

116-3FC

Electrically or Pneumatically Actuated Deluge Valve

Electrically or pneumatically actuated, pilot controlled deluge valve, actuated by the pipeline pressure. The valve is closed in its normal, set position and opens when the pneumatic supply pressure is removed, or by an electric command. An emergency manual release valve is fitted as standard.

CERTIFICATION & COMPLIANCE



- ANSI FCI 70-2 Class VI seat leakage class
- Fire tested to EN ISO 19921
- UL listed under VLFT category
- ABS type approval



* General representation of valve

FEATURES & BENEFITS

- Opens quickly when the pneumatic supply pressure is removed, or when the solenoid valve is energized (specify energize-to-open or energize-to-close)
- Manual override to open the valve regardless of pneumatic pilot or solenoid valve position
- Visual indicator for indication of valve position
- Large supply drain port to drain inlet side piping
- Solenoid operated main valve
- No adjustments are necessary
- Factory tested
- UL Listed for deluge service in sizes 3" thru 10"
- Can be installed vertically or horizontally
- ANSI Flanged Class #150 or Class #300
- Wide range of materials available
- Options available including opening and/or closing speed controls, limit switch assembly and pressure gauge(s)

TYPICAL APPLICATIONS



Automatic or Manual Actuated
Fire Suppression Systems



Petrochemical, Oil & Gas
Installations



Tunnels



Power Generation, Transformer
& Transmission Plants



Flammable Storage



Hangars & Airport Terminals



Onshore / Offshore



Mining

OPERATION

The basic control valve **[1]** used in this deluge system is a diaphragm actuated globe valve which closes with an elastomer-on-metal seal, hydraulically operated control valve engineered specifically for fire protection systems.

In the standby position, the deluge 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]** and an ejector **[8]**.

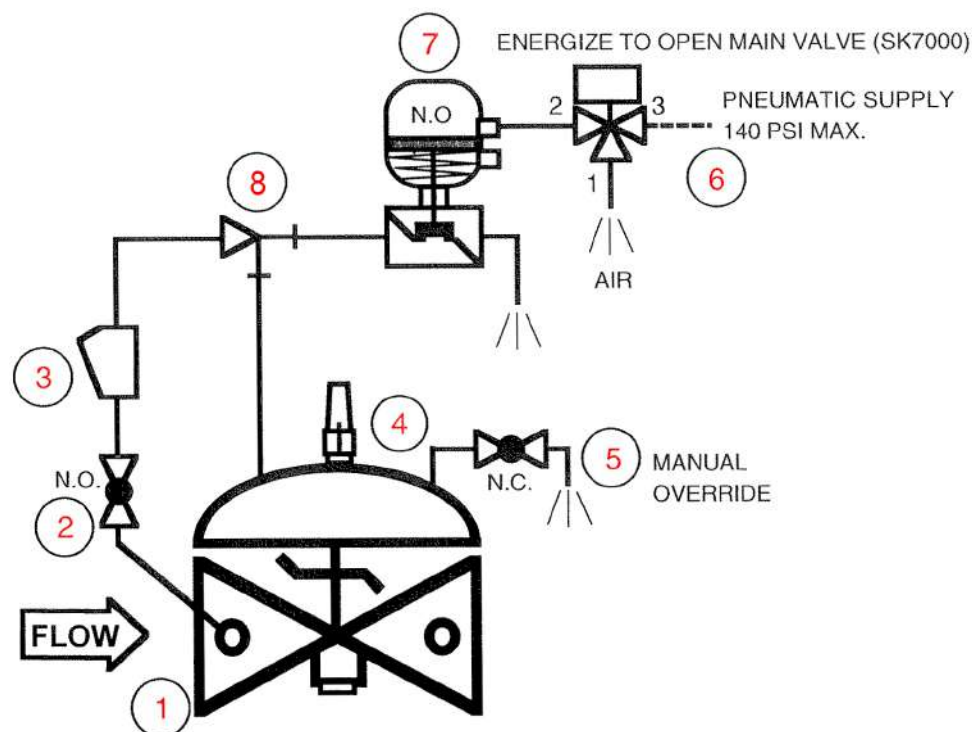
Under fire conditions, the deluge valve opens automatically under any of the following circumstances:

1. A fire alarm control panel (F&G panel) energizes the 3/2-way solenoid **[6]** (or de-energizes the coil of a continuously energized ED 100% solenoid for SIL 3-4 rated systems).
2. The pneumatic pressure is removed.

When this happens, the pressure in the pneumatic pilot **[7]** drops, causing it to open and allowing the water to drain from the deluge valve's control chamber. The deluge valve opens instantly and allows water to flow into the pipeline and through the open sprinklers over the protected area.

Manual emergency actuation is enabled by opening the emergency manual activation valve **[5]**. The deluge valve opens instantly and allows water to flow into the pipeline and through the open sprinklers over the protected area.

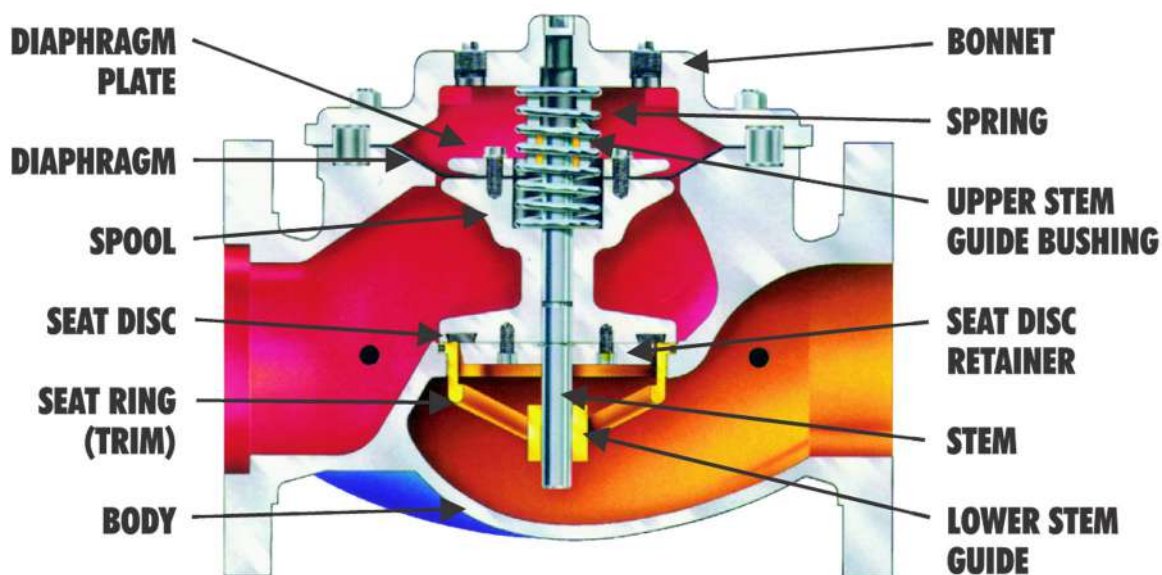
A visual indicator **[4]** provides indication of the valve's position at a glance.



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

TYPICAL MATERIALS

DESCRIPTION	STANDARD	OPTIONAL
Valve Body	Ductile Iron	Cast Steel, Stainless Steel, NAB, Duplex Stainless Steel
Seat Ring	Bronze	Stainless Steel, NAB, Duplex Stainless Steel
Stem	Stainless Steel	Monel
Spring	Stainless Steel	Elgiloy/MP35N
Diaphragm	Nylon Reinforced Buna-N	E.P.D.M.
Pneumatic Pilot	Stainless Steel	---
Solenoid Valve	Stainless Steel	---
Tubing/Fittings	Copper, Bronze/Brass	Stainless Steel, Monel



* General representation of valve

BASIC VALVE DIMENSIONS
U.S. DIMENSIONS - INCHES

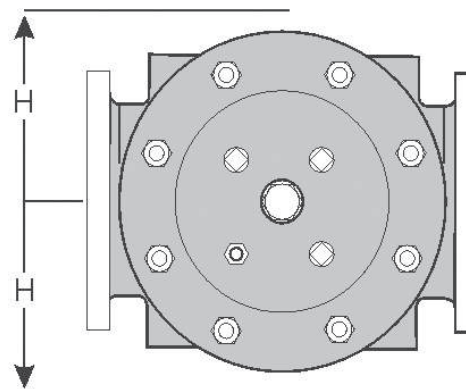
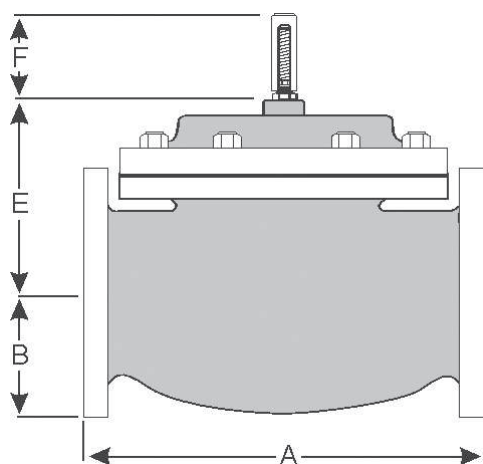
DIM	END CONN.	3"	4"	6"	8"	10"
A	150# FLGD	12	15	17 ³ / ₄	25 ³ / ₈	29 ³ / ₄
	300# FLGD	12 ³ / ₄	15 ⁵ / ₈	18 ⁵ / ₈	26 ³ / ₈	31 ¹ / ₈
B	150# FLGD	3 ³ / ₄	4 ¹ / ₂	5 ¹ / ₂	6 ³ / ₄	8
	300# FLGD	4 ¹ / ₈	5	6 ¹ / ₄	7 ¹ / ₂	8 ³ / ₄
E	ALL	6 ¹ / ₂	8	10	11 ⁷ / ₈	15 ³ / ₈
F	ALL	3 ⁷ / ₈	3 ⁷ / ₈	3 ⁷ / ₈	6 ³ / ₈	6 ³ / ₈
H	ALL	11	12	13	14	17

* Approximate dimensions

METRIC DIMENSIONS - M.M.

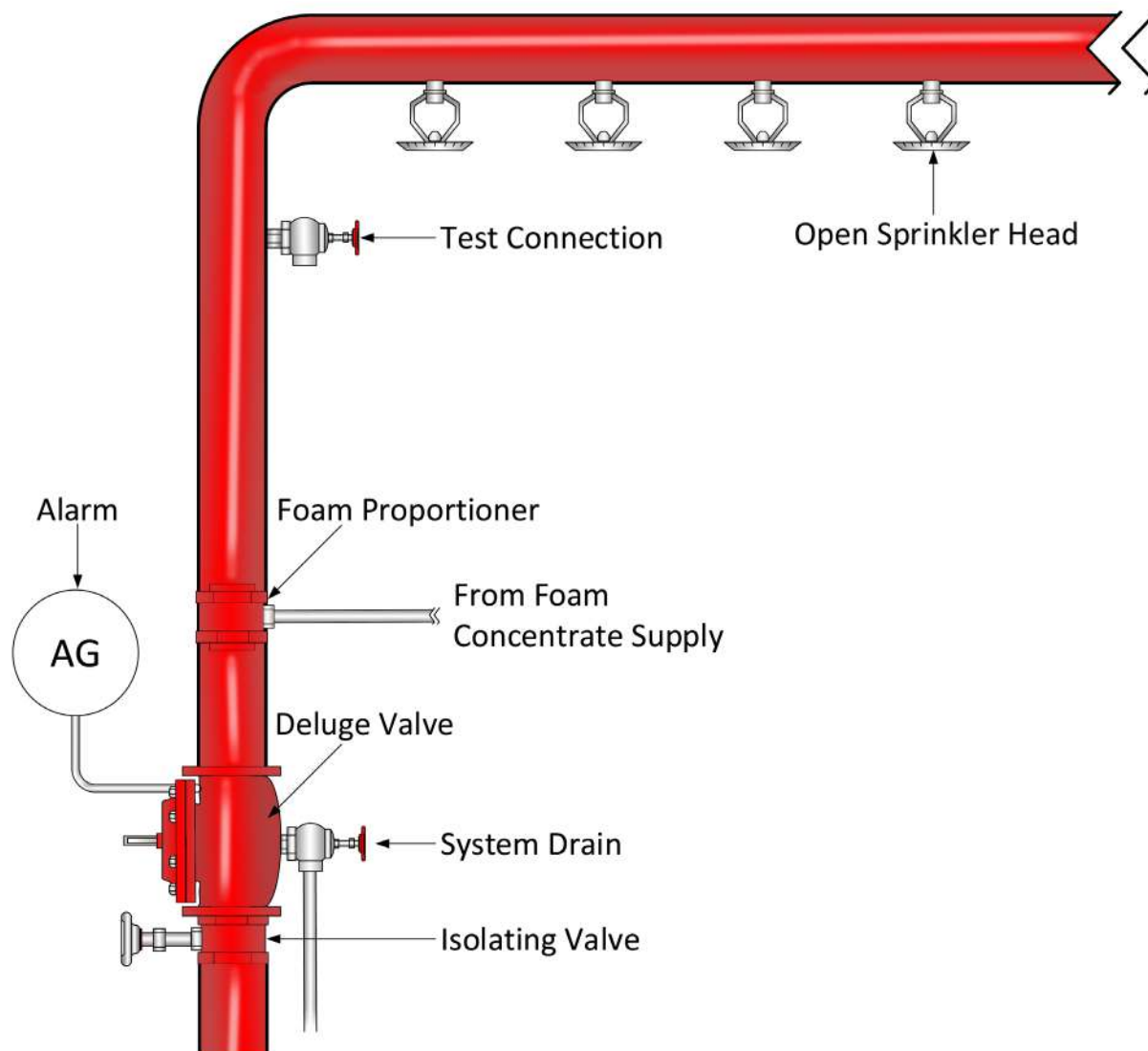
DIM	END CONN.	DN80	DN100	DN150	DN200	DN250
A	150# FLGD	305	381	451	645	756
	300# FLGD	324	397	473	670	791
B	150# FLGD	95	114	140	171	203
	300# FLGD	105	127	159	191	222
E	ALL	165	203	254	302	391
F	ALL	98	98	98	162	162
H	ALL	279	305	330	356	432

* Approximate dimensions



* General representation of valve

TYPICAL INSTALLATION



FLOW CHARACTERISTICS

VALVE SIZE		3" (DN80)	4" (DN100)	6" (DN150)	8" (DN200)	10" (DN250)
GLOBE Cv	US	120	200	450	760	1250
GLOBE Kv	METRIC	103.8	173	389.3	657.4	1081.2

* Not all items pictured reflect products sold by OCV

TECHNICAL DATA**Temperature:**

- Buna-N 32°F to 180°F
- EPDM 32°F to 230°F

Solenoid Valve Voltage:

- 24VDC standard (all other standard voltages available, AC and DC)

Sizes:

- Globe: 3", 4", 6", 8", 10"

End Connections:

- Flanged: ANSI Class #150 and #300

Pressure Rating:

- 250 psi for class #150 (at 100°F)
- #300 ANSI flanges are available

Body and Cover Material:

- Ductile Iron
- Cast Steel
- NAB
- Stainless Steel
- Duplex Stainless Steel

Trim Material:

- Pneumatic Pilot: Stainless Steel
- Solenoid Valve: Stainless Steel
- Tubing/Fittings: Copper, Bronze/Brass (Optional: Stainless Steel, Monel)

Optional Components:

- Alarm Test Trim
- Upstream Drain Valve
- Pressure Switch
- Limit/Proximity Switch

Items to Specify:

- Serial Number
- Valve Size
- Globe
- Flanged #150 or #300 ANSI
- Trim Material
- Special Needs/Installation Requirements
- If explosion proof accessories are required, please define classification

ENGINEERING SPECIFICATIONS

The deluge valve shall be a single-seated, line pressure operated, diaphragm actuated, globe valve. The deluge valve shall seal by means of a corrosion resistant seat and resilient, rectangular seat disc. 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. The stem of the main valve shall be guided top and bottom by integral bushings. Alignment of the body, bonnet and diaphragm assembly shall be by precision dowel pins. The diaphragm shall not be used as a seating surface, nor shall pistons be used as an operating means. The deluge valve shall be fully trimmed, hydrostatically and operationally tested at the factory. The 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 main valve seat ring shall be bronze (other materials available upon request). Elastomers (diaphragms, resilient seats, and O-rings) shall be Buna-N or E.P.D.M. Control pilot shall be Stainless Steel. The solenoid valve shall be Stainless Steel. The control line tubing shall be copper (other materials available upon request). Additional coatings and special materials are available upon request. The deluge valve shall be a Model 116-3FC, UL Listed under VLFT category, as manufactured by OCV Fluid Solutions, Tulsa, OK, USA.

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