

## 3. Maintenance

|                      |     |                            |      |
|----------------------|-----|----------------------------|------|
| Service Information  | 3-1 | Valve Clearance            | 3-7  |
| Service Access Guide | 3-2 | Carburetor Synchronization | 3-10 |
| Maintenance Schedule | 3-4 | Drive Chain                | 3-11 |
| Air Cleaner          | 3-5 | Side Stand                 | 3-12 |
| Spark Plug           | 3-5 |                            |      |

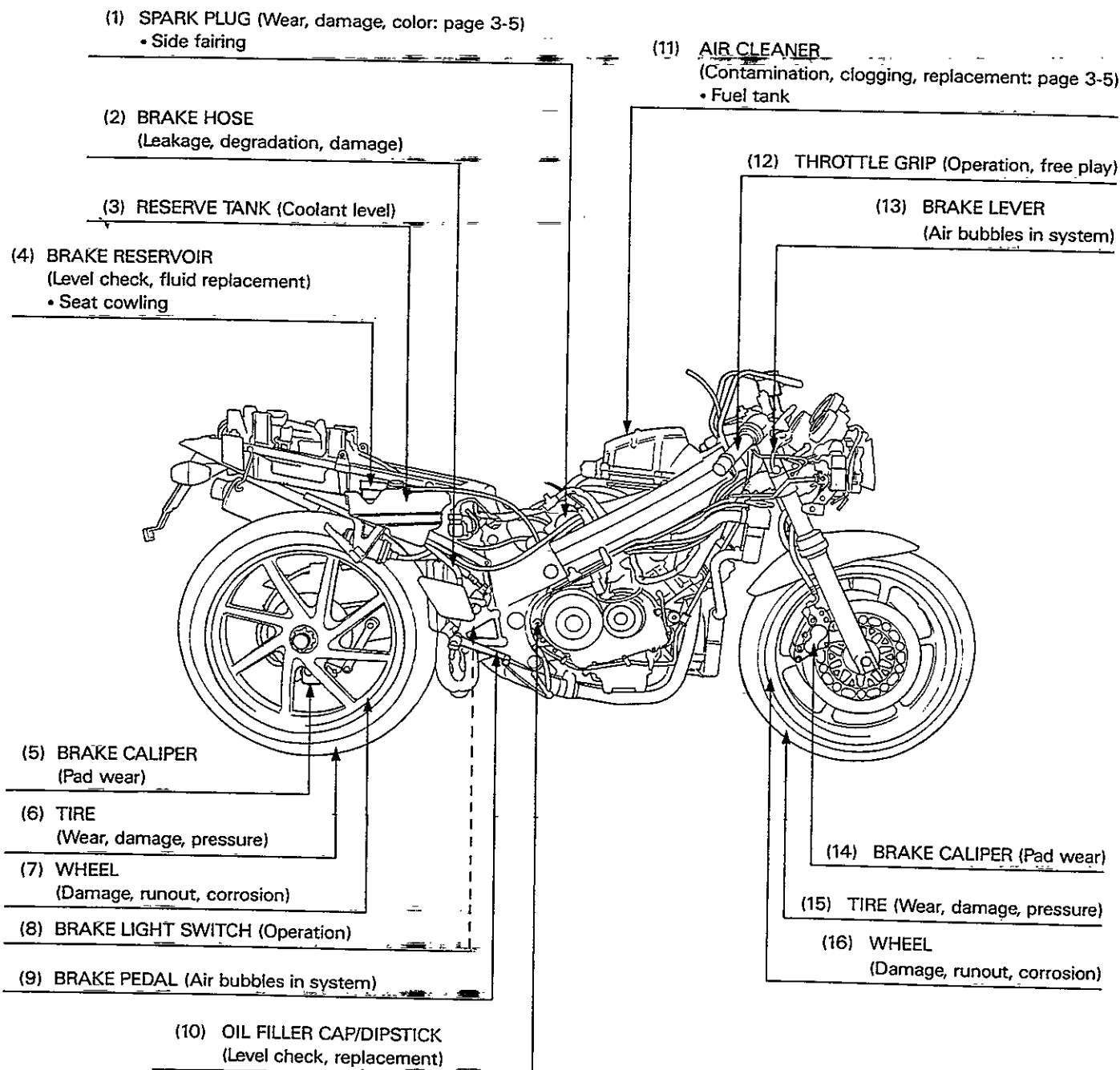
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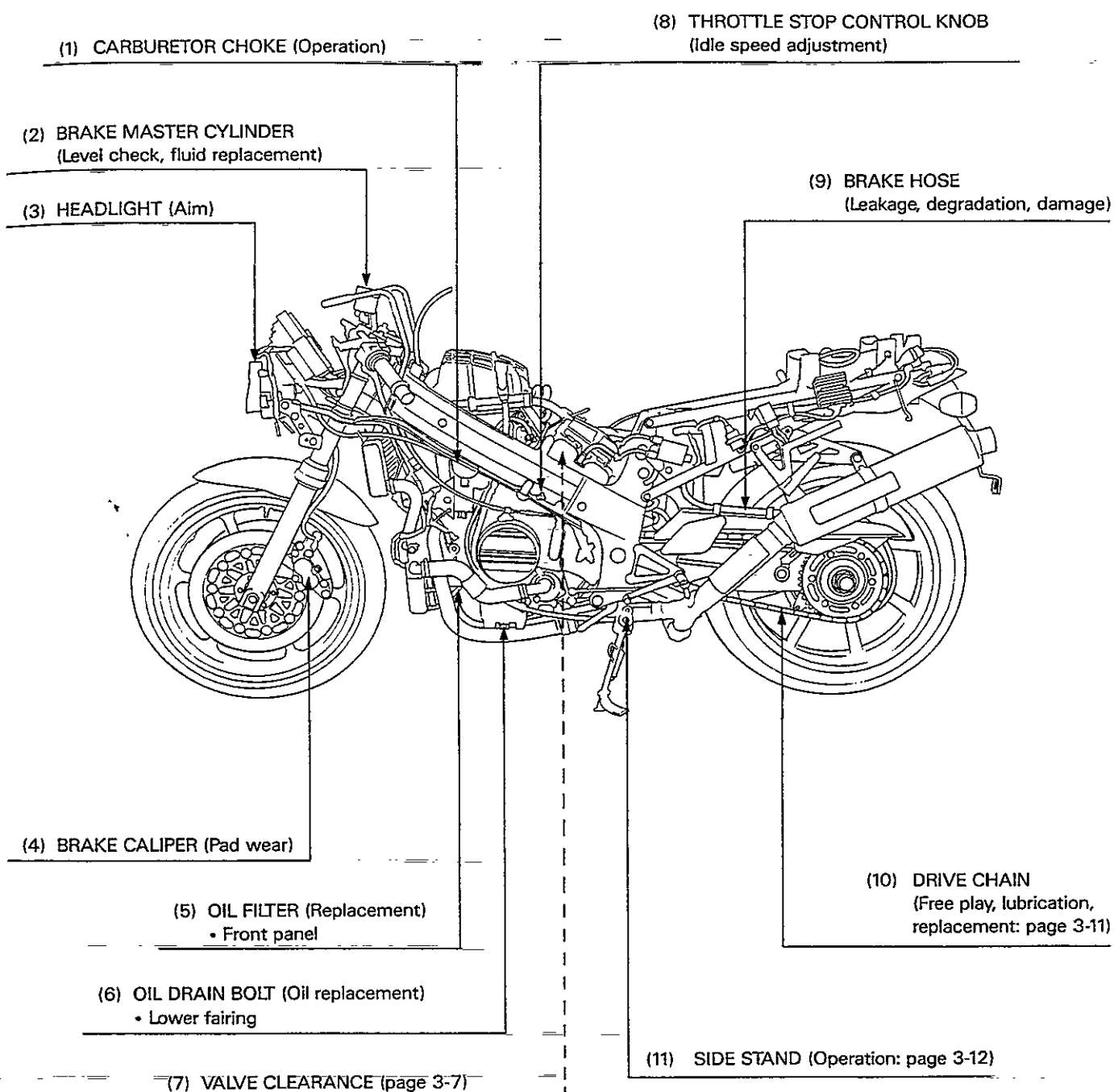
### Service Information

- Refer to Common Service Manual for service procedures on items not included in this manual.
- Refer to the specifications (Section 1) for maintenance service data.

## Service Access Guide

- The following shows the locations of the parts that must be removed for the maintenance items listed below. Refer to the Common Service Manual for items not included in this manual.
- Refer to section 2 (Frame/body panels/exhaust system), for the parts that must be removed for service.  
For example: AIR CLEANER (Contamination, clogging, replacement) — Maintenance part (service items)
  - Fuel tank — The parts that must be removed for service.





# Maintenance Schedule

Perform the PRE-RIDE INSPECTION in the Owner's Manual at each scheduled maintenance period.

I: Inspect and clean, adjust, lubricate, or replace if necessary.

R: Replace C: Clean L: Lubricate A: Adjust

The following items require some mechanical knowledge. Certain items (particularly those marked \* and \*\*) may require more technical information and tools. Consult their authorized Honda dealer.

| Item                         | Frequency | Whichever comes first<br>↓<br>Note | Odometer Reading (Note 1)    |     |   |    |    |    |    |    | Refer to page |
|------------------------------|-----------|------------------------------------|------------------------------|-----|---|----|----|----|----|----|---------------|
|                              |           |                                    | × 1,000 km                   | 1   | 6 | 12 | 18 | 24 | 30 | 36 |               |
|                              |           |                                    | × 1,000 mi                   | 0.6 | 4 | 8  | 12 | 16 | 20 | 24 |               |
|                              |           |                                    | Months                       |     | 6 | 12 | 18 | 24 | 30 | 36 |               |
| * Fuel Line                  |           |                                    |                              |     |   | I  |    | I  |    | I  | Note 4        |
| * Throttle Operation         |           |                                    |                              |     |   | I  |    | I  |    | I  | Note 4        |
| * Carburetor Choke           |           |                                    |                              |     |   | I  |    | I  |    | I  | Note 4        |
| Air Cleaner                  |           | Note 2                             |                              |     |   |    | R  |    |    | R  | 3-5           |
| * Valve Clearance            |           |                                    |                              | I   |   |    |    | I  |    |    | 3-7           |
| Spark Plug                   |           |                                    |                              |     | I | R  | I  | R  | I  | R  | 3-5           |
| Engine Oil                   |           |                                    |                              | R   |   | R  |    | R  |    | R  | Note 4        |
| Engine Oil Filter            |           |                                    |                              | R   |   | R  |    | R  |    | R  | Note 4        |
| * Carburetor Synchronization |           |                                    |                              | I   |   | I  |    | I  |    | I  | 3-10          |
| * Carburetor Idle Speed      |           |                                    |                              | I   | I | I  | I  | I  | I  | I  | Note 4        |
| Radiator Coolant             |           | Note 3                             |                              |     |   | I  |    | I  |    | R  | Note 4        |
| * Cooling System             |           |                                    |                              |     |   | I  |    | I  |    | I  | Note 4        |
| Drive Chain                  |           |                                    | I, L Every 1,000 km (600 mi) |     |   |    |    |    |    |    | 3-11          |
| Brake Fluid                  |           | Note 3                             |                              |     | I | I  | R  | I  | I  | R  | Note 4        |
| Brake Pads Wear              |           |                                    |                              |     | I | I  | I  | I  | I  | I  | Note 4        |
| Brake System                 |           |                                    |                              | I   |   | I  |    | I  |    | I  | Note 4        |
| * Brake Light Switch         |           |                                    |                              |     |   | I  |    | I  |    | I  | Note 4        |
| * Headlight Aim              |           |                                    |                              |     |   | I  |    | I  |    | I  | Note 4        |
| Clutch System                |           |                                    |                              | I   | I | I  | I  | I  | I  | I  | Note 4        |
| Side Stand                   |           |                                    |                              |     |   | I  |    | I  |    | I  | 3-12          |
| * Suspension                 |           |                                    |                              |     |   | I  |    | I  |    | I  | Note 4        |
| * Nuts, Bolts, Fasteners     |           |                                    |                              | I   |   | I  |    | I  |    | I  | Note 4        |
| ** Wheels/Tires              |           |                                    |                              |     |   | I  |    | I  |    | I  | Note 4        |
| ** Steering Head Bearings    |           |                                    |                              | I   |   | I  |    | I  |    | I  | Note 4        |

\* Should be serviced by an authorized Honda dealer, unless the owner has proper tools and service data and is mechanically qualified.

\*\* In the interest of safety, we recommend these items be serviced only by an authorized Honda dealer.

Notes: 1. At higher odometer readings, repeat at the frequency interval established here.

2. Service more frequently when riding in unusually wet or dusty areas.

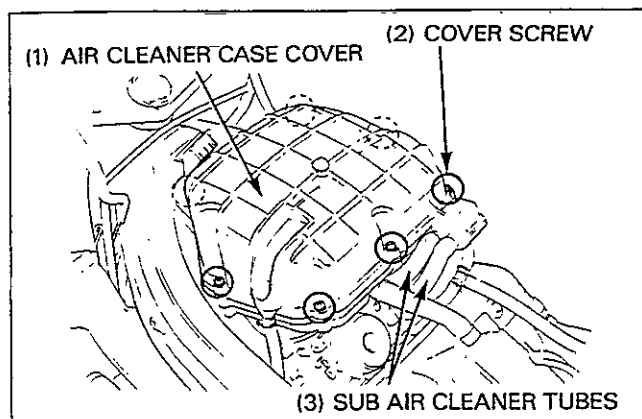
3. Replace every 2 years, or at indicated odometer interval, whichever comes first. Replacement requires mechanical skill.

4. Refer to Common Service Manual.

## Air Cleaner

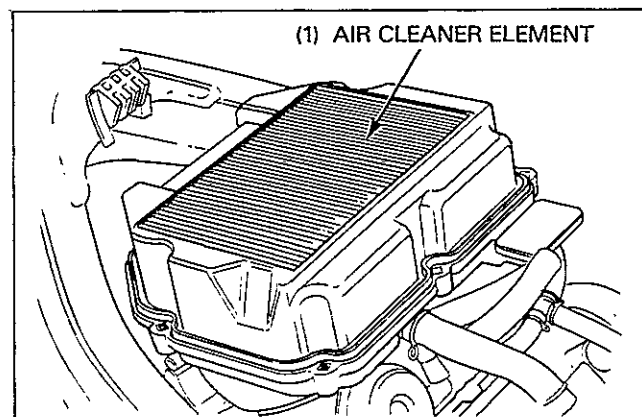
Remove the following:

- seat cowling (page 2-2).
- fuel tank (page 2-5).
- air cleaner case cover screws.
- sub air cleaner tubes.
- air cleaner case cover.



Remove the air cleaner element, and replace it with a new one.

Install the removed parts in the reverse order of removal.



## Spark Plug

### ⚠ WARNING

- Do not touch the exhaust pipe while it is hot.

### Rear Cylinder:

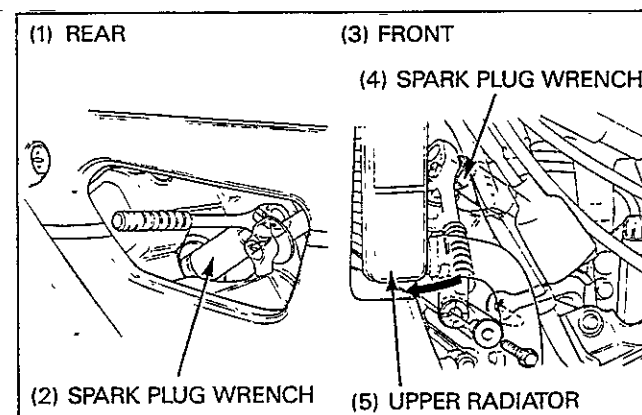
Remove the No. 1 and No. 3 cylinder spark plug caps, and remove the spark plugs with the spark plug wrench.

### Front Cylinder:

Remove the following:

- both side fairings (page 2-3).
- upper radiator lower mounting bolt.

Move the upper radiator forward, remove the No. 2 and No. 4 cylinder spark plug caps and remove the spark plugs with the spark plug wrench.



### CAUTION

- Be careful not to damage the radiator fins while servicing.

### NOTE

- For inspection, refer to section 2 of the Common Service Manual.
- For recommended spark plug and specified spark plug gap, refer to section 1 (Specifications).

Using the spark plug wrench, hand tighten the spark plug until it is seated, then tighten it to the specified torque:

**Torque: 9 N·m (0.9 kg-m, 7 ft-lb)**

**When the spark plug wrench (07KMA—MR80200) is used:**

Hand tighten the spark plug until it is seated, using the spark plug wrench.

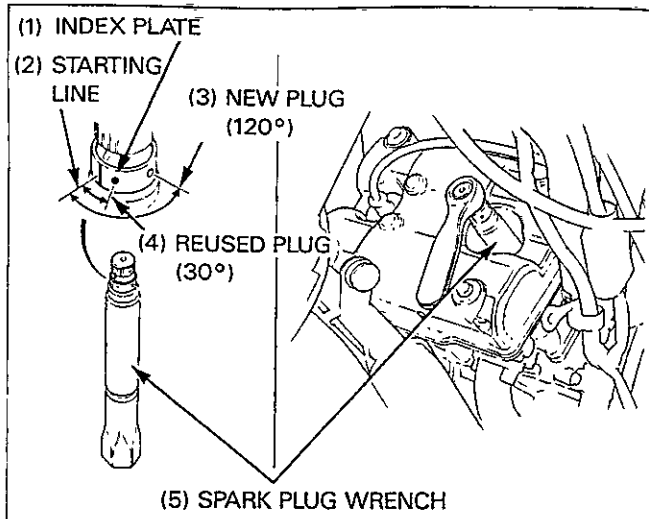
Turn the index plate to align the starting line of the tightening, and install the handle onto the spark plug wrench.

When a new spark plug is used (the sealing washer is not compressed), tighten the plug from the starting line to the "○" mark of the index plate.

When the spark plug is reused (the sealing washer is compressed), tighten the plug from the starting line to the "●" mark of the index plate.

### CAUTION

- Never tighten the plug over the "○" and "●" marks.



## Valve Clearance

### NOTE

- Inspect and adjust valve clearance while the engine is cold (below 35°C/95°F).

## Cylinder Head Cover Removal

### Front Cylinder

Remove the lower fairing (page 2-4).

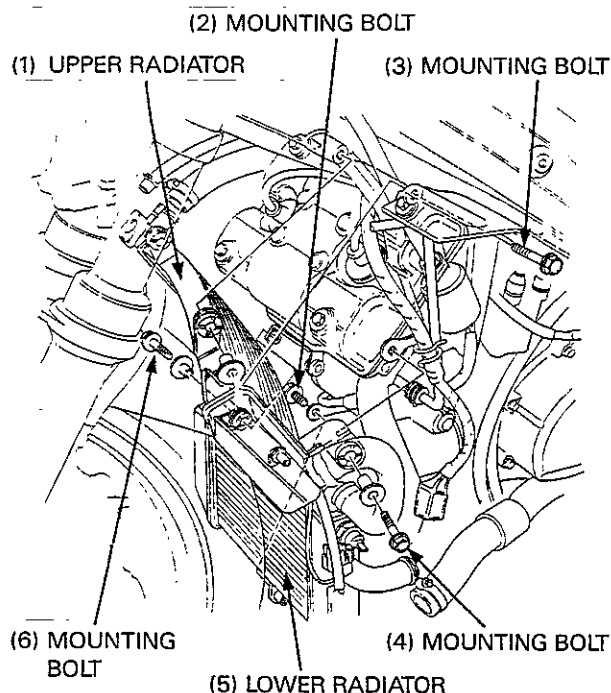
Remove the upper and lower radiator mounting bolts and move the radiators forward.

Remove the following:

- fuel tank (page 2-5).
- air cleaner case (page 6-4).
- air cleaner case base.
- heat protector.
- front spark plug caps.
- front cylinder head cover bolts.
- front cylinder head cover.

### CAUTION

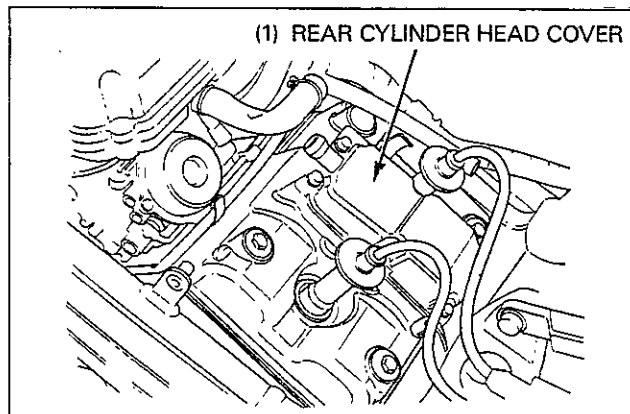
- Cover the radiator fins to prevent them from damaging when servicing.
- Be careful not to damage the front fender.



### Rear Cylinder

Remove the following:

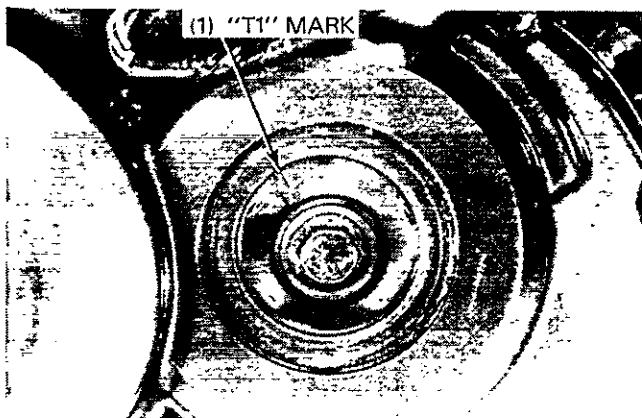
- seat cowl (page 2-2).
- fuel tank (page 2-5).
- rear cylinder head cover bolts.
- rear cylinder head cover.



### Inspection

Remove the timing hole cap.

Turn the crankshaft clockwise and align the "T" mark (front: T2, rear: T1) on the starter clutch cover with the index mark on the right crankcase cover.

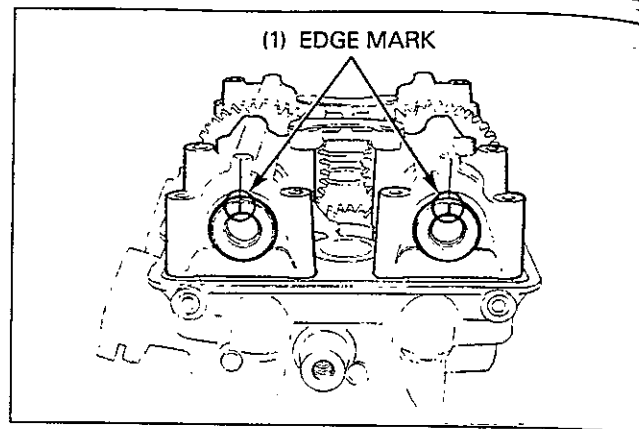


## Maintenance

When the edge marks on the right sides of the cam shafts are facing up, the piston of the following cylinder is at TDC (Top Dead Center) on the compression stroke.

Front (T2): No. 4 cylinder

Rear (T1): No. 1 cylinder



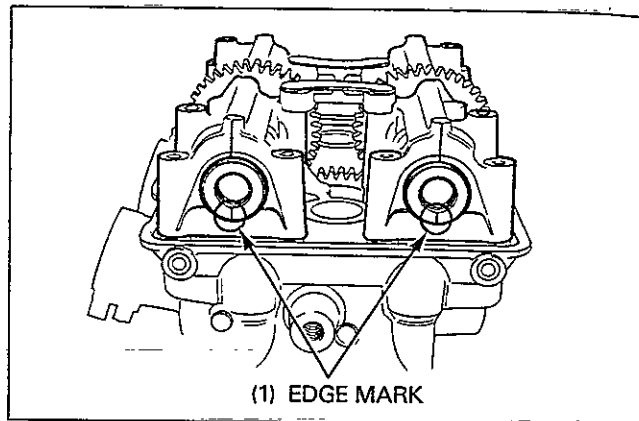
When the edge marks are facing down, the following cylinder is at TDC on the compression stroke.

Front (T2): No. 2 cylinder

Rear (T1): No. 3 cylinder

Relation between the timing mark and edge marks:

| Timing mark | Edge marks  | Piston at TDC on the compression stroke |
|-------------|-------------|---|
| T1          | Facing up   | No. 1 cylinder                          |
|             | Facing down | No. 3 cylinder                          |
| T2          | Facing up   | No. 4 cylinder                          |
|             | Facing down | No. 2 cylinder                          |



Make sure that the piston is at TDC on the compression stroke.

Measure the valve clearance by inserting the feeler gauge between the rocker arm and adjustment shim.

Valve clearance:

Intake valve: 0.12—0.18 mm (0.005—0.007 in)

Exhaust valve: 0.21—0.27 mm (0.008—0.011 in)

### Shim Removal

Make sure that the piston is at TDC on the compression stroke.

Place the shop towels in the spark plug hole and cam gear case hole and place the magnet near the shim to prevent the shim from falling.

Move the rocker arm inward by pushing it.

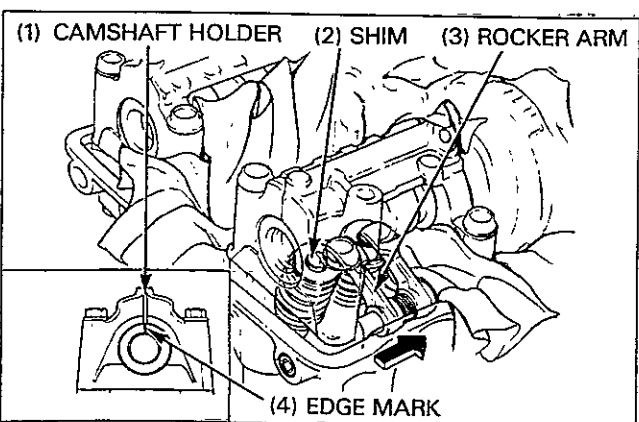
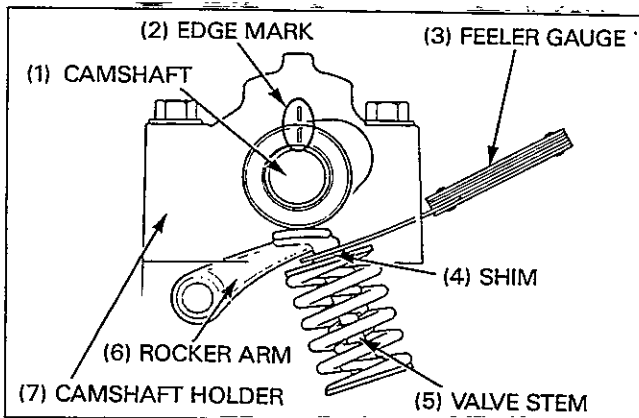
### CAUTION

- If the valve clearance is too small, the shim may jump out when moving the rocker arm.

### NOTE

- To hold the moved rocker arm, it is convenient to use the snap ring pliers (07914—5670100).

Remove the shim with a tweezers.





## Shim Selection

### NOTE

- Sixty-five shims are available in thickness intervals of 0.025 mm. The thinnest is 1.200 mm and the thickest is 2.800 mm.

Clean the shim with a clean shop towel.

Measure the shim thickness with a micrometer and record it.

To select the shim needed to bring the valve clearance within specification, use the following formula:

$$a = b - c + d$$

a: new shim thickness

b: recorded valve clearance

c: specified valve clearance

d: old shim thickness

Example:

Recorded valve clearance = 0.20 mm (b)

Specified valve clearance = 0.15 mm (c)

Old shim thickness = 2.200 mm (d)

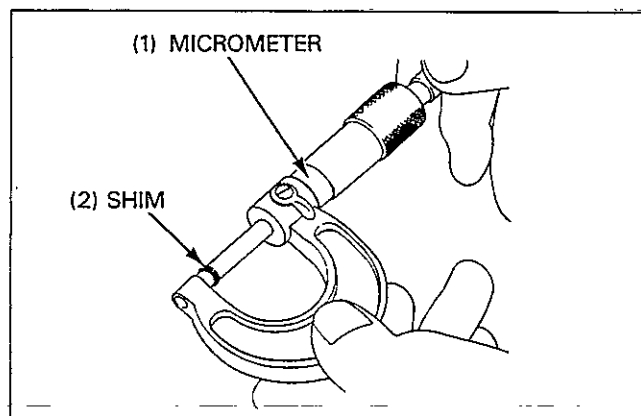
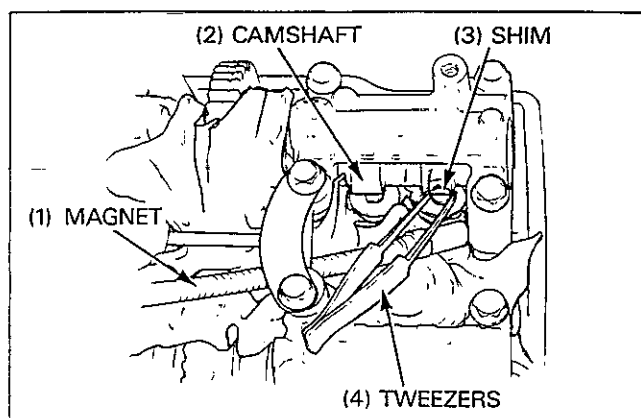
$$a = 0.20 - 0.15 + 2.200$$

$$a = 2.25$$

$$\text{New shim thickness} = 2.250 \text{ mm}$$

### NOTE

- If the required thickness of the new shim is more than 2.800 mm, the valve seat is probable heavily carboned. Reface the seat, recheck valve clearance and reselect the shim.



## Shim Installation

Make sure that the piston is at TDC on the compression stroke.

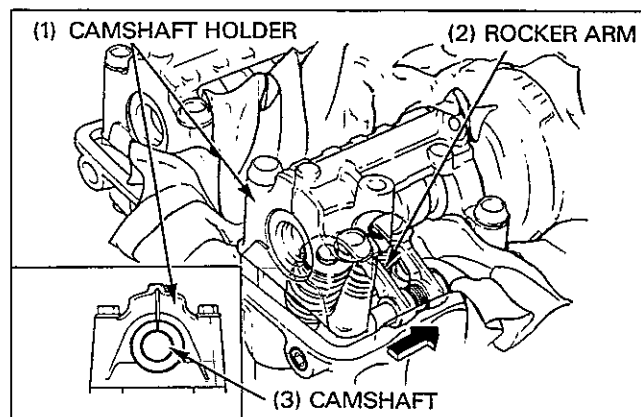
Apply molybdenum disulfide oil to the shim and rocker arm slipper.

Place the shop towels in the spark plug hole and cam gear case hole and place the magnet near the valve to prevent the shim from falling.

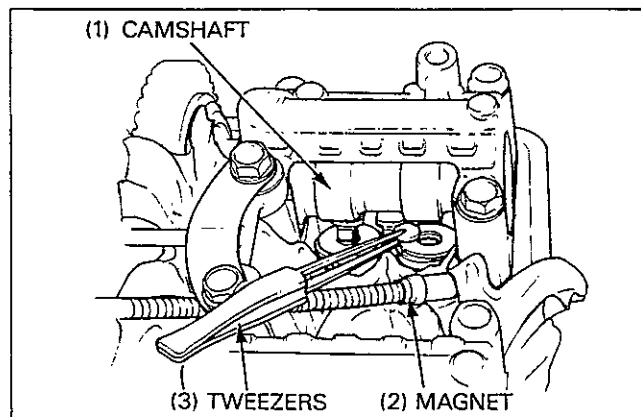
Move the rocker arm inward by pushing it.

### NOTE

- To hold the moved rocker arm, it is convenient to use the snap ring pliers (07914-5670100).



Install the shim with the tweezers.



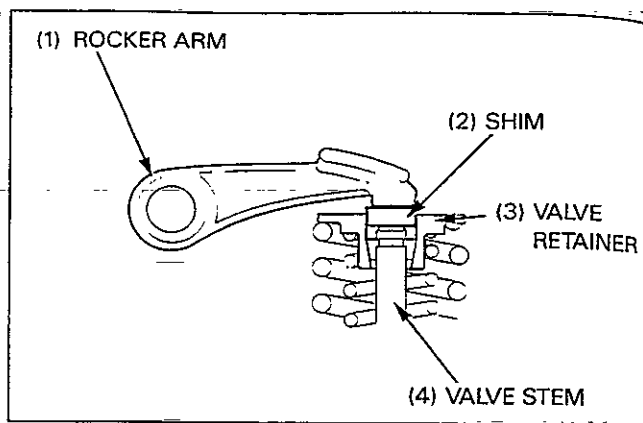
## Maintenance

Carefully slide the rocker arm back to the original position. Make sure that the shim contacting surface of the rocker arm is positioned in the center of the shim and the shim is completely seated.

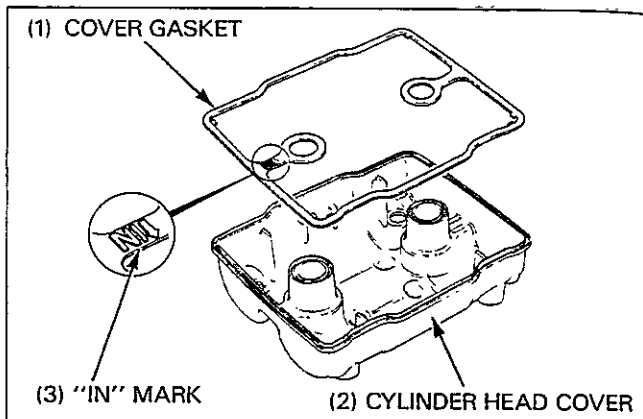
### CAUTION

- Be careful not to bound the shim out when sliding the rocker arm.

Turn the crankshaft clockwise several times. Recheck the valve clearance.



Apply Honda bond A or equivalent to the gasket groove in the cylinder head cover. Install the cover gasket with the "IN" mark facing toward the intake side.

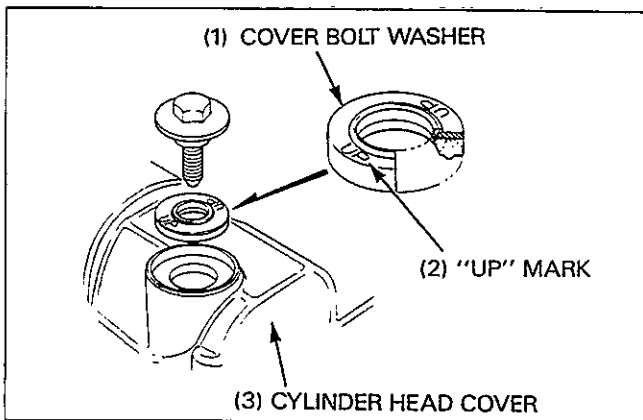


Install the cylinder head cover with the "IN" mark facing toward the intake side.

Install the cover bolt washers with the "UP" mark facing up. Install the cover bolts and tighten them.

**Torque: 10 N·m (1.0 kg-m, 7 ft-lb)**

Install the removed parts in the reverse order of removal.



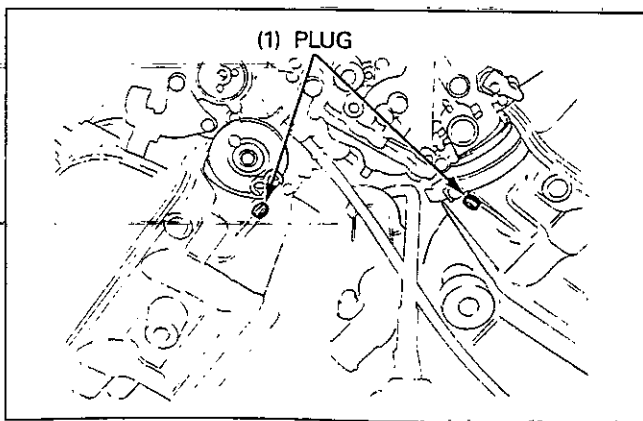
## Carburetor Synchronization

### NOTE

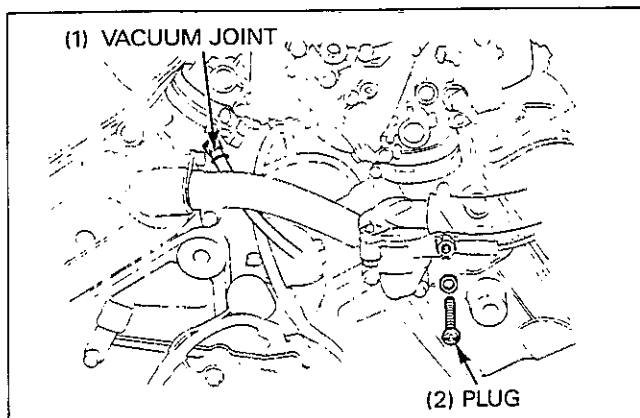
- Refer to section 2 of Common Service Manual for carburetor synchronization procedure.
- Synchronize the carburetor with the engine at normal operating temperature, transmission in neutral and motorcycle supported upright.

Disconnect the vacuum tube from the No. 3 cylinder intake manifold, apply vacuum to the auto fuel valve and pinch the tube with a clip.

Remove the plugs from the No. 1, 2 and 4 cylinder intake manifold and install the vacuum gauge adaptors.



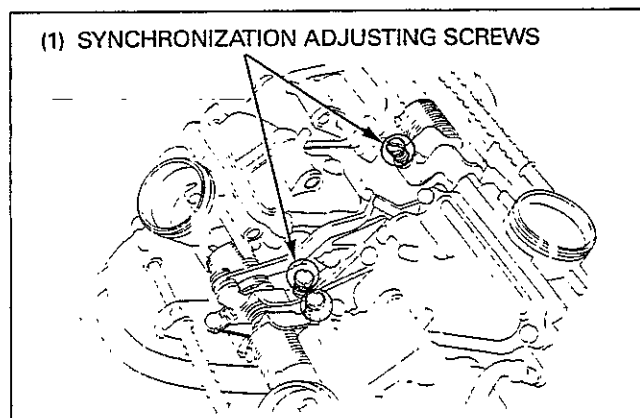
Connect the vacuum gauge adaptor to the auto fuel valve vacuum tube joint of the No. 3 cylinder intake manifold.



## NOTE

- The base carburetor is the No. 2 carburetor.

Adjust the carburetor synchronization by turning the synchronization adjusting screw.



## Drive Chain

**⚠ WARNING**

- Never inspect or adjust the drive chain while the engine is running.

Place the motorcycle on its side stand and shift the transmission into neutral.

Check slack in the drive chain lower run midway between the sprockets.

**Slack: 15–25 mm (5/8–1 in)**

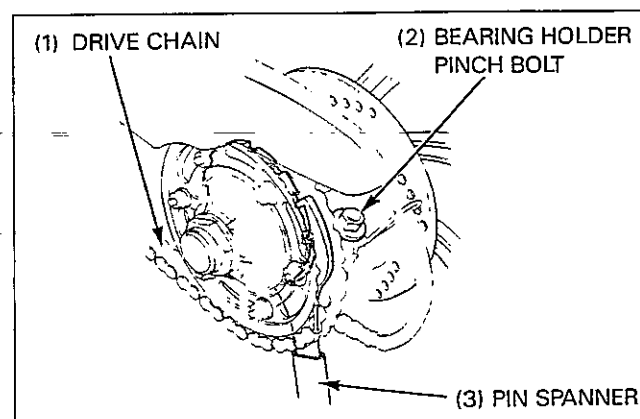
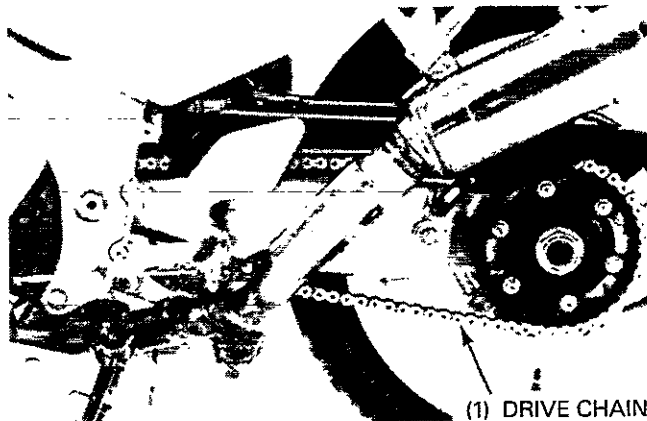
Adjust the chain slack as follows:

Loosen the bearing holder pinch bolt.

Turn the axle bearing holder with the pin spanner provided in the tool kit until the correct drive chain slack is obtained.

## NOTE

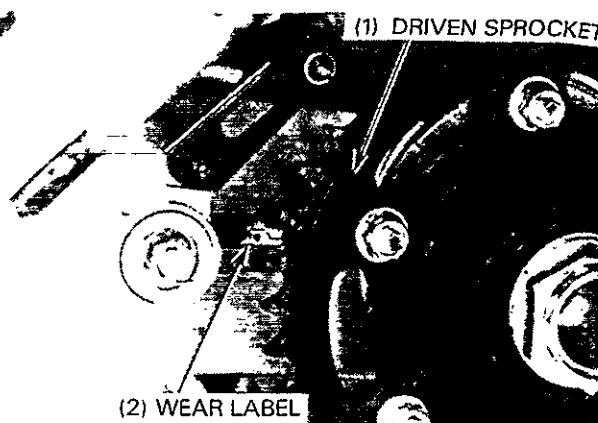
- To ease the adjustment, raise the rear wheel with an optional stand and turn the wheel in the same direction as the bearing holder rotation.



## Maintenance

After adjustment, check the chain wear label. If the red zone on the label reaches the outside diameter of the driven sprocket, replace the drive chain with a new one.

Replacement chain: RK GB525SM4



### NOTE

- Because the endless type drive chain is used, the swingarm must be removed to replace the drive chain.

Tighten the bearing holder pinch bolt.

Torque: 55 N·m (5.5 kg-m, 40 ft-lb)

## Side Stand

Check the side stand rubber for wear.  
Replace the rubber if wear extends to the wear mark.

Check the side stand operation.

The side stand should lower easily to its first stop, then lock after moving farther forward to support the motorcycle as the rubber touches the ground.

When the motorcycle is lifted upright, the stand should automatically move the first position, and retract when kicked up.

If the side stand does not move freely, disassemble it:

Remove the return spring at the retracted position.

Remove the pivot bolt and remove the side stand assembly from the frame.

Check the following parts for wear or damage:

- inside of the pivot and pivot collar.
- pivot dust seals.

Lubricate the pivot area with clean grease and reassemble the side stand.

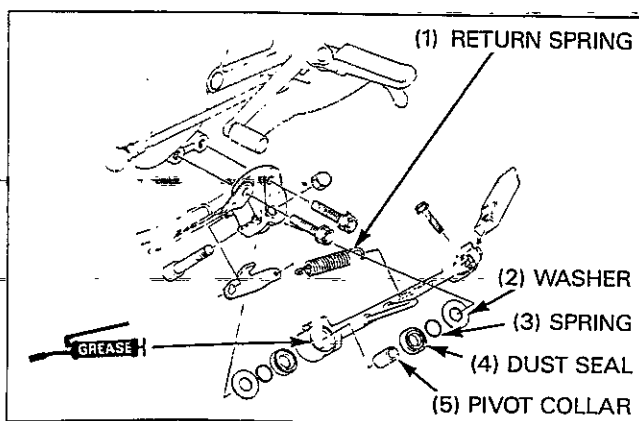
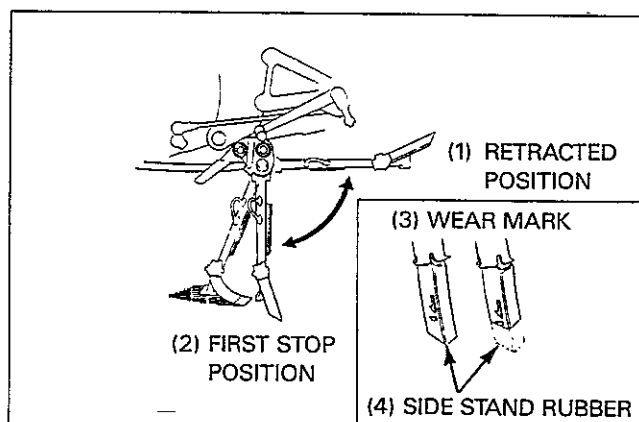
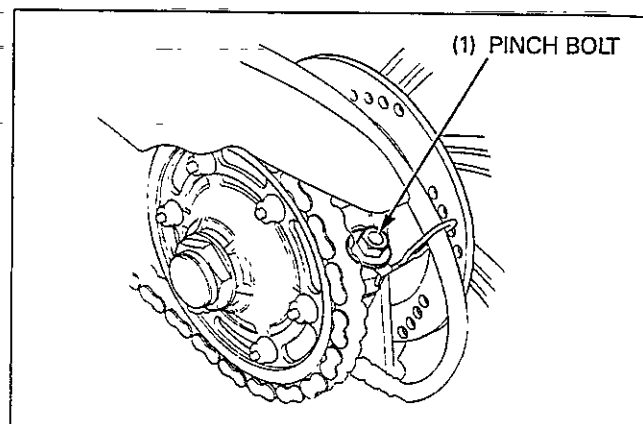
### CAUTION

- Install the dust seal with the spring side facing out.
- Make sure that the dust seal spring is not removed, then install the side stand.

### Torque:

Side stand bracket bolt: 35 N·m (3.5 kg-m, 25 ft-lb)

Recheck the side stand operation.



## 4. Lubrication System

|                            |     |                                 |     |
|----------------------------|-----|---------------------------------|-----|
| Service Information        | 4-1 | Oil Cooler Removal/Installation | 4-3 |
| Troubleshooting            | 4-1 | Oil Pump Removal/Installation   | 4-4 |
| Lubrication System Diagram | 4-2 | Oil Pump Disassembly/Assembly   | 4-6 |

### 4

## Service Information

- The service procedures in this section can be performed with the engine oil drain.
- When removing and installing the oil pump use care not to allow dust or dirt to enter the engine.
- If any portion of the oil pump is worn beyond the specified service limits, replace the oil pump as an assembly.
- After the oil pump has been installed, check that there are no oil leaks and that oil pressure is correct.

## Troubleshooting

### Oil Level Low

- Oil consumption.
- External oil leak.
- Worn piston ring or incorrect piston ring installation.
- Worn valve guide or seal.

### Oil Contamination

- From coolant mixing with oil.
  - Faulty water pump mechanical seal.
  - Faulty head gasket.
  - Water leak in crankcase.

### No Oil Pressure

- Oil level too low.
- Oil pump drive chain or drive sprocket broken.
- Oil pump damaged (pump shaft).
- Internal oil leaks.

### Low Oil Pressure

- Pressure relief valve stuck open.
- Clogged oil filter screen.
- Oil pump worn or damaged.
- Internal oil leak.
- Incorrect oil being used.
- Low oil level.

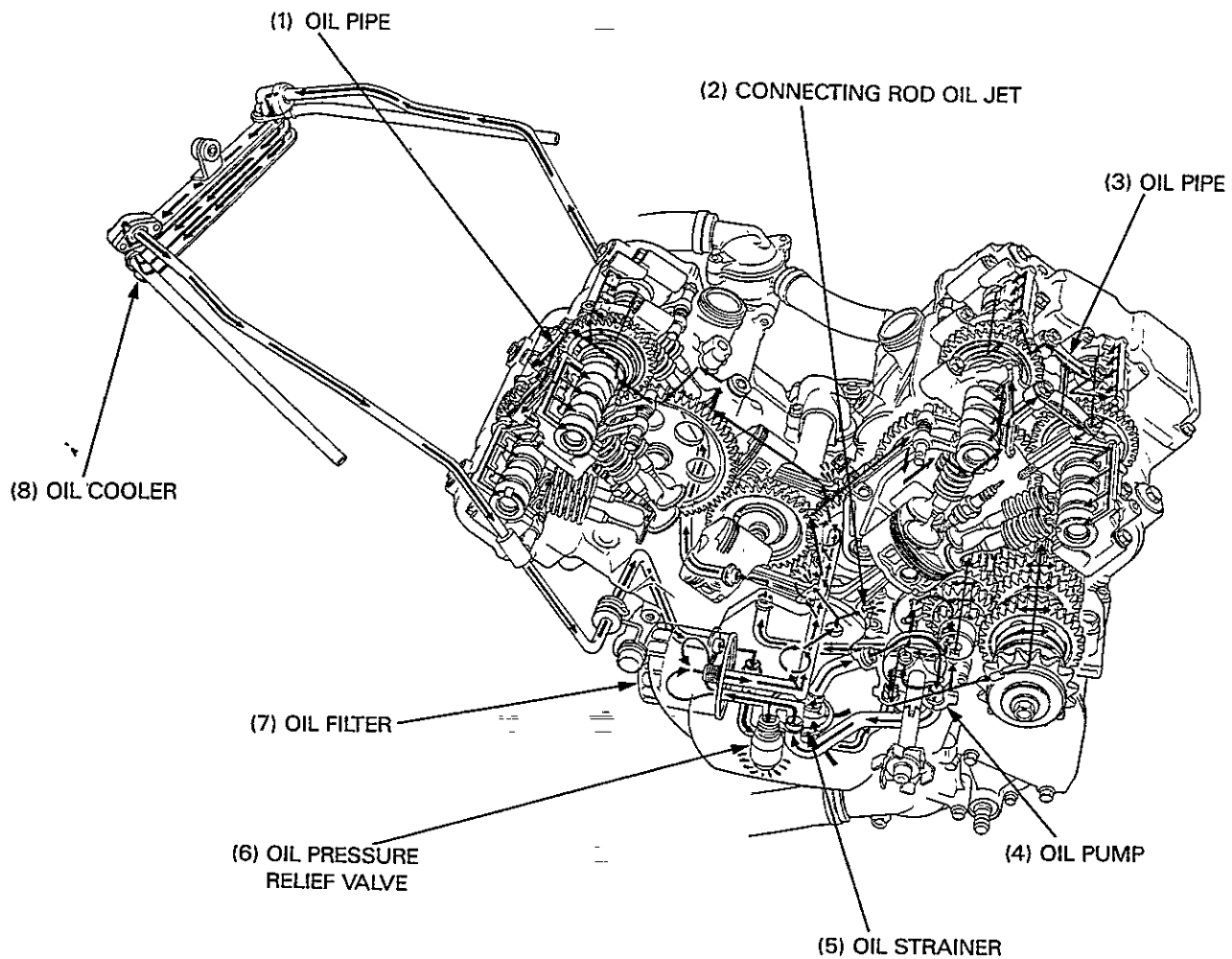
### High Oil Pressure

- Pressure relief valve stuck closed.
- Plugged oil filter, gallery, or metering orifice.
- Incorrect oil being used.

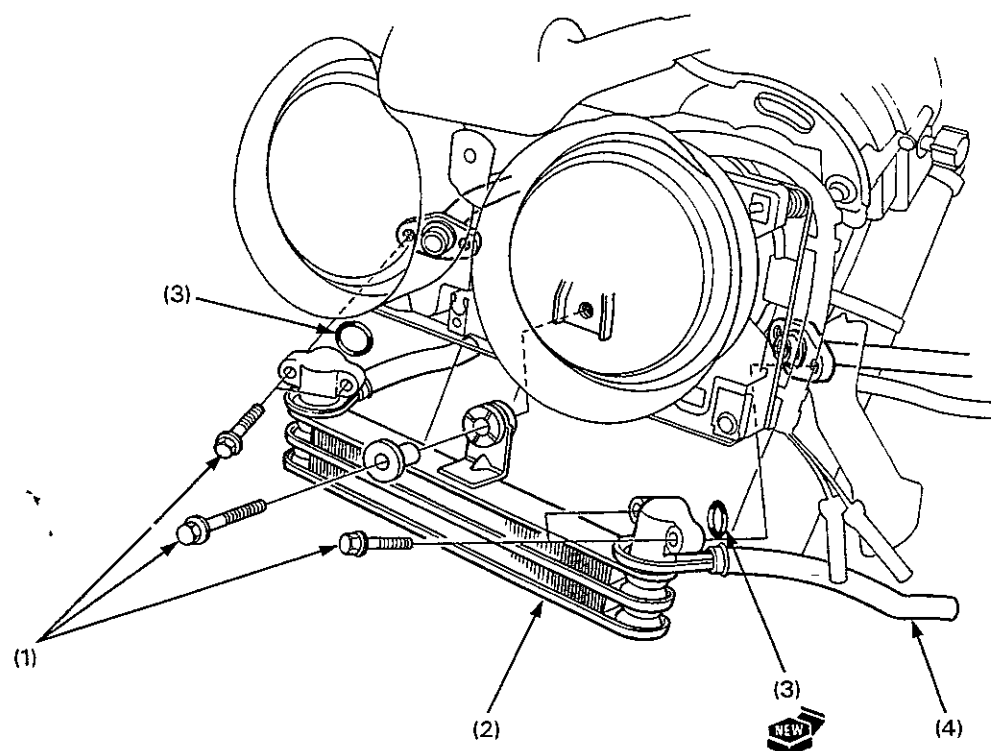
### Seized Engine

- No or low oil pressure.
- Clogged oil orifice/passage.
- Oil leakage inside the engine.
- Use of oil not recommended.

## Lubrication System Diagram



# Oil Cooler Removal/Installation

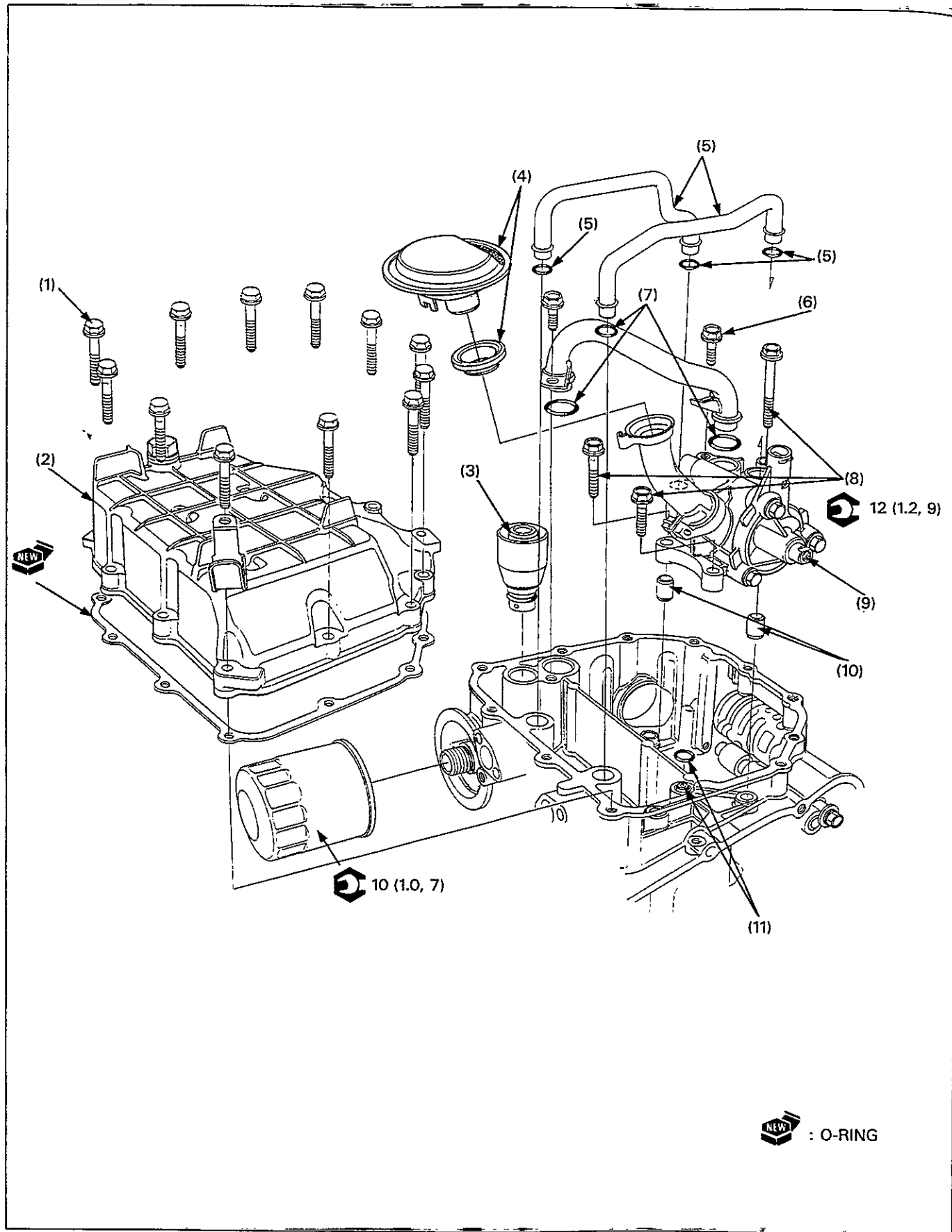


## Requisite Service

- Lower fairing removal/installation (page 2-4).
- Engine oil draining (location: page 3-3, step: section 2 of the Common Service Manual).

| Procedure            |                 | Q'ty | Remarks  |
|----------------------|-----------------|------|--|
| <b>Removal Order</b> |                 |      | Installation is in the reverse order of removal. |
| (1)                  | Oil cooler bolt | 5    |  |
| (2)                  | Oil cooler      | 1    |  |
| (3)                  | O-ring          | 2    |  |
| (4)                  | Tube            | 2    |  |

# Oil Pump Removal/Installation





## NOTE

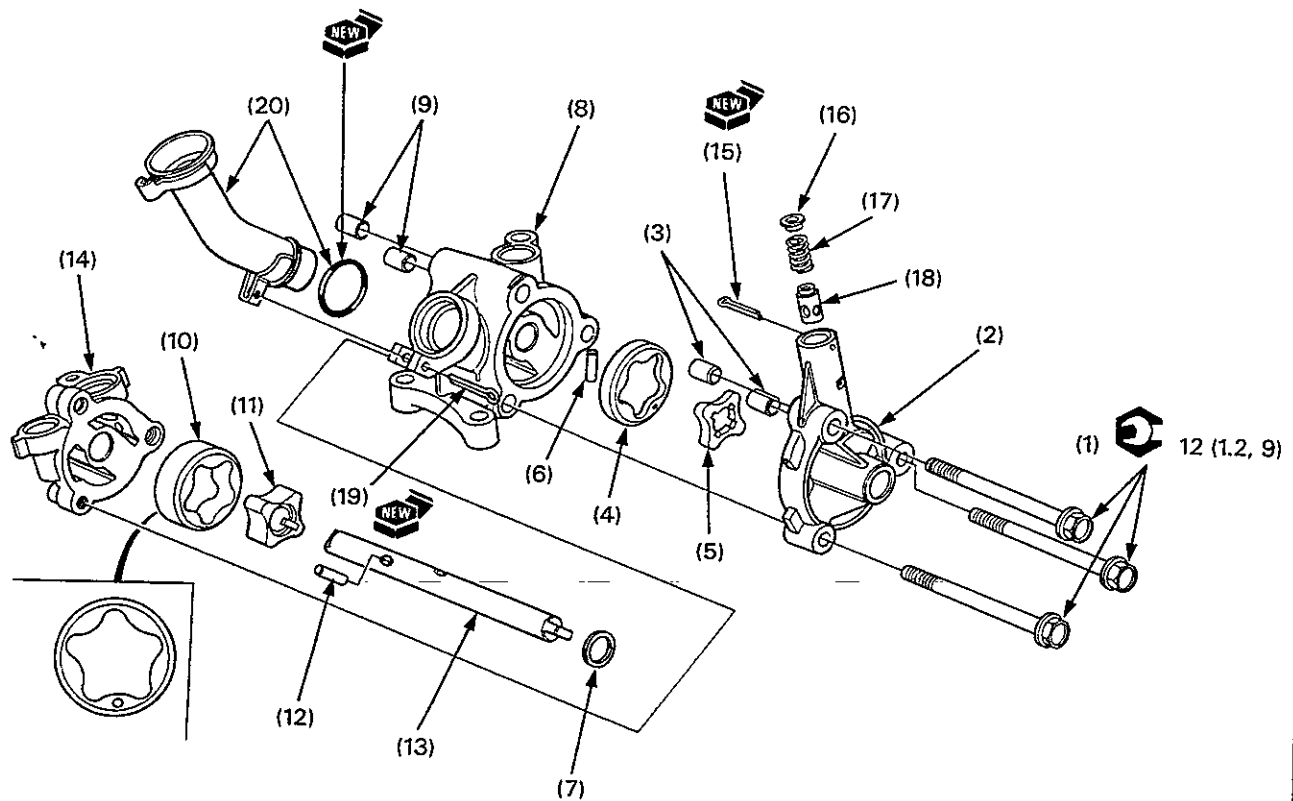
- Remove the drive sprocket bolt before removing the oil pump mounting bolts.
- Remove the oil pump drive sprocket bolt with care as it is coated with thread locking agent.

## Requisite Service

- Engine oil draining (location: page 3-3, step: section 2 of the Common Service Manual).
- Lower fairing removal/installation (page 2-4).
- Oil pump driven sprocket removal/installation (pages 9-4 and 9-6).
- Front exhaust system (page 2-10).
- Right crankcase cover removal/installation (page 9-2).

| Procedure |                       | Q'ty | Remarks  |
|-----------|-----------------------|------|--|
|           | <b>Removal order</b>  |      | Installation is in the reverse order of removal.   |
| (1)       | Oil pan bolt          | 12   |  |
| (2)       | Oil pan               | 1    | NOTE<br>Loosely tighten the bolts first to set the oil pan in correct position.  |
| (3)       | Pressure relief valve | 1    | NOTE<br>Align the cutout in the stopper with the pipe.   |
| (4)       | Oil strainer/O-ring   | 1/1  | NOTE<br>Install the oil strainer aligning the boss in the strainer with the slit on the oil strainer.  |
| (5)       | Oil pipe/O-ring       | 2/4  |  |
| (6)       | Oil pipe bolt         | 2    |  |
| (7)       | Oil pipe/O-ring       | 1/1  | NOTE<br>Remove the drive sprocket bolt before removing the oil pump mounting bolts.  |
| (8)       | Oil pump bolt         | 3    |  |
| (9)       | Oil pump assembly     | 1    | NOTE<br>When installing the oil pump assembly, align the projection on the pump shaft with the cutout in the water pump shaft by rotating the pump shaft. Disassembly: see page 4-6. |
| (10)      | Dowel pin             | 2    |  |
| (11)      | Oil orifice/O-ring    | 1/1  | NOTE<br>If the orifice is removed, check it for clogging before reinstallation.  |

# Oil Pump Disassembly/Assembly



## NOTE

- Clean each part with cleaning solvent and coat with clean engine oil before assembly.

## Requisite Service

- Oil pump removal/installation (page 4-4).

| Procedure                |                          | Q'ty | Remarks   |
|--------------------------|--------------------------|------|---|
| <b>Disassembly Order</b> |                          |      | Assembly is in the reverse order of disassembly.                        |
| (1)                      | Oil pump body bolt       | 3    |   |
| (2)                      | Cooler pump cover        | 1    |   |
| (3)                      | Dowel pin                | 2    |   |
| (4)                      | Cooler outer rotor       | 1    | NOTE  |
|                          |                          |      | • Install the outer rotor with its punch mark facing cooler pump cover. |
| (5)                      | Cooler inner rotor       | 1    |   |
| (6)                      | Drive pin                | 1    |   |
| (7)                      | Thrust washer            | 1    |   |
| (8)                      | Oil pump body            | 1    |   |
| (9)                      | Dowel pin                | 2    |   |
| (10)                     | Feed pump outer rotor    | 1    | NOTE  |
|                          |                          |      | • Install the outer rotor with its punch mark facing feed pump cover.   |
| (11)                     | Feed pump inner rotor    | 1    |   |
| (12)                     | Drive pin                | 1    |   |
| (13)                     | Oil pump shaft           | 1    | NOTE  |
|                          |                          |      | • Install with the tab side facing the cover (water pump side).         |
| (14)                     | Feed pump cover          | 1    |   |
| (15)                     | Cotter pin               | 1    |   |
| (16)                     | Spring retainer          | 1    |   |
| (17)                     | Spring                   | 1    |   |
| (18)                     | Piston                   | 1    |   |
| (19)                     | Cotter pin               | 1    |   |
| (20)                     | Oil strainer pipe/O-ring | 1/1  |   |

# 5. Cooling System

|                                 |     |                                 |     |
|---------------------------------|-----|---------------------------------|-----|
| Service Information             | 5-1 | Water Pump Disassembly/Assembly | 5-5 |
| Troubleshooting                 | 5-1 | Radiator Removal/Installation   | 5-6 |
| System Flow Pattern             | 5-2 | Radiator Disassembly/Assembly   | 5-8 |
| Coolant Draining                | 5-3 |                                 |     |
| Thermostat Removal/Installation | 5-4 |                                 |     |

5

## Service Information

### ⚠ WARNING

- Wait until the engine is cool before slowly removing the radiator cap. Removing the cap while the engine is hot and the coolant is under pressure may cause serious scalding.
- Radiator coolant is toxic. Keep it away from eyes, mouth, skin and clothes.
  - If any coolant gets in your eyes, rinse them with water and consult a doctor immediately.
  - If any coolant is swallowed, induce vomiting, gargle and consult a physician immediately.
  - If any coolant gets on your skin or clothes, rinse thoroughly with plenty of water.
- KEEP OUT OF REACH OF CHILDREN.

- Add coolant at the reserve tank. Do not remove the radiator cap except to refill or drain the system.
- All cooling system service can be made with the engine in the frame.
- Avoid spilling coolant on painted surfaces.
- After servicing the system, check for leaks with a cooling system tester.
- Refer to section 18 for fan motor switch and thermo sensor inspections.

## Troubleshooting

### Engine Temperature Too High

- Faulty radiator cap.
- Insufficient coolant.
- Passages blocked in radiator, hoses, or water jacket.
- Air in system.
- Faulty water pump.
- Thermostat stuck closed.
- Faulty temperature gauge or thermo sensor.
- Faulty cooling fan motor.
- Faulty fan motor switch.
- Fan shroud installed improperly.

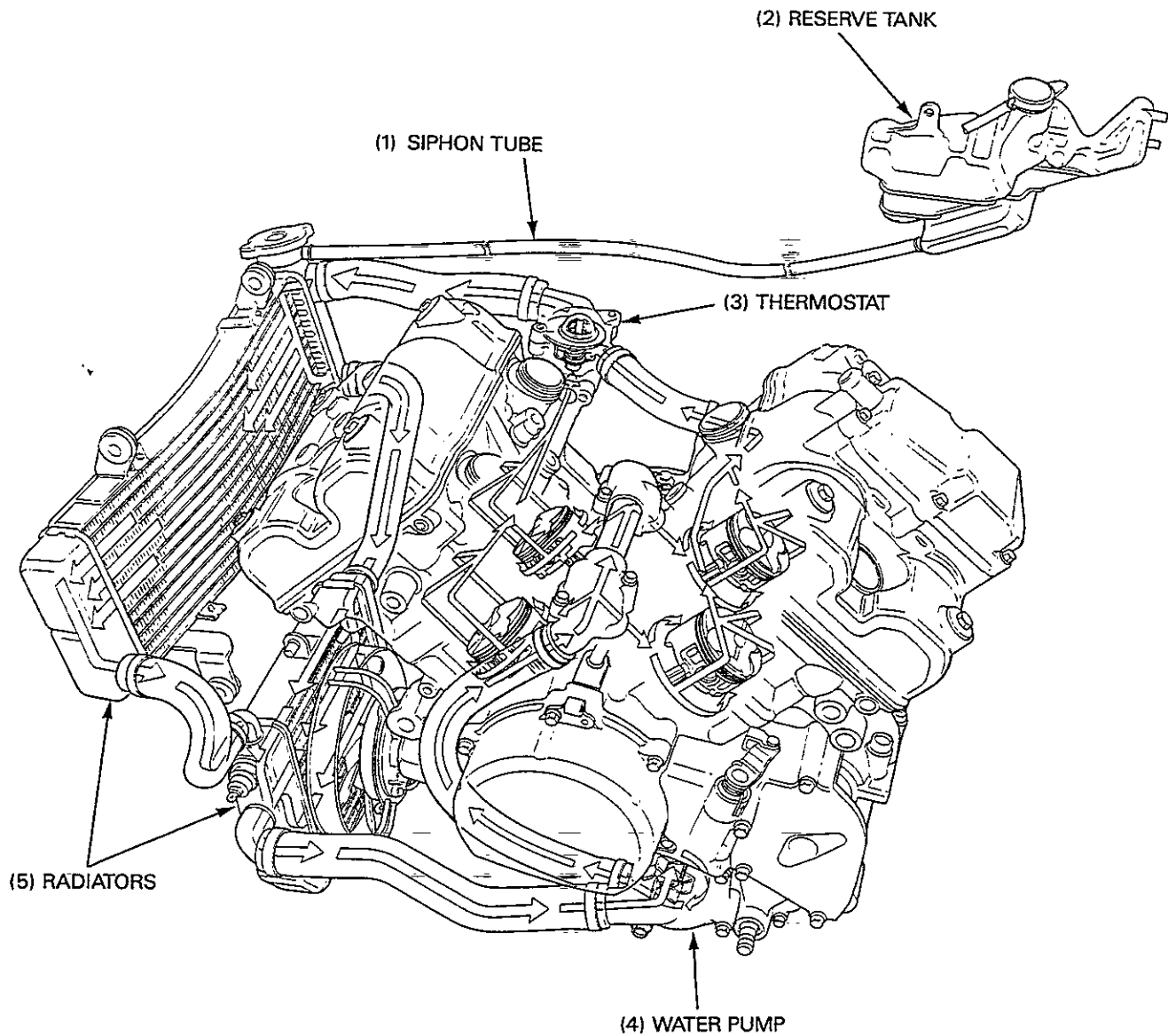
### Engine Temperature Too Low

- Faulty temperature gauge or gauge sensor.
- Thermostat stuck open.
- Faulty cooling fan motor switch (see section 18).

### Coolant Leaks

- Faulty pump mechanical seal.
- Deteriorated O-rings.
- Faulty radiator cap.
- Damaged or deteriorated gasket.
- Loose hose connection or clamp.
- Damaged or deteriorated hoses.

## System Flow Pattern

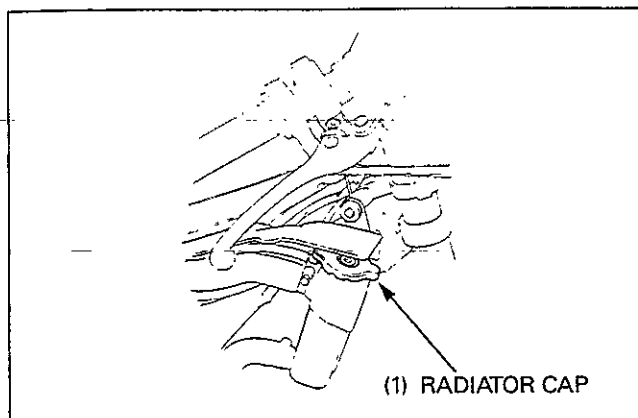


## Coolant Draining

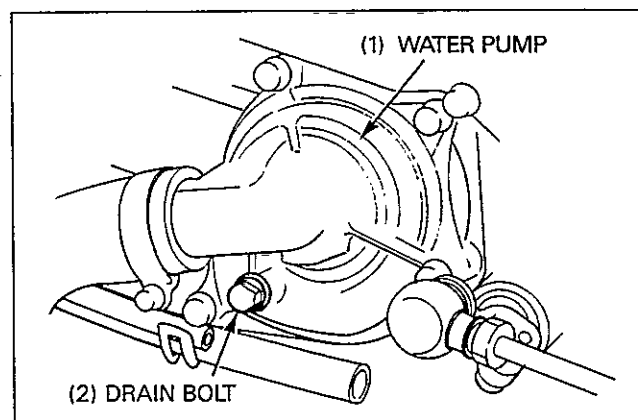
### ⚠ WARNING

- The radiator cap is under high pressure and radiator coolant could spurt out, resulting in scalds on your hands etc. If the cap is removed while the radiator is hot. Wait until the radiator cools down and remove the cap.

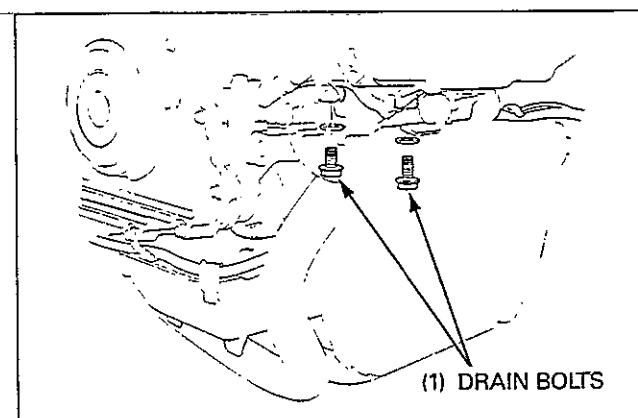
Remove the side fairing and the lower fairing (pages 2-3 and 2-4).  
Remove the radiator cap.



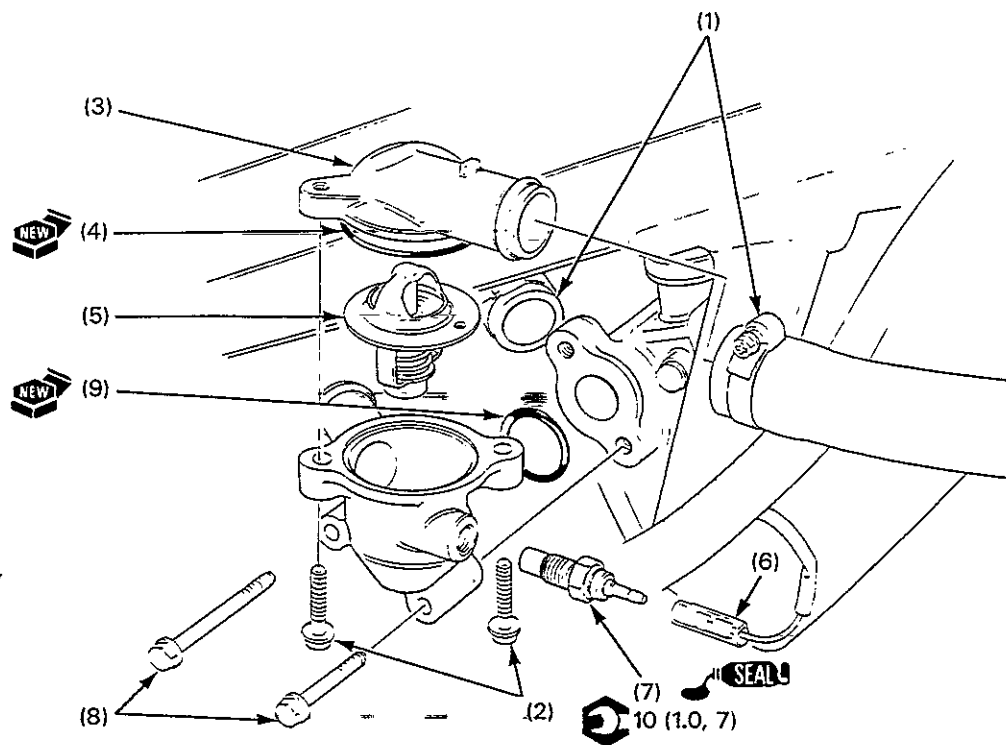
Remove the drain bolt (on which a copper washer attached) from the water pump and drain the coolant.



Remove the two drain bolts from the cylinder and drain the coolant.



## Thermostat Removal/Installation

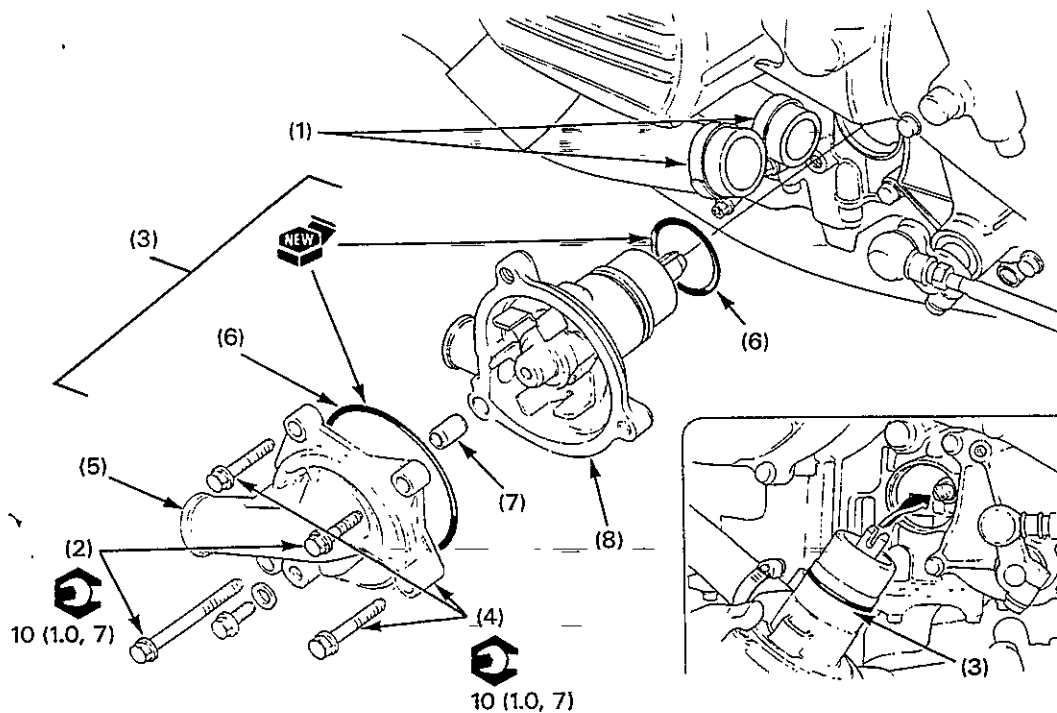


## Requisite Service

- Fuel tank removal/installation (page 2-5).
- Lower fairing removal/installation (page 2-4).
- Coolant draining (page 5-3).
- Coolant refill (section 5 of the Common Service Manual).

| Procedure |   | Q'ty | Remarks   |
|-----------|---|------|---|
| (1)       | <b>Removal Order</b><br>Band/water hose | 2/2  | Installation is in the reverse order of removal.<br>NOTE<br>• Loosen the hose band. |
| (2)       | Thermostat cover bolt                   | 2    |   |
| (3)       | Thermostat cover                        | 1    |   |
| (4)       | O-ring                                  | 1    |   |
| (5)       | Thermostat                              | 1    |   |
| (6)       | Thermo sensor connector                 | 1    |   |
| (7)       | Thermo sensor                           | 1    | NOTE<br>• At reassembly, apply a sealing agent to the threads.                      |
| (8)       | Thermostat housing bolt                 | 2    |   |
| (9)       | O-ring                                  | 1    |   |

# Water Pump Disassembly/Assembly



## NOTE

- Before removing the water pump, place an oil pan under the engine to catch the leaked engine.

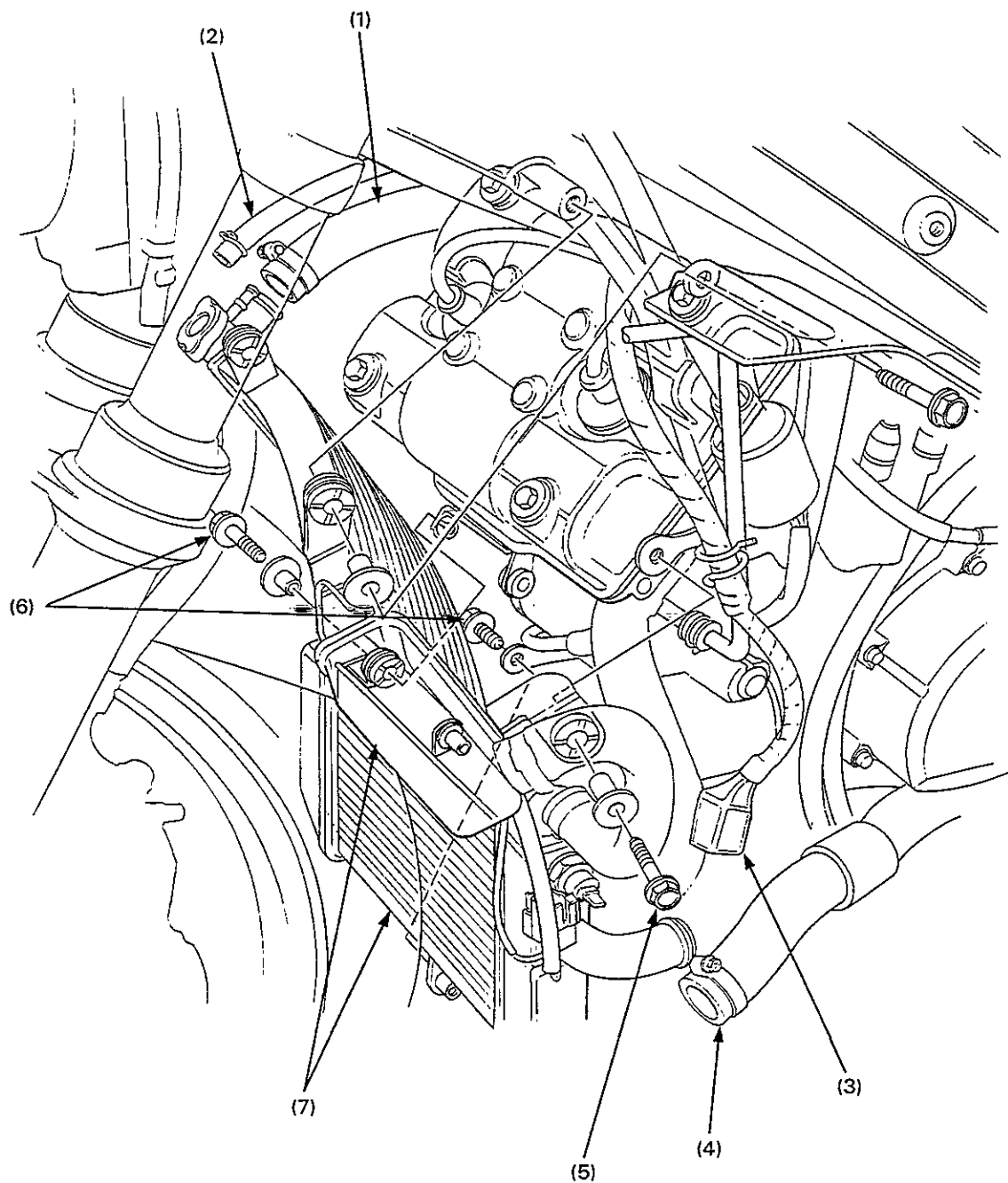
## Requisite Service

- Lower fairing removal/installation (page 2-4).
- Coolant draining (page 5-3).
- Coolant refill (section 5 of the Common Service Manual).

| Procedure |  | Q'ty | Remarks  |
|-----------|--|------|--|
| (1)       | <b>Removal Order</b><br>Hose band/water hose | 2/2  | Installation is in the reverse order of removal.<br>NOTE<br>• Loosen the band and pull out the water hose. |
| (2)       | Bolt   | 2    | NOTE<br>• Before removing bolts, loosen the pump cover bolts.  |
| (3)       | Water pump assembly                          | 1    | NOTE<br>• At installation, align the pump shaft slot with the oil pump shaft.                              |
| (4)       | Housing cover bolt                           | 2    |  |
| (5)       | Cover  | 1    |  |
| (6)       | O-ring                                       | 2    |  |
| (7)       | Dowel pin                                    | 1    |  |
| (8)       | Water pump                                   | 1    | <b>CAUTION</b><br>• Avoid further disassembly.   |



## Radiator Removal/Installation



**CAUTION**

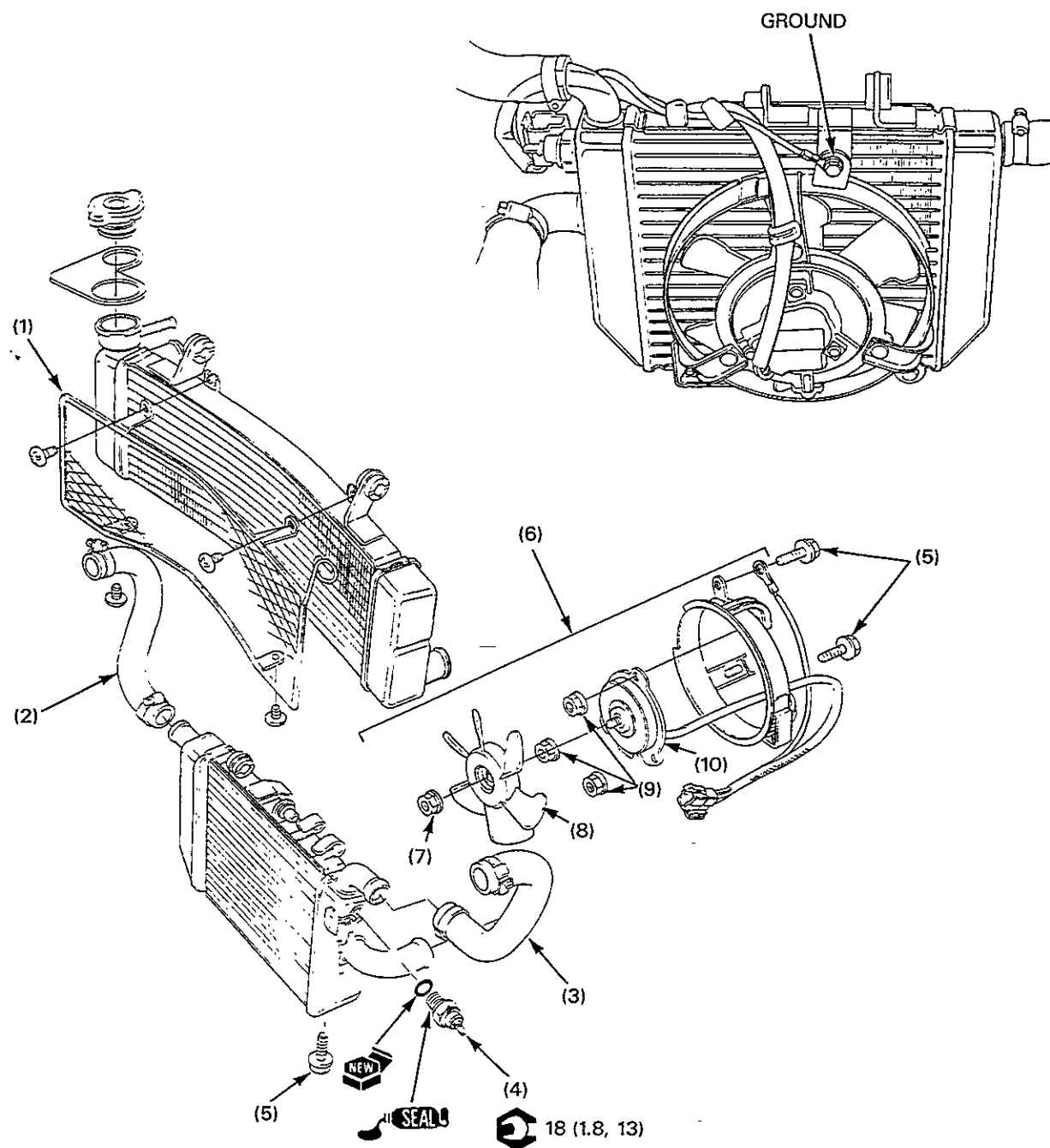
- Protect the radiator fins by attaching a piece of adhesive tape or equivalent and remove/install the radiator with care not to break the fins.
- Take care not to damage the front fender.

**Requisite Service**

- Lower fairing removal/installation (page 2-4).
- Coolant draining (page 5-3).
- Coolant refill (section 5 of the Common Service Manual).

| Procedure            |  | Q'ty | Remarks   |
|----------------------|--|------|---|
| <b>Removal Order</b> |  |      | Installation is in the reverse order of removal.  |
| (1)                  | Upper radiator hose                            | 1    |   |
| (2)                  | Radiator breather tube                         | 1    |   |
| (3)                  | Fan motor connector/fan motor switch connector | 1/1  |   |
| (4)                  | Lower radiator hose                            | 1    |   |
| (5)                  | Upper radiator bolt                            | 2    | NOTE<br>• Remove the two bolts, pull the upper radiator to the flywheel side, and disconnect at the upper connection of the radiator mount. |
| (6)                  | Lower radiator bolt                            | 2    | NOTE<br>• Remove the two bolts, pull the lower radiator to the clutch side, and disconnect at the upper connection of the radiator mount.   |
| (7)                  | Upper/lower radiator                           | 1/1  | NOTE<br>• Remove as an assembly.  |

## Radiator Disassembly/Assembly



**CAUTION**

- Protect the radiator fins by attaching a piece of adhesive tape or equivalent and remove/install the radiator with care not to break the fins.

**NOTE**

- Set the fan motor wire in the fan shroud clamp properly to avoid interference between the fan and the cord.

**Requisite Service**

- Radiator removal/installation (page 5-6).

| Procedure                |                     | Q'ty | Remarks   |
|--------------------------|---------------------|------|---|
| <b>Disassembly Order</b> |                     |      | Assembly is in the reverse order of disassembly.  |
| (1)                      | Radiator grille     | 1    |   |
| (2)                      | Right radiator hose | 1    |   |
| (3)                      | Left radiator       | 1    |   |
| (4)                      | Fan motor switch    | 1    | NOTE<br>• At installation, apply sealant to the threads.                                      |
|                          |                     |      | <b>CAUTION</b><br>• Do not over-tighten the fan motor switch, or the radiator may be damaged. |
| (5)                      | Fan motor bolt      | 3    | NOTE<br>• On reassembly, tighten the ground wire together with the upper bolt.                |
| (6)                      | Fan motor assembly  | 1    | NOTE<br>• Disconnect the connector and the wire from the clamp of the lower radiator.         |
| (7)                      | Nut                 | 1    |   |
| (8)                      | Cooling fan         | 1    | NOTE<br>• When reassembling, align the fan motor shaft and the cutout in the fan blade.       |
| (9)                      | Fan motor nut       | 3    |   |
| (10)                     | Fan motor           | 1    | NOTE<br>• Install the fan motor on the fan shroud with the water drain hole facing down.      |

## 6. Fuel System

|                                  |     |                                 |      |
|----------------------------------|-----|---------------------------------|------|
| Service Information              | 6-1 | Carburetor Removal/Installation | 6-8  |
| Troubleshooting                  | 6-2 | Carburetor Separation           | 6-10 |
| Fuel Tank Disassembly/Assembly   | 6-3 | Carburetor Combination          | 6-12 |
| Fuel Valve Disassembly/Assembly  | 6-4 | Carburetor Disassembly/Assembly | 6-14 |
| Air Cleaner Removal/Installation | 6-6 |                                 |      |

### Service Information

6

#### ⚠ WARNING

- Gasoline is extremely flammable and is explosive under certain conditions. Work in a well ventilated area. Smoking or allowing flames or sparks in the work area or where gasoline is stored can cause fire or explosion.

#### CAUTION

- Bending or twisting the control cables will impair smooth operation and could cause the cables to stick or bind, resulting in loss of vehicle control.
- Be sure to remove the diaphragms before cleaning air and fuel passages with compressed air. The diaphragms might be damaged.

#### NOTE

- If the vehicle is to be stored for more than one month, drain the float bowls. Fuel left in the float bowls may cause clogged jets resulting in hard starting or poor driveability.

- Carburetor disassembly is not required for servicing the vacuum piston and the float chamber.
- Refer to section 2 for fuel tank removal and installation.
- When disassembling fuel system parts, note the locations of the O-rings. Replace them with new ones on reassembly.
- Before disassembling the carburetor, place the suitable container under the carburetor drain bolt, then loosen the bolt and drain the carburetor.
- After removing the carburetor, wrap the intake port of the engine with a shop towel or cover it with piece of tape to prevent any foreign material from dropping into the engine.
- Carburetor number is set so that it corresponds to the cylinder number.

## **Troubleshooting**

### **Engine Won't Start**

- No fuel to carburetors
  - fuel strainer clogged
  - fuel tube clogged
  - faulty fuel valve
  - float level misadjusted
  - fuel tank cap breather hole clogged
- Too much fuel getting to the engine
  - air cleaner clogged
  - flooded carburetors
- Intake air leak
- Fuel contaminated/deteriorated
- Slow circuit or bystarter circuit clogged
- Ignition malfunction

### **Engine Stalls, Hard to Start, Rough Idling**

- Fuel line restricted
- Ignition malfunction
- Fuel mixture too lean/rich
- Fuel contaminated/deteriorated
- Intake air leak
- Idle speed misadjusted
- Pilot screw misadjusted
- Slow circuit or bystarter circuit clogged
- Float level misadjusted
- Fuel tank breather tube clogged

### **Afterburn on Deceleration**

- Lean mixture in slow circuit

### **Backfiring or Misfiring During Acceleration**

- Ignition system faulty
- Fuel mixture too lean

### **Poor Performance (driveability) and Poor Fuel Economy**

- Fuel system clogged
- Ignition malfunction

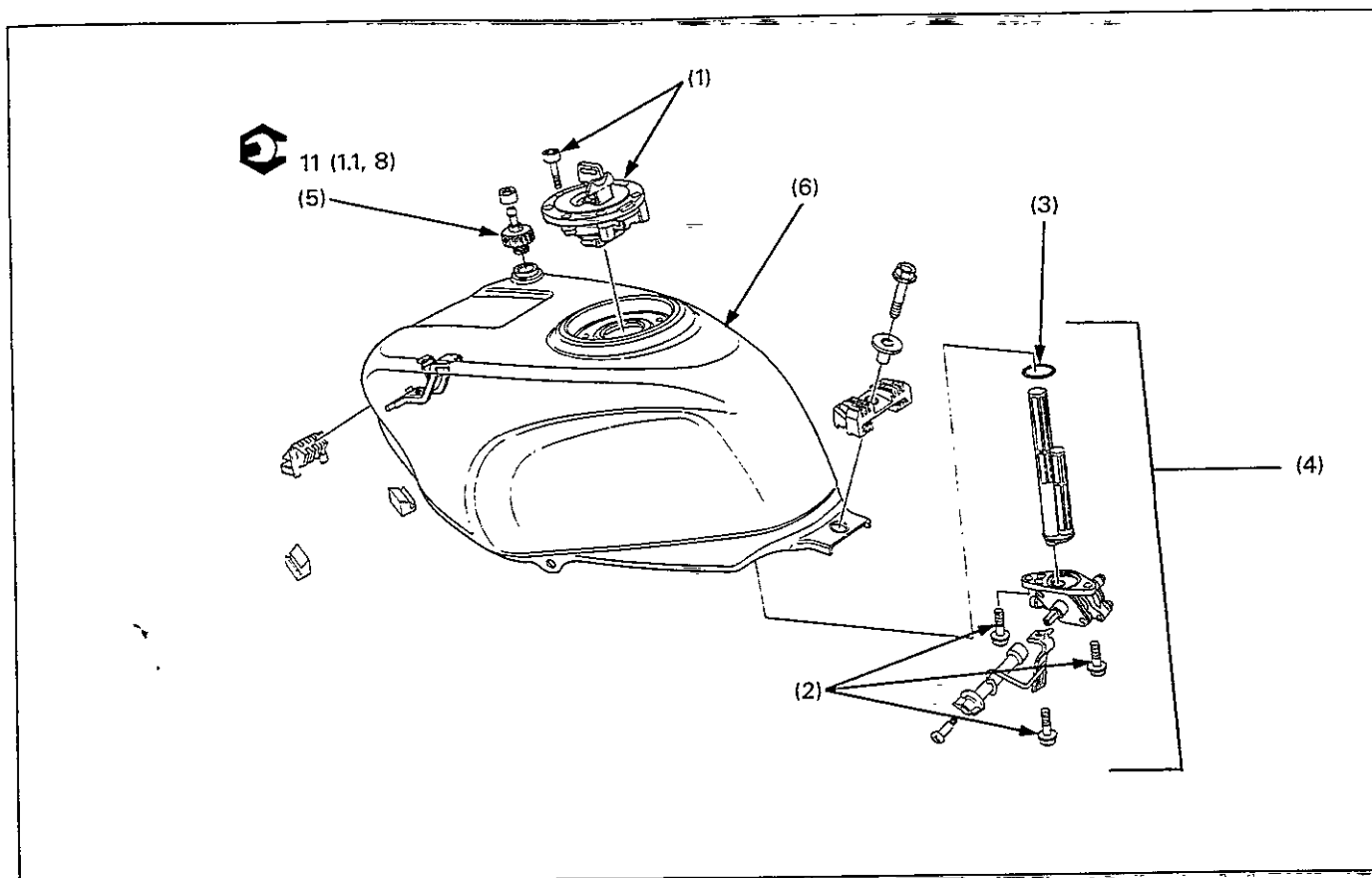
### **Lean Mixture**

- Fuel jets clogged
- Float valve faulty
- Float level too low
- Fuel line restricted
- Carburetor air vent hole (or tube) clogged
- Intake air leak
- Vacuum piston faulty
- Throttle valve faulty

### **Rich Mixture**

- Bystarter valve in ON position
- Float valve faulty
- Float level too high
- Air jets clogged
- Air cleaner element contaminated
- Flooded carburetors

# Fuel Tank Disassembly/Assembly



## ⚠ WARNING

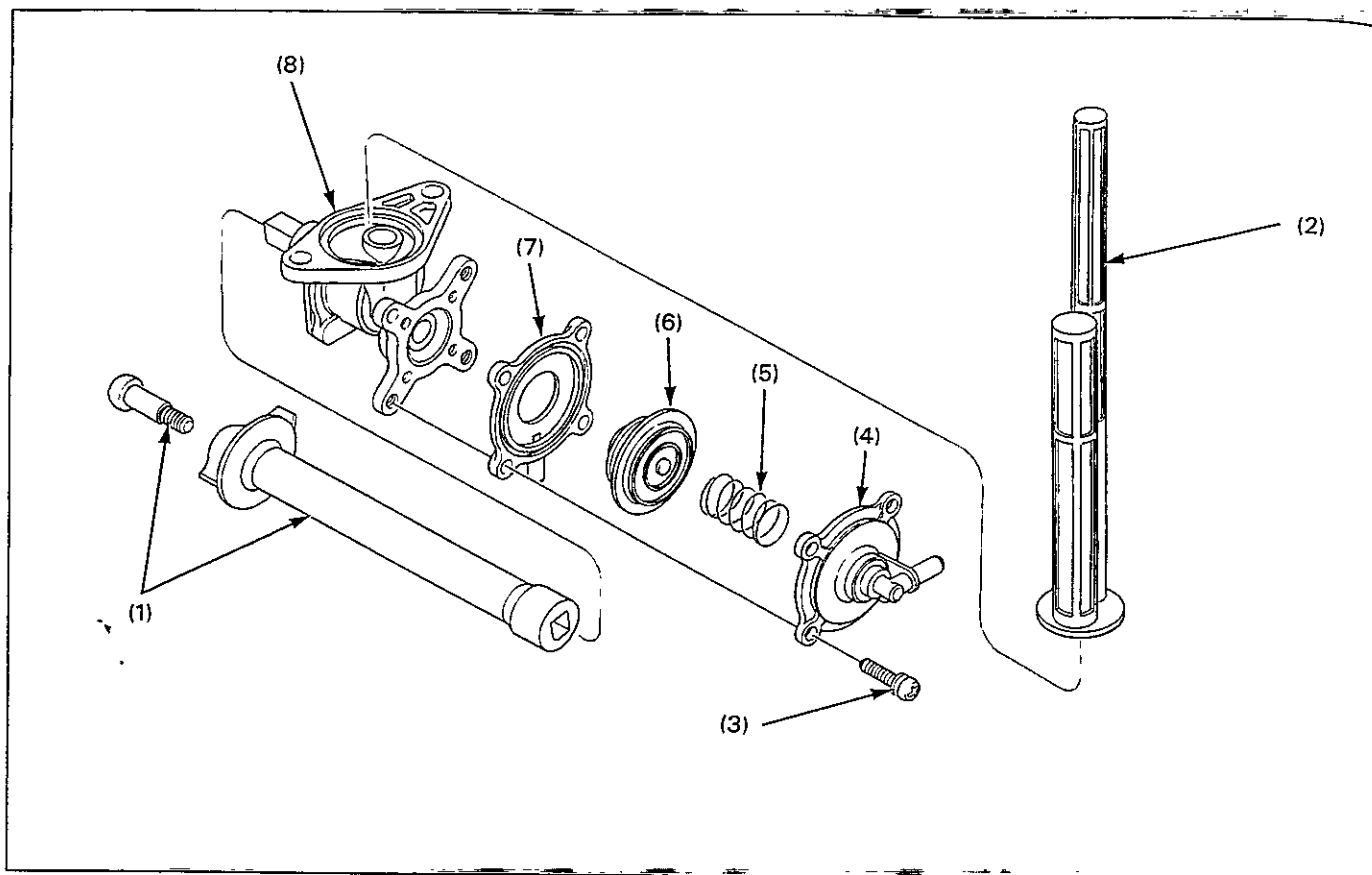
- Gasoline is extremely flammable and is explosive under certain conditions. Work in a well ventilated area. Smoking or allowing flames or sparks in the work area or where gasoline is stored can cause a fire or explosion.

## Requisite Service

- Fuel tank removal/installation (page 2-5).

| Procedure                |                     | Q'ty | Remarks  |
|--------------------------|---------------------|------|--|
| <b>Disassembly Order</b> |                     |      | Assembly is in the reverse order of disassembly.   |
| (1)                      | Bolt/tank cap       | 7/1  | <b>NOTE</b> <ul style="list-style-type: none"> <li>When assembling the fuel tank, take care not to get the O-ring caught or pinched in the parts.</li> </ul> |
| (2)                      | Fuel valve bolt     | 3    |  |
| (3)                      | O-ring              | 1    |  |
| (4)                      | Fuel valve assembly | 1    |  |
| (5)                      | Breather tube joint | 1    |  |
| (6)                      | Fuel tank           | 1    |  |

## Fuel Valve Disassembly/Assembly

**⚠ WARNING**

- Gasoline is extremely flammable and is explosive under certain conditions. Work in a well ventilated area. Smoking or allowing flames or sparks in the work area or where gasoline is stored can cause a fire or explosion.

**Requisite Service**

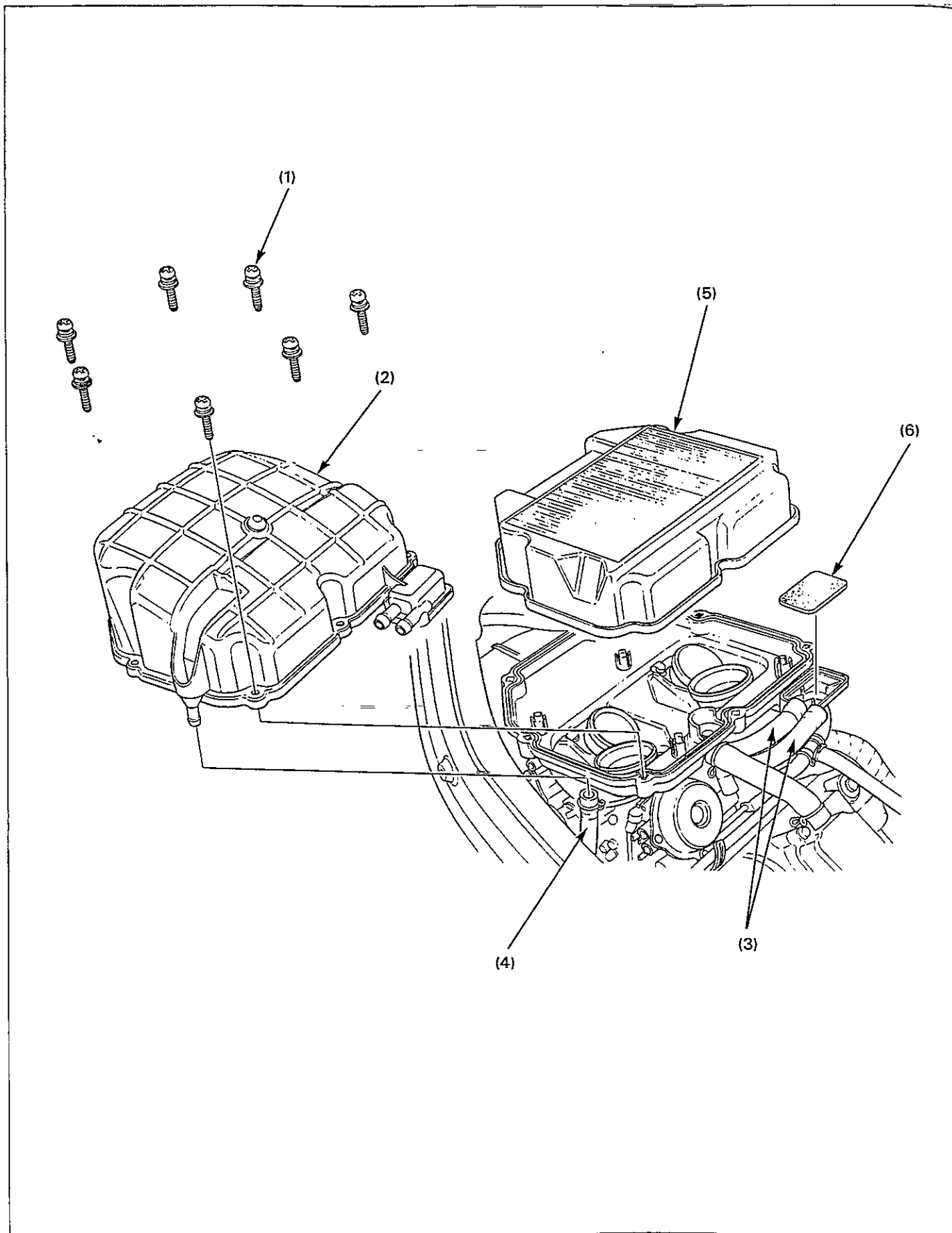
- Fuel tank disassembly/assembly (page 6-3).

| Procedure                |                       | Q'ty | Remarks   |
|--------------------------|-----------------------|------|---|
| <b>Disassembly Order</b> |                       |      | Assembly is in the reverse order of disassembly.          |
| (1)                      | Fuel valve lever      | 1    | <b>NOTE</b><br>• On assembly, tighten the screws equally. |
| (2)                      | Fuel filter           | 1    |   |
| (3)                      | Diaphragm cover screw | 4    |   |
| (4)                      | Diaphragm cover       | 1    |   |
| (5)                      | Spring                | 1    |   |
| (6)                      | Diaphragm             | 1    |   |
| (7)                      | Set plate             | 1    |   |
| (8)                      | Fuel valve body       | 1    |   |



MEMO

## Air Cleaner Removal/Installation

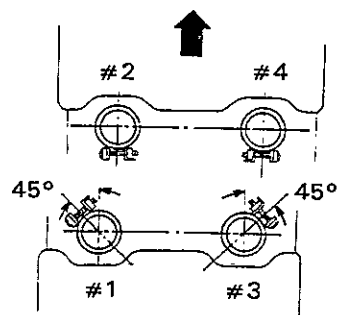
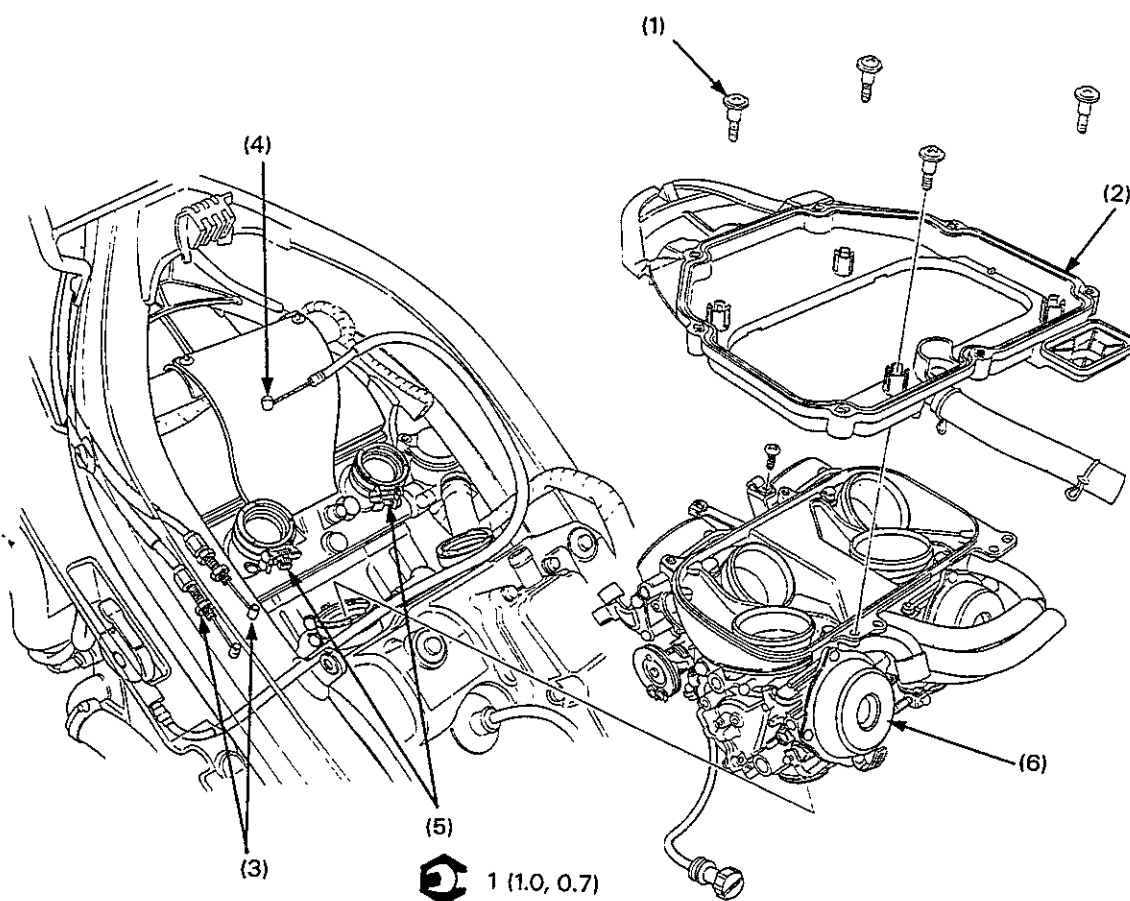


**Requisite Service**

- Fuel tank removal/installation (page 2-5).

| Procedure |                              | Q'ty | Remarks  |
|-----------|------------------------------|------|--|
|           | <b>Removal Order</b>         |      | Installation is in the reverse order of removal. |
| (1)       | Air cleaner case cover screw | 7    |  |
| (2)       | Air cleaner case cover       | 1    |  |
| (3)       | Sub air cleaner tube         | 2    |  |
| (4)       | Fuel tank drain tube         | 1    |  |
| (5)       | Air cleaner element          | 1    |  |
| (6)       | Sub air cleaner element      | 1    |  |

# Carburetor Removal/Installation



**⚠ WARNING**

- Gasoline is extremely flammable and is explosive under certain conditions. Work in a well ventilated area. Smoking or allowing flames or sparks in the work area or where gasoline is stored can cause a fire or explosion.

**NOTE**

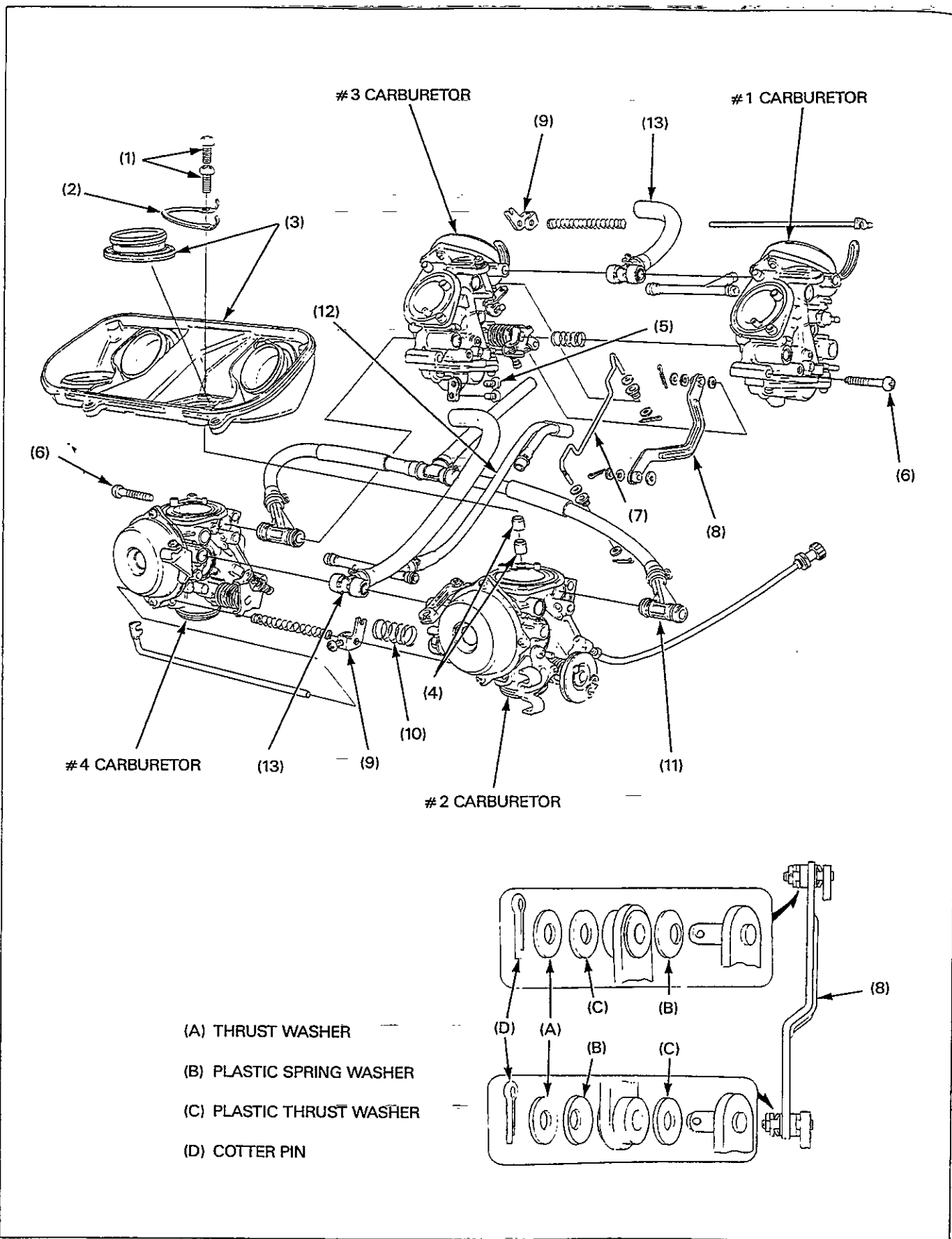
- After removing the carburetor, cover the engine intake port with a shop towel or tape to prevent foreign materials from entering the engine through the port.

**Requisite Service**

- Air cleaner removal/installation (page 6-6).

| Procedure            |                             | Q'ty | Remarks  |
|----------------------|-----------------------------|------|--|
| <b>Removal Order</b> |                             |      | Installation is in the reverse order of removal.     |
| (1)                  | Air cleaner case base screw | 4    |  |
| (2)                  | Air cleaner case base       | 1    |  |
| (3)                  | Throttle cable              | 2    | NOTE   |
|                      |                             |      | • Loosen the adjuster.                               |
| (4)                  | Choke cable                 | 1    |  |
| (5)                  | Insulator band              | 4    | NOTE   |
|                      |                             |      | • Loosen the screws on the carburetor side.          |
|                      |                             |      | Install the insulator bands as shown in the drawing. |
| (6)                  | Carburetor assembly         | 1    |  |

# Carburetor Separation



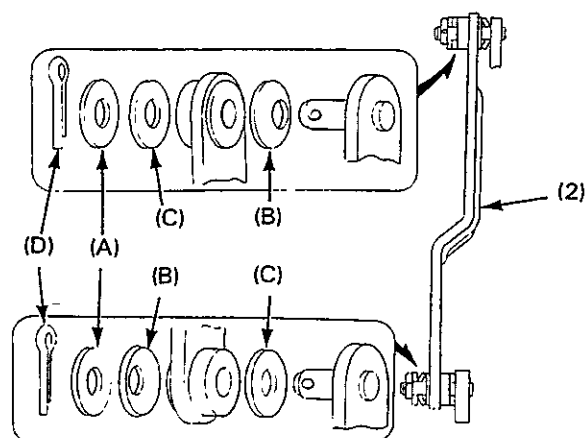
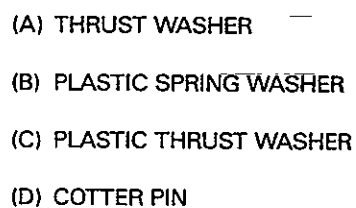
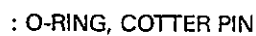
**⚠ WARNING**

- Gasoline is extremely flammable and is explosive under certain conditions. Work in a well ventilated area. Smoking or allowing flames or sparks in the work area or where gasoline is stored can cause a fire or explosion.

**Requisite Service**

- Carburetor removal (page 6-8).

| Procedure               |                              | Q'ty | Remarks  |
|-------------------------|------------------------------|------|--|
| <b>Separation order</b> |                              |      |  |
| (1)                     | Air chamber screw            | 8    |  |
| (2)                     | Lock plate                   | 4    |  |
| (3)                     | Air chamber/air cleaner duct | 1/4  |  |
| (4)                     | Dowel pin                    | 8    |  |
| (5)                     | Bracket screw                | 2    |  |
| (6)                     | Carburetor set screw         | 2    | NOTE   |
|                         |                              |      | • Separate the carburetors.                                      |
| (7)                     | By-starter link              | 1    | NOTE   |
|                         |                              |      | • Remove from the No. 2 and No. 3 carburetors.                   |
| (8)                     | Throttle link                | 1    | NOTE   |
|                         |                              |      | • Disconnect from the No. 2 and No. 3 carburetors.               |
| (9)                     | By-starter arm               | 2    | NOTE   |
|                         |                              |      | • Loosen the screws.   |
| (10)                    | # 1-3, # 2-4 thrust spring   | 2    | NOTE   |
|                         |                              |      | • Loosen the synchronizing screws.                               |
| (11)                    | Fuel tube                    | 1    | NOTE<br>• Note and record the joint pipe installation direction. |
| (12)                    | Air bent tube                | 1    |  |
| (13)                    | Sub air cleaner tube         | 2    |  |





**Requisite Service**

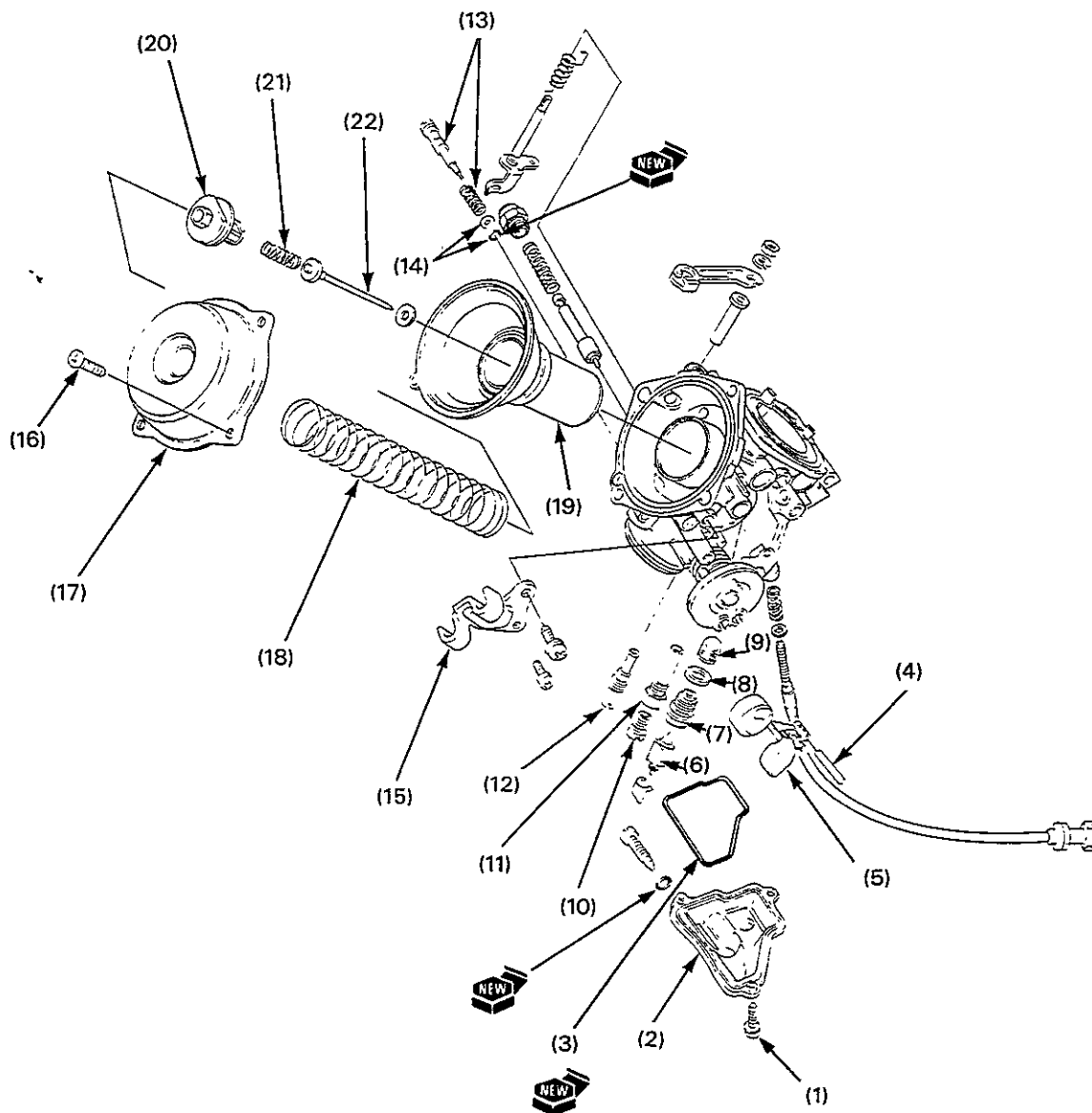
- Carburetor installation (page 6-8).

**CAUTION**

- After assembling the carburetor, check the throttle link and the bystarter link for smooth operation.
- After assembling the carburetor, move the bystarter link lever to "CLOSED" position and be sure that the bystarter valve is not pulled by the bystarter rod claw.

| Procedure |   | Q'ty | Remarks  |
|-----------|---|------|--|
| (1)       | <b>Combination Order</b><br>By-starter link | 1    | NOTE<br>• Refer to the drawing for the combination of the washer.  |
| (2)       | Throttle link                               | 1    |  |
| (3)       | Sub air cleaner tube                        | 2    |  |
| (4)       | Air bent tube                               | 1    |  |
| (5)       | Fuel tube                                   | 1    |  |
| (6)       | By-starter arm                              | 2    |  |
| (7)       | Carburetor set screw                        | 2    | NOTE<br>• Set the claw of the by-starter rod and arm on the by-starter valve securely.<br><br><b>CAUTION</b><br>• Take care not to damage the fuel joint pipe O-rings. |
| (8)       | #1-3; #2-4 thrust spring                    | 2    |  |
| (9)       | Bracket screw                               | 2    |  |
| (10)      | Dowel pin                                   | 8    |  |
| (11)      | Air chamber                                 | 1    |  |
| (12)      | Lock plate                                  | 4    |  |
| (13)      | Air chamber screw                           | 8    |  |

# Carburetor Disassembly/Assembly



**WARNING**

- Gasoline is extremely flammable and is explosive under certain conditions. Work in a well ventilated area. Smoking or allowing flames or sparks in the work area or where gasoline is stored can cause a fire or explosion.

**NOTE**

- The service procedure is for the No. 2 carburetor on this page.
- The procedures of the No. 1, 3, and 4 are the same as the No. 2.
- The vacuum chamber and float chamber can be serviced with the carburetor assembly.
- The pilot screws are factory pre-set and should not be removed unless the carburetors are overhauled. Turn each pilot screw in and carefully count the number of turns before it seats lightly. Make a note of this to use as a reference when reinstalling the pilot screws. If new pilot screws are installed, turn pilot screws out to the initial opening (page 1-6).

**Requisite Service**

- Carburetor removal/installation (page 6-8).

| Procedure                |                            | Q'ty | Remarks   |
|--------------------------|----------------------------|------|---|
| <b>Disassembly Order</b> |                            |      | Assembly is in the reverse order of disassembly.          |
|                          | Float Chamber              |      |   |
| (1)                      | Screw                      | 3    |   |
| (2)                      | Float chamber cover        | 1    |   |
| (3)                      | O-ring \                   | 1    |   |
| (4)                      | Float pin                  | 1    |   |
| (5)                      | Float                      | 1    |   |
| (6)                      | Float valve                | 1    |   |
| (7)                      | Valve seat                 | 1    |   |
| (8)                      | Washer                     | 1    |   |
| (9)                      | Filter                     | 1    |   |
| (10)                     | Main jet                   | 1    |   |
| (11)                     | Needle jet holder          | 1    |   |
| (12)                     | Slow jet                   | 1    |   |
| (13)                     | Pilot screw/spring         | 1/1  |   |
| (14)                     | Washer/O-ring              | 1/1  |   |
| (15)                     | Throttle cable holder      | 1    |   |
| <b>Vacuum Piston</b>     |                            |      |   |
| (16)                     | Vacuum chamber cover screw | 4    | NOTE  |
|                          |                            |      | • Install with care not to pinch the diaphragm.           |
| (17)                     | Vacuum chamber cover       | 1    |   |
| (18)                     | Spring                     | 1    |   |
| (19)                     | Vacuum piston              | 1    |   |
| (20)                     | Jet needle holder          | 1    | NOTE  |
|                          |                            |      | • Turn counterclockwise while pushing the holder lightly. |
| (21)                     | Spring                     | 1    |   |
| (22)                     | Jet needle                 | 1    |   |