

IGNITION SYSTEM ON-VEHICLE INSPECTION

IG0FA-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 IGNITION COIL (WITH IGNITER) AND SPARK TEST

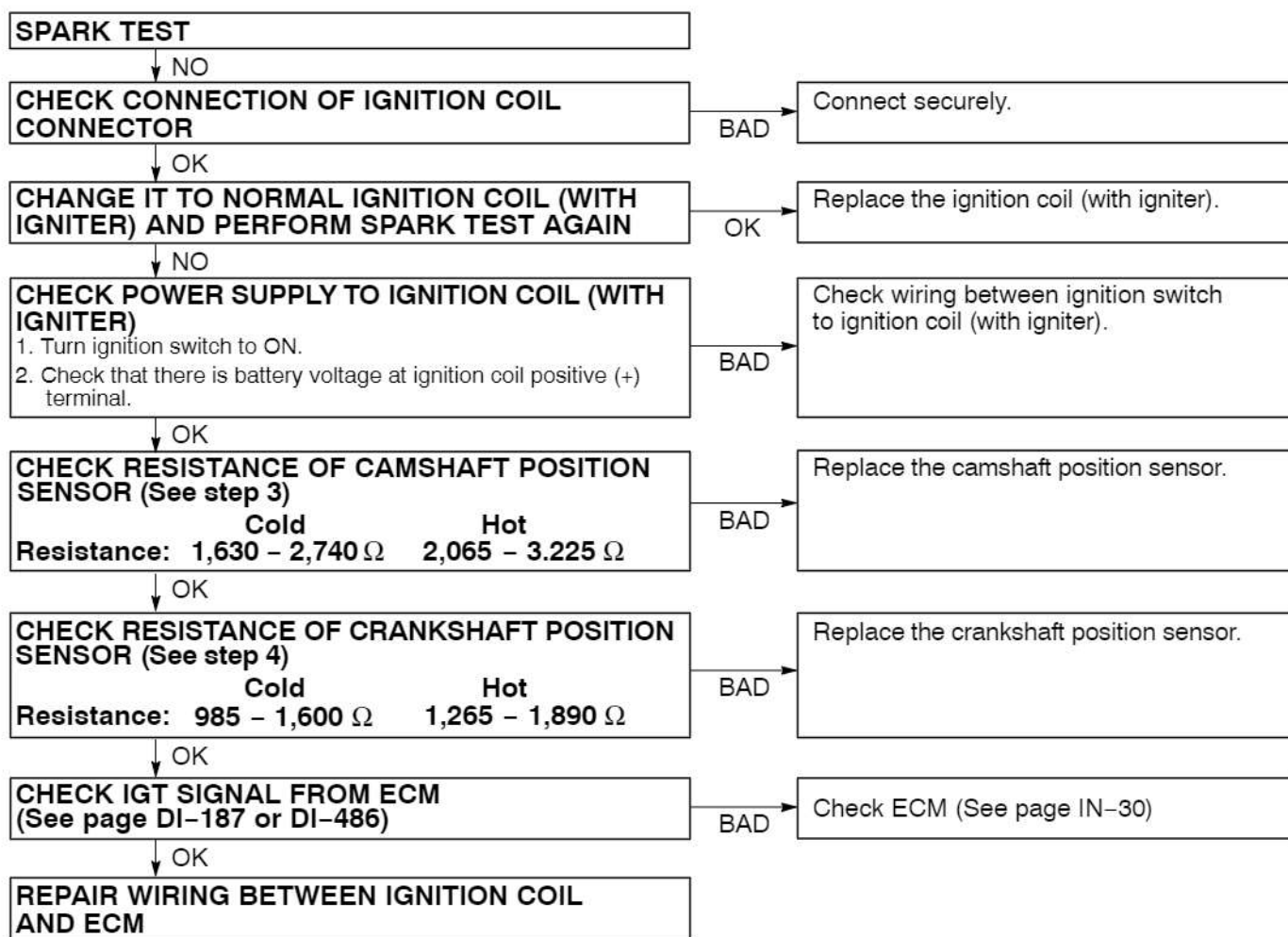
Check that the spark occurs.

- (1) Remove the ignition coils (with igniter).
(See page IG-6)
- (2) Using a 16 mm (0.63 in.) plug wrench, remove the spark plugs.
- (3) Install the spark plugs to each ignition coils (with igniter), and connect the ignition coil connectors.
- (4) Disconnect the 4 injector connectors.
- (5) Ground the spark plugs.
- (6) Check 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:



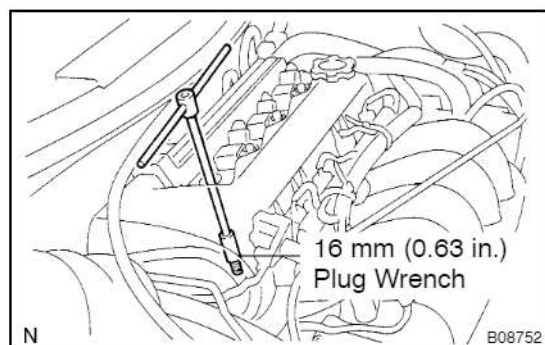
- (7) Using a 16 mm (0.63 in.) plug wrench, install the spark plugs.

Torque: 18 N·m (184 kgf·cm, 13 ft·lbf)

- (8) Install the ignition coils (with igniter).
(See page IG-7)

2. INSPECT SPARK PLUGS

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



- (b) Using a 16 mm (0.63 in.) plug wrench, remove the spark plugs.



(c) Clean the spark plugs.

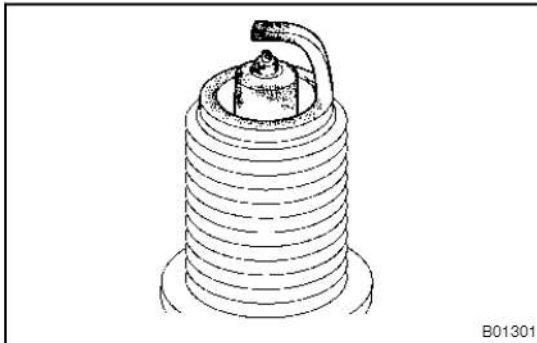
If the electrode has traces of wet carbon, allow it to dry and then clean with a spark plug cleaner.

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.



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

If abnormal, replace the spark plug.

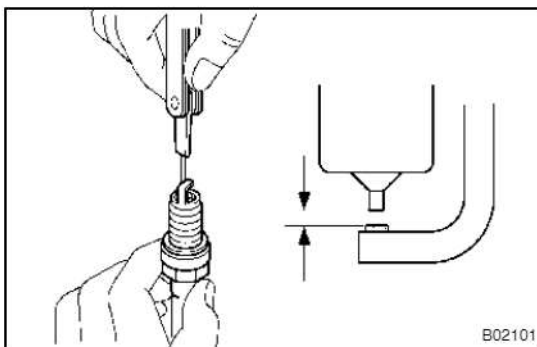
Recommended spark plug:

1ZZ-FE:

DENSO made	SK16R11
NGK made	IFR5A11

2ZZ-GE:

DENSO made	SK20R11
NGK made	IFR6A11



(e) Adjust electrode gap.

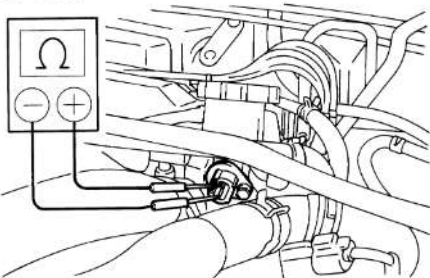
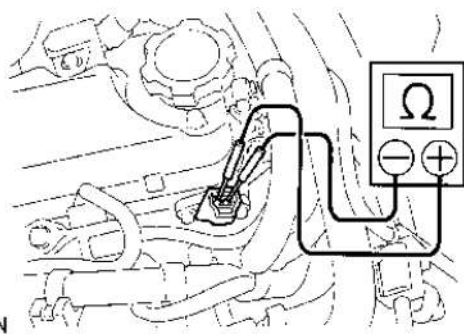
Carefully bend the outer electrode to obtain the correct electrode gap.

Electrode gap: 1.1 mm (0.043 in.)

(f) Using a 16 mm (0.63 in.) plug wrench, install the spark plugs.

Torque: 18 N·m (184 kgf·cm, 13 ft·lbf)

(g) Install the ignition coils (with igniter).
(See page IG-7)

1ZZ-FE:**2ZZ-GE:**

B08754

3. INSPECT CAMSHAFT POSITION SENSOR

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

Resistance:

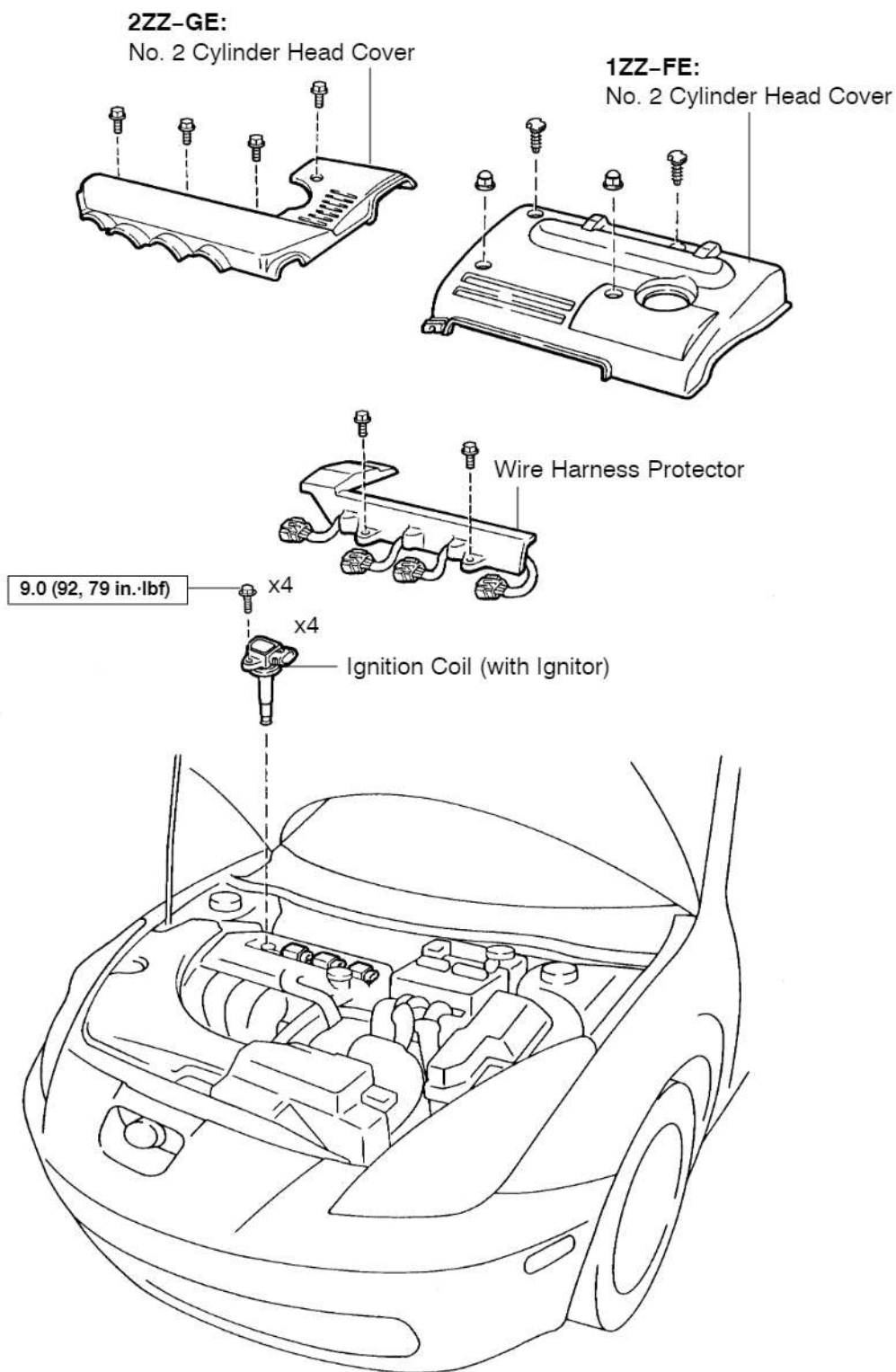
Cold	835 - 1,400 Ω
Hot	1,060 - 1,645 Ω

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

- (c) Connect the camshaft position sensor connector.

IGNITION COIL COMPONENTS

IG080-19

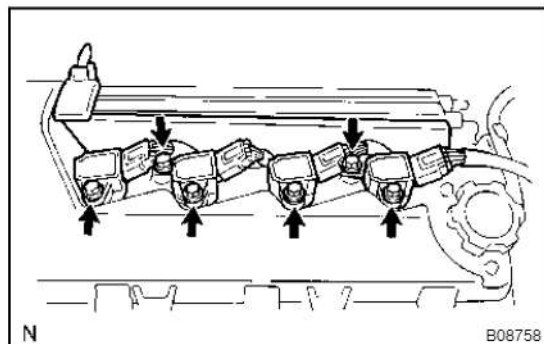


N N·m (kgf·cm, ft·lbf) : Specified torque

B08757

REMOVAL

1. REMOVE NO. 2 CYLINDER HEAD COVER



2. REMOVE IGNITION COILS (WITH IGNITER) FROM SPARK PLUGS

- (a) Remove the 2 bolts and disconnect the wire harness protector.
- (b) Disconnect the 4 ignition coil connectors.
- (c) Remove the 4 bolts and pull out the 4 ignition coils (with igniter).

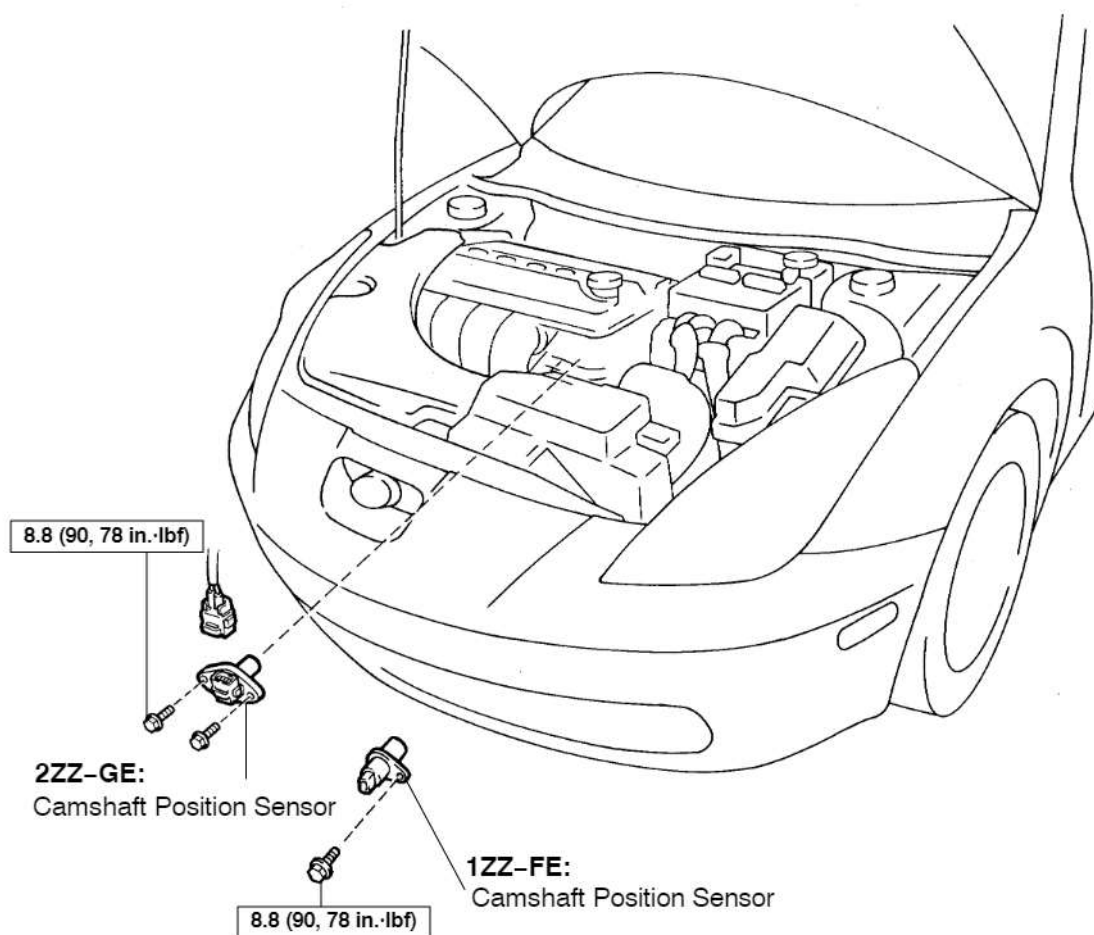
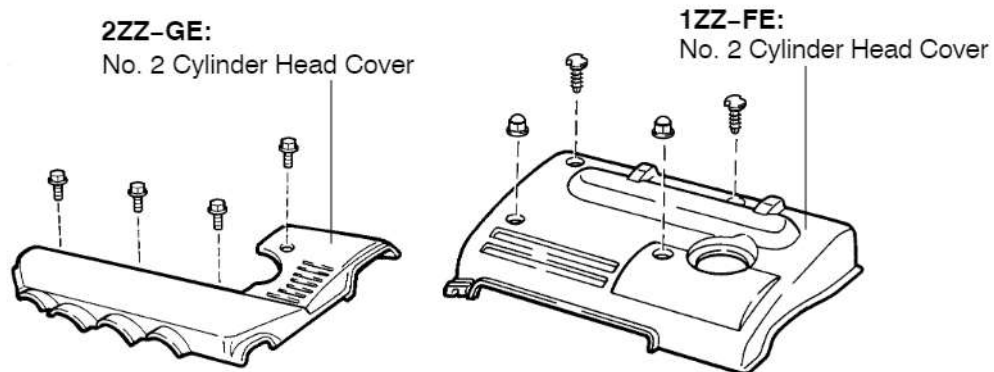
Torque: 9.0 N·m (92 kgf·cm, 79 in.·lbf)

INSTALLATION

Installation is in the reverse order of removal (See page IG-6).

CAMSHAFT POSITION SENSOR COMPONENTS

IG08R-18



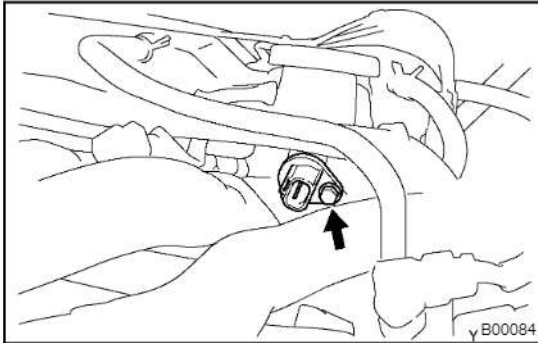
N·m (kgf·cm, ft·lbf) : Specified torque

N

B08759

REMOVAL

1. REMOVE NO. 2 CYLINDER HEAD COVER

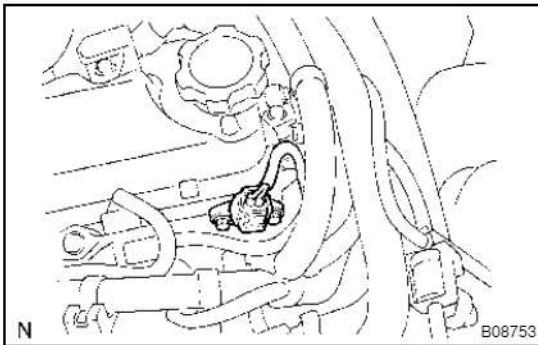


2. 1ZZ-FE:

REMOVE CAMSHAFT POSITION SENSOR

- (a) Disconnect the connector.
- (b) Remove the bolt and camshaft position sensor.

Torque: 8.8 N·m (90 kgf·cm, 78 in·lbf)



3. 2ZZ-GE:

REMOVE CAMSHAFT POSITION SENSOR

- (a) Disconnect the connector.
- (b) Remove the 2 bolts and camshaft position sensor.

Torque: 8.8 N·m (90 kgf·cm, 78 in·lbf)

INSTALLATION

Installation is in the reverse order of removal (See page IG-9).

IGOF8-03

Upper Front Fender Apron Seal

Upper Radiator Support Seal

No. 2 Cylinder Head Cover

VSV for EVAP

MAF Sensor Connector

Air Cleaner Cap

Air Filter

Air Cleaner Case

◆ Gasket

Intake Manifold

Wire Harness Bracket

Engine Wire

Throttle Position Sensor Connector

◆ Gasket

Throttle Body

IAC Valve Connector

10, 78 in.-lbf

Crankshaft Position Sensor

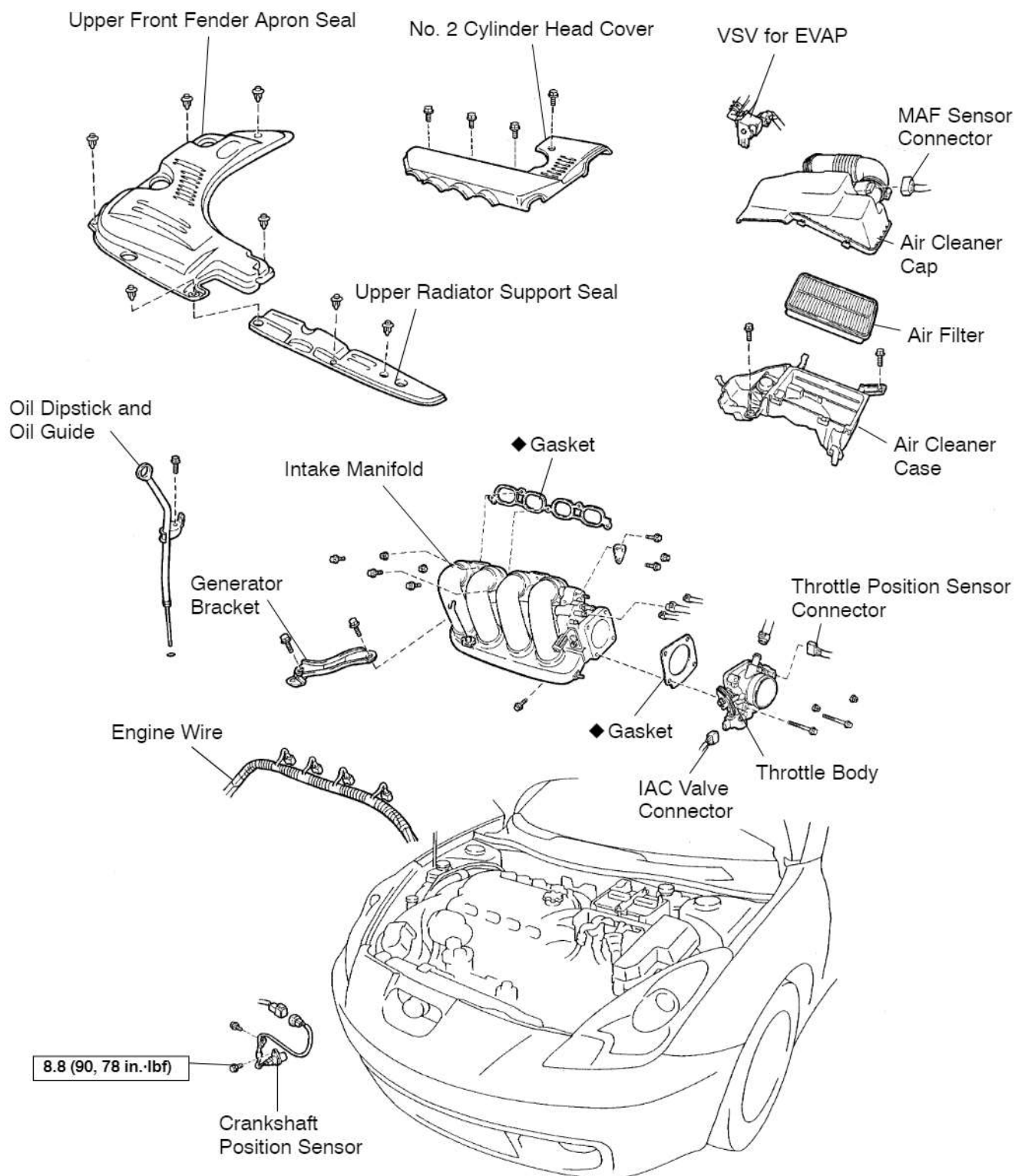
Fig. 1.8L 4-cylinder engine

Crankshaft Position Sensor

N ♦ Non-reusable part

B08804

2ZZ-GE:



N

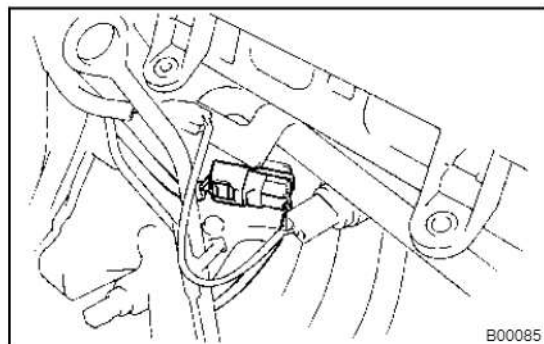
N·m (kgf·cm, ft·lbf) : Specified torque

◆ Non-reusable part

B09366

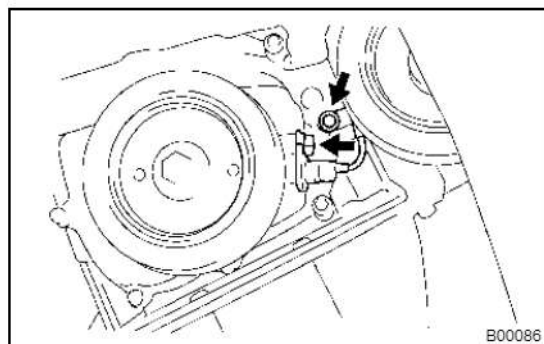
REMOVAL

1. REMOVE INTAKE MANIFOLD (See page EM-44)
2. REMOVE ENGINE UNDER COVER RH

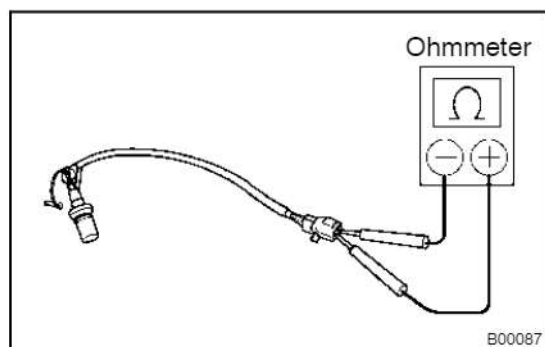


3. REMOVE CRANKSHAFT POSITION SENSOR

- (a) Disconnect the crankshaft position sensor connector.



- (b) Remove the 2 bolt and crankshaft position sensor.
Torque: 8.8 N·m (90 kgf·cm, 78 in.·lbf)



INSPECTION

NOTICE:

"Cold" and "Hot" in these sentences express the temperature of the sensor itself. "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).

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

Installation is in the reverse order of removal (See page IG-13).