IGNITION SYSTEM

GENERAL

- The ECM/ICM may be damaged if dropped. Also, if the connector is disconnected when current is flowing, the excessive voltage may damage the ECM/ICM. Always turn the ignition switch OFF before servicing.
- Use spark plug with the correct heat range. Using spark plug with an incorrect heat range can damage the engine.
- Some electrical components may be damaged if terminals or connectors are connected or disconnected while the ignition switch is turned ON and current is present.
- When servicing the ignition system, always follow the steps in the troubleshooting.
- The ignition timing cannot be adjusted since the ECM/ICM is factory preset.
- A faulty ignition system is often related to poor connections. Check those connections before proceeding.
- Make sure the battery is adequately charged. Using the starter with a weak battery results in a slower engine cranking speed as well as no spark at the spark plug.

TROUBLESHOOTING

- Inspect the following before diagnosing the system.
  – Turn the ignition switch ON and check the MIL blinks.
    MIL 52 blinks (CKP sensor) is indicated only when the engine is cranked.
  – Faulty spark plug
  – Loose spark plug cap or spark plug wire connection
  – Water in the spark plug cap (Leaking the ignition coil secondary voltage)
- "Initial voltage" of the ignition primary coil is the battery voltage with the ignition switch turned ON. (The engine is not cranked by the starter.)

No spark at spark plug

UNUSUAL CONDITION		PROBABLE CAUSE (Check in numerical order)
Ignition coil primary voltage	No initial voltage with the ignition switch turned ON. (Other electrical components are normal)	1. An open circuit or loose connection in primary wire. 2. Loose or poor connection of the ignition coil primary wire terminal or an open circuit in primary coil. 3. Faulty ECM/ICM (in case when the initial voltage is normal when ECM/ICM connector is disconnected).
	Initial voltage is normal, but it drops by 2 – 4 V while cranking the engine.	1. Incorrect peak voltage adaptor connections. (System is normal if measured voltage is over the specifications with reverse connections.) 2. Battery is undercharged. (Voltage drops largely when the engine is started.) 3. Loose or poor connection or an open circuit in Yellow/blue wire between the ignition coil and ECM/ICM. 4. A short circuit in the ignition primary coil. 5. Faulty CKP sensor (Check the MIL blinking:) 6. Faulty ECM/ICM (in case when above No. 1 through 5 are normal).
	No peak voltage while cranking the engine.	1. Incorrect peak voltage adaptor connections. (System is normal if measured voltage is over the specifications with reverse connections.) 2. Faulty peak voltage adaptor. 3. Faulty ECM/ICM (in case when above No. 1 and 2 are normal).
	Peak voltage is lower than the standard value.	1. The multimeter impedance is too low; below 10 MΩ/DCV. 2. Cranking speed is too slow. (Battery is undercharged.) 3. The sampling timing of the tester and measured pulse were not synchronized. (System is normal if measured voltage is over the standard voltage at least once.) 4. Faulty ECM/ICM (in case when above No. 1 through 3 are normal).
	Peak voltage is normal but no spark jumps.	1. Faulty spark plug or leaking ignition coil secondary current. 2. Faulty ignition coil.