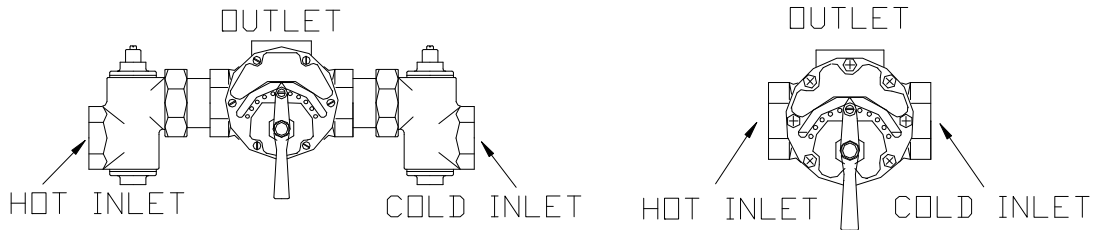


INSTALLATION ADJUSTMENT SERVICE

TM-200, (OLD STYLE)

TM-300, T-225, T-250, T-300)

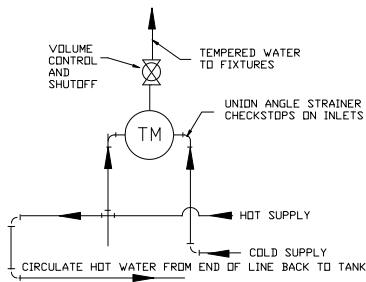
IMPORTANT! Provide valve serial numbers (stamped on cover of valve) when ordering parts!



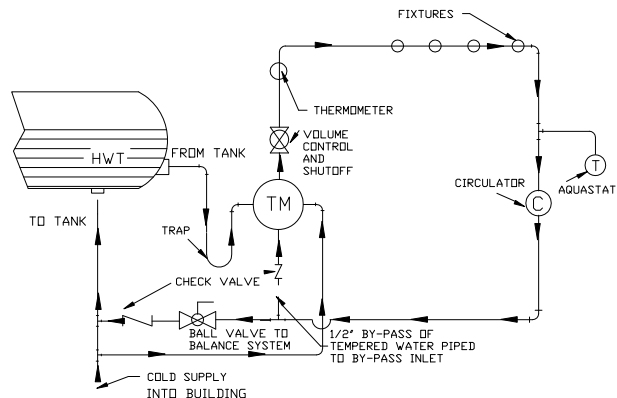
INSTALLATION

1. Valve should be installed 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 "HOT" and cold water into the inlet marked "COLD". These are not to be confused with the "C-H" markings on the front cover.
3. Union angle 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 pipe cement sparingly. Supply pipes should be flushed before the valve is connected. Flush outlet pipe and valve as soon as it is connected.
6. Refer to page 3 of this bulletin for correct Setup Instructions.

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



Required when hot water in the 140°F (60°C) range is to be circulated to a master mixer or individual thermostatic mixing valves which are a substantial distance from the hot water source. It is used primarily in a building with several risers, with tempered water in each riser controlled by a separate master mixer. NOTE: The engineer must determine maximum distance which can be run, i.e. maximum allowable time for hot water to reach user with one showerhead operating, based upon code requirements and/or good practice.



Required when hot water in the 120°F (49°C) range is to be circulated thru the entire building, to maintain tempered water at each fixture. The function of the 1/2" by-pass is to allow the recirculated water to pass through the mixing valve during periods of no draw without entering the hot water source to avoid being reheated. The ball valve allows the system to be properly balanced. The secondary by-pass loop helps reduce the buildup of undesirable hot water in the primary system, and must not be omitted. See TB-98 for set-up instructions.

WARNING! This piping will not perform effectively if the valve is oversized (see chart p4). Minimum flow must be no less than as shown on page 4. For estimating hot water demand, consult Leonard Caspak® Plus Sizing Program.

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ADJUSTMENT AND SERVICE

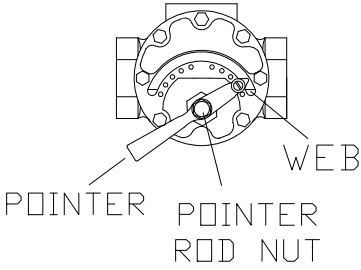
Leonard Type TM Thermostatic Water Mixing Valves are simple in design and may be easily cleaned, adjusted and repaired. If the installation is accessible, servicing may be completed without disconnecting the valves.

NOTE: 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 factory set at approximately 130°F (54°C) with an incoming hot water supply temperature of 155°F (68°C). If the hot water supply temperature of the job is greater than 155°F (68°C), the valves when turned to full HOT will deliver water in excess of 130°F (49°C) and the limit stops **MUST BE RESET BY THE INSTALLER!**

TO RESET ADJUSTABLE HIGH TEMPERATURE LIMIT STOP:



While valve is running:

1. Remove POINTER ROD NUT AND POINTER
2. Temporarily place POINTER on the spline rod. turn RIGHT for warmer temperature, turn LEFT for cooler temperature. When valve is delivering warmest temperature desired, remove the pointer.
3. Replace POINTER on the spline rod so that its RIGHT edge is resting against the TOP SIDE OF THE web which is cast on the RIGHT side of cover.
4. The new maximum temperature has now been set. Test this temperature by holding a thermometer under the flow of water to be certain it is as desired.

TROUBLESHOOTING INSTRUCTIONS

		PARTS REQUIRED
PACKINGS & GASKETS	<ol style="list-style-type: none"> 1. Leak at packing nut. 2. Leak between valve cover and base. 	#24, 21/200, (TM-200) or 24, 21/300 (TM-300)
PORT SLEEVE ASSEMBLY	<ol style="list-style-type: none"> 3. Valve delivers either all hot or all cold water, or will not mix consistently. 	#3/3A, TG-1 plus packings noted above or Kit R/200 (TM-200) R/300 (TM-300)
THERMOSTAT GROUP	<ol style="list-style-type: none"> 4. After cleaning or replacing port sleeve assembly, valve will not hold temperature. 	TG-2/60 or Kit R/200 (TM-200) TG-2/300 or Kit R/300 (TM-300)
CHECKSTOPS (TM-200,225 ONLY)	<ol style="list-style-type: none"> 5. Hot water by-pass into cold line. 6. Supplies cannot be shut-off completely. 7. Leak at checkstop bonnet. 	Kit 2/200

SEE PAGES: 3 FOR COMPLETE PARTS BREAKDOWN

*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 4).

If installed on a recirculated hot water system, make certain the valve is piped according to Leonard Required Piping (see page 1).

INSTRUCTIONS FOR DISMANTLING

1. Shut off hot and cold supplies to valve.
2. Remove the 8 Cover Screws, then take off cover to which the thermostat and gears are attached.

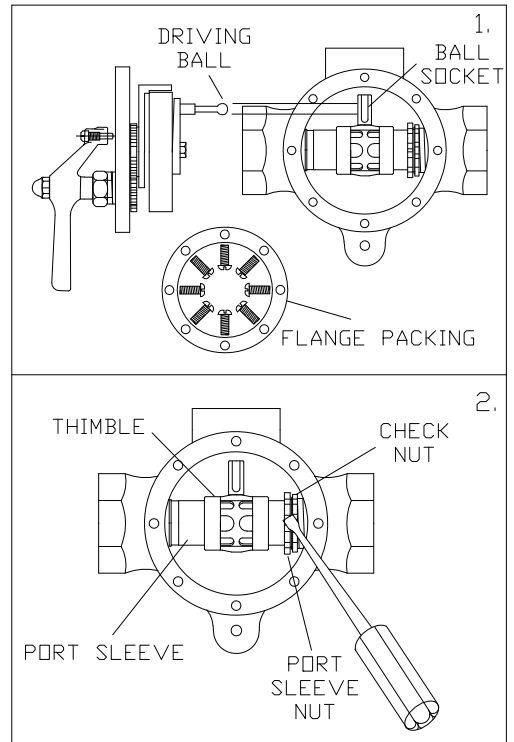
TO CLEAN PORT SLEEVE ASSEMBLY

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 (see DWG 2).

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 (see DWG2).
2. Clean with **A NON-CORROSIVE CLEANING AGENT AND SOFT CLOTH-DO NOT USE ABRASIVES-** then wash parts thoroughly wipe with 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 crimp sleeve in place. Tighten Check Nut.
3. When replacing front be sure the flange packing is in place and the Thermostat Group's DRIVING BALL is inserted in Ball Socket as shown in DWG 1.

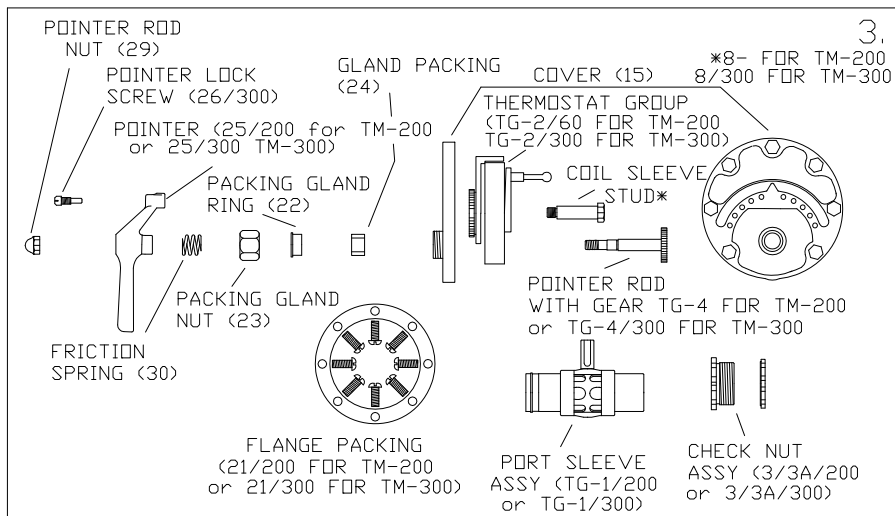
TO REPLACE POINTER ROD WITH GEAR

1. Remove Cover with parts attached from front of valve.
2. Remove Pointer Rod Nut and Pointer.
3. Remove Coil Sleeve Stud (8) and take off Thermostat Group (TG-2).
4. Replace Pointer Rod with Gear and re-assemble.



TO REPLACE (OR CLEAN) THERMOSTAT GROUP

Follow instructions for replacing Pointer Rod with Gear. If a deposit has collected on the Thermostat Group, clean it off with a brush in a **non-corrosive grit free cleaning solution**.



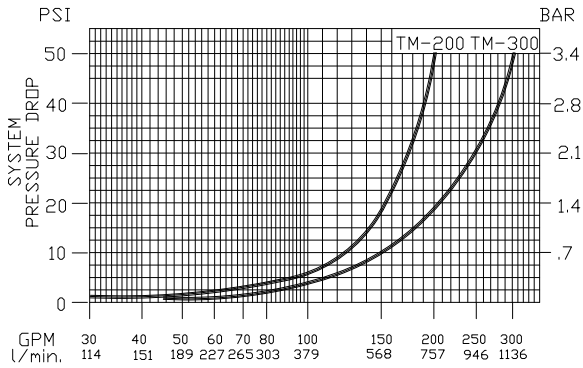
WHEN RE-ASSEMBLING VALVE, insert new Flange Packing (21) in place; replace Cover, tightening Cover Screws in rotation; put Friction Spring (30) in place; then replace Pointer and Pointer Rod Nut.

NOTE: After installing new parts, it will be necessary to reset Pointer to obtain correct temperature range from Cold to Hot. See instructions on Page 2:

“TO RESET ADJUSTABLE HIGH TEMPERATURE LIMIT STOP”

Note: Parts noted for TM-200 apply to TM-225B Parts noted for TM-300 apply to T-225, T-250, T-300

FLOW CAPACITIES



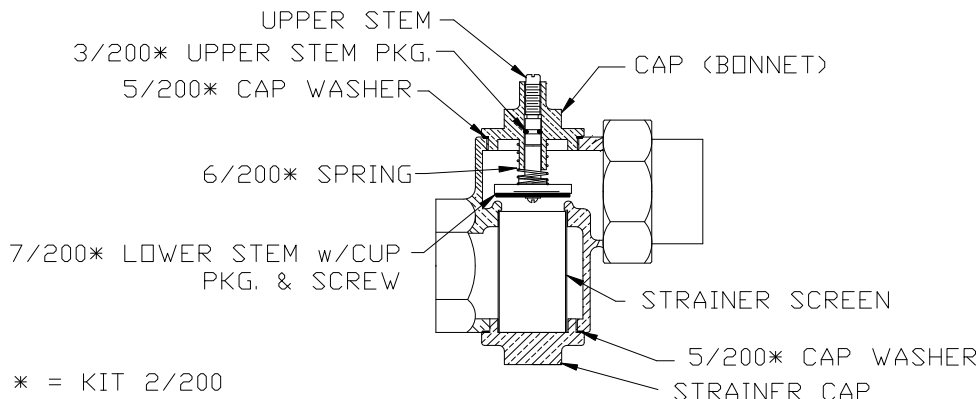
Leonard Type TM-200 and TM-300 Thermostatic Mixing Valves are designed primarily for industrial and large commercial applications. When considering these products, exercise caution and observe the minimum flow requirements shown below.

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 AND OBSERVE MINIMUM FLOWS SHOWN.

TM-200 MINIMUM FLOW – 30 GPM (114 l/min.)

TM-300 MINIMUM FLOW – 45 GPM (170 l/min.)

NOTE: Do not use valve where system flow is either less or greater than the limits shown. For estimating hot water demand, consult Leonard Caspak® Plus Sizing Program.



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.