

## INSTALLATION

### 1. INSTALL OIL PUMP

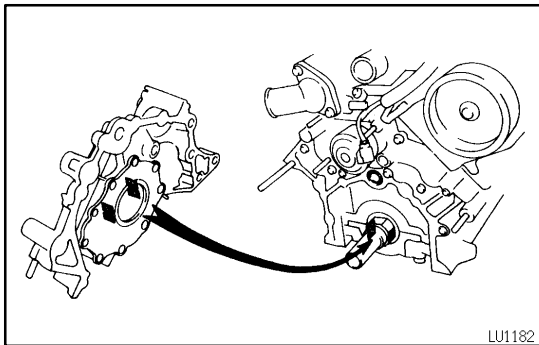
- (a) Remove any old packing (FIPG) material and be careful not to drop any oil on the contact surfaces of the oil pump and cylinder block.
  - Using a razor blade and gasket scraper, remove all the old packing (FIPG) material from the gasket surfaces and sealing groove.
  - Thoroughly clean all components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

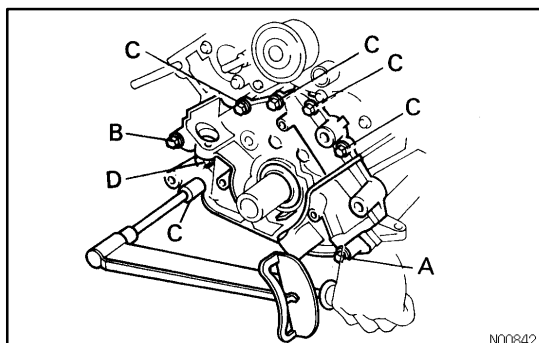
#### NOTICE:

**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:

**16 N·m (160 kgf·cm, 12 ft·lbf) for 12 mm head**

**30 N·m (310 kgf·cm, 22 ft·lbf) for 14 mm head**

#### HINT:

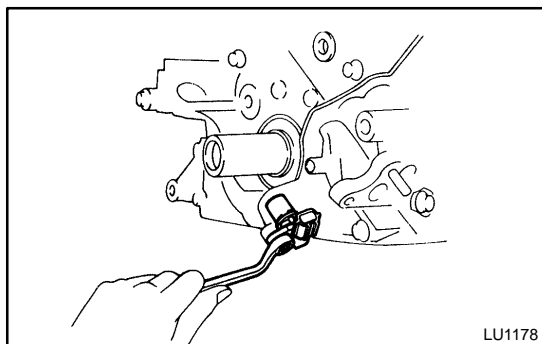
Long bolt are indicated in the illustration.

Bolt length:

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

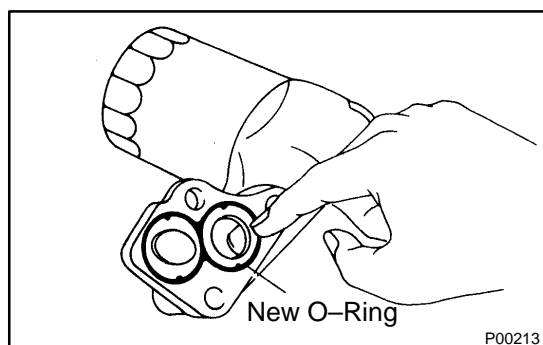
106 mm (4.17 in.) for B of 12 mm head

30 mm (1.18 in.) for C of 12 mm head  
 40 mm (1.57 in.) for D of 14 mm head



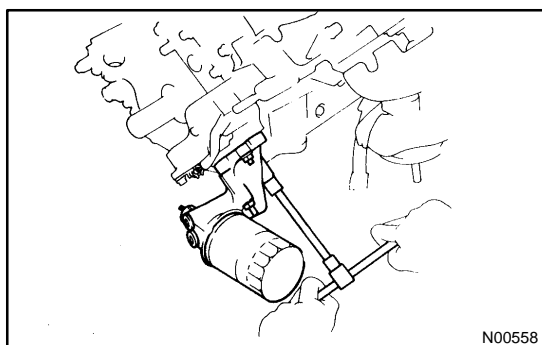
## 2. INSTALL CRANKSHAFT POSITION SENSOR

- (a) Install the crankshaft position sensor with the bolt.  
**Torque: 6.4 N·m (65 kgf·cm, 56 in.-lbf)**
- (b) Connect the crankshaft position sensor connector.



## 3. 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 bolt, nut.  
**Torque: 18 N·m (185 kgf·cm, 13 ft-lbf)**
- (c) Connect the oil pressure switch connector.



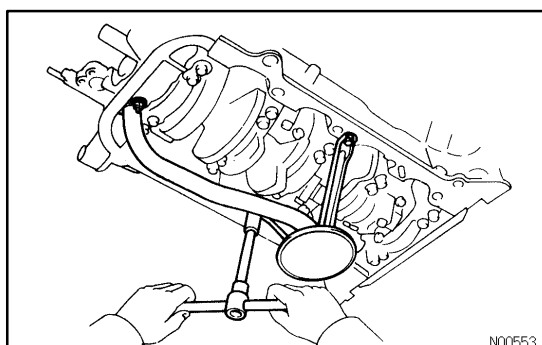
## 4. INSTALL OIL STRAINER

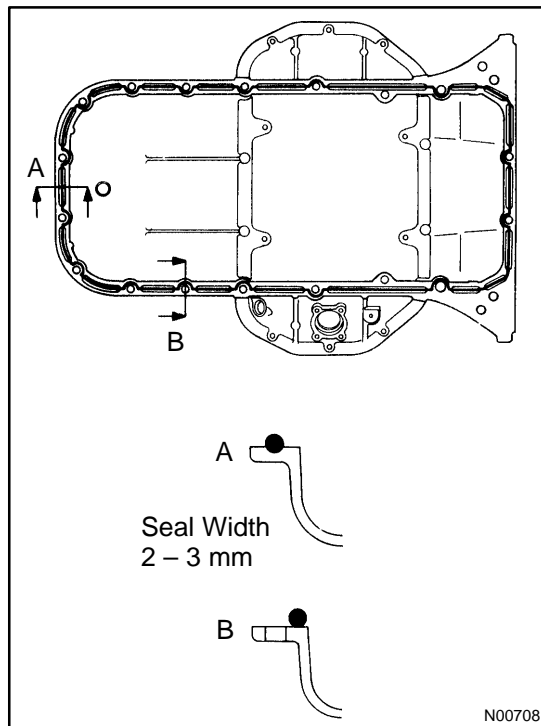
Install a new gasket and the oil strainer with the 2 bolts and 2 nuts.

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

HINT:

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



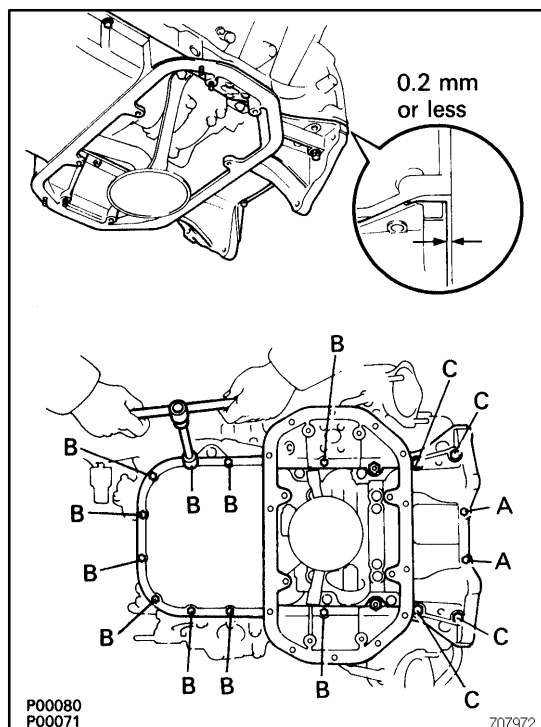


## 5. INSTALL NO. 1 OIL PAN

- (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 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) Temporarily install the No. 1 oil pan with the 16 bolts and 2 nuts.

### HINT:

Each bolt length is indicated in the illustration.

### Bolt length:

20 mm (0.78 in.) for A of 10 mm head

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

55 mm (2.17 in.) for C of 12 mm head

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

### NOTICE:

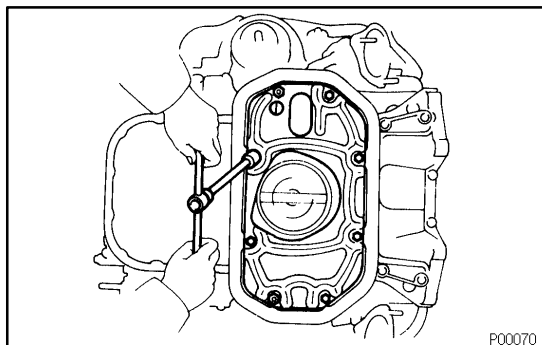
**Make sure the clearance between the rear ends of the No. 1 oil pan and cylinder block is 0.2 mm (0.008 in.) or less. If the clearance is more than 0.2 mm (0.008 in.), the No. 1 oil pan will be stretched.**

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

### Torque:

**7.8 N·m (80 kgf·cm, 69 in.-lbf) for 12 mm head**

**28 N·m (290 kgf·cm, 20 ft-lbf) for 14 mm head**



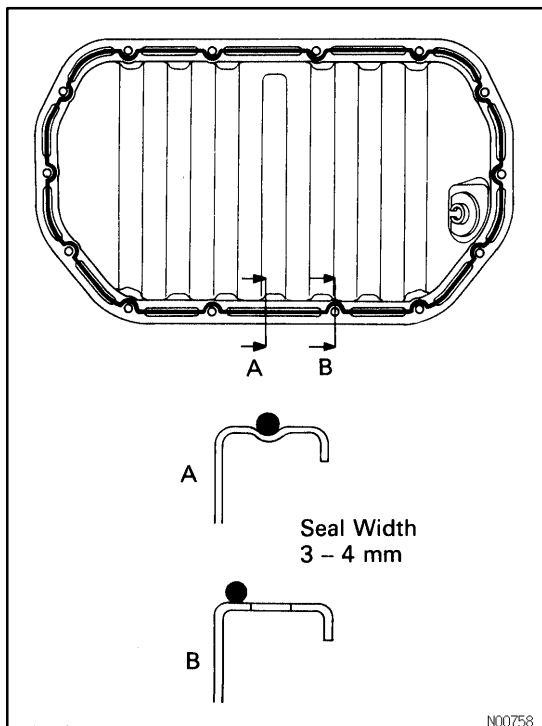
## 6. INSTALL OIL PAN BAFFLE PLATE

Install the baffle plate with the 6 bolts and 2 nuts.

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

HINT:

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



## 7. 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.

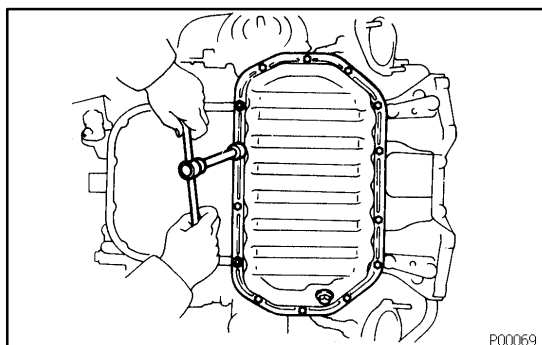
### NOTICE:

**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 – 4 mm (0.12 – 0.16 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.

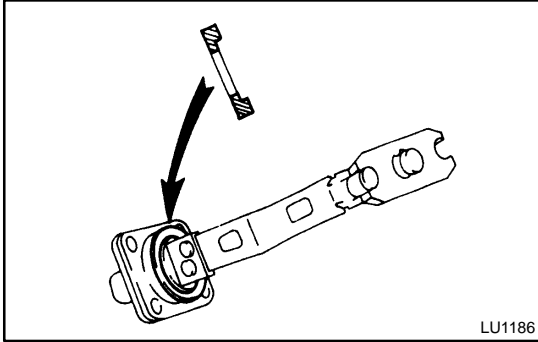


- (c) Install the No. 2 oil pan with the 12 bolts and 2 nuts. Uniformly tighten the bolts and nuts in several passes.

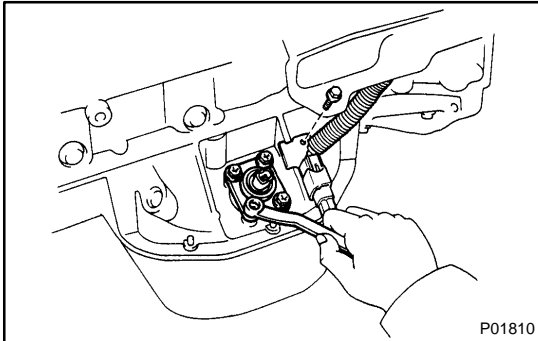
**Torque: 7.8 N·m (80 kgf·cm, 69 in.-lbf)**

HINT:

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

**8. INSTALL OIL LEVEL SENSOR**

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



- (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 BRACKET OF HEATED OXYGEN SENSOR (BANK 1 SENSOR 1) CONNECTOR TO NO. 1 OIL PAN**

Connect the connector bracket with the bolt.

**10. 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.

**11. INSTALL TIMING BELT (See page [EM-26](#))****12. REMOVE ENGINE STAND FROM ENGINE****13. ASSEMBLE ENGINE AND TRANSMISSION (See page [EM-95](#))****14. INSTALL ENGINE WITH TRANSMISSION (See page [EM-95](#))**