

Model DPV-1 Dry Pipe Valve External Resetting

General Description

The TYCO Model DPV-1 Dry Pipe Valves are differential valves used to automatically control the flow of water into dry pipe fire protection sprinkler systems upon operation of one or more automatic sprinklers. The DPV-1 also provides for actuation of fire alarms upon system operation. The Model DPV-1 features are as follows:

- External reset.
- 250 psi (17,2 bar) pressure rating.
- Unique offset single clapper design enabling a simple compact valve to minimize installation labor.
- Ductile iron construction to ensure a lightweight valve to minimize shipping cost.
- A variety of inlet and outlet connections.
- Compact, Pre-Trimmed, and Semi-Assembled, easy to operate valve trim.
- Simple reset procedure through the elimination of priming water.

Dry pipe sprinkler systems are used in unheated warehouses, parking garages, store windows, attic spaces, loading docks, and other areas exposed to freezing temperatures, where water filled pipe cannot be utilized. When set for service, the dry pipe sprinkler system is pressurized with air (or nitrogen). The loss of pressure through an operated automatic sprinkler in response to heat from a fire permits the DPV-1 Dry Pipe Valve to open and allow a flow of water into the sprinkler system piping. Table B establishes the minimum required system air pressure that includes a safety factor to help prevent false operations that might occur due to water supply fluctuations.

IMPORTANT

Refer to Technical Data Sheet TFP2300 for warnings pertaining to regulatory and health information.



Available Sizes and End Connections

End Connection	Nominal Valve Size			
	2-1/2 in. (DN65)	3 in. (DN80)	4 in. (DN100)	6 in. (DN150)
Flange x Flange	N/A	N/A	•	•
Flange x Groove	N/A	N/A	•	•
Groove x Groove	•	•	•	•

• = Available
N/A = Not Available

NOTICE

The Model DPV-1 Dry Pipe Valves described herein must be installed and maintained in compliance with this document, as well as with the applicable standards of the National Fire Protection Association, in addition to the standards of any other authorities having jurisdiction. Failure to do so may impair the performance of these devices.

The owner is responsible for maintaining their fire protection system and devices in proper operating condition. Contact the installing contractor or product manufacturer with any questions.

Technical Data

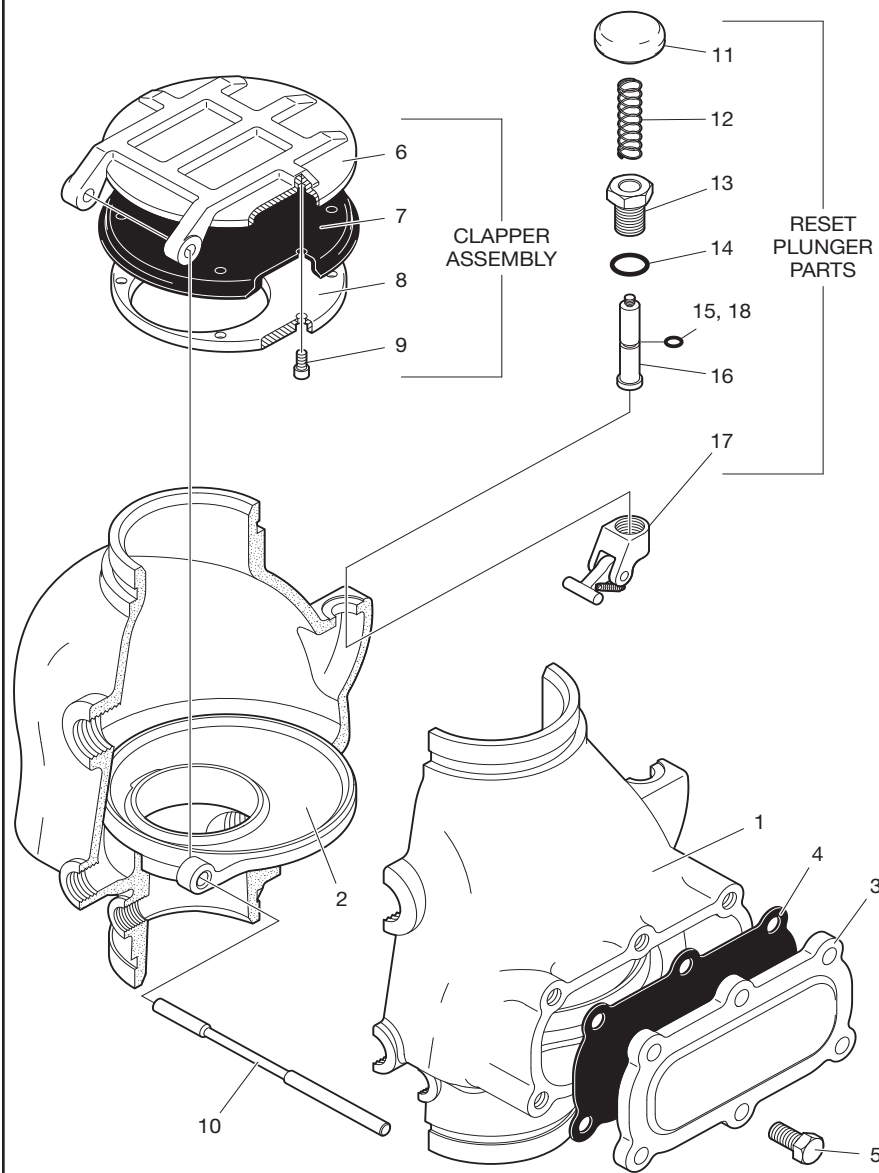
Approvals
UL and C-UL Listed
FM Approved
NYC Approved

Dry Pipe Valve

The TYCO Model DPV-1 Dry Pipe Valves shall be installed in the vertical orientation only (supply at bottom flowing upward) and are rated for use at a maximum service pressure of 250 psi (17,2 bar). Valve and trim dimensions are shown in Figure 6.

Flanged connections are available and drilled per ANSI, ISO, AS, and JIS specifications, see Table A. The grooved outlet connections, as applicable, are cut in accordance with standard groove specifications for steel pipe. They are suitable for use with grooved end pipe couplings that are listed or approved for fire protection system service. Available combinations of inlet and outlet connections are described in the Ordering Procedure section and in the Available End Connection and Sizes table on page 1.

Trim port connections of valves having flanges drilled to ANSI, AS, or JIS spec-



NO.	DESCRIPTION	QTY.	REF.
1	Valve Body	1	NR
2	Air and Water Seat	1	NR
3	Handhole Cover . . .	1	NR
4	Handhole Cover Gasket	1	(b)
5	1/2-13 UNC x 1" Hex Head Cap Screw: 2-1/2 & 3 Inch Valves	5	CH
6	Clapper	1	(a)
7	Clapper Facing . . .	1	(a) or (b)
8	Clapper Facing Retaining Plate . . .	1	(a)
9	2-1/2 and 3 Inch Valves: 1/4" x 3/8" Long #10-32 Shoulder Screw	5	(a)
10	4 Inch Valve: 1/4-20 UNC x 1/2" Socket Head Cap Screw	7	(a)
11	Clapper Hinge Pin	1	(a)
12	Reset Knob	1	(c) or (d)
13	Reset Spring	1	(c)
14	Reset Bushing	1	(c)
15	Reset Bushing O-Ring	1	(b), (c) or (e)
16	Reset Plunger O-Ring	1	(b) or (c)
17	Reset Plunger	1	(c)
18	Reset Latch Subassembly	1	(c)
19	Dow Corning FS3452 Fluorosilicone Grease, 1.5 g	1	(b) or (c)

NR: Not Replaceable
CH: Common Hardware

REPLACEMENT PARTS		
NO.	DESCRIPTION	P/N
(a)	Clapper Assembly Includes Items 6-10: 2-1/2 & 3 Inch Valves . .	92-312-2-203
(b)	4 Inch Valve	92-312-2-403
(b)	Repair Parts Kit Includes Items 4, 7, 14, 15, & 18: 2-1/2 & 3 Inch Valves . .	92-312-1-204
(c)	4 Inch Valve	92-312-1-404
(c)	Reset Plunger Parts Kit Includes Items 11-18 . .	92-312-1-405
(d)	Reset Knob, Item 11. . .	92-312-1-406
(e)	Reset Plunger O-Ring, Item 15	92-312-1-407

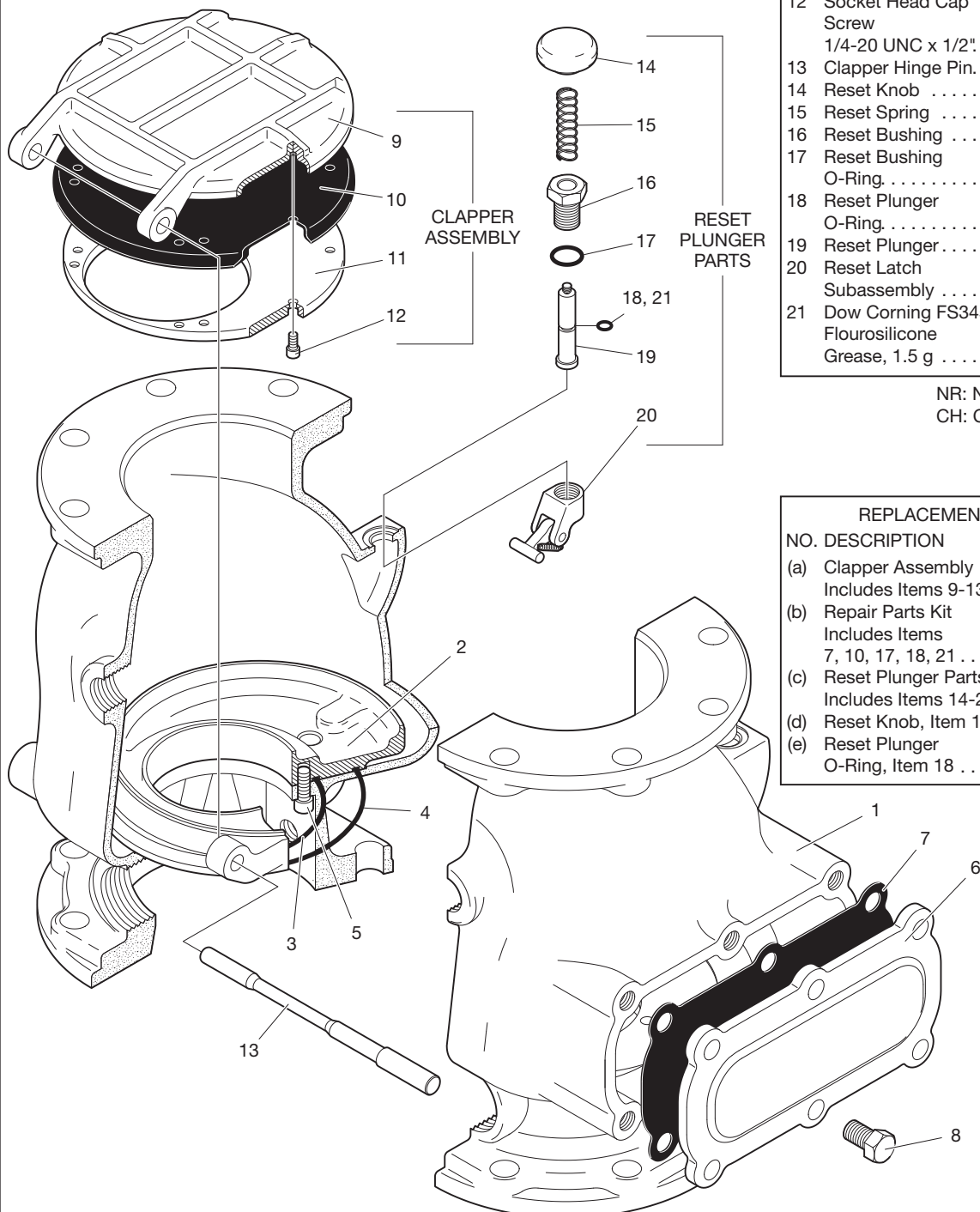
FIGURE 1 - PART 1 OF 2
MODEL DPV-1 DRY PIPE VALVE
2-1/2, 3, AND 4 INCH (DN65, DN80, DN100) ASSEMBLIES

NO.	DESCRIPTION	QTY.	REP. PART
1	Valve Body	1	NR
2	Air and Water Seat	1	NR
3	Water Seal O-Ring	1	NR
4	Air Seal O-Ring	1	NR

NO.	DESCRIPTION	QTY.	REP. PART
5	Socket Head Cap Screw	8	NR
6	Handhole Cover	1	NR
7	Handhole Cover Gasket	1	(b)

NO.	DESCRIPTION	QTY.	REP. PART
8	Hex Head Cap Screw 5/8-11 UNC x 1"	6	CH
9	Clapper	1	(a)
10	Clapper Facing	1	(a) or (b)
11	Clapper Facing Retaining Plate	1	(a)
12	Socket Head Cap Screw	1	(a)
13	Clapper Hinge Pin	1	(a)
14	Reset Knob	1	(c) or (d)
15	Reset Spring	1	(c)
16	Reset Bushing	1	(c)
17	Reset Bushing O-Ring	1	(b), (c) or (e)
18	Reset Plunger O-Ring	1	(b) or (c)
19	Reset Plunger	1	(c)
20	Reset Latch Subassembly	1	(c)
21	Dow Corning FS3452 Flourosilicone Grease, 1.5 g	1	(b) or (c)

NR: Not Replaceable
CH: Common Hardware



REPLACEMENT PARTS	
NO.	P/N
(a) Clapper Assembly Includes Items 9-13	92-312-2-603
(b) Repair Parts Kit Includes Items 7, 10, 17, 18, 21	92-312-1-604
(c) Reset Plunger Parts Kit Includes Items 14-21	92-312-1-405
(d) Reset Knob, Item 14.	92-312-1-406
(e) Reset Plunger O-Ring, Item 18	92-312-1-407

FIGURE 1 - PART 2 OF 2
MODEL DPV-1 DRY PIPE VALVE
6 INCH (DN150) ASSEMBLY

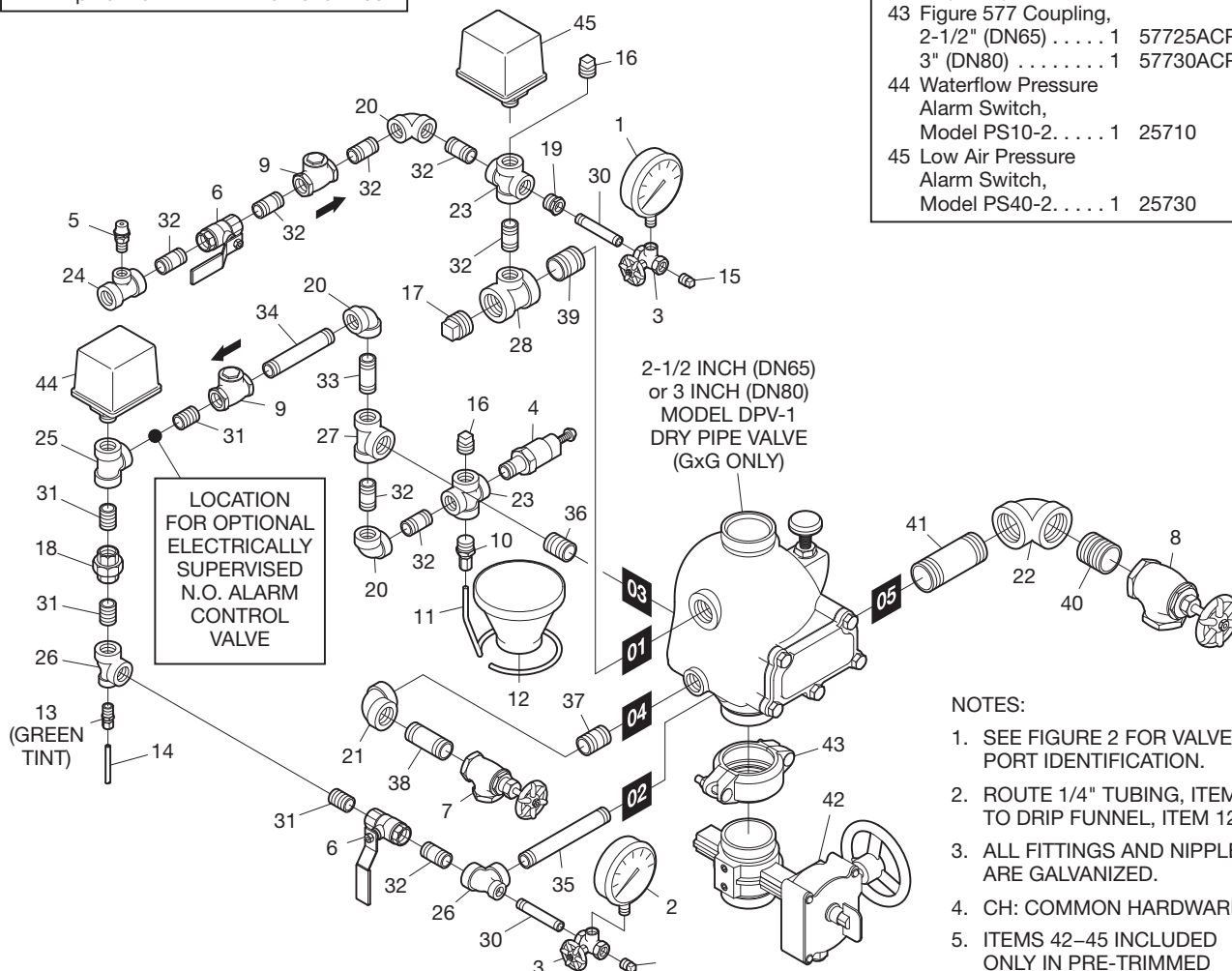
NO.	DESCRIPTION	QTY	P/N
1	250 psi/ 1750 kPa Air Pressure Gauge.....	1	92-343-1-012
2	300 psi/ 2000 kPa Water Pressure Gauge.....	1	92-343-1-005
3	1/4" Gauge Test Valve.....	2	46-005-1-002
4	Model AD-1 Automatic Drain Valve.....	1	52-793-2-004
5	1/4" Pressure Relief Valve.....	1	92-343-1-020
6	1/2" Ball Valve.....	2	46-050-1-004
7	3/4" Angle Valve.....	1	46-048-1-005
8	1-1/4" Angle Valve.....	1	46-048-1-007
9	1/2" Swing Check Valve.....	2	46-049-1-004
10	Drip Funnel Connector.....	1	92-211-1-005
11	Drip Funnel Bracket.....	1	92-211-1-003
12	Drip Funnel.....	1	92-343-1-007

NO.	DESCRIPTION	QTY	P/N
13	3/32" Vent Fitting.....	1	92-032-1-002
14	1/4" Tube, 18" Long.....	1	CH
15	1/4" Plug.....	2	CH
16	1/2" Plug.....	2	CH
17	1" Plug.....	1	CH
18	1/2" Union.....	1	CH
19	1/2" x 1/4" Reducing Bushing.....	1	CH
20	1/2" 90° Elbow.....	3	CH
21	3/4" 90° Elbow.....	1	CH
22	1-1/4" 90° Elbow.....	1	CH
23	1/2" Cross.....	2	CH
24	1/2" x 1/2" x 1/4" Reducing Tee.....	1	CH
25	1/2" Tee.....	1	CH
26	1/2" x 1/4" x 1/2" Reducing Tee.....	2	CH
27	1/2" x 1/2" x 3/4" Reducing Tee.....	1	CH

NO.	DESCRIPTION	QTY	P/N
28	1" x 1" x 1/2" Reducing Tee.....	1	CH
29	Not Used		
PIPE NIPPLES:			
30	1/4" x 3".....	2	CH
31	1/2" x Close.....	4	CH
32	1/2" x 1-1/2".....	8	CH
33	1/2" x 2".....	1	CH
34	1/2" x 4-1/2".....	1	CH
35	1/2" x 6".....	1	CH
36	3/4" x Close.....	1	CH
37	3/4" x 1-1/2".....	1	CH
38	3/4" x 2-1/2".....	1	CH
39	1" x Close.....	1	CH
40	1-1/4" x Close.....	1	CH
41	1-1/4" x 4".....	1	CH

COMPONENTS INCLUDED ONLY IN
PRE-TRIMMED VALVE ASSEMBLIES:

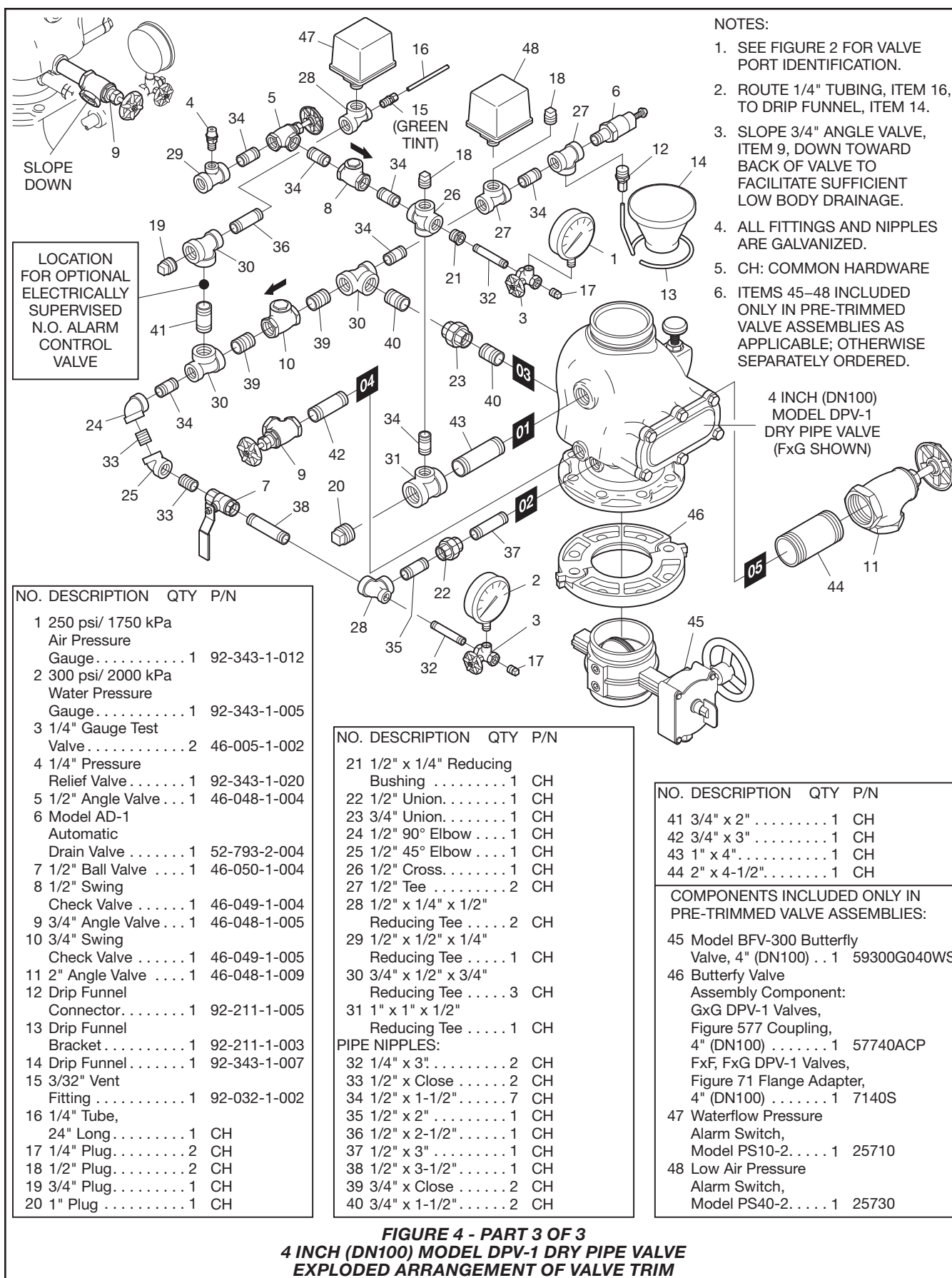
42	Model BFV-300 Butterfly Valve, 2-1/2" (DN65).....	1	59300G025WS
	3" (DN80).....	1	59300G030WS
43	Figure 577 Coupling, 2-1/2" (DN65).....	1	57725ACP
	3" (DN80).....	1	57730ACP
44	Waterflow Pressure Alarm Switch, Model PS10-2.....	1	25710
45	Low Air Pressure Alarm Switch, Model PS40-2.....	1	25730



NOTES:

1. SEE FIGURE 2 FOR VALVE PORT IDENTIFICATION.
2. ROUTE 1/4" TUBING, ITEM 14, TO DRIP FUNNEL, ITEM 12.
3. ALL FITTINGS AND NIPPLES ARE GALVANIZED.
4. CH: COMMON HARDWARE
5. ITEMS 42-45 INCLUDED ONLY IN PRE-TRIMMED VALVE ASSEMBLIES AS APPLICABLE; OTHERWISE SEPARATELY ORDERED.

FIGURE 3 - PART 3 OF 3
2-1/2 AND 3 INCH (DN65 AND DN80) MODEL DPV-1 DRY PIPE VALVE
EXPLODED ARRANGEMENT OF VALVE TRIM



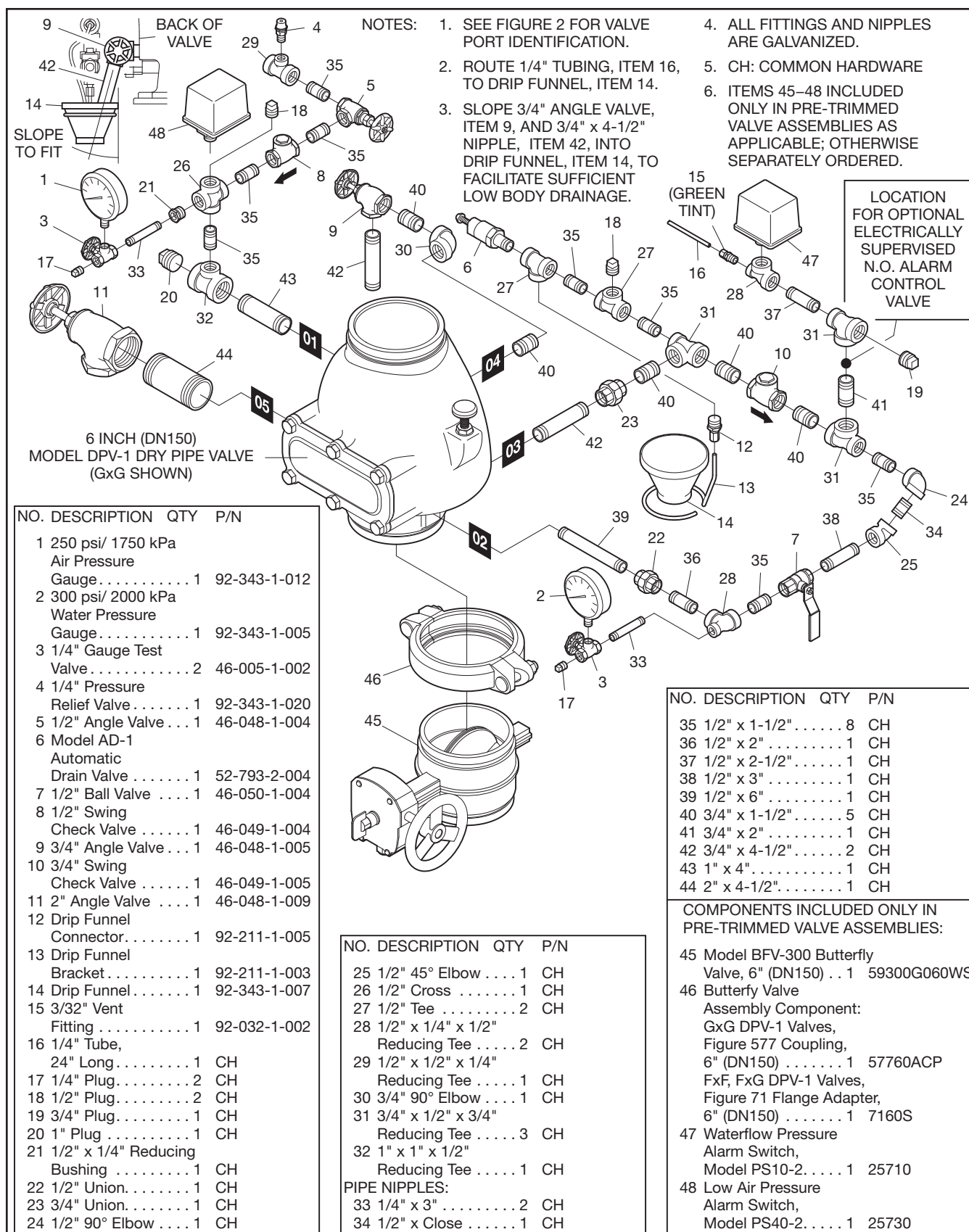


FIGURE 5 - PART 3 OF 3
6 INCH (DN150) MODEL DPV-1 DRY PIPE VALVE
EXPLODED ARRANGEMENT OF VALVE TRIM

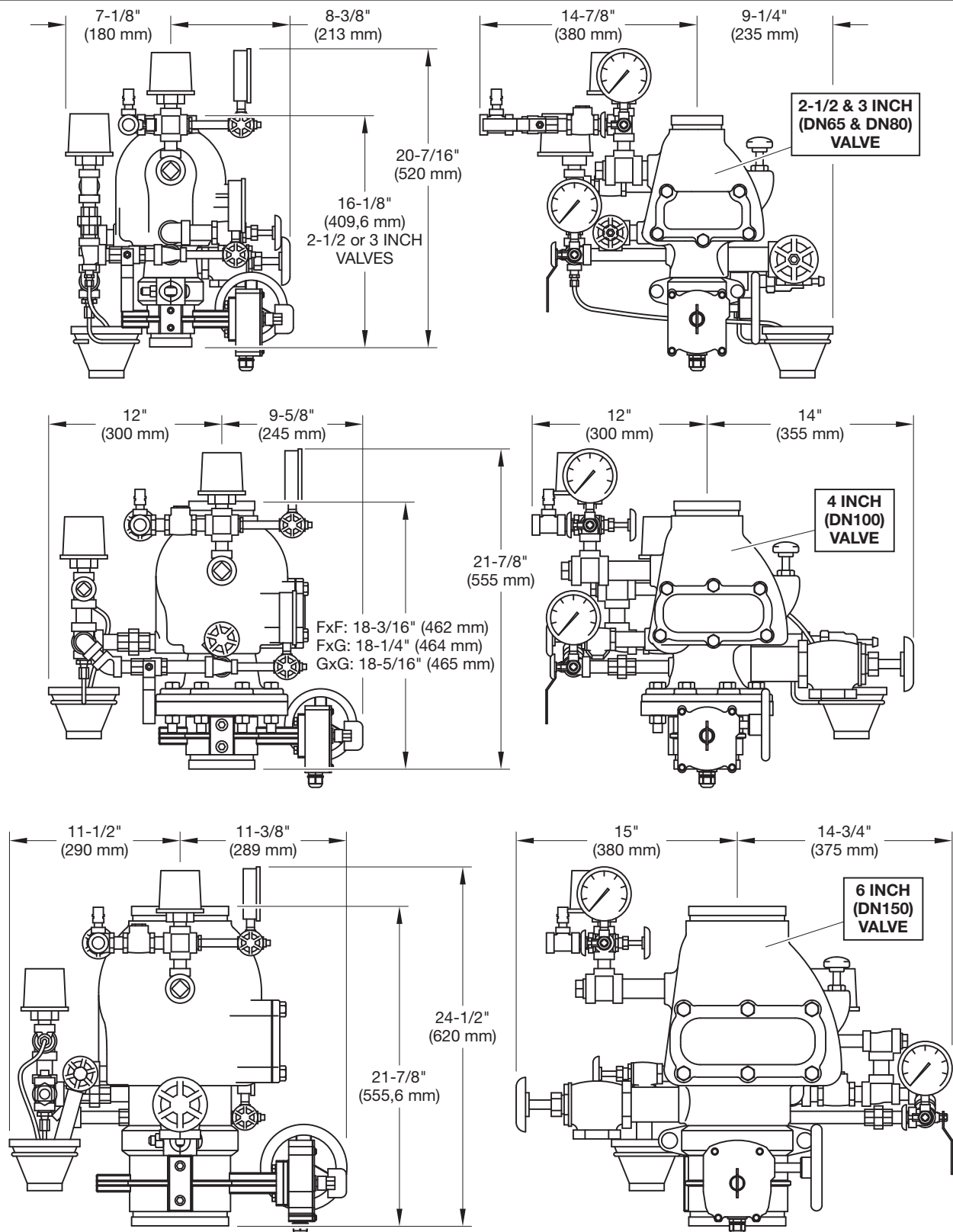


FIGURE 6 - PART 1 OF 2
MODEL DPV-1 DRY PIPE VALVE
INSTALLATION DIMENSIONS, PRE-TRIMMED VALVE

Limited Warranty

For warranty terms and conditions, visit
www.tyco-fire.com.

Ordering Procedure

Contact your local distributor for availability. When placing an order indicate the full product name and Part Number (P/N).

Standard DPV-1 Dry Pipe Valve

ANSI standard outside diameter (O.D.) pipe size with grooved or ANSI drilled flange end connections and NPT threaded ports.

Specify: (specify size) Model DPV-1 Dry Pipe Valve with (specify) End Connections, P/N (specify):

Groove x Groove,
ANSI 2.88 in. (73,1 mm) O.D. Grooves:
2-1/2 in. (DN65) G x G 52-312-1-925
Groove x Groove,
ANSI 3.50 in. (88,9 mm) O.D. Grooves:
3 in. (DN80) G x G 52-312-1-930
Groove x Groove,
ANSI 4.50 in. (114,3 mm) O.D. Grooves:
4 in. (DN100) G x G 52-312-1-940
Flange x Groove,
ANSI Flange x ANSI 4.50 in. (114,3 mm) O.D.
Groove:
4 in. (DN100) F x G 52-312-1-440
Flange x Flange,
ANSI Flanges:
4 in. (DN100) F x F 52-312-1-040
Groove x Groove,
ANSI 6.62 in. (168,3 mm) O.D. Grooves:
6 in. (DN150) G x G 52-312-1-960
Flange x Groove,
ANSI Flange x ANSI 6.62 in. (168,3 mm) O.D.
Groove:
6 in. (DN150) F x G 52-312-1-460
Flange x Flange,
ANSI Flanges:
6 in. (DN150) F x F 52-312-1-060

Pre-Trimmed DPV-1 Assemblies with Butterfly Valve

Specify: 2-1/2 in. DPV-1 Pre-Trimmed Valve Assembly, Grooved End Connections, P/N 52-310-3-925

Specify: 3 in. DPV-1 Pre-Trimmed Valve Assembly, Grooved End Connections, P/N 52-310-3-930

Specify: 4 in. DPV-1 Pre-Trimmed Valve Assembly, (specify) End Connection, P/N (specify):

Flange x Flange 52-310-3-040
Flange x Groove 52-310-3-440
Groove x Groove 52-310-3-940

Specify: 6 in. DPV-1 Pre-Trimmed Valve Assembly, (specify) End Connection, P/N (specify):

Flange x Flange 52-310-3-060
Flange x Groove 52-310-3-460
Groove x Groove 52-310-3-960

Pre-Trimmed DPV-1 Assemblies without Butterfly Valve

Specify: 4 in. DPV-1 Pre-Trimmed Valve Assembly without Butterfly, (specify) End Connection, P/N (specify):

Flange x Flange 52-310-4-040
Flange x Groove 52-310-4-440

Specify: 6 in. DPV-1 Pre-Trimmed Valve Assembly without Butterfly, (specify) End Connection, P/N (specify):

Flange x Flange 52-310-4-060
Flange x Groove 52-310-4-460

Standard Galvanized Semi-Assembled DPV-1 Trim

Note: Valves with NPT threaded ports are intended for use with the Standard Galvanized Semi-Assembled DPV-1 Valve Trim as described in Figures 3, 4 and 5 of this document.

Specify: 2-1/2 and 3 in. DPV-1 Semi-Assembled Galvanized Trim, P/N 52-309-2-005

Specify: 4 in. DPV-1 Semi-Assembled Galvanized Trim, P/N 52-309-2-001

Specify: 6 in. DPV-1 Semi-Assembled Galvanized Trim, P/N 52-309-2-002

Optional Drain Kit

Includes swing check valve, fittings and pipe nipples to connect the drip funnel directly to the main drain in 4 and 6 in. valve trim assemblies as shown in Figure 7.

Specify: (specify size) Model DPV-1 Dry Pipe Valve Drain Kit, P/N (specify):

4 in. Valve 52-309-2-104
6 in. Valve 52-309-2-106

Drain Kit Replacement Check Valve

Specify: Swing Check Valve, 1-1/4 in., P/N 46-049-1-007

Optional Electronic Accelerator: VIZOR Electronic Dry Pipe Accelerator (with Trim)

Refer to Technical Data Sheet TFP1105.

Specify: VIZOR Electronic Dry Pipe Accelerator for use with the 4 or 6 in. TYCO Model DPV-1 Dry Pipe Valve Trim, P/N 52-312-3-001

Optional Mechanical Accelerator:

Model ACC-1 Dry Pipe Accelerator
Refer to Technical Data Sheet TFP1112.

Specify: Model ACC-1 Dry Pipe Accelerator, P/N 52-311-1-001, and Galvanized Accelerator Trim for Model DPV-1 Dry Pipe Valve, P/N 52-311-2-010

Optional 600 PSI Water Pressure Gauge:

Specify: 600 PSI Water Pressure Gauge, P/N 92-343-1-004

Accessories

Refer to Technical data Sheets describing the following accessories, as applicable.

Specify: Description, P/N (specify):

Model PS10-2 Potter Electric Waterflow
Pressure Alarm Switch 25710
(Refer to Potter Electric Technical Data Sheet)
Model PS40-2 Potter Electric Low Air
Pressure Alarm Switch 25730
(Refer to Potter Electric Technical Data Sheet)
Model WMA-1
Water Motor Alarm 52-630-1-001
(Refer to Technical Data Sheet TFP921)
Model AMD-1
Air Maintenance Device 52-324-2-002
(Refer to Technical Data Sheet TFP1221)
Model AMD-2
Air Maintenance Device 52-326-2-001
(Refer to Technical Data Sheet TFP1231)
Model AMD-3
Nitrogen Maintenance Device 52-328-2-001
(Refer to Technical Data Sheet TFP1241)

Replacement Valve Parts

Specify: (description) for use with (specify size) Model DPV-1 Dry Pipe Valve, P/N, see Figure 1.

Replacement Trim Parts

Specify: (description) for use with (specify size) Model DPV-1 Dry Pipe Valve, P/N, see Figures 3, 4, or 5.

Other DPV-1 Dry Pipe Valves

Notes: Other DPV-1 Dry Pipe Valves are valves ordered with any combination of flange drilling, pipe groove outside diameter (O.D.), or port thread specification not offered as Standard DPV-1 Dry Pipe Valves.

Valves with NPT threaded ports are intended for use with the Standard Galvanized Semi-Assembled DPV-1 Valve Trim described in Figures 3, 4 and 5. Valves with ISO threaded ports are intended for use with special order trim that is provided by local distributors to meet the specific needs of certain localities. Please contact your local distributor regarding valves and valve trim for specific localities.

Specify: (specify size) Model DPV-1 Dry Pipe Valve with (specify) End Connections and (specify NPT or ISO) threaded ports