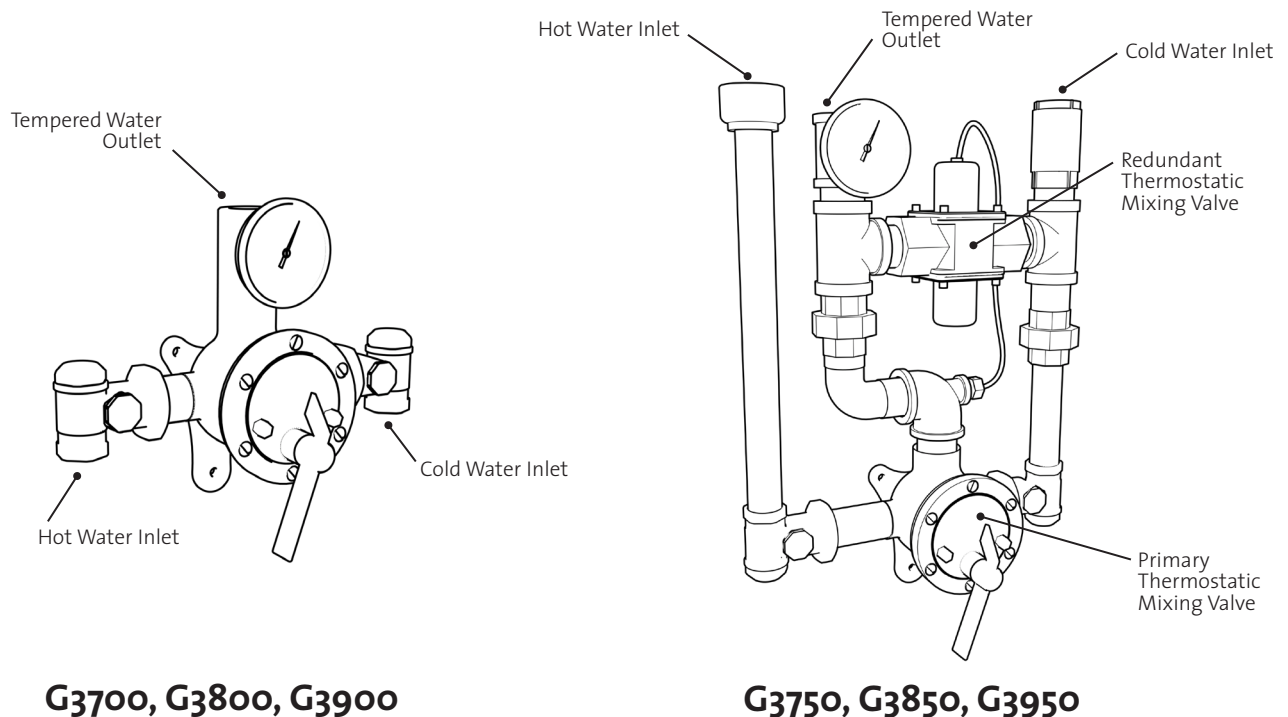




Installation Setup and Operating Instructions Thermostatic Water Mixing Valve Systems G3700, G3750, G3800, G3850, G3900, G3950

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



G3700, G3800, G3900

G3750, G3850, G3950

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 "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 strainer checkstops furnished must be installed on both supply lines as shown above.
4. 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.
Maximum Operating Pressure 125PSI (860 KPA) for Hot and Cold Water.

Note: It may be necessary to recalculate, the tempered water to the face/eyewash/drench shower should the piping be exposed to excessive hot or cold conditions. Consult factory for proper piping.

! CAUTION !

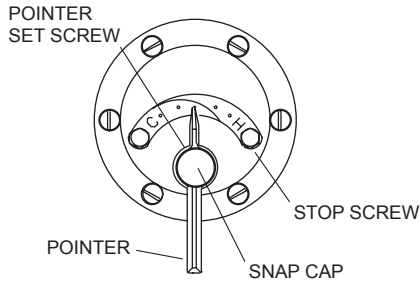
IMPORTANT! THESE SYSTEMS ARE DESIGNED TO PROVIDE MIXED WATER FROM 60 TO 90°F (15 TO 32°C) FOR EMERGENCY SHOWER APPLICATIONS ONLY. CALL GUARDIAN EQUIPMENT FOR SYSTEMS DESIGNED TO OPERATE AT TEMPERATURES OUTSIDE OF THIS RANGE.

Adjustment And Service

Guardian Equipment 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 mgrg-1000 and ansi 358).

To Reset Adjustable High Temperature Limit Stop:



1. Loosen pointer set screw, remove snap cap, screw & washer. Remove 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 stop screw located on the right side of the 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.

! 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 THIS STOP IMMEDIATELY. ALWAYS CHECK THE TEMPERATURE OF THE MIXED WATER WHEN THE LEVER HANDLE IS TURNED TO FULL HOT. IF THE EMERGENCY DRENCH EQUIPMENT IS A COMBINATION TYPE, THE WATER TEMPERATURE MUST BE CHECKED AT EACH OUTLET (FACE/EYEWASH /SHOWER) LOCATION INDEPENDENTLY, EXCESSIVELY HOT WATER IS DANGEROUS AND MAY CAUSE SCALDING!

THE HIGH TEMPERATURE LIMIT STOP IS FACTORY SET AT APPROXIMATELY 90°F (32.2°C) WITH AN INCOMING HOT WATER SUPPLY TEMPERATURE OF 150°F (65°C). IF THE INCOMING HOT WATER ON THE JOB IS HIGHER THAN 150°F, THE VALVE WHEN TURNED TO FULL HOT WILL DELIVER WATER IN EXCESS OF 90°F AND THE HIGH TEMPERATURE LIMIT STOP MUST BE RESET BY THE INSTALLER.

Troubleshooting Table

Symptom	Component	Parts Required	
Leak at pointer rod.	Packings and gaskets	Kit #1	"50M" for G3700, G3800, G3850 or "125M" for G3900, G3950
Leak between valve cover and base.	Packings and gaskets	Kit #1	"50M" for G3700, G3800, G3850 or "125M" for G3900, G3950
Valve outlet temperature will not mix consistently.	Port Sleeve Assembly	TGM-1	"50M" for G3700, G3800, adjusted or 850 or "125M" for G3900, G3950
		Kit #R	"50M" for G3700, G3800, G3850
		Rebuild Kit	"125M" for G3900, G3950
After cleaning or replacing port sleeve assembly, valve will not hold temperature.	Thermostat Group	TGM-2	"50" for G3700, G3800, G3850 or "125" for G3900, G3950
		Kit #R	"50M" for G3800, G3850
		Rebuild Kit	"125M" for G3900, G3950
Hot water bypass into cold line.	Checkstops	Kit #2	"50M" for G3700, G3800, G3850 or "125M" for G3900, G3950
Supplies cannot be shut off completely.	Checkstops	Kit #2	"50M" for G3700, G3800, G3850 or "125M" for G3900, G3950
Leak at checkstop bonnet.	Checkstops	Kit #2	"50M" for G3700, G3800, G3850 or "125M" for G3900, G3950

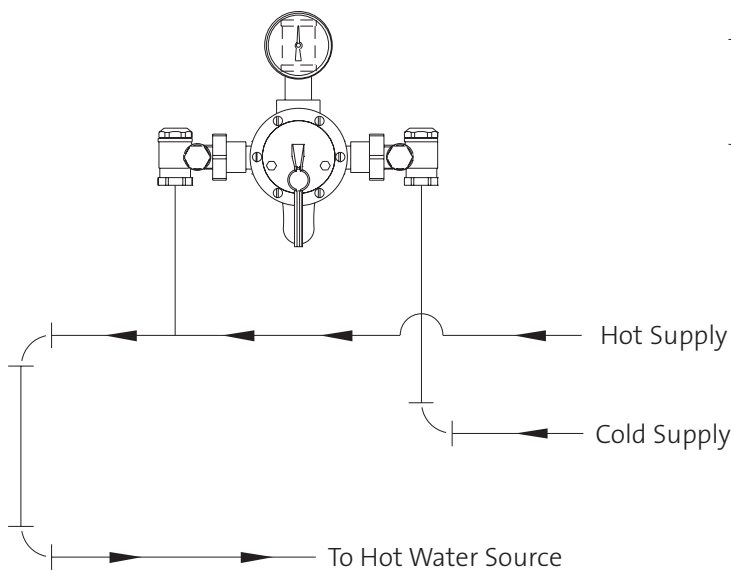
See page 5 for complete parts breakdown, and parts kits. If installed on a circulated hot water system, make certain the valve is piped according to Guardian Equipment Required Methods of Piping (see page 3).

NOTE: THIS IS A CONTROL SYSTEM WHICH MUST BE CLEANED AND MAINTAINED ON A REGULAR BASIS (SEE MAINTENANCE GUIDE AND RECORD MGRG-1000).

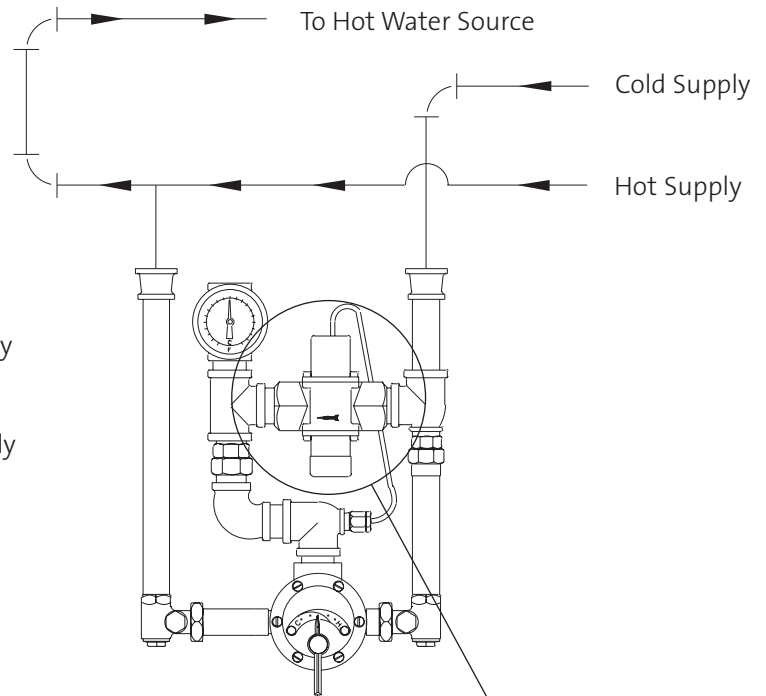
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Required Methods Of Piping Thermostatic Mixing Valves – Method #1

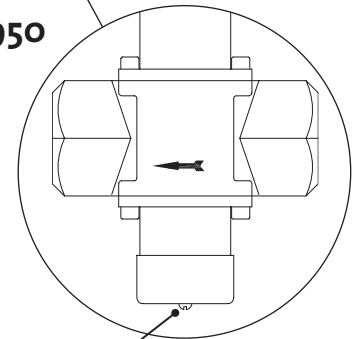
Required when hot water is to be circulated to a thermostatic mixing valve, which is a substantial distance from the hot water source.



G3700, G3800, G3900



G3750, G3850, G3950



1. Cycle redundant thermostatic valve by loosening the pointer set screw and set the primary thermostatic mixing valve to full hot. (G3850, G3750, G3950 only).
2. Open drench or combination emergency shower and allow temperature to reach the set point.
3. Turn primary thermostatic valve to full cold and wait ten seconds.
4. Turn primary thermostatic valve to full hot and wait for ten seconds.
5. Check to be sure outlet temperature does not climb above 90°F (32°C).
6. Turn primary thermostatic mixing valve to full cold and wait ten seconds.
7. Set primary thermostatic mixing valve to the desired temperature and close drench or combination emergency shower.

Notes:

1. The G3750, G3850, G3950 Redundant Thermostatic Mixing Valve has been factory set at 90°F (32°C). This set point can be field adjusted with a 3/8" wrench (see diagram). Clockwise direction will increase temperature. Maximum set point is 10°F (38°C).
2. This unit must be cycled each time the emergency equipment is checked. (See ANSI Z358.1-1998, Maintenance and Training section).

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To Dismantle Valve

1. Shut off hot and cold supplies to valve.
2. Loosen pointer set screw, remove snap cap, screw and washer, pointer and friction spring. (Figure #1).
3. Remove the 6 cover screws, then take off cover to which the thermostat and gears are attached.

When re-assembling valve, 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 elongated holes to the right (cold side). Tighten port sleeve nut against end of port sleeve but be careful not to over tighten, this may deform port sleeve. 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. Loosen pointer set screw, 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.

Fig. 1

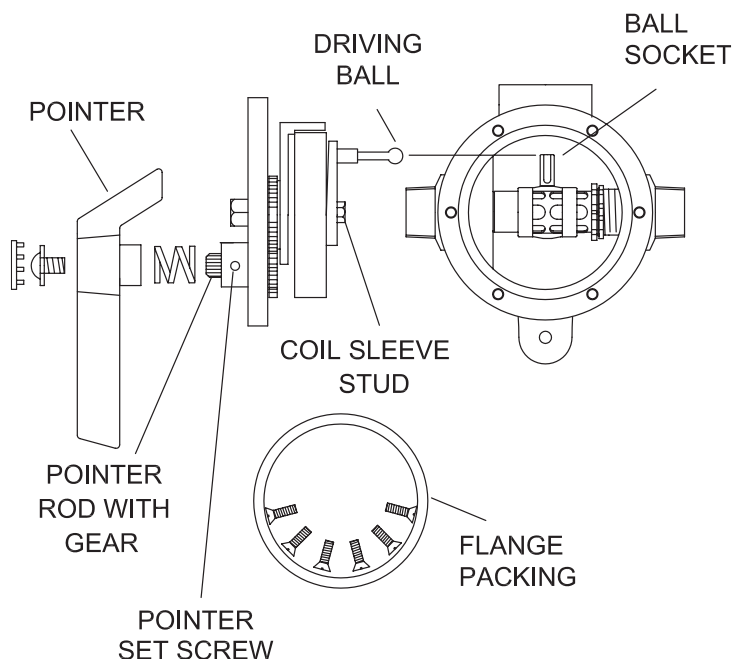
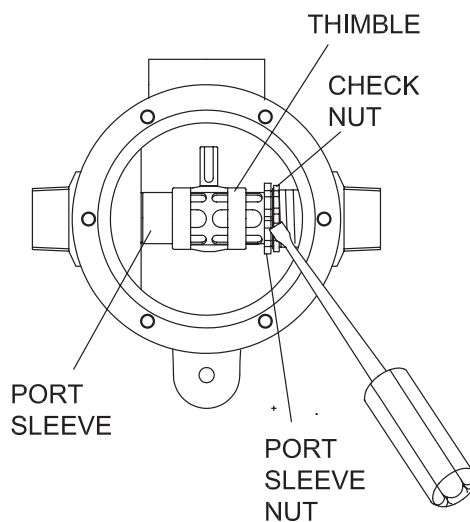
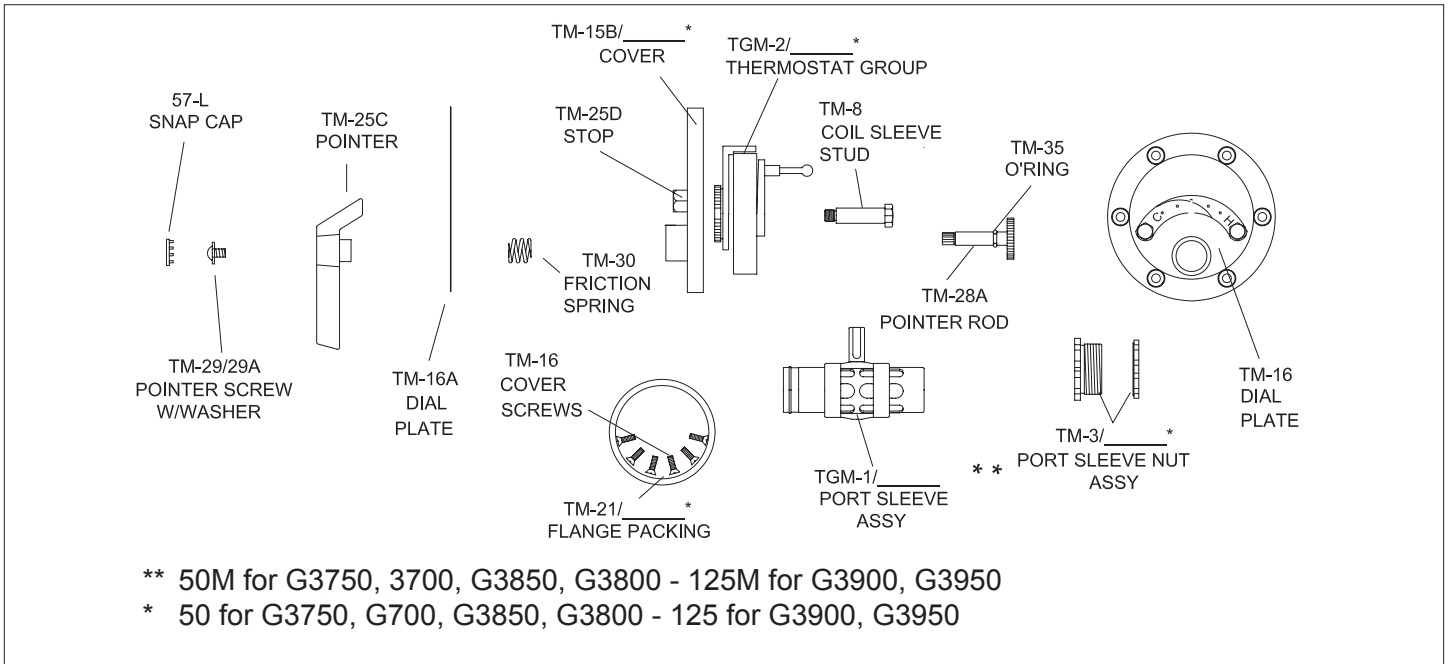


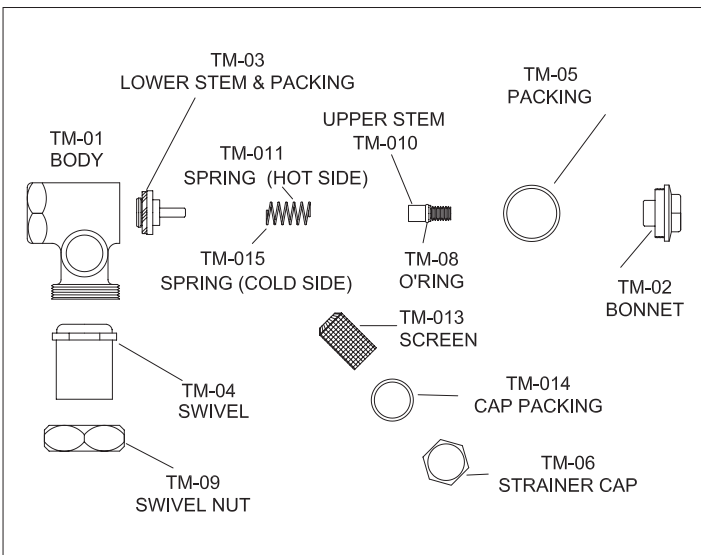
Fig. 2



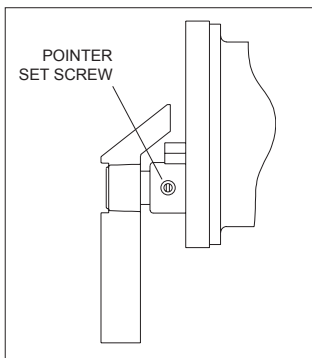
Thermostatic Mixing Valve Parts



Checkstop Parts



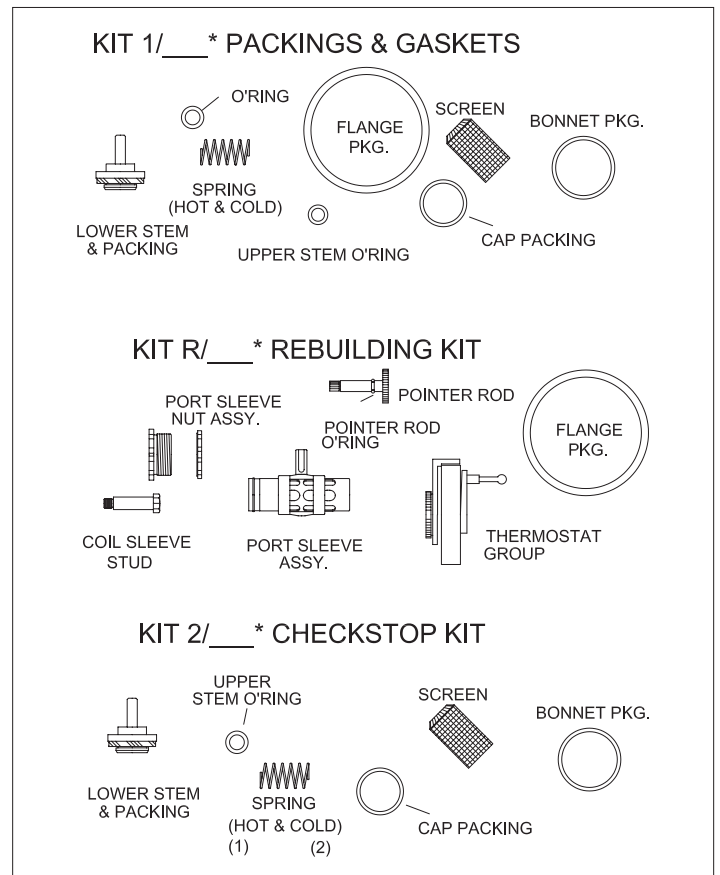
Lock-Type Pointer (suffix "LTR")



Notes:

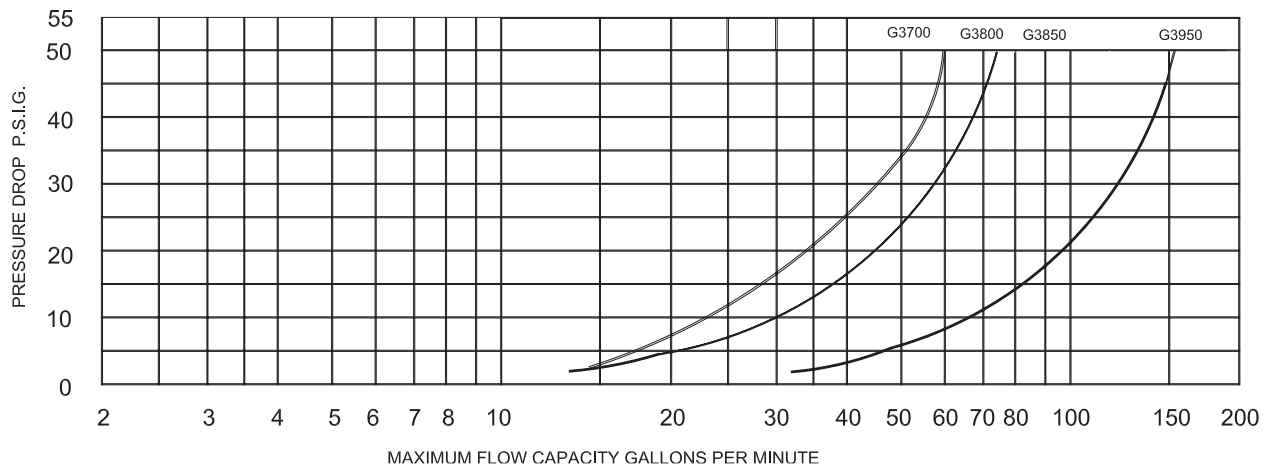
1. After installing new parts it will be necessary to reset the adjustable high temperature limit stop (see page 2).
2. All G3700, G3750, G3800, G3850, G3900 & G3950 valves are furnished with lockable pointers. See part noted.

Repair Kits



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Flow Capacities



MODEL	IN	OUT	MINIMUM FLOW (GPM)	INTERNAL COLD WATER BY-PASS MINIMUM	SYSTEM PRESSURE DROP										PSI
					5	10	15	20	25	30	35	40	45	BAR	
G3700	3/4"	1"	3	20	18	23	29	34	40	45	51	56	58	GPM	
			11	76	68	87	110	129	151	170	193	212	220	LMIN	
G3750	1"	1"	3	20	18	23	29	34	40	45	51	56	58	GPM	
			11	76	68	87	110	129	151	170	193	212	220	LMIN	
G3800	1"	1 1/4"	3	20	21	29	38	44	50	53	56	61	64	GPM	
			11	76	79	110	143	167	189	201	212	231	242	LMIN	
G3850	1 1/4"	1 1/4"	3	20	21	29	38	44	50	53	56	61	64	GPM	
			11	76	79	110	143	167	189	201	212	231	242	LMIN	
G3900	1 1/4"	1 1/4"	3	40	53	64	72	81	90	99	108	117	126	GPM	
			11	151	201	242	273	307	341	374	409	443	477	LMIN	
G3950	1 1/4"	1 1/2"	3	40	53	64	72	81	90	99	108	117	126	GPM	
			11	151	201	242	273	307	341	374	409	443	477	LMIN	
MAXIMUM FLOW CAPACITY															

! 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.

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Limited Warranty

Guardian Equipment 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 Guardian Equipment's instructions, for a period of one year from date of shipment. During this period the Guardian Equipment will at its option repair or replace any product, or part thereof, which shall be returned, freight prepaid, to the

Guardian Equipment factory and determined by Guardian Equipment 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 Guardian Equipment 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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