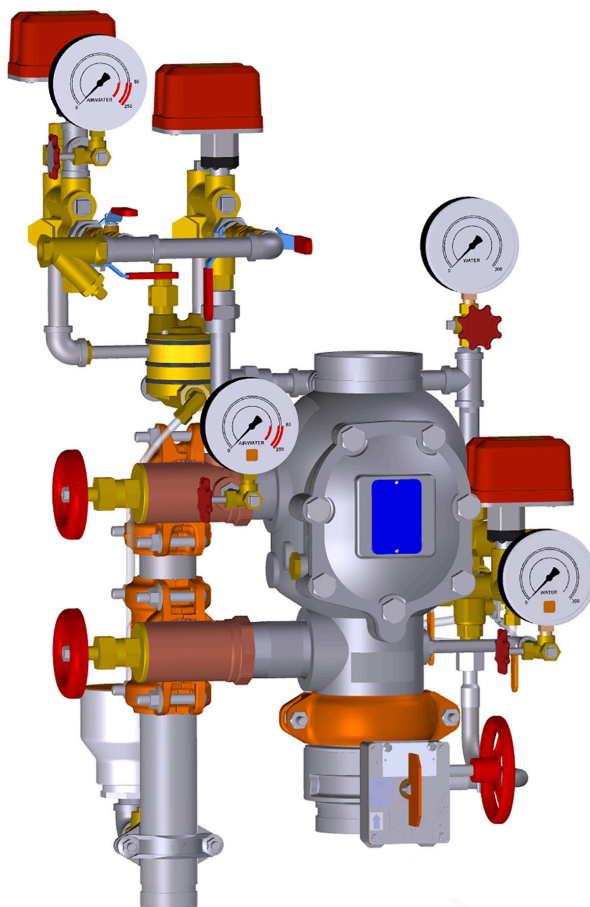


Victaulic® Series 769N FireLock NXT™ Actuated Valve with Preaction Trim

Double-Interlocked Pneumatic/Pneumatic Release with Series 798 Pneumatic/Pneumatic Actuator

KEEP THESE INSTRUCTIONS WITH THE
INSTALLED VALVE FOR FUTURE REFERENCE**⚠ WARNING**

- Read and understand all instructions before attempting to install, remove, adjust, or perform maintenance on any Victaulic piping products.
- Depressurize and drain piping systems before attempting to install, remove, adjust, or perform maintenance on any Victaulic piping products.
- Wear safety glasses, hardhat, and foot protection.
- Save this installation, maintenance, and testing manual for future reference.

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

SERIES 769N FIRELOCK NXT™ ACTUATED VALVE WITH DOUBLE-INTERLOCKED PNEUMATIC/ PNEUMATIC RELEASE PREACTION TRIM

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

INITIAL SYSTEM SETUP

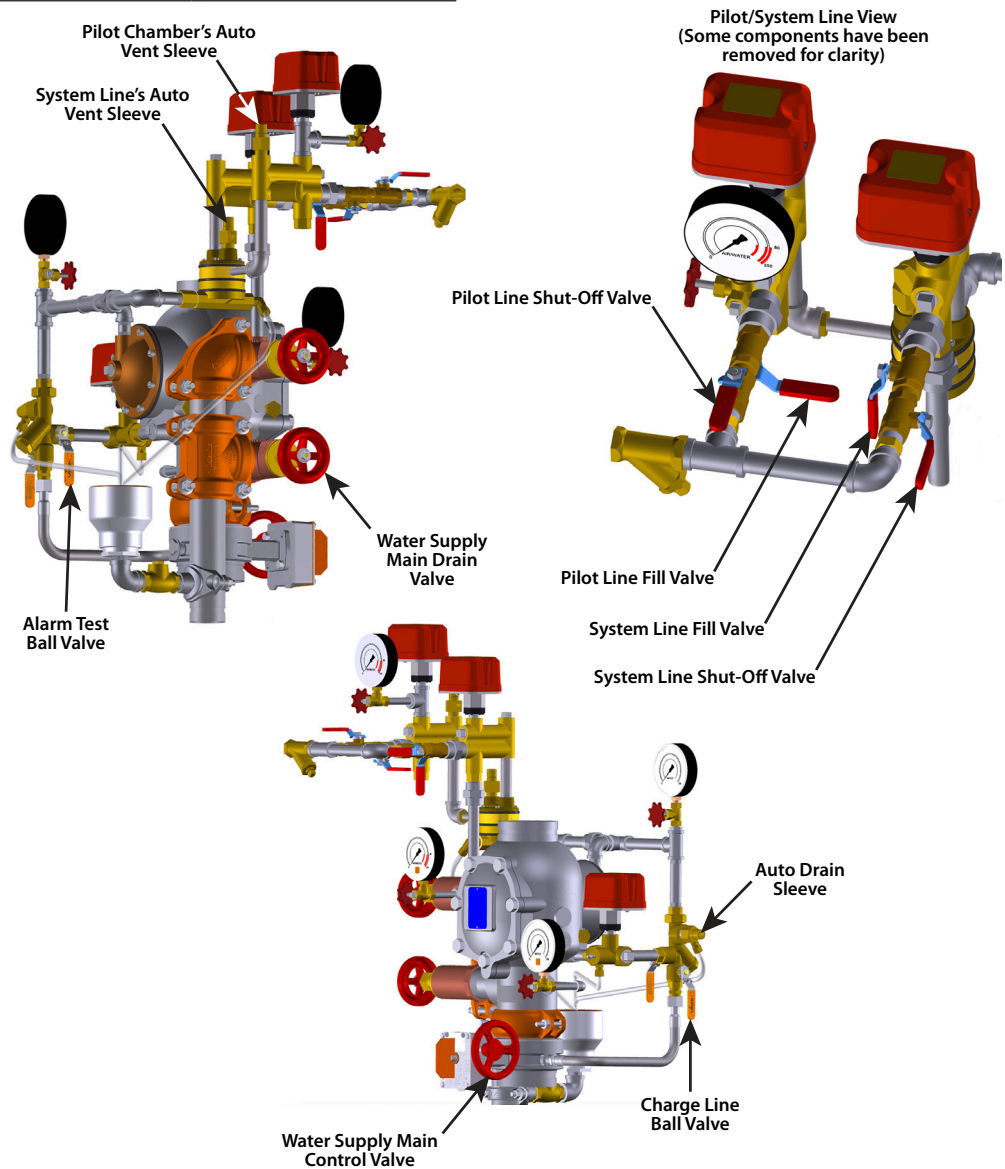
NOTICE
<ul style="list-style-type: none">Before proceeding with initial system setup, verify that the system air feed piping is connected to the location indicated on the trim drawing.

- 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 2a:** If Series 746-LPA Dry Accelerators are installed, confirm that the isolation ball valves are closed.
- Step 2b:** If Series 746-LPA Dry Accelerators are installed, open the ¼-turn vent ball valves.
- Step 3:**
Confirm that the alarm test ball valve is closed.
- Step 4:**
Open the pilot line shut-off valve. **NOTE:** Failure to leave the pilot line shut-off valve open may allow pilot line pressure to drop, resulting in valve operation in the event of a system leak.
- Step 5:**
Open the pilot line fill valve to the “OPEN – FAST-FILL” position. Charge the pilot line to 13psi/90kPa/0.9Bar minimum.
- Step 6:**
When pilot pressure reaches approximately 10psi/69 kPa/0.7 Bar, pull up on the pilot chamber Auto Vent Sleeve, which is located on the air manifold of the pilot line. **NOTE:** The pilot chamber Auto Vent Screw should seal and remain in the set (“UP”) position.
- Step 7:**
When pilot line air pressure is established, close the pilot line fill valve to the “CLOSED – RESTRICTED FILL” position.
- Step 8:**
Open the system line shut-off valve. **NOTE:** Failure to leave the system line shut-off valve open may allow system line pressure to drop, resulting in valve operation in the event of a system leak.
- Step 9:**
Open the system line fill valve to the “OPEN – FAST-FILL” position. Charge the system line to 13psi/90kPa/0.9Bar minimum. Refer to the “Air Supply Requirements” section.
- Step 10:**
When system pressure reaches approximately 10psi/69 kPa/0.7 Bar, and no additional moisture is being released from the Auto Vent, pull up on the system line Auto Vent Sleeve on the Series 798 Pneumatic/Pneumatic Actuator. **NOTE:** The system line Auto Vent Screw should seal and remain in the set (“UP”) position.
- Step 11:**
When system line air pressure is established, close the system line fill valve to the “CLOSED – RESTRICTED FILL” position.
- Step 12:**
Open the charge line ball valve. Allow water to flow through the auto drain tube.
- Step 13:**
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 and pilot line pressure are equal to the supply pressure and that the auto drain is set by pulling up on the auto drain sleeve. Verify that no water is draining from the Series 798 Pneumatic/Pneumatic Actuator.
- Step 13a:** If Series 746-LPA Dry Accelerators are installed, close the ¼-turn vent ball valves.
- Step 13b:** If Series 746-LPA Dry Accelerators are installed, open the isolation ball valves. This will set the accelerators.
- Step 14:**
Open the water supply main drain valve.
- Step 15:**
Open the water supply main control valve slowly until water flows steadily from the open water supply main drain valve.
- Step 16:**
Close the water supply main drain valve when a steady flow of water occurs.
- Step 17:**
Open the water supply main control valve fully.
- Step 18:**
Confirm that all valves are in their normal operating positions (refer to the table on the following page).
- Step 19:**
Notify the authority having jurisdiction, remote station alarm monitors, and those in the affected area that the system is in service.

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
Alarm Test Ball Valve of the Priming Manifold Assembly	Closed
Pilot Line Shut-Off Valve	Open

Valve	Normal Operating Position
Pilot Line Fill Valve	Closed – Restricted Fill
System Line Shut-Off Valve	Open
System Line Fill Valve	Closed – Restricted Fill
Isolation Ball Valve for Series 746-LPA Dry Accelerators (if applicable)	Open
¼-Turn Vent Ball Valve for Series 746-LPA Dry Accelerators (if applicable)	Closed



WATER FLOW ALARM TEST

Perform the water flow alarm test on a frequency required by the current NFPA-25 code. The authority having jurisdiction in the area may require these 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 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.

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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 must install this product in accordance with all instructions. These instructions contain important information.



- Depressurize and drain the piping system before attempting to install, remove, adjust, or maintain any Victaulic piping 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 Actuated Valve with Preaction Trim.** For proper operation and approval, the Series 769N FireLock NXT Actuated Valve and accessories must 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 actuated 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 6 for dimensional information.
2. **Flush water supply piping.** Before installing the Series 769N FireLock NXT Actuated Valve, flush the water supply piping thoroughly to remove all foreign material.
3. **Protect system from freezing temperatures.** Series 769N FireLock NXT Actuated Valves and supply piping MUST 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 Actuated 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 must be clean, dry, and oil-free and must 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 must 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, ENSURE THAT THE CHARGE LINE IS FULLY PRESSURIZED BEFORE PLACING THE SYSTEM BACK IN SERVICE.**

HYDROSTATIC TESTING

 WARNING	
	<ul style="list-style-type: none"> If air testing is required, DO NOT exceed 50 psi/345 kPa/3.4 Bar air pressure. <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)

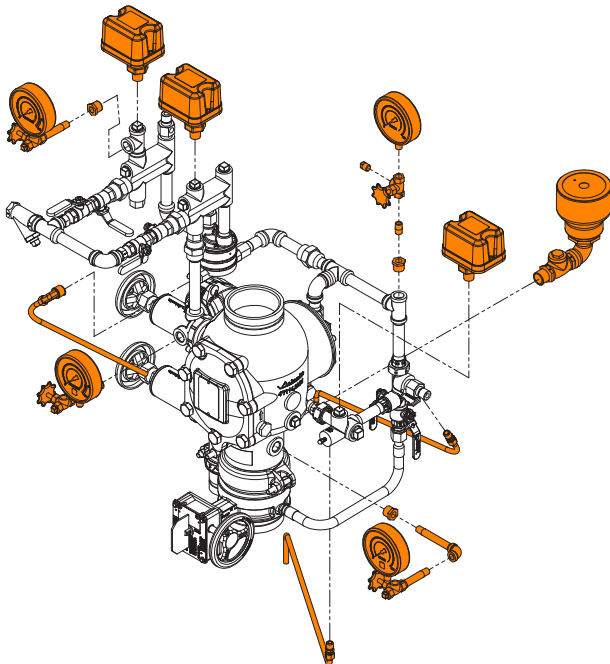
The valve can be hydrostatically tested against the clapper at:

- 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
<ul style="list-style-type: none"> 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.

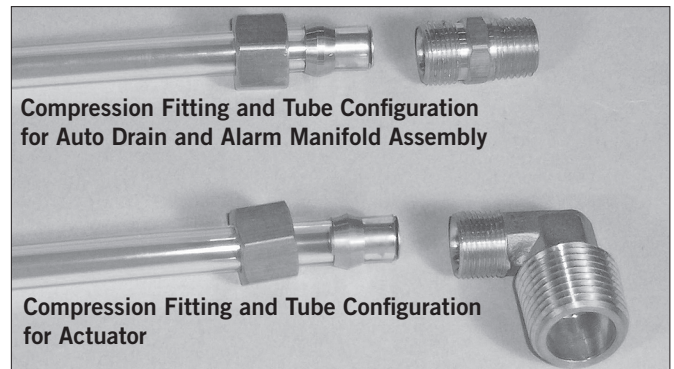
The components shaded in orange below are shipped separate from the valve and must be installed in accordance with the trim drawing provided. **NOTE:** The Vic-Quick Riser (VQR) assembly is shown.



1. Ensure 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
<ul style="list-style-type: none"> Ensure that all protective shipping items are removed from the interior and exterior of the valve body before installation. Ensure 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. <p>Failure to follow these instructions could cause improper valve operation, resulting in personal injury and property damage.</p>

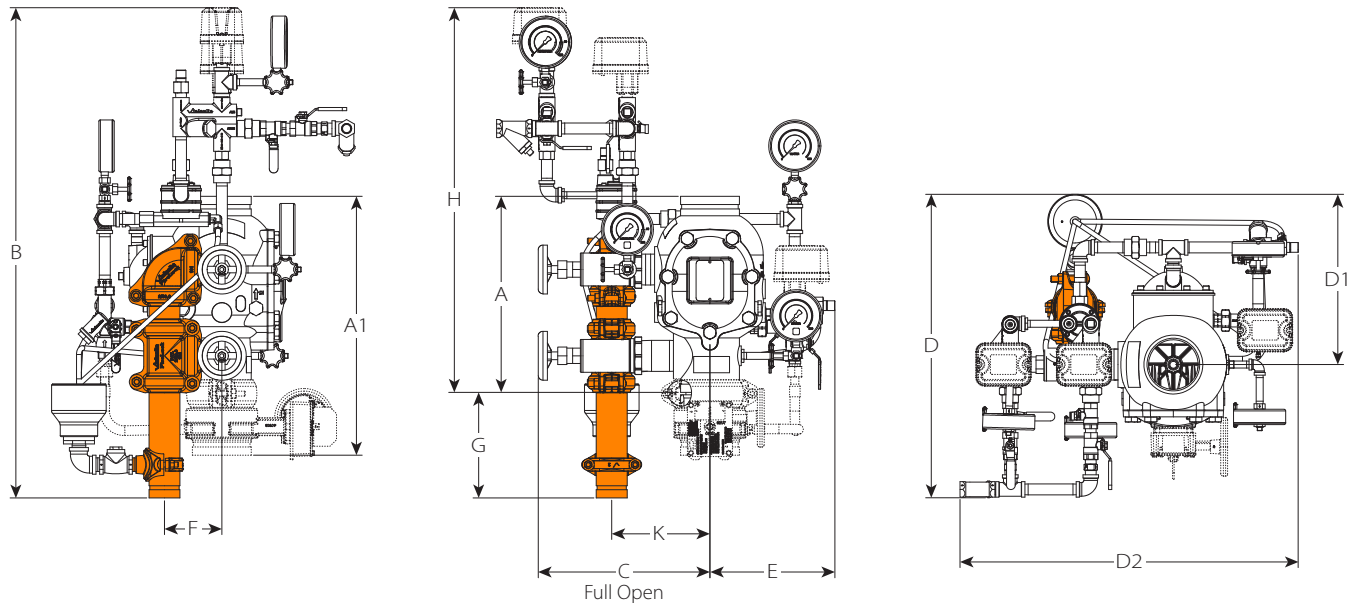
3. Install the valve assembly into the riser with two Victaulic rigid couplings. Refer to the instructions, supplied with the coupling, for complete installation requirements. **SERIES 769N FIRELOCK NXT ACTUATED VALVES MUST BE INSTALLED ONLY IN THE VERTICAL POSITION WITH THE ARROW ON THE BODY POINTING 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.**

TRIM DIMENSIONS

A 4-INCH/114.3-MM VALVE WITH DOUBLE-INTERLOCKED PNEUMATIC/PNEUMATIC RELEASE PREACTION TRIM IS SHOWN BELOW
1½ – 2-INCH/48.3 – 60.3-MM CONFIGURATIONS CONTAIN ¾-INCH/19-MM DRAIN VALVES
2½ – 3-INCH/73.0 – 88.9-MM CONFIGURATIONS CONTAIN 1 ¼-INCH/31-MM DRAIN VALVES
4 – 8-INCH/114.3 – 219.1-MM CONFIGURATIONS CONTAIN 2-INCH/50-MM DRAIN VALVES



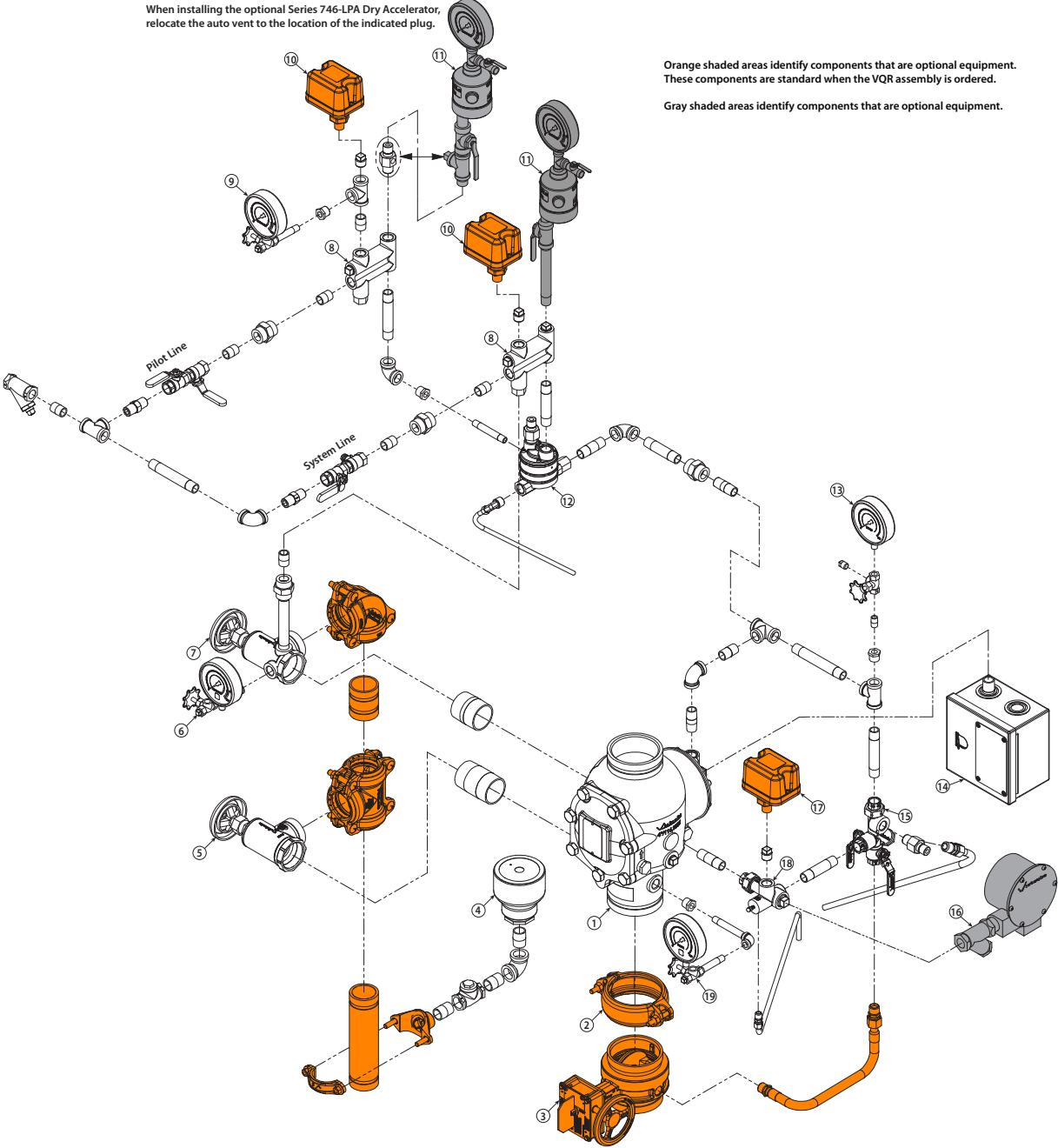
NOTES:

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.
For systems with optional Series 746-LPA Dry Accelerators, add 11.50 inches/292 mm to the "B" dimension to account for the additional height.
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 inches or mm	Dimensions – inches/mm												Approx Weight Each lbs/kg	
	A	A1	B	C	D	D1	D2	E	F	G	H	K	Without Trim	With Trim
1½	9.00 228.60	16.37 415.80	36.00 914	9.25 235	21.25 540	11.00 279	23.50 597	9.25 235	3.25 83	10.25 260	25.75 654	6.00 152	16.7 7.6	43.0 19.5
2	9.00 228.60	13.83 351.28	36.00 914	9.25 235	21.25 540	11.00 279	23.50 597	9.25 235	3.25 83	10.25 260	25.75 654	6.00 152	17.0 7.7	43.0 19.5
2½	12.61 320.29	16.51 419.35	37.75 959	11.25 286	22.50 572	12.50 318	24.75 629	9.50 241	4.00 102	9.75 248	28.00 711	6.50 165	41.0 18.7	65.0 29.5
76.1 mm	12.61 320.29	16.51 419.35	37.75 959	11.25 286	22.50 572	12.50 318	24.75 629	9.50 241	4.00 102	9.75 248	28.00 711	6.50 165	41.0 18.7	65.0 29.5
3	12.61 320.29	16.51 419.35	37.75 959	11.25 286	22.50 572	12.50 318	24.75 629	9.50 241	4.00 102	9.75 248	28.00 711	6.50 165	41.0 18.7	65.0 29.5
4	15.03 381.76	19.85 504.19	38.50 978	13.50 343	23.75 603	13.50 343	26.25 667	10.00 254	4.75 121	8.50 216	30.00 762	8.00 203	59.0 26.7	111.0 50.3
165.1 mm	16.00 406.40	22.13 562.10	39.25 997	14.00 356	24.50 622	13.25 337	27.75 705	11.00 279	4.50 114	8.25 210	31.00 787	8.25 210	80.0 36.2	132.0 59.8
6	16.00 406.40	22.13 562.10	39.25 997	14.00 356	24.50 622	13.25 337	27.75 705	11.00 279	4.50 114	8.25 210	31.00 787	8.25 210	80.0 36.2	132.0 59.8
8	17.50 444.50	23.02 584.71	41.25 1048	14.75 375	27.00 686	13.50 343	29.75 756	12.25 311	4.75 121	8.25 210	33.00 838	9.25 235	122.0 55.3	174.0 78.9

TRIM COMPONENTS – EXPLODED VIEW DRAWING
Series 769N FireLock NXT Actuated Valve - Double-Interlocked Pneumatic/Pneumatic Release Preaction Trim with Series 798 Pneumatic/Pneumatic Actuator

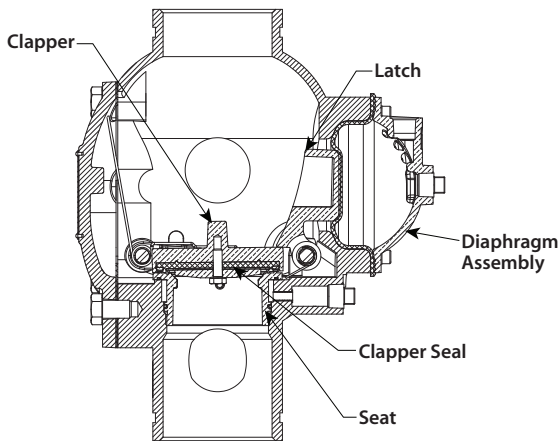
When installing the optional Series 746-LPA Dry Accelerator, relocate the auto vent to the location of the indicated plug.



Item	Description
1	Series 769N FireLock NXT Actuated Valve
2	FireLock Rigid Coupling
3	Water Supply Main Control Valve
4	Drip Cup
5	Water Supply Main Drain Valve – Flow Test
6	System Pressure Gauge/Gauge Valve Assembly
7	System Main Drain Valve
8	Air Manifold
9	Pilot Line Pressure Gauge/Gauge Valve Assembly
10	Air Supervisory Pressure Switch

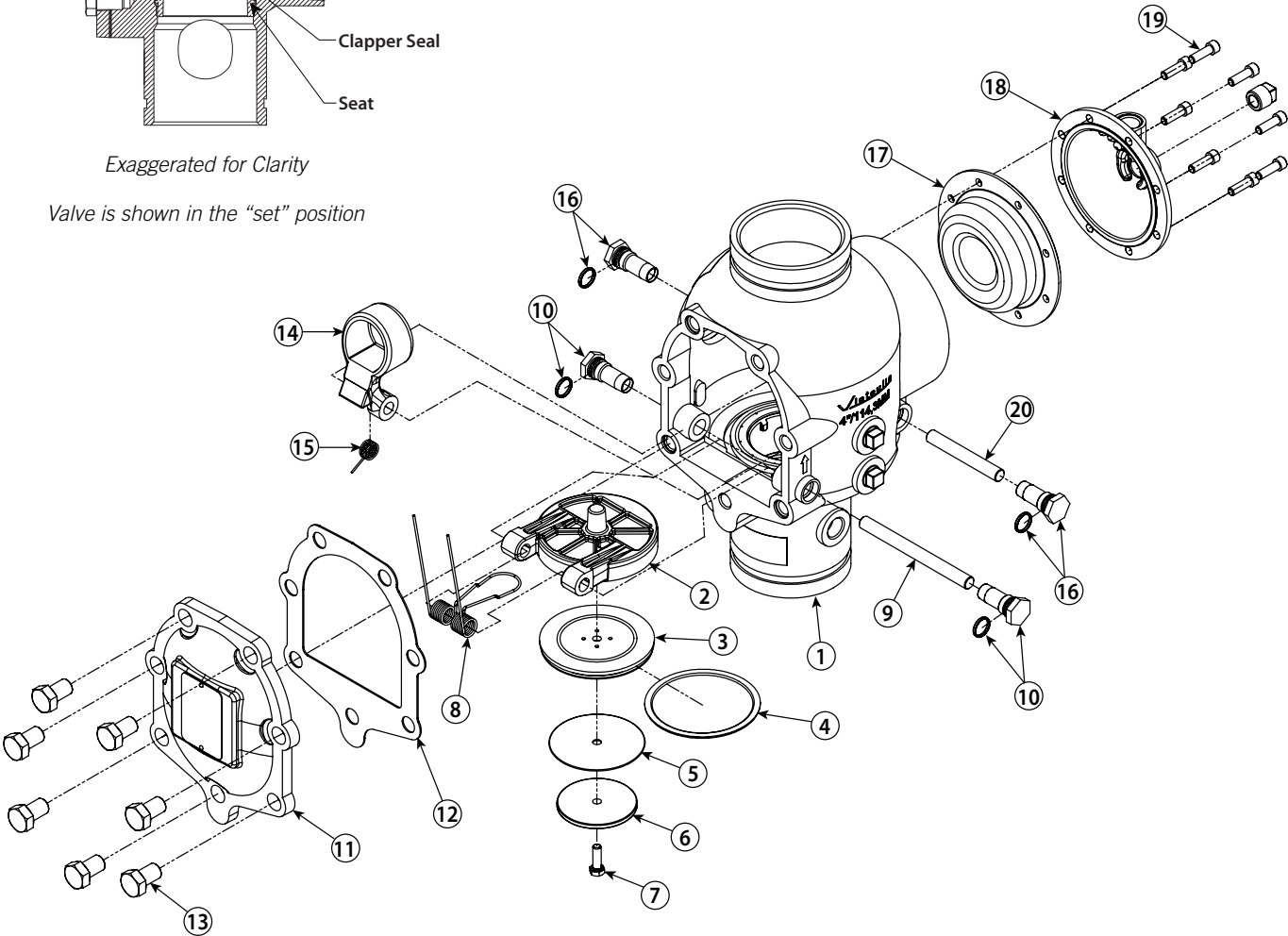
Item	Description
11	Series 746-LPA Dry Accelerator
12	Series 798 Pneumatic/Pneumatic Actuator
13	Charge Line Pressure Gauge/Gauge Valve Assembly
14	Series 755 Manual Pull Station
15	Priming Manifold Assembly
16	Series 760 Water Motor Alarm Assembly
17	Alarm Pressure Switch
18	Alarm Manifold Assembly
19	Water Supply Pressure Gauge/Gauge Valve Assembly

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

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

AIR SUPPLY REQUIREMENTS

The required air pressure for Series 769N FireLock NXT Actuated Valves 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.

The Series 746-LPA Dry Accelerator must be used only on systems operating below 20 psi/138 kPa/1.4 Bar of air. If air pressure is higher than 20 psi/138 kPa/1.4 Bar, the Series 746 Dry Accelerator should be used.

If multiple Series 769N FireLock NXT Actuated Valves 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 Actuated Valve, 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 Actuated Valves 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 must 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.

COMPRESSOR REQUIREMENTS AND SETTINGS FOR A SERIES 769N FIRELOCK NXT ACTUATED VALVE INSTALLED WITH SERIES 746-LPA DRY ACCELERATORS

Set the air regulator of the Series 757 Regulated AMTA to a minimum of 13 psi/90 kPa/0.9 Bar.

The Series 757P Air Maintenance Trim Assembly with Pressure Switch MUST NOT be used on a Series 769N FireLock NXT Actuated Valve installed with Series 746-LPA Dry Accelerators, unless a tank and air regulator are added.

In the event a compressor becomes inoperative, a properly sized tank-mounted air compressor provides the greatest protection for systems installed with Series 746-LPA Dry Accelerators. In this situation, air can be supplied continuously to the sprinkler system for an extended time period.

NOTE: The Series 757 Regulated AMTA should be used with a tank-mounted air compressor to supply air to a Series 769N FireLock NXT Actuated Valve when Series 746-LPA Dry Accelerators are used. The use of an air regulator with a base- or riser-mounted air compressor could cause short cycling, resulting in premature wear of the compressor.

The air regulator of the Series 757 Regulated AMTA is a relief-type design. Any pressure in the system that is above the set point of the air regulator will be released. Therefore, charging the air regulator above the set point could cause premature operation of a valve installed with Series 746-LPA Dry Accelerators.

SETTINGS FOR AIR SUPERVISORY PRESSURE SWITCHES AND ALARM PRESSURE SWITCHES

1. Air supervisory pressure switches are required for preaction systems and must 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.

SECTION I

- Initial System Setup

INITIAL SYSTEM SETUP

NOTICE

- Before proceeding with initial system setup, verify that the system air feed piping is connected to the location indicated on the trim drawing.

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 2a: If Series 746-LPA Dry Accelerators are installed, confirm that the isolation ball valves are closed.

Step 2b: If Series 746-LPA Dry Accelerators are installed, open the ¼-turn vent ball valves.

Step 3:

Confirm that the alarm test ball valve is closed.

Step 4:

Open the pilot line shut-off valve. **NOTE:** Failure to leave the pilot line shut-off valve open may allow pilot line pressure to drop, resulting in valve operation in the event of a system leak.

Step 5:

Open the pilot line fill valve to the “OPEN – FAST-FILL” position. Charge the pilot line to 13psi/90kPa/0.9Bar minimum. Refer to the “Air Supply Requirements” section.

Step 6:

When pilot pressure reaches approximately 10psi/69 kPa/0.7 Bar, pull up on the pilot chamber Auto Vent Sleeve, which is located on the air manifold of the pilot line. **NOTE:** The pilot chamber Auto Vent Screw should seal and remain in the set (“UP”) position.

Step 7:

When pilot line air pressure is established, close the pilot line fill valve to the “CLOSED – RESTRICTED FILL” position.

Step 8:

Open the system line shut-off valve. **NOTE:** Failure to leave the system line shut-off valve open may allow system line pressure to drop, resulting in valve operation in the event of a system leak.

Step 9:

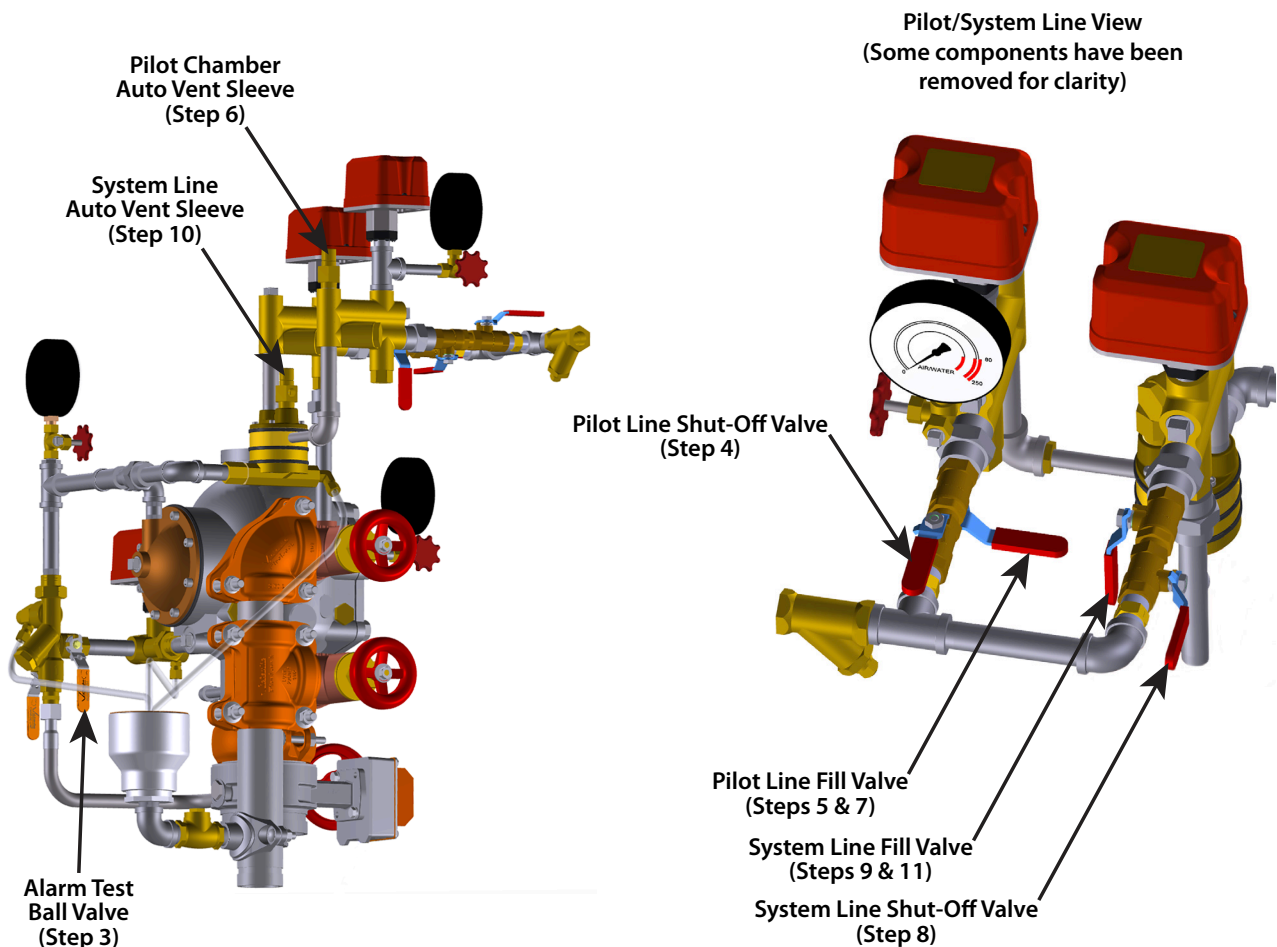
Open the system line fill valve to the “OPEN – FAST-FILL” position. Charge the system line to 13psi/90kPa/0.9Bar minimum. Refer to the “Air Supply Requirements” section.

Step 10:

When system pressure reaches approximately 10psi/69 kPa/0.7 Bar, and no additional moisture is being released from the Auto Vent, pull up on the system line Auto Vent Sleeve on the Series 798 Pneumatic/Pneumatic Actuator. **NOTE:** The system line Auto Vent Screw should seal and remain in the set (“UP”) position.

Step 11:

When system line air pressure is established, close the system line fill valve to the “CLOSED – RESTRICTED FILL” position.



INITIAL SYSTEM SETUP (CONTINUED)

Step 12:

Open the charge line ball valve. Allow water to flow through the auto drain tube.

Step 13:

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 and pilot line pressure are equal to the supply pressure and that the auto drain is set by pulling up on the auto drain sleeve. Verify that no water is draining from the Series 798 Pneumatic/Pneumatic Actuator.

Step 13a: If Series 746-LPA Dry Accelerators are installed, close the ¼-turn vent ball valves.

Step 13b: If Series 746-LPA Dry Accelerators are installed, open the isolation ball valves. This will set the accelerators.

Step 14:

Open the water supply main drain valve.

Step 15:

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

Step 16:

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

Step 17:

Open the water supply main control valve fully.

Step 18:

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

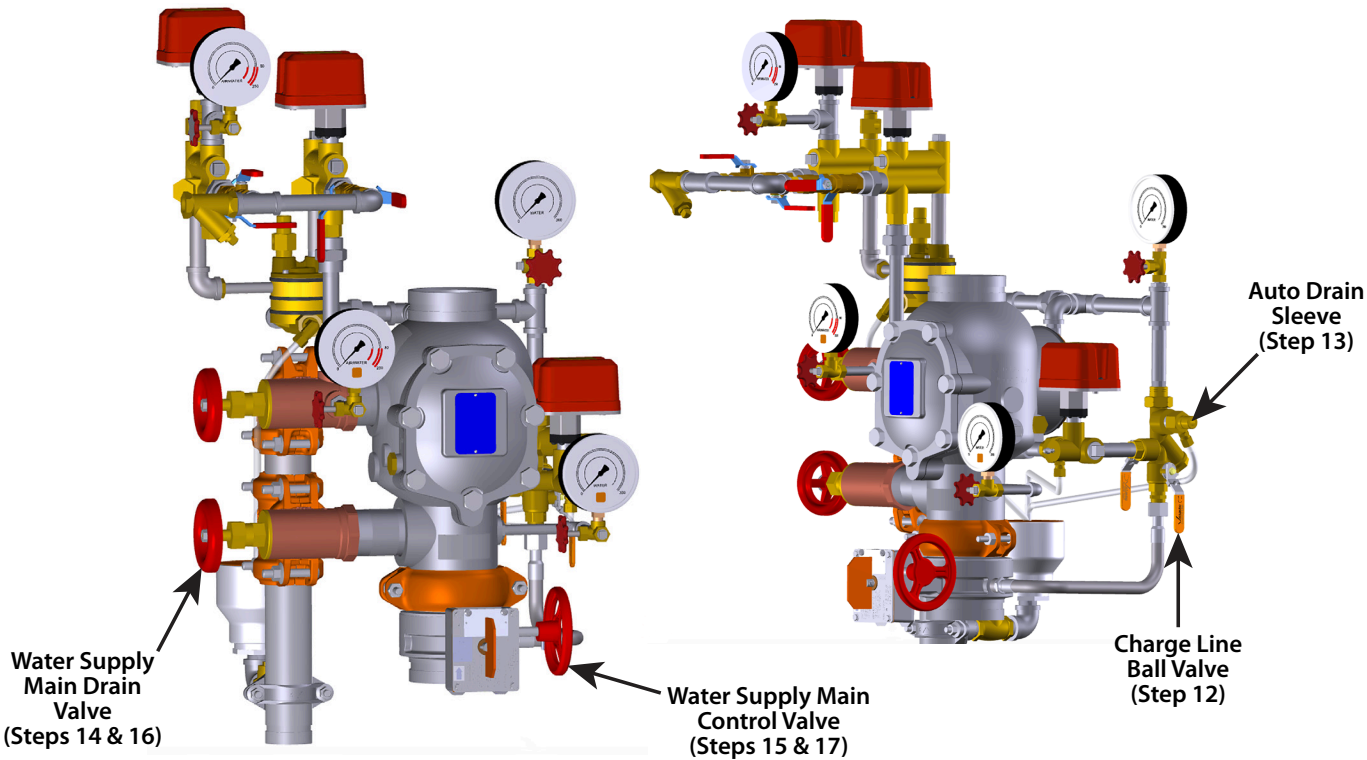
Step 19:

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
Pilot Line Shut-Off Valve	Open
Pilot Line Fill Valve	Closed – Restricted Fill
System Line Shut-Off Valve	Open
System Line Fill Valve	Closed – Restricted Fill
Isolation Ball Valve for Series 746-LPA Dry Accelerators (if applicable)	Open
¼-Turn Vent Ball Valve for Series 746-LPA Dry Accelerators (if applicable)	Closed

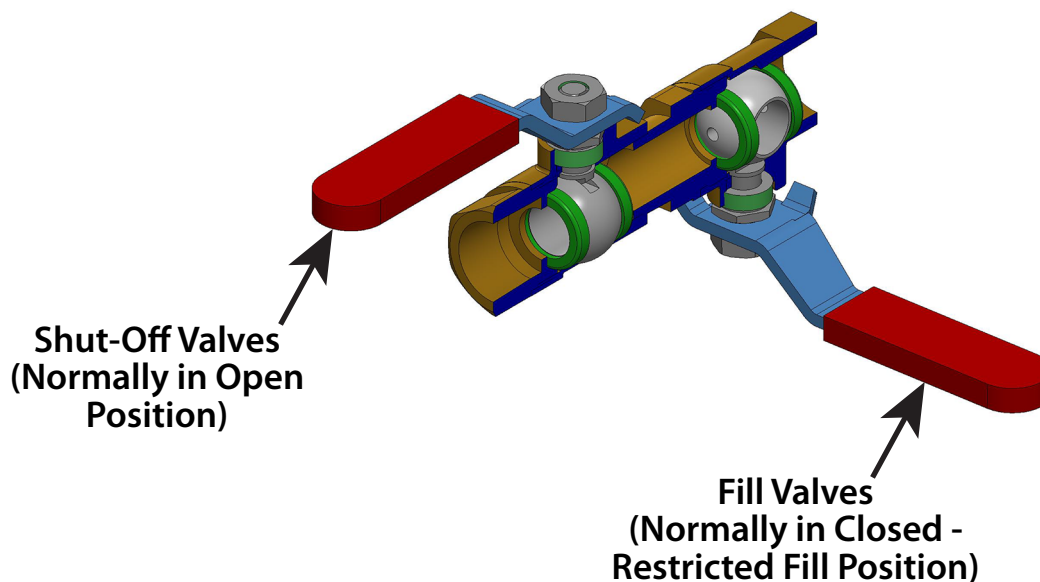
CAUTION

- 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.



⚠ WARNING

- It is critical for the pilot line and system line shut-off valves and fill valves to be in the proper operating orientations, as shown below. Failure to follow this instruction could prevent the valve from operating, resulting in death or serious personal injury and property damage in the event of a fire.



SECTION II

- **Resetting the System**

RESETTING 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 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 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:

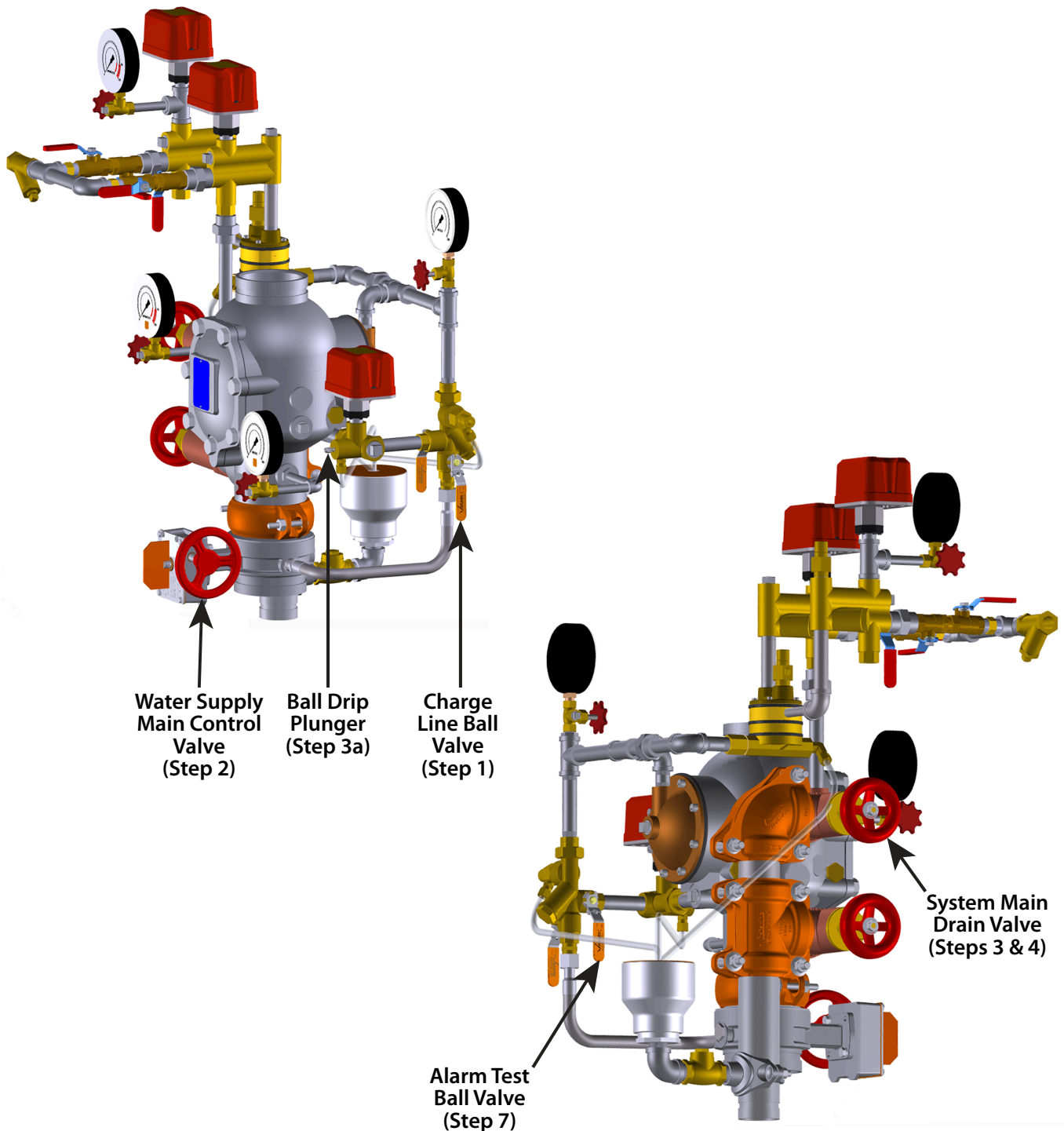
Confirm that the system has been depressurized. The gauges should indicate zero pressure.

Step 7:

Confirm that the alarm test ball valve is closed.

Step 8:

Follow steps 4 - 19 of the "Initial System Setup" section.



SECTION III


- **Weekly External Inspection**
- **Monthly External Inspection**

WARNING

- The building owner or their representative is responsible for maintaining the fire protection system in proper operating condition.
- To ensure proper system operation, valves must be inspected in accordance with current NFPA-25 requirements or in accordance with the requirements of the local authority having jurisdiction (whichever is more stringent). Always refer to the instructions in this manual for additional inspection and testing requirements.
- The frequency of inspections must 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.

WEEKLY EXTERNAL INSPECTION



CAUTION

- Perform a visual inspection of the valve and trim on a weekly basis.
- If the preaction system is equipped with a low-pressure alarm, monthly inspections may be sufficient. Contact the local authority having jurisdiction for specific requirements.

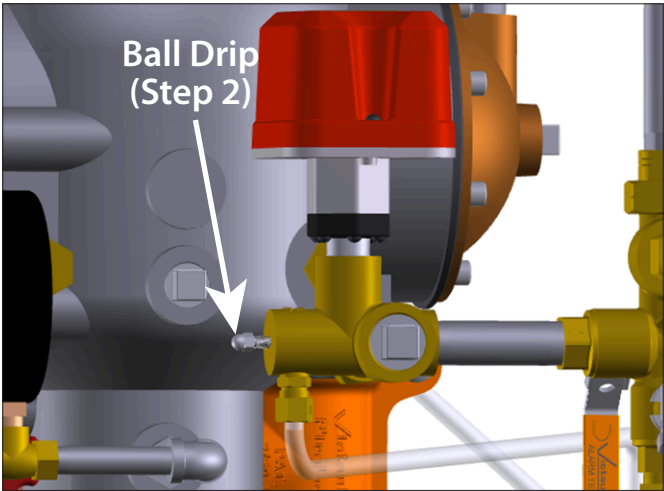
Failure to perform weekly inspections may result in damage to the valve and trim.

On a weekly basis, when the valve is reset after an operational test (or after any system operation): The water supply main drain valve and any low-point drains 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. **NOTE:** The optional Series 75D Water Column Kit can be installed to automate this step.

MONTHLY EXTERNAL INSPECTION

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. Confirm the proper water-to-air ratio is being maintained.
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 the actuated valve and trim are located in an area that is not subject to freezing temperatures.
5. 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
Pilot Line Shut-Off Valve	Open
Pilot Line Fill Valve	Closed – Restricted Fill
System Line Shut-Off Valve	Open
System Line Fill Valve	Closed – Restricted Fill
Isolation Ball Valve for Series 746-LPA Dry Accelerators (if applicable)	Open
¼-Turn Vent Ball Valve for Series 746-LPA Dry Accelerators (if applicable)	Closed



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, valves must be inspected in accordance with current NFPA-25 requirements or in accordance with the requirements of the local authority having jurisdiction (whichever is more stringent). Always refer to the instructions in this manual for additional inspection and testing requirements.
- The frequency of inspections must 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

Perform the main drain test on a frequency required by the current NFPA-25 code. The authority having jurisdiction in the area may require these 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 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.
5. 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.

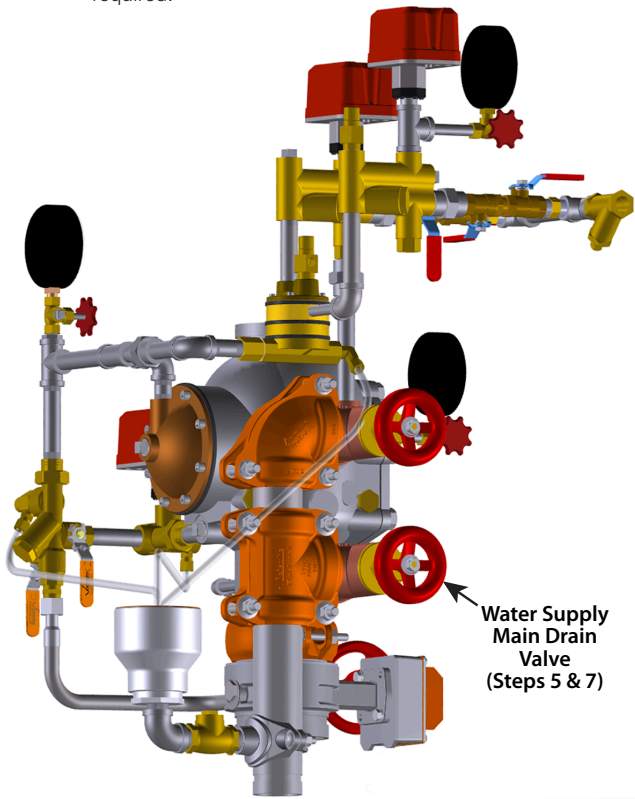
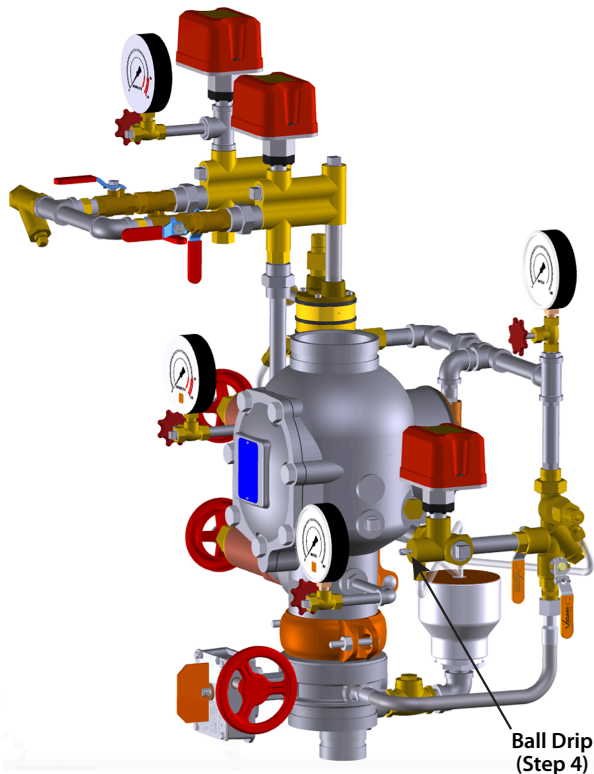
Failure to pipe the system main drain valve to a proper wastewater drain will result in property damage.

6. Open the water supply main drain valve fully to flush the water supply of any contaminants.
7. While the water supply main drain valve is fully open, record the water supply pressure (from the water supply gauge) as the residual pressure.
8. Close the water supply main drain valve slowly.
9. Record the water pressure established after closing the water supply main drain valve.

10. Compare the residual pressure reading, taken above, 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.
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
Pilot Line Shut-Off Valve	Open
Pilot Line Fill Valve	Closed – Restricted Fill
System Line Shut-Off Valve	Open
System Line Fill Valve	Closed – Restricted Fill
Isolation Ball Valve for Series 746-LPA Dry Accelerators (if applicable)	Open
¼-Turn Vent Ball Valve for Series 746-LPA Dry Accelerators (if applicable)	Closed

12. 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.
13. 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.



REQUIRED WATER FLOW ALARM TEST

Perform the water flow alarm test on a frequency required by the current NFPA-25 code. The authority having jurisdiction in the area may require these tests on a more frequent basis. Verify these requirements by contacting the authority having jurisdiction in the affected area.

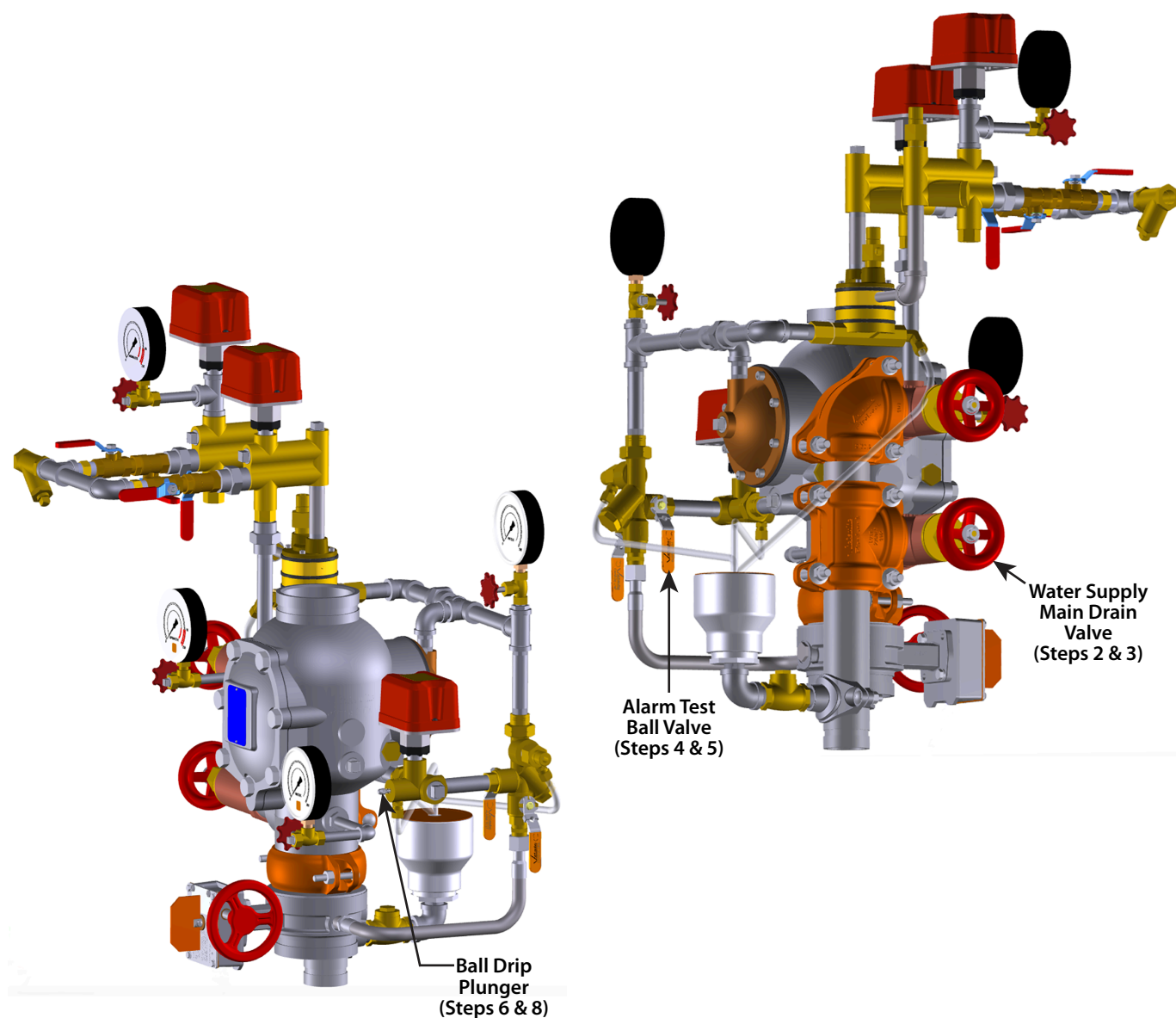
1. Notify the authority having jurisdiction, remote station alarm monitors, and those in the affected area that the water flow alarm test will be performed.

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 there is no leakage from the intermediate valve chamber. The ball drip on the alarm manifold assembly should not be 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.



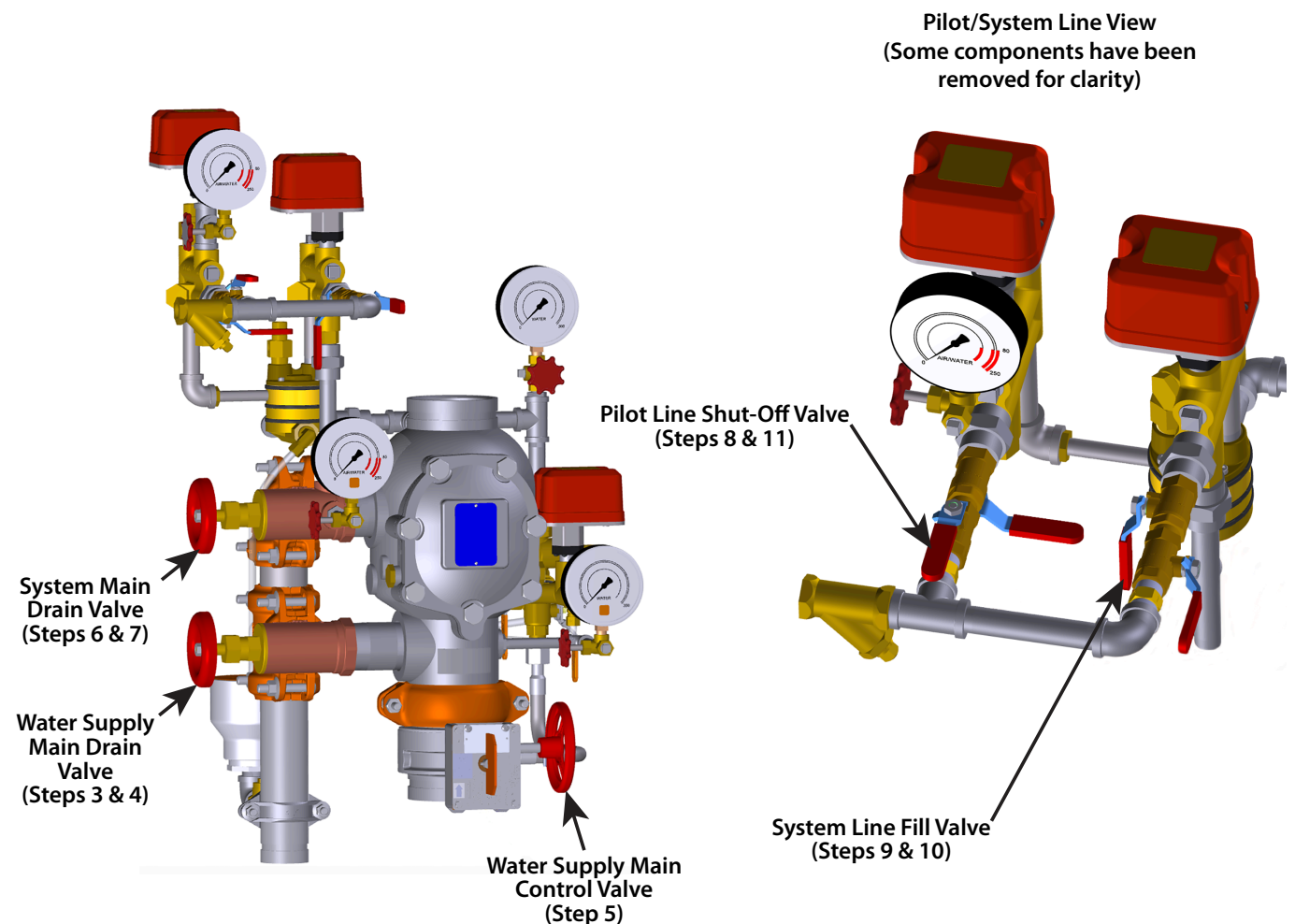
REQUIRED WATER LEVEL AND LOW AIR ALARM TESTS FOR THE SYSTEM SUPERVISORY SWITCH

Perform the water level and low air alarm tests for the system supervisory switch on a frequency required by the current NFPA-25 code. The authority having jurisdiction in the area may require these tests on a more frequent basis. Verify these requirements by contacting the authority having jurisdiction in the affected area.

NOTICE


- If Series 746-LPA Dry Accelerators are installed, ensure that the authority having jurisdiction is notified that the water level and low air alarm tests are in progress. Failure to close the isolation ball valve of the Series 746-LPA Dry Accelerators may cause the valve to trip, resulting in a false alarm.

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. If Series 746-LPA Dry Accelerators are installed, close the isolation ball valves.
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. Close the water supply main control valve.
6. 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.
- 6a. Record the air pressure at which the low air alarm activates.
7. Close the system main drain valve.
8. Close the pilot line shut-off valve.
9. Open the system line fill valve to the “OPEN – FAST-FILL” position. Bring the pressure back up to normal system line pressure.
10. When normal system line air pressure is reached, close the system line fill valve to the “CLOSED – RESTRICTED FILL” position.
11. Open the pilot line shut-off valve.
12. If Series 746-LPA Dry Accelerators are installed, open the isolation ball valves.



REQUIRED WATER LEVEL AND LOW AIR ALARM TESTS FOR THE SYSTEM SUPERVISORY SWITCH (CONTINUED)

13. Open the water supply main drain valve.



CAUTION

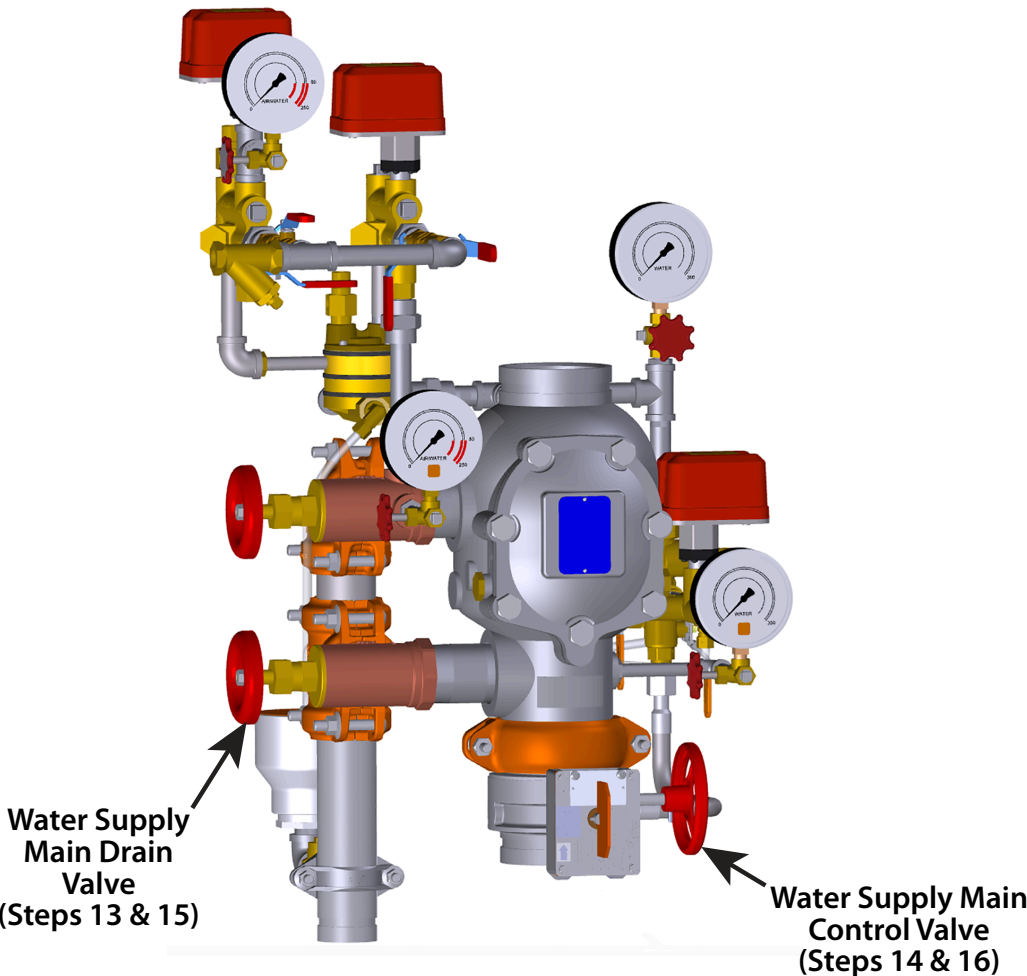
- Take precautions when opening the water supply main control valve, since water will flow from all open system valves.

Failure to follow this instruction could result in property damage.

14. Open the water supply main control valve slowly until water flows steadily from the open water supply main drain valve.
15. Close the water supply main drain valve when a steady flow of water occurs.
16. Open the water supply main control valve fully.
17. Confirm that all valves are in their normal operating positions (refer to the table on this page).

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
Pilot Line Shut-Off Valve	Open
Pilot Line Fill Valve	Closed – Restricted Fill
System Line Shut-Off Valve	Open
System Line Fill Valve	Closed – Restricted Fill
Isolation Ball Valve for Series 746-LPA Dry Accelerators (if applicable)	Open
¼-Turn Vent Ball Valve for Series 746-LPA Dry Accelerators (if applicable)	Closed

18. 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.



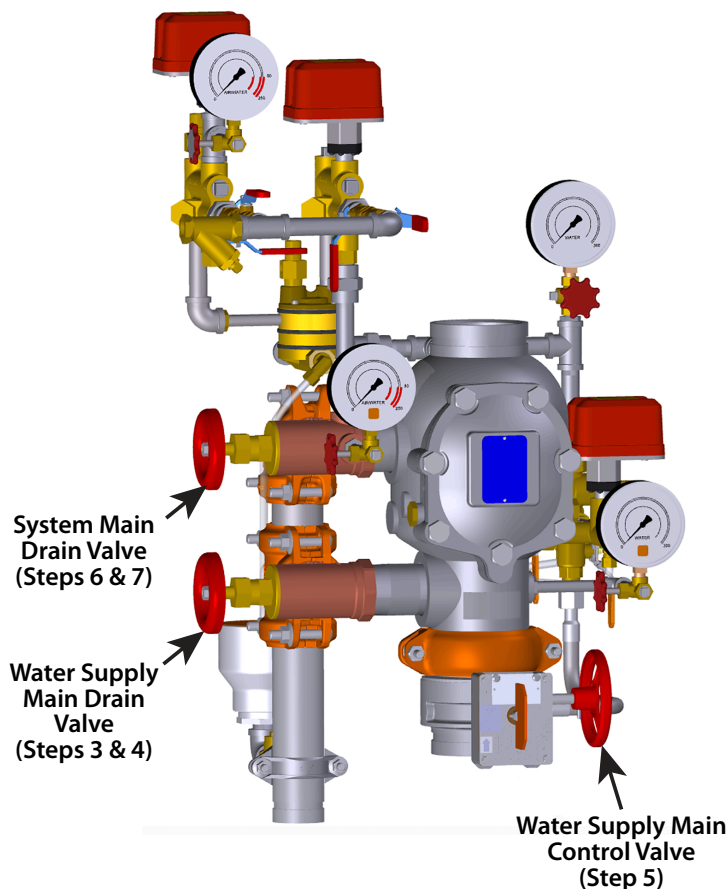
REQUIRED WATER LEVEL AND LOW AIR ALARM TESTS FOR THE PILOT SUPERVISORY SWITCH

Perform the water level and low air alarm tests for the pilot supervisory switch on a frequency required by the current NFPA-25 code. The authority having jurisdiction in the area may require these tests on a more frequent basis. Verify these requirements by contacting the authority having jurisdiction in the affected area.

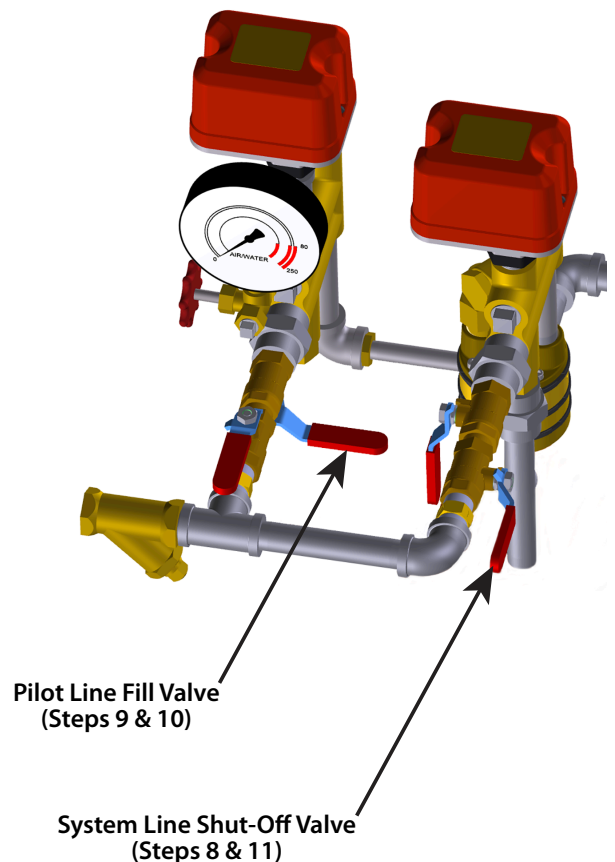
NOTICE

- If Series 746-LPA Dry Accelerators are installed, ensure that the authority having jurisdiction is notified that the water level and low air alarm tests are in progress. Failure to close the isolation ball valve of the Series 746-LPA Dry Accelerators may cause the valve to trip, resulting in a false alarm.

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. If Series 746-LPA Dry Accelerators are installed, close the isolation ball valves.
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. Close the water supply main control valve.
- 5a. Remove pressure from the pilot line by opening the remote system test valve (inspector's test connection).
6. 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.
- 6a. Record the air pressure at which the low air alarm activates.
7. Close the system main drain valve.
8. Close the system line shut-off valve.
9. Open the pilot line fill valve to the "OPEN – FAST-FILL" position. Bring the pressure back up to normal pilot line pressure.
10. When the pressure reaches a minimum of 13 psi/90 kPa/0.9 Bar, close the pilot line fill valve to the "CLOSED – RESTRICTED FILL" position.
11. Open the system line shut-off valve.
12. If Series 746-LPA Dry Accelerators are installed, open the isolation ball valves.



Pilot/System Line View
(Some components have been removed for clarity)



REQUIRED WATER LEVEL AND LOW AIR ALARM TESTS FOR THE PILOT SUPERVISORY SWITCH (CONTINUED)

13. Open the water supply main drain valve.

⚠ CAUTION

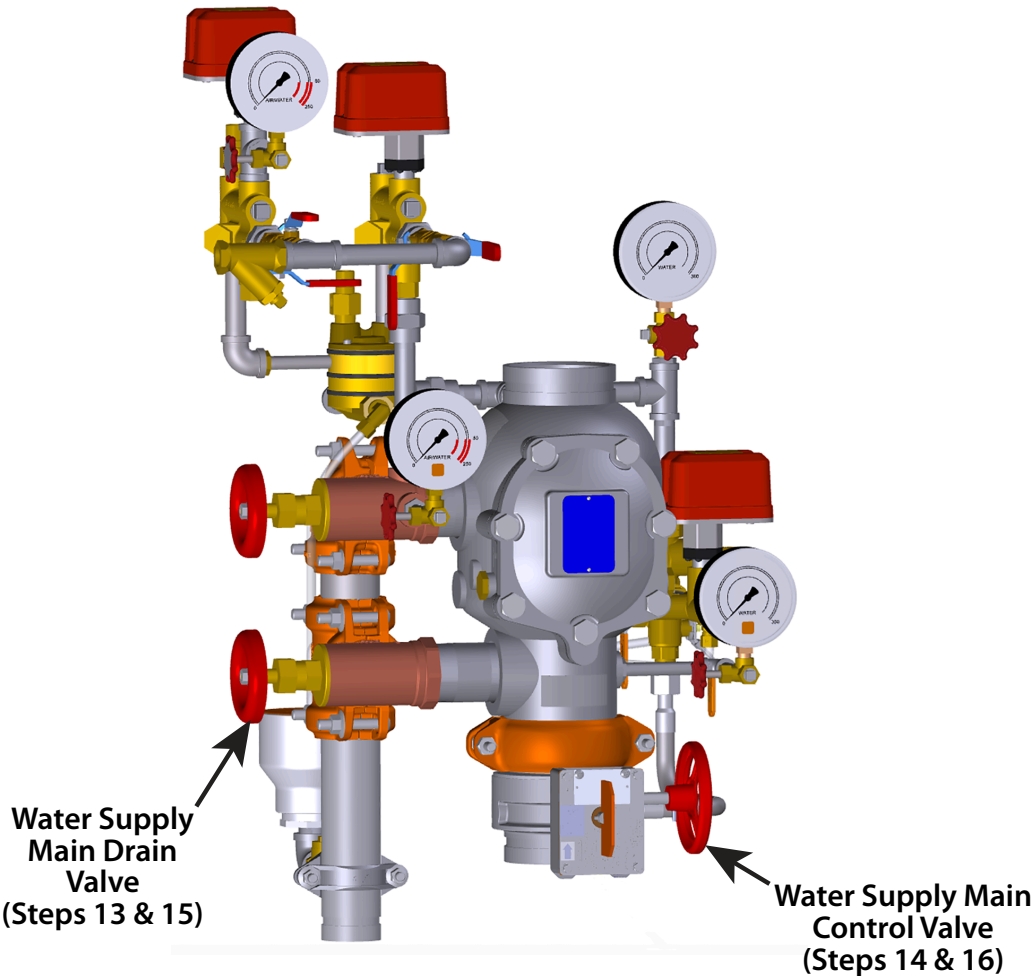
- Take precautions when opening the water supply main control valve, since water will flow from all open system valves.

Failure to follow this instruction could result in property damage.

14. Open the water supply main control valve slowly until water flows steadily from the open water supply main drain valve.
15. Close the water supply main drain valve when a steady flow of water occurs.
16. Open the water supply main control valve fully.
17. Confirm that all valves are in their normal operating positions (refer to the table on this page).

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
Pilot Line Shut-Off Valve	Open
Pilot Line Fill Valve	Closed – Restricted Fill
System Line Shut-Off Valve	Open
System Line Fill Valve	Closed – Restricted Fill
Isolation Ball Valve for Series 746-LPA Dry Accelerators (if applicable)	Open
¼-Turn Vent Ball Valve for Series 746-LPA Dry Accelerators (if applicable)	Closed

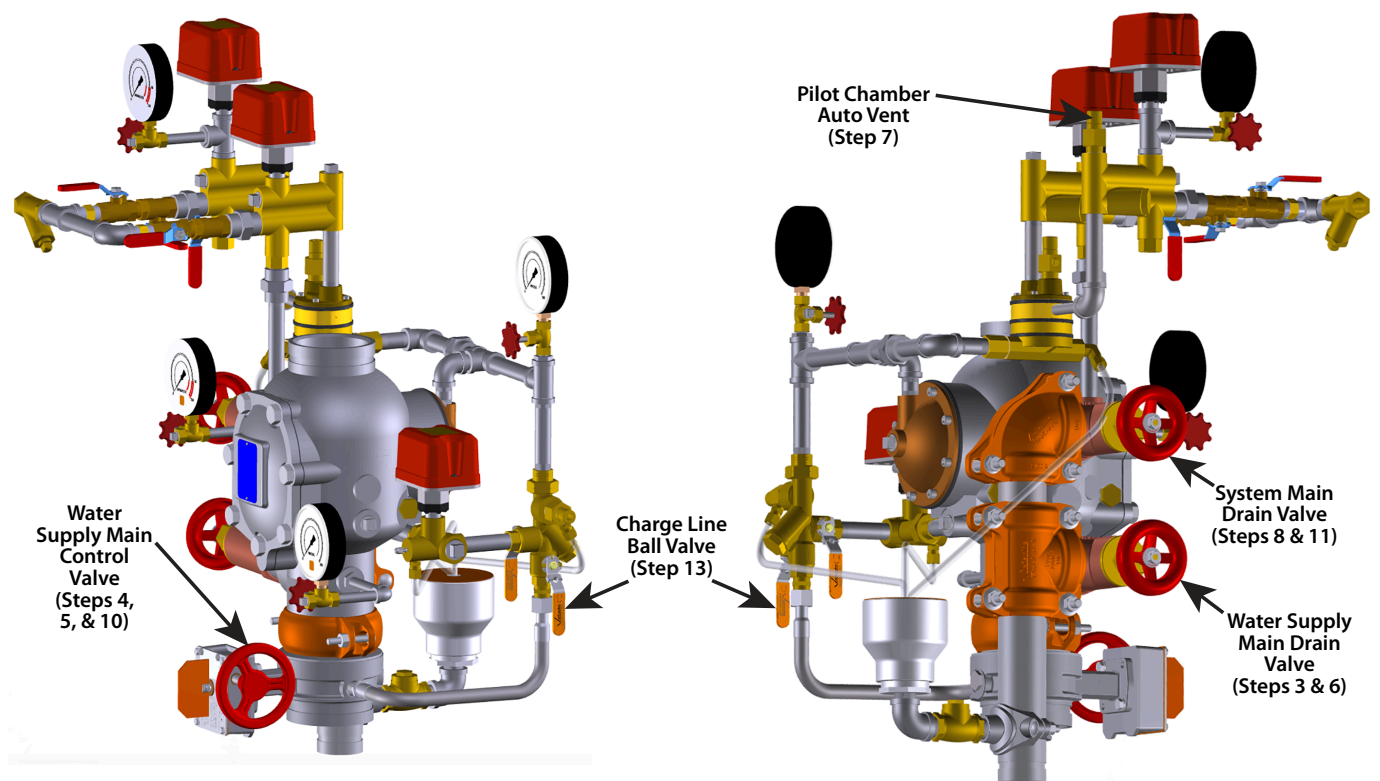
18. Notify the authority having jurisdiction, remote station alarm monitors, and those in the affected area that the valve is back in service. Provide test results to the authority having jurisdiction, if required.



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 must 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.

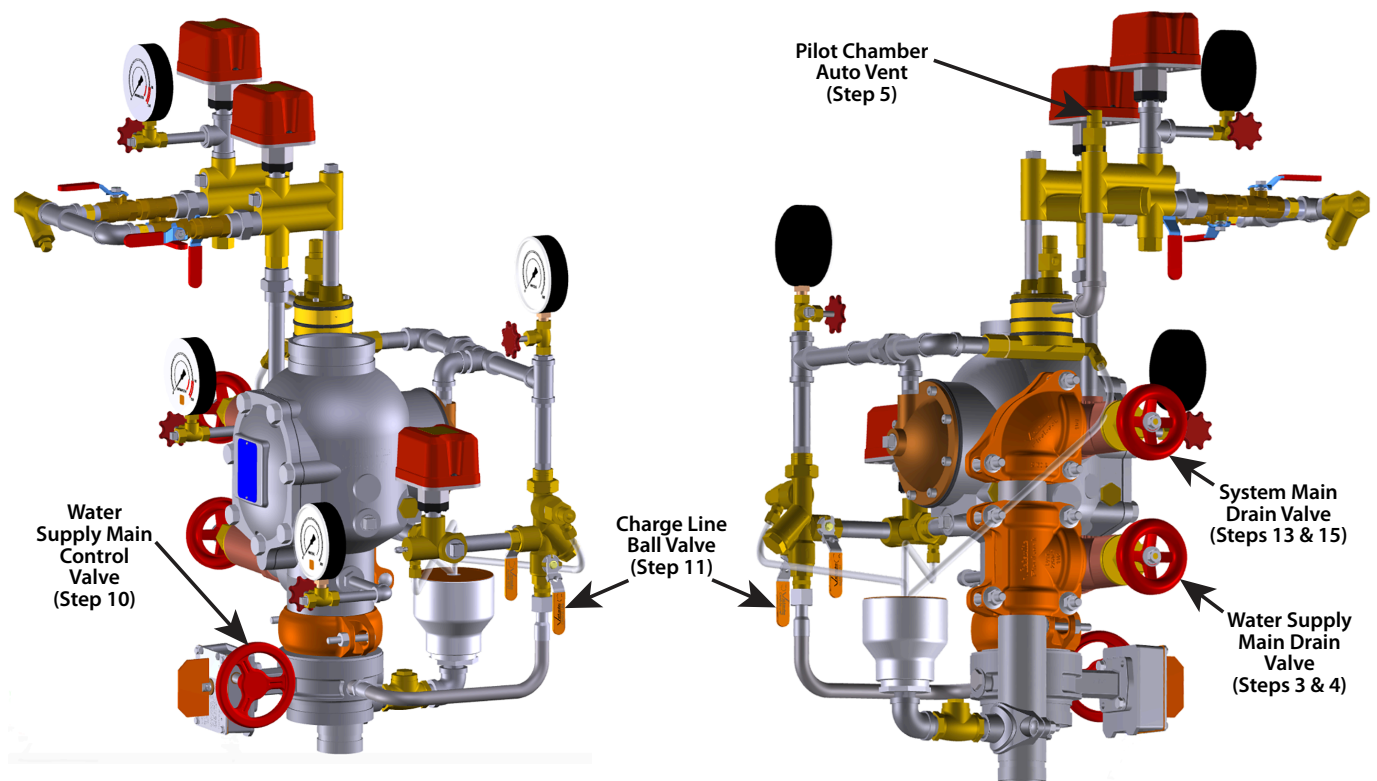
1. Notify the authority having jurisdiction, remote station alarm monitors, and those in the affected area that the partial operational (trip) test will be performed.
2. Record the water supply pressure and system air pressure.
3. Open the water supply main drain valve fully to flush the water supply 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. Remove pressure from the pilot line by pressing down on the screw of the pilot chamber Auto Vent Sleeve, which is located on the air manifold of the pilot line, or by opening the pilot line inspector's test valve.
8. Open the remote system test valve (inspector's test connection) or the system main drain valve to simulate an open sprinkler. Record the system air pressure when the valve operates, along with any other information required by the authority having jurisdiction.
9. Confirm that the charge line's pressure drops to zero and that water is flowing through the auto drain to the drip cup.
10. Close the water supply main control valve fully.
11. Close the remote system test valve (inspector's test connection) or the system main drain valve.
12. **Shut off the air supply.**
13. Close the charge line ball valve.
14. Perform all steps in the "Resetting the System" section.



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 must 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 must 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. Remove pressure from the pilot line by pressing down on the screw of the pilot chamber Auto Vent Sleeve, which is located on the air manifold of the pilot line, or by opening the pilot line inspector's test valve.
6. Open the remote system test valve (inspector's test connection) or the system main drain valve to simulate an open sprinkler.
7. Record the following:
 - 7a. The time between opening the remote system test valve (inspector's test connection) and operation of the actuated valve
 - 7b. System air pressure when the valve operated
 - 7c. The time between opening the remote system test valve (inspector's test connection) to when water flows from the test connection's outlet
 - 7d. All information required by the authority having jurisdiction
8. Confirm that all alarms operate properly.
9. Continue to run water until it is clear.
10. Close the water supply main control valve.
11. Close the charge line ball valve.
12. **Shut off the air supply.**
13. Open the system main drain valve to drain the system.
14. After the system is drained, 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.



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SECTION V

- Required Internal Inspection

 WARNING	
	
<ul style="list-style-type: none">• Depressurize and drain the piping system before attempting to remove the cover plate from the valve.• The building owner or their representative is responsible for maintaining the fire protection system in proper operating condition.• To ensure proper system operation, valves must be inspected in accordance with current NFPA-25 requirements or in accordance with the requirements of the local authority having jurisdiction (whichever is more stringent). Always refer to the instructions in this manual for additional inspection and testing requirements.• The frequency of inspections must 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. <p>Failure to follow these instructions could cause system failure, resulting in death or serious personal injury and property damage.</p>	

REQUIRED INTERNAL INSPECTION

Inspect internal components at the frequency required by the current NFPA-25 code. 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.

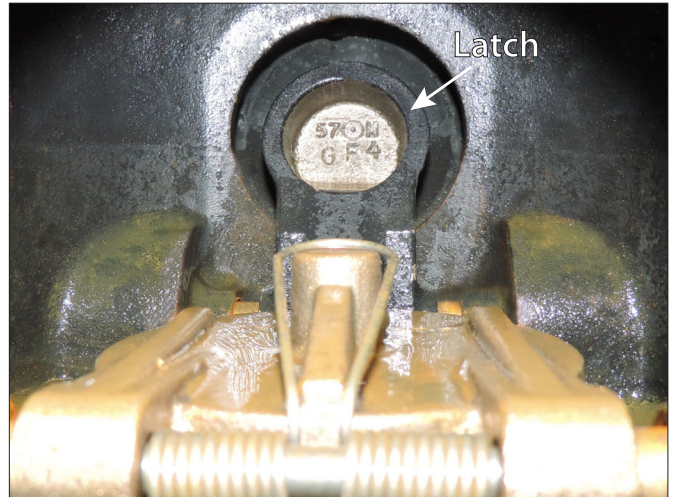
1. Notify the authority having jurisdiction, remote station alarm monitors, and those in the affected area that the system is being taken out of service.
2. Open the water supply main drain valve fully to flush the water supply of any contaminants.
3. Close the water supply main drain valve.
4. Close 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.
9. **SHUT OFF THE AIR SUPPLY.**
10. Open the manual pull station valve.
11. **PUSH DOWN ON THE AUTO DRAIN SCREW TO REMOVE PRESSURE IN THE CHARGE LINE. VERIFY THAT THERE IS NO PRESSURE ON THE GAUGES.**

WARNING

- Ensure 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.



12. 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.
13. Remove all cover plate bolts, along with the cover plate and cover plate gasket. **NOTE:** The 1 1/2-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.



14. 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.



15. 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.**
16. 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.
17. Inspect the clapper for freedom of movement and physical damage. Replace any damaged or worn parts by following the applicable instructions in Section VI.
18. Re-install the cover plate by following the "Installing the Cover Plate Gasket and Cover Plate" section.
19. 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 798 Pneumatic/Pneumatic Actuators

 WARNING	
	
<ul style="list-style-type: none">• Before servicing or testing the system, notify the authority having jurisdiction.• Depressurize and drain the piping system before attempting to remove the cover plate from the valve.• The building owner or their representative is responsible for maintaining the fire protection system in proper operating condition.• To ensure proper system operation, valves must be inspected in accordance with current NFPA-25 requirements or in accordance with the requirements of the local authority having jurisdiction (whichever is more stringent). Always refer to the instructions in this manual for additional inspection and testing requirements.• The frequency of inspections must 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. <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 – 14 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.

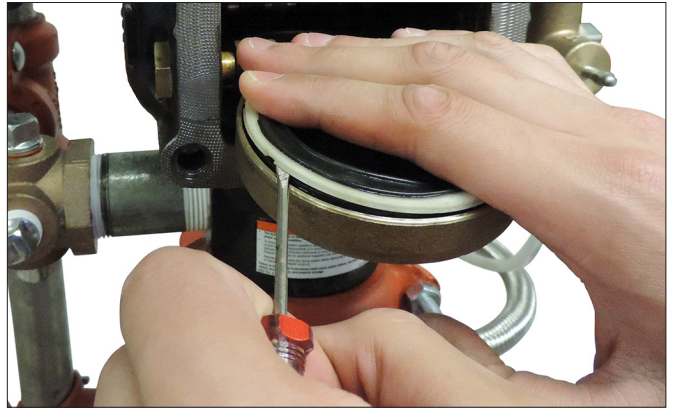


4. Pry the edge of the seal washer from inside the clapper seal, as shown above. **DO NOT PRY THE SEAL WASHER OUT FROM THE INNER HOLE.**
5. Remove the seal washer from the clapper seal. Dry up any moisture under the seal washer or on the clapper seal.

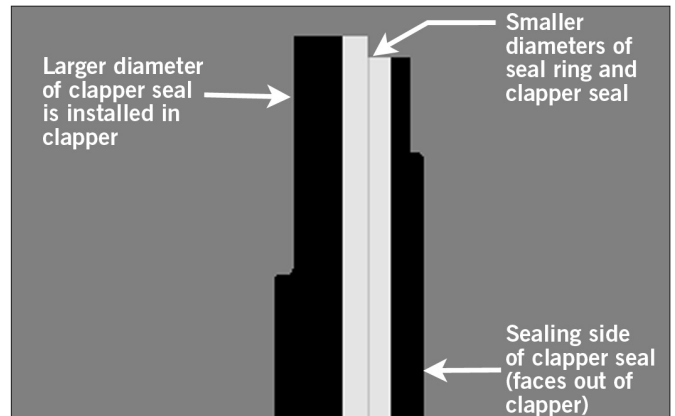
CAUTION

- Use only Victaulic-supplied replacement parts.

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



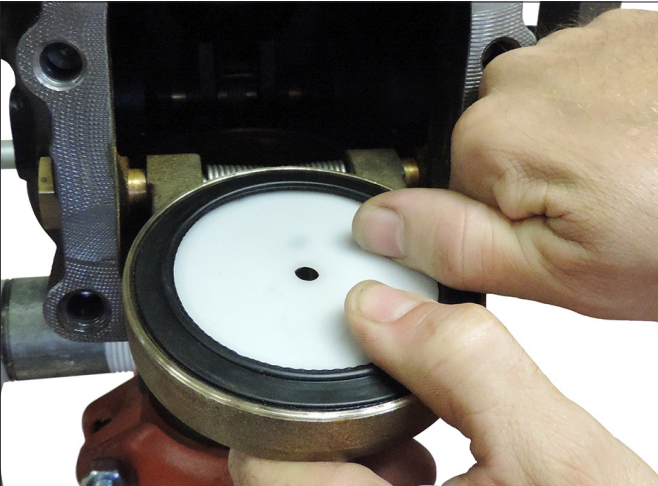
6. Pry the clapper seal, along with the seal ring, out of the clapper. Inspect the clapper seal. If the clapper seal is torn or worn, replace it with a new, Victaulic-supplied clapper seal. If replacing the clapper seal assembly with a new assembly, skip to step 7.



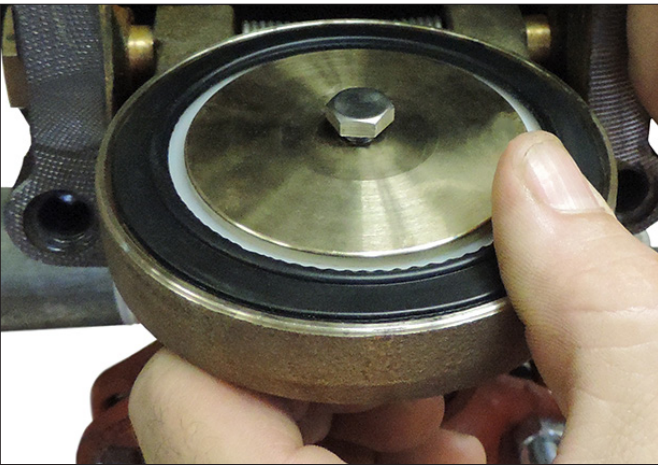
- 6a. If using the same clapper seal assembly and the seal ring was removed from the clapper seal in the previous step: Re-insert the seal ring carefully underneath the outer lip of the clapper seal. Ensure that the smaller diameter of the seal ring is toward the sealing surface of the clapper seal.



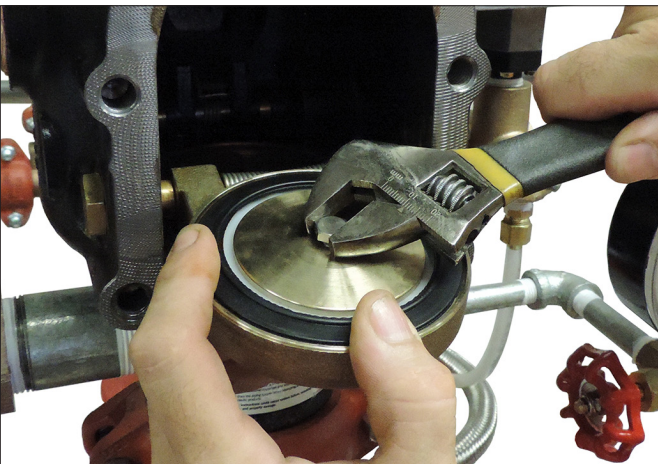
7. Insert the seal washer carefully underneath the sealing lip of the gasket.
8. Remove any debris from the clapper. Inspect the clapper for damage that may affect the sealing capabilities of the new clapper seal. Contact Victaulic if the clapper requires replacement.



9. Install the clapper seal into the clapper carefully. Ensure 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.

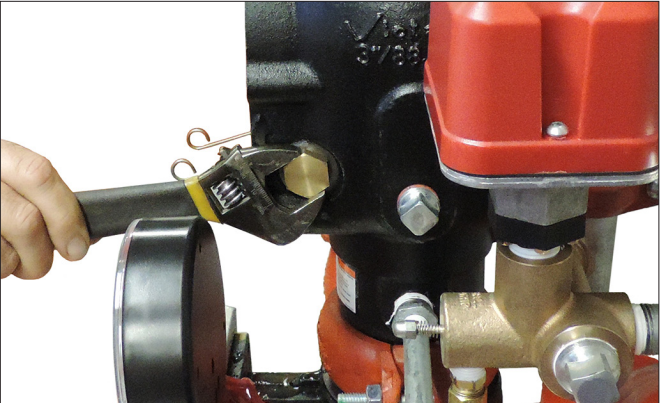
REQUIRED SEAL ASSEMBLY BOLT/BOLT SEAL TORQUES

Nominal Size inches or mm	Required Torque inch-lbs/N•m
1 ½	40 5
2	40 5
2 ½	90 10
76.1 mm	90 10
3	90 10
4	110 12
165.1 mm	160 18
6	160 18
8	160 18

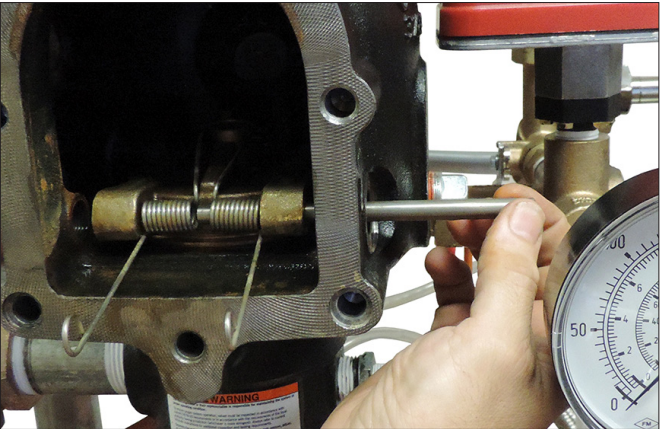
12. Replace the cover plate by following the “Installing the Cover Plate Gasket and Cover Plate” section.
13. Place the system back in service by following the “Resetting the System” section.

REMOVING AND REPLACING THE CLAPPER ASSEMBLY

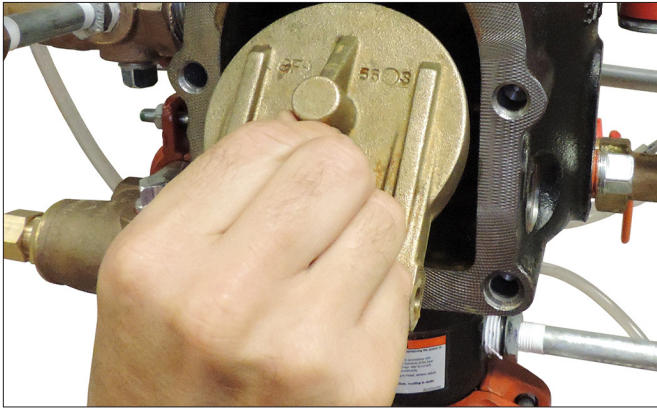
1. Perform steps 1 – 14 of the “Required Internal Inspection” section.



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.

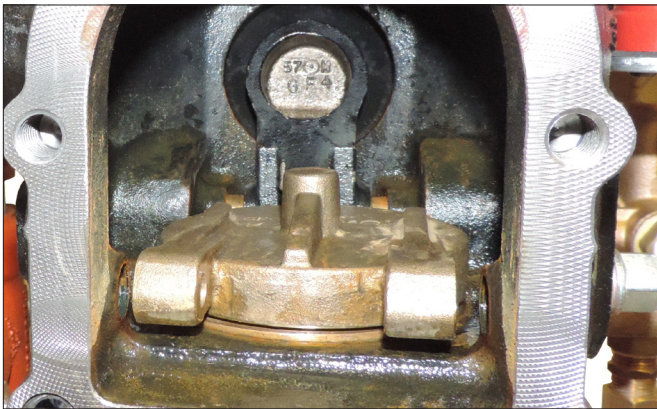


4. Remove the clapper assembly from the valve body seat ring. Clean the valve body seat ring.

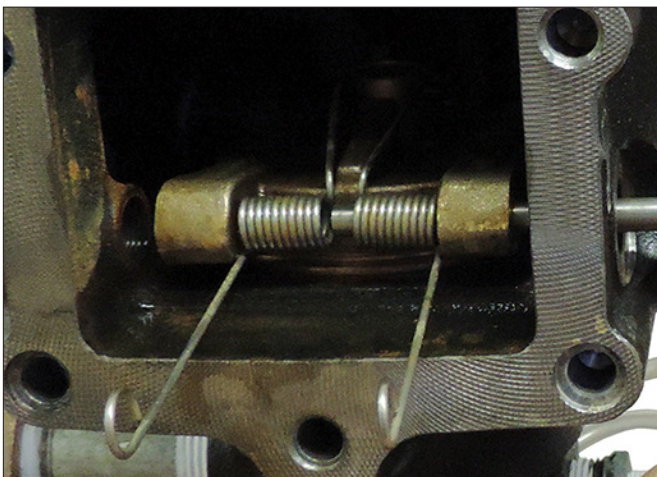
⚠ CAUTION

- 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. Ensure 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. Ensure 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. Ensure 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.

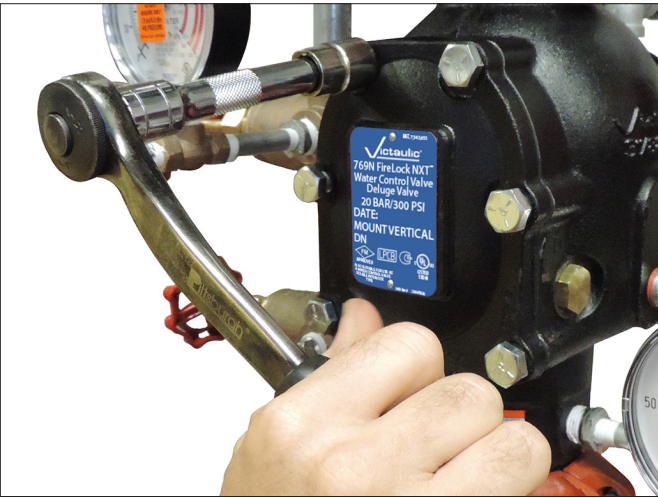
1. Verify that the cover plate gasket is in good condition. If the gasket is torn or worn, replace it with a new, Victaulic-supplied gasket.



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 1 ½-inch/48.3-mm and 2-inch/60.3-mm valve sizes, a washer must 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. Ensure 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.

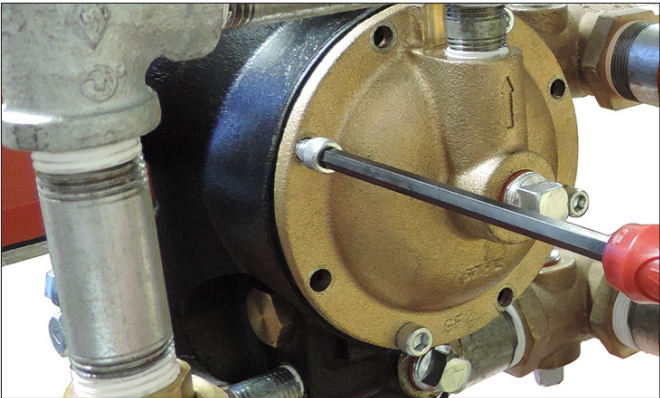
REQUIRED COVER PLATE BOLT TORQUES

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

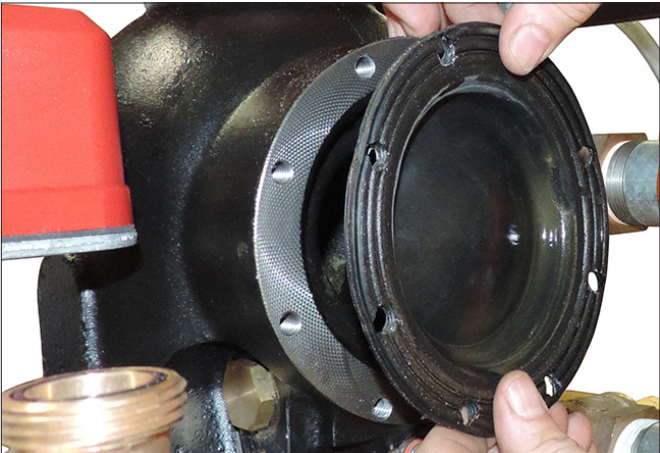
6. Place the system back in service by following the "Resetting the System" section.

REMOVING AND REPLACING THE DIAPHRAGM

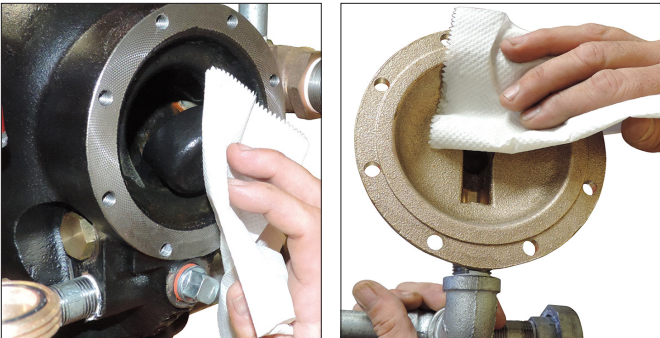
1. Remove the system from service by following steps 1 – 11 of the "Required Internal Inspection" section.
2. Break the unions that connect the trim to the diaphragm cover. Refer to the applicable trim drawing for details.



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.

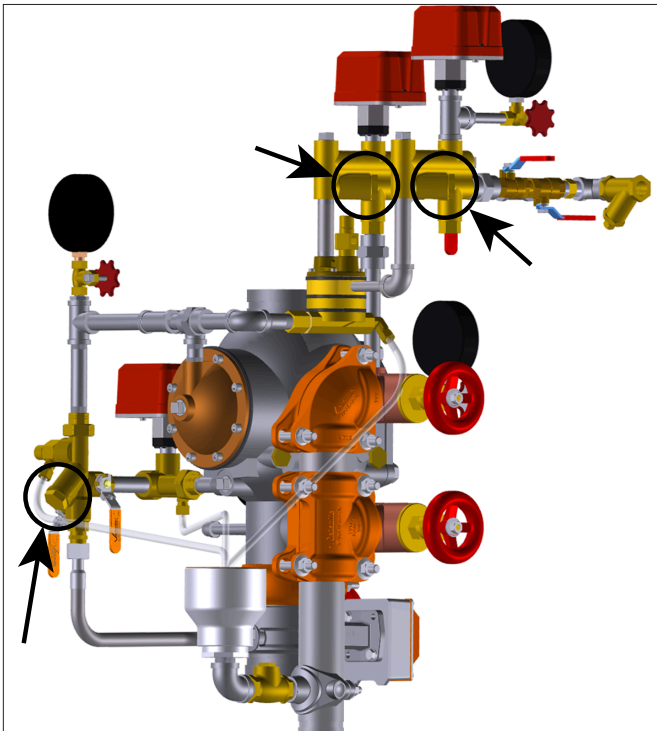
⚠ CAUTION

- **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 LOOSENEED 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 must be corrected immediately by depressurizing the system and tightening any affected components.

CLEANING THE CARTRIDGE IN THE AIR AND PRIMING MANIFOLD ASSEMBLIES

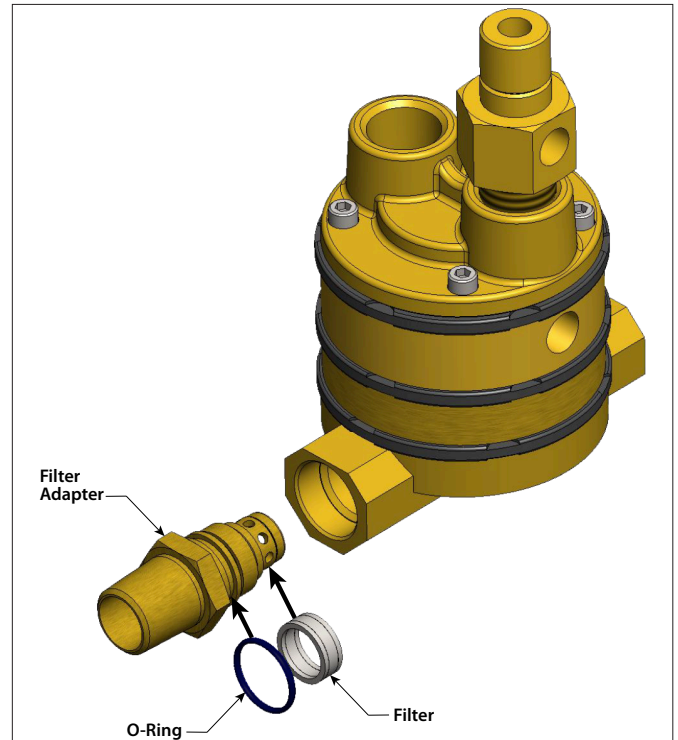
1. Remove the system from service by following steps 1 – 11 of the “Required Internal Inspection” section.



2. Remove the existing cartridge from the air manifold 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 798 PNEUMATIC/PNEUMATIC ACTUATORS

1. Remove the system from service by following steps 1 – 11 of the “Required Internal Inspection” section.



2. Remove the Series 798 Pneumatic/Pneumatic 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 must 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. Make sure 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. 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. 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. Water is under the clapper seal.	Check the clapper seal and valve body seat ring for physical damage and foreign material. Inspect the clapper seal to ensure 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. Water is under the clapper seal.	Check the clapper seal and valve body seat ring for physical damage and foreign material. Inspect the clapper seal to ensure 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 clapper will not latch closed.	There is no water pressure on the diaphragm. The auto drain is not set.	Check the water pressure in the charge line. Ensure that the restrictor in the charge line is clean. 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 798 PNEUMATIC/PNEUMATIC ACTUATOR

Problem	Possible Cause	Solution
When air in the system and pilot lines is released, the Series 798 Pneumatic/Pneumatic Actuator does not trip.	There is a restriction in the piping between the air manifolds and the auto vents.	Remove the air feed nipple and remove any debris. Clean the restrictor and strainer in the air manifolds. Verify that no debris has built up in the air manifold ports that could be restricting airflow.
When the Auto Vent Sleeves of the Series 798 Pneumatic/Pneumatic Actuator are pulled up, the screws do not stay set in the "UP" position.	The Series 798 Pneumatic/Pneumatic Actuator is not receiving enough air. The Series 798 Pneumatic/Pneumatic Actuator has a broken seal.	Increase the air pressure going into the Series 798 Pneumatic/Pneumatic Actuator. If the above procedure does not work, contact Victaulic.
Water is leaking through the Series 798 Pneumatic/Pneumatic Actuator.	The air chamber of the Series 798 Pneumatic/Pneumatic Actuator is not set. The filter on the Series 798 Pneumatic/Pneumatic Actuator is clogged. The Series 798 Pneumatic/Pneumatic Actuator has a ripped diaphragm.	Ensure that the auto vent seals of the Series 798 Pneumatic/Pneumatic Actuator are in the set position and that the air chambers are pressurized. Replace the filter of the Series 798 Pneumatic/Pneumatic Actuator. Refer to the "Replacing the Filter in Series 798 Pneumatic/Pneumatic Actuators" section. If water still leaks through the Series 798 Pneumatic/Pneumatic Actuator after performing the above procedures, contact Victaulic.
No water is passing through the Series 798 Pneumatic/Pneumatic Actuator.	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.

TROUBLESHOOTING – SERIES 746-LPA DRY ACCELERATOR

Problem	Possible Cause	Solution
The valve operates without sprinkler activation.	There is a loss of air pressure in the lower inlet chamber of the Series 746-LPA Dry Accelerator.	Check for air loss at the lower chamber seal. If a leak is present, turn the adjustment nut counterclockwise to seal. Check for any leaks in the system and trim. Confirm that the AMTA is operating properly.
The Series 746-LPA Dry Accelerator does not operate within a 0.3-Bar/5-psi pressure drop in system air pressure.	There is a loss of air pressure in the upper air chamber of the Series 746-LPA Dry Accelerator. The air decay rate of the system is too slow.	Apply soapy water to all joints around the Series 746-LPA Dry Accelerator to check for leaks. Repair any leaks and re-test. Make sure there are no restrictions in the remote system test valve (inspector's test connection). If the above procedures do not work, contact Victaulic.
The Series 746-LPA Dry Accelerator does not set up properly (cannot get pressure on the upper gauge, and the button pops up immediately when pressure is introduced).	The Series 746-LPA Dry Accelerator is installed upside-down.	Remove the Series 746-LPA Dry Accelerator from the trim. Turn the unit around so that the vent seal "button" is facing down (toward the actuator).

Victaulic® Series 769N FireLock NXT™ Actuated Valve with Preaction Trim

Double-Interlocked Pneumatic/Pneumatic Release with Series 798 Pneumatic/Pneumatic Actuator

For complete contact information, visit victaulic.com

I-769N.Preaction/DPA 9450 REV A UPDATED 05/2016 ZDPA769NP0

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