

DESCRIPTION

The Fireguard Deluge Valve is a hydraulically operated, diaphragm-type deluge valve designed to provide rapid and reliable water release to deluge, water spray, foam-water and other special-hazard fire protection systems.

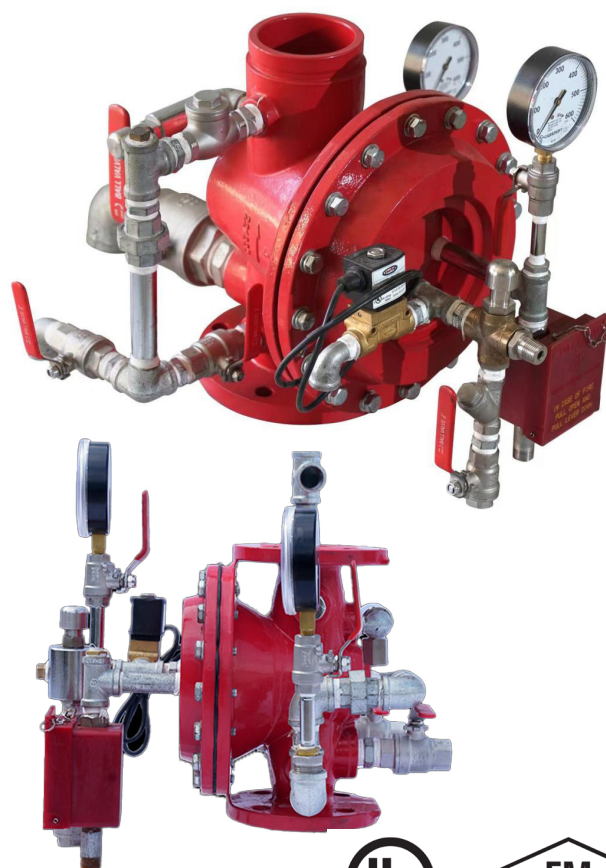
The valve incorporates a straight-through flow path and resilient diaphragm sealing arrangement, providing reliable sealing during normal system standby conditions. The valve is actuated by releasing pressure from the diaphragm chamber through an electric, pneumatic or manual release mechanism.

Upon activation, the diaphragm chamber pressure is released, allowing the valve to open rapidly. Water then flows through the valve and into the fire protection system. The opening of the valve can simultaneously initiate a water-flow alarm through the alarm outlet and associated alarm devices.

The Fireguard Deluge Valve can be integrated with a wide range of release, detection, alarm and firefighting components to form complete deluge, water spray, foam-water and special-hazard fire protection systems.

FEATURES

- Straight-through flow path for efficient water passage.
- Diaphragm-operated design for reliable and rapid operation.
- Suitable for electric, pneumatic or manual remote activation.
- Can be integrated with automatic detection and release systems.
- Available with grooved, flanged or combination end connections.
- Suitable for horizontal or vertical installation, subject to the applicable installation requirements.
- Integral alarm outlet for connection to hydraulic alarm devices.
- Available with optional control valves for complete valve assembly.
- Compact design for ease of installation and maintenance.
- Suitable for integration with deluge, water spray and foam-water firefighting systems.
- Available in sizes from 2" to 8".
- Maximum working pressure available up to 300 psi, depending on model and configuration.
- UL Listed / FM Approved configurations available, where applicable.



****FM approval under process**

SPECIFICATION

Product Type	Diaphragm-operated Deluge Valve
Operating Principle	Hydraulic diaphragm operation
Activation	Electric/Pneumatic/Manual
Available Size	2", 2.5", 3", 4", 6" and 8"
Max Working Pressure	250 psi / 300 psi, depending on model
End Connections	Grooved / Flanged / Grooved × Flanged
Groove Standard	AWWA C606 / ISO 6182, as applicable
Flange Standard	ASME B16.42 Class 150/300 or DIN 2501 PN16/PN25, as applicable
Alarm Outlet	3/4" NPT
Installation Position	Horizontal or Vertical, as permitted by the applicable listing/installation requirements
Max Test Pressure	500 psi / 600 psi, depending on rated working pressure
Approvals	UL Listed / FM Approved configurations available
Approvals Standards	UL 260; FM applicable standards including FM 1011/1012/1013 and FM 1020, as applicable

CONTROL VALVES

Fireguard Deluge Valves with grooved end connections may be supplied with or without control valves, depending on system requirements.

Where specified, the valve assembly can be supplied with:

- **Water supply control valve**
- **Upper/service control valve**
- **Drain and test arrangement**
- **Alarm trim**
- **Release system trim**
- **Pressure gauges**
- **Hydraulic, pneumatic or electric release components**

The Fireguard Model grooved-end butterfly valve with integral supervisory/tamper switch may be used as the system control valve where specified and where covered by the applicable approval configuration.

ACTIVATION METHOD

The Fireguard Deluge Valve can be activated remotely through different release arrangements:

Electrical Release

The valve is operated through an electrically controlled release system connected to the fire detection and releasing control panel. This configuration is suitable for automatic fire detection and special-hazard protection systems.

Pneumatic Release

The valve can be activated through a pneumatic release arrangement using pressurized air or other approved pneumatic control methods.

Manual Release

A manual emergency release arrangement can be provided to allow the valve to be operated manually when required.

VALVE OPERATION

Under normal standby conditions, system water pressure is maintained in the diaphragm chamber, keeping the diaphragm securely seated against the valve body and preventing water from entering the downstream fire protection system.

When a fire condition is detected, the release system operates and the pressure in the diaphragm chamber is discharged through the release trim. The differential pressure acting on the diaphragm causes the valve to open.

Once open, the valve permits a large volume of water to flow into the downstream deluge or water spray system. The alarm outlet can simultaneously supply water to the associated hydraulic alarm device or water-flow alarm arrangement.

The valve remains in the operated position until the system is manually reset in accordance with the applicable installation and maintenance procedure.

APPLICATION

Fireguard Deluge Valves are suitable for use in fire protection systems where rapid discharge of water or water-based extinguishing media is required, including:

- Deluge sprinkler systems
- Water spray systems
- Open-nozzle fire protection systems
- Foam-water deluge systems
- Transformer protection systems
- Storage tank protection
- Process plant protection
- Oil and gas facilities
- Power generation facilities
- Industrial special-hazard areas
- Aircraft hangars
- Warehouses and other high-hazard installations

CONNECTION OPTIONS

Fireguard Deluge Valves can be available with the following end connection configurations:

- **FLANGE x FLANGE (see figure 1)**
- **FLANGE x GROOVE (see figure 2)**
- **GROOVE x GROOVE (see figure 3)**

Connections dimensions and standards shall be selected according to the valve model and specified system requirements

ORDERING INFORMATION

MODEL	DESCRIPTION
D1-F250	Flange x Flange 250PSI
D1-F300	Flange x Flange 300PSI
D1-FG250	Groove x Flange 250PSI
D1-FG300	Groove x Flange 300PSI
D1-G250	Groove x Groove 250PSI
D1-G300	Groove x Groove 300PSI

DIMENSIONS

Figure 1. Outline dimensional drawing of deluge valve (**Flange Connection**)

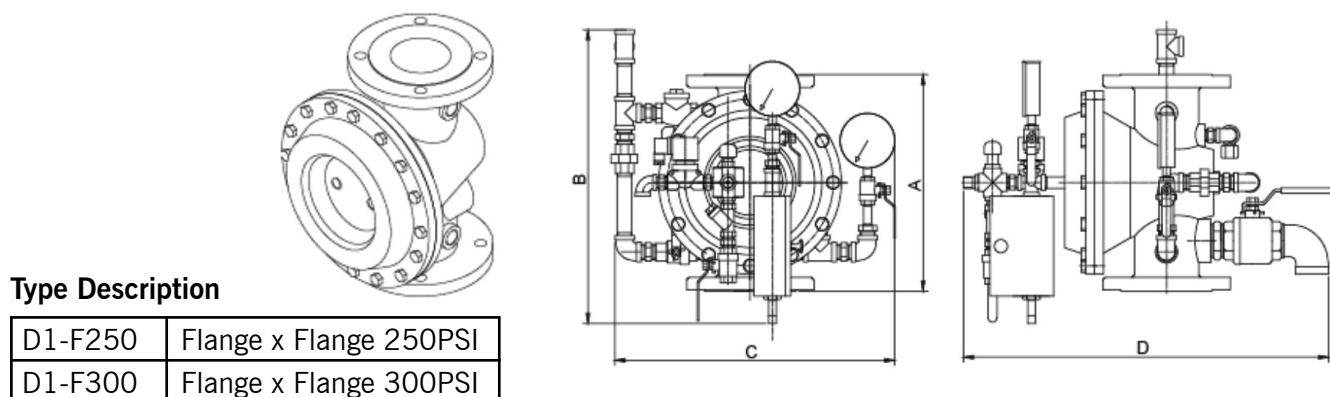


Figure 2. Outline dimensional drawing of deluge valve (**Grooved * Flange Connection**)

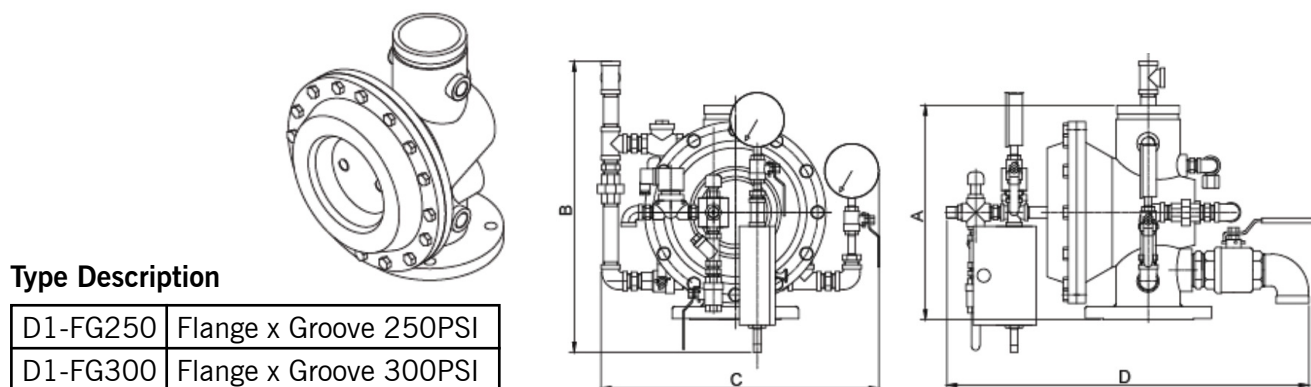
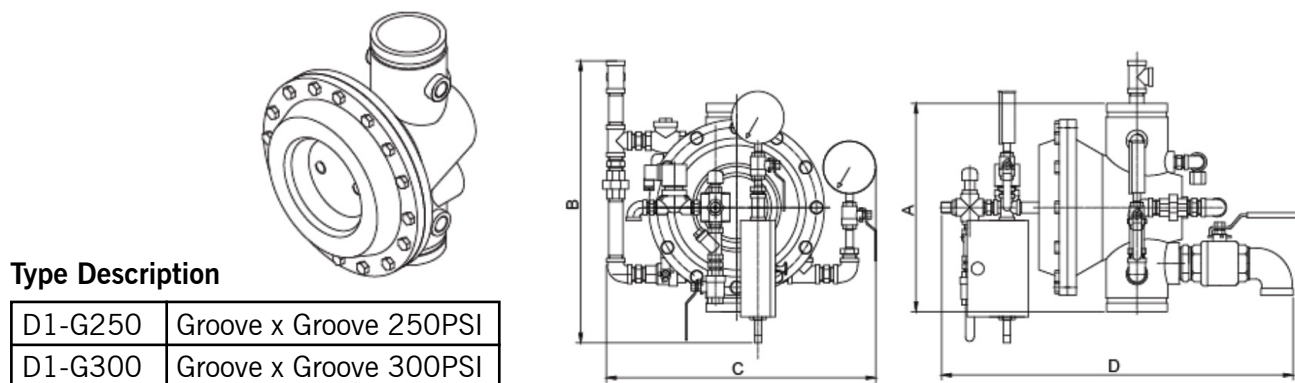
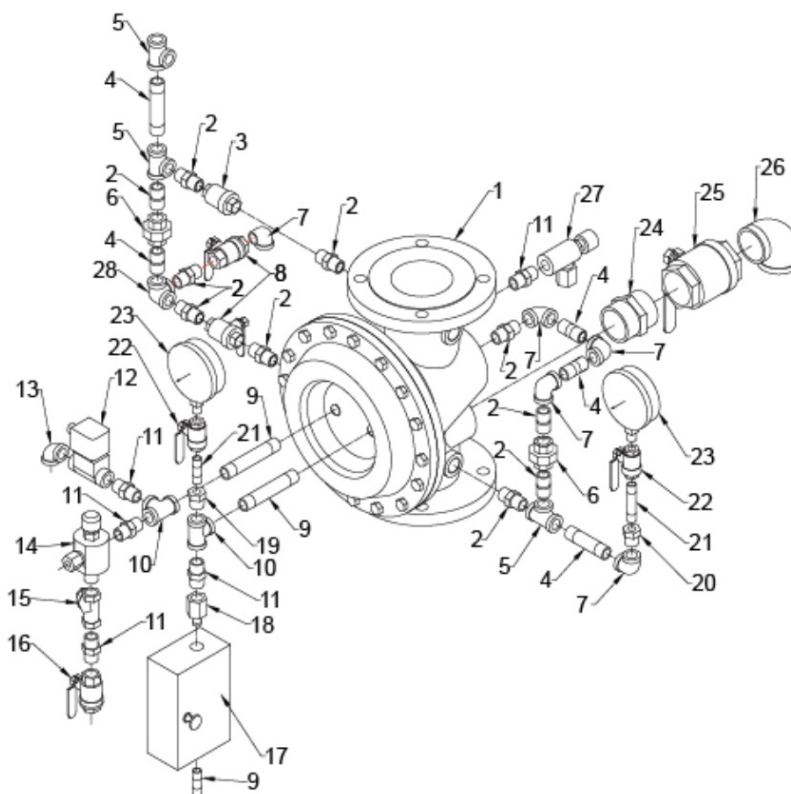


Figure 3. Outline dimensional drawing of deluge valve (**Grooved Connection**)



Diameter(in/mm)	A(mm)	B(mm)	C(mm)	D(mm)
2/50	287±2	440±10	460±10	500±10
2.5/65	287±2	440±10	460±10	540±10
3/80	340(324)±2	450±10	490±10	570±10
4/100	390(350)±2	520±10	490±10	680±10
6/150	508(460)±2	570±10	570±10	800±10
8/200	584(570)±2	900±10	650±10	900±10

STRUCTURAL CHARACTERISTICS



No.	Name	QTY	Size	Material	Standard
1	Deluge valve	1			
2	Butt joint	n	3/4"	DI/CF8/CF8M/C95400/C95800	ASTM A536/A351/B148
3	Check valve	1	3/4"	CF8/CF8M/C95400/C95800	ASTM A351/B148
4	Pipe fittings	n	3/4"	Gr.A/TP304/C60800	ASTM A53/A312/B111M
5	Tee joint	n	3/4"	DI/CF8/CF8M/C95400/C95800	ASTM A536/A351/B148
6	Union	2	3/4"	DI/CF8/CF8M/C95400/C95800	ASTM A536/A351/B148
7	90° Joint	n	3/4"	DI/CF8/CF8M/C95400/C95800	ASTM A536/A351/B148
8	Ball valve	2	3/4"	CF8/CF8M/C95400/C95800	ASTM A351/B148
9	Pipe fittings	n	1/2"	Gr.A/TP304/C60800	ASTM A53/A312/B111M
10	Tee joint	2	1/2"	DI/CF8/CF8M/C95400/C95800	ASTM A536/A351/B148
11	Butt joint	n	1/2"	DI/CF8/CF8M/C95400/C95800	ASTM A536/A351/B148
12	Solenoid valve	1	1/2"		
13	90° Joint	n	1/2"	DI/CF8/CF8M/C95400/C95800	ASTM A536/A351/B148
14	Manual reset valve	1	1/2"		
15	Y type filter	1	1/2"	CF8/CF8M/C95400/C95800	ASTM A351/B148
16	Ball valve	2	1/2"	CF8/CF8M/C95400/C95800	ASTM A351/B148
17	Emergency release valve bank	1			
18	Release valve joint	1	1/2"	DI/CF8/CF8M/C95400/C95800	ASTM A536/A351/B148
19	Joint	1	1/2"-1/4"	DI/CF8/CF8M/C95400/C95800	ASTM A536/A351/B148
20	Joint	1	3/4"-1/4"	DI/CF8/CF8M/C95400/C95800	ASTM A536/A351/B148
21	Pipe fittings	n	1/4"	Gr.A/TP304/C60800	ASTM A53/A312/B111M
22	Ball valve	2	1/4"	CF8/CF8M/C95400/C95800	ASTM A351/B148
23	Pressure gauge	2			
24	Butt joint	1	3/4"-2"	DI/CF8/CF8M/C95400/C95800	ASTM A536/A351/B148
25	Ball valve	1	3/4"-2"	CF8/CF8M/C95400/C95800	ASTM A351/B148
26	90° Joint	1	3/4"-2"	DI/CF8/CF8M/C95400/C95800	ASTM A536/A351/B148
27	Drip valve	1	1/2"		
28	Stereoscopic tee joint	1	3/4"	DI/CF8/CF8M/C95400/C95800	ASTM A536/A351/B148

INSTALLATION

The Fireguard Deluge Valve may be installed in either the horizontal or vertical position, provided the installation complies with the valve's approved configuration, trim arrangement, manufacturer's installation instructions and applicable fire protection standards.

The valve should be installed in an accessible location to allow inspection, testing, resetting and maintenance of the valve and associated trim.

All pipework and accessories connected to the valve should be adequately supported and installed in accordance with the applicable fire protection system design requirements.

TESTING & MAINTENANCE

The deluge valve and associated release trim should be inspected, tested and maintained at regular intervals in accordance with the applicable fire protection standards, authority requirements and Fireguard installation and maintenance instructions.

Functional testing should verify:

- Valve opening operation
- Release system operation
- Alarm operation
- Water flow through the system
- Manual release operation
- System reset operation
- Supervisory/tamper switch operation, where provided
- Condition of associated trim and control valves

APPROVALS & COMPLIANCE

Fireguard Deluge Valves are available in configurations designed and tested for compliance with applicable fire protection standards.

UL Listed and FM Approved models/configurations are available up to the applicable certified pressure rating and size.

Where UL/FM approval is specified, the valve, trim, accessories and installation configuration should correspond to the approved/listed assembly.

Applicable Standards

- UL 260 – Automatic Sprinkler System Deluge and Water Control Valves
- FM applicable approval standards for deluge and water control valves
- ASME B16.42 – Ductile Iron Pipe Flanges and Flanged Fittings
- AWWA C606 – Grooved and Shouldered Joints
- ISO 6182 – Fire Protection – Automatic Sprinkler Systems / Components, where applicable
- DIN 2501 – Flanges, where applicable