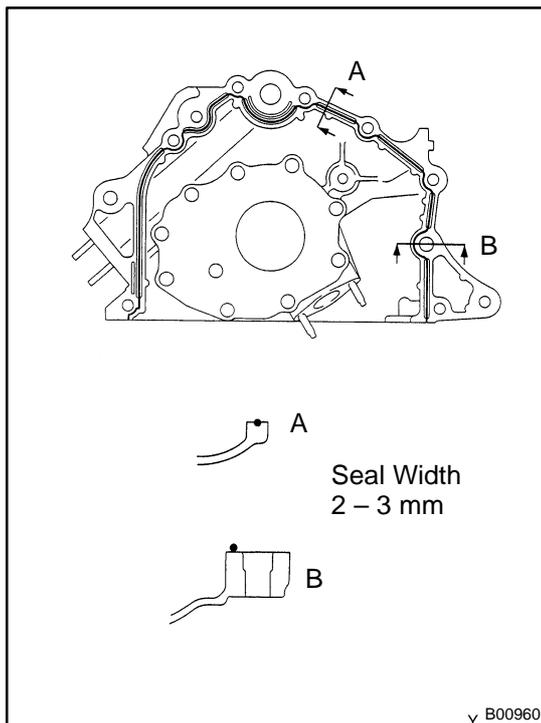


## INSTALLATION

### 1. INSTALL OIL PUMP

- (a) Remove any old packing (FIPG) material and be careful not to drop any oil on the contact surfaces of the oil pump and cylinder block.
- Using a razor blade and gasket scraper, remove all the old packing (FIPG) material from the gasket surfaces and sealing groove.
  - Thoroughly clean all components to remove all the loose material.
  - Using a non-residue solvent, clean both sealing surfaces.



- (b) Apply seal packing to the oil pump as shown in the illustration.

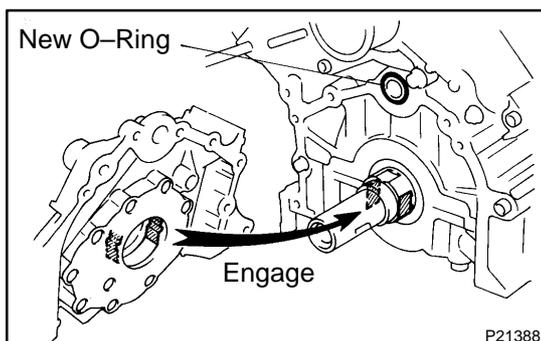
#### Seal packing:

Part No. 08826-00080 or equivalent

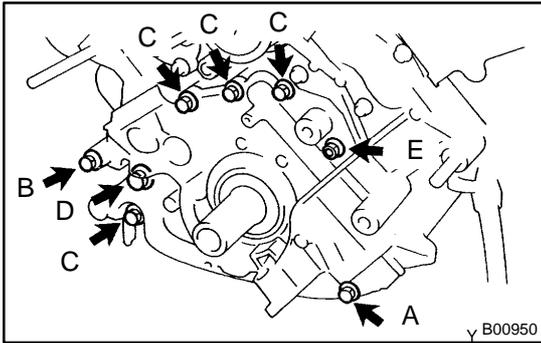
#### NOTICE:

Avoid applying an excessive amount to the surface. Be particularly careful near oil passage.

- Install a nozzle that has been cut to a 2 – 3 mm (0.08 – 0.12 in.) opening.
- Parts must be assembled within 5 minutes of application. Otherwise the material must be removed and reapplied.
- Immediately remove nozzle from the tube and reinstall cap.



- (c) Install a new O-ring to the cylinder block.
- (d) Engage the spline teeth of the oil pump drive gear with the large teeth of the crankshaft, and slide the oil pump on the crankshaft.



(e) Install the oil pump with the 8 bolts. Uniformly tighten the bolts in several passes.

**Torque:**

**12 mm head:**

**15.5 N·m (160 kgf·cm, 11 ft·lbf)**

**14 mm and 6 mm hexagon socket head**

**30.5 N·m (310 kgf·cm, 22 ft·lbf)**

**HINT:**

- Use a 6mm hexagon wrench for the hexagon socket head bolt.
- Each bolt length is indicated in the illustration.

**Bolt length:**

50 mm (1.97 in.) for A of 12 mm head

106 mm (4.17 in.) for B of 12 mm head

30 mm (1.18 in.) for C of 12 mm head

44 mm (1.73 in.) for D of 14 mm head

28 mm (1.10 in.) for E of 6 mm hexagon socket head

**2. INSTALL OIL STRAINER**

Install a new gasket and the oil strainer with the bolt and 2 nuts.

**Torque: 7.5 N·m (80 kgf·cm, 66 in.-lbf)**

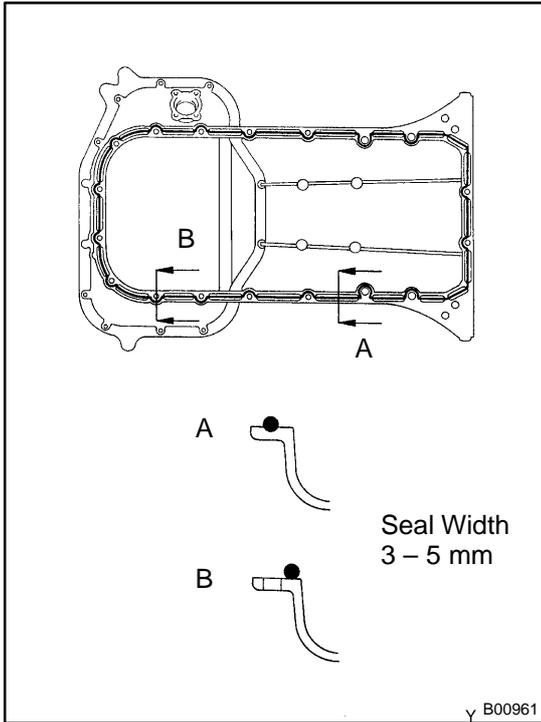
**HINT:**

Use bolt 12 mm (0.47 in.) in length.

**3. INSTALL NO.1 OIL PAN**

(a) Remove any old packing (FIPG) material and be careful not to drop any oil on the contact surfaces of the No.1 oil pan, cylinder block, oil pump and rear oil seal retainer.

- Using a razor blade and gasket scraper, remove all the old packing (FIPG) material from the gasket surfaces and sealing groove.
- Thoroughly clean all components to remove all the loose material.
- Using a non-residue solvent, clean both sealing surfaces.

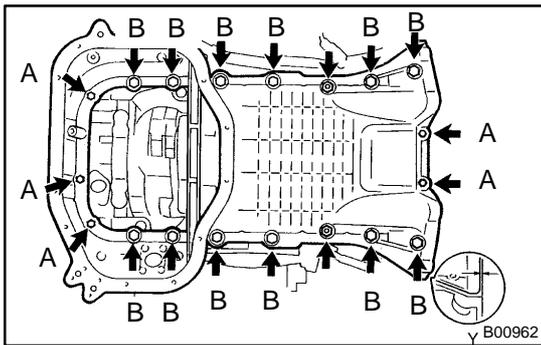


(b) Apply seal packing to the No.1 oil pan as shown in the illustration.

**Seal packing:**

**Part No. 08826-00080 or equivalent**

- Install a nozzle that has been cut to a 3 – 5 mm (0.12 – 0.20 in.) opening.
- Parts must be assembled within 5 minutes of application. Otherwise the material must be removed and reapplied.
- Immediately remove nozzle from the tube and reinstall cap.



(c) Temporarily install the No.1 oil pan with the 17 bolts, stud bolt and 2 nuts.

**HINT:**

Each bolt length is indicated in the illustration.

**Bolt length:**

35 mm (1.38 in.) for A of 10 mm head

56 mm (2.21 in.) for B of 12 mm head

(d) Set the No.1 oil pan as shown in the illustration.

**NOTICE:**

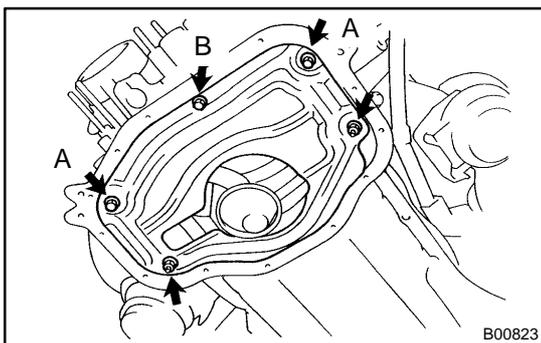
**Make sure the clearance between the rear ends of the No.1 oil pan and cylinder block is 0.2 mm (0.008 in.) or less. If the clearance is more than 0.2 mm (0.008 in.), the No.1 oil pan will be stretched.**

(e) Uniformly tighten the bolts, stud bolts and nuts in several passes.

**Torque:**

**10 mm head: 7.5 N-m (80 kgf-cm, 66 in.-lbf)**

**12 mm head: 28 N-m (290 kgf-cm, 21 ft-lbf)**



**4. INSTALL OIL PAN BAFFLE PLATE**

Install the baffle plate with the 3 bolts and 2 nuts.

**Torque: 7.5 N-m (80 kgf-cm, 66 in.-lbf)**

**HINT:**

Each bolt length is indicated in the illustration.

**Bolt length:**

12 mm (0.47 in.) for A

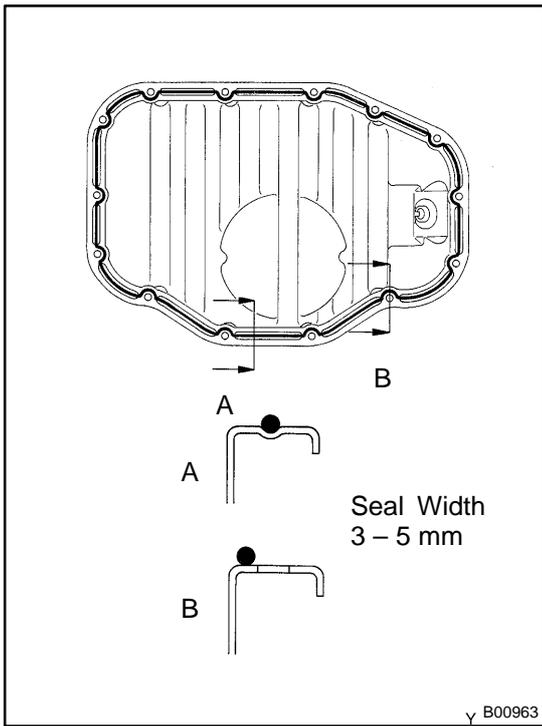
80 mm (3.15 in.) for B

**5. INSTALL NO.2 OIL PAN**

- (a) Remove any old packing (FIPG) material and be careful not to drop any oil on the contact surfaces of the No.1 and No.2 oil pans.
  - Using a razor blade and gasket scraper, remove all the old packing (FIPG) material from the gasket surfaces and sealing groove.
  - Thoroughly clean all components to remove all the loose material.
  - Using a non-residue solvent, clean both sealing surfaces.

**NOTICE:**

**Do not use a solvent which will affect the painted surfaces.**



- (b) Apply seal packing to the No.2 oil pan as shown in the illustration.

**Seal packing:**

**Part No. 08826-00080 or equivalent**

- Install a nozzle that has been cut to a 3 – 5 mm (0.12 – 0.20 in.) opening.
- Parts must be assembled within 5 minutes of application. Otherwise the material must be removed and reapplied.
- Immediately remove nozzle from the tube and reinstall cap.

- (c) Install the No.2 oil pan with the 12 bolts and 2 nuts. Uniformly tighten the bolts and nuts in several passes.

**Torque: 7.5 N·m (80 kgf·cm, 66 in.-lbf)**

**HINT:**

Use bolts 14 mm (0.55 in.) in length.

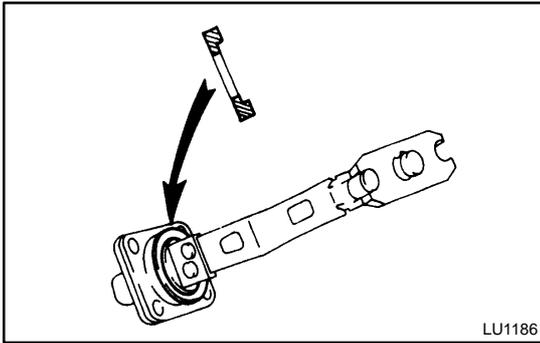
**6. INSTALL CRANKSHAFT POSITION SENSOR**

(See page IG-13)

**7. INSTALL OIL FILTER AND FILTER BRACKET ASSEMBLY**

- (a) Install the a new gasket to the oil filter bracket.
- (b) Install the oil filter and filter bracket assembly with the stud bolt and 2 nuts.

**Torque: 18 N·m (185 kgf·cm, 13 ft-lbf)**



### 8. INSTALL OIL LEVEL SENSOR

- (a) Install a new gasket to the level sensor.

**NOTICE:**

**Be careful of the installation direction.**

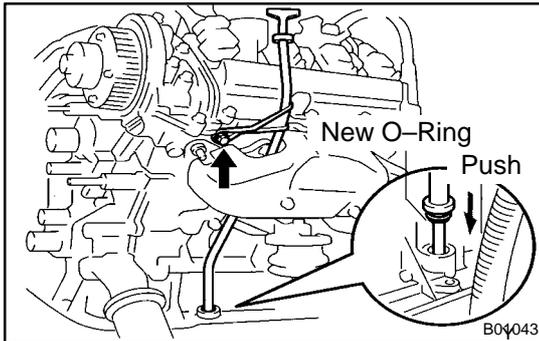
- (b) Install the level sensor with the 4 bolts.

**Torque: 5.4 N·m (55 kgf·cm, 48 in.-lbf)**

**HINT:**

Use bolts 16 mm (0.63 in.) in length.

- (c) Connect the level sensor connector.



### 9. INSTALL OIL DIPSTICK GUIDE AND DIPSTICK

- (a) Install a new O-ring to the dipstick guide.

- (b) Apply soapy water to the O-ring.

- (c) Push in the dipstick guide end into the guide hole of the No.1 oil pan.

- (d) Install the dipstick guide with the bolt.

- (e) Install the dipstick.

### 10. INSTALL CRANKSHAFT TIMING PULLEY

(See page [EM-22](#))

### 11. INSTALL NO.1 AND NO.2 IDLER PULLEYS

(See page [EM-22](#))

### 12. INSTALL TIMING BELT (See page [EM-22](#))

### 13. DISCONNECT ENGINE FROM ENGINE STAND

### 14. REASSEMBLE ENGINE AND TRANSMISSION

(See page [EM-82](#))

### 15. INSTALL ENGINE TO BODY (See page [EM-82](#))