Reliable®

# Model DDX Deluge Valve
## 2" (50 mm), 2½" (65 mm), 3" (80 mm), 76 mm, 4" (100 mm), 6" (150 mm), 165 mm & 8" (200 mm)

Bulletin 518

## Features

1. Differential Latch-type, lightweight, dependable construction.
2. Easily trimmed for releasing by:
   - Manual pull stations
   - Wet pilot sprinklers
   - Dry pilot actuators
   - Solenoid valves
3. Drop in or Screw in seat & clapper assembly simplifies maintenance.
4. Bronze or Stainless steel seat with O-ring seals resists corrosion and leakage.
5. Pressure-actuated clapper facing provides dependable seal.
6. Reset externally. Cover removal is not required.
7. Grooved inlet and outlet connections Flanged connections available on 4" (100mm), 6" (150mm), 165mm & 8" (200mm).
8. Drain valve to drain standing water column.
9. Valve latches in open position. No pressure-operated relief valve is required.
10. Pressure rating of 250 psi (17,2 bar) or 300 psi (20,7 bar) (4" (100mm), 6" (150mm) & 165mm Only).

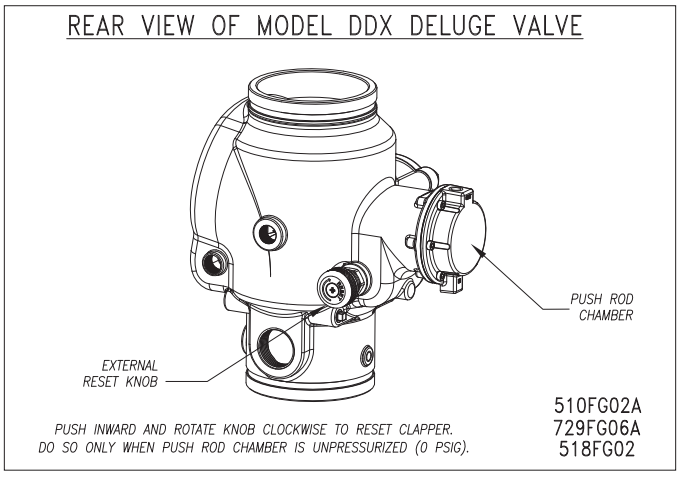



Fig. 2

518 Fig. 1

### Listings & Approvals

(Only when used with Reliable's Trim Sets.)

1. Listed by Underwriters Laboratories, Inc. and UL certified for Canada (cULus).
2. Certified by Factory Mutual Approvals (FM).
3. NYC MEA 258-93-E
4. LPCB (4" (100mm), 165mm, 6" (150mm) & 8" (200mm) only)
5. CE
6. VdS Schadenverhütung GmbH

The Reliable Model DDX Deluge Valve is a hydraulically operated, latching clapper-type valve used to control the water supply to a deluge or preaction system. Deluge systems use open sprinklers or nozzles as discharge outlets in the fire area, while preaction systems use closed sprinklers or nozzles. Both systems use separate detection devices to control the operation of the Deluge Valve. Three simple trim arrangements allow for actuation of the Reliable Model DDX Deluge Valve by utilizing manual, hydraulic, pneumatic, or electrical devices. These devices include break glass stations, wet pilot sprinklers, dry pilot sprinklers, thermal detectors, and smoke detectors.

The Reliable Model DDX Deluge Valve can be reset externally, without cover removal. This is accomplished by pushing in and turning the external reset knob at the rear of the Deluge Valve (see Fig. 2).

# DDX VALVE CLAPPER IN "OPEN", "CLOSED" AND "LATCHED" POSITIONS

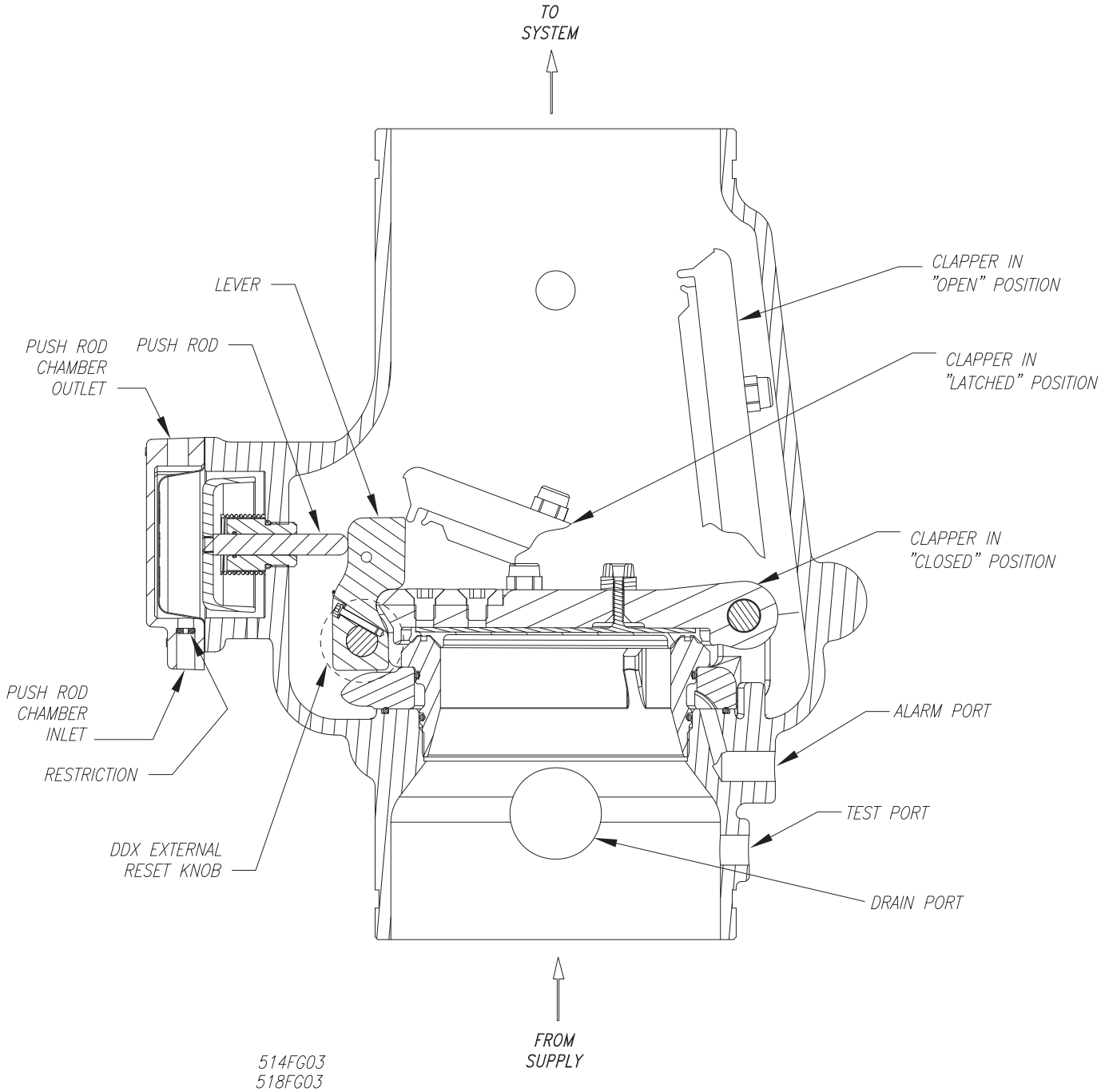



Fig. 3

## Valve Operation

The Reliable Model DDX Deluge Valve is shown in both closed and open positions in Fig. 3. In the closed position, the supply pressure acts on the underside of the clapper and also on the push rod through the push rod chamber's inlet restriction. The resultant force due to the supply pressure acting on the push rod is multiplied by the mechanical advantage of the lever and is more than sufficient to hold the clapper closed against normal supply pressure surges.

When a fire is detected, a releasing device vents the push rod chamber to atmosphere through the chamber's outlet. Since the pressure cannot be replenished through the inlet restriction as rapidly as it is vented, the push rod chamber pressure falls instantaneously. When the push rod chamber pressure approaches approximately one-third of the supply pressure, the upward force of the supply pressure acting beneath the clapper overcomes the lever-applied force thereby opening the clapper.

Once the clapper has opened, the lever acts as a latch, preventing the clapper from returning to the closed position. Water from the supply flows through the Deluge Valve into the system piping. Water also flows through the Deluge Valve's alarm outlet to the alarm devices.

After system shutdown, resetting the Model DDX Deluge Valve is quite simple. Doing so only requires pushing in and turning the reset knob at the rear of the valve (see Fig. 2). The external reset feature of the Model DDX Deluge Valve provides a means for simple, economical system testing, which is one essential facet of a good maintenance program. The external reset feature does not, however, eliminate another important facet of good maintenance, namely, periodic cleaning and inspection of the internal valve parts.

In the event that water builds up inside the valve due to condensate from the air supply system, or water left inside from valve system testing, a drain is available for venting. After closing the main supply valve, a small valve over the drain cup can be opened slightly until the water inside the valve body and the main pipe column has drained.

Whenever ambient temperature conditions are high, the water temperature in the Model DDX Deluge Valve's pushrod chamber could possibly increase, thereby increasing the pressure in the chamber to values exceeding the rated pressure of the system. In an indoor installation where standard room temperatures are exceeded, a pressure relief kit may be needed. Pressure relief kit, P/N 6503050001, can be installed into the pushrod chamber's releasing line to limit the pressure to 250 psi (17,2 bar).

Reliable Model DDX Deluge Valve with associated trim sizes 2" (50 mm), 2½" (65 mm), 76 mm, 3" (80 mm), 4" (100 mm), 165 mm, 6" (150 mm) or 8" (200 mm), are rated for use at a minimum water supply pressure of 20 psi (1,4 bar) and a maximum water supply pressure of 250 psi (17,2bar) for 2" (50mm), 2½" (65mm), 3" (80mm), 76mm & 8" (200mm) valve sizes and 300 psi (20,7 bar) for 4" (100mm), 6" (150mm) & 165mm valve sizes.. Water supplied to the inlet of the valve and to the push rod chamber must be maintained between 40°F (4°C) and 140°F (60°C).

## Detection and Actuation

In general, the Reliable Model DDX Deluge Valve can be released by any Reliable UL Listed or FM Approved device that opens sufficiently to vent the push rod chamber in response to a fire. The releasing device is simply connected to the push rod chamber's outlet. When the releasing device operates and vents the push rod chamber, the Deluge Valve opens.

Typical releasing devices include hydraulic manual emergency stations, Model F1-FTR Fixed Temperature Detectors on wet pilot lines, dry pilot actuators, and solenoid valves. Model F1-FTR Detectors perform both Deluge Valve releasing and fire detection functions with wet pilot lines.

The use of a solenoid valve for Deluge Valve releasing enables various types of electrical fire detection devices to be used. Typical detection devices include electrical emergency pull stations, thermal detectors, and ionization or photoelectric smoke detectors. Electrical detection and releasing equipment used in Electrical Systems is described in Bulletin 700, for both deluge and preaction systems.

## Model DDX Deluge Valve Description

1. Rated working pressure:
   Valve & System - 250 psi (17.2 bar) for the 2" (50mm), 2½" (65mm), 76mm, 3" (80mm) and 8" (200mm) valve sizes and 300 psi (20,7 bar) for the 4" (100mm), 165mm and 6" (150mm) valve sizes.
2. Factory tested to a hydrostatic pressure of 500 psi (34,5 bar) for the 2" (50mm), 2½" (65mm), 76mm, 3" (80mm) and 8" (200mm) valve sizes and 600 psi (41,4 bar) for the 4" (100mm), 165mm and 6" (150mm) valve sizes. (Valve only)
3. End and trim connections:
   - ANSI/AWWA C606 grooved inlet and outlet

| Nominal Pipe Size | Outlet Diameter | Groove Diameter | Groove Width | Outlet Face to Groove |
|---|---|---|---|---|
| 2" (50 mm) | 2.375" (60mm) | 2.250" (57mm) | 11/32" (9.0mm) | 5/8" (16mm) |
| 2½" (65 mm) | 2.875" (73mm) | 2.720" (69mm) | 11/32" (9.0mm) | 5/8" (16mm) |
| 76 mm | 3.000" (76mm) | 2.845" (72mm) | 11/32" (9.0mm) | 5/8" (16mm) |
| 3" (80 mm) | 3.500" (89mm) | 3.344" (85mm) | 11/32" (9.0mm) | 5/8" (16mm) |
| 4" (100 mm) | 4.500" (114mm) | 4.334" (110mm) | 3/8" (9.5mm) | 5/8" (16mm) |
| 165 mm | 6.500" (165mm) | 6.330" (161mm) | 3/8" (9.5mm) | 5/8" (16mm) |
| 6" (150 mm) | 6.625" (168mm) | 6.455" (164mm) | 3/8" (9.5mm) | 5/8" (16mm) |
| 8" (200 mm) | 8.625" (219mm) | 8.441" (214mm) | 7/16" (11mm) | 3/4" (19mm) |

   - Threaded openings Per ANSI B 2.1

- Flange Dimensions

| Flange Type: | Nominal Pipe Size | Bolt Circle Diameter | Bolt Hole Diameter | Flange Outside Diameter | Flange Thickness | Number of Bolts |
|---|---|---|---|---|---|---|
| AMSE B16.5 Class 150 | 4" (100mm) | 7½" (191mm) | ¾" (19mm) | 9" (229mm) | 15/16" (24mm) | 8 |
| ISO 7005-2 PN16 | 4" (100mm) | 7 3/32" (180mm) | ¾" (19mm) | 9" (229mm) | 15/16" (24mm) | 8 |
| AMSE B16.5 Class 150 | 6" (150mm) | 9½" (241mm) | 7/8" (22mm) | 11" (279mm) | 15/16" (24mm) | 8 |
| ISO 7005-2 PN16 | 6" (150mm) | 9 7/16" (240mm) | 29/32" (23mm) | 11" (279mm) | 15/16" (24mm) | 8 |
| AMSE B16.5 Class 150 | 8" (200mm) | 11¾" (298mm) | 7/8" (22mm) | 13½" (343mm) | 1" (25.4mm) | 8 |
| ISO 7005-2 PN16 | 8" (200mm) | 11 5/8" (295mm) | 29/32" (23mm) | 13½" (343mm) | 1" (25.4mm) | 12 |

4. Valve Exterior's Color:

| Valve Size | Color |
|---|---|
| 2" (50 mm) | Black or Red |
| 2½" (65 mm) | Black or Red |
| 76 mm | Red |
| 3" (80 mm) | Black or Red |
| 4" (100 mm) | Black or Red |
| 165 mm | Red |
| 6" (150 mm) | Black or Red |
| 8" (200 mm) | Black or Red |

5. Face to face dimensions:

| Valve Size: | End Connection: | End to End: |
|---|---|---|
| 2" (50mm), 2½" (65mm), 76mm & 3" (80mm) | Groove/ Groove | 12½" (318mm) |
| 4" (100mm) | Groove/ Groove | 14" (356mm) |
| | Flange/ Groove | 16" (406mm) |
| | Flange/ Flange | 16" (406mm) |
| 6" (150mm) & 165mm | Groove/ Groove | 16" (406mm) |
| | Flange/ Groove | 19" (483mm) |
| | Flange/ Flange | 19" (483mm) |
| 8" (200mm) | Groove/ Groove | 19 3/8" (492mm) |
| | Flange/ Flange | 21¼" (540mm) |

6. Valve Shipping Weight:

| Valve Size: | End Connection: | Weight: |
|---|---|---|
| 2" (50mm), 2½" (65mm), 76mm & 3" (80mm) | Groove/ Groove | 34 lbs (15 kg) |
| 4" (100mm) | Groove/ Groove | 64 lbs (29 kg |
| | Flange/ Groove | 79 lbs (36 kg) |
| | Flange/ Flange | 92 lbs (42 kg) |
| 6" (150mm) & 165mm | Groove/ Groove | 95 lbs (43 kg) |
| | Flange/ Groove | 122 lbs (56 kg) |
| | Flange/ Flange | 138 lbs (69 kg) |
| 8" (200mm) | Groove/ Groove | 148 lbs (67 kg) |
| | Flange/ Flange | 197 lbs (90 kg) |

7. Trim Shipping Weight:

| Trim Configuration | 2" (50 mm), 2½" (65 mm), 3" (80 mm) & 76 mm | 4" (100 mm), 6" (150 mm), 8" (200 mm) & 165 mm |
|---|---|---|
| Wet Pilot Deluge | 31 lbs (14 kg) | 37 lbs (17 kg) |
| Dry Pilot Deluge | 39 lbs (18 kg) | 50 lbs (23 kg) |
| Electric Actuation Deluge | 33 lbs (15 kg) | 38 lbs (17 kg) |

8. Friction loss (Expressed in equivalent length of Schedule 40 pipe, based on Hazen & Williams formula:

| Valve Size: | Equivalent Length: | | Cv |
|---|---|---|---|
| | C = 120 | C = 100 | |
| 2" (50mm) | 4.4 ft (1,3 m) | 3.1 ft (1,0 m) | 101 |
| 2½" (65mm) | 6.0 ft (1,8 m) | 4.3 ft (1,3 m) | 236 |
| 76mm | 7.7 ft (2,3 m) | 5.5 ft (1,7 m) | 241 |
| 3" (80mm) | 12.6 ft (3,8 m) | 9.0 ft (2,7 m) | 254 |
| 4" (100mm) | 14 ft (4,3 m) | 10 ft (3,0 m) | 469 |
| 165mm | 29.4 ft (9,0 m) | 20.9 ft (6,4 m) | 886 |
| 6" (150mm) | 29.4 ft (9,0 m) | 20.9 ft (6,4 m) | 886 |
| 8" (200mm) | 53.5 ft (16,3 m) | 38.1 ft (11,6 m) | 1516 |

9. Installation position: Vertical

## Trim Descriptions

The trims for the Reliable Model DDX Deluge Valve are arranged for rapid, easy, and compact attachment, and serve as connection points to Reliable Model C Mechanical Alarms and other devices.

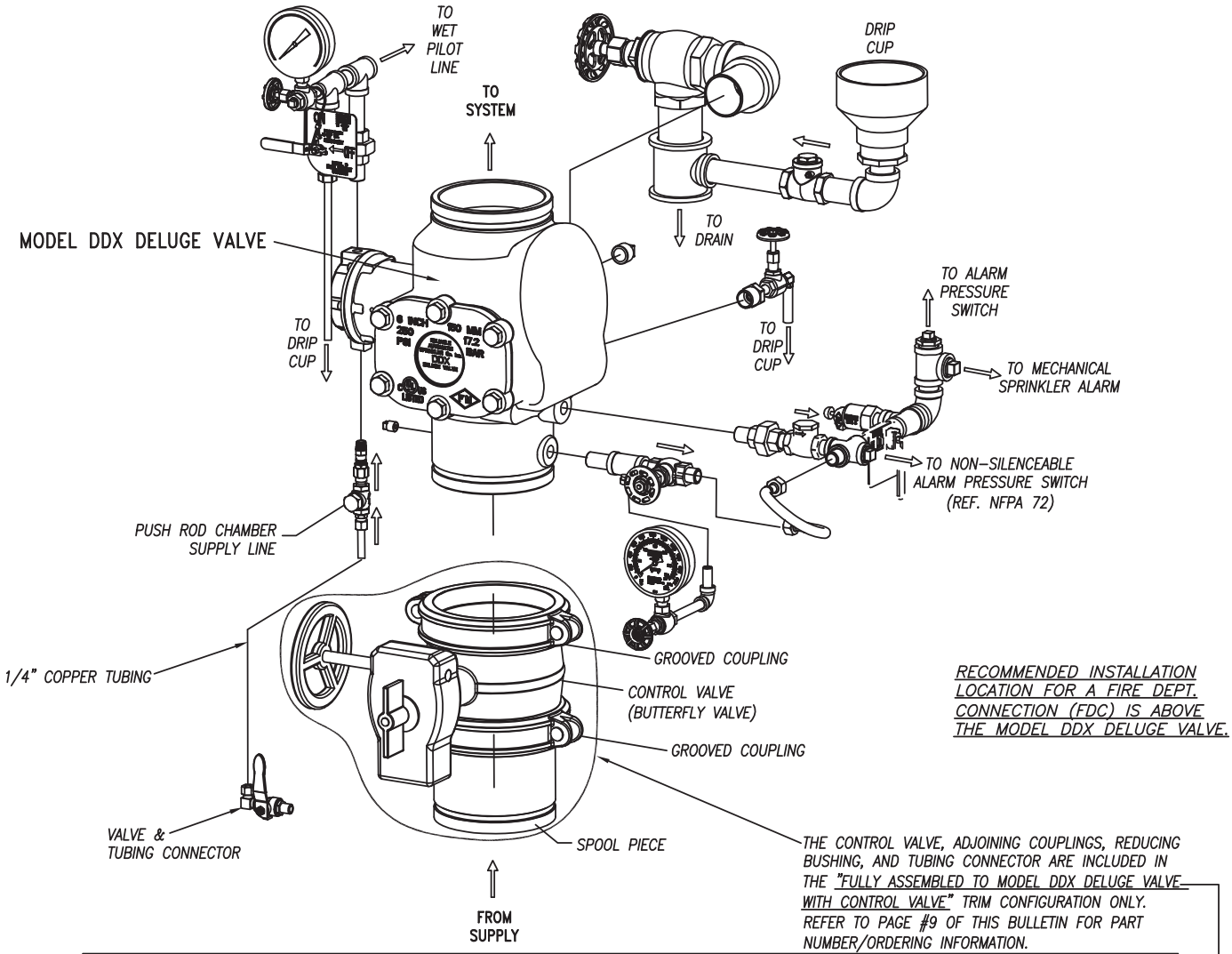
The available Model DDX Deluge Valve trim sets are:

- Wet Pilot Trim
- Dry Pilot Trim
- Electric Actuation Trim

The Wet Pilot Trim (see Fig. 4 or Fig. 5) is used when wet pilot sprinklers or hydraulic manual emergency pull boxes are used for detection and releasing. This trim set provides a one and one quarter main drain for 2" (50mm), 2½" (65mm), 76mm & 3" (80mm) valve sizes or a two inch main drain for 4" (100mm), 6" (150mm), 165mm & 8" (200mm) valve sizes, alarm test, supply pressure gauge, push rod chamber pressure gauge, push rod chamber supply connections, Model B Hydraulic Manual Emergency Station, and a connection for releasing devices.

The Dry Pilot Trim (see Fig. 6 or Fig. 7) is used when dry pilot sprinklers are used as the fire detection means. This trim set includes the Model LP Dry Pilot Line Actuator, air and water pressure gauges, low air pressure switch (for Dry Pilot Line), air pressure relief valve, connections for the air supply and pilot sprinkler lines, a one and one quarter main drain for 2" (50mm), 2½" (65mm), 76mm & 3" (80mm) valve sizes or a two inch main drain for 4" (100mm), 6" (150mm), 165mm & 8" (200mm) valve sizes, alarm test, push rod chamber connections, push rod chamber pressure gauge, and the Model B Hydraulic Manual Emergency Station. Table A provides the recommended air pressure when the dry pilot trim set is used as the actuation means.

# WET PILOT LINE DELUGE TRIM




AVAILABLE TRIM CONFIGURATIONS:
- INDIVIDUAL PARTS (MODEL DDX DELUGE VALVE SOLD SEPARATELY)
- SEGMENTALLY ASSEMBLED (MODEL DDX DELUGE VALVE SOLD SEPARATELY)
- FULLY ASSEMBLED TO MODEL DDX DELUGE VALVE WITHOUT CONTROL VALVE
- FULLY ASSEMBLED TO MODEL DDX DELUGE VALVE WITH CONTROL VALVE*

*NOT AVAILABLE WITH 76MM OR 165MM MODEL DDX VALVE

518FG04

Fig. 4

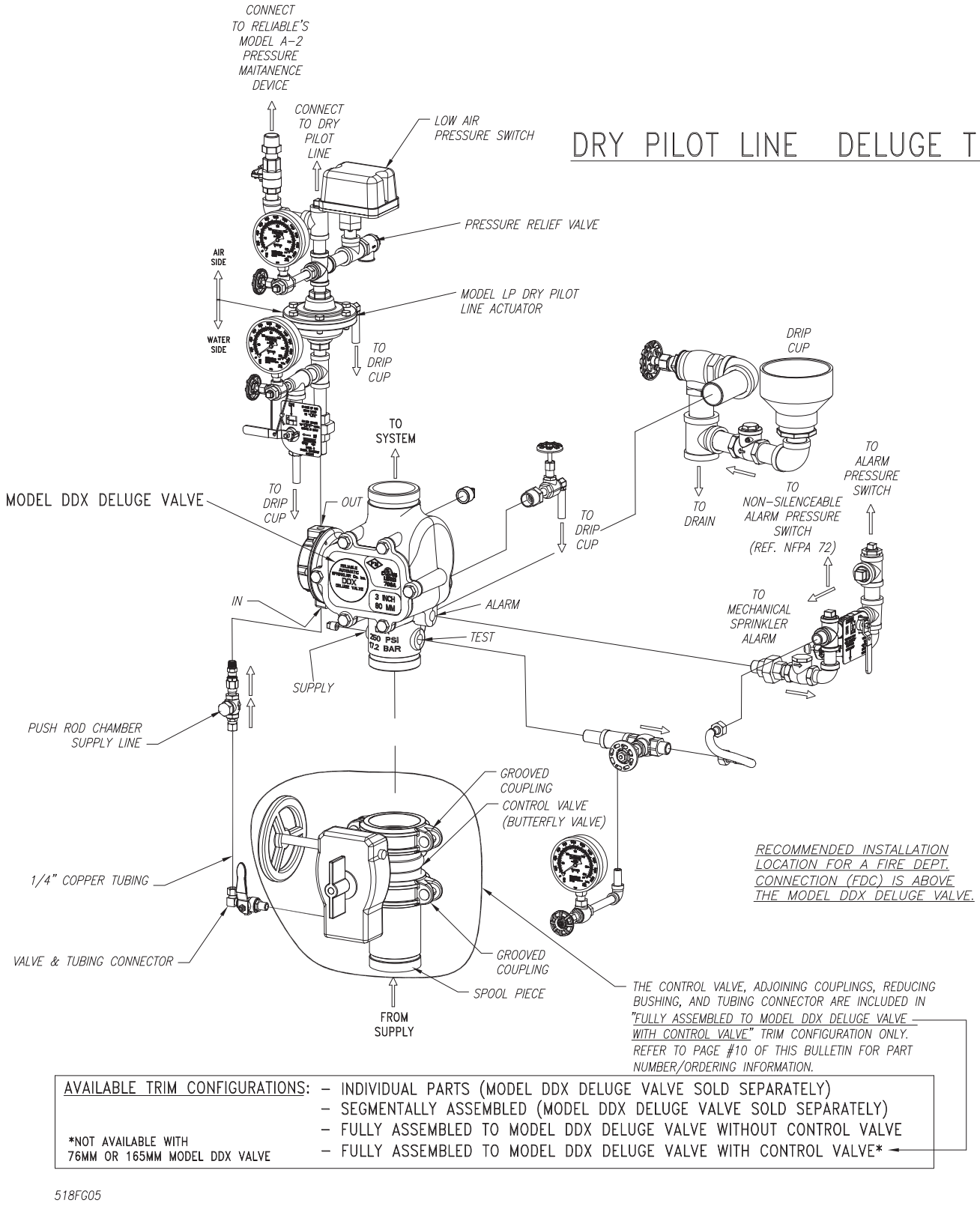
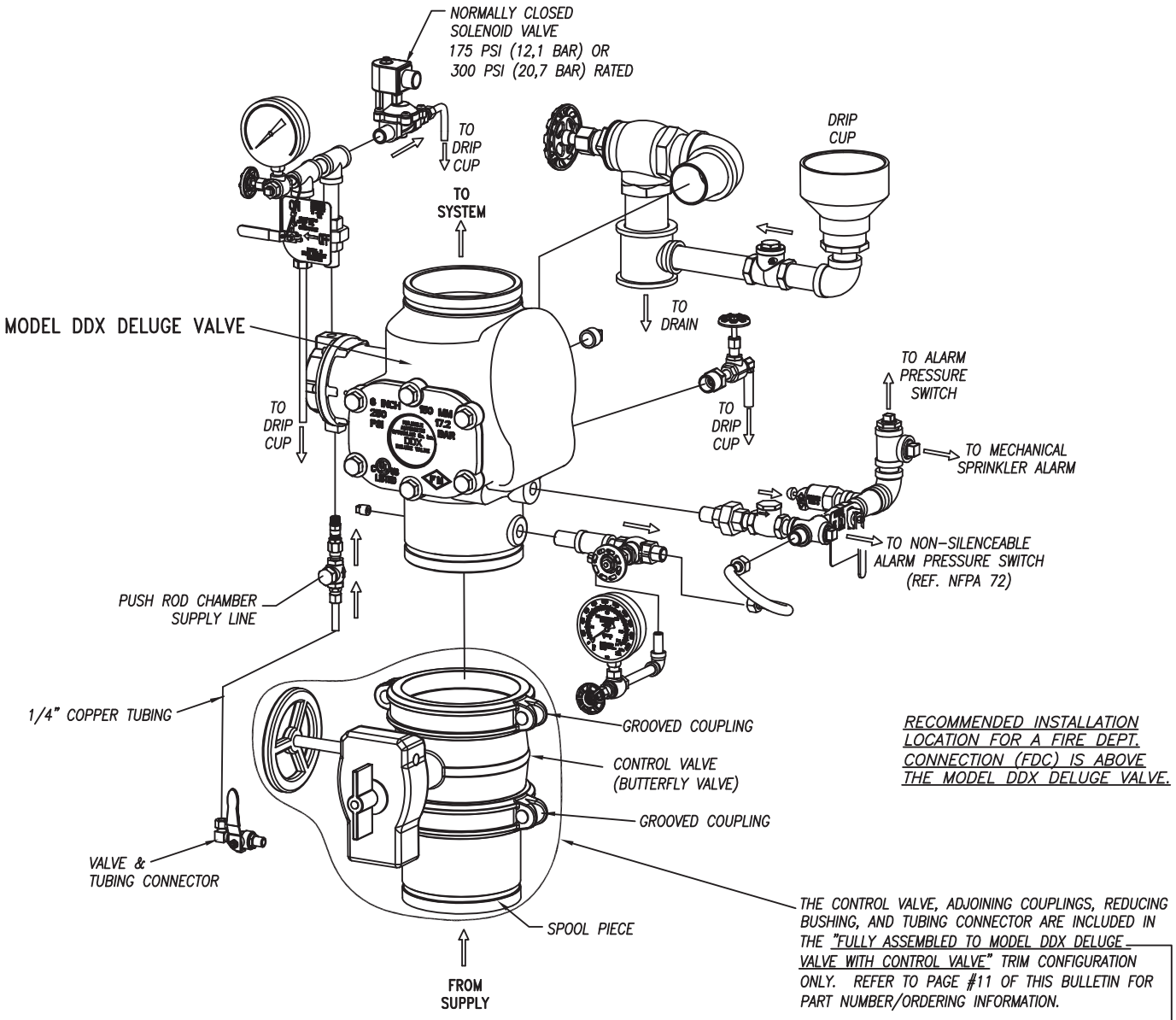

DRY PILOT LINE DELUGE TRIM
CONNECT TO RELIABLE'S MODEL A-2 PRESSURE MAITANENCE DEVICE
CONNECT TO DRY PILOT LINE
LOW AIR PRESSURE SWITCH
PRESSURE RELIEF VALVE
AIR SIDE
WATER SIDE
MODEL LP DRY PILOT LINE ACTUATOR
TO DRIP CUP
DRIP CUP
TO SYSTEM
MODEL DDX DELUGE VALVE
TO DRIP CUP
OUT
TO DRIP CUP
TO DRAIN
TO ALARM PRESSURE SWITCH
TO NON-SILENCEABLE ALARM PRESSURE SWITCH (REF. NFPA 72)
IN
ALARM
TEST
TO MECHANICAL SPRINKLER ALARM
SUPPLY
PUSH ROD CHAMBER SUPPLY LINE
GROOVED COUPLING
CONTROL VALVE (BUTTERFLY VALVE)
1/4" COPPER TUBING
VALVE & TUBING CONNECTOR
GROOVED COUPLING
SPOOL PIECE
FROM SUPPLY
RECOMMENDED INSTALLATION LOCATION FOR A FIRE DEPT. CONNECTION (FDC) IS ABOVE THE MODEL DDX DELUGE VALVE.
THE CONTROL VALVE, ADJOINING COUPLINGS, REDUCING BUSHING, AND TUBING CONNECTOR ARE INCLUDED IN "FULLY ASSEMBLED TO MODEL DDX DELUGE VALVE WITH CONTROL VALVE" TRIM CONFIGURATION ONLY. REFER TO PAGE #10 OF THIS BULLETIN FOR PART NUMBER/ORDERING INFORMATION.
AVAILABLE TRIM CONFIGURATIONS:
- INDIVIDUAL PARTS (MODEL DDX DELUGE VALVE SOLD SEPARATELY)
- SEGMENTALLY ASSEMBLED (MODEL DDX DELUGE VALVE SOLD SEPARATELY)
- FULLY ASSEMBLED TO MODEL DDX DELUGE VALVE WITHOUT CONTROL VALVE
- FULLY ASSEMBLED TO MODEL DDX DELUGE VALVE WITH CONTROL VALVE*
*NOT AVAILABLE WITH 76MM OR 165MM MODEL DDX VALVE
518FG05

Fig. 5

# ELECTRIC ACTUATION DELUGE TRIM




AVAILABLE TRIM CONFIGURATIONS:
- INDIVIDUAL PARTS (MODEL DDX DELUGE VALVE SOLD SEPARATELY)
- SEGMENTALLY ASSEMBLED (MODEL DDX DELUGE VALVE SOLD SEPARATELY)
- FULLY ASSEMBLED TO MODEL DDX DELUGE VALVE WITHOUT CONTROL VALVE
- FULLY ASSEMBLED TO MODEL DDX DELUGE VALVE WITH CONTROL VALVE*

*NOT AVAILABLE WITH 76MM OR 165MM MODEL DDX VALVE

518FG06

Fig. 6

## Table A

| Water Pressure psi (bar) | Pneumatic Pressure to be Pumped into Sprinkler System psi (bar) | |
|---|---|---|
| Maximum | Not Less Than | Not More Than |
| 20 (1.4) | 10 (.7) | 14 (1.0) |
| 50 (3.4) | 12 (.8) | 16 (1.1) |
| 75 (5.2) | 13 (.9) | 17 (1.2) |
| 100 (6.9) | 15 (1.) | 19 (1.3) |
| 125 (8.6) | 16 (1.1) | 20 (1.4) |
| 150 (10.3) | 17 (1.2) | 21 (1.4) |
| 175 (12.1) | 18 (1.2) | 22 (1.5) |
| 200 (13.8) | 19 (1.3) | 23 (1.6) |
| 225 (15.5) | 21 (1.4) | 25 (1.7) |
| 250 (17.2) | 22 (1.5) | 26 (1.8) |
| 275 (19.) | 23 (1.6) | 27 (1.9) |
| 300 (20.7) | 24 (1.7) | 28 (1.9) |

***Note:** During system set-up, a higher pneumatic pressure may be required in order to properly set the Model LP Dry Valve Actuator.

The Electric Actuation Trim (see Fig. 8 or Fig. 9) is used when electric detection and releasing are desired. This trim set includes a solenoid valve (175 psi (12,1 bar) or 300 psi (20,7 bar) rated), one and one quarter main drain for 2" (50mm), 2½" (65mm), 76mm & 3" (80mm) valve sizes or a two inch main drain for 4" (100mm), 6" (150mm), 165mm & 8" (200mm) valve sizes, alarm test supply pressure gauge, push rod chamber pressure gauge, push rod chamber supply connections, and the Model B Hydraulic Manual Emergency Station. Detailed description of electrical operation can be found in Bulletins 707 and 708.

The Model B Hydraulic Manual Emergency Station is a standard item in all trim sets. However, the Model A Hydraulic Manual Emergency Station, described in Bulletin 506, is also available as an option.

All Model DDX Deluge Valves are listed by Underwriters Laboratories, Inc, and certified by UL for Canada (cULus) and certified by Factory Mutual Approvals, only when used with the valve manufacturer's trim sets.

## Ordering Information

Specify:

- **Valve Model & Size**

| Valve Part Numbers | | | |
|---|---|---|---|
| **Valve Size & End Connection** | **Flange Type** | **Color** | **Reliable Part Number** |
| **2" (50mm) Grv/Grv** | N/A | Black | 6103022000 |
| | | Red | 6103022001 |
| **2½" (65mm) Grv/Grv** | N/A | Black | 6103022500 |
| | | Red | 6103022501 |
| **3" (80mm) Grv/Grv** | N/A | Black | 6103030000 |
| | | Red | 6103030001 |
| **76mm Grv/Grv** | N/A | Red | 6103027600 |
| **4" (100mm) Grv/Grv** | N/A | Black | 6103040026 |
| | | Red | 6103040030 |
| **4" (100mm) Flg/Grv** | ASME Class 150 | Black | 6103040044 |
| | ASME Class 150 | Red | 6103040046 |
| | ISO PN16 | Red | 6103040048 |
| **4" (100mm) Flg/Flg** | ASME Class 150 | Black | 6103040045 |
| | ASME Class 150 | Red | 6103040047 |
| | ISO PN16 | Red | 6103040049 |
| **6" (168mm) Grv/Grv** | N/A | Black | 6103060024 |
| | | Red | 6103060030 |
| **6" (168mm) Flg/Grv** | ASME Class 150 | Black | 6103060045 |
| | ASME Class 150 | Red | 6103060047 |
| | ISO PN16 | Red | 6103060049 |
| **6" (168mm) Flg/Flg** | ASME Class 150 | Black | 6103060046 |
| | ASME Class 150 | Red | 6103060048 |
| | ISO PN16 | Red | 6103060050 |
| **165mm Grv/Grv** | N/A | Red | 6103060028 |
| **165mm Flg/Grv** | ASME Class 150 | Red | 6103060051 |
| | ISO PN16 | Red | 6103060052 |
| **8" (200mm) Grv/Grv** | N/A | Black | 6103080001 |
| | | Red | 6103080003 |
| **8" (200mm) Flg/Flg** | ASME Class 150 | Black | 6103080016 |
| | ASME Class 150 | Red | 6103080018 |
| | ISO PN16 | Red | 6103080020 |

- **Trim** — Wet Pilot Trim, Dry Pilot Trim, or Electric Actuation Trim. Each trim set is available in individual parts, in time-saving, segmentally assembled kit forms, or fully assembled to the Model DDX Deluge Valve with or without a control valve). The Electric Actuation trim is available with a 175 psi (12,1 bar) or 300 psi (20,7 bar) rated solenoid valve.

## Wet Pilot Line Deluge

| Trim Part Numbers | | | | | | |
|---|---|---|---|---|---|---|
| Valve Size & End Connection | Trim Configurations | | | | | |
| | Flange Type | Color | Individual Parts (Model DDX Valve Sold Seperately) | Segmentally Assembled (Model DDX Valve Sold Seperately) | Fully Assembled to Model DDX Valve w/o Control Valve | Fully Assembled to Model DDX Valve w/ Control Valve |
| 2" (50mm) Grv/Grv | N/A | Black | 6503002004 | 6503002005 | 6505020001 | 6505020000 |
| | | Red | | | 6505A20001 | 6505A20000 |
| 2½" (65mm) Grv/Grv | N/A | Black | | | 6505022501 | 6505022500 |
| | | Red | | | 6505A22501 | 6505A22500 |
| 3" (80mm) Grv/Grv | N/A | Black | | | 6505030001 | 6505030000 |
| | | Red | | | 6505A30001 | 6505A30000 |
| 76mm Grv/Grv | N/A | Red | | | 6505A27601 | N/A |
| 4" (100mm) Grv/Grv | N/A | Black | 6503001002 | 6503001003 | 6505040201 | 6505040200 |
| | | Red | | | 6505A40201 | 6505A40200 |
| 4" (100mm) Flg/Grv | ASME Class 150 | Black | | | 6505043201 | N/A |
| | ASME Class 150 | Red | | | 6505A43201 | |
| | ISO PN16 | Red | | | 6505A44201 | |
| 4" (100mm) Flg/Flg | ASME Class 150 | Black | | | 6505047201 | N/A |
| | ASME Class 150 | Red | | | 6505A47201 | |
| | ISO PN16 | Red | | | 6505A48201 | |
| 6" (168mm) Grv/Grv | N/A | Black | | | 6505060201 | 6505060200 |
| | | Red | | | 6505A60201 | 6505A60200 |
| 6" (168mm) Flg/Grv | ASME Class 150 | Black | | | 6505063201 | N/A |
| | ASME Class 150 | Red | | | 6505A63201 | |
| | ISO PN16 | Red | | | 6505A64201 | |
| 6" (168mm) Flg/Flg | ASME Class 150 | Black | | | 6505067201 | N/A |
| | ASME Class 150 | Red | | | 6505A67201 | |
| | ISO PN16 | Red | | | 6505A68201 | |
| 165mm Grv/Grv | N/A | Red | | | 6505A65201 | N/A |
| 165mm Flg/Grv | ASME Class 150 | Red | | | 6505A66201 | N/A |
| | ISO PN16 | Red | | | 6505A69201 | |
| 8" (200mm) Grv/Grv | N/A | Black | | | 6505080201 | 6505080200 |
| | | Red | | | 6505A80201 | 6505A80200 |
| 8" (200mm) Flg/Flg | ASME Class 150 | Black | | | 6505087201 | N/A |
| | ASME Class 150 | Red | | | 6505A87201 | |
| | ISO PN16 | Red | | | 6505A88201 | |

**Note:** For metric installations, a 1¼" NPT x R1¼. ISO 7/1 x Close Nipple (Reliable P/N 98543403) or a 2" NPT x R2. ISO 7/1 x Close Nipple (Reliable P/N 98543401) is sold separately as an adapter for the single drain outlet of the trims.

- **Additional equipment** — Air compressors, electric detection, actuation equipment, and mechanical sprinkler alarms must be ordered separately. These devices are described in Bulletin 700.

## Dry Pilot Deluge

| | Valve Size & End Connection | Trim Part Numbers | | | | | |
|---|---|---|---|---|---|---|---|
| | | Trim Configurations | | | | | |
| | | Flange Type | Color | Individual Parts (Model DDX Valve Sold Seperately) | Segmentally Assembled (Model DDX Valve Sold Seperately) | Fully Assembled to Model DDX Valve w/o Control Valve | Fully Assembled to Model DDX Valve w/ Control Valve |
| UL/FM | 2" (50mm) Grv/Grv | N/A | Black | 6503002108 | 6503002109 | 6505020006 | 6505020005 |
| | | | Red | | | 6505A20006 | 6505A20005 |
| | 2½" (65mm) Grv/Grv | N/A | Black | | | 6505022506 | 6505022505 |
| | | | Red | | | 6505A22506 | 6505A22505 |
| | 3" (80mm) Grv/Grv | N/A | Black | | | 6505030006 | 6505030005 |
| | | | Red | | | 6505A30006 | 6505A30005 |
| | 76mm Grv/Grv | N/A | Red | | | 6505A27606 | N/A |
| | 4" (100mm) Grv/Grv | N/A | Black | 6503001107 | 6503001108 | 6505040206 | 6505040205 |
| | | | Red | | | 6505A40206 | 6505A40205 |
| | 4" (100mm) Flg/Grv | ASME Class 150 | Black | | | 6505043206 | N/A |
| | | ASME Class 150 | Red | | | 6505A43206 | |
| | | ISO PN16 | Red | | | 6505A44206 | |
| | 4" (100mm) Flg/Flg | ASME Class 150 | Black | | | 6505047206 | N/A |
| | | ASME Class 150 | Red | | | 6505A47206 | |
| | | ISO PN16 | Red | | | 6505A48206 | |
| | 6" (168mm) Grv/Grv | N/A | Black | | | 6505060206 | 6505060205 |
| | | | Red | | | 6505A60206 | 6505A60205 |
| | 6" (168mm) Flg/Grv | ASME Class 150 | Black | | | 6505063206 | N/A |
| | | ASME Class 150 | Red | | | 6505A63206 | |
| | | ISO PN16 | Red | | | 6505A64206 | |
| | 6" (168mm) Flg/Flg | ASME Class 150 | Black | | | 6505067206 | N/A |
| | | ASME Class 150 | Red | | | 6505A67206 | |
| | | ISO PN16 | Red | | | 6505A68206 | |
| | 165mm Grv/Grv | N/A | Red | | | 6505A65206 | N/A |
| | 165mm Flg/Grv | ASME Class 150 | Red | | | 6505A66206 | N/A |
| | | ISO PN16 | Red | | | 6505A69206 | |
| | 8" (200mm) Grv/Grv | N/A | Black | | | 6505080206 | 6505080205 |
| | | | Red | | | 6505A80206 | 6505A80205 |
| | 8" (200mm) Flg/Flg | ASME Class 150 | Black | | | 6505087206 | N/A |
| | | ASME Class 150 | Red | | | 6505A87206 | |
| | | ISO PN16 | Red | | | 6505A88206 | |
| ULC | 2" (50mm) Grv/Grv | N/A | Black | 6503002112 | 6503002113 | 6505020008 | 6505020007 |
| | | | Red | | | 6505A20008 | 6505A20007 |
| | 2½" (65mm) Grv/Grv | N/A | Black | | | 6505022508 | 6505022507 |
| | | | Red | | | 6505A22508 | 6505A22507 |
| | 3" (80mm) Grv/Grv | N/A | Black | | | 6505030008 | 6505030007 |
| | | | Red | | | 6505A30008 | 6505A30007 |
| | 76mm Grv/Grv | N/A | Red | | | 6505A27608 | N/A |
| | 4" (100mm) Grv/Grv | N/A | Black | 6503001109 | 6503001110 | 6505040209 | 6505040208 |
| | | | Red | | | 6505A40209 | 6505A40208 |
| | 4" (100mm) Flg/Grv | ASME Class 150 | Black | | | 6505043209 | N/A |
| | | ASME Class 150 | Red | | | 6505A43209 | |
| | | ISO PN16 | Red | | | 6505A44209 | |
| | 4" (100mm) Flg/Flg | ASME Class 150 | Black | | | 6505047209 | N/A |
| | | ASME Class 150 | Red | | | 6505A47209 | |
| | | ISO PN16 | Red | | | 6505A48209 | |
| | 6" (168mm) Grv/Grv | N/A | Black | | | 6505060209 | 6505060208 |
| | | | Red | | | 6505A60209 | 6505A60208 |
| | 6" (168mm) Flg/Grv | ASME Class 150 | Black | | | 6505063209 | N/A |
| | | ASME Class 150 | Red | | | 6505A63209 | |
| | | ISO PN16 | Red | | | 6505A64209 | |
| | 6" (168mm) Flg/Flg | ASME Class 150 | Black | | | 6505067209 | N/A |
| | | ASME Class 150 | Red | | | 6505A67209 | |
| | | ISO PN16 | Red | | | 6505A68209 | |
| | 165mm Grv/Grv | N/A | Red | | | 6505A65207 | N/A |
| | 165mm Flg/Grv | ASME Class 150 | Red | | | 6505A66207 | N/A |
| | | ISO PN16 | Red | | | 6505A69207 | |
| | 8" (200mm) Grv/Grv | N/A | Black | | | 6505080209 | 6505080208 |
| | | | Red | | | 6505A80209 | 6505A80208 |
| | 8" (200mm) Flg/Flg | ASME Class 150 | Black | | | 6505087209 | N/A |
| | | ASME Class 150 | Red | | | 6505A87209 | |
| | | ISO PN16 | Red | | | 6505A88209 | |

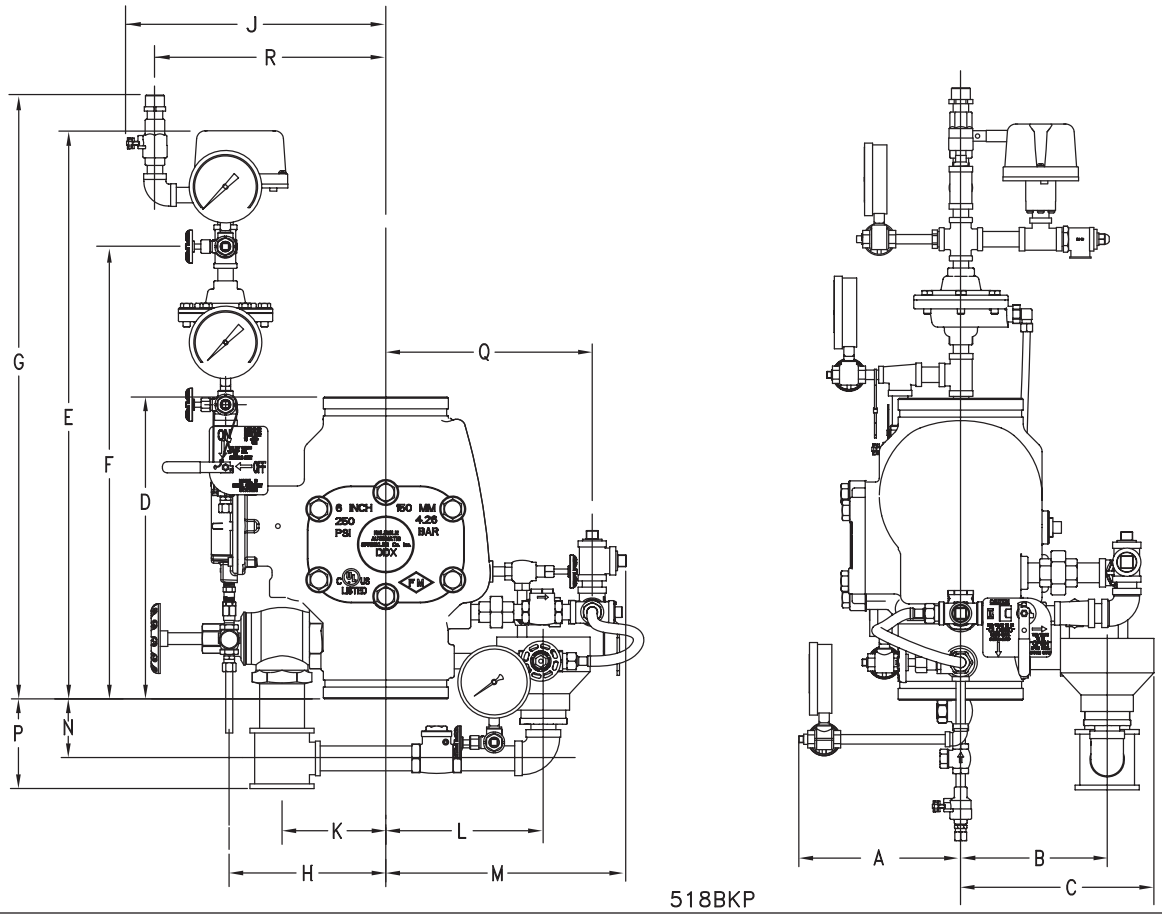
## Electric Actuation Deluge (Explosion Proof Solenoid Available Upon Request)

| | Valve Size & End Connection | Trim Part Numbers | | | | | |
|---|---|---|---|---|---|---|---|
| | | Trim Configurations | | | | | |
| | | Flange Type | Color | Individual Parts (Model DDX Valve Sold Seperately) | Segmentally Assembled (Model DDX Valve Sold Seperately) | Fully Assembled to Model DDX Valve w/o Control Valve | Fully Assembled to Model DDX Valve w/ Control Valve |
| 175 PSI | 2" (50mm) Grv/Grv | N/A | Black | 6503002507 | 6503002508 | 6505020011 | 6505020010 |
| | | | Red | | | 6505A20011 | 6505A20010 |
| | 2½" (65mm) Grv/Grv | N/A | Black | | | 6505022511 | 6505022510 |
| | | | Red | | | 6505A22511 | 6505A22510 |
| | 3" (80mm) Grv/Grv | N/A | Black | | | 6505030011 | 6505030010 |
| | | | Red | | | 6505A30011 | 6505A30010 |
| | 76mm Grv/Grv | N/A | Red | | | 6505A27611 | N/A |
| | 4" (100mm) Grv/Grv | N/A | Black | 6503001505 | 6503001507 | 6505040211 | 6505040210 |
| | | | Red | | | 6505A40211 | 6505A40210 |
| | 4" (100mm) Flg/Grv | ASME Class 150 | Black | | | 6505043211 | N/A |
| | | ASME Class 150 | Red | | | 6505A43211 | |
| | | ISO PN16 | Red | | | 6505A44211 | |
| | 4" (100mm) Flg/Flg | ASME Class 150 | Black | | | 6505047211 | N/A |
| | | ASME Class 150 | Red | | | 6505A47211 | |
| | | ISO PN16 | Red | | | 6505A48211 | |
| | 6" (168mm) Grv/Grv | N/A | Black | | | 6505060211 | 6505060210 |
| | | | Red | | | 6505A60211 | 6505A60210 |
| | 6" (168mm) Flg/Grv | ASME Class 150 | Black | | | 6505063211 | N/A |
| | | ASME Class 150 | Red | | | 6505A63211 | |
| | | ISO PN16 | Red | | | 6505A64211 | |
| | 6" (168mm) Flg/Flg | ASME Class 150 | Black | | | 6505067211 | N/A |
| | | ASME Class 150 | Red | | | 6505A67211 | |
| | | ISO PN16 | Red | | | 6505A68211 | |
| | 165mm Grv/Grv | N/A | Red | | | 6505A65211 | N/A |
| | 165mm Flg/Grv | ASME Class 150 | Red | | | 6505A66211 | N/A |
| | | ISO PN16 | Red | | | 6505A69211 | |
| | 8" (200mm) Grv/Grv | N/A | Black | | | 6505080211 | 6505080210 |
| | | | Red | | | 6505A80211 | 6505A80210 |
| | 8" (200mm) Flg/Flg | ASME Class 150 | Black | | | 6505087211 | N/A |
| | | ASME Class 150 | Red | | | 6505A87211 | |
| | | ISO PN16 | Red | | | 6505A88211 | |
| 250 PSI | 2" (50mm) Grv/Grv | N/A | Black | 6503002511 | 6503002512 | 6505020016 | 6505020015 |
| | | | Red | | | 6505A20016 | 6505A20015 |
| | 2½" (65mm) Grv/Grv | N/A | Black | | | 6505022516 | 6505022515 |
| | | | Red | | | 6505A22516 | 6505A22515 |
| | 3" (80mm) Grv/Grv | N/A | Black | | | 6505030016 | 6505030015 |
| | | | Red | | | 6505A30016 | 6505A30015 |
| | 76mm Grv/Grv | N/A | Red | | | 6505A27616 | N/A |
| | 4" (100mm) Grv/Grv | N/A | Black | 6503001506 | 6503001508 | 6505040216 | 6505040215 |
| | | | Red | | | 6505A40216 | 6505A40215 |
| | 4" (100mm) Flg/Grv | ASME Class 150 | Black | | | 6505043216 | N/A |
| | | ASME Class 150 | Red | | | 6505A43216 | |
| | | ISO PN16 | Red | | | 6505A44216 | |
| | 4" (100mm) Flg/Flg | ASME Class 150 | Black | | | 6505047216 | N/A |
| | | ASME Class 150 | Red | | | 6505A47216 | |
| | | ISO PN16 | Red | | | 6505A48216 | |
| | 6" (168mm) Grv/Grv | N/A | Black | | | 6505060216 | 6505060215 |
| | | | Red | | | 6505A60216 | 6505A60215 |
| | 6" (168mm) Flg/Grv | ASME Class 150 | Black | | | 6505063216 | N/A |
| | | ASME Class 150 | Red | | | 6505A63216 | |
| | | ISO PN16 | Red | | | 6505A64216 | |
| | 6" (168mm) Flg/Flg | ASME Class 150 | Black | | | 6505067216 | N/A |
| | | ASME Class 150 | Red | | | 6505A67216 | |
| | | ISO PN16 | Red | | | 6505A68216 | |
| | 165mm Grv/Grv | N/A | Red | | | 6505A65216 | N/A |
| | 165mm Flg/Grv | ASME Class 150 | Red | | | 6505A66216 | N/A |
| | | ISO PN16 | Red | | | 6505A69216 | |
| | 8" (200mm) Grv/Grv | N/A | Black | | | 6505080216 | 6505080215 |
| | | | Red | | | 6505A80216 | 6505A80215 |
| | 8" (200mm) Flg/Flg | ASME Class 150 | Black | | | 6505087216 | N/A |
| | | ASME Class 150 | Red | | | 6505A87216 | |
| | | ISO PN16 | Red | | | 6505A88216 | |

| Nominal Pipe Size | Installation Dimensions in Inches (mm) | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D* | D** | D*** | D**** | E | F | G | H | J | K | L | M | N | P | Q | R |
| 2" (50 mm) | 8 (203) | 7 (178) | 9½ (241) | 12½ (318) | 21¼ (540) | N/A | N/A | 31 (787) | 25 (635) | 32½ (826) | 6 (152) | 11¾ (298) | 4¼ (108) | 5½ (140) | 11 (279) | 3 (76) | 4½ (114) | 9¼ (235) | 10¼ (260) |
| 2½" (65 mm), 3" (80 mm) & 76 mm | 8 (203) | 7 (178) | 9½ (241) | 12½ (318) | 22 (559) | N/A | N/A | 31 (787) | 25 (635) | 32½ (826) | 6 (152) | 11¾ (298) | 4¼ (108) | 5½ (140) | 11 (279) | 3 (76) | 4½ (114) | 9¼ (235) | 10¼ (260) |
| 4" (100 mm) | 7¼ (184) | 7½ (191) | 10 (254) | 14 (356) | 24¼ (616) | 16 (406) | 16 (406) | 31 (787) | 25 (635) | 32½ (826) | 7½ (191) | 13¼ (337) | 5½ (140) | 8¼ (210) | 13½ (343) | 5 (127) | 6¾ (171) | 11¾ (298) | 11¾ (298) |
| 6" (150 mm) & 165 mm | 7¼ (184) | 8½ (215) | 11 (280) | 16 (406) | 27½ (699) | 19 (483) | 19 (483) | 33½ (851) | 27½ (699) | 35 (889) | 8 (203) | 13¾ (349) | 5½ (140) | 8¼ (210) | 13¾ (349) | 4¾ (121) | 6½ (165) | 12 (305) | 12¼ (311) |
| 8" (200 mm) | 7¼ (184) | 9¼ (235) | 11½ (292) | 19⅜ (492) | 30¼ (768) | N/A | 21¼ (540) | 33¾ (857) | 27¾ (705) | 35¼ (895) | 9 (229) | 14¾ (375) | 5½ (140) | 8¼ (210) | 14½ (368) | 3½ (89) | 5¼ (133) | 12¾ (324) | 13¼ (337) |

D* is total takeout for Fully Assembled to Grv/Grv DDX Valve w/o Control Valve Configurations
D** is total takeout for Fully Assembled to Grv/Grv DDX Valve w/ Control Valve Configurations
D*** is total takeout for Fully Assembled to Flg/Grv DDX Valve w/o Control Valve Configurations
D**** is total takeout for Fully Assembled to Flg/Flg DDX Valve w/o Control Valve Configurations

DRY PILOT LINE TRIM SHOWN (FULLY ASSEMBLED WITHOUT CONTROL VALVE)




518BKP

The equipment presented in this bulletin is to be installed in accordance with the latest published Standards of the National Fire Protection Association, Factory Mutual Research Corporation, or other similar organizations and also with the provisions of governmental codes or ordinances whenever applicable. Products manufactured and distributed by Reliable have been protecting life and property for over 90 years, and are installed and serviced by the most highly qualified and reputable sprinkler contractors located throughout the United States, Canada and foreign countries.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