

IGNITION SYSTEM

ON-VEHICLE INSPECTION

IGOKB-01

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

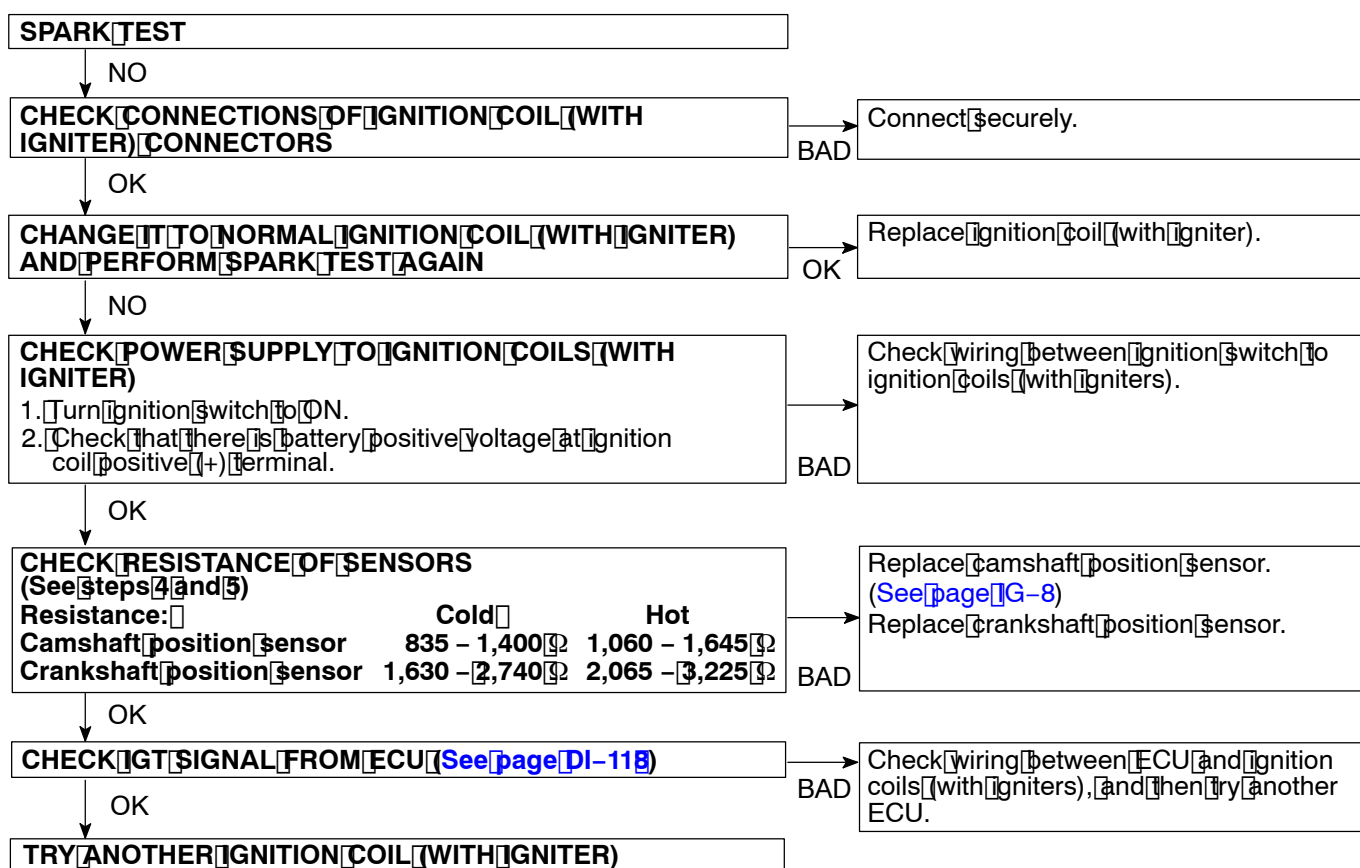
Check that the spark occurs.

- (1) Remove the ignition coil. (See page IG-6)
- (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:

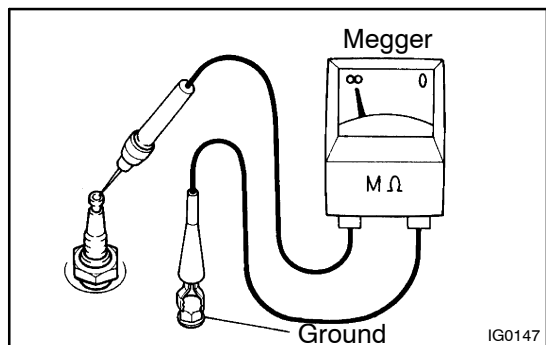


2. Iridium Tipped Type (Unleaded Gasoline): INSPECT SPARK PLUGS

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 200,000 km (120,000 miles).

(a) Remove the 8 ignition coils (See page IG-6).



(b) Inspect the electrode.

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

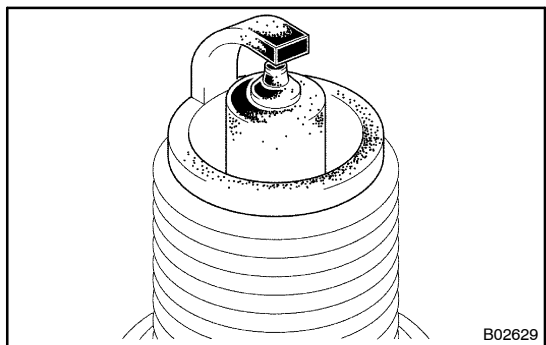
Standard correct insulation resistance:

10 MΩ or more

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

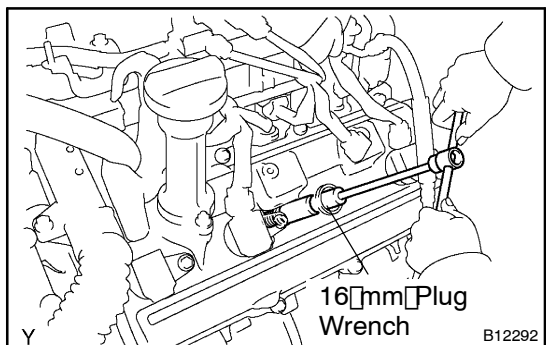
HINT:

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))



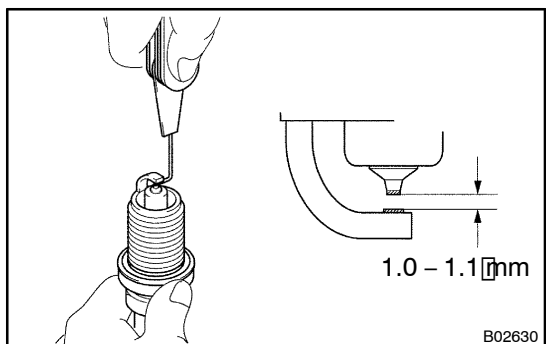
(c) Using a 16 mm plug wrench, remove the 8 spark plugs.

(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.

Correct electrode gap:

1.0 mm – 1.1 mm (0.039 – 0.043 in.)

Maximum electrode gap:

1.3 mm (0.051 in.)

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



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

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

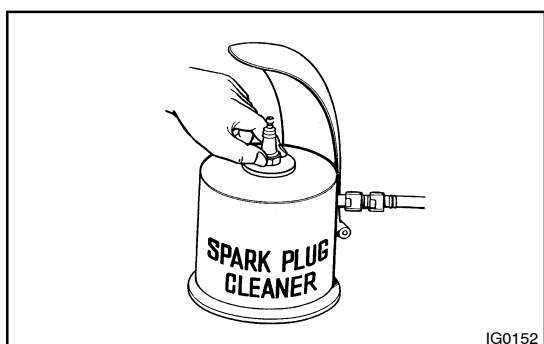
(h) Reinstall the 8 ignition coils (See page IG-6).

3. Conventional Type (Leaded Gasoline):

INSPECT SPARK PLUGS

(a) Remove the ignition coil with igniters (See page IG-6).

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



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(c) Clean the spark plugs.

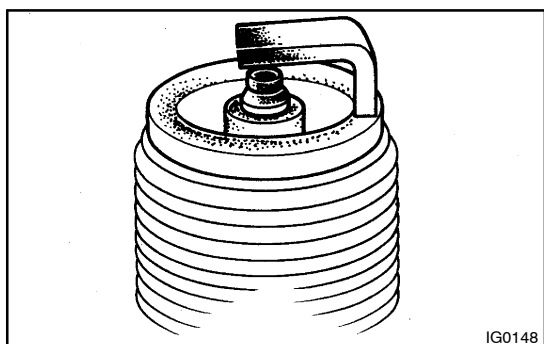
If the electrode has traces of wet carbon, allow it to dry and then clean with a spark plug cleaner.

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.



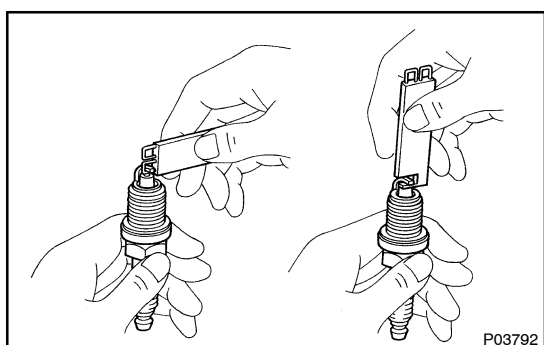
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(d) Check the spark plug for thread damage and insulator damage.

If abnormal, replace the spark plug.

Recommended spark plug:

DENSO	K20R-U
NGK	BKR6EYA



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(e) Adjust electrode gap.

Carefully bend the outer electrode to obtain the correct electrode gap.

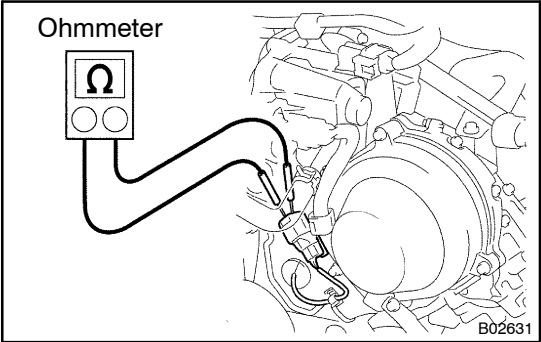
Electrode gap: 0.8 mm (0.031 in.)

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

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

(g) Reinstall the ignition coil with igniters (See page IG-6).

4. INSPECT IGNITION COILS (WITH IGNITERS) (See step 1)



5. INSPECT CAMSHAFT POSITION SENSOR

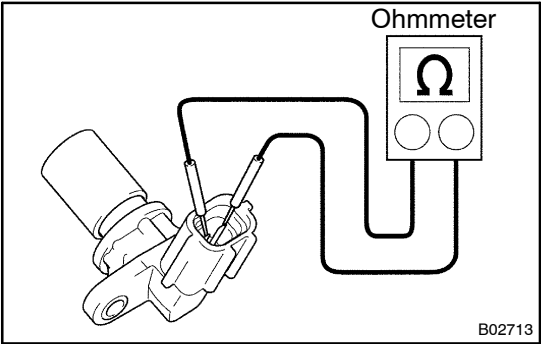
- (a) Remove the 2 bolts, 2 cap nuts and V-bank cover.
- (b) Disconnect the sensor connector.
- (c) Using an ohmmeter, measure the resistance between terminals.

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-8)

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



6. INSPECT CRANKSHAFT POSITION SENSOR

- (a) Remove the sensor (See page IG-10)
- (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-10)