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# Summary Instructions

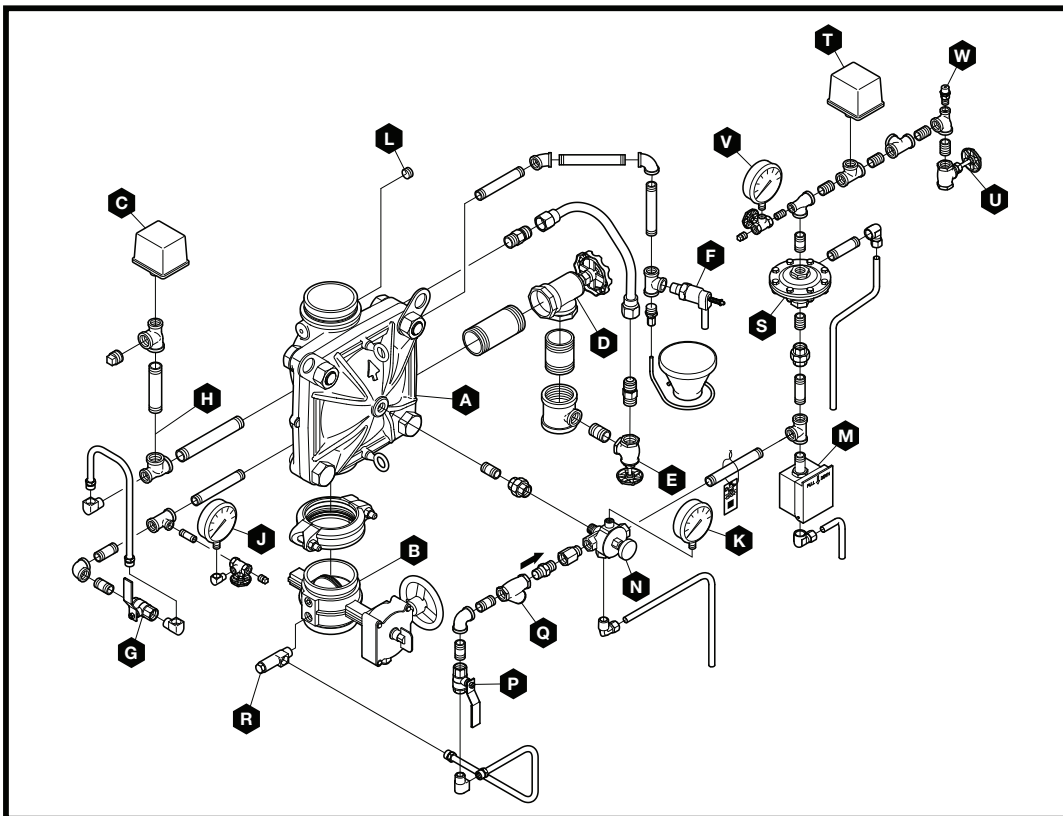
## DV-5A Automatic Water Control Valve

### Deluge Fire Protection Systems

### Dry Pilot Actuation Trim

#### NOTICE

The procedures provided are summary instructions of the complete procedures appearing in Technical Data Sheet TFP1316. 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 (Optional)

Item	Description
M	Manual Control Station
N	Manual Reset Actuator
P	Diaphragm Supply Valve
Q	Diaphragm Supply Strainer
R	Inverted Flare Shut-Off Valve
S	Dry Pilot Actuator
T	Dry Pilot Low Pressure Switch
U	Dry Pilot Air Supply Valve
V	Dry Pilot Line Gauge
W	Pressure Relief Valve

### **Valve Setting Procedure**

1. Close System Main Control Valve (B) and Diaphragm Supply Valve (P).
2. Open Main Drain Valve (D), System Drain Valve (E), and all auxiliary drains. Close auxiliary drain valves and System Drain Valve (E) after water stops discharging. Leave Main Drain Valve (D) open. Ensure Pressure Gauge Valves and Alarm Control Valve (H) are open.
3. Depress plunger of Automatic Drain Valve (F) to verify it is open.
4. Clean Diaphragm Supply Strainer (Q). Flush strainer by opening the Diaphragm Supply Valve (P).
5. Replace operated pilot sprinklers and/or reset remote manual control stations, and re-establish dry pilot pneumatic pressure.
6. Open Manual Control Station (M) and Diaphragm Supply Valve (P). After water stops discharging, slowly close the operating lever. Do not close the hinged cover at this time.
7. After water stops discharging, reset Manual Reset Actuator (N) until water stops flowing from its drain tube pressure reaches approximately 15 psi (1,0 bar) on Diaphragm Gauge (K).
8. With diaphragm chamber pressurized, temporarily close Diaphragm Supply Valve (P) and observe Diaphragm Gauge (K) for a drop in pressure. If a pressure drop is noted, replace DV-5A Diaphragm and correct any leaks before proceeding.
9. If Diaphragm Gauge (K) indicates no drop in pressure, re-open the Diaphragm Supply Valve (P) and proceed.
10. 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.
11. Close hinged cover of Manual Control Station (M). Insert a new break rod in the small hole through the top of enclosing box.
12. Open System Main Control Valve (B).
13. After setting fire protection system, notify proper authorities and advise those responsible for monitoring proprietary and/or central station alarms.

### **Drop in Water Supply Pressure Below Normal Range**

1. Note water supply pressure by the Diaphragm Gauge (K) and determine if the pressure is within normally expected range.
2. If below normal range, correct any leakage from diaphragm chamber prior to resetting the system.
3. When water supply pressure is restored, reset DV-5A Valve in accordance with the Valve Setting Procedure.

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### **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 the Alarm Test Valve (G) when test is completed.
2. Depress plunger on Automatic Drain Valve (F) to drain alarm line.

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### **Dry Pilot Actuation Operation Test Procedure**

1. Close System Main Control Valve (B).
2. Open Main Drain Valve (D).
3. Open System Main Control Valve (B) one turn beyond position at which water just begins to flow from Main Drain Valve (D).
4. Slowly close Main Drain Valve (D).
5. Open Inspector's Test Connection.
6. Verify DV-5A Valve has tripped, as indicated by flow of water into system.
7. Close System Main Control Valve (B).
8. Close Diaphragm Supply Valve (P).
9. Reset DV-5A Valve in accordance with Valve Setting Procedure.

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### **Dry Pilot Actuator Test Procedure**

1. Close System Main Control Valve (B).
2. Open Main Drain Valve (D).
3. Open Inspector's Test Connection on Dry Pilot Line.
4. Verify water flowing from Dry Pilot Actuator (R) drain connection.
5. Verify Diaphragm Chamber pressure decreases below 25% of water supply pressure.
6. Close Inspector's Test Connection and allow dry pilot line pressure to re-establish. Water should cease draining from Dry Pilot Actuator (S) but continues draining from Manual Reset Actuator (N).
7. Press reset Knob on Manual Reset Actuator (N) and hold for few seconds until water ceases draining. Pressure builds up in DV-5A Diaphragm Chamber.
8. After system pressure is restored, inspect Dry Pilot Actuator (S) and Manual Reset Actuator (N) for leaks at the drain tubes. Any leaks must be corrected before proceeding to the next step.
9. Partially open System Main Control Valve (B). Slowly close Main Drain Valve (D) when 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 fully open System Main Control Valve (B).

## Low Pressure Alarm and Condensate Drain for Dry Pilot Actuation Test Procedures

1. Close System Main Control Valve (B).
2. Close Diaphragm Supply Valve (P).
3. Open Main Drain Valve (D).
4. Open Inspector's Test Connection, and slowly relieve pneumatic pressure. Verify Dry Pilot Low Pressure Switch (T) is operational. Ensure Low pressure alarm setting is approximately 6 psi (0,4 bar) below minimum pilot line service pressure requirement, and fire alarm setting is approximately 14.5 psi (1,0 bar) below minimum pilot line service pressure requirement.
5. Close Inspector's Test Connection and allow Dry Pilot Line to automatically re-pressurize.
6. Open each low point drain and then close after discharge of any trapped condensate. The gauge test valve connected to Dry Pilot Line Gauge (V) must be used as a low point drain. Close gauge test valve, remove plug, and partially open gauge test valve (as necessary, collect water in a cup). After condensate water ceases to drain, close gauge test valve, replace plug, and then completely open gauge test valve.
7. Allow Dry Pilot Line to automatically re-pressurize.
8. Open Diaphragm Supply Valve (P).
9. Partially open System Main Control Valve (B). Slowly close Main Drain Valve (D) when 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 fully open System Main Control Valve (B).

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## 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 (R).
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 (R).
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 union, secure MRA-1 Manual Reset Actuator to 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 (R).
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 (R) stainless steel screw (approximately 1/2 in.) until resistance is met.
16. Proceed with Step 5 of the Valve Setting Procedures.