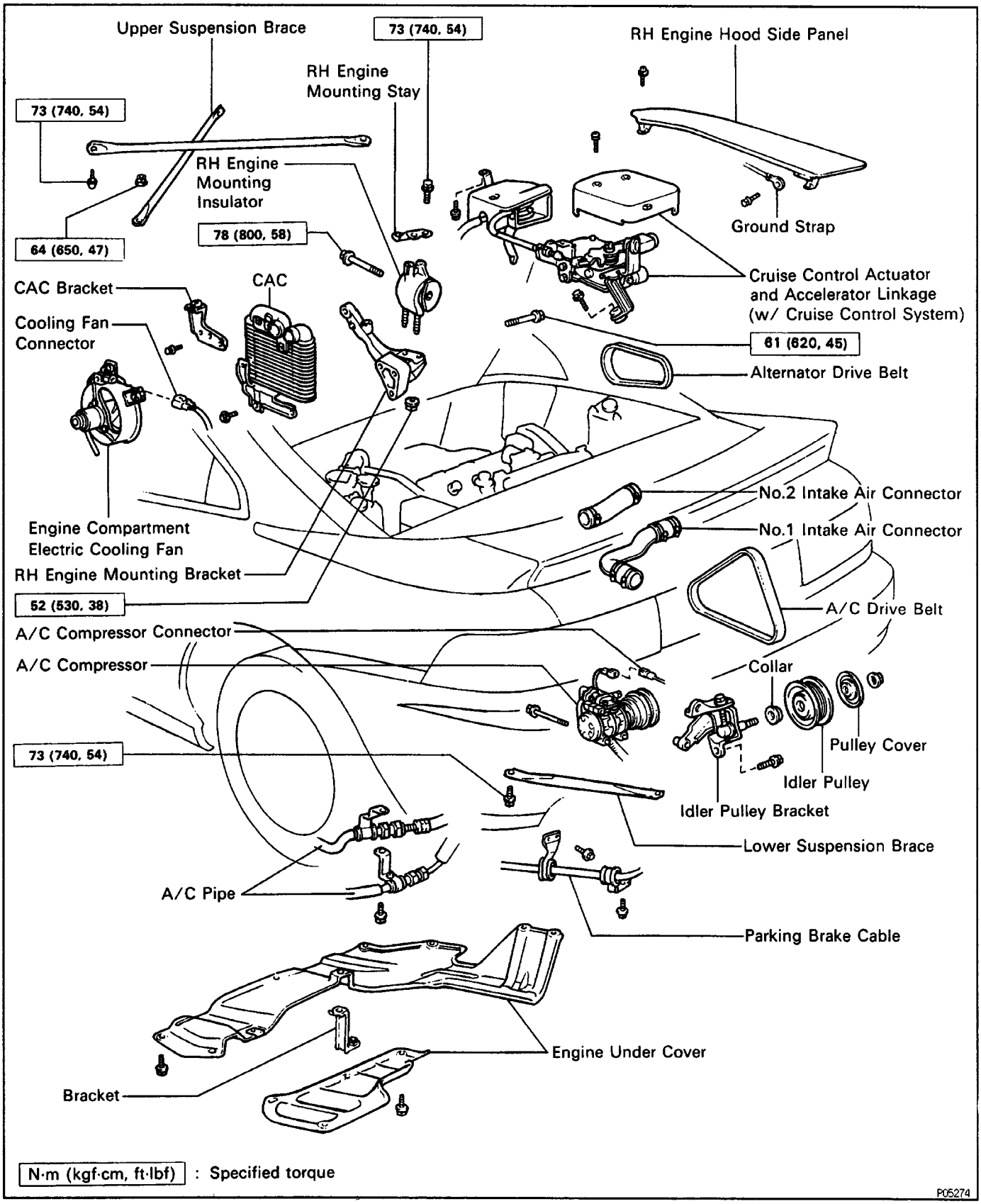
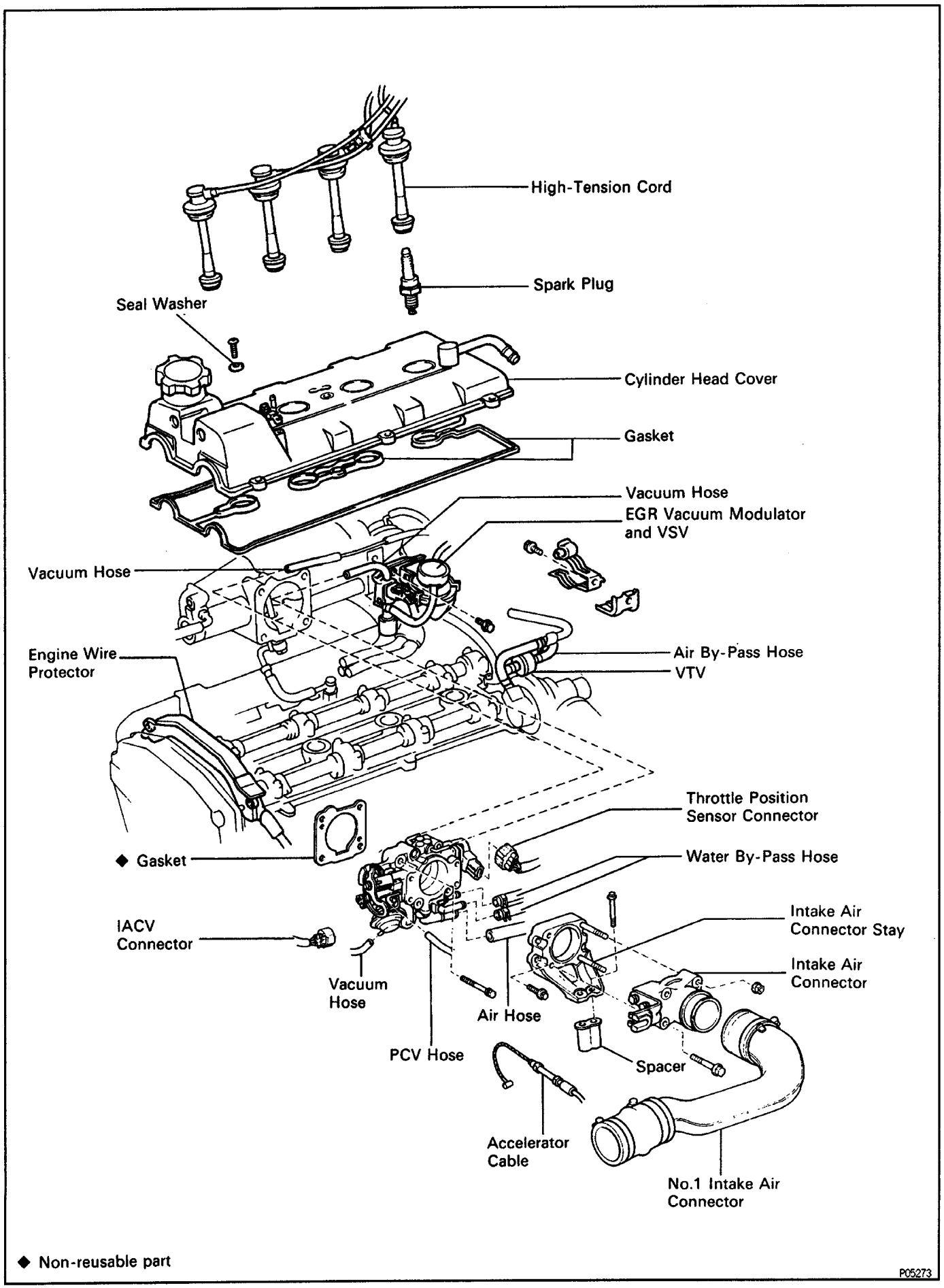
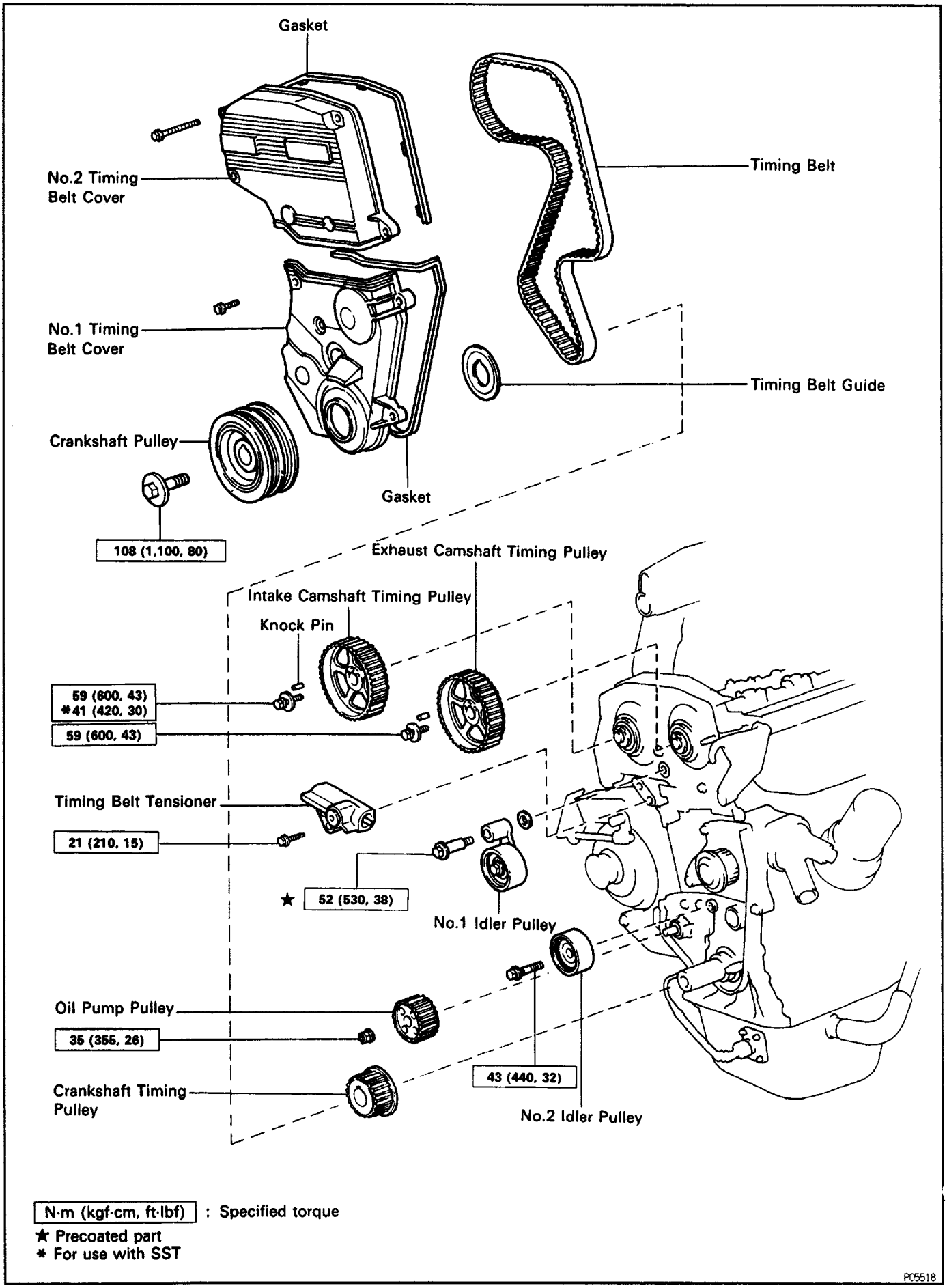
TIMING BELT

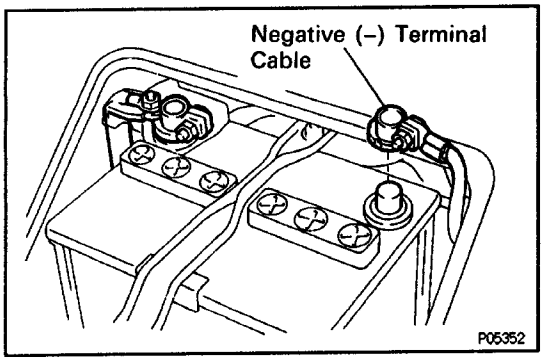
COMPONENTS

EG0W7–01




High-Tension Cord
Spark Plug
Seal Washer
Cylinder Head Cover
Gasket
Vacuum Hose
EGR Vacuum Modulator and VSV
Vacuum Hose
Engine Wire Protector
Air By-Pass Hose
VTV
Throttle Position Sensor Connector
◆ Gasket
Water By-Pass Hose
IACV Connector
Intake Air Connector Stay
Intake Air Connector
Vacuum Hose
Air Hose
PCV Hose
Spacer
Accelerator Cable
No.1 Intake Air Connector
◆ Non-reusable part
P05273


Gasket
No.2 Timing Belt Cover
Timing Belt
No.1 Timing Belt Cover
Timing Belt Guide
Crankshaft Pulley
Gasket
108 (1,100, 80)
Exhaust Camshaft Timing Pulley
Intake Camshaft Timing Pulley
Knock Pin
59 (600, 43)
*41 (420, 30)
59 (600, 43)
Timing Belt Tensioner
21 (210, 15)
★ 52 (530, 38)
No.1 Idler Pulley
Oil Pump Pulley
35 (355, 26)
Crankshaft Timing Pulley
43 (440, 32)
No.2 Idler Pulley
N·m (kgf·cm, ft·lbf) : Specified torque
★ Precoated part
* For use with SST
P05518



TIMING BELT REMOVAL

(See Components for Removal and Installation)

1. DISCONNECT CABLE FROM NEGATIVE TERMINAL OF BATTERY

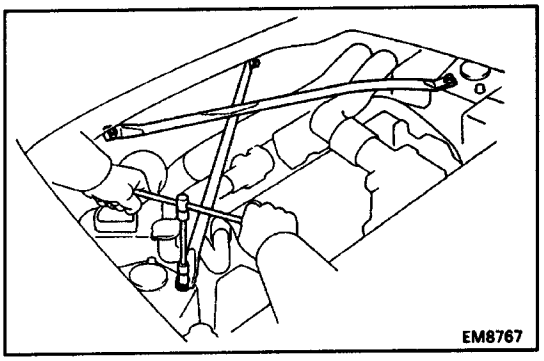
CAUTION: Turn the ignition switch to "LOCK". Disconnect the negative terminal from the battery. Wait at least 20 seconds before proceeding with work.

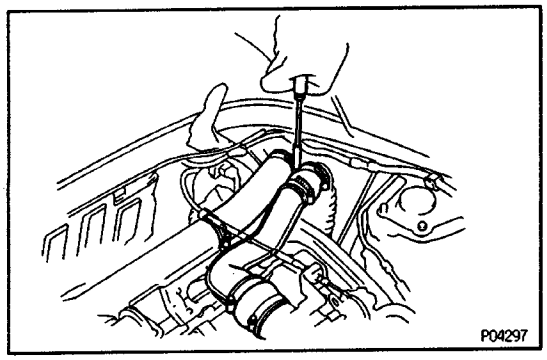
2. REMOVE ENGINE UNDER COVERS

3. REMOVE RH ENGINE HOOD SIDE PANEL

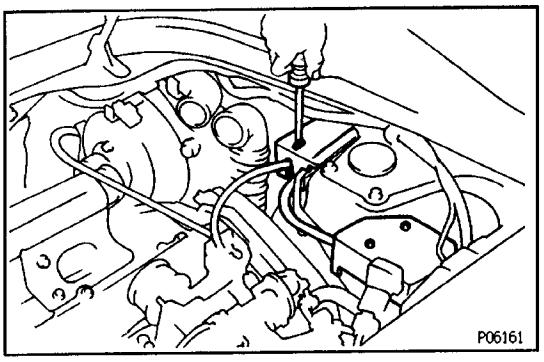
4. REMOVE UPPER SUSPENSION BRACE

Remove the two bolts, two nuts and upper brace.



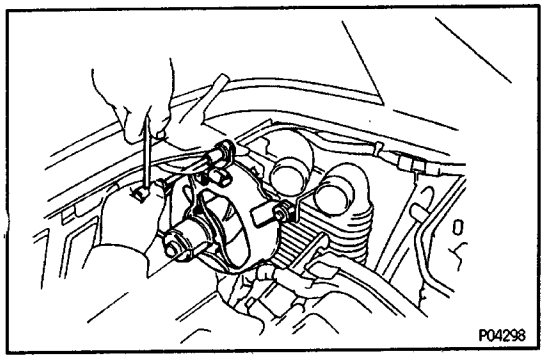


5. REMOVE NO.1 AND NO.2 INTAKE AIR CONNECTORS



6. (w/ CRUISE CONTROL SYSTEM) REMOVE CRUISE CONTROL ACTUATOR AND ACCELERATOR LINKAGE

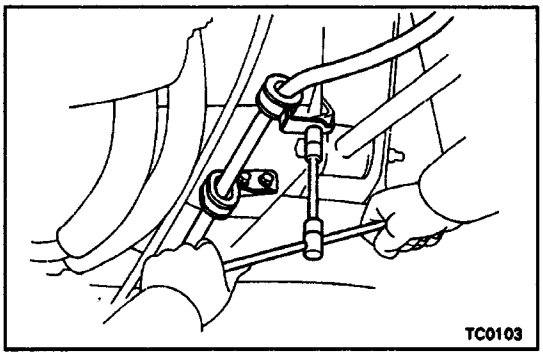
7. (w/o CRUISE CONTROL SYSTEM) DISCONNECT ACCELERATOR LINKAGE FROM THROTTLE BODY



8. REMOVE ENGINE COMPARTMENT ELECTRIC COOLING FAN

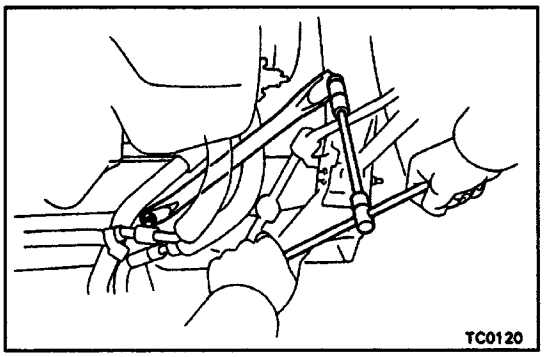
(a) Disconnect the cooling fan connector.

(b) Loosen the three bolts, and remove the cooling fan.

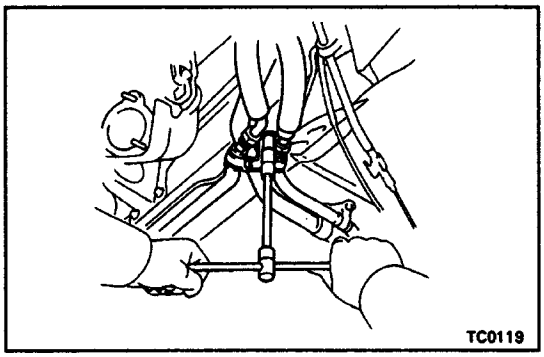


9. DISCONNECT A/C COMPRESSOR FROM ENGINE

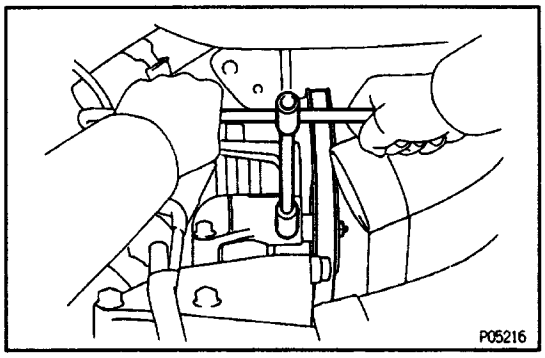
(a) Remove the three clamp bolts, and disconnect the parking brake cable.



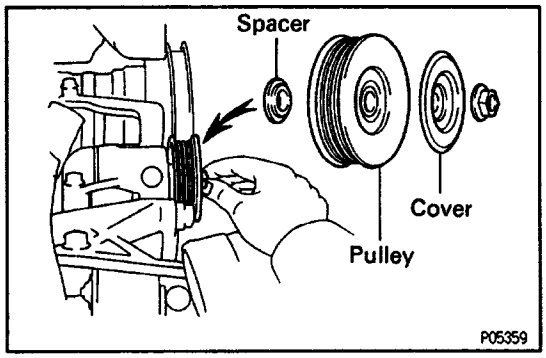
(b) Remove the two bolts and lower suspension brace.



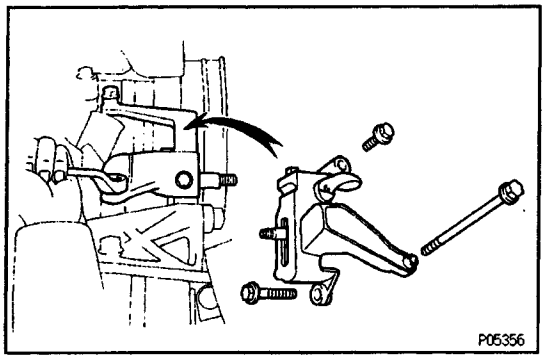
(c) Remove the clamp nut, and disconnect the two A/C pipes.



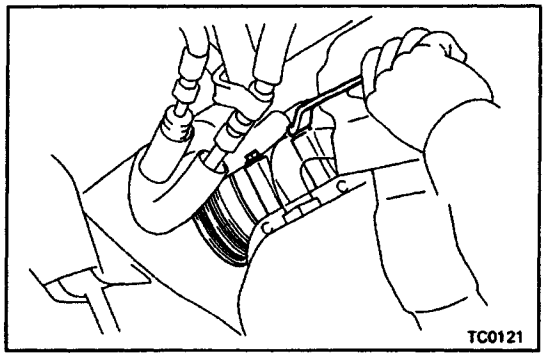
(d) Loosen the idler pulley nut.
(e) Loosen the adjusting bolt, and remove the drive belt.



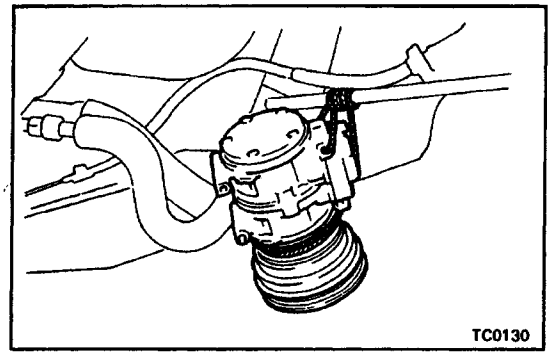
(f) Remove the nut, pulley cover, idler pulley and spacer.



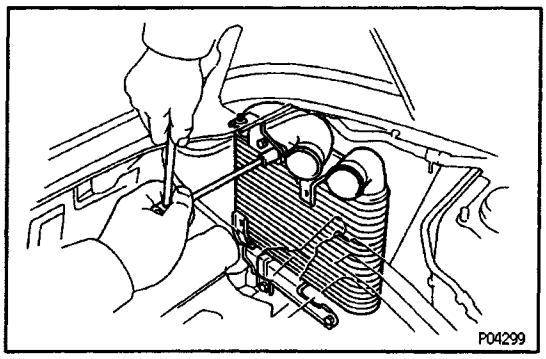
(g) Disconnect the A/C compressor connector.
(h) Remove the three bolts and idler pulley bracket.



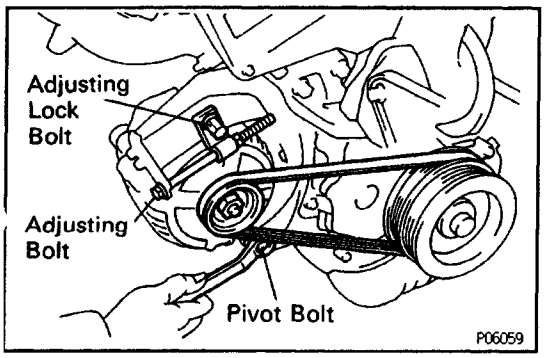
(i) Remove the two bolts, and disconnect the A/C com–pressor from the engine.



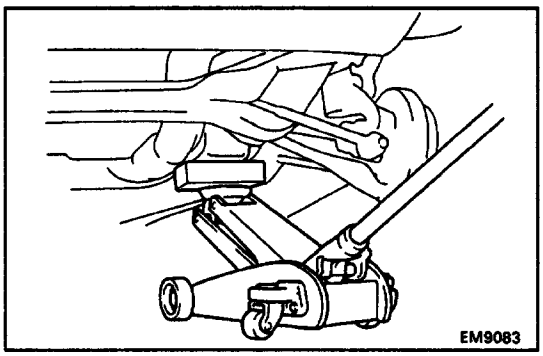
HINT: Suspend the A/C compressor to strut rod with a string.



10. REMOVE CAC
(a) Remove the two bolts holding the CAC to the upper bracket.
(b) Remove the three bolts, upper bracket and CAC.
11. REMOVE RH REAR WHEEL

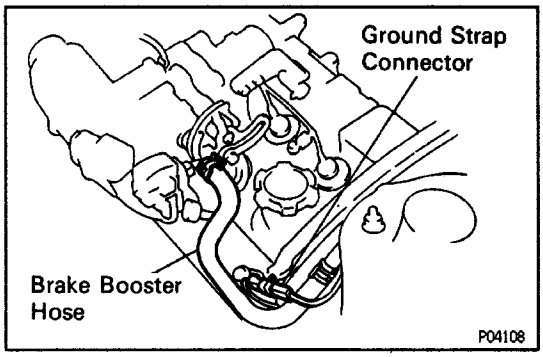


12. REMOVE ALTERNATOR DRIVE BELT
(a) Loosen the pivot bolt and adjusting lock bolt.
(b) Loosen the adjusting bolt, and remove the drive belt.



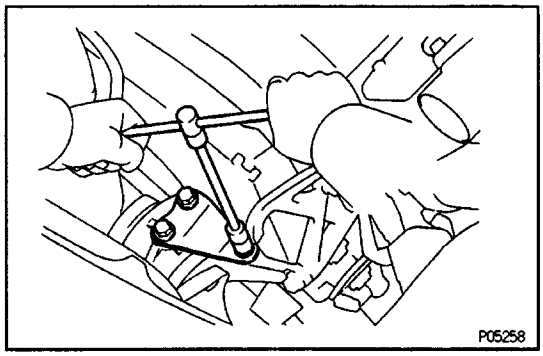
13. SLIGHTLY JACK UP ENGINE

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



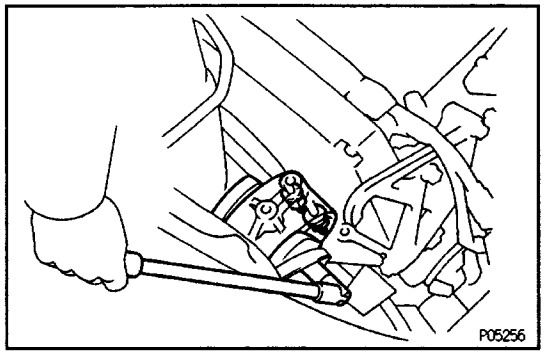
14. DISCONNECT GROUND STRAP CONNECTOR

15. DISCONNECT BRAKE BOOTER VACUUM HOSE



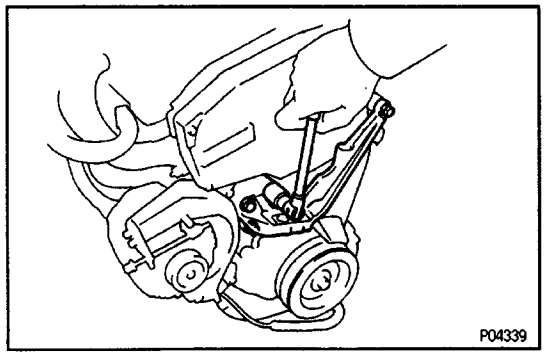
16. REMOVE RH ENGINE MOUNTING STAY

Remove the three bolts and mounting stay.



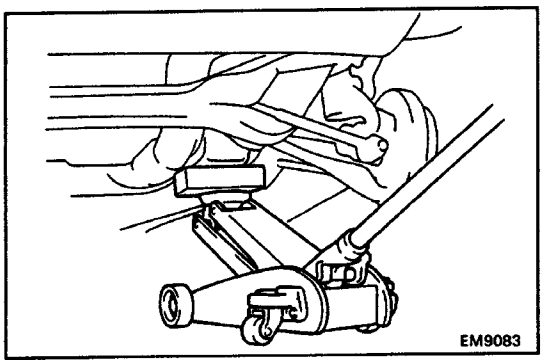
17. REMOVE RH ENGINE MOUNTING INSULATOR

Remove the two nuts, through bolt and mounting insulator.



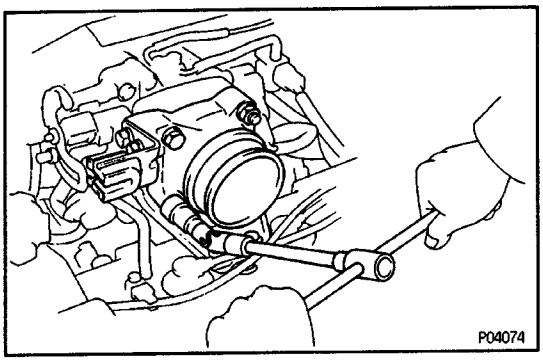
18. REMOVE RH ENGINE MOUNTING BRACKET

(a) Remove the four bolts.



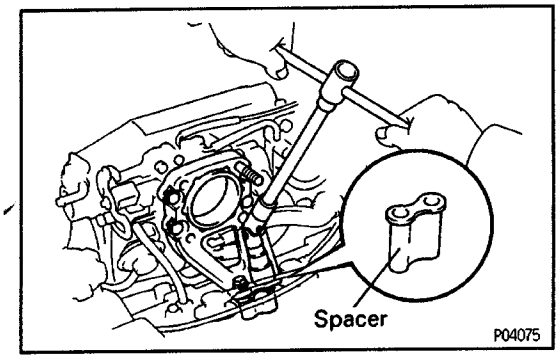
(b) Remove the mounting bracket.

HINT: Raise the engine as far as it will go, and remove the mounting bracket.



19. REMOVE INTAKE AIR CONNECTOR

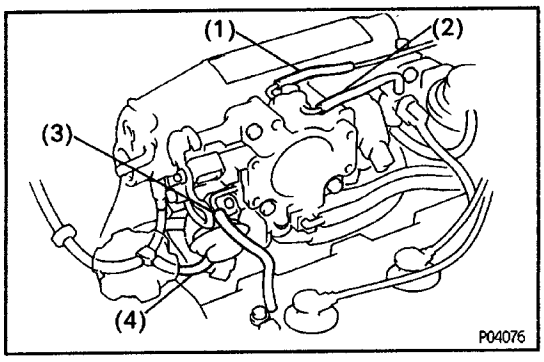
Remove the two bolts, and two nuts and intake air connector.



20. REMOVE INTAKE AIR CONNECTOR STAY

(a) Remove the six bolts and intake air connector stay.

(b) Remove the spacer.



21. REMOVE THROTTLE BODY

(a) Disconnect the following connector:

- Throttle position sensor connector
- IACV connector

(b) Disconnect the following hoses:

(1) Vacuum hose from port ”P” of throttle body

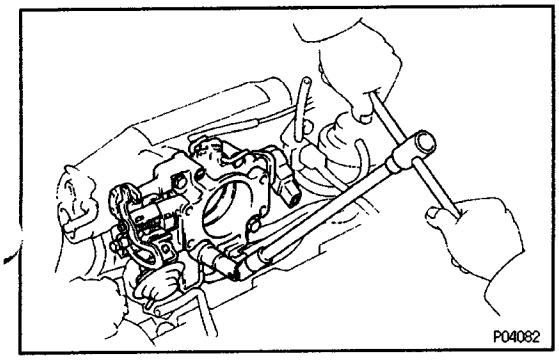
(2) Vacuum hose from port ”E” of throttle body

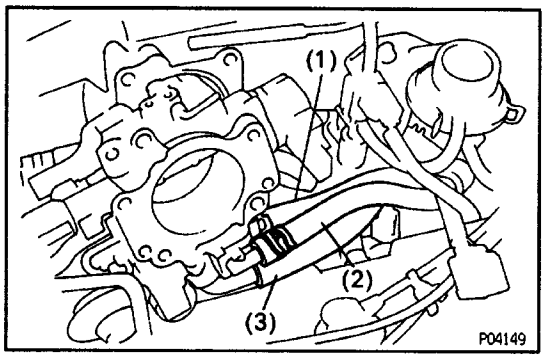
(3) PCV hose from port PCV of throttle body

(4) Vacuum hose from throttle body opener

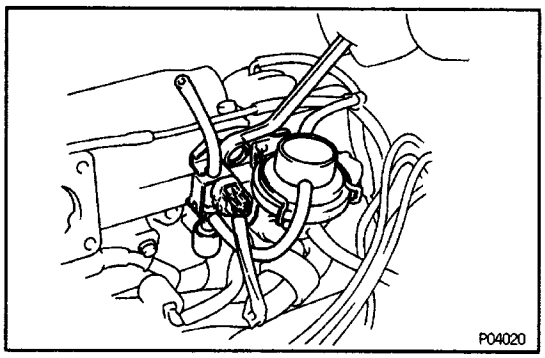
(c) Remove the four bolts, and disconnect the throttle body from the intake manifold.

(d) Remove the throttle body gasket.



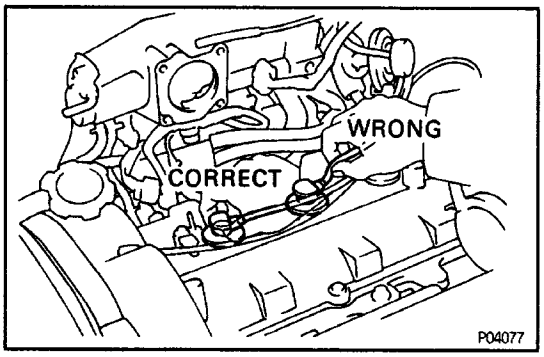


(e) Disconnect the following hoses from the throttle body, and remove the throttle body:
(1) Water by–pass hose (f r–om upper side of No. 1 air tube)
(2) Water by–pass hose (from lower side of No. 1 air tube)
(3) Air hose (from No. 1 air tube)

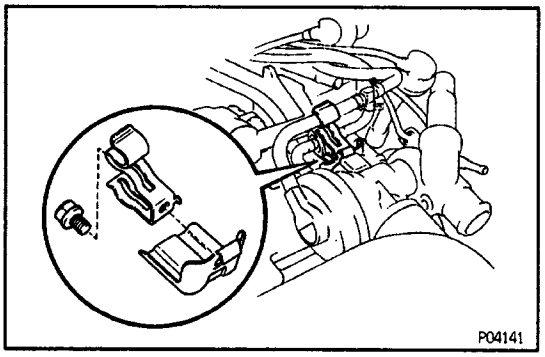


22. REMOVE CYLINDER HEAD COVER

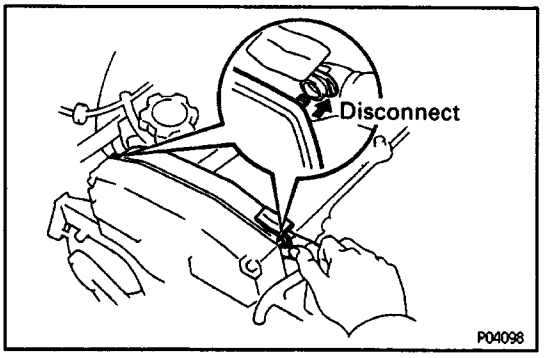
(a) Remove the bolt, and disconnect the VSV and EGR vacuum modulator assembly from the intake mani–fold.



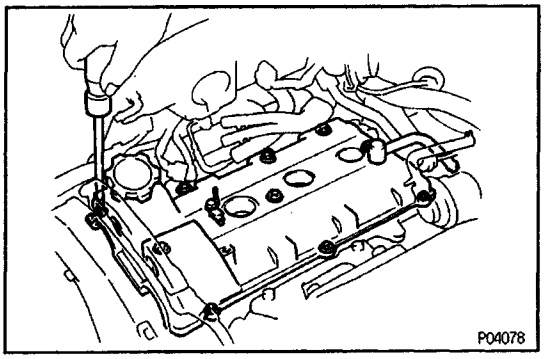
(b) Disconnect the high – tension cords at the rubber boot. Do not pull on the high–tension cords.
NOTICE: Pulling on or bending the cords may damage the conductor inside.



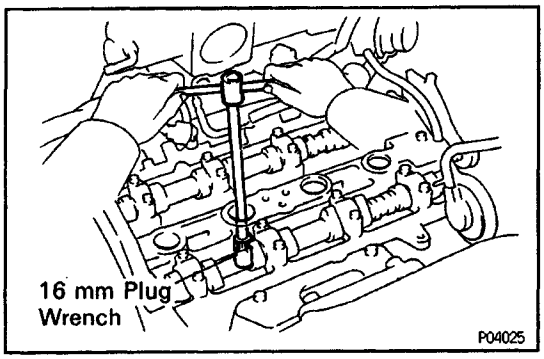
(c) Disconnect the hose and VTV from the clamps.
(d) Remove the bolt and two clamps.



(e) Disconnect the engine wire protector between the No. 3 timing belt cover and cylinder head cover.

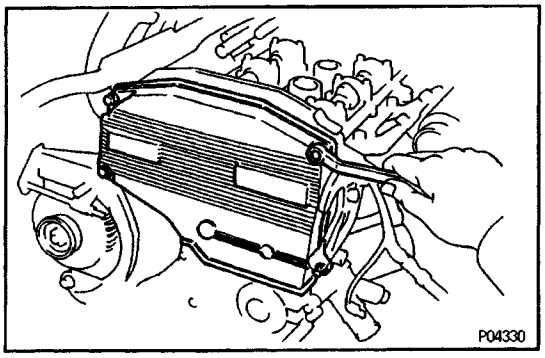


(f) Remove the ten screws, seal washers, bolts, head cover and two gaskets.



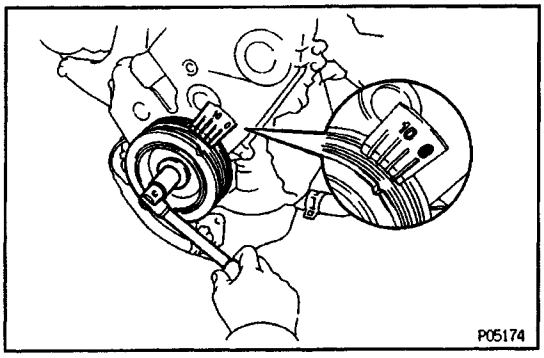
23. REMOVE SPARK PLUGS

Using a 16 mm plug wrench, remove the four spark plugs.



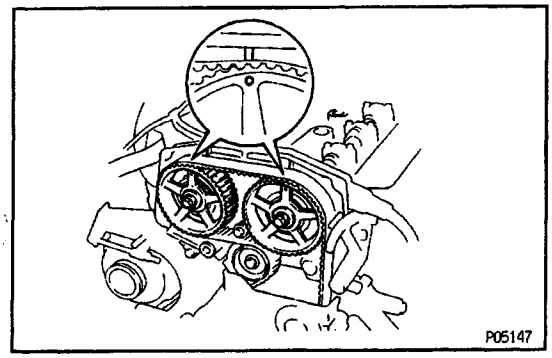
24. REMOVE No.2 TIMING BELT COVER

Remove the five bolts, timing belt cover and gasket.



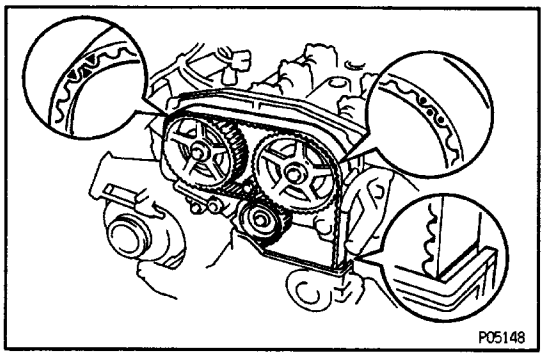
25. SET NO.1 CYLINDER TO TDC/COMPRESSION

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



(b) Check that the timing marks of the camshaft timing pulleys are aligned with the timing marks of the No.3 timing belt cover.

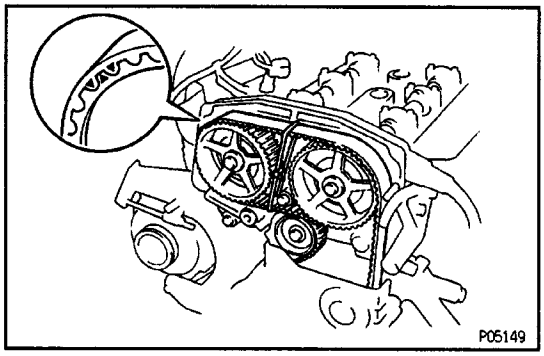
If not, turn the crankshaft one revolution (360˚).



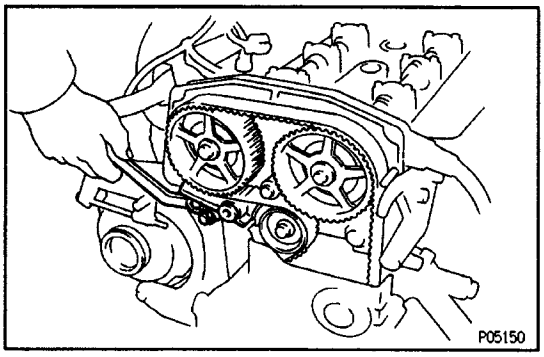
26. DISCONNECT TIMING BELT FROM CAMSHAFT TIMING PULLEYS

HINT:

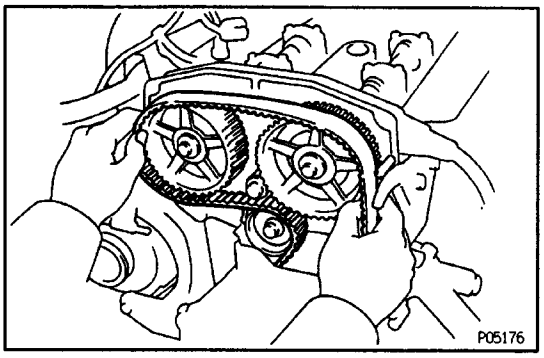
- (Re–using timing belt)
  Place matchmarks on the timing belt and cam–shaft timing pulleys, and place a matchmark on the timing belt to match the end of the No.1 timing belt cover.



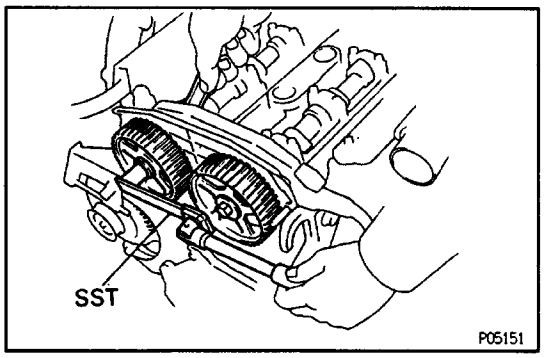
- (When replacing timing belt tensioner only)
  To avoid meshing of the timing belt and timing pulley, secure one with a string. And place the matchmarks on the timing belt and RH camshaft timing pulley.



(a) Remove the two bolts and timing belt tensioner.



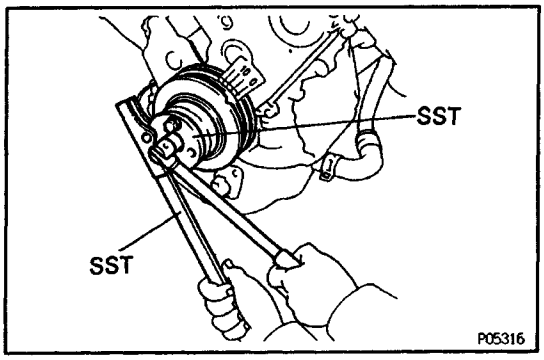
(b) Disconnect the timing belt from the camshaft timing pulleys.



27. REMOVE CAMSHAFT TIMING PULLEYS

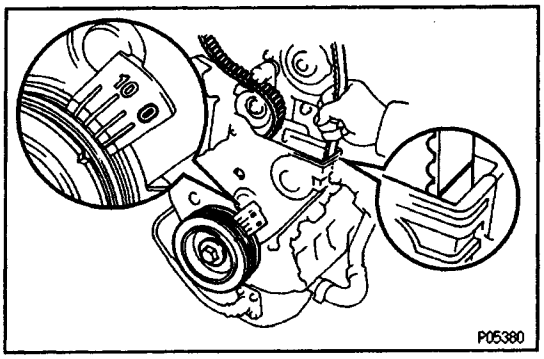
(a) Hold the hexagon wrench head portion of the cam–shaft with a wrench, and loosen the pulley bolt.
HINT (Intake camshaft timing pulley): Use SST.
, SST 09249–63010

(b) Remove the bolt, timing pulley and pin. Remove the two timing pulleys.
HINT: Arrange the intake and exhaust timing pulleys.

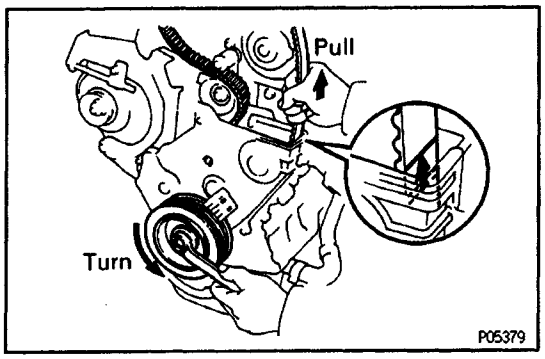


28. REMOVE CRANKSHAFT PULLEY

(a) Using SST, remove the pulley bolt.
SST 09213–54015 (90119–08216),
09330–00021

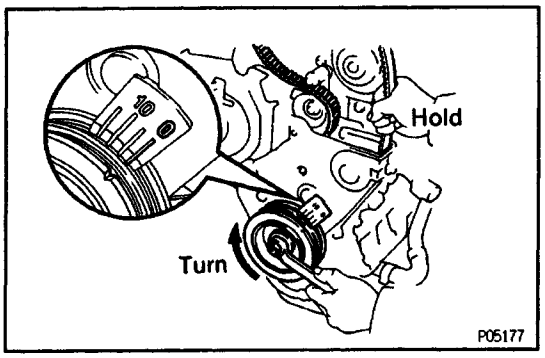


HINT (When re–using timing belt): After loosening the crankshaft pulley bolt, check that the timing belt rnatchmark aligns with the end of the No. 1 timing belt
cover when the crankshaft pulley groove is aligned with the timing mark ”0” of the No. 1 timing belt cover. If the matchmark does not align, align as follows:

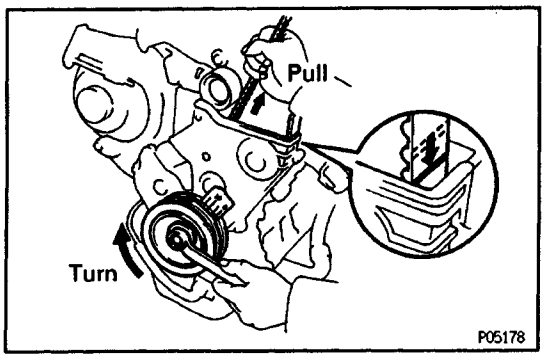


(When matchmark is out of alignment on clockwise)

- Align the matchmark by pulling the timing belt up on the water pump pulley side while turning the crankshaft pulley counterclockwise.

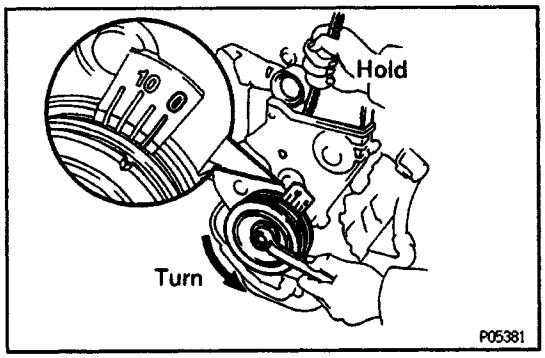


- After aligning the matchmark, hold the timing belt. And turn the crankshaft pulley clockwise, and align its groove with timing mark ”0” of the No.1 timing belt cover.

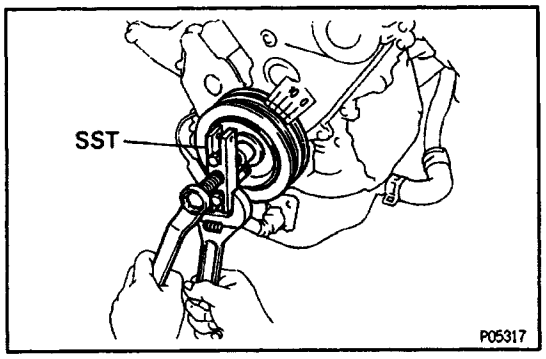


(When matchmark is out of alignment on counter–clockwise)

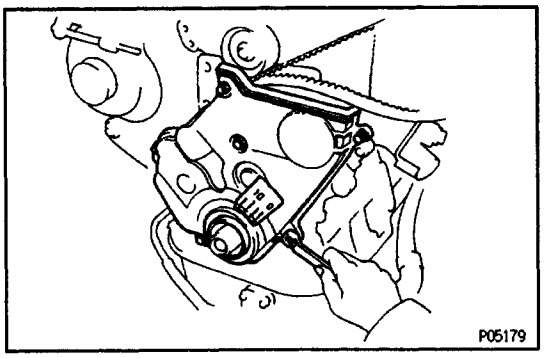
- Align the matchmark by pulling the timing belt up on the No.1 idler pulley side while turning the crankshaft pulley clockwise.



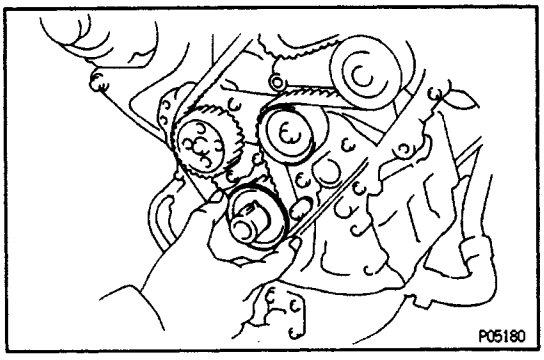
- After aligning the matchmark, hold the timing belt. And turn the crankshaft pulley counter–clockwise, and align its groove with timing mark' 0" of the No.1 timing belt cover.



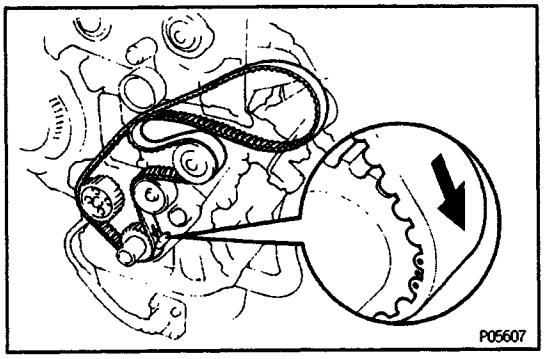
(b) Using SST, remove the pulley.
SST 09213–31021
HINT (When re–using timing belt): Remove the pulley without turning it.



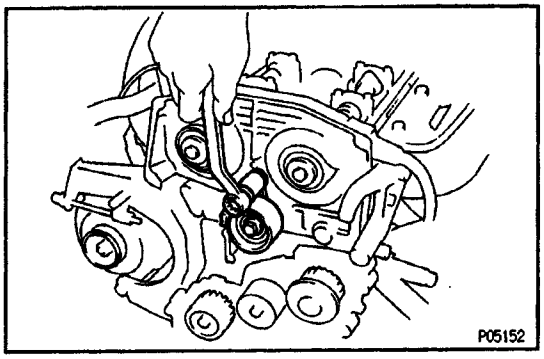
29. REMOVE NO.1 TIMING BELT COVER
Remove the six bolts, timing belt cover and gasket.



30. REMOVE TIMING BELT GUIDE

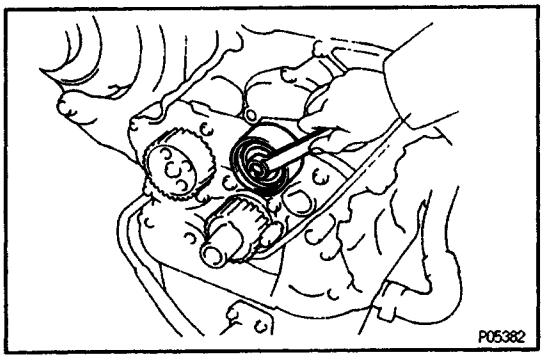


31. REMOVE TIMING BELT
HINT (When re–using timing belt): Draw a direction arrow on the timing belt (in the direction of engine revolution), and place matchmarks on the timing bell and crankshaft timing pulley.



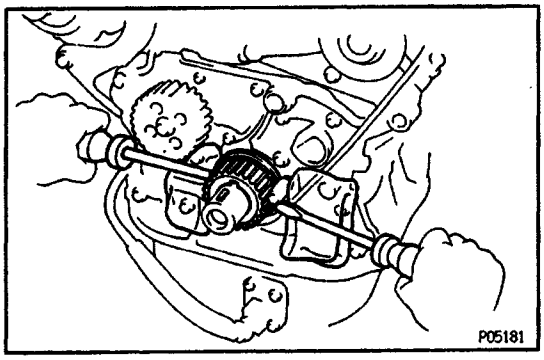
32. REMOVE N0.1 IDLER PULLEY

Remove the pivot bolt, pulley and plate washer.



33. REMOVE No.2 IDLER PULLEY

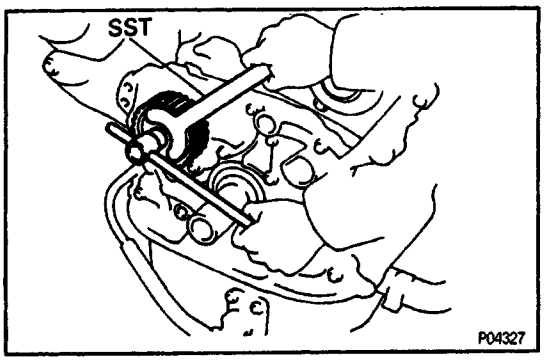
Remove the bolt and pulley.



34. REMOVE CRANKSHAFT TIMING PULLEY

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

HINT: Position shop rags as shown to prevent damage.



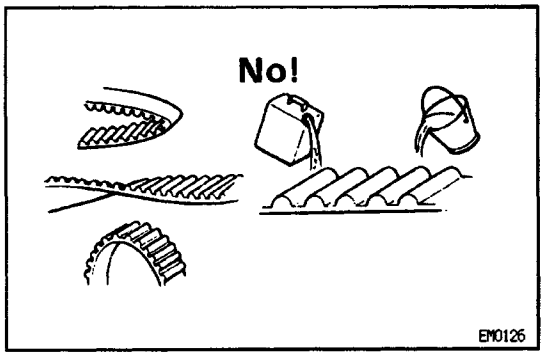
35. REMOVE OIL PUMP PULLEY

Using SST, remove the nut and pulley.

SST 09616–30011

TIMING BELT COMPONENTS INSPECTION

1. INSPECT TIMING BELT



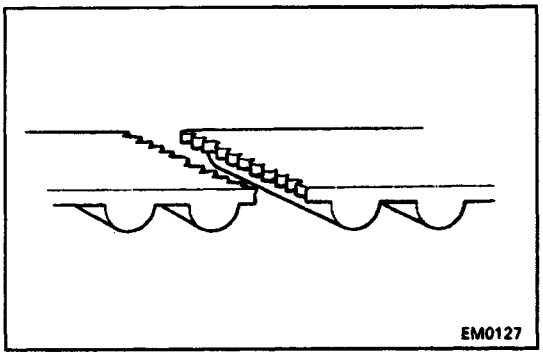
NOTICE:

- 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 mounting bolt of the camshaft timing pulley.

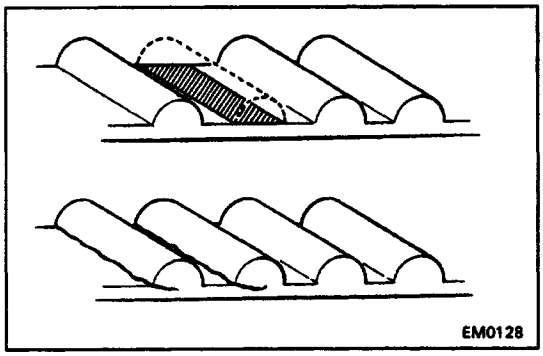
If there are any defects as shown in the illustration, check the following points:

(a) Premature parting

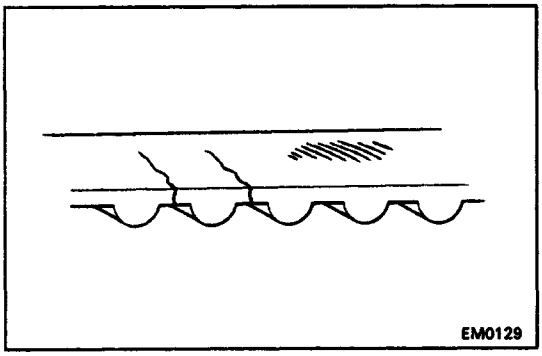
- Check the proper installation.
- Check the timing cover gasket for damage and proper installation.



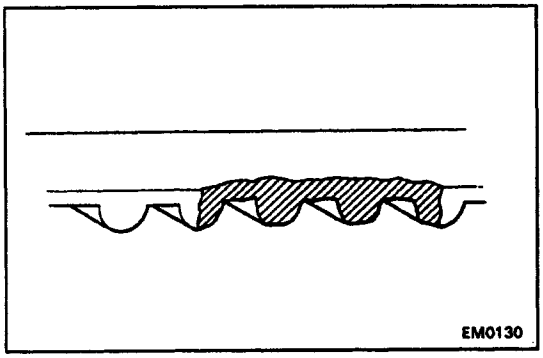
(b) If the belt teeth are cracked or damaged, check to see if either camshaft or water pump is locked.

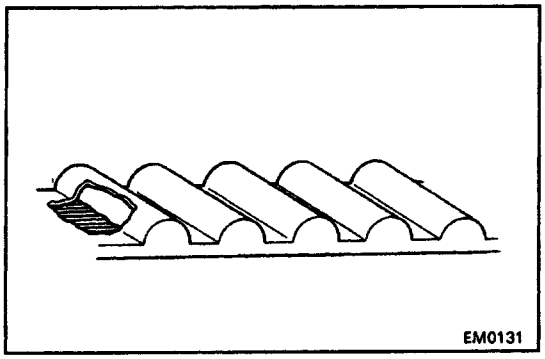


(c) If there is noticeable wear or cracks on the belt face, check to see if there are nicks on the side of the idler pulley lock.



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

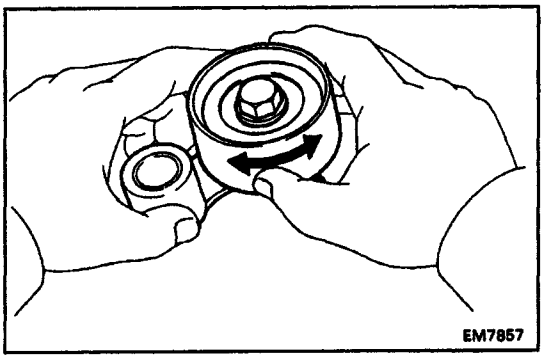




(e) If there is noticeable wear on the belt teeth, check the timing cover for damage, correct gasket installation, and the foreign material on the pulley teeth.
If necessary, replace the timing belt.

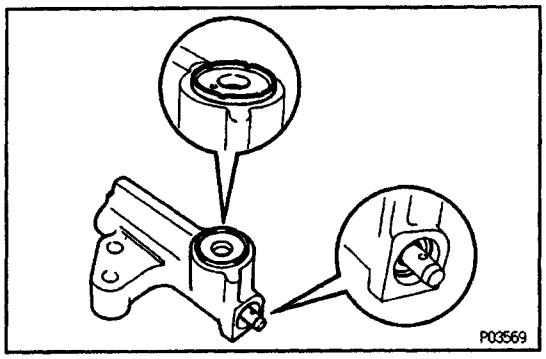
2. INSPECT IDLER PULLEYS

Check that the idler pulley turns smoothly.
If necessary, replace the idler pulley.

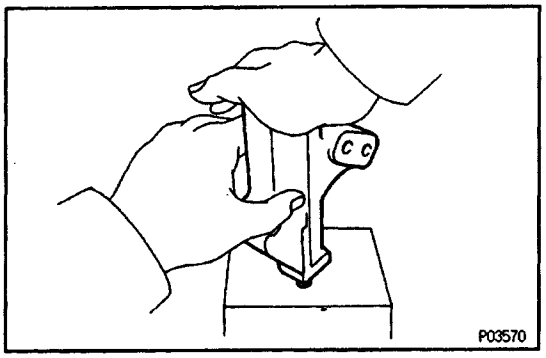


3. INSPECT TIMING BELT TENSIONER

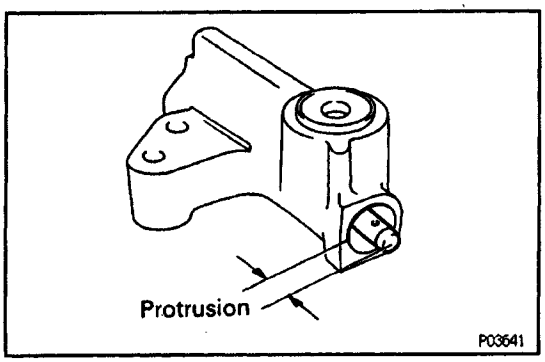
(a) Visually check tensioner for leakage.
HINT: A small trace of oil on the push rod seal is permissible.
If leakage is found, replace the tensioner.



(b) Hold the tensioner with both hands, and push the push rod firmly against the floor or wall to check that it doesn't move.
If push rod moves, replace the tensioner.



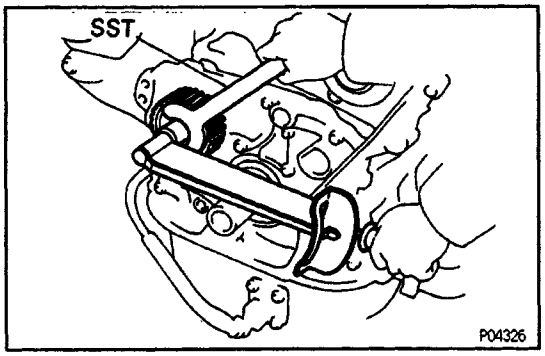
(c) Measure the protrusion of the push rod from the housing end.
Protrusion:
8.5 – 9.5 mm (0.335 – 0.374 in.)
If the protrusion is not as specified, replace the tensioner.



EG0WA–01

TIMING BELT INSTALLATION

(See Components for Removal and Installation)



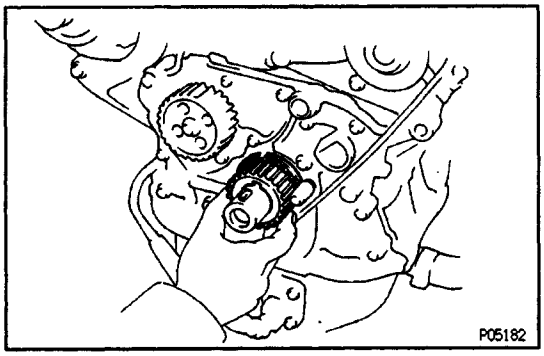
1. INSTALL OIL PUMP PULLEY

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

(b) Using SST, install the pulley nut.

SST 09616–30011

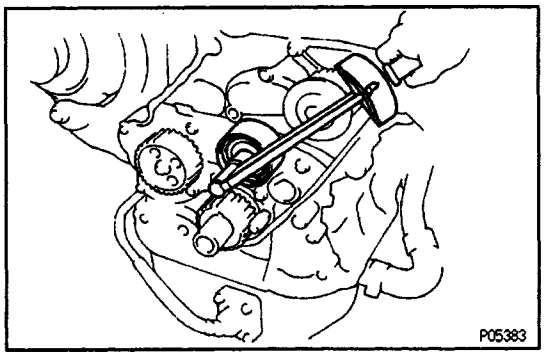
Torque: 35 N–m (355 kgf–cm, 26 ft–lbf)



2. INSTALL CRANKSHAFT TIMING PULLEY

(a) Align the timing pulley set key with the key groove of the pulley.

(b) Slide on the timing pulley, facing the flange side inward.

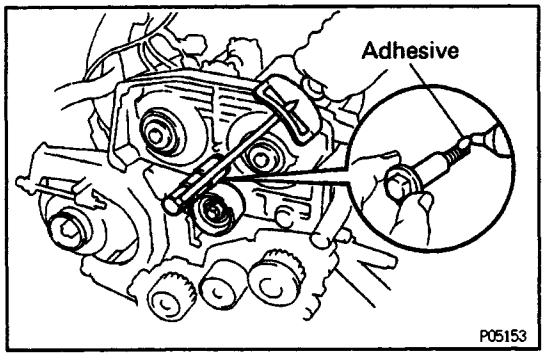


3. INSTALL NO.2 IDLER PULLEY

(a) Install the pulley with the bolt.

Torque: 43 N–m (440 kgf–cm, 32 ft–lbf)

(b) Check that the idler pulley moves smoothly.



4. INSTALL NO.1 IDLER PULLEY

(a) Apply adhesive two or three threads of the pivot bolt.

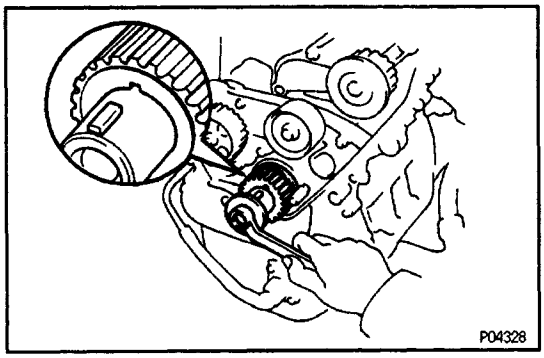
Adhesive:

Part No. 08833–00080. THREE BOND 1344, LOCTITE 242 or equivalent

(b) Install the plate washer and pulley with the pivot bolt.

Torque: 52 N–m (530 kgf–cm, 38 ft–lbf)

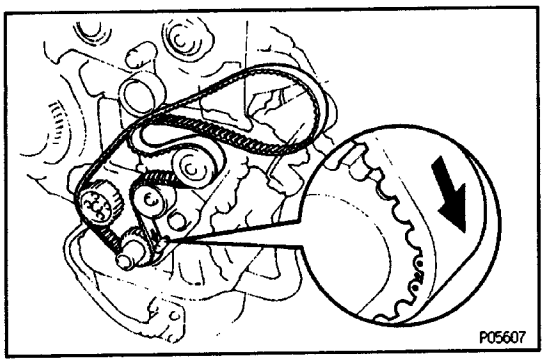
(c) Check that the idler pulley moves smoothly.



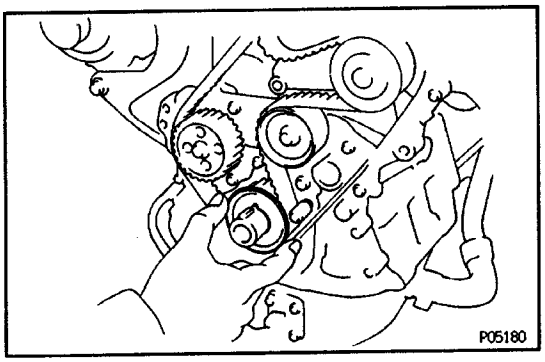
5. TEMPORARILY INSTALL TIMING BELT

NOTICE: The engine should be cold.

(a) Using the crankshaft pulley bolt, turn the crankshaft and position the key groove of the crankshaft timing pulley upward.

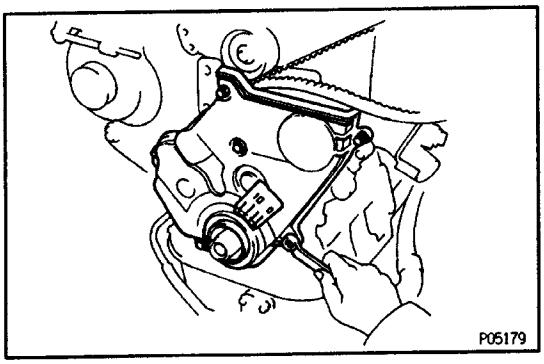


(b) Remove any oil or water on the crankshaft pulley, oil pump pulley, water pump pulley, No.1 idler pulley, No. 2 idler pulley and keep them clean.
(c) Install the timing belt on the crankshaft timing pulley, oil pump pulley, No.1 idler pulley, water pump pulley and No.2 idler pulley.
HINT (When re–using timing belt): Align the points marked during removal, and install the belt with the arrow pointing in the direction of engine revolution.



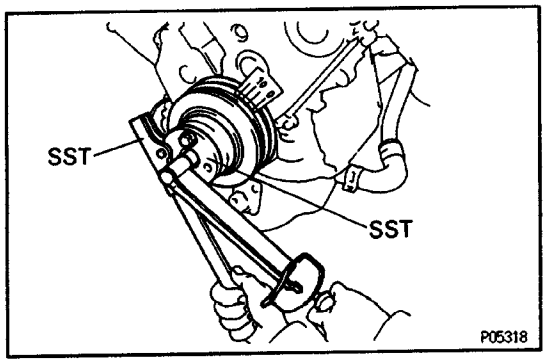
6. INSTALL TIMING BELT GUIDE

Install the guide, facing the cup side outward.



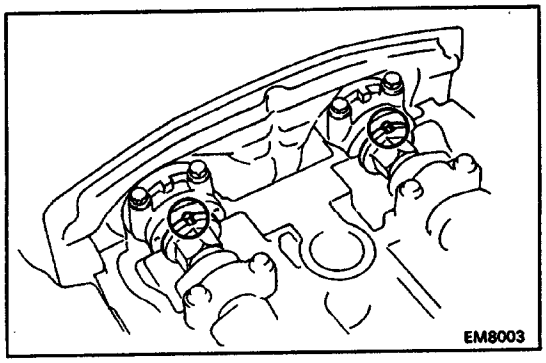
7. INSTALL NO.1 TIMING BELT COVER

(a) Install the gasket to the timing belt cover.
(b) Install the timing belt cover with the six bolts.



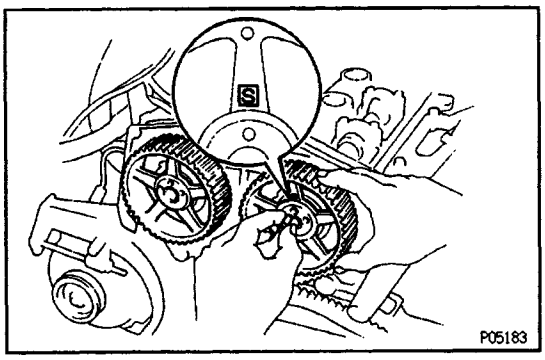
8. INSTALL CRANKSHAFT PULLEY

(a) Align the pulley set key with the key groove of the pulley, and slide on the pulley.
(b) Using SST, install the pulley bolt.
SST 09213–54015 (90119–08216), 09330–00021
Torque: 108 N–m (1,100 kgf–cm, 80 ft–lbf)

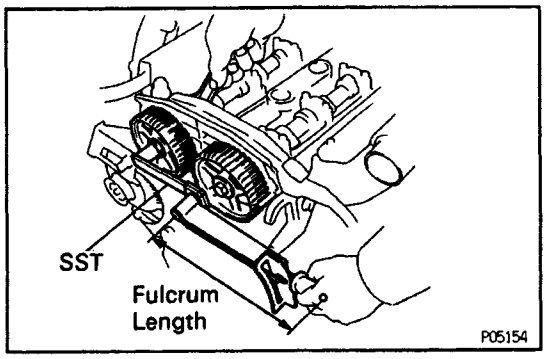


9. INSTALL CAMSHAFT TIMING PULLEY

(a) Using a wrench, turn and align the groove of the camshaft with the dot mark of the No.1 camshaft bearing cap.

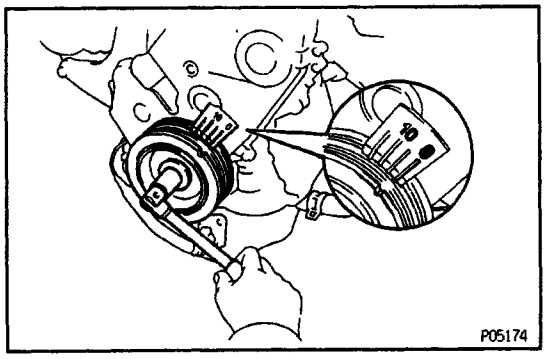


(b) Slide the timing pulley onto the camshaft facing mark "S" upward.
(c) Align the pin holes of the camshaft and timing pulley, and insert the knock pin.

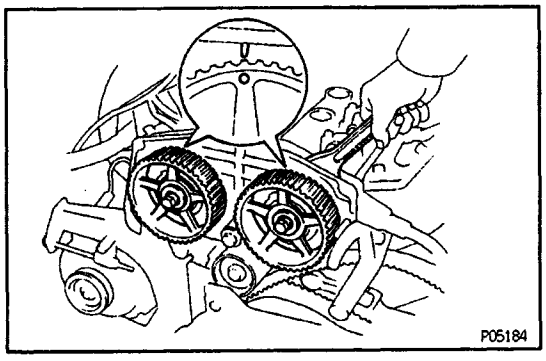


(d) Hold the hexagon wrench portion of the camshaft with a wrench and tighten the bolts.
Torque:
59 N–m (600 kgf–cm. 43 ft–lbf)
41 N–m (420 kgf–cm, 30 ft–lbf) for SST
HINT (Intake camshaft timing pulley):
- Use SST.

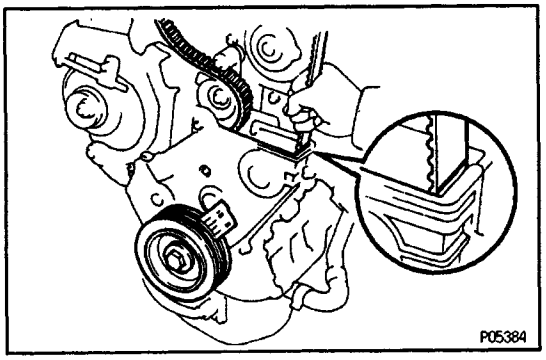
SST 09249–63010
- Use a torque wrench with a fulcrum length of 340 mm (13.39 in.).



10. SET NO.1 CYLINDER TO TDC/COMPRESSION
(a) Turn the crankshaft pulley, and align its groove with timing mark "0" of the No.1 timing belt cover.

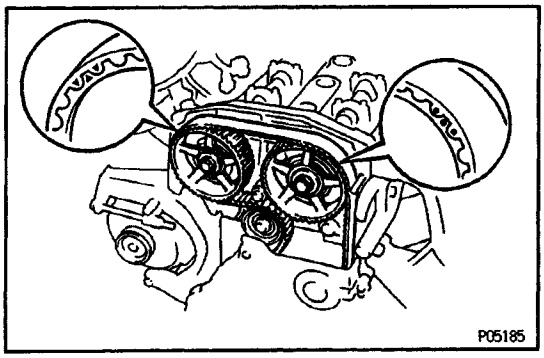


(b) Turn the camshaft, and align the timing marks of the camshaft timing pulleys and No.3 timing belt cover.

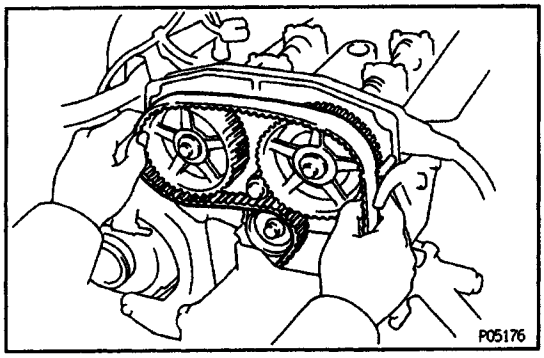


11. CONNECT TIMING BELT TO CAMSHAFT TIMING PULLEYS
HINT (When re–using timing belt):
- Check that the matchmark on the timing belt matches the end of the No.1 timing belt cover.

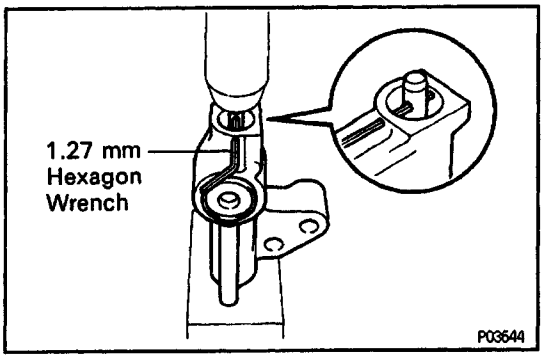
If the matchmark does not align, shift the meshing o1 the timing belt and crankshaft timing pulley until they align. (See step 28 in Timing Belt Removal)



- Align the matchmarks of the timing belt and camshaft timing pulleys.

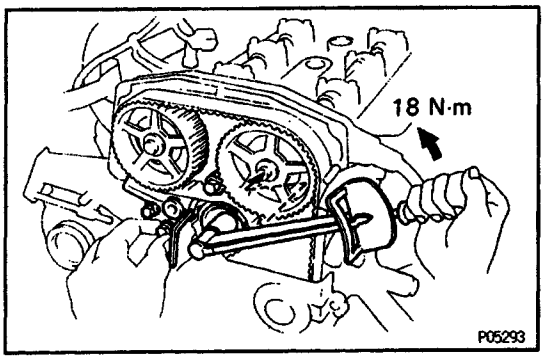


(a) Remove any oil or water on the camshaft timing pul–leys, and keep it clean.
(b) Install the timing belt, and checking the tension be–tween the crankshaft timing pulley and intake cam–shaft timing pulley.



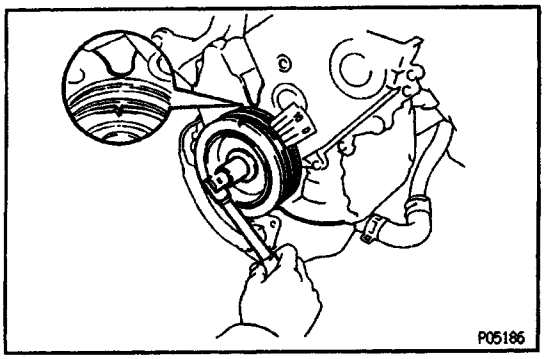
12. SET TIMING BELT TENSIONER

(a) Using a press, slowly press in the push rod using 981 – 9,807 N (100 – 1,000 kgf, 220 – 2,205 lbf) of pressure.
(b) Align the holes of the push rod and housing, pass a 1.27 mm hexagon wrench through the holes to keep the setting position of the push rod.
(c) Release the press.

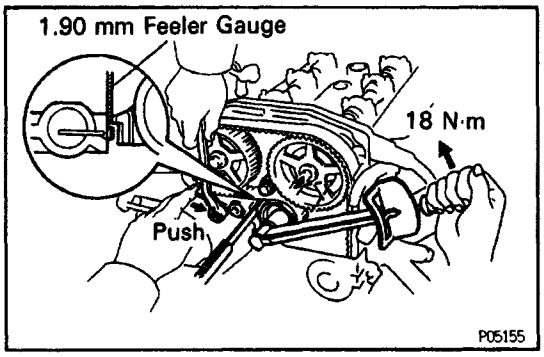


13. INSTALL TIMING BELT TENSIONER

(a) Turn the No.1 idler pulley bolt counterclockwise to obtain the specified torque toward the left as far as the No. 1 idler pulley will go, and temporarily install the tensioner with the two bolts.
Torque: 18 N–m (180 kgf–cm, 13 ft–lbf)
NOTICE: To apply the correct torque, apply the torque wrench along the axis through the bolts of the No.1 idler pulley and exhaust camshaft timing pulley.



(b) Slowly turn the crankshaft pulley 5/6 revolution, and align its groove with the ATDC 60˚ mark of the No. 1 timing belt cover.
NOTICE: Always turn the crankshaft clockwise.



(c) Insert the 1.90 mm (0.075 in.) feeler gauge between the tensioner body and No.1 idler pulley stopper.

(d) Turn the No.1 idler pulley bolt counterclockwise to obtain the specified torque.

Torque: 18 N–m (180 kgf–cm, 13 ft–lbf)

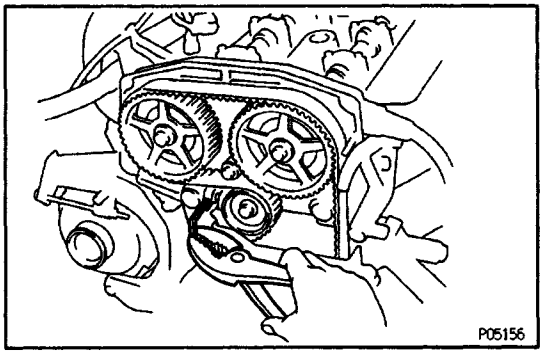
NOTICE: To apply the correct torque, apply the torque wrench along the axis through the bolts of the No.1 idler pulley and exhaust camshaft timing pulley.

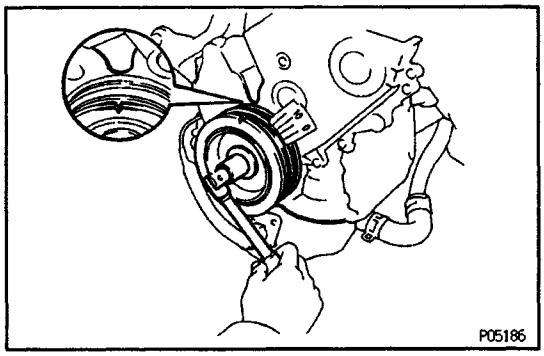
(e) While pushing the tensioner, alternately tighten the two bolts.

Torque: 21 N–m (210 kgf–cm, 15 ft–lbf)

(f) Remove the 1.90 mm (0.075 in.) feeler gauge.

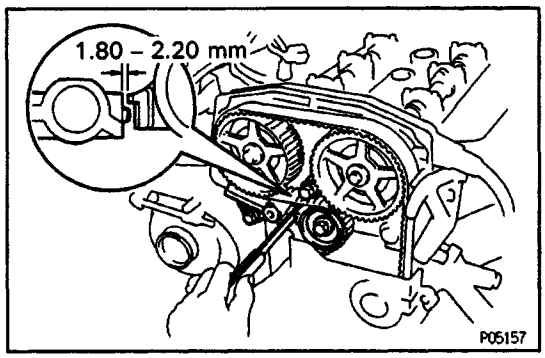
(g) Remove the 1.27 mm hexagon wrench from the tensioner





(h) Slowly turn the crankshaft pulley one revolution, and align its groove with the ATDC 60° mark of the No. 1 timing belt cover.

NOTICE: Always turn the crankshaft clockwise.

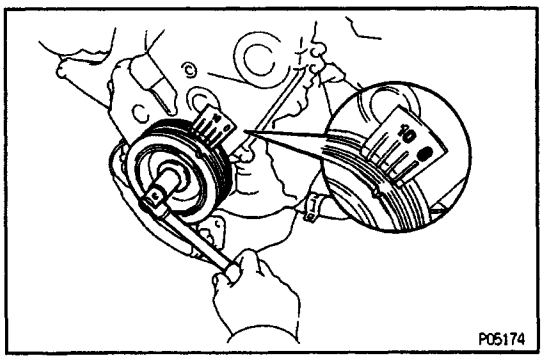


(i) Using a feeler gauge, check the specified clearance between the tensioner body and No.1 idler pulley stopper.

Clearance:

1.80 – 2.20 mm (0.071 – 0.087 in)

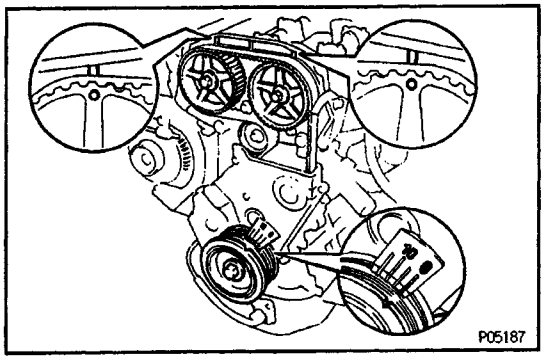
If the clearance is not as specified, remove the tensioner and reinstall it.



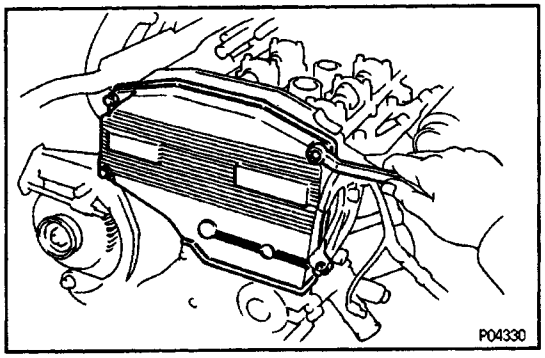
14. CHECK VALVE TIMING

(a) Slowly turn the crankshaft pulley two revolutions from TDC to TDC.

NOTICE: Always turn the crankshaft clockwise.

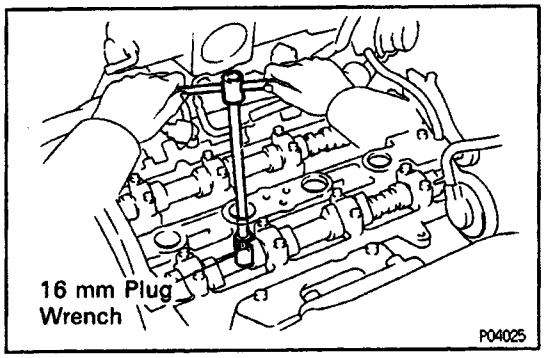


(b) Check that each pulley aligns with the timing marks as shown in the illustration.
If the timing marks do not align, remove the timing belt and reinstall it.



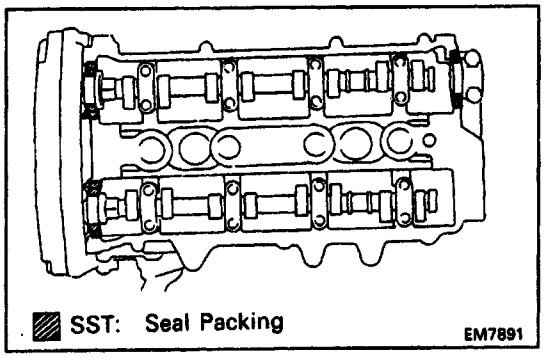
15. INSTALL NO.2 TIMING BELT COVER

(a) Install the gasket to the timing belt cover.
(b) Install the timing belt cover with the five bolts.



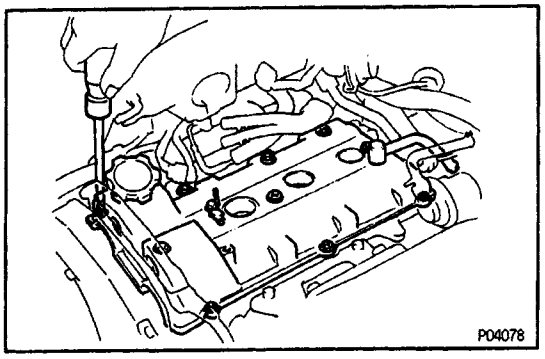
16. INSTALL SPARK PLUGS

Using a 16 mm plug wrench, install the four spark plugs.
Torque: 18 N–m (180 kgf–cm, 13 ft–lbf)

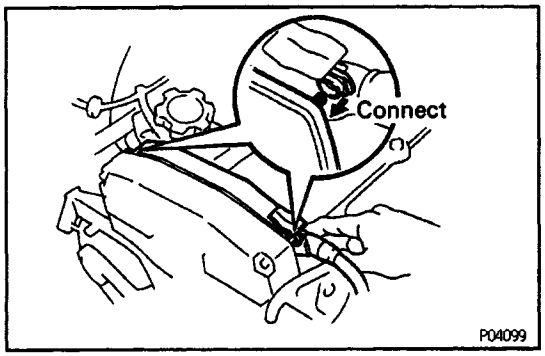


17. REINSTALL CYLINDER HEAD COVER

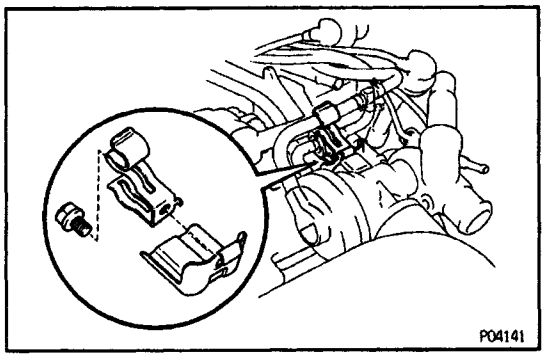
(a) Remove any old packing (FIPG) material.
(b) Apply seal packing to the cylinder head as shown in the illustration.
Seal packing:
Part No. 08826–00080 or equivalent



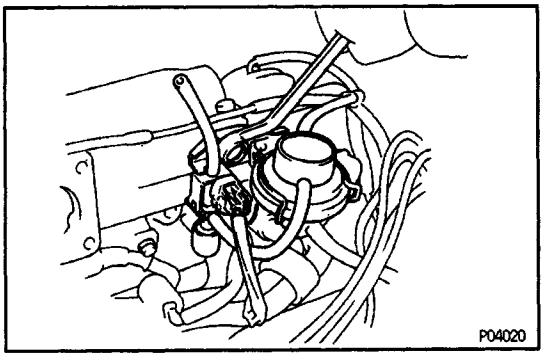
(c) Install the two gaskets to the cylinder head cover.
(d) Install the cylinder head cover with the ten seal washers and screws.
Torque: 2.5 N–m (25 kgf–cm, 21 in.–lbf)



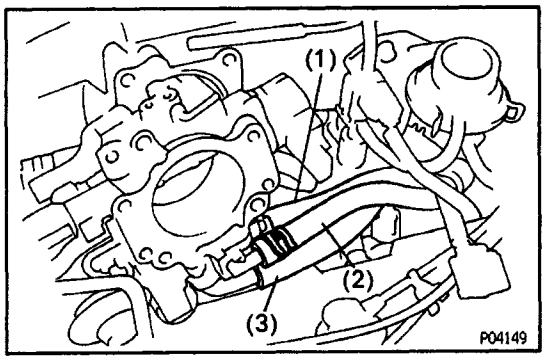
(e) install the two clamps of the engine wire protector to each bolt.



(f) install the two clamps.
(g) Connect the VTV and hose to the clamp.
(h) Connect the high–tension cords.

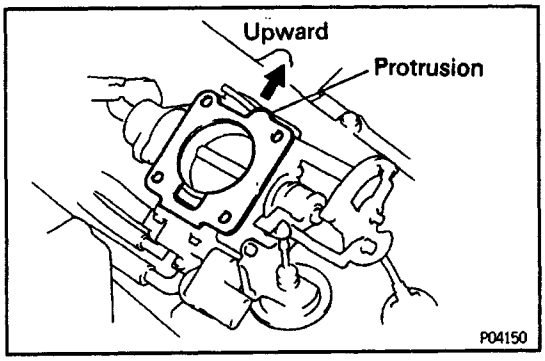


(i) Install the VSV and EGR vacuum modulator assembly with the bolt.

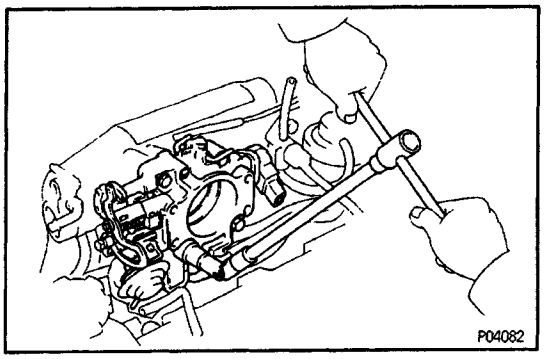


18. INSTALL THROTTLE BODY

(a) Connect the following hoses to the throttle body:
(1) Water by–pass hose (from upper side of No. 1 air tube)
(2) Water by–pass hose (from lower side of No.1 air tube)
(3) Air hose (from No. 1 air tube)



(b) Install a new gasket to the throttle body.



(c) Install the throttle body with the four bolts.

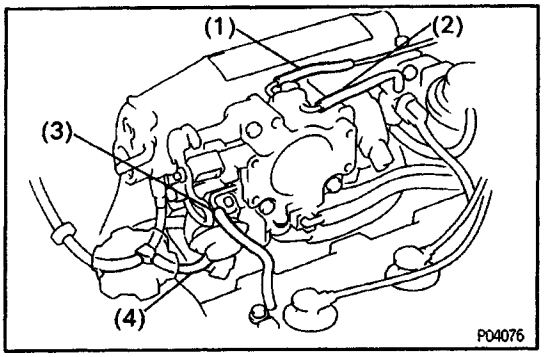
Torque: 19 N–m (195 kgf–cm, 14 ft–lbf)

HINT: Deferment bolt lengths are used for the upper and lower sides.

Bolt length:

45 mm (1.77 in.) for upper side

70 mm (2.76 in.) for lower side



(d) Connect the following hoses:

(1) Vacuum hose to port ”P” of throttle body

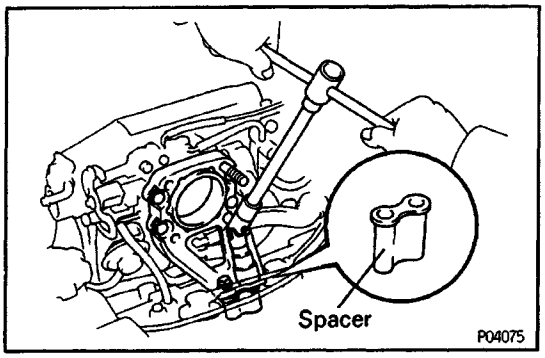
(2) Vacuum hose to port ”E” of throttle body

(3) PCV hose to port PCV of throttle body

(4) Vacuum hose to throttle body opener

(e) Connect the following connector:

- Throttle position sensor connector
- IACV connector



19. INSTALL INTAKE AIR CONNECTOR STAY

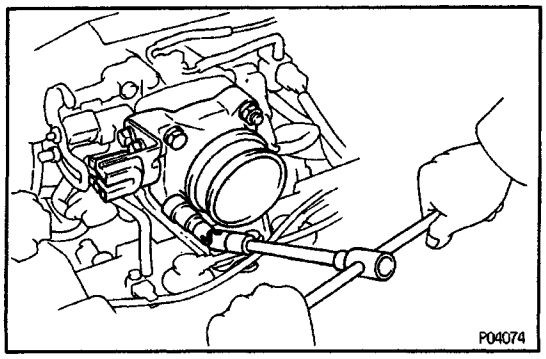
(a) Install the spacer.

(b) Install the intake air connector stay with the six bolts.

Torque:

7.8 N–m (80 kgf–cm. 69 in–lbf) for 10 mm head

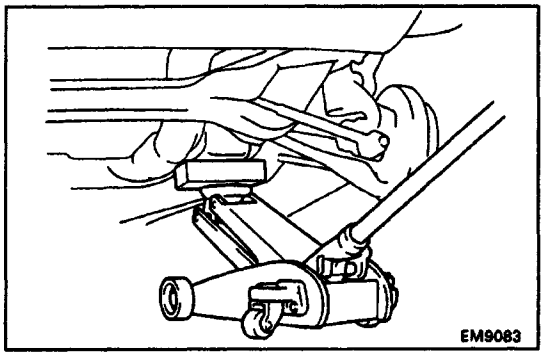
19 N–m (195 kgf–cm, 14 ft–lbf) for 12 mm head



20. INSTALL INTAKE AIR CONNECTOR

Install the intake air connector with the two bolts and two nuts.

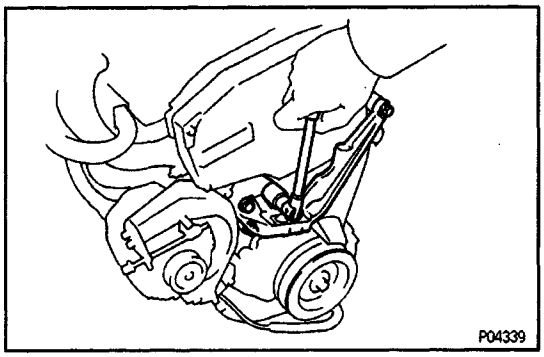
Torque: 19 N–m (195 kgf–cm, 14 ft–lbf)



21. INSTALL RH ENGINE MOUNTING BRACKET

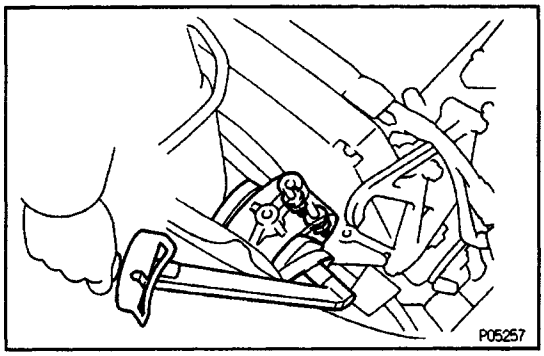
(a) Place the mounting bracket in position.

HINT: Raise the engine as far as it will go, and place the mounting bracket in position.



(b) Install the mounting bracket with the four bolts.

Torque: 61 N–m (620 kgf–cm, 45 ft–lbf)



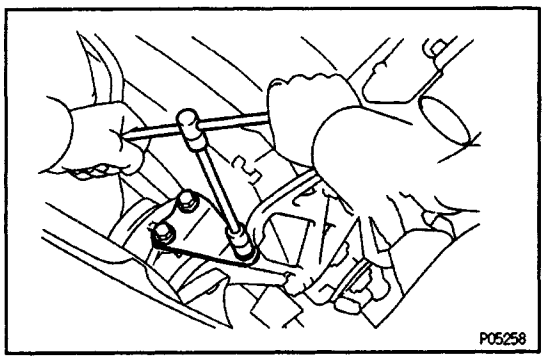
22. INSTALL RH ENGINE MOUNTING INSULATOR

Install the mounting insulator with the throught bolt and two nuts.

Torque:

52 N–m (530 kgf–cm, 38 ft–lbf) for nut

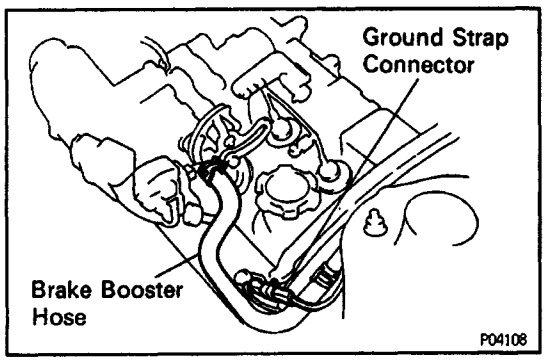
78 N–m (800 kgf–cm, 58 ft–lbf) for through bolt



23. INSTALL RH ENGINE MOUNTING STAY

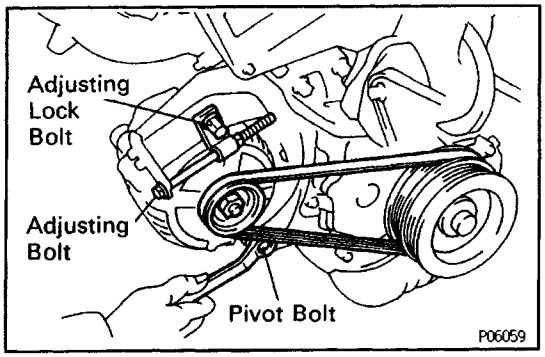
Install the mounting stay with the three bolts.

Torque: 73 N–m (740 kgf–cm, 54 ft–lbf)



24. CONNECT BRAKE BOOTER VACUUM HOSE

25. CONNECT GROUND STRAP CONNECTOR



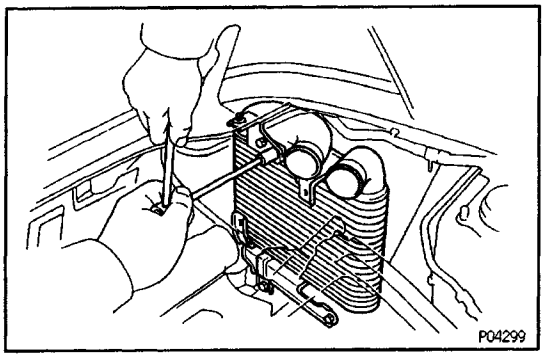
26. INSTALL ALTERNATOR DRIVE BELT

(a) Install the drive belt with the adjusting bolt.

(b) Adjust the drive belt with the adjusting bolt.

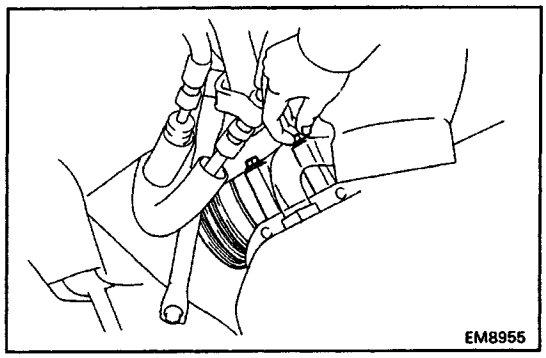
(c) Tighten the adjusting lock bolt and pivot bolt.

27. INSTALL RH REAR WHEEL



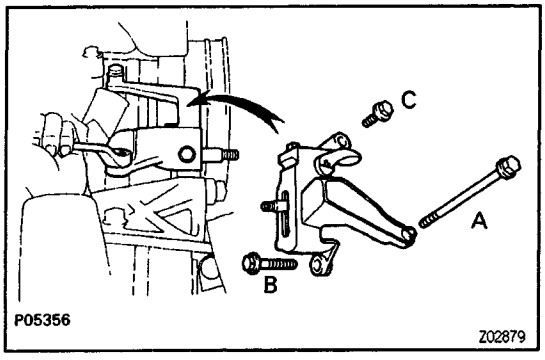
28. INSTALL CAC

Install the CAC and upper bracket with the five bolts.



29. INSTALL A/C COMPRESSOR

(a) Temporarily install the A/C compressor with the two bolts.



(b) Install the idler pulley bracket with the three bolts.

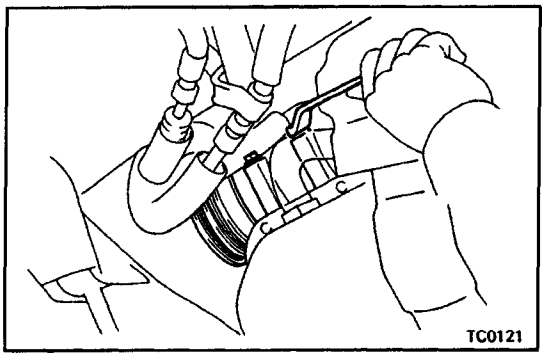
Torque:

25 N–m (250 kgf–cm, 18 ft–lbf) for A

27 N–m (275 kgf–cm, 20 ft–lbf) for B

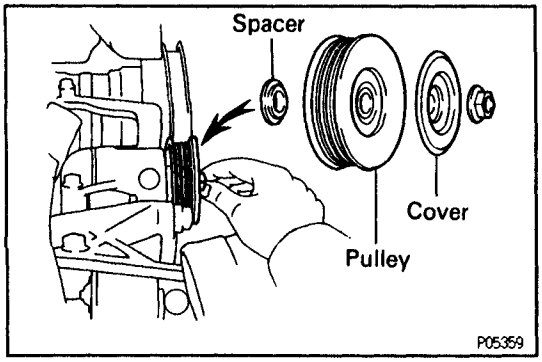
37 N–m (375 kgf–cm, 27 ft–lbf) for C

(c) Connect the A/C compressor connector.

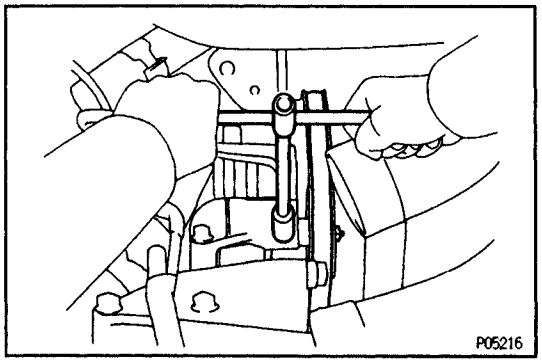


(d) Tighten the two bolts of the lower side of the A/C compressor.

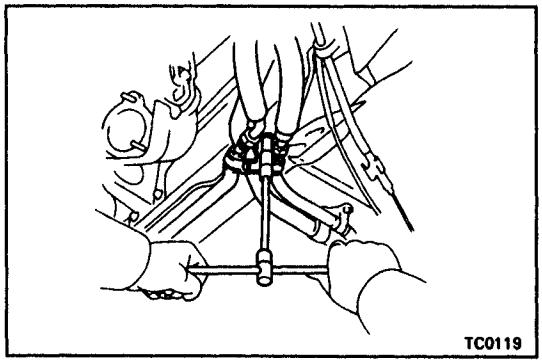
Torque: 25 N–m (250 kgf–cm, 18 ft–lbf)



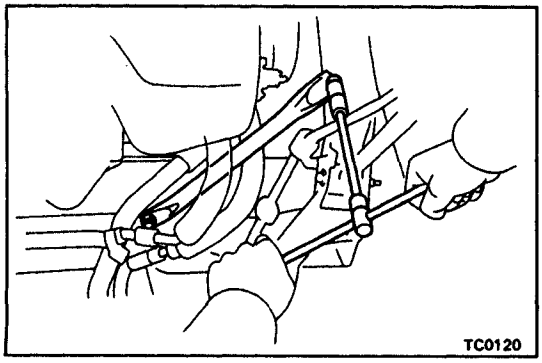
(e) Temporarily install the spacer, idler pulley and pulley cover with the nut.



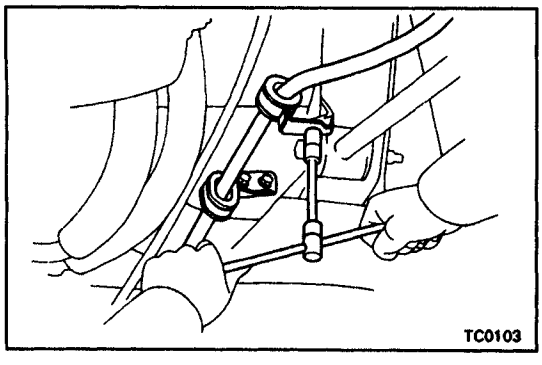
(f) Install the drive belt with the adjusting bolt.
(g) Tighten the idler pulley nut.



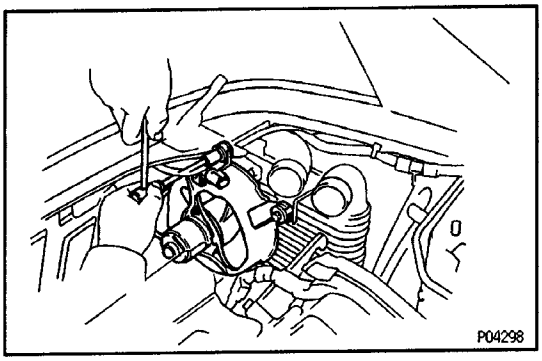
(h) Install the A/C pipes with the two clamps and nut.



(i) Install the lower suspension brace with the two bolts.
Torque: 73 N–m (740 kgf–cm, 54 ft–lbf)

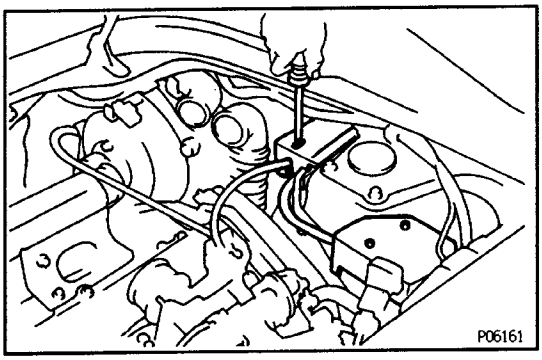


(j) Install the parking brake cable with the two clamp and three bolts.



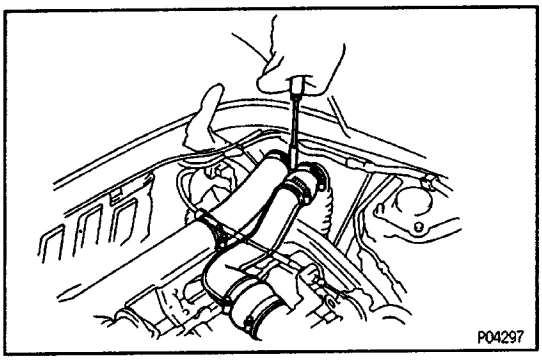
30. INSTALL ENGINE COMPARTMENT ELECTRIC COOLING FAN

(a) Install the cooling fan with the three bolts.
(b) Connect the cooling fan connector.

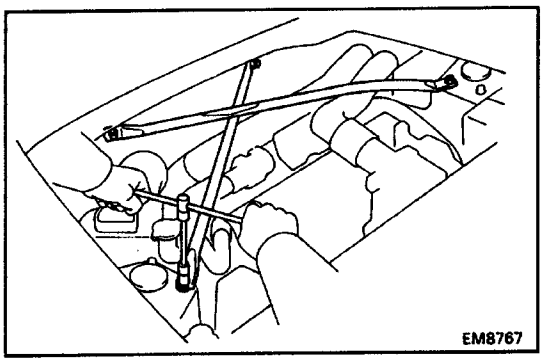


31. (w/ CRUISE CONTROL SYSTEM) INSTALL CRUISE CONTROL ACTUATOR AND ACCELERATOR LINKAGE

32. (w/o CRUISE CONTROL SYSTEM) CONNECT ACCELERATOR LINKAGE TO THROTTLE BODY



33. INSTALL NO.1 AND NO.2 INTAKE AIR CONNECTORS



34. INSTALL UPPER SUSPENSION BRACE

Install the upper– brace with the two bolts and two nuts.

Torque:

73 N–m (740 kgf–cm, 54 ft–lbf) for–bolt
64 N–m (650 kgf–cm, 47 ft–lbf) for nut

35. INSTALL RH ENGINE HOOD SIDE PANEL

36. INSTALL ENGINE UNDER COVERS

37. CONNECT CABLE TO NEGATIVE TERMINAL OF BATTERY

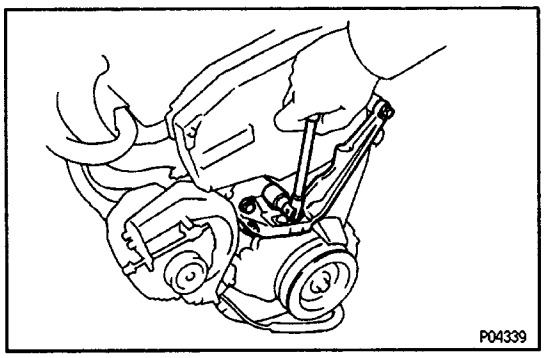
EGOWB–01

VALVE TIMING ADJUSTMENT

(See Components for Removal and Installation)

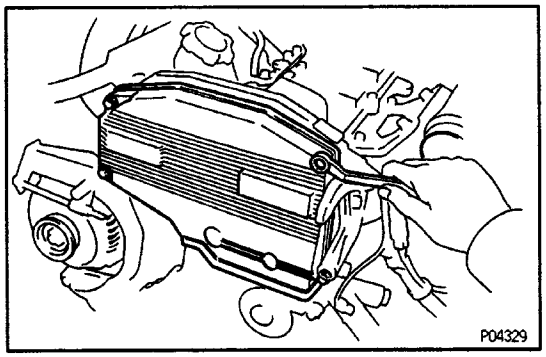
1. REMOVE RH ENGINE MOUNTING BRACKET

(See steps 1 to 11 and 13 to 18 in Timing Belt Removal)



2. REMOVE No.2 TIMING BELT COVER

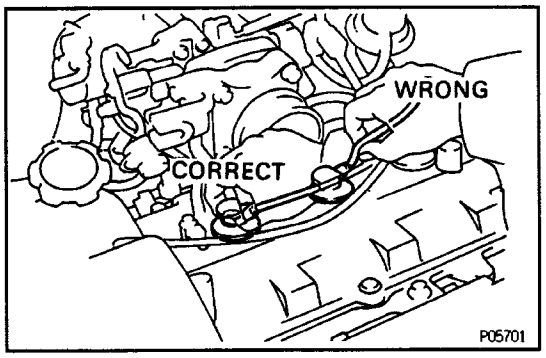
Remove the five bolts, timing belt cover and gasket.



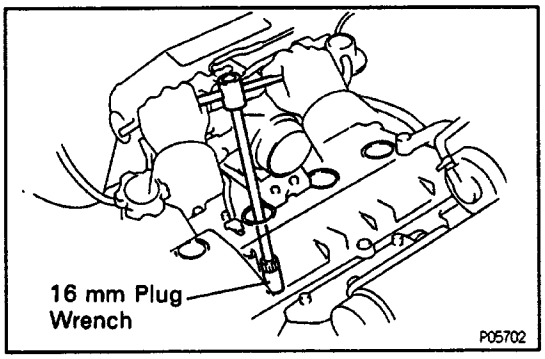
3. REMOVE SPARK PLUGS

(a) Disconnect the high – tension cords at the rubber boot. Do not pull on the high–tension cords.

NOTICE: Pulling on or bending the cords may damage the conductor inside.

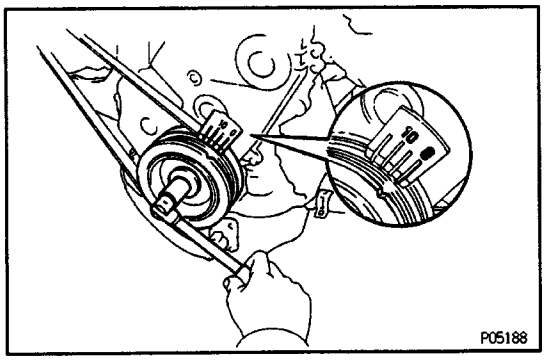


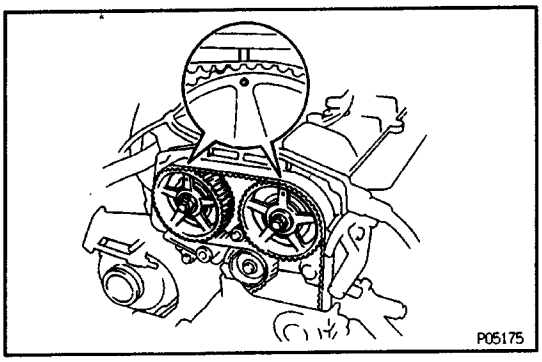
(b) Using a 16 mm plug wrench, remove the four spark plugs.



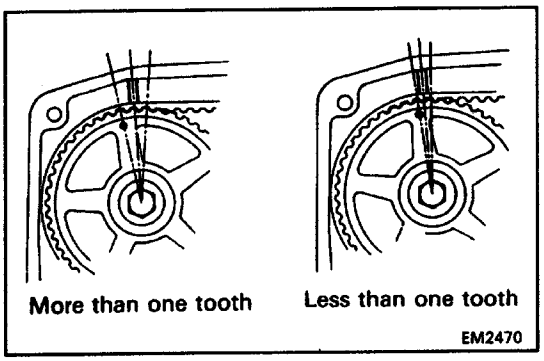
4. CHECK CAMSHAFT TIMING PULLEY MARKS

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

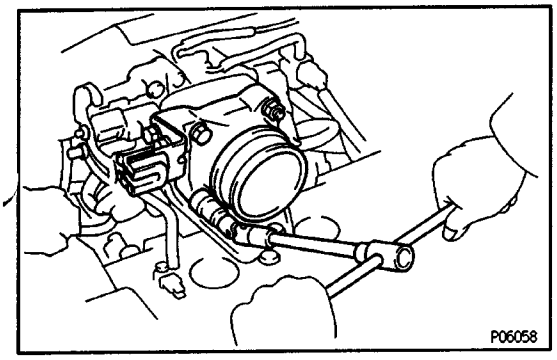




(b) Check that the timing marks of the camshaft timing pulleys are aligned with the timing marks of the No.3 timing belt cover.

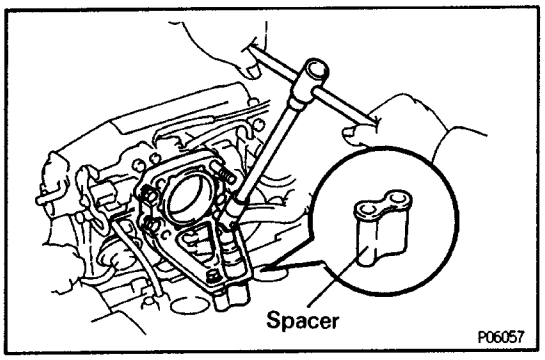


- If there is more one timing pulley tooth between the timing marks, realign the timing marks in accordance with step 9.
- If the timing marks are aligned or the difference is less than one timing pulley tooth, proceed to step 10.



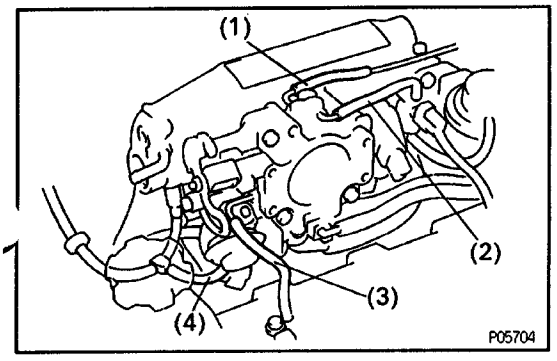
5. REMOVE INTAKE AIR CONNECTOR

Remove the two bolts, two nuts and intake air con–nector.



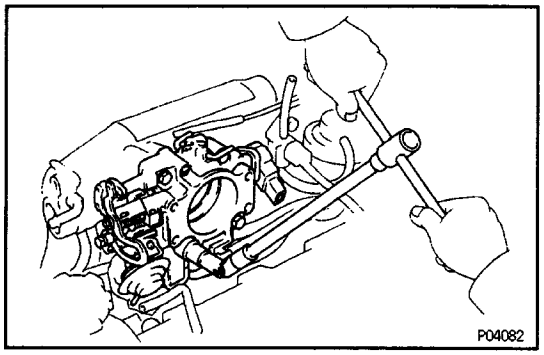
6. REMOVE INTAKE AIR CONNECTOR STAY

(a) Remove the six bolts and intake air connector stay.
(b) Remove the spacer.

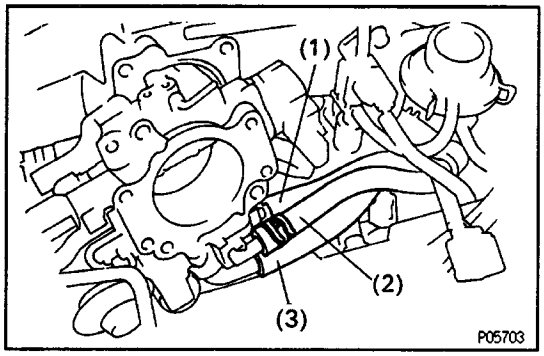


7. REMOVE THROTTLE BODY

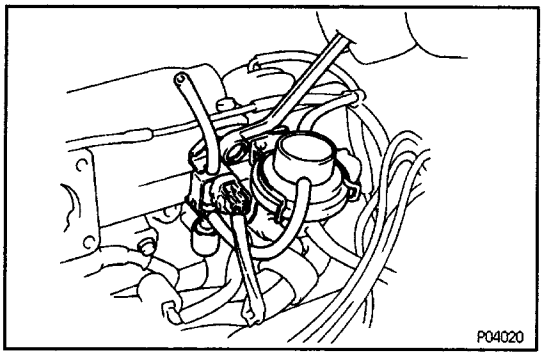
(a) Disconnect the following connector:
Throttle position sensor connector
IACV connector
(b) Disconnect the following hoses:
(1) Vacuum hose from port ”P” of throttle body
(2) Vacuum hose from port ”E” of throttle body
(3) PCV hose from port PCV of throttle body
(4) Vacuum hose from throttle body opener



(c) Remove the four bolts, and disconnect the throttle body from the intake manifold.
(d) Remove the throttle body gasket.

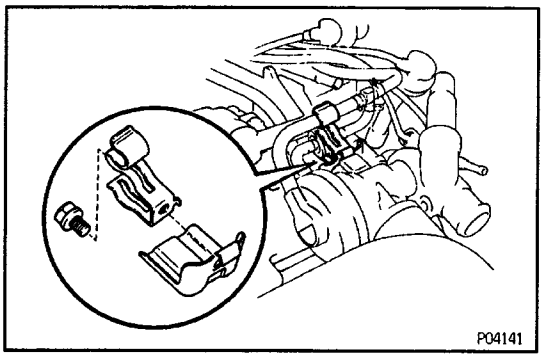


(e) Disconnect the following hoses from the throttle body, and remove the throttle body:
(1) Water by–pass hose (from upper side of No. 1 air tube)
(2) Water by–pass hose (from lower side of No.1 air tube)
(3) Air hose (from No. 1 air tube)

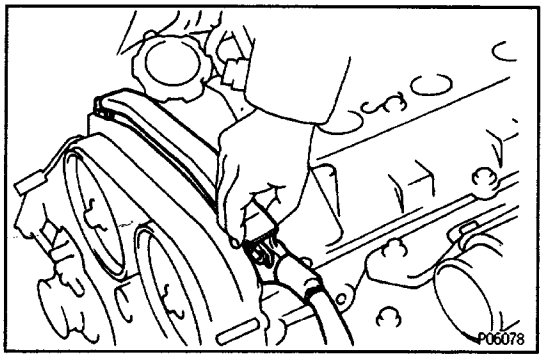


8. REMOVE CYLINDER HEAD COVER

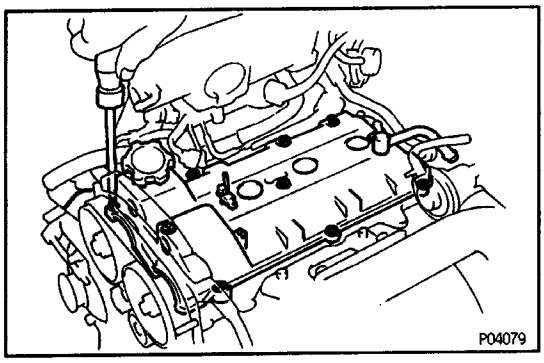
(a) Remove the bolt, and disconnect the VSV and EGR vacuum modulator assembly from the intake mani–fold.



(b) Disconnect the hose and VTV from the clamps.
(c) Remove the bolt and two clamps.

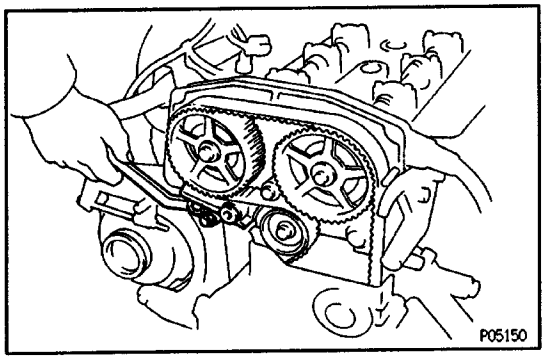


(d) Disconnect the engine wire protector between the No. 3 timing belt cover and cylinder head cover.

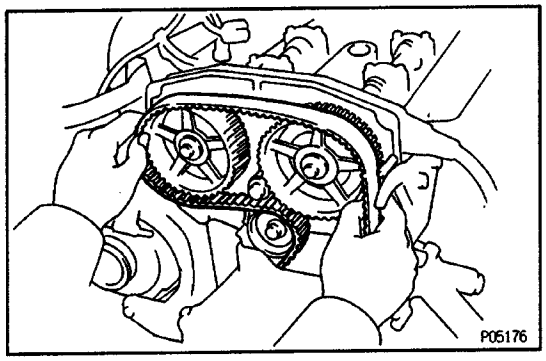


(e) Remove the ten screws, seal washers bolts, head cover and two gaskets.

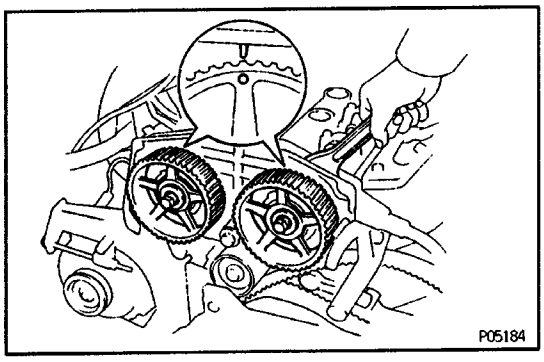
9. ADJUST CAMSHAFT TIMING PULLEY MARKS



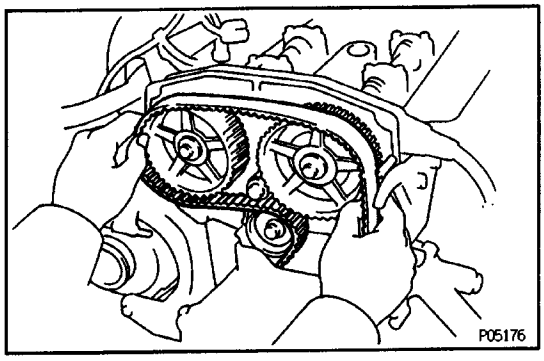
(a) Remove the two bolts and timing belt tensioner.



(b) Disconnect the timing belt from the camshaft timing pulleys.

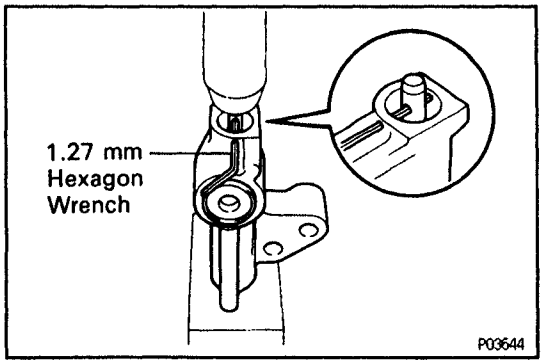


(c) Rotate the camshaft with a wrench, and align the alignment marks of the camshaft timing pulley and No.3 timing belt cover.

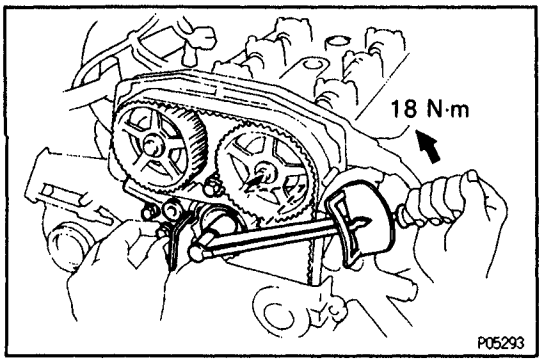


(d) Reinstall the timing belt, checking the tension be–tween the the crankshaft timing pulley and intake camshaft timing pulley.

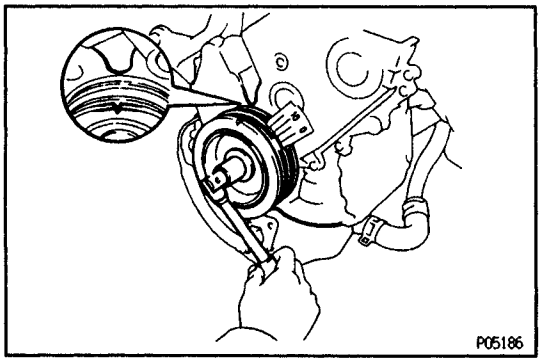
NOTICE: Install the timing belt when the engine is cold.



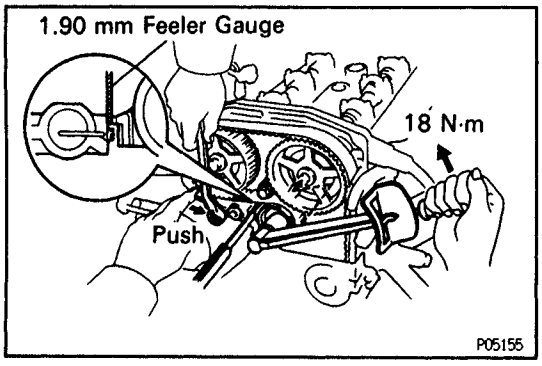
(e) Set the timing belt tensioner.
- Using a press, slowly press in the push rod using 981 – 9,807 N (100 – 1,000 kgf, 220 – 2,205 lbf) of pressure.
- Align the holes of the push rod and housing, pass a 1.27 mm hexagon wrench through the holes to keep the setting position of the push rod.
- Release the press.



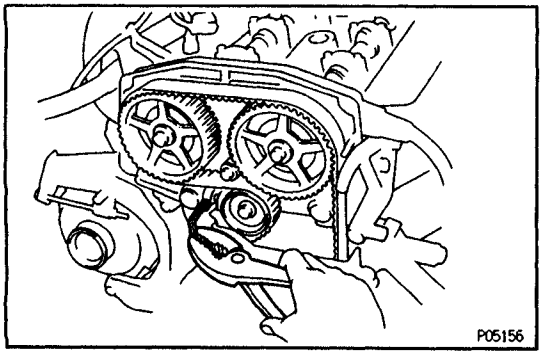
(f) Turn the No.1 idler pulley bolt counterclockwise to obtain the specified torque toward the left as far as the No. 1 idler pulley will go, and temporarily install the tensioner with the two bolts.
Torque: 18 N–m (180 kgf–cm, 13 ft–lbf)
NOTICE: To apply the correct torque, apply the torque wrench along the axis through the bolts of the No.1 idler pulley and exhaust camshaft timing pulley.

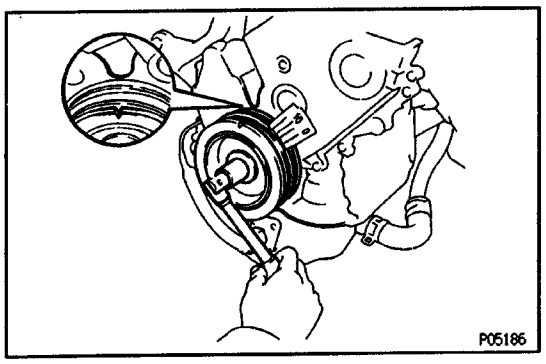


(g) Slowly turn the crankshaft pulley 5/6 revolution, and align its groove with the ATDC 60° mark of the No. 1 timing belt cover.
NOTICE: Always turn the crankshaft clockwise.

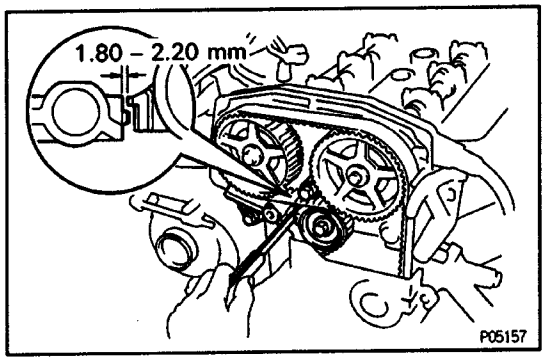


(h) Insert the 1.90 mm (0.075 in.) feeler gauge between the tensioner body and No.1 idler pulley stopper.
(i) Turn the No.1 idler pulley bolt counterclockwise to obtain the specified torque.
Torque: 18 N–m (180 kgf–cm, 13 ft–lbf)
NOTICE: To apply the correct torque, apply the torque wrench along the axis through the bolts of the No.1 idler pulley and exhaust camshaft timing pulley.
(j) While pushing the tensioner, alternately tighten the two bolts.
Torque: 21 N–m (210 kgf–cm, 15 ft–lbf)
(k) Remove the 1.90 mm (0.075 in.) feeler gauge.
(1) Remove the 1.27 mm hexagon wrench from the tensioner.

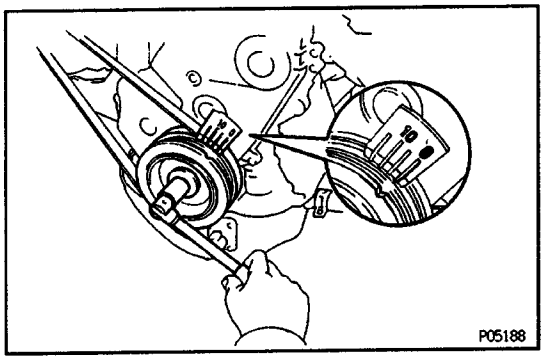




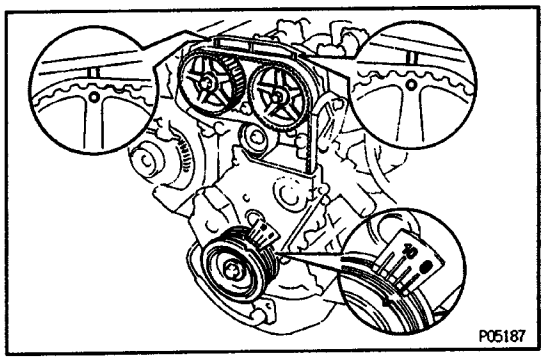
(m) Slowly turn the crankshaft pulley one revolution, and align its groove with the ATDC ^0˚ mark of the No. 1 timing belt cover.
NOTICE: Always turn the crankshaft clockwise.



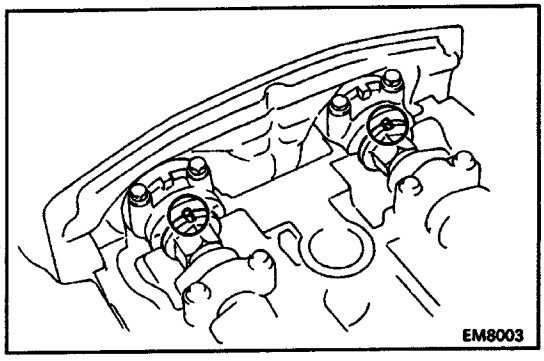
(n) Using a feeler gauge, check the specified clearance between the tensioner body and No.1 idler pulley stopper.
Clearance:
1.80 – 2.20 mm (0.071 – 0.087 in)
If the clearance is not as specified, remove the tensioner and reinstall it.



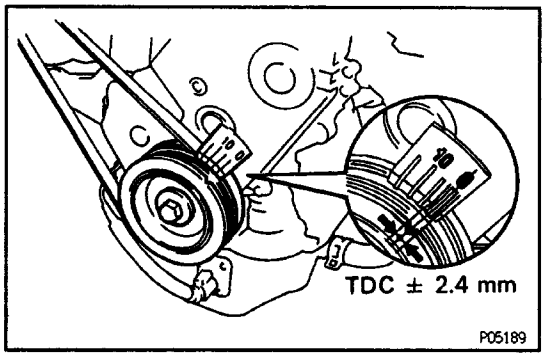
(o) Slowly turn the crankshaft pulley two revolutions from TDC to TDC.
NOTICE: Always turn the crankshaft clockwise.



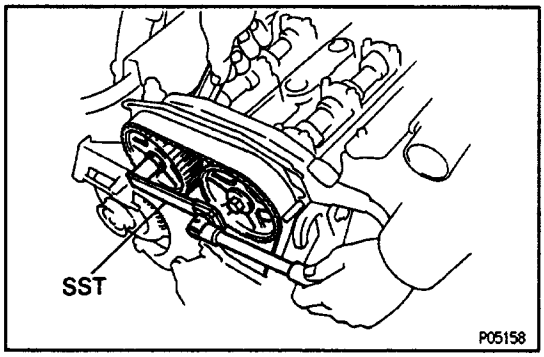
(p) Check that each pulley aligns with the timing marks as shown in the illustration.



10. CHECK VALVE TIMING
(a) Using a wrench, turn and align the groove of the camshaft with the dot mark of the No.1 camshaft bearing cap.

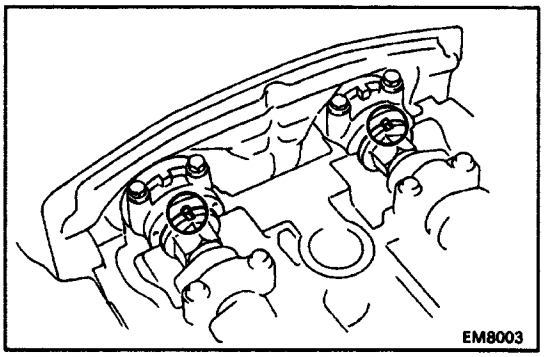


(b) Next mark a note of the crankshaft pulley angle on the No.1 timing belt cover.
HINT: Perform this check separately for the intake and exhaust sides.
If the crankshaft pulley movement is within ± 2.4 mm (0.094 in.) of TDC, it is correct.
If it is greater than 2.4 mm (0.094 in.), go back to step 9.

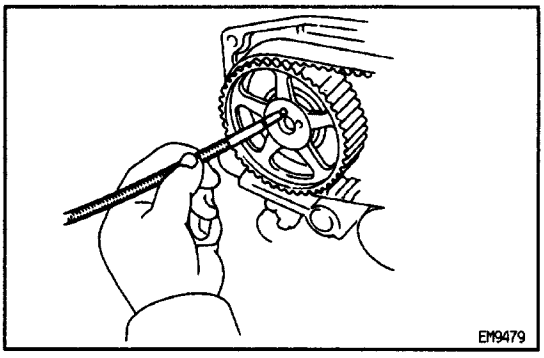


11. ADJUST VALVE TIMING

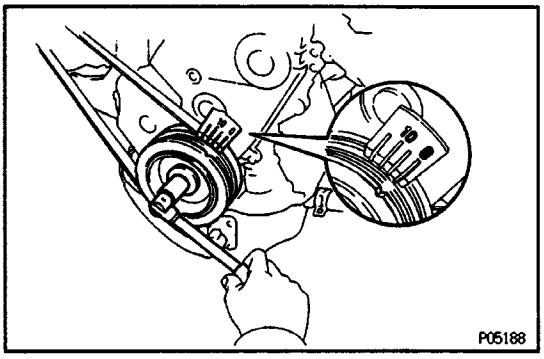
(a) Hold the hexagon wrench head portion of the camshaft with a wrench, and remove the two camshaft timing pulley bolts.
HINT (Intake camshaft timing pulley): Use SST.
SST 09249 – 63010
NOTICE: Do not make use of the timing belt tension when loosening the pulley bolts.



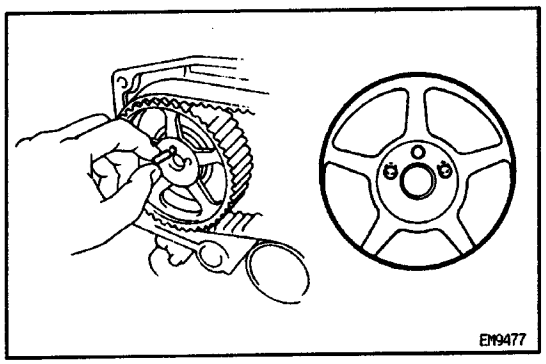
(b) Using a wrench, turn and align the groove of the camshaft with the dot mark of the No.1 camshaft bearing cap.



(c) Using a magnetic finger, remove the knock pin from the pin hole of the camshaft timing pulley.

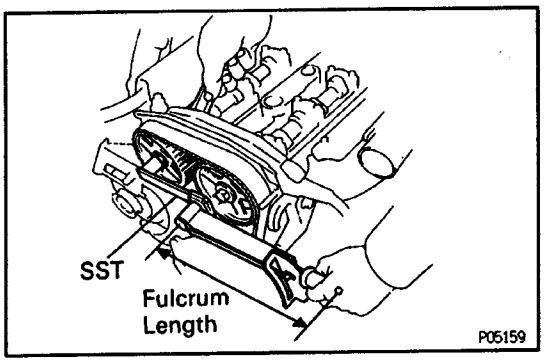


(d) Slowly turn the crankshaft pulley two revolutions from TDC to TDC.
NOTICE: Always turn the crankshaft clockwise.



(e) Select one overlapped hole of the camshaft and timing pulley, and insert the knock pin into it.
HINT:

- If there is not an overlapped hole, rotate the crankshaft a little and insert the pin knock pin into the nearly overlapped hole.
- By changing the pin hole to the next one, the crankshaft pulley angle can be adjusted by approx. 2˚.
- By changing the pin hole to the next two, the crankshaft pulley angle can be adjusted by approx. 5˚.



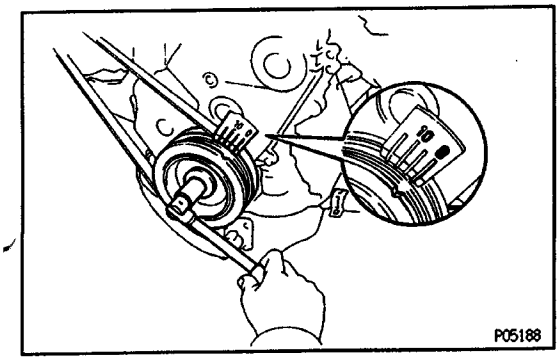
(f) Hold the hexagon wrench portion of the camshaft with a wrench, and tighten the two camshaft timing pulley bolts.
Torque:
59 N–m (600 kgf–cm. 43 ft–lbf)
41 N–m (420 kgf–cm, 30 ft–lbf) for SST
HINT(Intake camshaft timing pulley):

- Use SST.

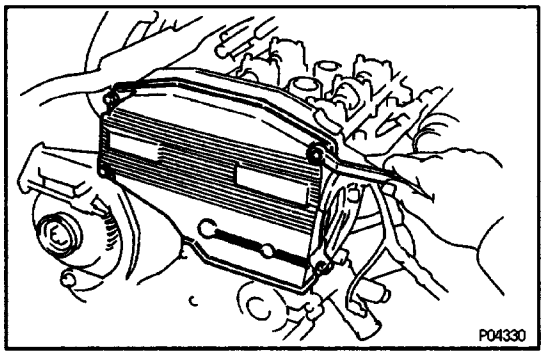
SST 09249–63010

- Use a torque wrench with a fulcrum length of 340 mm (13.39 in.).

NOTICE: Do not make use of the timing belt tension when tightening the pulley bolts.



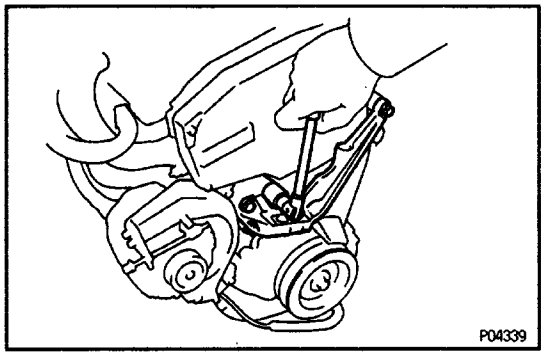
(g) Slowly turn the crankshaft pulley two revolutions from TDC to TDC.
NOTICE: Always turn the crankshaft clockwise.
(h) Recheck the valve timing. (See step 10 above)



12. INSTALL NO.2 TIMING BELT COVER

(a) Install the gasket to the timing belt cover.

(b) Install the timing belt cover with the five bolts.



13. INSTALL RH ENGINE MOUNTING BRACKET

(See steps 16 to 25 and 27 to 37 in Timing Belt Installation)