

INSTALLATION

1. INSTALL OIL PUMP ASSEMBLY

- (a) Install 2 new O-rings to the 2 locations as shown in the illustration.
- (b) Apply seal packing to the engine body and oil pump as shown in the illustration below.

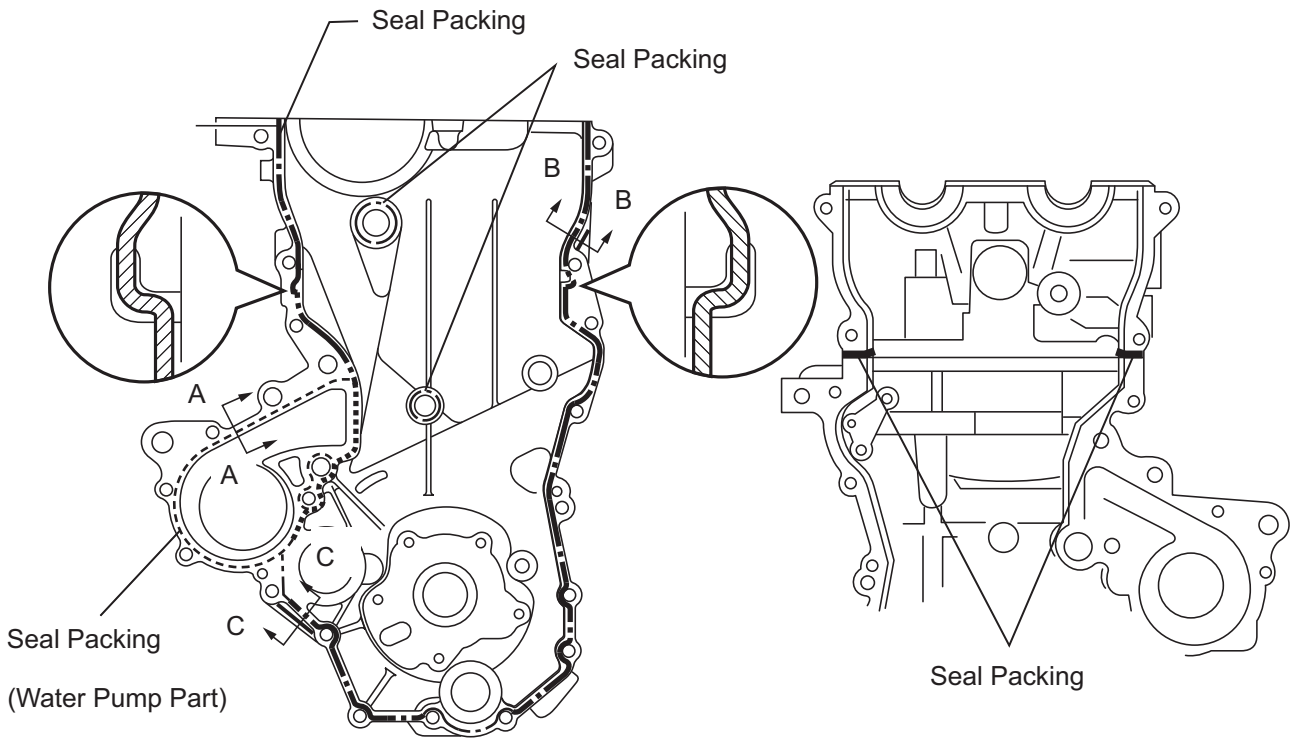
Seal packing:

Water pump part: Toyota Genuine Seal Packing 1282B, Three Bond 1282B or Equivalent

Other part: Toyota Genuine Seal Packing Black, Three Bond 1207B or Equivalent

NOTICE:

- Remove pump any oil from the contact surface.
- Install the oil pump within 3 minutes, and tighten the bolts within 15 minutes after applying seal packing.
- Do not expose the seal packing to engine oil within 2 hours of installation.



A - A

Diameter:
1.5 to 2.0 mm
(0.059 to 0.078 in.)

B - B, C - C
(After Assembling)

2.5 mm
(0.098 in.)

5.0 mm
(0.197 in.)

1.5 mm
(0.059 in.)



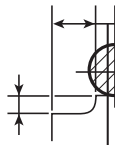
2.5 mm (0.098 in.) or more

B - B, C - C

2.5 mm
(0.098 in.)

Diameter:

1.0 mm
(0.039 in.)



3.5 to 4.5 mm
(0.138 to 0.177 in.)

1.0 mm
(0.039 in.)

Other Part

Seal Diameter:

— · — · — · — 3.5 to 4.5 mm (0.138 to 0.177 in.)

— · — · — · — 1.5 to 2.0 mm (0.059 to 0.078 in.)

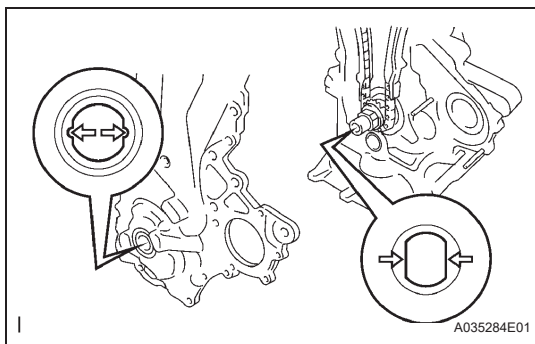
Water Pump Part

Seal Diameter:

······ 3.5 to 4.5 mm (0.138 to 0.177 in.)

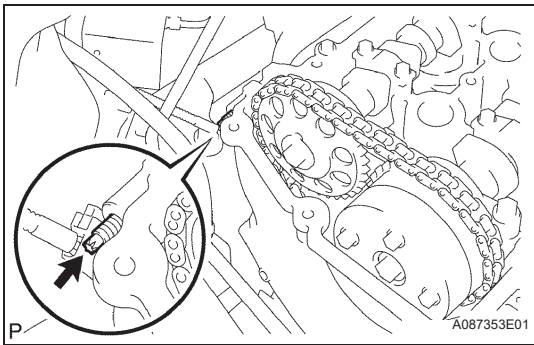
----- 1.5 to 2.0 mm (0.059 to 0.078 in.)

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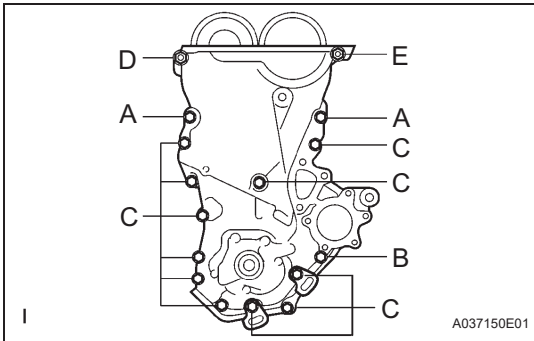
(c) Align the drive rotor spline of the oil pump with the rectangular portion of the crankshaft, then slide the oil pump into place.

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- (d) Using an E8 "torx" socket wrench, install the stud bolt.

Torque: 10 N*m (102 kgf*cm, 7.4 ft.*lbf)



- (e) Install the oil pump with the 15 bolts and nut as illustrated.

Torque: 32 N*m (326 kgf*cm, 24 ft.*lbf) for bolt A

11 N*m (112 kgf*cm, 8 ft.*lbf) for bolt B

11 N*m (112 kgf*cm, 8 ft.*lbf) for bolt C

24 N*m (245 kgf*cm, 18 ft.*lbf) for bolt D

24 N*m (245 kgf*cm, 18 ft.*lbf) for bolt E

NOTICE:

- Be careful that the chain does not contact the seal packing when installing the oil pump.
- Install the engine mounting bracket RH and water pump within 15 minutes after installing the oil pump.

2. INSTALL CRANKSHAFT POSITION SENSOR (See page [ES-443](#))

3. INSTALL CAMSHAFT TIMING OIL CONTROL VALVE ASSEMBLY

- (a) Apply a light coat of engine oil to the O-ring.
 (b) Install the camshaft timing oil control valve with the bolt.

Torque: 7.5 N*m (76 kgf*cm, 66 in.*lbf)

4. INSTALL ENGINE MOUNTING BRACKET

Torque: 55 N*m (561 kgf*cm, 41 ft.*lbf)

5. INSTALL ENGINE MOUNTING SPACER

Torque: 52 N*m (530 kgf*cm, 38 ft.*lbf)

6. INSTALL ENGINE MOUNTING INSULATOR SUB-ASSEMBLY RH

- (a) Install the engine mounting insulator with the 3 bolts and 4 nuts.

Torque: 52 N*m (530 kgf*cm, 38 ft.*lbf)

