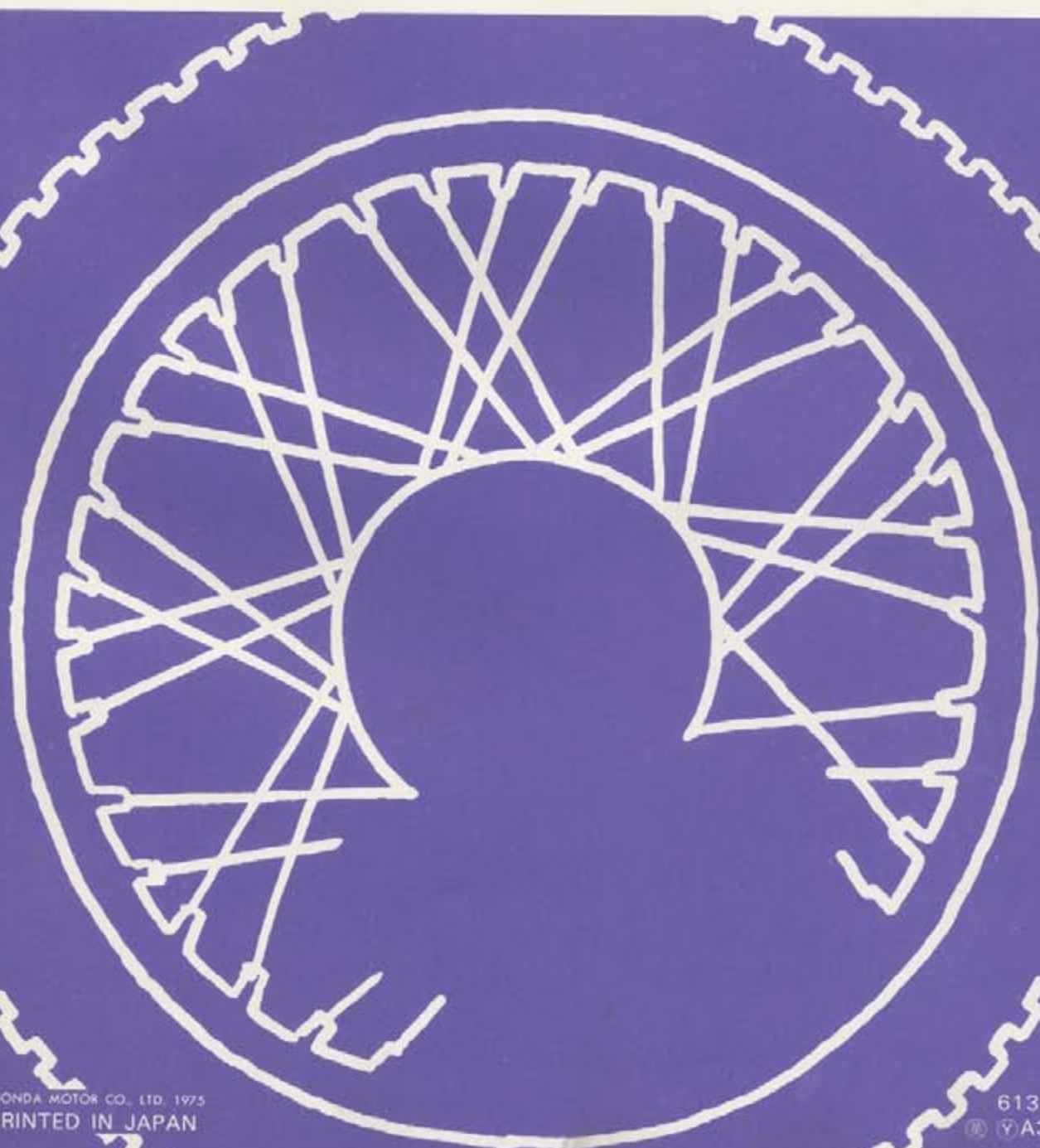


# SHOP MANUAL

## HONDA MR175



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## PREFACE

This SERVICE MANUAL has been prepared as a "SERVICE GUIDANCE" for the mechanics responsible for the upkeep of the Honda MR175.

It is compiled into six sections and summarizes the procedures for disassembling, inspecting, and reassembling the components of the machine.

Strict adherence to the instructions given herein will result in better, safer service work.

All information, illustrations and specifications contained are based on the 1974 model. Honda reserves the right to make changes at any time without notice and obligation.

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SERVICE PUBLICATIONS OFFICE

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## I. SERVICE PRECAUTIONS

1. Always replace gaskets, O-ring cotter pins, etc. with new ones when reassembling.
2. When tightening bolts, nuts or screws, begin on larger-diameter or inner one first and tighten them to specified torque in a criss-cross pattern.
3. Use genuine Honda or Honda-recommended parts and lubricants when servicing.
4. Be sure to use a special tool or tools where so specified.
5. A joint work of more than two persons must be carried out with mutual safety attention paid.
6. Wash clean engine parts upon disassembly. Coat their sliding surfaces with high-quality lubricant (crankshaft bearings, connecting rod small end bearings and piston rings with two-cycle motor oil) when reassembling.
7. Coat or pack grease where so specified.
8. After reassembling, check to be sure each part is tightened properly. Also check for proper operation.
9. When reassembling an engine, bleed the oil pump. Then allow the engine to warm up for about seven minutes.
10. Be sure to retain fuel and oil pipes with clips.

### Electrical System

1. If any electrical part is at fault, locate the cause according to the wiring diagram at the end of manual and inspect carefully.
2. Check cables and wires for disconnection, open circuit, binding or breakage of insulation and grommets. Repair or replace if necessary.
3. Making sure that wiring is in good condition, check electrical parts for condition.

### NOTE:

It is advisable to check the electrical parts at a temperature of about 20°C (68°F) (room temperature).





## II. INSPECTION AND ADJUSTMENT

This chapter covers the inspection and adjustment of important ones of the items involved in the MAINTENANCE SCHEDULE on page 71. For other items, see the paragraph for "Inspection" in each section.

### 1. TRANSMISSION OIL

#### Transmission oil level

1. Start the engine and allow it to warm up for about three minutes.
2. Stop the engine. With the motorcycle standing upright, remove the transmission oil check bolt from the right crankcase cover.

The oil should flow out of the oil check bolt hole.



Fig. 2-1 (1) Oil check bolt

3. Add oil if the oil level is too low.

#### Transmission oil change

Drain used the transmission oil while the engine is warm. This will ensure complete and rapid draining.

1. Remove the oil filler cap and oil check bolt from the right crankcase cover.
2. Place a pan under the engine to catch the oil, and remove the drain plug. Rock the motorcycle from side to side to drain all residual oil.
3. Install the drain plug with its sealing washer, and tighten securely.
4. Add the recommended oil (approximately 0.85ℓ or 0.90 US qt.) slowly through the oil filler hole. Place the motorcycle in an upright position and ensure that the oil level is up to the upper mark on the level gauge.

#### NOTE:

When reassembling the engine, add oil until it flows out of the oil check bolt hole. It takes approximately 1.0ℓ (1.1 US qt.) to fill a dry transmission.



Fig. 2-2 (1) Oil filler cap

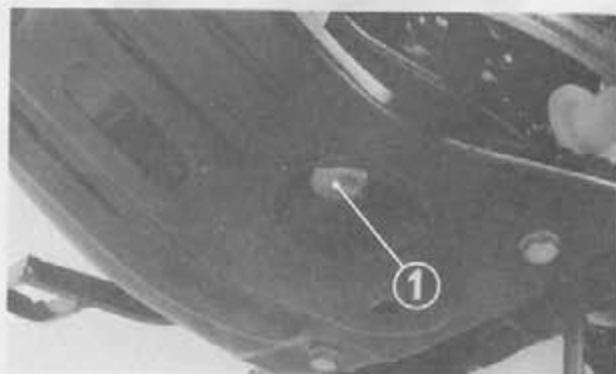


Fig. 2-3 (1) Drain plug

## Transmission oil recommendation

Use only high detergent, premium quality motor oil certified to meet or exceed US automobile manufacturer's requirements for Service Classification SE Motor oil intended for Service SE will show this designation on the container.

Viscosity selection should be based on the average atmospheric temperature in your riding area. Change to the proper viscosity oil whenever the average atmospheric temperature changes substantially.

## Recommended oil viscosity:

General, all temperatures SAE 10W-40

## Alternate:

Above 59°F	SAE 30
32° to 59°F	SAE 20 or 20W
Below 32°F	SAE 10W

## 2. SPARK PLUG

The NGK B-8ES, or NDW-24ES spark plug is standard for this model. If replacing with any spark plug, of other manufacturers be certain to select the correct reach and heat range.

Before removing the spark plug, clean the spark plug area thoroughly to prevent dirt from entering the cylinder.

1. Measure spark plug gap with a wire gauge, and adjust by carefully bending the side electrode.  
The recommended spark plug gap is 0.6–0.7 mm (0.024–0.028 in.).

2. Inspect the firing tip of the used spark plug. The electrodes and insulator nose should appear medium gray.

To obtain accurate spark the plug firing condition, switch ignition off at operating speed, coast to a stop with the clutch disengaged, then remove and inspect the spark plug. Idling or low speed operation will produce darker spark plug coloration or increased fouling.

If electrodes appear burnt, or the insulator nose is white or very light gray, this indicates one or more of the following conditions:

- \* Spark plug heat range too hot.
- \* Ignition timing advanced.
- \* Fuel mixture too lean.
- \* Insufficient oil in fuel mixture.

If the electrodes and insulator nose are black or fouled, this indicates one or more of the following conditions:

- \* Spark plug heat range too cold.
- \* Ignition timing retarded.
- \* Fuel mixture too rich.
- \* Excessive or improper oil in fuel mixture.

3. Install and tighten the spark plug finger tight, then draw down with a spark plug wrench until the sealing gasket is compressed (1/2 to 3/4 turn to compress a new spark plug gasket).

## CAUTION:

The use of spark plug of incorrect reach or heat range can cause engine damage.

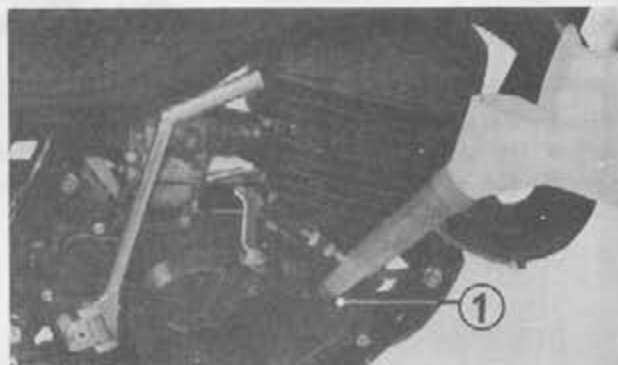


Fig. 2-4 (1) Transmission oil filler hole

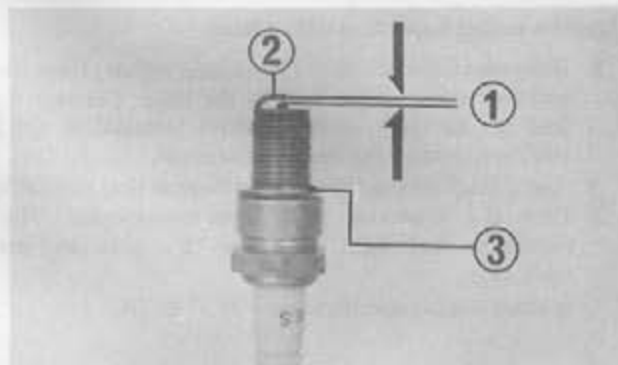


Fig. 2-5 (1) Spark plug gap  
(2) Side electrode  
(3) Sealing gasket



Fig. 2-6 (1) Electrode

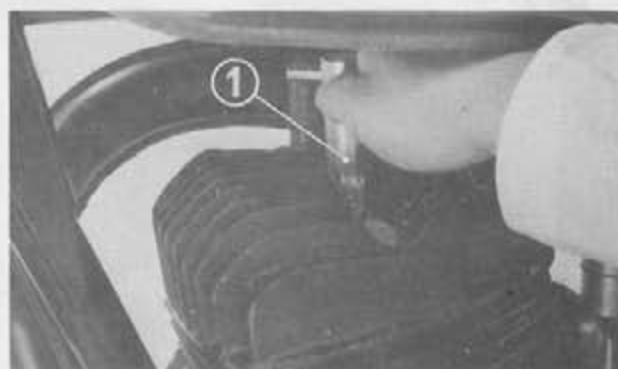


Fig. 2-7 (1) Spark plug wrench

## 4. BREAKER POINT GAP AND IGNITION TIMING

## Ignition timing adjustment

Remove the generator cover.

Adjust the ignition timing so that the breaker points start opening the moment the "F" mark on the generator rotor passes the matching mark on the crankcase cover.

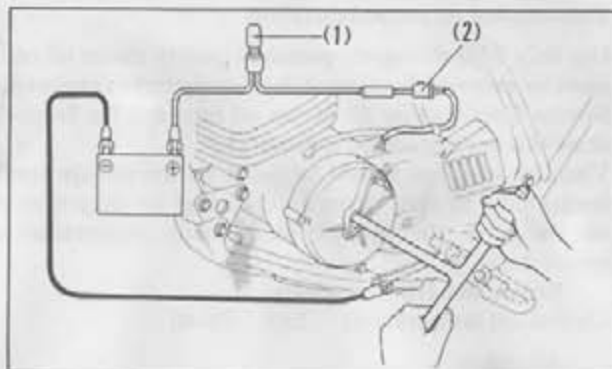


Fig. 2-8 (1) Lamp (2) Black/yellow

## Ignition timing inspection with a lamp

1. Disconnect the primary wire (black/yellow) from the stator and connect it to one lead of the lamp. Connect the other lead of the lamp to the positive terminal of the battery (6V) and ground the negative terminal.
- \* Use a lamp having the same wattage as that of a taillight.
2. Turn the generator rotor counterclockwise. The lamp should be dark light when the "F" mark and matching mark align.

Ignition timing specification: 20.5° BTDC



Fig. 2-9 (1) "F" and matching marks

3. To adjust, loosen the screw, move the adjustment point in either direction using a standard screwdriver and retighten the screw where the lamp comes on.
4. Again turn the generator rotor counterclockwise and check if the lamp becomes dark when the marks align.
5. Measure the point gap with a feeler gauge.

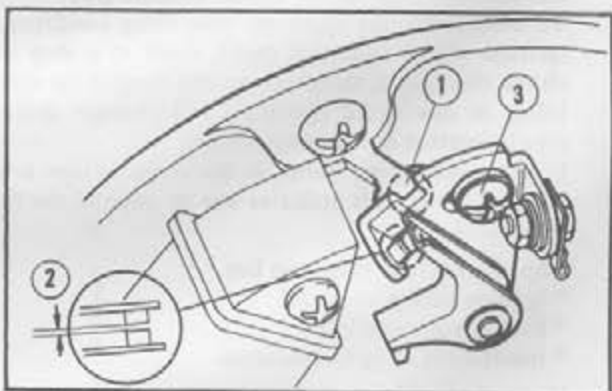
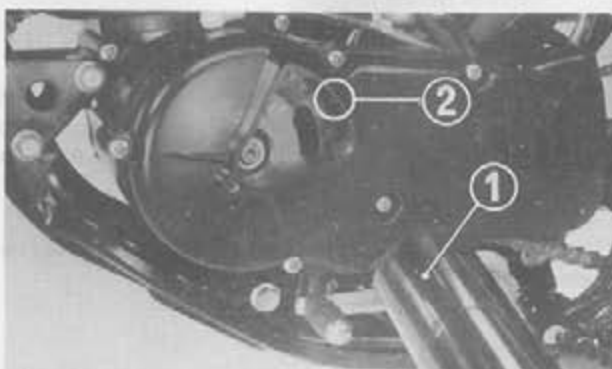
Specification: 0.3–0.4 mm (0.012–0.016 in.)

Service limit: 0.2–0.6 mm (0.008–0.024 in.)

## NOTE:

If the maximum gap is not within 0.2–0.6 mm (0.008–0.024 in.) after ignition timing has been correctly adjusted, the contact breaker points should be replaced and ignition timing reset.

6. Finally recheck the ignition timing with a stroboscopic timing light.

Fig. 2-10 (1) Adjustment  
(2) Point gap  
(3) ScrewFig. 2-11 (1) Stroboscopic timing light  
(2) Matching mark

#### 4. CYLINDER HEAD DECARBONIZING

Carbon deposits which build up in the combustion chamber and exhaust pipe will decrease engine performance. These carbon deposits must be removed periodically.

1. Remove the exhaust pipe, and scrape carbon deposits from the throat of the pipe.
2. Remove the spark plug and cylinder head bolts; then remove the cylinder head.
3. Remove the carburetor and clutch cable holder from the cylinder; then remove the cylinder. As the cylinder is raised, place a clean cloth over the crankcase bore to prevent dirt from entering the engine.
4. Remove piston pin clip and piston pin. Remove the piston.
5. Remove carbon deposits from the piston crown, cylinder head, cylinder and exhaust port, using a soft scraper to prevent damage to the parts.
6. Inspect the piston, piston rings, and cylinder for wear, damage, or sticking rings (See pages 19).



Fig. 2-12 (1) Cylinder

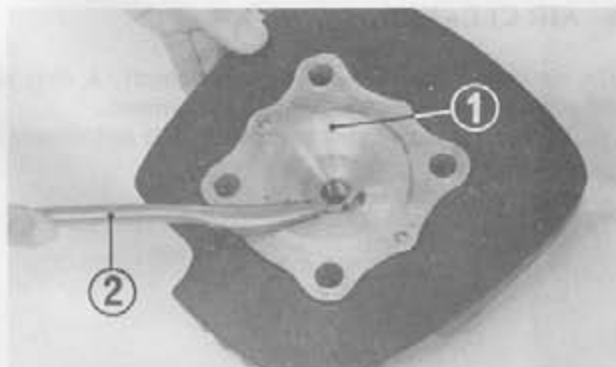


Fig. 2-13 (1) Cylinder head combustion chamber  
(2) Scraper

7. Reassemble in the reverse order of disassembly, using new gaskets and piston pin clips. Coat the cylinder wall with oil before lowering the cylinder over the piston.



Fig. 2-14 (1) Piston

#### 5. CARBURETOR

##### Idle speed adjustment

The carburetor should be adjusted only after the engine has attained operating temperature.

1. Adjust the idle speed screw until the engine idles at approximately 1,500 rpm. Turn the idle speed screw clockwise to increase idle speed or counterclockwise to decrease idle speed.
2. Turns the air screw clockwise until the engine begin to miss or decrease in speed, then counterclockwise until the engine again misses or decreases in speed. Set the air screw exactly between these two extreme positions. Usually the correct setting (between extremes of rich and lean) will be found to be 1.0-1½ turns open from a fully closed position.



Fig. 2-15 (1) Throttle stop screw

3. If idle speed changes after adjusting fuel mixture, readjust the idle speed screw.

**NOTE:**

Before making adjustments to the carburetor, be sure the ignition system is functioning properly, and the engine has good compression. Do not attempt to compensate for other faults by carburetor adjustment.

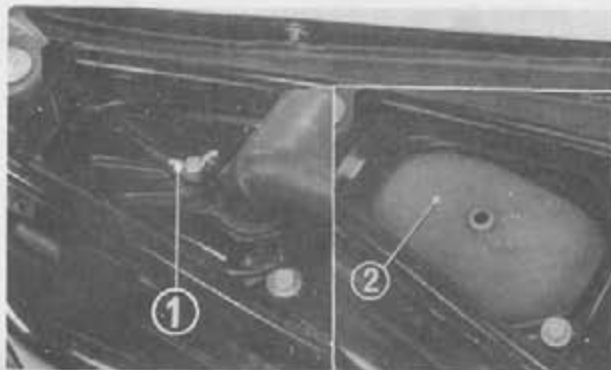


Fig. 2-16 (1) Air screw

**6. AIR CLEANER**

The air cleaner uses a polyurethane element. A dirty element will reduce engine output. To clean the element:

1. Loosen the air cleaner cover wing bolt and remove the air cleaner cover.
2. Pull out the element.

Fig. 2-17 (1) Element cover screw (Wing bolt)  
(2) Element

3. Wash the element in clean stoddard solvent and dry it thoroughly.
4. Soak the element in clean gear oil (SAE. 80—SAE. 90) and squeeze it to remove excess oil.

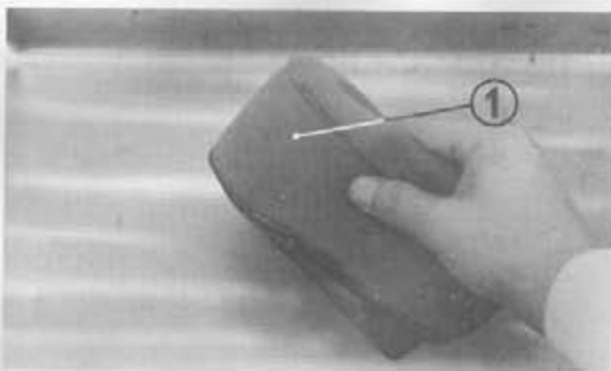


Fig. 2-18 (1) Air cleaner element

- \* When reinstalling the element make sure that it is installed with its "REAR" mark facing backward.
- \* Check the drain tube for contamination.

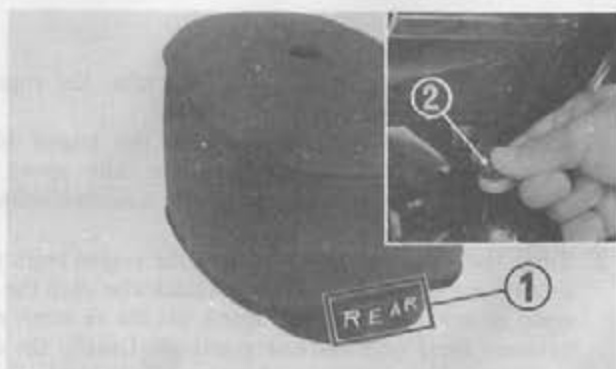


Fig. 2-19 (1) Rear mark (2) Drain tube



## 7. CLUTCH

## Adjustment of clutch

1. Make sure that the center of the clutch cable lower end is within each 10 mm (0.3937 in.) of the index mark on the crankcase as shown. If not, loosen the lock nut and turn the clutch cable lower adjuster.
2. Remove the clutch adjuster cap from the right crankcase cover.
3. Loosen the adjuster lock nut and turn the clutch adjuster clockwise until it no longer turns. From that position, turn out the adjuster counterclockwise 1/2 turn and tighten the lock nut.
4. Replace the clutch adjuster cap and tighten securely.

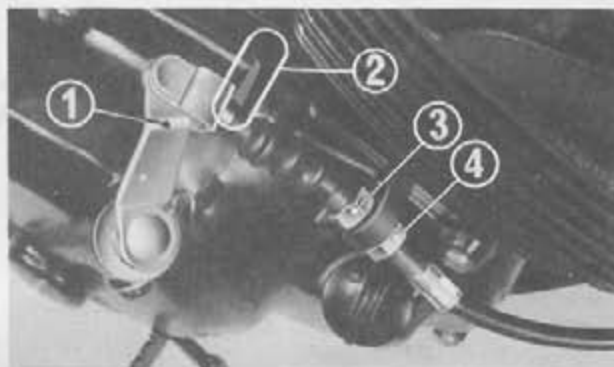


Fig. 2-20 (1) Clutch lifter lever  
(2) Index mark  
(3) Lock nut  
(4) Clutch cable lower adjuster

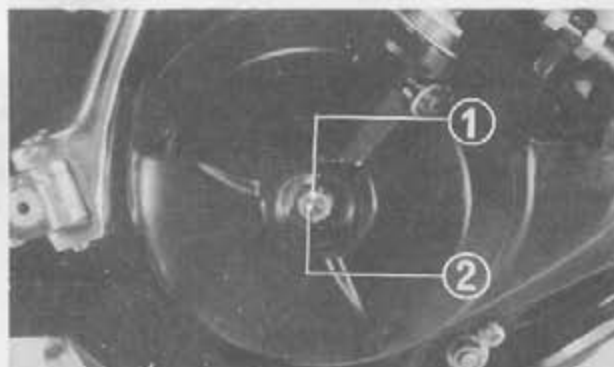


Fig. 2-21 (1) Lock nut (2) Clutch adjuster

## Check the clutch lever free play

5. The normal clutch lever free play is 10–20 mm (0.4–0.8 in.) at the tip of the lever.

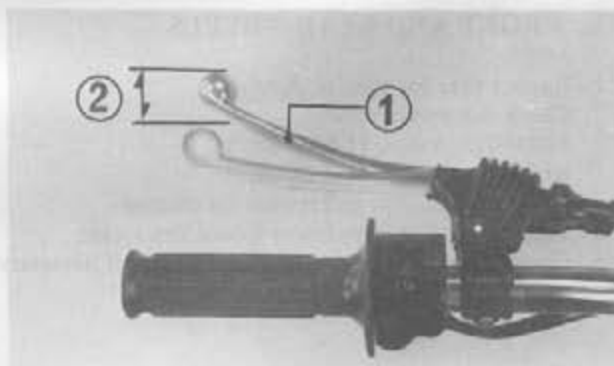


Fig. 2-22 (1) Clutch lever (2) Clutch lever free play

To adjust, remove the dust cover, loosen the lock nut and turn the upper adjuster in either direction. Turning the adjuster in direction (A) will increase the free play and turning it in direction (B) will decrease the free play. After adjusting, tighten the lock nut and install the dust cover.

6. Test ride to be sure the clutch operates properly without slip or drag. If clutch operation is not satisfactory after adjustment, check the condition of the clutch plates and friction discs (See pages 24).

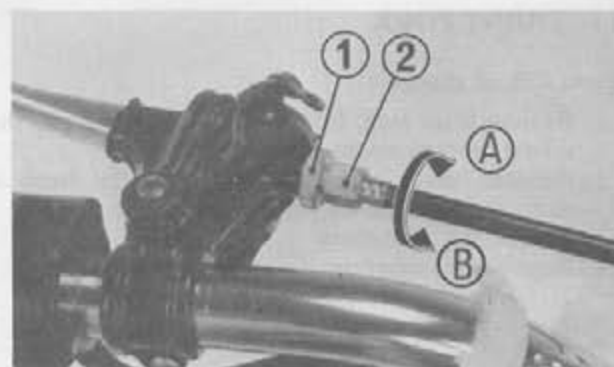


Fig. 2-23 (1) Lock nut (2) Upper adjuster

## 8. HANDLEBAR

Check the handlebar for deformation or cracks and the upper holders for proper tightness. Turn the handlebar to right and left to check for smooth operation.



Fig. 2-24 (1) Handlebar (2) Handlebar upper holders

## 9. THROTTLE GRIP

The standard throttle grip free play is  $5^{\circ}$ – $10^{\circ}$  of grip rotation. To adjust, loosen the lock nut and turn the throttle cable adjuster. Turn the adjuster in direction (A) to increase free play or in direction (B) to decrease free play. Tighten the lock nut after adjustment is completed. Operate the throttle grip to ensure that it functions smoothly.

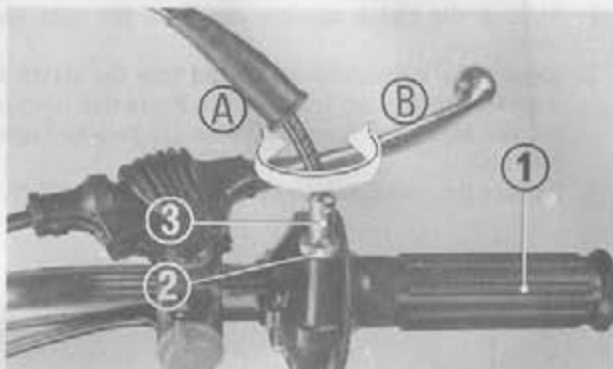


Fig. 2-25 (1) Throttle grip  
(2) Lock nut  
(3) Throttle cable adjuster

## 10. FRONT AND REAR WHEELS

1. Inspect tires for wear or damage.
2. Check tire pressure.  
FRONT: 14.0 psi (1.0 kg/cm<sup>2</sup>)  
REAR: 14.0 psi (1.0 kg/cm<sup>2</sup>)
3. Inspect wheel rims and spokes for damage.
4. Tighten any loose spokes or loosen rim locks.
5. Check wheel rim runout, and true wheels if necessary.

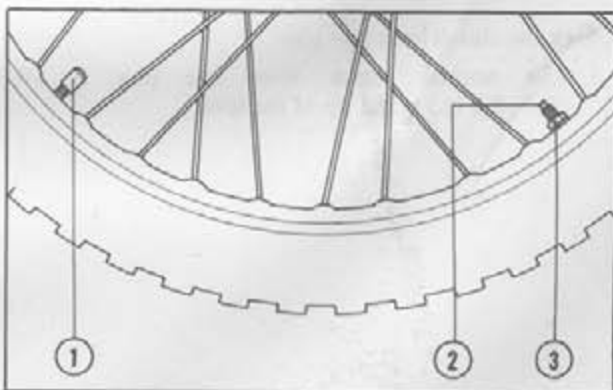


Fig. 2-26 (1) Valve cap  
(2) Rim lock  
(3) Lock nut

## 11. FRONT FORK

### Front fork oil change

1. Remove drain plugs from each fork leg and pump the forks several times to ensure complete draining.
2. Reinstall drain plugs and block up the front of the motorcycle to raise the front wheel off the ground.
3. Remove the handlebars.
4. Remove the rubber cap.

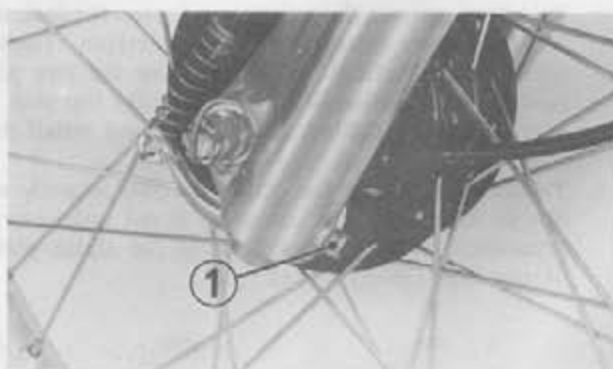


Fig. 2-27 (1) Drain plug

5. While pushing down the spring upper seat with the tip of a screwdriver, remove the snap ring using snap ring pliers. Then remove the spring upper seat. See page 53.

**CAUTION:**

When removing the snap ring, the spring upper seat may accidentally jump out by means of the force of shock absorber spring.

6. Fill each fork leg with approx. 4.9 ozs (145 cc) of premium quality Automatic Transmission Fluid (ATF).
7. Installation is the reverse of removal order.

**NOTE:**

Securely set the snap ring in the ring groove in the front fork.

FRONT FORK FLUID CAPACITY	
Amount required to fill dry assembly.	155-160 cc (5.3-5.4 ozs.) each fork leg
Amount required to refill after draining (total capacity less amount of residual fluid).	145 cc (4.9 ozs.) each fork leg

**12. REAR SUSPENSION****Inspection**

- Inspect shock absorbers for damage or leakage.
- Inspect rear fork bushings for looseness by checking side play at the rear wheel.

**Adjustment**

Rear suspension spring tension is adjustable in five increments to suit riding conditions and rider weight.

Turn the adjusters to the desired setting using a pin spanner. Be certain that both right and left rear suspension springs are adjusted to identical settings.

**Lubrication**

Lubricate the rear fork pivot with chassis grease. A grease fitting is provided at the center of the pivot.



Fig. 2-28 (1) Fork pipe cap (2) Filler hole



Fig. 2-29 (1) Spring adjuster (2) Grease nipple

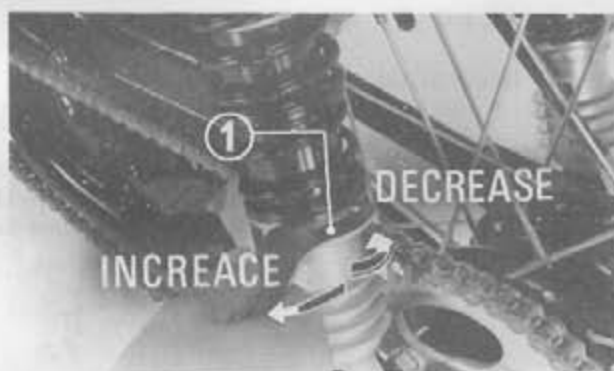


Fig. 2-30 (1) Pin spanner

**13. FRONT BRAKE ADJUSTMENT**

Free play, measured at the tip of the front brake lever, should be maintained at 20-30 mm (0.8-1.2 in.).

Free play is the distance the brake lever moves before the brake starts to engage.

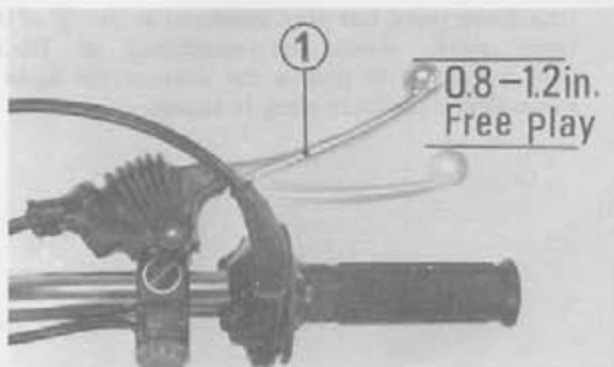


Fig. 2-31 (1) Front brake lever

Major adjustments should be made using the adjusting nut located at the front wheel.

1. Loosen the lock nut and then turn the front brake adjusting nut.

Turning the nut in direction (A) will decrease the brake lever free play and turning the nut in direction (B) will increase the free play.



Fig. 2-32 (1) Lock nut  
(2) Front brake adjusting nut

2. Minor adjustments can be made with the front brake cable adjuster at the front brake lever.

Remove the dust cover, loosen the lock nut and turn the front brake cable adjuster. Turning the adjuster in direction (A) will decrease the brake lever free play and turning the adjuster in direction (B) will increase the free play.

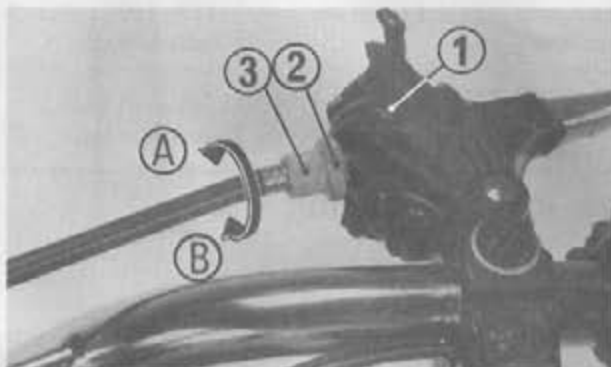


Fig. 2-33 (1) Dust cover  
(2) Lock nut  
(3) Front brake cable adjuster

#### 14. REAR BRAKE ADJUSTMENT

1. The height of the rear brake pedal can be adjusted to the rider. To adjust, loosen the lock nut and turn the adjusting bolt.

Turning the adjusting bolt in direction (A) will lower the tip of the brake pedal and turning it in direction (B) will raise the tip of the pedal. After adjusting, tighten the lock nut securely.

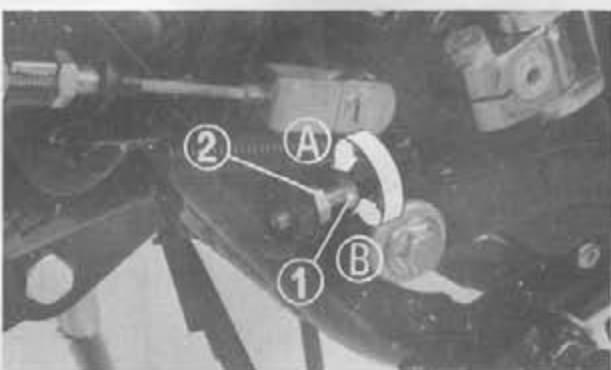


Fig. 2-34 (1) Adjusting bolt (2) Lock nut

2. Rear brake pedal free play, measured at the tip of the rear brake pedal, should be maintained at 20-30 mm (0.8-1.2 in.). Free play is the distance the brake pedal moves before the brake starts to engage.

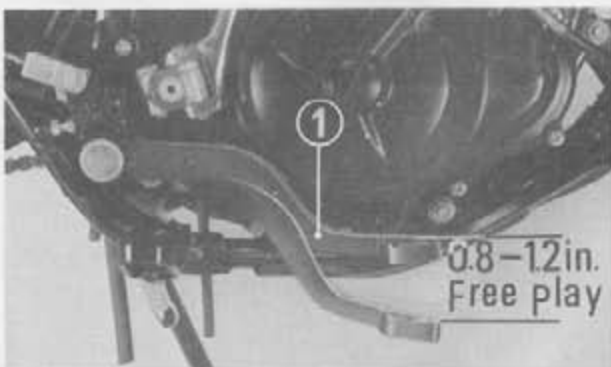


Fig. 2-35 (1) Rear brake pedal



3. Major adjustments should be made at the forward rear brake cable adjuster. Remove the rear brake pedal spring from the forward rear brake cable adjuster, loosen the lock nut and turn the brake cable adjuster. Turning the adjuster in direction (A) will decrease the free play and turning it in direction (B) will increase the free play. After adjusting, tighten the lock nut securely.

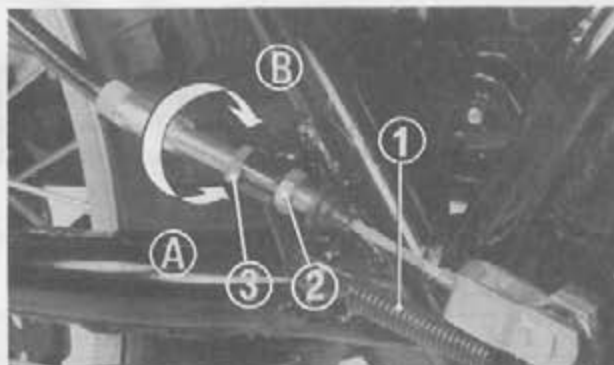


Fig. 2-36 (1) Rear brake pedal spring  
(2) Lock nut  
(3) Brake cable adjuster

4. Minor adjustments should be made at the rear brake cable adjuster. To adjust rear brake pedal free play turn the rear brake cable adjuster. Turning the adjuster in direction (A) will decrease the free play and turning it in direction (B) will increase the free play.

#### Drive Chain Maintenance

Proper adjustment and lubrication will help to extend the service life of the drive chain. Place a wood block under the engine to raise the rear wheel off the ground. Shift the transmission into neutral. Then, turn the rear wheel slowly and check the drive chain and sprockets for any of the following conditions.



Fig. 2-37 (1) Adjuster

#### Drive Chain

- \* Damaged rollers
- \* Loose pins
- \* Dry and rusted links
- \* Kinked and binding links
- \* Excessive wear
- \* Improper adjustment

#### Sprockets

- \* Excessively worn teeth
- \* Broken or damaged teeth

#### Measuring drive chain wear

Measure a section of the drive chain to determine whether the chain is worn beyond its service limit. Put the transmission in gear, and then turn the rear wheel forward until the lower section of the chain is pulled taut. With the chain held taut and any link straightened, measure the distance between a span of pins, from pin center to pin center. In a MR-175 drive chain, this distance will measure 9.5 in. (each pitch x 0.5in.). If the distance exceeds 9.7 in., the chain is worn out and should be replaced. After the chain is measured, shift the transmission into neutral again before proceeding with inspection and service.

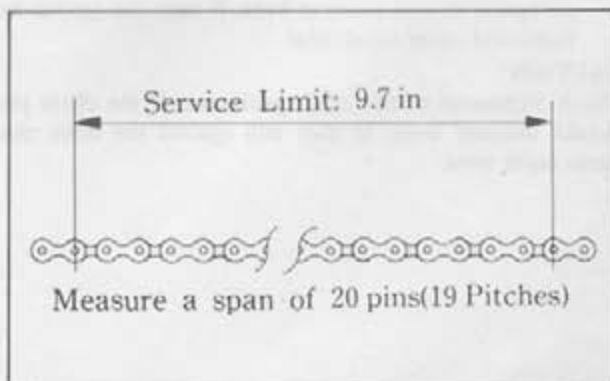


Fig. 2-38

## Inspecting the sprockets

Check the drive and driven sprockets for wear or damage. The left rear crankcase cover must be removed for access to the drive sprocket. Excessively worn sprocket teeth have a hooked and asymmetric appearance. Replace any sprocket which is damaged or excessively worn.

Standard sprocket sizes:

Drive sprocket (engine)	Driven sprocket (rear wheel)
15 teeth	43 teeth

## NOTE:

Never install a new drive chain on badly worn sprockets, or use new sprockets with a badly worn drive chain. Both chain and sprockets must be in good condition, or the new replacement chain or sprocket will wear rapidly.

## Measuring drive chain slack

Check drive chain slack at a point midway between the drive sprocket and the rear wheel sprocket. Move the chain up and down with your fingers, and measure the amount of slack. Drive chain slack is adjusted to approximately 3/4-in. Slack becomes greater as the chain wears. If chain slack is found to exceed a maximum of 1 1/2-in., the drive chain must be readjusted.

Drive chain tension should remain constant as the wheel is rotated.

If the chain is found to be slack in one segment of its length and taut in another, this indicates that some of the links are either worn or kinked and binding. Kinking and binding can frequently be eliminated by lubrication.

## Drive chain adjustment

If the drive chain is found to require adjustment, the procedure is as follows:

1. Remove the rear axle nut cotter pin and loosen the rear axle nut.
2. Loosen the lock nuts and turn the adjusting bolts to increase or decrease chain tension. Align the chain adjuster index marks to the reference marks on both sides of the rear fork.
3. Tighten the rear axle nut and secure the nut with the cotter pin (replace the cotter pin if it has become broken or damaged).
4. Tighten the adjusting bolts and secure them with the lock nuts.
5. Check alignment of the drive chain protector. If the chain protector should become bent, it may rub against the drive chain and cause rapid wear.

## CAUTION:

Check alignment of the chain protector. If the chain protector should become bent, it may rub against the drive chain and cause rapid wear.

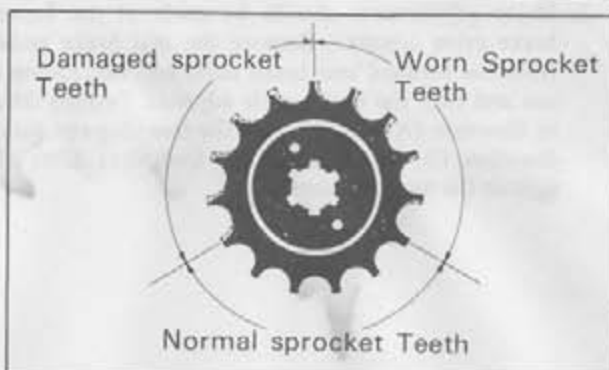


Fig. 2-39



Fig. 2-40 (1) Drive chain

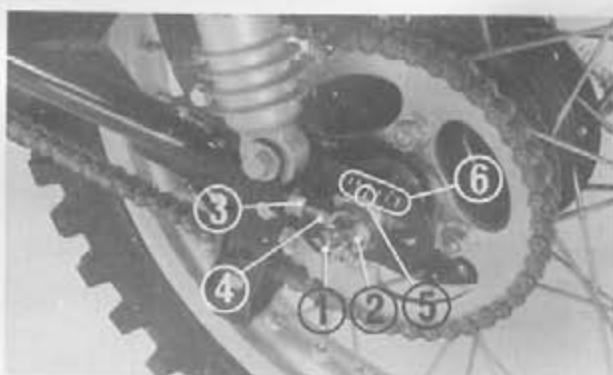


Fig. 2-41 (1) Cotter pin (2) Rear axle nut (3) Lock nut (4) Adjusting bolt (5) Index mark (6) Reference mark



Fig. 2-42 (1) Chain protector

### Lubrication

Commercially prepared drive chain lubricants may be purchased at most motorcycle shops and should be used in preference to motor oil or other lubricants.

Saturate each chain joint so that the lubricant will penetrate the space between adjacent surfaces of link plates and rollers.

### Removal and cleaning

When the drive chain becomes extremely dirty, it should be removed and cleaned prior to lubrication.

1. Carefully remove the master link retaining clip with pliers. Do not bend or twist the clip. Remove the master link. Remove the drive chain from the motorcycle.
2. Clean the drive chain in solvent and allow to dry. Inspect the drive chain for possible wear or damage. Replace any chain that has damaged rollers, loose fitting links, or otherwise appears unserviceable.
3. Inspect the sprocket teeth for possible wear or damage. Replace if necessary. Never use a new drive chain on badly worn sprockets. Both chain and sprockets must be in good condition, or the new replacement chain or sprocket will wear rapidly.
4. Lubricate the drive chain.
5. Pass the chain over the sprockets and join the ends of the chain with the master link. For ease of assembly, hold the chain ends against adjacent rear sprocket teeth while inserting the master link.  
Install the master link retaining clip so that the closed end of the clip will face the direction of forward wheel rotation. The master link is the most critical part affecting the security of the drive chain. Master links are reusable, if they remain in excellent condition, but it is recommended that a new master link retaining clip be installed whenever the drive chain is reassembled.
6. Adjust the drive chain to the proper tension, following the instruction on page 12.

## 16. FUEL TANK

Check the fuel tank, fuel valve, and fuel line for leaks.

### Fuel Filter

The fuel filter is incorporated in the fuel valve which is mounted on the bottom of the fuel tank at the left side. Accumulation of dirt in the filter will restrict the flow of the fuel and cause the carburetor to malfunction, therefore, the fuel filter should be serviced periodically.

1. Drain the fuel from the fuel tank.
2. Remove the fuel valve by removing the two bolts. Wash the fuel screen filter in cleaning solvent.
3. Reassemble the fuel valve in the reverse order of removal and turn the fuel valve to "ON" position and check for leaks.

## 17. EXPANSION CHAMBER

Check the two exhaust pipe springs, and replace if damaged or stretched.

Check the chamber bolts for proper tightness.

Remove carbon deposits from the throat of the exhaust pipe. Check the expansion chamber for cracks or deformation.

A damaged chamber may cause an excessive drop in engine horsepower.

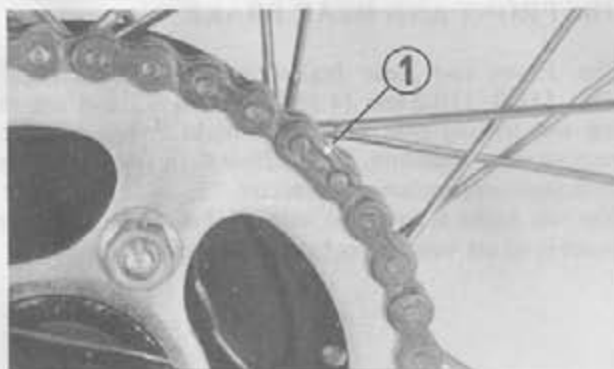


Fig. 2-43 (1) Retaining clip

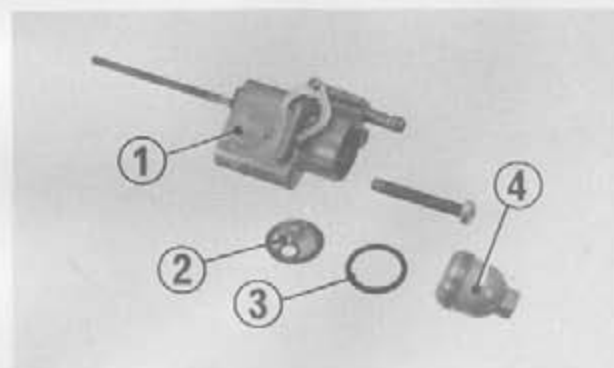


Fig. 2-44 (1) Fuel cock body  
(2) Fuel strainer screen  
(3) Fuel strainer cap gasket  
(4) Fuel strainer cap

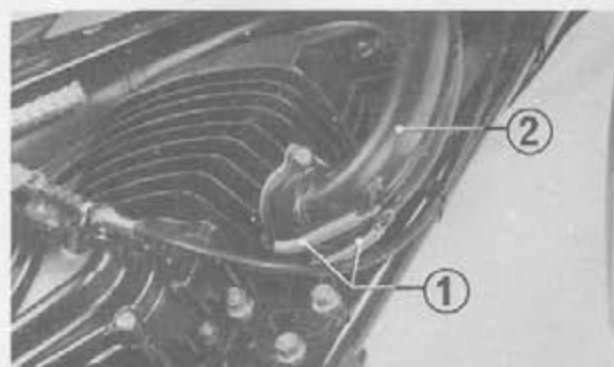


Fig. 2-45 (1) Springs (2) Expansion chamber

## 18. FRONT AND REAR BRAKE

The Front and Rear Brakes are of a drum type (drum dia.: 110.0–110.2 mm (4.3307–4.3386 in.) and use the leading and trailing type shoes. The brake linings are specifically molded and, therefore, the coefficient of friction hardly varies with high temperature and pressure.

The rear brake is equipped with the brake indicator to make it possible to see wear of the brake shoes and drum.

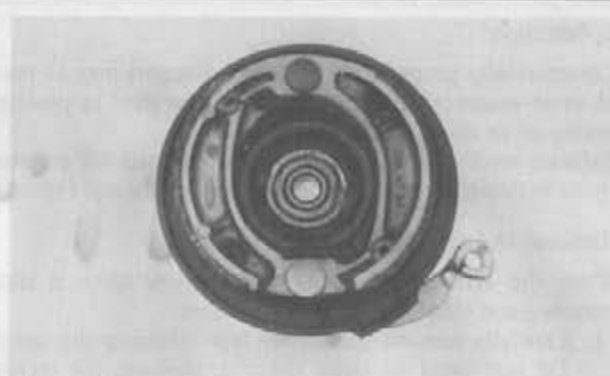


Fig. 2-46

## 19. BRAKE INDICATOR

The brake panel is provided with the index mark, and the brake arm is installed on the brake camshaft with the brake indicator plate in between.

If the index marks on the panel and on the indicator are not aligned when the brake pedal is depressed, it indicates that the brake shoes and drum are in good condition. As the brake shoes wear, the brake cam moves as shown and, therefore, the index marks reach alignment. Check the brake shoes and drum for wear and replace if the service limit is exceeded.

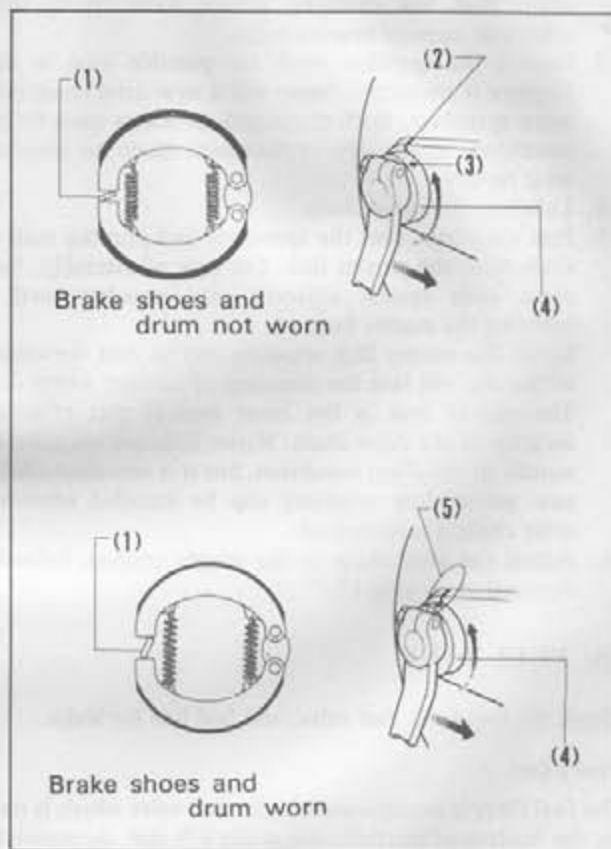


Fig. 2-47 (1) Brake cam (2) Index mark (3) Arrow mark (4) Brake indicator plate (5) Wear limits



### III. SERVICING THE ENGINE

#### 1. SERVICE NOT REQUIRING ENGINE REMOVAL

Part to be serviced	Ref. page
Cylinder head, cylinder, piston	16-
A-C generator	21-
Clutch	23-
Kick starter (one part)	26-
Gearshift mechanism (one part)	27-
Carburetor	34-
Electric system	65-

#### 2. ENGINE REMOVAL AND INSTALLATION

Remove the engine from the frame by removing the following parts in the order shown.

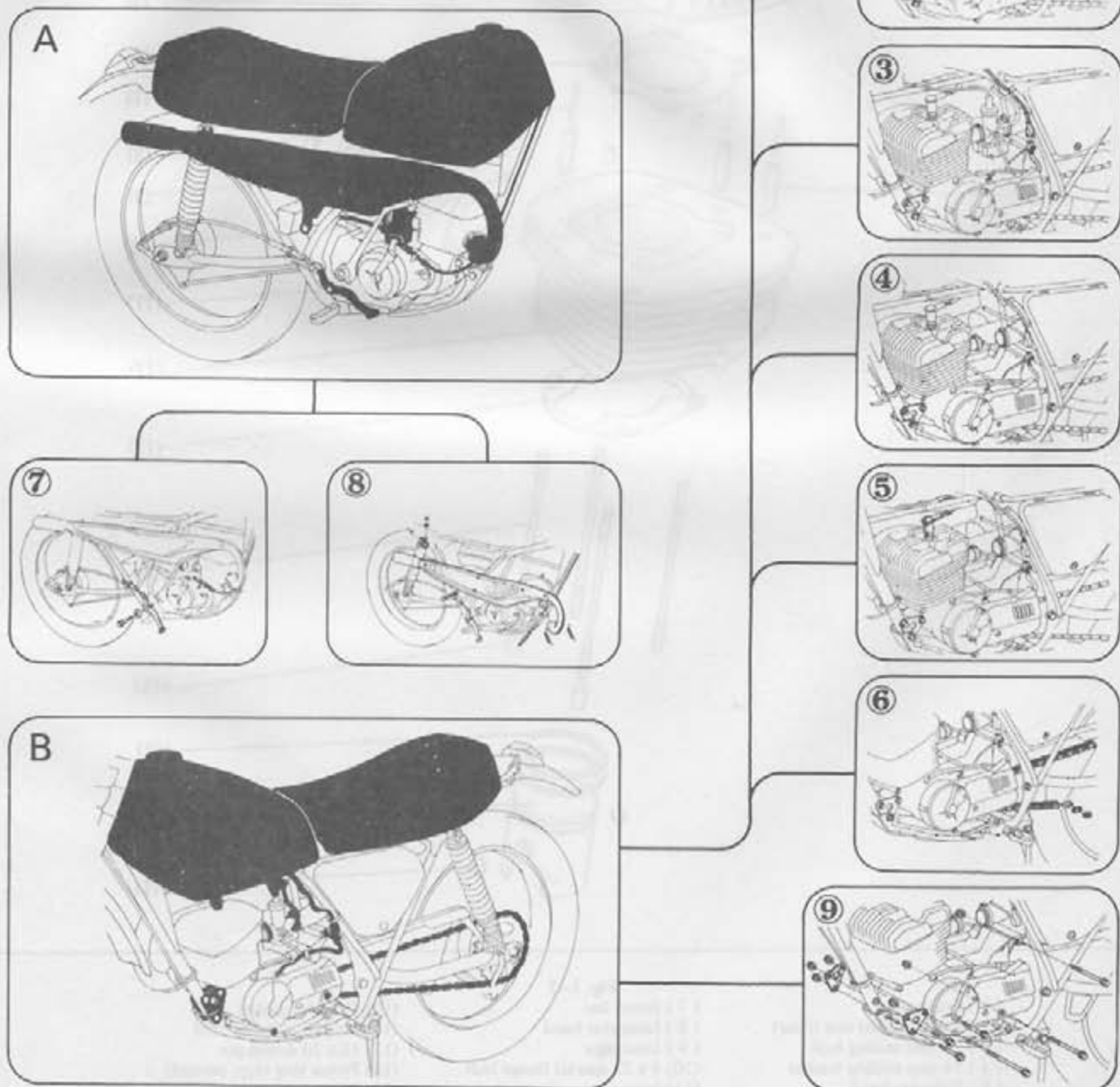


Fig. 3-1

- (1) Seat and fuel tank
- (2) Carburetor connecting band
- (3) Generator cord connector

- (4) Carburetor
- (5) Plug cap
- (6) Clip and drive chain

- (7) Clutch cable and rear brake pedal
- (8) Four expansion chamber springs and two bolts
- (9) Bolts

## 3. CYLINDER HEAD, CYLINDER AND PISTON

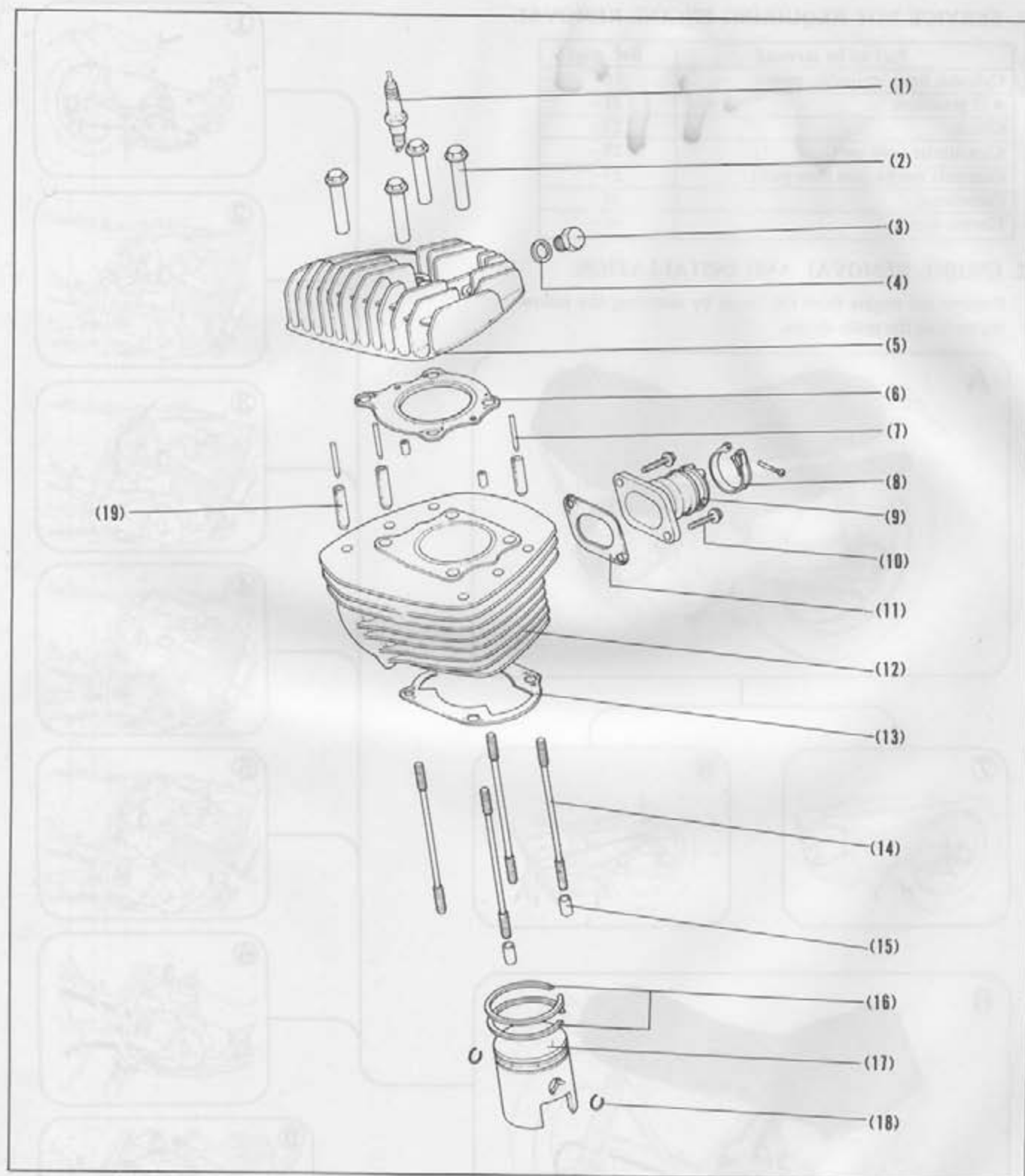


Fig. 3-2

- (1) Spark plug
- (2) 8 mm special nut (four)
- (3) 14 mm sealing bolt
- (4) 14 mm sealing washer
- (5) Cylinder head
- (6) Cylinder head gasket

- (7) Insert bar
- (8) Insulator band
- (9) Inlet pipe
- (10) 6 x 22 special flange bolt
- (11) Inlet pipe gasket
- (12) Cylinder

- (13) Cylinder gasket
- (14) 8 x 116 cylinder stud
- (15) 10 x 20 dowel pin
- (16) Piston ring (top, second)
- (17) Piston
- (18) Piston clip

## Disassembly

1. Remove the seat.
2. Remove the fuel tank.
3. Remove the spark plug cap from the spark plug.
4. Remove the expansion chamber.
5. Remove the four 8 mm bolts and remove the cylinder head.



Fig. 3-3 (1) Cylinder head (2) 8 mm special nut

6. Loosen the carburetor insulator bolts and remove the cylinder.



Fig. 3-4 (1) Cylinder (2) Carburetor insulator bolts

7. Put a clean cloth over the cylinder bore.  
Remove the piston pin clip, piston pin and piston.

Fig. 3-5 (1) Piston  
(2) Piston pin clip  
(3) Piston pin

8. Remove the piston rings from the piston. Expand each ring with the right and left thumbs and lift it from the direction opposite to the gap.

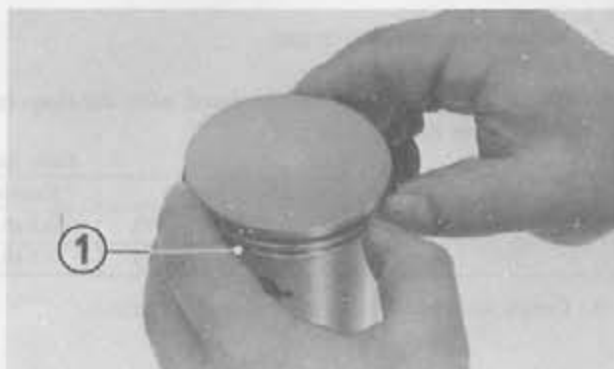


Fig. 3-6 (1) Piston ring

## Inspection

## 1. Carbon deposit.

Remove carbon deposits from the combustion chamber, exhaust port and piston.

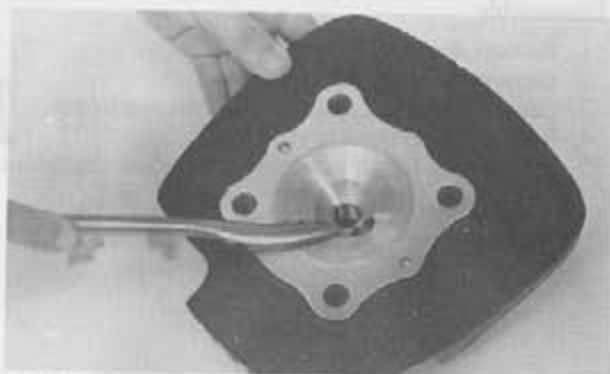


Fig. 3-7 Decarbonizing the cylinder head

## 2. Cylinder bore measurement

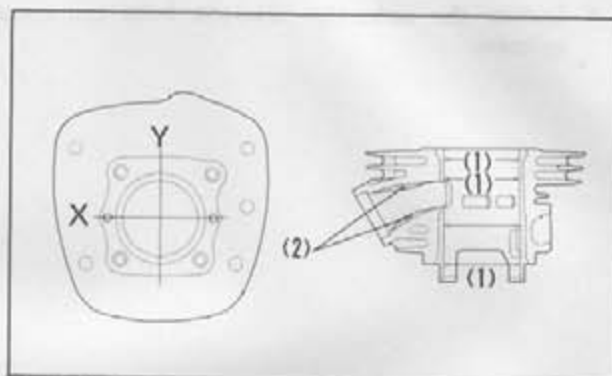
As shown in Fig. 4-27, measure the cylinder bore at four points in the longitudinal direction and in the directions X and Y. The maximum dimension is the measured value.

## 3. Piston OD (outside diameter) measurement

Measure the piston OD at 8 mm (0.3 in.) apart from the bottom of the piston and 90° from the piston pin hole, using micrometer, in the directions X and Y. The minimum dimension is the measured value.

Unit: mm (in.)

Item	Assembly standard	Service limit
Cylinder bore	66.0-66.01 (2.598-2.599)	66.1 (2.602)
Piston OD	65.94-65.96 (2.596-2.597)	65.8 (2.591)

Fig. 3-8 (1) Cylinder bore measurement points  
(2) Carbon deposits in cylinder exhaust port

## 4. Cylinder exhaust port decarbonizing.

If carbon is deposited in the cylinder exhaust port, decarbonize using a scraper or screwdriver.

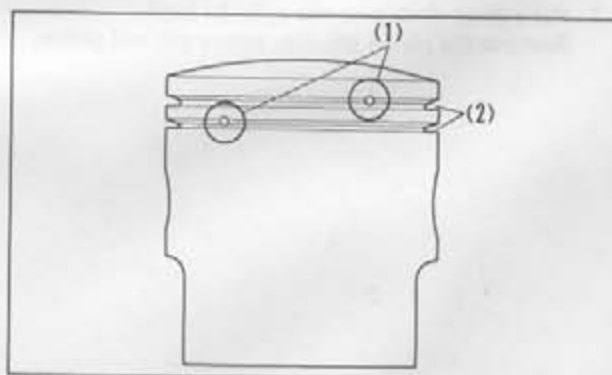
## 5. Check the inner surface of the cylinder for scores, scratches or wear.

## 6. Check the piston for scores, scratches, cracks or carbon deposits.

If the piston rings are sticking, remove them and clean the ring grooves in the piston with the tip of a scraper taking care not to score or scratch them.

## 7. Check the piston ring dowels for wear.

If the dowels are excessively worn, replace the piston.

Fig. 3-9 (1) Piston ring dowels  
(2) Piston ring grooves

## 8. Measure the piston ring gap.

## NOTE:

The ring gaps should be measured with the rings installed properly in the cylinder.

Unit: mm (in.)

Item		Assembly standard	Service limit
Piston ring gap	Top	0.2-0.4 (0.0079-0.0157)	0.5 (0.0197)
	2nd	0.2-0.4 (0.0079-0.0157)	0.5 (0.0197)

## 9. Check the piston rings for warpage or wear.

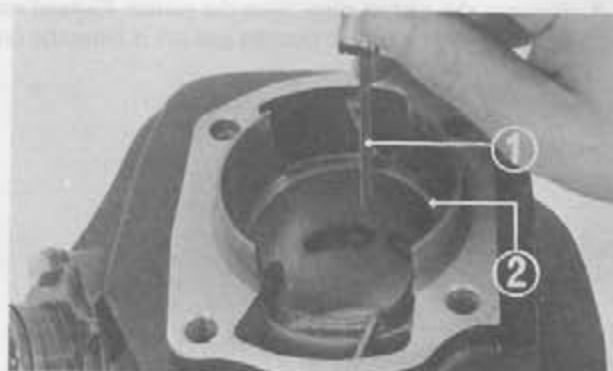


Fig. 3-10 (1) Feeler gauge (2) Piston ring



## 10. Piston ring groove side clearance.

Measure the side clearance with a feeler gauge. If the clearance exceeds the service limit, replace the rings. If the clearance is too great even with new rings, replace the piston and rings.

Unit: mm (in.)			
Item		Assembly standard	Service limit
Piston ring side clearance	Top	0.045-0.075 (0.0018-0.0030)	0.09 (0.0035)
	2nd	0.025-0.055 (0.0010-0.0020)	0.07 (0.0028)

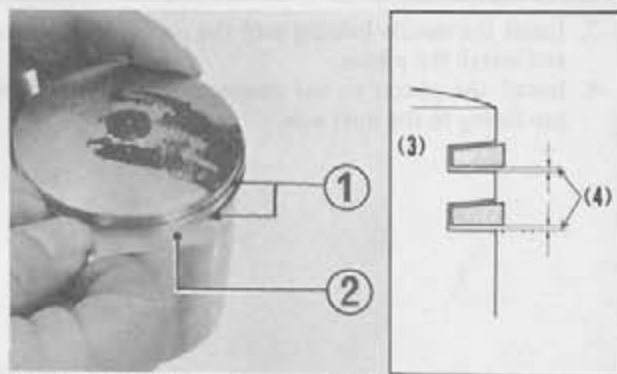


Fig. 3-11 (1) Piston ring (2) Feeler gauge (3) Piston (4) Clearance

## 11. Check the connecting rod small end bearing for looseness.

**NOTE:**

If the bearing is excessively loose, replace it according to the bearing fit classification table. (See page 33)

## 12. Check the piston for wear and the piston pin clearance in the pin hole.

Unit: mm (in.)			
Item		Assembly standard	Service limit
Piston pin OD		15.992-16.000 (0.6296-0.6299)	15.98 (0.6291)
Piston pin hole ID		16.002-16.014 (0.6300-0.6305)	16.1 (0.6339)

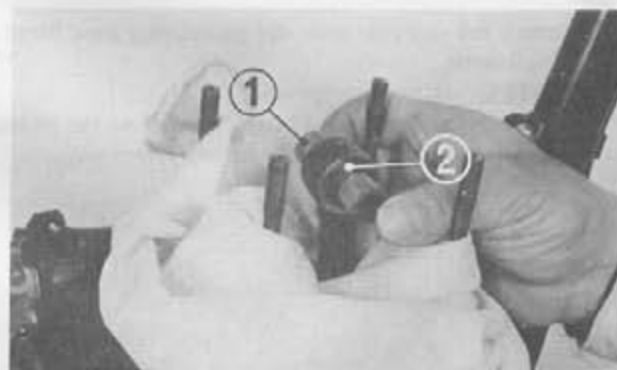


Fig. 3-12 Checking connecting rod small end bearing for looseness

**Assembly**

- \* To assemble, reverse the disassembly procedures.

## 1. Install the piston rings to the piston.

**NOTE:**

- \* The top and second rings are of a keystone type and interchangeable.
- \* Use the piston rings of the same manufacturer in a set.
- \* The markings on the rings should face upward.
- \* After installing, compress the rings to check for proper fit.

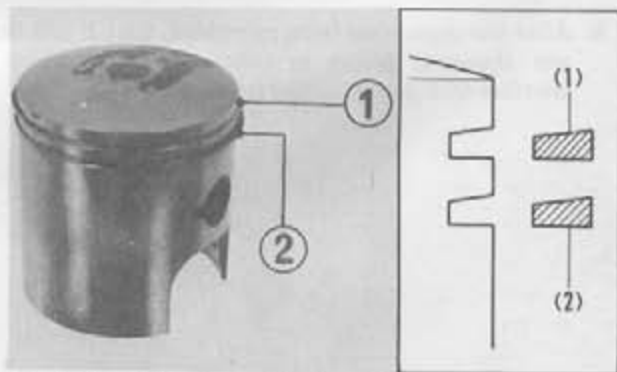


Fig. 3-13 (1) Top ring (2) Second ring

## 2. When installing new piston rings, put them in the ring grooves and turn the rings to check for smooth movement. The piston rings should be installed with their markings facing upward.

Decarbonize the ring grooves if necessary.

**NOTE:**

Discard the piston pin clip once removed. Use a new clip.

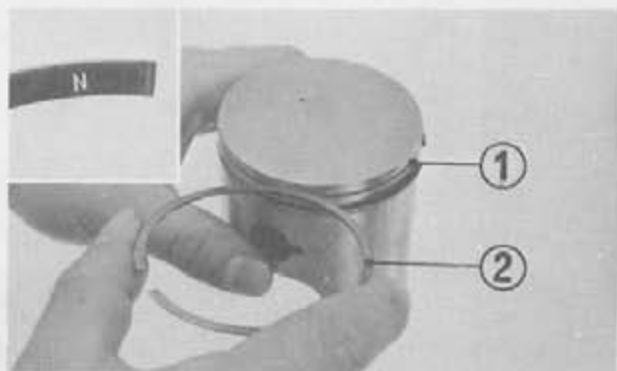


Fig. 3-14 (1) Ring groove (2) Piston ring

3. Insert the needle bearing into the connecting rod small end and install the piston.
4. Install the piston to the connecting rod with the ring end gap facing to the inlet side.

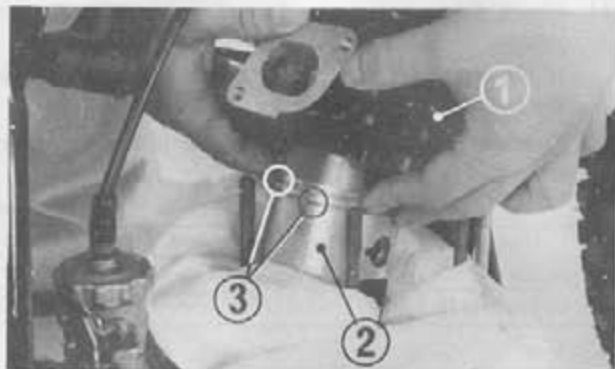


Fig. 3-15 (1) Piston ring dowels

5. Install the cylinder with the piston ring gaps fitted on the ring dowels.

**NOTES:**

- a. Apply a thin coat of two-cycle oil to the piston rings.
- b. Do not forget to install the two dowel pins.

Fig. 3-16 (1) Cylinder  
(2) Piston  
(3) Piston ring dowels

6. After the engine has been assembled, start it and listen for any abnormal noises or other conditions which might interfere with proper engine operation.

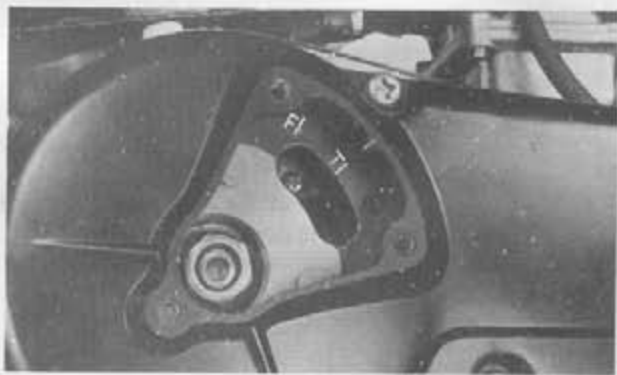
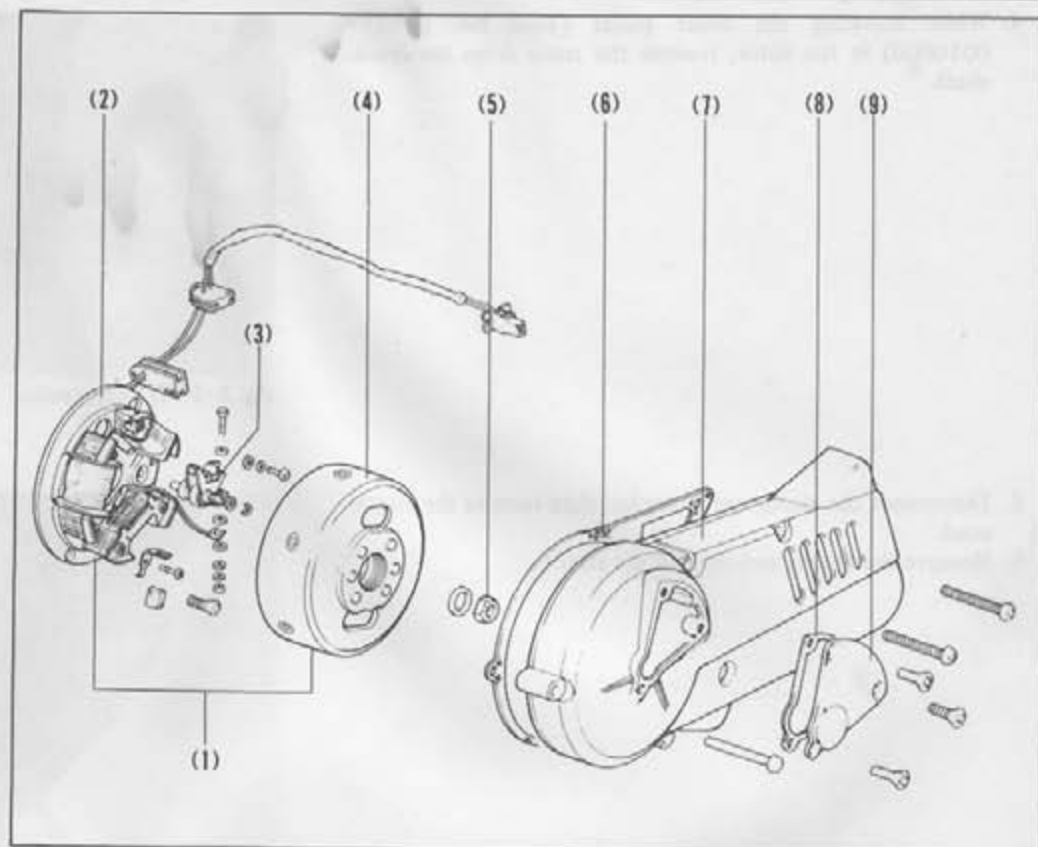


Fig. 3-17

## 4. A.C. GENERATOR

Fig. 3-18

- (1) A.C. generator assy.  
 (2) A.C. generator stator  
 (3) Contact breaker  
 (4) A.C. generator rotor  
 (5) 12 mm special nut  
 (6) Left crankcase cover gasket  
 (7) Left crankcase cover  
 (8) Generator rotor cover gasket  
 (9) Generator rotor cover



## Disassembly

1. Remove the left side cover.
2. Remove the generator rotor cover and left crankcase cover.

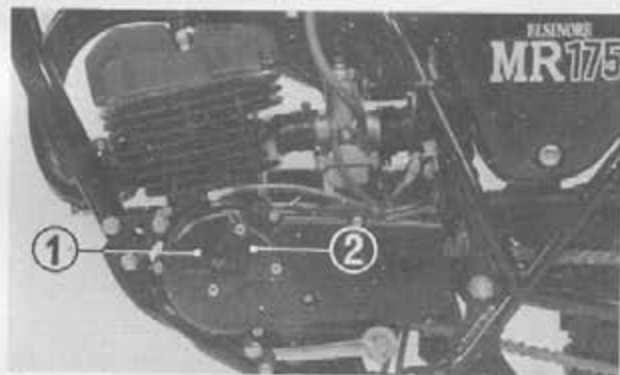


Fig. 3-19 (1) Left crankcase cover  
 (2) Generator rotor cover

3. With the transmission gear placed in any position other than the neutral position, set the drive sprocket holder (Tool No. 07922-3570000) as shown in Fig. 3-20 and remove the 12 mm special nut tightening the generator rotor.

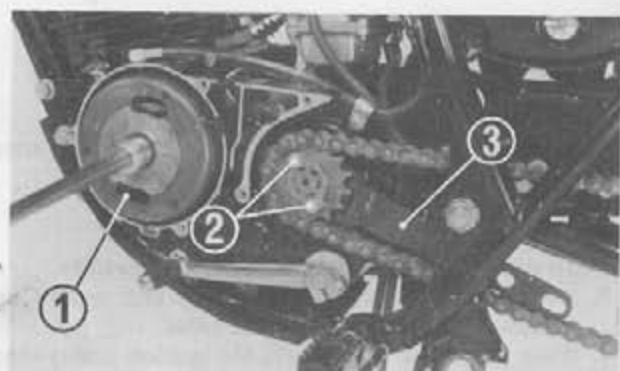


Fig. 3-20 (1) A.C. generator rotor  
 (2) Drive sprocket fixing bolts  
 (3) Drive sprocket holder

4. While screwing the rotor puller (Tool No. 07933-0010000) in the rotor, remove the rotor from the crankshaft.

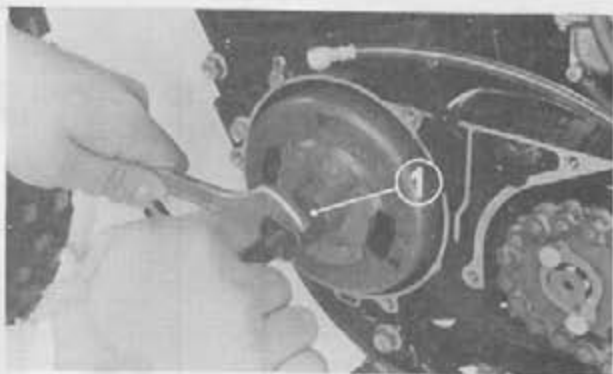


Fig. 3-21 (1) Rotor puller

5. Disconnect the stator cord coupler; then remove the starter cord.
6. Remove the screws and remove the stator.

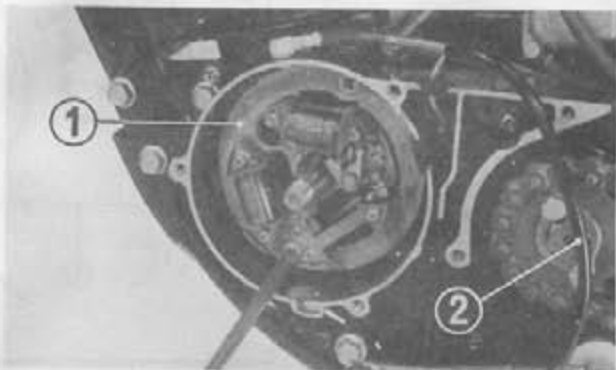
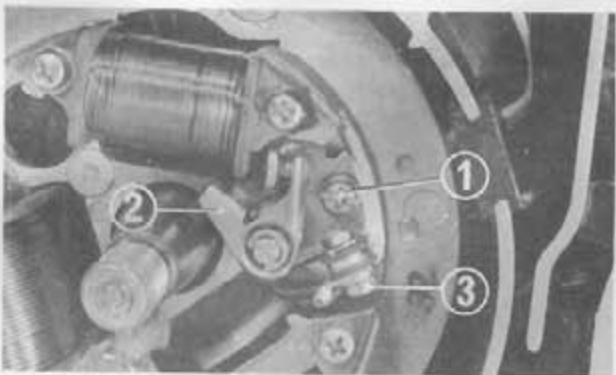


Fig. 3-22 (1) Stator (2) Stator cord

7. To remove the contact breaker for replacement, remove the screw (1) and nut (3).

Fig. 3-23 (1) Screw  
(2) Contact breaker  
(3) Nut

#### Inspection

1. Check the stator cord for breakage.
2. Check the oil felt for wear.
3. Check the contact breaker for damage or burning.
4. Make sure that the stator and generator are not interfering with each other.

#### Assembly

- \* To assemble, reverse the disassembly procedures.
- 1. Making sure that the screw, bolt and washer are not remained in the rotor; install the rotor.
- 2. When the stator is removed, the ignition timing should be adjusted.
- 3. Insert the stator cord grommet in the case groove in position.

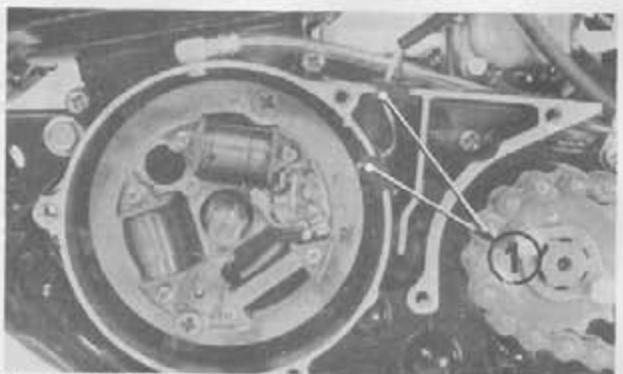


Fig. 3-24 (1) Stator cord grommet



## 5. CLUTCH

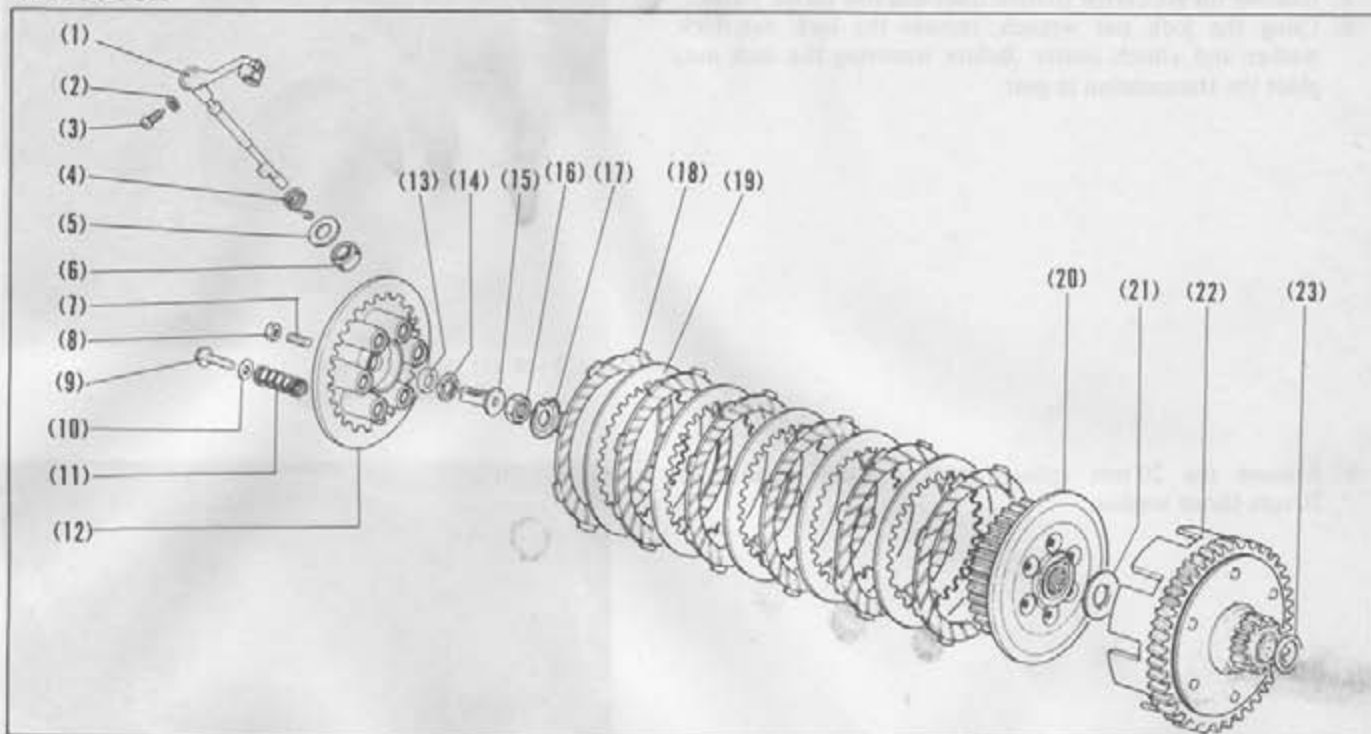


Fig. 3-25 (1) Clutch lever (7) Clutch adjust screw (13) 12.5 mm thrust washer (19) Clutch plate (five)  
 (2) 12 mm sealing washer (8) 6 mm hex. nut (14) 1226 thrust bearing (20) Clutch center  
 (3) 6 mm special bolt (9) 6 x 22 special flange bolt (15) Lifter rod (21) 18 mm spline washer  
 (4) Clutch lifter shaft spring (10) Shift drum stopper washer (16) 16 mm nut (22) Clutch outer  
 (5) 26 mm special washer (11) Clutch spring (17) 16 mm lock washer (23) 20 mm thrust washer  
 (6) 13 x 22 x 5 oil seal (12) Clutch pressure plate (18) Clutch disc (six)

## Disassembly

1. Drain the transmission oil from the crankcase.
2. Remove the brake pedal pivot.
3. Remove the kick starter pedal.
4. Disconnect the clutch cable from clutch lever.
5. Remove the 10 right crankcase cover tightening screws. Then remove the 6 mm screw and remove the right crankcase cover with the clutch lever raised.

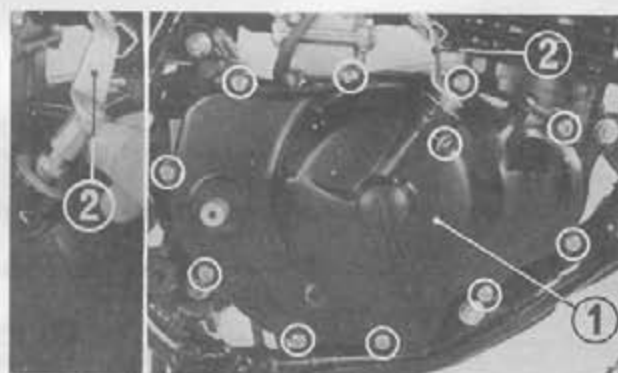


Fig. 3-26 (1) Right crankcase cover  
 (2) Clutch lever

6. Remove the six 6 mm clutch bolts and remove the clutch pressure plate. Then remove the clutch lifter rod, thrust needle bearing and 12.5 mm thrust washer from the clutch pressure plate.

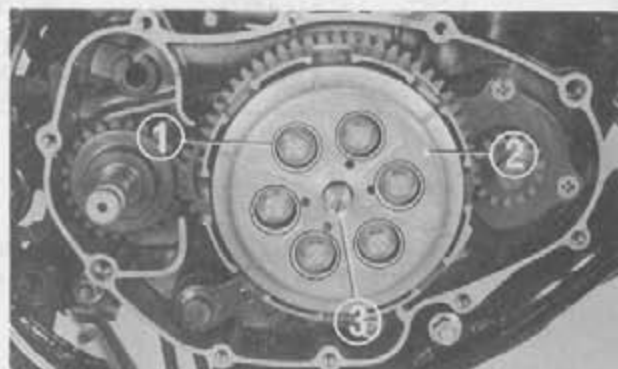


Fig. 3-27 (1) 6 mm bolt  
 (2) Clutch pressure plate  
 (3) Clutch lifter rod

7. Remove the six clutch friction discs and five clutch plates.
8. Using the lock nut wrench, remove the lock nut, lock washer and clutch center. Before removing the lock nut, place the transmission in gear.

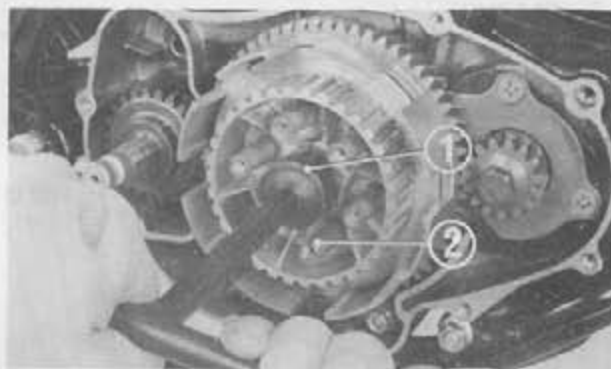


Fig. 3-28 (1) 16 mm lock nut  
(2) Clutch center

9. Remove the 20 mm splined washer, clutch outer, and 20 mm thrust washer.

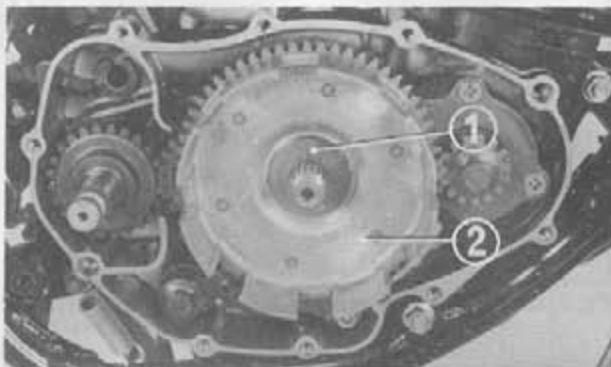


Fig. 3-29 (1) 20 mm splined washer  
(2) Clutch outer

#### Inspection

1. Check the clutch friction discs for burning, wear or any other damage, and replace any damaged discs.
2. Check the clutch plates for face runout. Warped or damaged plates may cause the clutch to slip when engaged. Replace the plates if necessary.
3. Check the clutch springs for fatigue and replace them if necessary.
4. Check the clutch outer for stepped wear and replace it if necessary.

Unit: mm (in.)

Item	Assembly standard	Service limit
Clutch friction disc thickness	2.62-2.78(0.1031-0.1094)	2.4 (0.0945)
Clutch plate face runout	0.15 (0.0057)	0.25 (0.0098)
Clutch spring	Free length	37.8 (1.4882)
	Tension	23.3/12.75-14.25kg (0.9173/28.12-31.42 lbs)
		23.3/12.5kg (0.9173/27.56 lbs)

#### Assembly

1. Install the 20 mm thrust washer and starter shaft to the main shaft.
2. Install the clutch outer. Install the 20 mm splined washer to the main shaft and rotate the shaft until the washer meshes with the shaft.

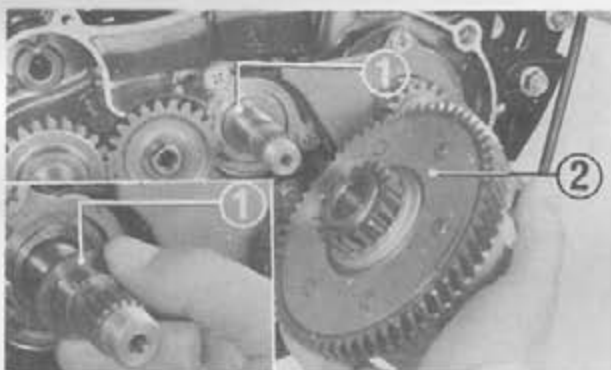


Fig. 3-30 (1) Clutch outer  
(2) 20 mm thrust washer

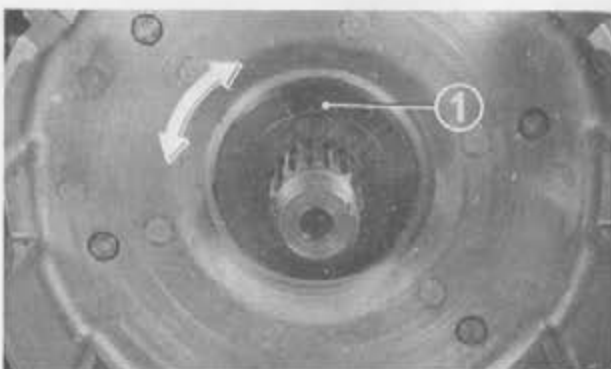


Fig. 3-31 (1) 20 mm splined washer

3. Install the clutch center and 16 mm lock washer and tighten the lock nut to the specified torque. Bend the locking lug of the lock washer against a flat on the lock nut. **Tightening torque: 4.0–4.5 kg-m (28.9–32.5 lb-ft)**

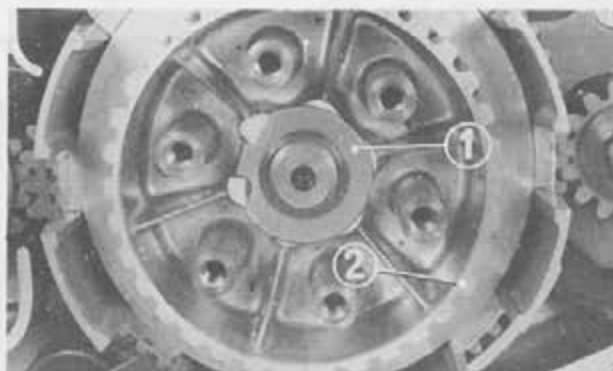


Fig. 3-32 (1) 16 mm lock washer  
(2) Clutch center

4. Install the six friction discs and five clutch plates on the clutch center (alternating the friction discs and clutch plates). The friction discs must be installed with the grooves facing in the direction shown in Fig. 3-33.

STAGGER FRICTION PLATE CUTOUTS  
ALTERNATE CUTOUTS FRONT/BACK  
STEEL PLATES FLAT-SIDE-BACK

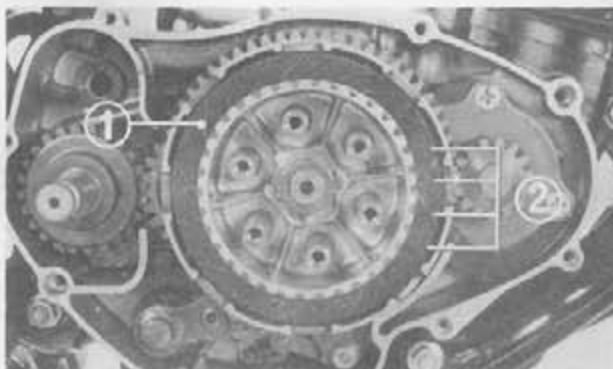


Fig. 3-33 (1) Clutch friction disc  
(2) Groove

5. Install the 12.5 mm thrust washer, thrust needle bearing and clutch lifter rod to the clutch pressure plate.

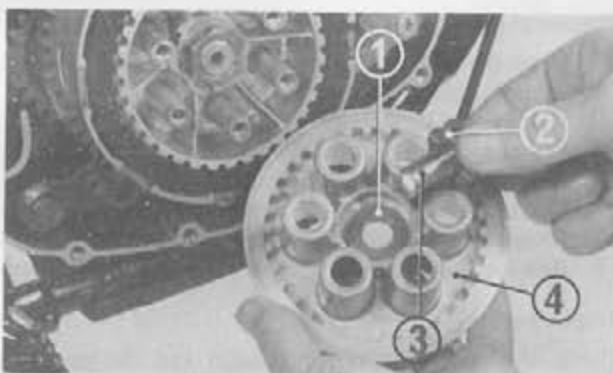


Fig. 3-34 (1) 12.5 mm thrust washer  
(2) Thrust needle bearing  
(3) Clutch lifter rod  
(4) Clutch pressure plate

6. With the groove in the clutch lifter rod faced in direction (A) in Fig. 3-35, install the right crankcase cover. Insert the clutch lever and turn it clockwise to fit the tip into the groove in the clutch lifter rod.

RAISED DIMPLE  
ALIGNED  
W/ BENT  
LOCKWASHER  
TAB



Fig. 3-35 (1) Clutch lifter rod

## 6. KICK STARTER

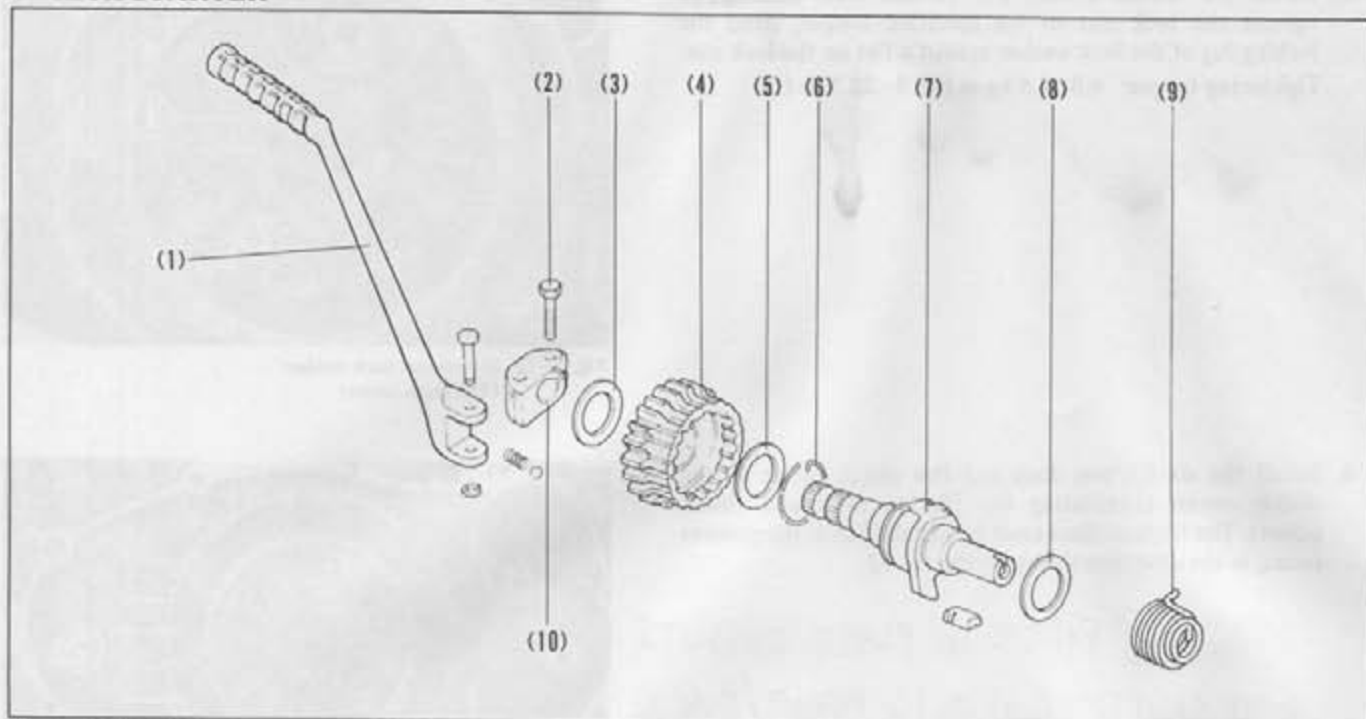


Fig. 3-36 (1) Kick starter arm (4) Starter pinion (24 teeth) (7) Starter shaft (10) Kick arm joint  
 (2) 8 x 25 bolt (hex.) (5) 22 mm thrust washer (8) 22 mm thrust washer  
 (3) 17 mm thrust washer (6) Starter pawl spring (9) Starter return spring

## Disassembly

1. Drain the transmission oil from the crankcase. (See page 2).
2. Remove the brake pedal pivot.
3. Remove the kick starter pedal.
4. Disconnect the clutch cable from the clutch lever.
5. Remove the right crankcase cover (See page 23).
6. Remove the 17 mm thrust washer and starter pinion.
7. Disassemble the right and left crankcase (See page 32).
8. Remove the starter spring and the starter shaft assembly.

## Inspection

Check the ratchet pawl for damage and the pawl spring for fatigue.



Fig. 3-37 (1) Starter pinion  
 (2) 17 mm thrust washer

## Assembly

\* To reassemble the kick starter, reverse the disassembly procedure. Pay attention to the following points:

1. Install the kick starter so that the mark on the starter shaft aligns with that on the starter.

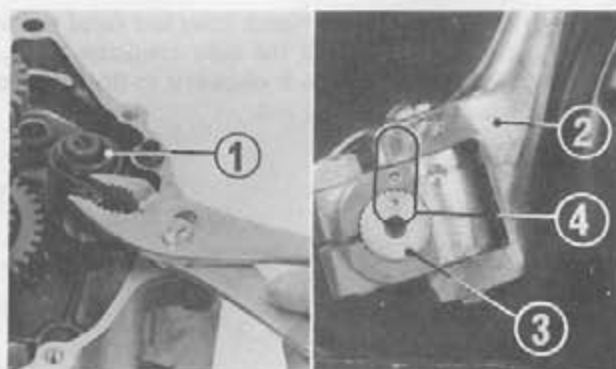


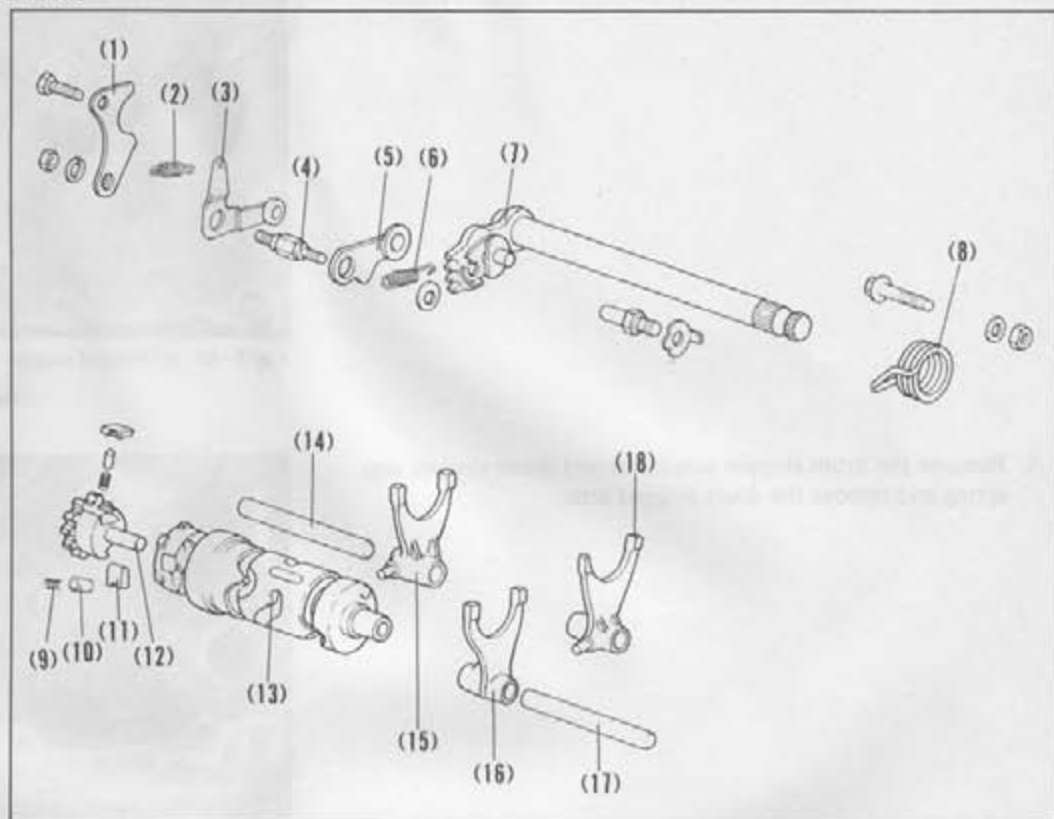
Fig. 3-38 (1) Starter spring (2) Kick starter (3) Starter shaft (4) Punch marks



## 7. GEARSHIFT MECHANISM

Fig. 3-39

- (1) Plate guide
- (2) Neutral stopper spring
- (3) Neutral stopper arm
- (4) Drum stopper arm collar
- (5) Drum stopper arm
- (6) Shift drum stopper arm spring
- (7) Gear shift spindle
- (8) Gear shift return spring
- (9) Pawl plunger spring
- (10) Pawl plunger
- (11) Ratchet pawl B
- (12) Drum shifter
- (13) Gear shift drum
- (14) Gear shift fork guide shaft
- (15) Right gear shift fork
- (16) Center gear shift fork
- (17) Gear shift fork guide shaft
- (18) Left gear shift fork



## Disassembly

1. Remove the clutch. (See page 23)
2. Remove the gear change pedal and gearshift spindle.

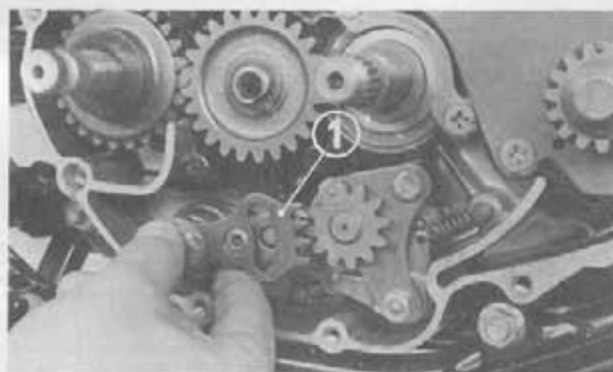


Fig. 3-40 (1) Gearshift spindle

3. Remove the 6 x 12 mm bolt and 6 mm nut and remove the plate guide. Then remove the drum shifter while holding the two ratchet pawls.

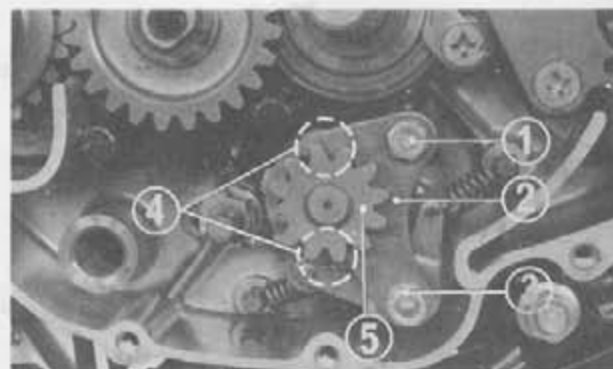


Fig. 3-41 (1) 6 x 12 mm bolt (2) Plate guide (3) 6 mm nut (4) Ratchet pawl (5) Drum shifter

4. Remove the neutral stopper spring and neutral stopper.

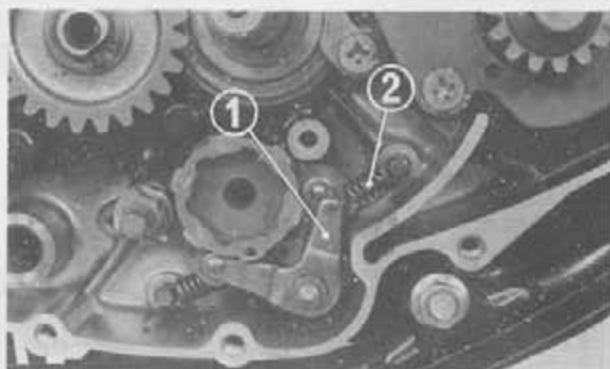


Fig. 3-42 (1) Neutral stopper (2) Neutral stopper spring

5. Remove the drum stopper arm collar and drum stopper arm spring and remove the drum stopper arm.

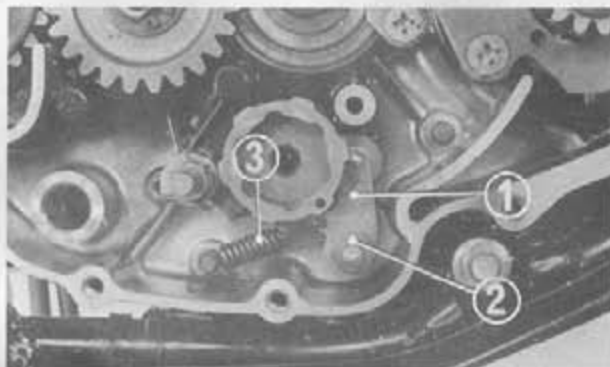


Fig. 3-43 (1) Drum stopper arm  
(2) Drum stopper arm collar  
(3) Drum stopper arm spring

6. Disassemble the right and left crankcases. (See page 32)  
Remove the two gearshift fork shafts, three gearshift forks and gearshift drum.

#### Inspection

1. Check the condition of the gearshift fork finger.
2. Measure the gearshift fork guide shaft O.D.
3. Measure the gearshift fork I.D.

Unit: mm (in.)

Item	Assembly standard	Service limit
Shift fork guide shaft OD	9.972-9.987 (0.3926-0.3932)	9.92 (0.3906)
Right, Center, left gearshift fork ID	10.000-10.018 (0.3937-0.3944)	10.05 (0.3957)
Shift fork finger thickness	4.90-4.93 (0.1929-0.1941)	4.5 (0.1772)

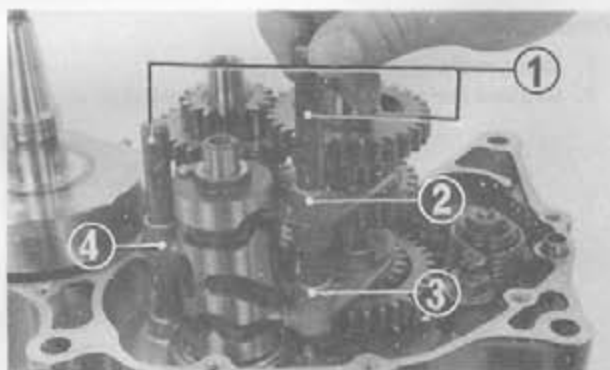


Fig. 3-44 (1) Gearshift fork shaft (2) Left gearshift fork  
(3) Right gearshift fork (4) Center gearshift fork

4. Check for sticking or bent gearshift forks.
5. Check for broken, worn, or bent gearshift spindle spring.
6. Check the gearshift spindle for bend.
7. Check the return spring pin for wear or looseness.
8. Check the pawl plunger for wear.
9. Check the ratchet pawl for wear.
10. Check the return spring for weakness.

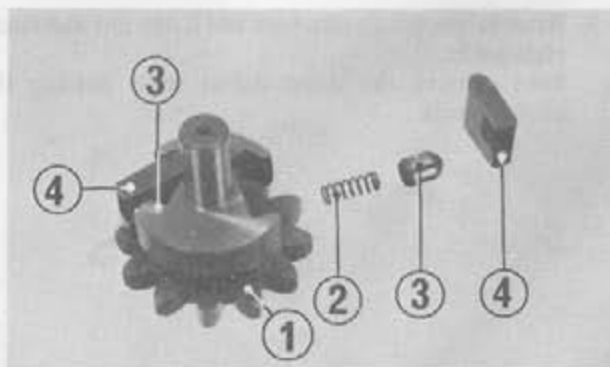


Fig. 3-45 (1) Drum shifter (2) Pawl plunger spring  
(3) Pawl plunger (4) Ratchet pawl

**Reassembly**

\* To reassemble, reverse the disassembly procedures. Pay attention to the following points:

1. First install the gearshift drum stopper arm spring to the drum stopper arm. Then, with one side of the drum stopper arm collar having longer threaded part down; install the drum stopper arm, and stopper arm washer. Tighten the drum stopper arm collar while holding it with screwdriver.

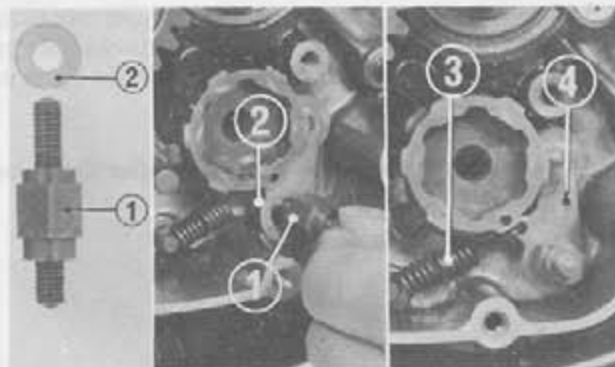


Fig. 3-46 (1) Drum stopper arm collar  
(2) Drum stopper arm washer  
(3) Drum stopper arm spring  
(4) Drum stopper arm

2. Neutral stopper arm installation

First install the neutral stopper arm spring. Then install the stopper arm to the drum stopper arm collar using a screwdriver.



Fig. 3-47 (1) Neutral stopper arm  
(2) Neutral stopper arm spring

3. Install the ratchet pawl to the drum shifter as shown in Fig. 3-48. Check the ratchet pawl for proper operation and then install it to the drum.

**NOTE:**

Install the ratchet pawl with wider part facing the inside, as shown in Fig. 3-48.

Ensure that the ratchet pawls are installed correctly.

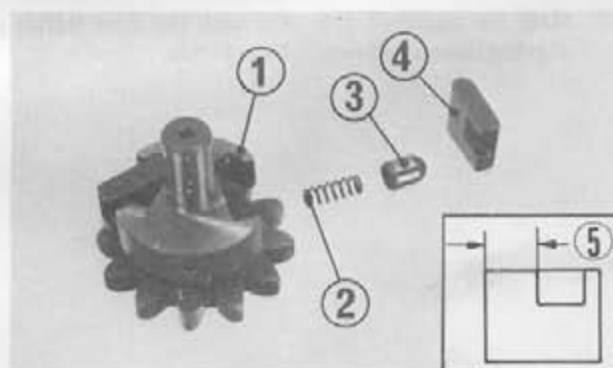


Fig. 3-48 (1) Drum shifter  
(2) Pawl plunger spring  
(3) Pawl plunger  
(4) Ratchet pawl  
(5) Wider part facing

4. After assembling the drum shifter, install it in place with the punch mark facing in the direction shown in Fig. 3-49.

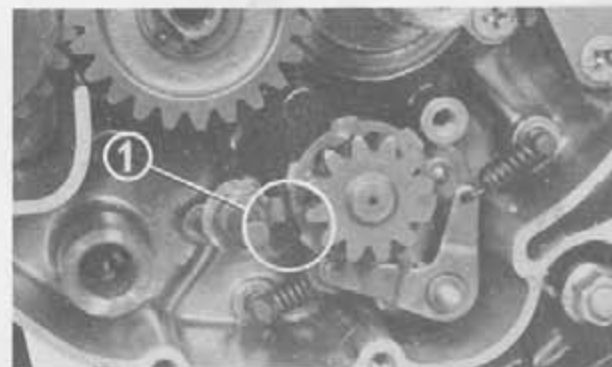


Fig. 3-49 (1) Punch mark on drum shifter

5. Install the drum plate to the drum stopper arm collar. Then insert the pawl of the plate into between the drum and drum shifter and tighten the plate with the 6 mm pan head screw and 6 mm nut.

**NOTE:**

Flare out the 6 mm pan head screw after tightening them.



Fig. 3-50 (1) Drum plate  
(2) Drum shifter  
(3) Drum stopper arm collar

6. Install the gearshift return spring to the gearshift spindle as shown in Fig. 3-51.

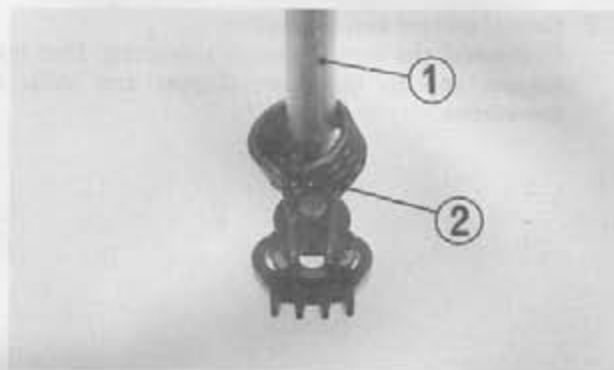


Fig. 3-51 (1) Gearshift spindle  
(2) Gearshift return spring

7. Mesh the gearshift arm gear with the drum shifter gear by aligning them as shown in Fig. 3-52.

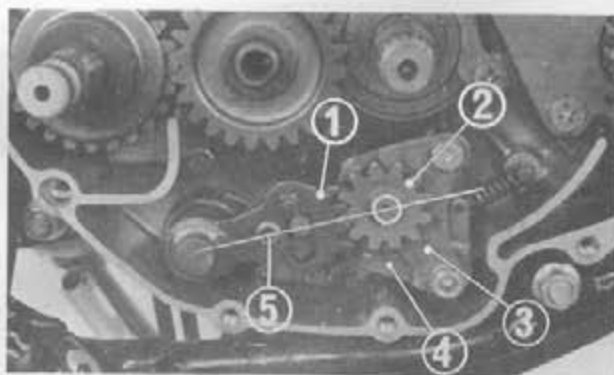


Fig. 3-52 (1) Gearshift arm (2) Drum shifter (3) Drum plate  
(4) Neutral stopper arm (5) Stopper pin



**Reassembly**

\* To reassemble, reverse the disassembly procedures. Pay attention to the following points:

1. First install the gearshift drum stopper arm spring to the drum stopper arm. Then, with one side of the drum stopper arm collar having longer threaded part down; install the drum stopper arm, and stopper arm washer. Tighten the drum stopper arm collar while holding it with screwdriver.

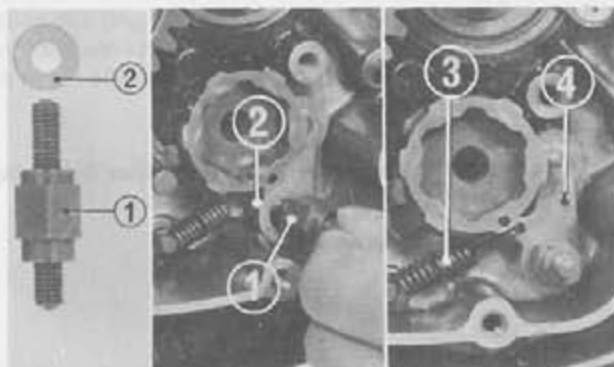


Fig. 3-46 (1) Drum stopper arm collar  
(2) Drum stopper arm washer  
(3) Drum stopper arm spring  
(4) Drum stopper arm

2. Neutral stopper arm installation

First install the neutral stopper arm spring. Then install the stopper arm to the drum stopper arm collar using a screwdriver.



Fig. 3-47 (1) Neutral stopper arm  
(2) Neutral stopper arm spring

3. Install the ratchet pawl to the drum shifter as shown in Fig. 3-48. Check the ratchet pawl for proper operation and then install it to the drum.

**NOTE:**

Install the ratchet pawl with wider part facing the inside, as shown in Fig. 3-48.

Ensure that the ratchet pawls are installed correctly.

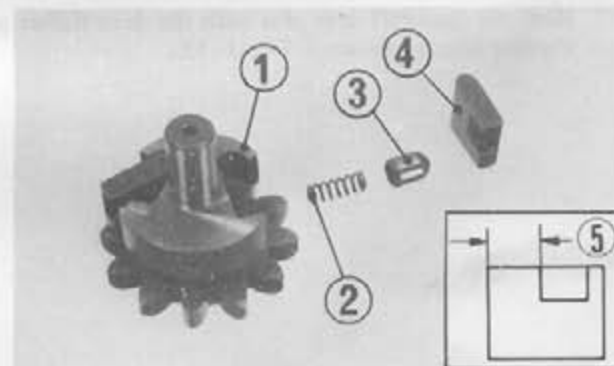


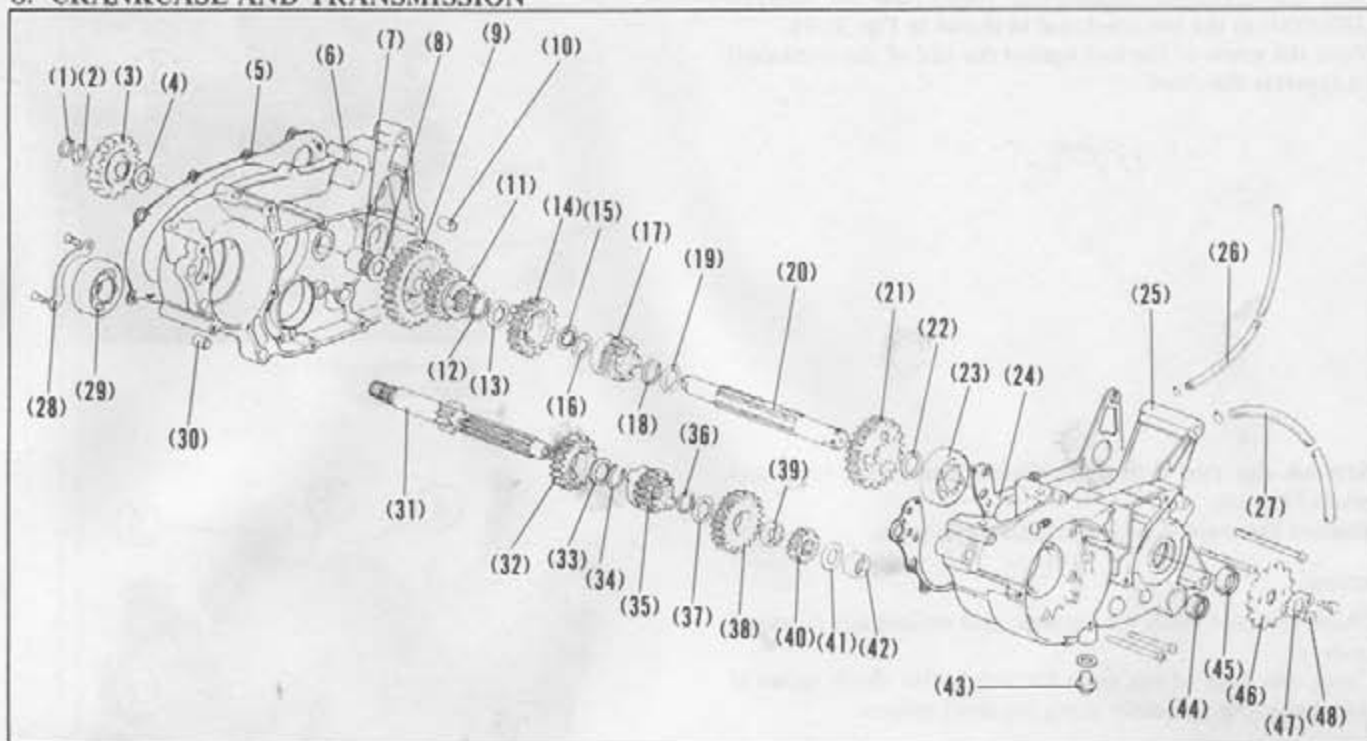
Fig. 3-48 (1) Drum shifter  
(2) Pawl plunger spring  
(3) Pawl plunger  
(4) Ratchet pawl  
(5) Wider part facing

4. After assembling the drum shifter, install it in place with the punch mark facing in the direction shown in Fig. 3-49.



Fig. 3-49 (1) Punch mark on drum shifter

## 8. CRANKCASE AND TRANSMISSION



- Fig. 3-53
- |  |  |                                  |   |
|--|--|----------------------------------|---|
| (1) 15 mm set ring                     | (13) 22 mm spline washer               | (25) Left crankcase              | (37) 20 mm spline washer                |
| (2) 16 mm thrust washer                | (14) Countershaft third gear (26T)     | (26) 4.5 x 6.5 x 750 tube        | (38) Main shaft top gear (27T)          |
| (3) Starter idle gear                  | (15) Lock washer                       | (27) 3.5 x 300 fuel tube         | (39) Main shaft top gear spline collar  |
| (4) 16.5 mm thrust washer              | (16) 22 mm spline washer               | (28) Bearing set plate B         | (40) Main shaft second gear (16T)       |
| (5) Right crankcase cover gasket       | (17) Countershaft top gear (20T)       | (29) 6304Z radial ball bearing   | (41) 16.5 mm thrust washer              |
| (6) Right crankcase                    | (18) Countershaft second gear set ring | (30) 10 x 16 dowel pin A         | (42) 15 x 22 x 12 needle roller bearing |
| (7) 1612 needle roller bearing         | (19) Countershaft third spline washer  | (31) Main shaft (12T)            | (43) 12 mm drain plug                   |
| (8) 16.5 mm thrust washer              | (20) Countershaft                      | (32) Main shaft forth gear (24T) | (44) 14 x 28 x 7 oil seal               |
| (9) Countershaft low speed gear (36T)  | (21) Countershaft second gear (30T)    | (33) 20 mm thrust washer         | (45) 20 x 32 x 6 oil seal               |
| (10) 10 x 16 dowel pin A               | (22) 30 mm thrust washer               | (34) 20 mm set ring              | (46) Drive sprocket (15T)               |
| (11) Countershaft forth gear (23T)     | (23) 6304 radial ball bearing          | (35) Main shaft third gear (20T) | (47) Fixing plate B                     |
| (12) Countershaft second gear set ring | (24) Crankcase gasket                  | (36) 20 mm set ring              | (48) Drive sprocket fixing bolt         |

## Disassembly

1. Remove the engine. (See page 15)
2. Remove the cylinder head, cylinder and piston. (See page 17)
3. Remove the clutch. (See page 23)
4. Remove the kick starter. (See page 27)
5. Remove the stator base and A.C. generator.
6. Remove the drive sprocket.
7. Remove the gearshift spindle, neutral stopper and gearshift drum stopper.
8. Remove the 15 mm snap ring and remove the starter idle gear.
9. Remove the 10 left crankcase screws.

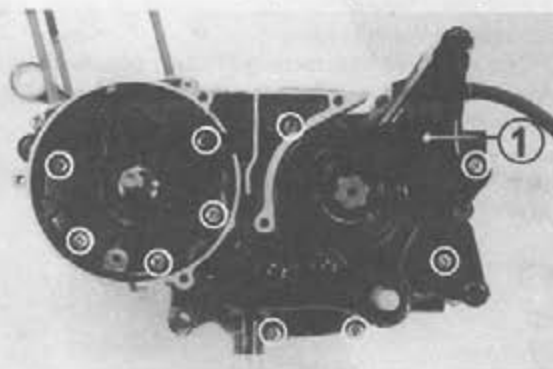


Fig. 3-54 (1) Left crankcase

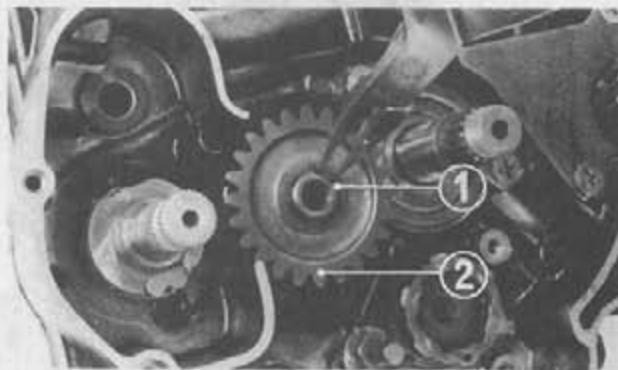


Fig. 3-55 (1) 15 mm snap ring (2) Starter idle gear

10. Bolt the crankcase disassembly tool (Tool No. 07937-3600000) to the left crankcase as shown in Fig. 3-56. Turn the screw of the tool against the end of the crankshaft to separate the cases.

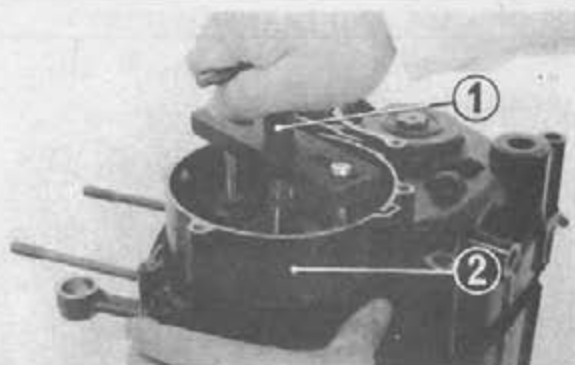


Fig. 3-56 (1) Crankcase disassembly tool  
(2) Left crankcase

11. Remove the two shift fork shafts, three shift forks and gearshift drum.
12. Remove the main shaft and countershaft gears.

#### Inspection

1. Check the gear teeth for damage, and replace any damaged gears.
2. Check the dogs of the gears for wear. Also check to see if the gears move smoothly along the shaft splines.

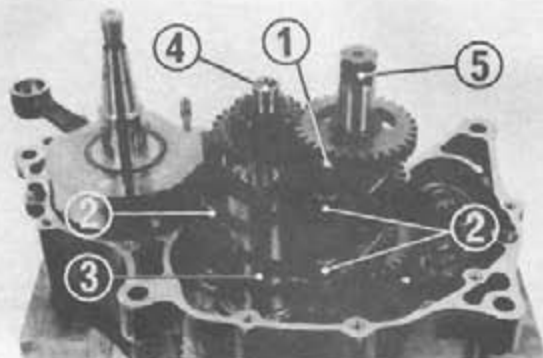


Fig. 3-57 (1) Shift fork shaft (4) Main shaft  
(2) Shift fork (5) Countershaft  
(3) Gearshift drum

#### Assembly

1. When installing the right and left crankcases, thoroughly clean the crankshaft chamber first.
2. Install the spline collar and countershaft while aligning the oil holes in the two parts.
3. When installing the main shaft and countershaft, apply a coat of oil to the bearing attaching surfaces. Also fill the shafts with oil.

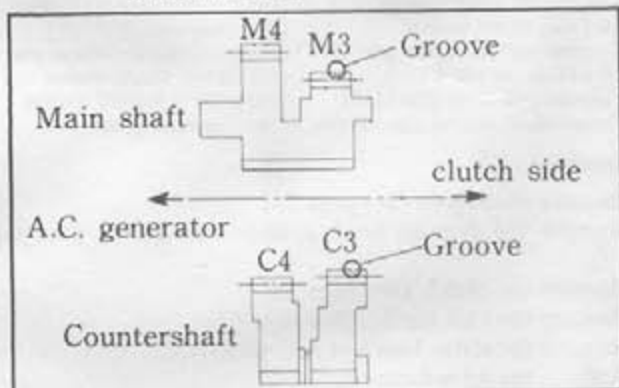


Fig. 3-58

4. The main shaft and countershaft 3rd gears have grooves cut in their peripheries. Install the main shaft and countershaft 3rd and 4th gears as shown in Fig. 3-58.
5. Fill the void between the double lips of the oil seal with gasoline-resistant grease. Check the lips for burr.

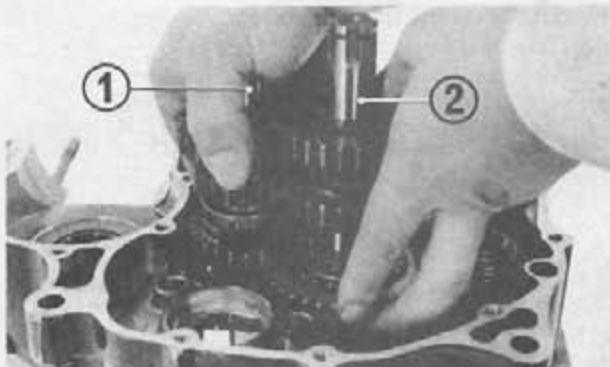


Fig. 3-59 (1) Main shaft (2) Countershaft

## 9. CRANKSHAFT AND CONNECTING ROD

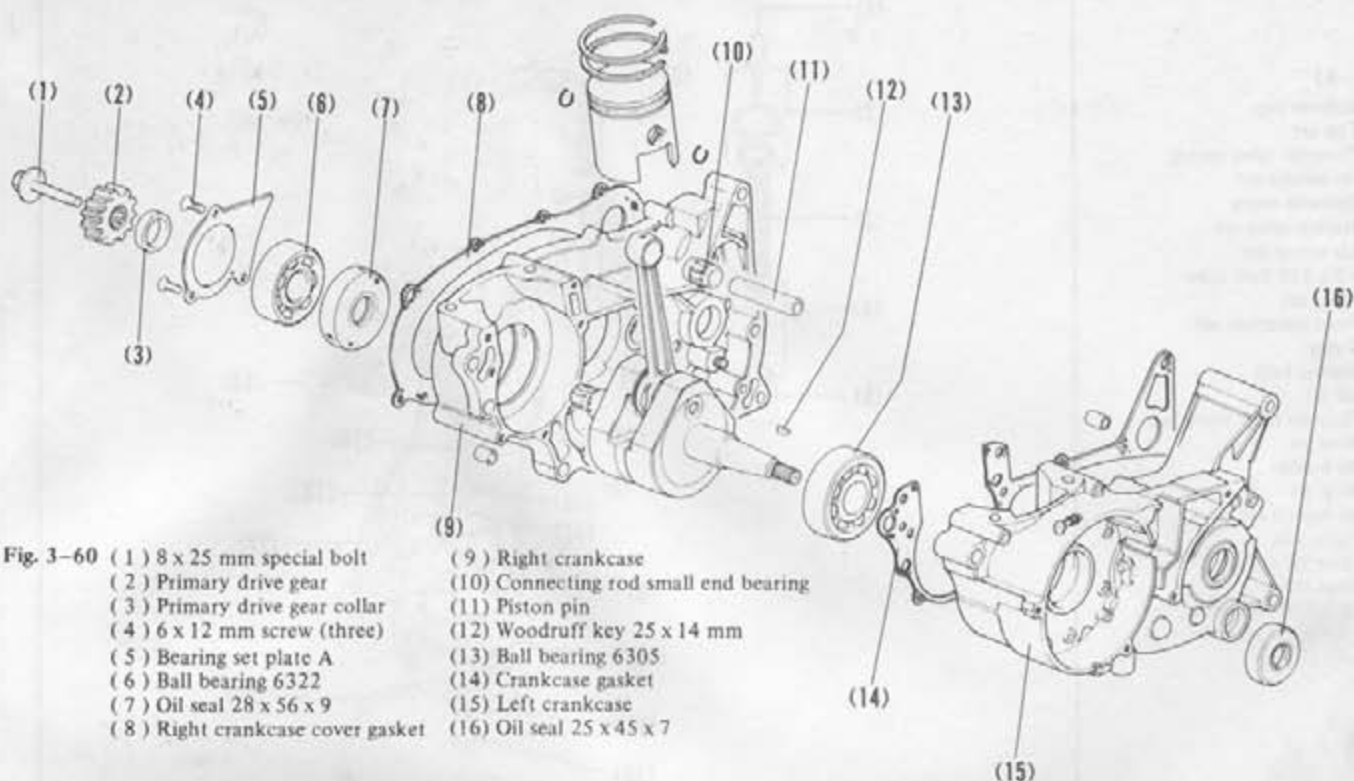


Fig. 3-60 (1) 8 x 25 mm special bolt  
(2) Primary drive gear  
(3) Primary drive gear collar  
(4) 6 x 12 mm screw (three)  
(5) Bearing set plate A  
(6) Ball bearing 6322  
(7) Oil seal 28 x 56 x 9  
(8) Right crankcase cover gasket

(9) Right crankcase  
(10) Connecting rod small end bearing  
(11) Piston pin  
(12) Woodruff key 25 x 14 mm  
(13) Ball bearing 6305  
(14) Crankcase gasket  
(15) Left crankcase  
(16) Oil seal 25 x 45 x 7

## Disassembly

1. Disassemble the crankcase. (See page 32)

## NOTE:

Before disassembling the crankcase, remove the primary drive gear by using the drive gear holder (Tool No. 07924-3600000).

2. Remove the crankshaft assembly from the crankcase.

## Inspection

Before disassembling, hold both ends of the crankshaft and check for looseness. If the crankshaft rattles, check to see if the rattle is caused by loose bearings or excessive clearance between the crankcase and bearing outers.

## Assembly

The connecting rod small end bearing is selective-fitted with the connecting rod small end. The connecting rod small end is identified by the number of notches.

Unit: mm (in.)

Item	Assembly standard	Service limit
Connecting rod small end bearing I.D.	15.994-16.000 (0.6299-0.6298)	-
Connecting rod big end axial clearance	0.15-0.58 (0.0059-0.0228)	0.6 (0.0236)
Connecting rod big end radial clearance	0.008-0.020 (0.0003-0.0008)	0.03 (0.0012)

For identification, see the table below:

Connecting rod small end I.D. identification	Small end bearing Part No.
One notch (20.01 - 20.014 mm)	91007-373-004 91007-373-006
Two notches (20.006-20.01 mm)	91008-373-004 91008-373-006
Three notches (20.002-20.006 mm)	91009-373-004 91009-373-006

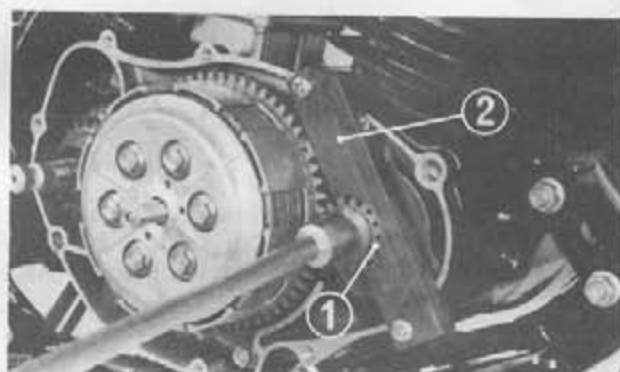


Fig. 3-61 (1) Primary drive gear (NORMAL RH THREAD)  
(2) Drive gear holder

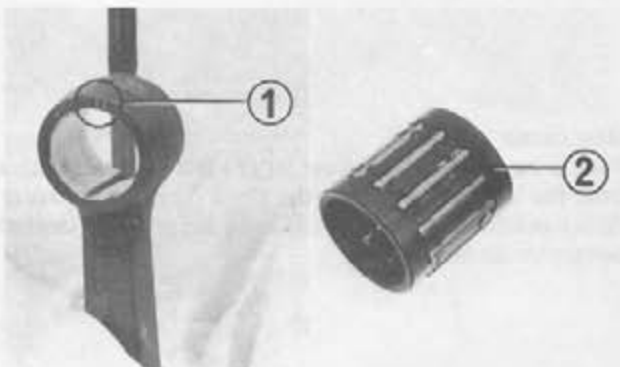


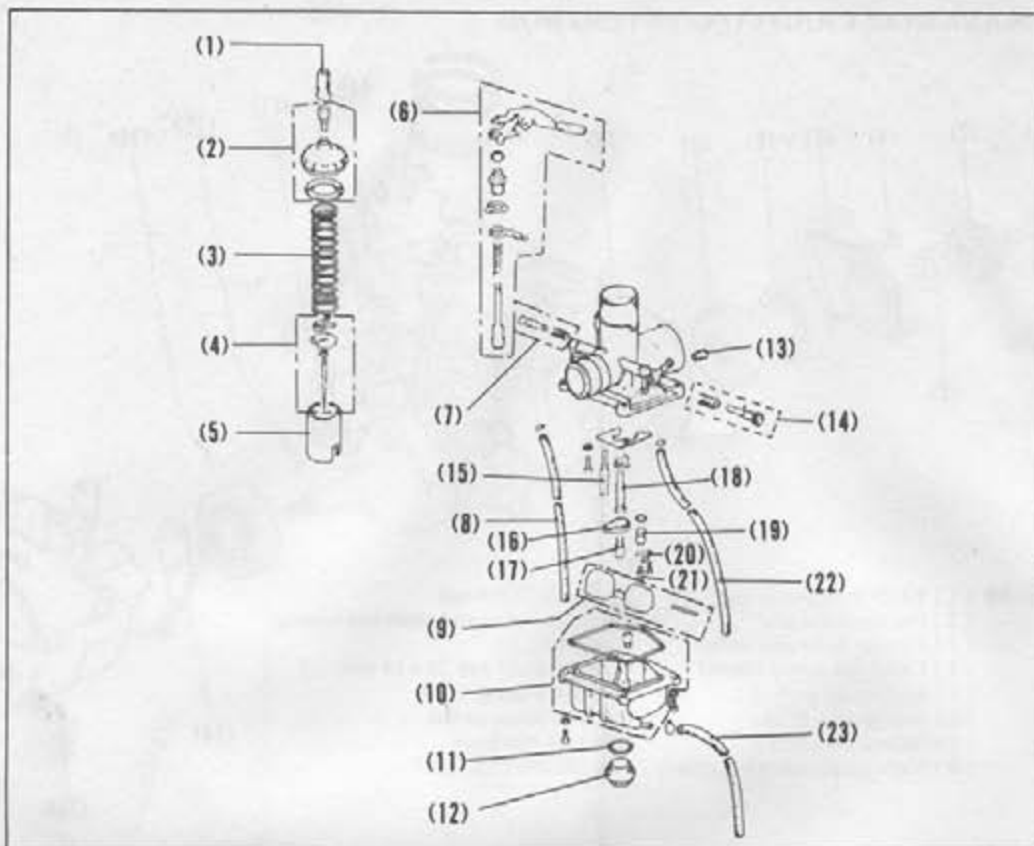
Fig. 3-62 (1) Connecting rod small end I.D. identification mark  
(2) Small end bearing



## 10. CARBURETOR

Fig. 3-63

- (1) Rubber cap
- (2) Top set
- (3) Throttle valve spring
- (4) Jet needle set
- (5) Throttle valve
- (6) Starter valve set
- (7) Air screw set
- (8) 3.5 x 330 fuel tube
- (9) Float set
- (10) Float chamber set
- (11) O-ring
- (12) Sealing bolt
- (13) Air jet
- (14) Throttle stop screw set
- (15) Slow jet
- (16) Jet holder
- (17) Main jet
- (18) Jet needle set
- (19) Valve seat
- (20) Valve set plate
- (21) Float valve
- (22) 3.5 x 390 fuel tube
- (23) 5.5 x 300 fuel tube



## Construction

## 1. Starting circuit

When the starter valve (1) is opened, fuel is metered by the starter jet (2) and is mixed with air passing from the passages (3) and (4). Then, the mixture is drawn into the cylinder through the hole (5).

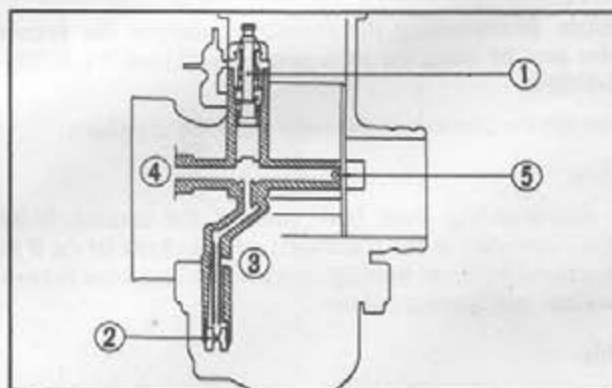


Fig. 3-64 (1) Starter valve (2) Starter jet

## 2. Slow circuit

Fuel is metered by the slow jet (6) and is mixed with air from the slow air passage at the bleed. Then, the mixture is discharged from the bypass (8) and pilot outlet (9) into the carburetor air horn.

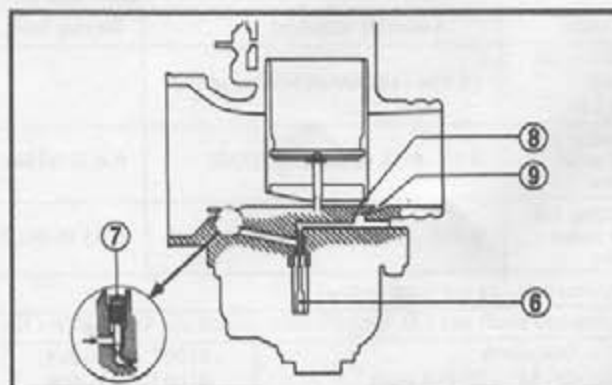


Fig. 3-65 (6) Slow jet (7) Air screw (8) Bypass (9) Pilot outlet

## 3. Main circuit

Fuel metered by the main jet (10) flows through the passage between the jet needle (11) and needle jet (12) and is then mixed with air from air jet (13) at the outlet. Then the mixture is squirted from the nozzle tip. The jet holder (14) and the main jet (10) are secured together.

## 4. Float chamber

The float chamber maintains a constant fuel level.

A spring built into the float valve (16) prevents the float from moving abnormally to maintain a constant fuel level and to prevent wear on float valve.

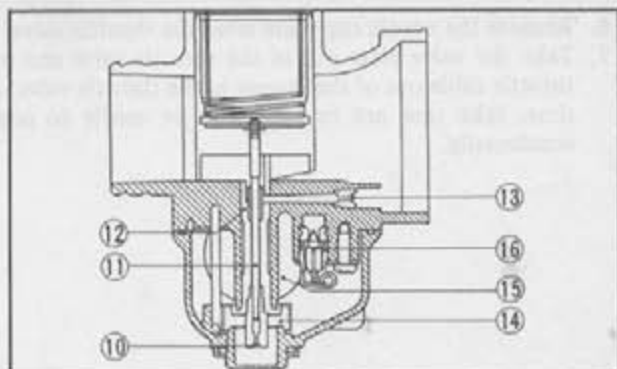


Fig. 3-66 (10) Main jet (14) Jet holder  
(11) Jet needle (15) Float  
(12) Needle jet (16) Float valve  
(13) Air jet

## 5. Baffle plate

The baffle plate installed in the float chamber inhibits change of fuel level and bubbling caused by vibration.

## Removal

1. Clean all around the carburetor.
2. With the fuel valve lever placed in "OFF" position, disconnect the fuel tube from the carburetor.



Fig. 3-67 (1) Fuel cock lever

## 3. Remove the inlet pipe tightening bolt.

Then remove the connecting tube band and remove the carburetor and inlet pipe together from the cylinder and air cleaner connecting tube.

- \* After removing, plug the cylinder and air cleaner to prevent entry of dust and dirt.

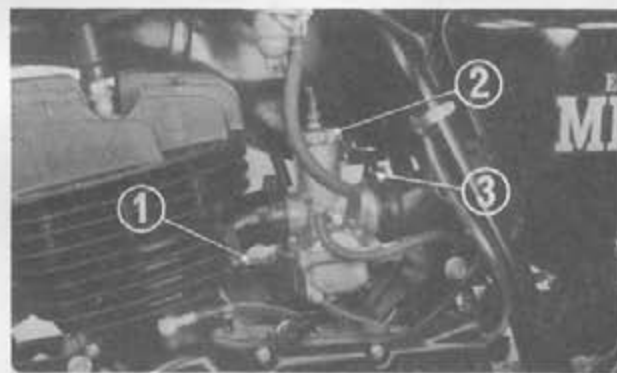


Fig. 3-68 (1) Inlet pipe tightening bolts  
(2) Carburetor top  
(3) Connecting tube band

## 4. Loosen the carburetor top and remove it together with the throttle valve.

- \* Put the throttle valve in a nylon bag or the like not to allow dust and dirt to come in contact with it.

## 5. Remove the insulator band and remove the carburetor from the inlet pipe.



Fig. 3-69 (1) Carburetor top (2) Throttle valve

6. Remove the needle clip plate from the throttle valve.
7. Take the valve plate out of the throttle valve and pull the throttle cable out of the groove in the throttle valve. At this time, take care not to allow the jet needle to come out accidentally.

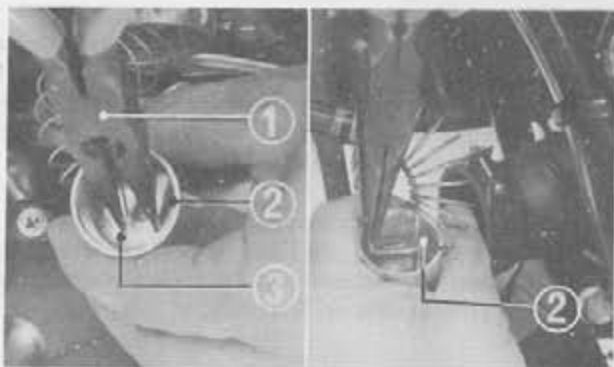


Fig. 3-70 (1) Radio punch  
(2) Needle clip plate  
(3) Needle clip

8. Remove the rubber cap and disconnect the throttle cable from the carburetor top.

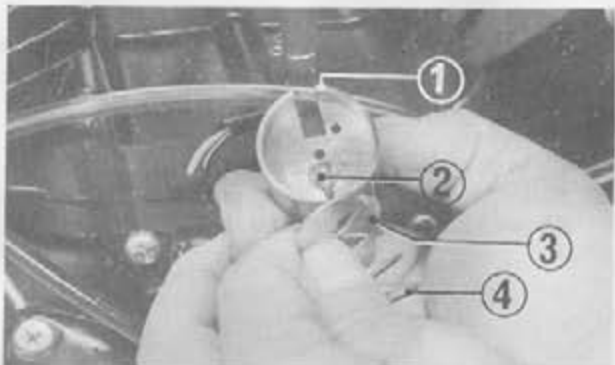


Fig. 3-71 (1) Throttle valve (3) Clip plate  
(2) Throttle cable end (4) Carburetor spring

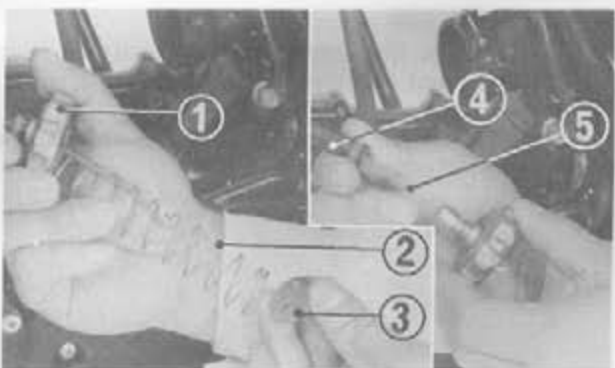


Fig. 3-72 (1) Carburetor top (4) Rubber cap  
(2) Spring (5) Throttle cable  
(3) Clip plate

#### 9. Carburetor starter lever removal

Straighten the locking tab of the lock washer and remove the 8 mm nut (1). Pull the starter lever and remove the starter lever from the starter valve. Then the starter valve can be removed from the carburetor body.

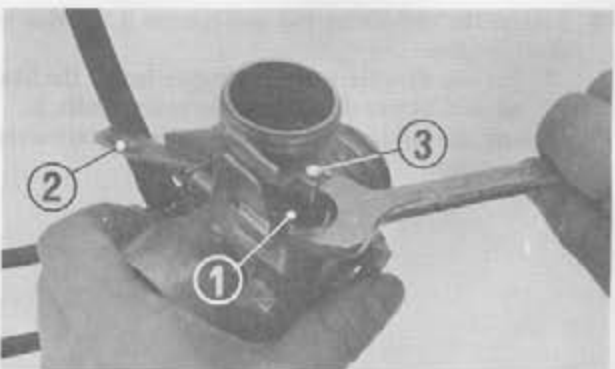


Fig. 3-73 (1) 8 mm nut  
(2) Starter lever  
(3) Starter valve

- \* Carefully handle the jets since they may be scored or scratched easily.
- 10. Remove the drain bolt and drain the fuel from the carburetor.

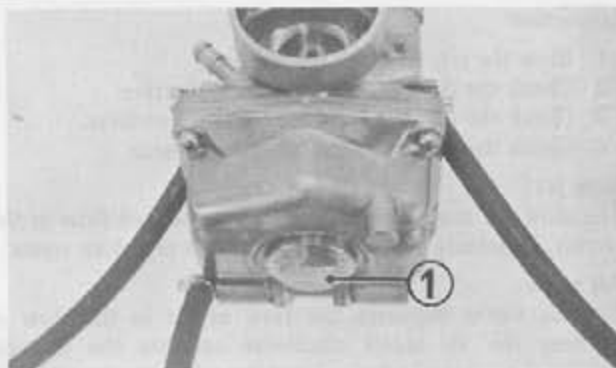


Fig. 3-74 (1) Drain bolt

- 11. Loosen the four screws and remove the float chamber body.
- 12. Remove the main jet by removing the float chamber body drain bolt.

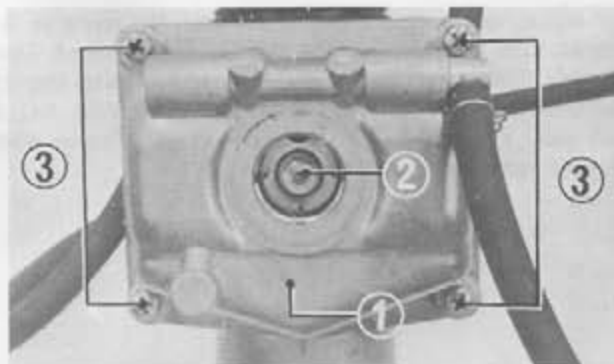


Fig. 3-75 (1) Float chamber body (2) Main jet

- 13. Remove the float pin and remove the float.
- 14. Loosen the screw (5) and remove the valve seat set plate then pull out the valve seat.

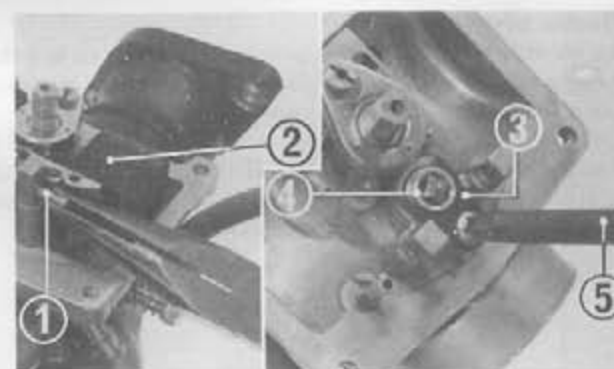


Fig. 3-76 (1) Float pin (2) Float (3) Valve seat set plate (4) Valve seat (5) Plus screwdriver

- 15. Remove each part as shown in Fig. 3-78.

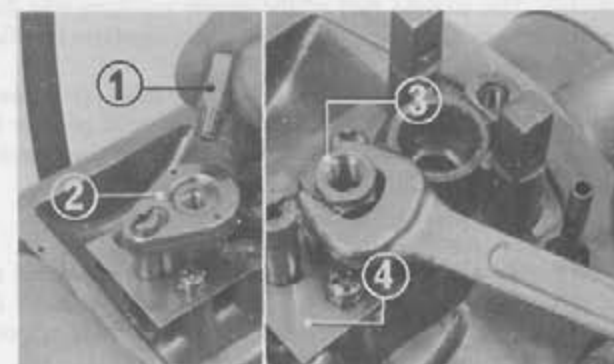


Fig. 3-77 (1) Main jet (2) Jet holder (3) Jet needle (4) Baffle plate



**Inspection**

1. Blow the jets to check for clogging.
2. Check the float valve for proper operation.
3. Check the throttle valve for breakage or wear.
4. Check the jet needle for breakage or wear.

**Slow jet**

The slow jet is a means of regulating the fuel flow in the slow circuit. Its setting is based on adjustment of the air screw.

**Air screw**

The air screw regulates the flow of air in the slow circuit. Turning the air screw clockwise enriches the mixture and turning it counterclockwise leans the mixture.

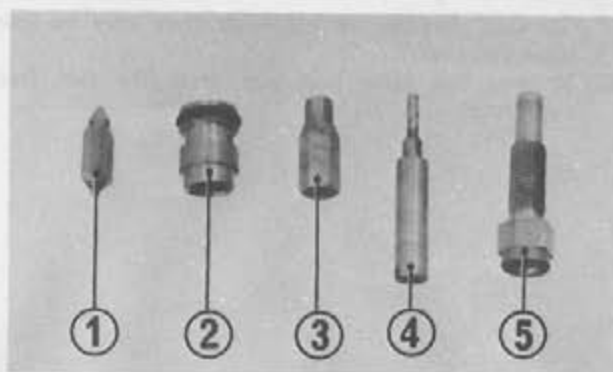


Fig. 3-78 (1) Float valve (2) Valve seat (3) Main jet (4) Slow jet (5) Jet needle

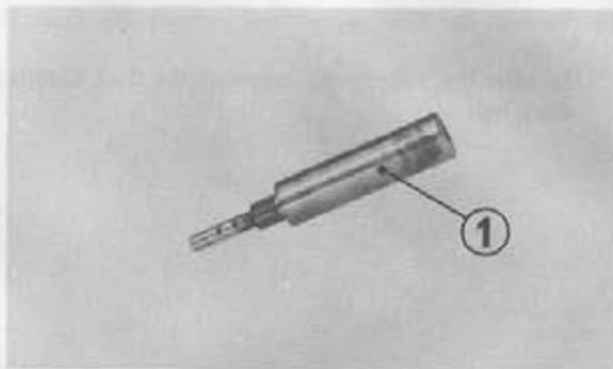


Fig. 3-79 (1) Slow jet

**Throttle valve cutaway**

The throttle valve cutaway regulates the flow of air at a throttle opening of 1/8-1/4. The higher the value of the marking, the leaner the mixture, and vice versa.

Road-test the motorcycle with 1/4 throttle. Check the spark plug if any unsmoothness is felt. If the plug is wet, change the throttle valve for one with a larger number and if overheated, use a throttle valve with a smaller number.

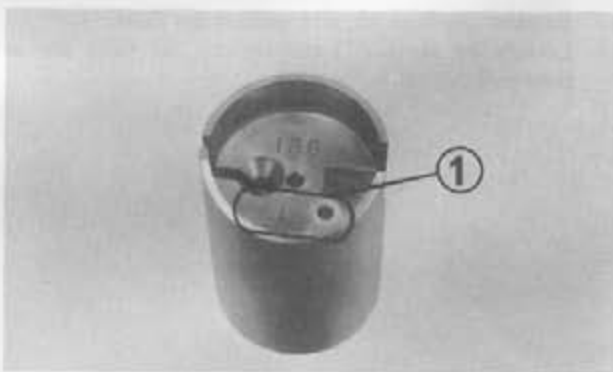


Fig. 3-80 (1) Cutaway number

**Jet needle**

The jet needle regulates the flow of fuel at a throttle opening of 1/4-1/2. The straight part of the needle regulates fuel flow at low throttle opening, and the tapered part regulates fuel flow at mid-throttle.

Five grooves are cut into the needle head to allow for adjustment of the needle. If throttle response is poor or if the engine will not maintain constant rpm, change the position of the needle. Before adjusting, set the main jet.

**Example:**

If the engine is running erratically with the jet needle set at the 3rd groove position, change to the 4th groove position. If the motorcycle jerks when accelerated or when running at a certain speed, change to a lower-numbered groove position.

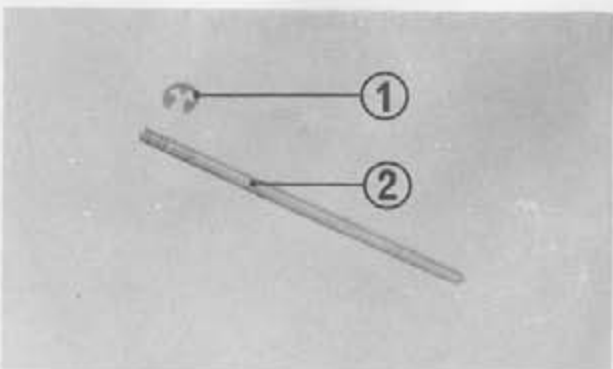


Fig. 3-81 (1) Straight (2) Tapered (3) Clip

**Main jet**

The main jet operates at 1/2 to full throttle and is important in regulating the flow of fuel from 3/4 to full throttle. Select a larger jet to obtain maximum speed.

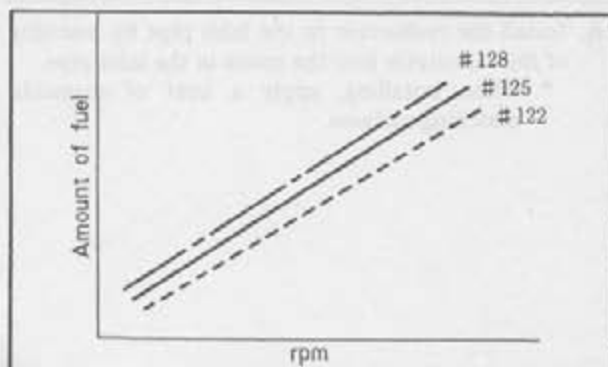


Fig. 3-82

**Reassembly**

- \* To reassemble, reverse the disassembly procedures. Pay attention to the following points:
- 1. When connecting the tubes, do not forget to install the clips.
- 2. Install the valve seat set plate correctly. Do not install it upside-down.

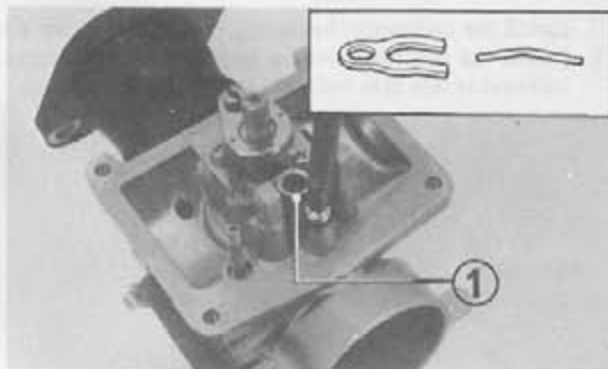
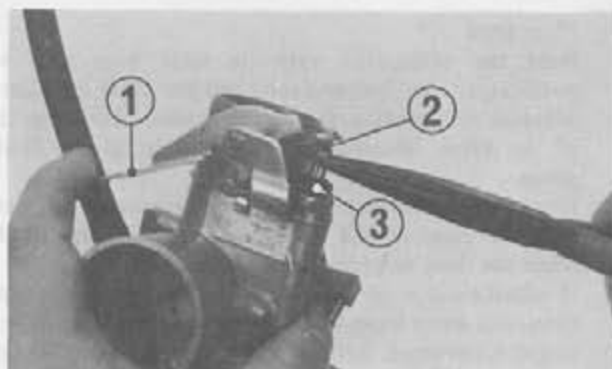


Fig. 3-83 (1) Valve seat set plate

3. Install the clip plate in the direction shown in Fig. 3-84.

Fig. 3-84 (1) Clip plate  
(2) Throttle valve spring  
(3) Carburetor top

4. After installing the starter lever to the starter valve, tighten the 8 mm nut (3) and bend the locking tab of the lock washer.
5. After installing, check the starter lever for proper operation.

Fig. 3-85 (1) Starter lever  
(2) Starter valve  
(3) Starter lever cap

6. Install the carburetor to the inlet pipe by inserting the tab of the carburetor into the recess in the inlet pipe.

\* When installing, apply a coat of soapsuds to the matching surfaces.



Fig. 3-86 (1) Inlet pipe (2) Recess in inlet pipe

7. Install the carburetor beginning on the air cleaner side.

8. Install the throttle valve by inserting the lug located on the carburetor side into the groove in the throttle valve.

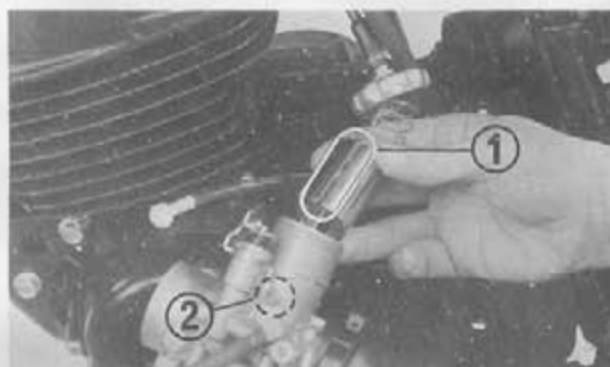


Fig. 3-87 (1) Groove in throttle valve  
(2) Lug located on carburetor side

9. Route the tubes as shown in Fig. 3-88.  
10. For servicing of the air cleaner see page

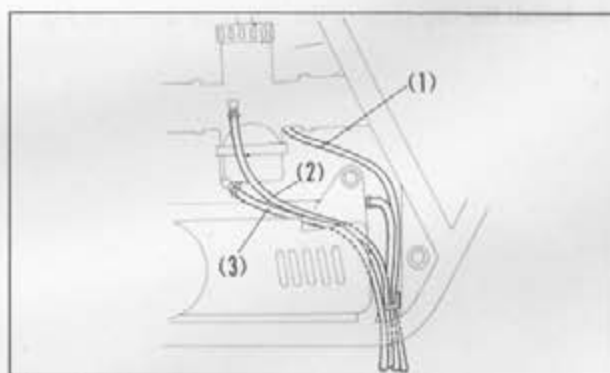


Fig. 3-88 (1) Right carburetor breather tube  
(2) Left carburetor breather tube  
(3) Carburetor overflow tube

#### 11. Float level

Hold the carburetor with its main bore in a vertical position, so the float arm tang will just close the float valve, without compressing the spring loaded plunger in the end of the valve. Measure the float height with a float level gauge.

Float height (distance between the carburetor body and the opposite edge of the float) should be **20 mm (0.787-in.)** when the float valve just closes.

If adjustment is needed, carefully bend the float arm tang toward or away from the float valve until the specified float height is obtained. Replace any damaged or leaking float.

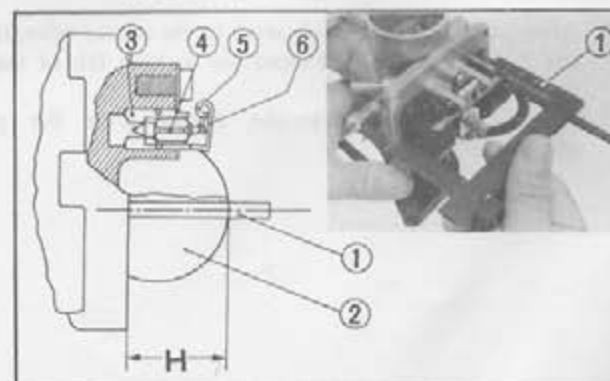


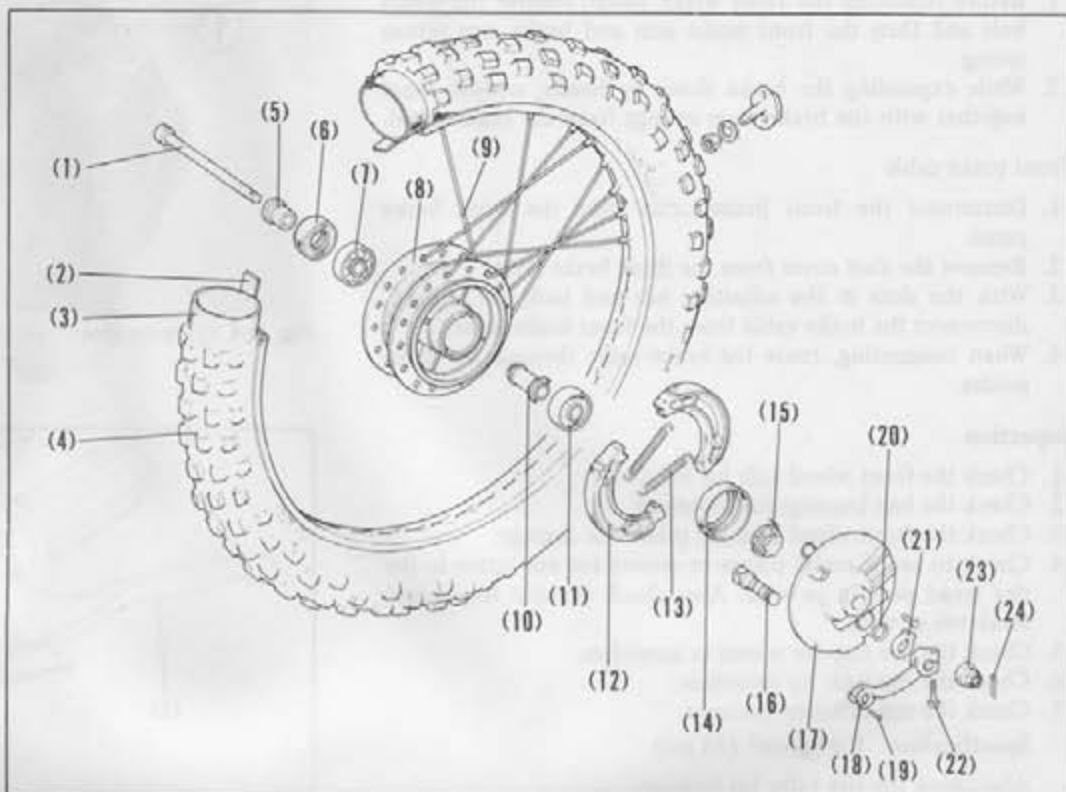
Fig. 3-89 (1) Float valve gauge (4) Float valve  
(2) Float (5) Float arm pin  
(3) Valve seat (6) Float arm tank

## IV. SERVICING THE FRAME

### 1. FRONT WHEEL AND FRONT BRAKE

Fig. 4-1

- (1) Front wheel axle
- (2) Tire flap
- (3) Front wheel tube (3.00-21)
- (4) Front wheel tire (3.00-21-4PR)
- (5) Front wheel side collar
- (6) 21 x 37 x 7 oil seal
- (7) 6301 radial ball bearing
- (8) Front wheel hub
- (9) Front spoke A
- (10) Front axle distance collar
- (11) 6301 radial ball bearing
- (12) Brake shoe (two)
- (13) Brake shoe spring (two)
- (14) 47 x 60 x 7 oil seal
- (15) Speedometer gear
- (16) Front brake cam
- (17) Front brake panel
- (18) Front brake arm
- (19) 2.0 x 20 mm cotter pin
- (20) Dust seal
- (21) Dust seal washer
- (22) 6 x 22 mm hex. head bolt
- (23) 12 mm castle nut
- (24) 3.0 mm cotter pin



#### Disassembly

1. Place a wooden block under the engine and raise the front wheel off the ground.
2. Disconnect the front brake cable from the brake arm.
3. Pull out the cotter pin and remove the front axle nut. Then, pull off the front axle and remove the front wheel.
4. Remove the speedometer cable and take out the brake cam.

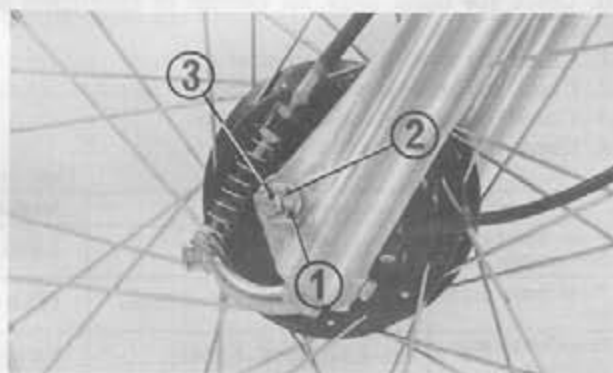


Fig. 4-2 (1) Cotter pin (2) Axle nut (3) Front axle

5. Remove the two brake shoes from the front brake backing plate.

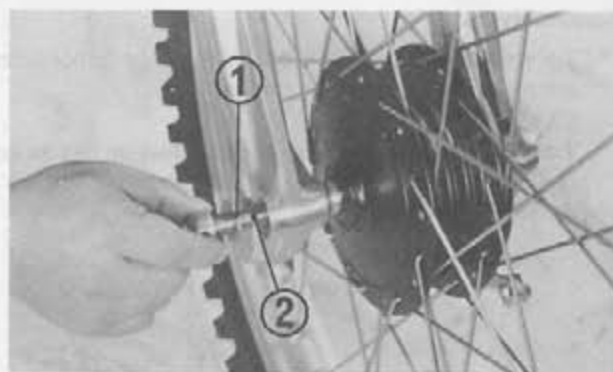


Fig. 4-3 (1) Plain washer (2) Front axle



## Front brake panel

1. Before removing the front brake panel, remove the 6 mm bolt and then the front brake arm and brake arm return spring.
2. While expanding the brake shoes by hands, remove them together with the brake shoe springs from the brake panel.

## Front brake cable

1. Disconnect the front brake cable from the front brake panel.
2. Remove the dust cover from the front brake lever.
3. With the slots in the adjusting nut and lock nut aligned, disconnect the brake cable from the front brake lever.
4. When connecting, route the brake cable through the cable guides.

## Inspection

1. Check the front wheel axle for bend.
2. Check the ball bearings for looseness.
3. Check the front wheel rims for runout or damage.
4. Check to see if metal pieces or stones are not bitten in the tire tread pattern or wall. Also check the tire for scores, scratches or wear.
5. Check the tire flap for scores or scratches.
6. Check the rim lock for looseness.
7. Check the tire inflation pressure.

Specification: 1.0 kg/cm<sup>2</sup> (14 psi)

Also check the tire valve for leakage.

8. Check the front wheel hub, brake shoes and brake cam for wear.
9. Check the brake panel for cracks or any other damage.
10. Check the brake cable for damage or insufficient lubrication.
11. Check the cam and serration of the brake cam for damage.
12. Check the brake arm for bend and the serration for damage.
13. Check the bearing retainer for wear.
14. Check the spoke for looseness.

Unit: mm (in.)

Item	Assembly standard		Service limit
Front wheel rims face runout	0.5 (0.0197)		2.0 (0.0787)
Front brake drum ID	110.0-110.2 (4.3307-4.3386)		111.0 (4.3701)
Front brake shoe thickness	4.0-4.3 (0.1575-0.1693)		2.5 (0.0984)
6301 ball bearing	Axial runout	0.07 (0.0028)	0.1 (0.0039)
	Radial runout	0.03 (0.0012)	0.05 (0.0020)

## Reassembly

- \* To reassemble, reverse the disassembly procedures. Pay attention to the following points:

**CAUTION:**

Take care not to allow oil, grease, dust or dirt to come in contact with the brake shoes and the inside surface of the brake drum.

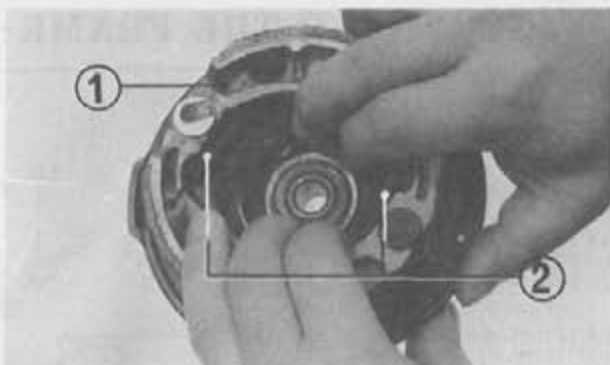


Fig. 4-4 (1) Brake shoe (2) Brake shoe spring

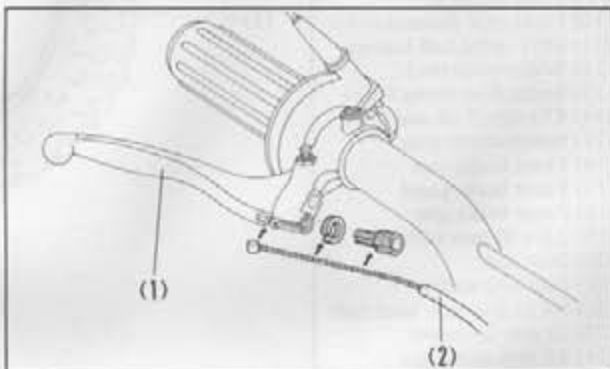


Fig. 4-5 (1) Brake lever (2) Brake cable

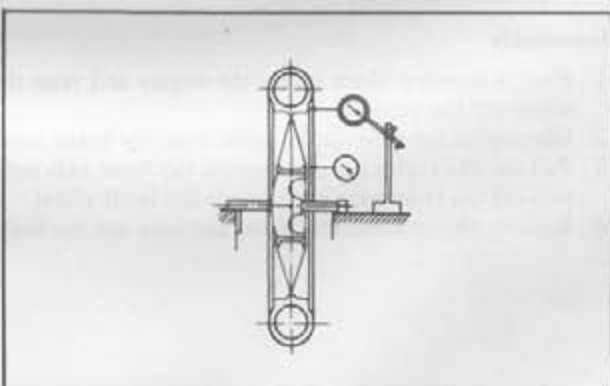


Fig. 4-6 Runout of the rim

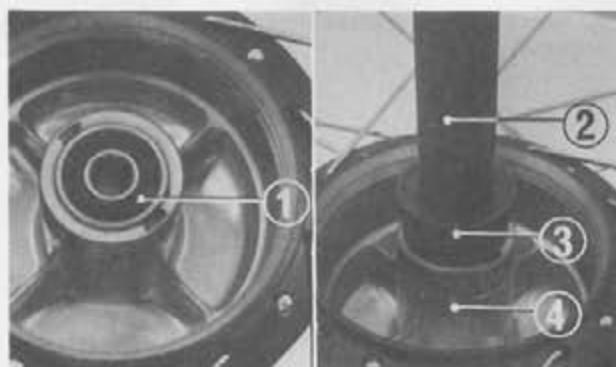


Fig. 4-7 (1) Ball bearing (2) Driver handle (3) Driver attachment (4) Wheel hub

## 1. Ball bearing installation

Fill the cavity in the ball bearings and inside the wheel hub with grease. Then install the bearings with the bearing driver (Tool No. 07946-3640000) taking care not to allow the distance collar to incline.

**NOTE:**

Face the sealed side of the ball bearing toward the outside.

Be sure that the brake arm installation groove aligns with the brake cam shaft where serration is not provided.

## 2. Apply a thin coat of grease to the brake cam and anchor pin and install the brake shoes in place.

**NOTE:**

Apply a coat of grease to the dust seal.

## 3. Take care when installing the brake panel so that the lugs on the speedometer gear are lined up with the groove in the wheel hub.

## 4. Install the front wheel between the fork legs by fitting the tongue of the left fork leg into the groove in the front brake backing plate.

## 5. Install the plain washers to the right and left fork legs and insert the front axle. Install and tighten the axle nut to the specified torque. Install and split the cotter pin to lock the nut in place.

## 6. Connect the front brake cable end to the brake arm. Install and split the cotter pin to lock the nut in place.

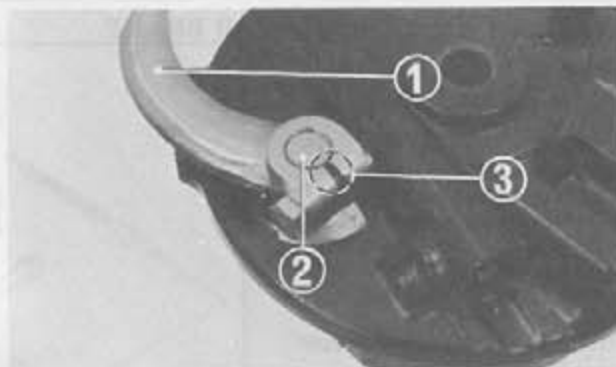


Fig. 4-8 (1) Brake arm  
(2) Brake camshaft  
(3) Fitting point



Fig. 4-9 (1) Lugs of speedometer gear  
(2) Groove in the wheel hub



Fig. 4-10 (1) Fitting point

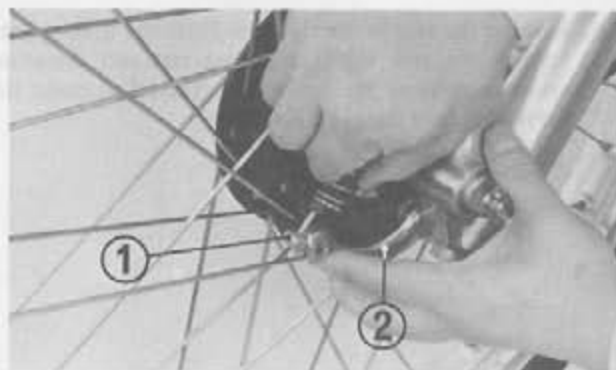
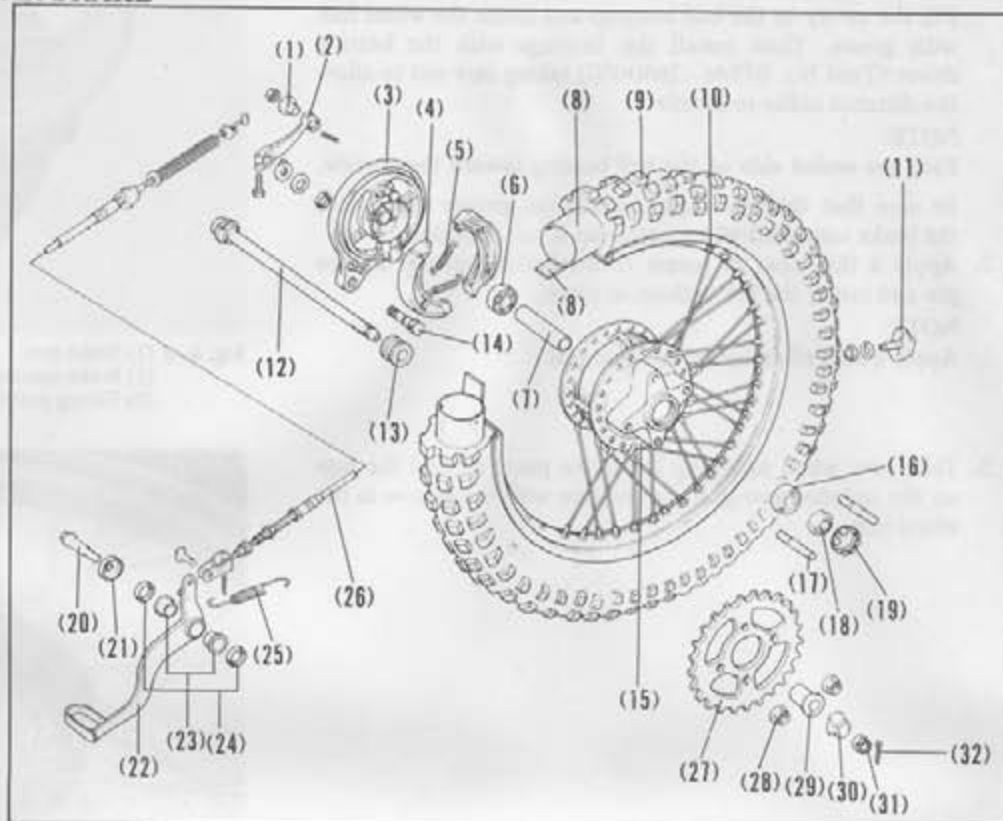


Fig. 4-11 (1) Brake cable end  
(2) Brake arm

## 2. REAR WHEEL AND REAR BRAKE

Fig. 4-12

- (1) Front fender collar
- (2) Rear brake arm
- (3) Rear brake panel
- (4) Rear brake shoe
- (5) Rear brake shoe spring
- (6) 6302 radial ball bearing
- (7) Rear wheel axle collar
- (8) Rear wheel tube (3.50-18)
- (9) Rear tire (3.50-18-4PR)
- (10) Rear spoke A
- (11) Rear wheel tire bead stopper
- (12) Rear wheel axle
- (13) Rear brake panel side collar
- (14) Rear brake cam
- (15) Rear wheel hub
- (16) 6302 radial ball bearing
- (17) 10 x 48 stud bolt
- (18) 21 x 35 x 7 oil seal
- (19) Rear wheel bearing retainer
- (20) Rear brake pivot shaft
- (21) Brake pivot washer
- (22) Rear brake arm
- (23) Brake pedal bush
- (24) Brake pedal dust seal
- (25) Brake pedal spring
- (26) Rear brake cable
- (27) Final driven sprocket (43T)
- (28) 10 mm hex. nut
- (29) Rear wheel side collar
- (30) Rear wheel axle collar
- (31) 14 mm castle nut
- (32) 3.0 x 28 split pin



## Disassembly

1. Raise the rear wheel off the ground by placing a stand under the engine.
2. Pull out the cotter pin and remove the rear axle nut.
3. Loosen the right and left drive chain adjuster lock nuts and then turn the adjusting bolts in to loosen the chain.

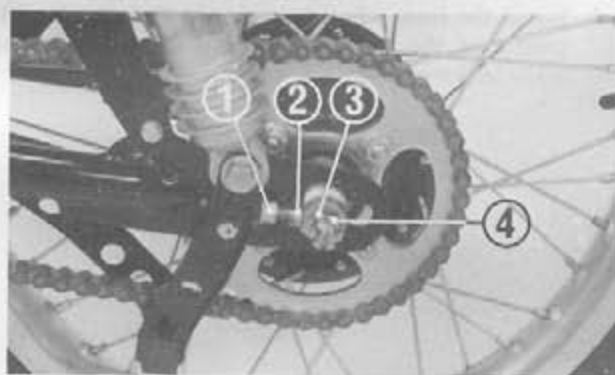


Fig. 4-13 (1) Lock nut (2) Adjusting bolt (3) Rear axle nut (4) Cotter pin

4. Remove the rear brake stop arm from the brake panel.
5. Loosen the rear brake adjusting nut and disconnect the brake cable from the brake arm. Then disconnect the cable from the brake panel by pulling it.

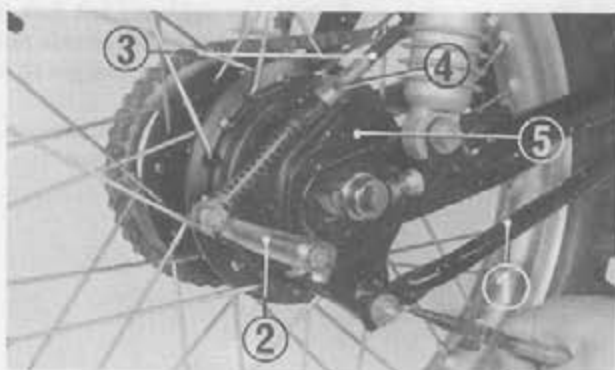


Fig. 4-14 (1) Rear brake stopper arm (2) Rear brake arm (3) Rear brake cable (4) Rear brake adjusting nut (5) Brake panel

6. With the rear wheel pushed forward, remove the drive chain from the driven sprocket.
7. Pull out the rear wheel axle and remove the rear wheel.

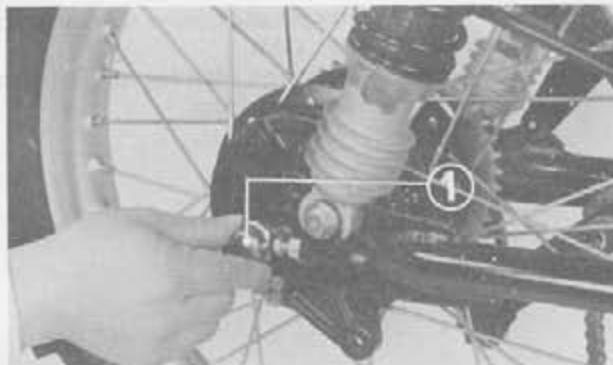
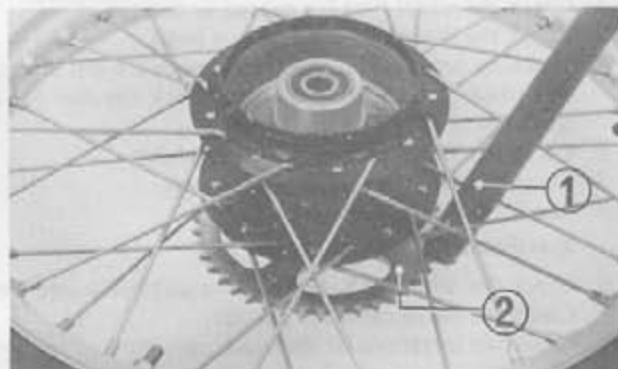
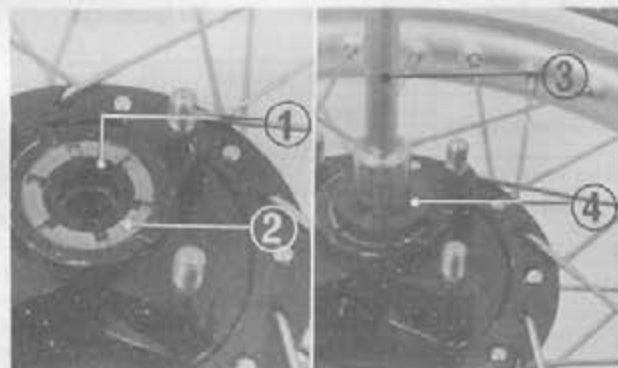


Fig. 4-15 (1) Rear wheel axle

8. Remove the 8 mm flange nuts and remove the driven sprocket.
9. If necessary, tap it around with a soft hammer or wooden block.
10. The rear brake panel should be disassembled and assembled in the same manner as in the front brake panel.

Fig. 4-16 (1) Wood block  
(2) Driven sprocket

11. Remove the rear wheel bearing retainer with the bearing retainer wrench (Tool No. 07910-3600000).
12. Remove the ball bearings.

Fig. 4-17 (1) Oil seal  
(2) Bearing retainer  
(3) 17 mm box wrench  
(4) Bearing retainer wrench

13. Rear brake pedal and brake cable removal.
  - a. Remove the brake pivot shaft and remove the rear brake pedal from the frame. Then remove the rear brake pedal spring and rear brake stop switch spring.

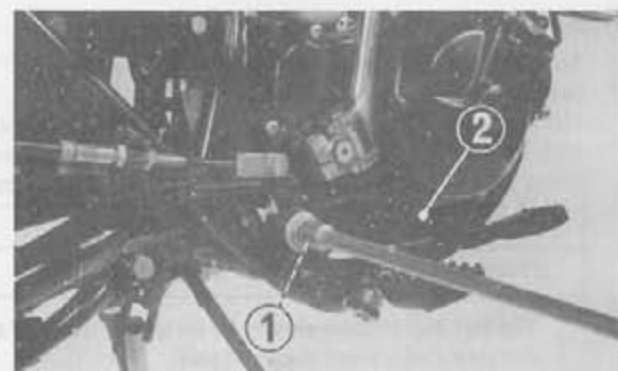


Fig. 4-18 (1) Brake pivot shaft (2) Rear brake pedal



- b. Pull out the cotter pin and remove the rear brake pedal from the rear brake cable.
- c. Loosen the lock nut and adjusting nut and disconnect the brake cable from the frame.

### Inspection

1. Check the rear wheel axle for bend.
2. Check the ball bearings for looseness (with them installed).
3. Check the wheel rims for runout or damage.
4. Check the spokes for looseness or bend.
5. Check to see if metal pieces or stones are not bitten in the tire tread pattern or wall. Also check the tire for scores, scratches or wear.
6. Check the tire flap for scores or scratches.
7. Check the two rim locks for looseness.
8. Check the tire inflation pressure.

Specification: 1.0 kg/cm<sup>2</sup> (14 psi)

9. Check the wheel hub, brake shoes and brake cam for wear.
10. Check the brake cable for damage.
11. Check the serrations of the brake cam and arm for wear.
12. Check the driven sprocket for wear or damage.
13. Check the driven flange for cracks or any other damage.
14. Check the rear wheel dampers for damage.
15. Check the drive chain for elongation, wear or jamming.
16. Check the drive chain master link for looseness.

Unit: mm (in.)

Item	Assembly standard	Service limit
6302 ball bearings	Axial runout 0.07 (0.0028)	0.1 (0.0039)
	Radial runout 0.03 (0.0012)	0.05 (0.0020)
Rear wheel rims	Face runout 0.5 (0.0197)	2.0 (0.0787)
Rear wheel axle bend	0.01 (0.0004)	0.2 (0.008)
Rear brake drum ID	110.0-110.2 (4.3307-4.3386)	111.0 (4.3701)
Rear brake shoe thickness	4.0-4.3 (0.1575-0.1693)	2.5 (0.0984)

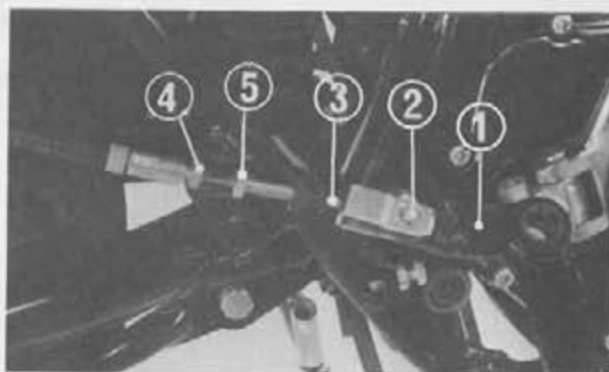


Fig. 4-19 (1) Rear brake pedal (2) Cotter pin (3) Rear brake cable (4) Lock nut (5) Adjusting nut

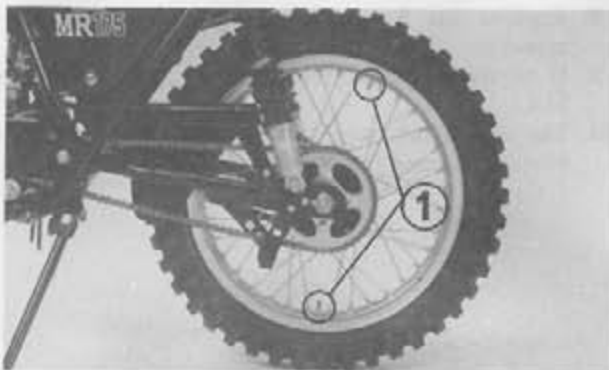


Fig. 4-20 (1) Rim locks

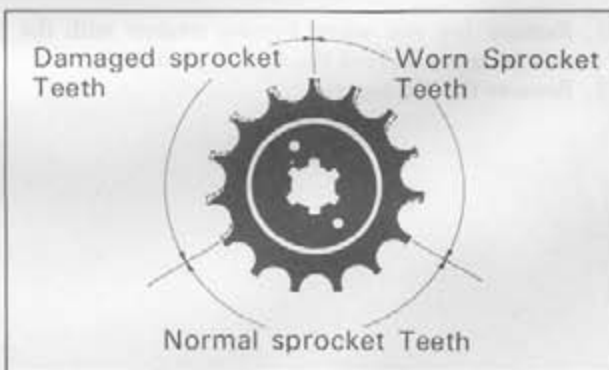


Fig. 4-21

### Assembly

- \* To assemble, reverse the disassembly procedures.
- 1. Ball bearing installation  
Fill the void in the ball bearings and inside the wheel hub with grease. Then install the bearings with the ball bearing driver taking care not to allow the distance collar to incline.

Tool No.	Bearing
07945-3330100	6302 ball bearing

- \* The left ball bearing should be installed first. Install the distance collar from the right side.
- \* Do not forget to flare out the bearing retainer.

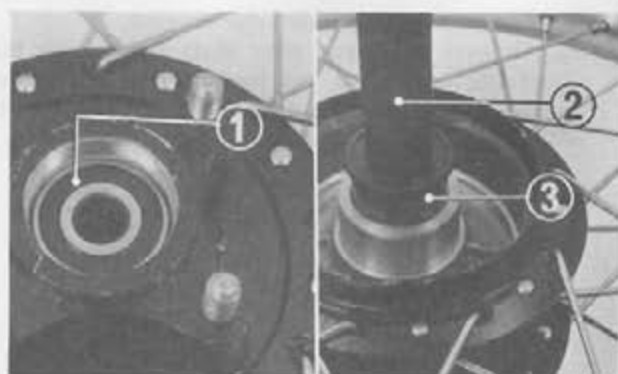


Fig. 4-22 (1) Radial ball bearing (2) Bearing driver handle (3) Bearing driver attachment

2. Install the oilseals and rear wheel bearing retainer to the rear wheel hub.  
Install the 8 mm flange nuts with the gear mark facing up.
3. Apply a coat of spindle oil to the nuts and tighten them in a criss-cross pattern to the specified torque.
4. When installing new stud bolts, apply a coat of locking sealant to them.



Fig. 4-24 (1) Driven sprocket

5. Install the rear wheel in the reverse order of the removal. Install the brake cable with the cable end set up on the brake arm as shown.

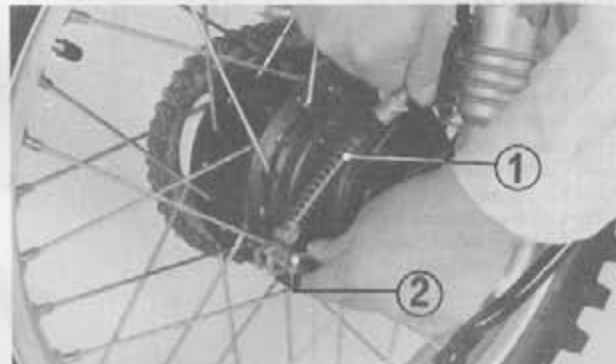


Fig. 4-25 (1) Brake cable (2) Brake arm

6. Install the cotter pin and cap.

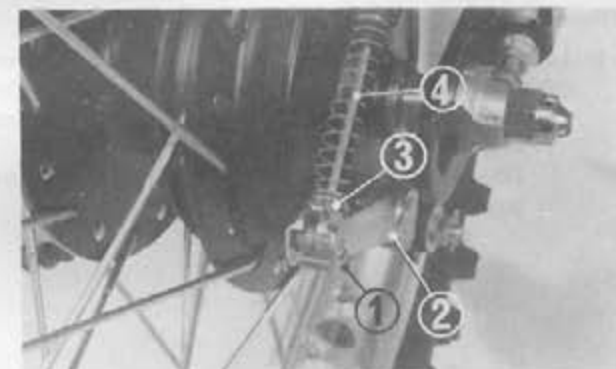


Fig. 4-26 (1) Cotter pin (2) Brake arm (3) Cap (4) Brake cable

7. Apply a coat of grease to the sliding surface of the brake pedal and a coat of oil to the dust seal. Then install the brake pedal in place.

**CAUTION:**

Install the dust seal correctly without any sign of binding.

8. After reassembling, adjust the rear brake pedal free height and play, and drive chain slack. (See pages 12).

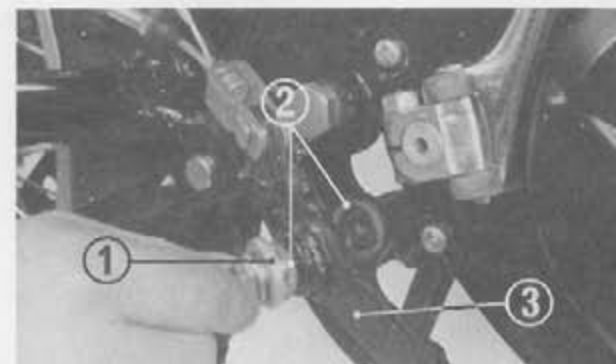
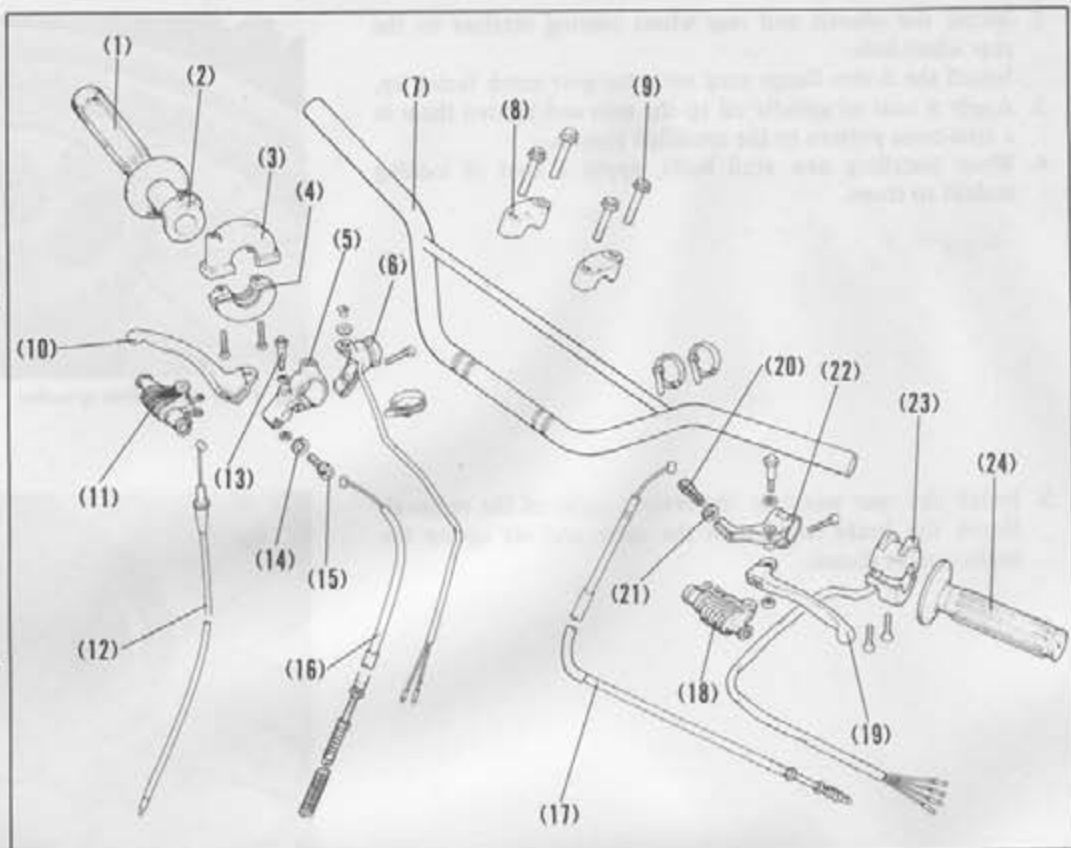


Fig. 4-27 (1) Brake pivot plate (2) Dust seal (3) Brake pedal

## 3. HANDLEBAR

Fig. 4-28

- (1) Right handle grip
- (2) Throttle grip pipe
- (3) Throttle housing upper case
- (4) Throttle housing lower case
- (5) Right handle lever bracket
- (6) Ignition switch
- (7) Handlebar
- (8) Handle upper holder
- (9) 8 x 36 flange bolt
- (10) Front brake lever
- (11) Dust cover
- (12) Throttle cable
- (13) Handle lever pivot bolt
- (14) Fixing nut
- (15) Brake cable adjusting nut
- (16) Brake cable
- (17) Clutch cable
- (18) Dust cover
- (19) Clutch lever
- (20) Clutch cable adjusting nut
- (21) Fixing nut
- (22) Left handle lever bracket
- (23) Lighting switch assy.
- (24) Left handle grip



## Disassembly

1. Loosen the throttle cable housing screws and remove the cable housing with the throttle cable from the handlebar.
  - \* Separate the housing into two parts and disconnect the throttle cable end from the grip pipe.
  - \* Disconnect the throttle cable at the carburetor. (See page 35)

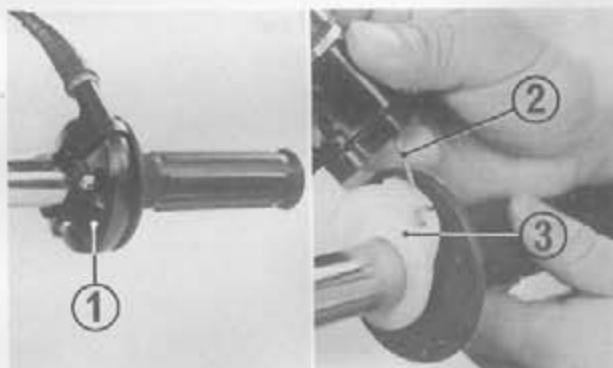


Fig. 4-29 (1) Throttle cable housing  
(2) Throttle cable  
(3) Throttle grip pipe

2. Remove the wire bands from the right side handlebar.

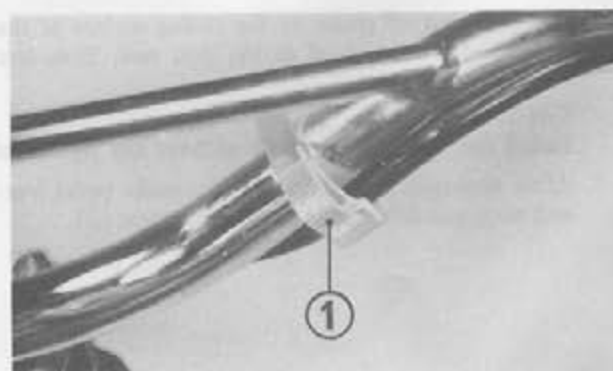


Fig. 4-30 (1) Wire band

3. Loosen the brake cable on the wheel side just enough to permit removal of the brake cable end at the lever.

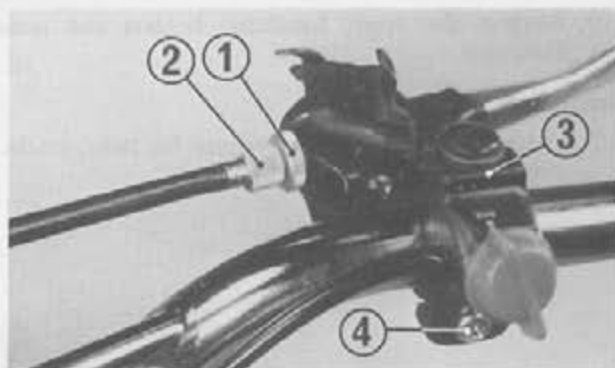


Fig. 4-31 (1) Lock nut (2) Adjuster nut (3) Handlebar bracket (4) Screw

4. Open the headlight case and disconnect the ignition leads and left handle lighting wire by pulling it. Remove the handlebar bracket.

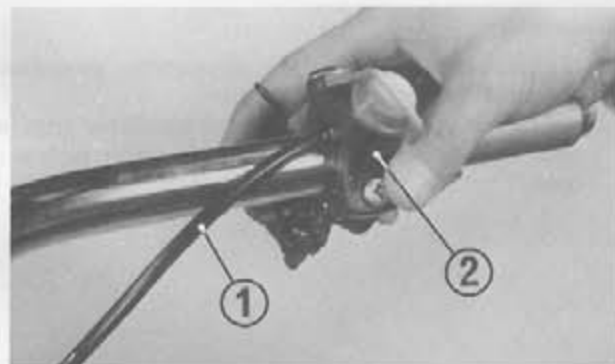


Fig. 4-32 (1) Ignition leads (2) Handlebar bracket

5. Loosen the headlight switch housing screws and remove the cable housing together with the lighting wire from the left handlebar.
6. Remove the left grip rubber.

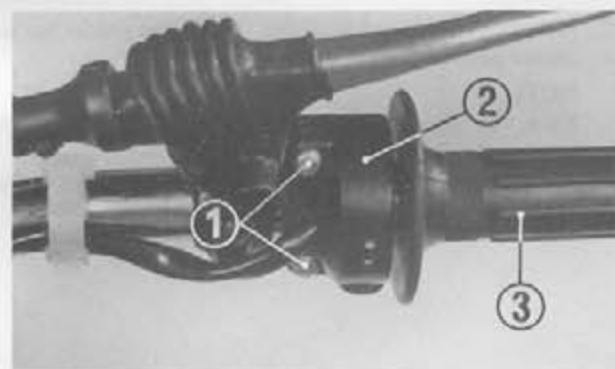


Fig. 4-33 (1) Screw (2) Headlight switch housing (3) Grip

7. Remove the wire bands as shown in Fig. 4-34.
8. Loosen the clutch wire adjust nut on the engine side; remove the cable from the clutch lever.
9. Loosen the screw securing the handlebar bracket. Then pull the handle lever bracket out of the handlebar.

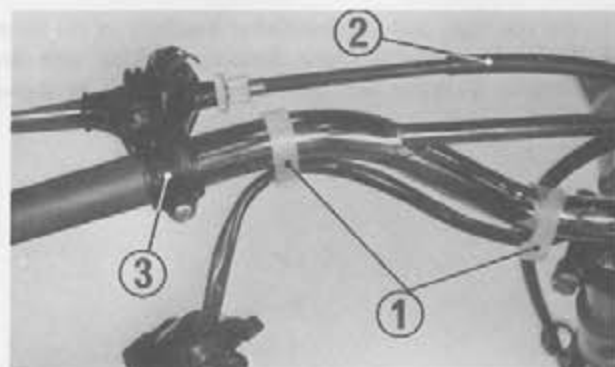


Fig. 4-34 (1) Wire bands (2) Clutch cable (3) Handlebar bracket



10. Remove the upper handlebar holders and remove the handlebar.

#### Inspection

1. Check the steering handlebar pipe for twist, cracks or any other damage.



Fig. 4-35 (1) Handlebar holder

#### Reassembly

- \* To reassemble, reverse the disassembly procedures. Pay attention to the following points:

1. When installing the right and left handlebar grips, apply a coat of proper adhesive agent to the inside surface of each grip.

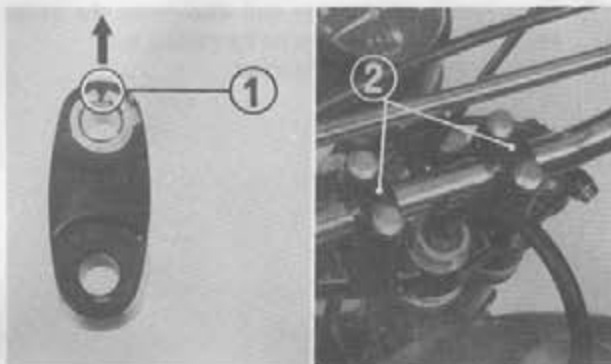


Fig. 4-36 (1) Handle upper holder punched mark  
(2) Handle upper holder

2. Install the steering handlebar so that the center bar is at the center between the upper holders.

#### NOTE:

Face the punch marks on the upper handlebar holders toward the front. (See Fig. 4-36)

To tighten the upper holders, begin on the front bolts. No clearance should exist at the front side.

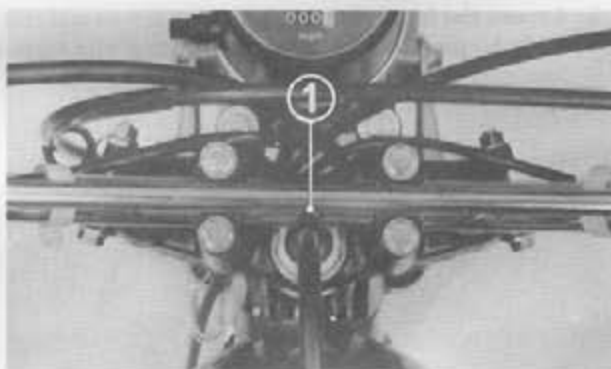


Fig. 4-37 (1) Center bar

3. Put the right and left handlebar brackets on the handlebar.
4. Insert the throttle cable housing, making sure that the distance between the housing and bracket as shown Fig. 4-38.

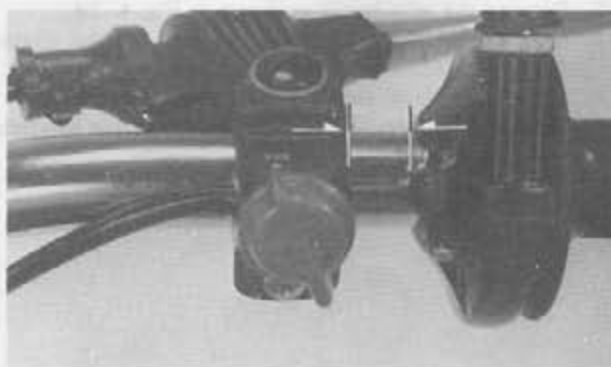


Fig. 4-38

5. Install the handle bracket clearance as shown Fig. 4-39.

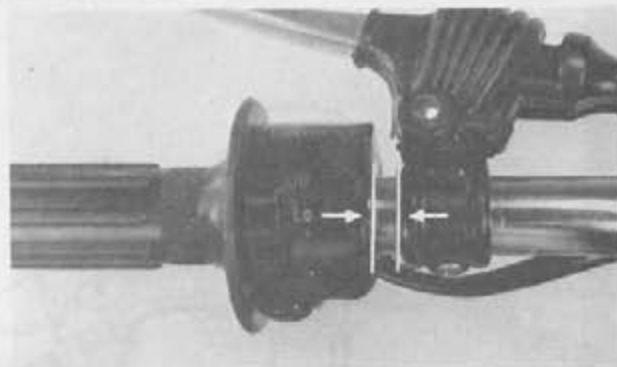


Fig. 4-39

6. Install the right and left handle levers so that the grip rubbers are almost parallel to the horizontal line.

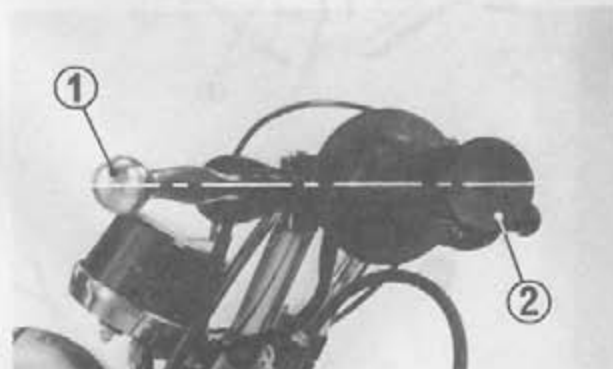


Fig. 4-40 (1) Handle lever (2) Grip rubber

7. Install the throttle cable housing so that the throttle cable holder is  $45^\circ$  to the handlebar.

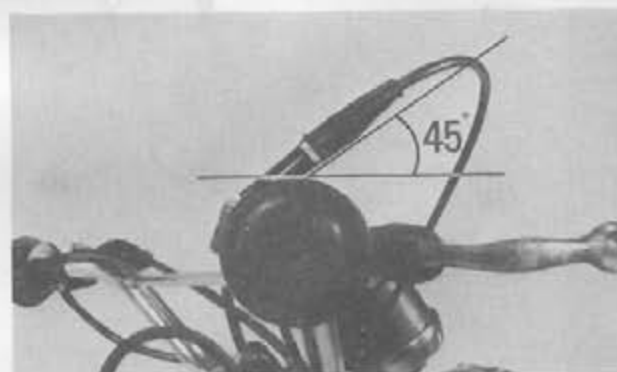


Fig. 4-41

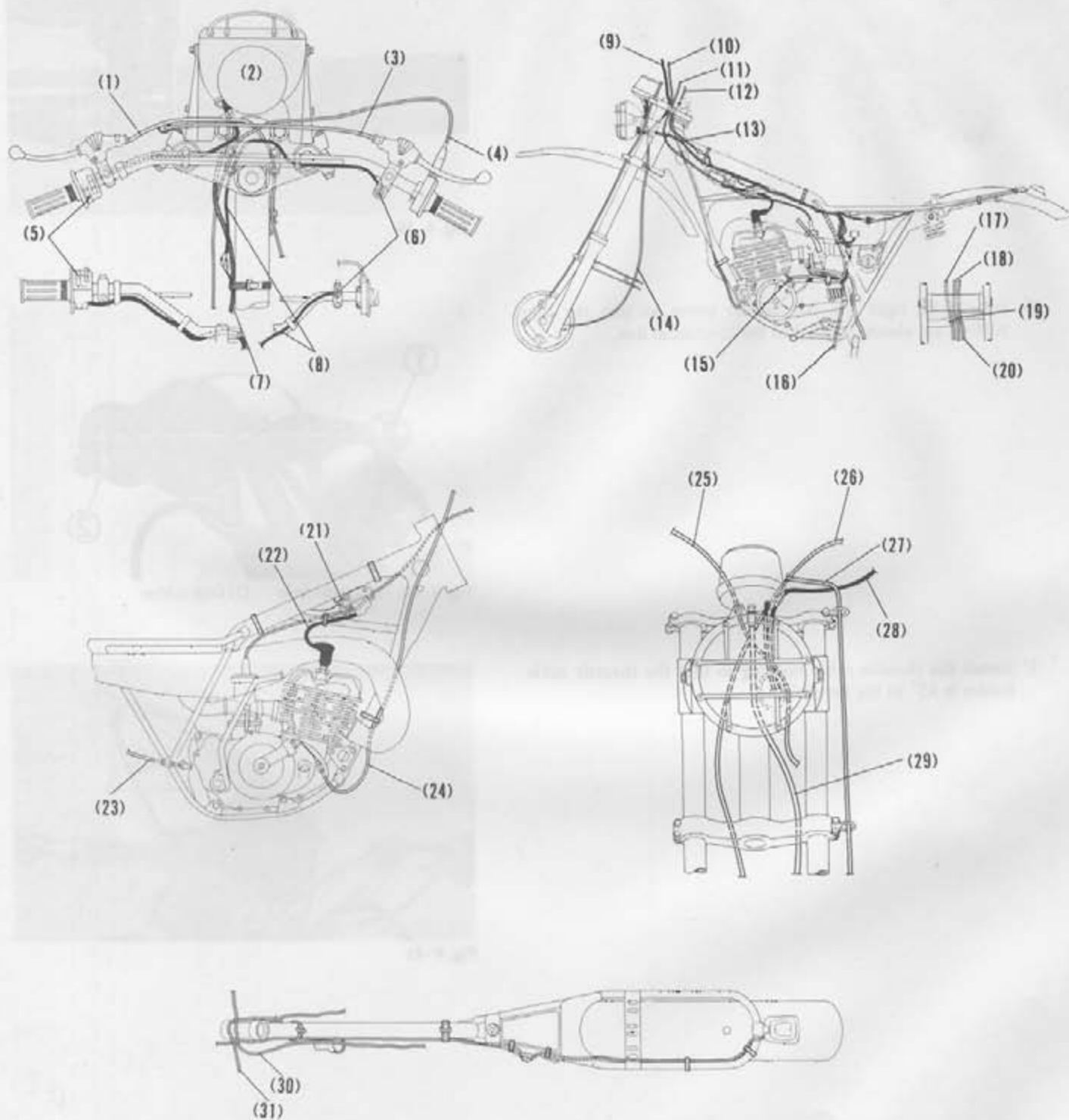


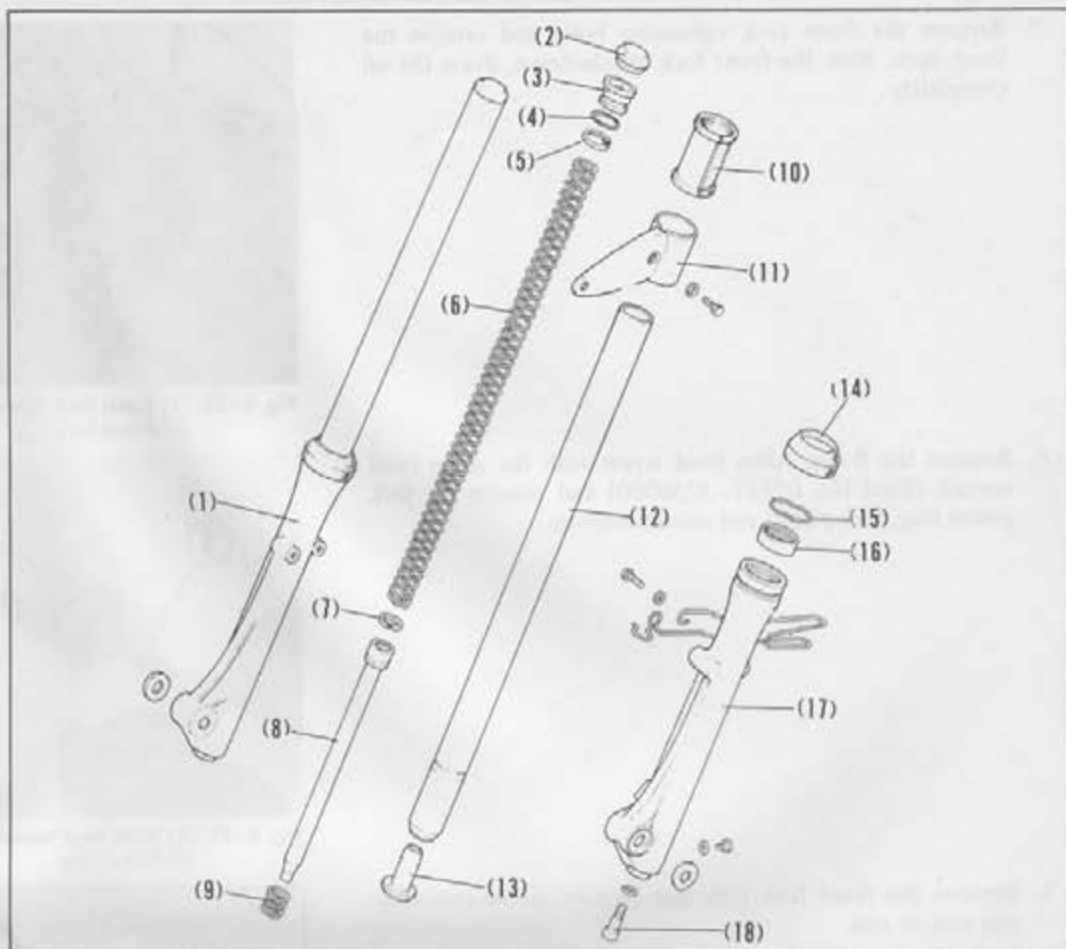
Fig. 4-42

- |                             |                               |                               |                           |
|-----------------------------|-------------------------------|-------------------------------|---------------------------|
| (1) Clutch cable            | (9) Lighting switch cord      | (17) Left side air vent tube  | (25) Throttle cable       |
| (2) Speedometer             | (10) Clutch cable             | (18) Crankcase breather tube  | (26) Clutch cable         |
| (3) Front brake cable       | (11) Throttle cable           | (19) Tube guide               | (27) Front brake cable    |
| (4) Throttle cable          | (12) Engine stop switch cord  | (20) Right side air vent tube | (28) Lighting switch cord |
| (5) Lighting switch         | (13) Wire harnesses           | (21) Ground cord              | (29) Speedometer cable    |
| (6) Engine stop switch      | (14) Speedometer cable        | (22) Hightention cord         | (30) Throttle cable       |
| (7) Wire harness            | (15) A.C.G. breather tube     | (23) Rear brake cable         | (31) Clutch cable         |
| (8) Engine stop switch cord | (16) Carburetor overflow tube | (24) Clutch cable             |                           |

## 4. FRONT FORKS

Fig. 4-43

- (1) Front fork assy.
- (2) Fork pipe cup
- (3) Spring upper seat
- (4) 19.4 x 2.8 O-ring
- (5) Internal 26 mm circlip
- (6) Front shock absorber spring
- (7) Piston ring
- (8) Under seat
- (9) Front shock absorber rebound spring
- (10) Headlight stay rubber
- (11) Headlight stay
- (12) Front fork pipe
- (13) Oil lock piece
- (14) Front fork dust seal
- (15) Oil seal stop ring
- (16) 31 x 43 x 12.5 oil seal
- (17) Right front fork bottom case
- (18) 8 mm socket bolt



## Disassembly

- \* Front fork oil change  
To change the oil without disassembling the front forks, see page 9. To change the oil after disassembling the front forks, proceed as follows:
- 1. After removing each front fork, loosen the drain bolt to make it easier to drain oil.
- 2. Remove the front wheel. (See page 40)

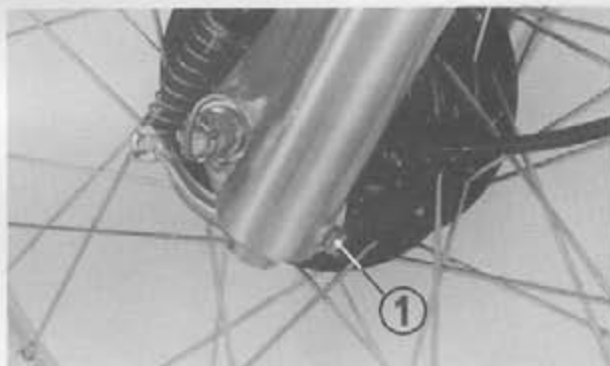


Fig. 4-44 (1) Drain bolt

- 3. Remove the handlebar. (See page 50)
- 4. Similarly as shown in page 9, remove the snap ring and spring upper seat. They should be removed before the front fork is removed. To remove them, proceed as follows:  
While pushing down the spring upper seat with the tip of a screwdriver, remove the snap ring using snap ring pliers. Then remove the spring upper seat.

**CAUTION:**

When removing the snap ring, the spring upper seat may accidentally jump out by means of the force of the shock absorber spring.



Fig. 4-45 (1) Snap ring (2) Upper seat

5. Remove the front fork tightening bolts and remove the front fork. With the front fork upside-down, drain the oil completely.



Fig. 4-46 (1) Front fork tightening bolts  
(2) Front fork

6. Remove the 8 mm Allen head screw with the Allen head wrench (Tool No. 07917-3230000) and remove the fork piston ring, fork piston and rebound spring.

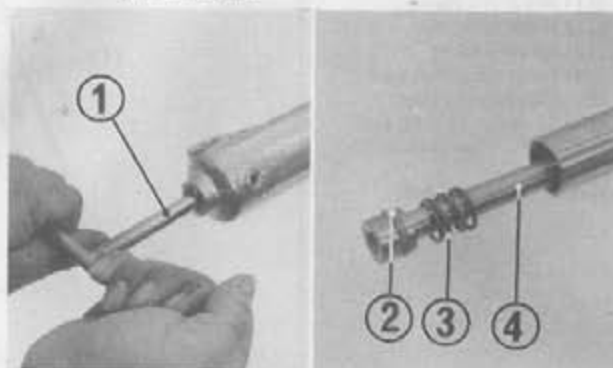


Fig. 4-47 (1) Allen head wrench  
(2) Piston ring  
(3) Rebound spring  
(4) Under seat

7. Remove the front fork pipe and remove the 45 mm snap ring and oil seal.

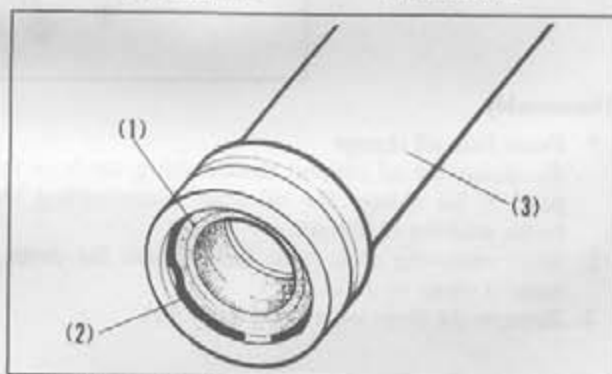


Fig. 4-48 (1) Oil seal  
(2) 45 mm snap ring  
(3) Front fork bottom case

#### Inspection

1. Check the front fork piston rings for wear.
2. Check the front shock absorber springs A and B for tension. Also measure the spring free length.
3. Check the fork bottom cases for wear, scores, scratches or cracks.
4. Check the front fork pipes for wear, scores, scratches, cracks or rust. If rust formation is noticed on the pipes, completely remove it with a fine emery cloth.
5. Check the oil seals for scores, scratches or breakage.

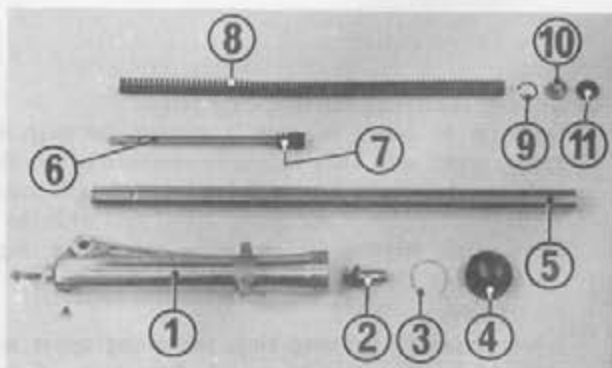


Fig. 4-49  
(1) Front fork bottom case (7) Front shock absorber rebound spring  
(2) Oil lock piece (8) Front shock absorber spring  
(3) 45 mm snap ring (9) 26 mm circlip  
(4) Front fork dust seal (10) Spring upper seat  
(5) Front fork pipe (11) Fork pipe cap  
(6) Under seat



**Reassembly**

- \* To reassemble, reverse the disassembly procedures. Pay attention to the following points:

1. Apply locking sealant to the threads of the 8 mm Allen head screw. Install the oil lock piece and seat pipe and tighten with the Allen head screw as shown in Fig. 4-50.

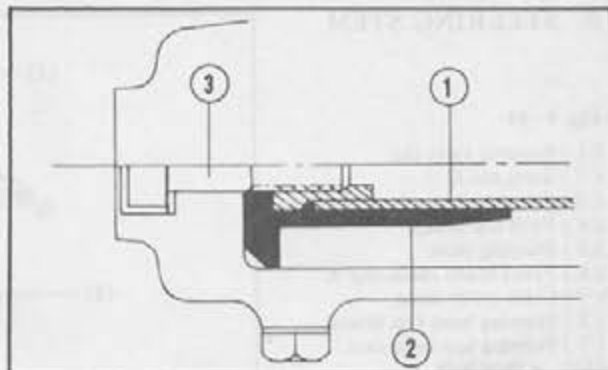


Fig. 4-50 (1) Seat pipe  
(2) Oil lock piece  
(3) 8 mm Allen head screw

2. Apply a coat of grease to each oil seal lip. Then insert the oil seal with the fork seal driver (Tool No. 07947-3550000).

Do not forget to install the snap ring.

3. Fill the fork pipes with premium quality automatic transmission fluid (ATF) up to the specified level. (See page 9)

4. Refer to on page 8 for installing the spring upper seat and circlip.

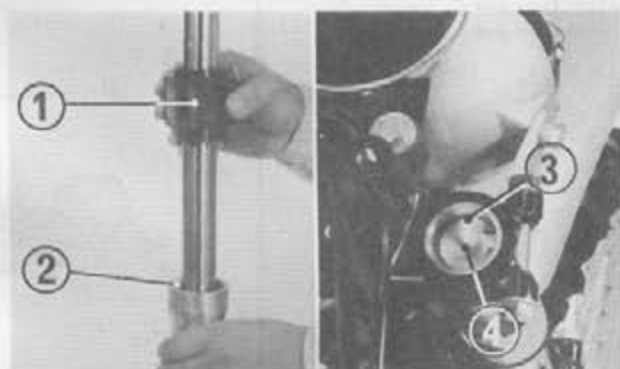


Fig. 4-51 (1) Fork seal driver (2) Oil seal (3) Snap ring (4) Spring upper seat

5. Install the right and left front forks, being sure that the top of each fork is flush with the upper face of the fork top bridge.

6. Tighten the parts to the specified torques. (See page 72)

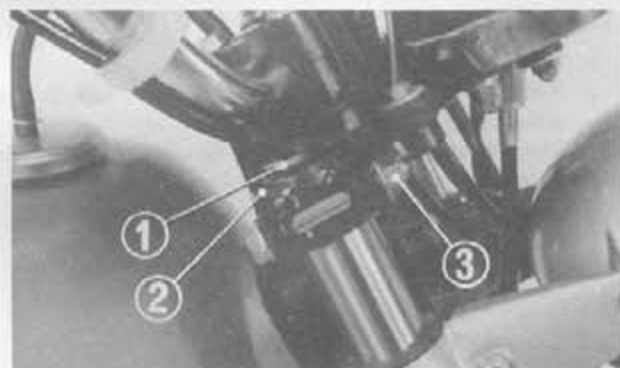


Fig. 4-52 (1) Rubber cap  
(2) Top bridge upper face  
(3) 8 mm nut

7. After assembling:

- (1) Check the front forks for smooth movement.
- (2) Check for leakage from the oil seals.

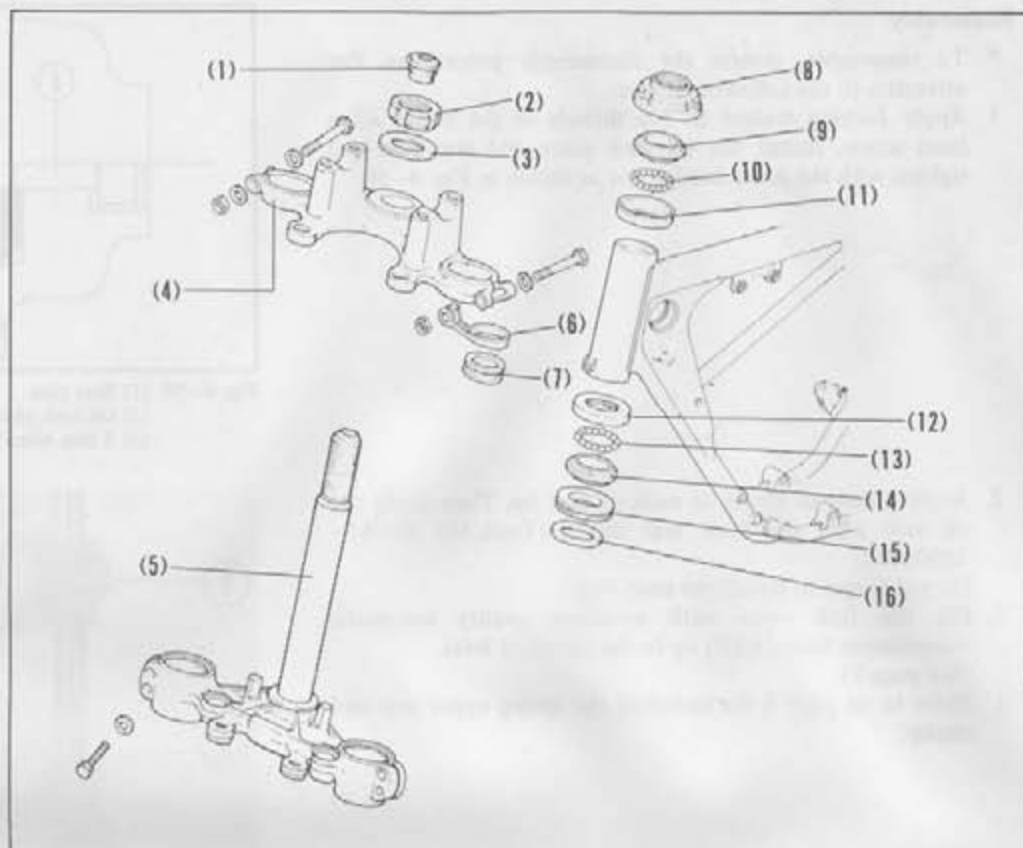


Fig. 4-53 Checking the front for condition

## 5. STEERING STEM

Fig. 4-54

- (1) Steering stem cap
- (2) Stem nut C
- (3) Steering stem nut washer
- (4) Fork top bridge
- (5) Steering stem
- (6) Front brake cable clip A
- (7) Cable guide inner
- (8) Steering head top thread
- (9) Steering top cone race
- (10) 6 steel ball
- (11) Steering top ball race
- (12) Steering bottom ball race
- (13) 6 steel ball
- (14) Steering bottom cone race
- (15) Dust seal
- (16) Dust seal washer



## Disassembly

1. Remove the three wire bands.
2. Remove the engine switch and headlight switch screws and remove the switches from the handlebar.
3. Disconnect the speedometer cable from the front wheel.
4. Remove the fuel tank.
5. Remove the clutch cable from the engine side.

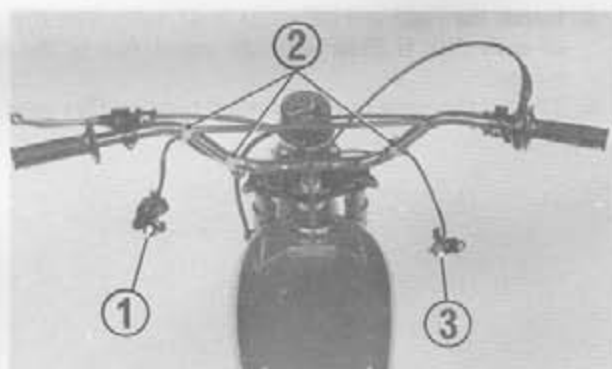


Fig. 4-55 (1) Headlight switch  
(2) Wire bands  
(3) Engine switch

6. Disconnect the wire harness connection inside the headlight case to remove the case.
7. Remove the two headlight stay tightening bolts by using the 10 mm box wrench supplied in the tool kit. And remove the headlight and parts attached to the headlight stay by pulling them upward.

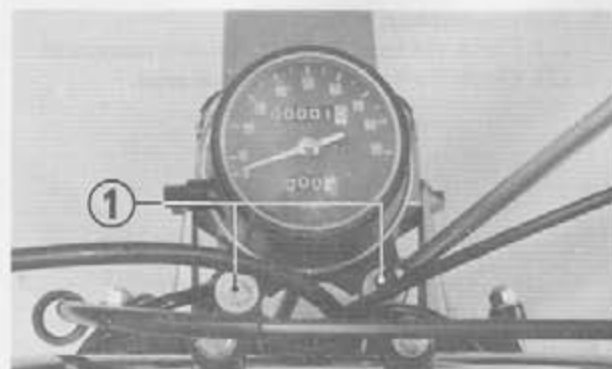


Fig. 4-56 (1) Headlight case tightening bolt

8. Remove the handlebar. (See page 50)
9. Remove the steering stem nut by using the 46 mm pin wrench (Tool No. 07902-2400000).

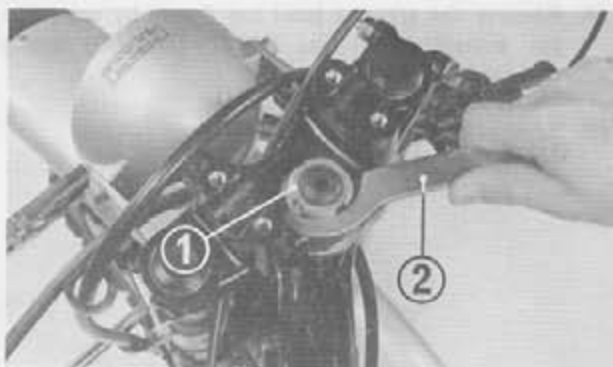


Fig. 4-57 (1) Steering stem nut (2) 46 mm pin wrench

10. Remove the brake cable guide and front fork upper tightening bolts and remove the fork top bridge.

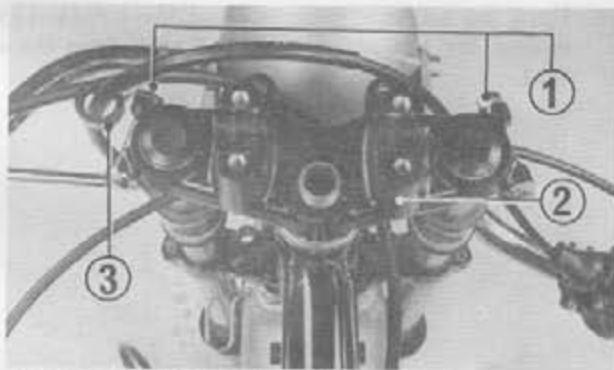


Fig. 4-58 (1) Upper front fork tightening nuts  
(2) Fork top bridge  
(3) Brake cable guide

11. Loosen the two headlight stay tightening bolt and remove the headlight stays by pulling them upward.



Fig. 4-59 (1) Headlight stay tightening bolts

12. Remove the front wheel. (See page 41)
13. Loosen the front fork lower tightening bolts and pull the front forks downward and then remove the front fender from the steering stem.

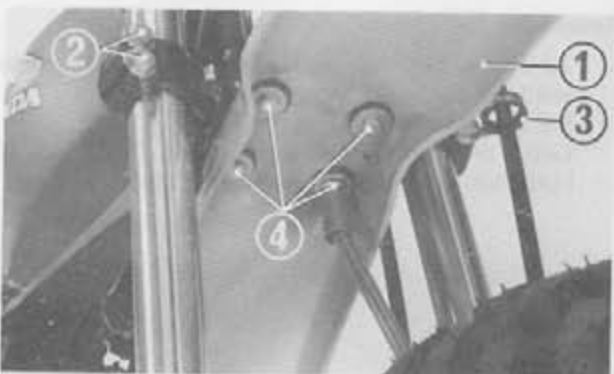


Fig. 4-60 (1) Front fender bolts  
(2) Low front fork tightening  
(3) Brake cable lower hold  
(4) 10 mm bolts

14. Remove the steering head top thread by using the 46 mm pin wrench (Tool No. 07902-2400000) and pull the steering stem downward.  
\* Do not lose the #6 steel balls.
15. Remove the handlebar lock.



Fig. 4-61 (1) 45 mm pin wrench (2) Steering head top thread (3) Top cone race (4) # 6 steel balls (5) Steering stem

16. Using the ball race remover (Tool No. 07944-1150000), remove the top and bottom ball races from the steering head.

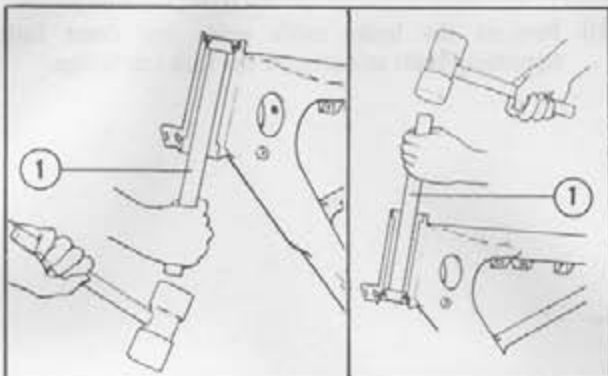


Fig. 4-62 (1) Ball race remover

#### Inspection

1. Check the #6 steel balls for damage or wear. If any one ball is damaged or worn, replace all balls.
2. Check the contact surfaces of the top and bottom cone races for damage or wear.
3. Check the steering head dust seal for wear or deterioration.
4. Check the steering stem for bend and the threads for wear.
5. Check if the cone races are properly installed to the head pipe.
6. Check the stopper for deformation or cracks.



Fig. 4-63 (1) # 6 steel ball (2) Stopper (3) Top cone race

#### Reassembly

- \* To reassemble, reverse the disassembly procedures. Pay attention to the following points:

1. Ball race installation  
Using the race driver attachment (Tool No. 07944-1150000), drive the ball races in with uniform force.

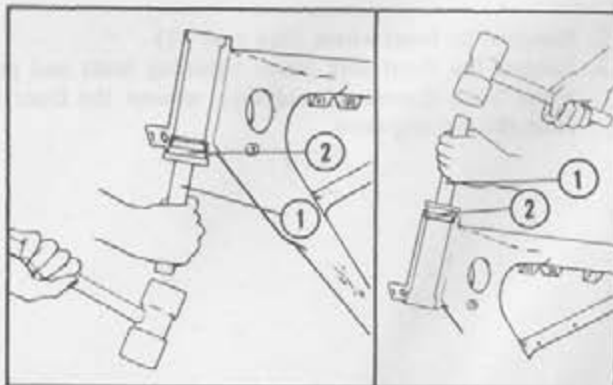


Fig. 4-64 (1) Ball race driver (2) Race driver attachment

2. Apply a coat of grease to the inside of the ball races and put the #6 steel balls into the ball races (twenty balls into each race). Install the steering stem into the head pipe, install the top cone race and tighten the head top thread fully. Then turn the top thread in either direction until it is turned with reasonable ease.  
Wash the cone races, ball races and #6 steel balls. Use new grease.

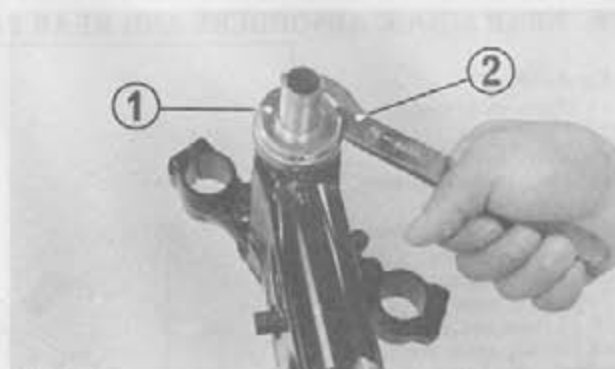


Fig. 4-65 (1) Steering head top thread  
(2) 46 mm pin wrench

3. Temporarily install the front forks. Install the fork top bridge and tighten the steering stem nut.  
After tightening, check to see if the stem moves smoothly by its own weight from the position  $5^{\circ}$ – $10^{\circ}$  from the center. If the stem will not move, the following causes may be suspected. Check and locate the cause.
  - (1) Bend of stem
  - (2) Incorrect number of balls
  - (3) Abnormal wear of races
  - (4) Maladjustment of head top thread
4. Route the cables and wires as shown in Fig. 4-67.
5. After assembling, check the parts specified by the road regulations for proper operation.

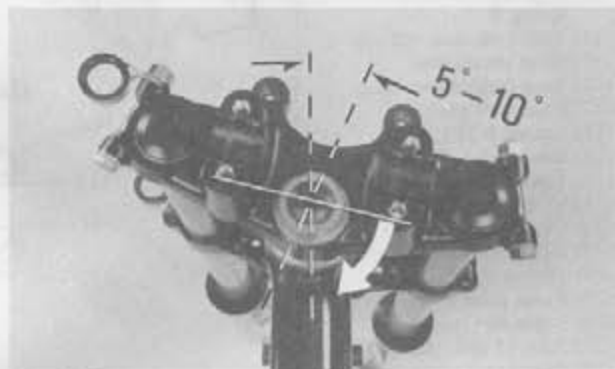


Fig. 4-66

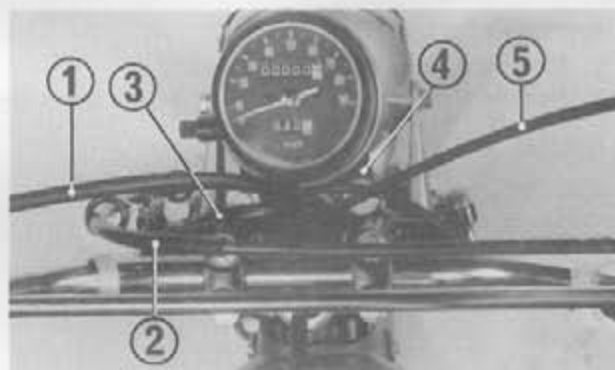


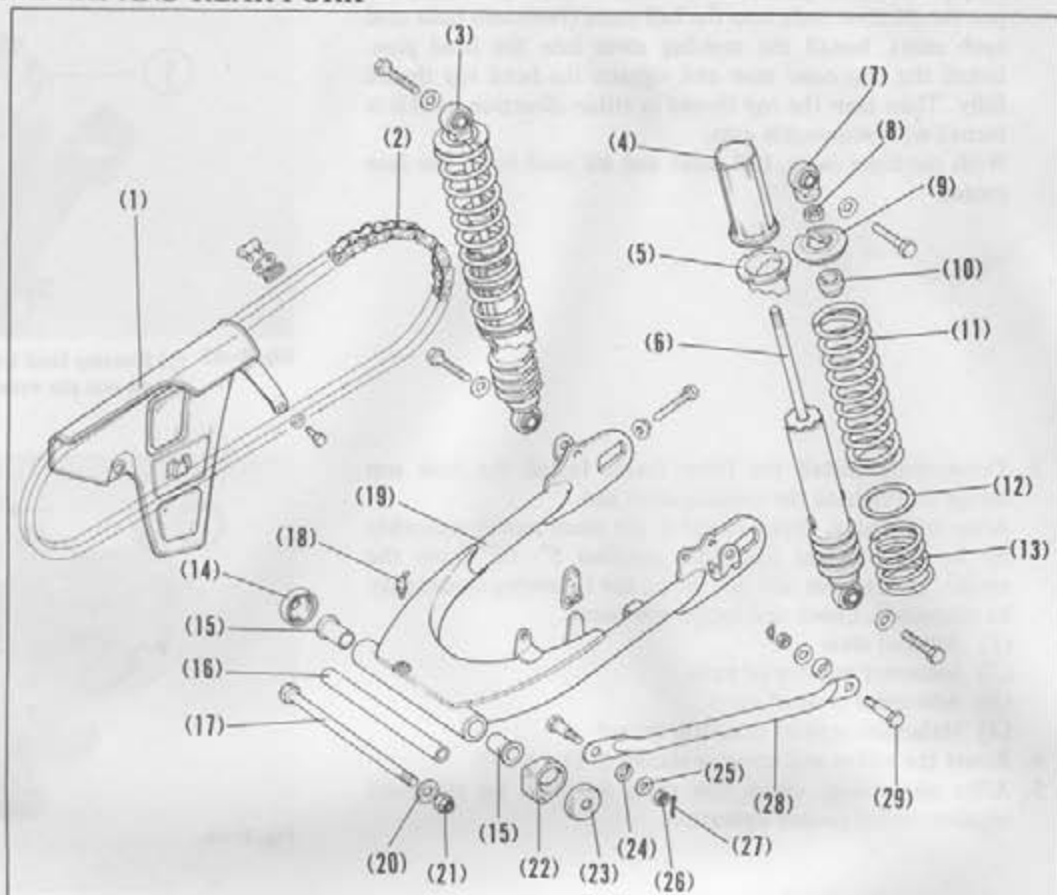
Fig. 4-67 (1) Clutch cable (4) Headlight stay  
(2) Front brake cable (5) Throttle cable  
(3) Headlight switch lead



## 6. REAR SHOCK ABSORBERS AND REAR FORK

Fig. 4-68

- (1) Drive chain case
- (2) Drive chain
- (3) Rear shock absorber
- (4) Rear shock absorber spring guide
- (5) Rear shock absorber spring adjuster
- (6) Rear damper
- (7) Upper joint
- (8) 12 mm hex. nut
- (9) Spring upper seat
- (10) Stopper rubber
- (11) Rear shock absorber spring A
- (12) Rear shock absorber joint
- (13) Rear shock absorber spring B
- (14) Rear fork dust seal cap
- (15) Pivot thrust bush
- (16) Rear fork center collar
- (17) Rear fork pivot bolt
- (18) Grease B-T6S nipple
- (19) Rear fork
- (20) Tension arm washer
- (21) 12 mm self lock nut
- (22) Chain slider
- (23) Rear fork dust seal cap
- (24) 10 mm spring washer
- (25) 8 mm plain washer
- (26) 8 mm hex. nut
- (27) 2.0 x 15 split pin
- (28) Rear brake stopper arm
- (29) Rear brake stopper bolt



## Disassembly

1. Remove the rear wheel. (See page 43)
2. Remove the two bolts and remove the rear shock absorbers.

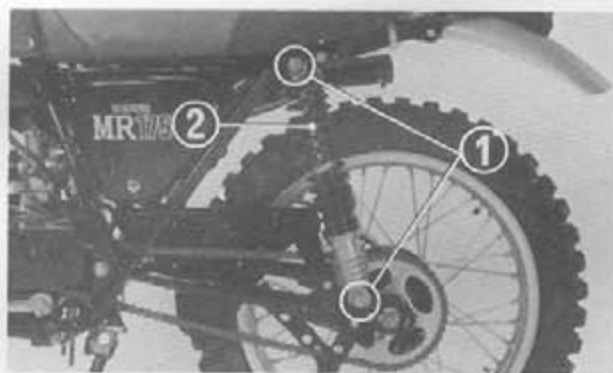


Fig. 4-69 (1) 10 mm bolts (2) Rear shock absorber

3. Remove the drive chain case and chainguide.

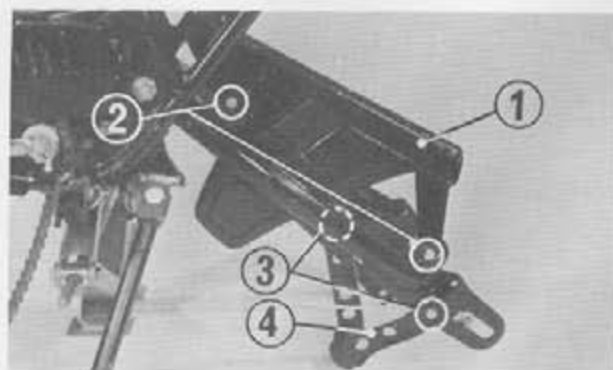


Fig. 4-70 (1) Drive chain case (2) 6 mm bolts (3) 6 mm bolts (4) Chainguide

4. Remove the 12 mm self lock nut and pull out the rear fork pivot bolt. Then remove the rear fork.
5. Remove the rear brake stopper arm from the rear fork.

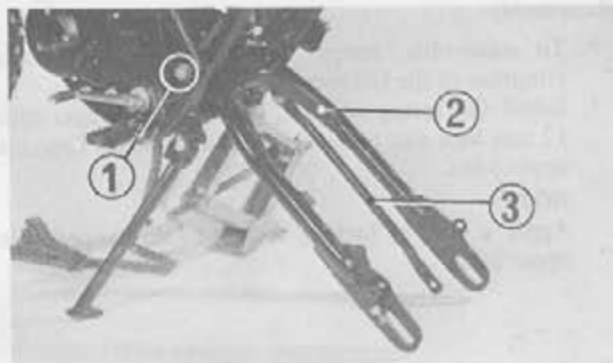


Fig. 4-71 (1) 12 mm self lock nut  
(2) Rear fork  
(3) Rear brake stopper

6. While compressing the rear shock absorber spring as shown, remove the upper spring seat.

**NOTE:**

This operation requires two men; one to compress the spring and the other to remove the upper spring seat while the spring is being compressed.



Fig. 4-72 (1) Upper spring seat  
(2) Spring

7. Loosen the 12 mm lock nut, remove the upper joint and remove the rear shock absorber.

**Inspection**

1. Measure the rear shock absorber spring free length. Also check the springs for tension.
2. Check the rear dampers for deformation or oil leakage.
3. Check the damper rods for bend.
4. Check the rubber stopper for breakage.
5. Measure the rear fork center collar-to-bushing clearance.
6. Check the holes for the rear axle in the rear end of the rear fork for proper alignment.
7. Check the grease lubrication hole in the rear fork pivot bolt for clogging.

Unit: mm (in.)

Item	Assembly standard	Service limit
Rear fork pivot bushing I.D.	18.030-18.063 (0.7098-0.7111)	18.20 (0.7165)
Rear fork center collar O.D.	17.968-17.981 (0.7074-0.7063)	17.88 (0.7039)

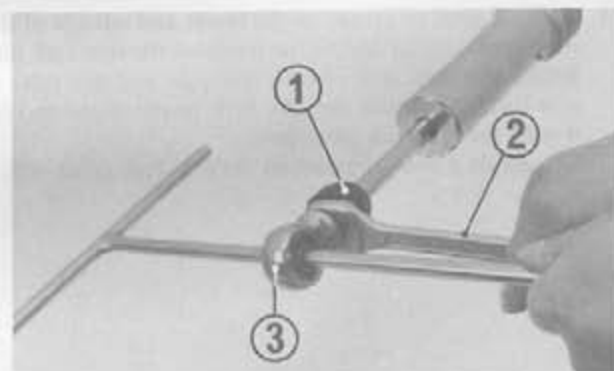


Fig. 4-73 (1) Rear damper  
(2) 10 mm lock nut  
(3) Upper joint

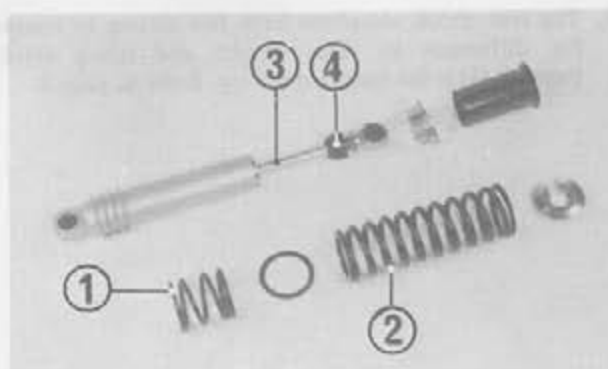


Fig. 4-74 (1) Rear shock absorber spring B  
(2) Rear shock absorber spring A  
(3) Rear damper rod  
(4) Stopper rubber

## Reassembly

- \* To reassemble, reverse the disassembly procedures. Pay attention to the following points:

1. Install the spring adjuster, spring seat, stopper rubber and 12 mm lock nut to each rear damper first. Then install the upper joint.

## NOTE:

Apply a coat of locking sealant to the tapped hole in the upper joint.

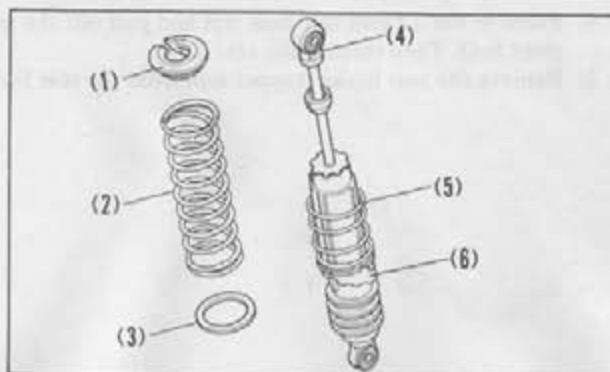
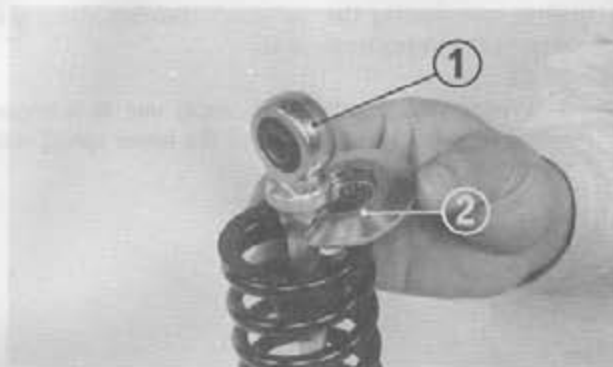


Fig. 4-75

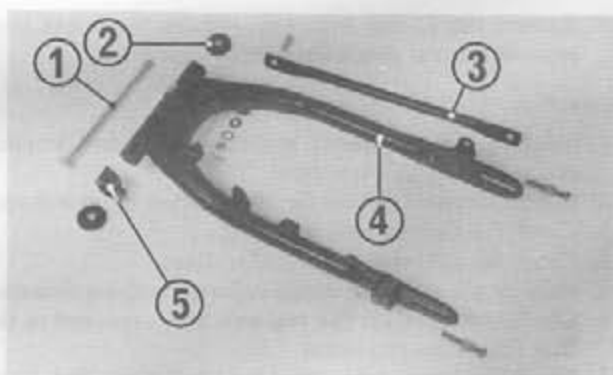
- |                                      |                                  |
|--------------------------------------|----------------------------------|
| (1) Spring upper seat                | (4) 12 mm lock nut               |
| (2) Rear shock absorber spring A     | (5) Rear shock absorber spring B |
| (3) Rear shock absorber spring joint | (6) Adjuster                     |

2. After tightening the upper joint, compress the spring and install the upper joint seat.

Fig. 4-76 (1) Upper joint  
(2) Upper joint seat

3. Apply a coat of grease to the inside and outside of the rear fork center collar and to the inside of the rear fork bushing. Install the dust seal caps to the right and left sides of the rear fork and install the rear fork to the frame and tighten it with the rear fork pivot bolt.

- \* Apply a coat of grease to the rear fork pivot bolt.

Fig. 4-77 (1) Rear fork pivot bolt (4) Rear fork  
(2) Rear fork dust seal cap (5) Chain guide  
(3) Rear brake stopper arm

4. The rear shock absorbers have five settings to compensate for difference in rider weight and riding conditions. Position (I) is the standard setting. Refer to page 9.



Fig. 4-78 (1) Spring adjuster

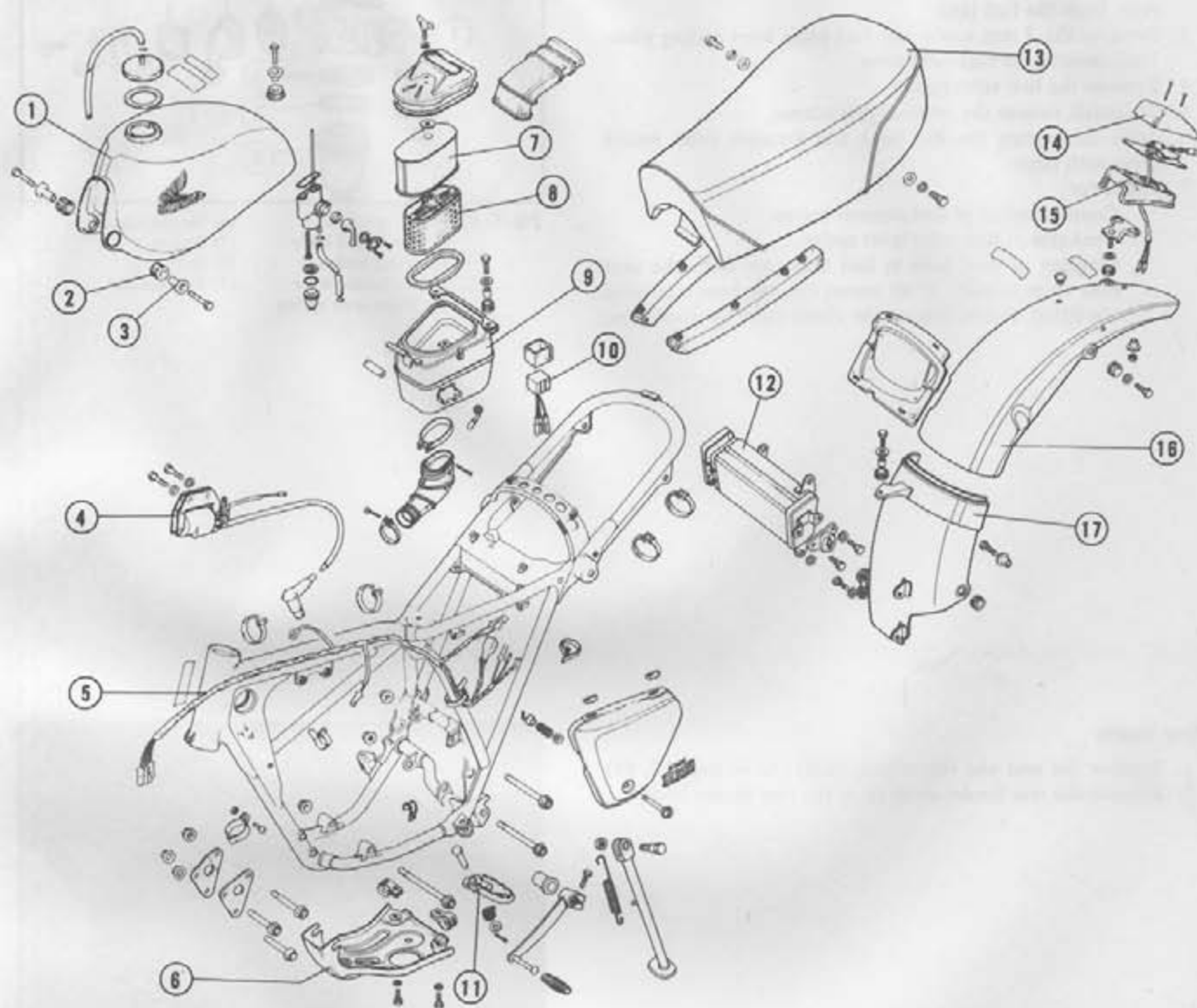


Fig. 4-79

- (1) Fuel tank
- (2) Fuel tank front rubber
- (3) Fuel tank front collar
- (4) Ignition coil
- (5) Frame body
- (6) Skid plate

- (7) Air cleaner element
- (8) Element holder
- (9) Air cleaner case
- (10) Rectifier
- (11) Step arm
- (12) Tool box

- (13) Seat
- (14) Taillight lens
- (15) Taillight base
- (16) Rear fender
- (17) Rear fender

**Fuel valve and fuel tank cap**

1. Drain the tank and remove it.
2. Remove the fuel strainer cup, O-ring and fuel strainer screen. Then remove the 6 mm screw and remove the fuel valve from the fuel tank.
3. Remove the 3 mm screw and fuel valve lever setting plate. Then remove the fuel valve lever.
4. Remove the fuel valve gasket.
5. To install, reverse the removal procedures.
6. After connecting the fuel tube and breather tube, secure them with clips.
7. Check for:
  - \* Contamination of fuel strainer screen.
  - \* Weakness of fuel valve lever spring.
  - \* Clogging of vent hole in fuel tank cap. Blow the vent hole from outside. If air comes out, the hole is in good condition. If not, inspect the check valve for condition.

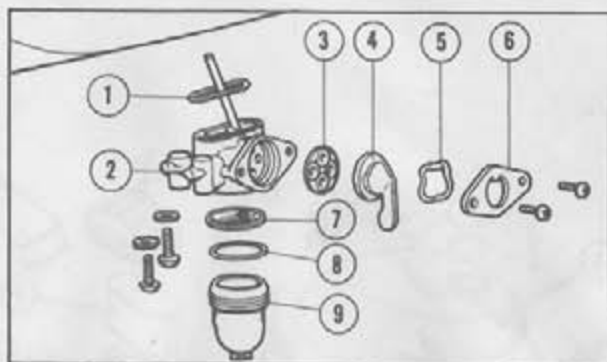


Fig. 4-80 (1) 23 mm O-ring (2) Fuel valve body (3) Valve gasket (4) Fuel valve lever (5) Valve lever spring (6) Setting plate (7) Screen (8) O-ring (9) Strainer cup

**Rear fender**

1. Remove the seat and rear wheel. (Refer to on page 15, 44)
2. Remove the rear fender cover from the rear fender hook.

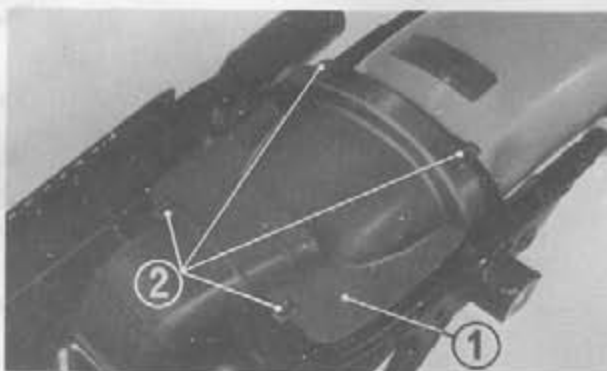


Fig. 4-81 (1) Rear fender cover (2) Hook

3. Remove the 6 mm bolts and remove the rear fender.
4. Disconnect the taillight cable.
5. Remove the taillight bolt and taillight.



Fig. 4-82 6 mm bolts



Disconnect the primary ignition cable and remove the 6 mm bolts.

Remove the high tension cord and remove the ignition coil.

To install, reverse the removal procedures.

Refer to the relative topic under INSPECTION on page 67 for procedure to be followed in inspecting the removed parts.

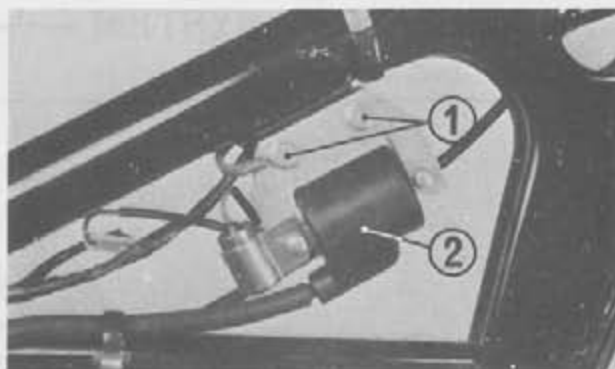


Fig. 4-83 (1) 6 mm bolts (2) Ignition coil

Pay off the cotter pin; remove the spring. Free the foot pedal.

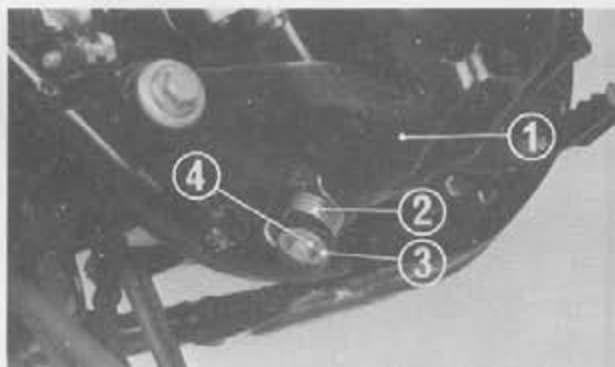


Fig. 4-84 (1) Step arm (2) Step return spring (3) 8 mm plain washer (4) 1.6 mm split pin

## V. ELECTRICAL SYSTEM

### 1. CHARGING SYSTEM

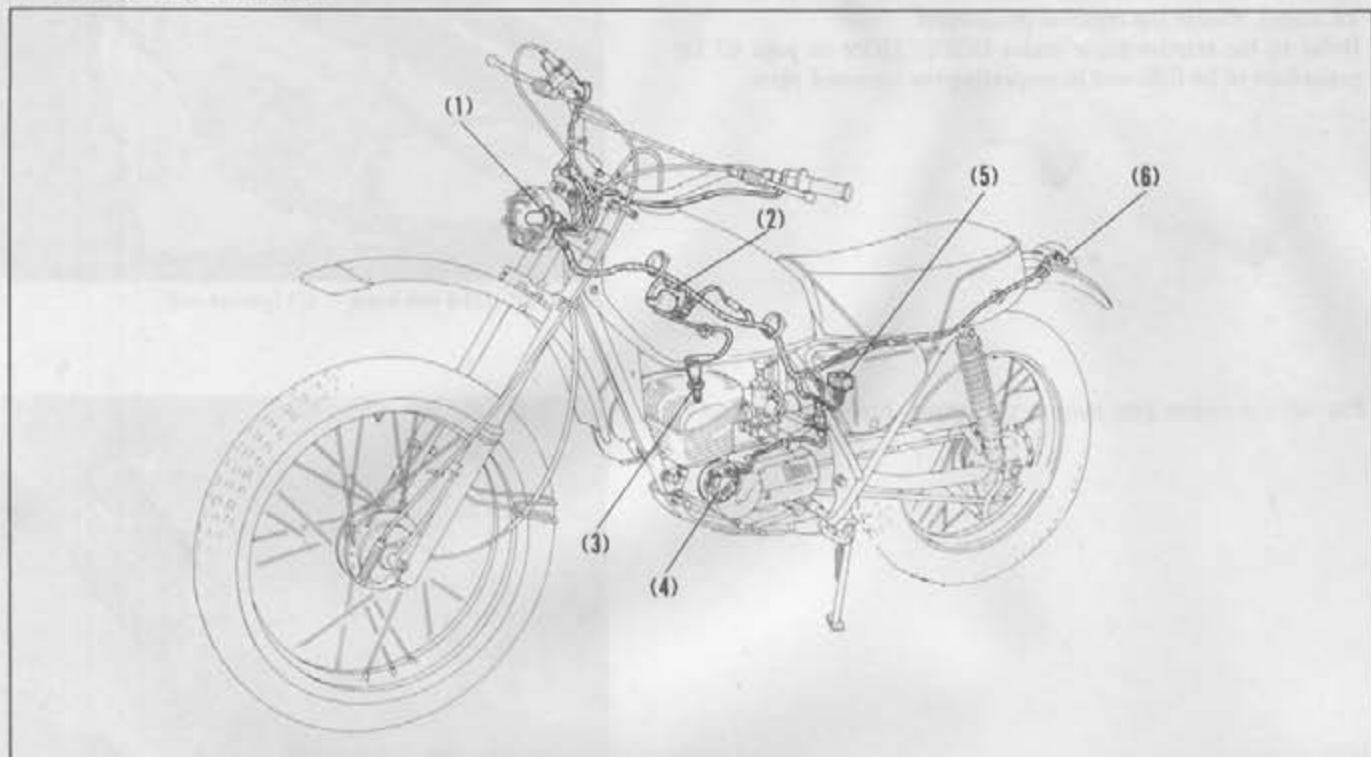


Fig. 5-1

- |                     |                       |
|---------------------|-----------------------|
| (1) Headlight valve | (4) A.C. generator    |
| (2) Ignition coil   | (5) Silicon rectifier |
| (3) Spark plug      | (6) Taillight valve   |

#### Disassembly

A.C. generator stator. (See page 21)

#### Inspection

Check the stator for continuity and resistance using a tester.  
Check for continuity between:

1. Black/yellow wire and stator.

If there is no continuity or the resistance is out of specification excessively, replace.

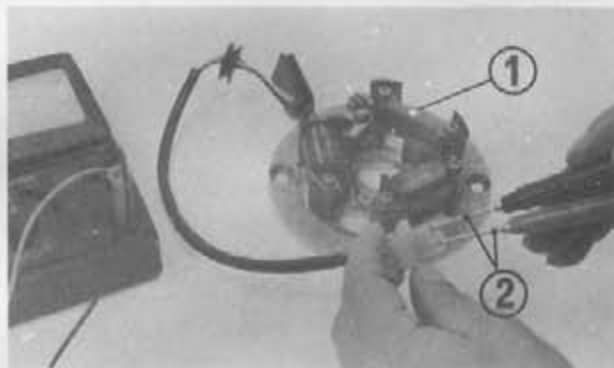


Fig. 5-2 (1) Starter (2) Tab.

#### Silicon rectifier

Check the two diodes for continuity from each direction.  
Check for continuity between:

1. Black/yellow and Black/white wires.
2. Black/white and Green wires.

\* Use an ohmmeter with the knob in the K $\Omega$  range. If there is a continuity or no continuity from both directions, the rectifier is defective.



Fig. 5-3 (1) Silicon rectifier

**CAUTIONS:**

- \* Do not use a megger since high voltage may be applied to the rectifier to result in breakage of the diodes.
- \* Connect the terminals of the battery correctly. If the battery is connected reversely, the service life may be shortened and excessive amount of current may flow to the electrical system to cause the breakage of the rectifier or the burning of the wire harness.
- \* When recharging the battery from outside sources, for example, by boost-charging with it installed, remove the coupler of the silicon rectifier first.



Fig. 5-4 (1) Silicon rectifier (2) Black/white (3) Black/yellow (4) Green

**2. IGNITION SYSTEM****Ignition coil****1. Continuity test**

- a. Primary winding. See page 65 for removal procedure. Check for the continuity between the attaching stay and primary winding (black/white cord) using a tester with the knob in the  $\Omega$  range.
- b. Secondary winding. Check for the continuity between the attaching stay and high-tension cable using a tester with the knob in the  $\Omega$  range.

If there is no continuity, the circuit in the coil is open. Replace the coil.

**2. Performance test**

Even if there is a continuity, the coil may become inferior in the performance. Check the coil performance.

- a. With the service tester selector knob turned to COIL TEST, connect in accordance with the instructions provided with the tester.

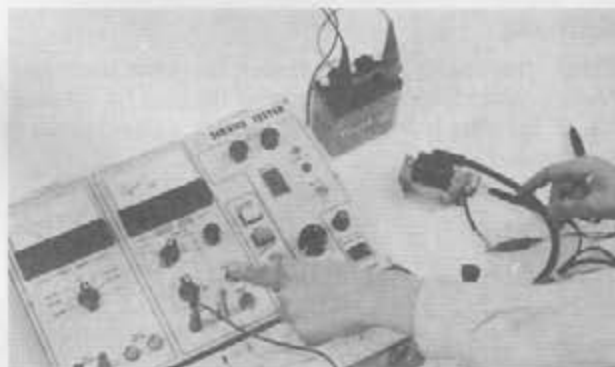


Fig. 5-5 Ignition coil continuity test

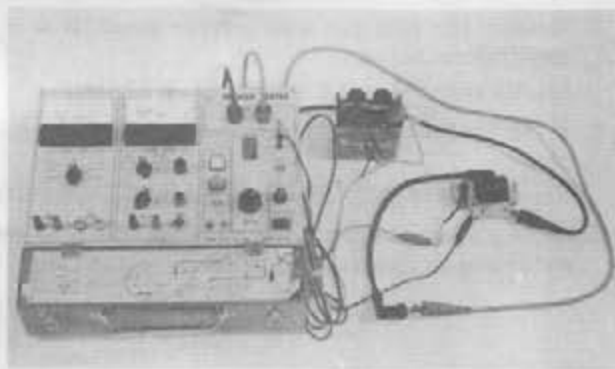


Fig. 5-6 Ignition coil performance test

- b. Connect a fully charged battery to the tester. Observing the spark jumping across a 3-point spark gap, turn the knob and measure the stable maximum jumping distance. If the spark appears in the form B in Fig. 5-7, connect the high-tension cable to the tester in the reverse direction and measure the jumping distance with the spark in the form A in the same figure.

**Specifications:**

- 8 mm (0.27-in.), min. at 500 rpm
- 8 mm (0.32-in.), min. at 3,500 rpm

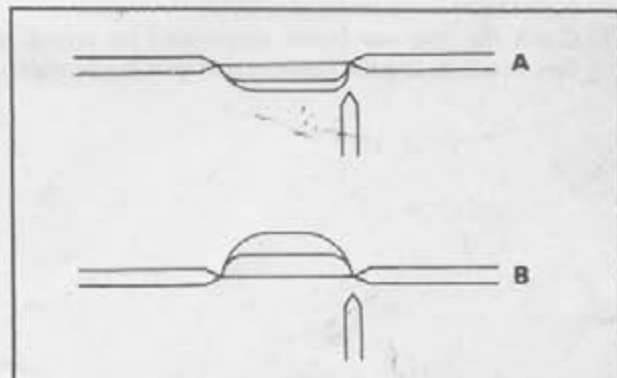


Fig. 5-7 Measuring distance of spark jumping across 3-point spark gap

**Condenser**

Using a tester, measure the capacity of the condenser. Also check for short circuit. If the capacity is small excessively or if the insulation resistance is too small, replace the condenser with the ignition coil.

**Specifications:**

- Capacity: 0.25 $\mu$ F  
 Insulation resistance: 10M $\Omega$  (at 1,000 $\Omega$  megger)

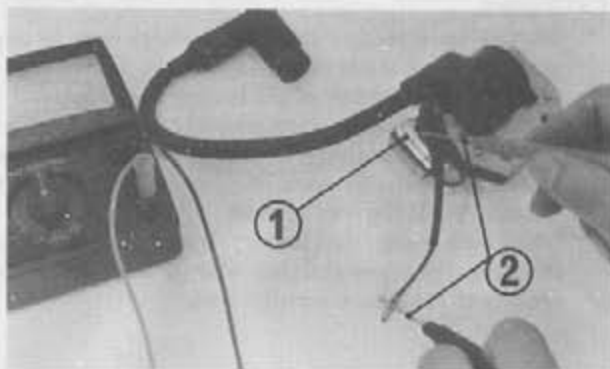


Fig. 5-8 (1) Condenser (2) Tabs  
 Checking condenser for condition

**Spark plug**

Check the spark plug electrodes for wear, improper cap or fouling. Also check the insulator of the plug for breakage.

1. If the plug is fouled, clean it with a plug cleaner or a wire brush.

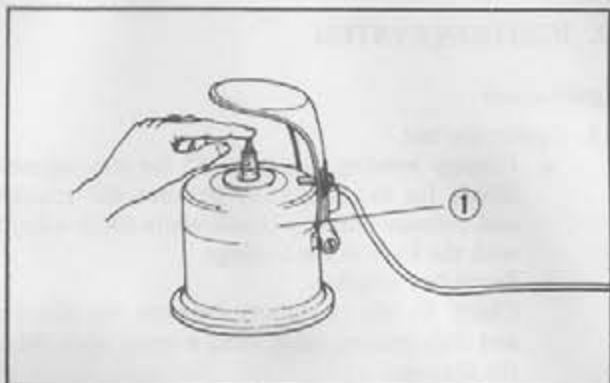


Fig. 5-9 (1) Spark plug cleaner

2. Measure the plug gap with a feeler gauge. If it is out of specification, adjust it.

Specification: 0.6–0.7 mm (0.024–0.028-in.)

3. If the insulator or gasket is broken or deformed, replace the plug.

Recommended plug: B-8ES (NGK) WD-F24FS (ND)

4. If the plug has a bridge, check the cylinder head, cylinder, piston and air cleaner for conditions.

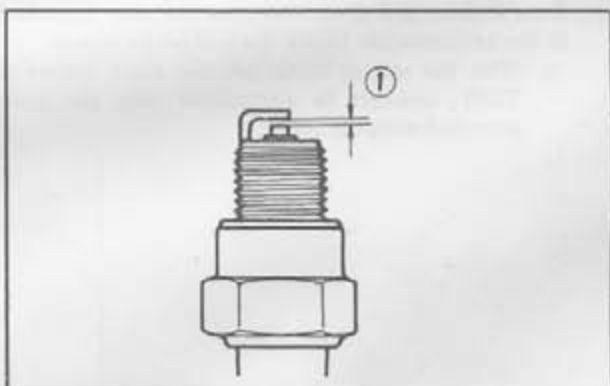


Fig. 5-10 (1) Plug gap

5. Check the plug cap (noise suppressor) for proper installation or cracks and the inside rubber part for damage.

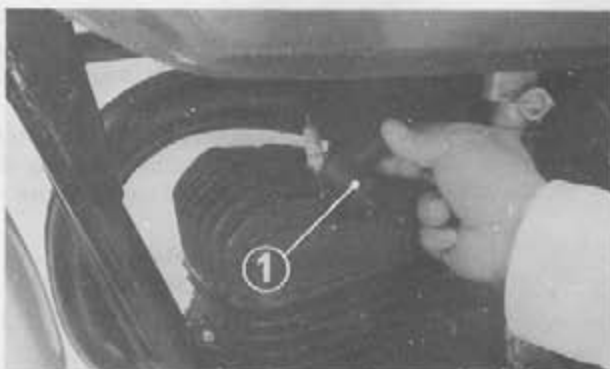


Fig. 5-11 (1) Noise suppressor cap

**Headlight dimmer switch**

Disconnect the headlight and dimmer switch leads from the headlight case. Using a tester, check for the continuity at each knob position. If the continuity is as shown in the table below, the switch is in good condition.

		C	TL	Hi	Lo
OFF					
ON	Hi	○	○	○	
	Lo	○	○		○
Cord color		Yellow	Brown	Blue	White

**Ignition switch (Kill switch)**

Disconnect the ignition switch leads and check for continuity between the leads on the switch side using a tester. If the continuity is as shown in the table below, the switch is in good condition.

	IG	E
OFF	○	○
RUN	○	○
OFF	○	○
Cord color	Black/white	Green

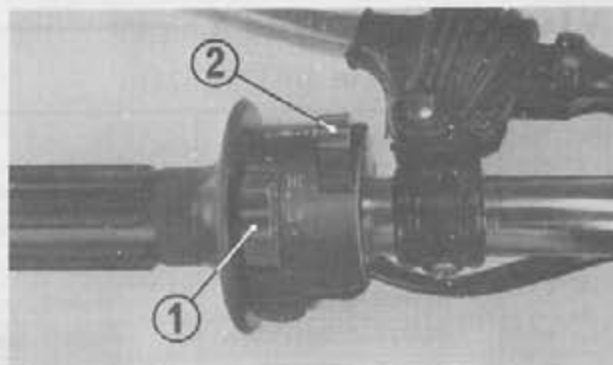


Fig. 5-12 (1) Dimmer switch (2) Headlight switch

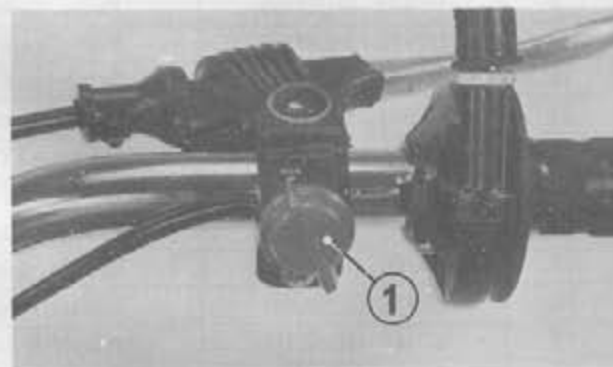


Fig. 5-13 (1) Ignition switch

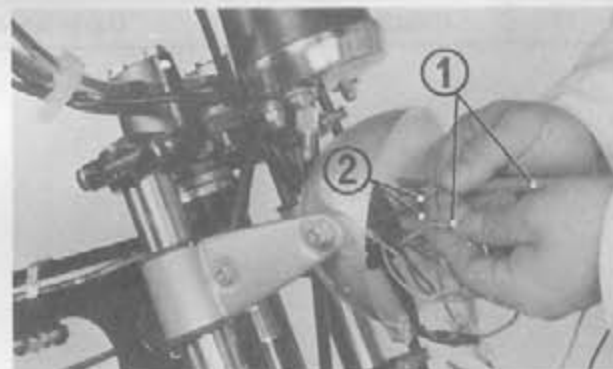


Fig. 5-14 (1) Tabs  
(2) Ignition switch leads



# VI. SERVICE DATA

## Special Tool List For MR175 (373)

Ref. No.	Tool No.	Tool Name	Q'ty
	07900-3730000	Special tool set	1
1	07902-2400000	Spanner, pin 46 mm	1
2	07908-3230000	Wrench, clutch adjusting	1
3	07910-3600000	Wrench, retainer rear	1
4	07915-0300000	Wrench, stem nut	1
5	07917-3230000	Wrench, hollow set 6 mm (Allen head wrench)	1
6	07922-3570000	Holder, drive sprocket	1
7	07924-3600000	Holder, drive gear	1
8	07933-0010000	Puller, flywheel	1
9	07937-3600000	Puller, case (Crankcase disassembly tool)	1
10	07944-1150000	Driver, ball race	1
11	07945-3230200	Driver, bearing	1
12	07946-3640000	Driver ATT, bearing	1
13	07946-3600000	Driver ATT, crank bearing	1
14	07947-3550000	Driver, fork seal	1
15	07949-6110000	Handle, driver	1
16	07958-2500000	Holder, connecting rod	1
17	07965-3610000	Assembly tool, crank	1
18	07797-2920300	Case, special tool	1

### Optional Special Tool

19	07542-3570000	Gauge set, dial T.D.C.	1
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## 2. MAINTENANCE SCHEDULE

<b>MAINTENANCE SCHEDULE</b> This maintenance schedule is based upon average riding conditions. Machines subjected to severe use, or ridden in unusually dusty areas, require more frequent servicing.	EVERY RIDING DAY	INITIAL SERVICE PERIOD	REGULAR SERVICE PERIOD Perform at every indicated mileage interval.
	Mile	200	1,000
	Km	350	1,600
DRIVE CHAIN—Check, lubricate, and adjust if necessary.	<input type="radio"/>	<input type="radio"/>	
*BRAKE SHOES—Inspect, and replace if worn.			<input type="radio"/>
BRAKE CONTROL LINKAGE—Check linkage, and adjust free play if necessary.	<input type="radio"/>		
WHEEL RIM AND SPOKES—Check. Tighten spokes and true wheels, if necessary.	<input type="radio"/>		
TIRES—Inspect	<input type="radio"/>		
REAR FORK BUSHING—Grease. Check for excessive looseness.		<input type="radio"/>	** <input type="radio"/>
*STEERING HEAD BEARINGS—Adjust.		<input type="radio"/>	<input type="radio"/>
ALL NUTS, BOLTS, AND OTHER FASTENERS—Check security and tighten if necessary.	<input type="radio"/>	<input type="radio"/>	
TRANSMISSION OIL—Change		<input type="radio"/>	<input type="radio"/>
SPARK PLUG—Clean and adjust gap or replace if necessary.			** <input type="radio"/>
*CONTACT POINT AND IGNITION TIMING—Clean, check, and adjust or replace if necessary.		<input type="radio"/>	<input type="radio"/>
*POLYURETHANE FOAM AIR FILTER ELEMENT—Clean and oil.	<input type="radio"/>	<input type="radio"/>	
*CARBURETOR—Check, and adjust if necessary.			<input type="radio"/>
*CYLINDER HEAD, CYLINDER PISTON, PISTON RINGS AND MUFFLER—Decarbonize.			<input type="radio"/>
THROTTLE OPERATION—Inspect cable. Check, and adjust free play.	<input type="radio"/>		
FUEL FILTER SCREEN—Clean.		<input type="radio"/>	<input type="radio"/>
CLUTCH—Check operation, and adjust if necessary.	<input type="radio"/>		
APARK ARRESTOR MAINTENANCE—Purge.			<input type="radio"/>

Items marked \* Should be serviced by an authorized Honda dealer, unless the owner has proper tools and is mechanically proficient. Other maintenance items are simple to perform and may be serviced by the owner.

\*\* Initial service period 200 miles.

## 3. TIGHTENING TORQUE STANDARD

## Engine

Unit: kg-m (lb-ft)

No.	Tightening point	Thread dia. (mm)	Torque	Remarks
1	Drive sprocket	6	0.8-1.2 (5.8-8.7)	Give special attention to torquing. UBS bolt
2	Drum stopper	6	0.8-1.2 (5.8-8.7)	
3	Neutral stopper	6	0.8-1.2 (5.8-8.7)	
4	Exhaust pipe muffler	6	0.8-1.2 (5.8-8.7)	
5	Clutch-center	16	4.0-4.5 (28.9-32.5)	
6	Clutch pressure plate	6	0.8-1.2 (5.8-8.7)	
7	AC generator rotor	12	5.0-6.0 (34.1-42.5)	
8	Cylinder head special nut	8	2.0-2.5 (14.5-18.1)	
9	Primary drive gear	8	3.5-4.0 (25.3-28.9)	
10	Spark plug	14	1.5-2.0 (10.8-14.5)	
11	Carburetor insulator band	5	0.8-1.2 (5.8-8.7)	
12	5 mm special bolt	5	0.3-0.4 (2.2-2.9)	

## Frame

Unit: kg-m (lb-ft)

No.	Tightening point	Thread dia. (mm)	Torque	Remarks
1	Steering stem nut	22	6.5-8.0 (43.4-57.9)	UBS bolt
2	Front fork top bridge	7	1.8-2.5 (13.0-18.1)	
3	Handlebar holder	8	1.8-2.5 (13.0-18.1)	
4	Front fork bottom bridge	8	1.8-2.5 (13.0-18.1)	
5	Spoke	-	0.2-0.45 (1.4-3.26)	
6	Rear fork pivot bolt	12	5.5-4.0 (39.8-50.6)	
7	Front wheel axle nut	12	6.0-8.0 (39.8-47.0)	
8	Front engine hanger bolt	8	2.8-3.3 (20.3-23.9)	
9	Rear engine hanger bolt	8	2.8-3.3 (20.3-23.9)	
10	Rear axle nut	14	6.0-8.0 (43.4-57.9)	
11	Driven sprocket	10	4.5-6.0 (32.5-43.4)	
12	Brake arm	6	0.8-1.1 (5.8-8.0)	
13	Rear brake torque link	8	1.8-2.5 (13.0-18.1)	
14	Rear shock absorber	10	3.0-4.0 (21.7-28.9)	
15	Change pedal	6	0.8-1.2 (5.8-8.7)	
16	Rear brake pedal pivot nut	10	3.0-4.0 (21.7-28.9)	
17	Kick starter pedal	8	1.8-2.5 (13.0-18.1)	
18	Handle lever bracket	6	0.3-0.4 (2.2-2.9)	

## 4. TECHNICAL SERVICE DATA

## Engine

Item		Assembly standard	Service limit
Cylinder bore		66.0-66.01 (2.5984-2.5988)	66.1 (2.6024)
Piston OD		65.94-65.96 (2.5961-2.5969)	65.8 (2.5905)
Piston pin hole dia.		16.002-16.008 (0.6300-0.6302)	16.1 (0.6339)
Piston pin OD		15.922-16.000 (0.6296-0.6299)	15.98 (0.6291)
Piston ring side clearance	Top	0.045-0.075 (0.0018-0.0030)	0.09 (0.0035)
	2nd	0.025-0.055 (0.0010-0.0022)	0.07 (0.0028)
Piston ring gap	Top	0.2-0.4 (0.0079-0.0157)	0.5 (0.0197)
	2nd	0.2-0.4 (0.0079-0.0157)	0.5 (0.0197)
Connecting rod small end ID	16.010	16.010-16.024 (0.6303-0.6309)	
Connecting rod big end axial clearance		0.15-0.6 (0.0059-0.0228)	
Connecting rod big end radial clearance		0.008-0.020 (0.0003-0.0008)	0.03 (0.0012)
Clutch friction disc thickness		2.62-2.78 (0.1031-0.1094)	2.4 (0.0945)
Clutch plate face runout		0.15 (0.0059)	0.25 (0.0098)
Clutch spring	Free length	37.8 (1.4882)	36.7 (1.4449)
	Tension	23.3/12.75-14.25 (0.9173/28.12-31.42 lbs)	23.3/12.5 kg (0.9173/27.56 lbs)
Transmission gear backlash			0.2 (0.0079)
Shift fork guide shaft OD		9.972-9.987 (0.3926-0.3932)	9.92 (0.3906)
R/H & L/H gearshift fork ID		10.000-10.018 (0.3937-0.3944)	10.05 (0.3957)
Shift fork finger thickness		4.90-4.93 (0.1929-0.1941)	4.5 (0.1772)

.55 = 2000 lbs

## Frame

Item		Assembly standard	Service limit
Front shock absorber spring free length		515 (20.276)	508 (20.000)
Rear shock absorber spring A free length		186.1 (7.326)	173 (6.8110)
Rear shock absorber spring B free length		56.2 (2.2126)	52 (2.047)
Front fork bottom pipe OD		30.925-30.950 (1.2175-1.2185)	30.9 (1.2165)
Front fork bottom case ID		31.000-31.039 (1.2205-1.2220)	31.180 (1.2276)
Front wheel axle bend		0.01 (0.0004)	0.2 (0.0080)
6302 ball bearings	Axial runout	0.07 (0.0028)	0.1 (0.0039)
	Radial runout	0.03 (0.0012)	0.05 (0.0020)
Front wheel rims	Face runout	0.5 (0.0197)	2.0 (0.0787)
Front brake drum ID		110.0-110.2 (4.3307-4.3386)	111.0 (4.3701)
Front brake shoe thickness		4.0-4.3 (0.1575-0.1693)	2.5 (0.0984)
Rear wheel rims	Face runout	0.5 (0.0197)	2.0 (0.0787)
Rear wheel axle bend		0.01 (0.0004)	0.2 (0.008)
6302 ball bearings	Axial runout	0.07 (0.0028)	0.1 (0.0039)
	Radial runout	0.03 (0.0012)	0.05 (0.0020)
Rear fork pivot bushing ID		18.030-18.063 (0.7098-0.7111)	18.20 (0.7165)
Rear fork center collar OD		17.968-17.941 (0.7074-0.7063)	17.88 (0.7039)
Rear brake drum ID		110.0-110.2 (4.3307-4.3386)	111.0 (4.3701)
Rear brake shoe thickness		3.75 (0.1476)	2.5 (0.0984)



## 5. TROUBLE SHOOTING

Trouble	Cause	Remedy
Engine will not start or fails to start.	<ol style="list-style-type: none"> <li>Insufficient compression pressure               <ol style="list-style-type: none"> <li>Leak of crankcase primary compression leak from oil seal primary compression leak from case matching surfaces</li> <li>Leak of crankcase</li> <li>Worn or stuck piston rings</li> <li>Worn cylinder</li> </ol> </li> <li>No spark from spark plug or on points               <ol style="list-style-type: none"> <li>Fouled plug</li> <li>Wet plug</li> <li>Fouled points</li> <li>Incorrect point gap</li> <li>Incorrect ignition timing</li> <li>Defective ignition coil</li> <li>Open or short circuit in ignition cords</li> <li>Short circuit in condenser</li> <li>Short circuit in AC generator</li> </ol> </li> <li>Raw gas in crankcase</li> <li>No fuel to carburetor               <ol style="list-style-type: none"> <li>Clogged jets</li> <li>Clogged fuel valve</li> <li>Defective float valve</li> <li>Clogged fuel tube</li> </ol> </li> </ol>	<p>Replace.</p> <p>Repair. Replace. Repair or replace.</p> <p>Clean or replace. Clean or replace. Clean or replace. Replace. Adjust. Replace. Replace. Replace. Repair or replace.</p> <p>Remove gas (with fuel valve in "OFF" position after stopping engine).</p> <p>Clean. Clean. Clean. Replace.</p>
Engine stalls frequently.	<ol style="list-style-type: none"> <li>Fouled plug</li> <li>Fouled points</li> <li>Incorrect ignition timing</li> <li>Clogged fuel pipes</li> <li>Clogged carburetor jets</li> <li>Leak from crankcase (primary compression)</li> <li>Sucked secondary air</li> </ol>	<p>Clean or replace.</p> <p>Clean or replace.</p> <p>Adjust.</p> <p>Clean.</p> <p>Clean.</p> <p>Repair.</p> <p>Repair or replace.</p>
Engine does not develop sufficient power.	<ol style="list-style-type: none"> <li>Worn or stuck cylinder or piston rings</li> <li>Incorrect ignition timing</li> <li>Defective points</li> <li>Incorrect spark plug gap</li> <li>Clogged carburetor jets</li> <li>Incorrect float level</li> <li>Clogged air cleaner element</li> <li>Cracked exhaust pipe muffler or carbon deposits in muffler</li> </ol>	<p>Repair or replace.</p> <p>Adjust.</p> <p>Repair or replace.</p> <p>Repair or replace.</p> <p>Clean.</p> <p>Adjust.</p> <p>Clean or replace.</p> <p>Repair.</p>
Engine overheats.	<ol style="list-style-type: none"> <li>Carbon deposit on cylinder head</li> <li>Too low float level (lean mixture)</li> <li>Incorrect ignition timing</li> <li>Clogged exhaust pipe muffler</li> <li>Insufficient lubrication</li> </ol>	<p>Clean.</p> <p>Adjust.</p> <p>Adjust.</p> <p>Clean.</p> <p>Check.</p>

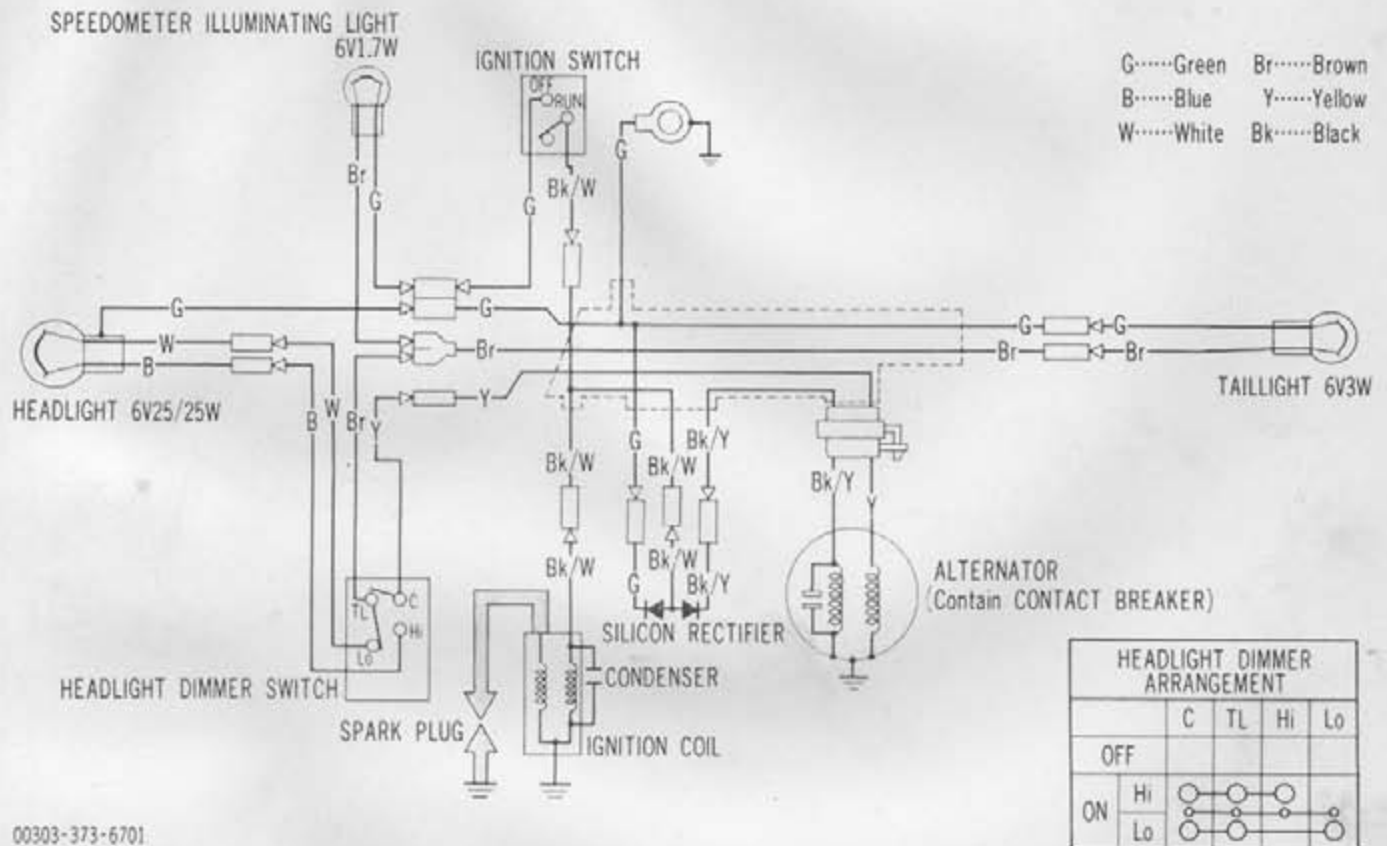
Trouble	Cause	Remedy
Clutch slips.	<ol style="list-style-type: none"> <li>1. Maladjusted clutch</li> <li>2. Weak clutch springs</li> <li>3. Worn or warped pressure plate</li> <li>4. Warped clutch plates</li> <li>5. Worn or warped friction discs</li> </ol>	Readjust. Replace. Replace. Replace. Replace.
Clutch drags when disengaged.	<ol style="list-style-type: none"> <li>1. Maladjusted clutch</li> <li>2. Unequal clutch spring tension</li> <li>3. Warped clutch plates</li> <li>4. Too much transmission oil</li> </ol>	Readjust. Replace. Replace. Adjust.
Transmission gears fail to be shifted smoothly or sequentially.	<ol style="list-style-type: none"> <li>1. Deformed shift drum stopper</li> <li>2. Broken gearshift drum</li> <li>3. Deformed gearshift forks</li> <li>4. Weak shift drum stopper spring</li> </ol>	Repair or replace. Replace. Repair or replace. Replace.
Gear change pedal fails to return.	<ol style="list-style-type: none"> <li>1. Broken gearshift return spring</li> <li>2. Interference between gearshift spindle and hole in crankcase</li> </ol>	Repair or replace. Repair.
Transmission gears disengage accidentally.	<ol style="list-style-type: none"> <li>1. Worn main shaft and countershaft shifting gears</li> <li>2. Bent or worn gearshift forks</li> </ol>	Replace. Repair or replace.
Engine operation is erratic at low speeds.	<ol style="list-style-type: none"> <li>1. Incorrect ignition timing</li> <li>2. Poor point contact</li> <li>3. Too large a spark plug gap</li> <li>4. Weak spark (defective condenser or ignition coil)</li> <li>5. Short circuit in AC generator</li> <li>6. Incorrect float level</li> <li>7. Maladjusted carburetor air screw</li> </ol>	Adjust. Repair or replace. Adjust or replace. Replace. Repair or replace. Adjust. Adjust.
Engine operation is erratic at high speeds.	<ol style="list-style-type: none"> <li>1. Too small a spark plug gap</li> <li>2. Incorrect ignition timing</li> <li>3. Weak point arm spring</li> <li>4. Defective ignition coil</li> <li>5. Incorrect float level</li> <li>6. Clogged air cleaner element</li> <li>7. Leak of primary compression pressure</li> <li>8. Rare short in AC generator</li> <li>9. Collapsed or cracked exhaust pipe muffler, broken tail pipe or carbon deposit in pipe</li> </ol>	Adjust or replace. Adjust. Replace. Replace. Adjust. Clean or replace. Repair. Repair or replace. Repair or replace.
Engine fails to fire.	<ol style="list-style-type: none"> <li>1. Defective ignition coil</li> <li>2. Defective spark plug</li> <li>3. Fouled points or incorrect point gap</li> <li>4. Rare short in AC generator</li> </ol>	Replace. Replace. Replace. Replace.
Breaker points are burning.	<ol style="list-style-type: none"> <li>1. Poor point contact</li> <li>2. Defective condenser</li> </ol>	Replace. Replace.
Spark plug electrodes are foul.	<ol style="list-style-type: none"> <li>1. Overflooded carburetor</li> <li>2. Maladjusted carburetor</li> </ol>	Adjust. Readjust.

Trouble	Cause	Remedy
Plug electrodes are burning.	1. Incorrect heat range 2. Engine overheating 3. Incorrect ignition timing 4. Loose spark plug 5. Lean mixture	Use recommended plug  Adjust. Retighten. Adjust.
Steering is hard.	1. Too tight steering stem 2. Broken steering stem steel balls 3. Bent steering stem 4. Unevenly worn ball races	Adjust. Replace. Replace. Replace.
Front wheel shimmies.	1. Deformed rims 2. Loose front wheel bearings 3. Loose spokes 4. Loose axle and related parts	Replace. Replace. Adjust. Retighten.
Front shock absorbers are spongy.	1. Weak springs 2. Insufficient damper oil	Replace. Add.
Front shock absorbers are hard.	1. Too high shock absorber oil viscosity 2. Too much damper oil	Replace. Adjust.
Rear wheel shimmies.	1. Deformed rims 2. Loose rear wheel bearings 3. Loose spokes 4. Loose axle and related parts	Replace. Replace. Adjust. Retighten.
Rear shock absorbers are spongy.	1. Weak springs 2. Improper rear shock absorber adjuster operation	Replace. Adjust.
Rear shock absorbers are hard.	1. Improper rear shock absorber adjuster operation 2. Improper spring thrust joint sliding 3. Bend damper rods	Adjust.  Repair. Replace.
Braking effect is poor.	1. Poor brake shoe contact 2. Oil or grease on brake linings 3. Broken brake cable or loose brake pedal shaft 4. Maladjusted brake	Repair or replace. Replace. Repair or replace. Readjust.
Brake free play is too small.	1. Excessively worn brake shoes 2. Excessively worn brake cam 3. Poor engagement of brake arm serration	Replace. Replace. Repair or replace.

## 6. SPECIFICATIONS

<b>DIMENSIONS</b> Overall length Overall width Overall height Wheel base Ground clearance Dry weight	2,055 mm (80.9-in.) 890 mm (35.0-in.) 1,125 mm (44.3-in.) 1,365 mm (53.7-in.) 250 mm ( 8.9-in.) 92.5 kg (204 lbs)
<b>FRAME</b> Type F. suspension R. suspension F. tire size, pressure R. tire size, pressure F. brake R. brake Fuel capacity Fuel reserve capacity Caster angle Trail length Front fork oil capacity	Semi-double cradle Telescopic fork Swing arm 3.00-21-4PR 14.2 psi. (1.0 kg/cm <sup>2</sup> ) 3.50-18-4PR 14.2 psi. (1.0 kg/cm <sup>2</sup> ) Internal expanding shoes Internal expanding shoes 11.0 lit. (2.9 U.S. gal., 2.3 imp. gal.) 2.7 lit. (0.7 U.S. gal., 0.6 imp. gal.) 59° 145 mm (5.7-in.) 160 cc (5.4 ozs) Amount required to fill dry assembly
<b>ENGINE</b> Type Cylinder arrangement Bore and stroke Displacement Compression ratio Transmission Oil capacity Lubrication system Port timing Intake Open Intake Close Exhaust Open Exhaust Close Scavenge Open Scavenge Close Idle speed	Air cooled, 2-stroke Single-cylinder 15° inclined from vertical 66.0 x 50.0 mm (2.60 x 1.97-in.) 171 cc (10.34 cu-in.) 6.8 : 1 1.0 (1.1 US qt) Forced and wet sump 81.5 BTDC 81.5 ATDC 89.5 BBDC 89.5 BBDC 57.5 BBDC 57.5 ABDC
<b>DRIVE TRAIN</b> Clutch Transmission Primary reduction Gear ratio I Gear ratio II Gear ratio III Gear ratio IV Gear ratio V Final reduction Gear shift pattern	Wet, multi-plates 5-speed constant mesh 4,000 3,000 1,875 1,300 0,958 0,741 2,866 Left foot operated return system
<b>ELECTRICAL</b> Ignition Starting system Generator Spark plug Spark plug gap Ignition timing	Flywheel magneto Kick starter A.C. generator NGK B8ES 0.6-0.7 mm (0.024-0.028-in.) 20.5° BTDC

## MR175 WIRING DIAGRAM



00303-373-6701



Insert this addendum after page 79 of the MR175 Shop Manual.  
 Engine No. MR175E-2000001 and subsequent  
 Frame No. MR175-2000001 and subsequent

## 1. TRANSMISSION BREATHER TUBE

The transmission breather tube routing has been changed. The breather tube should be routed into the main frame as shown in Figure.

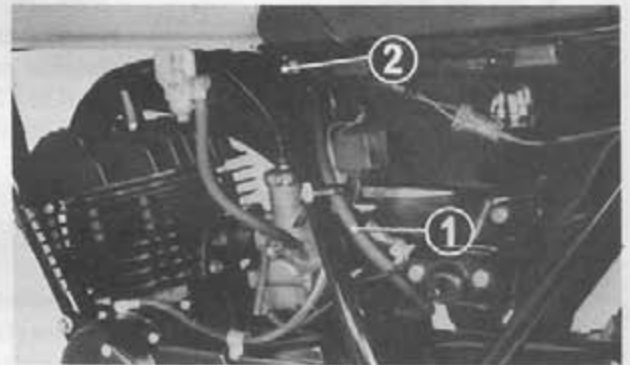
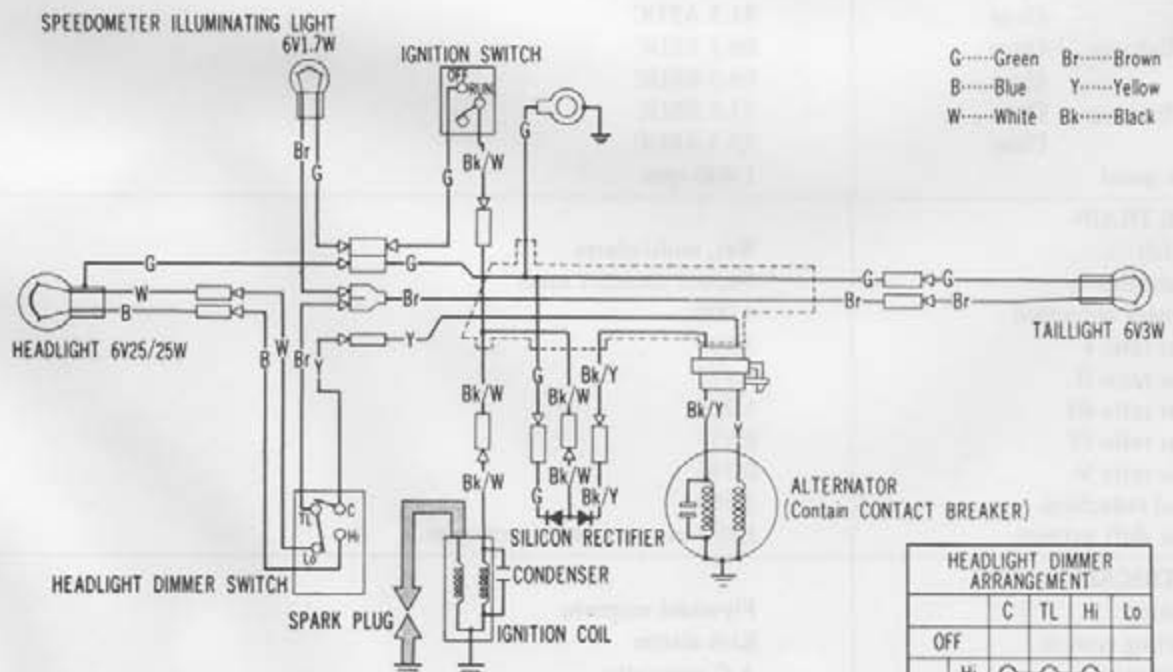


Fig. K1-1 (1) Transmission breather tube  
 (2) Main frame

## 2. WIRING DIAGRAM



00303-373-6701

HEADLIGHT DIMMER ARRANGEMENT				
	C	TL	Hi	Lo
OFF				
ON	Hi	Lo	Lo	Lo

## 3. SPECIFICATIONS

<b>DIMENSIONS</b> Overall length Overall width Overall height Wheel base Ground clearance Dry weight	2,075 mm (81.7-in.) 890 mm (35.0-in.) 1,125 mm (44.3-in.) 1,365 mm (53.7-in.) 250 mm (9.8-in.) 92.5 kg (204 lbs)
<b>FRAME</b> Type F. suspension R. suspension F. tire size, pressure R. tire size, pressure F. brake R. brake Fuel capacity Fuel reserve capacity Caster angle Trail length Front fork oil capacity	Semi-double cradle Telescopic fork Swing arm 3.00-21-4PR 14.2 psi. (1.0 kg/cm <sup>2</sup> ) 3.50-18-4PR 14.2 psi. (1.0 kg/cm <sup>2</sup> ) Internal expanding shoes Internal expanding shoes 11.0 lit. (2.9 U.S. gal., 2.3 Imp. gal.) 2.7 lit. (0.7 U.S. gal., 0.6 Imp. gal.) 59° 145 mm (5.7-in.) 160 cc (5.4 ozs) Amount required to fill dry assembly
<b>ENGINE</b> Type Cylinder arrangement Bore and stroke Displacement Compression ratio Transmission Oil capacity Lubrication system Port timing Intake      Open Close Exhaust    Open Close Scavenge   Open Close Idle speed	Air cooled, 2-stroke Single-cylinder 15° inclined from vertical 66.0 x 50.0 mm (2.60 x 1.97-in.) 171 cc (10.34 cu-in.) 6.8 : 1 1.0 lit. (1.1 U.S. qt., 0.9 Imp. qt.) Forced and wet sump 81.5 BTDC 81.5 ATDC 89.5 BBDC 89.5 BBDC 57.5 BBDC 57.5 ABDC 1,400 rpm
<b>DRIVE TRAIN</b> Clutch Transmission Primary reduction Gear ratio I Gear ratio II Gear ratio III Gear ratio IV Gear ratio V Final reduction Gear shift pattern	Wet, multi-plates 5-speed constant mesh 4.000 3.000 1.875 1.300 0.958 0.741 2.866 Left foot operated return system
<b>ELECTRICAL</b> Ignition Starting system Generator Spark plug Spark plug gap Ignition timing	Flywheel magneto Kick starter A.C. generator NGK B8ES 0.6-0.7 mm (0.024-0.028-in.) 20.5° BTDC