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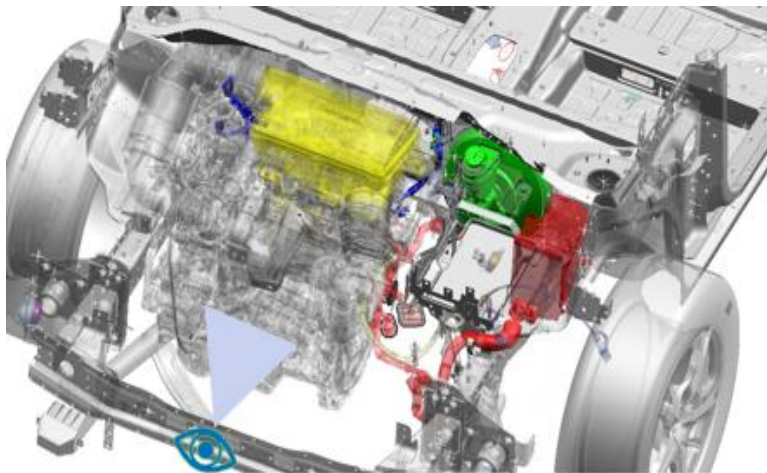
Case Number: S2305000001

Release Date: July 2023

Symptom/Vehicle Issue: Stop/Start Unavailable Message Displayed on Cluster. P258B Diagnostic Trouble Code (DTC) Present.

Customer Complaint/Technician Observation: Owner states the Malfunction Indicator lamp(MIL) is on, the cluster displays message "STOP/START SYSTEM IS INOPERATIVE" and ESC light will illuminate. Technician finds DTC P258B Electric Vacuum Pump Performance.

Discussion:



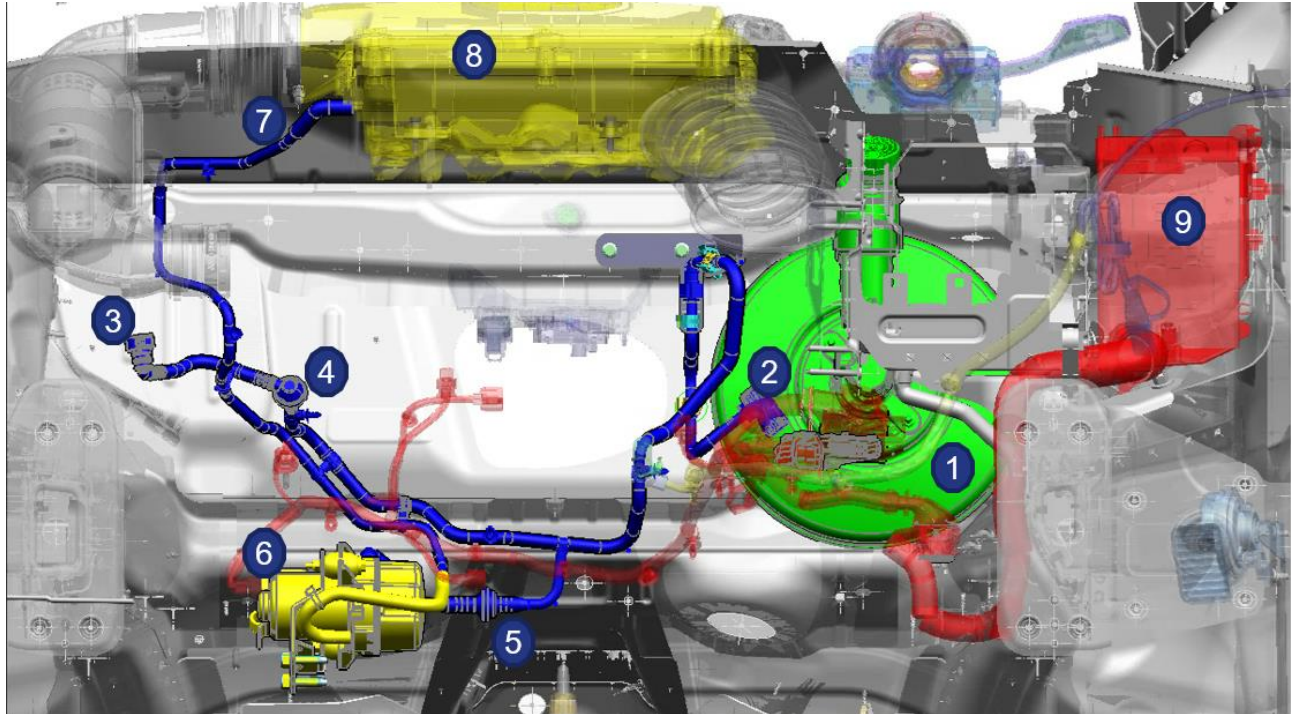
Vacuum Assist system

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Individual Parts Of The Vacuum Assist System.

1. Brake booster	2. Check valve/ vacuum pressure sensor	3. Engine connection
4. Check valve- Engine path	5. Check Valve -EVP path	6. Electric Vacuum Pump
7. Exhaust air	8. Air Filter	9. PDC box

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DIAGNOSTIC OVERVIEW - ELECTRIC VACUUM PUMP (EVP) SYSTEM

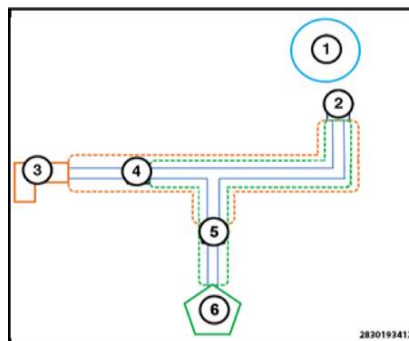
There are several electrical and mechanical failures that could cause the diagnostic to fail. Follow this sequence to check:

1. Leaking or damaged vacuum tubes or check valves.
2. A leaking vacuum brake booster assembly.
3. An electrical or mechanical failure with the vacuum pump.
4. It's also possible for the system to be functioning properly but fail due to a vacuum pressure sensor that is stuck in range and not changing.

1. Leaking or damaged vacuum tubes or check valves.

Pull a vacuum in the 3 hose's path to check;

- A. check for leakage in the engine check valve and all the vacuum hose assembly inside the green dashed line (4).
- B. Inspect for Leakage in the EVP connection check valve and all the vacuum hose inside the orange dashed line (5).
- C. Inspect for leakage in the sensor check valve (2).



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- If any of the above checks fail, the vacuum hose assembly should be replaced as an assembly.
- If the above vacuum checks pass, continue to CHECKING THE BRAKE BOOSTER SIDE FOR A LEAK.

2. A leaking vacuum brake booster assembly.

Start and run the engine to create the vacuum.

Monitor and record if pressure drop. Refer to Service library for threshold.

3. An electrical or mechanical failure with the vacuum pump.

A. Discharge booster with pedal until it becomes hard when pressed. Start the engine and verify the Electric Vacuum Pump (EVP) is running (2 second after). If the EVP is operating, monitor the brake pressure sensor reading while the EVP is running.

1. If the EVP is showing on in the PCM but cannot physically be seen running or the system cannot build vacuum pressure either the electric vacuum pump is failed or there is battery supply or ground circuit issue.
2. If the EVP does run but cannot increase the vacuum supply either a gross leak is present, the vacuum pressure sensor is faulty, or the vacuum pump is faulty.
3. If the EVP runs, increases the vacuum supply into a pass threshold and turns off the system is operating properly.

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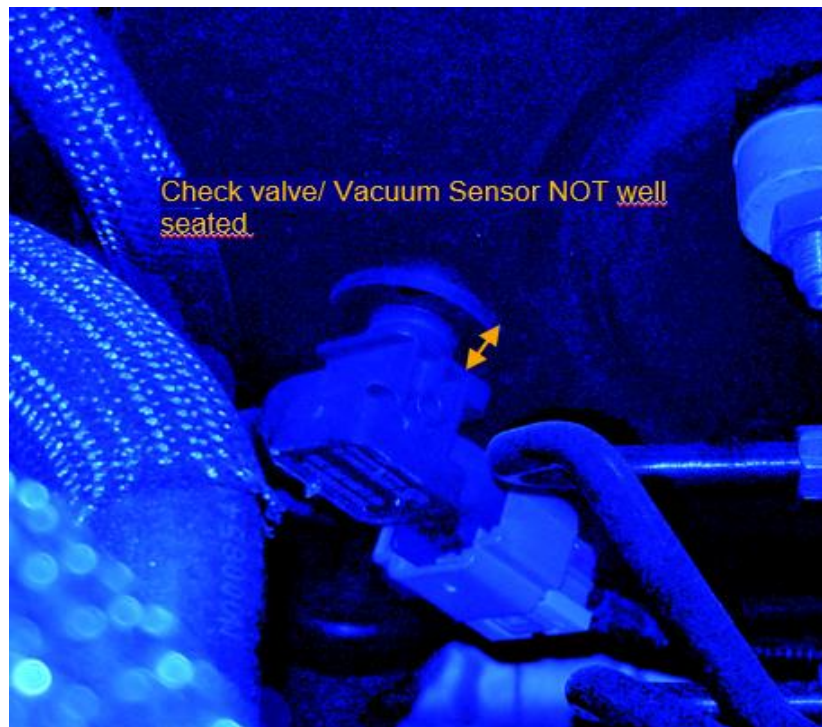


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- B. Disconnect the EVP harness connector. Load test the battery supply circuit and ground circuit at the EVP harness connector. Refer to Service Library Service Information 29 - Non-DTC Diagnostics/Circuit Testing Procedures/Standard Procedure.
1. If the circuits fail the load test, remove the lead connected to the ground circuit and connect it to a good chassis ground.
 2. If the battery supply and ground circuits check good, replace the electric vacuum pump in accordance with the service information.

Tips:



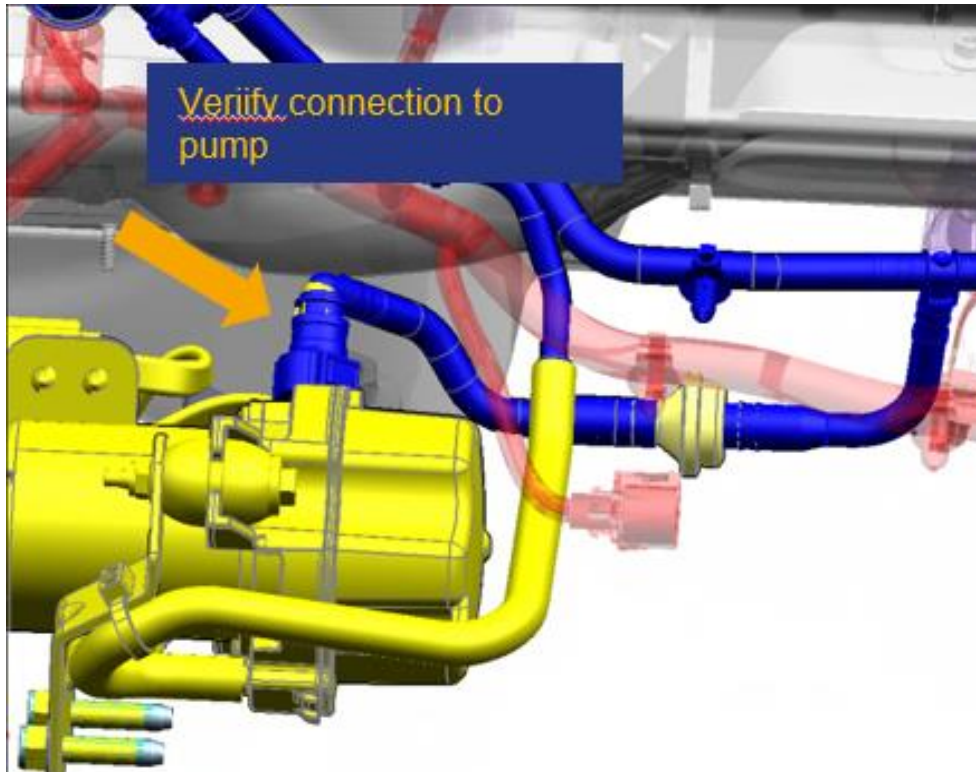
Verify vacuum sensor is seated and seal is not rolled.

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Inspect vacuum hose inlet for factory plug. Remove plug if found.

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Photo 7: Residue on outlet.



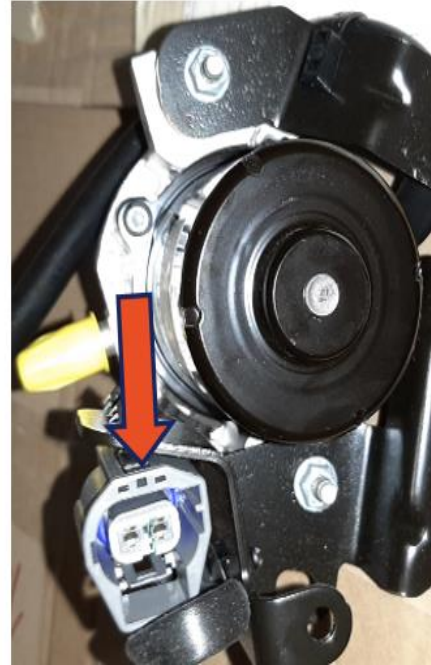
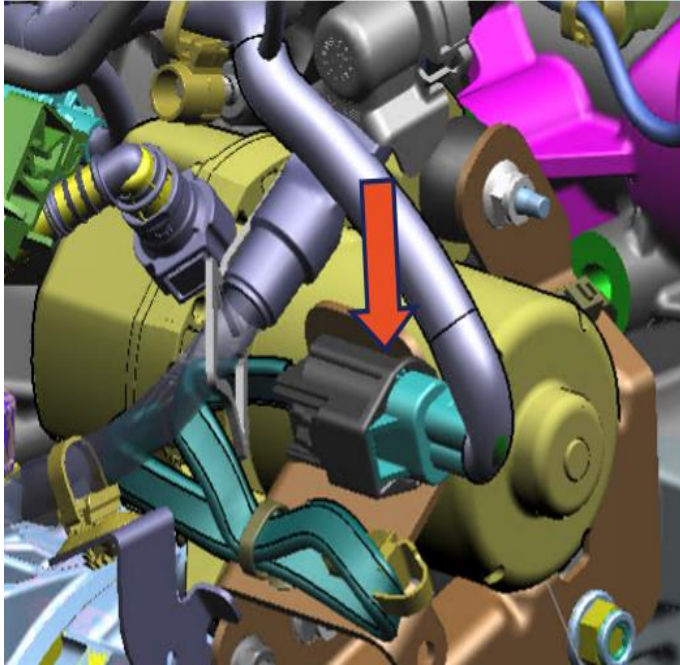
Inspect exhaust hose and connections for contamination and debris. Replace as needed.

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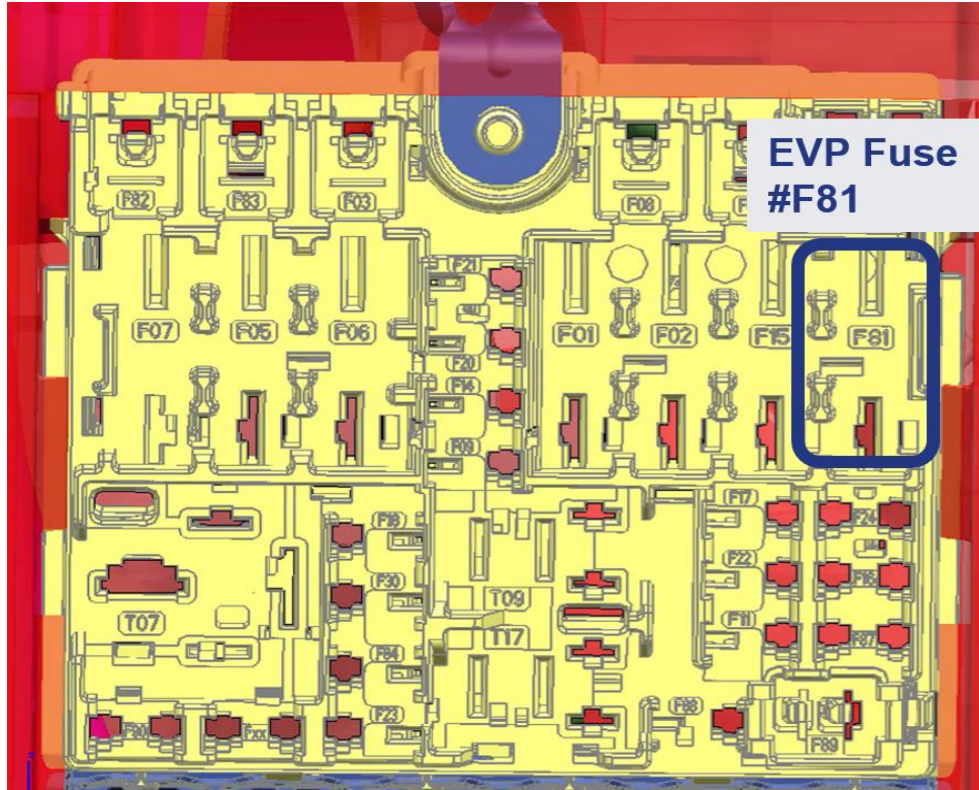
Inspect connections at EVP for pin issues, pin backout, expanded pins.

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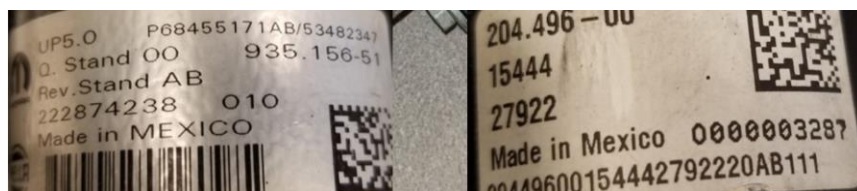
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EVP does not operate. Verify fuse condition. If blown, test for shorts or failed EVP.



Yellowed or bubbled label is an indication of a possibly overheated pump.

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