In-Line Leak Testing Procedure for Checking Skotch Trifecta Gas Safety Shut-off Valve Systems

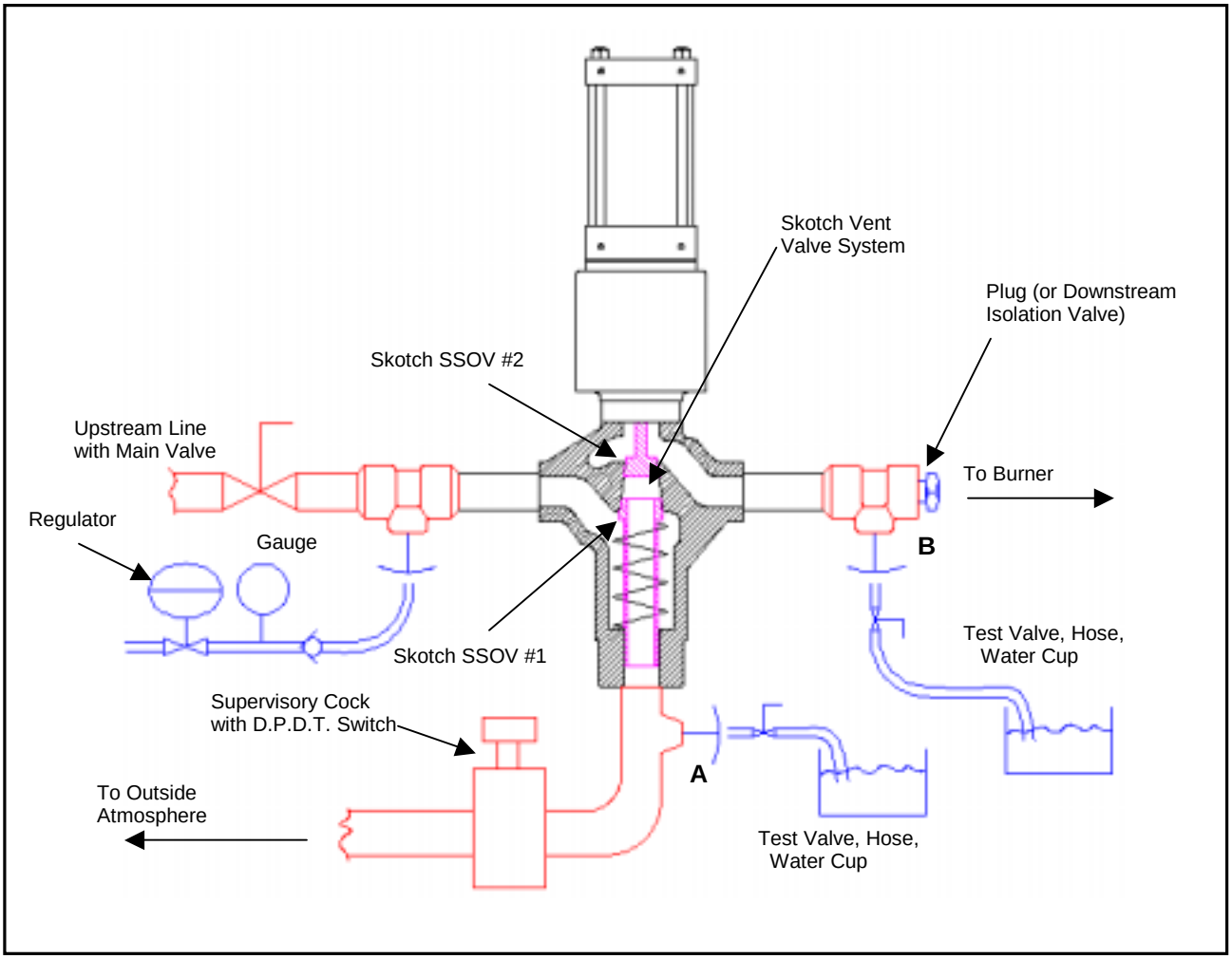

Figure 1: Testing Schematic of Skotch Valve System with pipe system as required to test the Double Block Valves. A supervisory cock in the vent line, and a down stream isolation valve are required in addition to the Skotch Valve System with a method to tap into the vent and downstream lines. The T4100C, T4150C, T4200C all test the same way regardless of the actuation package.

Figure 1 Color Legend:

Black – Skotch Base Valve System
Red – Customer Piping (portions may be supplied on request from ITT)
Blue – Required Leak Test Equipment

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Description of Terms:

Skotch Gas Valve System – Double "plug" block valve, with automatic vent valve incorporated into a singular housing/actuation package.

Port A - Test port located just outside the Skotch valve system on the vent line – used to test for SSOV #1 leakage, and to pressurize the SSOV #2 for leakage testing. This port is plugged during normal valve operation.

Port B - Test port located on the downstream line from the Skotch valve system; used to detect in-line leakage of SSOV #2.

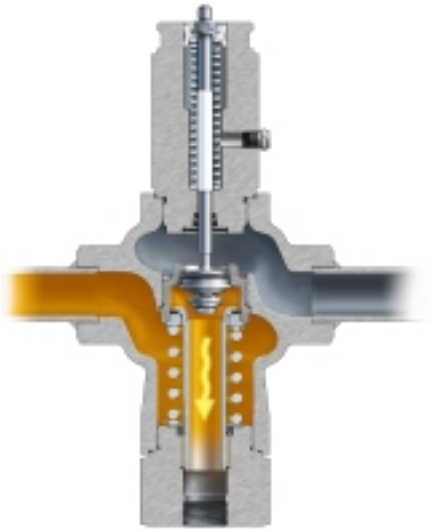
Plug (or Downstream Isolation Valve) – Downstream of the Skotch System; used to isolate the downstream piping during SSOV #2 leakage testing. (A plug would replace downstream flexline)

Supervisory Cock – Normally open cock, used in the closed position for in-line leak testing only.

Test Valve – manual valve used to control test port gas flow into the water cup.

Water Cup – leakage rate bubble capturing device. Should include a 100cc graduated cylinder for accurate measurements.

TEST PROCEDURE (*see Figure 1*):



1. Close supervisory cock on the vent line.
2. Verify that the Skotch Valve System is in the closed position.
3. SSOV #1 Leak testing:
   a. Open Test Port **A**, and connect up testing apparatus: manual valve (closed), hose, and bubble capture equipment.
   b. Verify that the upstream pressure gage is reading 50psig maximum.
   c. Open the manual test valve on Port **A**, evacuate any trapped pressure, and begin testing for 2 minutes. Record results based on a 2 minute test.
4. SSOV #2 Leak Testing.
   a. Remove the testing apparatus from Test Port **A**, and attach a regulated pressure line of Nitrogen gas supply to Test Port **A**.
   b. Verify that the Nitrogen gas supply pressure reading is 50psi maximum.
   c. Open Test Port **B**, and connect up testing apparatus: manual valve (closed), hose, and bubble capture equipment.
   d. Plug the downstream line, or close downstream isolation valve.
   e. Open the manual test valve on Port **B**, evacuate any trapped pressure, and begin testing for 2 minutes. Record results based on a 2 minute test.
5. Remove Nitrogen supply from Test Port **A**, and replace plug.
6. Open supervisory cock on vent line.
7. Replace downstream flex-line piping or open downstream isolation valve.
8. Remove testing apparatus from Test Port **B**, and replace plug.
9. Verify that all replaced port plugs, or reassembled piping are leak free.

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