POWERS™

HYDROGUARD® Thermostatic Tempering Valves
ASSE 1017 Series LM490, LFLM490, LM490-10 and LFLM490-10

Installation Instructions

NOTE: Installation should be in accordance with accepted plumbing practices. Flush all pipes thoroughly before installation. Installation and field adjustment are the responsibility of the installer.

LFLM490-1

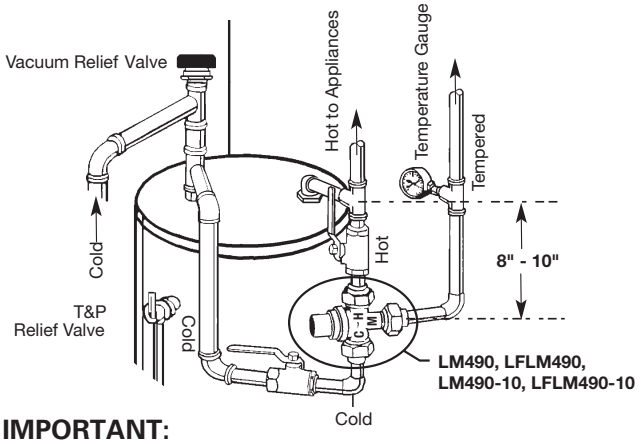
LM490-5

Installation Instructions ■

1. Close both hot and cold water shutoff valves upstream of the tempering valve.
2. Bleed pressure from the system.
3. Route copper tubing or piping to fit valve dimensions.
4. For valves with Quick-Connect tailpieces refer to "Quick-Connect Installation" instructions.
5. Remove tailpieces from the valve and make sure union nuts are over the tubing/piping before connecting to the tailpiece.

NOTE: If soldering, remove unions and gaskets from valve body prior to soldering to prevent damage to valve from excessive heat.

6. Flush piping again, install valve using filter gasket on hot and cold water inlets and fiber gasket on mixed water outlet.
7. Turn on the cold and hot water. If any leak are observed, tighten connections as necessary to stop leak before proceeding.



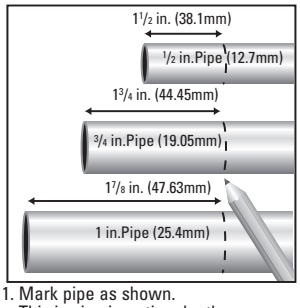
IMPORTANT:

To prolong the life of the series LM490, LFLM490, LM490-10 or LFLM490-10 valves, it is recommended that the hot water inlet to the valve should be 8-10"(200-305 mm) below the hot water inlets.

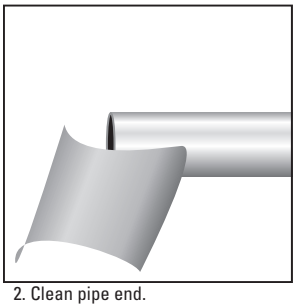
Figure 1. Domestic Hot Water Application

Quick-Connect Installation ■

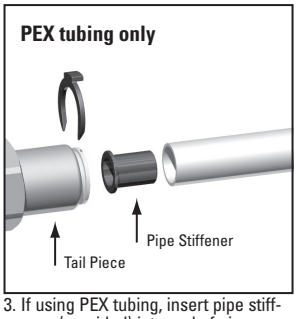
TO CONNECT



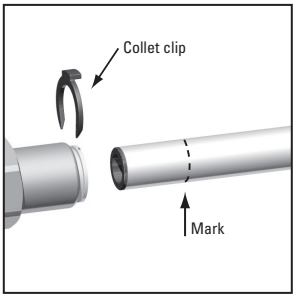
1. Mark pipe as shown. This is pipe insertion depth.



2. Clean pipe end.

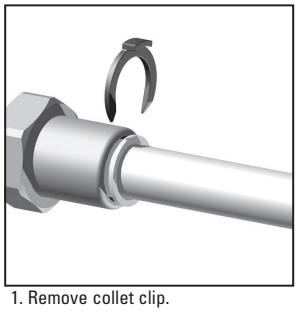


3. If using PEX tubing, insert pipe stiffener (provided) into end of pipe.

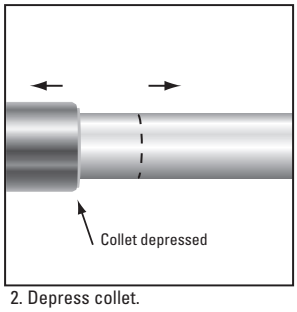


4. Push tubing into tailpiece up to mark.
5. Insert collet clip.

TO DISCONNECT



1. Remove collet clip.



2. Depress collet.
3. Pull tubing from tailpiece.

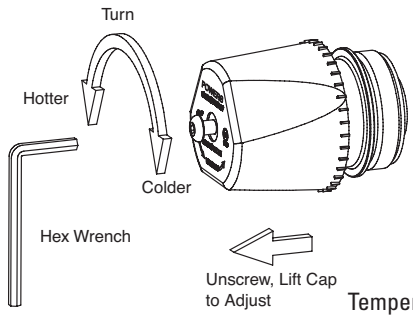


Figure 2.
Temperature Adjustment

To Adjust Temperature (Figure 2) ■

LM490 & LFLM490 is factory pre-set to 120°F (49°C) and LM490-10 & LFLM490-10 is factory set to 90°F (31°C) outlet temperatures under the following conditions:

Cold inlet: 60° - 70°F (16 - 21°C)
Hot inlet: 140° - 145°F (60 - 63°C)
Supply Pressures: 45psi (310 kPa)

1. Let the water flow for at least two minutes to allow supply temperature to stabilize.
2. Place a thermometer in the outlet water stream.
3. Loosen handle screw with hex wrench.
4. Handle must be lifted 1/4" to adjust temperature. Rotate handle clockwise to decrease temperature and counter-clockwise to increase the temperature.
5. Lower handle and tighten screw.
6. Check for outlet temperature.

Caution: Need Periodic Inspection ■

This valve requires periodic inspection and verification of outlet temperature by a licensed contractor. Corrosive water conditions, inlet temperatures over 200°F (93°C), unauthorized adjustments or repair could render the valve ineffective for service intended. Regular cleaning and checking of thermostat assembly helps to assure maximum life and proper product function. Frequency of cleaning depends upon local water conditions.

ATTENTION INSTALLER:
After installation, please leave this Instruction Sheet for occupant's information.
IMPORTANT: Inquire with governing authorities for local installation requirements.

Troubleshooting ■

Fluctuating or erratic hot water temperature at fixture:
Unbalanced Pressure. Install balancing or throttling valve at the hot and cold water supplies and adjust accordingly for demand.

Hot water backing up into cold water line:
Hot water pressure is higher than cold water pressure. Examine check valves for dirt & debris, clean as necessary.

Cannot adjust water temperature to desire temperature:
Install balancing or throttling valve at the hot and cold water supplies and adjust accordingly for demand.

High pressure drop through the tempering valve:
Valve Undersized. Install larger thermostatic tempering valve.

Insufficient hot water during peak demand:
Check flow requirement during peak demand period. Use larger thermostatic tempering valve.

Repair Kit ■

Model	Part #	Description
LFLM490 & LM490	490-090	Plunger/Motor Assembly
LFLM490-10 & LM490-10	490-190	Plunger/Motor Assembly

WARNING: For valves with CPVC or PEX-end connections, do not exceed the tubing manufacturers pressure and temperature ratings. Refer to the tubing manufacturers product specifications for that information.

WARNING:
Powers Hot Water Temperature Control Valve Series LM490, LFLM490, LM490-10 & LFLM490-10 are designed to be installed at or near the boiler or water heater. They cannot be used by themselves for tempering water temperatures at fixtures where ASSE Standard 1016 or ASSE Standard 1070 listed devices are required. To comply with ASSE Standard 1016 or ASSE Standard 1070, listed devices such as Powers Series e480, LFe480, LM495 or LFLM495 should be used at fixtures to prevent possible injury.
Powers Hot Water Temperature Control Valve Series LM490, LFLM490, LM490-10 or LFLM490-10 are not designed to compensate for system pressure fluctuations. Such use may result in severe bodily injury (i.e., scalding or chilling) and/or death.
When installing the Series LM490 or LM490-10, valves in radiant heat applications, the components of the radiant heat system must be of materials with a construction capable of withstanding the high limit output temperatures of the heating boiler. If you are uncertain as to the product's adaptability for your application, please consult an authorized representative before installing or using the product.

CALIFORNIA PROPOSITION 65 WARNING
WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.
(California law requires this warning to be given to customers in the State of California.)
For more information: www.watts.com/prop65

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