



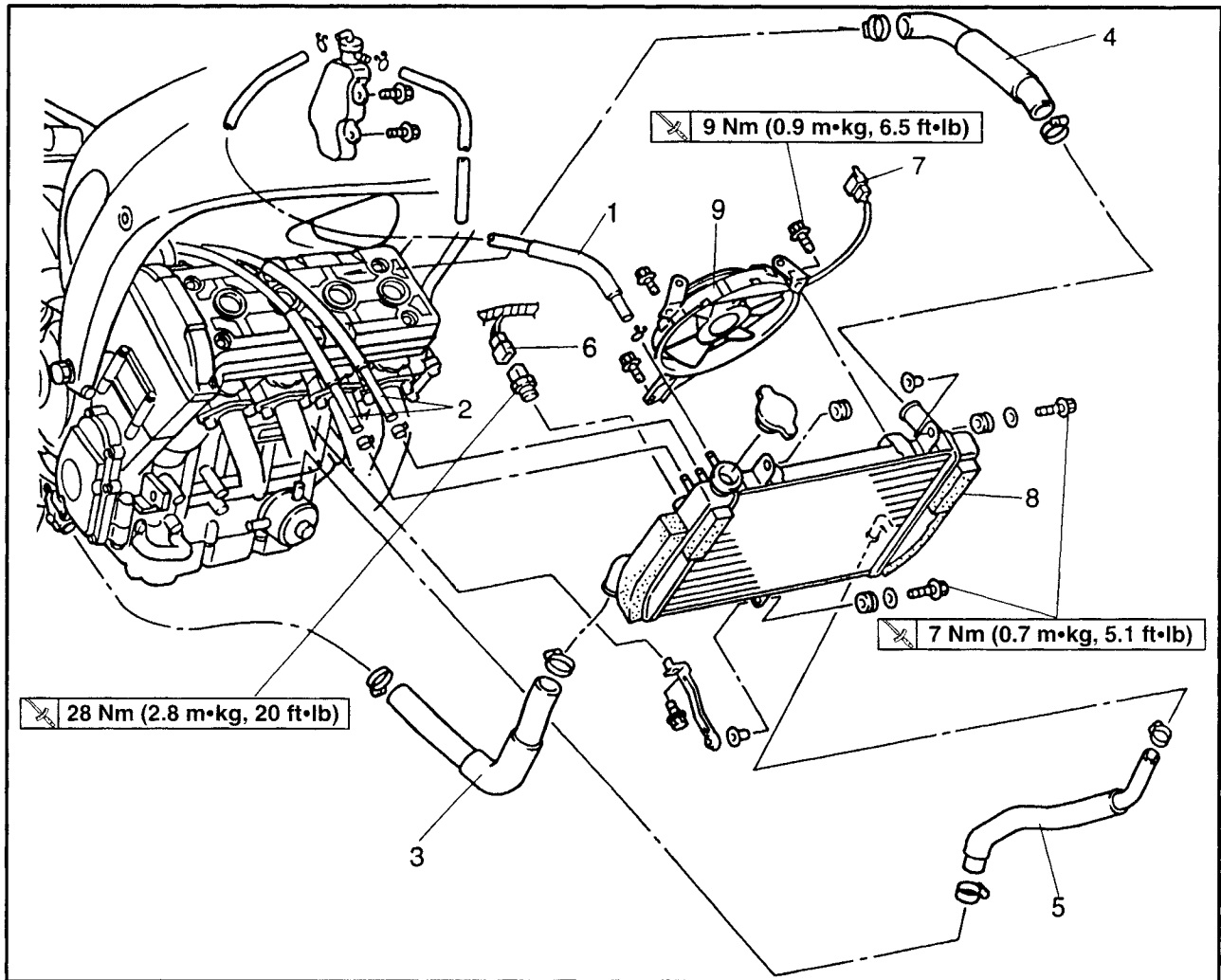
---

## CHAPTER 5. COOLING SYSTEM

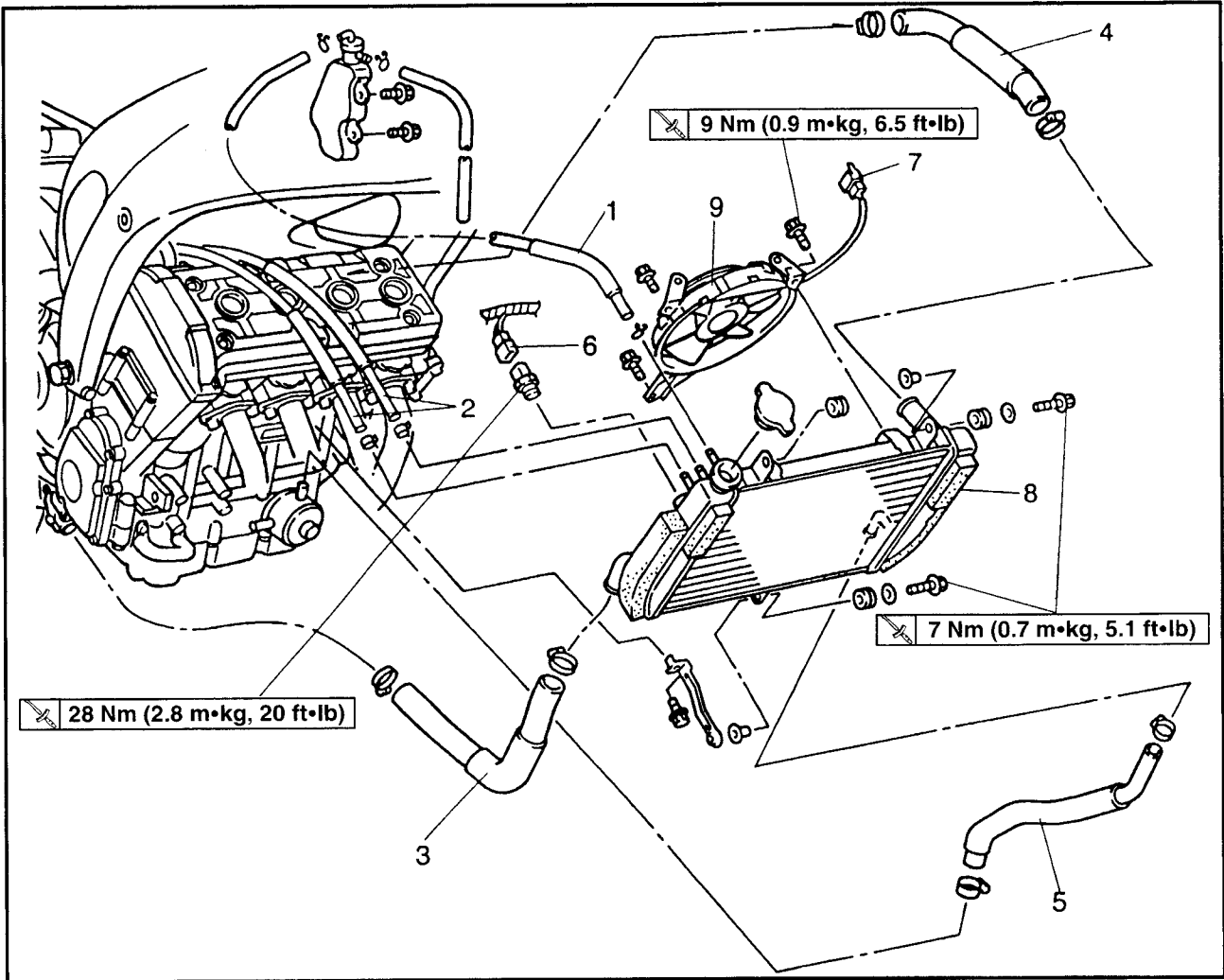
<b>RADIATOR</b> .....	5-1
CHECKING THE RADIATOR .....	5-3
INSTALLING THE RADIATOR .....	5-4
<b>OIL COOLER</b> .....	5-5
CHECKING THE OIL COOLER .....	5-7
INSTALLING THE OIL COOLER .....	5-7
<b>THERMOSTAT</b> .....	5-9
CHECKING THE THERMOSTAT .....	5-11
INSTALLING THE THERMOSTAT .....	5-11
<b>WATER PUMP</b> .....	5-13
DISASSEMBLING THE WATER PUMP .....	5-15
CHECKING THE WATER PUMP .....	5-15
ASSEMBLING THE WATER PUMP .....	5-16

COOLING SYSTEM

RADIATOR



Order	Job/Part	Q'ty	Remarks
	<b>Removing the radiator</b>		
	Rider seat and fuel tank		Remove the parts in the order listed. Refer to "SEATS" and "FUEL TANK" in chapter 3.
	Air filter case and heat protector plate		Refer to "AIRFILTER CASE AND IGNITION COILS" in chapter 3.
	Bottom cowling and side cowlings		Refer to "COWLINGS" in chapter 3.
	Coolant		Drain.
1	Coolant reserver hose	1	
2	Breather hose	2	
3	Radiator outlet hose	1	Disconnect.



Order	Job/Part	Q'ty	Remarks
4	Radiator inlet hose	1	Disconnect.
5	Oil cooler outlet hose	1	
6	Thermo switch coupler	1	Disconnect.
7	Radiator fan motor coupler	1	Disconnect.
8	Radiator	1	
9	Radiator fan	1	
			For installation reverse the removal procedure.





EAS00456

**INSTALLING THE RADIATOR**

## 1. Fill:

- cooling system  
(with the specified amount of the recommended coolant)

Refer to "CHANGING THE COOLANT" in chapter 3.

## 2. Check:

- cooling system  
Leaks → Repair or replace any faulty part.

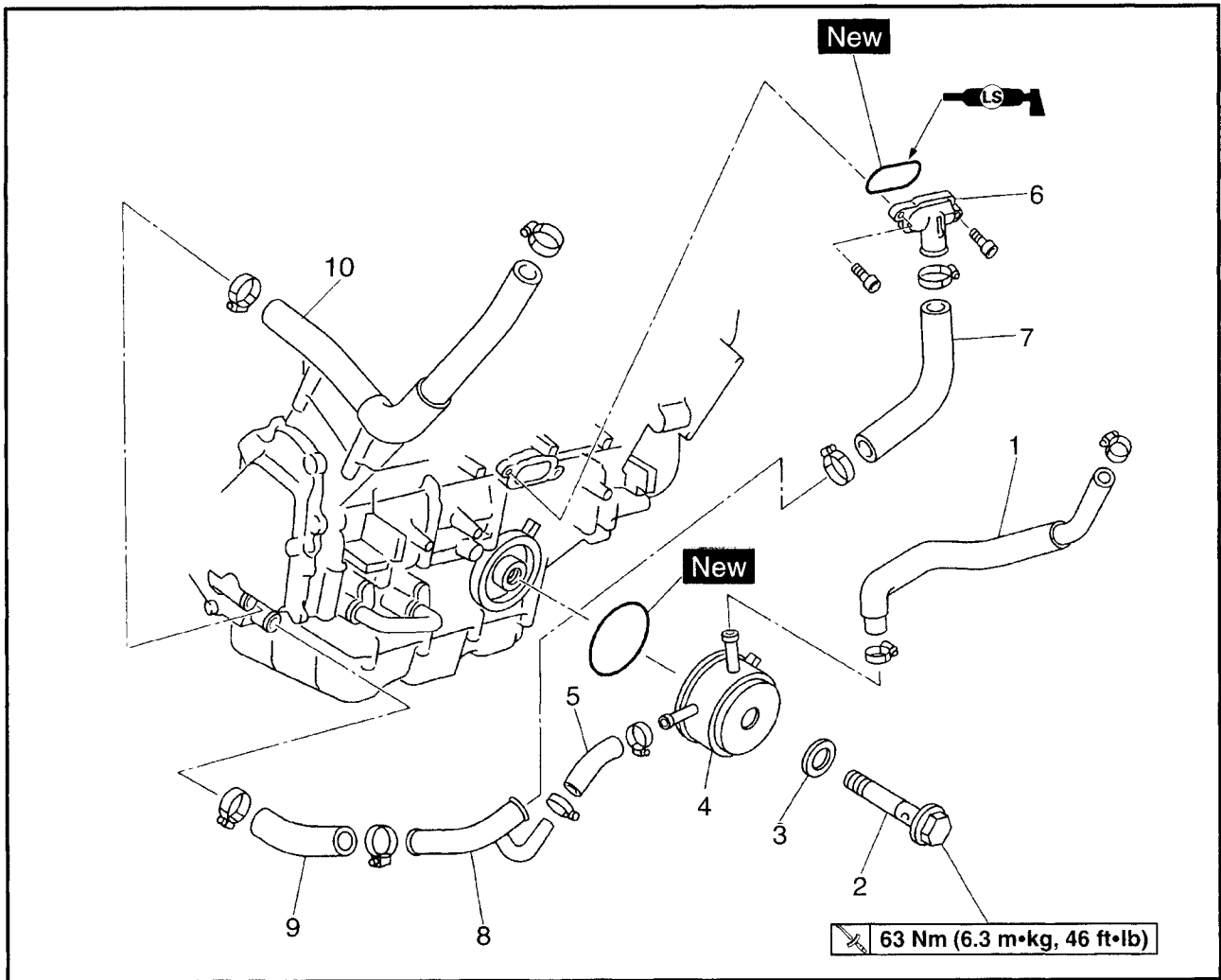
## 3. Measure:

- radiator cap opening pressure  
Below the specified pressure → Replace the radiator cap.

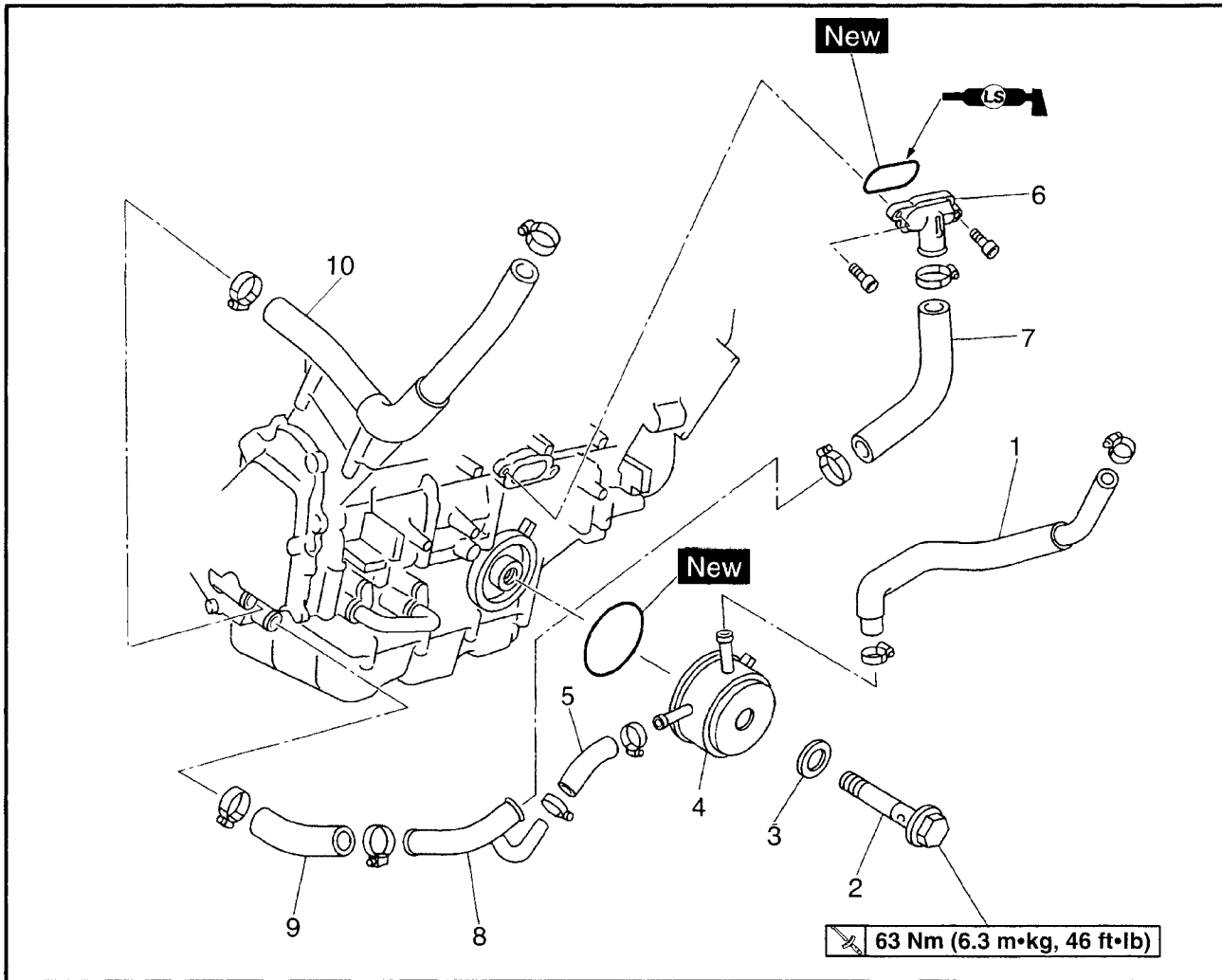
Refer to "CHECKING THE RADIATOR".

EAS00457

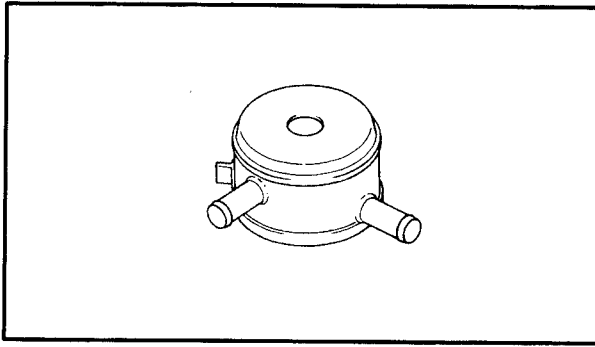
OIL COOLER



Order	Job/Part	Q'ty	Remarks
	<b>Removing the oil cooler</b> Radiator assembly Exhaust pipe assembly Engine oil		Remove the parts in the order listed. Refer to "RADIATOR". Refer to "ENGINE" in chapter 4. Drain. Refer to "CHANGING THE ENGINE OIL" in chapter 3.
1	Oil cooler outlet hose	1	Refer to "INSTALLING THE OIL COOLER".
2	Bolt	1	
3	Washer	1	
4	Oil cooler	1	



Order	Job/Part	Q'ty	Remarks
5	Oil cooler inlet hose	1	For installation, reverse the removal procedure.
6	Water jacket joint	1	
7	Water jacket joint hose	1	
8	Water pump outlet pipe	1	
9	Water pump outlet hose	1	
10	Water pump inlet hose	1	



EAS00458

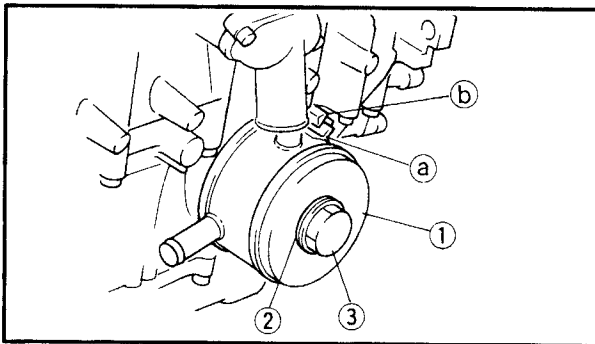
**CHECKING THE OIL COOLER**

1. Check:
  - oil cooler  
Cracks/damage → Replace.
2. Check:
  - oil cooler inlet hose
  - oil cooler outlet hose  
Cracks/damage/wear → Replace.
3. Check:
  - water jacket joint
  - water jacket joint inlet hose
  - water pump outlet hose  
Cracks/damage → Replace.

EBS00459


**INSTALLING THE OIL COOLER**

1. Clean:
  - mating surfaces of the oil cooler and the crankcase  
(with a cloth dampened with lacquer thinner)



2. Install:

- O-ring **New**
- oil cooler ①
- washer ② **New**
- bolt ③

 **63 Nm (6.3 m•kg, 46 ft•lb)**
**NOTE:**

- Before installing the oil cooler, lubricate the oil cooler bolt and O-ring with a thin coat of engine oil.
- Make sure that the O-ring is positioned properly.
- Align the projection (a) on the oil cooler with the slot (b) in the crankcase.

3. Bend the lock washer tab along a flat side of the bolt.





## 4. Fill:

- cooling system  
(with the specified amount of the recommended coolant)  
Refer to "CHANGING THE COOLANT" in chapter 3.
- crankcase  
(with the specified amount of the recommended engine oil)  
Refer to "CHANGING THE ENGINE OIL" in chapter 3.

## 5. Check:

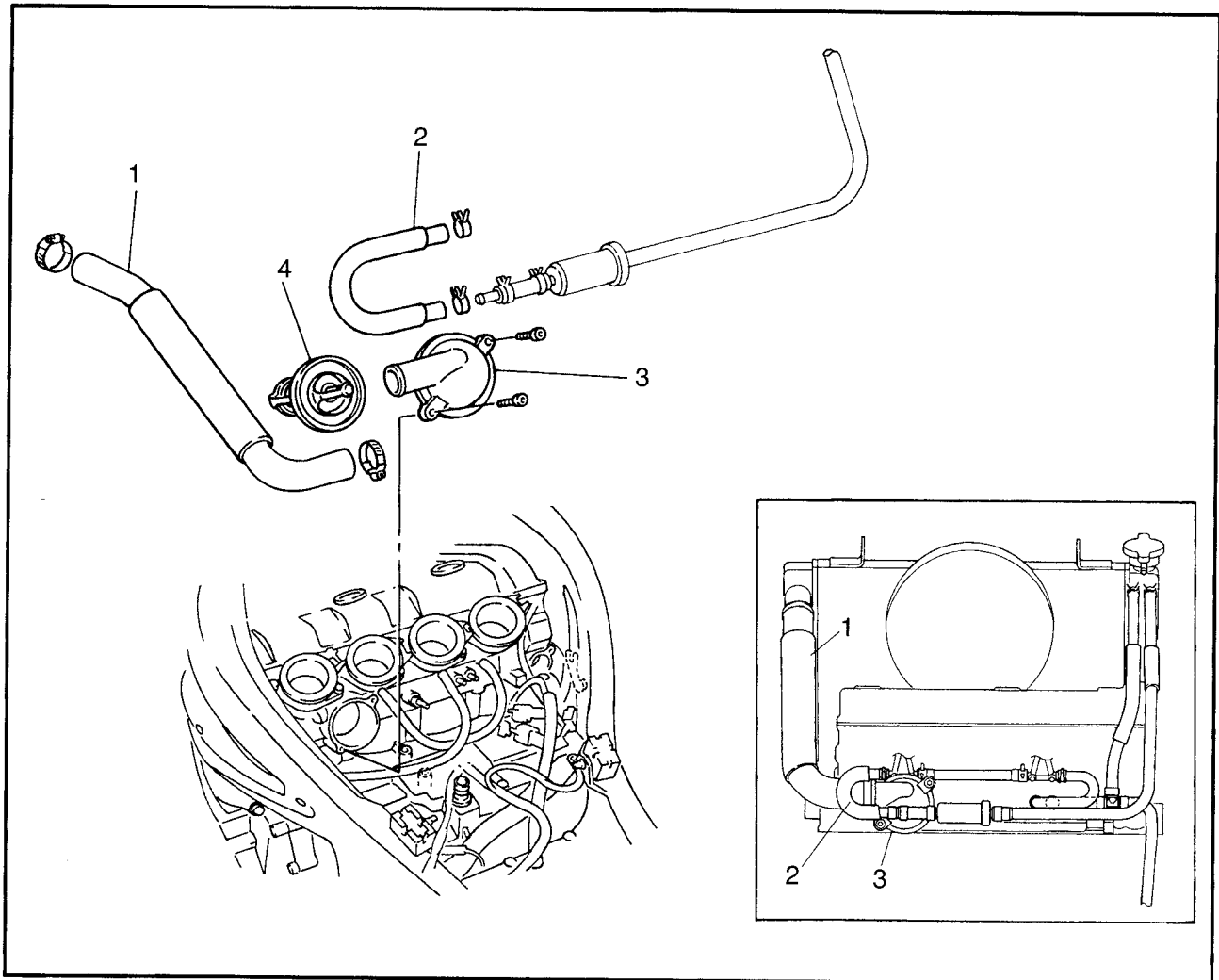
- cooling system  
Leaks → Repair or replace any faulty part.

## 6. Measure:

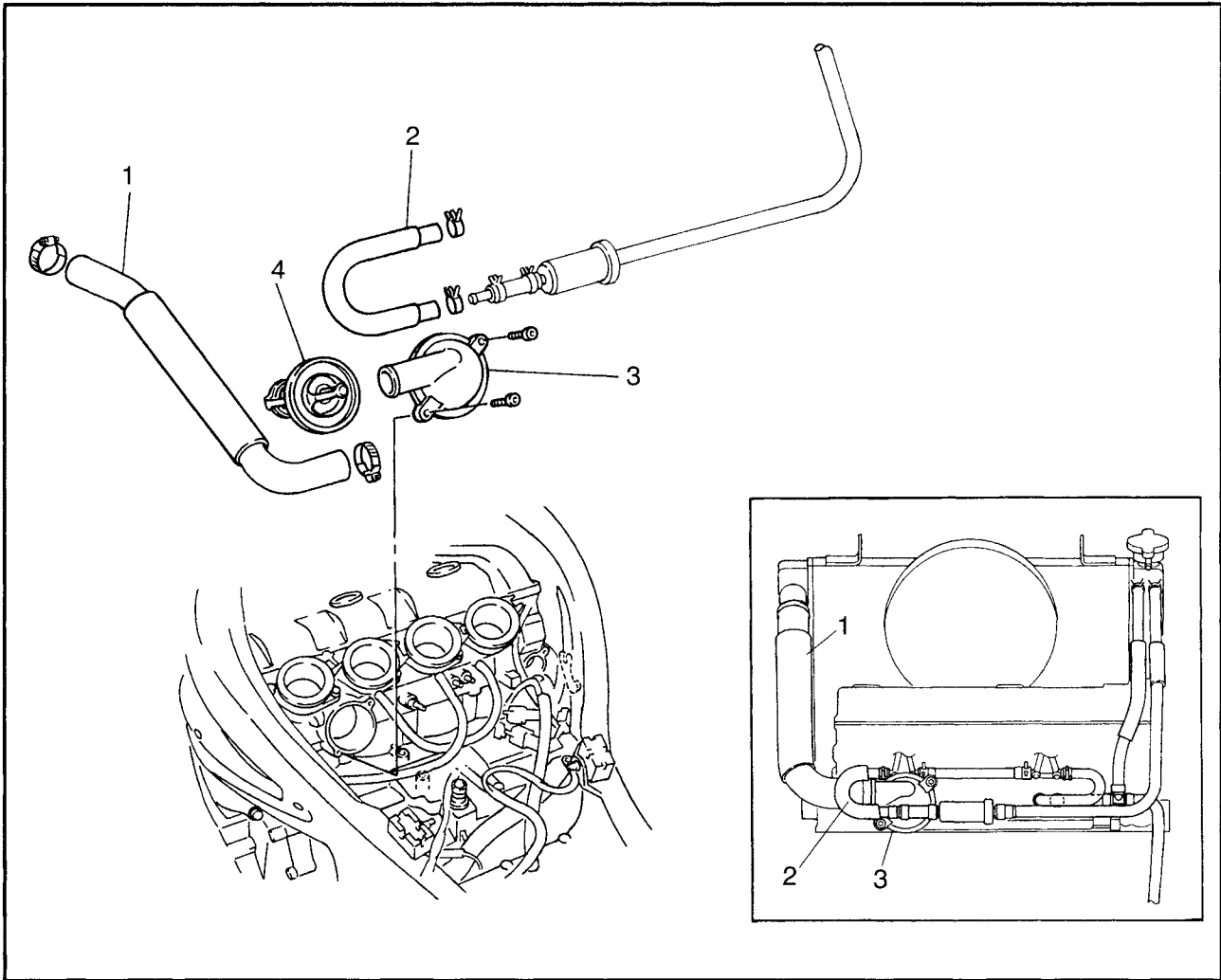
- radiator cap opening pressure  
Below the specified pressure → Replace the radiator cap.  
Refer to "CHECKING THE RADIATOR".



THERMOSTAT



Order	Job/Part	Q'ty	Remarks
	<p><b>Removing the thermostat</b> Rider seat and fuel tank</p>		<p>Remove the parts in the order listed. Refer to "SEAT" and "FUEL TANK" in chapter 3.</p>
	Coolant		<p>Drain.</p>
	Air filter case		<p>Refer to "CHANGING THE COOLANT" in chapter 3.</p>
	Carburetor assembly		<p>Refer to "AIRFILTER CASE AND IGNITION COILS" in chapter 3. Refer to "CARBURETORS" in chapter 6.</p>



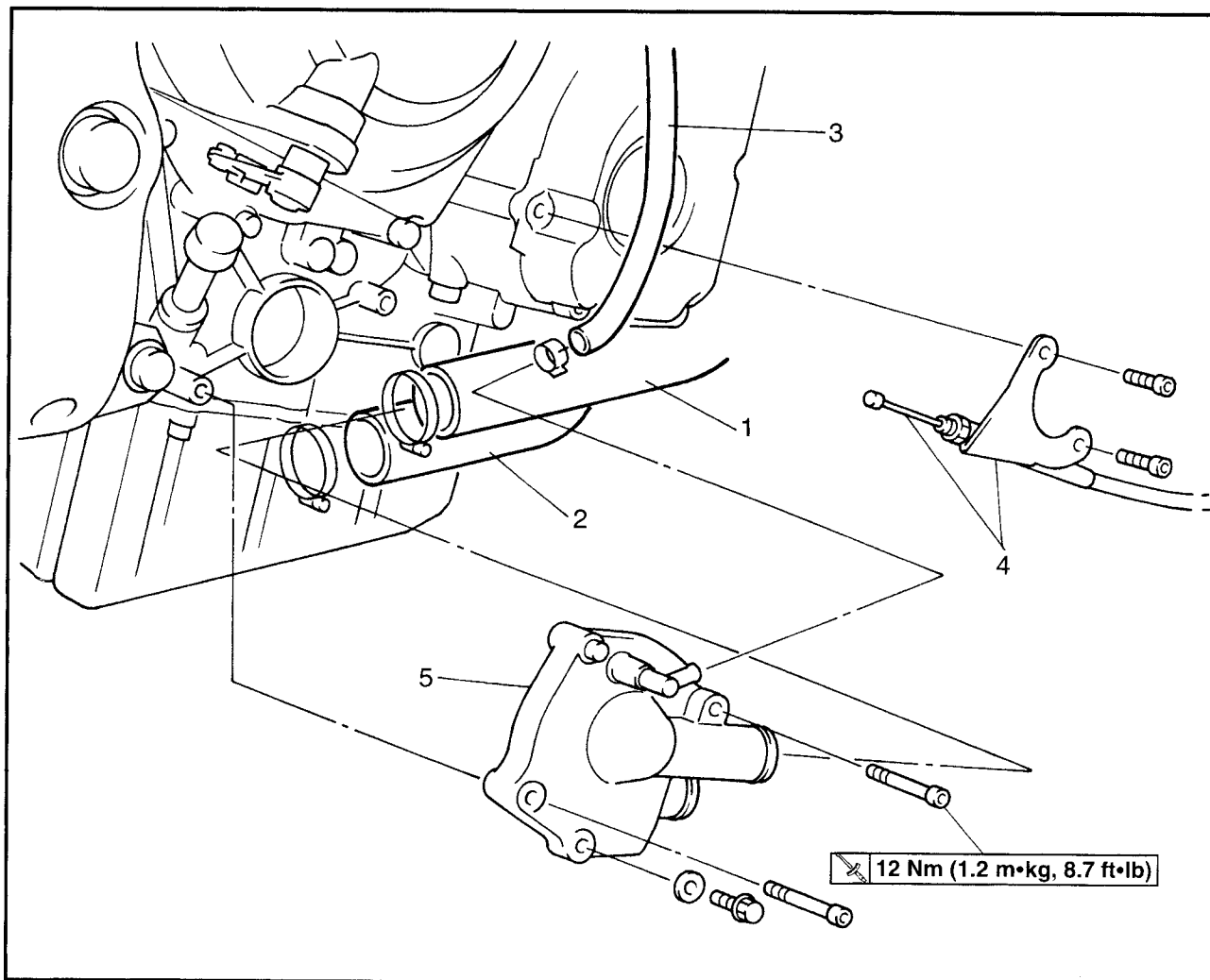
Order	Job/Part	Q'ty	Remarks
1	Radiator inlet hose	1	Refer to "INSTALLING THE THERMOSTAT" For installation, reverses the removal procedure.
2	Carburator outlet hose	1	
3	Thermostat cover	1	
4	Thermostat	1	



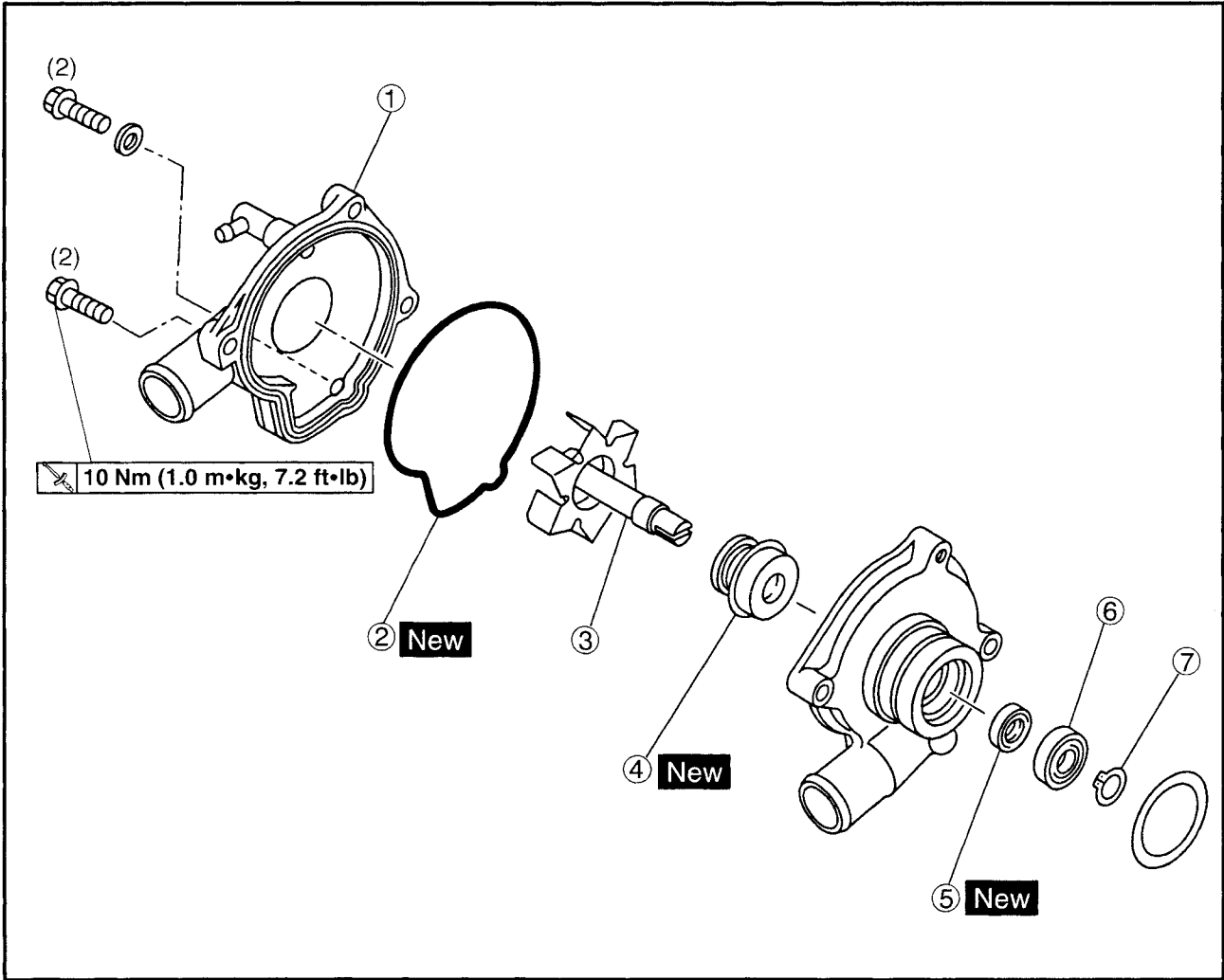


3. Fill:
  - cooling system  
(with the specified amount of the recommended coolant)  
Refer to “CHANGING THE COOLANT” in chapter 3.
4. Check:
  - cooling system  
Leaks → Repair or replace any faulty part.
5. Measure:
  - radiator cap opening pressure  
Below the specified pressure → Replace the radiator cap.  
Refer to “CHECKING THE RADIATOR”.

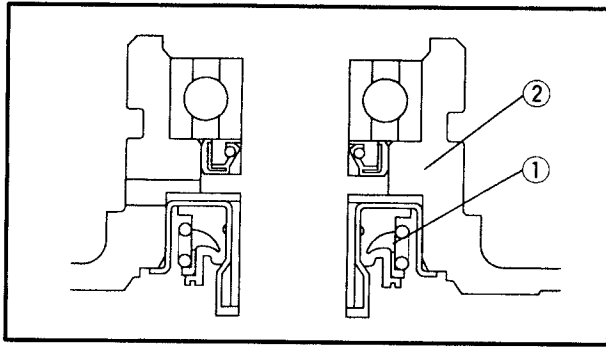
WATER PUMP



Order	Job/Part	Q'ty	Remarks
	<b>Removing the water pump assembly</b> Coolant		Remove the parts in the order listed. Drain. Refer to "CHANGING THE COOLANT" in chapter 3.
1	Water pump inlet hose	1	
2	Water pump outlet hose	1	
3	Water pump hose	1	
4	Clutch wire and holder	1	
5	Water pump	1	
			For installation, reverse the removal procedure.



Order	Job/Part	Q'ty	Remarks
	<b>Disassembling the water pump assembly</b>		Disassemble the parts in the order listed.
①	Water pump cover	1	Refer to "DISASSEMBLING/ ASSEMBLING THE WATER PUMP".
②	O-ring	1	
③	Impeller shaft (along with the impeller)	1	
④	Water pump seal	1	
⑤	Oil seal	1	
⑥	Bearing	1	
⑦	Circlip	1	
			For assembly, reverse the disassembly procedure.



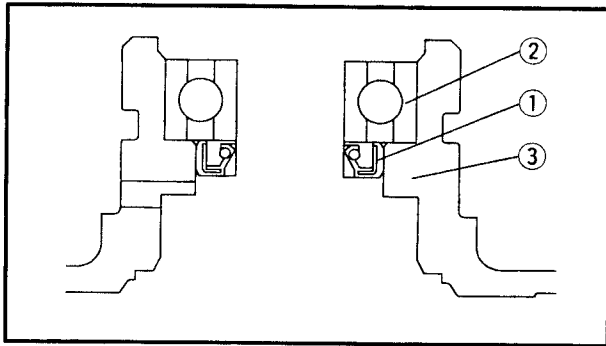
EAS00470

**DISASSEMBLING THE WATER PUMP**

1. Remove:
- water pump seal ①

**NOTE:** \_\_\_\_\_  
Tap out the water pump seal from the inside of the water pump housing.

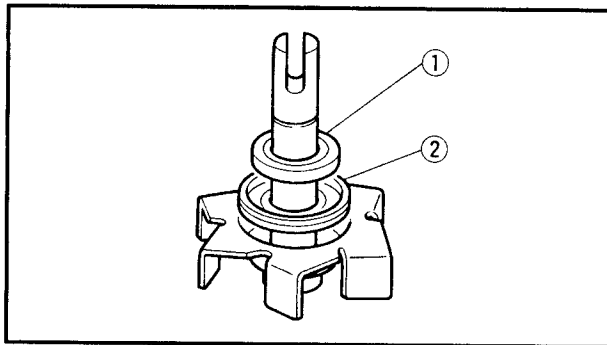
- ② Water pump housing



2. Remove:
- oil seal ①
  - circlip
  - bearing ②

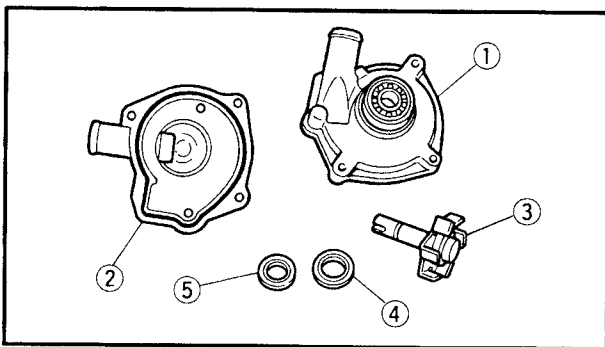
**NOTE:** \_\_\_\_\_  
Tap out the bearing and oil seal from the outside of the water pump housing.

- ③ Water pump housing



3. Remove:
- rubber damper holder ①
  - rubber damper ②  
(from the impeller, with a thin, flat-head screwdriver)

**NOTE:** \_\_\_\_\_  
Do not scratch the impeller shaft.



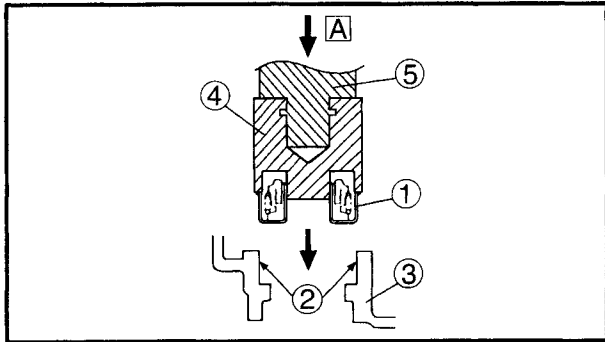
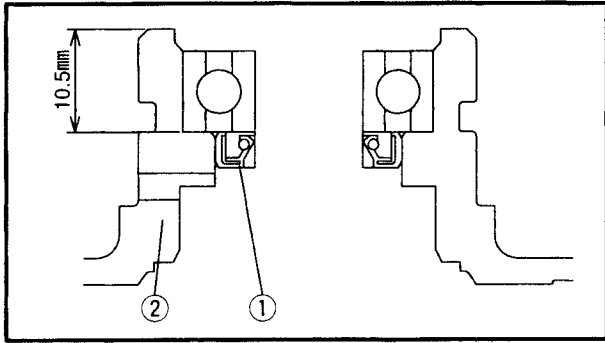
EAS00474

**CHECKING THE WATER PUMP**

1. Check:
- water pump housing cover ①
  - water pump housing ②
  - impeller ③
  - rubber damper ④
  - rubber damper holder ⑤
- Cracks/damage/wear → Replace.

2. Check:
- water pump seal
  - oil seal
- Cracks/damage/wear → Replace.
- bearing
- Rough movement → Replace.





EAS00475

**ASSEMBLING THE WATER PUMP**

1. Install:
- bearing
  - oil seal ① **New**
- (into the water pump housing ②)

**NOTE:**

- Before installing the oil seal, apply tap water or coolant onto its outer surface.
- Install the oil seal with a socket that matches its outside diameter.

2. Install:
- water pump seal ① **New**

**CAUTION:**

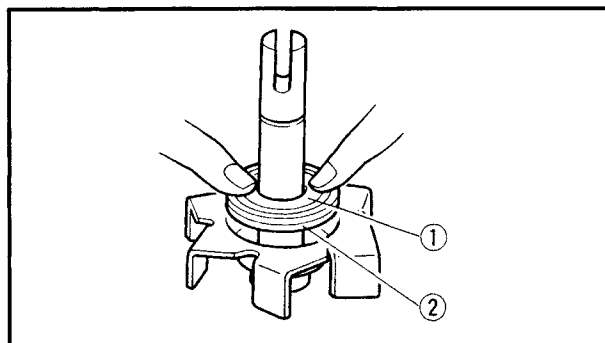
Never lubricate the water pump seal surface with oil or grease.

- NOTE:**
- Install the water pump seal with the special tools.
  - Before installing the water pump seal, apply Yamaha bond No.1215 ② to the water pump housing ③.



**Mechanical seal installer**  
 90890-04078, YM-33221 ④  
**Middle driven shaft bearing driver**  
 90890-04058, YM-04058-1 ⑤  
**Yamaha bond No. 1215**  
 90890-85505, ACC-1100-15-01

**A** Push down.



3. Install:
- rubber damper ① **New**
  - rubber damper holder ② **New**

**NOTE:**

Before installing the rubber damper, apply tap water or coolant onto its outer surface.

