CAMSHAFT SETTING OIL SEAL (1KD–FTV)

1411Q–01

REPLACEMENT

1. REMOVE ENGINE UNDER COVER SUB–ASSY NO.1

(a) Remove the 4 bolts and engine under cover No. 1.

2. DRAIN ENGINE COOLANT (See page 16–50)

3. REMOVE RADIATOR SUPPORT SEAL UPPER

(a) Remove the 11 clips and radiator support seal upper.

4. REMOVE WIRE HARNESS (W/ COLD AREA)

(a) Remove the wire harness from the fan shroud.

5. REMOVE RADIATOR RESERVE TANK ASSY

(a) Remove the radiator reserve tank hose first, and then remove the 3 bolts and radiator reserve tank.

6. REMOVE RADIATOR HOSE NO.1

7. REMOVE FAN AND GENERATOR V BELT (See page 14–189)

HINT:

Loosen the 4 nuts for the fan with fluid coupling assy in advance.

8. REMOVE FAN SHROUD

(a) Remove the oil cooler inlet hose and outlet hose from the hose clamp. (AT TRANSMISSION)

(b) Remove the 4 nuts for the fan with fluid coupling assy and 2 bolts for the fan shroud.

(c) Remove the fan with fluid coupling assy together with the fan shroud.

9. REMOVE FAN PULLEY

10. REMOVE INTERCOOLER PROTECTOR (See page 13–30)

11. REMOVE INTERCOOLER ASSY (See page 10–31)

12. REMOVE AIR HOSE NO.1

13. REMOVE VACUUM SWITCHING VALVE ASSY NO.1 (See page 10–31)

14. REMOVE DIESEL THROTTLE BODY ASSY (See page 10–31)

15. REMOVE TIMING BELT NO.1 COVER (See page 14–214)

16. REMOVE TIMING BELT (See page 14–214)

17. REMOVE CYLINDER HEAD COVER SUB–ASSY NO.2 (See page 14–223)

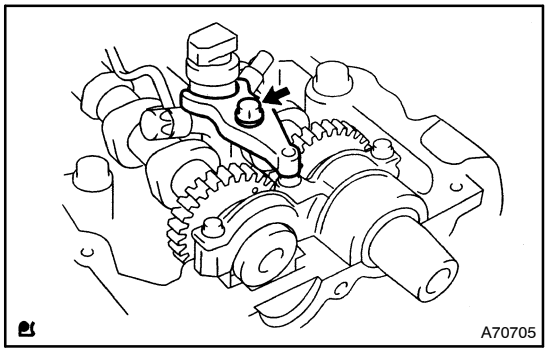
18. REMOVE INJECTION PIPE (See page 14–214)

19. REMOVE CYLINDER HEAD COVER SUB–ASSY (See page 14–214)

20. REMOVE CAMSHAFT TIMING PULLEY (See page 14–223)

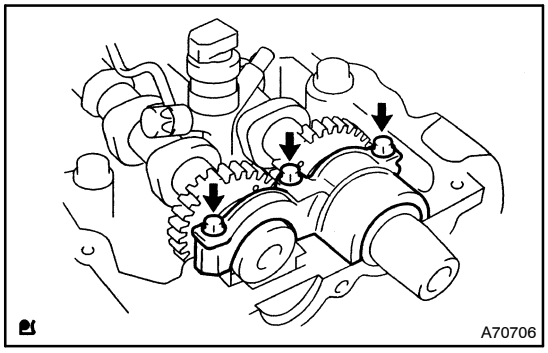
21. REMOVE TIMING BELT IDLER SUB–ASSY NO.1 (See page 14–223)

22. REMOVE TIMING BELT NO.2 COVER (See page 14–223)



23. REMOVE NOZZLE HOLDER CLAMP

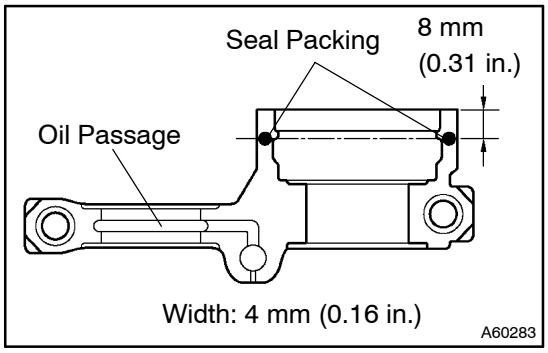
(a) Remove the bolt and washer, and remove the nozzle holder clamp.



24. REMOVE CAMSHAFT SETTING OIL SEAL

(a) Uniformly loosen the 3 bolts, and remove the camshaft bearing cap.

(b) Remove the oil seal.



25. INSTALL CAMSHAFT SETTING OIL SEAL

(a) Remove old seal packing (FIPG) from the camshaft bearing cap.

(b) Apply a seal packing to the specific places described in the illustration.

Seal packing: Part No. 08826 – 00080 or equivalent
Thickness: 1 mm (0.039 in.)

NOTICE:

- **Beware of sticking FIPG in the oil passage of the bearing cap.**
- **Once the applying FIPG has completed, install the camshaft bearing cap within 3 minutes and tighten its bolts within 15 minutes.**
- **Do not start the engine 2 hours after the installation.**

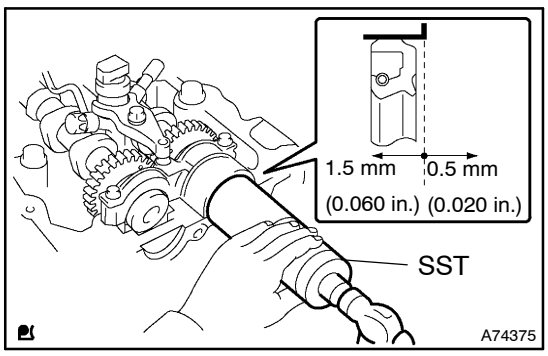
(c) Uniformly tighten the 3 bolts, and fix the camshaft bearing cap.

Torque: 19 N·m (194 kgf·cm, 14 ft·lbf)

(d) Apply a bit of MP grease to a new oil seal's lip.

NOTICE:

Keep the lip clean. Not to bring dirt and dust on that area.



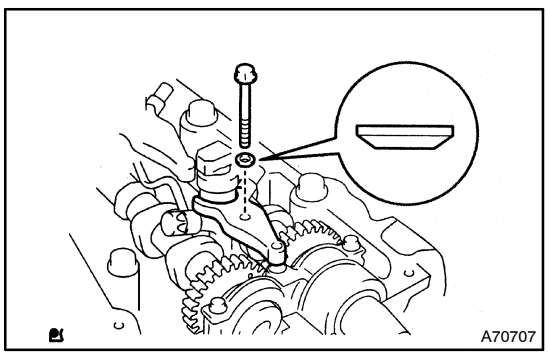
(e) Fit the oil seal by using SST and a hammer.

SST 09608–06041

Oil seal depth from flat end face:
0.5 to –1.5 mm (0.020 to –0.060 in.)

NOTICE:

Install the oil seal straight.



26. INSTALL NOZZLE HOLDER CLAMP

(a) Set a washer in between a bolt and the nozzle holder clamp, and install the nozzle holder clamp by tightening the bolt.

Torque: 22 N·m (220 kgf·cm, 16 ft·lbf)

NOTICE:

Beware of installing a washer upside–down.

27. INSTALL TIMING BELT NO.2 COVER (See page 14–223)
28. INSTALL TIMING BELT IDLER SUB–ASSY NO.1 (See page 14–223)
29. INSTALL CAMSHAFT TIMING PULLEY (See page 14–223)
30. INSTALL CYLINDER HEAD COVER SUB–ASSY (See page 14–214)
31. INSTALL INJECTION PIPE (See page 14–214)
32. INSTALL CYLINDER HEAD COVER SUB–ASSY NO.2 (See page 14–223)
33. INSTALL TIMING BELT (See page 14–214)
34. INSTALL TIMING BELT NO.1 COVER
(a) Install the timing belt cover No. 1 with the 6 bolts.
Torque: 6.0 N·m (61 kgf·cm, 53 in.·lbf)
(b) Install the wire harness clamp.
(c) Install the water hose clamp with the bolt.
Torque: 18 N·m (184 kgf·cm, 13 ft·lbf)
35. INSTALL DIESEL THROTTLE BODY ASSY (See page 10–31)
36. INSTALL VACUUM SWITCHING VALVE ASSY NO.1 (See page 10–31)
37. INSTALL AIR HOSE NO.1
38. INSTALL INTERCOOLER ASSY (See page 10–31)
39. INSTALL INTERCOOLER PROTECTOR
(a) Install the intercooler protector with the 5 bolts.
Torque: 6.0 N·m (61 kgf·cm, 53 in.·lbf)
40. INSTALL FAN PULLEY
41. INSTALL FAN SHROUD
(a) Temporarily place the fan shroud together with the fan with fluid coupling assy to the correct location inside the engine room first.
(b) Install the fan shroud to the radiator with the 2 bolts.
Torque: 5.0 N·m (51 kgf·cm, 44 in.·lbf)
(c) Install the fan with fluid coupling assy to the water pump with the 4 nuts.
Torque: 18 N·m (184 kgf·cm, 13 ft·lbf)
(d) Install the oil cooler inlet hose and outlet hose to the hose clamp. (AT TRANSMISSION)
42. INSTALL FAN AND GENERATOR V BELT (See page 14–189)
43. INSTALL RADIATOR HOSE NO.1
44. INSTALL RADIATOR RESERVE TANK ASSY
(a) Install the radiator reserve tank with the 3 bolts.
Torque: 5.0 N·m (51 kgf·cm, 44 in.·lbf)
(b) Install the radiator reserve tank hose.
45. INSTALL WIRE HARNESS (W/ COLD AREA)
(a) Install the wire harness to the fan shroud.
46. INSTALL RADIATOR SUPPORT SEAL UPPER
(a) Install the radiator support seal upper with the 11 clips.
47. ADD ENGINE COOLANT (See page 16–50)
48. CHECK FOR ENGINE COOLANT LEAKS
49. CHECK FUEL LEAK (See page 11–101)
50. INSTALL ENGINE UNDER COVER SUB–ASSY NO.1
(a) Install the engine under cover No. 1 and tighten the 4 bolts.
Torque: 29 N·m (296 kgf·cm, 21 ft·lbf)