

# ENGINE

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## ENGINE COMPONENTS REMOVABLE WITH ENGINE IN PLACE

The parts listed below can be removed and reinstalled without removing the engine from the frame. Refer to the page listed in this section for removal and reinstallation instructions.

### ENGINE CENTER

PARTS	REMOVAL	INSTALLATION
Inspection cap	3-11	3-71
PAIR pipe	3-11	3-71
Starter motor	3-14	3-64
Oil filter	3-17	3-59

### ENGINE LEFT SIDE

PARTS	REMOVAL	INSTALLATION
Neutral switch	3-18	3-58
Generator	3-18	3-57
Water pump	3-19	3-56
Secondary driven bevel gear	3-19	3-55

### ENGINE RIGHT SIDE

PARTS	REMOVAL	INSTALLATION
Clutch	3-14	3-61
Oil pump	3-16	3-60
Gearshift	3-16	3-59
Primary drive gear	3-17	3-59
Driveshaft bolt/Secondary driven gearshaft nut	3-17	3-56

## ENGINE REMOVAL AND INSTALLATION

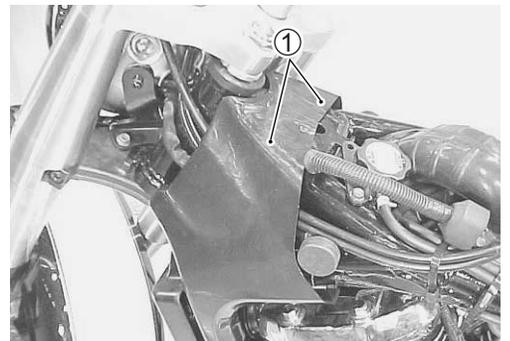
### ENGINE REMOVAL

Before taking the engine out of the frame, wash the engine using a steam cleaner. Engine removal is sequentially explained in the following steps. Reinstall the engine by reversing the removal procedure.

- Drain engine oil. (☞ 2-8)
- Drain engine coolant. (☞ 2-13)
- Remove the seats. (☞ 7-2)
- Remove the fuel tank. (☞ 5-3)
- Disconnect the battery ⊖ lead wire.



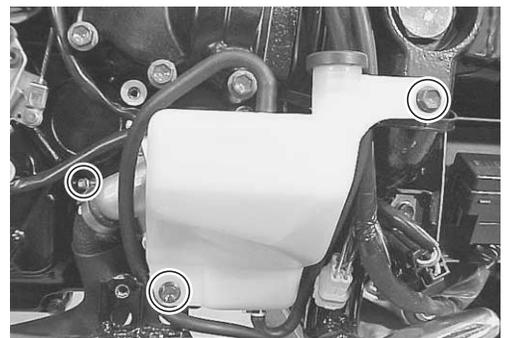
- Remove the frame head covers ①.



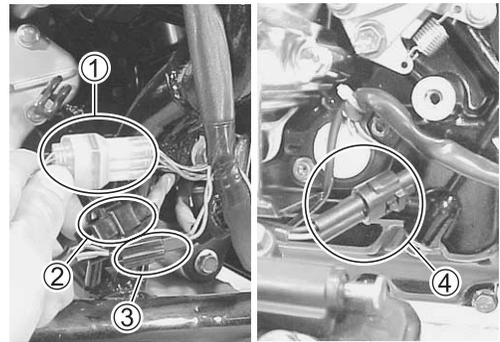
- Remove the radiator. (☞ 6-4)



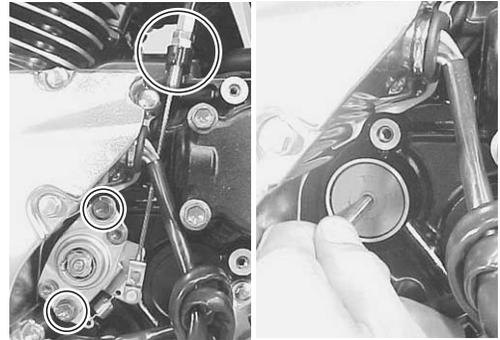
- Remove the left frame cover and the secondary gear case cover.
- Remove the engine coolant reservoir tank.



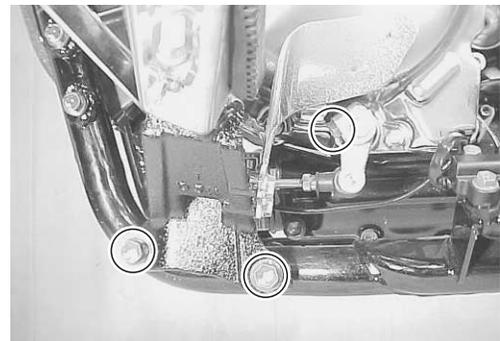
- Disconnect the neutral switch lead wire coupler ①.
- Disconnect the generator lead wire coupler ② and the signal generator lead wire coupler ③.
- Disconnect the side-stand switch lead wire coupler ④.



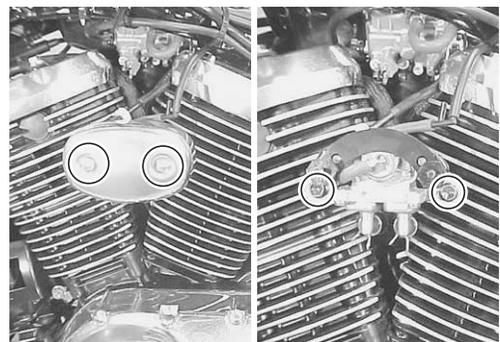
- Remove the clutch release mechanism.
- Remove the push rod.



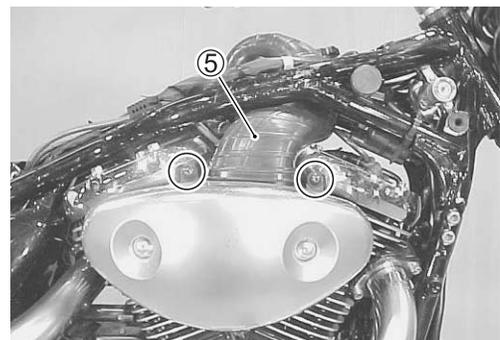
- Remove the left footrest and the gearshift lever.



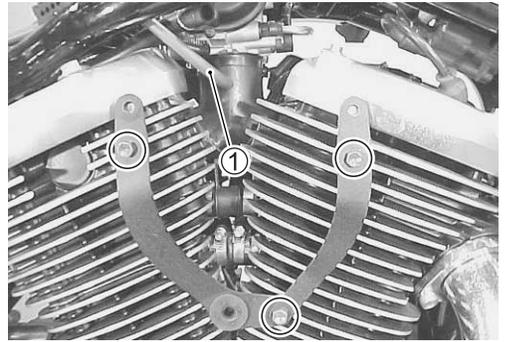
- Remove the PAIR (AIR SUPPLY) cover.
- Remove the PAIR system.



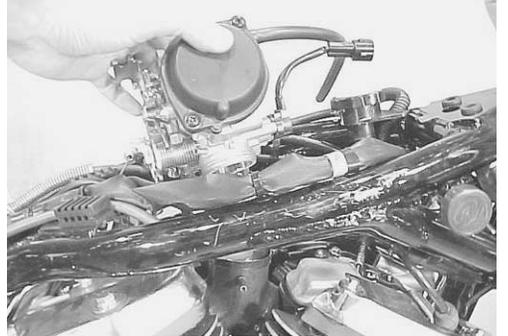
- Remove the air cleaner box and the outlet tube ⑤.



- Remove the air cleaner box bracket.
- Disconnect the negative pressure hose ①.



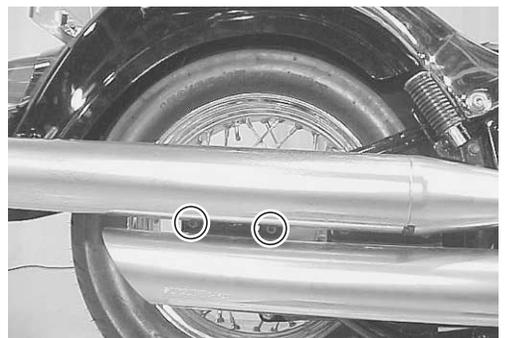
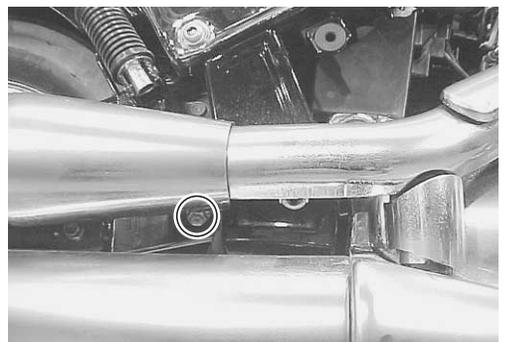
- Remove the carburetor.  
Carburetor removal  5-15
- Remove the spark plug caps.



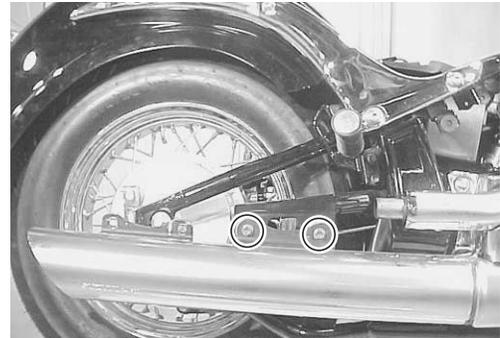
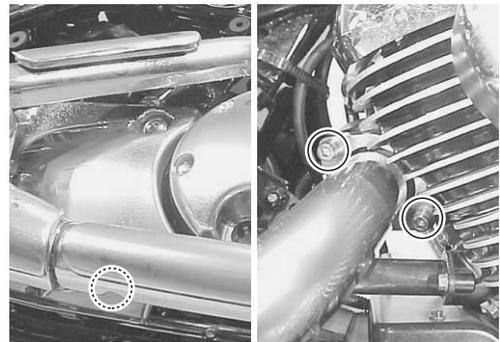
- Remove the right frame cover.



- Remove the No. 1 muffler.



- Remove the No. 1 exhaust pipe and the No. 2 muffler.



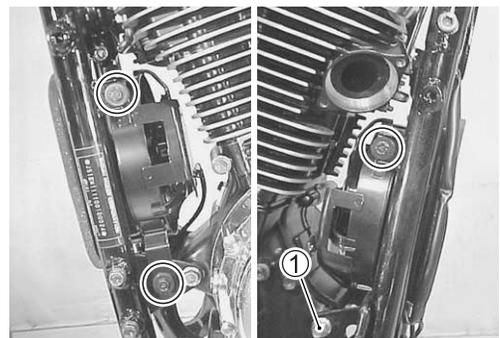
- Remove the No.2 exhaust pipe.



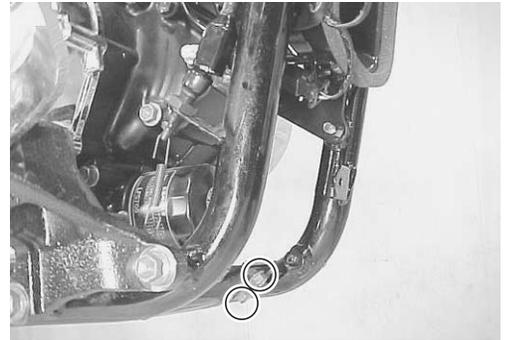
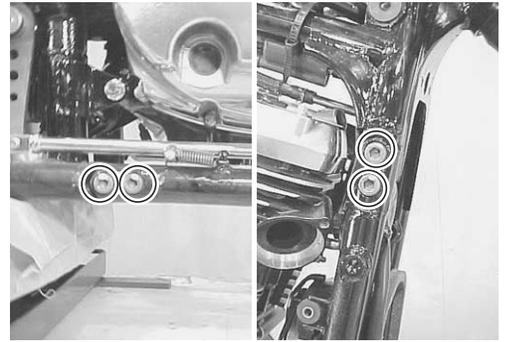
- Remove the rear clutch cover.



- Remove the cooling fan mounting bolts.
- Remove the engine mounting bolt ①.



- Remove the frame down tube.



- Support the engine with an engine jack.
- Remove the engine mounting bolts and nuts.
- Gradually lower the engine.



## ENGINE INSTALLATION

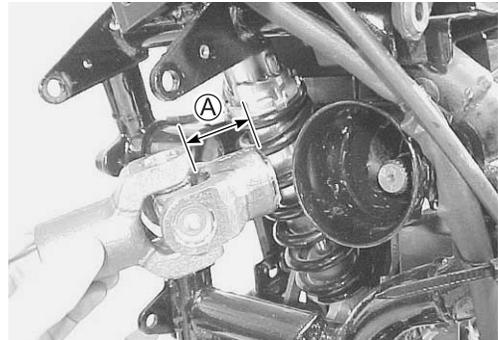
Install the engine in the reverse order of engine removal.

Pay attention to the following points:

- Install the universal joint.

**NOTE:**

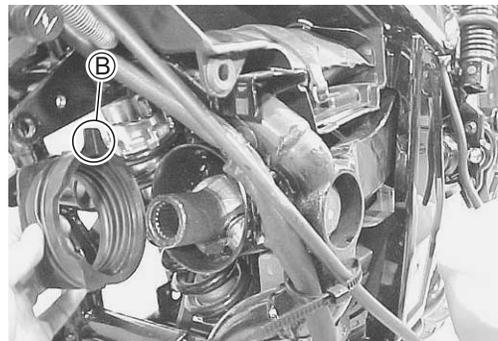
*Be sure to face the short portion **A** backward when installing it.*



- Install the boot.

**NOTE:**

*Make sure that the "UP" mark **B** faces up.*



- Gradually raise the engine, and then engage the secondary driven gear shaft to the universal joint.

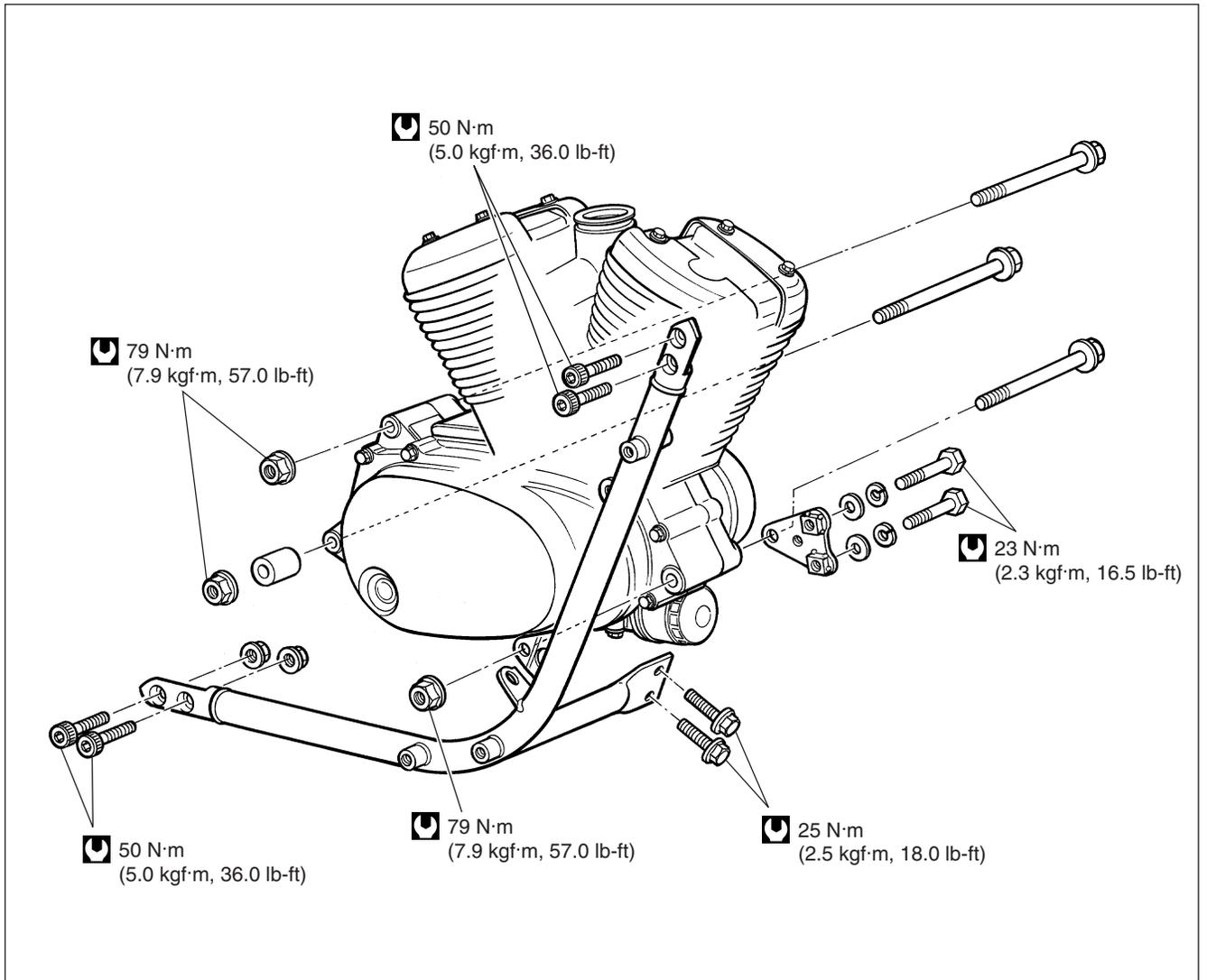


- Install the engine mounting bolts and nuts and tighten them.

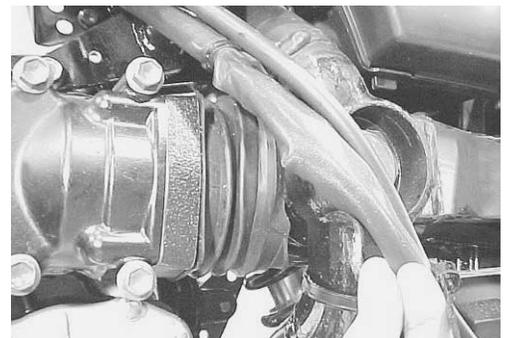


**NOTE:**

- \* The engine mounting nuts are self-locking. Once the nut has been removed, they are no longer of any use.
- \* Be sure to use new nuts and tighten them to the specified torque.

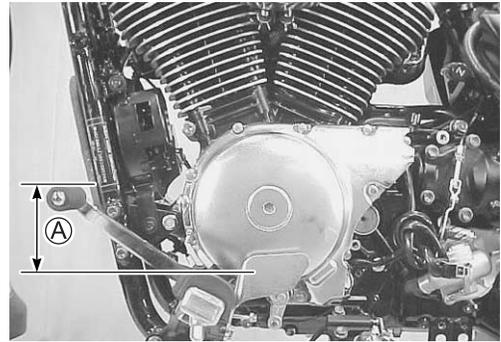


- Properly fit the boot onto the engine and the swingarm.



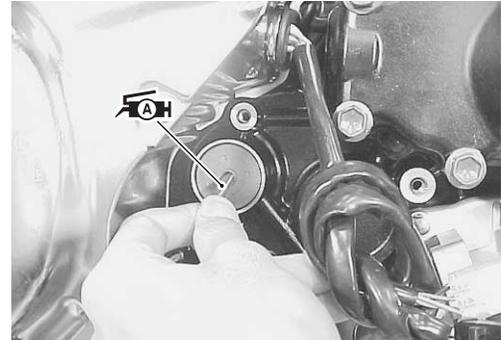
- Install the gearshift lever and the footrest in the correct position.

**DATA** Gearshift lever height  $\text{\textcircled{A}}$   
 Standard: 90 mm (3.5 in)



- Apply grease to the push rod and install it.

**FAH** 99000-25030: SUZUKI SUPER GREASE "A" (For USA)  
 99000-25010: SUZUKI SUPER GREASE "A"  
 (For the others)

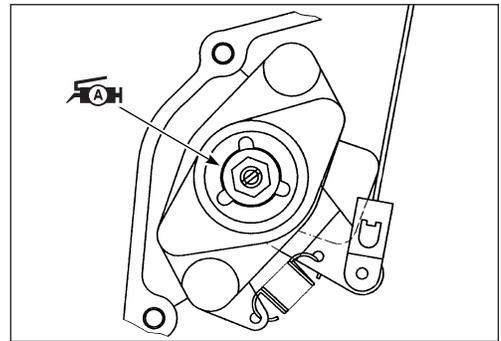


- Apply grease to the clutch release mechanism and install it.

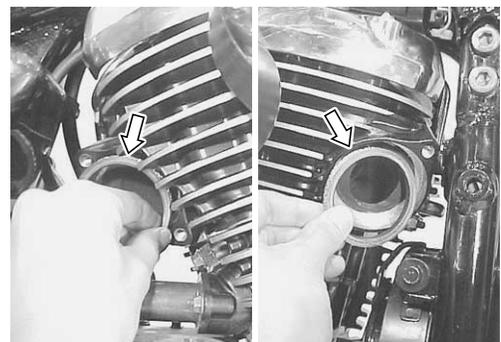
**FAH** 99000-25030: SUZUKI SUPER GREASE "A" (For USA)  
 99000-25010: SUZUKI SUPER GREASE "A"  
 (For the others)

**DATA** Clutch release screw  
 Standard:  $\frac{1}{4}$  turn back

**CLUTCH CABLE ADJUSTMENT** 2-12



- Install the new gaskets.
- Install the exhaust pipes and mufflers.



- Apply gas sealer to the exhaust pipe connectors.

EXHAUST GAS SEALER: PERMATEX 1372

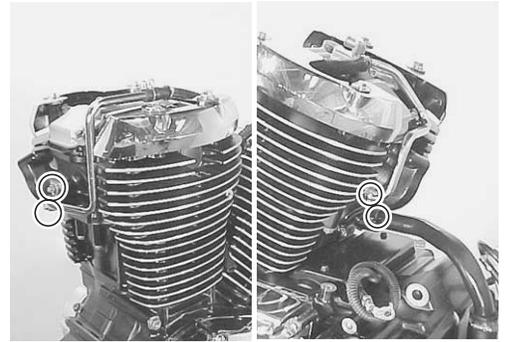
- Adjust the following items.

- \* Engine oil 2-8
- \* Engine coolant 2-13
- \* Idling adjustment 2-10
- \* Throttle cable play 2-11
- \* Rear brake pedal height 2-16

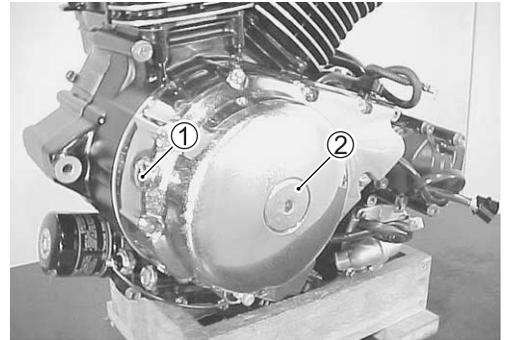
## ENGINE DISASSEMBLY

- Remove the PAIR pipes.
- Remove the spark plugs.

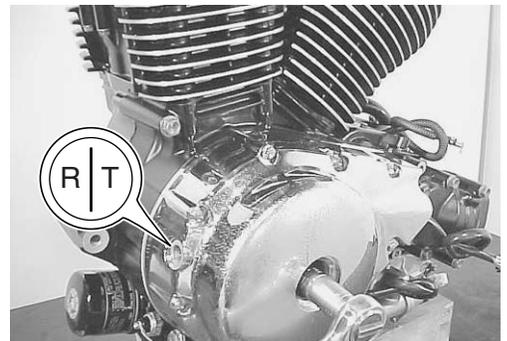
 **09930-10121: Spark plug wrench set**



- Remove the valve timing inspection plug ① and the generator cover cap ②.

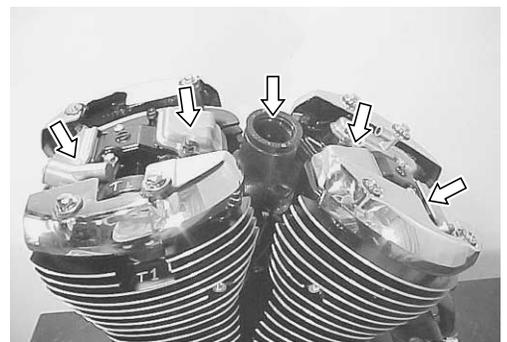


- Position "RIT" mark on the generator with the center of the valve timing inspection hole.



### CYLINDER HEAD COVER

- Remove the intake pipe.
- Remove the inspection caps.
- Remove the cylinder head covers.



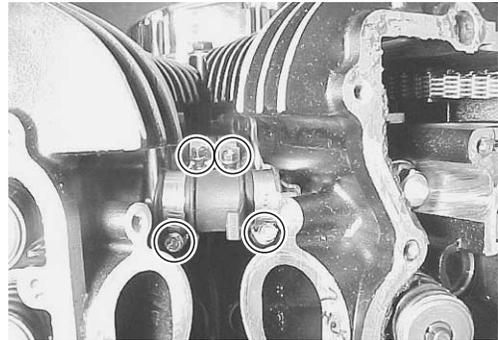
### CAMSHAFT

- Flatten the lock washer.
- Remove the cam sprocket and camshaft. (Front and rear cylinders)

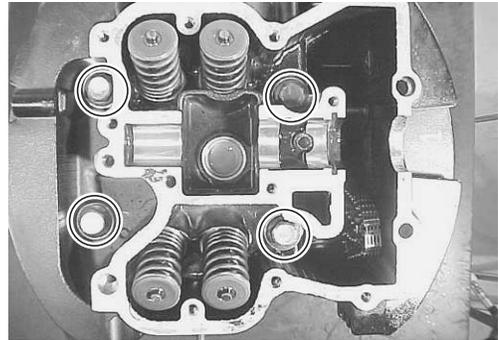


### CYLINDER HEAD/CYLINDER

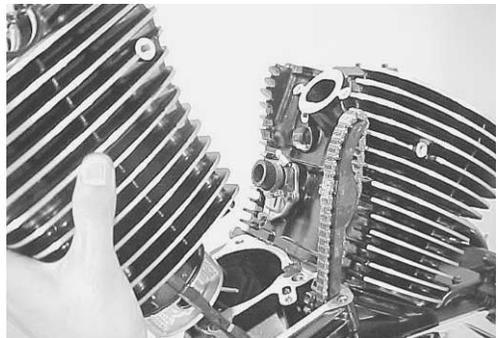
- Loosen the water hose clamp screws.



- Remove the cylinder head bolts. (Front cylinder)

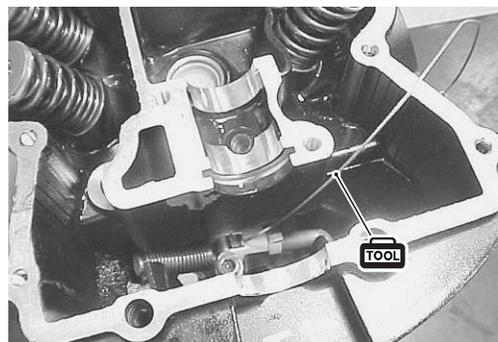


- Remove the cylinder head and cylinder. (Front cylinder)



- After unlocking the ratchet, push the cam chain tension adjuster rod fully.
- Insert the special tool between the ratchet and the adjuster body.

 **09918-53810: Chain tensioner lock tool**



- Separate the cylinder head/cylinder assembly. (Front cylinder)

