

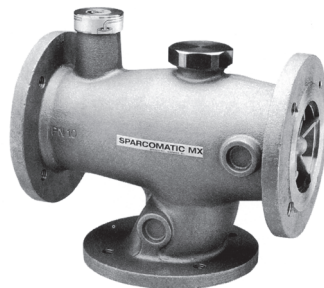


Thermaflo MX Series Valves

LARGE FLOW PROPORTIONAL THERMOSTATIC MIXING OR DIVERTING VALVE



Union NPT Model



Flange Model

APPLICATION

Any application requiring accurate control of water temperature based on mixing of hot and cold water, such as: Domestic water for hotels, schools, hospitals, nursing homes, offices, public facilities, commercial and industrial buildings, space heating, central distribution systems, heat pump systems, radiant floor heating, combo systems and industrial applications.

Installer:

1. Fill in measured discharge temperature on CAUTION label.
2. Attach CAUTION label to MX series valve.
3. Explain CAUTION label to owner.
4. Leave this instruction sheet with owner or on the job site.

Benefits

The Thermaflo MX Series thermostatic mixing valve provides energy savings, increased comfort and safety for the user.

PRODUCT SPECIFICATIONS

- Dual purpose mixing or diverting valve.
- Constant water temperature under different operating conditions.
- Proportional valve (control of hot and cold water).
- Flow reduction in seconds if cold water supply is interrupted.
- Temperature adjustable.
- Union NPT models (1 in., 1-1/4 in., 1-1/2 in., and 2 in.).
- Flange connection models (2-1/2 in. and 3 in.).
- Install in any position, heat trapping not required.
- Recirculation connection for fast response.
- Brass / stainless steel construction.
- Moving parts Teflon® coated to prevent calcium and lime deposits.
- Allen wrench for temperature adjustment included.
- Maximum pressure differential between hot and cold ports is 7 psi.
- ASSE 1017 Listed.
- CSA approved.
- Lead Free Plumbing Code Compliance: the wettable surfaces of lead-free models contain less than 0.25% of lead by weighted average.



SPECIFICATIONS

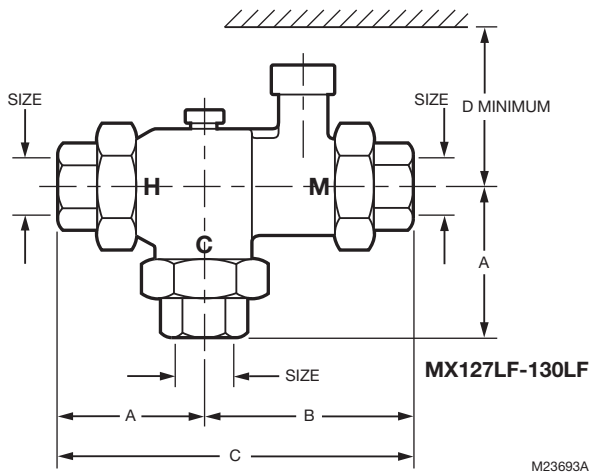


Fig. 1. Dimensions of Union NPT model.

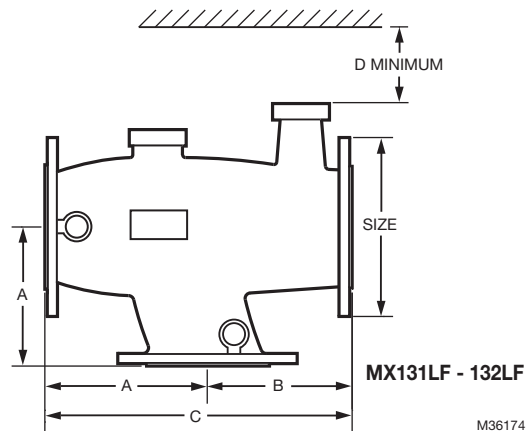


Fig. 2. Dimensions of Flange model.

Table 1. MX Series Valve Models.

Product Number	Size NPT	C _v	Min. Flow (GPM)	GPM @ 30 psi	Temp. Range	Weight in Lbs (kg)	Dimensions in inches (mm)			
							A	B	C	D
MX127LF	1 in.	4.0	1.0	22	113°-149° F (45°-65° C)	3.6 (1.6)	2.8 (66)	3.7 (94)	6.5 (165)	6.0 (152)
MX128LF	1-1/4 in.	9.3	2.5	50		6.4 (2.9)	3.3 (84)	4.4 (112)	7.7 (196)	6.9 (175)
MX129LF	1-1/2 in.	13.5	3.5	75		8.4 (3.8)	3.6 (91)	5.0 (127)	8.6 (218)	7.0 (178)
MX130LF	2 in.	18.0	5.0	100		13.1 (5.9)	4.2 (107)	5.8 (147)	10.0 (254)	7.3 (185)
MX131LF**	2-1/2 in. Flange	34.0	8	186	113°-149° F (45°-65° C)	51 (23.1)	5.7 (144.8)	5.7 (144.8)	11.4 (289.6)	4.0 (101.6)
MX132LF**	3 in. Flange	50.0	12	274		62 (28.1)	6.1 (154.9)	6.1 (154.9)	12.2 (309.9)	4.0 (101.6)
MX 050-RP Recirculation Adapter Kit						0.2 (0.1)				
* Union models include 1/2-in. recirculation adapter. ** Flange models recirculation adapter size (MX131LF 1 in. and MX132LF 1-1/4 in.) Maximum Temperature: MX127LF, 128LF, 129LF, 130LF, 131LF, 132LF: 221° F (105° C)						Maximum working Pressure 150 psi (1034 kPa). Minimum temperature difference between hot and mix should be 10° F (6° C).				

Maximum working pressure: 150 psi (1034 kPa).

Replacement Parts

Product Number	Description
MX050-RP	1/2 inch Recirculation Adapter
MX100-RP	1 inch Gasket Kit for MX Series mixing valves
MX125-RP	1 1/4 inch Gasket Kit for MX Series mixing valves
MX150-RP	1 1/2 inch Gasket Kit for MX mixing valves
MX200-RP	2 inch Gasket Kit for MX mixing valves
MX250-RP	2 1/2 inch Gasket Kit for MX mixing valves
MX300-RP	3 inch Gasket Kit for MX mixing valves

OPERATION

Automatic operation is provided by the thermostatic element. Element will control hot and cold supply based on valve setting. If cold water is shut off, valve reduces mixed flow in seconds (speed/residual flow rates vary by size).



CAUTION

Do not override calibration. Test temperature with thermometers.

Service

To remove dirt, flush valve. To remove calcium and lime deposits, soak valve in vinegar for 24 hours and flush or contact factory for assistance. Do not attempt to field repair this calibrated valve.

Temperature Selection

The Thermaflo MX Series Valves are made in ranges: 113°-149° F (45°-65° C). The factory setting is 130° F (54° C). Change temperature setting with an Allen wrench, which is included; 3/16 for MX127LF or a 5/16 for MX128LF, MX129LF and MX130LF. Punch through the center of the temperature range label. By turning the screw clockwise, the mix temperature increases (counterclockwise, it decreases). Each complete turn with the Allen wrench changes the temperature as follows: MX127LF (1 in.); 11° F (6° C), MX128LF (1-1/4 in.), MX129LF (1-1/2 in.) and MX130LF (2 in.), 7° F (4° C). Do not operate valve at temperatures outside of its calibrated range of 113°-149° F (45°-65°). Use a thermometer to verify temperature.

TYPICAL INSTALLATION DIAGRAMS

Domestic Water Mixing

Use when water temperature produced by heater is hotter than desired at point of use. Many codes require that water supplied to the system be limited to 120° F (49° C) max.

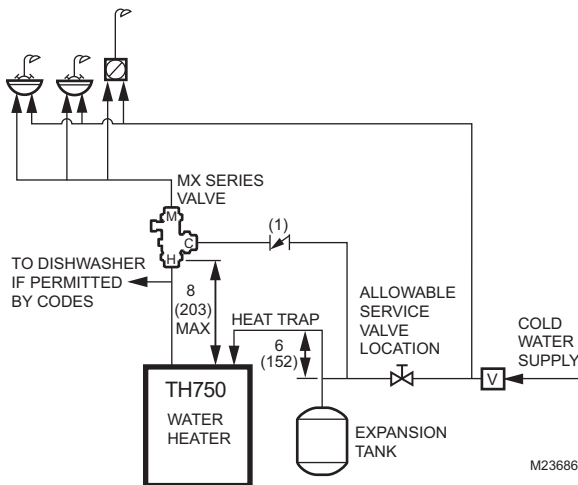


Fig. 3. Water heater without recirculation. Dimensions shown in in. (mm).

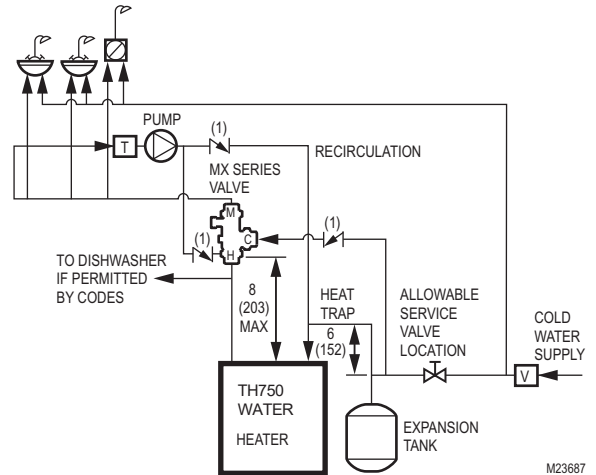


Fig. 4. Heater with recirculation. Dimensions shown in in. (mm).

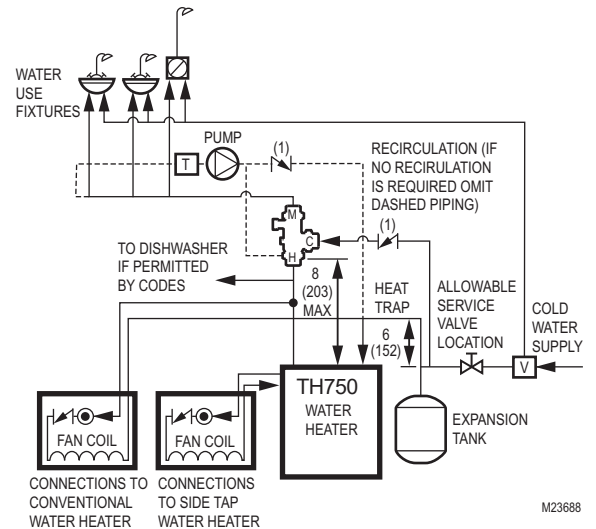


Fig. 5. Water heater is used for domestic water and space heating. Dimensions shown in in. (mm).

1.= Check Valve.

2. = Alternate Pump Location.

V.= Any device which turns the domestic water system into a closed system, such as backflow preventers, check valves or pressure reducing valves.

NOTE: "V" is optional depending on local codes. If a "V" type valve is used, it is mandatory that a thermal expansion tank be installed as shown. Otherwise dangerously high pressures could result or water heater safety relief valve will frequently expel water. If a "V" device is not used, a thermal expansion tank is not required.

Space Heating

Boiler must operate at a water temperature higher than desired temperature in the heating system in order to perform at maximum efficiency. Example: Radiant floor heating.

Mixing Applications (Constant Supply Temperature)

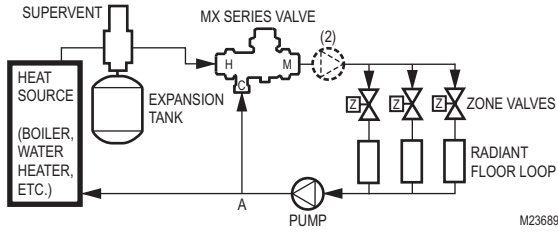


Fig. 6. Single loop.

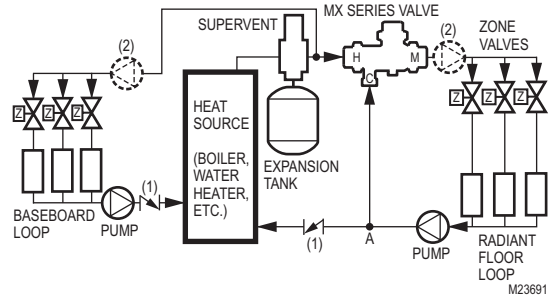


Fig. 8. Multiple Loops. One loop operates at boiler water temperature and MX Series loops at lower temperature.

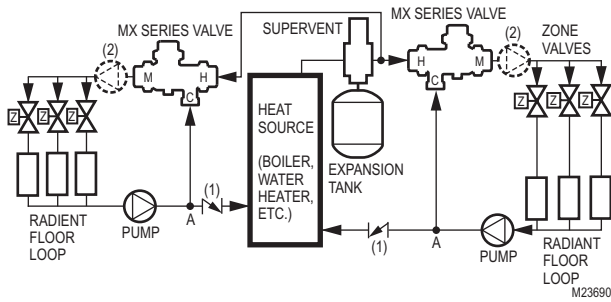


Fig. 7. Multiple loops. Each loop operates at a different temperature.

Diverting Application

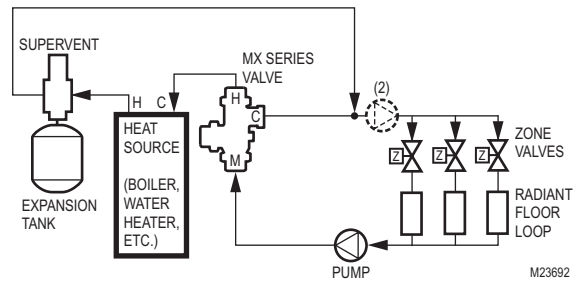


Fig. 9. Single loop. For multiple loops see Mixing Applications.

Hot Water Sizing Method For Thermaflo Mixing Valve Selection

1. Determine Fixture Units – Table 2
2. Using Total Fixture Units determine load in Gpm from Table 3.
3. Select product based on minimum flow requirement and allowable pressure drop (20 Psi).

Table 2. Fixture Unit Worksheet.

Fixture Units			Fixture Unit Calculation				
Fixture	Private	Public	# of Fixtures	(multiply by)	Fixture Units	Equals	Total
Lavatory	1	2		x		=	
Kitchen Sink	2	4		x		=	
Bathtub	2	4		x		=	
Separate Shower	2	4		x		=	
Clothes Washer	2	4		x		=	
Dish Washer	1	2		x		=	
						Total	

EXAMPLE:A system with 40 Lavatory (Private), 40 Bathtubs (private) and 5 Lavatory (public) has total fixture count of 130 fixture units. From Table 3 - 130 fixture unit = 38 Gpm

Table 3. Domestic Hot Water Demand – Load Data.

Fixture Units	Gpm	Fixture Units	Gpm	Fixture Units	Gpm
2	2	55	23	350	72
6	4.5	60	24	400	78
10	6.5	70	27	450	86
14	8.5	80	29	500	93
20	11	90	31	550	100
24	13	100	33	600	107
30	15	130	38	650	115
34	16.5	160	43	700	122
40	18.5	200	49	750	130
45	20	260	58	800	134.5
50	21	300	64	1000	156

Table 4. Single High Capacity MX Series Mixing Valve Selection Chart

Product	Min Flow GPM	Outlet Size Inch	System Differential Pressure Drop (PSI)					
			5	10	15	20	25	30
MX127LF	1	1"	9	13	15	18	20	22
MX128LF	2.5	1¼"	21	29	36	42	47	51
MX129LF	3.5	1½"	30	43	52	60	68	74
MX130LF	5	2"	40	57	70	80	90	99
MX131LF	8	2½"	76	108	132	152	170	186
MX132LF	12	3"	112	158	194	224	250	274

This sizing method is a general guideline. Please refer to local building and plumbing codes for additional guidance.



Contact Thermaflo Applications Engineering @
 704-940-1228 Newberry, South Carolina 29108
 Water to Water Domestic Heaters
 Steam Fired Water Heaters
 Heat Exchangers
 Condensate Pumping Systems