

Engine Ignition

General Equipment

Worldwide Diagnostic System (WDS)

Inspection and Verification

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

Visual Inspection Chart

Electrical	half	">
• Wiring harness • Electrical connector(s) • Spark plug(s) • Spark plug wire(s) • Ignition coil pack • 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

Condition(s):

- ☐ Engine cranks but does not start

Possible Source(s):

- Spark plug(s).
- Spark plug wire(s).

Action(s) to take:

- CARRY OUT a KV test using WDS. Install new ignition components as necessary. Test the system for normal operation.

Possible Source(s):

- Ignition coil pack.
- PCM.

- PCM calibration.

Action(s) to take:

- REFER to WDS. Install new ignition components as necessary. Test the system for normal operation.

□ Engine misfire

Possible Source(s):

- Spark plug(s).
- Spark plug wire(s).

Action(s) to take:

- CARRY OUT a KV test using WDS.

Possible Source(s):

- Ignition coil pack.
- PCM.
- PCM calibration.

Action(s) to take:

- REFER to WDS.

Possible Source(s):

- Worn or damaged valve(s), tappet(s) or camshaft(s).

Action(s) to take:

- REMOVE the cylinder head. INSPECT the cylinder head, valves, tappets and camshafts for signs of wear or damage. For additional information, refer to «[Section 303-01A](#)». For additional information, refer to «[Section 303-01B](#)». For additional information, refer to «[Section 303-01C](#)». For additional information, refer to «[Section 303-01D](#)».

Possible Source(s):

- Low cylinder compression.

Action(s) to take:

- For additional information, refer to «[Section 303-00](#)».

Possible Source(s):

- Low fuel pressure
- Fuel injection supply manifold
- Fuel pressure regulator

Action(s) to take:

- For additional information, refer to «[Section 303-04A](#)». For additional information, refer to «[Section 303-04B](#)». For additional information, refer to «[Section 303-04C](#)». For additional information, refer to «[Section 303-04D](#)». For additional information, refer to «[Section 303-04E](#)». For additional information, refer to «[Section 303-04F](#)». For additional information, refer to «[Section 303-04G](#)». For additional information, refer to «[Section 303-04H](#)».

Possible Source(s):

- Low fuel pressure
- Fuel pump

Action(s) to take:

- For additional information, refer to «[Section 310-00A](#)». For additional information, refer to «[Section 310-00B](#)». For additional information, refer to «[Section 310-00C](#)».

□ Engine stumbling

Possible Source(s):

- Spark plug(s).
- Spark plug wire(s).

Action(s) to take:

- CARRY OUT a KV test using WDS.

Possible Source(s):

- Ignition coil pack.
- PCM.
- PCM calibration.

Action(s) to take:

- REFER to WDS.

Possible Source(s):

- Worn or damaged valve(s), tappet(s) or camshaft(s).

Action(s) to take:

- REMOVE the cylinder head. INSPECT the cylinder head, valves, tappets and camshafts for signs of wear or damage. For additional information, refer to «[Section 303-01A](#)». For additional information, refer to «[Section 303-01B](#)». For additional information, refer to «[Section 303-01C](#)». For additional information, refer to «[Section 303-01D](#)».

Possible Source(s):

- Low cylinder compression.

Action(s) to take:

- For additional information, refer to «[Section 303-00](#)».

Possible Source(s):

- Low fuel pressure
- Fuel injection supply manifold
- Fuel pressure regulator

Action(s) to take:

- For additional information, refer to «[Section 303-04A](#)». For additional information, refer to «[Section 303-04B](#)». For additional information, refer to «[Section 303-04C](#)». For additional information, refer to «[Section 303-04D](#)». For additional information, refer to «[Section 303-04E](#)». For additional information, refer to «[Section 303-04F](#)». For additional information, refer to «[Section 303-04G](#)». For additional information, refer to «[Section 303-04H](#)».

Possible Source(s):

- Low fuel pressure
- Fuel pump

Action(s) to take:

- For additional information, refer to «[Section 310-00A](#)». For additional information, refer to «[Section 310-00B](#)». For additional information, refer to «[Section 310-00C](#)».

□ Engine lacks power

Possible Source(s):

- Spark plug(s).
- Spark plug wire(s).

Action(s) to take:

- CARRY OUT a KV test using WDS.

Possible Source(s):

- Ignition coil pack.

Action(s) to take:

- REFER to WDS.

Possible Source(s):

- Worn or damaged valve(s), tappet(s) or camshaft(s).

Action(s) to take:

- REMOVE the cylinder head. INSPECT the cylinder head, valves, tappets and camshafts for signs of wear or damage. For additional information, refer to «[Section 303-01A](#)». For additional information, refer to «[Section 303-01B](#)». For additional information, refer to «[Section 303-01C](#)». For additional information, refer to «[Section 303-01D](#)».

Possible Source(s):

- Low cylinder compression.

Action(s) to take:

- For additional information, refer to «[Section 303-00](#)».

Possible Source(s):

- Low fuel pressure
- Fuel injection supply manifold
- Fuel pressure regulator

Action(s) to take:

- For additional information, refer to «[Section 303-04A](#)». For additional information, refer to «[Section 303-04B](#)». For additional information, refer to «[Section 303-04C](#)». For additional information, refer to «[Section 303-04D](#)». For additional information, refer to «[Section 303-04E](#)». For additional information, refer to «[Section 303-04F](#)». For additional information, refer to «[Section 303-04G](#)». For additional information, refer to «[Section 303-04H](#)».

Possible Source(s):

- Low fuel pressure
- Fuel pump

Action(s) to take:

- For additional information, refer to «[Section 310-00A](#)». For additional information, refer to «[Section 310-00B](#)». For additional information, refer to «[Section 310-00C](#)».
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