

# WATER PUMP ASSY (1GR-FE)

160J5-01

## REPLACEMENT

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

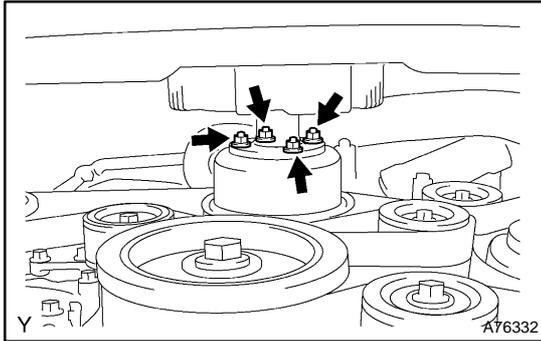
(a) Remove the 4 bolts and engine under cover.

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

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

### 4. REMOVE RADIATOR SUPPORT SEAL UPPER

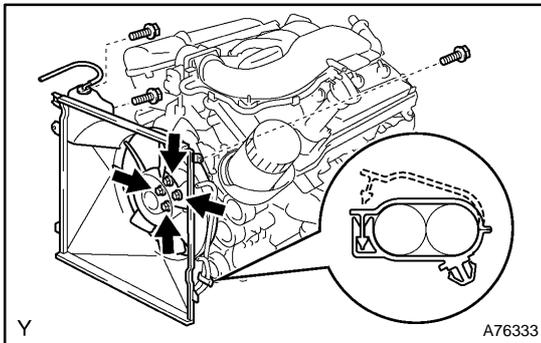
(a) Remove the 11 clips and radiator support seal upper.



### 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.

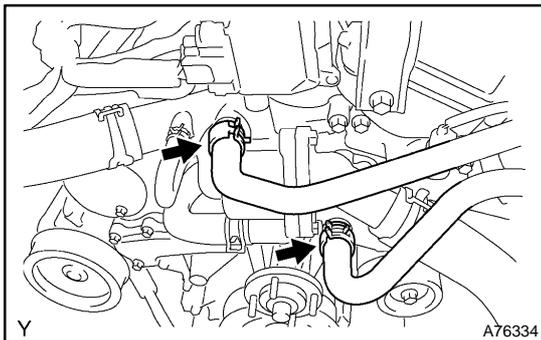
(c) Remove the 2 fan shroud bolts and radiator reserve tank bolt.

(d) Remove the 4 fluid coupling nuts, and then remove the fan w/ fluid coupling and fan shroud together.

(e) Remove the fan pulley.

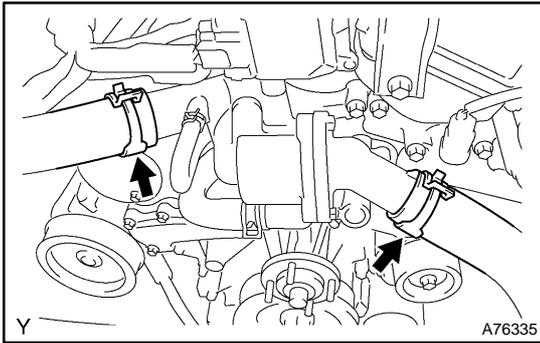
### 8. DISCONNECT VENTILATION HOSE NO.2

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

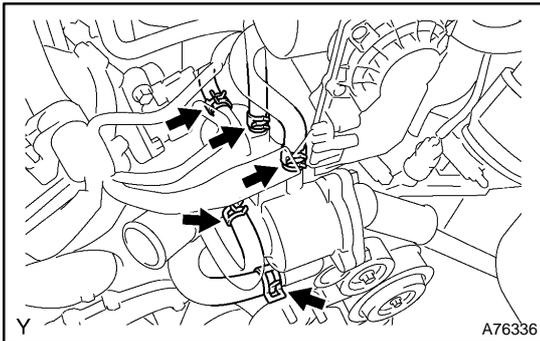


### 10. REMOVE WATER INLET

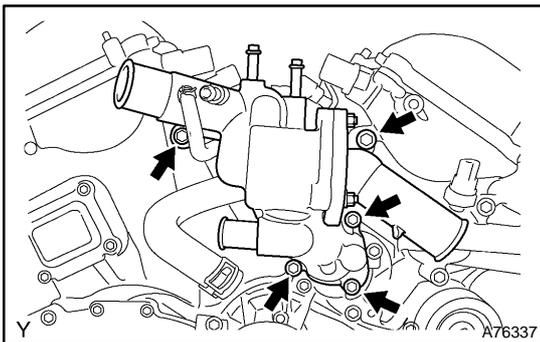
(a) Disconnect the 2 oil cooler hoses (w/ oil cooler).



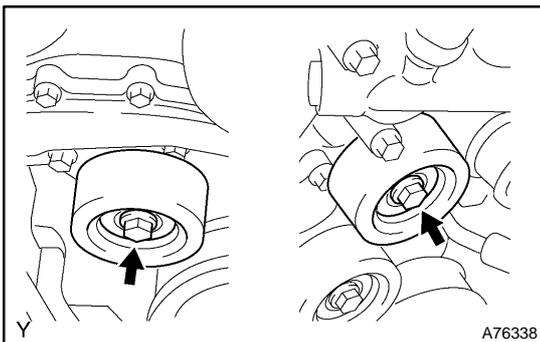
- (b) Disconnect the 2 radiator hoses.



- (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.



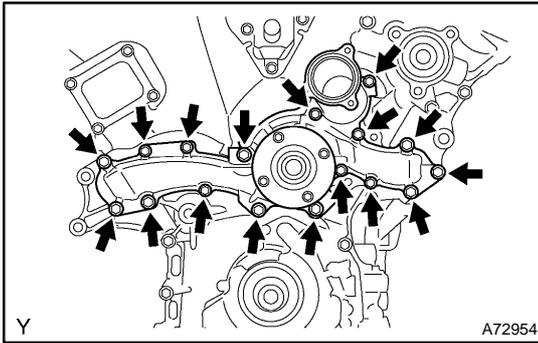
## 11. REMOVE IDLER PULLEY SUB-ASSY NO.2

- (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)**

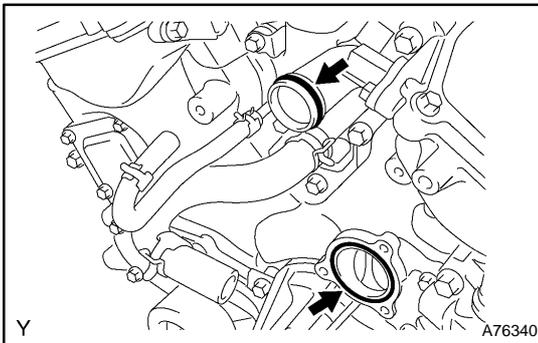
- 18. INSTALL COOLER COMPRESSOR ASSY (See page 18-7 )**

- 19. INSTALL GENERATOR ASSY (See page 19-26 )**

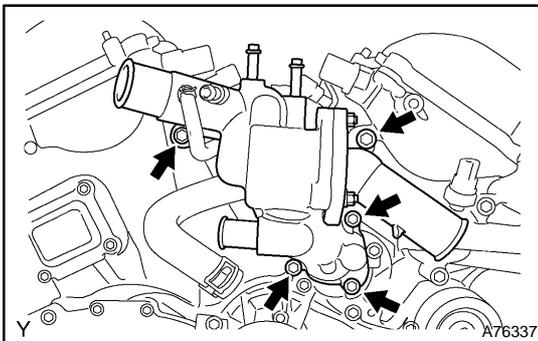
- 20. INSTALL IDLER PULLEY SUB-ASSY NO.2**

- (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)**