

5123-WH-N Lead Free ($\leq .25\%$ Pb) Mixing Valve

SUPERSEDES: July 2, 2015

EFFECTIVE: August 18, 2015

Plant I.D. 001-4206

- ⚠ 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 5123-WH-N must not be installed on steam systems (water systems only).
- ⚠ WARNING:** 5123-WH-N 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.
- ⚠ CAUTION:** Valve must not be subjected to heat during the installation, this may damage the valve's internal components.
- ⚠ CAUTION:** Do not use excess thread sealant (in any form) as this may cause valve failure.

GENERAL:

The Taco 5123-WH-N is dual listed for both ASSE 1070 and ASSE 1017 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 specification section. If the site conditions are outside of the specifications for the valve, the site conditions must be corrected prior to installing the valve.
- Install in accordance with markings on valve body, i.e. hot water inlet - marked "H", cold water inlet - marked "C" and mixed outlet - marked "M".
- 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 (**MIXING VALVE TEMPERATURE ADJUSTMENT**).
- A temperature strip is provided with each mixing valve and can be used as a reference to set the temperature. The temperature strip must not be used for final temperature verification.

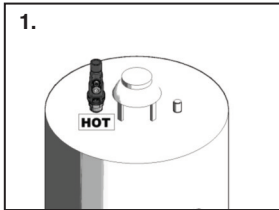
NOTE: If the water supply is of poor quality a filter or strainer should be fitted at the system inlet so that both the water heater and the mixing valve are protected from dirt and debris.



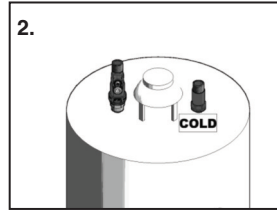
F	C
140	60
138	59
136	58
134	57
132	56
130	54
128	53
126	52
124	51
122	50
120	49
118	48
116	47
114	46
112	44
110	43

INSTALLATION:

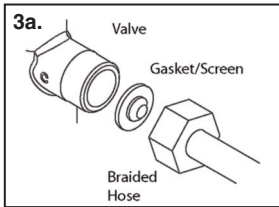
Before connecting the tee and mixing valve to the water heater, it is important to consider the alignment required to enable connection of the tee to the mixing valve with the flexible hose or piping and the positioning of the mixing valve to allow easy access for adjustment. If a recirculation return line is also being installed the position of the recirculation port also needs to be considered.



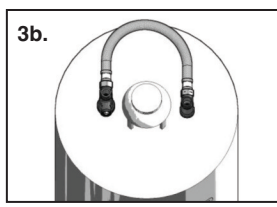
1. Apply sealing tape to the hot and cold connections on the water heater. Connect the hot inlet of the mixing valve to the hot outlet of the water heater, ensuring that the adjustment mechanism is easily accessible and that the recirculation port is positioned for easy connection to the system return line.



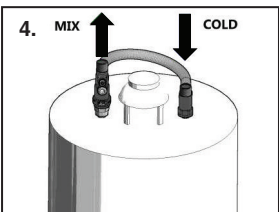
2. Connect the tee to the cold inlet of the water heater, ensuring that its mixing valve connection is aligned to allow connection to the mixing valve via the flexible hose or hard pipe.



- 3a. Insert the combination screen/gasket into the nut side of the flexible hose and connect the hose between the tee and the mixing valve.



- 3b. Connect the flexible hose/hard pipe between the tee and the mixing valve.



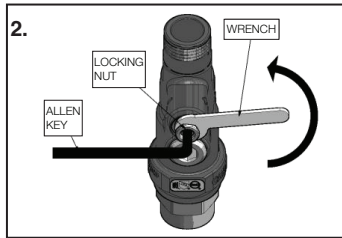
4. Connect system cold water inlet supply to the tee inlet and the system hot water outlet supply to the mixing valve outlet.

MIXING VALVE TEMPERATURE ADJUSTMENT:

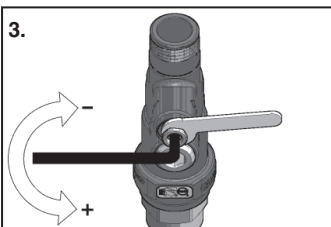
Prior to setting the valve it is necessary for the hot water source to be switched on and delivering hot water at the design temperature.



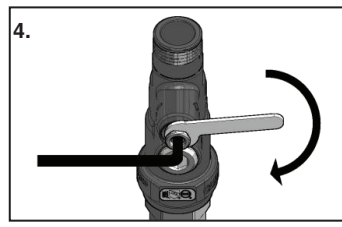
1. Using an accurate thermometer, test the mixed water temperature at the nearest outlet being supplied by the valve. The test outlet should not be a shower with its own temperature limiting control valve. This should be opened to allow a minimum flow rate of 1.5 gpm (6 L/min). Allow the water to run for at least one minute to ensure the mixed water temperature has settled.



2. Holding the 3/16" Allen key (supplied), loosen the locking nut with a 7/16" wrench.



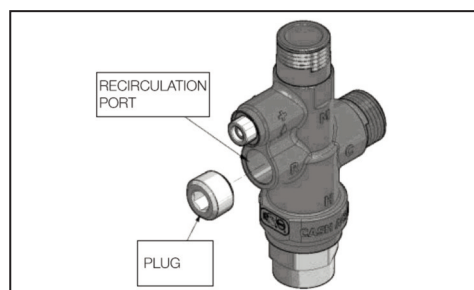
3. Using the wrench to support the locking nut and prevent it from rotating, turn the Allen key to adjust the outlet temperature - clockwise to decrease the temperature, counterclockwise to increase the temperature - until the desired set point is reached.



4. Holding the Allen key, tighten the locking nut with the wrench.

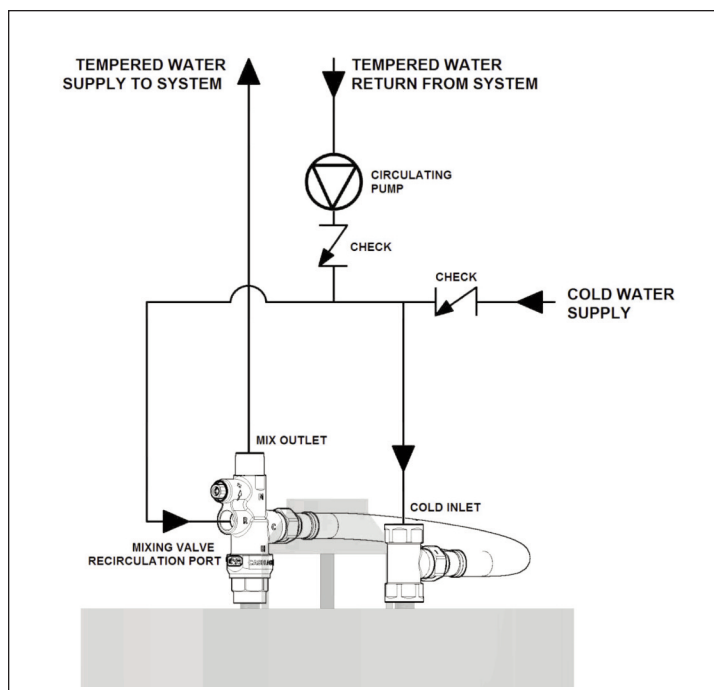
INSTALLATION IN RECIRCULATED SYSTEMS:

The 5123-WH-N includes a recirculation port to allow return water from the system to be connected directly back into the mixing valve. To use this recirculation port, remove the plug using an Allen key (3/8").



CHECKING/SERVICING THE MIXING VALVE:

- Note that this thermostatic mixing valve is a **SAFETYVALVE**. It does not require routine maintenance but should be checked annually to be sure it is functioning properly. For installations with poor or unknown water quality, or other adverse supply conditions, it may be necessary to check the valve at more frequent intervals.
- The temperature should be checked at the same outlet as was used for commissioning in the first instance. If the temperature is more than 5°F from the commissioning temperature, refer to fault finding guide below.
- There may be some variation in the temperature of the water from the thermostatic mixing valve due to seasonal temperature variations in the cold water supply.
- The check valve can be easily accessed for cleaning via the flexible hose connection.
- **If the water supply is of poor or unknown quality filters or strainer should be fitted at the inlet to the system such that the cold inlet to both the water heater and the mixing valve are protected from dirt and debris.**



NOTE: This diagram is a guideline only. Any installation of a recirculated system should be undertaken by a qualified tradesman, and in accordance with the relevant codes and State, Provincial and Local Authority requirements. Performance of the system will be dependent on the other components specified within it.

TROUBLESHOOTING:

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

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)

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

Cold Water Inlet Temperature: 39-80°F (4-27°C)

Maximum Design Pressure: 230 psi

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

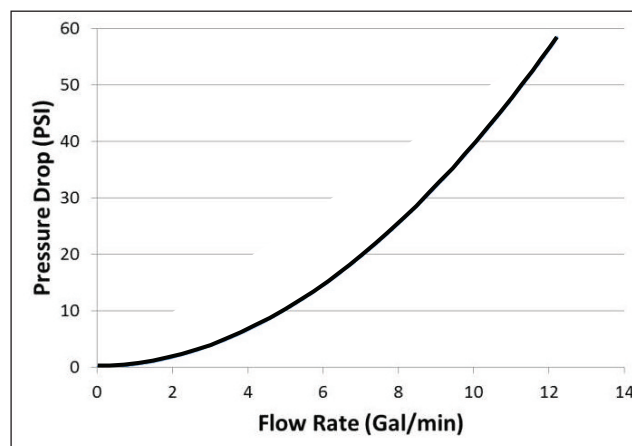
Minimum Flow Rate: 1 GPM (3.8 L/min)

Allowable Supply Pressure Variation: $\pm 20\%$ ¹

Maximum Flow Rate: 12 GPM (45.4 L/min)

Accuracy of Outlet Temperature: $\pm 5^\circ\text{F}^2$ (2.8°C)

FLOW CURVE:



Notes:

1. Maximum allowable variation in either supply pressure in order to control the outlet temperature to within $\pm 5^\circ\text{F}$.

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

2. As tested in accordance with ASSE 1070.

MAINTENANCE:

The Taco 5123-WH-N 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.

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.

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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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