LEONARD®
WATER TEMPERATURE CONTROLS

Bulletin GLV-1010
January 2014

INSTALLATION ADJUSTMENT SERVICE THERMOSTATIC WATER MIXING VALVE

LV-10, LV-10-LF

IMPORTANT! Provide valve serial number, (located on valve cover) when ordering parts!!

INSTALLATION

1. Valve should be installed at a location where it can easily be cleaned, adjusted or repaired.
2. The inlets are clearly marked on the valve body. Hot on the left and cold on the right.
3. A shutoff valve must be installed on the outlet pipe. Type LV valves do not have a built-in shutoff.
4. Use solder, or thread sealant sparingly. Supply pipes should be flushed before the valve is connected. Flush outlet pipe and valve as soon as it is connected.

125 PSI (8.6 BAR) MAXIMUM OPERATING PRESSURE

CAUTION

All thermostatic water-mixing valves have limitations. They will not provide the desired accuracy outside of their flow capacity range. Consult the flow capacity chart on page 5.

Minimum flow must be no less than as shown.

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

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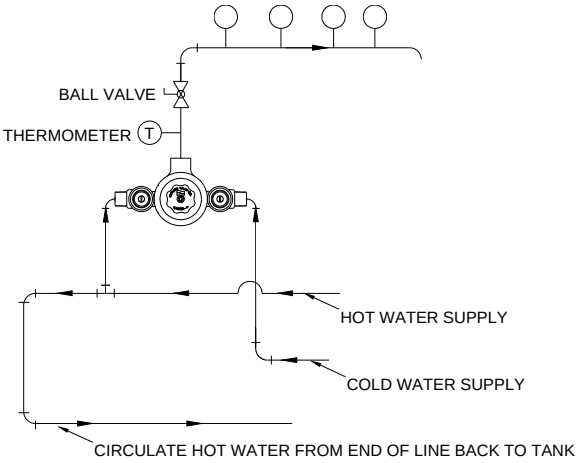
INSTALLATION

REQUIRED METHODS OF PIPING LV SERIES

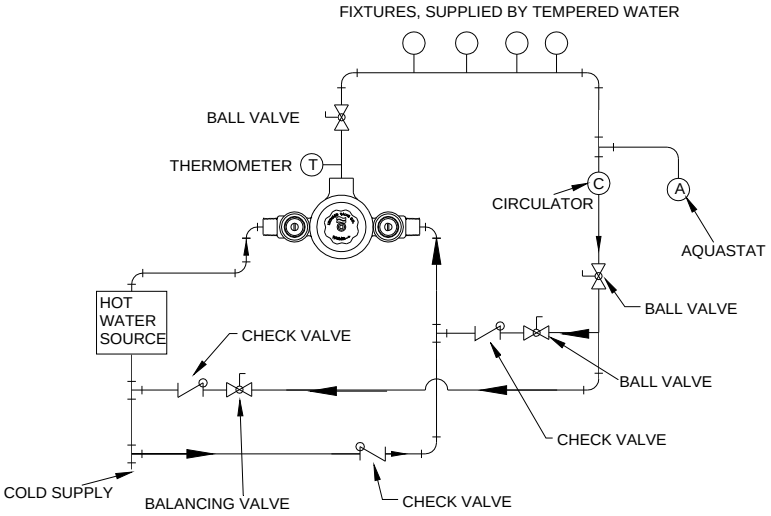
METHOD #1

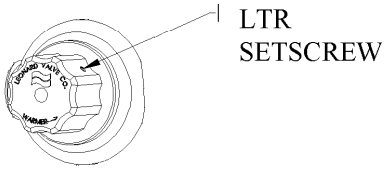
Required when **TEMPERED WATER** is **NOT CIRCULATED.** Only the hot water supply to the mixing valve can be circulated with this piping arrangement.



METHOD W

Required when **TEMPERED WATER IS CIRCULATED.**





OPERATION

1. **Verify that the temperature of the hot water source is properly set and maintained. Shutoff and isolate the circulator pump.**
2. **Loosen LTR set screw located on temperature adjustment knob with allen wrench.**
3. **Turn on enough fixtures to flow approximately 4 GPM, turn knob clockwise until it stops (full cold) then counterclockwise until it stops (full hot), three times to exercise the thermostatic element.**
4. **Set mixing valve to the desired temperature, (See warning tag for temperature set point). Tighten LTR set screw.**
5. **Shut off all fixtures. Setup is complete.**
6. **Turn on circulator. With all fixtures still off, (no water flowing) observe the circulation temperature until it stabilizes.**
7. **If temperature rises, close balance valve until desired temperature is reached**

INSTALLATION CONTINUED

WARNING	
WARNING! This Thermostatic Mixing Valve has an Locking Temperature Regulator (LTR) which must be checked. If the temperature is too high, the installer **MUST RESET** this adjustment immediately. Always check the temperature of the mixed water after installation. Excessively hot water is **DANGEROUS AND MAY CAUSE SCALDING!**	***NOTE:** A locking temperature regulator is simply a mechanical setting to prevent unauthorized temperature set point changes. AFTER INSTALLATION THE VALVE MUST BE RESET BY THE INSTALLER !!

SERVICE

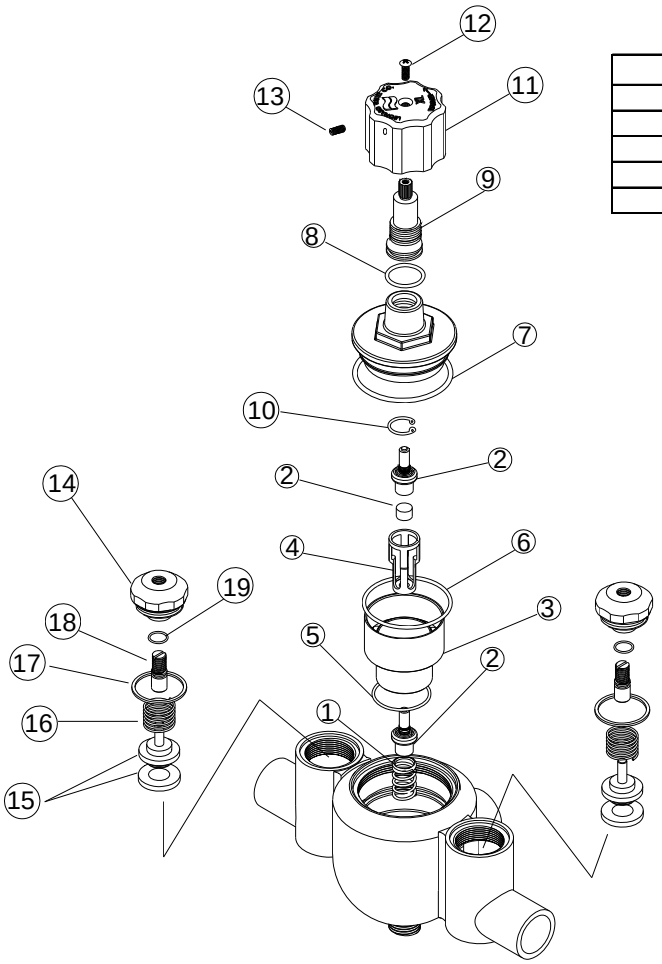
Leonard Type LV Thermostatic Water Mixing Valves are simple in design and may be easily cleaned, adjusted and repaired. If the installation is accessible, servicing may be completed without disconnecting the valve.

NOTE: Thermostatic Water Mixing Valves are REGULATING mechanisms, 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).

TROUBLESHOOTING INSTRUCTIONS

ITEM:	PROBLEM:	RECOMMENDED REPAIR KITS: LV-10
PACKINGS & GASKETS	1. Leak at stem. 2. Leak between valve cover and base.	**KIT 1/XL32**
SHUTTLE ASSEMBLY	3. Valve delivers either all hot or all cold water, or will not mix consistently.	**KIT R/XL32 OR 2/XL32**
CHECKSTOPS	4. Hot water bypass into cold line. 5. Supplies cannot be shut off completely. 6. Leak at checkstop bonnet.	**KIT 4/M20**

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

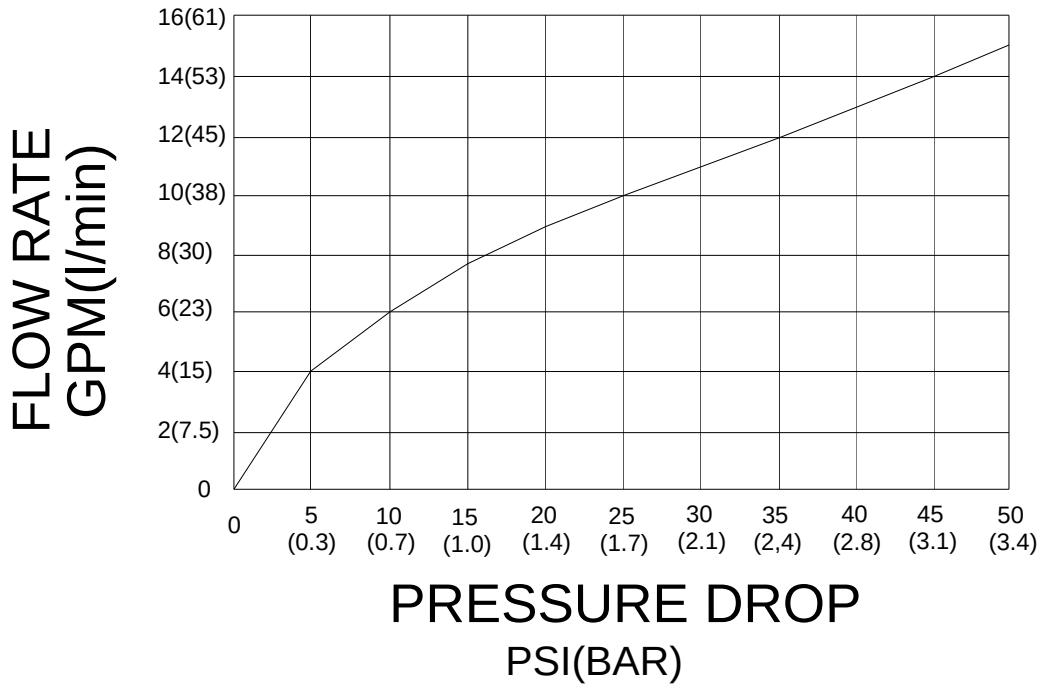


KIT	TYPE KIT	INCLUDES
R/XL32	COMPLETE REPAIR	1,2,3,4,5,6,7,8,10
1/XL32	O-RING	5,6,7,8
2/XL32	SHUTTLE	1,2,3,4
747700	KNOB	11,12,13
4/M20	CHECK	15,16,17,19

ITEM #	DESCRIPTION	QTY.	PART # / KIT #
1	SPRING, RETURN	1	2/XL32, R/XL32
2	THERMOSTATIC ELEMENTS AND SPACER	1	2/XL32, R/XL32
3	SHUTTLE	1	2/XL32, R/XL32
4	ELEMENT HOLDER	1	2/XL32, R/XL32
5	O'RING, LOWER SHUTTLE	1	1/XL32, R/XL32
6	O'RING, UPPER SHUTTLE	1	1/XL32, R/XL32
7	O'RING, COVER	1	1/XL32, R/XL32
8	O'RING, STEM	1	1/XL32, R/XL32
9	STEM ASSEMBLY (DO NOT REMOVE SNAP RING)	1	741900
10	RETAINING RING, COVER	1	7411, R/XL32
11	KNOB	1	747700
12	SCREW, KNOB	1	747700
13	LTR SET SCREW	1	747700
14	BONNET	1	M20-2A
15	LOWER STEM & PACKING	2	4/M20
16	SPRING,CHECK	2	4/M20
17	PACKING, BONNET	2	4/M20
18	STEM, UPPER CHECK	2	010
19	O'RING, UPPER STEM	2	4/M20

FLOW CAPACITIES

PRESSURE DROP											
MIN FLOW	5	10	15	20	25	30	35	40	45	50	PSI
	0.3	0.7	1	1.4	1.7	2.1	2.4	2.8	3.1	3.4	BAR
1.0	4	6	7.5	8.8	10	11	12	13	14	15	GPM
3.8	15	23	28	33	38	42	46	49	53	57	l/min



LIMITED WARRANTY

Leonard Valve Company warrants the original purchaser that products manufactured by them (not by others) will be free from defects in materials and workmanship under normal conditions of use, when properly installed and maintained in accordance with Leonard Valve Company's instructions, for a period of one year from date of shipment. During this period the Leonard Valve Company 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. There are no warranties, express or implied, which extend beyond the description contained herein. There are no implied warranties of merchantability or of fitness for a particular purpose. In no event will Leonard be liable for labor or incidental or consequential damages. Any alteration or improper installation or use of the product will void this limited warranty.

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