

INSTALLATION

NOTICE:

Check that No.1 cylinder is at TDC and that the weights of the No.1 and No.2 balance shafts are at the bottom side.

1. INSTALL NO.4 VIBRATION DAMPER

Install the No.4 damper with the 2 bolts.

2. 3RZ-FE:

INSTALL NO.2 TIMING CHAIN, NO.2 CRANKSHAFT TIMING SPROCKET, BALANCE SHAFT DRIVE GEAR AND SHAFT

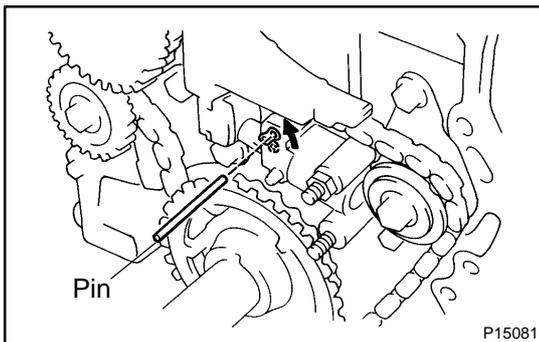
- (a) Install the No.2 timing chain by matching its mark links with the timing marks on the No.2 crankshaft timing sprocket and balance shaft timing sprocket.
- (b) Fit the other mark link of No.2 timing chain onto the sprocket behind the large timing mark of the balance shaft drive gear.
- (c) Insert the balance shaft drive gear shaft through the balance shaft drive gear so that it fits into the thrust plate hole.

Then align the small timing mark of the balance shaft drive gear with the timing mark of the balance shaft timing gear.

- (d) Install the bolt to the balance shaft drive gear and tighten it.

Torque: 25 N·m (250 kgf-cm, 18 ft-lbf)

- (e) Check that each timing mark is matched with the corresponding mark link.

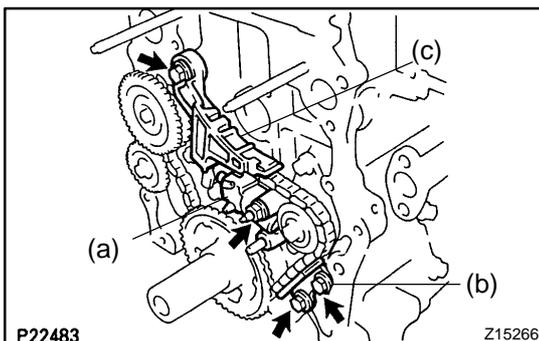


3. 3RZ-FE:

INSTALL NO.2, NO.3 VIBRATION DAMPERS AND NO.2 CHAIN TENSIONER

NOTICE:

- Assemble the chain tensioner with the pin installed, then remove the pin after assembly.
- When doing this, avoid pushing the No.2 vibration damper against the chain.



- (a) Install the No.2 chain tensioner with the nut.

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

- (b) Install No.3 damper with the 2 bolts.

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

- (c) Install No.2 damper with the bolt.

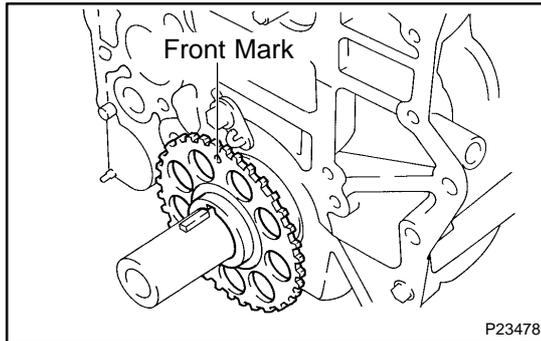
Torque: 27 N·m (270 kgf-cm, 20 ft-lbf)

- (d) Remove a pin from the No.2 chain tensioner and free the plunger.

**4. 2RZ-FE:
INSTALL OIL JET**

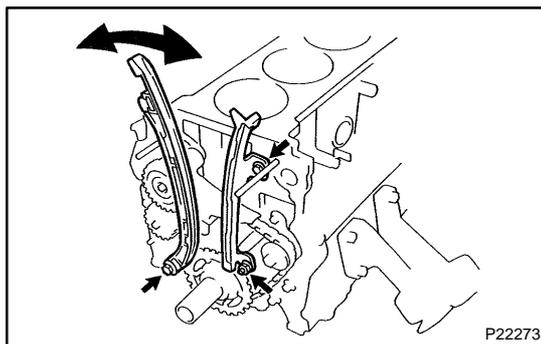
Install a new gasket and the oil jet with the bolt.

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



**5. 2RZ-FE:
INSTALL CRANKSHAFT POSITION SENSOR ROTOR**

Install the rotor to the crankshaft with the front mark (cavity) of the rotor facing forward.



6. INSTALL NO.1 TIMING CHAIN TENSIONER SLIPPER AND NO.1 VIBRATION DAMPER

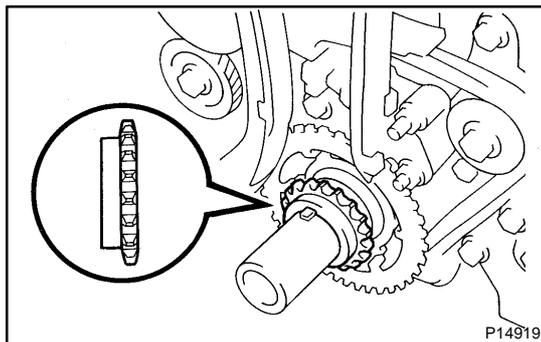
(a) Install the No.1 damper with the bolt and nut.

Torque: 29 N·m (300 kgf·cm, 22 ft·lbf)

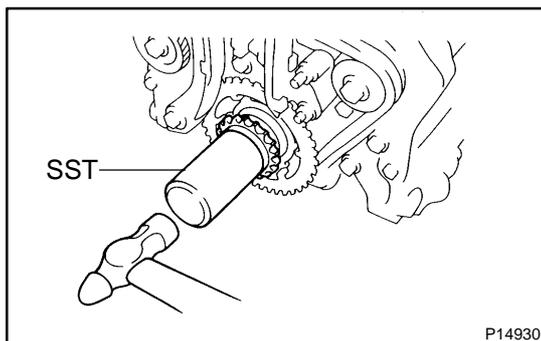
(b) Install the slipper with the bolt.

Torque: 27 N·m (270 kgf·cm, 20 ft·lbf)

(c) Check that the slipper moves smoothly.



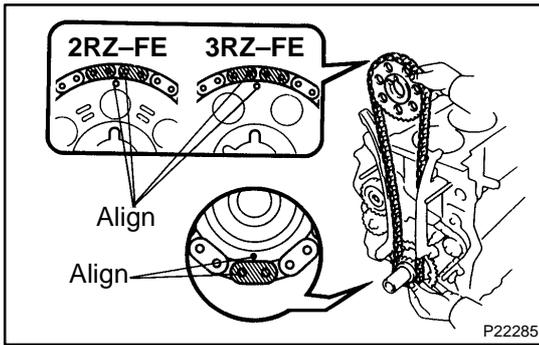
7. INSTALL CRANKSHAFT TIMING SPROCKET



HINT:

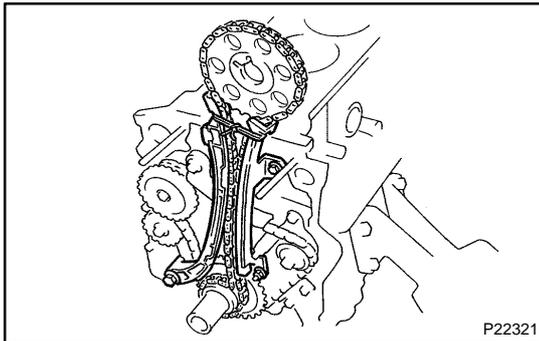
If necessary, install the sprocket with SST.

SST 09636-20010

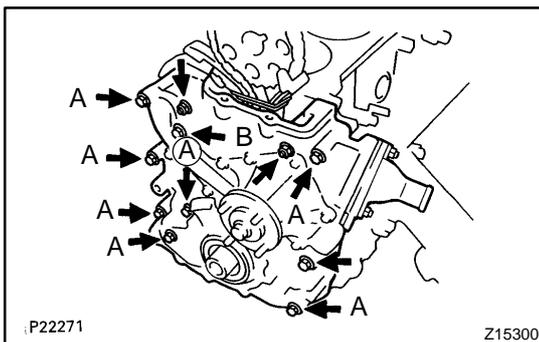


8. INSTALL NO.1 TIMING CHAIN AND CAMSHAFT TIMING SPROCKET

- Align the timing mark between the mark link of the No.1 timing chain, and install the No.1 timing chain to the timing sprocket.
- Align the timing mark of the crankshaft timing sprocket with the mark link of the No.1 timing chain and install the No.1 timing chain.



- Tie the No.1 timing chain with a cord as shown in the illustration, and make sure it doesn't come loose.



9. INSTALL TIMING CHAIN COVER

- Install 3 new gaskets to the cylinder block and water bypass pipe.

- Install the timing chain cover with the 9 bolts and 2 nuts.

Torque:

20 N·m (200 kgf·cm, 14 ft·lbf) for 12 mm head bolt A

24.5 N·m (250 kgf·cm, 18 ft·lbf) for 12 mm head bolt B

44 N·m (440 kgf·cm, 32 ft·lbf) for 14 mm head bolt

20 N·m (200 kgf·cm, 14 ft·lbf) for nut

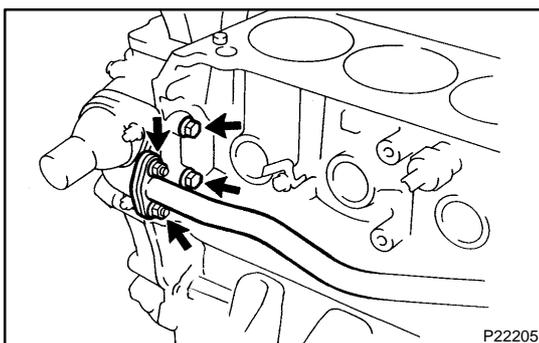
- Install the 2 timing chain cover bolts.

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

- Install the 2 water bypass pipe nuts.

Torque: 20 N·m (200 kgf·cm, 14 ft·lbf)

- Remove the cord from the chain.



10. INSTALL CRANKSHAFT PULLEY

- Align the pulley set key with the key groove of the pulley, and slide on the pulley.

- Using SST, install and torque the pulley bolt.

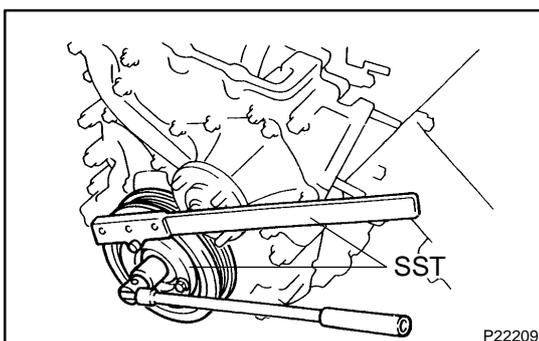
SST 09213-54015, 09330-00021

Torque: 260 N·m (2,650 kgf·cm, 193 ft·lbf)

- w/ A/C:

Install the No.3 and No.2 crankshaft pulleys with the 4 bolts.

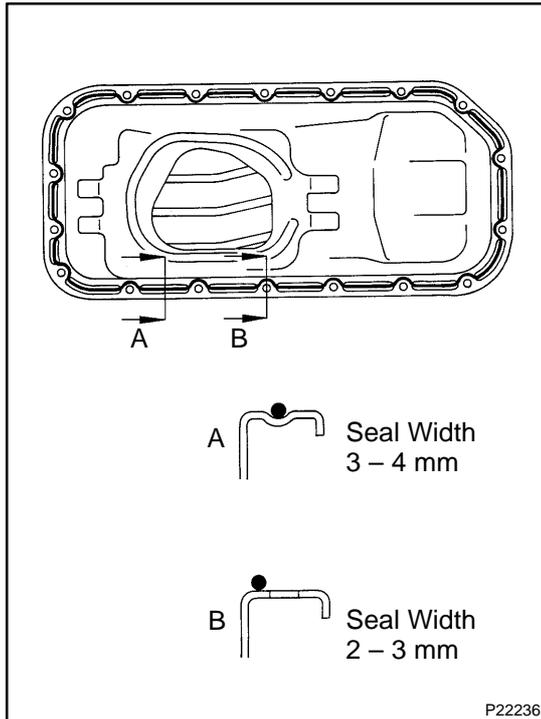
Torque: 25 N·m (250 kgf·cm, 18 ft·lbf)



11. INSTALL OIL STRAINER

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

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

**12. INSTALL OIL PAN**

(a) Remove any old packing (FIPG) material and be careful not to drop any oil on the contact surface of the oil pan.

- Using a razor blade and gasket scraper, remove all the old packing (FIPG) material from the gasket surfaces and sealing grooves.
- 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 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 or 3 – 4 mm (0.012 – 0.016 in.) opening.

HINT:

Avoid applying an excessive amount to the surface.

- 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 oil pan with the 16 bolts and 2 nuts.

Torque: 12.5 N·m (130 kgf·cm, 9 ft·lbf)

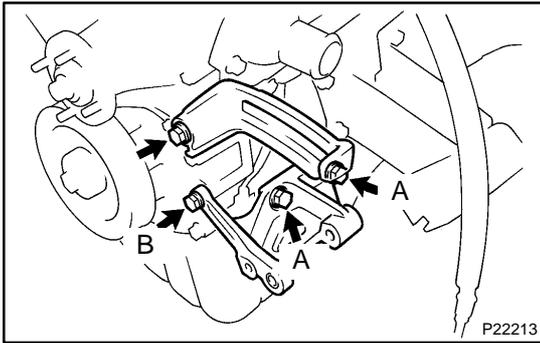
13. INSTALL FLYWHEEL HOUSING UNDER COVER AND DUST SEAL**14. 2WD:****INSTALL STIFFENER PLATES**

Torque: 37 N·m (380 kgf·cm, 27 ft·lbf)

15. INSTALL CRANKSHAFT POSITION SENSOR

Install a new O-ring.

Torque: 8.5 N·m (85 kgf·cm, 74 in.-lbf)



16. INSTALL GENERATOR, ADJUSTING BAR AND BRACKET

- (a) Install the bracket with the 3 bolts.

Torque:

74.5 N·m (760 kgf·cm, 55 ft·lbf) for bolt A

18 N·m (185 kgf·cm, 13 ft·lbf) for bolt B

- (b) Install the adjusting bar with the bolt.

Torque: 63.5 N·m (650 kgf·cm, 47 ft·lbf)

- (c) Install the generator with the pivot bolt and lock bolt.

17. INSTALL A/C COMPRESSOR AND BRACKET

- (a) Install the A/C compressor bracket with the 4 bolts.

Torque: 44 N·m (440 kgf·cm, 32 ft·lbf)

- (b) Install the A/C compressor with the 4 bolts.

Torque: 25 N·m (250 kgf·cm, 18 ft·lbf)

18. INSTALL CYLINDER HEAD ASSEMBLY (See page EM-57)

19. INSTALL WATER PUMP PULLEY, FAN WITH FLUID COUPLING AND DRIVE BELT FOR GENERATOR

20. 4WD:

INSTALL FRONT DIFFERENTIAL AND DRIVE SHAFTS ASSEMBLY

21. FILL WITH ENGINE OIL

22. START ENGINE AND CHECK FOR LEAKS

23. INSTALL ENGINE UNDER COVER

24. VEHICLE ROAD TEST

Check for abnormal noise, shock slippage, correct shift points and smooth operation.

25. RECHECK ENGINE COOLANT AND ENGINE OIL LEVEL