

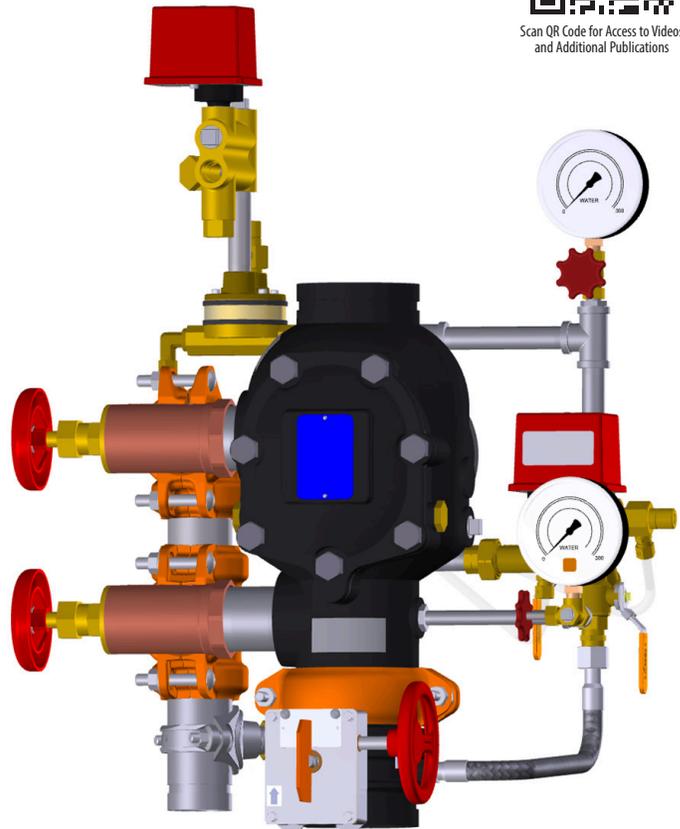
# Series 769N FireLock NXT™ Deluge Valve

Pneumatic (Dry Pilot) Release, Hydraulic (Wet Pilot) Release, and Electric Release Systems

KEEP THESE INSTRUCTIONS WITH THE INSTALLED VALVE FOR FUTURE REFERENCE



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## ⚠ WARNING



- Read and understand all instructions before attempting to install any Victaulic products.
  - Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.
  - Wear safety glasses, hardhat, and foot protection.
- Failure to follow these instructions could result in death or serious personal injury and property damage.

- Series 769N FireLock NXT™ Deluge Valves shall be used only in fire protection systems that are designed and installed in accordance with current, applicable National Fire Protection Association (NFPA 13, 13D, 13R, etc.) standards, or equivalent standards, and in accordance with applicable building and fire codes. These standards and codes contain important information regarding protection of systems from freezing temperatures, corrosion, mechanical damage, etc.
  - These installation instructions are intended for an experienced, trained installer. The installer shall understand the use of this product and why it was specified for the particular application.
  - The installer shall understand common industry safety standards and potential consequences of improper product installation.
- Failure to follow installation requirements and local and national codes and standards could compromise system integrity or cause system failure, resulting in death or serious personal injury and property damage.

# SERIES 769N FIRELOCK NXT™ DELUGE VALVE

THIS QUICK REFERENCE SECTION IS FOR PLACING THE SYSTEM IN SERVICE AND FOR PERFORMING WATER FLOW ALARM TESTS. AN EXPERIENCED, TRAINED INSTALLER SHALL READ AND UNDERSTAND THE FULL CONTENTS OF THIS MANUAL AND ALL WARNING MESSAGES BEFORE ATTEMPTING TO PLACE THE SYSTEM INTO SERVICE.

## INITIAL SYSTEM SETUP

### NOTICE

Before proceeding with initial system setup, verify that the following steps have been completed:

- **FOR HYDRAULIC (WET PILOT) RELEASE SYSTEMS:** Verify that the wet pilot line is piped to the location indicated on the trim drawing.
- **FOR PNEUMATIC (DRY PILOT) RELEASE SYSTEMS:** Verify that the dry pilot piping is connected to the air manifold, as indicated on the trim drawing.
- **FOR ELECTRIC RELEASE SYSTEMS:** Verify that an approved control panel is installed for proper system operation.

#### Step 1:

Confirm that all system drains are shut and that the system is free of leaks.

#### Step 2:

Confirm that the system has been depressurized. The gauges should indicate zero pressure.

#### Step 3:

Confirm that the alarm test ball valve is closed.

#### Step 4:

For hydraulic (wet pilot) release trim and electric release trim, open the charge line ball valve. Allow water to flow through the auto drain tube, then proceed to step E5a. For pneumatic (dry pilot) release systems, proceed to step P5a.

#### FOR PNEUMATIC (DRY PILOT) RELEASE SYSTEMS:

**Step P5a:** Charge the dry pilot release system with air by turning on the compressor or by opening the fast-fill ball valve on the AMTA. Charge the dry pilot release system to 13psi/90kPa/0.9Bar minimum.

**Step P5b:** When the system reaches approximately 10psi/69 kPa/0.7 Bar, and no additional moisture is being released from the Auto Vent, pull up on the Auto Vent Sleeve of the Series 776 Low-Pressure Actuator. **NOTE:** The Auto Vent Screw should seal and remain in the set ("UP") position.

**Step P5c:** When system air pressure is established, close the fast-fill ball valve on the AMTA.

**Step P5d:** Open the slow-fill ball valve on the AMTA. **NOTE:** Failure to leave the slow-fill ball valve open may allow system pressure to drop, resulting in valve operation in the event of a system leak.

**Step P5e:** Open the charge line ball valve. Allow water to flow through the auto drain tube.

**Step P5f:** Pull up on the auto drain sleeve.

#### FOR ELECTRIC RELEASE SYSTEMS:

**Step E5a:** Confirm that the solenoid valve is closed (de-energized).

**Step E5b:** Confirm that water is not flowing through the solenoid valve.

#### Step 6:

Open the manual pull station valve to bleed off any air that is present, then close the manual pull station valve. Verify that the charge line pressure is equal to the supply pressure, and verify that the auto drain is set by pulling up on the auto drain sleeve.

#### Step 7:

Open the water supply main drain valve.

#### Step 8:

Open the water supply main control valve slowly until water flows steadily from the open water supply main drain valve.

#### Step 9:

Close the water supply main drain valve when a steady flow of water occurs.

#### Step 10:

Open the water supply main control valve fully.

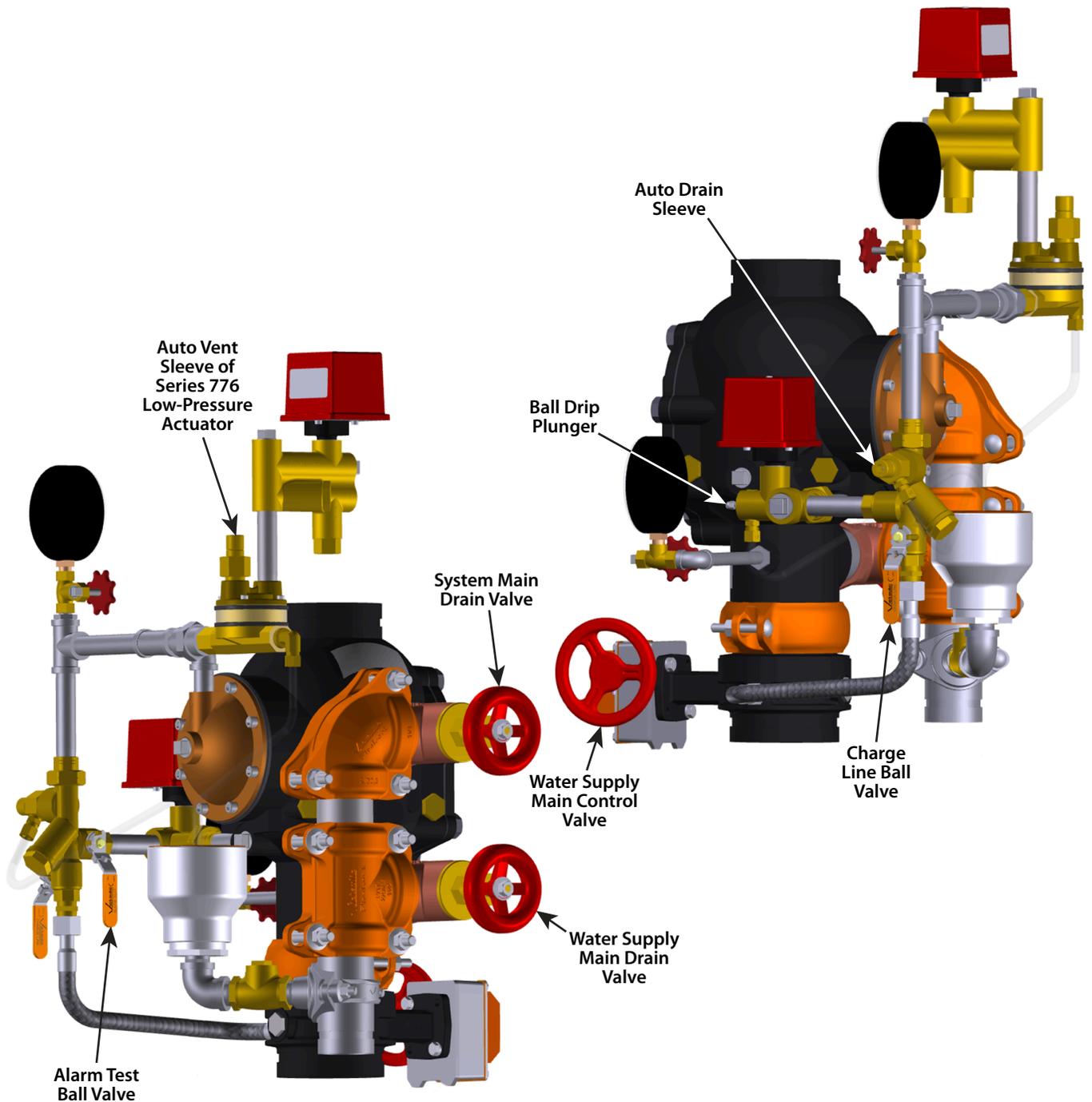
#### Step 11:

Confirm that all valves are in their normal operating positions (refer to the table below).

### NORMAL OPERATING POSITIONS FOR VALVES

| Valve   | Normal Operating Position |
|---|---------------------------|
| Water Supply Main Control Valve                         | Open                      |
| Water Supply Main Drain Valve                           | Closed                    |
| System Main Drain Valve                                 | Closed                    |
| Charge Line Ball Valve of the Priming Manifold Assembly | Open                      |

| Valve  | Normal Operating Position |
|--|---------------------------|
| Alarm Test Ball Valve of the Priming Manifold Assembly     | Closed                    |
| Slow-Fill Ball Valve of the Victaulic AMTA (if applicable) | Open                      |
| Fast-Fill Ball Valve of the Victaulic AMTA (if applicable) | Closed                    |



Pneumatic (Dry Pilot) Release Trim Shown  
(Manual pull station not shown for clarity of components)

## REQUIRED WATER FLOW ALARM TEST

Refer to NFPA 25, FM Datasheets, or any applicable local requirements to perform water flow alarm tests. The authority having jurisdiction in the area may require these inspections on a more frequent basis. Verify these requirements by contacting the authority having jurisdiction in the affected area.

1. Notify the authority having jurisdiction, remote station alarm monitors, and those in the affected area that the water flow alarm test will be performed.
2. Open the water supply main drain valve fully to flush the water supply of any contaminants.
3. Close the water supply main drain valve.
4. Open the alarm test ball valve. Confirm that mechanical and electrical alarms are activated and that remote monitoring stations, if provided, receive an alarm signal.
5. Close the alarm test ball valve after verifying proper operation of all alarms.
6. Push in the ball drip plunger on the alarm manifold assembly to verify that there is no pressure in the alarm line.
7. Verify that all alarms stopped sounding, that the alarm line drained properly, and that remote station alarms reset properly.
8. Confirm that the ball drip on the alarm manifold assembly is not leaking water or air.
9. Provide test results to the authority having jurisdiction, if required.

**TABLE OF CONTENTS**

Hazard Identification . . . . . 4  
 Installer Safety Information . . . . . 4  
 Important Installation Information . . . . . 5  
 Hydrostatic Testing . . . . . 5  
 Receiving the Shipment . . . . . 6  
 Trim Dimensions . . . . . 7  
 Trim Components - Exploded View Drawing -  
 Pneumatic (Dry Pilot) Release Trim . . . . . 8  
 Trim Components - Exploded View Drawing -  
 Hydraulic (Wet Pilot) Release Trim . . . . . 9  
 Trim Components - Exploded View Drawing -  
 Electric Release Trim . . . . . 10  
 Internal Valve Components - Section View and  
 Exploded View Drawings . . . . . 11  
 Air Supply Requirements . . . . . 12  
 Base- or Riser-Mounted Air Compressors . . . . . 12  
 Shop Air or Tank-Mounted Air Compressors . . . . . 12  
 Settings for Air Supervisory Pressure Switches and Alarm  
 Pressure Switches . . . . . 12  
 Wet Pilot Line Charts . . . . . 13-15  
**SECTION I**  
 Initial System Setup . . . . . 17  
**SECTION II**  
 Resetting the System . . . . . 21  
**SECTION III**  
 Weekly External Inspection . . . . . 23  
 Monthly External Inspection . . . . . 23  
**SECTION IV**  
 Required Main Drain Test . . . . . 25  
 Required Water Flow Alarm Test . . . . . 26  
 Required Water Level and Low-Air Alarm Tests . . . . . 27  
 Required Partial Operational Trip Test . . . . . 28  
 Required Full Operational Trip Test . . . . . 29  
**SECTION V**  
 Required Internal Inspection . . . . . 31  
**SECTION VI**  
 Removing and Replacing the Clapper Seal . . . . . 33  
 Removing and Replacing the Clapper Assembly . . . . . 34  
 Installing the Cover Plate Gasket and Cover Plate . . . . . 35  
 Removing and Replacing the Diaphragm . . . . . 36  
 Cleaning the Cartridge in the Air and Priming Manifold  
 Assemblies . . . . . 37  
 Replacing the Filter in Series 776 Low-Pressure Actuators  
 (Dry Pilot Release Systems) . . . . . 37  
**SECTION VII**  
 Troubleshooting . . . . . 39

**HAZARD IDENTIFICATION**



Definitions for identifying the various hazard levels are provided below. When you see this symbol, be alert to the possibility of personal injury. Carefully read and fully understand the message that follows.

**WARNING**

- The use of the word “WARNING” identifies the presence of hazards or unsafe practices that could result in death or serious personal injury and property damage if instructions are not followed.

**CAUTION**

- The use of the word “CAUTION” identifies possible hazards or unsafe practices that could result in personal injury and product or property damage if instructions are not followed.

**NOTICE**

- The use of the word “NOTICE” identifies special instructions that are important but not related to hazards.

**INSTALLER SAFETY INFORMATION**

**WARNING**




- An experienced, trained installer shall install this product in accordance with all instructions. These instructions contain important information.
- Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.

**Failure to follow these instructions can cause product failure, resulting in death or serious personal injury and property damage.**

1. **Read and understand all instructions and refer to the trim diagrams before installing, maintaining, or testing this Victaulic Series 769N FireLock NXT Deluge Valve.** For proper operation and approval, the Series 769N FireLock NXT Deluge Valve and accessories shall be installed in accordance with the specific trim diagrams included with the shipment.
2. **Use only recommended accessories.** Accessories and equipment that are not approved for use with this deluge valve may cause improper system operation and property damage.
3. **Wear safety glasses, hardhat, foot protection, and hearing protection.** Wear hearing protection if you are exposed to long periods of noisy jobsite operations.
4. **Prevent back injury.** Valve assemblies require more than one person (or mechanical lifting equipment) to position and install the assembly. Always practice proper lifting techniques.
5. **Keep work areas clean.** Keep the work area clean and well lit, and allow enough space to accommodate proper installation of the valve, trim, and accessories.
6. **Avoid pinch points.** Due to the weight of the valve body, use caution around pinch points and spring-loaded components (i.e. clapper assembly) in order to prevent bodily injury.

## IMPORTANT INSTALLATION INFORMATION

1. **Confirm that adequate space is available for valve, trim, and accessories.** Refer to page 7 for dimensional information.
2. **Flush water supply piping.** Before installing the Series 769N FireLock NXT Deluge Valve, flush the water supply piping thoroughly to remove all foreign material.
3. **Protect system from freezing temperatures.** Series 769N FireLock NXT Deluge Valves and supply piping SHALL NOT be located in an area where the valve can be exposed to freezing temperatures or mechanical damage.
4. **Confirm material compatibility.** It is the system designer's responsibility to confirm material compatibility of the Series 769N FireLock NXT Deluge Valve, trim, and associated accessories when a corrosive environment or contaminated water is present.
5. **Supply air or nitrogen to the system.** Air or nitrogen supply to the piping system shall be clean, dry, and oil-free and shall be regulated, restricted, and uninterrupted. Refer to the "Air Supply Requirements" section. Observe the system air pressure over a 24-hour period to confirm system integrity. If there is degradation in system air pressure, find and correct all leaks. **NOTE:** NFPA requires less than 1½-psi/10-kPa/0.1-Bar leakage in 24 hours.
6. **Supply water to the system.** Supply pressure to the charge line by providing an uninterrupted source of water from upstream of the main control valve. When an uninterrupted water flow alarm is required, Victaulic recommends the use of a low-pressure alarm installed on the charge line downstream of the priming manifold assembly.
7. **Pitch the water supply piping.** Per NFPA 13 requirements, piping shall be pitched so that systems can drain properly. For areas that are subject to high levels of condensation, or where piping is not properly pitched, an optional Series 75D Water Column Device kit is available to assist in automatically draining water out of the riser.
8. **IF THE INLET WATER SUPPLY IS INTERRUPTED FOR ANY REASON, AND SYSTEM SUPPLY PRESSURE TO THE VALVE DECREASES, VERIFY THAT THE CHARGE LINE IS FULLY PRESSURIZED BEFORE PLACING THE SYSTEM BACK IN SERVICE.**

## HYDROSTATIC TESTING

| <b>⚠ WARNING</b>   |   |
|--|---|
|  | <ul style="list-style-type: none"> <li>• If air testing is required, <b>DO NOT</b> exceed 50 psi/345 kPa/3.4 Bar air pressure.</li> </ul> <p>Failure to follow this instruction could result in death or serious personal injury and property damage.</p> |

### Maximum working pressure of valve:

- 300 psi/2065 kPa/20.7 Bar

### Valve is factory tested to:

- 600 psi/4135 kPa/4.1 Bar (all sizes)

### The valve can be hydrostatically tested against the clapper at:

- 200 psi/1380 kPa/13.8 Bar or 50 psi/345 kPa/3.4 Bar above the normal water supply pressure (2-hour limited time period) for acceptance by the authority having jurisdiction

## RECEIVING THE SHIPMENT

### NOTICE

- Drawings and/or pictures in this manual may be exaggerated for clarity.
- This product and this installation, maintenance, and testing manual contain trademarks, copyrights, and/or patented features that are the exclusive property of Victaulic.

The components shaded in orange below are shipped separate from the valve and shall be installed in accordance with the trim drawing provided. **NOTE:** The Vic-Quick Riser (VQR) assembly is shown.

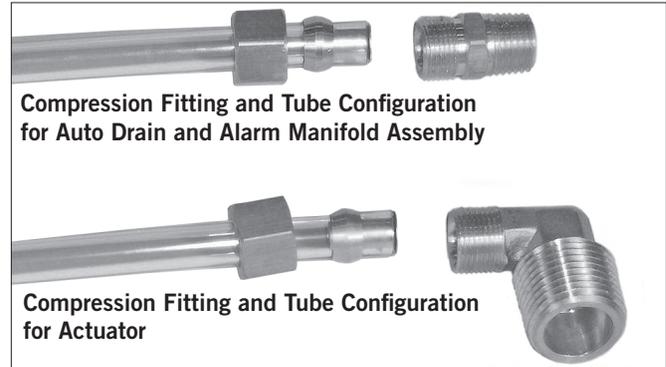
1. Verify that all components are included in the shipment and that all necessary tools are available for installation. Verify that the provided trim drawing matches the system's requirements.
2. Remove all plastic caps and foam spacers from the valve.

### CAUTION

- Verify that all protective shipping items are removed from the interior and exterior of the valve body before installation.
- Verify that no foreign material gets into the valve body, pipe nipples, or valve openings.
- If using any material other than PTFE thread sealant tape, use extra caution so that material does not enter the trim.

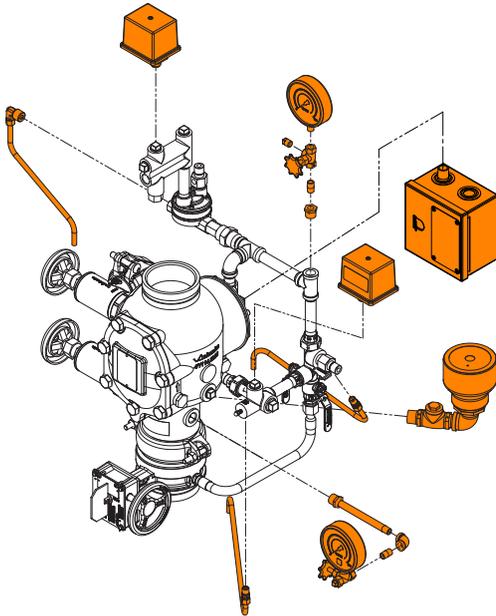
Failure to follow these instructions could cause improper valve operation, resulting in personal injury and property damage.

3. Install the valve assembly into the riser with two Victaulic rigid couplings. Refer to the instructions, supplied with the coupling, for complete installation requirements. **SERIES 769N FIRELOCK NXT DELUGE VALVES SHALL BE INSTALLED ONLY IN THE VERTICAL POSITION WITH THE ARROW ON THE BODY POINTING UPWARD.**
4. For components shipped separate from the valve, apply a small amount of pipe joint compound or PTFE thread sealant tape to the external threads of all threaded connections. DO NOT get any tape, compound, or other foreign material into the openings of the threaded connections.

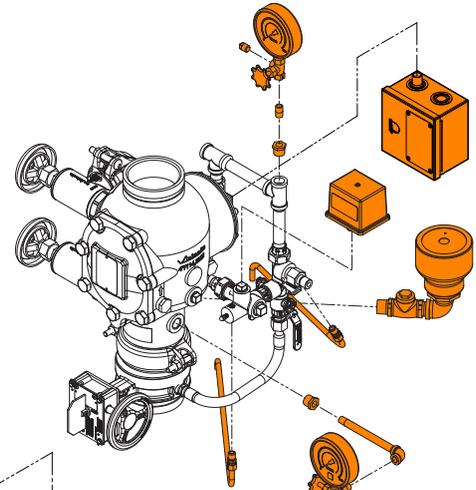


5. Compression fittings and tubes are provided for connection from the outlet of the auto drain, alarm manifold assembly, and actuator to the drip cup or drain. Install the compression fittings in accordance with the trim drawing provided. **NEVER INSERT A PLUG INTO THE OUTLET OF THE AUTO DRAIN, ALARM MANIFOLD ASSEMBLY, OR ACTUATOR IN PLACE OF THE COMPRESSION FITTING/TUBE.**

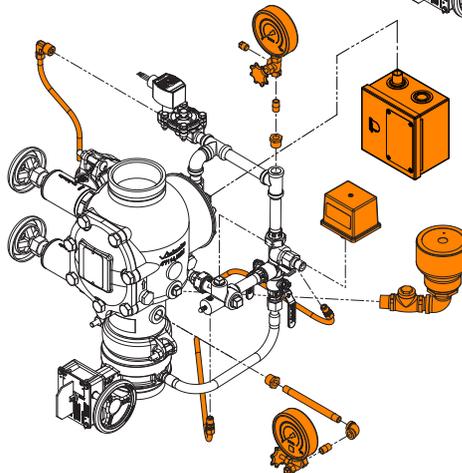
Pneumatic (Dry Pilot) Release



Hydraulic (Wet Pilot) Release

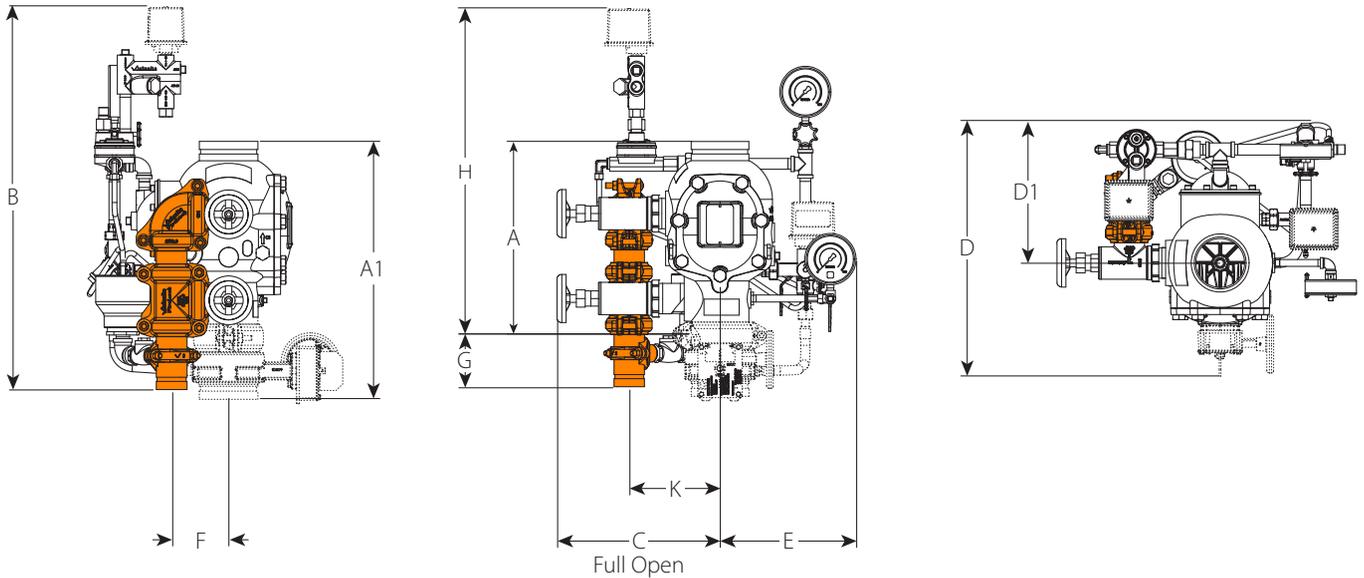


Electric Release



**TRIM DIMENSIONS**

A 4-INCH/114.3-MM VALVE WITH PNEUMATIC (DRY PILOT) RELEASE TRIM IS SHOWN BELOW  
 1½ – 2-INCH/48.3 – 60.3-MM CONFIGURATIONS CONTAIN ¼-INCH/19-MM DRAIN VALVES  
 2½ – 3-INCH/73.0 – 88.9-MM CONFIGURATIONS CONTAIN 1¼-INCH/31-MM DRAIN VALVES  
 4 – 8-INCH/114.3 – 219.1-MM CONFIGURATIONS CONTAIN 2-INCH/50-MM DRAIN VALVES



**NOTES:**

The drawings shown above reflect the pneumatic (dry pilot) release trim with Series 776 Low-Pressure Actuator. In addition, these dimensions can be applied to hydraulic (wet pilot) release trim and electric release trim.

The “A” dimension is the actual takeout dimension of the valve body.

The “A1” dimension is the actual takeout dimension of the valve body with water supply main control valve.

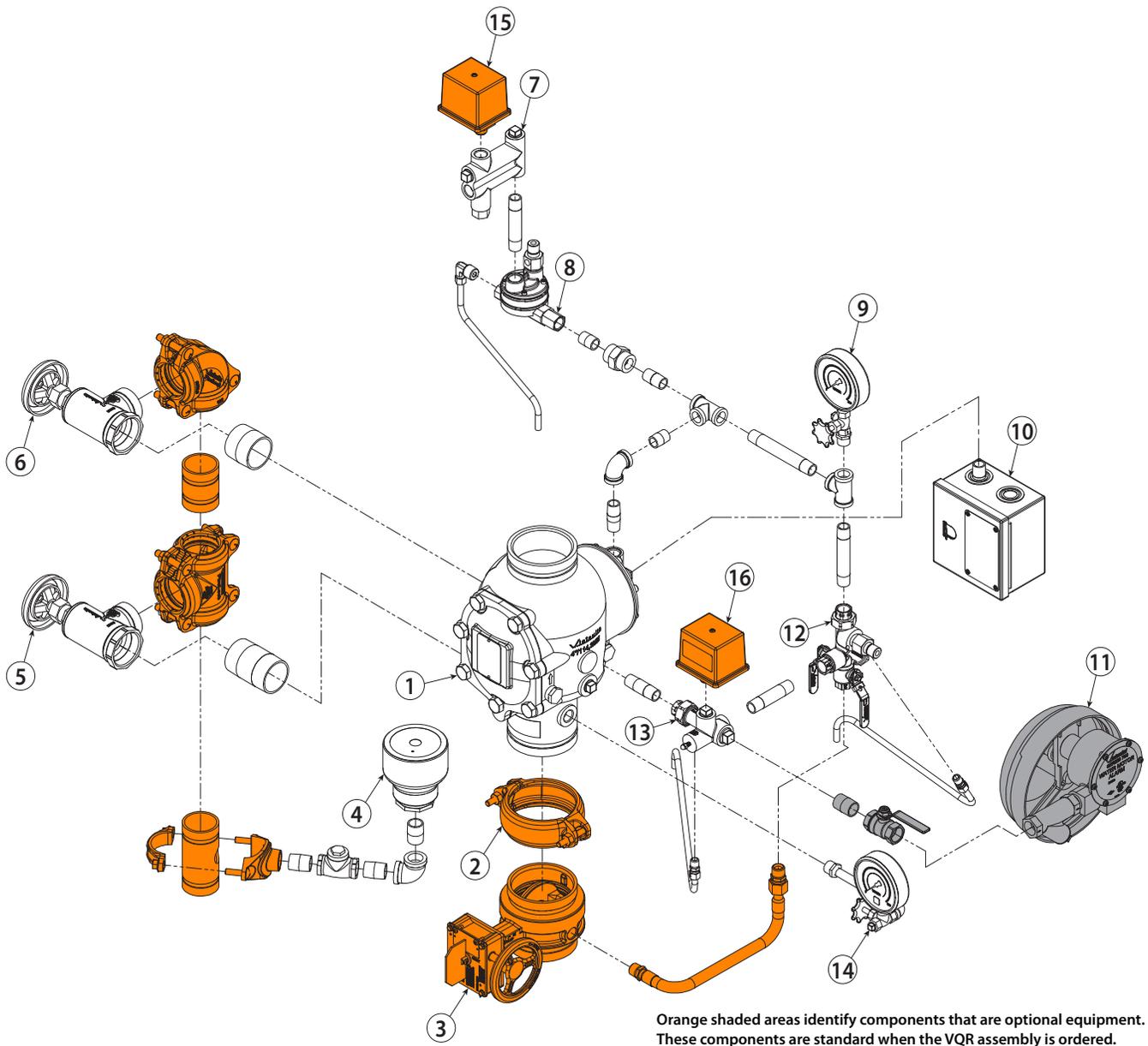
The “D” and “D1” dimensions are not fixed measurements. The drip cup can be rotated to provide more clearance at the back of the trim.

Components shown as dotted lines denote optional equipment.

The recommended drain connection kit (shaded in orange) is for reference and takeout dimensions. This drain connection comes standard when the VQR assembly is ordered.

| Nominal Size<br>inches<br>or mm | Dimensions – inches/mm |                 |              |              |              |              |              |             |              |              |             | Approx Weight Each<br>lbs/kg |               |
|---------------------------------|------------------------|-----------------|--------------|--------------|--------------|--------------|--------------|-------------|--------------|--------------|-------------|------------------------------|---------------|
|                                 | A                      | A1              | B            | C            | D            | D1           | E            | F           | G            | H            | K           | Without<br>Trim              | With<br>Trim  |
| 1½                              | 9.00<br>228.60         | 16.37<br>415.80 | 33.00<br>838 | 8.75<br>222  | 14.25<br>362 | 9.00<br>229  | 9.25<br>235  | 3.25<br>83  | 10.25<br>260 | 22.75<br>578 | 5.50<br>140 | 16.7<br>7.6                  | 43.0<br>19.5  |
| 2                               | 9.00<br>228.60         | 13.83<br>351.28 | 33.00<br>838 | 8.75<br>222  | 15.50<br>394 | 9.00<br>229  | 9.25<br>235  | 3.25<br>83  | 10.25<br>260 | 22.75<br>578 | 5.50<br>140 | 17.0<br>7.7                  | 43.0<br>19.5  |
| 2½                              | 12.61<br>320.29        | 16.51<br>419.35 | 33.50<br>851 | 11.25<br>286 | 17.75<br>451 | 10.25<br>260 | 9.75<br>248  | 4.00<br>102 | 9.75<br>248  | 23.75<br>603 | 6.50<br>165 | 41.0<br>18.7                 | 65.0<br>29.5  |
| 76.1 mm                         | 12.61<br>320.29        | 16.51<br>419.35 | 33.50<br>851 | 11.25<br>286 | 17.75<br>451 | 10.25<br>260 | 9.75<br>248  | 4.00<br>102 | 9.75<br>248  | 23.75<br>603 | 6.50<br>165 | 41.0<br>18.7                 | 65.0<br>29.5  |
| 3                               | 12.61<br>320.29        | 16.51<br>419.35 | 33.50<br>851 | 11.25<br>286 | 17.75<br>451 | 10.25<br>260 | 9.75<br>248  | 4.00<br>102 | 9.75<br>248  | 23.75<br>603 | 6.50<br>165 | 41.0<br>18.7                 | 65.0<br>29.5  |
| 4                               | 15.03<br>381.76        | 19.85<br>504.19 | 30.25<br>768 | 13.00<br>330 | 20.00<br>508 | 11.25<br>286 | 11.00<br>279 | 4.75<br>121 | 4.50<br>114  | 25.75<br>654 | 7.50<br>191 | 59.0<br>26.7                 | 95.0<br>43.0  |
| 165.1 mm                        | 16.00<br>406.40        | 22.13<br>562.10 | 31.50<br>800 | 14.00<br>356 | 24.75<br>629 | 11.75<br>298 | 11.00<br>279 | 4.50<br>114 | 4.50<br>114  | 27.00<br>686 | 8.25<br>210 | 80.0<br>36.2                 | 116.0<br>52.6 |
| 6                               | 16.00<br>406.40        | 22.13<br>562.10 | 31.50<br>800 | 14.00<br>356 | 24.75<br>629 | 11.75<br>298 | 11.00<br>279 | 4.50<br>114 | 4.50<br>114  | 27.00<br>686 | 8.25<br>210 | 80.0<br>36.2                 | 116.0<br>52.6 |
| 8                               | 17.50<br>444.50        | 23.02<br>584.71 | 33.25<br>845 | 14.75<br>375 | 25.75<br>654 | 12.50<br>318 | 12.25<br>311 | 4.75<br>121 | 4.25<br>108  | 29.00<br>737 | 9.25<br>235 | 122.0<br>55.3                | 158.0<br>71.6 |

**TRIM COMPONENTS – EXPLODED VIEW DRAWING**  
**Series 769N FireLock NXT Deluge Valve - Pneumatic (Dry Pilot) Release Trim**



Orange shaded areas identify components that are optional equipment. These components are standard when the VQR assembly is ordered.

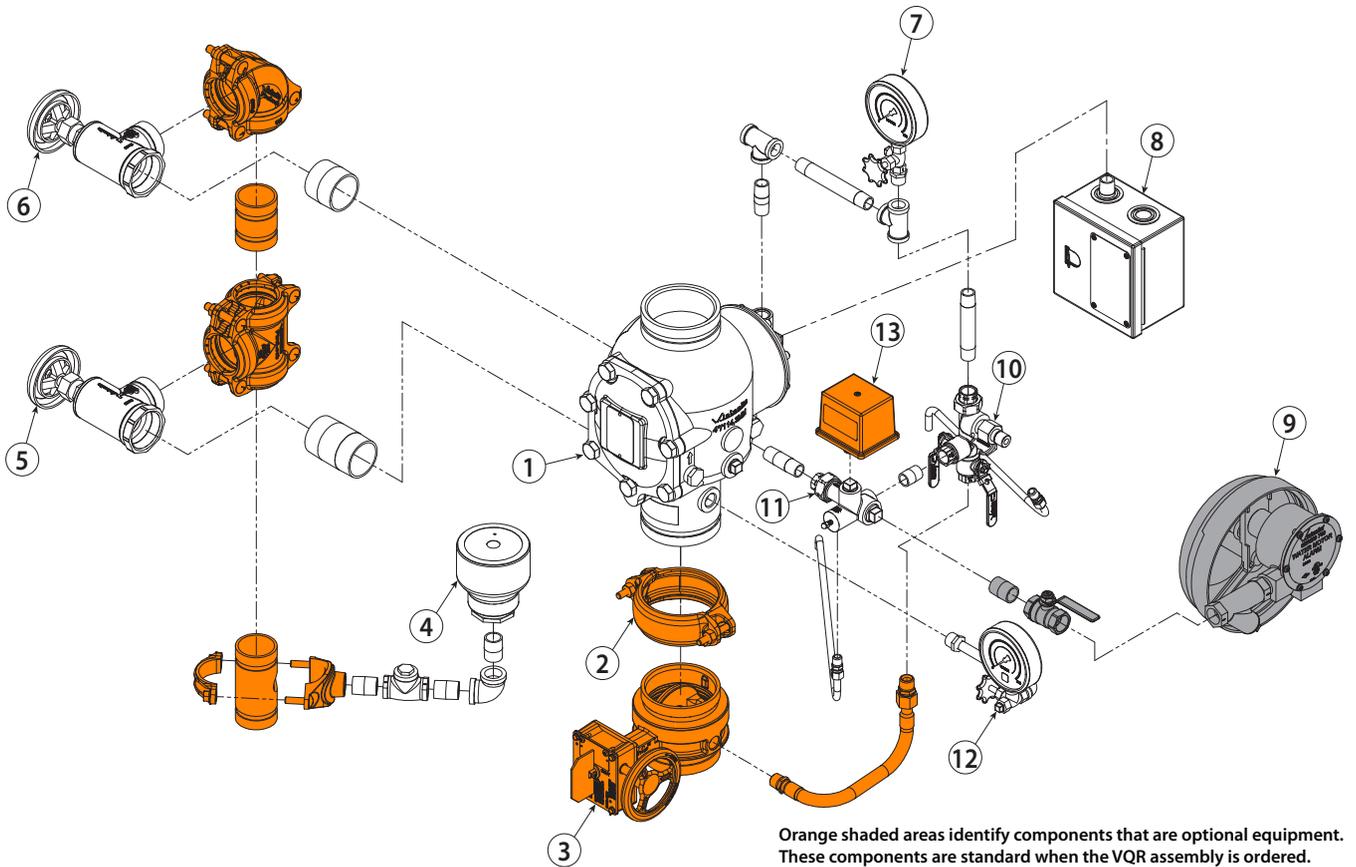
Gray shaded areas identify components that are optional equipment.

| Item | Description                               |
|------|---|
| 1    | Series 769N FireLock NXT Deluge Valve     |
| 2    | FireLock Rigid Coupling                   |
| 3    | Water Supply Main Control Valve           |
| 4    | Drip Cup                                  |
| 5    | Water Supply Main Drain Valve – Flow Test |
| 6    | System Main Drain Valve                   |
| 7    | Air Manifold                              |
| 8    | Series 776 Low-Pressure Actuator          |

| Item | Description                                      |
|------|--|
| 9    | Charge Line Pressure Gauge/Gauge Valve Assembly  |
| 10   | Series 755 Manual Pull Station                   |
| 11   | Series 760 Water Motor Alarm Assembly            |
| 12   | Priming Manifold Assembly                        |
| 13   | Alarm Manifold Assembly                          |
| 14   | Water Supply Pressure Gauge/Gauge Valve Assembly |
| 15   | Air Supervisory Pressure Switch                  |
| 16   | Alarm Pressure Switch                            |

**TRIM COMPONENTS – EXPLODED VIEW DRAWING**

**Series 769N FireLock NXT Deluge Valve - Hydraulic (Wet Pilot) Release Trim**



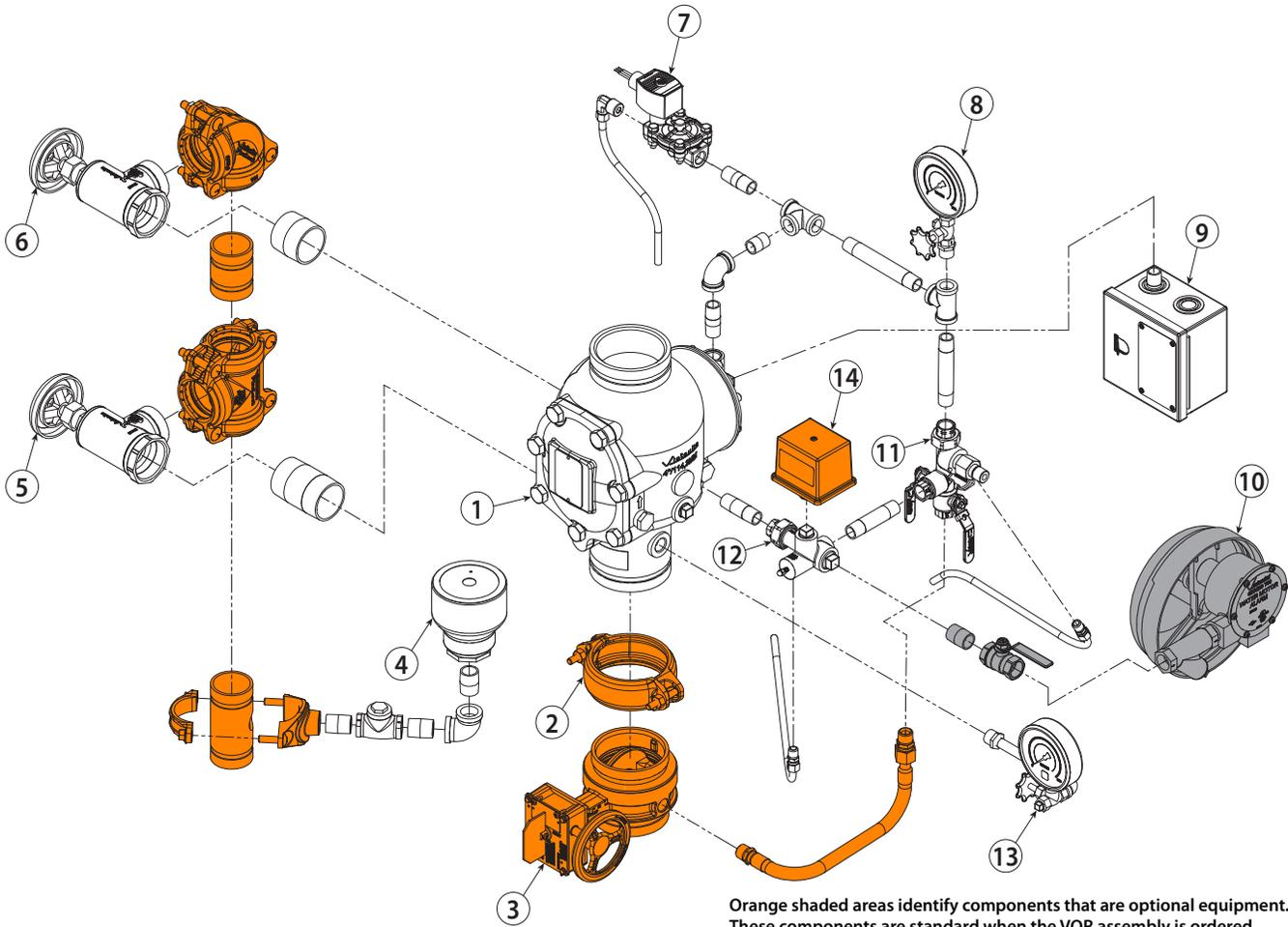
Orange shaded areas identify components that are optional equipment. These components are standard when the VQR assembly is ordered.

Gray shaded areas identify components that are optional equipment.

| Item | Description                                     |
|------|---|
| 1    | Series 769N FireLock NXT Deluge Valve           |
| 2    | FireLock Rigid Coupling                         |
| 3    | Water Supply Main Control Valve                 |
| 4    | Drip Cup  |
| 5    | Water Supply Main Drain Valve – Flow Test       |
| 6    | System Main Drain Valve                         |
| 7    | Charge Line Pressure Gauge/Gauge Valve Assembly |

| Item | Description                                      |
|------|--|
| 8    | Series 755 Manual Pull Station                   |
| 9    | Series 760 Water Motor Alarm Assembly            |
| 10   | Priming Manifold Assembly                        |
| 11   | Alarm Manifold Assembly                          |
| 12   | Water Supply Pressure Gauge/Gauge Valve Assembly |
| 13   | Alarm Pressure Switch                            |

**TRIM COMPONENTS – EXPLODED VIEW DRAWING**  
**Series 769N FireLock NXT Deluge Valve - Electric Release Trim**



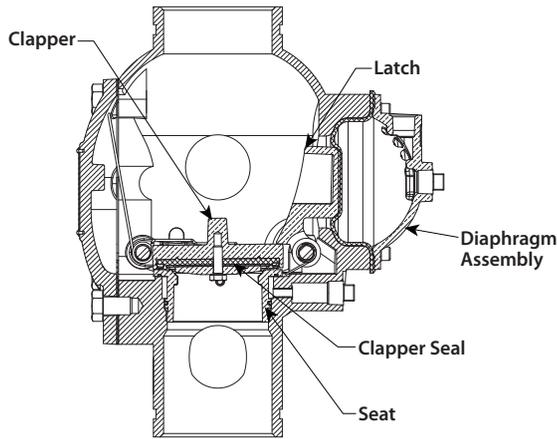
Orange shaded areas identify components that are optional equipment. These components are standard when the VQR assembly is ordered.

Gray shaded areas identify components that are optional equipment.

| Item | Description                               |
|------|---|
| 1    | Series 769N FireLock NXT Deluge Valve     |
| 2    | FireLock Rigid Coupling                   |
| 3    | Water Supply Main Control Valve           |
| 4    | Drip Cup                                  |
| 5    | Water Supply Main Drain Valve – Flow Test |
| 6    | System Main Drain Valve                   |
| 7    | 24 VDC Normally-Closed Solenoid Valve     |

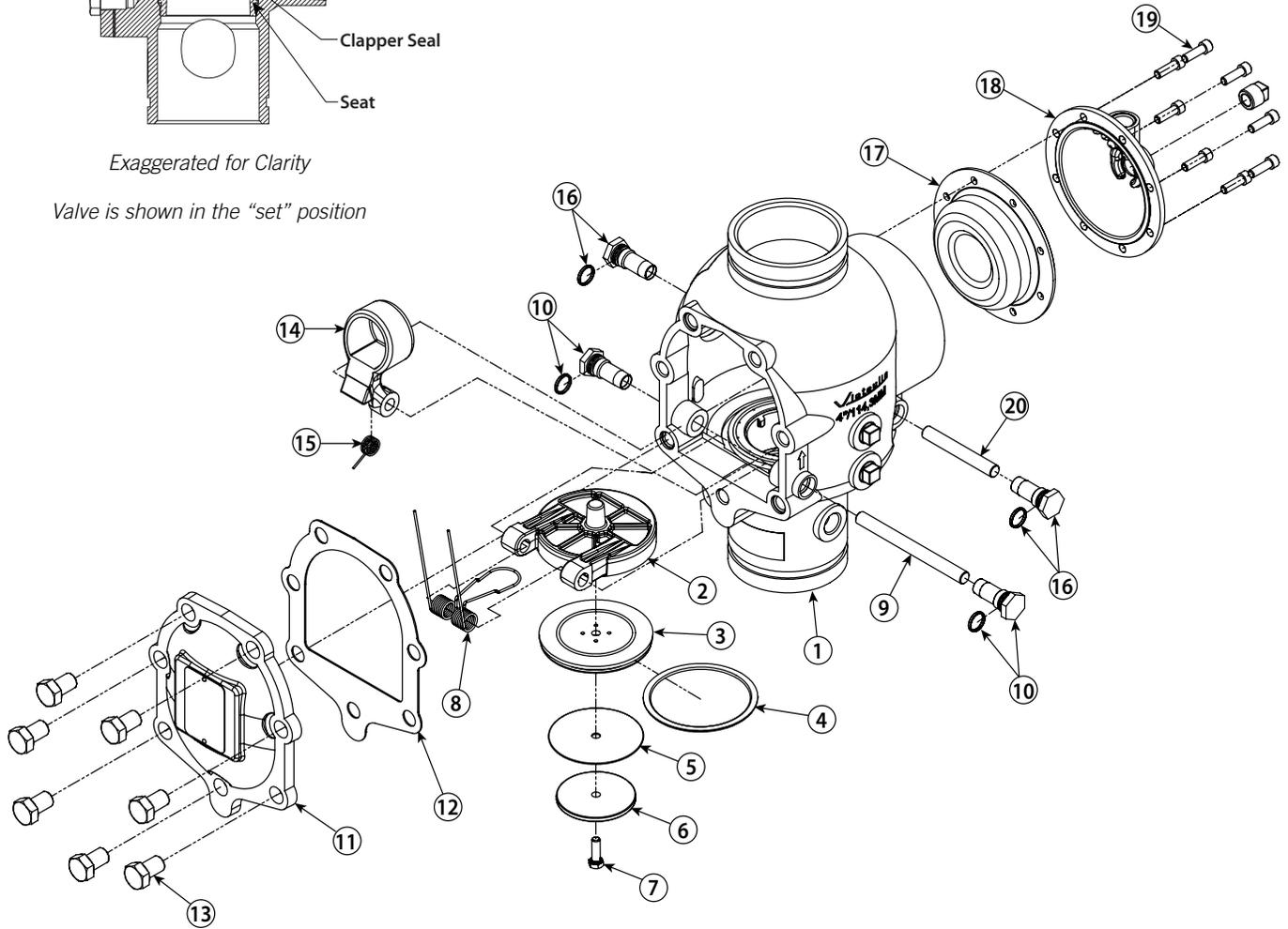
| Item | Description                                      |
|------|--|
| 8    | Charge Line Pressure Gauge/Gauge Valve Assembly  |
| 9    | Series 755 Manual Pull Station                   |
| 10   | Series 760 Water Motor Alarm Assembly            |
| 11   | Priming Manifold Assembly                        |
| 12   | Alarm Manifold Assembly                          |
| 13   | Water Supply Pressure Gauge/Gauge Valve Assembly |
| 14   | Alarm Pressure Switch                            |

**INTERNAL VALVE COMPONENTS – SECTION VIEW AND EXPLODED VIEW DRAWINGS**



*Exaggerated for Clarity*

*Valve is shown in the “set” position*



The 1½-inch/48.3-mm and 2-inch/60.3-mm valve sizes contain washers under the heads of the cover plate bolts.

| Item | Description                               |
|------|---|
| 1    | Valve Body                                |
| 2    | Clapper                                   |
| 3    | Clapper Seal                              |
| 4    | Seal Ring                                 |
| 5    | Seal Washer*                              |
| 6    | Seal Retaining Ring                       |
| 7    | Seal Assembly Bolt                        |
| 8    | Clapper Spring                            |
| 9    | Clapper Shaft                             |
| 10   | Clapper Shaft Bushing and O-Ring (Qty. 2) |

| Item | Description                              |
|------|--|
| 11   | Cover Plate                              |
| 12   | Cover Plate Gasket                       |
| 13   | Cover Plate Bolts                        |
| 14   | Latch                                    |
| 15   | Latch Spring                             |
| 16   | Latch Spring Bushing and O-Ring (Qty. 2) |
| 17   | Diaphragm                                |
| 18   | Diaphragm Cover                          |
| 19   | Diaphragm Cover Cap Screws (Qty. 8)      |
| 20   | Latch Shaft                              |

\* Item 5 (Seal Washer) is not used in 1½-inch/48.3-mm and 2-inch/60.3-mm valve sizes.

## AIR SUPPLY REQUIREMENTS

The required air pressure for Series 769N FireLock NXT Deluge Valves with dry pilot trim is 13 psi/90 kPa/0.9 Bar minimum, regardless of the system supply water pressure. Normal air pressure should not exceed 20 psi/138 kPa/1.4 Bar. Failure to maintain air pressure within the 13 psi/90 kPa/0.9 Bar to 18 psi/124 kPa/1.2 Bar range may delay system operation response time.

**FOR Vds APPROVED VALVES ONLY:** The minimum air pressure for Series 769N FireLock NXT Deluge Valves installed with dry pilot trim shall be 16 psi/110 kPa/1.1 Bar. The maximum air pressure shall be 19 psi/130 kPa/1.3 Bar.

If multiple Series 769N FireLock NXT Deluge Valves with dry pilot trim are installed with a common air supply, isolate the systems with a spring-loaded, soft-seated ball check valve to ensure air integrity for each system. Good practice is to include a ball valve for isolation and service of each individual system.

The engineer/system designer is responsible for sizing the compressor so that the entire system is charged to the required air pressure within 30 minutes. DO NOT oversize the compressor to provide more airflow. An oversized compressor will slow down or possibly prevent valve operation.

If the compressor fills the system too fast, it may be necessary to restrict the air supply. Restricting the air supply will ensure that air being exhausted from an open sprinkler or manual release valve is not replaced by the air supply system as fast as it is being exhausted.

## BASE- OR RISER-MOUNTED AIR COMPRESSORS

For base- or riser-mounted air compressors, the recommended air pressure of 13 psi/90 kPa/0.9 Bar is the “on” or “low” pressure setting for the compressor. The “off” or “high” pressure setting should be 18 psi/124 kPa/1.2 Bar.

When a base- or riser-mounted air compressor supplies air to a Series 769N FireLock NXT Deluge Valve with dry pilot trim, it is not necessary to install the Victaulic Series 757 Regulated Air Maintenance Trim Assembly (AMTA). In this case, the air line of the compressor connects to the trim at the fitting where the Series 757 Regulated AMTA is installed normally (refer to the applicable trim drawing). If the compressor is not equipped with a pressure switch, the Series 757P Air Maintenance Trim Assembly with Pressure Switch should be installed.

### NOTICE

- Victaulic recommends a maximum of two Series 769N FireLock NXT Deluge Valves with dry pilot trim per Series 757 Regulated AMTA or Series 757P AMTA with Pressure Switch.

## SHOP AIR OR TANK-MOUNTED AIR COMPRESSORS

In the event a compressor becomes inoperative, a properly sized tank-mounted air compressor provides the greatest protection for systems.

When shop air or a tank-mounted air compressor is used, the Series 757 Regulated AMTA shall be installed. The Series 757 Regulated AMTA provides proper air regulation from the air reservoir to the sprinkler system.

For tank-mounted air compressors, the recommended air pressure of 13 psi/90 kPa/0.9 Bar should be used as the set point for the air regulator. The “on” pressure of the compressor should be at least 5 psi/34 kPa/0.3 Bar above the set point of the air regulator.

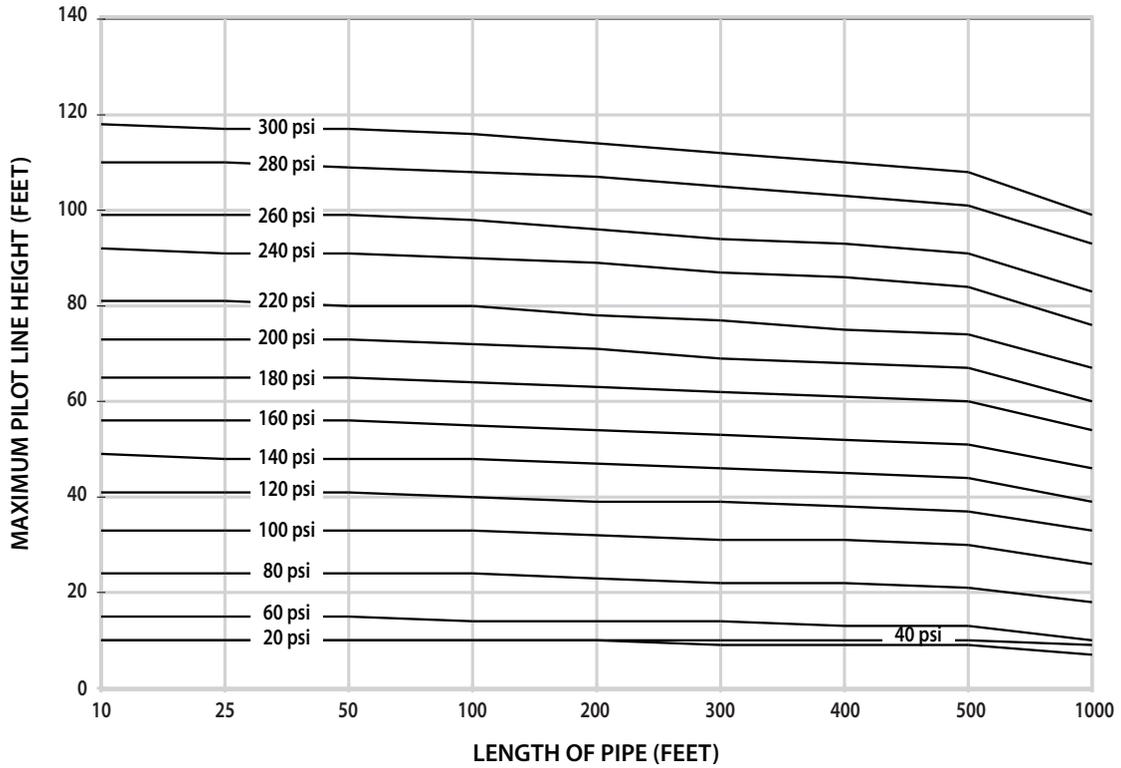
## SETTINGS FOR AIR SUPERVISORY PRESSURE SWITCHES AND ALARM PRESSURE SWITCHES

1. Air supervisory pressure switches are required for dry pilot systems and shall be set according to the following notes. **NOTE:** Switches for VQR assemblies are pre-set at the factory.
  - 1a. Wire the air supervisory pressure switches to activate a low-pressure alarm signal. **NOTE:** In addition, the local authority having jurisdiction may require a high-pressure alarm. Contact the local authority having jurisdiction for this requirement.
  - 1b. Set the air supervisory pressure switches to activate at 2 – 4 psi/14 – 28 kPa/0.1 – 0.3 Bar below the minimum air pressure required (but not lower than 10 psi/69 kPa/0.7 Bar).
  - 1c. Wire the alarm pressure switch to activate a water flow alarm.
  - 1d. Set the alarm pressure switch to activate on a pressure rise of 4 – 8 psi/28 – 55 kPa/0.3 – 0.6 Bar.

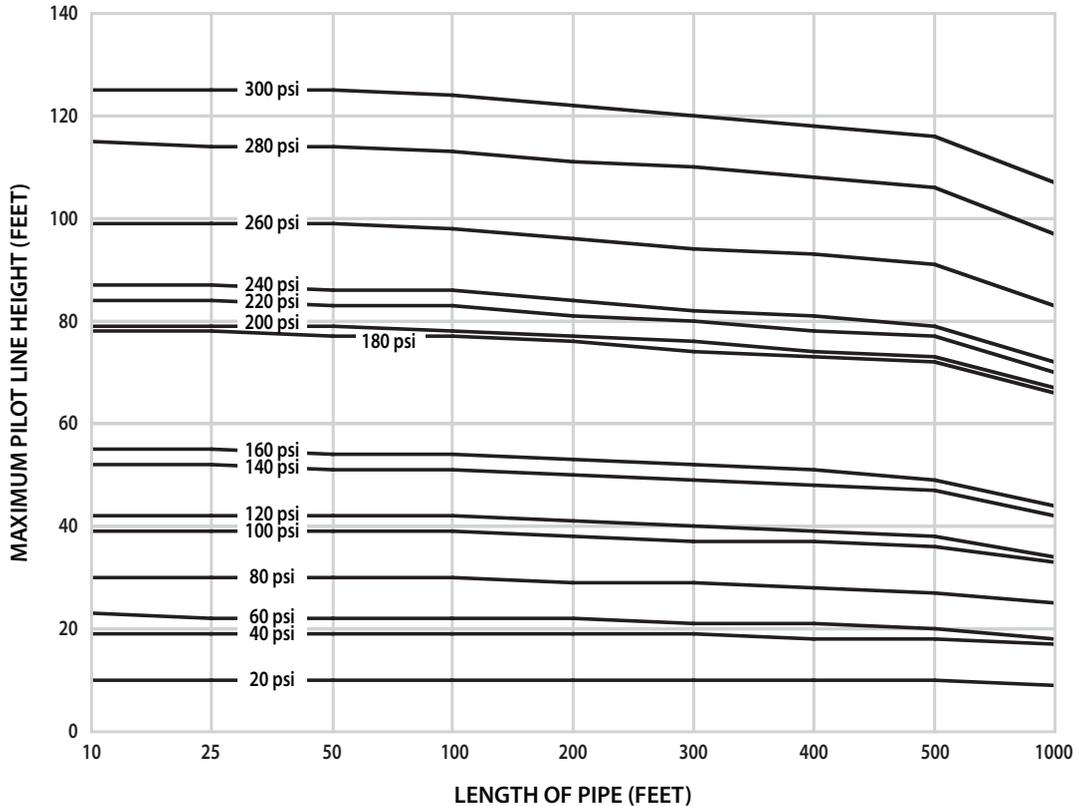
### WET PILOT LINE CHARTS

Maximum allowable wet pilot line heights for specific equivalent lengths (heights are based on ½-inch/21.3-mm Schedule 40 pipe and a ½-inch/21.3-mm sprinkler)

1½ – 2-inch/48.3 – 60.3-mm Valve Sizes



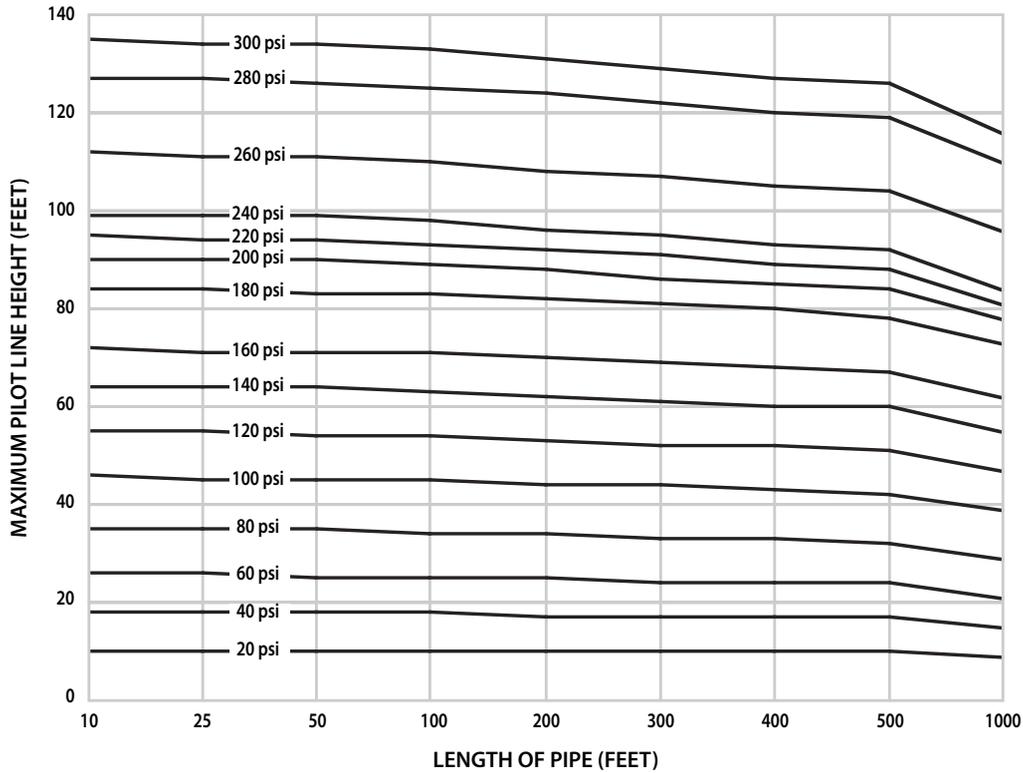
2½ – 3-inch/73.0 – 88.9-mm Valve Sizes (Includes 76.1 mm)



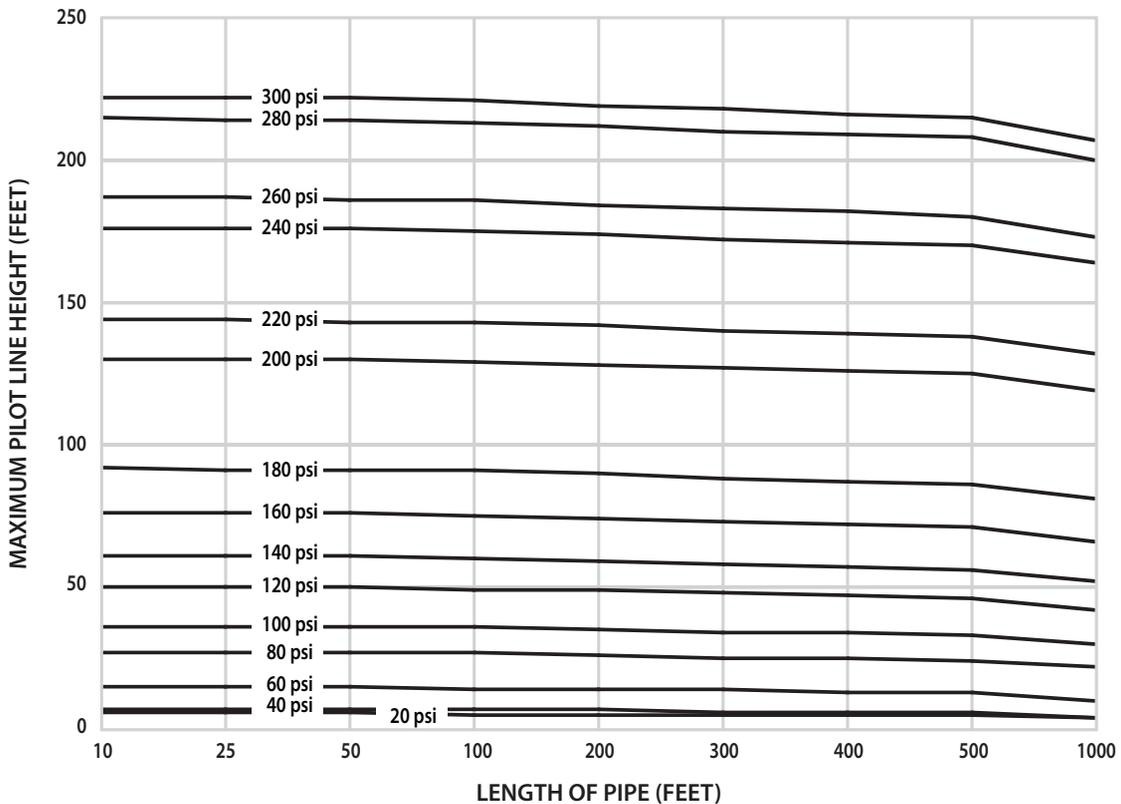
### WET PILOT LINE CHARTS

Maximum allowable wet pilot line heights for specific equivalent lengths (heights are based on ½-inch/21.3-mm Schedule 40 pipe and a ½-inch/21.3-mm sprinkler)

4-inch/114.3-mm Valve Size

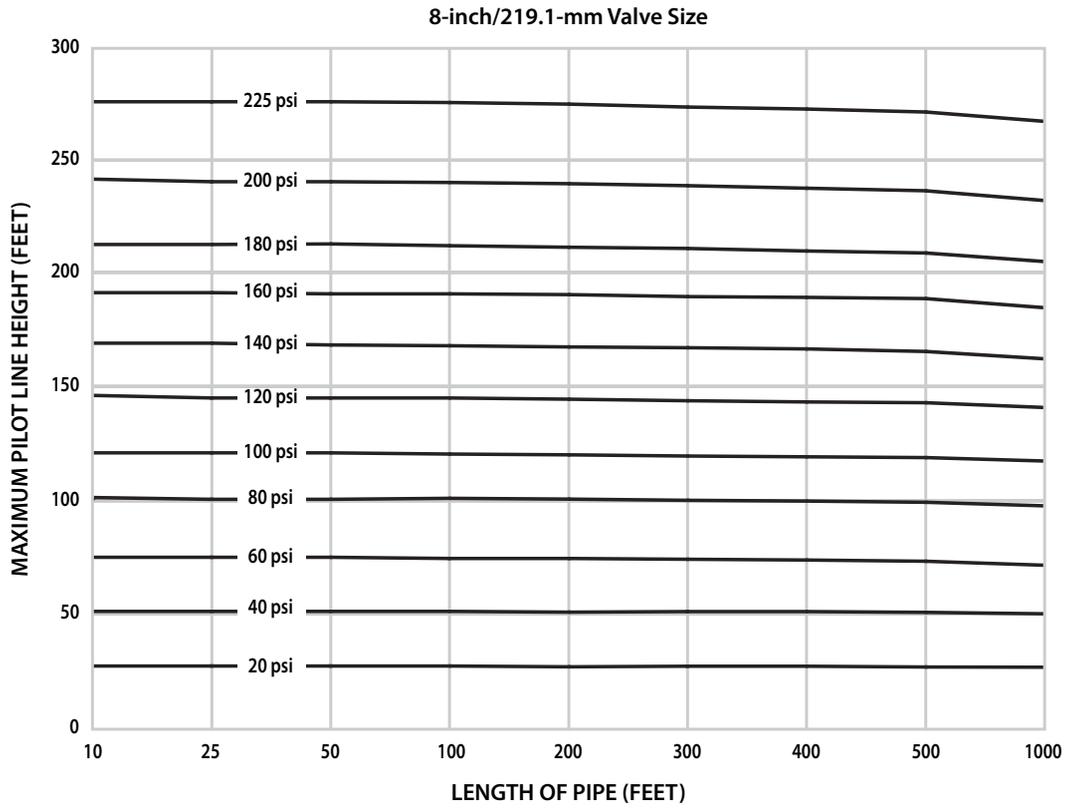


6-inch/168.3-mm Valve Size (Includes 165.1 mm)



### WET PILOT LINE CHARTS

Maximum allowable wet pilot line heights for specific equivalent lengths (heights are based on ½-inch/21.3-mm Schedule 40 pipe and a ½-inch/21.3-mm sprinkler)



# SECTION I

- Initial System Setup

**INITIAL SYSTEM SETUP**

**NOTICE**

Before proceeding with initial system setup, verify that the following steps have been completed:

- **FOR HYDRAULIC (WET PILOT) RELEASE SYSTEMS:** Verify that the wet pilot line is piped to the location indicated on the trim drawing.
- **FOR PNEUMATIC (DRY PILOT) RELEASE SYSTEMS:** Verify that the dry pilot piping is connected to the air manifold, as indicated on the trim drawing.
- **FOR ELECTRIC RELEASE SYSTEMS:** Verify that an approved control panel is installed for proper system operation.

**Step 1:**

Confirm that all system drains are shut and that the system is free of leaks.

**Step 2:**

Confirm that the system has been depressurized. The gauges should indicate zero pressure.

**Step 3:**

Confirm that the alarm test ball valve is closed.

**Step 4:**

For hydraulic (wet pilot) release trim and electric release trim, open the charge line ball valve. Allow water to flow through the auto drain tube. Proceed to step 6 for hydraulic (wet pilot) release trim, step E5a for electric release trim, or step P5a for pneumatic (dry pilot) release trim.

**FOR PNEUMATIC (DRY PILOT) RELEASE SYSTEMS:**

**Step P5a:** Charge the dry pilot release system with air by turning on the compressor or by opening the fast-fill ball valve on the AMTA. Charge the dry pilot release system to 13psi/90kPa/0.9Bar minimum. Refer to the “Air Supply Requirements” section.

**Step P5b:** When the system reaches approximately 10psi/69 kPa/ 0.7Bar, and no additional moisture is being released from the Auto Vent, pull up on the Auto Vent Sleeve of the Series 776 Low-Pressure Actuator. **NOTE:** The Auto Vent Screw should seal and remain in the set (“UP”) position.

**Step P5c:** When system air pressure is established, close the fast-fill ball valve on the AMTA.

**Step P5d:** Open the slow-fill ball valve on the AMTA. **NOTE:** Failure to leave the slow-fill ball valve open may allow system pressure to drop, resulting in valve operation in the event of a system leak.

**Step P5e:** Open the charge line ball valve. Allow water to flow through the auto drain tube.

**Step P5f:** Pull up on the auto drain sleeve.

**FOR ELECTRIC RELEASE SYSTEMS:**

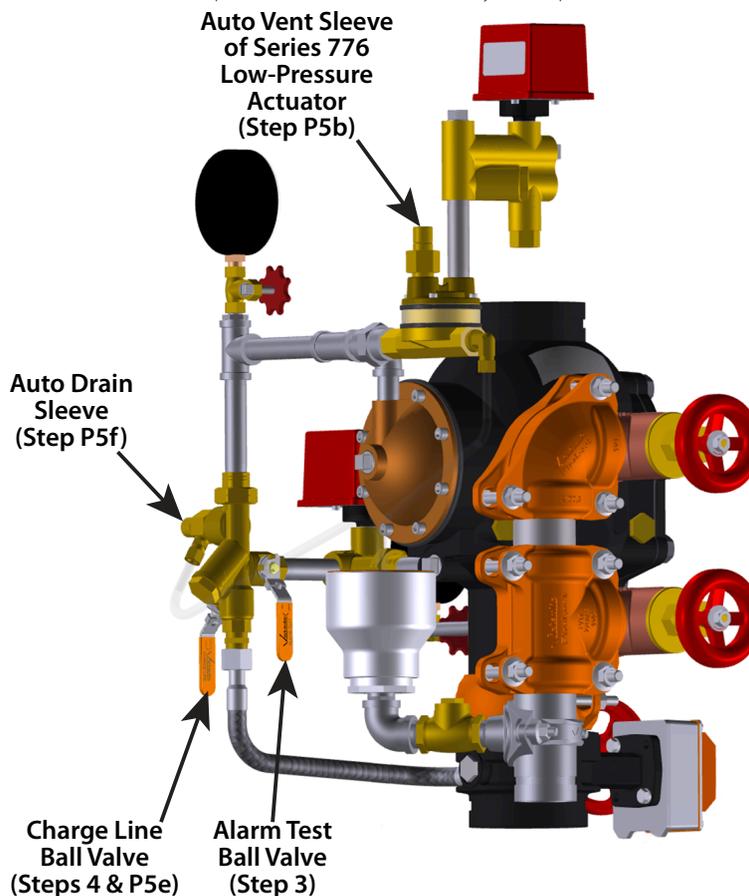
**Step E5a:** Confirm that the solenoid valve is closed (de-energized).

**Step E5b:** Confirm that water is not flowing through the solenoid valve.

**Step 6:**

Open the manual pull station valve to bleed off any air that is present, then close the manual pull station valve. Verify that the charge line pressure is equal to the supply pressure, and verify that the auto drain is set by pulling up on the auto drain sleeve.

Pneumatic (Dry Pilot) Release Trim Shown  
(Manual pull station not shown for clarity of components)



**INITIAL SYSTEM SETUP (CONTINUED)**

**Step 7:**

Open the water supply main drain valve.

**Step 8:**

Open the water supply main control valve slowly until water flows steadily from the open water supply main drain valve.

**Step 9:**

Close the water supply main drain valve when a steady flow of water occurs.

**Step 10:**

Open the water supply main control valve fully.

**Step 11:**

Confirm that all valves are in their normal operating positions (refer to the table to the right).

**Step 12:**

Notify the authority having jurisdiction, remote station alarm monitors, and those in the affected area that the system is in service.

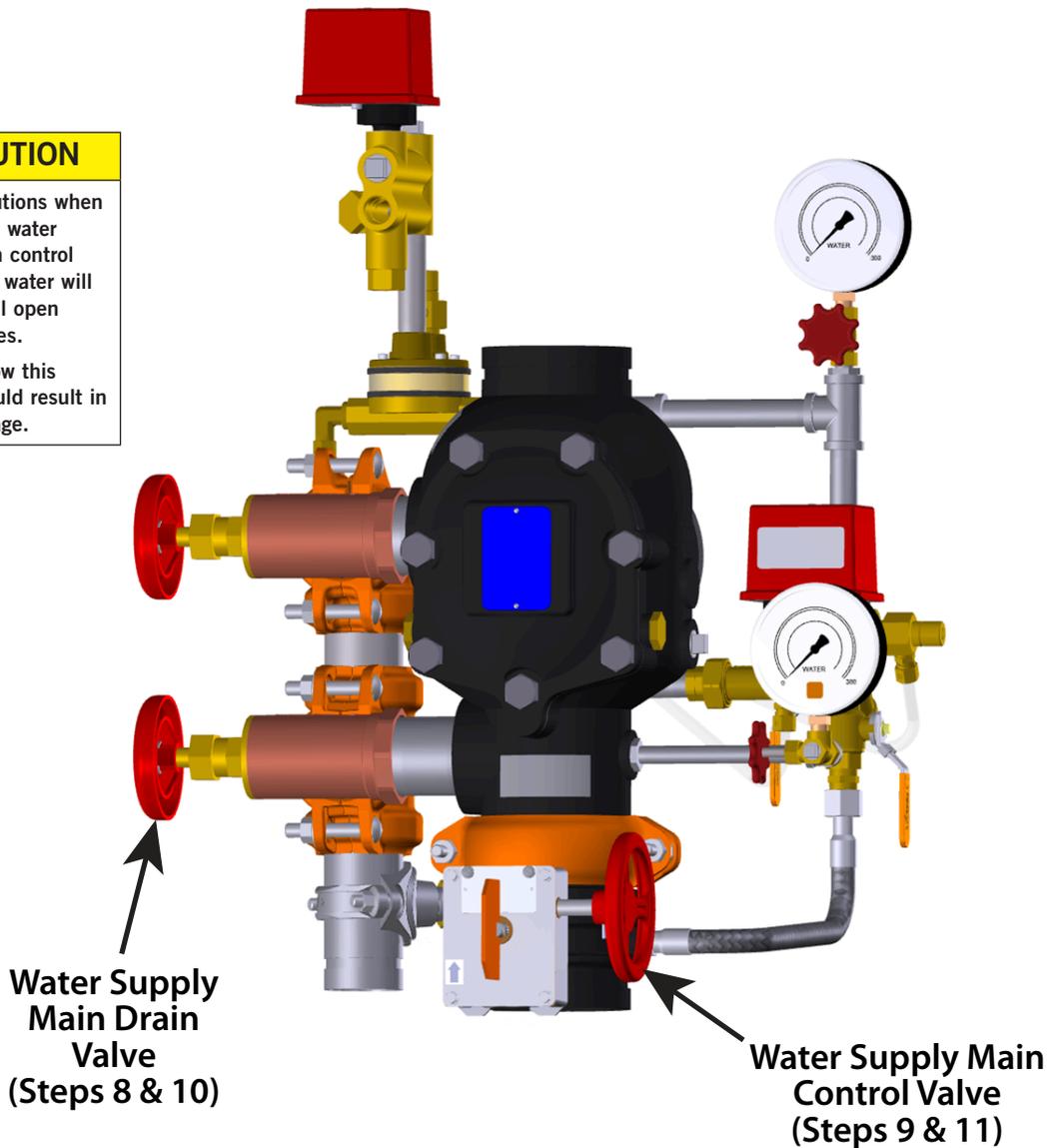
| Valve  | Normal Operating Position |
|--|---------------------------|
| Water Supply Main Control Valve                            | Open                      |
| Water Supply Main Drain Valve                              | Closed                    |
| System Main Drain Valve                                    | Closed                    |
| Charge Line Ball Valve of the Priming Manifold Assembly    | Open                      |
| Alarm Test Ball Valve of the Priming Manifold Assembly     | Closed                    |
| Slow-Fill Ball Valve of the Victaulic AMTA (if applicable) | Open                      |
| Fast-Fill Ball Valve of the Victaulic AMTA (if applicable) | Closed                    |

Pneumatic (Dry Pilot) Release Trim Shown  
(Manual pull station not shown for clarity of components)

**CAUTION**

- Take precautions when opening the water supply main control valve, since water will flow from all open system valves.

Failure to follow this instruction could result in property damage.



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# SECTION II

- **Resetting the System**

## RESETTING THE SYSTEM

### NOTICE

- Prior to resetting the system, the cover plate shall be removed to verify that the clapper is resting on the seat in the closed position. Failure to do so may result in damage to the diaphragm during the reset procedure.
- As a practical alternative to removing the cover plate, an additional control valve can be added to the system above the deluge valve. This will allow for full trip tests to be conducted while preventing water from entering the system.

#### Step 1:

Isolate the charge line ball valve by placing it in the closed position.

#### Step 2:

Close the water supply main control valve.

**Step 2a:** Isolate the air supply to the system.

#### Step 3:

Open the system main drain valve. Confirm that the system is drained.

**Step 3a:** Push in the ball drip plunger to release pressure.

**Step 3b:** The cover plate shall be removed to verify that the clapper is resting on the seat in the closed position. Failure to do so may result in damage to the diaphragm during the reset procedure. Refer to Section V.

#### Step 4:

Close the system main drain valve.

#### Step 5:

Confirm that all system drains are shut and that the system is free from leaks.

#### Step 6:

Confirm that the system has been depressurized. The gauges should indicate zero pressure.

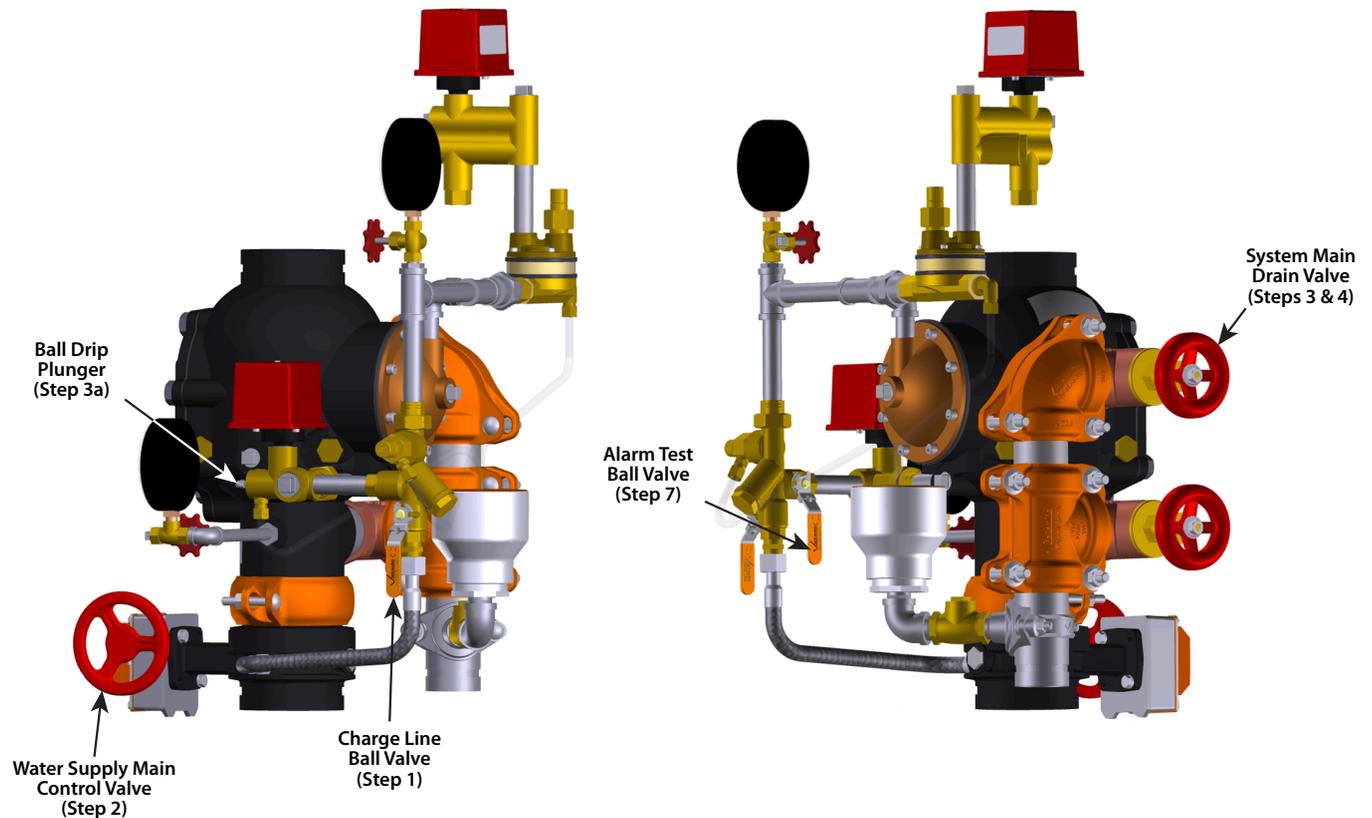
#### Step 7:

Confirm that the alarm test ball valve is closed.

#### Step 8:

Follow steps 4 - 12 of the “Initial System Setup” section.

Pneumatic (Dry Pilot) Release Trim Shown  
(Manual pull station not shown for clarity of components)



# SECTION III

- **Inspection/Testing Requirements**

 **WARNING**

- The building owner or their representative is responsible for maintaining the fire protection system in proper operating condition.
- To ensure proper system operation, refer to NFPA 25, FM Datasheets, or any applicable local requirements for valve inspection requirements. The authority having jurisdiction in the area may require these inspections on a more frequent basis. Verify these requirements by contacting the authority having jurisdiction in the affected area, and always refer to the instructions in this manual for additional inspection and testing requirements.
- The frequency of inspections shall be increased in the presence of contaminated water supplies, corrosive/scaling water supplies, and corrosive atmospheres.

Failure to follow these instructions could cause system failure, resulting in death or serious personal injury and property damage.

## DAILY/WEEKLY INSPECTION

Refer to NFPA 25, FM Datasheets, or any applicable local requirements to perform daily/weekly inspections. The authority having jurisdiction in the area may require these inspections on a more frequent basis. Verify these requirements by contacting the authority having jurisdiction in the affected area.

1. During cold weather conditions, verify on a daily basis that the enclosure temperature is maintained above 40° F/4° C.
2. Inspect the valve and trim for mechanical damage and corrosion. Replace any damaged or corroded parts.

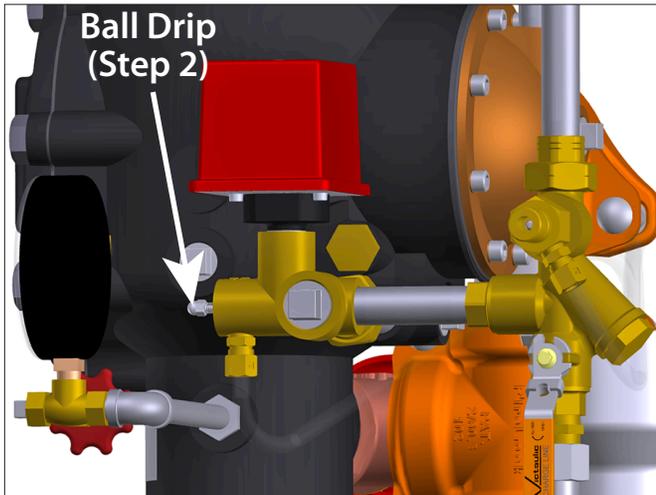
### NOTICE

- If the deluge system is equipped with a low-pressure alarm, monthly inspections may be sufficient. Contact the local authority having jurisdiction for specific requirements.

## MONTHLY INSPECTION

Refer to NFPA 25, FM Datasheets, or any applicable local requirements to perform monthly inspections. The authority having jurisdiction in the area may require these inspections on a more frequent basis. Verify these requirements by contacting the authority having jurisdiction in the affected area.

1. Record the system air pressure and water supply pressure. Confirm that the water supply pressure is within the range of normal pressures observed in the area. Significant loss of water supply pressure could indicate an adverse condition in the water supply. Any variations outside of the normal pressures shall be investigated.



2. Confirm that there is no leakage from the intermediate valve chamber. The ball drip on the alarm manifold assembly should not be leaking water or air.
3. Inspect the valve and trim for mechanical damage and corrosion. Replace any damaged or corroded parts.

4. Confirm that all valves are in their normal operating positions (refer to the table below).

| Valve  | Normal Operating Position |
|--|---------------------------|
| Water Supply Main Control Valve                            | Open                      |
| Water Supply Main Drain Valve                              | Closed                    |
| System Main Drain Valve                                    | Closed                    |
| Charge Line Ball Valve of the Priming Manifold Assembly    | Open                      |
| Alarm Test Ball Valve of the Priming Manifold Assembly     | Closed                    |
| Slow-Fill Ball Valve of the Victaulic AMTA (if applicable) | Open                      |
| Fast-Fill Ball Valve of the Victaulic AMTA (if applicable) | Closed                    |

## QUARTERLY INSPECTION

Refer to NFPA 25, FM Datasheets, or any applicable local requirements to perform quarterly inspections. The authority having jurisdiction in the area may require these inspections on a more frequent basis. Verify these requirements by contacting the authority having jurisdiction in the affected area.

1. Perform the required water level (NFPA 25 priming water level) and low air alarm tests, in accordance with Section IV of this manual. If a high water level condition is noted during two consecutive quarterly tests, increase the frequency of the required water level test to monthly.

## ANNUAL INSPECTION

Refer to NFPA 25, FM Datasheets, or any applicable local requirements to perform annual inspections. The authority having jurisdiction in the area may require these inspections on a more frequent basis. Verify these requirements by contacting the authority having jurisdiction in the affected area.

1. Perform the required partial operational trip test in accordance with Section IV of this manual.
2. Perform an internal inspection of the deluge valve in accordance with Section V of this manual.

## 3-YEAR INSPECTION

Refer to NFPA 25, FM Datasheets, or any applicable local requirements to perform 3-year inspections. The authority having jurisdiction in the area may require these inspections on a more frequent basis. Verify these requirements by contacting the authority having jurisdiction in the affected area.

1. Perform the required full operational trip test in accordance with Section IV of this manual.

## 5-YEAR INSPECTION

Refer to NFPA 25, FM Datasheets, or any applicable local requirements to perform 5-year inspections. The authority having jurisdiction in the area may require these inspections on a more frequent basis. Verify these requirements by contacting the authority having jurisdiction in the affected area.

1. Inspect all strainers, filters, restricted orifices, and diaphragm chambers. Replace any affected components.

# SECTION IV

- **Required Main Drain Test**
- **Required Water Flow Alarm Test**
- **Required Water Level and Low-Air Alarm Tests**
- **Required Partial Operational Trip Test**
- **Required Full Operational Trip Test**

## WARNING

- The building owner or their representative is responsible for maintaining the fire protection system in proper operating condition.
- To ensure proper system operation, refer to NFPA 25, FM Datasheets, or any applicable local requirements for valve inspection requirements. The authority having jurisdiction in the area may require these inspections on a more frequent basis. Verify these requirements by contacting the authority having jurisdiction in the affected area, and always refer to the instructions in this manual for additional inspection and testing requirements.
- The frequency of inspections shall be increased in the presence of contaminated water supplies, corrosive/scaling water supplies, and corrosive atmospheres.
- Any activities that require taking the valve out of service may eliminate the fire protection provided. A fire patrol is strongly recommended for the affected areas.
- Before servicing or testing the system, notify the authority having jurisdiction.

Failure to follow these instructions could cause system failure, resulting in death or serious personal injury and property damage.

## NOTICE

- When the valve is reset after an operational test (or after any system operation), the main drain valve and any low-point drain valves should be partially opened and then closed to drain water that might be present in the riser. Continue this procedure until all water is released.
- The optional Series 75D Water Column Kit can be installed to automate this step.

## REQUIRED MAIN DRAIN TEST

Refer to NFPA 25, FM Datasheets, or any applicable local requirements to perform main drain tests. The authority having jurisdiction in the area may require these inspections on a more frequent basis. Verify these requirements by contacting the authority having jurisdiction in the affected area.

1. Notify the authority having jurisdiction, remote station alarm monitors, and those in the affected area that the main drain test will be performed.
2. Confirm that sufficient drainage is available.
3. Record the water supply pressure and system air pressure.
4. Confirm that there is no leakage from the intermediate valve chamber. The ball drip on the alarm manifold assembly should not be leaking water or air.

### FOR PNEUMATIC (DRY PILOT) RELEASE SYSTEMS:

Verify that the system is at the proper air pressure for the local water supply pressure.

### **CAUTION**

- Use caution to prevent opening the system main drain valve accidentally.
- Opening the system main drain valve will cause the valve to operate.

Failure to pipe the system main drain valve to a proper wastewater drain will result in property damage.

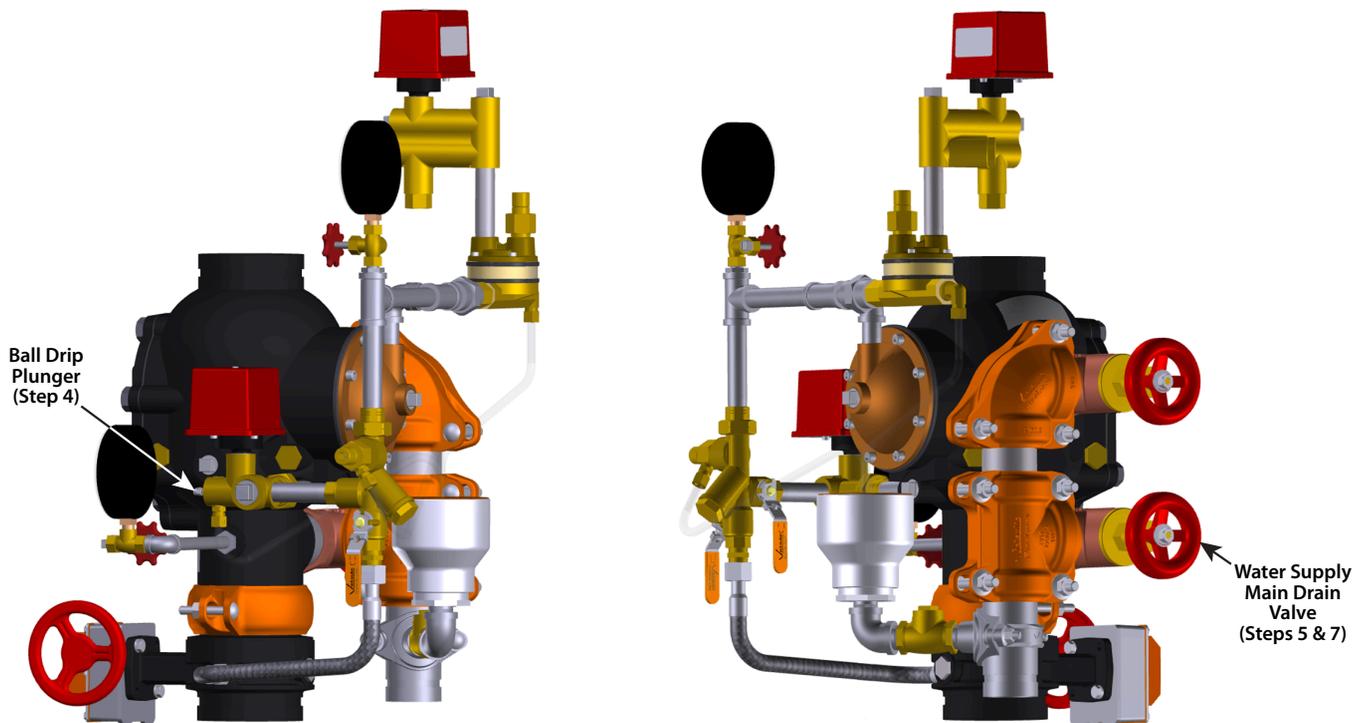
5. Open the water supply main drain valve fully to flush the water supply of any contaminants.
6. While the water supply main drain valve is fully open, record the water supply pressure (from the water supply gauge) as the residual pressure.

7. Close the water supply main drain valve slowly.
8. Record the water pressure established after closing the water supply main drain valve.
9. Compare the residual pressure reading to the residual pressure readings taken in previous main drain tests. If there is degradation in the residual water supply reading, restore the proper water supply pressure.
10. Confirm that all valves are in their normal operating positions (refer to the table below).

| Valve  | Normal Operating Position |
|--|---------------------------|
| Water Supply Main Control Valve                            | Open                      |
| Water Supply Main Drain Valve                              | Closed                    |
| System Main Drain Valve                                    | Closed                    |
| Charge Line Ball Valve of the Priming Manifold Assembly    | Open                      |
| Alarm Test Ball Valve of the Priming Manifold Assembly     | Closed                    |
| Slow-Fill Ball Valve of the Victaulic AMTA (if applicable) | Open                      |
| Fast-Fill Ball Valve of the Victaulic AMTA (if applicable) | Closed                    |

11. Confirm that there is no leakage from the intermediate valve chamber. The ball drip on the alarm manifold assembly should not be leaking water or air.
12. Notify the authority having jurisdiction, remote station alarm monitors, and those in the affected area that the valve is back in service. Provide test results to the authority having jurisdiction, if required.

Pneumatic (Dry Pilot) Release Trim Shown  
(Manual pull station not shown for clarity of components)



## REQUIRED WATER FLOW ALARM TEST

Refer to NFPA 25, FM Datasheets, or any applicable local requirements to perform water flow alarm tests. The authority having jurisdiction in the area may require these inspections on a more frequent basis. Verify these requirements by contacting the authority having jurisdiction in the affected area.

1. Notify the authority having jurisdiction, remote station alarm monitors, and those in the affected area that the water flow alarm test will be performed.

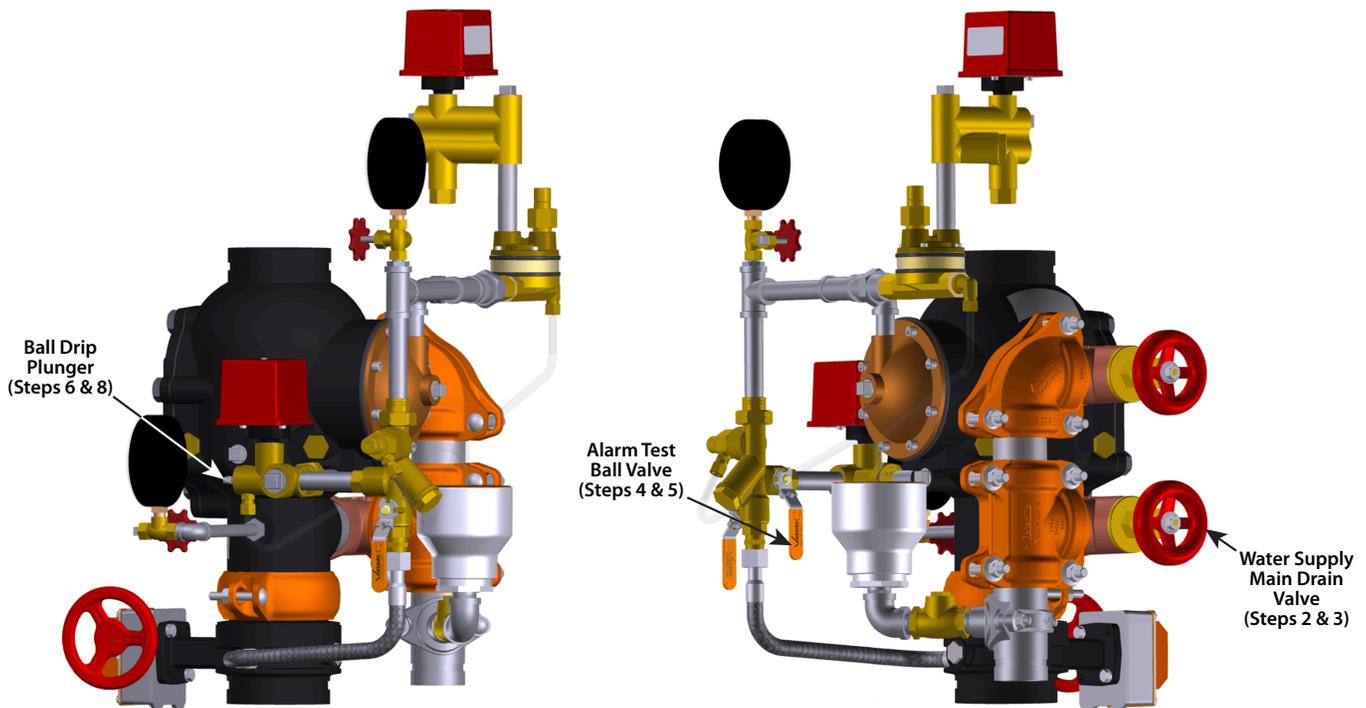
### **CAUTION**

- Use caution to prevent opening the system main drain valve accidentally.
- Opening the system main drain valve will cause the valve to operate.

Failure to pipe the system main drain valve to a proper wastewater drain will result in property damage.

2. Open the water supply main drain valve fully to flush the water supply of any contaminants.
3. Close the water supply main drain valve.
4. Open the alarm test ball valve. Confirm that mechanical and electrical alarms are activated and that remote monitoring stations, if provided, receive an alarm signal.
5. Close the alarm test ball valve after verifying proper operation of all alarms.
6. Push in the ball drip plunger on the alarm manifold assembly to verify that there is no pressure in the alarm line.
7. Verify that all alarms stopped sounding, that the alarm line drained properly, and that remote station alarms reset properly.
8. Confirm that the ball drip on the alarm manifold assembly is not leaking water or air.
9. Notify the authority having jurisdiction, remote station alarm monitors, and those in the affected area that the valve is back in service. Provide test results to the authority having jurisdiction, if required.

Pneumatic (Dry Pilot) Release Trim Shown  
(Manual pull station not shown for clarity of components)



## REQUIRED WATER LEVEL AND LOW AIR ALARM TESTS

Refer to NFPA 25, FM Datasheets, or any applicable local requirements to perform water level and low air alarm tests. The authority having jurisdiction in the area may require these inspections on a more frequent basis. Verify these requirements by contacting the authority having jurisdiction in the affected area.

1. Notify the authority having jurisdiction, remote station alarm monitors, and those in the affected area that the water level and low air alarm tests will be performed.
2. Open the water supply main drain valve fully to flush the water supply of any contaminants.
3. Close the water supply main drain valve.
4. Close the water supply main control valve.
5. Partially open the system main drain valve slowly. Confirm that water is not flowing from the drain. **NOTE:** If water is flowing from the drain, the system may not have drained properly. In this case, follow all steps in the “Resetting the System” section.

### FOR PNEUMATIC (DRY PILOT) RELEASE SYSTEMS:

Record the system air pressure at which the low air alarm activates.

6. Close the system main drain valve.

### FOR PNEUMATIC (DRY PILOT) RELEASE SYSTEMS:

Close the slow-fill ball valve on the AMTA.

Open the fast-fill ball valve on the AMTA. Bring the pressure back up to the normal system pressure.

When the normal system air pressure is reached, close the fast-fill ball valve on the AMTA.

Open the slow-fill ball valve on the AMTA.

7. Open the water supply main drain valve.

## ⚠ CAUTION

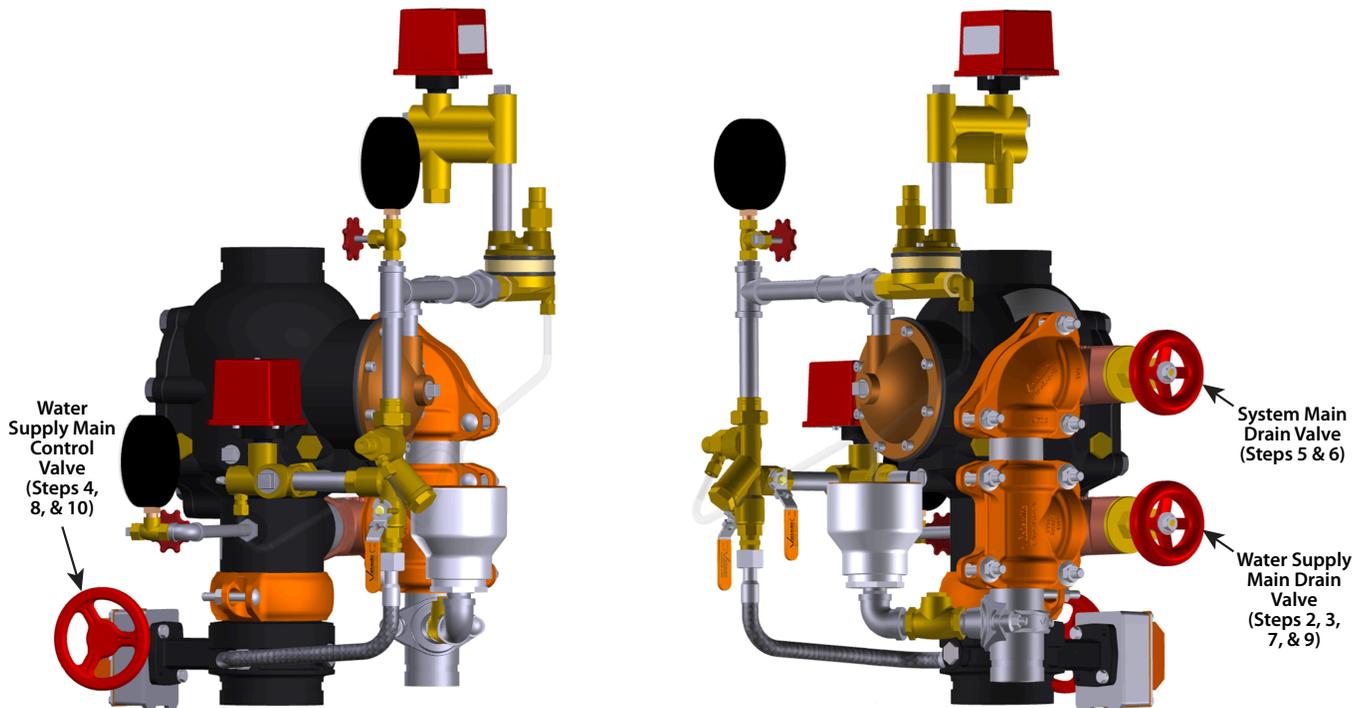
- Take precautions when opening the water supply main control valve, since water will flow from all open system valves. Failure to follow this instruction could result in property damage.

8. Open the water supply main control valve slowly until water flows steadily from the open water supply main drain valve.
9. Close the water supply main drain valve when a steady flow of water occurs.
10. Open the water supply main control valve fully.
11. Confirm that all valves are in their normal operating positions (refer to the table below).

| Valve  | Normal Operating Position |
|--|---------------------------|
| Water Supply Main Control Valve                            | Open                      |
| Water Supply Main Drain Valve                              | Closed                    |
| System Main Drain Valve                                    | Closed                    |
| Charge Line Ball Valve of the Priming Manifold Assembly    | Open                      |
| Alarm Test Ball Valve of the Priming Manifold Assembly     | Closed                    |
| Slow-Fill Ball Valve of the Victaulic AMTA (if applicable) | Open                      |
| Fast-Fill Ball Valve of the Victaulic AMTA (if applicable) | Closed                    |

12. Notify the authority having jurisdiction, remote station alarm monitors, and those in the affected area that the valve is back in service. Provide test results to the authority having jurisdiction, if required.

Pneumatic (Dry Pilot) Release Trim Shown  
(Manual pull station not shown for clarity of components)



## REQUIRED PARTIAL OPERATIONAL TRIP TEST

Partial operational (trip) tests are required to confirm proper valve operation; however, this test does not confirm full system operation. Victaulic recommends performing the partial operational (trip) test annually (at minimum). **NOTE:** The frequency of the partial operational (trip) test shall be increased in the presence of contaminated water supplies, corrosive/scaling water supplies, and corrosive atmospheres. In addition, the authority having jurisdiction in the area may require partial operational (trip) tests on a more frequent basis. Verify these requirements by contacting the authority having jurisdiction in the affected area.

1. Notify the authority having jurisdiction, remote station alarm monitors, and those in the affected area that the partial operational (trip) test will be performed.
2. Record the water supply pressure and system air pressure.
3. Open the water supply main drain valve fully to flush the water supply of any contaminants.
4. Close the water supply main control valve to the point where additional closure will not provide flow through the water supply main drain valve.
5. Open the water supply main control valve slowly until a small amount of water flows through the water supply main drain valve.
6. Close the water supply main drain valve.
7. **Trip the valve by doing one of the following:**
  - a. Open (energize) the solenoid valve
  - b. Relieve pressure from the pilot line
  - c. Open the manual pull station valve

8. Confirm that the charge line's pressure drops to zero and that water is flowing through the auto drain to the drip cup.
9. Close the water supply main control valve fully.
10. Close the remote system test valve (inspector's test connection) or the system main drain valve.

**FOR PNEUMATIC (DRY PILOT) RELEASE SYSTEMS:**  
Shut off the air supply.

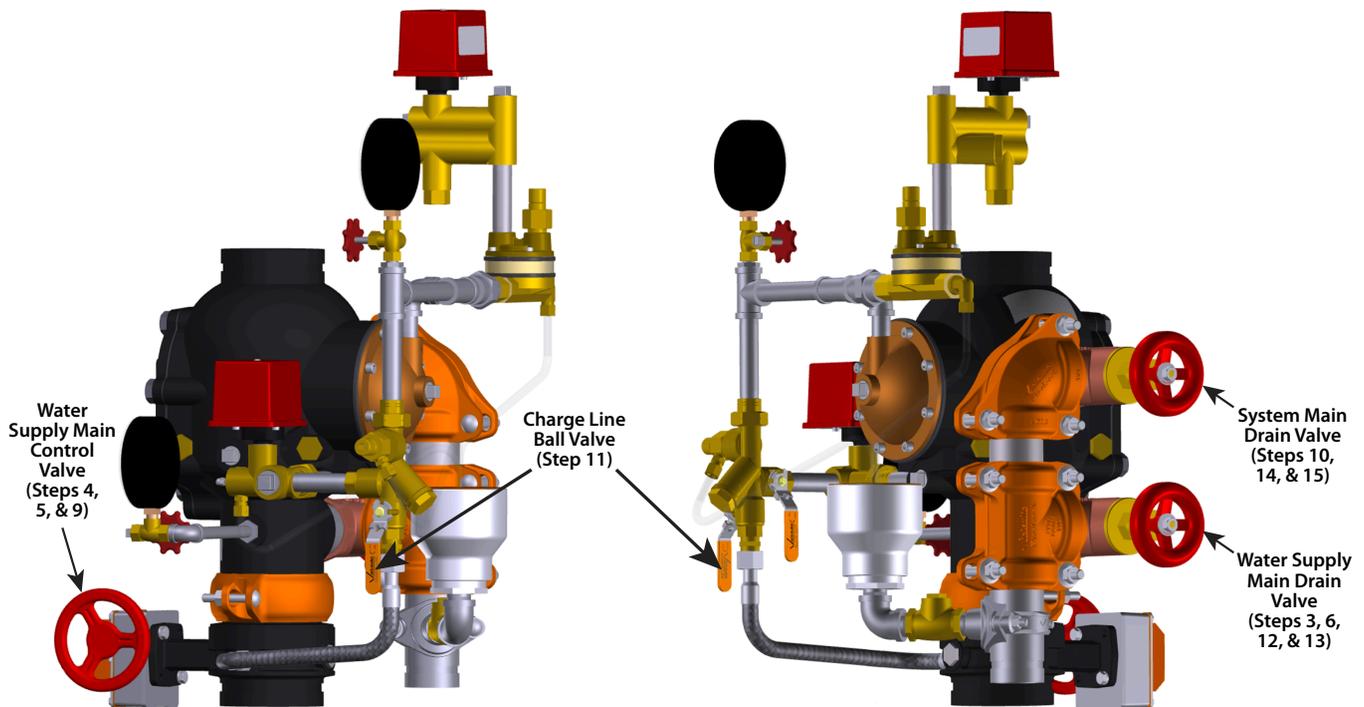
11. Close the charge line ball valve.

### NOTICE

- **Prior to resetting the system, the cover plate shall be removed to verify that the clapper is resting on the seat in the closed position. Failure to do so may result in damage to the diaphragm during the reset procedure.**
- **As a practical alternative to removing the cover plate, an additional control valve can be added to the system above the deluge valve. This will allow for full trip tests to be conducted while preventing water from entering the system.**

12. Open the water supply main drain valve.
13. Close the water supply main drain valve until water stops flowing.
14. Open the system main drain valve to drain the system.
15. After the system is drained completely, close the system main drain valve.
16. Perform all steps in the "Resetting the System" section.

Pneumatic (Dry Pilot) Release Trim Shown  
(Manual pull station not shown for clarity of components)

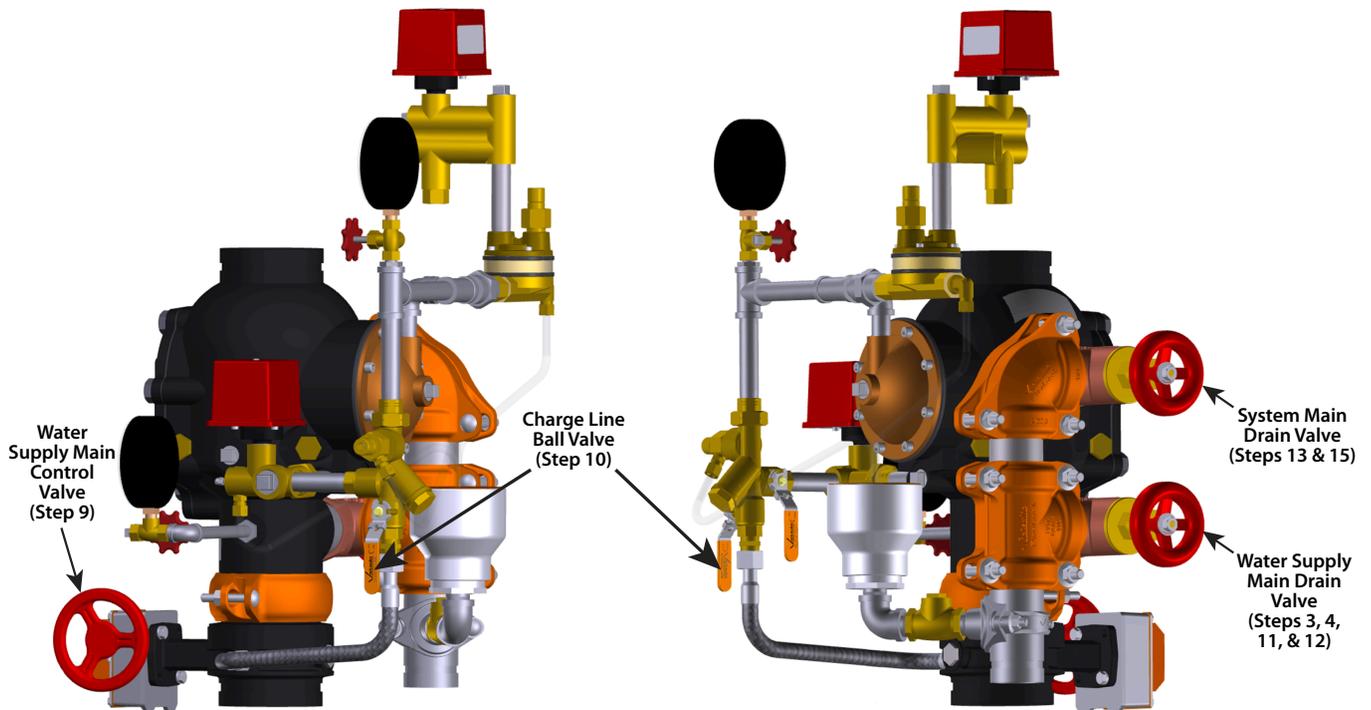


## REQUIRED FULL OPERATIONAL TRIP TEST

Victaulic recommends the full operational (trip) test every 3 years (at minimum). **NOTE:** The frequency of the full operational (trip) test shall be increased in the presence of contaminated water supplies, corrosive/scaling water supplies, and corrosive atmospheres. This test allows a full flow of water into the sprinkler system; therefore, this test shall be performed when there is no chance for freezing conditions. In addition, the authority having jurisdiction in the area may require full operational (trip) tests on a more frequent basis. Verify these requirements by contacting the authority having jurisdiction in the affected area.

1. Notify the authority having jurisdiction, remote station alarm monitors, and those in the affected area that the full operational (trip) test will be performed.
2. Record the water supply pressure and system air pressure.
3. Open the water supply main drain valve fully to flush the water supply of any contaminants.
4. Close the water supply main drain valve.
5. **Trip the valve by doing one of the following:**
  - a. Open (energize) the solenoid valve
  - b. Relieve pressure from the pilot line
  - c. Open the manual pull station valve
6. Record the following:
  - 6a. The time between opening the remote system test valve (inspector's test connection) and operation of the deluge valve
  - 6b. **FOR PNEUMATIC (DRY PILOT) RELEASE SYSTEMS:** System air pressure when the valve operated
  - 6c. The time between opening the remote system test valve (inspector's test connection) to when water flows from the test connection's outlet
  - 6d. All information required by the authority having jurisdiction
7. Confirm that all alarms operate properly.
8. Continue to run water until it is clear.
9. Close the water supply main control valve.
10. Close the charge line ball valve.
- FOR PNEUMATIC (DRY PILOT) RELEASE SYSTEMS:** Shut off the air supply.
11. Open the water supply main drain valve.
12. Close the water supply main drain valve until water stops flowing.
13. Open the system main drain valve to drain the system.
14. After the system is drained completely, close the remote system test valve (inspector's test connection).
15. Close the system main drain valve.
16. Perform all steps in the "Resetting the System" section.

Pneumatic (Dry Pilot) Release Trim Shown  
(Manual pull station not shown for clarity of components)



# SECTION V

- **Required Internal Inspection**

|  <b>WARNING</b>   |  |
|--|--|
|    |  |
| <ul style="list-style-type: none"><li>• Depressurize and drain the piping system before attempting to remove the cover plate from the valve.</li><li>• The building owner or their representative is responsible for maintaining the fire protection system in proper operating condition.</li><li>• To ensure proper system operation, refer to NFPA 25, FM Datasheets, or any applicable local requirements for valve inspection requirements. The authority having jurisdiction in the area may require these inspections on a more frequent basis. Verify these requirements by contacting the authority having jurisdiction in the affected area, and always refer to the instructions in this manual for additional inspection and testing requirements.</li><li>• The frequency of inspections shall be increased in the presence of contaminated water supplies, corrosive/scaling water supplies, and corrosive atmospheres.</li><li>• Any activities that require taking the valve out of service may eliminate the fire protection provided. A fire patrol is strongly recommended for the affected areas.</li><li>• Before servicing or testing the system, notify the authority having jurisdiction.</li></ul> <p>Failure to follow these instructions could cause system failure, resulting in death or serious personal injury and property damage.</p> |  |

## REQUIRED INTERNAL INSPECTION

Refer to NFPA 25, FM Datasheets, or any applicable local requirements to perform internal inspections. The authority having jurisdiction in the area may require these inspections on a more frequent basis. Verify these requirements by contacting the authority having jurisdiction in the affected area.

1. Notify the authority having jurisdiction, remote station alarm monitors, and those in the affected area that the system is being taken out of service.
2. Open the water supply main drain valve fully to flush the water supply of any contaminants.
3. Close the water supply main drain valve.
4. Close the water supply main control valve to take the system out of service.
5. Open the water supply main drain valve.
6. Confirm that water is not flowing from the water supply main drain valve.
7. Close the charge line ball valve.
8. Open the system main drain valve to drain any water that has accumulated and to release system air pressure.  
**NOTE:** If the system has operated, open the remote system test valve (inspector's test connection) and any auxiliary drain valves.  
**FOR PNEUMATIC (DRY PILOT RELEASE) SYSTEMS:** Close the slow-fill ball valve on the AMTA.
9. Open the manual pull station valve.
10. **PUSH DOWN ON THE AUTO DRAIN SCREW TO REMOVE PRESSURE IN THE CHARGE LINE. VERIFY THAT THERE IS NO PRESSURE ON THE GAUGES.**

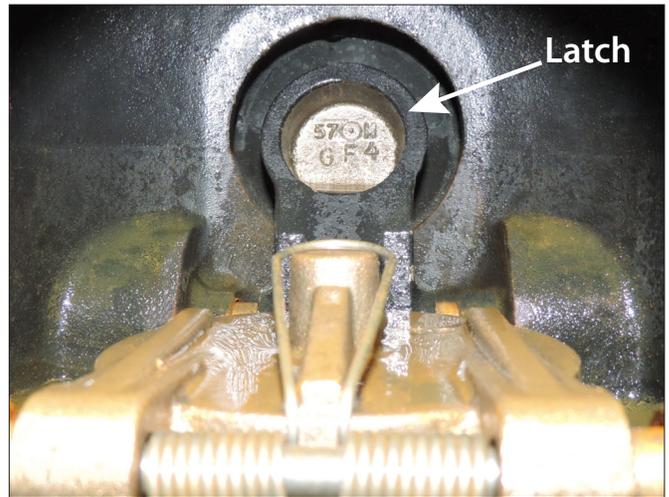
### WARNING

- Verify that the valve is depressurized and drained completely before the cover plate bolts are removed.

Failure to follow this instruction could result in death or serious personal injury and property damage.



11. After all pressure is released from the system, loosen the cover plate bolts slowly. **NOTE:** DO NOT remove any cover plate bolts until all cover plate bolts are loosened.
12. Remove all cover plate bolts, along with the cover plate and cover plate gasket. **NOTE:** The 1 ½-inch/48.3-mm and 2-inch/60.3-mm valve sizes contain washers under the heads of the cover plate bolts. Keep these washers for re-installation.



13. Push the latch back (toward the diaphragm).

### CAUTION

- DO NOT use solvents or abrasives on or near the valve body seat ring.

Failure to follow this instruction could prevent the clapper from sealing, resulting in valve leakage.



14. Rotate the clapper out of the valve body. Inspect the clapper seal and seal-retaining ring. Wipe away any contaminants, dirt, and mineral deposits. Clean out any holes that are plugged in the valve-body seat ring. **DO NOT USE SOLVENTS OR ABRASIVES.**
15. While the clapper is rotated out of the valve body, pull the latch forward to inspect the diaphragm. If the diaphragm shows any signs of wear or damage, replace it with a new, Victaulic-supplied diaphragm. Refer to the "Removing and Replacing the Diaphragm" section.
16. Inspect the clapper for freedom of movement and physical damage. Replace any damaged or worn parts by following the applicable instructions in Section VI.
17. Re-install the cover plate by following the "Installing the Cover Plate Gasket and Cover Plate" section.
18. Place the system back in service by following the "Resetting the System" section.

# SECTION VI

- Removing and Replacing the Clapper Seal
- Removing and Replacing the Clapper Assembly
- Installing the Cover Plate Gasket and Cover Plate
- Removing and Replacing the Diaphragm
- Cleaning the Cartridge in the Air and Priming Manifold Assemblies
- Replacing the Filter in Series 776 Low-Pressure Actuators (Dry Pilot Release Systems)

|  <b>WARNING</b>   |   |
|--|---|
|   |  |
| <ul style="list-style-type: none"><li>• Before servicing or testing the system, notify the authority having jurisdiction.</li><li>• Depressurize and drain the piping system before attempting to remove the cover plate from the valve.</li><li>• The building owner or their representative is responsible for maintaining the fire protection system in proper operating condition.</li><li>• To ensure proper system operation, refer to NFPA 25, FM Datasheets, or any applicable local requirements for valve inspection requirements. The authority having jurisdiction in the area may require these inspections on a more frequent basis. Verify these requirements by contacting the authority having jurisdiction in the affected area, and always refer to the instructions in this manual for additional inspection and testing requirements.</li><li>• The frequency of inspections shall be increased in the presence of contaminated water supplies, corrosive/scaling water supplies, and corrosive atmospheres.</li><li>• Any activities that require taking the valve out of service may eliminate the fire protection provided. A fire patrol is strongly recommended for the affected areas.</li></ul> <p>Failure to follow these instructions could cause system failure, resulting in death or serious personal injury and property damage.</p> |   |

## REMOVING AND REPLACING THE CLAPPER SEAL

1. Perform steps 1 – 13 of the “Required Internal Inspection” section.



2. Remove the seal assembly bolt/bolt seal from the clapper seal.



3. Remove the seal-retaining ring. Save the seal-retaining ring for re-installation.

### ⚠ CAUTION

- **DO NOT** pry the seal washer out of the clapper seal from the inner hole.

Failure to follow this instruction could damage the seal washer, resulting in improper clapper sealing and valve leakage.



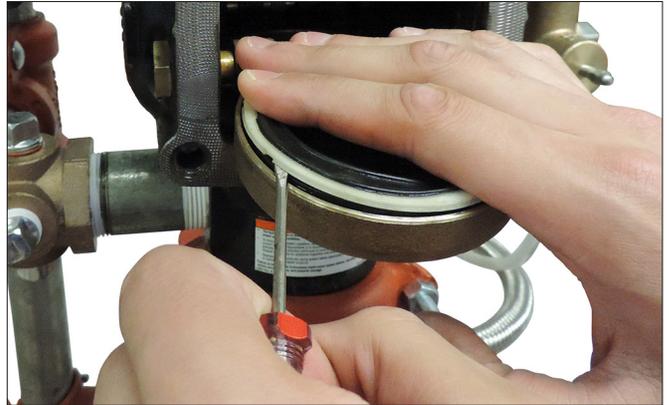
4. Pry the edge of the seal washer from inside the clapper seal, as shown above. **DO NOT PRY THE SEAL WASHER OUT FROM THE INNER HOLE.**

5. Remove the seal washer from the clapper seal. Dry up any moisture under the seal washer or on the clapper seal.

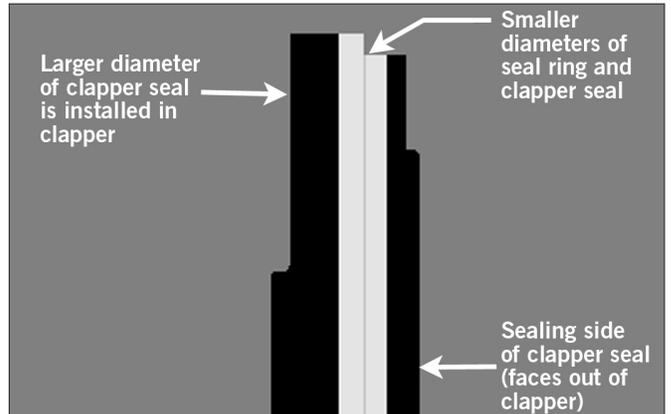
### ⚠ CAUTION

- Use only Victaulic-supplied replacement parts.

Failure to follow this instruction could cause improper valve operation, resulting in property damage.



6. Pry the clapper seal, along with the seal ring, out of the clapper. Inspect the clapper seal. If the clapper seal is torn or worn, replace it with a new, Victaulic-supplied clapper seal. If replacing the clapper seal assembly with a new assembly, skip to step 7.



6a. If using the same clapper seal assembly and the seal ring was removed from the clapper seal in the previous step: Re-insert the seal ring carefully underneath the outer lip of the clapper seal. Verify that the smaller diameter of the seal ring is toward the sealing surface of the clapper seal.

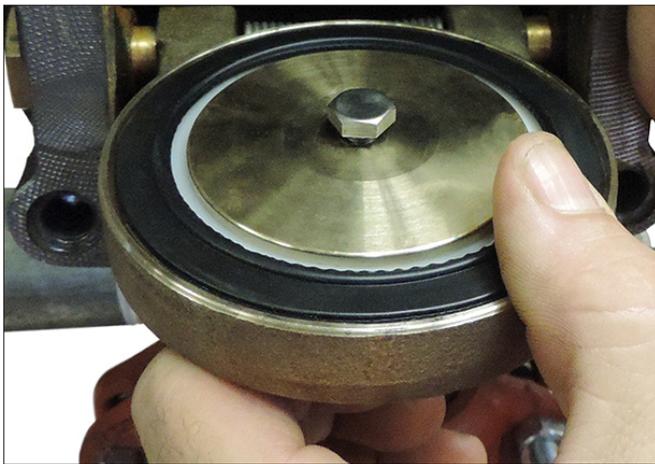


7. Insert the seal washer carefully underneath the sealing lip of the gasket.

8. Remove any debris from the clapper. Inspect the clapper for damage that may affect the sealing capabilities of the new clapper seal. Contact Victaulic if the clapper requires replacement.



9. Install the clapper seal into the clapper carefully. Verify that the seal ring snaps into the clapper completely.



10. Place the seal-retaining ring onto the seal washer of the clapper seal. Install the seal assembly bolt/bolt seal through the seal-retaining ring and clapper.



11. Tighten the seal assembly bolt/bolt seal to the torque value listed in the table on this page to ensure a proper seal.

**REQUIRED SEAL ASSEMBLY BOLT/BOLT SEAL TORQUES**

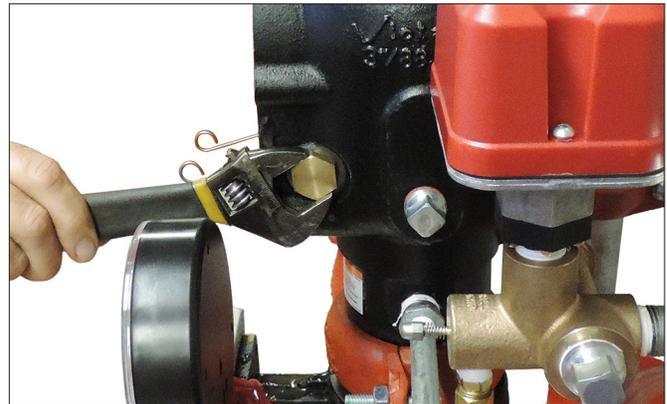
| Nominal Size<br>inches or mm | Required Torque<br>inch-lbs/N•m |
|------------------------------|---------------------------------|
| 1½                           | 40<br>5                         |
| 2                            | 40<br>5                         |
| 2½                           | 90<br>10                        |
| 76.1 mm                      | 90<br>10                        |
| 3                            | 90<br>10                        |
| 4                            | 110<br>12                       |
| 165.1 mm                     | 160<br>18                       |
| 6                            | 160<br>18                       |
| 8                            | 160<br>18                       |

12. Replace the cover plate by following the “Installing the Cover Plate Gasket and Cover Plate” section.

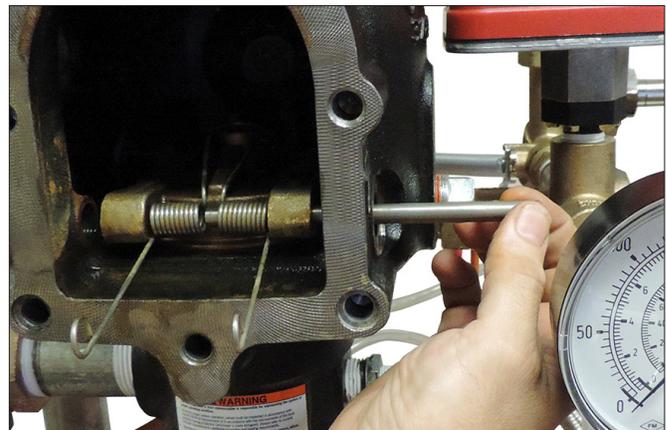
13. Place the system back in service by following the “Resetting the System” section.

**REMOVING AND REPLACING THE CLAPPER ASSEMBLY**

1. Perform steps 1 – 13 of the “Required Internal Inspection” section.



2. Remove the clapper shaft bushings with o-rings from the valve body.



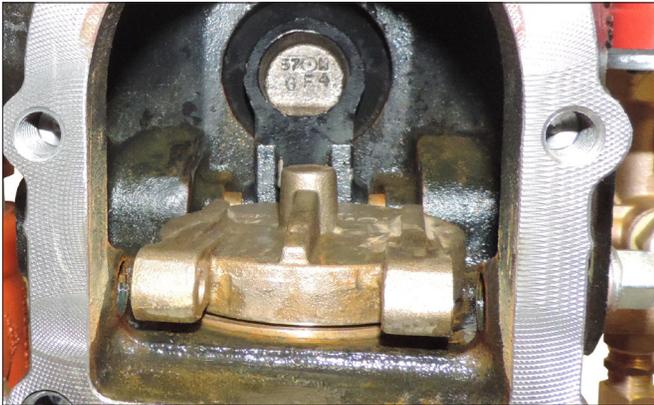
3. Remove the clapper shaft. **NOTE:** As the shaft is being removed, the clapper spring will drop out of position. Save the clapper spring for re-installation.



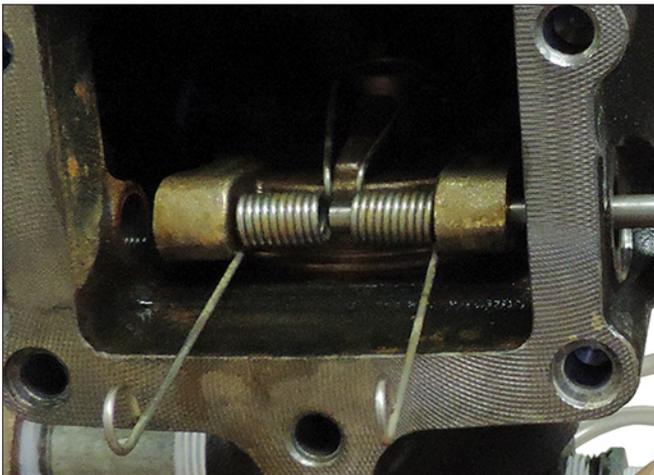
4. Remove the clapper assembly from the valve body seat ring. Clean the valve body seat ring.

**⚠ CAUTION**

- Use only Victaulic-supplied replacement parts.
- Failure to follow this instruction could cause improper valve operation, resulting in property damage.



5. Place the new clapper assembly onto the valve body seat ring. Verify that the holes in the clapper arms align with the holes in the valve body.



6. Insert the clapper shaft halfway into the valve body.
7. Install the clapper spring onto the clapper shaft. Verify that the loop of the clapper spring is facing the clapper, as shown above.
8. Finish inserting the clapper shaft through the clapper arm and valve body.



9. Verify that a clapper shaft bushing o-ring is installed on each clapper shaft bushing.
- 9a. Apply thread sealant to each clapper shaft bushing. Install the clapper shaft bushings into the valve body until hand-tight.
- 9b. Tighten the clapper shaft bushings until metal-to-metal contact occurs with the valve body. DO NOT exceed 10 ft-lbs/14 N•m of torque on the clapper shaft bushings.
- 9c. Check the clapper for freedom of movement.
10. Replace the cover plate by following the “Installing the Cover Plate Gasket and Cover Plate” section.
11. Place the system back in service by following the “Resetting the System” section.

**INSTALLING THE COVER PLATE GASKET AND COVER PLATE**

**⚠ CAUTION**

- Use only Victaulic-supplied replacement parts.
- Failure to follow this instruction could cause improper valve operation, resulting in property damage.

1. Verify that the cover plate gasket is in good condition. If the gasket is torn or worn, replace it with a new, Victaulic-supplied gasket.



2. Align the holes of the cover plate gasket with the holes in the cover plate.
3. Insert one cover plate bolt through the cover plate and cover plate gasket to ease alignment. **NOTE:** For 1½-inch/48.3-mm and 2-inch/60.3-mm valve sizes, a washer shall be re-installed under the head of each cover plate bolt.

**CAUTION**

- **DO NOT over-tighten the cover plate bolts.**
- Failure to follow this instruction could cause damage to the cover plate gasket, resulting in valve leakage.



4. Align the cover plate/cover plate gasket to the valve. Verify that the clapper spring's arms are rotated to their installed position. Tighten all cover plate bolts into the cover plate/valve body.
5. Torque all cover plate bolts in an even, crossing pattern. Refer to the "Required Cover Plate Bolt Torques" table below for the required torque values. DO NOT over-tighten the cover plate bolts.

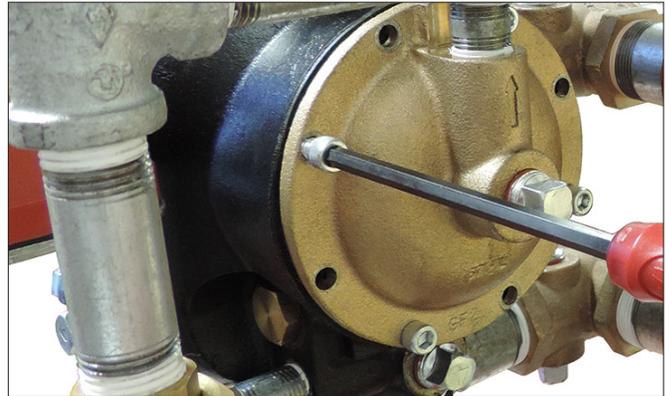
**REQUIRED COVER PLATE BOLT TORQUES**

| Nominal Size<br>inches or mm | Required Torque<br>ft-lbs/N•m |
|------------------------------|-------------------------------|
| 1 ½                          | 30<br>41                      |
| 2                            | 30<br>41                      |
| 2 ½                          | 60<br>81                      |
| 76.1 mm                      | 60<br>81                      |
| 3                            | 60<br>81                      |
| 4                            | 100<br>136                    |
| 165.1 mm                     | 115<br>156                    |
| 6                            | 115<br>156                    |
| 8                            | 100<br>136                    |

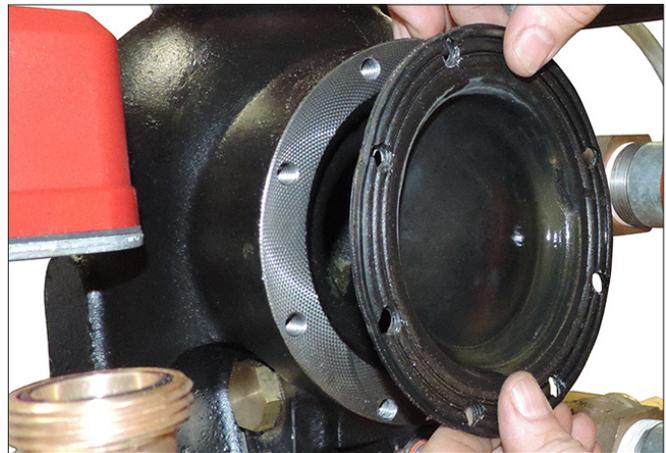
6. Place the system back in service by following the "Resetting the System" section.

**REMOVING AND REPLACING THE DIAPHRAGM**

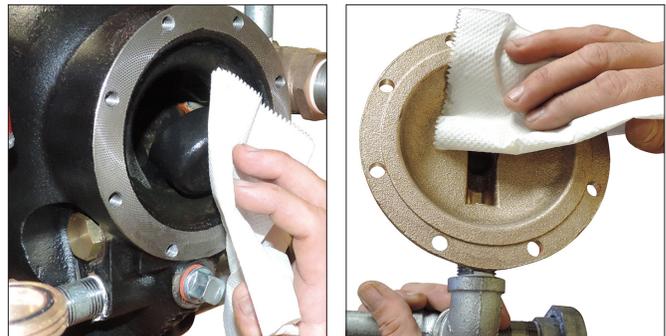
1. Remove the system from service by following steps 1 – 10 of the "Required Internal Inspection" section.
2. Break the unions that connect the trim to the diaphragm cover. Refer to the applicable trim drawing for details.



3. Remove the cap screws from the diaphragm cover, and pull the diaphragm cover/trim off the valve.



4. Remove the diaphragm from the valve body. Discard the diaphragm.



5. Clean the back of the valve body to remove any debris that may interfere with proper diaphragm seating.
- 5a. Clean the inside of the diaphragm cover.

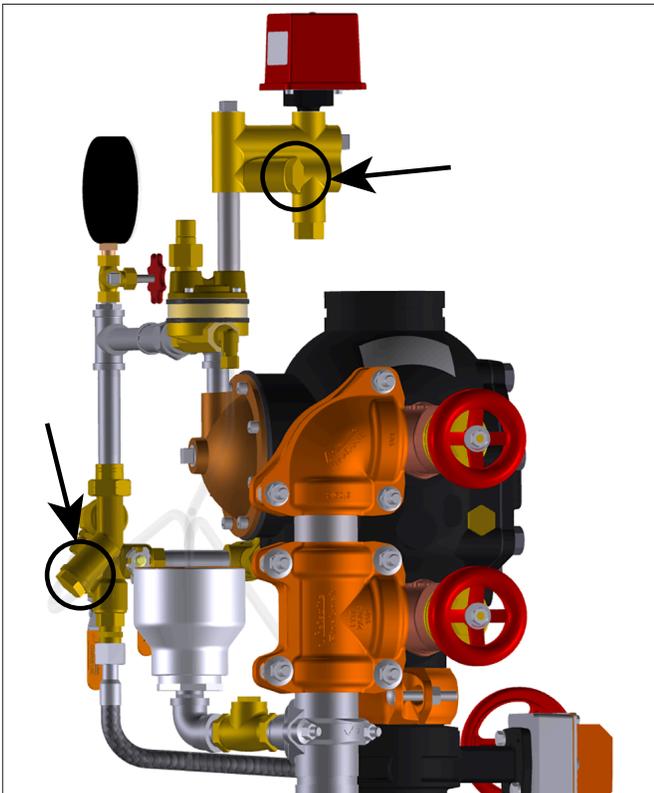
**CAUTION**

- **Use caution when installing a new diaphragm into the valve body.**
- Failure to follow this instruction could cause damage to the diaphragm, resulting in improper valve operation and valve leakage.

6. Replace the diaphragm with a new, Victaulic-supplied diaphragm. Align the holes in the diaphragm with the holes in the valve body. Use caution to prevent damage to the diaphragm during installation.
7. Align the holes of the diaphragm cover with the holes in the diaphragm/valve body. Tighten all cap screws into the diaphragm cover/valve body in an even, crossing pattern to a torque of 10 ft-lbs/14 N•m. Repeat this tightening sequence to verify that all cap screws have been torqued to 10 ft-lbs/14 N•m.
8. Re-attach the trim at the unions that were loosened in step 2. Refer to the applicable trim drawing for details. **VERIFY THAT ALL UNIONS THAT WERE LOOSENED TO PERMIT ACCESS TO THE DIAPHRAGM COVER HAVE BEEN RE-TIGHTENED BEFORE ATTEMPTING TO PLACE THE SYSTEM BACK IN SERVICE.**
9. Place the system back in service by following the “Resetting the System” section. Inspect all trim components to confirm that there are no leaks. Any leaks shall be corrected immediately by depressurizing the system and tightening any affected components.

### CLEANING THE CARTRIDGE IN THE AIR AND PRIMING MANIFOLD ASSEMBLIES

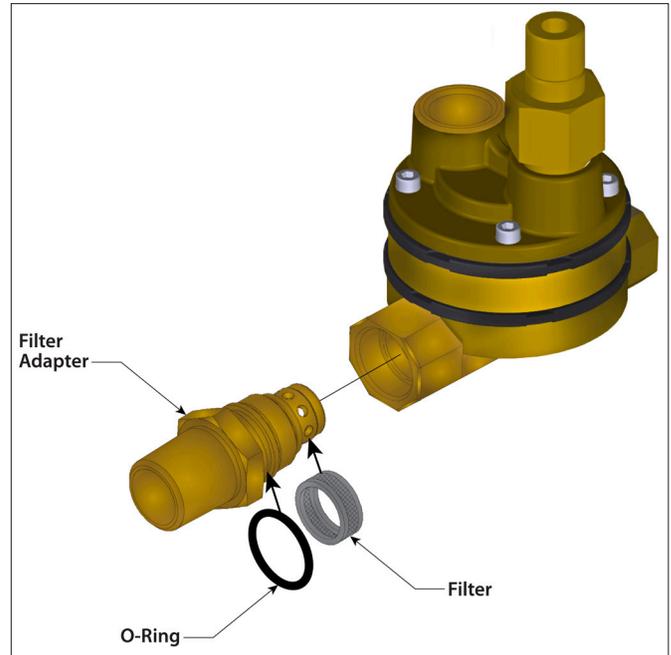
1. Remove the system from service by following steps 1 – 10 of the “Required Internal Inspection” section.



2. Remove the existing cartridge from the air manifold (dry pilot release systems) and priming manifold assemblies, shown above. Rinse the cartridges to remove any deposits.
3. Install the corresponding cartridge into the air manifold and priming manifold assemblies. **NOTE:** The face of the air manifold cartridge is stamped “AM” and the face of the priming manifold cartridge is stamped “PM.” These cartridges are designed so that they cannot be interchanged.
4. Place the system back in service by following the “Resetting the System” section.

### REPLACING THE FILTER IN SERIES 776 LOW-PRESSURE ACTUATORS (DRY PILOT RELEASE SYSTEMS)

1. Remove the system from service by following steps 1 – 10 of the “Required Internal Inspection” section.



2. Remove the Series 776 Low-Pressure Actuator from the trim. Refer to the applicable trim drawing for details.
3. Remove and discard the filter.

#### **CAUTION**

- **DO NOT re-use filters. After removal, the old filter shall be replaced with a new, Victaulic-supplied filter.**

Failure to follow this instruction could cause improper valve operation, resulting in property damage.

4. Use only a new, Victaulic-supplied filter. Install the new filter onto the filter adapter, as shown above. Verify that the o-ring is positioned on the filter adapter, as shown above.
5. Carefully re-install the filter adapter into the actuator. Use caution to prevent damage to the o-ring.
6. Re-install the actuator into the trim. Refer to the applicable trim drawing for details.

# SECTION VII

- **Troubleshooting**

## TROUBLESHOOTING – SYSTEM

| Problem   | Possible Cause   | Solution   |
|---|--|--|
| The valve operates without sprinkler activation.                    | There is a loss of air pressure in the system or trim.<br><br>The pressure switch on the air compressor is set too low, or the compressor is not operating properly. | Check for any leaks in the system and trim. Confirm that the AMTA is operating properly. Consider installing a low-air supervisory switch.<br><br>Increase the "ON" setting of the air compressor's pressure switch, and check the air compressor for proper operation.                |
| Water is leaking from the ball drip on the alarm manifold assembly. | Water is getting past the clapper seal and into the intermediate chamber of the valve.<br><br>Water is under the clapper seal.                                       | Check the clapper seal and valve body seat ring for physical damage and foreign material.<br><br>Inspect the clapper seal to verify that no water is under the seal. If water is present, remove and replace the seal. Refer to the "Removing and Replacing the Clapper Seal" section. |
| Air is leaking from the ball drip on the alarm manifold assembly.   | Air is getting past the clapper seal and into the intermediate chamber of the valve.<br><br>Water is under the clapper seal.   | Check the clapper seal and valve body seat ring for physical damage and foreign material.<br><br>Inspect the clapper seal to verify that no water is under the seal. If water is present, remove and replace the seal. Refer to the "Removing and Replacing the Clapper Seal" section. |
| The latch will not maintain the clapper in the closed position.     | There is no water pressure on the diaphragm.<br><br>The auto drain is not set.   | Check the water pressure in the charge line. Verify that the restrictor in the charge line is clean.<br><br>Set the auto drain by pulling up on the auto drain sleeve.   |
| Water is leaking from the diaphragm assembly.                       | The diaphragm is damaged.  | Contact Victaulic.   |
| Air is leaking from the diaphragm assembly.                         | The diaphragm is damaged.  | Contact Victaulic.   |

## TROUBLESHOOTING – SERIES 776 LOW-PRESSURE ACTUATOR

| Problem   | Possible Cause  | Solution  |
|---|---|---|
| When air in the system is released, the Series 776 Low-Pressure Actuator does not trip.   | There is a restriction in the piping between the air manifold and the auto vent of the Series 776 Low-Pressure Actuator.  | Remove the air feed nipple and remove any debris. Clean the restrictor and strainer in the air manifold. Verify that no debris has built up in the air manifold ports that could be restricting airflow.  |
| When the Auto Vent Sleeve of the Series 776 Low-Pressure Actuator is pulled up, the screw does not stay set in the "UP" position. | The Series 776 Low-Pressure Actuator is not receiving enough air.<br><br>The Series 776 Low-Pressure Actuator has a broken seal.  | Increase the air pressure going into the Series 776 Low-Pressure Actuator.<br><br>If the above procedure does not work, contact Victaulic.  |
| Water is leaking through the Series 776 Low-Pressure Actuator.  | The air chamber of the Series 776 Low-Pressure Actuator is not set.<br><br>The strainer on the Series 776 Low-Pressure Actuator is clogged.<br><br>The Series 776 Low-Pressure Actuator has a ripped diaphragm. | Verify that the vent seal of the Series 776 Low-Pressure Actuator is in the set position and the air chamber is pressurized.<br><br>Replace the strainer screen of the Series 776 Low-Pressure Actuator. Refer to the "Replacing the Filter in Series 776 Low-Pressure Actuators (Dry Pilot Release Systems)" section.<br><br>If water still leaks through the Series 776 after performing the above procedures, contact Victaulic. |
| No water is passing through the Series 776 Low-Pressure Actuator.   | The strainer in the priming manifold is clogged.  | Disassemble and clean the priming manifold strainer. Refer to the "Cleaning the Cartridge in the Air and Priming Manifold Assemblies" section.  |

## TROUBLESHOOTING – SOLENOID VALVE

| Problem   | Possible Cause   | Solution   |
|---|--|--|
| No water is passing through the solenoid valve. | The cartridge in the priming manifold is clogged.  | Disassemble and clean the priming manifold cartridge. Refer to the "Cleaning the Cartridge in the Air and Priming Manifold Assemblies" section.  |
| The solenoid valve does not open.               | Power is not being supplied to the solenoid valve.<br><br><br><br>Solenoid coil has been removed from the valve. | Check all electrical connections to verify power is being supplied to the solenoid valve. If there are still issues with power being supplied to the solenoid valve, a qualified fire alarm control specialist should verify that the fire alarm control panel is configured correctly.<br><br>Reinstall the coil to the solenoid valve. |

**Series 769N FireLock NXT™ Deluge Valve**

Pneumatic (Dry Pilot) Release, Hydraulic (Wet Pilot) Release, and Electric Release Systems

|   |   |
|---|---|
| Victaulic Company<br>4901 Kesslersville Road<br>US 18040 Easton, Pennsylvania<br>Phone: 001-610-559-3300<br>Fax: 001-610-250-8817 |   |
| <b>Deluge Valve Stations</b>  |   |
| Approval no.: G4070040  |  |
| Name of product: "NXT S 769" mit hydraulischer Anregung   |   |
| Approval no.: G4070041  |  |
| Name of product: "NXT S 769" mit pneumatischer Anregung   |   |
| Approval no.: G4070042  |  |
| Name of product: "NXT S 769" mit elektrischer Anregung  |   |

For complete contact information, visit [victaulic.com](http://victaulic.com)

I-769N.Deluge 9241 REV F UPDATED 01/2019 Z000769ND0

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