



# SYMMONS® Dia™

## Tub-Shower Systems S-3500, S-3501, S-3502 Series Installation and Service Instructions



### Model Number Series

S-3502..... Tub-Shower System  
 S-3502-X ..... Valve includes stops  
 S-3502-TRM. Trim only  
 S-3501..... Shower System  
 S-3501-X ..... Valve includes stops  
 S-3501-TRM. Trim only

S-3500..... Shower Valve System  
 S-3500-X ..... Valve includes stops  
 S-3500-TRM. Trim only  
 S-3500TS ..... Tub-Shower Valve Sys.  
 S-3500TS-X.. Valve includes stops

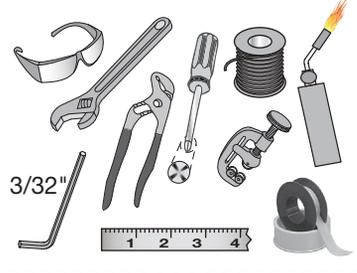
### Need Help?

Symmons customer service:  
 (800) 796-6667, (781) 848-2250  
[customerservice@symmons.com](mailto:customerservice@symmons.com)  
 Mon - Fri 7:30 am - 7:00 pm EST  
[www.symmons.com/service](http://www.symmons.com/service)

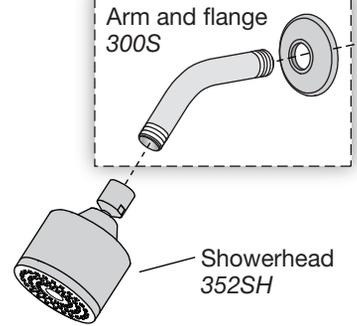
- Technical help
- Product information
- Warranty policy

### Visual Guide Dia Tub-Shower Systems, S-3500, S-3501, S-3502 Series

#### Tools & Materials



#### Arm and flange 300S



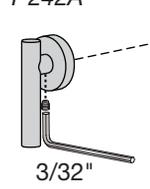
#### Model Series

S-3501  
 S-3501-X  
 S-3501-TRM  
 S-3502  
 S-3502-X  
 S-3502-TRM

#### Model Series

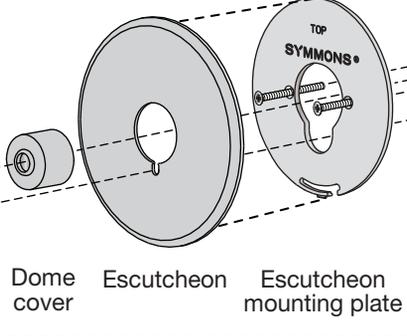
S-3500 S-3502  
 S-3500-X S-3502-X  
 S-3500-TRM S-3502-TRM  
 S-3501 S-3500TS  
 S-3501-X S-3500TS-X  
 S-3501-TRM

#### Handle kit T-242A

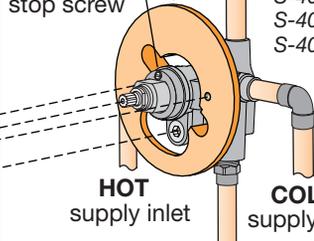


Volume control handle or diverter handle  
 RTS-013, brass  
 RTS-014, plastic

#### Screwless escutcheon kit RTS-011, brass RTS-012, plastic



Mounting plate, T-177  
 Temp Limit stop screw



Temptrol® Control Valve  
 S-4001-BODY  
 S-4001-X-BODY  
 S-4002-BODY  
 S-4002-X-BODY

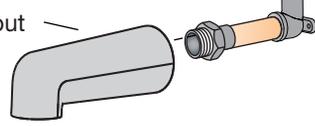
#### Model Series

S-3500  
 S-3500-X  
 S-3500TS  
 S-3500TS-X  
 S-3501  
 S-3501-X  
 S-3502  
 S-3502-X

Note: Piping, fittings and tools are not included. Actual plumbing should be determined and installed by a licensed plumber.

Protective valve shield (not shown) T-176

#### Tub spout 067



#### Model Series

S-3502  
 S-3502-X  
 S-3502-TRM

# Installation Instructions

## Rough-in Installation

**Control valve assembly, piping and fittings** (Note: *Illustrations below show valve model without stops*)

Reference as required: Page  
 Visual guide..... 1  
 Dimensions illustration ..... 4

### 1) Determine wall thickness

- Determine type of wall and wall thickness where valve will be mounted.
- Consider whether to use mounting plate by reviewing figure 2 below.
- Skip ahead to **Step 3** if mounting plate is not used.

### 2) Attach valve mounting plate

Seat mounting plate against valve assembly as illustrated in figure 1.

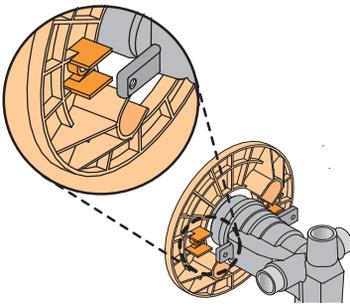


Figure 1 Mounting plate

### 3) Attach protective shield

- Reference figure 2 to determine whether shield is required.
- Attach protective shield by snap fitting over end of valve spindle.

### 4) Install piping, fittings and control valve

*Piping and fittings not supplied*

- **Control Valve**  
Install through cutout hole in wall as specified in figure 2 below and dimension illustration on page 4.
- **Showerhead (S on valve)**  
Pipe from outlet port on valve marked **S** to showerhead mounting arm location.
- **Hot & Cold Supply (H & C)**  
Pipe hot water supply to valve inlet marked **H** and cold water supply to valve inlet marked **C**.
- **Tub Spout (T on valve)**  
Pipe from outlet port on valve marked **T** to tub spout.



**Important!** Do not substitute Tub Spout with restrictive fittings such as PEX, CPVC or outlet accessories such as a ledge spout, hose and spray that would subject the valve to excessive internal back pressure, otherwise operation will be compromised.

### 5) Remove protective shield

If protective shield was attached in **Step 3** then remove shield snap fitted over the end of valve spindle once valve is securely installed and wall finish work has been completed.

### 6) Adjust valve packing nut

*Reference figure 3 below*

- Turn hot & cold supplies on. Valve will not operate unless both hot and cold water supply pressures are turned on.
- Place handle over end of *control spindle stem*.
- Adjust *packing nut* for positive frictional resistance as handle is rotated from shutoff position across adjustment range.

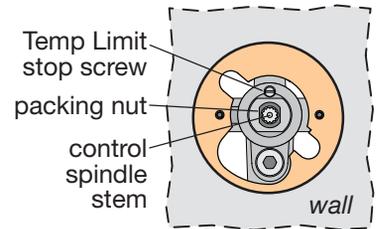


Figure 3 Valve adjustments

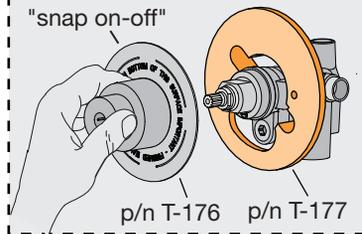
### Walls for using T-177 mounting plate

- Fiberglass or acrylic walls (required)
  - Plaster or other type walls (optional)
- 1/16" (2 mm) min ▪ 1/2" (13 mm) max

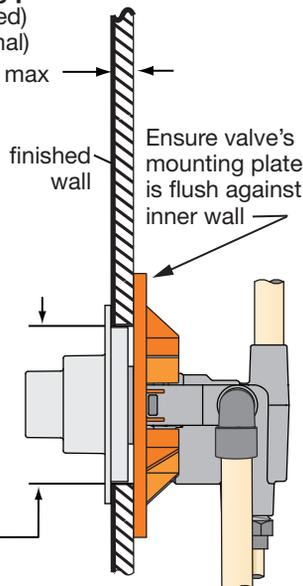
#### Protective shield

When mounting plate is used, then shield is optional for protecting end of valve during installation.

"snap on-off"



wall cutout hole size  
 3-1/2" (95 mm) min  
 4" (101 mm) max



### Dry wall, plaster or other type wall

1/2" (13 mm) or greater  
 finished wall

2-3/8" ± 1/2"  
 (60 mm ± 13 mm)  
 pipe centerline  
 to finished wall

Finished wall must be flush with back side of protective shield surface

**Protective shield**  
 "snap on-off"  
 (required when mounting plate is not used)

wall cutout hole size  
 3-1/2" (89 mm) min  
 4" (101 mm) max

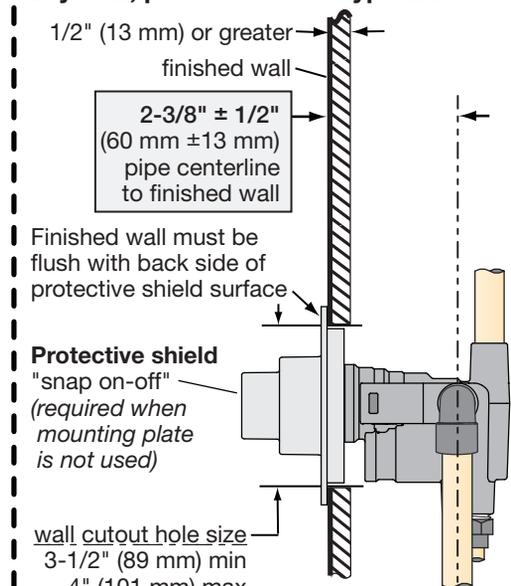


Figure 2 Mounting valve

## 7) Flush system, check for leaks

- Turn valve to the warm position and run for a few minutes.
- If system is dirty, remove valve spindle in center of valve to ensure proper flushing. (See service instructions.)
- Check for leaks around valve assembly and all pipe fittings.

## 8) Set Temp Limit stop screw

Reference page 2, figure 3

The temperature limit stop screw limits valve handle from being turned to maximum position resulting in excessive hot water discharge temperatures.



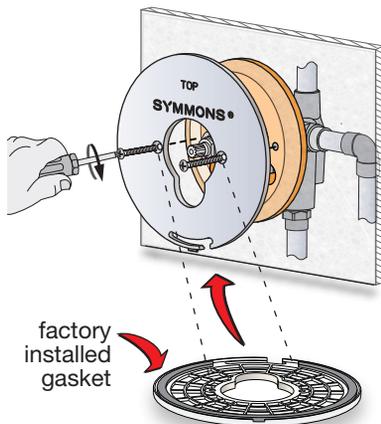
**Warning:** Failure to adjust *Temp Limit stop screw* properly may result in serious scalding.

- Place handle on *control spindle stem* and open valve to maximum desired temperature.
- Turn *Temp Limit stop screw* clockwise until it seats.

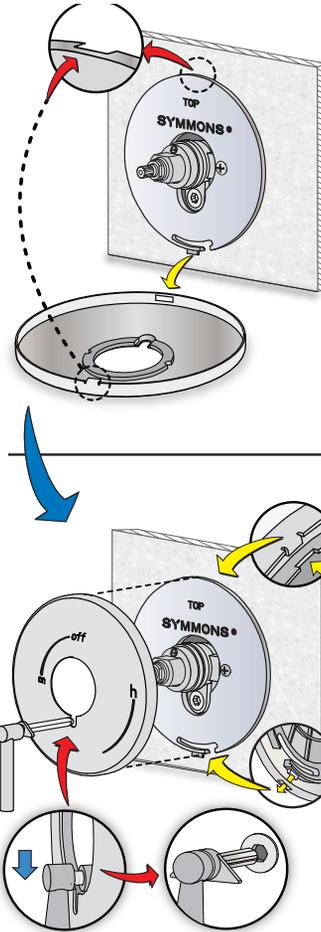
**Note:** Do not install positive shut-off devices on control valve outlet or devices that do not allow the valve to flow at least 1.5 gpm.

## Trim Installation

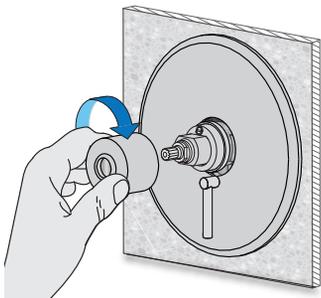
### 1) Attach escutcheon mounting plate



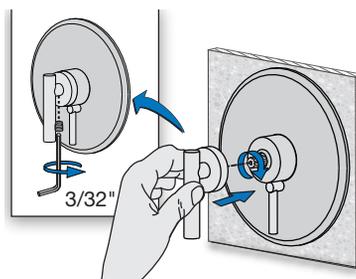
### 2) Attach escutcheon



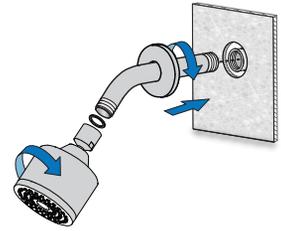
### 3) Attach dome cover



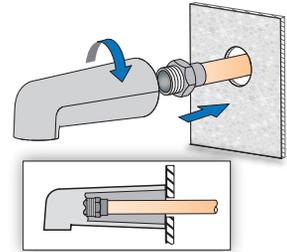
### 4) Attach handle



### 5) Attach showerhead



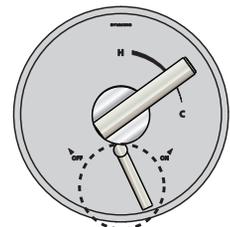
### 6) Attach tub spout



## Diverter & Volume Control Handle Operation

### Diverter handle

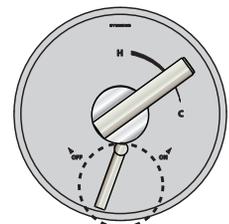
*Tub-Shower models*



Tub ⇄ Shower

### Volume control handle

*Shower only models*



High ⇄ Low

## Care and Cleaning

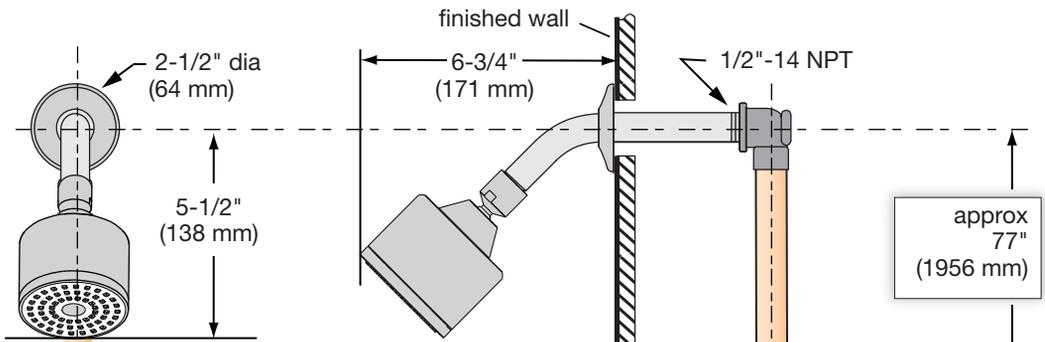
Clean finished area using mild soap and water or a non-abrasive cleaner and then quickly rinse. A non-abrasive wax may be used to preserve finish area.



# Dimensions Dia Tub-Shower Systems, S-3500, S-3501, S-3502 Series

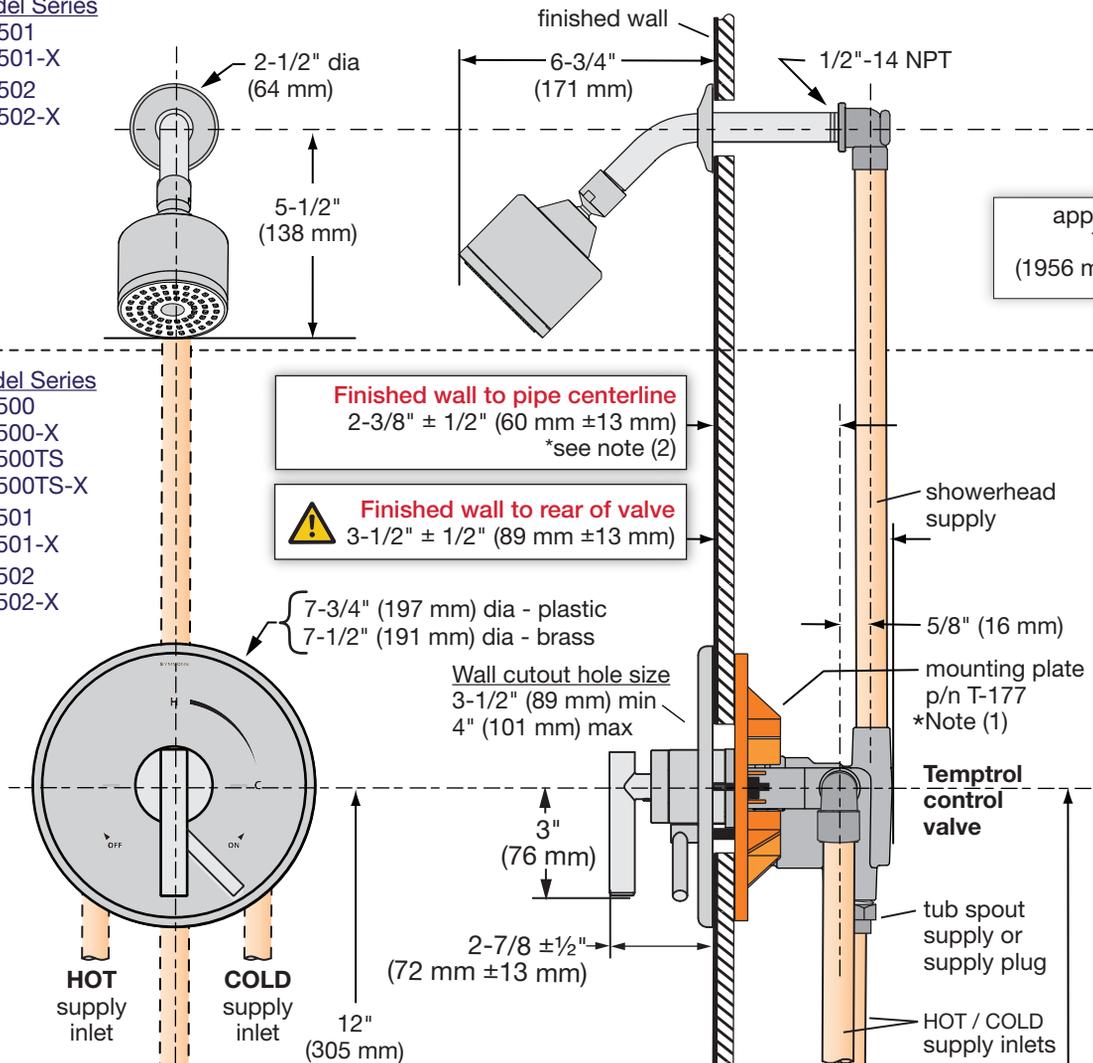
## Model Series

S-3501  
S-3501-X  
S-3502  
S-3502-X



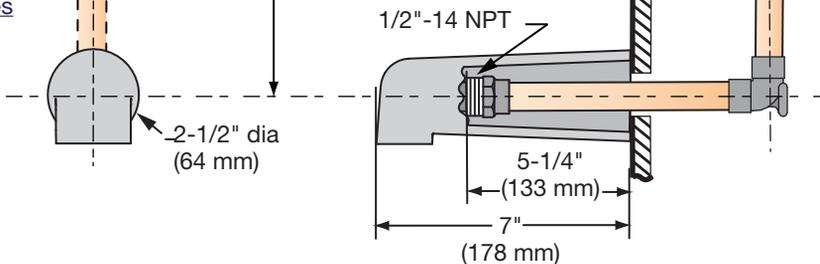
## Model Series

S-3500  
S-3500-X  
S-3500TS  
S-3500TS-X  
S-3501  
S-3501-X  
S-3502  
S-3502-X



## Model Series

S-3502  
S-3502-X



### \* Notes: (also reference page 2, figure 2 for details)

- (1) Walls for using T-177 mounting plate (MP)
  - Wall thickness is 1/16" (2 mm) min • 1/2" (13 mm) max
  - Fiber or acrylic walls (MP is required)
  - Plaster or other type walls 1/2" or less (MP optional)
  - Protective shield usage (optional for protection only)
- (2) Dry wall, plaster or other type walls 1/2" or greater
  - Protective shield attached to valve spindle to locate position
- (3) Dimensions subject to change without notice

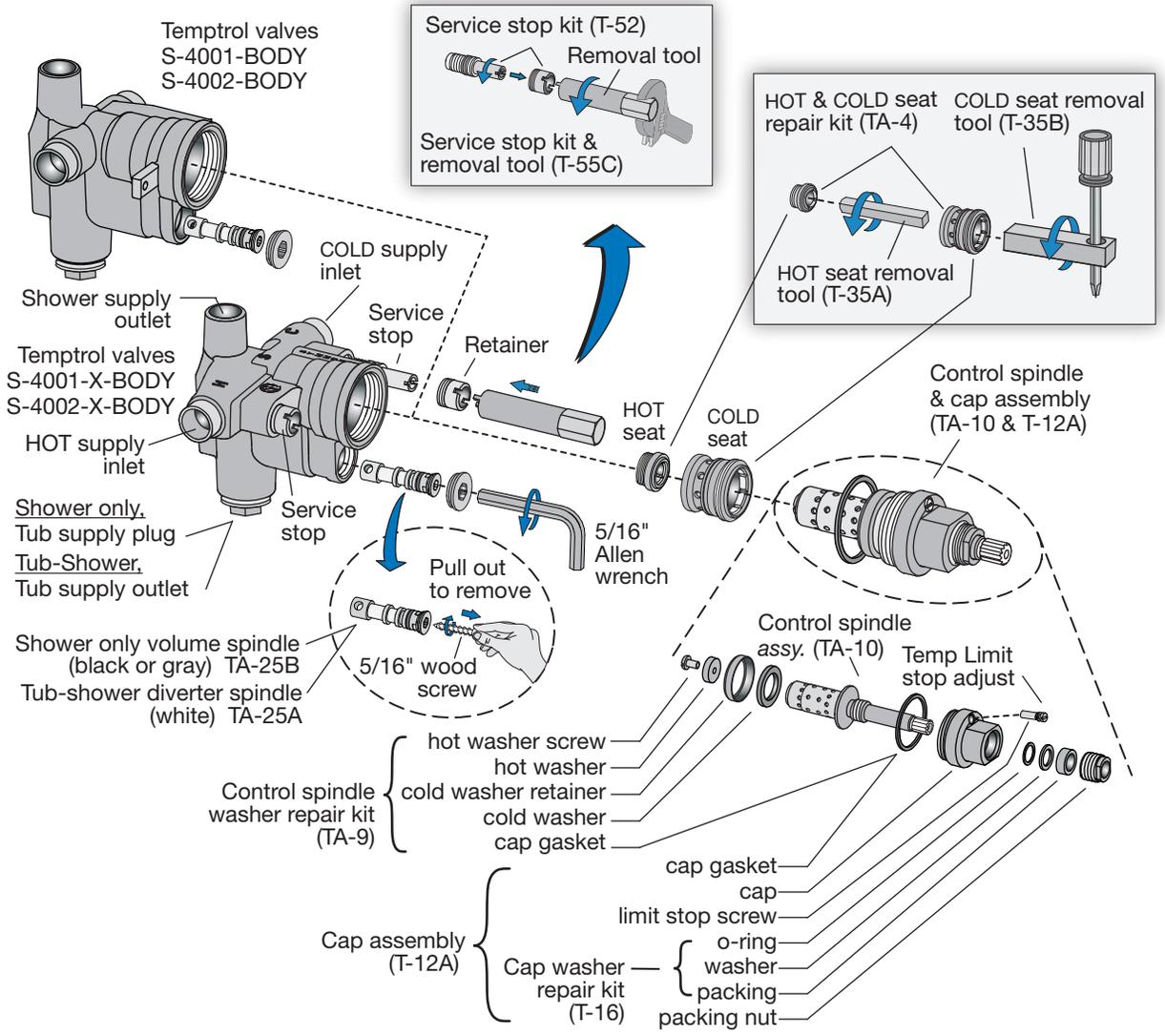
approximately  
Shower only = 42" (1067 mm)  
Tub-Shower = 32" (813 mm)



Floor

# Parts Assembly Temptrol Shower & Tub-Shower Control Valves

- S-4001-BODY.....Shower valve
- S-4002-BODY.....Tub-Shower valve
- S-4001-X-BODY..Shower valve w/stops
- S-4002-X-BODY..Tub-Shower valve w/stops



## Temptrol Valve Replacement Parts and Optional Tools

| Symmons Part Number | Valve Body Type            |                                | Description                                                                        |
|---------------------|----------------------------|--------------------------------|------------------------------------------------------------------------------------|
|                     | S-4001-BODY<br>S-4002-BODY | S-4001-X-BODY<br>S-4002-X-BODY |                                                                                    |
| TA-4                | √                          | √                              | HOT & COLD seat repair kit.....( <i>optional tool p/n T-35A/B</i> )                |
| TA-9                | √                          | √                              | Control spindle washer repair kit                                                  |
| TA-10               | √                          | √                              | Control spindle.....( <i>includes p/n TA-9 &amp; T-16 components</i> )             |
| T-12A               | √                          | √                              | Cap assembly                                                                       |
| T-16                | √                          | √                              | Cap washer repair kit                                                              |
| TA-25A              | S-4002-BODY                | S-4002-X-BODY                  | Diverter spindle kit .....( <i>white appearance</i> )                              |
| TA-25B              | S-4001-BODY                | S-4001-X-BODY                  | Volume control spindle kit.....( <i>black or gray appearance</i> )                 |
| T-35A/B             | √                          | √                              | HOT seat removal tool, T-35A & COLD seat removal tool, T-35B                       |
| T-52                |                            | √                              | Service stop spindle & retainer                                                    |
| T-55C               |                            | √                              | Service stop spindle, retainer & removal tool                                      |
| T-108               | √                          | √                              | Reverse seat & tool kit ( <i>valve HOT &amp; COLD supply inputs are reversed</i> ) |

# Trouble Shooting Chart

| Problem                                                                                                                                           | Cause                                                                                                                              | Solution                                                                                                                                                                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Valve will not pass water.                                                                                                                        | Both hot and cold water supplies are not turned on.                                                                                | Turn on both supplies. Valve will not operate unless both hot and cold water pressure is on.                                                                                                                                                           |
| Valve leaks when shut off.                                                                                                                        | Hot and cold washers are worn or foreign matter (dirt, chips) is lodged between washers and seat surfaces.                         | 1) Replace washers using <i>control spindle washer repair kit</i> , p/n TA-9.<br>2) Replace hot & cold seats using <i>hot/cold seat repair kit</i> , p/n TA-4.                                                                                         |
| 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 restricted from free movement by foreign matter.                           | 1) Open valve halfway, remove handle and tap spindle with plastic hammer.<br>2) Check <i>water pressure balancing piston</i> in <i>control spindle</i> . See service instructions.<br>3) Replace <i>control spindle</i> , p/n TA-10.                   |
| Valve delivers sufficient quantity of cold, but little hot, or the reverse.                                                                       | Same as above                                                                                                                      | Same as above                                                                                                                                                                                                                                          |
| Temperature varies without moving handle.                                                                                                         | Same as above                                                                                                                      | Same as above                                                                                                                                                                                                                                          |
| Valve delivery temperature reduces gradually during use; handle must be turned 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 showerhead. This will allow longer period of use before overdrawing hot water supply.                                                                                               |
| Valve delivers hot water when initially opened. Water turns colder as handle is rotated in a counter-clockwise direction toward the hot position. | Valve is piped incorrectly (i.e. the hot supply is piped to the valve's cold inlet and the cold supply is piped to the hot inlet.) | If piping is accessible, correct connections to the valve. If piping is not accessible, order a <i>reverse seat and tool kit</i> , p/n T-108. Older installations may also require replacing the hot seat, <i>hot/cold seat repair kit</i> , p/n TA-4. |
| When tub-shower valve's diverter handle is set in shower position a pencil width stream of water runs from the tub spout.                         | Up to a pencil width stream of water may flow from the tub spout to ensure the water has been shut off at the main valve only.     |                                                                                                                                                                                                                                                        |

## Service Instructions

### Removing control spindle assembly (Ref. parts assembly figure)

- Shut off water supply to valve and remove control valve handle and dome cover.
- Remove escutcheon plate by first removing escutcheon screws.
- Turn valve's *control spindle* to half way position between minimum and maximum rotation.



**Important:** Failure to do this can damage *control spindle assembly*.

- Unscrew both *spindle cap* and *control spindle assembly*.

### Hot/Cold seat repair kit

Order p/n TA-4, T-35A and T-35B.

Installation requires both hot & cold removal tools, p/n T-35A & T-35B.

- Remove *control spindle assembly*.
- Remove both seats with removal tools.

- Replace both seats even if only one appears worn.
- Install and tighten both seats to 15 foot pounds of torque.

### Control spindle washer repair kit Order p/n TA-9.

- Remove *control spindle assembly*.
- Remove *cold washer* by holding spindle using valve handle and unscrew *cold washer retainer* using channel lock pliers.
- Remove *hot washer* by removing *hot washer screw*.

### Checking water pressure balancing piston

The perforated end of the *control spindle assembly* houses the water pressure-balancing piston which is the heart of the valve.

- Remove *control spindle assembly*.
- Shake spindle assembly and listen for clicking noise. Piston should be free to slide back and forth the full length of its travel.

- If piston appears restricted then do the following:
  - (1) Tap the handle or stem end of the spindle against a solid object to free the piston.
  - (2) Try soaking in household vinegar and repeat step (1).
- If unable to free piston, replace *control spindle*, p/n TA-10.



**Important:** Do not attempt removal of the piston.

### Valve re-assembly

Reassemble by reversing above procedures.

After the *control spindle assembly* (TA-10) is threaded back into the spindle cap assembly (T-12A) ensure *control spindle* is rotated 1/2 turn clockwise from its maximum counter clockwise rotational position. Failure to do this will damage assembly.