

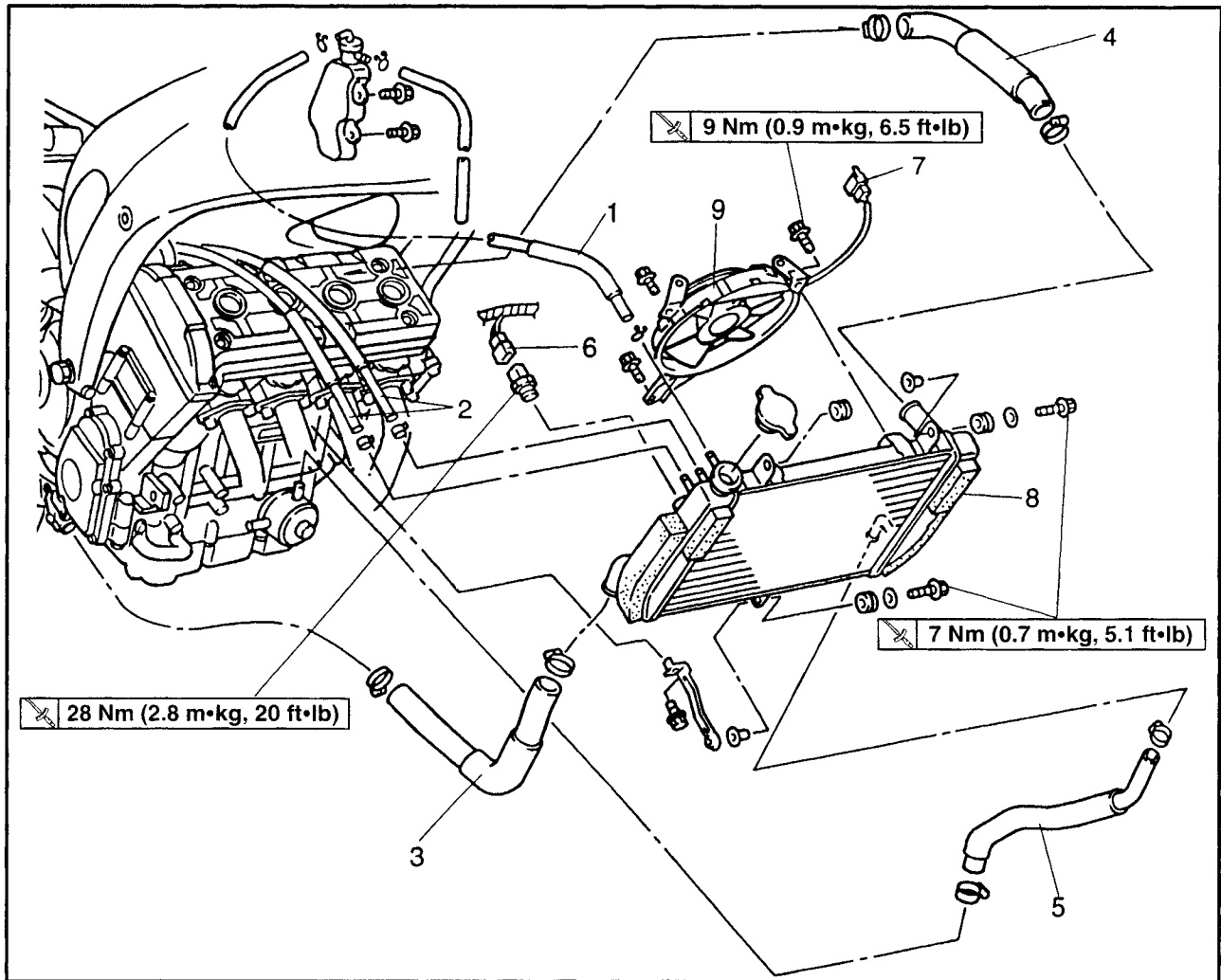


CHAPTER 5. COOLING SYSTEM

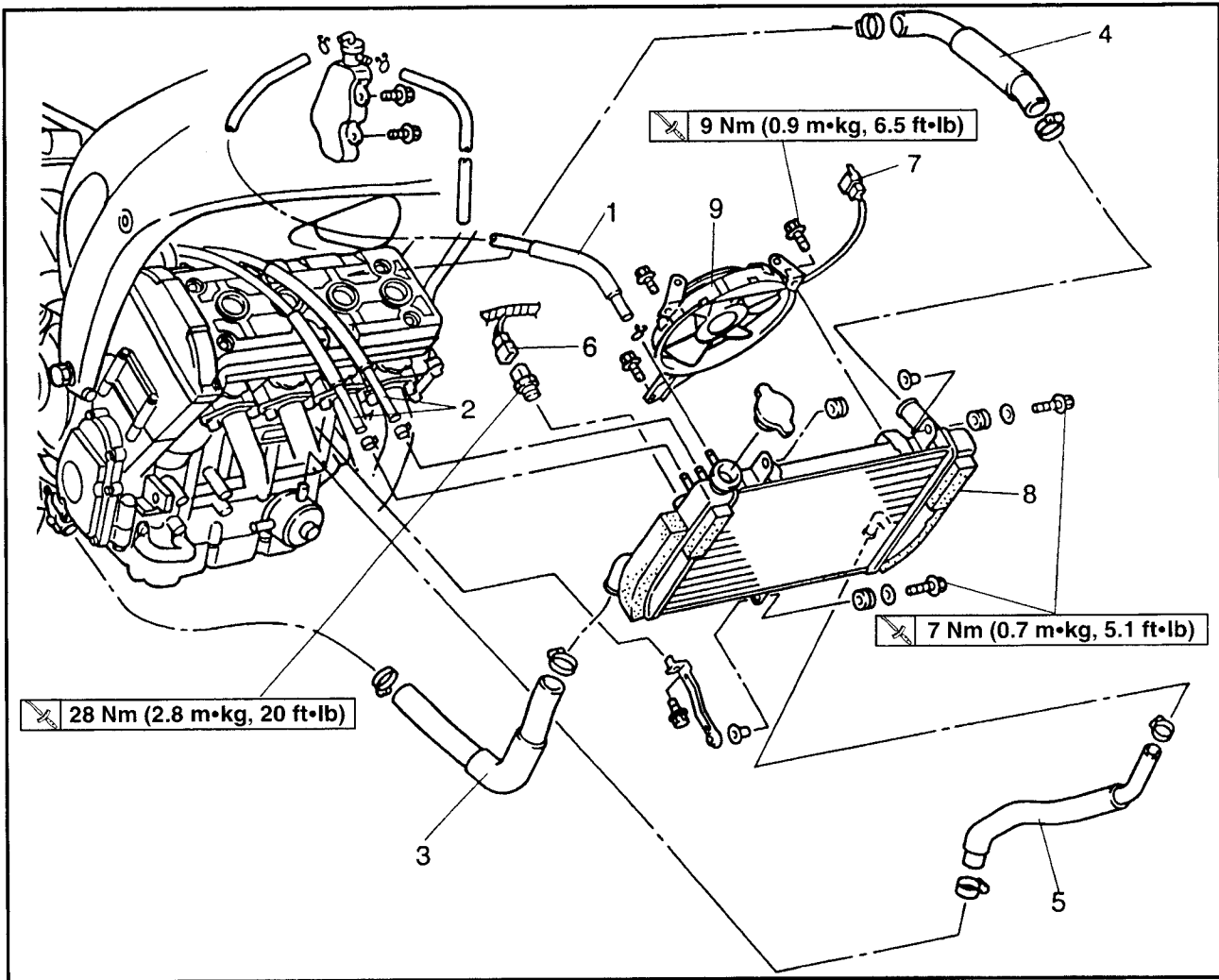
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COOLING SYSTEM

RADIATOR



Order	Job/Part	Q'ty	Remarks
	Removing the radiator		
	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.

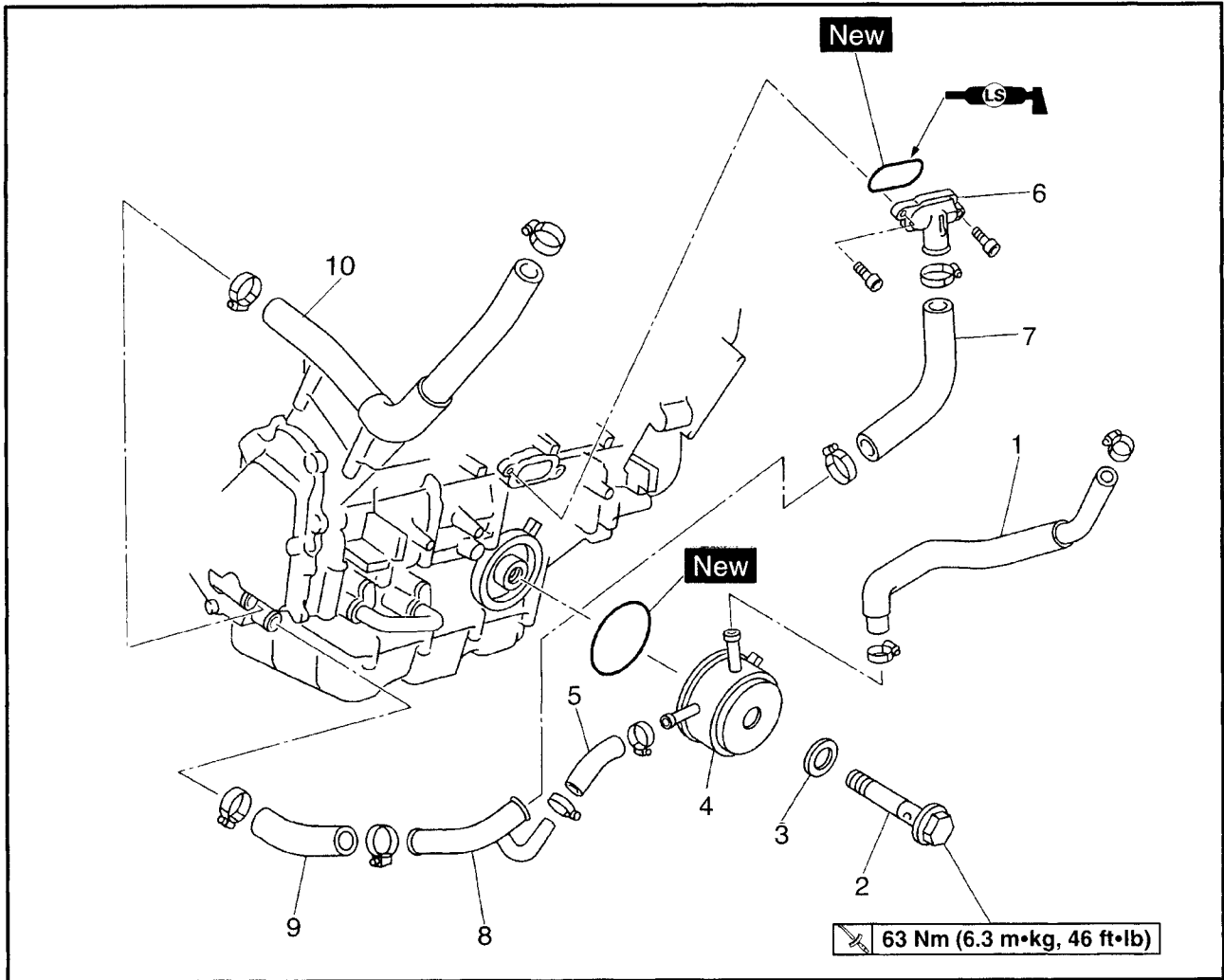
3. Measure:

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

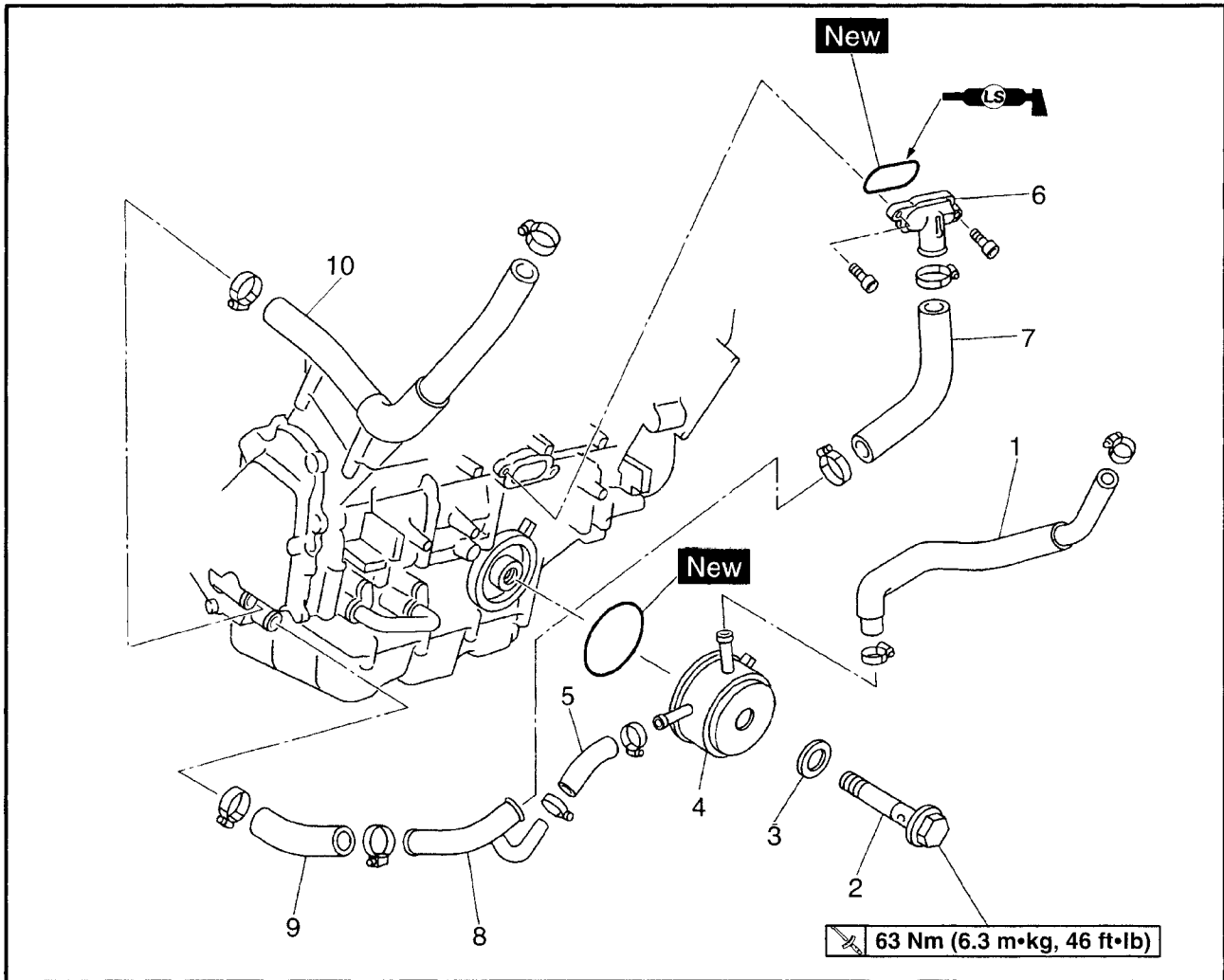
Refer to "CHECKING THE RADIATOR".

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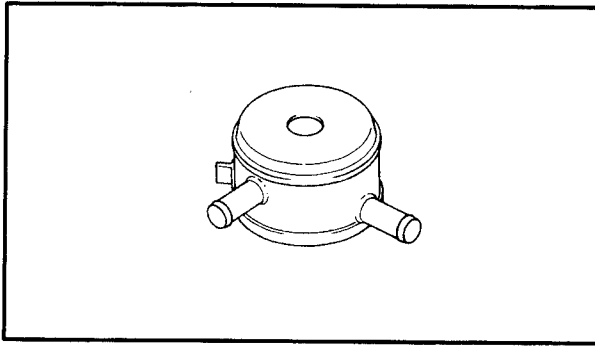
OIL COOLER



Order	Job/Part	Q'ty	Remarks
	Removing the oil cooler 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	



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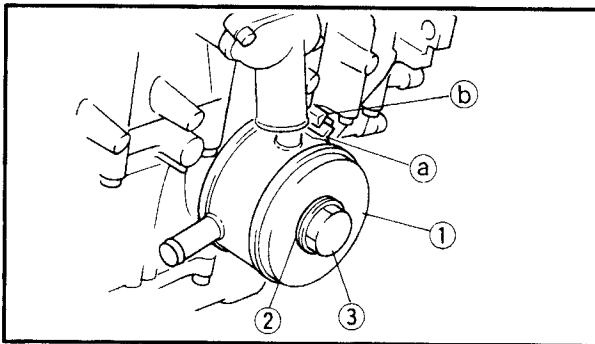
CHECKING THE OIL COOLER

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:

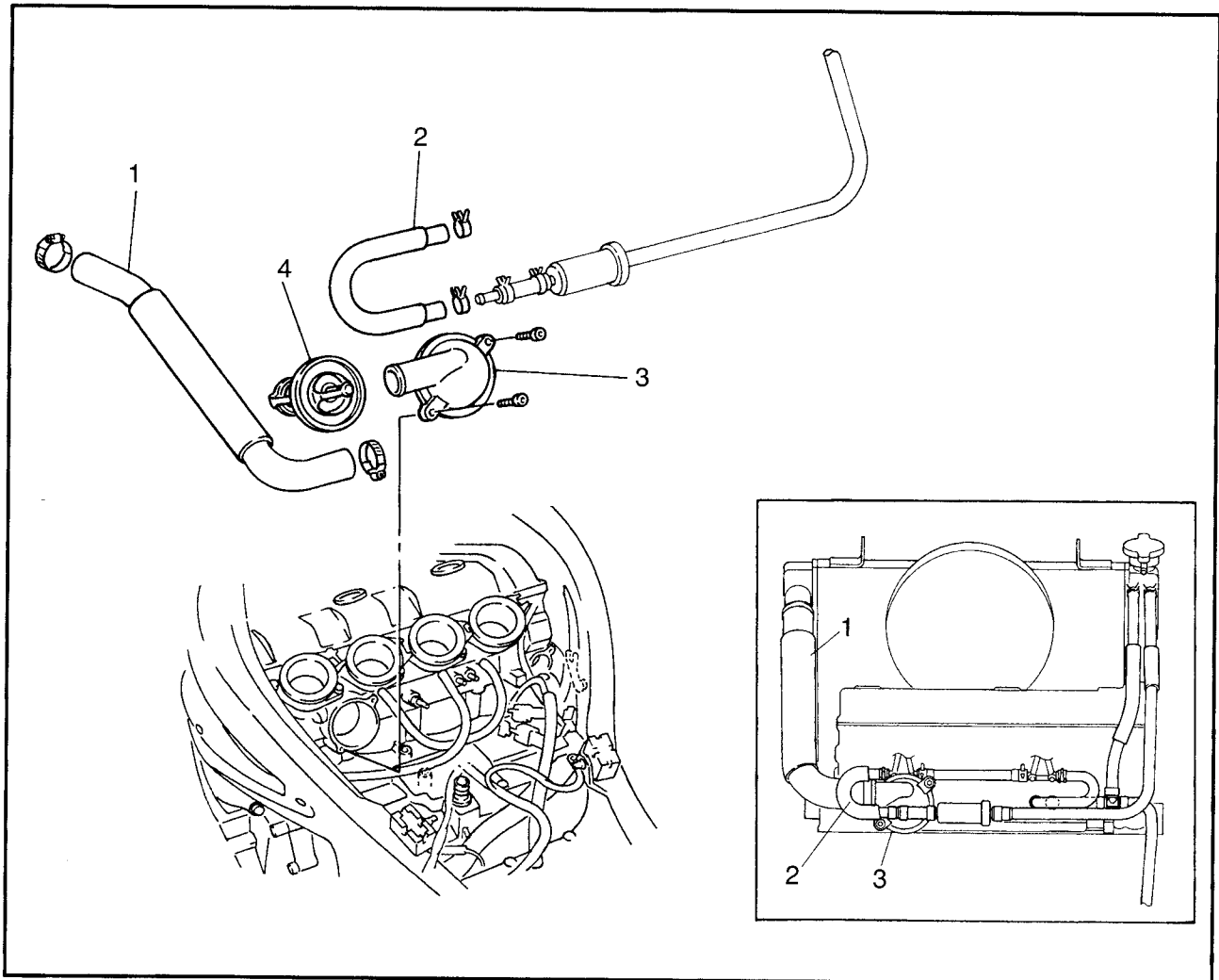
- cooling system
Leaks → Repair or replace any faulty part.

6. Measure:

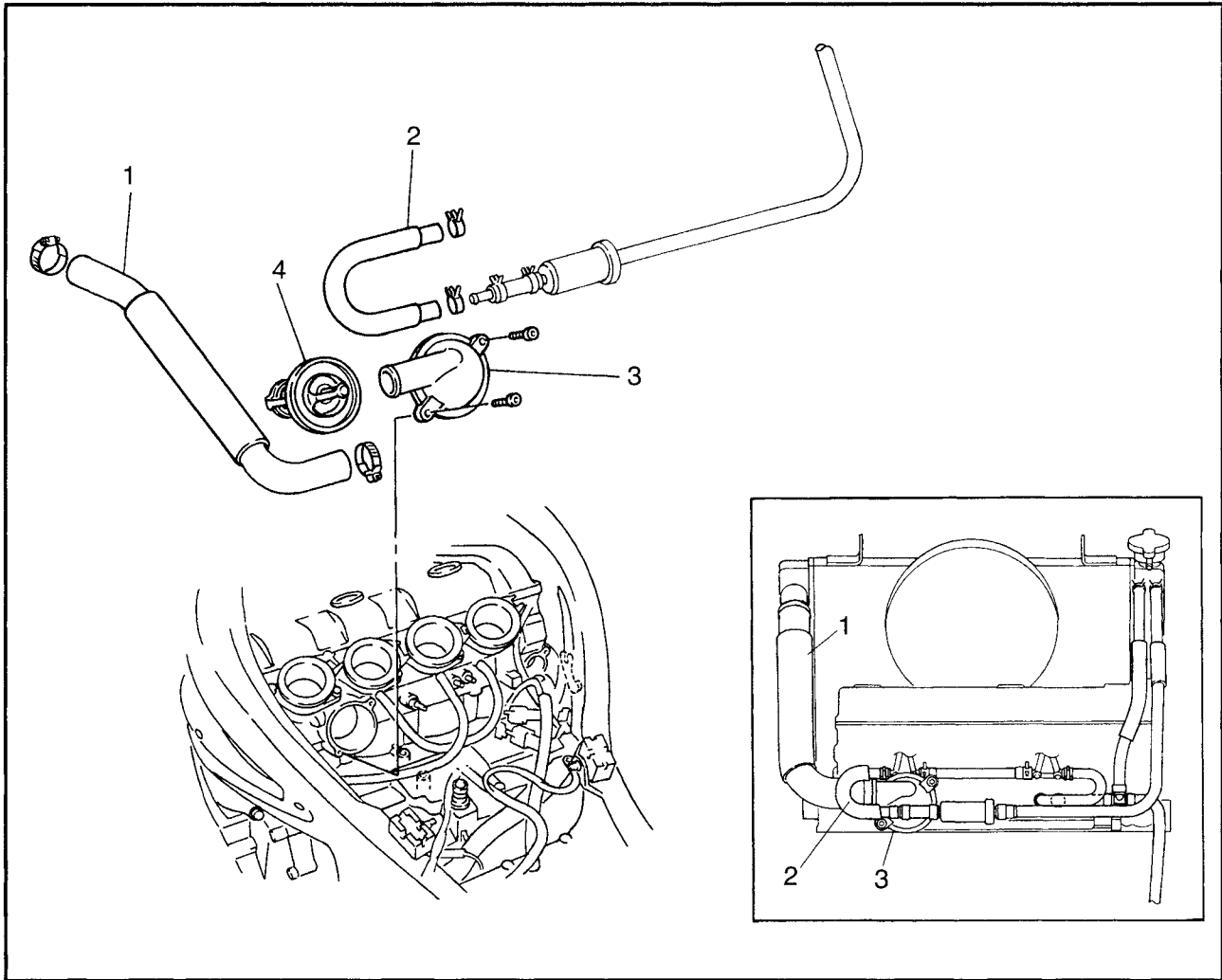
- radiator cap opening pressure
Below the specified pressure → Replace the radiator cap.
Refer to "CHECKING THE RADIATOR".



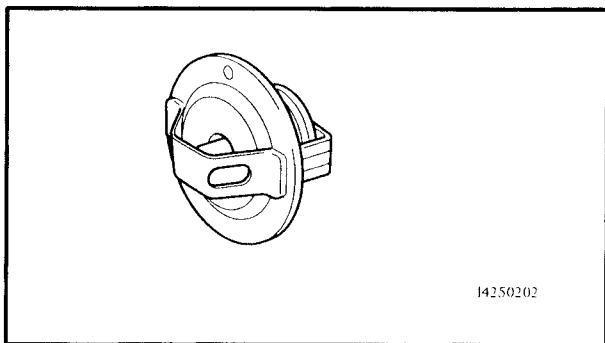
THERMOSTAT



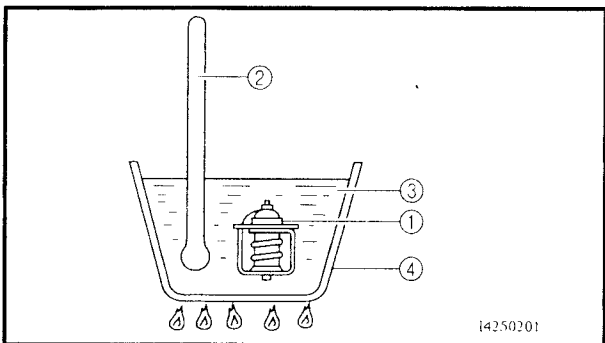
Order	Job/Part	Q'ty	Remarks
	<p>Removing the thermostat Rider seat and fuel tank</p>		<p>Remove the parts in the order listed. Refer to "SEAT" and "FUEL TANK" in chapter 3.</p>
	Coolant		<p>Drain.</p>
	Air filter case		<p>Refer to "CHANGING THE COOLANT" in chapter 3.</p>
	Carburetor assembly		<p>Refer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



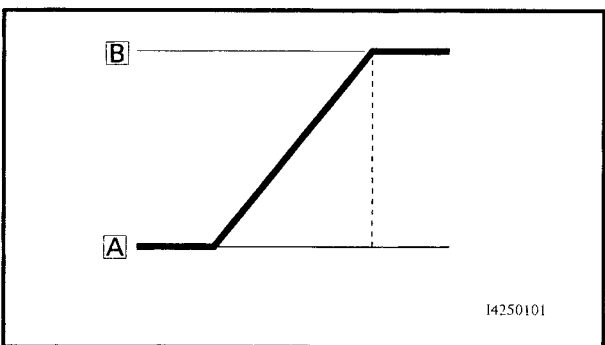
Order	Job/Part	Q'ty	Remarks
1	Radiator inlet hose	1	Refer to "INSTALLING THE THERMOSTAT" For installation, reverses the removal procedure.
2	Carburator outlet hose	1	
3	Thermostat cover	1	
4	Thermostat	1	



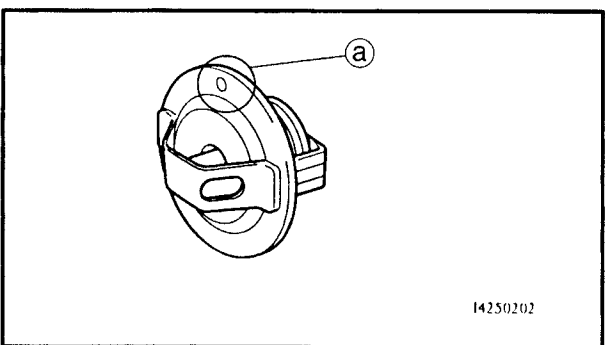
I4250202



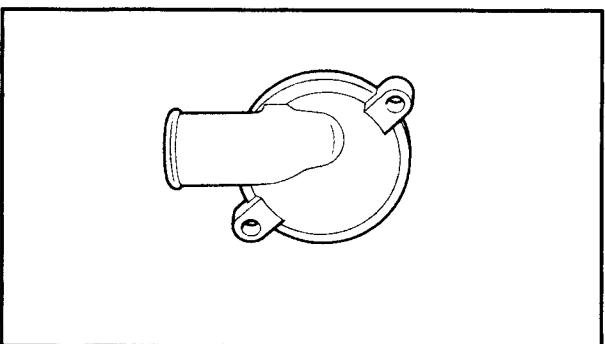
I4250201



I4250101



I4250202



EAS00462

CHECKING THE THERMOSTAT

- 1. Check:
• thermostat (1)
Does not open at 71 ~ 84°C (160 ~ 183°F) (without California) → Replace.
Does not open at 82 ~ 95°C (178 ~ 203°F) (California) → Replace.

- a. Suspend the thermostat in a container filled with water.
b. Slowly heat the water.
c. Place a thermometer in the water.
d. While stirring the water, observe the thermostat and thermometer's indicated temperature.

- (1) Thermostat
(2) Thermometer
(3) Water
(4) Container
[A] Fully closed
[B] Fully opens

NOTE:
If the accuracy of the thermostat is in doubt, replace it. A faulty thermostat could cause serious overheating or overcooling.

- 2. Check:
• thermostat housing cover
• thermostat housing
Cracks/damage → Replace.

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INSTALLING THE THERMOSTAT

- 1. Install:
• thermostat

NOTE:
Install the thermostat with its breather hole (a) facing up.

- 2. Install
• thermostat cover

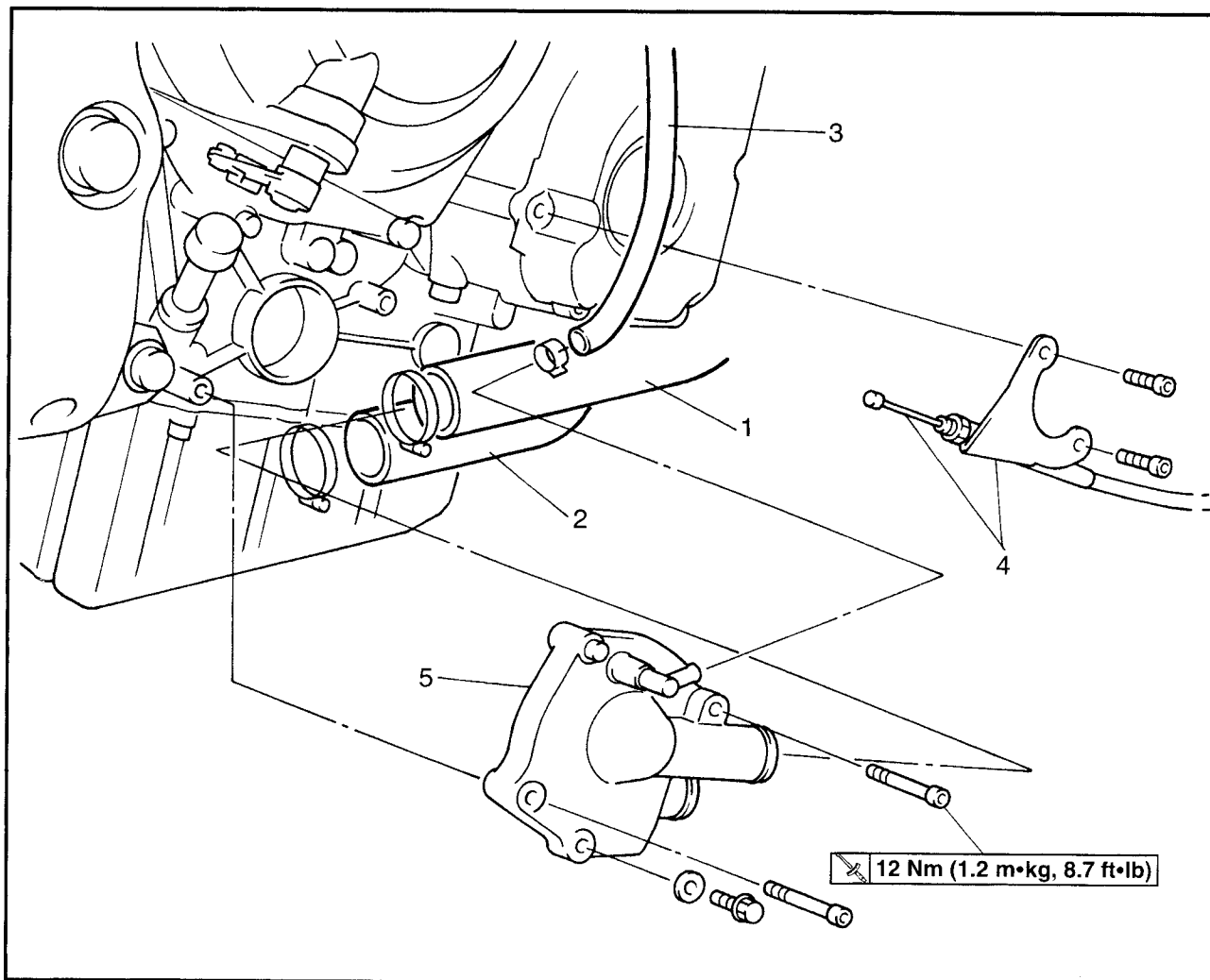
10 Nm (1.0 m•kg, 7.2 ft•lb)

NOTE:
Before installing the thermostat cover to the cylinder head, lubricate the O-ring with a thin coat of lithium soap base grease.

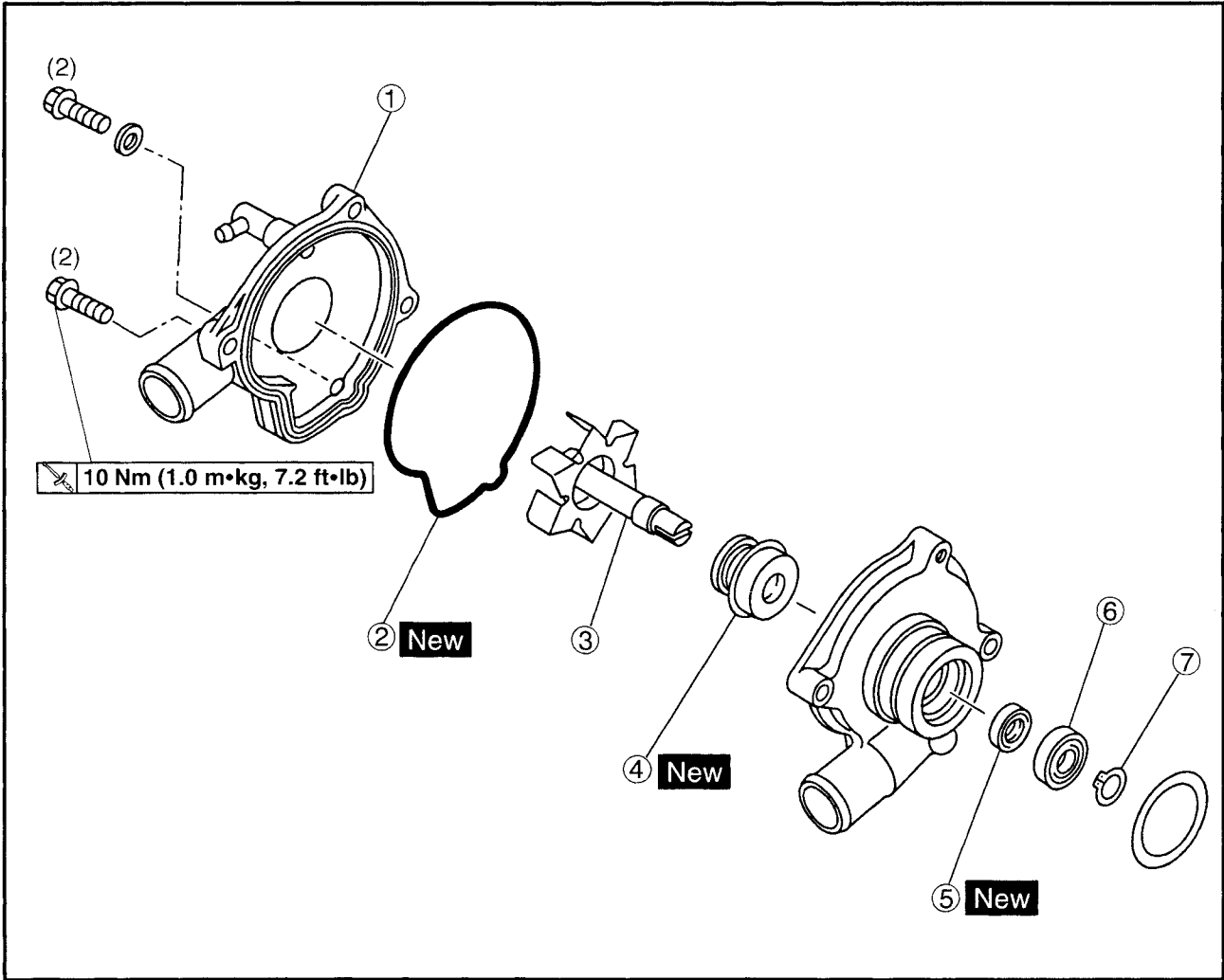


3. Fill:
 - cooling system
(with the specified amount of the recommended coolant)
Refer to “CHANGING THE COOLANT” in chapter 3.
4. Check:
 - cooling system
Leaks → Repair or replace any faulty part.
5. Measure:
 - radiator cap opening pressure
Below the specified pressure → Replace the radiator cap.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

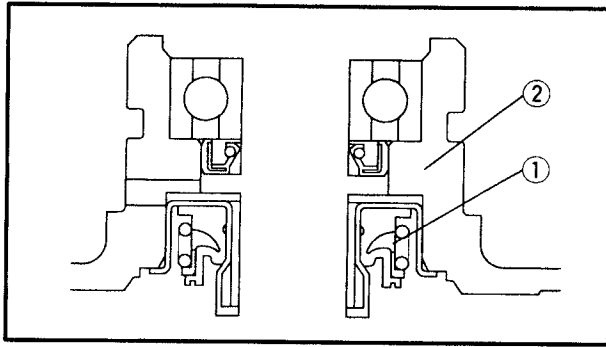
WATER PUMP



Order	Job/Part	Q'ty	Remarks
	Removing the water pump assembly 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
	Disassembling the water pump assembly		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.



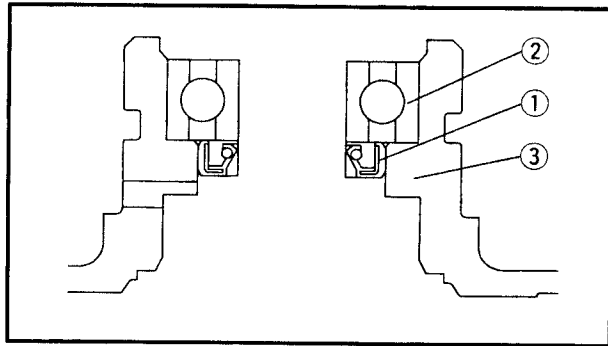
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DISASSEMBLING THE WATER PUMP

1. Remove:
- water pump seal ①

NOTE: _____
Tap out the water pump seal from the inside of the water pump housing.

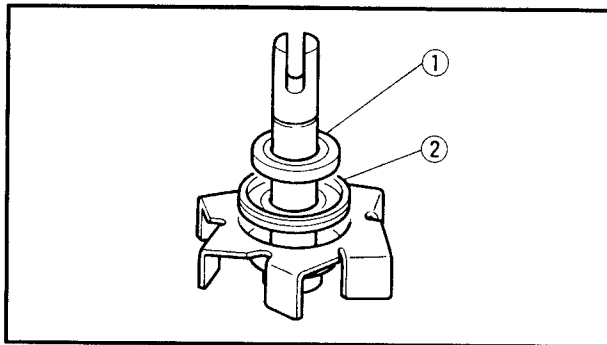
- ② Water pump housing



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

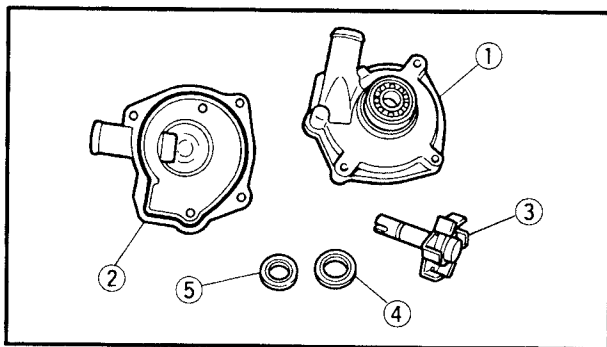
NOTE: _____
Tap out the bearing and oil seal from the outside of the water pump housing.

- 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.

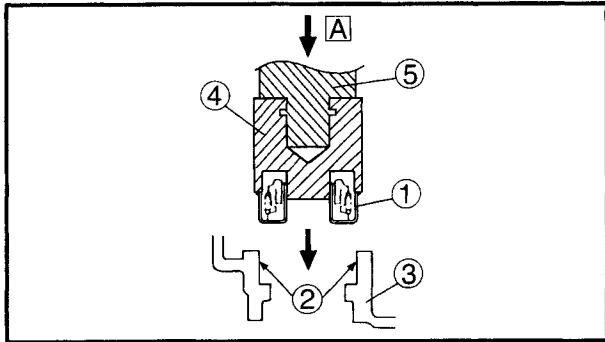
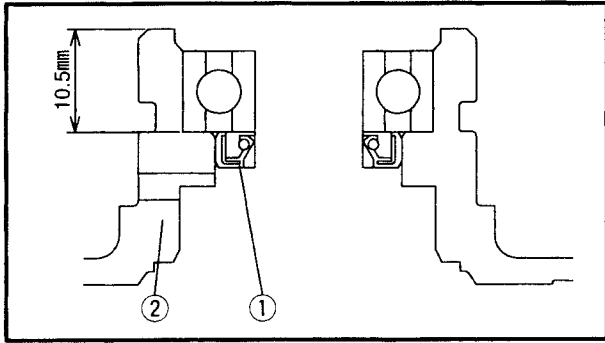


EAS00474

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.

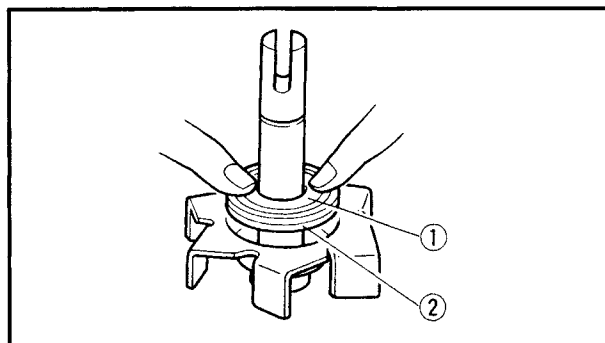
NOTE: _____

- 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.

