

# IGNITION SYSTEM

## ON-VEHICLE INSPECTION

IG0FB-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  $100^{\circ}\text{C}$  ( $212^{\circ}\text{F}$ ).

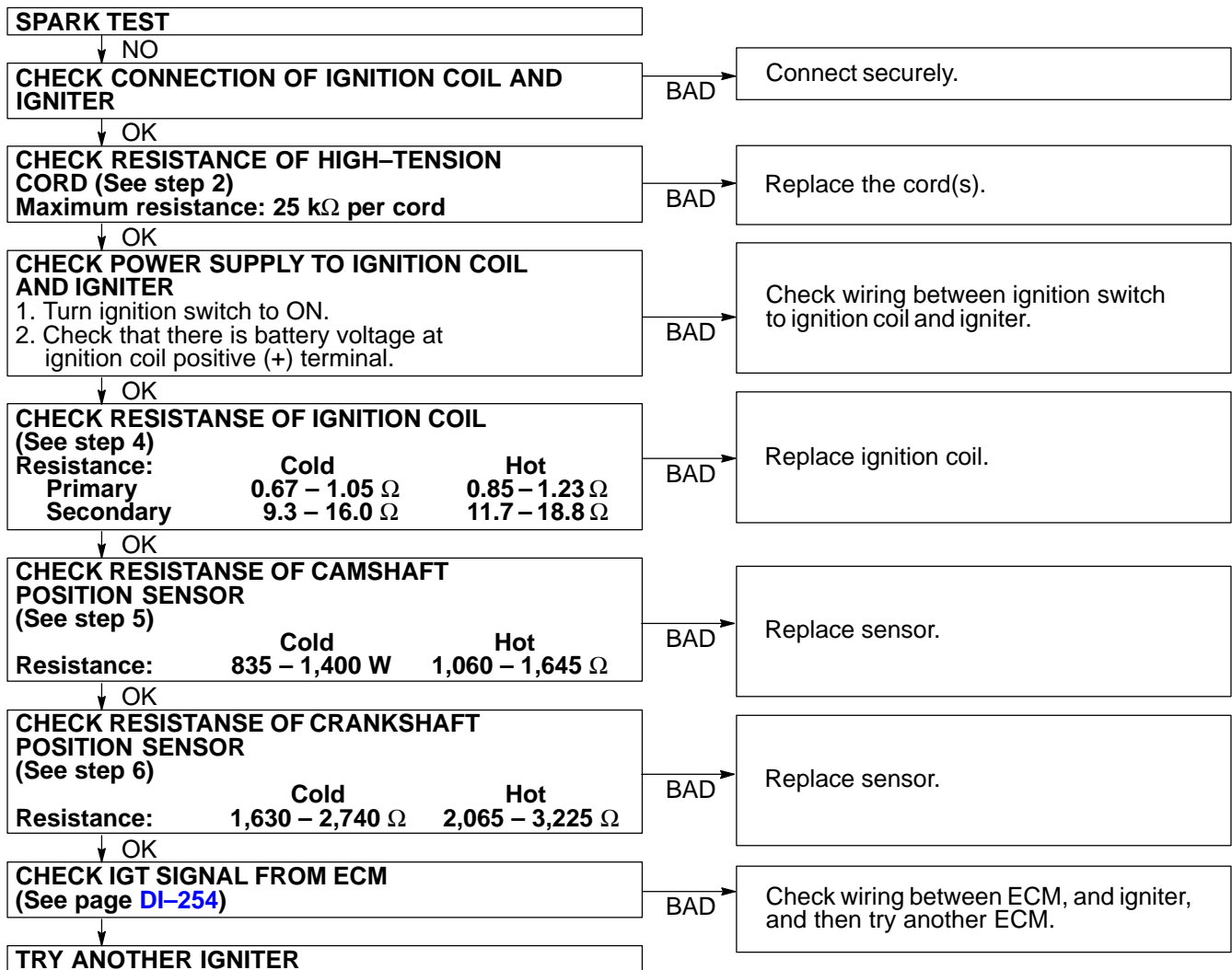
**1. INSPECT IGNITER AND SPARK TEST**

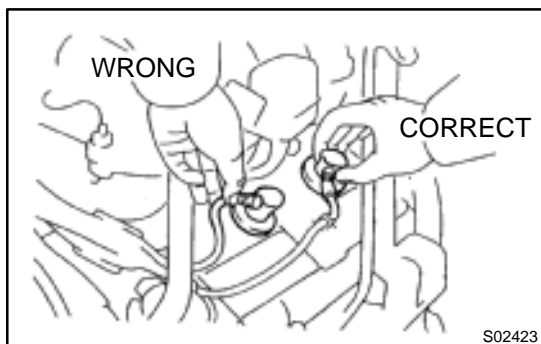
- Disconnect high-tension cords from spark plug.
- Remove the spark plug.
- Install the spark plug to each high-tension cord.
- Ground the spark plug.
- Check if spark occurs while engine is being cranked.

**NOTICE:**

To prevent excess fuel being injected from the injectors during this test, do not crank the engine for more 5 – 10 seconds at a time.

If the spark does not occur, do the test as follows:



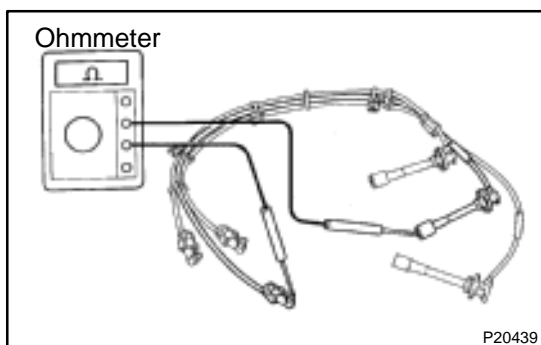


## 2. INSPECT HIGH-TENSION CORDS

- Remove the air cleaner hose.
- Disconnect the high-tension cords at the rubber boot. Do not pull on the high-tension cords.

### NOTICE:

**Pulling on or bending the cords may damage the conductor inside.**

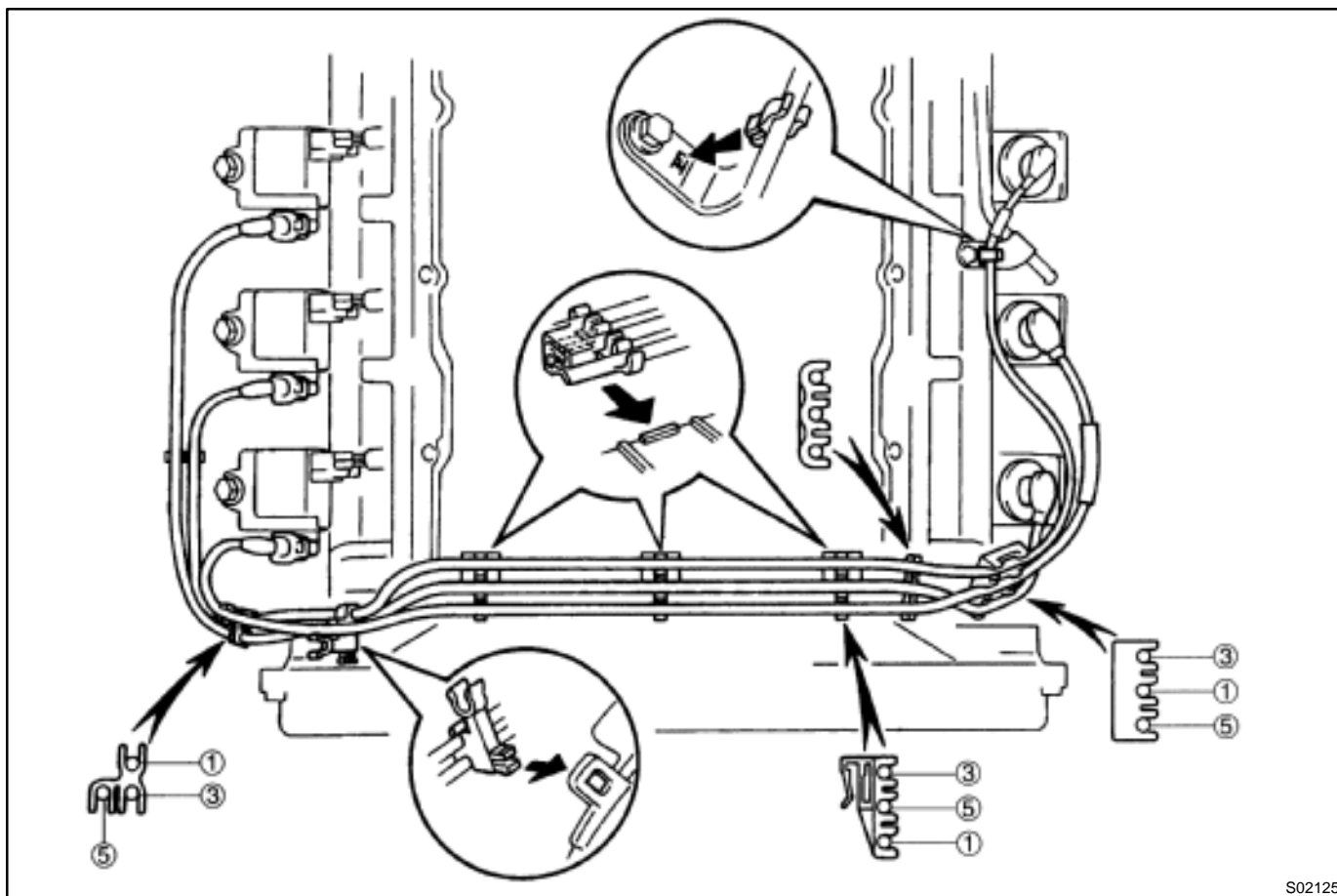


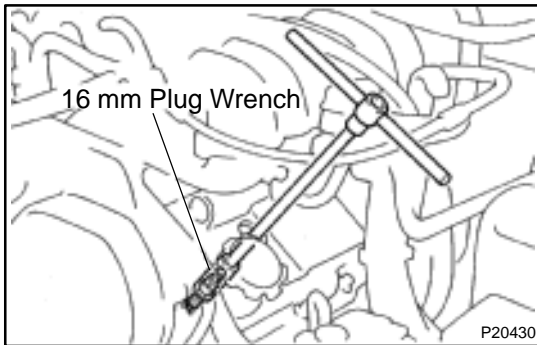
- Using an ohmmeter, measure the high-tension cord resistance.

**Maximum resistance: 25 kΩ per cord**

If the resistance is greater than maximum, check the terminals. If necessary, replace the high-tension cord.

- Reconnect and install the high-tension cords as shown in the illustration.





### 3. INSPECT SPARK PLUGS

- (a) Disconnect the 3 high-tension cords.
- (b) Remove the 3 ignition coils.
- (c) Using a 16 mm plug wrench, remove the 6 spark plugs.



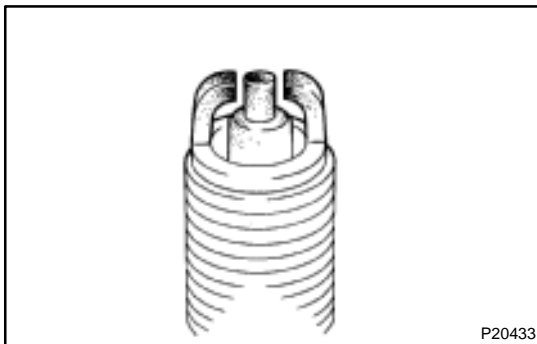
- (d) Clean the spark plugs.  
If the electrode has traces of wet carbon, allow it to dry and then clean with a spark plug cleaner.

**Air pressure: Below 588 kPa (6 kgf/cm<sup>2</sup>, 85 psi)**

**Duration: 20 seconds or less**

**HINT:**

If there are traces of oil, remove it with gasoline before using the spark plug cleaner.

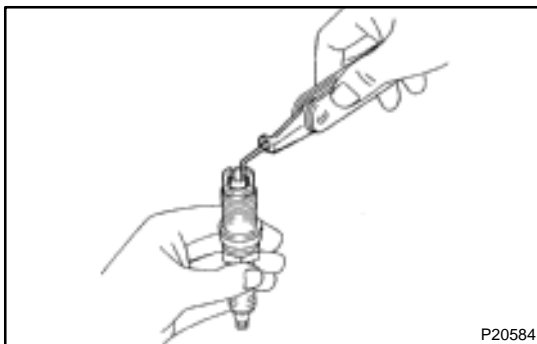


- (e) Visually check the spark plug for thread damage and insulator damage.

If abnormal, replace the spark plug.

**Recommended spark plug:**

DENSO made	K16TR11
NGK made	BKR5EKB-11



- (f) Adjust the electrode gap.  
Carefully bend the outer electrode to obtain the correct electrode gap.

**Correct electrode gap: 1.1 mm (0.043 in.)**

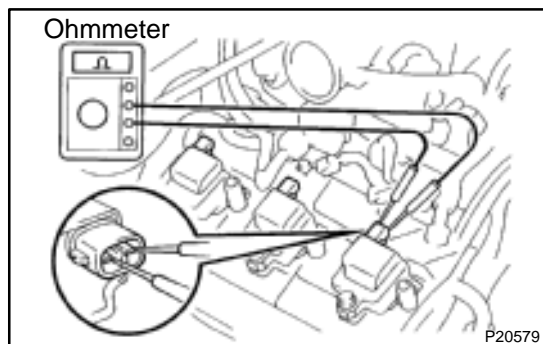
- (g) Using a 16 mm plug wrench, reinstall the spark plugs.

**Torque: 18 N·m (180 kgf-cm, 13 ft-lbf)**

- (h) Reinstall the 3 ignition coils.
- (i) Reconnect the 3 high-tension cords.

### 4. INSPECT IGNITION COIL

- (a) Remove the air cleaner hose.
- (b) Disconnect the high-tension cords and ignition coil connectors from the ignition coils.



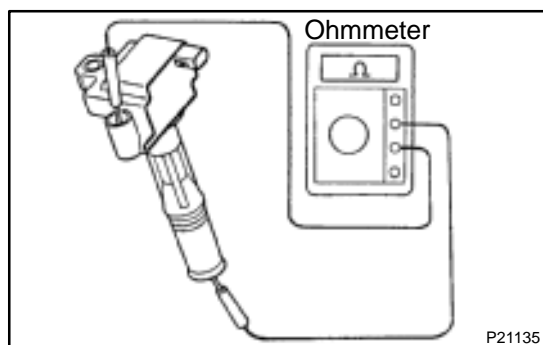
- (c) Inspect the primary coil resistance.  
Using an ohmmeter, measure the resistance between the positive (+) and negative (–) terminals.

**Primary coil resistance:**

Cold	0.67 – 1.05 $\Omega$
Hot	0.85 – 1.23 $\Omega$

If the resistance is not as specified, replace the ignition coil.

- (d) Remove the ignition coils.



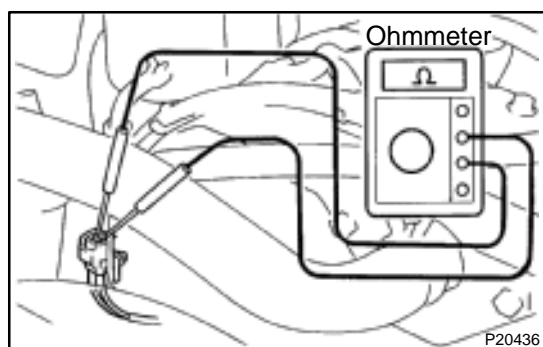
- (e) Inspect the secondary coil resistance.  
Using an ohmmeter, measure the resistance between the positive (+) and high–tension terminals.

**Secondary coil resistance:**

Cold	9.3 – 16.0 $\Omega$
Hot	11.7 – 18.8 $\Omega$

If the resistance is not as specified, replace the ignition coil.

- (f) Reinstall the ignition coils.  
(g) Reconnect the ignition coil connectors and the high–tension cords.  
(h) Reinstall the air cleaner hose.



**5. INSPECT CAMSHAFT POSITION SENSOR**

- (a) Disconnect the sensor connector.  
(b) Using an ohmmeter, measure the resistance between the terminals.

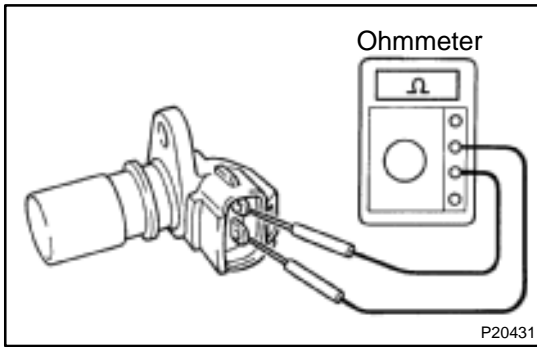
**Resistance:**

Cold	835 – 1,400 $\Omega$
Hot	1,060 – 1,645 $\Omega$

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

(See page IG-9)

- (c) Reconnect the camshaft position sensor connector.

**6. INSPECT CRANKSHAFT POSITION SENSOR**

- (a) Remove the sensor connector. (See page [IG-10](#))
- (b) Using an ohmmeter, measure the resistance between the terminals.

**Resistance:**

Cold	1,630 – 2,740 $\Omega$
Hot	2,065 – 3,225 $\Omega$

- (c) Reinstall the sensor.