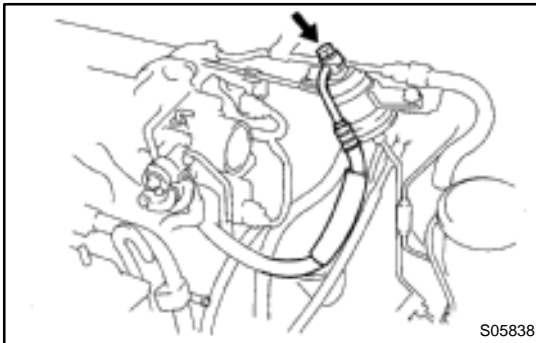


REMOVAL

1. REMOVE RH ENGINE UNDER COVER
2. DRAIN ENGINE COOLANT
3. DISCONNECT FRONT EXHAUST PIPE

Remove the 2 bolts and 2 compression springs, and disconnect the front exhaust pipe.

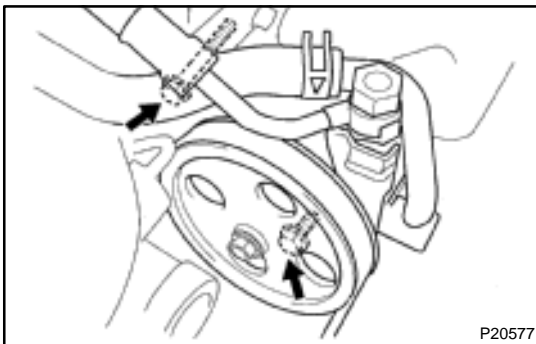


4. A/T:
DISCONNECT THROTTLE CABLE
5. DISCONNECT ACCELERATOR CABLE
6. DISCONNECT VSV FOR EVAP CONNECTOR AND BRACKET
7. REMOVE AIR CLEANER ASSEMBLY WITH AIR INTAKE CONNECTOR
8. DISCONNECT FUEL HOSE

Remove the union bolt and gaskets, and disconnect the fuel inlet hose.

NOTICE:

Catch leaking fuel in a container.

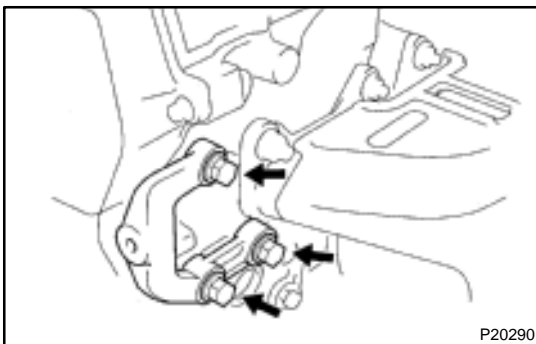


9. w/ PS:
REMOVE PS PUMP AND PUMP BRACKET WITHOUT DISCONNECTING HOSES

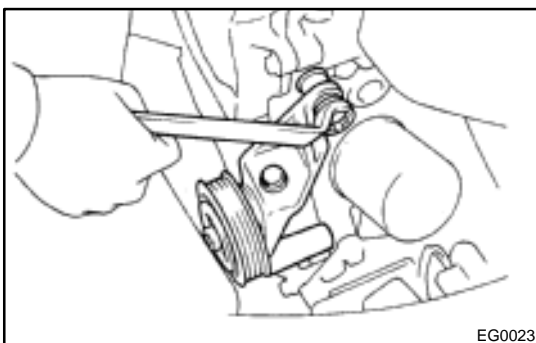
- (a) Loosen the 2 bolts, and remove the PS drive belt.
- (b) Remove the 2 bolts, and disconnect the PS pump from the engine.

HINT:

Put aside the PS pump, and suspend it.



- (c) Remove the 3 bolts and PS pump bracket.



10. w/ A/C and w/o PS:
REMOVE IDLER PULLEY BRACKET

- (a) Loosen the idler pulley mounting nut and adjusting bolt, and remove the drive belt.
- (b) Remove the 3 bolts and idler pulley bracket.

11. REMOVE IGNITION COILS AND SPARK PLUGS

12. REMOVE THROTTLE BODY

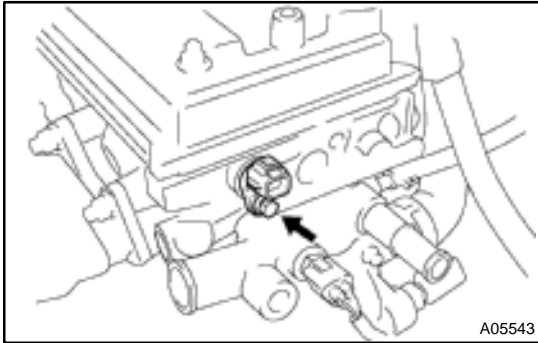
(See page [SF-27](#))

13. REMOVE CAMSHAFT POSITION SENSOR

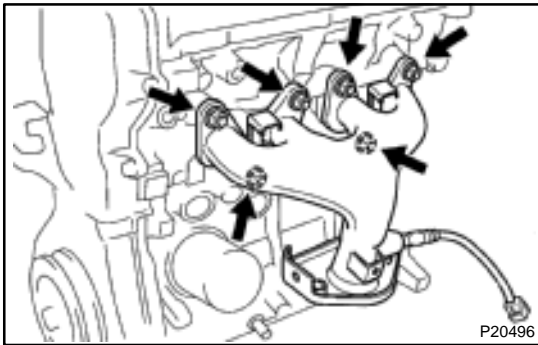
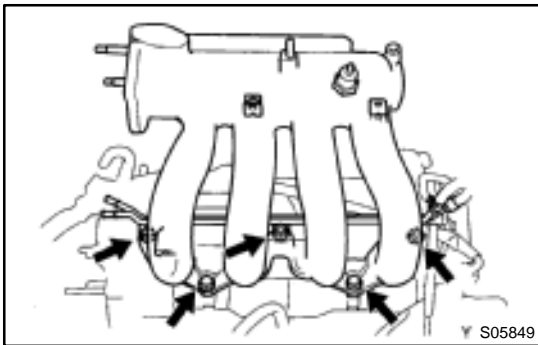
(See page [IG-10](#))

14. REMOVE WATER INLET AND OUTLET HOUSING

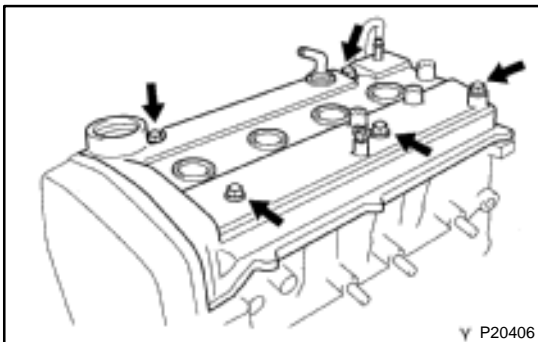
- (a) Disconnect these connectors:
 - Engine coolant temperature sender gauge connector
 - Engine coolant temperature sensor connector
 - Fan engine coolant temperature switch connector
- (b) Disconnect these hoses:
 - 2 radiator hoses
 - Water inlet hose
 - Heater outlet hose
- (c) Remove the bolt, 2 nuts, the water inlet and outlet housing.

**15. REMOVE EXHAUST MANIFOLD**

- (a) Remove the 3 bolts and heat insulator.
- (b) Remove the bolt, 2 nuts and exhaust manifold stay.
- (c) Remove the 6 nuts, exhaust manifold and gasket.

**16. REMOVE DELIVERY PIPE AND INJECTORS**(See page [SF-18](#))**17. DISCONNECT BRAKE BOOSTER AND MAP VACUUM HOSES****18. REMOVE INTAKE MANIFOLD**

- (a) Disconnect the engine wire clamps from the intake manifold stay.
- (b) Remove the bolt, nut and intake manifold stay.
- (c) Remove the 2 bolts, 3 nuts, intake manifold and gasket with air pipe.

**19. REMOVE CYLINDER HEAD COVER**

- (a) Remove the oil filler cap.
- (b) Remove the 5 cap nuts and seal washers.
- (c) Pry out the cylinder head cover, and remove the cover and gasket.

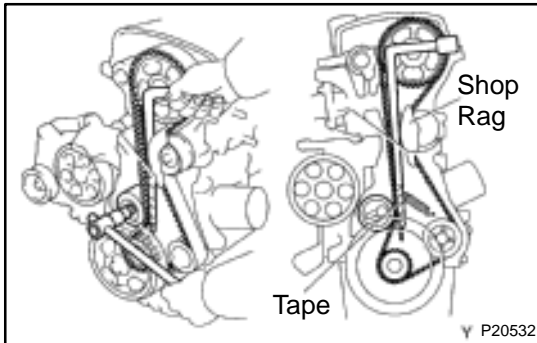
20. REMOVE CHARCOAL CANISTER(See page [EM-13](#))

21. REMOVE NO.2 TIMING BELT COVER

Remove the 4 bolts, No.2 timing belt cover and gasket.

22. REMOVE GENERATOR DRIVE BELT

Loosen the pivot nut and adjusting bolt, and remove the generator drive belt.

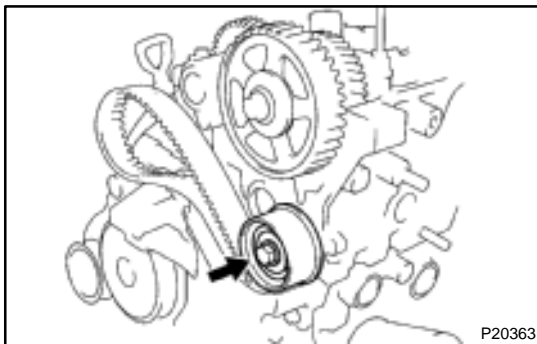
23. REMOVE NO.3 TIMING BELT COVER FROM NO.1 TIMING BELT COVER**24. SET NO.1 CYLINDER TO TDC/COMPRESSION**
(See page [EM-13](#))**25. REMOVE TIMING BELT FROM CAMSHAFT TIMING PULLEY**

- (a) Loosen the mount bolt of the No.1 idler pulley and shift pulley toward the left as far as it will go and then temporarily tighten it.

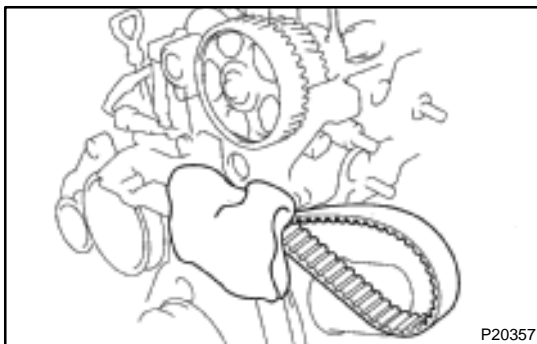
NOTICE:

Be careful not to damage the timing belt.

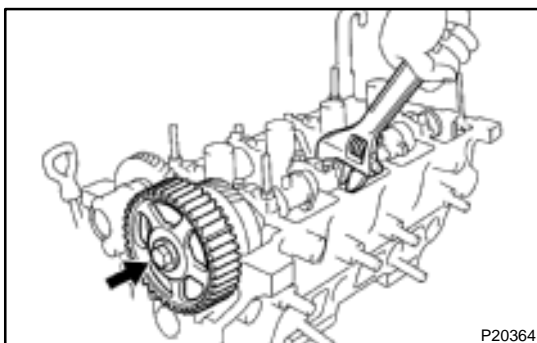
- (b) Remove the timing belt from the camshaft timing pulley.

**26. REMOVE NO.2 IDLER PULLEY**

Remove the bolt and idler pulley.

**NOTICE:**

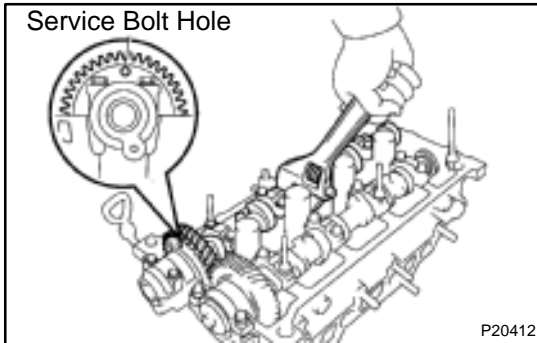
- Support the timing belt, so the meshing of the crankshaft timing pulley and timing belt does not shift.
- Be careful not to drop anything inside the timing belt cover.
- Do not allow the belt to come into contact with oil, water or duct.

**27. REMOVE CAMSHAFT TIMING PULLEY**

Secure the hexagonal portion of the camshaft, and remove the bolt and pulley.

28. REMOVE INTAKE AND EXHAUST CAMSHAFTS**NOTICE:**

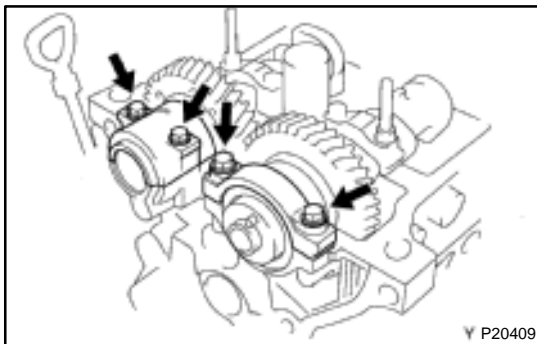
Since the thrust clearance of the camshaft is small, the camshaft must be held level while it is being removed. If the camshaft is not kept level, the portion of the cylinder head receiving the shaft thrust may crack or be damaged, causing the camshaft to seize or break. To avoid this, the following steps should be carried out.



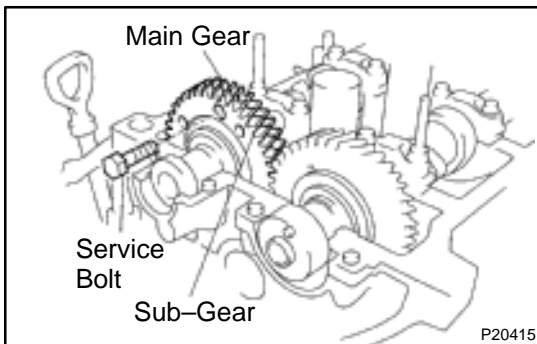
- (a) Set the intake camshaft as shown in the illustration so that the service bolt holes of the intake camshaft gears are directly above.

HINT:

This helps to lift the exhaust camshaft levelly and evenly by pushing No.2 and No.4 cylinder cam lobes of the intake camshaft toward their valve lifters.



- (b) Remove the 4 bolts, No.1 and No.2 bearing caps.
(c) Remove the oil seal and housing plug.



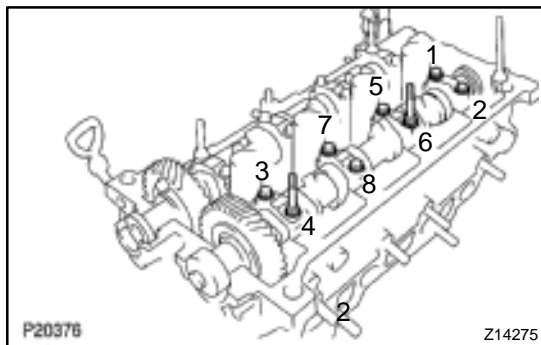
- (d) Secure the intake camshaft sub-gear to the main gear with a service bolt.

Recommended service bolt:

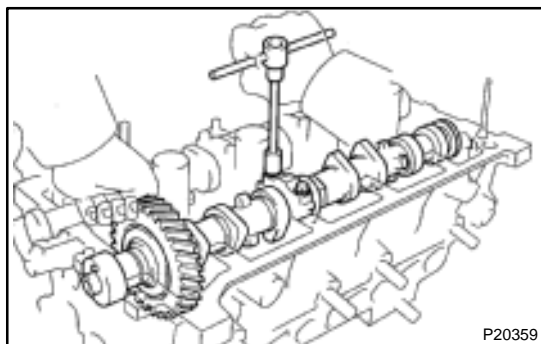
| | |
|-----------------|------------------------------|
| Thread diameter | 6 mm |
| Thread pitch | 1.0 mm |
| Bolt length | 16 – 20 mm (0.63 – 0.79 in.) |

HINT:

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



- (e) Uniformly loosen and remove the 8 No.3 bearing cap bolts, in several passes, in the sequence shown.
- (f) Remove the 4 bearing caps and exhaust camshaft.

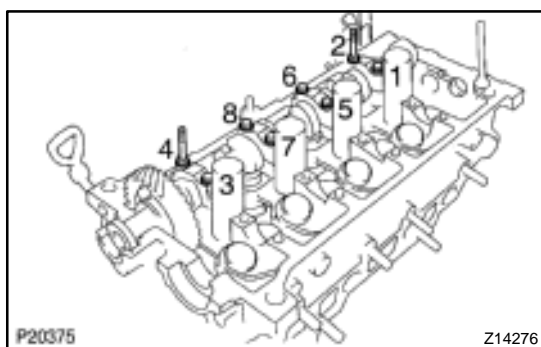
**HINT:**

If the camshaft is not being lifted out straight and level, reinstall the bearing cap with the 2 bolts.

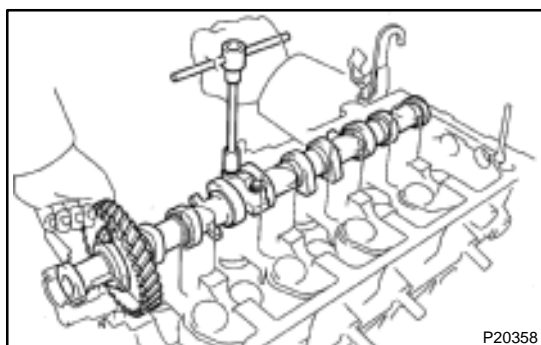
Then alternately loosen and remove the bearing cap bolts with the camshaft gear pulled up.

NOTICE:

Do not pry on or attempt to force the camshaft with a tool or other object.



- (g) Uniformly loosen and remove the 8 No.3 bearing cap bolts, in several passes, in the sequence shown.
- (h) Remove the 4 bearing caps and intake camshaft.

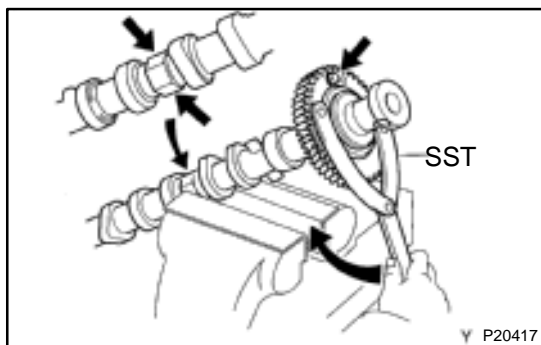
**HINT:**

If the camshaft is not being lifted out straight and level, reinstall the bearing cap with the 2 bolts.

Then alternately loosen and remove the 2 bearing cap bolts with the camshaft gear pulled up.

NOTICE:

Do not pry on or attempt to force the camshaft with a tool or other object.

**29. DISASSEMBLE INTAKE CAMSHAFT**

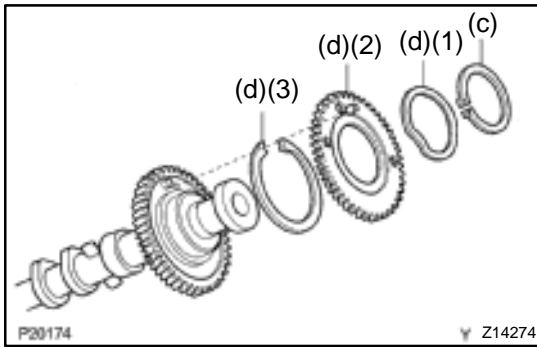
- (a) Mount the hexagon head portion of the camshaft in a soft jaw vise.

NOTICE:

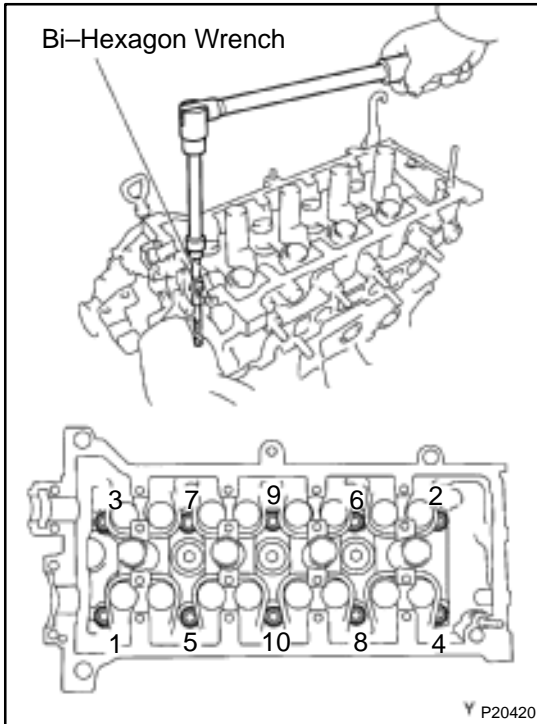
Be careful not to damage the camshaft.

- (b) Using SST, turn the sub-gear clockwise, and remove the service bolt.

SST 09960-10010 (09962-01000, 09963-00500)



- (c) Using snap ring pliers, remove the snap ring.
- (d) Remove these parts:
- (1) Wave washer
 - (2) Camshaft sub-gear
 - (3) Camshaft gear spring

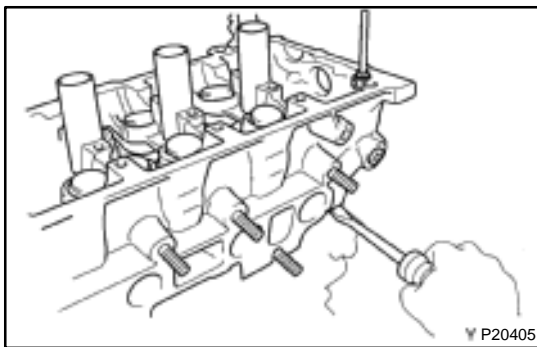


30. REMOVE CYLINDER HEAD

- (a) Using a bi-hexagon wrench 8 mm, uniformly loosen and remove the 10 cylinder head bolts, in several passes, in the sequence shown.

NOTICE:

Cylinder head warpage or cracking could result from removing bolts in incorrect order.



- (b) Lift the cylinder head from the dowels on the cylinder block and place the head on wooden blocks on a bench.

HINT:

If the cylinder head is difficult to lift off, pry with a screwdriver between the cylinder head and block saliences.

NOTICE:

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