

# COOLING SYSTEM

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**COOLING SYSTEM CIRCUIT**

Fig. 5-1

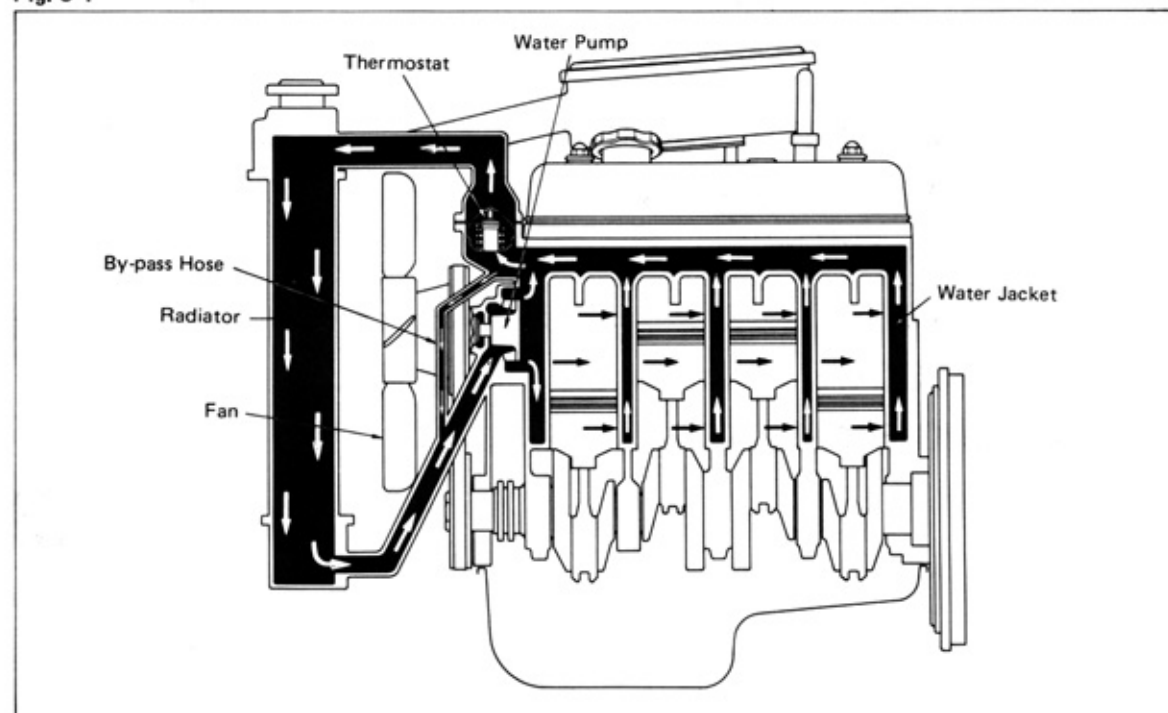
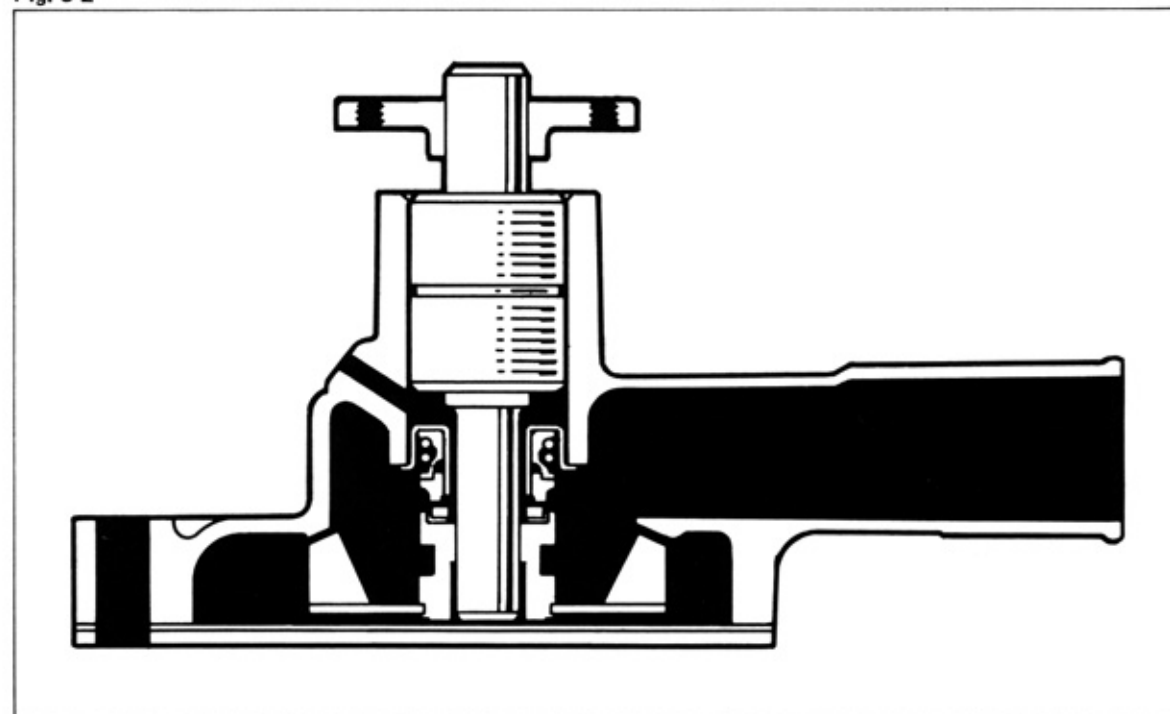
**WATER PUMP CUTAWAY VIEW**

Fig. 5-2



## WATER PUMP

### DISASSEMBLY

Disassemble the parts in the numerical order shown in the figure.

Fig. 5-3

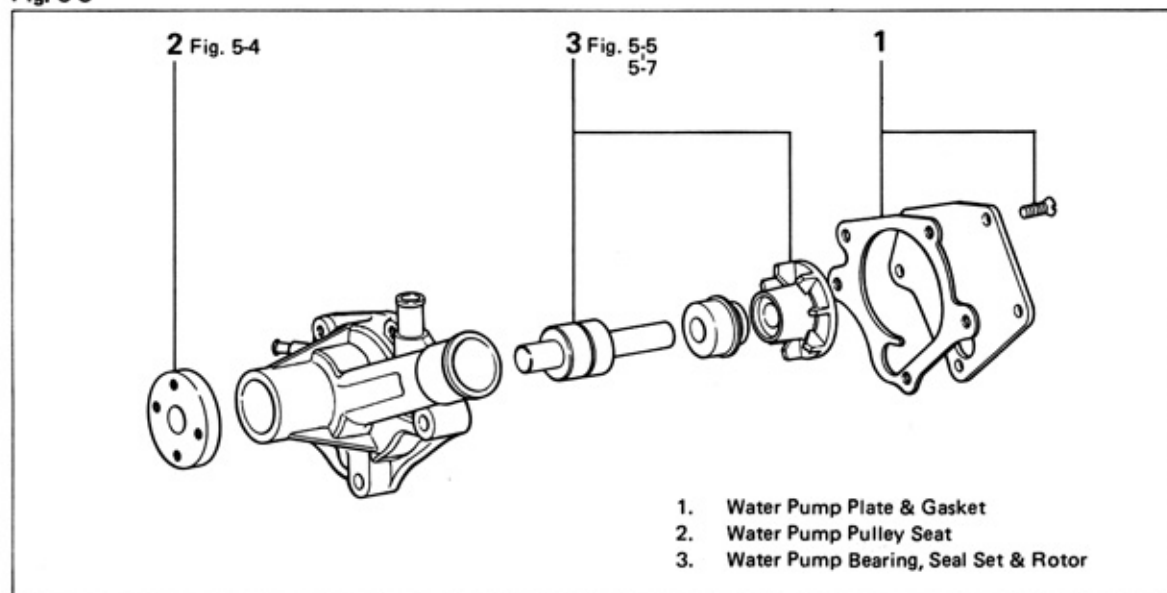
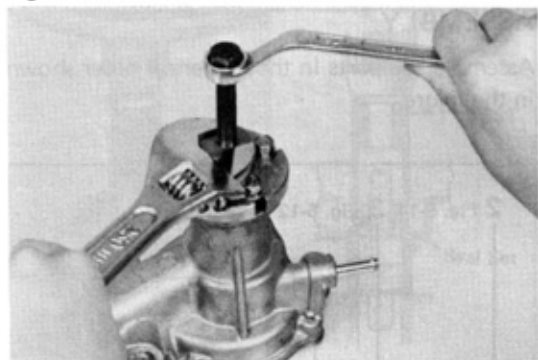
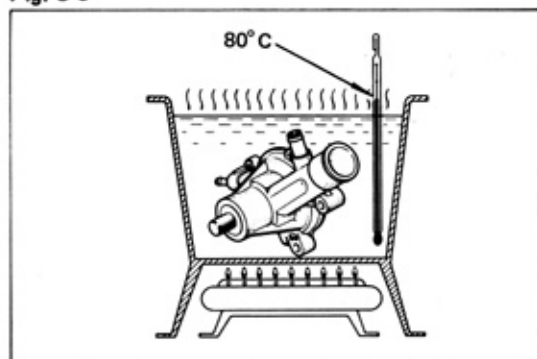


Fig. 5-4



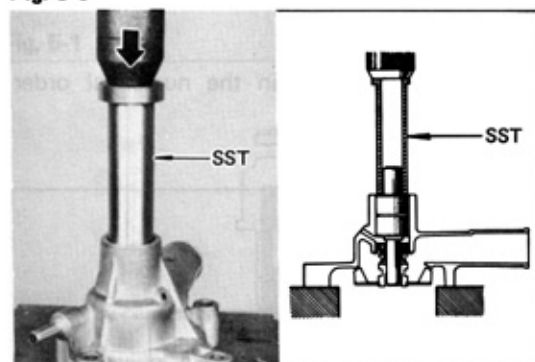
Remove the pulley seat with SST.  
SST [09235-20011]

Fig. 5-5



Heat the water pump body to about 80°C (176°F).

Fig. 5-6

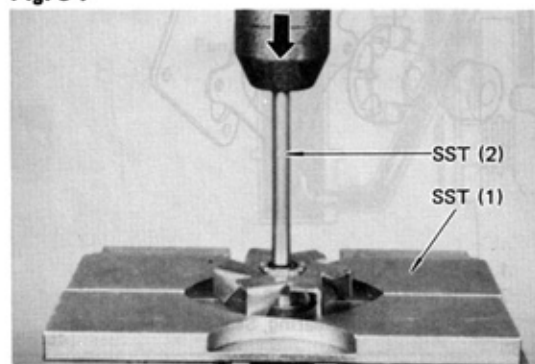


Using SST, press out the water pump bearing together with the rotor and seal set.  
SST [09238-48010]

— Note —

Always replace the seal set upon assembly.

Fig. 5-7



Using SST, press out the pump bearing from the rotor.

SST [09236-28011] (1)

[09236-36010] (2)

## ASSEMBLY

Assemble the parts in the numerical order shown in the figure.

Fig. 5-8

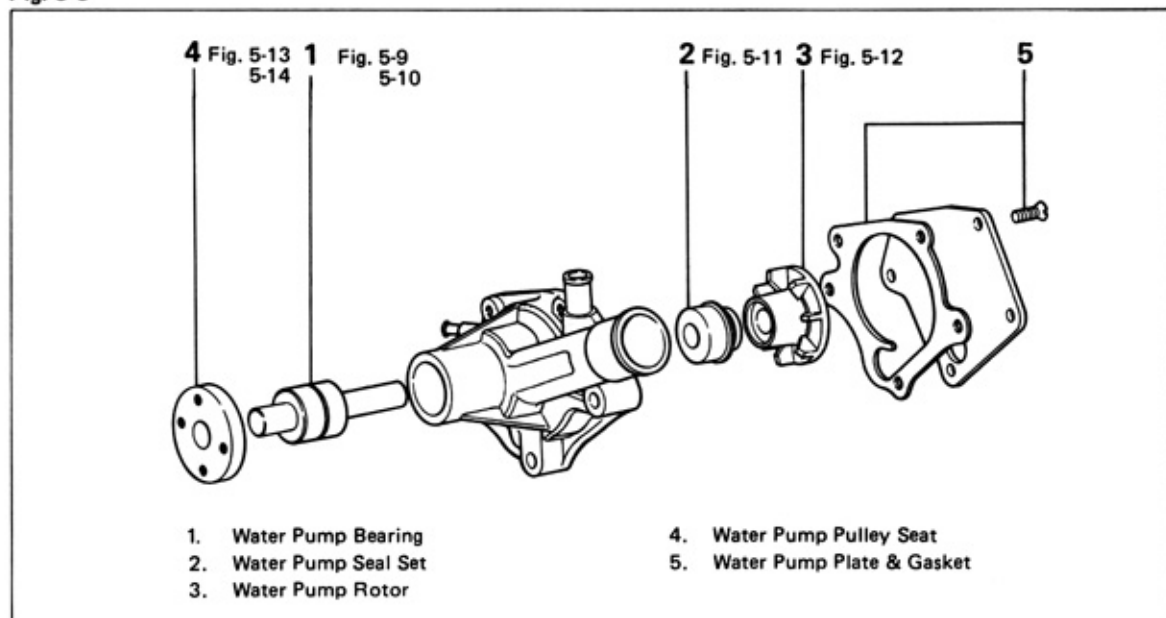
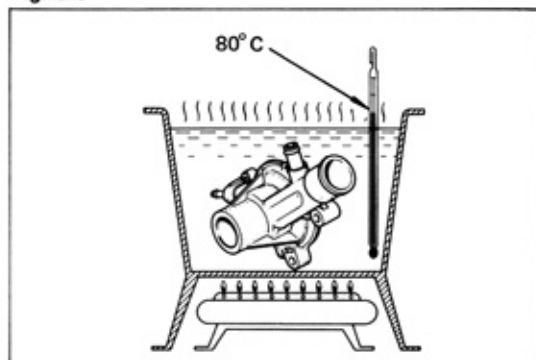
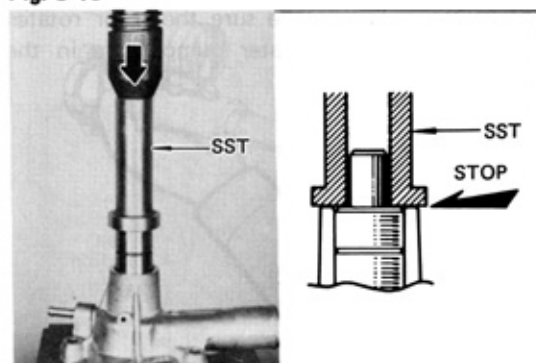


Fig. 5-9



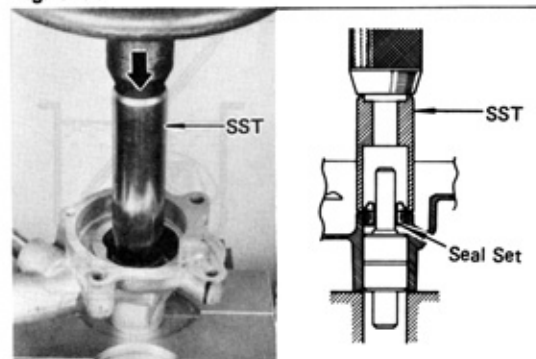
Heat the water pump body to about 80°C (176°F).

Fig. 5-10



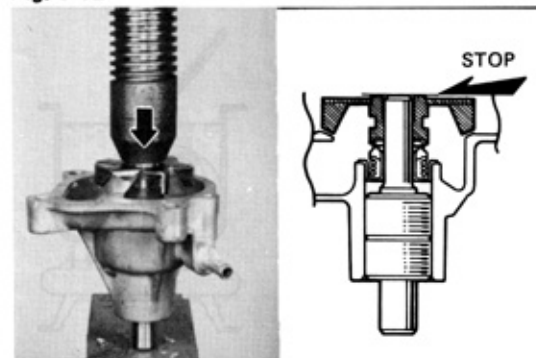
Using SST, press the water pump bearing into the pump body.  
SST [09238-48010]

Fig. 5-11



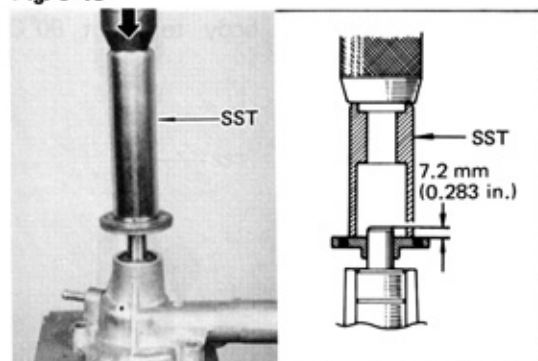
Press in the new seal set with SST.  
SST [09236-36010]

Fig. 5-12



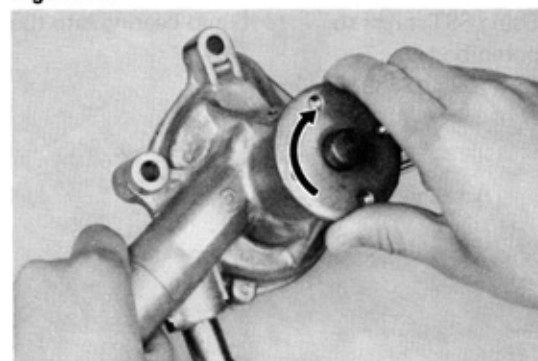
Press in the rotor.

Fig. 5-13



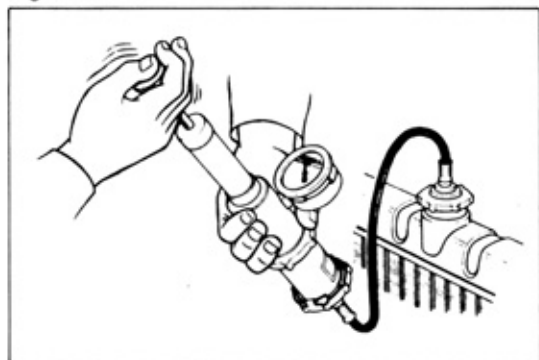
Using SST, press in the pulley seat to the specified depth.  
SST [09236-36010]

Fig. 5-14



After assembling, make sure the rotor rotates smoothly with the water pump plate in the installed condition.

Fig. 5-15



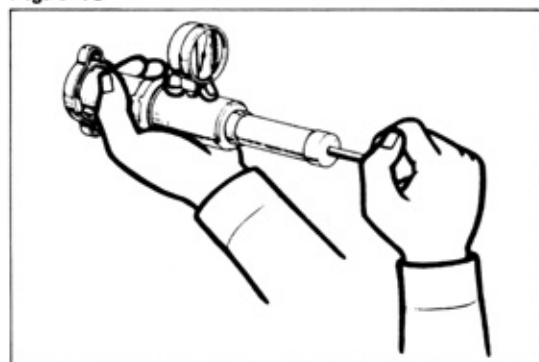
## RADIATOR

### INSPECTION

1. Install the radiator cap tester to the radiator, apply pressure and check for leakage in the cooling system under normal operating temperature.

**Applicable pressure:** 1.2 kg/cm<sup>2</sup>  
(17 psi)

Fig. 5-16



2. Check the pressure sealing and vacuum relief valve operation.

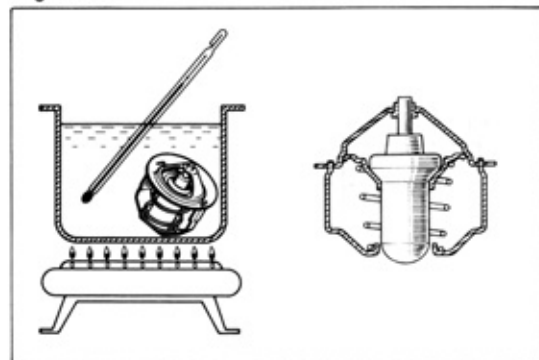
**Valve opening pressure:**

**STD** 0.75 – 1.05 kg/cm<sup>2</sup>  
(10.7 – 14.9 psi)

**Limit** 0.6 kg/cm<sup>2</sup>  
(8.5 psi)

3. If the readings are not within acceptable limits, replace the radiator cap.

Fig. 5-17



## THERMOSTAT

### INSPECTION

1. Immerse the thermostat in water, and check the valve opening temperature by heating the water gradually.
2. Replace the thermostat if the valve remains open at normal temperature or is not very tight when fully closed.

**Low temp. type:**

**Valve starts to open at** 80 – 84°C  
(176 – 183°F).

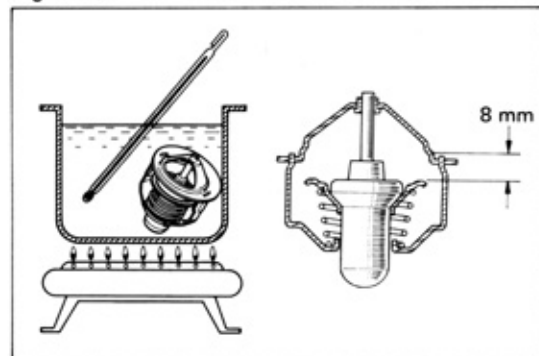
**Valve opens by more than 8 mm**  
(0.31 in.) at 95°C (203°F).

**High temp. type:**

**Valve starts to open at** 86 – 90°C  
(187 – 194°F).

**Valve opens by more than 8 mm**  
(0.31 in.) at 100°C (212°F).

Fig. 5-18



## COOLING FAN MOTOR CIRCUIT DIAGRAM

Fig. 5-19

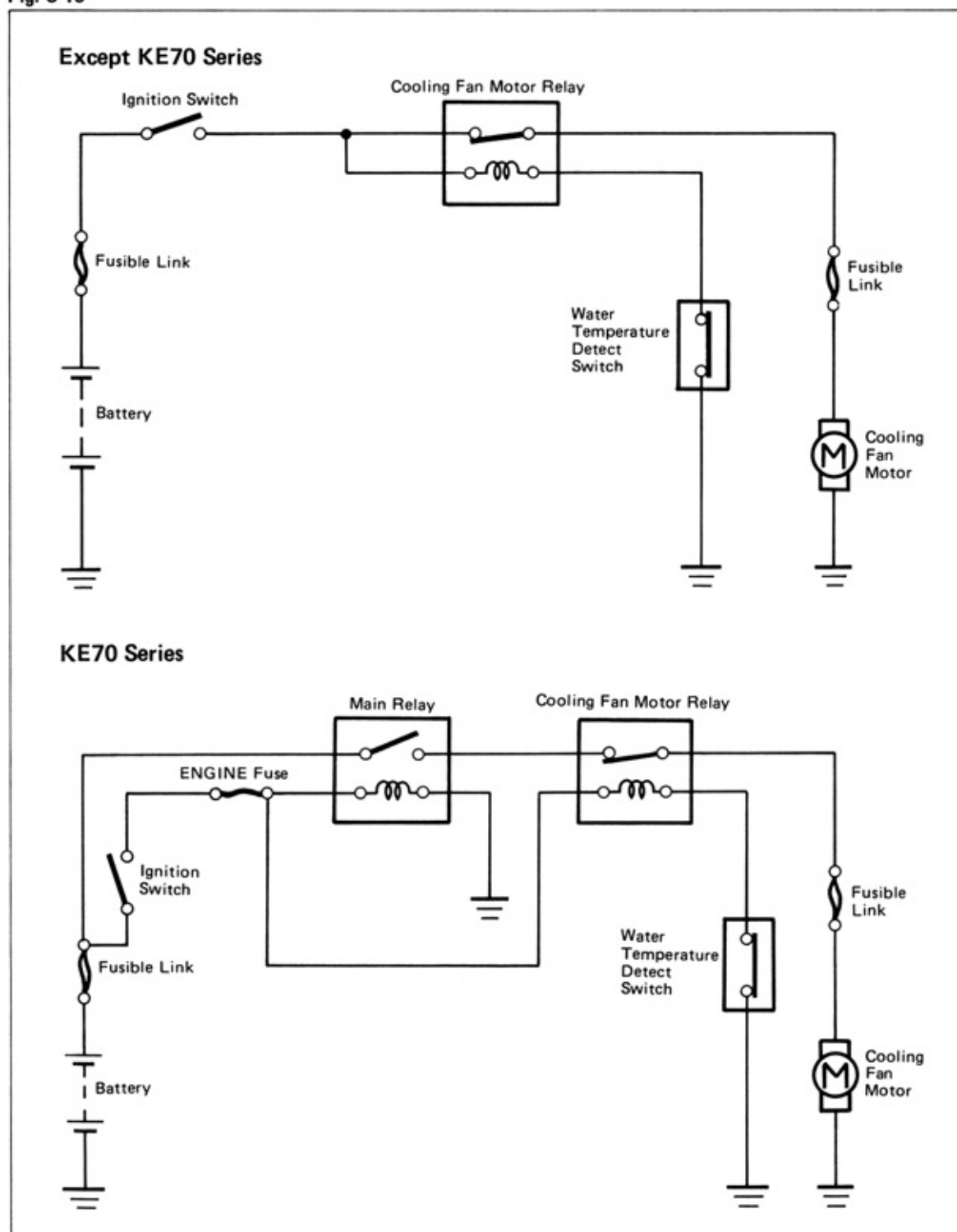
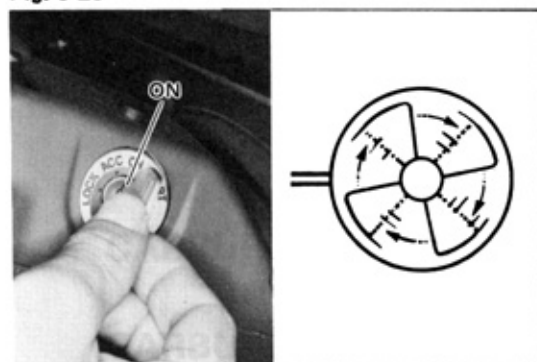
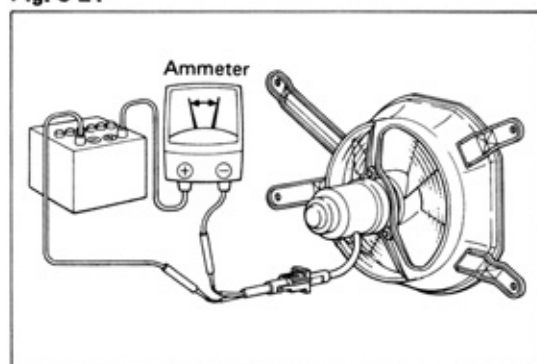


Fig. 5-20

**ON-VEHICLE INSPECTION****Cooling Fan Motor Relay**

1. Disconnect the water temperature detect switch connector.
2. Check to see that the fan rotates when the ignition switch is turned ON.

Fig. 5-21

**Cooling Fan Motor**

Check to see that the motor rotates smoothly within the standard current flow.

**Current:**

**STD 2K, 3K-C, 3K-H (Europe M/T) & 4K-C (USA & Canada)**

**$4.9 \pm 0.5$  A**

**4K (Europe) & 4K-C (Sweden)**

**$3.5 \pm 0.4$  A**

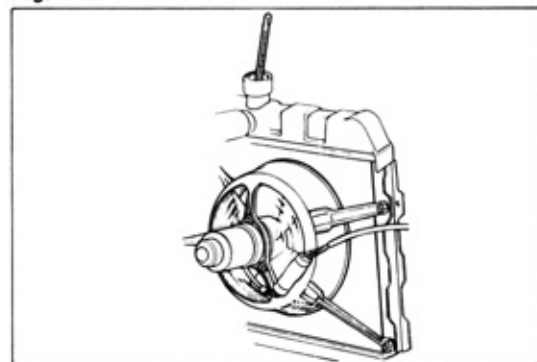
**4K (Europe A/T)**

**$7 \pm 0.8$  A**

**3K-H (w/cooler)**

**$9.5 \pm 1$  A**

Fig. 5-22

**Water Temperature Detect Switch**

1. Raise the coolant temperature by warming up the engine at idle.
2. Check that the fan begins turning when the coolant temperature reaches about  $90^{\circ}\text{C}$  ( $194^{\circ}\text{F}$ ).

