

IGNITION SYSTEM

ON-VEHICLE INSPECTION

IG0GC-01

"Cold" and "Hot" in these sentences express the temperature of the coils and sensors 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 IGNITER AND SPARK TEST

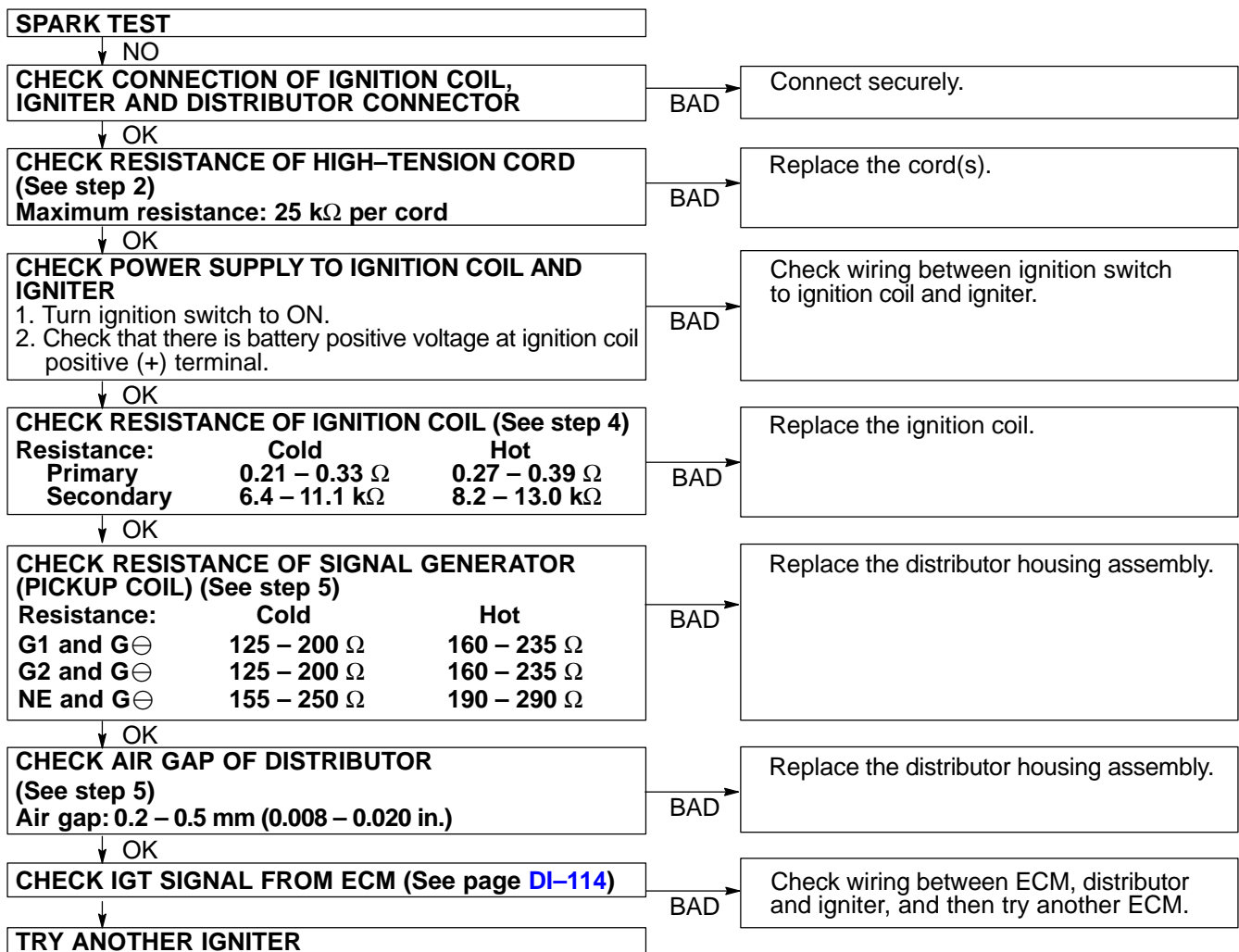
Check that the spark occurs.

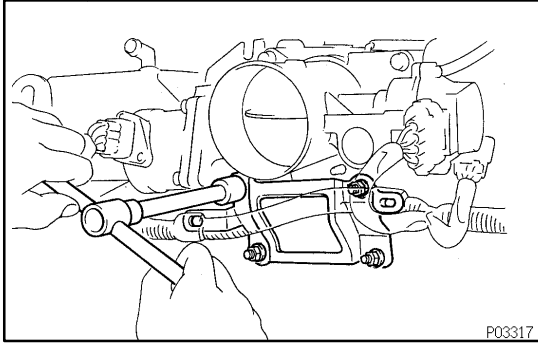
- (1) Disconnect the high-tension cord (from the ignition coil) from the distributor cap.
- (2) Hold the end approx. 12.5 mm (0.50 in.) from the body ground.
- (3) Check if spark occurs while engine is being cranked.

NOTICE:

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

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

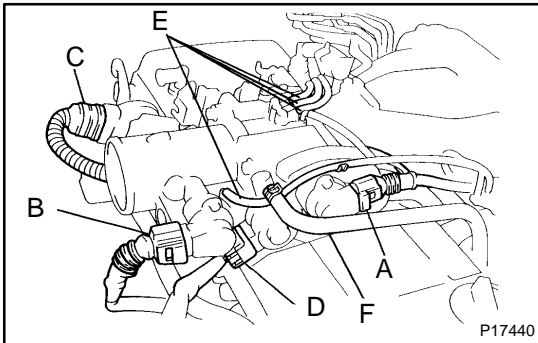




2. INSPECT HIGH-TENSION CORDS

- (a) Disconnect the control cables from the throttle body.
- (b) Remove the intake air connector pipe.
- (c) Disconnect the throttle body bracket from the throttle body and cylinder head.

Remove the 4 nuts, and disconnect the throttle body bracket from the throttle body and cylinder head.

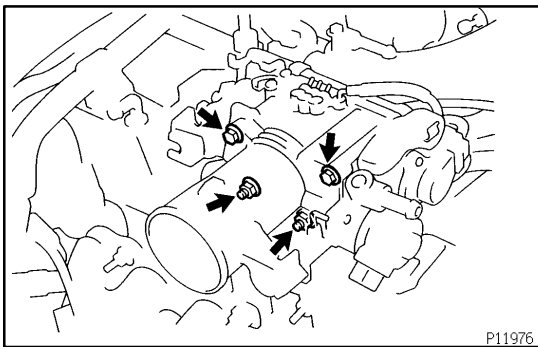


- (d) Disconnect the throttle body from the intake air connector without disconnecting the water bypass hose.

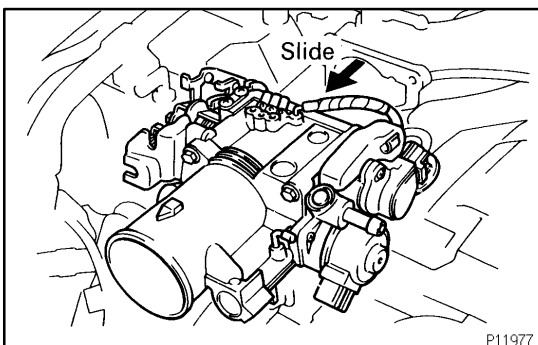
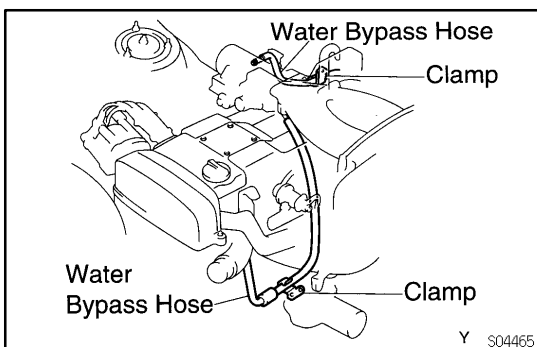
- (1) Disconnect these connectors and hoses:

- Throttle position sensor connector (A)
- w/ TRAC:
Sub-throttle position sensor connector (B)
- w/ TRAC:
Sub-throttle actuator connector (C)
- IAC valve connector (D)
- 4 vacuum hoses (E)
- Air hose (from intake manifold) (F)

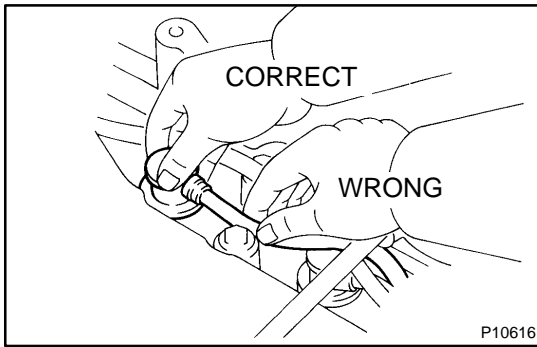
- (2) Remove the 2 bolts and 2 nuts.



- (3) Disconnect the 2 water bypass hoses from the clamps on the oil filter bracket and engine hanger.



- (4) Slightly slide the throttle body away from the intake air connector.
- (e) Remove the No.3 timing belt cover.
- (f) Remove the cylinder head rear cover.

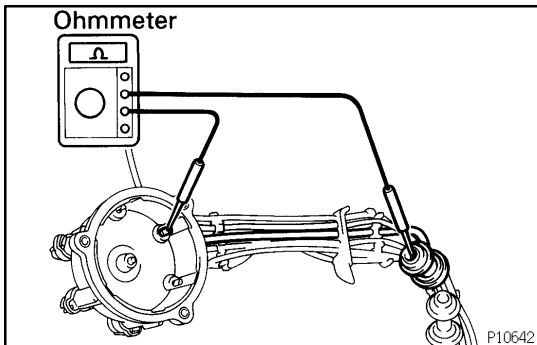


- (g) Disconnect the high-tension cords from the spark plugs and ignition coil.
Disconnect the high-tension cords at the rubber boot. Do not pull on the high-tension cords.

NOTICE:

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

- (h) Remove the distributor cap without disconnecting the high-tension cords.



- (i) Inspect the high-tension cord resistance.
Using an ohmmeter, measure the resistance without disconnecting the distributor cap.

Maximum resistance:

25 kΩ per cord

If the resistance is greater than maximum, check the terminals.
If necessary, replace the high-tension cord and/or distributor cap.

- (j) Reinstall the distributor cap.
(k) Reconnect the high-tension cords to the spark plugs and ignition coil.
(l) Reinstall the cylinder head cover.
(m) Reinstall the No.3 timing belt cover.
(n) Reinstall the throttle body to the intake air connector.

Torque: 21 N·m (210 kgf-cm, 15 ft-lbf)

- (o) Reinstall the throttle body bracket.

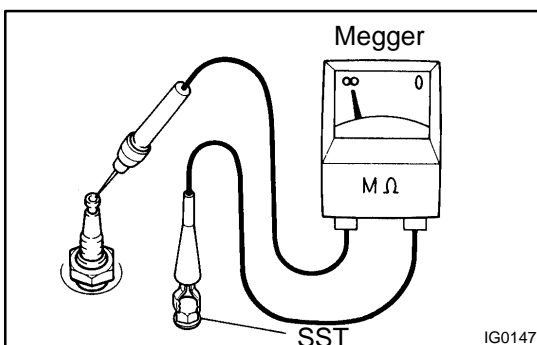
Torque: 21 N·m (210 kgf-cm, 15 ft-lbf)

- (p) Reinstall the intake air connector pipe.
(q) Reconnect the control cables to the throttle body.

3. INSPECT SPARK PLUGS

NOTICE:

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



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

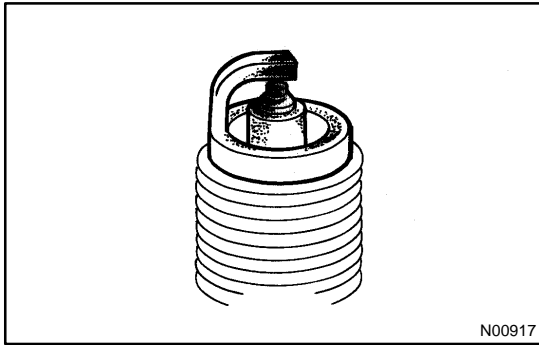
Standard correct insulation resistance:

10 MΩ or more

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

HINT:

If a megger is not available, the following 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) Remove the spark plugs.

Using a 16 mm plug wrench, remove the 6 spark plugs.

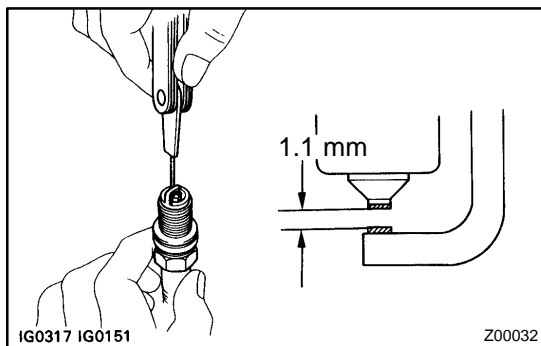
(d) Visually inspect the spark plugs.

Check the spark plug for thread damage and insulator damage.

If abnormal, replace the spark plug.

Recommended spark plug:

ND Made	PK16R11
NGK Made	BKR5EP11



(e) Inspect the 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 the used plug.

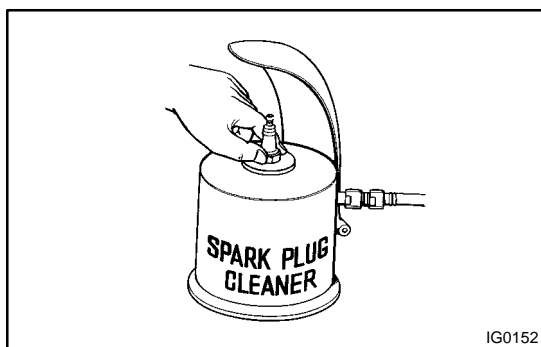
(f) Clean the spark plugs.

If the electrode has traces of wet carbon, allow it to dry and then clean with a spark plug cleaner.

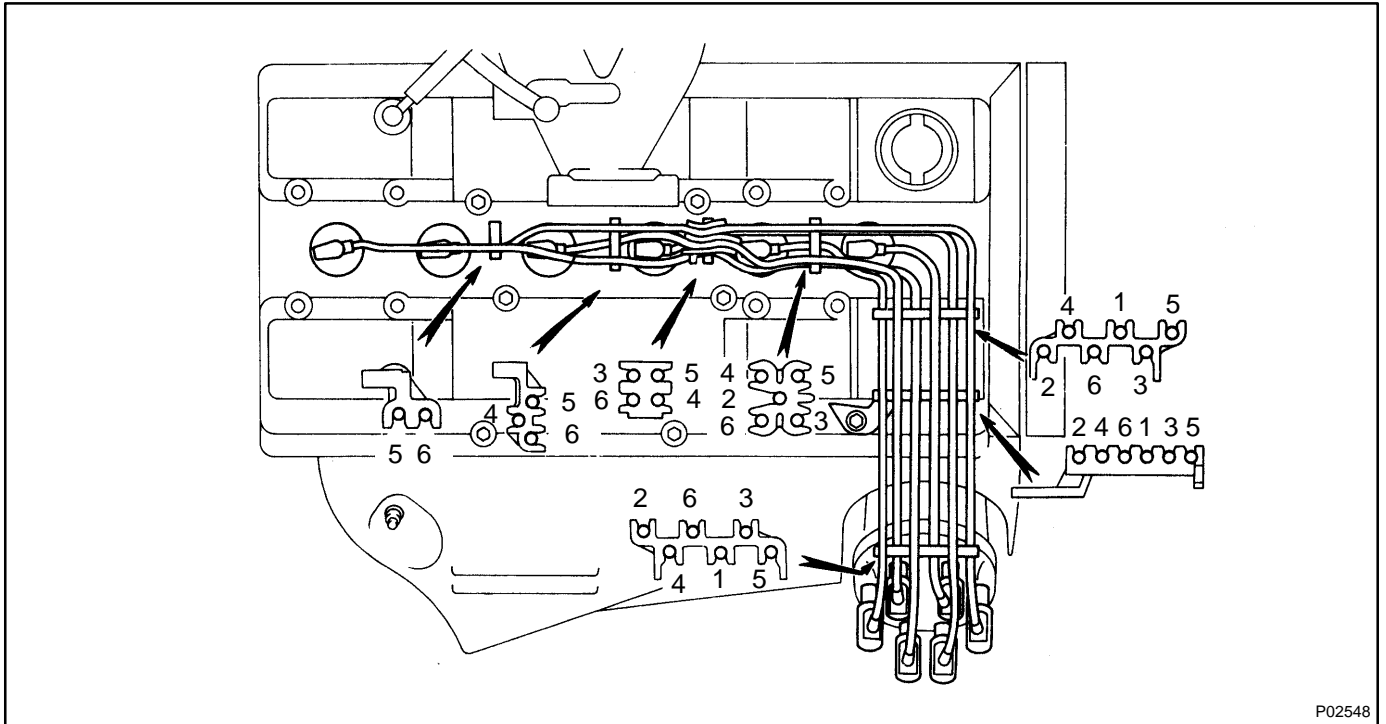
Air pressure:**Below 588 kPa (6 kgf/cm², 85 psi)****Duration:****20 seconds or less****HINT:**

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

(g) Reinstall the spark plugs.

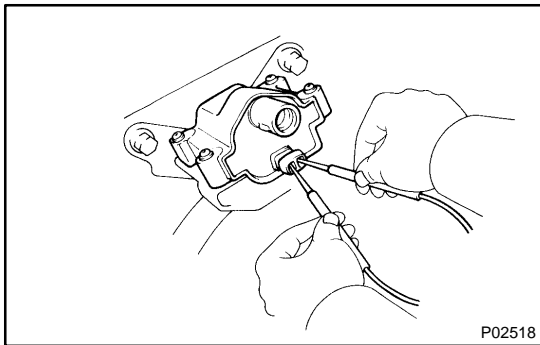
Torque: 18 N·m (180 kgf·cm, 13 ft·lbf)

- (h) Reconnect the high-tension cords.
- (1) Connect the high-tension cords to the spark plugs.
 - (2) Secure the high-tension cords with the cord clamps as shown in the illustration.



4. INSPECT IGNITION COIL

- (a) Disconnect the ignition coil connector.
- (b) Disconnect the high-tension cord from the ignition coil.

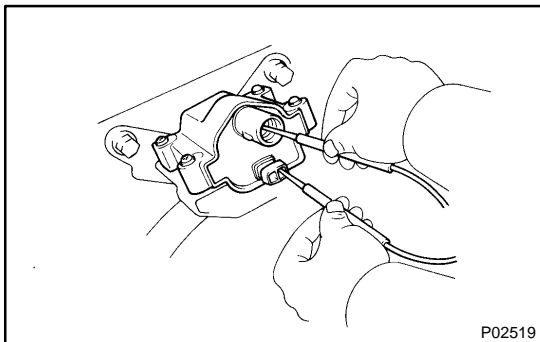


- (c) Inspect the primary coil resistance.
- Using an ohmmeter, measure the resistance between the positive (+) and negative (-) terminals.

Primary coil resistance:

Cold	0.21 – 0.33 Ω
Hot	0.27 – 0.39 Ω

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



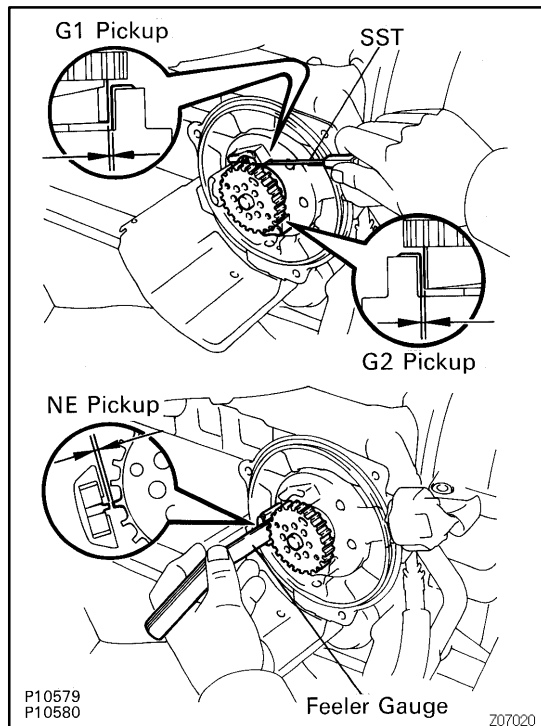
- (d) Inspect the secondary coil resistance.
- Using an ohmmeter, measure the resistance between the positive (+) and high-tension terminals.

Secondary coil resistance:

Cold	6.4 – 11.1 k Ω
Hot	8.2 – 13.0 k Ω

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

- (e) Reconnect the high-tension cord to the ignition coil.
- (f) Reconnect the ignition coil connector.



5. INSPECT DISTRIBUTOR

- Remove the distributor cap without disconnecting the high-tension cords.
- Remove the rotor.
- Inspect the air gap.

Using SST (G1 and G2 pickups) and a feeler gauge (NE pickup), measure the air gap between the signal rotor and pickup coil projection.

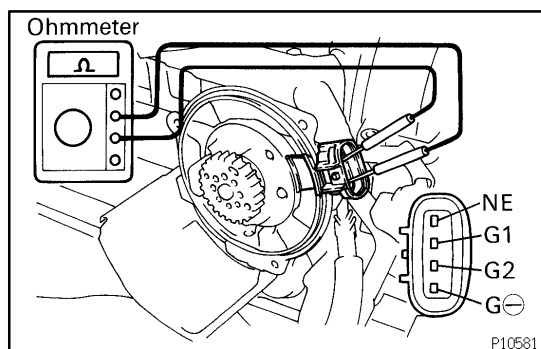
SST 09240-00020

Air gap:

0.2 – 0.5 mm (0.008 – 0.020 in.)

If the air gap is not as specified, replace the distributor housing assembly.

- Disconnect the distributor connector.



- Inspect the signal generator (pickup coil) resistance. Using an ohmmeter, measure the resistance between terminals.

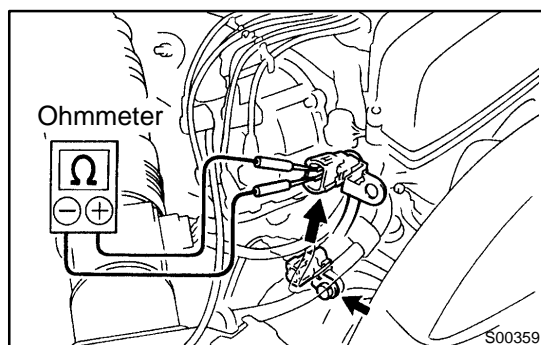
Terminal	Cold	Hot
G1 and G \ominus	125 – 200 Ω	160 – 235 Ω
G2 and G \ominus	125 – 200 Ω	160 – 235 Ω
NE and G \ominus	155 – 250 Ω	190 – 290 Ω

If the resistance is not as specified, replace the distributor housing assembly.

- Reconnect the distributor connector.
- Reinstall the rotor.
- Reinstall the distributor cap.

6. INSPECT CRANKSHAFT POSITION SENSOR

- Disconnect the crankshaft position sensor connector.
 - Disconnect the sensor connector.
 - Remove the bolt holding the connector bracket to the water pump.



- Inspect the crankshaft position sensor resistance. 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 crankshaft position sensor.

- Reconnect the crankshaft position sensor connector.

7. INSPECT IGNITER
(See step 1)