



Instruction Sheet

102-490

5120-2 Series Lead Free ($\leq .25\%$ Pb) Mixing Valve

SUPERSEDES: New

EFFECTIVE: August 1, 2013

Plant I.D. 001-4204

- ▲ 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 and verify the final water temperature. The thermostatic strip provided must not be used for final water temperature verification.
- ▲ WARNING:** The 5120 Series must not be installed on steam systems (water systems only).
- ▲ WARNING:** 5120 Series mixing valves 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. These mixing valves are not intended to provide protection against thermal shock.

GENERAL:

The Taco 5120 Series is dual listed for both ASSE 1070 and ASSE 1017 applications.

- **NOTE:** Non-union NPT valve is ASSE 1017 only and does not have check valves.
- 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 specification section. 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 115-120°F (46-49°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.
- Union valves come complete with union style connections for ease of installation and service. Non-union versions have NPT threads built into the body.
- Valve must be removed from the piping prior to soldering the end connections. It is recommended to use a spacer piece while soldering.
- For models using the temperature gauge and adaptor on the mixed outlet, attach the adaptor to the mixing valve body, insert the temperature gauge into the adaptor well and then attach the valve union connection to the adaptor.

SETTING VALVE OUTLET TEMPERATURE:

The Taco Series 5120 Mixing Valve is supplied factory set at 115-120°F with 150°F hot water inlet temperature. It may need to be altered depending on operating requirements.

1. Rotate the green knob counterclockwise to increase the outlet temperature and clockwise to decrease the outlet temperature. (See Figure 1)
2. Turn both the hot and cold water supplies on. Open the outlet closest to the mixing valve, preferably a sink rather than a shower. To calibrate, let the water run for 2 minutes and measure the outlet temperature with a thermometer. Adjust the outlet temperature to the desired setting.
3. A temperature strip is provided with each mixing valve and can be used as a reference to set the temperature, however a more accurate device should be used to ensure a correct temperature setting.



F	C
140	60
138	59
136	58
134	57
132	56
130	54
128	53
126	52
124	51
122	50
120	49
118	48
116	47
114	46
112	44
110	43

ADJUSTING MAXIMUM TEMPERATURE (NON-ASSE 1070 APPLICATIONS):

NOTE: Maximum temperature must only be adjusted above 120° in installations which are outside the scope of ASSE 1070.

To adjust the maximum temperature:

- Unscrew the retaining screw to remove the cap. (Figure 2)
- Lift the limit stop ring off of the spindle, rotate to the new maximum temperature position and place the limit stop back on the spindle. (Figure 3)
- Replace the cap and install the retaining screw. The valve may now be freely adjusted up to the new maximum temperature.

Figure 3

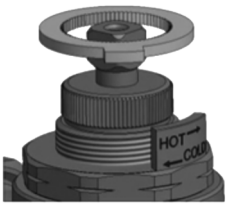


Figure 1

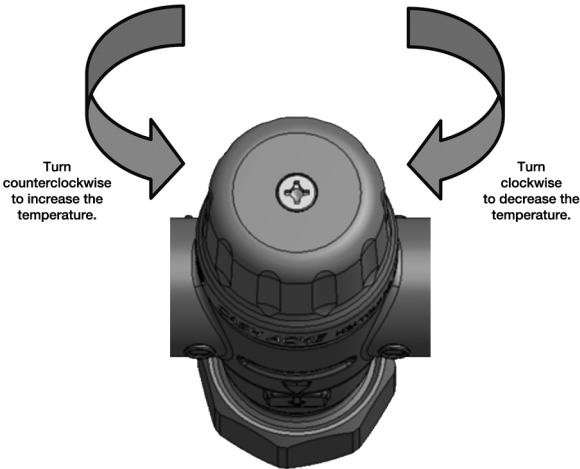
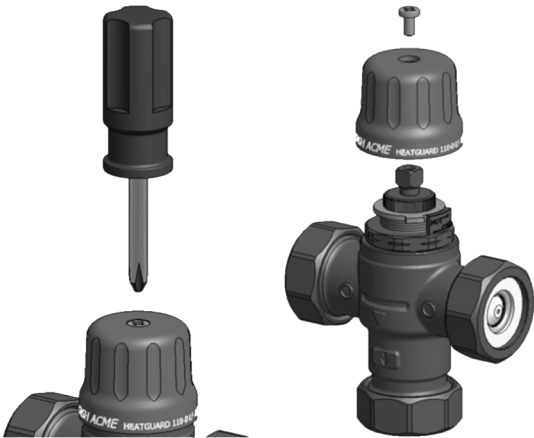
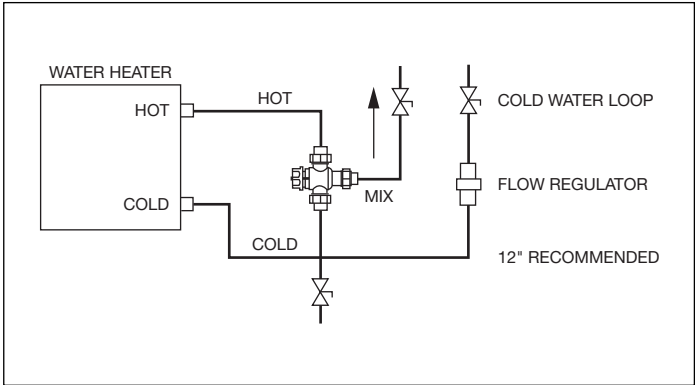


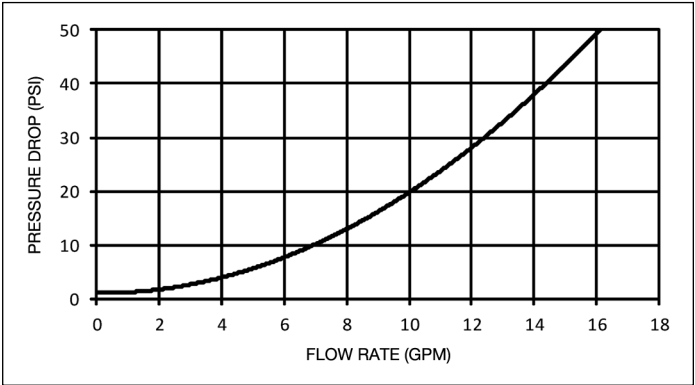
Figure 2



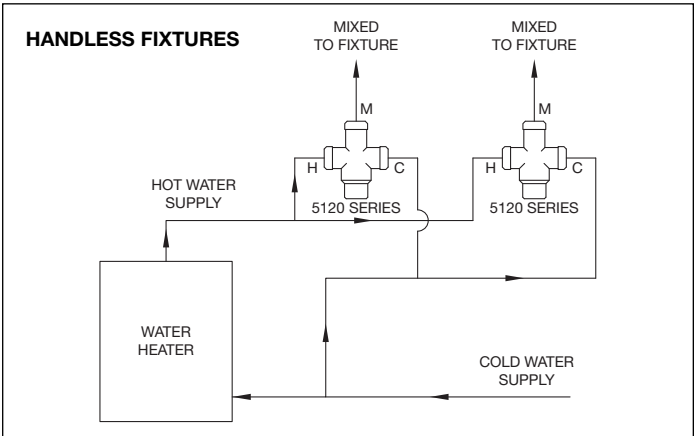
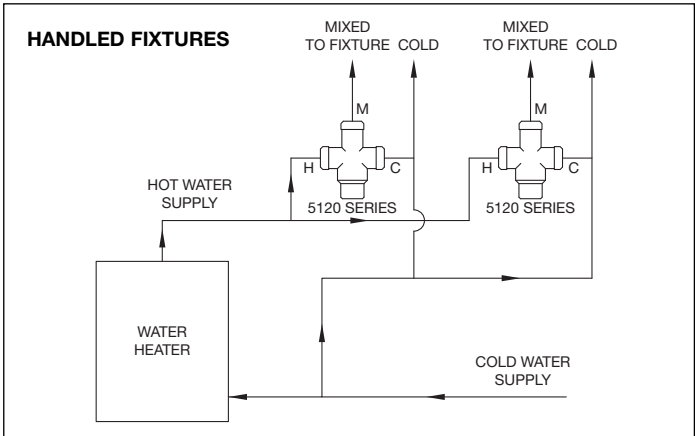
TYPICAL ASSE 1017 INSTALLATION:



FLOW CHART:



TYPICAL ASSE 1070 INSTALLATIONS:



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.	• Inlet temperatures are not within specification limits. • Hot and cold supplies are reversed. • Strainers are blocked.	• 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.	• Strainers are blocked. • Fluctuating supply pressures.	• Clean strainers. • Install pressure regulating valves on both hot and cold supplies.
3. Either full hot or full cold water flowing from outlet fixture.	• Valve is incorrectly set. • Hot and cold supplies are reversed. • Hot/Cold water has migrated to other inlet. • Refer also to fault 1.	• 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.	• Hot or cold water supply failure. • Strainers are blocked.	• Restore inlet supplies and check mix temperature. • Clean strainers.
5. Flow rate reduced or fluctuating.	• Strainers are blocked. • Fluctuating supply pressures.	• Clean strainers. • Install pressure regulating valves.
6. Mixed water temperature does not change when temperature adjustment knob is turned.	• Hot and cold supplies are reversed.	• Refit the valve with Hot/Cold supplies fitted to the correct connections.
7. Hot water flows into the cold water system or vice versa.	• Check valves fouled.	• Clean check valves, ensuring debris is removed.
8. Valve is noisy.	• Excessive water velocity. • Valve sized incorrectly.	• 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: 39-80°F (4-27°C)

Maximum Design Pressure: 230 psi

Minimum Flow Rate: 1 GPM (3.8 L/min)

Maximum Flow Rate: 14 GPM (54 L/min)

Outlet Water Temperature Range: 85-130°F (29-54°C)

Factory Set Locking Ring: 120° Max.¹

Minimum Temperature Differential
(between hot supply and outlet): 27°F (15°C)

Allowable Supply Pressure Variation: $\pm 20\%$ ²

Accuracy of Outlet Temperature: $\pm 3^\circ\text{F}$ (3.4°C)

Notes:

1. Maximum permissible temperature in accordance with ASSE 1070. The limit locking ring may be adjusted for applications not requiring ASSE 1070 valves.

2. Maximum allowable variation in either supply pressure in order to control the outlet temperature to within $\pm 3^\circ\text{F}$.

Warning: Pressure variations outside of this range may cause changes in the outlet temperature.

MAINTENANCE:

The Taco Series 5120 Mixing Valve is a 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. Unscrew the union nuts and remove the valve body from the system. For non-union valves remove the valve body from the piping system. **Removing the valve from the piping system is not required but may make replacement easier.**
3. Using a screwdriver, remove the green cap from the valve.
4. Secure the valve body (using the flats on the body) 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.

TACO OFFERS THIS WARRANTY IN LIEU OF ALL OTHER EXPRESS WARRANTIES. ANY WARRANTY IMPLIED BY LAW INCLUDING WARRANTIES OF MERCHANTABILITY OR

FITNESS IS IN EFFECT ONLY FOR THE DURATION OF THE EXPRESS WARRANTY SET FORTH IN THE FIRST PARAGRAPH ABOVE.

THE ABOVE WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR STATUTORY, OR ANY OTHER WARRANTY OBLIGATION ON THE PART OF TACO.

TACO WILL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF ITS PRODUCTS OR ANY INCIDENTAL COSTS OF REMOVING OR REPLACING DEFECTIVE PRODUCTS.

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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