

**2013-14 ENGINE****Ignition System - Veloster Turbo****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 pre-programmed 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.

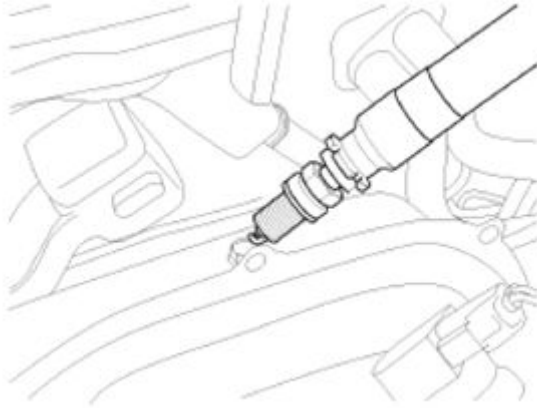
**REPAIR PROCEDURES****ON-VEHICLE INSPECTION****Inspect ignition coil assembly and Perform spark test**

1. Check for DTCs.

**NOTE:**

- **If a DTC is present, perform troubleshooting in accordance with the procedure for that DTC. (Refer to DTC INDEX )**

2. Check if sparks occur.
  1. Remove the engine cover.
  2. Remove the cylinder head center cover.
  3. Remove the ignition coils.
  4. Using a spark plug wrench, remove the spark plugs.
  5. Disconnect the 4 injector connectors.
  6. Ground the spark plug to the engine.



**Fig. 1: Checking Spark Plug**  
Courtesy of HYUNDAI MOTOR AMERICA

7. Check if sparks occur at each spark plug while engine is being cranked.

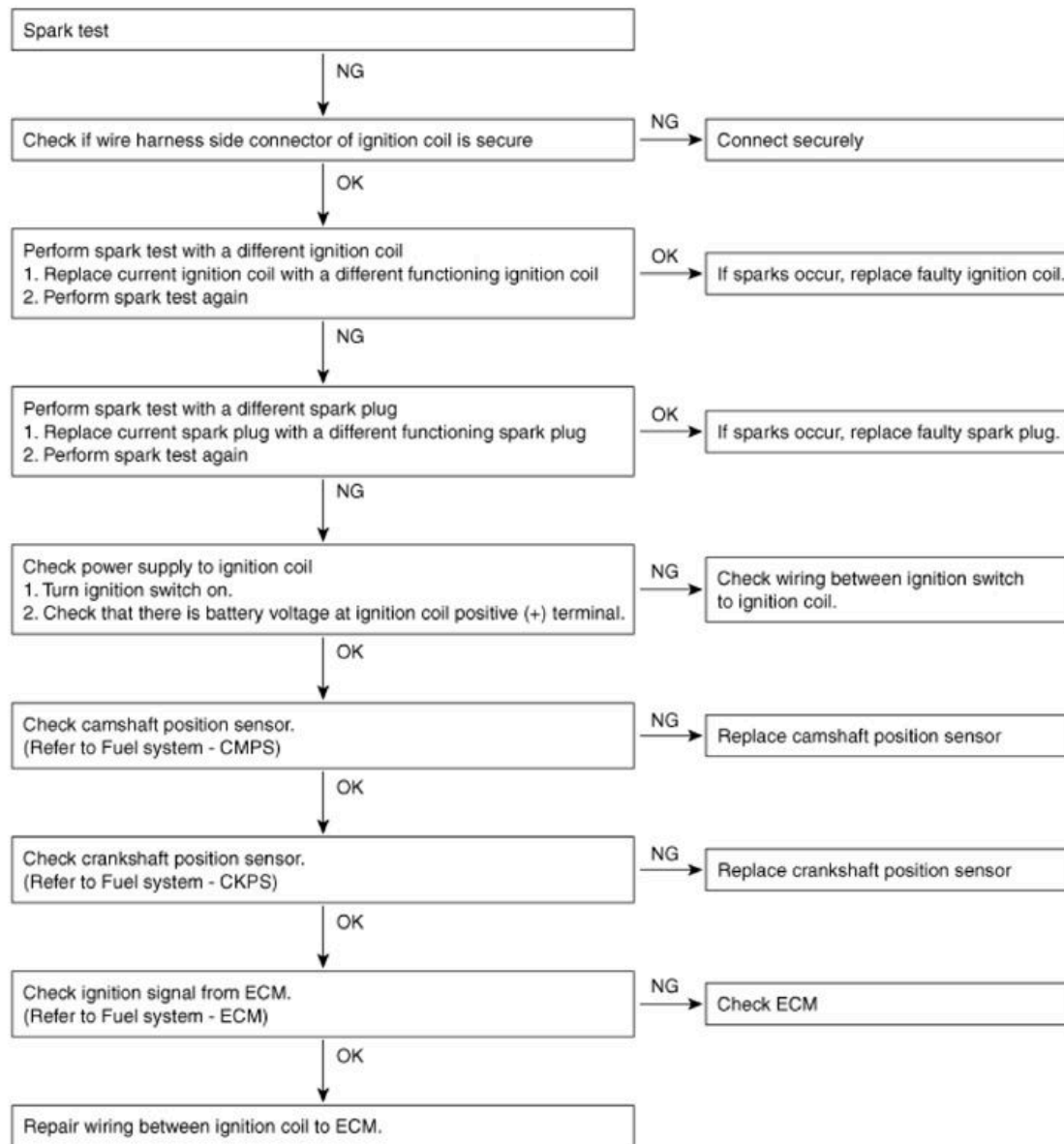
**NOTE:**

- **Do not crank the engine for more than 5 seconds.**

3. If sparks do not occur, perform the following test.

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**Fig. 2: Spark Test Procedure Chart**  
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- Using a spark plug wrench, install spark plugs.
- Install the ignition coils.
- Install the cylinder head center cover and the engine cover.

## IGNITION COIL

### DESCRIPTION AND OPERATION

#### Description

# 2014 Hyundai Veloster

## 2013-14 ENGINE Ignition System - Veloster Turbo

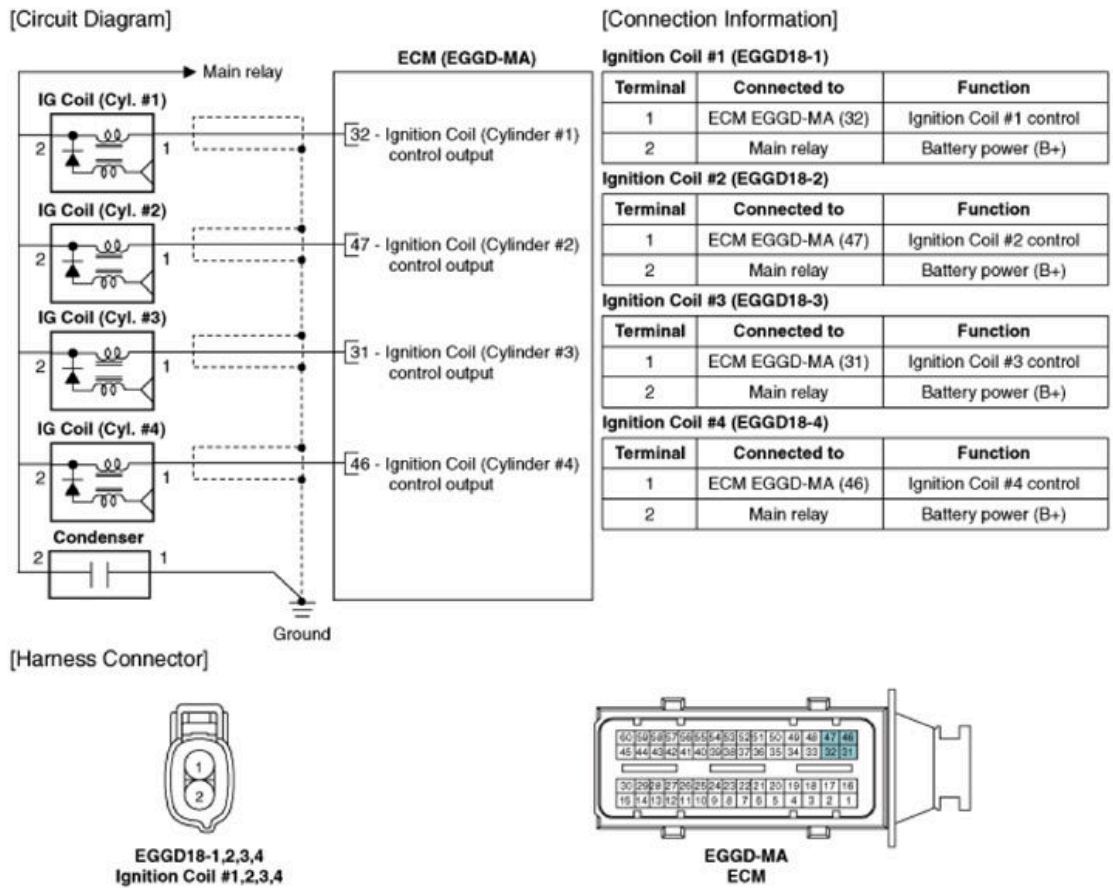
An ignition coil is an induction coil in an engine's ignition system which transforms the battery's low voltage to the high voltage needed to create an electric spark in the spark plugs to ignite the fuel. Coils have an internal resistor while others rely on a resistor wire or an external resistor to limit the current flowing into the coil from the battery 12 V supply.

### SPECIFICATION

Item	Specification
Primary Coil Resistance (ohms)	$0.79 \pm 15\%$ [20°C (68°F)]
Secondary Coil Resistance (kohms)	$7.0 \pm 15\%$ [20°C (68°F)]

### SCHEMATIC DIAGRAMS

#### Circuit Diagram



**Fig. 3: Engine Electrical System Schematic Diagrams**  
Courtesy of HYUNDAI MOTOR AMERICA

### REPAIR PROCEDURES

#### Removal

1. Disconnect the battery negative terminal.
2. Remove the engine cover.
3. Disconnect the ignition coil connector (A).



**Fig. 4: Identifying Ignition Coil Connector**  
Courtesy of HYUNDAI MOTOR AMERICA

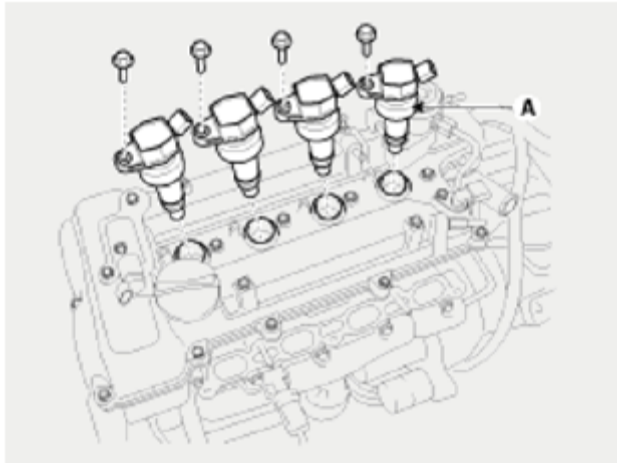
**NOTE:**

- When removing the ignition coil connector, pull the lock pin (A) and push the clip (B).



**Fig. 5: Removing Ignition Coil Connector**  
Courtesy of HYUNDAI MOTOR AMERICA

4. Remove the ignition coil (A).



**Fig. 6: Identifying Ignition Coil With Mounting Bolts**  
Courtesy of HYUNDAI MOTOR AMERICA

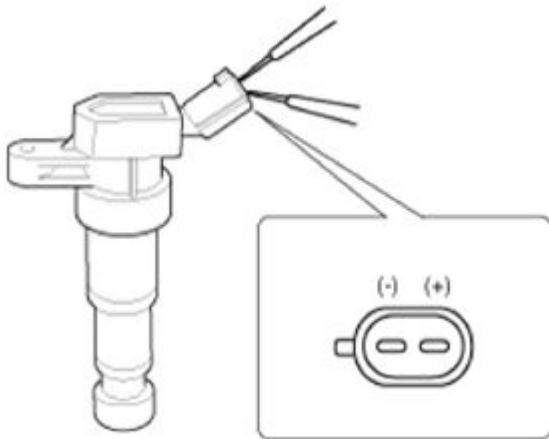
**Installation**

1. Install in the reverse order of removal.

**Ignition coil installation bolts:** 9.8 ~ 11.8 N.m (1.0 ~ 1.2 kgf.m, 7.2 ~ 8.7 lb-ft)

**Inspection**

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



**Fig. 7: Measuring Primary Coil Resistance Between Terminals**  
Courtesy of HYUNDAI MOTOR AMERICA

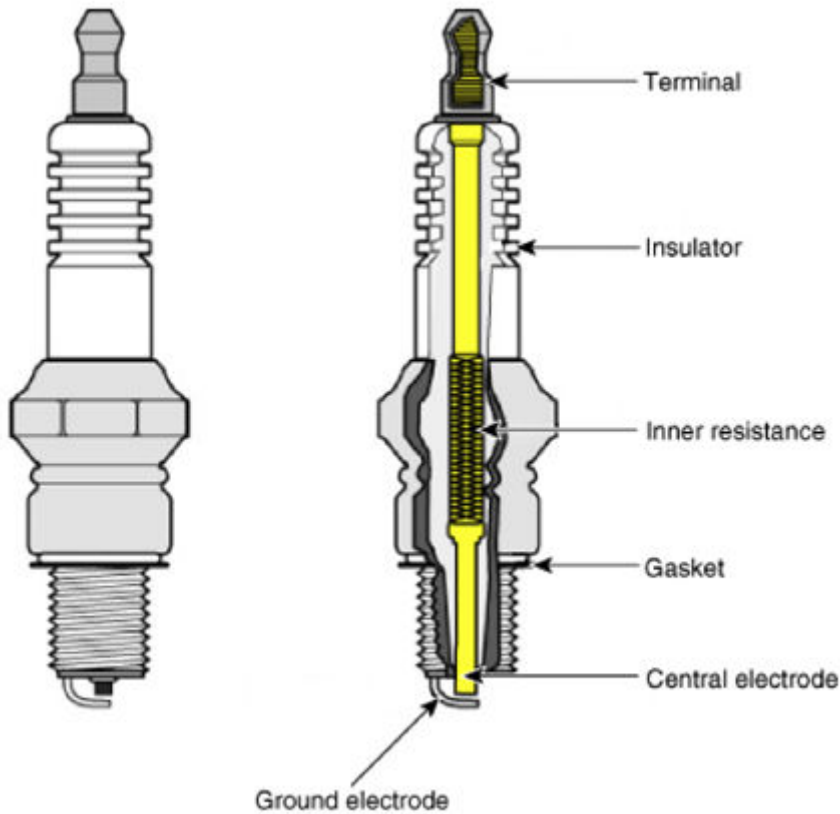
**Standard value:** 0.79 ohms  $\pm$  15%

**SPARK PLUG**

**DESCRIPTION AND OPERATION**

**Description**

A spark plug is a device for delivering electric current from an ignition system to the combustion chamber of a spark-ignition engine to ignite the compressed fuel/air mixture therein by means of an electric spark, while containing combustion pressure within the engine. A spark plug has a metal threaded shell, electrically isolated from a central electrode by a porcelain insulator.



**Fig. 8: Identifying Spark Plug**  
 Courtesy of HYUNDAI MOTOR AMERICA

**SPECIFICATION**

Item	Specification
Type	SILZKR6D8E
Gap	0.7 ~ 0.8 mm (0.028 ~ 0.031 in.)

**REPAIR PROCEDURES**

**Inspection**

[On vehicle inspection]