

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

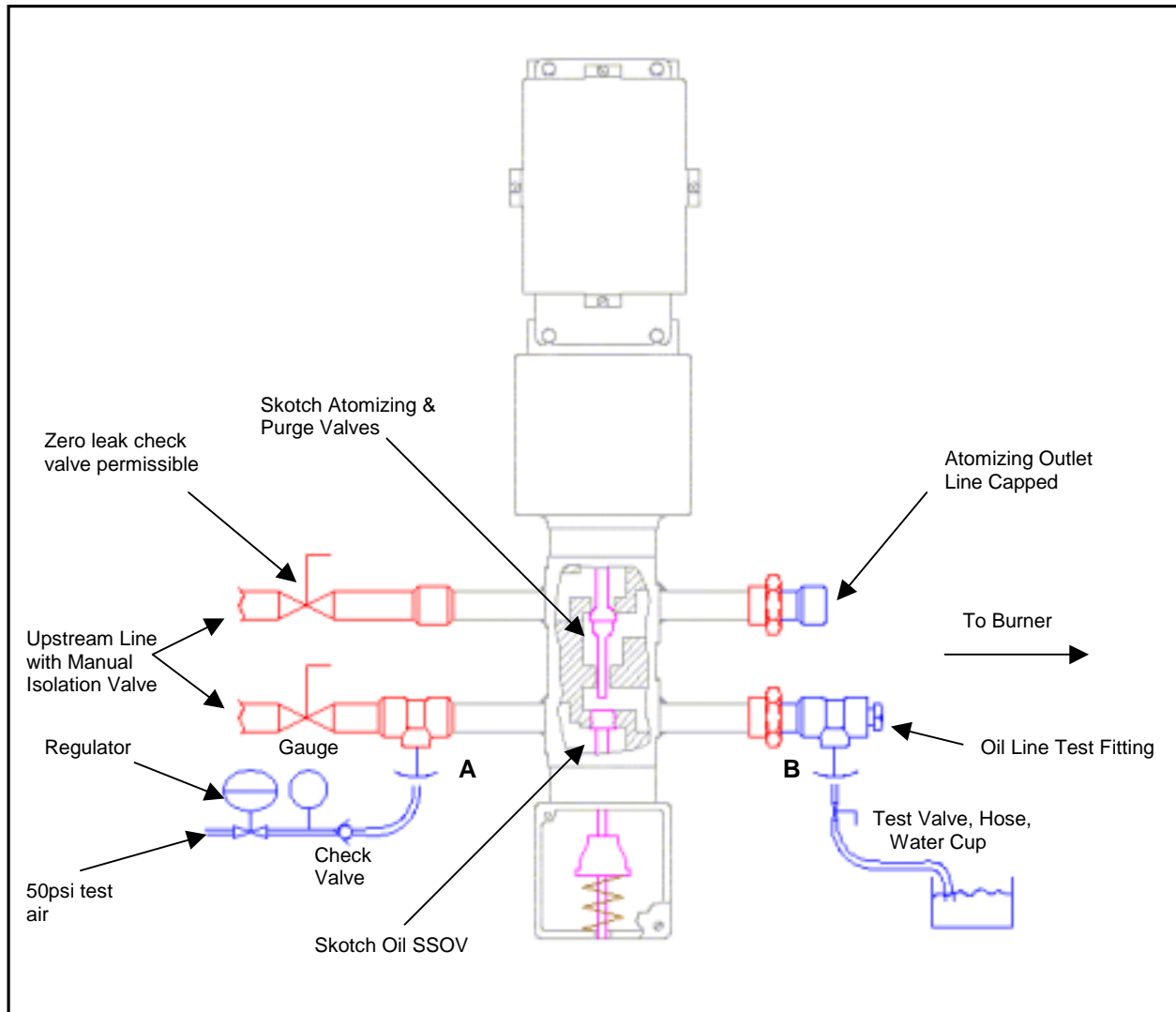


Figure 1: Testing Schematic of Skotch Valve System with pipe system as required to test the Fuel Oil Block Valve. The testing system utilizes existing piping system upstream isolation valves and downstream union fittings to flexible lines to the burners. A tee fitting just upstream of the Skotch Oil Valve is recommended in order to tap in for air testing of the block valve.

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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



Description of Terms:

Skotch Oil Valve System – Fuel oil Safety Shut-off Valve incorporated with atomizing and purge media operated by one actuation system.

Port A - Recommended “tee” fitting on the upstream fuel oil line just in front of the Skotch Valve to attach to an air testing source. Can be incorporated into supplied system or field installed.

Port B - Part of the recommended portable testing apparatus; a “tee” fitting that attaches to the fuel oil downstream line once removing the flex-line at the union fitting. One end capped, and the other port piped to the bubble test equipment

Upstream Isolation Valve – manual valve upstream of the Skotch Valve system; this should be part of plant supply line. For the atomizing line, a zero leak check valve can substitute for this requirement.

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 fuel oil line manual isolation valve when Skotch Valve is open position in order to drain the line as much as possible.
2. Send the Skotch Oil Valve system to Purge position for 45 seconds minimum. Close the Skotch Valve System. Verify that Valve System is closed
3. Skotch Oil SSOV Leak testing:
 - a. Remove both the atomizing and fuel line downstream flex-lines from the union fittings.
 - b. Plug the atomizing outlet port. Close the atomizing line upstream manual isolation valve or verify upstream atomizing check valve.
 - c. Hook up test “tee” fitting apparatus to the fuel oil downstream union fitting & connect up bubble test equipment.
 - d. Open Test Port **A** (allow any excess oil to drain out), and connect up testing apparatus: manual valve (closed), hose, and regulator & pressure gauge & recommended check valve to reduce any oil backflow.
 - e. Verify that the upstream pressure gage is reading 50psig maximum.
 - f. Open the manual test valve on Port **A & B**, evacuate any trapped pressure, and begin testing for 2 minutes. Record results based on a 2 minute test.
4. Remove Testing air supply from Test Port **A**, and replace plug.
5. Remove testing apparatus from fuel oil downstream and atomizing downstream lines and replace flex-line piping.
6. Open both upstream isolation valves prior to startup.

