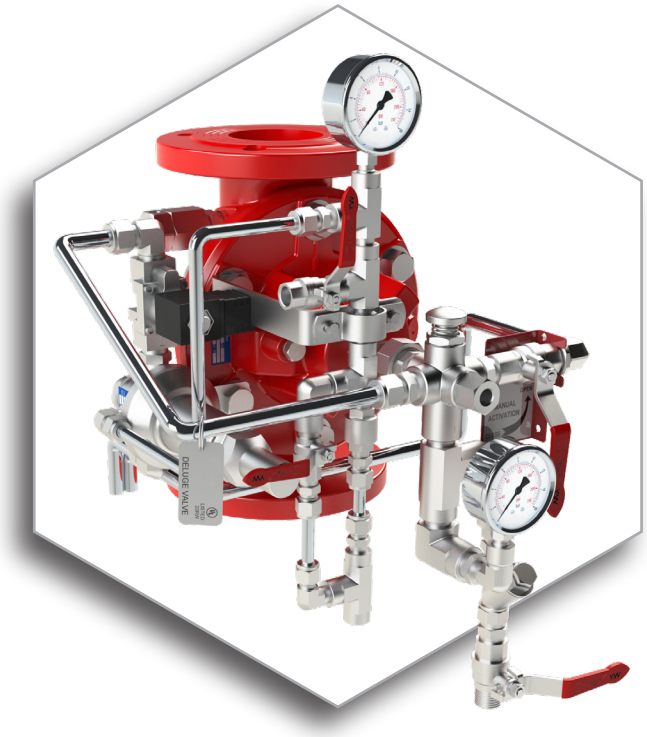
PRE-ACTION
MODEL 68 DE\EL\PORV-DN-MR

OCV FLUID SOLUTIONS LLC
mathholding group

DE\EL\PORV-DN-MR

Double-Interlock Pre-action, Manual Reset, Electro-Pneumatic Release System

Electrically and pneumatically, pilot controlled, double-interlock, pre-action valve, actuated by the pipeline pressure. The valve is closed in its normal, set position and opens when the pressure drops in a gas pressurized supervisory pilot line, sensed by the relay valve, and the solenoid valve is energized. The valve must be manually reset following automatic actuation. An emergency manual release valve is fitted as standard.



* General representation of valve

CERTIFICATION & COMPLIANCE

UL LISTED · Lloyd's Register · ABS

- ANSI FCI 70-2 Class VI seat leakage class
- UL listed under VLFT category
- Fire tested to EN ISO 6182-5:2006 (2"-6" only)
- Lloyd's Register & ABS approvals

FEATURES & BENEFITS

- High pressure (PN25/375psi), high flow systems
- Automatic or manual emergency actuation
- Industrial & commercial fire suppression
- Hazardous, flammable & explosion classified area fire suppression
- Superior design featuring exceptionally low pressure losses at high flow rates
- Low lifelong maintenance costs due to straightforward design
- Applicable for water, seawater & foam
- Out of box fully assembled & tested valves
- Factory trimmed for vertical & horizontal installations without modification
- Extensive valve & trim materials selection and corrosion protection coating

TYPICAL APPLICATIONS

- Machine Rooms
- Cold Storage Protected Areas
- High Rise Buildings & Offices
- Power Plants
- Archives, Museums, Libraries & Water Sensitive Depots

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OPERATION

The basic control valve [1] used in this pre-action system is a direct-sealing elastomeric diaphragm, hydraulically operated control valve engineered specifically for fire protection systems.

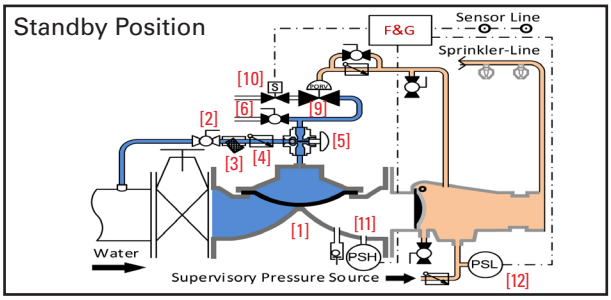
In the standby position, the pre-action valve is held closed by the upstream water pressure, trapped in the valve's control chamber. The water pressure enters the control chamber through the priming line ball valve [2], a Y-type strainer [3], a check valve [4] and a DMR (Manual Reset Latching Device) [5].

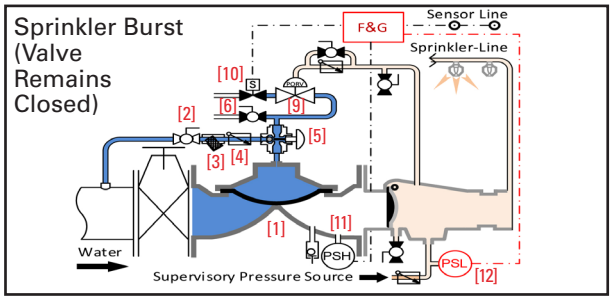
The pre-action valve opens automatically when both conditions below occur simultaneously:
1. A fire alarm control panel (F&G panel) energizes the 2/2-way N.C. solenoid [10] (or de-energizes the coil of a continuously energized ED 100% normally open solenoid for SIL 3-4 rated systems).
2. The pressure in the dry (pneumatically-pressurized) automatic sprinkler line drops, following bursting of one (or more) of the automatic sprinklers sensed by the relay valve [9].

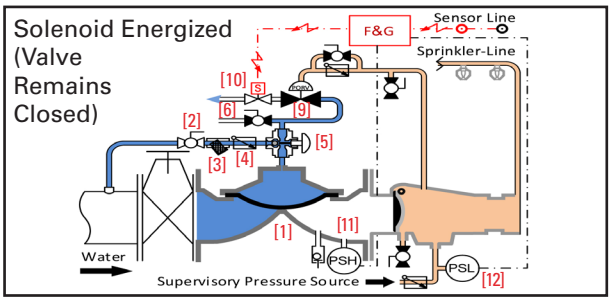
When both conditions occur, water is drained from the pre-action valve's control chamber through the 2/2-way N.C. solenoid. The valve opens instantly allowing water to flow into the pipeline, through any open sprinklers and over the protected area. Pressure switches on the valve's downstream port [11] and the check valve's downstream port [12] provide electrical indication to the fire alarm control panel of rising water pressure (the valve has opened) and drop in air (or gas) pressure (one or more sprinklers have burst).

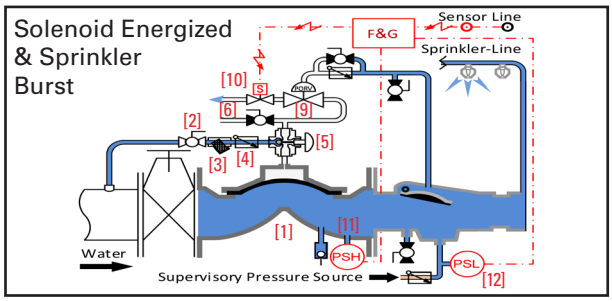
Manual emergency actuation is enabled by opening the emergency manual activation valve [6]. The pre-action valve opens instantly and allows water to flow into the pipeline and through the open sprinklers over the protected area.

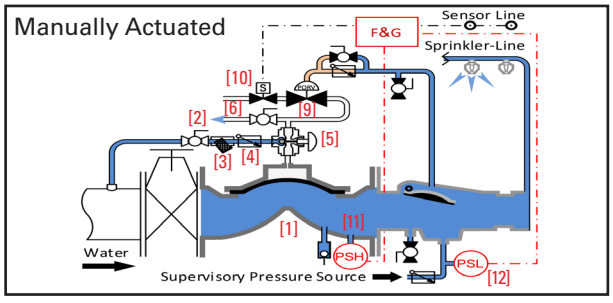
When the valve trips open, the DMR isolates the control chamber from the upstream pressure source. Reconnecting the upstream pressure to enable the pre-action valve to close can only be achieved by pressing the DMR's knob.

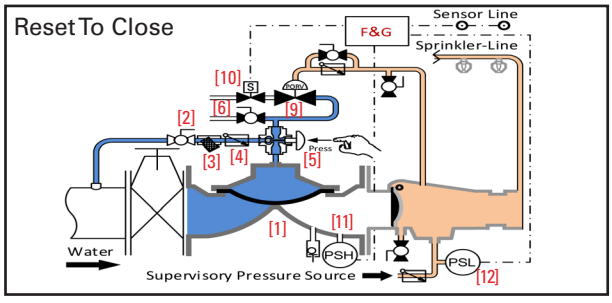










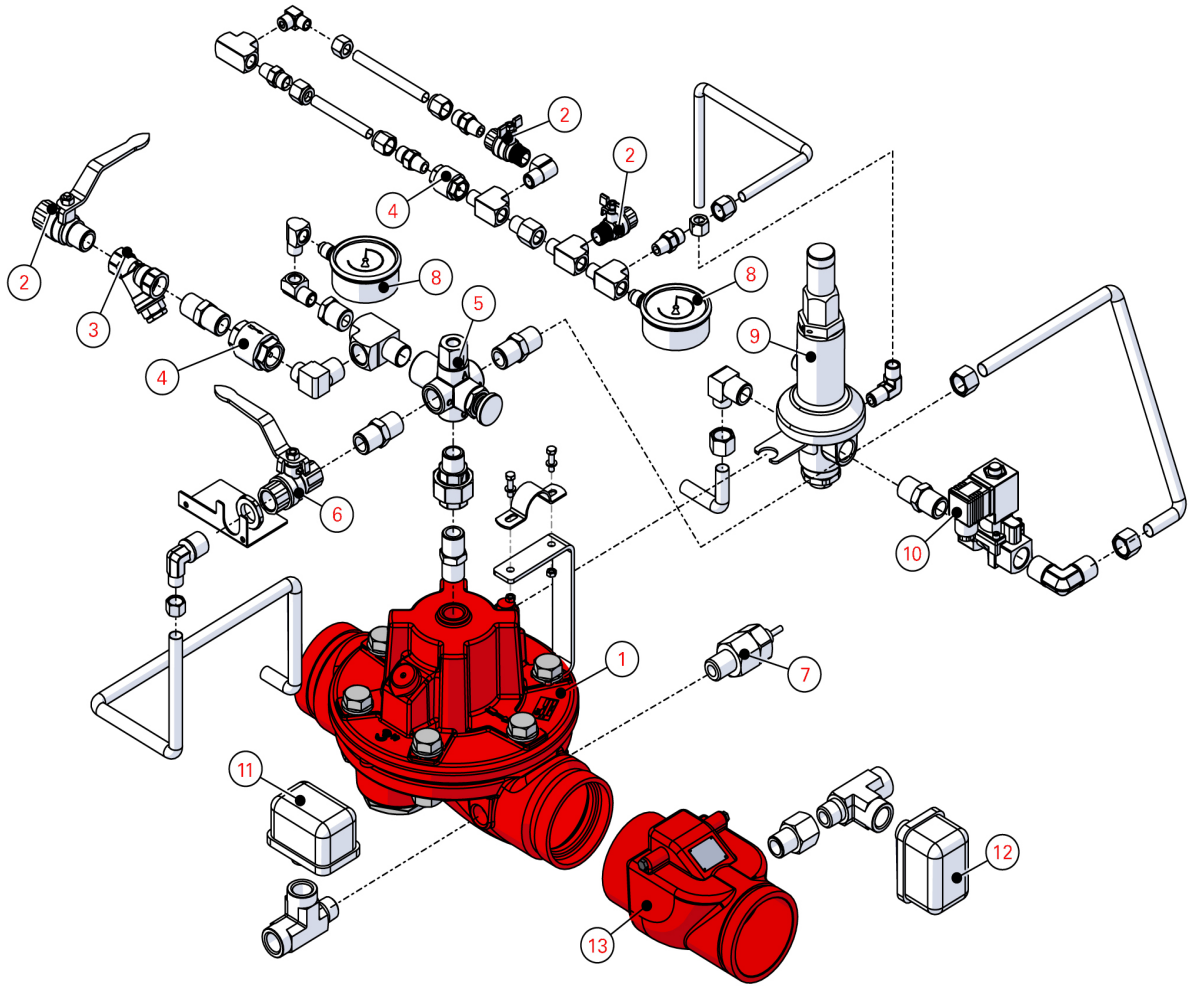


Resetting, maintenance and periodic testing instructions must be followed as described in detail in the applicable OCV IOM (Installation, Operation & Maintenance) Manual.

TYPICAL MATERIALS

ID	Description	Standard	Industrial Applications
1	Valve Body	See Series 100 Engineering Data (1)	
2	Ball Valve	Bronze, Stainless Steel Ball	Stainless Steel 316
3	DMR (Manual Reset Latching Device)	Bronze, Stainless Steel Screen	Stainless Steel 316
4	Check Valve	Bronze	Stainless Steel 316
5	T Restrictor	Brass	Stainless Steel 316
6	Manual Emergency Valve	Bronze	Stainless Steel 316
7	Drip Valve	Brass	Stainless Steel 316
8	Pressure Gauge	Stainless Steel	Stainless Steel 316
9	66-2UL Relay	Brass	Stainless Steel 316
10	2/2 Way N.C. Solenoid (2)	Brass	Stainless Steel 316
11	PSH (Pressure Switch High)	Specified Upon Request	Specified Upon Request
12	PSL (Pressure Switch Low)	Specified Upon Request	Specified Upon Request
13	Riser Check Valve	Ductile Iron	Ductile Iron

(1) Refer to materials selection guidelines, Engineering Data - Materials: Ductile Iron A-536 65-45-12; Cast Steel A-216 WCB; Cast Steel A-352 LCB; Austenitic Stainless Steel A-351/CF8M; Super Duplex 2507; Nickel-Aluminum-Bronze B-148 UNS C95800
(2) Consult factory



* General representation of valve

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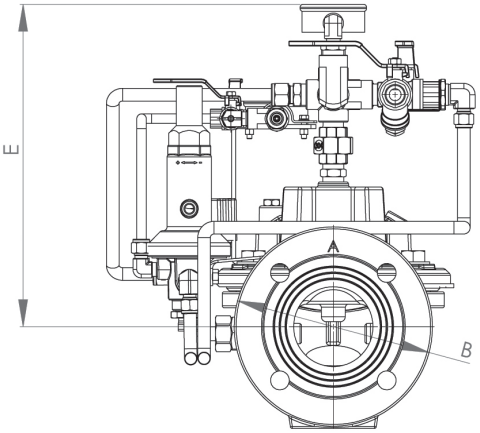
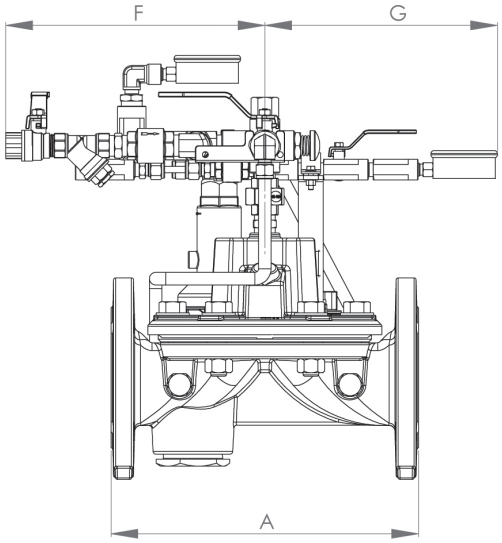
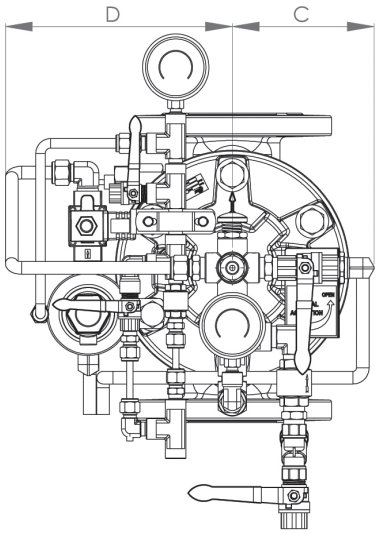
GENERAL ARRANGEMENT & DIMENSIONS

Valve	2" (50)		2.5" (65)		3" (80)		4" (100)		6" (150)		8" (200)		10" (250)	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
A	9 5/8	243	9 3/16	233	12 3/16	310	14	356	17 3/16	436	20 7/8	530	25	635
A_G (1)	9 5/8	243	10	253	13 3/16	336	15	380	17 5/16	440	21 7/8	556	N/A	
B	6 5/8	168	7 3/8	185	7 7/8	200	9 3/8	238	12 1/8	306	14 3/16	360	16 7/8	430
C	5 5/8	143	5 5/8	143	5 5/8	143	5 5/8	143	6 3/16	160	7 7/8	200	9 11/16	249
D	7 11/16	196	7 11/16	196	9	229	9 5/8	243	10 11/16	272	12 3/16	312	14 3/16	361
E	10	255	10	255	12 5/8	321	12 1/2	317	15 11/16	400	16 1/2	420	17 3/8	443
F	10 5/16	262	10 5/16	262	10 5/16	262	10 5/16	262	10 5/16	262	10 3/8	265	12 1/2	318
G	9 3/16	234	9 3/16	234	9 3/16	234	9 3/16	234	9 3/16	234	10 3/8	265	12 1/2	318

* Approximate dimensions
(1) Grooved model length







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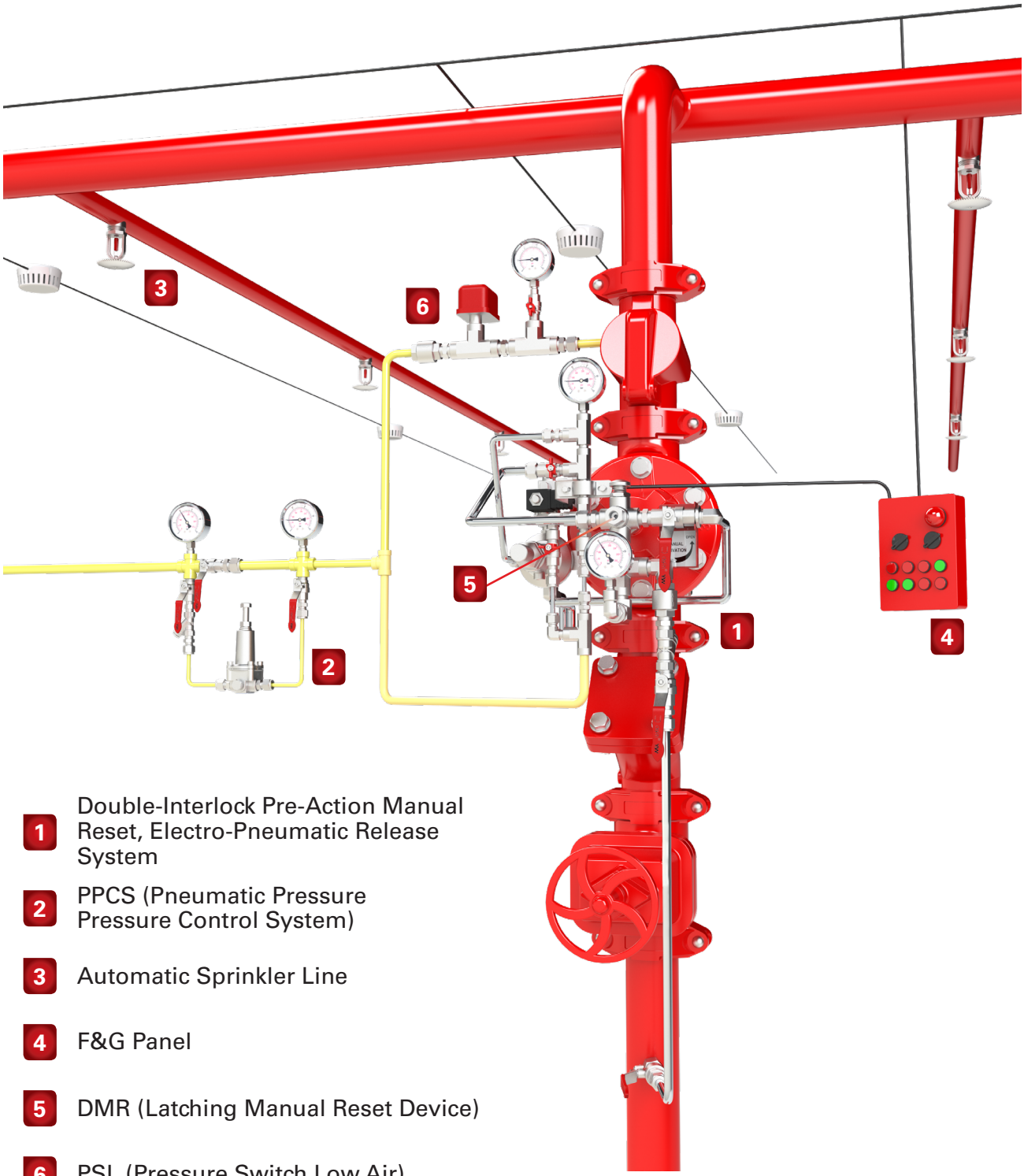
TYPICAL INSTALLATION



1. Double-Interlock Pre-Action Manual Reset, Electro-Pneumatic Release System
2. PPCS (Pneumatic Pressure Pressure Control System)
3. Automatic Sprinkler Line
4. F&G Panel
5. DMR (Latching Manual Reset Device)
6. PSL (Pressure Switch Low Air)

* Not all items pictured reflect products sold by OCV

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TECHNICAL DATA

Temperature:
- Media up to 80°C = 176°F
- Elastomers suitable for extreme climates available upon request

Sizes:
- UL Listed Sizes: Model 68: 2"-10"
- Straight Flow: 2"-24"

End Connections:
- Flanged:
  ISO-PN16 & ISO-PN25
  ANSI B16.42 & B16.5 Class #150 and #300
  Additional options available upon request
- Grooved:
  Sizes: 2"-8"

Pressure Rating:
- 250 psi for Class #150
- 375 psi for Class #300

Body and Cover Material:
- Ductile Iron
- Cast Steel
- Stainless Steel
- NAB

Trim Material:
- Bronze/Brass - Copper
- Stainless Steel
- Monel

Optional Components:
- Spring
- Position Indicator
- Pressure Switch
- Alarm Test Trim
- Upstream Drain Valve
- Limit/Proximity Switch

Items to Specify:
- Electrical features other than standard (24VDC, IP65/NEMA4)
- If explosion proof accessories are required such as solenoids, pressure switches, etc., please define classification
- Control trim material other than standard
- Required standards, certifications and approvals

ENGINEERING SPECIFICATIONS

The pre-action valve shall be hydraulically operated, direct elastomeric diaphragm-seal, single chamber weir type. The valve shall consist of three major components: the body, the cover and the diaphragm assembly. The diaphragm assembly shall be the only moving part. The diaphragm forms a sealed control chamber in the upper portion of the valve, separating operating pressure from line pressure. Packing glands, stuffing boxes and dynamic O-ring seals are not permitted and there shall not be shafts, discs, bearings or pistons operating the valve. No hourglass shaped disc retainers shall be permitted, and no V-type, U-type or other slotted type disc guides shall be used. The valve shall contain a nylon reinforced rubber diaphragm, elastic & resilient through its entire surface without vulcanized radial seals and/or reinforcements. The diaphragm assembly shall not be guided by any shafts or bearings and shall not be in close contact with other valve parts except for its sealing surface. The pre-action valve shall be fully trimmed, hydrostatically and operationally tested at the factory. Maintenance, disassembly and reassembly of all the valve's components shall be made possible on-site and in-line, without the need to remove the valve from the line. Main valve body and bonnet standard material shall be Ductile Iron or Cast Steel. Main valve body and bonnet surfaces shall include a fire red epoxy coating. Other materials and coatings available upon request. The pre-action valve shall be a Model 68 DE\EL\PORV-DN-MR, UL Listed under VLFT category, as manufactured by OCV Fluid Solutions, Tulsa, OK, USA.

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