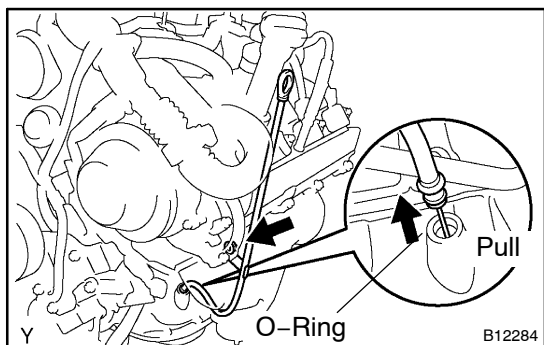


REPLACEMENT

1. REMOVE ENGINE AND TRANSMISSION ASSEMBLY FROM VEHICLE (See page 14-26)
2. SEPARATE ENGINE AND TRANSMISSION
3. INSTALL ENGINE STAND
4. REMOVE TIMING BELT (See page 14-71)
5. REMOVE TIMING BELT IDLER SUB-ASSY NO.1 (See page 14-42)
6. REMOVE TIMING BELT IDLER SUB-ASSY NO.2 (See page 14-42)
7. REMOVE CRANKSHAFT TIMING PULLEY (See page 14-42)

1701Q-01



8. REMOVE OIL LEVEL GAGE GUIDE

- (a) Remove the bolt holding the guide to the LH cylinder head.
- (b) Pull out the guide together with the level gage from the oil pan.
- (c) Remove the O-ring from the guide.

9. REMOVE ENGINE OIL LEVEL SENSOR

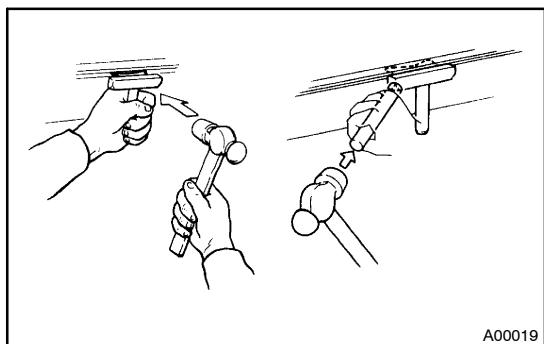
- (a) Remove the 4 bolts and sensor.
- (b) Remove the gasket from the sensor.

10. REMOVE OIL FILTER BRACKET SUB-ASSY

- (a) Disconnect the 2 water by-pass hoses from the oil cooler.
- (b) Disconnect the oil pressure switch connector.
- (c) Remove the stud bolt, 2 nuts and filter bracket together with the oil filter and oil cooler assembly.
- (d) Remove the gasket from the filter bracket.

11. REMOVE CRANKSHAFT POSITION SENSOR

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



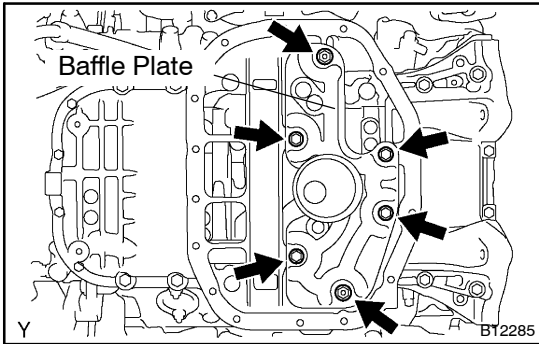
12. REMOVE OIL PAN SUB-ASSY NO.2

- (a) Remove the 13 bolts and 2 nuts.
- (b) Insert the blade of SST between the oil pan No. 1 and oil pan No. 2, cut through the sealer and remove the oil pan No. 2.

SST 09032-00100

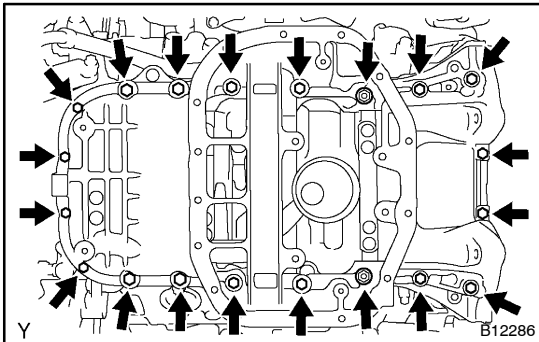
NOTICE:

- Do not damage the contact surface of the oil pan No. 1 and oil pan No. 2.
- Do not damage the flange portion of the oil pan No. 2 during removal.



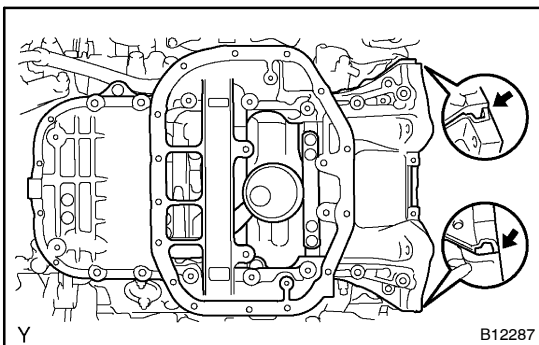
13. REMOVE OIL PAN BAFFLE PLATE

Remove the 4 bolts, 2 nuts and baffle plate.



14. REMOVE OIL PAN SUB-ASSY

(a) Remove the 18 bolts and 2 nuts.



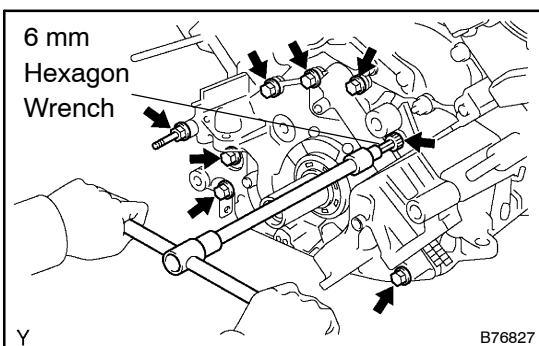
(b) Using a screwdriver, remove the oil pan by prying the portions between the cylinder block and oil pan.

NOTICE:

Be careful not to damage the contact surfaces of the cylinder block and oil pan.

15. REMOVE OIL STRAINER SUB-ASSY

(a) Remove the bolt, 2 nuts, oil strainer and gasket.

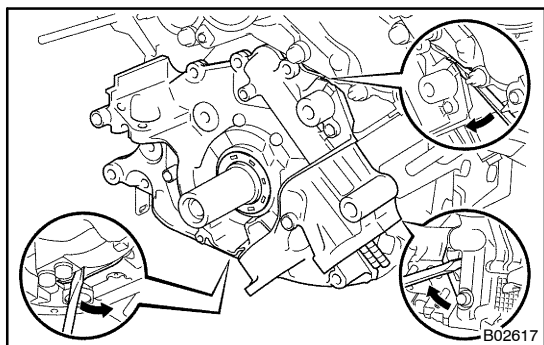


16. REMOVE OIL PUMP ASSY

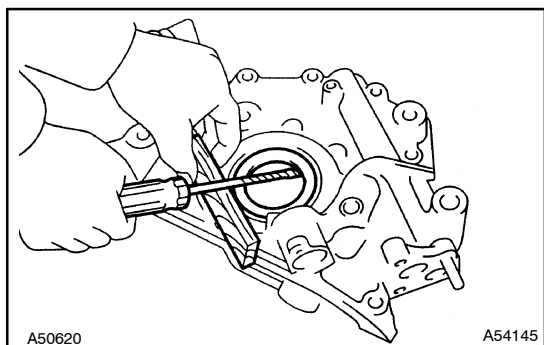
(a) Remove the 8 bolts.

HINT:

Use a 6 mm hexagon wrench for the hexagon head bolt.



- (b) Using a screwdriver, remove the oil pump by prying the portions between the oil pump and cylinder block.
- (c) Remove the O-ring from the cylinder block.



17. REMOVE OIL PUMP SEAL

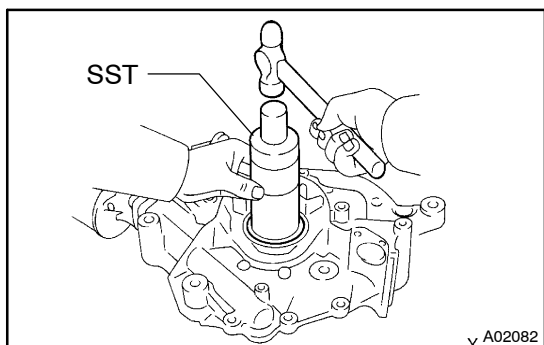
- (a) Using a screwdriver, pry out the seal.

HINT:

Tape the screwdriver tip.

NOTICE:

To protect the oil pump body while prying out the seal, place a wooden block between the screwdriver and oil pump body.



18. INSTALL OIL PUMP SEAL

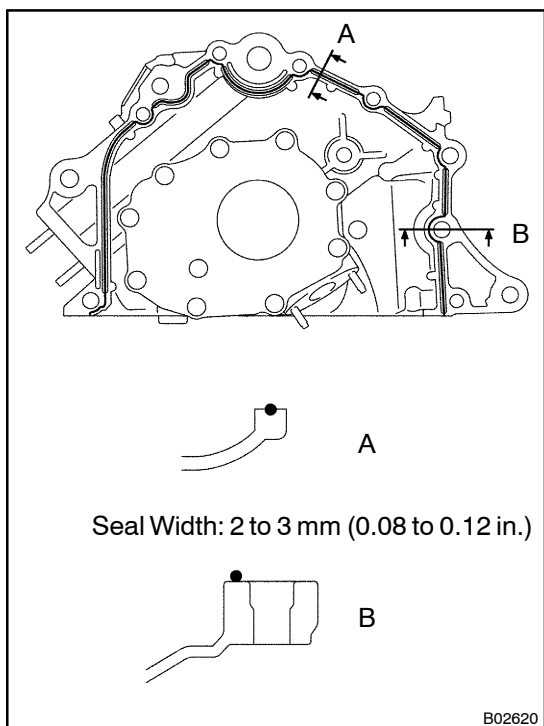
- (a) Using SST and a hammer, tap in a new oil seal until its surface is flush with the oil pump body edge.

SST 09316-60011 (09316-00011)

NOTICE:

Be careful not to tap the oil seal in at an angle.

- (b) Apply a small amount of MP grease to the oil seal lip.



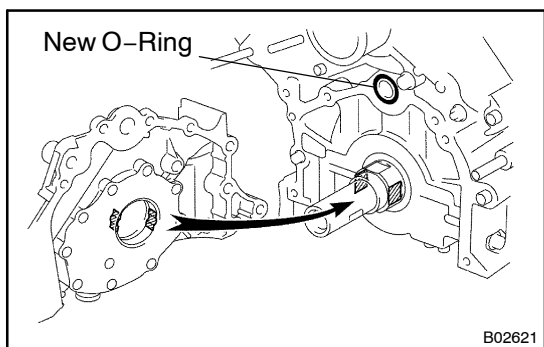
19. INSTALL OIL PUMP ASSY

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

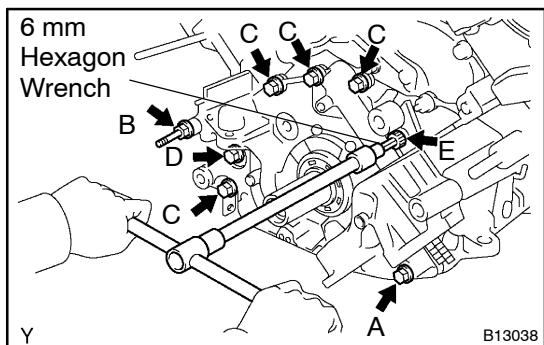
Seal packing: Part No. 08226-00080 or equivalent

NOTICE:

- Remove any oil from the contact surface.
- Install the oil pump within 3 minutes after applying seal packing.
- Do not put into engine oil for at least 2 hours after installing.



- (b) Install a new O-ring to the cylinder block. 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.



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

Torque:

15.5 N·m (160 kgf·cm, 11 ft·lbf) for 12 mm head (A, C), stud bolt (B) and 6 mm hexagon head (E)

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

HINT:

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

Bolt length:

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

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

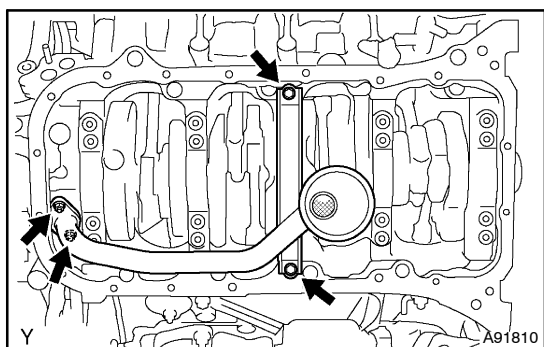
30 mm (1.18 in.) for C of 12 mm head

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

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

NOTICE:

Do not reuse the stud bolt (B).



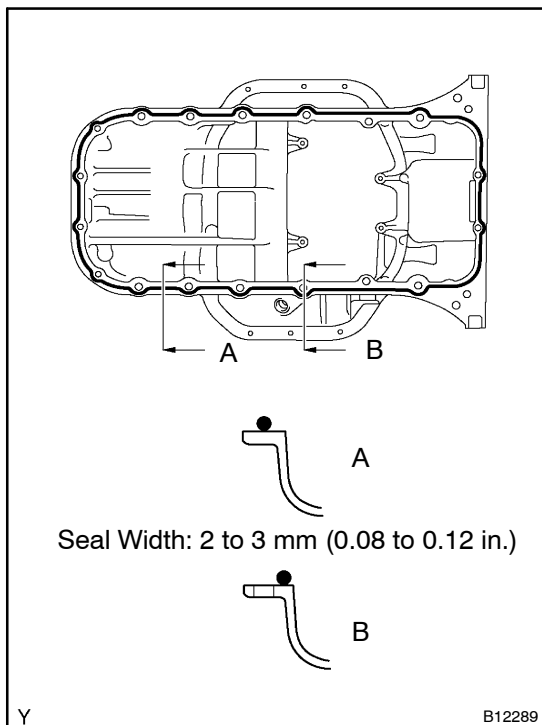
20. INSTALL OIL STRAINER SUB-ASSY

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

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

HINT:

Use a bolt that is 12 mm (0.47 in.) in length.



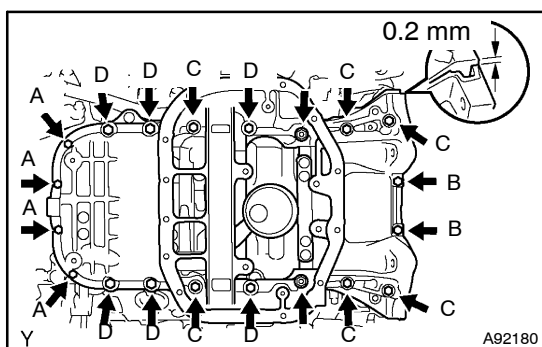
21. INSTALL OIL PAN SUB-ASSY

- (a) Apply seal packing to the oil pan as shown in the illustration.

Seal packing: Part No. 08226-00080 or equivalent

NOTICE:

- Install the oil pan within 3 minutes after applying seal packing.
- Do not put into engine oil for at least 2 hours after installing.
- Remove any oil from the contact surface.



- (b) Temporarily install the oil pan with the 18 bolts and 2 nuts.

HINT:

Each bolt length is indicated in the illustration.

Bolt length:

- A: 20 mm (0.79 in.) of 10 mm head
 B: 35 mm (1.38 in.) of 10 mm head
 C: 60 mm (2.36 in.) of 12 mm head
 D: 25 mm (0.98 in.) of 12 mm head

- (c) 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 deform when tightening the bolts, stud bolts and nuts.

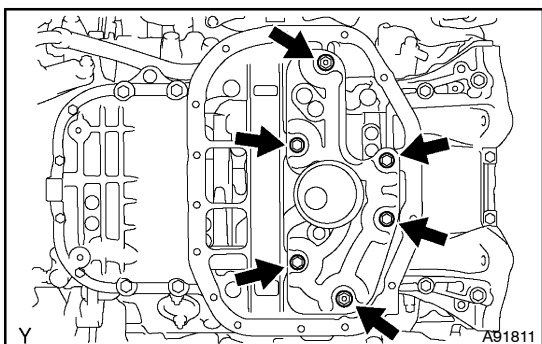
- (d) Uniformly tighten the bolts, stud bolts and nuts in several passes.

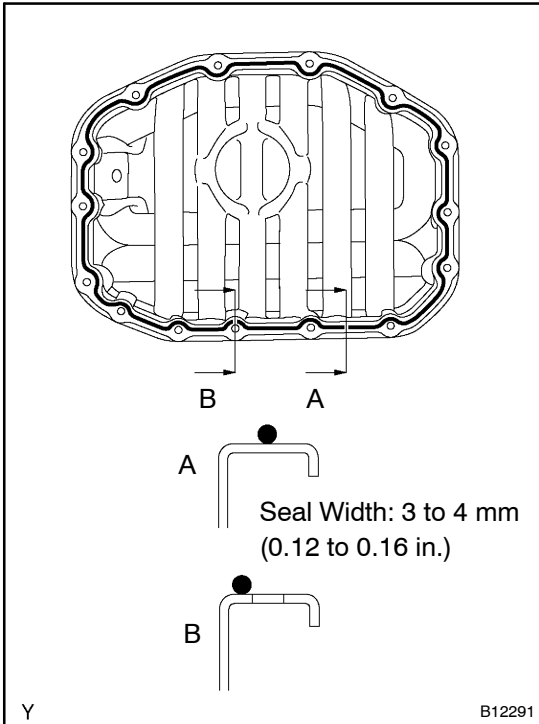
Torque:

7.5 N·m (76 kgf·cm, 66 in.·lbf) for 10 mm head
28 N·m (286 kgf·cm, 21 ft·lbf) for 12 mm head

22. INSTALL OIL PAN BAFFLE PLATE

- (a) Install the baffle plate with the 4 bolts and 2 nuts
Torque: 7.5 N·m (76 kgf·cm, 66 in.·lbf)



**23. INSTALL OIL PAN SUB-ASSY NO.2**

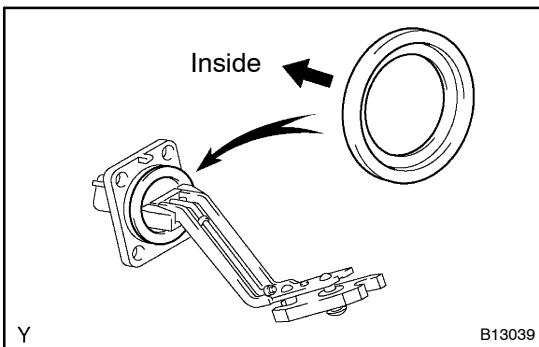
- (a) Apply seal packing to the oil pan as shown in the illustration.

Seal packing: Part No. 08226-00080 or equivalent

NOTICE:

- **Remove any oil from the contact surface.**
 - **Install the oil pan within 3 minutes after applying seal packing.**
 - **Do not put into engine oil for at least 2 hours after installing.**
- (b) Install oil pan with the 13 bolts and 2 nuts. Uniformly tighten the bolts and nuts in several passes.

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

**24. INSTALL ENGINE OIL LEVEL SENSOR**

- (a) Install a new gasket to the sensor as shown in the illustration.
- (b) Install the sensor with the 4 bolts.

Torque: 6.9 N·m (70 kgf·cm, 61 in.·lbf)

HINT:

Use a bolt that is 16 mm (0.63 in.) in length.

25. INSTALL CRANKSHAFT POSITION SENSOR

- (a) Install the sensor with the bolt.

Torque: 6.5 N·m (65 kgf·cm, 58 in.·lbf)

HINT:

Use bolt that is 17 mm (0.67 in.) in length.

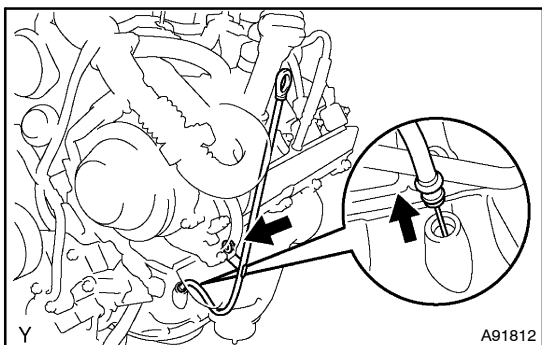
- (b) Connect the sensor connector.

26. INSTALL OIL FILTER BRACKET SUB-ASSY

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

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

- (c) Connect the oil pressure switch connector.
- (d) Connect the 2 water by-pass hoses to the oil cooler.

**27. INSTALL OIL LEVEL GAGE GUIDE**

- (a) Install a new O-ring to the gage guide.
- (b) Apply soapy water to the O-ring.
- (c) Push in the gage guide end into the guide hole of the No. 1 oil pan.
- (d) Install the gage guide with the bolt.
Torque: 15 N·m (153 kgf·cm, 133 in.·lbf)
- (e) Install the gage.

28. INSTALL CRANKSHAFT TIMING PULLEY (See page 4-42)

29. INSTALL TIMING BELT IDLER SUB-ASSY NO.1 (See page 4-42)

30. INSTALL TIMING BELT IDLER SUB-ASSY NO.2 (See page 4-42)

31. INSTALL TIMING BELT (See page 4-71)

32. REMOVE ENGINE STAND

33. ASSEMBLE ENGINE AND TRANSMISSION (See page 4-26)

34. INSTALL ENGINE AND TRANSMISSION ASSEMBLY TO VEHICLE (See page 4-26)