

Model AV-1-300 Alarm Valve With and Without Model RC-1 Retard Chamber European Conformity Valve Trim

General Description

The TYCO Model AV-1-300 Alarm Valves DN65, DN100, DN150, and DN200 (European Conformity) are divided-seat ring, rubber-faced clapper, waterflow alarm valves that are intended for use in wet pipe (automatic sprinkler) fire protection systems. They are designed to automatically actuate electric and/or hydraulic alarms when there is a steady flow of water into the system that is equivalent to the discharge rate of one or more sprinklers.

An optional Model RC-1 Retard Chamber is required for installations subject to variable pressures. It is used to help prevent false alarms associated with pressure variations in public water supplies.

The Model AV-1-300 Alarm Check Valve Trim includes pressure gauges to monitor system pressure condi-

tions, a by-pass check valve, a main drain valve, and an alarm test valve. The bypass check valve reduces the possibility of false alarms by permitting slow as well as small transient increases in water supply pressure through the system without opening the waterway clapper.

NOTICE

The TYCO Model AV-1-300 Alarm Check Valves and TYCO Model RC-1 Retard Chamber described herein must be installed and maintained in compliance with this document as well as the standards recognized by the Approval agency, in addition to 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. The installing contractor or manufacturer should be contacted with any questions.

Nominal Valve Sizes	Groove x Groove	Flange x Groove	Flange x Flange
DN65 76,1 mm	10,0 Kg	12,7 Kg	N/A
DN100 114,3 mm	17,2 Kg	21,3 Kg	25,9 Kg
DN150 165,1 mm	26,3 Kg	31,8 Kg	38,1 Kg
DN150 168,3 mm	26,3 Kg	31,8 Kg	38,1 Kg
DN200 219,1 mm	46,3 Kg	54,4 Kg	67,6 Kg
TABLE A AVAILABLE VALVE END CONNECTIONS AND WEIGHTS			



IMPORTANT

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

VALVE PARTS			
NO.	DESCRIPTION	QTY.	REF.
1	Valve Body	1	NR
2	Handhole Cover	1	NR
3	Handhole Cover Gasket	1	See (a)
4	Seat Ring	1	NR
5	Clapper	1	See (b)
6	Clapper Facing	1	See (a) or (b)
7	Clapper Washer	1	See (b)
8	Lock Nut, DN65 Valve	1	See (b)
	Self-Locking Hex Cap Screw, DN100, 150 & 200 Valves	1	See (b)
9	Clapper Hinge Pin	1	See (b)
10	Clapper Hinge Pin Bushing, DN65 Valve	2	NR
	DN100, 150 & 200 Valves	4	NR
11	Clapper Spring	1	See (b)

VALVE PARTS			
NO.	DESCRIPTION	QTY.	REF.
12	Handhole Cover Hex Bolt, DN65 Valve, 1/2-13 UNC-2A x 1-1/4" Long	4	CH
	DN100 Valve, 1/2-13 UNC-2A x 1-3/4" Long	4	CH
	DN150 Valve, 1/2-13 UNC-2A x 1-3/4" Long	6	CH
	DN200 Valve, 3/4-10 UNC-2A x 2" Long	6	CH
13	Clapper Hinge Pin Square Head Pipe Plug, 3/8" NPT, DN100, 150 & 200 Valves only	1	CH

REPLACEMENT PARTS	
NO.	DESCRIPTION P/N
(a) Repair Parts Kit, Includes 3 & 6	
DN65 Valve	92-200-1-216
DN100 Valve	92-200-1-416
DN150 Valve	92-200-1-620
DN200 Valve	92-200-1-816
(b) Clapper Assembly, Includes 5-9, 11	
DN65 Valve	92-200-1-218
Includes 5-11	
DN100 Valve	92-200-1-423
DN150 Valve	92-200-1-623
DN200 Valve	92-200-1-823

- NOTES:**
1. F x F valve shown for reference; components for G x G and F x G valves are shared.
 2. NR: Not Replaceable
 3. CH: Common Hardware

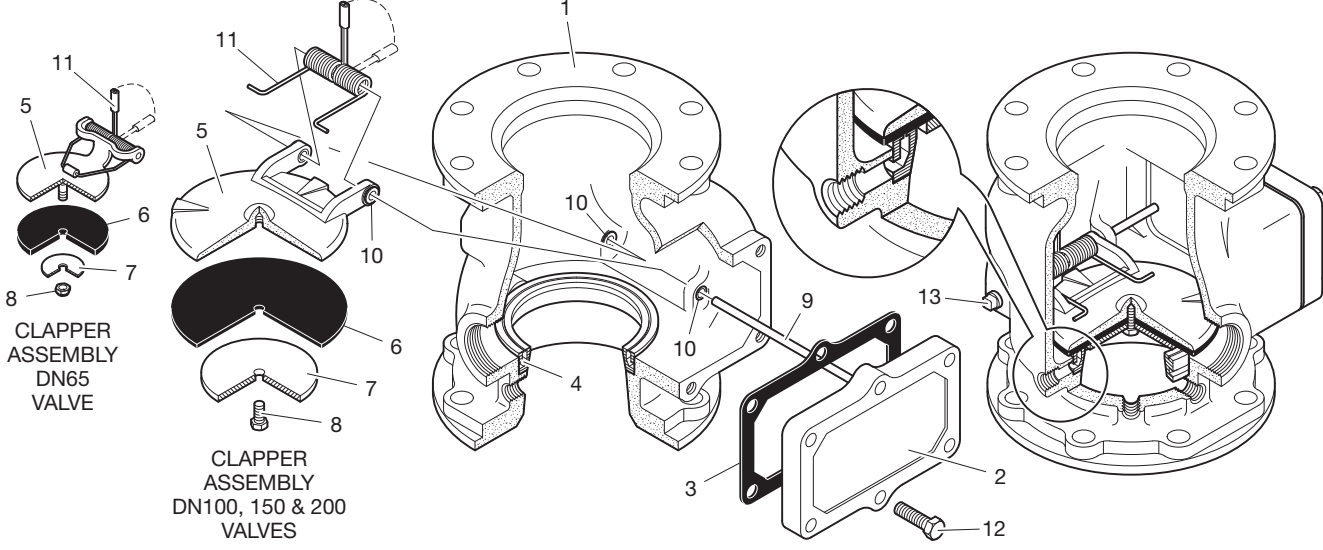


FIGURE 1
DN65, DN100, DN150, & DN200 MODEL AV-1-300 ALARM VALVE ASSEMBLY

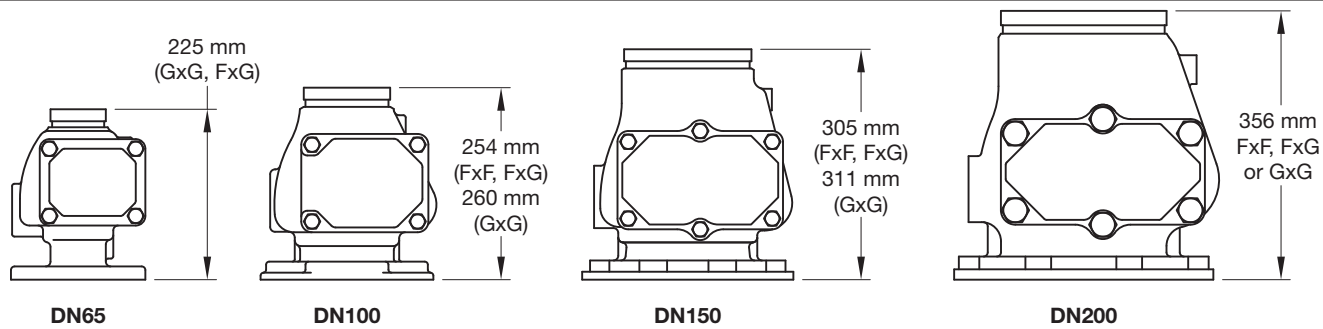
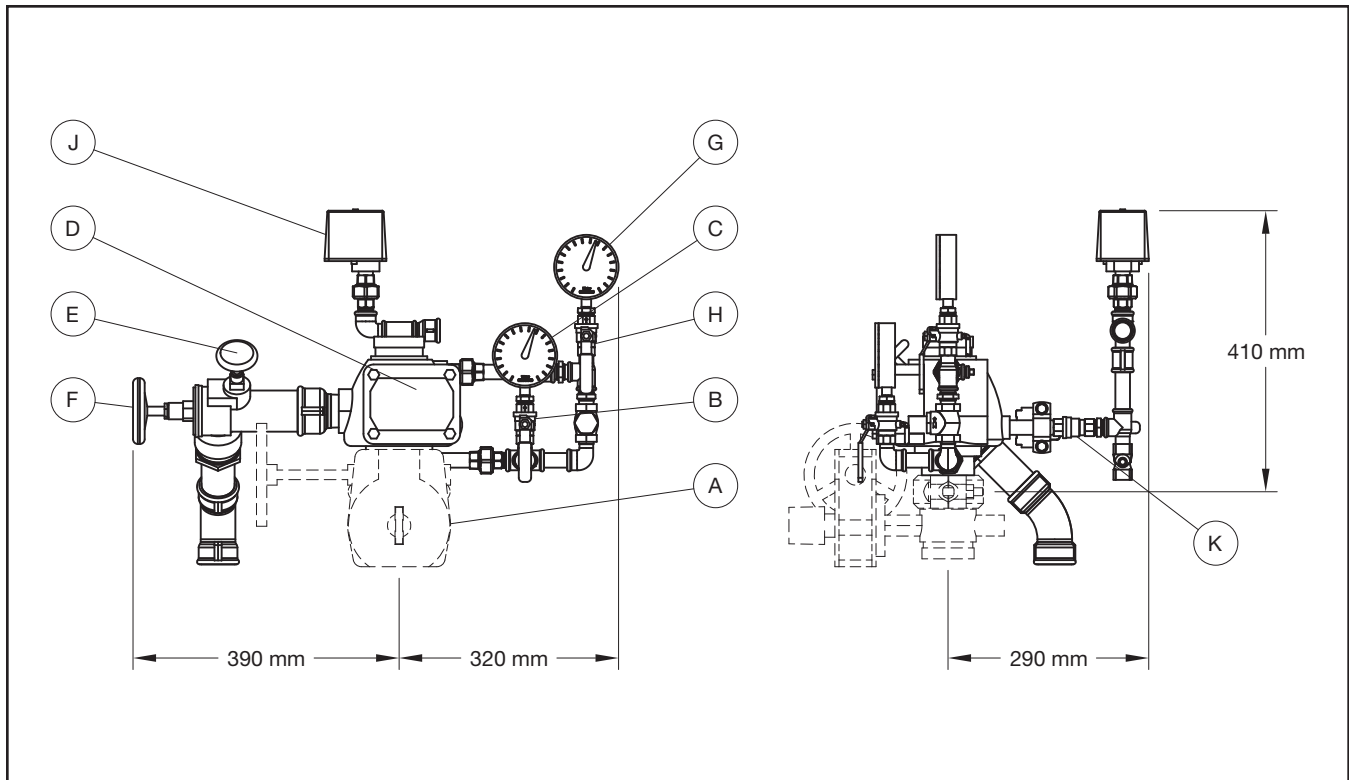


FIGURE 2
DN65, DN100, DN150, & DN200 MODEL AV-1-300 ALARM VALVE TAKE-OUT DIMENSIONS

Appendix B of TFP990 (05/2020)

Summary Instructions (If problems occur, consult full document)

Wet Alarm Valve, AV-1-300, DN65, Without Retarding Chamber (Suitable for Supervisory)



Normal Conditions

- The Main Control Valve (A) is opened and locked.
- The sprinkler system is filled with water and is pressurized.
- The Alarm Test Valve (E) and Main Drain Valve (F) are closed.
- The Water Motor Alarm Control Valve (K) is open.
- The Pressure Gauge Valve (B) is open.
- The Pressure Gauge Valve (H) is open.
- System Pressure Gauge (G) reads downstream pressure.
- Water Supply Pressure Gauge (C) reads upstream pressure.

Operation

When one or more sprinklers are activated, pressure is reduced downstream of the Alarm Valve. This reduction in pressure opens the Clapper in the Alarm Valve and allows water to flow through the alarm port into the alarm line, operating the Waterflow Pressure Alarm Switch (J) and the Water Motor Alarm via the Water Motor Alarm Control Valve (K). The main waterway is now open and water flows into the piping system.

Removing System from Service

Step 1. Close the Main Control Valve (A). Close the Water Motor Alarm Control Valve (K).

Step 2. Drain the system with the Main Drain Valve (F). Open all valves in the system to make sure that cross-mains and branch lines are vented and drained.

Placing the System Back in Service

Step 1. Replace sprinklers that have operated and sprinklers that are close to the fire.

Step 2. Remove the Hand-Hole Cover from the Alarm Check Valve (D). Check and clean the Clapper Facing and Seat Ring.

Step 3. Mount the Hand-Hole Cover.

Step 4. Close Main Drain Valve (F) and other valves in the system.

Step 5. Clean the strainers in the alarm line and the Water Motor Alarm Trim.

Step 6. Open the remote cross-main or branch-line vent connection.

Step 7. Slowly open the Main Control Valve (A) until the sound of flowing water just begins, then open the valve one more turn.

Step 8. Close the remote branch-line vent connection after the discharge of aerated water ceases, and the outlet has flowed fully for at least 15 seconds.

Step 9. Fully open the Main Control Valve (A) and lock it open.

Step 10. Open the Water Motor Alarm Control Valve (K).

Step 11. Reset the fire alarm panel and notify the central alarm station.

Weekly Test

NOTICE

Prior to closing any valves or activating any alarms, notify local security guards and the central alarm station if applicable.

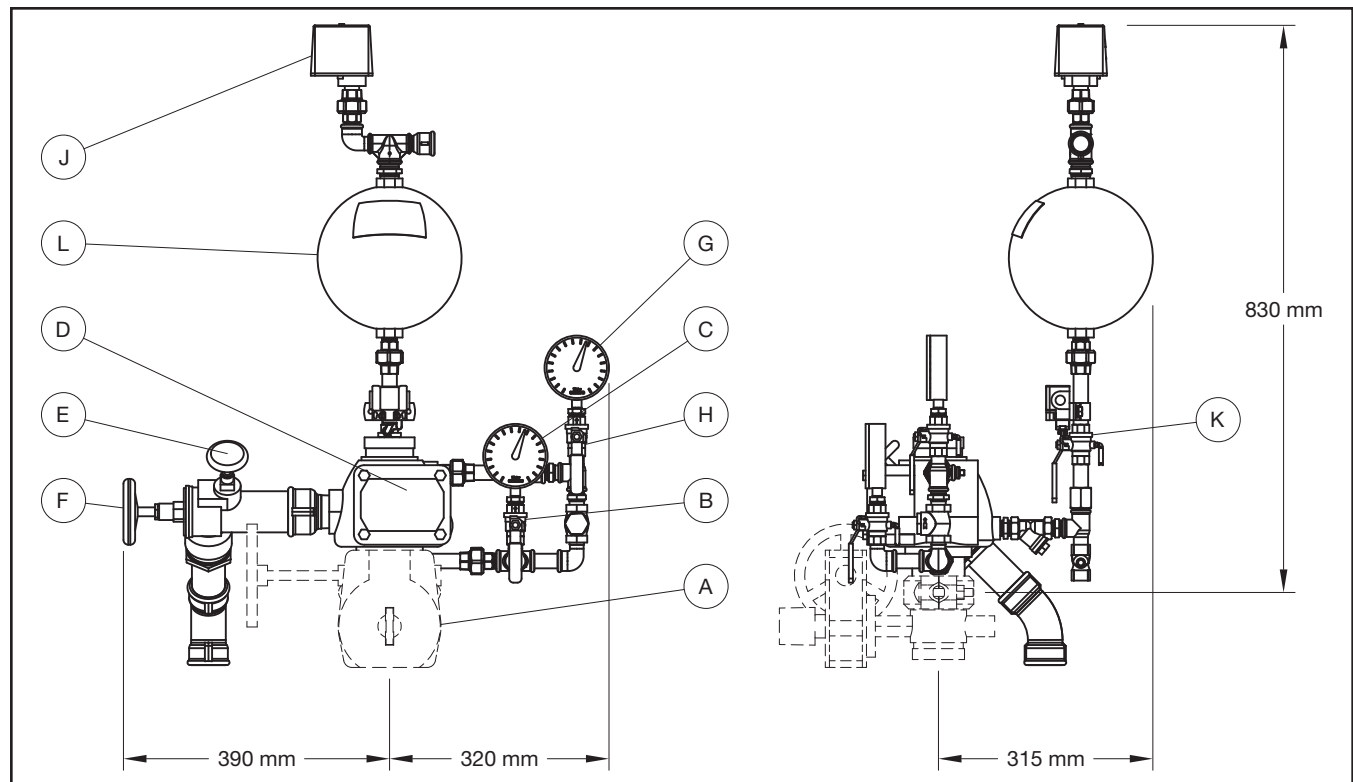
Step 1. Open the Alarm Test Valve (E). Verify that the alarm signal created by the Waterflow Pressure Alarm Switch (J) is visible at the fire panel. If applicable, check the sound of the Water Motor Alarm — it must be clear and steady — and the signal of the supervisory switch.

Step 2. Close the Alarm Test Valve (E). Verify that the normal supply and system pressures are restored. If the supply pressure is below normal, use the instructions from the water supply to obtain the usual pressure.

Appendix D of TFP990 (05/2020)

Summary Instructions (If problems occur, consult full document)

Wet Alarm Valve, AV-1-300, DN65, With Retarding Chamber (Suitable for Supervisory)



Normal Conditions

- The Main Control Valve (A) is opened and locked.
- The sprinkler system is filled with water and is pressurized.
- The Alarm Test Valve (E) and Main Drain Valve (F) are closed.
- The Water Motor Alarm Control Valve (K) is open.
- The Pressure Gauge Valve (B) is open.
- The Pressure Gauge Valve (H) is open.
- System Pressure Gauge (G) reads downstream pressure.
- Water Supply Pressure Gauge (C) reads upstream pressure.

Operation

When one or more sprinklers are activated, pressure is reduced downstream of the Alarm Valve. This reduction in pressure opens the Clapper in the Alarm Valve and allows water to flow through the alarm port into the alarm line, filling the Model RC-1 Retard Chamber (L) and operating the Waterflow Pressure Alarm Switch (J) and the Water Motor Alarm via the Water Motor Alarm Control Valve (K). The main waterway is now open and water flows into the piping system.

Removing System from Service

Step 1. Close the Main Control Valve (A). Close the Water Motor Alarm Control Valve (K).

Step 2. Drain the system with the Main Drain Valve (F). Open all valves in the system to make sure that cross-mains and branch lines are vented and drained.

Placing the System Back in Service

Step 1. Replace sprinklers that have operated and sprinklers that are close to the fire.

Step 2. Remove the Hand-Hole Cover from the Alarm Check Valve (D). Check and clean the Clapper Facing and Seat Ring.

Step 3. Mount the Hand-Hole Cover.

Step 4. Close Main Drain Valve (F) and other valves in the system.

Step 5. Clean the strainers in the alarm line and the Water Motor Alarm Trim.

Step 6. Open the remote cross-main or branch-line vent connection.

Step 7. Slowly open the Main Control Valve (A) until the sound of flowing water just begins, then open the valve one more turn.

Step 8. Close the remote branch-line vent connection after the discharge of aerated water ceases, and the outlet has flowed fully for at least 15 seconds.

Step 9. Fully open the Main Control Valve (A) and lock it open.

Step 10. Open the Water Motor Alarm Control Valve (K).

Step 11. Reset the fire alarm panel and notify the central alarm station.

Weekly Test

NOTICE

Prior to closing any valves or activating any alarms, notify local security guards and the central alarm station if applicable.

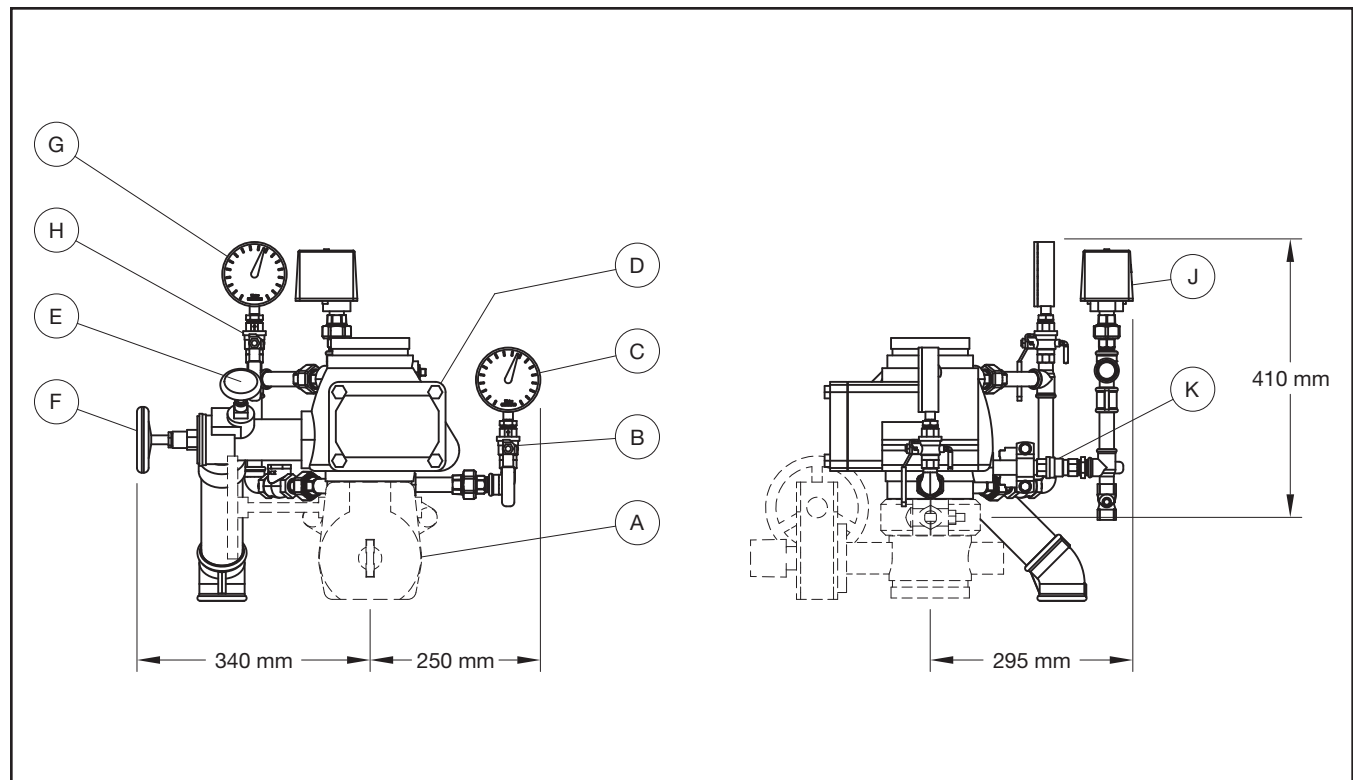
Step 1. Open the Alarm Test Valve (E). Verify that the alarm signal created by the Waterflow Pressure Alarm Switch (J) is visible at the fire panel. If applicable, check the sound of the Water Motor Alarm — it must be clear and steady — and the signal of the supervisory switch.

Step 2. Close the Alarm Test Valve (E). Verify that the normal supply and system pressures are restored. If the supply pressure is below normal, use the instructions from the water supply to obtain the usual pressure.

Appendix F of TFP990 (05/2020)

Summary Instructions (If problems occur, consult full document)

Wet Alarm Valve, AV-1-300, DN100, Without Retarding Chamber (Suitable for Supervisory)



Normal Conditions

- The Main Control Valve (A) is opened and locked.
- The sprinkler system is filled with water and is pressurized.
- The Alarm Test Valve (E) and Main Drain Valve (F) are closed.
- The Water Motor Alarm Control Valve (K) is open.
- The Pressure Gauge Valve (B) is open.
- The Pressure Gauge Valve (H) is open.
- System Pressure Gauge (G) reads downstream pressure.
- Water Supply Pressure Gauge (C) reads upstream pressure.

Operation

When one or more sprinklers are activated, pressure is reduced downstream of the Alarm Valve. This reduction in pressure opens the Clapper in the Alarm Valve and allows water to flow through the alarm port into the alarm line, operating the Waterflow Pressure Alarm Switch (J) and the Water Motor Alarm via the Water Motor Alarm Control Valve (K). The main waterway is now open and water flows into the piping system.

Removing System from Service

Step 1. Close the Main Control Valve (A). Close the Water Motor Alarm Control Valve (K).

Step 2. Drain the system with the Main Drain Valve (F). Open all valves in the system to make sure that cross-mains and branch lines are vented and drained.

Placing the System Back in Service

Step 1. Replace sprinklers that have operated and sprinklers that are close to the fire.

Step 2. Remove the Hand-Hole Cover from the Alarm Check Valve (D). Check and clean the Clapper Facing and Seat Ring.

Step 3. Mount the Hand-Hole Cover.

Step 4. Close Main Drain Valve (F) and other valves in the system.

Step 5. Clean the strainers in the alarm line and the Water Motor Alarm Trim.

Step 6. Open the remote cross-main or branch-line vent connection.

Step 7. Slowly open the Main Control Valve (A) until the sound of flowing water just begins, then open the valve one more turn.

Step 8. Close the remote branch-line vent connection after the discharge of aerated water ceases, and the outlet has flowed fully for at least 15 seconds.

Step 9. Fully open the Main Control Valve (A) and lock it open.

Step 10. Open the Water Motor Alarm Control Valve (K).

Step 11. Reset the fire alarm panel and notify the central alarm station.

Weekly Test

NOTICE

Prior to closing any valves or activating any alarms, notify local security guards and the central alarm station if applicable.

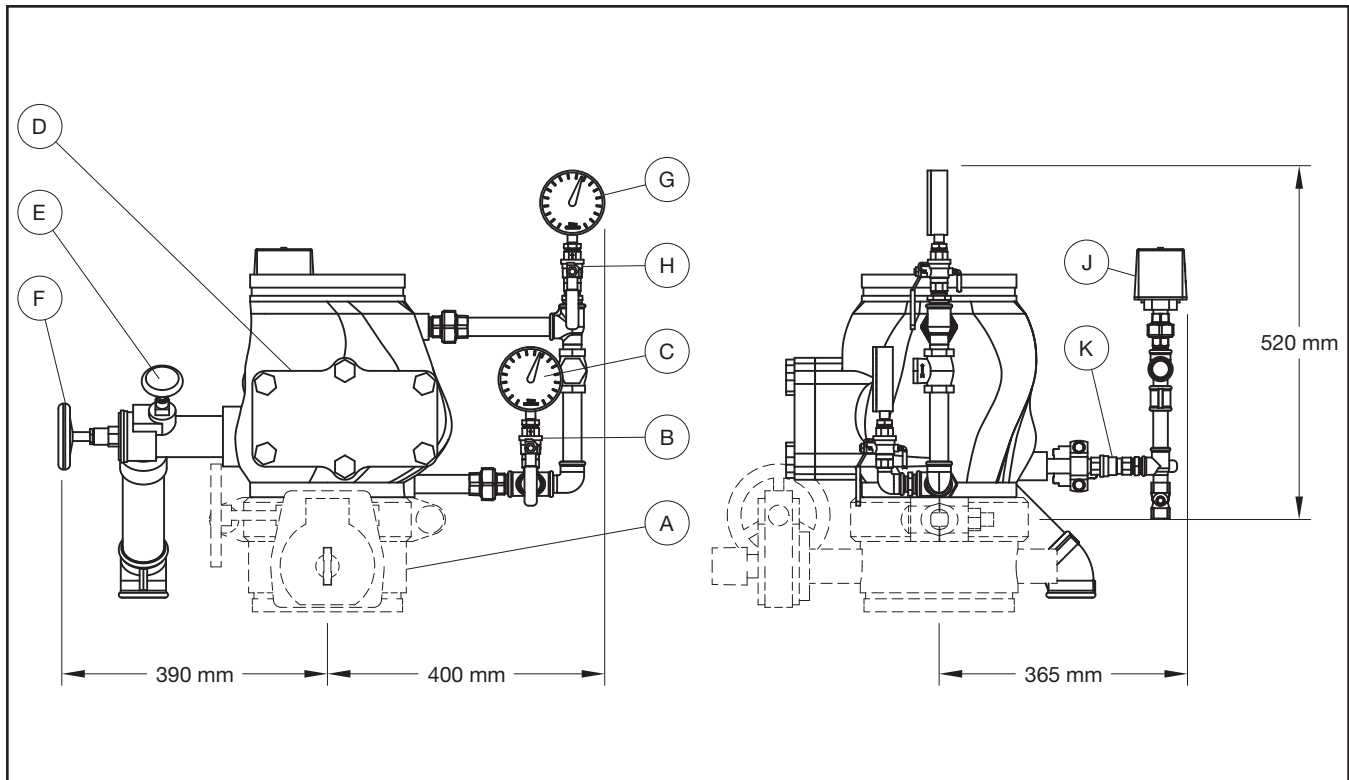
Step 1. Open the Alarm Test Valve (E). Verify that the alarm signal created by the Waterflow Pressure Alarm Switch (J) is visible at the fire panel. If applicable, check the sound of the Water Motor Alarm — it must be clear and steady — and the signal of the supervisory switch.

Step 2. Close the Alarm Test Valve (E). Verify that the normal supply and system pressures are restored. If the supply pressure is below normal, use the instructions from the water supply to obtain the usual pressure.

Appendix P of TFP990 (05/2020)

Summary Instructions (If problems occur, consult full document)

Wet Alarm Valve, AV-1-300, DN200, Without Retarding Chamber (Suitable for Supervisory)



Normal Conditions

- The Main Control Valve (A) is opened and locked.
- The sprinkler system is filled with water and is pressurized.
- The Alarm Test Valve (E) and Main Drain Valve (F) are closed.
- The Water Motor Alarm Control Valve (K) is open.
- The Pressure Gauge Valve (B) is open.
- The Pressure Gauge Valve (H) is open.
- System Pressure Gauge (G) reads downstream pressure.
- Water Supply Pressure Gauge (C) reads upstream pressure.

Operation

When one or more sprinklers are activated, pressure is reduced downstream of the Alarm Valve. This reduction in pressure opens the Clapper in the Alarm Valve and allows water to flow through the alarm port into the alarm line, operating the Waterflow Pressure Alarm Switch (J) and the Water Motor Alarm via the Water Motor Alarm Control Valve (K). The main waterway is now open and water flows into the piping system.

Removing System from Service

Step 1. Close the Main Control Valve (A). Close the Water Motor Alarm Control Valve (K).

Step 2. Drain the system with the Main Drain Valve (F). Open all valves in the system to make sure that cross-mains and branch lines are vented and drained.

Placing the System Back in Service

Step 1. Replace sprinklers that have operated and sprinklers that are close to the fire.

Step 2. Remove the Hand-Hole Cover from the Alarm Check Valve (D). Check and clean the Clapper Facing and Seat Ring.

Step 3. Mount the Hand-Hole Cover.

Step 4. Close Main Drain Valve (F) and other valves in the system.

Step 5. Clean the strainers in the alarm line and the Water Motor Alarm Trim.

Step 6. Open the remote cross-main or branch-line vent connection.

Step 7. Slowly open the Main Control Valve (A) until the sound of flowing water just begins, then open the valve one more turn.

Step 8. Close the remote branch-line vent connection after the discharge of aerated water ceases, and the outlet has flowed fully for at least 15 seconds.

Step 9. Fully open the Main Control Valve (A) and lock it open.

Step 10. Open the Water Motor Alarm Control Valve (K).

Step 11. Reset the fire alarm panel and notify the central alarm station.

Weekly Test

NOTICE

Prior to closing any valves or activating any alarms, notify local security guards and the central alarm station if applicable.

Step 1. Open the Alarm Test Valve (E). Verify that the alarm signal created by the Waterflow Pressure Alarm Switch (J) is visible at the fire panel. If applicable, check the sound of the Water Motor Alarm — it must be clear and steady — and the signal of the supervisory switch.

Step 2. Close the Alarm Test Valve (E). Verify that the normal supply and system pressures are restored. If the supply pressure is below normal, use the instructions from the water supply to obtain the usual pressure.