

4-2. CHECKING

An oil pump found to have deteriorated in oil delivery performance or to have developed any malfunction should be replaced by a new one.

Such a pump can be overhauled for re-use; but oil pump overhaul in field is not *recommendable*. This is because the oil pump is a high-precision unit and its overhaul requires special equipment and a high degree of skill on the part of the person doing the overhaul job.

Except where the pump is presenting some difficulty not related to its oil delivery performance, the test of its internal condition is its rate of discharge.

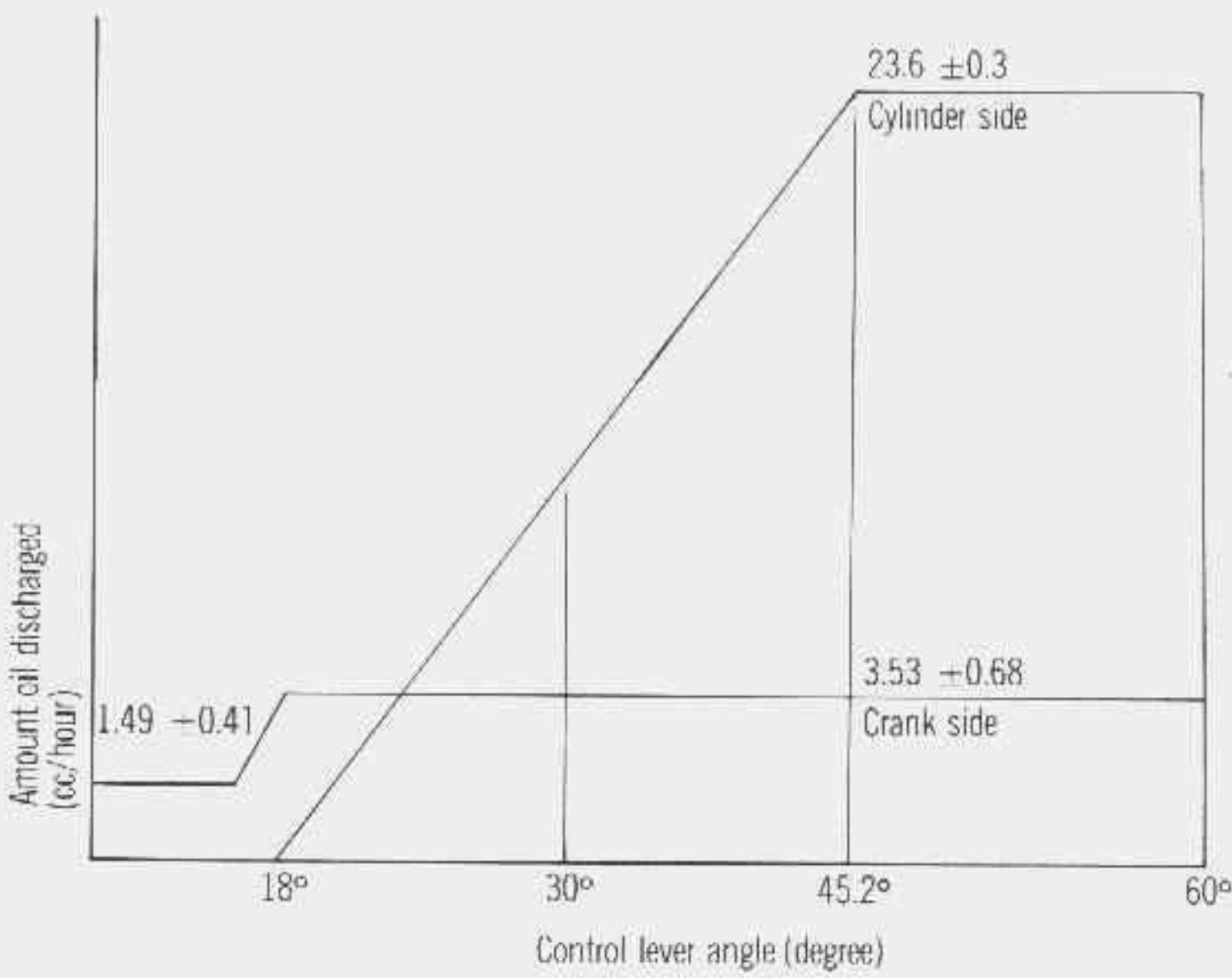


Fig. 6-4-2. Oil pump performance curves

Measuring discharging rate

Measure the discharging amount in the following order after warming up the engine sufficiently.

- a. Set the measuring apparatus at the oil pump inlet.
- b. Run the engine at  $2,000 \pm 100$  rpm. (Oil pump shaft is at 30 rpm.)
- c. Raise the oil pump lever to full open and start measurement.
- d. If the amount of oil in the measuring apparatus after two minutes is  $0.82 \sim 1.12$  cc less than the original amount there is no problem with the discharging rate of the oil pump.

4-3. ADJUSTMENT

Since the oil discharging rate of the oil pump is regulated by the throttle opening through throttle wire and control lever the throttle wire adjustment must be considered to be very important factor of engine lubrication.

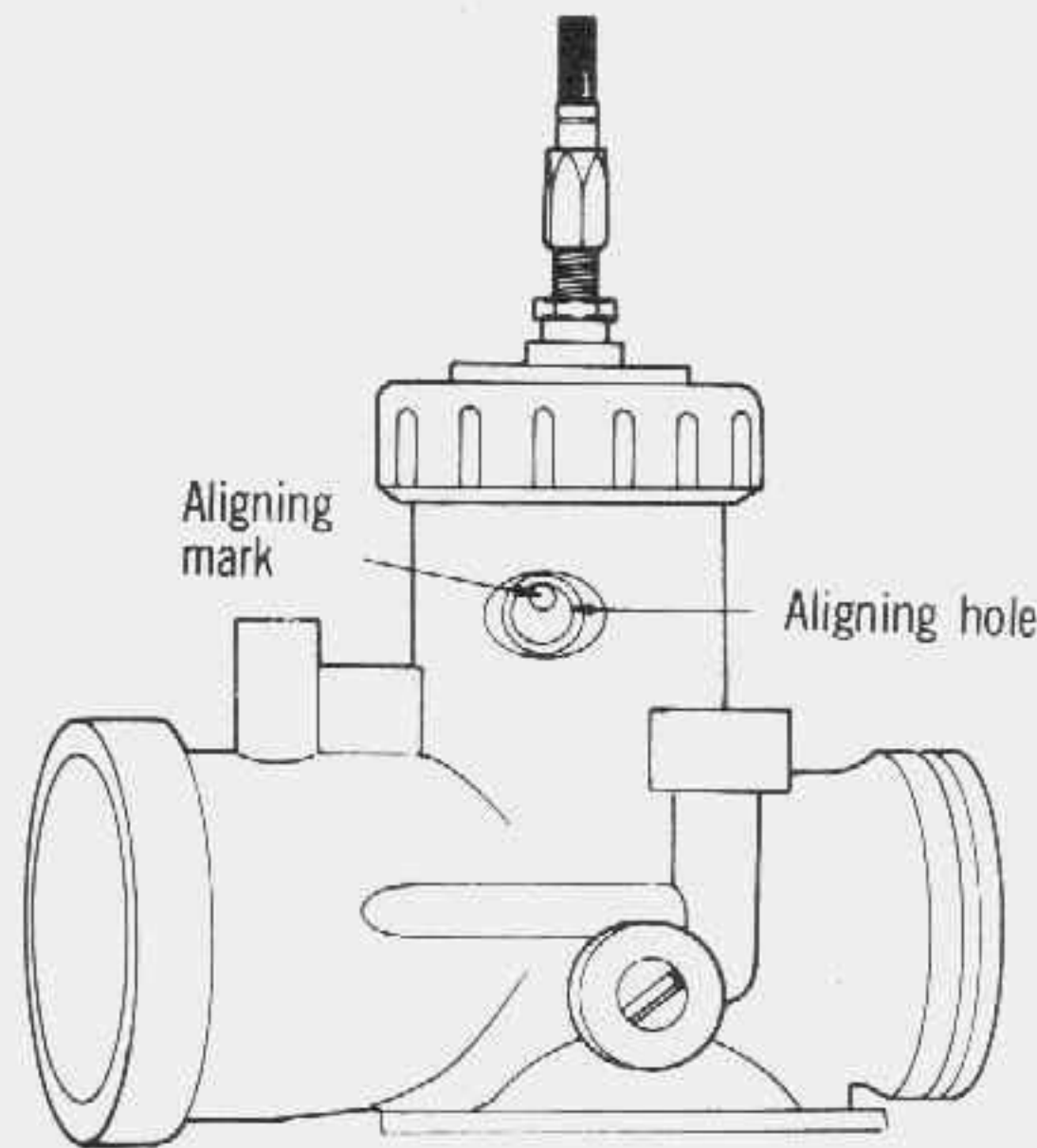


Fig. 6-4-3. Carburetor aligning marks

To adjust the oil pump by the throttle cable, perform the following procedure.

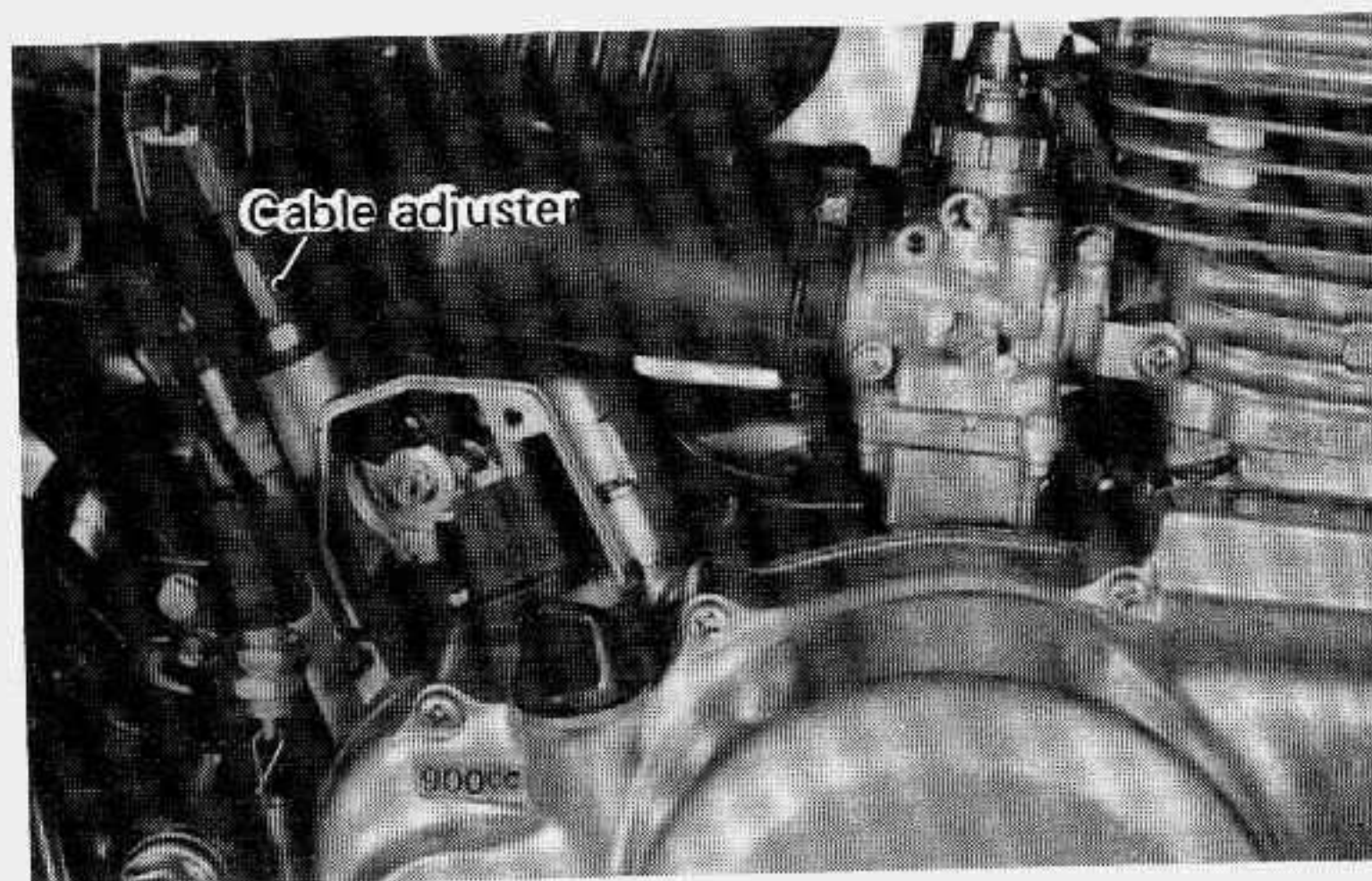
- 1) Remove the aligning hole plug on the right carburetor.
- 2) Wind up the throttle grip gradually and stop moving the grip just when an aligning mark on the side of throttle valve comes on upper end of the hole. Fig. 6-4-3.



- 3) Holding the grip in the position mentioned above adjust the cable adjuster so that a score on the oil pump lever align with the marking on the body Fig. 6-4-4.

**Note:**

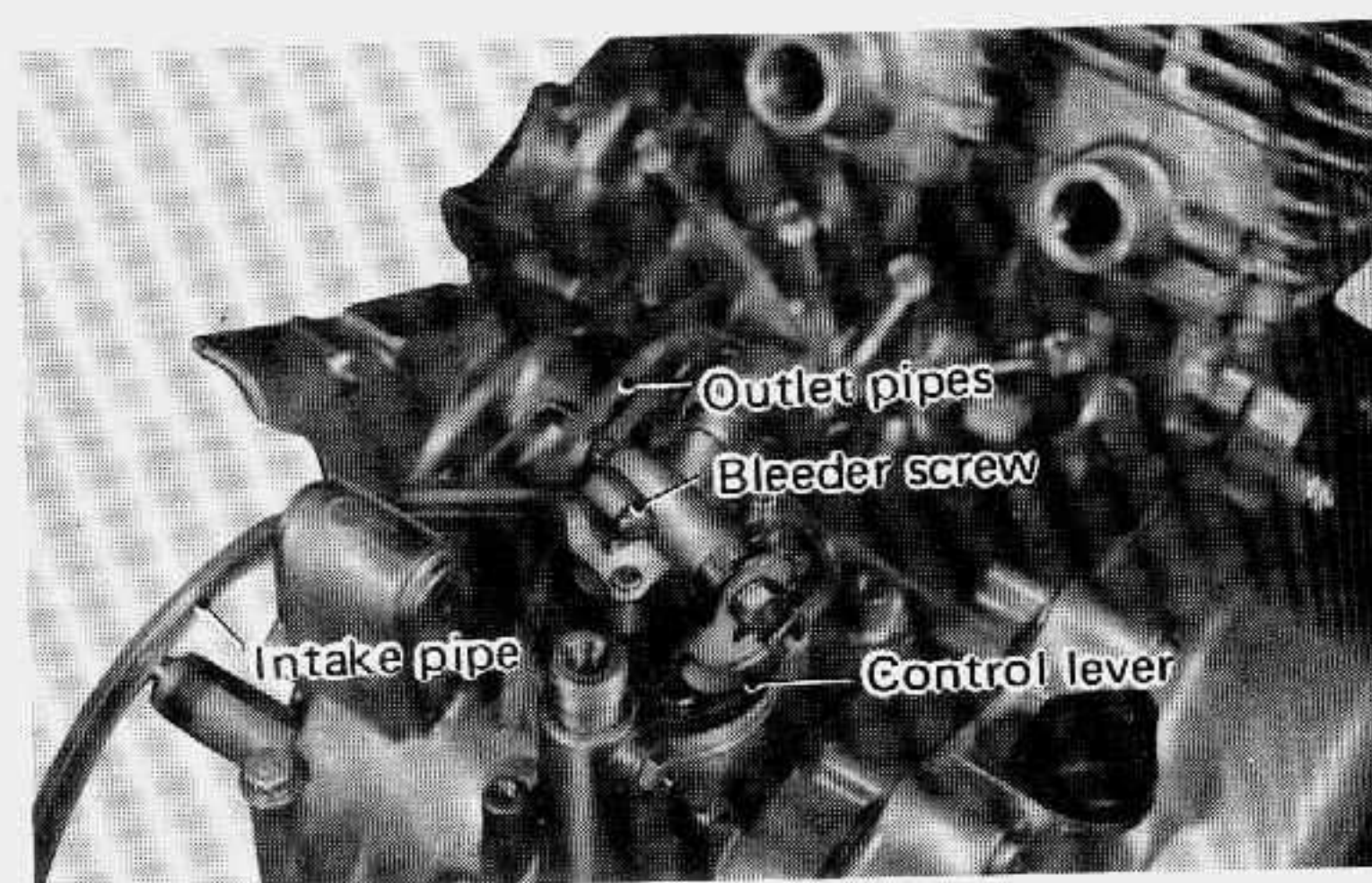
The adjustment in this section should be done after the throttle wire adjustment for the carburetor has been made; reversal of this sequence may cause the maladjustment of oil pump.



*Fig. 6-4-4. Adjusting oil pump*

#### 4-4. BLEEDING OF OIL LINES

In case air is found in the oil inlet pipe, bleed the line by loosening the bleeder screw. If air is in the outlet pipes, carry out either method 1) or 2), below, depending on amount of air.



*Fig. 6-4-5. Bleeding oil lines*

- 1) **Much air:**

Remove the oil pump and fill in oil with the oil filler to expel air as already explained in section 6-3-7.

- 2) **A little air:**

Start the engine with the oil control lever fully turned and keep the engine running at about 2,000 rpm till all air is expelled.



5. CARBURETOR

5-1. SPECIFICATIONS

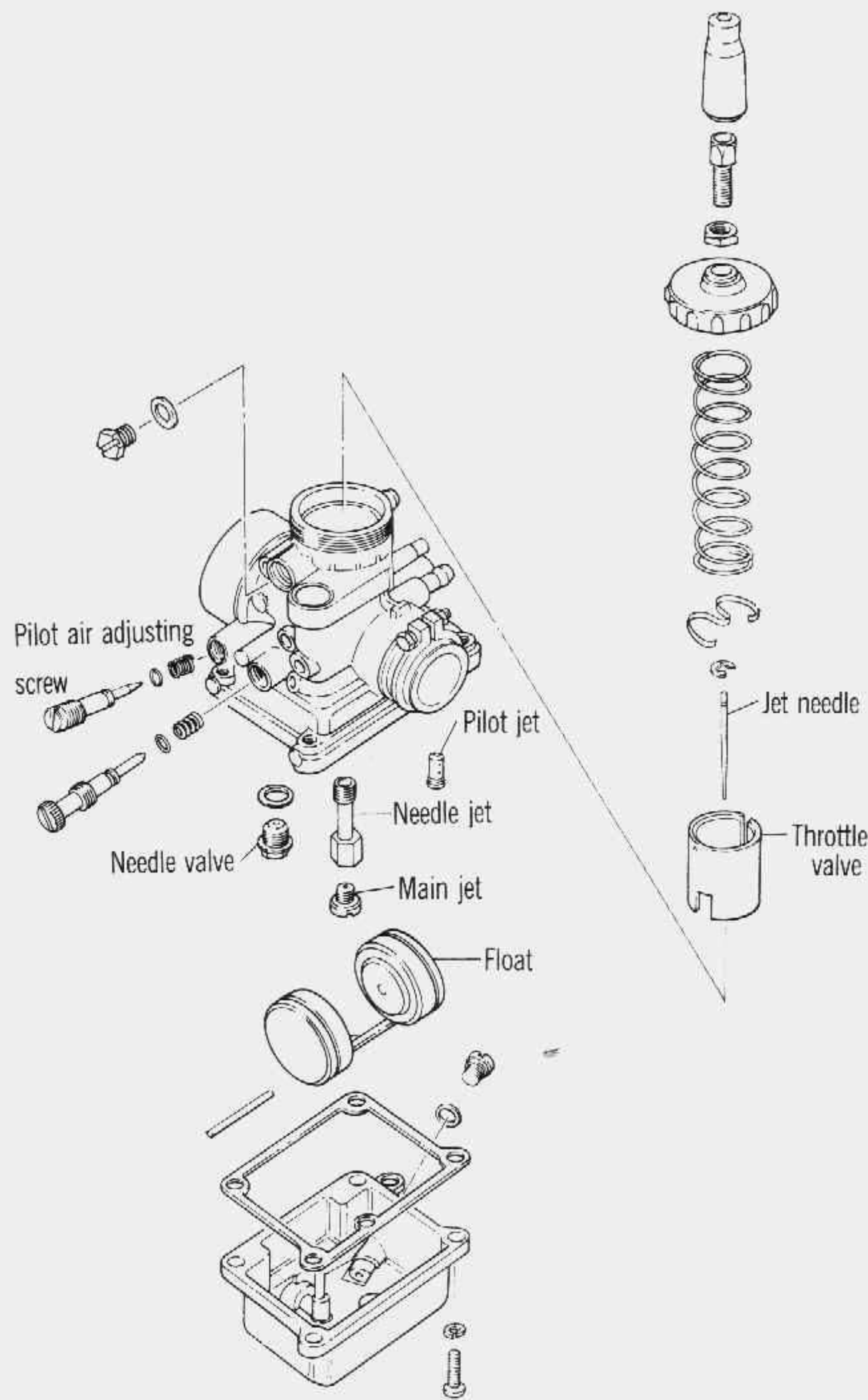





Fig. 6-5-1.

|                                 |             |
|---------------------------------|-------------|
| Type .....                      | VM18SC      |
| Main Jet .....                  | 70          |
| Jet Needle .....                | 4F19-3      |
| Needle Jet .....                | N-8         |
| Throttle Valve Cut-away .....   | 2.5         |
| Pilot Jet .....                 | 25          |
| Pilot Outlet .....              | 1.0         |
| Pilot Air Adjusting Screw ..... | 1½          |
| Needle Valve Seat .....         | 1.3         |
| Starter Jet .....               | 50          |
| Float Level .....               | 19.9 ± 1 mm |

5-2. CARBURETION

The adequate carburetion is determined according to the result of various tests mainly in consideration of engine power, fuel consumption and fuel cooling effect to the engine and jets settings are done so as to satisfy and balance all these conditions. Therefore, it is not recommended to replace the jet with the other size than original or to change the set positions of adjustable parts except when compensating the mixture ratio for the different altitude or climate conditions. When the adjustment is required, carry out the job referring to the following points.

1) Fuel-air mixture ratio can be changed in the following manners.

| Throttle opening | Method to change the ratio   | Standard setting                   |
|------------------|--|------------------------------------|
| Slight           | Pilot air adjusting screw<br><br>Leaner ( ) mixture<br><br>Richer mixture        | 1.5                                |
| Medium           | <br>Leaner mixture<br>Richer mixture<br><br>Jet needle                            | 3RD position<br>from top<br>groove |
| High             |  Main jet<br><br>Larger number : Richer mixture<br>Smaller number: Leaner mixture | Number: 70                         |

2) The fuel level inside the float chamber should also be set in proper position. To adjust the fuel level, measure the height of the float from the mixing chamber body as follow.

- a) Remove the float chamber.
- b) Hold the carburetor upside down with the float fitted to the mixing chamber body.
- c) Lower the float gradually and stop it just when the float tongue touches the upper end of the needle valve.
- d) Measure the distance between the float chamber fitted surface and bottom of the float as shown in Fig. 6-5-2.

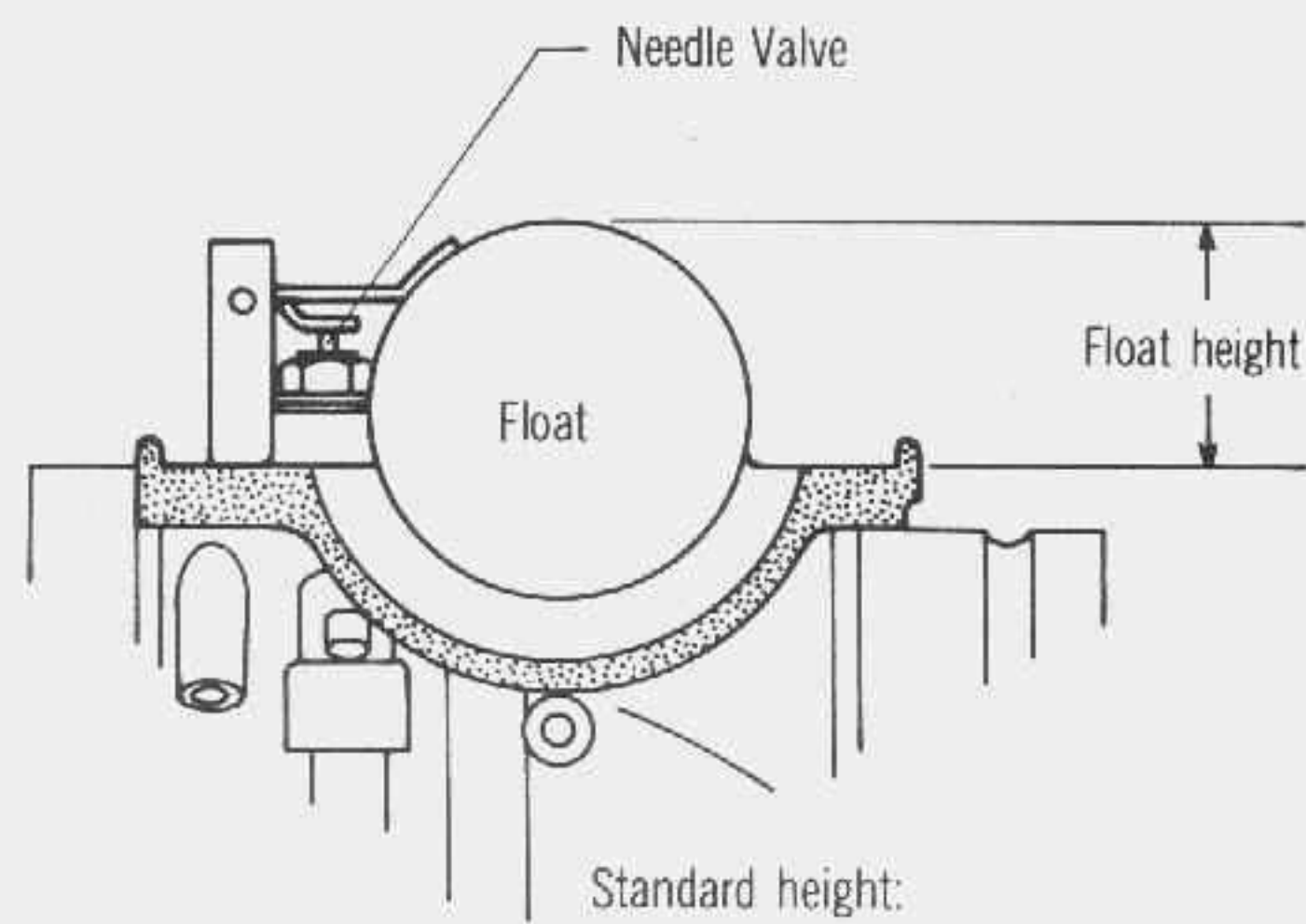


Fig. 6-5-2.



### 5-3. IDLING ADJUSTMENT

#### Adjusting idle speed

- Adjust the throttle cable adjuster on each carburetor to obtain 0.5 ~ 1.0 mm (0.02 ~ 0.04 in) cable play.
- Turn the pilot air screw clockwise until it seats in the carburetor.  
Do not force pilot air screw or the tip will be damaged.
- Open the pilot air screw 1½ turns counter-clock-wise.
- Start the engine and allow it to warm up.
- Slowly turn the pilot air screw in or out within ¼ turn from the standard setting (1½ turns) until the engine runs smoothly.

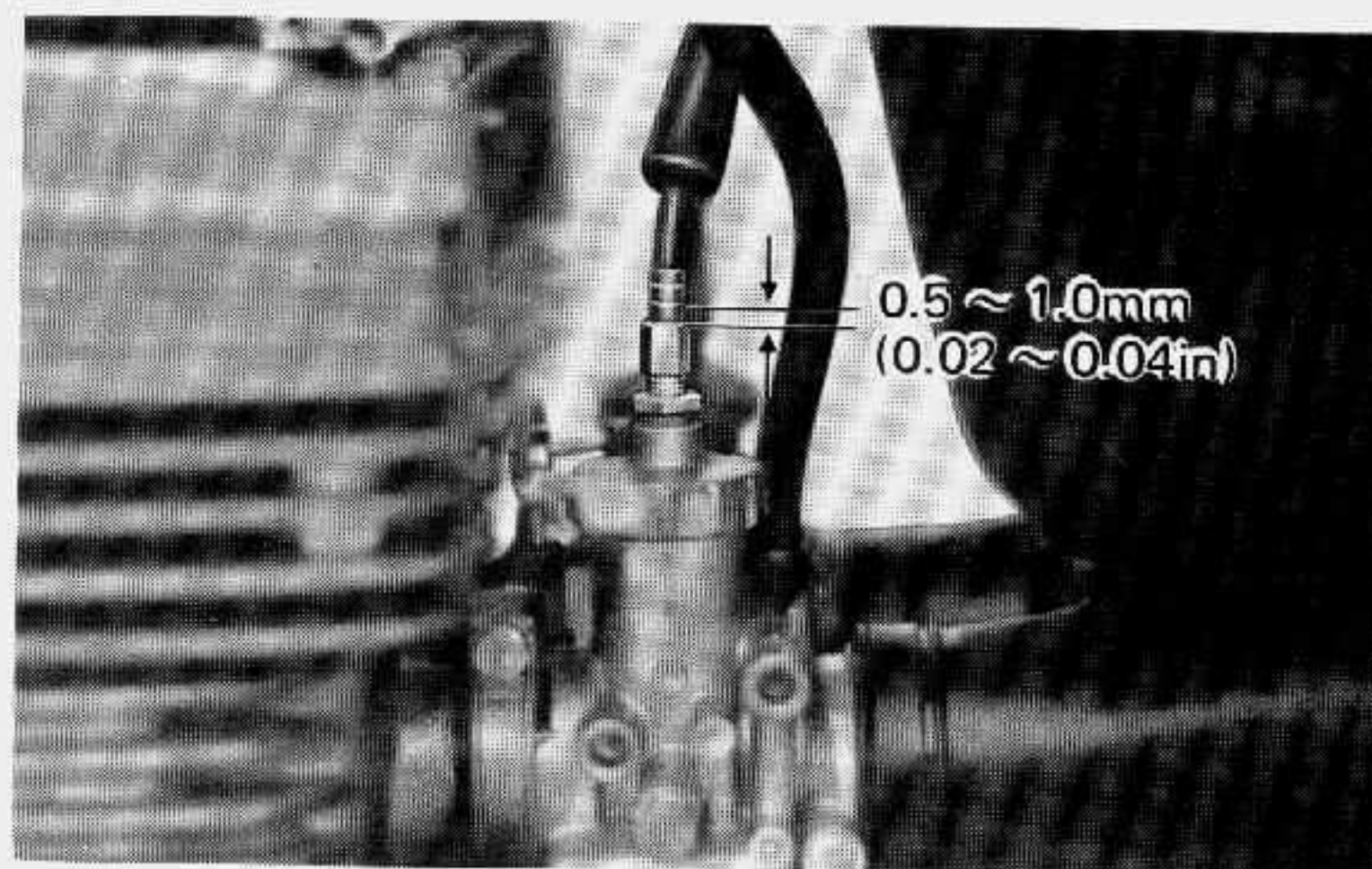


Fig. 6-5-3.

#### Synchronizing the throttle valve

In order to obtain maximum efficiency and throttle response, it is necessary that the throttle valve of each carburetor opens at the same time.

- Check to see whether exhaust fumes from the mufflers on both sides are identical in shade and volume when turning the throttle grip very slowly.
- If difference is found, adjust with the throttle valve stop screw on each carburetor so that the exhausting gases come out of the mufflers on both sides identically (both the throttle valves begin to lift simultaneously) when turning the throttle grip slowly.
- Finally adjust the throttle cable play on the handlebar side to allow 0.5 ~ 1 mm (0.02 ~ 0.04 in) with the throttle cable adjuster of the handlebar side.

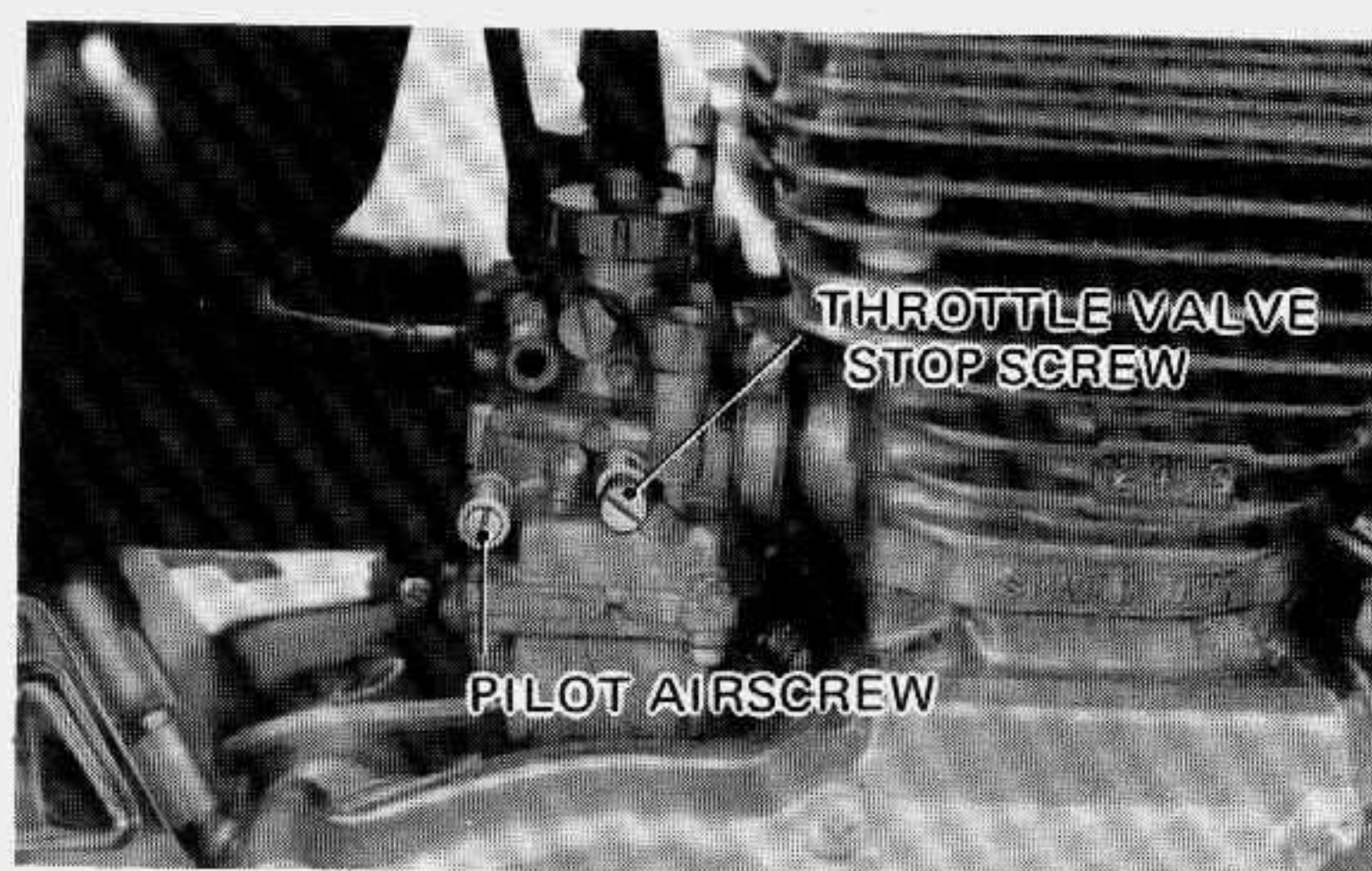


Fig. 6-5-4.

This adjustment could affect the oil pump lever adjustment. Therefore, readjust the oil pump lever cable as necessary.



6. STARTER SYSTEM

As the kick starter system is of a primary kick starting type, the engine can be started regardless of the gear position when the clutch is disengaged. Kick starting torque is transmitted to crankshaft through the kick starter drive gear, kick starter idle gear, kick starter driven gear, the primary driven gear and primary drive gear as shown: Fig. 6-6-1.

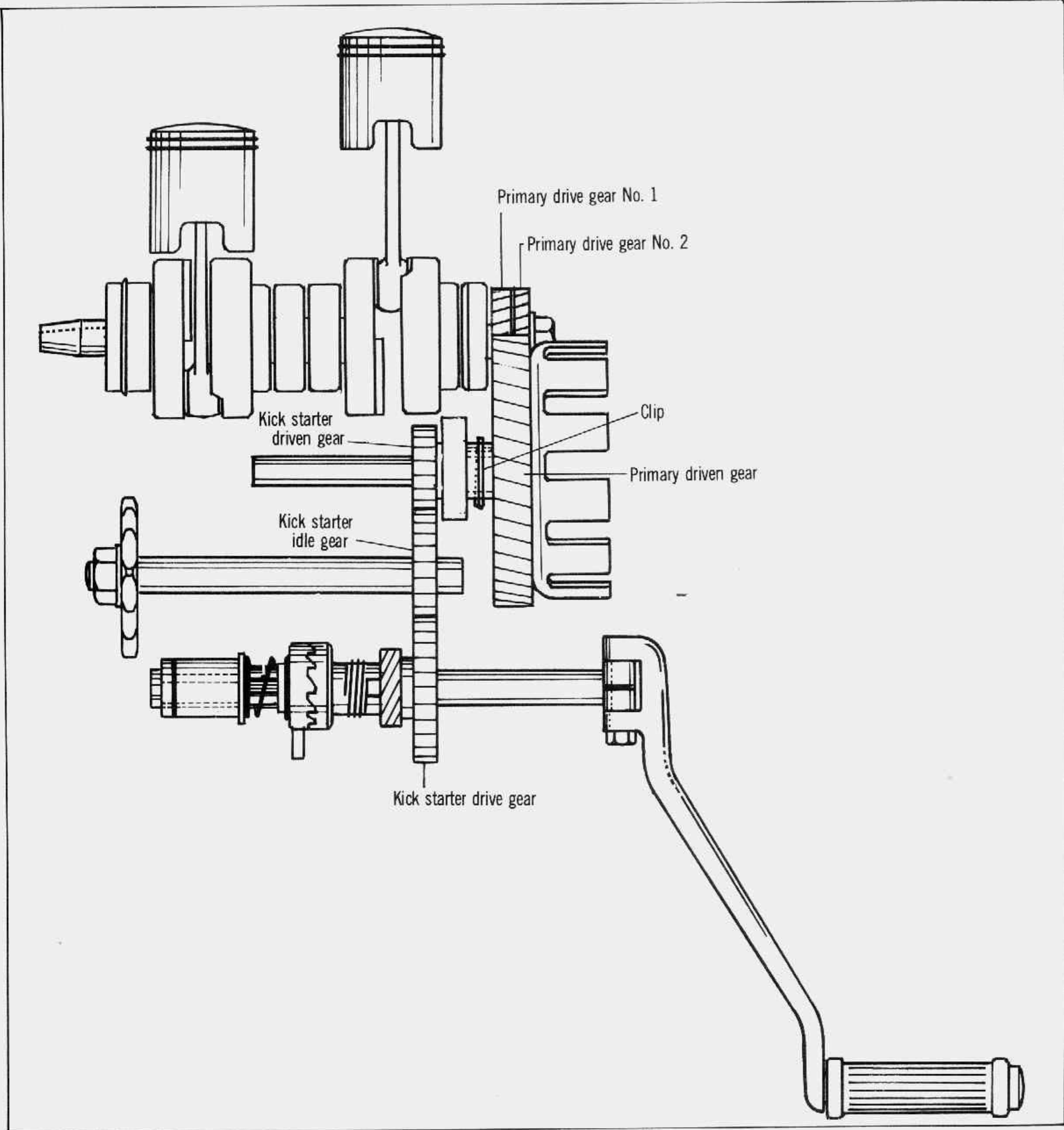


Fig. 6-6-1.

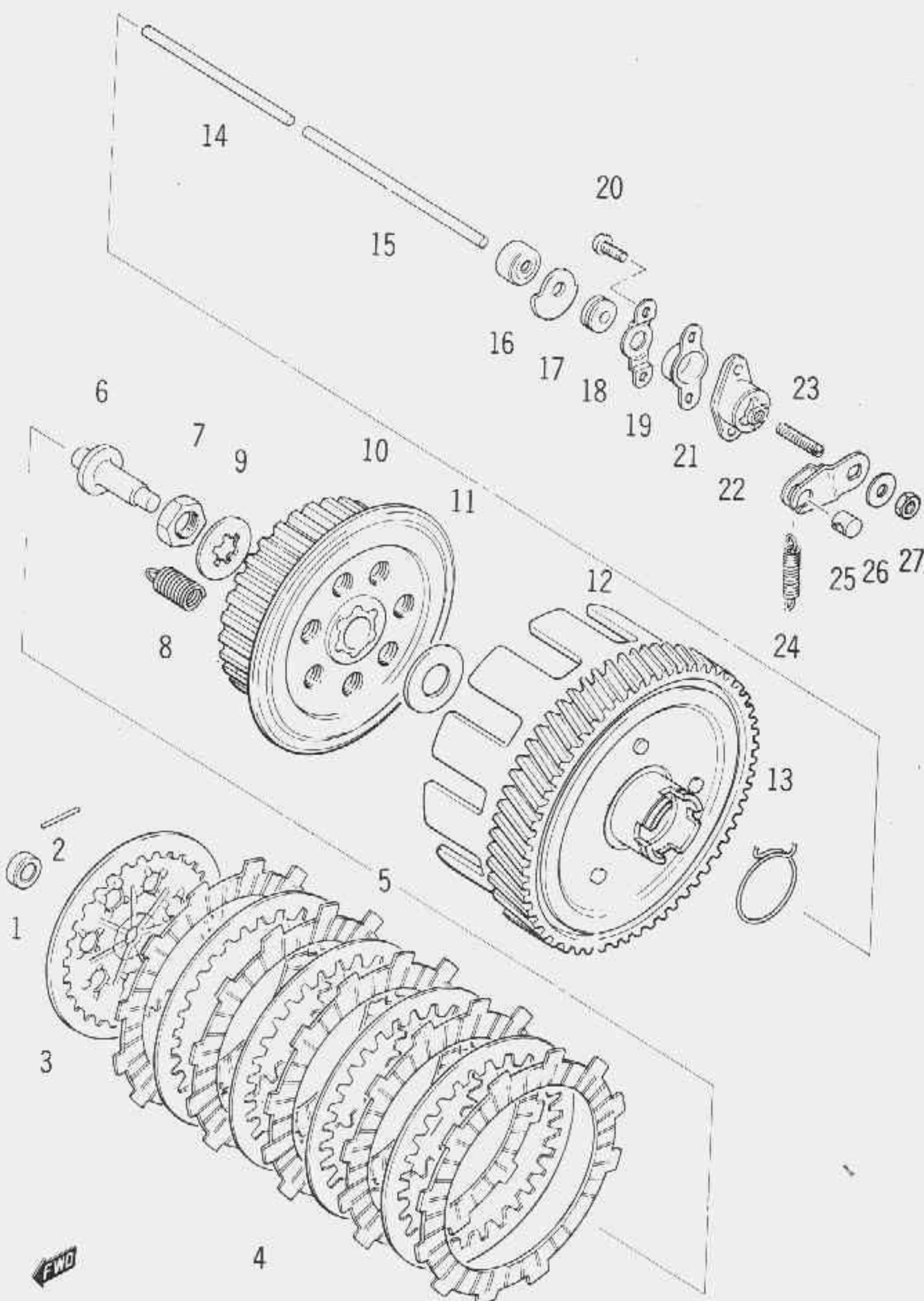
**Note:**  
For the assembly job of the kick starter, refer to section 6-3-15, p.32.



7. CLUTCH

7-1. CONSTRUCTION

The clutch is of wet multi-disc type and its construction is as shown in Fig. 6-7-1.



| Index No. | Description                               |
|-----------|---|
| 1.        | Oil seal (ID : 10, OD : 17, T : 5)        |
| 2.        | Pin                                       |
| 3.        | Clutch pressure plate                     |
| 4.        | Clutch drive plate                        |
| 5.        | Clutch driven plate                       |
| 6.        | Oil seal holder                           |
| 7.        | Nut                                       |
| 8.        | Spring                                    |
| 9.        | Washer                                    |
| 10.       | Clutch sleeve hub                         |
| 11.       | Washer                                    |
| 12.       | Primary driven gear                       |
| 13.       | Clip                                      |
| 14.       | Clutch push rod (Long : 97mm. (3.81 in))  |
| 15.       | Clutch push rod (Long : 121mm. (4.76 in)) |
| 16.       | Oil seal (ID : 6. OD : 30. T : 5)         |
| 17.       | Clutch push piece                         |
| 18.       | Dust seal                                 |
| 19.       | Dust seal holder                          |
| 20.       | Screw                                     |
| 21.       | Clutch release screw cover                |
| 22.       | Clutch release screw assy                 |
| 23.       | Screw                                     |
| 24.       | Spring                                    |
| 25.       | Clutch release end piece                  |
| 26.       | Washer                                    |
| 27.       | Nut                                       |

Fig. 6-7-1.

When meshing primary drive gear with driven gear, be sure to stagger the teeth of No. 1 half from those of No. 2 half by an amount corresponding to one tooth. To do so, one gear half must be turned against spring force relative to the other half.

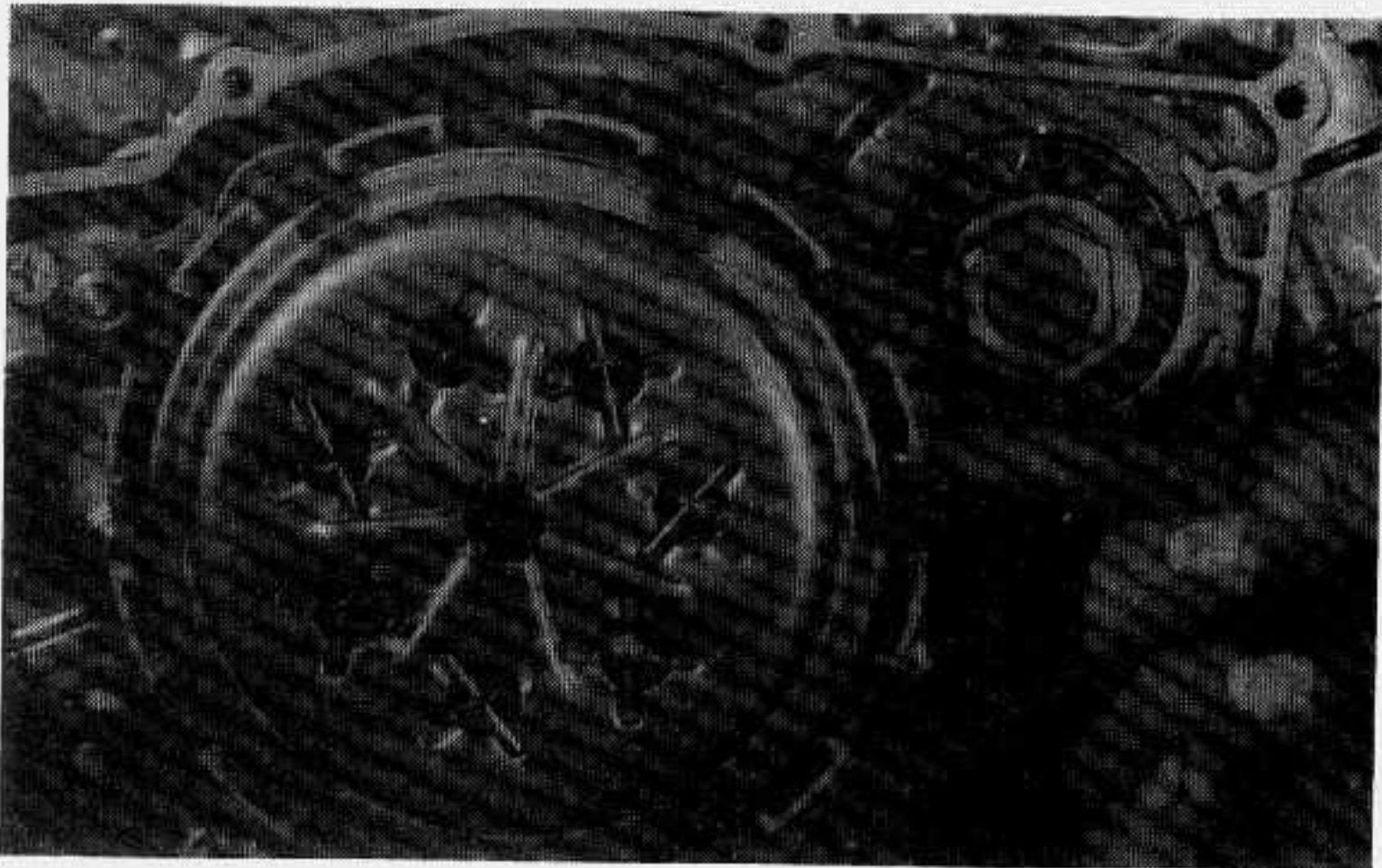


Fig. 6-7-2.



# 8. TRANSMISSION

## 8-1. CONSTRUCTION

This constant-mesh transmission provides 5 speeds. The construction and working principle are explained in this section.

Engine power is transmitted to drive shaft through the clutch, countershaft, gears on the countershaft and gears on the drive shaft. From drive shaft to rear wheel, the power is further transmitted through drive sprocket, drive chain and driven sprocket.

Each set of drive and driven gear is for each speed and these two gears are always paired so that one gear is free and the other gear is fixed on the related shaft in its turning direction. The sliding gears shown in the illustration can move axially to engage with respective free gears by their dogs. When engaged, the free gear runs with the shaft. This movement is done by the gear shifting forks.

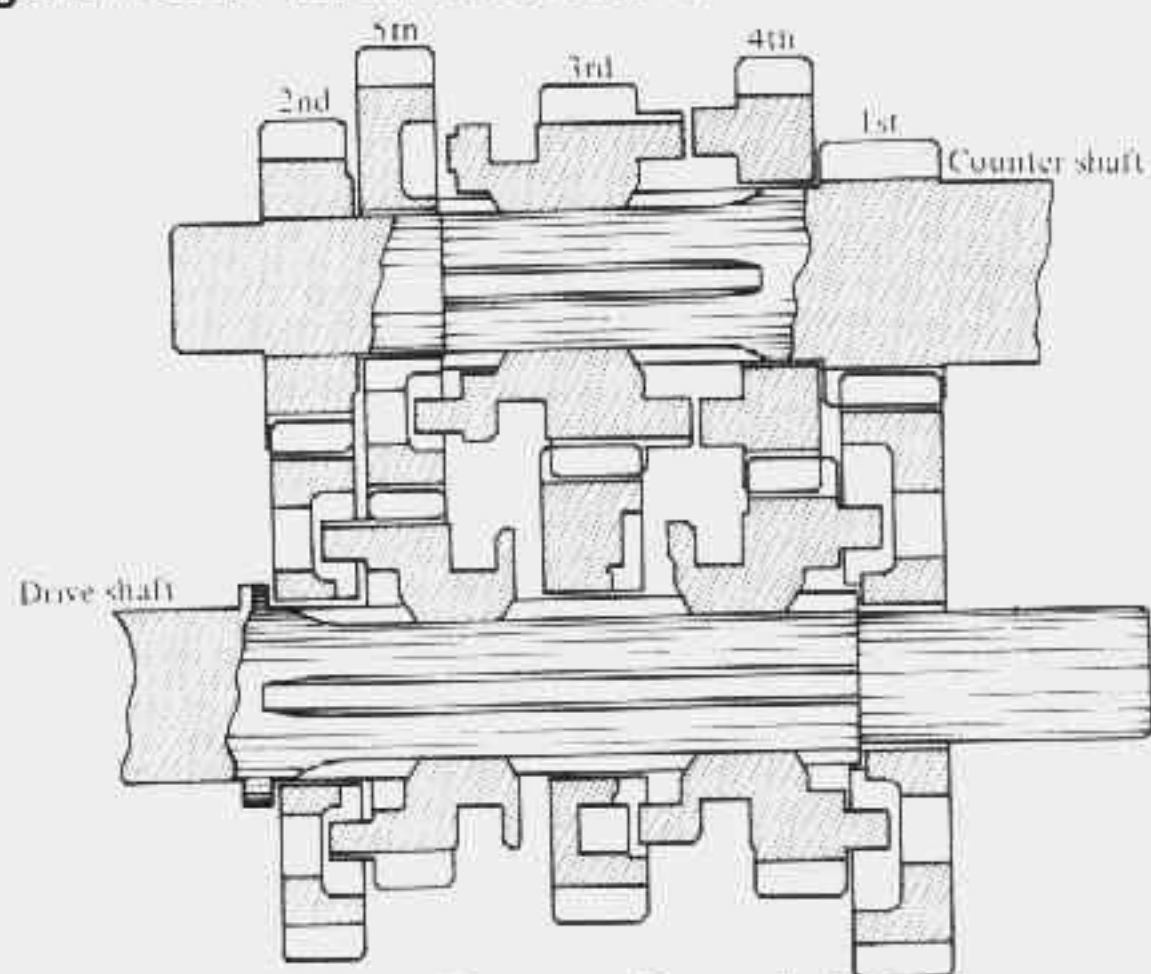


Fig. 6-8-1. Neutral position

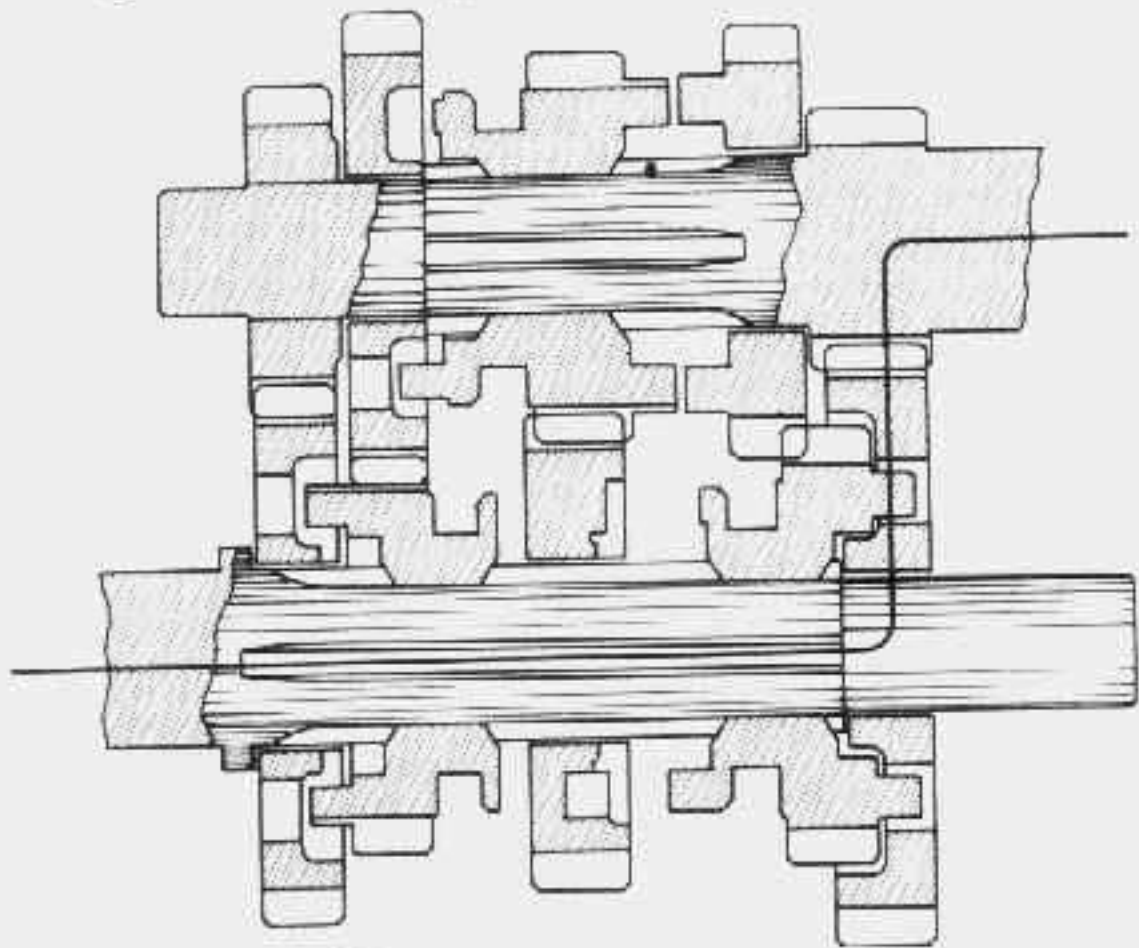


Fig. 6-8-2. 1st position

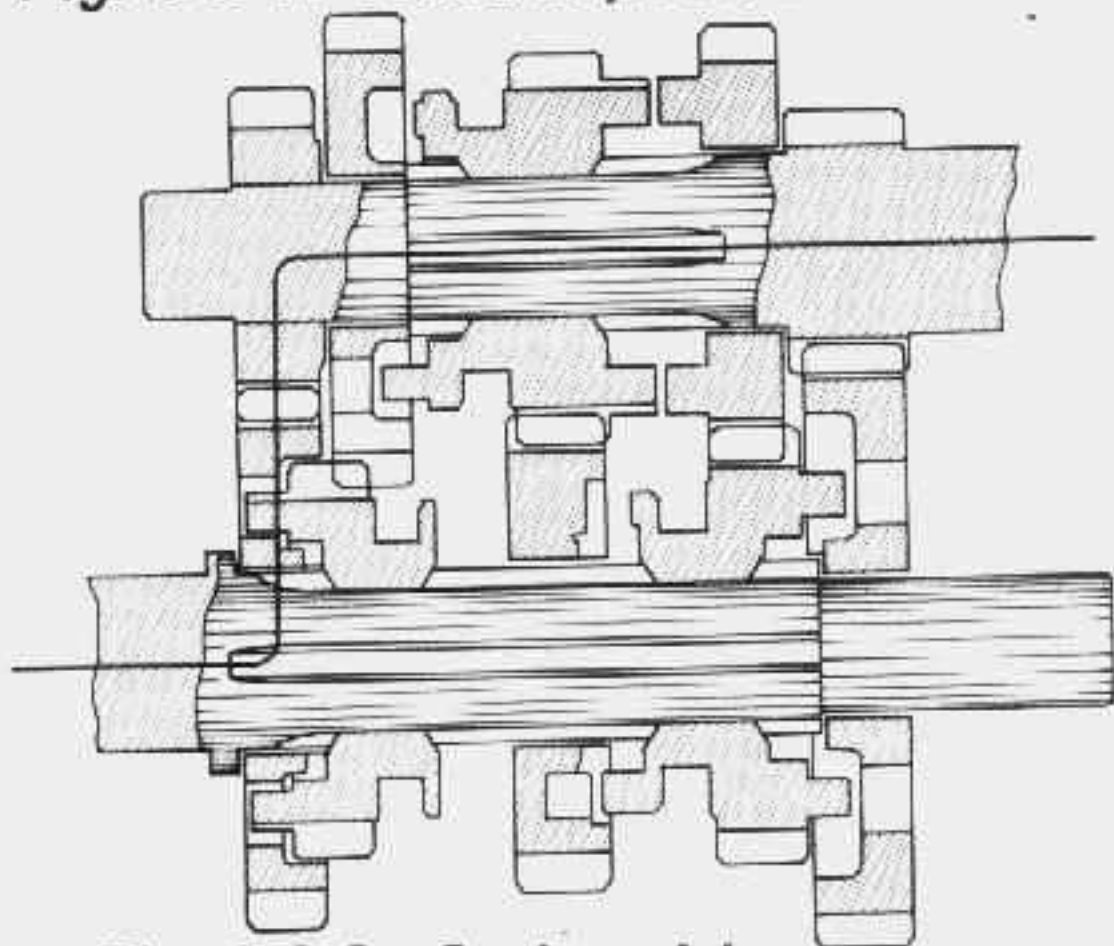


Fig. 6-8-3. 2nd position

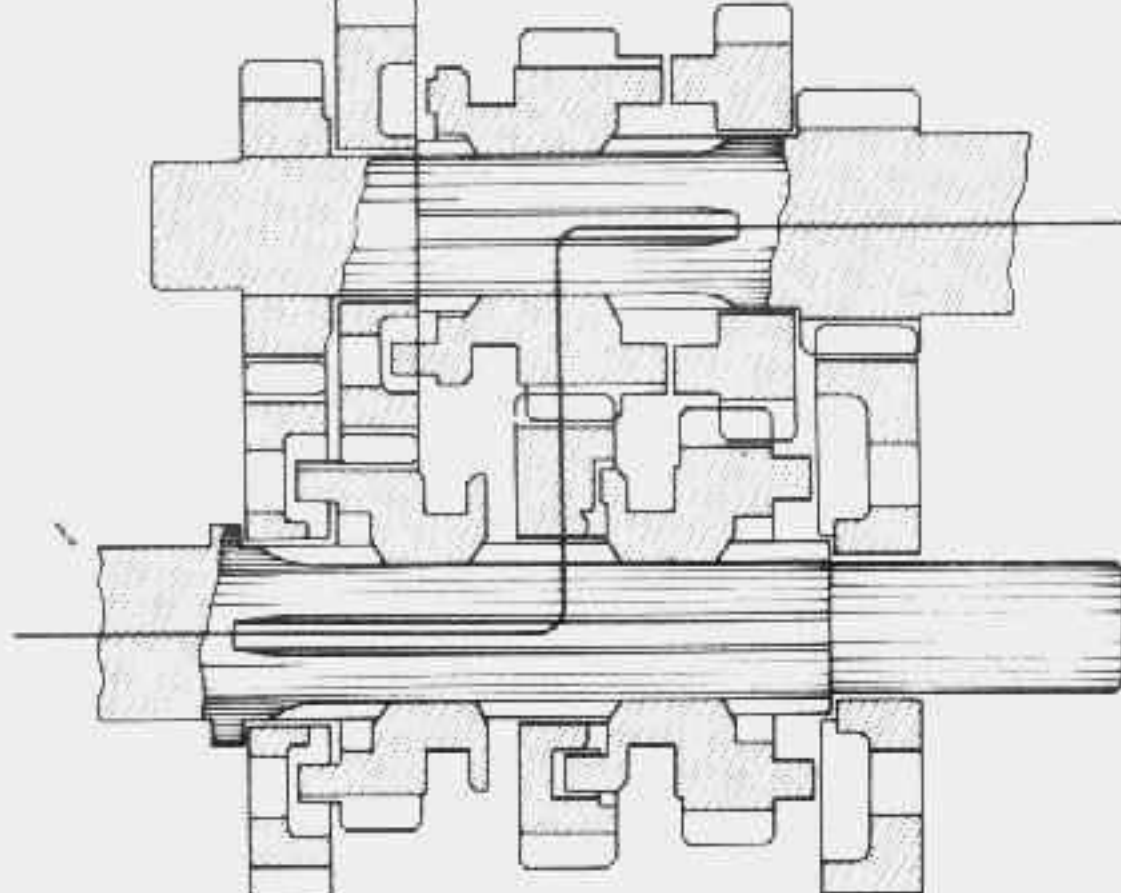


Fig. 6-8-4. 3rd position

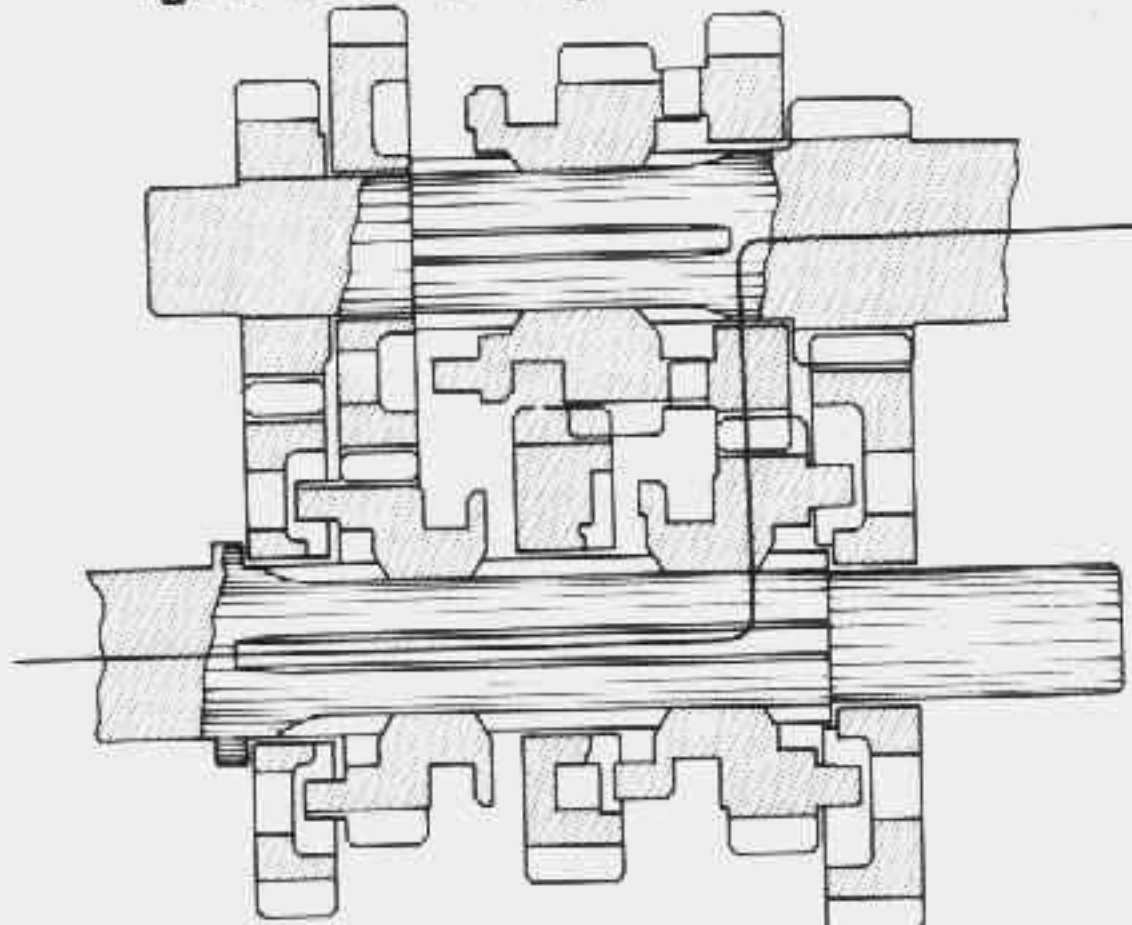


Fig. 6-8-5. 4th position

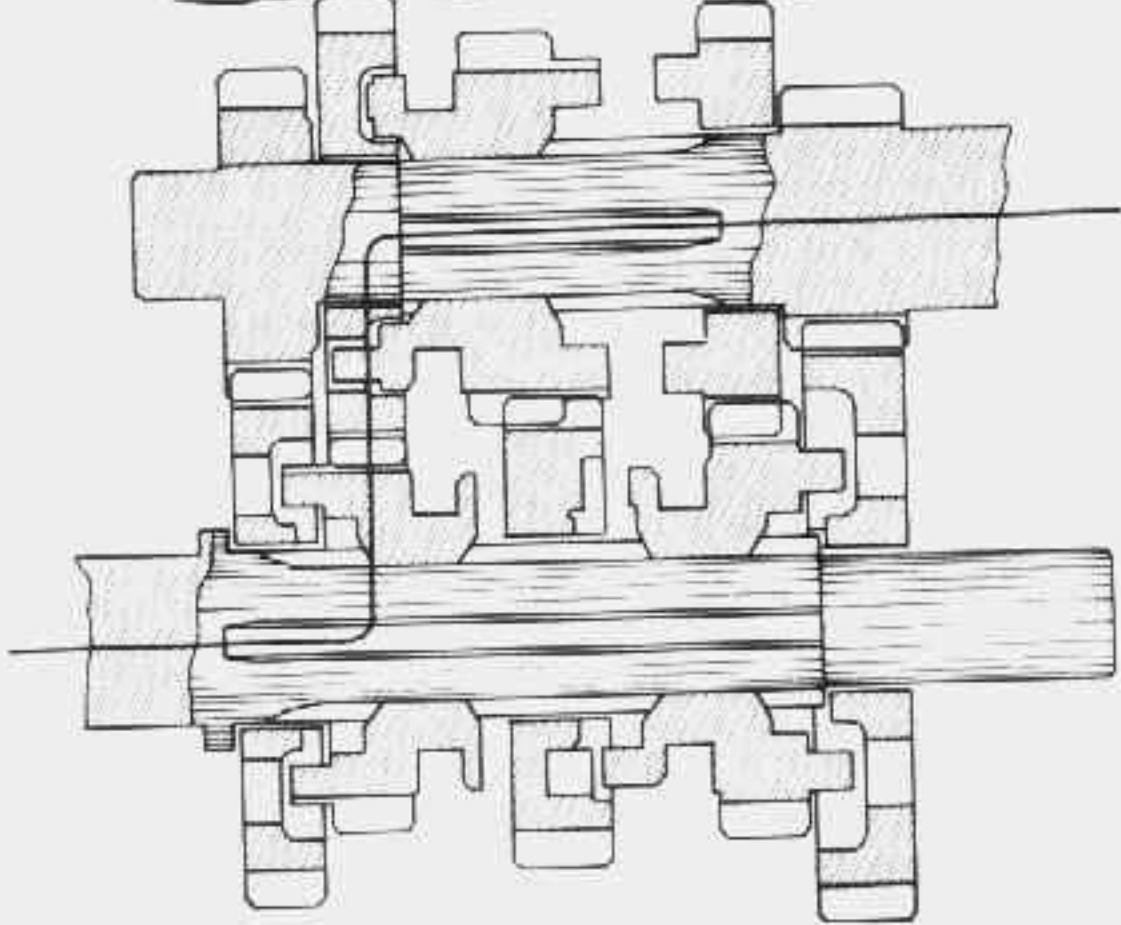


Fig. 6-8-6. 5th position

Note:

Refer to 6-3-14. TRANSMISSION (p. 31) for important tips and rules on transmission reassembly.



8-2. TRANSMISSION OIL

If Suzuki transmission oil is not available, a good quality 20W/40 multi-grade motor oil may be used instead.

An engine just overhauled needs 1000 cc (2.12/1.76 pt. US/IMP) of transmission oil.  
For a routine oil change, 900 cc (1.90/1.58 pt. US/IMP) is required.

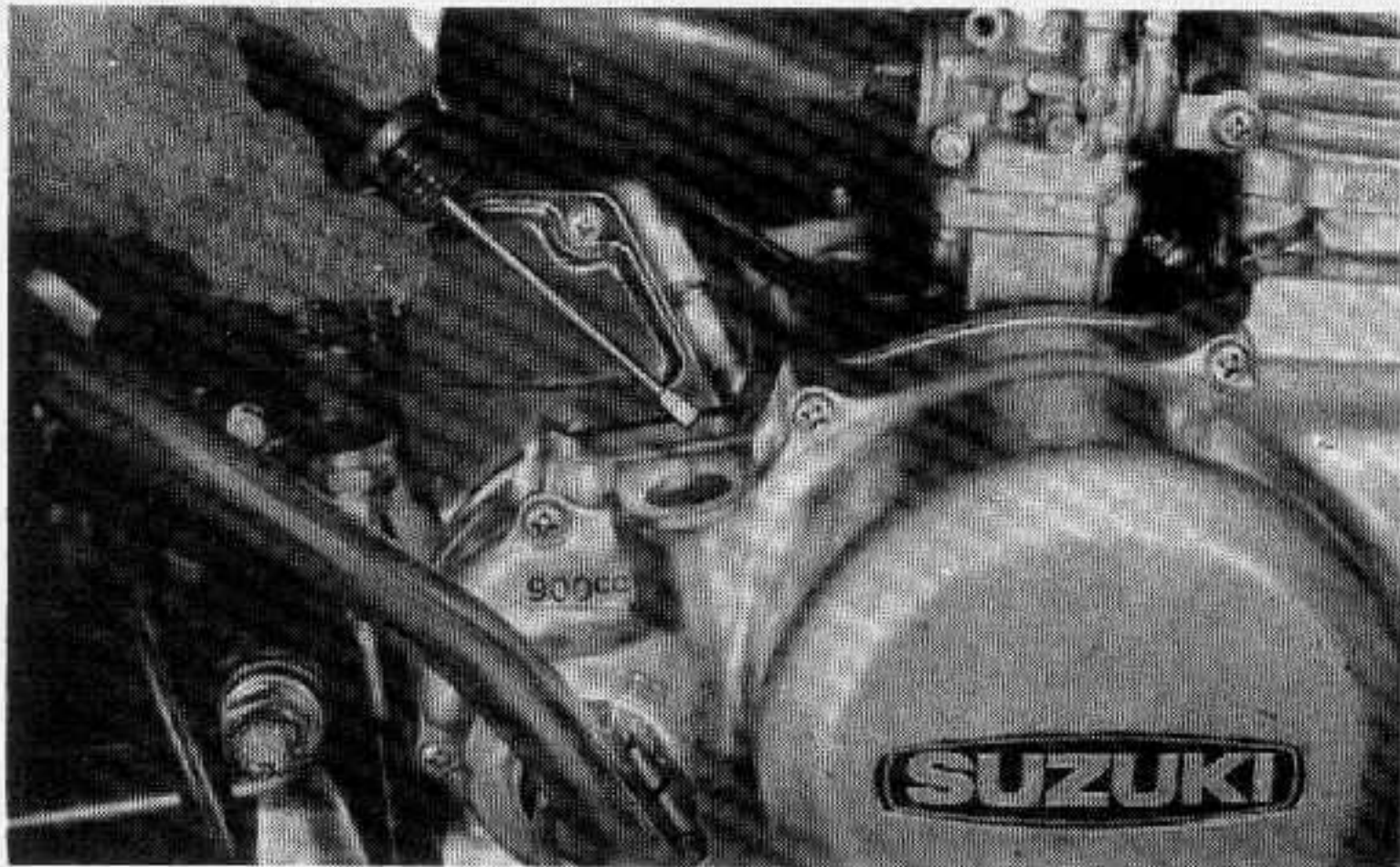


Fig. 6-8-7. Oil level gage

9. AIR CLEANER

9-1. CONSTRUCTION

The element is made of washable spongy plastics and contains oil in it so as to further prevent the penetration of dust. The construction is shown in Fig. 6-9-1.

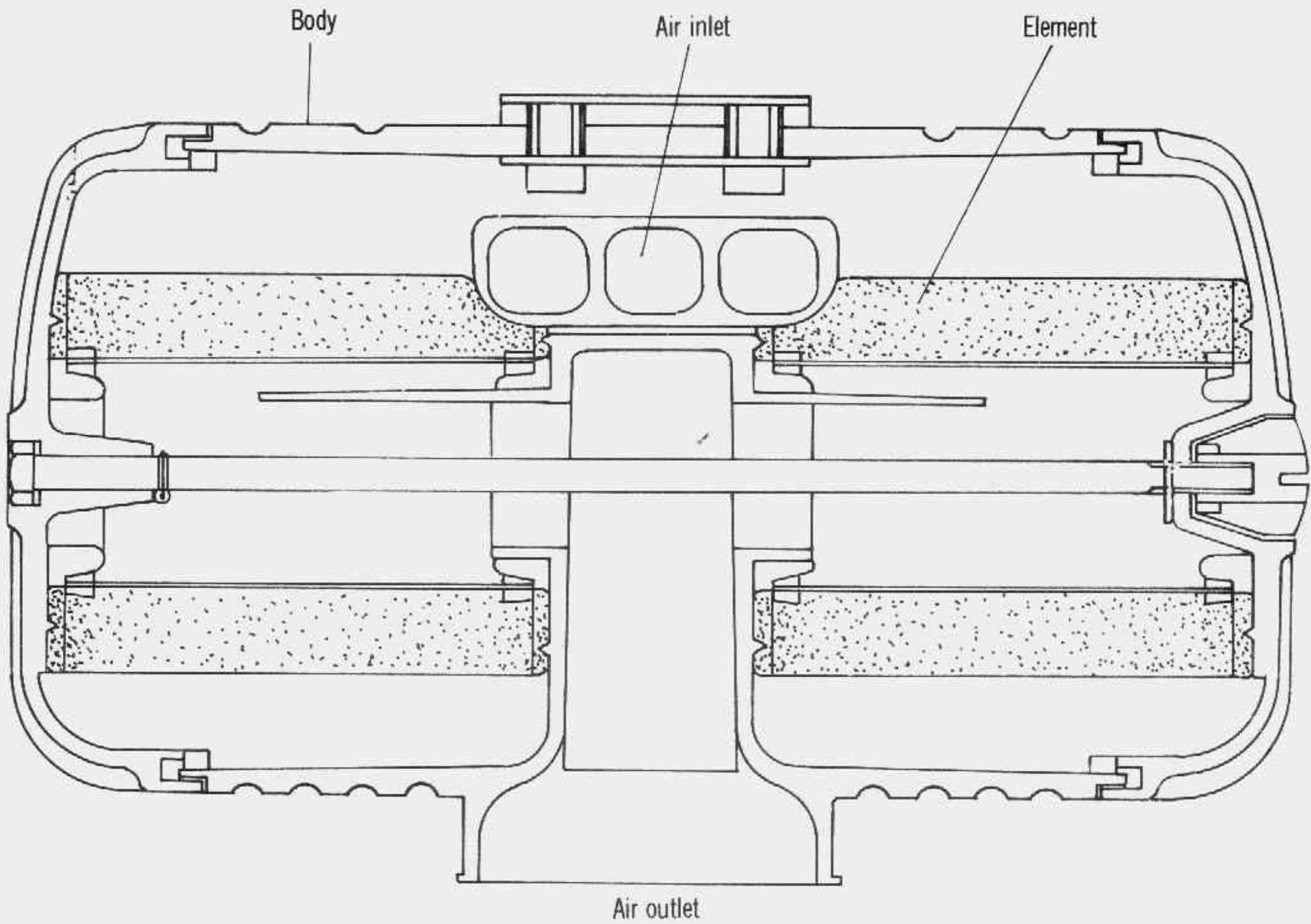


Fig. 6-9-1.

9-2. MAINTENANCE

To clean the element, take it out and wash with clean petrol. After draining the element, soak it into Suzuki CCI Oil or other two-stroke oil of around SAE 30 and squeeze oil from the element.



# 7. ELECTRIC EQUIPMENT

## 1. AC GENERATOR

### 1-1. Description

This A.C. generator produces electrical energy by its rotating six-pole magnet. For day operation, one set of coils is used. At night, all coils are utilized to supply current needed. The rotor is mounted on left crankshaft axle inside the stator assembly. Ignition system components are compactly installed on the stator.

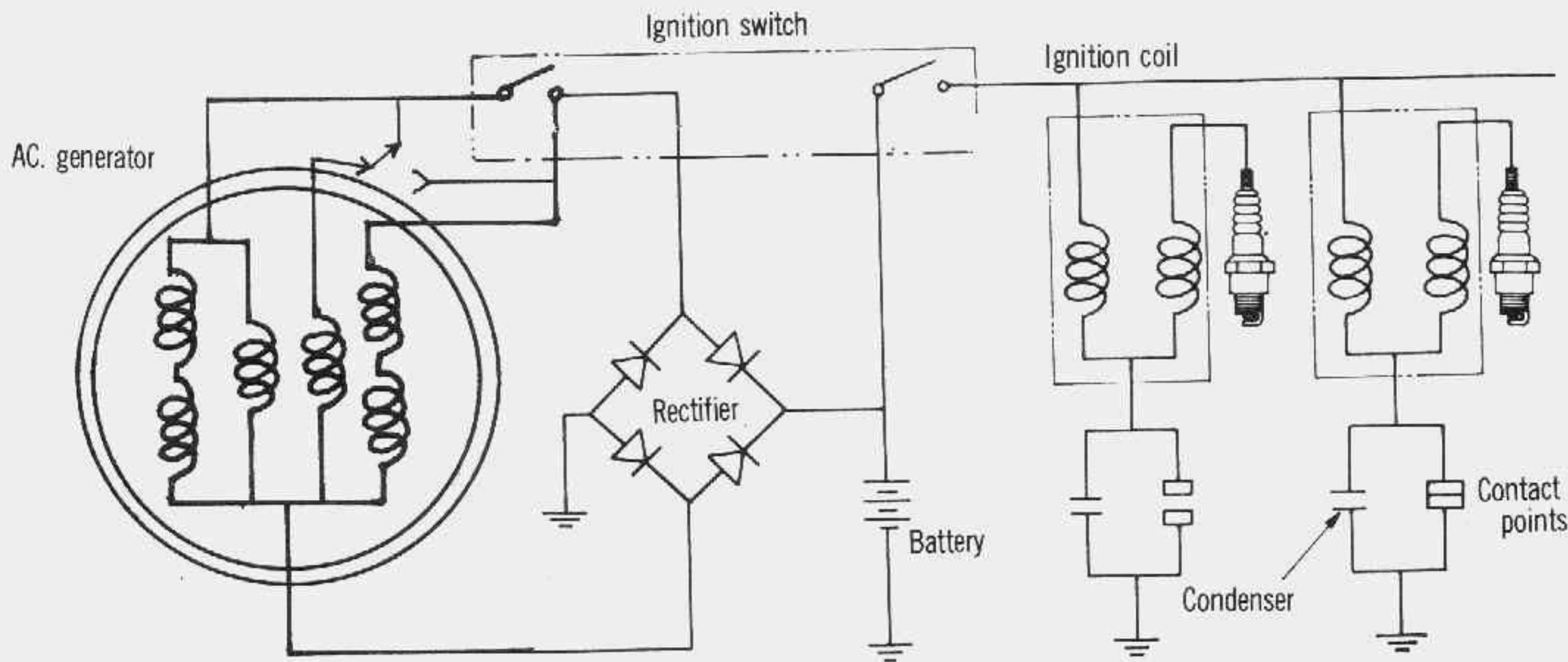


Fig. 7-1-1. A.C. generator wiring diagram

### 1-2. Specification

|                          |                     |
|--------------------------|---------------------|
| Weight .....             | 2.6 kg              |
| Contact point gap .....  | 0.35 mm             |
| Condenser capacity ..... | 0.16 ~ 0.20 $\mu$ F |
| Charging ampere .....    | as follows          |

● With the ignition key in day time position

| Engine speed | Reading (Amperage)                           |
|--------------|--|
| 2,000 rpm    | Pointer begins to swing toward positive side |
| 8,000 rpm    | 2.0 ~ 3.0A                                   |

● With the ignition key in night time position

| Engine speed | Reading (Amperage)                           |
|--------------|--|
| 2,000 rpm    | Pointer begins to swing toward positive side |
| 8,000 rpm    | 1.8 ~ 2.8A                                   |



## 2. IGNITION TIMING

Ignition timing greatly influences engine power and engine life. It is necessary to hold the ignition timing adjusted correctly at all times.

### 2-1. INSPECTION

1. Turn the crankshaft in the running direction, which is counterclockwise when viewed from the A.C. generator side. If the contact breaker opens when the ignition timing marks on the rotor and stator are aligned, the timing is correct. The maximum contact point gap is 0.35 mm (0.014 in). "R" and "L" marks are stamped on the rotor.

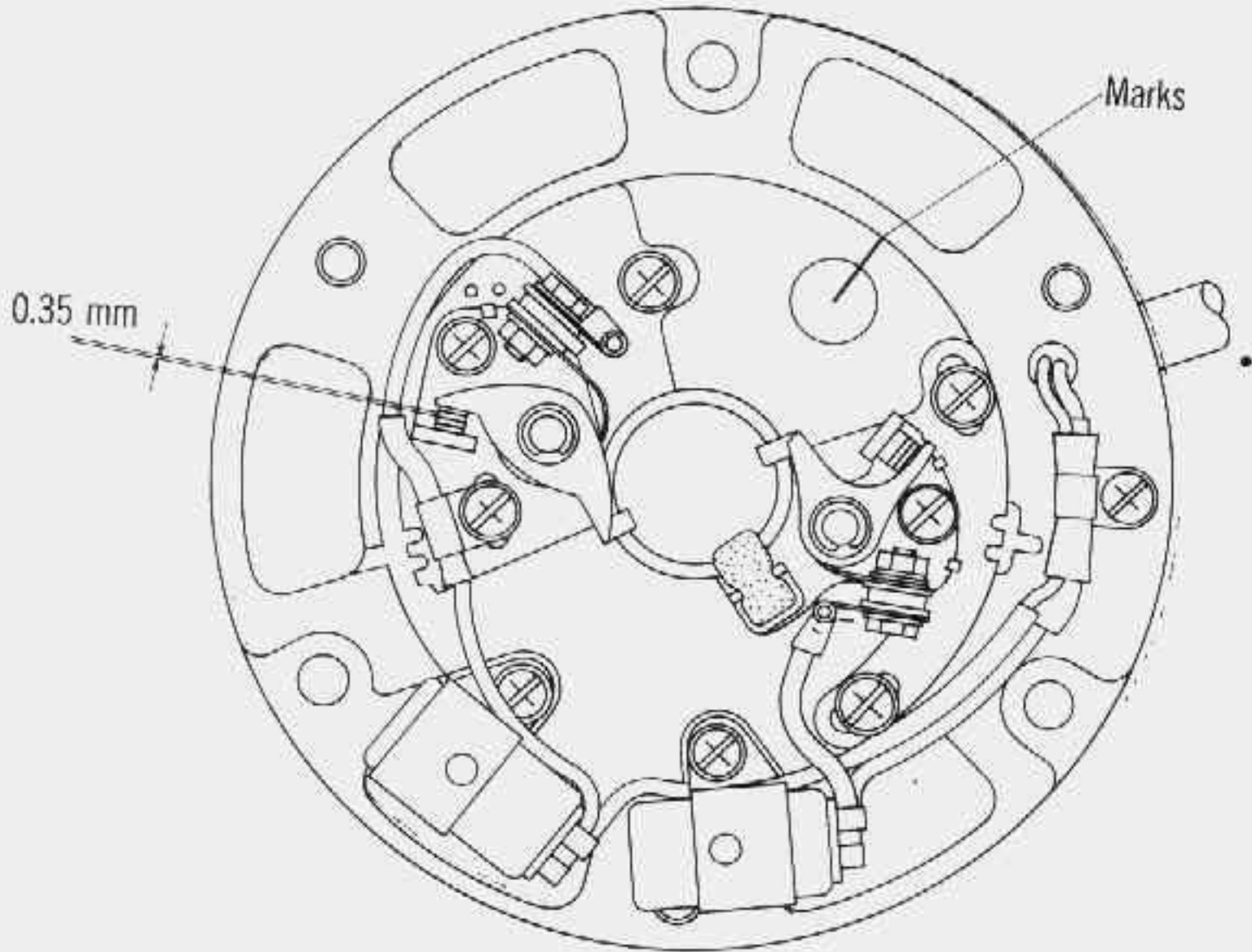


Fig. 7-2-1.

- "R" mark: For right cylinder, right contact points.  
"L" mark: For left cylinder, left contact points.

2. Checking with timing gauge (09931-20120) and timing tester (09931-00112):  
Fit a timing gauge into the spark plug hole. Making sure of the contact point opening timing with a timing tester, set the ignition timing when the piston is 1.95 mm (0.077 in) before Top Dead Center (22 degrees B.T.D.C.). The piston position can be checked by reading the timing gauge dial indicator. Repeat this procedure for the other cylinder.

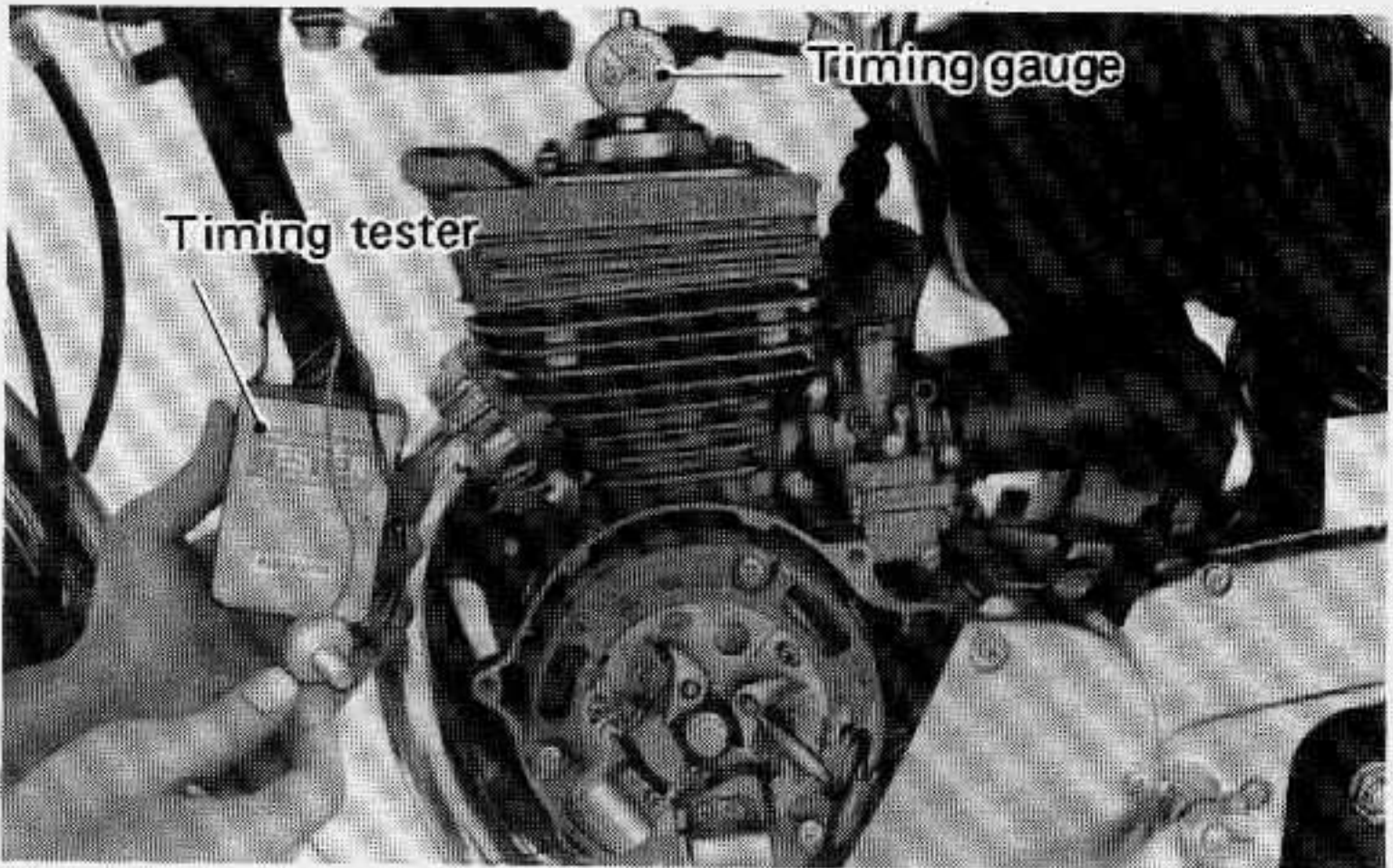


Fig. 7-2-2. Checking ignition timing

| Normal ignition timing | Retard Limit | Standard | Advance Limit |
|------------------------|--------------|----------|---------------|
| (Piston distance, mm)  | 1.76         | 1.95     | 2.10          |
| Degree                 | 21           | 22       | 23            |



3. SILICON RECTIFIER

3-1. INSPECTION

Connect the rectifier wires to a tester one by one. Check the conductivity in positive direction and negative direction as shown in Fig. 7-3-2. If any of the four checks is not satisfactory, it indicates that electric current is flowing in the reverse direction. In such a case, replace the rectifier with new one as this indicates the rectifier is defective.

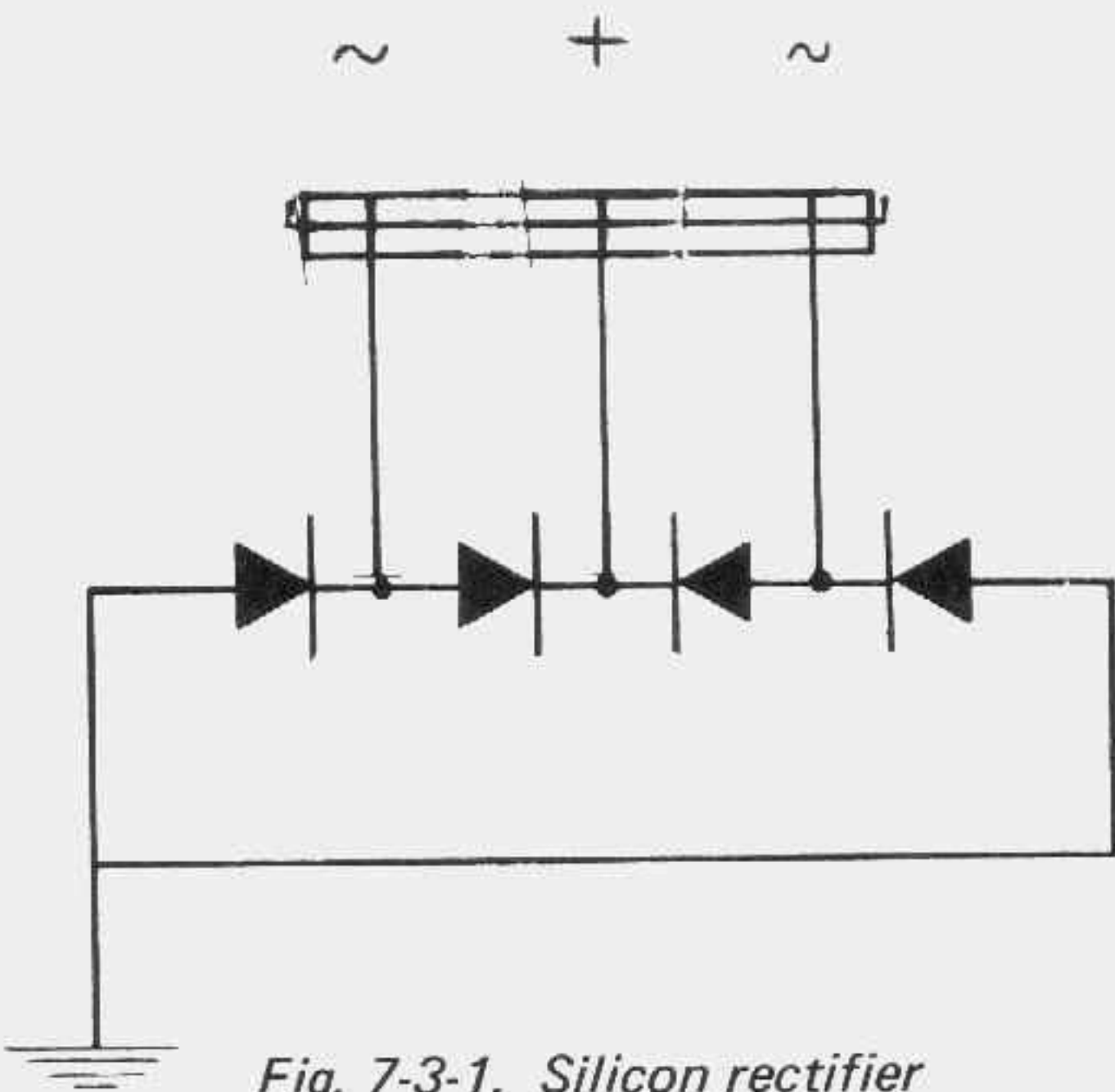


Fig. 7-3-1. Silicon rectifier

When conductivity is checked between yellow/green and red in both positive and negative directions and if it is found conductive in both directions, the rectifier is short-circuited. And if it is found non-conductive in both directions, the rectifier is open-circuited. In either case, the rectifier is defective.

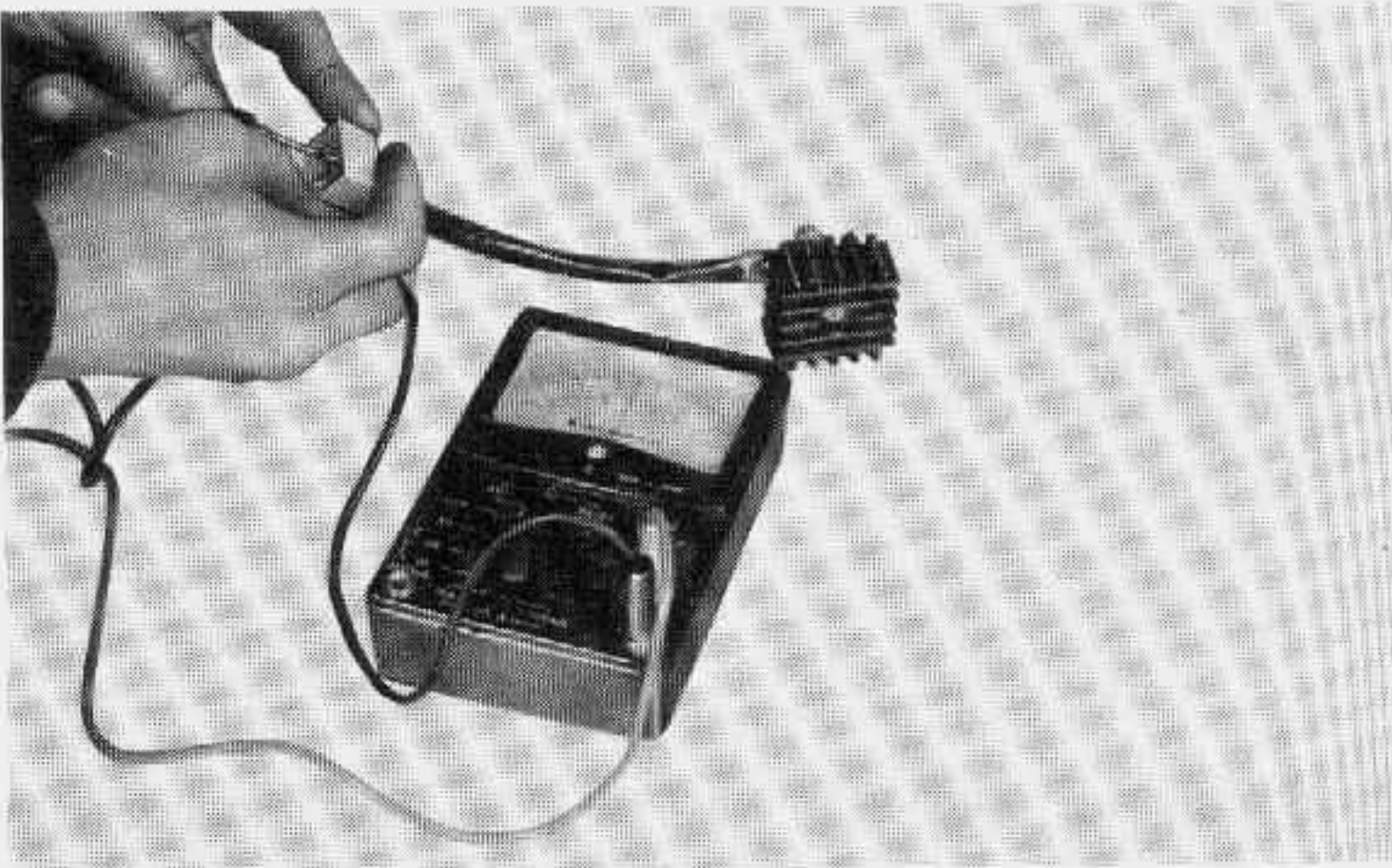


Fig. 7-3-2. Checking silicon rectifier

4. BODY ELECTRICAL

This section explains the inside wiring of the electrical equipments. Use a circuit tester to check the electrical equipments, referring to the inside wiring given below.

4-1. IGNITION SWITCH

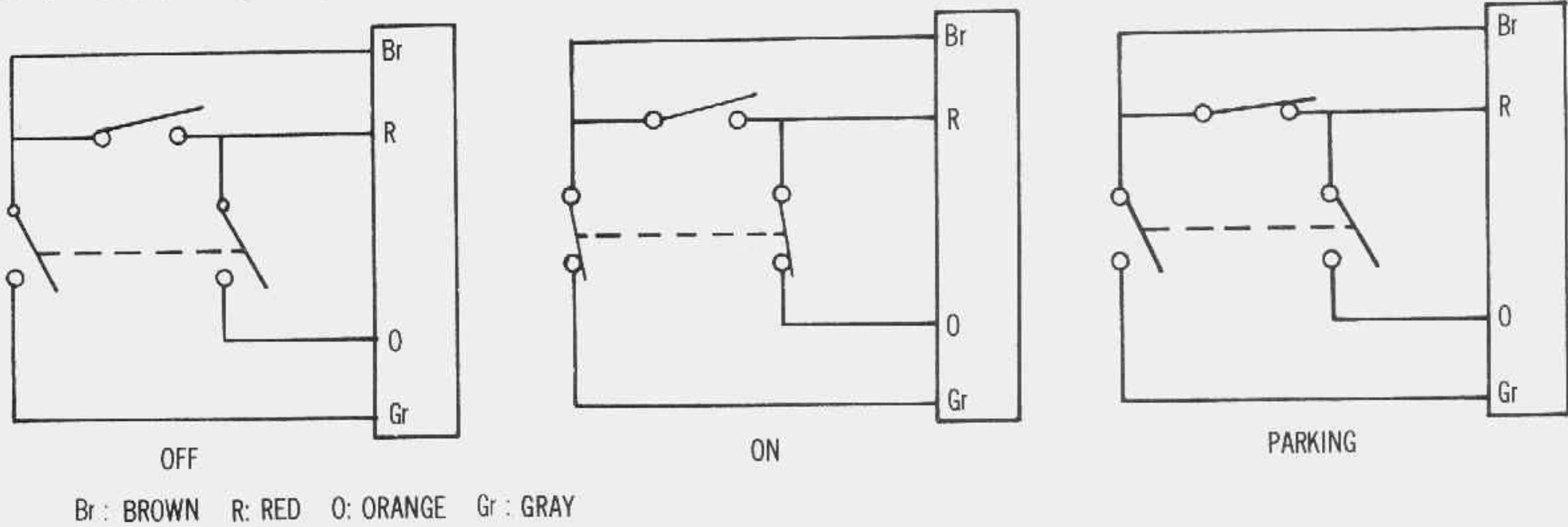
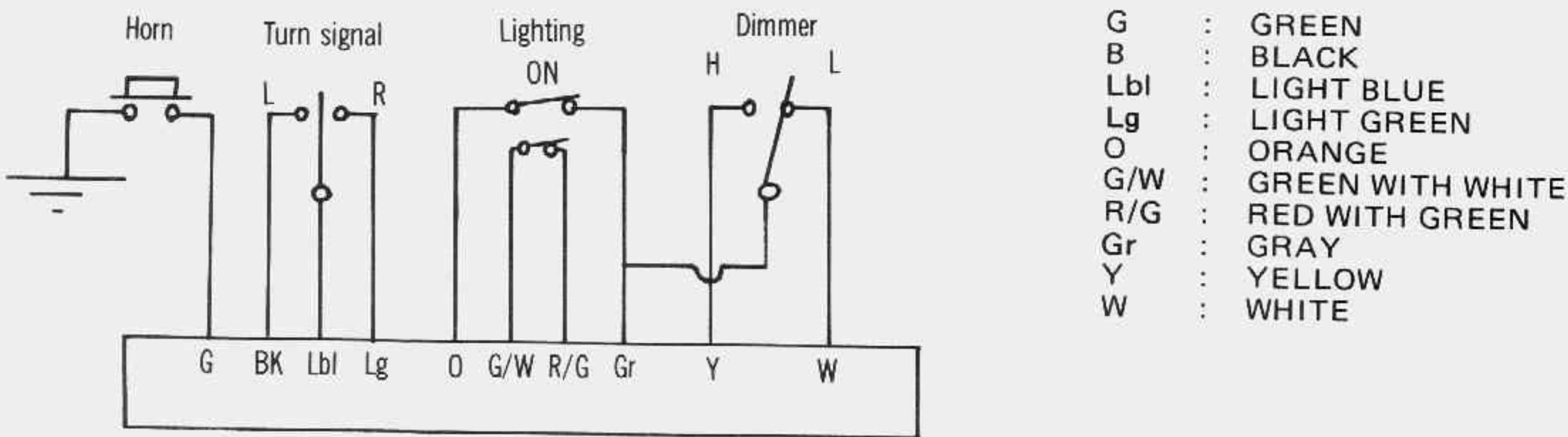


Fig. 7-4-1.



4-2. HANDLE LEFT SWITCH BOX



4-3. TURN SIGNAL RELAY

If the turn signal relay is to be checked separately from the original wiring, connect a bulb of 12V 50W as shown in Fig. 7-4-3. If the turn signal relay functions properly, the bulb must blink continuously with constant frequency.

Fig. 7-4-2.

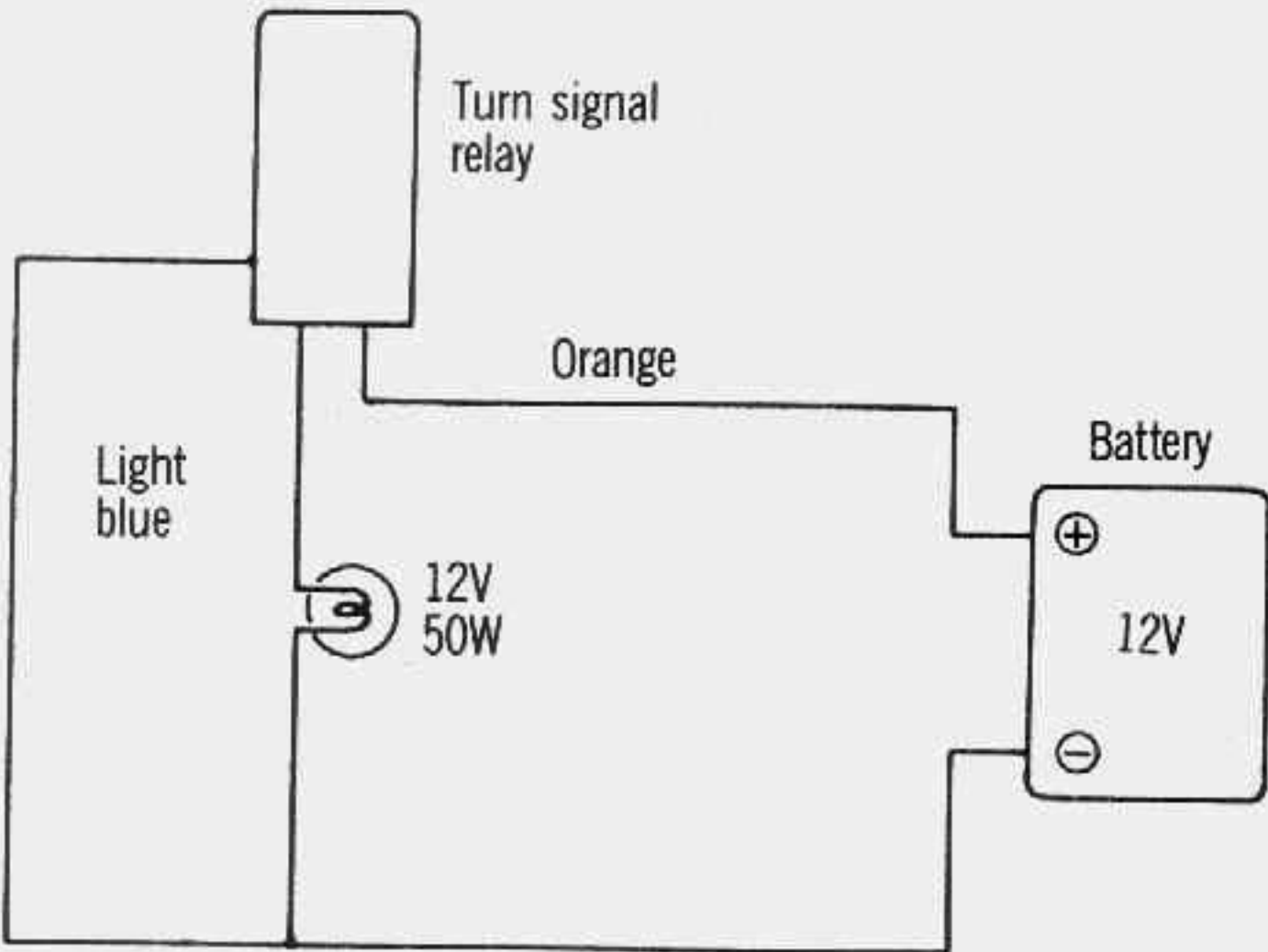


Fig. 7-4-3.

Initial charge

The battery is of dry-charged type, a type different from that of a large capacity battery. It needs initial charging with the specified rate before it is put in use. This is because the plates could be somewhat oxidized during storage.

Initial charging rate: ..... 0.5A    15 ~ 20 Hours  
Specific gravity of electrolyte: ..... 1.280 at 20° C (68° F)

Recharge

To check the battery for state of charge measure the specific gravity of electrolyte by means of hydrometer and refer to the following list.

| Specific gravity at 20°C (68°F) | State of charge | Necessary measure   |
|---------------------------------|-----------------|---------------------|
| 1.250 ~ 1.280                   | OK              |                     |
| 1.220 ~ 1.250                   | Under charged   | Recharge            |
| Below 1.220                     | Run down        | Replace or recharge |

Recharging rate:    0.5A    12 ~ 15 Hours

Note:  
When recharging the battery, be sure to remove it from the motorcycle.



# 8. BODY

## 1. FRONT FORK

### 1-1. CONSTRUCTION

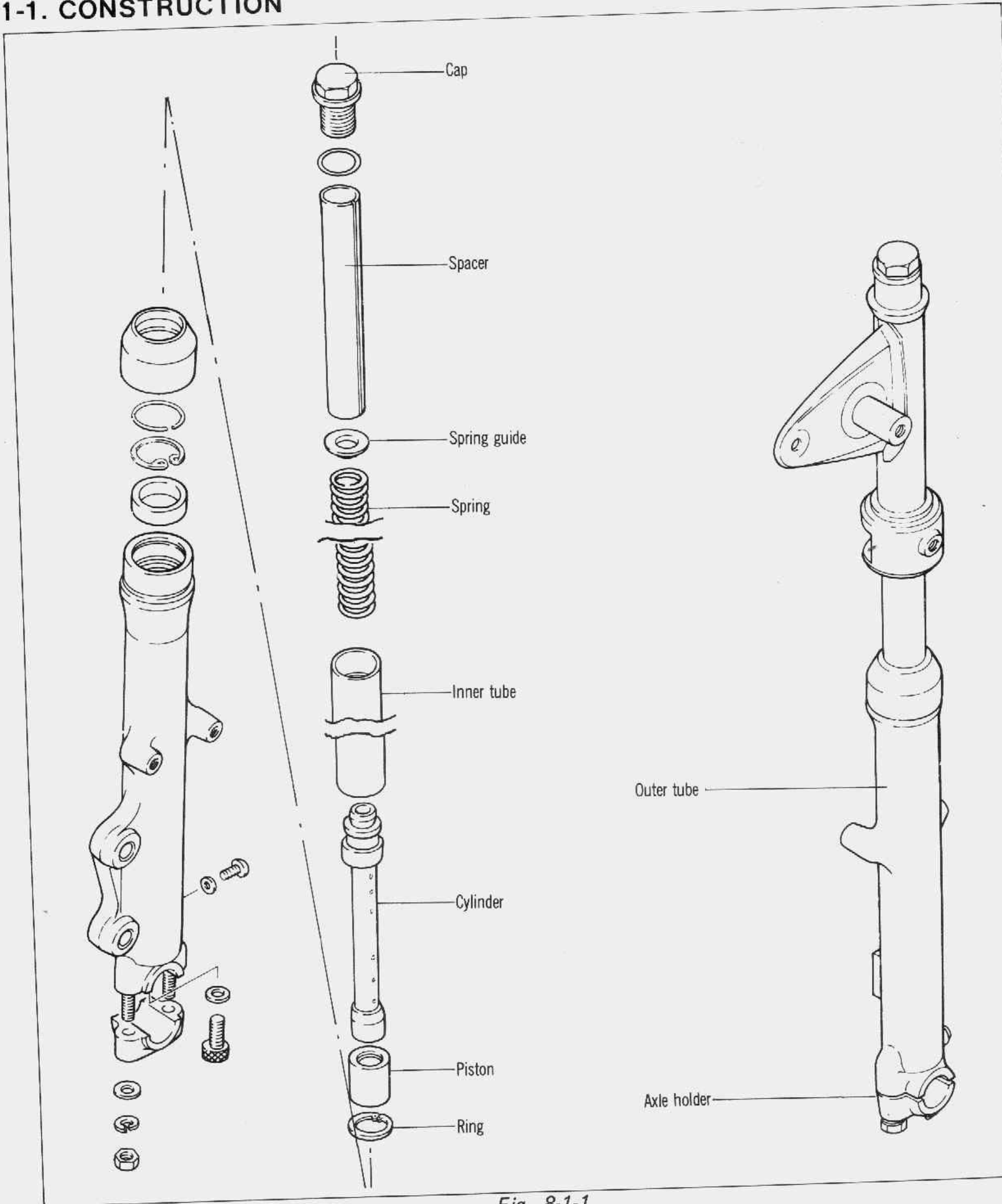
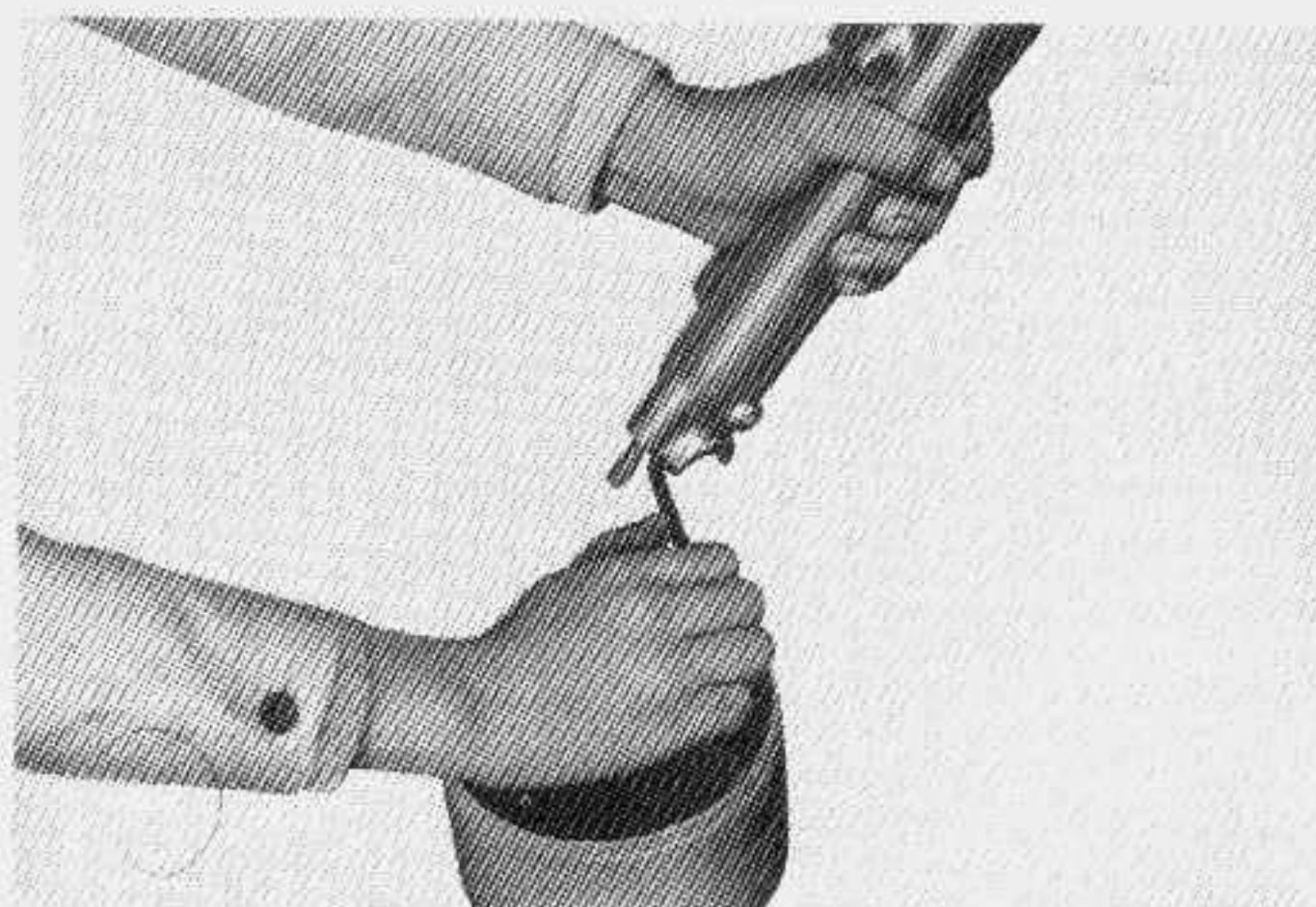


Fig. 8-1-1



## 1-2. DISSASSEMBLY

After removing the front fork legs and draining the front fork oil by unscrewing the drain plug fitted on outside of the outer tube near the front axle, unscrew the hexagon socket head cap bolt at the bottom end of the front fork outer tube with the hexagon wrench.



*Fig. 8-1-2 Disassembling front fork*

## 1-3. ASSEMBLY

Once the bolt shown in Fig. 8-1-3 has been removed, tighten it under the condition that the front fork is completely bottomed without installing the spring; otherwise the wrong positioning of the inner part may cause an abnormal noise when operating due to collision with the end of inner tube.

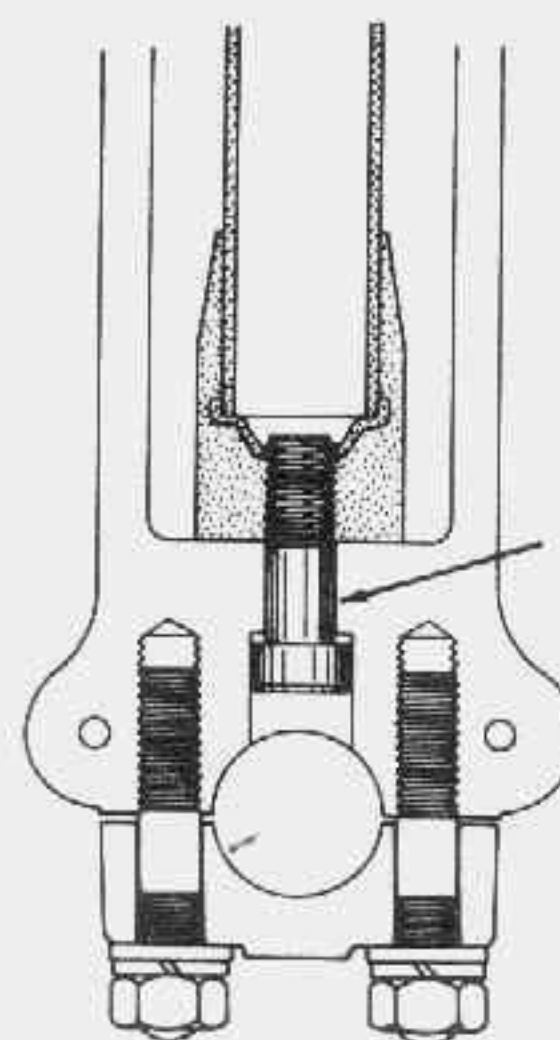
**Tightening torque:** 150~250kg-cm(11-18 lb-ft )

**OIL capacity:** 125cc (0.26/0.22 pt, US/Imp) in each fork leg

**Oil viscosity:** SAE 10W/30

### Note:

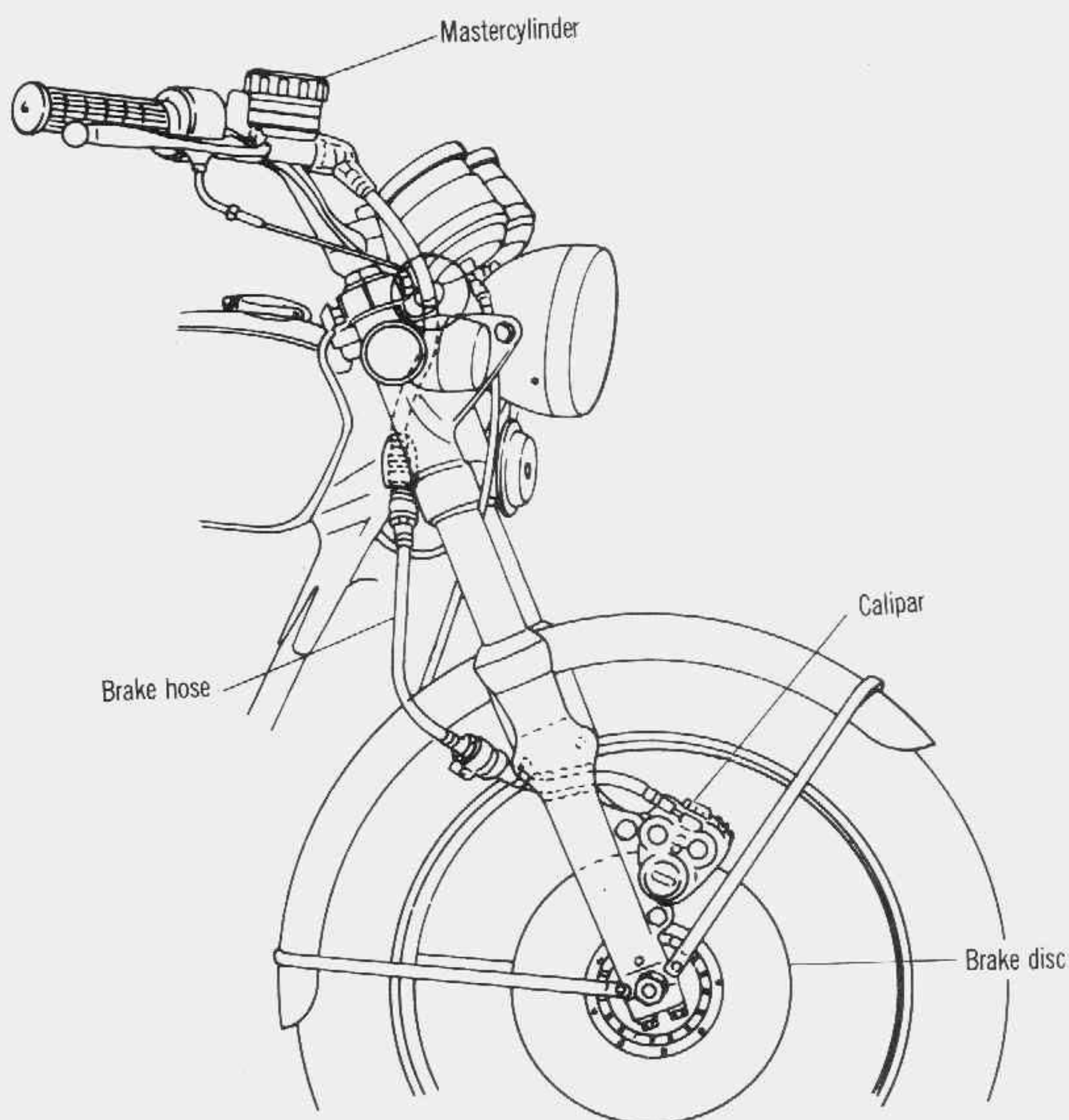
If damper oil is to be drained, be sure to pump the fork in order to thoroughly dry it up. Damper oil tends to remain inside the fork in the draining procedure and this may bring about excessive oil level in refilling the fork even if oil is measured to the specified amount.



*Fig. 8-1-3*



## 2. FRONT BRAKE



*Fig. 8-2-1*

The hydraulic disc brake adopted in model GT125 consists of four main portions, i.e., brake discs mounted on a front wheel hub, master cylinder for pressurizing, brake hose line for fluid pressure, and caliper which presses pads to brake disc by means of hydraulic pressures.



2-1. BRAKE FLUID AND ITS HANDLING

1) Inspecting brake fluid level

Be sure to check brake fluid level in the reservoir. In inspecting brake fluid, first mount your motorcycle firmly onto the center stand with its handlebar kept straight up without fail. If the level is found to be lower than the level mark ① provided on the reservoir, replenish the reservoir with one of the brake fluid graded below.

| Spacification & Classification | Remarks  |
|--------------------------------|--|
| DOT 3                          | in U.S.A.  |
| DOT 4                          | in U.S.A.  |
| SAE J1703a                     |  |
| SAE J1703b                     |  |
| SAE J1703c                     |  |
| SAE 70R3                       | A classification in obsolete specification of SAE J170b. |

**Note:**  
Since the brake system of this motorcycle is filled with a glycol base brake fluid by the manufacturer, do not use or mix different types of fluid such as silicone-based and petroleum-based fluid for refilling the system, otherwise damage sustained will be serious.  
Do not use any brake fluid taken from old or used, or unsealed containers.  
Do not squeeze the brake lever while the reservoir cap is removed, otherwise brake fluid will sometimes spout out. Do not put the removed reservoir cap on the speedometer or tachometer.  
Brake fluid will damage the paint surface and instrument gauge lenses.  
Take due care especially so that water may not enter brake fluid on rainy day particularly during replacement or in handling a brake fluid container, because brake fluid has hydroscopic property, and its boiling point falls excessively if water is mixed with it.

2) Air bleeding from brake system

If the brake lever travel becomes excessive or the lever feels a soft or spongy feeling, you must carry out air bleeding from the brake system in the following procedure:

- It is best if two persons perform this.
- a) Attach the bleeder tube to the bleeder valve after removing the bleeder valve dust cap as shown in Fig. 8-2-3. A transparent tube is useful in finding air bubble expelled from the system.
  - b) The tube must be submerged in a clean container partially filled with brake fluid.
  - c) Fill the reservoir with the aforementioned brake fluid.

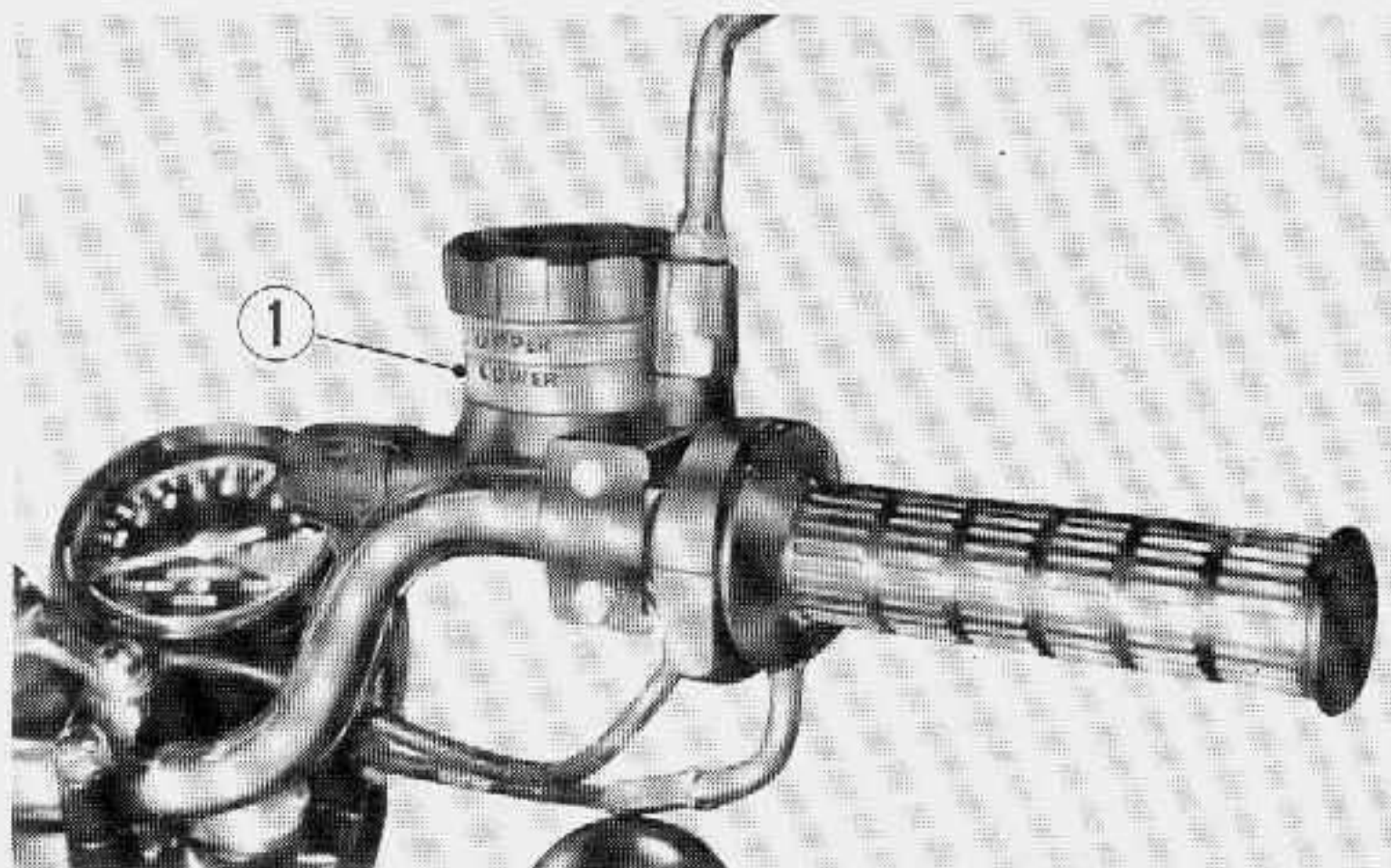


Fig. 8-2-2

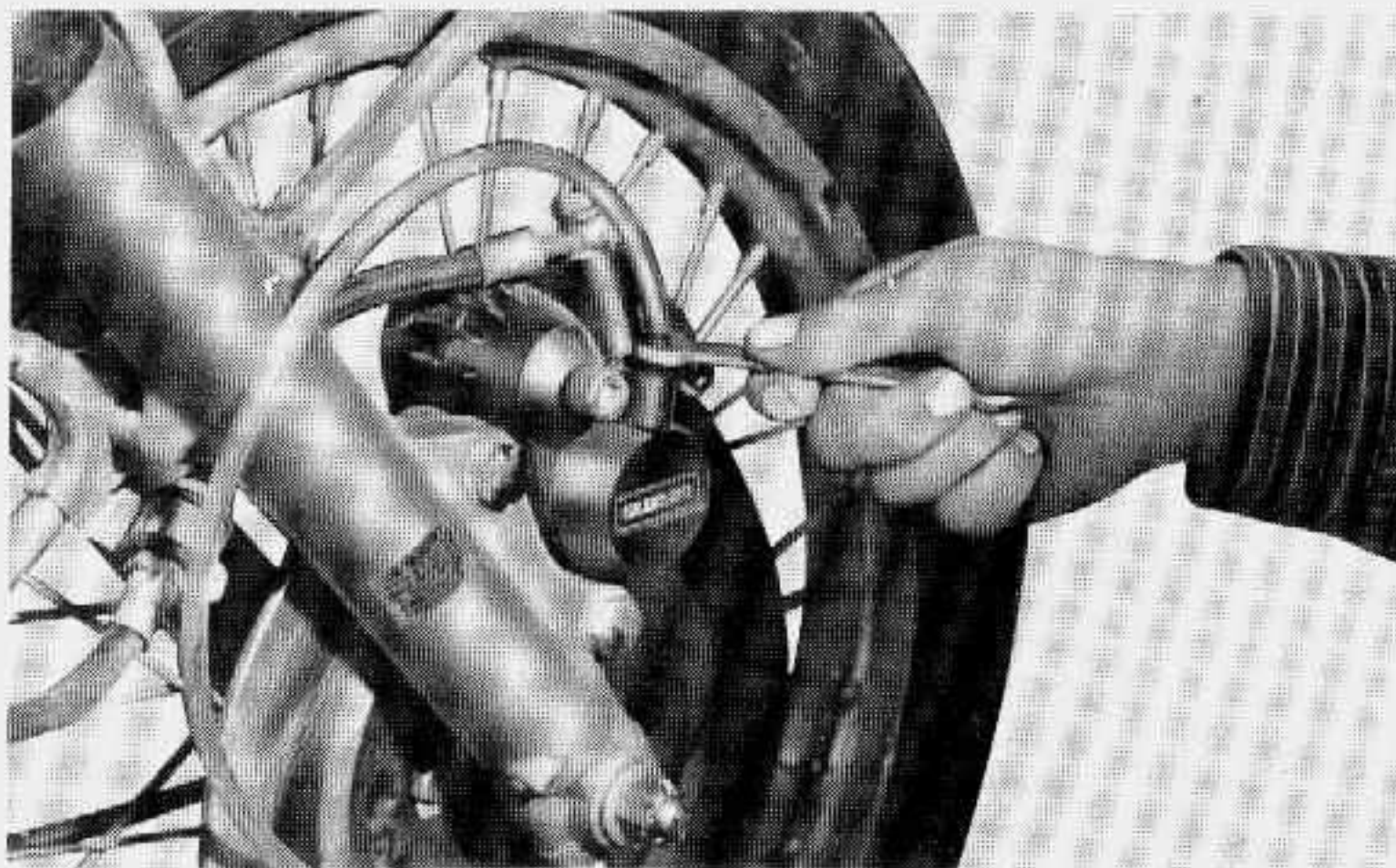


Fig. 8-2-3



- d) Screw in the cap on the reservoir to prevent a spout of brake fluid and entry of dust.
- e) Allow the pressure in the hydraulic system by squeezing rapidly the brake lever several times and then holding the lever tight.
- f) Unscrew (open) the bleeder valve by one half turn and squeeze the lever all the way down. Do not release the lever until the bleeder valve is screwed in. (closed) again.
- g) Repeat steps e) and f) until air bubbles disappear in the bleeder tube or container and screw in (close) the bleeder valve securely.
- h) Remove the tube and install the bleeder valve dust cap.
- i) Check the fluid level on the reservoir and replenish if necessary, after the bleeding operation has been completed.
- j) Reinstall the diaphragm and the diaphragm plate and tighten the reservoir cap securely.

**Caution:**

**Do not reuse the brake fluid drained from the system.**

Boiling point of brake fluid falls considerably with absorption of moisture which may take place during a long period of use. Therefore, it is recommended to exchange old brake fluid with new one periodically.

**Exchange interval: One year**

On changing brake fluid, extreme attention should be paid so as not to mix any foreign materials because they would block the return port of the master cylinder resulting in the brake dragging or squeaking.

When brake fluid is to be changed, perform the following procedure.

- a) Attach a bleeder tube to the bleeder valve. Drain out old brake fluid by squeezing the brake lever with the bleeder valve opened until the brake fluid disappears in the bleeder tube.
- b) After old brake fluid is drained out from the system completely, carry out the same procedure as described "1-2 Air bleeding".

## 2-3. INSPECTION AND REPLACEMENT OF PADS

### 1) Inspection of pads

Check worn condition of the friction pads. If any of the friction pads is worn out up to the red limit line ① marked on its circumference, replace it following the procedure of "2-3-2".

**Caution:**

**Wash mud and dust off around the front wheel and/or caliper prior to the replacing operation.**

### 2) Replacing of pads

- a) Set up the center stand and load at the rear portion to let the front wheel free.
- b) Remove the front wheel assembly.
- c) Unscrew the pad fastening screw, and take off pad No. 2. stationary side.

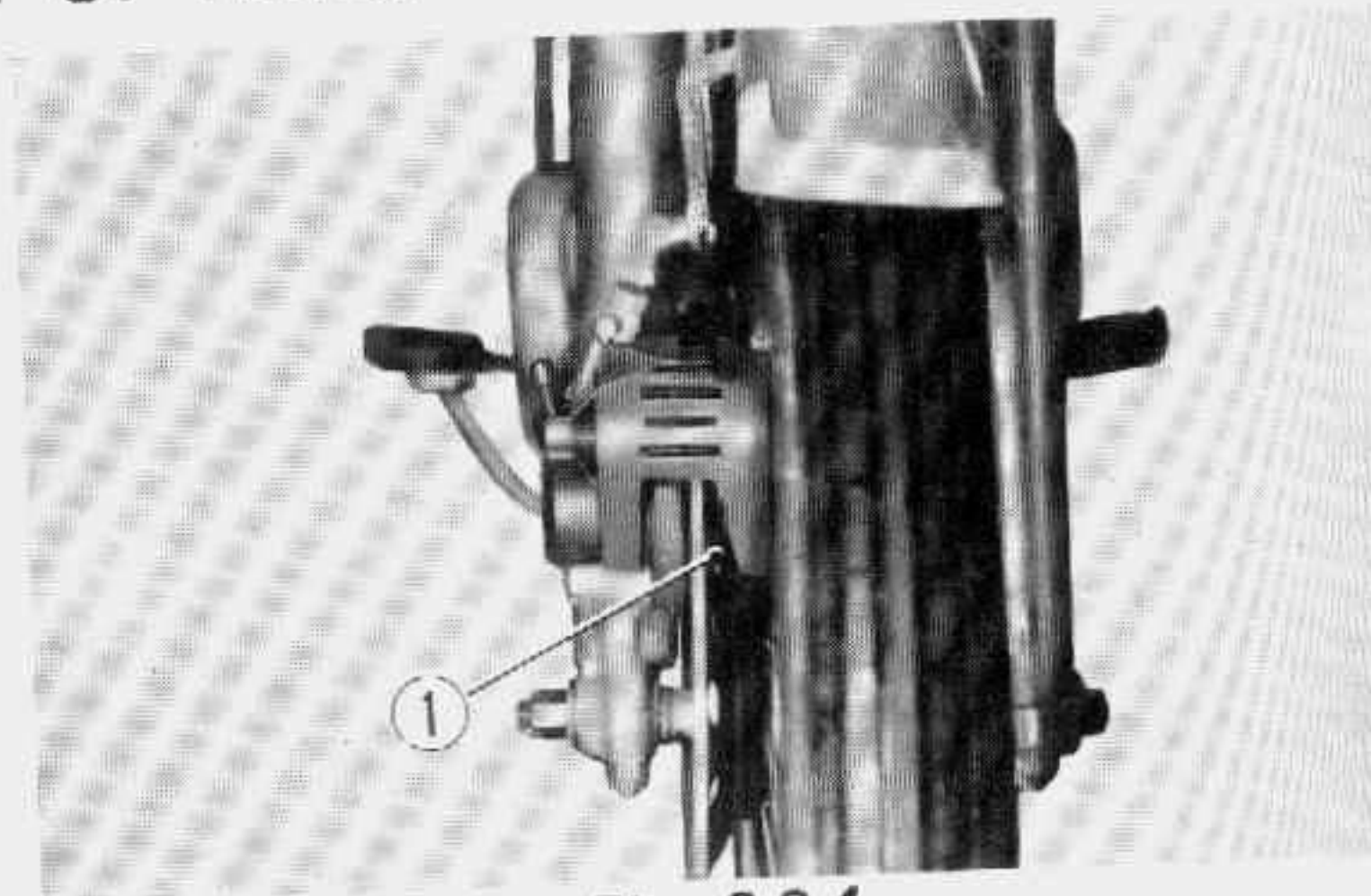


Fig. 8-2-4

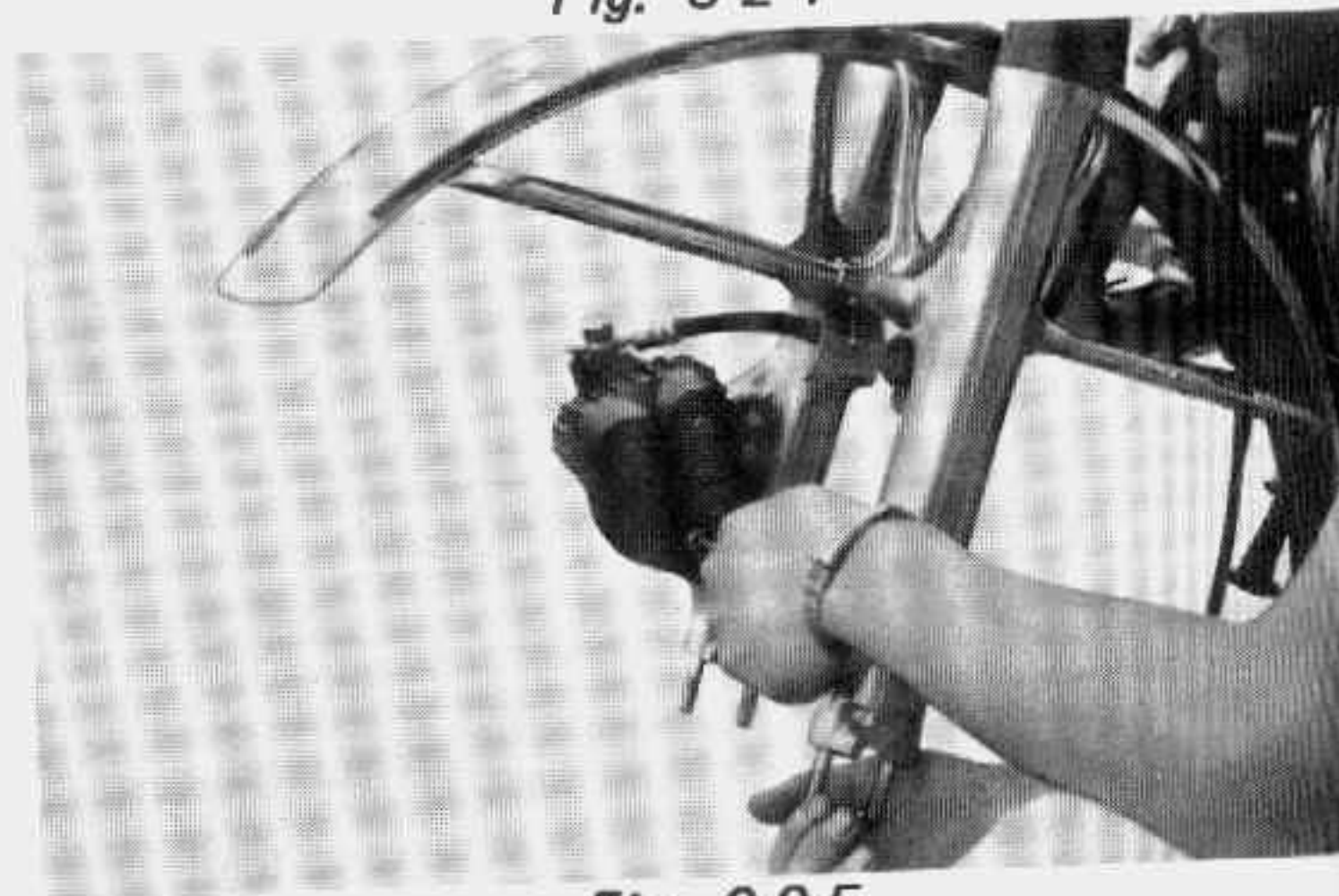


Fig. 8-2-5



- d) Squeeze the brake lever two or three times gradually to force out pad No. 1 (moving side) by fluid pressure while observing the motion of pad.

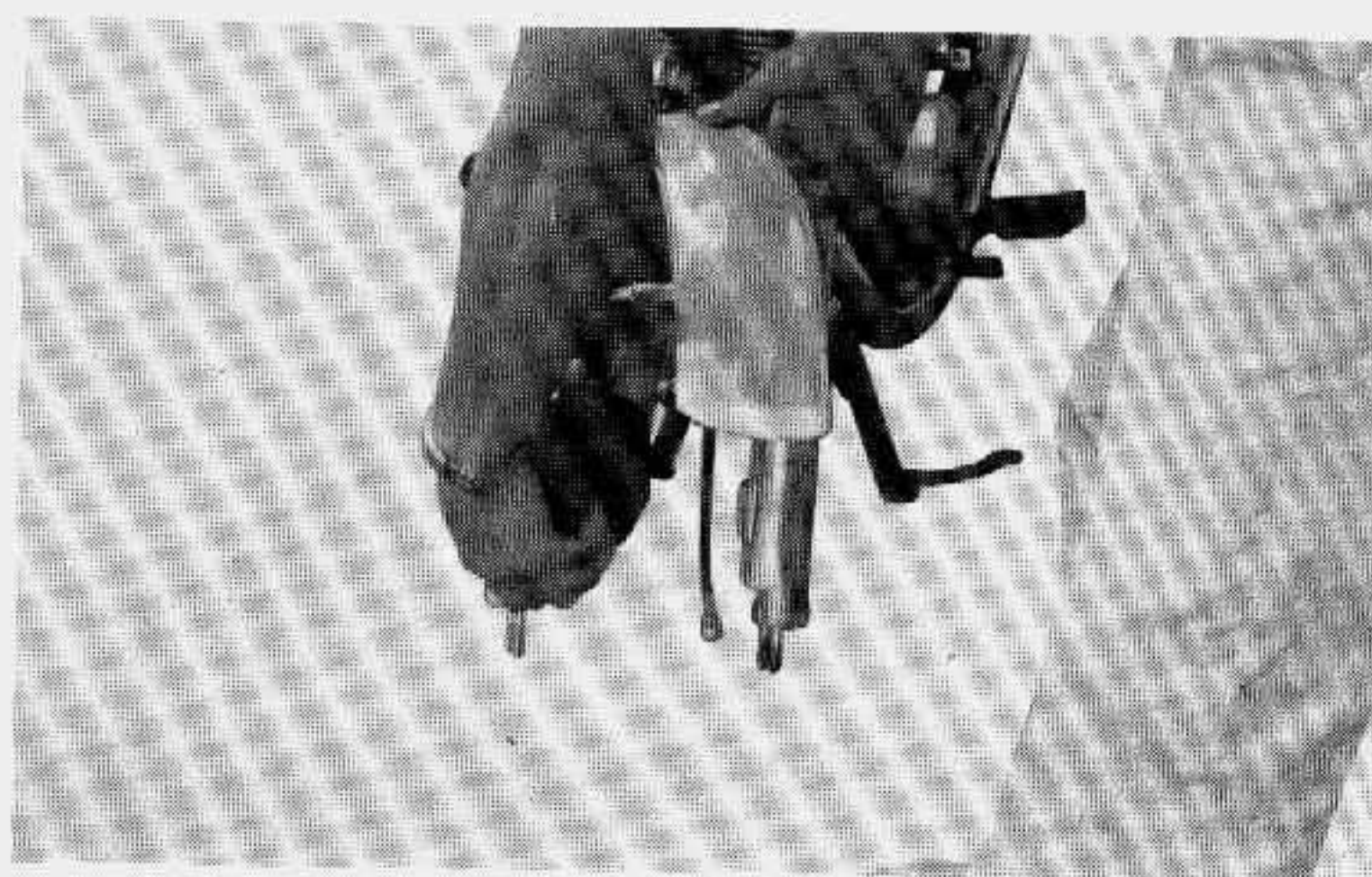


Fig. 8-2-6.

- e) Apply Suzuki Brake Pad Grease, which is provided as a component of Pad Set as shown in Fig. 8-2-7, onto the periphery and back plate of pad No. 1 as illustrated in Fig. 8-2-8 in a very thin layer.

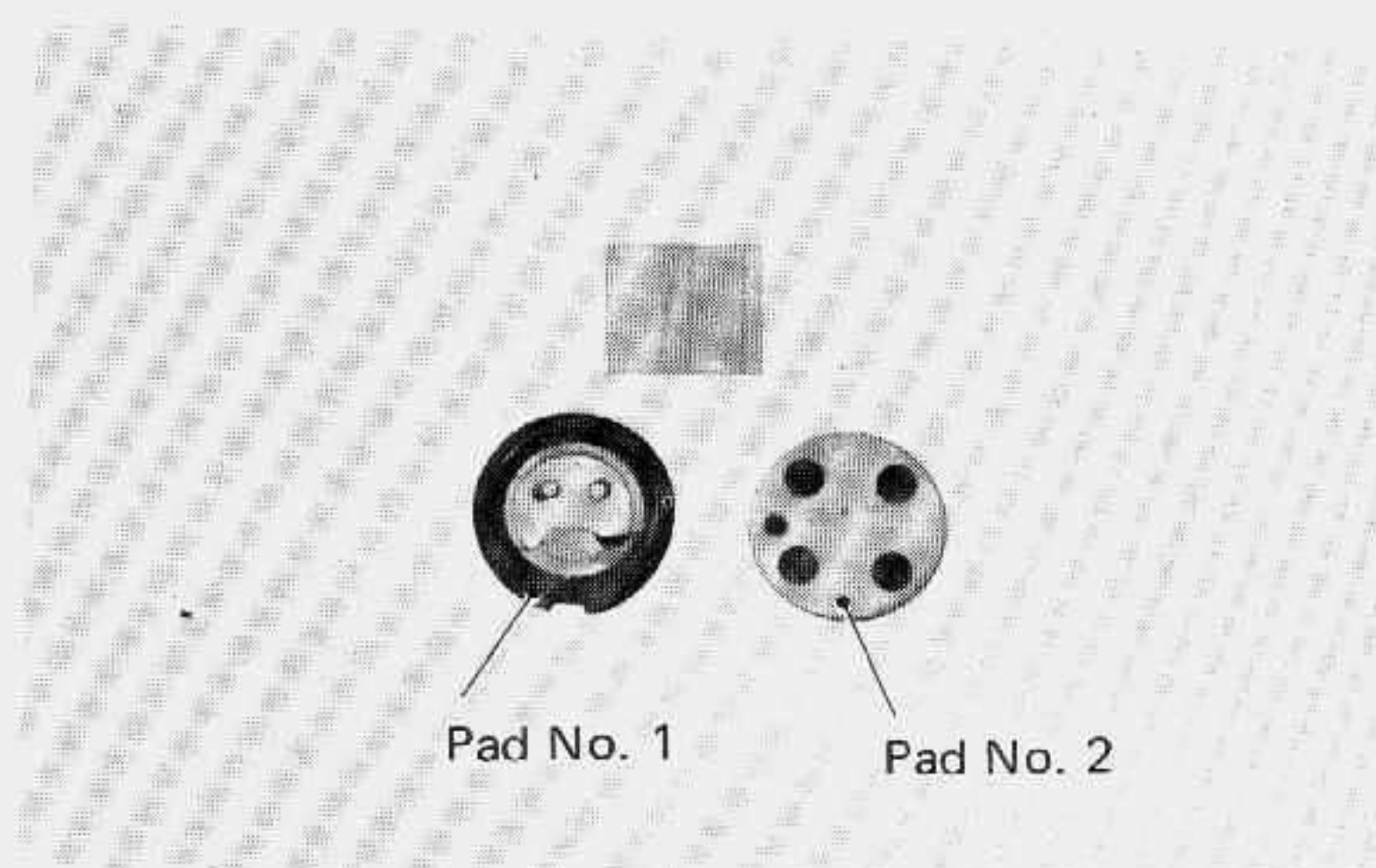


Fig. 8-2-7.

**Caution:**

**Do not use another grease.**

**Apply grease thinly so as not to flow out, Other wise resulting in reduced brake performance.**

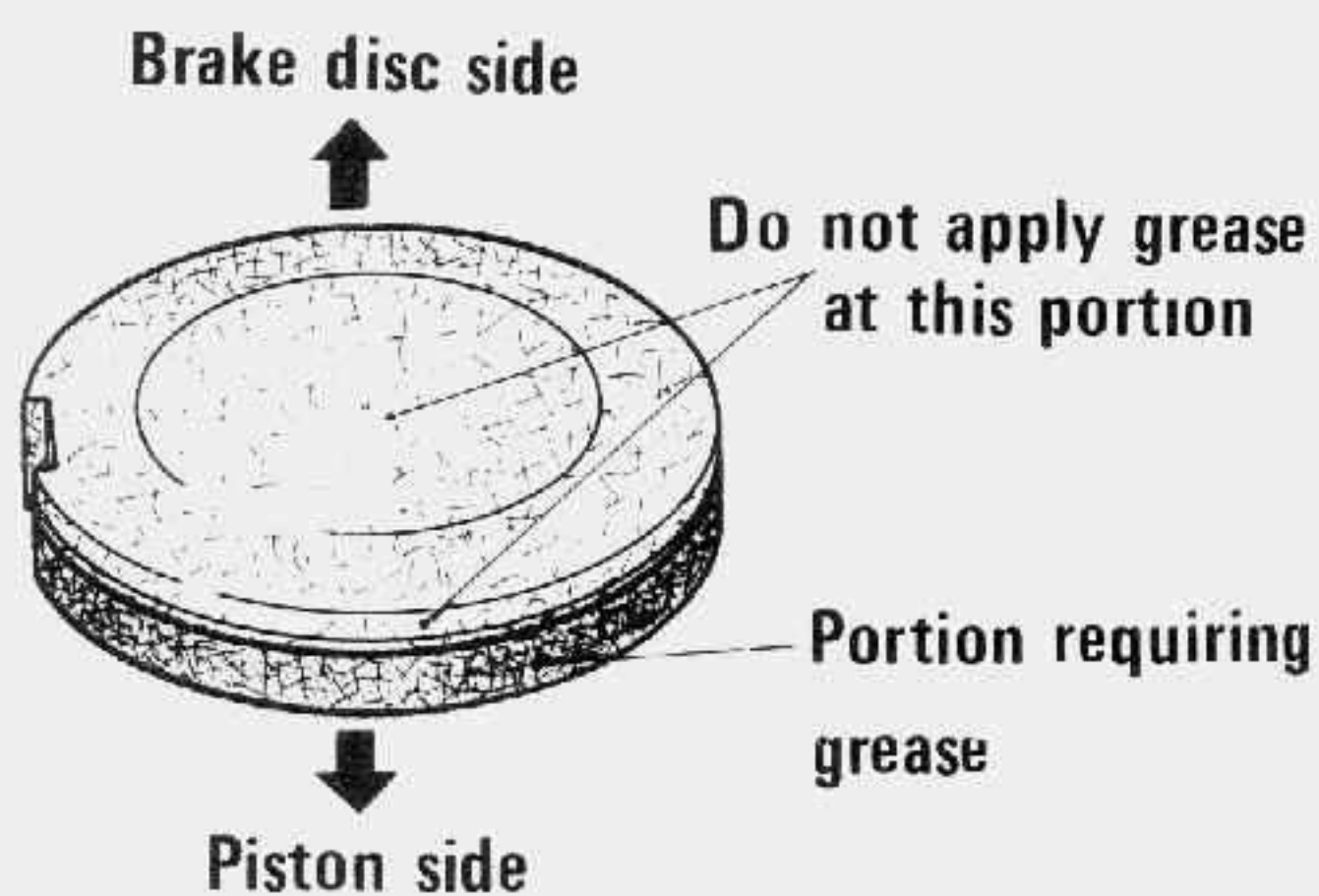


Fig. 8-2-8.

- f) Push in pad No. 1 into the caliper holder.  
g) Mount pad No. 2 to the caliper body.

**Caution:**

**Do not apply any grease to the pad No. 2, and take care not to mount it inclined.**

- h) Install the front wheel assembly to the front fork.  
i) Squeeze the brake lever two or three times to confirm its operation, and bleed air if necessary.

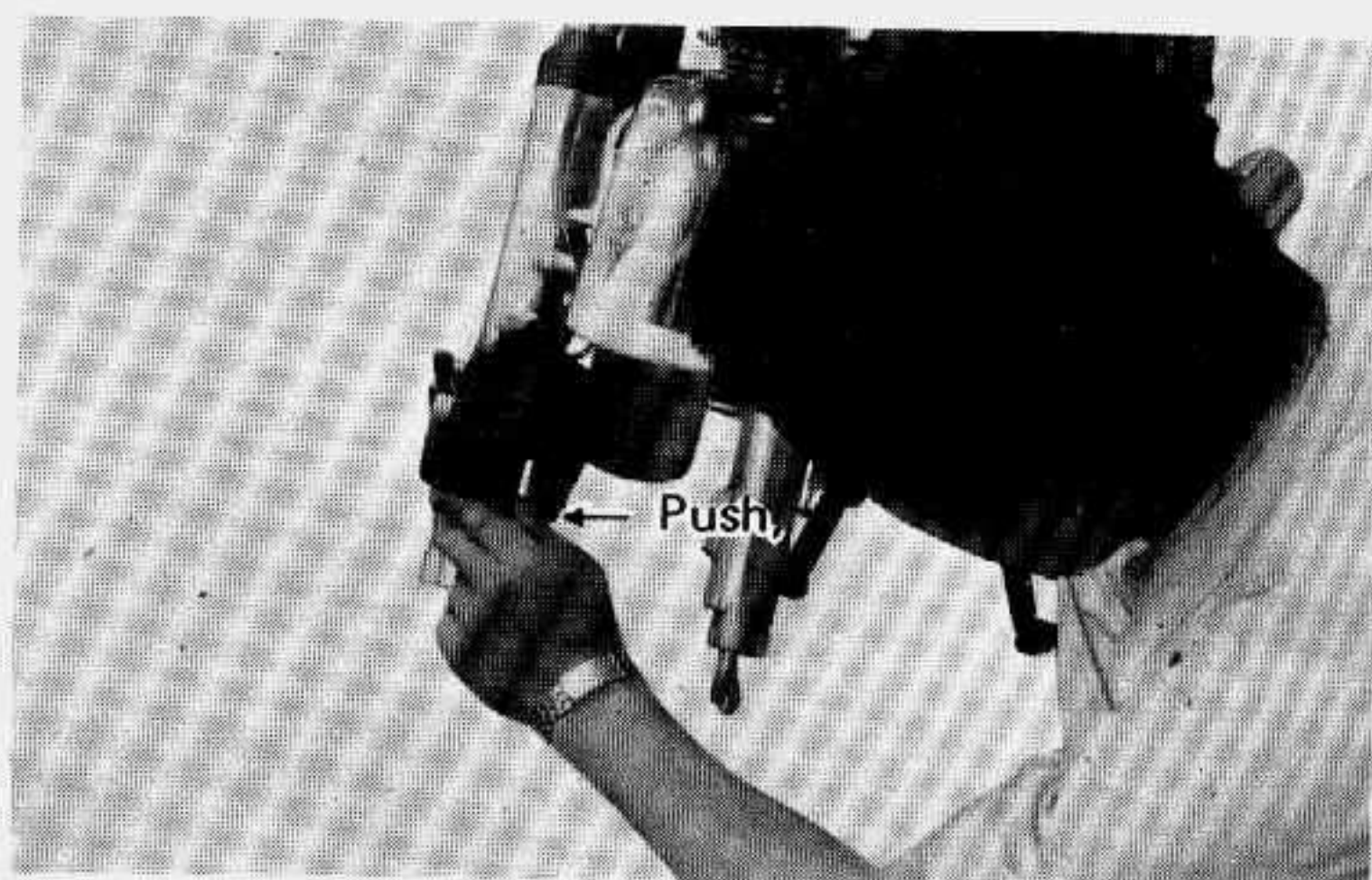


Fig. 8-2-9.



2-4. MASTER CYLINDER, BRAKE HOSE AND BRAKE PIPE

1) General

| Index No. | Description              |
|-----------|--------------------------|
| 1         | Master cylinder assembly |
| 2         | Check valve              |
| 3         | Spring                   |
| 4         | Primary cup              |
| 5         | Secondary cup            |
| 6         | Piston                   |
| 7         | Stop plate               |
| 8         | Circlip                  |
| 9         | Boot                     |
| 10        | Boot plate               |
| 11        | Boot stopper             |
| 12        | Diaphragm                |
| 13        | Diaphragm plat           |
| 14        | Reservoir cap            |
| 15        | Washer                   |
| 16        | Bolt                     |
| 17        | Master cylinder boot     |
| 18        | Union bolt               |
| 19        | Washer                   |
| 20        | Front brake hose         |
| 21        | Brake hose guide         |
| 22        | Grommet                  |
| 23        | Brake pipe               |
| 24        | Brake hose guide         |
| 25        | Grommet                  |
| 26        | Brake hose               |
| 27        | Grommet                  |

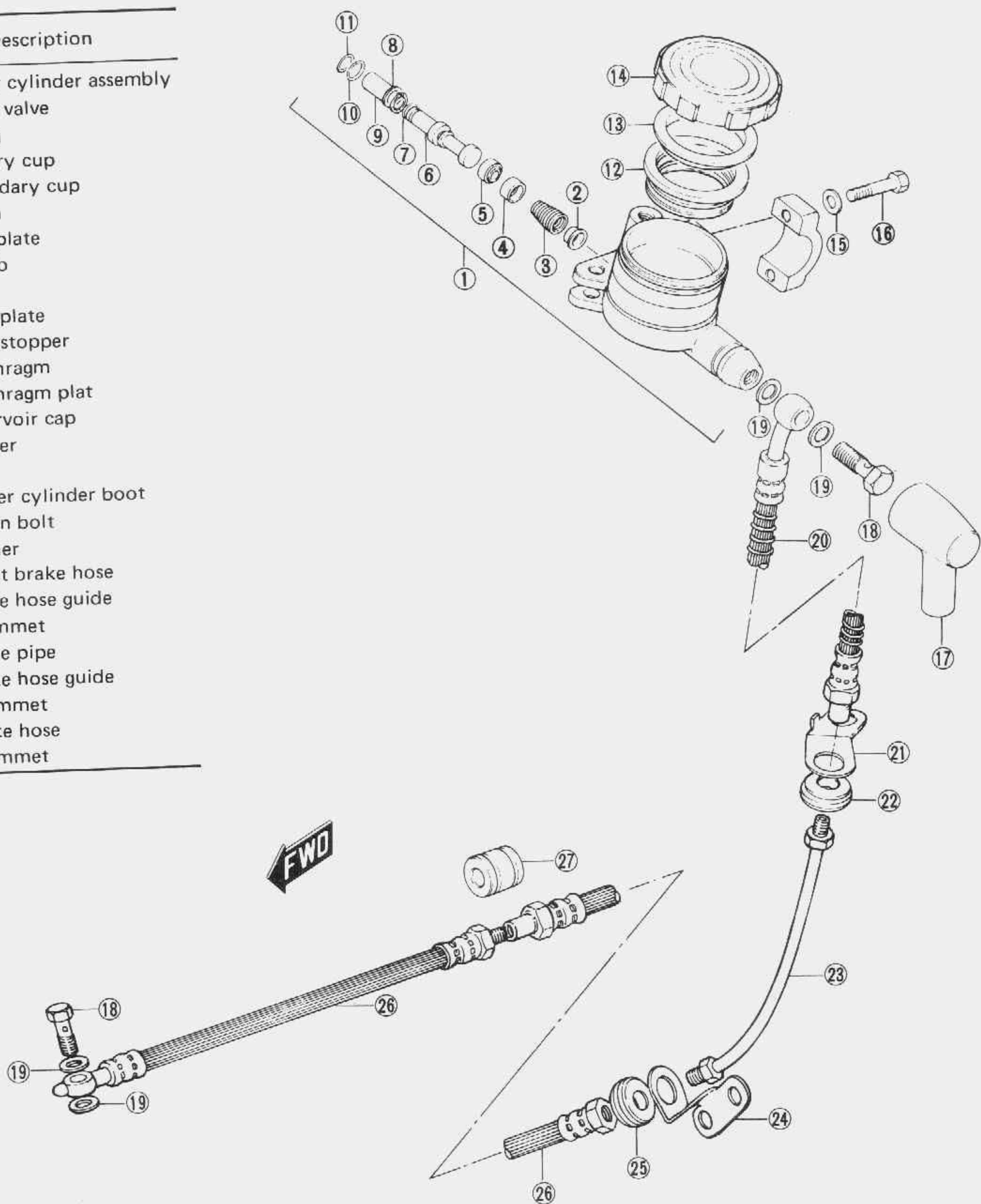


Fig. 8-2-10.

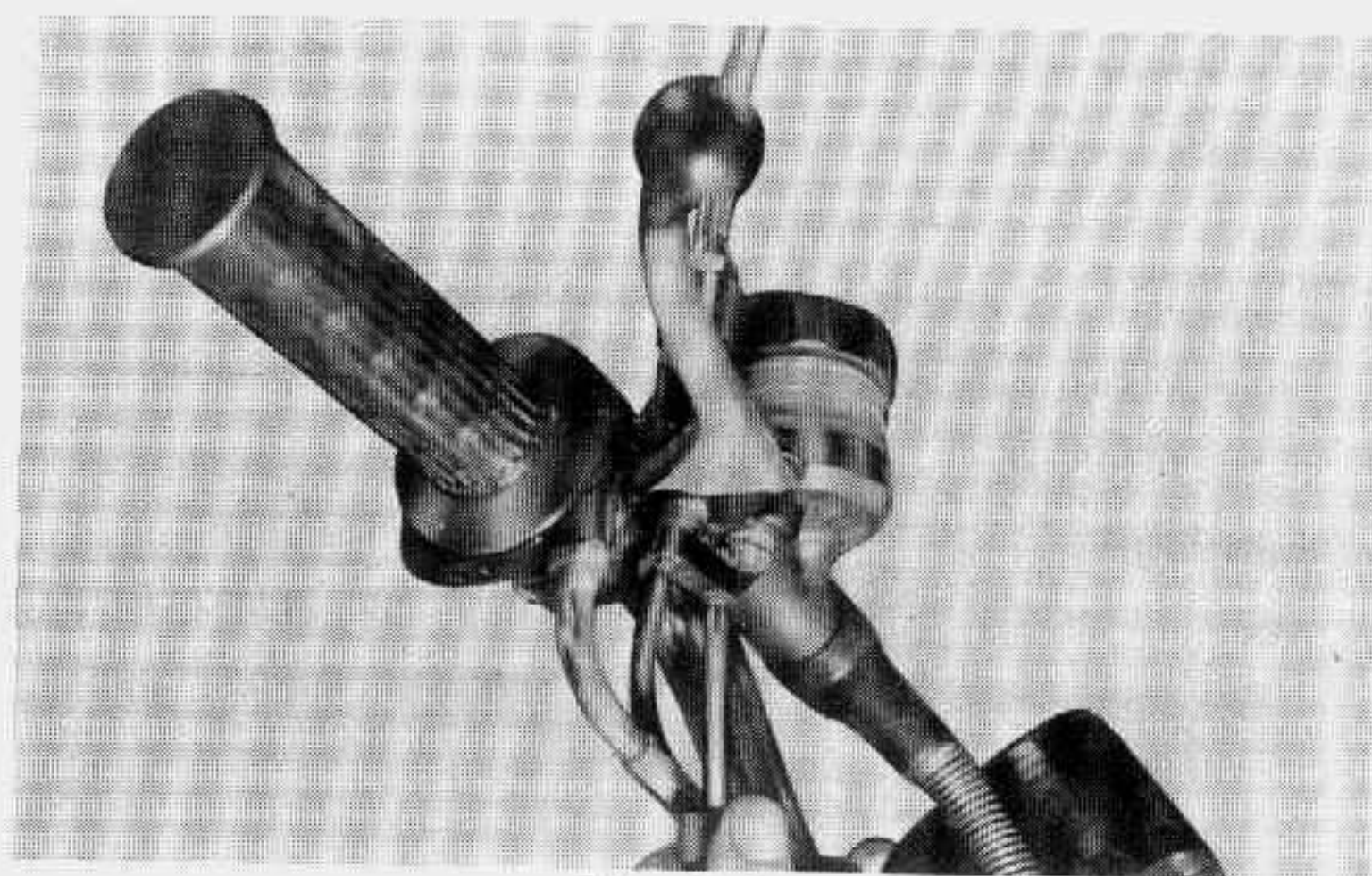


Always check the master cylinder, brake hose and the brake pipe for operation and leakage of brake fluid since they are very important parts for safe riding.

If any abnormal condition is found, repair or replace. Though every part is made of material rigidly selected under high degree quality control, periodically replace the master cylinder piston cup and its related parts in order to always keep the motorcycle in its best condition.

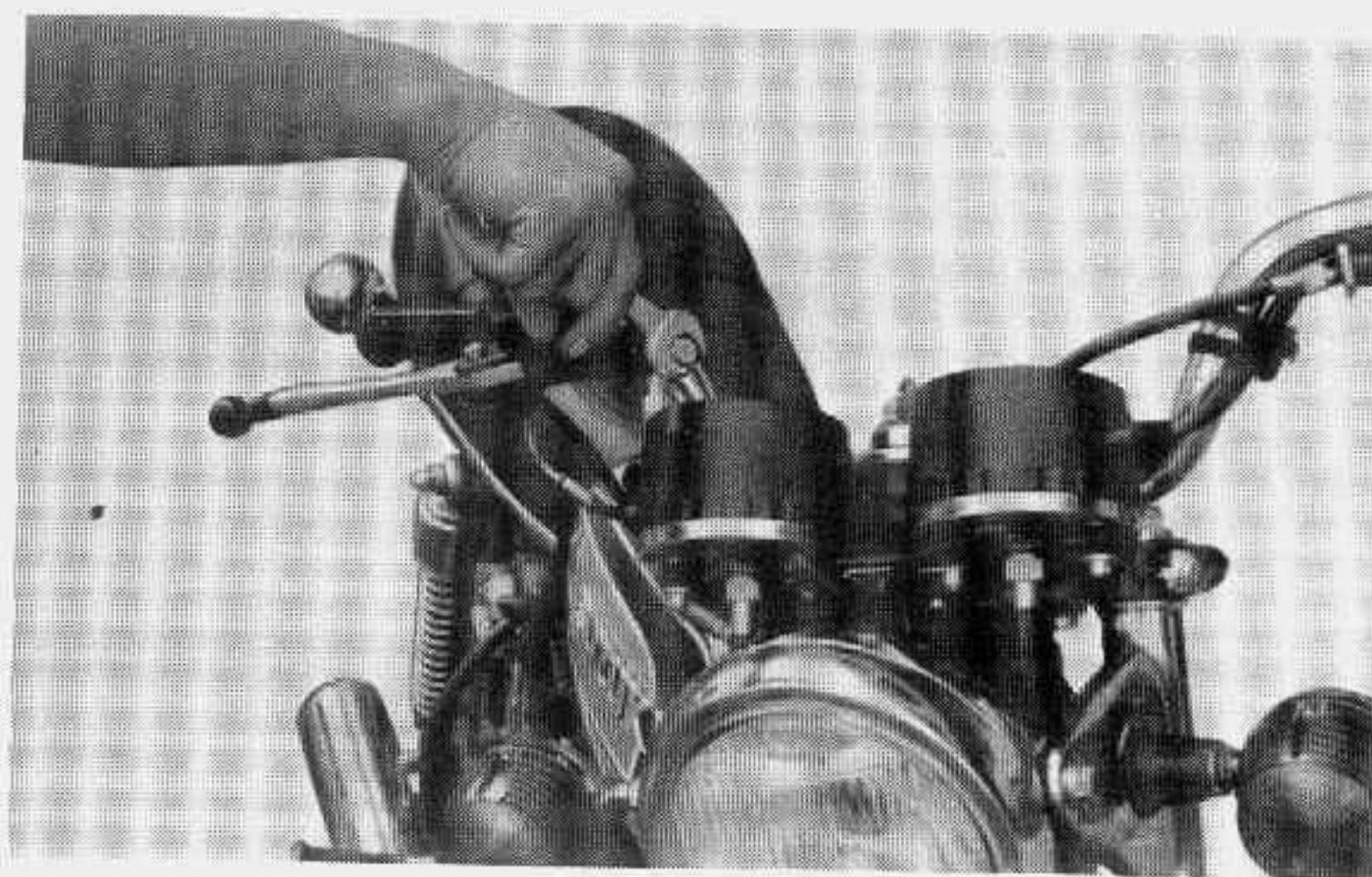
## 2) Removing master cylinder

- a) Remove the stop switch from the master cylinder.



*Fig. 8-2-11.*

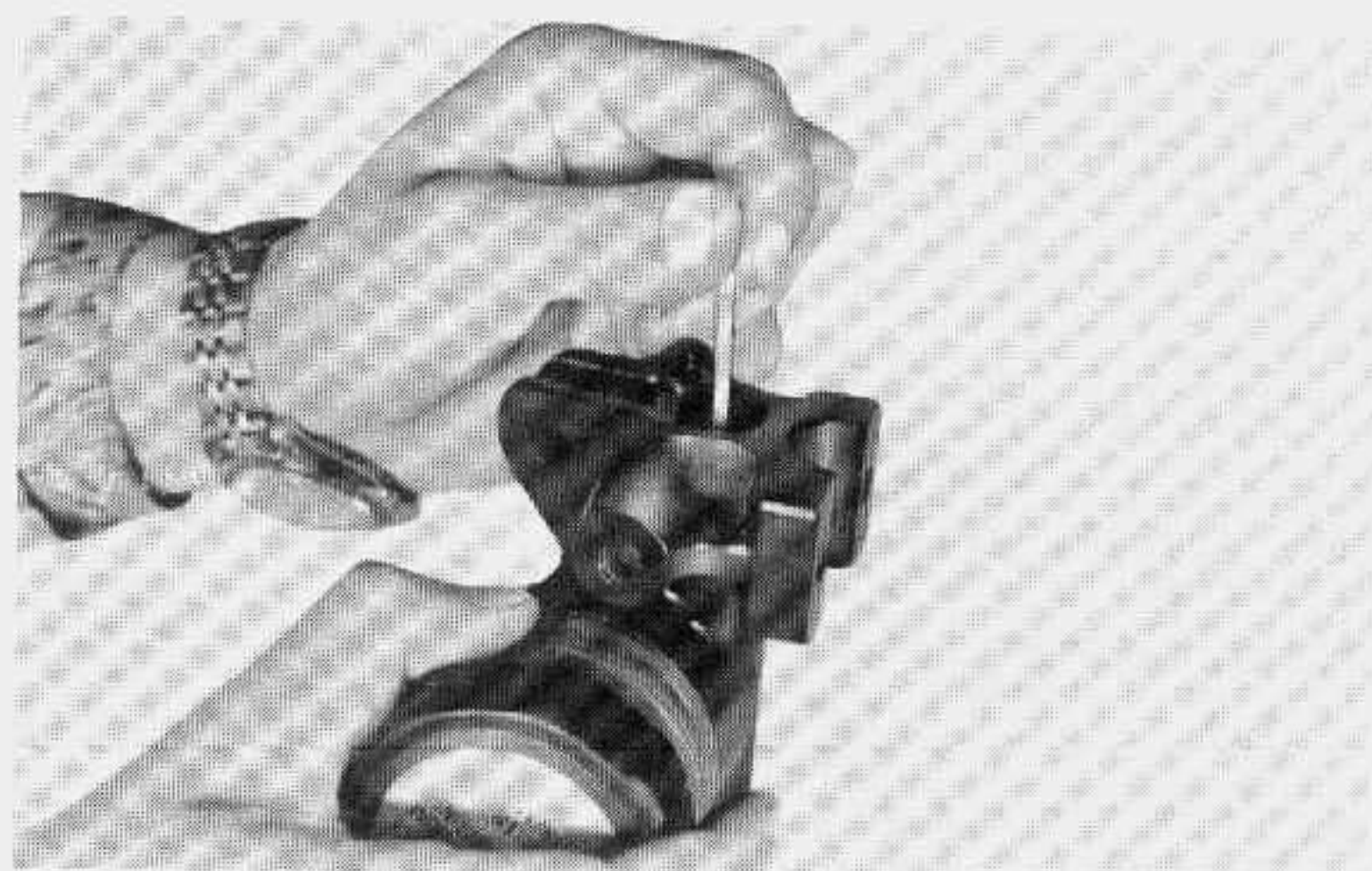
- b) Put a piece of rag beneath the union bolt on the master cylinder to catch drops of brake fluid. Unscrew the union bolt and disconnect the connection between the brake hose and the master cylinder as shown in Fig. 8-2-12.
- c) Unscrew two master cylinder fastening bolts and remove the master cylinder body from the handlebar.
- d) Empty brake fluid out of the reservoir.



*Fig. 8-2-12.*

## 3) Disassembling master cylinder

- a) Remove the brake lever.
- b) Remove the boot stopper while taking care not to damage the boot and then remove the boot as shown in Fig. 8-2-13.



*Fig. 8-2-13.*



c) Remove the circlip with the special tool (Circlip remover, 19920-73110) as shown in Fig. 8-2-14.

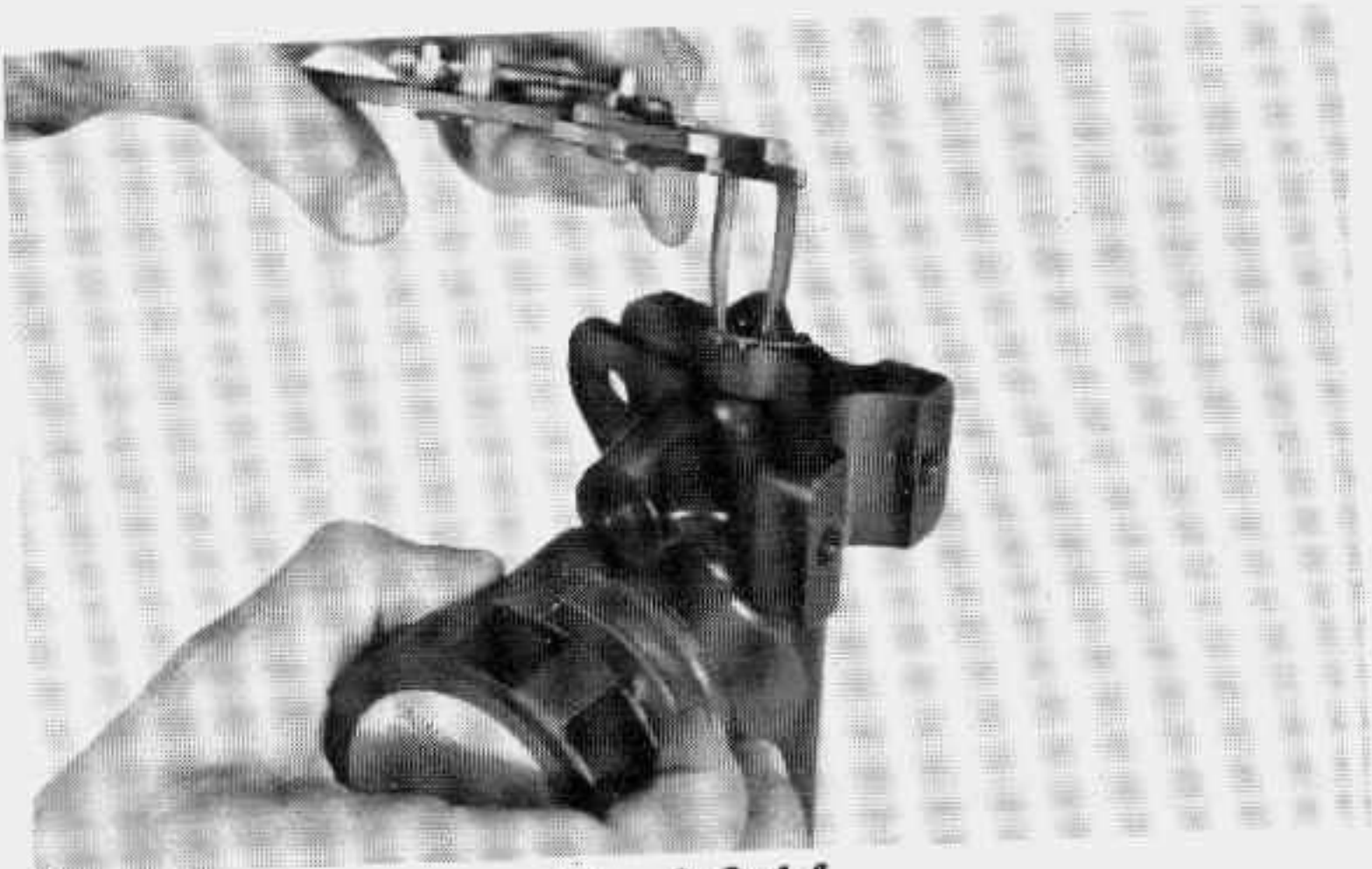


Fig. 8-2-14.

d) Remove the piston, primary cup, spring and check valve.

e) Put the removed parts into a clean container and wash them in new brake fluid as shown in Fig. 8-2-15.

**Caution:**  
Never wash them in gasoline or petroleum; otherwise such fluid will damage rubber parts.

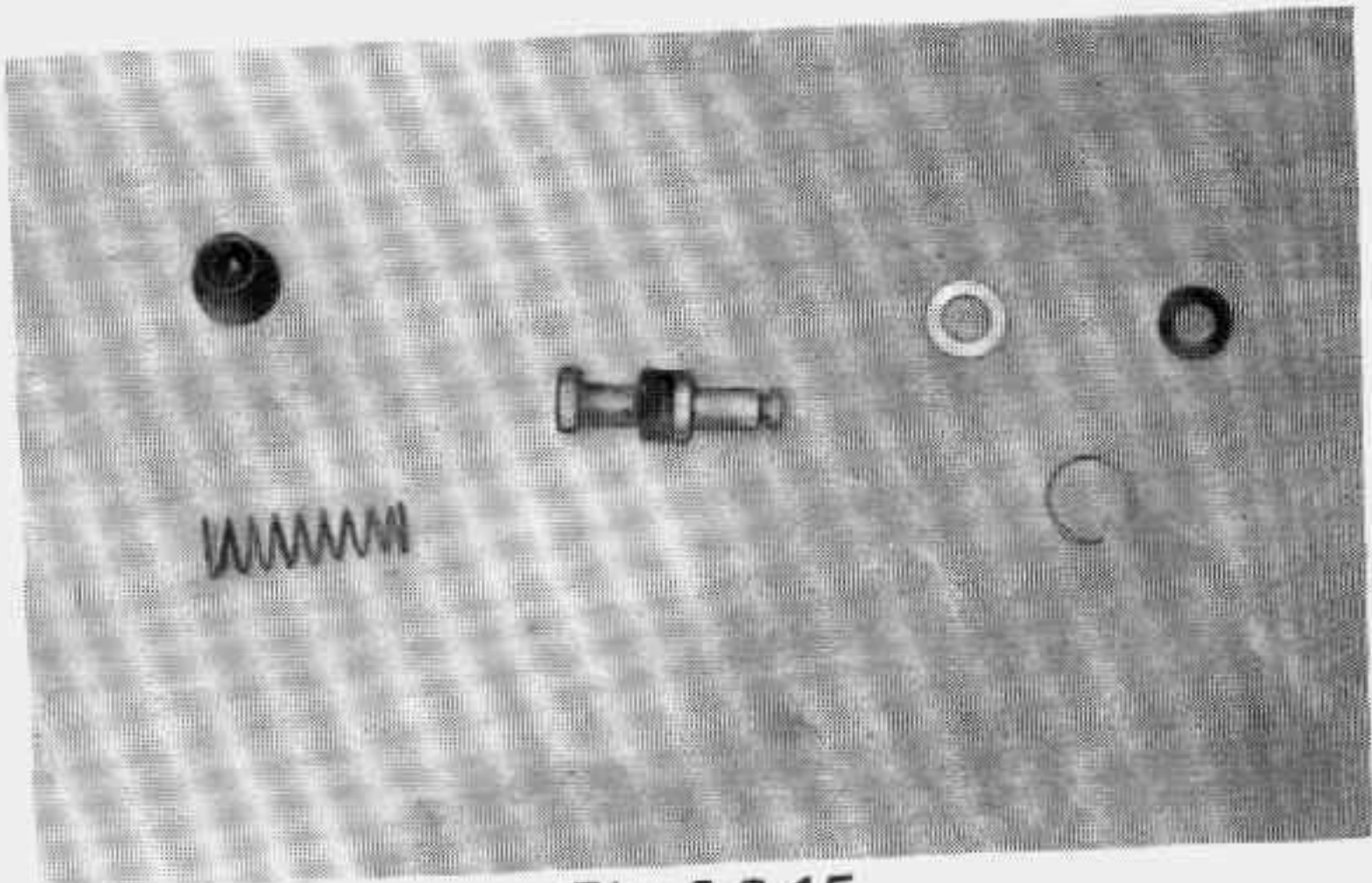


Fig. 8-2-15.

**4) Checking master cylinder**

Replace the following parts with new one if any abnormality is found.

a) Master cylinder: Measure inner diameter of the master cylinder with an inside dial indicator as shown in Fig. 8-2-16.

| Standard                                  | Limit                        |
|---|------------------------------|
| 14.00 to 14.04 mm<br>(0.551 to 0.553 in.) | Over 14.05 mm<br>(0.553 in.) |



Fig. 8-2-16.

b) Piston: Measure outer diameter of the piston as shown in Fig. 8-2-17.

| Standard                                  | Limit                         |
|---|-------------------------------|
| 13.96 to 13.98 mm<br>(0.550 to 0.551 in.) | Under 13.94 mm<br>(0.549 in.) |

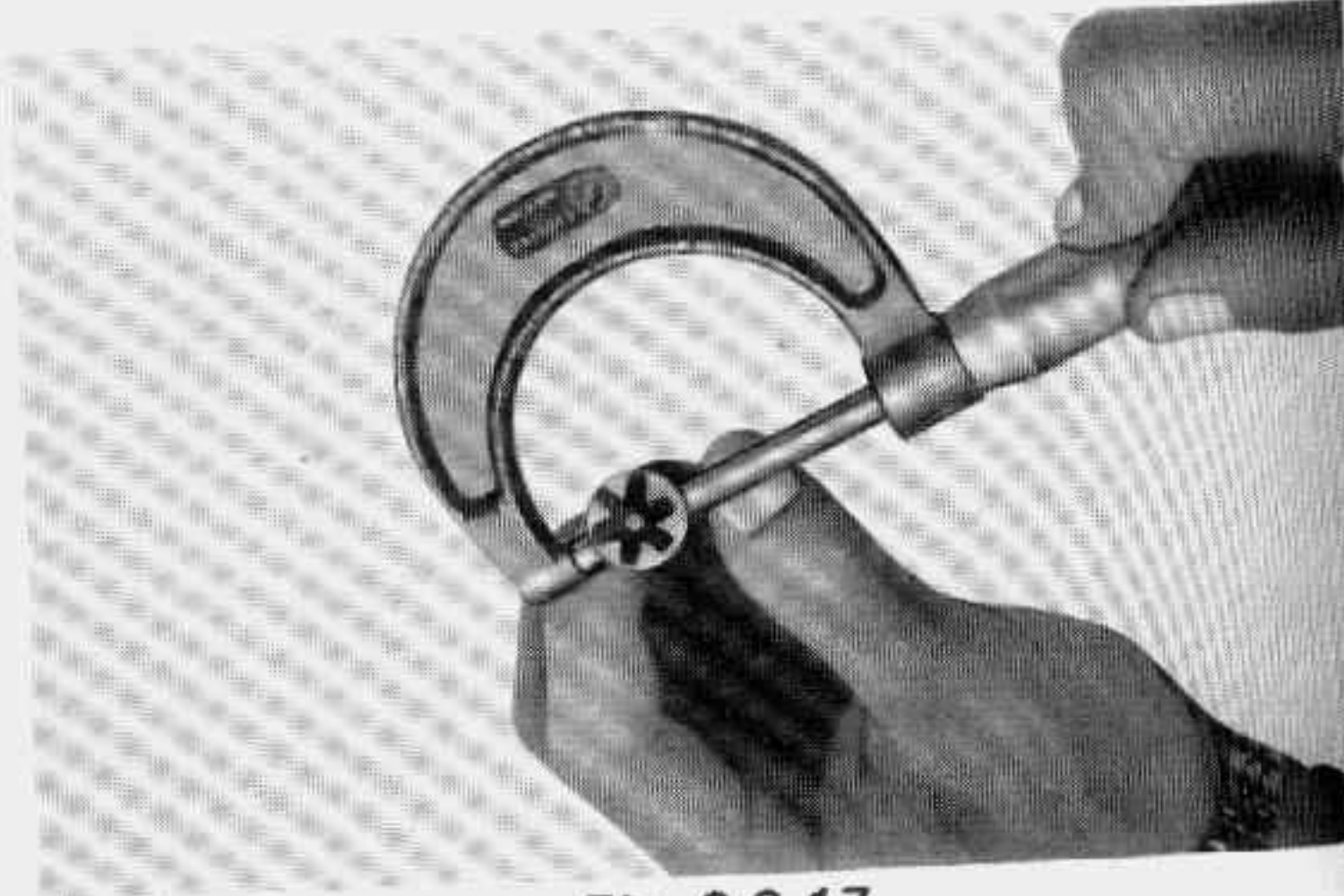


Fig. 8-2-17.

c) Check valve: Inspect the check valve for operation.



### 5) Assembling master cylinder

Follow the removal procedures in the reverse order. When assembling them, pay attention to the following points.

- a) Do not confuse the directions of assembling the primary cup. (Refer to Fig. 8-2-18).
- b) Replace a cotter pin of the brake lever pivot nut with new one and fit it securely.

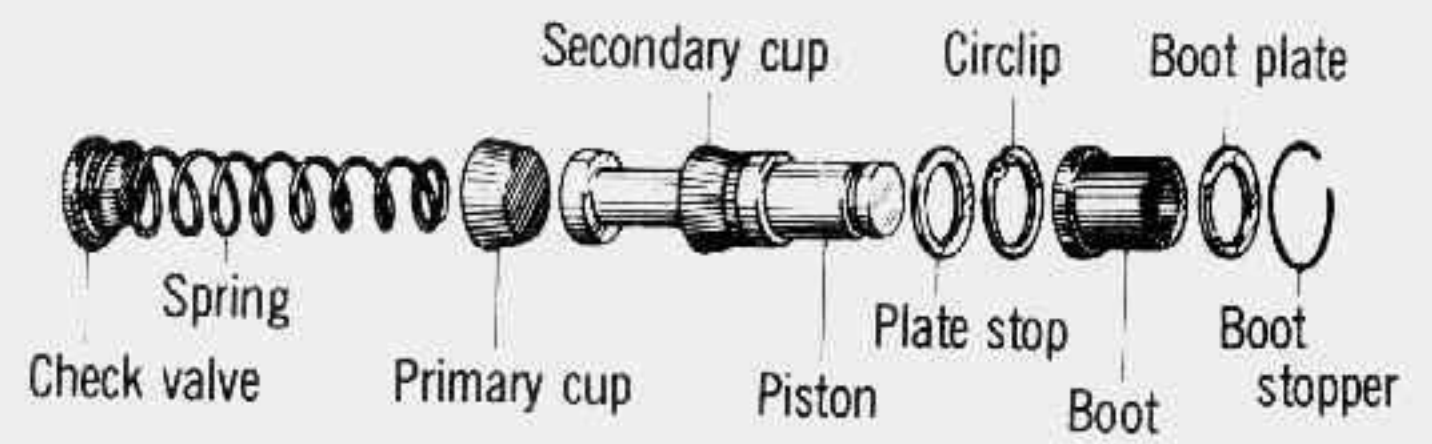


Fig. 8-2-18.

- c) Mount the master cylinder to the handlebar so that a gap between it and the switch box is about 2 mm (0.08 in.) and the reservoir becomes horizontal when the motorcycle is held on the center stand and steering is kept in a straight-on direction. Refer to Fig. 8-2-19.

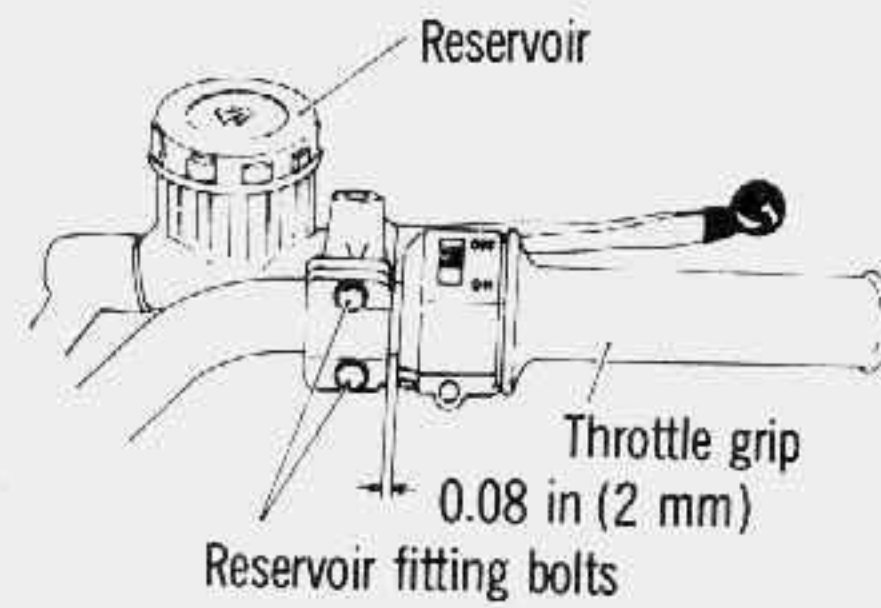


Fig. 8-2-19.



2-5. ASSEMBLING BRAKE HOSE AND PIPE

- When connecting the brake hose and pipe, pay attention to the following points.
- a) When tightening two brake hose joints be sure to be free either hose so that may not be twisted.
  - b) When connecting the brake hose to the caliper body, screw the bolt in with your fingers to prevent stripping the threads, then tighten with a wrench to the specified torque.
  - c) Check that there is a generous space between each of them and the fuel tank, the front fork or other parts, and correct if any abnormality is found. Check that the hose or pipe does not contact any other parts particularly when the handlebar is turned fully to the right or left or when the front fork is brought down to the bottom.
  - d) After the assembling, check for no brake fluid leakage at any connection while holding the brake lever tightly.

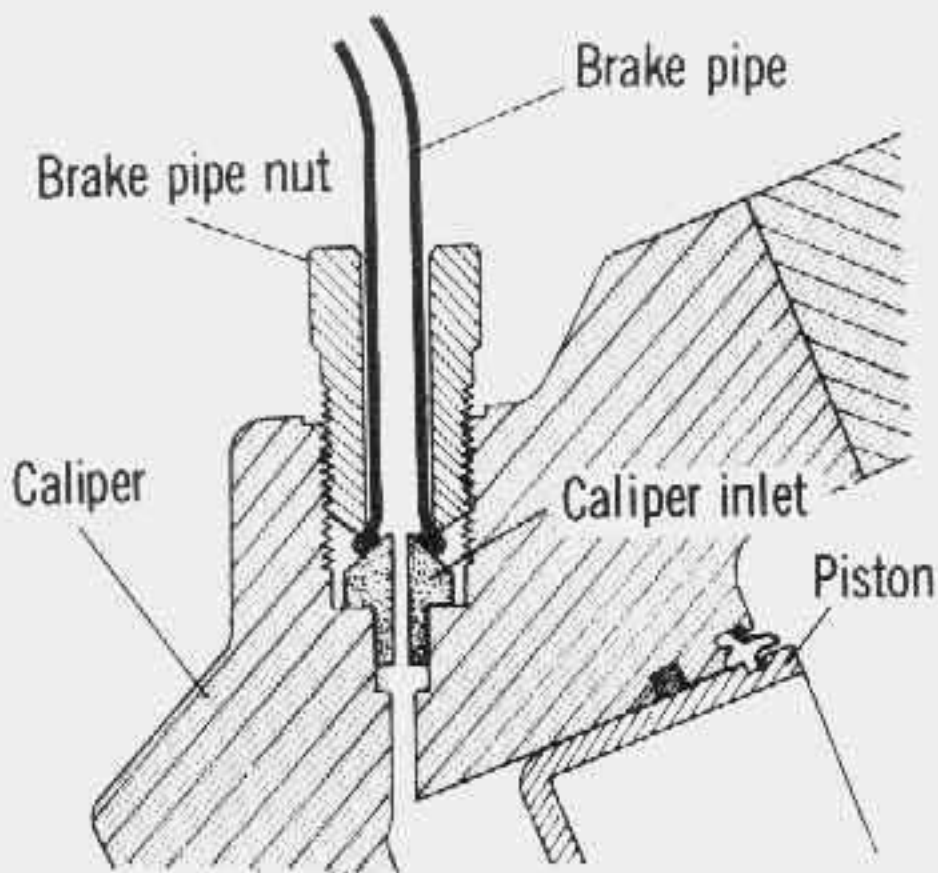


Fig. 8-2-20.

2-6. CALIPER

| Index No. | Description                 |
|-----------|-----------------------------|
| 1         | Caliper assembly            |
| 2         | Caliper holder              |
| 3         | Caliper stopper             |
| 4.        | Stopper rubber              |
| 5         | Piston                      |
| 6         | Piston seal                 |
| 7.        | Pad No. 1 (moving side)     |
| 8         | Pad No. 2 (stationary side) |
| 9         | Screw                       |
| 10        | Lock washer                 |
| 11        | Caliper axle                |
| 12        | Axle dust cover             |
| 13        | Caliper axle "O" ring       |
| 14        | Piston boot                 |
| 15        | Bleeder cap                 |
| 16        | Bleeder                     |
| 17        | Bolt                        |
| 18        | Washer                      |
| 19        | Lock washer                 |
| 20        | Caliper emblem              |

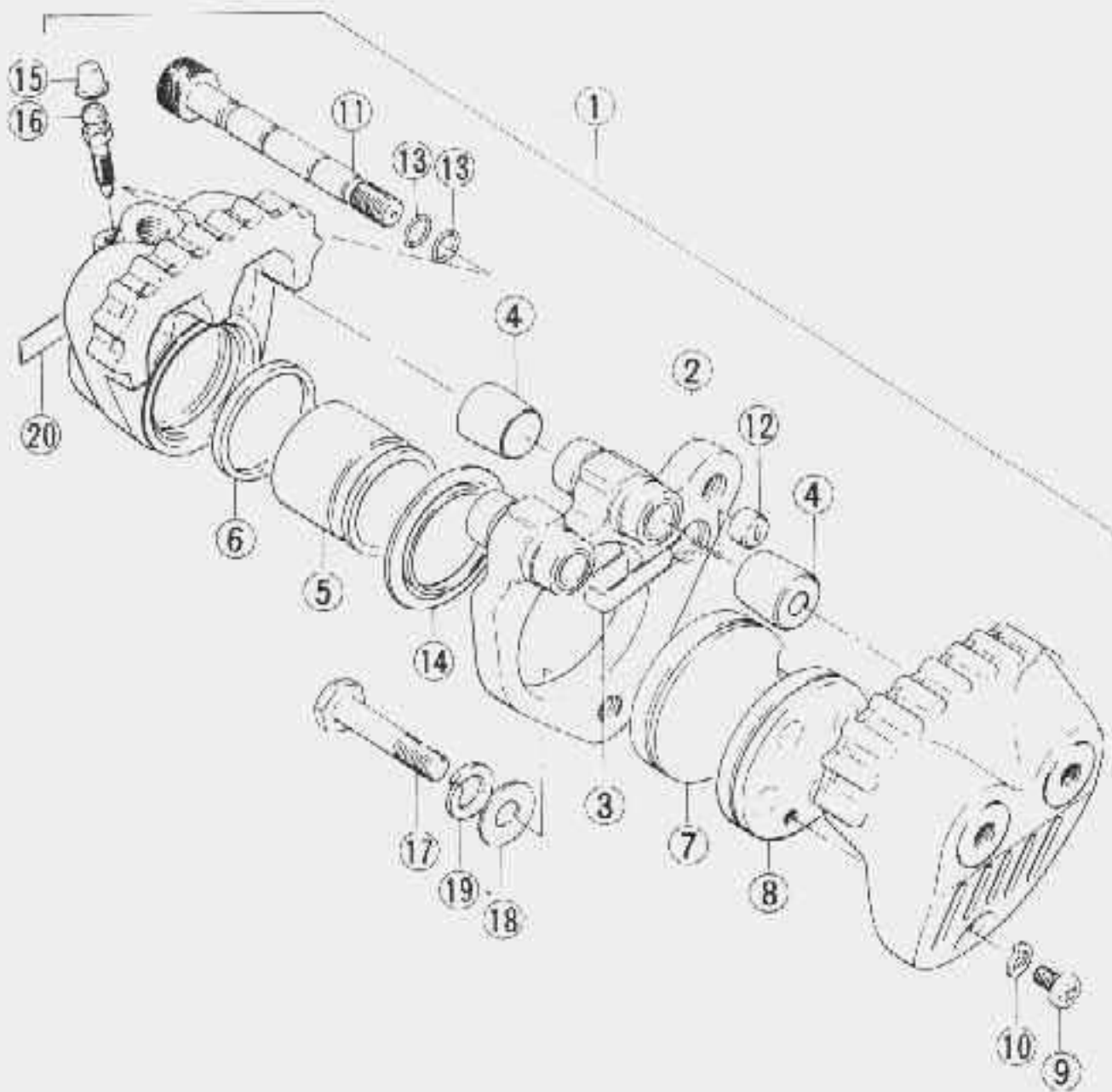


Fig. 8-2-21.



## 2) Removing

- a) Unscrew the brake hose bolt and caliper fastening bolts.
- b) Pull out the caliper body from the disc plate.

## 3) Disassembling

- a) Unscrew the caliper axle bolts with a special tool (8 mm hexagon L-type wrench 09900-06904) and separate the inner caliper body from the outer body as shown in Fig. 8-2-22.

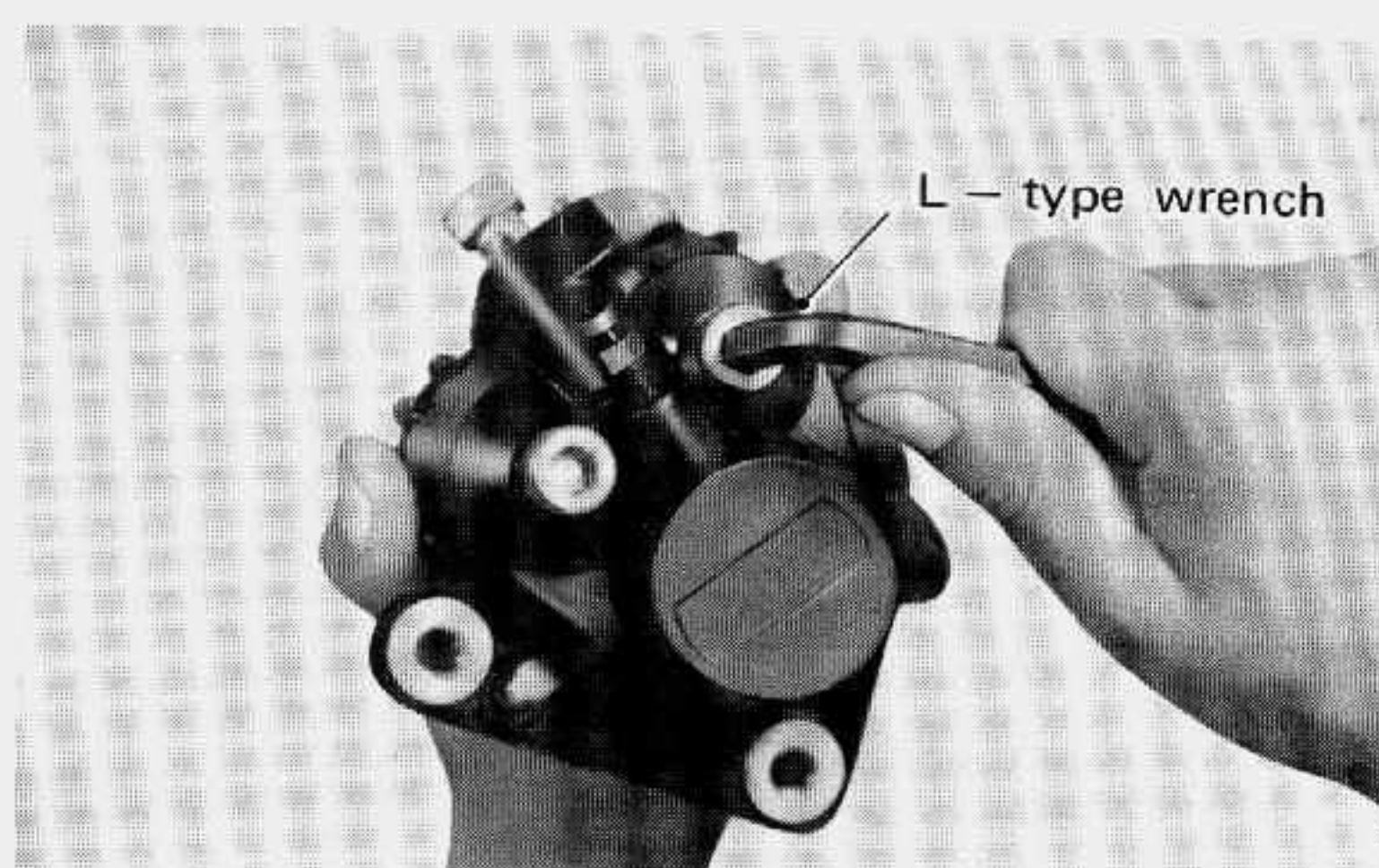


Fig. 8-2-22.

- b) Remove the caliper holder.
- c) Remove "O" rings on the caliper axle.
- d) Remove the caliper axles.
- e) Remove the piston boot.
- f) Push out the piston with compressed air while holding it with finger to prevent it from blowing out as shown in the figure.

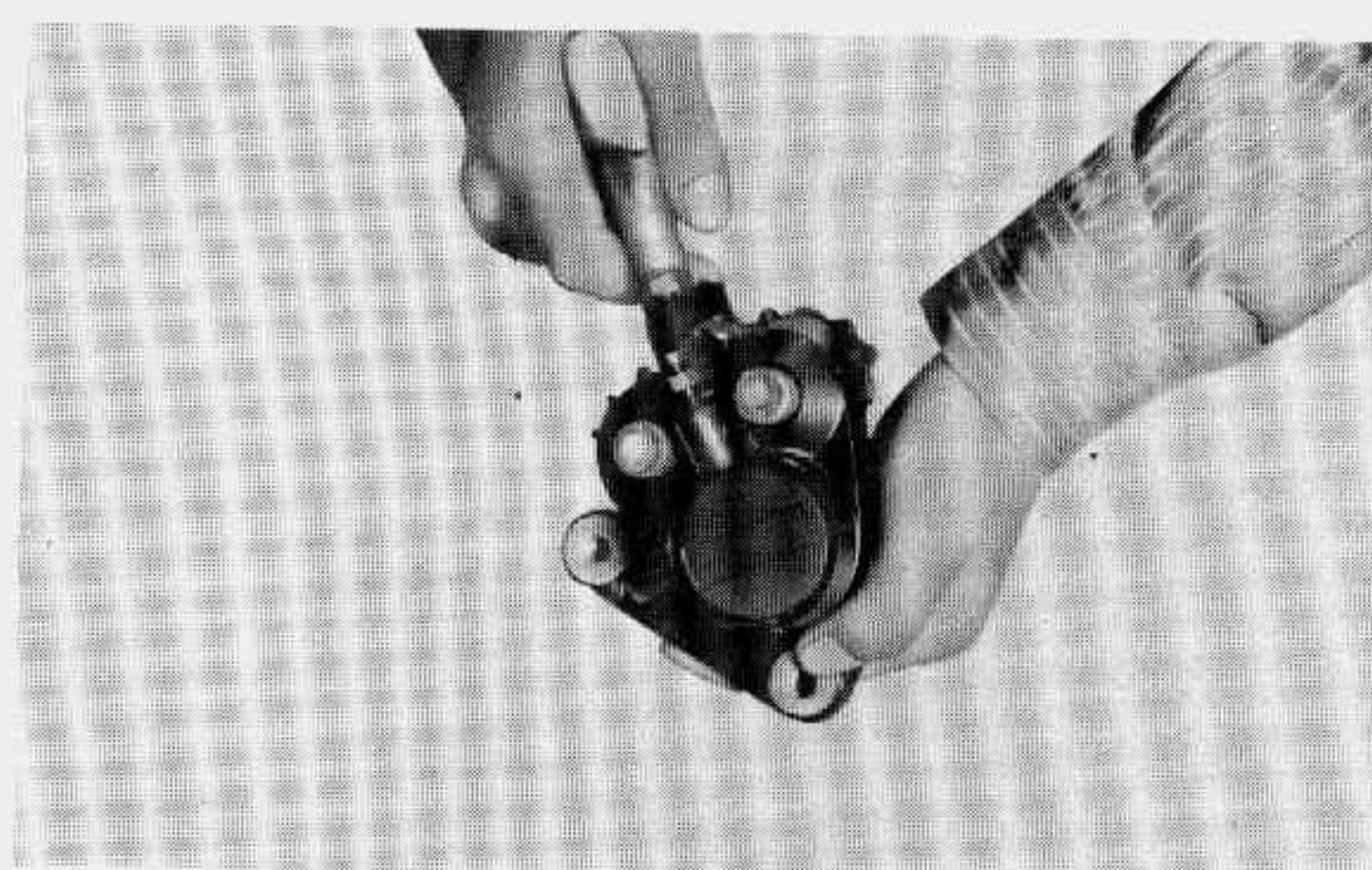


Fig. 8-2-23.

- g) Remove the piston seal.

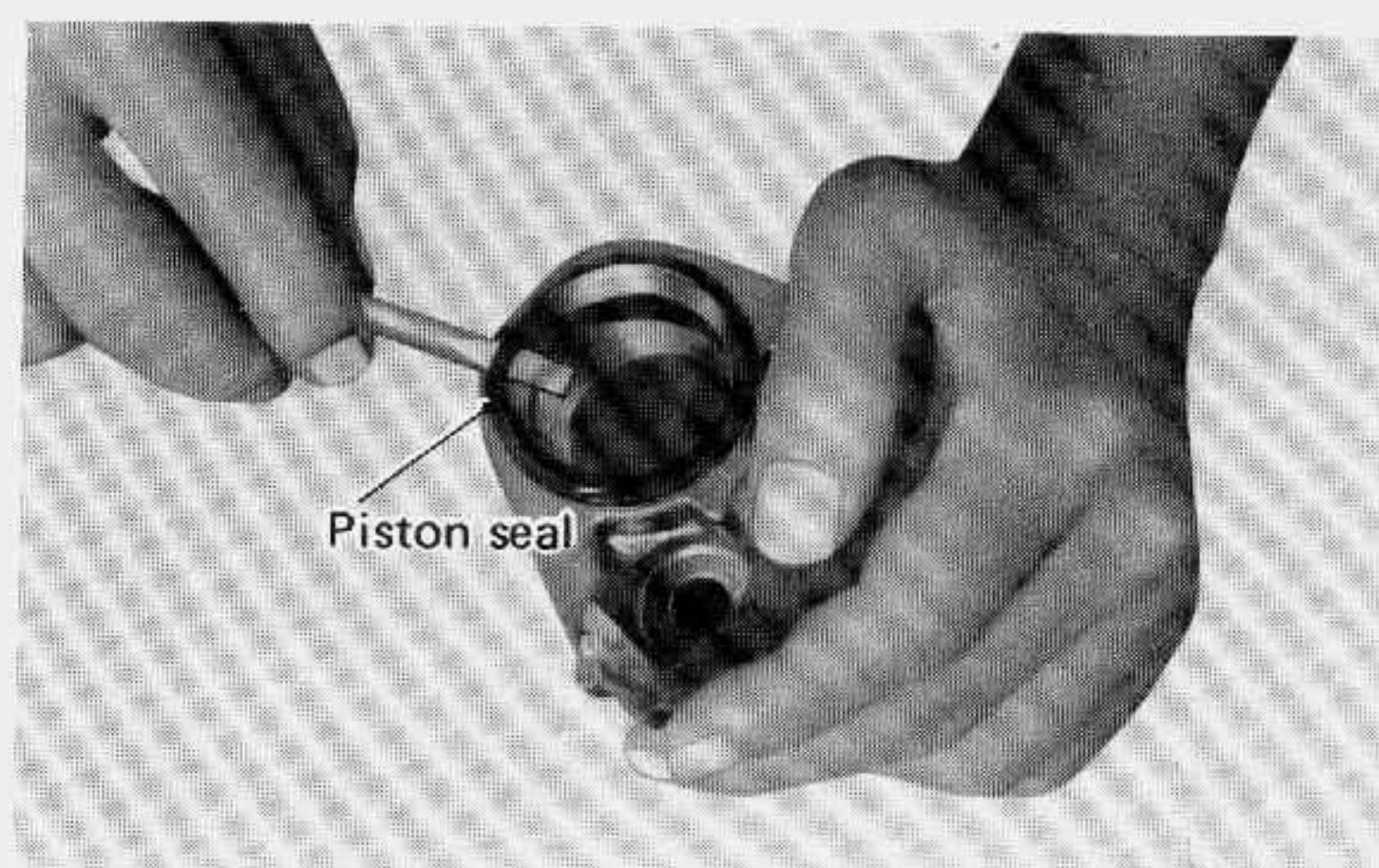


Fig. 8-2-24.

- h) Wash the piston, piston boot, piston seal and "O" rings of the caliper axles with new brake fluid.

### Caution:

Never use gasoline or petroleum; otherwise rubber parts will be damaged.

Do not wash the pads and also take care that brake fluid is not splashed onto the pads.

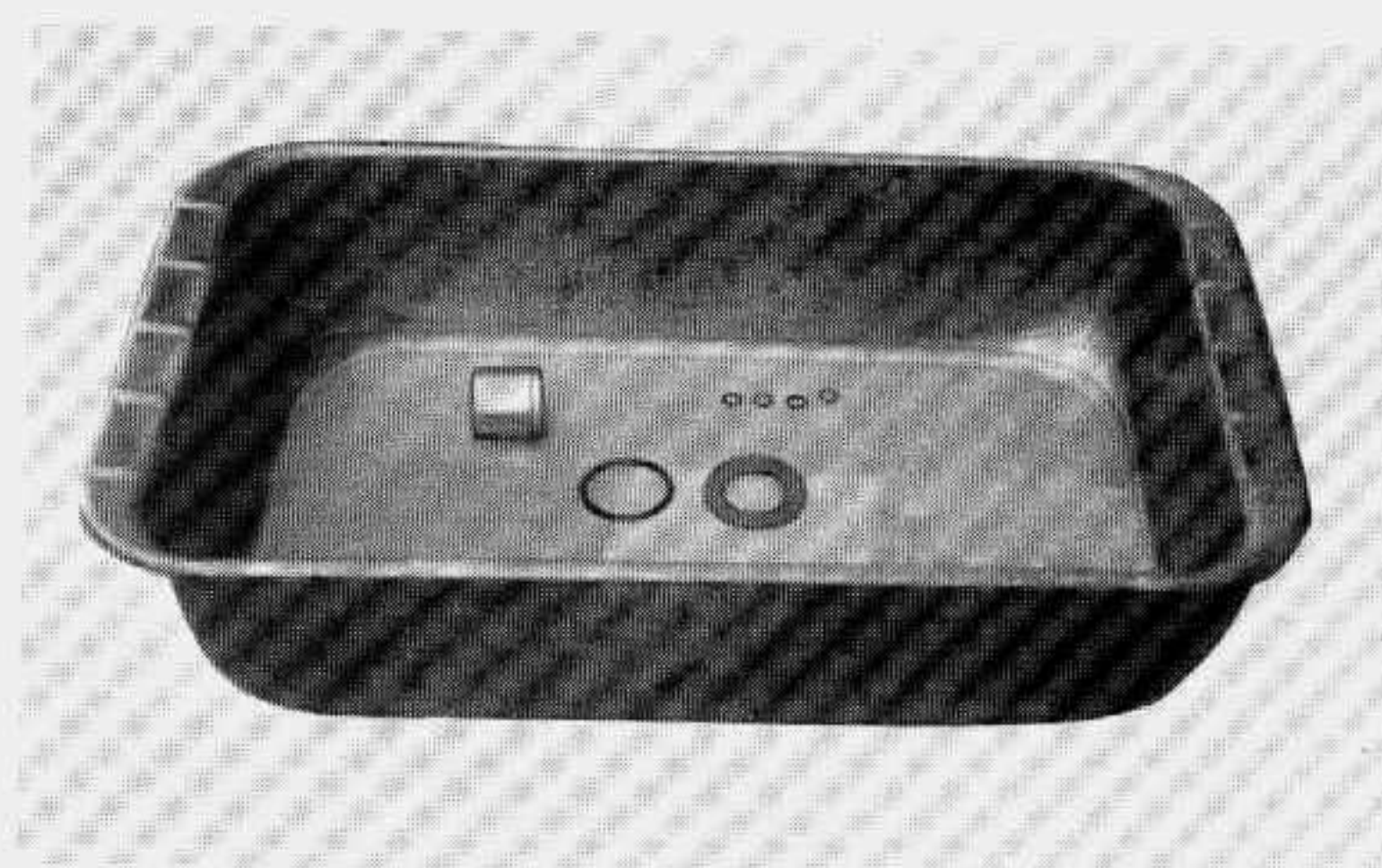


Fig. 8-2-25.



4) Checking

When disassembling the caliper, check the following points and replace if any abnormality is found.

a) Cylinder: Its inner diameter is not worn out of its limit.

| Standard                                  | Limit                        |
|---|------------------------------|
| 38.18 to 38.20 mm<br>(1.503 to 1.504 in.) | Over 38.22 mm<br>(1.504 in.) |

b) Piston: Its outer diameter is not worn out of its limit.

| Standard                                  | Limit                         |
|---|-------------------------------|
| 38.15 to 38.18 mm<br>(1.502 to 1.503 in.) | Under 38.10 mm<br>(1.500 in.) |

- c) Piston seal: No damage nor excessive wear
- d) Piston boot: No damage nor setting
- e) Pads Nos. 1 and 2: Not worn out of its limit (Refer to 2''-3'' Inspection of pads.)
- f) Caliper body: No crack

5) Assembling

Follow the removal procedure in the reverse order. When assembling them, pay attention to the following points.

- a) Apply Suzuki Caliper Axle Grease with property of high heat resistance onto the caliper axle shown in Fig. 8-2-28.
- b) Apply a generous amount of brake fluid onto the inner surface of the cylinder and periphery of the piston and then assemble.
- c) Do not assemble the piston seal with it inclined or twisted.
- d) In installing the piston, push it slowly into the cylinder while taking care not to damage the piston seal.
- e) Apply Suzuki Brake Pad Grease onto the periphery of pad No. 1 (refer to page 53)
- f) Bleed air after assembling (refer to page. 51)
- g) After bleeding air, check for brake fluid leakage while holding the brake lever tightly.
- h) After a test run, check the pads and brake disc do not press each other excessively by turning the front wheel by hand.

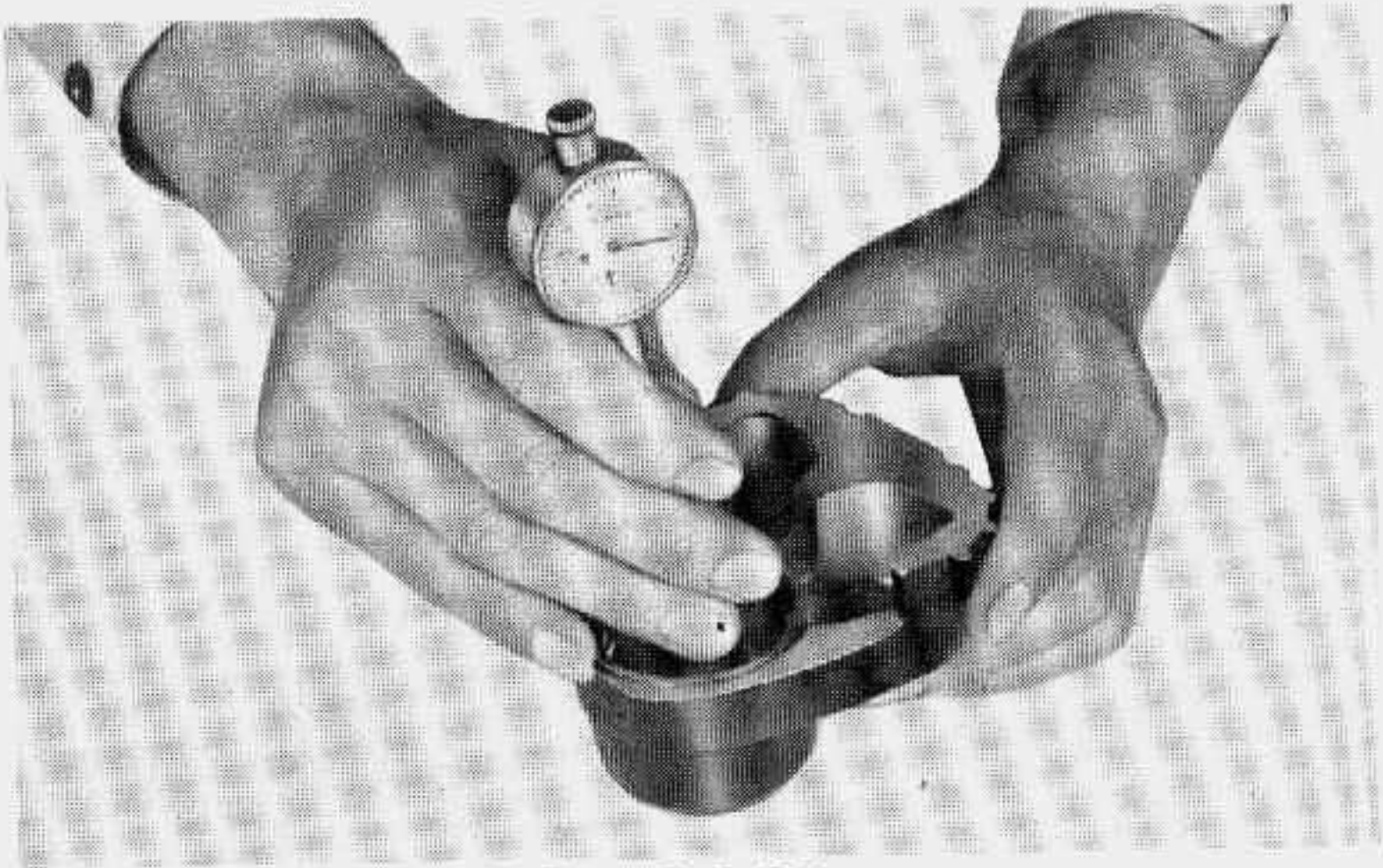


Fig. 8-2-26.

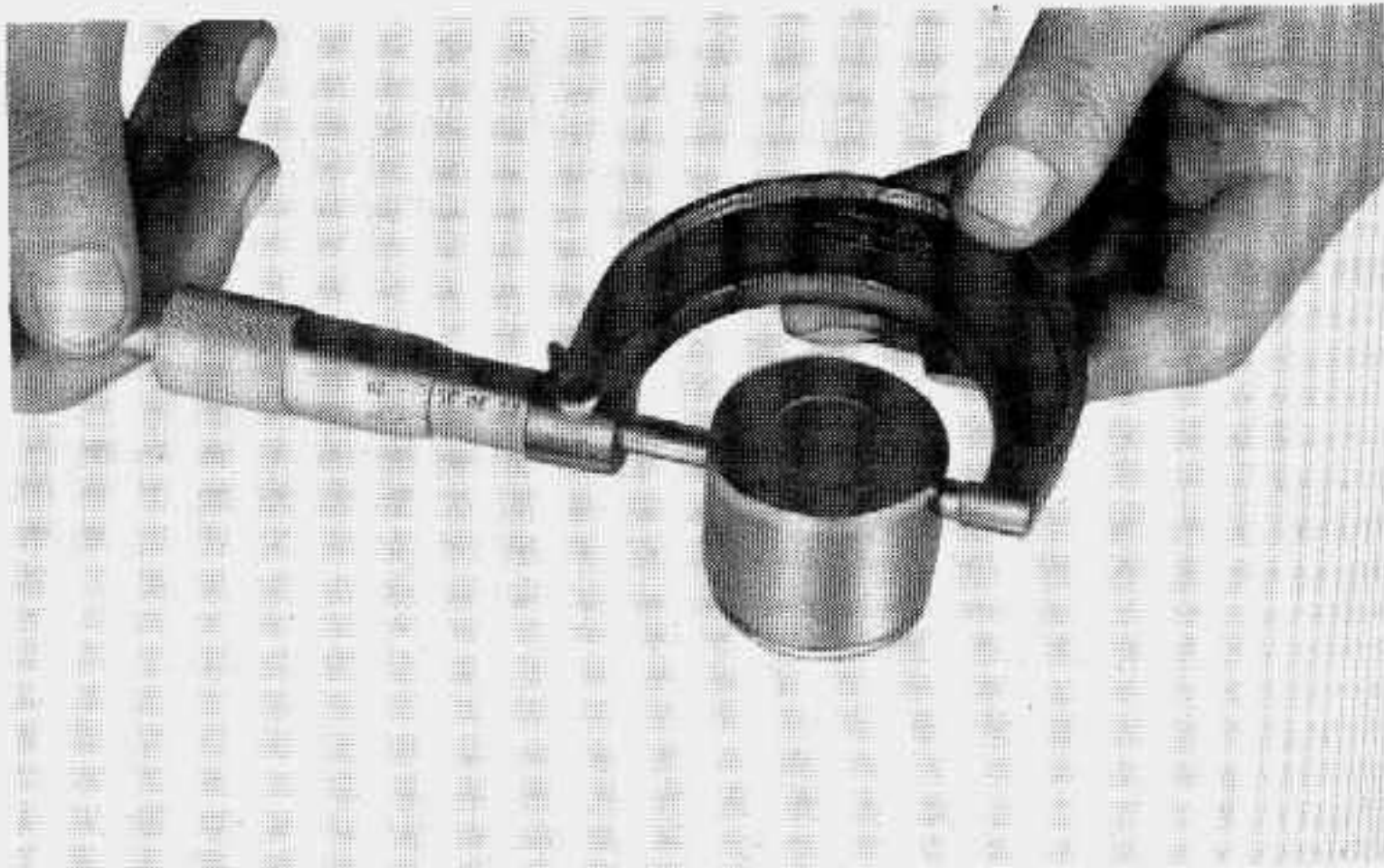


Fig. 8-2-27.

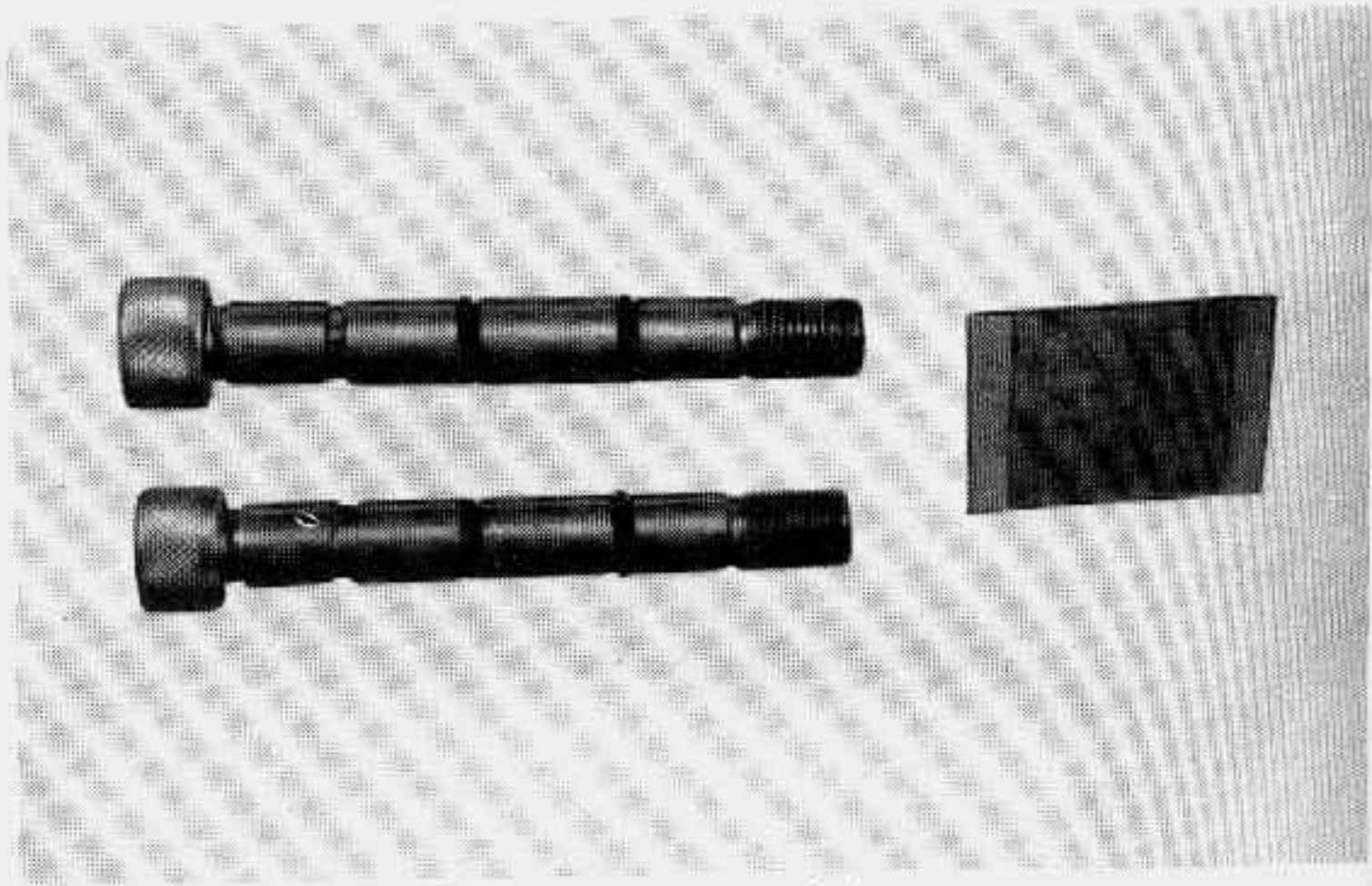


Fig. 8-2-28.

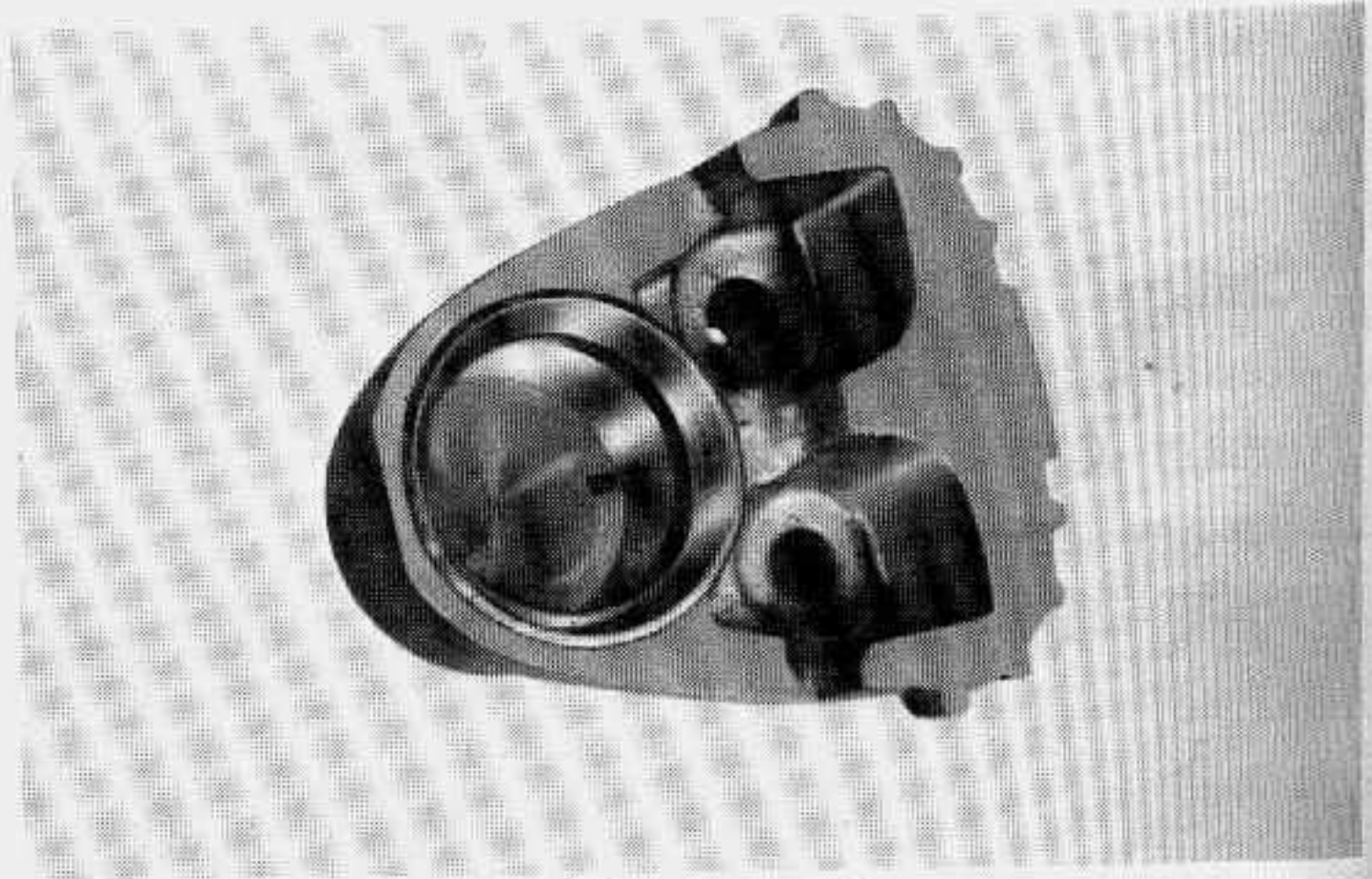


Fig. 8-2-29.



2-7. BRAKE DISC

1) General

The brake disc, made of stainless steel having excellent heat-resistance and abrasion-proof properties, is fastened to the front hub with six high tensile strength bolts. Runout or wear of the brake disc may not only reduce braking performance but also cause the brake to squeak.

2) Checking

- a) Runout of the brake disc should be not greater than the limit. Measure brake disc runout with a dial indicator as shown in Fig. 8-2-30. If the runout is over the limit on the largest periphery of the disc plate, check whether the cause lies in the front wheel bearing or the brake disc itself, and replace defective parts.

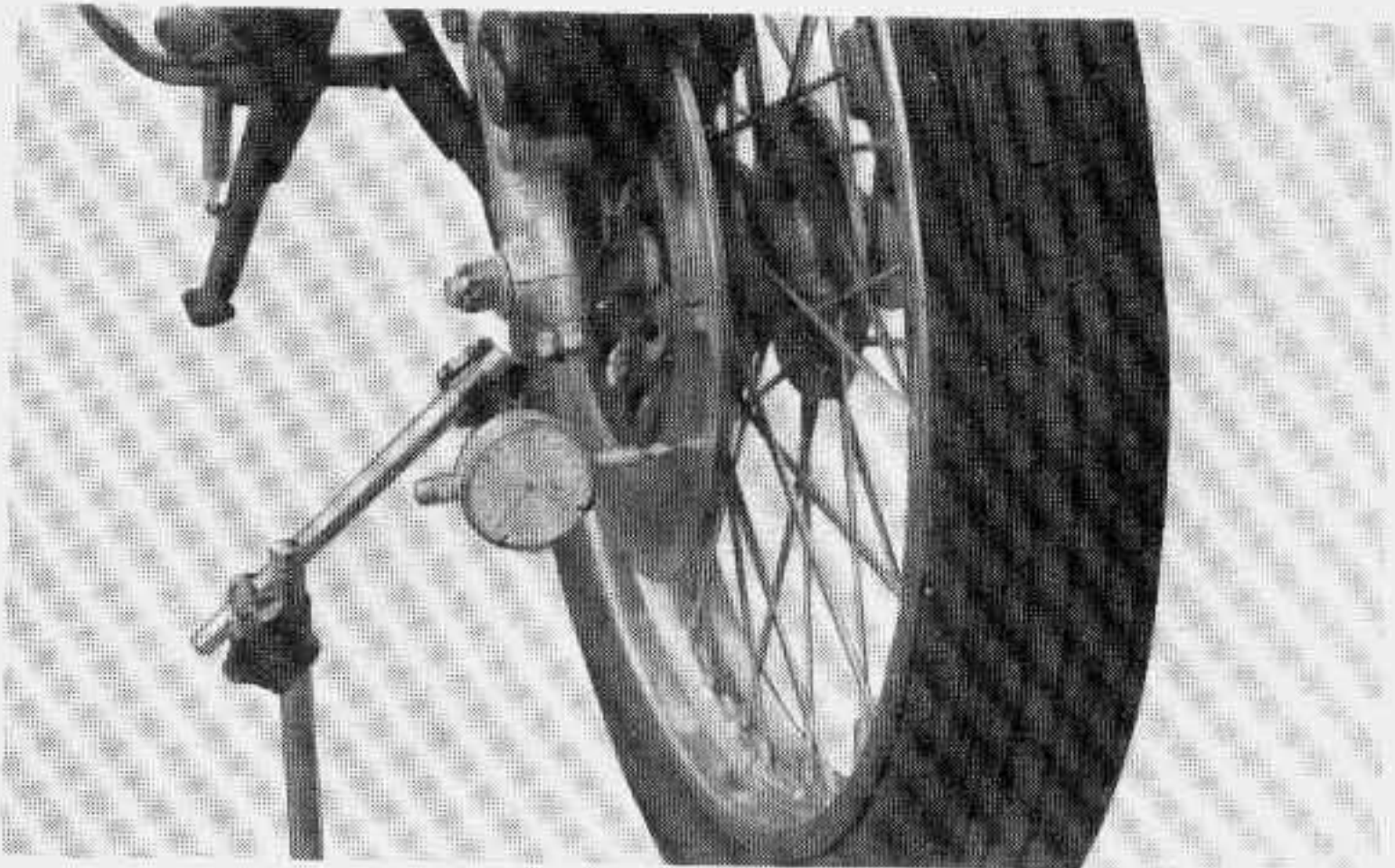


Fig. 8-2-30.

- b) Thickness of the brake disc should be not less than the limit. Measure its worn portion with a micrometer as shown in Fig. 8-2-31 and replace the brake disc if the thickness is less than the limit.

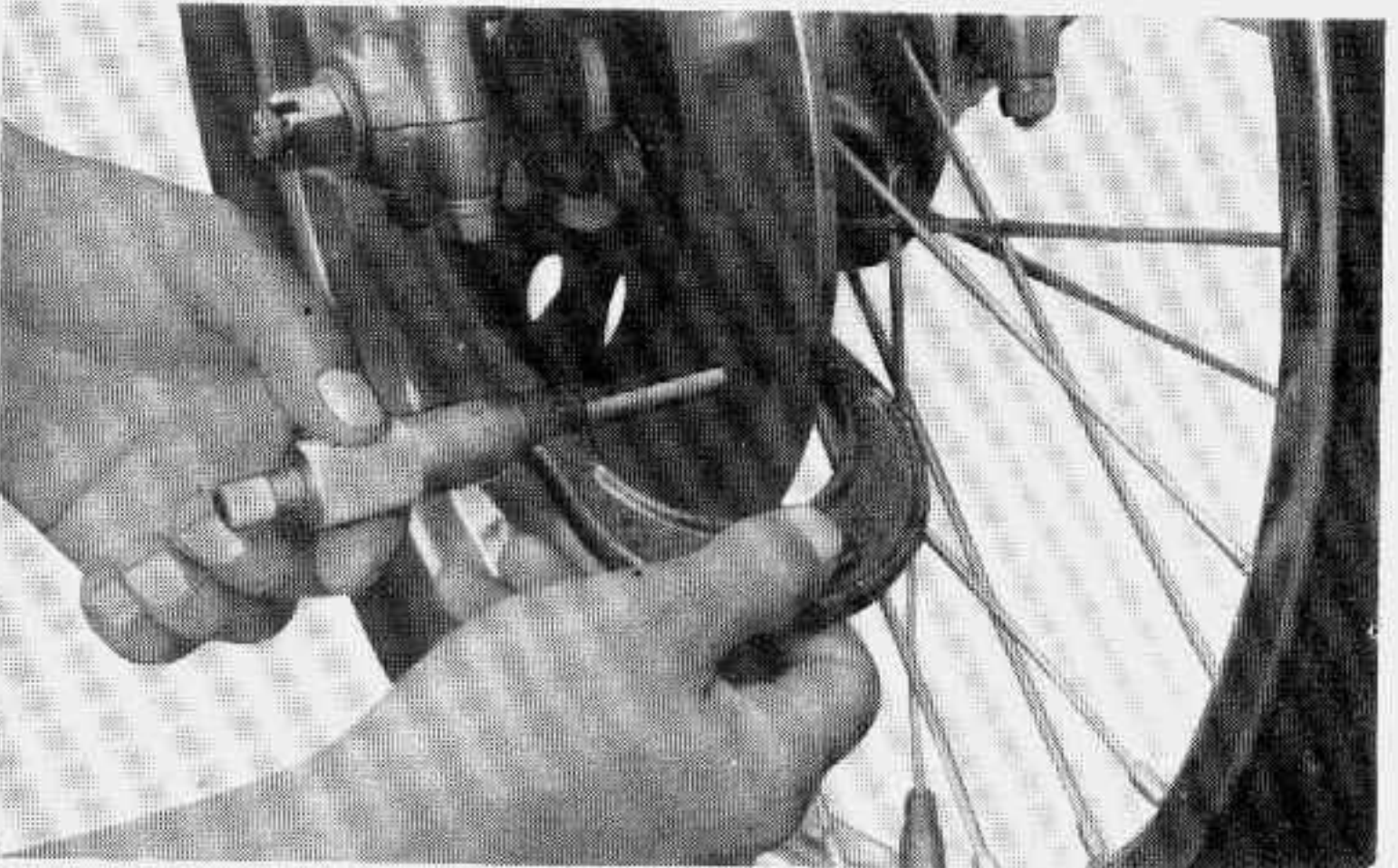


Fig. 8-2-31.

- c) Surface of the brake disc should be free from oil. Take care that no oil is adhered on the brake disc surface, since oil adhesion there is very dangerous. If oil is placed on the disc by mistake, wipe off the oil with a soft waste-cloth soaked with alcohol.
- d) The brake disc fitting bolts should be securely tightened with the specified torque and should be secured with lock washers.

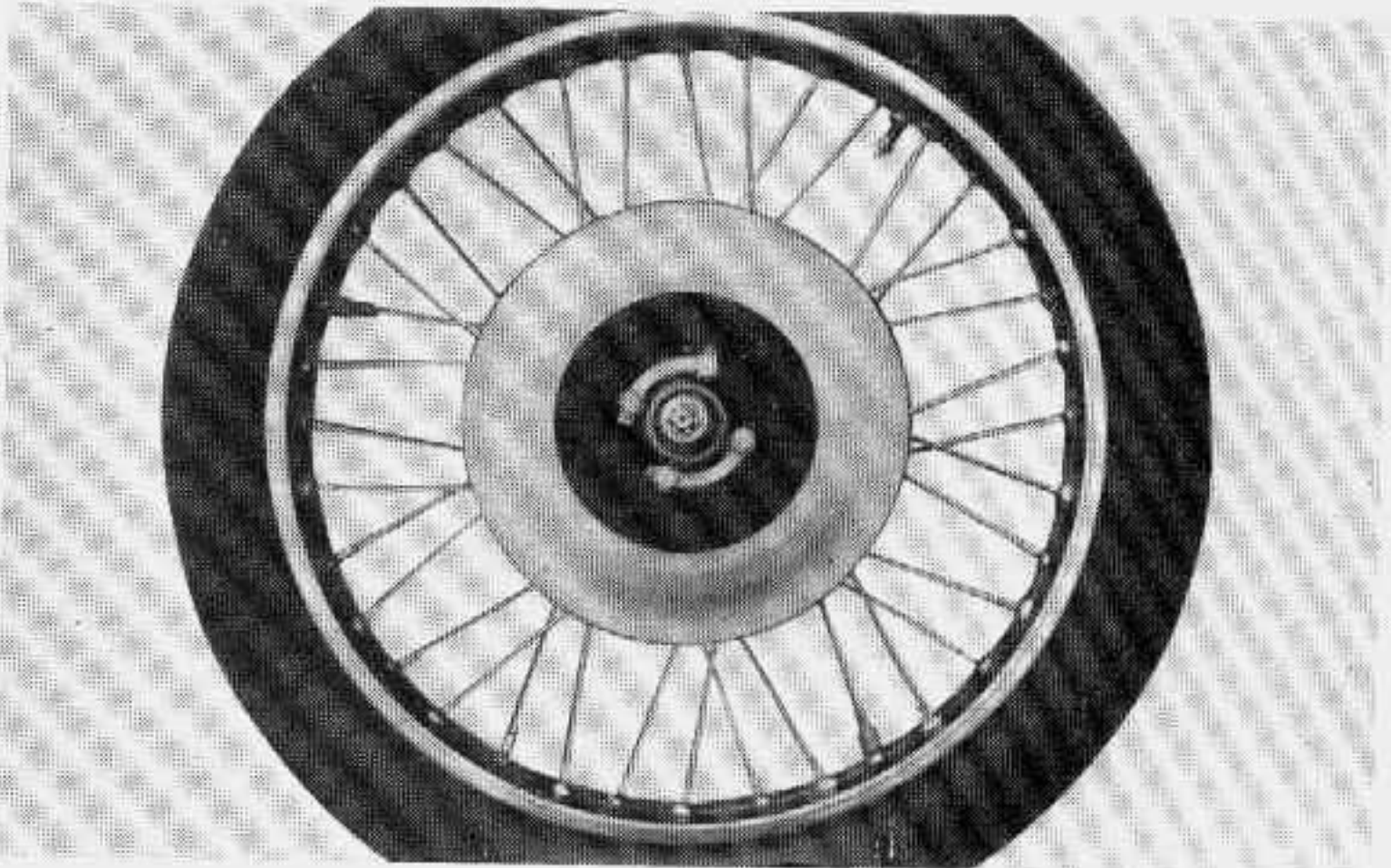


Fig. 8-2-32.



2-8. PERIODIC REPLACEMENT PARTS

The component parts of the master cylinder assembly and the caliper assembly may be worn and deteriorated in function in long period of use, however, it is generally difficult to foresee how long each component will further work with proper function thereafter, since deterioration of function much depends upon usage of brake by individual motorcycle.

Then, from safety of view, the following is defined as periodic replacement parts in order to prevent unexpected trouble caused by wearing of component.

Replace all the following parts at a time with Suzuki genuine parts sets.

Exchange interval: Two years

1) Components of master cylinder assembly

Use Suzuki Genuine parts: Master cylinder cup set.

- |               |               |                |
|---------------|---------------|----------------|
| 1 Primary cup | 4 Check valve | 7 Boot         |
| 2 Spring      | 5 Circlip     | 8 Stop plate   |
| 3 Piston      | 6 Boot plate  | 9 Boot stopper |

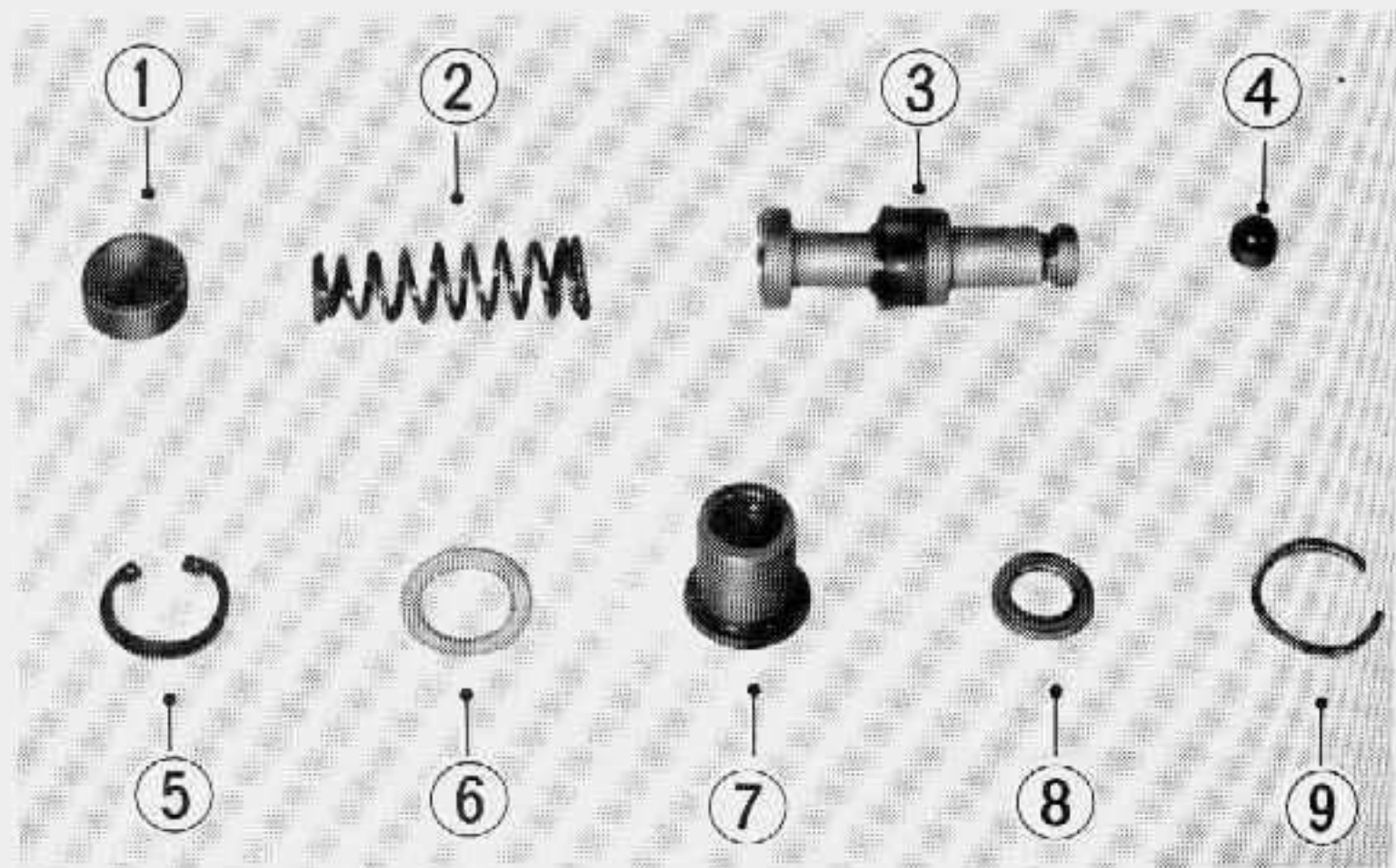


Fig. 8-2-33

2) Component of caliper assembly

Use Suzuki Genuine parts: Pad and piston set.

- |               |                  |                 |
|---------------|------------------|-----------------|
| 1 "O" ring    | 5 Piston         | 8 Pad No. 1     |
| 2 Stopper     | 6 Suzuki Caliper | 9 Pad No. 2     |
| 3 Piston seal | Axle Grease      | 10 Suzuki Brake |
| 4 Boot        | 7 Axle shaft     | Pad Grease      |
|               | dust cover       |                 |

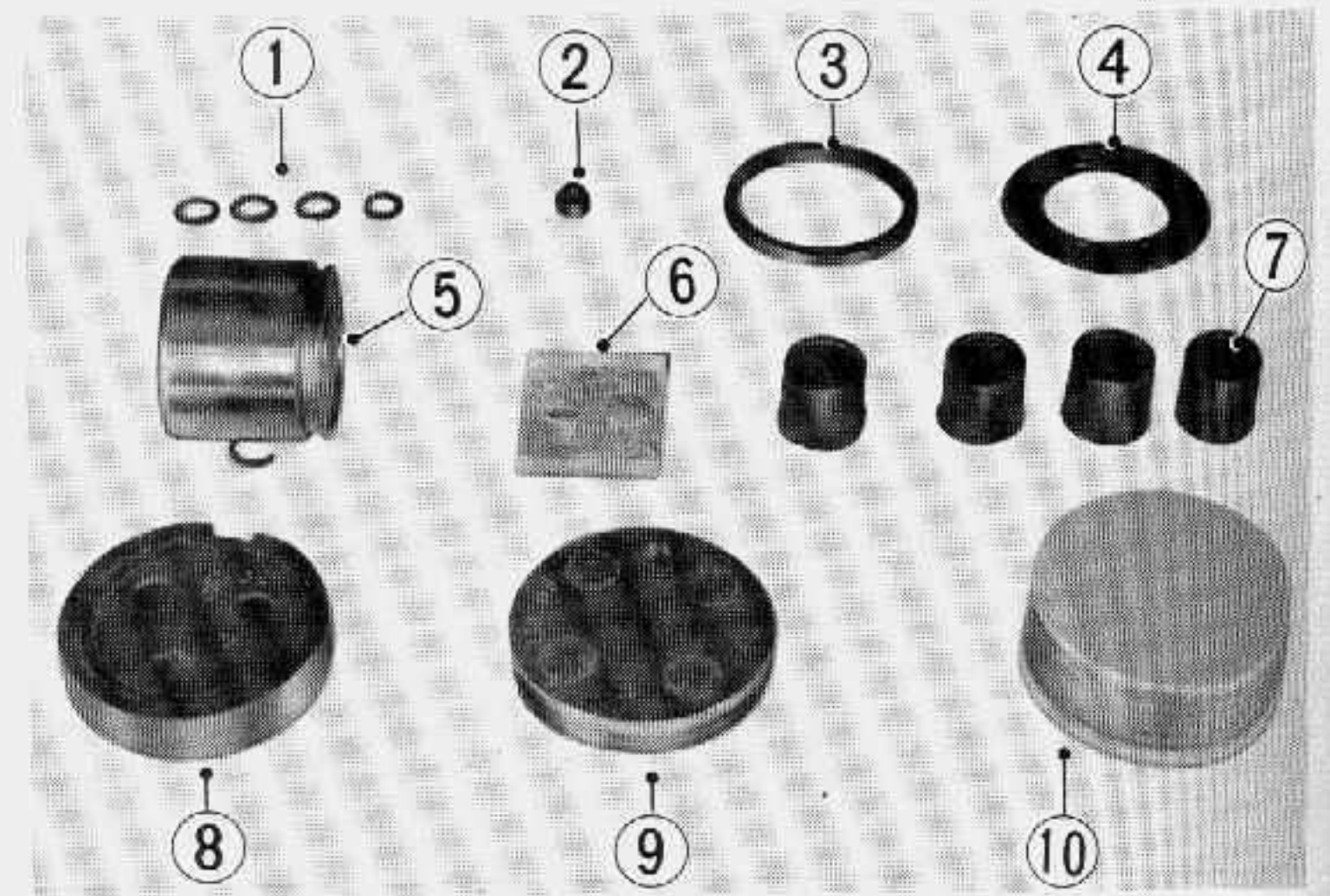


Fig. 8-2-34

Note:

Pad and piston set includes two kinds of grease packed in pouch. Grease in the pouch printed "Caliper Axle Grease" should be used for the caliper axle and printed "Brake Pad Grease" for the pad No. 1.



### 3. REAR BRAKE

The rear wheel mounts internal expanding type mechanical brake which is operated by the right foot. Brake shoes and brake springs in the rear brake are interchangeable. The rear hub panel is fixed to the rear swinging arm with rear torque link.

When removing the brake shoes from the hub panel, remove two brake shoe springs together with the brake shoes. When fitting the brake shoes to the brake panel, fit the shoes with the springs already installed.

#### 3-1. INSPECTING

##### Brake cam lever

When the brake lining is worn and the brake cannot be adjusted by the brake rod, adjust the brake by changing the brake cam lever fitting angle. When the angle between the brake cam lever and hub shaft center line is reduced, the clearance between the brake lining and hub drum is decreased. If the brake cannot be adjusted by changing the cam lever fitting angle, inspect the brake shoes, hub drum, etc., for wear.

##### Brake shoes

When the diameter measured squarely in the line between the anchor pin and brake cam shaft is reduced to 125 mm (4.92 in), replace the brake linings with new ones. The standard diameter is 129.3 mm (5.09 in). It is good practice to change both leading and trailing shoe brake linings at the same time.

##### Brake shoe springs

Replace the brake shoe spring if the free length exceeds the limit of 31.2 mm (1.22 in) with a new spring as the brake shoes do not return to their normal position after the brake is released properly if the brake shoe springs are stretched.

##### Brake cam shaft

If the brake cam shaft is worn, replace it with new one. When mud or water gets into the hub drum or on the hub panel, the brake cam shaft can become rusted. The brake will not work efficiently or brake shoes will not return to their normal position properly if the cam shaft is rusted. Remove the brake cam shaft from the hub panel by gently striking it with a wooden hammer and polish the cam shaft with emery paper. Apply grease to the cam shaft and insert it into the panel. Check to see that the cam shaft turns freely.

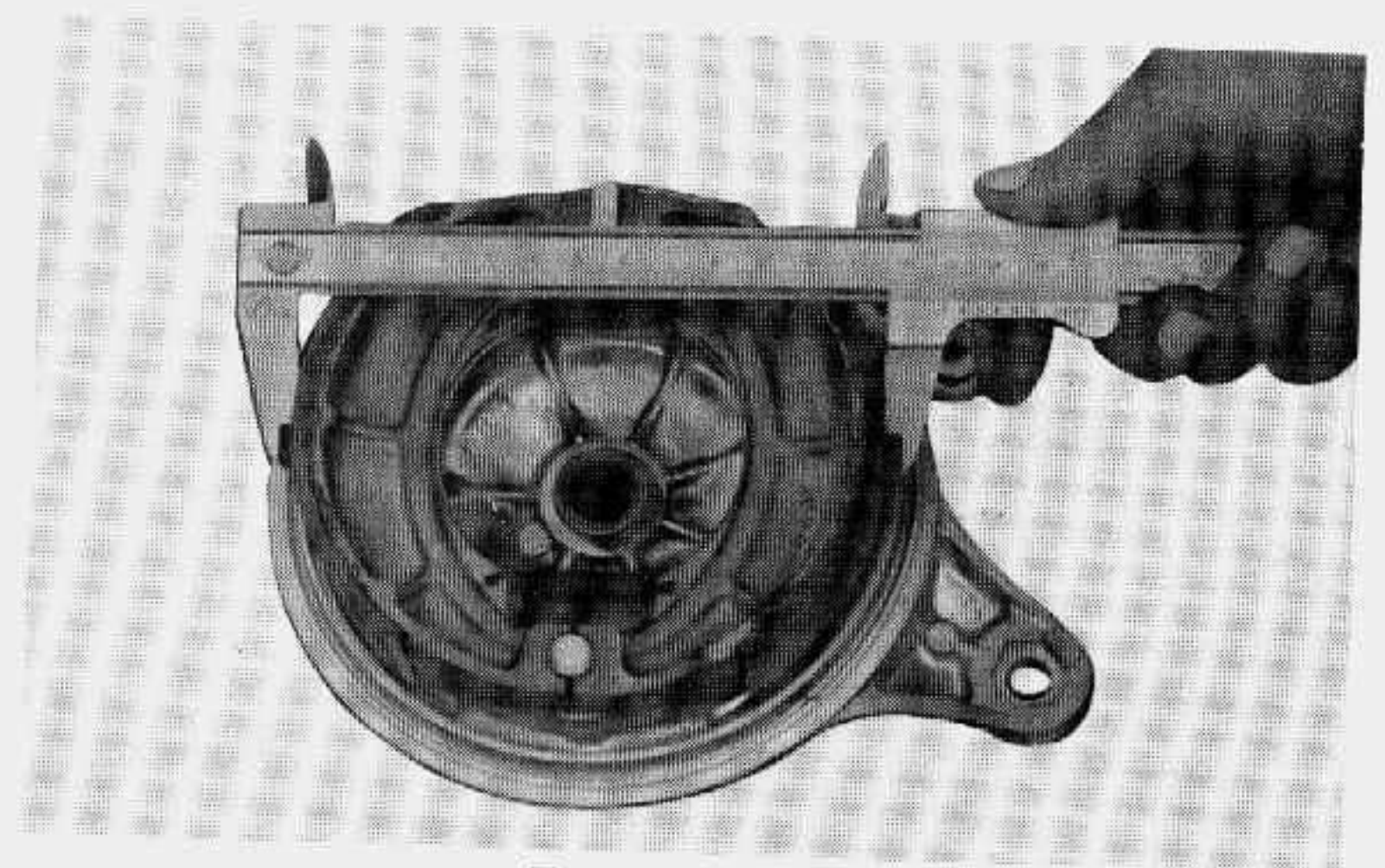


Fig. 8-3-1.

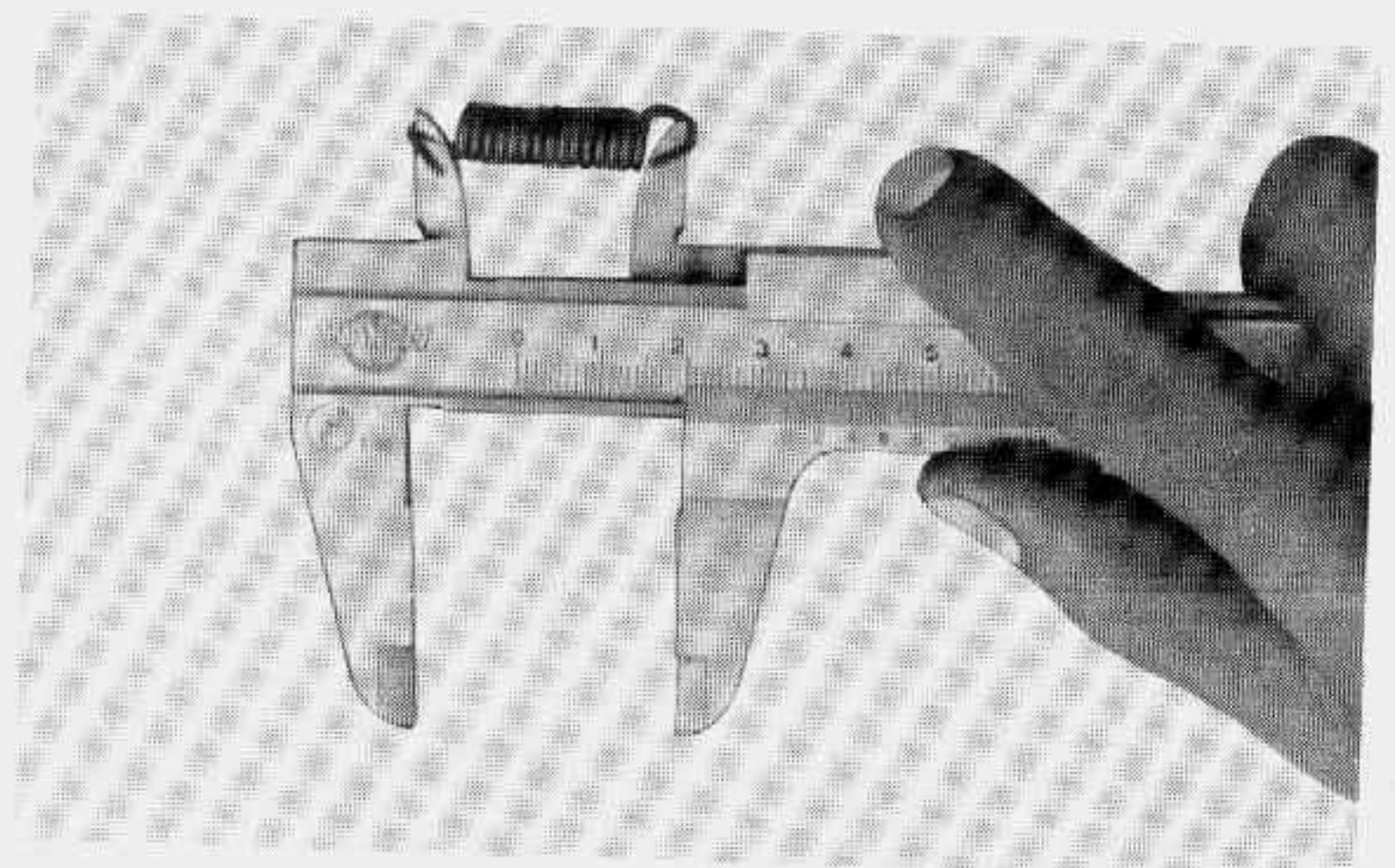


Fig. 8-3-2.



4. TIRES

4-1. WEAR LIMIT

To ensure the braking effect and stability at high speed, the tire should keep enough depth in the grooves shaped on the tread surface. When the depth of the tire shown in Fig. 8-4-1 reaches the wear limit given below, replace with new tire.

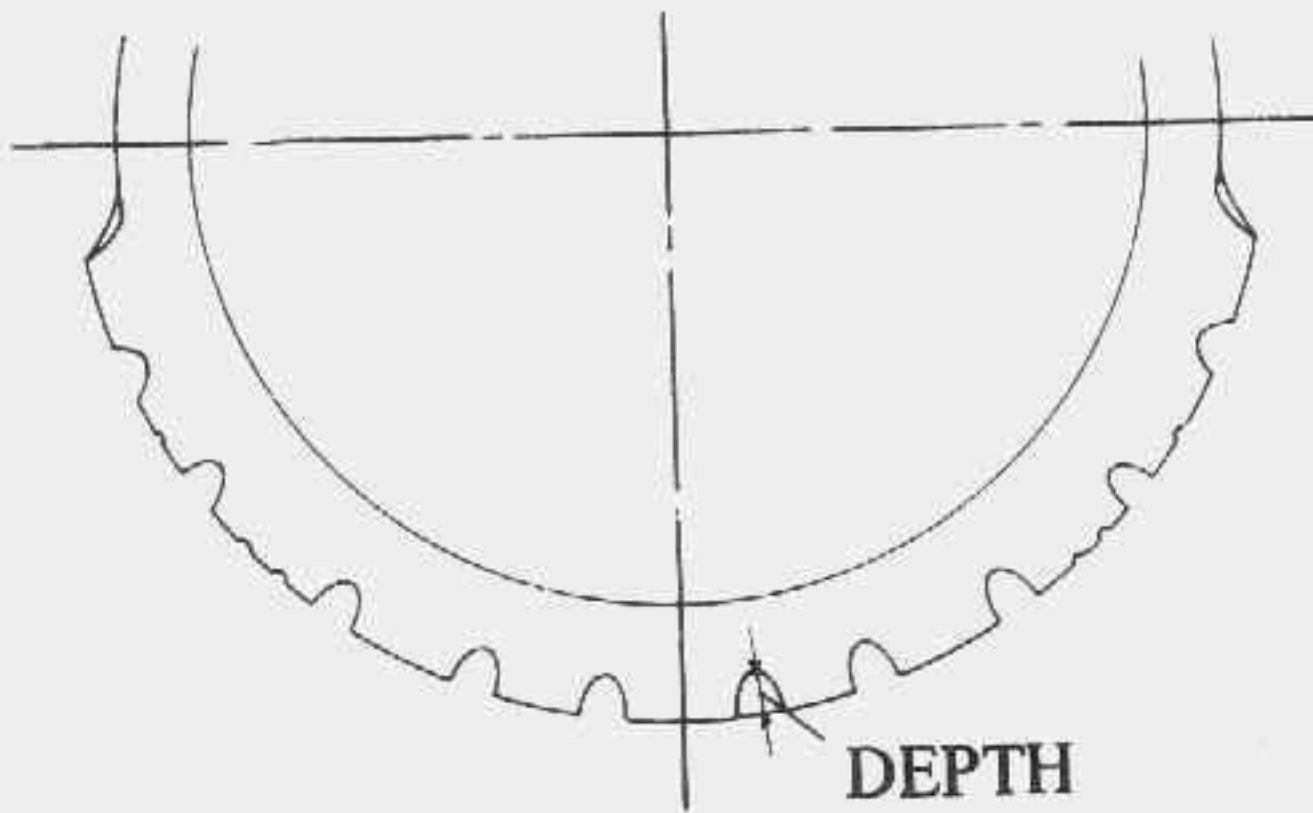


Fig. 8-4-1.

Wear limit in depth:

- Front 1.6 mm (0.06 in)
- Rear 2.0 mm (0.08 in)

4-2. RECOMMENDED TIRE PRESSURE

Since tire pressure affects the durability and safety in driving to a great extent, it is necessary that the pressure be always kept properly. The following list shows the recommended tire pressure for this model.

| Driving condition           | Front              |                    | Rear               |                    |                    |                    |
|-----------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|                             |                    |                    | Sold riding        |                    | Dual riding        |                    |
|                             | kg/cm <sup>2</sup> | lb/in <sup>2</sup> | kg/cm <sup>2</sup> | lb/in <sup>2</sup> | kg/cm <sup>2</sup> | lb/in <sup>2</sup> |
| Normal riding               | 1.7                | 24                 | 2.0                | 28                 | 2.2                | 31                 |
| Condinuous highspeed riding | 1.8                | 26                 | 2.4                | 34                 | 2.4                | 34                 |



# 9. SPECIFICATIONS FOR INSPECTION AND REPAIR

## 1. ENGINE

| Part                | Check item                | Standard                           | Limit                 | Operation         | Remarks  |
|---------------------|---------------------------|------------------------------------|-----------------------|-------------------|--|
| Cylinder            | Wear                      |                                    | 0.05 mm<br>(0.002 in) | Rebore            | Measurement is the difference between largest and smallest diameter of the bore.   |
|                     | Cylinder-piston clearance | 0.04~0.05 mm<br>(0.0016-0.0020 in) | 0.10 mm<br>(0.004 in) |                   | Measure the piston diameter at 16 mm (0.63 in) above the piston skirt in the direction perpendicular to the piston pin hole. |
| Piston ring         | End gap                   | 0.15~0.35 mm<br>(0.006~0.014 in)   | 0.7 mm<br>(0.028 in)  | Replace           | Measure with a thickness gauge when the ring is inserted into the lower part of the cylinder.                                |
| Crank shaft         | Con-rod small end shake   |                                    | 3 mm<br>(0.12 in)     | Repair or Replace | Check the shake at TDC with a dial gauge.  |
|                     | Radial runout             | Below 0.05 mm<br>(0.002 in)        |                       | Repair or Replace | Check runout at left and right ends with dial gauge when both journal positions are held.                                    |
| Clutch drive plate  | Thickness                 | 3 mm<br>(0.12 in)                  | 2.8 mm<br>(0.11 in)   | Replace           |  |
|                     | Warp                      | Below 0.4 mm<br>(0.016 in)         |                       | Replace           |  |
| Clutch driven plate | Warp                      | Below 0.1 mm<br>(0.004 in)         |                       | Replace           | Measure with a thickness gauge placing the plate on the surface plate.   |



2. ELECTRICAL

| Part           | Check item                         | Standard                       | Limit                               | Operation | Remarks                                    |
|----------------|------------------------------------|--------------------------------|-------------------------------------|-----------|--|
| A.C. Generator | Contact point gap                  | 0.3~0.4 mm<br>(0.012~0.016 in) | Under or over STD.                  | Adjust    |  |
|                | Ignition timing                    | 1.95 mm<br>(22°)               | Under or over 1.76~2.10<br>(21~23°) | Adjust    | In piston travel from                      |
|                | Condenser capacity                 | 0.18μF                         | 0.16~0.20μF                         | Replace   |  |
| A.C. Generator | Charging Performance in daytime    | begin to charge/<br>2,000 rpm  |                                     |           | With the lighting switch in "ON" position. |
|                |                                    | 2.0~3.0A/<br>8,000 rpm         |                                     |           |  |
|                | Charging performance in night Time | begin to charge/<br>2,000 rpm  |                                     |           |  |
|                |                                    | 1.8~2.8A/<br>8,000 rpm         |                                     |           |  |
|                | Ignition performance               | 7 mm<br>(0.275 in)             |                                     | Replace   |  |
| Ignition coil  | Continuity in primary coil         |                                | If 0 or ∞ Ω                         | Replace   | Resistance:<br>approx. 2~4 Ω               |
|                | Continuity in secondary coil       |                                | If 0 or ∞ Ω                         | Replace   | Resistance:<br>approx. 16~20 kΩ            |
| Battery        | Specific gravity                   | 1.280 when 20° C<br>(68° F)    | Below 1.250                         | Recharge  |  |

3. BODY

| Part       | Check item                     | Standard                             | Limit                          | Operation | Remarks |
|------------|--------------------------------|--------------------------------------|--------------------------------|-----------|---------|
| Front fork | Damper oil                     | SAE 10W/30<br>125 cc<br>in each fork |                                |           |         |
|            | Disc thickness, front brake    | 5.00 mm<br>(0.197 in)                | Under 4.00 mm<br>(0.157 in)    | Replace   |         |
|            | Disc runout front brake        | Max.<br>0.1 mm<br>(0.004 in)         | Over 0.3 mm<br>(0.012 in)      | Replace   |         |
|            | Inner diameter master cylinder | 14.00~14.04 mm<br>(0.551~0.553 in)   | Over mm 14.05 mm<br>(0.553 in) | Replace   |         |



| Part            | Check item                       | Standard                           | Limit                        | Operation | Remarks  |
|-----------------|----------------------------------|------------------------------------|------------------------------|-----------|--|
| Front brake     | Piston diameter waster cylinder  | 13.96~13.98 mm<br>(0.550~0.551 in) | Under 13.94 mm<br>(0.549 in) | Replace   |  |
|                 | Inner diameter catiper cylinder  | 38.18~38.20 mm<br>(1.503~1.504 in) | Over 38.22 mm<br>(1.504 in)  |           |  |
|                 | Piston diameter caliper cylinder | 38.15~38.18 mm<br>(1.502~1.503 in) | Under 38.10 mm<br>(1.500 in) | Replace   |  |
| Rear brake shoe | Wear                             | 129.3 mm<br>(5.09 in)              | 125 mm<br>(4.92 in)          | Replace   | Measure the diameter when the shoes are installed on the pannel. |
| Rear brake drum | Wear                             | 130 mm<br>(5.12 in)                | 130.7 mm<br>(5.15 in)        | Replace   |  |
| Drive chain     | Slack                            | 15~20 mm<br>(0.6~0.8 in)           |                              | Adjust    |  |
| Tire            | Wear in depth                    |                                    | Front: 1.6 mm<br>(0.06 in)   |           |  |
|                 |                                  |                                    | Rear: 2.0 mm<br>(0.08 in)    |           |  |



10. TIGHTENING TORQUE

| Part                              | Tightening torque |              |
|-----------------------------------|-------------------|--------------|
|                                   | <i>Kg-cm</i>      | <i>lb-ft</i> |
| Front axle nut                    | 360 ~ 520         | 26 ~ 38      |
| Handlebar clamp bolt              | 120 ~ 200         | 9 ~ 14       |
| Front fork upper bracket bolt     | 200 ~ 300         | 14 ~ 22      |
| Steering stem bolt                | 350 ~ 550         | 25 ~ 40      |
| Front fork lower bracket bolt     | 250 ~ 350         | 18 ~ 25      |
| Front footrest bolt               | 100 ~ 150         | 7 ~ 11       |
| Engine mounting nut ( 8 mm)       | 130 ~ 230         | 9 ~ 17       |
| Engine mounting nut (10 mm)       | 250 ~ 400         | 18 ~ 29      |
| Brake cam lever fitting nut       | 50 ~ 80           | 4 ~ 6        |
| Rear swinging arm pivot shaft nut | 300 ~ 450         | 22 ~ 33      |
| Rear torque link nut              | 100 ~ 150         | 7 ~ 11       |
| Rear shock absorber nut           | 200 ~ 300         | 14 ~ 22      |
| Rear axle nut                     | 360 ~ 520         | 26 ~ 38      |
| Rear sprocket drum spacer nut     | 550 ~ 700         | 40 ~ 51      |
| Master cylinder clamp bolt        | 50 ~ 80           | 4 ~ 6        |
| Union bolt                        | 150 ~ 250         | 11 ~ 18      |
| Brake pipe nut                    | 130 ~ 180         | 10 ~ 13      |
| Caliper fitting bolt              | 250 ~ 400         | 18 ~ 29      |
| Brake hose joint                  | 250 ~ 350         | 18 ~ 25      |
| Breeder bolt                      | 60 ~ 90           | 4 ~ 7        |

TIGHTENING TORQUE FOR GENERAL BOLTS

| Bolt diameter<br>(mm) | Tightening torque |              |                 |              |
|-----------------------|-------------------|--------------|-----------------|--------------|
|                       | Usual bolt        |              | "S" marked bolt |              |
|                       | <i>kg-cm</i>      | <i>lb-ft</i> | <i>kg-cm</i>    | <i>lb-ft</i> |
| 5                     | 20 ~ 40           | 1.5 ~ 2.9    | 30 ~ 60         | 2.2 ~ 4.4    |
| 6                     | 40 ~ 70           | 2.9 ~ 5.1    | 60 ~ 100        | 4.4 ~ 7.3    |
| 8                     | 90 ~ 140          | 6.6 ~ 10     | 130 ~ 230       | 9.5 ~ 17     |
| 10                    | 180 ~ 280         | 13 ~ 20      | 250 ~ 400       | 18 ~ 29      |

Usual bolt

"S" marked bolt



# 11. IMPORTANT FUNCTIONAL PARTS

For safe driving of motorcycle, check the important items in accordance with following check list at the time of the periodical inspection.

Check list of important functional parts for safe driving

| System      | Item   | Check for   |
|-------------|--|---|
| Fuel supply | Carburetor<br>Fuel hose<br>Fuel tank<br>Fuel cock  | Uneven movement of throttle valve<br>Fuel leakage<br>Fuel leakage   |
| Suspension  | Front fork<br>Front fork lower and upper bracket<br>Front and rear axle<br>Rear swinging arm   | Crack, Welding faulty<br>Crack, Welding faulty<br>Crack<br>Crack, Welding faulty  |
| Steering    | Handlebars<br>Handlebar clamp  | Crack   |
| Brakes      | * FRONT BRAKE<br>Pad<br>Disc plate<br>Hose, pipe and Joint<br>Master cylinder<br>Caliper<br>* REAR BRAKE<br>Rear hub drum<br>Rear hub panel<br>Rear torque link<br>Rear brake shoe<br>Rear brake cam shaft<br>Rear brake rod<br>Brake pedal<br>Brake lever | Worn<br>Worn, Runout<br>Leakage, crack<br>Leakage, Crack<br>Leakage, Crack<br>Worn<br>Crack<br>Crack<br>Worn<br>Worn<br>Crack<br>Crack, Welding faulty<br>Crack |
| Flame       | Frame  | Crack, Welding faulty   |



**MEMO**

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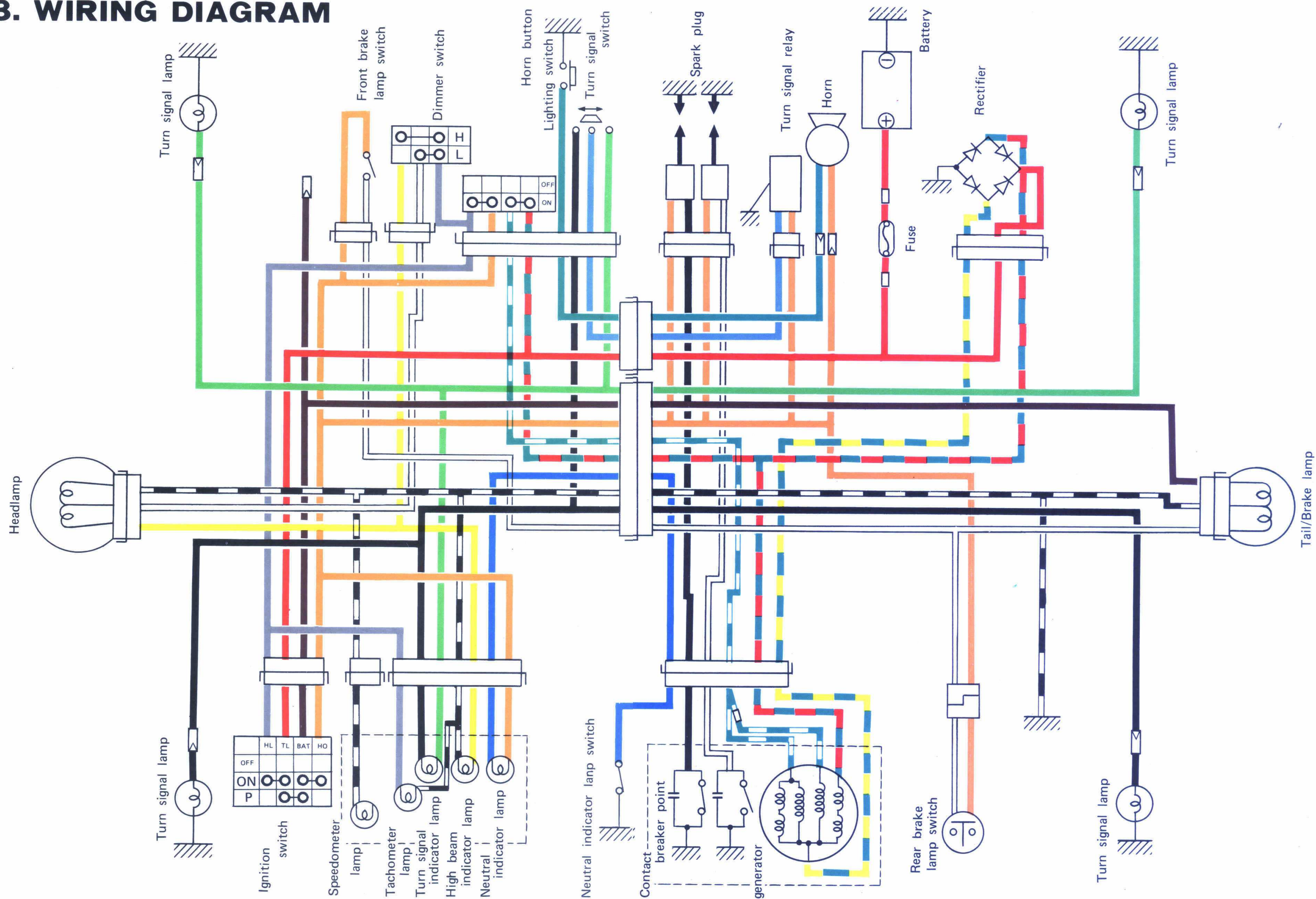
## 12. PERIODIC INSPECTION LIST

The chart below indicates time when inspections, adjustments and maintenance are required based on the distance the motorcycle runs, that is first 1,000 km (750 mi), and every 3,000 km (2,000 mi), 6,000 km (4,000 mi) and 12,000 km (8,000 mi) thereafter. According to the chart, advise users to have the motorcycle checked and serviced at your shop. See the appropriate section for instructions on making the inspection.

| Distance (km)              | Initial 1,000 km                                     | Every 3,000 km                                       | Every 6,000 km                   | Every 12,000 km       |
|----------------------------|--|--|----------------------------------|-----------------------|
| Distance (miles)           | Initial 750 miles                                    | Every 2,000 miles                                    | Every 4,000 miles                | Every 8,000 miles     |
| Service                    |  |  |                                  |                       |
| Oil pump                   | Check operation, adjust control lever aligning marks | Check operation, adjust control lever aligning marks |                                  |                       |
| Spark plug                 | Clean  | Clean and adjust gap                                 | Replace                          |                       |
| Gearbox oil                | Change   | Change   |                                  |                       |
| Throttle cable             | Adjust play  | Adjust play  | Lubricate                        |                       |
| Carburetor                 | Adjust with throttle valve screw and pilot air screw | Adjust with throttle valve screw and pilot air screw |                                  | Overhaul and clean    |
| Contact breaker            | Check contact point gap and ignition timing          | Check contact point gap and ignition timing          |                                  | Replace contact point |
| Cylinder head and cylinder | Retighten cylinder and cylinder head nuts            | Retighten cylinder and cylinder head nuts            | Remove carbon                    |                       |
| Battery                    | Check and service electrolyte                        | Check and service electrolyte                        |                                  |                       |
| Fuel cock                  | Clean fuel strainer                                  |  | Clean fuel strainer              |                       |
| Drive chain                | Adjust   | Adjust and lubricate                                 | Wash                             |                       |
| Front brake                | Check brake fluid level                              | Check brake fluid level                              |                                  |                       |
| Rear brake                 | Adjust play  | Adjust play  |                                  |                       |
| Air cleaner element        |  | Wash and apply engine oil                            |                                  |                       |
| Throttle grip              |  |  | Put grease in throttle grip      |                       |
| Exhaust pipe and Muffler   | Retighten exhaust pipe flange fitting screw          | Retighten exhaust pipe flange fitting screw          | Remove carbon                    |                       |
| Steering stem              | Check play<br>Retighten stem nut                     |  | Check play<br>Retighten stem nut |                       |
| Bolts, Nuts and Spokes     | Retighten  |  | Retighten                        |                       |



# 13. WIRING DIAGRAM







**SUZUKI**

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