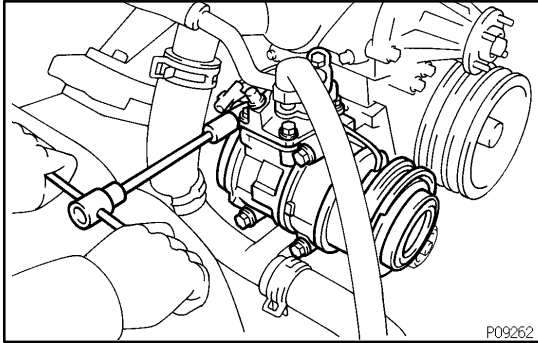


REMOVAL

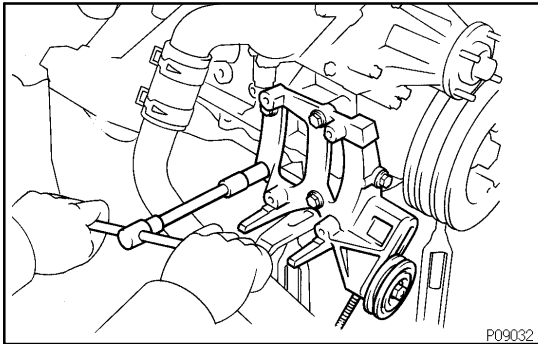
1. DRAIN ENGINE OIL
2. DRAIN ENGINE COOLANT
3. REMOVE ENGINE UNDER COVER
4. REMOVE RADIATOR (See page [CO-14](#))



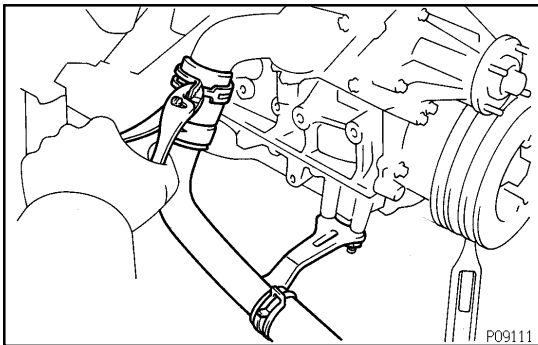
5. **DISCONNECT A/C COMPRESSOR AND BRACKET**
 - (a) Loosen the idler pulley nut and adjusting bolt, and remove the drive belt.
 - (b) Remove the 4 mounting bolts, and disconnect the compressor from the bracket.

HINT:

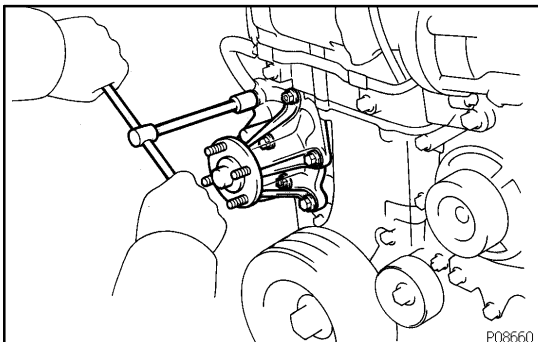
Put aside the compressor, and suspend it.



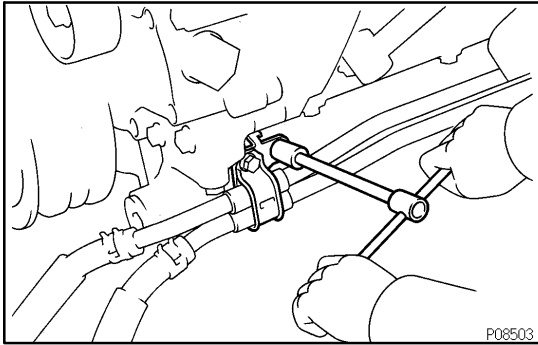
- (c) Remove the 5 bolts and A/C compressor bracket.



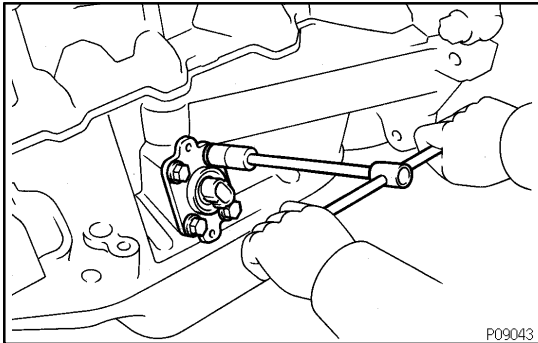
6. **REMOVE RADIATOR PIPE**
 - (a) Disconnect the No.2 radiator hose from the water inlet.
 - (b) Remove the 2 nuts and radiator pipe.



7. **REMOVE WATER PUMP**
Remove the 4 bolts, 2 nuts, water pump and gasket.
8. **REMOVE CYLINDER HEAD** (See page [EM-27](#))

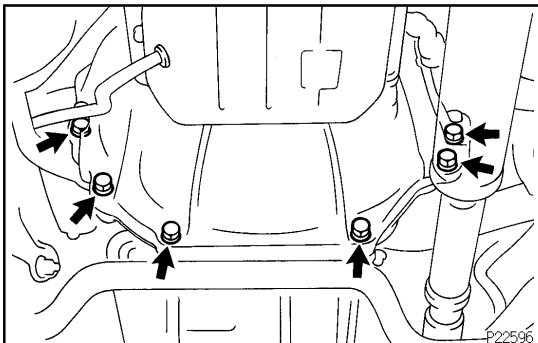


9. DISCONNECT OIL COOLER PIPE BRACKET FROM NO.1 OIL PAN



10. REMOVE OIL LEVEL SENSOR

- (a) Remove the 4 bolts and level sensor.
- (b) Remove the gasket from the level sensor.

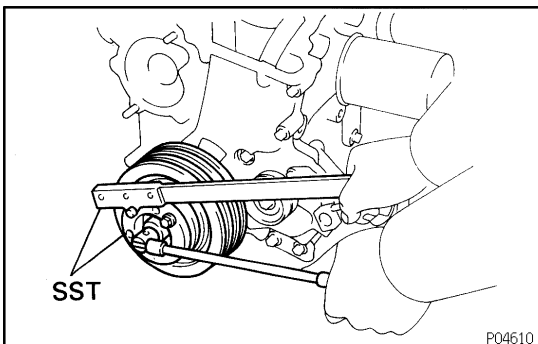


11. REMOVE BOLTS HOLDING NO.1 OIL PAN TO TRANSMISSION HOUSING

Remove the 6 bolts.

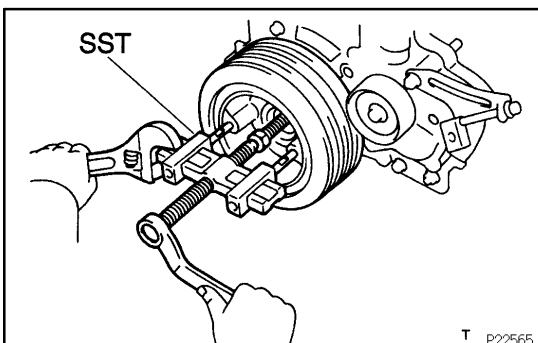
12. REMOVE NO.2 OIL PAN (See page LU-5)

13. REMOVE NO.1 OIL PAN (See page LU-5)



14. REMOVE CRANKSHAFT PULLEY

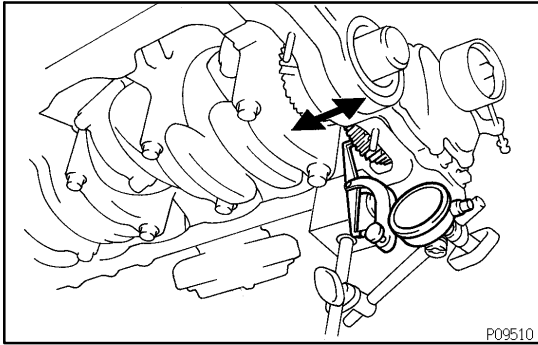
- (a) Using SST, remove the pulley bolt.
SST 09213-58012, 09330-00021
- (b) Remove the crankshaft pulley.



HINT:

If necessary, remove the pulley with SST.

SST 09950-50010 (09951-05010, 09952-05010, 09953-05010, 09953-05020, 09954-05020)



15. CHECK THRUST CLEARANCE OF OIL PUMP DRIVE SHAFT GEAR

Using a dial indicator with lever type attachment, measure the thrust clearance.

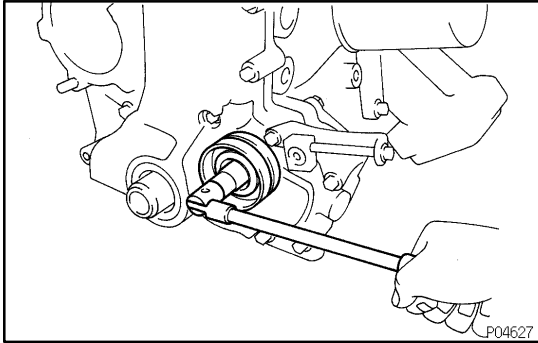
Standard thrust clearance:

0.040 – 0.160 mm (0.0016 – 0.0063 in.)

Maximum thrust clearance:

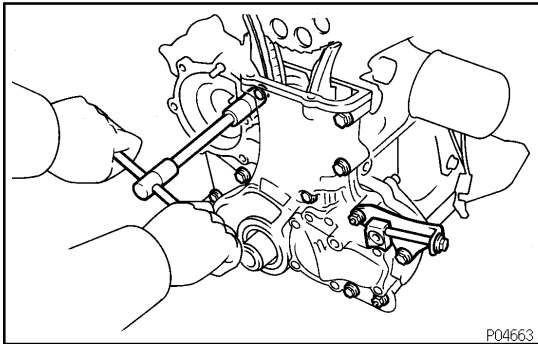
0.30 mm (0.0118 in.)

If the thrust clearance is greater than maximum, replace the oil pump drive shaft gear and/or timing chain cover.



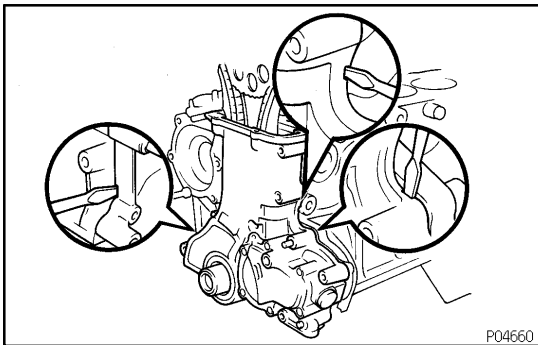
16. REMOVE DRIVE BELT IDLER PULLEY

Remove the bolt and idler pulley.



17. REMOVE TIMING CHAIN COVER

- (a) Remove the 9 mounting bolts, 2 mounting nuts and drive belt adjusting bar.

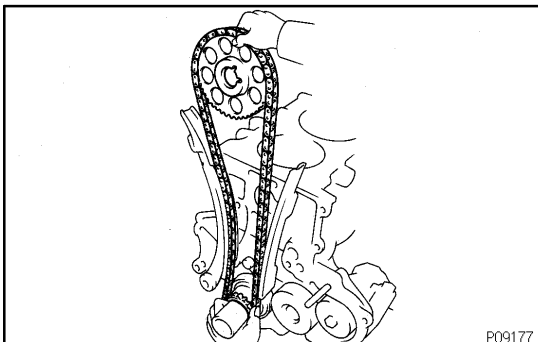


- (b) Remove the oil pump by prying the portions between the cylinder block and oil pump with a screwdriver.

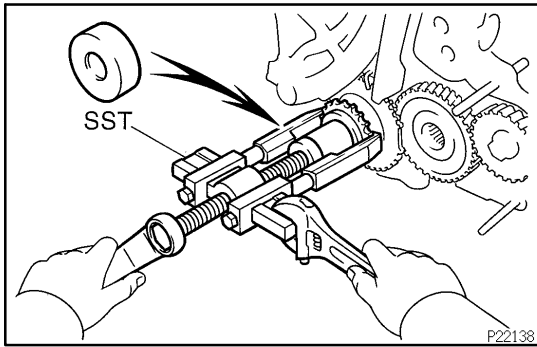
NOTICE:

Be careful not to damage the contact surfaces of the cylinder block and oil pump.

- (c) Remove the O-rings from the oil pump.
(d) Remove the gasket from the oil pump.

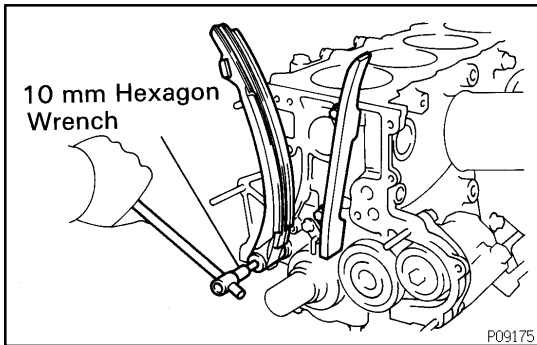


18. REMOVE TIMING CHAIN AND CAMSHAFT TIMING GEAR

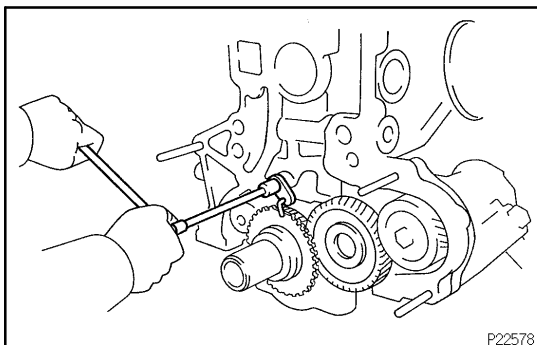
**19. REMOVE CRANKSHAFT TIMING GEAR****HINT:**

If necessary, remove the gear with SST.

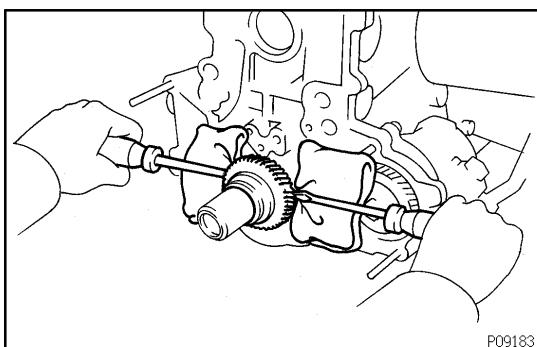
SST 09950-40010 (09951-04010, 09952-04010, 09953-04020, 09954-04010, 09955-04060), 09950-60010 (09951-00350)

**20. REMOVE CHAIN TENSIONER SLIPPER AND VIBRATION DAMPER**

- (a) Using a 10 mm hexagon wrench, remove the bolt and slipper.
- (b) Remove the 2 bolts and damper.

**21. REMOVE OIL JET**

Remove the bolt and oil jet.

22. REMOVE CRANKSHAFT ROTOR**23. REMOVE OIL PUMP DRIVE SHAFT GEAR****24. REMOVE PUMP DRIVE SHAFT GEAR**

If the pump drive shaft gear cannot be removed by hand, use 2 screwdrivers.

NOTICE:

Position shop rags as shown to prevent damage.