

Diagnosis and Testing

Refer to Wiring Diagrams Cell 027-1, for schematic and connector information.

Inspection and Verification

- 1. Verify the customer concern.
- 2. Visually inspect for obvious signs of mechanical or electrical damage.

Visual Inspection Chart

Mechanical	Electrical
• Air cleaner • Air cleaner element • Air cleaner intake pipe • Air cleaner outlet pipe • Charge air cooler (CAC) • CAC intake pipe • CAC outlet pipe	• Wiring harness • Electrical connector(s) • Manifold absolute pressure and temperature (MAPT) sensor • Mass air flow and temperature (MAFT) sensor • Manifold absolute pressure (MAP) sensor • Intake air temperature (IAT) sensor • Powertrain control module (PCM)

- 3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
- 4. If the cause is not visually evident, verify the symptom and refer to the Symptom Chart.

Symptom Chart

Symptom	Possible Sources	Action
Excessive intake air noise	* Detached air cleaner pipe(s). * Detached turbocharger pipe(s). * Detached charge air cooler pipe(s).	* CHECK the pipe(s) for security and leaks to atmosphere. INSTALL new intake air components as necessary. TEST the system for normal operation.
Oil in the air intake system	* Blocked or damaged positive crankcase ventilation (PCV) valve. * Blocked or damaged PCV pipe(s)/hose(s). * Blocked or damaged crankcase vent oil separator.	* REFER to: Engine Emission Control (303-08A Engine Emission Control, Diagnosis and Testing).
Water in the air cleaner	* Air cleaner intake pipe.	* CHECK the air cleaner intake pipe for correct installation and alignment. REPAIR/INSTALL the air cleaner intake pipe as necessary. TEST the system for normal operation.
	* Blocked air cleaner drain.	* CHECK the air cleaner drain for blockage. TEST the system for normal operation.
Engine lacks power	* Air cleaner element blocked.	* INSPECT the air cleaner for signs of blockage. INSTALL a new air cleaner element as necessary.
	* CAC pipe(s).	* INSPECT the CAC pipes for damage. INSTALL a new CAC pipe(s) as necessary.
	* CAC blocked.	* INSPECT the CAC for blockage. INSTALL a new CAC as necessary. REFER to: Charge Air Cooler (CAC) (303-12B Intake Air Distribution and Filtering, Removal and Installation).
	* Fuel charging and controls.	* REFER to: Fuel Charging and Controls (303-04F Fuel Charging and Controls, Diagnosis and Testing).
	* Turbocharger.	* REFER to: Turbocharger (303-04O Fuel Charging and Controls - Turbocharger, Diagnosis and Testing).
	* Engine.	* REFER to: Engine (303-01F Engine, Diagnosis and Testing).