INTERNATIONAL JOINT
FIRE FIGHTING GROUP

Model IJFFG-DV1 Diaphragm Deluge Valve 232 psi (16.0 bar), Flange End 3"-8" (DN80-DN200) Vertical & Horizontal Installation

DESCRIPTION

INTERNATIONAL JOINT FIRE FIGHTING GROUP Model IJFFG-DV1 Deluge Valves are diaphragm type valves that can be used in deluge fire protection systems. The working principle and function of the IJFFG-DV1 deluge valve is that it can control the fire storage water in the fire protection pipeline of the building to flow towards the sprinkler head in one direction according to the fire situation. It is a timely and efficient fire protection valve. General deluge valves are designed with valve components such as hydraulic alarm bell, ball valve, valve and pressure switch, etc.

Key features are as follows:

1. Automatic control and manual control.
2. Monitoring the water supply and outlet pressure.
3. The water supply of the system can be turned on or off.
4. Accept electric signal to open the deluge valve electrically, and can receive the transmission pipe signal to open the deluge valve hydraulically or pneumatically.
5. It can drive the hydraulic alarm bell to alarm.
6. It can display the opening and closing status of the deluge valve
7. Compact, space-saving design reduces valve room footprint and construction costs

IJFFG-DV1 Deluge valves are mostly us utomatic sprinkler systems. Specifically used for pre-ac itomatic sprinkler systems in closed systems, automatic er-foam combined systems, and deluge systems and water systems in open areas.

The characteristic of the pre-action sprinkler system is that it can take into account both dry and wet sprinkler systems. The system uses a deluge valve to link with the alarm system. The nozzle is closed, and there is no water in the pipeline at ordinary times. Once the alarm is issued, it can be pre-filled with water, changing from a dry system to a wet system. This kind of system has high requirements, and the advantage is that there is no water in the pipeline at ordinary times, which can prevent misspraying or freezing and cracking, and is especially suitable for places where water is avoided.

The water spray range of the deluge system is controlled by the deluge valve, which sprays water in a large area immediately after the system is started. It is suitable for special dangerous places that need to spray water in a large area and quickly extinguish fires.

In addition, the deluge valve also plays a very important role as a system alarm control valve in the water spray fire extinguishing system.

TECHNICAL DATA

Physical Characteristics

Valve Body . . . . . Ductile Iron
Diaphragm . . . . . NBR Rubber
Pipes . . . . . Galvanized Pipe
Valves . . . . . Brass
Water Motor Gong . . . Carbon Steel and Aluminium Alloy

Refer to TABLE A for additional technical data.

Approvals

ISO9001 & CCC

TABLE A

MODEL	**IJFFG-DV1**
WORKING PRESSURE	232 psi (16.0 bar / 1.6 MPa)
SEALING TESTING PRESSURE	464 psi (32.0 bar / 3.2 MPa)
APPLICABLE TEMPERATURE	4°C to 70°C
PRESSURE SWITCH	DC24V 0.5 A
INSTALLATION	Vertical & Horizontal
CONNECTION	Flange x Flange
AVAILABLE SIZE	3"-8"(DN80-DN200)

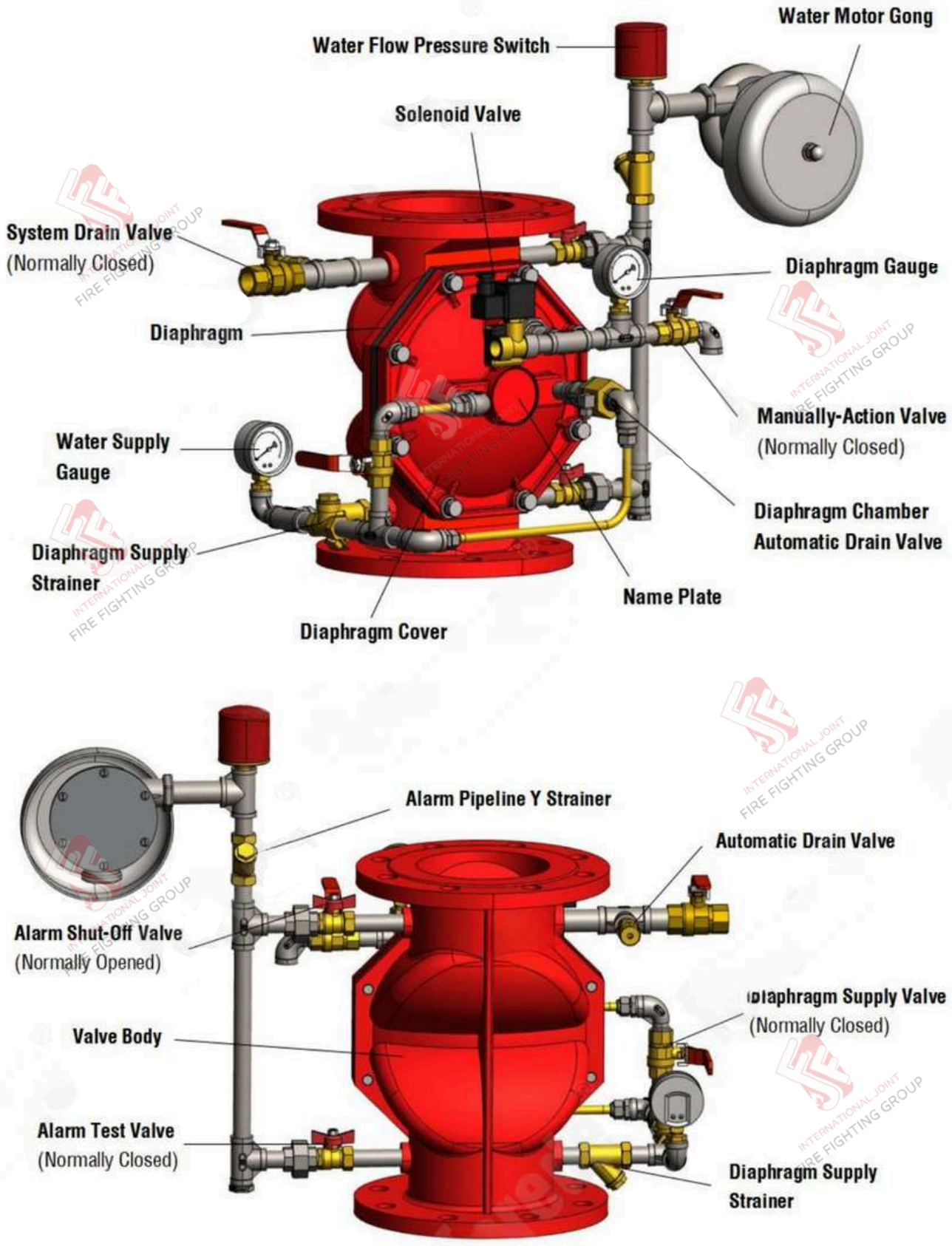


FIGURE 1
IJFFG-DV1 DELUGE VALVE WITH TRIM

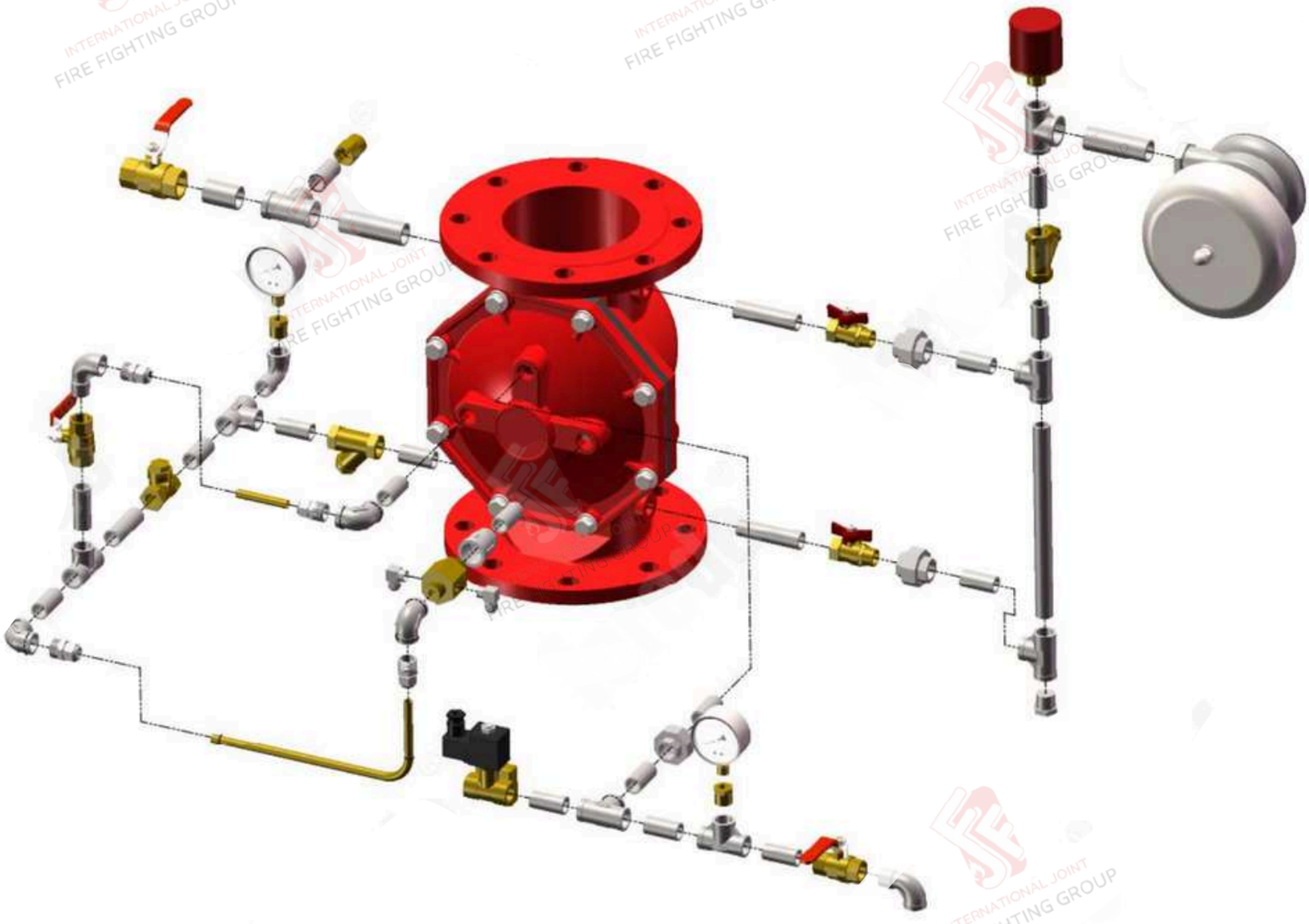


FIGURE 2
IJFFG-DV1 DELUGE VALVE WITH TRIM

Model IJFFG-DV1 Diaphragm Deluge Valve
232 psi (16.0 bar), Flange End 3"-8" (DN80-DN200)
Vertical & Horizontal Installation

STANDARD ACCESSORIES

1. **All Necessary Nipples and Fittings**
2. **All Standard Trim Accessories**
3. **All Necessary Gauges**
4. **Solenoid Valve**

The solenoid valve is to releases the pressure of the diaphragm chamber after the fire detector sends a signal, thereby opening the deluge valve.

5. **Water Motor Alarm**

The IJFFG-DV1 Deluge Valve is designed to activate a mechanical alarm during a sustained flow of water (such the flow required by an open sprinkler) causes the alarm check's clapper to lift from its seat.
Refer to the TABLE B Water Motor Alarm technical data.

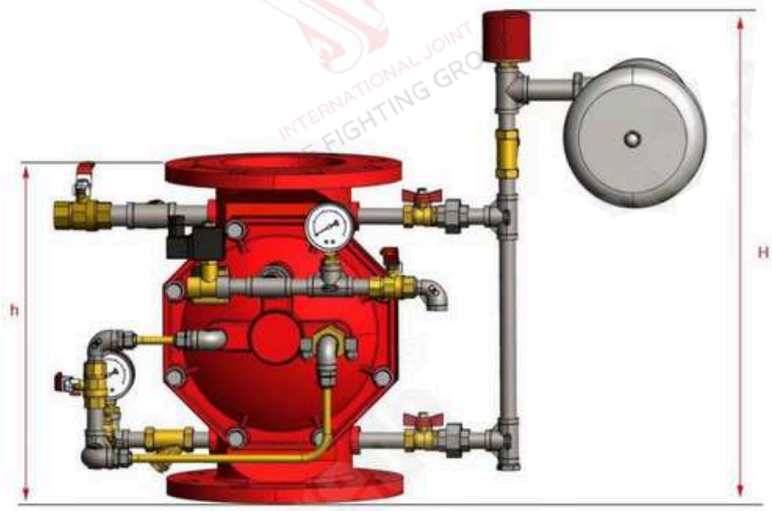
TABLE B	
OPERATING PRESSURE	<0.035 bar
LOUDNESS	>90 d B @ 14 bar
CONTINUOUS ALARM TIME	> 50 hours

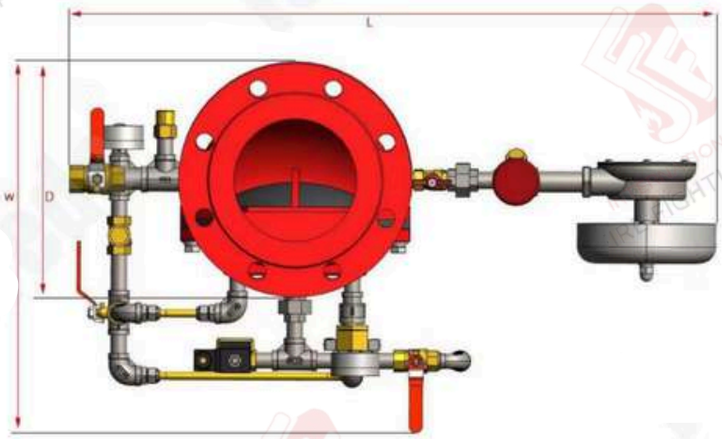
6. **Water Flow Pressure Switch**

The Deluge Valve trim allows installation of pressure switches to operate local electric alarms and/or remote electric alarms during a sustained flow of water (such as the flow requires by an open sprinkler).
Refer to TABLE C Alarm Pressure Switch technical data.

TABLE C	
OPERATING PRESSURE	0.035 bar to 0.5 bar
CONTACT CAPACITY	DC24V 0.5A
WORKING ELECTRIC CURRENT	0.5 A

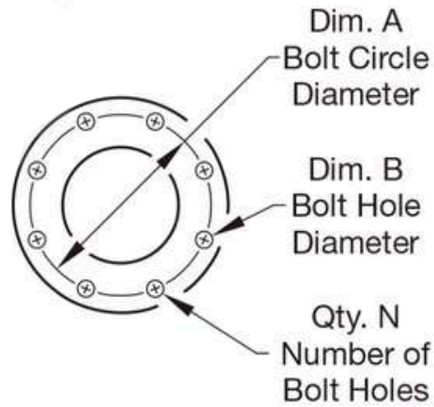
OVERALL DIMENSION





Model	Size	L	W	H	h	D
IJFFG-DV1-80	3"	700	400	520	315	200
IJFFG-DV1-100	4"	700	400	520	315	220
IJFFG-DV1-125	5"	745	455	581	400	250
IJFFG-DV1-150	6"	745	455	581	400	285
IJFFG-DV1 200	8"	790	545	680	510	340

Specifications of Flange						
Size	BS4504 PN16			ANSI #150		
	A	B	N	A	B	N
3"(DN80)	160	18	8	152.5	19	4
4"(DN100)	180	18	8	190.5	19	8
5"(DN125)	210	18	8	216	23	8
6"(DN150)	240	22	8	241.5	23	8
8"(DN200)	295	22	12	298.5	23	8



OPERATION

The INTERNATIONAL JOINT FIRE FIGHTING GROUP IJFFG-OV1 Deluge Valve is a diaphragm style valve that depends upon water pressure in the Diaphragm Chamber to hold the Diaphragm closed against the water supply pressure, When a fire occurs in the protection area, the solenoid valve is directly opened through the fire alarm and fire extinguishing controller, and the water in the pressure chamber is quickly discharged. Because the pressure in the pressure chamber is released, the water acting on the lower part of the valve flap quickly pushes the valve flap, and the water flows into the work. The cavity flows to the entire pipe network to sprinkle water. At the same time, part of the pressure water flows to the alarm pipe network, so that the water power alarm bell will sound the alarm, the pressure switch will act, and send a signal to the duty room or directly start the fire water pump to supply water. At this time, because the solenoid valvo has a self-locking function,the deluge alarm valve is locked in the open state. After the fire is extinguished, the solenoid valve is reset manually and the deluge alarm valve will reset itself later

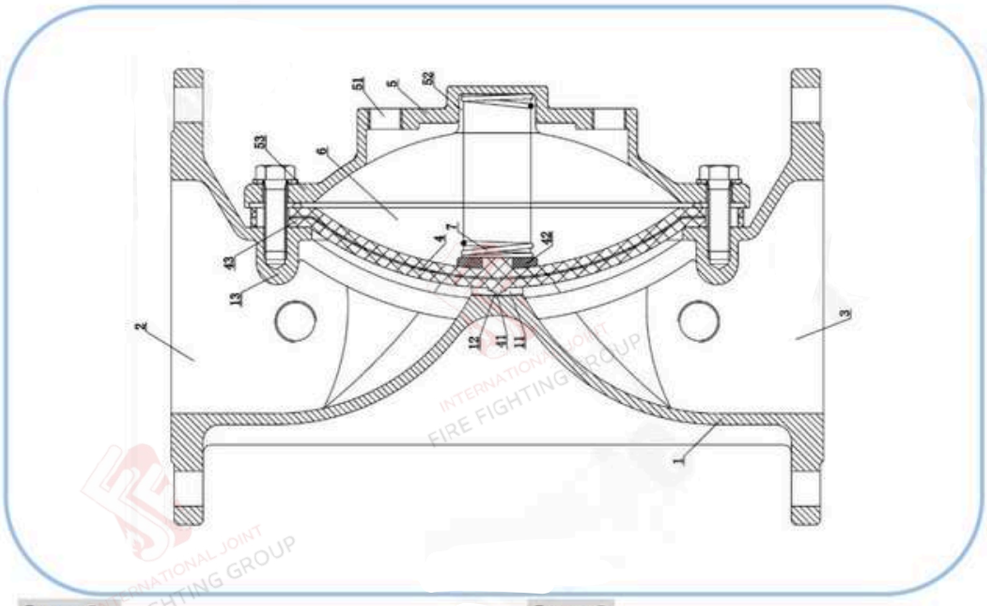
INSTALLATION

Notice

- The deluge valve and trim must be installed only in areas where they will not be subjected to freezing tempera -tures.

Step 1.

All nipples, fittings, and devices must be clean and free of scale and burrs before installation. Use pipe thread sealant sparingly on male pipe threads only.



Step 2.

The IJFFG-DV1 Valve must be trimmed in accordance with Figure 2.

Step 3.

Care must be taken to ensure that check valves, strainers, globe valves, etc. are installed with the flow arrows in the proper direction.

Step 4.

Suitable provision must be made for disposal of drain water. Drainage water must be directed such that it will not cause accidental damage to property or danger to persons.

Step 5.

Connect the Diaphragm Supply Valve to the inlet side of the System Main Control Valve in order to facilitate setting of the IJFFG-DV1 Valve.

VALVE SETTING & TESTING

PROCEDURE

Step 1.

Close the O.S.&Y. Gate valve or butterfly valve at the inlet end of the IJFFG-DV1 Deluge Valve.

Step 2.

Verify that all ball valves are in their normal operating position:

-Diaphragm Supply Valve (Normally Closed)
-Manually-Action Valve (Normally Closed)
-Alarm Test Valve (Normally Closed)
-System Drain Valve (Normally closed)
-Alarm Shut-off Valve (Normally Opened)

Step 3.

Close the O.S.&Y. Gate valve or butterfly valve at the outlet end of the IJFFG-DV1 Deluge Valve.

Step 4.

Open the Re-set Valve.

Step 5.

Open the O.S.&Y. Gate valve or butterfly valve at the inlet end of the IJFFG-DV1 Deluge Valve slowly. And open System Drain Valve, let the water flow fill into the FRD-DV1 Deluge Valve.

Step 6.

Open the Manually Action Valve slowly to allow air to escape from the Deluge Valve while it is filling with water.

Step 7.
Close the Manually-Action Valve.

Step 8.
Open the Re-set Valve, let the water flow into the Diaphragm Chamber to hold the Diaphragm closed against the water supply pressure.

Step 9.
Close the Re-set Valve.

Step 10.
When the water in the Chamber at the system side is drain out, close the System Drain Valve.

Step 11.
Installation is finished.

Test the alarm devices
1)Close the Alarm Shut-off Valve
2)Open the Alarm Test Valve to allow the water flow in to the alarm pipeline.
3)The alarm devices should sound, testing is finished.

CARE & MAINTENANCE
Notice
If the water supply needs to be shut off to the IJFFG-DV1 deluge valve and trim and cannot be shut off upstream of the system, close the System Main Control Valve, the Diaphragm Supply Valve, and the Water Supply Shut-Off Valve. This will allow any trim above the System Main Control Valve to be taken apart for service if necessary.

Drop in Water Supply Pressure Below Normal Range
Notice
If the water supply pressure is significantly reduced below the normally expected static pressure range (as could occur in the case of a water main break or repair), and there is a subsequent drop in the diaphragm chamber water pressure below its normal range (for example, due to a leak in a piping connection to or from the diaphragm chamber or, a leak in the diaphragm chamber check valve caused by dirt or debris in the check valve seal area), a deluge valve such as the IJFFG-DV1 could inadvertently trip, if its water supply pressure is quickly restored.

For fire protection systems subject to an emergency impairment caused by an interrupted water supply condition, it is recommended that consideration be given to installing a low water supply pressure switch with the appropriate alarm/ indications to monitor the water supply pressure.

A drop in the water supply pressure to below its normal range (as in the case of an interrupted water supply condition) constitutes an emergency impairment.

Should this condition occur, immediately close the main control valve and use the following procedure to reset the system:

Step 1.
Prior to the water supply pressure being restored to the closed main control valve, note the pressure indicated by the diaphragm chamber pressure gauge and determine if the pressure is within the normally expected range.

Step 2.
If the diaphragm chamber pressure is below the normal range, check for and correct any source of leakage from the diaphragm chamber prior to resetting the system. Step 3. After the water supply pressure is restored to the main control valve, reset the IJFFG-DV1 Valve in accordance with the Valve Setting Procedure section.

Water Flow Alarm Test Procedure
To test the water flow alarm, open the Alarm Test Valve, which will allow a flow of water to the Water Flow Pressure Switch and/or Water Motor Alarm. Upon satisfactory completion of the test, close the Alarm Test Valve. To ensure drainage of the alarm line, depress the plunger on the Automatic Drain Valve.

Electric Actuation Operation Test Procedure
Proper operation of the IJFFG-DV1 Valve (i.e., opening of the IJFFG-DV1 Valve as during a fire condition) must be verified as follows:

Step 1.
If water must be prevented from flowing beyond the riser, perform the following steps.
- Close System Main Control Valve, Open Main Drain Valve.
- Open System Main Control Valve one turn beyond position at which water just begins to flow from Main Drain Valve.
- Slowly close the Main Drain Valve.

Step 2.
Test the deluge releasing panel in accordance with the manufacturer's instructions to energize the solenoid valve.

***Note**: Be prepared to quickly perform Steps 3, 4, and 5 if water must be prevented from flowing beyond the riser.*

Step 3.
Verify that the IJFFG-DV1 Valve has tripped, as indicated by the flow of water into the system.

Step 4.
Close the System Main Control Valve.

Step 5.
Close the Diaphragm Supply Valve.

Step 6.

Reset the IJFFG-DV1 Valve in accordance with the Valve Setting accordanceTesting Procedure

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Electric Actuation Solenoid Valve Test Procedure

Proper operation of the Solenoid Valve for electric actuation must be verified at as follows:

Step 1.
Close the System Main Control Valve.

Step 2.
Open the Main Drain Valve.

Step 3.
Test the deluge releasing panel in accordance with the manufacturer's instructions to energize the Solenoid Valve.

Step 4.
Verify that there is a flow of water from the Solenoid Valve drain connection.

Step 5.
Verify that the Diaphragm Chamber pressure has decreased to below 25% of the water supply pressure.

Step 6.
Reset the electric detection system in accordance with the manufacturer's instructions to de-energize the Solen -oid Valve, and proceed as follows:

• Water should cease draining from the Solenoid Valve.
Pressure will then build up in the IJFFG-DV1 Diaphragm Chamber.

After system pressure is restored in the IJFFG-DV1 Diaphragm Chamber, inspect the Solenoid Valve for leaks at the drain tube. Any leaks must be corrected before proceeding to the next step. The Solenoid Valve discharges water into the riser and must be drained at the concluson of this test.

Step 7.

Partially open the System Main Control Valve. Slowly close the Main Drain Valve as soon as water discharges from the Main Drain Valve. Observe the Automatic Drain Valve for leaks. If there are leaks, determine/ correct the cause of the leakage problem. If there are no leaks, the IJFFG-DV1 Valve is ready to be placed in service and the System Main Control Valve must then be fully opened.

ORDERING GUIDE

- Model Number
- Connection type and standard
- Order Quantity
- Shipping/Transportation Way

Other special requirements please contact FOREDE SALES TEAM.

Tips: for more related products or other firefighting equipment, please forward to our website, www.forede.com