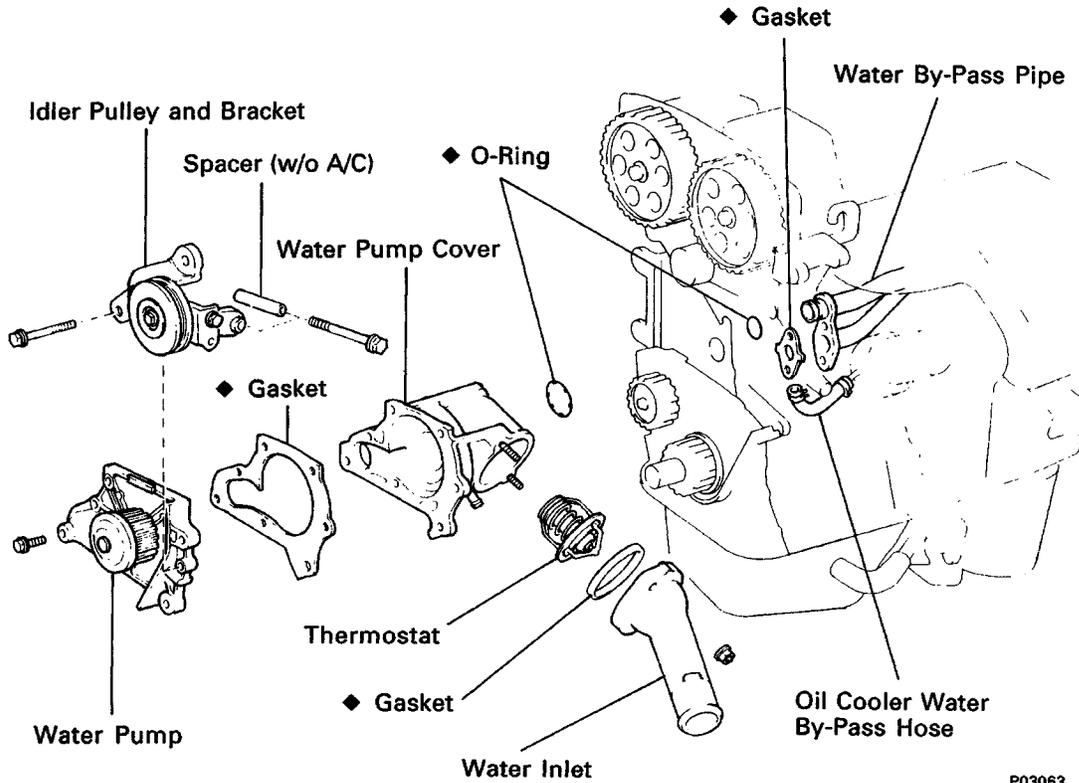


WATER PUMP (3S-GTE and 5S-FE) COMPONENTS

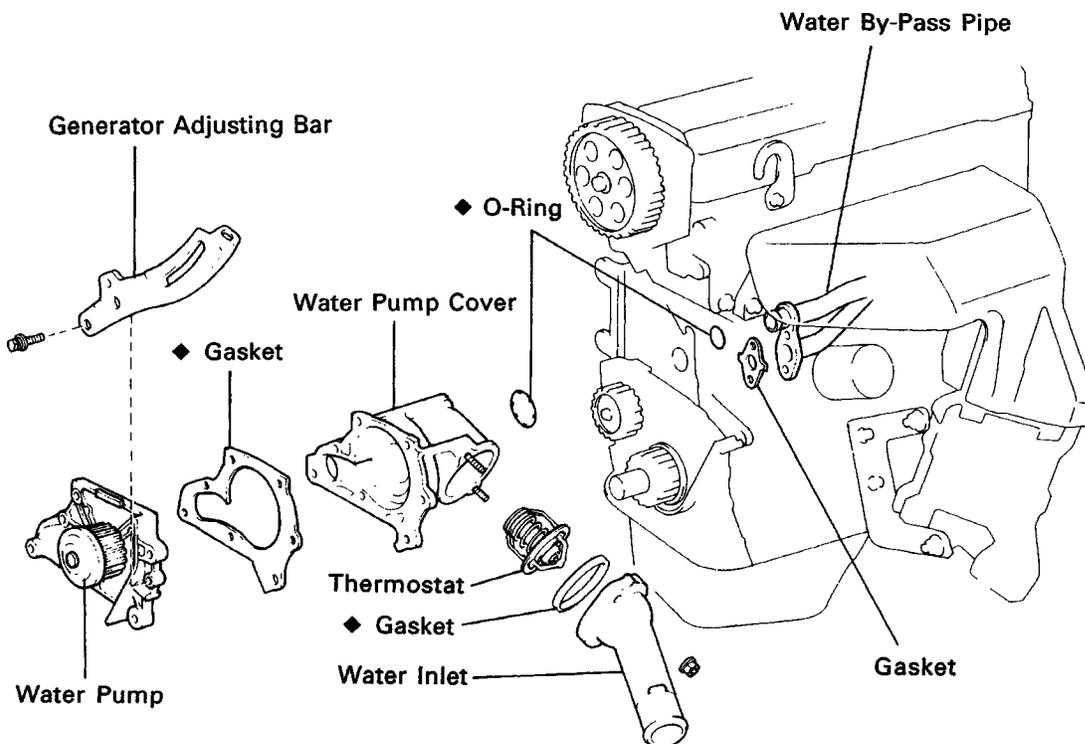
3S-GTE



P03063

◆ Non-reusable part

5S-FE



P03067

◆ Non-reusable part

REMOVAL OF WATER PUMP

(See page [CO-11](#))

1. DISCONNECT CABLE FROM NEGATIVE TERMINAL OF BATTERY

CAUTION: Work must be started after approx. 20 seconds or longer from the time the ignition switch is turned to the "LOCK" position and the negative (-) terminal cable is disconnected from the battery.

2. DRAIN ENGINE COOLANT (See page [CO-6](#))

3. REMOVE TIMING BELT

3S-GTE (See steps 2 to 18 and 20 to 23 on pages EM-46 to 51)

5S-FE (See steps 2 to 17 and 19 to 22 on pages EM-67 to 72)

4. (3S-GTE)

REMOVE NO.2 IDLER PULLEY

(See step 25 on page [EM-52](#))

5. (5S-FE)

REMOVE IDLER PULLEYS

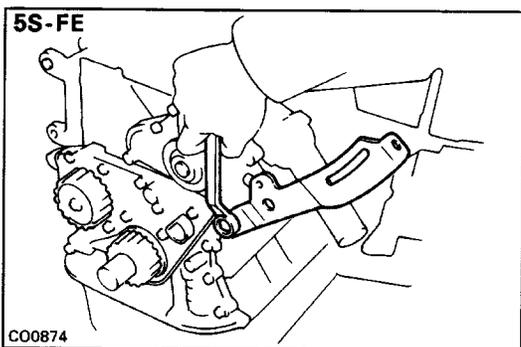
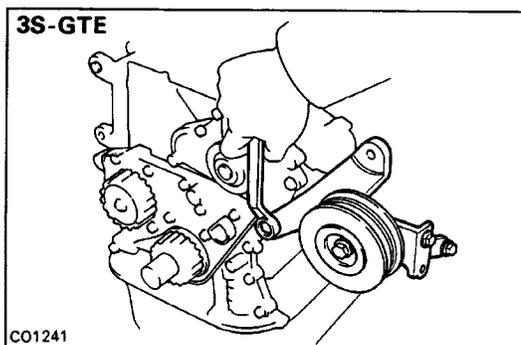
(See steps 23 to 24 on page [EM-72](#))

6. DISCONNECT LOWER RADIATOR HOSE FROM WATER INLET

7. (3S-GTE)

REMOVE IDLER PULLEY AND BRACKET

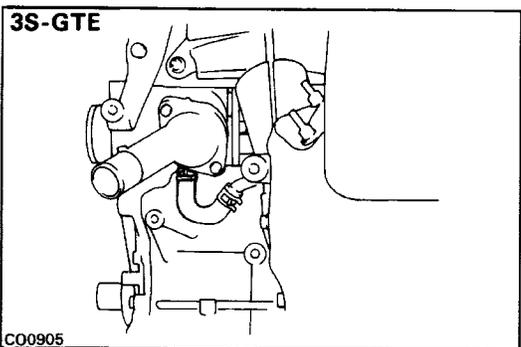
Remove the two bolts, pulley, bracket and spacer (w/o, A/C).



8. (5S-FE)

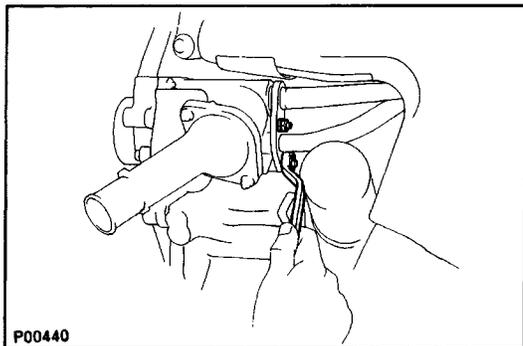
REMOVE GENERATOR BELT ADJUSTING BAR

Remove the bolt and adjusting bar.



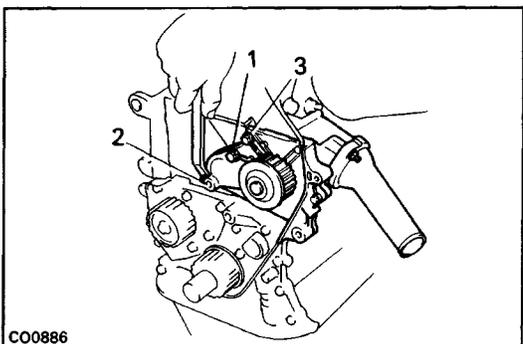
9. (3S-GTE)

DISCONNECT OIL COOLER WATER BY-PASS HOSE



10. REMOVE WATER PUMP AND WATER PUMP COVER ASSEMBLY

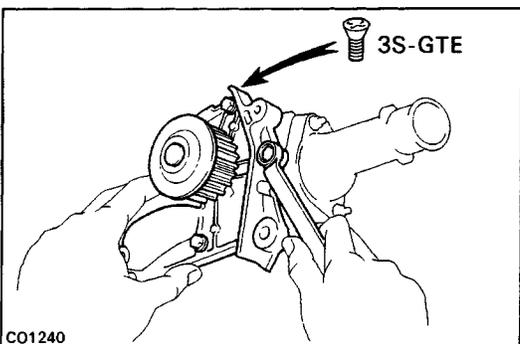
(a) Remove the two nuts holding the pump to the water by-pass pipe.



(b) Remove the three bolts in the sequence shown.

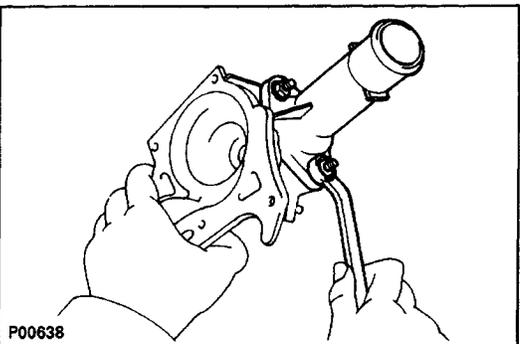
(c) Pull out the water pump together with the water pump cover.

(d) Remove the gasket and two O-rings from the water pump and water by-pass pipe.



11. SEPARATE WATER PUMP AND WATER PUMP COVER

Remove the three bolts, water pump and gasket from the water pump cover.

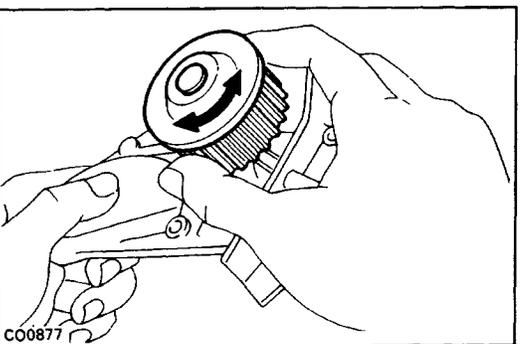


12. REMOVE WATER INLET AND THERMOSTAT FROM WATER PUMP COVER

(a) Remove the two nuts and water inlet from the water pump.

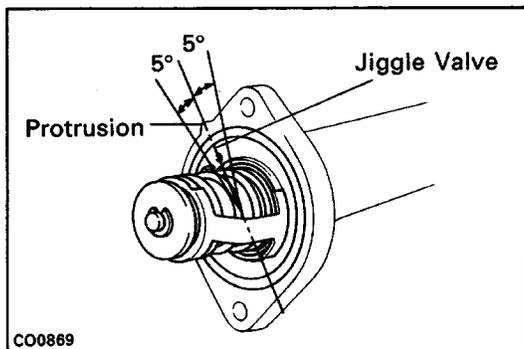
(b) Remove the thermostat.

(c) Remove the gasket from the thermostat.



INSPECTION OF WATER PUMP INSPECT WATER PUMP

Turn the pulley and check that the water pump bearing moves smoothly and quietly.



INSTALLATION OF WATER PUMP

(See page CO-11)

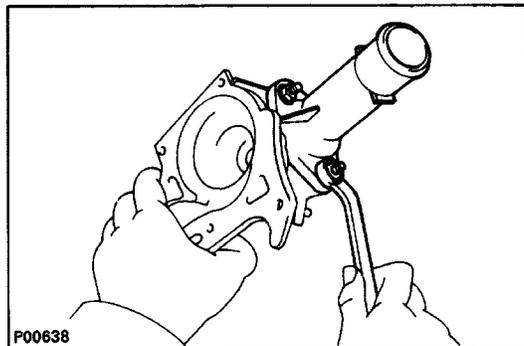
1. INSTALL THERMOSTAT AND WATER INLET TO WATER PUMP COVER

- (a) Install a new gasket to the thermostat.
- (b) Align the jiggle valve of the thermostat with the upper side of the stud bolt, and insert the thermostat in the water pump.
HINT: The jiggle valve may be set within 5° of either side of the prescribed position.
- (c) Install the water inlet with the two nuts.

Torque:

3S-GTE 7.8 N-m (80 kgf-cm, 69 in.-lbf)

5S-FE 9.3 N-m (95 kgf-cm, 82 in.-lbf)



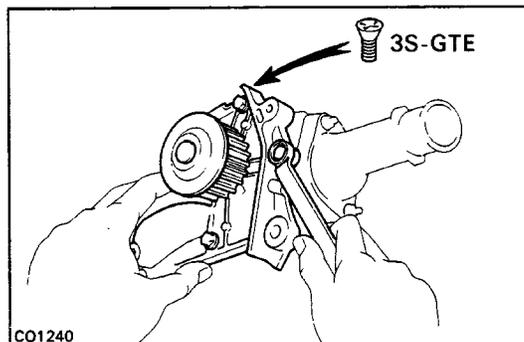
2. ASSEMBLE WATER PUMP AND WATER PUMP COVER

Install a new gasket and the water pump to the pump cover with the three bolts.

Torque:

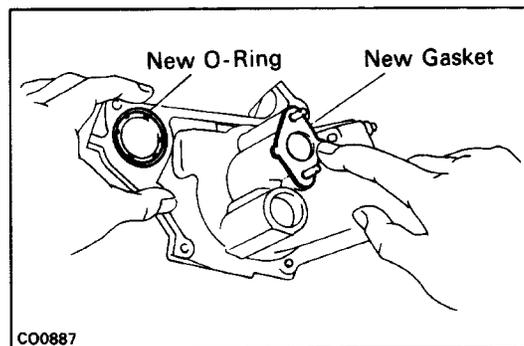
3S-GTE 9.3 N-m (95 kgf-cm, 82 in.-lbf)

5S-FE 8.8 N-m (90 kgf-cm, 78 in.-lbf)

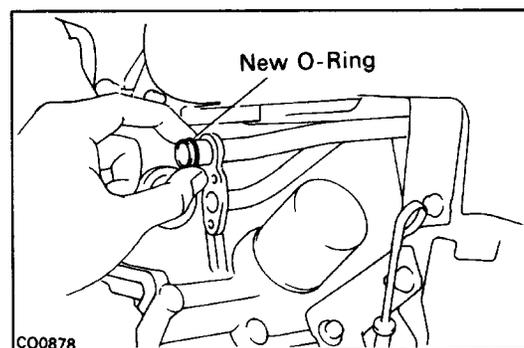


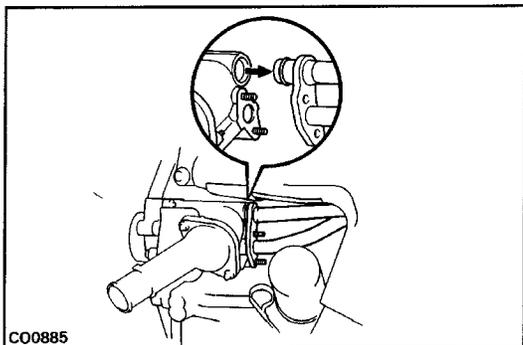
3. INSTALL WATER PUMP AND WATER PUMP COVER ASSEMBLY

- (a) Install new O-ring and gasket to the water pump cover.

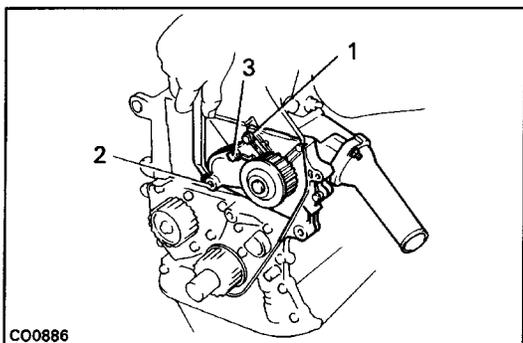


- (b) Install a new O-ring to the water by-pass pipe.





- (c) Apply soapy water to the O-ring on the water by-pass pipe.
- (d) Connect the pump cover to the water by-pass pipe.
Do not install the nuts yet.

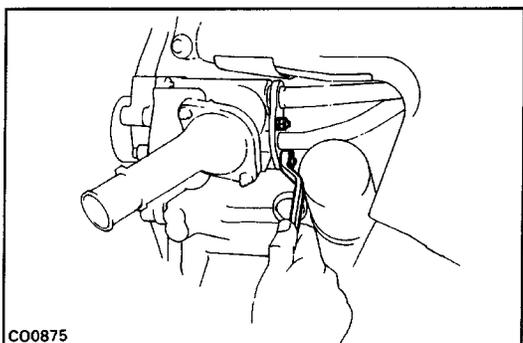


- (e) Install the water pump with the three bolts. Tighten the bolts in the sequence shown.

Torque:

3S-GTE 7.8 N-m (80 kgf-cm, 69 MAW)

5S-FE 8.8 N-m (90 kgf-cm, 78 MAW)

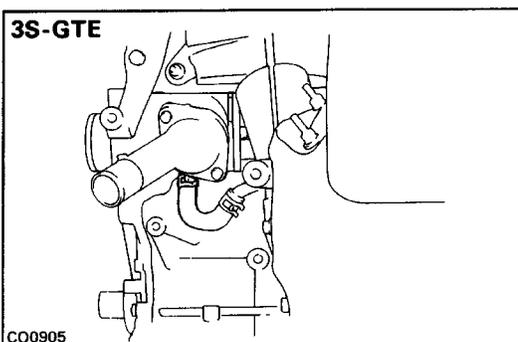


- (f) Install the two nuts holding the water pump cover to the water by-pass pipe.

Torque:

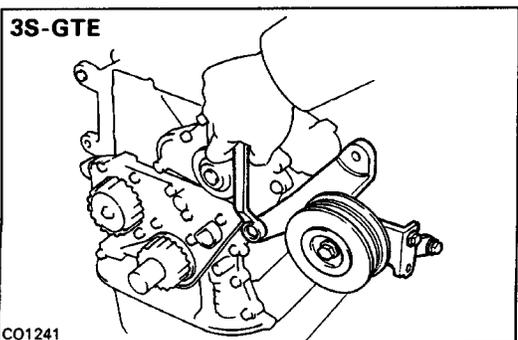
3S-GTE 12 N-m (120 kgf-cm, 9 ft-lbf)

5S-FE 9.3 N-m (95 kgf-cm, 82 MAW)



4. (3S-GTE)

CONNECT OIL COOLER WATER BY-PASS HOSE

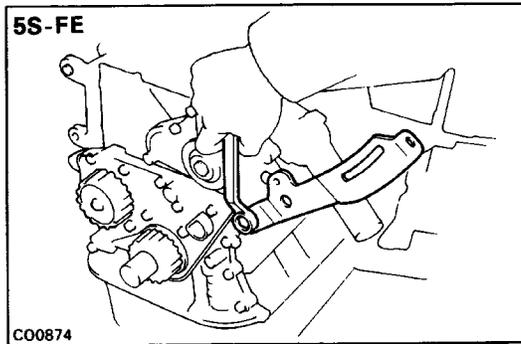


5. (3S-GTE)

INSTALL IDLER PULLEY AND BRACKET

Install the pulley and bracket with the spacer (w/o A/C) and two bolts.

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

**6. (5S-FE)****INSTALL GENERATOR BELT ADJUSTING BAR**

Temporarily install the adjusting bar with the bolt.

7. CONNECT LOWER RADIATOR HOSE TO WATER**INLET****8. (3S-GTE)****INSTALL NO.2 IDLER PULLEY**

(See step 3 on page [EM-55](#))

9. (5S-FE)**INSTALL IDLER PULLEYS**

(See steps 3 and 4 on page [EM-75](#))

10. INSTALL TIMING BELT

3S-GTE (See steps 5 to 8 and 10 to 30 on pages [EM-55](#) to 61)

5S-FE (See steps 5 to 8 and 10 to 27 on pages [EM-75](#) to 80)

11. CONNECT CABLE TO NEGATIVE TERMINAL OF BATTERY**12. FILL WITH ENGINE COOLANT (See page [CO-6](#))**