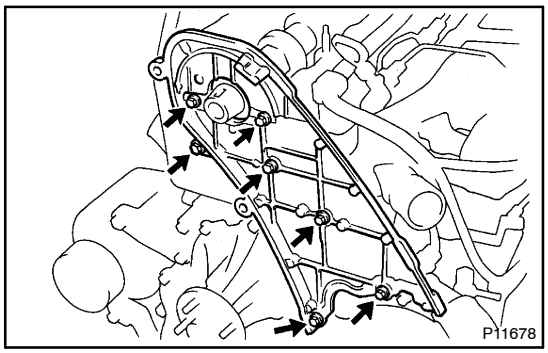
EM0RW–02

REMOVAL

NOTICE:

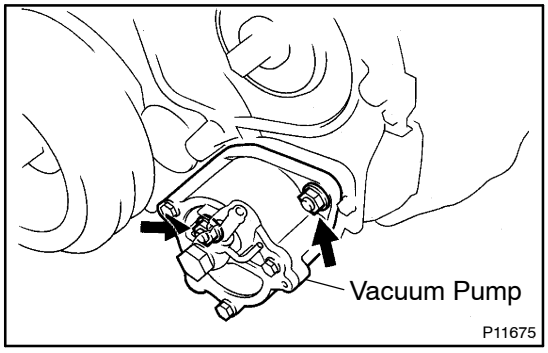
When removing the crankshaft pulley and timing gear as the timing belt is off and the valve interferes with the piston, never,turn the crankshaft to the right beyond the dead point above the No.4 cylinder.

1. **REMOVE TIMING BELT AND PULLEYS**
   (See page EM–13)
2. **REMOVE DRIVE BELT, FAN AND WATER PUMP PULLEY (See page CO–5)**



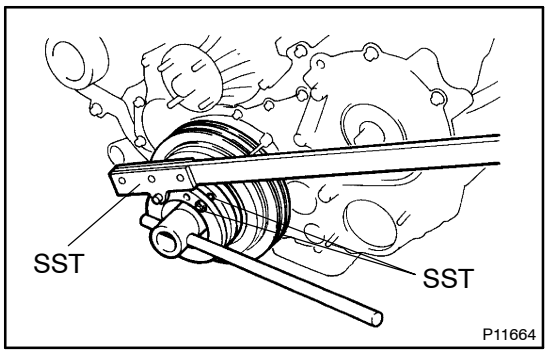
3. **REMOVE CAMSHAFT OIL SEAL RETAINER**

Remove the 7 bolts and camshaft oil seal retainer.



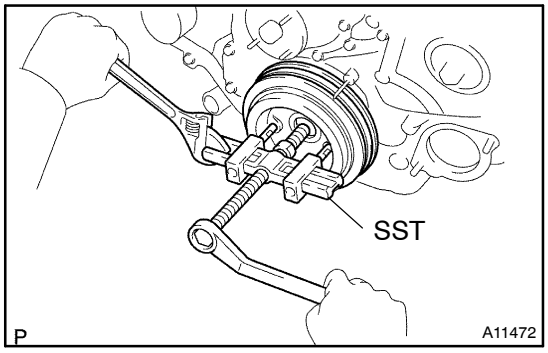
4. **REMOVE VACUUM PUMP**

(a) Remove the vacuum hose.
(b) Remove the 2 nuts and vacuum pump.
(c) Remove 2 the O–rings.

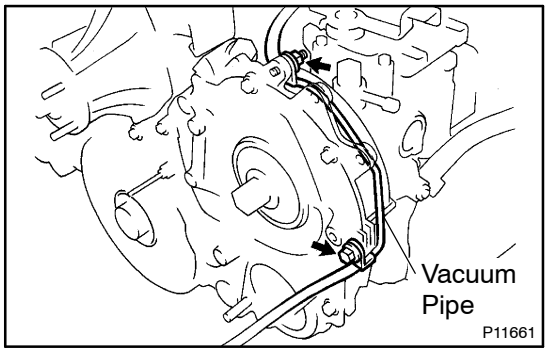


5. **REMOVE CRANKSHAFT PULLEY**

(a) Using SST, remove the pulley bolt and plate.
SST 09213–58012 x 2, 09330–00021

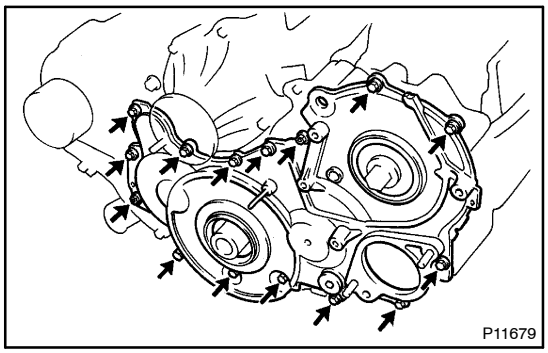


(b) Using SST, remove the crankshaft pulley.
SST 09950–50012, (09951–05010, 09952–05010, 09953–05010, 09953–05020, 09954–05020)

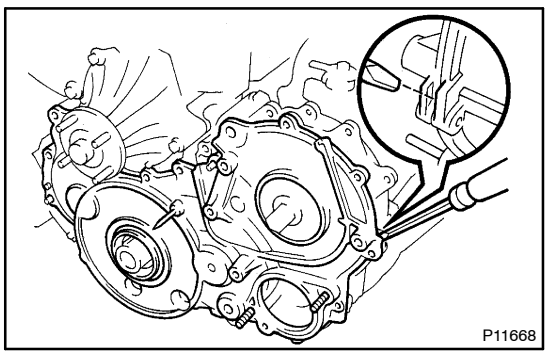


6. REMOVE TIMING GEAR COVER

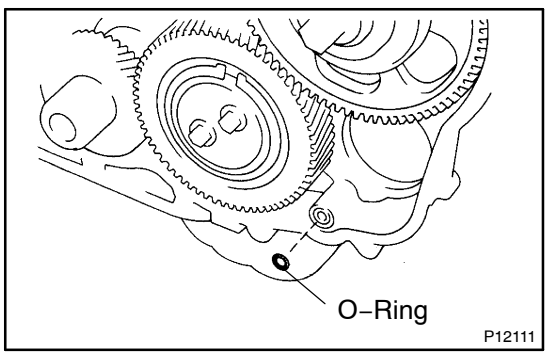
(a) Remove the bolt, nut and washer and disconnect the vacuum pipe.



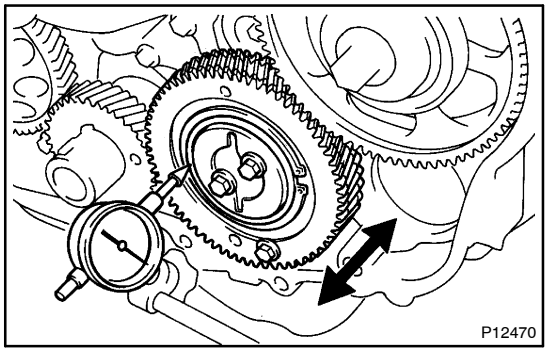
(b) Remove the 13 bolts and 2 nuts.



(c) Using a screwdriver, pry out the timing gear cover.



(d) Remove the O–ring.



7. CHECK THRUST CLEARANCE OF IDLER GEAR

Using a dial indicator, measure the thrust clearance.

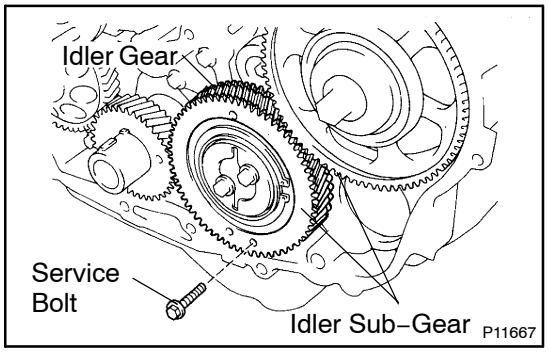
Standard thrust clearance:
0.06 – 0.11 mm (0.0024 – 0.0043 in.)
Maximum thrust clearance: 0.30 mm (0.0118 in.)

If the thrust clearance is greater than maximum, replace the thrust plate. If necessary, replace the idler gear and/or idler gear shaft.

8. REMOVE TIMING GEARS

NOTICE:

- **The matchmark on each gear faces the front of the engine.**
- **Take care not to damage the gear teeth when removing and installing the gears. Do not use parts that are scratched or damaged, they cause noise.**



(a) Remove the crankshaft timing gear.

(1) Secure the idler sub–gears to the idler gear with a service bolt.

Recommended service bolt:

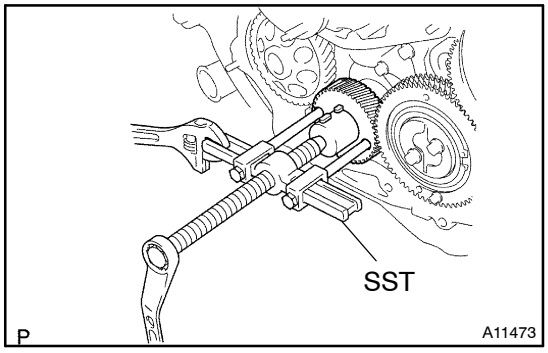
Thread diameter	6 mm
Thread pitch	1.0 mm
Bolt length	28.0 mm (1.10 in.)

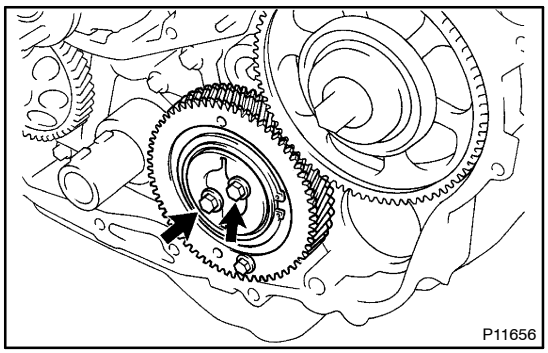
HINT:

When removing the idler gear, make sure that the torsional spring force of the sub–gears has been eliminated by the above operation.

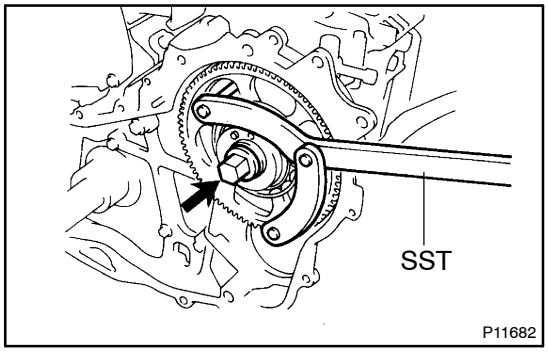
(2) Using SST, remove the crankshaft timing gear.

SST 09950–50012 (09951–05010, 09952–05010, 09953–05010, 09954–05020)

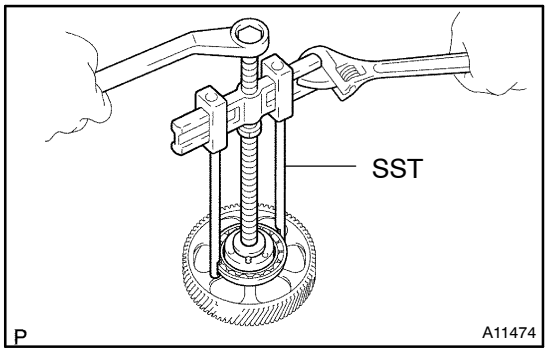




(b) Remove the 2 bolts, thrust plate, idler gear assembly and idler gear shaft.

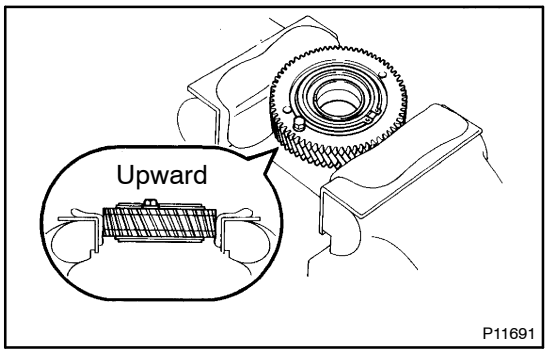


(c) Remove the injection pump drive gear.
(1) Using SST, remove the injection pump drive gear set nut.
SST 09960–10010 (09962–01000, 09963–00600)
(2) Remove the O–ring.



(3) Using SST, remove the injection pump drive gear.
SST 09950–50012 (09951–05010, 09952–05010, 09953–05010, 09954–05020)

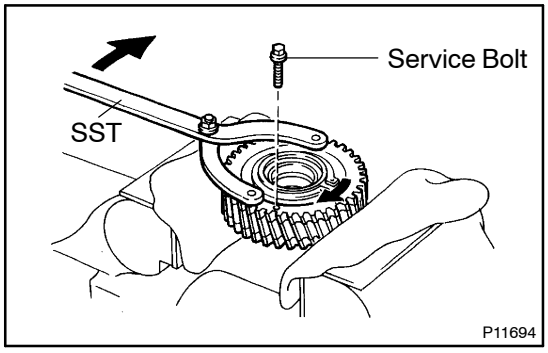
NOTICE:
- **Tighten the 2 bolts of SST more than 8 mm (0.31 in.).**
- **Set the SST so that it is balanced.**



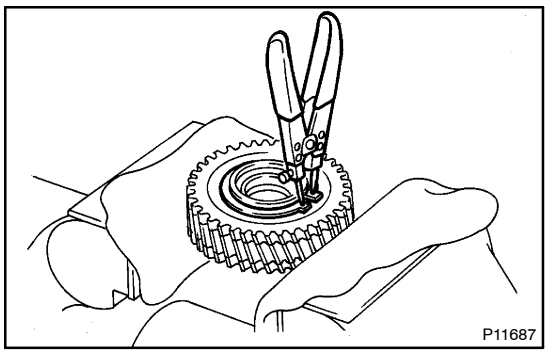
9. DISASSEMBLY IDLER GEAR

(a) Mount the idler gear and No.2 idler sub–gear in a vise.

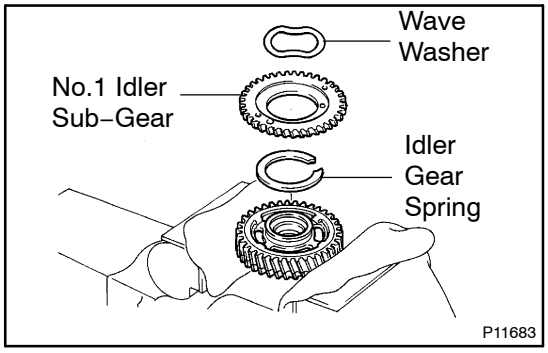
NOTICE:
Be careful not to damage the gears.



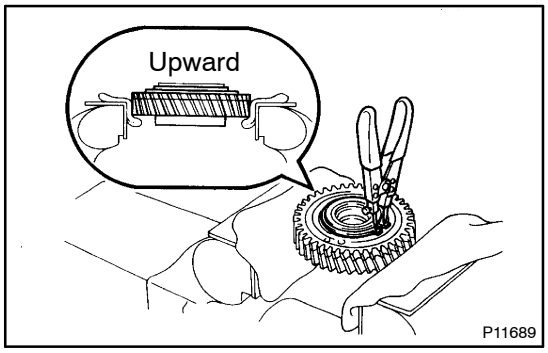
(b) Using SST, turn the No.1 idler sub–gear clockwise and remove the service bolt.
SST 09960–10010 (09962–01000, 09963–00600)



(c) Using snap ring pliers, remove the snap ring.



(d) Remove the wave washer.
(e) Remove the No.1 idler sub–gear.
(f) Remove the idler gear spring.
(g) Remove the idler gear assembly from the vice and turn it upside down.

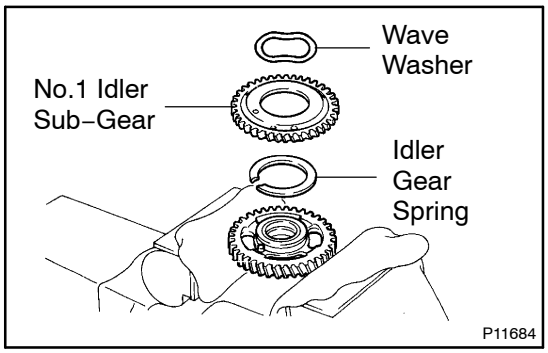


(h) Mount the idler gear in a vise.

NOTICE:

Be careful not to damage the gear.

(i) Using snap ring pliers, remove the snap ring.



(j) Remove the wave washer.
(k) Remove the No.2 idler sub–gear.
(l) Remove the idler gear spring.