# IGNITION SYSTEM

IG0F4–03

## ON–VEHICLE INSPECTION

**NOTICE:**

**"Cold" and "Hot" in the following 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 IGNITOR AND SPARK TEST

Check that the spark occurs.

(1) Disconnect the high–tension cords from the spark plugs.
(2) Remove the spark plugs.
(3) Install the spark plugs to each high–tension cord.
(4) Ground the spark plug.
(5) Check 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 1 – 2 seconds at a time.**

**If the spark does not occur, perform the test as follows:**

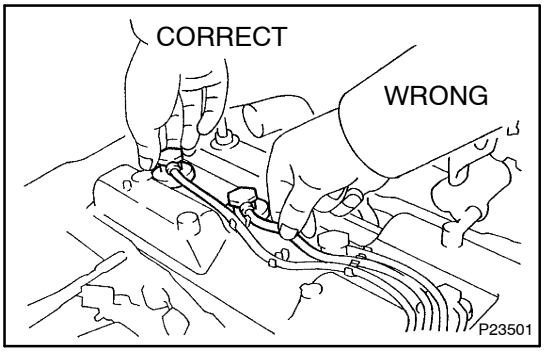
**SPARK TEST**
↓ NO
**CHECK CONNECTION OF IGNITION COIL AND IGNITER** → BAD → Connect securely.
↓ OK
**CHECK RESISTANCE OF HIGH–TENSION CORD (See step 2.)**
**Maximum resistance: 25 kΩ per cord** → BAD → Replace the cord(s).
↓ OK
**CHECK POWER SUPPLY TO IGNITION COIL AND IGNITER**
1. Turn ignition switch to ON.
2. Check that there is battery voltage at ignition coil positive (+) terminal.
→ BAD → Check wiring between ignition switch to ignition coil and igniter.
↓ OK
**CHECK RESISTANCE OF IGNITION COIL (See step 4.)**

| Resistance: | Cold | Hot |
|---|---|---|
| Secondary | 9.7 – 16.7 kΩ | 12.4 – 19.6 kΩ |

→ BAD → Replace the ignition coil.
↓ OK
**CHECK RESISTANCE OF CRANKSHAFT POSITION SENSOR (See page IG–1)**

| Resistance: | Cold | Hot |
|---|---|---|
| NE⊕ and NE⊖ | 1,630 – 2,740 Ω | 2,065 – 3,225 Ω |

→ BAD → Replace the crankshaft position sensor.
↓ OK
**CHECK IGT SIGNAL FROM ECU (See page DI–19)** → BAD → Check wiring between ECU, ignition coil with igniter, and then try another ECU.
↓ OK
**TRY ANOTHER IGNITER**




**2. INSPECT HIGH–TENSION CORDS**

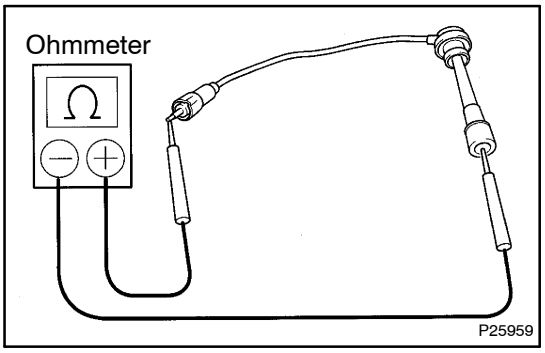
(a) Remove the air cleaner cap and MAF meter assembly.

(b) Remove the intake air connector.

(c) Disconnect the high–tension cords from the spark plugs.

**NOTICE:**

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

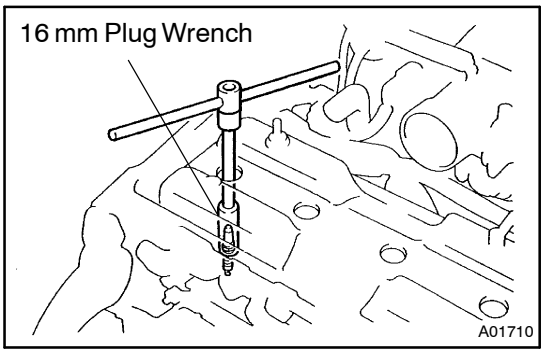



(d) Using an ohmmeter, measure the resistance.

**Maximum resistance: 25 kΩ per cord**

If the resistance is greater than the maximum, check the terminals.

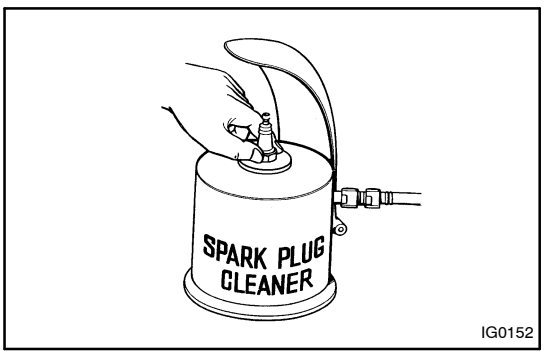
If necessary, replace the high–tension cord.




**3. INSPECT SPARK PLUGS**

(a) Disconnect the high–tension cords from the spark plugs.

(b) Using a 16 mm plug wrench, remove the spark plug.




(c) Using a spark plug cleaner or wire brush, clean the spark plug.

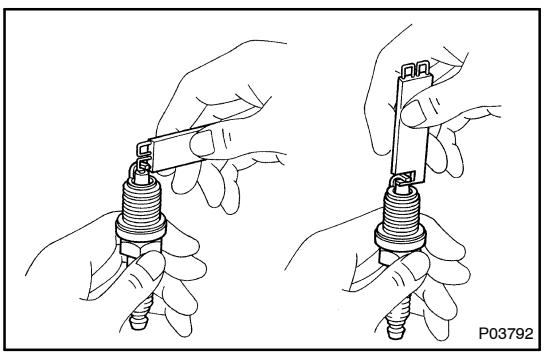
(d) Check the spark plug for electrode wear, threads damage and insulator damage.

If abnormal, replace the plugs.

**Recommended spark plugs:**

**ND: K16R–U**

**NGK: BKR5EYA**




(e) Carefully bend the outer electrode to obtain the correct electrode gap.

**Correct electrode gap: 0.8 mm (0.031 in.)**

(f) Using a 16 mm plug wrench, install the spark plug.

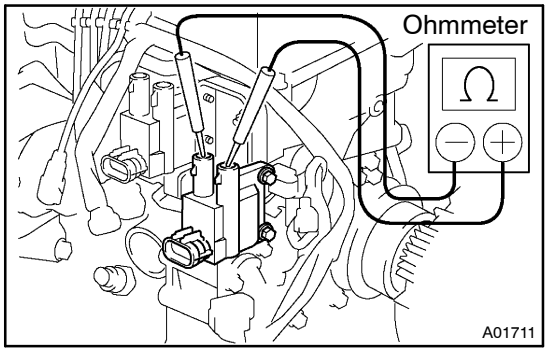
**Torque: 20 N·m (200 kgf·cm, 14 ft·lbf)**

(g) Connect the high–tension cords to the spark plugs.

**4. INSPECT IGNITION COIL**

(a) Disconnect the high–tension cords from the ignition coil.

(b) Disconnect the ignition coil connectors.



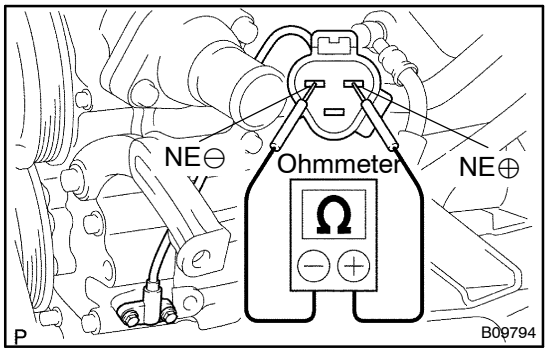

(c) Using an ohmmeter, measure the secondary coil resistance between the positive (+) and high–tension terminals.

**Secondary coil resistance:**
**Cold: 9.7 – 16.7 kΩ**
**Hot: 12.4 – 19.6 kΩ**

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

(d) Connect ignition coil connectors.

(e) Connect the high–tension cords from the ignition coils.




### 5. INSPECT CRANKSHAFT POSITION SENSOR

Using an ohmmeter, measure the resistance between terminals.

**Resistance (NE⊕ and NE⊖):**
**Cold: 1,630 – 2,740 Ω**
**Hot: 2,065 – 3,225 Ω**

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