

IGNITION SYSTEM ON-VEHICLE INSPECTION

IG00U-07

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

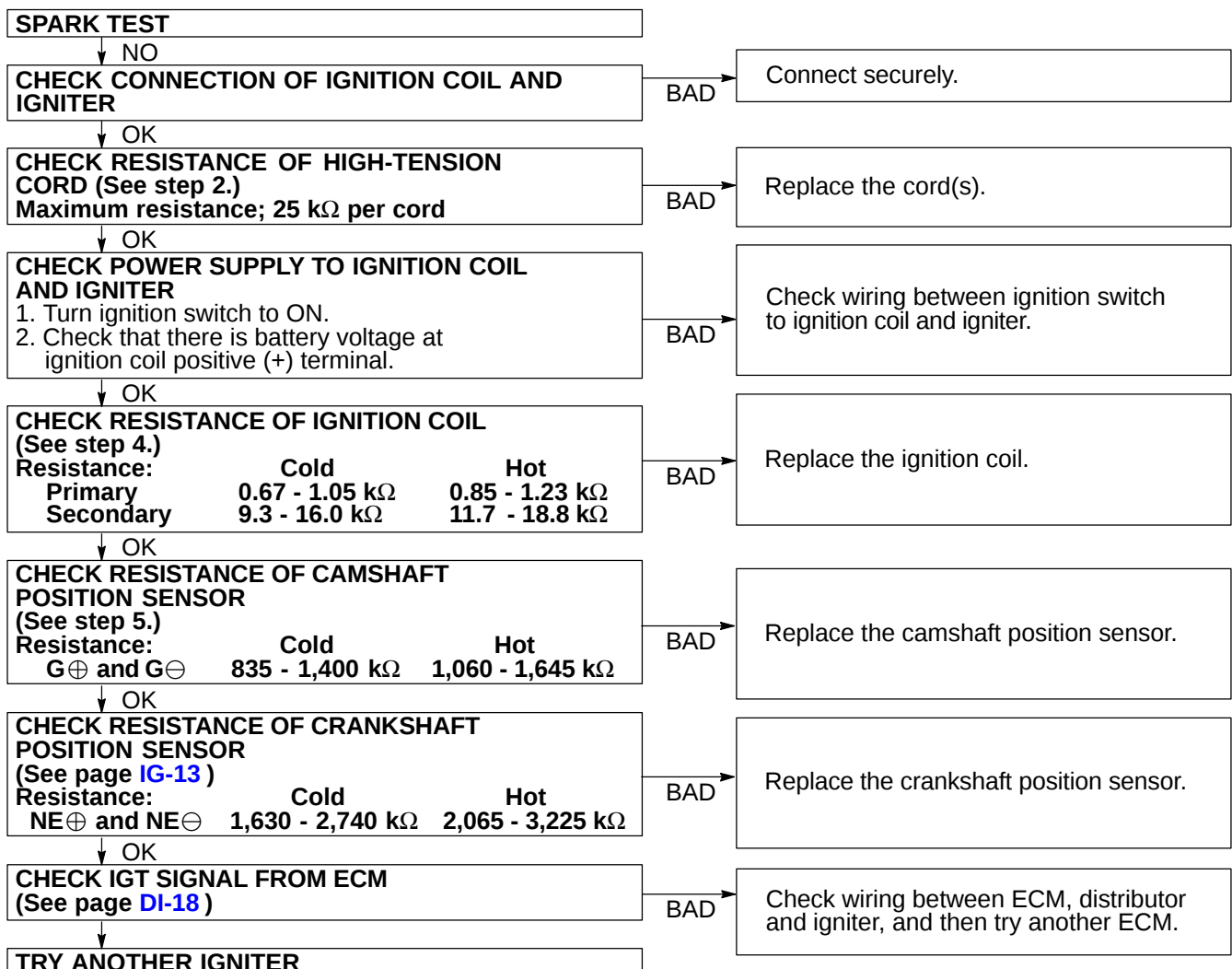
Check that the spark occurs.

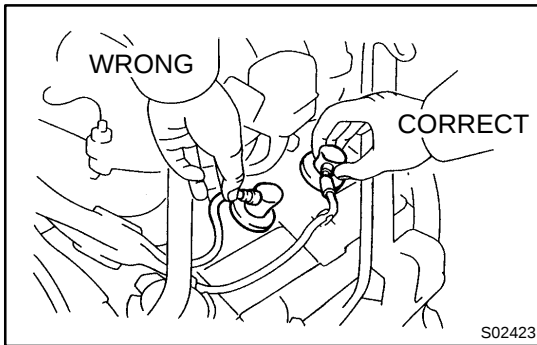
- (1) Disconnect high-tension cords from spark plug.
- (2) Remove the spark plug.
- (3) Install the spark plug to each high-tension cord.
- (4) Ground the spark plug.
- (5) Check if spark occurs while engine is being cranked.

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:



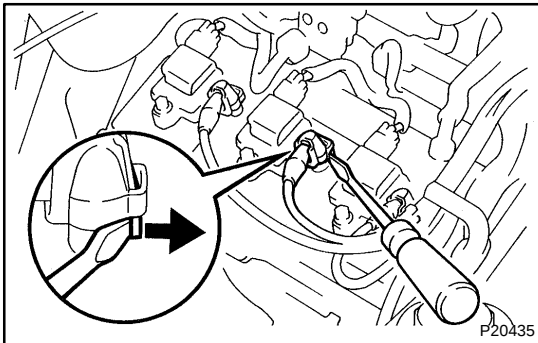


2. INSPECT HIGH-TENSION CORDS

- (a) Remove the air cleaner cap and MAF meter assembly.
- (b) Disconnect the high-tension cords from the spark plugs. 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.

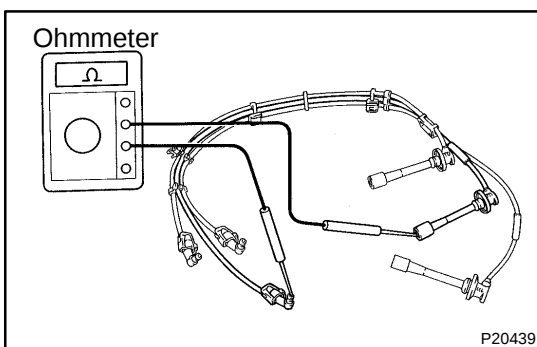


- (c) Disconnect the high-tension cords from the ignition coils.
 - (1) Using a screwdriver, lift up the lock claw and disconnect the holder from the ignition coils.
 - (2) Disconnect the high-tension cord at the grommet.

DO NOT pull on the cord.

NOTICE:

- **Pulling on or bending the cords may damage the conductor inside.**
- **Do not wipe any of the oil from the grommet after the high-tension cord is disconnected.**

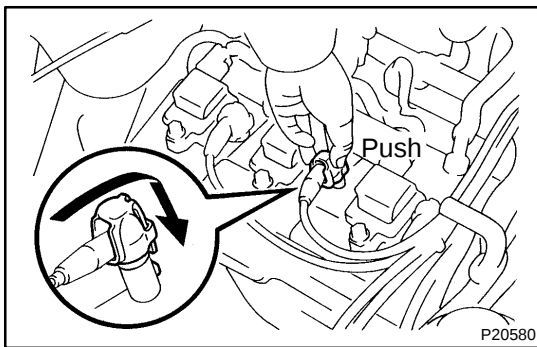
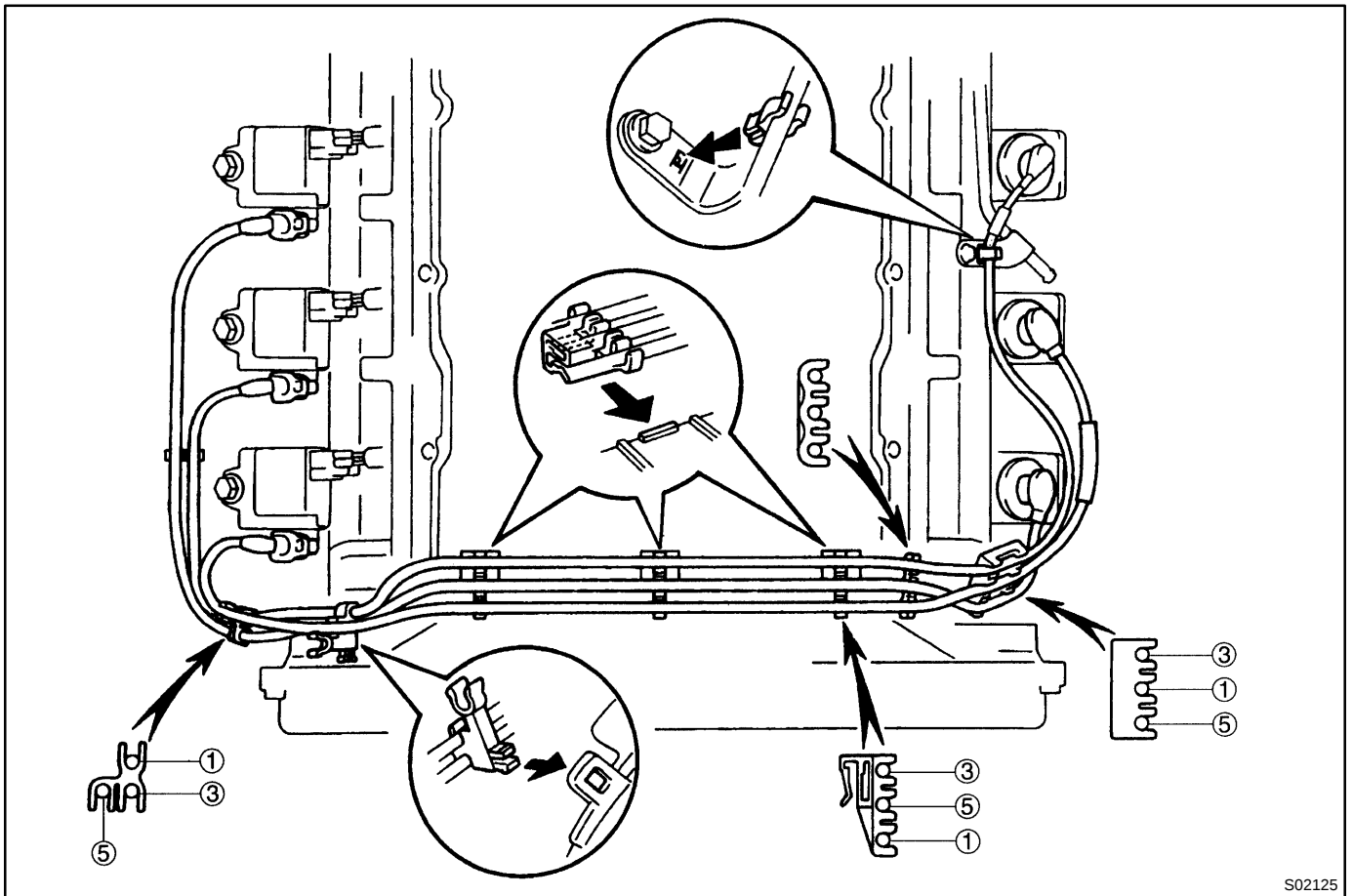


- (d) Using an ohmmeter, measure the resistance.

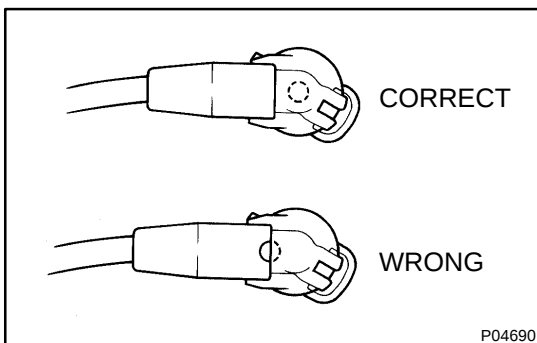
Maximum resistance: 25 kΩ per cord

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

(e) Connect the high-tension cords to the ignition coils.



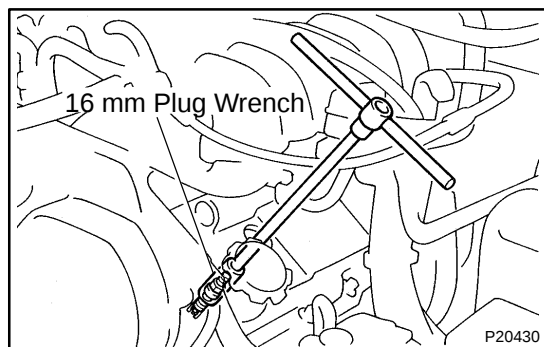
- (1) Assemble the holder and grommet.
- (2) Align the spline of the ignition coil with the spline of the holder, and push in the cord.



NOTICE:

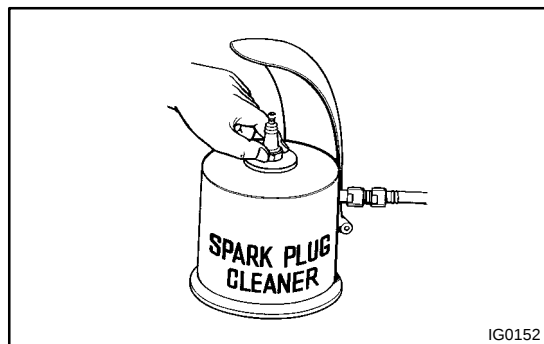
Check that the holder is correctly installed to the grommet and distributor cap as shown in the illustration.

- (3) Check that the lock claw of the holder is engaged by lightly pulling the holder.
- (f) Connect the high-tension cords to the spark plugs.
- (g) Install the air cleaner cap and MAF meter assembly.



3. INSPECT SPARK PLUGS

- (a) Disconnect the high-tension cords from the spark plugs. (See step 2)
- (b) Remove the ignition coils. (See page [IG-7](#))
- (c) Using a 16 mm plug wrench, remove the 6 spark plugs from the RH and LH cylinder heads.



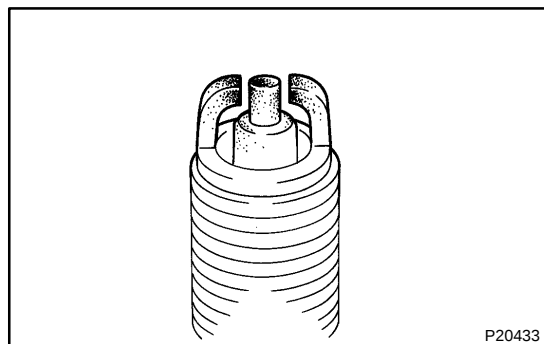
- (d) If the electrode has traces of wet carbon, allow it to dry and then clean with a spark plug cleaner.

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.

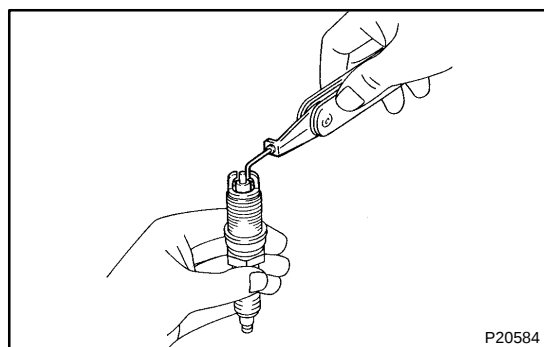


- (e) Check the spark plug for thread damage and insulator damage.

If abnormal, replace the spark plug.

Recommended spark plug:

DENSO made	K16TR11
NGK made	BKR5EKB-11



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

Correct electrode gap: 1.1 mm (0.043 in.)

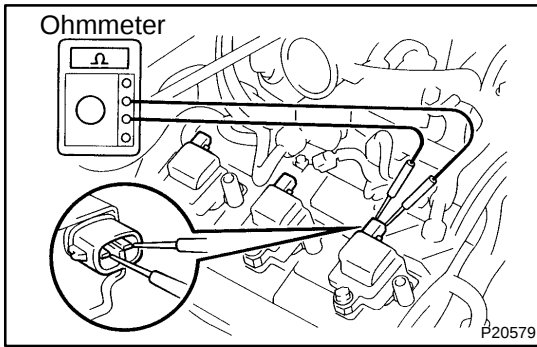
- (g) Using a 16 mm plug wrench, install the spark plug.

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

- (h) Install the ignition coils. (See page [IG-7](#))
- (i) Connect the high-tension cords. (See step 2)

4. INSPECT IGNITION COIL

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



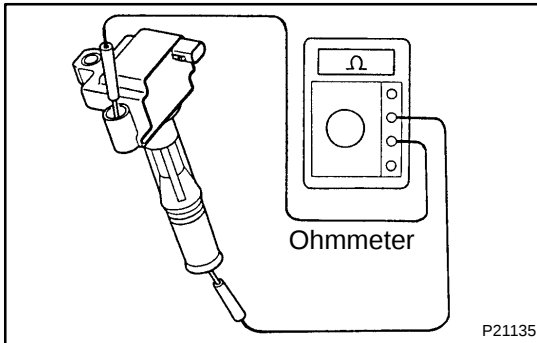
- (c) Using an ohmmeter, measure the resistance between the positive (+) and negative (-) terminals.

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.



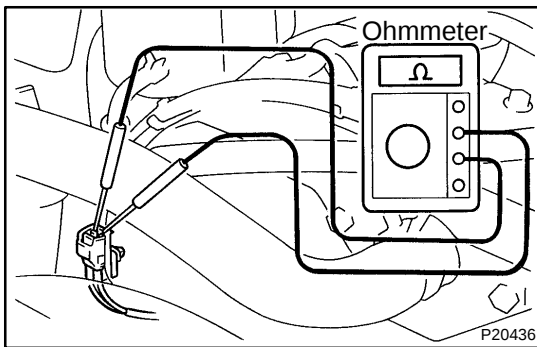
- (e) Using an ohmmeter, measure the resistance between the positive (+) and high-tension terminals.

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) Install the ignition coils.
 (g) Connect the ignition coil connectors and high-tension cords.
 (h) Install the air cleaner hose.



5. INSPECTION CAMSHAFT POSITION SENSOR

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

Resistance:

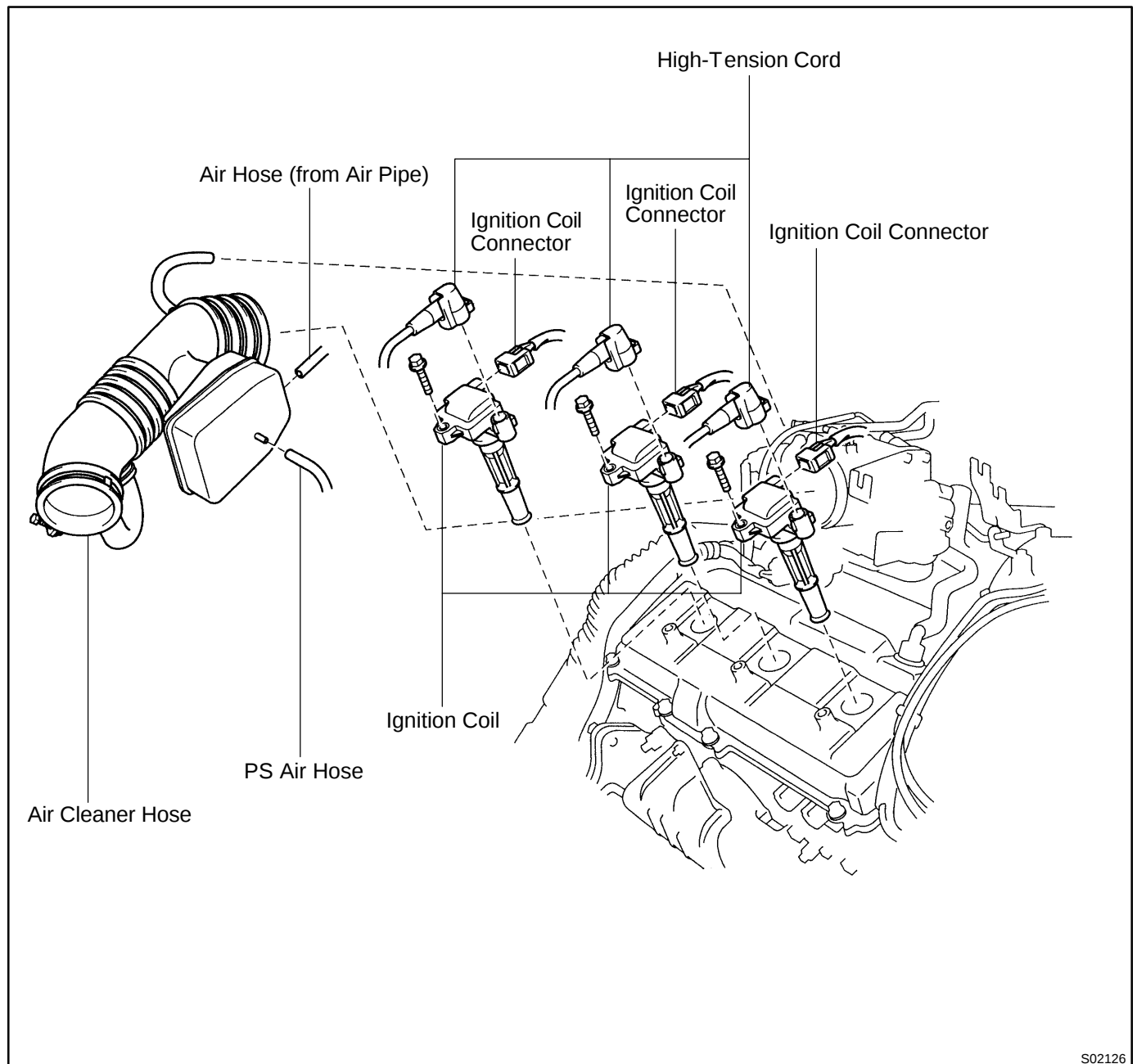
Cold	835 - 1,400 Ω
Hot	1,060 - 1,645 Ω

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

- (c) Connect the camshaft position sensor connector.

IGNITION COIL COMPONENTS

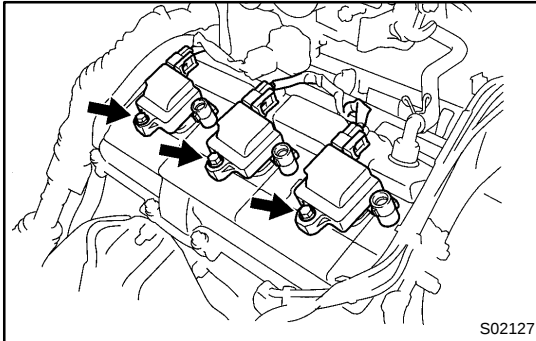
IG00V-02



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REMOVAL

1. REMOVE AIR CLEANER HOSE
2. DISCONNECT HIGH-TENSION CORDS FROM IGNITION COILS (See page [IG-1](#))

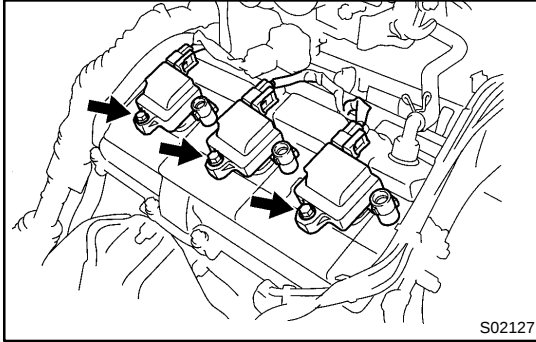


3. REMOVE IGNITION COILS

- (a) Disconnect the 3 connectors from the ignition coils.
- (b) Remove the 3 bolts and 3 ignition coils from the LH cylinder head.

HINT:

Arrange the ignition coils in correct order.



INSTALLATION

1. INSTALL IGNITION COILS

- (a) Install the 3 ignition coil to LH cylinder head with 3 bolts.

Torque: 7.8 N·m (80 kgf·cm, 69 in·lbf)

- (b) Connect the 3 connector to the ignition coil.

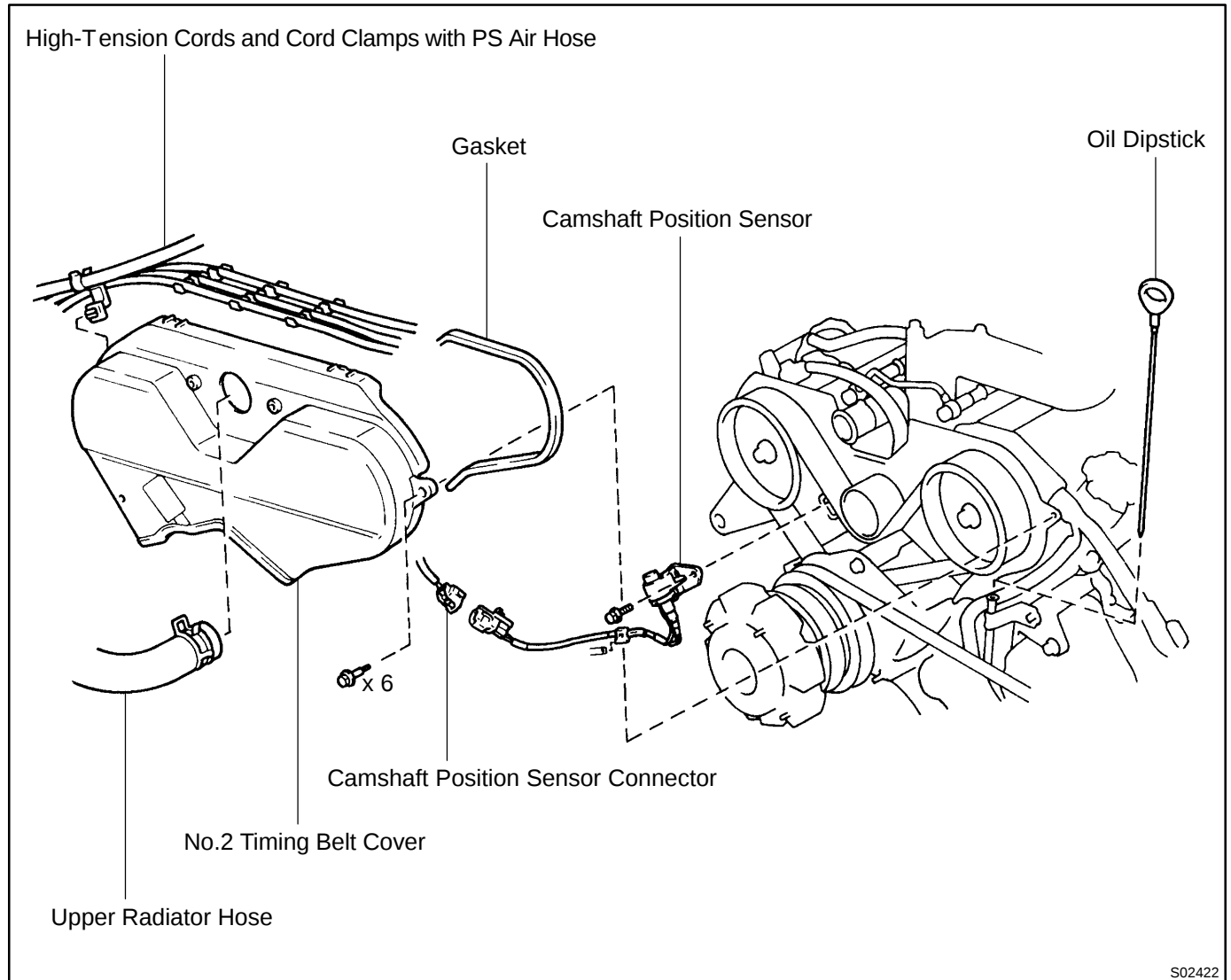
2. CONNECT HIGH-TENSION CORDS TO IGNITER

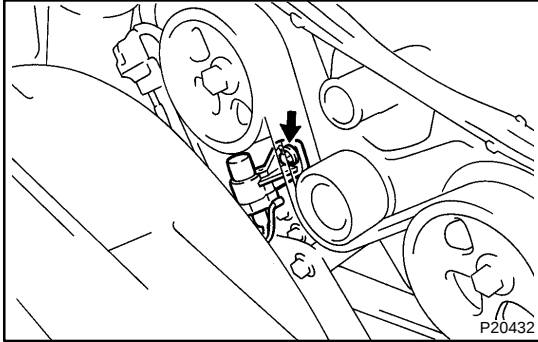
(See page [IG-1](#))

3. INSTALL AIR CLEANER HOSE

CAMSHAFT POSITION SENSOR COMPONENTS

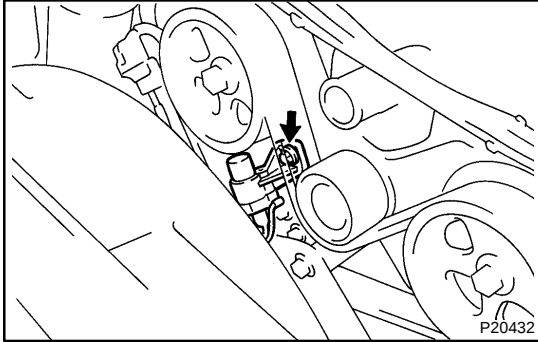
IG00Y-03





REMOVAL

1. **REMOVE NO.2 TIMING BELT COVER**
(See page [EM-13](#))
2. **REMOVE CAMSHAFT POSITION SENSOR**
 - (a) Disconnect the camshaft position sensor connector.
 - (b) Remove the bolts and camshaft position sensor.
 - (c) Disconnect the cord clamp from the No.3 timing belt cover.



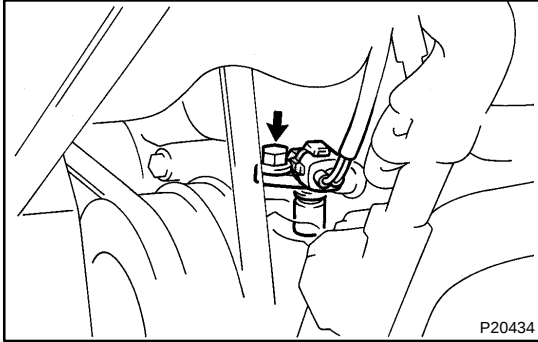
INSTALLATION

1. INSTALL CAMSHAFT POSITION SENSOR

- (a) Connect the cord clamp to the timing belt cover.
- (b) Install the camshaft position sensor with bolt.
Torque: 7.8 N·m (80 kgf·cm, 69 in·lbf)
- (c) Connect the camshaft position sensor connector.

2. INSTALL NO.2 TIMING BELT COVER

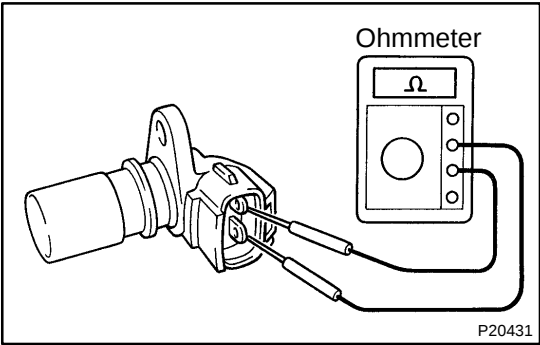
(See page [EM-19](#))



CRANKSHAFT POSITION SENSOR REMOVAL

IG011-03

1. REMOVE ENGINE UNDER COVER
2. REMOVE CRANKSHAFT POSITION SENSOR
 - (a) Disconnect the crankshaft position sensor connector.
 - (b) Remove the bolt crankshaft position sensor.



INSPECTION

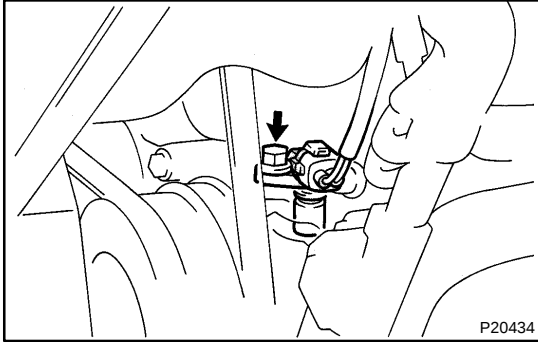
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INSPECT CRANKSHAFT POSITION SENSOR RESISTANCE
Using an ohmmeter, measure the resistance between terminals.

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.



INSTALLATION

1. INSTALL CRANKSHAFT POSITION SENSOR

- (a) Install the crankshaft position sensor with bolt.

Torque: 7.8 N·m (80 kgf·cm, 69 in·lbf)

- (b) Connect the crankshaft position sensor connector.

2. INSTALL ENGINE UNDER COVER