

Troubles	Probable Cause	Remedy	Procedure
	Lubrication	Pour or change oil	Shortage of oil amount or inferior oil cause engine seizing and stick. Supply proper grade oil or change if necessary.
	Fuel	Check	Premium quality gasoline is being used.
High oil consumption	① Wear of engine's part	Replace	Worn piston, piston ring and cylinder should be replaced.
	② Clearance between valve and valve guide	Replace	Replace both valve and valve guide in case there are large clearance between them.
	③ Piston ring installation	Disassembling and inspect	Each piston ring must be installed properly on the piston and piston ring gaps must be staggered at 120° apart.
	④ Amount of oil	Check	When the oil was overfilled, drain the oil to bring to the proper oil level.
	⑤ Leakage	Check	Replace the gasket or oil seal and retighten the screws.

## (CLUTCH MULFUNCTION)

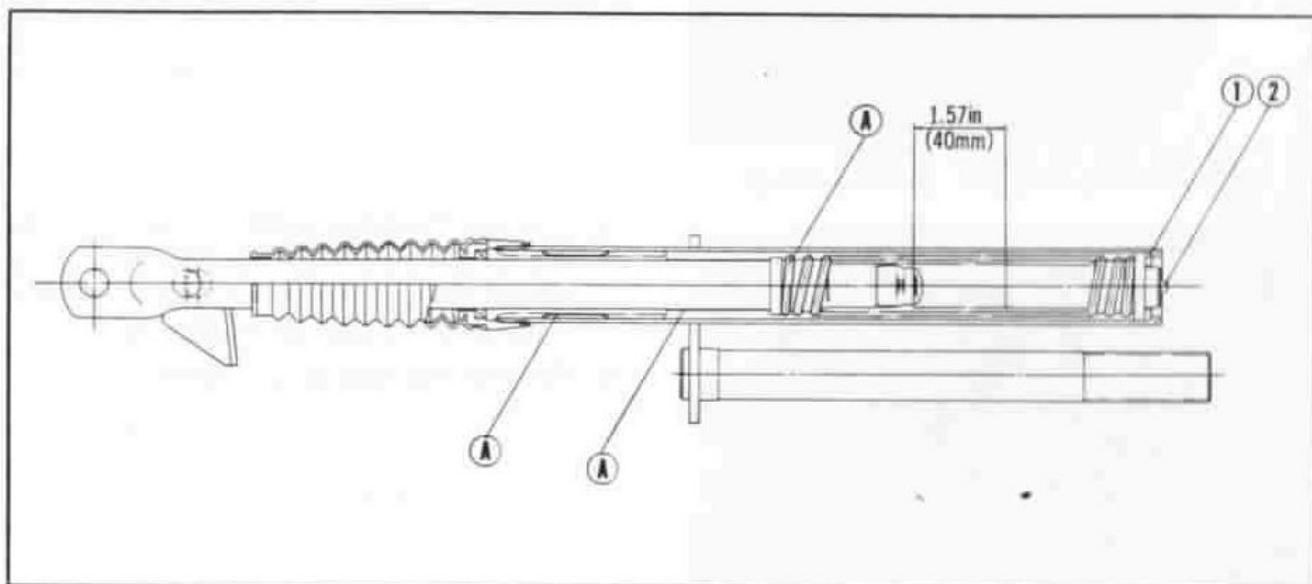
Troubles	Probable Cause	Remedy	Procedure
Clutch slippage	Wear clutch plate and clutch friction disk and spring damage	Check and repair	Spring compressive force and free length are beyond the servicable limit, they should be replaced. Replace the parts in case the clutch disks and plates are distorted or excessively worn.
Clutch stick	Oil and defective installation	Inspect and adjust	Readjust the clutch or replace the clutch disks and plates if necessary.
Chattering noise	Clutch spring	Check and adjust	Adjust the same height of clutch spring and replace if the springs are distorted.
Gear shift operation			
Not able to shift the gear	Gear, shift fork, shift arm, spring	Inspect and replace	① Broken, wear and damage of these parts should be replaced. ② Repair the gear shaft arm or drum if they do not operate smoothly
Gear change pedal does not return to the normal position	Gear shift return spring and gear shift arm spring	Inspect	① Repair or replace if they are defectively.
Transmission gear jumping	Gear shift fork gear shift drum stopper spring	Repair	① If the gear shift fork finger is deformed or excessively worn, it should be replaced. ② Replace if the spring compressive force is inadequate.

Troubles	Probable Cause	Remedy	Procedure
<b>Noise</b>			
<b>Tappet noise</b>	• Tappet clearance	Adjust	Adjust the proper clearance if it is too large.
	• Wear of rocker arm and shaft	Replace	Replace the rocker arm and shaft if excessively worn.
<b>Piston slap</b>	• Large clearance between piston and cylinder	Replace	Piston or cylinder should be replaced, use its oversize of piston and piston ring.
	• Large clearance of bearing ends of connecting rod	Repair	Replace the worm parts when the connecting rod to piston pin or to crank pin clearance are excessively large
<b>Cam chain noise</b>	• Cam chain tensioner, chain and wear of sprocket teeth	Adjust or replace	<ul style="list-style-type: none"> <li>• Perform the adjustment or replacement if the cam chain tensioner is inoperative.</li> <li>• The stretched chain should be replaced.</li> <li>• Excessive worm teeth of sprocket (cam side, timing side) should be replaced.</li> </ul>
<b>Clutch chattering noise</b>	Clutch outer and friction disk	Replace	• Replace the worn parts if there are excessive looseness between them.
<b>Crankshaft noise</b>	Bent center of crankshaft and crank pin, worn bearing	Align and replace	Align the crankshaft if there are excessive deflection at the center of crank shaft. Bent crank pin and worn bearing should also be replaced.
<b>Primarily drive gear's noise</b>	Drive or driven gear	Inspect and replace	Carefully check to the teeth face of drive or driven gear on which there are excessive wear, replace them.

## FRAME

### 1. FRONT SUSPENSION

When assembling the front cushion, particular attention should be given to the following items.



① Spring seat washer ② Dowel pin  
Fig. 54

1. Apply ample amount of good quality grease to the area **A** indicated by heavy lines in Fig. 54 when installing the front fork cushion assembly to the front fork.
2. Do not forget to install the seat washer **①**.
3. Positively insert the alignment dowel pin **②** of the front fork cushion into the steering handle holder before tightening the bolts.

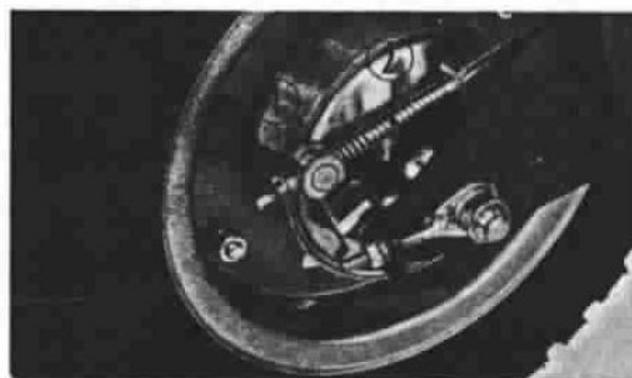
### 2. REAR BRAKE (U.S.A. Type)

#### A. Description

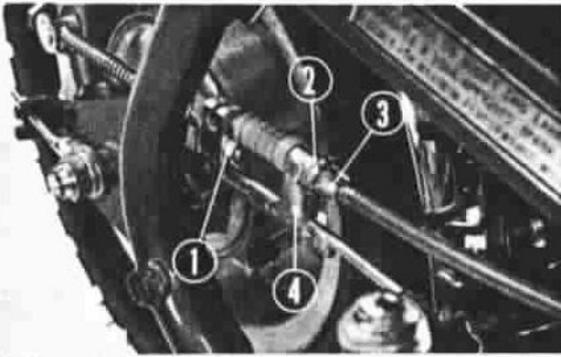
The rear brake is operated by the right foot pedal or the left hand lever.

#### B. Disassembly

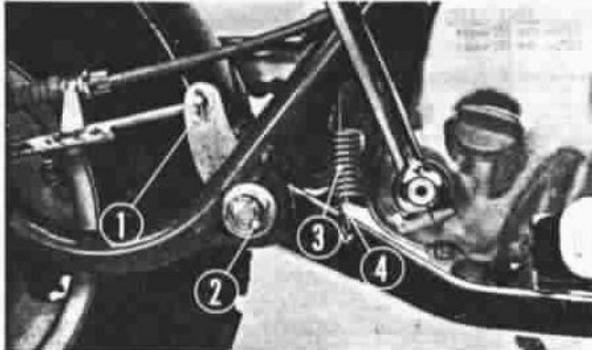
1. Remove the brake rod adjusting nut and separate the brake rod **B** from the brake lever (Fig. 55).



① Brake rod adjusting nut ② Brake rod **B**  
Fig. 55



① 6 mm lock nut ② Circular lock nut  
③ Brake cable adjusting bolt ④ Brake rod A  
Fig. 56



① Pin ② Brake pedal pin nut  
③ Brake pedal spring ④ Stop lamp switch spring  
Fig. 57

2. Loosen the circular lock nut and remove the brake cable from the brake rod A (Fig. 56).
3. Remove 6 mm lock nut and a pin. Then remove the brake rod A and B (Fig. 56, 57).

4. Remove the brake pedal pin nut, unhook the brake pedal spring and stop lamp switch spring from the brake pedal and remove the brake pedal (Fig. 57).
5. Perform the rear wheel removal.

#### C. Inspection

1. Check the brake rods for bent and damage. Straighten the bent rod and replace the rod if damaged.
2. Check the spring and brake pedal for deformation or damage. If damaged, replace them with new one.
3. Check the brake cable for break. Replace the broken cable with new one.

#### D. Reassembly

Perform the reassembly in the reverse order of disassembly.

#### E. Adjustment

1. Make the adjustment of left hand lever play independently by turning the brake cable adjusting bolt. Turn clockwise to increase the play. The nominal free play is 0.8-1.2 (20-30 mm).

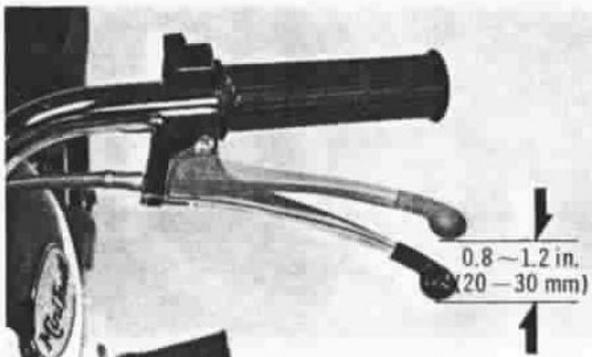
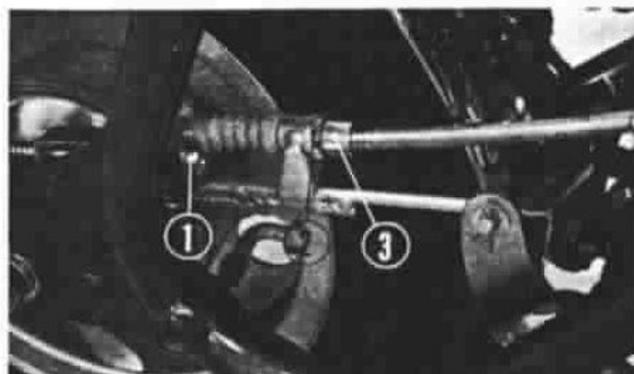


Fig. 58

2. Make the adjustment of pedal tip travel with the brake rod adjusting nut. Turn clockwise for less free travel, counter-clockwise for greater free travel. The nominal free play is 0.4–0.8 (10–20 mm).



① Brake rod adjusting nut ② Circular lock nut  
③ Brake cable adjusting nut

Fig. 59

3. The light should come on when the brake pedal is depressed 0.4 (10 mm). Turning the adjuster nut clockwise will delay the switch engagement (Fig. 60).

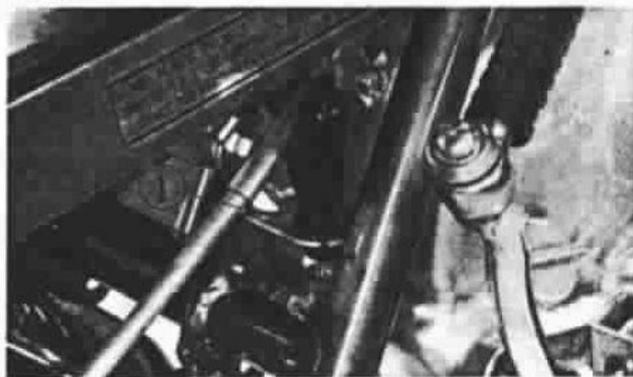
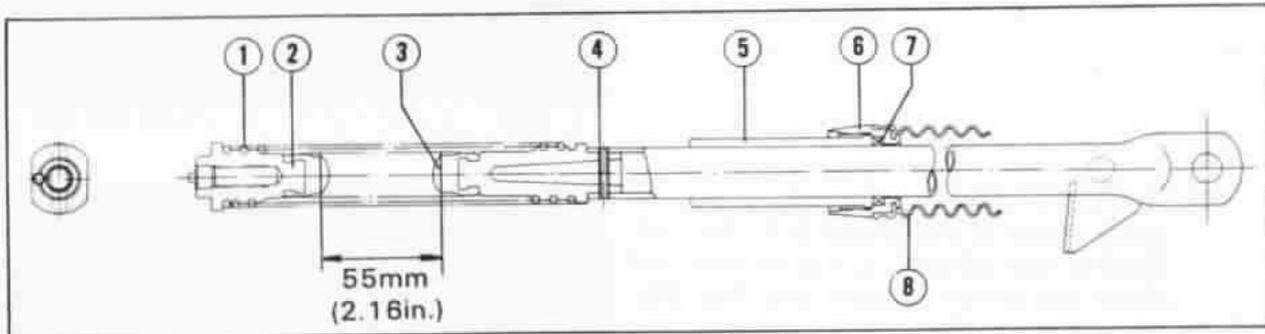


Fig. 60 ① Adjuster nut

## FRAME (K3, K4, K5)

### 1. FRONT SUSPENSION

On the models Z50AK3, Z50AK4 and Z50AK5, the overall length and stroke were changed.



- |                                |                       |
|--------------------------------|-----------------------|
| ① Front cushion spring         | ⑤ Fork pipe guide     |
| ② Spring upper holder          | ⑥ Fork pipe guide cap |
| ③ Front cushion stopper rubber | ⑦ Oil seal            |
| ④ Spring pin                   | ⑧ Front fork boot     |

Fig. 1

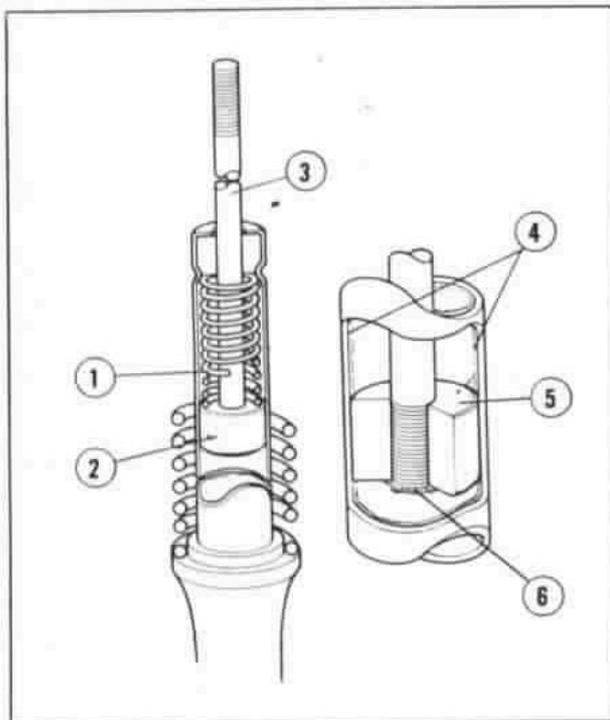
### 2. FUNCTION OF REAR SUSPENSION

On the model Z50AK3, the rear suspension was newly employed in connection with the change in shape of the frame. This rear suspension uses single tube, friction type dampers. Each cylinder is filled with some amount of grease for lubrication.

#### • Operation

The head of the damper rod acts as a piston and it slides along the internal wall of the cylinder to cause the friction to be produced.

- Since friction is produced in both directions (when the shock absorber contracts and extends), this rear damper is of a double-acting type.
- The rebound stop spring is provided to absorb a shock load when the shock absorber is fully extended.



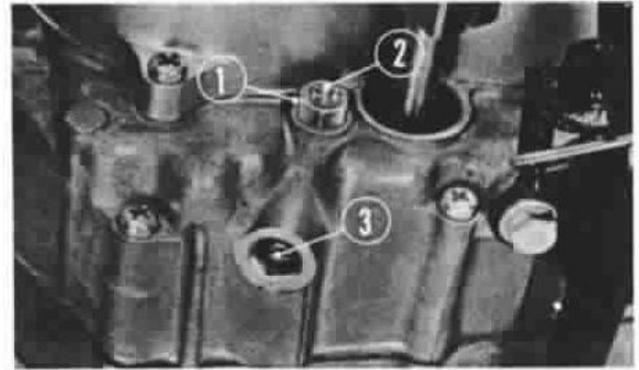
- |                               |                               |
|-------------------------------|-------------------------------|
| ① Rear cushion rebound spring | ③ Rod                         |
| ② Rear cushion rod guide      | ④ Grease                      |
| ⑤ Piston                      | ⑥ Rebound stopper spring seat |

Fig. 2

### 3. CAM CHAIN ADJUSTMENT

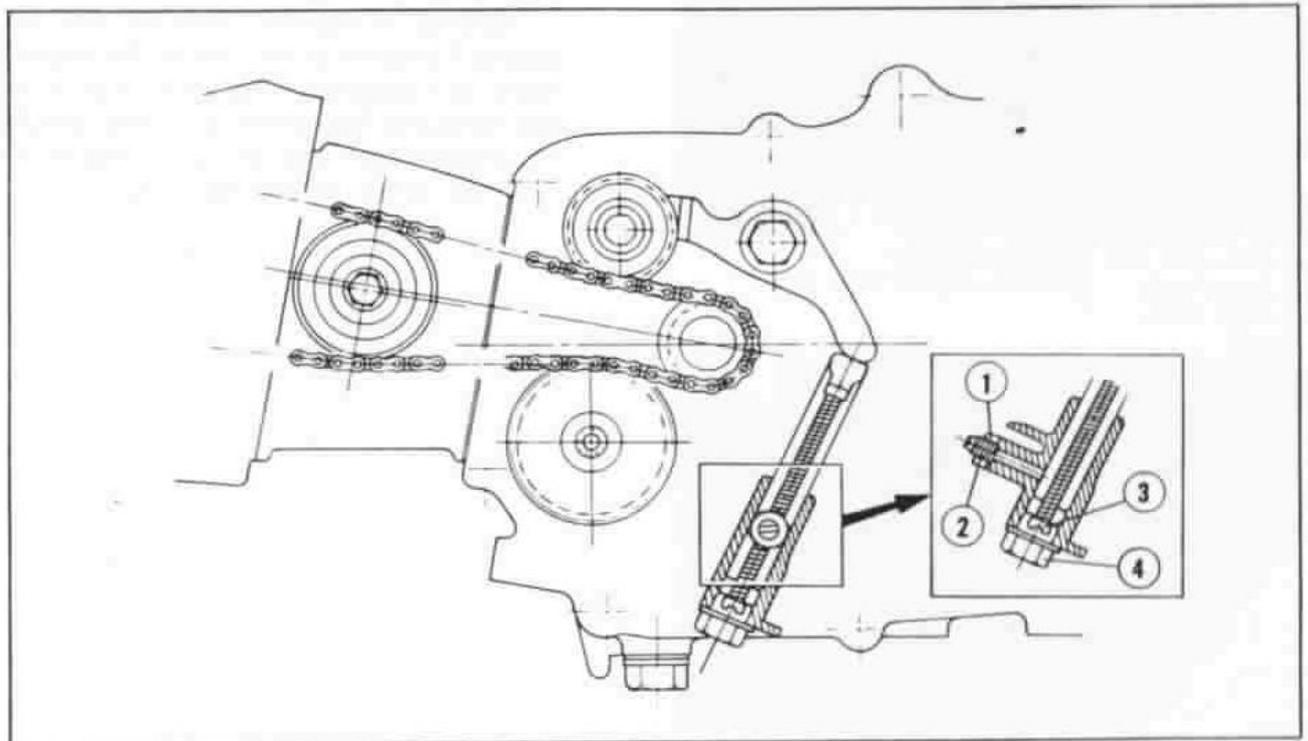
Too tight or too loose a cam chain will adversely affect the engine. Adjust the chain tension while the engine is idling.

1. To adjust, loosen the lock nut ① and back off the tensioner adjusting bolt ② approximately 1/2 turn.
2. If the chain is still noisy after adjusting, loosen the 14 mm sealing bolt located at the left lower side of the crankcase and tighten the tensioner bolt ③ gradually until the chain becomes quiet. Upon completing the adjustment, tighten the tensioner adjusting bolt, lock nut and 14 mm sealing bolt securely.



① Tensioner adjusting bolt lock nut  
② Tensioner adjusting bolt  
③ Tensioner bolt

Fig. 3



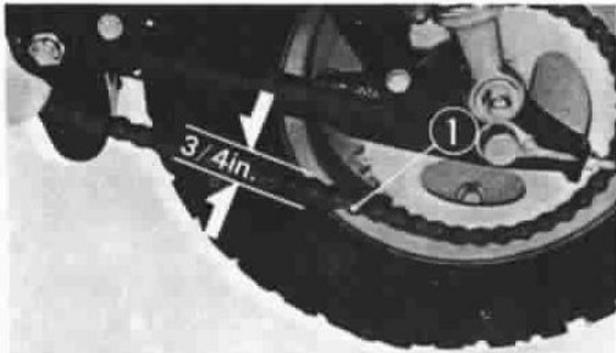
① Tensioner adjusting bolt lock nut  
② Tensioner adjusting bolt

③ Tensioner bolt  
④ 14 mm sealing bolt

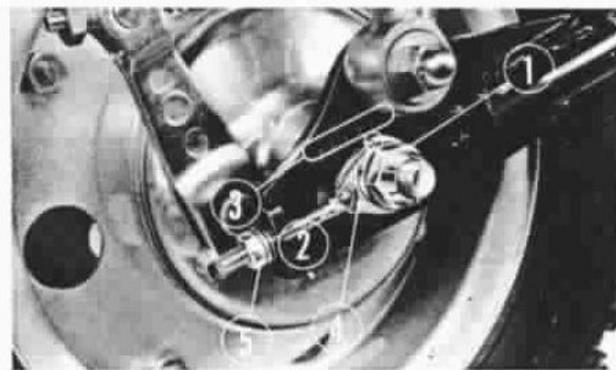
Fig. 4

### 4. DRIVE CHAIN MAINTENANCE

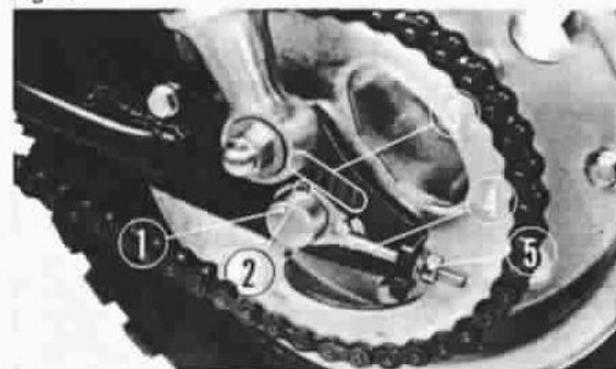
Adjustment of the drive chain tension will have a considerable effect on the transmission of power from the engine to the rear wheel and on the service life of the chain. Therefore, the chain tension should always be adjusted correctly. Every time the chain tension is adjusted, the chain must be lubricated.



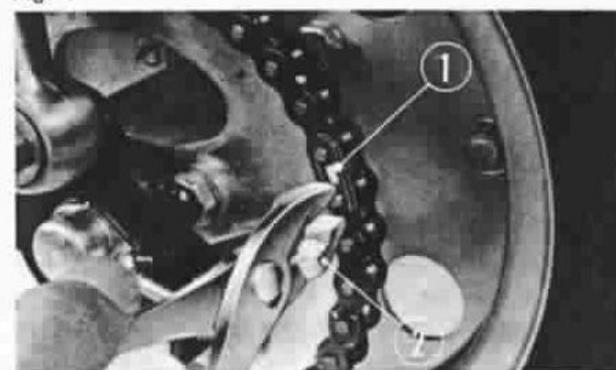
① Drive chain  
Fig. 5



① Rear axle nut    ④ Chain adjuster  
② Index mark    ⑤ Chain adjuster lock nut  
③ Side scale  
Fig. 6



① Rear axle shaft    ④ Chain adjuster  
② Index mark    ⑤ Chain adjuster lock nut  
③ Side scale  
Fig. 7



① Retaining clip    ② Pliers  
Fig. 8

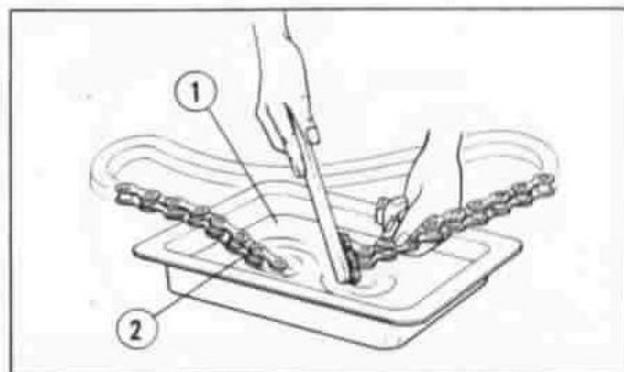
1. Push the chain up and down at the midpoint between the sprockets to check the chain tension. The maximum slack of the chain should be  $3/4$  inch.

2. To adjust, loosen the rear axle nut.
3. Then turn the chain adjuster lock nut in either direction. Turning the lock nut clockwise will decrease the chain slack or turning it counterclockwise will increase the chain slack. When the adjustment is completed, the index marks on the right and left chain adjusters should be aligned with the reference marks on the both sides of the rear fork.

4. Finally, tighten the axle nut securely.
5. If the drive chain is excessively dirty, clean it in the following manner.
  - a. Carefully remove the master link retaining clip ① with pliers. Do not bend or twist the clip. Remove the master link. Remove the drive chain from the Mini-Trail.

- b. Clean the chain in solvent and dry it (Fig. 9).

Check the chain for wear or damage. Replace any chain that has damaged rollers, loose fitting links or otherwise appears unserviceable.

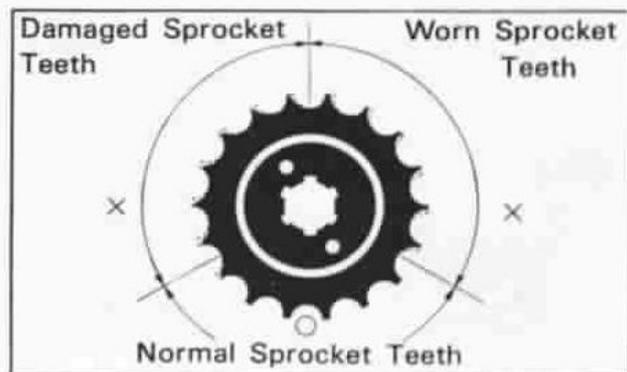


① Solvent ② Chain

Fig. 9

- c. Check the sprocket teeth for wear or damage and replace if necessary (Fig. 10).

Never use a new drive chain with badly worn sprocket. Both the chain and sprockets must be in good condition.

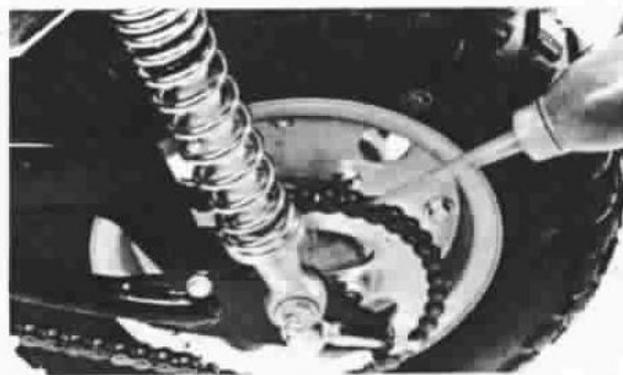


① Drive sprocket

Fig. 10

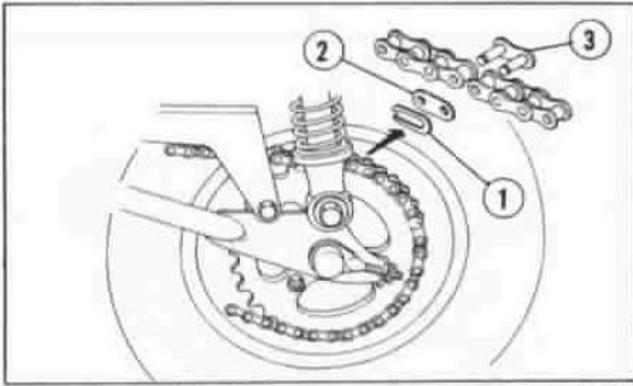
- d. Lubricate the chain. Commercially available drive chain lubricants may be purchased at most motorcycle shops and should be used in preference to motor oil or other lubricants.

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

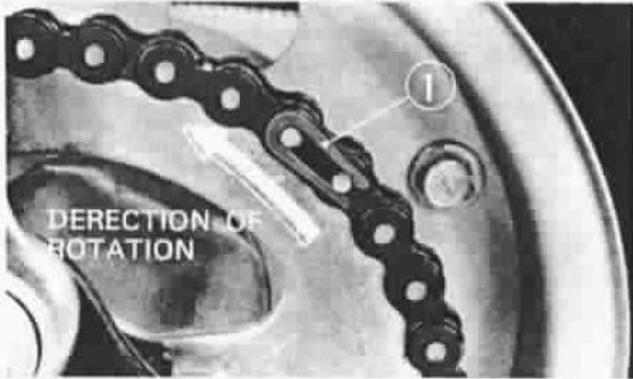


Drive chain lubricants

Fig. 11



① Retaining clip ② Retaining plate ③ Master link  
Fig. 12



① Retaining clip  
Fig. 13

- e. Install the chain on the sprockets and join the ends with the master link. For ease of assembly, hold the chain ends against the adjacent rear sprocket teeth while inserting the master link. Install the master link retaining clip so that the closed end will face in the direction of forward wheel rotation.

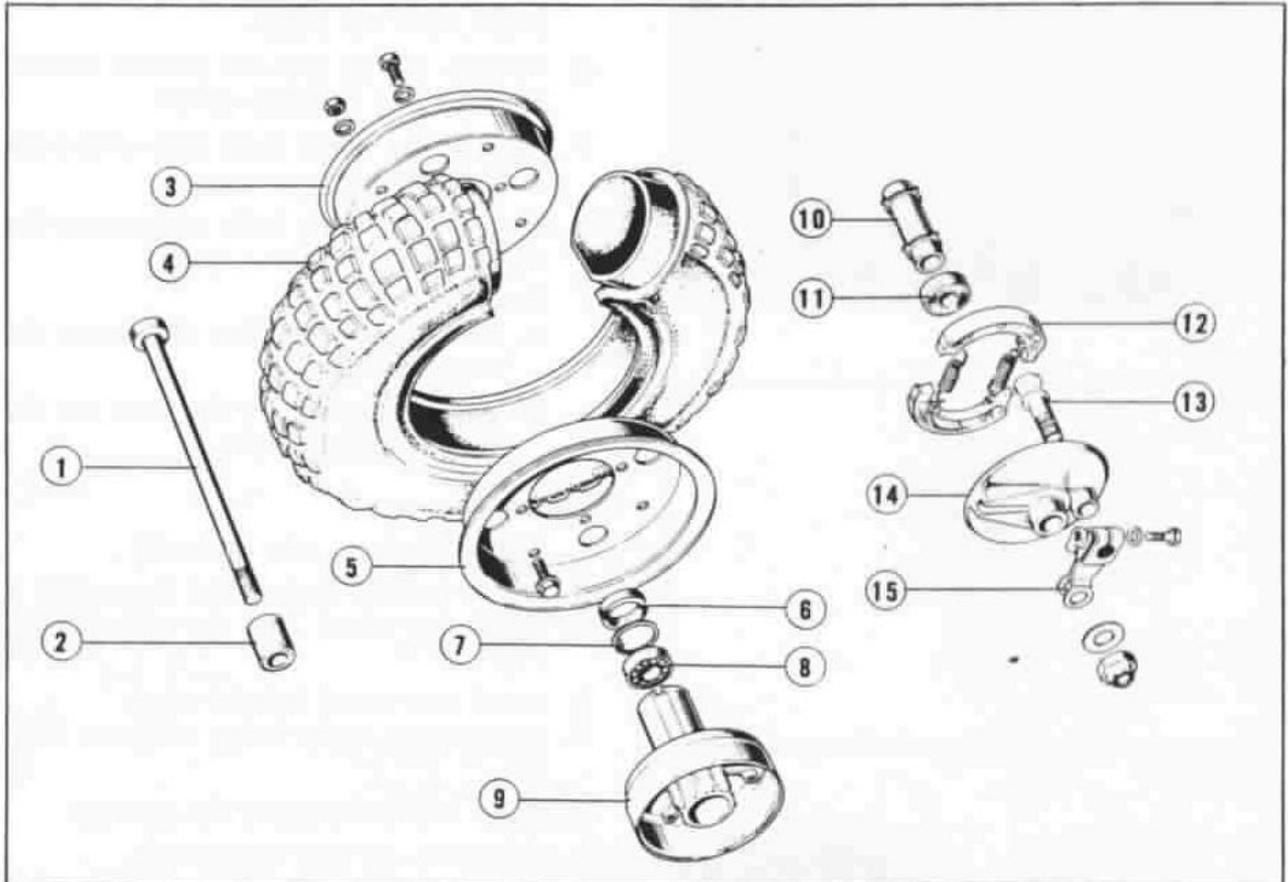
The master link is the most critical part affecting the security of the drive chain. Master links are reusable, if they remain in excellent condition, but it is recommended that a new master link be installed whenever the drive chain is reassembled.

- f. Adjust the chain tension. (See page 36).

**Note :**

If the drive chain is excessively loose when the rear axle is moved to the rearward limit of adjustment, it is worn out and must be replaced.

## 5. FRONT WHEEL AND FRONT BRAKE

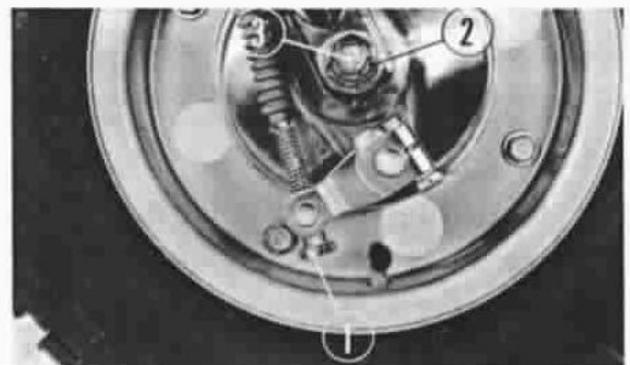


- |                            |                              |
|----------------------------|------------------------------|
| ① Front wheel axle         | ⑨ Front wheel hub            |
| ② Front wheel side collar  | ⑩ Front axle distance collar |
| ③ Left wheel rim           | ⑪ Radial 6201R ball bearing  |
| ④ Wheel tire               | ⑫ Brake shoe                 |
| ⑤ Right wheel rim          | ⑬ Rear brake cam             |
| ⑥ Oil-seal, 21 × 35 × 55   | ⑭ Rear brake panel           |
| ⑦ Internal 32 mm cir-clip  | ⑮ Front brake arm            |
| ⑧ Radial 6201 ball bearing |                              |

Fig. 14

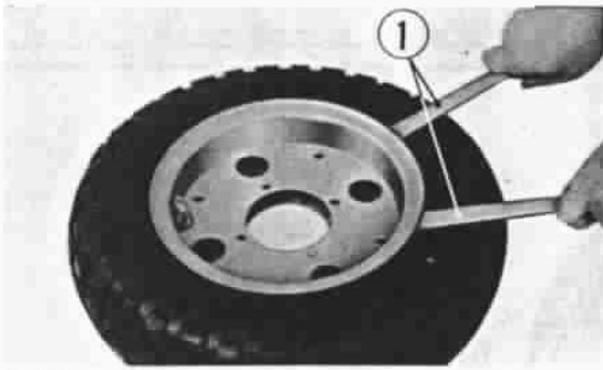
## A. Disassembly

1. Place a proper wood block under the engine to raise the front wheel off the ground.
2. Remove the front brake adjusting nut ① and disconnect the front brake cable from the brake arm.
3. Remove the front axle nut ② and pull out the front axle ③ (Fig. 15).
4. Remove the front wheel.

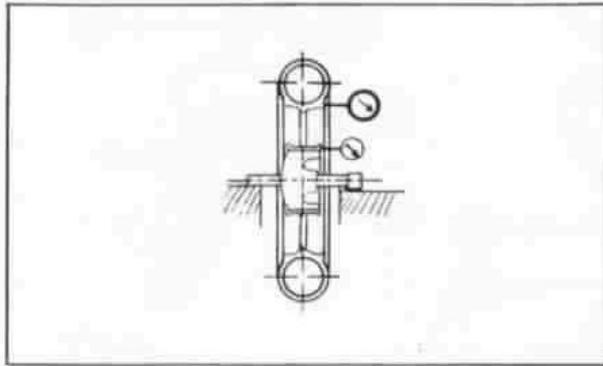


- |                             |
|-----------------------------|
| ① Front brake adjusting nut |
| ② Front axle nut            |
| ③ Front axle                |

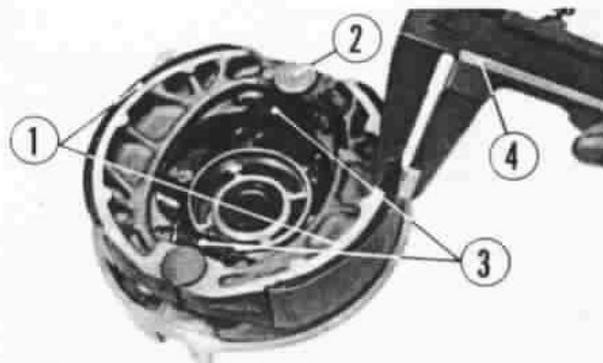
Fig. 15



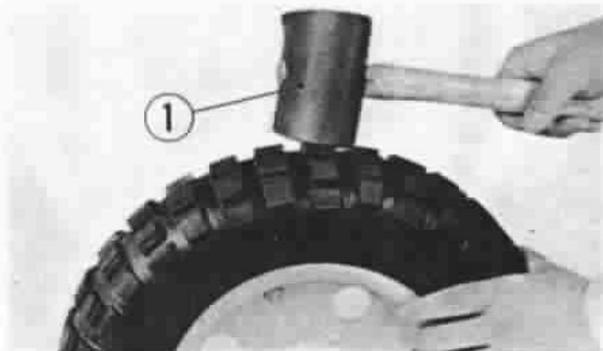
① Tire wrench  
Fig. 16



① Dial gauge  
Fig. 17



① Brake shoe ② Brake shoe cam  
③ Brake shoe spring ④ Vernier caliper  
Fig. 18



① Rubber hammer  
Fig. 19

5. Remove the brake arm, cam and shoe springs in this order and remove the brake shoes from the panel.
6. Remove the oil seal and pull out the ball bearings and distance collar.
7. Remove the 8 mm bolts and remove the front wheel hub.
8. Remove the 6 mm bolts and remove the wheel rims and tire.

#### Notes :

1. Before removing the tire, open the valve to deflate.
2. When removing the tire, use the tire wrench (special tool).

#### B. Inspection

1. Check the front axle for bend.
2. Check the ball bearing for looseness.
3. Check the wheel rims for runout (Fig. 17).
4. Check the wheel hub for wear.
5. Measure the brake lining thickness (Fig. 18).
6. Check the brake panel for damage.
7. Check the oil seal for damage.
8. Check to see if metal pieces or stones are bitten in the tire tread pattern or wall.
9. Check for air leakage from the tire valve.

#### C. Assembly

1. Slightly inflate the tire and install the wheel rims.

#### Note :

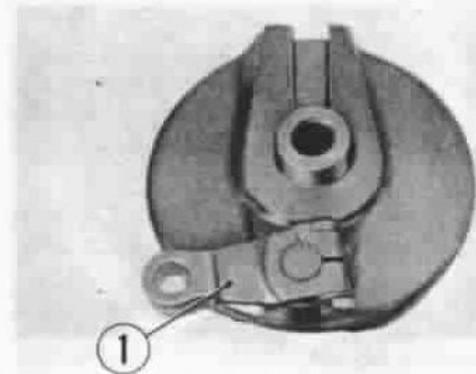
Upon noting that the rims are properly installed to the tire, tighten the 8 mm hex. bolts. Inflate the tire to 1/3 the specified pressure and give a light tap to the circumference of the tire using a mallet to prevent the tube from being bound. Inflate the tire to the specified pressure (Fig. 19).

## Tire inflation pressure

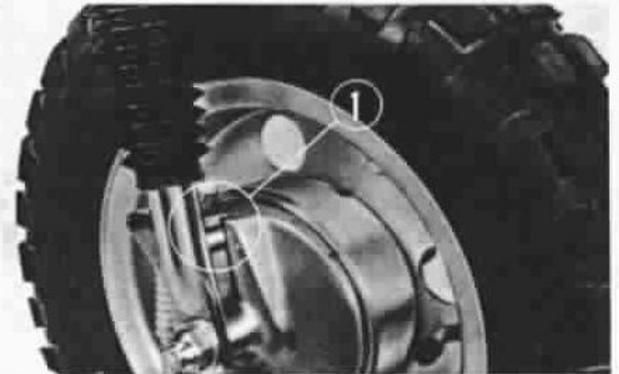
Unit: kg/cm<sup>2</sup> (psi)

	Z50
Front wheel	1.0 (14.2)
Rear wheel	1.0 (14.2)

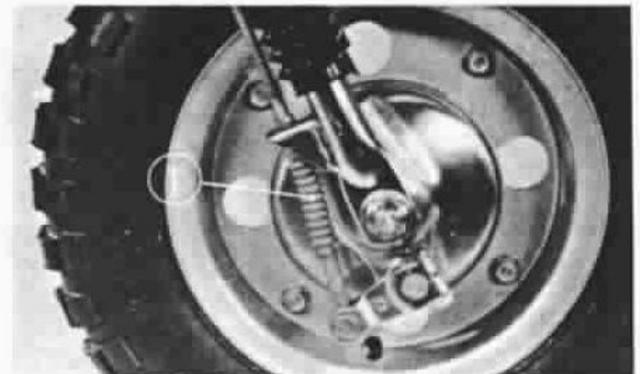
- Fill the cavity in the ball bearing and inside the wheel hub with grease. Put the distance collar in position and drive the bearing in.
  - Install the wheel hub to the rims using the 8 mm bolts.
  - Install the brake cam to the brake panel. Attach the brake shoe springs to the brake shoes and secure to the brake panel (Fig. 20).
  - Install the brake arm.
  - Install the brake panel in the front wheel.
  - Fit the lug of the front shock absorber into the groove in the brake panel (Fig. 21).
- Insert the front axle, tighten the axle nut and secure with the cutter pin.
- Connect the front brake cable to the brake arm and adjust the front brake (Fig. 22).



① Brake arm  
Fig. 20



① Groove in brake panel  
Fig. 21

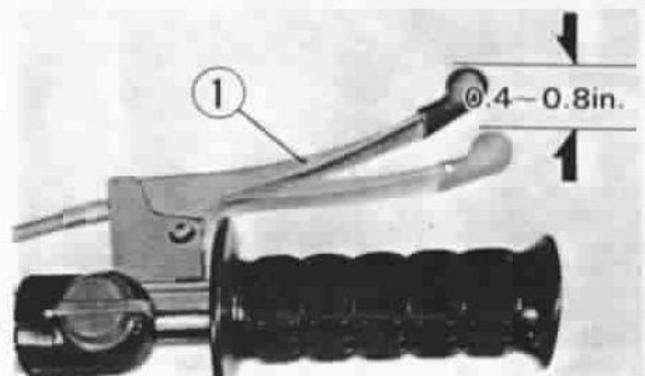


① Front brake cable  
Fig. 22

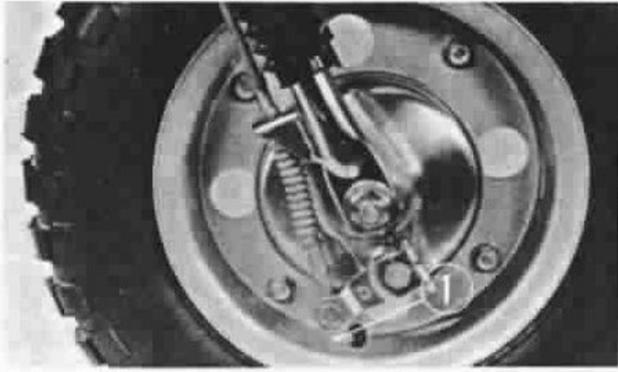
## D. Front brake adjustment

Brake are items of personal safety and should always be adjusted correctly.

The front brake lever free play should be 0.4 to 0.8 inch (10 to 20 mm) as measured at the tip of the lever ① (Fig. 23). Free play is the distance the brake lever moves before the brake starts to engage.



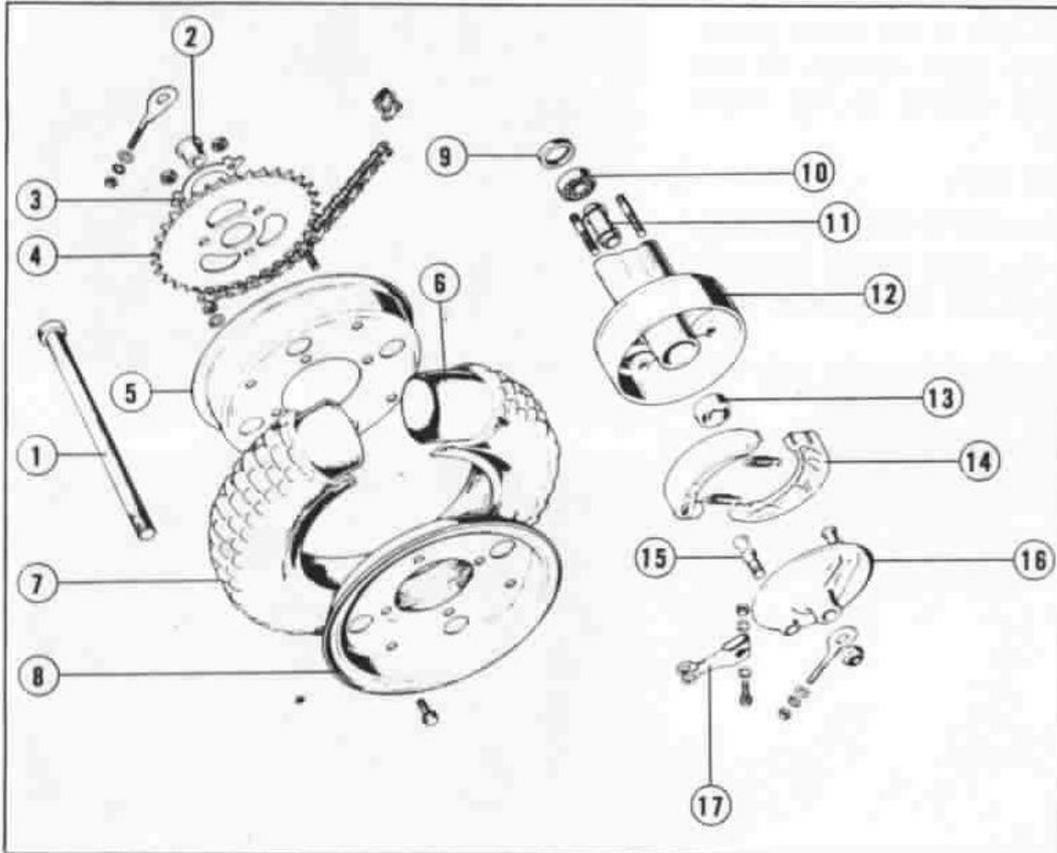
① Front brake lever  
Fig. 23



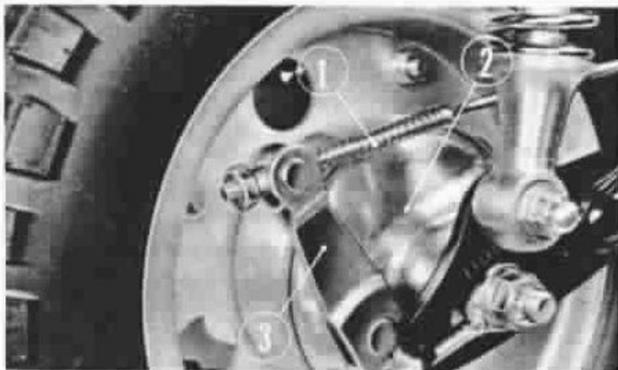
① Front brake adjusting nut  
Fig. 24

1. To adjust, turn the front brake adjusting nut ① in either direction (Fig. 24). Turning the adjusting nut clockwise will decrease the free play and turning it counterclockwise will increase the free play.

## 6. REAR WHEEL AND REAR BRAKE



- ① Rear wheel axle
  - ② Left rear wheel side collar
  - ③ Tongued washer B
  - ④ Final driven sprocket
  - ⑤ Left wheel rim
  - ⑥ Wheel tube
  - ⑦ Wheel tire
  - ⑧ Right wheel rim
  - ⑨ Oil seal, 18328
  - ⑩ 6201 radial ball bearing
  - ⑪ Rear axle distance collar
  - ⑫ Rear wheel hub
  - ⑬ 6201R radial ball bearing
  - ⑭ Brake shoe
  - ⑮ Rear brake cam
  - ⑯ Rear brake panel
  - ⑰ Rear brake arm
- Fig. 25

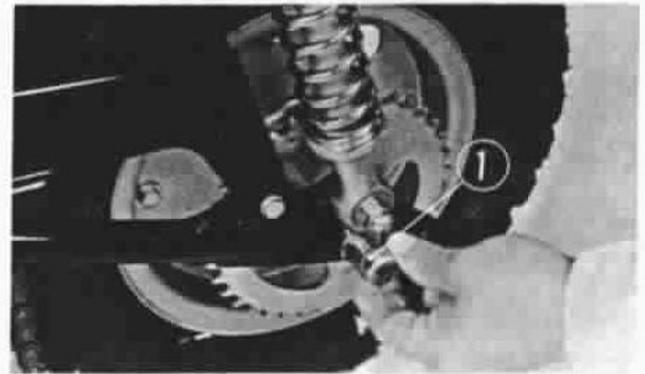


① Brake rod ② Brake panel ③ Brake arm  
Fig. 26

### A. Disassembly

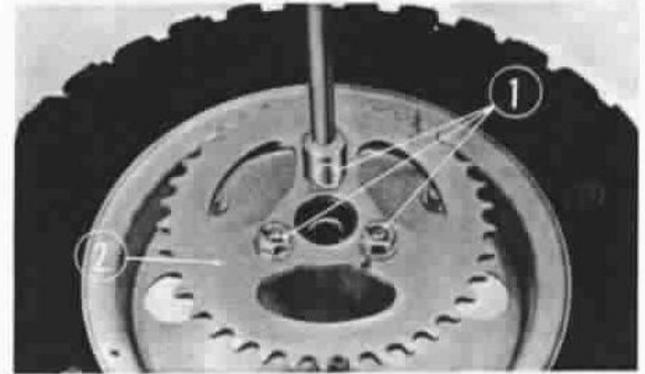
1. Loosen the axle nut and adjuster nut.
2. Disconnect the rear brake rod (Fig. 26).

3. Remove the drive chain joint
4. Remove the axle nut and pull out the axle shaft. (Fig. 27). Take out the wheel.
5. Remove the brake panel from the wheel hub.
6. Remove the brake cam, cam spring and brake shoes.



① Axle shaft  
Fig. 27

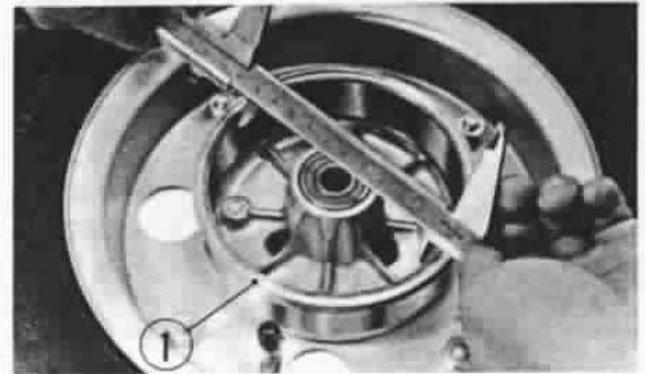
7. Remove the three 8 mm nuts and remove the final driven sprocket (Fig. 28).
8. Pull out the oil seal, bearing and distance collar.
9. Remove the 6 mm bolts and 8 mm bolts and remove the wheel rims, wheel hub and tire.



① 8 mm nuts ② Final driven sprocket  
Fig. 28

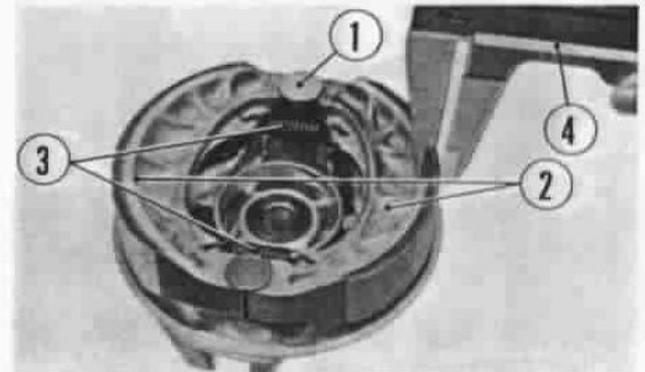
#### B. Inspection

1. Check the rear axle for bend.
2. Check the wheel bearing for looseness.
3. Check the wheel rims for runout.
4. Check the wheel hub for wear (Fig. 29).

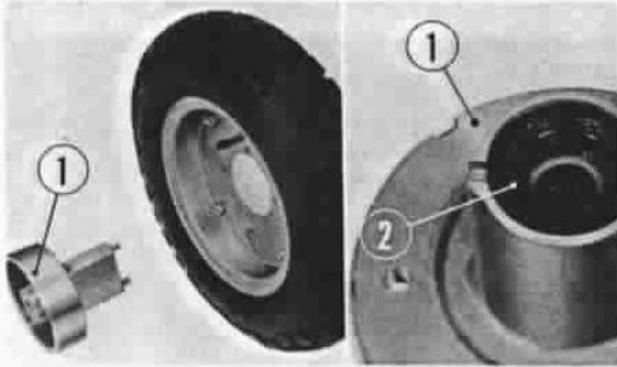


① Wheel hub  
Fig. 29

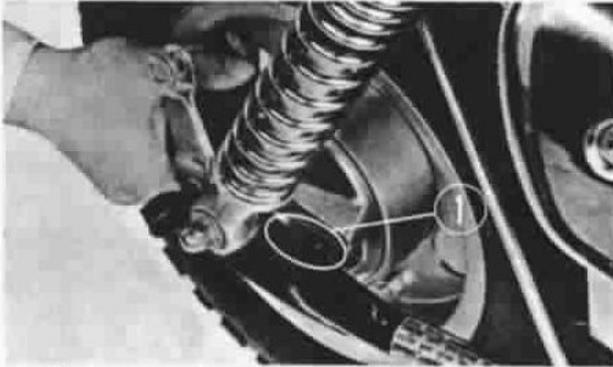
5. Measure the brake lining thickness (Fig. 30).
6. Check the brake panel for damage.
7. Check the oil seal for damage.
8. Check to see if metal pieces or stones are bitten in the tire tread pattern or wall.
9. Check for air leakage from the tire valve.



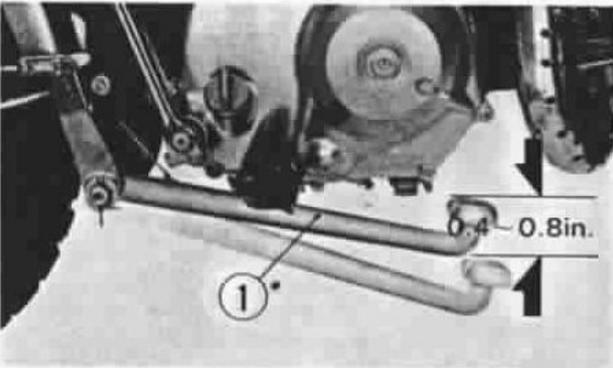
① Brake shoe cam ② Brake shoe  
③ Brake shoe spring ④ Vernier caliper  
Fig. 30



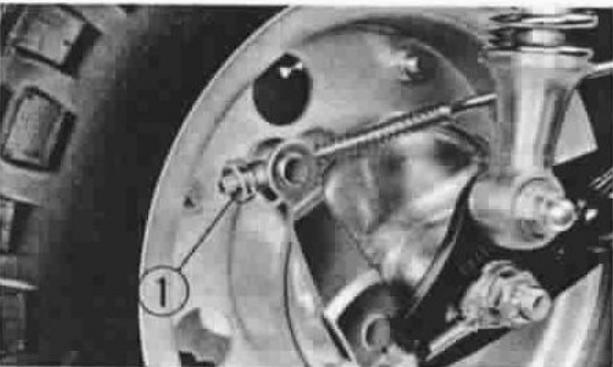
① Wheel hub ② Grease  
Fig. 31



① Groove in brake panel  
Fig. 32



① Rear brake pedal  
Fig. 33



① Rear brake adjust nut  
Fig. 34

### C. Assembly

1. To assemble, reverse the disassembly procedures.
2. Install the tire to the wheel rims in the same manner as in the front wheel.
3. Fill the cavity in the ball bearing and inside the wheel hub with grease. Put the distance collar in position and drive the ball bearing in.
4. Install the wheel hub to the rims (Fig. 31).
5. Fit the lug of the rear fork into the groove in the rear brake panel. (Fig. 32)
6. Insert the rear axle tighten the axle nut.

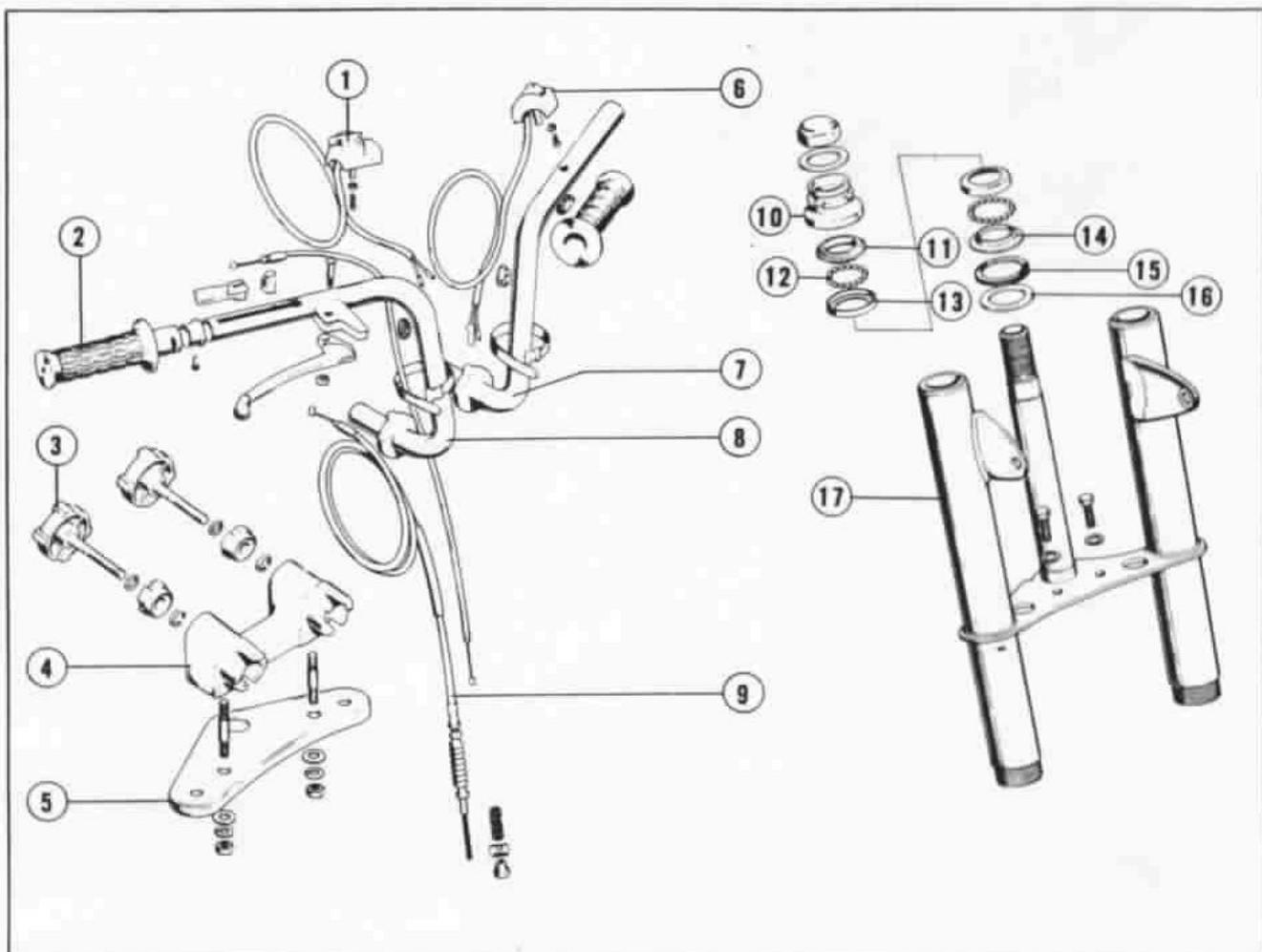
### D. Rear brake adjustment

The rear brake pedal free play should be 0.4 to 0.8 inch (10 to 20 mm) as measured at the tip of the pedal ① (Fig. 33).

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

1. To adjust, turn the rear brake adjusting nut ① in either direction (Fig. 34). Turning the adjusting nut clockwise will decrease the free play and turning it counterclockwise will increase the free play.

## 7. STEERING SYSTEM

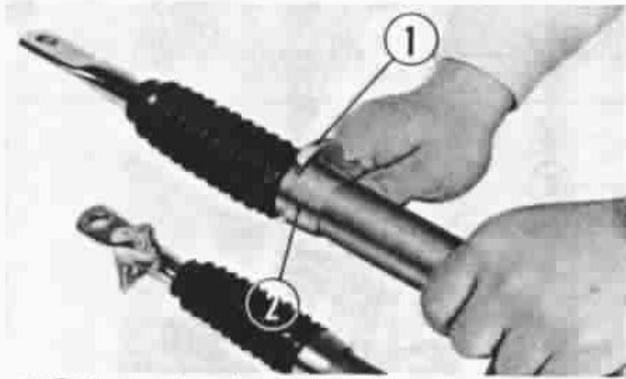


- |                              |                                  |
|------------------------------|----------------------------------|
| ① Throttle cable             | ⑩ Steering head top thread       |
| ② Right handle grip A        | ⑪ Steering top cone race         |
| ③ Handle holder knob         | ⑫ # 6 steel ball                 |
| ④ Steering handle holder     | ⑬ Steering top ball race         |
| ⑤ Fork top bridge            | ⑭ Steering bottom cone race      |
| ⑥ Lighting switch            | ⑮ Steering head dust-seal        |
| ⑦ Left steering handle pipe  | ⑯ Steering head dust-seal washer |
| ⑧ Right steering handle pipe | ⑰ Front fork                     |
| ⑨ Front brake cable          |                                  |

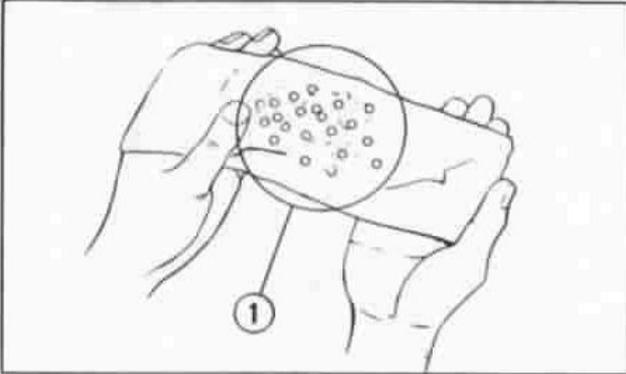
Fig. 35

## A. Disassembly

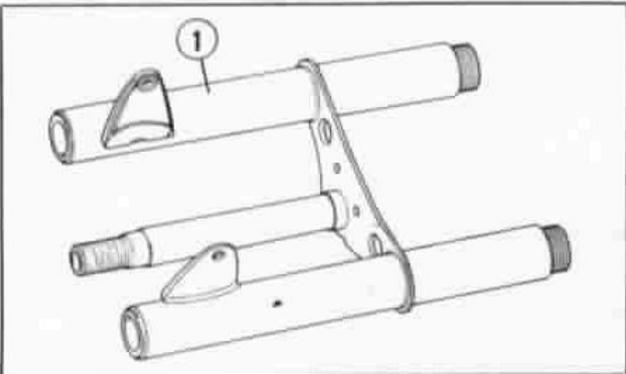
1. Disconnect the brake cable from the right handlebar.
2. Disconnect the throttle cable from the throttle grip pipe.
3. Remove the headlight and disconnect the wires inside the headlight case.
4. Turn the handlebar holder knobs and remove the handlebar pipes.
5. Remove the front wheel. (See Section 5-A.)
6. Remove the headlight case, front fender, horn handle lock and turn signals.



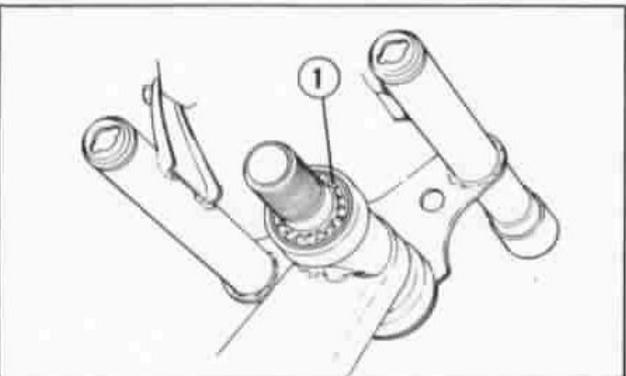
① Fork top thread  
② Front fork guide cap  
Fig. 36



① Steel ball  
Fig. 37



① Steering stem  
Fig. 38



① Grease  
Fig. 39

7. Remove the front fork bolts and loosen the fork guide caps (Fig. 36). Then pull out the front shock absorber assemblies.
8. Remove the steering handle holder and remove the steering stem and front.
9. Remove the steering head top thread and steering top cone race. Then remove the steering top ball races, bottom cone race and steel balls.

**Caution :**

Take care not to drop the steel balls.

**B. Inspection**

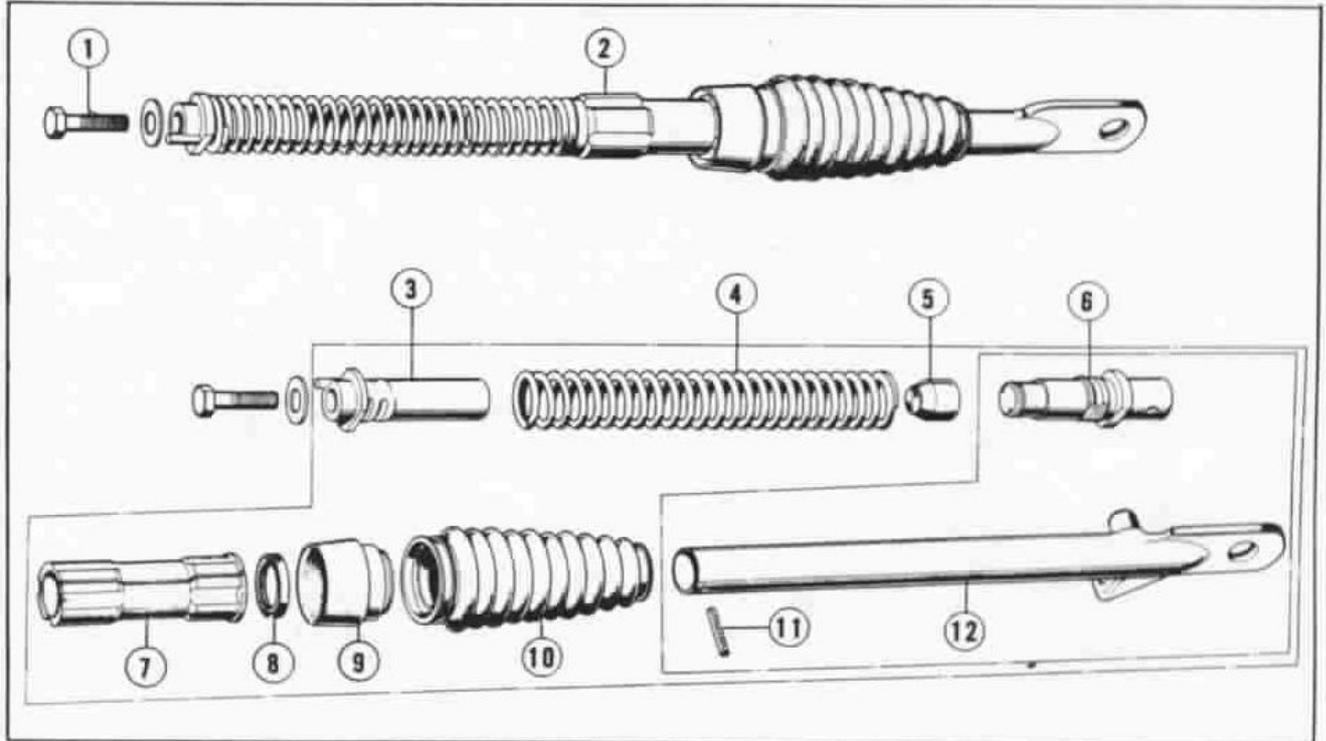
1. Check the control cables for proper operation. Also check for breakage or any other damage. Relubricate if necessary.
2. Check the steel balls for wear or damage (Fig. 37).

3. Check the contact surfaces of the steering top and bottom cone races and steering top ball races for scores, scratches or wear.
4. Check the steering stem for bend or twist (Fig. 38).
5. Check the threaded parts for breakage or deformation.
6. Check the handlebar holder for breakage.

**C. Assembly**

1. To assemble, reverse the disassembly procedures.
2. Before installing the cone races, ball races and steel balls, wash them clean and apply a coat of new grease to them (Fig. 39).
3. Adjust the control cables.

## 8. FRONT SHOCK ABSORBERS



- ① Front fork bolt      ④ Front cushion spring      ⑦ Front fork pipe guide      ⑩ Front fork boot  
 ② Front cushion assy.      ⑤ Front cushion stopper rubber      ⑧ Oil-seal      ⑪ Spring pin  
 ③ Spring upper holder      ⑥ Spring lower holder      ⑨ Fork pipe guide cap      ⑫ Front cushion half pipe

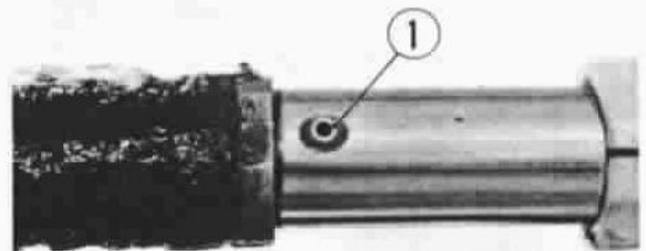
Fig. 40

## A. Disassembly

1. Remove the front shock absorber assemblies. (See Section 7-A.)
2. Pull out the spring pin and disassemble each shock absorber.

## B. Inspection

1. Measure the shock absorber spring free length.
2. Check the spring stops for scores, scratches or breakage.



① Stopper pin  
 Fig. 41

## C. Assembly

To assemble, reverse the disassembly procedures. Tighten the bolts, nuts, etc. to the specified torque. (See page 56.)

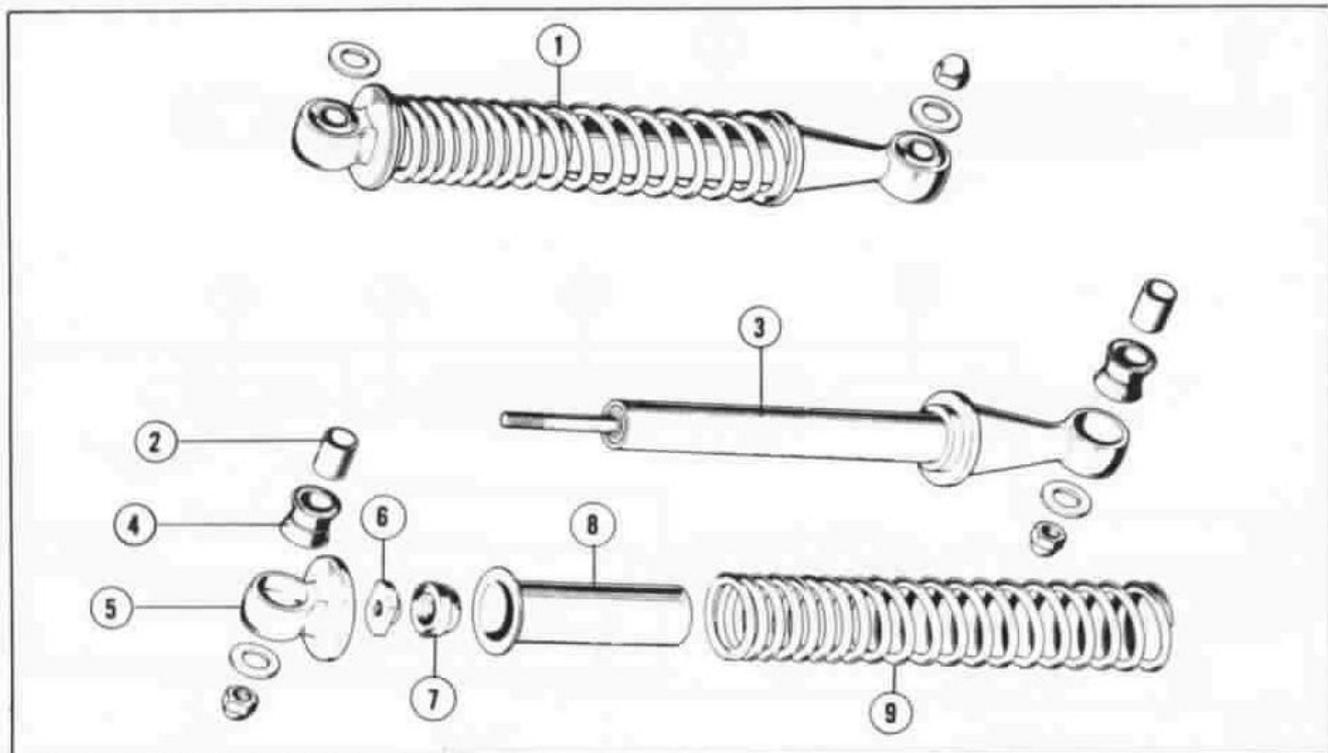
## Note :

The spring pin must be flush with the end faces of the piston.



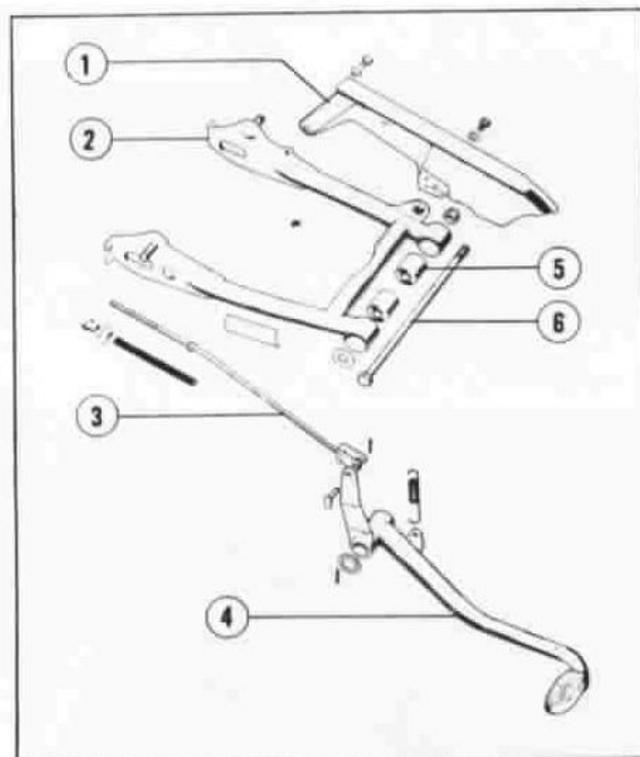
① Fork top thread  
 Fig. 42

## 9. REAR SUSPENSION



- ① Rear shock absorber assy.    ④ Rear cushion rubber brush    ⑦ Rear cushion stopper rubber  
 ② Rear cushion rubber collar    ⑤ Rear cushion upper metal    ⑧ Rear cushion spring guide  
 ③ Rear damper    ⑥ Rear cushion upper lock nut    ⑨ Rear cushion spring

Fig. 43

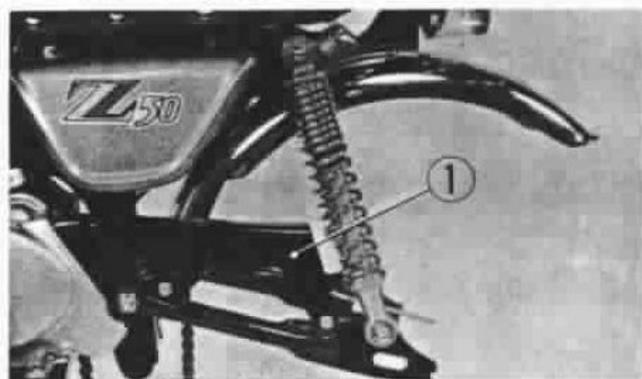


- ① Drive chain case    ② Rear fork  
 ③ Rear brake rod    ④ Rear brake pedal  
 ⑤ Rear fork pivot rubber bush  
 ⑥ Rear fork pivot bolt

Fig. 44

## A. Disassembly

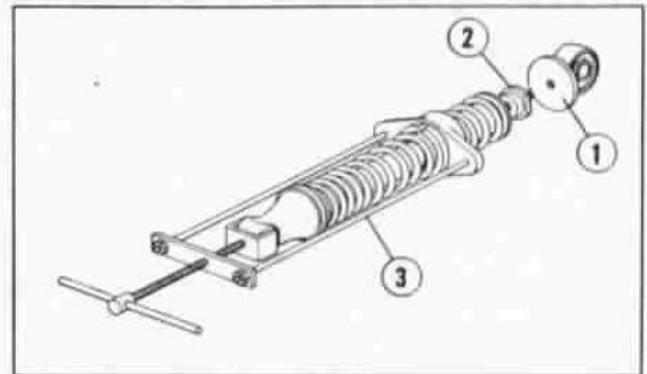
1. Remove the rear wheel. (See Section 6-A.)
2. Remove the chain cover.
3. Remove the rear shock absorber attaching cap nuts and remove the rear shock absorber assemblies from the frame and rear fork.
4. Remove the brake pedal and brake rod.
5. Remove the pivot bolt and nut and remove the rear fork.



- ① Chain case cover

Fig. 45

5. Using a special tool, loosen the locking nut, remove the upper metal and disassemble each rear shock absorber. (See Fig. 46.)



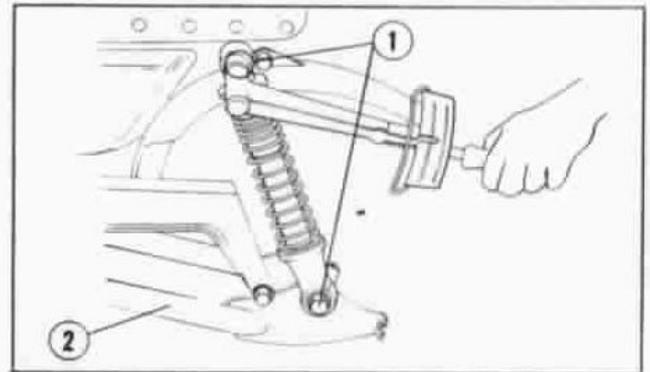
① Rear shock absorber upper metal  
 ② Locking nut  
 ③ Rear shock absorber dis/assembly tool  
 Fig. 46

### B. Assembly

1. To assemble, reverse the disassembly procedures.

#### Notes:

1. Install the spring with the smaller pitch end upward.
2. Apply a coat of locking sealant to the upper metal.
2. Install the rear shock absorbers to the rear fork and frame and secure with the cap nuts. (See Fig. 47.) See the Tightening Torque Standard.
3. Install the rear wheel. (See Section 6-C.)



① Cap nut ② Rear fork  
 Fig. 47

## 10. FRAME BODY, SEAT, FUEL TANK AND AIR CLEANER

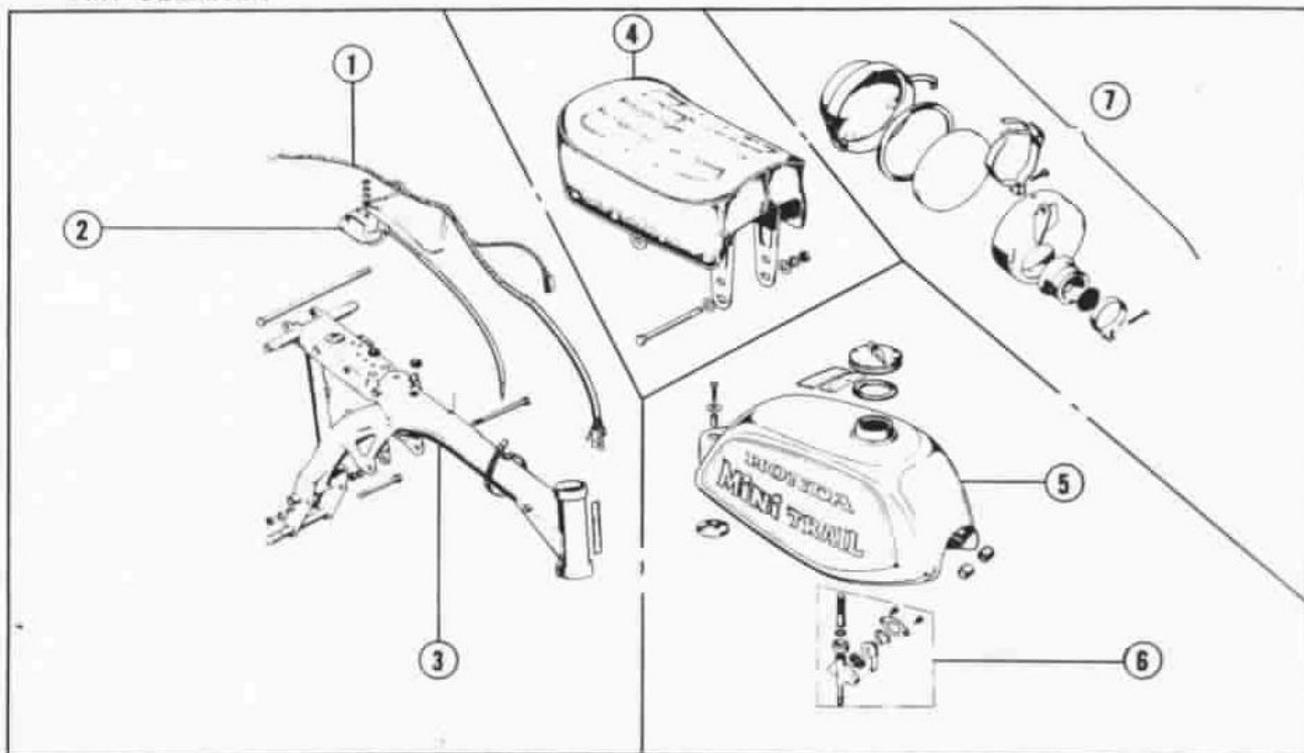
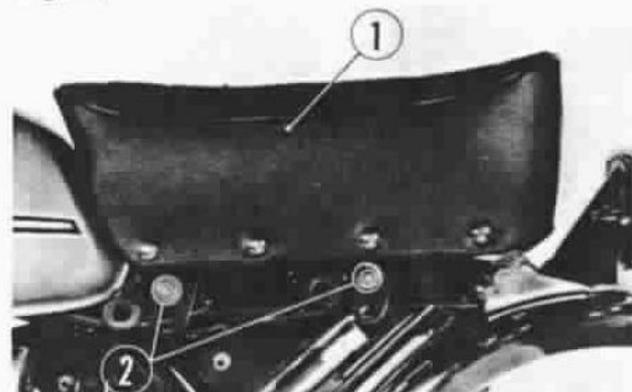


Fig. 48 ① Wire harness ③ Frame body ⑤ Fuel tank ⑦ Air cleaner assy.  
 ② A.C. ignition coil assy. ④ Seat ⑥ Fuel cock assy.



① Setting 6 mm bolt  
 Fig. 49



① Seat ② 8 mm bolt  
 Fig. 50

### A. Disassembly

1. Remove the engine. (See page 7.)
2. To remove the fuel tank, disconnect the fuel tube by pulling it and remove the 6 mm bolt.
3. To remove the seat, remove the two 8 mm bolts.
4. Remove the front wheel and front shock absorber assemblies. (See Section 5-A.)
5. Remove the rear wheel and rear suspension. (See Section 6-A.)
6. Remove the auxiliary equipment.
7. Remove the electrical parts.

## B. Inspection

1. Check the welded parts for damage and the pipes for cracks, breakage or twist.
2. Check the head pipe for deformation.
3. Check for leakage from the fuel tank. Also check the vent in the fuel filler cap for clogging, the cock valve and strainer cap gaskets for deterioration or damage and the fuel tube for deterioration or breakage (Fig. 51).

### Note :

Flush the tank using new gasoline.

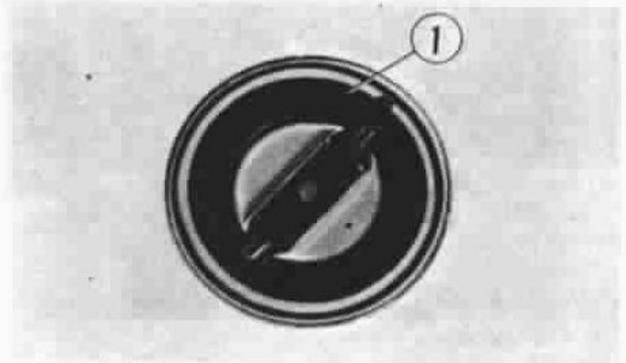
4. Soak air filter element in clean gear oil (No. 80~No. 90) until saturated then squeeze out excess oil (Fig. 52).

### Warning :

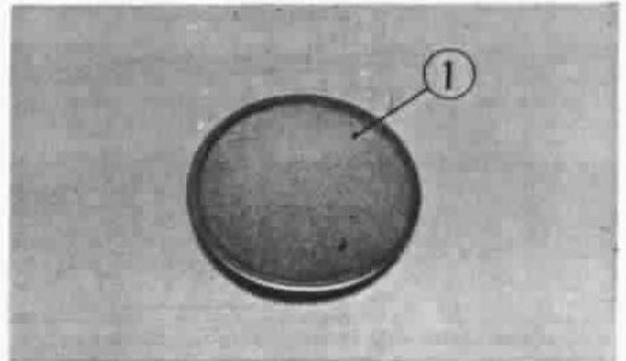
Gasoline or low flash point solvents are highly flammable and must not be used to clean air filter elements.

5. Check the painted surface of the connecting tube for peeling.
6. Check the exhaust pipe gasket for breakage and replace it if necessary (Fig. 53).

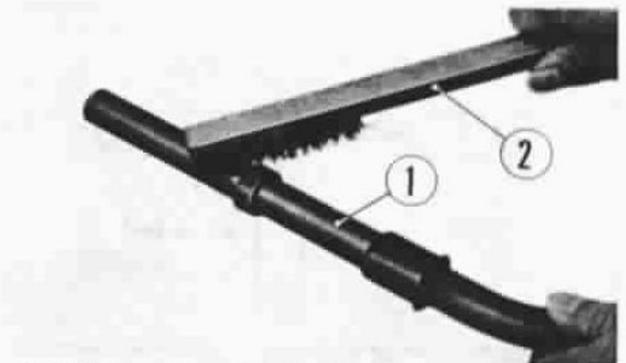
Remove carbon, if any, from the diffuser pipe using a wire brush and wash it clean.



① Fuel filler cap  
Fig. 51



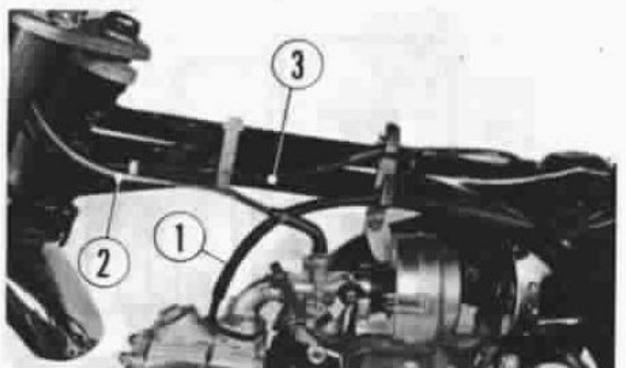
① Air filter element  
Fig. 52



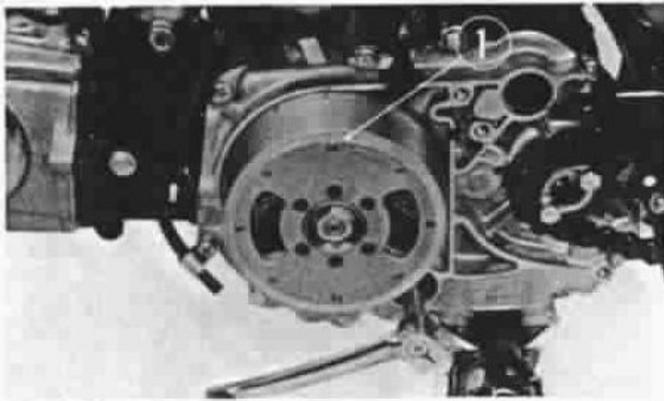
① Diffuser pipe ② Wire brush  
Fig. 53

## C. Assembly

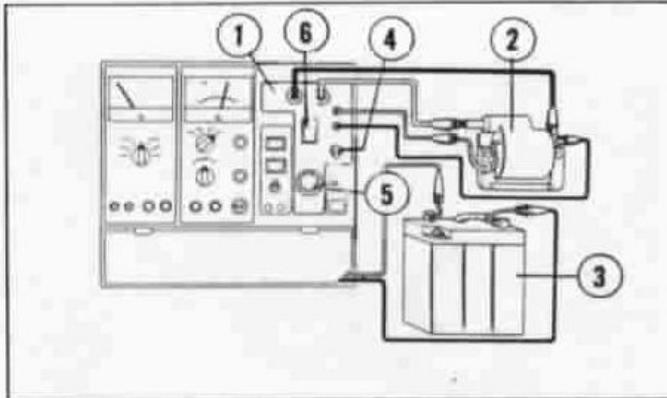
1. To assemble, reverse the disassembly procedures.
2. Route and connect the control cables and wires correctly (Fig. 54).  
Connect the wires, color to color, referring to the wiring diagram at the end of this manual.
3. Adjust the brakes, clutch and chain. Check the steering handlebars for proper operation.



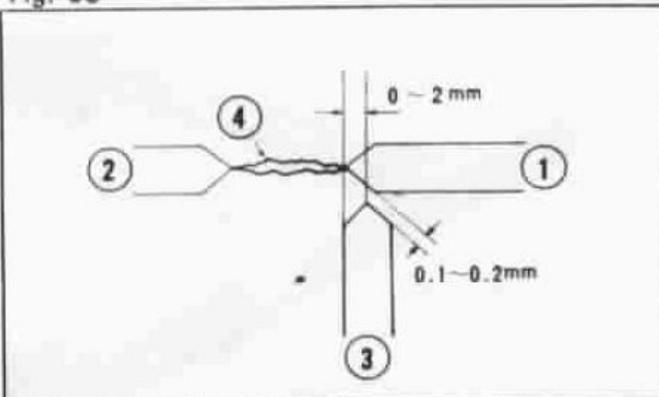
① High tension cable  
② Throttle cable  
③ Wire harness  
Fig. 54



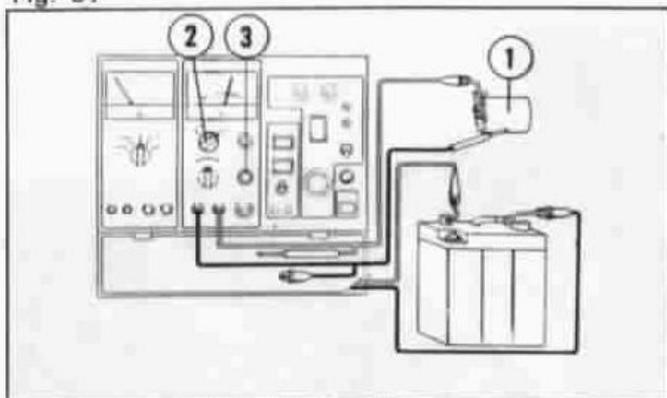
① A-C generator  
Fig. 55



① Service tester ② Ignition coil ③ Battery  
④ Coil test switch ⑤ Spark gap check dial  
⑥ Spark gap finder  
Fig. 56



① 1st electrode ② 2nd electrode  
③ 3rd electrode ④ Spark  
Fig. 57



① Condenser ② Switch "II"  
③ "CAPACITY" button  
Fig. 58

## 11. ELECTRICAL SYSTEM

### 1. Generating System

On the model Z50A, the alternating current generated by the A-C generator consisting of a flywheel magneto and field coil is rectified by the selenium rectifier. Then the direct current is fed to the battery for charging.

#### A-C generator specifications

Type	Flywheel
Output	6V-15W
Battery capacity	6V-2AH
Speed under load	500~11,000 rpm
Battery polarity (ground)	Negative

### 2. Inspection of Electrical Parts

Inspection with a service tester (Tool No. 07308-0010000)

#### 1. Ignition coil

##### Ignition coil test

This test is conducted to check the coil performance. If the engine fails to start, check the spark plug, points, condenser, etc. for condition.

- ① Use a battery and service tester and connect them as shown in (Fig. 56).
- ② Turn the service tester selector knob to COIL TEST.
- ③ Observing the spark jumping across a 3-point spark gap, turn the knob and measure the jumping distance (Fig. 57).
- ④ If the spark jumps more 6 mm (0.2362 in.) in air, the coil is in good condition.

#### 2. Condenser

- ① Connect as shown in Fig. 58.
- ② Turn the switch "II" to "CAPACITY" (Condenser capacity measurement).
- ③ Push the "CAPACITY" button and read the scale on the tester.  
Specification 0.21  $\mu$ F~0.26  $\mu$ F

### 3. Headlight switch (Inspection with a radio tester)

Start the engine and operate the headlight switch to check to see if the headlight comes on in "ON" position. If the headlight does not come on, check the bulb for condition. If the bulb is burnt out, locate the cause. If the bulb is not burnt out, check the switch for condition. Remove the red and brown connectors and attach the probes of a tester to the connectors and operate the switch to check for continuity. If there is a continuity in "OFF" position and there is no continuity in "ON" position, the switch is defective (Fig. 59, 60).

	C3	HL
ON	○	○
OFF		

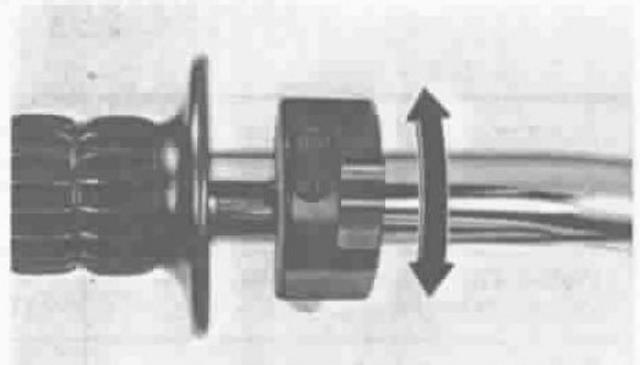
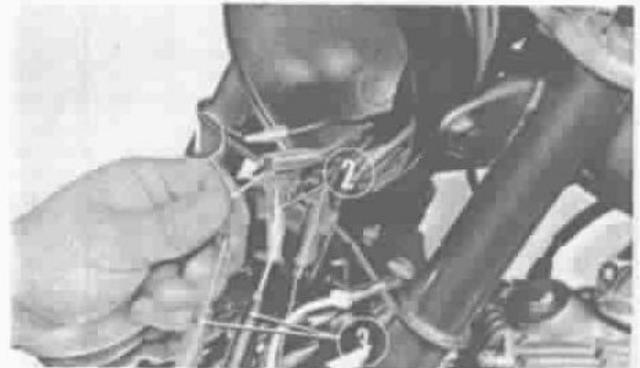


Fig. 59



① Red ② Brown ③ Probes  
Fig. 60

### 4. Ignition switch (kill switch) (Inspection with a radio tester)

Start the engine and operate the switch to check to see if the engine stops in "ON" position.

If the engine does not stop in that position, check in the following manner: Disconnect the primary wire (black) and ground wire (green) of the ignition switch from the connectors. Then attach the probes of a tester to the wires and operate the switch to check for continuity. If there is a continuity in "ON" position and there is no continuity in "OFF" position, the switch is defective (Fig. 61, 62).

	IG	E
ON		
OFF	○	○

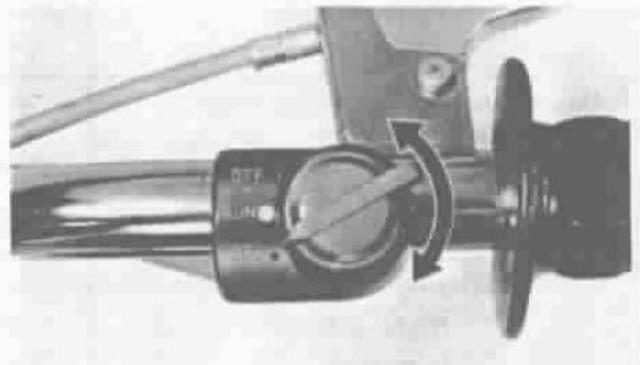
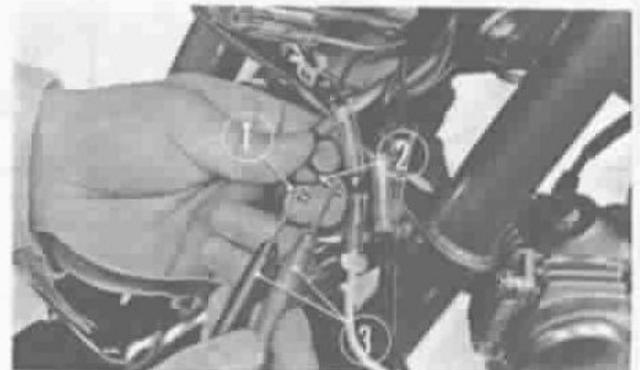


Fig. 61



① Black ② Green ③ Probes  
Fig. 62

## TECHNICAL SERVICE DATA

Unit: mm (in.)

Item	Assembly standard	Service limit
Cylinder bore	39.00~39.01 (1.5354~1.5358)	39.05 (1.5374)
Piston OD	38.98~39.00 (1.5336~1.5354)	38.90 (1.5315)
Piston ring side clearance		
Top and 2nd rings	0.015~0.045 (0.0006~0.0018)	0.10 (0.0039)
Oil ring	0.01~0.045 (0.0004~0.0018)	0.10 (0.0039)
Piston ring gap		
Top and 2nd rings	0.15~0.35 (0.0059~0.0138)	0.5 (0.0197)
Oil ring	0.15~0.40 (0.0059~0.0157)	0.5 (0.0197)
Valve-to-guide clearance		
Intake side	0.01~0.03 (0.0004~0.0012)	0.08 (0.0031)
Exhaust side	0.03~0.95 (0.0012~0.0020)	0.1 (0.0039)
Oil pump body-to-outer rotor clearance	0.1~0.15 (0.0039~0.0059)	0.2 (0.0079)
Inner rotor-to-outer rotor clearance	0.02~0.07 (0.0008~0.0028)	0.12 (0.0047)
Crankshaft journal runout		
Right side	0.015 (0.0006)	0.05 (0.0020)
Left side	0.015 (0.0006)	0.05 (0.0020)
Connecting rod big end play		
Axial direction	0.1~0.35 (0.0039~0.0138)	0.8 (0.0315)
Radial direction	0.010~0.012 (0.0004~0.0005)	0.05 (0.0020)

Unit: mm (in.)

	Item	Assembly standard	Service limit
Front wheel	Front axle bend	0.2 (0.0079)	0.5 (0.0197)
	Ball bearing play		
	Axial direction	0.05 (0.0020)	0.1 (0.0039)
	Radial direction	0.002~0.007 (0.0001~0.0003)	0.05 (0.0020)
	Wheel rim face runout	0.2 (0.0079)	0.5 (0.0197)
	Wheel hub ID	109.9~110.1 (4.327~4.335)	112 (4.409)
	Brake lining thickness	3.9~4.0 (0.1535~0.1575)	2.0 (0.0787)
Rear wheel	Rear axle bend	0.2 (0.0079)	0.5 (0.0197)
	Ball bearing play		
	Axial direction	0.05 (0.0020)	0.1 (0.0039)
	Radial direction	0.002~0.007 (0.0001~0.0003)	0.05 (0.0020)
	Wheel rim face runout	0.2 (0.0079)	0.5 (0.0197)
	Wheel hub ID	109.9~110.1 (4.327~4.335)	112 (4.409)
	Brake lining thickness	3.9~4.0 (0.1535~0.1575)	2.0 (0.0787)
	Front shock absorber spring free length	166.8 (6.567)	

(The above service data are subject to change without notice or obligation.)

## TORQUE SPECIFICATIONS

### (ENGINE)

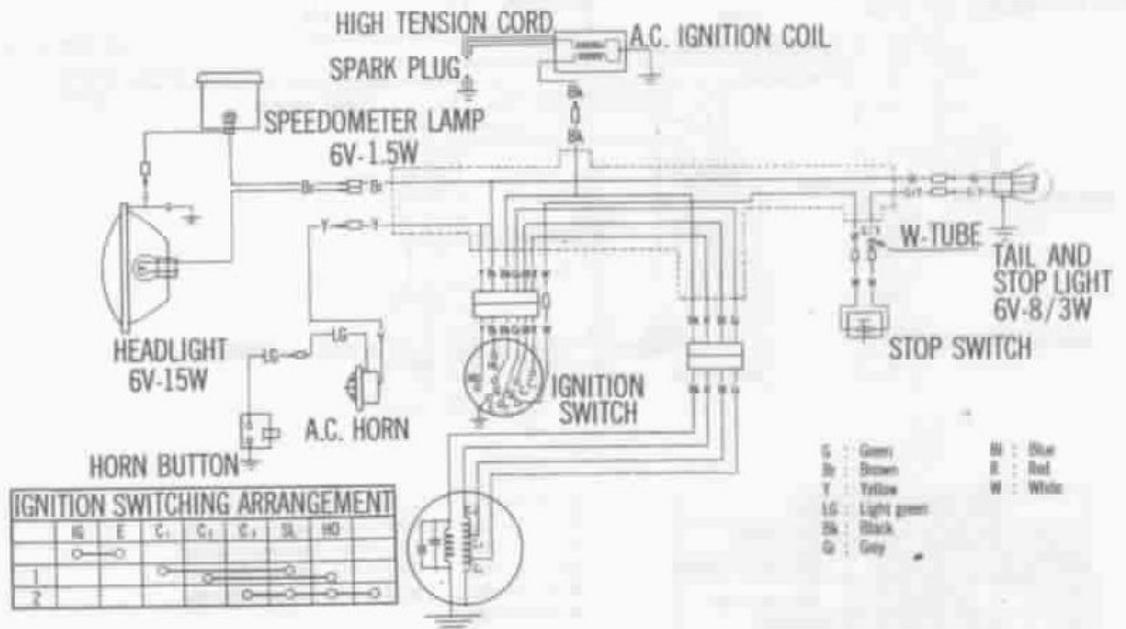
	Item	Q'ty	Torque values	
			kg-m	ft-lbs
1	Cylinder head cover	4	0.9~1.2	6.5~ 8.6
2	Cam sprocket	3	0.8~1.2	5.7~ 8.6
3	Cylinder tighten	1	0.8~1.2	5.7~ 8.6
4	L. crankcase cover	3	0.7~1.1	5.1~ 7.9
5	Flywheel	1	3.0~3.8	21.7~27.4
6	R. crankcase cover	8	0.7~1.1	5.1~ 7.9
7	Clutch tighten	1	3.5~4.5	25.3~32.5
8	Shift drum stopper	1	0.9~1.4	6.5~10.2
9	Drain cock bolt	1	2.0~2.5	14.5~18.0
10	Drive sprocket	2	0.8~1.2	5.7~ 8.6

### (FRAME)

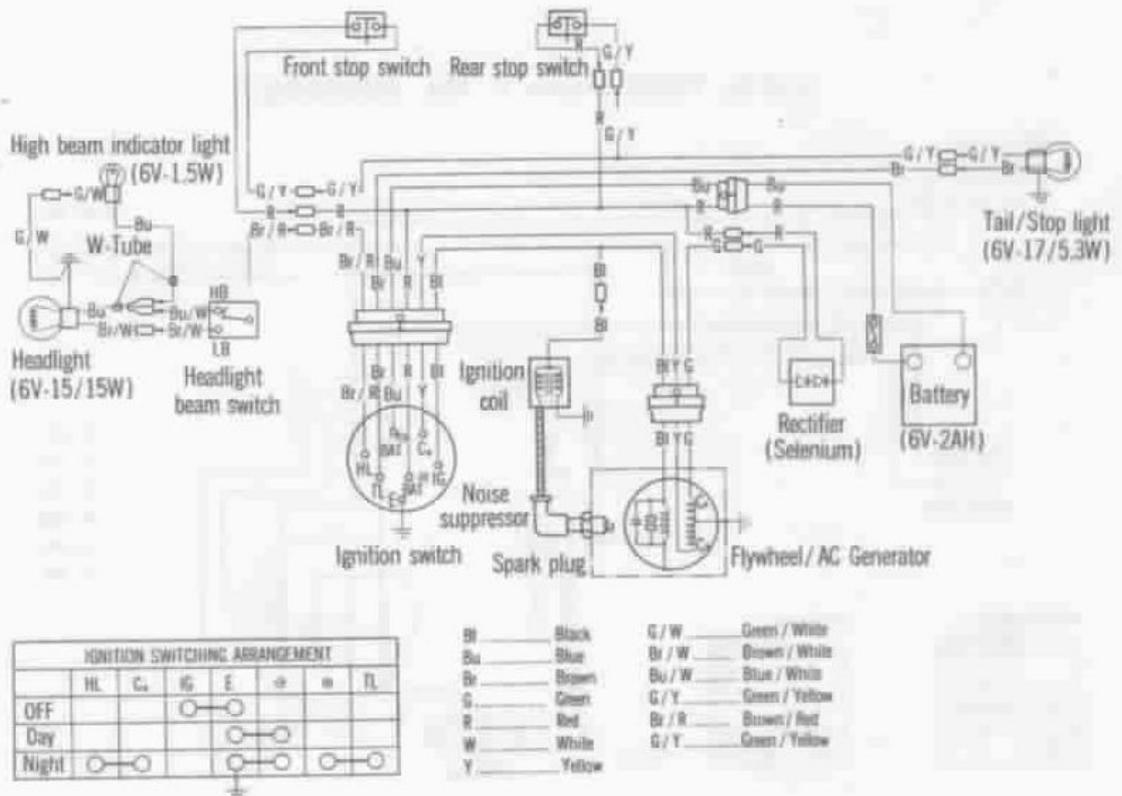
	Item	Q'ty	Torque values	
			kg-m	ft-lbs
1	Front axle	1	3.0~4.0	21.7~28.9
2	Front cushion	2	2.0~2.5	14.5~18.1
3	Rear axle	1	2.5~3.5	18.0~23.6
4	Rear cushion	2	2.5~3.5	18.0~23.6
5	Rear fork pivot	1	2.5~3.5	18.0~23.6
6	Engine hanger bolt	2	2.0~2.5	14.5~18.1
7	Torque link tighten bolt	1	2.0~2.5	14.5~18.1
8	Steering stem	1	6.0~8.0	43.2~57.6
9	Driven sproket	1	1.8~2.3	13.0~16.6
Standard parts				
	Bolt hex. 6 mm		0.8~1.2	5.7~ 8.6
	Bolt hex. 8 mm		2.0~2.4	14.5~17.3
	Screw cross. 6 mm		0.8~1.2	5.7~ 6.6

# WIRING DIAGRAM

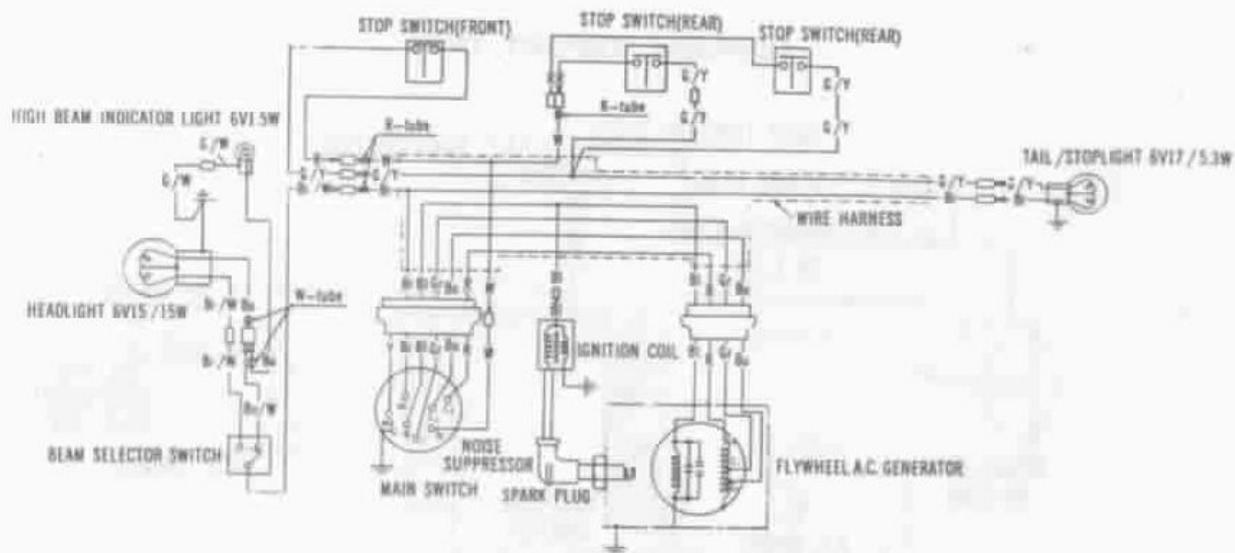
## GENERAL EXPORT TYPE



## U.S.A. TYPE (From F. No. 120001)



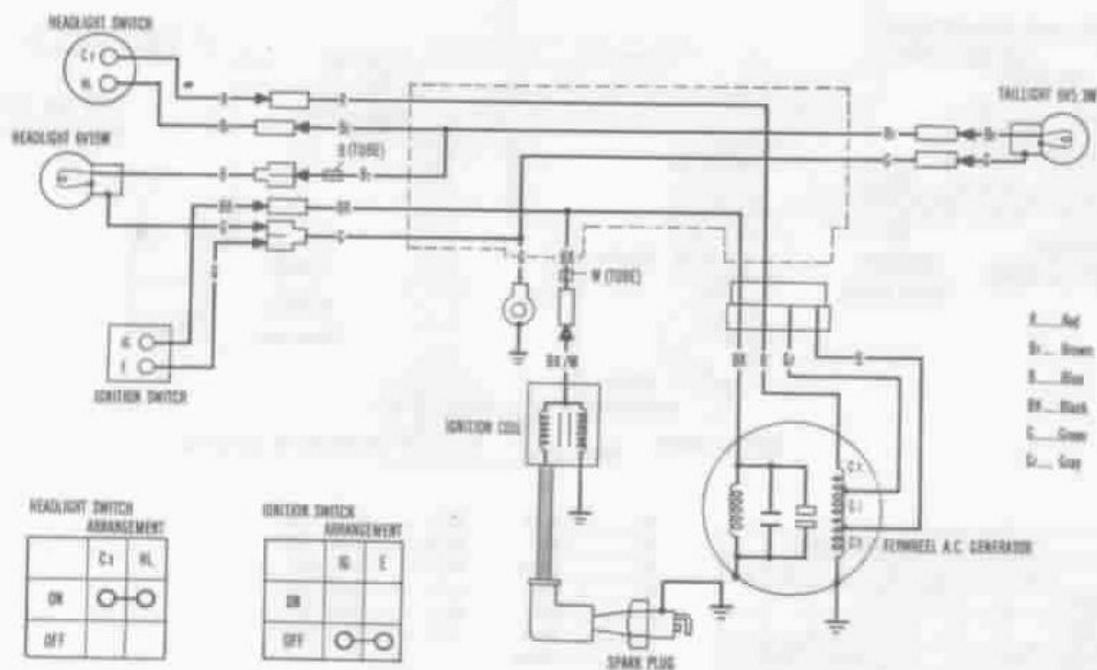
**U.S.A. TYPE (From F. No. 270236)**



MAIN SWITCH ARRANGEMENT								
	IG	E	C <sub>1</sub>	C <sub>2</sub>	SL	HO	C <sub>3</sub>	HL
OFF	○	○			○	○		
I					○	○		
II			○	○	○	○	○	○

- B — Black
- Bu — Blue
- Bw — Brown
- G — Grey
- R — Red
- W — White
- C/W — Green with White spiral
- B/W — Brown with White spiral
- C/Y — Green with Yellow spiral
- B/W — Black with White spiral
- Bu/W — Blue with White spiral

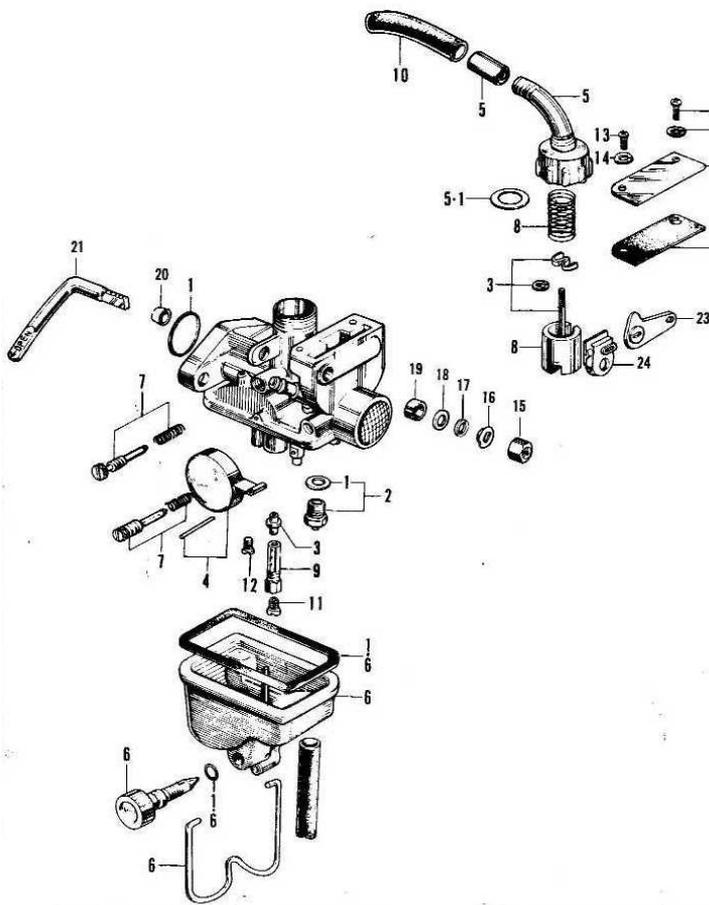
**U.S.A. TYPE (From F. No. 5000001)**



HEADLIGHT SWITCH ARRANGEMENT		
	C <sub>1</sub>	HL
ON	○	○
OFF		

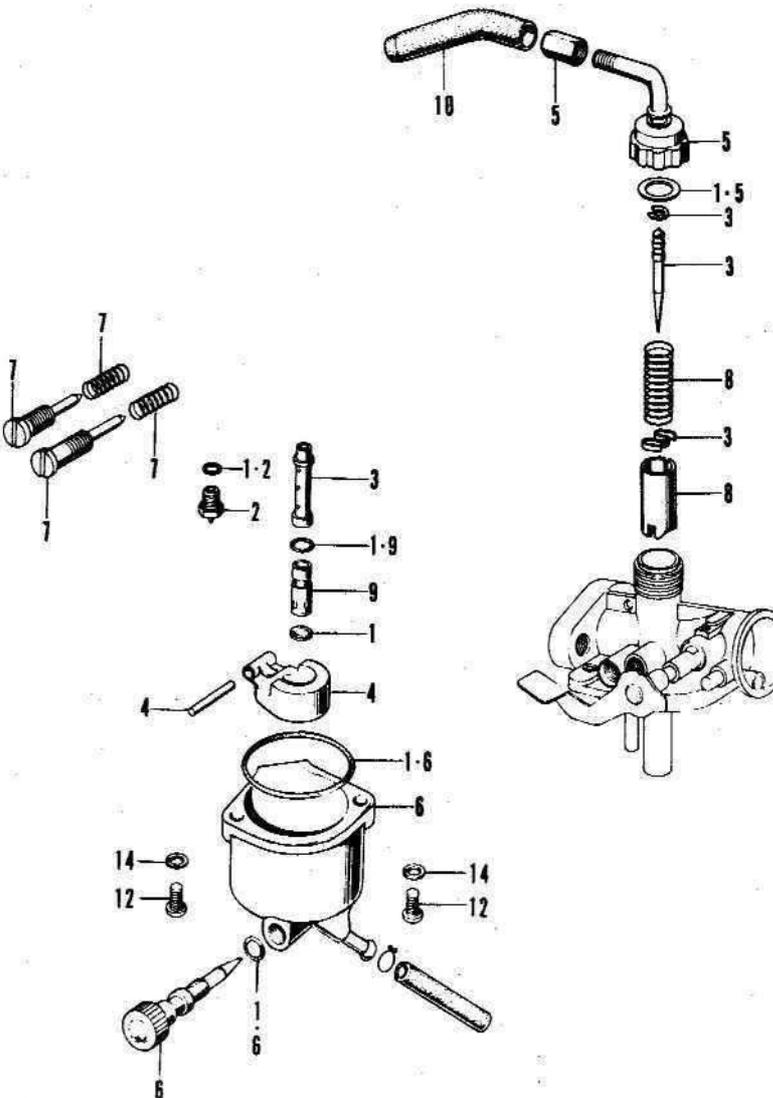
IGNITION SWITCH ARRANGEMENT		
	IG	E
ON	○	○
OFF	○	○

- R — Red
- Bu — Brown
- B — Black
- C — Green
- G — Grey



Ref. No.	H/C	Part Number	Description	No. Req'd.	Remarks
17607		16100-045-670	CARBURETOR ASSY.....	1	Z50A INITIAL TO 255950
25882		16100-045-671	CARBURETOR ASSY.....	1	Z50A 255951 TO
1	30923	16010-045-670	PACKING SET.....	1	
2	30492	16011-045-004	VALVE SET, FLOAT.....	1	
3	30966	16012-045-670	NEEDLE SET, JET.....	1	
4	31009	16013-045-004	FLOAT SET.....	1	
5	31025	16014-045-004	TOP SET.....	1	
6	31045	16015-045-670	CHAMBER SET, FLOAT.....	1	
7	31072	16016-045-014	SCREW SET.....	1	
8	31097	16022-045-600	VALVE SET, THROTTLE.....	1	
9	17615	16139-045-004	HOLDER, NEEDLE JET.....	1	Z50A INITIAL TO 108295
22800		16139-045-014	HOLDER, NEEDLE JET.....	1	Z50A 108296 TO
10	17604	16194-045-004	CAP, RUBBER.....	1	Z50A INITIAL TO 255950
25124		16118-045-770	CAP, RUBBER.....	1	Z50A 255951 TO
11	17580	99124-05004	JET, MAIN #50#.....	1	Z50A INITIAL TO 108295
22808		99114-076-05000	JET, MAIN #50#.....	1	Z50A 108296 TO
12	17585	99153-03804	JET, SLOW #38#.....	1	
13	05670	93500-03008	SCREW, PAN, 3X8.....	1	
19817		93500-03008-0A	SCREW, PAN, 3X8 OPTIONAL#.....	1	
14	05894	94111-03000	WASHER, SPRING, 3MM.....	1	
15	05793	94001-05000	NUT, HEX., 5MM.....	1	Z50A INITIAL TO 108295
15688		94001-05000-05	NUT, HEX., 5MM.....	1	Z50A 108296 TO
16	17605	16197-049-004	WASHER, STOPPER.....	1	
17	05896	94111-05000	WASHER, SPRING, 5MM.....	1	
18	05905	94101-05000	WASHER, PLAIN, 5MM.....	1	
19	17599	16179-049-004	SEAT, SEALING.....	1	
20	17598	16178-049-004	SEAL.....	1	
21	17603	16192-045-004	LEVER, CHOKE.....	1	Z50A INITIAL TO 108295
24033		16192-050-014	LEVER, CHOKE.....	1	Z50A 108296 TO
22	17611	16123-049-004	COVER, CHOKE.....	1	
23	17618	16143-050-004	LINK, CHOKE.....	1	
24	20797	16142-049-004	VALVE, CHOKE.....	1	

MODEL Z50AK3



MODEL Z50AK3

Ref. No.	H/C	Part Number	Description	No. Req'd.
27435		16100-120-010	CARBURETOR ASSY.....	1
1	30491	16010-114-004	PACKING SET.....	1
2	30492	16011-045-004	VALVE SET, FLOAT.....	1
3	30984	16012-120-004	NEEDLE SET, JET.....	1
4	30494	16013-114-004	FLOAT SET.....	1
5	30495	16014-120-004	TOP SET.....	1
6	30496	16015-114-004	CHAMBER SET, FLOAT.....	1
7	30497	16016-045-610	SCREW SET.....	1
8	31108	16022-120-004	VALVE SET, THROTTLE #18MM#.....	1
31109		16022-120-305	VALVE SET, THROTTLE #25MM#.....	1
9	31222	99201-114-0550	JET SET, MAIN #55#.....	1
10	25124	16118-045-770	CAP, RUBBER.....	1
11	16665	93500-03006-0A	SCREW, PAN, 3X6.....	1
12	16946	93500-04012-0A	SCREW, PAN, 4X12.....	1
13	05894	94111-03000	WASHER, SPRING, 3MM.....	1
14	05895	94111-04000	WASHER, SPRING, 4MM.....	1
15	16780	16199-063-004	PLATE, CLIP.....	1