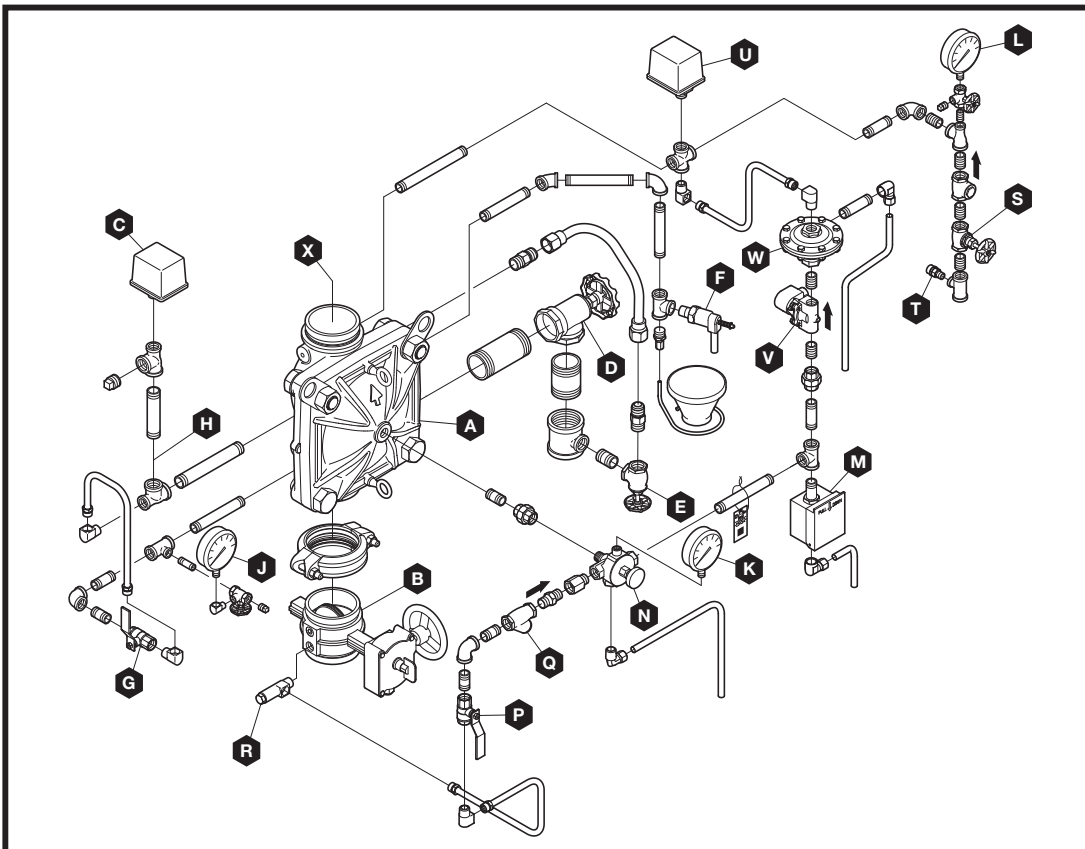


## Summary Instructions DV-5A Automatic Water Control Valve Double Interlock Preaction Electric/ Pneumatic Actuation Fire Protection System

### NOTICE

The procedures provided are summary instructions of the complete procedures appearing in Technical Data Sheet TFP1461. 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

Item	Description
N	Manual Reset Actuator
P	Diaphragm Supply Valve
Q	Diaphragm Supply Strainer
R	Inverted Flare Shut-Off Valve
S	Air Supply Valve
T	Air Pressure Relief Valve
U	Low Air Pressure Alarm Switch
V	Solenoid Valve
W	Dry Pilot Actuator
X	System Shut-Off Valve

### **Valve Setting Procedure**

1. Close System Main Control Valve (B), Diaphragm Supply Valve (P), and Air Supply Valve (S).
2. Open Main Drain Valve (D), System Drain Valve (E), and all auxiliary drains in the system. Close auxiliary drain valves and System Drain Valve (E) after water stops discharging. Leave Main Drain Valve (D) 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. Inspect for and clear all ice plugs where system piping has been exposed to freezing conditions.
6. Replace operated sprinklers.
7. Service air dryer, if applicable, in accordance with the manufacturer's instructions.
8. De-energize Solenoid Valve (V) via Potter RCDS-1 Releasing Circuit Disable Switch, or equivalent.
9. Open Manual Control Station (M), then open Diaphragm Supply Valve (P). After aerated water stops discharging, 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 the drain tube and the pressure builds and reaches approximately 15 psi (1,0 bar) on Diaphragm Gauge (K).
11. Inspect Electric/Electric actuation drain connection from Manual Control Station (M) and Solenoid Valve (V). Correct any leaks before proceeding.
12. 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, correct any leaks before proceeding. If Diaphragm Gauge (K) indicates no drop in pressure, re-open Diaphragm Supply Valve (P) and proceed.
13. Open Air Supply Valve (S) and allow system to automatically re-establish nominal system air pressure of 15 psi (1,0 bar). Observe Automatic Drain Valve (F) for leaks. If there are leaks, correct leaks before proceeding.
14. Open System Shut-Off Valve (X), as will be the case when resetting a system after performing an operational test.
15. Proceed to reset electric detection system in accordance with the manufacturer's instructions. After setting releasing panel, return Potter RCDS-1 to "green light - releasing circuit system normal".
16. 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.
17. Close hinged cover on Manual Control Station (M) and insert a new break rod in small hole through top of enclosing box.
18. Fully open System Main Control Valve (B).
19. After setting fire protection system, notify proper authorities and advise those responsible for monitoring proprietary and/or central station alarms.

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### **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.

### **Electric/Pneumatic Actuation System Operation Procedure**

1. Close System Main Control Valve (B), then open Main Drain Valve (D).
2. Manually operate Releasing Panel and verify operation of Releasing Panel and its associated alarms, ensuring no leakage from Dry Pilot Actuator (W)
3. Open Inspector's Test Connection and close it immediately after verifying Low Air Pressure Alarm Switch (U) and its associated alarms operate properly. Low Air Pressure Alarm Switch (U) should operate at previously established pressure.
4. Close Inspector's Test Connection, then close System Shut-Off Valve (X) after system air pressure has been restored to normal.
5. Manually restore electric fire detection system to a normal condition in accordance with manufacturer's instructions. Solenoid Valve (V) will then be de-energized and returned to its normally closed position.
6. Open System Main Control Valve (B) one turn beyond which water just begins to flow from Main Drain Valve (D).
7. Close Main Drain Valve (D) and Air Supply Control Valve (S).
8. Open Dry Pilot Actuator (W) by partially opening System Drain Valve (E) to relieve air pressure at inlet to Dry Pilot Actuator (W). Verify there is no leakage from Dry Pilot Actuator (W).
9. Open Solenoid Valve by operating Releasing Panel. Verify DV-5A Valve operates as indicated water discharging from System Drain Valve (E) and Automatic Drain Valve (F). Automatic Drain Valve (F) may or may not close depending on flow past partially open System Main Control Valve (B)
10. Verify Model MRA-1 Manual Reset Actuator (N) has operated as indicated by water discharging into Drip Funnel drain tube connected to Model MRA-1 Manual Reset Actuator (N), and Waterflow Pressure Switch (C) and its associated alarms properly operate, and Water Motor Alarm, if applicable, properly operates.
11. Reset Double Interlock Preaction System in accordance with Valve Setting Procedure section.

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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 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 (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.