

Honeywell

# AM-1 SERIES “R Model” - Heating Only

PROPORTIONAL THERMOSTATIC MIXING AND DIVERTING VALVE PATENTED

**PRODUCT DATA**



## PRODUCT INFORMATION

- **HEATING ONLY** (Not intended for potable water usage).
- **Teflon<sup>®</sup> coated spool and body** to prevent mineral buildup and extended valve life.
- **Lockable Handwheel.**
- **Nickel plated brass/bronze construction, EPDM O-rings.**
- **Constant water temperature under different operating conditions.**
- **Proportional valve (simultaneous control of hot and cold water).**
- **Straight thru design (hot and cold at same level).**
- **Designed for easy maintenance and element replacement (Refer to page 4).**
- **Union Sweat, Union Threaded, Union Propress, and Union PEX connections available (Refer to Table 1).**
- **Patent No. 6,079,625.**

## SPECIFICATIONS

**Maximum Hot Water Inlet Temperature:** 212° F (100° C).

NOTE: Consult PEX tubing manufacturer for maximum allowable temperature ratings.

**Media Temperature Ranges:**

Cold Inlet: 39° - 80° F (4° - 27° C)  
Hot Inlet: 120° - 212° F (49° - 100° C)  
Mixed Outlet: 70° - 180° F (21° - 82° C)

**Maximum Pressure Rating:** 150 psi (1034 kPa).

**Minimum Required Temperature Difference** between hot and mix 3° F (-16° C).

**Minimum Flow:** 0.5 Gpm (1.9 Lpm).

**Body Material:** Nickel plated Brass/Bronze construction, Teflon coated valve body wear surface, Teflon coated brass shuttle, EPDM O-rings, proportional design (simultaneous control of hot and cold ports), with either sweat union, NPT (female) union, Propress union, or union PEX connections.

**Temperature Gauge Adapter:** Lead-free brass, EPDM o-ring

**Valve Body:** Refer to Fig. 7.

**Connections:** Union Sweat, Union NPT (female), Union Propress, and Union PEX.

**Dimensions:** Refer to Fig. 1.

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Table 1. AM-1 Union Connections.

Product Number	Size in.	Connection Type	Max Flow GPM	Cv in.	A in. (mm)	B in. (mm)	C in. (mm)
AM100R-US-1	1/2	Union Sweat	8	3.9	5.4 (136)	2.7 (69)	4.4 (112)
AM101R-US-1	3/4		12		5.5 (141)	2.9 (73)	4.9 (124)
AM102R-US-1	1		16		6.3 (161)	3.5 (89)	6.1 (155)
AM100R-UT-1	1/2	Union Threaded	8		5.6 (143)	2.9 (73)	4.8 (122)
AM101R-UT-1	3/4		12		6.4 (161)	3.8 (97)	6.5 (165)
AM102R-UT-1	1		16		6.6 (166)	3.9 (99)	7.0 (178)
AM100R-UPEX-1	1/2	Union PEX	8		5.7 (146)	3.1 (79)	5.3 (135)
AM101R-UPEX-1	3/4		12		5.7 (146)	3.1 (79)	5.3 (135)
AM100R-UP-1/U	1/2	Union Propress	8		5.9 (150)	3.3 (84)	5.6 (142)
AM101R-UP-1/U	3/4		12	6.2 (157)	3.6 (91)	6.3 (160)	
AM102R-UP-1/U	1		16	6.5 (165)	3.8 (97)	6.7 (152)	

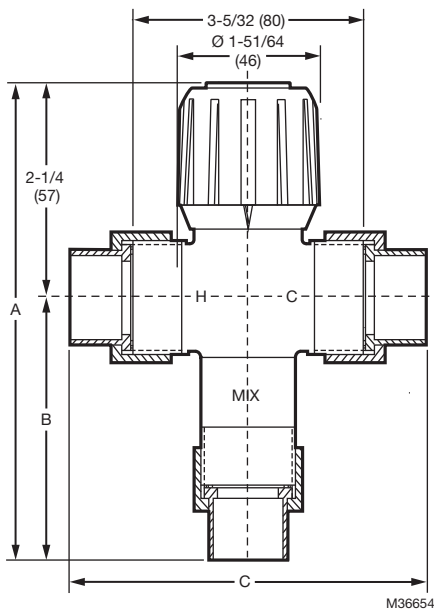


Fig. 1. Dimension Diagram.

## VALVE ADJUSTMENT

To adjust temperature setting of the mixing valve. Loosen hand wheel screw, lift handwheel and turn to desired temperature, push the hand wheel on the retighten screw.

## APPLICATION

The AM-1 SERIES "R Model" - Heating Only is a valve for heating applications ONLY.

## INSTALLATION

This product should be installed by a qualified individual, in accordance with local codes and ordinances. It is the responsibility of the installer to properly select, install and adjust these devices as specified in these instructions. For installations, which require compliance with Building/Mechanical/Plumbing Codes, the appropriate

AM-1 Series Valve must be chosen and installed and the discharge temperature set and locked according to these instructions. These valves should be installed where they will be accessible for cleaning, servicing or adjustment.

NOTE: Pressure difference between Hot and Cold ports should not exceed 10 psi (69 kPa).

## Installation of Temperature Gauge Adapter

### IMPORTANT

Union sweat connections must be soldered before the thermowell with O-ring and sealing gasket are installed. Install the thermowell with O-ring and sealing gasket after the joint has cooled.

1. Install thermowell with O-ring to the thermometer adapter body.
2. Tighten to 75 LB-IN ± 10 LB-IN. **DO NOT OVERTIGHTEN.**
3. Install the thermometer into the thermowell until seated and tighten the set screw to secure in place.

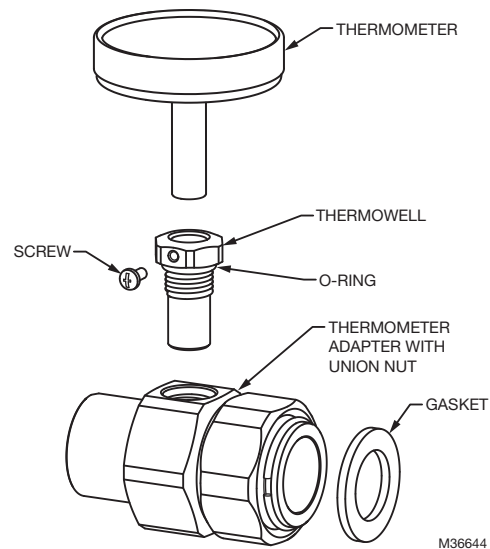


Fig. 2. Temperature gauge installation.

## TYPICAL INSTALLATION DIAGRAMS

### Space Heating

Boiler must operate at a water temperature higher than the desired temperature in the heating system in order to perform at maximum efficiency.

Example: Radiant floor heating.

#### SYMBOLS

- 1 = Check Valve/Flow Check
- 2 = Alternate Pump Location
- T= Pump Control Thermostats

#### NOTES:

- Install recirculation pump between last fixture and water heater.
- Use a pump control thermostat where shown. Recirculation pump should not run continuously.

## Mixing Applications (Constant Supply Temperature)

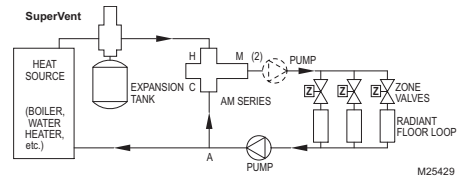


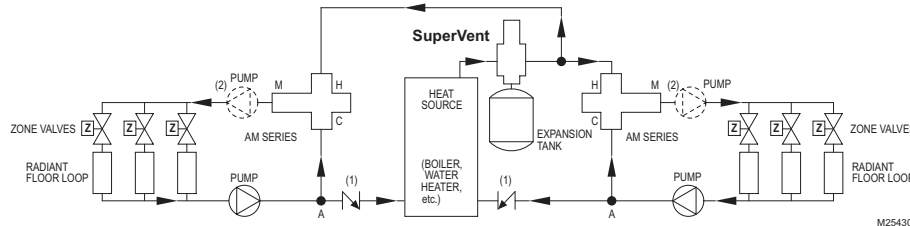
Fig. 3. Single Loop.



### CAUTION

**Do Not Install Pump Between Connection "A" and Heat Source.**

The installation of the pump at this point would result in NO FLOW through the radiation loop(s).



Each loop operates at a different temperature.

Fig. 4. Multiple Loops.

## Diverting Application (Constant Return Temperature)

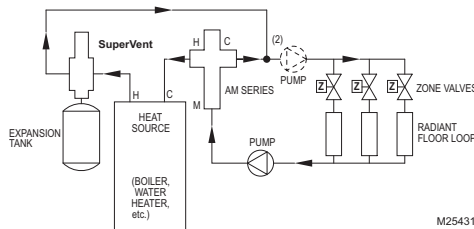


Fig. 5. Single Loop for Multiple Loops.

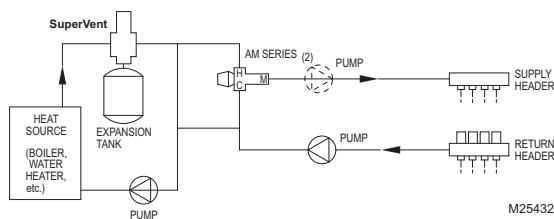


Fig. 6. AM-1 Primary/Secondary Application.

## OPERATION

The AM-1 Series valve provides for automatic operation through the use of a thermostatic element in the product. The element will control the mixing of the hot and cold

supply water to provide mixing tempered water to connected water control devices. This provides constant water temperature under different working conditions.

Thermostrip temperature indicator easily indicates water temperature 105° - 180° F (41° - 82° C) for accurate control and quick set-ups.

### Thermostrip Installation Instructions

Clean pipe to mix outlet of valve and firmly apply Thermostrip. Flow water and adjust mixed outlet temperature for desired setting range. Actual mixed water temperature is indicated in green with 5° F (1.5° C) increments. Blue means slightly lower and brown slightly higher.



### WARNING

**To ensure proper application and usage, the Honeywell AM-1 "R" model mixing valves are designed for HEATING ONLY applications and should never be used for Domestic Hot Water as temperature and product usage far exceed safe water temperature limitations. Water temperatures above 120° F (49° C) can cause serious injury. Mixing valve temperature setting should be done by licensed contractor per local code requirement.**

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Thermal temperature indicator strip is One Time use only for initial system temperature setting. Check date code printed on temperature strip to ensure temperature reading accuracy.

Thermostrip only included in models without the temperature gauge.



Fig. 7. Thermostrip Temperature Indicator.

## VALVE MAINTENANCE

Hard water conditions may result in scale deposits causing binding of internal parts in extreme cases. Cleaning the internal parts will usually restore the valve operating conditions. In some cases it may be necessary to replace the lower assembly.

### To Clean and/or Replace the Lower Assembly Shut Off Water and:

1. With a screwdriver remove screw and hand wheel.
2. Unscrew lower nut (counterclockwise). This removes top assembly.
3. Brass top assembly will pop up. Remove lower assembly, diffuser and spring.

## ⚠ WARNING

**Do not use solvents or scratch metallic / Teflon coated surfaces.**

4. Carefully remove any scaling (calcium deposits) or foreign particles from valve seat and other internal parts. Use vinegar to remove calcium. Soak parts until calcium becomes soft and can be scrubbed and washed off.
5. Replace cleaned spring, diffuser and lower assembly following instructions below or use new replacement kit assembly.
  - a. Insert spring onto diffuser.
  - b. Insert diffuser with spring end first into body.
  - c. Fit valve top assembly into lower assembly and insert into valve. Tighten lower nut.
  - d. Tightening upper nut.
  - e. Place handwheel on valve.
  - f. Turn handwheel to desired temperature setting and insert screw.

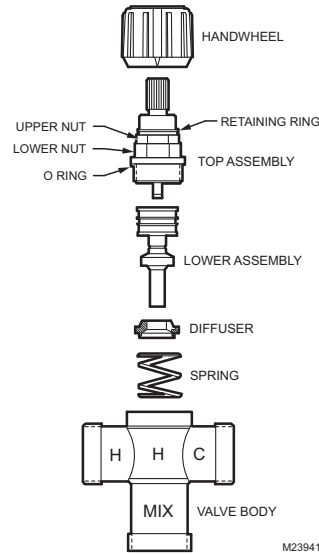


Fig. 8. Exploded View

## TYPICAL SPECIFICATION

Temperature Setting Range (as required, see page one), Maximum Pressure rating of 150 psi (1034 kPa), Maximum Hot inlet temperature of 212° F (100° C), Nickel plated Brass/Bronze construction, Teflon coated valve body wear surface, Teflon coated brass shuttle, EPDM O-rings, proportional design (simultaneous control of hot and cold ports), with either sweat union, propress union, NPT (female) union or union PEX connections. Valve for domestic hot water applications shall have temperature lock. Design shall be straight thru, with hot and cold ports at the same level. The design shall permit easy access for maintenance, with replaceable thermostatic element.

Table 2. Replacement Parts.

Part No.	Description
AM-1-025RP	Thermostatic Element Replacement Kit
AM1-TG100-US-LF/U	1/2" AM1 Temp Gauge Tail PC w/Sweat
AM1-TG101-US-LF/U	3/4" AM1 Temp Gauge Tail PC w/Sweat
AM1-TG102-US-LF/U	1" AM1 Temp Gauge Tail PC w/Sweat
TG200-UT/U	Thermometer, 2" Dial w/ Threaded Well
TG250-UT/U	Thermometer, 2.5" Dial w/ Threaded Well

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