

FireLock NXT™ Actuated Valve with Preaction AutoConvert Trim



SERIES 769

With Preaction Double-Interlocked,
Electric/Pneumatic AutoConvert Dry Trim
OR Preaction Electric AutoConvert Dry Trim

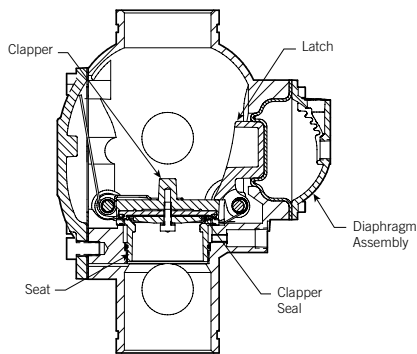
The patented Victaulic Series 769 FireLock NXT™ Preaction Valve controls the water supply entry into the Preaction system piping and sprinklers. The Preaction System is normally supervised with pressurized air or nitrogen in order to detect any leaks in the system. The Series 769 is a low differential, latched clapper valve that uses a unique direct acting diaphragm to separate system water supplies from Preaction pipe sprinkler systems. The positive latching mechanism uses the supply water pressure from upstream (city side) of the main control valve to hold the clapper shut. When the water pressure in the diaphragm chamber is released the latch retracts from the clapper and the valve actuates. The low differential and unique latch and actuator design of the valve allows the valve to be self-resetting; therefore it is not necessary to remove the cover. The low differential design is not subject to water columns.

AutoConvert Function: In the event of an AC power loss, the AutoConvert module latches from Closed to Open with a quick electrical pulse. To stay open, no further current draw is required as would be needed in a normally open solenoid. This opened pathway allows the included Series 776 Low Pressure Actuator to operate as a dry actuator, putting the preaction system into a Non-Interlocked condition. In this case, an air loss in the system piping or an electrical release from the FACP would allow the Series 769 valve to actuate, filling the piping with water. Upon an AC power return, the Auto-Convert module senses the restoration and latches the path from the Series 776 Low Pressure Actuator closed, returning the preaction valve to its standard release method.



PATENTED

FEATURES



Exaggerated for Clarity

NOTE: Valve is shown in the “set” position

The valve allows the water to operate a water motor alarm and/or electric pressure alarms, which continue until the flow of water stops.

The valve is rated to 300 psi/2065 kPa water working pressure and is factory tested hydrostatically to 600 psi/4135 kPa for sizes 1 ½ – 8”/40 – 200 mm. Required air pressure is 13 psi/90 kPa. The Series 769 is available grooved x grooved. Standard grooved dimensions conform to ANSI/AWWA C606.

Victaulic Series 769 Preaction valves do NOT require a separate check valve in the preaction system and feature a straight-through valve body design that provides superior flow and low-pressure drop. The valve body is tapped with a special drain for a complete system. The valve has simple access to all internal parts for easy maintenance. All internal parts are replaceable.

Maintenance and service can be performed from the installed position. The rubber clapper seal is replaced easily without removing the clapper from the valve. The body is tapped for main drain and all available trim configurations. The valve is painted inside and out to increase corrosion resistance.

The Victaulic Series 769 FireLock NXT Preaction valve trim includes an alarm test valve, which allows testing of the alarm system without reducing the system pressure.

NOTE: The bare valve carries VdS approvals for deluge applications. There is no LPCB or VdS recognition of the preaction configurations. The AutoConvert trim configuration is FM and LPCB Approved only. For LPCB Approved version, see Submittal Publication 30.85.

JOB/OWNER

System No. _____

Location _____

CONTRACTOR

Submitted By _____

Date _____

ENGINEER

Spec Sect _____ Para _____

Approved _____

Date _____

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REV_B



30.84_1

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With Preaction Double-Interlocked,
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OR Preaction Electric AutoConvert Dry Trim

INSTALLATION OPTIONS

AutoConvert Kit

The AutoConvert Kit includes the Series 776 Low Pressure Actuator, latching solenoid, strainer, 3-in-1 strainer/check/restrictor assembly, air pressure gauge and assembly trim. It is ordered separately and can be installed on any FireLock NXT Single Interlock or Double Interlock Preaction system that includes a solenoid.

Bare with Trim Kit

The FireLock NXT Actuated Valve can also be ordered bare with the required preaction and AutoConvert trim packaged separately.

Vic-Quick Riser

The Vic-Quick Riser comes completely pre-trimmed and includes a shut off valve (uses a FireLock Butterfly valve – request publication 10.18; for 1 ½ and 2" / 40 and 50mm sizes, the Vic-Quick Riser comes with a Series 728 Ball Valve – request publication 10.17) for system shut off, pre-set pressure switches, and a drain kit for ease of installation. For complete Vic-Quick Riser information request publication 30.20.

Series 745 FireLock Fire-Pac

The Fire-Pac is a completely pre-assembled fire protection valve that provides maximum service in a minimal enclosed space. The unit includes a water supply shutoff valve, the sprinkler system fire protection valve, alarm line pressure switches, air supervisory pressure switches, supervisory pump switches, and digital pressure gauges that are easily viewed through a window in the cabinet door. For complete Fire-Pac information request publication 30.23.

Optional accessories ship separately.

NOTE

This system must be installed in conjunction with a Notifier RP-2001 family panel, System Sensor PDRP-2001, or a Potter 4410RC panel to be in compliance with FM Approvals. See Submittal Publication 30.45 for PDRP-2001 Wiring Tips.

FireLock NXT™ Actuated Valve with Preaction AutoConvert Trim

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With Preaction Double-Interlocked,
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OR Preaction Electric AutoConvert Dry Trim

SYSTEM DESCRIPTIONS

Single Interlocked

Single interlocked systems are designed so that only an event detection by the release mechanism will cause the valve to operate. When the valve operates water will enter the sprinkler system and flow from any open sprinklers or other openings in the system.

Electric Release: The Victaulic electric release system uses an electric solenoid valve, approved electric panel and a compatible detection system. Only when a release system event occurs, will the water in the diaphragm chamber be released and the valve operate. Pneumatic pressure is maintained in the sprinkler system only for supervisory purposes and a low pressure alarm is installed in the sprinkler system in order to detect any leaks in the system. If there is an electric release activation and a sprinkler system sprinkler does not operate, the valve will operate and water will fill the sprinkler system, alarms will be activated and the Victaulic Series 769 Actuated Valve will act as an Alarm Check Valve. If a system sprinkler is damaged or activates and there is no release mechanism detection, the low pressure alarm in the system will activate but the valve will not operate and no water will flow until there is a release detection.

AutoConvert Trim: In the event of an AC power loss, the AutoConvert module latches from Closed to Open with a quick electrical pulse. To stay open, no further current draw is required as would be needed in a normally open solenoid. This opened pathway allows the included Series 776 Low Pressure Actuator to operate as a dry actuator, putting the preaction system into a Non-Interlocked condition. In this case, an air loss in the system piping or an electrical release from the Fire Alarm Control Panel (FACP) would allow the Series 769 valve to actuate, filling the piping with water. Upon an AC power return, the Auto-Convert module senses the restoration and latches the path from the Series 776 Low Pressure Actuator closed, returning the preaction valve to its standard release method.

This automatic sensing and automatic action allows continuous fire protection in the event of an AC power loss and possible battery backup failure.

Double Interlocked

Double interlocked systems are designed so that the valve will actuate only in the event of multiple fire detections by the release mechanisms. If a single release event occurs alarms will sound but the valve will not operate and water will not flow until a second release event is detected. Double interlocked systems are commonly used in refrigerated systems and in systems where water entering the sprinkler system is critical as well as when accidental discharge of water is critical.

Electric-Pneumatic/Electric: The electric-pneumatic/electric release uses two electric detection devices, a fire detection device and a low pressure switch installed in the sprinkler system. Both electric detection devices are wired into an approved control panel in a “cross-zoned” configuration. The electric control panel controls a solenoid valve piped to the Victaulic Series 769 Actuated Valve diaphragm charge line. In the event of a fire detection device activation and no pressure loss in the sprinkler system the control panel will not trigger the solenoid valve and the valve will not actuate. If there is a loss of pressure in the sprinkler system due to damage or a sprinkler activating and no fire detection the control panel will not trigger the solenoid and the valve will not actuate. The valve will actuate ONLY when BOTH a fire detection event and loss of system pressure occurs. When BOTH signals are received by the control panel the panel triggers the solenoid valve. This allows the water supply pressure in the Series 769 diaphragm chamber to be released and the valve will actuate allowing water into the system.

Electric/Electric: The electric/electric release uses two zones of electric detection devices installed in the sprinkler system. Both zones of electric detection devices are wired into an approved control panel in a “cross-zoned” configuration. The electric control panel controls a solenoid valve piped to the Victaulic Series 769 Actuated Valve diaphragm charge line. In the event of a single electric fire detection device activation, the control panel will not trigger the solenoid valve and the valve will not actuate. If there is a loss of pressure in the sprinkler system due to damage or a sprinkler activating and no fire detection the control panel will not trigger the solenoid and the valve will not actuate. The valve will actuate ONLY when BOTH zones of electric fire detection devices are activated. When BOTH signals are received by the control panel, the panel triggers the solenoid valve. This allows the water supply pressure in the Series 769 diaphragm chamber to be released and the valve will actuate allowing water into the system. In this configuration, a minimum air pressure is required to maintain supervisory alarms and low pressure switches.

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With Preaction Double-Interlocked,
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OR Preaction Electric AutoConvert Dry Trim

SYSTEM DESCRIPTIONS

Electric/Pneumatic Release: The electric/pneumatic preaction system uses both an electric release system, (composed of an approved solenoid valve, electric panel and an appropriate sensor), and pneumatically pressurized sprinkler system. The Victaulic Series 769 Actuated Valve will activate ONLY when there is a pressure loss in the sprinkler system AND the electric detection of a release event. In the event of a loss of pressure in the sprinkler system without an electric detection the valve will not actuate until a second release event is detected. In this way if there is accidental damage to the sprinkler system no water will flow. Additionally, if there is an electric detection and no pressure loss in the sprinkler system the valve will not actuate. Alarms will activate in both cases alerting the user of a detection condition.

AutoConvert Trim: In the event of an AC power loss, the AutoConvert module latches from Closed to Open with a quick electrical pulse. To stay open, no further current draw is required as would be needed in a normally open solenoid. This opened pathway allows the included Series 776 Low Pressure Actuator to operate as a dry actuator, putting the preaction system into a Non-Interlocked condition. In this case, an electrical release from the FACP and an air loss in the system or the system air loss would allow the Series 769 valve to actuate, filling the pipe with water. Upon an AC power return, the Auto-Convert module senses the restoration and latches the path from the Series 776 Low Pressure Actuator closed, returning the preaction valve to its standard release method.

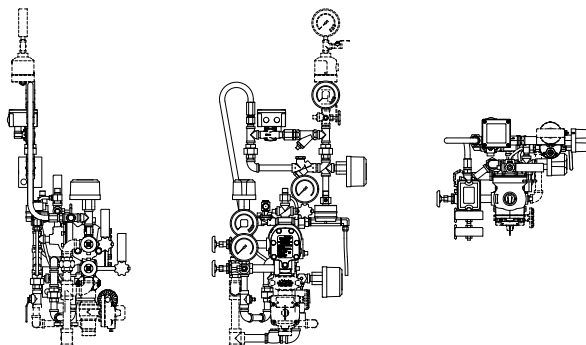
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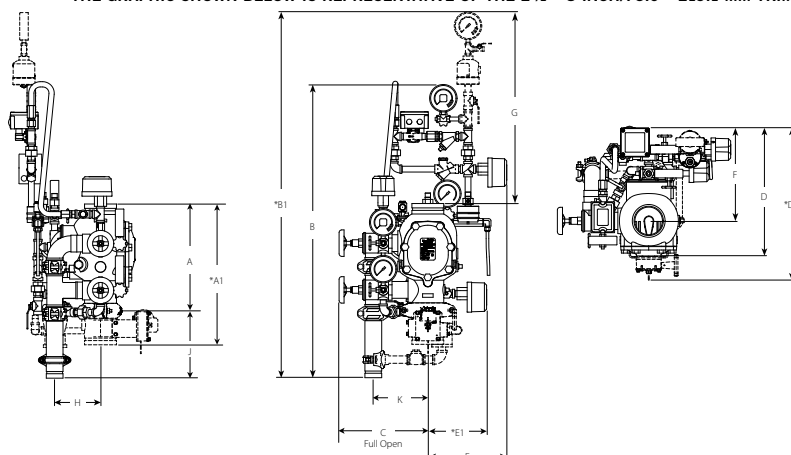
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TRIM DIMENSIONS - Preaction Electric AutoConvert Dry Trim

THE GRAPHIC SHOWN BELOW IS REPRESENTATIVE OF THE 1 ½ – 2-INCH/48.3 – 60.3-MM TRIM CONFIGURATIONS.



THE GRAPHIC SHOWN BELOW IS REPRESENTATIVE OF THE 2 ½ – 8-INCH/73.0 – 219.1-MM TRIM CONFIGURATIONS.



Size		Dimensions – inches/mm														Aprx. Weight Ea. lbs/kg	
Nominal Size inches mm	Actual Out. Dia. inches mm	A	A1*	B	B1*	C	D	D1*	E	E1	F	G*	H	J	K	Without Trim	With Trim
1½ 40	1.900 48.3	9.00 228.6	16.43 417.3	36.50 927	46.75 1187	10.75 273	14.75 375	16.75 425	9.50 241	8.50 216	11.75 298	29.75 756	3.04 77.2	9.17 232.1	6.98 177.3	16.7 7.6	43.0 19.5
2 50	2.375 60.3	9.00 228.6	16.43 417.3	36.50 927	46.75 1187	10.75 273	14.75 375	16.75 425	9.50 241	8.50 216	11.75 298	29.75 756	3.04 77.2	9.17 232.9	6.98 177.3	17.0 7.7	43.0 19.5
2½ 65	2.875 73.0	12.61 320.3	16.50 419.1	41.50 1054	51.50 1308	11.50 292	16.00 406	18.50 470	9.50 241	9.00 229	11.50 292	28.00 711	3.90 99.1	10.50 266.7	6.93 176.0	41.0 18.7	65.0 29.5
76.1 mm	3.000 76.1	12.61 320.3	16.50 419.1	41.50 1054	51.50 1308	11.50 292	16.00 406	18.50 470	9.50 241	9.00 229	11.50 292	28.00 711	3.90 99.1	10.50 266.7	6.93 176.0	41.0 18.7	65.0 29.5
3 80	3.500 88.9	12.61 320.3	16.50 419.1	41.50 1054	51.50 1308	11.50 292	16.00 406	18.50 470	9.50 241	9.00 229	11.50 292	28.00 711	3.90 99.1	10.50 266.7	6.93 176.0	41.0 18.7	65.0 29.5
4 100	4.500 114.3	15.03 381.8	19.78 502.4	42.25 1073	52.50 1334	13.25 337	18.25 464	21.50 546	9.50 241	9.00 229	13.50 343	27.75 705	6.25 158.8	9.62 244.3	8.46 214.9	59.0 26.7	95.0 43.0
165.1 mm	6.500 165.1	16.00 406.4	22.00 558.8	42.50 1080	52.75 1340	13.75 349	19.25 489	23.75 603	9.50 241	8.50 216	13.75 349	27.00 686	6.20 157.5	9.62 244.3	8.84 224.5	80.0 36.2	116.0 52.6
6 150	6.625 168.3	16.00 406.4	22.00 558.8	42.50 1080	52.75 1340	13.75 349	19.25 489	23.75 603	9.50 241	8.50 216	13.75 349	27.00 686	6.20 157.5	9.62 244.3	8.84 224.5	80.0 36.2	116.0 52.6
8 200	8.625 219.1	17.50 444.5	22.94 582.6	42.25 1073	52.25 1327	15.25 387	22.00 559	27.00 686	9.50 241	8.75 222	14.75 375	25.50 648	6.05 153.7	9.40 238.8	10.21 259.3	122.0 55.3	158.0 71.6

NOTES: Components shown as dotted lines denote optional equipment

* Measurements denoted with an asterisk take optional equipment into account

Optional drain connection kit is shown for reference and takeout dimensions.

The 1 ½ – 2-inch/48.3 – 60.3-mm configurations contain ¾-inch/19-mm drain valves. The 2 ½ – 3-inch/73.0 – 88.9-mm configurations contain 1 ¼-inch/31-mm drain valves. The 4 – 8-inch/114.3 – 219.1-mm configurations contain 2-inch/50-mm drain valves.

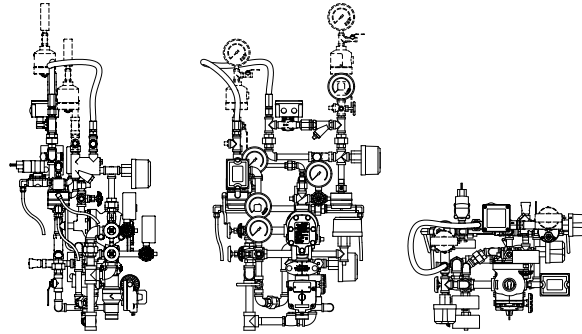
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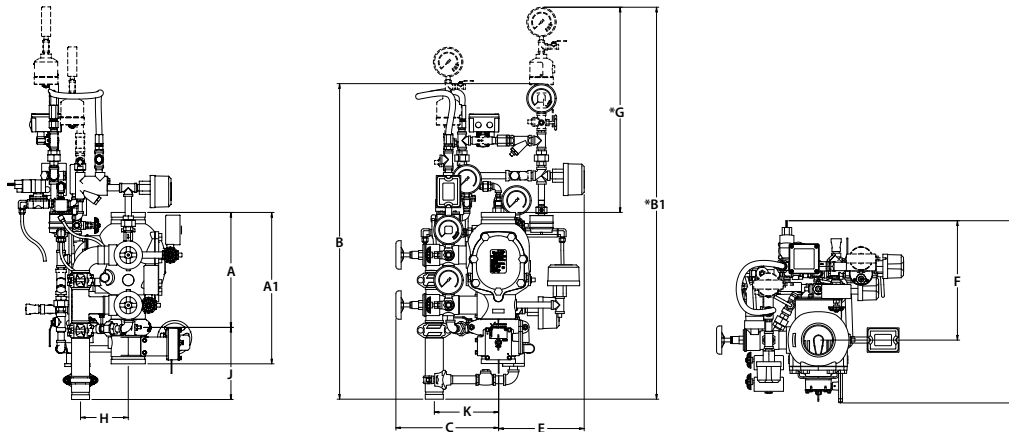
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TRIM DIMENSIONS - Preaction Double-Interlocked, Electric/Pneumatic AutoConvert Dry Trim

THE GRAPHIC SHOWN BELOW IS REPRESENTATIVE OF THE 1½ – 2-INCH/48.3 – 60.3-MM TRIM CONFIGURATIONS.



THE GRAPHIC SHOWN BELOW IS REPRESENTATIVE OF THE 2½ – 8-INCH/73.0 – 219.1-MM TRIM CONFIGURATIONS.



Size		Dimensions – inches/mm														Aprx. Weight Ea. lbs/kg	
Nominal Size inches mm	Actual Out. Dia. inches mm	A	A1*	B*	B1*	C	D	D1*	E	E1	F	G*	H	J	K	Without Trim	With Trim
1½ 40	1.900 48.3	9.00 228.6	16.43 417.3	41.25 1048	46.75 1187	10.75 273	14.75 375	16.75 425	8.50 216	9.75 248	11.75 298	29.75 756	3.04 77.2	9.17 232.9	6.98 177.3	16.7 7.6	43.0 19.5
2 50	2.375 60.3	9.00 228.6	16.43 417.3	41.25 1048	46.75 1187	10.75 273	14.75 375	16.75 425	8.50 216	9.75 248	11.75 298	29.75 756	3.04 77.2	9.17 232.9	6.98 177.3	17.0 7.7	43.0 19.5
2½ 65	2.875 73.0	12.61 320.3	16.50 419.1	46.25 1175	51.50 1308	11.50 292	16.00 406	18.50 470	9.00 229	9.75 248	11.50 292	28.00 711	3.90 99.1	10.50 266.7	6.93 176.0	41.0 18.7	65.0 29.5
76.1 mm	3.000 76.1	12.61 320.3	16.50 419.1	46.25 1175	51.50 1308	11.50 292	16.00 406	18.50 470	9.00 229	9.75 248	11.50 292	28.00 711	3.90 99.1	10.50 266.7	6.93 176.0	41.0 18.7	65.0 29.5
3 80	3.500 88.9	12.61 320.3	16.50 419.1	46.25 1175	51.50 1308	11.50 292	16.00 406	18.50 470	9.00 229	9.75 248	11.50 292	28.00 711	3.90 99.1	10.50 266.7	6.93 176.0	41.0 18.7	65.0 29.5
4 100	4.500 114.3	15.03 381.8	19.78 502.4	47.00 1194	52.25 1327	14.50 368	18.00 457	21.25 540	9.00 229	11.25 286	13.00 330	27.50 699	6.25 158.8	9.62 244.3	8.46 214.9	59.0 26.7	95.0 43.0
165.1 mm	6.500 165.1	16.00 406.4	22.00 558.8	47.25 1200	52.75 1340	14.25 362	19.25 489	23.75 603	8.50 216	10.75 273	13.75 349	27.00 686	6.20 157.5	9.62 244.3	8.84 224.5	80.0 36.2	116.0 52.6
6 150	6.625 168.3	16.00 406.4	22.00 558.8	47.25 1200	52.75 1340	14.25 362	19.25 489	23.75 603	8.50 216	10.75 273	13.75 349	27.00 686	6.20 157.5	9.62 244.3	8.84 224.5	80.0 36.2	116.0 52.6
8 200	8.625 219.1	17.50 444.5	22.94 582.7	47.00 1194	52.25 1327	15.75 400	22.00 559	27.00 686	8.75 222	9.25 235	14.75 375	25.50 648	6.05 153.7	9.40 238.8	10.21 259.3	122.0 55.3	158.0 71.6

NOTES: Components shown as dotted lines denote optional equipment

* Measurements denoted with an asterisk take optional equipment into account

Optional drain connection kit is shown for reference and takeout dimensions.

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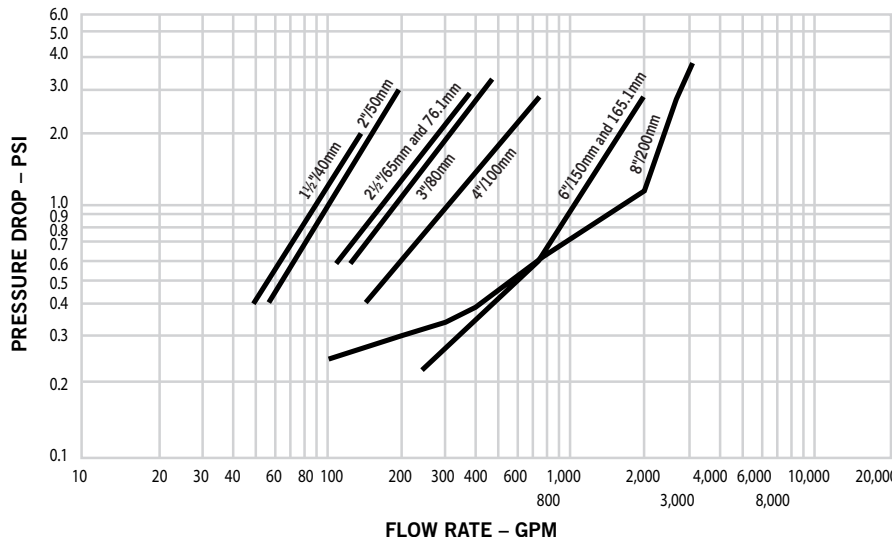
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With Preaction Double-Interlocked,
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OR Preaction Electric AutoConvert Dry Trim

PERFORMANCE

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 769 FireLock NXT
Preaction Valve in equivalent feet of straight pipe.

Size		Equivalent Length of Pipe
Nominal Size Inches/ mm	Actual Outside Dia. Inches/ mm	Feet meters
1 ½ 40	1.900 48.3	3.00 0.9
2 50	2.375 60.3	9.00 2.7
2 ½ 65	2.875 73.0	8.00 2.4
76.1 mm	3.000 76.1	8.00 2.4
3 80	3.500 88.9	17.00 5.2
4 100	4.500 114.3	21.00 6.4
165.1 mm	6.500 165.1	22.00 6.7
6 150	6.625 168.3	22.00 6.7
8 200	8.625 219.1	50.00 15.2

FireLock NXT™ Actuated Valve with Preaction AutoConvert Trim

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C_v VALUES

C_v values for flow of water at +60°F/+16°C through a fully open valve are shown in the table below.

Formulas for C_v values:

$$\Delta P = \frac{Q^2}{C_v^2}$$

$$Q = C_v \times \sqrt{\Delta P}$$

Where:

Q = Flow (GPM)

ΔP = Pressure Drop (psi)

C_v = Flow Coefficient

Size		C _v /K _v (Fully Open Valve)
Nominal Size Inches/ mm	Actual Outside Dia. Inches/ mm	
1 ½ 40	1.900 48.3	60 52.0
2 50	2.375 60.3	110 95.0
2 ½ 65	2.875 73.0	180 156.0
76.1 mm	3.000 76.1	180 156.0
3 80	3.500 88.9	200 173.0
4 100	4.500 114.3	350 302.8
165.1 mm	6.500 165.1	1000 865.0
6 150	6.625 168.3	1000 865.0
8 200	8.625 219.1	1500 1499.1

OPERATION

The Victaulic Preaction System utilizes the Series 769 Preaction Valve to control the entry of the water supply into the Preaction System piping and sprinklers. The Series 769 Preaction Valve is constructed with a clapper having a replaceable rubber face. The clapper makes contact with the valve seat ring which has access holes to the intermediate chamber of the valve. The clapper is contacted by the latch which is contacted by the diaphragm. In the set position, water supply pressure from upstream of the water supply control valve is maintained in the diaphragm chamber which holds the clapper in the closed/set position. The water is maintained in the diaphragm by one of the system release mechanisms (pneumatic, hydraulic or electric). Upon the detection of an appropriate actuating event of the Preaction System (see system description above) the water supply pressure in the diaphragm chamber is released. This release allows the latch to move to its open position, permitting the clapper to pivot freely, thus allowing water into the system. Water will flow from all open sprinklers in the piping. Also, water enters the intermediate chamber of the valve through the holes in the seat ring. The water flows from the intermediate chamber to the alarm line thus activating the system alarms. These alarms will continue to sound until the flow of water is stopped. When the flow of water is stopped the spring assisted valve clapper returns to the closed position and the valve acts as an alarm check valve until the system is put back into service as a Preaction System.

Manual Operation

Any time the manual release handle is pulled, water will be released from the diaphragm chamber and the valve will actuate, allowing water into the Preaction System. Water motor alarms and alarm pressure switches will activate. Manual Pull Stations are also included.

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MATERIAL SPECIFICATIONS

Body: Ductile iron conforming to ASTM A-536, grade 65-45-12.

Clapper: Aluminum bronze UNS-C95500

Latch: Aluminum bronze UNS-C95500

Clapper Seal: Peroxide cured EPDM, ASTM D2000

Bushing and Seat O-rings: Nitrile

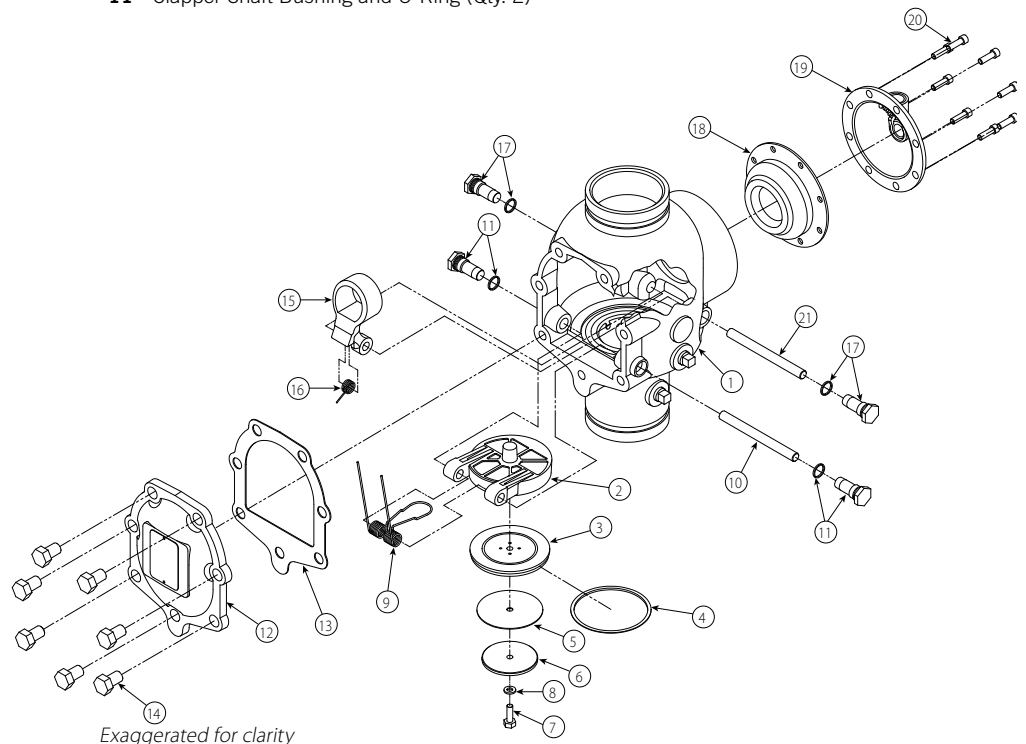
Springs: Stainless steel (300 Series)

Shafts: Stainless 17-4

Diaphragm: Peroxide cured EPDM with fabric reinforcement

Bill of Materials

1	Valve Body	12	Cover Plate
2	Clapper	13	Cover Plate Gasket
3	Clapper Seal	14	Cover Plate Bolts*
4	Seal Ring	15	Latch
5	Seal Washer	16	Latch Spring
6	Seal Retaining Ring	17	Latch Shaft Bushing and O-Ring (Qty. 2)
7	Seal Assembly Bolt	18	Diaphragm
8	Bolt Seal	19	Diaphragm Cover
9	Clapper Spring	20	Diaphragm Cover Cap Screws (Qty. 8)
10	Clapper Shaft	21	Latch Shaft
11	Clapper Shaft Bushing and O-Ring (Qty. 2)		



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

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TRIM PACKAGES

Trim Packages Options:

Electric Trim - can be used as:

- Single Interlock Electric/Electric
- Double Interlock Electric/ Pneumatic/Electric
- Double Interlock Electric/Electric
- Double-Interlocked, Electric/Pneumatic with AutoConvert option

Trim packages include all required galvanized pipe and fittings. For trim package details and optional accessories, see pages 17-22

Actuators:

- **Series 776 Low-Pressure Actuator AutoConvert Kit** – The Series 776 Low-Pressure Actuator is pneumatically actuated and requires only 13 psi/90 kPa minimum air pressure, regardless of the system supply pressure. This actuator allows the system to operate with a low air or gas pressure of 7 psi/48 kPa. Request submittal 30.46.
- **Series 767 Electric/Pneumatic Actuator** – The Series 767 Electric/Pneumatic Actuator provides a single trip point for the pneumatic event and an integral electric actuator. This actuator requires only 13 psi/90 kPa minimum air pressure, regardless of the system supply pressure. This actuator allows the system to operate with a low air or gas pressure of 7 psi/48 kPa. Request submittal 30.62.
- **Series 753-E Solenoid Valve** – The Series 753-E Solenoid Valve is designed for use with systems that require electrical activation. Request submittal 30.32.

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TRIM PACKAGES

Optional accessories:

- **Series 746-LPA Dry Accelerator** – The Series 746-LPA Dry Accelerator can be used on pneumatic release systems to improve response time. Request submittal 30.64.
- **Series 760 Water Motor Alarm** – The Series 760 Water Motor Alarm is a mechanical device that sounds when a sustained flow of water occurs (such as with an open sprinkler). Request submittal 30.32.
- **Series 75B Supplemental Alarm Device** – The Series 75B Supplemental Alarm Device is designed to provide a continuous alarm for systems equipped with a mechanical device. Request submittal 30.33.
- **Series 75D Water Column Kit** – The Series 75D Water Column Kit is designed to minimize residual water in the riser from collecting above the clapper. Request submittal 30.34.
- **Alarm Pressure Switch** – Alarm Pressure Switches are designed to activate electrical alarms and control panels when a sustained flow of water occurs (such as with an open sprinkler).
- **Air Supervisory Pressure Switch** – Air Pressure Supervisory Switches are used to monitor system air pressure and are available as low-pressure and high-pressure sensitivity.
- **Air Supply System** – The air supply system contains all components for establishing and maintaining air in a pneumatic system. The compressor, low pressure alarms, ball valves, and required trim are included in the air supply system.
- **Air Compressor** (See page 14 for more on the Victaulic Series 7C7 Compressor Package)
- **Air Maintenance Trim Assembly**
- **Alarm Panels**
- **Drain Connection Kit**

FireLock NXT™ Actuated Valve with Preaction AutoConvert Trim

SERIES 769

With Preaction Double-Interlocked,
Electric/Pneumatic AutoConvert Dry Trim
OR Preaction Electric AutoConvert Dry Trim

AIR SUPPLY REQUIREMENTS

The required air pressure for Series 769 FireLock NXT Preaction Valves is 13 psi/90 kPa minimum, regardless of the system supply pressure. Air pressures should be kept below 18 psi/124 kPa, unless a Series 746-LPA Dry Accelerator is installed. Systems with air pressures higher than 18 psi/124 kPa may require the addition of a Series 746-LPA Dry Accelerator.

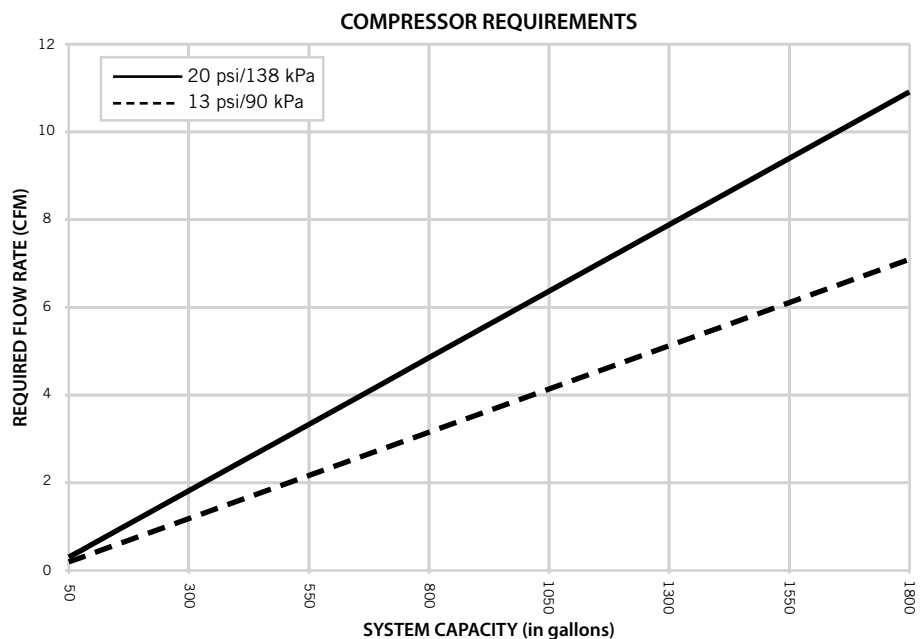
If multiple Series 769 FireLock NXT Preaction Valves are installed with a common air supply, isolate the systems with a spring-loaded, soft-seated ball check valve to ensure air integrity for each system. Good practice is to include a ball valve for isolation and service of each individual system.

Set the air pressure to the required system air pressure. Air pressure differing from the required system air pressure could reduce system operation response time.

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.

COMPRESSOR SIZING



FireLock NXT™ Actuated Valve with Preaction AutoConvert Trim

SERIES 769

With Preaction Double-Interlocked,
Electric/Pneumatic AutoConvert Dry Trim
OR Preaction Electric AutoConvert Dry Trim

BASE OR RISER-MOUNTED COMPRESSORS

For base or riser-mounted compressors, the recommended air pressure of 13psi/90kPa is the “on” or “low” pressure setting for the compressor. The “off” or “high” pressure setting should be 18psi/124kPa. Victaulic offers the Series 7C7 Compressor package for FireLock NXT devices which is riser-mounted and pre-set for the FireLock NXT pressure requirements as stated above. For information on the Series 7C7 package, consult publication 30.22. The Series 7C7 Compressor package is only available in North America.

When a base or riser-mounted air compressor supplies air to a Series 768 FireLock NXT Dry Valve, it is not necessary to install the Victaulic Series 757 Regulated Air Maintenance Trim Assembly (AMTA). In this case, the airline of the compressor connects to the trim at the fitting where the Series 757 Regulated AMTA is normally installed (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. For information on the Series 757 Regulated Air Maintenance Trim Assembly, see publication 30.35. For information on the Series 757P Air Maintenance Trim Assembly, see publication 30.36.

SHOP AIR OR TANK-MOUNTED AIR COMPRESSORS

In the event a compressor becomes inoperative, a properly sized tank-mounted air compressor provides the 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 13psi/90kPa should be used as the set point for the air regulator. The “on” pressure of the compressor should be at least 5psi/34kPa above the set point of the air regulator.

FireLock NXT™ Actuated Valve with Preaction AutoConvert Trim

SERIES 769

With Preaction Double-Interlocked,
Electric/Pneumatic AutoConvert Dry Trim
OR Preaction Electric AutoConvert Dry Trim

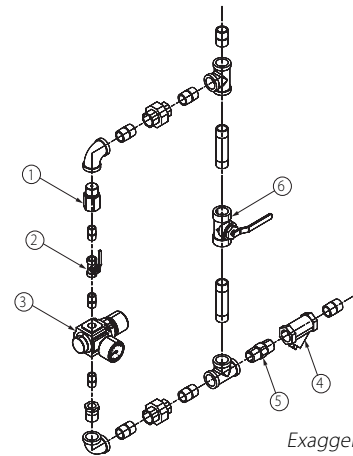
SERIES 757 REGULATED AIR MAINTENANCE TRIM ASSEMBLY

NOTICE

- Victaulic recommends a maximum of two Series 769 FireLock NXT Preaction Valves per Series 757 Regulated AMTA

Bill of Materials

- | | |
|---|---|
| 1 | 1/8"/3.2 mm Restrictor |
| 2 | Slow Fill Ball Valve (Normally Open) |
| 3 | Air Regulator |
| 4 | Strainer (100 Mesh) |
| 5 | Spring-Loaded, Soft-Seated Ball Check Valve |
| 6 | Fast Fill Ball Valve (Normally Closed) |



Exaggerated for clarity

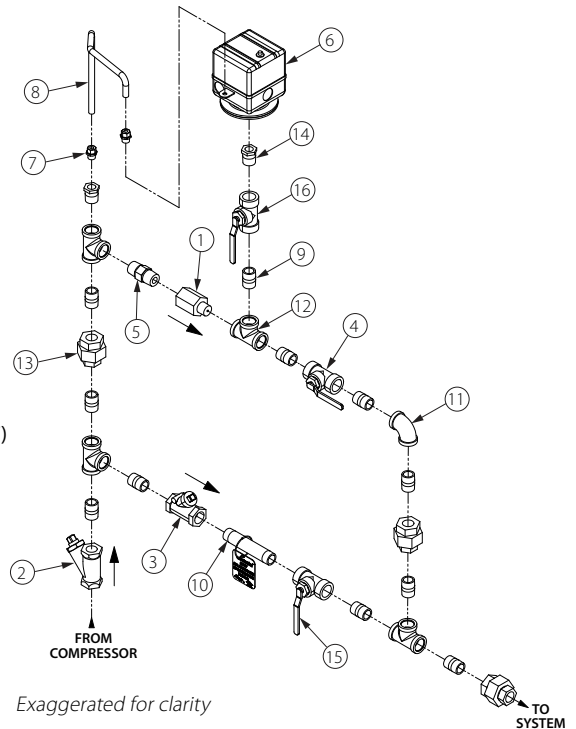
SERIES 757P AIR MAINTENANCE TRIM ASSEMBLY WITH PRESSURE SWITCH

NOTICE

- Victaulic recommends a maximum of two Series 769 FireLock NXT Preaction Valves per Series 757P AMTA with Pressure Switch.

Bill of Materials

- | Item | Qty. | Description |
|------|------|---|
| 1 | 1 | Restrictor (1/2-inch NPT) |
| 2 | 1 | Strainer (1/2-inch NPT) |
| 3 | 1 | Swing Check (1/2-inch NPT) |
| 4 | 1 | Slow-Fill Ball Valve (Normally Open) |
| 5 | 1 | Spring-Loaded, Soft-Seated Check Valve |
| 6 | 1 | Pressure Switch |
| 7 | 2 | Compression Fitting, Straight (1/4-inch NPT x 1/4-inch Tube) |
| 8 | 1 | Copper Tubing (1/4-inch OD) |
| 9 | 11 | Close Nipple (1/2-inch NPT x 1.13) |
| 10 | 1 | Nipple (1/2-inch NPT x 4.00) |
| 11 | 1 | 90° Female Elbow (1/2-inch NPT) |
| 12 | 4 | Female Tee (1/2-inch NPT) |
| 13 | 3 | Union (1/2-inch NPT) |
| 14 | 2 | Reducing Bushing (1/2-inch NPT x 1/4-inch NPT) |
| 15 | 1 | Fast-Fill Ball Valve (Normally Closed) |
| 16 | 1 | Pressure Switch Isolation Ball Valve (Normally Open - Lockable) |



Exaggerated for clarity

FireLock NXT™ Actuated Valve with Preaction AutoConvert Trim

SERIES 769

With Preaction Double-Interlocked,
Electric/Pneumatic AutoConvert Dry Trim
OR Preaction Electric AutoConvert Dry Trim

COMPRESSOR REQUIREMENTS

Compressor Requirements and Settings for Series 769 FireLock NXT Preaction Valves Installed with Series 746-LPA Dry Accelerators

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

THE SERIES 757P AIR MAINTENANCE TRIM ASSEMBLY WITH PRESSURE SWITCH MUST NOT BE USED ON A SERIES 769 FIRELOCK NXT PREACTION VALVE INSTALLED WITH A SERIES 746-LPA DRY ACCELERATOR.

When a Series 769 FireLock NXT Preaction Valve is installed with a Series 746-LPA Dry Accelerator, the Series 757 Regulated AMTA must be used. **NOTE:** The use of an air regulator with a base or riser-mounted compressor could cause short cycling, resulting in premature wear of the compressor.

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

NOTE: The Series 757 Regulated AMTA must be used with a tank-mounted air compressor that supplies air to a Series 769 FireLock NXT Preaction Valve installed with a Series 746-LPA Dry Accelerator.

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 a Series 746-LPA Dry Accelerator. **NOTE:** The Series 746-LPA should not be used above 30 psi/207 kPa. If higher pressures are required, the Series 746 should be used.

Settings for Air Supervisory Pressure Switches and Alarm Pressure Switches

Air supervisory pressure switches are required for preaction systems and must be set according to the following instructions. **NOTE:** Switches for Vic-Quick Risers are pre-set at the factory.

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.

Set the air supervisory pressure switches to activate at 2 – 4 psi/14 – 28 kPa below the minimum air pressure required, but not lower than 10 psi/69 kPa.

Wire the alarm pressure switch to activate a water flow alarm.

Set the alarm pressure switch to activate on a pressure rise of 4 – 8 psi/28 – 55 kPa.

Remote System Test Valve Requirements

The remote system test valve (inspector's test connection) should contain a UL Listed and/or FM Approved valve (normally closed), which can be opened to simulate the operation of a sprinkler.

The remote system test valve (inspector's test connection) should be located at the most hydraulically demanding location in the release system. **NOTE:** Multiple restrictions on the remote system test valve (inspector's test connection) may slow the air decay rate and cause the system to respond slower than required.

The remote system test valve (inspector's test connection) should terminate with an orifice equal to the smallest orifice in the releasing system.

The remote system test valve (inspector's test connection) is used to ensure that water reaches the most remote part of the system within 60 seconds.

FireLock NXT™ Actuated Valve with Preaction AutoConvert Trim

SERIES 769

With Preaction Double-Interlocked,
Electric/Pneumatic AutoConvert Dry Trim
OR Preaction Electric AutoConvert Dry Trim

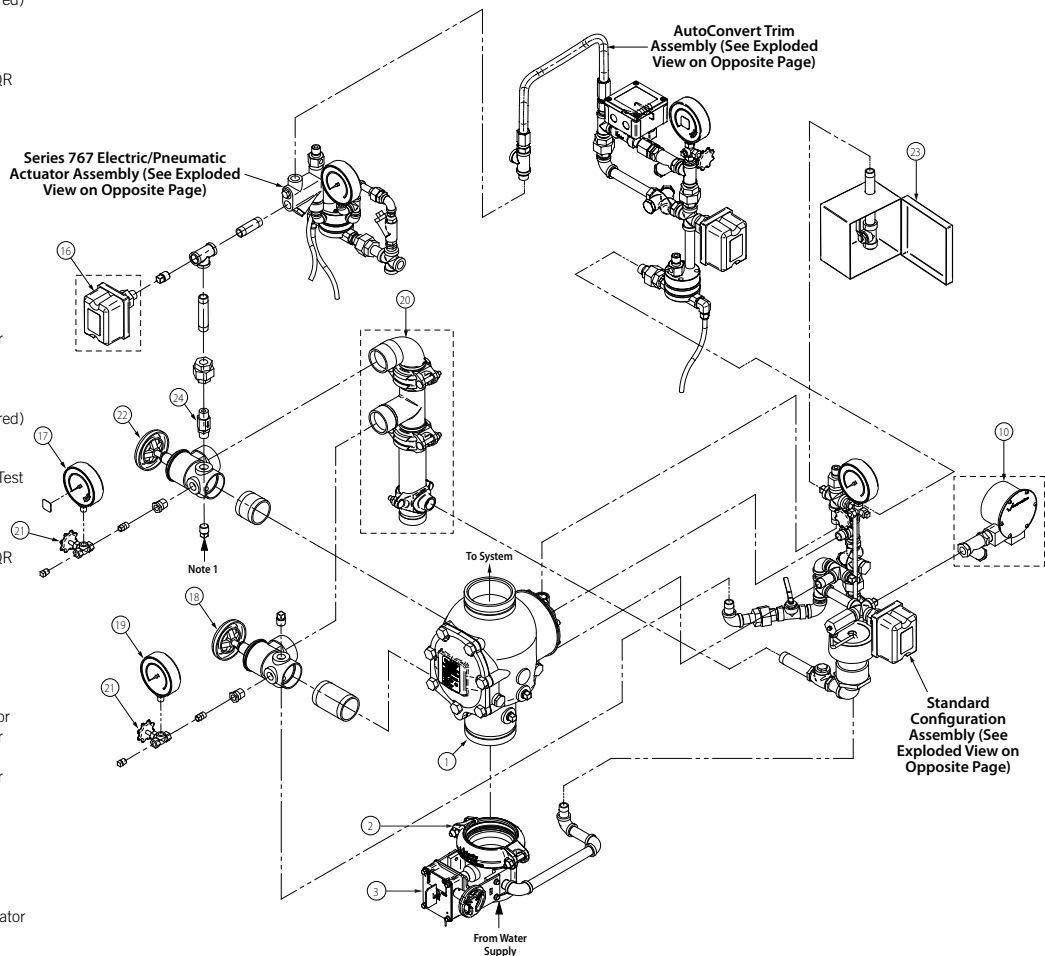
EXPLODED VIEW DRAWING – TRIM COMPONENTS

SERIES 769 FIRELOCK NXT PREACTION VALVE – DOUBLE-INTERLOCKED, ELECTRIC/PNEUMATIC AUTOCONVERT DRY TRIM (OPTIONAL ACCESSORIES ALSO SHOWN)



Bill of Materials

- 1 Series 769 FireLock NXT Preaction Valve
- 2 FireLock Rigid Coupling (Optional/Sold Separately – Comes Standard when VQR Assembly is Ordered)
- 3 Water Supply Main Control Valve (Optional/Sold Separately – Comes Standard when VQR Assembly is Ordered)
- 4 Drain Swing Check Valve
- 5 Drip Cup with Cap
- 6 Alarm Pressure Switch (Optional/Sold Separately – Comes Standard when VQR Assembly is Ordered)
- 7 Series 729 Drip Check Valve
- 8 Diaphragm-Charge-Line Ball Valve (Normally Open)
- 9 3-in-1 Strainer/Check/Restrictor Assembly
- 10 Series 760 Water Motor Alarm (Optional/Sold Separately)
- 11 Alarm Test Ball Valve
- 12 Diaphragm-Charge-Line Pressure Gauge (0-300 psi/0-20.7 Bar)
- 13 Series 749 Auto Drain
- 14 Series 767 Electric/Pneumatic Actuator
- 15 Air Manifold
- 16 Air Supervisory Pressure Switch (Optional/Sold Separately – Comes Standard when VQR Assembly is Ordered)
- 17 System Pressure Gauge (0-80 psi/0-5.5 Bar with Retard)
- 18 Water Supply Main Drain Valve - Flow Test
- 19 Water Supply Pressure Gauge (0-300 psi/0-20.7 Bar)
- 20 Drain Connection Kit (Optional/Sold Separately – Comes Standard when VQR Assembly is Ordered)
- 21 Gauge Valve
- 22 System Main Drain Valve
- 23 Series 755 Manual Pull Station
- 24 Series 748 Ball Check Valve
- 25 Series 746-LPA Dry Accelerator (Optional/Sold Separately)
- 26 Upper Chamber Strainer (100 Mesh) for Series 767 Electric/Pneumatic Actuator
- 27 Upper Chamber Pressure Gauge for Series 767 Electric/Pneumatic Actuator
- 28 Auto Vent for Series 767 Electric/Pneumatic Actuator
- 29 Upper Chamber Inlet Restrictor (.032-inch) for Series 767 Electric/Pneumatic Actuator
- 30 Upper Chamber Check Valve (1/4-inch) for Series 767 Electric/Pneumatic Actuator
- 31 Latching Solenoid Module
- 32 Braided Stainless Steel Flex Hose
- 33 Series 776 Low-Pressure Actuator
- 34 AutoConvert Assembly Air Pressure Gauge (0-80 psi/0-5.5 Bar with Retard)
- 35 Strainer
- 36 AutoConvert Assembly Pre-Set Air Pressure Switch



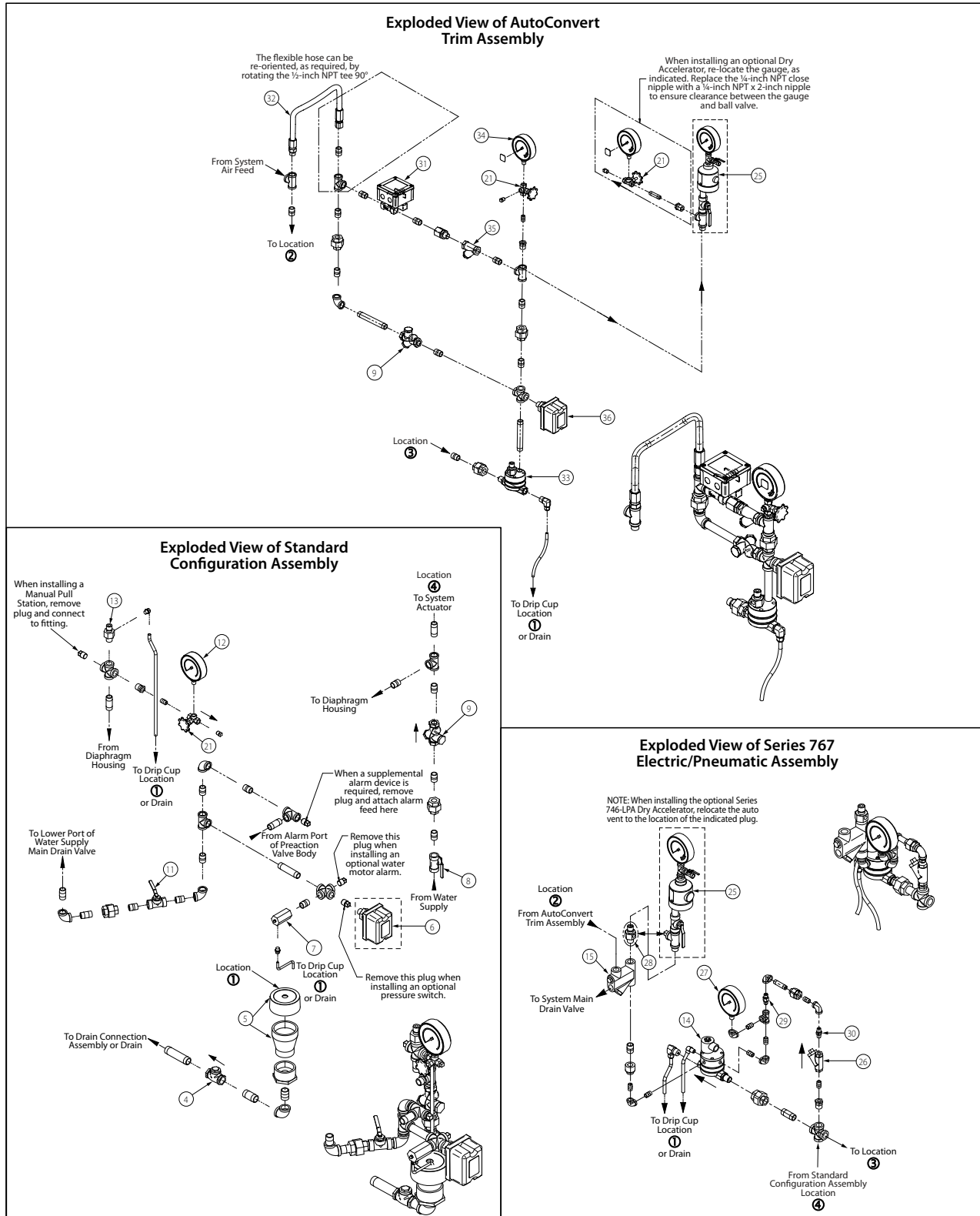
NOTE 1: Connection point for the Series 75D Water Column Device Kit

For information regarding installation of the Series 75B Supplemental Alarm Device or the Series 7C7 Air Maintenance/Compressor Assembly (not shown), refer to the instructions supplied with the product.

FireLock NXT™ Actuated Valve with Preaction AutoConvert Trim

SERIES 769

With Preaction Double-Interlocked,
Electric/Pneumatic AutoConvert Dry Trim
OR Preaction Electric AutoConvert Dry Trim



FireLock NXT™ Actuated Valve with Preaction AutoConvert Trim

SERIES 769

With Preaction Double-Interlocked,
Electric/Pneumatic AutoConvert Dry Trim
OR Preaction Electric AutoConvert Dry Trim

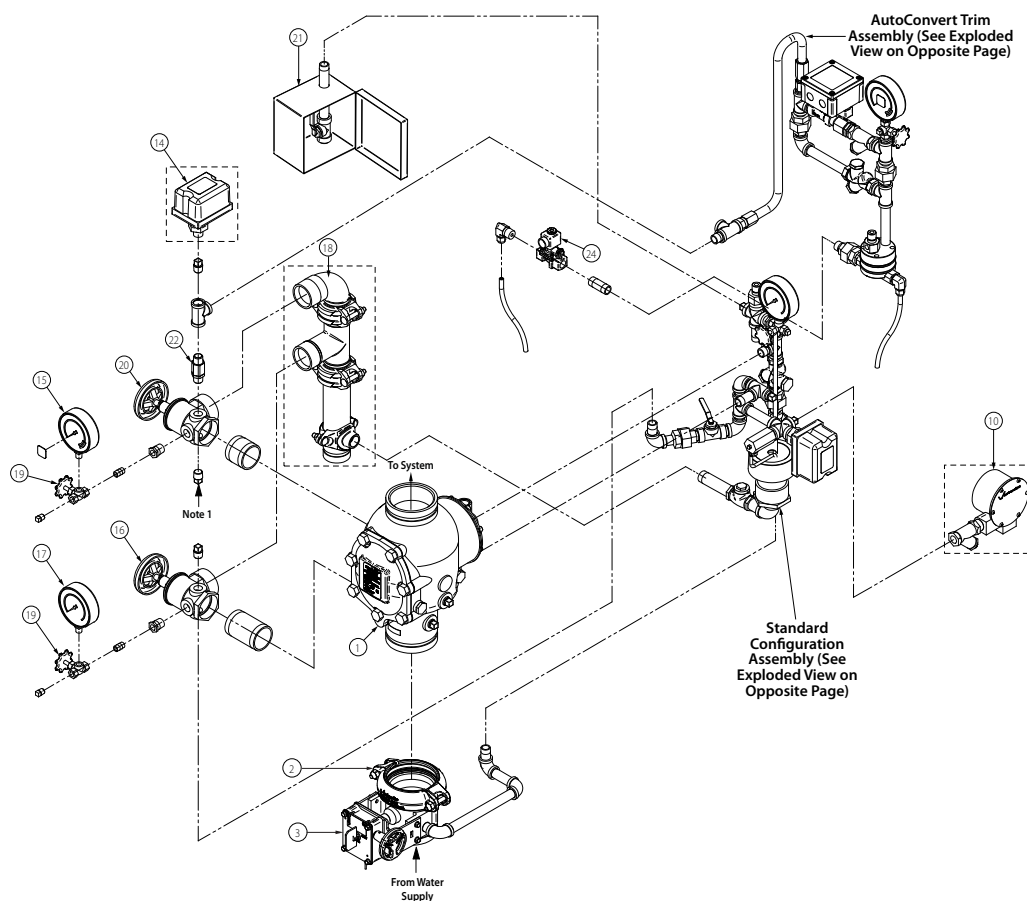
EXPLODED VIEW DRAWING – TRIM COMPONENTS

SERIES 769 FIRELOCK NXT PREACTION VALVE – ELECTRIC AUTOCONVERT DRY TRIM (OPTIONAL ACCESSORIES ALSO SHOWN)



Bill of Materials

- 1 Series 769 FireLock NXT Preaction Valve
- 2 FireLock Rigid Coupling (Optional/Sold Separately – Comes Standard when VQR Assembly is Ordered)
- 3 Water Supply Main Control Valve (Optional/Sold Separately – Comes Standard when VQR Assembly is Ordered)
- 4 Drain Swing Check Valve
- 5 Drip Cup with Cap
- 6 Alarm Pressure Switch (Optional/Sold Separately – Comes Standard when VQR Assembly is Ordered)
- 7 Series 729 Drip Check Valve
- 8 Diaphragm-Charge-Line Ball Valve (Normally Open)
- 9 3-in-1 Strainer/Check/Restrictor Assembly
- 10 Series 760 Water Motor Alarm (Optional/Sold Separately)
- 11 Alarm Test Ball Valve
- 12 Diaphragm-Charge-Line Pressure Gauge (0-300 psi/0-2068 kPa/0-20.7 Bar)
- 13 Series 749 Auto Drain
- 14 Air Supervisory Pressure Switch (Optional/Sold Separately – Comes Standard when VQR Assembly is Ordered)
- 15 System Pressure Gauge (0-80 psi/0-552 kPa/0-5.5 Bar with Retard)
- 16 Water Supply Main Drain Valve - Flow Test
- 17 Water Supply Pressure Gauge (0-300 psi/0-2068 kPa/0-20.7 Bar)
- 18 Drain Connection Kit (Optional/Sold Separately – Comes Standard when VQR Assembly is Ordered)
- 19 Gauge Valve
- 20 System Main Drain Valve
- 21 Series 755 Manual Pull Station
- 22 Series 748 Ball Check Valve
- 23 Series 746-LPA Dry Accelerator (Optional/Sold Separately)
- 24 Series 753-E Solenoid Valve
- 25 Latching Solenoid Assembly
- 26 Braided Stainless Steel Flex Hose
- 27 Series 776 Low-Pressure Actuator
- 28 AutoConvert Assembly Air Pressure Gauge (0-80 psi/0-5.5 Bar with Retard)
- 29 Strainer



NOTE 1: Connection point for the Series 75D Water Column Device Kit

For information regarding installation of the Series 75B Supplemental Alarm Device or the Series 7C7 Air Maintenance/Compressor Assembly (not shown), refer to the instructions supplied with the product.

FireLock NXT™ Actuated Valve with Preaction AutoConvert Trim

SERIES 769

With Preaction Double-Interlocked,
Electric/Pneumatic AutoConvert Dry Trim
OR Preaction Electric AutoConvert Dry Trim

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.

WARNING



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.

For complete contact information, visit www.victaulic.com

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