



Imen **Datis** Asia

شیر سیلابی

MODELS

100G/2100G

Deluge Valve

- **UL Listed / ULC Listed/ABS Approved**
- **Globe or Angle Pattern**
- **Proven Reliable Design**



Type Approved



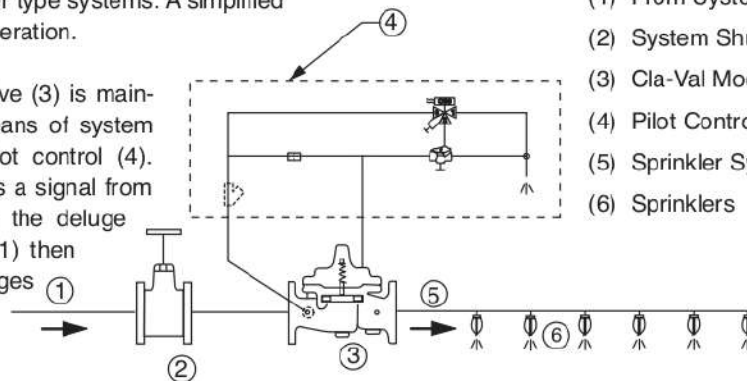
The Cla-Val Model 100G/2100G Deluge Valve is designed for use in controlling water flow to Deluge, Pre-Action, or Foam-Water type fire protection sprinkler systems. This valve is UL Listed in "Special Systems Water Control Valves Class I (VLFT) for both vertical and horizontal installation applications. This valve is UL/ULC Listed for operation manually, electronically, with hydraulic or pneumatic pilot control system for a wet pilot line of sprinklers.

The Model 100G/2100G is a hydraulically-operated, diaphragm-actuated, globe or angle pattern Deluge Valve. It consists of three major components: the body, the cover, and the diaphragm assembly. The only moving part is the diaphragm assembly. Packless construction and simplicity of design assures long service life and dependable low maintenance for this valve. All ferrous parts are fusion epoxy coated internally and externally for added corrosion resistance, along with a Dura-Kleen™ stem.

Typical Application

The Model 100G/2100G is installed to control the water flow to the sprinklers in Deluge, Pre-Action, or Foam-Water type systems. A simplified system is used to illustrate typical operation.

The Model 100G/2100G Deluge Valve (3) is maintained in the closed position by means of system water pressure controlled by a pilot control (4). When the pilot control valve receives a signal from the fire detection system, it allows the deluge valve to open. Firefighting water (1) then enters system piping (5) and discharges from sprinklers (6).



- (1) From System Water Supply
- (2) System Shut-off Valve (Visual Stem)
- (3) Cla-Val Model 100G or 2100G
- (4) Pilot Control System
- (5) Sprinkler System Piping
- (6) Sprinklers

Specifications

Sizes Globe: 3" - 12" • Angle: 3" - 12"

Ductile Iron 150 ANSI B16.42 flanged

End Details Ductile Iron 300 Grooved Ends

Cast Steel 150 ANSI B16.5 flanged

Pressure Rating

150 class, 250 psi maximum (Ductile Iron)

150 class, 285 psi maximum (All other materials)

300 class, 300 psi maximum (All materials)

Temperature Range

Water, to 180°F MAX.

Materials

Main Valve Body & Cover:

- Ductile Iron ASTM A-536* **UL, ULC**
- Cast Steel ASTM A216-WCB* **UL, ULC**
- Nickel Aluminum Bronze ASTM B148 **UL, ULC**
- Naval Bronze ASTM B61 **UL, ULC**
- 316 Stainless Steel - ASTM A743 Grades CF3M and CFM8
- Super Austenitic Stainless Steel - ASTM A351 Grade CK3MCuN (SMO 254)
- Super Duplex Stainless Steel - ASTM A890 Grade 5A (CE3MN)

Main Valve Internal Trim:

Bronze ASTM B61 • Monel QQ-N-281 Class B

Diaphragm and Disc: Buna-N® synthetic rubber

*Internally & Externally Epoxy Coated

Specifications Seawater Service Option

Sizes

Globe: 3" - 12" flanged

Globe: 3" - 8" grooved

Angle: 3" - 12" flanged

Consult factory for materials and flange ratings.

When Ordering, Please Specify

1. Model No. 100G or 2100G
2. Size
3. Body and Cover Material
4. Globe or Angle Pattern
5. Pressure Class
6. Internal Trim Material

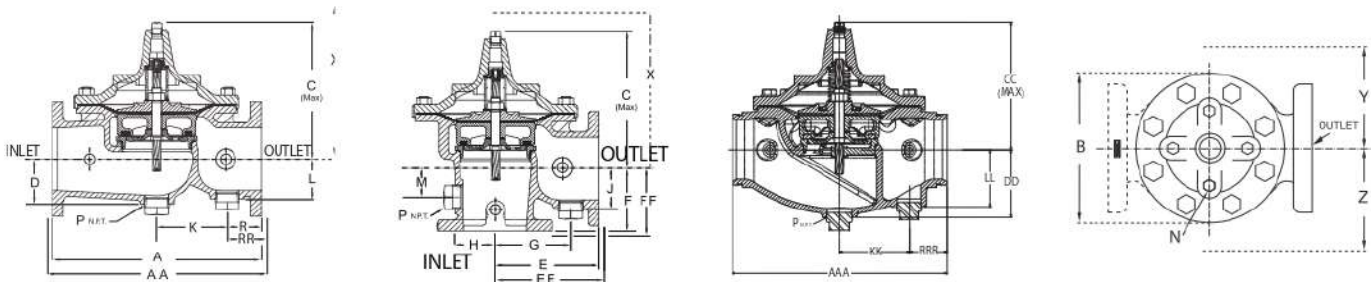
*optional Teflon™ coated seat upon request.



To calculate the maximum wet sprinkler pilot height above the valve, use the graph shown.

Functional Data

Valve Size	Inches	3	4	6	8	10	12	
	mm	80	100	150	200	250	300	
C _v Factor	Globe Pattern	Gal./Min. (gpm)	115	200	440	770	1245	1725
	Angle Pattern	Litres/Sec. (l/s)	27.6	48	105.6	184.8	299	414
C _v Factor	Globe Pattern	Gal./Min. (gpm)	139	240	541	990	1575	2500*
	Angle Pattern	Litres/Sec. (l/s)	33.4	58	130	238	378	600



Valve Size (in.)	3	4	6	8	10	12
A 150 ANSI	12.00	15.00	20.00	25.38	29.75	34.00
AA 300 ANSI	13.25	15.62	21.00	26.38	31.12	35.50
AAA Grooved	12.50	15.00	20.00	25.38	—	—
B Dia.	9.12	11.50	15.75	20.00	23.62	28.00
C Max.	8.19	10.62	13.38	16.00	17.12	21.00
CC Max.	7.50	9.94	12.13	15.00	—	—
D	2.56	3.19	4.31	5.16	8.50	9.39
DD	3.62	4.50	6.31	7.81	—	—
E 150 ANSI	7.00	8.50	10.00	12.69	14.88	17.00
EE 300 ANSI	—	8.81	10.50	13.19	—	17.75
F 150 ANSI	4.00	4.97	6.00	8.00	8.62	13.75
FF 300 ANSI	—	5.28	6.50	8.50	—	14.50
G	4.75	5.94	7.25	8.50	10.50	17.00
H	2.69	2.81	3.88	5.31	6.56	7.00
J	2.56	2.81	3.81	4.81	5.81	7.00
K	7.00	4.03	6.75	17.00	15.50	21.00
KK	3.50	4.56	6.50	7.00	—	—
L	2.56	2.81	3.81	4.81	8.50	9.39
LL	3.25	4.00	5.31	7.00	—	—
M	1.75	2.41	2.75	4.00	4.24	8.75
N NPT	1/2 - 14	3/4 - 14	3/4 - 14	1 - 11-1/2	1 - 11-1/2	1 - 11-1/2
P NPT	1-1/4 - 11-1/2			2 - 11-1/2		
R 150 ANSI	2.50	3.47	3.25	4.19	7.12	6.50
RR 300 ANSI	3.12	3.78	3.75	4.69	7.81	7.25
RRR Grooved	2.75	2.94	3.50	5.69	—	—
X Pilot System	15.00	17.00	29.00	31.00	33.00	35.00
Y Pilot System	11.00	12.00	20.00	22.00	24.00	26.00
Z Pilot System	11.00	12.00	20.00	22.00	24.00	26.00

Valve Size (mm)	80	100	150	200	250	300
A 150 ANSI	305	381	508	645	756	864
AA 300 ANSI	337	397	533	670	791	902
AAA Grooved	318	381	508	645	—	—
B Dia.	232	292	400	508	600	711
C Max.	208	270	340	406	435	533
CC Max.	191	252	308	381	—	—
D	65	81	110	131	216	239
DD	92	114	160	198	—	—
E 150 ANSI	178	216	254	322	378	432
EE 300 ANSI	—	224	267	350	—	451
F 150 ANSI	102	126	152	203	219	349
FF 300 ANSI	—	134	165	216	—	368
G	121	151	184	216	267	432
H	68	71	99	135	167	178
J	65	71	97	122	148	178
K	178	102	171	432	394	533
KK	89	116	165	178	—	—
L	65	71	97	122	216	239
LL	83	102	135	178	—	—
M	45	61	70	102	108	222
N NPT	1/2 - 14	3/4 - 14	3/4 - 14	1 - 11-1/2	1 - 11-1/2	1 - 11-1/2
P NPT	1-1/4 - 11-1/2			2 - 11-1/2		
R 150 ANSI	64	88	83	106	181	165
RR 300 ANSI	79	96	95	119	198	184
RRR Grooved	70	75	89	145	—	—
X Pilot System	381	432	737	787	838	889
Y Pilot System	279	305	508	559	610	660
Z Pilot System	279	305	508	559	610	660



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Model DDV Diaphragm Deluge Valve with Electric Actuation, Wet Pilot, & Dry Pilot Trims

FM Approved (All Trims)
UL Listed (Electric Actuation, Wet Pilot, Dry Pilot)

Product Features

- Compact Trim with all connections to the valve body
- Valve can be reset without removing cover
- Suitable for horizontal or vertical installation
- Pressure regulating dry pilot version allows up to 400 psi (27.6 bar) inlet pressure

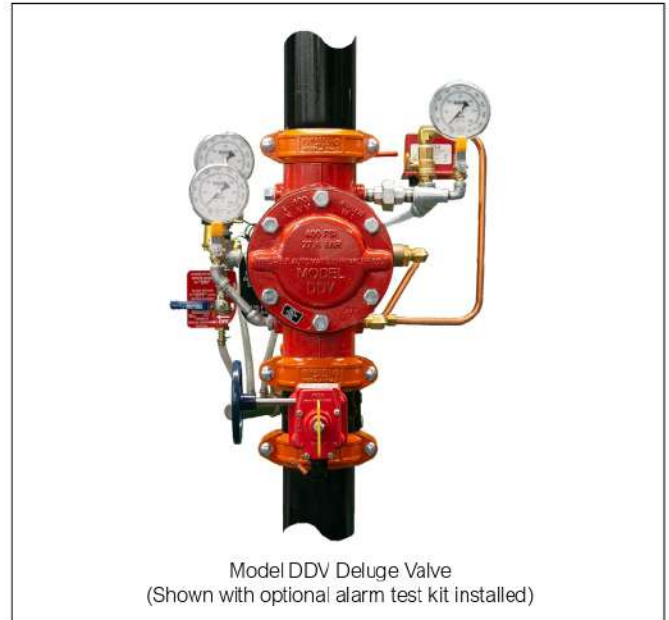
Product Description

The Model DDV deluge valve diaphragm-type deluge valve available in 1-1/2" (40mm), 2" (50mm), 2-1/2" (65mm), 76mm, 3" (80mm), 4" (100mm), 6" (150mm), 165mm, and 8" (200mm) nominal sizes with multiple end configurations (see Table A).

The valve's diaphragm seals against a seat machined in the valve body. Water pressure in the chamber between the diaphragm and the cover presses the diaphragm against the seat to prevent water flow through the valve. The release of water pressure from the chamber allows the diaphragm to deform away from the seat, which permits water to flow through the valve. Maintenance of the valve is simplified because all trim is connected to the valve body, and the diaphragm can be removed without removing the trim.

Three release trim packages are available: electric actuation, wet pilot line, and dry pilot line. The dry pilot line trim can also be ordered with a pressure regulating option to regulate the water pressure downstream of the valve. Water supply input pressures up to 400 psi (27.6 bar) can be regulated by the Model DDV valve to an output pressure of 20 to 200 psi (1.4 to 13.8 bar) for 6" (150mm) and 165mm sizes, and 50 to 200 psi (3.4 to 13.8 bar) for all other sizes.

Note: The 8" (200mm) Model DDV Valve is not available with pressure regulating trim.



Model DDV Deluge Valve
(Shown with optional alarm test kit installed)

All trim options include 0-300 psi water pressure Gauges for the incoming water supply and control chamber; in addition, the dry pilot pressure regulating trim includes a 0-300 psi water pressure gauge for adjusting the outlet pressure. Optional 0-600 pressure gauges are available. Model DDV systems with groove end connections may be ordered with or without control valves (water supply valve and upper service valve), and an optional spool piece with an outlet for the control chamber supply is also available. Control valves will be Reliable RBVG or REL300GT grooved end butterfly valves with integral tamper switches. Plugged outlets are provided for alarm devices that are ordered separately. For convenience, an optional alarm line test valve kit may be installed (see Figure 11).

End Configuration Options

Table A

GR x GR (ANSI/AWWA C606)	Class 150 FLG x FLG (ASME B16.5)	Class 300 FLG x FLG (ASME B16.5)	PN16 FLG x FLG (ISO 7005-2)	BS-E FLG x FLG (BS 10)	NPT THD x THD (ANSI/AMSE B1.20.1)	ISO 7/1 THD x THD
All Sizes	All Sizes (exc 76 & 165mm)	All Sizes (exc 76 & 165mm)	All Sizes (exc 76 & 165mm)	All Sizes (exc 76 & 165mm)	1-1/2", 2", 2-1/2", & 3" (40, 50, 65, & 80mm)	1-1/2", 2", 2-1/2", 3" (40, 50, 65, & 80mm)

Note: Valves are intended to be installed on systems where the pressure does not exceed the working capabilities of the end configurations.

Technical Data: Electric Actuation Trim

Table B

Valve Size	Maximum Flow gpm (L/min)	Maximum Rated Pressure psi (bar)	Valve Output Range psi (bar)	Approvals
All	Not Restricted	175 (12.0)	Not Regulated	UL, FM
		300 (20.7)		

Note: Maximum rated pressure determined by solenoid selection. See page 3.

Technical Data: Wet Pilot Trim

Table C

Valve Size	Maximum Flow gpm (L/min)	Maximum Rated Pressure psi (bar)	Valve Output Range psi (bar)	Approvals
All	Not Restricted	400 (27.6)	Not Regulated	UL, FM

Technical Data: Dry Pilot Trim

Table D

Valve Size	Maximum Flow gpm (L/min)	Maximum Rated Pressure psi (bar)	Valve Output Range psi (bar)	Approvals
All	Not Restricted	400 (27.6)	Not Regulated	UL, FM

Technical Data: Dry Pilot Pressure Regulating Trim

Table E

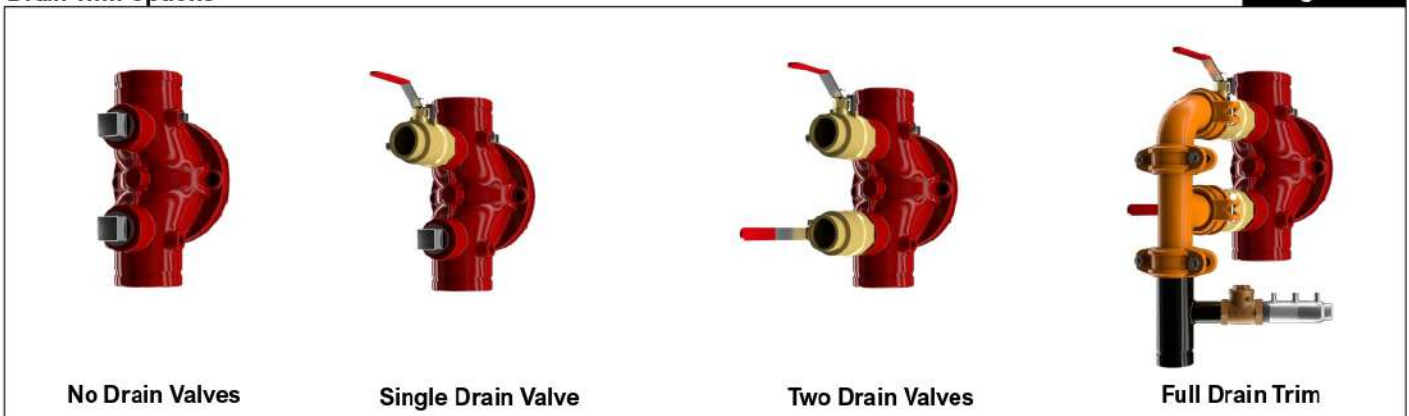
Valve Size	Maximum Flow gpm (L/min)	Maximum Rated Pressure psi (bar)	Valve Output Range psi (bar)	Approvals
1-1/2" (40mm)	225 (1023)	400 (27.6)	50 – 210 (3.4 – 14.5)	FM
2" (50mm)	250 (1137)			
2-1/2" (65mm) 76mm	400 (1514)			
3" (80mm)				
4" (100mm)	1340 (5072)			
6" (150mm) 165mm	3000 (11350)			

Notes for Pressure Regulating Trim:

- Where inlet pressure is between 85 and 300 psi (5.9 and 20.7 bar), a regulated outlet pressure of 50 to 210 psi (3.4 to 14.5 bar) can be maintained under flowing conditions with inlet pressures that are at least 35 psi (2.4 bar) greater than the outlet set pressure.
- Where inlet pressure is more than 300 psi (20.7 bar) and up to 400 psi (27.6 bar), a regulated outlet pressure of 50 to 210 psi (3.4 to 14.5 bar) can be maintained under flowing conditions with inlet pressures that are at least 50 psi (3.4 bar) greater than the outlet set pressure.
- 8" (200mm) valve not currently available with dry pilot pressure regulating trim.

Drain Trim Options

Figure 1



No Drain Valves

Single Drain Valve

Two Drain Valves

Full Drain Trim

Note: 2" grooved drain shown for 4", 6", 165mm, and 8" valves. Drain on 2-1/2", 3", and 76mm valves is 1-1/4" threaded with 1-1/4" tee provided for connection of drain piping. Drain on 1-1/2" and 2" valves is 3/4" threaded with 1" tee provided for connection of drain piping.

Model DDV Deluge Valve with Electric Actuation Trim

Technical Specifications

Pressure Rating:

Standard: 175 psi (12.7 bar)
Optional: 300 psi (20.7 bar)

Material Specifications

Body: Ductile Iron with Red Oxide Epoxy coating and Urethane external coating
Cover: Ductile Iron with Red Oxide Epoxy coating and Urethane external coating
Diaphragm: Fabric-reinforced EPDM

Installation Orientation

Not Restricted

End Connections

See Table A

Drain Trim Options

See Figure 1

Actuator

Standard: Parker Hannifin 24 VDC Normally Closed Solenoid Valve Model 73218BNUNLVNOC111C2
10 Watt, 0.41 Amp Holding, 175 psi (12.7 bar)

Optional: Parker Hannifin 24 VDC Normally Closed Solenoid Valve Model 73212BN4TNLVNOC322C2
22 Watt, 0.92 Amp Holding, 300 psi (20.7 bar)

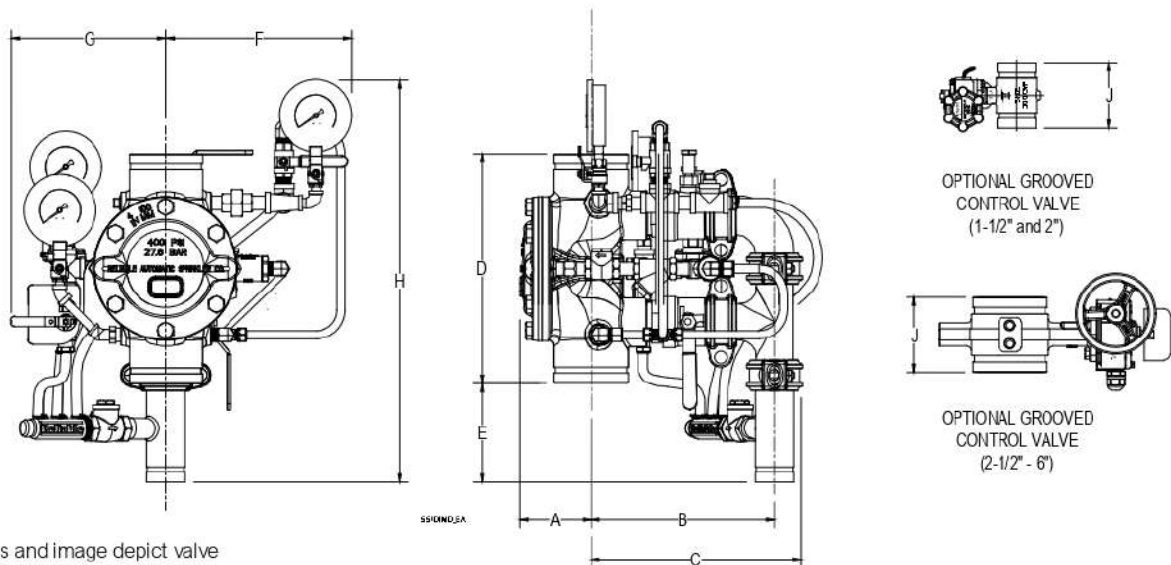
Approvals

UL Listed
FM Approved



Model DDV Deluge Valve with Electric Actuation Trim Dimensions

Figure 2



Note: Drawings and image depict valve with *optional* alarm test line.

Model DDV Dimensions - in. (mm)

Table F

Valve Size	A	B	C	D	E	F	G	H	J
1-1/2" (40mm)	3 (76)	9-1/4 (235)	10 (254)	8 (203)	2-1/2 (64)	10-1/8 (257)	8 (203)	15-5/8 (397)	4 (102)
2" (50mm)	3 (76)	9-1/4 (235)	10 (254)	8 (203)	2-1/2 (64)	10-1/8 (257)	8 (203)	15-5/8 (397)	4-1/8 (104)
2-1/2" (65mm) & 76mm	3-1/2 (89)	11-3/4 (298)	12-1/2 (318)	11 (279)	3-1/8 (79)	10-7/8 (276)	8-3/4 (222)	18-1/4 (464)	3-7/8 (98)
3" (80mm)	3-1/2 (89)	11-3/4 (298)	12-1/2 (318)	11 (279)	3-1/8 (79)	10-7/8 (276)	8-3/4 (222)	18-1/4 (464)	3-7/8 (98)
4" (100mm)	4-3/8 (111)	11-1/4 (285)	12-7/8 (327)	14 (356)	6 (152)	11-3/8 (289)	9-1/2 (241)	24-3/8 (619)	4-9/16 (116)
6" (150mm) & 165mm	6-1/2 (165)	11-3/4 (298)	13-3/8 (340)	18 (457)	4 (102)	12-7/8 (327)	11-1/2 (292)	24-3/8 (619)	5-7/8 (149)
8" (200mm)	9-1/8 (232)	12-5/8 (321)	14-1/4 (362)	22-1/2 (572)	1-3/4 (44)	14-3/8 (365)	13 (330)	24-3/8 (619)	5-1/4 (134)

Model DDV Deluge Valve with Electric Actuation Trim

General Operation

Under normal conditions the solenoid valve and the Manual Emergency Release valve on the release trim are closed which maintains hydraulic pressure in the diaphragm chamber. The captured hydraulic pressure holds the diaphragm closed against the valve seat. When the solenoid valve is energized open by the releasing panel, or when the Manual Emergency Release is opened, pressure is relieved from the diaphragm chamber to the drain allowing the diaphragm to relax and water to flow through the Model DDV valve. Water movement through the supply line to the diaphragm chamber closes the Model A Velocity Check Valve which prevents the diaphragm chamber from re-pressurizing and closing the Model DDV deluge valve.

Note: The system pressure gauge on the DDV valve provides an indication of the pressure within the system, but accuracy may be affected by turbulence across the diaphragm created during water flow. Where a more accurate measurement of residual pressure is required, a pressure gauge should be installed downstream of the DDV valve on a straight run of pipe of sufficient length to provide an accurate reading of residual pressure.

Setup Procedure

1. Ensure the system has been properly drained, and all parts of the system that may have been affected by fire are inspected and, if necessary, replaced.
2. Ensure that the electric detection system is in proper working order and reset.
3. Ensure that the Manual Emergency Release Valve, Solenoid Valve, and Alarm Test Valve (if present) are closed.
4. Open the Upper Drain Valve.
5. Partially open the Lower Drain Valve.
6. Depress and hold the plunger on the Model A Velocity Check Valve. (**Note:** The plunger must remain depressed until the diaphragm chamber is fully pressurized; step 11.)

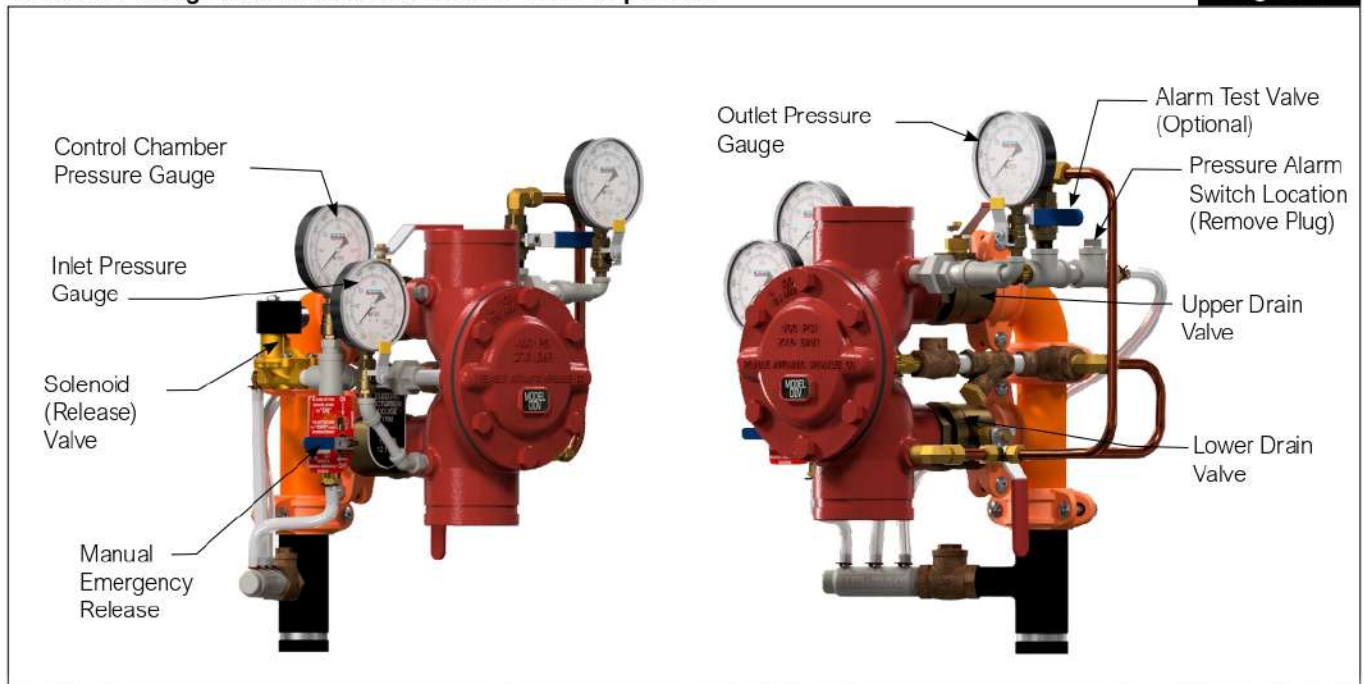
7. Slightly open the Main Water Supply Control Valve.
8. Once water begins to flow through the Lower Drain Valve, slowly close Lower Drain Valve.
9. Allow hydraulic pressure to stabilize on the diaphragm control face and seal the diaphragm.
10. Observe if water flows through the Upper Drain Valve. If no flow occurs, the deluge valve diaphragm is sealed.
11. Release the plunger on the Model A Velocity Check Valve.
12. Using the Diaphragm Chamber Pressure Gauge, confirm that full hydraulic pressure is present in the diaphragm control chamber.
13. Close the Upper Drain Valve after any residual water has drained from system.
14. Slowly open the Main Water Supply Control Valve. Verify that the Water Control Valve is fully open and properly monitored.
15. Secure the handle of the Manual Emergency Release Valve in the closed position with a cable tie.
16. Fully reset fire alarm panel to clear any active signals.
17. Notify the proper authorities, building occupants, and those responsible for monitoring the system that the system has been placed into service.

Shutdown Procedure

1. Close the main water supply control valve.
2. Close the Diaphragm Chamber Supply Valve.
3. Open the Manual Emergency Release Valve.
4. Open the Upper Drain Valve and Lower Drain Valve to drain the system.
5. Depress the plunger on the Model A Velocity Check Valve to relieve any remaining pressure on the supply line to the diaphragm chamber.
6. Open all auxiliary drain valves throughout the fire protection system, closing them when fully drained.
7. Inspect and replace any sections of the fire protection system that may have been damaged due to fire.

Model DDV Deluge Valve with Electric Release Trim Components

Figure 3



Model DDV Deluge Valve with Wet Pilot Line Trim

Technical Specifications

Pressure Rating:

400 psi (27.6 bar)

Material Specifications

Body: Ductile Iron with Red Oxide Epoxy coating and Urethane external coating

Cover: Ductile Iron with Red Oxide Epoxy coating and Urethane external coating

Diaphragm: Fabric-reinforced EPDM

Installation Orientation

Not Restricted

End Connections

See Table A

Drain Trim Options

See Figure 1

Actuator

Wet Pilot Detection Line

Approvals

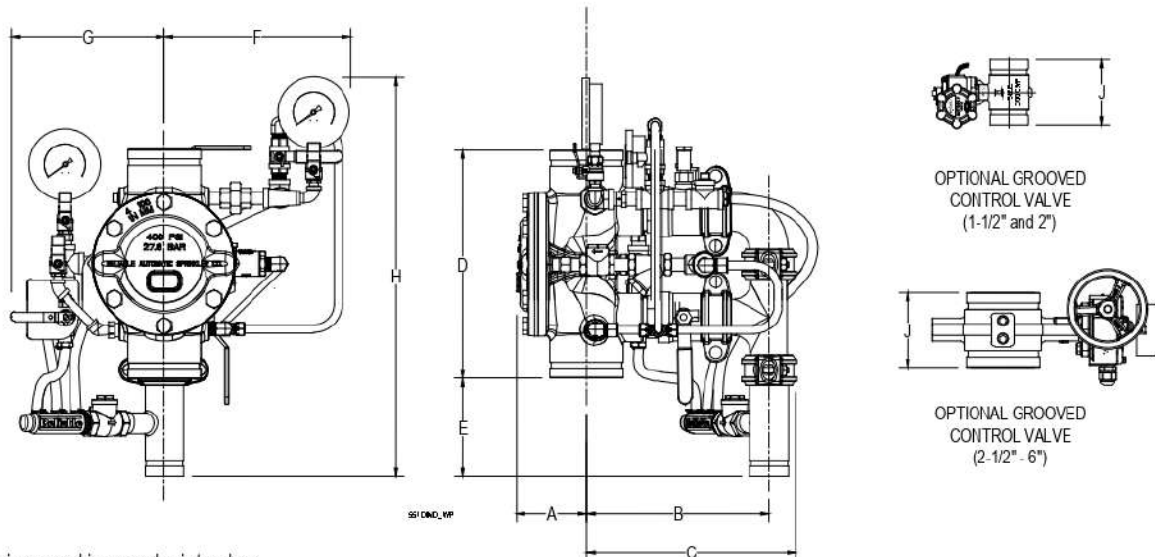
UL Listed

FM Approved



Model DDV Deluge Valve with Wet Pilot Line Trim Dimensions

Figure 4



Note: Drawings and image depict valve with *optional* alarm test line.

Model DDV Dimensions - in. (mm)

Table G

Valve Size	A	B	C	D	E	F	G	H	J
1-1/2" (40 mm)	3 (76)	9-1/4 (235)	10 (254)	8 (203)	2-1/2 (64)	10-1/8 (257)	8 (203)	15-5/8 (397)	4 (102)
2" (50mm)	3 (76)	9-1/4 (235)	10 (254)	8 (203)	2-1/2 (64)	10-1/8 (257)	8 (203)	15-5/8 (397)	4-1/8 (104)
2-1/2" (65mm) & 76mm	3-1/2 (89)	11-3/4 (298)	12-1/2 (318)	11 (279)	3-1/8 (79)	10-7/8 (276)	8-3/4 (222)	18-1/4 (464)	3-7/8 (98)
3" (80mm)	3-1/2 (89)	11-3/4 (298)	12-1/2 (318)	11 (279)	3-1/8 (79)	10-7/8 (276)	8-3/4 (222)	18-1/4 (464)	3-7/8 (98)
4" (100mm)	4-3/8 (111)	11-1/4 (285)	12-7/8 (327)	14 (356)	6 (152)	11-3/8 (289)	9-1/2 (241)	24-3/8 (619)	4-9/16 (116)
6" (150mm) & 165mm	6-1/2 (165)	11-3/4 (298)	13-3/8 (340)	18 (457)	4 (102)	12-7/8 (327)	11-1/2 (292)	24-3/8 (619)	5-7/8 (149)
8" (200mm)	9-1/8 (232)	12-5/8 (321)	14-1/4 (362)	22-1/2 (572)	1-3/4 (44)	14-3/8 (365)	13 (330)	24-3/8 (619)	5-1/4 (134)

Wet Pilot Line Requirements

The wet pilot line is a detection system only and does not contribute to controlling the fire. Piping shall be ½" schedule 40 galvanized pipe and extend from the deluge valve control chamber outlet to the protected area. Maximum wet pilot line height shall be in accordance with the tables below. Wet pilot line shall utilize Reliable Model F-FTR fixed temperature release

pilot line detectors spaced and positioned in accordance with the device listing or in accordance with NFPA 72 as fixed temperature heat detectors. Wet pilot lines shall not be installed in an areas subject to freezing, or where temperatures in excess of 150°F (65°C) are anticipated.

Maximum Wet Pilot Line Height, Vertical Valve Orientation

Table H

Water Supply Pressure psi (bar)	Valve Size							
	1-1/2", 2"		2-1/2", 76mm, 3"		4"		6", 165mm, 8"	
	Feet	Meter	Feet	Meter	Feet	Meter	Feet	Meter
20 (1.4)	23.7	7.2	25.3	7.7	25.3	7.7	21.2	6.5
40 (2.6)	58.0	17.7	56.6	17.3	56.5	17.2	50.6	15.4
60 (4.1)	86.3	26.3	87.9	26.8	86.4	26.3	83.0	25.3
80 (5.5)	120.4	36.7	114.8	35.0	116.4	35.5	112.3	34.2
100 (6.9)	150.4	45.8	148.4	45.2	147.8	45.0	142.2	43.3
120 (8.3)	180.9	55.1	178.1	54.3	178.0	54.3	169.8	51.8
140 (9.7)	210.0	64.0	209.8	63.9	209.2	63.8	192.4	58.6
160 (11.0)	241.6	73.6	240.8	73.4	239.8	73.1	216.6	66.0
180 (12.4)	271.6	82.8	270.2	82.4	271.0	82.6	248.9	75.9
200 (13.8)	304.0	92.7	301.5	91.9	300.6	91.6	290.2	88.5
220 (15.2)	328.0	100.0	332.0	101.2	331.8	101.1	318.4	97.0
240 (16.6)	363.9	110.9	359.9	109.7	361.6	110.2	346.1	105.5
260 (17.9)	393.5	119.9	392.5	119.6	392.3	119.6	376.0	114.6
280 (19.3)	424.2	129.3	423.0	128.9	423.4	129.1	400.2	122.0
300 (20.7)	440.9	134.4	455.2	138.7	453.7	138.3	443.2	135.1
320 (22.1)	484.5	147.7	485.5	148.0	482.3	147.0	468.3	142.7
340 (23.4)	514.8	156.9	516.4	157.4	512.0	156.1	497.0	151.5
360 (24.8)	550.2	167.7	543.3	165.6	546.1	166.5	528.2	161.0
380 (26.2)	579.9	176.8	577.3	176.0	575.5	175.4	464.1	141.5
400 (27.6)	612.8	186.8	608.3	185.4	601.3	183.3	579.2	176.5

Model DDV Deluge Valve with Wet Pilot Line Trim

General Operation

The wet pilot detection line is a hydraulically pressurized extension of the diaphragm chamber. Under normal conditions the thermal detectors on the wet pilot line and the Manual Release Emergency valve are closed which maintains hydraulic pressure in the diaphragm chamber. The captured hydraulic pressure holds the diaphragm closed against the valve seat. When a thermal detector in the protected area opens, or the Manual Emergency Release valve is opened, hydraulic pressure is relieved from the diaphragm chamber to the drain allowing the diaphragm to relax and water to flow through the Model DDV valve. Water movement through the supply line to the diaphragm chamber closes the Model A Velocity Check Valve which prevents the diaphragm chamber from re-pressurizing and closing the Model DDV deluge valve. Excessive head pressure on the diaphragm chamber can result in a failure of the valve to operate, therefore, the height of the wet pilot line above the valve is limited to the values shown in Table H in this bulletin. Additional requirements for the wet pilot line are also shown.

Note: The system pressure gauge on the DDV valve provides an indication of the pressure within the system, but accuracy may be affected by turbulence across the diaphragm created during water flow. Where a more accurate measurement of residual pressure is required, a pressure gauge should be installed downstream of the DDV valve on a straight run of pipe of sufficient length to provide an accurate reading of residual pressure.

Setup Procedure

1. Ensure the system has been properly drained, and all parts of the system that may have been affected by fire are inspected and, if necessary, replaced.
2. Ensure the wet pilot line detection system is in proper working order and all thermal detection devices and manual release valves are closed.
3. Ensure that the Manual Emergency Release Valve and Alarm Test Valve (if present) are closed.
4. Open the Upper Drain Valve.
5. Partially open the Lower Drain Valve.
6. Open the manual release valve at the remote end of the wet pilot line, or otherwise vent the wet pilot line detection system.

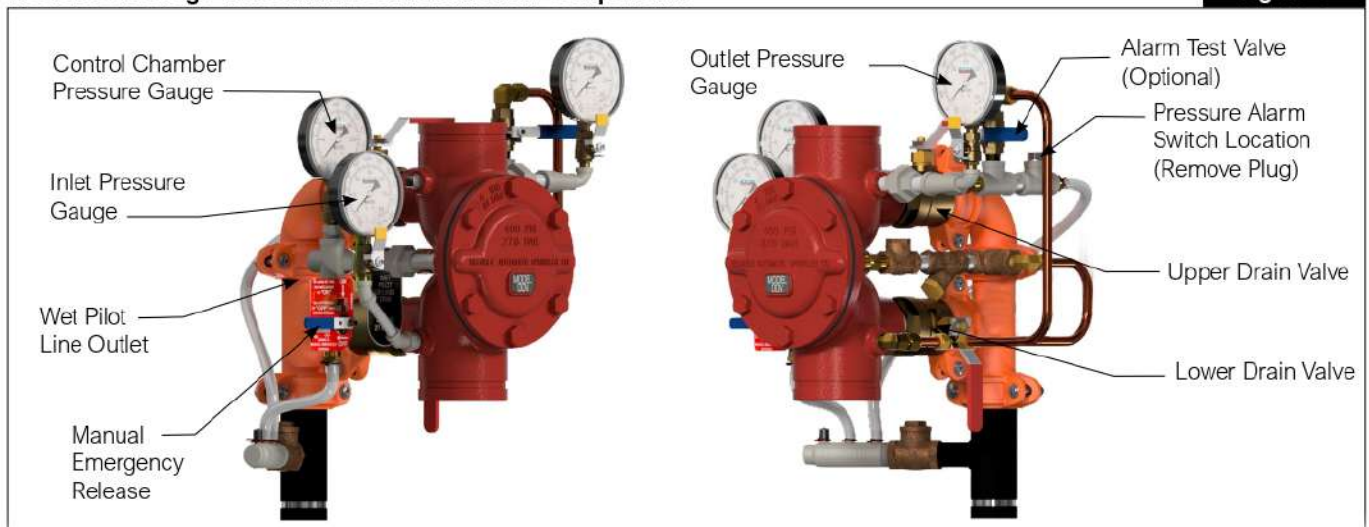
7. Depress and hold the plunger on the Model A Velocity Check Valve. (**Note:** The plunger must remain depressed until the diaphragm chamber is fully pressurized; step 13.)
8. Slightly open the Main Water Supply Control Valve.
9. Once water begins to flow through the Lower Drain Valve, slowly close Lower Drain Valve.
10. Close the manual release valve or other device used to vent the wet pilot line detection system when a steady stream of water is present.
11. Allow hydraulic pressure to stabilize on the diaphragm control face and seal the diaphragm.
12. Observe if water flows through the Upper Drain Valve. If no flow occurs, the deluge valve diaphragm is sealed.
13. Release the plunger on the Model A Velocity Check Valve.
14. Using the Diaphragm Chamber Pressure Gauge, confirm that full hydraulic pressure is present in the diaphragm control chamber.
15. Close the Upper Drain Valve after any residual water has drained from system.
16. Slowly open the Main Water Supply Control Valve. Verify that the Water Control Valve is fully open and properly monitored.
17. Secure the handle of the Manual Emergency Release Valve in the closed position with a cable tie.
18. Fully reset fire alarm panel to clear any active signals.
19. Notify the proper authorities, building occupants, and those responsible for monitoring the system that the system has been placed into service.

Shutdown Procedure

1. Close the main water supply control valve.
2. Close the Diaphragm Chamber Supply Valve.
3. Open the Manual Emergency Release Valve.
4. Open the Upper Drain Valve and Lower Drain Valve to drain the system.
5. Depress the plunger on the Model A Velocity Check Valve to relieve any remaining pressure on the supply line to the diaphragm chamber.
6. Open all auxiliary drain valves throughout the fire protection system, closing them when fully drained.
7. Inspect and replace any sections of the fire protection system and wet pilot detection line that may have been damaged due to fire.

Model DDV Deluge Valve with Wet Pilot Line Trim Components

Figure 5



Model DDV Deluge Valve with Dry Pilot Line Trim

Technical Specifications

Pressure Rating:
400 psi (27.6 bar)

Material Specifications

Body: Ductile Iron with Red Oxide Epoxy coating and Urethane external coating
Cover: Ductile Iron with Red Oxide Epoxy coating and Urethane external coating
Diaphragm: Fabric-reinforced EPDM

Installation Orientation

Not Restricted

End Connections

See Table A

Drain Trim Options

See Figure 1

Actuator

Dry Pilot Actuator

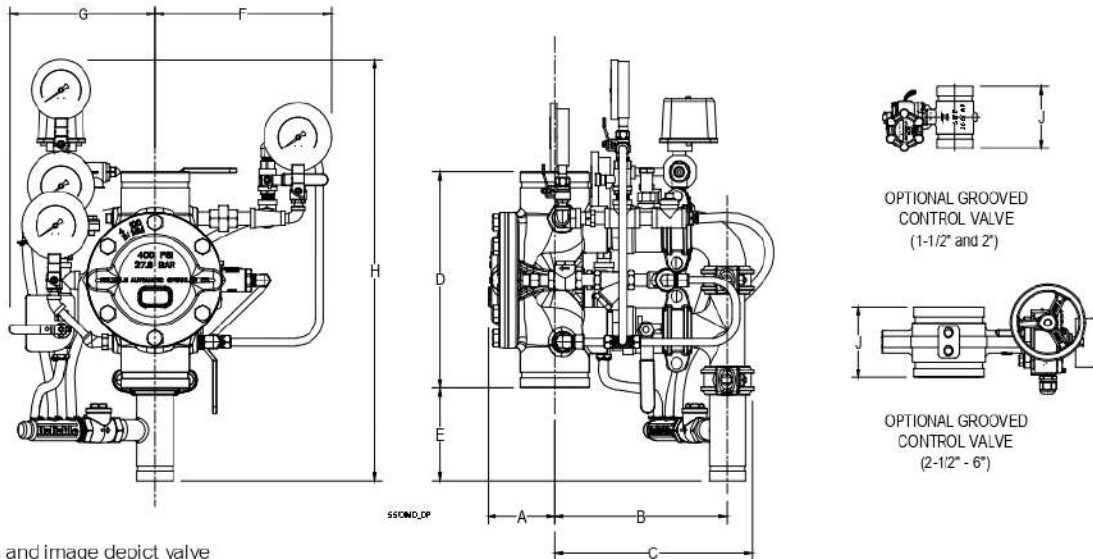
Approvals

UL Listed
FM Approved



Model DDV Deluge Valve with Dry Pilot Line Trim Dimensions

Figure 6



Note: Drawings and image depict valve with optional alarm test line.

Model DDV Dimensions - in. (mm)

Table I

Valve Size	A	B	C	D	E	F	G	H	J
1-1/2" (40mm)	3 (76)	9-1/4 (235)	10 (254)	8 (203)	2-1/2 (64)	10-1/8 (257)	8 (203)	20-3/4 (527)	4 (102)
2" (50mm)	3 (76)	9-1/4 (235)	10 (254)	8 (203)	2-1/2 (64)	10-1/8 (257)	8 (203)	20-3/4 (527)	4-1/8 (104)
2-1/2" (65mm) & 76mm	3-1/2 (89)	11-3/4 (298)	12-1/2 (318)	11 (279)	3-1/8 (79)	10-7/8 (276)	8-3/4 (222)	22-7/8 (581)	3-7/8 (98)
3" (80mm)	3-1/2 (89)	11-3/4 (298)	12-1/2 (318)	11 (279)	3-1/8 (79)	10-7/8 (276)	8-3/4 (222)	22-7/8 (581)	3-7/8 (98)
4" (100mm)	4-3/8 (111)	11-1/4 (285)	12-7/8 (327)	14 (356)	6 (152)	11-3/8 (289)	9-1/2 (241)	27-1/8 (689)	4-9/16 (116)
6" (150mm) & 165mm	6-1/2 (165)	11-3/4 (298)	13-3/8 (340)	18 (457)	4 (102)	12-7/8 (327)	11-1/2 (292)	26-3/4 (679)	5-7/8 (149)
8" (200mm)	9-1/8 (232)	12-5/8 (321)	14-1/4 (362)	22-1/2 (572)	1-3/4 (44)	14-3/8 (365)	13 (330)	26-3/4 (679)	5-1/4 (134)

General Operation

The dry pilot detection line is a pneumatically pressurized extension of the diaphragm chamber. Unlike a wet pilot line, dry pilot lines are not limited in height. The Reliable Model LP Dry Pilot Actuator serves to separate the hydraulic pressure in the diaphragm chamber from the pneumatic pressure in the dry pilot line. Under normal conditions the thermal detectors on the dry pilot line are closed which maintains air or nitrogen pressure on the top side of the Model LP Actuator diaphragm. When properly seated, the Model LP Actuator diaphragm closes the waterway between the Model DDV diaphragm chamber and the drain. The Manual Emergency Release valve, connected directly to the release trim of the diaphragm chamber, is also closed. The captured hydraulic pressure holds the diaphragm closed against the valve seat. When a thermal detector in the protected area opens, pneumatic pressure is released from the dry pilot detection line and the Model LP actuator causing the actuator to open. Hydraulic pressure in the diaphragm chamber is relieved through the Model LP Actuator allowing the diaphragm to relax and water to flow through the Model DDV valve. Alternately, when the Manual Emergency Release valve is opened, hydraulic pressure is directly relieved to the drain, allowing the diaphragm to relax and water to flow through the Model DDV valve. In either case, water movement through the supply line to the diaphragm chamber closes the Model A Velocity Check Valve which prevents the diaphragm chamber from re-pressurizing and closing the Model DDV deluge valve.

Note: The system pressure gauge on the DDV valve provides an indication of the pressure within the system, but accuracy may be affected by turbulence across the diaphragm created during water flow. Where a more accurate measurement of residual pressure is required, a pressure gauge should be installed downstream of the DDV valve on a straight run of pipe of sufficient length to provide an accurate reading of residual pressure.

Setup Procedure

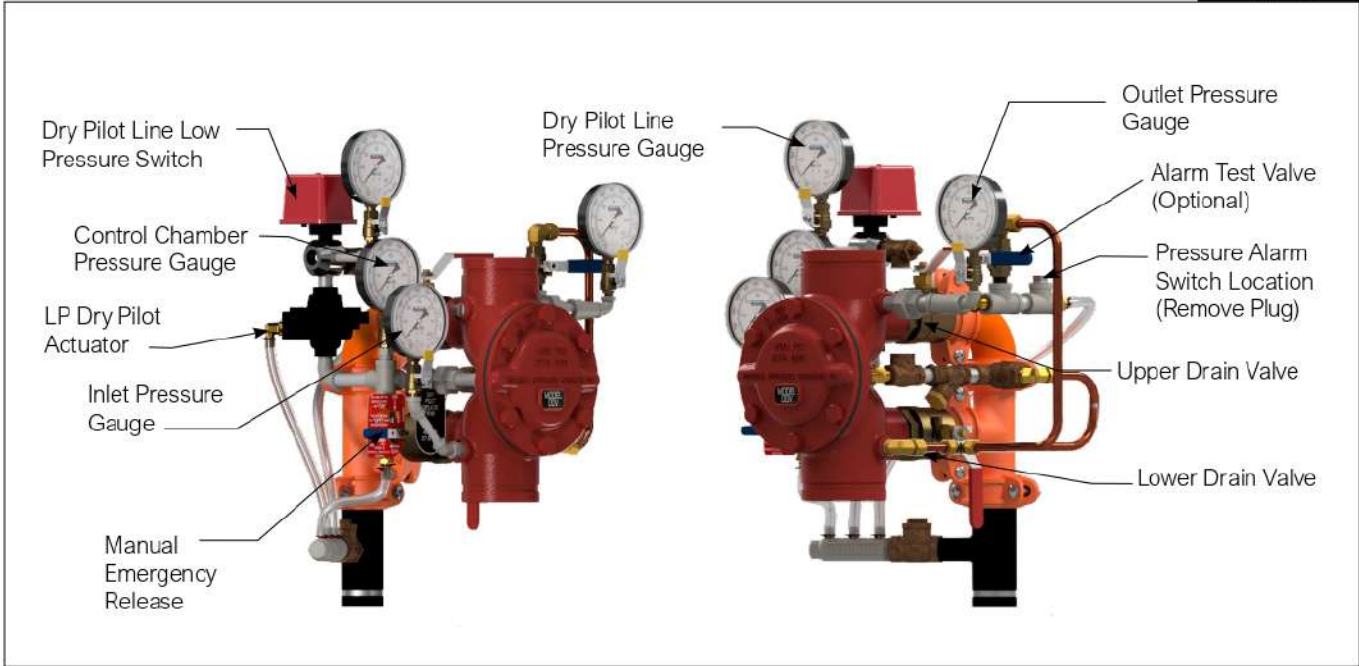
1. Ensure the system has been properly drained, and all parts of the system that may have been affected by fire are inspected and, if necessary, replaced.
2. Ensure the dry pilot line detection system is in proper working order and is pressurized with air or nitrogen in accordance with Table J.
3. Place the air or nitrogen supply system into automatic operation.
4. Ensure that the Manual Emergency Release Valve and Alarm Test Valve (if present) are closed.
5. Open the Upper Drain Valve.
6. Partially open the Lower Drain Valve.
7. Depress and hold the plunger on the Model A Velocity Check Valve. (**Note:** The plunger must remain depressed until the diaphragm chamber is fully pressurized; step 12.)
8. Slightly open the Main Water Supply Control Valve.
9. Once water begins to flow through the Lower Drain Valve, slowly close Lower Drain Valve.
10. Allow hydraulic pressure to stabilize on the diaphragm control face and seal the diaphragm.
11. Observe if water flows through the Upper Drain Valve. If no flow occurs, the deluge valve diaphragm is sealed.
12. Release the plunger on the Model A Velocity Check Valve.
13. Using the Diaphragm Chamber Pressure Gauge, confirm that full hydraulic pressure is present in the diaphragm control chamber.
14. Close the Upper Drain Valve after any residual water has drained from system.
15. Slowly open the Main Water Supply Control Valve. Verify that the Water Control Valve is fully open and properly monitored.
16. Secure the handle of the Manual Emergency Release Valve in the closed position with a cable tie.
17. Fully reset fire alarm panel to clear any active signals.
18. Notify the proper authorities, building occupants, and those responsible for monitoring the system that the system has been placed into service.

Shutdown Procedure

1. Close the main water supply control valve.
2. Close the Diaphragm Chamber Supply Valve.
3. Close the valve(s) controlling air or nitrogen supply to the dry pilot detection line.
4. Open the Upper Drain Valve and Lower Drain Valve to drain the system.
5. Depress the plunger on the Model A Velocity Check Valve to relieve any remaining pressure on the supply line to the diaphragm chamber.
6. Open all auxiliary drain valves throughout the fire protection system, closing them when fully drained.
7. Inspect and replace any sections of the fire protection system and dry pilot detection line that may have been damaged due to fire.

Model DDV Deluge Valve with Dry Pilot Trim Components

Figure 7



Dry Pilot Line Pressure

Table J

Water Pressure psi (bar)	Required Dry Pilot Line Pneumatic Pressure psi (bar)
Maximum	Not Less Than
20 (1.4)	8 (0.6)
30 (2.1)	10 (0.7)
50 (3.4)	12 (.8)
75 (5.2)	13 (.9)
100 (6.9)	15 (1.)
125 (8.6)	16 (1.1)
150 (10.3)	17 (1.2)
175 (12.1)	18 (1.2)
200 (13.8)	19 (1.3)
225 (15.5)	21 (1.4)
250 (17.2)	22 (1.5)
275 (19.0)	23 (1.6)
300 (20.7)	24 (1.7)
325 (22.4)	25 (1.7)
350 (24.1)	26 (1.8)
375 (25.9)	27 (1.9)
400 (27.6)	28 (1.9)

Notes:

- Supervisory air or nitrogen pressure should not exceed 30 psi (2.1 bar). Excess pressure may result in damage to the actuator.
- Fastest valve operation is achieved with supervisory air or nitrogen pressure indicated; however, pressure must never be less than the minimum specified in the table above.
- Air maintenance devices that maintain a constant pressure are recommended; however, if a tank-less compressor is used, the "compressor on" setting of the pressure switch must never be lower than the minimum pressure in the table above.

Model DDV Deluge Valve with Dry Pilot Line Pressure Regulating Trim

Technical Specifications

Pressure Rating:

400 psi (27.6 bar)

Flow & Pressure Output Range:

Reference Table E, page 2

Material Specifications

Body: Ductile Iron with Red Oxide Epoxy coating and Urethane external coating

Cover: Ductile Iron with Red Oxide Epoxy coating and Urethane external coating

Diaphragm: Fabric-reinforced EPDM

Installation Orientation

Not Restricted

End Connections

See Table A

Drain Trim Options

See Figure 1

Actuator

Dry Pilot Detection Line

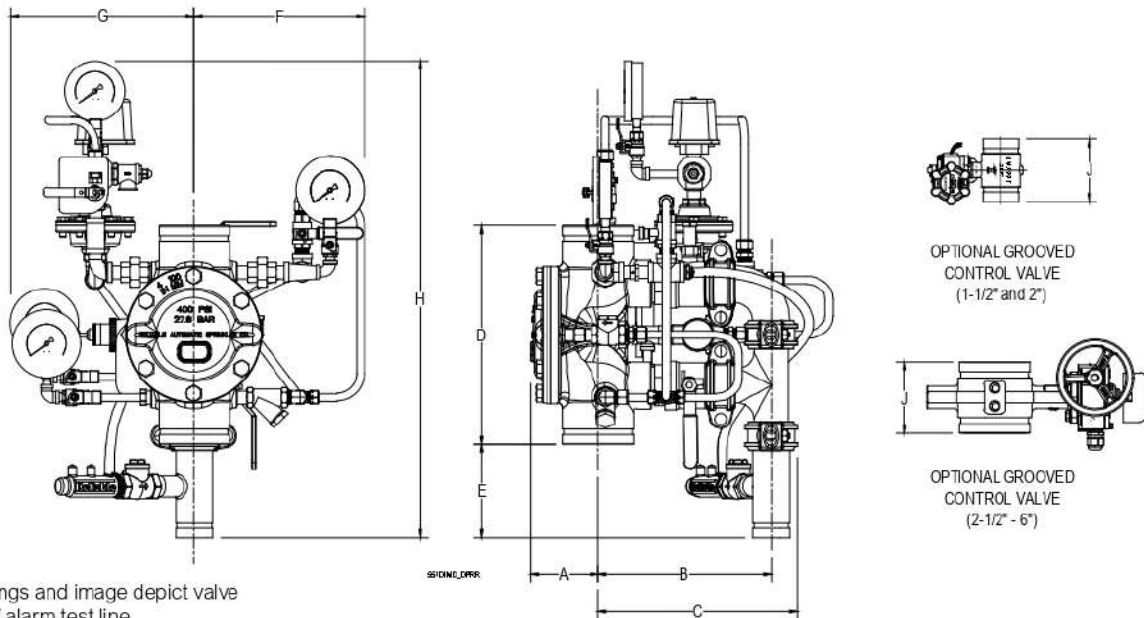
Approvals

FM Approved



Model DDV Deluge Valve with Dry Pilot Line Pressure Regulating Trim Dimensions

Figure 8



Note: Drawings and image depict valve with *optional* alarm test line.

Model DDV Dimensions - in. (mm)

Table K

Valve Size	A	B	C	D	E	F	G	H	J
1-1/2" (40mm)	3 (76)	9-1/4 (235)	10 (254)	8 (203)	2-1/2 (64)	10-1/8 (257)	10-1/2 (267)	20-1/4 (514)	4 (102)
2" (50mm)	3 (76)	9-1/4 (235)	10 (254)	8 (203)	2-1/2 (64)	10-1/8 (257)	10-1/2 (267)	20-1/4 (514)	4-1/8 (104)
2-1/2" (65mm) & 76mm	3-1/2 (89)	11-3/4 (298)	12-1/2 (318)	11 (279)	3-1/8 (79)	10-7/8 (276)	11-1/4 (286)	24-3/4 (629)	3-7/8 (98)
3" (80mm)	3-1/2 (89)	11-3/4 (298)	12-1/2 (318)	11 (279)	3-1/8 (79)	10-7/8 (276)	11-1/4 (286)	24-3/4 (629)	3-7/8 (98)
4" (100mm)	4-3/8 (111)	11-1/4 (285)	12-7/8 (327)	14 (356)	6 (152)	11-3/8 (289)	12 (305)	30-1/2 (775)	4-9/16 (116)
6" (150mm) & 165mm	6-1/2 (165)	11-3/4 (298)	13-3/8 (340)	18 (457)	4 (102)	12-7/8 (327)	13-7/8 (353)	30-1/2 (775)	5-7/8 (149)

General Operation

The dry pilot detection line is a pneumatically pressurized extension of the diaphragm chamber. The Reliable Model LP Dry Pilot Actuator serves to separate the hydraulic pressure in the diaphragm chamber from the pneumatic pressure in the dry pilot line. Under normal conditions the thermal detectors on the dry pilot line are closed which maintains air or nitrogen pressure on the top side of the Model LP Actuator diaphragm. When properly seated, the Model LP Actuator diaphragm closes the waterway between the Model DDV diaphragm chamber and the drain. The Manual Emergency Release valve, connected directly to the release trim of the diaphragm chamber, is also closed. The captured hydraulic pressure holds the diaphragm closed against the valve seat. When a thermal detector in the protected area opens, pneumatic pressure is released from the dry pilot detection line and the Model LP actuator causing the actuator to open. Hydraulic pressure in the diaphragm chamber is relieved through the Model LP Actuator allowing the diaphragm to relax and water to flow through the Model DDV valve. Alternately, when the Manual Emergency Release valve is opened, hydraulic pressure is directly relieved to the discharge side of the deluge valve, allowing the diaphragm to relax and water to flow through the Model DDV valve. The adjustable pilot valve on the release trim decreases or increases pressure in the diaphragm chamber, thereby regulating the outlet (downstream) flowing pressure.

Note: The system pressure gauge on the DDV valve provides an indication of the pressure within the system, but accuracy may be affected by turbulence across the diaphragm created during water flow. Where a more accurate measurement of residual pressure is required, a pressure gauge should be installed downstream of the DDV valve on a straight run of pipe of sufficient length to provide an accurate reading of residual pressure.

Setup Procedure

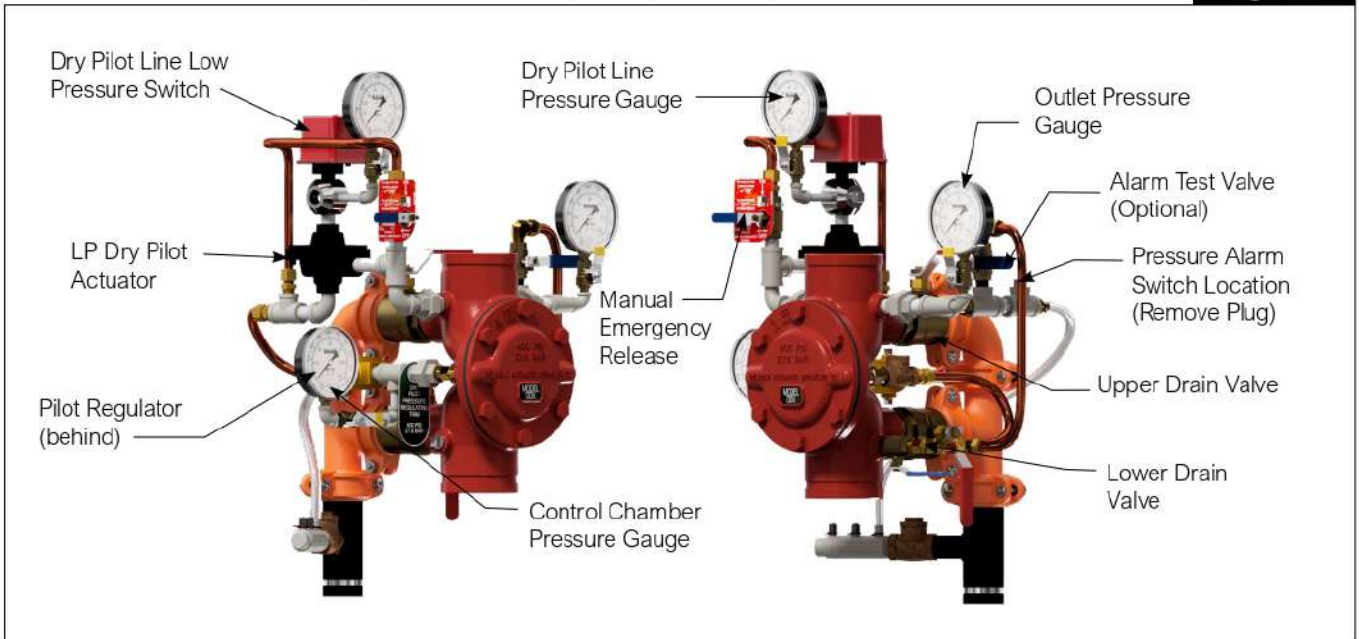
1. Ensure the system has been properly drained, and all parts of the system that may have been affected by fire are inspected and, if necessary, replaced.
2. Ensure the dry pilot line detection system is in proper working order and is pressurized with air or nitrogen in accordance with Table J.
3. Place the air or nitrogen supply system into automatic operation.
4. Ensure that the Manual Emergency Release Valve and Alarm Test Valve (if present) are closed.
5. Open the Upper Drain Valve.
6. Partially open the Lower Drain Valve.
7. Slightly open the Main Water Supply Control Valve.
8. Once water begins to flow through the Lower Drain Valve, slowly close Lower Drain Valve.
9. Allow hydraulic pressure to stabilize on the diaphragm control face and seal the diaphragm.
10. Observe if water flows through the Upper Drain Valve. If no flow occurs, the deluge valve diaphragm is sealed.
11. Using the Diaphragm Chamber Pressure Gauge, confirm that full hydraulic pressure is present in the diaphragm control chamber.
12. Close the Upper Drain Valve after any residual water has drained from system.
13. Slowly open the Main Water Supply Control Valve. Verify that the Water Control Valve is fully open and properly monitored.
14. Secure the handle of the Manual Emergency Release Valve in the closed position with a cable tie.
15. Fully reset fire alarm panel to clear any active signals.
16. Notify the proper authorities, building occupants, and those responsible for monitoring the system that the system has been placed into service.

Shutdown Procedure

1. Close the main water supply control valve.
2. Close the valve(s) controlling air or nitrogen supply to the dry pilot detection line.
3. Open the Upper Drain Valve and Lower Drain Valve to drain the system.
4. Open all auxiliary drain valves throughout the fire protection system, closing them when fully drained.
5. Inspect and replace any sections of the fire protection system and dry pilot detection line that may have been damaged due to fire.

Model DDV Deluge Valve with Dry Pilot Pressure Regulating Trim Components

Figure 9

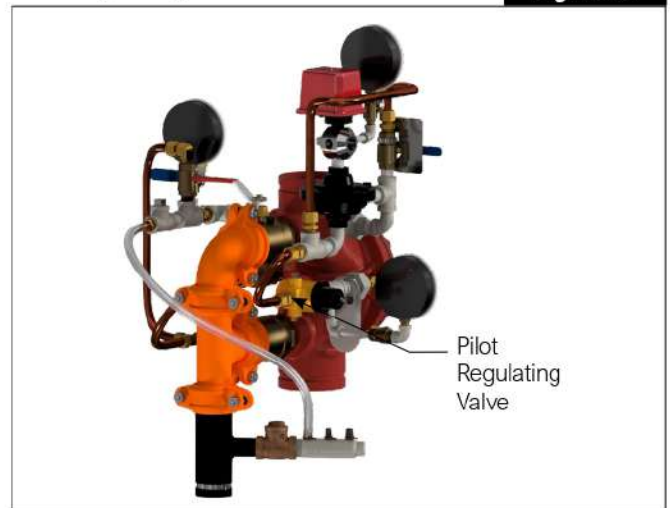


Pressure Adjustment (Refer to Fig. 10)

1. Loosen the lock nut on the Pilot Regulating Valve adjustment screw.
2. Operate a manual or automatic release to open the Model DDV valve. **Note:** This will allow water to flow into the fire protection system.
3. Turn the adjustment screw of the pilot regulating device clockwise to increase downstream flowing pressure of the system, or counterclockwise to decrease downstream flowing pressure of the system.
4. Adjust in 1/2 turns and allow time for the valve to stabilize at the new set point.
5. When the desired outlet pressure is reached, securely tighten the locknut.
6. Close the main water control valve and drain the system.
7. Reset the system in accordance with the setup procedure.

Pilot Regulating Valve Location

Figure 10



Model DDV Hydraulic Friction Loss Data

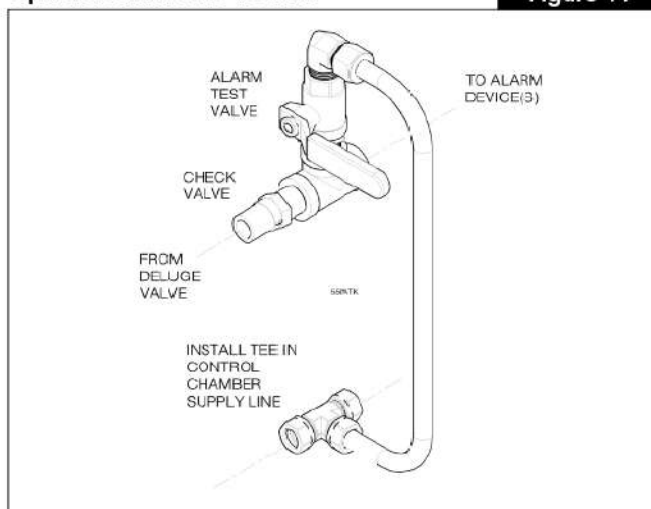
Table L

Valve Size	Cv Flow Coefficient gpm/(psi) ^{1/2}	Kv Flow Coefficient m ³ /h/(bar) ^{1/2}	Approximate Equivalent Length ft (m) C= 120 Sch 40 Steel Pipe	Approximate Equivalent Length ft (m) C= 100 Sch 40 Steel Pipe
1-1/2" (40mm)	81.6	70	4.6 (1.4)	3.3 (1.0)
2" (50mm)	110.5	95	8.8 (2.7)	6.3 (1.9)
2-1/2" (65mm)	144	124	12.9 (3.9)	9.2 (2.8)
76mm, 3" (80mm)	182	157	24.1 (7.3)	17.2 (5.2)
4" (100mm)	393	339	28.6 (8.7)	20.4 (6.2)
6" (150mm), 165mm	815	703	52.2 (15.9)	37.2 (11.3)
8" (200mm)	1455	1254	59.7 (18.2)	42.6 (13.0)

Note: The Cv flow coefficient (amount of flow to generate a 1 psi loss) was used to calculate the approximate equivalent length.

Optional Alarm Line Test Kit

Figure 11



Note: When installed in the control chamber supply line, permits testing of alarm devices without the need to operate the Diaphragm Deluge Valve.

Installation

The Model DDV valve should be installed in accordance with NFPA 13, "Standard for the Installation of Sprinkler Systems," as well as the requirements of any authorities having jurisdiction. Failure to follow installation instructions and/or revisions to the trim arrangement of the valve may void the warranty and listing of the valve. Verify compatibility of the Model DDV valve's materials with the water supply and the environment where the valve will be installed prior to installation. Do not apply lubricants, sealants, or other chemicals to the diaphragm or seat. The Model DDV valve must be installed in a location where the temperature is maintained as a minimum of 40°F (4°C). Heat tracing of the valve and trim is not permitted. Design and installation of the detection and release system must be performed in accordance with applicable NFPA standards and the authority having jurisdiction. For Electric Release Valves, at least one electric manual release should be installed near the release control panel to facilitate commissioning and routine testing of the system. Drain should be piped to a location that will avoid damage to property and injury to personnel.

Maintenance

The owner is responsible for maintaining the fire protection system in proper operating condition. Any system maintenance or testing that involves placing a control valve or detection/control system out of service may eliminate the fire protection that is provided by the fire protection system.

The Reliable Model DDV valve and associated equipment shall periodically be given a thorough inspection and test. NFPA 25, "Inspection, Testing and Maintenance of Water Based Fire Protection Systems," provides minimum maintenance requirements. System components shall be tested, operated, cleaned, and inspected at least annually, and parts replaced as required.

Reliable recommends that the diaphragm be replaced every 10 years or more frequently if inspections identify wear warranting more frequent replacement.

Recommended torque for cover plate bolts is as follows:

- 1-1/2" (40 mm) & 2" (50 mm) = 30 (+/- 5) ft-lb
- 2-1/2" (65 mm), 76 mm, & 3" (80 mm) = 50 (+/- 5) ft-lb
- 4" (100 mm) = 70 (+/- 5) ft-lb
- 6" (150 mm) & 165 mm = 130 (+/- 5) ft-lb
- 8" (200mm) = 200 (+/-5) ft-lb

Replacement Diaphragm

- 1-1/2" & 2" - PN 95277620
- 2-1/2", 76mm, & 3" - PN 95277630
- 4" - PN 95277640
- 6" & 165mm - PN 95277660
- 8" - PN 95277680

Guarantee

For Reliable Automatic Sprinkler Co., Inc. guarantee, terms, and conditions, visit www.reliablesprinkler.com.

Ordering Information

Specify the following when ordering:

Valve Model

- DDV

Valve Size

- 1-1/2" (40mm)
- 2" (50mm)
- 2-1/2" (65mm)
- 76 mm
- 3" (80mm)
- 4" (100mm)
- 6" (150mm)
- 165 mm
- 8" (200mm)

End Configuration

- Grooved, flanged, or threaded (reference Table A)

Operational Trim

- Electric Actuation 175 psi (12.7 bar)
- Electric Actuation 300 psi (20.7 bar)
- Wet Pilot
- Dry Pilot
- Dry Pilot Pressure Regulating

Drain Trim Options

- No Drain Valves
- Single Drain Valve
- Two Drain Valves
- Full Drain Trim (**Note:** Full Drain Trim option will arrive disconnected at the couplings/unions)

Grooved Control Valve Option

- No control valves
- Water supply (lower) control valve only
- Both water supply (lower) and service (upper) control valves

Note: Control valve option is not available on the 76mm and 165mm systems.

Pressure Gauges

- 0-300 psi (20.7 bar) (standard)
- 0-600 psi (41.4 bar) (optional)

(Optional) Alarm Line Trim

Note: When included on a fully assembled valve, the alarm line test option is designated by a 4, 5, 6, or 7 in the 9th digit of the production part number (see below). If ordered separately as a loose kit, use PN 6501040001.

(Optional) Alarm Pressure Switch

- PN 6990006382

Model DDV Ordering Information Part Number

Figure 11

6507 U V W X Y Z



End Connections U	Valve Size V	Trims W	Control Valve ⁽¹⁾ X	Drains Y	Gauges Z
0 = Groove/Groove	0 = 1-1/2" (40mm) Valve	0 = Wet Pilot	0 = W/O Control Valve	0 = W/ Drain Plugs, W/O Alarm Test	0 = 0-300 psi
1 = Flange/Flange Class 150	2 = 2" (50mm) Valve	1 = Dry Pilot	1 = W/ Control Valve	1 = W/ 1 Drain Valve, W/O Alarm Test	1 = 0-600 psi
2 = Flange/Flange Class 300	1 = 2-1/2" (65mm) Valve	2 = Electric	2 = W/ Control Valve & Spool	2 = W/ 2 Drain Valves, W/O Alarm Test	
3 = Flange/Flange PN16	7 = 76mm Valve	5 = Dry Pilot Pressure Regulating	3 = W/ 2 Control Valves	3 = W/ Full Drain, W/O Alarm Test	
4 = Flange/Flange BS-E	3 = 3" (80mm) Valve	Note: Pressure regulating trim is not available for 8" valve.	4 = W/ 2 Control Valves & Spool	4 = W/ Drain Plugs, W/ Alarm Test	Solenoid Valve⁽²⁾ Z
5 = Thread/Thread NPT	4 = 4" (100mm) Valve			5 = 1 Drain Valve, W/ Alarm Test	0 = 175 psi Solenoid
6 = Thread/Thread ISO 7/1	6 = 6" (150mm) Valve			6 = W/ 2 Drain Valves, W/ Alarm Test	1 = 300 psi Solenoid
	5 = 165mm Valve			7 = W/ Full Drain, W/ Alarm Test	
	8 = 8" (200mm) Valve				

Notes:

⁽¹⁾ Control valve and spool piece not available for 76mm and 165mm systems. "X" must be 0 for 76mm and 165mm systems.

⁽²⁾ Use when "W" = 2 to select either solenoid pressure rating. All gauges will be 0 - 300 psi.



Features

- Simple configuration for easy maintenance.
- No False Alarm
- Outstanding Durability
- Anti-corrosive Trim
- Reliable Operation
- Field replaceable diaphragm and clapper seat

Description

LIFECO Preaction & Deluge Valve with external resetting function is a differential latch type valve which designed for fire protection system.

The external resetting feature of the LF-DV valve provides easy resetting of a pre-action system without opening the valve cover for manual repositioning of the clapper and latch mechanism.

Actuation of electric system automatically releases the LF-DV valve by allowing water to flow into the sprinkler piping system and to be discharged from any sprinklers that is open.

Single Interlock Preaction System:

Single Interlock Preaction System is generally used to protect area where there is a danger of water damage that might result from malfunction of automatic sprinkler or piping. Typically, such areas include computer rooms, storage areas for valuable artifacts, libraries and archives.

Single Interlock Preaction System is also effectively used to protect properties where the pre-alarm might activate (fire) prior to sprinkler discharge that condition may allow time for fire extinguishment by alternate suppression.

When operation of the electrical detection device, heat sensitive detector and smoke detector, electrical manual control station signals the valve releasing panel to operate the solenoid valve. In turns, the operated solenoid valve opens to release water from the diaphragm chamber faster than when it replenished through the provided 3/8 restriction.

Materials

Body/Cover/Clapper	Gray cast iron
Seat ring	Bronze
Diaphragm	EPDM
Clapper seat	VITON

Deluge Valve Equipped with Trim:

When the deluge valve operates, it continually vents the diaphragm chamber to prevent the deluge valve from the resetting condition. Deluge valve can only be reset after the system is taken out of service and trim piping is depressurized and drained.

In Service Condition:

System pressure is supplied to the diaphragm chamber through the restricted priming line equipped with y-strainer. System water supply pressure which trapped in the diaphragm chamber holds the clapper on seat due to its area differential design.

In Activate Condition:

When the release system operates, pressure is released from the diaphragm chamber with the speed that is faster than when it is supplied through the setting pipeline. Water supply pressure forces the clapper off seat allowing water to flow through the outlet and into the system and alarm devices.

Electric Actuation Trim:

To actuate the Preaction & deluge valve electrically, the solenoid valve is provided to drain the water from the diaphragm chamber of the valve body. The pressure switch is provided to activate an electric alarm, to shut down the desired equipment or to give alarm signal to the panel.

Dry-Pilot/Wet-Pilot Actuation Trim:

Dry-pilot actuation trim provides for connection of a detection system consisting of dry-pilot line sprinkler (as a heat detectors) containing air under pressure. Wet-pilot actuation trim also wet-pilot line sprinkler containing pressurized water. Due to release of any one of the actuation devices, air pressure or water pressure of the pilot line is depressurized.

The pressure switch is provided to activate an electric alarm, to shut down the desired equipment or to give alarm signal to the panel.

Specification

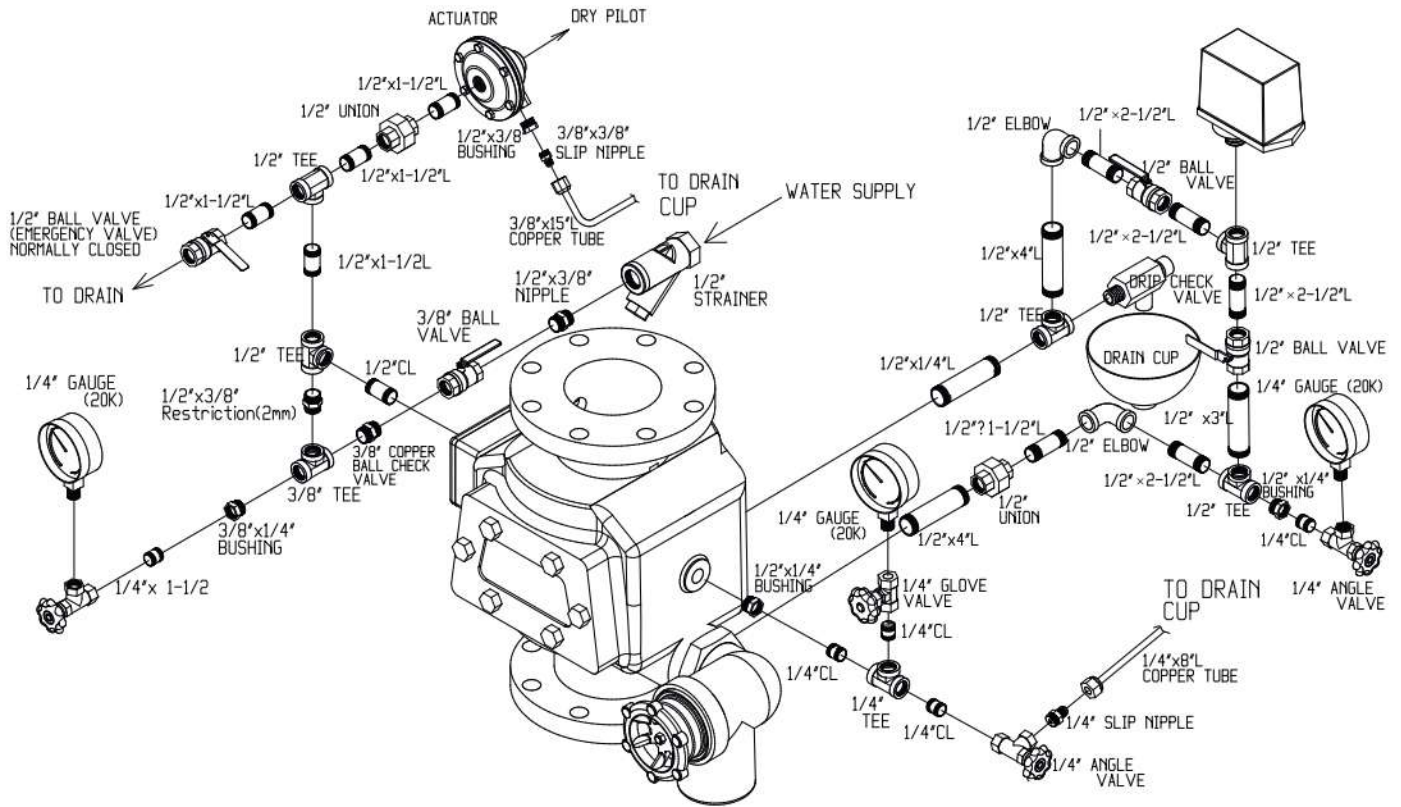
Model	LF-DV100A & LF-DV150A
Flange connection	ANSI B16.1 FF Class 150
Maximum working Pressure	175 psi (12 bar)
Hydrostatic Test Pressure	25 Bar (350 psi)
Net Weight	4" (100A) - 59kg (included trim) 6" (150A) - 79kg (included trim)

Part List

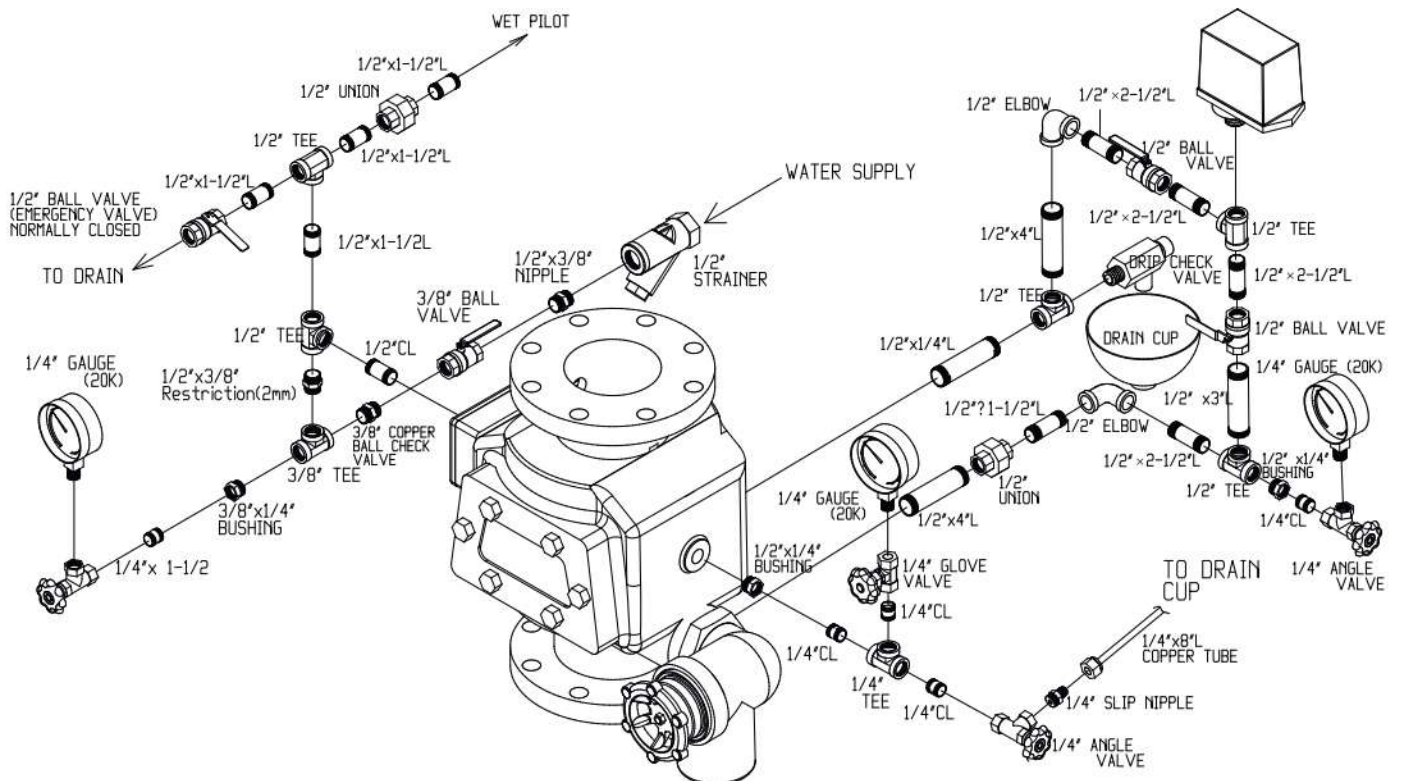
1	Body/Cover	Cast Iron
2	OS&Y valve	-
3	Air control valve	-
4	Pressure switch	-
5	Water supply valve	-
6	Solenoid valve	-
7	Drip check valve	-
8	PS test valve	-
9	PS signal control valve	-
10	Manual valve	-



Dry Pilot Actuation Trim



Wet Pilot Actuation Trim





Electric Actuation Trim

