

ALARM CHECK VALVE ASSEMBLY

MODEL: SD-ECO-AVA

TECHNICAL DATA :

Nominal Size	150 & 100 NB
End Connection	Flange x Flange
Rated Working Pressure	175 PSI
Range of Working Pressure	21 PSI TO 200 PSI
Testing Pressure	350 PSI
Mounting	Vertical
Material	Grey Cast Iron
Flange Connection	ANSI B16.5 #150 ANSI B16.1 #125
Flange Facing	Flat Face
Frictional Loss in Terms of Equivalent Length of Pipe (C-120)	150 NB - 40ft 100 NB - 40ft
Max. Flow Rate	150 NB - 790 gpm 100 NB - 550 gpm
Non Actuating Flow Rate	Below 4 gpm
Weight	150 NB - 37 Kg 100 NB - 20 Kg
Finish	Red Enamel
Ordering Information	Specify Size of valve, Flange Connection, Trim Details and Pipe OD

PRODUCT DESCRIPTION

The SHIELD alarm check valve features a grooved seat alarm port, an external by-pass, and removable hand hole cover which hinged to a clapper assembly, it has both flanged inlet and outlet, the valve may be installed vertically on a wet pipe sprinkler system, which is used to lock water pressure fluctuations into the sprinkler system during providing the capability of initiating the required fire alarm through a water motor alarm or an electric pressure switch, which may use at constant pressure or variable pressure water supplies.

Wet Alarm Valves are designed to hold back water pressure in the piping system until the sprinkler is activated, to be used in wet pipe sprinkler installations in buildings not subject to freezing temperatures. Alarm Valve includes trim packages valves, gauges, pressure switch, fittings and nipples to provide retard chamber connection, drain connections and alarm test bypass.



RETARD CHAMBER

This is a valve accessory which may be used for variable pressure wet systems where mechanical motor alarms or pressure switches are used. In situations where excessive water pressure surges occur the retarding chamber is needed to collect excess water from the alarm valve and feed water back into the main drain, before activating the alarm.

Retard chamber with galvanized steel pipes and pipe fittings

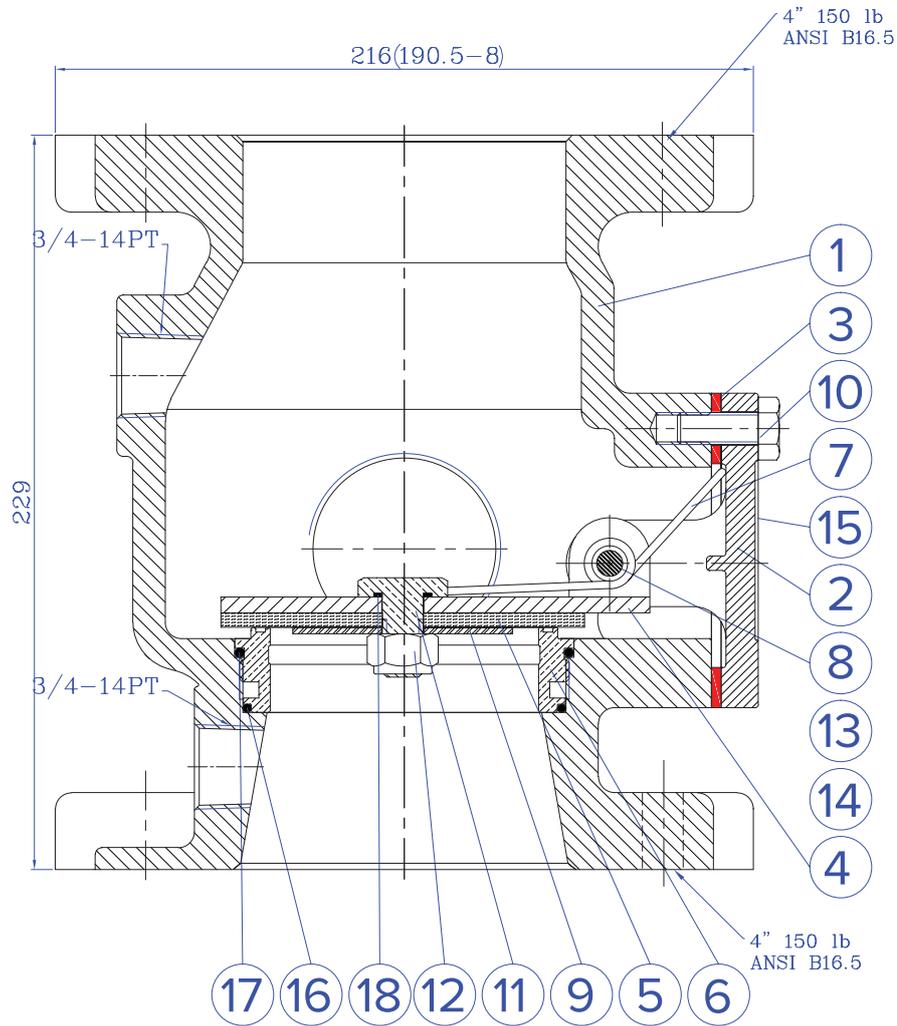
Inlet Connection	½" NPT female
Outlet Connection	¾" NPT female
Rated Working Pressure	175 psig
Hydrostatic Test Pressure	350 psig
Material	Aluminium Alloy

WATER MOTOR ALARM GONG

This is a hydraulically driven mechanical gong that automatically sounds a continuous alarm when the sprinkler system activates.

Inlet Connection	½" NPT female
Outlet Connection	¾" NPT female
Rated Working Pressure	175 psig
Hydrostatic Test Pressure	350 psig
Material	Aluminium Alloy

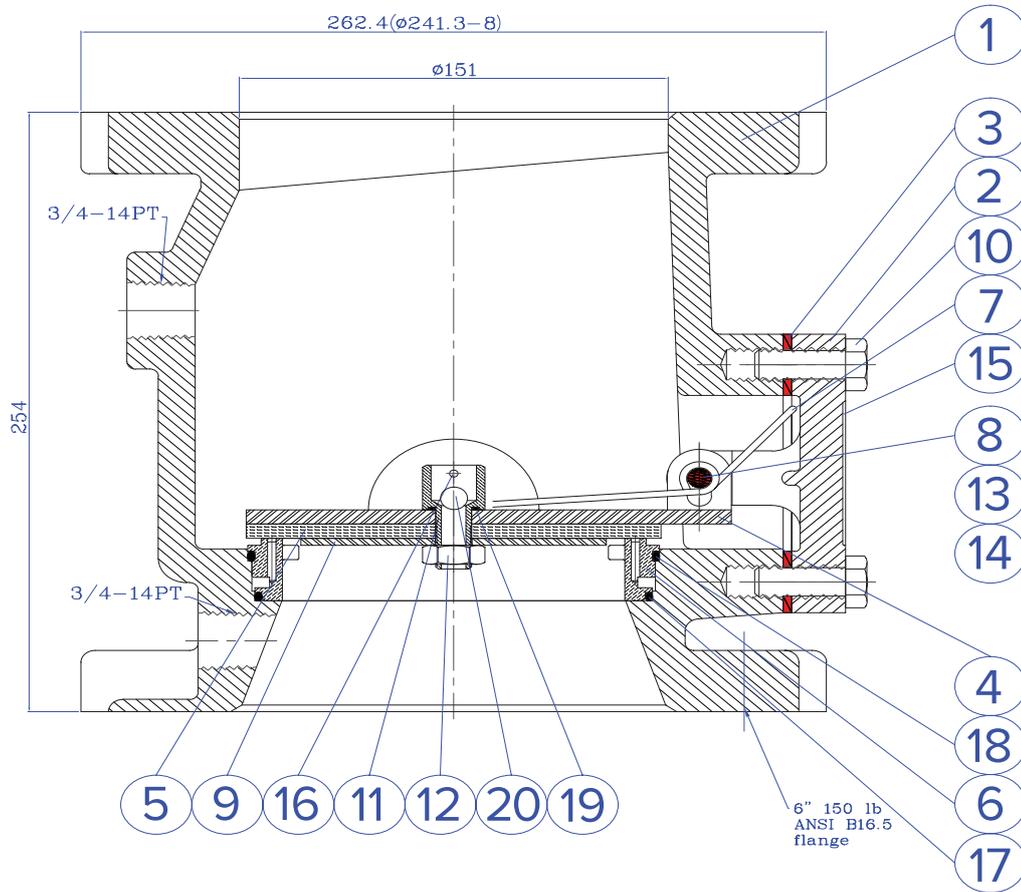
PART LIST - ALARM VALVE (DN100)



No.	Part Name	Material	Standard
1	Body	Grey Cast Iron	ASTM A126 Class A
2	Cover	Grey Cast Iron	ASTM A126 Class A
3	Gasket	Asbestos	5072S
4	Clapper	Stainless Steel	ASTM A276 S30400
5	Seat Seal	Synthetic Rubber	#E701N
6	Seat Ring	Cast Bronze	ASTM B548 C83600
7	Torsion Spring	Stainless Steel	ASTM A276 S30400
8	Hinge Pin	Stainless Steel	ASTM A276 S30400
9	Clamp Ring	Stainless Steel	ASTM A276 S30400

No.	Part Name	Material	Standard
10	Bolt	Mild Steel	ASTM A126 Class A
11	Clapper Bolt	Brass Rod	ASTM A126 Class A
12	Nut	Stainless Steel	5072S
13	Bearing	Brass Rod	ASTM A276 S30400
14	E Snap	Stainless Steel	#E701N
15	Name Plate	Aluminum Strip	ASTM B548 C83600
16	O-Ring G95 (d94.4*W3.1)	Synthetic Rubber	ASTM A276 S30400
17	O-Ring (d98*W3.5)	Synthetic Rubber	ASTM A276 S30400
18	O-Ring P12 (d11.8*W2.4)	Synthetic Rubber	ASTM A276 S30400

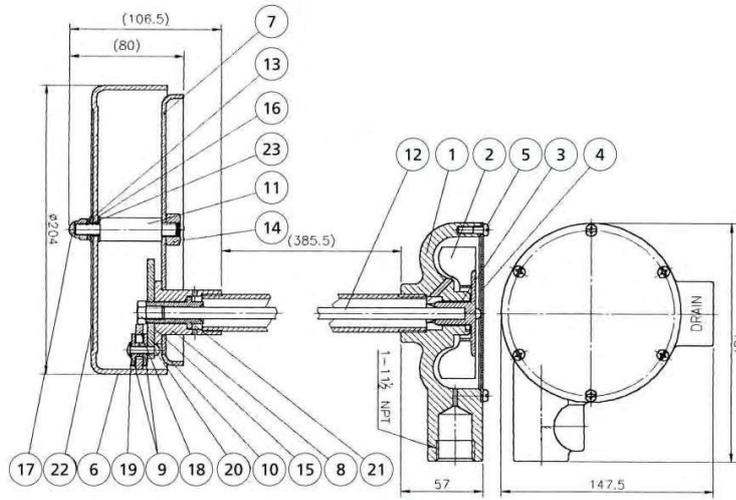
PART LIST - ALARM VALVE (DN150)



No.	Part Name	Material	Standard
1	Body	Grey Cast Iron	ASTM A126 Class A
2	Cover	Grey Cast Iron	ASTM A126 Class A
3	Gasket	Asbestos	5072S
4	Clapper	Stainless Steel	ASTM A276 S30400
5	Seat Seal	Synthetic Rubber	#E701N
6	Seat Ring	Cast Bronze	ASTM B548 C83600
7	Torsion Spring	Stainless Steel	ASTM A276 S30400
8	Hinge Pin	Stainless Steel	ASTM A276 S30400
9	Clamp Ring	Stainless Steel	ASTM A276 S30400
10	Bolt	Mild Steel	ASTM A283 Grade D

No.	Part Name	Material	Standard
11	Clapper Bolt	Brass Rod	ASTM B16 C36000
12	Nut	Brass Rod	ASTM B16 C36000
13	Bearing	Brass Rod	ASTM B16 C36000
14	E Snap	Stainless Steel	ASTM A276 S30400
15	Name Plate	Aluminum Strip	ASTM B209 5052
16	Set Pin (Ø3.2*20L)	Stainless Steel	ASTM A276 S30400
17	O Ring G135 (d134.4*W3.1)	Synthetic Rubber	NBR
18	O Ring (d136.4*W3.5)	Synthetic Rubber	NBR
19	O Ring P12 (d11.8*W2.4)	Synthetic Rubber	NBR
20	Ball (SØ¾)	Stainless Steel	ASTM A276 S30400

PART LIST - ALARM GONG

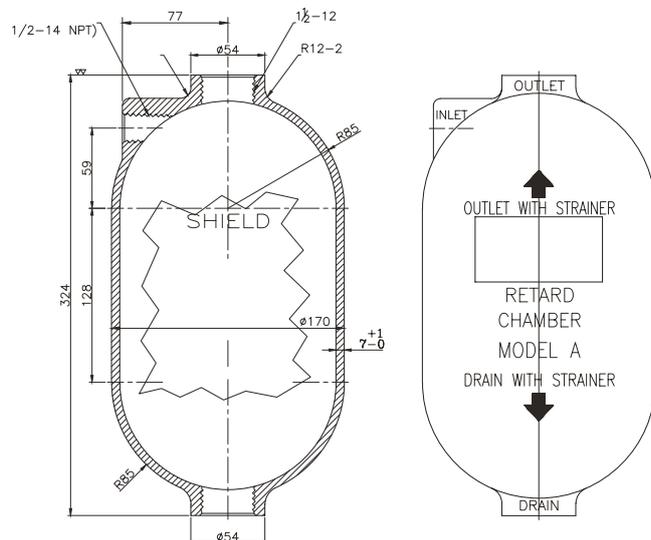


No.	Part Name	Material	Standard
1	Body	Aluminum Alloy	ASTM B26 356.0 T6
2	Impeller	Polyoxymethylene (POM)	
3	Retainer	Polyoxymethylene (POM)	
4	Clapper	Aluminum Alloy	ASTM B209 6061 T6
5	Cover	Mild Steel	ASTM A283D
6	Matching Screw	Aluminum Alloy	ASTM B209 6061 T6
7	Gong Shell	Aluminum Alloy	ASTM B26 356.0 T6
8	Socket	Aluminum Alloy	ASTM B211 6061 T6
9	Hub	Polyoxymethylene (POM)	
10	Flat Bar	Mild Steel	ASTM A283D
11	Spindle	Aluminum Alloy	ASTM B211 6061 T6

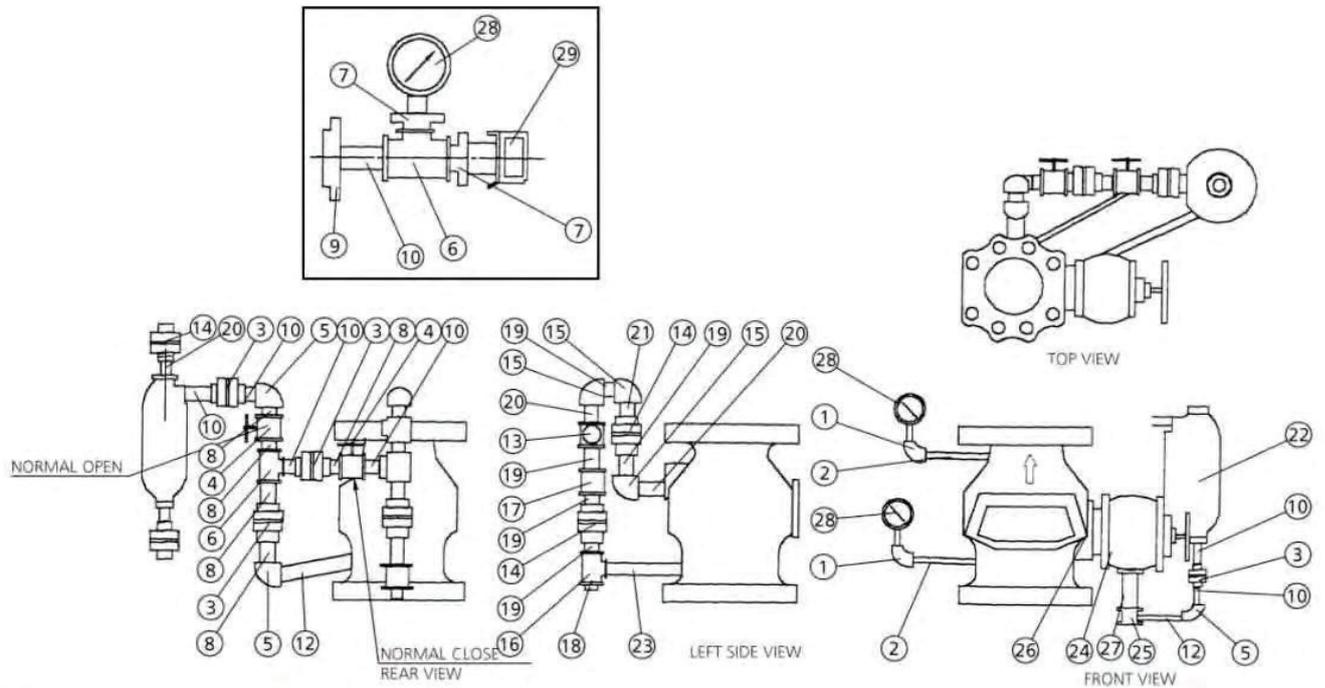
No.	Part Name	Material	Standard
12	Drive Shaft	STN Steel	ASTM A313 S30400
13	Washer	Mild Steel	ASTM A283D
14	Nut	Aluminium Alloy	ASTM B211 6061 T6
15	Bolt	Mild Steel	ASTM A283D
16	Washer	Plastic	PE
17	Acorn Nut	Mild Steel	ASTM A283D
18	Striker	Bakelite	--
19	Washer	Mild Steel	ASTM A283D
20	Spindle	Mild Steel	ASTM A283D
21	Spindle	Polyoxymethylene (POM)	
22	Label	--	--
23	Bushing	Plastic	PE

PART LIST - RETARD CHAMBER

No.	Part Name	Material	Standard
1	Body	Cast Iron	ASTM A48



ALARM CHECK VALVE ASSEMBLY



No.	Part Name	Qty.	No.	Part Name	Qty.	No.	Part Name	Qty.
1	¼" Elbow	2	11	Water Motor Gong	1	21	¾" 6cm Nipple	1
2	½" 10cm Nipple	2	12	½" 18cm Nipple	2	22	Retard Chamber	1
3	½" Union	4	13	¾" Swing Check Valve	1	23	¾" 15cm Nipple	1
4	½" Gate Valve	2	14	¾" Union	3	24	2" Angle Valve	1
5	½" Elbow	3	15	¾" Union	3	25	2" 2" ½" Tee	1
6	½" ½" ½" Tee	2	16	¾" ¾" ¾" Tee	1	26	2" 6cm Nipple	1
7	½" ¼" Bushing	2	17	¾" ¾" ¾" Tee	1	27	2" 15cm Nipple	1
8	½" 3cm Nipple	9	18	¾" Plug	1	28	Pressure Gauge	3
9	¾" ½" Bushing	1	19	¾" 3cm Nipple	6	29	Pressure Switch	1
10	½" 5cm Nipple	6	20	¾" 5cm Nipple	3			

GENERAL

Alarm Check Valve is a waterflow alarm device designed for vertical installation in the main supply to a wet pipe sprinkler system. When a flow of water from the system equals or exceeds that of a single sprinkler, the valve is to actuate a fire alarm.

The alarm may be accomplished in two ways:

- Mechanically by means of a water motor alarm and/or
- A water-pressure-actuated alarm switch (Range 1-10 pressure control) connected to an electrically operated signaling device such as bell or light.

The valve seat is tinned. Only the listed components such as retard chamber, water motor gong (alarm), drain valve and pressure gauges will be used as explained below.

DESCRIPTION / OPERATION

Alarm Check Valve has a grooved tinned bronze seat ring and external by-pass. Bolts used for flanges are carbon steel bolts with 60,000 psi tensile strength, per ASTM A307-91. The Retard Chamber, Water Motor Gong, Pressure Gauge, Drain Valve, Pressure Switch, are operated in a wet pipe sprinkler system like follows:

When the sprinkler system is placed in service, the water is allowed to flow into the system, until the system pressure and the supply pressure are equal. The system pressure, then, causes the rubber-faced clapper of the alarm valve to close tightly on the grooved seat ring. It will remain in this closed position as long as the pressure in the system is equal to or greater than the supply pressure.

In the variable pressure conditions, in service, the pressure on the system, most often, will be found to be greater than the water supply pressure. This condition exists because excess pressure from surges and fluctuations in the water supply is allowed to pass through the external checked by-pass to be trapped in the system above the alarm valve clapper. Normally, then, the clapper will remain in a closed position.

Sometimes, however, sudden surges of greater pressure may cause the clapper to open momentarily, then close. In such instances, when the clapper is open, there will be a limited flow of water through the seat ring opening and into the retard chamber. There, the water can accumulate then drain away without causing a false alarm.

When a sprinkler operates, the resulting water flow relieves the system pressure. The greater supply pressure, then, causes the alarm valve clapper to open, thereby permitting an unobstructed flow of water into the system. At the same time, water flows through the seat ring openings and via alarm line connections into the retard chamber. But now, with the system operating, the clapper remains in an open position and the volume of water flowing through the alarm line is such that the retard chamber drain cannot keep up

with the incoming flow. The chamber quickly fills and the water flow continues on to sound the water motor alarm and/or operate the pressure actuated electric alarm switch.

CAUTION

All sprinkler systems contain a certain amount of confined air. It is possible that a pressure surge could compress this air and allow the alarm valve clapper to move off the seat ring. Under some conditions, this could cause false alarm. It is recommended, therefore, that the installer bleed off the confined air and fill the system with water to the fullest extent possible.

CONSTANT PRESSURE

Under normal conditions, the system and the supply pressure will be the same. And since the pressure is constant, there is no need to consider surges and fluctuation. Therefore, a retard chamber is not provided. When a sprinkler operates, the system pressure drops allowing the alarm valve clapper to open. At the same time that water enters the system, it also flows through the seat ring openings and then via the alarm line connections directly to operate the alarm devices.

INSTALLATION

The inlet and outlet of the alarm valve are provided with standard flanges. The water flow of sprinkler system should be cleaned off any dirt and foreign matters such as sands and stones. Check the clapper for room of operation before connecting the alarm valve to the flanged water supply piping.

WARNING

The installation direction must be correct. The arrow direction indicates the direction of water flow, reverse installation is not allowed.

Please follow the below steps to install the by-pass and retard chamber. After installation of alarm valve is completed, please actuate the system in the following order:

1. Close the system control valve
2. Close the alarm control valve.
3. Open the inspectors check valve.
4. Slowly open the system control valve.

WARNING

Be sure to open this valve partially at the start of water flow into the system. Do not fully open at this point; doing so may cause water hammer which could damage the piping and trap large volumes of air within the system.

5. Continue to fill the system until water discharge in stream from the test orifice of the check valve.
6. Close the inspectors check valve.
7. Turn the system control valve to wide open and watch the pressure gauges.

NOTE

The system is full when the reading of the pressure gauges in both sides are same.

8. Conduct main drain valve test to make sure that the water supply is sufficient.
9. Open the alarm control valve.
10. Conduct alarm device test.
11. Seal, lock and secure the system control valve, and the system is now ready for service.
12. If alarms connect to a central station or fire department, notify them that the system is ready for service.

Please contact the manufacturer or his authorized representative for any other unspecified problems which may require some field adjustment.

MAINTENANCE

The maintenance of alarm valves shall be conducted in accordance with requirements described in NFPA 25.

Alarm Valves and its related equipment should be examined periodically to ensure proper operation and trouble free service. Several areas to be routinely inspected are:

CLAPPER FACING

The rubber clapper facing should be checked for wear or damage, and to determine that it is free of dirt and other foreign substance. If found to be worn or damaged (e.g., foreign matters imbedded in the surface), the facing should be replaced. If it is dirty, it should be cleaned, but compounds which could damage the rubber facing must never be used.

SEAT RING

The seat ring should be checked for nicks and for stones, dirt or other foreign matters lodged in the groove or holes. It should be cleaned thoroughly. If the seat ring is found to be severely damaged, the complete alarm valve assembly should be replaced or returned to CHANG DER for possible reconditioning.

BY-PASS CHECK VALVE

The ¾" check valve in the external by-pass should be checked for clapper and seat condition.

RETARD CHAMBER

The outlet plug and drain plug assemblies should be checked for obstructions. The screens should be cleaned thoroughly.

ALARM LINE STRAINER

The ¾" strainer in the alarm line of the constant pressure trim setup should be checked and cleaned thoroughly.

All controlling valves which are normally closed when the alarm valve is in the set position should be checked to be sure that they are fully close and not leaking.

OPERATION INSTRUCTION FOR WATER FLOW ALARM CHECK VALVE SYSTEM

The maintenance of alarm valves shall be conducted in accordance with requirements described in NFPA 25.

1. TEST BY DELUGE VALVE

When open the deluge valve, the alarm valve clapper (main valve seat) open, water supply ½" pipe through top (upper) of retard chamber, as retard chamber filled, water supply to water motor and alarm gong, the alarm rings. The retard chamber have not diaphragm, is an open condition, the retard chamber function is to delay the alarm rings and to avoid any miss rings.

2. WHEN TEST

Open the 2" drain valve, 2" pipe is keep continue draining, supply water will not flow to retard chamber, as above, the clapper open, water flow to alarm gong and alarm rings.

3. WHEN ONLY TEST THE ALARM GONG

½" gate valve open, water supply to alarm gong, to check if the gong function is in good conditions.

4. IN NORMAL TIME (ON LINE/ON SERVICE)

2" drain valve is normally closed, 2" drain pipe hold open, ½" gate valve normally open, ½" gate valve normally closed.

THE ACTUAL CONDITION AND FUNCTION FOR MAIN PARTS**1. RETARD CHAMBER**

The retard chamber role is a delaying device, which make delay for some seconds, for its function, when a fire pump actuating, the alarm system main valve will open and start to supply water, the pressured water will continuing flow into the retard chamber, which make delay some seconds for alarm rings, to avoid for wrong alarm occurs

2. WATER MOTOR & ALARM GONG

The pressured water flow into the water motor, drive to the alarm gong by shaft, strike the striker, make the gong ringing.

3. PRESSURE SWITCH

The pressure switch is normally closed, when subject to a pressured water, the pressure switch actuate to send a signal, it plays the signal start or stop

4. WHEN ON FIRE

When a fire occurs, the deluge valve start operating, the alarm valve open and supply the pressured water into retard chamber and water motor and gong, make the gong rings.

ALARM VALVE

MODEL: SDH-AVA

TECHNICAL DATA :

NOMINAL SIZE	200, 150, 100, & 80 NB	
END CONNECTION	Flange X Flange Flange X Groove Groove X Groove	
MAXIMUM WORKING PRESSURE	17.5 Bar (250 PSI)*	
THREADED OPENING	BSPT	
MOUNTING	Vertical	
FLANGE CONNECTION	ANSI B16.42 #150 (Flange drilling mtaching to ANSI B 16.5 #150)	
TRIM	Galvanised fitting with Brass Valves	
FACTORY HYDROSTATIC TEST PRESSURE	35 Kg./ Sq.cm. (500PSI)	
FRICTIONAL LOSS IN TERMS OF EQUIVALENT LENGTH OF PIPE (C-120)	200 NB	7.5 Mtrs.
	150 NB	7 Mtrs.
	100 NB	6.1 Mtrs.
	80 NB	4.7 Mtrs.
FINISH	Red RAL 3000	
ORDERING INFORMATION	Specify Size of valve, Flange Connection, Trim Details and Pipe OD	
REFERENCE	NFPA 13 and NFPA 25	

* For 200 NB FM Approval is rated upto 200PSI (14 Bar)

DESCRIPTION

Alarm Valve is a double seated clapper check valve with grooved seat design, which ensures positive water flow for alarm operation and is designed for installation in wet pipe sprinkler system. External bypass prevents false alarm under all supply pressure condition. In the event of variable pressure condition, false alarm is prevented with the provision of retard chamber, thus the design allows for installation under both variable and constant supply pressure condition.

Operation of one or more automatic fire sprinklers causes the water to flow into the sprinkler system causing the alarm valve



to open, allowing continuous flow of water into the system and transmittal of alarm, both electrical and mechanical.

OPERATION

The fire protection system initially when being pressurized, will allow water to flow into the system until the water supply and system pressure is equalized and the clapper closes the waterway. Once the pressure is stabilized, the fire protection system is ready to be placed in service and then the alarm control valve must be opened. Under normal condition, the water pressure gauge connected to the system side of the alarm valve would show a higher or equal pressure reading than the water pressure gauge connected to the supply side of the valve. This occurs because of the bypass line connecting downstream and upstream side of the alarm valve, which allows water pressure surge to pass without lifting the valve clapper off its seat, thereby causing excessive high pressure surge entrapped in the system side due to presence of a check valve, which generally prevents false alarm.

Sudden high pressure surge, as might be encountered by the start-up of a large fire pump may lead the valve clapper to lift momentarily, allowing water to flow through grooves in the valve seat to the retard

chamber. The water in the alarm line is automatically drained out, which helps to prevent false alarm due to successive transient surge in supply pressure. Restriction assembly located beneath the retard chamber consists of inlet and drain restriction orifices, which are established by considering the volume of the retard chamber to meet the listing and approval requirement with regard to time-to alarm. These requirements represent a balancing of the need to reduce the possible false alarm due to a transient surge in supply pressure and to achieve desired minimum time- to- alarm following a sprinkler operation.

In constant pressure installation, the retard chamber is not required and the water passing through the groove in the alarm valve seat flows directly through restriction nozzle assembly to activate the mechanical and electrical alarm.

INSTALLATION

1. SHIELD Sprinkler alarm valve, Model-SDH-AVA must be installed vertically.
2. The alarm valve must be installed in a readily visible and accessible location and provision to be made in such a way that alarm line drain is visible and accessible.
3. Where water pressure fluctuates, the variable pressure trim with retard chamber must be used. Under non-fluctuating water pressure condition, the constant pressure trim, which does not include retard chamber, may be used.
4. The valve must be installed with trim in accordance with the trim data. Failure to follow the appropriate trim connection guidelines may prevent the device from functioning properly as well as void listing, approval and the manufacturer's warranty.
5. Care must be exercised while installing the check valve in the trim to ascertain that they are located with the arrow mark on the check valve body and pointed in proper direction.
6. The contraction and expansion associated with an excessive volume of trapped air could cause the waterway clapper to cycle open and shut. This may result in false alarm or an intermittent alarm. To avoid these, it is recommended to have breather valve in the system piping network and a vent valve at the extreme end of the system to bleed-off the air.
7. The ball valve provided on the alarm line must be kept open and strapped in set position.
8. Pipe connecting the retard chamber and sprinkler alarm bell must be supported properly to avoid loading on the retard chamber.
9. All the newly installed system pipes must be flushed properly before alarm valve is put into service.

INSPECTION AND MAINTENANCE

A qualified and trained person must commission the system. After few initial successful tests an authorised person must be trained to perform inspection and testing of the system.

It is recommended to carry out physical inspection of the system at least twice a week. The inspection should verify that all the control valves are in proper position as per the requirement of the system and no damage has taken place to any component.

It is recommended that the alarm valve and its accessories should be examined and performed for following at least

quarterly or as demanded by local authorities to ensure reliable and trouble free operation and service.

1. Inspection and testing is to be carried out only by an authorized person. DO NOT TURN OFF the water supply valve to undertake repair work or to test the valve, without placing a roving fire patrol in the area covered by the system. The patrol should continue until the system is back into service. Also do inform the local security personnel and alarm control station, so that a false alarm is not signaled.
2. Open the alarm test valve. Verify that the sprinkler alarm bell and/or the pressure alarm switch/ electric alarm properly actuate. Close the alarm test valve and verify that water has ceased to flow from the alarm line drain.
3. Clean the 20 NB (3/4") strainer provided on the sprinkler alarm bell line.
4. Clean the strainer of restriction assembly.
5. Inspect the check valve clapper located on the bypass line.

FALSE ALARM

1. Inspect the valve rubber clapper face. If worn or damaged, replace it. Be certain that dirt, stone or any other foreign object have not accumulated under the clapper face and lodged in the groove or holes. Clean the clapper face thoroughly. If the seat ring surface is nicked or scoured, it might be possible to repair the same using lapping compound. If not, replace the complete valve or return it to the manufacturer's works for repair.
2. If sprinkler alarm bell is not functioning or the impeller is jammed, please follow the maintenance guideline provided in the catalogue for sprinkler alarm bell.
3. If pressure alarm switch gives a steady signal, but sprinkler alarm generates an intermittent alarm, check sprinkler alarm bell shaft. If both the sprinkler alarm bell and pressure alarm switch are generating intermittent alarm then check for the possible air which is trapped within the sprinkler system. Trapped air is to be bled off. Also the intermittent alarm may occur due to sudden pressure drop and increase in the system. These problems can be corrected by maintaining a steady supply.

CAUTION

1. The UL Listing, FM Approval and manufacturer's warranty are valid only when the alarm valve is installed with trim set and installed as per installation guidelines.
2. Pressure relief valve is required with wet pipe system, when a rise in ambient temperature can cause system pressure to exceed 17.5 Bar (250 PSI). A 17.7 Bar relief valve setting should be used.
3. For proper operation of the wet system and to minimize unwanted false alarm, it is important to remove trapped air from the system. The air trapped in the system may also cause intermittent operation of the Water Motor Alarm during sustained flow of water.

WEIGHT IN KG

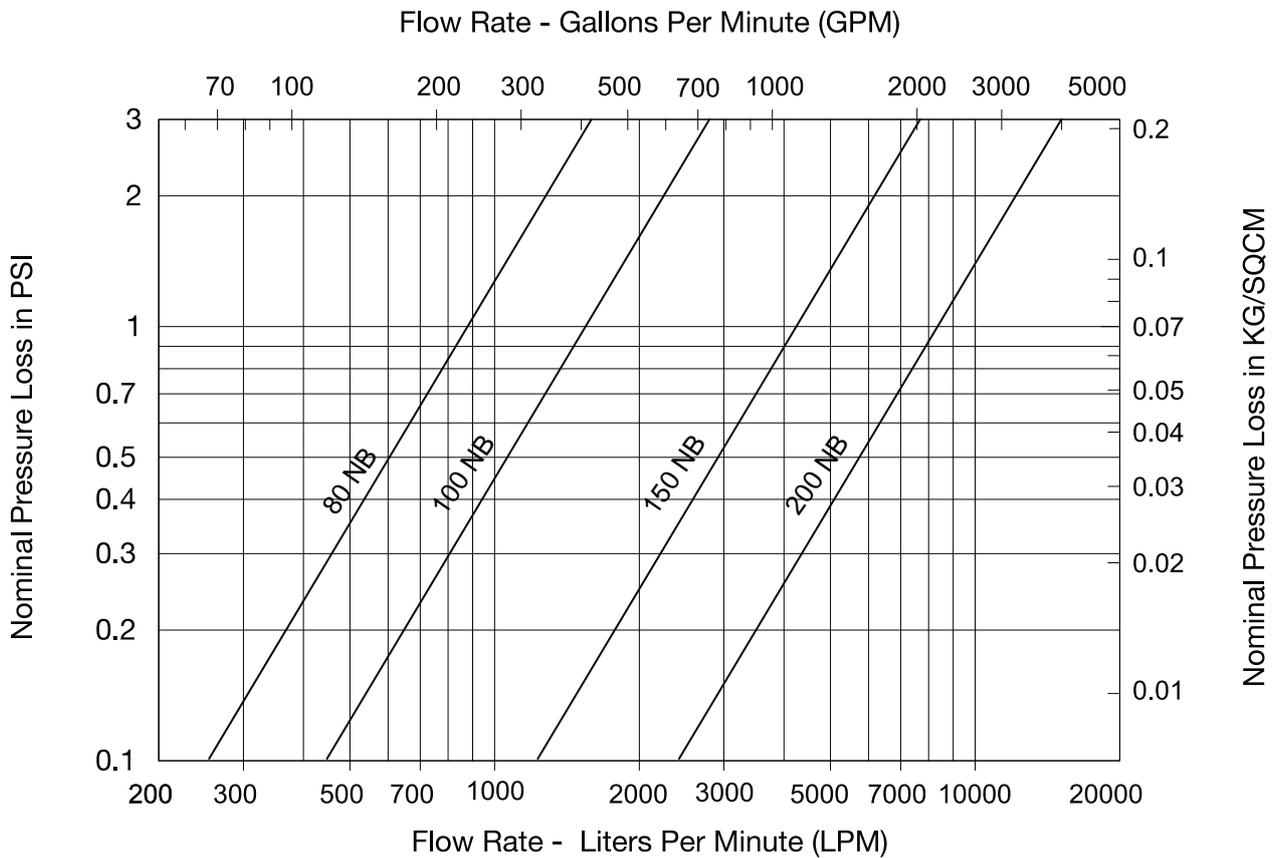
Valve Size	Flange x Flange	Flange x Groove	Groove x Groove
200	65	54	44
150	42	35.8	28
100	27	22.1	17.3
80	18	15	12.1

GROOVE PIPE SIZE

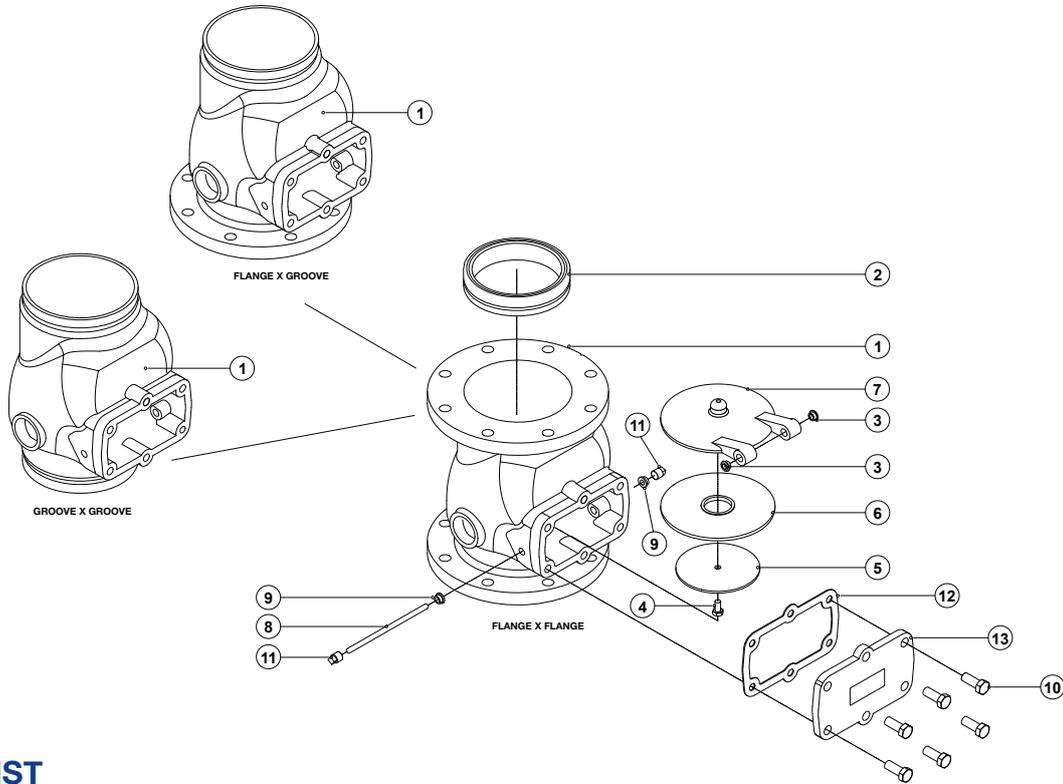
Normal Size	Pipe OD in MM
80 NB	89
100 NB	114.3
150 NB	165.1
150 NB	168.3
200 NB	219.1

Note: For 150 NB standard supply is 168.3 mm OD pipe Groove. For 165.1mm specify in order.

NOMINAL PRESSURE LOSS VS FLOW



ALARM VALVE, MODEL – SDH-AVA

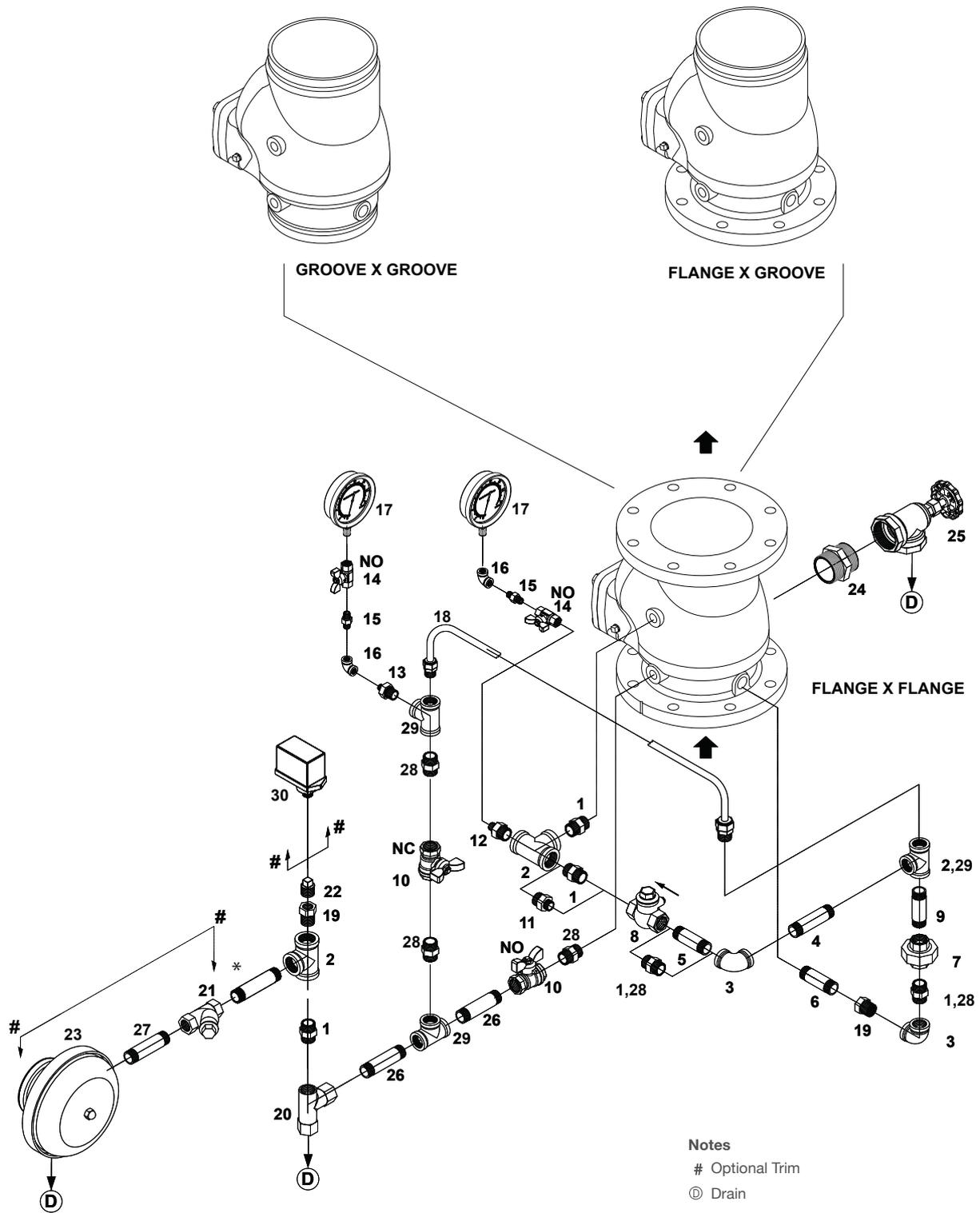


PART LIST

ITEM	PART NO.				DESCRIPTION	QTY.				MATERIAL SPECIFICATION
	200 NB	150 NB	100 NB	80 NB		200 NB	150 NB	100 NB	80 NB	
1	NA	NA	NA	NA	Housing (Flange x Flange)	1	1	1	1	Ductile Iron
1	AV2014	AV1514	AV1014	AV8014	Housing (Flange x Groove)	1	1	1	1	Ductile Iron
1	AV2014	AV1515	AV1015	AV8015	Housing (Groove x Groove)	1	1	1	1	Ductile Iron
2	NA	NA	NA	NA	Seat	1	1	1	1	Bronze
3	AV2003	AV1503	AV1003	AV8003	Clapper Bush	2	2	2	2	Brass
4	AV2004	AV1504	AV1004	AV8004	Hex. Head Bolt	4	1	1	1	Stainless Steel
5	AV2005	AV1505	AV1005	AV8005	Rubber Clamp	1	1	1	1	Stainless Steel
6	AV2006	AV1506	AV1006	AV8006	Rubber Seat	1	1	1	1	Neoprene Rubber
7	AV2007	AV1507	AV1007	AV8007	Clapper	1	1	1	1	Ductile Iron
8	AV2008	AV1508	AV1008	AV8008	Hinge Pin	1	1	1	1	Stainless Steel
9	AV2009	AV1509	AV1009	AV8009	Body Bush	2	2	2	2	Brass
10	AV2010	AV1510	AV1010	AV8010	Hex. Head Bolt	6	6	4	4	Steel
11	AV2011	AV1511	AV1011	AV8011	Sq. Head Plug	2	2	2	2	Forged Steel
12	AV2012	AV1512	AV1012	AV8012	Cover Gasket	1	1	1	1	Neoprene Rubber
13	AV2013	AV1513	AV1013	AV8013	Cover	1	1	1	1	Ductile Iron

NA: Parts replacement not available

CONSTANT PRESSURE TRIM FOR ALARM VALVE



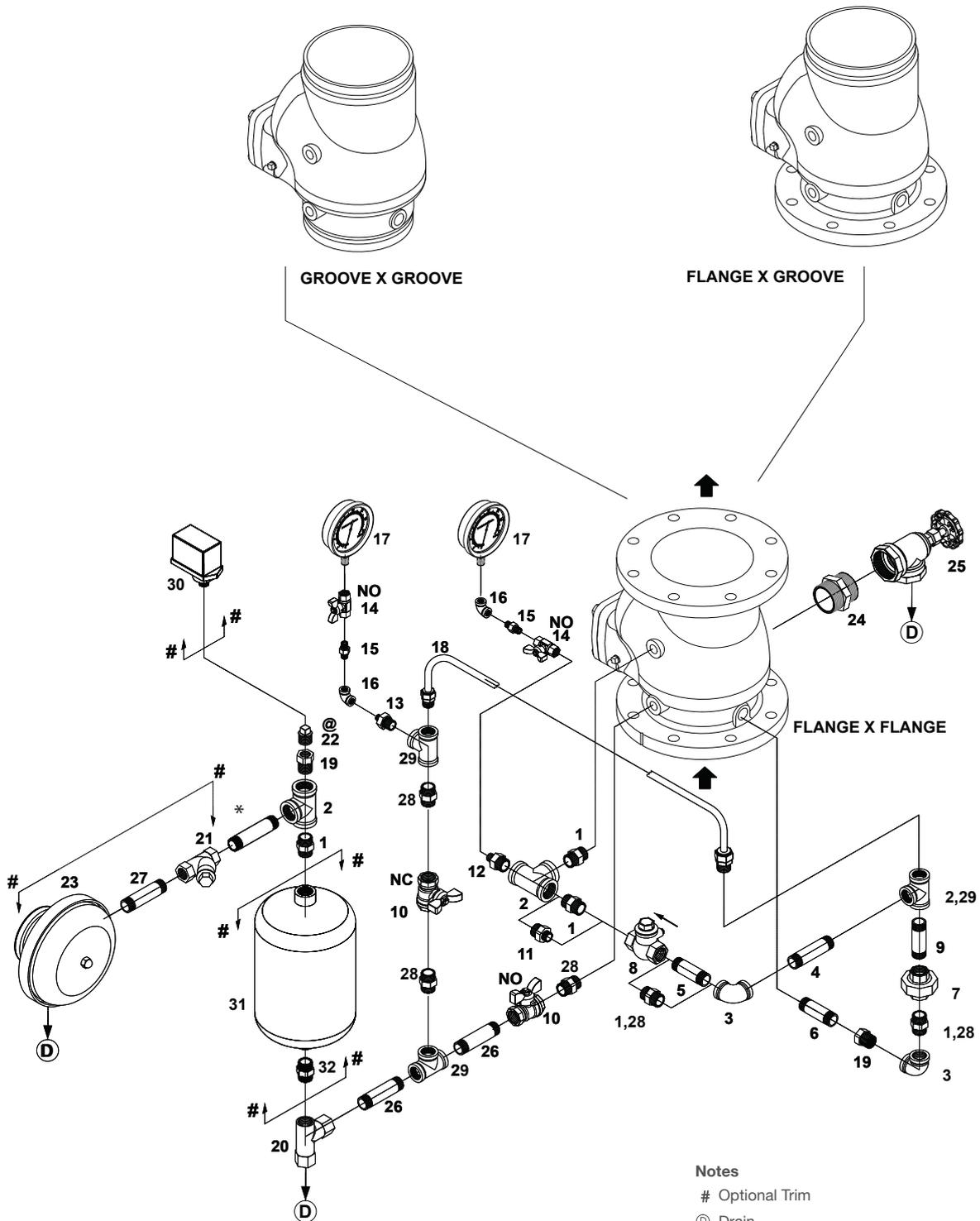
- Notes**
- # Optional Trim
 - Ⓧ Drain
 - ★ To suit at site by installer
 - NO Normally Open
 - NC Normally Closed

When pressure switch is supplied then SI.No. 22 plug not required.

CONSTANT PRESSURE TRIM FOR ALARM VALVE

ITEM NO.	CODE NO.	DESCRIPTION	SIZE	QTY			
				200NB	150 NB	100 NB	80 NB
1	AV01	Hex Nipple	3/4"	4	4	5	2
2	AV02	Tee	3/4"	3	3	3	2
3	AV03/1	Elbow	3/4"	2	2	2	---
3	AV03/2	Elbow	1/2"	---	---	---	2
4	AV04/1	Pipe Nipple	3/4" X 150 mm Long	1	---	---	---
4	AV04/2	Pipe Nipple	3/4" X 130 mm Long	---	1	---	---
4	AV04/3	Pipe Nipple	3/4" X 100 mm Long	---	---	1	---
4	AV04/4	Pipe Nipple	1/2" X 100 mm Long	---	---	---	1
5	AV05/1	Pipe Nipple	3/4" X 100 mm Long	1	---	---	---
5	AV05/2	Pipe Nipple	3/4" X 80 mm Long	---	1	---	---
6	AV06/1	Pipe Nipple	1/2" X 100 mm Long	1	---	---	1
6	AV06/2	Pipe Nipple	1/2" X 80 mm Long	---	1	1	---
7	AV07/1	Union	3/4"	1	1	1	---
7	AV07/2	Union	1/2"	---	---	---	1
8	AV08/1	Swing Check Valve	3/4"	1	1	1	---
8	AV08/2	Swing Check Valve	1/2"	---	---	---	1
9	AV09/1	Pipe Nipple	3/4" X 70 mm Long	1	1	---	---
9	AV09/2	Pipe Nipple	3/4" X 60 mm Long	---	---	1	---
9	AV09/3	Pipe Nipple	1/2" X 70 mm Long	---	---	---	1
10	AV10	Ball Valve	1/2"	2	2	2	2
11	AV11	Reducing Hex Nipple	3/4" X 1/2"	---	---	---	1
12	AV12	Reducing Hex Nipple	3/4" X 1/4"	1	1	1	1
13	AV13	Reducing Hex Nipple	1/2" X 1/4"	1	1	1	1
14	AV14	Ball Valve	1/4"	2	2	2	2
15	AV15	Hex Nipple	1/4"	2	2	2	2
16	AV16	Elbow	1/4"	2	2	2	2
17	AV17	Pressure Gauge	1/4"	2	2	2	2
18	AV18/1	Alarm Test Line Assembly	1/2"	---	---	---	1
18	AV18/2	Alarm Test Line Assembly	1/2"	---	---	1	---
18	AV18/3	Alarm Test Line Assembly	1/2"	---	1	---	---
18	AV18/4	Alarm Test Line Assembly	1/2"	1	---	---	---
19	AV19	Reducing Bush	3/4" X 1/2"	2	2	2	1
20	AV20	Restriction Nozzle Assembly	—	1	1	1	1
21	AV21	Y Type Strainer	3/4"	1	1	1	1
22	AV22	Plug	1/2"	1	1	1	1
23	AV23/1	Sprinkler Alarm	---	1	1	1	1
23	AV23/2	Sprinkler Alarm	---	1	1	1	1
24	AV24/1	Hex Nipple	2"	1	1	1	---
24	AV24/2	Hex Nipple	1 1/4"	---	---	---	1
25	AV25/1	Angle Valve	2"	1	1	1	---
25	AV25/2	Angle Valve	1 1/4"	---	---	---	1
26	AV26	Pipe Nipple	1/2" X 60 mm Long	2	2	2	2
27	AV27	Pipe Nipple	3/4" X 80 mm Long	1	1	1	1
28	AV28	Hex Nipple	1/2"	3	3	3	5
29	AV29	Tee	1/2"	2	2	2	3
30	AV30	Pressure Switch (Optional)	1/2"	1	1	1	1

VARIABLE PRESSURE TRIM FOR ALARM VALVE



Notes

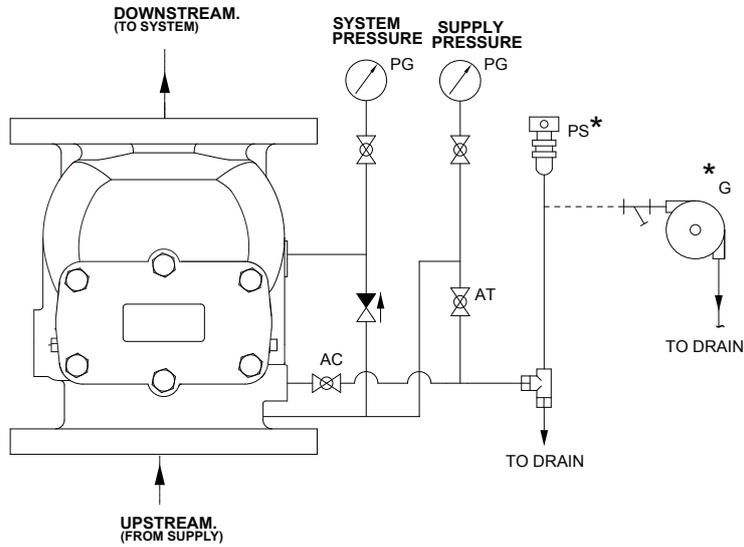
- # Optional Trim
- Ⓧ Drain
- * To suit at site by installer
- NO Normally Open
- NC Normally Closed

When pressure switch is supplied then SI.No. 22 plug not required.

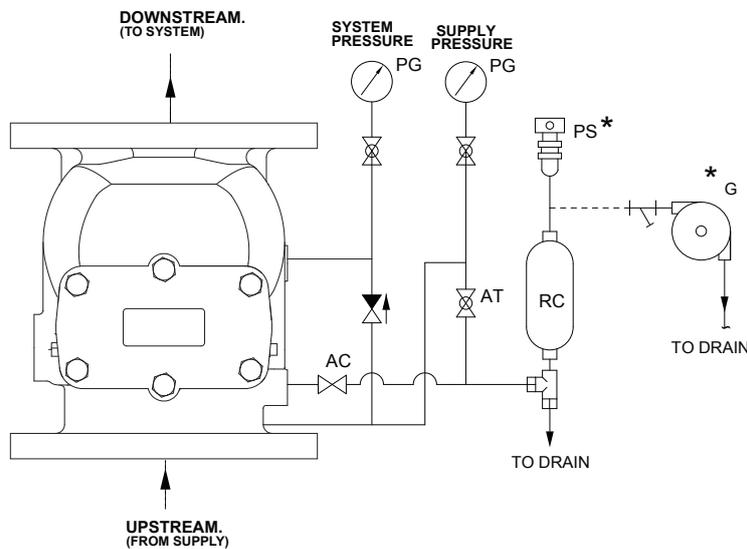
VARIABLE PRESSURE TRIM FOR ALARM VALVE

ITEM NO.	CODE NO.	DESCRIPTION	SIZE	QTY			
				200NB	150 NB	100 NB	80 NB
1	AV01	Hex Nipple	¾"	4	4	5	2
2	AV02	Tee	¾"	3	3	3	2
3	AV03/1	Elbow	¾"	2	2	2	---
3	AV03/2	Elbow	½"	---	---	---	2
4	AV04/1	Pipe Nipple	¾" X 150 mm Long	1	---	---	---
4	AV04/2	Pipe Nipple	¾" X 130 mm Long	---	1	---	---
4	AV04/3	Pipe Nipple	¾" X 100 mm Long	---	---	1	---
4	AV04/4	Pipe Nipple	½" X 100 mm Long	---	---	---	1
5	AV05/1	Pipe Nipple	¾" X 100 mm Long	1	---	---	---
5	AV05/2	Pipe Nipple	¾" X 80 mm Long	---	1	---	---
6	AV06/1	Pipe Nipple	½" X 100 mm Long	1	---	---	1
6	AV06/2	Pipe Nipple	½" X 80 mm Long	---	1	1	---
7	AV07/1	Union	¾"	1	1	1	---
7	AV07/2	Union	½"	---	---	---	1
8	AV08/1	Swing Check Valve	¾"	1	1	1	---
8	AV08/2	Swing Check Valve	½"	---	---	---	1
9	AV09/1	Pipe Nipple	¾" X 70 mm Long	1	1	---	---
9	AV09/2	Pipe Nipple	¾" X 60 mm Long	---	---	1	---
9	AV09/3	Pipe Nipple	½" X 70 mm Long	---	---	---	1
10	AV10	Ball Valve	½"	2	2	2	2
11	AV11	Reducing Hex Nipple	¾" X ½"	---	---	---	1
12	AV12	Reducing Hex Nipple	¾" X ¼"	1	1	1	1
13	AV13	Reducing Hex Nipple	½" X ¼"	1	1	1	1
14	AV14	Ball Valve	¼"	2	2	2	2
15	AV15	Hex Nipple	¼"	2	2	2	2
16	AV16	Elbow	¼"	2	2	2	2
17	AV17	Pressure Gauge	¼"	2	2	2	2
18	AV18/1	Alarm Test Line Assembly	½"	---	---	---	1
18	AV18/2	Alarm Test Line Assembly	½"	---	---	1	---
18	AV18/3	Alarm Test Line Assembly	½"	---	1	---	---
18	AV18/4	Alarm Test Line Assembly	½"	1	---	---	---
19	AV19	Reducing Bush	¾" X ½"	2	2	2	1
20	AV20	Restriction Nozzle Assembly	---	1	1	1	1
21	AV21	Y Type Strainer	¾"	1	1	1	1
22	AV22	Plug	½"	1	1	1	1
23	AV23/1	Sprinkler Alarm	---	1	1	1	1
23	AV23/2	Sprinkler Alarm	---	1	1	1	1
24	AV24/1	Hex Nipple	2"	1	1	1	---
24	AV24/2	Hex Nipple	1¼"	---	---	---	1
25	AV25/1	Angle Valve	2"	1	1	1	---
25	AV25/2	Angle Valve	1¼"	---	---	---	1
26	AV26	Pipe Nipple	½" X 60 mm Long	2	2	2	2
27	AV27	Pipe Nipple	¾" X 80 mm Long	1	1	1	1
28	AV28	Hex Nipple	½"	3	3	3	5
29	AV29	Tee	½"	2	2	2	3
30	AV30	Pressure Switch (Optional)	½"	1	1	1	1
31	AV31	Retard Chamber, Model - RC9	---	1	1	1	1
32	AV32	Hex Nipple	¾"	1	1	1	1

CONSTANT PRESSURE TRIM - SCHEMATIC FLANGE X FLANGE



VARIABLE PRESSURE TRIM - SCHEMATIC FLANGE X FLANGE



Abbreviation & Symbols

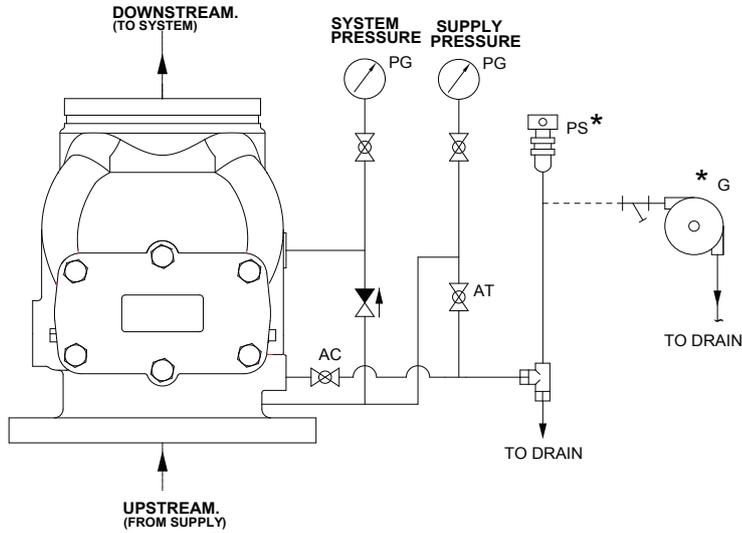
▶◀	Non Return Valve	⌞	Stop Valve	AV	Alarm Valve
⊗	Valve	AC	Sprinkler Alarm Control Valve	G	Sprinkler Alarm
⌞	Angle Valve	★	Optional	PS	Pressure Switch
⌞	Strainer	NO	Normally Open	RC	Retard Chamber
NC	Normally Closed	OD	Open Drain	AT	Sprinkler Alarm Test Valve
⌞	Restriction Nozzle Assembly	PG	Pressure Gauge	---	By User

NOTE:-

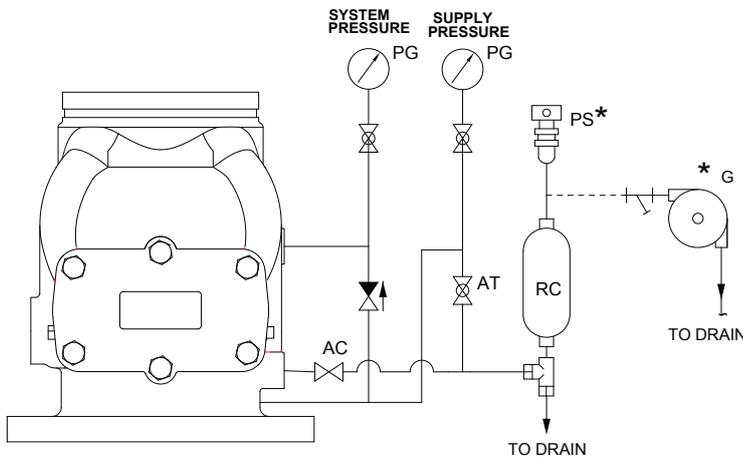
1) Sprinkler alarm control valve must be kept normally open if this valve is kept closed the sprinkler alarm bell/electric alarm will not signal.

2) Sprinkler alarm test valve must be kept normally closed condition. Valve is opened to test the sprinkler alarm bell/electrical alarm.

CONSTANT PRESSURE TRIM - SCHEMATIC FLANGE X GROOVE



VARIABLE PRESSURE TRIM - SCHEMATIC FLANGE X GROOVE



Abbreviation & Symbols

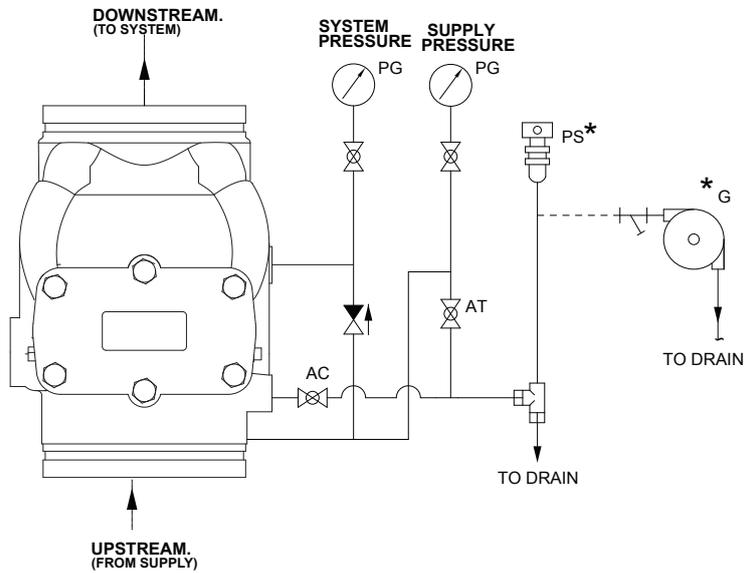
▶	Non Return Valve	⊥	Stop Valve	AV	Alarm Valve
⊗	Valve	AC	Sprinkler Alarm Control Valve	G	Sprinkler Alarm
⊘	Angle Valve	★	Optional	PS	Pressure Switch
⊢	Strainer	NO	Normally Open	RC	Retard Chamber
NC	Normally Closed	OD	Open Drain	AT	Sprinkler Alarm Test Valve
⊞	Restriction Nozzle Assembly	PG	Pressure Gauge	---	By User

NOTE:-

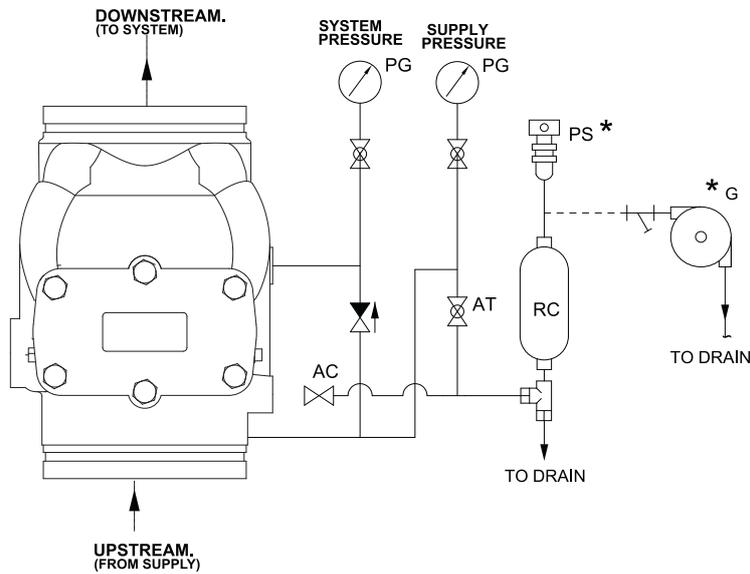
1) Sprinkler alarm control valve must be kept normally open if this valve is kept closed the sprinkler alarm bell/electric alarm will not signal.

2) Sprinkler alarm test valve must be kept normally closed condition. Valve is opened to test the sprinkler alarm bell/electrical alarm.

CONSTANT PRESSURE TRIM - SCHEMATIC GROOVE X GROOVE



VARIABLE PRESSURE TRIM - SCHEMATIC GROOVE X GROOVE



Abbreviation & Symbols

▶◀	Non Return Valve	⌞	Stop Valve	AV	Alarm Valve
⊗	Valve	AC	Sprinker Alarm Control Valve	G	Sprinker Alarm
⌞	Angle Valve	★	Optional	PS	Pressure Switch
⌞	Strainer	NO	Normally Open	RC	Retard Chamber
NC	Normally Closed	OD	Open Drain	AT	Sprinker Alarm Test Valve
⌞	Restriction Nozzle Assembly	PG	Pressure Gauge	---	By User

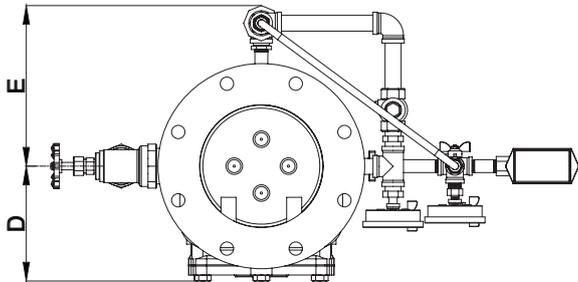
NOTE:-

1) Sprinkler alarm control valve must be kept normally open if this valve is kept closed the sprinkler alarm bell/electric alarm will not signal.

2) Sprinkler alarm test valve must be kept normally closed condition. Valve is opened to test the sprinkler alarm bell/electrical alarm.

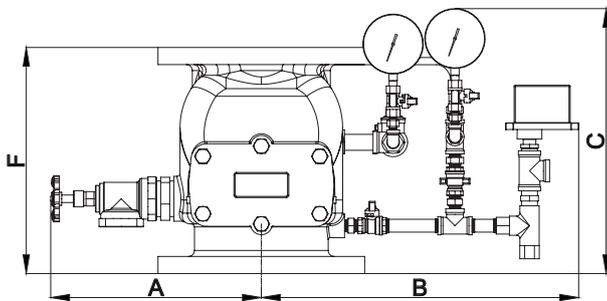
INSTALLATION DIMENSION WITH TRIM FLANGE X FLANGE

A) Constant Pressure Trim

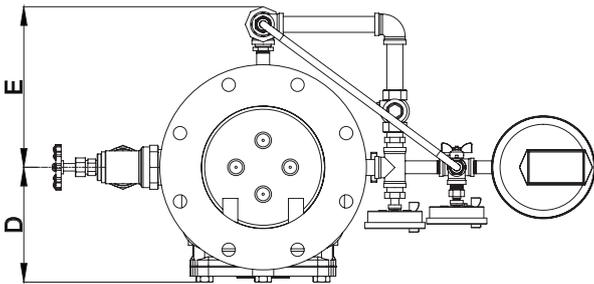


WITH CONSTANT PRESSURE TRIM				
SIZE	80 NB	100 NB	150 NB	200 NB
A	279	312	331	350
B	457	464	486	527
C	434	434	434	443
D	127	140	173	192
E	201	219	234	269
F	262	274	320	378

Unit : mm

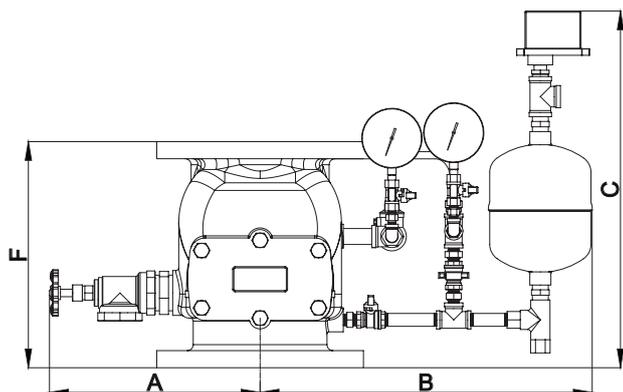


B) Variable Pressure Trim



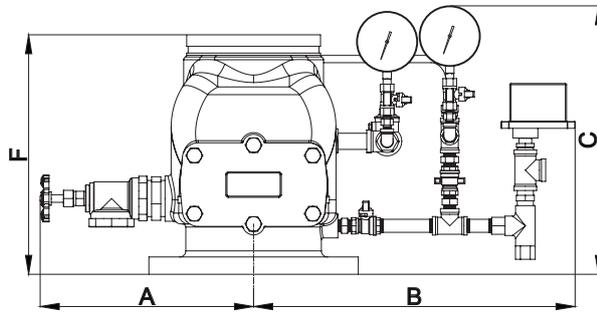
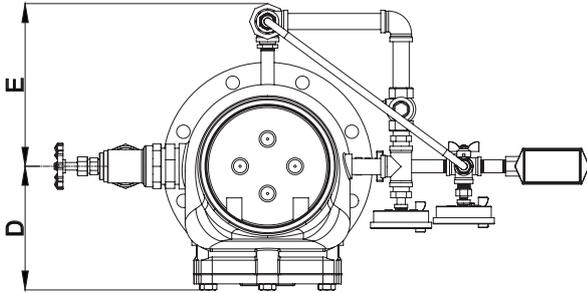
WITH VARIABLE PRESSURE TRIM				
SIZE	80 NB	100 NB	150 NB	200 NB
A	279	312	331	350
B	482	488	510	551
C	588	588	588	597
D	127	140	173	192
E	201	219	234	269
F	262	274	320	378

Unit : mm



INSTALLATION DIMENSION WITH TRIM FLANGE X GROOVE

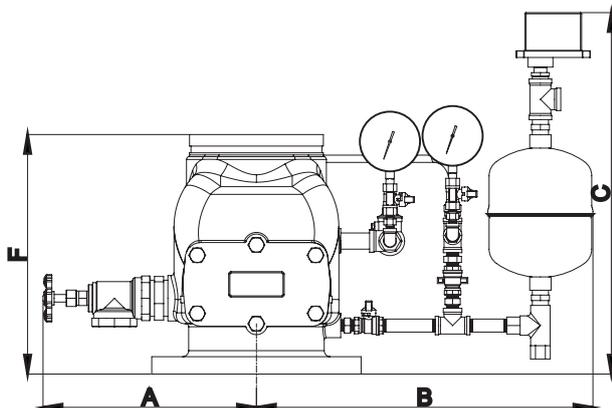
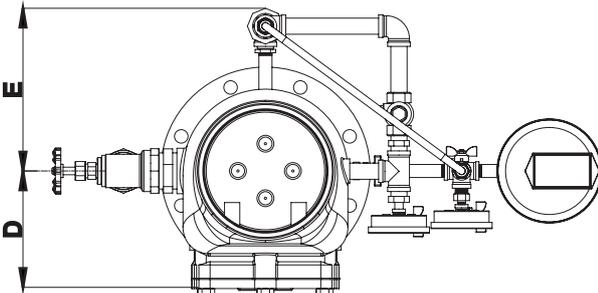
A) Constant Pressure Trim



WITH CONSTANT PRESSURE TRIM				
SIZE	80 NB	100 NB	150 NB	200 NB
A	279	312	331	350
B	457	464	486	527
C	434	434	434	443
D	127	140	173	204
E	201	219	234	269
F	275	291	317	395

Unit : mm

B) Variable Pressure Trim

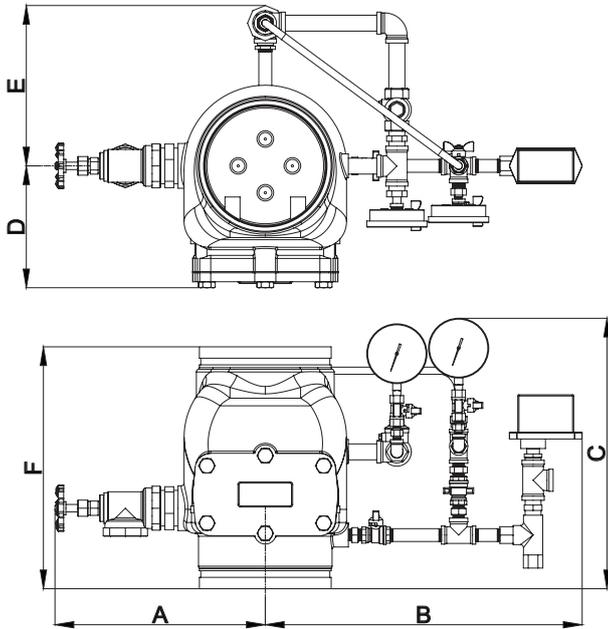


WITH VARIABLE PRESSURE TRIM				
SIZE	80 NB	100 NB	150 NB	200 NB
A	279	312	331	350
B	482	488	510	551
C	588	588	588	597
D	127	140	173	204
E	201	219	234	269
F	275	291	317	395

Unit : mm

INSTALLATION DIMENSION WITH TRIM GROOVE X GROOVE

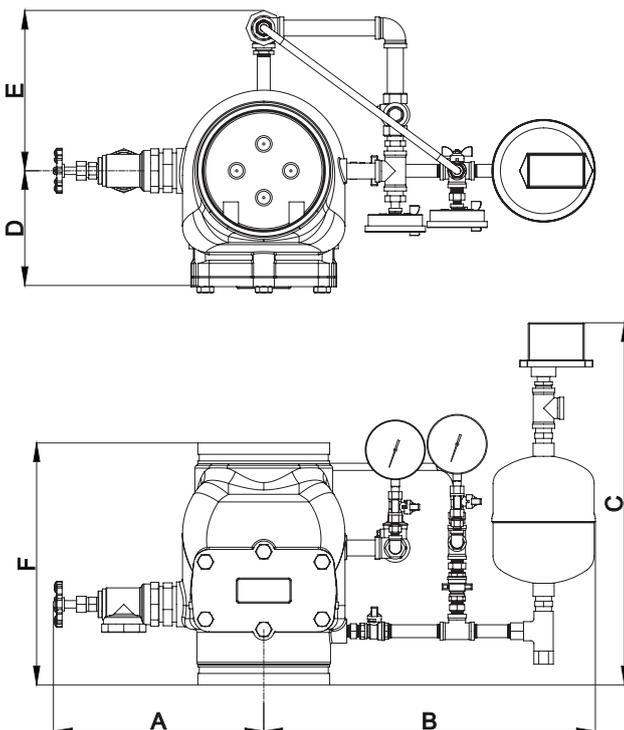
A) Constant Pressure Trim



WITH CONSTANT PRESSURE TRIM				
SIZE	80 NB	100 NB	150 NB	200 NB
A	279	312	331	350
B	457	464	486	527
C	434	434	434	443
D	127	140	173	204
E	201	219	234	269
F	280	300	324	405

Unit : mm

B) Variable Pressure Trim



WITH VARIABLE PRESSURE TRIM				
SIZE	80 NB	100 NB	150 NB	200 NB
A	279	312	331	350
B	482	488	510	551
C	588	588	588	597
D	127	140	173	204
E	201	219	234	269
F	280	300	324	405

Unit : mm

WET ALARM VALVE

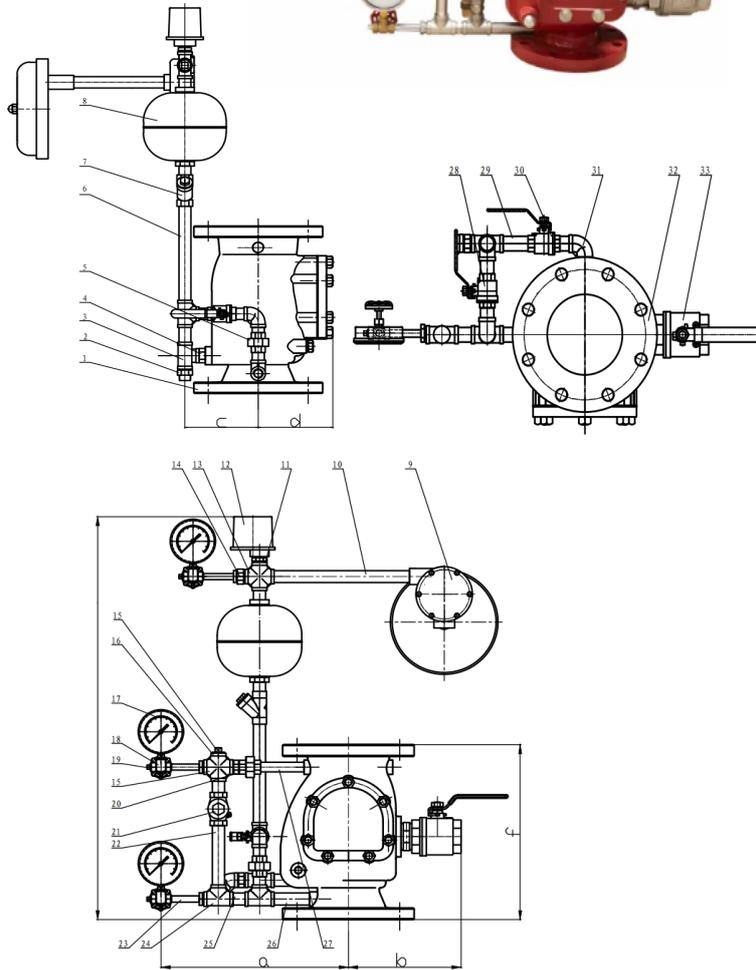
MODEL: SD-AVA-300F, SD-AVA-300G, SD-AVA-300FGA, SD-AVA-300FGB



- Working pressure: 300 psi
- Connection ends: Flange to ASME B16.42 Class 150
- Groove Standard: AWWA C606
- Temperature range: 4°C to 70°C
- Coating: Fusion bonded epoxy coating internally and externally in accordance with ANSI/AWWA C550



PART NO.	PART NAME	MATERIAL
1	Valve Body	Ductile Iron 65-45-12
2	Orifice, Retard	C954/SS316
3	Tee	GI/SS316
4	Nipple	GI/SS316
5	Union	GI/SS316
6	Nipple	GI/SS316
7	Y Strainer	C954/SS316
8	Retard Chamber	SS316
9	Gong Assembly	Aluminium Alloy
10	Nipple	GI/SS316
11	Reducer Bushing	GI/SS316
12	Pressure Switch	Galvanized CS Base
13	Cross	GI/SS316
14	Reducer Bushing	GI/SS316
15	Plug	GI/C954/SS316
16	Cross	GI/SS316
17	Pressure Gauge	AISI 1008
18	3-Way Valve Gauge	C954/SS304
19	Plug	Steel/C954/SS304
20	Orifice, Retard	C954/SS304
21	Check Valve	C954/SS304
22	Nipple	Steel/SS304
23	Nipple	Steel/SS304
24	Tee	Steel/SS304
25	Nipple	Steel/SS304
26	Nipple	Steel/SS304
27	Nipple	Steel/SS304
28	Ball Valve	C954/SS304
29	Nipple	Steel/SS304
30	Ball Valve	C954/SS304
31	Elbow	Steel/SS304
32	Nipple	Steel/SS304
33	Ball Valve	C954/SS304

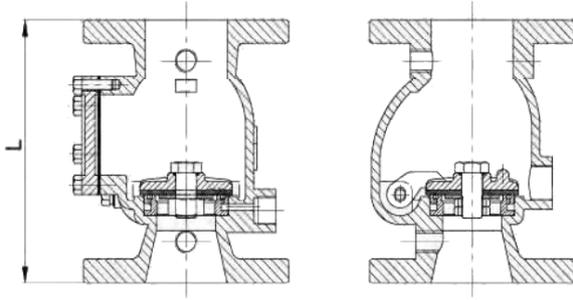


Size	a	b	c	d
2"	340	205	145	110
2.5"	340	205	145	110
3"	340	205	145	110
4"	342	250	160	136
5"	349	274	180	162
6"	349	274	180	162
8"	415	290	205	195
10"	475	340	240	235
12"	495	368	270	270

Unit : mm

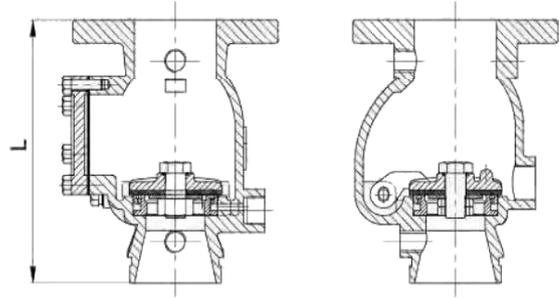
General Technical Information

Flange x Flange, SD-AVA-300F



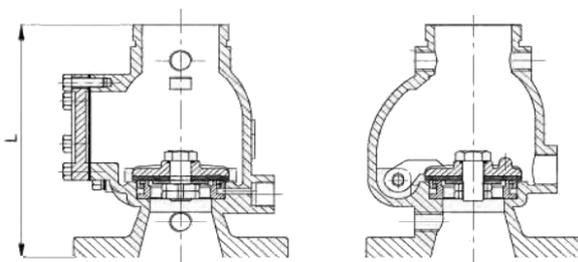
Dimension	
Size	L (mm)
2"	233
2.5"	236
3"	245
4"	316
5"	386
6"	390
8"	438
10"	535
12"	622

Flange x Groove, SD-AVA-300FGA



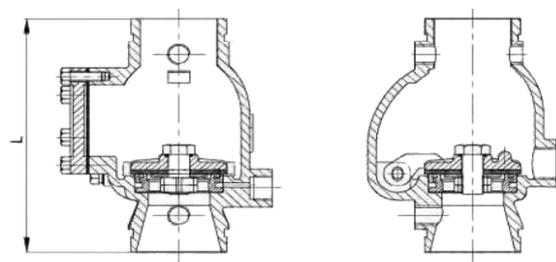
Dimension	
Size	L (mm)
2"	239
2.5"	240
3"	245
4"	316
5"	386
6"	390
8"	438
10"	535
12"	622

Groove x Flange, SD-AVA-300FGB



Dimension	
Size	L (mm)
2"	239
2.5"	240
3"	245
4"	316
5"	386
6"	390
8"	438
10"	535
12"	622

Groove x Groove, SD-AVA-300G



Dimension	
Size	L (mm)
2"	245
2.5"	245
3"	245
4"	316
5"	386
6"	390
8"	438
10"	535
12"	622