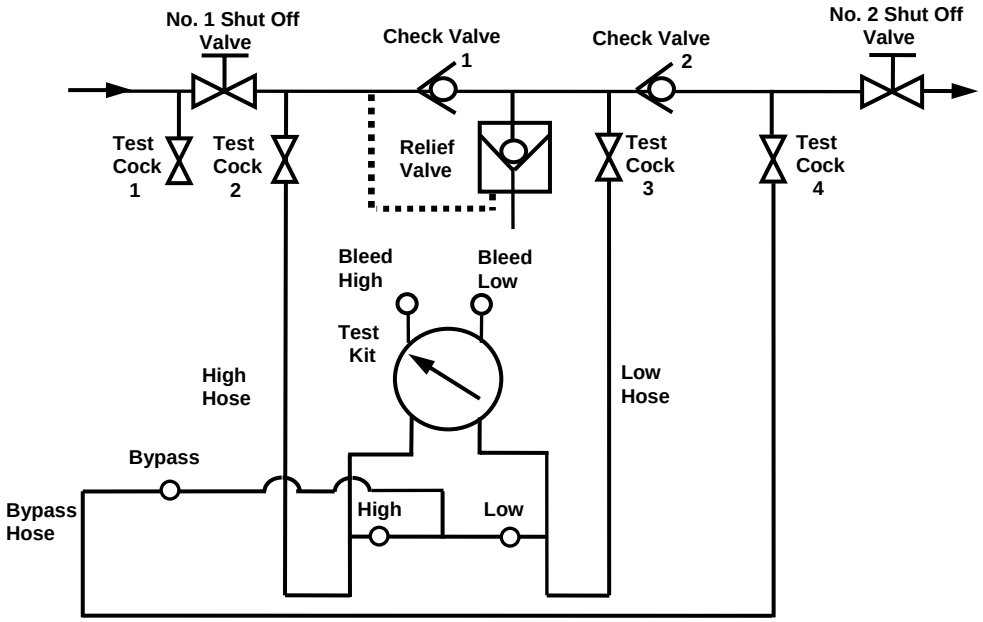
MID-WEST INSTRUMENT – MODELS 835 and 845-5 TEST KIT

TEST PROCEDURES – REDUCED PRESSURE PRINCIPLE ASSEMBLIES

NOTE: IT IS THE TESTER'S RESPONSIBILITY TO DETERMINE IF THIS PROCEDURE IS ACCEPTED BY LOCAL AUTHORITIES.



TEST SET UP:

1. Obtain permission to shut of the water supply.
2. Determine the direction of flow.
3. Identify all 4 test cocks.
4. All test kits valves are closed.

TEST NO. 1 - DOES THE DIFFERENTIAL PRESSURE RELIEF VALVE OPERATE TO MAINTAIN THE "ZONE" BETWEEN THE TWO CHECK VALVES AT LEAST 2 PSI LESS THAN THE SUPPLY PRESSURE.

1. Open test cock 4 to establish flow through the RP. Flush test cocks taking care not to dump the relief valve; open test cock 3, **SLOWLY** open test cock 2, open test cock 1. Close test cocks 1, 2, 3 and 4. Install appropriate adapters in all test cocks.
2. Connect the red hose between test cock 2 and the high side (middle) connection on the test kit.
3. Connect the green hose between test cock 3 and the low side (right) connection on the test kit.
4. Slowly open test cock 3. Bleed the low side by opening the bleed low (top, right) valve.
5. Slowly open test cock 2. Bleed the high side by opening the bleed high (top, left) valve.
6. Close No. 2 shutoff valve.
7. Close the bleed high valve. After the gauge reaches the upper part of the scale, close the bleed low valve.
8. Observe the pressure drop across check valve 1. Should the pressure drop until the relief valve discharges continuously, check valve 1 is leaking and must be repaired before continuing.
9. Open the high (bottom, middle, red) valve.
10. Open the low (bottom, right, green) valve no more than one quarter (1/4) turn.
11. Watch the gauge drop **slowly** to the relief valve opening point – record the reading. (If the differential pressure does not drop to the relief valve opening point, close the high and low valves and go to step 13.)
12. Close the high and low valves and go to Test No. 2.
13. No. 2 shutoff valve may be leaking. Reopen and close No. 2 shutoff valve to attempt a better shutoff. Repeat steps 9 through 11. If the relief valve does not open, a by-pass hose is required. (Large leaks may require a garden hose.)

14. Attach a hose (not supplied with Test Kit) to test cock 1. Bleed hose by opening test cock 1. Close test cock 1.
15. Connect the hose from test cock 1 to test cock 4.
16. Open test cock 1 to pressurize the hose.
17. Slowly open test cock 4. Repeat steps 9 through 11. If the relief valve does not open, the leaky No. 2 shutoff valve must be repaired.

<u>TEST NO. 2</u> – IS CHECK VALVE 2 PRESSURE TIGHT AGAINST BACK PRESSURE.

NO BYPASS HOSE USED IN TEST 1.

1. Connect the black hose to the bypass (left) connection on the test kit.
2. Bleed bypass hose by opening the high (bottom, middle, red) and bypass (bottom, left, black) valves. Close the bypass valve.
3. Attach the bypass hose to test cock 4.
4. Open test cock 4.
5. Open the bleed low (top, right) valve allowing the gauge to reach the upper part of the scale. Close the bleed low valve.
6. Open the bypass (bottom, left, black) valve.
   - If the differential pressure stabilizes above the relief valve opening point, check valve 2 is recorded as "tight". (Proceed to Test No. 3.)
   - If the reading falls to the relief valve opening point open the bleed low valve until the reading rises above the apparent No. 1 check valve pressure drop. Close the bleed low valve.
     - ➢ If the reading stabilizes above the relief valve opening point, check valve 2 is recorded as "tight" (proceed to Test No. 3).
     - ➢ If the reading falls to the relief valve opening point again, check valve 2 is noted as leaking and test No. 3 cannot be completed.

BYPASS HOSE USED IN TEST 1.

1. Leave the bypass hose connected between test cocks 1 and 4.
2. Leave test cocks 1 and 4 open.
3. Open the bleed low (top, right) valve allowing the gauge to reach the upper part of the scale. Close the bleed low valve.
4. If the differential pressure stabilizes above the relief valve opening point, check valve 2 is recorded as "tight". (Proceed to test No. 3.) If the reading falls to the relief valve opening point, check valve 2 is recorded as "leaking" and test No. 3 cannot be completed.

<u>TEST NO. 3</u> – IS THE STATIC PRESSURE DROP ACROSS CHECK VALVE 1 AT OR ABOVE 5 PSID?

1. Open the bleed low (top, right) valve allowing the gauge to reach the upper part of the scale. Close the bleed low valve.
2. Allow the gauge reading to stabilize. Record this reading as the static pressure drops across check valve 1.
3. Close all test cocks. Open the No. 2 shutoff valve. Remove all test equipment. ***<u>DRAIN TEST KIT.</u>***

Values recorded from Tests #'s 1, 2 & 3	**Acceptable Results**
Test No. 1: Relief Valve Opening Point = _____._____	2.0 PSID or higher
Test No. 2: Check Valve No. 2 – Tight / Leaking	Tight
Test No. 3: Check Valve No. 1 = _____._____	5.0 PSID or higher