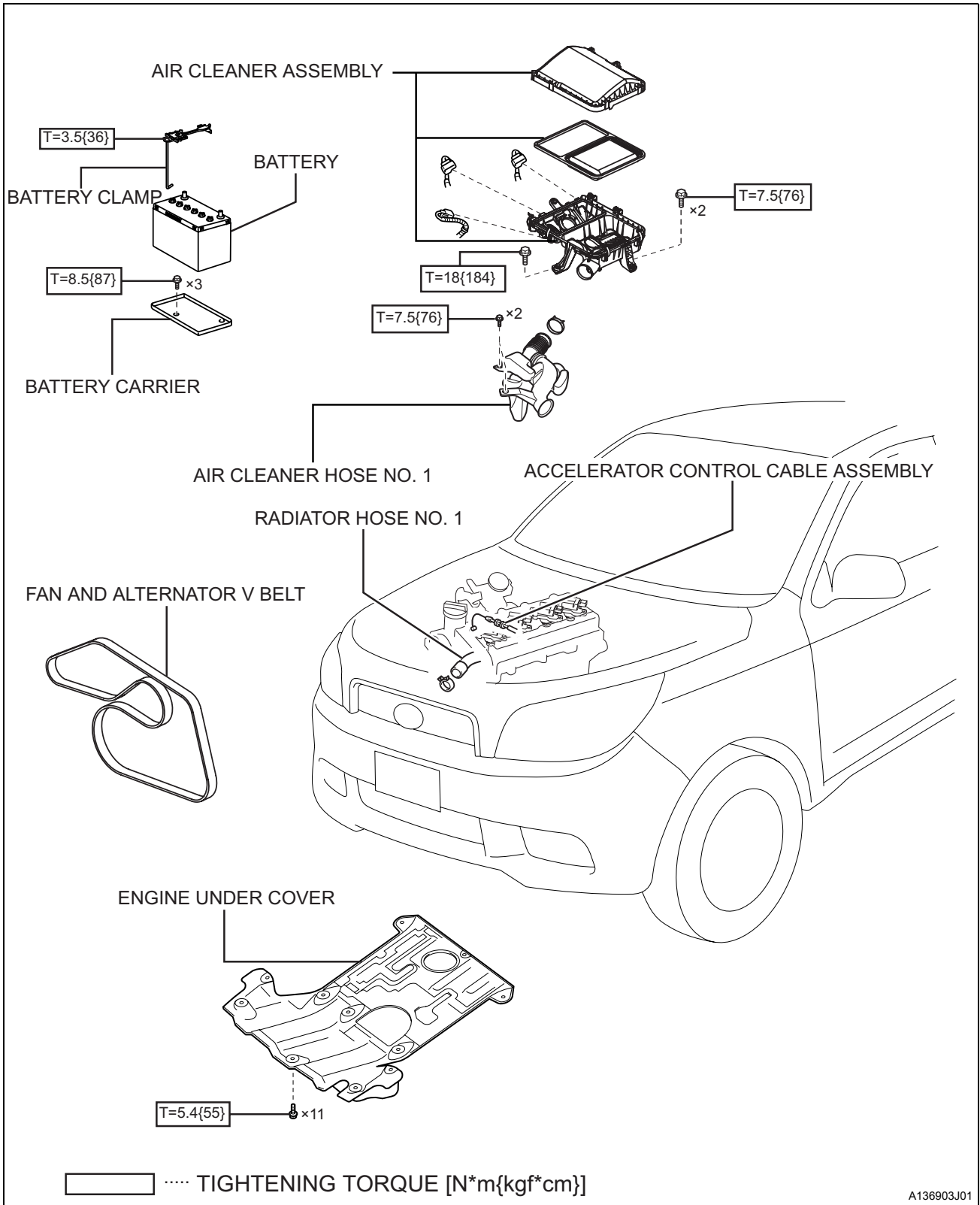
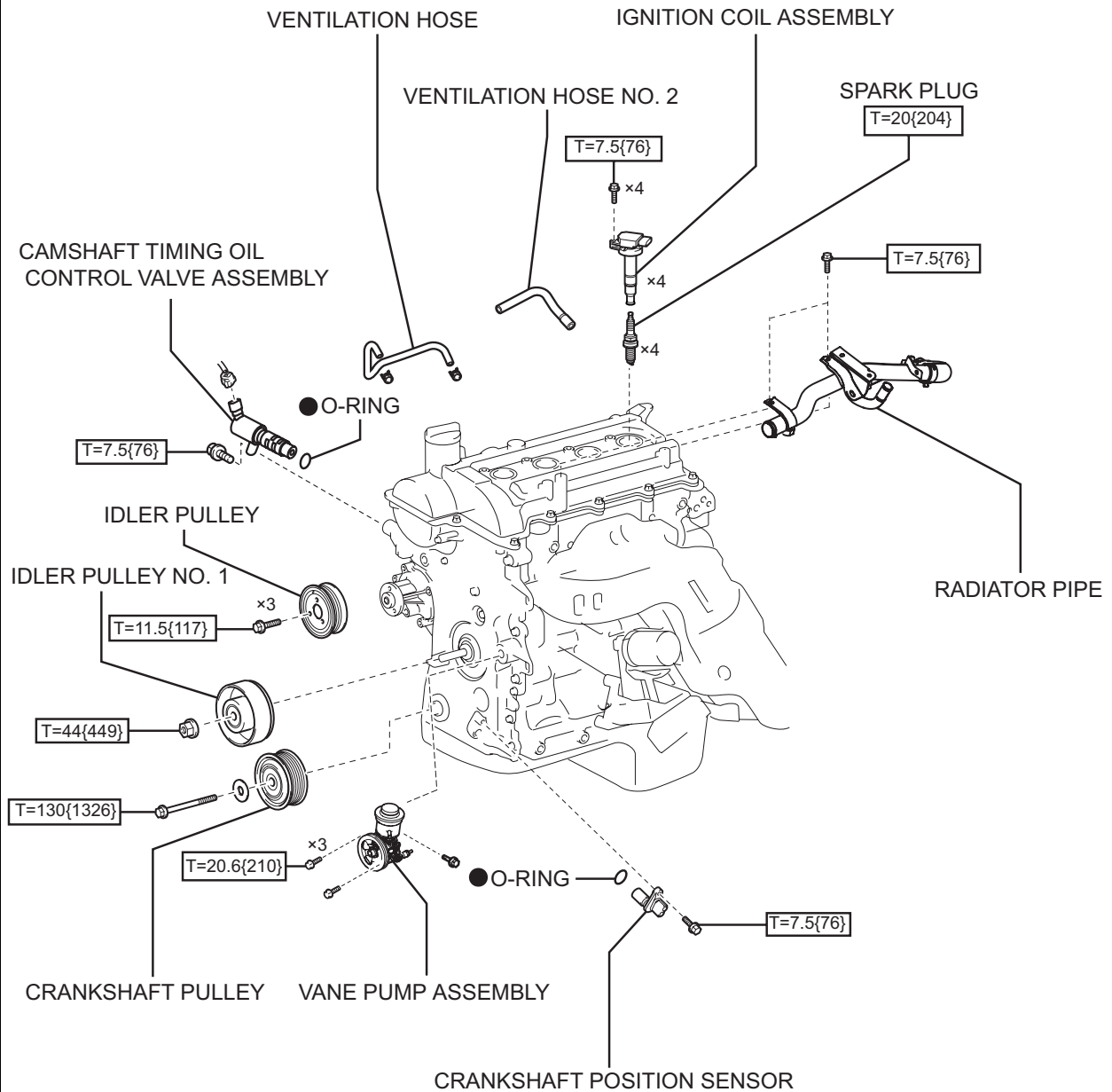


CYLINDER HEAD GASKET (K3-VE)

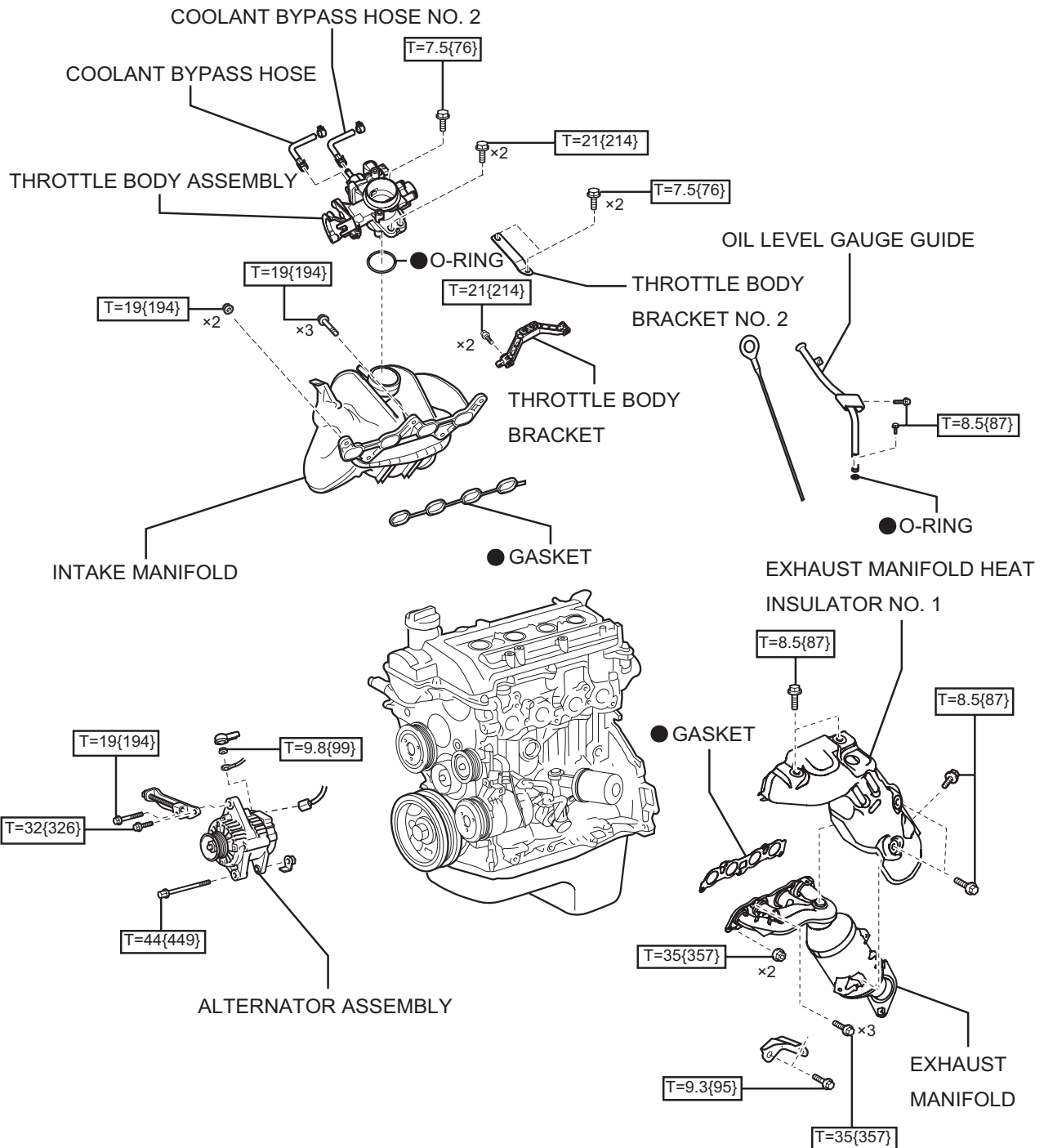
COMPONENTS

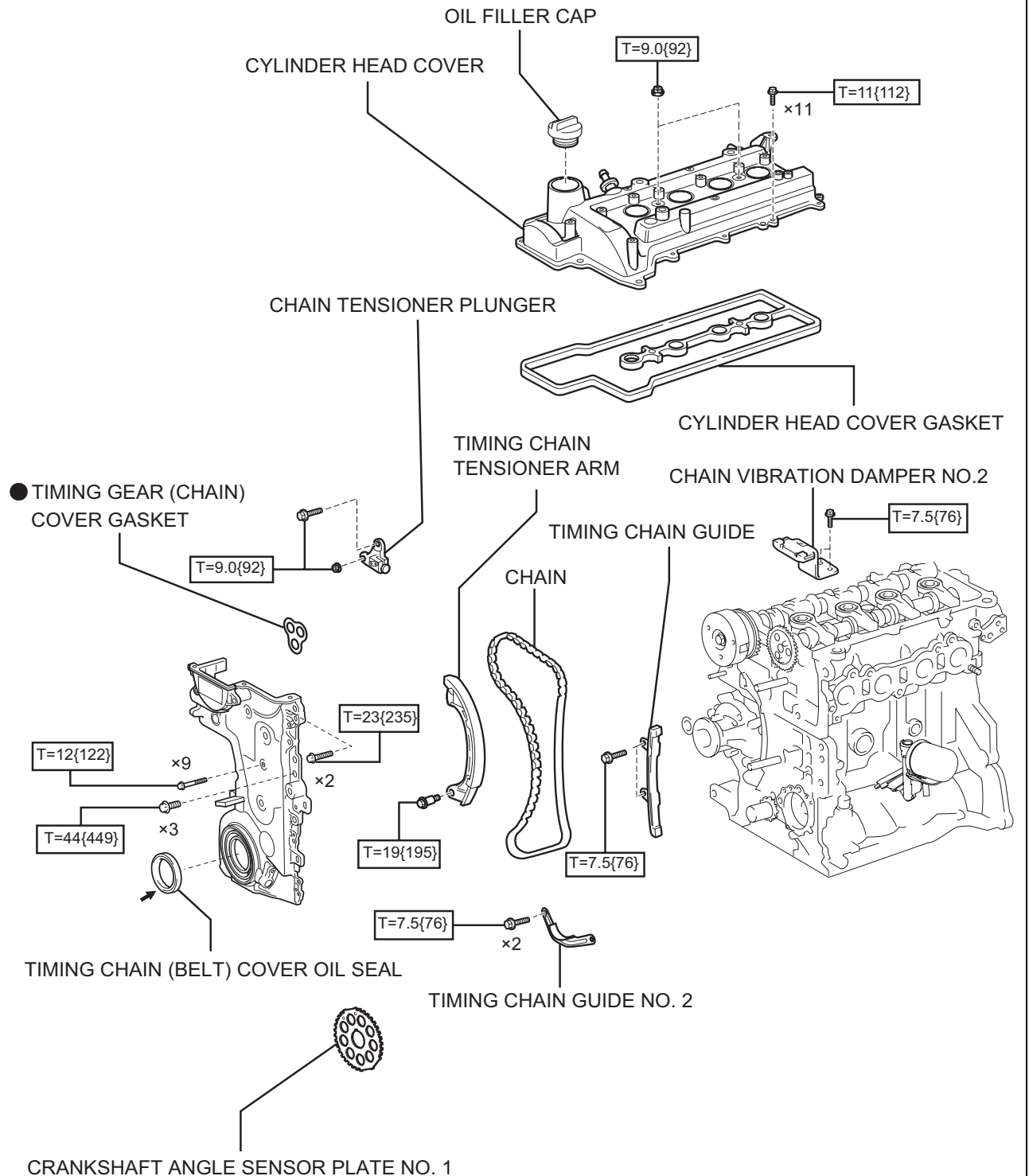


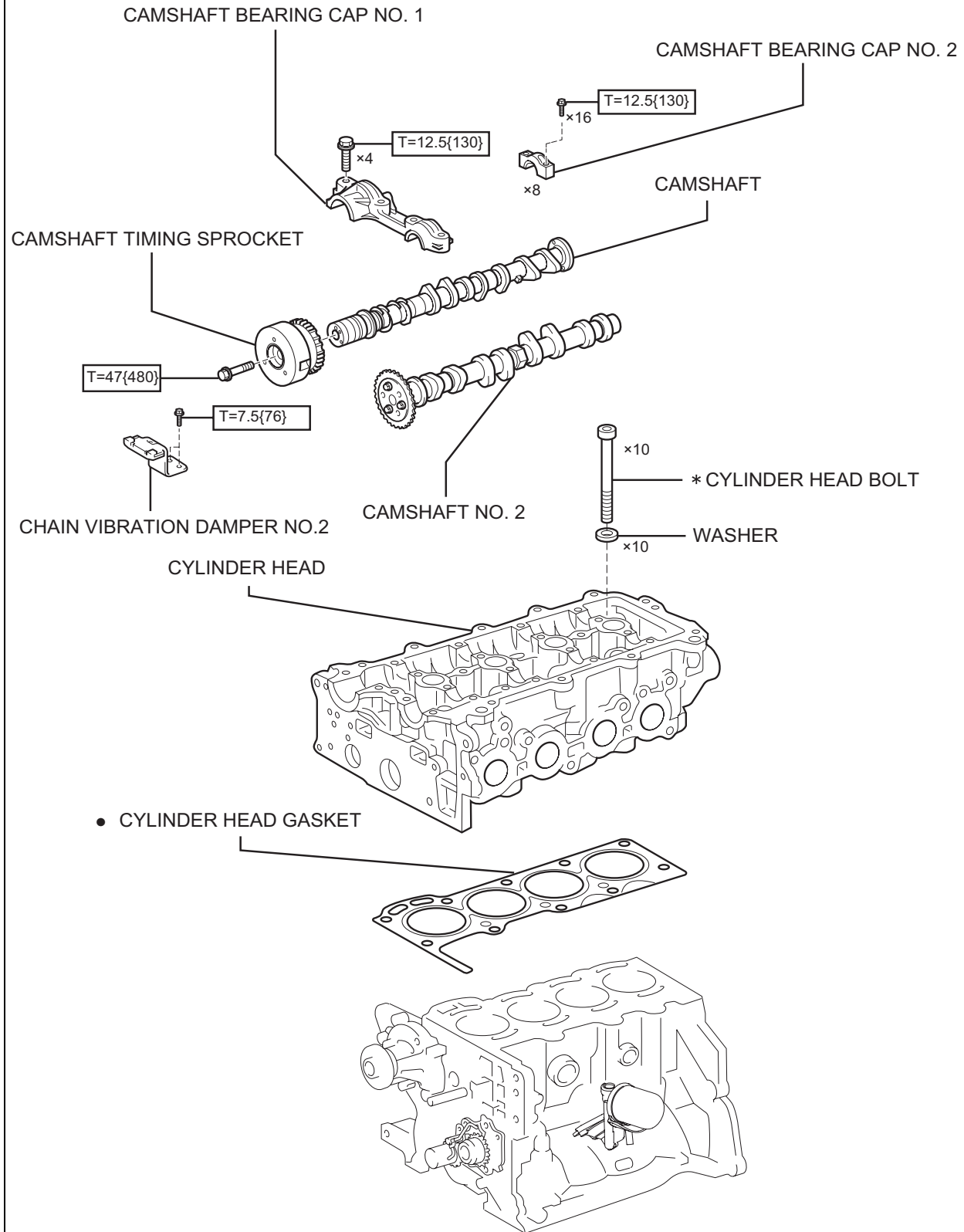


T TIGHTENING TORQUE [N*m{kgf*cm}]

● NON-REUSEABLE PART







REMOVAL

1. DISCHARGE FUEL SYSTEM PRESSURE

NOTICE:

- Always discharge fuel system pressure before removing any fuel system components.
- As some pressure will remain in the fuel line even after the fuel system pressure has been discharged, cover the opening with a shop rag or a similar to prevent fuel from splashing.

- (a) Procedure required when removing the F/P relay
- (1) Turn the ignition switch to the LOCK position.

- (2) Remove the F/P relay.

- (3) Start up the engine.

- (4) After the engine has stopped on its own, turn the ignition switch off.

HINT:

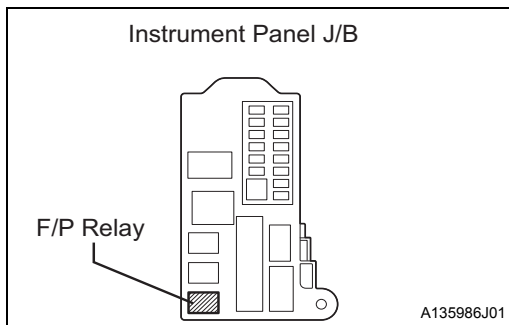
DTC P0171/25 lean malfunction may be detected.

- (5) Crank the engine again, then check that the engine does not start.

- (6) Remove the fuel tank cap to discharge pressure from the fuel tank.

- (7) Disconnect the negative terminal from the battery.

- (8) Install the F/P relay.



2. DISCONNECT NEGATIVE BATTERY TERMINAL

(See page RS-164.)

3. REMOVE BATTERY CARRIER

- (a) Remove the 3 bolts and battery carrier.

4. REMOVE ENGINE UNDER COVER

5. DRAIN ENGINE OIL (See page EM-78)

6. DRAIN ENGINE COOLANT (See page CO-11)

7. REMOVE RADIATOR RESERVE TANK ASSEMBLY (See page CO-22)

8. REMOVE CHARCOAL CANISTER ASSEMBLY (See page CO-23)

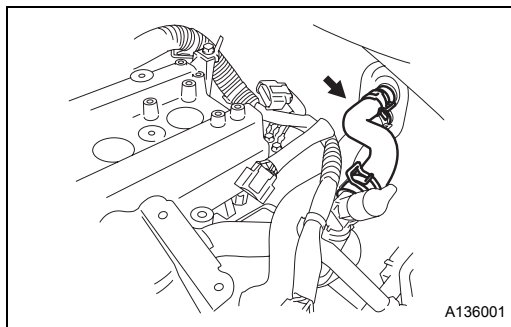
9. REMOVE RADIATOR HOSE NO. 1 (See page CO-22)

10. REMOVE WITH WATER FAN ASSEMBLY (See page CO-24)

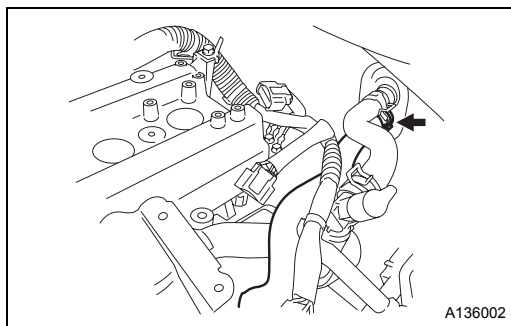
11. REMOVE AIR CLEANER HOSE NO. 1 (See page CO-22)

12. REMOVE AIR CLEANER ASSEMBLY

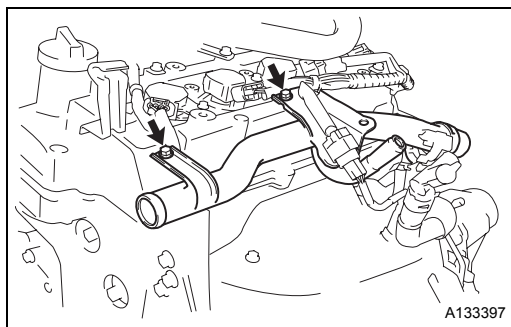
- (a) Disconnect the VSV connector and 2 hoses.
- (b) Disconnect the vacuum sensor connector and hose.
- (c) Remove the inlet air temperature sensor.
- (d) Remove the 3 bolts and the air cleaner assembly.

**13. DISCONNECT HEATER INLET WATER HOSE**

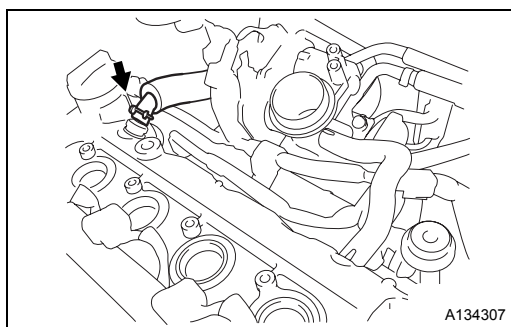
- (a) Loosen the clip, then disconnect the heater inlet water hose from the radiator pipe.

**14. DISCONNECT HEATER OUTLET WATER HOSE**

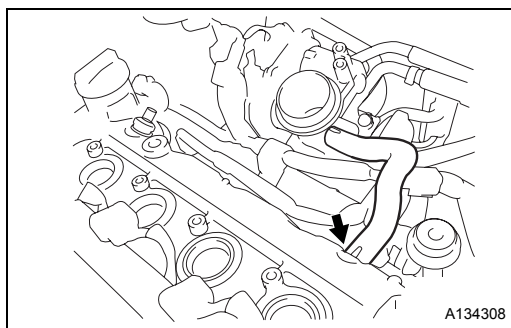
- (a) Loosen the clip, then disconnect the heater outlet water hose.

**15. REMOVE RADIATOR PIPE**

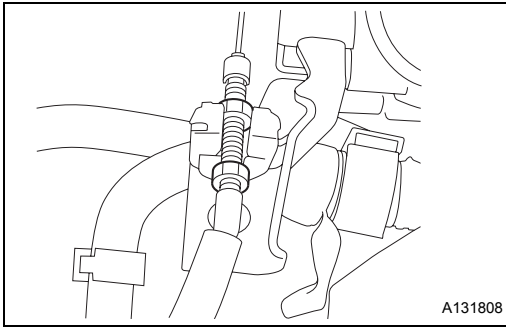
- (a) Remove the 2 bolts, loosen the clip and then remove the radiator pipe.

**16. REMOVE VENTILATION HOSE**

- (a) Loosen the clip and remove the ventilation hose.

**17. REMOVE VENTILATION HOSE NO. 2**

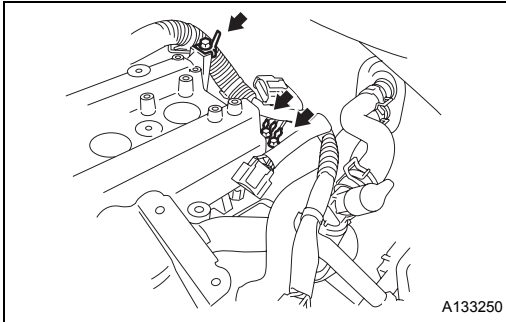
- (a) Loosen the clip and remove ventilation hose No. 2.

**18. DISCONNECT ACCELERATOR CONTROL CABLE ASSEMBLY**

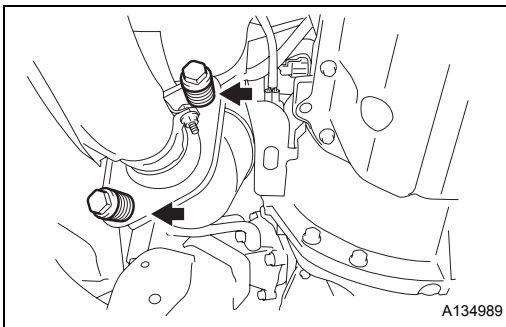
- (a) Loosen the nut and disconnect the accelerator control cable assembly from the throttle body assembly.
- (b) Remove the bolt and bracket.

19. DISCONNECT ENGINE ROOM MAIN WIRE

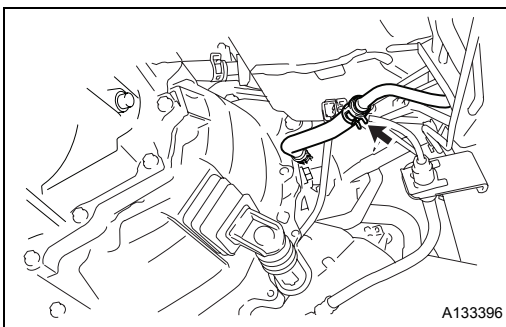
- (a) Disconnect the engine wire clamp from the bracket.
- (b) Disconnect the sensor connectors.
- (c) Disconnect the ground connector of the cylinder head cover.



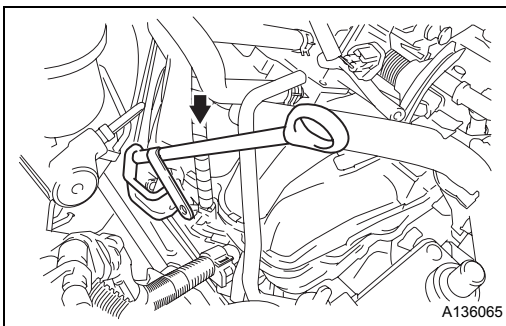
- (d) Remove the 2 bolts and disconnect the ground wire.

**20. DISCONNECT EXHAUST PIPE ASSEMBLY FR**

- (a) Remove the 2 bolts and 2 springs, then disconnect the exhaust pipe assembly FR from the exhaust manifold.

**21. REMOVE FUEL HOSE NO. 2**

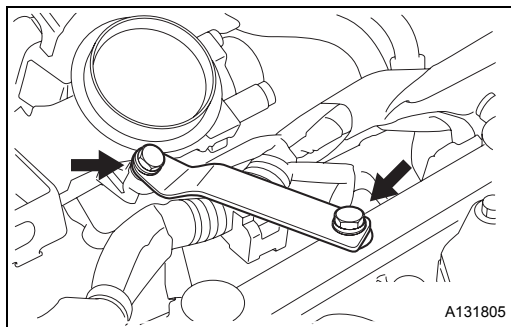
- (a) Loosen the clip, then disconnect fuel hose No. 2.

**22. REMOVE OIL LEVEL GAUGE GUIDE**

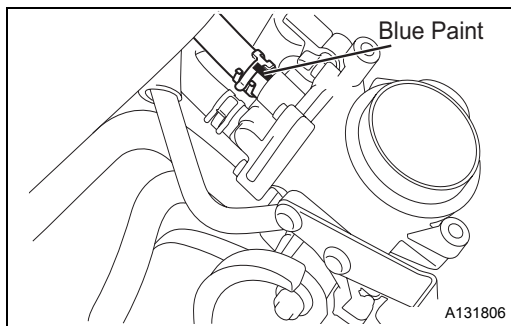
- (a) Remove the bolt and nut, then remove the oil level gauge guide and O-ring.

23. DISCONNECT VACUUM HOSE ASSEMBLY

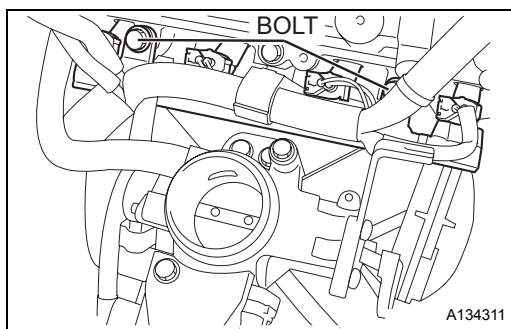
- (a) Disconnect the vacuum hose assembly from the booster vacuum tube.

**24. REMOVE THROTTLE BODY ASSEMBLY**

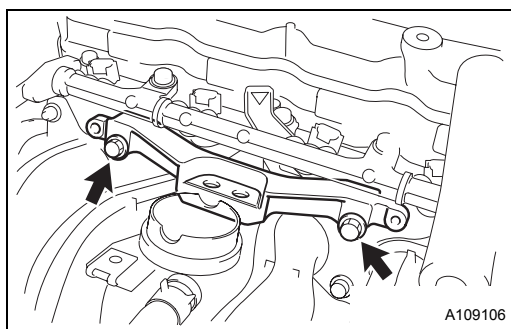
- (a) Remove the 2 bolts and bracket.
- (b) Disconnect the throttle body assembly connector and wire harness clamp.



- (c) Loosen the clamp, then disconnect the water hose.
- (d) Remove the 3 bolts and the throttle body assembly.
- (e) Remove the 2 bolts and the throttle body assembly.

**25. REMOVE FUEL DELIVERY PIPE**

- (a) Remove the 2 bolts, then hold both sides of the fuel delivery pipe and lift it straight up to remove.

**26. REMOVE THROTTLE BODY BRACKET**

- (a) Remove the 2 bolts and the throttle body bracket.

27. REMOVE FUEL INJECTOR ASSEMBLY

- (a) Remove the fuel injector assembly from the fuel delivery pipe.

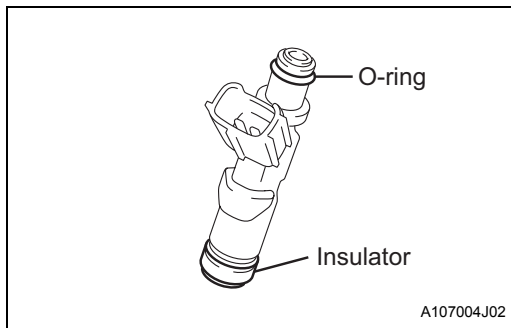
NOTICE:

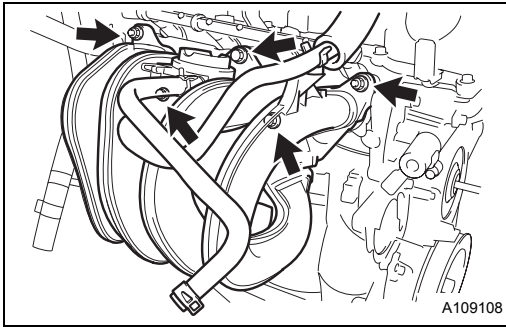
- The O-ring may be stuck, but even if it is, do not apply sideways force to the fuel injector assembly.
- If re-installing the fuel injector assembly instead of replacing it with a new one, note the cylinder number on a tag or similar to distinguish it.

- (b) Remove the O-ring and insulator from the fuel injector assembly.

28. REMOVE INTAKE MANIFOLD

- (a) Disconnect the water by-pass hose from the cylinder head.
- (b) Disconnect the wire harness from the intake manifold.





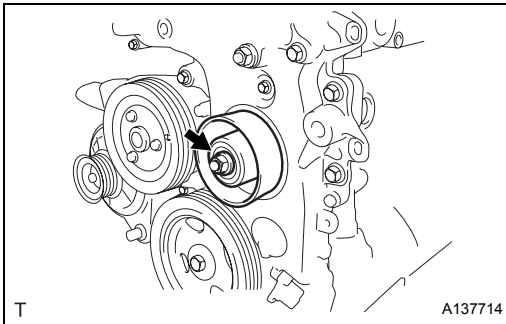
- (c) Remove the 3 bolts and 2 nuts, then remove the intake manifold.
- (d) Remove the gasket from the intake manifold.

29. REMOVE FAN AND ALTERNATOR V BELT (See page EM-12)

30. REMOVE VANE PUMP WITH BRACKET (See page EM-79)

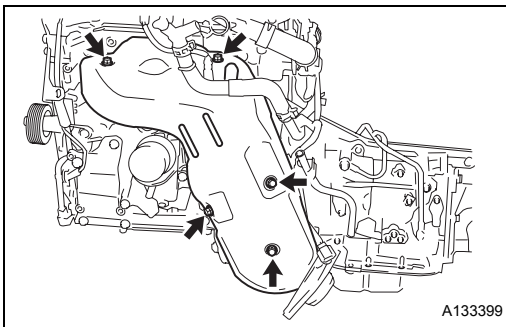
31. REMOVE FAN PULLEY (See page CO-33)

32. REMOVE ALTERNATOR ASSEMBLY (See page CH-13)



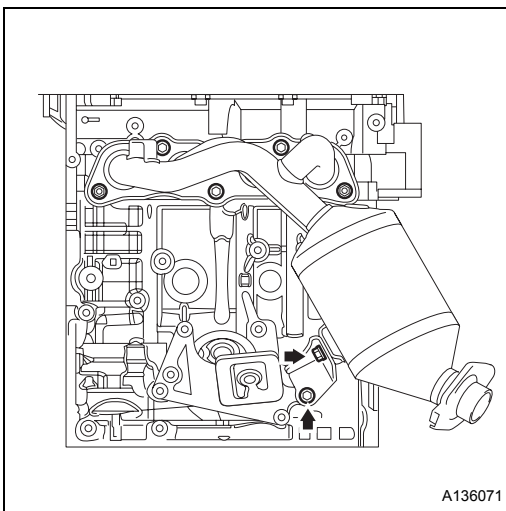
33. REMOVE IDLER PULLEY NO. 1

- (a) Remove the nut, then remove idler pulley No. 1.



34. REMOVE EXHAUST MANIFOLD HEAT INSULATOR NO. 1

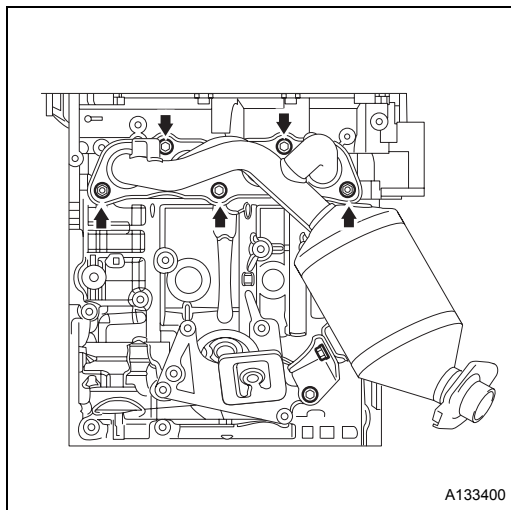
- (a) Remove the 5 bolts and the exhaust manifold heat insulator No. 1.



35. REMOVE MANIFOLD STAY

- (a) Remove the 2 bolts and the manifold stay.

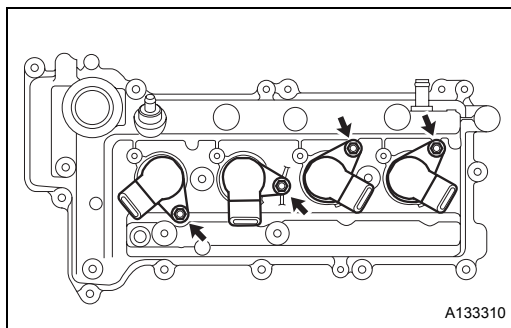
EM

**36. REMOVE EXHAUST MANIFOLD**

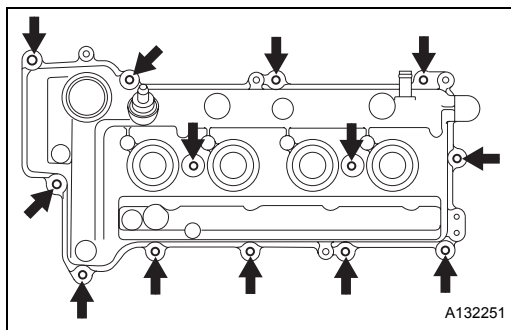
- (a) Remove the 3 bolts and 2 nuts, then remove the exhaust manifold.

37. REMOVE IGNITION COIL ASSEMBLY

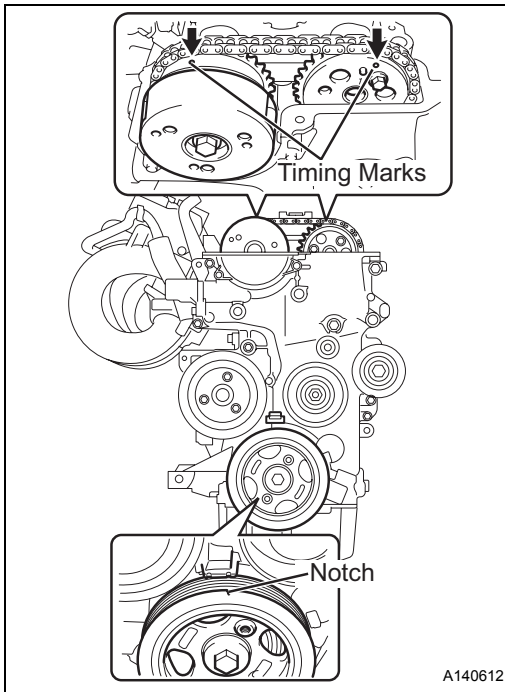
- (a) Disconnect the ignition coil connector.



- (b) Remove the bolt and the ignition coil assembly.

**38. REMOVE CYLINDER HEAD COVER**

- (a) Remove the 11 bolts and 2 nuts, then remove the cylinder head cover.

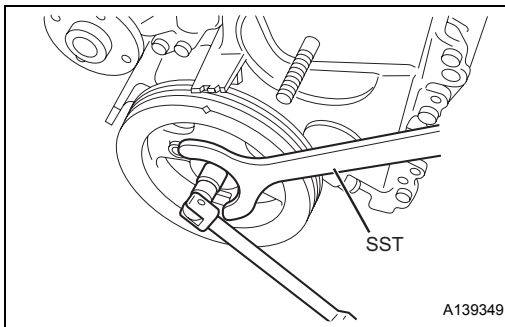


39. REMOVE CRANKSHAFT PULLEY

- (a) Rotate the crankshaft pulley clockwise to align the timing mark (groove) so it is at 0°. Make sure that each timing mark is positioned as shown in the illustration.

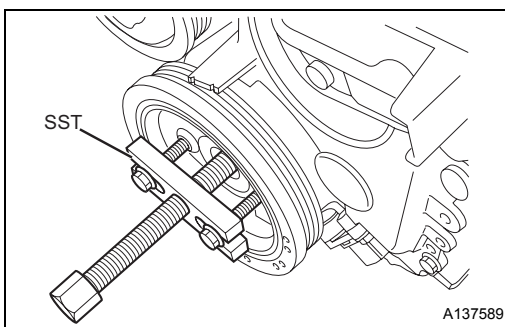
HINT:

If the timing marks are not aligned, turn the crankshaft pulley clockwise again and align the marks.



- (b) Using the SST, hold the crankshaft pulley and loosen the bolt.

SST 09278-87201

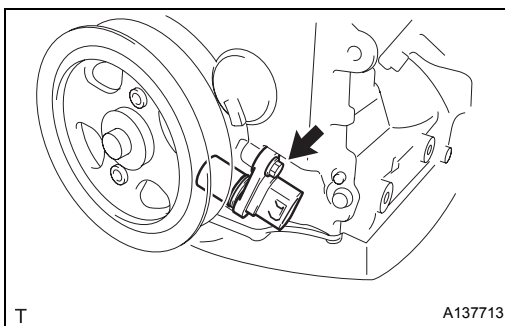


- (c) Using the SST and the crankshaft pulley bolt, remove the crankshaft pulley.

SST 09306-87501

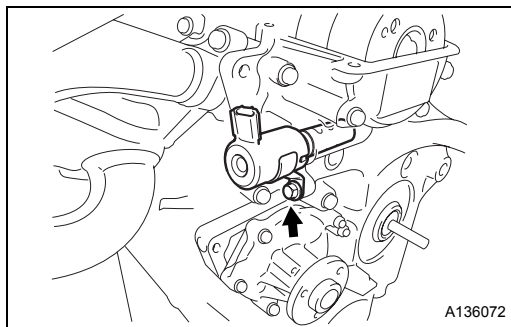
NOTICE:

Install the SST to the crankshaft pulley so that the fixing bolts for the SST do not contact with the chain cover.

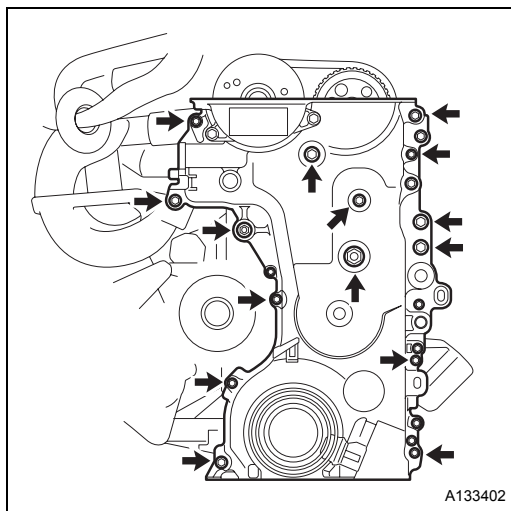


40. REMOVE CRANK POSITION SENSOR

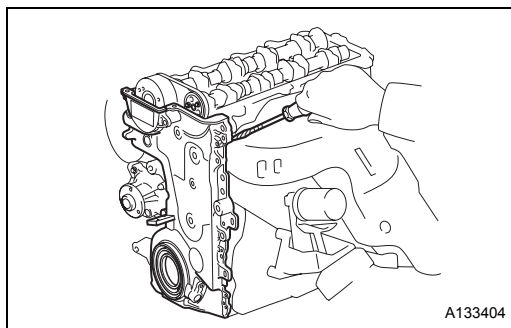
- (a) Remove the bolt and the crank position sensor.

**41. REMOVE CAMSHAFT TIMING OIL CONTROL VALVE ASSEMBLY**

- (a) Remove the bolt and the camshaft timing oil control valve assembly.

**42. REMOVE TIMING CHAIN (BELT) COVER**

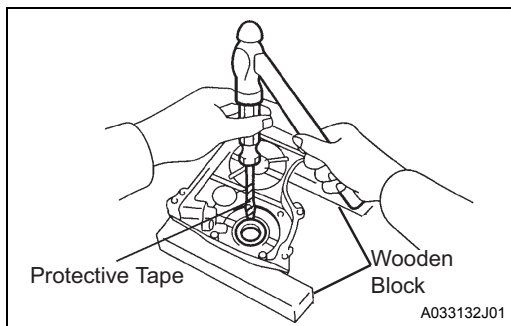
- (a) Remove the 13 bolts and 2 nuts.



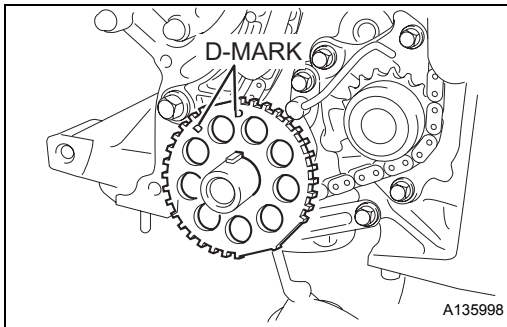
- (b) Using a screwdriver wrapped with protective tape, lever off and remove the timing chain (belt) cover.

NOTICE:

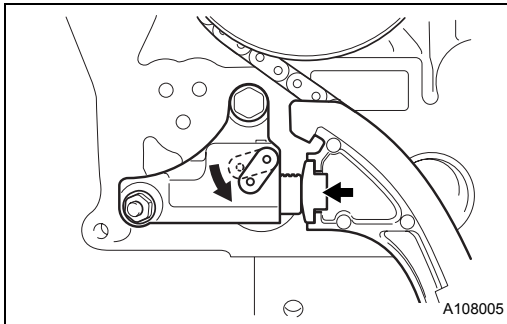
Do not damage the timing chain cover, cylinder block or cylinder head.

**43. REMOVE TIMING CHAIN (BELT) COVER OIL SEAL**

- (a) Using a screwdriver, pry out the timing chain (belt) cover oil seal.

**44. REMOVE CRANK ANGLE SENSOR PLATE NO. 1**

- (a) Remove the crank angle sensor plate No. 1.

**45. REMOVE CHAIN TENSIONER PLUNGER**

- (a) Move the stopper plate downward and hold it with the lock released.[*1]

HINT:

If it is difficult to release the stopper plate lock, use the hexagon head portion of the camshaft and rotate the camshaft a little to the right and left.

- (b) Under the conditions noted at [*1], use the hexagon head portion of the camshaft to rotate the camshaft a little to the right and hold.[*2]

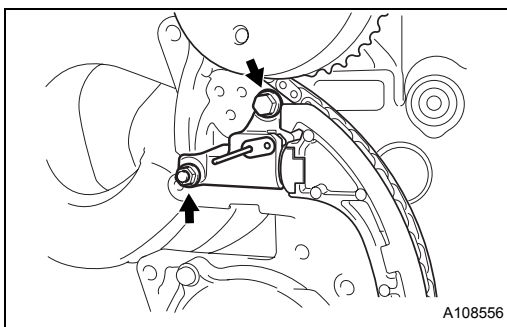
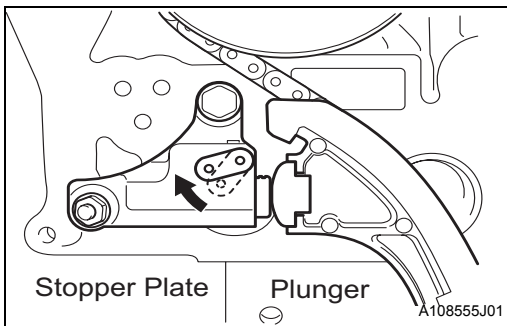
HINT:

Rotating the camshaft to the right will press the tensioner plunger.

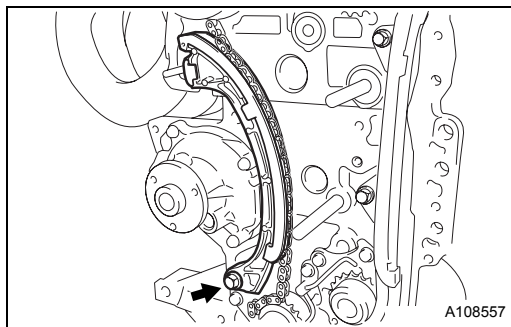
- (c) Under the conditions noted at [*2], align the stopper plate and the chain tensioner plunger hole.[*3]

HINT:

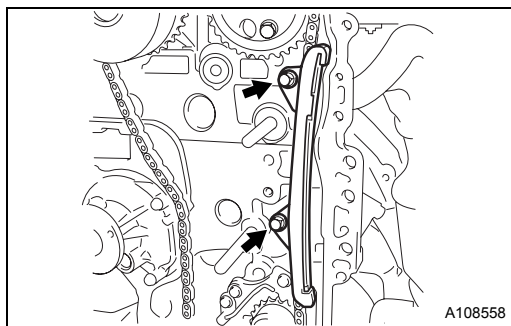
If the stopper plate and the chain tensioner plunger hole are difficult to align, rotate the camshaft a little to the left and then back a little to the right again to align them.



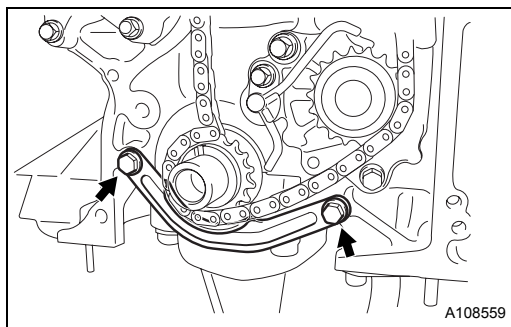
- (d) Under the conditions noted at [*3], insert a bar of 3 mm in diameter into the stopper plate and the chain tensioner plunger hole.
- (e) Remove the bolt and nut and then remove the water inlet.

**46. REMOVE TIMING CHAIN TENSION ARM**

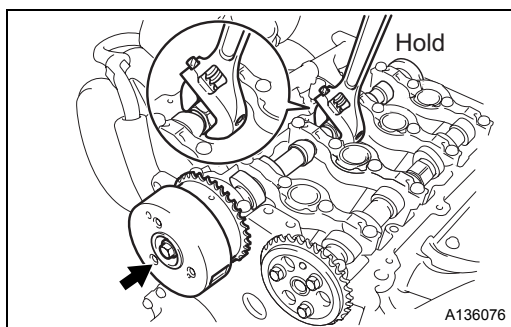
- (a) Remove the bolt and the timing chain tensioner arm.

**47. REMOVE TIMING CHAIN GUIDE**

- (a) Remove the 2 bolts and the timing chain guide.

**48. REMOVE TIMING CHAIN GUIDE NO. 2**

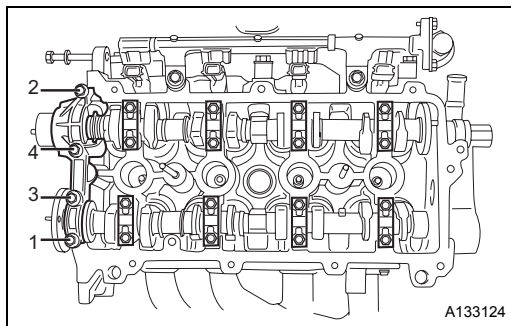
- (a) Remove the 2 bolts and the timing chain guide No. 2.

49. REMOVE CHAIN**50. REMOVE CAMSHAFT TIMING SPROCKET**

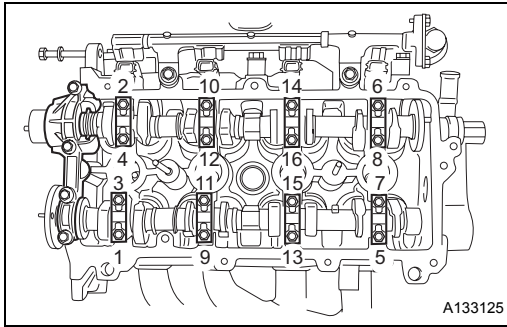
- (a) Using the hexagon head portion of the camshaft, remove the camshaft timing sprocket installation bolt.

NOTICE:

When rotating the camshaft with the chain removed, rotate the crankshaft 90° (crank angle) in the direction that the engine rotates from cylinder No. 1 TDC / compression so the valve does not interfere with the piston.

**51. REMOVE CAMSHAFT BEARING CAP NO. 1**

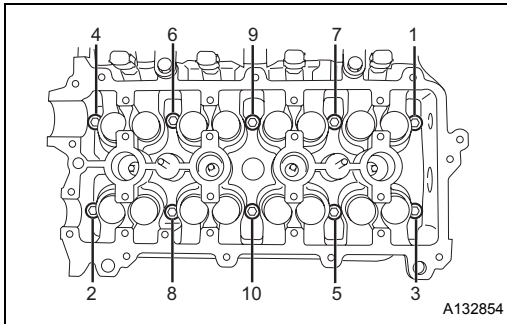
- (a) Remove the camshaft bearing cap No. 1 in the order indicated in the illustration.

**52. REMOVE CAMSHAFT BEARING CAP NO. 2**

- (a) Remove the camshaft bearing cap No. 2 in the order indicated in the illustration.

NOTICE:

Uniformly loosen the bolts keeping the camshaft level.

**53. REMOVE CYLINDER HEAD**

- (a) Using an 8 mm double hexagon wrench, loosen the cylinder head bolts in several passes in the order shown in the illustration, then remove the cylinder head bolt and washer.

NOTICE:

- When removing the bolt, do not drop the washer into the head.
- Failure to remove the bolts in the specified order may damage the cylinder head.

- (b) Remove the cylinder head.

54. REMOVE CYLINDER HEAD GASKET**INSTALLATION****1. INSPECT CYLINDER HEAD BOLT**

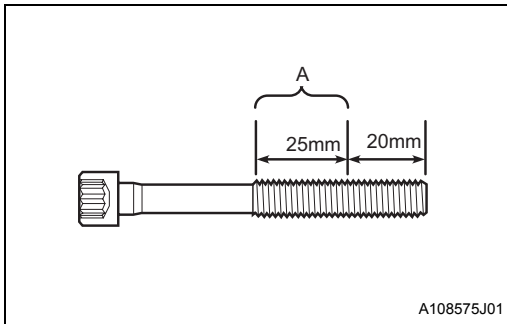
- (a) Using vernier calipers, measure the diameter of the thread within the range indicated by A in the illustration.

Maximum limit:

8.75 mm

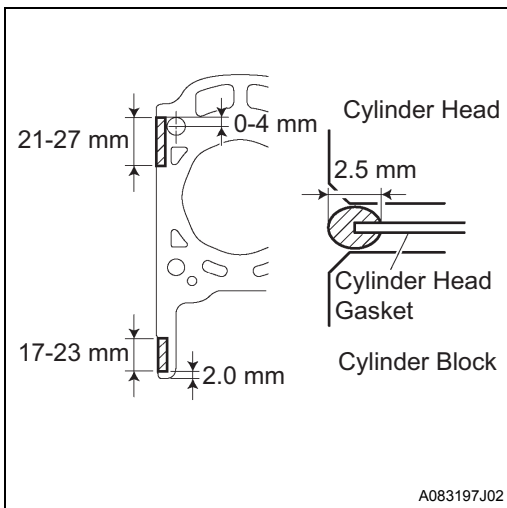
HINT:

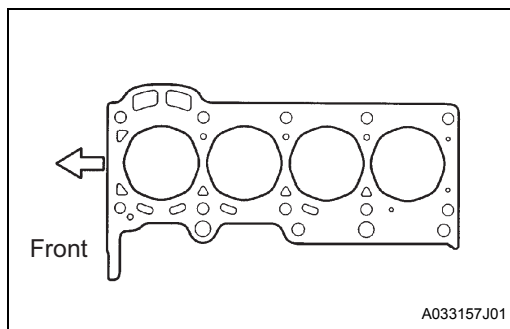
- Measure the diameter at several locations. If the smallest measured value is above the limit, the engine may be damaged. Replace the bolt with a new one.
- If there is any damage to the thread on the bolt, replace the cylinder head bolt.

**2. INSTALL CYLINDER HEAD GASKET****NOTICE:**

- Clean and degrease the installation surfaces.
- Install the cylinder head gasket within 3 minutes and tighten the cylinder head bolts within 15 minutes after applying Three Bond TB1280E.

- (a) Apply Three Bond TB1280E to the locations shown in the illustration.





- (b) Install a new cylinder head gasket in the direction shown in the illustration.

NOTICE:

- Check that it is installed in the correct direction.
- Do not damage the cylinder head gasket.

3. INSTALL CYLINDER HEAD**NOTICE:**

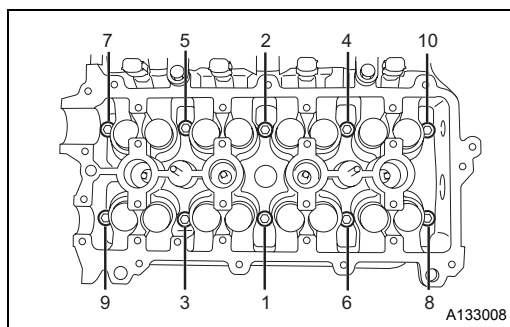
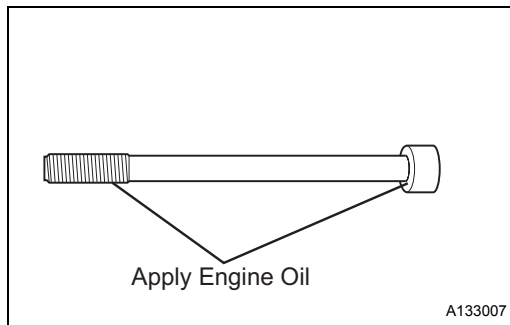
- Clean and degrease the installation surfaces.
- Inspect and clean the cylinder head and installation hole.
- Tighten the cylinder head using the plastic area tightening method.
- Do not allow oil to get on the lower surface of the cylinder head.

- (a) Install the cylinder head.

NOTICE:

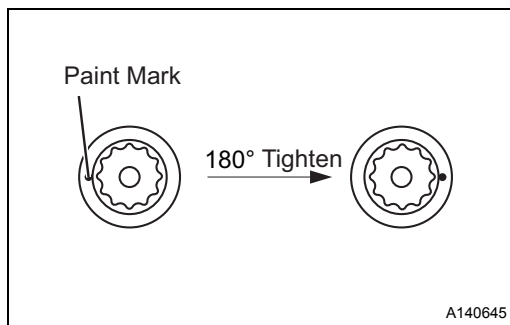
- Take care not to damage the cylinder head gasket when installing it.
- Install the cylinder head bolt to the same place it was removed from.

- (b) Apply a light coat of engine oil to the threads and bolt-seating surface of the cylinder head bolts.



- (c) Using an 8 mm double hexagon wrench, temporarily install the cylinder head bolts and washers in several passes in the order shown in the illustration and then tighten the bolts with the specified torque.

Torque: 34 N*m (347 kgf*cm)



- (d) Put paint marks on the engine front side of heads of the cylinder head bolts.
- (e) Using the paint mark as a reference, tighten the cylinder head bolts 180° in the specified order.
- (f) Check all the paint marks are now moved 180°.
- (g) When installing the cylinder head, wipe off any Three Bond TB1280E that is squeezed out.

NOTICE:

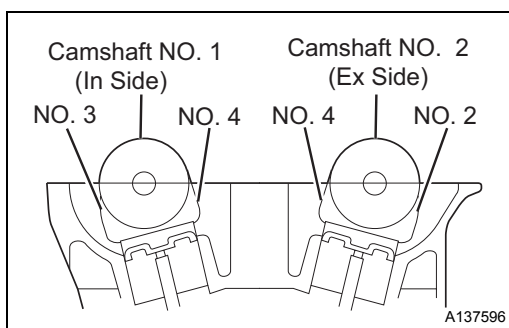
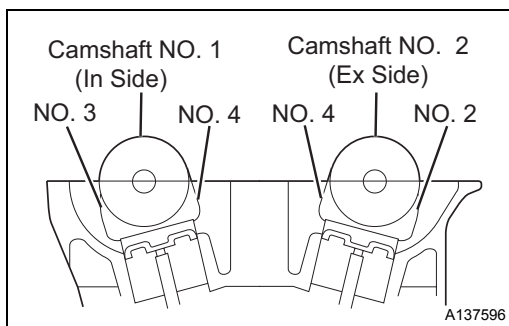
When wiping off the Three Bond TB1280E, do not allow it to enter the bolt hole or knock pin hole.

4. INSTALL CAMSHAFT NO. 2

- (a) When installing camshaft No. 2, rotate the crankshaft 90° (crank angle) in the direction that the engine rotates from cylinder No. 1 TDC/compression so the lifted valve does not interfere with the piston.
- (b) Apply engine oil to the cam part of camshaft No. 2 and the journal part of the cylinder head, and then install the camshaft No. 2.

NOTICE:

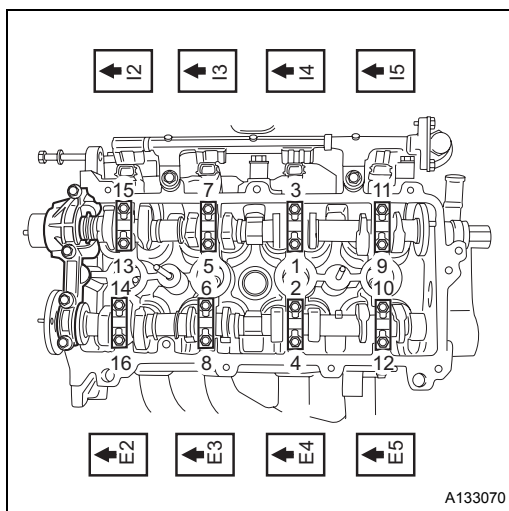
Position it so the cam nose of cylinders No. 2 and 4 of the camshaft No. 2 push down the lifter valve.

**5. INSTALL CAMSHAFT**

- (a) Apply engine oil to the cam of the camshaft and the journal part of the cylinder head, and then install the camshaft.

NOTICE:

Position it so the cam nose of cylinders No. 3 and 4 of the camshaft push down the lifter valve.

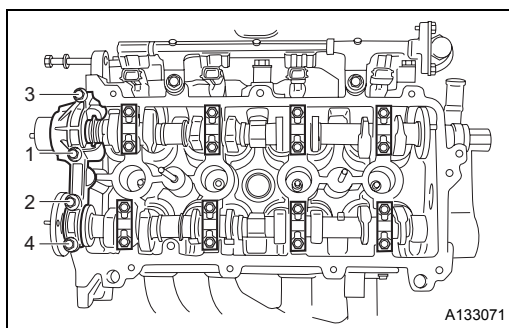
**6. INSTALL CAMSHAFT BEARING CAP NO. 2**

- (a) Confirm the front mark and number of camshaft bearing cap No. 2 and install it.
- (b) Tighten the camshaft bearing cap No. 2 in the order shown in the illustration.

Torque: 12.5 N*m (130 kgf*cm)

NOTICE:

- Position the cap so the arrow on it faces toward the front of the engine, and install it so the punched numbers are positioned as shown in the illustration.
- Uniformly tighten the bolts, keeping the camshaft level.

**7. INSTALL CAMSHAFT BEARING CAP NO. 1**

- (a) Tighten the camshaft bearing cap No. 1 in the order indicated in the illustration.

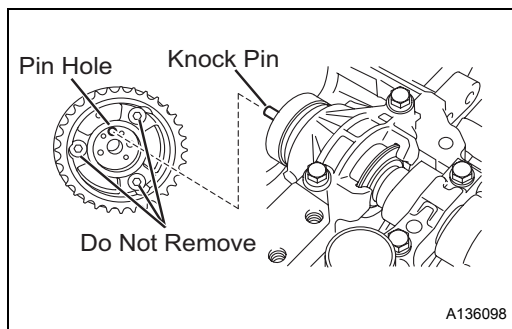
Torque: 12.5 N*m (130 kgf*cm)

NOTICE:

Tighten the bolts after checking that the thrust part of the camshaft is aligned with the groove on camshaft bearing cap No. 1.

8. INSTALL CAMSHAFT TIMING SPROCKET

- (a) Apply engine oil to the installation surface to the camshaft.



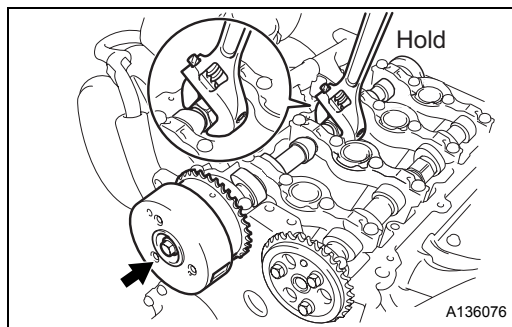
- (b) Align the camshaft knock pin and the camshaft timing sprocket pin hole, and install the camshaft timing sprocket to the camshaft.

NOTICE:

- If the knock pin and pin hole do not align, use the hexagon head portion of the camshaft and rotate the camshaft a little to the right and left so they align. Do not press too firmly on the camshaft timing sprocket as the seal surface can be easily damaged by the end of the knock pin which may cause the seal to fail.
- Do not remove the 3 bolts. If the bolts are removed, replace the camshaft timing sprocket.

- (c) Apply a small amount of engine oil to the camshaft timing sprocket installation bolt thread and seating surface to temporarily install them.
- (d) Using the hexagon head portion of the camshaft, tighten the camshaft timing sprocket installation bolt.

Torque: 47 N*m (480 kgf*cm)

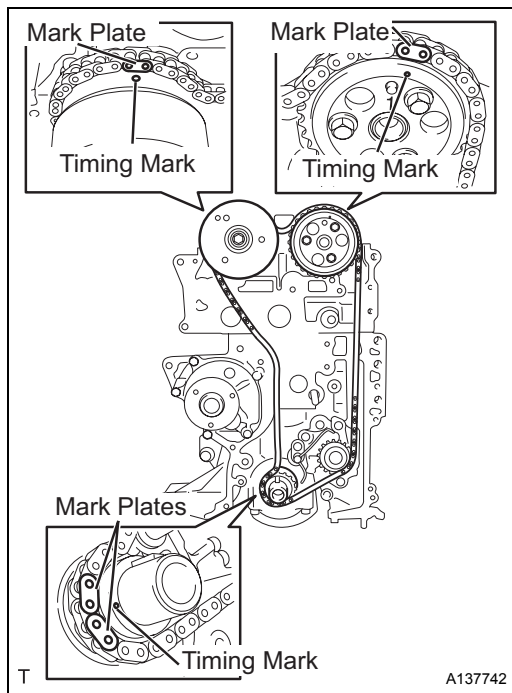


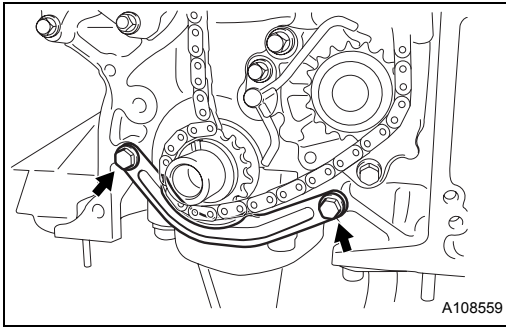
9. INSTALL CHAIN

- (a) Align the mark plate (yellow) and the timing mark as shown in the illustration and install the chain.

HINT:

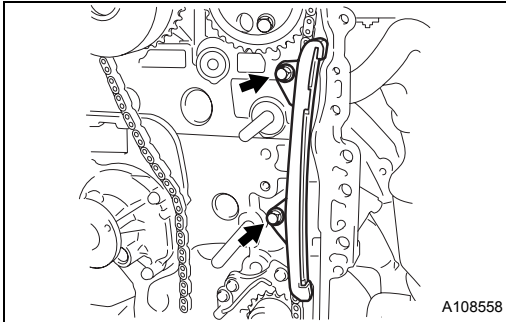
Install so that the mark plate is on the engine front side.



**10. INSTALL TIMING CHAIN GUIDE NO. 2**

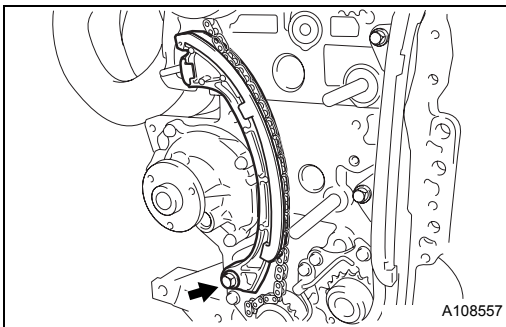
- (a) Install the timing chain guide No. 2 with the 2 bolts.

Torque: 7.5 N*m (76 kgf*cm)

**11. INSTALL TIMING CHAIN GUIDE**

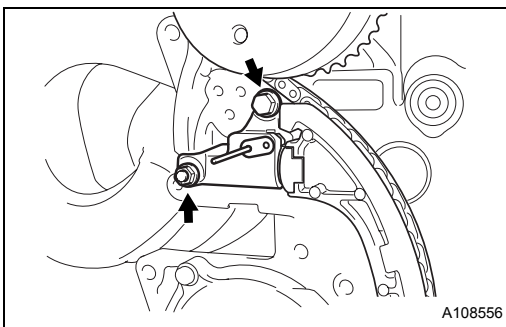
- (a) Install the timing chain guide with the 2 bolts.

Torque: 7.5 N*m (76 kgf*cm)

**12. INSTALL TIMING CHAIN TENSION ARM**

- (a) Install the timing chain tension arm with the bolt.

Torque: 19 N*m (195 kgf*cm)

**13. INSTALL CHAIN TENSIONER PLUNGER**

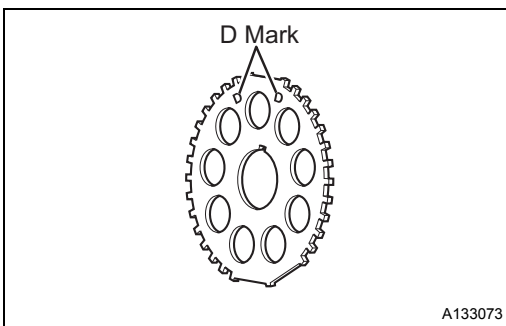
- (a) Install the chain tensioner plunger with the bolt and nut.

Torque: 9 N*m (92 kgf*cm)

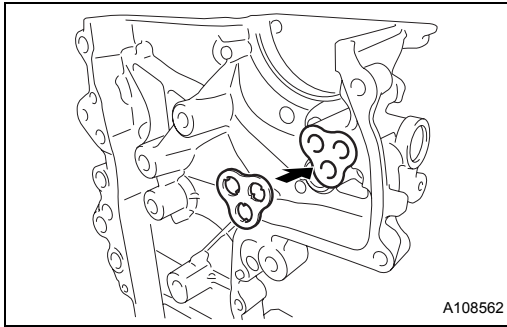
HINT:

Using the hexagon wrench head portion of the camshaft, rotate the camshaft a little to the left, and with the chain slightly slack on the chain tensioner plunger side, attach the chain tensioner plunger.

- (b) Pull the 3 mm diameter bar out from the chain tensioner plunger.

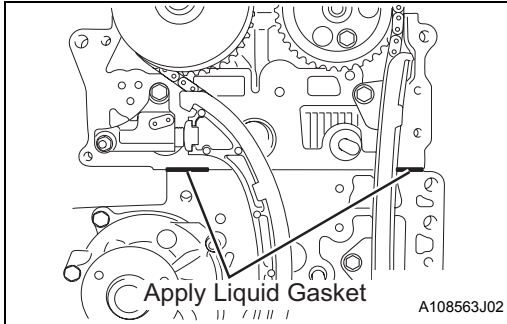
**14. INSTALL CRANK ANGLE SENSOR PLATE NO. 1**

- (a) Install the crank angle sensor plate No. 1 so that the D mark is visible.



15. INSTALL TIMING CHAIN (BELT) COVER

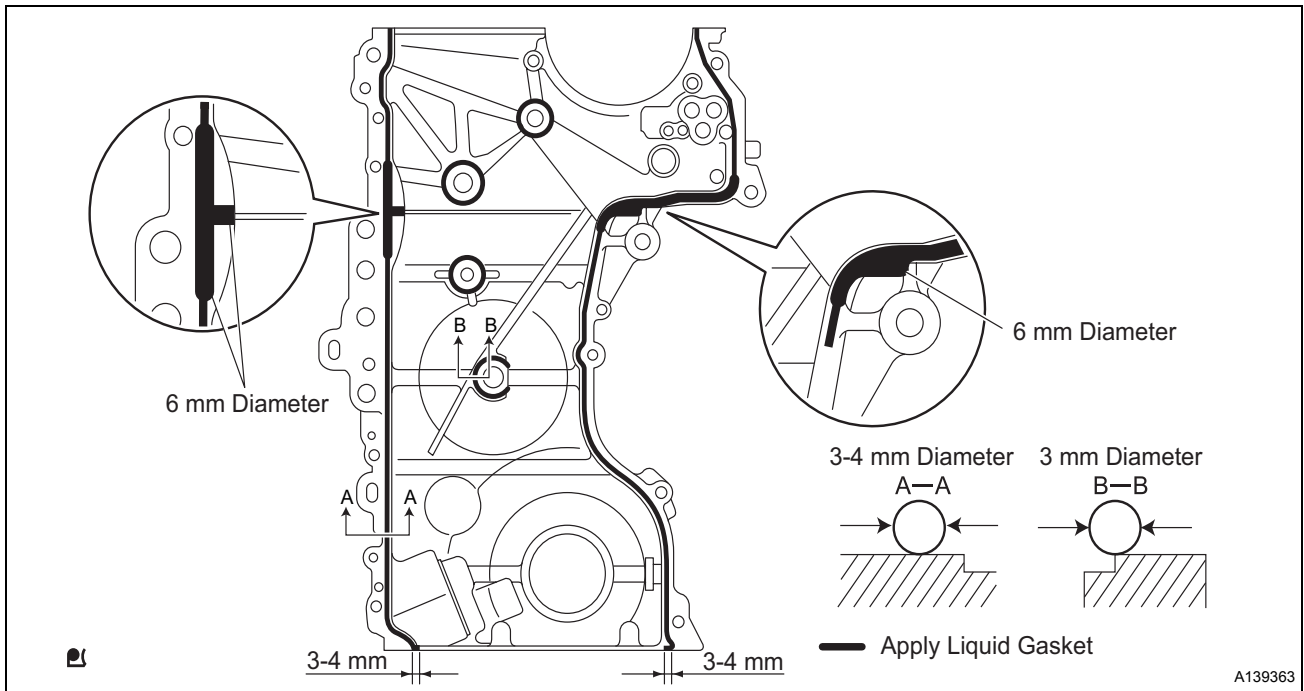
- (a) Install a new gasket to the timing chain (belt) cover.

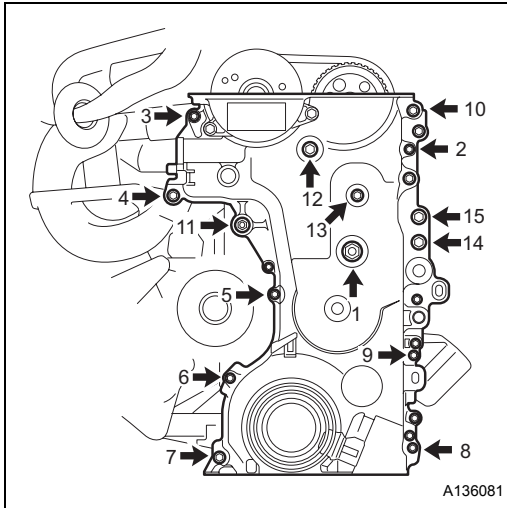


- (b) Apply Three Bond TB1280E to the locations shown in the illustration.

NOTICE:

- Clean and degrease the installation surfaces using brake cleaner and white gasoline.
- Install the timing chain (belt) cover within 3 minutes of applying Three Bond TB1280E.
- Tighten the timing chain (belt) cover to the specified torque within 15 minutes of applying Three Bond TB1280E.
- Do not add engine oil within 2 hours of installation.
- Do not start the engine within 2 hours of installation.





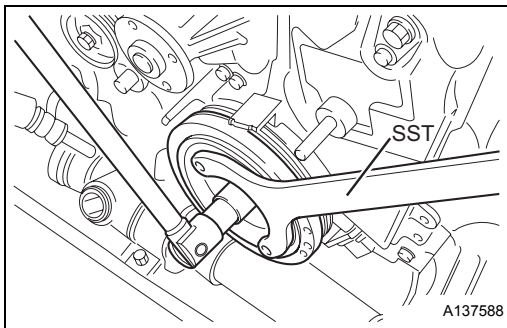
- (c) Install the timing chain (belt) cover with the 13 bolts and 2 nuts.

Torque: 12 N*m (122 kgf*cm) (Bolts 1 to 9)

23 N*m (235 kgf*cm) (Nuts 11 to 12)

44 N*m (449 kgf*cm) (Bolts 13 to 15)

- 16. INSTALL TIMING CHAIN (BELT) COVER OIL SEAL** (See page EM-206)



- 17. INSTALL CRANKSHAFT PULLEY**

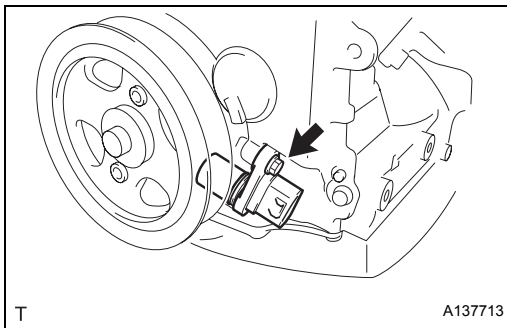
- (a) Using the SST, hold the crankshaft pulley and tighten the bolt.

SST 09278-87201

Torque: 130 N*m (1326 kgf*cm)

- 18. INSTALL CRANK POSITION SENSOR**

- (a) Apply a light coat of engine oil to the O-ring.

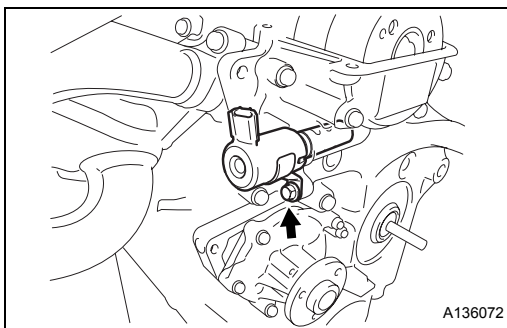


- (b) Install the crank position sensor with the bolt.

Torque: 7.5 N*m (76 kgf*cm)

NOTICE:

Install the sensor so that the O-ring is not cut or pinched.



- 19. INSTALL CAMSHAFT TIMING OIL CONTROL VALVE ASSEMBLY**

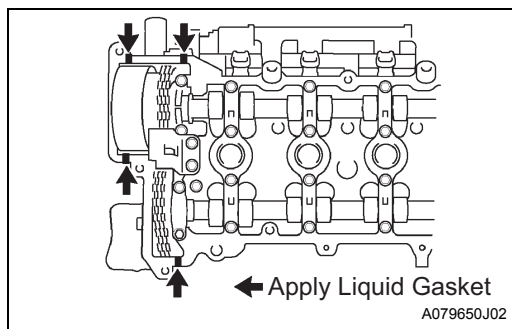
- (a) Apply a light coat of engine oil to the O-ring.

- (b) Install the camshaft timing oil control valve assembly with the bolt.

Torque: 7.5 N*m (76 kgf*cm)

NOTICE:

Install the sensor so that the O-ring is not cut or pinched.



20. INSTALL CYLINDER HEAD COVER

- (a) Apply Liquid Gasket to the locations shown in the illustration.

NOTICE:

- Clean and degrease the installation surfaces.
- Install within 3 minutes of applying Three Bond TB1280E.
- Tighten the cylinder head cover to the specified torque within 15 minutes of applying Three Bond TB1280E.
- Do not start the engine within 2 hours of installation.

- (b) Install the cylinder head cover with the 11 bolts and 2 nuts in several passes in the order shown in the illustration.

Torque: 11 N*m (112 kgf*cm)

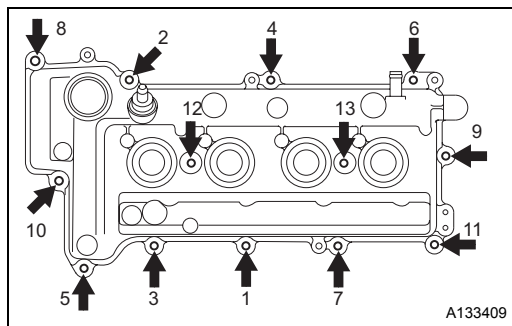
(bolt)

9 N*m (92 kgf*cm)

(nut)

21. INSTALL SPARK PLUG

Torque: 20 N*m (203 kgf*cm)



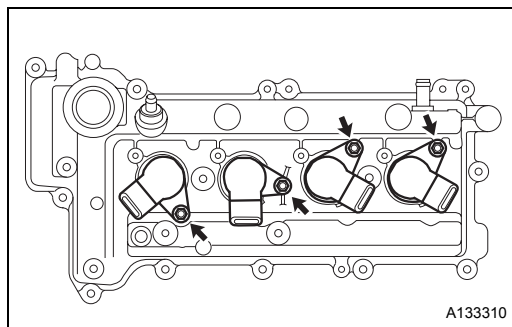
22. INSTALL IGNITION COIL ASSEMBLY

- (a) Install the ignition coil assembly with the bolt.

Torque: 7.5 N*m (76 kgf*cm)

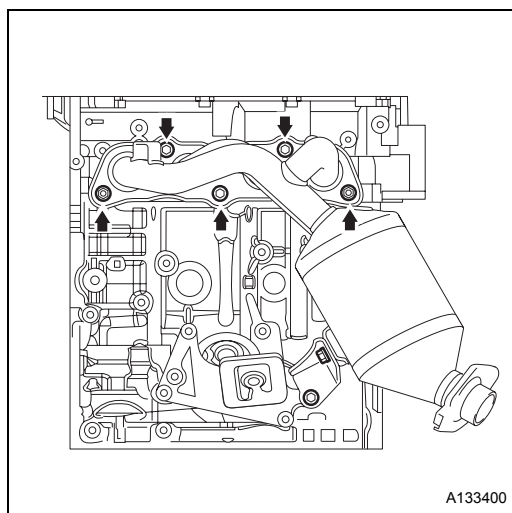
23. INSTALL EXHAUST MANIFOLD

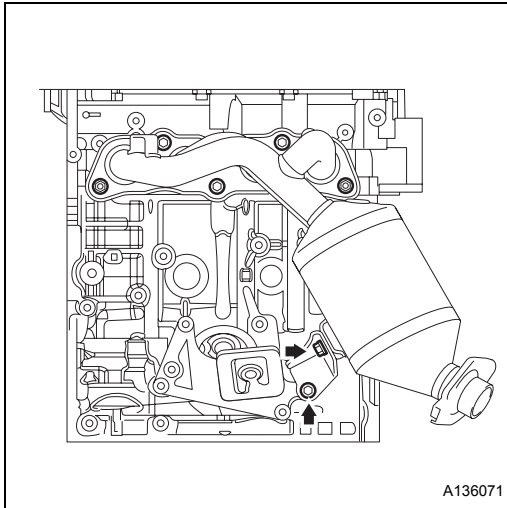
- (a) Install the exhaust manifold using a new gasket.



- (b) Install the intake manifold with the 3 bolts and 2 nuts in the order shown in the illustration.

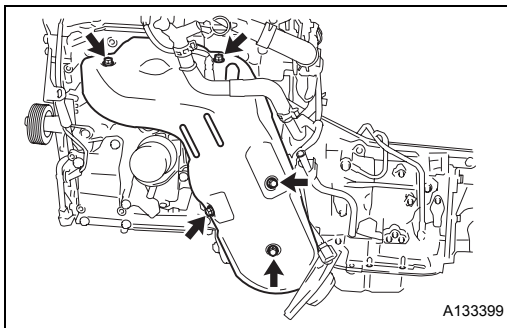
Torque: 35 N*m (357 kgf*cm)



**24. INSTALL MANIFOLD STAY**

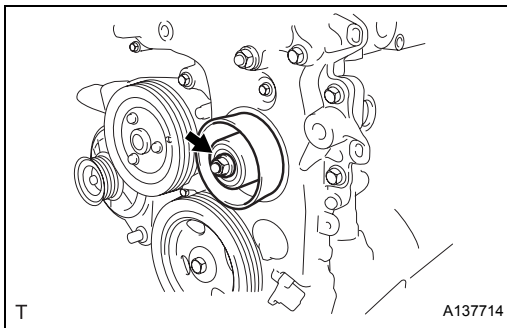
- (a) Install the manifold stay with the bolt.

Torque: 9.3 N*m (95 kgf*cm) (bolt)

**25. INSTALL EXHAUST MANIFOLD HEAT INSULATOR NO. 1**

- (a) Install the exhaust manifold heat insulator No. 1 with the 5 bolts.

Torque: 8.5 N*m (87 kgf*cm)

26. INSTALL ALTERNATOR ASSEMBLY (See page CH-13)**27. INSTALL FAN PULLEY (See page CO-33)****28. INSTALL IDLER PULLEY NO. 1**

- (a) Install the idler pulley No. 1 with the nut.

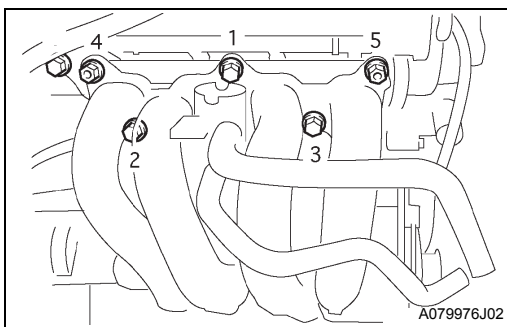
Torque: 44 N*m (449 kgf*cm)

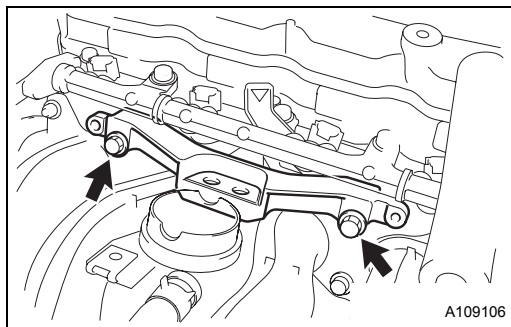
29. INSTALL VANE PUMP WITH BRACKET (See page EM-103)**30. INSTALL FAN AND ALTERNATOR V BELT (See page EM-12)****31. ADJUST FAN AND ALTERNATOR V BELT (See page EM-13)****32. CHECK FAN AND ALTERNATOR V BELT (See page EM-13)****33. INSTALL INTAKE MANIFOLD**

- (a) Temporarily install the intake manifold with the 3 bolts and 2 nuts using a new gasket.

- (b) Tighten the bolts and nuts in the order shown in the illustration.

Torque: 19 N*m (194 kgf*cm)



**34. INSTALL THROTTLE BODY ASSEMBLY**

- (a) Temporarily install the throttle body bracket with the 2 bolts.
- (b) Temporarily install the throttle body assembly with the 3 bolts using a new gasket.
- (c) Tighten the throttle body bracket with the 2 bolts.

Torque: 21 N*m (214 kgf*cm)

- (d) Using a new gasket, tighten the throttle body assembly on the throttle body bracket side and then the intake manifold side with the 3 bolts.

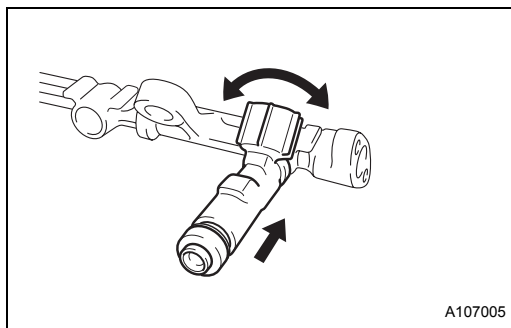
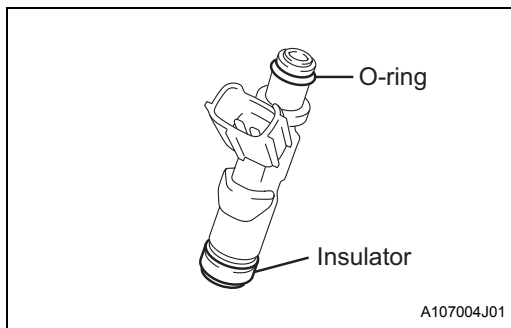
Torque: 21 N*m (214 kgf*cm) Bolt throttle body bracket side

7.5 N*m (75 kgf*cm) Bolt intake manifold side

- (e) Connect the 2 water by-pass hoses.
- (f) Connect the engine wire harness.

35. INSTALL FUEL INJECTOR ASSEMBLY

- (a) Install a new injector vibration insulator.
- (b) Apply gasoline to the new fuel injector assembly O-ring.



- (c) Install the fuel delivery pipe while rotating the fuel injector assembly to the left and right.

NOTICE:

Install the sensor so that the O-ring is not twisted or pinched.

- (d) Check that the fuel injector assembly rotates smoothly.

NOTICE:

If the fuel injector assembly does not rotate smoothly, reinstall it with a new O-ring.

36. INSTALL FUEL DELIVERY PIPE

- (a) Install the fuel pipe insulator.
- (b) Temporarily install the fuel delivery pipe and the fuel tube with the 2 bolts.

NOTICE:

- Do not drop the fuel injector when installing the fuel delivery pipe.
- If the tip of the sensor is hit or dropped, replace it with a new one.
- Make sure there is no foreign matter in or damage to the insertion part of the injector assembly (cylinder head).

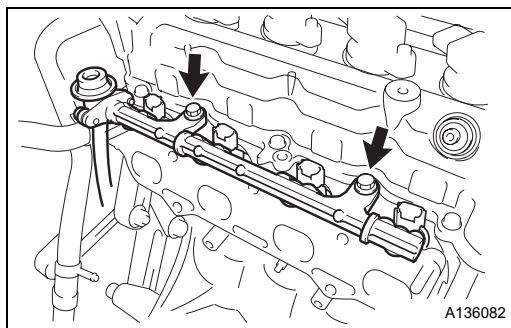
- (c) Check that the fuel injectors rotate smoothly.

NOTICE:

If a fuel injector does not rotate smoothly, reinstall it with a new O-ring.

- (d) Tighten the 2 bolts.

Torque: 21 N*m (214 kgf*cm)



37. CONNECT VACUUM HOSE ASSEMBLY

- (a) Connect the vacuum hose assembly to the brake booster assembly.

38. INSTALL OIL LEVEL GAUGE GUIDE**39. CONNECT FUEL HOSE NO. 2**

- (a) Connect the fuel hose No. 2.

NOTICE:

- Before proceeding, check that there is no damage to or foreign matter on the fuel hose No. 2 or the connection of the pipe.

40. INSTALL EXHAUST PIPE ASSEMBLY FR (See page EM-101)**41. CONNECT ENGINE ROOM MAIN WIRE**

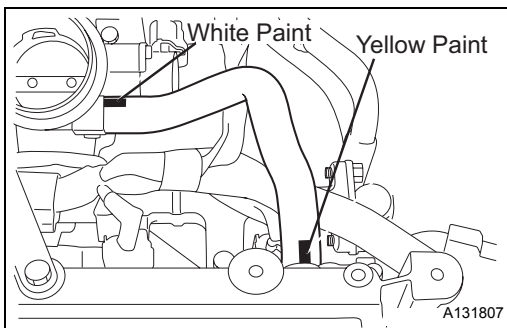
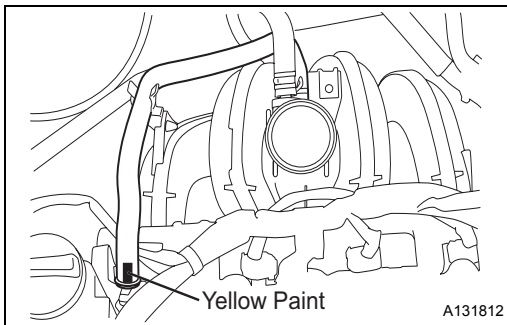
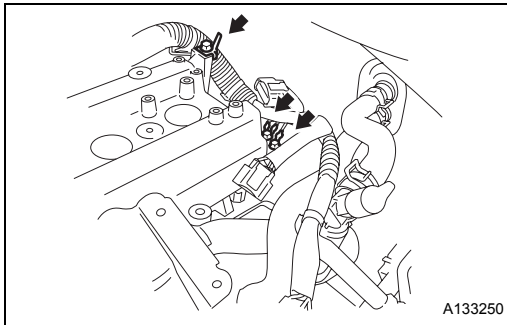
- (a) Install the ground wire with the 2 bolts.
- (b) Connect the cylinder head cover ground connector.
- (c) Connect the connectors of the sensors.
- (d) Connect the engine wire clamp to the bracket.

42. CONNECT ACCELERATOR CONTROL CABLE ASSEMBLY

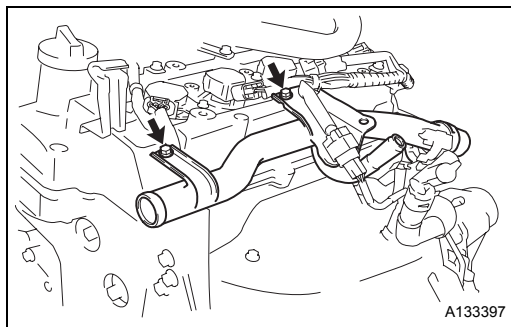
- (a) Connect the accelerator control cable assembly to the throttle body assembly.
- (b) Install the bracket with the bolt.
- (c) Adjust the wire cable and tighten the nut.

43. INSTALL VENTILATION HOSE

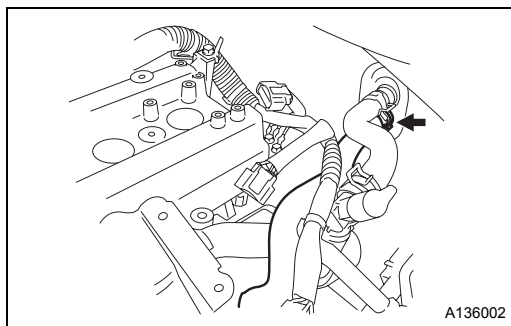
- (a) Install the ventilation hose.

**44. INSTALL VENTILATION HOSE NO. 2**

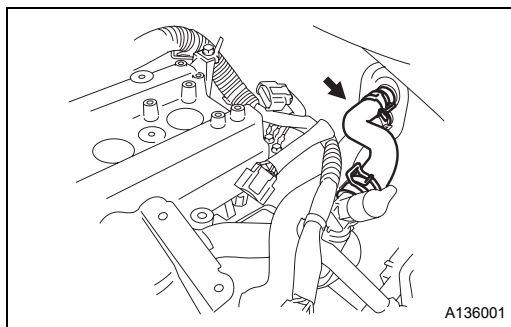
- (a) Install ventilation hose No. 2.

**45. INSTALL RADIATOR PIPE**

- (a) Install the radiator pipe with the 2 bolts and connect the hose.
Torque: 7.5 N*m (76 kgf*cm)

**46. CONNECT HEATER OUTLET WATER HOSE**

- (a) Connect the heater outlet water hose.

**47. CONNECT HEATER INLET WATER HOSE**

- (a) Connect the heater inlet water hose.

48. INSTALL WITH WATER FAN ASSEMBLY (See page CO-24)**49. CONNECT RADIATOR HOSE NO. 1 (See page CO-25)****50. INSTALL CHARCOAL CANISTER ASSEMBLY (See page CO-25)****51. INSTALL RADIATOR RESERVE TANK ASSEMBLY (See page CO-25)****52. INSTALL BATTERY CARRIER**

- (a) Install the battery carrier with the 3 bolts.
Torque: 8.5 N*m (87 kgf*cm)

53. INSTALL BATTERY**54. CONNECT BATTERY NEGATIVE TERMINAL**

Torque: 5.4 N*m (55 kgf*cm)

55. INSTALL AIR CLEANER ASSEMBLY

- (a) Install the air cleaner assembly with the 3 bolts.

NOTICE:

- Check that the O-ring is installed correctly to the throttle body joint.
- Check that there is no foreign matter in the throttle body opening.
- Check that there is no foreign matter on the clean side part of the air cleaner.

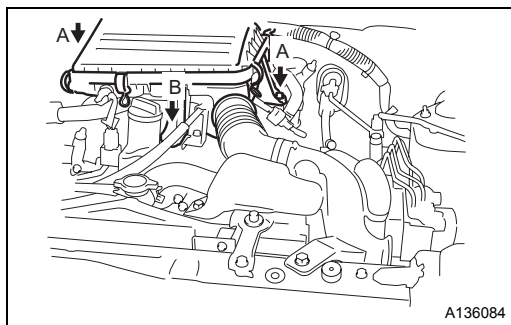
Torque: 7.5 N*m (75 kgf*cm) (Bolt A)

18 N*m (184 kgf*cm) (Bolt B)

- (b) Connect the VSV connector.

- (c) Connect the inlet air temperature sensor.

- (d) Connect the connector of the vacuum sensor.

56. INSTALL AIR CLEANER HOSE NO. 1 (See page CO-26)

- 57. **ADD ENGINE OIL**
- 58. **ADD ENGINE COOLANT (See page CO-11)**
- 59. **CHECK FOR ENGINE COOLANT LEAKS (See page CO-12)**
- 60. **CHECK COOLANT LEVEL (See page CO-12)**
- 61. **CHECK ENGINE OIL LEVEL**
 - (a) Warm up the engine, stop the engine and wait 5 minutes. Check that the oil level is between the F mark and L marks. If low, check for leakage and add oil up to the F mark.
- 62. **INSPECT ENGINE OIL LEAKS**
- 63. **Check for fuel leaks.**
 - (a) Check the fuel pump operation.
 - (1) Connect the DS-II to the DLC.
 - (2) Follow the prompts on the screen to select ACTIVE TEST / CIRCUIT RELAY / ON, and check the fuel pump operation.
 - (b) Check for fuel leaks.
 - (1) Check that there are no leaks in the fuel system with fuel pressure applied.
- 64. **CHECK FOR EXHAUST GAS LEAKS**
- 65. **CHECK ENGINE IDLE SPEED (See page EM-5)**
- 66. **CHECK IGNITION TIMING (See page EM-4)**
- 67. **CHECK DENSITY OF CO AND HC (See page EM-6)**
- 68. **INSTALL ENGINE UNDER COVER (See page EM-104)**

EM