INSTALLATION ADJUSTMENT SERVICE
ALLTERNATIVE TEMPERATURE THERMOSTATIC WATER MIXING VALVES
TYPE TM-50-AT, 80-AT, 150-AT, 200-AT,
TYPE TM-50-AT-LF, 80-AT-LF, 150-AT-LF, 200-AT-LF

IMPORTANT! Provide valve serial number, (stamped on cover of valve) 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.

OUTLET

HOT INLET COLD INLET

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 casting. Connect the hot water into the inlet marked "H" and cold water into the inlet marked "C". These are NOT to be confused with the "C-H" markings on the front cover.

3. Union angle strainer checkstops furnished must be installed on both supply lines as shown above.

4. A shutoff valve must be installed on the outlet pipe. Type TM valves do not have a built-in shutoff.

5. 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.

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

NOTE: Valve is not to be used for domestic hot water distribution. Please see Leonard Valves complete line of ASSE 1017 certified mixing valves for Domestic hot water.

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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ADJUSTMENT AND SERVICE

Leonard Type TM 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).

TO RESET ADJUSTABLE HIGH TEMPERATURE LIMIT STOP:

!! WARNING !!

WARNING! This Thermostatic Mixing Valve has an adjustable high temperature limit stop, which must be checked. If temperature is too high, the installer, MUST RESET stop immediately. Always check the temperature of the mixed water when the lever handle is turned to full HOT. Excessively hot water is DANGEROUS AND MAY CAUSE SCALDING!

TROUBLESHOOTING INSTRUCTIONS

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SEE PAGES 5, 6, 7 FOR COMPLETE PARTS BREAKDOWN, PARTS KIT

"Check for significant variations in outlet flow. Thermostatic valves will NOT provide the desired accuracy outside of their flow capacity range. Minimum flows must be no less than shown (see Flow Capacities, page 8).

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

METHOD #1

Note: The operating outlet temperature range of these valves is outside the normal operating range of a Domestic Hot Water Distribution Valve and therefore they are more suitable for Process Temperature Control applications. Please see Leonard’s complete line of ASSE 1017 Certified Valves for Domestic Hot Water Applications.
INSTRUCTIONS FOR
DISMANTLING VALVE

1. Shut off hot and cold supplies to valve.
2. Loosen LTR set screw.
3. Remove SNAP CAP, SCREW and WASHER, POINTER and FRICTION SPRING. (FIGURE #1).
4. Remove the 6 COVER SCREWS, then take off cover to which the Thermostat and Gears are attached.

WHEN RE-ASSEMBLING VALVE, making sure driving ball engages ball socket, insert new Flange Packing in base; replace COVER, tightening COVER SCREWS in rotation; put FRICTION SPRING in place; then replace POINTER and POINTER ROD SCREW, WASHER and CAP.

After installing new parts, it will probably be necessary to reset Pointer to obtain correct temperature range from Cold to Hot. See page 2 instructions "TO RESET ADJUSTABLE HIGH TEMPERATURE LIMIT STOP."

TO CLEAN PORT SLEEVE ASSEMBLY
Failure to properly blend the water may be caused by a sticking condition in the PORT SLEEVE ASSEMBLY. The THIMBLE should slide freely on the PORT SLEEVE.

1. If a deposit of lime or sediment prevents free movement, use a nail set or other tapered tool to unscrew the CHECK NUT as far as it will go, then screw the PORT SLEEVE NUT into the base. This will release the PORT SLEEVE and THIMBLE so they can be lifted out, (Figure #2).

2. Clean with a NON-CORROSIVE CLEANING AGENT AND SOFT CLOTH - DO NOT USE ABRASIVES - then wash parts thoroughly, wipe with a dry cloth and re-assemble. The PORT SLEEVE should be assembled with the SHOULDER to the LEFT. Tighten PORT SLEEVE NUT against end of PORT SLEEVE but be careful not to cramp sleeve in place. Tighten CHECK NUT.

3. When replacing front be sure DRIVING BALL is inserted in Ball Socket as shown in Figure #1.

TO REPLACE POINTER ROD WITH GEAR
1. Remove POINTER ROD SNAP CAP, SCREW, WASHER, POINTER, and FRICTION SPRING. (FIGURE #1)
2. Remove COVER with parts attached, from the front of valve.
3. Remove COIL SLEEVE STUD and take off THERMOSTAT GROUP.
4. Replace POINTER ROD with GEAR and re-assemble.

TO REPLACE (OR CLEAN) THERMOSTAT GROUP
Follow instruction for replacing POINTER ROD with GEAR above. If a deposit has collected on the Thermostatic Coil, clean it off with a brush in a non-corrosive grit-free cleaning solution.

REMEMBER! THIS IS A CONTROL DEVICE WHICH MUST BE CLEANED AND MAINTAINED ON A REGULAR BASIS. (SEE MAINTENANCE GUIDE AND RECORD, MGR-1000).
TM-50-AT, 80-AT VALVE PARTS

CHECKSTOP PARTS

LOCK TYPE POINTER

TM valves are furnished with lockable pointers

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

NOTE: AFTER INSTALLING NEW PARTS IT WILL BE NECESSARY TO RESET THE ADJUSTABLE HIGH TEMPERATURE LIMIT STOP (SEE PAGE 2).
TM-150-AT VALVE PARTS

LOCK TYPE POINTER

TM valves are furnished with lockable pointers

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

NOTE: AFTER INSTALLING NEW PARTS IT WILL BE NECESSARY TO RESET THE ADJUSTABLE HIGH TEMPERATURE LIMIT STOP (SEE PAGE 2).
TM-200-AT VALVE PARTS

CHECKSTOP PARTS

TM-200-AT

4727 PACKING
4728 RF CAP
4724 SCREEN
4732 RF SWIVEL NUT
4704 RF SWIVEL
4732 O'RING (2)
313 SPRING
UPPER STEM
LOWER STEM & PACKING
(TM-200-AT)
(IF APPLICABLE)

LOCK-TYPE POINTER

TM-25C POINTER
TM-25D STOP
TM-8 COIL SLEEVE STUD
TM-15B/125 COVER
TM-25D DIAL PLATE
TM-15B/125 THERMOSTAT GROUP
TM-16 COVER SCREWS
TM-16A/125 DIAL PLATE
TM-28A POINTER ROD
TG-1/200 PORT SLEEVE ASSY
TM-3/200 PORT SLEEVE NUT ASSY
TM-21/125 FLANGE PACKING

REPAIR KITS

KIT 1/200/C PACKINGS & GASKETS

4724 SCREEN **
4728 RF CAP
313 O'RING (2)
4732 SPRING **
MU-5A O'RING **
STM-200-AT LOWER STEM & PACKING

KIT R/200/N REBUILDING KIT

TM-28A POINTER ROD
TM-3/200 PORT SLEEVE NUT ASSY
TM-21/125 FLANGE PACKING
TM-29/29A PORTER SCREW WWASHINER
4727 PACKING
4728 RF CAP
4724 SCREEN
4732 RF SWIVEL NUT
4704 RF SWIVEL
313 SPRING
UPPER STEM
LOWER STEM & PACKING
(TM-200-AT)
(IF APPLICABLE)

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

NOTE: AFTER INSTALLING NEW PARTS IT WILL BE NECESSARY TO RESET THE ADJUSTABLE HIGH TEMPERATURE LIMIT STOP ON EACH VALVE (SEE PAGE 2).
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 and DO NOT OVERSIZE. Minimum flow must be no less than shown below.

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.

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