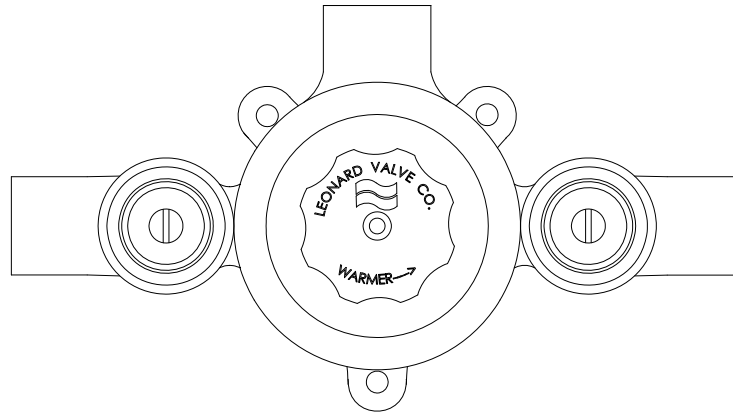


INSTALLATION ADJUSTMENT SERVICE THERMOSTATIC WATER MIXING VALVE

LV-981A, LV-981A-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 inlet on left, cold inlet on 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.



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

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).

1360 Elmwood Avenue, Cranston, RI 02910 USA

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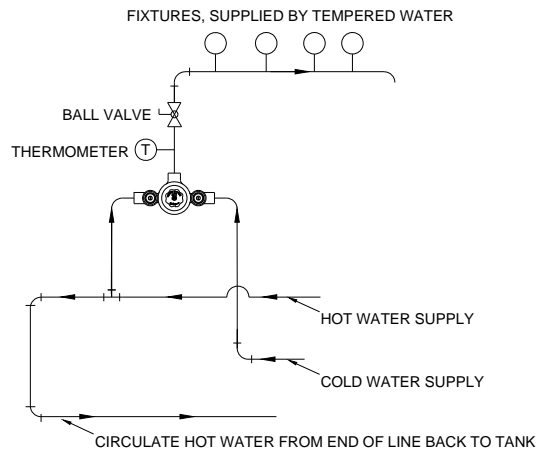
Web Site: <http://www.leonardvalve.com>

INSTALLATION

REQUIRED METHODS OF PIPING LV SERIES

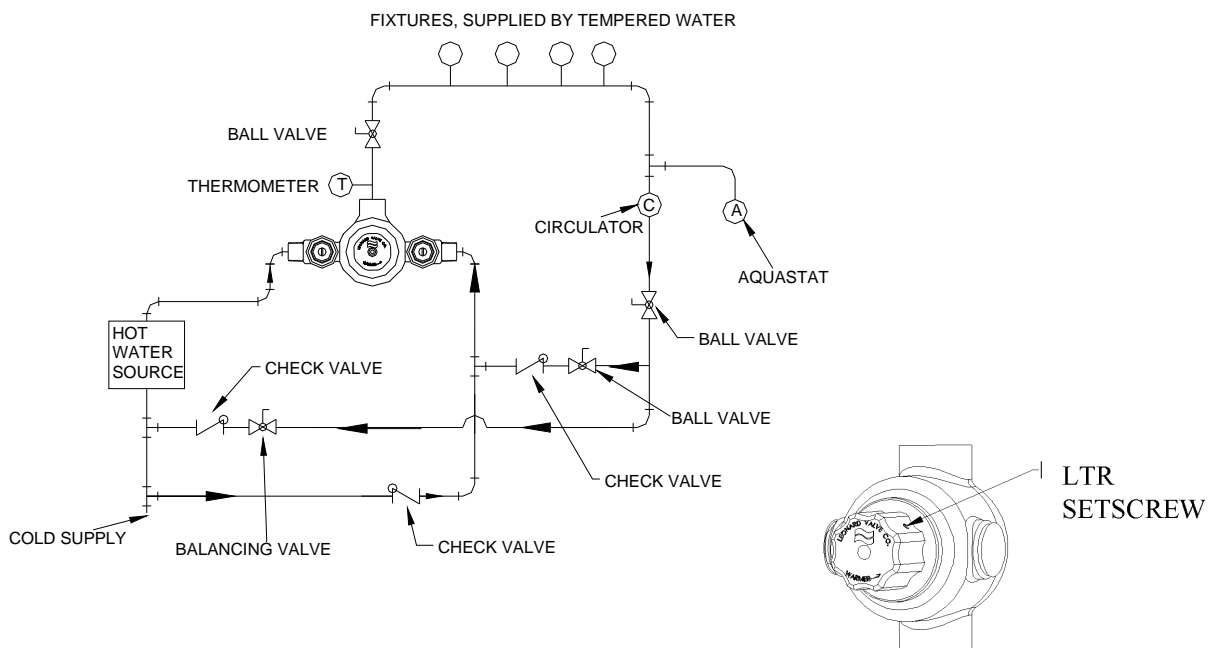
METHOD #1

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



PIPING 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!**

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.

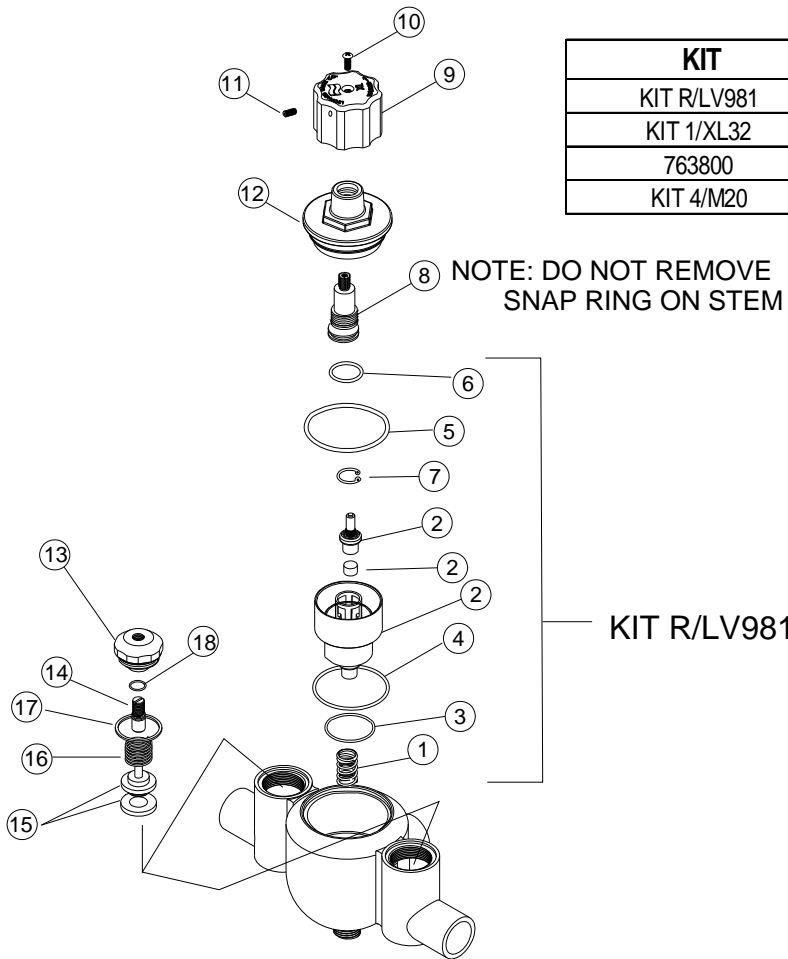
NOTE: Thermostatic Water Mixing Valves are REGULATING mechanisms, which must be regularly maintained to provide best performance. Frequency of cleaning depends on quality of local water conditions and usage. (See Maintenance Guide and Record MGR-1000).

TROUBLESHOOTING INSTRUCTIONS

ITEM:	PROBLEM:	RECOMMENDED REPAIR KITS
PACKINGS & GASKETS	<ol style="list-style-type: none">1. Leak at stem.2. Leak between valve cover and base.	KIT 1/XL32
SHUTTLE ASSEMBLY	<ol style="list-style-type: none">3. Valve delivers either all hot or all cold water, or will not mix consistently.	KIT R/LV981
CHECKSTOPS	<ol style="list-style-type: none">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).

LV-981A PARTS & KITS

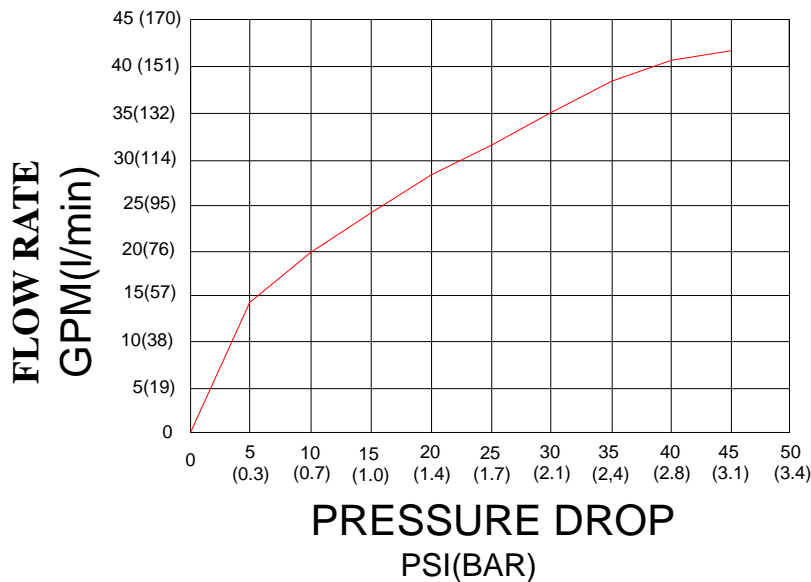


KIT	TYPE KIT	INCLUDES
KIT R/LV981	COMPLETE REPAIR	1 - 7
KIT 1/XL32	O-RING KIT	3 - 6
763800	KNOB	9 - 11
KIT 4/M20	CHECK KIT	15 - 18

ITEM #	DESCRIPTION	QTY.	PART # / KIT #
1	SPRING, RETURN	1	KIT R/LV981
2	SHUTTLE ASSEMBLY	1	KIT R/LV981
3	O-RING, LOWER SHUTTLE	1	KIT 1/XL32, KIT R/LV981
4	O-RING, UPPER SHUTTLE	1	KIT 1/XL32, KIT R/LV981
5	O-RING, COVER	1	KIT 1/XL32, KIT R/LV981
6	O-RING, STEM	1	KIT 1/XL32, KIT R/LV981
7	RETAINING RING, COVER	1	7411, KIT R/LV981
8	STEM ASSEMBLY (DO NOT REMOVE SNAP RING)	1	741900
9	KNOB	1	764300
10	SCREW, KNOB	1	764300
11	LTR SET SCREW	1	764300
12	COVER	1	7405
13	BONNET	2	M20-2A
14	STEM, UPPER CHECK	2	MU-4A
15	LOWER STEM & PACKING	2	M20-6A, KIT 4/M20
16	SPRING,CHECK	2	M20-9A, KIT 4/M20
17	PACKING, BONNET	2	M20-3A, KIT 4/M20
18	O-RING, UPPER STEM	2	MU-5A, KIT 4/M20

FLOW CAPACITIES

VALVE	PRESSURE DROP										
	MIN FLOW	5	10	15	20	25	30	35	40	45	PSI
		0.3	0.7	1	1.4	1.7	2.1	2.4	2.8	3.1	BAR
LV-981A-E	2.5	14	20	24	28	32	35	38	41	43	GPM
	9	53	76	91	106	121	132	144	155	163	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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