

5121 Lead Free ($\leq .25\%$ Pb) Mixing Valve

SUPERSEDES: New

EFFECTIVE: May 11, 2016

Plant I.D. 001-4263



WARNING: Water temperatures above 120°F can cause serious injury. Mixing valve temperature setting should be done by a licensed professional per local code requirements. Use an accurate water thermometer to verify the final water temperature.



WARNING: The 5121 mixing valve must not be installed on steam systems (water systems only).



WARNING: 5121 mixing valves are certified to ASSE 1070 and are not designed to compensate for system pressure fluctuations beyond the valves variation rating and should not be used where more sophisticated pressure compensating temperature controls are required.

GENERAL:

The Taco 5121 Series is listed for ASSE 1070 applications.

- All installations should be carried out by a Licensed Professional. Failure to comply with all aspects of these instructions may result in unsafe performance. All installations must comply with relevant State and Local codes or authorities.
- Ensure compatibility of valve installation, e.g. temperature of hot water, inlet pressure, flow rates, etc. - refer to product specifications. If the site conditions are outside of the specifications for the valve, the site conditions must be corrected or a valve that meets the conditions must be selected.
- Install in accordance with markings on valve body, i.e. hot water inlet - marked "H", cold water inlet - marked "C" and mixed outlet - marked with directional arrow.
- Valve may be installed in any position.
- Any inconsistency between these instructions and any specific instructions, bylaws or codes issued by local authorities must be referred back to Taco, Inc. prior to any installation taking place.
- During startup ensure that the valve is set to the desired temperature (valve preset at 105-110°F (41-43°C) with 150°F (66°C) hot water inlet temperature). If the valve temperature needs to be adjusted please refer to the instructions below (**SETTING VALVE OUTLET TEMPERATURE**).

NOTE: If the water supply is of poor quality a filter or strainer should be fitted at the system inlet so that both the water heater and the mixing valve are protected from dirt and debris.

FITTING VALVE TO PIPING SYSTEM:

- Flush all piping thoroughly before installing the valve (using water only). Not flushing the system properly is the most common cause of improper valve performance.
- The 5121 has 9/16 X 24 UNEF threads and is suitable for a 3/8" flexible hose connection or a compression connection to 3/8" OD tube. See typical installation diagram. The 5121 is available with or without fittings, a tee for cold water bypass and an elbow for the hot water connection. The valve is supplied with integral check valves on both inlets to prevent cross-flow and strainer screens, installed in hot and cold ports at time of installation, to prevent contaminate build up.

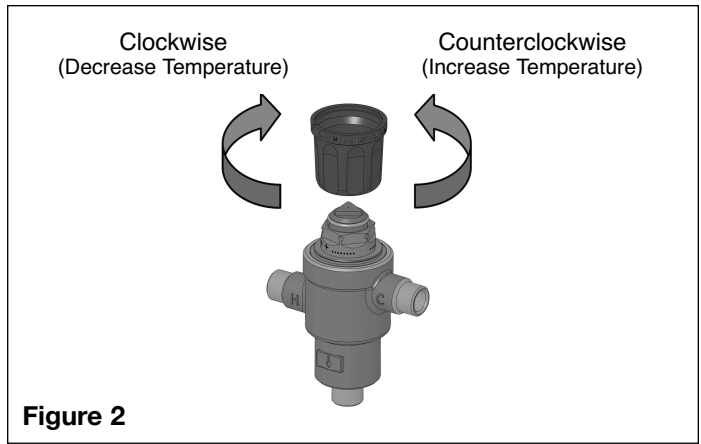
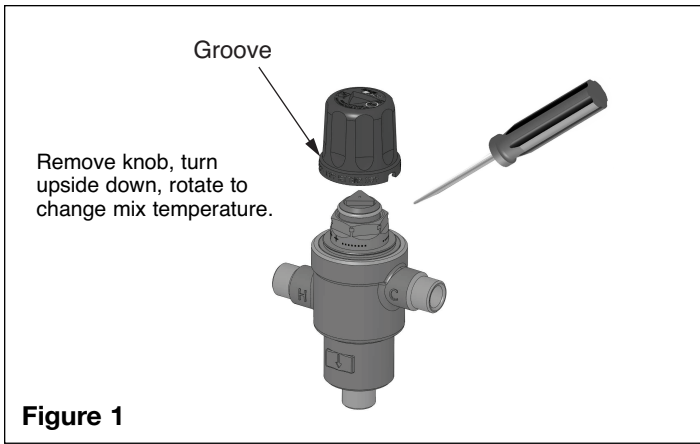
INSTALLING COMPRESSION FITTINGS WITH COPPER TUBE:

1. Insert the nut and ferrule onto the tube.
2. Install the tube into the valve and tighten the ferrule/nut until hand-tight.
3. With a wrench, turn 1/2 - 2 1/2 turns until the pipe no longer moves and no water leaks when tested.
4. DO NOT OVERTIGHTEN.

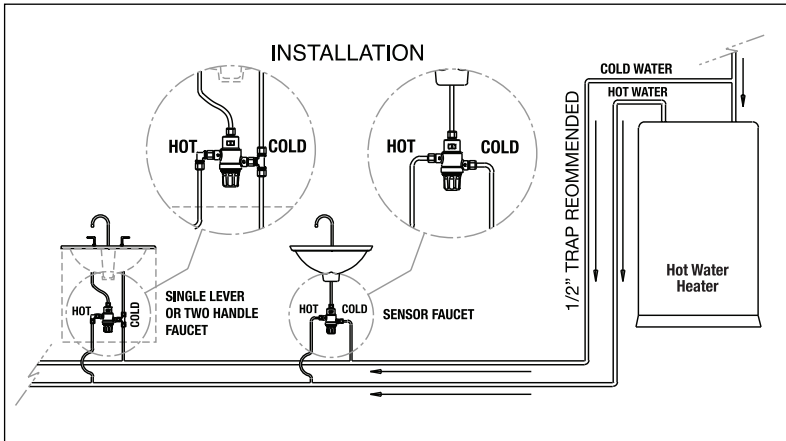
SETTING VALVE OUTLET TEMPERATURE:

The Taco 5121 Mixing Valve is supplied factory set at 105-110°F with 150°F hot water inlet temperature. It may need to be altered depending on operating requirements.

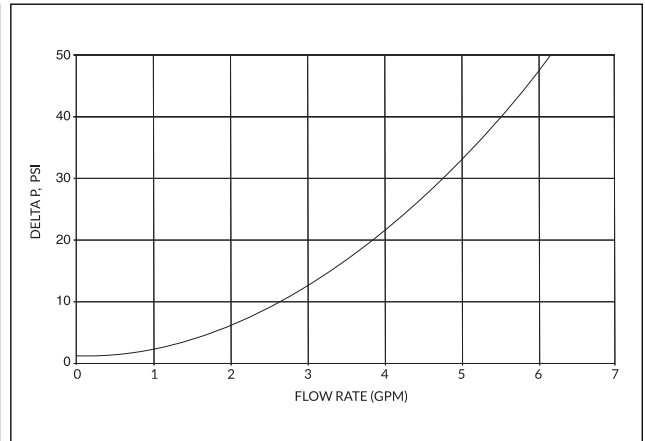
1. Remove the green knob by inserting a small screwdriver in the notch and gently prying up. (See Figure 1)
2. Turn both the hot and cold water supplies on. Open the hot water on the sink where the 5121 was installed. To calibrate, let the water run for 2 minutes and measure the outlet temperature with an accurate thermometer. Use the inset on the top of the cover provided to fit over the adjustment screw, adjust the knob counterclockwise to increase temperature and clockwise to decrease temperature. (See Figure 2)
3. Once the desired outlet temperature has been achieved refit the knob so that it snaps onto the body. This helps to prevent tempering with the set temperature.



TYPICAL ASSE 1070 INSTALLATION:



FLOW CURVE:



TROUBLESHOOTING:

This troubleshooting table is intended as a helpful guide and is not all inclusive. There could be other causes and solutions for a non-functioning product.

FAULT / SYMPTOM	CAUSE	POSSIBLE SOLUTION
1. The desired mixed water temperature cannot be obtained or valve is difficult to set.	<ul style="list-style-type: none"> Inlet temperatures are not within specification limits. Hot and cold supplies are reversed. Strainers are blocked. 	<ul style="list-style-type: none"> Ensure inlet temperatures are within the specified limits for the valve. Refit the valve with Hot/Cold supplies fitted to the correct connections. Clean strainers.
2. Mix temperature unstable or changing over time.	<ul style="list-style-type: none"> Strainers are blocked. Fluctuating supply pressures. 	<ul style="list-style-type: none"> Clean strainers. Install pressure regulating valves on both hot and cold supplies.
3. Either full hot or full cold water flowing from outlet fixture.	<ul style="list-style-type: none"> Valve is incorrectly set. Hot and cold supplies are reversed. Hot/Cold water has migrated to other inlet. Refer also to point 1. 	<ul style="list-style-type: none"> Adjust mix temperature as required. Refit the valve with Hot/Cold supplies fitted to the correct connections. Verify the check valve is not fouled. Clean if necessary.
4. No flow from the valve outlet.	<ul style="list-style-type: none"> Hot or cold water supply failure. Strainers are blocked. 	<ul style="list-style-type: none"> Restore inlet supplies and check mix temperature. Clean strainers.
5. Flow rate reduced or fluctuating.	<ul style="list-style-type: none"> Strainers are blocked. Fluctuating supply pressures. 	<ul style="list-style-type: none"> Clean strainers. Install pressure regulating valves.
6. Mixed water temperature does not change when temperature adjuster is altered.	<ul style="list-style-type: none"> Hot and cold supplies are reversed. 	<ul style="list-style-type: none"> Refit the valve with Hot/Cold supplies fitted to the correct connections.
7. Hot water flows into the cold water system or vice versa.	<ul style="list-style-type: none"> Check valves fouled. 	<ul style="list-style-type: none"> Clean check valves, ensuring debris is removed.
8. Valve is noisy.	<ul style="list-style-type: none"> Excessive water velocity. Valve sized incorrectly. 	<ul style="list-style-type: none"> Reduce water velocity (best achieved by fitting a pressure regulating valve). Check valve specifications and ensure the appropriate valve is used for required flow.

SPECIFICATIONS:

Hot Water Inlet Temperature:	120-180°F (49-82°C)
Cold Water Inlet Temperature:	39-85°F (4-29°C)
Maximum Design Pressure:	230 psi (15.8 Bar)
Minimum Flow Rate:	.34 GPM (1.3 L/min)
Maximum Flow Rate:	5.8 GPM (22 L/min)

Factory Preset:	105-110°F (41-43°C)
Outlet Water Temperature Range:	95-118°F (35-48°C)
Minimum Temperature Differential (between hot supply and outlet):	10°F (5.6°C) ³
Allowable Supply Pressure Variation:	±20% ¹
Accuracy of Outlet Temperature:	±3°F (±2°C) ²

Notes:

1. Maximum allowable variation in either supply pressure in order to control the outlet temperature to within ±3°F.
Warning: Pressure variations outside of this range may cause changes in the outlet temperature.
2. Per ASSE 1070 testing process.
3. The minimum differential must be maintained to assure performance to ASSE1070 requirements. A differential temperature greater than 10° F will improve the valve's accuracy.

MAINTENANCE:

The Taco 5121 Mixing Valve is an ASSE 1070 SAFETY VALVE. It does not require routine maintenance but should be checked annually to be sure it is functioning properly. For installations with poor water quality it may be necessary to inspect the mixing valve more frequently. Replacement element assemblies are available.

O-RING/PISTON SUB-ASSEMBLY REPLACEMENT:

1. Isolate the valve from the water supply.
2. **Removing the valve from the piping system is not required but may make replacement easier.**
3. Using a screwdriver, pry the green cap from the valve.
4. Secure the valve body (be careful not to damage any threads) and unscrew the brass cap to remove the internals of the valve.
5. Remove the piston assembly out of the top of the valve. If necessary, push the piston assembly from the outlet port of the valve.
6. Using a clean cloth gently wipe out the valve body paying particular attention to the o-ring half way down the inside of the valve body.
7. Remove the o-ring from the cap. Lightly grease the new cap o-ring and re-grease the o-ring half way down the inside of the valve with the grease packet provided.
8. Assemble in the reverse order.
9. When re-fitting the brass cap do not over tighten, as this is an o-ring seal.
10. If removed, reinstall the valve into the piping system and set the outlet mix temperature as indicated above in **"SETTING THE OUTLET TEMPERATURE."**

LIMITED WARRANTY STATEMENT

Taco, Inc. will repair or replace without charge (at the company's option) any product or part which is proven defective under normal use within one (1) year from the date of start-up or one (1) year and six (6) months from date of shipment (whichever occurs first).

In order to obtain service under this warranty, it is the responsibility of the purchaser to promptly notify the local Taco stocking distributor or Taco in writing and promptly deliver the subject product or part, delivery prepaid, to the stocking distributor. For assistance on warranty returns, the purchaser may either contact the local Taco stocking distributor or Taco. If the subject product or part contains no defect as covered in this warranty, the purchaser will be billed for parts and labor charges in effect at time of factory examination and repair.

Any Taco product or part not installed or operated in conformity with Taco instructions or which has been subject to misuse, misapplication, the

addition of petroleum-based fluids or certain chemical additives to the systems, or other abuse, will not be covered by this warranty.

If in doubt as to whether a particular substance is suitable for use with a Taco product or part, or for any application restrictions, consult the applicable Taco instruction sheets or contact Taco at (401-942-8000).

Taco reserves the right to provide replacement products and parts which are substantially similar in design and functionally equivalent to the defective product or part. Taco reserves the right to make changes in details of design, construction, or arrangement of materials of its products without notification.

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This warranty gives the purchaser specific rights, and the purchaser may have other rights which vary from state to state. Some states do not allow limitations on how long an implied warranty lasts or on the exclusion of incidental or consequential damages, so these limitations or exclusions may not apply to you.

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