

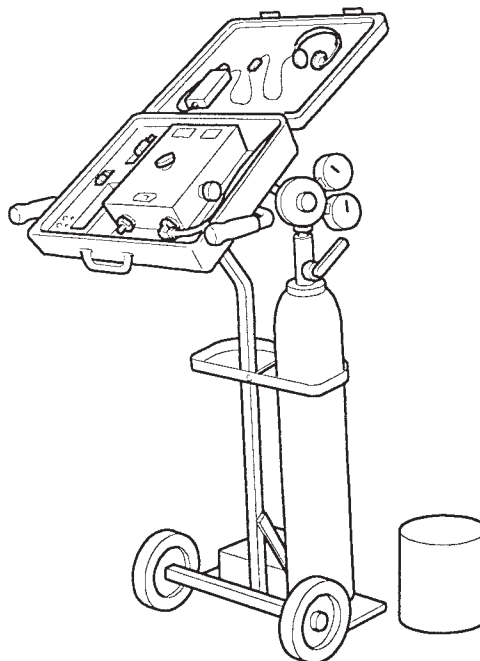
**Evaporative Loss System Check –
Clarified Procedure****MODEL** 1996-97 MY
Sedan (4.0L) Range
VIN 772231-812255 SWB
776271-812255 LWB**ISSUE:**

A mandatory testing tool was previously issued to enable the detection and repair of leaks from the dual canister evaporative emission system which is present on vehicles within the above VIN ranges. This bulletin is supplied to supplement the user's manual issued with the kit.

ACTION:

The 'Evaporative Emission Tester for OBDII, 134-00056J', manufactured by K-Line Industries Inc., can pressurize the fuel and evaporative emission system and then check for any leak from that system by use of the ultrasonic leak detector.

The tester is equipped with all the tools necessary to diagnose any EVAP system fault. The inert gas, (nitrogen or argon), used to pressurize the system, must be obtained locally.

EVAPORATIVE SYSTEM LEAK TESTER

D.303.381

ILLUSTRATION 1

Assemble the tester according to the manufacturer's instructions supplied with the tester.

⚠ WARNING: Never attach the tester to a cylinder of combustible gas.
Only cylinders of nitrogen or argon gas, which are in good condition and properly maintained, should be attached to the tester.
At least one gas cylinder should be installed in the equipment stand, to act as ballast, to prevent it overturning.

Install the gas regulator on the gas cylinder.

⚠ WARNING: The gas cylinder is pressurized to 2650 psi. Ensure that the regulator is correctly attached to the cylinder and that it is tightened securely.

Note: The primary gauge will show the current cylinder pressure, e.g. 2650 psi.
The secondary gauge will show 10 to 12 psi., these limits are set at the factory and are not adjustable.

CHECK LIST

- Be sure that both the vehicle and the test equipment are at room temperature.
- Before connecting the equipment to the vehicle, verify that the vehicle fuel tank is between 50%-70% is full.
- If the pressure display does not indicate "0-0" after discharging the system, remove and reinsert the battery to reset the system and clear any program problems.
- Always use the "ON/OFF" valve of the gas cylinder to turn off the gas flow when the tester is not in use. This action will prevent the loss of gas due to a valve being left open or a vehicle component not operating correctly.

EQUIPMENT SELF TEST:

- Before applying the tester to the vehicle it should be self tested as follows.
- Open the tool case and remove the manifold assembly.

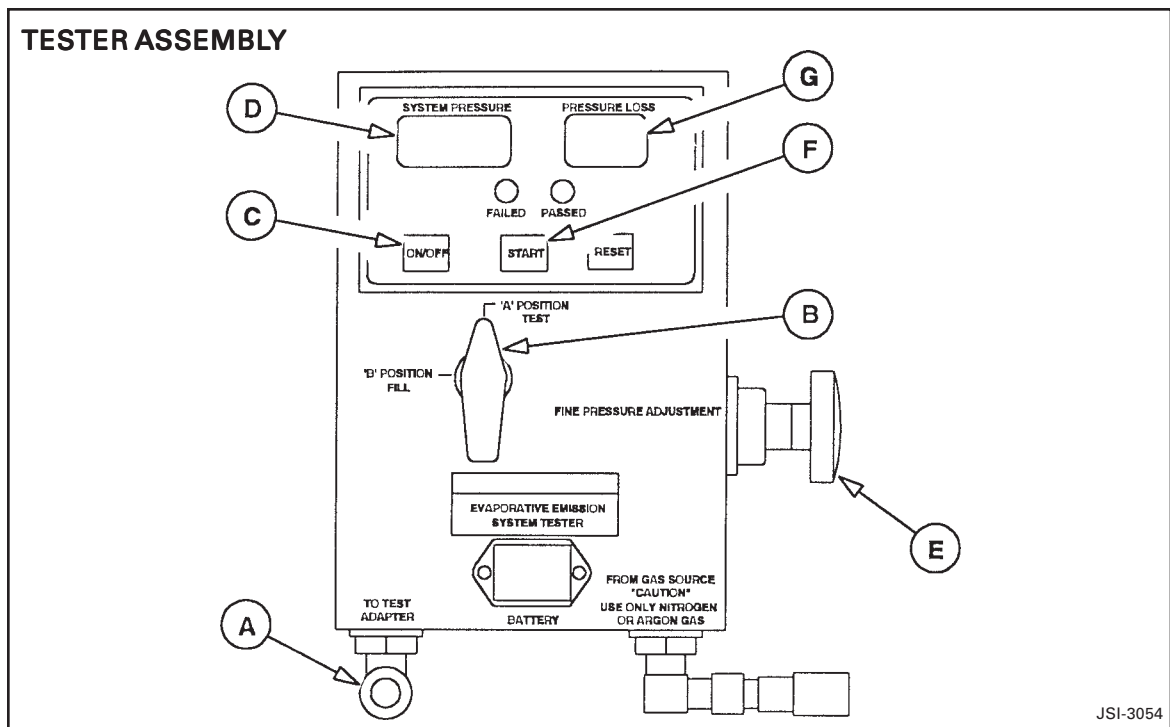


ILLUSTRATION 2

- Connect the manifold inlet hose to the quick connector on the control panel, (A, Illustration 2).

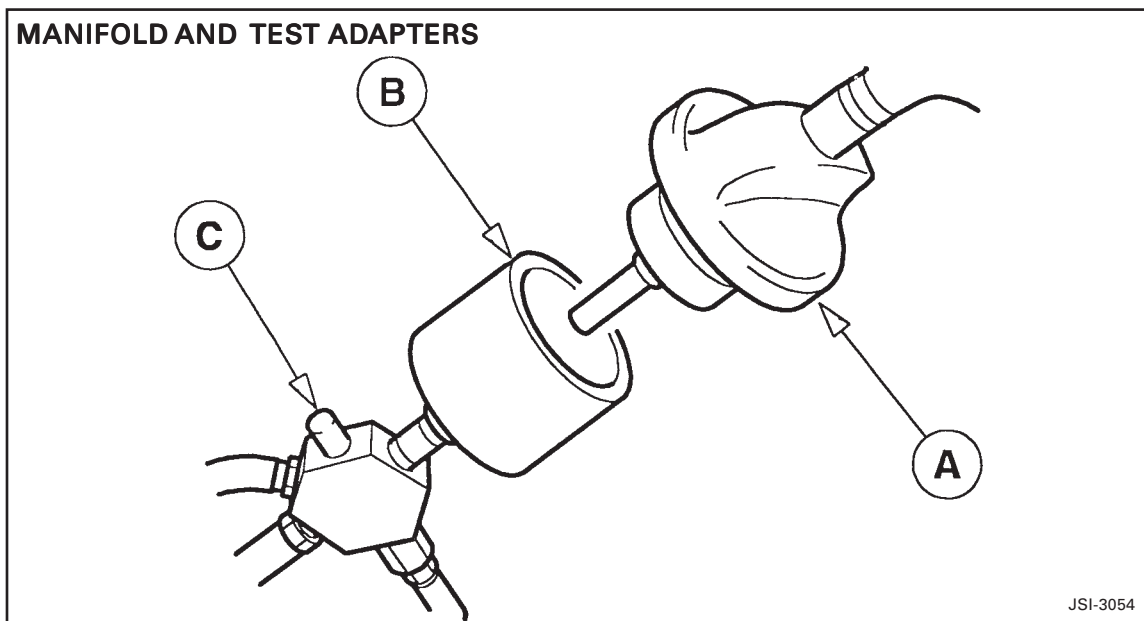


ILLUSTRATION 3

- Install the fuel cap test adapter, (A, Illustration 3), on the manifold adapter receiver, (B, Illustration 3).
- Turn the control valve, (B, Illustration 2), to the 'A' TEST position.
- Turn the gas cylinder valve to the 'OPEN' position: observe the WARNING on page 2.
- Press the 'ON/OFF' button, (C, Illustration 2), to switch the tester 'ON'.

- The SYSTEM PRESSURE digital display, (D, Illustration 2), should now indicate zero.
- If the SYSTEM PRESSURE is not at zero, press the pressure discharge valve, (C, Illustration 3), on the pipe manifold, to relieve the pressure until zero is indicated.
- Turn the control valve from the 'A' TEST position to the 'B' FILL position.
- The SYSTEM PRESSURE display should now indicate between the limits of 13.8 to 14.2 in. H₂O.

Note: The tester will measure pressure to 0.1 in. H₂O. When the system is initially charged the gauge may show minor fluctuations, due to hose position and temperature changes. Allow the system to stabilize before using the fine pressure adjustment control knob.

- If the reading is outside the limits, after allowing the system to stabilize, use the FINE PRESSURE ADJUSTMENT control knob, (E, Illustration 2), to bring the pressure within limits.
- Turn the control valve from the 'B' FILL position to the 'A' TEST position.
- Press the START button, (F, Illustration 2), to begin the 2 minute countdown, which will be shown on the SYSTEM PRESSURE display.
- During the countdown the PRESSURE LOSS digital display, (G, Illustration 2), will show what, if any, pressure loss (or gain) is occurring in the system.

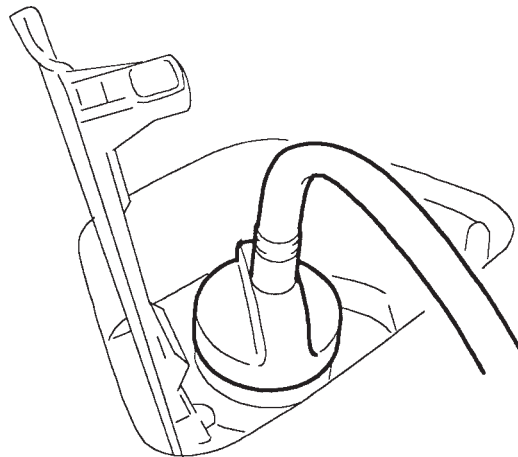
Note: The digital readout on the tester may also show a **negative** number which indicates the unit is **gaining** pressure. This is not an uncommon occurrence when the cold gas from the cylinder is warming up to room temperature. As the gas warms it creates pressure.

- The final figure indicated on the PRESSURE LOSS display should **not** be more than 0.5 in. H₂O. Disregard the "PASSED" and "FAILED" lights during the self-test. A negative number is acceptable since a pressure gain due to temperature change shows there is no leak.
- Place the manifold discharge hose in an approved safety container and then press the pressure discharge valve on the pipe manifold to depressurize the system.
- Remove the fuel cap test adapter from the manifold adapter receiver.
- After completing the test, close the gas cylinder valve and shut off the tester to avoid wasting gas.

VEHICLE EVAP SYSTEM TEST

- Before conducting the test the fuel and evaporative emission system should be checked for signs of damage or wear, i.e. fuel filler cap seal, pipes, connections etc. The fuel tank should be between 50% and 70% full.

FUEL CAP TESTER ADAPTER



D.303.307

ILLUSTRATION 4

- Remove the fuel filler cap from the fuel tank filler neck and install it on the fuel cap test adapter receiver, (B, Illustration 3). The cap will act as a seal on the adapter receiver.
- Install the fuel cap test adapter, (Illustration 4), on the filler neck.
- At the PDU base station, load the PDU with disc PDU 1055 (replaces Service Action Disc 2.0).
- Select Diagnostics from the main menu screen
- Enter the vehicle details.
- Select Toolbox from the main menu screen.
- Select Evaporative System Leak Check from the toolbox menu screen. Select 4.0L engine size under vehicle features.
- Follow the operator messages on the PDU screen. (Position the vehicle and switch off the ignition, select P, apply parking brake).
- Take the PDU, with the required data now loaded, and connect it to the vehicle.
- The PDU will communicate with the ECM.
- 'TURN IGNITION ON' is displayed on the screen, switch on the ignition.
- Press 'ENTER'.
- The operator action screen with the instruction to set up the leak check equipment will display.
- Select YES, if the canister close valve should be closed for the duration of the test.
- A 30 minute count down will display on the screen.

Note: The canister close valve will be closed for 30 minutes, after which time it will be automatically opened in order to protect the solenoid.

- Turn lever to 'A' TEST position.
- Press ON/OFF switch to power up tester.
- Turn the gas cylinder valve to the open position. Observe the warnings on page 2.
- Turn the EVAP tester control valve, (B, Illustration 2), to the 'B', FILL position.
- Press the START switch and allow the 2 minute timer to cycle. After the timer has cycled, the SYSTEM PRESSURE digital display, (D, Illustration 2), should show 13.8 to 14.2 in. H₂O.
- If the reading is outside the limits then use the FINE PRESSURE ADJUSTMENT control knob, (E, Illustration 2), to bring the pressure within the limits.
- If you cannot adjust the pressure to 13.8 to 14.2 in. H₂O, the system has a leak. Use the ultrasonic leak detector to check for leakage in the vehicle's EVAP/fuel system.
- Press the RESET button.
- Turn the control valve, (B, Illustration 2), to the 'A' TEST position.
- Press the START button, (F, Illustration 2), to begin the 2 minute countdown, which will be shown on the SYSTEM PRESSURE display.
- Wait until the countdown is completed.
- During the countdown any pressure lost will be shown on the PRESSURE LOSS digital display, (G, Illustration 2).
- If the system has passed the test, the green PASSED light will be switched on.
- If the system has failed the test, the red FAILED light will be switched on.

Note: The PASS and FAIL limits are set within the tester and are **not** adjustable.

- Place the manifold discharge hose in an approved safety container and then press the pressure discharge valve on the manifold to depressurize the system.

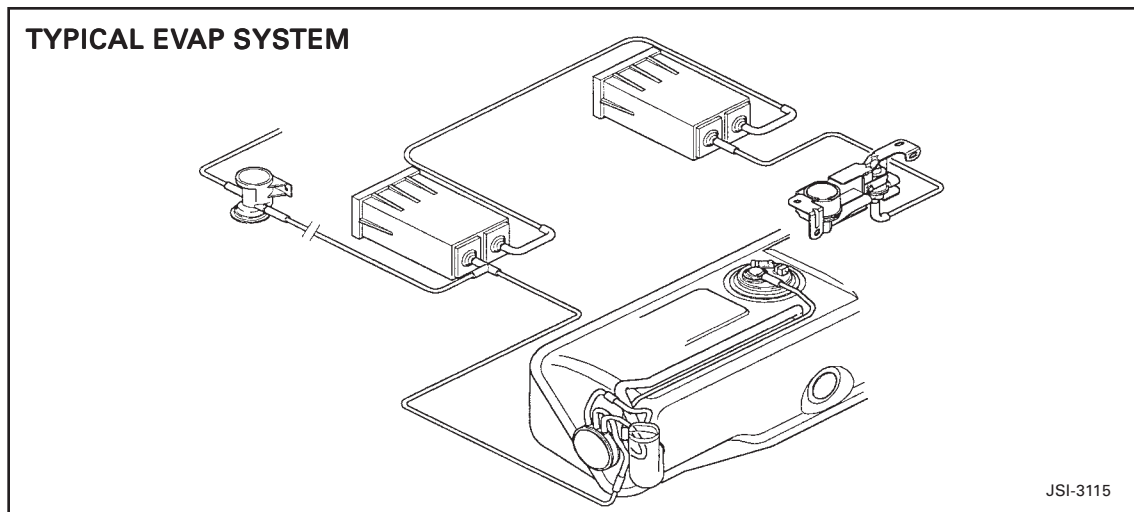


ILLUSTRATION 5

- If the system has passed the test, the system should be retested to verify the first result.
- If the system has failed the test, the system should be repressurized and investigated by the use of the ultrasound detector.
- If a leak is detected, the fault should be rectified and the system retested.
- If a leak is not detected, then the fault must be within the EVAP purge valve or the canister close valve.
- Install a plug or a clamp on the pipe connecting the purge valve to the intake manifold and repeat the test.
- If the system has passed the test, then the purge valve is leaking and it should be replaced by a new valve.
- If the system has failed the test, then remove the plug or clamp and install it on the pipe connecting the canister close valve to the canister and then repeat the test.
- If the system has passed the test, then the canister close valve is leaking and it should be replaced by a new valve.

Confirmation Check:

- Close the canister close valve and run the system pressure test.
- If the system has failed the test, the process detailed above must be repeated.
- If the system has passed the test, the canister close valve should be opened and the pressure drop observed.
- If the pressure does not drop rapidly after the canister close valve is opened then the running loss control valve is faulty and it should be removed and a new valve installed.

Note: Always use the 'ON\OFF' valve of the gas cylinder to cut off the gas flow when the tester is not in use.

ULTRASONIC LEAK DETECTOR

- The ultrasonic leak detector is housed in the foam insert in the tester case.
- Check the 9V battery in the detector for proper installation. The LED will indicate power.
- Connect the headset to the ultrasonic leak-detector by inserting the headset plug into the socket in the detector.
- Depress the on/off button to switch on the detector.
- There is a volume control built into the cable between the headset and the detector. Set the volume control at maximum.
- Test the detector by making a small noise, e.g. rubbing fingers together, in front of the detector.
- Adjust the volume control to allow the wearing of the headset without hearing discomfort.

Note: The inaudible vibrations caused by an escape of gas are translated into sound by the detector, so that the leak can be traced.

- Point the detector at the suspected leak, keeping within an 1/2 in. to 2 in. radius of that area.
- The hissing noise should rise and fall in volume as the detector passes over the leak.
- If a leak is found, repair, and then recheck the system for further leaks.

Note: Gas pressure in the EVAP system must be maintained during the test for leaks since low gas pressure could inhibit leak detection.