

INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

MV17 THERMOSTATIC MIXING VALVE



Model MV17-1

Patent #9,898,017



Model MV17CP-1

FOR TECHNICAL ASSISTANCE

1-(847)-604-4773



NOTES TO THE INSTALLER:

- 1. Please leave this documentation with the owner of the fixture when finished.**
- 2. Please read this entire booklet before beginning the installation.**
- 3. Check your installation for compliance with plumbing and other applicable codes.**



WARNING:

You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

FAILURE TO READ AND FOLLOW PROPER INSTALLATION AND MAINTENANCE INSTRUCTIONS MAY RESULT IN PRODUCT FAILURE WHICH CAN CAUSE PROPERTY DAMAGE, PERSONAL INJURY AND/OR DEATH.

MGI CONTROLS® is not responsible for damages resulting from improper installation and/or maintenance. Installation of this valve shall be in accordance with *Uniform Plumbing Code*.

TO ENSURE ACCURATE AND RELIABLE OPERATION OF THIS PRODUCT, IT IS ESSENTIAL TO:

- Properly design the system to minimize pressure and temperature variations.
- Implement an annual maintenance program to ensure proper operation and temperature setting of valve(s).
- This valve is factory preset. However, it can be adjusted. It is the responsibility of the installer and or facility maintenance personnel to make sure valve outlet temperature is properly set.

SUPPLIES REQUIRED:

(Not provided by MGI CONTROLS®)

1. Wall anchors, screws nuts and washers as required.
2. Teflon tape for sealing water connections.
3. Supply hoses.
4. Wrench and an Allen wrench.



IMPORTANT

- Flush supply lines of all foreign material such as pipe dope, chips or solder prior to connecting to mixing valve.
- To ensure proper installation, review the Manual thoroughly to verify rough-ins before beginning any work.
- Installation and field adjustment are the responsibility of the installer.
- Maximum water pressure is 125 PSI (8.62 bars). Maximum inlet hot water temperature is 180°F (82°C). Temperature adjustment range* is 100°F-160° F (38°C-71°C). Valve assembly must be drained prior to being subjected to freezing temperatures. Valve includes integral check valves.

**Under Normal Operating Conditions*



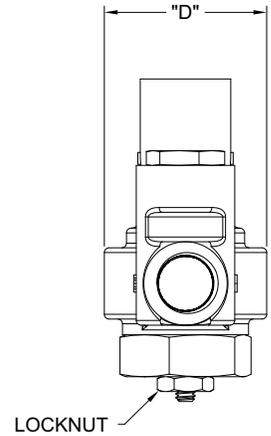
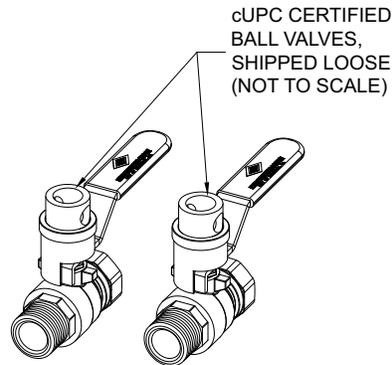
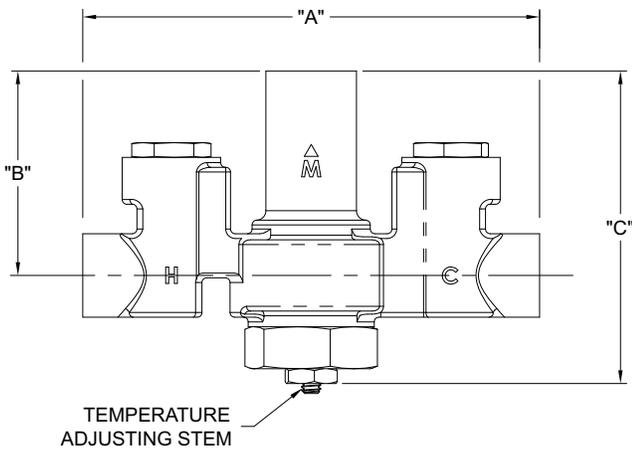
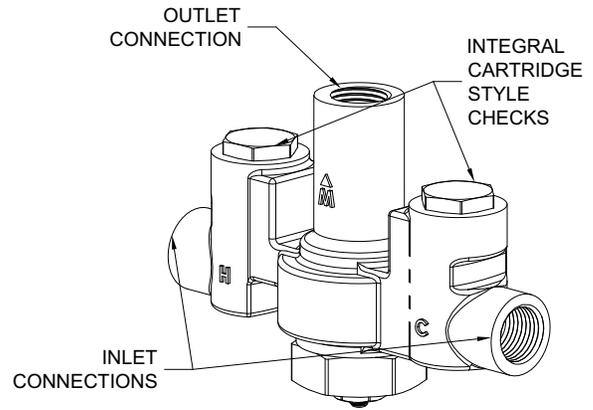
IMPORTANT

Upon completion of installation check all points of connection for leakage.

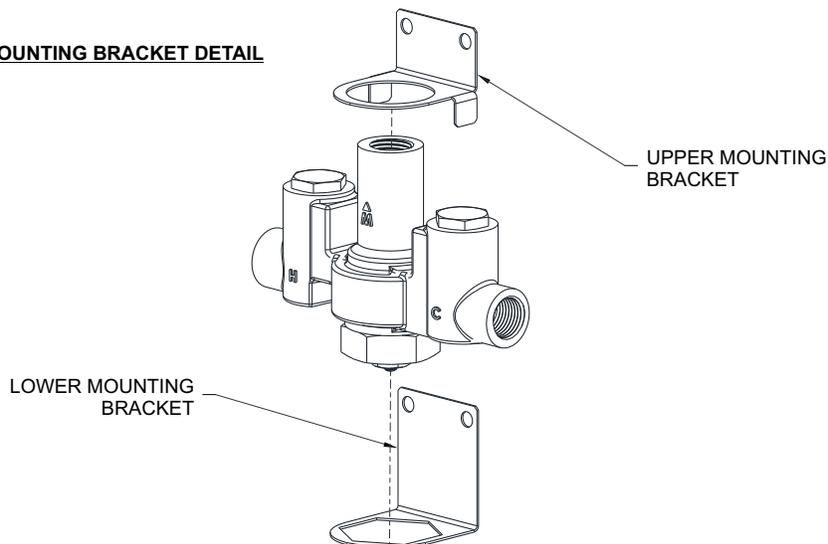
	PRESSURE DROP PSID (kPa)	Cv	5 (34)	10 (69)	15 (103)	20 (138)	30 (207)	45 (310)	60 (414)
MV17-1 15 GPM (56.8 LPM)	FLOW RATE GPM (LPM)	2.2	5 (19)	7 (26.7)	8.7 (32.8)	10 (37.9)	12.3 (46.4)	15 (56.8)	17.3 (65.6)
MV17-2 45 GPM (170 LPM)	FLOW RATE GPM (LPM)	6.7	15 (56.8)	21.2 (80.3)	26 (98.4)	30 (113.6)	36.7 (139)	45 (170.3)	52 (196.7)
MV17-3 90 GPM (341 LPM)	FLOW RATE GPM (LPM)	13.4	30 (113.6)	42.4 (160.6)	52 (196.7)	60 (227.1)	73.5 (278.2)	90 (340.7)	104 (393.4)
MV17-4 150 GPM (568 LPM)	FLOW RATE GPM (LPM)	22.4	50 (189)	70.7 (167.7)	86.6 (327.8)	100 (378.5)	122.5 (463.6)	150 (567.8)	173.2 (655.7)
MV17-5 225 GPM (852 LPM)	FLOW RATE GPM (LPM)	33.5	75 (284)	106 (401.5)	130 (491.7)	150 (567.8)	183.7 (695.4)	225 (851.7)	259.8 (983.5)

ROUGH-IN DIMENSIONS:

	INLET	OUTLET	"A"	"B"	"C"	"D"
MV17-1	1/2" NPT	1/2" NPT	5-3/4" (146)	2-5/8" (67)	4" (102)	2" (51)
MV17-2	3/4" NPT	1" NPT	8-1/2" (216)	3" (76)	5-1/2" (140)	3" (76)
MV17-3	1" NPT	1-1/4" NPT	14" (356)	5-1/4" (133)	8-3/4" (222)	5-3/4" (146)
MV17-4	1-1/4" NPT	1-1/2" NPT	14" (356)	5-1/4" (133)	8-3/4" (222)	5-3/4" (146)
MV17-5	1-1/2" NPT	2" NPT	15" (381)	4-3/4" (121)	9-7/8" (251)	6-1/4" (159)



OPTIONAL MOUNTING BRACKET DETAIL



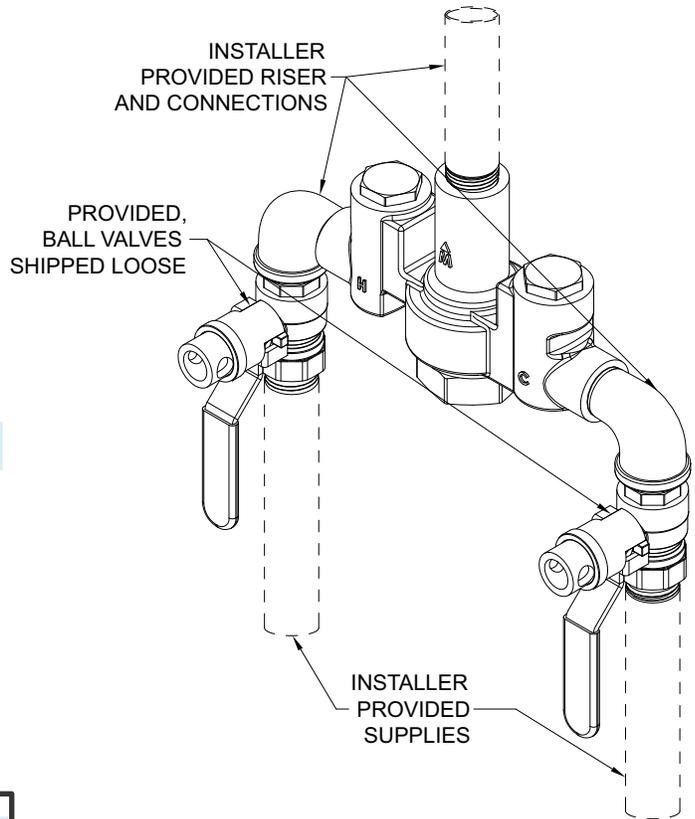
NOTE;
ALL DIMENSIONS ARE IN INCHES (MM).

INSTALLATION:

1. Locate mixing valve in a suitable place accessible for servicing and adjusting. Valve should be as close as possible to point of use.
2. Thoroughly flush supplies.
3. Connect Hot and Cold supplies to mixing valve inlets and outlet to fixture(s). Supply lines by others.
4. Turn on supplies and inspect for leaks. Tighten connections if leak(s) are detected.
5. Turn on fixture and allow to run until water temperature stabilizes. Measure water temperature. If water is not at desired temperature adjust as needed, (refer to adjustment section below).

TEMPERATURE ADJUSTMENT:

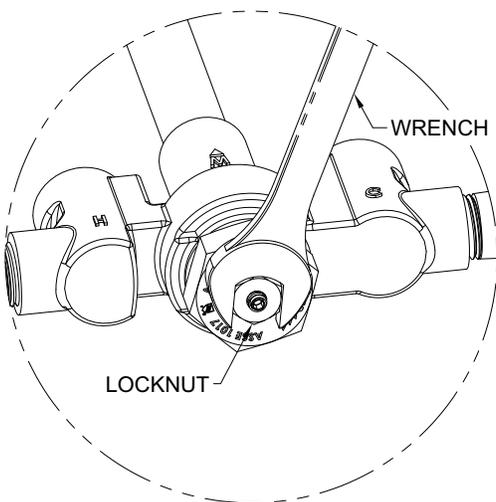
1. Loosen locknut. *Detail A*
2. Turn on fixture so temperature can stabilize.
3. Using an Allen wrench, turn adjustment stem counter-clockwise for hotter or clockwise for colder outlet temperature. *Detail B*
4. Tighten locknut to prevent any unauthorized or accidental temperature adjustment.
5. Re-check temperature.



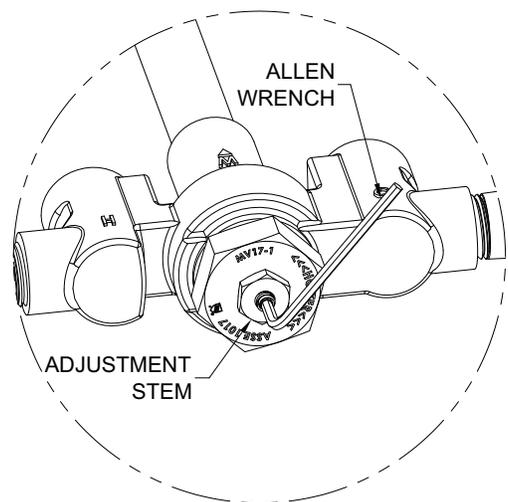
TYPICAL INSTALLATION

! IMPORTANT

Upon completion of installation check all points of connection for leakage.

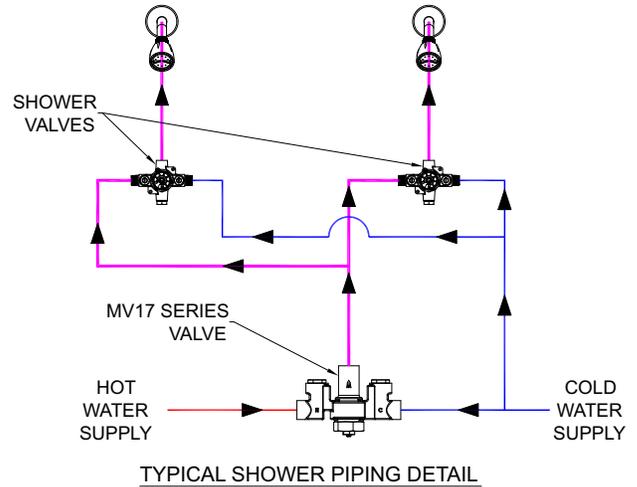
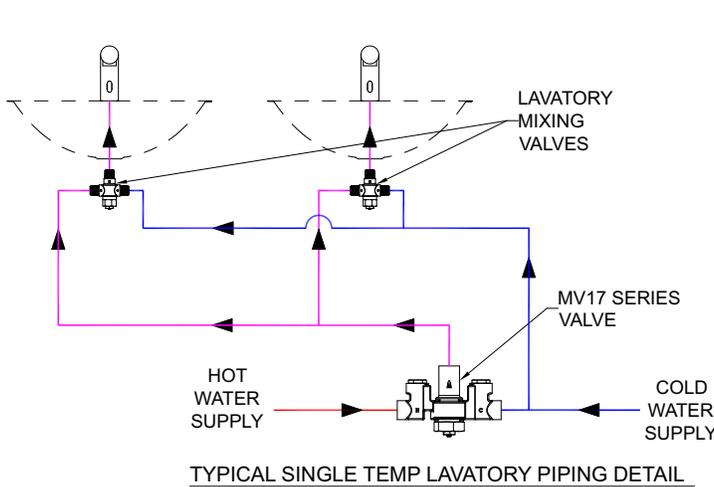


DETAIL A



DETAIL B

PIPING DETAILS:



Valve Specifications:

Maximum Operating Pressure: 125 PSI (861 kPa)
 Maximum Hot Water Supply Temp: 180°F (82°C)
 Outlet Temp. Range: 100°F-160°F (38°C-71°C)
 Minimum Hot Water Supply* 5°F (3°C)
 Above Set Point

Flow Rate at 45 PSI (310 kPa) differential:

MV17-1: 15 GPM (56.8 LPM)
 MV17-2: 45 GPM (170 LPM)
 MV17-3: 90 GPM (341 LPM)
 MV17-4: 150 GPM (568 LPM)
 MV17-5: 225 GPM (852 LPM)

Valve Specifications Continues:

Minimum Flow Rate per ASSE 1017*:
 MV17-1: 0.5 GPM (1.9 LPM)
 MV17-2: 1 GPM (3.8 LPM)
 MV17-3: 2 GPM (7.6 LPM)
 MV17-4: 3 GPM (11.4 LPM)
 MV17-5: 4 GPM (15.1 LPM)

NOTE:

ASSE 1017 performance based on actual demand or recirculation pump flow rate or a combination of both. See FEATURES regarding control performance at ZERO GPM user demand.

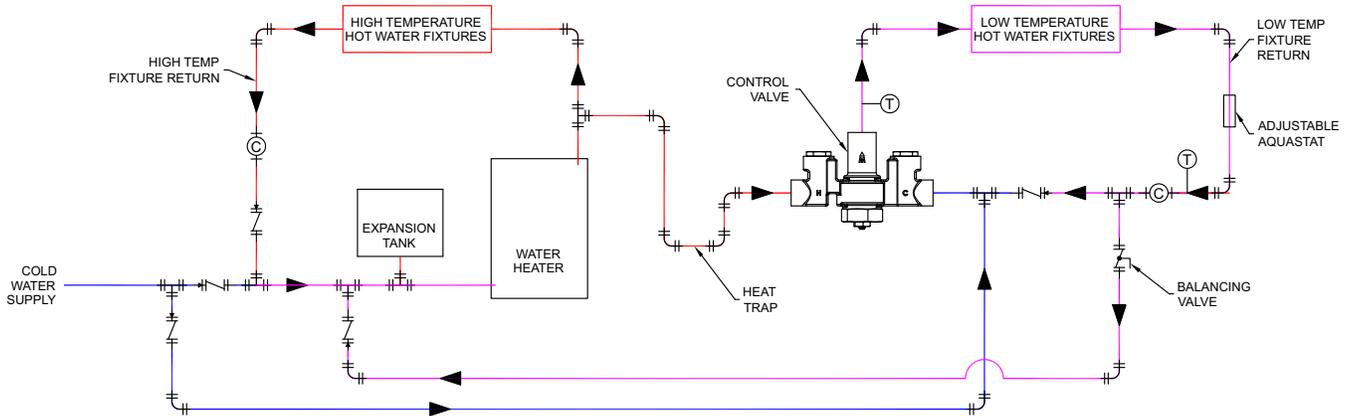
TROUBLESHOOTING:

*Under Normal Operating Conditions.

PROBLEM	CAUSE	SOLUTION
1. SET POINT DIFFICULT TO SET OR CANNOT BE REACHED	<ul style="list-style-type: none"> SUPPLY TEMPS NOT WITHIN SPECIFIED LIMITS HOT AND COLD SUPPLIES ARE REVERSED 	<ul style="list-style-type: none"> CHECK DIFFERENTIAL TEMPERATURE BETWEEN SUPPLIES AND OUTLET REINSTALL VALVE WITH SUPPLIES CONNECTED TO MARKED INLETS
2. DOES NOT MAINTAIN OUTLET TEMPERATURE OR CHANGES OVER TIME	<ul style="list-style-type: none"> FLUCTUATION IN SUPPLY PRESSURES CHECK VALVE/FILTERS BLOCKED WITH DEBRIS 	<ul style="list-style-type: none"> CHECK DIFFERENTIAL TEMPERATURE BETWEEN SUPPLIES AND OUTLET CLEAN CHECK VALVES/FILTERS
3. DISCHARGE TEMPERATURE TOO HOT OR TOO COLD	<ul style="list-style-type: none"> VALVE NOT ADJUSTED PROPERLY 	<ul style="list-style-type: none"> READJUST VALVE TEMPERATURE PER INSTALLATION INSTRUCTIONS
4. CROSS FLOW	<ul style="list-style-type: none"> CHECK VALVES FOULED 	<ul style="list-style-type: none"> CLEAN CHECK VALVES/FILTERS
5. NO FLOW FROM VALVE	<ul style="list-style-type: none"> HOT OR COLD SUPPLY FAILURE OR SHUTOFFS CLOSED CHECK VALVE/FILTERS BLOCKED WITH DEBRIS 	<ul style="list-style-type: none"> OPEN SHUTOFFS OR RESTORE HOT AND COLD SUPPLIES CLEAN CHECK VALVES AND FILTERS

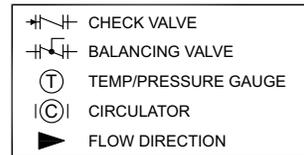
RECIRCULATING PIPING DIAGRAM:

TYPICAL RECIRCULATION WITH AQUASTAT

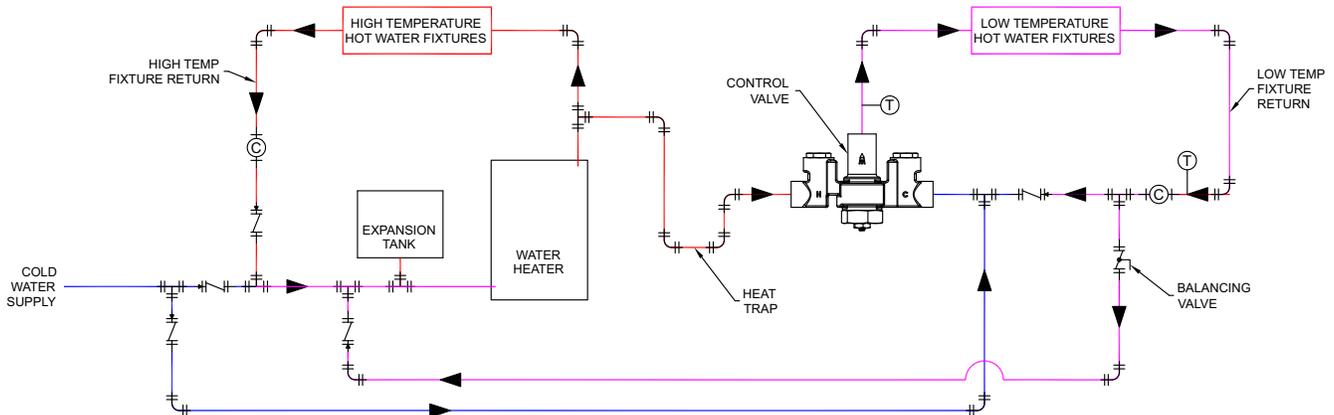


Ⓢ SELECT FLOW RATE NECESSARY TO ENSURE MIXING VALVE IS OPERATING AT AN ASSE 1017 MINIMUM CERTIFIED FLOW RATE. SEE LITERATURE.

NOTE: TO BALANCE THE SYSTEM, BEGIN WITH DIVERTING 80% OF THE RETURN WATER TO COLD SIDE OF THE TEMPERING VALVE (20% OF THE HOT WATER SOURCE). CONTINUE ADJUSTING UNTIL SYSTEM IS FULLY BALANCED. A HEAT TRAP IS RECOMMENDED IF THE MIXING VALVE IS ABOVE THE WATER HEATER.

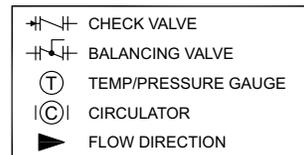


TYPICAL CONTINUOUS RECIRCULATION



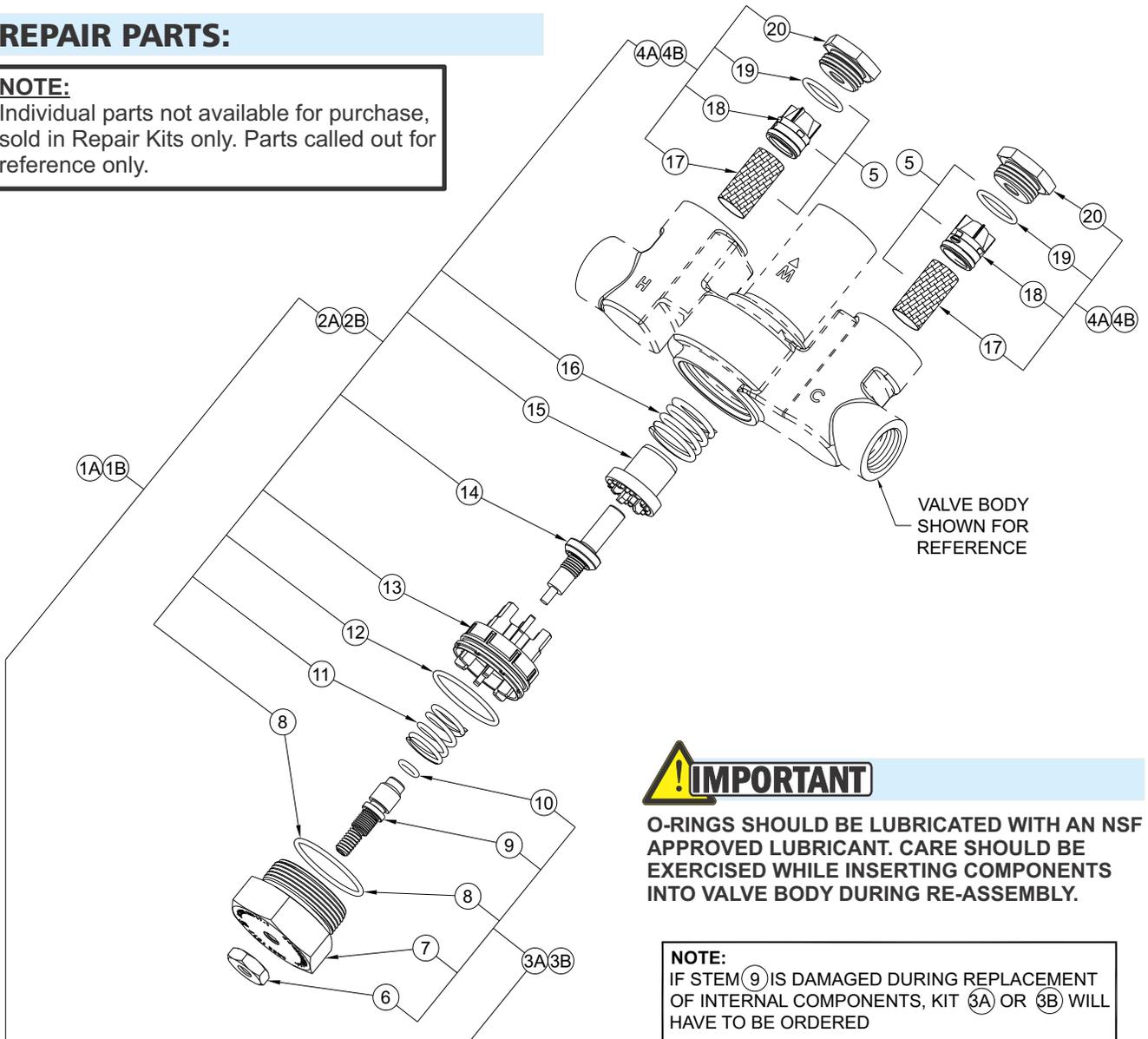
Ⓢ SELECT FLOW RATE NECESSARY TO ENSURE MIXING VALVE IS OPERATING AT AN ASSE 1017 MINIMUM CERTIFIED FLOW RATE. SEE LITERATURE.

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REPAIR PARTS:

NOTE:
Individual parts not available for purchase, sold in Repair Kits only. Parts called out for reference only.



IMPORTANT
O-RINGS SHOULD BE LUBRICATED WITH AN NSF APPROVED LUBRICANT. CARE SHOULD BE EXERCISED WHILE INSERTING COMPONENTS INTO VALVE BODY DURING RE-ASSEMBLY.

NOTE:
IF STEM (9) IS DAMAGED DURING REPLACEMENT OF INTERNAL COMPONENTS, KIT (3A) OR (3B) WILL HAVE TO BE ORDERED

		MV17-1	MV17-2	MV17-3	MV17-4	MV17-5
ITEM	DESCRIPTION	KIT NUMBER				
1A	COMPLETE REBUILD KIT	7806-500-001	7812-500-001	7810-500-001	7809-500-001	7811-500-001
2A	INTERNAL REPAIR KIT	7806-510-001	7812-510-001	7810-510-001	7809-510-001	7811-510-001
3A	BONNET / STEM REPLACEMENT	7806-502-001	7812-502-001	7810-502-001	7809-502-001	7811-502-001
4A	CHECK / STRAINER KIT	7801-503-001	7804-503-001	7808-503-001	7808-503-001	7808-503-001
5	CHECK/STRAINER KIT LESS BONNET	7801-503-002	7804-503-002	7808-503-002	7808-503-002	7808-503-002
		MV17CP-1	MV17CP-2	MV17CP-3	MV17CP-4	MV17CP-5
ITEM	DESCRIPTION	KIT NUMBER				
1B	COMPLETE REBUILD KIT	7806-500-010	7812-500-010	7810-500-010	7809-500-010	7811-500-010
2B	INTERNAL REPAIR KIT	7806-510-010	7812-510-010	7810-510-010	7809-510-010	7811-510-010
3B	BONNET / STEM REPLACEMENT	7806-502-010	7812-502-010	7810-502-010	7809-502-010	7811-502-010
4B	CHECK-STOP / STRAINER KIT	7801-503-010	7804-503-010	7808-503-010	7808-503-010	7808-503-010
5	CHECK/STRAINER KIT LESS BONNET	7801-503-002	7804-503-002	7808-503-002	7808-503-002	7808-503-002

ITEM	DESCRIPTION	ITEM	DESCRIPTION	ITEM	DESCRIPTION
6	ADJUSTMENT STEM LOCKNUT	11	UPPER SPRING	16	LOWER SPRING
7	VALVE BONNET	12	SHUTTLE O-RING	17	INLET SCREEN (x 2)
8	BONNET O-RING	13	SHUTTLE	18	CHECK VALVE (x 2)
9	ADJUSTMENT STEM	14	THERMOSTATIC MOTOR	19	CHECK VALVE BONNET O-RING (x 2)
10	ADJUSTMENT STEM O-RING	15	FUNNEL	20	CHECK VALVE BONNET (x 2)