

Series 776 Low Pressure Actuator

PRODUCT DESCRIPTION



See Victaulic
publication 10.01
for details.

The Victaulic Series 776 Low Pressure Actuator is a pneumatically actuated valve that is used to trigger the dry, preaction or deluge fire protection system. The Series 776 features a single trip point regardless of supply water pressure. The Series 776 is designed to allow the sprinkler system to operate with a low air or gas pressure of 13 psi/90 kPa, regardless of supply water pressure. The Series 776 is designed to actuate at 7 psi/45 kPa system pressure, thus releasing supply water pressure from the sprinkler control valve diaphragm and actuating the sprinkler control valve in its intended manner.

The low system pressure, 13 psi/90 kPa, allows the sprinkler system to have a very low moisture content while the 7 psi/45 kPa trip point will allow water to enter the sprinkler system and reach a greater number of heads more rapidly. The patented design operates as a single actuating device, or when used in conjunction with an electric solenoid, as a pneumatic/electric double interlock valve.

The Series 776 Low Pressure Actuator is rated for use on water supplies with up to 300 psi/2065 kPa working pressure. The Series 776 Low Pressure Actuator comes standard on the Series 768 Dry, 769 Deluge, and 769 Preaction FireLock NXT™ Valves and is tested and approved to be used in all sizes of Victaulic Series 756 and 758 fire protection valves.

OPERATION

The Series 776 Low-Pressure Actuator is located on the trim of pneumatically released Victaulic dry, deluge, and preaction valves and comes standard on the Series 768 Dry, 769 Deluge, and 769 Preaction FireLock NXT Valves. The Series 776 acts as the trigger for these systems.

Diaphragms separate the low-pressure actuator into three chambers. The upper air chamber controls the activation, while the middle and lower chambers act as the water valve.

During charging, the system feeds air into the upper chamber of the low-pressure actuator. Pulling up on the Auto Vent's knob, which is located on top of the low-pressure actuator, manually sets the upper chamber. The air pressure in the upper chamber holds the Auto Vent closed, while it exerts force on the water seal of the middle chamber.

When you open the piston charge line of the sprinkler control valve trim, water enters the lower chamber of the low-pressure actuator. The water entering the low-pressure actuator flows to the middle chamber through the inlet eyelet. This water is trapped in the middle chamber by the upper diaphragm assembly, which is held closed by the system air pressure in the upper chamber.

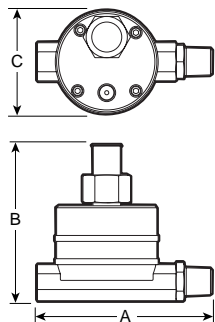
Since the area of the lower diaphragm, which is exposed to the middle chamber's water pressure, is greater than the area of the lower chamber, the lower chamber seals off. No water flows to the low-pressure actuator's outlet, and the supply water pressure creates the water seal.

When the system air pressure decays to 7 psi/45 kPa, the force exerted by the compression spring in the auto vent is greater than the force exerted by the air in the upper chamber. The Auto Vent opens and the air pressure in the upper chamber evacuates. The upper diaphragm then releases the water pressure in the low-pressure actuator's middle chamber, which allows the lower diaphragm to lift and water to flow from the low-pressure actuator's inlet to the outlet. This water flow releases water pressure from the control valve's piston, thus allowing the piston to retract. The control valve's clapper opens and water flows into the sprinkler system.

Auto Vent

After the actuated check valve operates, water will enter the air line portion of the trim. This is connected to the upper chamber of the LPA and controls its actuation. Should the upper chamber become pressurized, the LPA could close prematurely. The Series 748 ball check in the valve trim prevents most of this water from entering the LPA, but in case of ball check malfunction, the Auto Vent of the Series 776 Low Pressure Actuator acts as an anti-flood device. When the Auto Vent opens, the system is configured such that fluid entering the LPA upper chamber is allowed to flow through the Auto Vent faster than it can enter the LPA upper chamber. In this way, it is not possible to develop pressure in the upper chamber without manual intervention.

DIMENSIONS



Nominal Size In./mm	Actual Outside Dia. In./mm	Dimensions – Inches/millimeters			Aprx. Wgt. Ea. Lbs./kg
		A	B	C	
1/2	0.840	5.29	4.90	3.12	2.5
15	21.3	134	125	79	1.1

MATERIAL SPECIFICATIONS

Lower Chamber: Durable cast bronze

Middle and Upper Chambers: Brass conforming to UNS C36000

Internal Components: Brass conforming to UNS C36000

Seals: EPDM

Fasteners: 300 series stainless steel

Springs: Stainless steel

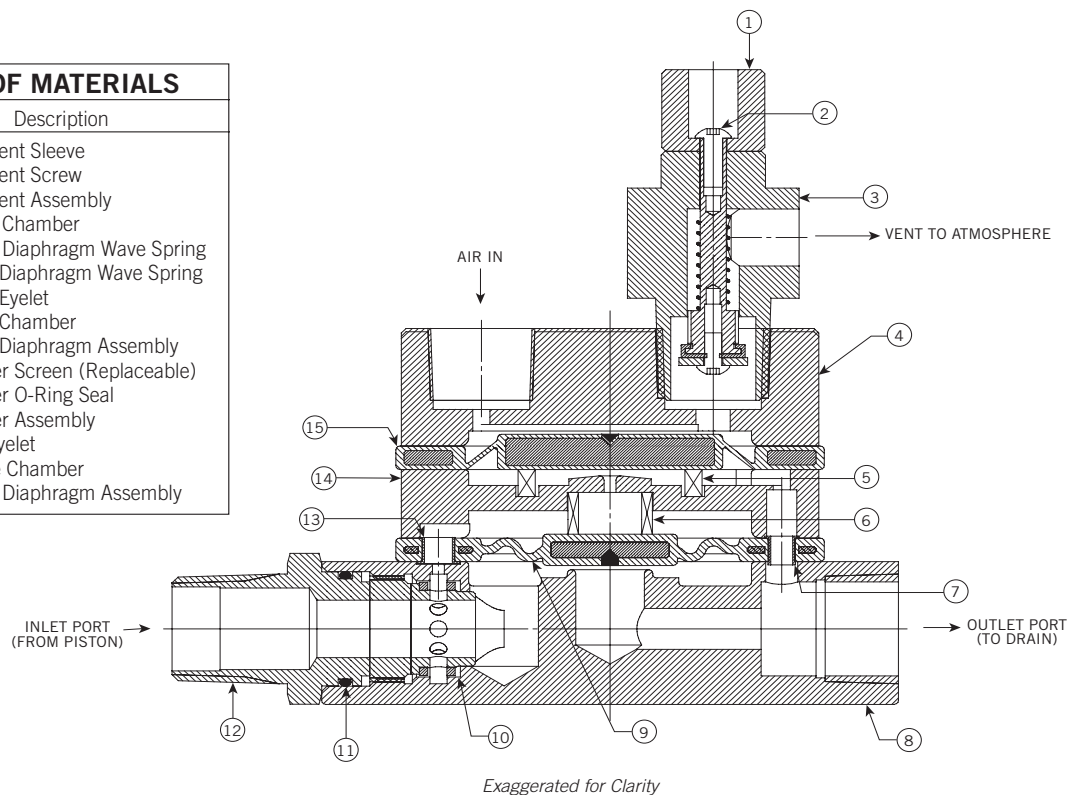
Strainer: Brass conforming to UNS C36000

Eyelets: Brass conforming to UNS C36000

O-ring: Buna N

Diaphragms: EPDM

BILL OF MATERIALS	
Item	Description
1	Auto Vent Sleeve
2	Auto Vent Screw
3	Auto Vent Assembly
4	Upper Chamber
5	Upper Diaphragm Wave Spring
6	Lower Diaphragm Wave Spring
7	Outlet Eyelet
8	Lower Chamber
9	Lower Diaphragm Assembly
10	Strainer Screen (Replaceable)
11	Strainer O-Ring Seal
12	Strainer Assembly
13	Inlet Eyelet
14	Middle Chamber
15	Upper Diaphragm Assembly



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.