Series 1170, LF1170, L1170 and LFL1170

Hot Water Temperature Control Valves

Size: ½", ¾", 1" (15, 20, 25mm)

LF1170-UT-M2

1170-QC-M2

Installation Instructions

Valve should be installed and adjusted by a licensed contractor in accordance with local codes and ordinances. Further, this valve should be installed in a location where it is accessible for cleaning, service or adjustment.

1. Close both the hot and cold water shutoff valves upstream nearest to the intended installation.
2. Bleed the remaining water from the system.
3. Connect the water supply to valve as shown in Figure 1 or 2, depending on the application. Supply piping must be flushed clean before making connections to the valve.

IMPORTANT!: To prolong the life of the Model 1170-M2, L1170-M2, LF1170-M2 or LFL1170-M2 valve, it is recommended that it be trapped as shown: i.e. the hot water inlet to the 1170-M2 or LF1170-M2 valve should be 8" – 12" (200 – 305mm) below the hot water supply feed.

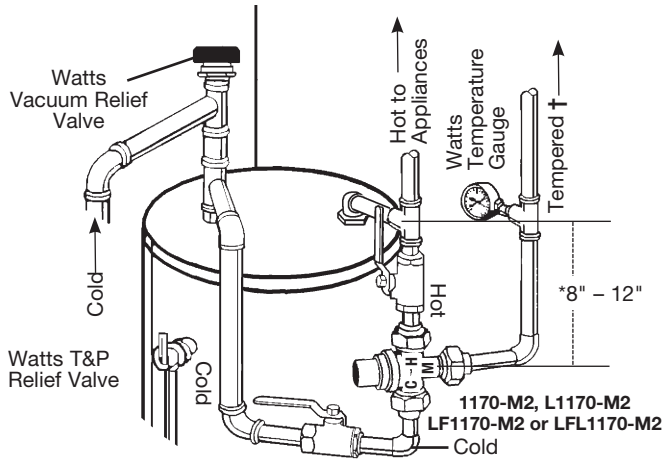
4. Valve can be installed in any position. Note: the inlet hot supply is to be connected to the "H" side of the valve, the cold supply side to the "C" side and the mixed water outlet to the "M" side.
5. Make sure union nuts are placed over tailpieces prior to soldering or threading to pipe.
6. For valves with Quick-Connect tailpieces refer to "Quick-Connect Installation" instructions below.

Note: To prevent damage to valve from excessive heat during soldering, remove unions and gaskets from valve body prior to soldering.

7. After soldering, flush piping and install valve using filter washer on hot and cold water inlet and fiber washer on the mixed water outlet.
8. Start-up: Open cold water supply, then hot water supply. Inspect for leaks.
9. Adjust temperature to desired setting (see Temperature Adjustment Section).

Figure 1

Domestic Hot Water Application



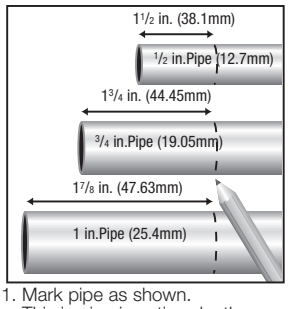
Domestic Hot Water Application

***Note:** To prolong the life of the valve, it is recommended the valve be trapped as shown

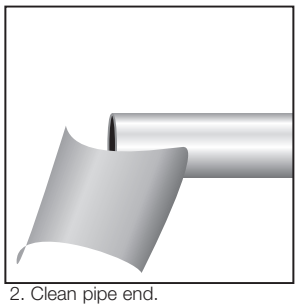
† Devices tested to ASSE 1070 or ASSE 1069 such as Watts USG, LFUSG, L111, MMV or LFMMV should be used at fixture to prevent possible injury.

Quick-Connect Installation

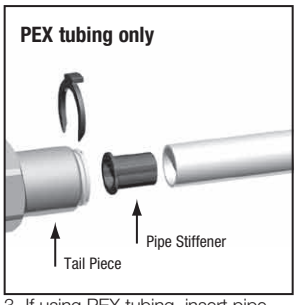
To Connect



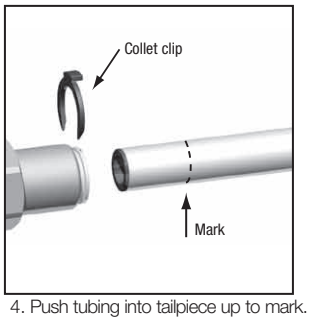
1. Mark pipe as shown. This is pipe insertion depth.



2. Clean pipe end.

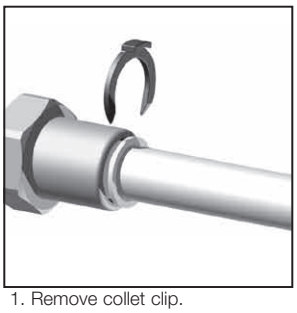


3. If using PEX tubing, insert pipe stiffener (provided) into end of pipe.

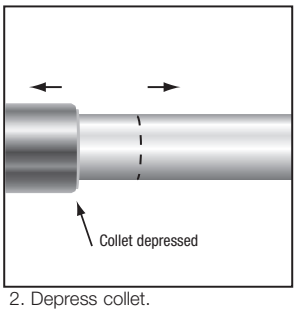


4. Push tubing into tailpiece up to mark.
5. Insert collet clip.

To Disconnect



1. Remove collet clip.



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

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Figure 2

Radiant Heat Application

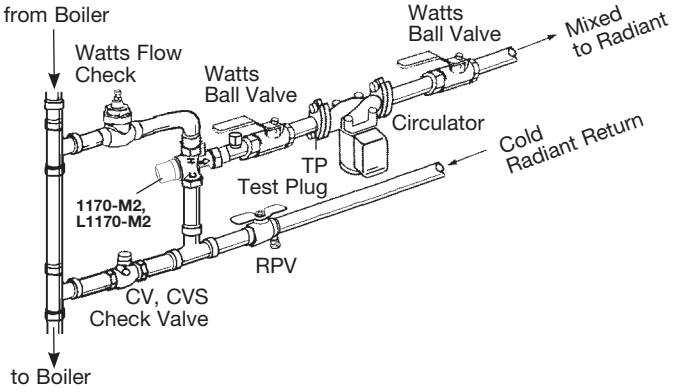


Figure 3

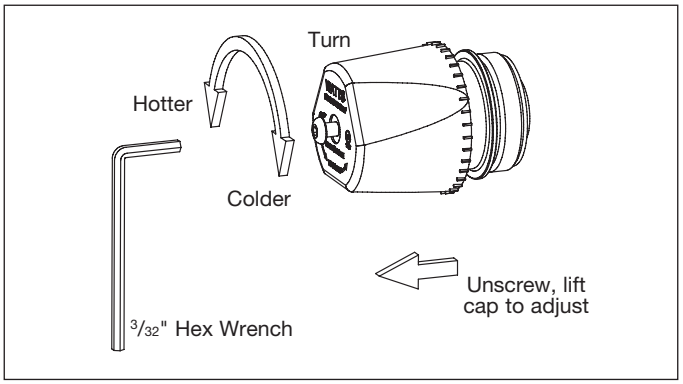
Temperature Adjustment

Factory Preset:

1170-M2, LF1170-M2: 120°F (49°C)
L1170-M2, LFL1170-M2: 90°F (31°C)

Under following conditions:

Cold Inlet: 60-70°F (16-21°C)
Hot Inlet: 140-145°F (60-63°C)
Supply Pressure: 45psi (3.15 bar)



1. Let water flow for at least two minutes to allow supply temperature to stabilize.
2. Calibrate the mixed water outlet temperature by placing a thermometer in the mixed water stream.
3. To adjust the setting of the valve, loosen locking cap screw with hex wrench, see Figure 3. Cap must be lifted 1/4" to adjust temperature. To increase the temperature, turn counterclockwise. To decrease temperature turn clockwise.
4. Lower handle and tighten screw.
5. Check outlet temperature.

Period Inspection/Maintenance

This valve requires periodic inspection and verification of the outlet temperature by a licensed contractor. Corrosive water conditions, hot inlet water temperature over 200°F (93°C), unauthorized adjustments or repairs could render the valve ineffective for its intended service. Regular cleaning and checking of thermostat assembly helps to maximize valve life and mixing function. Frequency of cleaning depends on local water conditions.

Pressure — Temperature

Minimum Supply Pressure (Static): 30psi (207 kPa)

Inlet Temperatures: hot inlet, 120°F – 200°F (49°C – 93°C), cold inlet, 40°F – 85°F (4°C – 29°C)

Hot Water Inlet to Outlet Differential Temperature: 5°F (3°C)

1170-M2, LF1170-M2 Temperature Out:
Field range: 90°F – 160°F (32°C – 71°C), adjustable.
Accurate within ±3°F (1.7°C)

L1170-M2 and LFL1170-M2 Temperature Out:
Field range: 60°F – 120°F (16°C – 49°C), adjustable.
Accurate within ±3°F (1.7°C)

Maximum Temperature: 200°F (93°C)

Maximum Pressure: 150psi (10.3 bar)

Maximum Pressure Differential Between Hot and Cold Water Supplies: 25%.

Approval: CSA B125 certified
Listing: ASSE 1017 and IAPMO UPC

⚠ WARNING

Watts Hot Water Temperature Control Valves cannot be used for tempering water temperature at fixtures. Severe bodily injury (i.e. scalding or chilling) and/or death may result depending upon system water pressure changes. ASSE Standard 1016, ASSE 1070 listed devices such as Watts Model L111, LFL111 Series USG, LFUSG, MMV or LFMMV should be used at fixtures to prevent possible injury. The Watts Hot Water Temperature Control Valves are designed to be installed at or near the boiler or water heater. They are not designed to compensate for system pressure fluctuations and should not be used where ASSE 1016 devices are required. These WATTS valves should never be used to provide “anti-scald” or “anti-chill” service.

When installing the Series 1170-M2 valves in a radiant heat application, 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.

Watts 1170-M2, LF1170-M2, L1170-M2, LFL1170-M2 Troubleshooting Guide

Problem & Cause	Answer
A. Unable to reach required set point or set point difficult to set	
A.1 Supply temperatures not within specified limits	A.1 Check differential temperature between hot and cold supplies and outlet 10°F (5.6°C) minimum required
A.2 Hot and cold supplies reversed	A.2 Reinstall valve with supplies connected to marked inlets
A.3 Filters are blocked by debris	A.3 Clean filters
B. Unable to achieve required flow	
B.1 Too much pressure drop at fixture	B.1 Measure supply pressures and check against flow chart. Look for restrictions in valve or piping
B.2 Checks valve/filters blocked by debris	B.2 Clean check valves/filters
C. Valve does not maintain required temperature or temperature changes over time	
C.1 Fluctuation in supply pressures	C.1 Stabilize water pressures with pressure regulating or balancing valves
C.2 Check valve/filters blocked by debris	C.2 Clean check valves/filters
C.3 Recirculation loop not piped properly	C.3 Pipe recirculated tempered water return so it connects to hot water source and cold side of mixing valve (see Product Guide for piping details)
D. Discharge temperature too hot or cold	
D.1 Valve not calibrated properly	D.1 Readjust valve temperature per installation instructions
E. Hot water from cold water tap or cold from hot	
E.1 Check valves fouled	E.1 Clean check valves/filters
F. Valve is noisy	
F.1 Water velocity is too high	F.1 Reduce water velocity with pressure regulating valves
F.2 Valve not sized properly	F.2 Check flow required versus rated flow capacity of valve
G. No flow from valve	
G.1 Hot or cold water supply failure or shutoffs closed	G.1 Open shutoffs or restore hot and cold supply
G.2 Check valve/filters blocked by debris	G.2 Clean check valves and filters
H. Flow from valve fluctuates	
H.1 Fluctuation in supply pressures	H.1 Stabilize water pressure with pressure regulating valves
H.2 Check valve/filters blocked by debris	H.2 Clean check valves and filters

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

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.

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

Limited Warranty: Watts Regulator Co. (the "Company") warrants each product to be free from defects in material and workmanship under normal usage for a period of one year from the date of original shipment. In the event of such defects within the warranty period, the Company will, at its option, replace or recondition the product without charge.
THE WARRANTY SET FORTH HEREIN IS GIVEN EXPRESSLY AND IS THE ONLY WARRANTY GIVEN BY THE COMPANY WITH RESPECT TO THE PRODUCT. THE COMPANY MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED. THE COMPANY HEREBY SPECIFICALLY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
The remedy described in the first paragraph of this warranty shall constitute the sole and exclusive remedy for breach of warranty, and the Company shall not be responsible for any incidental, special or consequential damages, including without limitation, lost profits or the cost of repairing or replacing other property which is damaged if this product does not work properly, other costs resulting from labor charges, delays, vandalism, negligence, fouling caused by foreign material, damage from adverse water conditions, chemical, or any other circumstances over which the Company has no control. This warranty shall be invalidated by any abuse, misuse, misapplication, improper installation or improper maintenance or alteration of the product.
Some States do not allow limitations on how long an implied warranty lasts, and some States do not allow the exclusion or limitation of incidental or consequential damages. Therefore the above limitations may not apply to you. This Limited Warranty gives you specific legal rights, and you may have other rights that vary from State to State. You should consult applicable state laws to determine your rights. **SO FAR AS IS CONSISTENT WITH APPLICABLE STATE LAW, ANY IMPLIED WARRANTIES THAT MAY NOT BE DISCLAIMED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO ONE YEAR FROM THE DATE OF ORIGINAL SHIPMENT.**

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