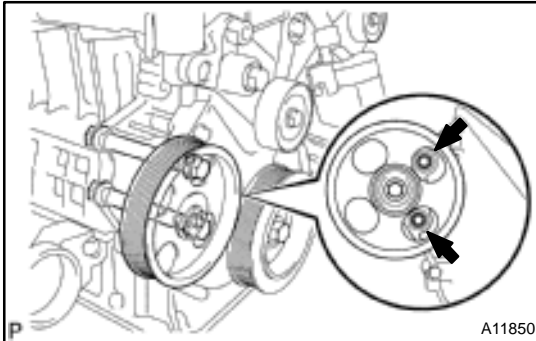


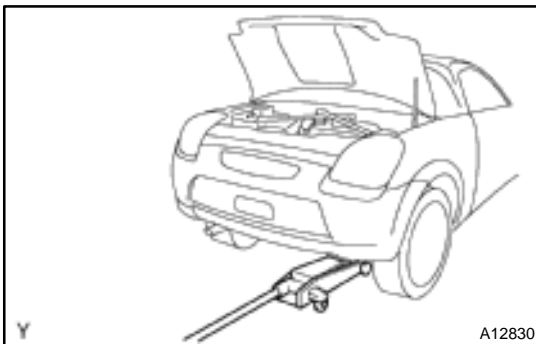
REMOVAL

1. DRAIN ENGINE COOLANT
2. REMOVE REAR SUSPENSION UPPER BRACE
3. REMOVE ENGINE UNDER COVERS
4. REMOVE DRIVE BELT AND GENERATOR
(See page [CH-7](#))



5. REMOVE DRIVE BELT IDLER

Remove the 2 bolts, 2 nuts and drive belt idler.

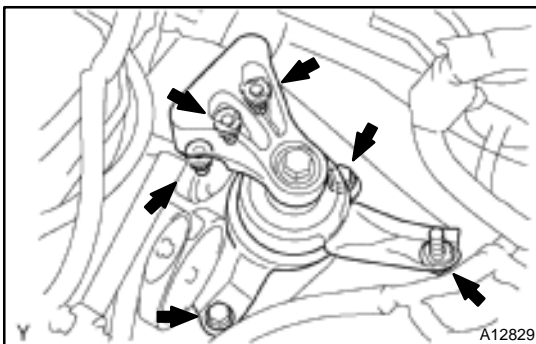


6. REMOVE RH ENGINE MOUNTING INSULATOR

- (a) Set a jack to the oil pan.

NOTICE:

Place a wooden block or rubber block between a jack and the oil pan.

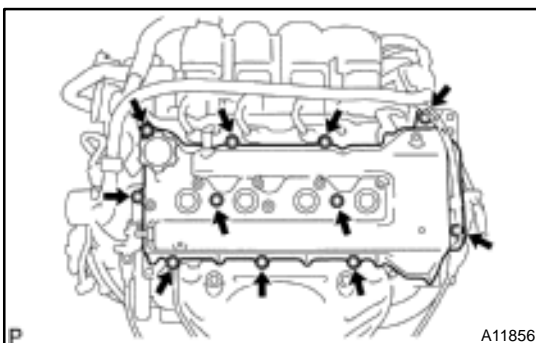


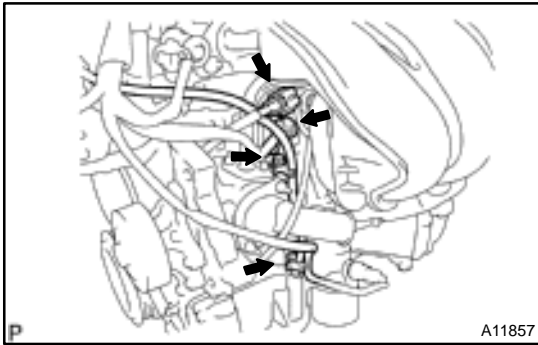
- (b) Remove the 3 bolts, 3 nuts and engine mounting insulator.

7. REMOVE IGNITION COILS (See page [IG-4](#))

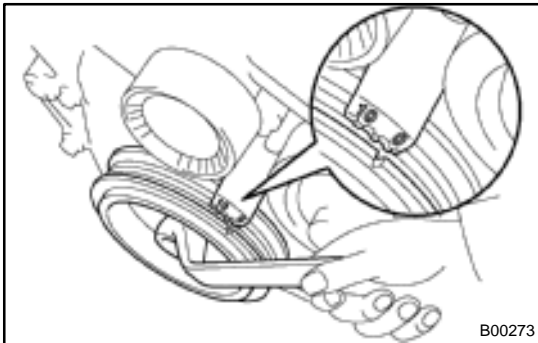
8. REMOVE CYLINDER HEAD COVER

- (a) Disconnect the 2 PCV hoses from the cylinder head cover.
- (b) Disconnect the noise filter.
- (c) Disconnect the heated oxygen sensor (bank 1 sensor 1) connector.
- (d) Remove the 9 bolts, 2 nuts and 2 seal washers.
- (e) Disconnect the engine wire together with the 3 engine wire brackets, and remove the cylinder head cover and gasket.

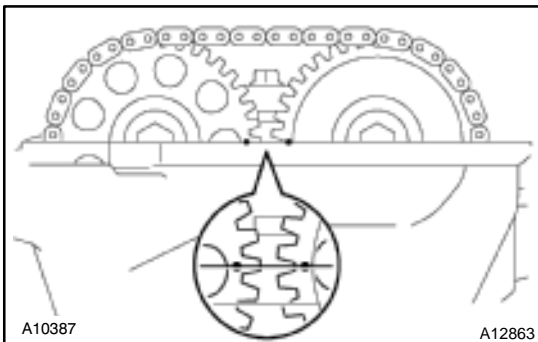


**9. REMOVE OIL DIPSTICK AND GUIDE**

- (a) Remove the bolt, and disconnect the oil dipstick and guide.
- (b) Disconnect the 2 connectors and wire bracket from the oil dipstick guide, and remove the oil dipstick and O-ring.

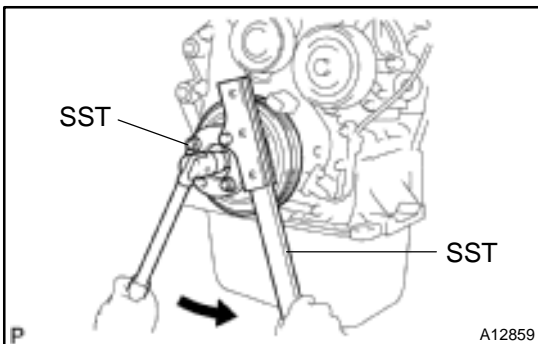
**10. SET NO. 1 CYLINDER TO TDC/COMPRESSION**

- (a) Turn the crankshaft pulley, and align its groove with the timing mark 0 of the timing chain cover.

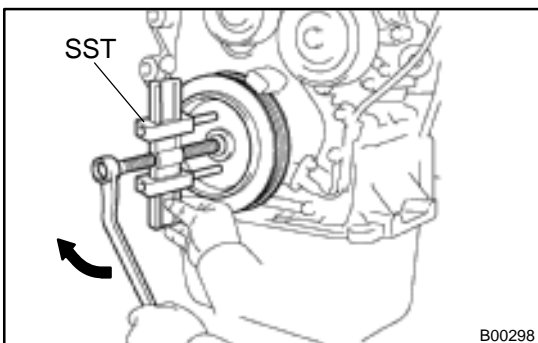


- (b) Check that the point marks of the camshaft timing sprocket and VVT timing sprocket are in straight line on the timing chain cover surface as shown in the illustration.

If not, turn the crankshaft 1 revolution (360°) and align the marks as above.

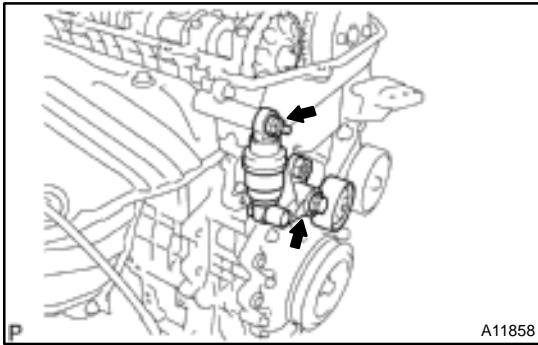
**11. REMOVE CRANKSHAFT PULLEY**

- (a) Using SST, remove the pulley bolt.
SST 09213-70011, 09330-00021
- (b) Remove the crankshaft pulley.

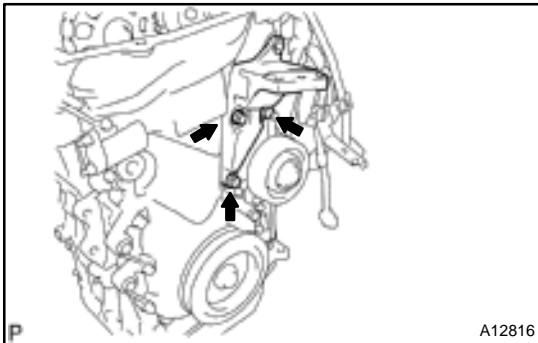
**HINT:**

If necessary, remove the pulley with SST.

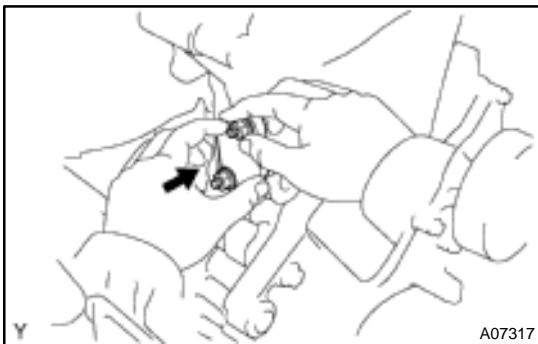
SST 09950-50012 (09951-05010, 09952-05010, 09953-05020, 09954-05020)

**12. REMOVE DRIVE BELT TENSIONER**

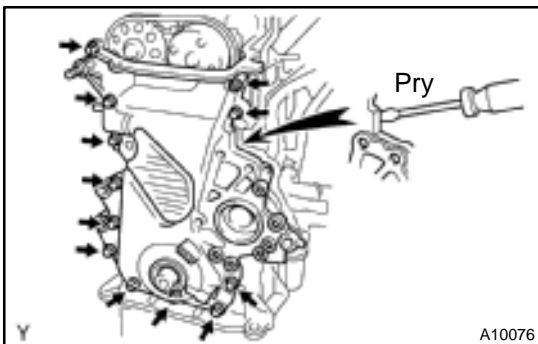
Remove the bolt, nut and drive belt tensioner.

**13. REMOVE RH ENGINE MOUNTING BRACKET**

Remove the 3 bolts and engine mounting bracket.

**14. REMOVE CHAIN TENSIONER**

Remove the 2 nuts and chain tensioner.

15. REMOVE WATER PUMP (See page CO-7)**16. REMOVE CRANKSHAFT POSITION SENSOR (See page IG-6)****17. REMOVE TIMING CHAIN COVER**

(a) Remove the 11 bolts and nut.

(b) Using a screwdriver, pry between the timing chain cover and cylinder head or cylinder block.

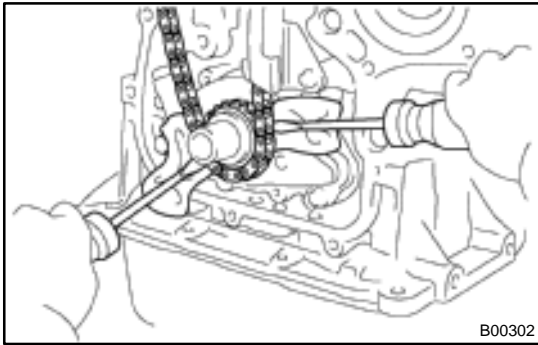
(c) Remove the timing chain cover.

NOTICE:

Be careful not to damage the contact surfaces of the timing chain cover, cylinder head and cylinder block.

18. REMOVE CRANK ANGLE SENSOR PLATE**19. REMOVE CHAIN TENSIONER SLIPPER**

Remove the bolt and slipper.



20. REMOVE TIMING CHAIN AND CRANKSHAFT TIMING SPROCKET

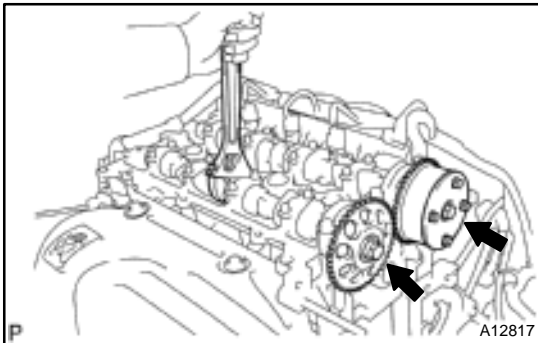
If necessary, pry between the timing chain and oil pump by 2 screwdrivers.

NOTICE:

Position shop rags as shown to prevent damage.

21. REMOVE CHAIN VIBRATION DAMPER

Remove the 2 bolts and damper.



22. REMOVE CAMSHAFT TIMING SPROCKET AND VVT TIMING SPROCKET

- (a) Hold the hexagonal head wrench portion of the camshaft with a wrench, and loosen the sprocket.

NOTICE:

Be careful not to damage the cylinder head and valve lifter by a wrench.

- (b) Remove the bolt and camshaft timing sprocket.
 (c) Remove the bolt and VVT timing Sprocket.