

WET-PIPE FIRE SPRINKLER SYSTEM AIR VENT

Furnish and install automatic air vents at the high points of the wet-pipe sprinkler system piping network(s). The devices shall be Model AR-1, manufactured by UNITED Fire Systems, Kentworth, NJ USA (908-688-0300), and shall contain all components factory-assembled and tested to make up a complete, ready-to-install device.

1. RELATED SPECIFICATIONS

- 1.1 Wet-Pipe Fire
- 1.2 Quality Control.
- 1.3 Common Work Results for Fire Suppression.
- 1.4 Schedules for Fire Suppression.
- 1.5 Contract drawings.
- 1.6 General provisions of the contract, including General and Supplementary Conditions

2. PERFORMANCE REQUIREMENTS

- 2.1 The device shall be pre-assembled and fully factory tested.
- 2.2 Design and performance of the device shall comply with NFPA 13, Standard for the Installation of Sprinkler Systems, 2016 edition, sections 7.1.5 and 8.1.6 (2).
- 2.3 Contractor shall furnish and install the air vent(s) per this specification and all applicable contract drawings.
- 2.4 Device shall be FM Approved per FM Approval Class 1344, and shall be approved for at least 175 PSIG working pressure.
- 2.5 System Operation. The device shall operate automatically in accordance with NFPA 13, 8.1.6 (2). Manual intervention to vent air shall not be necessary.

3. SUBMITTALS

- 3.1 Product Data. Include, as applicable, product rated capacities, operational characteristics, and materials and standards of construction.
- 3.2 Shop Drawings. Show device installation locations and details.
- 3.3 Closeout Submittals
- 3.3.1 Location of devices on system as-built drawings.
- 3.3.2 Operation and maintenance instructions.
- 3.4 Operation and Maintenance Submittals: Instructions for STANDPIPE-PAC™.

4. **AUTOMATIC AIR VENT.** Furnish and install automatic air vents at the high points of the wet-pipe sprinkler system piping network(s). The devices shall be Model AR-1, manufactured by UNITED Fire Systems, Kenilworth, NJ USA (908-688-0300), and shall contain all components factory-assembled and tested to make up a complete, ready-to-install device. The device shall have:

- Systems, Kwiknork® NJ, USA (800-688-6300), and shall contain all components factory-assembled and tested to make up a complete, ready-to-install device. The device shall have:
1. A 6-venturi air at the device inlet, assembled with a 1/2 inch NPT port. The union shall be constructed to inhibit debris-connection to the steel sprinker pipe and be brass component.
 2. A brass ball valve for shut-off, 1/2 inch NPT full port, with RPTEE seals and packing.
 3. A bronze Y-strainer with 304SS strainer, removable for cleaning via an external plug.
 4. A brass float valve, to automatically shut off the air vent when air is expelled and water reaches the float valve. All internal parts shall be non-ferrous. Seals and O-rings shall be Viton elastomer.
- The air vent model number, manufacturer's name, and IMF approved symbol shall be permanently etched onto the exterior of the brass float valve body. The air outlet shall have 1/2 inch NPT male threads, for attachment of the optional fitting described below.
5. An optional brass base and push-in tubing connection for attachment to the device outlet. 1/2 inch OD polyethylene tubing may be attached to the push-in fitting, allowing remote exhaust from the device outlet.

5. PIPE AND FITTINGS. Pipe and fittings for connection of air vents to sprinkler piping

5. Pipe: ASU Flange: Pipe and fittings for Erection B-W are used to support piping.
- 5.1 Pipe: Schedule 40 Steel, per ASTM A53 / ASTM - Schedule 40 Steel, Black, Welded and Seamless.
- 5.2 Pipes: - Steel Pipes/Threads. Threaded end, per ASTM A733 - Specification for Welded and Seamless Carbon Steel Pipe.
- 5.3 Fittings - All fittings shall be black. Galvanized fittings shall not be used. Fittings per ANSI B16.3 - Malleable Iron Threaded Fittings, or ANSI B16.4 - Cast Iron Threaded Fittings.
- 5.4 Couplings - Per ASTM A865 - Specification for Threaded Couplings, Black, Welded or Seamless, for Use in Steel Pipe Joints.
- 5.5 Unions. Use unions only as necessary where joining pipe is impossible or impractical without them. Unions per ANSI B16.39 - Malleable Iron Threaded Pipe Unions.
- 5.6 Threads - Threaded ends per ANSI B2.1 - Basic Standards for Steel Pipe Threads, and ANSI B2.1.1 - Pipe Threads, General Purpose (Inch). All threads shall be NPT.

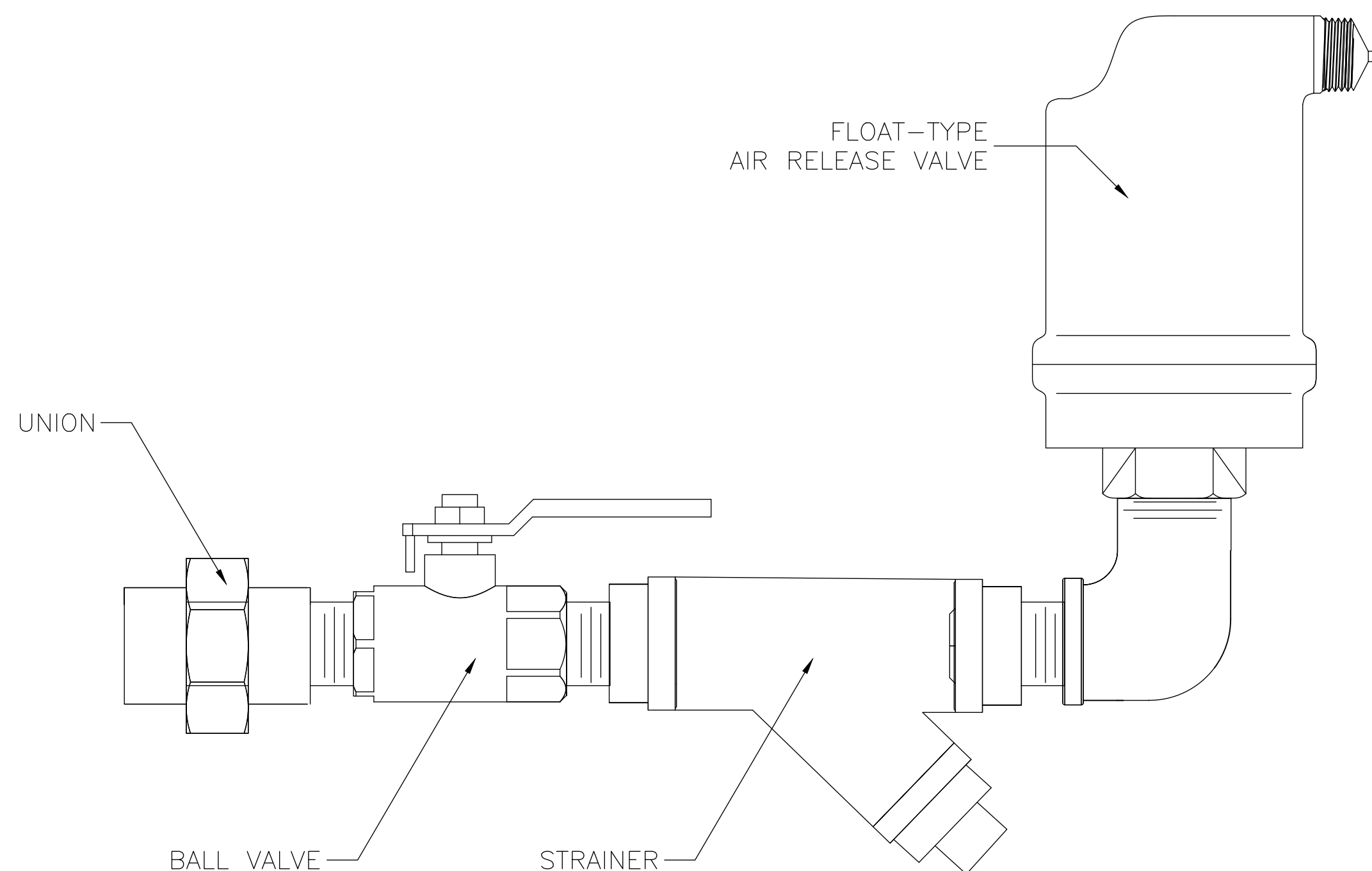
6. OPERATION

- 6.1 The device outlet shall be open when air is venting from the device.
- 6.2 The device outlet shall close when the air has been expelled and water closes the float valve.
- 6.3 The device ball valve shall remain open for automatic operation of the device.
- 6.4 The device ball valve may be manually closed for maintenance or repair of the device without the need to drain the wet-pipe sprinkler system piping.

7. **STORAGE AND HANDLING.** Deliver all material and equipment properly identified by type, size, manufacturer's name and specification section. All material to be undamaged. Do not store exposed to weather. Store indoors or cover to protect from damage. Protect all material and equipment to prevent damage and entrance of foreign matter. During loading, transporting, and unloading, handle all material and equipment with care to prevent damage. Do not drop. Store all material and equipment to the satisfaction of the Resident Engineer.

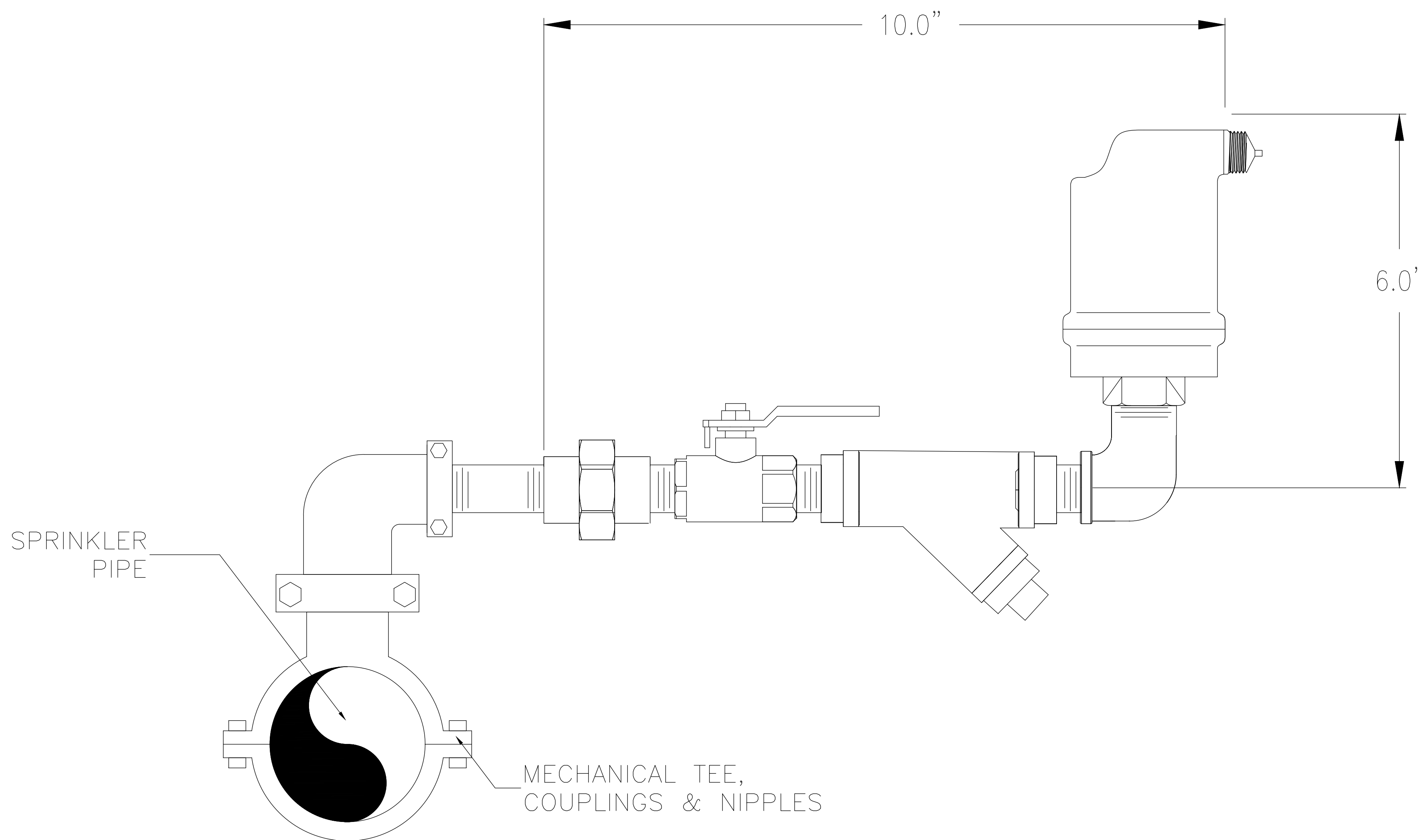
8. INSTALLATION

- 8.1 Location and Arrangement. Control drawings, plans, schematics, and diagrams indicate general location and arrangement of device(s). Shop drawings shall indicate actual device installation layout. Install device(s) per approved shop drawings.
- 8.2 Deviations. Installations deviations from approved shop drawings require written approval from the Engineer. During installation, do not deviate from approved shop drawings without written approval from the Engineer.
- 8.3 Pipe Ends. Ream ends of pipe to remove burrs. Bevel plain ends of pipe.
- 8.4 Examination. Examine all pipes and fittings thoroughly before installation. Do not install damaged or defective pipe or fittings.
- 8.5 Cleaning. Remove scale, dirt, oil, cutting and grinding shavings, and debris from inside and outside of pipe for fabrication and before assembly. Use a non-toxic solvent to ensure pipe is clean. Pipe shall be free of solvent and water when installed.



GENERAL ARRANGEMENT

MODEL AR-1 WET SPRINKLER AIR VENT



DIMENSIONS AND INSTALLATION

MODEL AR-1 WET SPRINKLER AIR VENT

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