

# Instructions

## Series LF70A

### Hot Water Extender Tempering Valves

#### ⚠ WARNING



Read this Manual **BEFORE** using this equipment. Failure to read and follow all safety and use information can result in death, serious personal injury, property damage, or damage to the equipment. Keep this Manual for future reference.



#### ⚠ WARNING

Watts Hot Water Master Tempering 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 and/or supply water temperature changes. ASSE standard 1016, 1069 or 1070 listed devices such as Watts Series LFL111, LFMMV and LFUSG and valves should be used at fixtures to prevent possible injury.

The Watts Hot Water Tempering 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 standard 1016, 1069 or 1070 devices are required. These Watts valves should never be used to provide “anti-scald” or “anti-chill” service.

#### NOTICE

Inquire with governing authorities for local installation requirements

#### NOTICE

**BE SURE TO REMOVE THERMOSTATIC ASSEMBLY** from valve before sweating connections, otherwise it will become damaged.

\*A valve should be installed in cold water line to hot water extender tempering valve, as shown, to help compensate for pressure drop through heater.

#### NOTICE

† Valves listed to ASSE Standard 1016, 1069 or 1070 such as Watts Series LFMMV or LFUSG-B should be used at fixture to prevent possible injury.

Minimum Flow Requirements to Maintain Set Temperature: 2 gpm for size ½" and ¾"

## Installation Instructions

Valve should be installed by a licensed contractor.

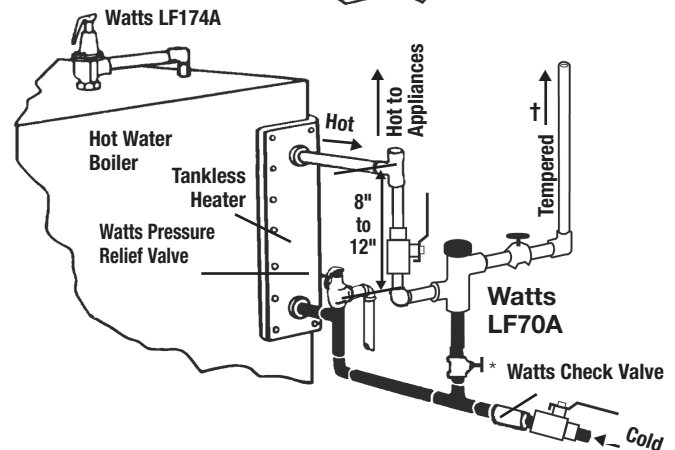
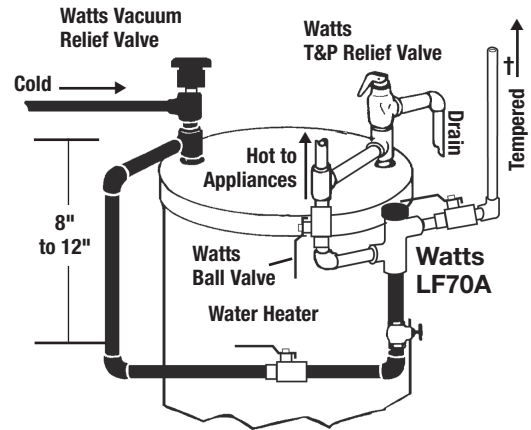
1. Close both the hot and cold water shutoff valves upstream of the valve.
2. Bleed pressure from the system.
3. Remove the thermostat and bonnet assembly (A), which is hand-tight, from body and install valve body as illustrated in diagram. Valve must be trapped 8" to 12" as shown.
4. Reinsert Thermostat and Bonnet assembly in body and tighten knurled portion of bonnet securely with pliers or channel locks.
5. **START UP REQUIREMENTS:** Open cold water then hot water shutoff valves. The cold water supply line to Series LF70A valve should always be opened first to prevent possible thermostat damage.

## Adjustment

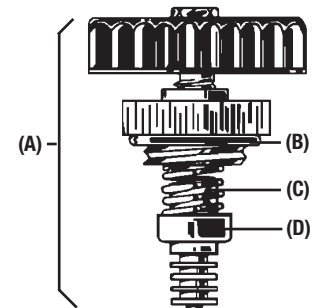
The Series LF70A features a new adjustment means which permits you to “dial” a temperature quickly and conveniently. To increase or decrease the water temperature, simply turn the adjusting cap as indicated by the arrow. The adjustment temperature range is 120°F to 160°F and will vary depending on system water pressure changes and water temperature fluctuations.

**Model LFL70A:** For lower tempered water or below 130°F, use low temperature Model LFL70A which provides a temperature range between 100°F-130°F.

**NOTE:** Model LFL70A (low temperature model) may be used in a radiant heat application. Other models of this valve must not be used in radiant heat applications. When installing an LFL70A valve in a radiant heat application, the components of the radiant heat system must be of materials with a construction of withstanding the high limit output temperatures of the heating boiler. If you are uncertain as to the products adaptability for your application, please consult an authorized representative before installing or using the product.



## Thermostat and Bonnet Assembly



Repair Kit	Model	Ordering Code
LF70ARK	fits LF70A, LF70AT	0869100
LFL70ARK	LFL70A, LFL70AT	0869130

Includes O-ring and (B), Spring (C) and Thermostat Assembly (D)

#### ⚠ CAUTION

#### Need for Periodic Inspection

Periodic inspection by a licensed contractor is recommended. Corrosive water conditions, temperatures over 210°F, unauthorized adjustments or repair could render the valve ineffective for service intended. Regular cleaning and checking of thermostat assembly (A) helps to assure maximum life and proper product function. Frequency of cleaning depends upon local water conditions.

†See Warning.

# Series LF70A Troubleshooting Guide

Problem & Cause	Answer
<b>A. Fluctuating or erratic hot water temperature at fixture.</b>	
A.1 Heavy draws of either cold or hot water elsewhere in the system, such as clothes washer or dishwasher.	A.1 See warning on reverse side. Hot water temperature control valves cannot compensate for this condition. Check valves in hot and cold legs to hot water temperature control valve would help but not cure the problem.
A.2 Unbalanced pressures.	A.2 Install balancing or throttling valves (shutoff valves) in hot and cold legs to hot water extender tempering valve and adjust accordingly for demand.
<b>B. Hot water backing up into cold water line.</b>	
B. Hot water pressure overriding cold pressure.	B. Install check valve in cold water leg to hot water temperature control valve.
<b>C. Cannot adjust water temperature to desired temperature.</b>	
C.1 Unequal pressures.	C.1 A balancing or throttling valve must be installed in the cold water leg to the hot water temperature control valve to throttle or restrict the pressure. In most installations, the cold water supply line feeds both the hot water temperature control valve and the water heater or tankless heater. To compensate for the pressure drop through the heater, the cold water to the hot water temperature control valve must be throttled or reduced.
C.2 Hot or cold temperature differential.	C.2 Check water heater controls to verify that the water temperature is the same as the heater thermostat setting.
C.3 Valve undersized.	C.3 Check gpm flow required versus gpm flow capacity of valve.
<b>D. High pressure drop through hot water temperature control valve.</b>	
D. Valve undersized.	D. Install larger hot water temperature control valve.
<b>E. Insufficient hot water during peak demand</b>	
E.1 Valve undersized.	E.1 Check gpm flow required during peak demand period and size hot water temperature control valve accordingly.
E.2 Heater or capacity insufficient for demand.	
<b>F. Frequent failure of thermostatic element.</b>	
F.1 Thermostatic element exposed to extremely high temperature.	F.1 Check heater thermostat setting. F.1a Hot water temperature control valve must be trapped at least 8" to 12" as per installation instructions. Install check valves as recommended.
F.2 Corrosive water conditions. (Buildup of mineral deposits)	F.2 Frequent cleaning of thermostat element and plunger would tend to prolong the life of the element. A small coating of FDA approved silicone lubricant in the piston area of the element would also help.
F.3 Electrolysis (pitting deterioration, etc.)	F.3 Electrically ground the piping system or install dielectric unions.
<b>G. All hot or cold water flows at hot fixture.</b>	
G.1 This problem will require considerable troubleshooting.	G.1 Verify that complete installation instructions were followed: A. Is valve properly trapped? 2. Check to see if thermostatic element has failed. 3. Check to see if temperature control on water heater is set at desired temperature. 4. Check to see if minimum flow requirements for valve size are met. Minimum flow requirements for LF70A series valves is 2 gpm.

**ATTENTION INSTALLER:** After installation please leave this instruction sheet for occupant's information.

**WARNING:** This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.  
**For more information:** [www.watts.com/prop65](http://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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