

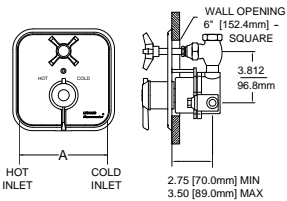
M-20-C, M-20-E, M-15-C, M-15-E, M-20-CST, M-20-EST

(TM-504, TM-356, TM-203, TM-202, PHOTO: TM-456B, MARK II)

THERMOSTATIC SHOWERMATER INSTALLATION INSTRUCTIONS

(Serial No. MU15, MU20, M15, M20)

M15C, M20C

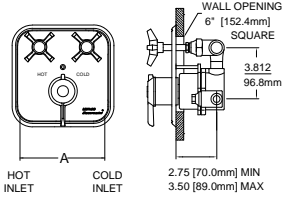


WALL OPENING
6" [152.4mm] SQUARE
3.812
96.8mm

HOT INLET COLD INLET
2.75 [70.0mm] MIN
3.50 [89.0mm] MAX

MODEL	INLETS	OUTLET	A
M-15-C	1/2" 12.7mm	3/4" 19mm	8 1/4" 210mm
M-20-C	3/4" 19mm	3/4" 19mm	8 5/8" 219mm

M20CST

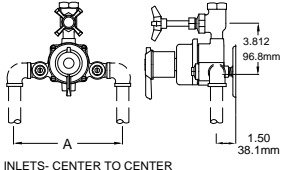


WALL OPENING
6" [152.4mm] SQUARE
3.812
96.8mm

HOT INLET COLD INLET
2.75 [70.0mm] MIN
3.50 [89.0mm] MAX

MODEL	INLETS	OUTLET	A
M-20-CST	3/4" 19mm	1/2" 12.7mm	8 5/8" 219mm

M15E, M20E

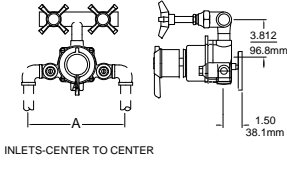


3.812
96.8mm
1.50
38.1mm

INLETS- CENTER TO CENTER

MODEL	INLETS	OUTLET	A
M-15-E	1/2" 12.7mm	3/4" 19mm	8 1/4" 210mm
M-20-E	3/4" 19mm	3/4" 19mm	8 5/8" 219mm

M20EST

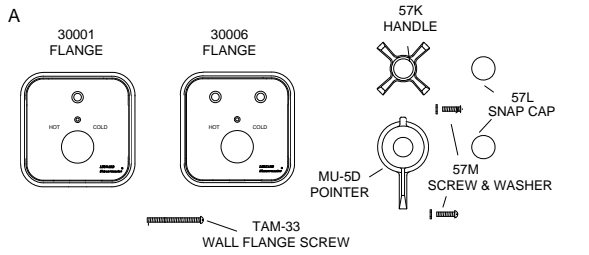


3.812
96.8mm
1.50
38.1mm

INLETS-CENTER TO CENTER

MODEL	INLETS	OUTLET	A
M-20-EST	3/4" 19mm	1/2" 12.7mm	8 5/8" 219mm

A



30001 FLANGE 30006 FLANGE
57K HANDLE
57L SNAP CAP
MU-5D POINTER 57M SCREW & WASHER
TAM-33 WALL FLANGE SCREW

1. Valve must **NOT** be sealed in wall with plaster or tile. Cover screws and inlet fittings **MUST** be accessible for servicing.
2. This valve is furnished with integral checkstops on each supply.
3. Install hot to left inlet and cold to right inlet as shown.
4. Pipe cement, or solder flux must be used sparingly. After connections are made to the valve, flush pipes thoroughly (remove internal parts if necessary) to eliminate dirt and excess materials which might become lodged on the working parts of the valve.

WARNING

WARNING! THIS MIXING VALVE IS EQUIPPED WITH AN ADJUSTABLE HIGH TEMPERATURE LIMIT STOP FACTORY SET AT APPROXIMATELY 110°F (43°C) WITH AN INCOMING HOT WATER SUPPLY TEMPERATURE OF 135°F (57°C) IF INCOMING HOT WATER ON THE JOB IS HIGHER THAN 135°F (57°C), THE VALVE WHEN TURNED TO FULL HOT MAY DELIVER WATER IN EXCESS OF 110°F (43°C), AND THE HIGH TEMPERATURE LIMIT STOP **MUST BE RESET BY THE INSTALLER** (SEE PAGE 2)

5. Attach protective cover which serves as a guide for the finish wall line after piping connections are made.
6. **IMPORTANT!** The M20C valve is designed for top outlet only when used for showers. When used for shower AND tub, pipe down to a special twin elbow and diverter tub spout or use an M20CST, (see installation drawings, page 4).
7. After the valve is installed as noted above, recheck and reset the adjustable high temperature limit stop (see instructions, page 2)
8. Mount the wall flange to the valve body, using the TAM-33 wall flange screw.
9. We recommend to seal the flange to the wall with silicone to prevent water from penetrating the wall.
10. Attach the pointer to the valve stem and the 57K 4-arm handle to the on/off volume control stem (using the pointer screw and washer), and insert snap cap.

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

1360 Elmwood Avenue, Cranston, RI 02910 USA

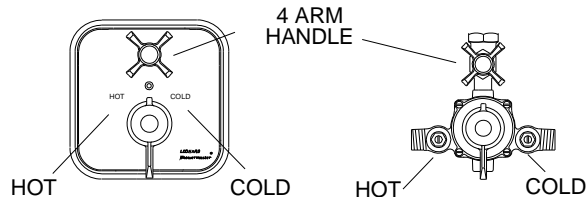
Phone: 401.461.1200 Fax: 401.941.5310

Email: info@leonardvalve.com

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

OPERATION

The M20(15) is a thermostatic water mixing valve which will compensate for changes in the temperature or pressure of hot and cold supplies and maintain bathing temperatures. The easy to read dial or Hot and Cold indicators on the flange or cover help to eliminate confusion as to where the handle should be located for a particular temperature. Turn the 4 arm handle clockwise to begin the flow of water, when the pointer indicates COLD (or BLUE) on the dial plate, the temperature is cold. As the handle enters the HOT (or RED) area, shower temperature becomes progressively WARMER until the high temperature limit is reached in the full "HOT" position. To turn OFF, move the 4 arm handle in a counter-clockwise direction to stop the flow of water.



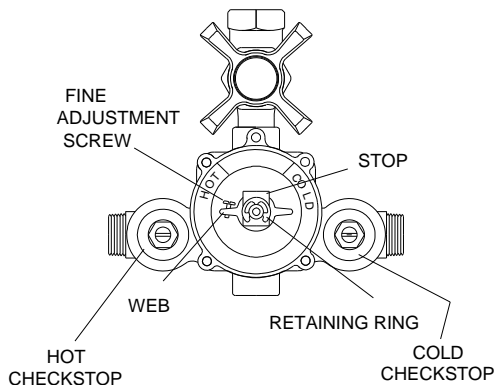
SERVICING INSTRUCTIONS

1. Remove pointer (MU-5D), 4 arm handle (57-K) and wall flange (3001)(See DWG A).
2. Turn off hot and cold supplies with a screwdriver at the integral checkstops (DWG B).
3. Remove the four cover screws (M20-2C) to release the cover and thermostatic control assembly (M20-1-12B) (DWGS C & D).
4. **To Remove Bridge Assembly** (MU-1-8B) (DWG E), remove pointer rod nut (M20-10B) and release bridge assembly from the stem.
5. **To Disassemble Bridge Assembly** (DWG. F), remove the holder nuts (M20-5B) with screwdriver in slots provided. Clean port sleeve assembly as noted below.
6. **To Clean Port Sleeve Assembly** (M20-G1) (DWG. F) submerge in clean water or any non-corrosive cleaning solution. **DO NOT USE** abrasives. Use a soft cloth to remove deposits or stains on the port sleeve assembly (M20-G1). Be certain the thimble moves freely on the port sleeve and reassemble bridge assembly. **NOTE!** When reattaching bridge assembly, driving ball must engage slot in thimble and the coil bracket (DWG. E).
7. **To Remove Thermostat Group** (M20-G2) (DWG. G) Remove stop retaining ring, stop and gland nut. Push rod through center. **Be careful NOT to pull coils out of shape!** To clean (if a deposit has collected on the thermostatic coil), brush in a non-corrosive cleaning solution and replace in cover with parts shown.
8. **NOTE! FOR COMPLETE REBUILDING KIT ORDER KIT R/M20 (INCLUDES M20-1-12B, M20-3C, M20-10E) .**

WARNING

WARNING! THIS MIXING VALVE IS EQUIPPED WITH AN ADJUSTABLE HIGH TEMPERATURE LIMIT STOP FACTORY SET AT APPROXIMATELY 110°F(43°C) WITH AN INCOMING HOT WATER SUPPLY TEMPERATURE OF 135°F(57°C). IF INCOMING HOT WATER ON THE JOB IS HIGHER THAN 135°F, THE VALVE WHEN TURNED TO THE FULL HOT MAY DELIVER WATER IN EXCESS OF 110°F, AND THE HIGH TEMPERATURE LIMIT STOP MUST BE RESET BY THE INSTALLER. (SEE BELOW)

B.

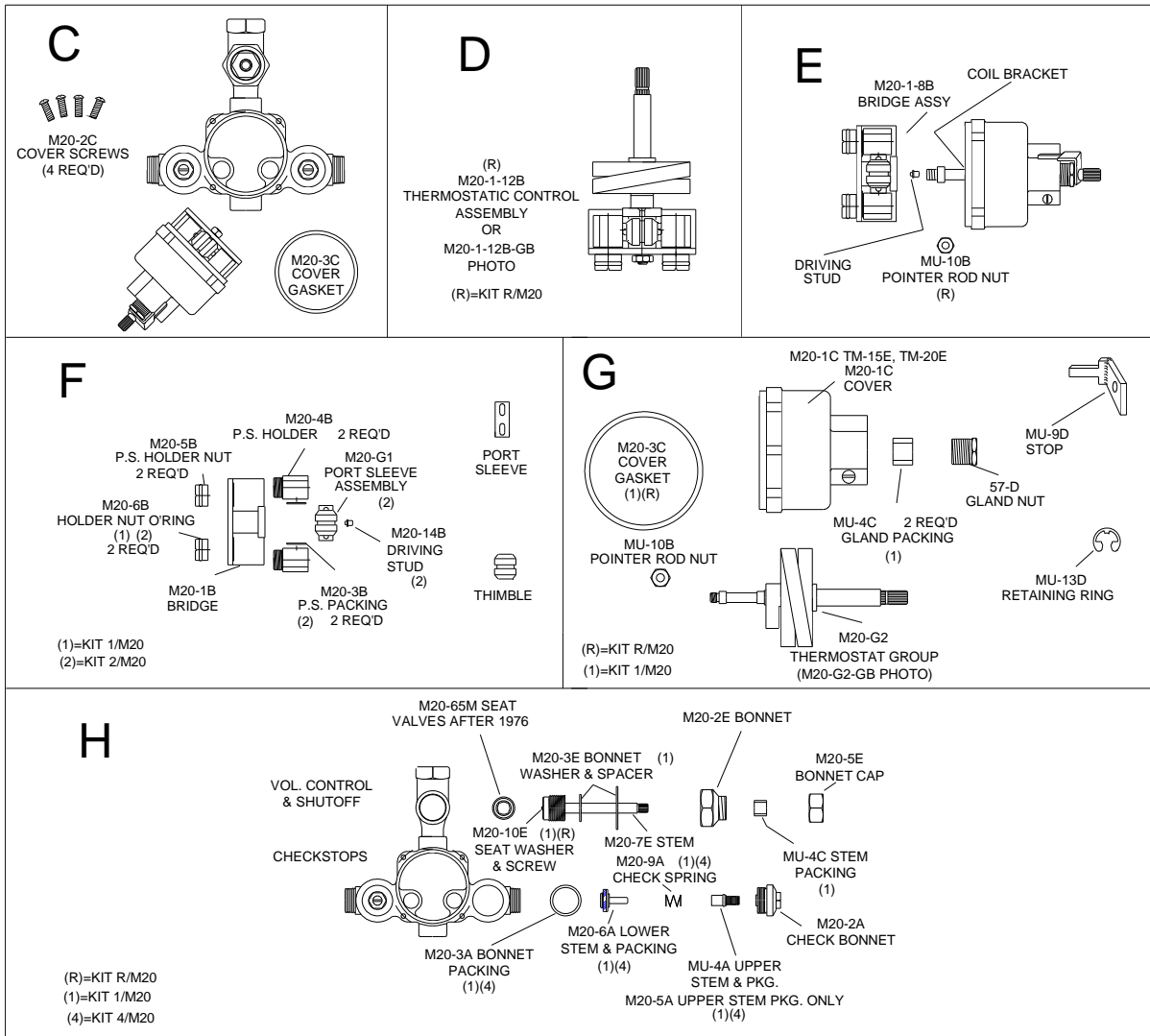


TO RESET HIGH TEMPERATURE LIMIT STOP (DWG B.):

1. While valve is running, turn pointer (MU-5D) to maximum "H" (HOT) position.
 2. Remove pointer, stop retaining ring and stop.
 3. Replace pointer and turn stem to the left or right until the valve is delivering the highest temperature 110°F (43°C) or lower and remove pointer.
 4. Push stop on stem so that its LEFT edge is resting on the fine adjustment screw* on the cover. Turn fine adjustment screw, if necessary, (clockwise for slightly HIGHER temperature, counterclockwise for slightly lower temperature).
- * furnished on valves manufactured after February, 1987
5. Replace pointer so its small end is pointing to the extreme "H" (HOT) position.

IMPORTANT! TEST THE NEW HIGH TEMPERATURE SETTING USING A DIAL THERMOMETER TO MAKE CERTAIN IT AS DESIRED. HOT WATER IN EXCESS OF 110°F (43°C) IS DANGEROUS AND MAY CAUSE SCALDING!!

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

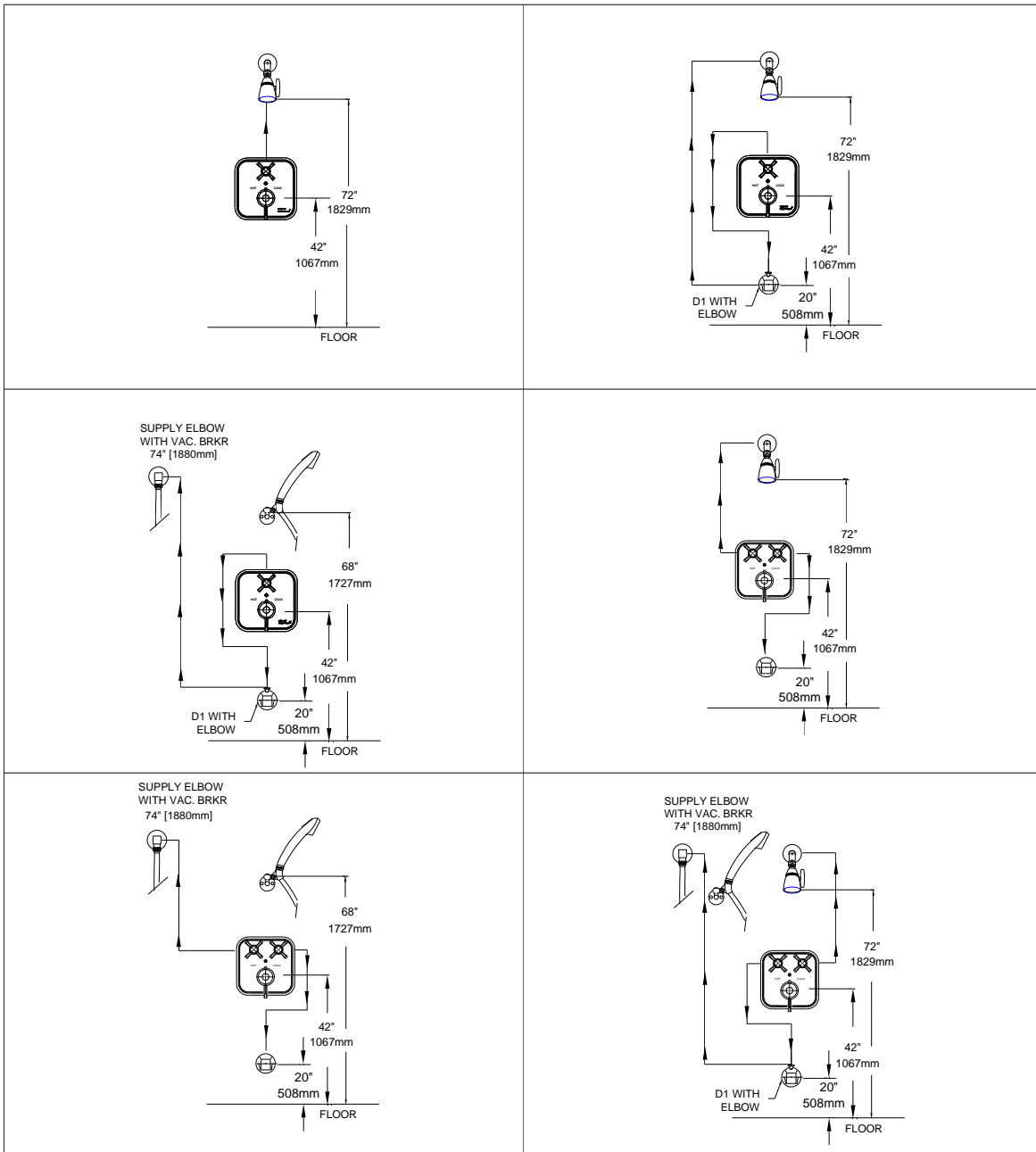


SERVICING INSTRUCTIONS

PACKINGS & GASKETS	<ol style="list-style-type: none"> Leak at handle. Leaks between valve cover and base. Volume control will not shut off completely. 	Kit 1/M20 includes 1 M20-3C 1 M20-3E 2 M20-3A 2 M20-6B 1 M20-6E 2 M20-5A 2 MU-4C 1 M20-10E 2 M20-9A
PORT SLEEVE ASSEMBLY	<ol style="list-style-type: none"> Valve delivers either all hot or all cold water, or will not mix consistently. Clean or replace port sleeve assembly. 	Kit 2/M20 includes: 2 M20-3B, M20-6B 1 M20-G1, M20-14B
THERMOSTAT GROUP	<ol style="list-style-type: none"> After replacing port sleeve assembly, valve will not hold temperature. Clean or replace thermostat group. 	ALTERNATE: ORDER 1 M20-1-8B Or KIT R/M20 (SEE DWG. E) KIT R/M20 or 1 M20-G2
CHECKSTOPS	<ol style="list-style-type: none"> Hot water by-passes into cold line (or cold into hot). Supplies cannot be shut off completely. 	Kit 4/M20 includes: 2 M20-3A, 2 M20-5A, 2 M20-6A, 2 M20-9A

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

INSTALLATION



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.