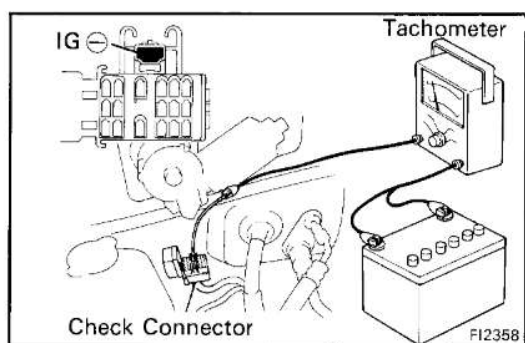


IGNITION SYSTEM

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ON-VEHICLE INSPECTION	IG-5
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PRECAUTIONS

1. Do not leave the ignition switch on for more than 10 minutes if the engine will not start.

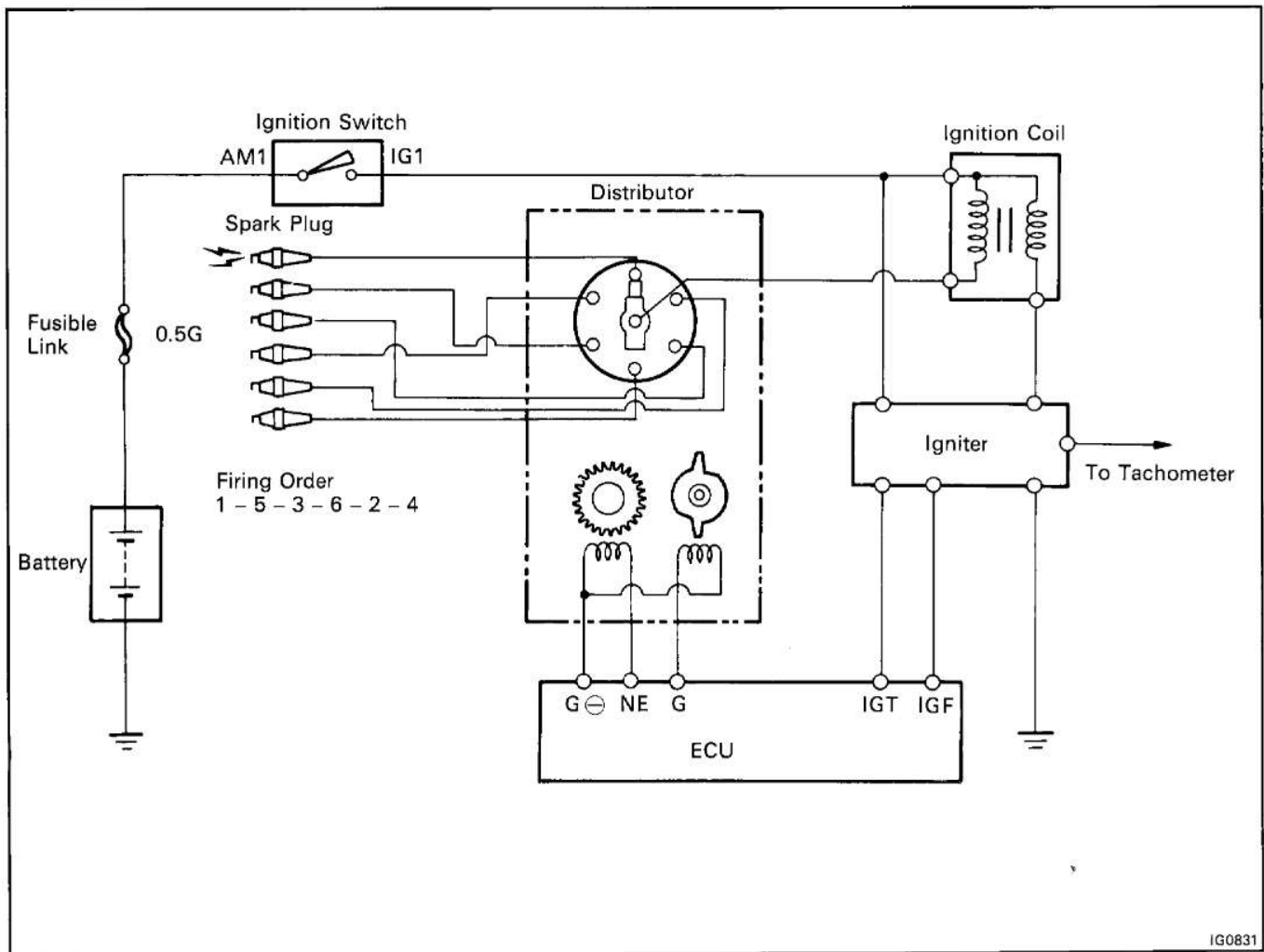


2. When a tachometer is connected to the system, connect the tachometer test probe to terminal IG ⊖ of the check connector.
3. As some tachometers are not compatible with this ignition system, we recommend that you confirm the compatibility of your unit before using.
4. NEVER allow the tachometer terminals to touch ground as this could damage the igniter and/or ignition coil.
5. Do not disconnect the battery when the engine is running.
6. Make sure that the igniter is properly grounded to the body.

TROUBLESHOOTING

Problem	Possible cause	Remedy	Page
Engine will not start/ hard to start (cranks ok)	Incorrect ignition timing Ignition problems • Ignition coil • Igniter • Distributor • High-tension cords Ignition wiring disconnected or broken	Reset timing Inspect coil Inspect igniter Inspect distributor Inspect high-tension cords Inspect wiring	EM-11 IG-7 IG-7 IG-7 IG-6
Rough idle or stalls	Spark plugs faulty Ignition wiring faulty Incorrect ignition timing Ignition problems • Ignition coil • Igniter • Distributor • High-tension cords	Inspect plugs Inspect wiring Reset timing Inspect coil Inspect igniter Inspect distributor Inspect high-tension cords	IG-6 EM-11 IG-7 IG-7 IG-7 IG-6
Engine hesitates/ poor acceleration	Spark plugs faulty Ignition wiring faulty Incorrect ignition timing	Inspect plugs Inspect wiring Reset timing	IG-6 EM-11
Engine dieseling (runs after ignition switch is turned off)	Incorrect ignition timing	Reset timing	EM-11
Muffler explosion (after fire) all the time	Incorrect ignition timing	Reset timing	EM-11
Engine backfires	Incorrect ignition timing	Reset timing	EM-11
Poor gasoline mileage	Spark plugs faulty Incorrect ignition timing	Inspect plugs Reset timing	IG-6 EM-11
Engine overheats	Incorrect ignition timing	Reset timing	EM-11

IGNITION SYSTEM CIRCUIT



IG0831

ELECTRONIC SPARK ADVANCE (ESA)

The ECU is programmed with data for optimum ignition timing under any and all operating conditions. Using data provided by sensors which monitor various engine functions (rpm, intake air volume, eng. temperature, etc.) the microcomputer (ECU) triggers the spark at precisely the right instant.

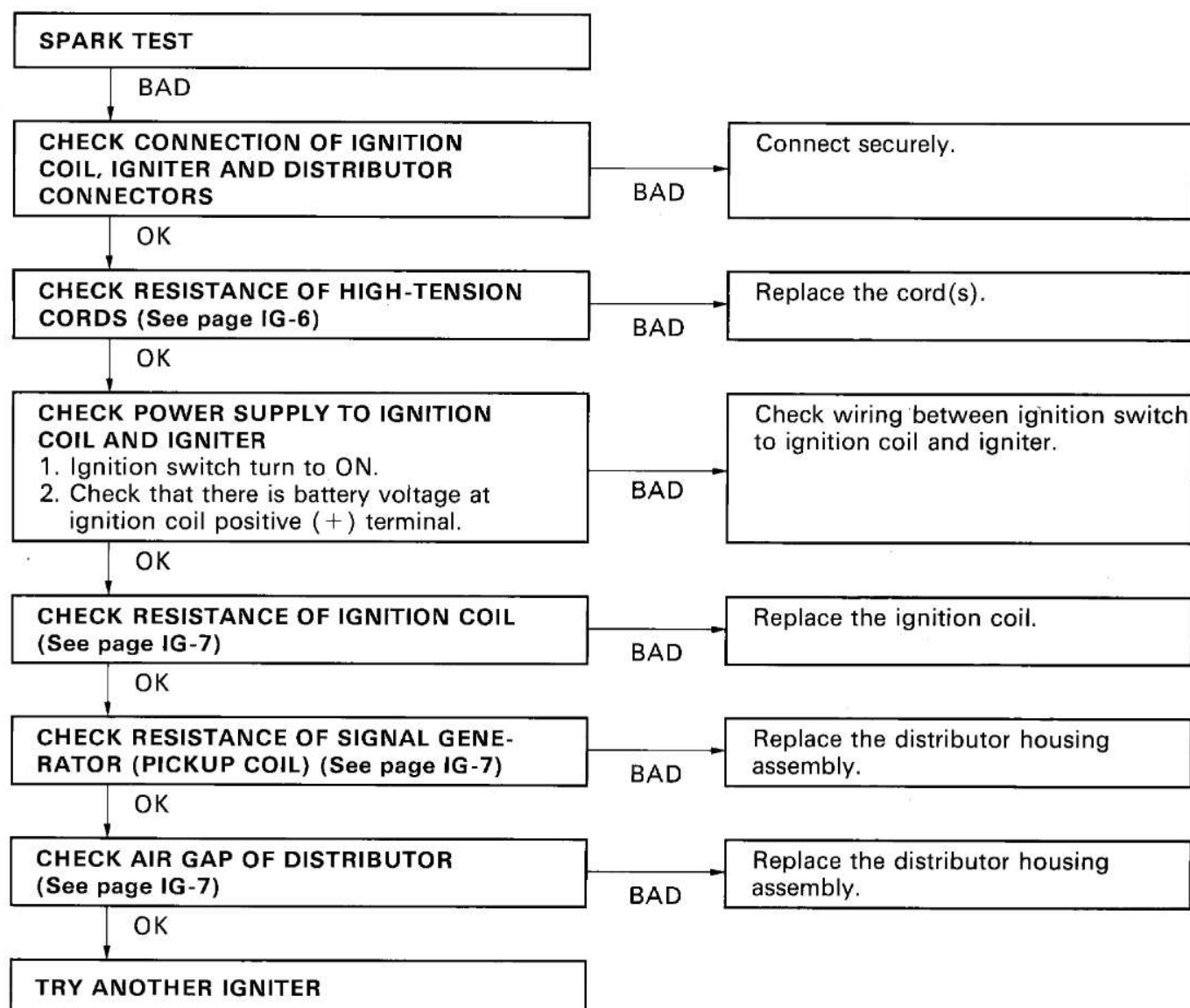
ON-VEHICLE INSPECTION

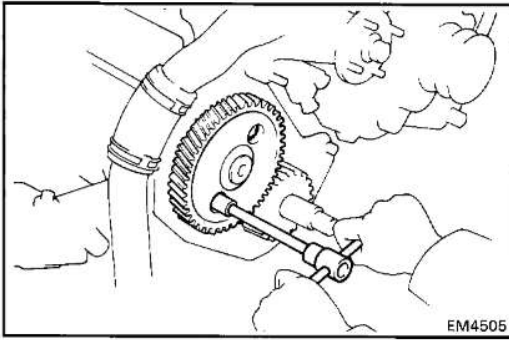
SPARK TEST

CHECK THAT SPARK OCCURS

- (a) Disconnect high-tension cord from distributor.
 - (b) Hold the end approx. 12.5 mm (0.50 in.) from body of vehicle.
 - (c) See if spark occurs while engine is being cranked.
- HINT: To prevent gasoline from being injected from injectors during this test, crank the engine for no more than 1-2 seconds at a time.

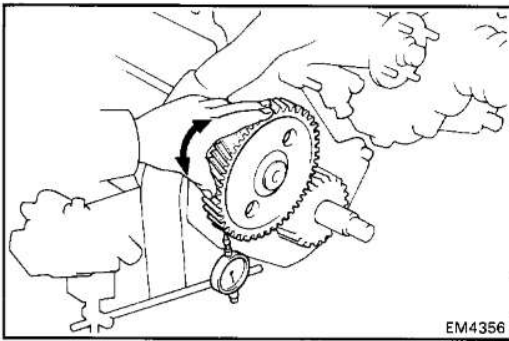
If the spark does not occur, perform the test as follows:





- (d) Install the two bolts mounting the thrust washer to the cylinder block. Torque the bolts.

Torque: 120 kg-cm (9 ft-lb, 12 N·m)

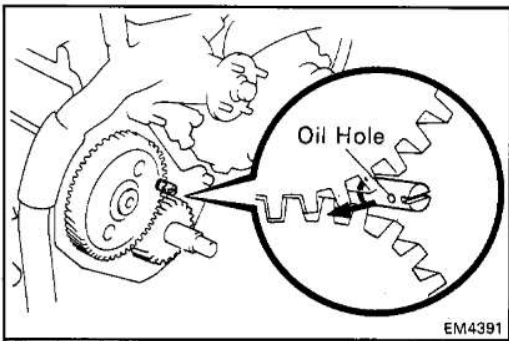


3. CHECK TIMING GEAR BACKLASH

Using a dial indicator, measure the backlash at several places while turning the camshaft clockwise and counterclockwise.

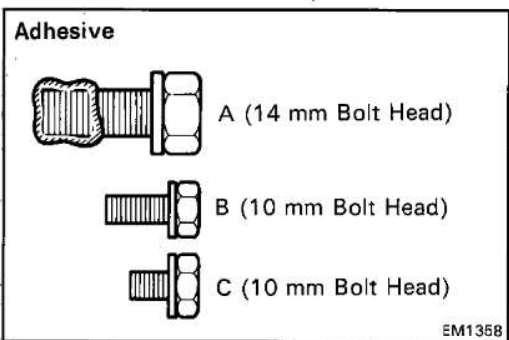
**Standard backlash: 0.100 – 0.183 mm
(0.0039 – 0.0072 in.)**

Maximum backlash: 0.25 mm (0.0098 in.)



4. INSTALL OIL NOZZLE

- Install and set the oil nozzle in position.
- Using a chisel and hammer, stake the threads of the oil nozzle.

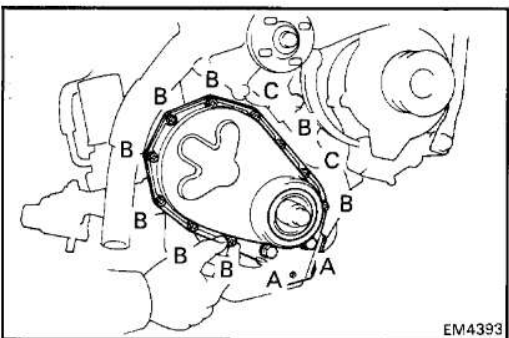


5. INSTALL TIMING GEAR COVER AND CRANKSHAFT PULLEY

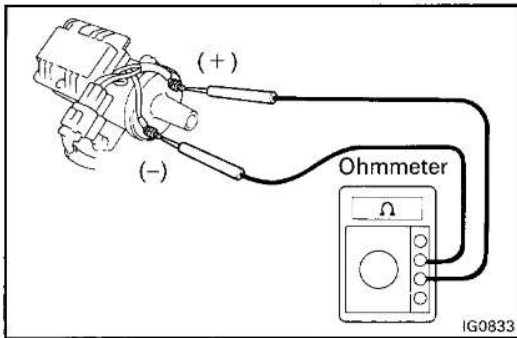
HINT: There are three sizes of timing gear cover bolts indicated A, B and C.

- Apply adhesive to the threads of the two A bolts.

Adhesive: Part No. 08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent



- Install a new gasket and the gear cover with the twelve bolts. Finger tighten all bolts.



INSPECTION OF IGNITION COIL

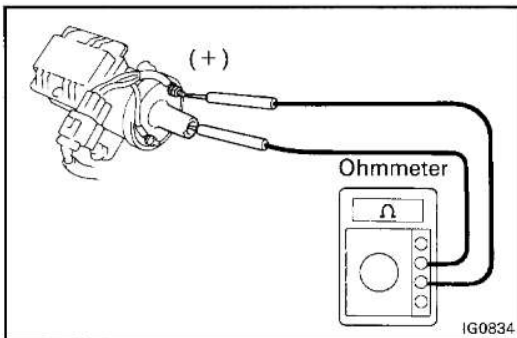
1. DISCONNECT HIGH-TENSION CORD

2. INSPECT PRIMARY COIL RESISTANCE

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

Primary coil resistance (cold): 0.52 – 0.64 Ω

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



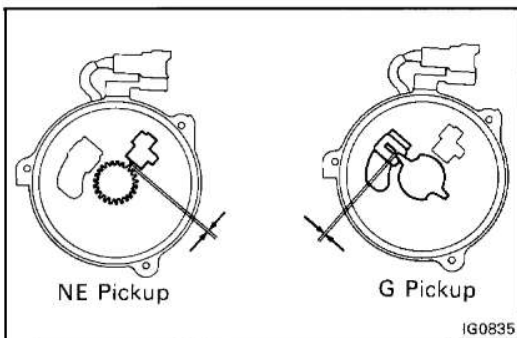
3. INSPECT SECONDARY COIL RESISTANCE

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

Secondary coil resistance (Cold): 11.5 – 15.5 k Ω

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

4. RECONNECT HIGH-TENSION CORD



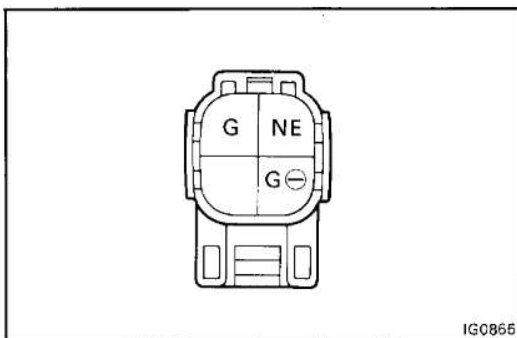
INSPECTION OF DISTRIBUTOR

1. INSPECT AIR GAPS

Using a thickness gauge, measure the gap between the signal rotor and pickup coil projection.

Air gap: 0.2 mm (0.008 in.) or more

If the gap is not as specified, replace the distributor.



2. INSPECT PICKUP COIL RESISTANCES

Using an ohmmeter, measure the resistance between the terminals.

G pickup coil resistance (G – G $\ominus$):

185 – 265 Ω

NE pickup coil resistance (NE – G $\ominus$):

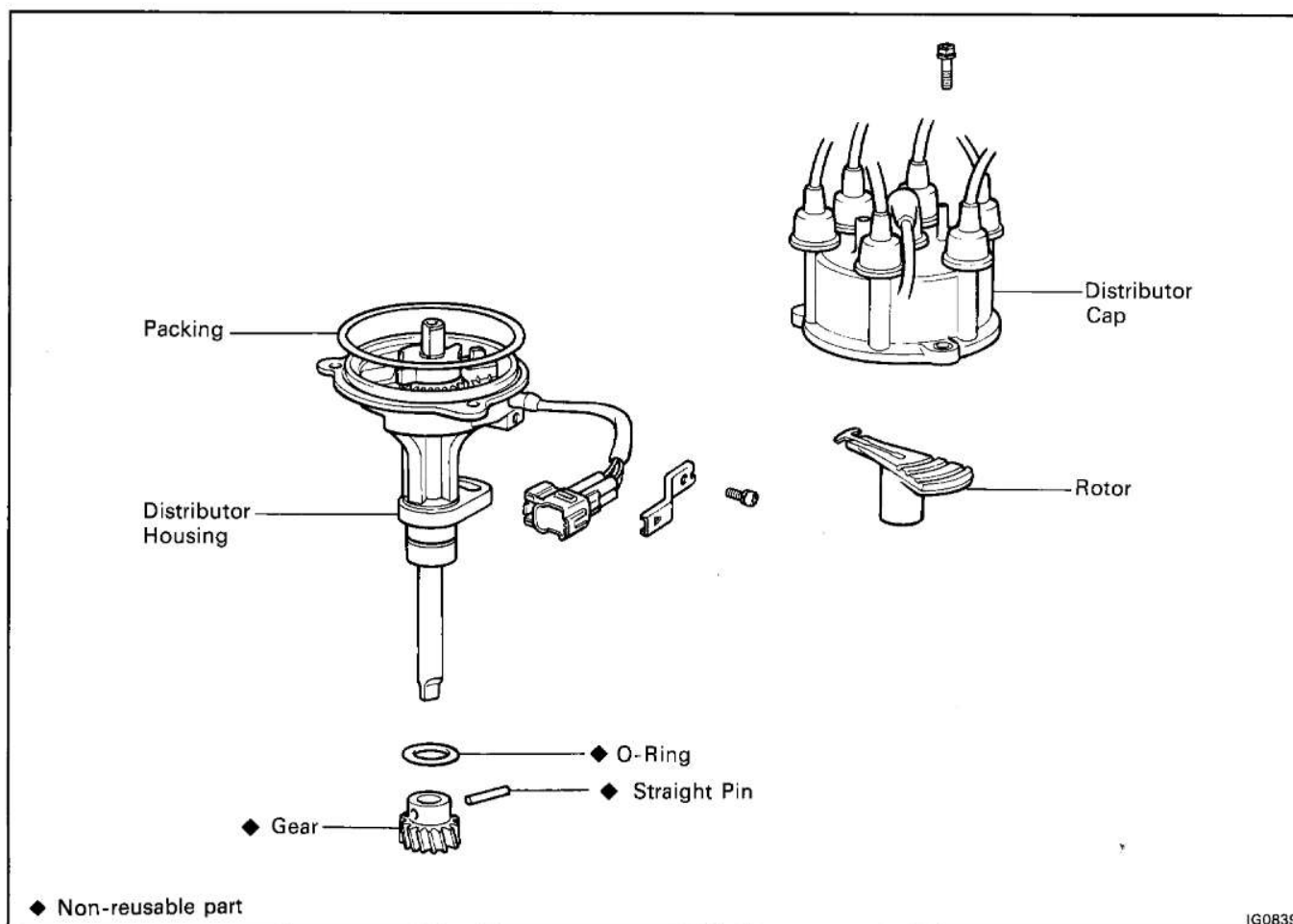
185 – 265 Ω

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

INSPECTION OF IGNITER

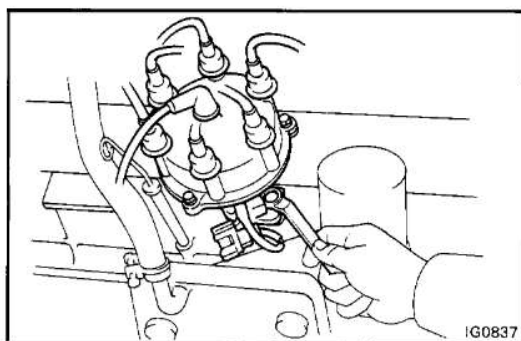
(See procedure Spark Test on page IG-5)

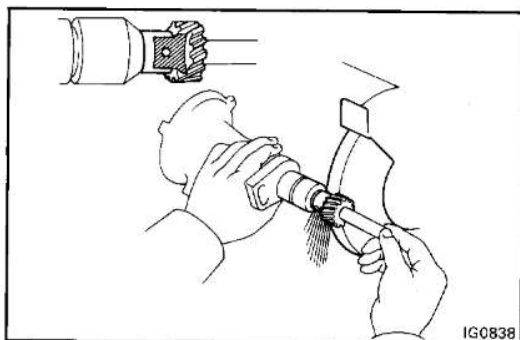
DISTRIBUTOR COMPONENTS



REMOVAL OF DISTRIBUTOR

1. REMOVE AIR CLEANER HOSE
2. DISCONNECT DISTRIBUTOR CONNECTOR
3. DISCONNECT VENTILATION HOSES
4. DISCONNECT HIGH-TENSION CORDS FROM SPARK PLUGS AND IGNITION COIL
5. REMOVE DISTRIBUTOR
Remove the mount bolt and pull out the distributor.
6. REMOVE O-RING FROM DISTRIBUTOR HOUSING



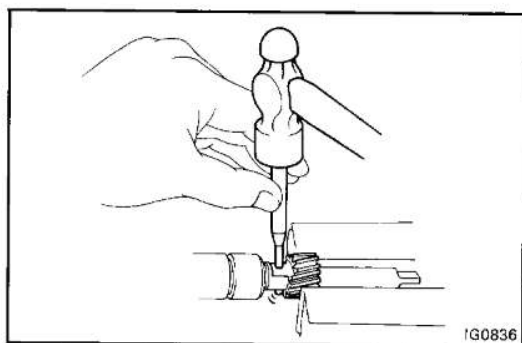


REPLACEMENT OF DISTRIBUTOR DRIVEN GEAR

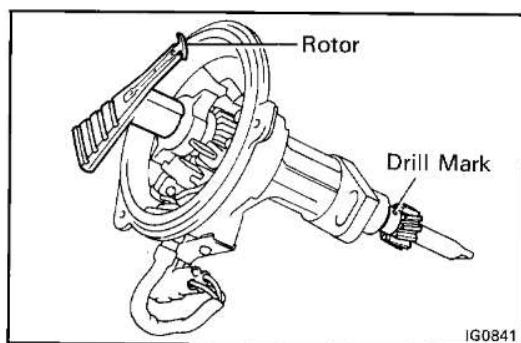
1. REMOVE DRIVEN GEAR

- (a) Using a grinder, grind the driven gear and straight pin.

NOTICE: Be careful not to damage the governor shaft.

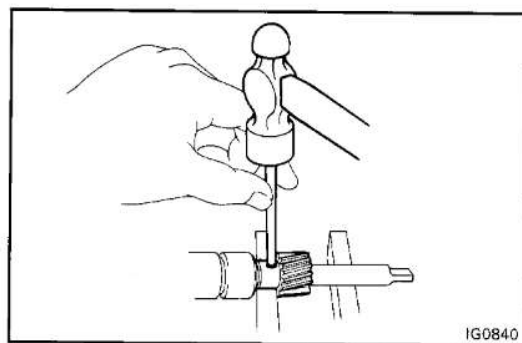


- (b) Mount the driven gear in a vise.
- (c) Using a pin punch and hammer, tap out the straight pin.
- (d) Remove the driven gear.

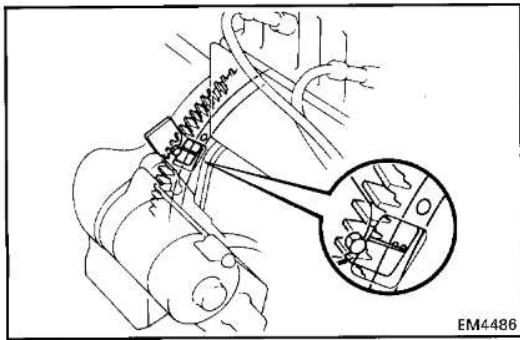


2. INSTALL NEW DRIVEN GEAR

- (a) Slide a new driven gear onto the governor shaft.
- (b) Position the drill mark on the driven gear and rotor as shown.



- (c) Install a new straight pin.
- (d) Secure the ends of the straight pin.

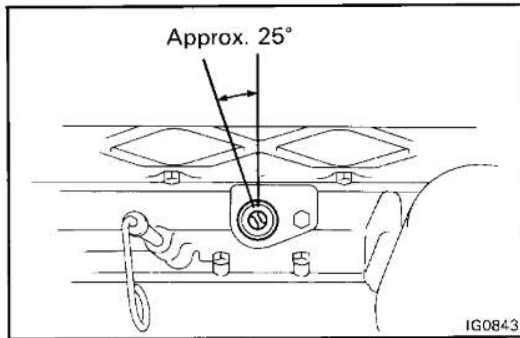


INSTALLATION OF DISTRIBUTOR

1. SET NO. 1 CYLINDER TO TDC/COMPRESSION

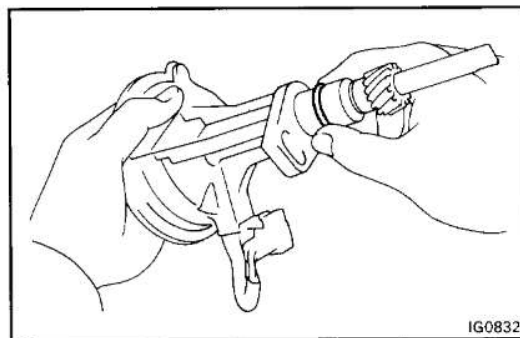
Set to TDC/compression in the following manner.

- Remove the No. 1 spark plug.
- Place your finger over the hole of the No. 1 spark plug and turn the crankshaft clockwise to TDC/compression. If pressure is felt on your finger, this is TDC/compression. If not, repeat the process.
- Install the No. 1 spark plug.



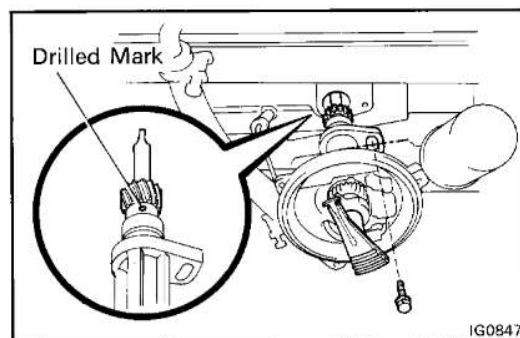
2. SET OIL PUMP SHAFT SLOT

Position the oil pump shaft slot in the direction shown in the illustration.



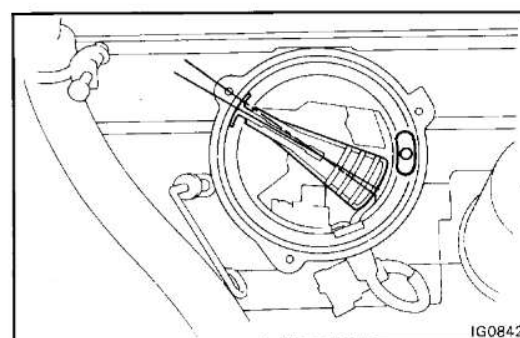
3. INSTALL NEW O-RING

- (a) Install a new O-ring to the housing.
- (b) Apply a light coat of engine oil on the O-ring.



4. INSTALL DISTRIBUTOR

- (a) Insert the distributor, aligning the center of the flange with that of the bolt hole on the cylinder head with drilled mark facing upward.



- (b) When fully installed, the distributor should point as shown in the illustration.
- (c) Lightly tighten the hold-down bolt.

5. INSTALL DISTRIBUTOR CAP WITH HIGH-TENSION CORDS
6. CONNECT HIGH-TENSION CORDS TO SPARK PLUGS

Firing order: 1 – 5 – 3 – 6 – 2 – 4

7. CONNECT VENTILATION HOSES
8. CONNECT DISTRIBUTOR CONNECTOR
9. INSTALL AIR CLEANER HOSE
10. ADJUST IGNITION TIMING (See page EM-11)

Ignition timing: 7° BTDC @ idle

(w/ connected TE1 - E1, Transmission in N position)