

# FireLock® Alarm Check Valve

SERIES 751



## \*FireLock® European Alarm Check Valve Stations

SERIES 751

EUROPEAN TRIM (SEE PAGE 10)



SERIES 751

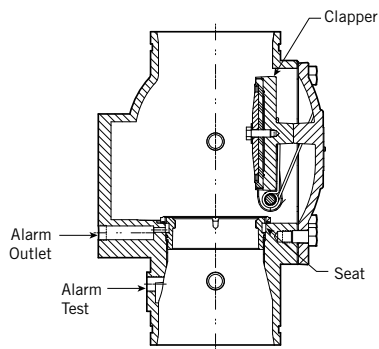


SERIES 751  
EUROPEAN TRIM

The Victaulic® Series 751 alarm check valve works as a check valve by preventing the reverse flow of water from the system piping to the water supply. The valve is trimmed with a water bypass line, which has an in-line swing check valve. The bypass line allows pressure surges to enter the system and to be trapped above the alarm check valve's clapper without the clapper lifting and causing false alarms.

NOTE: The Series 751 FireLock Alarm Check Valve is also available as part of the FireLock European Alarm Check Valve Station (Vds, CE, LPCB). See page 10 for details.

### FEATURES



Exaggerated for clarity

When a significant flow of water occurs, such as from an open sprinkler, the alarm valve's clapper lifts and allows water to enter the system. Simultaneously, water enters an intermediate chamber, which allows the water to activate an alarm either through a water motor alarm or through a water pressure alarm. These alarms continue to sound until the flow of water is stopped.

The Victaulic Series 751 alarm check valve is made from high strength, low weight ductile iron, and offers easy access to all internal parts. All internal parts are replaceable without having to remove the valve from the installed position. The rubber clapper seal is easily replaced without removing the clapper from the valve. The valve is painted inside and out to increase corrosion resistance.

The UL, ULC, FM, VNIPO approved version of the valve station valve can be installed in vertical orientations, and it can be used in both constant and variable pressure systems when the optional retard chamber is included in the trim piping. The Vds, CE, LPCB trim version can only be installed vertically. All versions of the Series 751 are available grooved x grooved only.

The Series 751 is available 1½ – 8" / 40 – 200 mm. Standard grooved dimensions conform to ANSI/AWWA C606.

#### Available Sizes and Approved Pressures - UL, ULC, FM, VNIPO approved version:

The 1½ – 6" / 40 – 165.1 mm valve is rated to 300 psi/2065 kPa and is tested hydrostatically to 600 psi/4135 kPa. The 8" / 200 mm valve is rated to 225 psi/1550 kPa and is tested hydrostatically to 450 psi/3100 kPa.

#### OPTIONS

##### Available Sizes and Approved Pressures: Vds, CE, LPCB version:

This configuration available in 3", 4", 6", 165mm (not Vds approved) and 8" sizes. These sizes are rated to 232 psi/16 bar.

Optional equipment includes pressure switch, which allows the activation of an electric alarm panel or remote alarm. The valve can be used in both constant pressure and variable pressure installations with the optional retard chamber. The body is tapped for main drain and all available trim configurations. The trim includes an alarm test valve, which allows testing of the alarm system without reducing the system pressure. The Series 751 Alarm Check Valve can be purchased with separate trim kits, or it can be purchased pre-trimmed.

#### JOB OWNER

System No. \_\_\_\_\_

Location \_\_\_\_\_

#### CONTRACTOR

Submitted By \_\_\_\_\_

Date \_\_\_\_\_

#### ENGINEER

Spec Sect \_\_\_\_\_ Para \_\_\_\_\_

Approved \_\_\_\_\_

Date \_\_\_\_\_

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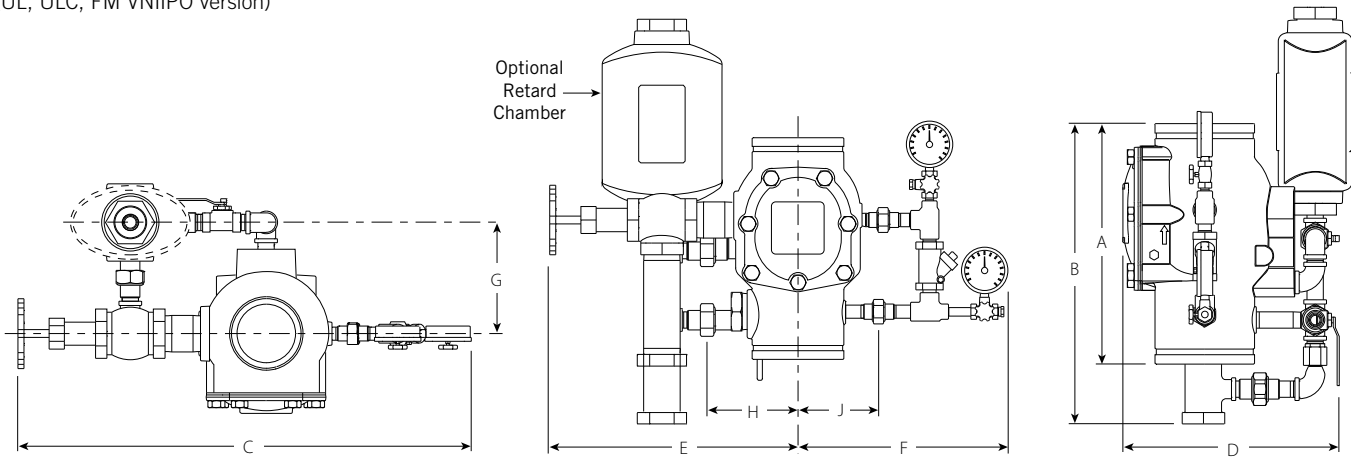
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EUROPEAN TRIM

### DIMENSIONS

(UL, ULC, FM VNIPO version)



TYPICAL 4"/100 MM – OTHER SIZES MAY VARY.

Size		Dimensions – Inches/mm									Aprx. Wgt. Each	
Nominal Size In./mm	Actual Outside Diameter In./mm	E to E A	Height B	Width C	Depth D	E	F	G	H	J	Without Trim Lbs./kg	With Trim Lbs./kg
1½ 40	1.900 48.3	9.00 228.60	18.50 470	21.00 533	12.50 318	10.00 254	11.00 279	9.00 229	5.00 127	5.00 127	14.2 6.4	31.0 14.1
2 50	2.375 60.3	9.00 228.60	18.50 470	21.00 533	12.50 318	10.00 254	11.00 279	9.00 229	5.00 127	5.00 127	14.6 6.6	31.0 14.1
2½ 65	2.875 73.0	12.61 320.29	22.50 572	23.50 597	13.50 343	11.25 286	12.00 305	9.00 229	5.00 127	5.00 127	34.4 15.6	52.0 23.6
76.1 mm	3.000 76.1	12.61 320.29	22.50 572	23.50 597	13.50 343	11.25 286	12.00 305	9.00 229	5.00 127	5.00 127	34.4 15.6	52.0 23.6
3 80	3.500 88.9	12.61 320.29	22.50 572	23.50 597	13.50 343	11.25 286	12.00 305	9.00 229	5.00 127	5.00 127	35.3 16.0	52.0 23.6
4 100	4.500 114.3	15.03 381.76	23.50 597	29.00 737	14.00 356	13.50 343	15.00 381	10.00 254	5.80 147	5.80 147	49.0 22.2	80.0 36.3
6 150	6.625 168.3	16.00 406.40	24.00 610	30.11 765	17.28 439	14.25 362	16.00 406	10.00 254	5.88 149	6.02 153	69.0 31.3	91.0 41.3
165.1 mm	6.500 165.1	16.00 406.40	24.00 610	30.11 765	17.28 439	14.25 362	16.00 406	10.00 254	5.88 149	6.02 153	69.0 31.3	95.0 43.1
8 200	8.625 219.1	17.50 444.50	26.00 660	30.00 762	18.00 457	15.25 387	16.00 406	10.00 254	16.00 406	10.00 254	142 64.4	182 82.6

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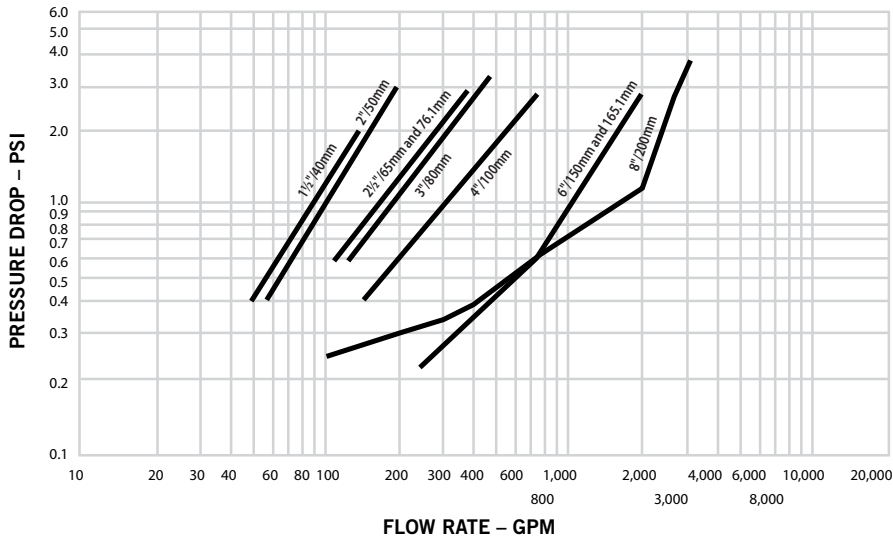
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### PERFORMANCE

(UL, ULC, FM VNIPO version)

### Hydraulic Friction Loss

The chart below expresses the flow of water at 65°F/18°C through a full open valve.



### Frictional Resistance

The chart below expresses the frictional resistance of Victaulic Series 751 Alarm Check Valve in equivalent feet of straight pipe.

Size		Equivalent Length of Pipe
Nominal Size Inches mm	Actual Outside Dia. Inches mm	Feet meters
1 1/2 40	1.900 48.3	3 0.910
2 50	2.875 60.3	9 2.740
2 1/2 65	2.875 73.0	8.00 2.438
76.1 mm	3.000 76.1	8.00 2.438
3 80	3.500 88.9	17.00 5.182
4 100	4.500 114.3	21.00 6.401
6 150	6.625 168.3	22.00 6.706
165.1 mm	6.500 165.1	22.00 6.706
8 200	8.625 219.1	50.00 15.240

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#### OPERATION

(UL, ULC, FM VNIPO version)

The Series 751 Alarm Check Valve's construction includes a clapper, which has a replaceable rubber face. The clapper closure is assisted by a spring, which ensures proper contact of the clapper to the brass seat ring.

When installed, the alarm check valve traps pressure above the clapper and prevents the reverse flow of water. Minor pressure surges pass through the bypass loop without lifting the clapper from its seat. The swing check valve in the bypass line traps the pressure above the clapper; this can be observed in the pressure gauges. The system-side water pressure will always be equal to or greater than the supply-side water pressure in the absence of an open sprinkler.

When a sustained flow of water occurs, such as an activated sprinkler or an open inspector's test connection, the clapper lifts from its closed position; this allows water to enter the intermediate chamber through the holes in the seat ring. The water flows from the intermediate chamber to the alarm line and activates the system's alarms. These alarms continue to sound until the flow of water stops.

#### Operation with an Installed Retard Chamber

When the Series 751 Alarm Check Valve is installed with the optional retard chamber, a surge of water, greater than what the bypass line can handle, will lift the clapper. When the clapper lifts, water will enter the intermediate chamber through the holes in the seat ring, and it will fill the retard chamber. The water then drains from the retard chamber through a restricted orifice.

A sustained flow of water, as in an open sprinkler, will lift the clapper. Water will flow into the intermediate chamber, and it will fill the retard chamber completely; these events activate the water motor alarm and/or the pressure switch for the electric alarm.

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### MATERIAL SPECIFICATIONS

(UL, ULC, FM VNIPO version)

**Body:** Ductile iron, ASTM A-536 Grade 65-45-12

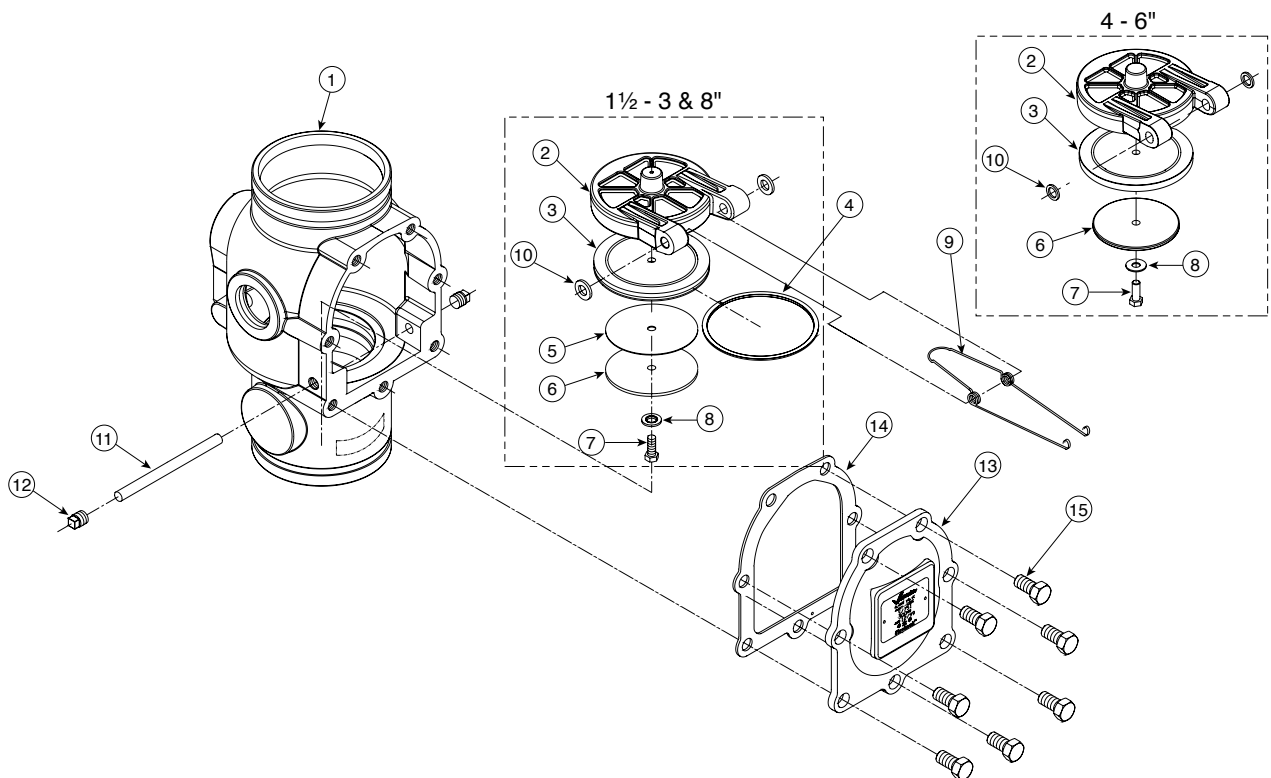
**Clapper:** Aluminum bronze UNS-C95500

**Shaft:** Stainless 17-4

**Clapper Seal:** EPDM, ASTM D2000

**Seat O-Rings:** Nitrile

**Springs:** Stainless steel (300 Series)



### BILL OF MATERIALS

- |                       |  |
|-----------------------|--|
| 1 Valve Body          | 9 Clapper Spring                         |
| 2 Clapper             | 10 Spacers (Qty. 2)                      |
| 3 Clapper Seal        | 11 Clapper Shaft                         |
| 4 Seal Ring           | 12 Clapper Shaft Retaining Plug (Qty. 2) |
| 5 Seal Washer         | 13 Cover Plate                           |
| 6 Seal-Retaining Ring | 14 Cover Plate Gasket                    |
| 7 Seal-Assembly Bolt  | 15 Cover Plate Bolts (Qty. 7)            |
| 8 Bolt Seal           |  |

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### TRIM PACKAGES

(UL, ULC, FM VNIPO version)

#### Trim packages available:

- 1 Vertical trim for the Series 751 Alarm Check Valve.

#### Trim packages include:

- 1 All required pipe and fittings.
- 2 All standard trim accessories.
- 3 All required gauges.

#### Optional accessories:

- Series 752 Retard Chamber – Required when the Series 751 Alarm Check Valve is installed in a variable pressure installation in order to reduce the possibility of false alarms.
- Series 752V Retard Vent Kit – Required when an electric pressure switch is installed on the retard chamber without a water motor alarm.
- Series 760 Water Motor Alarm – The Series 751 Alarm Check Valve is designed to activate a mechanical alarm when a sustained flow of water (such as an open sprinkler) causes the alarm check's clapper to lift from its seat.
- Alarm pressure switch – The Series 751 alarm check valve is designed to allow the installation of pressure switches to activate electric alarms and control panels when a sustained flow of water (such as an open sprinkler) causes the alarm check's clapper to lift from its seat.
- Waterflow Detectors – Waterflow detectors are available for installation on the riser.

Trim kit available for configuration with excess pressure pump (see page 9).

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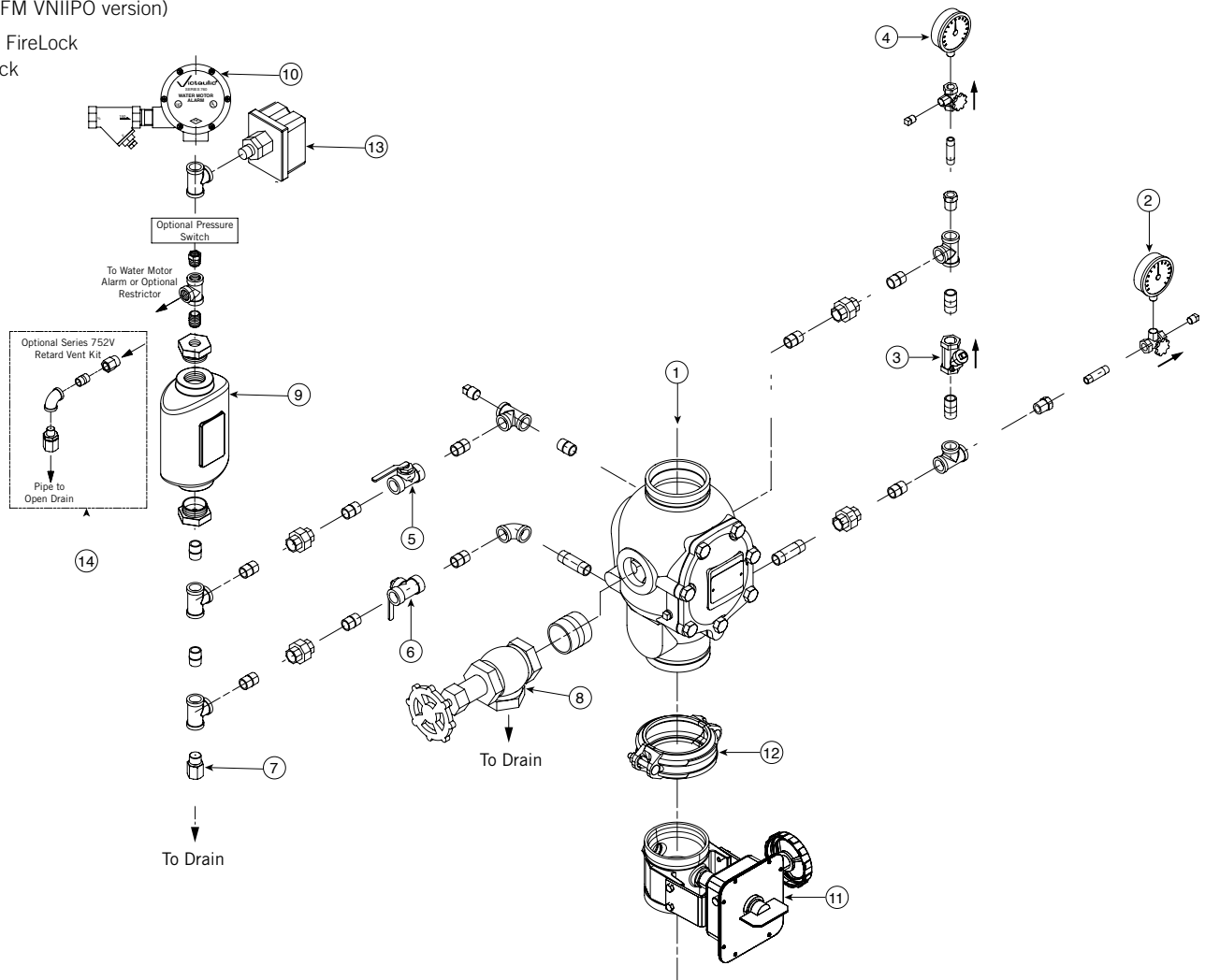


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### BILL OF MATERIALS

(UL, ULC, FM VNIPO version)

Series 751 FireLock  
Alarm Check  
Valve



### BILL OF MATERIALS

- |  |   |
|--|---|
| 1 Series 751 FireLock Alarm Check Valve              | 8 System's Main Drain Valve                     |
| 2 Water Supply Pressure Gauge (0-300 psi/0-2068 kPa) | 9 Series 752 Retard Chamber (Optional)          |
| 3 Swing Check Valve                                  | 10 Series 760 Water Motor Alarm (Optional)      |
| 4 System Pressure Gauge (0-300 psi/0-2068 kPa)       | 11 Series 705W Butterfly Valve (Optional)       |
| 5 Alarm Line Ball Valve (NO)                         | 12 Style 005 FireLock Rigid Coupling (Optional) |
| 6 Alarm Test Line Ball Valve (NC)                    | 13 EPS10-1 or EPS10-2 Alarm Pressure Switch     |
| 7 Alarm Line Drain Restrictor (1/16")                | 14 Series 752V Retard Vent Kit (Optional)*      |

NO = Normally Open; NC = Normally Closed

\* The Series 752V Retard Vent Kit is required any time an air break is needed above the retard chamber. In addition, the Series 752V Retard Vent Kit is required if multiple valves are tied into one water motor alarm and a check valve isolates each line.