

INSTRUCTION SHEET

Automatic Air Vent Device for Fire Sprinkler Systems
Model AR-1

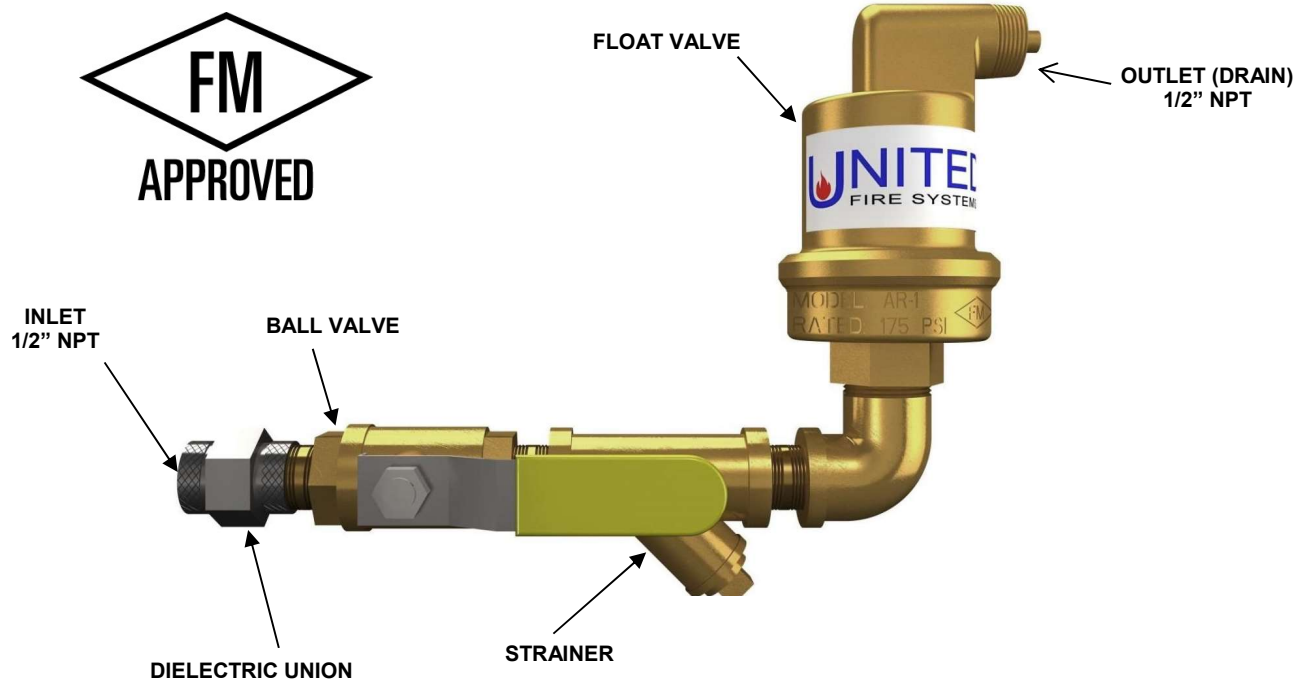


FIGURE 1

DESCRIPTION

The FM Approved **UNITED Fire Systems Model AR-1 Air Vent for Wet Sprinklers** is a device for automatically releasing the trapped air from the high point(s) of a wet-pipe sprinkler system to comply with the NFPA 13-2022 requirement for air venting. This device is essential to help protect the system piping from the effects of corrosion that is often found at the air / water boundary in the high elevations of fire sprinkler system piping.

Trapped air in a wet-pipe sprinkler system contains oxygen, which, when combined with water, is the primary cause of internal pipe corrosion. This corrosion can lead to pipe blockages, leaks, and pipe failure.

Using an FM Approved **UNITED Fire Systems AR-1 Air Vent** at the system high point allows air to vent from the system. Air in the system migrates to the vent. Air is vented until water reaches the internal float valve, which automatically closes the device to prevent water leakage. If desired, installer-supplied polyethylene tubing may be attached to the outlet using the supplied elbow and push-to-connect tubing fitting, allowing occasional water discharge to be re-directed.

SPECIFICATIONS

Model No.	Inlet	Outlet (Drain)	Orifice	Temperature Range	Maximum Pressure
AR-1	1/2" NPT Female	1/2" NPT Male	5/64"	40°F to 120°F (4.5°C to 49°C)	175 PSIG



IMPORTANT NOTICE



Although the Model AR-1 Air Vent is equipped with a high-quality float valve, some drops of water may appear at the outlet when the wet-pipe system is filled or the pressure in the system fluctuates.

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INSTALLATION INSTRUCTIONS – READ AND UNDERSTAND BEFORE INSTALLATION

- Determine the installation location(s) of AR-1 device(s), as follows:
 - Have the Engineer of Record select the AR-1 installation location(s), or:
 - Install AR-1 unit(s) at the highest point(s) of the sprinkler system that will vent the most air.
 - The device location(s) must not interfere with any sprinkler head spray pattern.
 - The device location(s) must be arranged in a manner so that water cannot become trapped.
 - Attempt to locate the device(s) where occasional drops of water from the outlet will not cause damage. If such a location cannot be found, see instruction 7 below to redirect water using plastic tubing.
 - Refer to NFPA 13-2022 sections 8.1.5, 8.1.5.1, 16.7, and A.16.7 for additional installation requirements.
- Figure 2 shows a typical installation in a horizontal high point. The pipe must be level, or pitched back toward the fire sprinkler riser.
- Drain the system of water. Ensure that no pressure is within pipe before drilling or cutting pipe.
- Drill a hole in the pipe for the use of a mechanical tee, as shown in Figure 2, or use the proper fittings to provide a 1/2" NPT connection at the desired installation location.
- Use installer-supplied fittings and nipples as shown in Figure 2.
- Use the dielectric union (see Figure 1) to ensure the proper upright orientation per Figure 2. Failure to orient the AR-1 unit(s) as shown will result in malfunction. **DO NOT disassemble the AR-1 at any time!**
- (Optional) To redirect occasional water discharge from the AR-1 outlet, attach the supplied elbow and push-to-connect fitting to the outlet, and then attach installer-supplied 1/2" OD plastic tubing to the elbow. Run tubing to a suitable drainage area.

COMMISSIONING

- Ensure AR-1 ball valve (see Figure 1) is CLOSED.
- Introduce water into sprinkler system.
- When system is full of water, gently OPEN ball valve to release air.
- When all air has been released, the float valve (see Figure 1) will close, preventing large amounts of water from discharging from the outlet.
- Inspect the installation for water leaks. Repair leaks if necessary.

OPERATION

- If desired, the ball valve may be left OPEN to continuously release air from the system. Occasional water leakage may occur – see INSTALLATION step 7 for attaching drainage tubing.
- The ball valve may be left CLOSED. If so, OPEN ball valve quarterly until all trapped air is released.

INSPECTION AND MAINTENANCE: Inspect and maintain the AR-1 quarterly or more frequently.

- With ball valve CLOSED, remove and clean the strainer (see Figure 1) screen with clean water and a wire brush.
- OPEN ball valve and inspect for water leaks. Repair leaks if necessary.
- If float valve does not stop water discharge from outlet, replace entire unit.

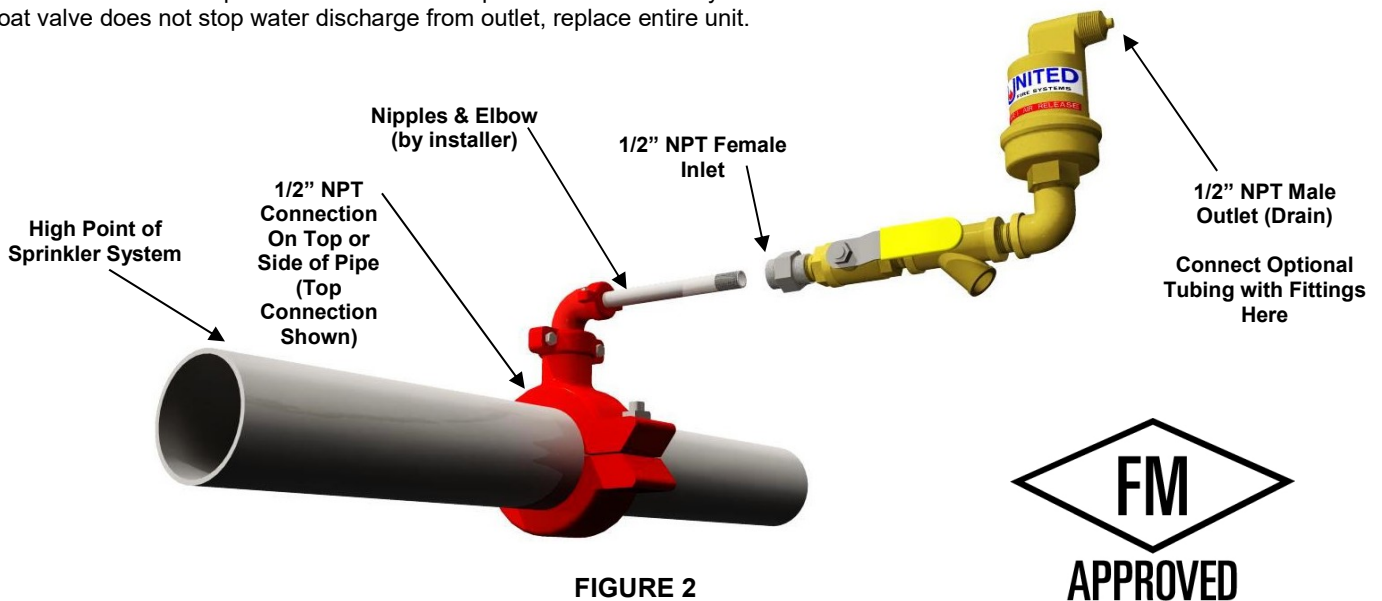


FIGURE 2

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