110LJ–01

REPLACEMENT

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

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

2. REMOVE ENGINE UNDER COVER ASSY REAR

(a) Remove the 4 bolts and the engine under cover rear.

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

4. REMOVE RADIATOR SUPPORT SEAL UPPER

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

5. REMOVE WIRE HARNESS (W/ COLD AREA)

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

6. REMOVE RADIATOR RESERVE TANK ASSY

(a) Remove the hose of the radiator reserve tank first.

(b) Remove the 3 bolts and the radiator reserve tank.

7. REMOVE RADIATOR HOSE NO.1

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

HINT:

Beforehand, looses the 4 nuts for the fan with fluid coupling assy before remove the V belt.

9. 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.

10. REMOVE FAN PULLEY

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

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

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

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

15. REMOVE VANE PUMP OIL RESERVOIR ASSY

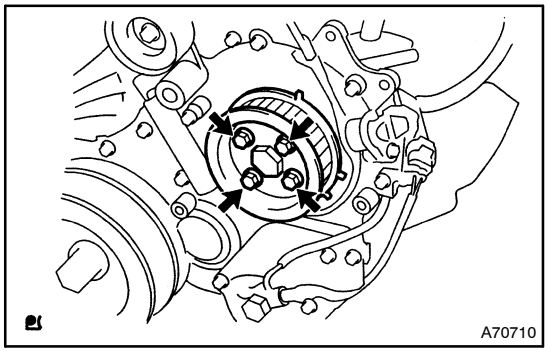
(a) Remove the 3 bolts and vane pump oil reservoir assy.

HINT:

It is not necessary that remove the hose from the vane pomp oil reservoir assy when you remove the assembly. Also, for your work in the rest of the following removal process, you may put and hang the removed oil reservoir assy with a rope to an appropriate location of the vehicle.

16. REMOVE FUEL INLET PIPE SUB–ASSY (See page 11–122)

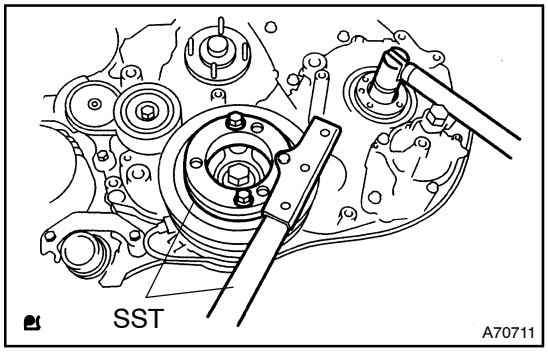
SST 09023–12700



17. REMOVE INJECTION OR SUPPLY PUMP ASSY

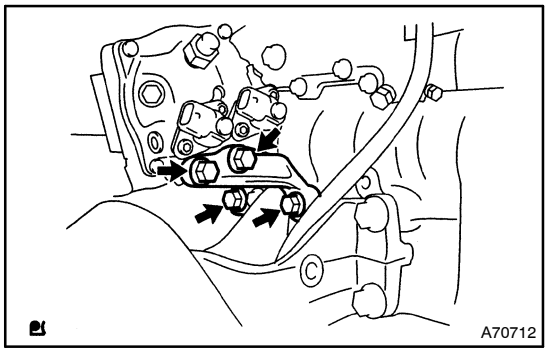
(a) Remove the 4 bolts first.

(b) Remove both the camshaft timing pulley flange No. 2 and pump drive shaft pulley.

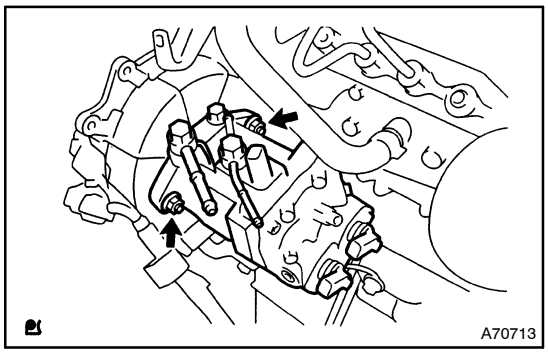


(c) Remove the supply pump gear set nut and O–ring while holding the crankshaft pulley by using SST.
SST 09213–58013, 09330–00021

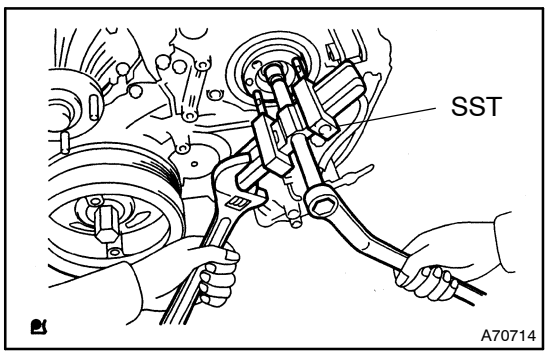
(d) Remove the 3 connectors from the supply pump first, as well as, disengage the 3 fuel hoses.



(e) Remove the 4 bolts and supply pump stay.



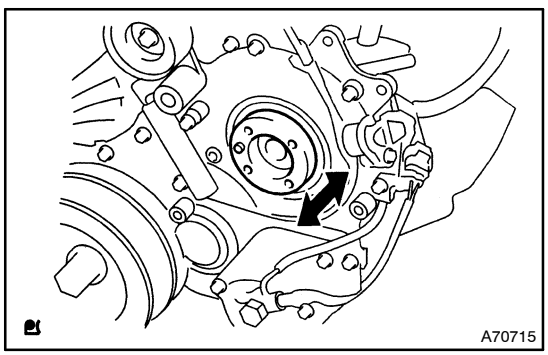
(f) Loosen the 2 nuts shown in the illustration.



(g) Disengage the supply pump from the supply pump gear by using SST.
SST 09950–50013 (09951–05010, 09952–05010, 09953–05020, 09954–05021)

(h) Remove the 2 nuts and supply pump from the engine component.

(i) Remove the O–ring.



18. INSTALL INJECTION OR SUPPLY PUMP ASSY

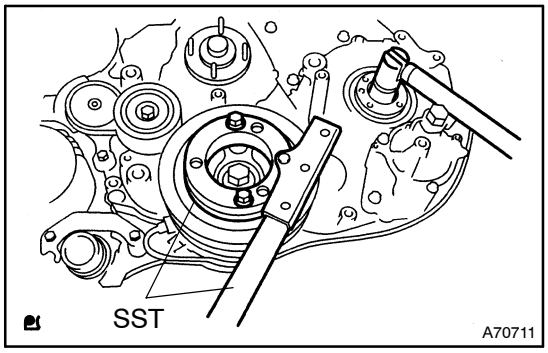
(a) Confirm the supply pump gear in the timing gear case that moves in back–and–forth direction smoothly.

(b) Install a new O–ring to the injection pump.

(c) As fitting its projecting edge of the supply pump head to the key–slot of the supply pump gear, install the pump to the timing gear case.

(d) With hold the supply pump by a hand, push the supply pump gear in rear side direction to joint the pump gear and drive shaft.

(e) Temporarily install the supply pump with the 2 nuts.



(f) Fix the crankshaft by SST.
SST 09213–58013, 09330–00021

(g) Set a new O–ring before tightening the supply pump gear set nut.
Torque: 103 N·m (1050 kgf·cm, 76 ft·lbf)

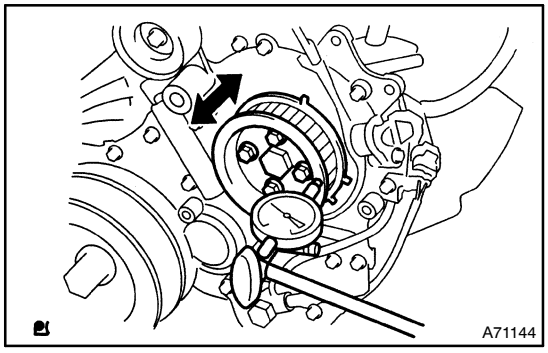
(h) Temporary install the supply pump stay with the 2 oblts on the engine block side.

(i) Tighten the 2 nuts for the injection pump.
Torque: 21 N·m (214 kgf·cm, 16 ft·lbf)

(j) Fit the supply pump stay to the engine block, and install the 2 bolts for the supply pump side.
Torque: 21 N·m (214 kgf·cm, 16 ft·lbf)

(k) Fasten the supply pump stay on the engine block side.
Torque: 21 N·m (214 kgf·cm, 16 ft·lbf)

(l) Install the camshaft timing pulley flange No. 2 and pump drive shaft with the 4 bolts.
Torque: 31 N·m (316 kgf·cm, 23 ft·lbf)



(m) Push the pump drive shaft pulley into back and forth to see a thrust clearance of the injection pump drive shaft.
Thrust clearance:
0.15 – 0.55 mm (0.0059 – 0.0217 in.)

NOTICE:
Make sure that the crankshaft pulley's notch is at 30 degree in a counterclockwise direction from TDC position.
HINT:
If there is no thrust clearance, disassemble and reassemble the injection pump and pump drive shaft pulley.

19. INSTALL FUEL INLET PIPE SUB–ASSY (See page 11–122)

NOTICE:
- **Also, if the supply pump is replaced, the fuel inlet pipe must be replaced.**
- **Beware of sticking dusts, dirt or any other materials onto the joint area of the fuel inlet pipe.**

SST 09023–12700

20. INSTALL VANE PUMP OIL RESERVOIR ASSY

(a) Install the vane pump oil reservoir assy with the 3 bolts.
Torque: 18 N·m (184 kgf·cm, 13 ft·lbf)

21. INSTALL TIMING BELT (See page 14–214)

22. INSTALL TIMING BELT NO.1 COVER

(a) Install the timing belt cover No. 1 with the 6 bolts.
Torque: 6 N·m (61 kgf·cm, 53 in.·lbf)

(b) Install the wire harness clamp.

(c) Instal the water hose clamp with the bolt.
Torque: 18 N·m (184 kgf·cm, 13 ft·lbf)

23. INSTALL INTERCOOLER ASSY (See page 10–31)

24. INSTALL INTERCOOLER PROTECTOR

(a) Install the intercooler protector with the 5 bolts.
Torque: 6 N·m (61 kgf·cm, 53 in.·lbf)

25. INSTALL FAN PULLEY

26. 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 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)

27. INSTALL FAN AND GENERATOR V BELT (See page 14–189)

28. INSTALL RADIATOR HOSE NO.1

29. INSTALL RADIATOR RESERVE TANK ASSY

(a) Install the radiator reserve tank with the 3 bolts.
Torque: 5 N·m (51 kgf·cm, 44 in.·lbf)

(b) Install the radiator reserve tank hose.

30. INSTALL WIRE HARNESS (W/ COLD AREA)

(a) Install the wire harness to the fan shroud.

31. INSTALL RADIATOR SUPPORT SEAL UPPER

(a) Install the radiator support seal upper with the 11 clips.

32. ADD ENGINE COOLANT (See page 16–50)

33. CHECK FOR ENGINE COOLANT LEAKS

34. CHECK FUEL LEAK (See page 11–101)

35. INSTALL ENGINE UNDER COVER ASSY REAR

(a) Install the engine under cover rear with the 4 bolts.
Torque: 29 N·m (296 kgf·cm, 21 ft·lbf)

36. INSTALL ENGINE UNDER COVER SUB–ASSY NO.1

(a) Install the engine under cover No. 1 with the 4 bolts.
Torque: 29 N·m (296 kgf·cm, 21 ft·lbf)