

IGNITION SYSTEM

ON-VEHICLE INSPECTION

IGOFB-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 IGNITOR AND SPARK TEST

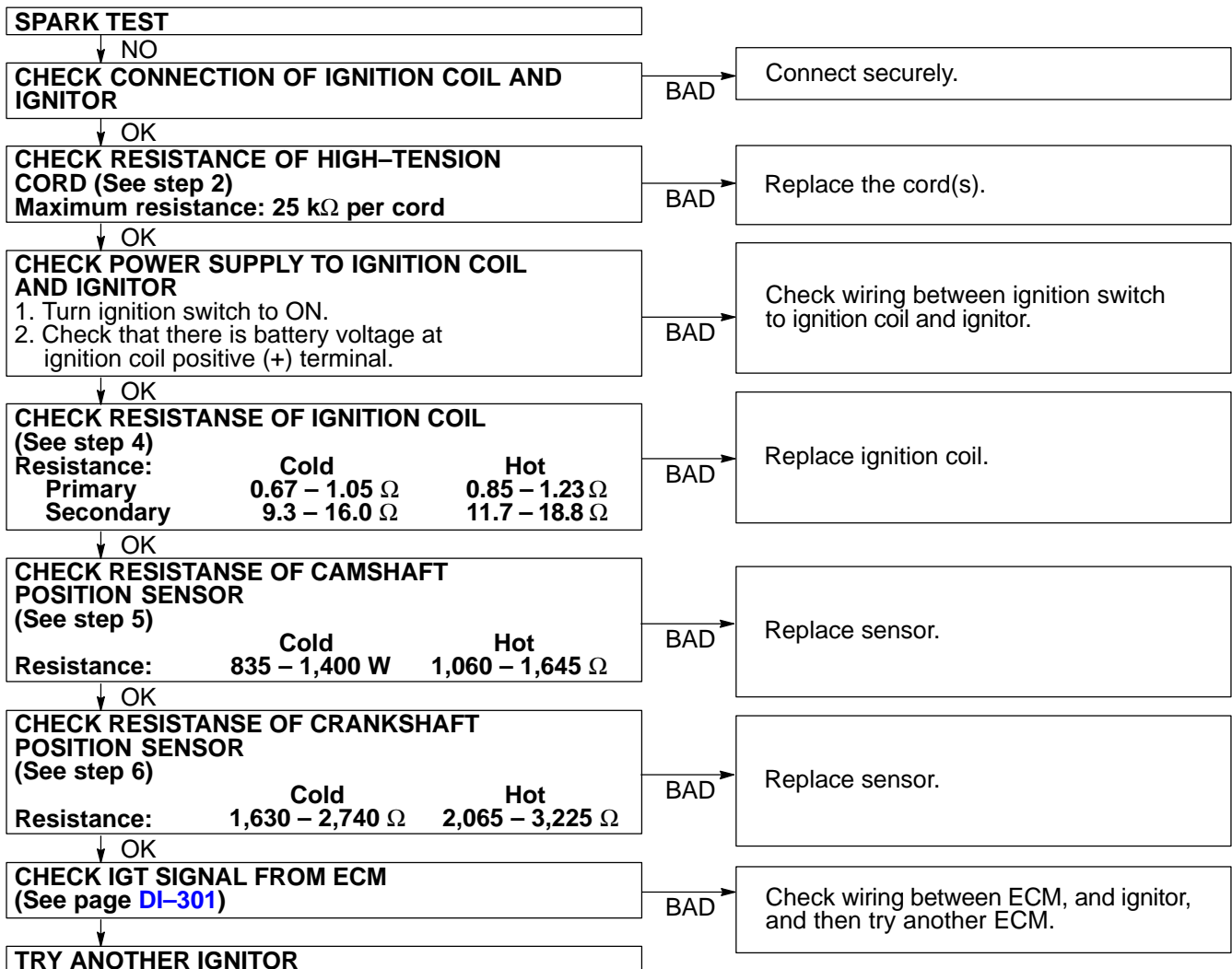
Check that the spark occurs.

- (1) Disconnect high-tension cords from spark plug.
- (2) Remove the spark plug.
- (3) Install the spark plug to each high-tension cord.
- (4) Ground the spark plug.
- (5) Check if spark occurs while engine is being cranked.

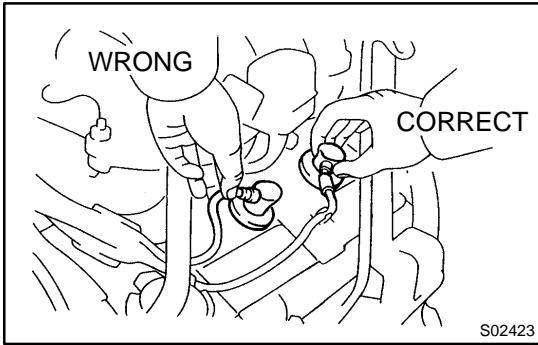
NOTICE:

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

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



- (6) Using a 16 mm plug wrench, install the spark plugs.
Torque: 18 N·m (195 kgf·cm, 15 ft·lbf)
- (7) Reinstall the ignition coil with ignitor.

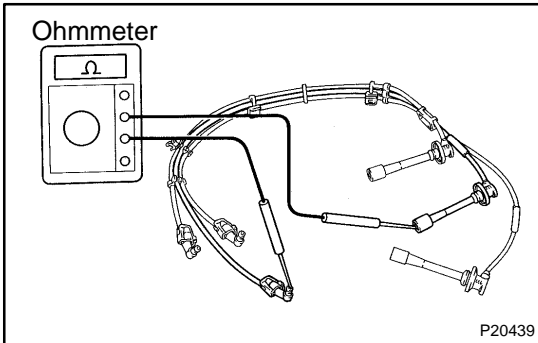


2. INSPECT HIGH-TENSION CORDS

- (a) Remove the air cleaner hose.
- (b) 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.

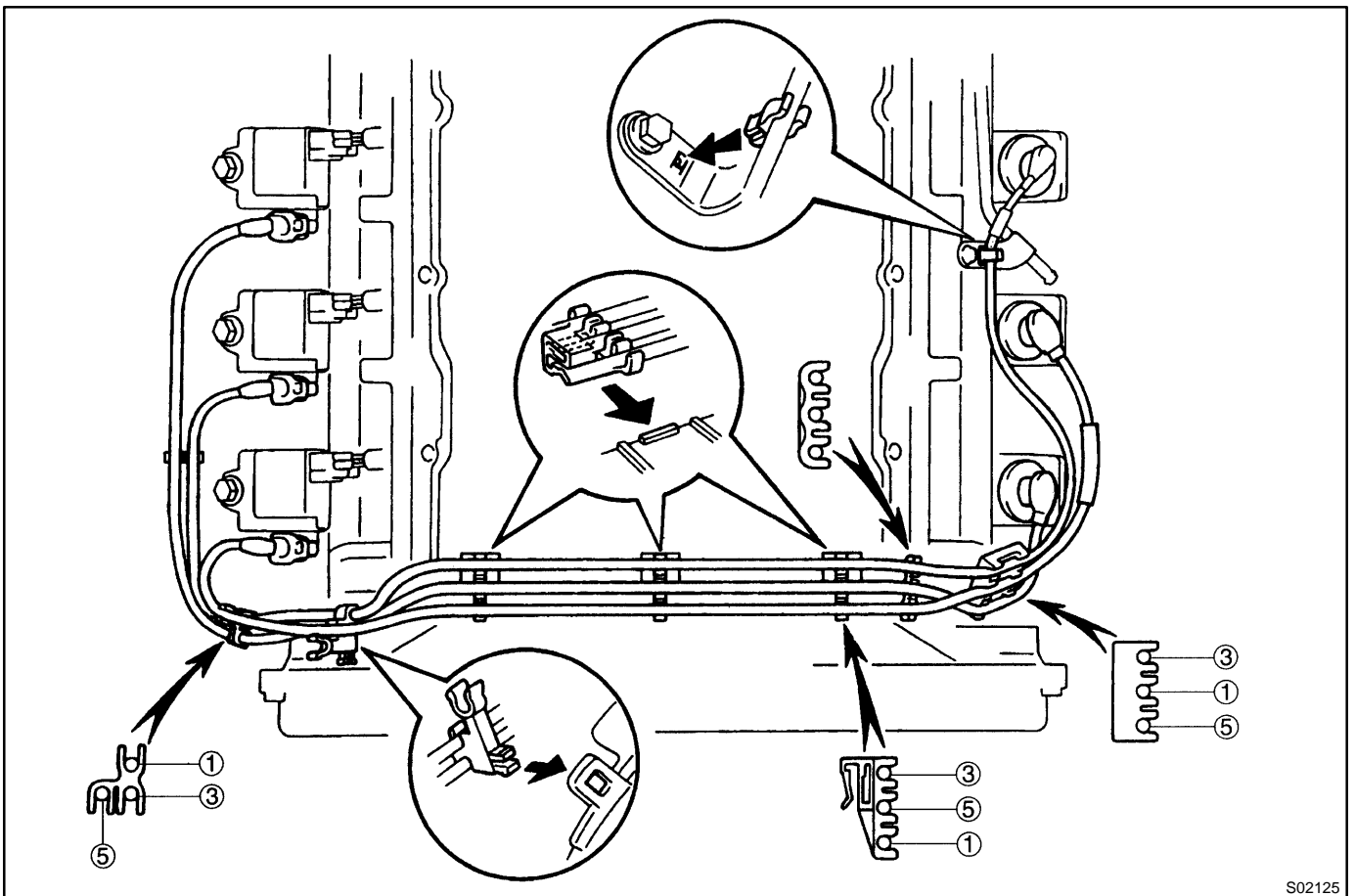


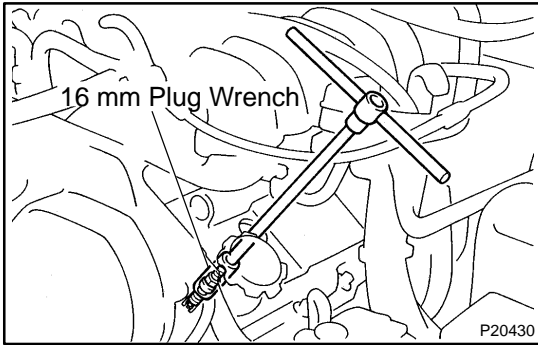
- (c) Using an ohmmeter, measure the high-tension cord resistance.

Maximum resistance: 25 kΩ per cord

If the resistance is greater than maximum, check the terminals. If necessary, replace the high-tension cord.

- (d) Reconnect and install the high-tension cords as shown in the illustration.





3. INSPECT SPARK PLUGS

- (a) Disconnect the 3 high-tension cords.
- (b) Remove the 3 ignition coils.
- (c) Using a 16 mm plug wrench, remove the 6 spark plugs.



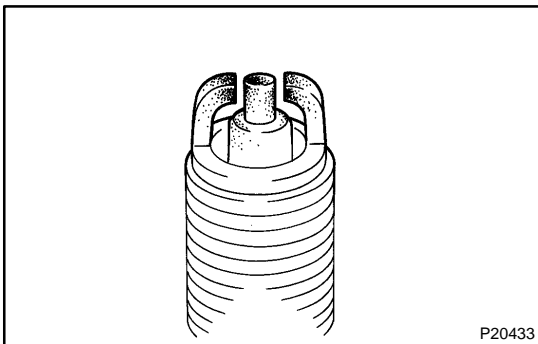
- (d) Clean the spark plugs.
If the electrode has traces of wet carbon, allow it to dry and then clean with a spark plug cleaner.

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.

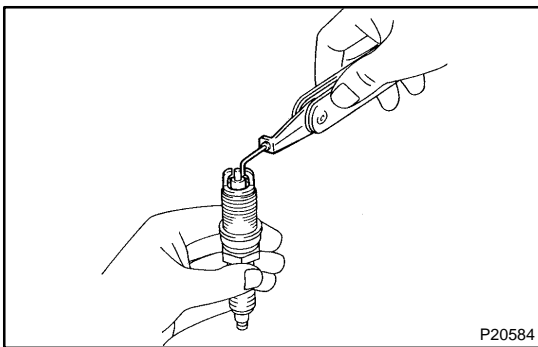


- (e) Visually check the spark plug for thread damage and insulator damage.

If abnormal, replace the spark plug.

Recommended spark plug:

DENSO made	K16TR11
NGK made	BKR5EKB-11



- (f) Adjust the electrode gap.
Carefully bend the outer electrode to obtain the correct electrode gap.

Correct electrode gap: 1.1 mm (0.043 in.)

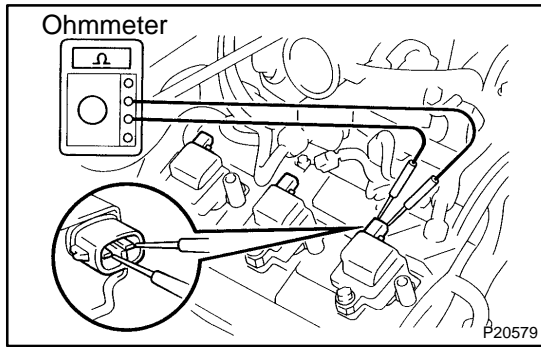
- (g) Using a 16 mm plug wrench, reinstall the spark plugs.

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

- (h) Reinstall the 3 ignition coils.
- (i) Reconnect the 3 high-tension cords.

4. INSPECT IGNITION COIL

- (a) Remove the air cleaner hose.
- (b) Disconnect the high-tension cords and ignition coil connectors from the ignition coils.



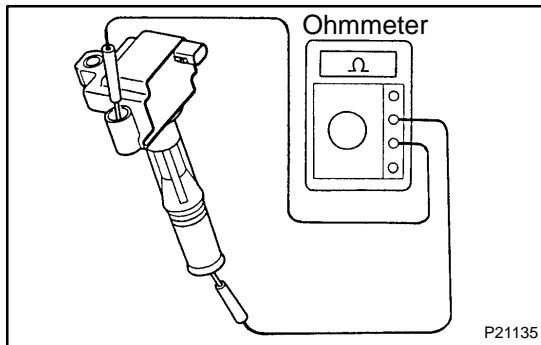
- (c) Inspect the primary coil resistance.
Using an ohmmeter, measure the resistance between the positive (+) and negative (-) terminals.

Primary coil resistance:

Cold	0.67 – 1.05 Ω
Hot	0.85 – 1.23 Ω

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

- (d) Remove the ignition coils.



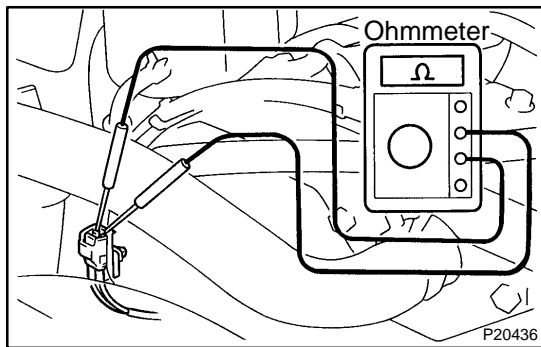
- (e) Inspect the secondary coil resistance.
Using an ohmmeter, measure the resistance between the positive (+) and high-tension terminals.

Secondary coil resistance:

Cold	9.3 – 16.0 Ω
Hot	11.7 – 18.8 Ω

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

- (f) Reinstall the ignition coils.
(g) Reconnect the ignition coil connectors and the high-tension cords.
(h) Reinstall the air cleaner hose.



5. INSPECT CAMSHAFT POSITION SENSOR

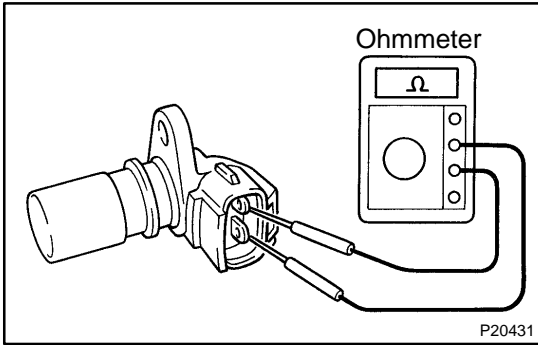
- (a) Disconnect the sensor connector.
(b) Using an ohmmeter, measure the resistance between the terminals.

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-9).

- (c) Reconnect the camshaft position sensor connector.



6. INSPECT CRANKSHAFT POSITION SENSOR

- (a) Remove the sensor connector (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

- (c) Reinstall the sensor.