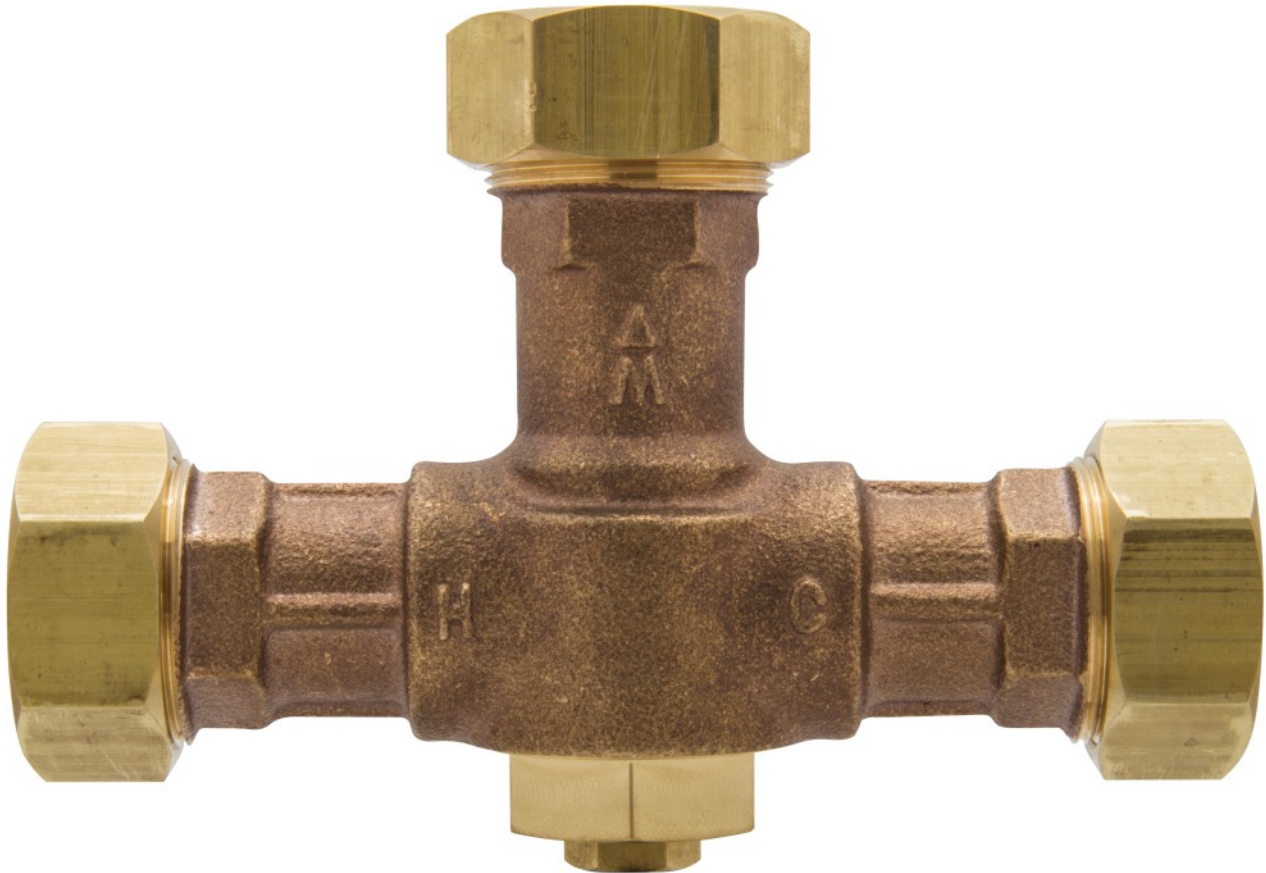


INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

ST7017 (OMEGA) THERMOSTATIC MIXING VALVE



Patent #9,898,017

FOR TECHNICAL ASSISTANCE
1-(847)-604-4773



Federal
Public Law
111-380
(No Lead)

NOTES TO THE INSTALLER:

- 1. Please leave this documentation with the owner of the fixture when finished.**
- 2. Please read this entire booklet before beginning the installation.**
- 3. Check your installation for compliance with plumbing and other applicable codes.**



WARNING:

You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

FAILURE TO READ AND FOLLOW PROPER INSTALLATION AND MAINTENANCE INSTRUCTIONS MAY RESULT IN PRODUCT FAILURE WHICH CAN CAUSE PROPERTY DAMAGE, PERSONAL INJURY AND/OR DEATH.

CONTROLS® is not responsible for damages resulting from improper installation and/or maintenance. Installation of this valve shall be in accordance with *Uniform Plumbing Code*.

TO ENSURE ACCURATE AND RELIABLE OPERATION OF THIS PRODUCT, IT IS ESSENTIAL TO:

- Properly design the system to minimize pressure and temperature variations.
- Implement an annual maintenance program to ensure proper operation and temperature setting of valve(s).
- This valve is factory preset. However, it can be adjusted. It is the responsibility of the installer and or facility maintenance personnel to make sure valve outlet temperature is properly set.

SUPPLIES REQUIRED:

(Not provided by CONTROLS®)

1. Wall anchors, screws nuts and washers as required.
2. Teflon tape for sealing water connections.
3. Supply angle stops, ball valves optionally available.
4. Supply connections.
5. Wrench and an Allen wrench.

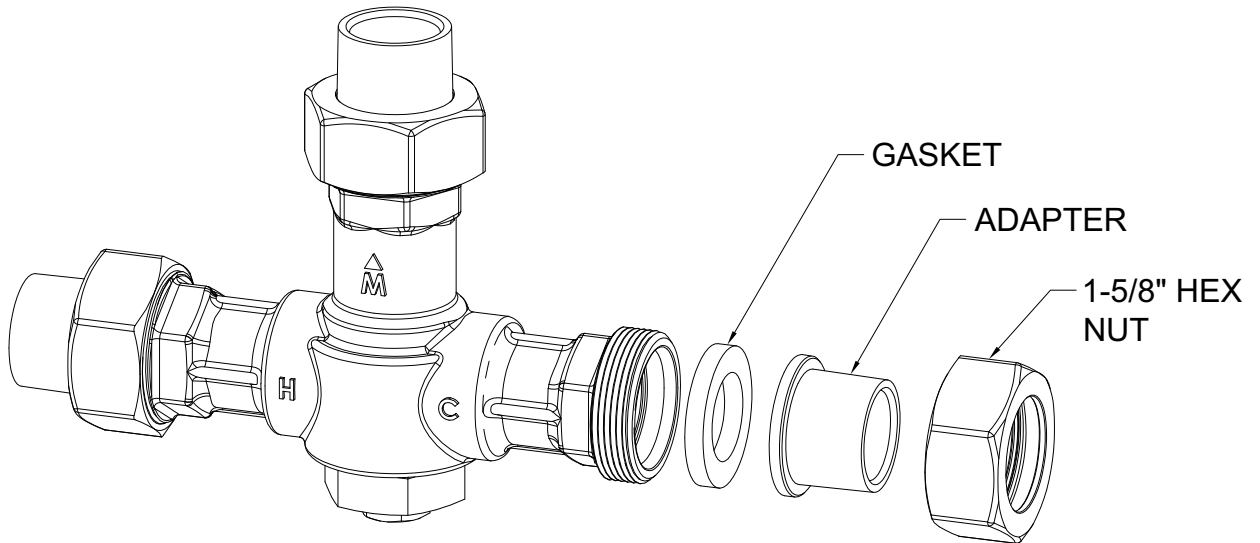


IMPORTANT

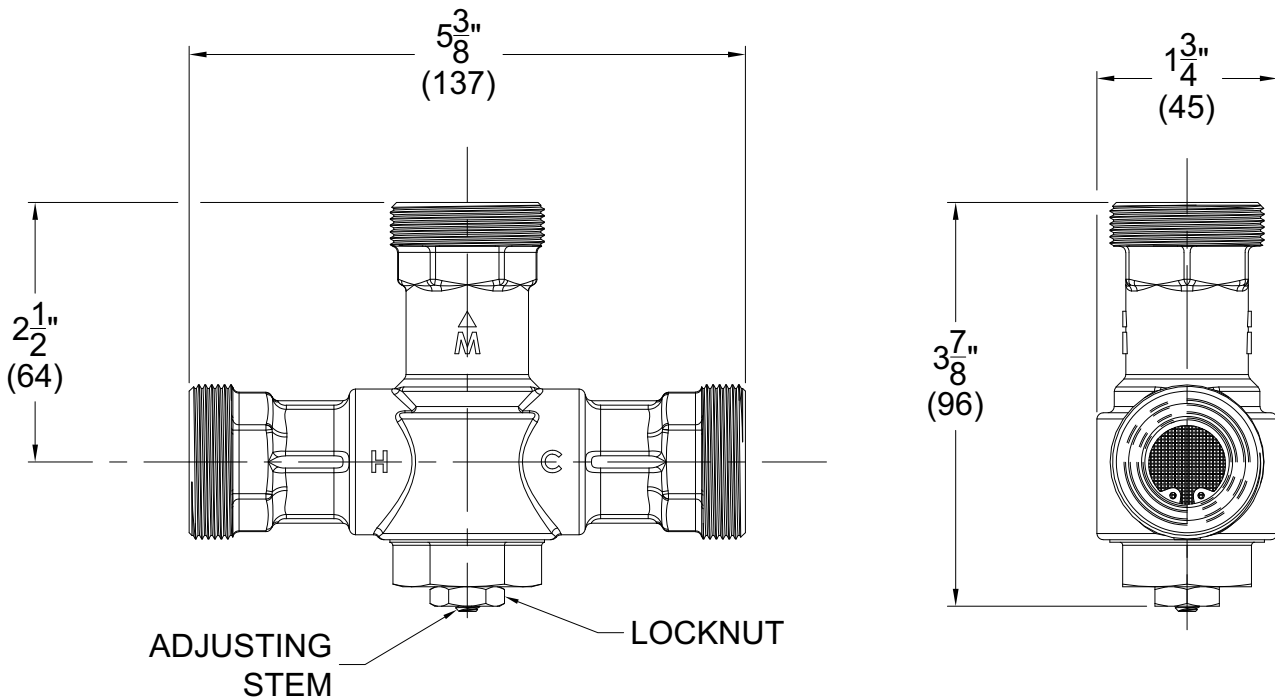
- Flush supply lines of all foreign material such as pipe dope, chips or solder prior to connecting to mixing valve.
- To ensure proper installation, review the Manual thoroughly to verify rough-ins before beginning any work.
- Installation and field adjustment are the responsibility of the installer.
- Maximum water pressure is 125 PSI (8.62 bars). Maximum inlet hot water temperature is 180°F (82°C). Temperature adjustment range* is 95°F-130°F (35°C-54°C). Valve assembly must be drained prior to being subjected to freezing temperatures. Valve includes integral check valves.

PRESSURE DROP PSID (KPA)	CV	5 (34)	10 (69)	15 (103)	20 (138)	30 (207)	45 (310)	60 (414)
1/2" TUBE FLOW RATE GPM (LPM)	2.8	6 (22.7)	9 (34)	11 (41.6)	13 (49.2)	15 (56.8)	19 (72)	22 (83.3)
3/4" TUBE FLOW RATE GPM (LPM)	3.2	7 (26.5)	10 (37.9)	12 (45.4)	14 (53)	18 (68.1)	21 (79.5)	25 (94.6)

ROUGH-IN DIMENSIONS:



ST7017-34CPVC, SHOWN
DETAIL NOT TO SCALE



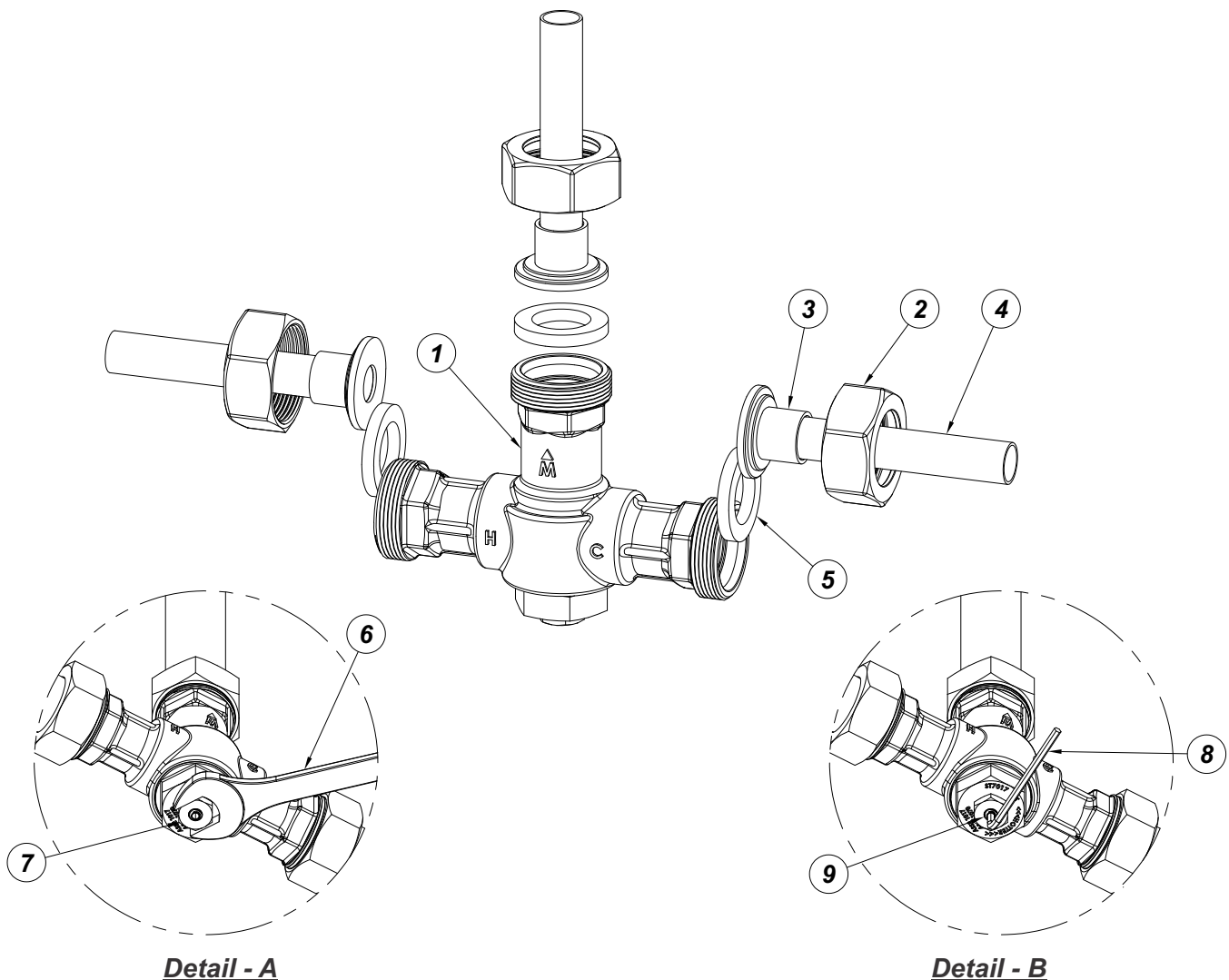
NOTE;
ALL DIMENSIONS ARE IN INCHES (MM).

INSTALLATION: ST7017-CU & -CPVC

1. Locate mixing valve **1** in a suitable place accessible for servicing and adjusting. Valve should be as close as possible to point of use.
2. Thoroughly flush supplies.
3. Slide Brass Nut **2**, onto supply and outlet Tubing.
4. Insert Tubing Adapter **3** onto the end of the Tubing **4**,
 - A. For -CU sweat Adapter **3** to Tube
 - B. For -CPVC Glue Adapter **3** to end of tubing using appropriate PVC Pipe Cement.
5. Insert Gasket **5** between Valve body **1** and Adapter **3** then tighten Hex Nut **2**.
6. Slowly turn on supplies, check for leaks and tighten Hex Nut **2** if needed.

TEMPERATURE ADJUSTMENT:

1. Using 5/8" **6** Wrench loosen Locknut **7**.
Detail A
2. Turn on fixture so temperature can stabilize.
3. Using an 1/8" Allen Wrench **8**, turn adjustment stem **9** counter-clockwise for hotter or clockwise for colder outlet temperature.
Detail B
4. Tighten locknut **7** to prevent any unauthorized or accidental temperature adjustment.
5. Turn on fixture(s) and re-check temperature.



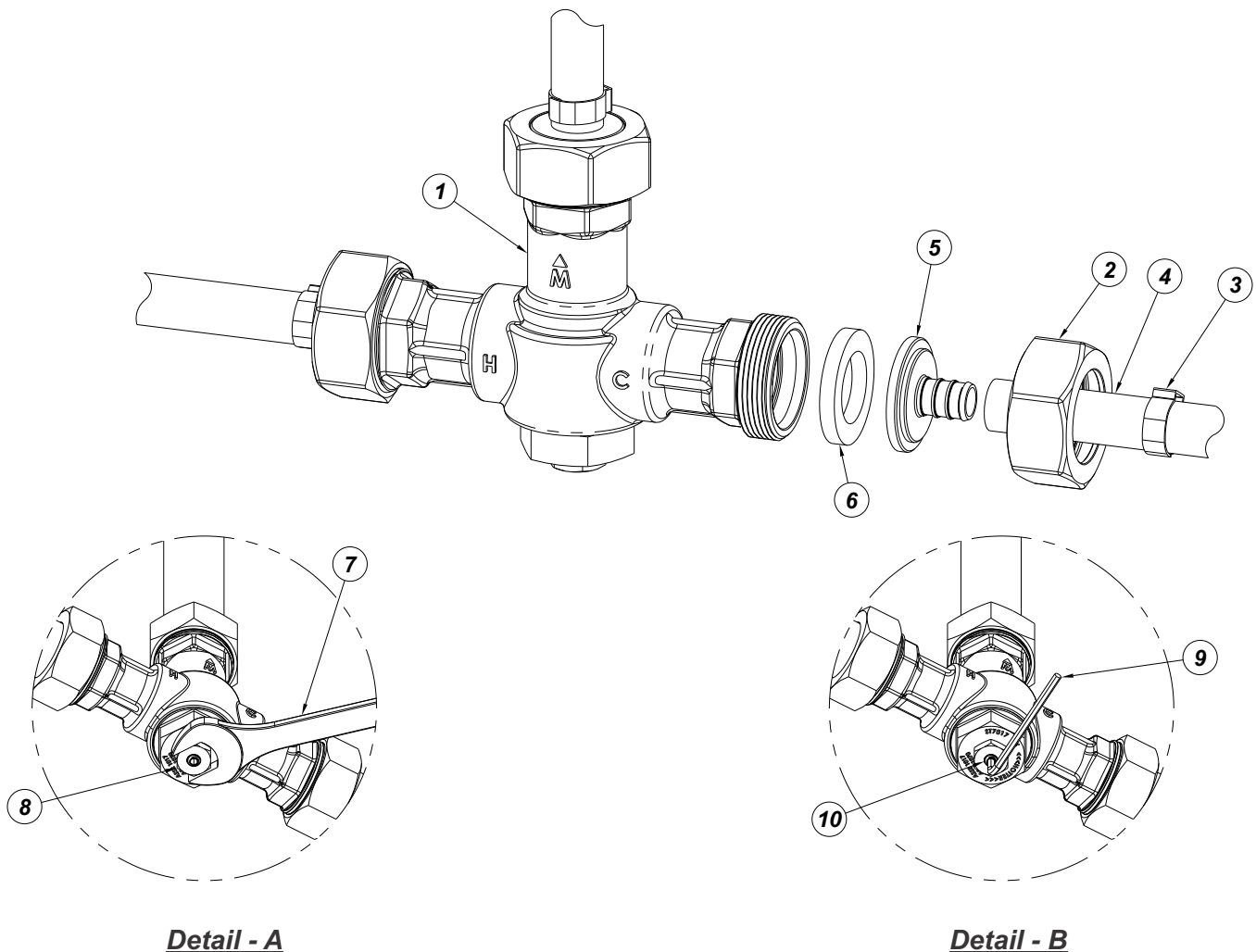
INSTALLATION: ST7017-PEX

1. Locate Mixing Valve **1** in a suitable place accessible for servicing and adjusting. Valve should be as close as possible to point of use.
2. Thoroughly flush supplies.
3. Slide Brass Nut **2** and installer provided Gripper/Clamp **3** onto the end of Tubing **4**
4. Insert PEX Adapter **5** into Tubing **4** and tighten Crimp Rings **3**.
5. Insert Gasket **6** between Valve body **1** and Adapter **3** then tighten Hex Nut **2**.
6. Slowly turn on supplies, check for leaks and tighten Hex Nut **2** if needed.

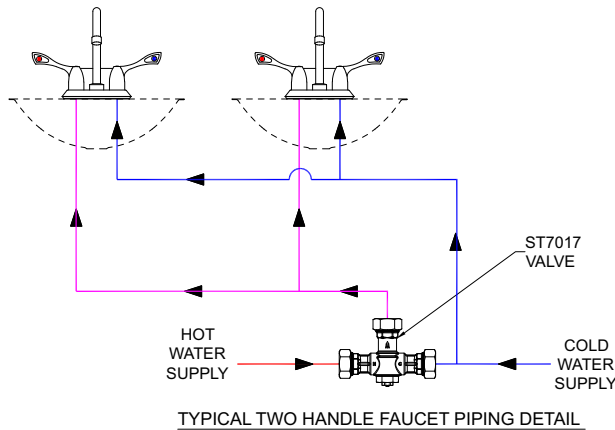
TEMPERATURE ADJUSTMENT:

1. Using 5/8" **7** Wrench loosen Locknut **8**. *Detail A*
2. Turn on fixture(s) so temperature can stabilize.
3. Using an 1/8" Allen Wrench **9**, turn Adjustment Stem **10** counter-clockwise for hotter or clockwise for colder outlet temperature. *Detail B*
4. Tighten Locknut **8** to prevent any unauthorized or accidental temperature adjustment.
5. Turn on fixture(s) and re-check temperature.

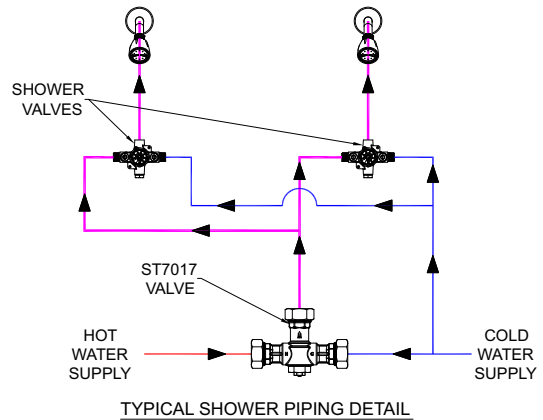
! IMPORTANT
Upon completion of installation check all points of connection for leakage.



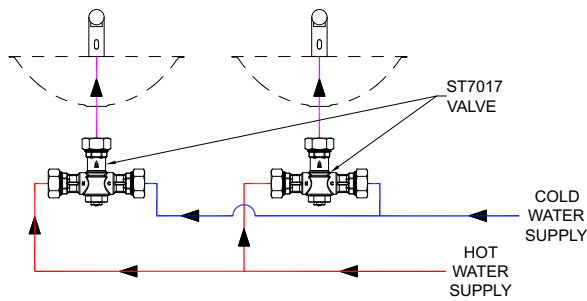
PIPING DETAILS:



TYPICAL TWO HANDLE FAUCET PIPING DETAIL



TYPICAL SHOWER PIPING DETAIL



TYPICAL SINGLE TEMP LAVATORY PIPING DETAIL

SPECIFICATIONS:

Valve Specifications:

- Maximum Operating Pressure: 125 PSI (861 kPa)
- Flow Rate @ 45 PSI (310 kPa) differential:
- Flow Rate: 24 GPM (91 LPM)
- Minimum Flow Rate*: 0.25 GPM (1.0 LPM)
- Maximum Hot Water Temp: 180°F (82°C)
- Minimum Hot Water Supply Temp**: 5°F (3°C)
Above Set Point
- Maximum Cold Water Supply Temp**: 5°F (3°C)
Below Set Point
- Minimum Cold Water Temp: 39°F (4°C)
- Temperature Range*: 95°F-130°F (35°C-54°C)

* In accordance with ASSE 1070 and ASSE 1017 as certified by IAPMO
 ** Under Normal Operating Conditions

◇ The wetted surface of these valves contacted by consumable water contains less than 0.25% of lead by weight in conformance with national Lead-Free law.

TROUBLESHOOTING:

PROBLEM	CAUSE	SOLUTION
1. SET POINT DIFFICULT TO SET OR CANNOT BE REACHED	<ul style="list-style-type: none"> • SUPPLY TEMPS NOT WITHIN SPECIFIED LIMITS • HOT AND COLD SUPPLIES ARE REVERSED 	<ul style="list-style-type: none"> • CHECK DIFFERENTIAL TEMPERATURE BETWEEN SUPPLIES AND OUTLET • REINSTALL VALVE WITH SUPPLIES CONNECTED TO MARKED INLETS
2. DOES NOT MAINTAIN OUTLET TEMPERATURE OR CHANGES OVER TIME	<ul style="list-style-type: none"> • FLUCTUATION IN SUPPLY PRESSURES • CHECK VALVE/FILTERS BLOCKED WITH DEBRIS 	<ul style="list-style-type: none"> • CHECK DIFFERENTIAL TEMPERATURE BETWEEN SUPPLIES AND OUTLET • CLEAN CHECK VALVES/FILTERS
3. DISCHARGE TEMPERATURE TOO HOT OR TOO COLD	<ul style="list-style-type: none"> • VALVE NOT ADJUSTED PROPERLY 	<ul style="list-style-type: none"> • READJUST VALVE TEMPERATURE PER INSTALLATION INSTRUCTIONS
4. CROSS FLOW	<ul style="list-style-type: none"> • CHECK VALVES FOULED 	<ul style="list-style-type: none"> • CLEAN CHECK VALVES/FILTERS
5. NO FLOW FROM VALVE	<ul style="list-style-type: none"> • HOT AND COLD SUPPLY FAILURE OR SHUTOFFS CLOSED • CHECK VALVE/FILTERS BLOCKED WITH DEBRIS 	<ul style="list-style-type: none"> • OPEN SHUTOFFS OR RESTORE HOT AND COLD SUPPLIES • CLEAN CHECK VALVES AND FILTERS