

## Product Engineering Specification

Job Name \_\_\_\_\_

Contractor \_\_\_\_\_

Job Location \_\_\_\_\_

Approval \_\_\_\_\_

Engineer \_\_\_\_\_

Contractor's P.O. No. \_\_\_\_\_

Approval \_\_\_\_\_

Representative \_\_\_\_\_

# LEAD FREE\*

## Series LF1170 and LFL1170 Hot Water Temperature Control Valves

Sizes: 1/2" – 1"

Series LF1170, LFL1170 Hot Water Temperature Control Valves are specifically designed for mixing hot and cold water on hot water supply systems. They can be used for a variety of applications to reduce the temperature of the hot water from the system and are ideal for radiant heat applications. This series features a "double throttling" design which combines the control of the hot and cold water to provide a sensitive response to changes in water temperature passing through the mixing chamber.

The LF1170M2 can be set to any temperature between 90°F and 160°F (60°F and 120°F for model LFL1170M2) with flow rates as low as 0.5 gpm and as high as 23 gpm (refer to capacity chart on the back). The superior flow characteristics of this valve provide accurate temperature control to the requirements of ASSE 1017\*\* across the rated flow range. The LF1170M2 and LFL1170M2 feature Lead Free\* construction to comply with Lead Free\* installation requirements.

These valves also provide additional safety as they restrict mixed water out to a drip upon loss of cold water supply to the valve.

As an added feature, the LF1170M2 and LFL1170M2 incorporate integral check valves and filter washers in both the hot and cold water inlets to protect against cross flow.

### Features

- Lead Free\* cast copper silicon alloy body construction
- Solid wax hydraulic principle thermostat assures dependable mixing of hot and cold water
- Thermostat controls both hot and cold water
- Available union connection models include threaded (-UT), solder (-US), PEX (-PEX), PEX F1960 cold expansion fittings (-CEF)\*\*\*\*, CPVC (-CPVC), Quick-Connect (-QC), or w/press\*\*\*\*
- Integral filter washers and check valves
- Adjustment cap with locking feature

### Minimum flow requirements to maintain set temperature for Series LF1170M2

VALVE SIZE	GPM
1/2" – 1"	.5

### NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

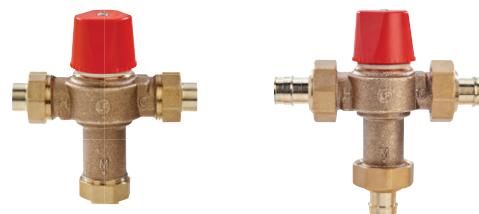
\*The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.

\*\*ASSE 1017 listing is for valves used in hot water source applications.

\*\*\*\*Available with LF1170 series only

\*\*\*\*\*Available with LF1170 series, sizes 1/2" and 3/4"

Watts product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Watts Technical Service. Watts reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Watts products previously or subsequently sold.



LF1170M2-US

LF1170M2-CEF



### WARNING

**FAILURE TO COMPLY WITH PROPER INSTALLATION AND MAINTENANCE INSTRUCTIONS COULD CONTRIBUTE TO THE VALVE FAILURE.**

This 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 should be used at fixtures to prevent possible injury.

These 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 valves should never be used to provide "anti-scald" or "anti-chill" service.

The components of the system must be of materials with a construction capable of withstanding the high limit output temperatures of the water heating source.

### WARNING

**Need for Periodic Inspection and Yearly Maintenance:** Periodic inspection and yearly maintenance by a licensed contractor is required. Corrosive water conditions, inlet temperatures over 200°F (93°C), and/or unauthorized adjustments or repair could render the valve ineffective for service intended. Regular checking and cleaning of the valve's internal components and check stops helps assure maximum life and proper product function. Frequency of cleaning and inspection depends upon local water conditions.

### WARNING

Valve should be installed and adjusted by a licensed contractor in accordance with local codes and ordinances. Valves to be installed in an accessible and visible location (non-destructive and observable) where it is accessible for cleaning, service or adjustment. Inspect device annually, including plumbing connections. PEX B (1806) connections for use with Watts WP14C, copper PEX crimp rings.

### NOTICE

Inquire with governing authorities for local installation requirements



## Specifications

A Hot Water Temperature Control Valve shall be installed on water heating equipment to provide tempered water to supply piping. Valve shall have a Lead Free\* copper silicon alloy body. Lead Free\* thermostatic valves shall comply with state codes and standards, where applicable, requiring reduced lead content. The valve shall have integral check valves and operate so the thermostat controls the cold and hot water ports. The valve shall be provided with threaded (-UT), solder (-US), PEX (-PEX), PEX F1960 cold expansion fittings (-CEF)\*\*\*\*, CPVC (-CPVC), Quick-Connect (-QC) or w/press\*\*\*\*, union connections. The valve shall be ASSE 1017\*\* certified, IAPMO cUPC certified and approved to CSA B125.3. Valve shall be a Watts Series LF1170M2 or LFL1170M2.

## 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 Temperature Differential: 5°F (3°C) above set point

LF1170M2 Temperature Out: Field range: 90°F – 160°F (32°C – 71°C), adjustable: Accurate within ±3°F (1.7°C)

LFL1170M2 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 (1034 kPa)

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

## Standards

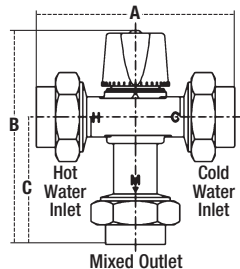
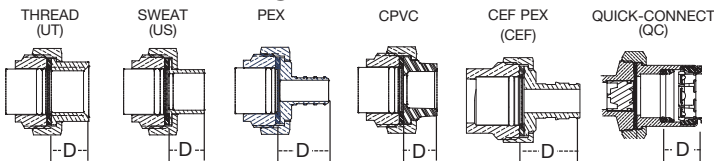
ASSE 1017 Certified

IAPMO cUPC Certified and approved to CSA B125.3

NSF/ANSI/CAN 61 & NSF/ANSI/CAN 372 Certified

Viega Pro-Press™ connections are optional factory installed fitting on each end of the approved/certified assembly

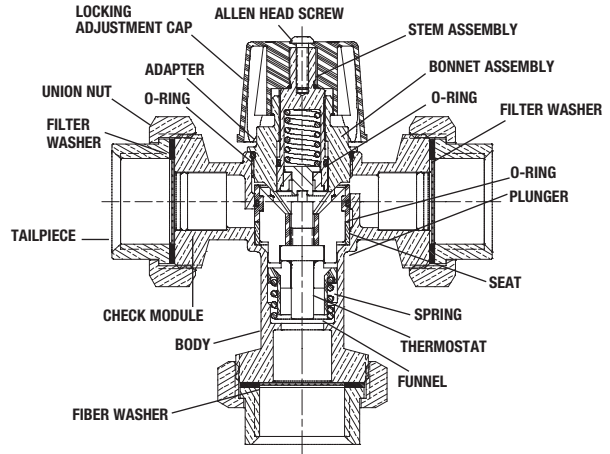
## Dimensions — Weights



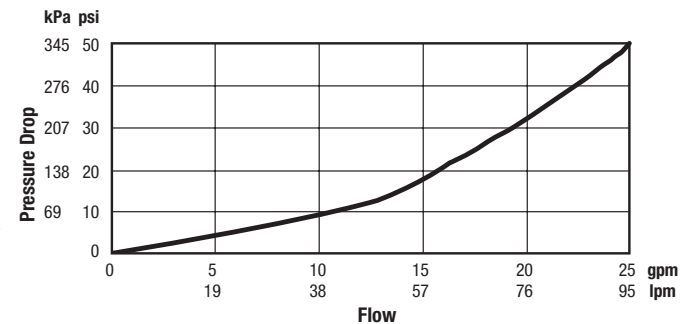
## Material

Body: Lead Free\* copper silicon alloy  
 Springs: Stainless steel  
 Thermostat Assembly: Copper  
 O-Rings: EPDM  
 Pistons: Polysulfone

## Basic Construction



## Capacity\*\*\*



Flow curves are for reference. Actual flows may vary depending on system temperatures and/or pressures.  
 \*\*\*Flow curve with integral inlet filters check valves

SIZE	MODEL	DIMENSIONS						WEIGHT			
		A		B		C		D			
in.		in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kg
1/2	LF1170M2-UT	4 7/8	124	5 7/16	137	3 3/16	80	5/8	16	1.8	0.8
3/4		4 7/8	124	5 7/16	137	3 3/16	80	5/8	16	2.4	1.1
1		5 5/16	135	5 5/8	143	3 3/8	86	3/4	20	3.0	1.4
1/2	LF1170M2-US	4 13/16	123	5 3/8	137	3 1/8	80	5/8	15	1.7	0.8
3/4		5 5/16	135	5 5/8	143	3 3/8	86	7/8	22	2.3	1.0
1		5 13/16	148	5 7/8	149	3 3/8	92	1 1/8	28	2.9	1.3
1/2	LF1170M2-PEX (For PEX B)	5 1/4	133	5 9/16	142	3 3/16	85	1 3/16	21	1.8	0.8
3/4		5 1/2	140	5 11/16	145	3 1/16	88	1 5/16	24	2.5	1.1
1		5 7/8	149	5 7/8	150	3 3/8	93	1 1/8	29	3.1	1.4
1/2	LF1170M2-CEF (For PEX A)	5 1/2	140	5 11/16	144	3 1/16	87	7/8	23	1.8	0.8
3/4		6 1/16	155	5 15/16	151	3 11/16	94	3/16	30	2.4	1.1
1		4 3/4	121	5 5/16	136	3 1/16	79	9/16	14	1.6	0.7
1/2	LF1170M2-CPVC	5 1/4	133	5 9/16	142	3 3/16	85	1 3/16	21	2.2	1.0
3/4		5 11/16	144	5 13/16	147	3 3/16	90	1	26	2.6	1.2
1		6 5/8	168	6 1/4	159	4	102	1 1/2	38	2.1	0.9
3/4	LF1170M2-QC	6 15/16	177	6 7/16	163	4 3/16	106	1 11/16	42	2.8	1.3
1		7 7/8	181	6 1/2	165	4 1/4	108	1 3/4	44	3.5	1.6

Note: Consult factory for dimensions w/press



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