110L6–01

REPLACEMENT

1. REMOVE INTERCOOLER ASSY (See page 13–11)

2. SEPARATE VANE PUMP OIL RESERVOIR ASSY

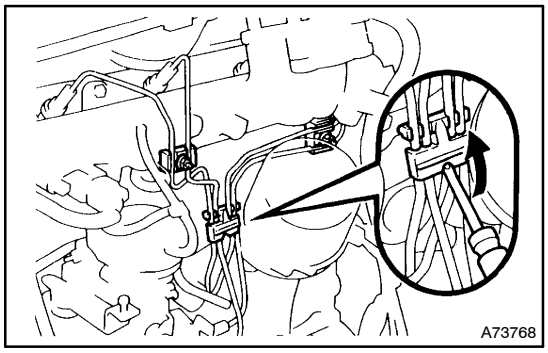
(a) Remove the 3 bolts and vane pump oil reservoir assy.

HINT:

Disconnect the vane pump oil reservoir assy with the hose connected, and then it should be hung with rope.

3. REMOVE INJECTION PIPE SET

(a) Remove the 2 nuts holding the clamps to the intake manifold.



(b) Using a screwdriver, pry out the clamp.

(c) Loosen the 8 union nuts of the injection pipes.

(d) Remove the 4 injection pipes and 2 clamps.

4. REMOVE TIMING BELT (See page 14–152)

5. REMOVE CAMSHAFT DRIVE GEAR

(a) Remove the 4 bolts, camshaft drive gear flange and camshaft drive gear pulley.

6. REMOVE INJECTION OR SUPPLY PUMP ASSY

(a) Disconnect the engine speed sensor connector.

(b) Disconnect the spill control valve connector.

(c) Disconnect the injection pump correction unit connector.

(d) Disconnect the timing control valve connector.

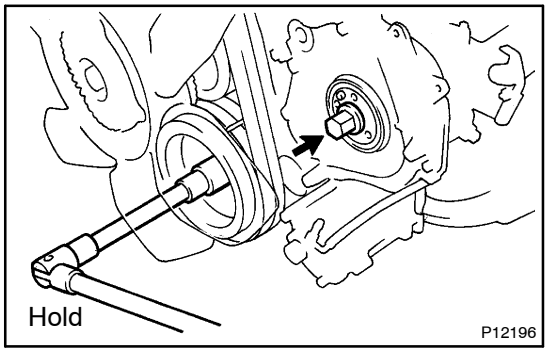
(e) Disconnect the fuel temperature sensor connector.

(f) Disconnect the engine wire clamp.

(g) Disconnect the fuel hose.

(h) Disconnect the fuel hose No. 1.

(i) Disconnect the fuel hose No. 2.

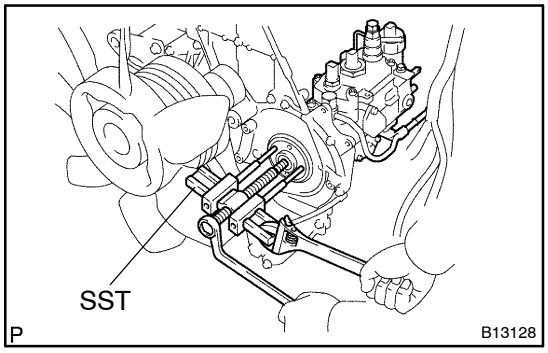


(j) Hold the crankshaft pulley bolt, and remove the injection pump drive gear set nut.

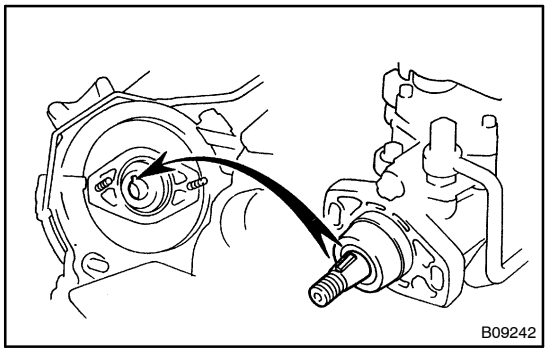
(k) Remove the O–ring from the injection pump drive gear.

(l) Loosen the 2 nuts holding the injection pump to the timing gear case.

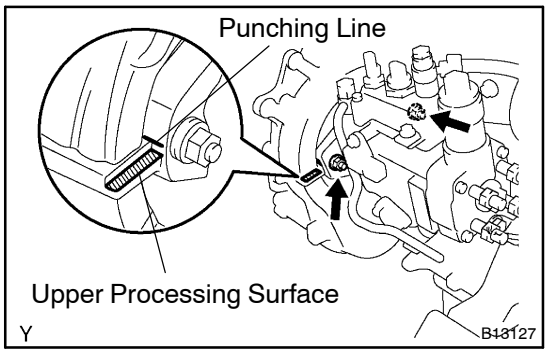
(m) Remove the 3 bolts and injection pump stay.



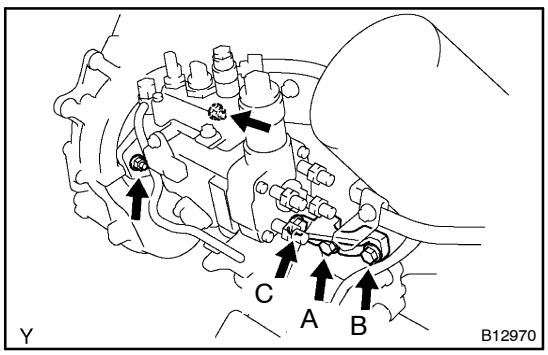
(n) Using SST, disconnect the injection pump from the timing gear case.
SST 09950–50013 (09951–05010, 09952–05010, 09953–05020, 09954–05010)
(o) Remove the 2 nuts, injection pump and cylinder block insulator.
(p) Remove the O–ring from the injection pump.



7. INSTALL INJECTION OR SUPPLY PUMP ASSY
(a) Install a new O–ring to the pump.
(b) Apply a light coat of engine oil on the O–ring.
(c) Align the set key on the drive shaft and groove of the injection pump drive gear.



(d) Hold the injection pump with hands and press the injection pump drive gear to the backward and weld it with the injection pump drive shaft.
(e) Align the punching line of the injection pump flange and the upper processing surface of the timing gear case, and then temporarily install the 2 nuts.
(f) Tighten the 2 nuts holding the injection pump to the timing gear case.
Torque: 21 N·m (210 kgf·cm, 15 ft·lbf)



(g) Temporarily install the injection pump stay with the bolt A and bolt B.
(h) Install the injection pump stay bolt C.
Torque: 32 N·m (330 kgf·cm, 24 ft·lbf)
(i) Tighten the injection pump stay bolt A and bolt B.
Torque: 21 N·m (210 kgf·cm, 15 ft·lbf)

NOTICE:
Before tightening to the standard torque, check whether the pump stay is up against the injection pump.

(j) Install the cylinder block insulator.
(k) Install a new O–ring to the injection pump drive gear.
(l) Install the injection pump drive gear nut.
(m) Hold the crankshaft pulley bolt, and tighten the injection pump drive gear nut.
Torque: 64 N·m (650 kgf·cm, 47 ft·lbf)

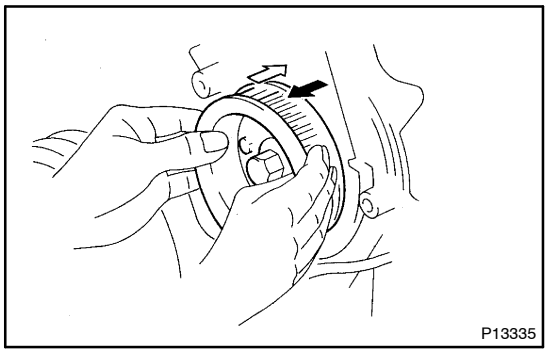
NOTICE:
Do not turn the crankshaft pulley. The valve heads will hit against the piston top.

(n) Connect the engine speed sensor connector.
(o) Connect the spill control valve connector.

(p) Connect the injection pump correction unit connector.
(q) Connect the timing control valve connector.
(r) Connect the fuel temperature sensor connector.
(s) Connect the engine wire clamp.
(t) Connect the fuel hose.
(u) Connect the fuel hose No. 1.
(v) Connect the fuel hose No. 2.

8. INSTALL CAMSHAFT DRIVE GEAR

(a) Align the knock pin of the injection pump drive gear with the knock pin hole of the camshaft drive gear pulley, install the pulley and camshaft drive gear pulley flanges with the 4 bolts.
Torque: 13 N·m (130 kgf·cm, 9 ft·lbf)


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9. INSPECT THRUST CLEARANCE

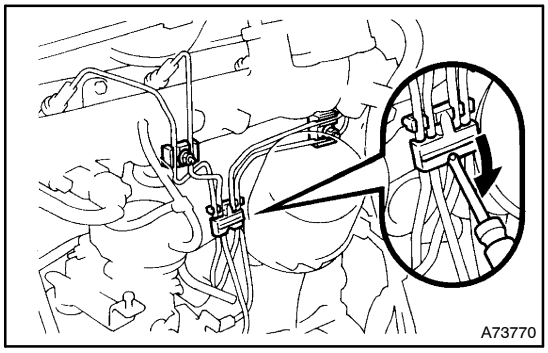
(a) Move the No. 2 camshaft timing pulley back and forth to check that the injection pump drive shaft has sufficient thrust clearance.
Thrust clearance (Reference):
0.15 – 0.55 mm (0.0059 – 0.0217 in.)

If the thrust clearance is not sufficient, loosen the 2 injection pump nuts and the 3 pump stay bolts, than retighten them.
If the thrust clearance is still not sufficient, remove the timing gear cover and then reinstall it.

10. INSTALL TIMING BELT (See page 14–152)

11. INSTALL INJECTION PIPE SET

(a) Install a flare nut in the nozzle side temporarily but tighten one in the pump side.
Torque: 15 N·m (150 kgf·cm, 11 ft·lbf)
(b) Install the injection pipe clamp to the injection pipe.
Torque: 6 N·m (65 kgf·cm, 53 in.·lbf)


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(c) Using a screwdriver, attach the clamp.

12. INSTALL VANE PUMP OIL RESERVOIR ASSY

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

13. INSTALL INTERCOOLER ASSY (See page 13–11)

14. CHECK FOR FUEL LEAKS (See page 11–77)