ON–VEHICLE INSPECTION

SPARK TEST

I0044M-04

CHECK THAT SPARK OCCURS

(a) Disconnect the high–tension cords from the spark plugs.
(b) Remove the spark plugs.
(c) Install the spark plugs to the each high–tension cord.
(d) Ground the spark plug.
(e) Check if spark occurs while engine is being cranked.
HINT: 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, do the test as follows:

SPARK TEST

↓ NO

CHECK CONNECTION OF IIA CONNECTORS → BAD → Connect securely.

↓ OK

CHECK RESISTANCE OF HIGH-TENSION CORDS
(See page IG-4)
Maximum resistance: 25 kΩ per cord → BAD → Replace cord(s).

↓ OK

CHECK POWER SUPPLY TO IGNITION COIL
1. Turn ignition switch ON.
2. Check that there is battery voltage at ignition coil positive (+) terminal.

→ BAD → Check wiring between ignition switch and ignition coil.

↓ OK

CHECK RESISTANCE OF IGNITION COIL
(See page IG-6)

Resistance:	Cold	Hot
Primary	1.11 – 1.75 Ω	1.41 – 2.05 Ω
Secondary	9.0 – 15.7 kΩ	11.4 – 18.4 kΩ

→ BAD → Replace ignition coil.

↓ OK

CHECK RESISTANCE OF SIGNAL GENERATOR (PICK UP COIL)
(See page IG-6)

Resistance:	Cold	Hot
NE ⊕ and NE ⊖	370 – 550 Ω	475 – 650 Ω

→ BAD → Replace distributor housing assembly.

↓ OK

CHECK AIR GAP OF DISTRIBUTOR
(See page IG-6)
Air gap: 0.2 – 0.4 mm (0.008 – 0.016 in.) → BAD → Replace distributor housing assembly.

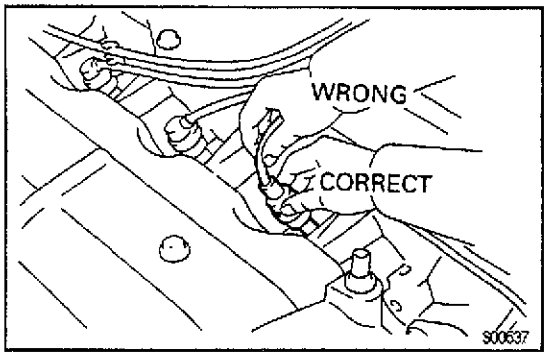
↓ OK

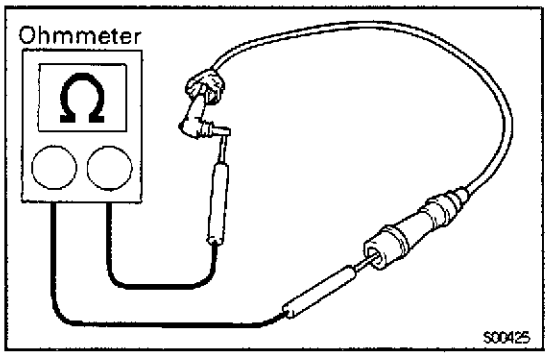
CHECK IGT SIGNAL FROM ECM
(See page EG-101) → BAD → Check wiring between ECU and IIA, and then try another ECU.

↓ OK

TRY ANOTHER IGNITER

V07128





HIGH–TENSION CORDS INSPECTION

1. REMOVE HIGH–TENSION CORDS

(a) Distributor Cap Side:
Using a screwdriver, lift up the lock claw, and disconnect the holder from the distributor cap.

(b) Disconnect the high – tension cords at the rubber boot. Do not pull on the cords.
NOTICE: Pulling on or bending the cords may damage the conductor inside.

2. INSPECT HIGH–TENSION CORD RESISTANCE

Using an ohmmeter, measure the resistance.
Maximum resistance:
25 kΩ per cord
If the resistance is greater than maximum, replace the high–tension cord.

3. REINSTALL HIGH–TENSION CORDS

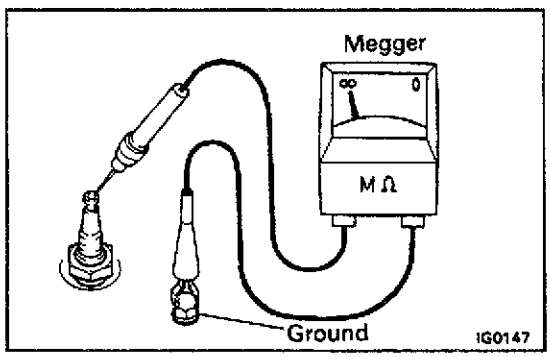
SPARK PLUGS INSPECTION

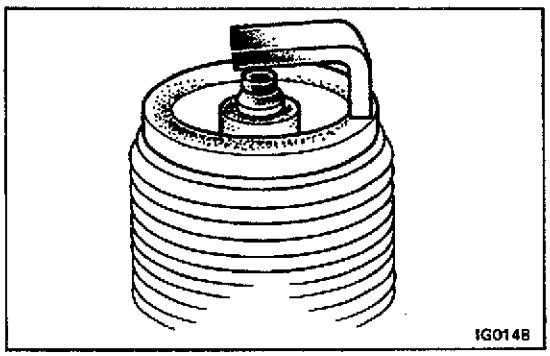
NOTICE:
- **Never use a wire brush for cleaning.**
- **Never attempt to adjust the electrode gap on used spark plug.**
- **Spark plug should be replaced every 100,000 km (60,000 miles).**

1. DISCONNECT HIGH–TENSION CORDS FROM SPARK PLUGS

2. INSPECT ELECTRODE

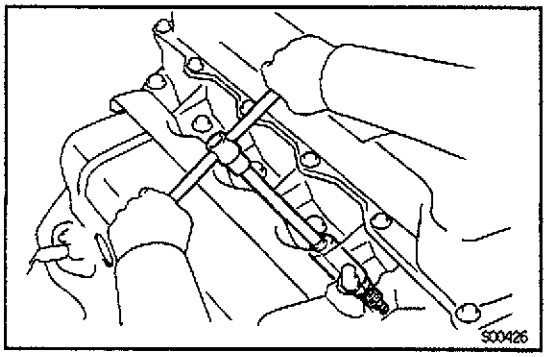
Using a megger (insulation resistance meter), measure the insulation resistance.
Correct insulation resistance:
10 MΩ or more
If the resistance is less than specified, proceed to step 4.
HINT: If a megger is not available, the following simple method of inspection provides fairly accurate results.





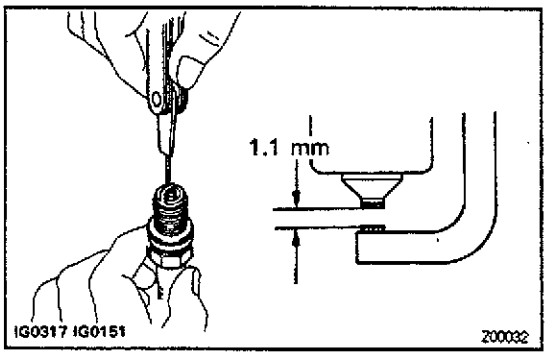
Simple Method:

(a) Quickly race the engine to 4,000 rpm 5 times.
(b) Remove the spark plug. (See step 3)
(c) Visually check the spark plug.
If the electrode is dry ... Okay
If the electrode is wet ... Proceed to step 4
(d) Reinstall the spark plug. (See step 7)

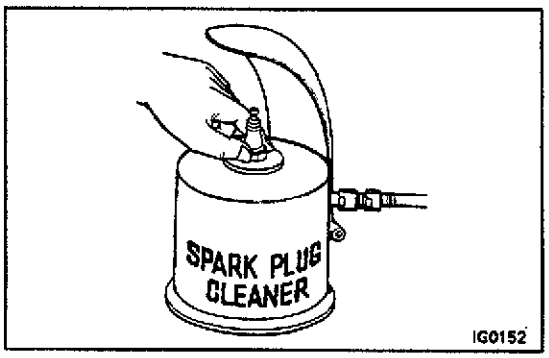


3. **REMOVE SPARK PLUGS**
Using a plug wrench, remove the spark plugs.

4. **VISUALLY INSPECT SPARK PLUGS**
Check the spark plug for thread damage and insulator damage.
If abnormal, replace the spark plug.
Recommended spark plug:
ND
P16R
NGK
BPR5EP–11



5. **INSPECT ELECTRODE GAP**
Maximum electrode gap for used spark plug:
1.3 mm (0.051 in.)
If the gap is greater than maximum, replace the spark plug.
Correct electrode gap for new spark plug:
1.1 mm (0.043 in.)
NOTICE: If adjusting the gap of a new spark plug, bend only the base of the ground electrode. Do not touch the tip. Never attempt to adjust the gap on a used plug.

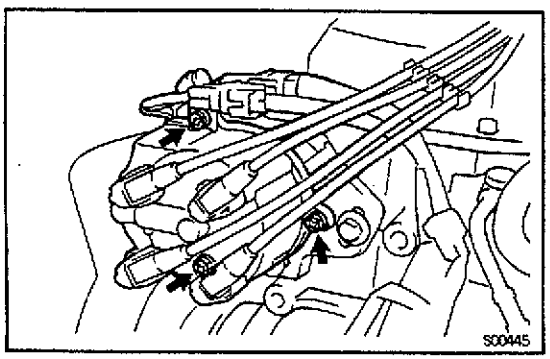


6. **CLEAN SPARK PLUGS**
If the electrode has traces of wet carbon, allow it to dry and then clean with a spark plug cleaner.
Air pressure:
Below 588 kPa (6 kgf/cm², 85 psi)
Duration:
20 seconds or less
HINT: If there are traces of oil, remove it with gasoline before using the spark plug cleaner.

7. **REINSTALL SPARK PLUGS**
Using a plug wrench, install the spark plugs.
Torque: 19 N·m (200 kgf·cm, 14 ft·lbf)

8. **RECONNECT HIGH–TENSION CORDS TO SPARK PLUGS**

IIA INSPECTION

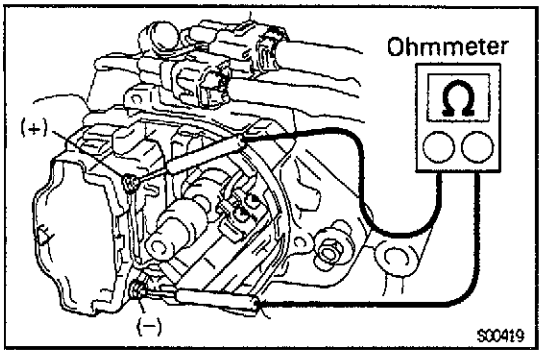


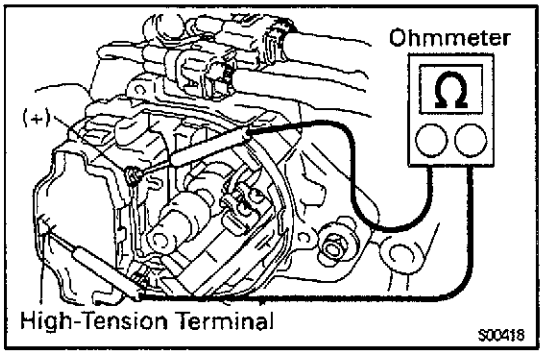
NOTICE: "Cold" and "Hot" in the following sentences express the temperature of the coils themselves. "Cold" is from −10°C (14°F) to 50°C (122°F) and "Hot" is from 50°C (122°F) to 100°C (212°F).

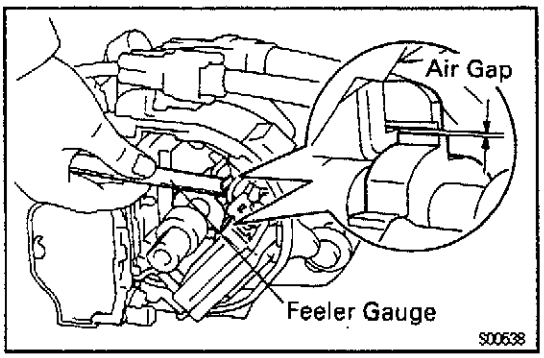
1. **DISCONNECT DISTRIBUTOR CAP FROM DISTRIBUTOR HOUSING**
Remove the 3 bolts, and disconnect the distributor cap from the distributor housing.

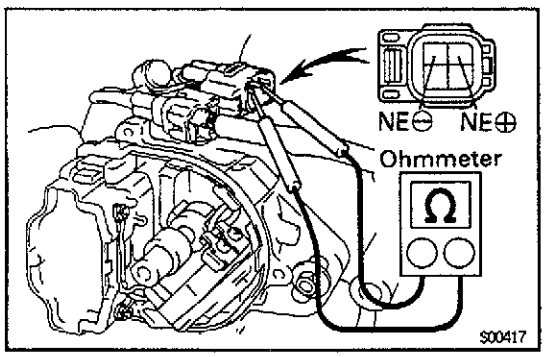
2. **REMOVE ROTOR**

3. **REMOVE IGNITION COIL DUST COVER**









Ignition Coil

4. **INSPECT PRIMARY COIL RESISTANCE**
Using an ohmmeter, measure the resistance between the positive (+) and negative (−) terminals.
Primary coil resistance:
Cold
1.11 — 1.75 Ω
Hot
1.41 — 2.05 Ω
If the resistance is not as specified, replace the ignition coil.

5. **INSPECT SECONDARY COIL RESISTANCE**
Using an ohmmeter, measure the resistance between positive (+) and high—tension terminals.
Secondary coil resistance:
Cold
9.0 — 15.7 kΩ
Hot
11.4 — 18.4 kΩ
If the resistance is not as specified, replace the ignition coil.

Distributor

6. **INSPECT AIR GAP**
Using a feeler gauge, measure the air gap between the signal rotor and pickup coil projection.
Air gap:
0.2 — 0.4 mm (0.008 — 0.016 in.)
If the air gap is not as specified, replace the distributor housing assembly.

7. **DISCONNECT IIA CONNECTOR**

8. **INSPECT SIGNAL GENERATOR (PICKUP COIL) RESISTANCE**
Using an ohmmeter, measure the resistance between terminals (NE⊕ and NE⊖).
Pickup coil resistance:
Cold
370 — 550 Ω
Hot
475 — 650 Ω
If the resistance is not as specified, replace the distributor housing assembly.

9. **RECONNECT IIA CONNECTOR**

10. **REINSTALL IGNITION COIL DUST COVER**

11. **REINSTALL ROTOR AND DISTRIBUTOR CAP**

Igniter

(See spark test in on—vehicle inspection)