CUMMINS ISB LIFT PUMP TEST PROCEDURE

This test kit and procedure are provided as a means to evaluate the output of the fuel supply lift pump on a Cummins ISB engine. Low lift pump pressures may contribute to lack of performance, poor fuel economy, or premature failure of the injection pump.

The fuel transfer pump supplies fuel from the fuel tank through the fuel filter/water separator to the high pressure injection pump. It is a 12-volt vane-type self-priming pump mounted to the left side of the engine behind the fuel filter/water separator. Check fuel lines to and from the pump for leaks, kinks, or other restrictions. A pump with external housing leaks must be replaced. Clean the area around the pump and filter/separator before performing the following test.

1. Remove the two hex plugs from the top of the fuel filter/water separator housing and replace them with the two inline check valve fittings supplied. Use Teflon tape on the threads. See Figure 1.
2. Install the fuel pressure test gauge onto the hose supplied. Connect the end of the hose and gauge assembly to the check valve installed in the inlet side of the fuel filter housing. This is the valve farthest away from the engine.
3. Prevent the engine from starting by removing the fuel injection pump relay in the Power Distribution Center.
4. Crank the engine and observe the fuel pressure. Cranking pressure should be 5-7 PSI.
5. Re-Install the fuel injection pump relay in the Power Distribution Center and start the engine. Pressure should be a minimum of 10 PSI at idle.
6. If a Diagnostic Trouble Code was set when the pump relay was removed, use a scan tool to remove the code.
7. Shut off the engine and switch the fuel pressure gauge from the inlet side check valve to the outlet side check valve (closest to the engine). Start the engine and observe the pressure. It should be no more than 5 PSI lower than the inlet pressure previously observed. If a greater pressure drop is observed, replace the fuel filter.
8. Once the pressure test is complete, the check valves may be left in place with the brass caps covering the valves. This will allow for future testing if necessary.

Figure 1