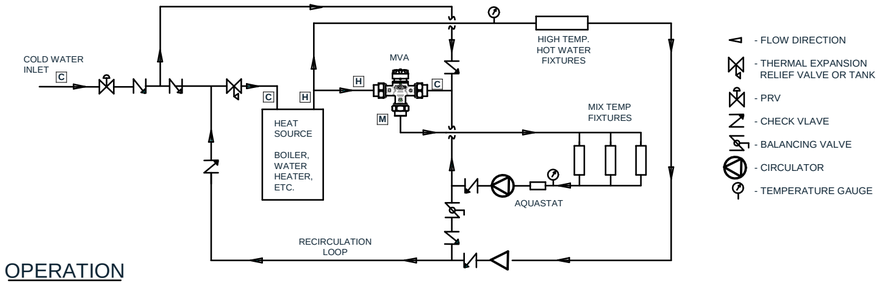
MODEL MVA (34A SERIES)
THERMOSTATIC MIXING VALVE
INSTALLATION, OPERATION, & MAINTENANCE INSTRUCTIONS

INSTALLATION

1. Unit must be installed by a licensed plumber in accordance with these instructions and state and local plumbing codes.
2. Flush all piping thoroughly before installation.
3. Mount the unit so that it is accessible for adjustment, cleaning and service.
4. Adequate mounting support is recommended.
5. The unit can be installed in any orientation. Make sure that cold water supply be connected to port "C", hot water supply to port "H", and mixed water discharge to port "M".
6. Cure times for CPVC joints shall be as recommended by the adhesive manufacture or 1 hour minimum, whichever is longer. Exposure to temperatures above 100 ℉ may require extended curing times.

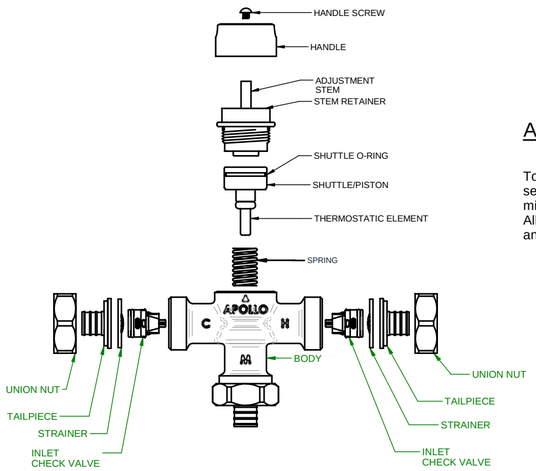
TYPICAL PIPING DIAGRAM WITH RECIRCULATION LOOP



- FLOW DIRECTION
- THERMAL EXPANSION RELIEF VALVE OR TANK
- PRV
- CHECK VLAVE
- BALANCING VALVE
- CIRCULATOR
- TEMPERATURE GAUGE

OPERATION

The Apollo "MVA" Series uses a shuttle/piston to control the volumes of cold and hot water required to deliver water at a predetermined temperature. Cold water enters the mixing chamber above the top face of the shuttle, and hot water enters below the lower face of the shuttle. The thermostatic element which is positioned in the mixing chamber, is connected to the spring-loaded shuttle, which moves up and down in response to expansion and contraction of the element.
In the event of an increase in the temperature of either the hot or cold water supply, as the change commences to alter the temperature of the water in the mixing chamber, the thermostatic element immediately reacts by expanding. This expansion moves the shuttle downward decreasing the opening area of the hot water supply, and increasing the opening for the cold water. This change in the volumes of the respective water supplies in the correct proportions, compensates for the change of temperature of the water in the mixing chamber, and a constant mixed water is maintained. The sensitivity of the thermostatic element ensures instantaneous movement of expansion and contraction as necessary. In the event of complete failure of the cold water supply, the ensuing expansion of the element shuts-off the hot water supply completely.



ADJUSTMENT

To adjust the Apollo "MVA" Series, simply turn the handle to the desired setting. Facing top of the valve, turn the handle clockwise to decrease the mixed temperature, or counter-clockwise to increase the mixed temperature. Allow the mixed temperature to stabilize (at least one minute) before making another adjustment. Adjustment must be performed at flowing conditions.

FRONT

MAINTENANCE

Periodic inspection and maintenance by a licensed plumber is required to insure proper and efficient performance of the unit. Frequent cleaning and replacement of shuttle O-ring is required and recommended. Shuttle O-ring requires periodic lubrication using silicone based lubricant only. PTFE or petroleum based lubricant may cause O-ring swelling.

REPAIR KIT INFORMATION

MODEL NO.	QTY	PART NO.		DESCRIPTION
MVA-RK (34A20001RK)	1	A215300		SPRING
	1	W436405		SHUTTLE SUB-ASSY
			F326400	SHUTTLE
			I637800	THERMAL ACTUATOR
			D395900	O-RING, -024
	1	I639200		INSTRUCTION SHEET

TROUBLE SHOOTING

PROBLEM	CAUSE	SOLUTION
Mixed temperature fluctuating or erratic	Cold and Hot water inlet pressure differential greater than 30 psid	Install pressure reducing valve or pressure limiting device to maintain equal and consistent pressures.
	Shuttle assembly damaged or worn	
	Setpoint adjustment at maximum setting	Increase inlet water temperature setting allowing valve to mix.
Mixed temperature will not adjust to desired temperature	Hot water inlet temperature within 15℉ of outlet mix setpoint.	Increase hot water inlet to more than 15℉ above outlet setting.
	Hot water temperature above 180℉	Adjust water heate r temperature
	Inlet check valves clogged or damaged	Replace inlet check valves
No flow	Supply valves closed	Check cold and hot water supply valves
	Inlet check valves clogged or damaged	Clean or replace
	Strainers completely clogged	Clean or replace
	Loss of supply pressure	Check with licensed plumber
Hot water backing-up in cold water supply	Cold water inlet check valve defective, clogged or damaged and cold water pressure is less than hot water supply pressure	Inspect, clean or replace cold water check valve
Cold water backing-up in hot water supply	Hot water inlet check valve defective, clogged or damaged and hot water pressure is less than cold water supply pressure	Inspect, clean or replace hot water check valve

THIS PRODUCT MEETS THE REQUIREMENTS OF THE EPA SAFE DRINKING WATER ACT

WARNING:
Corrosive water conditions, water temperatures in excess of 210℉, and improper repair or adjustment m ay result in valve damage. This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. (California law requires that this warning be given to consumers in the State of California.). For more information visit www.apollovalves.com.

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