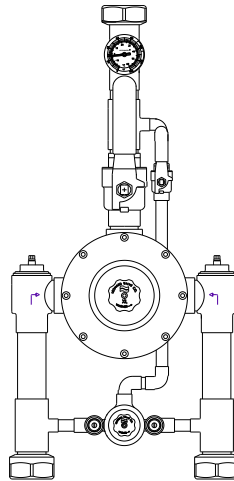


INSTALLATION ADJUSTMENT SERVICE THERMOSTATIC WATER MIXING VALVE SERIES XL-20032-LF-BDT

IMPORTANT! Provide valve serial numbers for both valves, (located on valve cover) when ordering parts!!



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

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 must be installed on the left, cold must be installed on the right.
3. 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.
4. Piping diagram along with start up procedures are on page 2.

125 PSI (8.6 BAR) MAXIMUM OPERATING PRESSURE

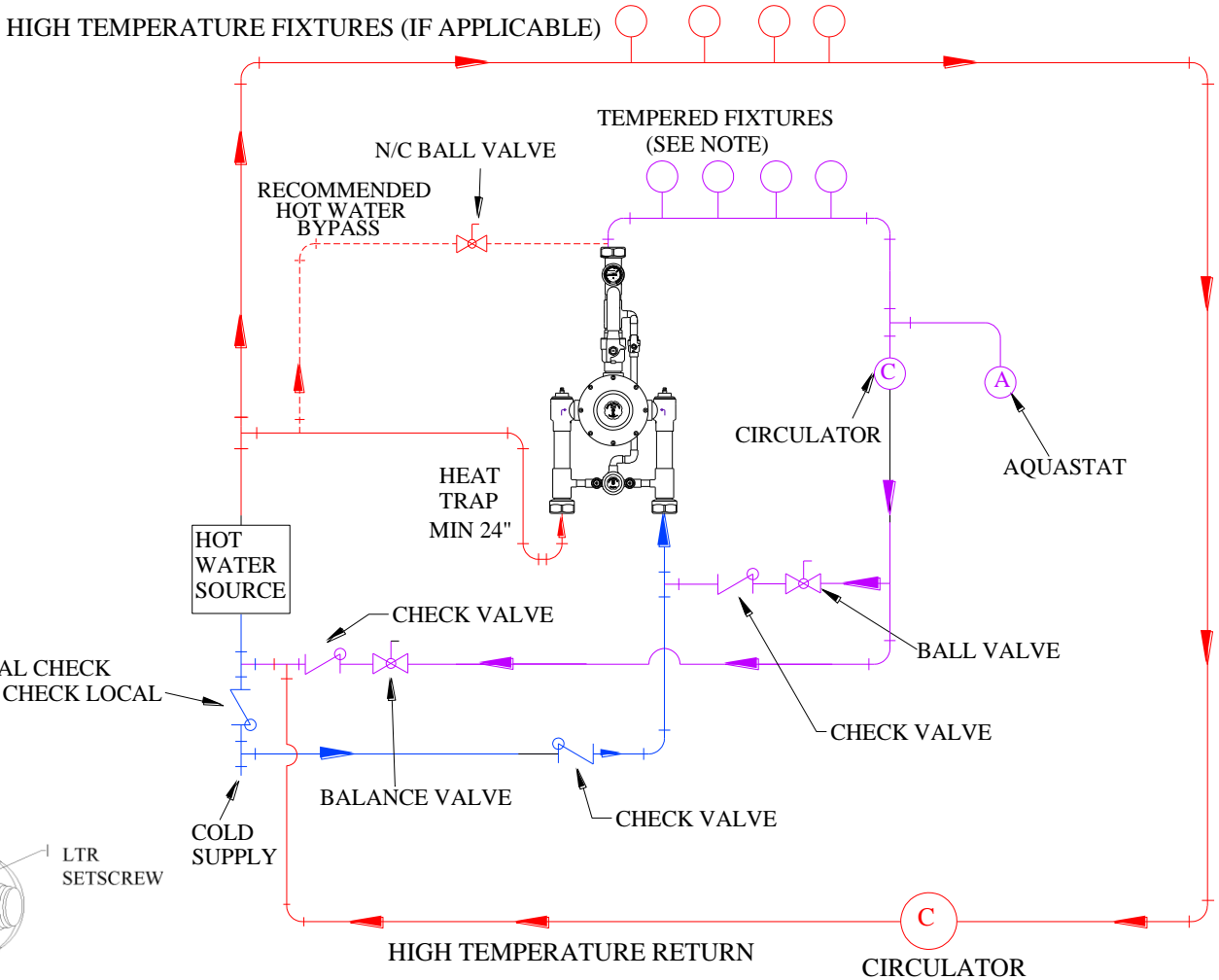
CAUTION

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 6.

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).

REQUIRED PIPING METHOD W



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 knobs with Allen wrench.
3. Close large outlet ball valve above large mixing valve.
4. Turn on enough fixtures to flow approximately 3-5 GPM, turn small valve knob clockwise until it stops (full cold) then counterclockwise until it stops (full hot), three times to exercise the thermostatic element.
5. Set small mixing valve to the desired temperature, tighten LTR set screw.
6. Open large outlet ball valve above large mixing valve.
7. Close small outlet ball valve on outlet of small mixing valve.
8. Turn on enough fixtures to flow approximately 10-15 GPM, turn large valve knob clockwise until it stops (full cold) then counterclockwise until it stops (full hot), three times to exercise the thermostatic element.
9. Set large mixing valve to the same desired temperature as small valve, tighten LTR set screw.
10. Open small ball valve on outlet of small mixing valve.
11. Shut off all fixtures. Setup is complete.
12. Turn on circulator. With all fixtures still off, (no water flowing) observe the circulation temperature until it stabilizes.
13. If temperature rises, close balance valve until desired temperature is reached.

INSTALLATION CONTINUED

WARNING

WARNING! This Thermostatic Mixing Valve has a 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!**

Model XL-20032-LF-BDT – 2” Inlets and 2”Outlet
Maximum Operating Pressure 125 PSI (8.6 BAR) for Hot and Cold Water
Hot Water Temperature Range: 120° - 180°F (49° - 82°C)
Cold Water Temperature Range: 39° - 80°F (4° - 27°C)
Temperature Adjustment Range: 95° - 135°F (35° - 57°C)

SERVICE

Leonard Type XL 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

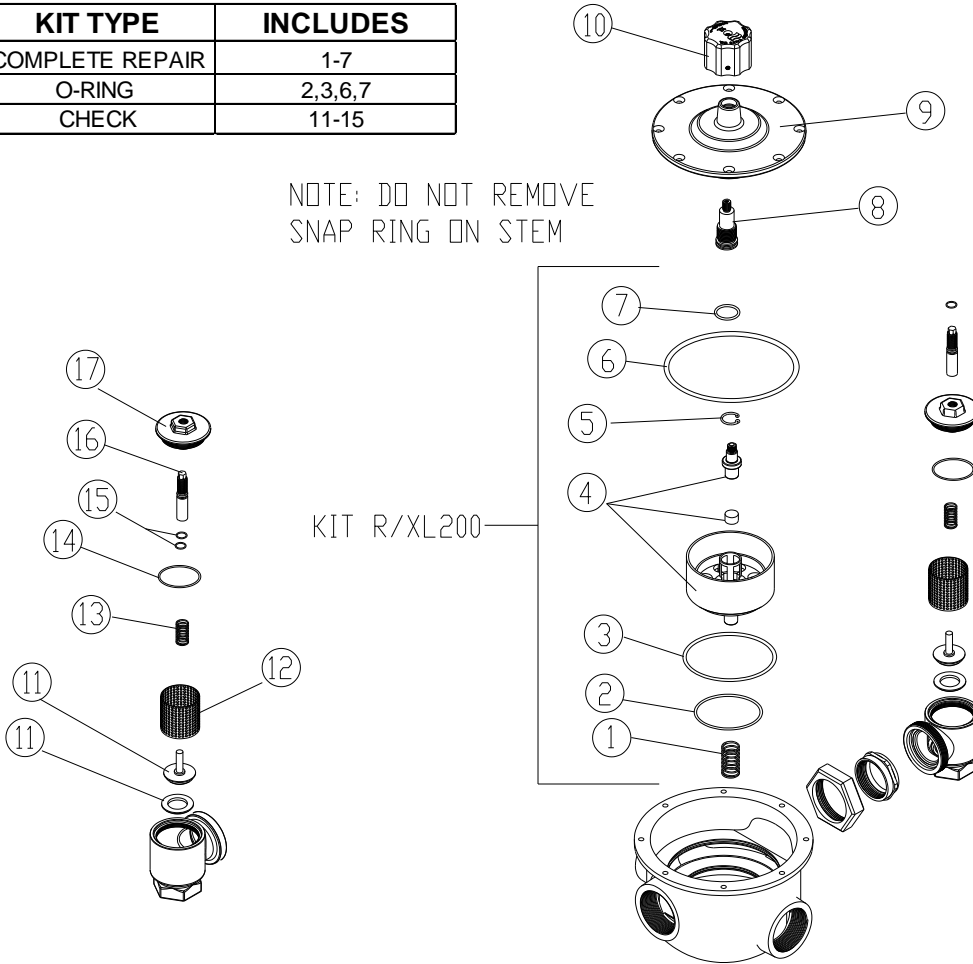
ITEM:	PROBLEM:	SMALL VALVE – XL-32A-LF RECOMMENDED REPAIR KITS:	LARGE VALVE – XL-200-LF RECOMMENDED REPAIR KITS:
PACKINGS & GASKETS	1. Leak at stem. 2. Leak between valve cover and base.	KIT 1/XL32	KIT 1/XL200
SHUTTLE ASSEMBLY	3. Valve delivers either all hot or all cold water, or will not mix consistently.	KIT R/XL32	KIT R/XL200
CHECKSTOPS	4. Hot water bypass into cold line. 5. Supplies cannot be shut off completely. 6. Leak at checkstop bonnet.	KIT 4/M20	KIT 2/200/C

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

XL-200 PARTS & KITS

KIT	KIT TYPE	INCLUDES
R/XL200	COMPLETE REPAIR	1-7
1/XL200	O-RING	2,3,6,7
2/200/C	CHECK	11-15

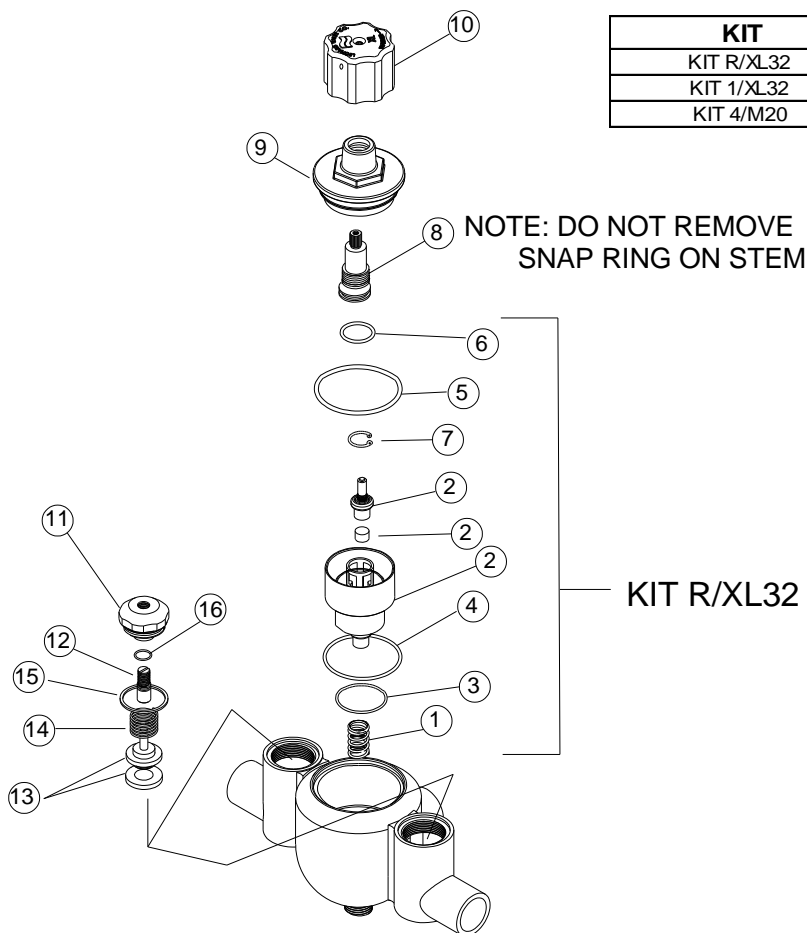
NOTE: DO NOT REMOVE
SNAP RING ON STEM



ITEM #	DESCRIPTION	QTY.	PART # / KIT #
1	SPRING, RETURN	1	KIT R/XL200
2	O-RING, LOWER SHUTTLE	1	KIT 1/XL200, KIT R/XL200
3	O-RING, UPPER SHUTTLE	1	KIT 1/XL200, KIT R/XL200
4	SHUTTLE ASSEMBLY	1	KIT R/XL200
5	RETAINING RING, COVER	1	7611, KIT R/XL200
6	O-RING, COVER	1	KIT 1/XL200, KIT R/XL200
7	O-RING, STEM	1	KIT 1/XL200, KIT R/XL200
8	STEM ASSEMBLY (DO NOT REMOVE SNAP RING)	1	781700
9	COVER	1	7856
10	KNOB, DIAL PLATE, KNOB SCREW, SET SCREW	1	768100
11	LOWER STEM & PACKING	2	KIT 2/200/C
12	SCREEN	2	KIT 2/200/C
13	SPRING, CHECK	2	KIT 2/200/C
14	O-RING, BONNET	2	KIT 2/200/C
15	O-RING, UPPER STEM	4	KIT 2/200/C
16	STEM, UPPER CHECK	2	4727
17	CHECK BONNET	2	4723

XL-32A PARTS & KITS

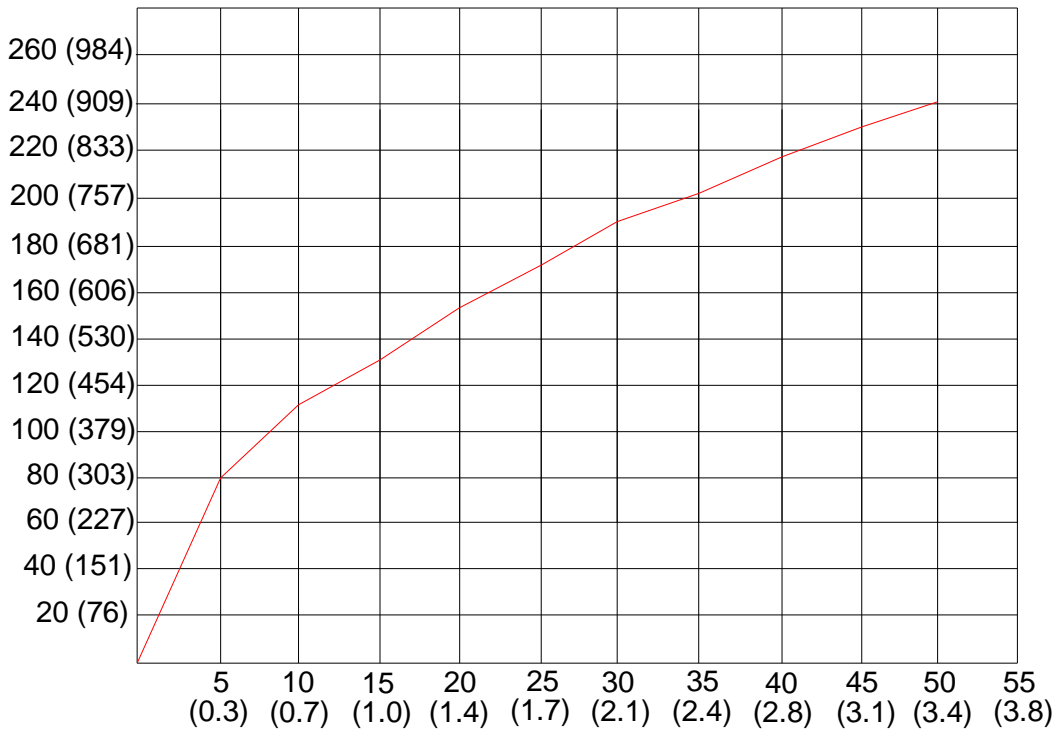
KIT	TYPE KIT	INCLUDES
KIT R/XL32	COMPLETE REPAIR	1 - 7
KIT 1/XL32	O-RING KIT	3 - 6
KIT 4/M20	CHECK KIT	13 - 16



ITEM #	DESCRIPTION	QTY.	PART # / KIT #
1	SPRING, RETURN	1	KIT R/XL32
2	SHUTTLE ASSEMBLY	1	KIT R/XL32
3	O'RING, LOWER SHUTTLE	1	KIT 1/XL32, KIT R/XL32
4	O'RING, UPPER SHUTTLE	1	KIT 1/XL32, KIT R/XL32
5	O'RING, COVER	1	KIT 1/XL32, KIT R/XL32
6	O'RING, STEM	1	KIT 1/XL32, KIT R/XL32
7	RETAINING RING, COVER	1	7411, KIT R/XL32
8	STEM ASSEMBLY (DO NOT REMOVE SNAP RING)	1	741900
9	COVER	1	7405
10	KNOB, DIAL PLATE, SCREW, SET SCREW	1	768100
11	BONNET	2	M20-2A
12	STEM, UPPER CHECK	2	MU-4A
13	LOWER STEM & PACKING	2	M20-6A, KIT 4/M20
14	SPRING,CHECK	2	M20-9A, KIT 4/M20
15	PACKING, BONNET	2	M20-3A, KIT 4/M20
16	O'RING, UPPER STEM	2	MU-5A, KIT 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	80	112	137	157	172	189	202	218	230	241	GPM
3.8	303	424	519	594	651	715	765	825	871	912	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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