

FireLock® Alarm Check Valve and European Alarm Check Valve Stations

Series 751



Series 751



Series 751
European Trim

Certifications/Listings:



[See Victaulic Publication 10.01 for more details.](#)

Product Description:

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, LCPB, GOST). See page 11 for details.

Job/Owner

System No.	
Location	

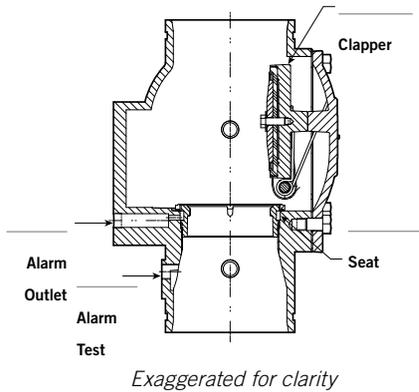
Contractor

Submitted By	
Date	

Engineer

Spec Section	
Paragraph	
Approved	
Date	

Features:
(cULus, FM version)



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 cULus, FM 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, GOST 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 - cULus, FM 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.

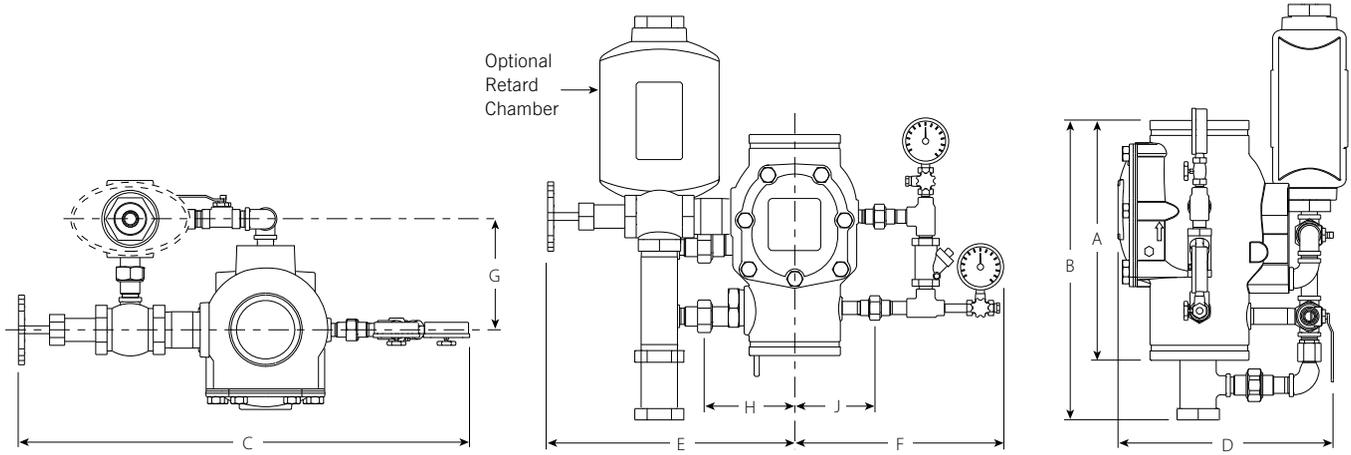
Options

Available Sizes and Approved Pressures: VdS, CE, LPCB, GOST 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.

Dimensions:

(cULus, FM version)



Typical 4"/100 mm - other sizes may vary

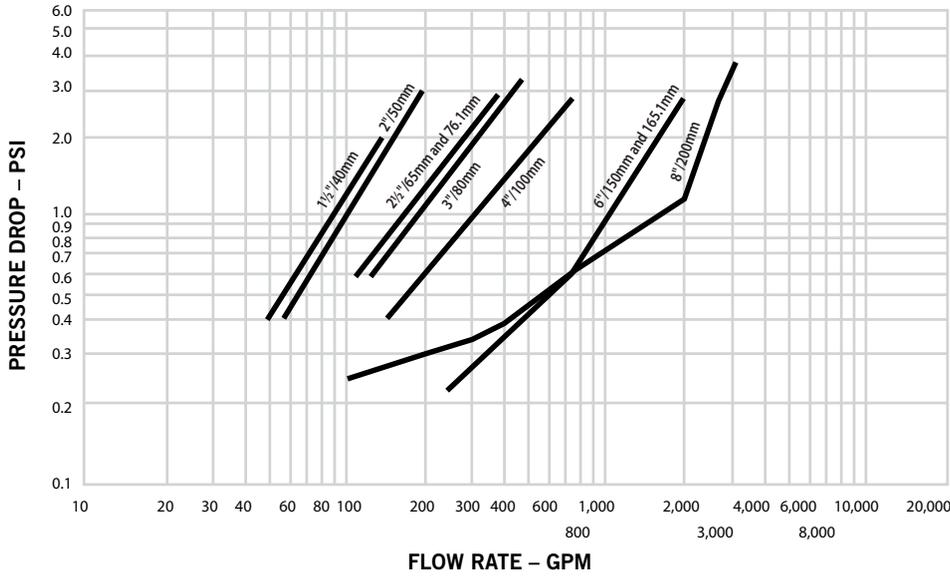
Nominal Size	Actual Outside Diameter	Dimensions									Approx. Weight Each	
		E to E A	Height B	Width C	Depth D	E	F	G	H	J	Without Trim	With Trim
inches mm	inches mm	inches mm	inches mm	inches mm	inches mm	inches mm	inches mm	inches mm	inches mm	inches mm	lbs. kg	lbs. kg
1 1/2 40	1.900 48.3	9.00 228.60	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
2 1/2 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

Performance:

(cULus, FM 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.

Nominal Size	Actual Outside Diameter	Equivalent Length of Pipe	
		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

Operation:

(cULus, FM 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.

Material Specifications:

(cULus, FM version)

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

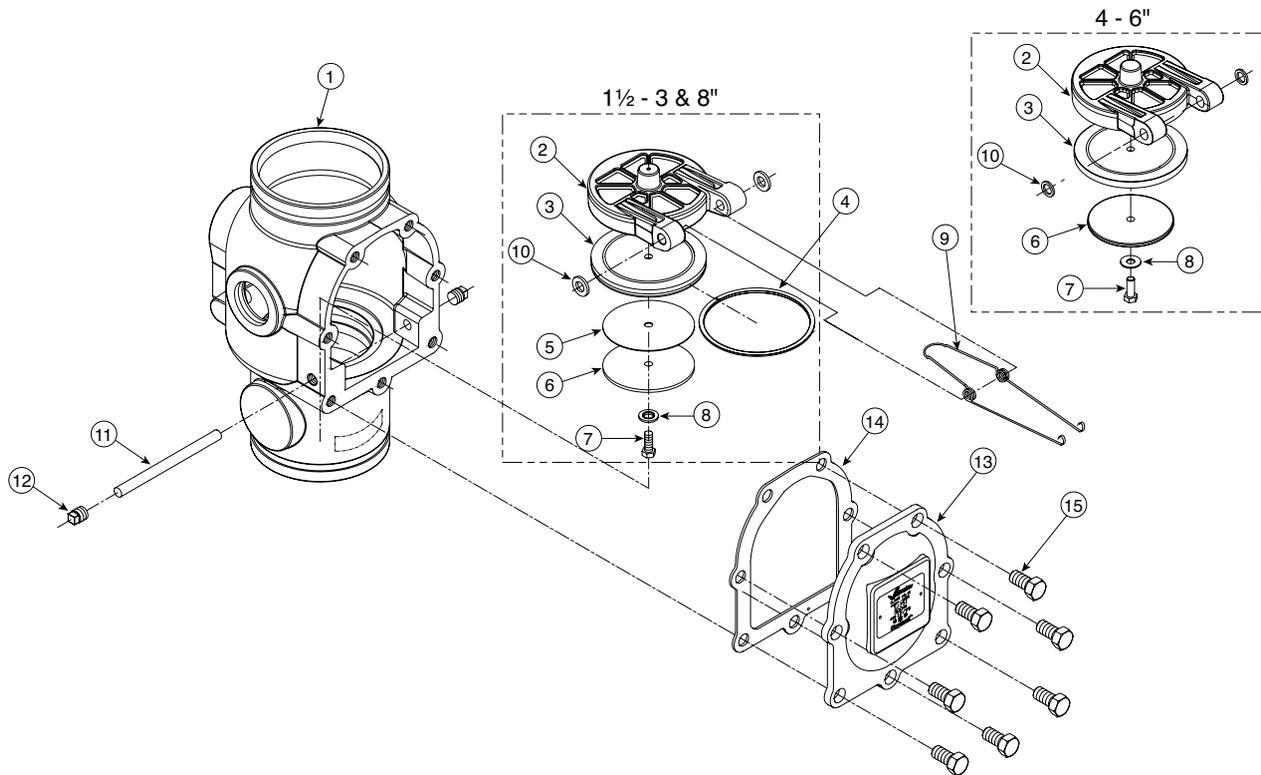
Clapper: Aluminum bronze UNS-C95500

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 | |

Trim Packages:

(cULus, FM 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.

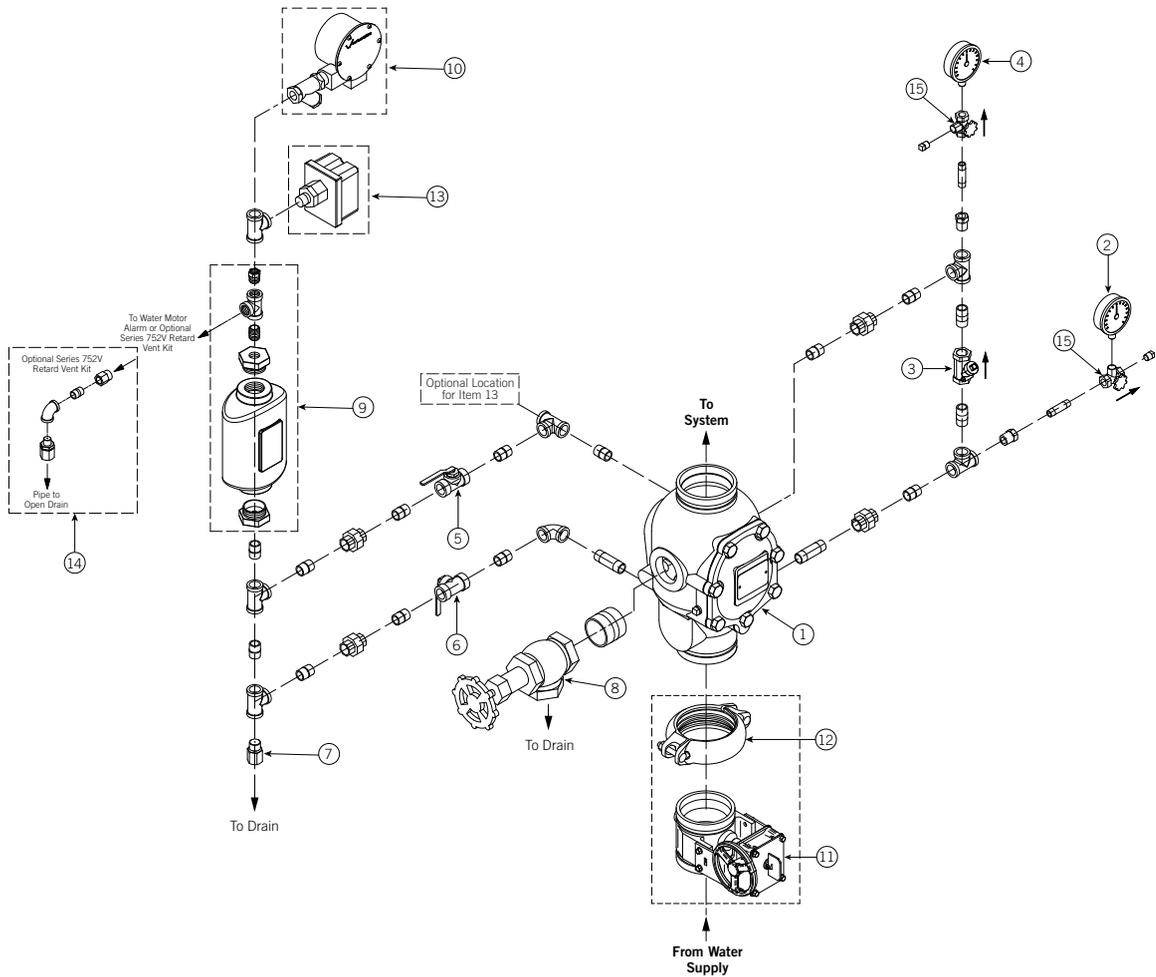
Optional accessories:

- 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 10).

Bill of Materials:

(cULus, FM version)

Series 751 Firelock
Alarm Check Valve



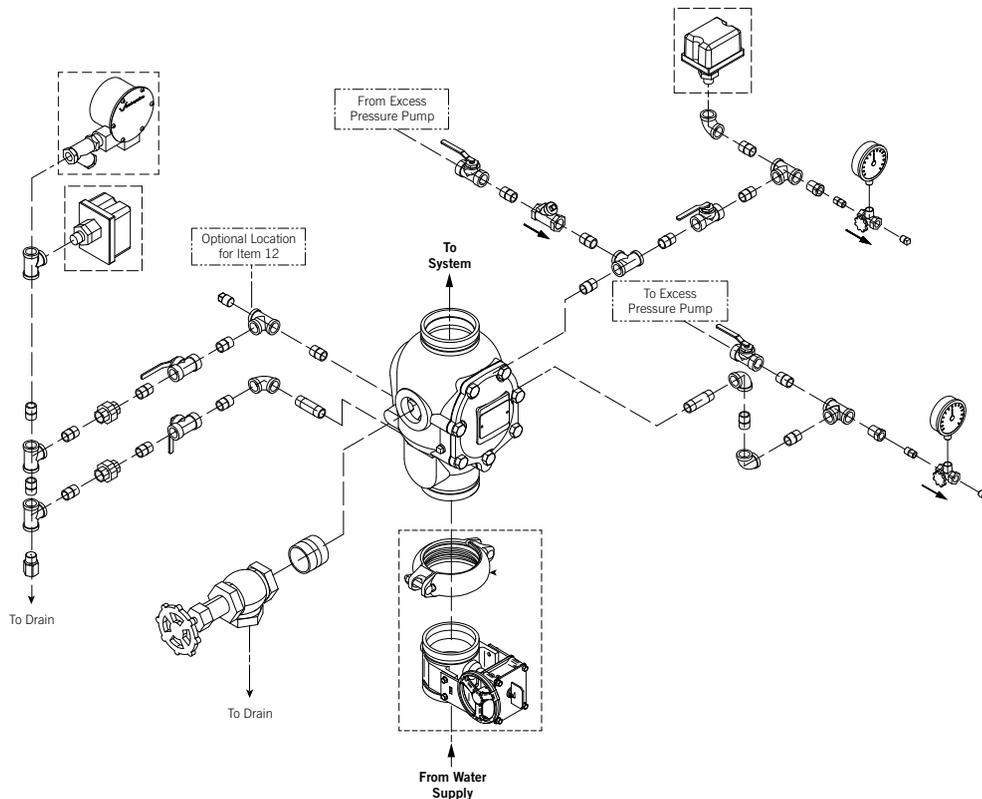
Bill of Materials

- | | |
|---|--|
| <ul style="list-style-type: none"> 1 Series 751 FireLock Alarm Check Valve 2. Water Supply Pressure Gauge (0-300 psi/ 0-2068 kPa) 3 Swing Check Valve 4 System Pressure Gauge (0-300 psi/0-2068 kPa) 5 Alarm Line Ball Valve (Normally Open) 6 Alarm Test Line Ball Valve (Normally Closed) 7 Alarm Line Drain Restrictor (1/16-inch) 8 System Main Drain Valve | <ul style="list-style-type: none"> 9 Series 752 Retard Chamber Assembly (Optional/ Sold Separately) 10 Series 760 Water Motor Alarm (Optional/Sold Separately) 11 Water Supply Main Control Valve (Optional/Sold Separately) 12 FireLock Rigid Coupling (Optional/Sold Separately) 13 Alarm Pressure Switch (Optional/Sold Separately) 14 Series 752V Retard Vent Kit (Optional/Sold Separately) * 15 Gauge Valve |
|---|--|

Bill of Materials:

(cULus, FM version)

Series 751 Trim for Use
with Excess Pressure Pump

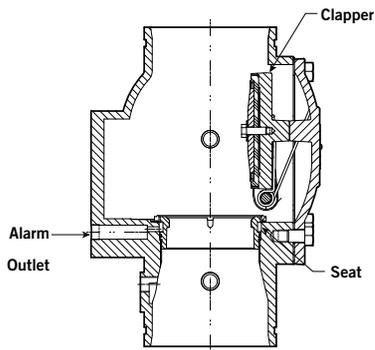


Bill of Materials

- | | |
|--|--|
| <ul style="list-style-type: none"> 1 Series 751 FireLock Alarm Check Valve 2. Water Supply Pressure Gauge (0-300 psi/
0-2068 kPa) 3 Swing Check Valve 4 System Pressure Gauge (0-300 psi/0-2068 kPa) 5 Alarm Line Ball Valve (Normally Open) 6 Alarm Test Line Ball Valve (Normally Closed) 7 Alarm Line Drain Restrictor (1/16-inch) 8 System Main Drain Valve 9 Series 760 Water Motor Alarm (Optional/Sold
Separately) | <ul style="list-style-type: none"> 10 Water Supply Main Control Valve (Optional/Sold
Separately – Comes Standard when VQR Assembly
is Ordered) 11 FireLock Rigid Coupling (Optional/Sold Separately –
Comes Standard when VQR Assembly is Ordered) 12 Alarm Pressure Switch (Optional/Sold Separately) 13 Excess Pressure Pump Pressure Switch (Sold
Separately/Not Provided by Victaulic) 14 Excess Pressure Pump Isolation Ball Valve (Normally
Open) 15 Excess Pressure Pump Pressure Switch Isolation
Ball Valve (Normally Open) |
|--|--|

Features - European Trim:

(VdS, CE, LPCB, CNBOP, GOST version)



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 valve is to be installed in the vertical orientation only; it can be used in both constant and variable pressure systems when the optional retard chamber is included in the trim piping.

The Series 751 is available grooved X grooved (all sizes). Standard grooved dimensions conform to ANSI/AWWA C606.

The valve is rated to 16 Bar and is tested hydrostatically to 32 Bar.

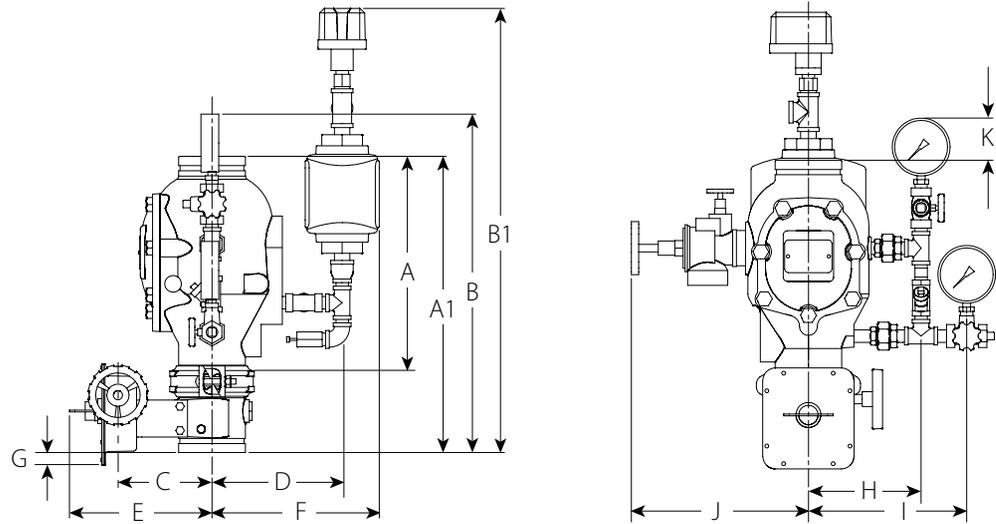
Options

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 integral alarm test drain valve, which allows testing of the alarm system without reducing the system pressure.

Dimensions:

European Trim

(VdS, CE, LPCB, CNBOP, GOST version)



Size	Dimensions													Approx. Weight Each kg
	A ¹ cm	A1 cm	B cm	B1 cm	C cm	D cm	E cm	F cm	G cm	H cm	I cm	J cm	K cm	
DN80	32.03	42.24	—	71.86	14.48	21.21	22.11	27.56	4.67	18.64	26.93	27.97	—	24.0
DN100	38.18	50.66	57.88	75.97	16.13	22.33	24.45	26.68	2.14	19.33	27.14	30.37	7.22	54.0
DN150	40.64	56.32	64.44	79.38	18.60	25.77	26.93	31.79	—	20.30	28.11	31.08	8.12	69.0
DN200	44.45	58.65	—	85.80	16.66	28.34	26.81	34.39	—	23.85	30.87	34.56	—	83.0

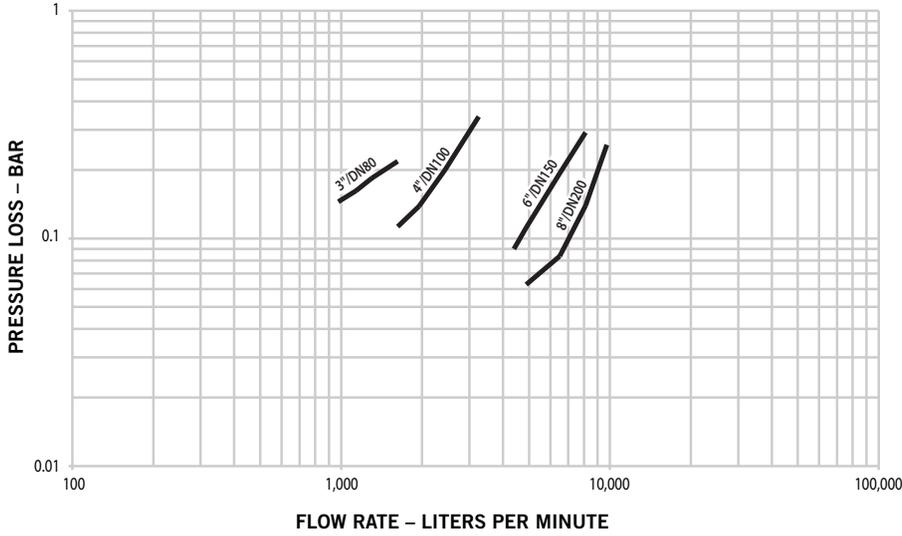
1 The "A" dimension is the measurement from the top of the valve body to the bottom of the valve body (takeout dimension).

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

Performance: European Trim
 (VdS, CE, LPCB, CNBOP, GOST 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 meters of straight pipe.

Nominal Size mm	Equivalent Length of Pipe meters
80	5.18
100	6.40
150	6.70
200	15.24

Expressed in equivalent length of pipe C=120.

Material Specifications:

(VdS, CE, LPCB, CNBOP, GOST version)

Valve Body: Ductile iron conforming to ASTM A-536, grade 65-45-12. Ductile iron conforming to ASTM A-395, grade 65-45-15, is available upon special request.

Valve Body Seat Ring (Not Shown): Bronze, UNS-C83600 (85-5-5-5)

Seat O-Rings (Not Shown): Nitrile

Clapper: Aluminum Bronze (UNS-C95500)

Clapper Seal: EPDM, ASTM D2000

Clapper Shaft: 17-4 PH Stainless Steel

Clapper Spring: 302 Stainless Steel

Clapper Seal-Retaining Ring: Aluminum Bronze (UNS-C95400)

Clapper Shaft Retaining Bushings: CA360 Brass

Cover Plate Gasket: Nitrile

Trim Packages:

(VdS, CE, LPCB, GOST version)

Trim packages available:

Vertical trim for the Series 751 Alarm Check Valve.

Trim packages include:

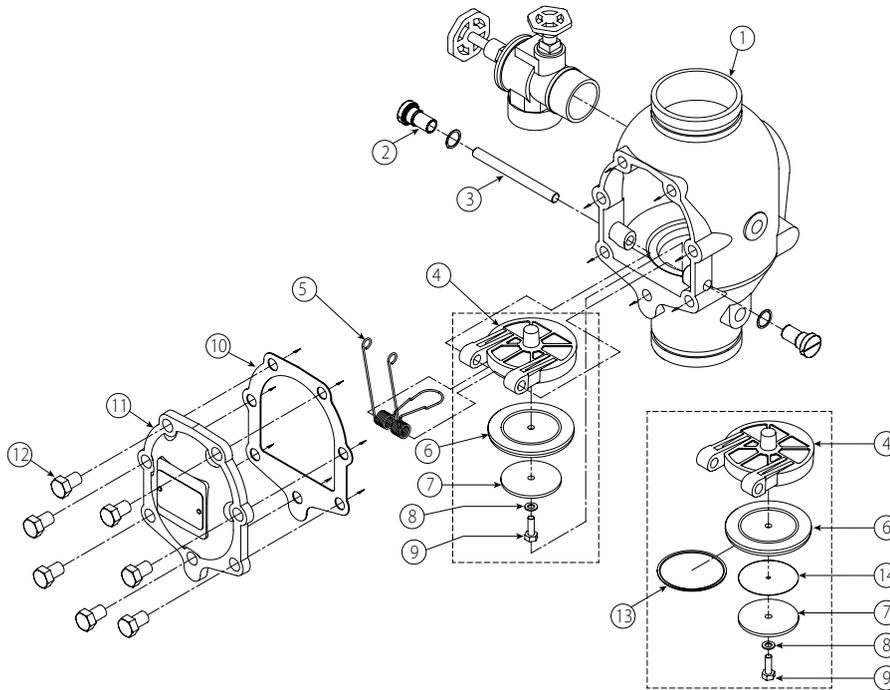
- 1 All required pipe and fittings.
- 2 All standard trim accessories.
- 3 All required gauges.
- 4 Alarm Pressure Switch.
- 5 Control Valve (Series 705W Butterfly Valve).

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.
- **Waterflow Detectors** - Waterflow detectors are available for installation on the riser.

Bill of Materials:

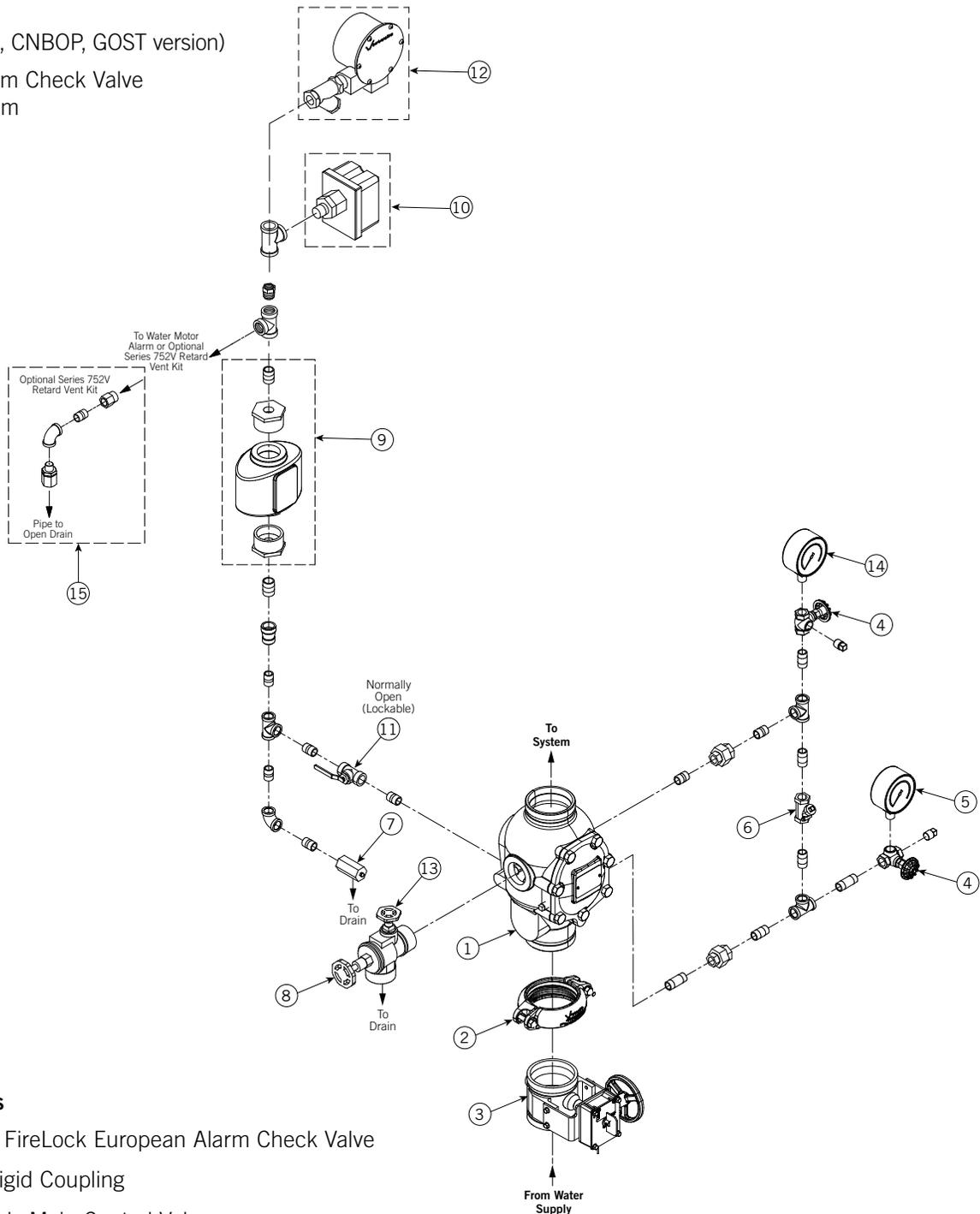
(VdS, CE, LPCB, CNBOP, GOST version)



Bill of Materials

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

Trim:
 (VdS, CE, LPCB, CNBOP, GOST version)
 Series 751 Alarm Check Valve
 with Vertical Trim



Bill of Materials

- | | |
|---|--|
| <ul style="list-style-type: none"> 1 Series 751 FireLock European Alarm Check Valve 2 FireLock Rigid Coupling 3 Water Supply Main Control Valve 4 Gauge Valve 5 Water Supply Pressure Gauge (0-25 Bar) 6 Drain Swing Check Valve 7 Restricted Orifice/Alarm Line Drain 8 System Main Drain Valve 9 Series 752 VdS Retarding Chamber Assembly (Optional/Sold Separately) 10 Alarm Pressure Switch 11 Alarm Line Ball Valve (Lockable - Normally Open) | <ul style="list-style-type: none"> 12 Series 760 European Water Motor Alarm Assembly (Optional/Sold Separately) 13 System Test Valve 14 System Pressure Gauge (0-25 Bar) 15 Series 752V Retard Vent Kit² (Optional/Sold Separately) <p>2 The Series 752V Retard Vent Kit is required any time an air break is needed above the Series 752 VdS Retarding Chamber Assembly. 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.</p> |
|---|--|

 **WARNING**



- **This product must be installed by an experienced, trained installer, in accordance with the instructions provided with each valve. These instructions contain important information.**

Failure to follow these instructions may result in serious personal injury, property damage, or valve leakage.

If you need additional copies of this product literature or the valve installation instructions, or if you have any questions about the safe installation and use of this device, contact Victaulic Company, P.O. Box 31, Easton, PA 18044-0031 USA, Telephone: 001-610-559-3300.

Installation

Reference should always be made to the appropriate Installation, Maintenance, and Testing Manual included with each shipment of Victaulic products. These manuals are also available in PDF format on our website at victaulic.com

Warranty

Refer to the Warranty section of the current Price List or contact Victaulic for details.

Note

This product shall be manufactured by Victaulic or to Victaulic specifications. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

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