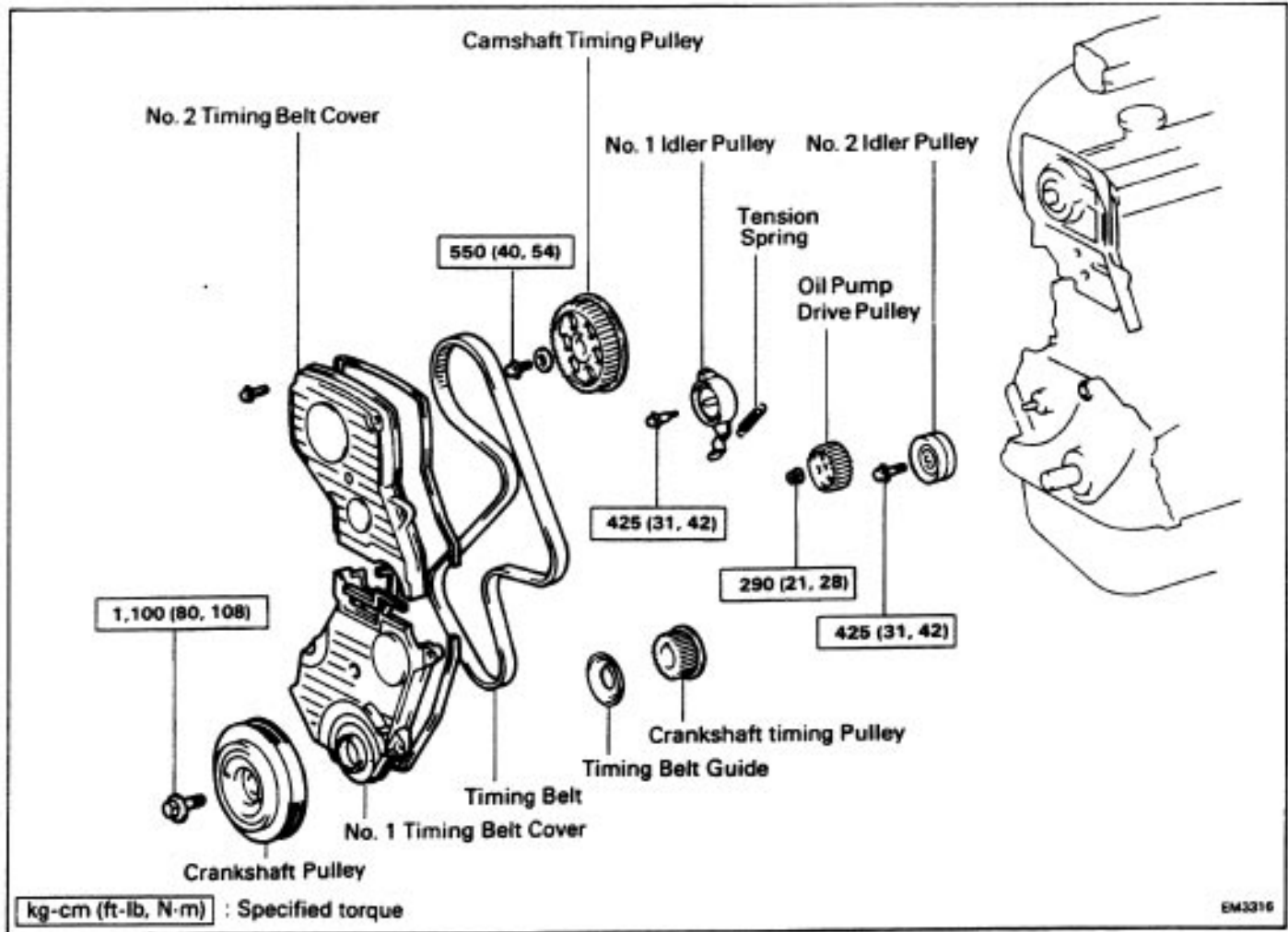


TIMING BELT (3S-FE) COMPONENTS

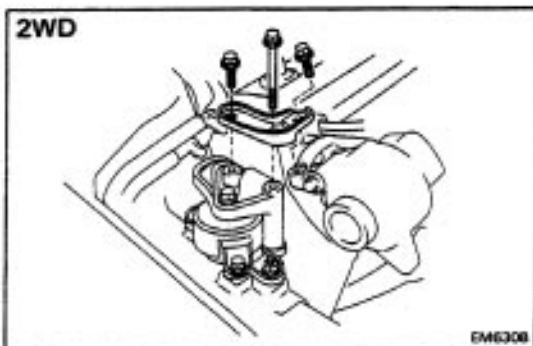


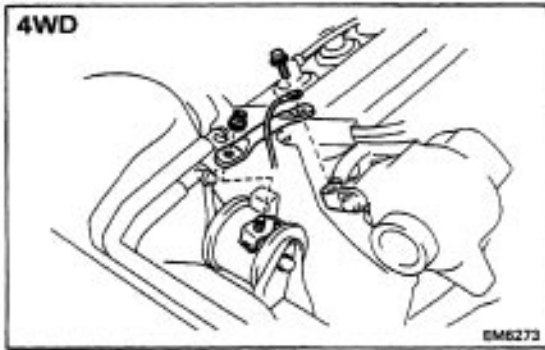
REMOVAL OF TIMING BELT

1. DISCONNECT CABLE FROM NEGATIVE TERMINAL OF BATTERY
2. REMOVE RN FRONT WHEEL
3. REMOVE ENGINE RH UNDER COVER
4. REMOVE CRUISE CONTROL ACTUATOR
(See step 9 on page [EM-108](#))
5. REMOVE DRIVE BELTS
6. REMOVE ALTERNATOR (See page [CH-6](#))
7. REMOVE ALTERNATOR BRACKET
8. REMOVE RH MOUNTING STAY
(2WD)

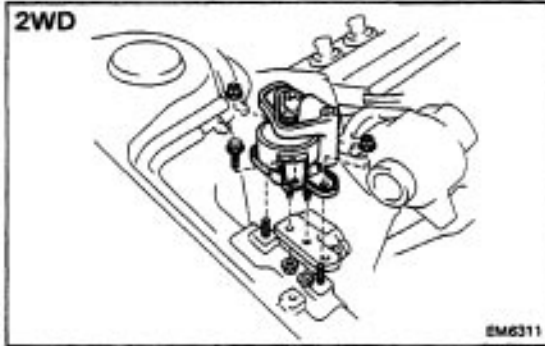
Remove the three bolts and mounting stay.

2WD



**(4WD)**

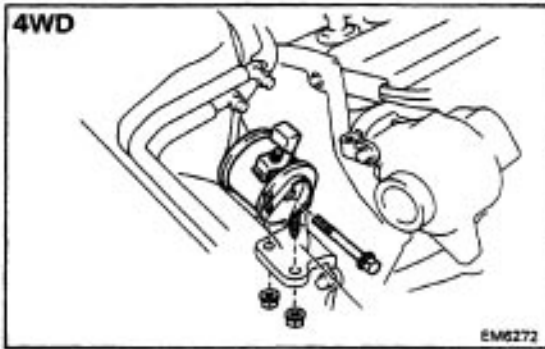
Remove the bolt, nut, ground strap and mounting stay.

**9. SLIGHTLY JACK UP ENGINE**

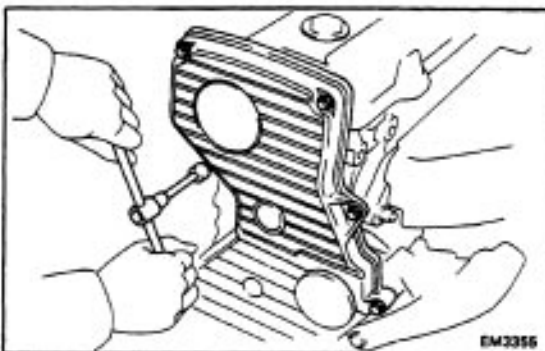
Raise the engine enough to remove the weight from the engine mounting on the right side.

10. REMOVE ENGINE RH MOUNTING INSULATOR AND BRACKET**(a) (2WD)**

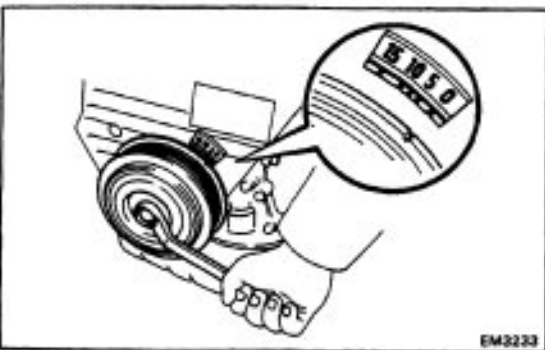
Remove the four nuts, bolt and mounting insulator.

**(b) (4WD)**

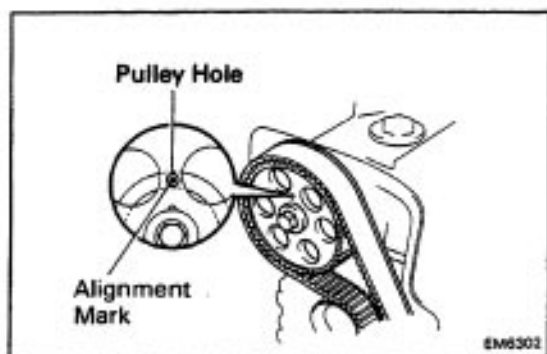
Remove through bolt, two nuts and mounting insulator.

(c) Remove the three bolts and mounting bracket.**11. REMOVE SPARK PLUGS (See page IG-6)****12. REMOVE No.2 TIMING BELT COVER**

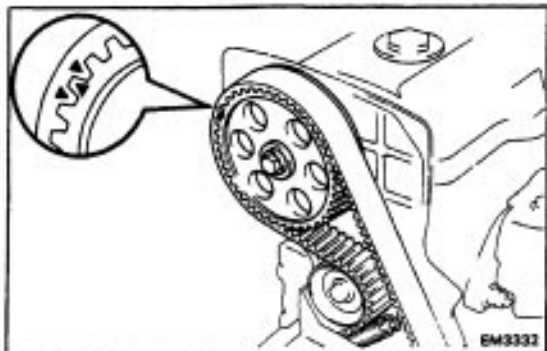
Remove the five bolts, belt cover and gaskets.

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

(a) Turn the crankshaft pulley and align its groove with the timing mark "0" of the No. 1 timing belt cover.

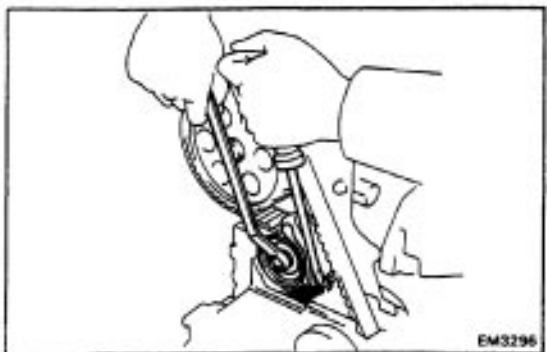


- (b) Check that the hole of the camshaft timing pulley is aligned with the alignment mark of the bearing cap.
If not, turn the crankshaft one revolution (360°).

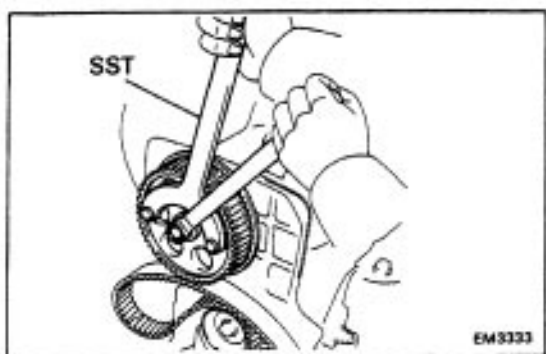


14. REMOVE TIMING BELT FROM CAMSHAFT TIMING PULLEY

HINT: If reusing the timing belt, place the matchmarks on the timing belt and camshaft timing pulley.

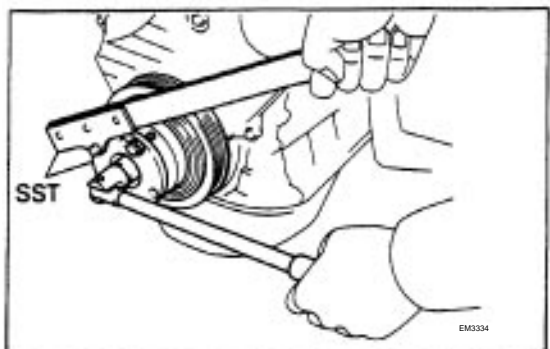


- (a) Loosen the mount bolt of the No. 1 idler pulley and shift the pulley toward the left as far as it will go, temporarily tighten it.
(b) Remove the timing belt from the camshaft timing pulley.



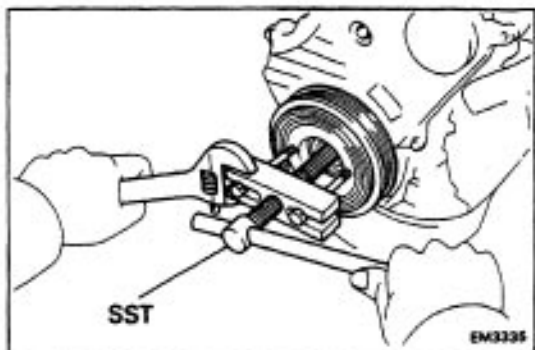
15. REMOVE CAMSHAFT TIMING PULLEY

Using SST, remove the bolt, plate washer and pulley.
SST 09278-54012

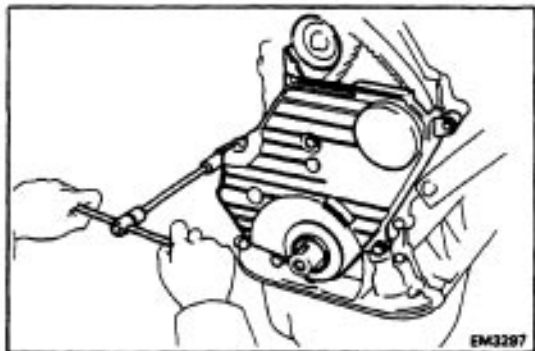


16. REMOVE CRANKSHAFT PULLEY

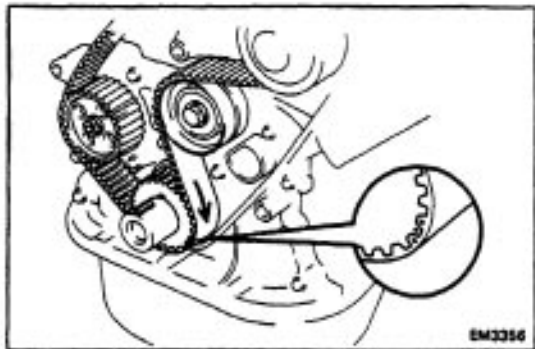
- (a) Using SST, remove the pulley mount bolt.
SST 09213-54015 (09214-00030) and 09330-00021



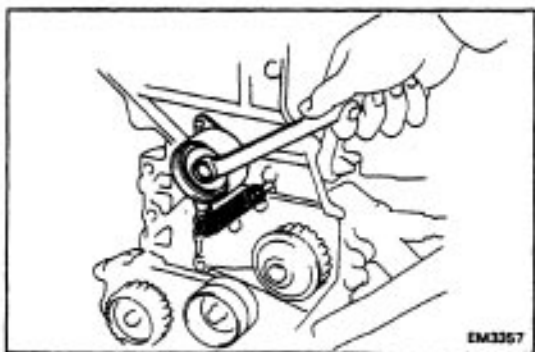
(b) Using SST, remove the pulley.
SST 09213-60017 (09213-00020, 09213-00030
09213-00050)



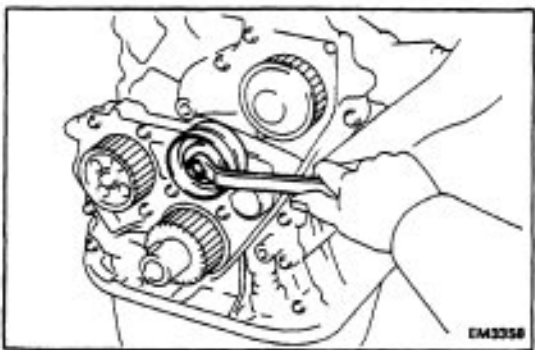
17. REMOVE NO.1 TIMING BELT COVER
Remove the four bolts, belt cover and gasket.



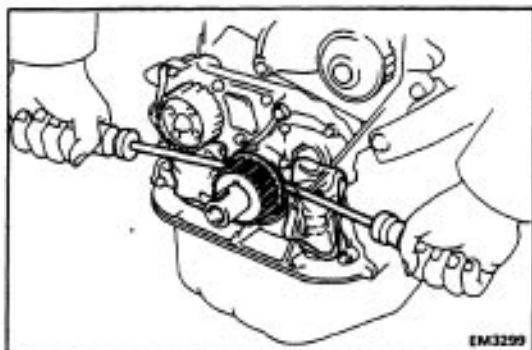
18. REMOVE TIMING BELT AND BELT GUIDE
HINT: If reusing the timing belt, draw a direction arrow on the timing belt (in direction of engine revolution), and place the matchmarks on the timing belt and crankshaft timing pulley.



19. REMOVE NO.1 IDLER PULLEY AND TENSION SPRING
Remove the bolt, pulley and tension spring.



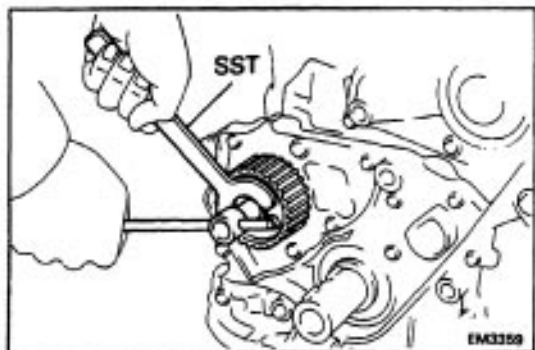
20. REMOVE NO.2 IDLER PULLEY
Remove the bolt and pulley.



21. REMOVE CRANKSHAFT TIMING PULLEY

If the pulley cannot be removed by hand, use two screwdrivers.

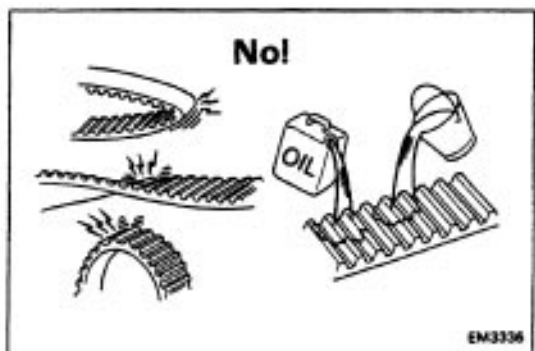
HINT: Position shop rags as shown to prevent damage.



22. REMOVE OIL PUMP PULLEY

Using SST, remove the nut and pulley.

SST 09616-30011

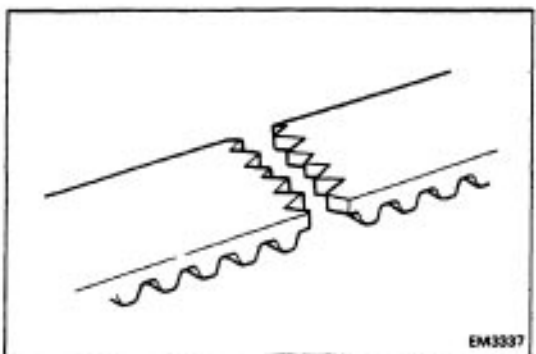


INSPECTION OF TIMING BELT COMPONENTS

1. INSPECT TIMING BELT

NOTICE:

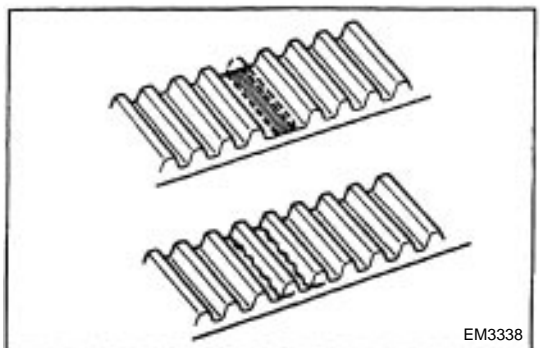
- Do not bend, twist or turn the timing belt inside out.
- Do not allow the timing belt to come into contact with oil, water or steam.
- Do not utilize timing belt tension when installing or removing the mount bolt of the camshaft timing pulley.



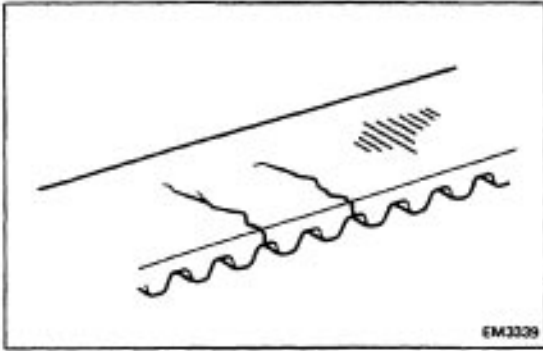
If there are any defects as shown in the figures, check the following points:

(a) Premature parting

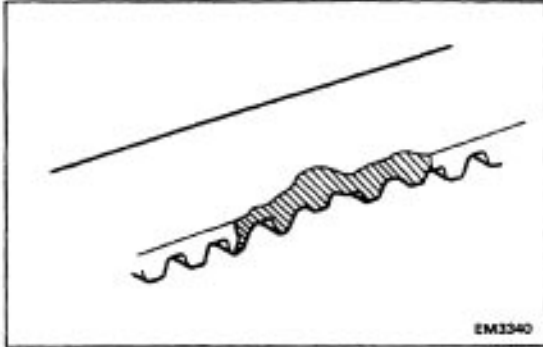
- Check for proper installation.
- Check the timing cover gasket for damage and proper installation.



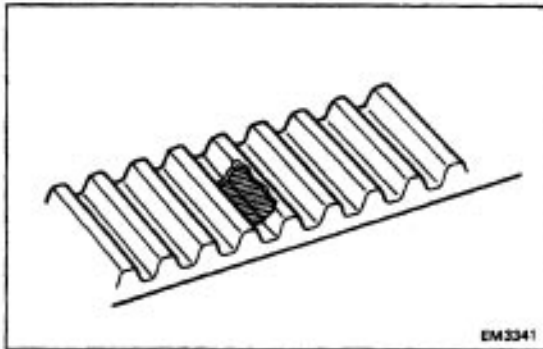
- (b) If the belt teeth are cracked or damaged, check to see if either the camshaft, water pump is locked.



- (c) If there are cracks or noticeable wear on the belt face, check to see if there are nicks on the side of the idler pulley.

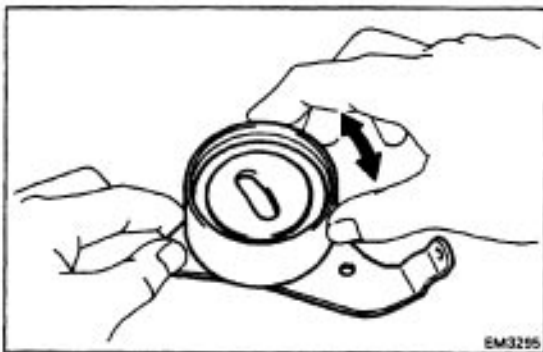


- (d) If there is wear or damage on only one side of the belt, check the belt guide and the alignment of each pulley.



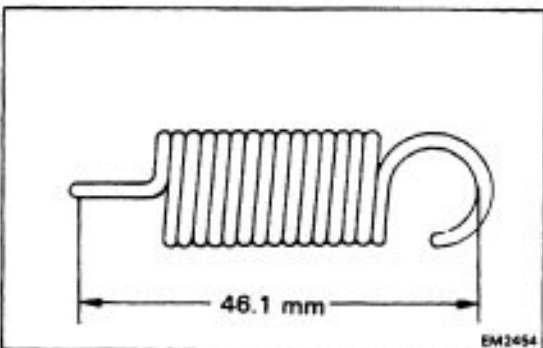
- (e) If there is noticeable wear on the belt teeth, check timing cover for damage and check for correct gasket installation. Check for foreign material on the pulley teeth.

If necessary, replace the timing belt.



2. INSPECT IDLER PULLEYS

Check the turning smoothness of the idler pulley.
If necessary, replace the idler pulley.



3. INSPECT TENSION SPRING

- (a) Measure the free length of tension spring.

Free length: 46.1 mm (1.815 in.)

If the free length is not as specified, replace the tension spring.

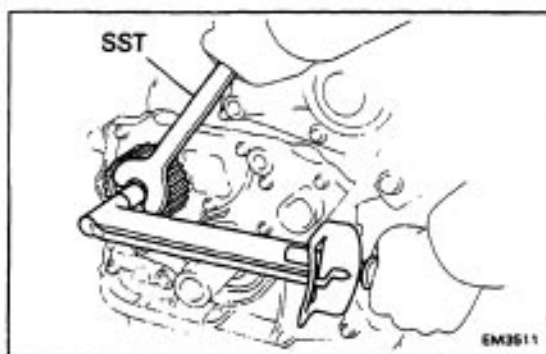
- (b) Measure the tension of the tension spring at the specified installed length.

Installed tension:

6.0 – 7.0 kg (13.2 – 15.4 lb, 59 – 69 N-m)

at 50.5 mm (1.988 in.)

If the installed tension is not as specified, replace the tension spring.



INSTALLATION OF TIMING BELT

(See page [EM-23](#))

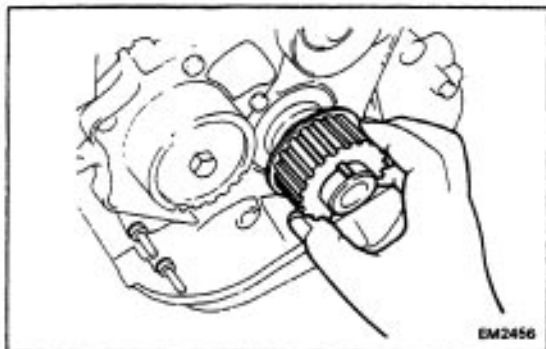
1. INSTALL OIL PUMP PULLEY

(a) Align the cutouts of the pulley and shaft, and slide the pulley.

(b) Using SST, install and torque the nut.

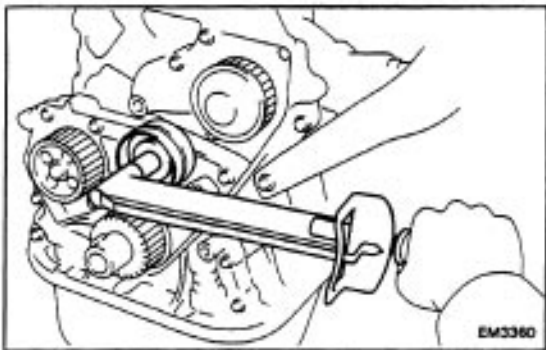
SST 09616-30011

Torque: 290 kg-cm (21 ft-lb, 28 N-m)



2. INSTALL CRANKSHAFT TIMING PULLEY

Align the pulley set key with the key groove of the pulley, and slide the pulley.



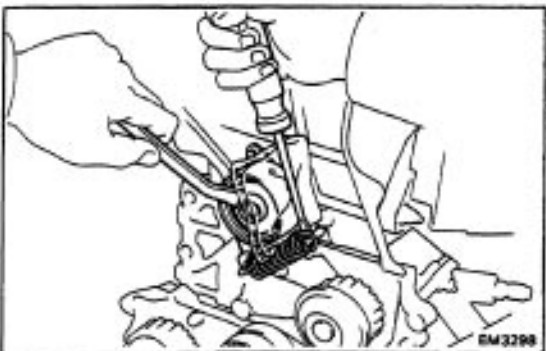
3. INSTALL NO.2 IDLER PULLEY

(a) Install the pulley with the bolt. Torque the bolt.

Torque: 425 kg-cm (31 ft-lb, 42 N-m)

(b) Check that the pulley moves smoothly.

HINT: Remove any oil or water on the idler pulley and keep it clean.

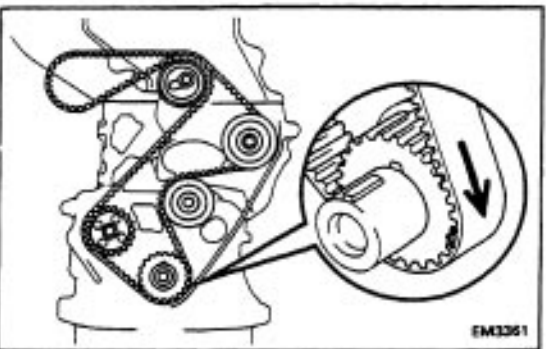


4. TEMPORARILY INSTALL NO.1 IDLER PULLEY AND TENSION SPRING

(a) Install the pulley with the bolt. Do not tighten the bolt yet.

(b) Install the tension spring.

(e) Pry the pulley toward the left as far as it will go and tighten the bolt.

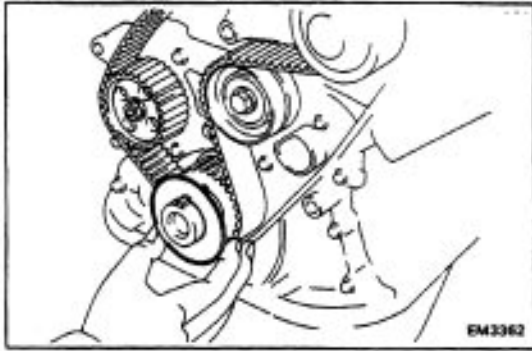


5. TEMPORARILY INSTALL TIMING BELT

NOTICE: The engine should be cold.

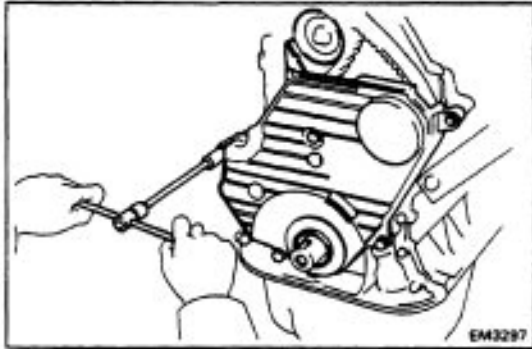
Install the timing belt on the crankshaft timing, oil pump, No-2 idler and water pump pulleys.

HINT: If reusing the timing belt, align the points marked during removal, and install the belt with the arrow pointing in the direction of engine revolution.



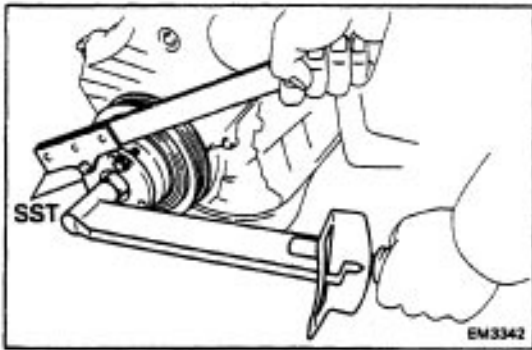
6. INSTALL TIMING BELT GUIDE

Install the guide, facing the cup side outward.



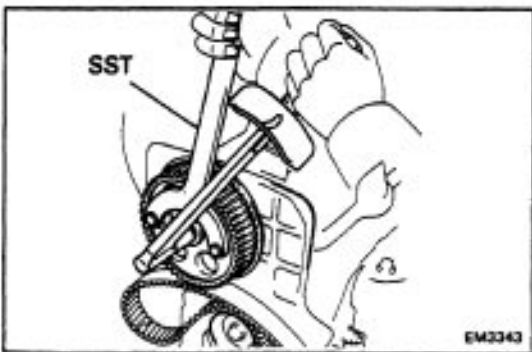
7. INSTALL NO.1 TIMING BELT COVER

- (a) Install the gasket to the belt cover.
- (b) Install the belt cover with the four bolts.



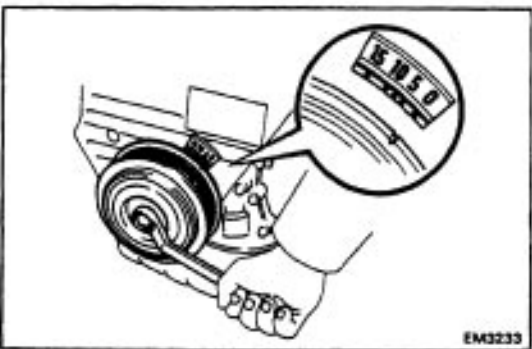
8. INSTALL CRANKSHAFT PULLEY

- (a) Align the pulley set key with the key groove of the pulley, slide the pulley.
- (b) using SST, install and torque the bolt.
SST 09213-54015 (09213-00030) and 09330- 21
Torque: 1,100 kg-cm (80 ft-lb, 108 N-m)



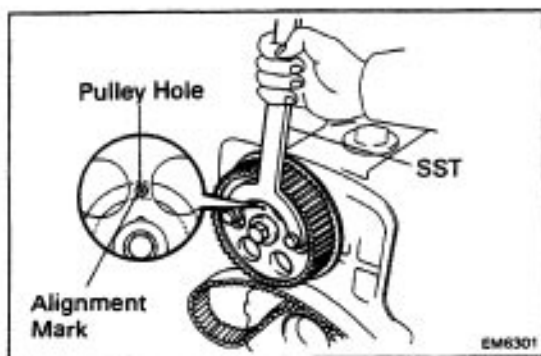
9. INSTALL CAMSHAFT TIMING PULLEY

- (a) Align the camshaft knock pin with the knock pin groove of the pulley, and slide the pulley.
- (b) Using SST, install the plate washer and bolt.
Torque the bolt.
SST 09278-54012
Torque: 550 kg-cm (40 ft-lb, 54 N-m)



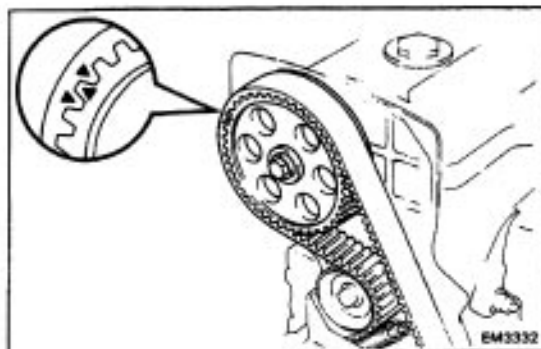
10. SET NO.1 CYLINDER .TO TDC/COMPRESSION

- (a) Turn the crankshaft pulley, and align the its groove with the "0" timing mark of the No. 1 timing belt cover.



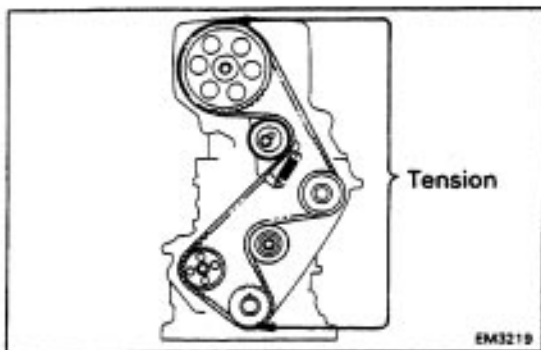
- (b) Using SST, turn the camshaft, and align the hole of the camshaft timing pulley with the matchmark of the bearing cap.

SST 09278-54012

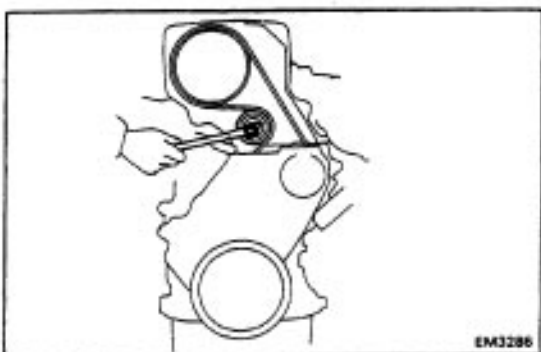


11. INSTALL TIMING BELT

HINT: If reusing the timing belt, first align the matchmarks of the timing belt and camshaft timing pulley.

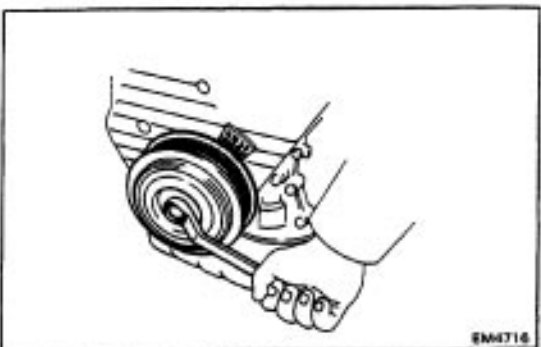


Install the timing belt, insure that there is tension between the crankshaft timing pulley, water pump pulley and camshaft timing pulley.



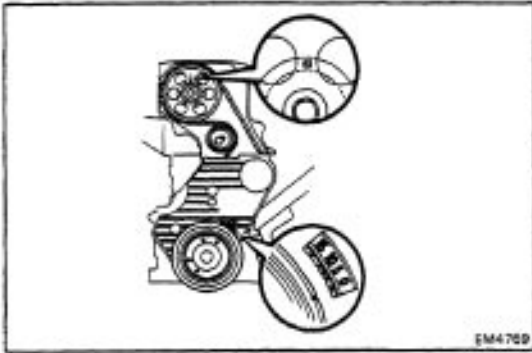
12. CHECK VALVE TIMING

- (a) Loosen the No. 1 idler pulley mount bolt 1/2 turn.

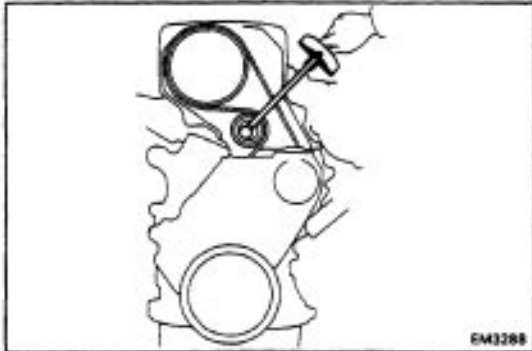


- (b) Turn the crankshaft pulley two revolutions from TDC to TDC.

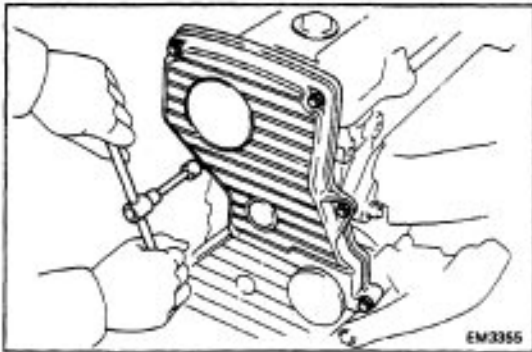
HINT: Always turn the crankshaft clockwise.



- (c) Check that each pulley aligns with the timing marks as shown in the figure.
If the marks do not align, remove the timing belt and reinstall it.



- (d) Torque the mount bolt of the No.1 idler pulley.
Torque: 425 kg-cm (31 ft-lb, 42 N-m)



13. INSTALL NO-2 TIMING BELT COVER

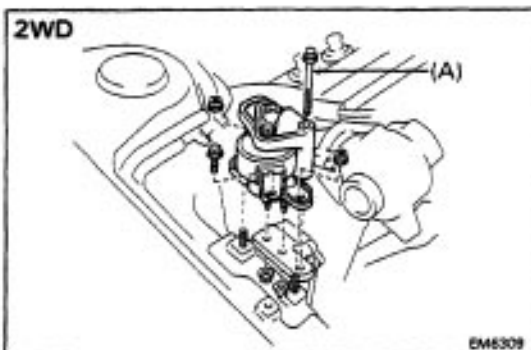
- (a) Install the two gaskets to the No. 1 and No.2 belt covers.
(b) Install the belt cover with the five bolts.

14. INSTALL SPARK PLUGS (See page [IG-7](#))

Torque: 180 kg-cm (13 ft-lb, 18 N-m)

15. INSTALL ENGINE RH MOUNTING INSULATOR AND BRACKET

- (a) Install the bracket with the three bolts. Torque the bolts.
Torque: 530 kg-cm (38 ft-lb, 52 N-m)



- (b) (2WD)

Install the mounting insulator to the mounting bracket and body, and temporarily install the mounting insulator bolt, four nuts and mounting stay bolt (A). Torque the mounting insulator bolt and four nuts. Do not torque the mounting stay bolt (A) yet.

Torque:

Bolt 650 kg-cm (47 ft-lb, 64 N-m)

Nut To bracket 530 kg-cm (38 ft-lb, 52 N-m)

To body 900 kg-cm (65 ft-lb, 88 N-m)



(c) (4WD)

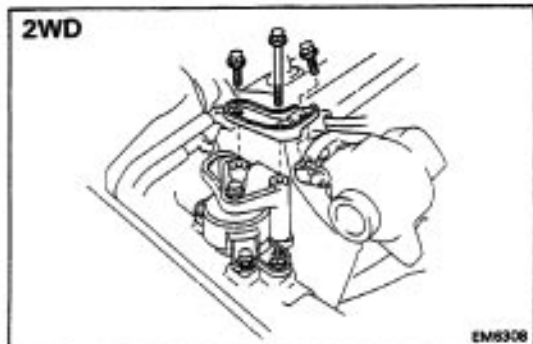
Install the mounting insulator with the through bolt and two nuts. Torque the through bolt and nuts.

Torque:

Through bolt 890 kg-cm (64 ft-lb, 87 N-m)

Nut 530 kg-cm (38 ft-lb, 52 N-m)

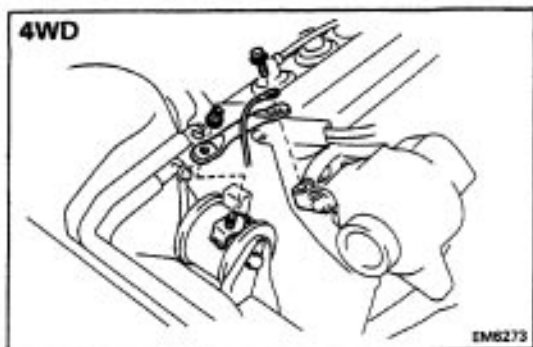
16. LOWER ENGINE



17. INSTALL ENGINE RH MOUNTING STAY (2WD)

Install the mounting stay with the three bolts. Torque the bolts.

Torque: 740 kg-cm (54 ft-lb, 73 N-m)



(4WD)

Install the mounting stay and ground strap with the bolt and nut. Torque the bolt and nut.

Torque: 740 kg-cm (54 ft-lb, 73 N-m)

18. INSTALL ALTERNATOR BRACKET

Torque: 425 kg-cm (31 ft-lb, 42 N-m)

19. INSTALL ALTERNATOR (See page [CH-14](#))

20. INSTALL DRIVE BELTS

Adjust the drive belts. (See page [CH-3](#))

Drive belt tension:

Alternator w/ A/C . New belt 175 ± 5 lb

Used belt 130 ± 10 lb

w/o, A/C New belt 125 ± 25 lb

Used belt 95 ± 20 lb

PS pump New belt 125 ± 10 lb

Used belt 80 ± 20 lb

21. INSTALL CRUISE CONTROL ACTUATOR

(See step 26 on page [EM-137](#))

22. INSTALL ENGINE RH UNDER COVER

23. INSTALL RH FRONT WHEEL

24. CONNECT CABLE TO NEGATIVE TERMINAL OF BATTERY