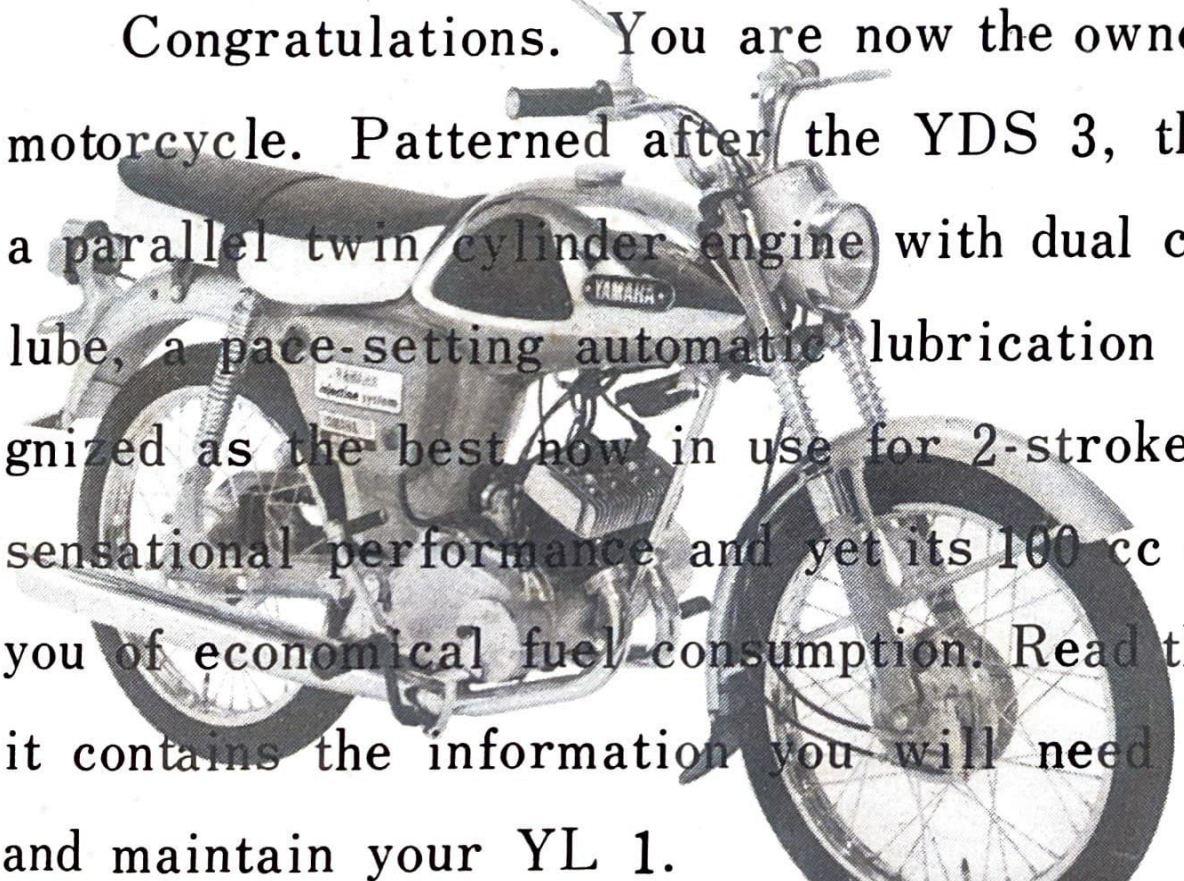




Rider's Manual for **YAMAHA 100 YL-1**

アメリカ向

Message to the Owner:



Congratulations. You are now the owner of Yamaha's newest motorcycle. Patterned after the YDS 3, the Yamaha YL 1 has a parallel twin cylinder engine with dual carburetors and Auto-lube, a pace-setting automatic lubrication system widely recognized as the best now in use for 2-strokes. The YL 1 delivers sensational performance and yet its 100 cc displacement assures you of economical fuel consumption. Read this manual thoroughly; it contains the information you will need to properly operate and maintain your YL 1.

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A. Special Features

1. High Performance Engine

A new parallel twin engine with dual carburetors assures you of quick acceleration and smooth high-speed riding.

2. YAMAHA Autolube

Yamaha's exclusive separate lubricating system uses a precision pump to maintain an optimum flow of oil to the engine; a varying volume controlled by the speed and load of the engine itself. Autolube thereby widens the range of practical two-stroke engine operation.

3. Primary Kick System

A primary-coupled kick-starter crank lets you start the engine with the gear-change pedal in any position, eliminating the need to shift to neutral before starting in an emergency: simply squeeze the clutch lever and kick the starter.

4. Special Twin Carburetors

Starter jets are used in the YL 1's carburetors, and in all other Yamaha motorcycles, to make starting easy even in freezing weather.

5. Easy Ride and Excellent Handling

The shape of the handlebars, width of the gas tank, position of the foot pegs and knee pads, etc., are all part of a new design based on the rider's natural body structure. This riding position, combined with the stable yet maneuverable chassis of the YL 1, allows balanced control even on rough roads or sharp curves.

6. Dependable Brakes

The YL 1 has Yamaha's waterproof and dustproof brake drums to assure you of effective braking whether riding in the rain or on dusty back roads.

7. Unique Design

Moderate weight, brisk performance, and smart styling accentuated by the suspension's exposed and chromed coil springs, make the YL 1 ideal for a wide range of uses, from commuting to just plain joy-riding.

B. Specifications

Name and model:

Yamaha 100 YL 1

Dimensions:

Overall length	71.6 in. (1820 mm.)
Overall width	24.8 in. (630 mm.)
Overall height	37.3 in. (947 mm.)
Wheelbase	45.1 in. (1145 mm.)
Road clearance	5.1 in. (130 mm.)
Weight	180 lbs. (82 kg.)

Performance:

Speed range	60—65 mph (100 km./h.)
Fuel consumption on level road	153 mpg. at 19 mph
Climbing ability	20°
Minimum turning radius	70.1 in. (1780 mm.)
Braking distance	23 ft. at 22 mph

Engine:

Model	Yamaha L 1
Type	2-stroke, gasoline
Lubrication system	Autolube, oil mist injection
Number & arrangement of cylinders	2, parallel
Bore & stroke	38 × 43 mm.
Displacement	97 cc.
Compression ratio	7.1 : 1
Maximum power	9.25 bhp at 8500 rpm
Maximum torque	5.9 ft. lbs. at 8000 rpm
Ignition system	Battery ignition
Starting system	Kick starter

Transmission:

Primary reduction method & ratio	Gears, 3.89 : 1 (74/19)
Secondary reduction method & ratio	Chain, 2.33 : 1 (35/15)
Clutch	Wet, multiple-disc
Gearbox	Constant mesh, 4-speeds
Ratios	Gearbox: Total reduction:
Low	3.08 : 1 27.96 : 1
Second	1.89 : 1 17.17 : 1
Third	1.30 : 1 11.85 : 1
Fourth	0.96 : 1 8.75 : 1

Suspension:

Front	Coil spring, oil dampened, telescopic fork
Rear	Coil spring, oil dampened, swing-arm

Wheels:

Caster	63°
Trail	3.54 in. (90 mm.)
Front tire	2.50 × 17-4 ply rating
Rear tire	2.50 × 17-4 ply rating

Brakes:

Front	Hand-operated, internal expanding, cable-actuated
Rear	Foot-operated, internal expanding, rod-actuated

Fuel Tanks:

Gasoline tank capacity	1.93 gal. (6.2 liters)
Oil tank capacity	1.16 qts. (1.1 liters)

C. YAMAHA Autolube

1. What is Autolube?

Ordinary two-stroke engines must use pre-mixed gas and oil for lubrication, but Yamaha's Autolube, a separate and automatic lubricating system, needs no gas/oil pre-mixture. Oil and gasoline are stored in separate tanks so oil can bypass the carburetors and be pumped directly to the engine's intake passages. The Autolube pump is a reliable, precision unit developed by Yamaha's engineers.

2. Special features of Autolube

This pump, driven by the crankshaft through reduction gears, is a cylindrical plunger that moves in and out of a revolving sleeve or casing. This rotating casing is filled with oil when a hole in its side aligns with the oil tank line during the plunger's suction stroke (plunger moves out). The casing is emptied of oil when further rotation aligns its hole with the oil delivery line during the plunger's pumping stroke (plunger moves in).

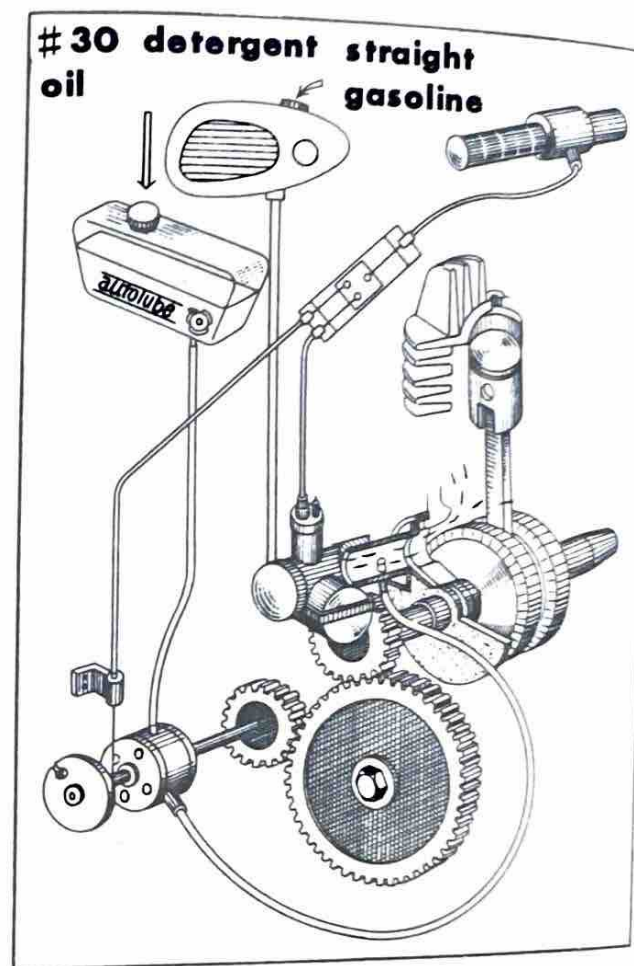


Diagram of Autolube operation

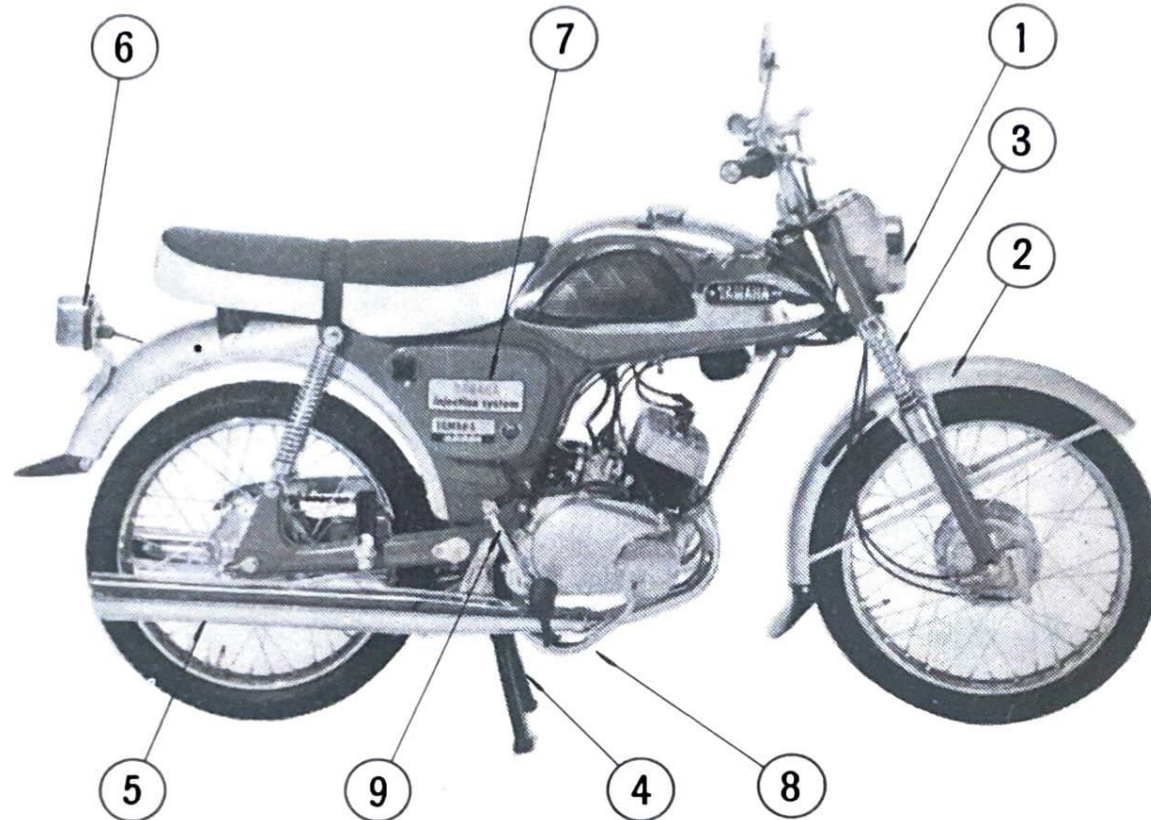
The carburetor throttles are connected to the oil pump, so that increasing the engine's speed by pulling the throttle cable not only makes the plunger pump faster, but also lengthens its stroke. This dual control by engine RPM and load (throttle opening), maintains optimum lubrication under any operating condition: with the engine pulling (throttle open wide) at low RPM, pulling at high RPM, or even with the throttle closed at high RPM (downhill).

Autolube compensates for many shortcomings in the gas/oil pre-mix system, thereby improving the performance and durability of Yamaha engines.

A U T O L U B E

1. eliminates the bother of pre-mixing gas and oil.
2. maintains optimum lubrication according to engine RPM and throttle position.
2. reduces spark plug fouling by injecting just enough oil for proper lubrication.
4. can cut oil consumption to 1/3 that of conventional 2-strokes, by pumping a precisely variable oil volume.
5. reduces exhaust smoke; no excess oil builds up in the combustion chamber because injection is proportional to engine speed and load.
6. lets you use engine compression as a brake; oil injection continues according to engine RPM, even with the throttle closed.
7. improves performance; no excess oil interferes with complete combustion of the gas-air mixture.
8. prolongs engine life; each injection is clean, undissolved, #30 detergent oil with high film strength and other lubricating qualities often lacking in 2-stroke oils.

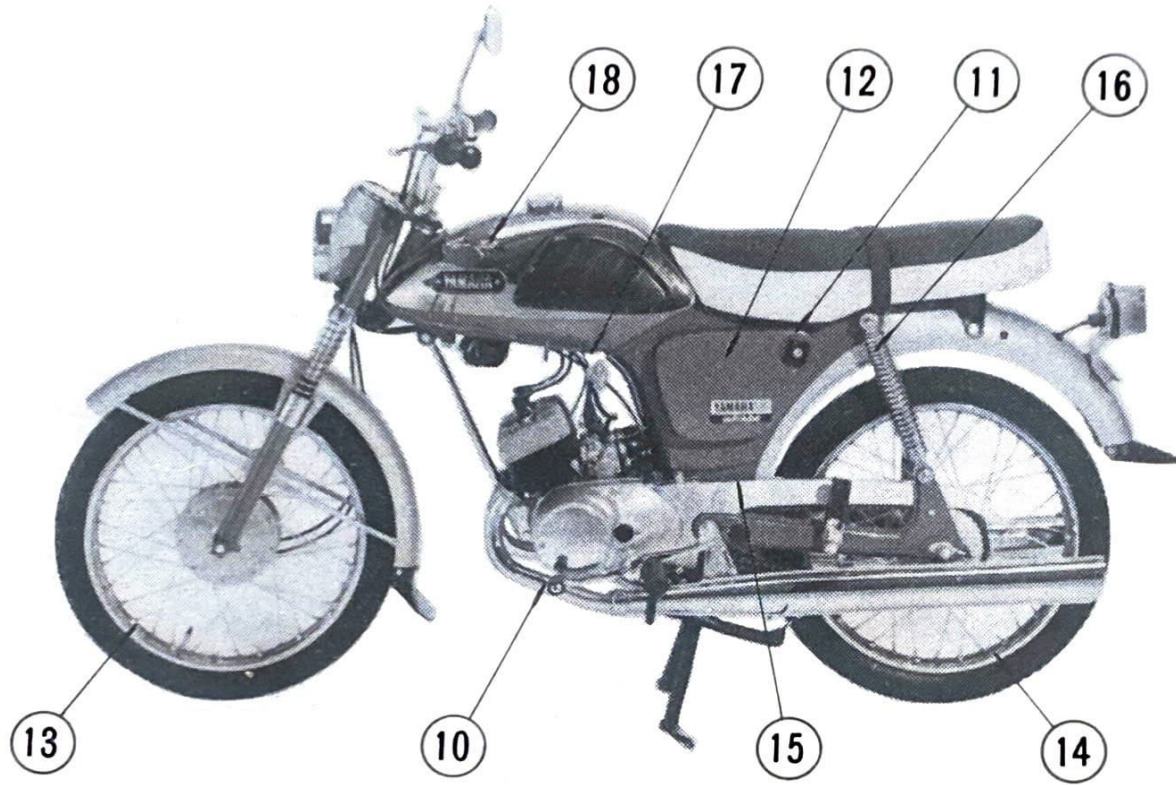
D. Identification of main parts.



- ① **Head light**
- ② **Front fender**
- ③ **Front fork**

- ④ **Main stand**
- ⑤ **Muffler**
- ⑥ **Taillight**

- ⑦ **Side cover(right) & oil tank**
- ⑧ **Brake pedal**
- ⑨ **Kick starter crank**



⑩ **Gear change arm**

⑪ **Main switch**

⑫ **Side cover(left)**

⑬ **Front wheel**

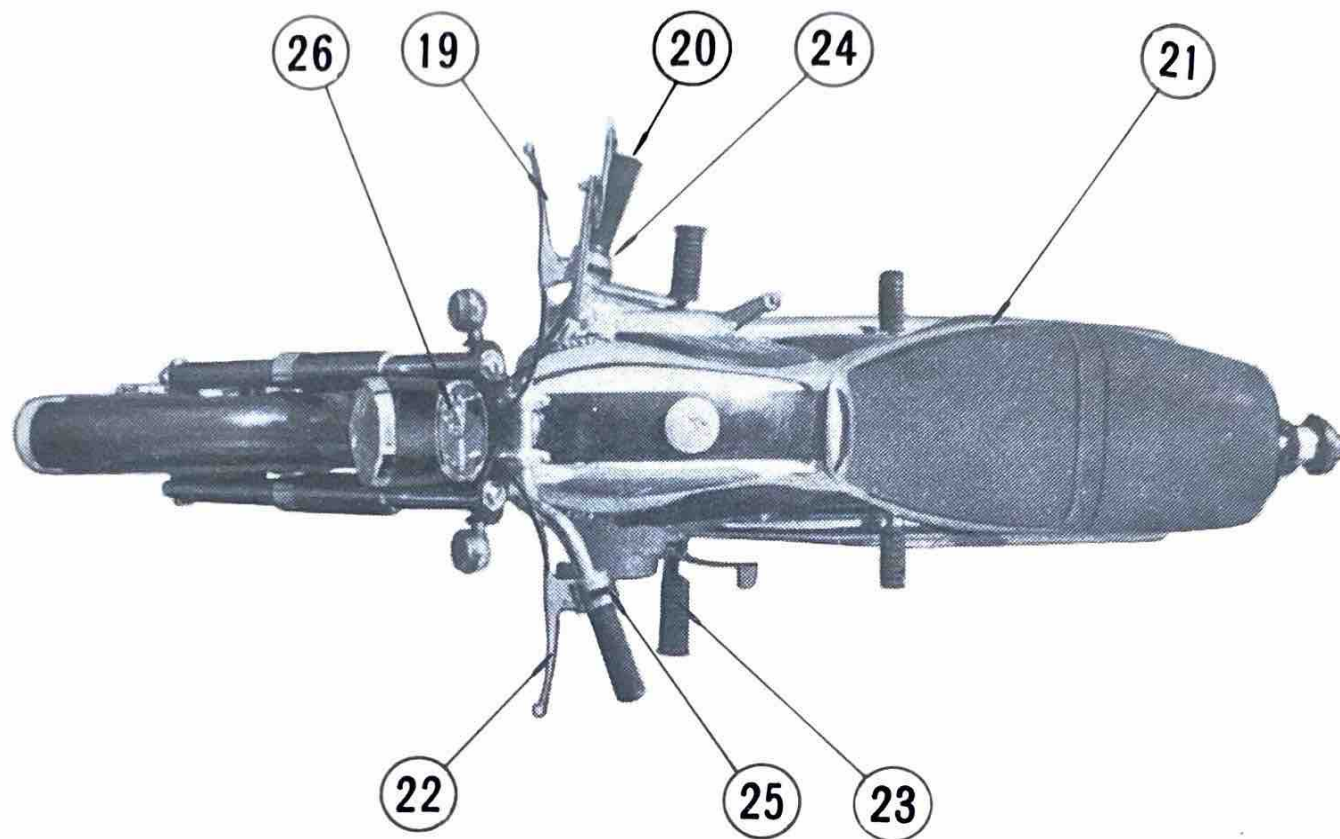
⑭ **Rear wheel**

⑮ **Chain guard**

⑯ **Rear suspension unit**

⑰ **Fuel cock**

⑱ **Fuel tank**



①9 **Brake lever**

②0 **Accelerator grip**

②1 **Seat**

②2 **Clutch lever**

②3 **Footrest**

②4 **Handlebar switch(right)**

②5 **Handlebar switch
(left)**

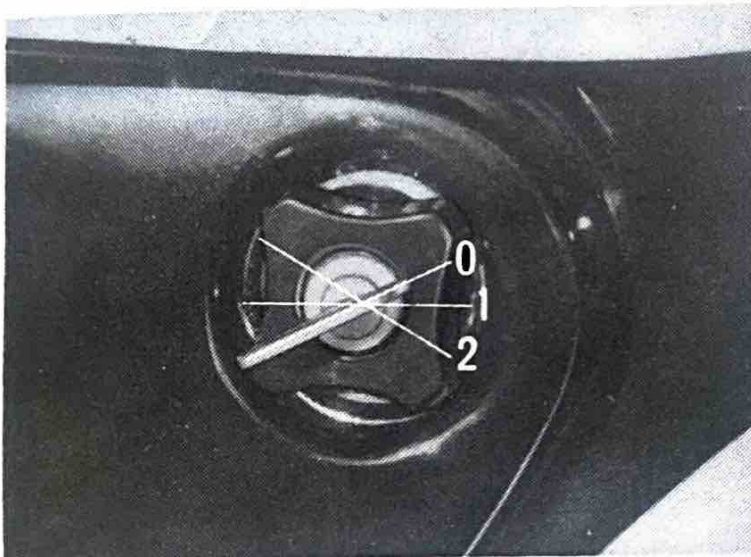
②6 **Speedometer**

E. Operating instructions.

1. Using the controls.

a. Main switch.

Insert your key in the main switch and turn it to position I or II:

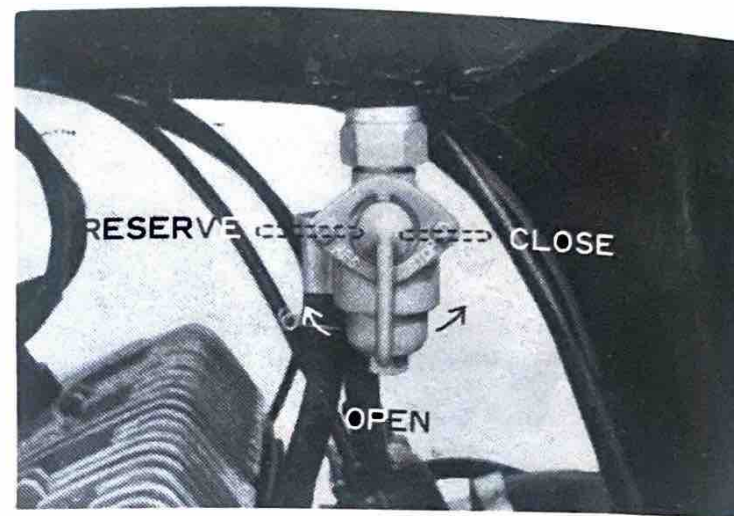


(Fig. 1)

Key position	0 (When stopped)	I (Day riding)	II (Night riding)
Part name			
Headlight			×
Taillight			×
Stop light		×	×
Neutral light		×	×
Instrument light			×
Horn		×	×
Ignition system		×	×

b. Fuel Cock.

Turn the fuel cock lever to OPEN position (O) to let fuel flow into the carburetors. If you run out of gas while riding, turn the lever to RESERVE position (R): the half gallon of reserve fuel will let you ride nearly 50 miles to find a gas station.



(Fig. 2)

c. Left handlebar switches

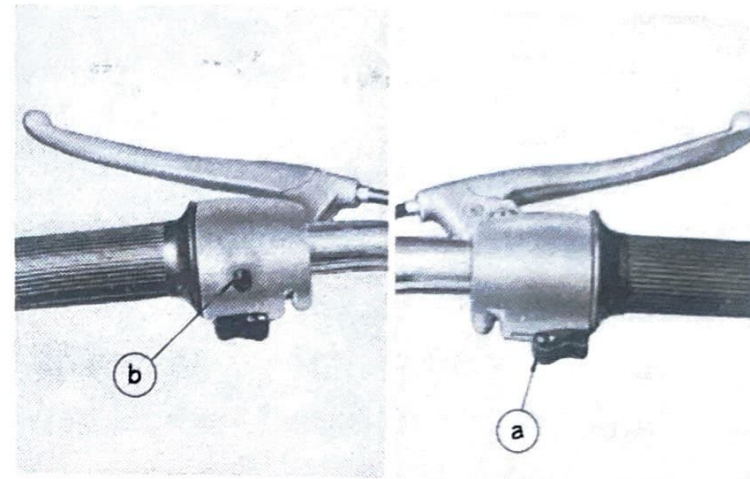
1) Horn button:

Press button (b) and the horn will sound.

2) Headlight switch:

To lower the headlight beam, push switch (a) to the left.

To raise the headlight beam, push the switch to the right.



(Fig. 3)

d. Steering lock

Turn the handlebars all the way left or right, then insert the key in the lock just below the front fork pivot and turn it to lock the steering.

Make sure the handlebars will not turn and then pull out the key.



(Fig. 4)

2. Routine (daily) inspection

For safety's sake, be sure to check the following before every ride.

a. Fuel

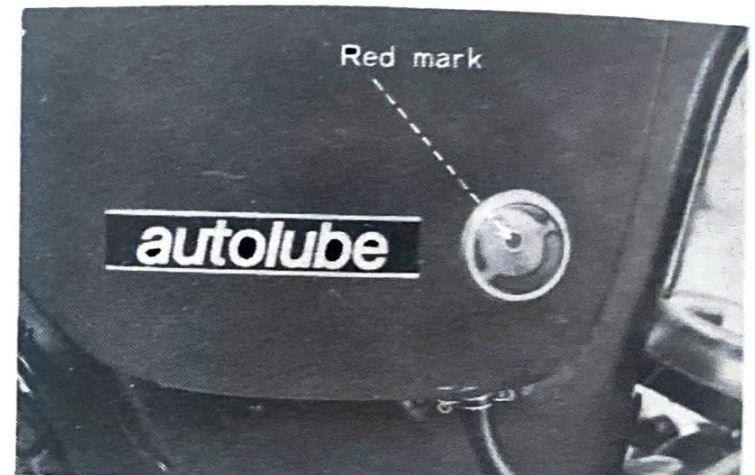
Do you have enough gas for your ride? If not, fill the gas tank with "straight" gasoline; Autolube eliminates pre-mixing the oil.

b. Autolube oil

To avoid running out of oil or adding fractions of quarts:

- 1) check the oil level whenever you stop for gas and
- 2) when it reaches the middle of the viewport in the Autolube tank you can add a full quart of oil.

In temperatures down to $+20^{\circ}$ F. add #30 detergent oil;
from $+20^{\circ}$ F. to -15° F. use SAE 10W-30 detergent oil;
from -15° F. to -30° F. use SAE 5W-20 detergent oil.



(Fig. 5)

c. Tire pressures

Low tire pressures not only impair riding comfort but also reduce stability and shorten tire life.

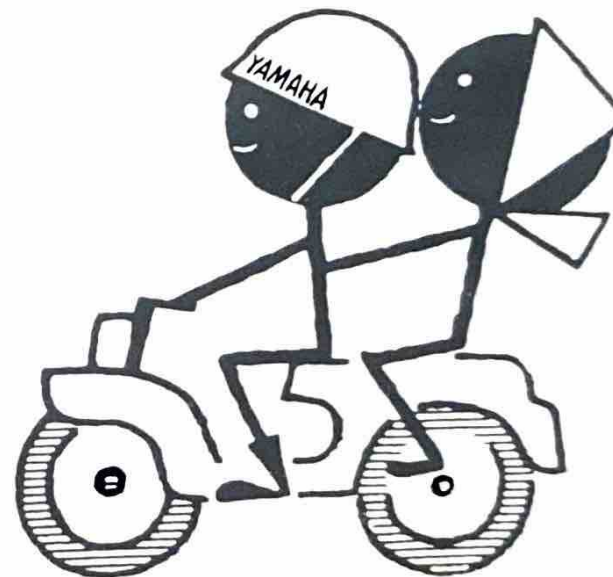
Correct pressure:	One rider	Two riders
front tire	20 lbs	20 lbs
rear tire	28 lbs	32 lbs

d. Brakes

Ride a few yards, then simultaneously apply the front and rear brakes. Do they feel properly adjusted?

e. Lights and horn

Turn the main switch to position I and check the brake light, neutral light, and horn. Turn the switch to position II and again check the brake light, neutral light and horn; then be sure the headlight, taillight, and speedometer light are on.

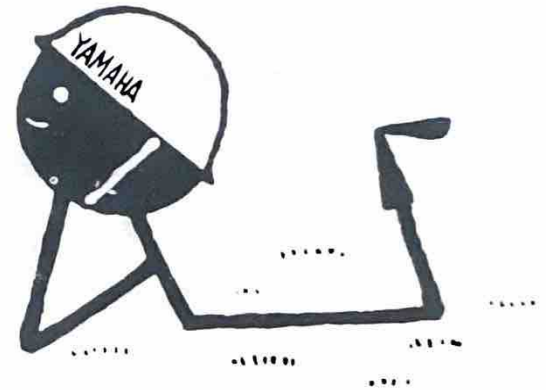


3. Riding essentials

If fuel, tire pressures, and brakes are O.K., you are ready to ride.

a. Starting the engine

- 1) Turn the gasoline fuel cock to Open position (O).
- 2) Turn on the main switch. If the green neutral light in the speedometer is not on, you must downshift to neutral before starting the engine. Repeatedly press down the heel section of the shift pedal (as many as 4 times) until the neutral indicator light goes on.



3) Starting in cold weather

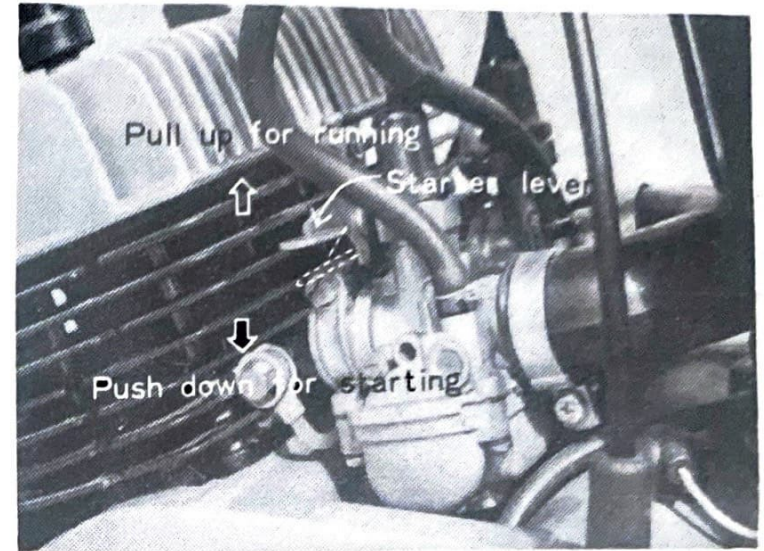
All engines are hard to start in cold weather, but the starter jets in your YL 1's carburetors enrich the fuel mixture for optimum combustion in a cold engine by adding gas to the normal flow of air rather than reducing normal air flow with a "choke." Starting is easy, even in freezing weather.

- a) Push open the starter jet lever on the left handlebar (Fig.6).
- b) Leave the accelerator grip closed, straddle the machine, and push down the kick starter crank once or twice with your right foot until the engine starts.

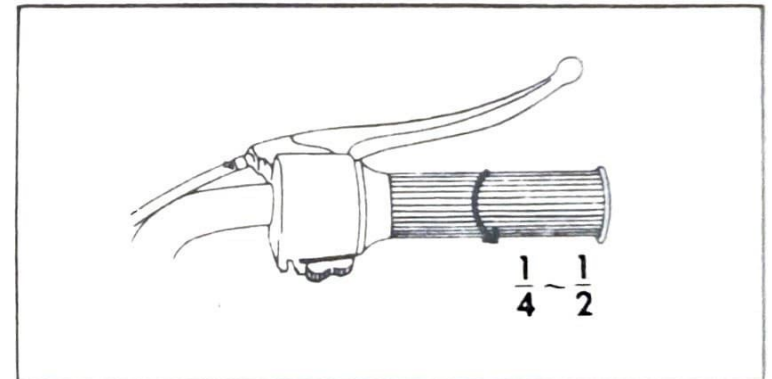
4) Warming up

When the engine starts, open the throttle slightly to keep it running, but don't close the starter jet lever. Warm up is complete when you can close the starter lever and rev up the engine quickly and smoothly with a twist of the throttle.

NOTE: Correct warming up and periodic inspection are indispensable in keeping your motorcycle in top condition.

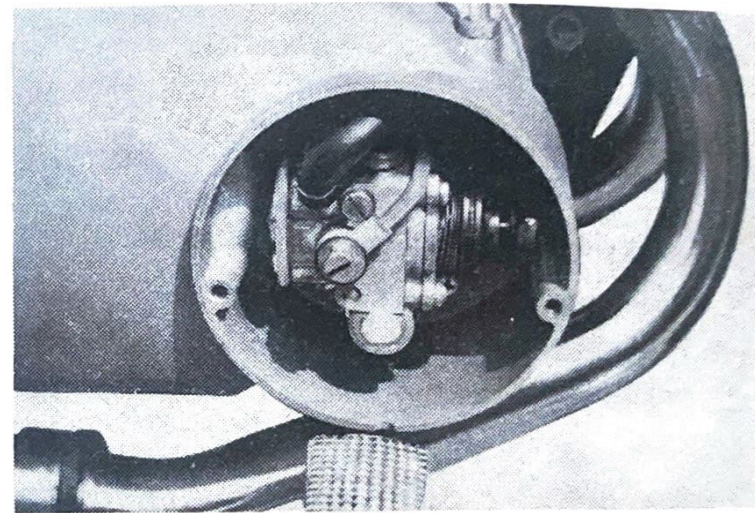


(Fig. 6)



(Fig. 7)

- 5) Starting when the engine is warm
 - a) Leave the starter jet lever closed.
 - b) Hold the throttle open $1/4$ to $1/2$ turn and push down on the kick starter crank with your right foot.
 - c) See (4) above.



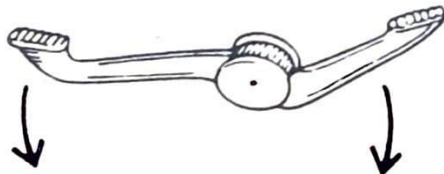
(Fig. 8)

b. Riding

1) Using the transmission

The YL 1's transmission has four gear reduction ratios or "speeds" to let you use engine power most effectively for smooth starting, accelerating, or cruising. The gear shifting arm is a toe lever heel pedal combination: you can upshift and downshift with just your toe (press down toe section; pull up underneath it) or, if you're wearing good shoes, you can upshift with your toe (press down toe section) and downshift with your heel (press down heel section). The gear shift arm positions (Fig.9) show that during acceleration you must shift to progressively smaller reduction ratios, (from LOW to SECOND, THIRD, and TOP) using the engine's power at each ratio to increase your speed. During deceleration or when you anticipate riding conditions that demand more power than speed, shift to progressively larger reduction ratios (from TOP to THIRD, SECOND, and LOW) to decrease your machine's speed and multiply the engine's power. To shift into NEUTRAL, press down the heel section of the shift arm once, twice, maybe three or four times until the clicking stops and the NEUTRAL light in the speedometer goes on.

Shifting
sequence
for
acceleration:
NEUTRAL
LOW
SECOND
THIRD
TOP



(Fig. 9)

Shifting
sequence for
deceleration:
TOP
THIRD
SECOND
LOW
NEUTRAL

- 2) After you start the engine:
 - a) Squeeze the clutch lever to disengage the transmission from the engine.
 - b) Press the shift arm's toe section down into LOW.
 - c) Gradually open the throttle as you slowly release the clutch lever, and your machine will begin moving.
- 3) Shifting gears
 - a) At 10 to 15 MPH, close the throttle and, at the same time, promptly squeeze the clutch lever;
 - b) then shift to SECOND (press the toe section down again) and
 - c) again open the throttle as you release the clutch lever.

You can use the engine's compression to decelerate:

close the throttle as you squeeze the clutch lever, and downshift to THIRD, SECOND, or FIRST (press down heel section, or pull up under toe section); keep the throttle closed and slowly release the clutch lever.

To avoid abusing the engine, shift gears according to your riding conditions:

Gear	Power	Speed	Use	Optimum speed
Low	High	Slow	Starting; on steep grades	Up to 10 mph
Second	Medium	Medium	Uphill; slow riding	10—16 mph
Third	Medium	Medium	Gentle slopes, gravel roads	16—25 mph
Top	Low	Fast	Level riding, cruising	More than 25

For easier shifting, you can remove the shifting arm its shaft and replace it in a position that matches the angle of your foot during normal riding.

NOTE: THESE SPEEDS ARE RECOMMENDED FOR AFTER THE BREAK-IN PERIOD. FOR BREAK-IN RECOMMENDATIONS, SEE PAGE 25

c. Riding on hills

1) Uphill

When you start climbing a slight grade, gradually open the throttle to avoid losing speed. When you're climbing a steep hill, downshift promptly from TOP to THIRD or from THIRD to SECOND, to maintain engine RPM and power.

2) Downhill

When you're riding down a long or steep hill, use the engine's compression as well as the brakes to hold you back: keep the throttle closed and downshift to THIRD or SECOND, depending on the grade. Use the same gear for riding down a hill as you would use for climbing the same hill.

CAUTION: Never turn off the main switch when riding down a long hill; it will foul the sparkplugs and impair the engine's performance.

d. Stopping and parking

1) Stopping

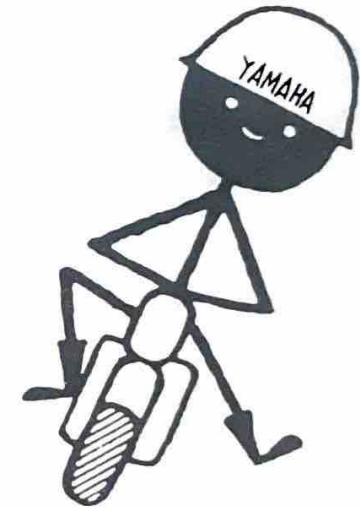
- a) Be sure to apply the front and rear brakes at the same time. Applying only one (front or rear) brake may, under certain conditions, cause skidding or loss of control.
- b) Apply the brakes gently, not sharply.
- c) Don't overheat your brakes; apply them at repeated intervals rather than continuously when you're riding down a long hill (see 2) above).

2) Parking

- a) Lock the handlebars and remove the key (see page 15).
- b) Remove the main switch key.
- c) Turn the fuel cock to STOP position (S).

NOTE: Be sure to observe parking regulations.

Park your machine where it is best protected.



4. Breaking-in your YL 1

The Yamaha 100 is a precision-built motorcycle that has withstood rigorous testing, but the first 600 miles is still the most important period affecting the life of its engine and other moving parts.

- a. Ride at 35 mph or less while in top gear during your first 300 miles.
- b. and at 45 mph or less in top gear during the next 300 miles.

BREAK-IN SPEED LIMITS FOR EACH GEAR

Odometer mileage	Top (4th)	Thirdd	Second	Low (1st)
Up to 300 miles	40 mph	25 mph	15 mph	10 mph
From 300-600 miles	45 mph	30 mph	20 mph	10 mph

F. Inspection and maintenance

Faithful inspection and servicing by you and your Yamaha dealer will keep your YL 1 in top condition and prolong its life.

1. Dealer service

All items in the list on page 27 should be inspected or serviced at maximum intervals of 1,000 miles or 4 months, whichever occurs first. These are preventive measures to insure you of proper operation with a minimum of concern.

Periodic Inspection Guide

C h e c k p o i n t	After 1 month	After 4 months	After 8 months	Every 4 months thereafter
Adjust front & rear brakes	×	×	×	×
Adjust clutch	×	×	×	×
Change gear oil	×	×	×	×
Grease (lubricate)		×	×	×
Inspect battery fluid level	×	×	×	×
Clean spark plugs	×	×	×	×
Check spark plug gaps	×	×	×	×
Adjust carburetor		×	×	×
Overhaul & clean carburetors			×	×
Clean air filter		×	×	×
Inspect & clean cylinder heads & piston crowns		×	×	×
Clean mufflers		×	×	×
Tighten bolts & nuts	×	×	×	×
Adjust drive chain	×	×	×	×
Adjust oil pump stroke	×	×	×	×

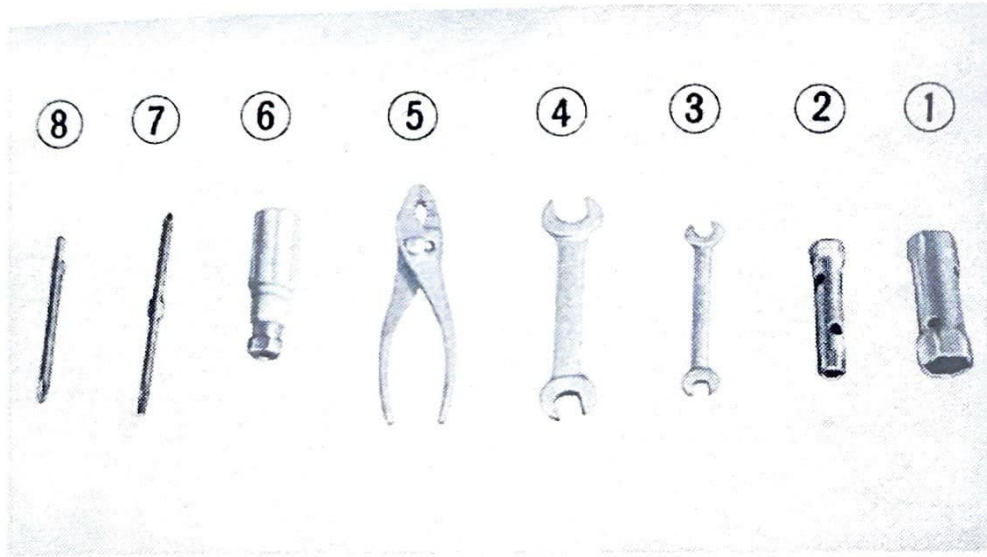
2. Your own inspection

In addition to periodic inspection by your dealer, you should check your motorcycle every 300 miles, or every month, whichever comes first:

Check	I n s t r u c t i o n s	See page
Front & rear brakes	Adjust cable slack	30, 31
Clutch	Adjust cable slack	32
Gear oil	Check oil level; add or change oil as required	33
Battery	Check fluid level; add distilled water if necessary	34
Spark plug	Clean & check gap	35
Air filter	Clean thoroughly	36
Drive chain	Adjust and oil	38
Other parts	Tighten bolts, nuts, & screws	39

3. Periodic inspection using service tools

a. Identification of metric tools:



- (1) 21 × 23 mm socket wrench
- (2) 10 × 14 mm socket wrench
- (3) 9 × 10 mm wrench
- (4) 14 × 17 mm wrench
- (5) Pliers
- (6) Screwdriver handle
- (7) Combination slotted & Phillips types screwdrivers
- (8) Phillips type screwdriver

(Fig. 10)

Use these precision tools for adjustments and repair; always keep them on the motorcycle.

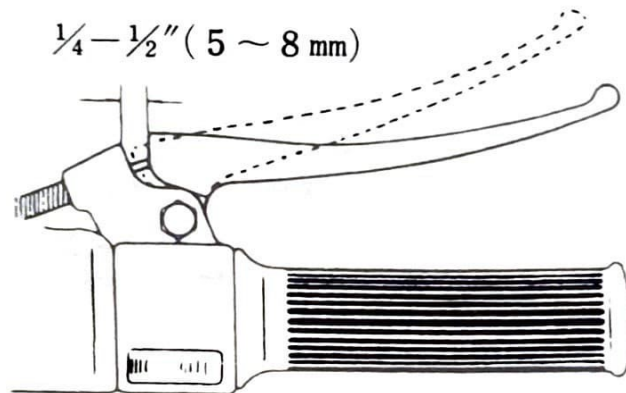
b. Maintenance

1) Adjusting the brakes

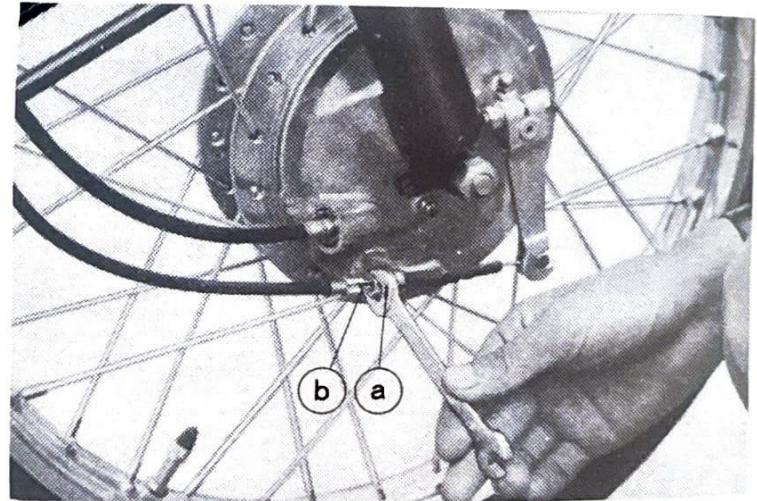
a) Front brake

Loosen lock nut (a) and turn adjusting nut (b) a half turn at a time, checking brake lever play after each half turn; Correct brake lever play is $1/4$ to $1/2$ inch (5–8 mm).

When the adjustment is correct, tighten lock nut (a).



(Fig. 11)

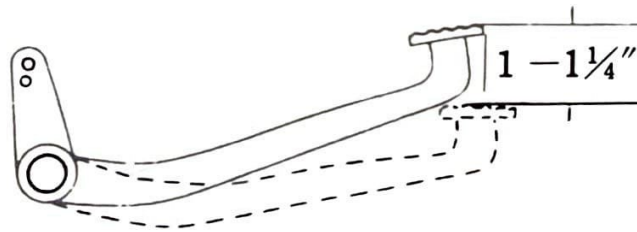


(Fig. 12)

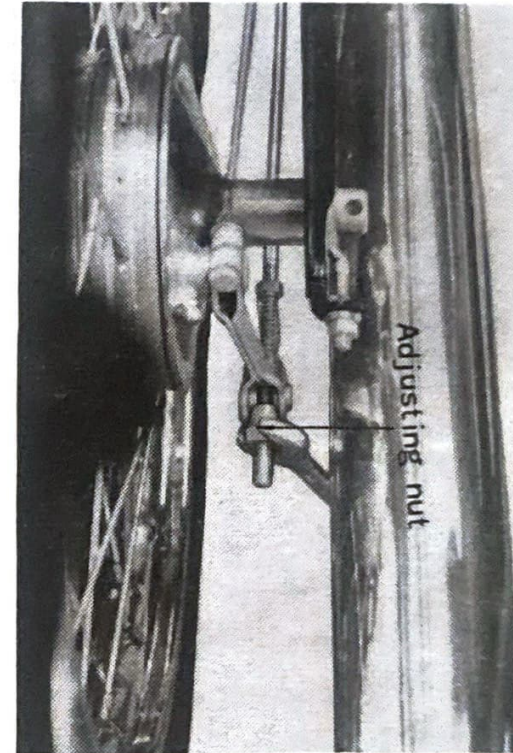
b) Rear brake

Adjust the rear brake by turning the adjusting nut at the end of the brake rod a half-turn at a time, checking pedal play after each half turn (clockwise to remove slack).

Correct brake pedal play is 1 to 1 and 1/4 inches.



(Fig. 13)



(Fig. 14)

2) Adjusting the clutch

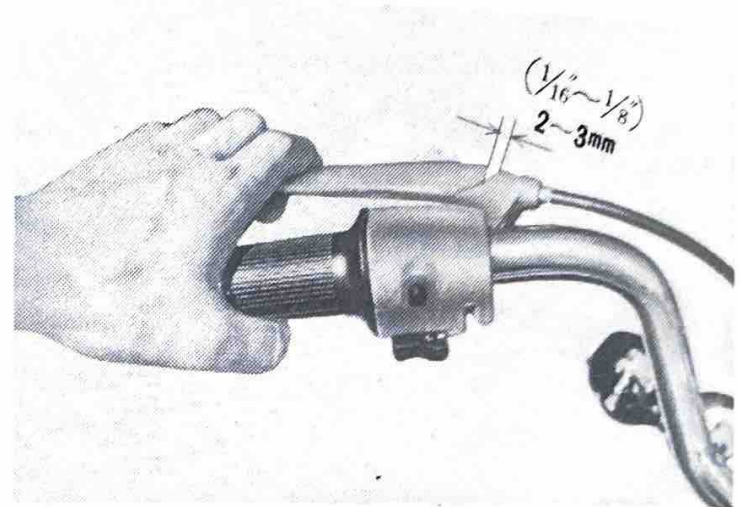
Clutch lever play must be adjusted to $1/16$ - $3/32$ inch to let the clutch springs apply full pressure to the clutch facings.

With excessive lever play, the clutch will not completely disengage, but without play it will not completely engage, and slipping will occur.

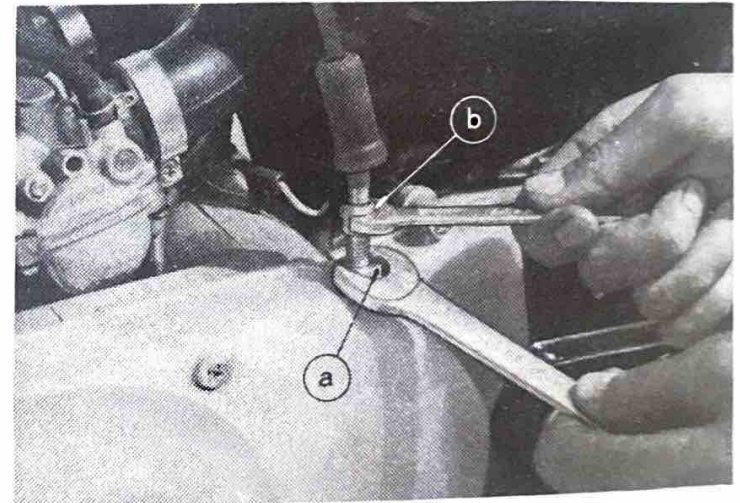
Tools: 14 mm and 10 mm wrenches

- a) Loosen locknut (a) at the top of the left crankcase cover.
- b) To decrease play, loosen adjusting nut (b) (counterclockwise); to increase play, tighten the nut (clockwise).

When your adjustment is correct tighten locknut (a).



(Fig. 15)



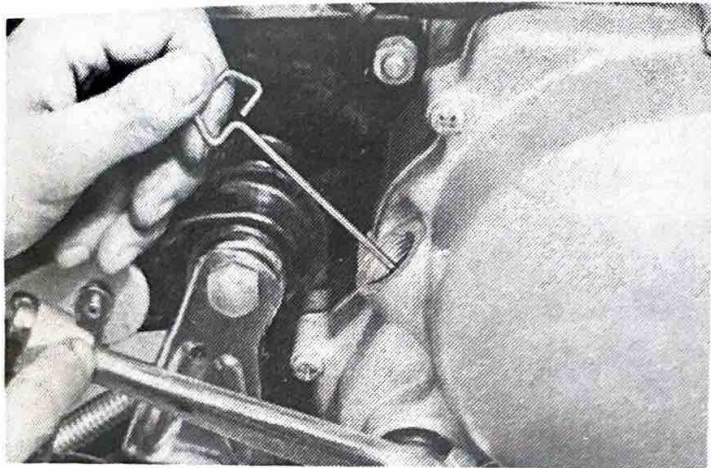
(Fig. 16)

3) Checking and changing gearbox oil

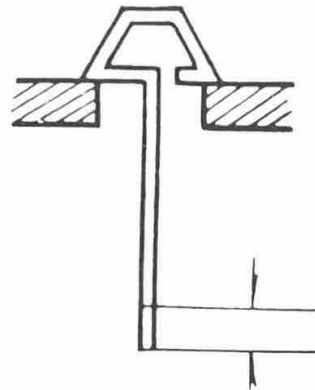
a) Oil level

Remove the check plug in the rear edge of the right crankcase cover and insert the oil gauge as illustrated. If the flat section of the gauge comes out covered with oil, your gearbox oil level is correct. If not, add oil as described below.

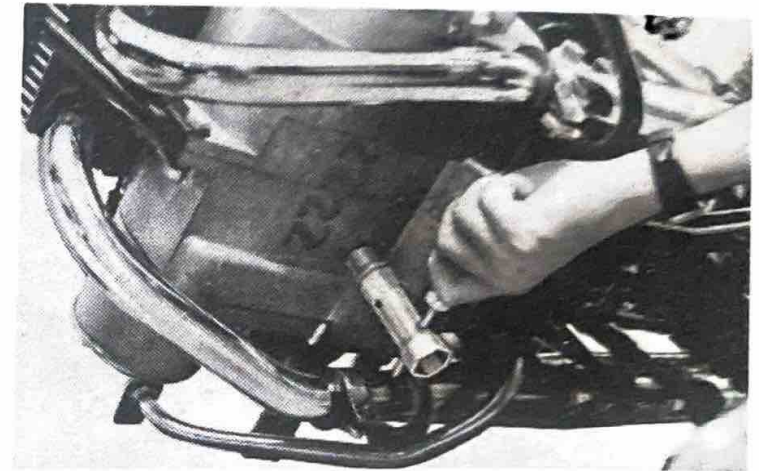
(Diagram: the oil level is correct if this section is covered)



(Fig. 17)



Keep the oil between these levels



(Fig. 18)

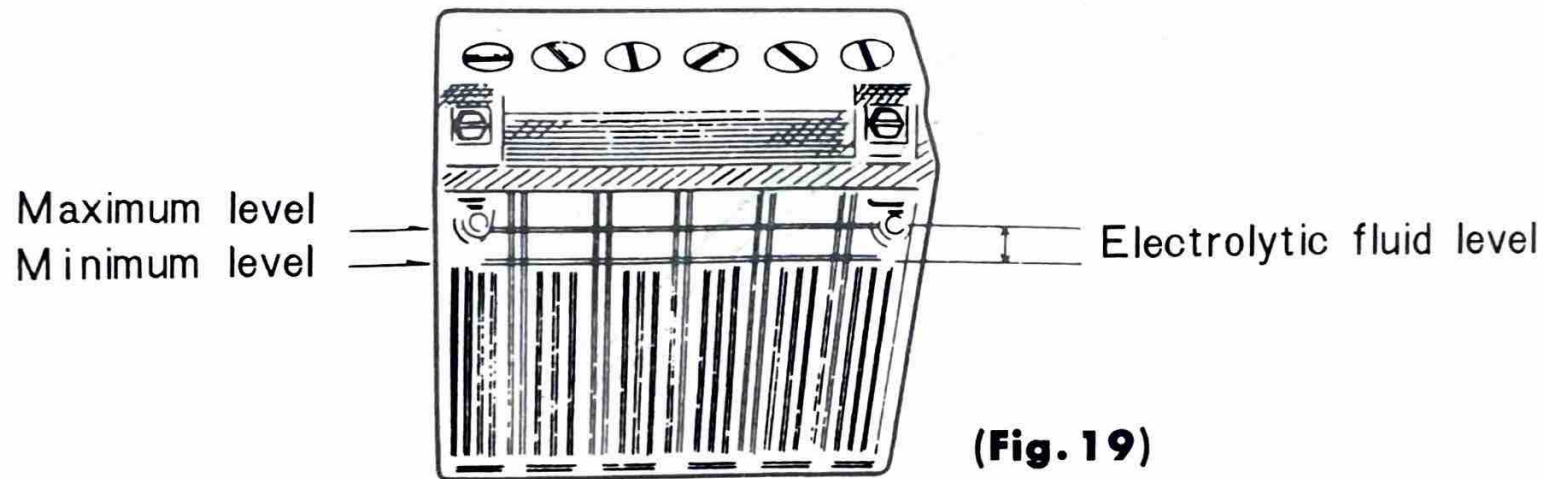
b) Changing the oil

Change transmission oil every 1,000 miles. Remove the plug (21 mm) in the bottom of the right crankcase and let the oil drain into a pan. After draining, replace the plug firmly and pour 7/8 pint (a little less than 1/2 quart) of #30 detergent oil into the check plug hole. Replace the check plug, start your machine, and let the engine run a few minutes; then check the oil level: clutch lubrication depends on transmission oil overflow, so a correct gearbox oil level means the clutch also has proper lubrication.

4) Inspecting the battery fluid

Remove the left side cover and check the battery: its fluid levels should always be between the maximum and minimum levels as illustrated.

If necessary, unhook the battery strap, pull out the battery, unscrew the caps of the cells that are low, and add distilled water until the fluid rises to maximum level.



If your motorcycle will not be used for more than a month:

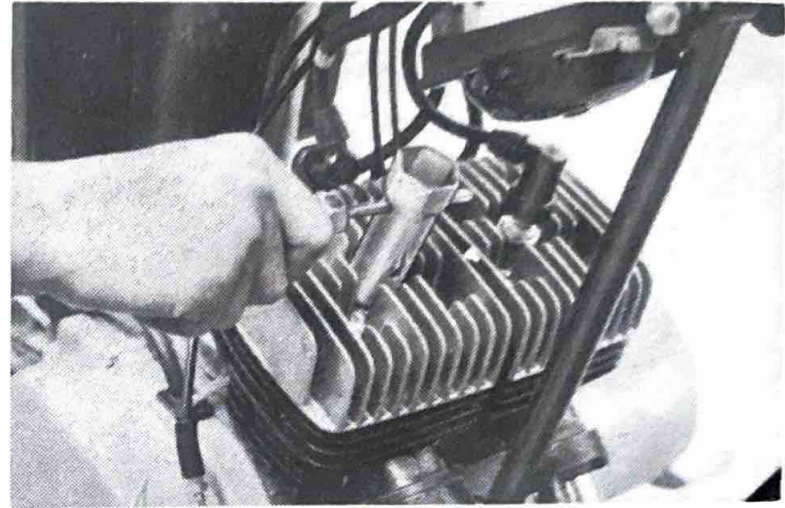
- a) remove the battery from your machine and keep it in a cool, dry place or have your dealer store it for you;
- b) have your dealer recharge it once a month.

NOTE: After long storage, you should completely recharge your battery before mounting it.

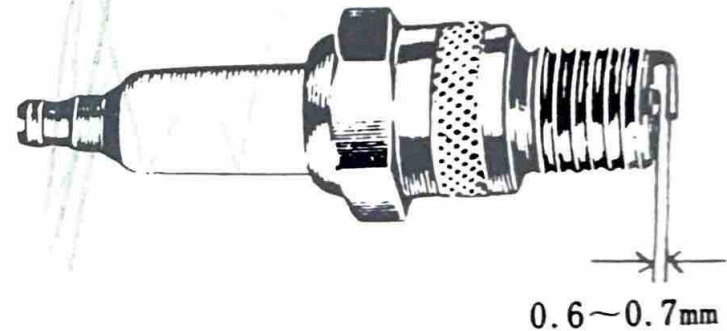
5) **Cleaning the spark plugs**

The spark plugs ignite the carburetor's air-fuel mixture, but a defective or fouled plug will cause hard starting, poor acceleration, engine misfiring, etc. Check the plugs to keep your engine running smoothly:

- a) Pull off the sparkplug wires and unscrew the plugs with the 21 mm socket wrench and the Phillips screwdriver, as illustrated.
- b) Clean the carbon from each plug's electrodes with a wire brush or fine sandpaper.
- c) Check the gap between the electrodes: 0.025 in. (6—7 mm.).
- d) The plugs are correct for your engine's present operating conditions if the porcelain around their center electrodes is a light tan color. If the porcelain is covered with carbon, change to hotter operating (range) plugs. If the porcelain is burned white, install colder range plugs. Spark plug heat range requirements



(Fig. 20)



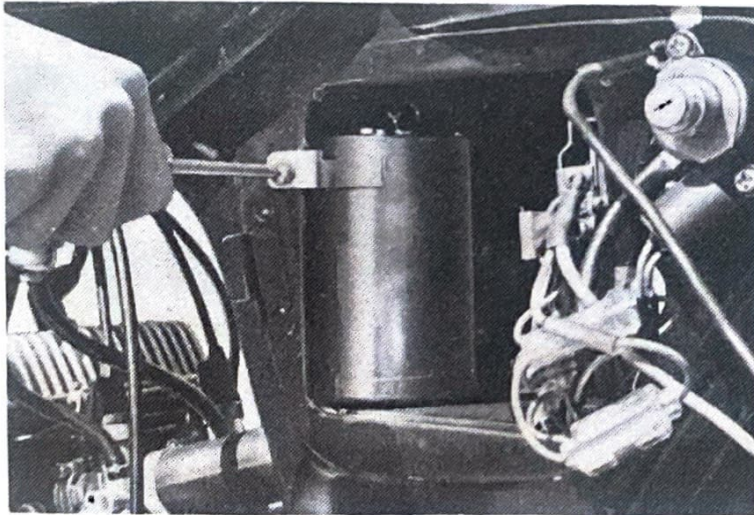
(Fig. 21)

differ with individuals' riding habits, so consult your dealer before you switch plugs. For example: if your standard plugs (NGK B-7HZ) are covered with carbon, as sometimes happens during early break-in, your dealer may suggest the hotter B-7H plugs.

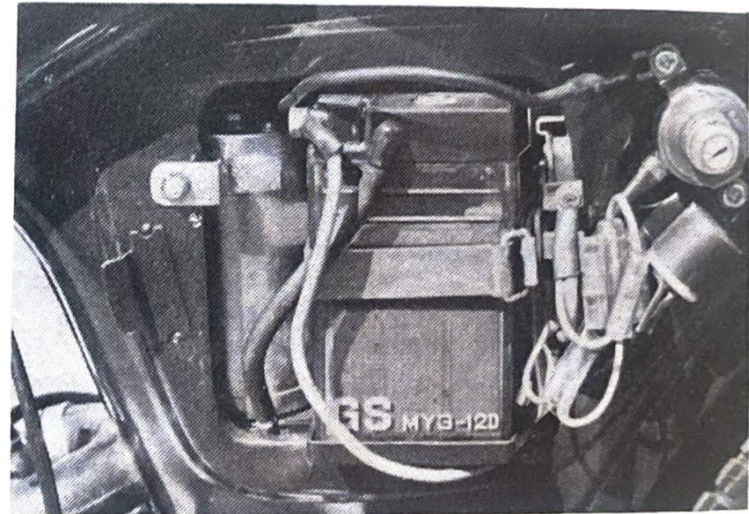
6) **Cleaning the air filter**

The air filter protects the engine from dust and grit but it must be kept clean to stay efficient.

Tools: Phillips and slotted screwdrivers.



(Fig. 22)

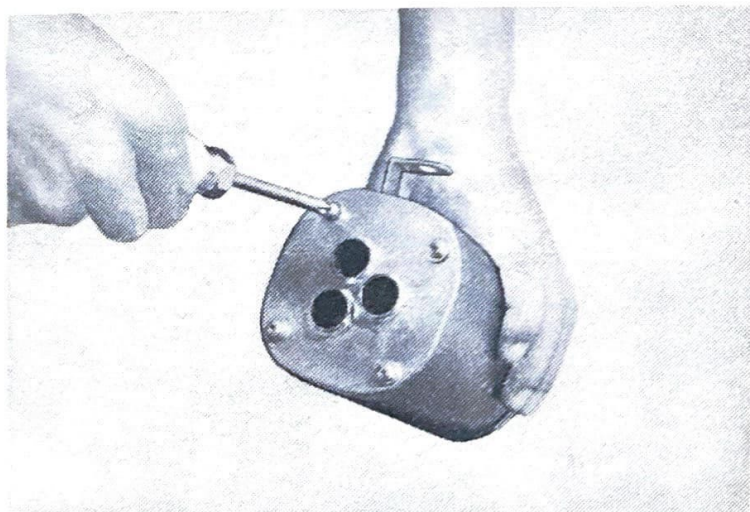


(Fig. 23)

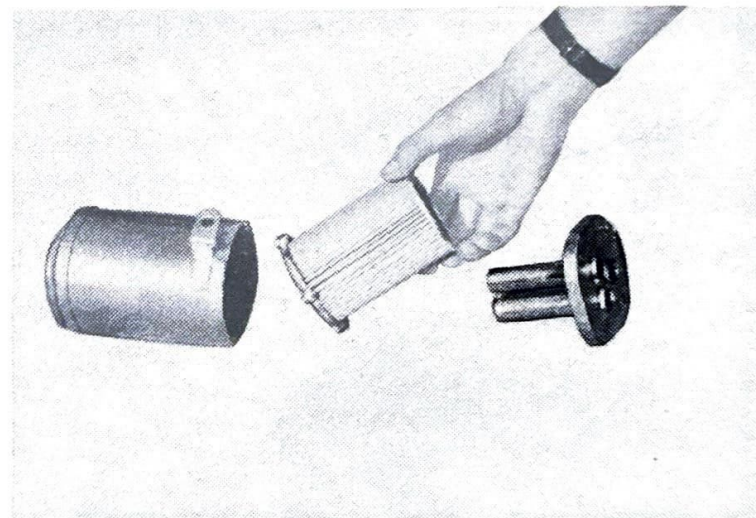
- a) Remove the left side cover, disconnect the leads from the battery terminals and take out the battery.
- b) Remove the air cleaner mount bolt, and pull out the cleaner "can."
- c) Remove the 4 bolts in the cap of the can, take off the cap, and pull out the filter element.
- d) Knock off dust and dirt by tapping the element on the floor.

NOTE: The element is a dry paper type so be careful to keep it free of oil and grease that would impair filtration.

Very dirty or oil saturated elements must be replaced to regain peak engine performance.



(Fig. 24)

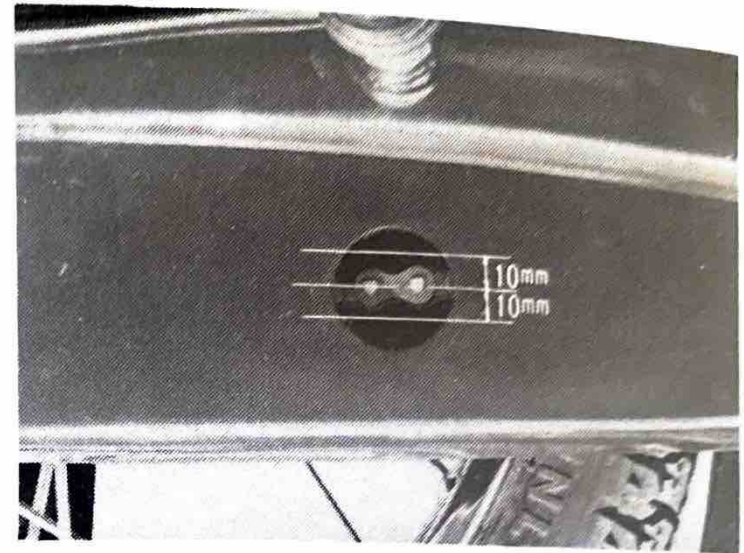


(Fig. 25)

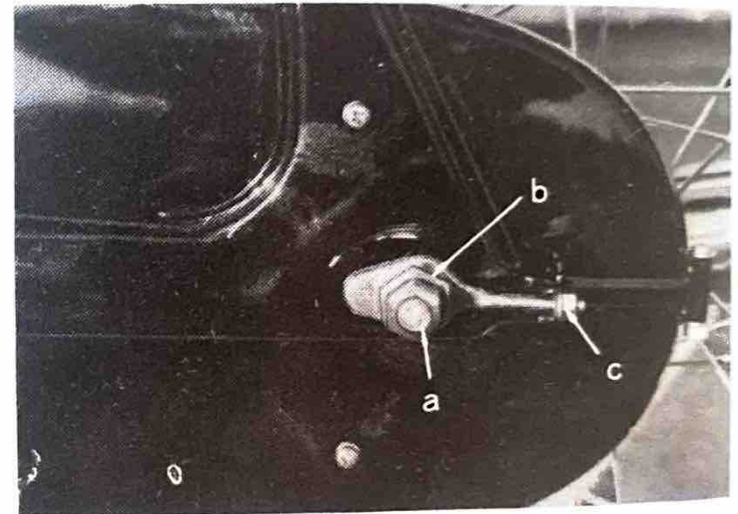
7) Adjusting the drive chain

Tools: 23 mm box, 17 mm and 10 mm wrenches and Phillips screwdriver

- a) Pull your machine up on its center stand. Move the chain up and down to check its play (Fig.26): if total play is more than $7/8$ inch, adjust it to no less than $5/8$ inch.
- b) Loosen the rear brake rod adjusting nut.
- c) Loosen the rear wheel's outside axle nut (a) with the 17 mm wrench.
- d) Then loosen the inner axle nut (b) with the 23 mm socket and screwdriver.



(Fig. 26)



(Fig. 27)

- e) Tighten the 10 mm adjusting nuts (c) to decrease chain play, or loosen them and knock the wheel forward to increase play. Adjust both adjusting plates to equal marks on the swing arm.
- f) After adjustment, tighten nut (b), then nut (a).
- g) Readjust brake pedal play to 1—1 1/4 inches.
- h) Oil the chain every 500 miles. Lack of oil impairs performance and shortens chain life.

8) Checking other parts

Check all bolts, nuts, and screws holding the parts listed below and tighten them if necessary.

Front and rear axles	Engine case
Steering arm shaft	Chain guard
Seat	Handle lever holders
Rear suspension units	Crankcase covers
Handlebars	Cylinder heads
Footrests	Carburetors
Center and side stands	Air cleaner cover
Mufflers	Others

c. Other periodic maintenance

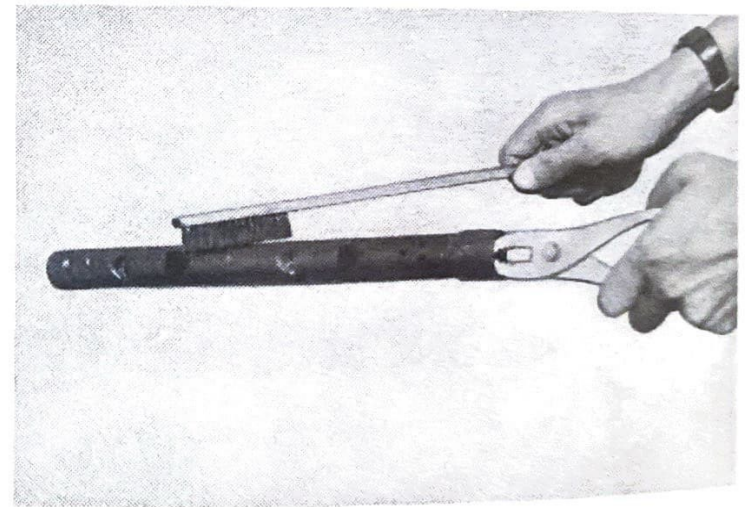
1) Cleaning the muffler

Carbon-coated exhaust pipes and mufflers can cause loss of power, poor acceleration, overheating, and other problems.

Use a 9 mm wrench to remove the bolt holding the inner baffle in each muffler and pull the baffle out with pliers. Scrape off carbon with a wire brush, and remove hard-to-reach scale by tapping the baffle on a hard surface.



(Fig. 28)



(Fig. 29)

2) **Cleaning the cylinder heads and pistons**

Carbon covered cylinder heads and pistons may cause overheating, loss of power, engine knock, and other trouble.

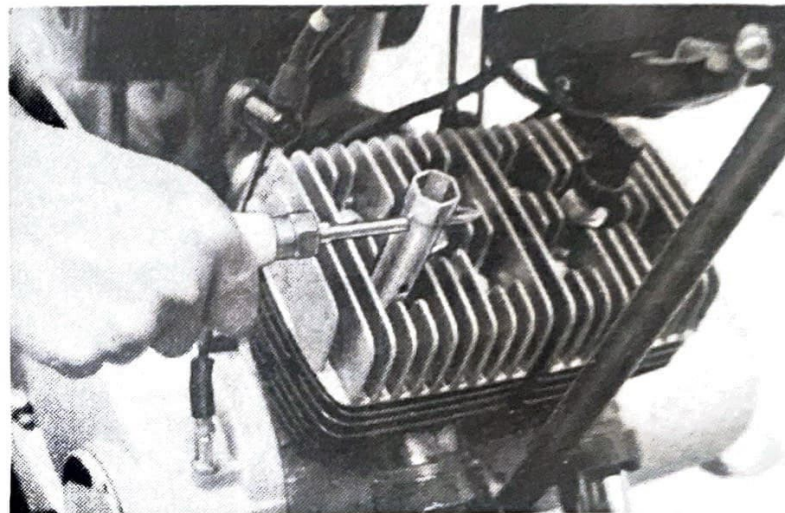
- a) Remove the cylinder head nuts with the 10 mm socket and screwdriver (Fig.30), then pull off the heads and scrape the carbon out of each combustion chamber.
- b) Move each piston to top dead center and scrape the carbon from its crown with a wire brush or screwdriver, then clean it with a rag moistened in gasoline.

3) **Cleaning the fuel cock filter**

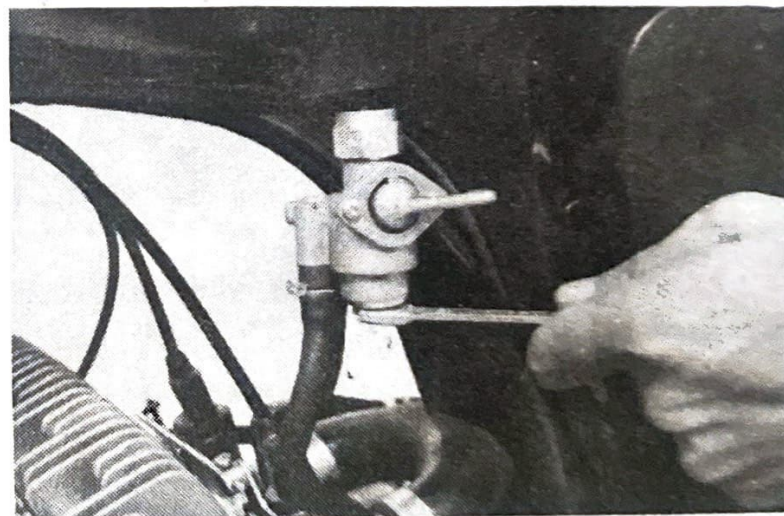
The gasoline filter keeps impurities from entering the carburetor, but a dirty filter limits the flow of gasoline and can cause other engine trouble.

Use the 10 mm wrench to unscrew the cup below the fuel cock; remove the filter element, and wash it in gasoline.

(Fig 32)



(Fig. 30)



(Fig. 31)

4) Wheel removal

Wheel removal is necessary to repair flat tires.

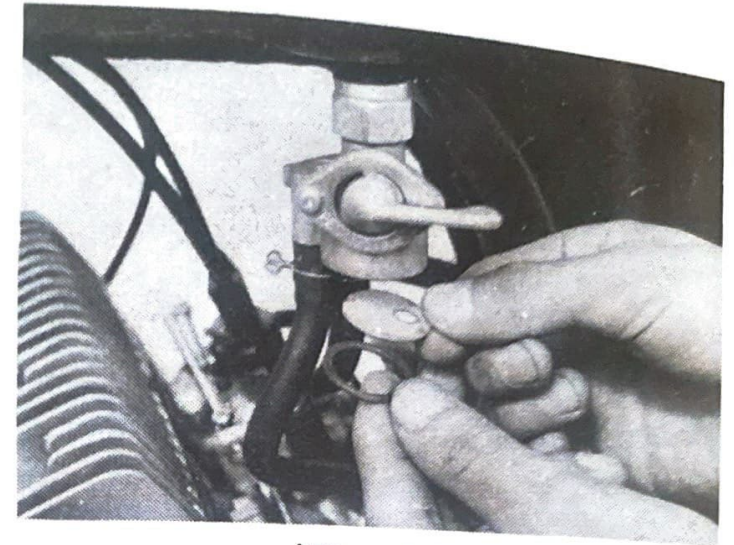
a) Front wheel

- (1) Remove the brake cable and speedometer cable from the brake backing plate. (To remove the speedometer cable, compress and remove the snap ring inside the cavity.)
- (2) Remove the 17 mm nut on the right side of the axle.
- (3) Loosen the 14 mm clamp bolt on the left side, and use a screwdriver (through the hole in its left end) to pull the axle out.

b) Rear wheel

Tools: 23 mm box, 17 mm, and 14 mm wrenches

- (1) Remove the 14 mm adjusting nut at the end of the brake rod.
- (2) Remove the bolt holding the tension bar to the wheel hub.
- (3) Unscrew the outer and inner axle nuts and pull out the axle from the right side.
- (4) Pull the wheel to the left so its hub separates, leaving the sprocket and hub clutch on the swing arm.



(Fig. 32)

5) Headlight beam adjustment

If your headlight does not suit you in its present position, simply adjust its aim:

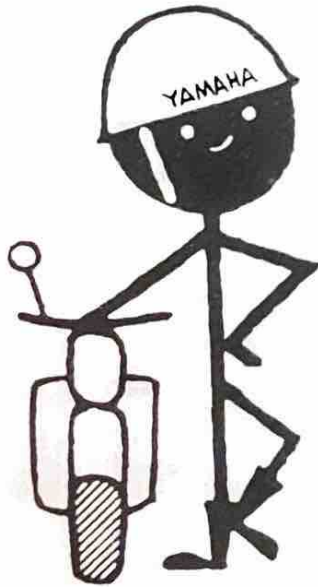
- a) Loosen the mounting bolts in the right and left headlight brackets, and pivot the headlight up or down while you are sitting on the motorcycle.
- b) Position the headlight where its beam seems most effective, then carefully tighten both bolts.

G. Repair information

1. Genuine YAMAHA parts

All replacement parts must be of the same high accuracy and quality as the originals to keep your Yamaha performing as well as new. The genuine, guaranteed Yamaha parts stocked by your dealer are manufactured and tested to meet the requirements of Yamaha's high standards.

The imitation Yamaha parts on the market today are not recommended for your bike because of their uncertain quality and durability; using them will void your warranty and may adversely affect the life and performance of your machine.



2. Troubleshooting

All Yamaha motorcycles undergo rigid factory tests to insure their reliability, so if trouble develops consult your dealer immediately. Every dealer's shop is staffed with trained mechanics and provided with a stock of genuine Yamaha parts.

NOTE: Some parts are sealed or cannot be detached or disassembled, so let your dealer repair them. Yamaha can only be responsible for the results of repairs made by its own authorized dealers. Repair and adjustment of the Autolube pump, for instance, should be left to your Yamaha dealer.

Listed below are possible causes of trouble and their remedies:

a. Engine does not start

Cause	Remedy
1) Fuel is low.	Add fuel.
2) Fuel cock is closed.	Open fuel cock.
3) Carburetor(s) flooded.	You may have left the fuel cock open. Close starter jet lever.
4) Spark plugs dirty.	Remove and clean. (page 35)
5) Spark plugs burned.	Replace with colder plugs. (p.35)
6) Wrong plug gap.	Set gap to 0.025 in.
7) Spark plugs damaged	Replace with new plugs.
8) Faulty magneto. (Remove both spark plugs from the cylinder heads and reconnect their high voltage leads. Then ground each plug to see if it sparks as you crank the kick starter. No spark means the points, ignition coil, or flywheel magneto may be faulty.	Have a Yamaha dealer check and repair it.

b. Engine output falls off under load (while climbing a long slope), although nothing is wrong with the piston.

Cause	Remedy
1) Spark plug temperature is too high. (porcelain around center electrode is white.)	Replace with colder range plugs.
2) Ignition timing incorrect.	Have your dealer check and adjust it.

c. Engine overheats

Cause	Remedy
1) Autolube oil tank is empty.	Add #30 detergent oil.
2) Too much gear oil.	Drain oil to correct level.
3) Gear oil viscosity too high.	Use #30 detergent oil.

- d. Engine over-revs in relation to the motorcycle's speed.
The clutch may be slipping. Ask your dealer to check and, if necessary, repair it.
- e. The headlight is dim and the battery is easily discharged.

Cause	Remedy
1) Low battery fluid level.	Add distilled water. (p.34)
2) Battery fluid is wrong specific gravity.	Have your dealer charge the battery. (Specific gravity should be 1.26—1.28)
3) Other	Ask your dealer to check the electrical system.

f. Other trouble:

Consult your dealer for brake repair, hard steering, tendency to steer to one side, clutch slippage, hard starting, difficult shifting, or other major trouble.

3. Good riding habits:

- a. Safety is more important than speed; get a copy of the YAMAHA Safety Manual from your dealer. All riders, especially newcomers to motorcycling, will find it instructive and helpful.
- b. Ten tips for good riding:
 - 1) Always use quality gasoline and oil.
 - 2) Check tire pressures before every ride.
 - 3) Be sure the transmission is in NEUTRAL before starting the engine.
 - 4) Warm up the engine for about one minute before riding.
 - 5) Shift gears gently and in the correct sequence.
 - 6) During the break-in period, ride at the suggested RPM in each gear.
(p.25)
 - 7) Apply the front and rear brakes at the same time.
 - 8) Down a long hill, use engine compression as a brake. (p.23)
 - 9) When parking, be sure to turn off and remove the ignition key, turn off the fuel cock, and lock the steering.
 - 10) Check parts at regular intervals as described in this manual.

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