



SYMMONS® Safetymix®



Single Handle Pressure-Balancing Mixing Valve for Shower or Tub/Shower Application

INSTALLATION, OPERATION & SERVICE INSTRUCTIONS

⚠ WARNING: This product can expose you to chemicals including lead, which is known to the state of California to cause cancer, birth defects, or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

Symmons valves, shower heads and hand sprays comply to all known standards, codes and specifications: ASME A112.18.1/CSA B125.1 & ASSE 1016. Symmons shower heads and hand sprays are equipped with a 2.5 gpm (9.5 L/min) water and energy saving flow restrictor.

This instruction sheet shows rough-in dimensions for Models 4-500(X), 1-100(X) and 1-215-X. See separate drawings enclosed with numbered models for applicable rough-in dimensions.

Tools required for installation of this product are: Phillips screw driver, tubing cutter, teflon tape, soldering equipment, adjustable wrench and channel-lock pliers.

Installation of Shower System

Model 1-100(X) (Figure 2)

Install HOT on left and COLD on right according to valve markings.

1. Install piping and fittings with valve body as shown in Figure 2 or 3. **IMPORTANT:** Valve rough-in is 23/8" (60mm) min. — 3" (76mm) max. from CENTERLINE OF SUPPLIES TO FACE OF FINISH WALL. Install so that surface indicated on plaster shield on valve is flush with finish wall as shown in Figure 1.

FIGURE 1

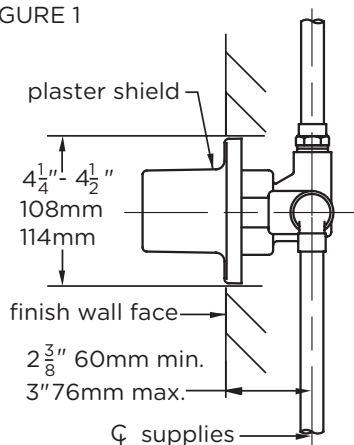
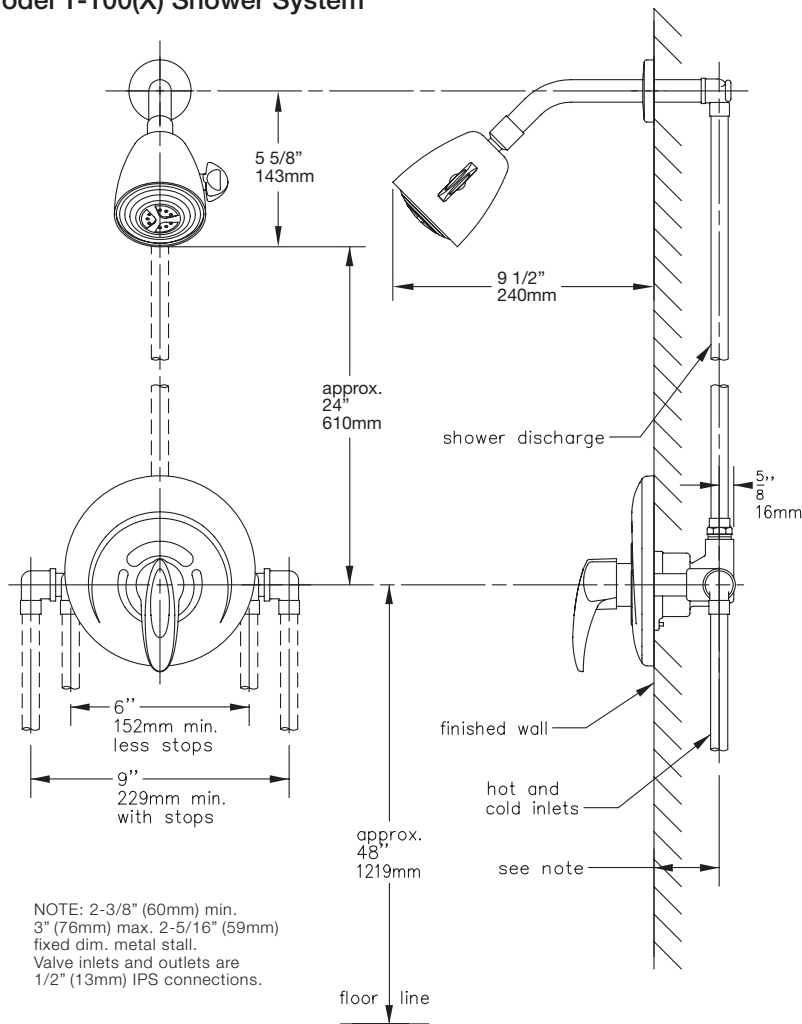


FIGURE 2
Model 1-100(X) Shower System



NOTE: 2-3/8" (60mm) min.
3" (76mm) max. 2-5/16" (59mm)
fixed dim. metal stall.
Valve inlets and outlets are
1/2" (13mm) IPS connections.

All floor to center dimensions optional. Concealed piping and fittings not furnished by manufacturer.

2. When finishing tile wall REMOVE (pull off; don't turn) ENTIRE PROTECTIVE PLASTER SHIELD and FILL AREA AROUND VALVE BODY WITH GROUT OR PLASTER. DO NOT PLASTER OVER SC-2 CAP OR SERVICE STOPS IF SO EQUIPPED.
3. Turn on hot and cold supplies, valve will not operate unless both hot and cold water are turned on.
4. This valve is equipped with a limit stop screw to be used to limit valve handle from being turned to excessively hot water discharge temperatures. To adjust, remove dome cover, place handle (VT-112) on stem, open valve to maximum desired temperature and turn in limit stop screw until it seats. **WARNING:** Failure to adjust the limit stop screw properly may result in serious scalding.

5. Check packing nut (SC-7) for positive frictional resistance to handle turn throughout adjustment cycle and at shut-off position, tighten if necessary. Check valve cap, packing nut and all valve, pipe and fitting connections for leaks. Reattach dome cover back onto packing nut.
6. After finish wall is completed, remove protective backing from escutcheon gasket (T-149) exposing adhesive and adhere to inside top diameter of escutcheon (SC-144). This step should not preclude sealing valve body in wall as directed in installation instruction step #2.
7. Push escutcheon and gasket against wall and secure to valve with escutcheon screws (WO-20A). Mount temperature control handle (VT-112) on valve spindle spline, secure with screw (SC-15A). Install shower arm, flange and shower head. See Figures 2 and 3. Install tub spout on diverter twin-ell (1-215-X only) using the provided 3/4" male NPT x 1/2" female NPT bushing adapter. Use putty or sealant on back edge of spout to make proper seal with finished wall.
8. ALLOW VALVE TO RUN IN WARM POSITION FOR A FEW MINUTES TO TOTALLY FLUSH SYSTEM. IF SYSTEM IS QUITE DIRTY, REMOVE VALVE SPINDLE OR STOP SPINDLES (IF SO EQUIPPED) TO INSURE PROPER FLUSHING. See service instructions.
9. Do not install positive shut-off

[illegible]

All floor to center dimensions optional. Concealed piping and fittings not furnished by manufacturer.

The valve supplied with this system does NOT have a built-in choke and must be supplied with either a separate diverter valve or a twin-ell tub spout.

1. Follow instructions from previous page. Refer to Figure 3.

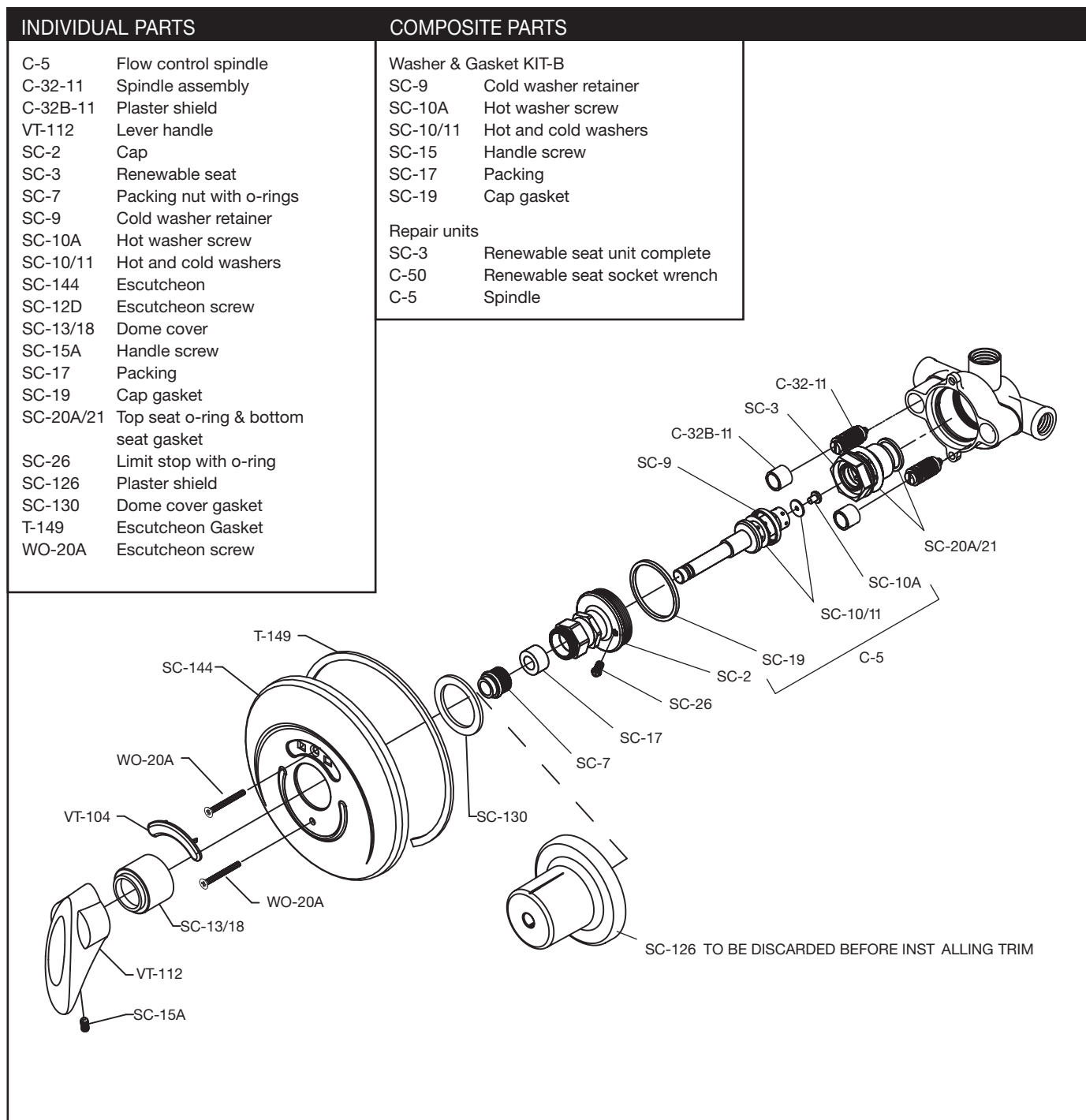
Technical drawings of two mechanical parts with dimensions in inches and millimeters.

Left Part:

- Overall width: $3\frac{1}{16}$ " (78mm)
- Overall height: $2\frac{5}{8}$ " (67mm)
- Three holes: $\varnothing 3\frac{3}{4}$ " (10mm)
- Distance from top edge to centerline: $1\frac{7}{16}$ " (37mm)
- Distance from bottom edge to centerline: $1\frac{7}{16}$ " (37mm)

Right Part:

- Overall width: $3\frac{1}{16}$ " (78mm)
- Overall height: $2\frac{7}{16}$ " (62mm)
- Four holes: $\varnothing 3\frac{3}{4}$ " (10mm) and $\varnothing 2\frac{7}{16}$ " (19mm)
- Distance from top edge to centerline: $1\frac{7}{16}$ " (37mm)
- Distance from bottom edge to centerline: $1\frac{7}{16}$ " (37mm)
- Distance from centerline to side holes: $1\frac{7}{16}$ " (37mm)



FIBERGLASS WALL INSTALLATION

When installing Safety Mix in fiberglass or panel walls and it is desired to sandwich wall between valve body and escutcheon, cut hole in wall as shown in Figure 4 and mount valve from rear. Note: It is always recommended to secure valve piping to rough construction and not depend on fiberglass wall for valve mounting security. On panel walls over 1" thick, install in conventional manner. (See figure 1).

OPERATION OF VALVE

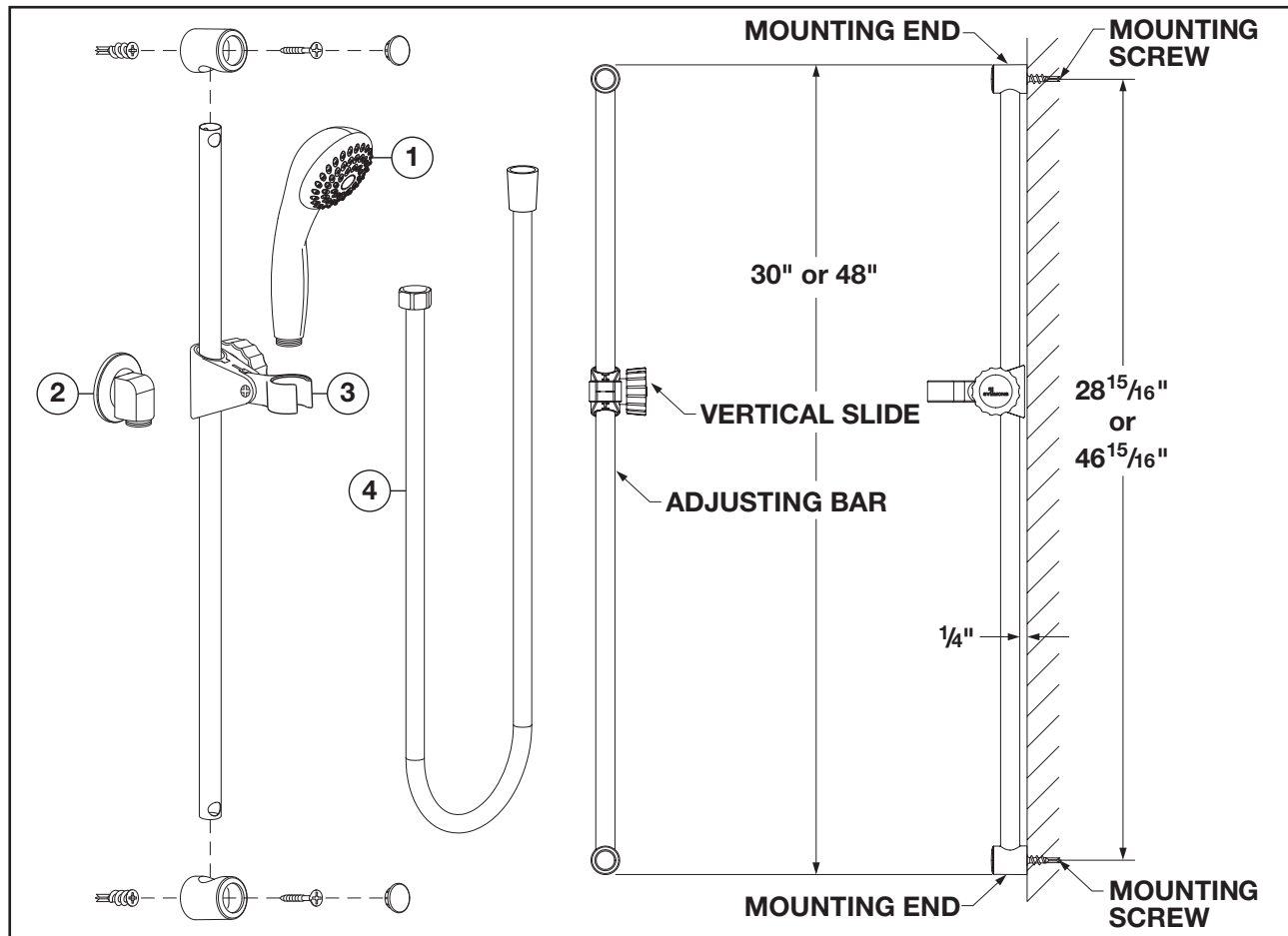
The main handle of the Safety Mix valve is for control of temperature only. From the OFF position, the handle is turned counter-clockwise through a minimum cold position, through a warm and hot position for a maximum turn of approximately one revolution. This allows for infinite temperature adjustments to suit the requirements of any user.

CARE AND CLEANING

The lustrous finish on your Safety Mix valve should be treated with care. It can be readily damaged by improper handling or abusive treatment. To clean the finish wipe gently with a soft damp cloth and blot dry with a soft towel. Use only a mild soap solution if required. **DO NOT USE ABRASIVE CLEANERS. USE OF POLISH, ABRASIVE CLEANERS, SOLVENTS OR ACID CLEANERS WILL DAMAGE THE FINISH AND VOID THE SYMMONS WARRANTY.**

Hand Spray Adjusting Bar

(30" and 48" or cut to length desired)



REPLACEMENT PARTS		
ITEM	DESCRIPTION	PART NUMBER
1	Wand (chrome) Wand (STN)	FP-1 EF-100-STN
2	Wall Elbow	FP-40
3	Slide Mechanism	FP-SM3
4	60" Hose	EF-104

Note: Append finish code to part number for premium finish (wand becomes EF-100-STN).

The Symmons hand spray adjusting bar is designed for easy installation and a neat, clean appearance.

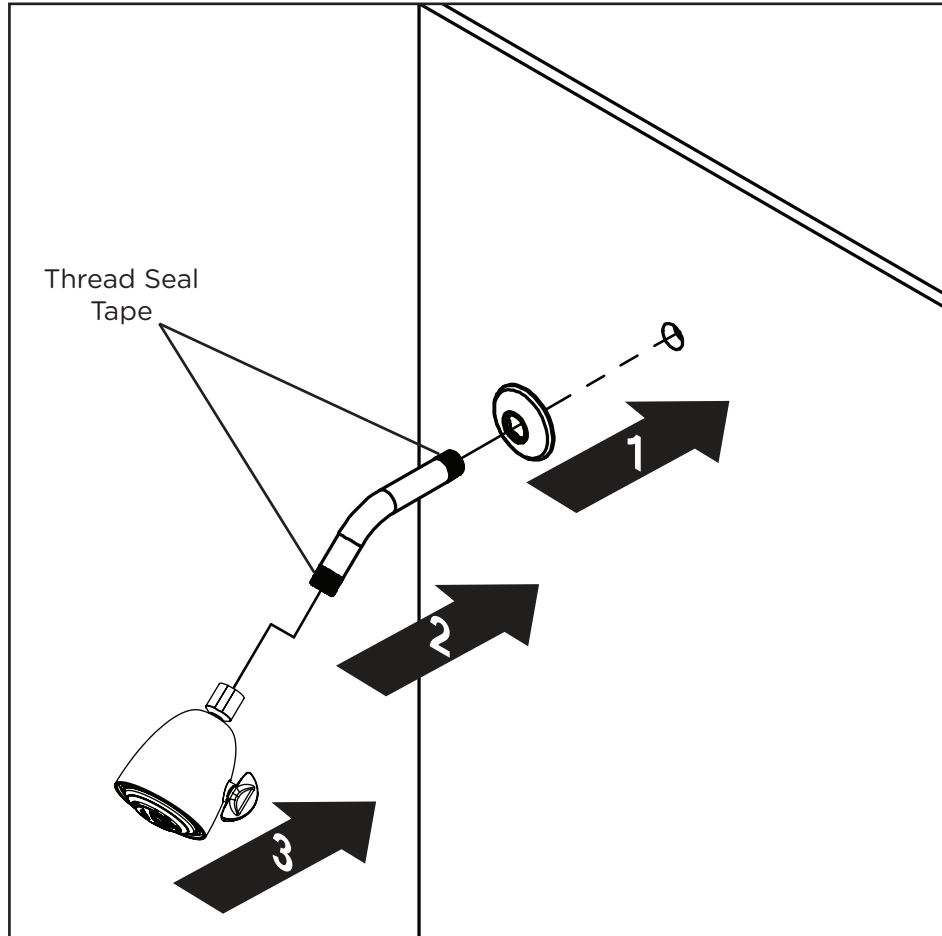
No exposed screws, vertical slide with large acrylic knob, polished chrome plated brass tube, mounting ends.

Mounts 1/4" from finish wall so it cannot be used as a grab bar. Grab bars should be in all shower or tub shower applications where so required.

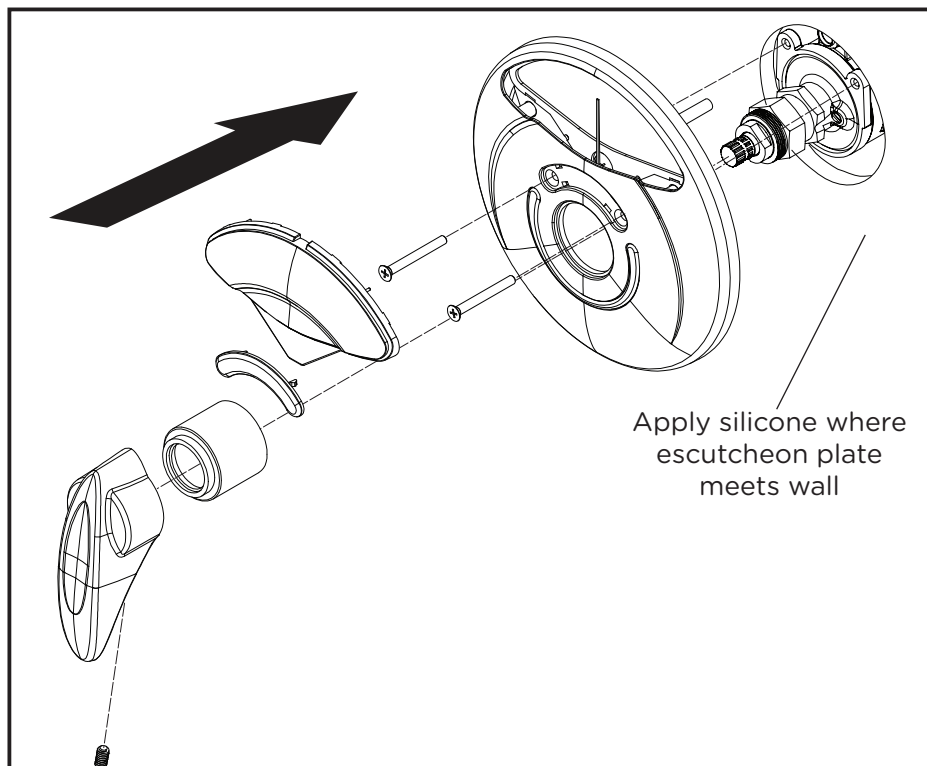
Installation: (When job cutting, use tubing cutter and cut excess from end with holes).

1. Screw top mounting end to wall at proper position.
2. With vertical slide on bar as shown, assemble bottom mounting end to end of bar that has large and small hole. Large hole in bar should face forward and line up with hole in face of mounting end. Push bar onto top mounting end.
3. Plumb bar and screw bottom mounting end to wall.
4. To convert the hand spray adjusting bar to a friction up and down slide action (i.e. no requirement to use the bar slide knob), unscrew slide knob and replace with the enclosed hex socket head set screw. Tighten set screw so that slide can be moved up and down with minimal (less than 5 lbs.) force.

Showerhead and Shower Arm Installation



4-500VT-X SafetyMix VisuTemp Valve Installation



SERVICE

1. Shut off water supply to valve.
2. Loosen set screw (SC-15A) and remove handle (VT-112), dome cover (SC-13/18), and escutcheon (SC-144) in that order.
3. Open valve to about warm position and unscrew cap (SC-2). Warning: Failure to OPEN VALVE will damage cap and spindle. Spindle assembly (C-5) will be removed with cap. Leave packing nut (SC-7) in place while unscrewing cap to avoid distortion.
4. Ordinary service to eliminate dripping or not shutting off requires only the replacement of parts supplied in washer and gasket kit (KIT-B). Hold spindle with (VT-112) handle while removing hot washer screw and cold washer retainer (remove retainer with channel lock pliers).
5. Inspect surfaces of renewable seat (SC-3). If seat surfaces are worn or wire drawn or if NEW SPINDLE IS VERY LOOSE IN SEAT, replace SC-3 renewable seat. Use renewable seat socket wrench (C-50). Clean seat surfaces for proper sealing of top seat o-ring (SC-20A) and bottom seat gasket (SC-21). Tighten seat to 15 foot pounds of torque.
6. The perforated end of the (C-5) spindle assembly houses the balancing piston which is the heart of this pressure-balancing valve. The piston should be free to move back and forth and should click when the spindle assembly is shaken. If deposits block this action, tap the handle end of the spindle against a solid object to free the piston.
7. Reassemble, reversing above procedure. Be sure spindle assembly is drawn close to the cap before screwing cap back into valve. Warning: Failure to do this will damage cap and spindle.
8. **USE ONLY SYMMONS SAFETY MIX GENUINE REPAIR PARTS. FAILURE TO DO SO WILL VOID ALL WARRANTIES AND IMPAIR PROPER OPERATION OF YOUR VALVE.**

Soaking in household vinegar will help free foreign matter. If this does not free piston, replace (C-5) spindle assembly. **DO NOT TAMPER WITH PERFORATED CYLINDER ON THE SPINDLE ASSEMBLY OR ATTEMPT REMOVAL OF THE PISTON.**

TROUBLE SHOOTING CHART

Problem	Cause	Solution (Follow service instructions)
Valve will not pass water.	Hot and cold water not turned on.	Turn on both supplies. Valve will not operate unless both HOT and COLD water pressure is turned on.
Valve leaks when shut off.	Hot and cold washers are worn, or foreign matter (solder, chips, etc.) are between washers and seat surfaces	Replace Hot and Cold washers, inspect top surface on hot and cold seats and replace if necessary.
Temperature control handle is turned from cold to hot (or hot back to cold) and volume from spout or head is not constant.	Pressure balancing piston housed in spindle assembly is blocked from free movement by foreign matter.	With valve open half way, remove handle and tap spindle with plastic hammer. If problem not solved, remove spindle assembly completely and tap handle against solid object to free piston. Soaking in household vinegar will help free foreign matter.
Valve delivers sufficient quantity of cold, but little hot, or the reverse of this.	Same as above	Same as above
Temperature varies without moving handle.	Same as above	Same as above
Valve delivery temperature reduces gradually during use; must be turned on to hotter positions to maintain constant temperature.	Overdraw on hot water supply, i.e., running out of hot water.	Reduce maximum flow by using volume control adjustment on valve or shower head. This will allow longer period of use before overdrawing hot water supply.

Warranty

Limited Lifetime - for residential installations.

10 Years - for commercial/industrial installations.

Refer to www.symmons.com/warranty for complete warranty information.

