Installation, Maintenance, & Testing Manual

Series 751
FireLock® European
Alarm Check Valve Stations

Hang these instructions on the installed valve for easy future reference.

CE 0786 VdS

WARNING

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

- **Read and understand all instructions before attempting to install, maintain, or test any Victaulic piping products.**
- **Wear safety glasses, hardhat, and foot protection.**

If you need additional copies of any literature, or if you have any questions about the safe installation and operation of this product, contact Victaulic Company of Europe, Prijkelstraat 36, 9810 Nazareth, Belgium, Phone: 32-9-381-1500.

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HAZARD IDENTIFICATION

Definitions for identifying the various hazard levels are provided below.

This safety alert symbol indicates important safety messages. 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 if instructions, including recommended precautions, 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, including recommended precautions, are not followed.

NOTICE

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

INSTALLER SAFETY INSTRUCTIONS

⚠ WARNING

- **An experienced, trained installer must install this product in accordance with all instructions. These instructions contain important information.**

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

If you need additional copies of any literature, or if you have any questions about the safe installation and operation of this product, contact Victaulic Company of Europe, Prijkelstraat 36, 9810 Nazareth, Belgium, Phone: 32-9-381-1500.

⚠ WARNING

- **Depressurize and drain the piping system before attempting to install, remove, or adjust any Victaulic piping products.**

Failure to follow this instruction could cause product failure, resulting in serious personal injury and/or property damage.

General

1. Read and understand all instructions before proceeding with the installation, maintenance, and testing of this Victaulic fire protection device.

2. Use only recommended accessories. Use of improper accessories or equipment could result in improper system operation.

3. Avoid dangerous environments. If using electrically powered tools for installation, make sure the area is moisture-free. Keep work areas well lit. Allow enough space for installing the device, trim, and accessories safely and efficiently.

4. Prevent back injury. Larger and pre-trimmed valves are heavier and may require more than one person or mechanical lifting equipment to position and install the assembly properly. Always practice proper lifting techniques.

5. Inspect the shipment. Make sure all components are included with the shipment and that all necessary tools are available for proper installation.

6. Wear safety glasses, hardhat, foot protection, and hearing protection. Protect your hearing if you are exposed to long periods of very noisy job-site operations.

7. Watch for pinch points. Do not put fingers under the valve body where they could be pinched by the weight of the valve. Use caution around spring-loaded components (i.e. clapper).

8. Keep work areas clean. Cluttered areas, benches, and slippery floors can create hazardous working conditions.

9. Keep visitors away. Keep all visitors a safe distance away from work areas.

Maintenance and Testing

1. Notify the authority having jurisdiction. Always notify the authority having jurisdiction before taking a fire protection system out of service or before performing any maintenance that eliminates the fire protection provided by the system.

2. Depressurize and drain the system completely before performing any maintenance. Water under pressure, trapped air, or system air pressure may be present and can create hazardous conditions.

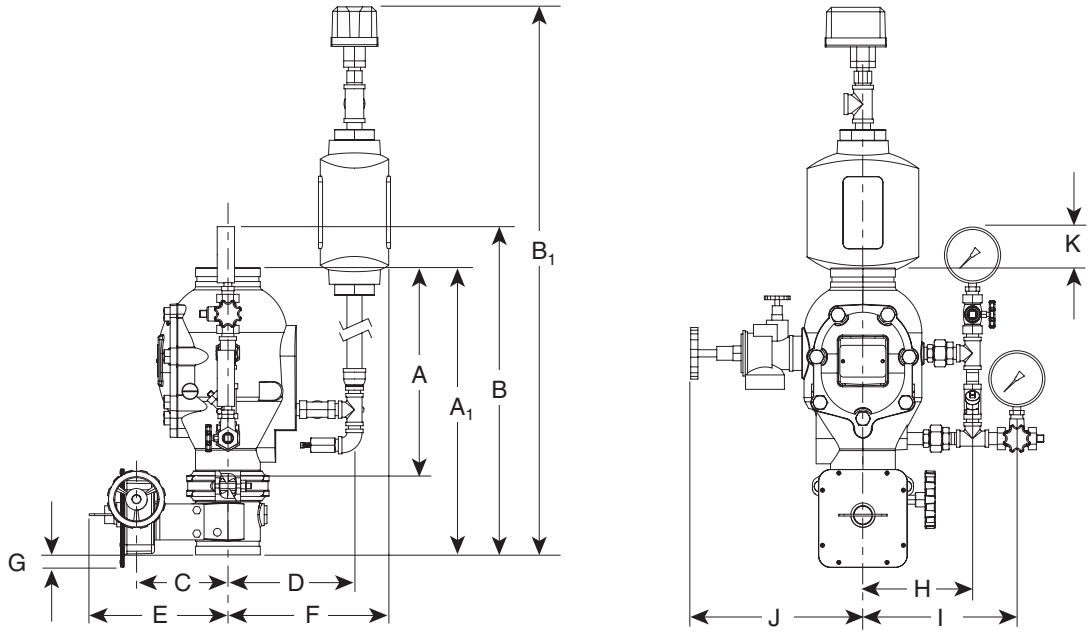
3. Contact the local authority having jurisdiction for testing and inspection schedules.

4. Keep the system away from freezing, corrosive atmospheres, and foreign matter. Any condition that might degrade the system or affect system performance must be avoided.

INTRODUCTION

The following instructions are a guide for proper installation of Victaulic Series 751 Alarm Check Valves. These instructions involve pipe that is properly prepared and grooved in accordance with current Victaulic specifications.

TRIM DIMENSIONS



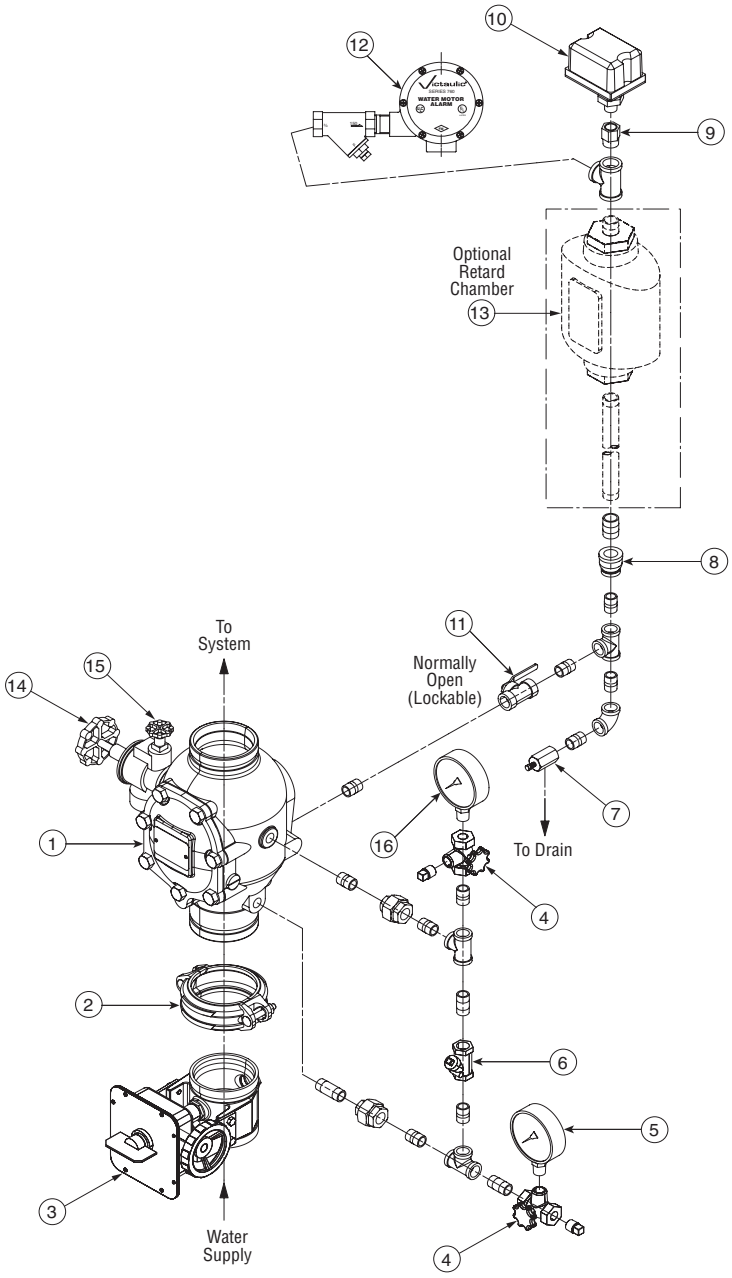
Valve Size	Dimensions – centimeters													Approx. Weight Each kg
	A*	A_1	B	B_1	C	D	E	F	G	H	I	J	K	
DN100	38,18	50,66	59,00	202,00	16,13	22,33	24,45	28,68	7,00	19,33	33,00	33,00	7,22	54,0
DN150	40,64	56,32	61,00	206,00	18,60	25,48	33,00	38,00	–	20,30	36,00	38,00	3,20	69,0

*The "A" dimension is the measurement from the top of the valve body to the bottom of the valve body (takeout dimension).

NOTE: Overall height "B" is greatest height if optional retard chamber is not installed.

EXPLODED VIEW DRAWING – TRIM COMPONENTS

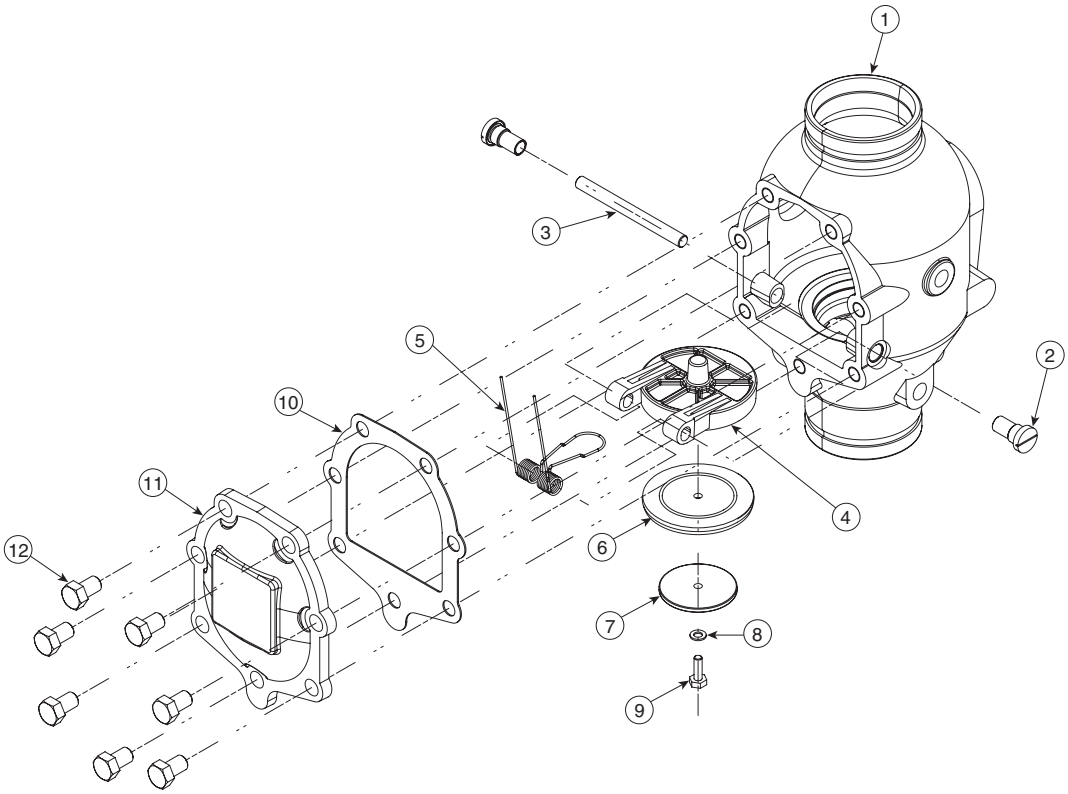
Series 751 FireLock™ European Alarm Check Valve Stations (Optional Accessories Also Shown) Grooved X Grooved



BILL OF MATERIALS

1	Series 751 FireLock European Alarm Check Valve	10	EPS-10 Alarm Pressure Switch
2	Style 005 FireLock Rigid Coupling	11	Alarm Line Ball Valve (Lockable - Normally Open)
3	Series 705W Butterfly Valve	12	Series 760 Water Motor Alarm with ¾-inch Strainer - 100 mesh (Optional)
4	Gauge Valve	13	Series 752 Retard Chamber (Optional)
5	Water Supply Pressure Gauge (0-25 Bar)	14	System Main Drain Valve
6	Swing Check Valve	15	System Test Valve
7	Restricted Orifice/Alarm Line Drain	16	System Pressure Gauge (0-25 Bar)
8	Reducer		
9	Reducing Bushing		

EXPLODED VIEW DRAWING – INTERNAL VALVE COMPONENTS



BILL OF MATERIALS

1	Valve Body	7	Seal-Retaining Ring
2	Clapper Shaft Retaining Bushing (Qty. 2)	8	Bolt Seal
3	Clapper Shaft	9	Seal Assembly Bolt
4	Clapper	10	Cover Plate Gasket
5	Clapper Spring	11	Cover Plate
6	Clapper Seal	12	Cover Plate Bolts (Qty. 7)

IMPORTANT INSTALLATION INFORMATION

1. Before installing the Series 751 Alarm Check Valve, flush the water supply piping thoroughly to ensure that no foreign material is present.

2. The Series 751 Alarm Check Valve MUST NOT be located in an area where the valve is subject to freezing temperatures or physical damage.

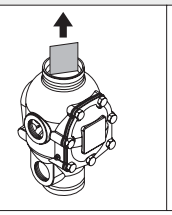
3. It is the owner's responsibility to confirm material compatibility of the Series 751 Alarm Check Valve, trim, and associated accessories when a corrosive environment or contaminated water is present.

4. Series 751 Alarm Check Valves MUST be installed in the vertical position only. The arrow on the body must point upward, and the arrow on the swing check valve in the bypass line must point upward.

5. The Series 752 Retard Chamber should be installed in variable pressure applications. Victaulic provides specific trim drawings for installations that involve a Series 752 Retard Chamber.

6. Confirm that all installation information is available.

⚠ CAUTION



- **Make sure foam spacers are removed before attempting to install the valve.**

Failure to follow this instruction could cause improper valve operation, resulting in serious personal injury and/or property damage.

7. Remove all plastic caps and foam spacers from the valve.

8. Install the Victaulic Series 751 Alarm Check Valve in accordance with the applicable trim drawings. Make sure the trim drawing matches the system's requirements (i.e. retard chamber for variable pressure installations).

PLACING THE SYSTEM IN SERVICE

⚠ CAUTION

- **Make sure the Series 751 Alarm Check Valve is properly heated and protected from freezing temperatures and physical damage.**

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

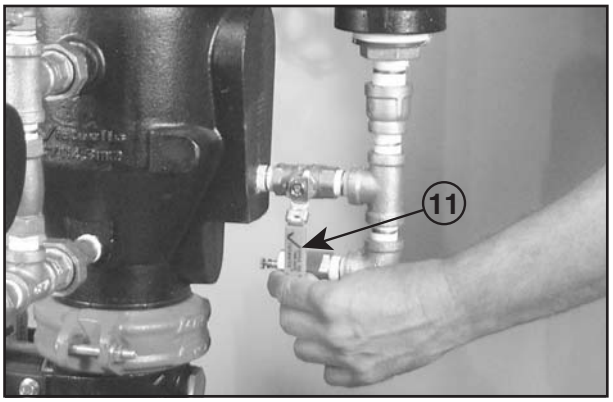
1. Confirm that system drains are shut and the system is free of leaks.

⚠ CAUTION

- **For proper operation of alarms in a wet system, it is important to ensure that all air is removed from the system. Auxiliary vents may be required to release all trapped air from the system.**

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

2. Open the auxiliary drains.

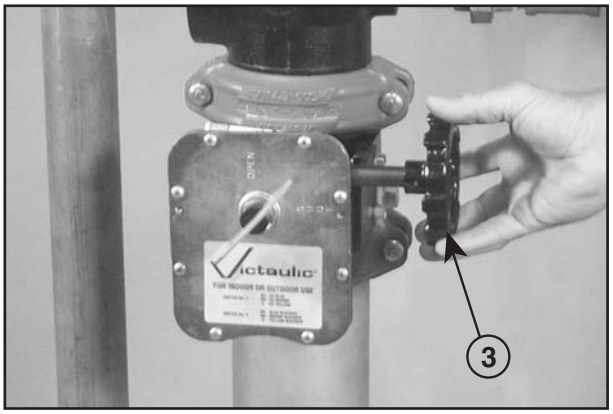


3. Close the alarm line ball valve (11) to prevent alarms from operating while the system is filling. Alarms and electrical panels (controlled by an alarm flow switch on the riser) cannot be interrupted. **NOTE:** If alarm activation is possible, notify local fire companies that the system is being serviced.

⚠ CAUTION

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

Failure to follow this instruction could cause personal injury and/or property damage.



4. Open the water supply's main control valve (3) slowly.

4a. Allow the system to fill with water completely. Allow water to flow from the auxiliary drains to release all trapped air from the system.

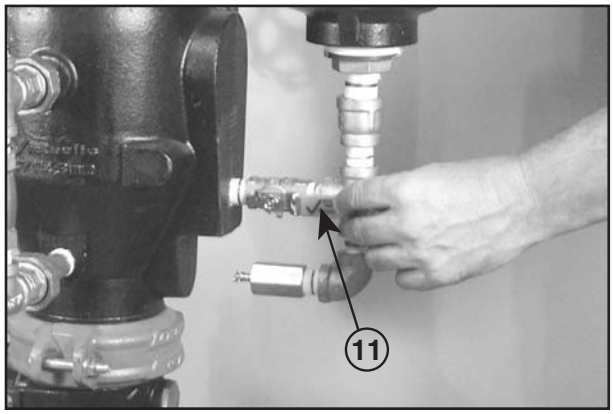
4b. When a steady flow of water occurs and all air is released from the system, close the auxiliary drains in the system.

4c. Record the system pressures. The system pressure gauge (16) should be equal to or greater than the water supply pressure gauge (5).

⚠ CAUTION

- **The alarm line ball valve must be open to allow alarms to activate.**

Failure to follow this instruction will prevent alarms to activate, resulting in serious personal injury and/or property damage.



5. Open the alarm line ball valve (11). Lock the ball valve, as required.

6. Confirm that all valves are in their normal operating positions.

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

EXTERNAL INSPECTION

⚠ CAUTION

- **Any activities that require taking the valve out of service may eliminate the fire protection provided.**
- **Before servicing or testing the system, notify the authority having jurisdiction.**
- **Consideration of a fire patrol should be given in the affected areas.**

Failure to follow these instructions could cause serious personal injury and/or property damage.

NOTICE

- **The owner is responsible for maintaining the fire protection system in proper operating condition.**
- **It is important that the system is inspected regularly, according to proper procedures.**
- **The Victaulic Series 751 Alarm Check Valve and trim must not be exposed to foreign material, corrosive environments, freezing conditions, contaminated water supplies, or any other condition that could impair proper system operation.**
- **Modify the frequency of inspections in the presence of any environmental conditions that could degrade system operation.**
- **The authority having jurisdiction may have additional maintenance, inspection, and test requirements.**

Monthly Inspection

Victaulic recommends a visual inspection of the alarm check valve and trim on a monthly basis.

1. Record the system's pressure and the water supply's pressure. It is normal for the system's water pressure to be higher than the water supply's pressure due to the check valve trapping pressure surges above the clapper. Confirm that the water supply's pressure is in the range of normal pressures observed in the area. A significant loss in supply pressure could indicate an adverse condition in the water supply.

2. Check for mechanical damage or corrosion. If damage or corrosion is present, replace the affected parts.

3. Confirm that the valve and trim are not subject to freezing conditions.

4. If the valve is installed in a variable pressure system, confirm that no excessive leakage is occurring from the restricted orifice/alarm line drain. It is normal for some leakage, since pressure surges lift the clapper and allow water into the intermediate chamber.

5. Verify that all valves are in their normal operating positions.

REQUIRED TESTS

Main Drain Test

The authority having jurisdiction in your area may require the main drain test on a more frequent basis. Verify these requirements by contacting the authority having jurisdiction in your area.

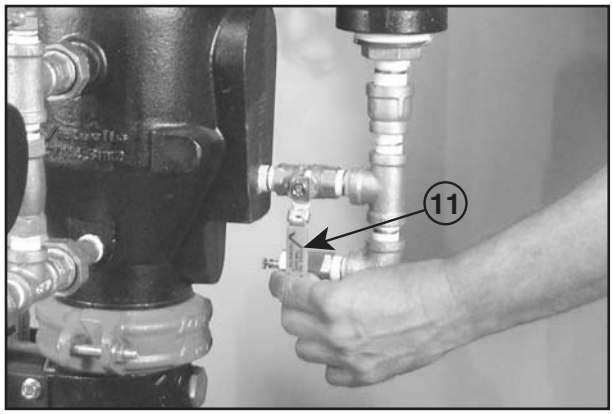
1. Notify the authority having jurisdiction, remote station alarm monitors, and anyone in the affected area that the main drain test will be performed.

2. Confirm that sufficient drainage is in place for a full-flow drain test.

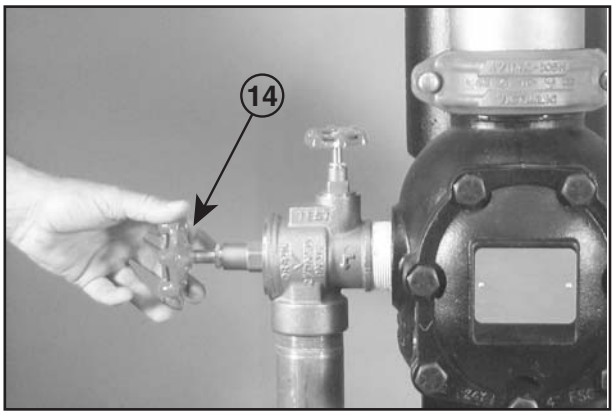
3. Record the water supply pressure.

NOTICE

- **If you do not want to activate alarms, close the alarm line ball valve**

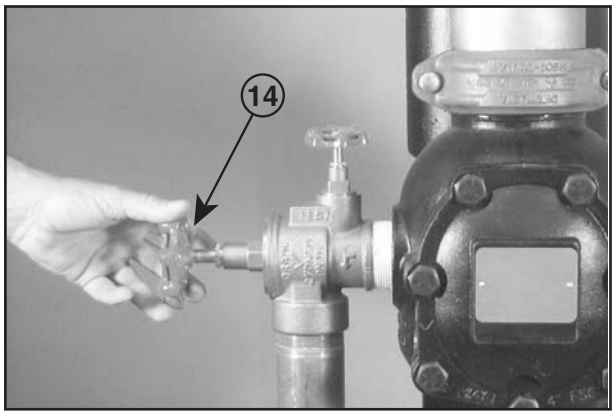


4. Close the alarm line ball valve (11).



5. Open the system main drain valve (14) fully.

5a. With the system main drain valve fully open, record the water supply pressure as the residual pressure.



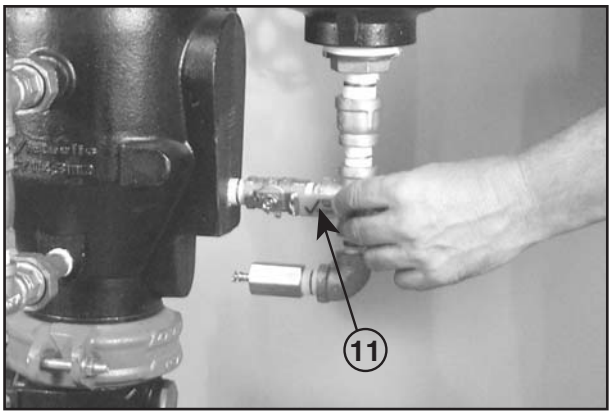
6. Close the system main drain valve (14) slowly.

6a. Record the water pressures established after closing the system main drain valve.

6b. 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 readings, restore the proper water supply pressure.

⚠ CAUTION

- **The alarm line ball valve must be open to allow alarms to activate. Failure to follow this instruction will prevent alarms to activate, resulting in serious personal injury and/or property damage.**



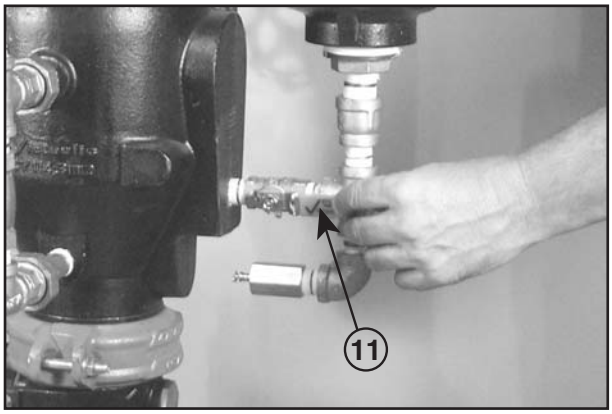
7. Open the alarm line ball valve (11), and make sure all valves are in their proper operating positions.

8. 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, as required, to the authority having jurisdiction.

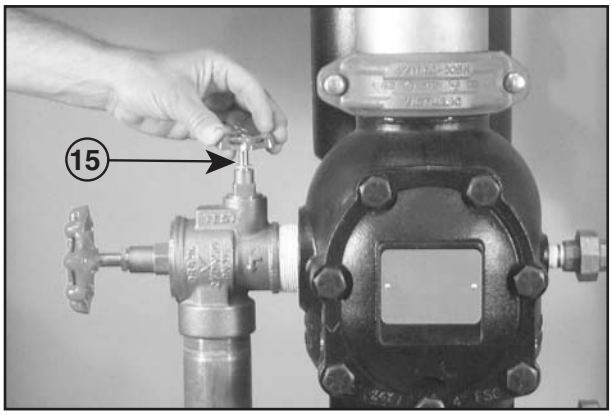
Water Flow Alarm Test

The authority having jurisdiction in your area may require the water flow alarm test on a more frequent basis. Verify these requirements by contacting the authority having jurisdiction in your area.

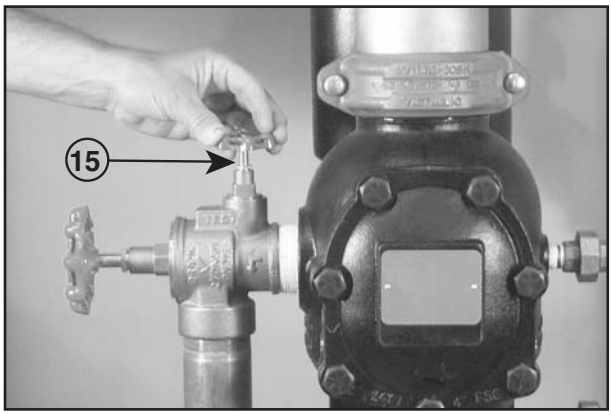
1. Notify the authority having jurisdiction, remote station alarm monitors, and anyone in the affected area that the water flow alarm test will be performed.



2. Verify that the alarm line ball valve (11) is open.

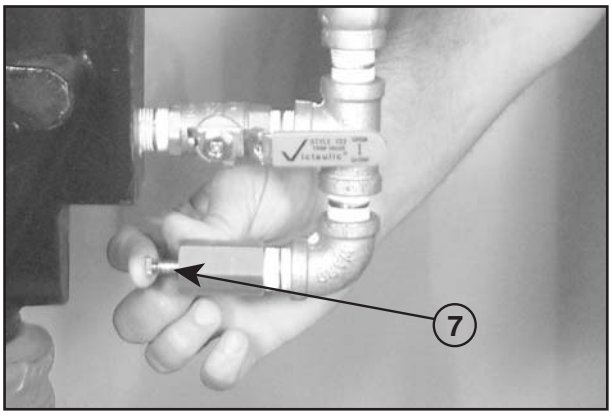


3. Open the system test valve (15) fully, as shown above. Confirm that mechanical and electrical alarms are activated. Confirm that remote monitoring stations, if provided, receive an alarm signal. **NOTE:** There may be a time delay if a retard chamber (13) is installed in the trim assembly.



4. Close the system test valve (15) after proper operation of all alarms is verified.

5. Verify that all alarms stopped sounding, that the alarm line drained properly, and that remote station alarms reset properly.



6. Push in the plunger on the restricted orifice/alarm line drain (7), as shown above.

7. Verify that no water is flowing from the restricted orifice/alarm line drain (7).

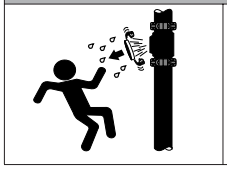
8. Notify the authority having jurisdiction, remote station alarm monitors, and those in the affected area that the valve is back in service.

9. Provide test results to the authority having jurisdiction, if required.

REQUIRED INTERNAL INSPECTION

The authority having jurisdiction in your area may have established requirements for internal inspection frequencies. Verify these requirements by contacting the authority having jurisdiction in your area.

⚠ WARNING



- **Depressurize and drain the piping system before attempting to install, remove, or adjust any Victaulic piping products.**

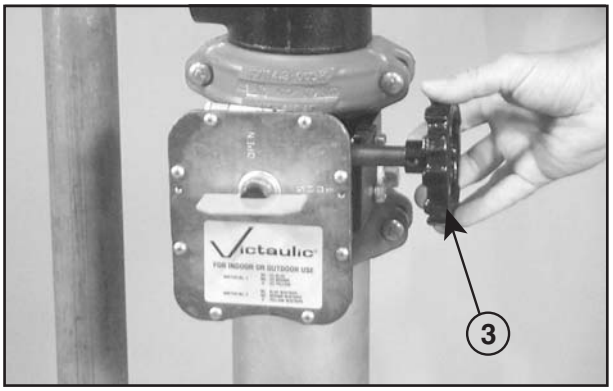
Failure to follow this instruction could cause serious personal injury and/or property damage.

⚠ CAUTION

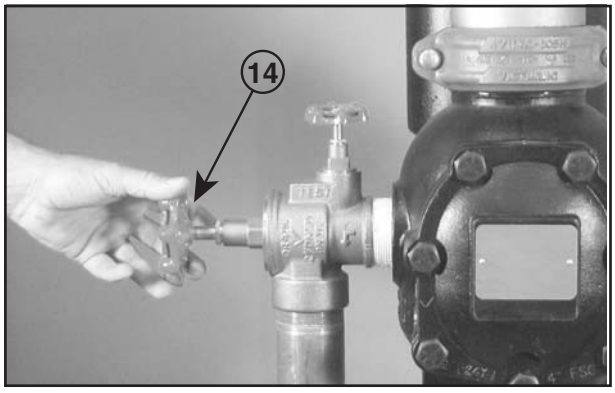
- **Any activities that require taking the valve out of service may eliminate the fire protection provided.**
- **Before servicing or testing the system, notify the authority having jurisdiction.**
- **Consideration of a fire patrol should be given in the affected areas.**

Failure to follow these instructions could cause serious personal injury and/or property damage.

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.

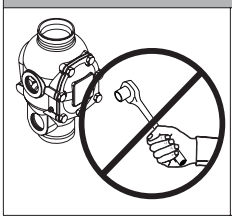


2. Close the water supply's main control valve (3) to take the system out of service.



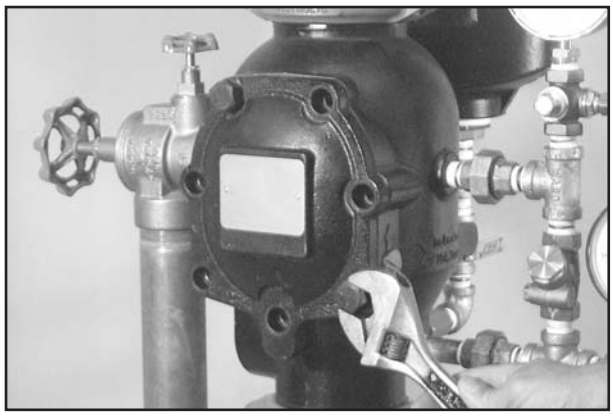
3. Open the system main drain valve (14), and allow the system to drain completely. It may be necessary to open the auxiliary drains in order to drain the system completely.

⚠ WARNING

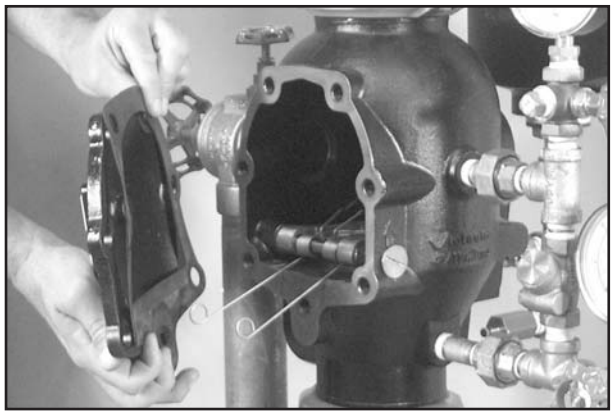


- **Make sure the valve is depressurized and drained before removing the cover plate bolts.**

The cover plate could blow off if these bolts are removed while the valve is pressurized, resulting in serious personal injury and/or property damage.



4. After all pressure is released from the system, remove all cover plate bolts slowly.

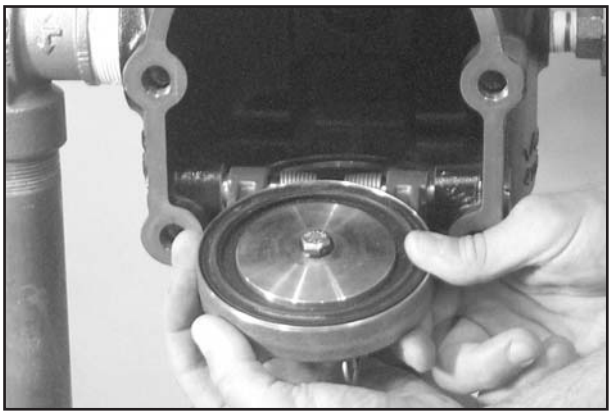


4a. Remove the cover plate and cover plate gasket.

⚠ 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 properly, resulting in improper operation, valve leakage, and/or property damage.



5. 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 any holes in the valve body seat ring that are plugged. **DO NOT USE SOLVENTS OR ABRASIVES.**

6. Inspect the clapper for freedom of movement and physical damage. Replace any damaged or worn parts by following the applicable instructions in the “Maintenance” section, starting on page 12.

7. Re-install the cover plate by following the “Installing Cover Plate Gasket and Cover Plate” section, starting on page 14.

MAINTENANCE

The following steps instruct on how to remove and replace internal valve components. It is important that care be taken to avoid damage to parts.

⚠ WARNING

- **Depressurize and drain the piping system before attempting to install, remove, or adjust any Victaulic piping products.**

Failure to follow this instruction could cause serious personal injury and/or property damage.

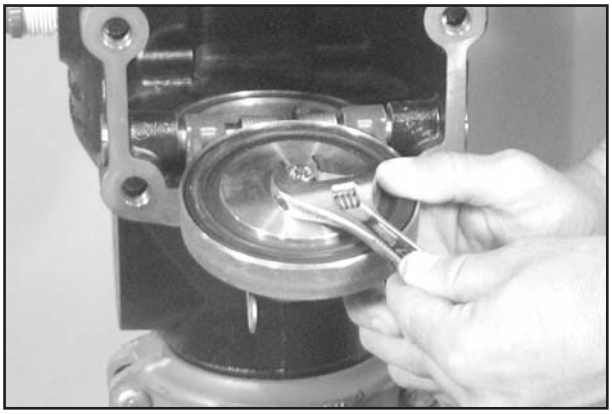
⚠ CAUTION

- **Any activities that require taking the valve out of service may eliminate the fire protection provided.**
- **Before servicing or testing the system, notify the authority having jurisdiction.**
- **Consideration of a fire patrol should be given in the affected areas.**

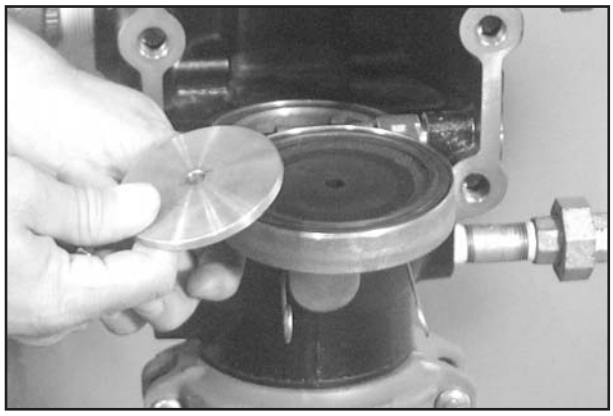
Failure to follow these instructions could cause serious personal injury and/or property damage.

Removing and Replacing Clapper Seal for DN 100 and DN 150 Size Valves

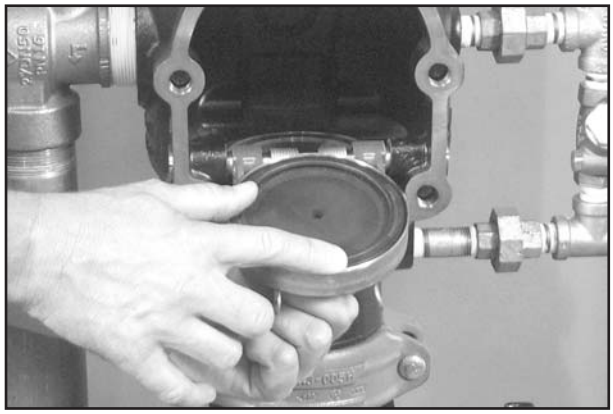
1. Perform steps 1 – 4 of the "Required Internal Inspection" section, starting on page 10.



2. Remove the seal assembly bolt/bolt seal from the clapper, as shown above.



3. Remove the seal-retaining ring. This seal-retaining ring will need to be re-installed in later steps.



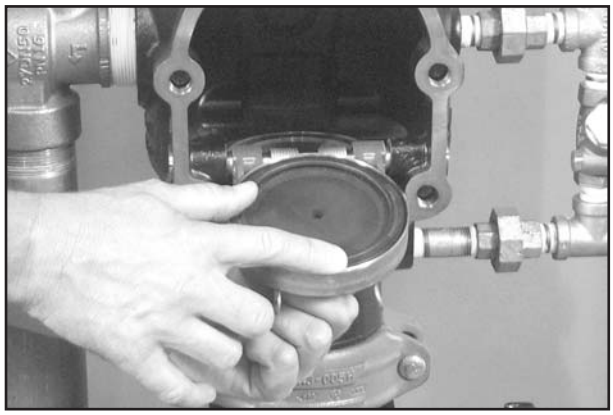
4. Remove the solid seal from the clapper and discard.

5. Make sure the clapper is free of contaminants, dirt, and mineral deposits. Clean any holes in the valve body seat ring that are plugged. **DO NOT USE SOLVENTS OR ABRASIVES.**

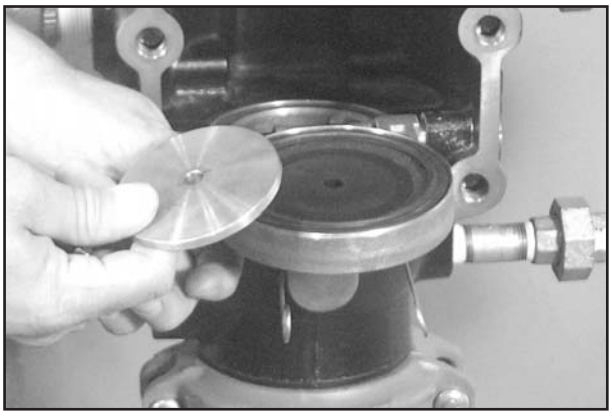
⚠ CAUTION

- **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 properly, resulting in improper valve operation, valve leakage, and/or property damage.



6. Install the new solid seal into the clapper, as shown above.
NOTE: Make sure the sealing lip is pointing upward.

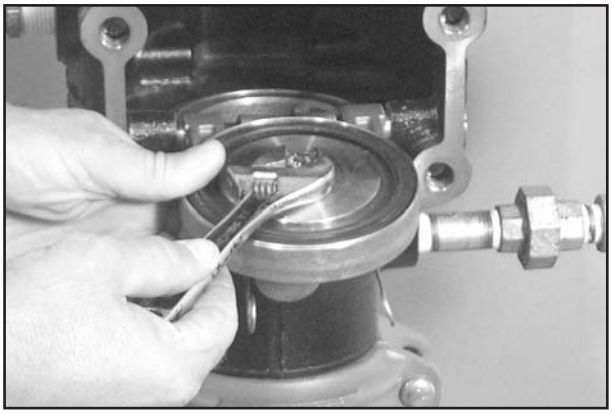


7. Place the seal-retaining ring onto the solid seal, as shown above.

⚠ CAUTION

- **Use only Victaulic-supplied replacement seal assembly bolt/ bolt seal when reassembling the clapper.**

Failure to follow this instruction could cause improper sealing, resulting in valve leakage and/or property damage.

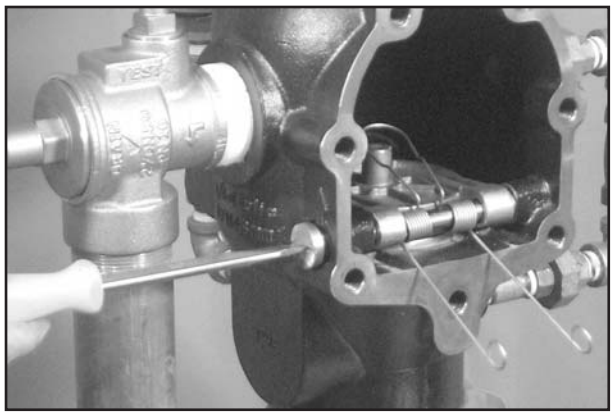


8. Install the seal assembly bolt/bolt seal through the seal-retaining ring and the clapper. Tighten the seal assembly bolt/ bolt seal completely, and apply an additional ¼ turn to ensure a proper seal.

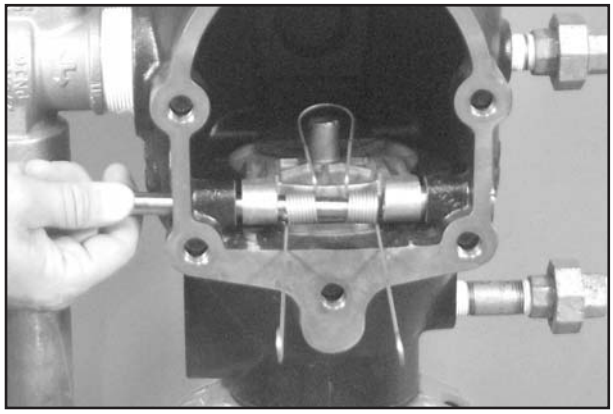
9. Replace the cover plate by following the "Installing Cover Plate Gasket and Cover Plate" section, starting on page 14.

Removing and Replacing Clapper Assembly

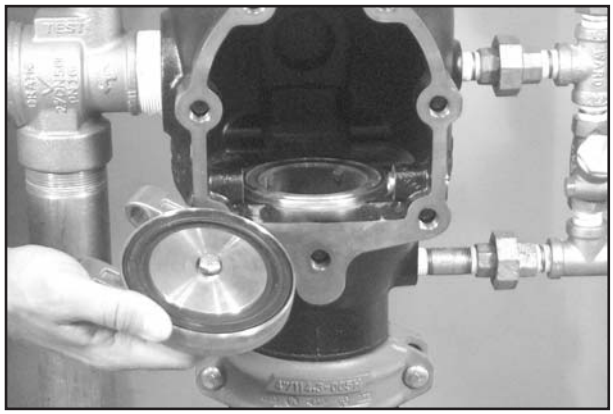
1. Perform steps 1 – 4 of the "Required Internal Inspection" section, starting on page 10.



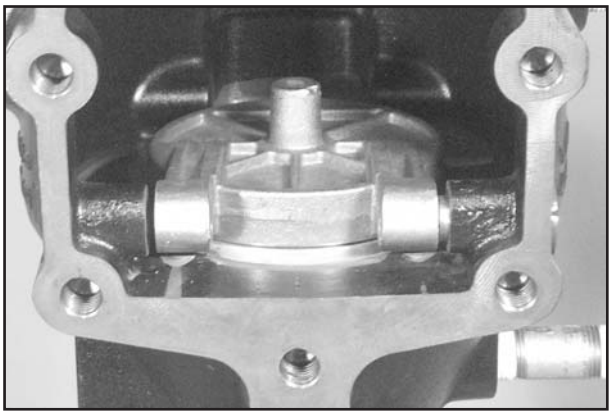
2. Remove one clapper shaft retaining bushing from the valve body.



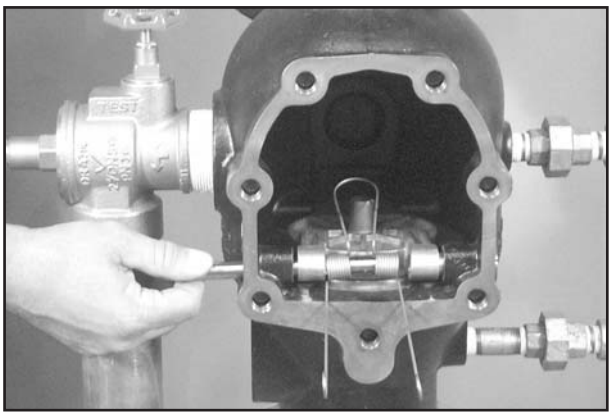
3. Remove the clapper shaft, as shown above. **NOTE:** As the shaft is being removed, the clapper spring will drop out of position. Keep the clapper spring for re-installation.



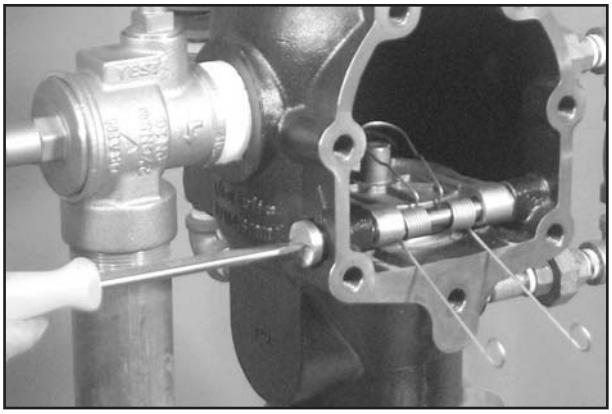
4. Remove the clapper from the valve body.



5. Place the new clapper assembly onto the valve body seat ring so that the holes in the clapper arms align with the holes in the valve body, as shown above.



6. Start the clapper shaft into the valve body, and install the spring onto the clapper shaft. Make sure the loop is toward the clapper, as shown above.



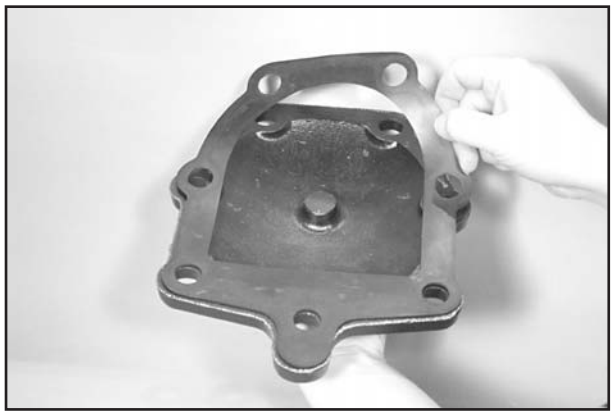
7. Install the clapper shaft retaining bushing into the valve body.

8. Check the clapper for freedom of movement.

9. Replace the cover plate by following the “Installing Cover Plate Gasket and Cover Plate” section, starting on this page.

Installing Cover Plate Gasket and Cover Plate

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 cover plate gasket holes with the cover plate holes.

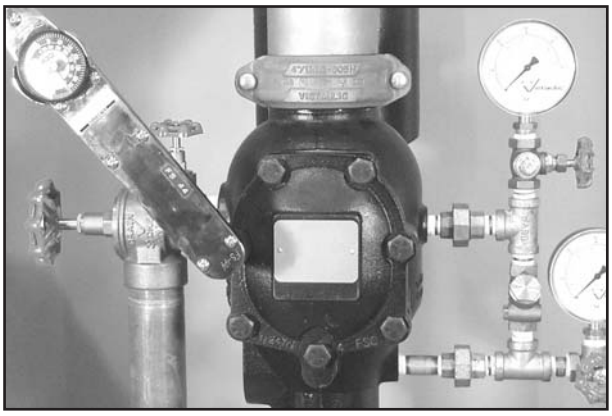
3. Insert one cover bolt through the cover plate and cover gasket to ease alignment.

4. Align the cover plate/cover plate gasket to the valve. Make sure the spring arms are rotated to the installed position. Insert all cover bolts and hand-tighten.

⚠ CAUTION

- **DO NOT over-tighten the cover bolts.**

Failure to follow this instruction could cause damage to the cover plate gasket, resulting in valve leakage and/or property damage.



5. Torque all cover bolts in an even, crossing pattern. Refer to the “Cover Bolt Torque Requirements” chart on this page for the required torque values. DO NOT over-tighten the cover bolts.

Cover Bolt Torque Requirements

Valve Size	Torque N•m
DN 100	136
DN 150	156

6. Place the system back in service by following the “Placing the System in Service” section, starting on page 6.

TROUBLESHOOTING – SERIES 751 ALARM CHECK VALVE

Problem	Possible Cause	Solution
The system water pressure gauge is fluctuating with the supply pressure.	The check valve in the bypass line is installed backward.	Check the orientation of the bypass check valve. The arrow must point from the supply side to the system side.
	Debris is present in the bypass check valve.	Remove the threaded cap to the check valve, and remove any debris. Make sure the clapper is free to move.
Water is leaking from the intermediate chamber.	Water is getting past the seal.	Check the clapper seal and seat for physical damage. Make sure no debris is present.
The water motor gong is not ringing, or the ringing is weak.	No water is going into the intermediate chamber.	Make sure the holes in the seat ring are not plugged.
	Water from the alarm line could be leaking out of the alarm line drain of another valve.	Make sure there are check valves isolating the alarm line of each valve.
	The wrong restrictor size is installed in the alarm line drain.	Confirm that the proper restrictor size is on the alarm drain. If not, re-install the proper size restrictor, according to the trim drawing.

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