3" Model A*
4" & 6"
Model F-3 and G-3
Dry Pipe Valve

Installation
and
Maintenance Guide

4077 AIRPARK DRIVE • STANDISH, MICHIGAN 48658
PHONE 989-846-4583 • 800-248-0278
FAX 989-846-9231 • 800-846-9211
www.globesprinkler.com

GLOBE DRY PIPE VALVE INSTALLATION AND MAINTENANCE GUIDE

Table of Contents

*** Formerly known as Model D**

GLOBE DRY PIPE VALVE INSTALLATION AND MAINTENANCE GUIDE

GENERAL DESCRIPTION

Globe Fire Sprinkler Corporation Dry Pipe Valves are essentially differential or differential mechanical control valves for use in dry pipe systems. They are the vital control units in dry pipe automatic sprinkler systems where supervisory air under pressure is used to prevent freezing that would certainly occur with ordinary wet pipe systems. The Dry Pipe Valve is the connecting link between the source of water supply and the automatic sprinkler, and must react promptly when it receives a signal from the protected area that a fire condition has developed and water is therefore quickly needed. This signal is generated by the opening of one or more sprinklers which causes a quick drop in the system supervisory air pressure resulting in a loss of the differential ratio.

Globe Fire Sprinkler Corporation Model C Accelerator and Anti-Flooding Device are designed to be used in conjunction with dry pipe valves in dry pipe systems. The Model C Accelerator is used to reduce the time lag normally associated with the opening of a dry pipe valve after one or more system sprinklers have operated, resulting in faster water discharge from the opened sprinkler(s). The Model C Anti-Flooding Device is used to help ensure the proper operation of the accelerator by preventing most waterborne foreign objects from entering the accelerator.

Globe Dry Pipe Valves, Accelerators, and Anti-Flooding Devices are designed and manufactured to the standards and/or requirements of Underwriters Laboratories Inc., Underwriters' Laboratories of Canada, Factory Mutual Research Corp. and the City of New York Department of Buildings, and they conform to the design/usage requirements of NFPA 25.

IMPORTANT NOTES

1. Any dry pipe valve, accelerator and anti-flooding device should be carefully tested, examined, and cleaned periodically in accordance with NFPA 25. After testing, the accelerator must be fully drained of any water.
2. It is most important to ensure a clean water supply free of debris and solid particles such as sand, gravel, or mud.
3. If, during the annual inspection of dry pipe valves, accelerators or anti-flooding devices, sediment or free particles of matter are noted, a further examination of internal valve parts becomes necessary.
4. All deposits should be removed from all operating parts and ports. Vent holes through retaining ring screws, should be thoroughly cleaned and flushed with clean water.
5. Where difficulty in performance is experienced, the manufacturer or his authorized representative shall be contacted if any field adjustment is to be made.
6. When an electric alarm switch is used without a mechanical water motor, an alarm line air bleeder should be added to prevent trapped air pockets from delaying an alarm. The bleeder should consist of a restricting orifice of approximately 1/8" diameter and copper tubing of sufficient length to run to the drip cup.

TROUBLE-SHOOTING

1. Check all valves to see if they are open or shut according to instructions.
2. If the dry pipe valve leaks priming water:
   - A) Check for debris between the brass seat and the rubber seat.
   - B) Check for proper tightness of the retaining ring, clamping ring, and memory washer nut.
   - C) Check for rips or tears in the "Bellofram."
   - D) Make sure that the clapper lever is latched under the locking stud.
   - E) Remove trim pipe to expose the atmospheric discharge tube. If water seeps from around the tube, it is an indication that the packing is loose.
3. If the dry pipe valve trips when supply water is turned on:
   - A) If the locking stud has been removed, check for proper seating in the valve body.
   - B) Check for the proper air to water pressure ratio.
   - C) Velocity check must be horizontal and the ball must move freely.
   - D) Check the air and water gauges for proper function.
   - E) If an accelerator is used, be sure it is drained and set up according to instructions.
   - F) Check for obstructions in the trim piping.
4. If there is no air to the accelerator:
   - A) Check for proper installation of the anti-flooding device.
   - B) Make sure that the check valve in the trim is in the proper position.
5. Accelerator won't trim or is too sensitive:
   - A) Check accelerator for contamination.
6. Accelerator won't set:
   - A) Check for torn diaphragm.
   - B) Check air gauge for proper function.
7. Accelerator trips for no apparent reason after being installed for a period of time:
   - A) Check system for leaks.
   - B) Air compressor settings not proper.

GLOBE DRY PIPE VALVE INSTALLATION AND MAINTENANCE GUIDE

3" MODEL A CROSS SECTION

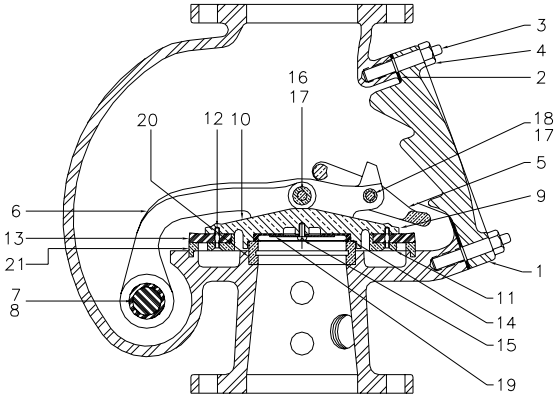


FIG. 1

ITEM	DESCRIPTION	MAT'L	P/N	ITEM	DESCRIPTION	MAT'L	P/N
1	Cover Plate	Cast Iron	318501	12	Machine Screw	Bronze	318512
2	Cover Plate Gasket	Rubber	318502	13	Air Seat Gasket	Rubber	318513
3	Cover Plate Stud	Steel	318503	14	Water Seat Gasket	Rubber	318514
4	Nut	Steel	318504	15	Machine Screw	Brass	318515
5	Latch	Cast Iron	318505	16	Clapper Hinge Pin	Brass	318516
6	Clapper Arm Assembly	---	318506	17	Cotter Pin	Brass	318517
7	Clapper Arm Hinge Pin	Monel	318507	18	Latch Pin	Brass	318518
8	Hinge Pin Plug	Brass	318508	19	Retaining Washer	Brass	318526
9	Clapper Assembly	---	318509	20	Seat Ring	Bronze	318522
10	Clapper	Bronze	318510	21	Air Seat	Bronze	318523
11	Clapper Ring	Bronze	318511				

TECHNICAL DESCRIPTION

The Globe Model A Dry Pipe Valve is essentially a differential check valve. The bronze clapper carries two rubber gaskets. The larger (air) gasket is rubber and seats against pure tin. The smaller gasket (water) is a specially designed rubber disc, which also seats on pure tin. These seats are so proportioned that one pound of air pressure will hold back approximately six pounds of water pressure.

When the air pressure on the surface of the priming water is relieved by the opening of a sprinkler, the upward pressure of the water underneath the water gasket causes the clapper to lift, the intermediate chamber instantly fills, sounds the alarm, and the water pressure, acting on the entire surface of the clapper, pushes it over to the wide open position and thus leaves a passage for the water to the sprinkler system.

INSPECTION & MAINTENANCE

Test main riser for water to make sure dry pipe valve is not water columned. Water should be up to but not above the level of valve 6 (Fig. 2). Close main control valve. Open main drain valve 1 (Fig. 2). Close valve 6 (Fig. 2) - remove 7 (Fig. 2) - then open 6 (Fig. 2) and draw off any water above the level of this valve. Replace 7 (Fig. 2) and open 6 (Fig. 2). Check air pressure according to chart, shown above. Close drain valve 1 (Fig. 2) and then open main control valve. Air pressure must be maintained, and checked at least once a week, under normal conditions. During freezing weather it should be checked daily. Check valve 8 (Fig. 2) in the fall before freezing weather sets in to assure a tight seat. Alarm Devices are to be tested in accordance with NFPA 25. Drip Valves or Drum Drips should be drained before freezing weather sets in and occasionally during the winter.

RESETTING THE MODEL A DRY PIPE VALVE

Close Main Controlling Valve or Post Indicator to shut off water supply to Sprinkler System. Open valve 1 (Fig. 2) to drain sprinkler system. Gong and electric bell may be shut off by closing valve 2 (Fig. 2). Vent sprinkler system by opening 3/4" Inspector's Test Valve which is normally located at the top of the system. After system is thoroughly drained, remove cover plate, Item 1 (Fig. 1) for resetting dry valve. Raise clapper off seat and scoop out any scale or solid particles found in the intermediate chamber, in the bottom of the valve, between the air and water seats. With a clean piece of cloth ***wipe the surfaces of the rubber seats*** on the swinging clapper, ***also the tin seats in the valve. Never apply grease, tallow, or any other substance to water or air seat.*** Let bronze clapper down on its seat ***making sure that the rubber air ring presses evenly***

GLOBE DRY PIPE VALVE INSTALLATION AND MAINTENANCE GUIDE

all around the air seat. Put on cover plate, Item 1 (Fig. 1) making sure that gasket is in good condition. Replace nuts and tighten evenly, a little at a time, all around. Drip valves are found at low points (if any) on sprinkler piping. They would not be drained by previous operations - open these valves for draining after removing plugs and close when water stops running. Close 3/4" Inspector's Test Valves, previously opened to vent system. **Replace sprinklers fused by fire.** Prime by opening until priming level even with cup. Remove plug 7 (Fig. 2) and close valve 4 (Fig. 2). **Water must not be allowed to stand above the priming water level.** Open valve 6 (Fig. 2) and pump air pressure into system. When ten pounds pressure has been built up open drip valves again to force water from low points of system then close drip valves tightly and plug. Pump the correct air pressure into the sprinkler system then close valve 6 (Fig. 2) tightly. **Make sure there is no leakage of priming water by the rubber air seat into drip cup 10** (Fig. 2) **by observing automatic drain valve 9** (Fig. 2)**. Note**: Never allow air pressure to drop below minimum limit, to safeguard against accidental tripping of dry valve. Air pressure required for accidental tripping of dry valve. Air pressure required for sprinkler systems should be calculated at approximately one pound of air for every six pounds of water pressure. The air pressure should be maintained at approximately twenty pounds above calculated air pressure per NFPA 5-2.7.7.

PHYSICAL DATA	A
	3"
Overall Length	14 1/2"
Center of Valve to Back	9"
Center of Valve to Right	17"
Center of Valve to Left	6"
Weight of Valve Complete with all Trimmings	106 lbs. 157 lbs.
Minimum Inside Dimensions of Enclosing Valve House	45" x 52"
Friction Loss in Equivalent Feet	9'

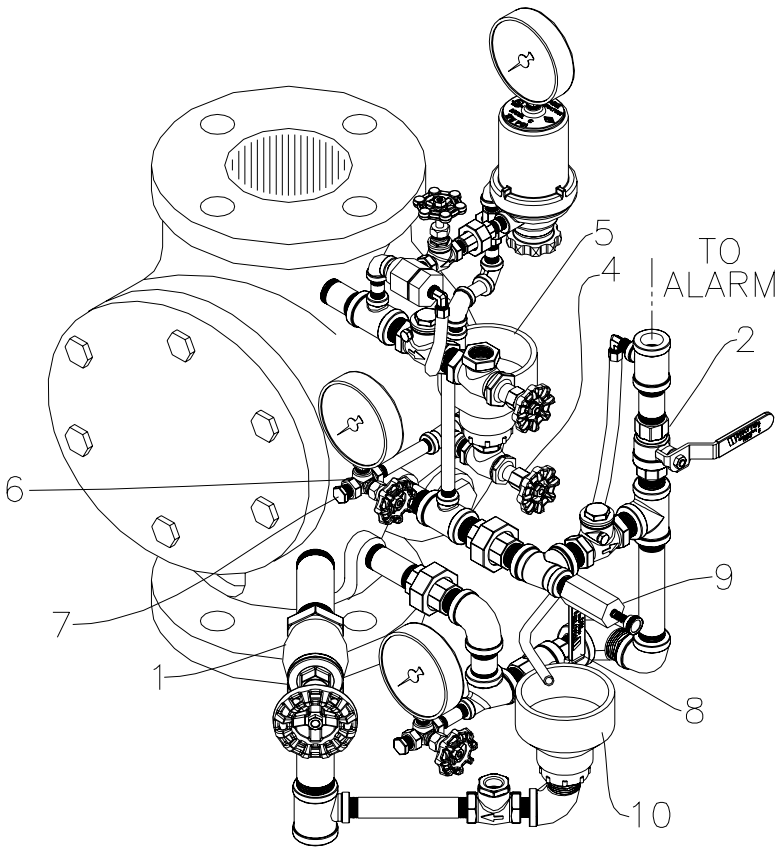


FIG. 2

GLOBE DRY PIPE VALVE INSTALLATION AND MAINTENANCE GUIDE

3" MODEL A TRIM ARRANGEMENT

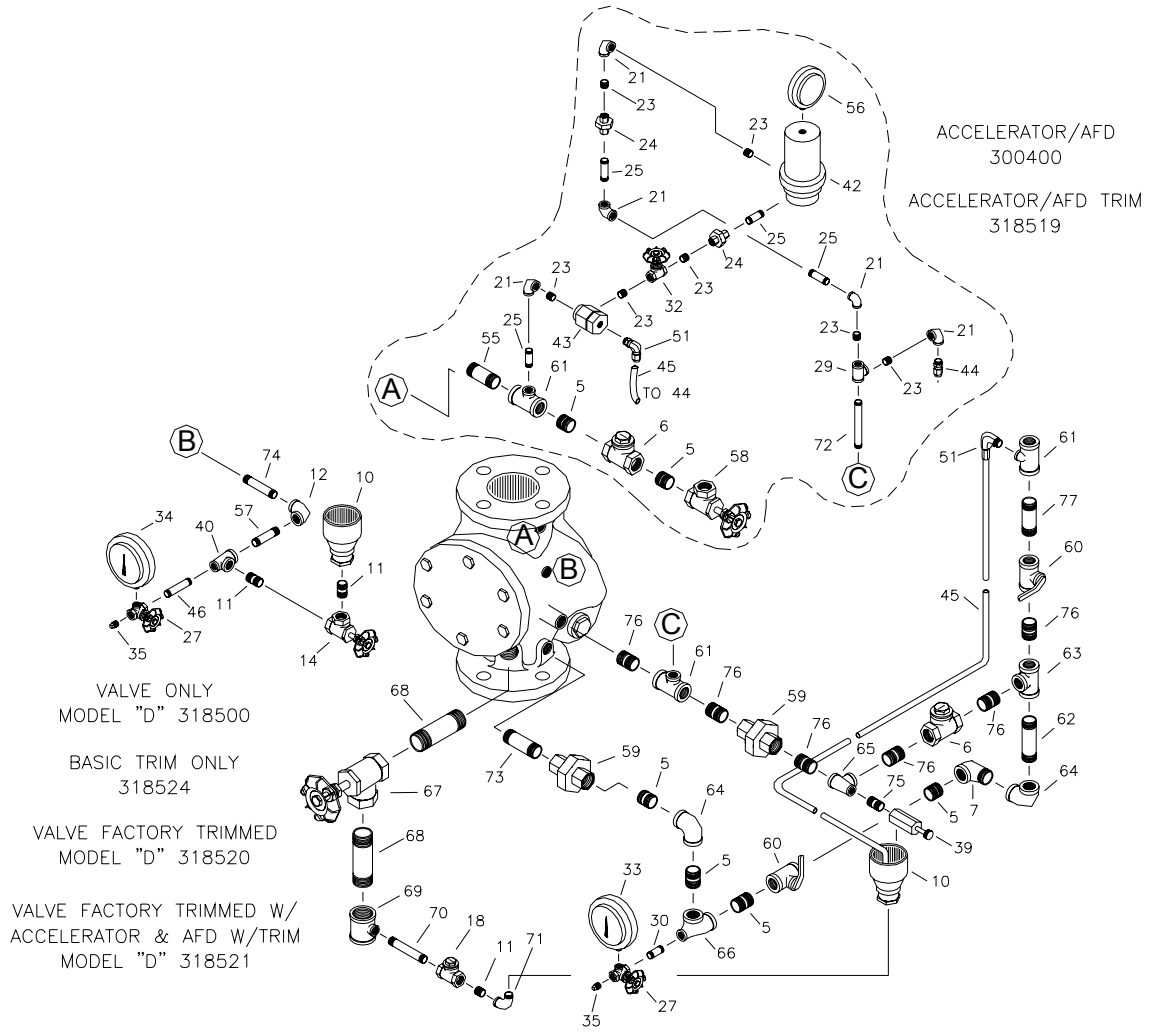


FIG.2

DET. NO.	DESCRIPTION	PART NO.	QTY.	DET. NO.	DESCRIPTION	PART NO.	QTY.	DET. NO.	DESCRIPTION	PART NO.	QTY.
5	3/4" Close Nipple	310400	6	34	Air Gauge	300120	1	62	3/4" x 3" Nipple	310403	1
6	3/4" Check Valve	311640	2	35	1/4" Plug	311001	2	63	3/4" Tee	311304	1
7	3/4" Street Elbow	311206	1	39	1/2" Velocity Check Valve	323300	1	64	3/4" Elbow	311204	2
10	Priming Cup	300470	2	40	1/2" x 1/4" x 1/2" Tee	311305	1	65	3/4" x 1/2" x 3/4" Tee	311313	1
11	1/2" Close Nipple	310300	3	42	Model "C" Accelerator	300400	1	66	3/4" x 1/4" x 3/4" Tee	311392	1
12	1/2" Elbow	311203	1	43	Model "C" Anti-Flooding Dev.	323332	1	67	1 1/2" Angle Valve	311616	1
14	1/2" Angle Valve	311612	1	44	1/4" NPT x 1/4" Tube Male Connector	320605	2	68	1 1/2" x 5 1/2" Nipple	310708	2
18	1/2" Check Valve	311639	1	45	1/4" Copper Tubing	M-320604	26 1/8"	69	1 1/2" x 1 1/2" x 1/2" Tee	311391	1
21	1/4" Elbow	311201	5	46	1/4" x 3 1/2" Nipple	310105	1	70	1/2" x 5 1/2" Nipple	310309	1
23	1/4" Close Nipple	310100	7	51	1/4" NPT x 1/4" Tube Female Elbow	320603	2	71	1/2" Street Elbow	311201	1
24	1/4" Union	311401	2	55	3/4" x 2 1/2" Nipple	310402	1	72	1/4" x 6" Nipple	310110	1
25	1/4 x 1 1/2" Nipple	310101	4	56	1/4" Air Gauge	300420	1	73	3/4" x 4 1/2" Nipple	310406	1
27	1/4" 3 Way Valve	311683	2	57	1/2" x 2" Nipple	310302	1	74	1/2" x 3" Nipple	310304	1
29	1/4" Tee	311301	1	58	3/4" Angle Valve	311613	1	75	1/2" Close Galv. Nipple	310300-G	1
30	1/4" x 2" Nipple	310102	1	59	3/4" Union	311404	2	76	3/4" Close Galv. Nipple	310400-G	6
32	1/4" Globe Valve	311600	1	60	3/4" Ball Valve	311682	2	77	3/4" x 2 1/2" Galv. Nipple	310402-G	1
33	Water Gauge	300119	1	61	3/4" x 3/4" x 1/4" Tee	311315	3				

GLOBE DRY PIPE VALVE INSTALLATION AND MAINTENANCE GUIDE

4" & 6" MODEL F-3 AND G-3 CROSS SECTION

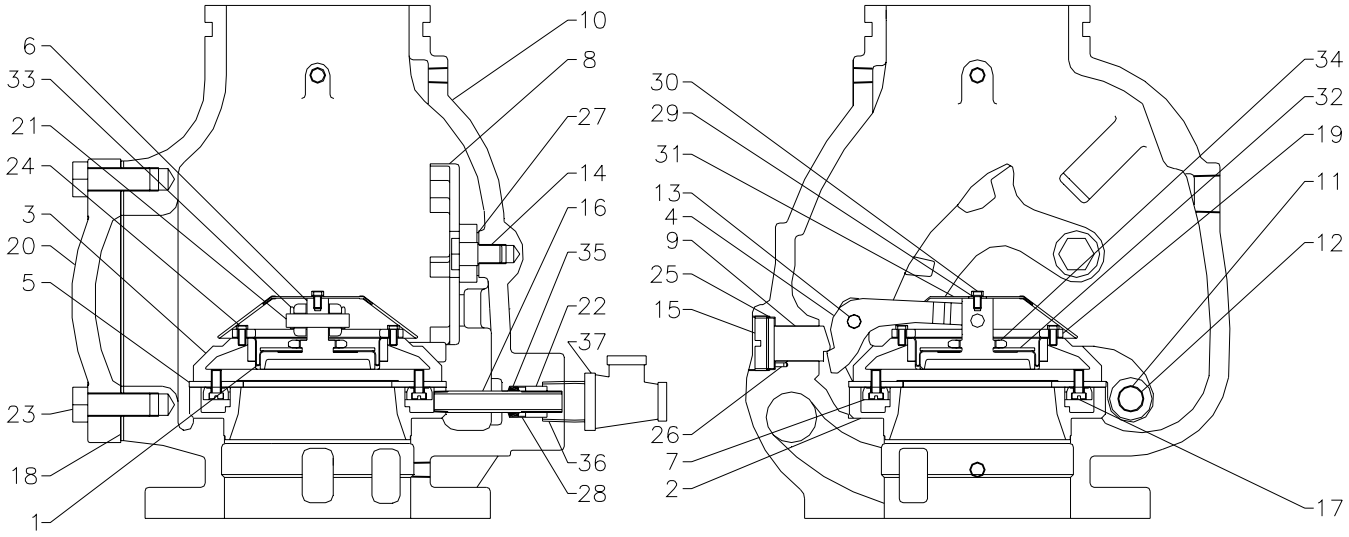


FIG. 3

ITEM	DESCRIPTION	MAT'L	4" P/N	6" P/N	ITEM	DESCRIPTION	MAT'L	4" P/N	6" P/N
1	Bellofram	EPDM	319794	319844	20	Side Cover Plate	Cast Iron	319767	319814
2	Seat Ring	Bronze	300014	300213	21	Pin	Bronze	300011	300210
3	Clapper and Ring Assembly	Bronze	319779	319821	22	Packing Nut	Bronze	300025	300025
4	Lever	Bronze	319757	319807	23	Cover Bolt	Steel	319768	319815
5	Rubber Seat Ring	EPDM	319791	319841	24	Cap Screw (6 req'd)	Bronze	319760	319760
6	Compression Plate	Bronze	319752	319802	25	Rubber Gasket	Rubber	300030	300030
7	Retaining Ring	Bronze	319792	319842	26	Pin	Brass	300031	300031
8	Clapper Latch	Bronze	300015	300214	27	Bronze Washer	Bronze	300032	300032
9	Locking Stud	Bronze	300016	300215	28	Packing Gland Ring	Bronze	300035	300035
10	Body - F-3	Cast Iron	319765	319813	29	Lock Washer	Bronze	319761	319761
	Body - G-3	Cast Iron	319704	319812	30	Cap Screw	Bronze	319762	319762
11	Hinge Pin	Bronze	300018	300217	31	Shield	Elastomer	319758	319808
12	Bushing	Bronze	300019	300218	32	Memory Washer	Brass	319763	319811
13	Pin	Bronze	319798	319845	33	Cotter Pin	Brass	300211	300211
14	Latch Screw	Brass	300020	300020	34	Nut	Brass	319756	319806
15	Plug	Bronze	300021	300021	35	Packing	PTFE	300036	300036
16	Atmospheric Discharge Tube	Brass	319766	300022	36	1" Close Nipple	Galvanized	310303-G	310303-G
17	Retaining Ring Screw (6 req'd)	Bronze	319778	319778	37	1" Elbow	Steel	311205	311205
18	Cover Plate Gasket	Rubber	300023	300219	N/S	Cover Release Screw	Stainless	300012	300012
19	Clamping Ring	Bronze	319793	319843					

TECHNICAL DESCRIPTION

The Globe Models F-3 and G-3* Dry Pipe Valves have a single clapper assembly design which provides varying areas exposed to working pressures which, in combination, create a differential ratio between system air pressure and water supply pressure. A single-latching lever is provided as a means of holding the clapper in the "set" position.

The body of the Dry Pipe Valve is constructed of high tensile strength cast iron having considerable ductility to reduce damage in field handling.

All interior parts are machined from highly corrosive-resistant copper alloys, each having high strength and good wear resistance.

Rubber parts are of selective material which have good abrasive resistance and long life expectancy in terms of resiliency.

*All information contained in this Bulletin pertains to both Models, F-3 and G-3 Dry Pipe Valves unless otherwise specified.

GLOBE DRY PIPE VALVE INSTALLATION AND MAINTENANCE GUIDE

The differential operating ratio of the Globe Dry Pipe Valve is between 5 to 1 and 6.5 to 1 in terms of water service pressure to normal tripping air pressure. The ratio varies within the range specified, depending on water service pressure. For example, at 20 pounds per square inch water service pressure, the air pressure at the tripping point would be approximately 3 pounds per square inch as indicated on the air gauge. If the water service pressure is 80 pounds per square inch, the air pressure tripping point will be approximately 16 pounds per square inch as indicated on the gauge. The differential tripping ratio is stabilized due to the constant area exposure provided on the top surface of the operating **"Bellofram,"** Item 1 (Fig. 3) Page 5.

As a guide to determining required system air pressure to be maintained, refer to the table below. In using this table, consider the maximum water pressure to which the system may be subjected due to line pressure variations or the application of booster fire pumps.

WATER PRESSURE P.S.I.	AIR PRESSURE REQUIREMENTS P.S.I.	
MAXIMUM	MINIMUM	MAXIMUM
30	15	20
50	20	25
75	25	30
100	30	35
125	35	40
150	40	45
175	45	50

OPERATION

Air pressure held in the sprinkler system piping above the Dry Pipe Valve provides "a mechanical force" to hold the valve closed. When an automatic sprinkler operates, or an inspector's test valve is opened, air continually discharging from the opening will reduce the system air pressure to a point below the differential balancing point or normal ratio between air pressure and water service pressure. The balancing, or tripping point, is that pressure at which the dry pipe valve clapper will open and permit water to flow upward into the sprinkler system piping. The valve clapper opens because the mechanical forces holding it closed have been reduced in proportion to the reduction in the system air pressure exerted on the **compression plate**, Item 6 (Fig. 3) through the **"Bellofram."** As the **compression plate** moves upward at the differential balancing point, the end of the **lever**, Item 4 (Fig. 3) attached to the **compression plate** also moves upward. The forward end of the **lever** pivots on the **pin**, Item 13 (Fig. 3) and disengages the **lever** "toe" with the underside of the **locking stud**, Item 9 (Fig. 3) unlatching the clapper assembly. The clapper assembly rotates upward and back on the **hinge pin**, Item 11 (Fig. 3), allowing an unobstructed passage for water to enter the sprinkler system piping.

A **clapper latch**, Item 8 (Fig. 3) is provided to prevent the clapper from returning to its seat after operation, so that the system piping can be drained through an opening located below the seat ring level when re-establishing the system into service.

The **seat ring**, Item 2 (Fig. 3), contains two seating surfaces for the **rubber seat ring**, Item 5 (Fig. 3). The outer seat surface provides a seal to retain the air pressure in the system, and the inner surface of the **seat ring** provides a seal against the system water service pressure. The inner area or space between the air seal and the water seal is vented, or channeled, to the outside room atmosphere through the **atmospheric discharge tube**, Item 16 (Fig. 3). A system of "trim" piping is connected on the outside of the Dry Pipe Valve to the **atmospheric discharge tube**. This connects the "between seats" area to a pipe line terminating at a mechanical water motor alarm or an electric alarm switch.

When the valve is in the **"set"** position (Fig. 3) and the clapper assembly is latched under the extension of the **locking stud**, the area or space between the seat-sealing surfaces is exposed to the atmospheric pressure or normal outside room air pressure.

When the valve clapper opens, and water is flowing through the valve, the inner area of the **seat ring**, between the air and water seals is exposed to the water supply. Water flows into this area and out through the **atmospheric discharge tube** into the **"trim"** piping to the alarm line on the outside of the valve. Water discharging through these lines is directed to a mechanical water motor alarm gong and/or electric alarm switch (circuit closer) (see Important Note #6, Page 1). Water flowing to the alarm provides an audible alarm indicating that the sprinkler system has operated or that a fire exists in a particular area.

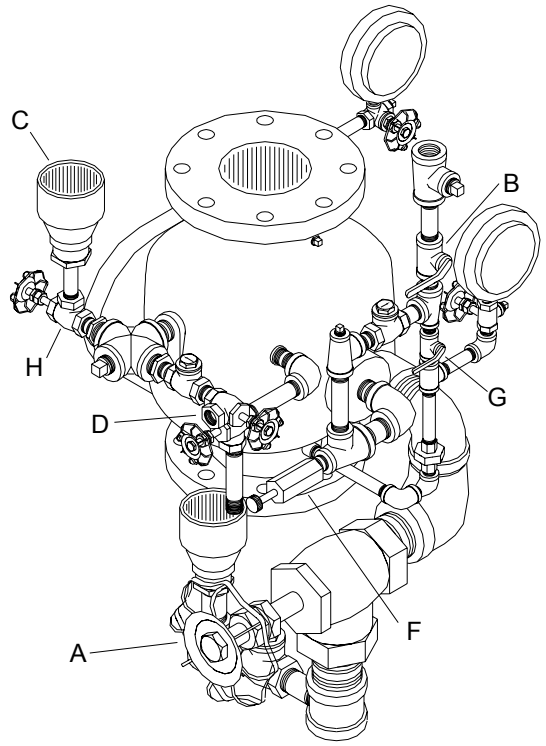


FIG. 4

GLOBE DRY PIPE VALVE INSTALLATION AND MAINTENANCE GUIDE

Included in the outside trimmings of the Dry Pipe Valve is an **alarm test valve** "G" (Fig. 4). This valve may be opened at any time when the system is in service to test the operation of the alarm devices only.

To Set the Valve

1. After the valve has operated, and there is no further need for water to flow through the system, close the main valve controlling the water supply to the sprinkler system. The main control valve usually consists of a full size gate valveor butterfly valve located under the dry pipe valve or it may be in the form of a post indicator valve located outside the building above ground.
2. Open the **main drain valve** "A" (Fig. 4). When this valve is opened to drain the system, make certain that the discharge from the system drain does not flow into an area where a large flow of water will cause damage. Make sure that all low points in the system are also drained through any other existing auxiliary drain valves provided. Make certain that all auxiliary or low point drain valves are closed tightly after all water has been drained.
3. After all system piping has been drained, remove the dry pipe valve **cover plate**, Item 20 (Fig. 3). The valve clapper will be found in the open position and will be held in the open position by the **clapper latch**, Item 8 (Fig. 3), located on the back inside wall of the valve body. Remove any dirt or sediment which may be found on the seat surfaces or inside of the valve.
4. Raise the valve clapper off the **clapper latch**. Hold the **clapper latch** up and to the left. This will allow the clapper to move downward to the seat surfaces. The **clapper latch** has three steps, and it will be necessary to hold the **clapper latch** out until the clapper drops free of the lower step.
5. When the clapper is resting properly on the seat ring, and the forward left end of the lever is engaged under the locking stud, replace the cover plate with gasket, bolting it securely. At this point make certain that the **main drain valve** is not closed. Open the **priming valve** "H" (Fig. 4). Obtain approximately 3 quarts of clean water. Pour the water into the **priming cup** "C" (Fig. 4) slowly until the water has passed through the opened priming valve and into the body of the dry pipe valve. The valve must be primed with water with no air pressure in the system piping. After the priming water is introduced into the valve body, close the **priming valve** tightly.
6. Introduce air into the system by starting the primary air source compressor and/or by opening the supply valve from an air storage tank. The **main air supply valve** is indicated as "D" (Fig. 4).

When the desired air pressure (see table on page 6) is indicated on the air pressure gauge, shut off the air compressor and/or close the **main air supply valve**. Open the main water supply valve with the **main drain valve** slightly open to exhaust any air which may be trapped under the main valve clapper, close the **main drain valve** and make certain that the main water supply valve is in the full open position. If air or water is leaking from the **mechanical drain** "F" (Fig. 4), this will indicate a leakage either through the clapper at the main seat or through the **"Bellofram,"** Item 1 (Fig. 3), or through the water inlet seat. Continued leaks occurring at the **mechanical drain** require a close examination of the seating surfaces and condition of the rubber sealing surfaces. If no leakage is evident, then the Dry Pipe Valve is in the normal **"set"** position and the system is considered operative in the event of fire.

PHYSICAL DATA	F-3		G-3	
	4"	6"	4"	6"
Overall Length	16"	16 1/2"	16"	16 1/2"
Center of Valve to Back	11"	12"	11"	12"
Center of Valve to Right	12"	12"	12"	12"
Center of Valve to Left	10"	11"	10"	11"
Weight of Valve Complete with all Trimmings	161 lbs. 179 lbs.	231 lbs. 249 lbs.	151 lbs. 169 lbs.	221 lbs. 239 lbs.
Minimum Inside Dimensions of Enclosing Valve House	45" x 52"	45" x 52"	45" x 52"	45" x 52"
Friction Loss in Equivalent Feet	19'-6"	31'-0"	19'-6"	31'-0"

MAINTENANCE

Should the "Bellofram," or rubber seat ring, Item 5 (Fig. 3), be damaged requiring replacement, the clapper, Item 3 (Fig. 3), should be removed from the valve. To remove the clapper, place the fingers of your right hand under the back end of the clapper sliding the hinge pin, Item 11 (Fig. 3), towards you and out through the hole provided in the body of the valve. The hole is normally covered by the cover plate. Cover the bronze metal seat in the valve with a soft rubber material or cardboard to prevent damage to metal surfaces while removing the clapper assembly.

To Replace "Bellofram"

Place the clapper face down on a suitable working surface. Remove the top **cap screw**, Item 30 (Fig. 3), and **pin**, Item 13 (Fig. 3). Remove the **shield**, Item 31 (Fig. 3), **pin**, Item 21 (Fig. 3), and the **lever**, Item 4 (Fig. 3). Remove the **nut**, Item 34 (Fig. 3), and **memory washer**, Item 32 (Fig. 3). Remove all **cap screws**, Item 24 (Fig. 3). Remove the **clamping ring**, Item 19 (Fig. 3), and replace the **"Bellofram"** with one of proper size and material as supplied by the manufacturer. Install the new **"Bellofram"** with printed wording down against the upper surface of the **compression plate,** Item 6 (Fig. 3). Make certain that the **"Bellofram"** when installed takes the shape illustrated in Fig. 3. Replace the **clamping ring** and **cap screws**. Place **compression plate** in upper recess of clapper. Place the **memory washer** in position and tighten the **nut**. Continue to follow the reverse procedure as outlined above for complete assembly of the clapper unit and insert the assembly into the valve without damaging the seat. Insert the hinge in its proper location. Follow the procedure as outlined under the instructions "To Set the Valve."

GLOBE DRY PIPE VALVE INSTALLATION AND MAINTENANCE GUIDE

To Replace Rubber Seat Ring

After removal of the "clapper assembly" from the body, place it face upward on a suitable working surface. The clapper may be held in a vise by clamping on one of the hinge arms. Care should be taken not to mar or bend any of the bronze parts.

With a wide blade flat end screw driver, remove all of the **retaining screws**, Item 17 (Fig. 3). Remove the **retaining ring**, Item 7 (Fig. 3). Remove the **rubber seat ring**, Item 5 (Fig. 3) and replace with one of proper size as supplied by the manufacturer. Replace the **retaining ring** aligning all screw holes. Insert all **retaining ring screws**. One at a time, tighten each screw slightly in a circular pattern until each screw is reasonably tight. Do not overtighten screws. The reason for this procedure is to insure that the **retaining ring** will not bend and that tightening forces are applied evenly against the rubber. If one screw is tightened ahead of another, the rubber ring will be squeezed out causing one section to be higher than the other. An uneven rubber surface will cause difficulty in obtaining a good seal against the seat surface and may even cause water or air leaks at the sealing surfaces.

After all **retaining ring screws** are evenly tightened and the rubber surface appears to be even, the clapper assembly can be reinstalled in the valve body.

Follow the procedure outlined under the instructions "To Set the Valve."

To Test Electric or Mechanical Alarm Operation Only

Open **alarm test valve** "G" (Fig. 4). This will allow water from below the dry pipe valve seat to be diverted through a by-pass line directly to the mechanical or electrical alarm mechanisms. Make certain that the **alarm test valve** is wide open during the alarm test. The **alarm shut off valve** "B" (Fig. 4) must remain open at all times during alarm test and while the sprinkler system is in a normal operating condition. The **alarm shut off valve** is used only to shut off alarm when necessary during maintenance procedures.

After a satisfactory alarm test is accomplished, make certain that the **test valve** "G" (Fig. 4) is closed tightly.

To Trip Test the System

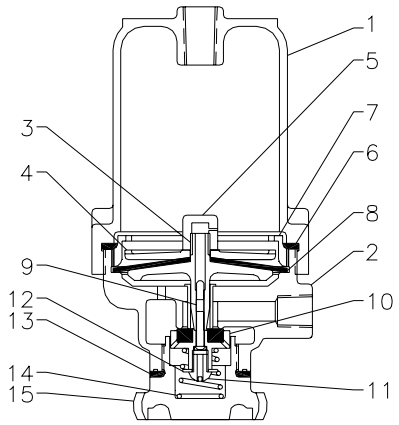
To provide realistic test information, a trip test should be performed only by the release of air from the inspector's test valve located in a remote portion of the sprinkler system piping. To release air from any other openings or valve would not provide a calibrated discharge of air. This would reflect on the tripping time lapse and would not compare with operational time in the event of "fire" operation.

Open the inspector's test valve. Have someone standing by at the dry pipe valve to read the air pressure gauge at the moment the dry pipe valve trips. After the valve "trips," close the main control valve and follow the procedure as outlined under the instructions "To Set the Valve."

Record the time from the opening of the inspector's test valve until a full flow of water is observed coming from the inspector's test valve flow orifice. Also, record the tripping pressure indicated on the air gauge at the time the valve tripped. A later comparison of trip test records may indicate possible need for maintenance or repairs to the system. An increasing lapsed time may indicate either a partly plugged inspector's test valve or sludge build-up in the system piping. A lower or higher tripping pressure may indicate need for replacement or close examination of mechanical parts.

GLOBE DRY PIPE VALVE INSTALLATION AND MAINTENANCE GUIDE

MODEL C ACCELERATOR AND ANTI-FLOODING DEVICE CROSS SECTION



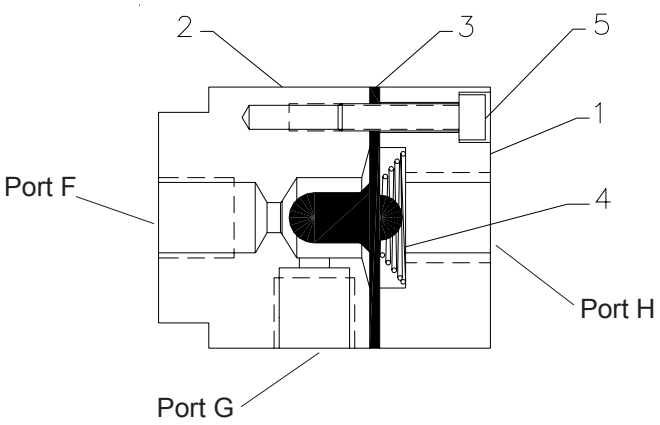


FIG.5

ITEM	DESCRIPTION	MATERIAL	PART NO.
1	Upper Chamber	Bronze	300401
2	Lower Chamber and Valve Seat Assembly	Bronze	300402
3	Pressure Plate	Brass	300405
4	Diaphragm Plate	Brass	300406
5	Nut	Bronze	300407
6	Gasket	E.P.D.M.	300408
7	Clamping Ring	Brass	300409
8	Diaphragm	Neoprene	300410
9	Restricted Orifice Pin	Monel	300411
10	Valve Disc and Disc Retainer Assembly	Neoprene/Brass	300412
11	Retaining Screw	Bronze	300415
12	Spring Retainer Disc	Brass	300416
13	Gasket	E.P.D.M.	300417
14	Spring	Bronze	300418
15	Plug	Brass	300419

ITEM	DESCRIPTION	MATERIAL	PART NO.
1	Top	Brass	323334
2	Body	Brass	323333
3	Diaphragm	E.P.D.M.	323335
4	Spring	Stainless Steel	323336
5	Screw	Steel	323337

Model C Acclerator and Anti-Flooding Device

When the Model C Accelerator "A" (Fig. 6) and in section (Fig. 5) is attached to the Globe Dry Pipe Valve, as illustrated, the same procedure is followed in reestablishing the system in service; same as followed without this attachment, except that - after draining water from the system piping and before pumping air into the system, the lower hand wheel plug, Item 15 (Fig. 5), should be "unscrewed" from the bottom of the accelerator and interior valve assembly, Items 9, 14, and 2 (Fig. 5), should be removed. This complete assembly can be pulled out by hand (if it does not come out with the hand-wheel cap when it is unscrewed). This will allow any water, that may have accumulated in the upper chamber, to drain out and permit thorough cleaning of the valve disc, Item 10, seat assembly, Item 2, and the orifice pin, Item 9.

The valve assembly can then be replaced and the hand-wheel cap screwed back into position. The device is then set for operation when air pressure is pumped into the system piping.

It is important that the foregoing procedure be followed after each operation of the system in order to insure against leakage of air in the event of scale and other substances collecting on the discharge seat of the Accelerator and to insure proper action of the system in the event of fire.

If it becomes necessary to remove the Accelerator from the valve, close the 1/4" control valve "B" (Fig. 6), and disconnect the unions "C" and "D." Remove nipple and union half which are connected into fitting at "E" (Fig. 6), and insert a 1/4" pipe plug. The dry valve will now operate normally without the Accelerator feature.

For installation of the Anti-Flooding Device - Inlet port F of the anti-flooding device ports to the upper 1/4" NPT on the top side of the dry pipe valve (Port J). Outlet port G on the anti-flooding device goes to the inlet side of the accelerator with a globe valve mounted between them for operation of the valve

GLOBE DRY PIPE VALVE INSTALLATION AND MAINTENANCE GUIDE

without the accelerator and anti-flooding device. Inlet port H is ported to the exhaust side of the accelerator and the intermediate chamber of the dry valve seat ring.

During normal operation, as air pressure is reduced in the system (resulting from the operation of one or more sprinklers), the passage of air from the accelerator is introduced into the intermediate chamber of the dry valve causing it to trip immediately, allowing water from the supply to enter the system. As the air pressure enters port H on the anti-flooding device, it is assisted by the help of a spring to close the passage between ports F and G on the anti-flooding device, thus preventing flow of water or water borne debris from entering the accelerator. This allows for a more easily maintained and trouble-free system.

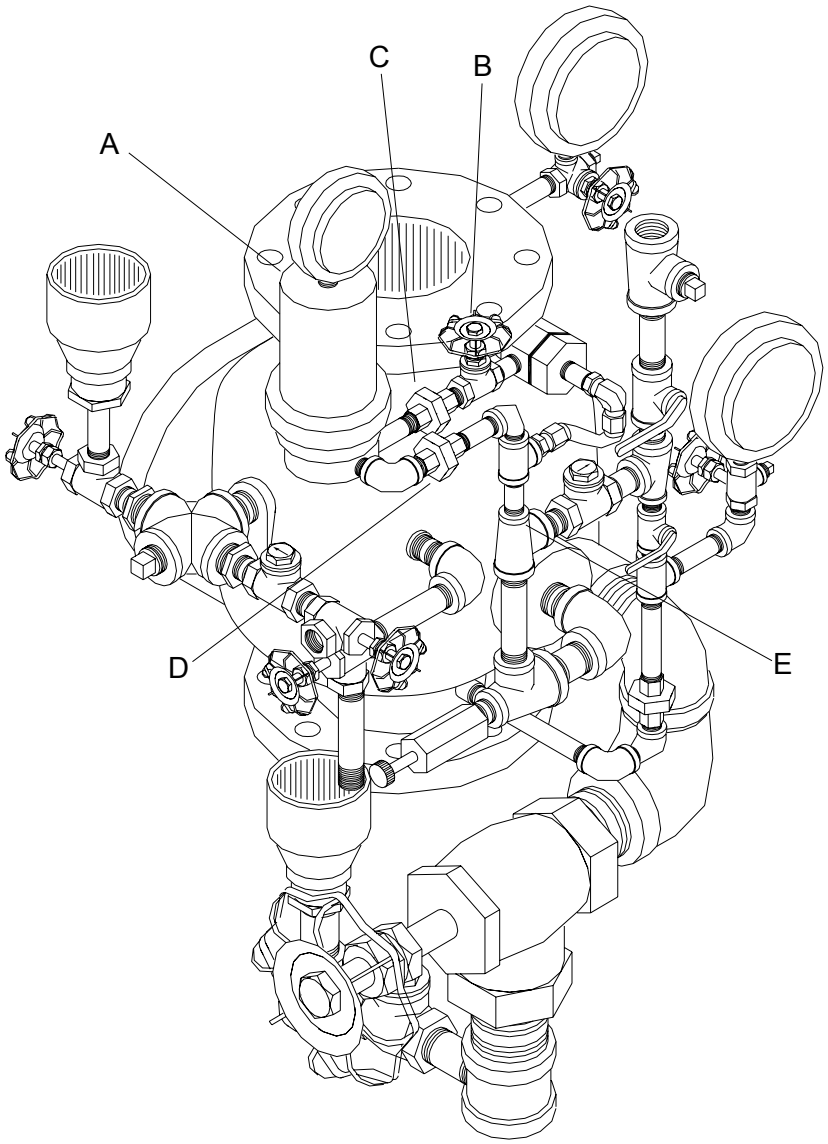


FIG. 6

GLOBE DRY PIPE VALVE INSTALLATION AND MAINTENANCE GUIDE

4" MODEL F-3 AND G-3 TRIM ARRANGEMENT

VALVE ONLY
MODEL "G-3" 319749
MODEL"F-3" 319786

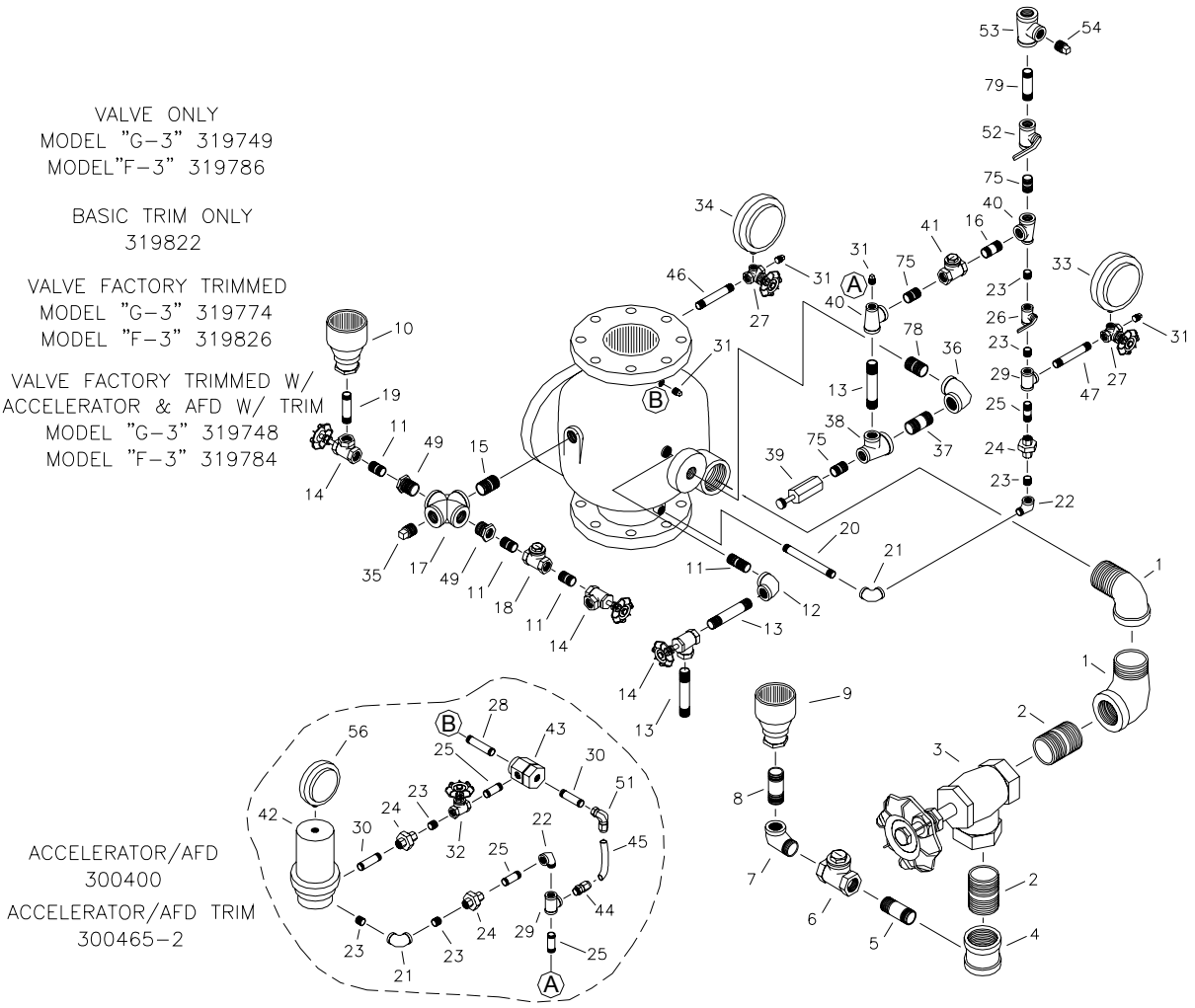
BASIC TRIM ONLY
319822

VALVE FACTORY TRIMMED
MODEL "G-3" 319774
MODEL "F-3" 319826

VALVE FACTORY TRIMMED W/ ACCELERATOR & AFD W/ TRIM
MODEL "G-3" 319748
MODEL "F-3" 319784

ACCELERATOR/AFD
300400

ACCELERATOR/AFD TRIM
300465-2



DET. NO.	DESCRIPTION	PART NO.	QTY.	DET. NO.	DESCRIPTION	PART NO.	QTY.	DET. NO.	DESCRIPTION	PART NO.	QTY.
1	2" Street Elbow	311209	2	20	1/4" x 5" Nipple	310108	1	39	1/2" Velocity Check Valve	323300	1
2	2" Close Nipple	310800	2	21	1/4" Elbow	311201	2	40	1/2" x 1/4" x 1/2" Tee	311305	2
3	2" Angle Valve	311617	1	22	1/4" Street Elbow	311211	2	41	1/2" Check Valve w/Vented Clapper	311639-V	1
4	2" x 2" x 3/4" Tee	311323	1	23	1/4" Close Nipple	310100	6	42	Model "C" Accelerator	300400	1
5	3/4" Close Nipple	310400	1	24	1/4" Union	311401	3	43	Model "C" Anti-Flooding Device	323332	1
6	3/4" Check Valve	311640	1	25	1/4" x 1 1/2" Nipple	310101	4	44	1/4" NPT x 1/4" Tube Male Connector	320605	1
7	3/4" Street Elbow	311206	1	26	1/4" Ball Valve	311690	1	45	1/4" Copper Tubing	M-320604	5"
8	3/4" x 4" Nipple	310405	1	27	1/4" 3 Way Valve	311683	2	46	1/4" x 3 1/2" Nipple	310105	1
9	Drip Cup	300122	1	28	1/4" x 2 1/2" Nipple	310103	1	47	1/4" x 4 1/2" Nipple	310107	1
10	Priming Cup	300470	1	29	1/4" Tee	311301	2	49	1" x 1/2" Bushing	311107	2
11	1/2" Close Nipple	310300	4	30	1/4" x 2" Nipple	310102	2	51	1/4" NPT x 1/4" Tube Female Elbow	311199	1
12	1/2" Elbow	311203	1	31	1/4" Plug	311001	4	52	1/2" Ball Valve	311692	1
13	1/2" x 4" Nipple	310306	3	32	1/4" Globe Valve	311600	1	53	3/4" x 1/2" x 1/2" Tee	311318	1
14	1/2" Angle Valve	311612	3	33	1/4" Water Gauge	300119	1	54	1/2" Plug	311016	1
15	1" Close Nipple	310500	1	34	1/4" Air Gauge	300120	1	56	1/4" Accelerator (Air) Gauge	300420	1
16	1/2" x 1 1/2" Galv. Nipple	310301-G	1	35	1" Plug	311005	1	75	1/2" Close Galv. Nipple	310300-G	3
17	1" Cross	300107	1	36*	1" Elbow	311205	1	78*	1" Close Galv. Nipple	310500-G	1
18	1/2" Soft Seat Check Valve	311639	1	37	1" x 2" Galv. Nipple	310501-G	1	79	1/2" x 2 1/2" Galv. Nipple	310303-G	1
19	1/2" x 2 1/2" Nipple	310303	1	38	1" x 1/2" x 1/2" Reducing Tee	311390	1				

*Items included with basic valve.