

# IGNITION SYSTEM ON-VEHICLE INSPECTION

IG062-02

**NOTICE:**

"Cold" and "Hot" in these sentences express the temperature of the coils themselves. "Cold" is from -10°C (14°F) to 50°C (122°F) and "Hot" is from 50°C (122°F) to 100°C (212°F).

**1. INSPECT SPARK TEST**

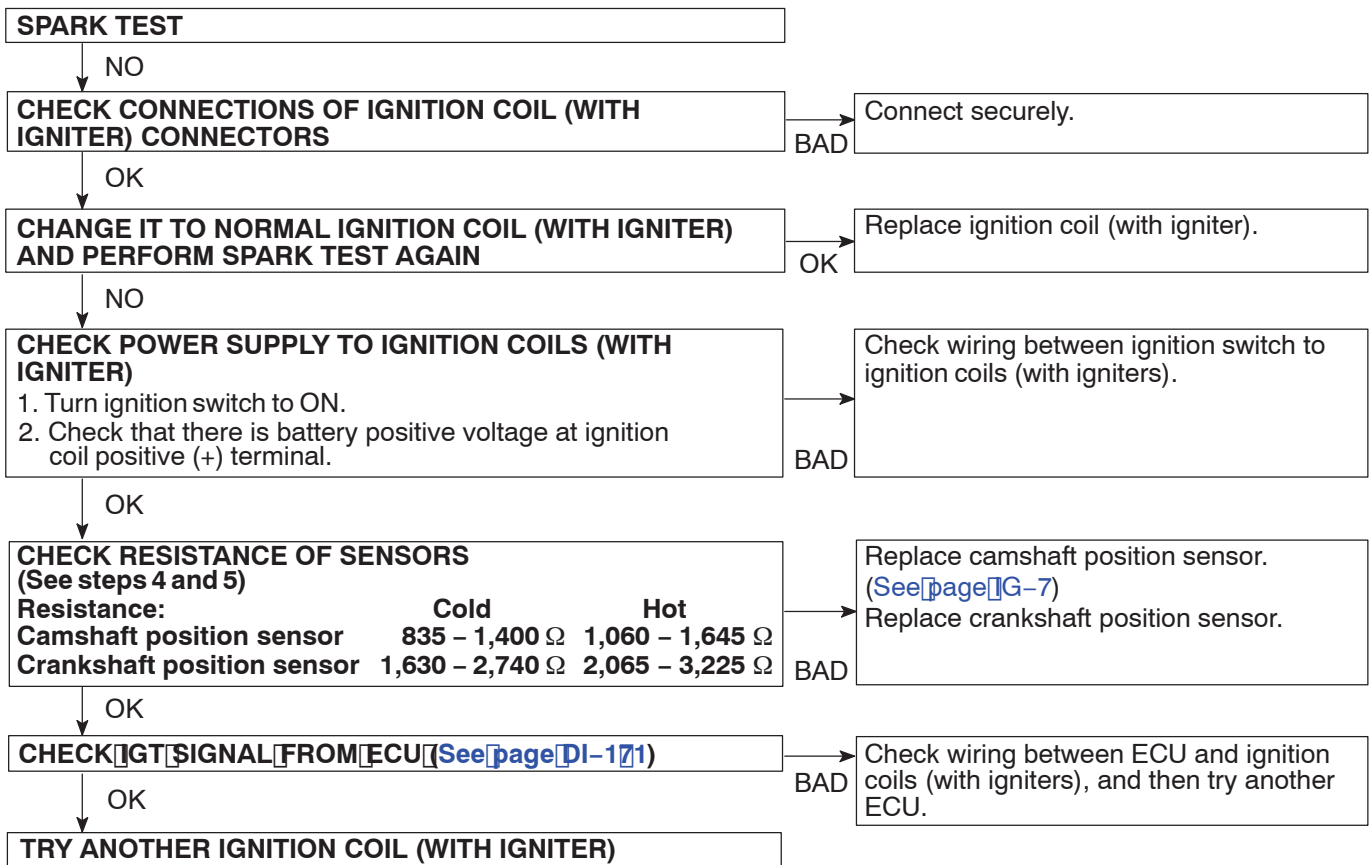
Check that the spark occurs.

- (1) Remove the ignition coil (See page IG-5)
- (2) Remove the spark plug.
- (3) Install the spark plug to the ignition coil, and connect the ignition coil connector.
- (4) Disconnect the 8 injector connectors.
- (5) Ground the spark plug.
- (6) See if spark occurs while engine is being cranked.

**NOTICE:**

To prevent gasoline from being injected from injectors during this test, crank the engine for no more than 5 - 10 seconds at time.

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

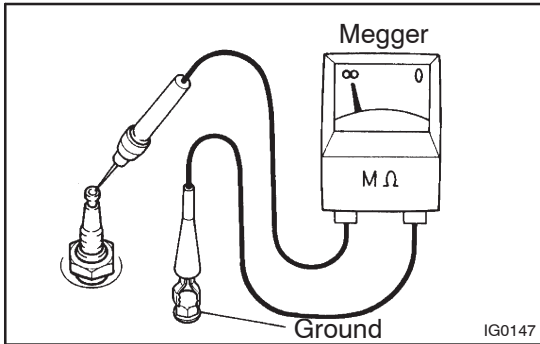


**2. INSPECT SPARK PLUGS**

**NOTICE:**

- **Never use a wire brush for cleaning.**
- **Never attempt to adjust the electrode gap on a used spark plug.**
- **Spark plugs should be replaced every 100,000 km (60,000 miles).**

(a) Remove the 8 Ignition coils (See page IG-5)



(b) Inspect the electrode.  
Using a megger (insulation resistance meter), measure the insulation resistance.

**Standard correct insulation resistance:  
10 MΩ or more**

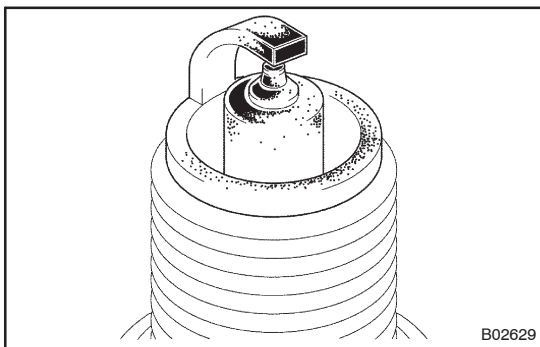
If the resistance is less than specified, proceed to step (d).

**HINT:**

If a megger is not available, these simple method of inspection provides fairly accurate results.

**Simple Method:**

- Quickly race the engine to 4,000 rpm 5 times.
- Remove the spark plug (See step (c)).
- Visually check the spark plug.  
If the electrode is dry ... OK  
If the electrode is wet ... Proceed to step (d)
- Reinstall the spark plug (See step (g)).

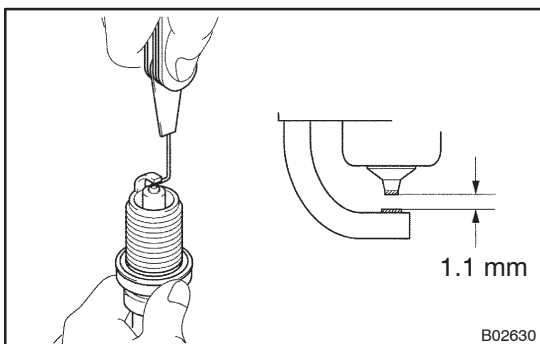
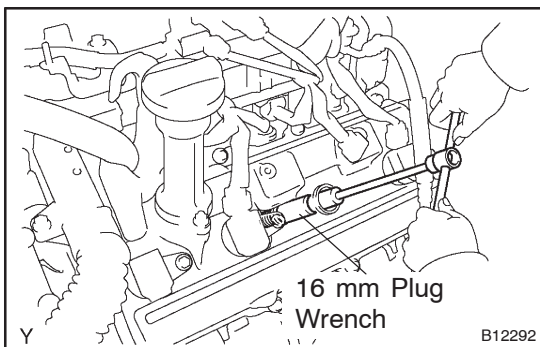


(c) Using a 16 mm plug wrench, remove the 8 spark plugs.  
(d) Visually check the spark plug for thread damage and insulator damage.

If abnormal, replace the spark plug.

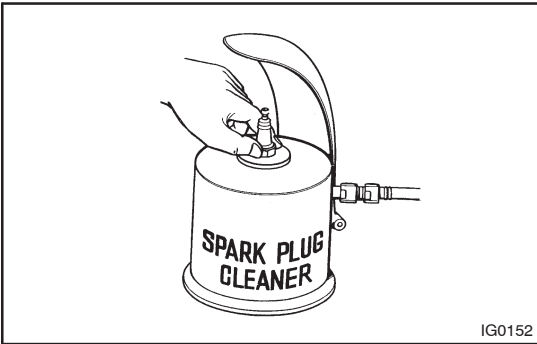
**Recommended spark plug:**

DENSO made	SK20R11
NGK made	IFR6A11



(e) Inspect the electrode gaps.  
**Standard electrode gap:  
1.0 – 1.1 mm (0.0394 – 0.043 in.)**  
**Maximum electrode gap:  
1.2 mm (0.047 in.)**

If the gap is greater than maximum, replace the spark plug.



- (f) 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:**

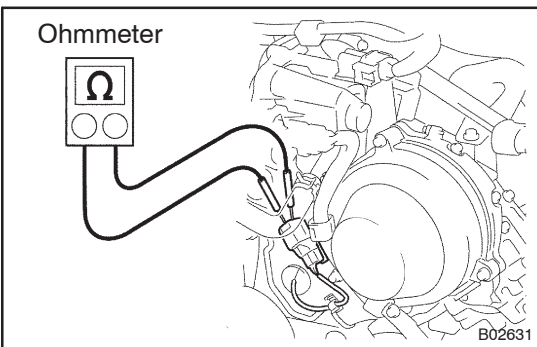
If there are traces of oil, remove it with gasoline before using the spark plug cleaner.

- (g) Using a 16 mm plug wrench, install the 8 spark plugs.

**Torque: 17.5 N·m (180 kgf·cm, 13 ft·lbf)**

- (h) Reinstall the 8 ignition coils (See page IG-5)

**3. INSPECT IGNITION COILS (WITH IGNITERS) (See step 1)**



**4. INSPECT CAMSHAFT POSITION SENSOR**

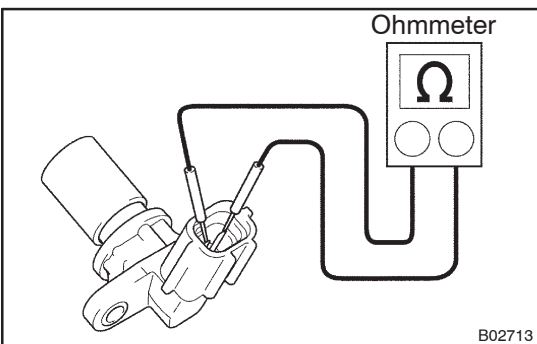
- (a) Remove the 2 bolts, 2 cap nuts and V-bank cover.
- (b) Disconnect the sensor connector.
- (c) Using an ohmmeter, measure the resistance between terminals.

**Resistance:**

Cold	835 - 1,400 Ω
Hot	1,060 - 1,645 Ω

If the resistance is not as specified, replace the sensor (See page IG-7)

- (d) Reconnect the sensor connector.
- (e) Reinstall the V-bank cover with the 2 cap nuts.



**5. INSPECT CRANKSHAFT POSITION SENSOR**

- (a) Remove the sensor (See page IG-9)
- (b) Using an ohmmeter, measure the resistance between the terminals.

**Resistance:**

Cold	1,630 - 2,740 Ω
Hot	2,065 - 3,225 Ω

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

- (c) Reinstall the sensor (See page IG-9)