

2014 ENGINE**Ignition System - 2.0L - Sportage****DESCRIPTION AND OPERATION****DESCRIPTION**

Ignition timing is controlled by the electronic control ignition timing system. The standard reference ignition timing data for the engine operating conditions are preprogrammed in the memory of the ECM (Engine Control Module). The engine operating conditions (speed, load, warm-up condition, etc.) are detected by the various sensors. Based on these sensor signals and the ignition timing data, signals to interrupt the primary current are sent to the ECM. The ignition coil is activated, and timing is controlled.

REPAIR PROCEDURES**ON-VEHICLE INSPECTION****Spark Test**

1. Disconnect the ignition coil connectors (A).

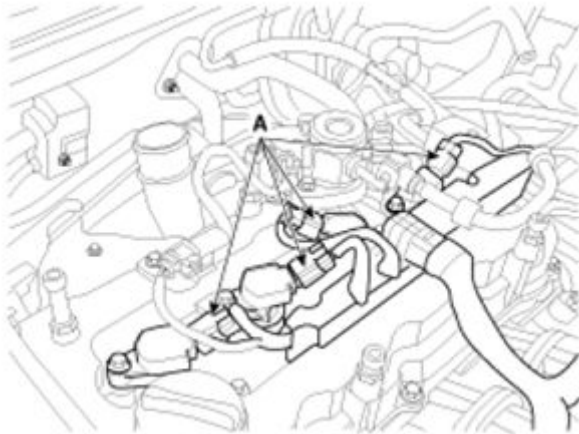


Fig. 1: Identifying Ignition Coil Connectors
Courtesy of KIA MOTORS AMERICA, INC.

2. Remove the ignition coils (A).



Fig. 2: Identifying Ignition Coils
Courtesy of KIA MOTORS AMERICA, INC.

3. Using a spark plug socket, remove the spark plug.
4. Install the spark plug to the ignition coil.
5. Ground the spark plug to the engine.

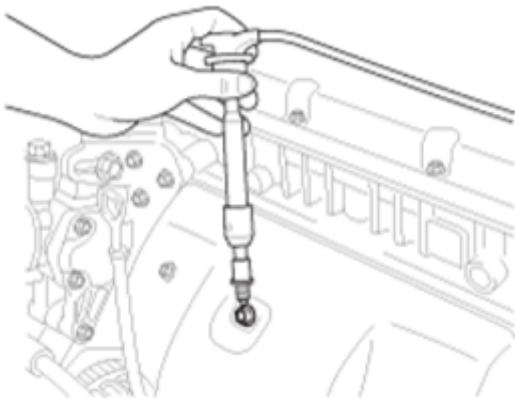


Fig. 3: Grounding Spark Plug
Courtesy of KIA MOTORS AMERICA, INC.

6. Check if spark occurs while engine is being cranked.

NOTE: To prevent fuel being injected from injectors while the engine is being cranked, disconnect the injector connector.
Crank the engine for no more than 5 ~ 10 seconds.

7. Inspect all the spark plugs.
8. Using a spark plug socket, install the spark plug.

9. Install the ignition coil.
10. Reconnect the ignition coil connector.

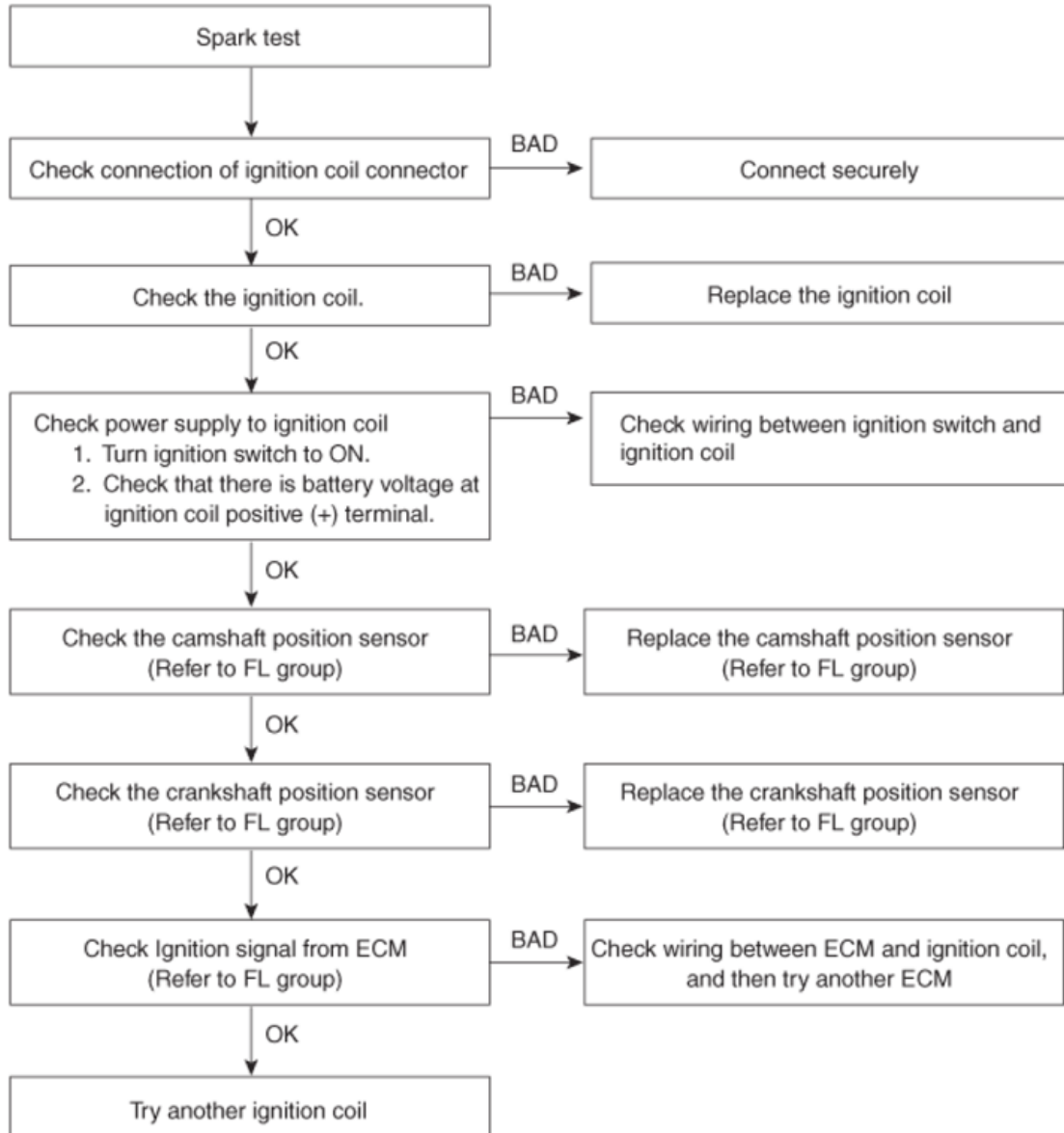


Fig. 4: Ignition Coil Connector Inspection Flow Diagram
 Courtesy of KIA MOTORS AMERICA, INC.

Inspect Spark Plug

1. Disconnect the ignition coil connectors (A).

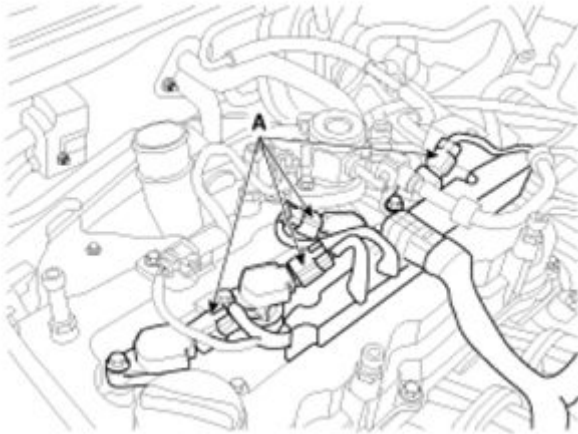


Fig. 5: Identifying Ignition Coil Connectors
Courtesy of KIA MOTORS AMERICA, INC.

2. Remove the ignition coils (A).

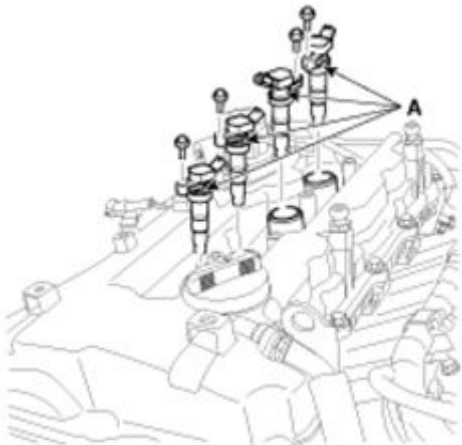


Fig. 6: Identifying Ignition Coils
Courtesy of KIA MOTORS AMERICA, INC.

3. Using a spark plug socket, remove the spark plug.

CAUTION: Be careful that no contaminants enter through the spark plug holes.

4. Inspect the electrodes (A) and ceramic insulator (B).

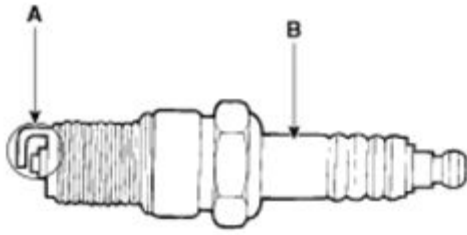


Fig. 7: Identifying Electrodes & Ceramic Insulator
 Courtesy of KIA MOTORS AMERICA, INC.

Inspection Of Electrodes

INSPECTION REFERENCE CHART

Condition	Dark deposits	White deposits
Description	<ul style="list-style-type: none"> ○ Fuel mixture too rich ○ Low air intake 	<ul style="list-style-type: none"> ○ Fuel mixture too lean ○ Advanced ignition timing ○ Insufficient plug tightening torque

5. Check the electrode gap (A).

Standard

Unleaded: 0.7 ~ 0.8 mm (0.0276 ~ 0.0315 in.)

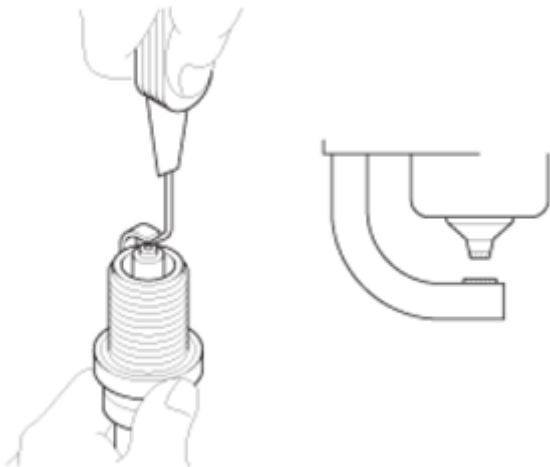


Fig. 8: Checking Electrode Gap
 Courtesy of KIA MOTORS AMERICA, INC.

Inspect Ignition Coil

1. Measure the primary coil resistance between terminals (+) and (-).

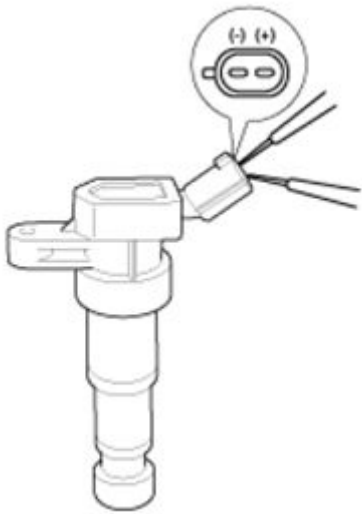


Fig. 9: Measuring Primary Coil Resistance Between Terminals (+) & (-)
Courtesy of KIA MOTORS AMERICA, INC.

Standard value: 0.62ohms \pm 10%

REMOVAL AND INSTALLATION

1. Disconnect the ignition coil connectors (A).

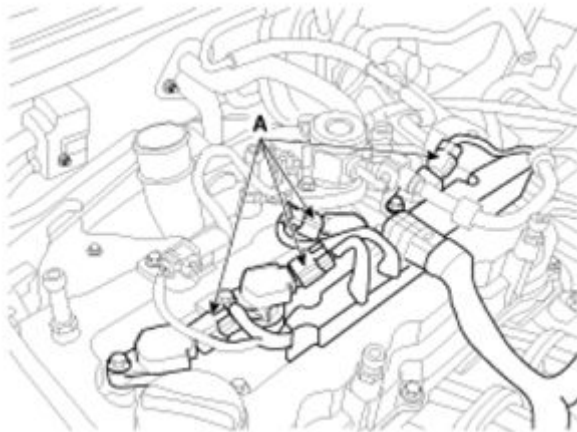


Fig. 10: Identifying Ignition Coil Connectors
Courtesy of KIA MOTORS AMERICA, INC.

2. Remove the ignition coils (A).

Tightening torque:

3.9 ~ 5.9 N.m (0.4 ~ 0.6kgf.m, 2.9 ~ 4.3 lb-ft)

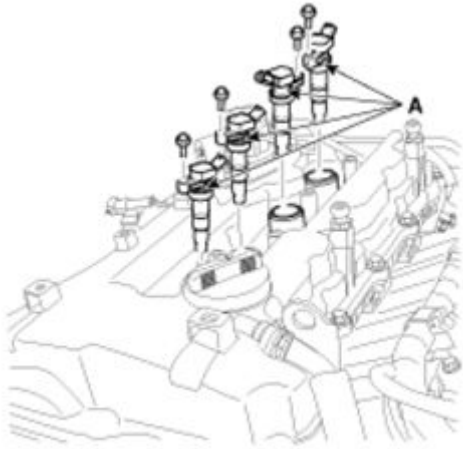


Fig. 11: Identifying Ignition Coils
Courtesy of KIA MOTORS AMERICA, INC.

3. Installation is the reverse of removal.