

# IGNITION SYSTEM

## ON-VEHICLE INSPECTION

1804B-01

**NOTICE:**

"Cold" and "Hot" in these sentences express the temperature of the coils themselves. "Cold" is from  $-10^{\circ}\text{C}$  ( $14^{\circ}\text{F}$ ) to  $50^{\circ}\text{C}$  ( $122^{\circ}\text{F}$ ) and "Hot" is from  $50^{\circ}\text{C}$  ( $122^{\circ}\text{F}$ ) to  $100^{\circ}\text{C}$  ( $212^{\circ}\text{F}$ ).

**1. INSPECT IGNITION COIL (WITH IGNITER) AND SPARK TEST**

- (a) Confirm DTC.

**NOTICE:**

If DTC is indicated, carry out troubleshooting in accordance with the procedure on the following DTC.

- (b) Check that the spark occurs.
- (1) Remove the ignition coils (with igniter).
  - (2) Using a 16 mm (0.63 in) plug wrench, remove the spark plugs.
  - (3) Install the spark plugs to each ignition coils (with igniter), and connect the ignition coil connectors.
  - (4) Disconnect the 4 injector connectors.
  - (5) Ground the spark plugs.
  - (6) Check if spark occurs while engine is being cranked.

**NOTICE:**

- **Be sure to ground the spark plug, when checking.**
- **Replace the ignition coil when it is given an impact.**
- **Do not crank the engine for more than 2 seconds.**

**HINT:**

If the spark does not occur, do the test as follow.

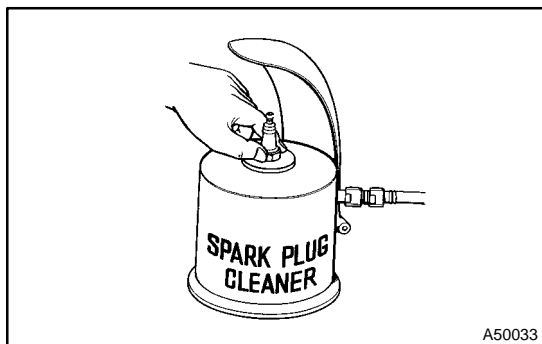
- (c) Using a 16 mm (0.63 in.) plug wrench, install the spark plugs.  
**Torque: 25 N·m (255 kgf·cm, 18 ft·lbf)**
- (d) Install the ignition coil with igniter.  
**Torque: 9.0 N·m (92 kgf·cm, 80 in·lbf)**

## INSPECTION

### 1. SPARK PLUG

#### NOTICE:

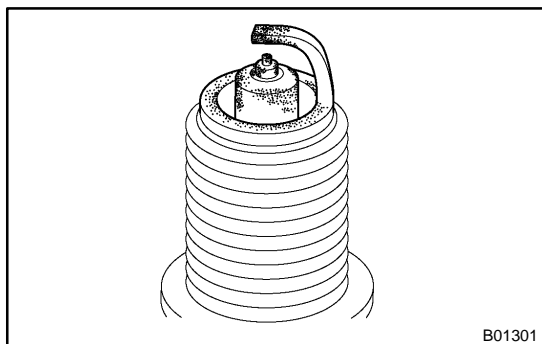
- Never use a wire brush for cleaning.
- Never attempt to adjust the electrode gap on used spark plug.
- Spark plug should be replaced every 192,000 km (120,000 miles).



- (a) Clean the spark plugs.

**Air pressure: Below 588 kPa (6.0 kg/cm<sup>2</sup>, 85 psi)**

**Duration: 20 seconds or less**



- (b) Check the spark plug for thread damage and insulator damage.

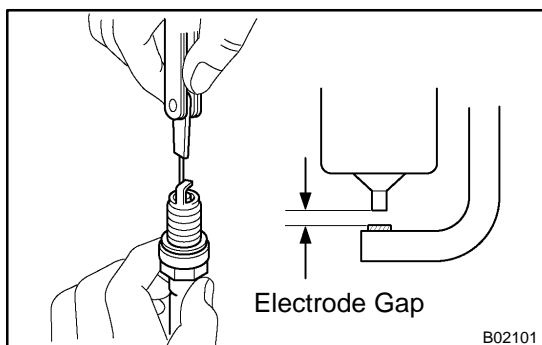
#### HINT:

If abnormal, replace the spark plug.

**Recommended spark plug:**

**SK16R11 (DENSO made)**

**IFR5A11 (NGK made)**



- (c) Check the spark plug electrode gap.

**Electrode gap: 1.1 mm (0.043 in.)**

### 2. CRANK POSITION SENSOR NO.1

- (a) Using an ohmmeter, measure the resistance between terminals.

#### RESISTANCE:

**At cold 835 – 1,400 Ω**

**At hot 1,060 – 1,645 Ω**

#### NOTICE:

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#### HINT:

If the resistance is not as specified, replace the crank position sensor No. 1.

2004 COROLLA (RM1037U)

### 3. CRANK POSITION SENSOR

- (a) Using an ohmmeter, measure the resistance between terminals.

**RESISTANCE:**

At cold 1,630 – 2,740  $\Omega$

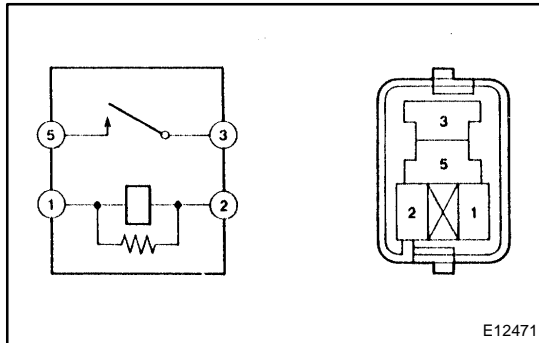
At hot 2,065 – 3,225  $\Omega$

**NOTICE:**

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**HINT:**

If the resistance is not as specified, replace the crank position sensor.



### 4. IGNITION RELAY

- (a) Continuity inspection.

- (1) Using an ohmmeter, check that continuity exists between each terminal.

**Specified condition:**

**Between terminal 1 and 2 Continuity**

**Between terminal 3 and 5 No continuity**

- (2) Using an ohmmeter, check that continuity exists between terminals 3 and 5 when the battery voltage is applied across terminals 1 and 2.