

WATER PUMP ASSY (1GR-FE)

REPLACEMENT

1. REMOVE ENGINE UNDER COVER SUB-ASSY NO.1

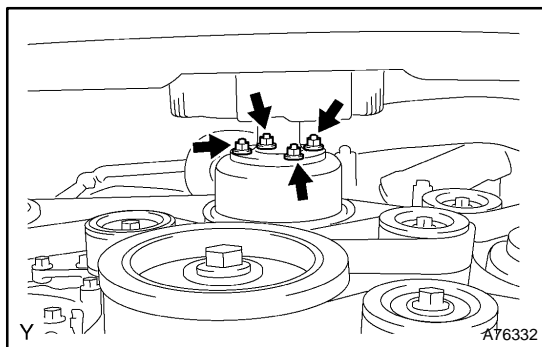
- (a) Remove the 4 bolts and engine under cover.

2. DRAIN ENGINE COOLANT (See page 16-5)

3. REMOVE V-BANK COVER (See page 10-7)

4. REMOVE RADIATOR SUPPORT SEAL UPPER

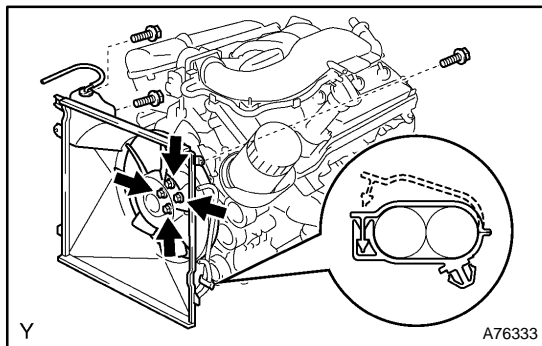
- (a) Remove the 11 clips and radiator support seal upper.



5. LOOSEN FAN W/ FLUID COUPLING

- (a) Loosen the 4 fluid coupling bolts.

6. REMOVE FAN AND GENERATOR V BELT (See page 14-5)

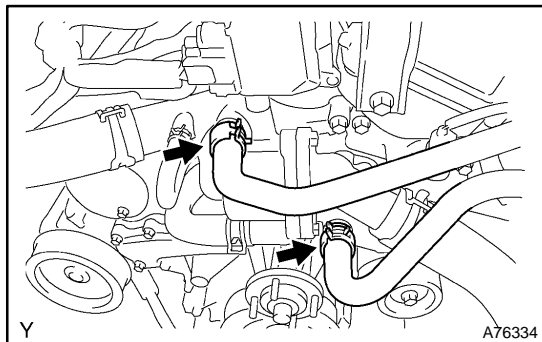


7. REMOVE FAN W/ FLUID COUPLING

- (a) Unfasten the hose clamp, and then separate the 2 oil cooler hoses from the fan shroud.
 (b) Disconnect the radiator reserve tank hose.
 (c) Remove the 2 fan shroud bolts and radiator reserve tank bolt.
 (d) Remove the 4 fluid coupling nuts, and then remove the fan w/ fluid coupling and fan shroud together.
 (e) Remove the fan pulley.

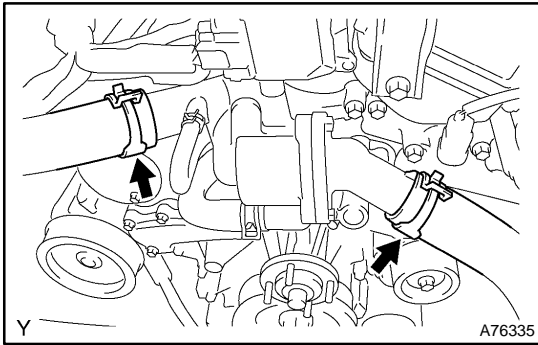
8. DISCONNECT VENTILATION HOSE NO.2

9. REMOVE AIR CLEANER ASSY (See page 10-7)

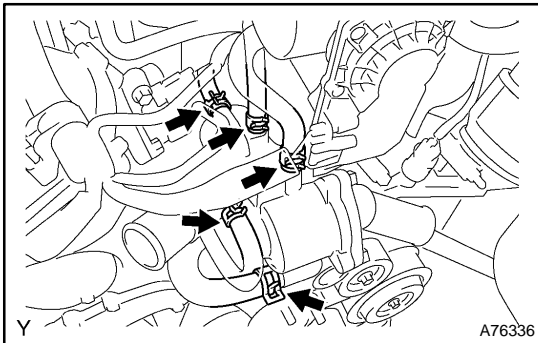


10. REMOVE WATER INLET

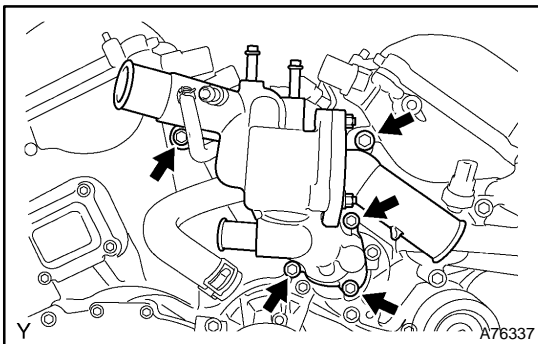
- (a) Disconnect the 2 oil cooler hoses (w/ oil cooler).



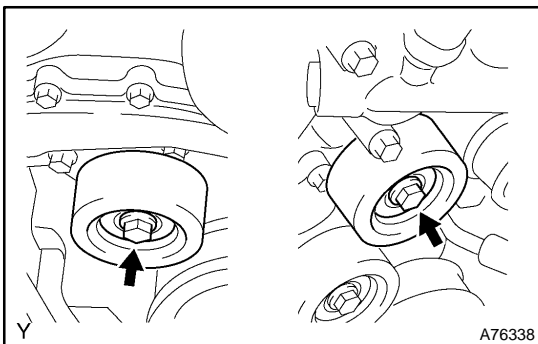
- (b) Disconnect the 2 radiator hoses.



- (c) Disconnect the 5 water by-pass hoses.



- (d) Remove the 5 bolts and water inlet.
 (e) Remove the O-ring from the water outlet pipe.
 (f) Remove the gasket from the water pump.



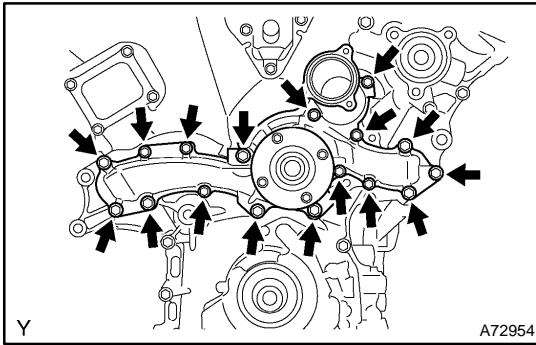
11. REMOVE IDLER PULLEY SUB-ASSY NO.2

- (a) Remove the 2 bolts and 2 idler pulleys.

12. REMOVE GENERATOR ASSY (See page 19-26)

13. SEPARATE COOLER COMPRESSOR ASSY (See page 18-7)

14. REMOVE V-RIBBED BELT TENSIONER ASSY (See page 14-1 19)

**15. REMOVE WATER PUMP ASSY**

- (a) Remove the 17 bolts, water pump and gasket.

16. INSTALL WATER PUMP ASSY

- (a) Install a new gasket and the water pump with the 17 bolts.

Torque:

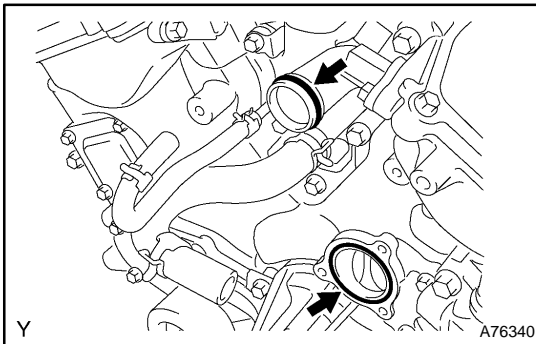
9.0 N·m (92 kgf·cm, 80 in·lbf) for 10 mm (0.39 in.) head

23 N·m (235 kgf·cm, 17 ft·lbf) for 12 mm (0.47 in.) head

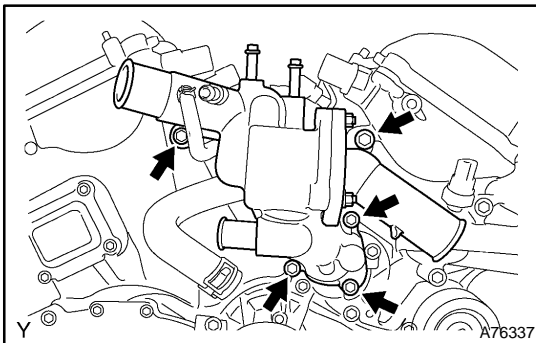
17. INSTALL V-RIBBED BELT TENSIONER ASSY (See page 14-1 19)**18. INSTALL COOLER COMPRESSOR ASSY (See page 18-7)****19. INSTALL GENERATOR ASSY (See page 19-26)****20. INSTALL IDLER PULLEY SUB-ASSY NO.2**

- (a) Install the 2 idler pulleys with the 2 bolts.

Torque: 39 N·m (398 kgf·cm, 29 ft·lbf)

**21. INSTALL WATER INLET**

- (a) Install a new O-ring to the water outlet pipe.
 (b) Install a new gasket to the water pump.
 (c) Apply soapy water to the O-ring.



- (d) Install the water inlet with the 5 bolts.
Torque: 9.0 N·m (92 kgf·cm, 80 in·lbf)
 (e) Connect the 5 water by-pass hoses.
 (f) Connect the 2 radiator hoses.
 (g) Connect the 2 oil cooler hoses (w/ oil cooler).

22. INSTALL AIR CLEANER ASSY (See page 10-7)**23. CONNECT VENTILATION HOSE NO.2**

24. INSTALL FAN W/ FLUID COUPLING

- (a) Put the fan pulley to the water pump.
- (b) Put the fan w/ fluid coupling and fan shroud together.
- (c) Temporarily install the 4 fluid coupling nuts.
- (d) Tighten the 2 fan shroud bolts and radiator reserve tank bolt.

Torque: 5.0 N·m (51 kgf·cm, 44 in·lbf)

- (e) Connect the reserve tank hose.
- (f) Fasten the 2 oil cooler hoses with the hose clamp.

25. INSTALL FAN AND GENERATOR V BELT (See page 14-5)**26. FULLY TIGHTEN FAN W/ FLUID COUPLING**

- (a) Tighten the 4 fluid coupling bolts.

Torque: 21 N·m (214 kgf·cm, 15 ft·lbf)

27. INSTALL RADIATOR SUPPORT SEAL UPPER**28. ADD ENGINE COOLANT (See page 16-5)****29. CHECK FOR ENGINE COOLANT LEAKS (See page 16-1)****30. INSTALL V-BANK COVER**

- (a) Install the V-bank cover with the 2 nuts.

Torque: 7.5 N·m (76 kgf·cm, 66 in·lbf)

31. INSTALL ENGINE UNDER COVER SUB-ASSY NO.1

- (a) Install the engine under cover with the 4 bolts.

Torque: 29 N·m (296 kgf·cm, 21 ft·lbf)