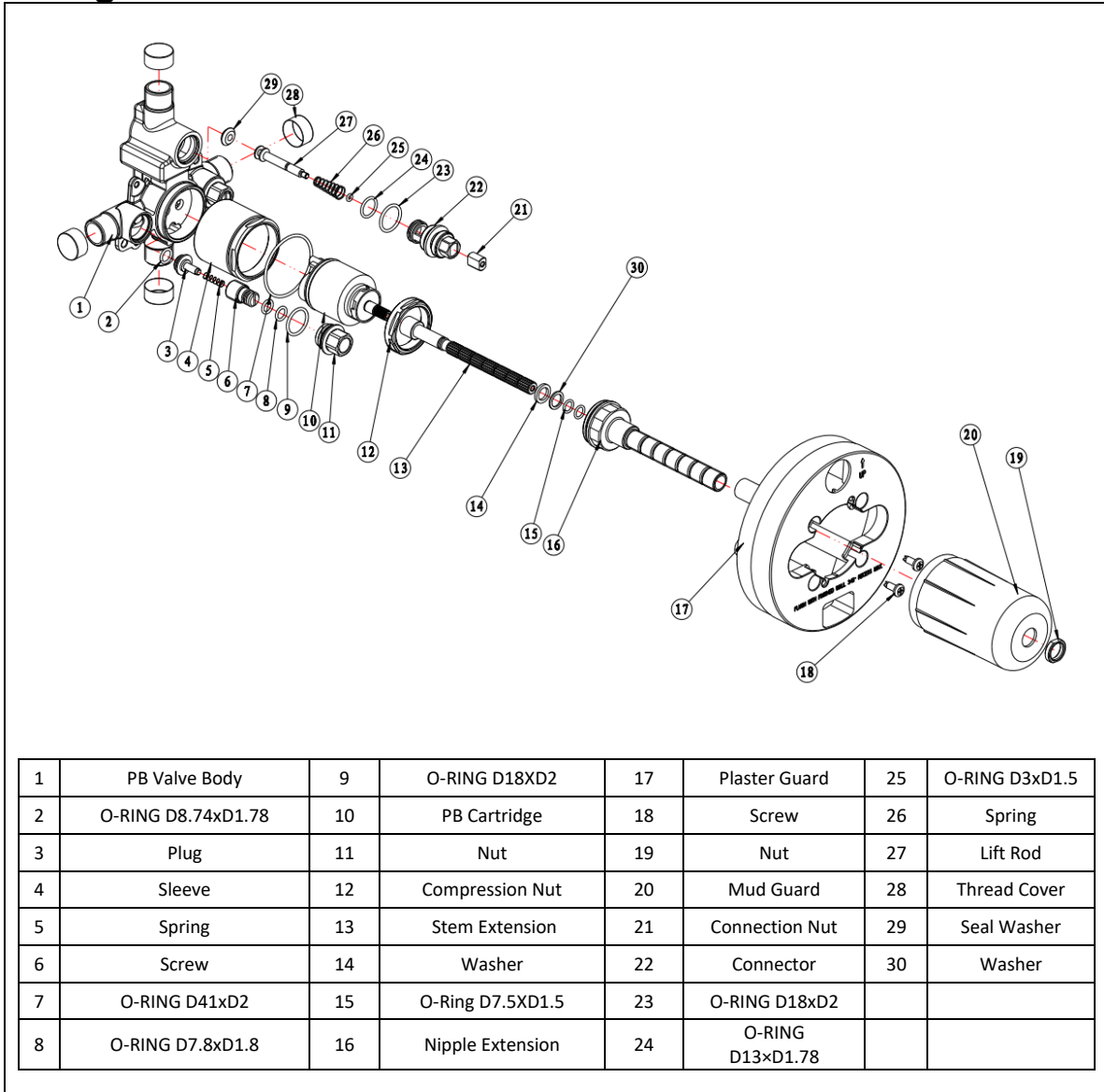
### Diagram 3



### Troubleshooting

Malfunction	Cause	Remedy
Shower control opening through hot	Hot and cold water supplies have been connected in reverse	Rotate cartridge
Tub filler or shower head drips after shutting off the valve	Water remains in the shower piping column (this is normal)  Incorrect setting of the mechanical stop against the stop post causing a partially opened cartridge	Allow approximately 3-5 minutes to drain column. <b>Do not stop dripping by applying excessive force when closing the valve.</b>  Reset the mechanical stop as described in "Adjusting the temperature range"
Shower insufficiently hot	Incorrect setting of the temperature limit stop	Reset the temperature limit stop as described in "Adjusting the temperature range"
No flow of hot or cold water	Either the hot or cold side is not fully pressurized  Debris in the inlet filter and/or cartridge and/or check valves	Be sure check valves are both fully open and system is fully pressurized. Remove filter inserts and filters, cartridge, and check valves, and remove any debris.
Valve body too deep into wall	The measured rough in or finished wall surface is incorrect	Install the proper extension kit: <u>SS-EXT20</u> for shower valve <u>SS-EXT81</u> for tub/shower valve with diverter (need to specify finish)

### Diagram 4



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For technical support, please call 718-257-2800