

## Model TAV-D Air Vent, Dry

### General Description

The TYCO Model TAV-D Air Vent, Dry, provides oxygen venting in dry pipe fire sprinkler systems. As a fire sprinkler system is filled with a continuous supply of nitrogen gas from the TYCO Nitrogen Generator, the Air Vent allows oxygen rich gas to be vented from the fire sprinkler system. Over a short period of time the Air Vent will almost completely remove oxygen from the fire sprinkler system (< 2% oxygen).

The Air Vent must be installed as shown on the engineering design documents. If a location is not specified, install the Air Vent on the fire sprinkler system riser on the system side of the main control valve. The vent is also installed to provide source gas when used in conjunction with the TYCO TSGA SMART Gas Analyzer.

The Air Vent is equipped with a levered Float Valve that allows oxygen to discharge but prevents water from leaking through the restricted venting orifice in the event that water enters the fire sprinkler system, as shown in Figure 1. A Backpressure Regulator is also included to prevent total system depressurization from the vent assembly.

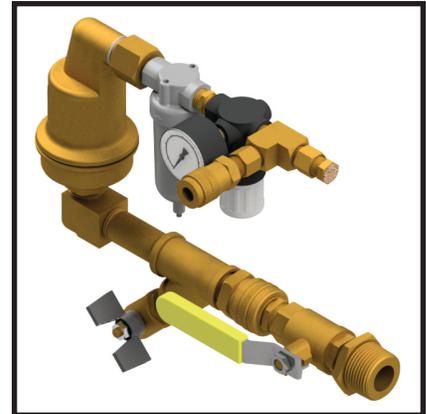
The Restricted Venting Orifice allows oxygen to be vented from the fire sprinkler system at a controlled rate to achieve a minimum nitrogen concentration of 98%. A special fitting is provided to receive 5/32 in. tubing when the vent is used in conjunction with the TYCO Model TSGA SMART Gas Analyzer.

There are two models of the TYCO Air Vent, the TAV-D and the TSV-D. The units both operate as described above but the TSV-D model includes an electronic solenoid valve wired to a control panel that automatically closes the vent once the desired nitrogen concentration is reached. The control panel is also equipped with a reset switch to allow the venting process to restart should oxygen be reintroduced into the fire sprinkler system.

#### NOTICE

*The TYCO Model TAV-D Air Vent, Dry, described herein must be installed and maintained in compliance with this document, in addition to the standards of any other authorities having jurisdiction. Failure to do so may impair the performance of the related devices.*

*The owner is responsible for maintaining their fire protection system and devices in proper operating condition. Contact the installing contractor or product manufacturer with any questions.*



### Technical Data

**Service Pressure**  
Up to 175 psig (12 bar)

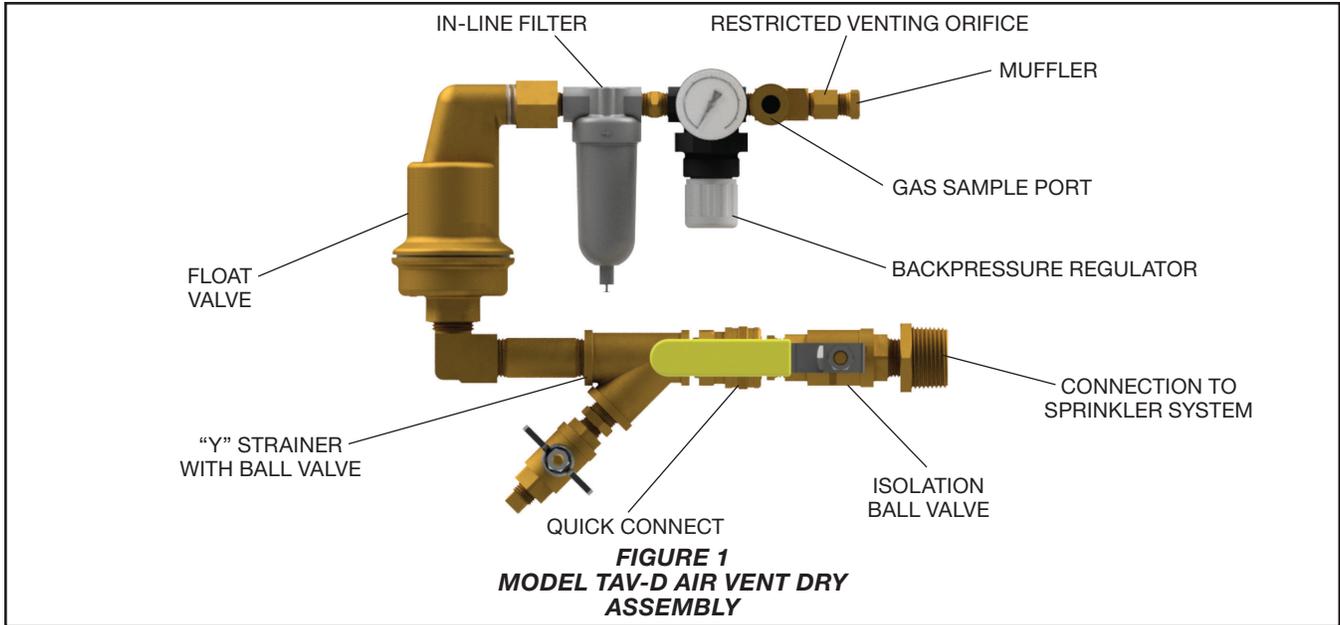
**System Connection**  
1 in. NPT Male

**Temperature Range**  
40°F to 120°F (4.5°C to 49°C)

**Dimensions**  
13.5 in. (W) x 4.25 in. (D) x 7.5 in. (H)  
(343 mm (W) x 108 mm (D) X 191 mm (H))

#### IMPORTANT

Refer to Technical Data Sheet TFP2300 for warnings pertaining to regulatory and health information.



## Operation

**Step 1.** Verify the vent assembly is equipped with a restricted venting orifice downstream of the backpressure regulator.

**Note:** If the vent assembly is not equipped with a restricted venting orifice, one will be provided by TYCO during system commissioning. The restricted venting orifice must be installed before proceeding with the steps below.

**Step 2.** Determine the low air alarm pressure and the turn-on pressure of the nitrogen generator.

**Step 3.** Choose a pressure setting for the backpressure regulator that is 3 to 5 psig (0,2 to 0,3 bar) above the low air alarm pressure but below the turn-on pressure of the nitrogen generator.

**Step 4.** Pull the knob out from the regulator to adjust the pressure setting. Turn the knob clockwise to raise the pressure, counter-clockwise to lower the pressure.

**Step 5.** Close the ball valve and allow the device to depressurize through the restricted venting orifice to the pressure setting. Adjust the pressure setting using the knob, then open the ball valve to pressurize the device and close the ball valve again to check the pressure setting. Repeat the process until the desired pressure setting is achieved.

**Note:** This process can only be performed when the fire sprinkler system is at normal operating pressure.

**Step 6.** Push the knob back into the regulator until it clicks into place.

**Step 7.** Once the TYCO Nitrogen Generator is commissioned, open the isolation ball valve on the vent assembly. The Air Vent is now open and actively venting oxygen from the fire sprinkler system. It should remain open for approximately 14 days or until the system nitrogen concentration reaches 98% or greater. Use a TYCO Model THGA Handheld Gas Analyzer to verify the gas concentration inside the fire sprinkler system.

**Step 8.** Close the isolation ball valve. Failure to close the manual ball valve after 14 days or once the fire sprinkler system nitrogen concentration reaches 98% will result in additional oxygen corrosion damage to the system and unnecessary run time of the air compressor and nitrogen generator.

**Step 9.** If the sprinkler system actuates or another event introduces oxygen to the sprinkler system the manual ball valve must be opened again for a period of 14 days to vent oxygen from the system.

## Installation

The TYCO Model TAV-D Air Vent, Dry must be installed in accordance with this section.

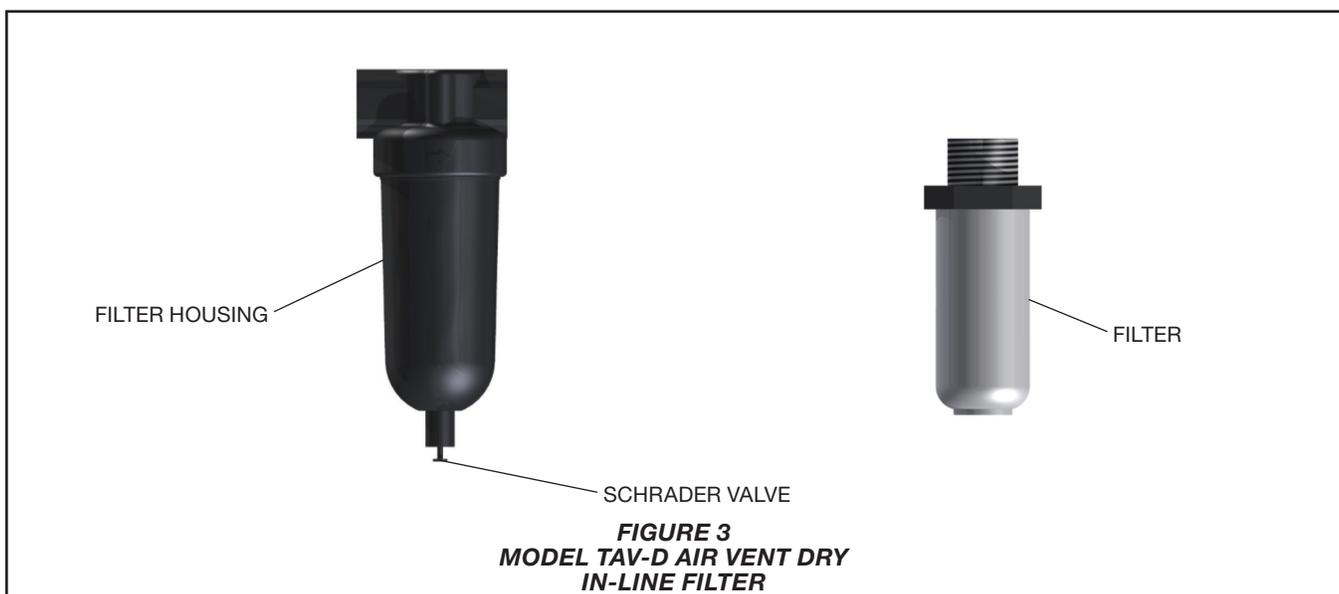
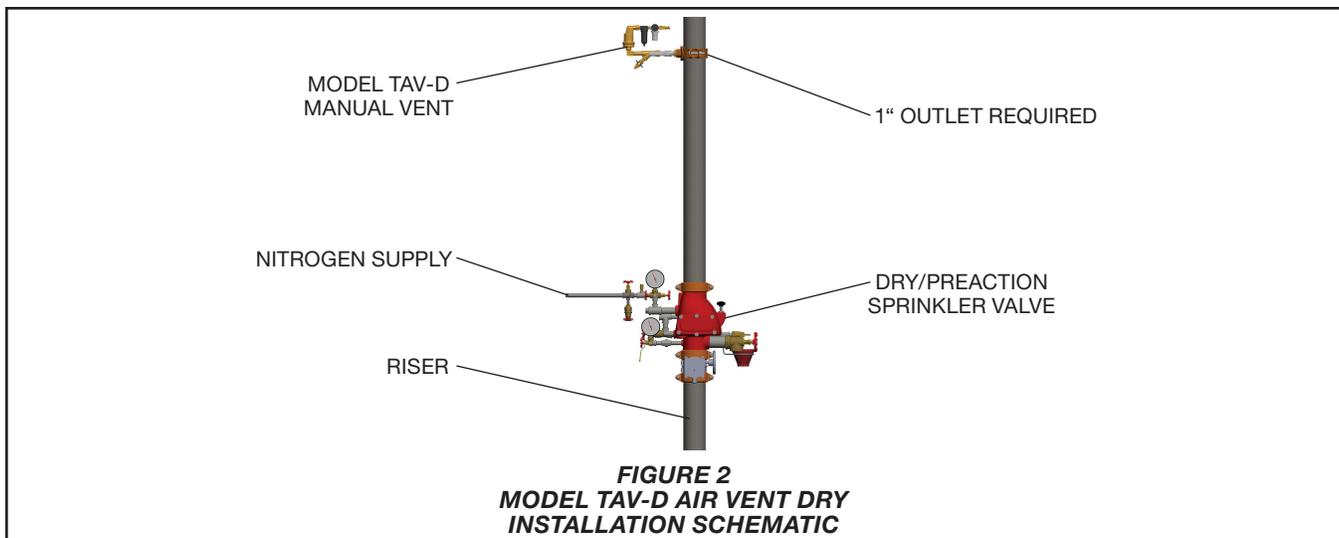
**Step 1.** The Model TAV-D Air Vent is equipped with a ball valve to be connected to the fire sprinkler riser. The contractor must install a 1 in. outlet (welded or mechanical) to connect the vent assembly to the sprinkler system on the system side of the main control valve as shown in Figure 2. The ball valve must remain in the closed position until the TYCO Nitrogen Generator is commissioned.

**Step 2.** Install the vent assembly in a level position. The recommended mounting height is between 5 ft to 10 ft (2 m to 3 m) above the finished floor.

**Note:** Piping to the vent assembly cannot be installed in a configuration that would trap water and prevent drainage to the sprinkler system; a water trap impedes the ability of the vent assembly to vent oxygen from the fire sprinkler system.

**Step 3.** Inspection of the vent assembly should be performed after installation and hydrostatic testing of the fire sprinkler system. Inspection should be performed periodically thereafter in accordance with the applicable NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) codes and standards and/or the authority having jurisdiction.

**Note:** Inspection must include the condition of the in-line filter and checking for blockage in the "Y" strainer and the restricted venting orifice.



## Care and Maintenance

The TYCO Model TAV-D Air Vent, Dry must be maintained and serviced in accordance with this section.

Before closing a fire protection system main control valve for maintenance work on the fire protection system that it controls, permission to shut down the affected fire protection systems must first be obtained from the proper authorities. All personnel who may be affected by this decision must be notified.

Inspection, testing, and maintenance must be performed in accordance with the requirements of the NFPA, and any impairment must be immediately corrected.

The owner is responsible for the inspection, testing, and maintenance of their fire protection system and devices in compliance with this document, as well as with the applicable standards of any authorities having jurisdiction. Contact the installing contractor or product manufacturer with any questions.

### Inspection Instructions

**Step 1.** The Model TAV-D Air Vent must be inspected annually at minimum. While the isolation ball valve is in the open position check for air/water leaks and ensure the pressure gauge is displaying normal system pressure.

**Step 2.** While the isolation ball valve is in the closed position inspect the condition of the inline filter and for blockage in the “Y” strainer and restricted venting orifice. Twist the black Filter Housing clockwise until it can be removed to expose the filter element.

**Step 3.** Replace the In-Line Filter element if a visual inspection reveals a significant collection of debris.

### **In-Line Filter Replacement Instructions**

**Step 1.** Close the isolation ball valve.

**Step 2.** Depressurize the housing by pressing the SCHRADER valve on the bottom of the in-line filter housing shown in Figure 3.

**Step 3.** Remove the lower section of the In-Line Filter housing by turning the filter housing counterclockwise.

**Note:** A rubber o-ring/seal is located between the upper and lower sections of the filter housing.

**Step 4.** Remove the old filter by turning the filter counterclockwise.

**Step 5.** Replace with a new filter, TYCO Model TFLT Replacement Filter Kit. The filter is secured to the housing by turning the filter clockwise.

**Note:** Ensure the filter housing is secured only finger/hand tight.

**Step 6.** Install the rubber o-ring/seal on the lower section of the filter housing.

**Step 7.** Re-install the filter housing by turning the filter housing clockwise.

**Note:** Ensure the filter housing is secured only finger/hand tight.

**Step 8.** Open the isolation ball valve.

## **Limited Warranty**

For warranty terms and conditions, visit [www.tyco-fire.com](http://www.tyco-fire.com).

## **Ordering Procedure**

Contact your local distributor for availability. When placing an order, indicate the full product name and Part Number (P/N).

### **Air Vent, Dry**

Specify: Model TAV-D Air Vent, Dry, P/N TAVD01

### **Replacement Filter Kit**

Specify: Model TFLT Replacement Filter Kit, P/N TVDFLT