

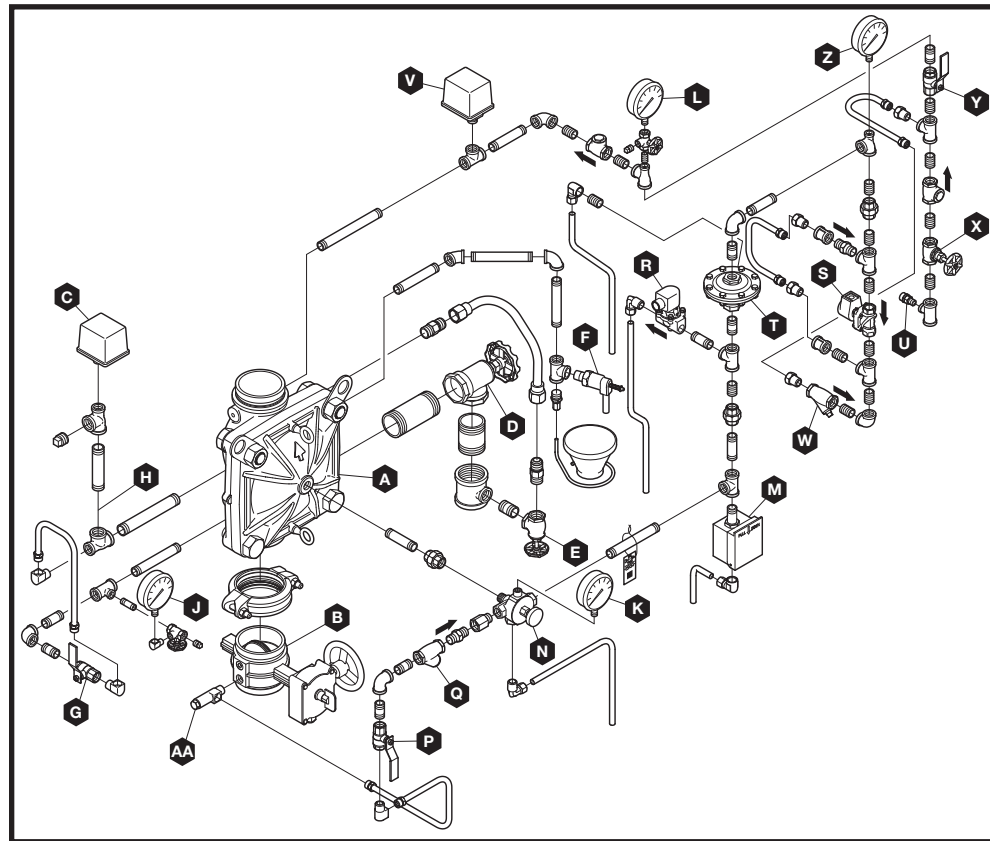


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## Summary Instructions DV-5A Automatic Water Control Valve Preaction Type A Systems (EN12845 Compliance)

### NOTICE

The procedures provided are summary instructions of the complete procedures appearing in Technical Data Sheet TFP1485. If problems occur, consult full document.



Item	Description
A	DV-5A Valve
B	System Main Control Valve
C	Waterflow Pressure Switch
D	Main Drain Valve
E	System Drain Valve
F	Automatic Drain Valve
G	Alarm Test Valve
H	Alarm Control Valve (Optional)
J	Water Supply Gauge
K	Diaphragm Gauge
L	System Gauge
M	Manual Control Station
N	Manual Reset Actuator

Item	Description
P	Diaphragm Supply Valve
Q	Diaphragm Supply Strainer
R	Solenoid Valve (NC) De-Energized #1
S	Solenoid Valve (NC) Energized #2
T	Dry Pilot Actuator
U	Pressure Relief Valve
V	Supervisory Low Pressure Alarm Switch
W	Air Supply Strainer
X	Air Supply Control Valve "A"
Y	Air Supply Control Valve "B"
Z	Dry Pilot Gauge
AA	Inverted Flare Shut-Off Valve

### Valve Setting Procedure

1. Close System Main Control Valve (B), Diaphragm Supply Valve (P), and Air Supply Control Valves (X) and (Y).
2. Open Main Drain Valve (D), System Drain Valve (E), and all auxiliary drains in system. Also, remove plug from Air Supply Strainer (W) to drain any water and ensure it is clean and free of debris. Close auxiliary drain valves, System Drain Valve (E), and reassemble Air Supply Strainer (W) after water stops discharging. Leave Main Drain Valve (D) open.
3. Ensure Pressure Gauge Valves and Alarm Control Valve (H), as applicable, are open.
4. Depress plunger of Automatic Drain Valve (F) to verify it is open.
5. Clean Diaphragm Supply Strainer (Q). Flush strainer by opening the Diaphragm Supply Valve (P).
6. Replace operated automatic sprinklers on system piping.
7. Reset DV-5A Valve Releasing Panel in accordance with manufacturer instructions.
8. Re-establish system air pressure to reset Model DP-1 Dry Pilot Actuator (T) by opening Air Supply Control Valve (X). Do not open Air Supply Control Valve (Y) at this time. Observe Dry Pilot Actuator (T) air pressure on Dry Pilot Gauge (Z).
9. Open Manual Control Station (M), then open Diaphragm Supply Valve (P). After aerated water stops discharging from Manual Control Station (M) drain tube, slowly close operating lever. Do not close hinged cover at this time.
10. After aerated water stops discharging, reset Manual Reset Actuator (N) until water stops flowing from its drain tube and pressure reaches approximately 15 psi (1,0 bar) on Diaphragm Gauge (K).
11. With diaphragm chamber pressurized, temporarily close Diaphragm Supply Valve (P), and observe Diaphragm Gauge (K) for a drop in pressure. If pressure drop is noted, replace DV-5A Diaphragm and correct any leaks before proceeding.
12. If Diaphragm Gauge (K) indicates no drop in pressure, re-open Diaphragm Supply Valve (P) and proceed.
13. Open Air Supply Control Valve (Y) to pressurize system piping.
14. Partially open System Main Control Valve (B). Slowly close Main Drain Valve (D) as water discharges from Main Drain Valve (D). Observe Automatic Drain Valve (F) for leaks. If there are leaks, correct the leakage problem.
15. Close hinged cover of Manual Control Station (M) and insert new break rod in small hole through the top of the enclosing box.
16. Open System Main Control Valve (B).
17. After setting fire protection system, notify proper authorities and advise those responsible for monitoring proprietary and/or central station alarms.

### Waterflow Alarm Test Procedure

1. Open Alarm Test Valve (G), allowing water to flow to Waterflow Pressure Switch (C) and/or Water Motor Alarm. Close Alarm Test Valve (G) when test is completed.
2. Depress plunger on the Automatic Drain Valve (F) to drain alarm line.

### Solenoid Valve Test Procedure For Electric Actuation

1. Close System Main Control Valve (B) and open Main Drain Valve (D).
2. Test deluge releasing panel in accordance with manufacturer's instructions to energize the Solenoid Valve (R).
3. Verify that water is flowing from Solenoid Valve (R) drain connection.
4. Verify Diaphragm Chamber pressure has decreased to below 25% of water supply pressure.
5. Reset electric detection system in accordance with manufacturer's instructions to de-energize Solenoid Valve (R). Water should top draining from Solenoid Valve (R) but remain draining from Manual Reset Actuator (N).
6. Press Reset Knob on Manual Reset Actuator (N) and hold a few seconds until water stops flowing.
7. After system pressure is restored, inspect Solenoid Valve (R) and Manual Reset Actuator (N) for leaks. Correct any leaks before proceeding.
8. Partially open System Main Control Valve (B). Slowly close Main Drain Valve (D) as water discharges from Main Drain Valve (D). Observe Automatic Drain Valve (F) for leaks. If there are leaks, correct the leakage problem. If there are no leaks, place DV-5A Valve in service and open System Main Control Valve (B).

### Solenoid Valve and Dry Pilot Actuator Test Procedure

1. Close System Main Control Valve (B) and open Main Drain Valve (D).
2. Simulate power failure by disconnecting main power to releasing panel, and disconnecting battery back-up. Refer to releasing panel manufacturer's instructions for specific details. This step allows Solenoid Valve (S) to open.
3. Open system's Inspector's Test Connection to relieve system air pressure.
4. Verify water flow from Dry Pilot Actuator (T) drain connection.
5. Verify Diaphragm Chamber pressure decreased to below 25% of water supply pressure.
6. Close Inspector's Test Connection and allow the system air pressure to re-establish. Water stops draining from Dry Pilot Actuator (T) but continues to drain from Manual Reset Actuator (N). Press Reset Knob on Manual Reset Actuator (N) and hold a few seconds until water stops flowing from drain tube.

7. Pressure will then build up in DV-5a Diaphragm Chamber.
8. After system pressure is restored, inspect Solenoid Valve (R) and Manual Reset Actuator (N) for leaks. Any leaks must be corrected before proceeding.
9. Reestablish battery and main power to releasing panel in accordance with manufacturer's instructions.
10. Partially open System Main Control Valve (B). Slowly close Main Drain Valve (D) as water discharges from Main Drain Valve (D), then close Main Drain Valve (D). Observe Automatic Drain Valve (F) for leaks and correct the leakage problem. If there are no leaks, place DV-5A Valve in service and open System Main Control Valve (B).

### Supervisory Low Pressure Alarm Test Procedure and Validation of Normally Closed Solenoid Valve (S)

1. Close System Main Control Valve (B), and open Main Drain Valve (D).
2. Crack open system's Inspector's Test Connection to relieve air pressure from system. Verify Supervisory Low Pressure Alarm Switch (V) is operational and low pressure set point is approximately 0,4 bar under minimum system air pressure.
3. Allow system air pressure to decay to 0 psig. Verify no water draining from Dry Pilot Actuator (T).
4. Close system's Inspector's Test Connection and allow system supervisory pressure to automatically re-established. As necessary, open, then close quick fill air supply control valve in automatic air maintenance device. Supervisory Low Pressure Alarm Switch (V) should return to "normal" condition.
5. Verify system air pressure is normal and DV-5A Diaphragm Chamber remains pressurized.
6. Partially open System Main Control Valve (B). Slowly close Main Drain Valve (D) as water discharges from Main Drain Valve (D). Observe Automatic Drain Valve (F) for leaks. If there are leaks, correct the leakage problem. If there are no leaks, place DV-5A Valve in service and open System Main Control Valve (B).

### Operation Test Procedure

1. To prevent water from flowing beyond riser, close System Main Control Valve (B). Open Main Drain Valve (D).
2. Open System Main Control Valve (B) one turn beyond which water begins to flow from Main Drain Valve (D). Slowly close Main Drain Valve (D).
3. Test deluge releasing panel in accordance with manufacturer's instructions to energize Solenoid Valve (R).
4. Verify DV-5A Valve has tripped, as indicated by water flow into system.
5. Close System Main Control Valve (B).
6. Close Diaphragm Supply Valve (P) and Air Supply Control Valves (X) and (Y).
7. Reset DV-5A Valve with Preaction Type A Trim in accordance with Valve Setting Procedure.

### Internal Valve Inspection

1. Ensure that Steps 1 to 4 of the Valve Setting Procedure are completed prior to proceeding with the Internal Valve Inspection.
2. Ensure Diaphragm Supply Valve (P) is closed. If provided as part of the valve trim, close Inverted Flare Shut-Off Valve (AA).
3. Remove the Supply Line between the Diaphragm Supply Valve (P) and the System Main Control Valve (B). If provided as part of the valve trim, remove the Supply Line between the Diaphragm Supply Valve (P) and Inverted Flare Shut-Off Valve (AA).
4. Loosen union securing Actuation Trim and remove Actuation Trim.
5. Remove union between Diaphragm Cover and MRA-1 Manual Reset Actuator (N). Remove MRA-1 Manual Reset Actuator (N) subassembly.
6. Remove Diaphragm Valve Cover hardware, slowly remove Diaphragm Cover and perform internal valve inspection. Clean valve interior and replace parts as necessary.
7. Ensure Diaphragm is properly oriented and proper hardware arrangement is utilized.
8. Insert Long Hex Bolts. Align Diaphragm with Valve Body, and then align Diaphragm Cover with Valve Body. Insert Short Hex Bolts. Hand-tighten all fasteners.
9. Using crossdraw sequence, wrench-tighten Long Hex Bolts and Short Hex Bolts. Repeat crossdraw sequence two to three times at incremental torque values.
10. Inspect to assure all Hex Bolts are securely tightened.
11. Using the union, secure the MRA-1 Manual Reset Actuator (N) to the Diaphragm Cover.
12. Using union, secure Actuation Trim.
13. Replace the Supply Line between the Diaphragm Supply Valve and the System Main Control Valve (B). If provided as part of the valve trim, replace Supply Line between Diaphragm Supply Valve (P) and Inverted Flare Shut-Off Valve (AA).
14. Ensure unions and flare fittings are securely tightened.
15. If provided with the valve trim, and with Diaphragm Supply Valve (P) closed, fully open Inverted Flare Shut-Off Valve (AA) stainless steel screw (approximately 1/2 in.) until resistance is met.
16. Proceed with Step 5 of the Valve Setting Procedures.

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