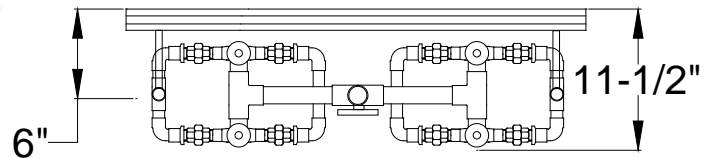
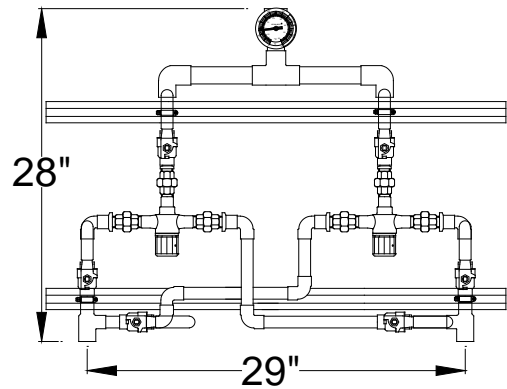
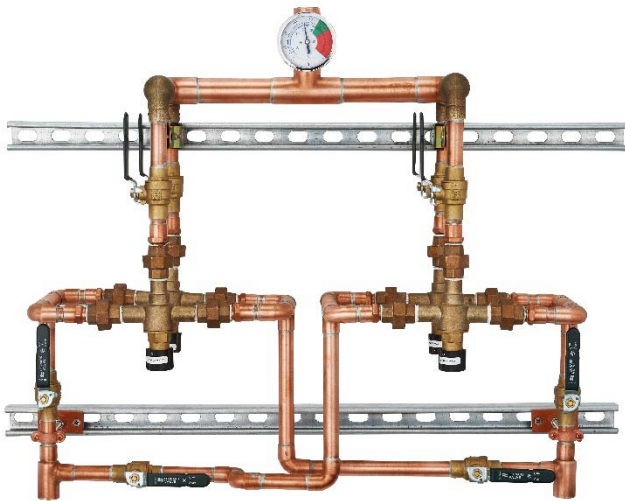


# INSTALLATION ADJUSTMENT SERVICE

## 270-4PS-LF



**WARNING:** This product can expose you to chemicals including lead, which is known to the State of California to cause cancer. For more information, go to [www.P65Warnings.Ca.gov](http://www.P65Warnings.Ca.gov)



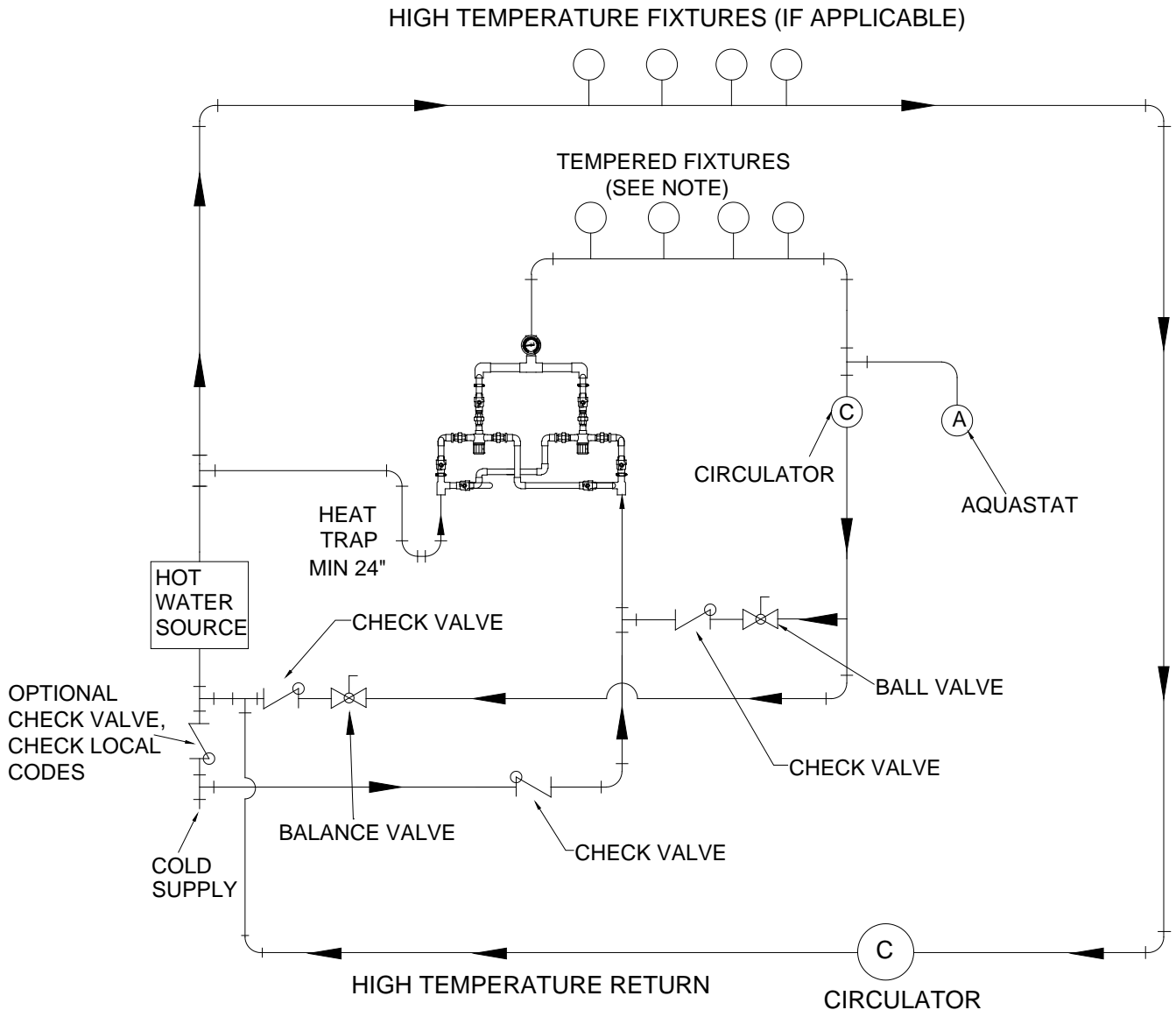
- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> <li>1. Model 270 Parallel Systems are factory pre-assembled and tested and include 4 thermostatic water mixing valves which function as a system to meet both high and low demand for tempered water.</li> <li>2. System should be installed at a location where it can easily be cleaned, adjusted or repaired.</li> <li>3. System supplies must be connected as shown (Hot-left, Cold-right) on page 2. Exercise caution when soldering.</li> </ol> | <ol style="list-style-type: none"> <li>4. Flush pipes thoroughly after system has been connected.</li> <li>5. Assemblies installed on a recirculated hot water system <b>MUST</b> be piped according to <b>LEONARD'S REQUIRED PIPING METHOD W</b> (see page 2).</li> <li>6. Refer to page 4 of this bulletin for correct Setup Instructions.</li> </ol> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Maximum Operating Pressure 125PSI (860 KPA) for Hot and Cold Water.**

### CAUTION

All thermostatic water-mixing valves have limitations. They will not provide the desired accuracy outside of their flow capacity range. Consult the capacity chart on page 6.

# REQUIRED PIPING METHOD W



**NOTE:** Hot inlet must be on left and cold inlet must be installed on right inlet or the unit will not work. See page 4 for set up instructions.

# ADJUSTMENT AND SERVICE

Leonard Model 270 Thermostatic Water Mixing Valves are simple in design and may be easily cleaned, adjusted and repaired. Shut-offs and unions are provided to access check valves on the inlets of each valve.

**NOTE:** Parallel Systems include Thermostatic Water Mixing Valves, which must be regularly maintained to provide best performance. Frequency of cleaning depends on quality of local water conditions and usage. See Maintenance Guide and Record MGR-1000

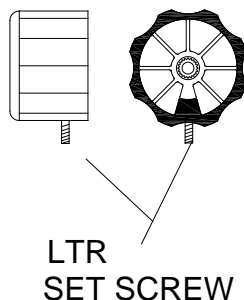


## WARNING



These mixing valves are equipped with an adjustable high temperature limit stop which must be set by the installer for each individual valve. If the valves are not set properly the valves when turned to full HOT will deliver water in excess of 110°F (43°C) and the limit stop **MUST BE RESET BY THE INSTALLER!**

### TO RESET ADJUSTABLE HIGH TEMPERATURE LIMIT STOP:



1. Loosen LTR Set Screw
2. Adjust POINTER to maximum desired temperature.
3. Tighten LTR Set Screw
4. Check temperature
5. The new maximum temperature has now been set.

**NOTE: LIMIT STOP MUST BE RESET AND RECHECKED EACH TIME HANDLE IS REMOVED.**

**IMPORTANT! ALL MIXING VALVES MUST BE SET AT THE SAME OPERATING TEMPERATURE.**

**SEE PAGE 4 FOR SET UP INSTRUCTIONS**

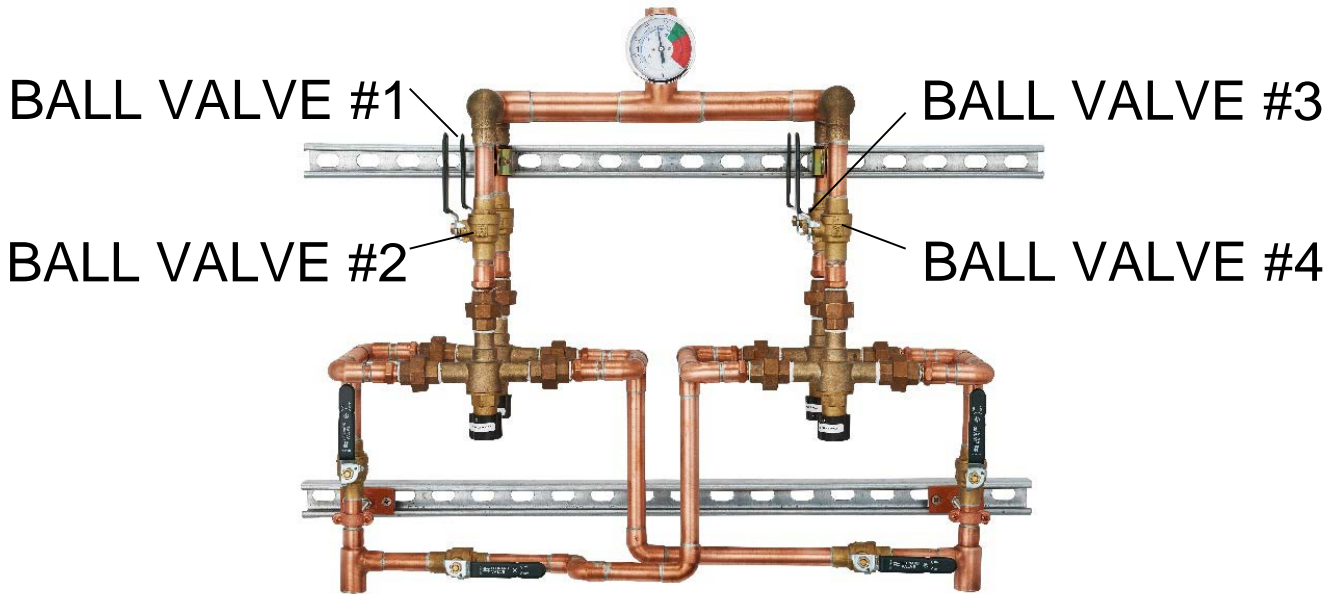
**SEE PAGE 5 FOR COMPLETE PARTS BREAKDOWN**

## WARNING

**WATER TEMPERATURES IN EXCESS OF 110°F (43°C) MAY CAUSE SCALDING, SEVERE INJURY, OR DEATH!!**

**REMEMBER! THIS IS A CONTROL DEVICE WHICH MUST BE CLEANED AND MAINTAINED ON A REGULAR BASIS. (SEE MAINTENANCE GUIDE AND RECORD, MGR-1000).**

# SET UP INSTRUCTIONS



## METHOD W SET-UP INSTRUCTIONS

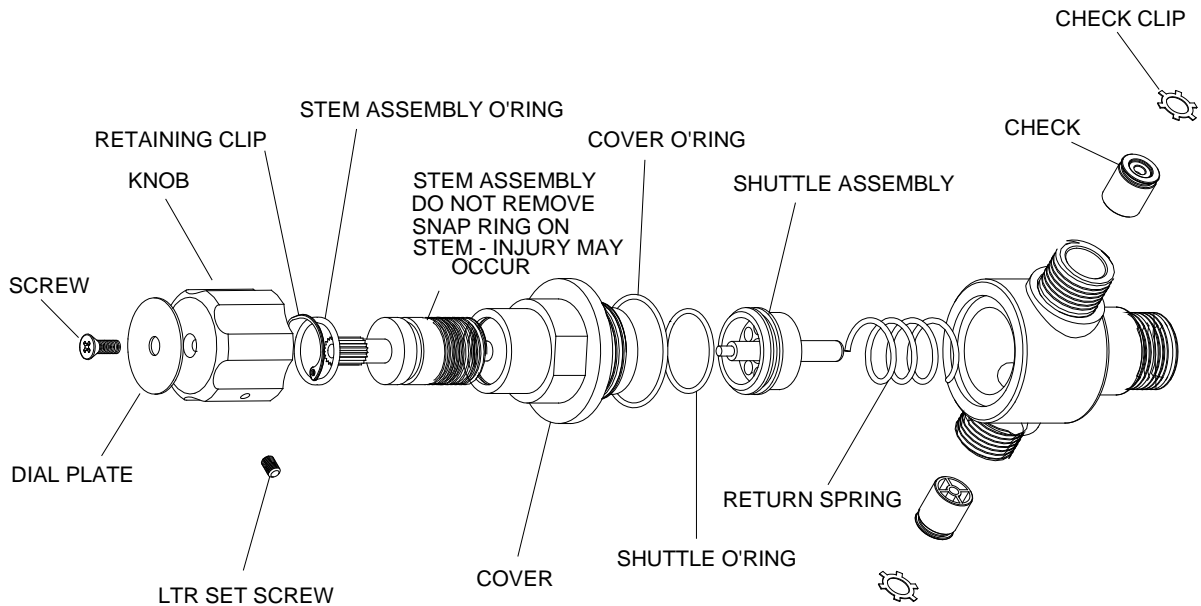
Before any attempt is made to adjust this system, be sure the temperature of the hot water at the source is properly set and maintained.

1. Shut off circulator
2. Close ball valves #2, #3, and #4
3. Open enough fixtures to flow roughly 2 GPM
4. Set mixing valve #1 to the desired temperature
5. Open ball valve #2 and close ball valve #1.
6. Set mixing valve #2 to the desired temperature
7. Continue until all 4 valves are set to same temperature
8. Open all ball valves
9. Shut off all fixtures. Note: At this point, be sure NO water is being drawn through any fixture until the temperature in the recirculated line has been set.
10. Fully open balancing valve #1 (see page 2) and start the circulator. Make sure no water is being drawn.
11. Observe the temperature until it stabilizes.
12. Close balancing valve #1 (see page 2) slightly if the temperature is too hot, and again let the temperature stabilize. Repeat until the desired recirculated temperature is set.

# TROUBLESHOOTING INSTRUCTIONS

## SYMPTOMS

Leaking water between valve cover and body	KIT 1/WX	gasket kit
Leaking water under knob	KIT 1/WX	gasket kit
Valve will not control temperature after cleaning	KIT R/270/370	rebuild kit
Hot water by-passes into Cold water	KIT 4/220	check kit
Cold water by-passes into Hot water	KIT 4/220	check kit



## KIT

## INCLUDED PARTS

KIT 1/WX	Shuttle o-ring, Stem assembly o-ring, Cover o-ring
KIT R/270/370	Shuttle o-ring, Stem assembly o-ring, Cover o-ring, Shuttle assembly, Return spring
KIT 4/220	2 Check valves, 4 Check clips

## PRESSURE-TEMPERATURE:

Maximum pressure: 125 PSI (8.6 BAR)

Maximum hot water temperature: 180°F (82°C)

Hot water inlet temperature range: 120-180°F (49-82°C) Cold water inlet temperature range: 33-80°F (1-27°C)

Temperature adjustment range: 90-140°F (32-60°C)

## IMPORTANT:

**Maximum Operating Pressure: 125 PSI (860 KPA)** These thermostatic water mixing valves can be adjusted to deliver water at temperatures exceeding 110°F (43°C). After installation, the installer must check the outlet water temperature and adjust the temperature setting to ensure delivery of a safe water temperature not exceeding 110°F (43°C).

**CAUTION! ALL THERMOSTATIC WATER MIXING VALVES AND SYSTEMS HAVE LIMITATIONS! THEY WILL NOT PROVIDE THE DESIRED PERFORMANCE OUTSIDE OF THEIR FLOW CAPACITY RANGE! CONSULT THE CAPACITY CHART BELOW AND OBSERVE MINIMUM FLOWS SHOWN.**

## FLOW CAPACITIES

MODEL	IN	OUT	MINIMUM FLOW (GPM) L\MIN	PRESSURE DROP										PSI BAR
				5	10	15	20	25	30	35	40	45	50	
270-4PS-LF	1"	1-1/4"	1	14	22	26	30	34	38	40	42	46	48	GPM
			1.9	53	83	98	114	129	144	151	159	174	182	L\MIN

NOTE: Leonard Valve Company reserves the right of product or design modification without notice or obligation

### LIMITED WARRANTY

Leonard Valve Company (hereinafter, "Leonard") warrants the original purchaser that products manufactured by Leonard will be free from defects in material or workmanship under normal conditions of use, when properly installed and maintained in accordance with Leonard's instructions, for a period of one year from the date of shipment. During this period, Leonard will at its option repair or replace any product, or part thereof, which shall be returned, freight prepaid, to the Leonard factory and determined by Leonard to be defective in materials or workmanship. Leonard provides no warranty, express or implied, which extends beyond the description contained herein. LEONARD SPECIFICALLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE. Nonetheless, some jurisdictions may not allow the disclaimer of certain implied warranties, in which case Leonard hereby limits such implied warranties to the duration of the limited warranty period contained herein. Some jurisdictions may not allow limitations on how long an implied warranty lasts, so the foregoing durational limitation may not apply to you. In no event will Leonard be liable for labor or incidental or consequential damages. Any alteration or improper installation or use of this product will void this limited warranty. If any provision of this limited warranty is prohibited by law in the applicable jurisdiction, such provision shall be null and void, but the remainder of this limited warranty shall continue in full force and effect.