CERTAIN 2011-2012 MODEL YEAR FUSION VEHICLES EQUIPPED WITH 2.5L OR 3.0L ENGINES — POWERTRAIN CONTROL MODULE REPROGRAMMING AND CANISTER PURGE VALVE INSPECTION

OVERVIEW

In some of the affected vehicles, the canister purge valve (CPV) may develop a leak that can cause excessive vacuum to build in the fuel tank. This condition will only occur under certain operating conditions and may result in illumination of the "service engine soon indicator". Dealers are to reprogram the powertrain control module (PCM), test the CPV, and repair as needed.

WARNING: Do not smoke, carry lighted tobacco or have an open flame of any type when working on or near any fuel-related component. Highly flammable mixtures are always present and may be ignited. Failure to follow these instructions may result in serious personal injury.

WARNING: Do not carry personal electronic devices such as cell phones, pagers or audio equipment of any type when working on or near any fuel-related component. Highly flammable mixtures are always present and may be ignited. Failure to follow these instructions may result in serious personal injury.

WARNING: When handling fuel, always observe fuel handling precautions and be prepared in the event of fuel spillage. Spilled fuel may be ignited by hot vehicle components or other ignition sources. Failure to follow these instructions may result in serious personal injury.

WARNING: Before working on or disconnecting any of the fuel tubes or fuel system components, relieve the fuel system pressure to prevent accidental spraying of fuel. Fuel in the fuel system remains under high pressure, even when the engine is not running. Failure to follow this instruction may result in serious personal injury.

WARNING: Always disconnect the battery ground cable at the battery when working on an evaporative emission (EVAP) system or fuel-related component. Highly flammable mixtures are always present and may be ignited. Failure to follow these instructions may result in serious personal injury.

Module Reprogramming

Important Information for Module Programming

NOTE: When programming or reprogramming a module, use the following basic checks to ensure programming completes without errors.

- Make sure the 12V battery is fully charged before carrying out the programming steps and connect IDS/scan tool to a power source.
- Inspect Vehicle Communication Module (VCM) and cables for any damage. Make sure scan tool connections are not interrupted during programming.
- A hardwired connection is strongly recommended.
- Turn off all unnecessary accessories (radio, heated/cooled seats, headlamps, interior lamps, HVAC system, etc.) and close doors.
- Disconnect/depower any aftermarket accessories (remote start, alarm, power inverter, CB radio, etc.).
- Follow all scan tool on-screen instructions carefully.
- Disable IDS/scan tool sleep mode, screensaver, hibernation modes.
- Create all sessions Key On Engine Off (KOEO). Starting the vehicle before creating a session will cause errors within the programming inhale process.

NOTE: Reprogram appropriate vehicle modules before performing diagnostics and clear all Diagnostic Trouble Codes (DTCs) after programming. For DTCs generated after reprogramming, follow normal diagnostic service procedures.

1. Connect a battery charger to the 12V battery.
2. Reprogram the Powertain Control Module (PCM) using IDS release 99.05 or higher.

NOTE: Calibration files may also be obtained at www.motorcraftservice.com.

NOTE: Follow the IDS on-screen instructions to complete the reprogramming procedure.

NOTE: If programming results in a blank module, refer to module recovery instructions on Page 10.

3. Disconnect the battery charger from the 12V battery, once the reprogramming has completed.
4. Proceed to Canister Purge Valve (CPV) Testing on Page 3.

Canister Purge Valve (CPV) Testing

NOTE: Ensure that the VACUTEC® Smoke Machine or equivalent is properly calibrated for a 0.020" leak test following the manufacturer's instructions.

1. Disconnect the vapor tube-to-CPV quick connect coupling. Please follow the WSM procedures in Section 310-00. See Figure 1.

NOTE: 2.5L shown, 3.0L similar.

FIGURE 1

2. Using suitable adapters, connect the VACUTEC® Smoke Machine Fuel Evaporative Emission System Tester or equivalent to the port on the CPV. See Figure 2.

NOTE: 2.5L shown, 3.0L similar.

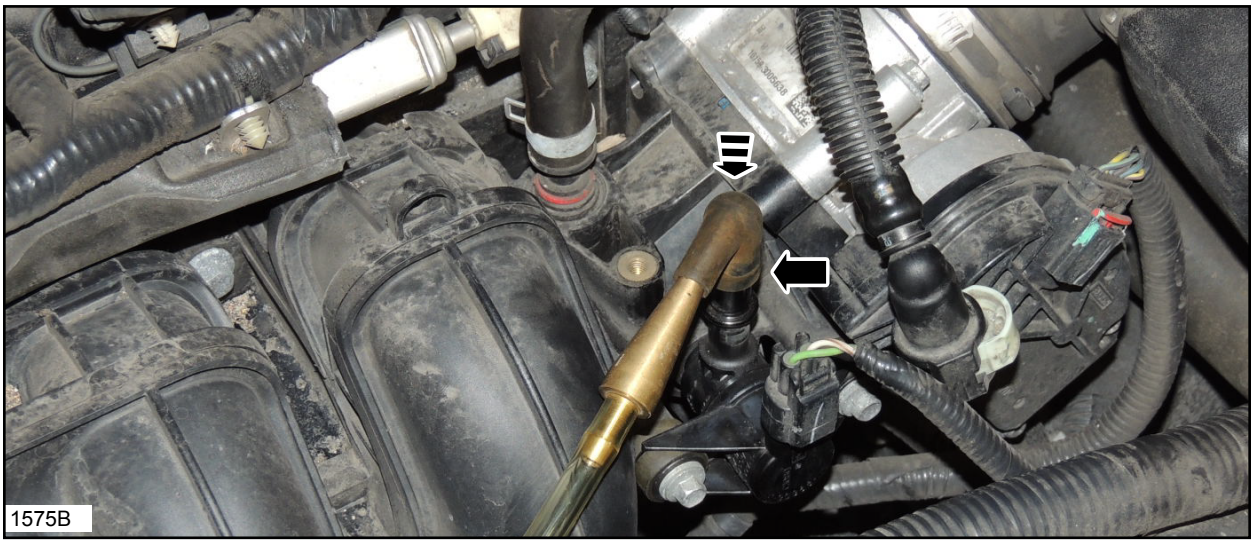

FIGURE 2

3. With the ignition in the "OFF" position, test the CPV for leaks by applying pressure from the tester and monitoring for air flow on the gauge. A good CPV will register a leak rate of less than 0.020".

4. Is CPV leak rate less than 0.020"?

   YES - Reconnect the vapor tube-to-CPV quick connect coupling. No further repairs needed.
   NO - Replace the CPV following the WSM procedures in Section 303-13, then proceed to Vapor Canister Inspection on Page 5.

Vapor Canister Inspection

WARNING: When handling fuel, always observe fuel handling precautions and be prepared in the event of fuel spillage. Spilled fuel may be ignited by hot vehicle components or other ignition sources. Failure to follow these instructions may result in serious personal injury.

IMPORTANT: Liquid fuel may be present inside of the vapor canister. Ensure you are using proper precautions while servicing.

1. Remove the vapor canister from the vehicle. Please follow the WSM procedures in Section 303-13.

2. While holding the vapor canister, tip the EVAP hose ports downward to determine if there is any liquid fuel within the canister.

3. Is there any liquid fuel in the canister?

   YES - Install a *new* vapor canister following the WSM procedures in Section 303-13.
   NO - Reinstall the vapor canister following the WSM procedures in Section 303-13.

4. Proceed to Fuel Tank Inspection on Page 6.

INSPECTION PROCEDURE

Fuel Tank Inspection

1. Inspect the fuel tank for any signs of fuel staining on the bottom of the fuel tank. See Figure 3.

NOTE: AWD Vehicles Only - Fuel tanks come equipped with a plastic shield covering the tank. See Figure 4.

a. Remove the fuel tank strap bolts and strap from the RH side of the fuel tank.
b. Remove the two push pins and bend the plastic shield downward to inspect the RH side of the fuel tank.
c. Reinstall the fuel tank strap, bolts and shield push pins. Perform the same inspection steps for the LH side of the fuel tank (Steps a-c).
d. If fuel tank replacement is not required, tighten the fuel tank strap bolts to 40 Nm (30 lb-ft).

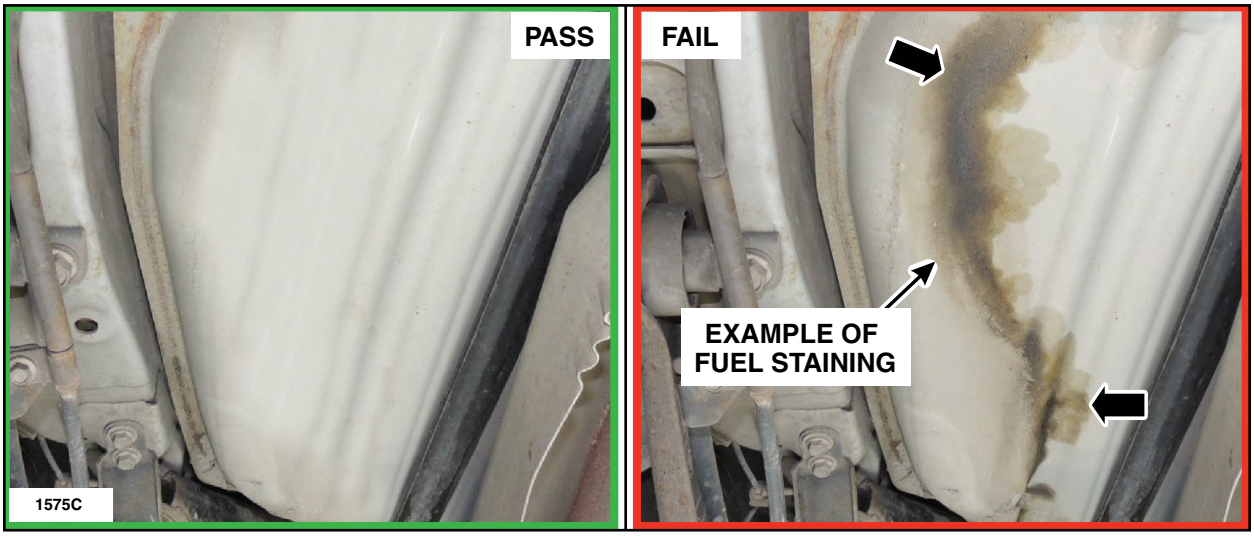

FIGURE 3

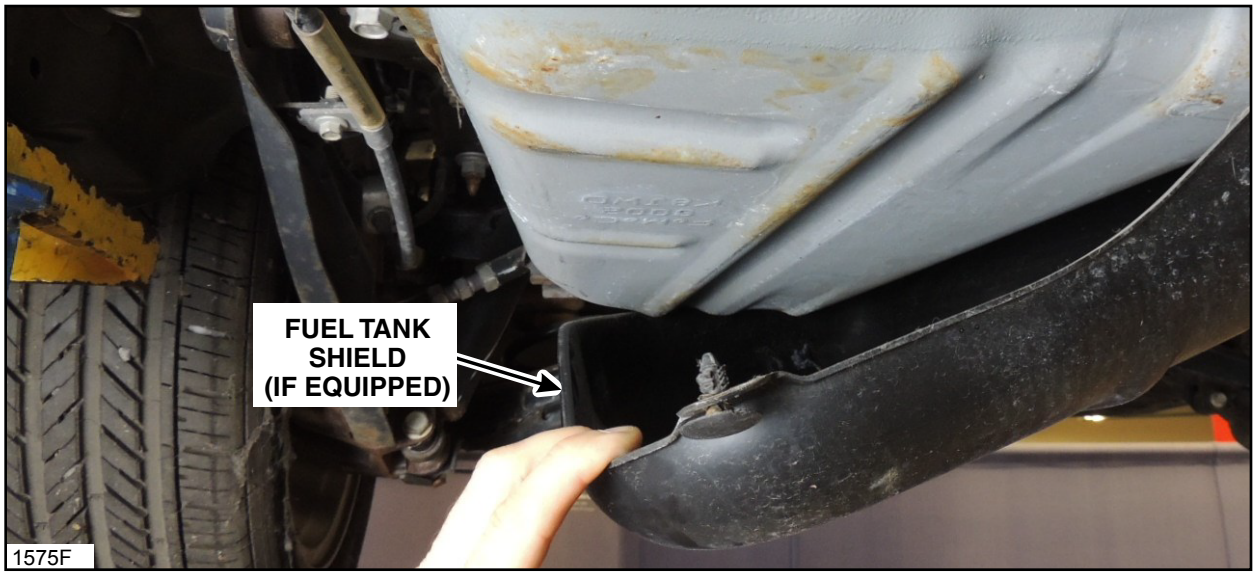

FIGURE 4

2. Is there fuel staining on the bottom of the fuel tank?

YES - Replace the fuel tank. Please follow the WSM procedures in Section 310-01. Repair is complete after fuel tank replacement has occurred.
NOTE: When replacing the fuel tank, position the exhaust muffler and tailpipe assembly aside as outlined in Step 3 below. Full removal of the exhaust muffler and tailpipe assembly is not required.
NO - FWD Vehicles - Proceed to Step 3.
AWD Vehicles - No repairs are needed at this time.

NOTE: Some fuel staining may be present on the top of the fuel tank if the fuel pump has been replaced previously. Fuel staining on the top of the fuel tank caused by prior fuel pump service is not an indication of a fuel tank leak.

FWD Vehicles Only

NOTICE: When lowering the fuel tank, do not exceed the stated distance. Lowering the fuel tank too far can cause damage to fuel lines and other components.

3. Partially lower the fuel tank to allow for inspection. See Figures 5 and 6.

a. Detach the exhaust isolators. Position aside and support the exhaust assembly.
b. Remove the fuel tank heat shield.
c. Use a suitable powertrain lift to support the fuel tank.
d. Remove the four fuel tank bolts and lower the fuel tank approximately 1.75 in (44.45 mm). See Figure 6 on Page 8.

NOTE: 2.5L shown, 3.0L similar.

FIGURE 5

4. Check the top RH side of the fuel tank for signs of cracks. See Figures 6 and 7. Is cracking present?

YES - Replace the fuel tank. Please follow the WSM procedures in Section 310-01.
NOTE: When replacing the fuel tank, position the exhaust muffler and tailpipe assembly aside as outlined in Step 3 on the previous page. Full removal of the exhaust muffler and tailpipe assembly is not required.
NO - Reassemble the vehicle. No repairs are needed at this time.

- When reinstalling the fuel tank strap bolts, tighten to 40 Nm (30 lb-ft).

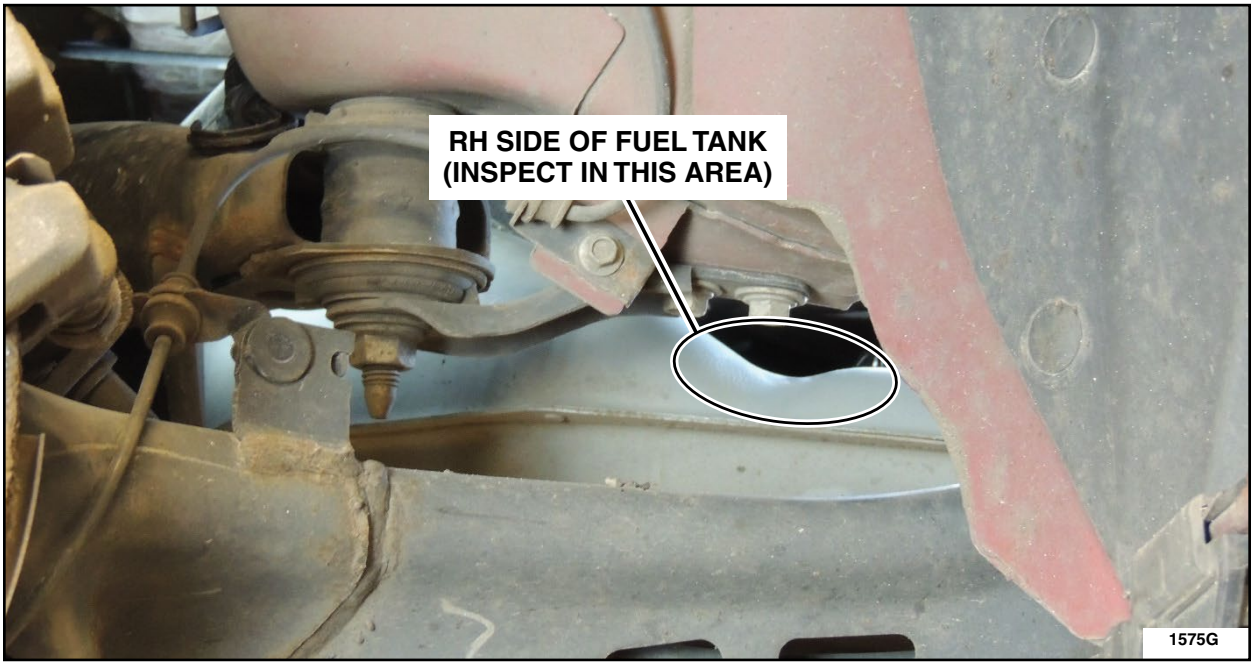

FIGURE 6

NOTE: Fuel tank removed for clarity.

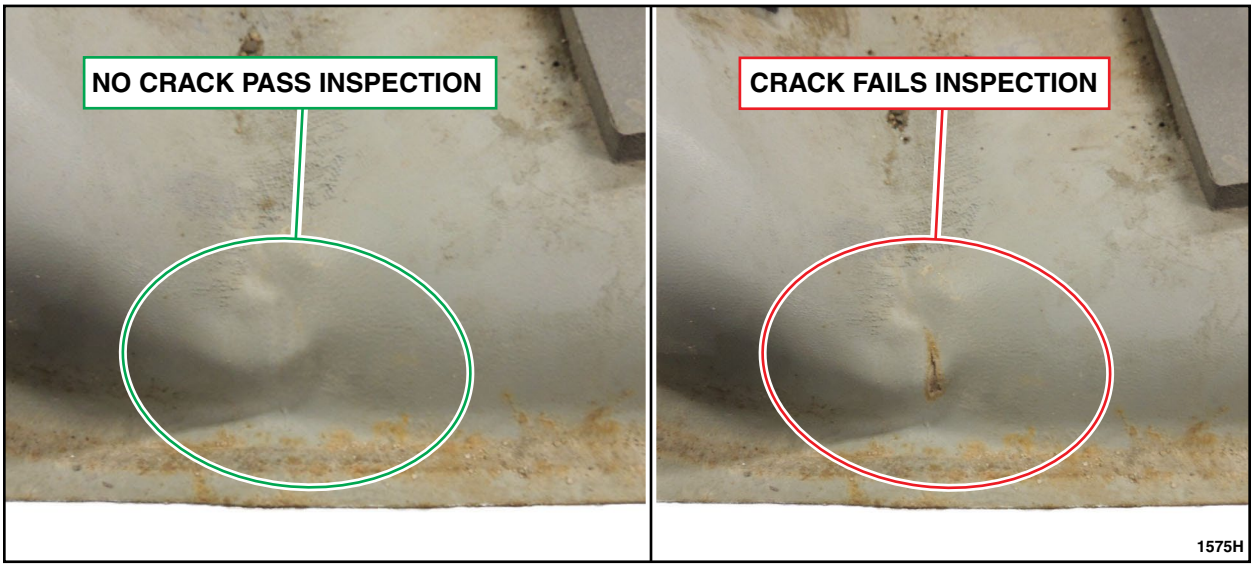

FIGURE 7

Recovering a module when programming has resulted in a blank module: NEVER DELETE THE ORIGINAL SESSION!

a. Obtain the original IDS that was used when the programming error occurred during Module Reprogramming (MR) or Programmable Module Installation (PMI).

b. Disconnect the VCM from the Data Link Connector (DLC) and the IDS.

c. Reconnect the VCM to IDS and then connect to the DLC. Once reconnected, the VCM icon should appear in the corner of the IDS screen. If it does not, troubleshoot the IDS to VCM connection.

d. Locate the ORIGINAL vehicle session when programming failed. This should be the last session used in most cases. If not, use the session created on the date that the programming failed.

NOTE: If the original session is not listed in the previous session list, click the ''Recycle Bin'' icon at the lower right of the previous session screen. This loads any deleted sessions and allows you to look through them. Double-click the session to restore it.

e. Once the session is loaded, the failed process should resume automatically.

f. If programming does not resume automatically, proceed to the Module Programming menu and select the previously attempted process, PMI or MR.

g. Follow all on-screen prompts/instructions.

h. The last screen on the IDS may list additional steps required to complete the programming process. Make sure all applicable steps listed on the screen are followed in order.