WATER PUMP ASSY (1GR–FE)

160LR–01

REPLACEMENT

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

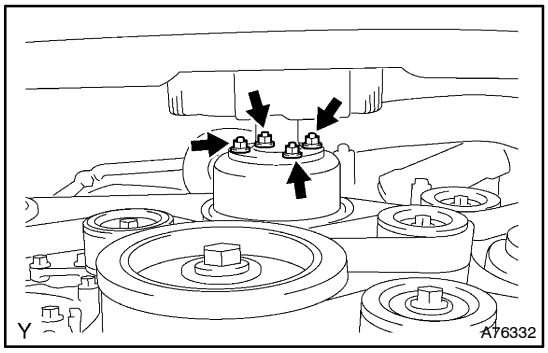
(a) Remove the 4 bolts and engine under cover.

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

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

4. REMOVE RADIATOR SUPPORT SEAL UPPER

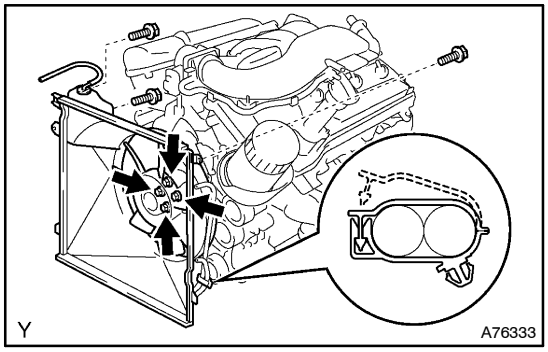
(a) Remove the 11 clips and radiator support seal upper.



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.

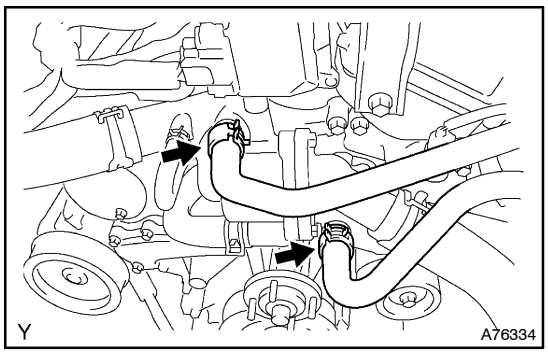
(c) Remove the 2 fan shroud bolts and radiator reserve tank bolt.

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

(e) Remove the fan pulley.

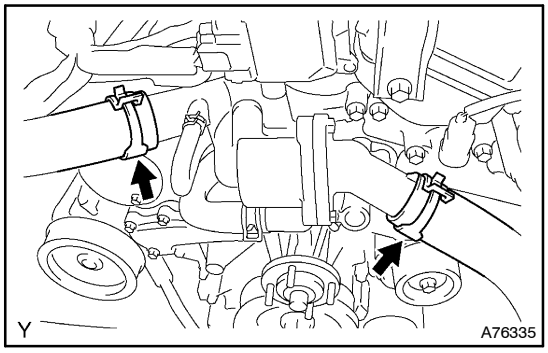
8. DISCONNECT VENTILATION HOSE NO.2

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

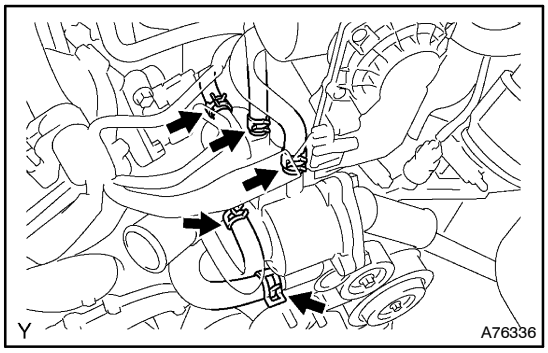


10. REMOVE WATER INLET

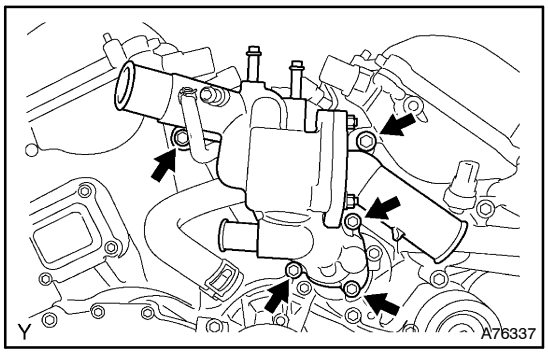
(a) Disconnect the 2 oil cooler hoses (w/ oil cooler).



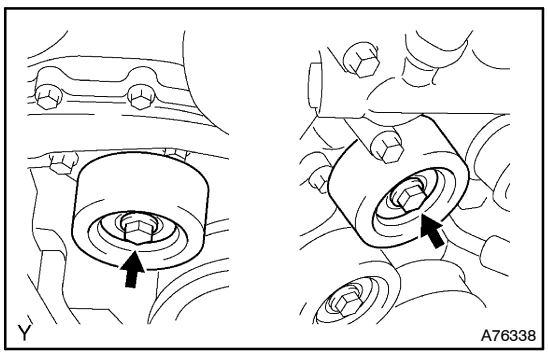
(b) Disconnect the 2 radiator hoses.



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

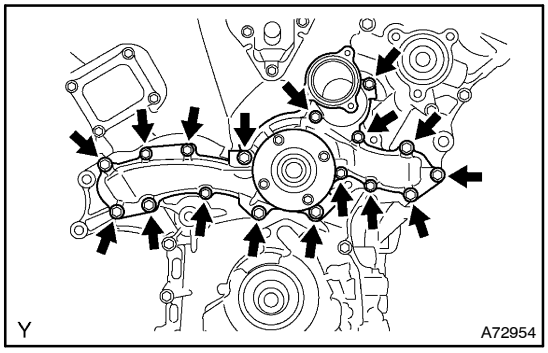


(d) Remove the 5 bolts and water inlet.
(e) Remove the O–ring from the water outlet pipe.
(f) Remove the gasket from the water pump.



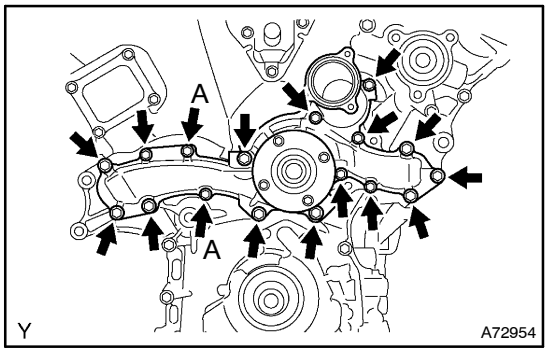
11. REMOVE IDLER PULLEY SUB–ASSY NO.2
(a) Remove the 2 bolts and 2 idler pulleys.

12. REMOVE GENERATOR ASSY (See page 19–10)
13. SEPARATE COOLER COMPRESSOR ASSY (W/ AIR CONDITIONING) (See page 18–7)
14. REMOVE IDLER PULLEY ASSY (W/O AIR CONDITIONING)
(a) Remove the 3 bolts and idler pulley assy.
15. REMOVE V–RIBBED BELT TENSIONER ASSY (See page 14–44)



16. REMOVE WATER PUMP ASSY

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



17. INSTALL WATER PUMP ASSY

(a) Apply adhesive to 2 or 3 threads of bolts A as shown in the illustration.
Adhesive:
Part No. 08833–00080, THREE BOND 1344 LOCTITE 242 or equivalent

(b) 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

18. INSTALL V–RIBBED BELT TENSIONER ASSY (See page 14–44)

19. INSTALL IDLER PULLEY ASSY (W/O AIR CONDITIONING)

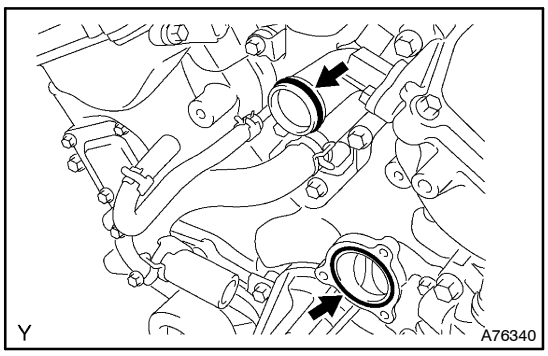
(a) Install the idler pulley with the 3 bolts.
Torque: 25 N·m (255 kgf·cm, 18 ft·lbf)

20. INSTALL COOLER COMPRESSOR ASSY (W/ AIR CONDITIONING) (See page 18–7)

21. INSTALL GENERATOR ASSY (See page 19–10)

22. 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)

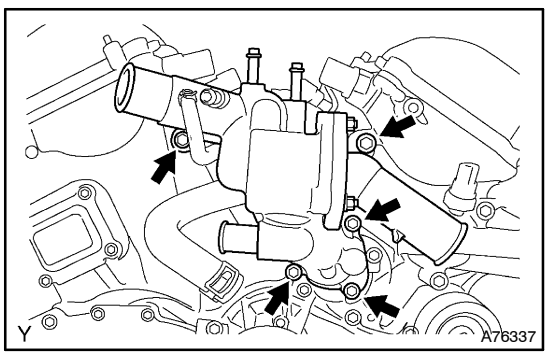


23. INSTALL WATER INLET

(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, 82 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).

24. INSTALL AIR CLEANER ASSY (See page 10–7)
25. CONNECT VENTILATION HOSE NO.2
26. 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.
27. INSTALL FAN AND GENERATOR V BELT (See page 14–5)
28. FULLY TIGHTEN FAN W/ FLUID COUPLING
(a) Tighten the 4 fluid coupling bolts.
Torque: 21 N·m (214 kgf·cm, 15 ft·lbf)
29. INSTALL RADIATOR SUPPORT SEAL UPPER
30. ADD ENGINE COOLANT (See page 16–5)
31. CHECK FOR ENGINE COOLANT LEAKS (See page 16–1)
32. 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)
33. 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)