

INSTALLATION

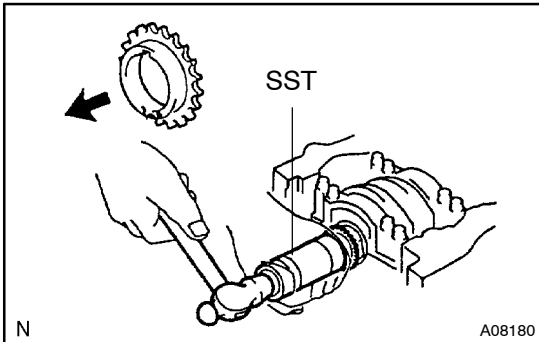
1. INSTALL OIL PUMP DRIVE GEAR

Check the key way and install the drive gear by using SST.

SST 09309-37010

NOTICE:

Make sure the timing gear is installed in the correct direction.



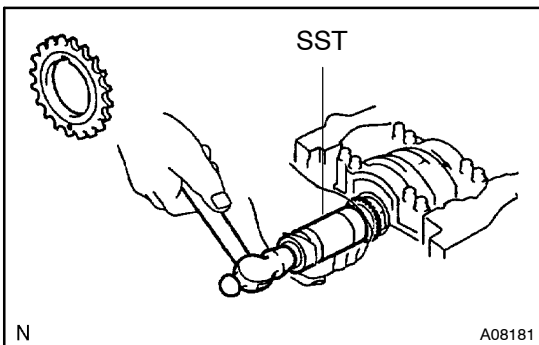
2. INSTALL CRANKSHAFT TIMING GEAR

Check the key way and install the timing gear by using SST.

SST 09309-37010

NOTICE:

Make sure the timing gear is installed in the correct direction.



3. INSTALL CRANKSHAFT TIMING SPROCKET LH

Check the key way and install the sprocket by using SST.

SST 09309-37010

4. INSTALL OIL PUMP

- (a) Apply a small quantity of engine oil to a new O-ring and install it on the cylinder block.
- (b) Install chain No.2 on the oil pump driven sprocket and install chain No.2 on the oil pump drive gear.
- (c) Install the oil pump on the cylinder block with 4 bolts.

Torque: 19 N·m (195 kgf·cm, 14 ft·lbf)

5. INSTALL CHAIN TENSIONER PLATE

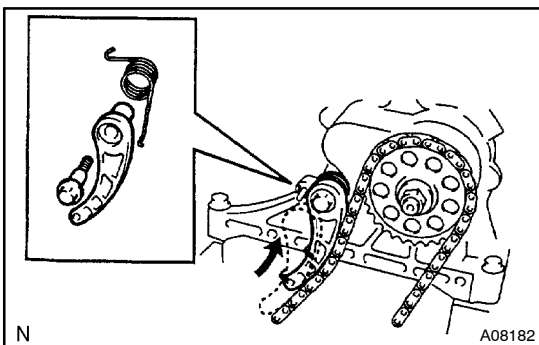
- (a) Install the spring on the chain tensioner.

NOTICE:

Install the spring so that its U-shaped portion may touch the inside of the tensioner plate.

- (b) Set the spring hook on the straight pin of the oil pump.
- (c) Install the tensioner plate with a bolt.

Torque: 8.0 N·m (80 kgf·cm, 69 in·lbf)



6. INSTALL CHAIN TENSIONER SLIPPER

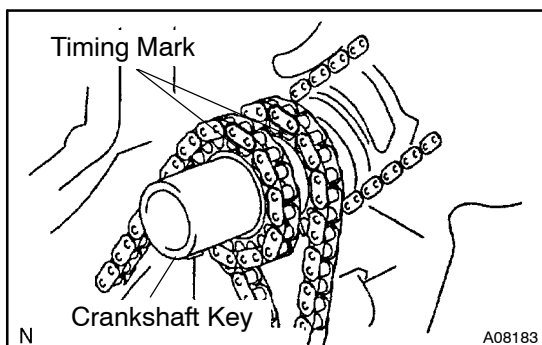
Install the tensioner slipper with a bolt.

Torque: 24 N·m (245 kgf·cm, 18 ft·lbf)

7. INSTALL CHAIN VIBRATION DAMPER NO.1

Install 2 vibration dampers No.1 with the 2 bolts and nuts.

Torque: 20 N·m (205 kgf·cm, 15 ft·lbf)

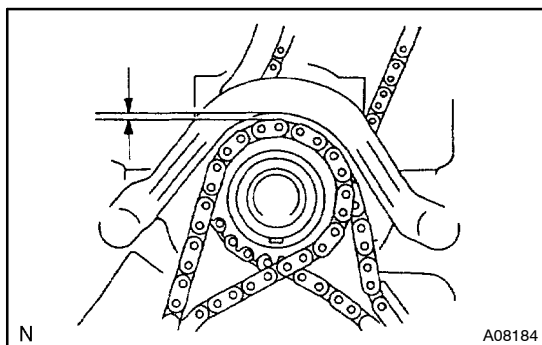
**8. INSTALL 2 TIMING CHAINS**

- (a) Set the chain so that the crankshaft key may be vertical (downward) to the engine in the reverse revolution status of the engine.

HINT:

The timing mark of the sprocket should be on the installation surface of the oil pan.

- (b) Align the camshaft drive chain with the timing mark of the sprocket and install the chain.

**9. INSTALL TIMING CHAIN GUIDE**

- (a) Install the chain guide temporarily with 2 nuts.
 (b) Check with a wire gauge that the clearance between the timing chain and the tube guide is 1.9 mm.

SST 09242-00190

NOTICE:

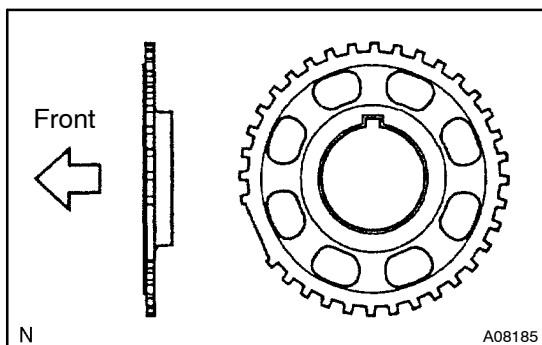
When the clearance is more or less than 1.9 mm, reinstall it.

- (c) Tighten the nuts.

Torque: 8.0 N·m (80 kgf·cm, 69 in·lbf)

10. INSTALL CRANK ANGLE SENSOR PLATE NO.1

Install the crank angle sensor plate in the direction shown in the illustration.

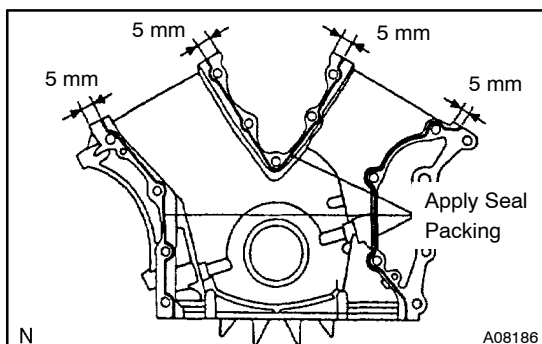
**11. INSTALL TIMING CHAIN COVER**

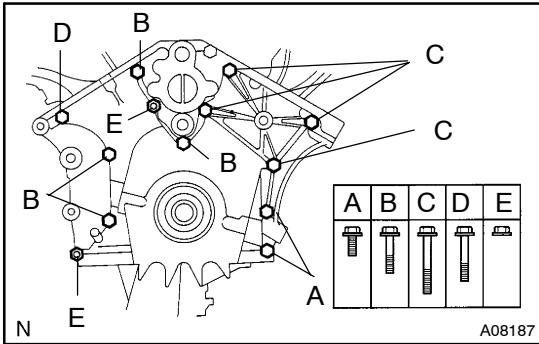
- (a) Remove oil or grease from the timing chain cover and the installation surface of the cylinder block chain cover.
 (b) Apply seal packing to the positions shown in the illustration continuously in bead form (1 – 2 mm width) and install the cylinder block within 3 minutes.

Seal Packing: Part No. 08826-00080 or equivalent

NOTICE:

- **Around the bolt hole, apply seal packing black to the inside.**
- **After installation, leave it without injecting engine oil at least for 2 hours.**



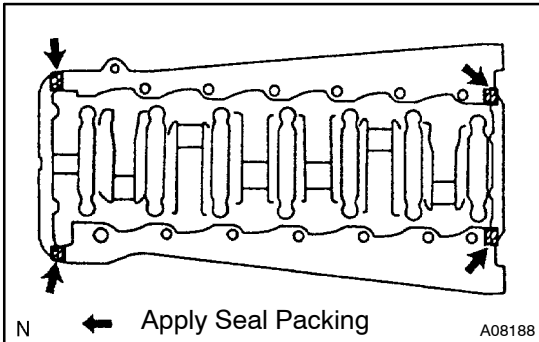


- (c) Install the chain cover with 11 bolts and 2 nuts.

Torque: 30 N·m (305 kgf·cm, 22 ft·lbf)

12. INSTALL OIL PAN

- (a) Remove oil or grease from the oil pan and the installation plate of the cylinder block oil pan.

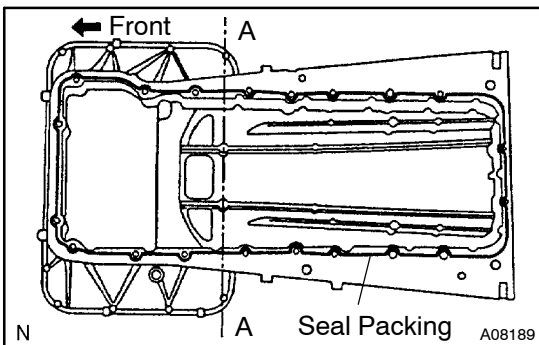


- (b) Apply seal packing (3 – 5 mm width) to the positions shown in the illustration on the cylinder block.

Seal Packing: Part No. 08826-00080 or equivalent

NOTICE:

After applying seal packing black, install the oil pan within 3 minutes.

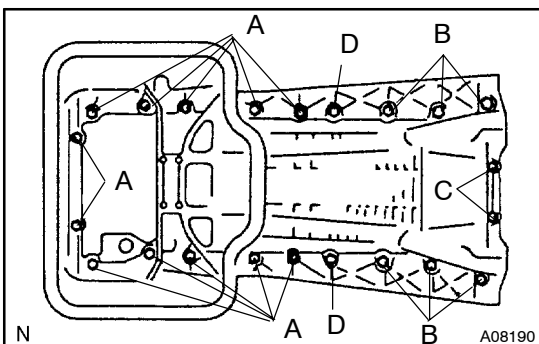


- (c) Apply seal packing to the positions shown in the illustration continuously in bead form (2 – 3 mm width) and install the cylinder block.

Seal Packing: Part No. 08826-00080 or equivalent

NOTICE:

- On the front side from line A-A, apply seal packing black to the outside of the bolt hole.
- On the rear side from line A-A, apply it to the inside of the bolt hole.
- After installation, leave it without injecting engine oil at least for 2 hours.
- After applying seal packing black, install the oil pan within 3 minutes.



- (d) Tighten 20 bolts and 2 nuts.

Torque:

30 N·m (305 kgf·cm, 22 ft·lbf) (bolt A, nut D)

38 N·m (390 kgf·cm, 28 ft·lbf) (bolt B)

8.0 N·m (80 kgf·cm, 69 in·lbf) (bolt C)

13. INSTALL OIL PUMP BRACKET

Install the bracket on the oil pan with 4 bolts.

Torque: 19 N·m (195 kgf·cm, 14 ft·lbf)

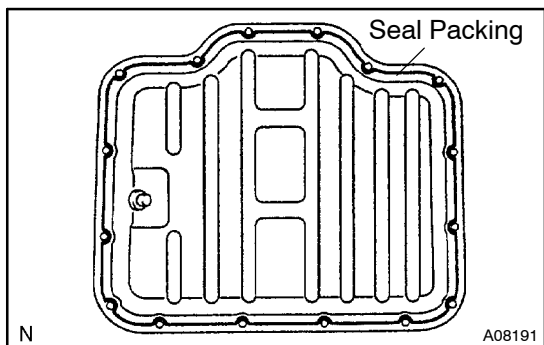
14. INSTALL OIL STRAINER

Install the strainer with 2 bolts through a new gasket.

Torque: 24 N·m (245 kgf·cm, 18 ft·lbf)

15. INSTALL OIL PAN NO.2

(a) Remove oil or grease from oil pan No.2 and the installation surface of oil pan No.2.



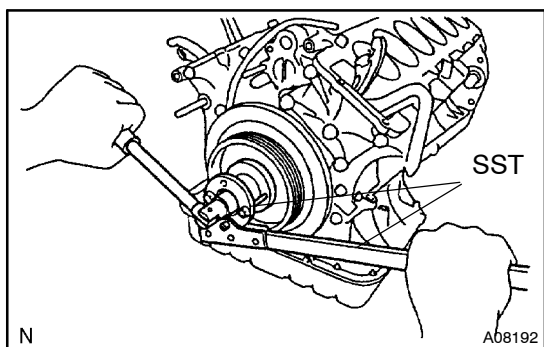
(b) Apply seal packing to the positions shown in the illustration continuously in bead form (4 – 5 mm width) and install oil pan No.2 with 14 bolts and 2 nuts.

Torque: 8.0 N·m (80 kgf·cm, 69 in·lbf)

Seal Packing: Part No. 08826-00080 or equivalent

NOTICE:

- **Around the bolt hole, apply seal packing to the inside.**
 - **After installation, leave oil pan No.2 without injecting engine oil at least for 2 hours.**
 - **After applying seal packing, install oil pan No.2 within 3 minutes.**
- 16. INSTALL CRANK POSITION SENSOR PROTECTOR**
Torque: 8.0 N·m (80 kgf·cm, 69 in·lbf)
- 17. INSTALL CRANK POSITION SENSOR**
Torque: 8.0 N·m (80 kgf·cm, 69 in·lbf)

**18. INSTALL CRANKSHAFT DAMPER**

(a) Insert the crankshaft damper by hitting it with a plastic hammer.

(b) Tighten the set bolt by using SST.

SST 09213-70010, 09330-00021, 90105-08076

Torque: 270 N·m (2,755 kgf·cm, 199 ft·lbf)

19. INSTALL V-RIBBED BELT TENSIONER NO.2

Torque: 19 N·m (195 kgf·cm, 14 ft·lbf)

(a) Install idler pulley.

(b) Install idler pulley cover plate and bolt.

NOTICE:

- **After cleaning (dust, oil or grease, etc.) the bolt seat face of the idler pulley, tighten the bolt.**
- **When using a new part, remove applied oil or grease and then install it.**

Torque: 68 N·m (695 kgf·cm, 50 ft·lbf)

20. INSTALL IDLER PULLEY NO.1 AND NO.2**NOTICE:**

- After cleaning (dust, oil or grease, etc.) the bolt seat face of the idler pulley, tighten the bolt.
- When using a new part, remove applied oil or grease and then install it.

Torque: 57 N·m (580 kgf·cm, 42 ft·lbf)

21. INSTALL A/C COMPRESSOR

Install the A/C compressor and 4 bolts.

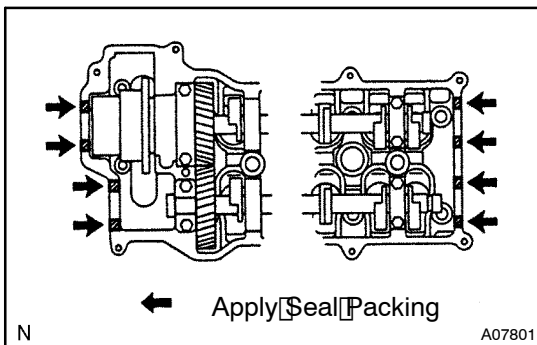
Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)

22. INSTALL LH AND RH CYLINDER HEAD ASSEMBLY

(See page EM-51)

23. INSTALL WATER PUMP PULLEY AND DRIVE BELT

(See page CO-7)

**24. INSTALL CYLINDER HEAD COVER LH AND RH**

- (a) Degrease the surfaces for mounting the cover and cylinder head.
- (b) Apply seal packing to the points shown in the illustration, and install the cylinder head cover in five minutes.

Seal Packing: Part No. 08826-00080 or equivalent

NOTICE:

Do not start the engine for 2 hours.

25. INSTALL 2 IGNITION COILS WITH HIGH-TENSION CORDS**26. CONNECT ENGINE WIRE****27. INSTALL INTAKE SURGE TANK LH AND RH WITH INTAKE AIR CONNECTOR**

- (a) Install the 4 nuts, 10 bolts and intake surge tank LH and RH with intake air connector.

Torque: 12 N·m (120 kgf·cm, 9 ft·lbf)

- (b) Connect the 2 hoses.

28. INSTALL VACUUM TRANSMITTING PIPE NO.1 AND NO.2 WITH VACUUM CONTROL VALVE SET

- (a) Install the 6 nuts, 4 bolts and vacuum transmitting pipe No.1 and No.2 with vacuum control valve set.

- (b) Connect the vacuum hoses.

29. INSTALL IDLE-UP PIPE NO.1

Install the 2 bolts and idle-up pipe No.1, and connect the hose.

30. INSTALL IDLE-UP PIPE NO.2

Install the 2 stud bolts and idle-up pipe No.2, and connect the 2 hoses.

31. INSTALL THROTTLE BODY LH AND RH

- (a) Install the 8 bolts, throttle body LH and RH and 2 new gaskets.

Torque: 21 N·m (215 kgf·cm, 15 ft·lbf)

- (b) Connect the 4 connectors.
(c) Connect the 4 hoses to water by-pass pipe.

32. INSTALL EMISSION CONTROL VALVE SET

- (a) Install the emission control valve set and 8 bolts.

Torque: 19 N·m (195 kgf·cm, 14 ft·lbf)

- (b) Connect the 4 hoses and 2 connectors.

33. INSTALL AIR CLEANER ASSEMBLY LH AND RH WITH AIR FLOW METER

- (a) Install the 10 bolts and cleaner assembly LH and RH with the air flow meter.

- (b) Connect the 4 hoses.

- (c) Connect the 2 air flow meter connectors and install the wire harness to the harness clamps.

34. INSTALL AIR CLEANER INLET**35. FILL WITH ENGINE COOLANT (See page CO-2)****36. FILL WITH ENGINE OIL****37. START ENGINE AND CHECK FOR LEAKS****38. RECHECK ENGINE COOLANT LEVEL****39. INSTALL ENGINE UNDER COVER****40. INSTALL V-BANK COVER**