



**YAMAHA**

**OWNER'S MANUAL  
MANUEL DU PROPRIETAIRE  
BETRIEBSANLEITUNG**

**RD 250 (B)  
/ 350 (B)**

410-139-82

# INTRODUCTION

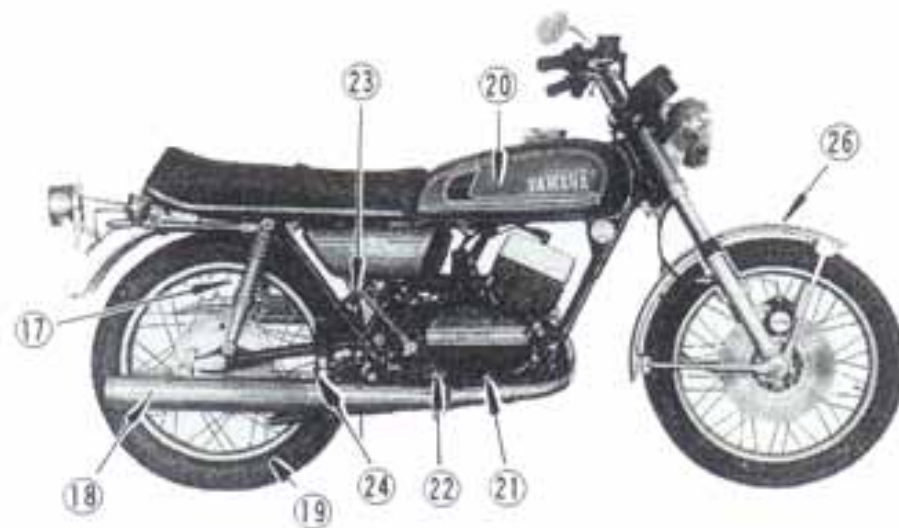
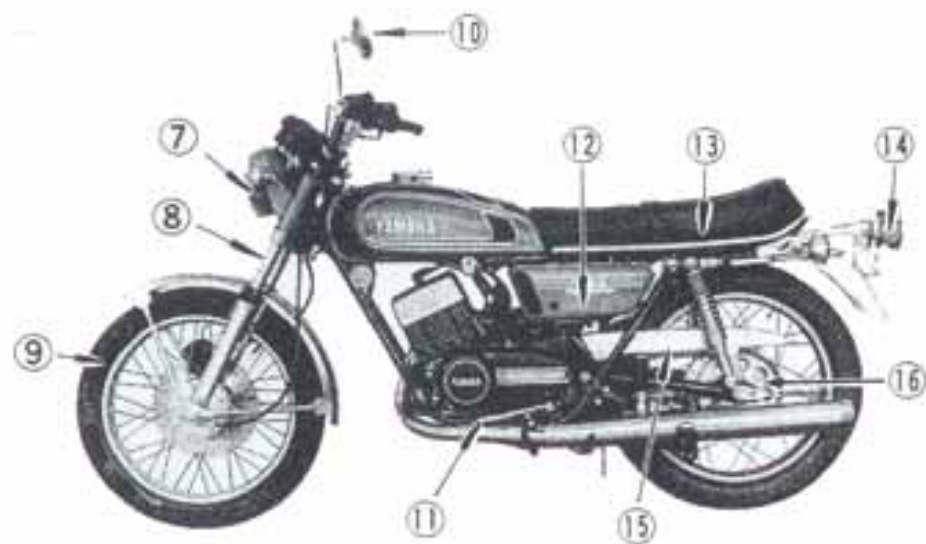
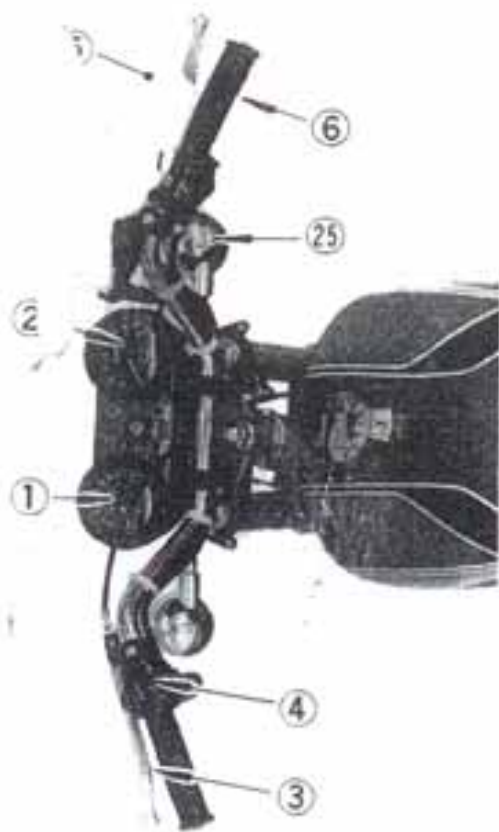
This manual is written in such a way as to provide the owner with a good understanding of the operation, maintenance and inspection of this machine. All information required for safe and reliable use of the machine is contained in this manual, so read it carefully and completely before operating the machine. If you have any questions concerning the information, ask your dealer before operating the machine.

**Note:**

Some data in this manual may become out of date due to improvements made to the machine in the future. If there is any question concerning this manual, consult your nearest Yamaha dealer.

YAMAHA MOTOR LTD.  
SERVICE CENTER

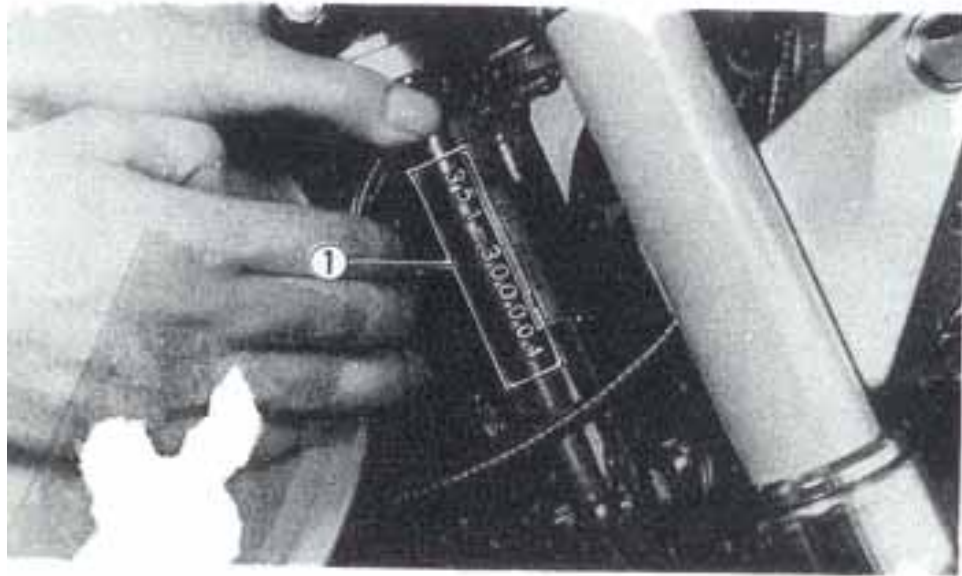
NOMENCLATURE  
NOMENCLATURE  
BENENNUNG DER TEILE



1. Speedometer
2. Tachometer
3. Clutch lever
4. Handle switch
5. Brake lever
6. Accel. grip
7. Headlight
8. Front fork
9. Front wheel
10. Rear view mirror
11. Change pedal
12. Oil tank
13. Seat
14. Taillight
15. Chain
16. Sprocket wheel
17. Rear shock absorber
18. Muffler
19. Rear wheel
20. Fuel tank
21. Brake pedal
22. Footrest
23. Kick crank
24. Footrest
25. Flasher light
26. Front fender

1. Compteur de vitesse
2. Tachymètre
3. Levier d'embrayage
4. Commutateur de guidon
5. Levier de frein
6. Poignée des gaz
7. Phare
8. Fourche avant
9. Roue avant
10. Rétroviseur
11. Pédale de changement
12. Réservoir d'huile
13. Siège
14. Feu arrière
15. Chaîne
16. Pignon
17. Amortisseur arrière
18. Pot d'échappement
19. Roue arrière
20. Réservoir d'essence
21. Pédale de frein
22. Repose-pied
23. Kick
24. Repose-pied
25. Clignoteur
26. Garde-boue avant

1. Geschwindigkeitsmesser
2. Drehzahlmesser
3. Kupplungshebel
4. Umschalter
5. Handbremshebel
6. Gasdrehgriff
7. Scheinwerfer
8. Vorderradgabel
9. Vorderrad
10. Rückspiegel
11. Gangschalthebe
12. Öltank
13. Sitz
14. Schlußleuchte
15. Kette
16. Kettenrad
17. Hinterer Stoßdämpfer
18. Auspufftopf
19. Hinterrad
20. Kraftstofftank
21. Fußbremshebel
22. Fußraste
23. Kickstarterhebel
24. Fußraste
25. Blinkleuchte
26. Vorderes Schutzblech

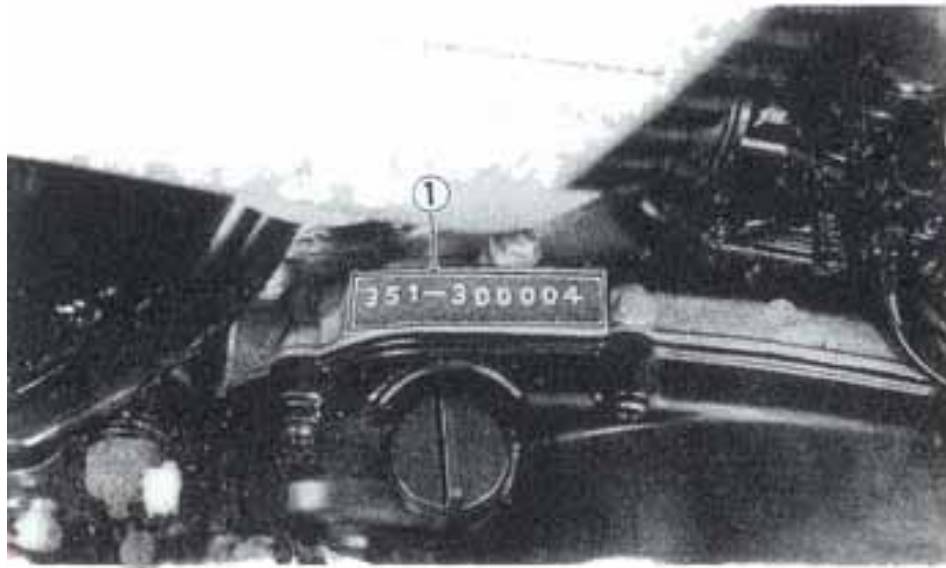


## MACHINE IDENTIFICATION

### 1. Frame serial number

The frame serial number is located on the right hand side of the headstock assembly. The first three digits identify the model. This is followed by a dash. The remaining digits identify the production number of the unit.

- 1. Frame serial number
- 1. Numéro de série du cadre
- 1. Seriennummer des Rahmens



- Engine serial number
- Numéro de série du moteur
- Seriennummer des Motors

## 2. Engine serial number

The engine serial number is located on a raised boss on the upper rear, right hand side of the engine. Engine identification follows the same code as frame identification.

Normally, both serial numbers are identical; however, on occasion they may be two or three numbers off.

### **Note:**

Always check your registration papers against the actual machine serial numbers. If any discrepancy is found, have it corrected immediately.



## CONTROL FUNCTION

### 1. Main switch

The following chart shows the key position at which the lights, horn and ignition circuit are switched on or off: The circle (○) denotes "Switch on".

#### Europe:

Parts Name	Key position				Instructions
	OFF*	I	II	III*	
Ignition circuit		○	○		Kick starting
Headlight		○	○		Turn on right handlebar switch
Taillight		○	○	○	Turn on right handlebar switch. Use III when parking at night
Neutral lamp		○	○		The gear is in neutral
Stoplight		○	○		The brake is applied
Meter lamps		○	○		Turn on right handlebar switch
Horn		○	○		The horn button is depressed
Flasher lights		○	○		Turn on flasher switch
Marker lamp			○		Turn the key to II

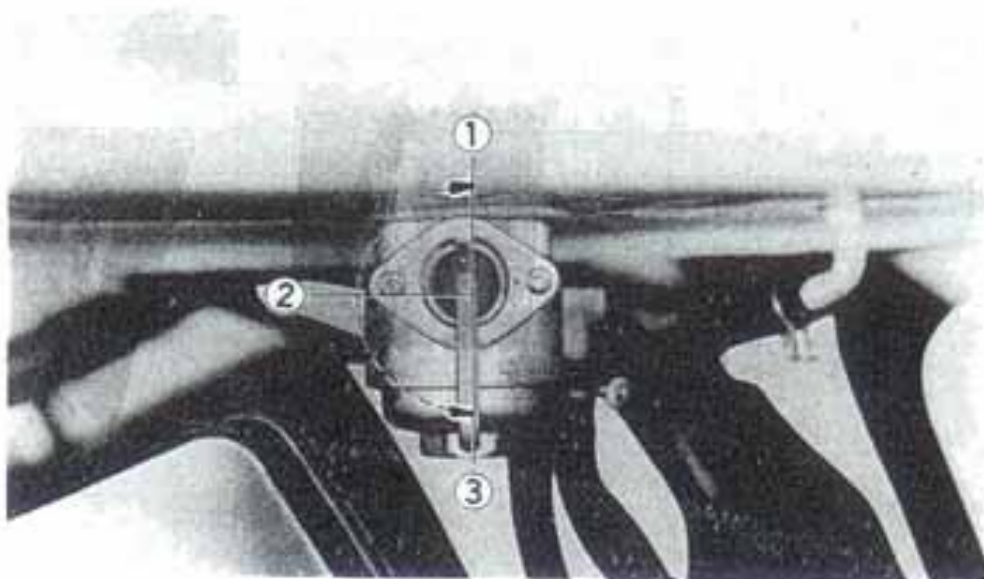
\* The key can be removed in this position.



## Other Areas:

Parts Name	Key position			Instructions
	OFF*	I	II	
Ignition circuit		○		Kick starting
Headlight		○		Turn on right handlebar switch
Taillight		○	○	Turn on right handlebar switch, Use III when parking at night
Neutral lamp		○		The change pedal is in neutral
Stoplight		○		The brake is applied
Meter lamps		○		Turn on right handlebar switch
Horn		○		The horn button is depressed
Flasher lights		○		Turn on flasher switch

\* The key can be removed in this position.



## 2. Fuel petcock

To fill the carburetor float bowls, set the fuel petcock lever to the OPEN position. If you should run low in fuel on the road, turn the lever to the RESERVE position. With just over a quart of fuel remaining, you can drive nearly 25 kms. enough to get to the nearest service station for refueling. When parking or storing your machine, be sure that the lever is in the STOP position.

1. RESERVE

2. STOP

3. OPEN

1. RESERVE

2. STOP (arrêt)

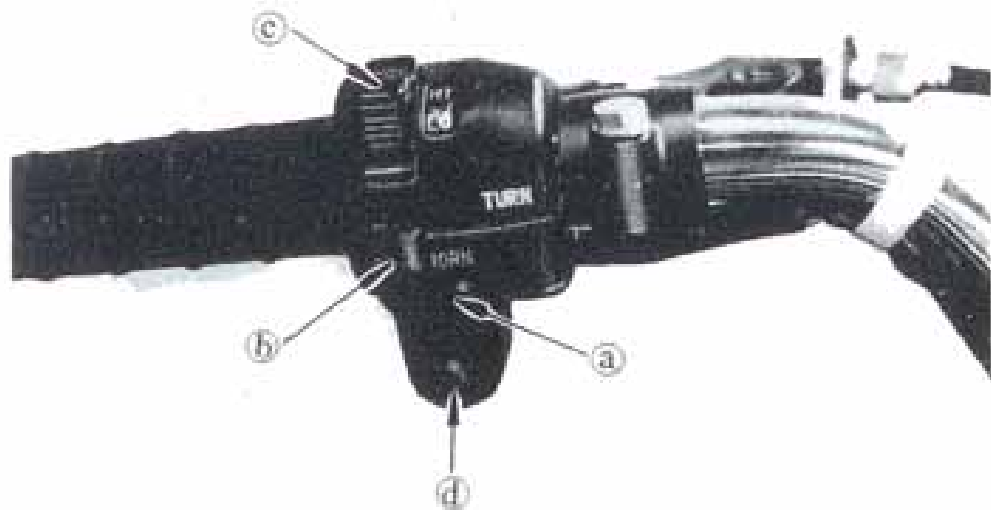
3. OPEN (marche)

1. RESERVE

2. STOP (geschlossen)

3. OPEN (geöffnet)





### 3. Handlebar switch and horn button

#### a. Horn button:

To sound the horn, depress the horn button.

#### b. Flasher switch:

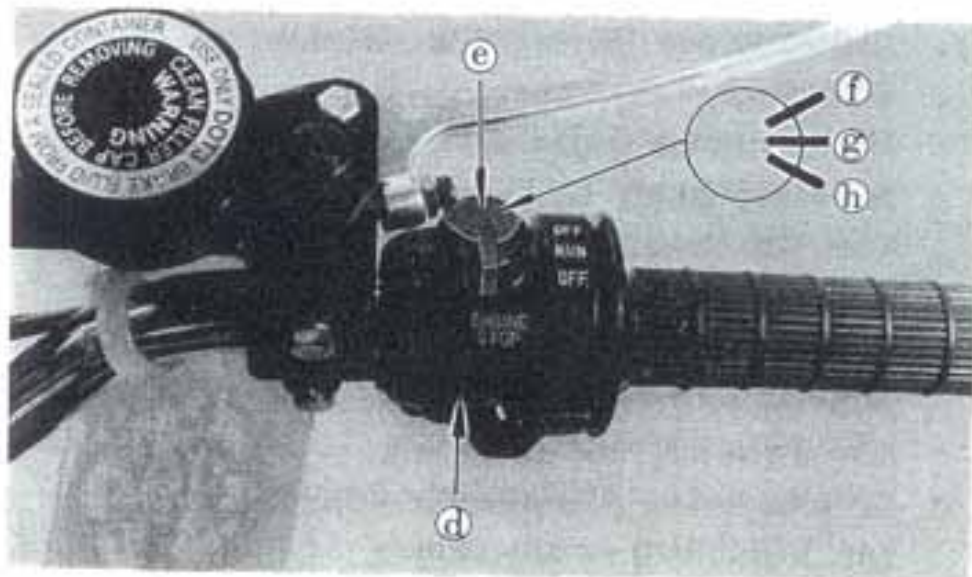
To signal a right turn, push the switch to the right. For left turns, push switch left.

#### c. Dimmer switch:

To raise the headlight beam, pull the switch forward. To lower the beam, push the switch toward you.

#### d. Passing lamp button (except for Canada):

To sign passing depress the passing button.



d. Lighting switch:

To light the headlight, taillight, and meter lamps push the headlight switch to left.

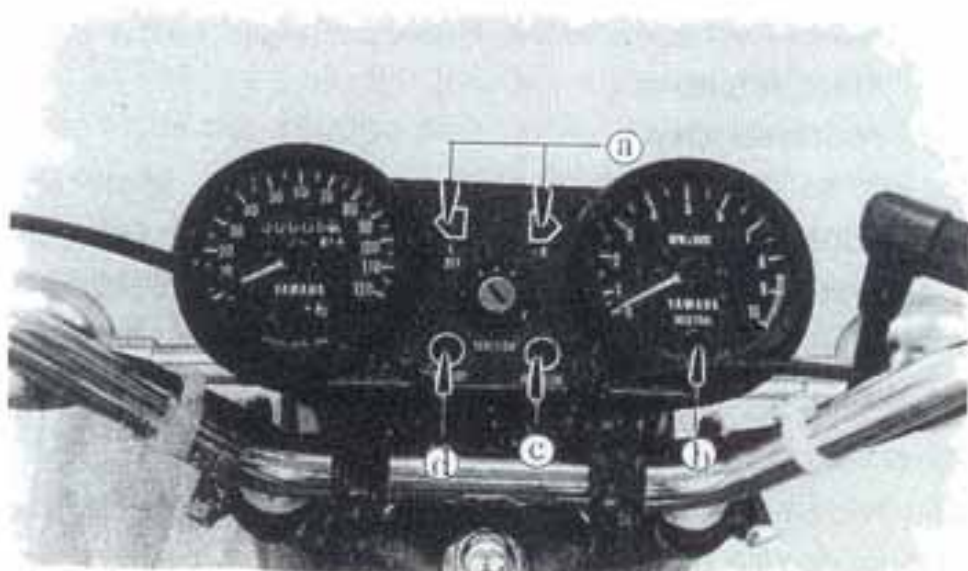
e. Engine stop switch:

Make sure that the engine stop switch is at "RUN". The engine stop switch has been equipped to ensure safety in such an emergency as when the motorcycle is upset or when trouble takes place in the throttle system.

**Caution:**

The engine will not start when the engine stop switch is turned to "OFF".

- f. OFF
- g. RUN
- h. OFF



#### 4. Indicator lamps

a. Flasher pilot lamp (AMBER)

When flasher switch is on, the pilot lamp flashes.

b. Neutral lamp (GREEN)

Mounted within the tachometer shell, the neutral indicator lights whenever the transmission is in neutral.

c. High beam indicator—"HIGH BEAM" (RED) (BLUE; Europe only)

Mounted on middle of the meter bracket, the high beam glows whenever the headlight high beam is in use.

d. Stoplight indicator—"STOP LAMP" (RED)

A "STOP LAMP" indicator is mounted in the meter bracket to advise the rider of normal operation, or failure, of the stoplight.

When the main switch is in Position I and either front or rear brake is applied, the stoplight indicator will light steadily.

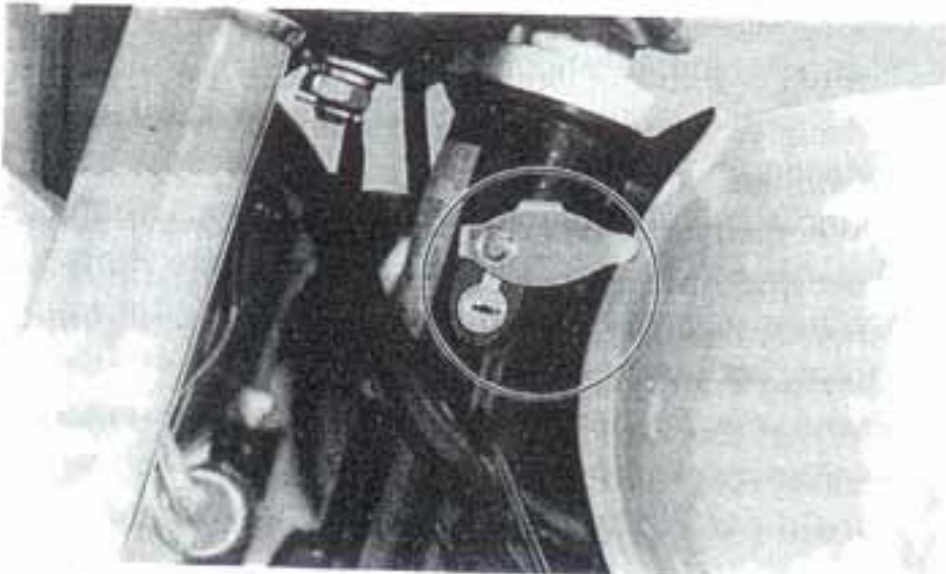
If the stoplight does not work normally, the "STOP LAMP" indicator will flash on and off, as soon as the main switch is turned on without operating either brake.

**Warning:**

Do not ride machine, at any time, if "STOP LAMP" indicator is flashing. Replace taillight bulb or repair wiring before proceeding.

**5. Front brake (Right handlebar lever)**

The right handle lever controls the operation of the front brake. The front brake is of the disc type and is adjustable at the lever. Adjustment will be explained later.

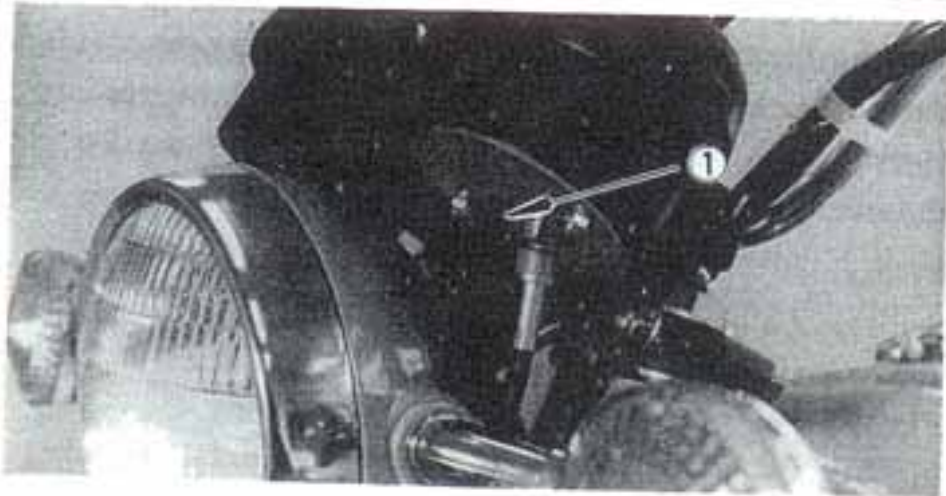
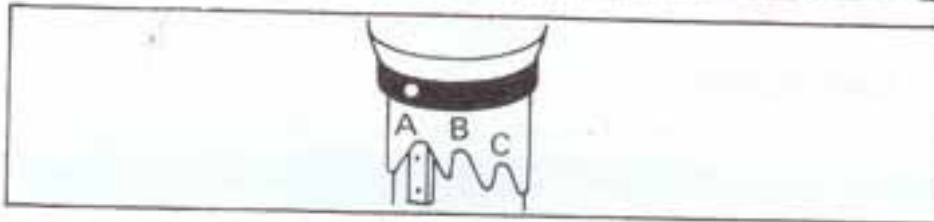
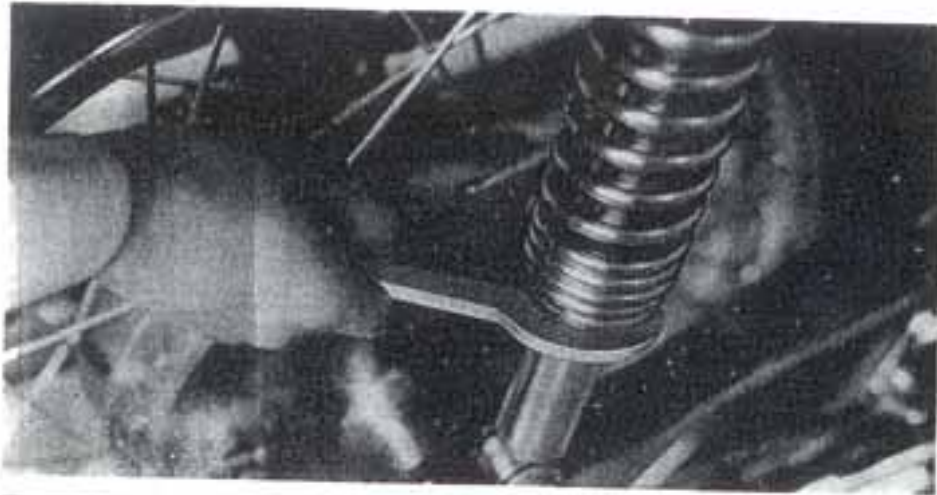


**6. Steering lock**

Turn the handlebar to the right, insert the steering lock key and turn it 45° counterclockwise then push the key and turn it 45° clockwise. Remove the key after checking to see that the front forks are securely locked. Be sure to lock your forks whenever you park. (See also 2. Fuel petcock.)

**Caution:**

Be sure to unlock the forks before trying to ride your machine.



### 7. Rear cushion adjustment

Place machine on mainstand, set the ring nut wrench as shown and turn it to change the spring rate.

The rear suspension should be adjusted to fit the load, speed and road conditions.

Standard ..... A

Intermediate..... B

Stiff ..... C

\* Adjust both shock absorbers to the same position.

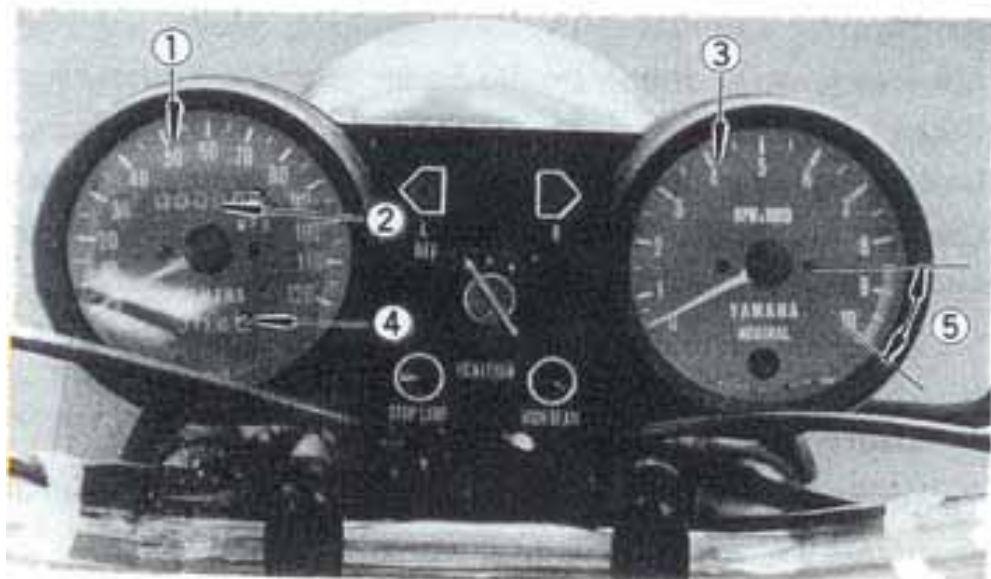
### 8. Tripmeter

A tripmeter is built into the speedometer shell. Twist the knob to reset the tripmeter.

1. Tripmeter knob

1. Bouton de remise à zéro

1. Knopf für Tageskilometerzähler



1. Speedometer
2. Odometer
3. Tachometer

4. Tripmeter
5. Red zone

1. Compteur de vitesse
2. Totalisateur kilométrique
3. Compte-tours

4. Totalisateur journalier
5. Zone rouge

1. Geschwindigkeitsmesser
2. Kilometerzähler
3. Drehzahlmesser

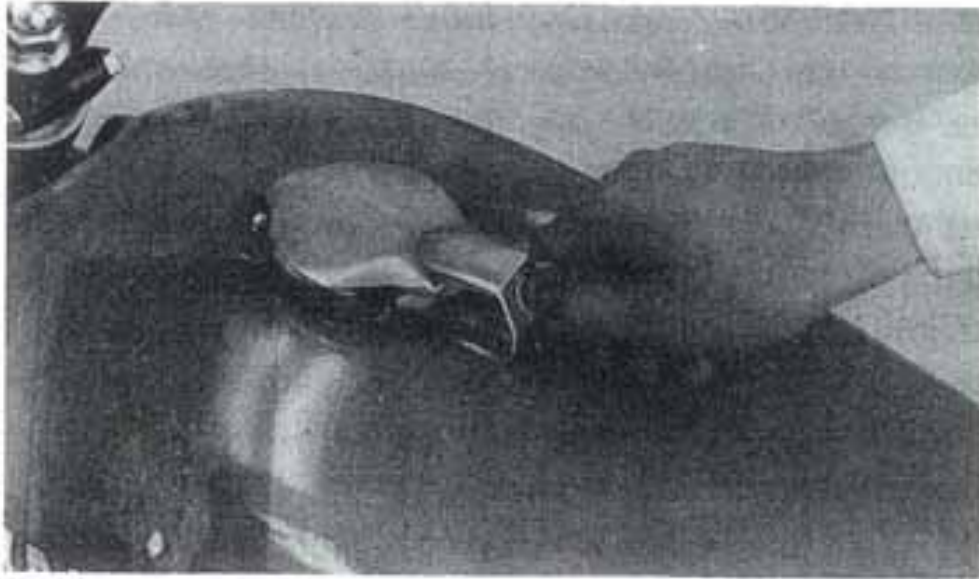
4. Tageskilometerzähler
5. Roter Bereich

## 9. How to read the tachometer

A tachometer is provided so that the rider can easily maintain engine RPM sufficient to keep the engine within the power curve. For maximum performance accelerate in each gear to 6,500 r.p.m. or at most to 7,000 r.p.m. before shifting. The best range for city driving is 4,000 to 5,000 r.p.m. in lower gears. In this range the engine has ample power and yet is quite docile. Never lug your engine! (i.e. operate below 4,000 r.p.m.) It is recommended not to use red-zone 8,500 ~ 10,000 r.p.m.

### Caution:

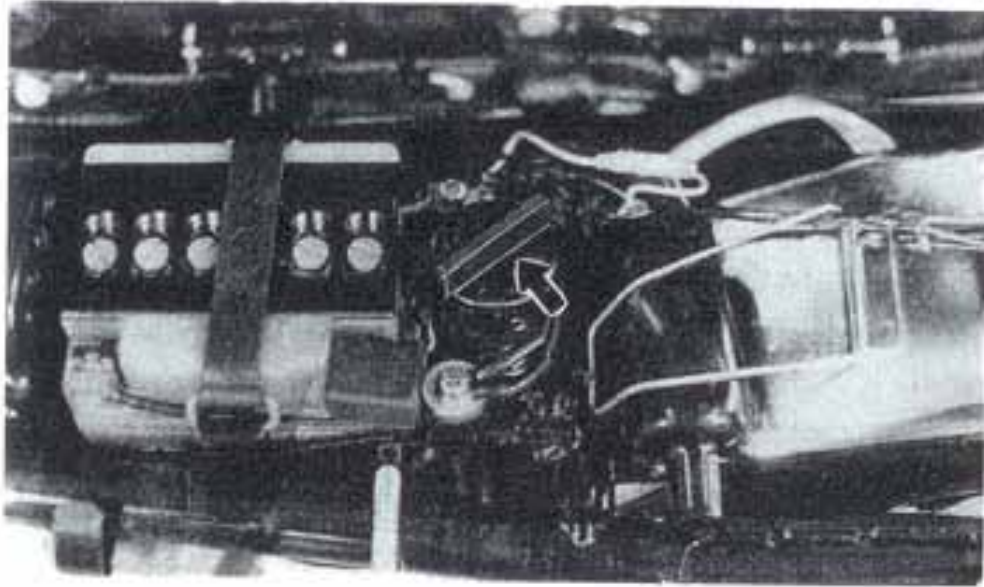
See "Break-in" section for additional information.



## BASIC INSTRUCTION

### 1. Gasoline

Use fuel with an octane rating of 90 or more. Some regular fuels and most mid-range have more than 90 octane ratings. Ethyl grade fuels usually have octane ratings in excess of 100. In addition, they have considerable additive tetra-ethyl lead which can cause spark plug problems. Whenever possible, use fresh, low lead gasoline.



## 2. Oil

We recommend that your first choice be Yamaha Autolube oil, which can be purchased from any Yamaha dealer. If for any reason you use another type of oil, choose from the following list, which is in descending order of preference.

- a. Another brand of 30 wt. two-stroke oil labeled "BIA certified for service TC-W".
- b. A 30 wt. two-stroke oil designed for air cooled engines.
- c. A 30 wt., quality, detergent type automotive oil.

### **Caution:**

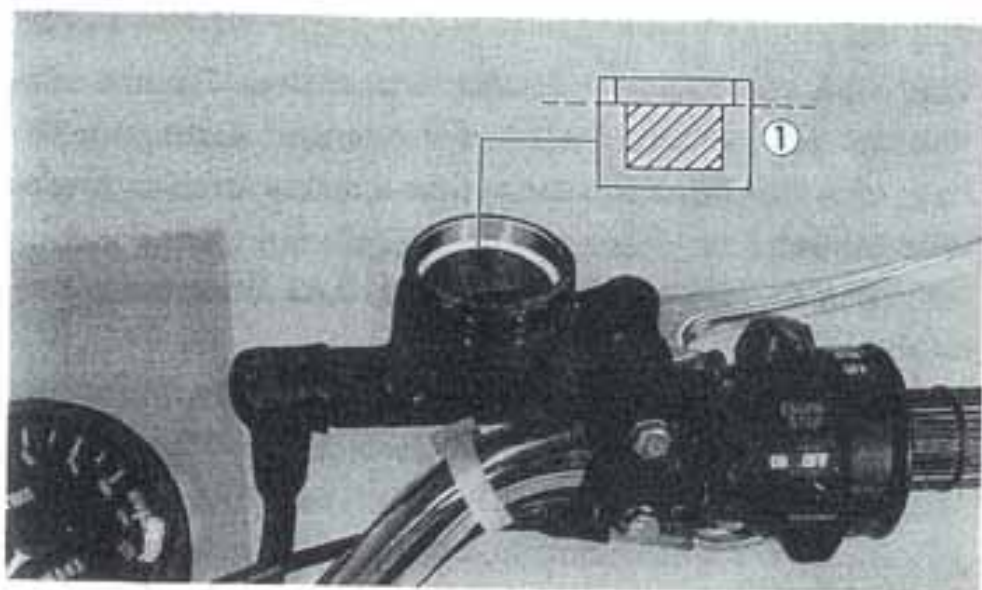
Use item c. only in emergencies where two-stroke oils are not available.

### **Note:**

Under extremely cold conditions ( $0^{\circ}\text{C}$  and below), some oils become exceedingly thick and do not flow as readily.

Consult your dealer regarding the oil you are using and the conditions under which you are riding.





- 1. Fluid level
- 1. Niveau du liquide de frein
- 1. Flüssigkeitsstand

### 3. Checking the front brake fluid

If the brake fluid level becomes low, brake failures will occur.

Check the mastercylinder for the fluid level. If it is found below the specified level, add the fluid.

Brake fluid type:

DOT #3 or #4

SAE 70R3

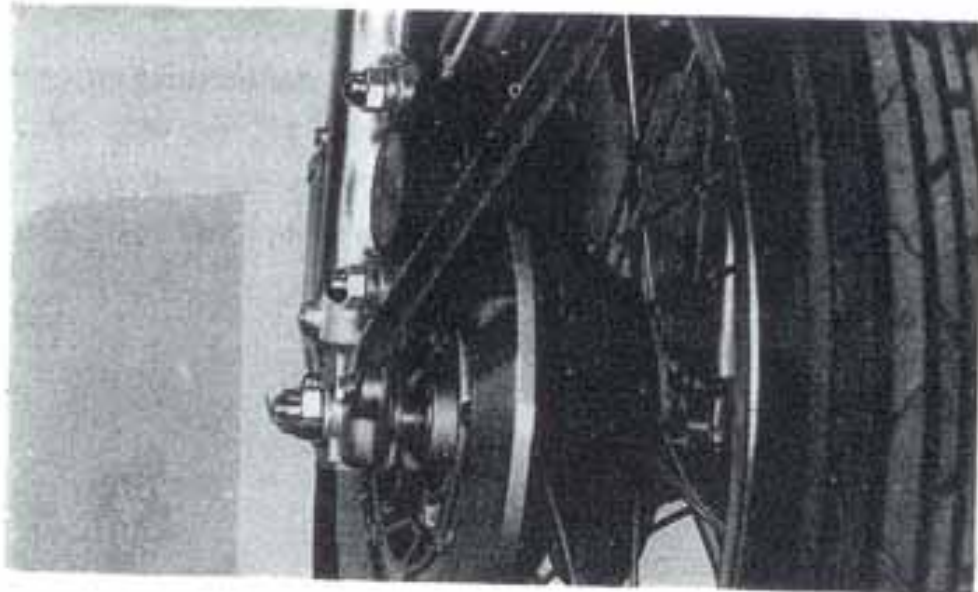
SAE J1703a~d

Boiling point:

240°C or better

#### Important note:

1. To not allow any brake fluid to contact painted surfaces, plastic parts or rubber parts or they will be damaged.
2. If the brake fluid level decreases rapidly, have your Yamaha dealer check the brake immediately.
3. Avoid using any brake fluids other than those meeting specifications.
4. Avoid mixing the brake fluid with other makes. Chemical reactions may occur, causing brake troubles.



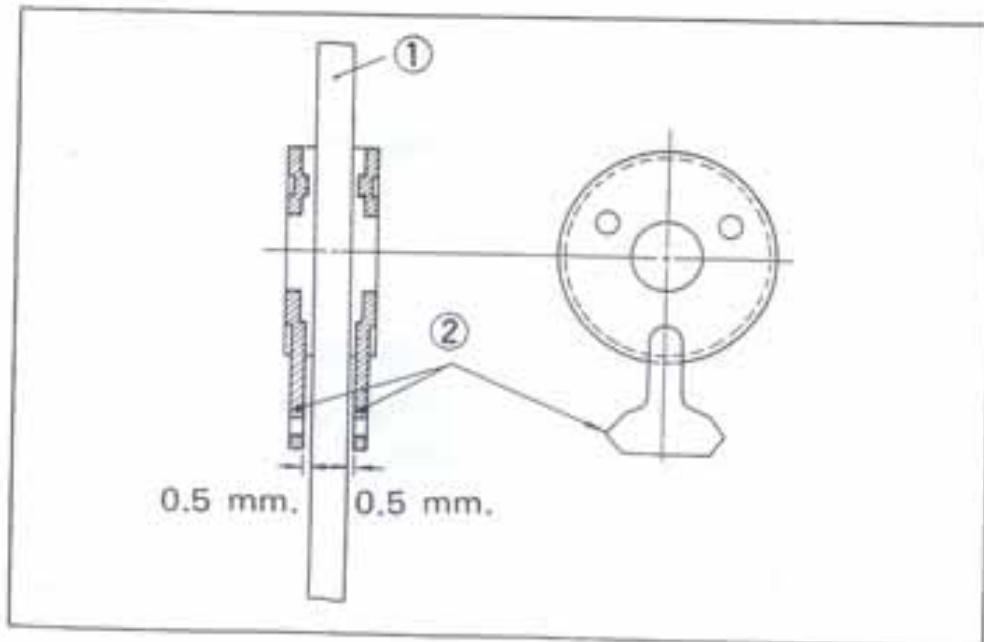
5. When adding the brake fluid, take care not to allow any water to enter the system.

#### 4. Checking the disc brake pads

For easy check of wear on the disc brake pads, a wear indicator is attached to each brake pad. This indicator permits a visual check without disassembling the pads.

To check, apply the brake, and measure the gap between the disc and the indicator.

If the gap measures less than 0.5 mm. have your Yamaha dealer replace the pads.



1. Brake disc
2. Indicator

1. Disque
2. Indicateur

1. Bremsscheibe
2. Verschleißanzeiger

### Pre-operation check chart

Item	Remarks
BRAKES	Check operation/Adjustment/Hydraulic reservoir
CLUTCH	Check operation/Lever adjustment
AUTOLUBE	Check oil level/Top-off as required
TRANSMISSION	Check trans/Sump level/Top-off as required
DRIVE CHAIN	Check alignment/Adjustment/Lubrication
BATTERY	Check electrolyte level weekly/Top-off monthly
SPARK PLUG	After break-in—Check color and condition weekly
THROTTLE	Check for proper operation
WHEELS AND TIRES	Check pressure/Runout/Spoke tightness/Axle nuts
FITTINGS AND FASTENERS	Check all—Tighten as necessary
LIGHTS AND SIGNALS	Check headlight/Tail-stoplights/Turn signals, etc.

Pre-operation checks should be made each time the machine is used. Such an inspection can be thoroughly accomplished in a very short time; and the added safety it assures is more than worth the time involved.



## OPERATION

### 1. Before starting

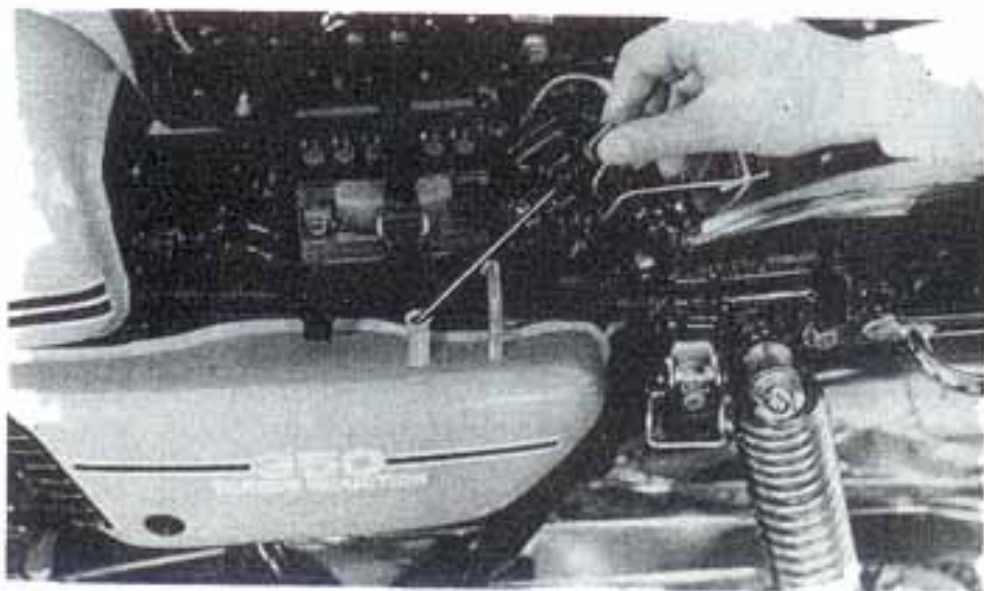
Before you start for a ride you should check several points for safety. In particular:

- a. Do you have enough fuel?
- b. Do you have enough oil?

If the oil level shows in the glass port, add oil. Make sure that the oil is sufficient for your driving plan by using the oil dip stick. (Refer to "Basic instruction" for type of oil.)

- c. Are your tire pressures correct?

Incorrect tire pressures affect the comfort, handling, acceleration and life of tires. Incorrect tire pressures can also lead to accidents!



	Front tire	Rear tire
Normal riding	1.6 kg/cm <sup>2</sup>	2.0 kg/cm <sup>2</sup>

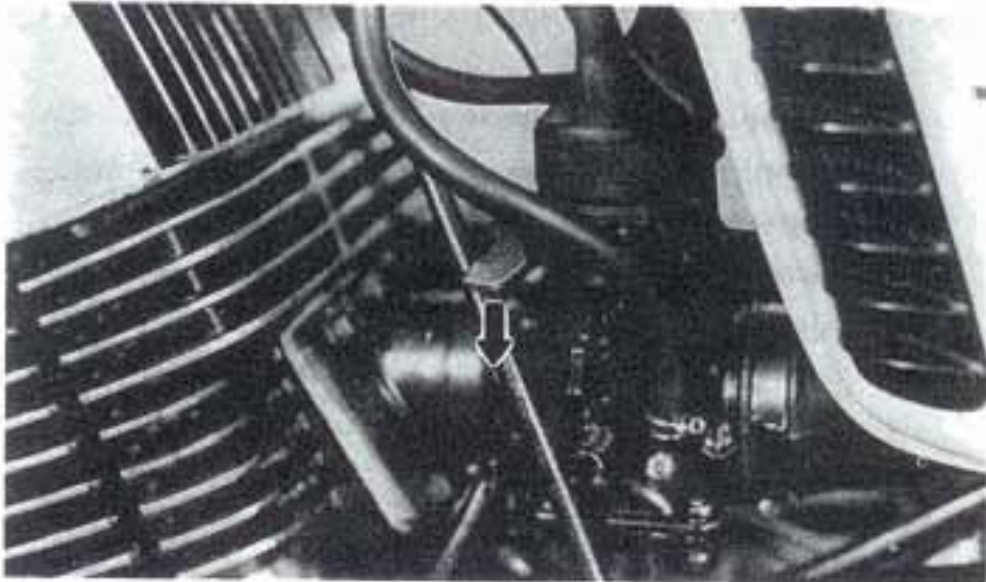
#### Note:

When you run the machine at a speed of 100 km/h or more, the tire pressure should be 20 percent more than the specified.

- d. Do both brakes and the stoplight work?
- e. Are the lights and horn working in order?  
Check the headlight, taillight, meter lamps, and indicating lamps. The few minutes you save by not checking are not worth being stranded without lights!

## 2. Starting

- a. Turn the fuel cock lever to the "OPEN" position.
- b. Insert the ignition key and turn it to the #1 position.  
The use of a primary kick starting system enables you to start the engine either in gear or in neutral (if in gear, pull in the clutch lever).
- c. Check "ENGINE STOP" switch position and throttle operation.



### **Starting in cold weather**

Most engines are difficult to start in cold or freezing weather.

YAMAHA Motorcycles however, use a carburetor with a built in starter jet that gives a richer mixture for easier cold weather starting.

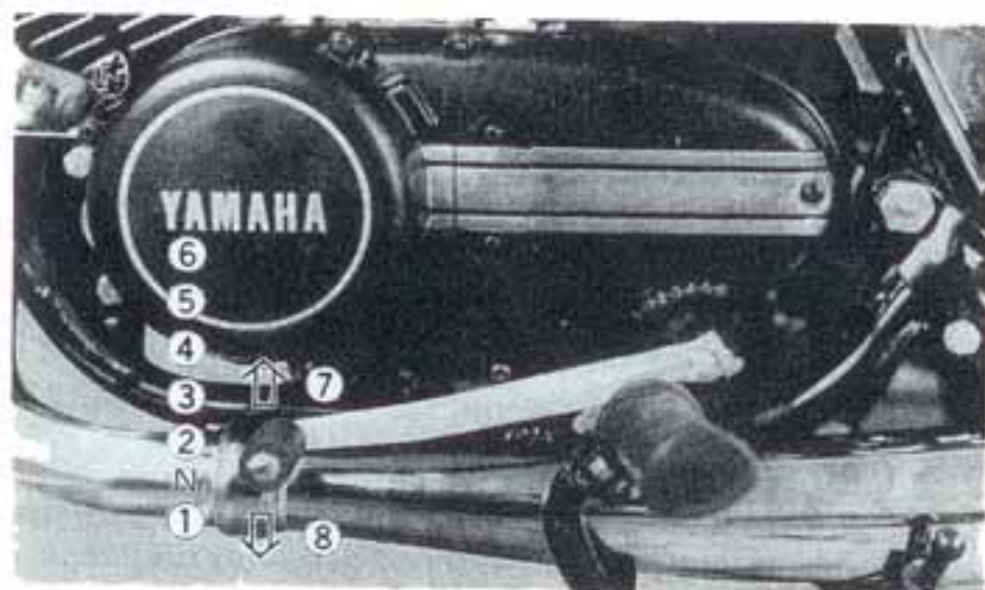
- 1) Depress the starter lever "CHOKE".
- 2) Start the engine with the kick starter, keeping the throttle closed.

### **Starting when your engine is warm**

When your engine is warm, after riding or in warm weather, don't use the starter lever. Open the throttle slightly (1/4 turn or less) and kick the starter.

### **Warming up**

To get maximum engine life, always "warm up" the engine for a few minutes before starting off. Never accelerate hard with a cold engine! To see whether or not the engine is warm, see if it responds to throttle normally. Don't forget to raise the starter lever after the engine is warm. Never run the engine excessively while in neutral or with clutch engaged.



1. First	1. Première	1. 1. Gang
N. Neutral	N. Point-mort	N. Leerlauf
2. Second	2. Deuxième	2. 2. Gang
3. Third	3. Troisième	3. 3. Gang
4. Fourth	4. Quatrième	4. 4. Gang
5. Fifth	5. Cinquième	5. 5. Gang
6. Sixth	6. Sixième	6. 6. Gang
7. Acceleration	7. Rapport supérieur	7. Heraufschalten
8. Reduction	8. Rapport inférieur	8. Herabschalten

### 3. Shifting and acceleration

RD250(B)/RD350(B) has a 6-speed transmission. The transmission allows you to control the amount of power you have available at a given speed for starting, accelerating, climbing hills, etc.

The use of the change pedal is illustrated below. To shift into NEUTRAL, depress the change pedal to the end of its travel (you will feel a stop when you are in low gear), then raise it slightly.

If you are in neutral, the green light in the tachometer will light when the ignition switch is on.

- a. Pull the clutch lever to disengage the clutch.
- b. Shift into FIRST gear.
- c. Open the throttle gradually, and at the same time, release the clutch lever slowly.
- d. At 15 to 25 km/h., close the throttle, and at the same time pull in the clutch lever quickly.
- e. Shift into SECOND. Be careful not to shift into neutral.
- f. Open the throttle part way and gradually release the clutch lever.

- g. To accelerate or decelerate, use the same procedure to shift into THIRD, FOURTH, FIFTH, and SIXTH gears.
- h. Except for competition or high speed driving, shift so that the engine speed remains between 4,000 ~ 5,000 r.p.m. This is the optimum operating range for the engine.

#### **Going downhill**

On a long down grade or sharp descent, don't rely on the brakes alone, but use the engine compression as a brake: shift into FOURTH or THIRD as required by the grade and close the throttle.

#### **Caution:**

Never attempt to turn off the ignition switch on a long hill.

This will only cause the spark plug to foul in addition to being unsafe.



### **Going uphill**

When starting to climb a gentle grade, open the throttle little by little to avoid losing speed and power.

When climbing a step grade, shift down (for example) for FIFTH to FOURTH or from FOURTH to THIRD as required.

### **4. Stopping**

There are several ways to stop.

Pulling in the clutch lever and twisting the throttle grip in the closed direction will permit you to gradually glide to a stop. Downshifting through the gears, using the drag of the engine to slow down is another. However, the best method, and the one most universally used, is to use both engine compression (downshifting through the gears as the machine slows) and the front and rear brakes.

After the rear brake starts to take hold, gradually apply the front brake.

As the machine continues to slow shift down through the gears using engine compression to aid the slowing effect. When shifting down, watch the tachometer to see that the engine does not over-rev.

**Note:**

During periods of inclement weather (snow, rain, sleet, or ice) or on poor road surfaces where traction is minimal, or in a sharp corner, IT IS NOT ADVISABLE TO FIRMLY APPLY THE FRONT BRAKE. While it is true that the front brake supplies the greater portion of braking power, it is also true that stability can be upset very easily if it is used incautiously under the above conditions.

**5. Cruising**

A frequently asked question is "What r.p.m. should I cruise at?"

The BREAK-IN section provides limitations when the motorcycle is new, but once the engine has been broken in, then we suggest that you follow these guide lines. For sustained load and throttle conditions, such as those encountered on open highways, cruise at 3/4 throttle or at 3/4 of the r.p.m. "red line", whichever comes first. Always bear in mind though, the maximum allowable speed limit for the area through which you are riding. This is a recommendation, not a "hard and fast" rule. Any modification or personalization of the running gear could possibly change the

operating range most comfortable and most efficient for the engine.

## **6. Break-in**

THERE IS NEVER A MORE IMPORTANT PERIOD, IN THE LIFE OF YOUR YAMAHA THAN THE PERIOD BETWEEN ZERO AND 1,000 km. For this reason we ask that you carefully read the following material. Because the engine is brand new, you must not put an excessive load on it during the first several hours of running you could look at it in this manner: During the first 500 km, the various parts in the engine wear and polish themselves to the correct operating clearances. During this period prolonged full throttle operation, or any condition which might result in excessive head and cylinder temperatures must be avoided. However, momentary full throttle operation (2 ~ 3 seconds maximum) does not harm the engine. Each full throttle acceleration sequence should be followed with a substantial rest period for the engine by cruising at lower rpm's so that the engine can ride itself of the temporary build up of heat. The method for breaking in your Yamaha is quite simple.

a. 0 to 500 km.:

Avoid operation above 4,000 r.p.m.

Allow a cooling off period of five to ten minutes after every hour of operation. Vary the speed of the motorcycle from time to time. Do not operate it at one-set throttle position.

b. 500 to 1,000 km.:

Avoid prolonged operation above 6,000 r.p.m.

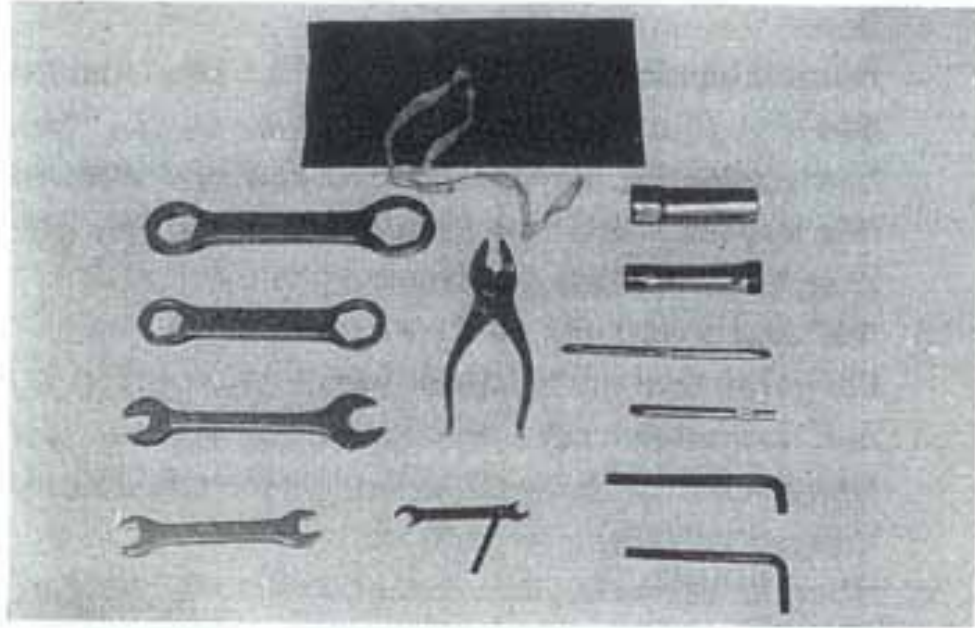
Allow the motorcycle to rev freely through the gears but do not use full throttle at any time.

c. 1,000 km. and beyond:

Avoid prolonged full throttle operation.

Avoid cruising speeds in excess of 7,000 r.p.m.

Vary speeds occasionally.



## SERVICING

The servicing information included in this manual is intended to provide you, the owner, with the necessary information to provide a means of doing your own preventive maintenance and minor repairs. The tools provided in the owner's tool kit are sufficient for this purpose, except that the torque wrench is also necessary to properly tighten nuts and bolts. (See torque chart on page 68.)

### **1. Lubrication and maintenance chart**

These chart should be considered strictly as a guide to general lubrication and maintenance periods. You much take into consideration that weather, terrain, geographicla locations, and a variety of individual uses all tend to demand that each owner alter this time schedule to match his environment. If the-motorcycle is continually operated in an area of high humidity, then all parts must be lubricated much more frequently than shown on the chart to avoid the revages of water on metal parts. If you are in doubt as to how closely you can follow these time recommendations, check with YAMAHA dealer in your area.

## Lubrication intervals

	Item	Type	Initial			Thereafter every	
			500 kms.	1,500 kms.	3,000 kms.	3,000 kms.	6,000 kms.
1	Brake cam shaft	G		○	○	○	
2	Wheel bearing	G			○		○
3	Brake cable	M/O		○	○	○	
4	Clutch cable	M/O		○	○	○	
5	Tacho, speedometer cables	G			○	○	
6	Meter gear unit	G			○	○	
7	Steering ball race	G					○
8	Front fork oil	M/O	○		○	○	
9	Brake pedal shaft	G		○	○	○	
10	Change pedal shaft	M/O,G			○	○	
11	Accelerator grip	G		○	○	○	
12	Transmission oil	M/O	○	○	○	○	
13	Dynamo lubricator	G					○
14	Stand shaft	M/O,G					○
15	Rear arm pivot shaft	G			○	○	
16	Drive chain	M/O		○	○	○	

\* G ..... Grease

\* M/O ..... Motor oil

## Periodic maintenance intervals

	Item	Pre-operation check	Initial			Thereafter every	
			500 kms.	1,500 kms.	3,000 kms.	3,000 kms.	6,000 kms.
1	Front and rear brake adjustment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
2	Clutch adjustment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
3	Transmission oil replacement		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
4	Front fork oil replacement		<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	
5	Grease up			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
6	Battery electrolyte refilling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
7	Spark plug cleaning		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
8	Ignition timing adjustment		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
9	Fuel pet cock cleaning		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
10	Carburetor adjustment			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
11	Carburetor cleaning						<input type="radio"/>
12	Air cleaner cleaning			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
13	Drive chain adjustment, oiling		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
14	F.R. wheel inspection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
15	Bolt, nut retightening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
16	Spoke, rim inspection		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
17	Cylinder, piston cleaning			<input type="radio"/>		<input type="radio"/>	
18	Silencer muffler cleaning			<input type="radio"/>		<input type="radio"/>	
19	Autolube pump adjustment		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Be sure to check the above points before long-distance touring.



## Lubrication recommendation

Transmission oil	Use a 10W/30 multi-viscosity oil, or a quality 30 wt. oil, (SAE "SE")
Swing arm shaft grease Brake actuating cam grease Steering head bearing grease Rear brake pivot point grease Throttle grip grease	Use an all purpose, chassis-type grease that does not break down easily in water (Shell and Lubriplate, as examples, carry this grease).
Front fork oil	Use 10W/30, 20wt. or 30wt. oil for street, use 30 or 40wt. oil for dirt (nonfoaming, if possible).
Autolube oil	See Basic Instruction, (P. 26)

## 2. Torque

All fittings require a minimal amount of torque during tightening to keep them from vibrating loose. Excessive tightening will only lead to stripped threads and broken studs.

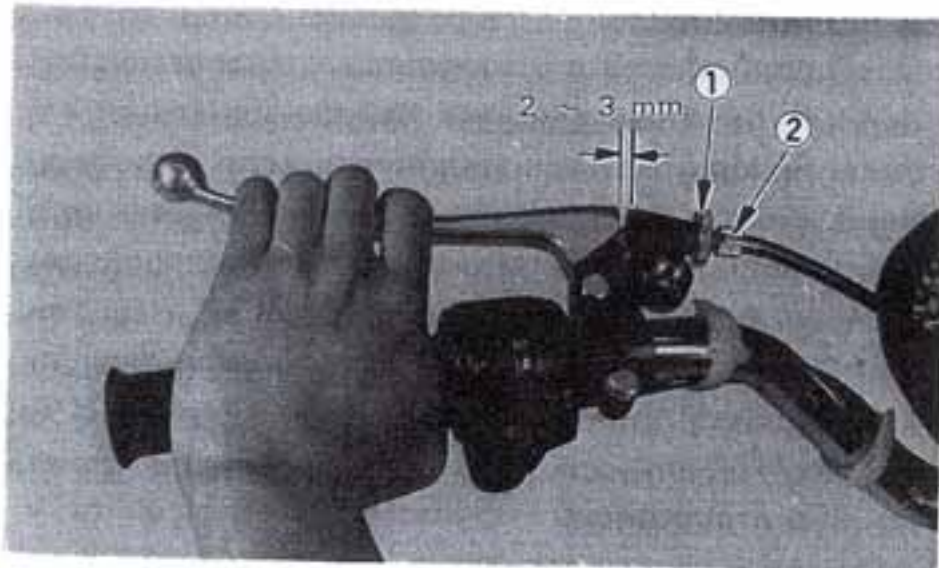
As a rule of thumb, use the following tightening chart:

STUD SIZE	TORQUE
6 mm.	1.0 m-kgs.
7 mm.	1.5 m-kgs.
8 mm.	2.0 m-kgs.
10 mm.	3.2 ~ 4.0 m-kgs.
12 mm.	4.0 ~ 4.6 m-kgs.
14 mm.	4.6 ~ 5.2 m-kgs.
17 mm.	5.8 ~ 7.0 m-kgs.
Spark plug	2.5 ~ 3.0 m-kgs.

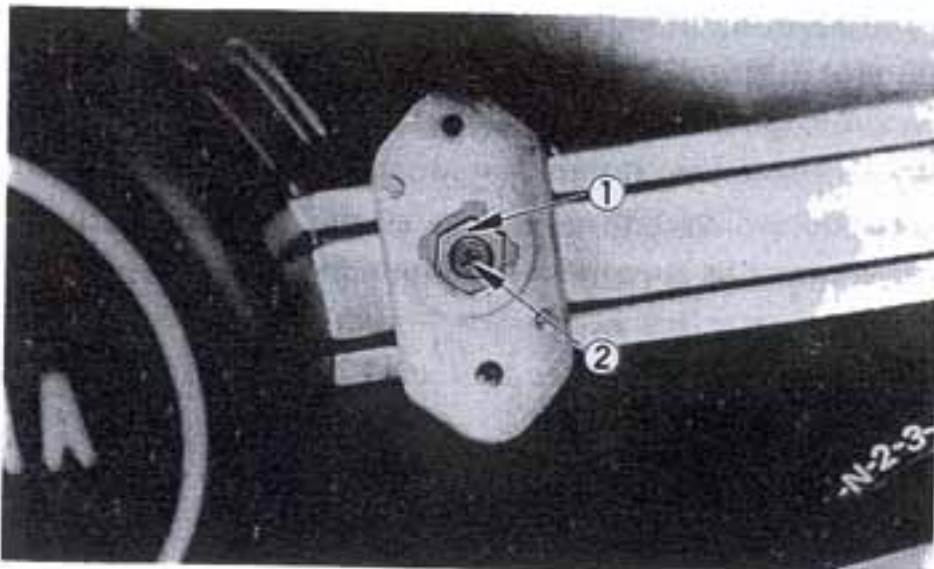
### **3. Clutch cable**

The clutch cable requires periodic lubrication to prevent the cable strands from rusting or hanging up in the casing. First, disconnect the cable from the clutch lever by screwing the adjuster all the way back to the cable casing. This will provide enough free play in the cable for you to slip the cable out of the lever holder through the slot in the lock nut, adjuster, and holder. Hold the cable upright and allow several drops of liquid graphite to flow down the cable. Hold the cable upright for several minutes to permit complete lubrication.

If the cable needs to be replaced, then perform the steps above and disconnect the cable at the lever. Next, disconnect the cable at the engine. Begin by taking off the cover that houses the clutch activating mechanism (left side of the engine). Looking at the inside of this cover, you will see the clutch actuating arm. Push the arm up and lift the cable end off. Removing the old cable and hooking up the new one will take but a few moments.



- |             |                        |                     |
|-------------|------------------------|---------------------|
| 1. Lock nut | 1. Contre-écrou        | 1. Sicherungsmutter |
| 2. Adjuster | 2. Barillet de réglage | 2. Seileinsteller   |

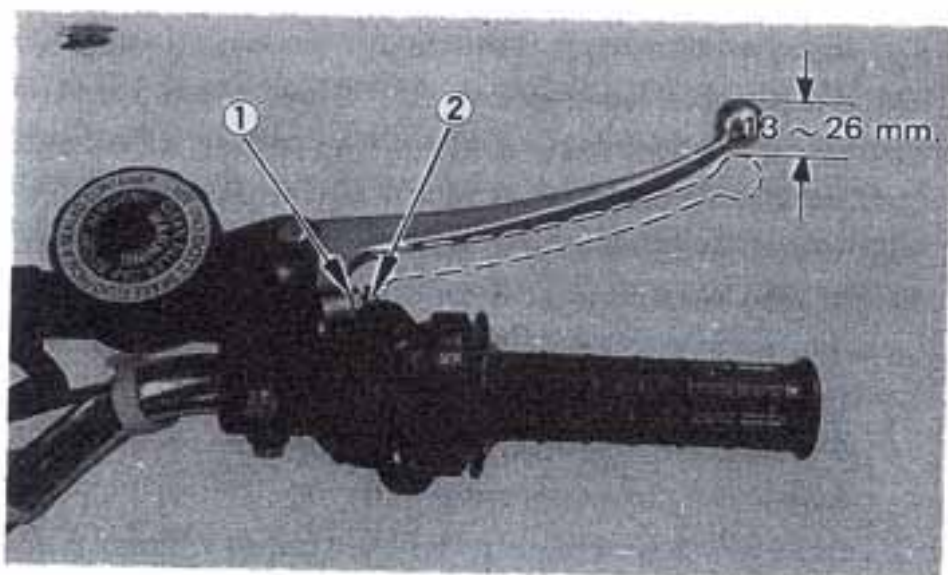


- |                    |                   |                     |
|--------------------|-------------------|---------------------|
| 1. Lock nut        | 1. Contre-écrou   | 1. Sicherungsmutter |
| 2. Adjusting screw | 2. Vis de réglage | 2. Einstellschraube |

#### 4. Clutch adjustment

The RD250(B)/RD350(B) have two clutch adjustments. The first adjustment, located at the handlebar lever, is used to take up slack from cable stretch and to provide sufficient free play so that the clutch engages and disengages completely. The picture illustrates all the parts involved in making the adjustment.

- a. First, loosen the lock nut. Then turn the adjuster either in or out depending on which direction is necessary to arrive at 2 ~ 3 mm. free play.
- b. The second adjustment is located behind the cover. Removing the cover will expose the adjusting set screw and lock nut. Loosen the lock nut, rotate the set screw in until it lightly seats against a clutch push rod that works with the set screw to operate the clutch. Back the set screw out 1/4 turn and tighten the lock nut. This adjustment must be checked because heat and clutch wear will affect this free play, possibly enough to cause incomplete clutch operation. Recheck clutch cable adjustment at handlebar after adjusting.

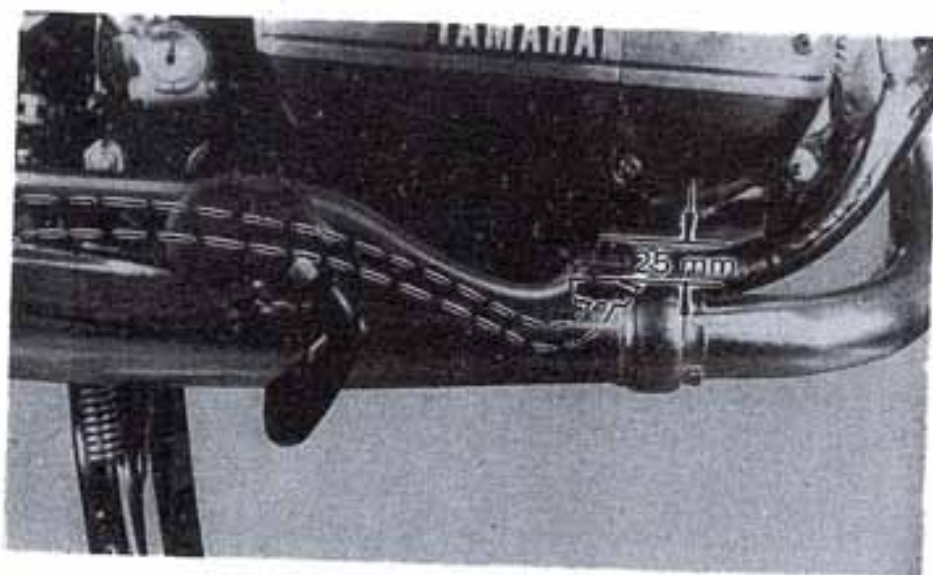


- |                    |                   |                     |
|--------------------|-------------------|---------------------|
| 1. Lock nut        | 1. Contre-écrou   | 1. Sicherungsmutter |
| 2. Adjusting screw | 2. Vis de réglage | 2. Einstellschraube |

## 5. Front brake adjustment

The front brake lever should be so adjusted that it has a free play of 13 ~ 26 mm. from when the brake lever is pulled to when the brake begins to be effected.

- Loosen the adjusting screw lock nut.
- By turning in and out the adjust screw, adjust the play of the brake lever and then lock it with the lock nut.

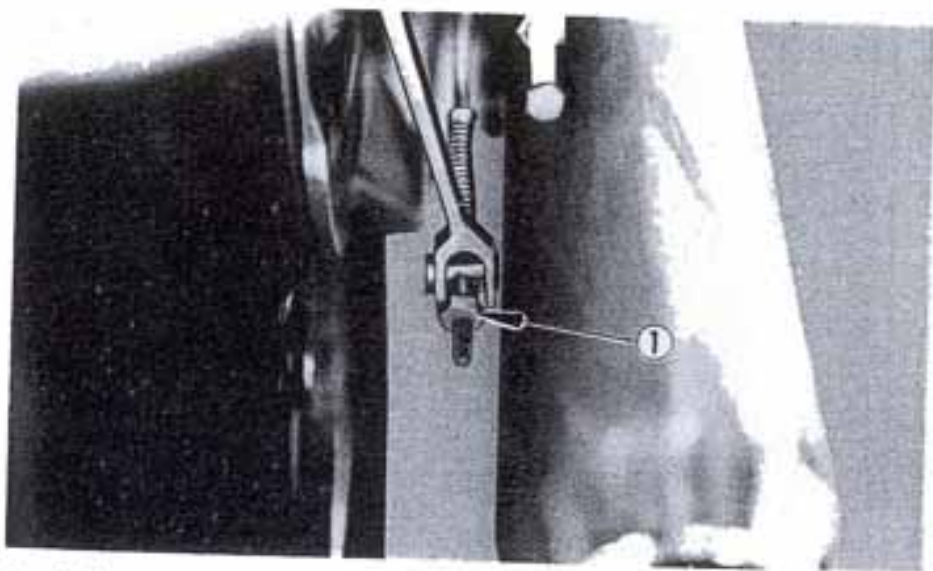


### 6. Rear brake adjustment

The correct free play of the rear brake pedal is about 25 mm. Adjust by turning the adjusting nut at the end of the rear brake rod a half turn at a time. After adjusting the brake, make sure the stop light is working. If not, readjust the stoplight switch.

#### Note:

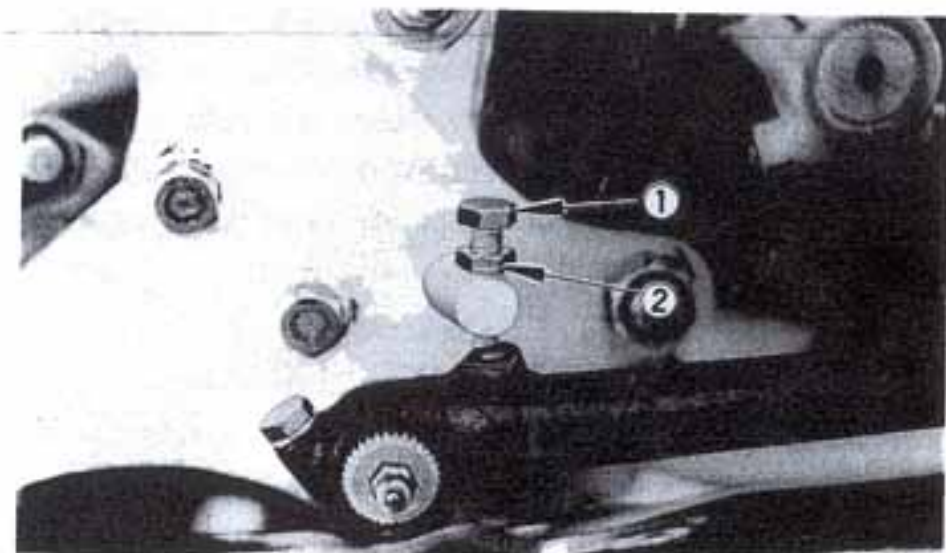
Have your dealer inspect the brake linings for wear and clean the brake shoes and drums every 3,000 km. Always keep the shoes and drums free of oil.



1. Adjusting nut

1. Erou de réglage

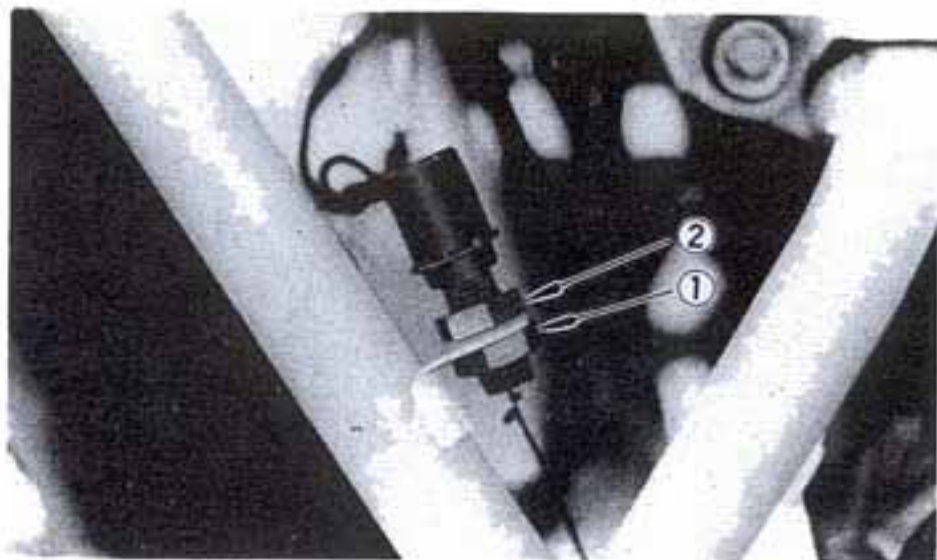
1. Einstellmutter



### 7. Adjustment of brake pedal

The relative position between the brake pedal and the footrest can be adjusted by the adjusting bolt on the rear end of the former. After adjustment check on the brake pedal play and the stoplight operation without fail.

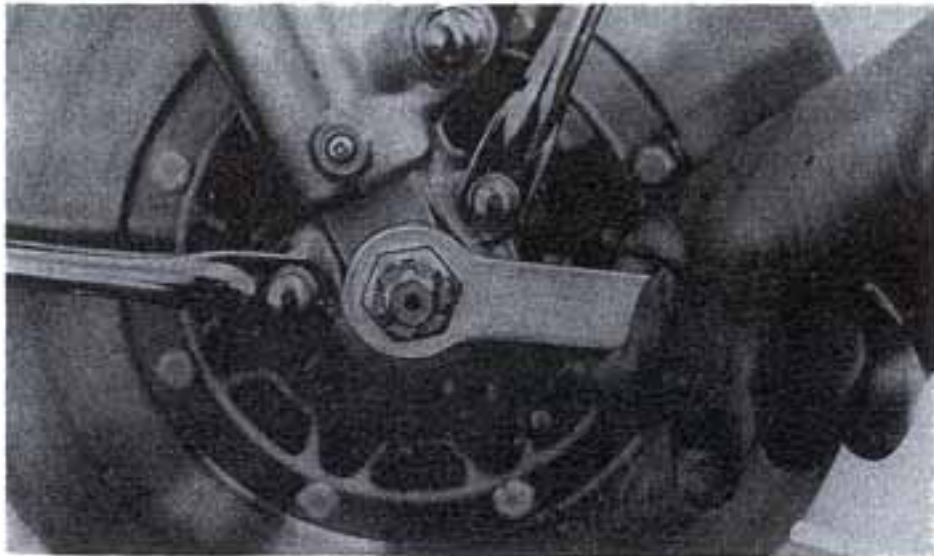
- |                   |                      |                     |
|-------------------|----------------------|---------------------|
| 1. Adjusting bolt | 1. Boulon de réglage | 1. Einstellschraube |
| 2. Lock nut       | 2. Contre-écrou      | 2. Sicherungsmutter |



### 8. Adjustment of stoplight switch

The stoplight switch opens and closes, interrelating with the movement of the brake pedal. To adjust this switch, loosen the lock nut and rotate the adjusting nut. Relock the nut where the stoplight comes slight just when the stepped brake pedal begins to take effect.

- |                  |                     |                     |
|------------------|---------------------|---------------------|
| 1. Lock nut      | 1. Contre-écrou     | 1. Sicherungsmutter |
| 2. Adjusting nut | 2. Ecrou de réglage | 2. Einstellmutter   |



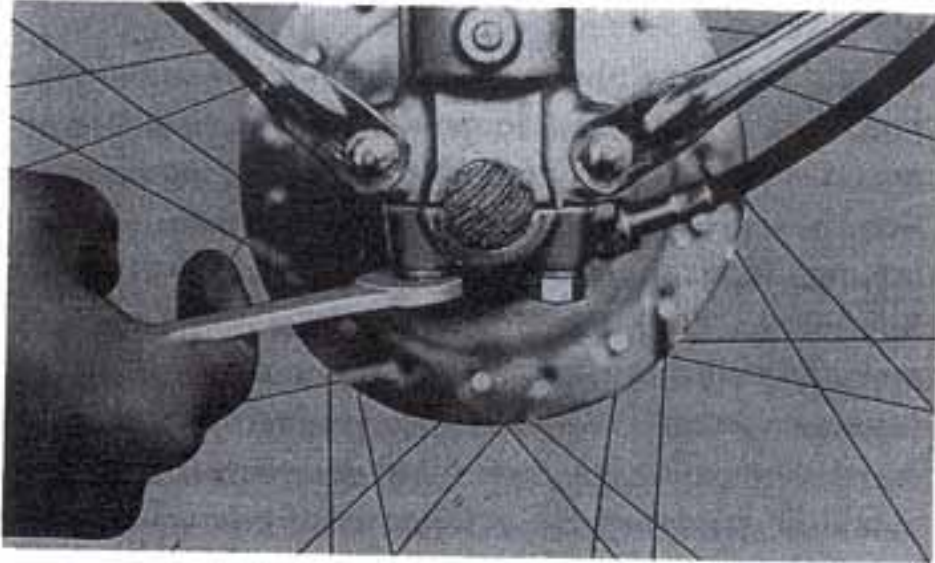
## 9. Front wheel

Work that might need to be done on the front wheel assembly includes tire or tube exchange, hub/spokes/rim assembly replacement, maintenance and inspection. The following are the steps necessary to dismantle the front wheel, step by step, and you should proceed with the steps until you have removed the part to be replaced. You as the owner, can replace everything but the spokes or the rim. To individually replace any of these parts requires that the spokes be "replaced". This should be done by a competent dealer as the spokes must be positioned and torqued correctly. If not done properly wheel alignment will not be correct and steering will be negatively affected.

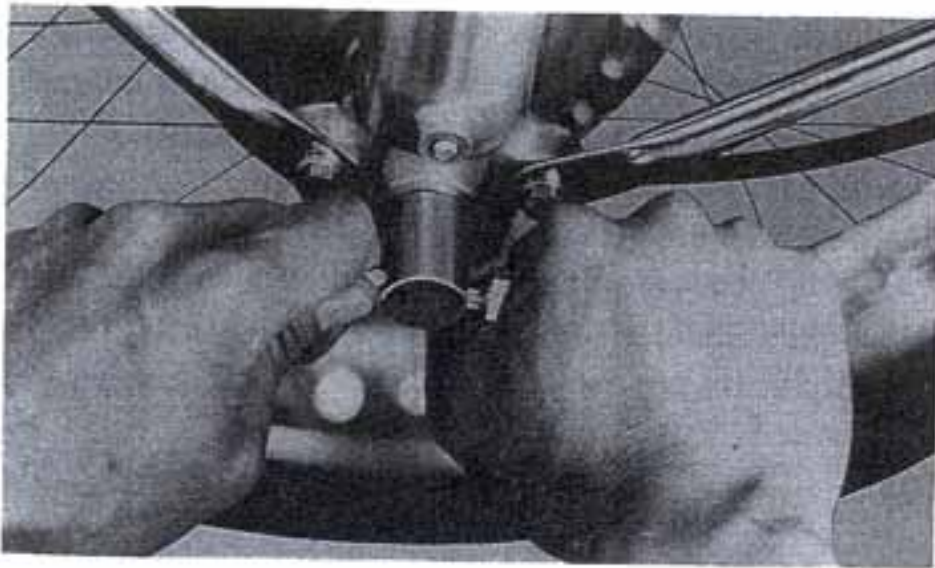
## 10. Front wheel removal

- a. Remove the cotter pin and loosen the wheel nut.

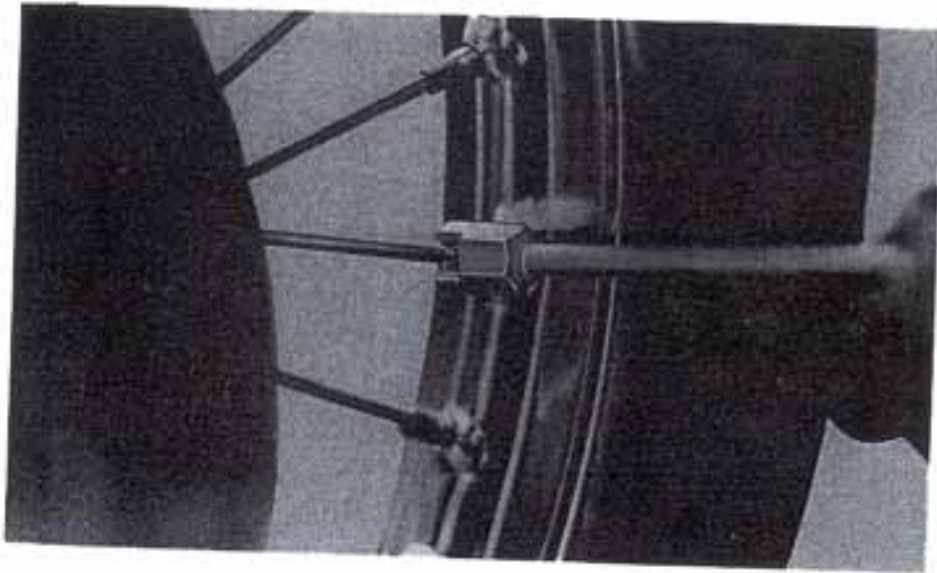




b. Loosen the front wheel axle holder nuts.



- c. Remove the front axle by simultaneously twisting and pulling out on the axle.
- d. Brace the front of the machine off the ground and remove the wheel assembly.
- e. During reassembly, make sure the axle nut is torqued, the holder nuts are torqued, and a new safety cotter pin is installed in that order.



### **11. Rim, spokes, front and rear wheels**

There are also checks that you can perform to determine if wheel work is necessary for your dealer to do. First, check for any loose spokes. This can be checked by bracing the front end off the ground so that the front wheel can spin free. Slowly revolve the front wheel and at the same time let the metal shaft of a fairly heavy screwdriver bounce off each spoke. If all the spokes are tightened approximately the same, then the sound given off by the screwdriver hitting the spokes should sound the same. If one spoke makes a dull flat sound, then check it for looseness.

While you have the front end up in the air, you should check that the front wheel does not have too much run-out. "Run-out" is the amount the front wheel deviates from a straight line as it spins. Secure the front forks from turning, spin the front wheel, and solidly anchor some sort of a pointer about 3 mm. away from the side of the rim.

As the wheel spins, the distance between the pointer and the rim should not change more than 2 mm. total. Any greater fluctuation means that you should have your dealer remove this rim warpage by properly adjusting the spokes.

**Note:**

The force-fitting method is employed for the RD250(B)/RD350(B) driving chain. For this reason, the driving chain cannot be easily removed. It is requested that removal of the rear wheel and also this chain be done at the dealer's. A new chain joint and chain joint plate must be used at the dealer's in refitting of the chain.

**Caution:**

Rear wheel:

Rear wheel dismounting and disassembly should be performed by your Yamaha dealer as a considerable number of adjustments and safety related parts are involved.

## **12. Tire repair**

Whether it is the front tire or the rear tire that you wish to change, the procedure of tire and tube removal is identical.

Consider the explanation that follows as the proper method for both wheels.

First, remove the valve cap and valve stem lock nut. Empty all the air out of the tire. Use two tire removal irons (with rounded edges) and begin to work the tire bread over the edge of the rim, starting 180° opposite the tube stem. Take care to avoid pinching the tube as you do this. After you have worked one side of the tire completely off the rim, then you can slip the tube out. Be very careful not to damage the stem while pushing it back out to the rim hole. If you are changing the tire itself, then finish the removal by working the tire off the same rim edge just previously mentioned.

Reinstalling the tire assembly can be accomplished by reversing the disassembly procedure. The only difference in procedure would be right after the tube has been installed, but before the tire has been completely slipped onto the rim, inflate the tube. This removes any creases that might exist. Release the air and continue with reassembly. Also, right after the

tire has been completely slipped onto rim, check to make sure that the stem is squarely in the center of the hole in the rim.

	Front	Rear
Normal riding	1.6 kg/cm <sup>2</sup>	2.0 kg/cm <sup>2</sup>

**Note:**

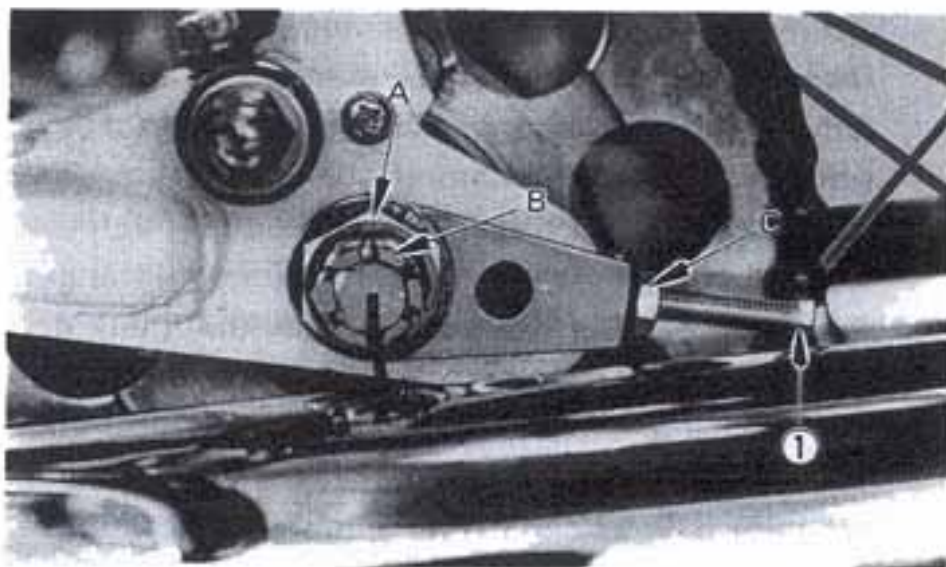
When you run the machine at a high speed of 100 km/h. or more, the tire pressure should be 20 percent more than the specified.

### 13. Drive chain

Because the chain consists of an extraordinary amount of parts that rub against one another, it is prone to wear if it is not maintained constantly and correctly. Without any lubrication, a chain can wear out within 1,500 km. You should develop a habit of servicing the chain on a regular schedule. This habit is especially important if you spend the major portion of your time riding in the dirt where dust and dirt can readily work into the chain links.

- a. Lubrication — there are several excellent pressure can lubricants available. Use a rag to wipe off any accumulation of dirt, then spray a liberal amount of lubricant on the chain at least every 3,000 km.
- b. Cleaning — the chain has to be periodically removed from the machine and soaked in cleaning solvent. Completely saturate the chain with solvent to remove as much dirt as possible. Drain and dry the chain thoroughly. Immediately after the chain has dried completely, lubricate to prevent any rust from forming.
- c. Adjustment — proper drive chain up and down free play, with the rider in position, should equal 20 mm, when measured at the center of the lower section of chain.

Follow these steps to obtain the correct free play:

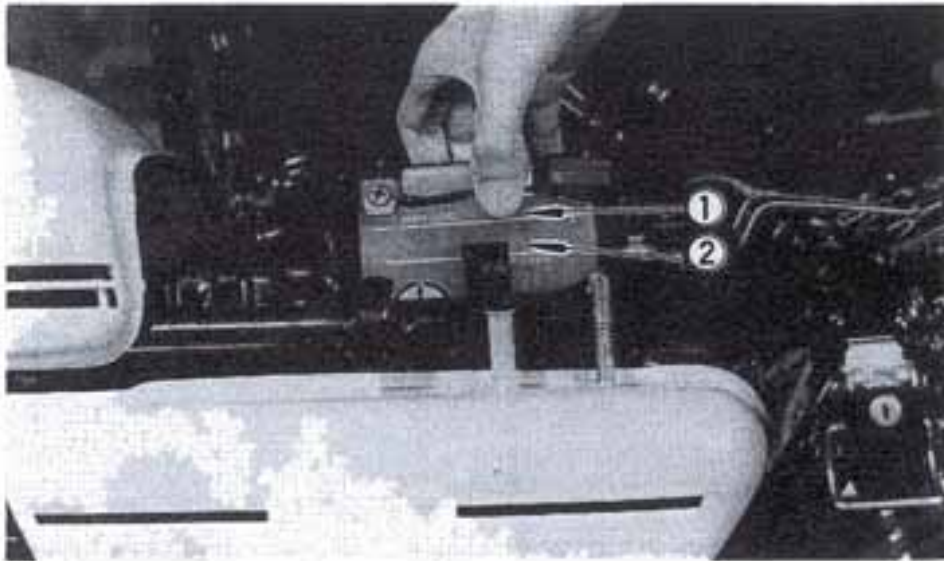


1. Adjusting bolt    1. Boulon de réglage    1. Einstellschraube

#### Drive chain adjustment:

- 1) Remove the cotter pin and loosen the rear wheel nut (A) and sprocket wheel nut (B).
- 2) Loosen the chain adjusting bolt lock nuts (C).

- 3) Rotate the adjusting bolts in or out, whichever is needed to obtain the correct free play, and at the same time make sure that both ends of the axle are positioned evenly. This can be checked by utilizing the marks on the very end of the swing arms, just above and to the rear of the rear wheel nuts.
- 4) After completing the adjustment, retighten all the lock nuts.
- 5) Finally, be sure to install a new cotter pin and check for correct brake pedal operation as it could have changed due to the chain adjustment.



#### 14. Battery

The life of your battery depends greatly on how well you keep it serviced. In order to service it completely and correctly, there are certain facts that you must know.

- a. Always keep the battery fluid level between the "Maximum" and "Minimum" level.

It should be checked at least once a month, and more often during hot weather. If the battery needs filling, use distilled water. Do not use tap water as it usually contains minerals that can be harmful to the life of the battery.

- b. If for any reason the battery has become discharged, and you are going to charge it yourself, use a "trickle charger" that has no more than a one amp. per hour rating. Also, make sure that all the battery caps have been taken off and that the rubber battery breather tube is not clogged or pinched shut. A charging battery creates gas, and pressure could build up in the battery if all the outlets were plugged up.

1. Maximum level

2. Minimum level

1. Niveau maximum

2. Niveau minimum

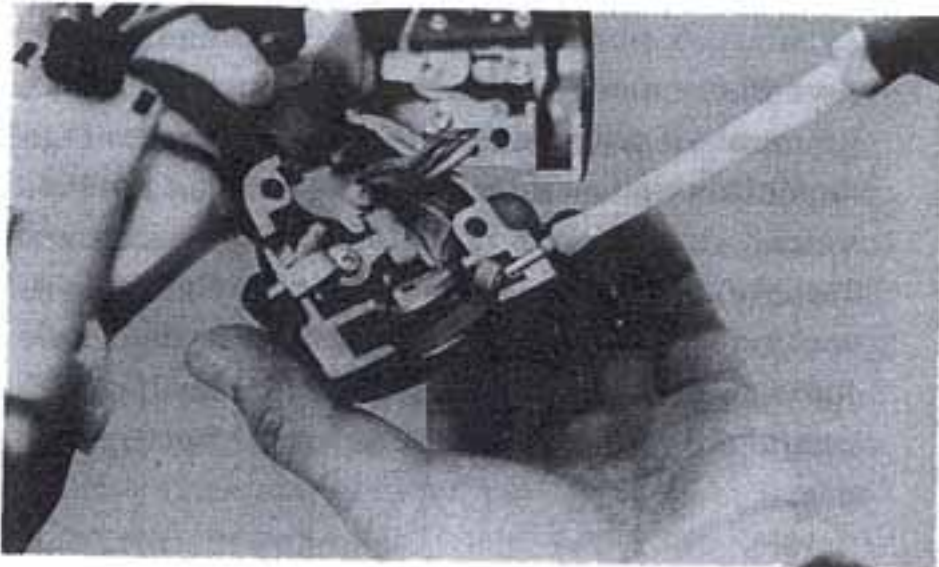
1. Obere Markierung

2. Untere Markierung



- c. If the motorcycle is to be stored for more than a month, then move the battery, have it fully charged, and store it in a cool dry storage area. If storage time is going to be lengthy, it is best to leave the battery with your dealer with specific instructions to recharge the battery every month or so. This procedure is necessary to insure maximum battery life.

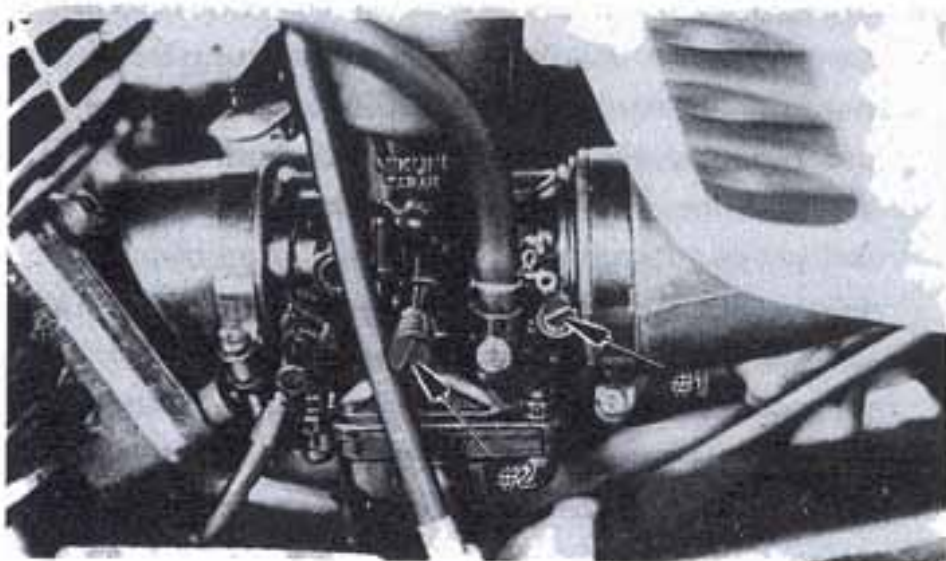
When reinstalling the battery, be sure to hook up the RED lead to the positive terminal and the BLACK lead to the negative terminal (the polarity of each is stamped just below each terminal).



#### 15. Throttle cable and grip lubrication

The throttle twist grip assembly should be greased at the time that the cable is lubricated, since the grip must be removed to get at the end of the throttle cable. Two screws clamp the throttle grip to the handlebar. Once these two are removed, the end of the cable can be held high to pour in several drops of liquid graphite.

With the throttle grip disassembly, coat the metal surfaces of the grip assembly with a suitable all-purpose grease to cut down friction. (See lubrication chart)



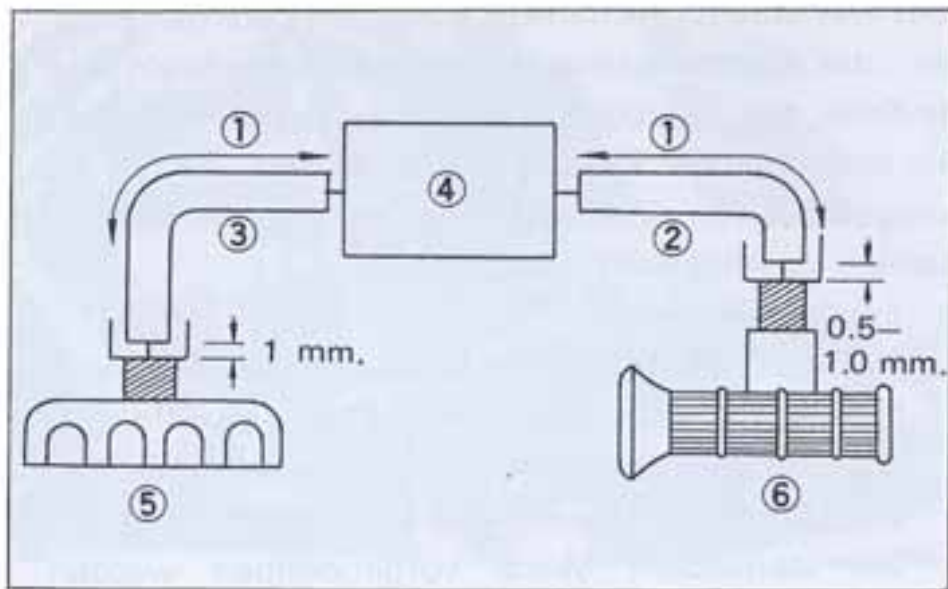
## 16. Carburetor

There are only three adjustments on the carburetor that do not require the services of a mechanic: the idle mixture, the engine idle speed throttle cable slack. Because the carburetor is such a critical part of the engine, any carburetor disassembly should be done by an experienced mechanic.

### a. Idle mixture

To set the idle mixture you must turn the pilot screw (#1) in until it lightly seats, then back it out as specified turns—no more or no less. This is a factory setting that can be set with the engine stopped.

	Standard	High land
RD250B	1-1/4 turns-out	1-3/4 turns-out
RD250 (for Europe)	1-1/4 turns-out	—
RD350B	1-3/4 turns-out	2.0 turns-out
RD350 (for Europe)	1/4 turns-out	—



- |              |                             |
|--------------|-----------------------------|
| 1. Slide     | 4. Junction block           |
| 2. Cable A   | 5. Carburetor top           |
| 3. Cable B   | 6. Throttle grip            |
| 1. Coulisser | 4. Cylindre relais          |
| 2. Câble A   | 5. Couvercle du carburateur |
| 3. Câble B   | 6. Poignée d'accélération   |
| 1. Schieben  | 4. Verbindungsblock         |
| 2. Gaszug A  | 5. Vergaserverschluß        |
| 3. Gaszug B  | 6. Gasdrehgriff             |

#### b. Idle speed

Start the engine and let it warm up. Next, screw the throttle stop screw (#2) in or out whichever direction is necessary for the engine to idle between 1,100 and 1,200 r.p.m. (check tachometer).

Lefthand and righthand idle speed screws must be set so that both cylinders are working together.

#### c. Throttle cable slack

After engine idle speed has been set, then loosen the cable adjuster lock nut and turn the adjuster on top of the carburetor until there is 1 mm. of slack in throttle cable "B".

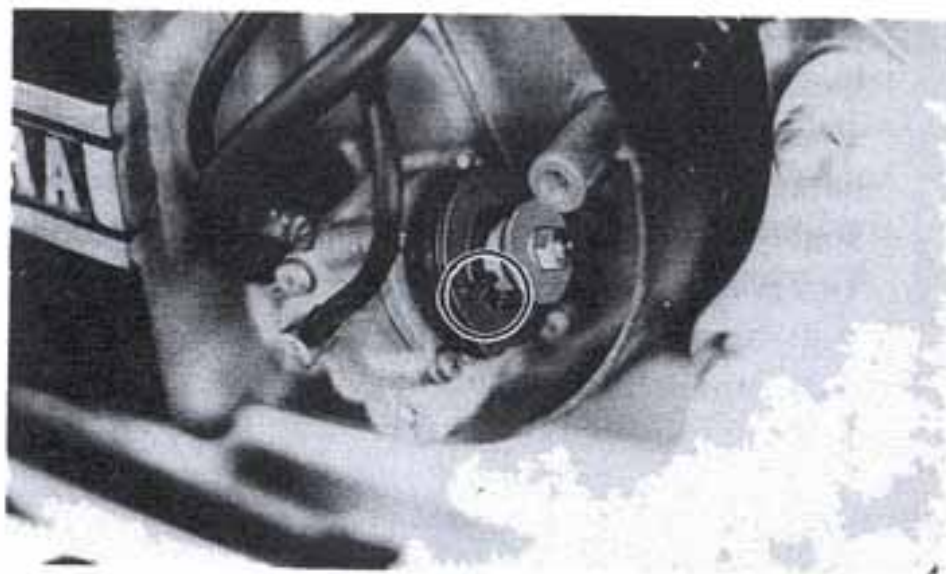
Retighten the lock nut. Adjust both carburetors. Make the second throttle cable slack adjustment at the throttle grip. There is a lock nut and adjuster where cable "A" meets cable guide "A". Loosen the lock nut and turn the adjuster until there is 0.5 ~ 1.0 mm. slack in throttle cable "A". Retighten the lock nut.

**Note:**

To measure the amount of cable slack, slide the cable back and forth over the throttle wire, and see how much end gap exists between the cable end and top of the carburetor (or cable guide "A", if checking throttle cable "A" slack).

**17. Fuel petcock**

The petcock serves another purpose other than acting as a fuel on and off switch. A wire mesh filter is incorporated into the assembly. This filter must be removed once every few months and cleaned.



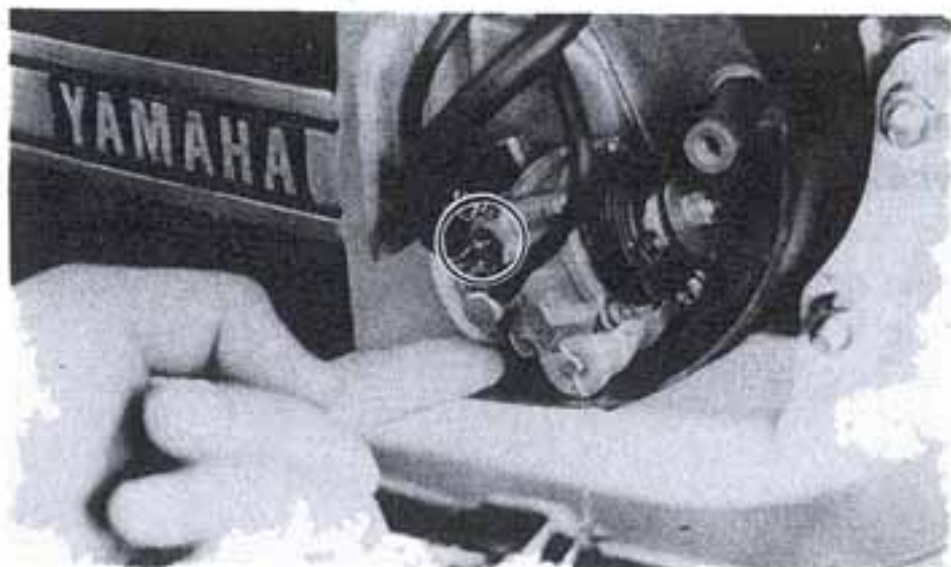
### 18. Autolube pump cable adjustment

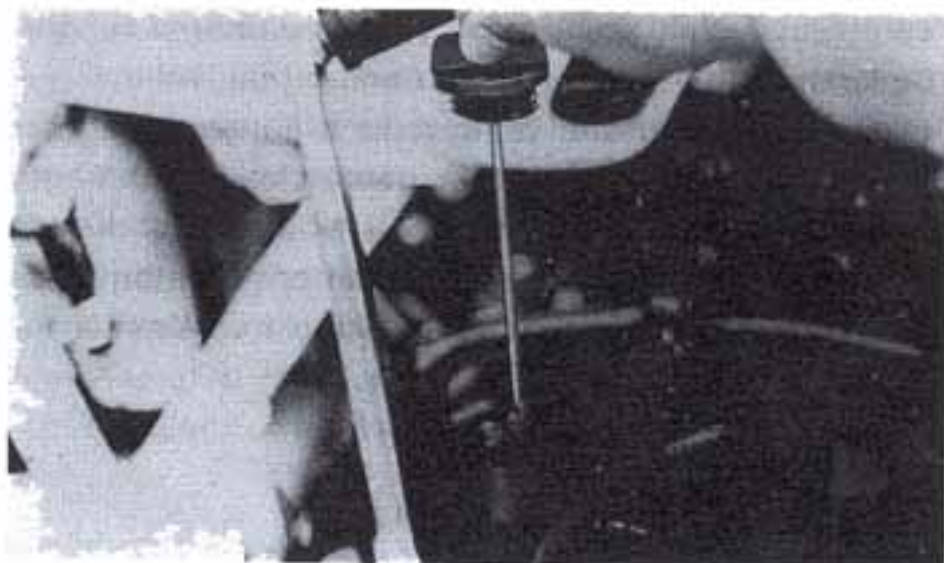
Close the throttle grip completely, then twist it open until all cable slack is removed, but stop before the sides start to lift.

Adjust the pump cable so the mark on the pump pulley lines up with the "adjust pulley guide pin". The Autolube cable adjuster is located at the bottom end of the cable, screwed into the top of right case cover.

### Note:

If the pump runs out of oil, the pump must be bled to release air trapped in the pump. Remove the Phillips head bleed screw, twist the throttle to full open position (turns the Autolube pump to maximum stroke), and rotate the plastic manual starter pump plate until only oil comes out the bleed hole (air stops coming out with the oil). Reinstall and tighten the bleed screw.





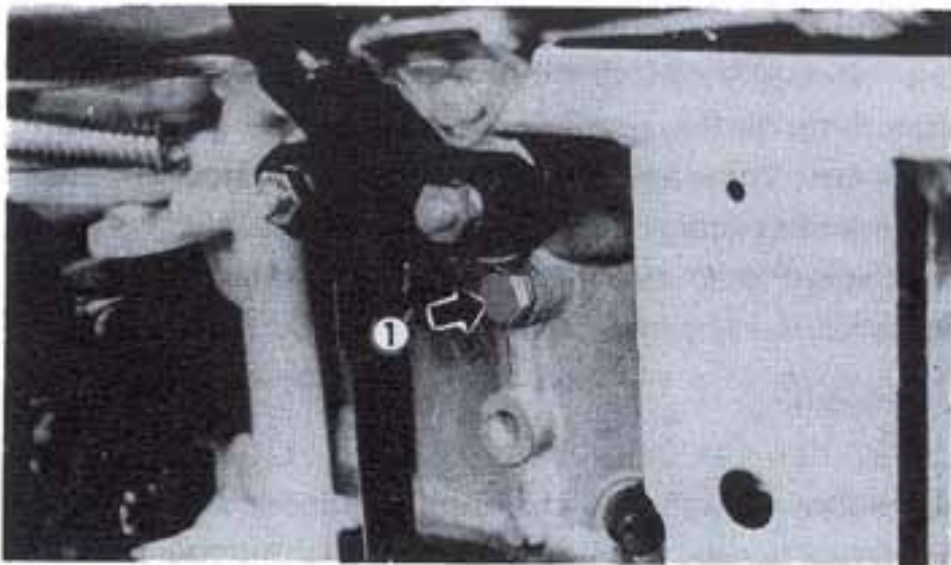
### **19. Transmission oil**

The only servicing for you to do is to check and fill the transmission lubricating oil. The transmission dip stick is located right above the kickstarter. To check the level, warm the engine up for several minutes, screw the dip stick completely out and then just rest the stick in the hole.

#### **Note:**

When checking transmission oil level with the dip stick, let the unscrewed dip stick just rest on the case threads. Also, be sure the machine is positioned straight up and on both wheels.

Recommended oil: SAE 10W/30 Motor oil  
Amount: 1,500 cc.



1. Drain plug

1. Bouchon de vidange

1. Ablasschraube

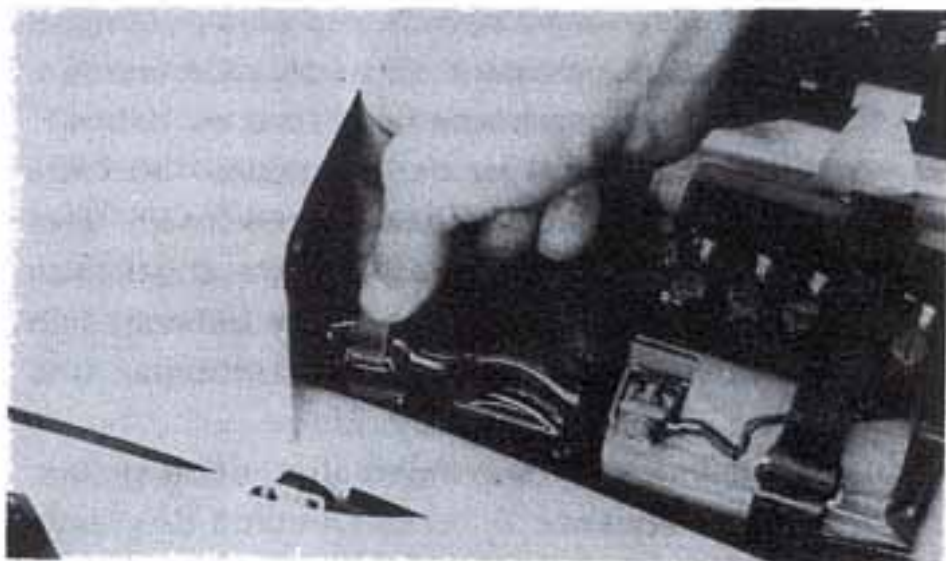
The dip stick has a Minimum and a Maximum mark, and the oil level should be between the two. If the level is lower, then add sufficient oil to raise it to the proper level.

During the break-in period, you should replace the gear oil 30 days after the date of purchase or thereafter 3,000 km. The transmission should be drained and refilled approximately every 3,000 km. On the bottom of the engine there is a drain plug. Remove it and drain all the transmission oil out.

Reinstall the drain plug (make sure it is tight). Add oil through the dip stick hole.

**Note:**

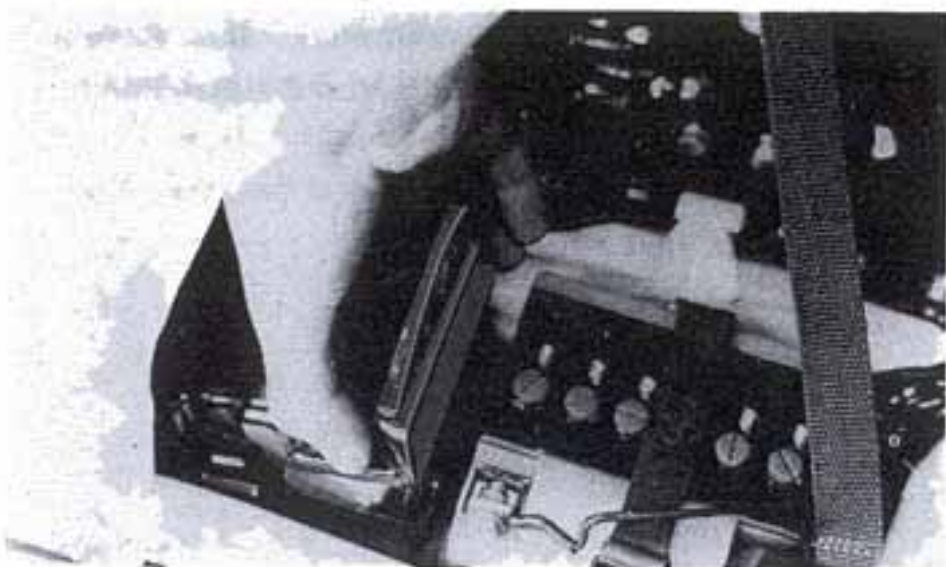
Do not add any chemical additives. Transmission oil also lubricates the clutch and additives could cause the clutch to slip.



## 20. Air filter

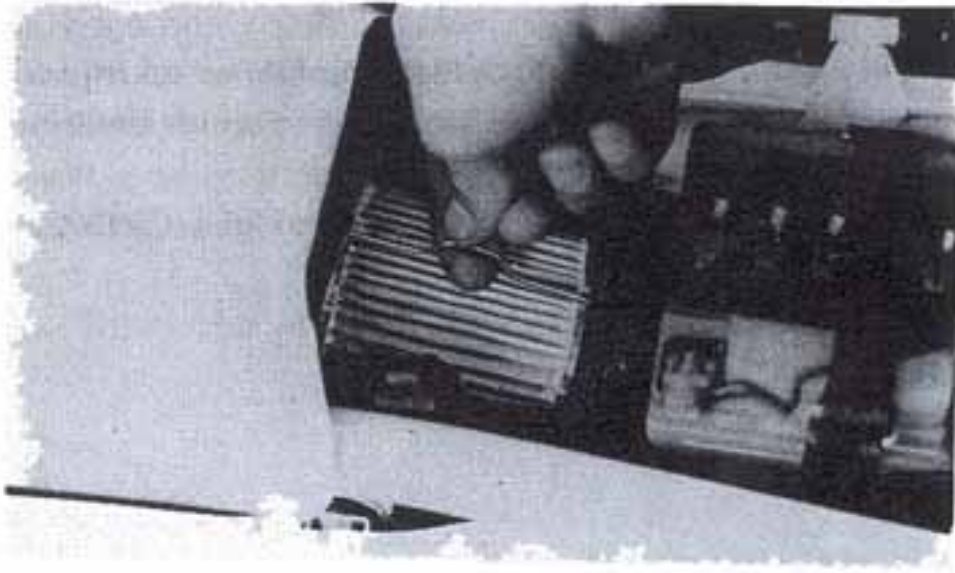
The air filter element should be removed and cleaned at least once a month, more often if the motorcycle is ridden mainly in the dirt (preferably each time after you spend an entire day in the dirt).

- a. Open the seat and remove the rubber band holding the air filter case cap.



- b. Remove the case cap.





- c. Raise the cleaner element and remove it.

**Cleaning:**

The air cleaner is a paper filter. Never wash the filter in gasoline. Blow compressed air through it from the inside. Never wash the filter in water or oil use air only. Coat both ends of the cleaner element with a small amount of oil so that the foam rubber parts can easily be installed in the cleaner case.

### **21. Ignition timing**

Timing is of critical importance. If for any reason you wish to check the timing, have your dealer check for you.

### **22. Breaker point**

Unless you are sufficiently experienced, it would be advisable for a mechanic to replace the points, as ignition timing will change when the points are replaced. As it is, points (and condenser) normally last several 6,000 kms.

#### **Note:**

In addition to the above, changes in point gap through wear and/or filling for cleaning purposes will also change timing, have your Authorized Yamaha Dealer service the ignition for you.

### **23. Spark plug**

The spark plug in your machine can tell you a great deal as to how the engine is operating when you know how to "read" the plug. If the engine is operating correctly, and if it is being ridden correctly, then the tip of the white insulator in the spark plug will be a light tan color. If, when you remove the spark plug, it is very dark brown or black, then a plug with a hotter heat range might be needed. This situation is quite common during the engine break-in period. If the insulator tip shows a very light tan color, or is actually white, or if the electrodes begin to melt, then a spark plug with a colder heat range is required. Again, if the spark plug insulator tip does not have a light tan color, have your dealer install a spark plug with a different heat range to correct the situation. Do not attempt to experiment with different heat range spark plugs yourself, as it takes an experienced eye to gauge which spark plug to use, and to gauge if the spark plug is actually at fault. It is all right though for you to replace the standard plug. Engine conditions can cause any spark plug to slowly break down. If deposits begin to build up, or if the electrodes finally become too worn, or if for any reason you believe the spark plug to not be functioning correctly, replace it. Be sure, when

replacing the plug, that you always clean the gasket surface, that you use a new gasket, and that the spark plug is torqued to 2.5 kg-m. ~ 3.0 kg-m. Also wipe off any grime that might be present on the surface of the spark plug. The plug can be taken out to be cleaned and gapped. As long as deposit build-up on the insulator is not extreme, you can use a spark plug cleaner to quickly remove the deposits. Use a wire type feeler gauge to set the electrode gap at 0.5 mm. ~ 0.6 mm.

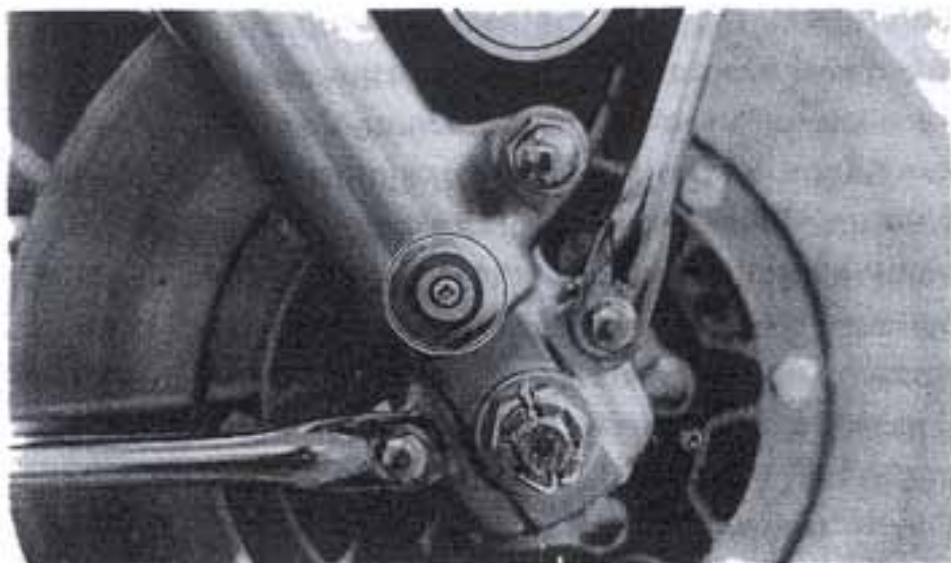
#### Standard plug

	Standard	High land
RD250B/RD350B	B-8HS (N.G.K.)	B-7HS (N.G.K.)
RD250B/RD350B (for Europe)	B-8ES (N.G.K.)	—

#### **24. Steering**

Periodically you should check for any looseness in the steering assembly. Do this by blocking the front end off the ground, grasping the bottom of the forks, and gently rocking the fork assembly backward and forward. You will feel any looseness in the steering assembly bearings. If any exists, do not attempt to correct it yourself but let your dealer make the adjustment with the correct tools.

Also, these same front fork bearings must also be lubricated every 6,000 km. This the dealer should also do.



### 25. Front fork

At least every 3,000 km, the front fork oil should be completely drained and refilled. Remove the Phillips head screws in the very bottom of the forks and most of the fork oil will drain out. Compress the forks several times to pump all the remaining oil out. Reinsert the drain screw and make sure it is tight. Next, remove the fork cap found on top of each fork tube. Slowly pour in 140 cc. oil in each fork leg (see Lubrication Recommendations section for type oil).

At least every other time you should have your mechanic dismantle the fork assembly and thoroughly clean out each fork. Water and dirt eventually coat much of the inner fork surfaces cannot be readily removed just by draining.

## REQUIREMENTS FOR A GOOD MOTORCYCLIST

1. Safety is more important than speed. Always observe traffic regulations and signs.
2. Always use quality gasoline and oil, and avoid the inconvenience of running out of gas or oil.
3. Check tire pressures before every ride.
4. Warm up the engine for about one minute before riding.
5. Shift gears gently, while momentarily closing the throttle, avoid power shifting.
6. During the break-in period, ride at the suggested speed in each gear.
7. Apply the front and the rear brake at the same time.
8. Down a long hill, use engine compression as a brake.
9. When parking, be sure to turn off and remove the ignition key, turn off the cock, and lock the steering.
10. Check parts at regular intervals as described in this manual.

## **TROUBLESHOOTING**

### **1. Factory authorized service**

Your Yamaha dealer is a factory trained mechanic who guarantees thorough and correct maintenance for your motorcycle. We recommend that you let your dealer make all repairs and adjustments on your motorcycle. You will be assured prompt and good service.

### **2. Genuine Yamaha parts**

Always use genuine Yamaha parts and not "substitute" brands. Yamaha parts are manufactured to meet the factory's exacting standards of precision and quality.

### **3. If something should go wrong. . . . .**

The RD250(B)/RD350(B) undergoes rigid factory tests to assure you long and satisfactory performance. However, if something should go wrong with your machine, immediately ask your Yamaha dealer for advice. He is always glad to answer your questions.



**Important:**

Some components are sealed or cannot be disassembled. If repairs to such components are necessary go to your Yamaha dealer. Yamaha cannot be responsible for repairs and adjustments to such components performed by non-authorized personnel.

**Note:**

The inspection and maintenance of Autolube should be entrusted to your dealer.



**YAMAHA MOTOR CO., LTD.**

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