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# Summary Instructions

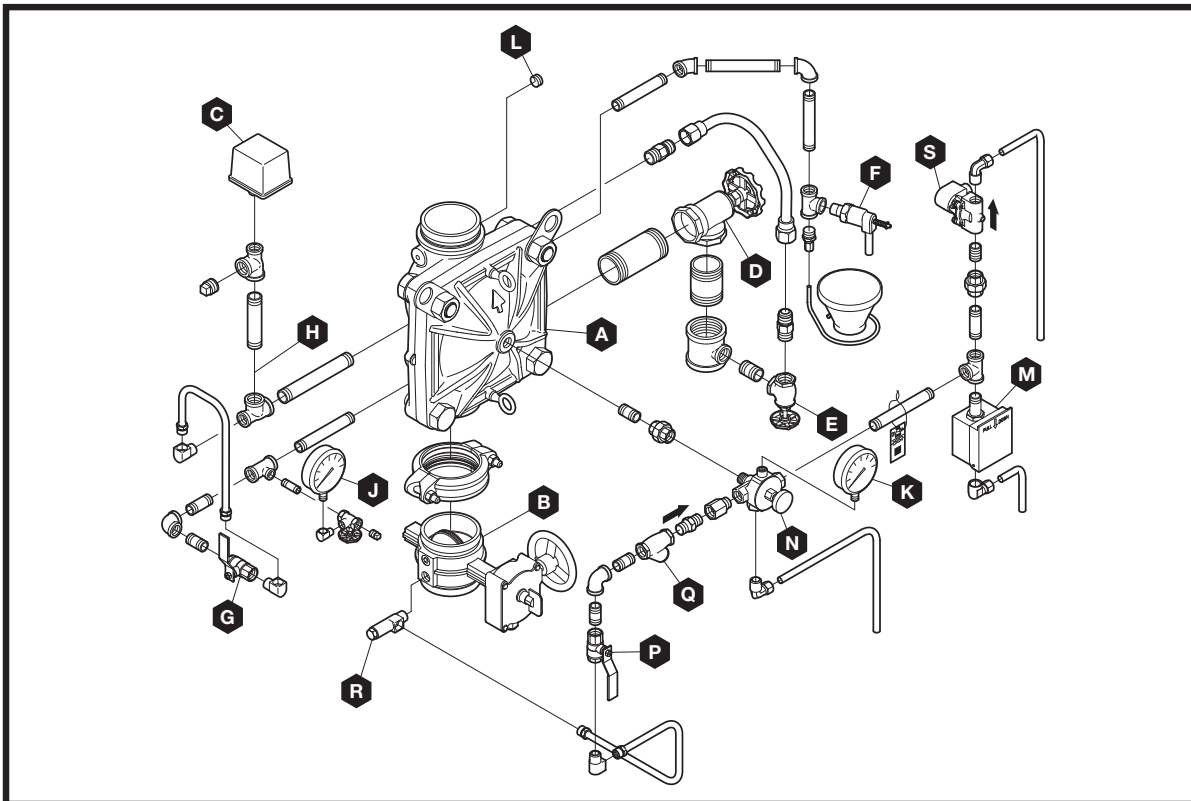
## DV-5A Automatic Water Control Valve

### Deluge Fire Protection Systems

### Electric Actuation Trim

#### NOTICE

The procedures provided are summary instructions of the complete procedures appearing in Technical Data Sheet TFP1321. 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             |

| Item | Description                   |
|------|-------------------------------|
| K    | Diaphragm Gauge               |
| L    | System Gauge (Optional)       |
| M    | Manual Control Station        |
| N    | Manual Reset Actuator         |
| P    | Diaphragm Supply Valve        |
| Q    | Diaphragm Supply Strainer     |
| R    | Inverted Flare Shut-Off Valve |
| S    | Solenoid 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 in the system. Close auxiliary drain valves and System Drain Valve (E) after water stops discharging. Leave the Main Drain Valve (D) open. Ensure that the Pressure Gauge Valves and the 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. Reset electric detection system in accordance with manufacturer's instructions to de-energize Solenoid Valve (S).
6. Open Manual Control Station (M) and Diaphragm Supply Valve (P). After aerated water stops discharging, slowly close the operating lever. Do not close the hinged cover at this time.
7. After aerated water stops discharging, reset the Manual Reset Actuator (N) until pressure reaches approximately 15 psi (1,0 bar) on the Diaphragm Gauge (K) and water stops flowing from the drain tube.
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, 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. When System Main Control Valve (B) is partially opened, the pressure on DV-5A Diaphragm Chamber may increase. If pressure is greater than valve trim maximum pressure, relieve pressure to at least valve trim pressure rating. Do not allow pressure to drop below supply pressure shown on Water Supply Gauge (J) which may result in tripping of DV-5A Valve.
12. Close hinged cover of Manual Control Station (M). Insert a new break rod in the small hole through the top of the enclosing box.
13. Open System Main Control Valve (B).
14. 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.

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## **Electric Actuation 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 position 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.
4. Verify DV-5A Valve has tripped, indicated by flow of water into system.
5. Close System Main Control Valve (B).
6. Close Diaphragm Supply Valve (P).

## **Electric Actuation Solenoid Valve Test Procedure**

1. Close System Main Control Valve (B).
2. Open Main Drain Valve (D).
3. Test deluge releasing panel in accordance with manufacturer's instructions to energize Solenoid Valve (S).
4. Verify water flow from Solenoid Valve drain connection.
5. Verify Diaphragm Chamber pressure decreases to below 25% of water supply pressure.
6. Reset electric detection system in accordance with manufacturer's instructions to de-energize Solenoid Valve (S).
7. Water should cease draining from Solenoid Valve (S) but remain draining from Manual Reset Actuator (N)
8. Press Reset Knob on Manual Reset Actuator (N) and hold it a few seconds until water stops flowing from its drain tube
9. Pressure will then build up in DV-5A Diaphragm Chamber.
10. After system pressure is restored, inspect Solenoid Valve (S) and Manual Reset Actuator (N) for leaks at drain tube. Any leaks must be corrected before proceeding.
11. Partially open System Main Control Valve (B). Slowly close Main Drain Valve (D) as soon 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, the DV-5A Valve is ready to be placed in service and System Main Control Valve (B) must then be fully opened.

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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 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.

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