

116-4FC

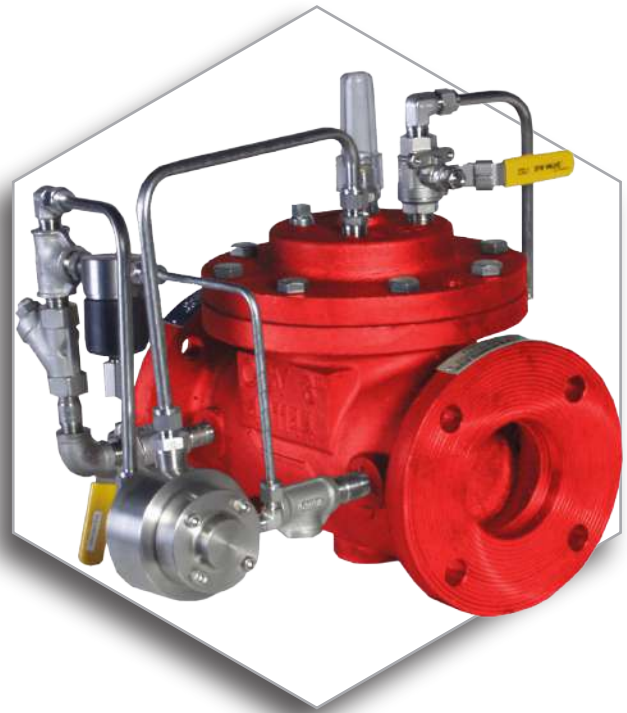
Electrically Actuated Deluge Valve

Electrically controlled deluge valve, actuated by the pipeline pressure. The valve is closed in its normal, set position and opens when a 3-way solenoid valve is energized. It closes drip tight when the solenoid valve is de-energized. 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 solenoid valve is activated (specify energize-to-open or energize-to-close)
- Manual override to open the valve regardless of 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

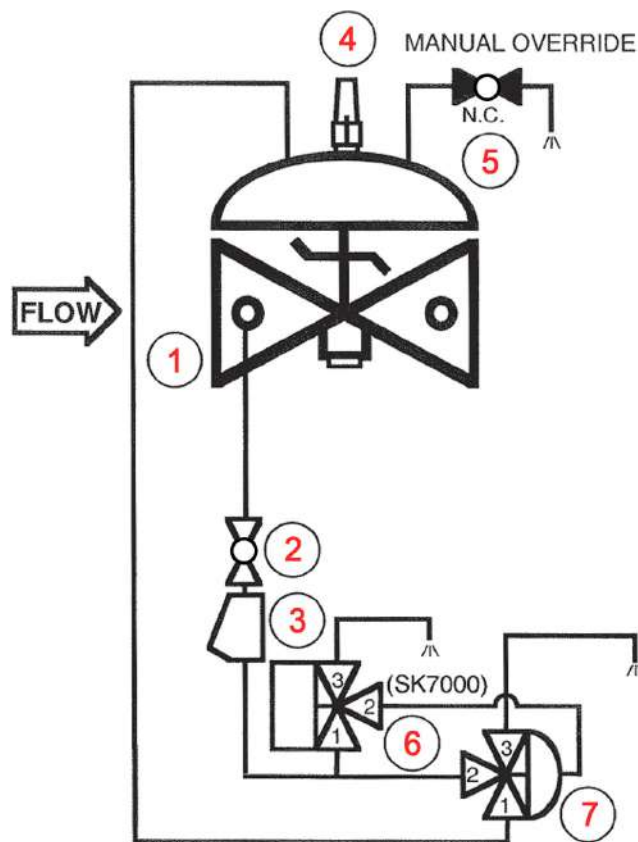
The basic control valve **[1]** used in this deluge system is a diaphragm actuated globe valve which closes with an elastomer-on-metal seal, hydraulically operated control valve engineered specifically for fire protection systems.

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]**, a 3/2-way N.C. solenoid **[6]** and an auxiliary pilot valve **[7]**.

Under fire conditions, a fire alarm control panel energizes the 3/2-way N.C. solenoid (or de-energizes the coil of a continuously energized ED 100% normally open solenoid for SIL 3-4 rated systems). The pressure in the auxiliary pilot valve vents to the atmosphere, causing it to shift position 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.

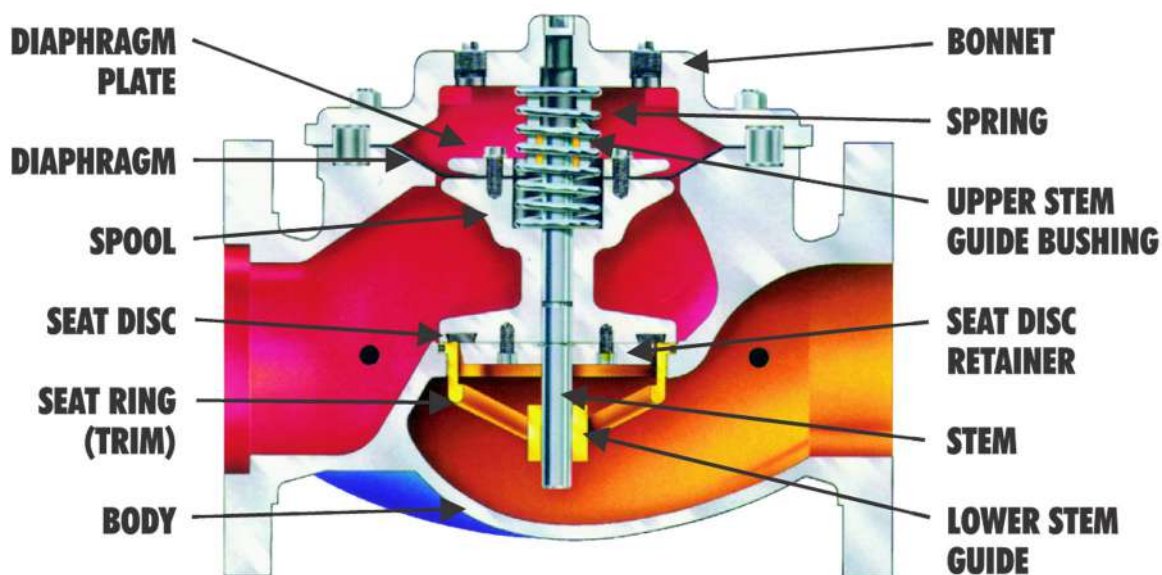
A visual indicator **[4]** provides indication of the valve's position at a glance.



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. |
| Three-Way Auxiliary Pilot | Bronze | Stainless Steel, Duplex 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

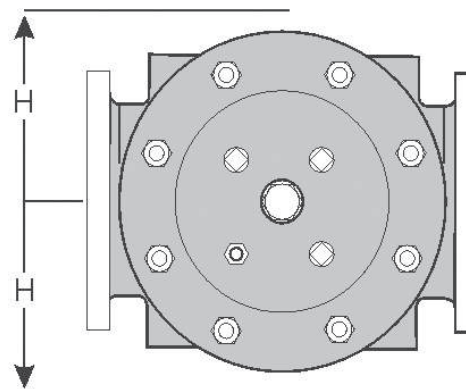
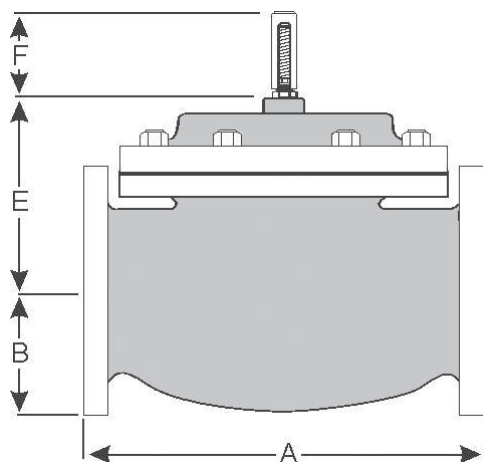
| DIM | END CONN. | 3" | 4" | 6" | 8" | 10" |
|-----|-----------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| A | 150# FLGD | 12 | 15 | 17 ³ / ₄ | 25 ³ / ₈ | 29 ³ / ₄ |
| | 300# 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.

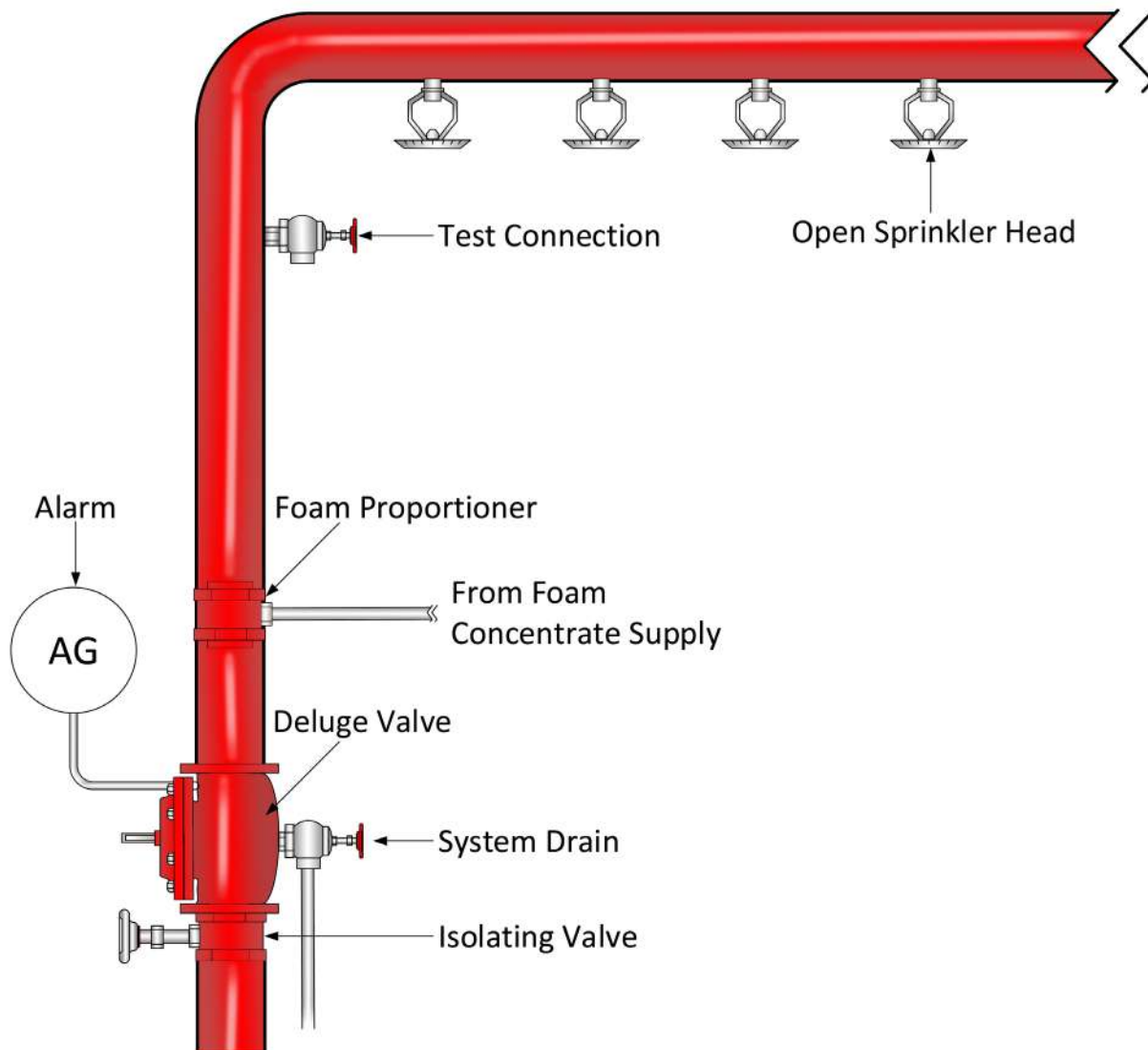
| DIM | END CONN. | DN80 | DN100 | DN150 | DN200 | DN250 |
|-----|-----------|------|-------|-------|-------|-------|
| A | 150# FLGD | 305 | 381 | 451 | 645 | 756 |
| | 300# FLGD | 324 | 397 | 473 | 670 | 791 |
| B | 150# FLGD | 95 | 114 | 140 | 171 | 203 |
| | 300# FLGD | 105 | 127 | 159 | 191 | 222 |
| 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:

- Three-Way Auxiliary Pilot: Bronze (Optional: Stainless Steel, Duplex 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 bronze or 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 116-4FC, UL Listed under VLFT category, as manufactured by OCV Fluid Solutions, Tulsa, OK, USA.

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