

ENGLISH INSTRUCTIONS

Series N170-M3 and LFN170-M3 ✓ Hot Water Master Tempering Valves

⚠ WARNING

You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product. **FAILURE TO COMPLY WITH PROPER INSTALLATION AND MAINTENANCE INSTRUCTIONS COULD RESULT IN PRODUCT FAILURE WHICH CAN CAUSE PROPERTY DAMAGE, PERSONAL INJURY AND/OR DEATH.** Watts is not responsible for damages resulting from improper installation and/or maintenance.

Local building or plumbing codes may require modifications to the information provided. You are required to consult the local building and plumbing codes prior to installation. If this information is not consistent with local building or plumbing codes, the local codes should be followed.

Installation Instructions

Installation should be in accordance with acceptable plumbing practices. Flush all pipes thoroughly before installation. Installation and field adjustment are responsibility of the installer and shall be carried out per following installation instructions.

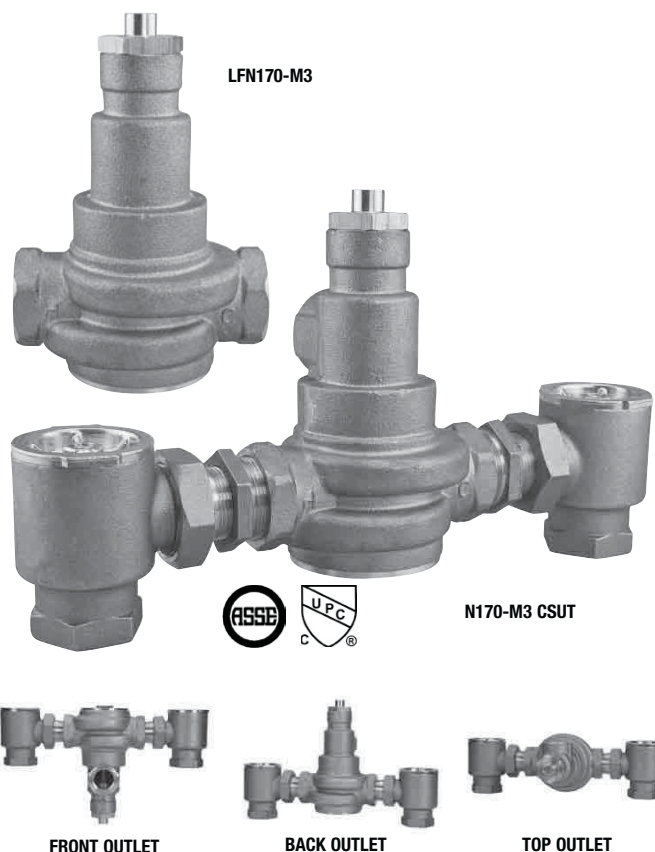
1. Valves are to be installed as close to building inlet supply as possible to prevent/minimize pressure fluctuations.
2. Valve body can be installed in multiple positions, see below. Make sure that the union nuts and tailpieces are tightened securely if you are using checkstops.
3. Connect inlets and outlet and check for leaks.
4. **⚠ CAUTION:** When N170-M3 or LFN170-M3 supplies tempered water to self-closing and/or solenoid valves, provide a shock absorber on the discharge line.
5. Before use, check discharge temperature. Reset if necessary

Temperature Adjustment

1. Turn off recirculation pump (if one is in the system).
2. Open enough fixtures to meet the minimum flow requirement of the valve.
3. Loosen the lock nut. Turn temperature adjustment screw clockwise to decrease or counterclockwise to increase outlet temperature.

NOTE: Please allow valve temperature to stabilize in before making your next adjustment. Watts recommends that a temperature gauge is installed on the tempered line and be checked at least monthly under normal flow conditions. The gauge must be installed at least 6 ft. away from the tempering valve.

4. When desired temperature is set, tighten the lock nut. Turn recirculation pump back on. Close open fixtures.



⚠ WARNING

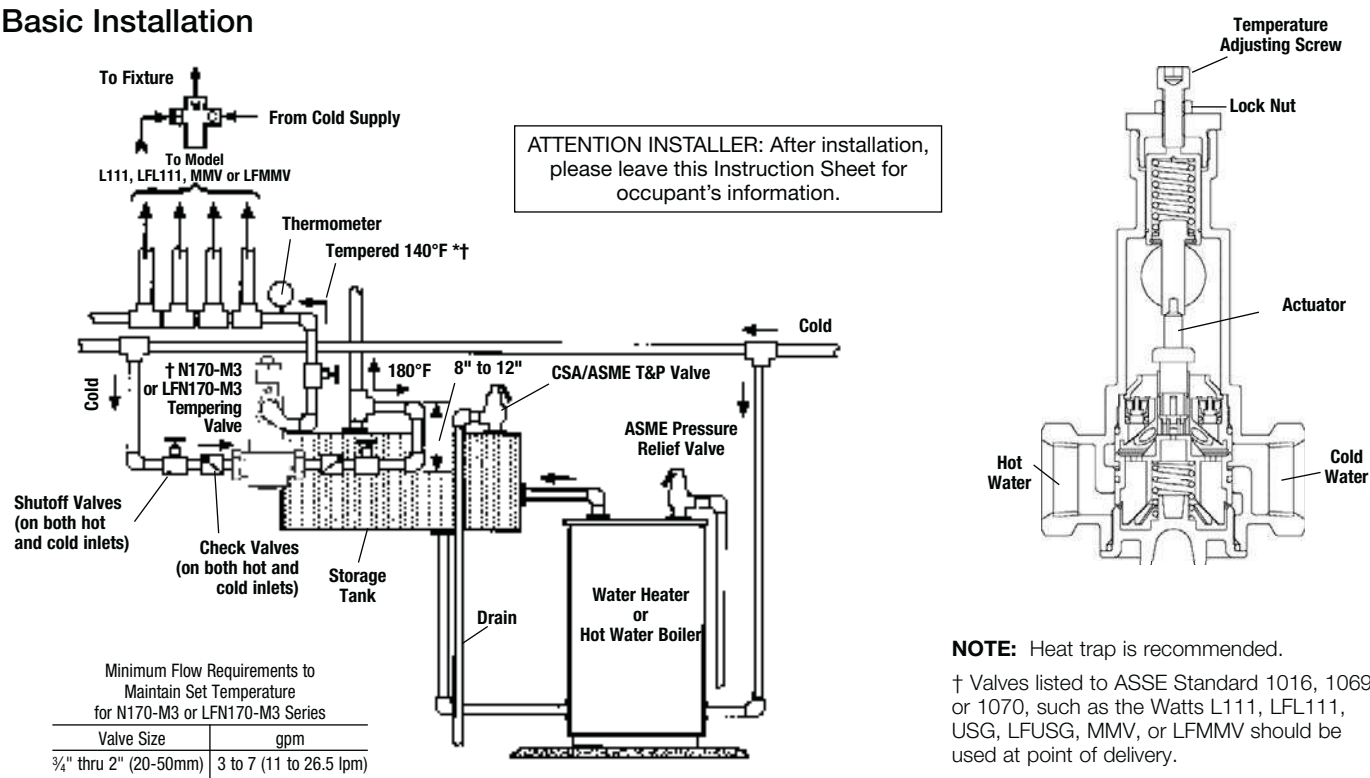
Watts Hot Water Master Tempering Valves cannot be used for tempering water temperature at fixtures. Severe bodily injury (i.e., scalding or chilling) and/or death may result depending upon system water pressure changes and/or supply water temperature changes. ASSE standard 1016, 1069 or 1070 listed devices such as Watts Series MMV, LFMMV, USG, LFUSG, L111 or LFL111 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.

⚠ WARNING

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 checking and cleaning of the valves internal components and checkstops helps to assure maximum life and proper product function. Frequency of cleaning depends upon local water conditions.

Basic Installation



Specifications

- Maximum Operating Pressure 125 psig (861 kPa)
- Maximum Hot Water Temperature 200°F (93°C)
- Minimum Hot Water Supply Temperature 5°F (3°C) Above Set-Point*
- Temperature Adjustment Range** 90 - 180°F (32 - 82°C)
- Hot Water Inlet Temperature Range 120 - 180°F (42 - 82°C)
- Cold Water Inlet Temperature Range 40 - 80°F (4 - 27°C)
- Listing ASSE 1017, IAPMO cUPC
- Approval Standards ASSE 1017, CSA B125.3

* With Equal Pressure

** Low limit can not be less than the cold water temperature. For best operation, hot water should be at least 5°F (3°C) above desire set point.

Capacity

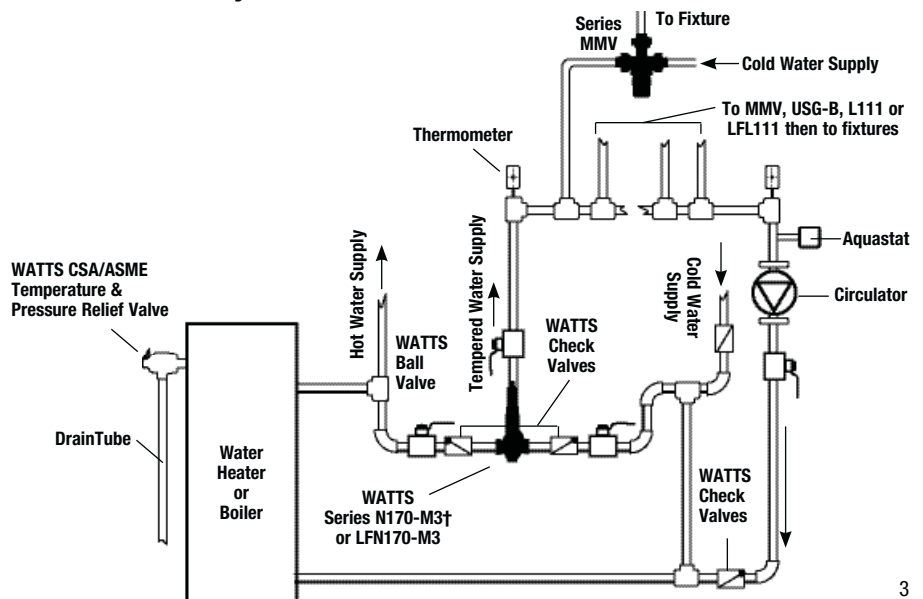
Flow Capacity at 50-50 mixed Less Checkstops									
			Pressure Drop Across Valve						
 Model	Inlet / Outlet (NPT)	Min. Flow to ASSE 1017	C _v	5psi (34 kPa)	10psi (69 kPa)	20psi (138 kPa)	30psi (207 kPa)	45psi (310 kPa)	60psi (414 kPa)
3/4" N170-M3 3/4" LFN170-M3	3/4 x 3/4"	3 gpm	6.70	15 gpm	21 gpm	30 gpm	37 gpm	45 gpm	52 gpm
		11 lpm		57 lpm	79 lpm	114 lpm	140 lpm	170 lpm	197 lpm
1" N170-M3 1" LFN170-M3	1 x 1"	4 gpm	10.13	23 gpm	32 gpm	45 gpm	56 gpm	68 gpm	79 gpm
		15 lpm		87 lpm	121 lpm	170 lpm	212 lpm	257 lpm	299 lpm
1 1/4" N170-M3 1 1/4" LFN170-M3	1-1/4 x 1-1/4"	4 gpm	14.16	32 gpm	45 gpm	63 gpm	76 gpm	95 gpm	110 gpm
		15 lpm		121 lpm	170 lpm	238 lpm	288 lpm	360 lpm	416 lpm
1 1/2" N170-M3 1 1/2" LFN170-M3	1-1/2 x 1-1/2"	5 gpm	15.65	35 gpm	49 gpm	70 gpm	86 gpm	105 gpm	121 gpm
		19 lpm		134 lpm	185 lpm	265 lpm	326 lpm	397 lpm	458 lpm
2" N170-M3 2" LFN170-M3	2 x 1-1/2 x 2"	7 gpm	18.63	42 gpm	59 gpm	83 gpm	102 gpm	125 gpm	144 gpm
		26 lpm		159 lpm	223 lpm	314 lpm	386 lpm	473 lpm	545 lpm

Flow Capacity at 50-50 mixed with Checkstops									
			Pressure Drop Across Valve						
Model	Inlet / Outlet (NPT)	Min. Flow to ASSE 1017	C _v	5psi (34 kPa)	10psi (69 kPa)	20psi (138 kPa)	30psi (207 kPa)	45psi (310 kPa)	60psi (414 kPa)
3/4" N170-M3 CSUT 3/4" LFN170-M3 CSUT	3/4 X 3/4"	3 gpm 11 lpm	6.26	14 gpm 53 lpm	20 gpm 76 lpm	28 gpm 106 lpm	34 gpm 129 lpm	42 gpm 159 lpm	48 gpm 182 lpm
1" N170-M3 CSUT 1" LFN170-M3 CSUT	3/4 X 1"	4 gpm 15 lpm	9.54	21 gpm 79 lpm	30 gpm 114 lpm	43 gpm 163 lpm	52 gpm 197 lpm	64 gpm 242 lpm	74 gpm 280 lpm
1 1/4" N170-M3 CSUT 1 1/4" LF170-M3 CSUT	1-1/4 X 1-1/4"	4 gpm 15 lpm	13.42	30 gpm 114 lpm	42 gpm 159 lpm	60 gpm 227 lpm	74 gpm 280 lpm	90 gpm 341 lpm	104 gpm 394 lpm
1 1/2" N170-M3 CSUT 1 1/2" LFN170-M3 CSUT	1-1/4 X 1-1/2"	5 gpm 19 lpm	14.90	33 gpm 125 lpm	47 gpm 128 lpm	67 gpm 254 lpm	82 gpm 310 lpm	100 gpm 379 lpm	115 gpm 435 lpm
2" N170-M3 CSUT 2" LFN170-M3 CSUT	1-1/4 X 2"	7 gpm 26 lpm	17.89	40 gpm 151 lpm	57 gpm 216 lpm	80 gpm 303 lpm	98 gpm 371 lpm	120 gpm 454 lpm	139 gpm 526 lpm

Series N170-M3 and LFN170-M3 Hot Water Master Tempering Valves

Installation Instructions for A Two Temperature Recirculating Hot Water Supply System

Recirculation System 1



Series N170-M3 and LFN170-M3 Hot Water Master Tempering Valves Continued

Installation Instructions for A Two Temperature Recirculating Hot Water Supply System

IMPORTANT: Valve must be installed trapped as shown. (See reverse side for recommended minimum gpm flow requirements.)

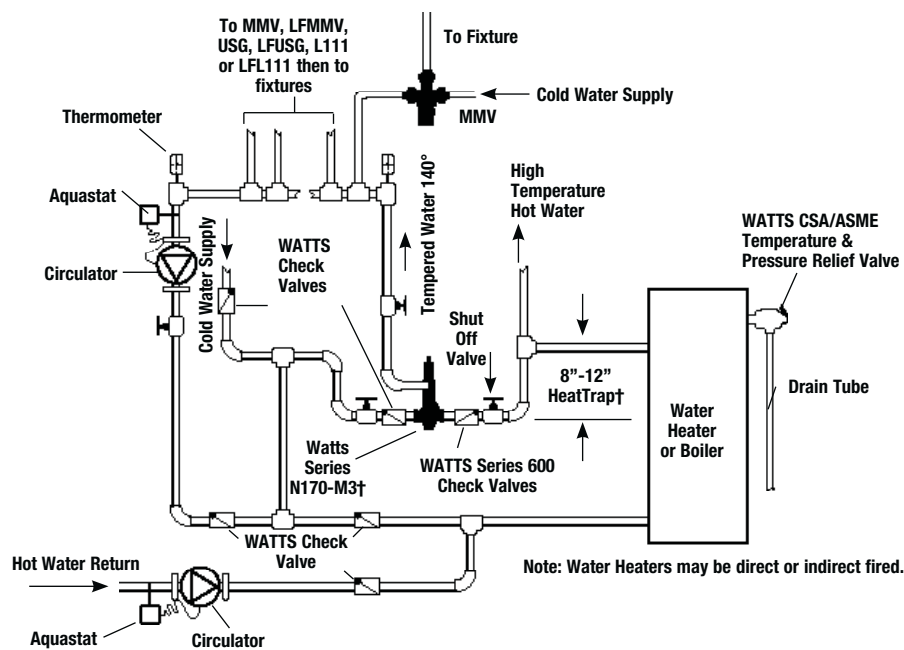
The sketch illustrates a two-temperature (180°F and 140°F) hot water supply system with a Series N170-M3 and LFN170-M3 valve and recirculating line for maintaining **approximate** fixture water temperatures in the mains. Because very little hot water is required to maintain the low temperature in the mains (usually 140°F), a relatively small capacity recirculator can generally be specified. The minimum flow requirements must be maintained between 3-7 gpm. Providing the heat loss from the piping is not too great (long runs of hot water piping should be insulated) standard circulators are usually adequate. However, each installation should be evaluated for its own recirculation requirements of gpm and pipe resistance.

NOTE: Recirculating control aquastat must be set at least 5°F to 10°F lower than the temperature setting of the Series N170-M3 or LFN170-M3 valve, otherwise the recirculator will run continually. Aquastat must be used to maintain water to fixtures at a desired temperature and to eliminate temperature override during no draw periods.

† Valves listed to ASSE Standard 1016, 1069 or 1070 such as the Watts L111, LFL111, USG, LFUSG, MMV or LFMMV should be used at point of delivery.

Recirculation System 2

Typical Two Temperature System with High Temperature Hot Water Recirculation Line



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.**



A Watts Water Technologies Company



USA: Tel: (978) 688-1811 • Fax: (978) 794-1848 • www.watts.com

Canada: Tel: (905) 332-4090 • Fax: (905) 332-7068 • www.wattscanada.ca