

**P3497-MDS RATIONALITY BANK 2**

For the Engine circuit diagram (Refer to 9 - ENGINE - SCHEMATICS AND DIAGRAMS).

For a complete wiring diagram Refer to Section 8W.

**Theory of Operation**

When all criteria has been met, power is supplied to each MDS Solenoid when the engine is making a transition from 8 cylinder mode to 4 cylinder mode. By actuating the solenoid, oil pressure is raised to the pair of lifters that coincide with each particular solenoid. The oil pressure pushes in the locking pins that allows the lifter to collapse, decoupling the valves and camshaft.

- **When Monitored:**  
Transition from 8 to 4 cylinder mode.
- **Set Condition:**  
O2 sensor readings on Bank 2 side indicate a lean condition while in 4 cylinder mode.

Possible Causes	
INSUFFICIENT OIL PRESSURE ACTING ON THE LIFTER LOCKING PINS	<i>недостаточное давление масла к толкателю</i>
OIL PASSAGES RESTRICTED	<i>забиты масляные каналы</i>
LIFTER	<i>проблема с толкателем</i>
MDS SOLENOID	<i>проблема с соленоидом</i>

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding (Refer to 9 - ENGINE - DIAGNOSIS AND TESTING).

**Diagnostic Test**

**1. ACTIVE DTC**

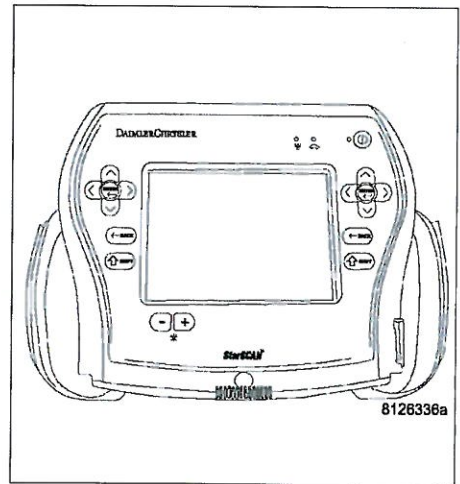
Ignition on, engine not running.

With a scan tool, read DTCs.

**Note:** Diagnose any Oil Pressure DTCs before continuing.

Is the DTC active at this time?

- Yes** >> Go To 2
- No** >> Refer to the INTERMITTENT CONDITION Diagnostic Procedure.  
Perform (NGC) POWERTRAIN VERIFICATION TEST VER - 5.(Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES/POWERTRAIN CONTROL MODULE - DIAGNOSIS AND TESTING)



**P3497-MDS RATIONALITY BANK 2 (CONTINUED)****2. MDS SOLENOID 4**

Turn the ignition off.

Remove the Intake Manifold per Service Information.

Turn the ignition on.

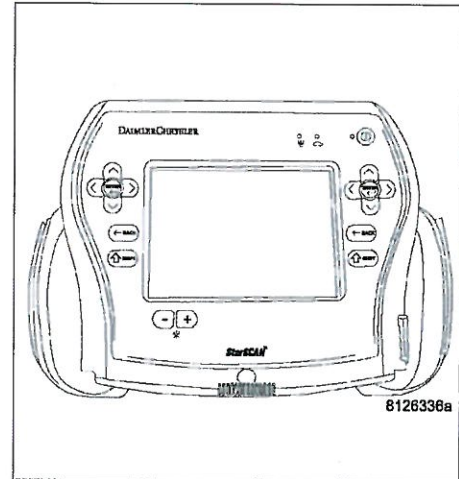
With the scan tool actuate the MDS Solenoid 4.

**Can you feel and hear the Solenoid Actuating?**

**Yes** >> Go To 3

**No** >> Remove the Solenoid and check for any debris that may be blocking the oil passages to the Solenoid. If the passages are clogged, clean the passages and replace the MDS Solenoid 4. If the passages are not clogged with debris, replace the MDS Solenoid 4.

Perform (NGC) POWERTRAIN VERIFICATION TEST VER - 5.(Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES/POWERTRAIN CONTROL MODULE - DIAGNOSIS AND TESTING)

**3. MDS SOLENOID 6**

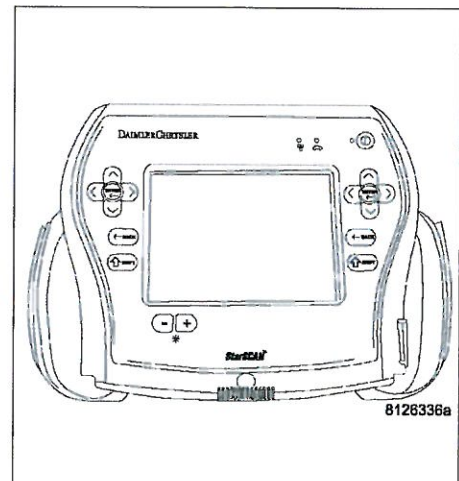
With the scan tool actuate the MDS Solenoid 6.

**Can you feel and hear the Solenoid Actuating?**

**Yes** >> Go To 4

**No** >> Remove the Solenoid and check for any debris that may be blocking the oil passages to the Solenoid. If the passages are restricted, clean the passages and replace the MDS Solenoid 6. If the passages are unable to be cleaned out, replacing the engine block may be necessary. If the passages are not clogged with debris, replace the MDS Solenoid 6.

Perform (NGC) POWERTRAIN VERIFICATION TEST VER - 5.(Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES/POWERTRAIN CONTROL MODULE - DIAGNOSIS AND TESTING)



**P3497-MDS RATIONALITY BANK 2 (CONTINUED)**

**4. OIL PASSAGES RESTRICTED**

Turn the ignition off.

Remove both Solenoids on Bank 2 of the engine block.

Remove the Bank 2 Cylinder Head per Service Information.

Remove the each pair of lifters for Cylinders 4 and 6.

Inspect the oil passages to the Solenoids and from the Solenoids to the lifters.

**Are the passages blocked?**

- Yes** >> Clean the oil passages as necessary. If the entire engine is restricted disassembly of the entire engine block may be necessary.  
Perform (NGC) POWERTRAIN VERIFICATION TEST VER - 5.(Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES/POWERTRAIN CONTROL MODULE - DIAGNOSIS AND TESTING)
- No** >> Replace both sets of lifters if no other possible causes remain.  
Perform (NGC) POWERTRAIN VERIFICATION TEST VER - 5.(Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES/POWERTRAIN CONTROL MODULE - DIAGNOSIS AND TESTING)
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