

YAMAHA

TA 125

PRODUCTION RACER OWNER'S MANUAL

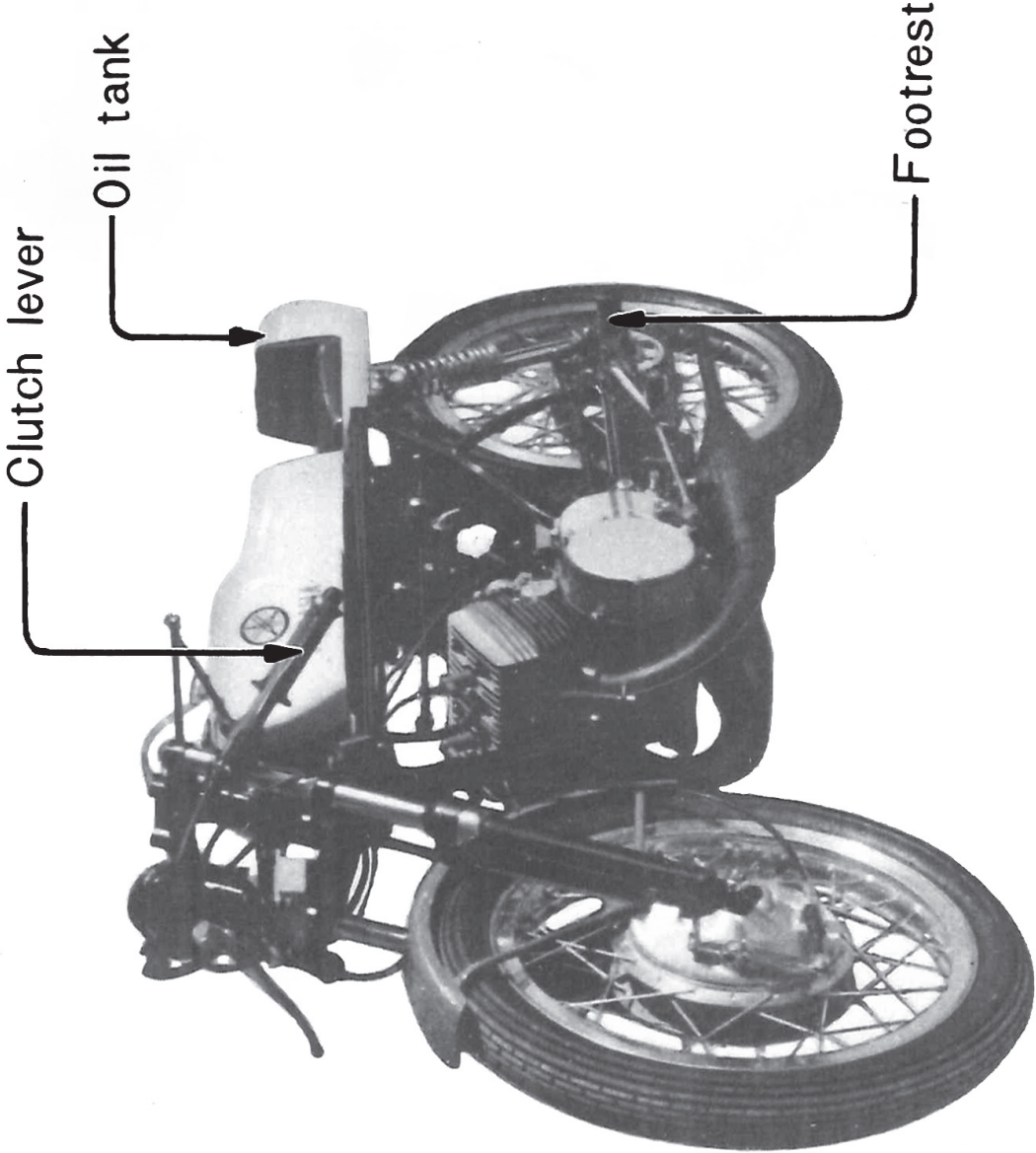


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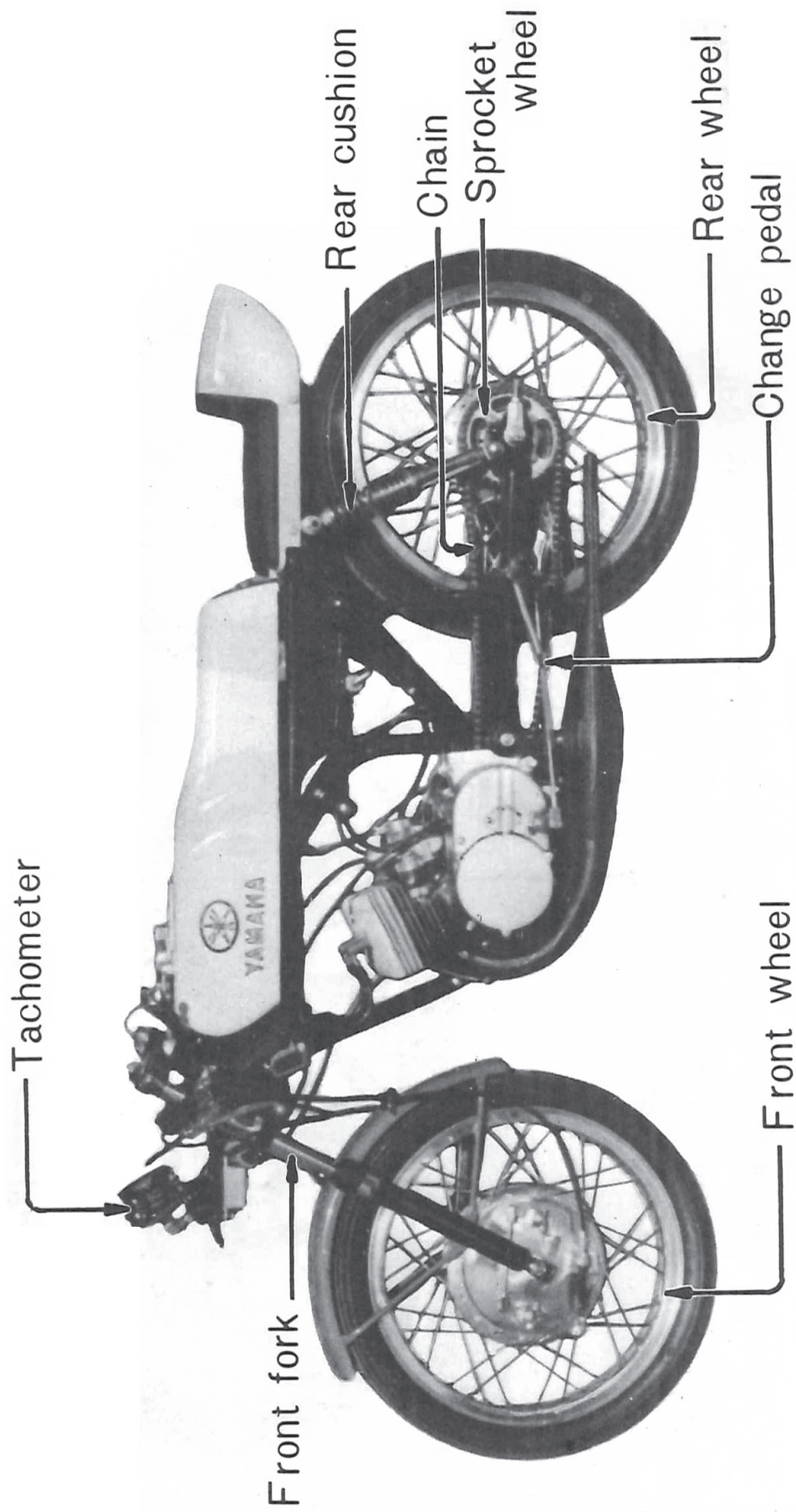
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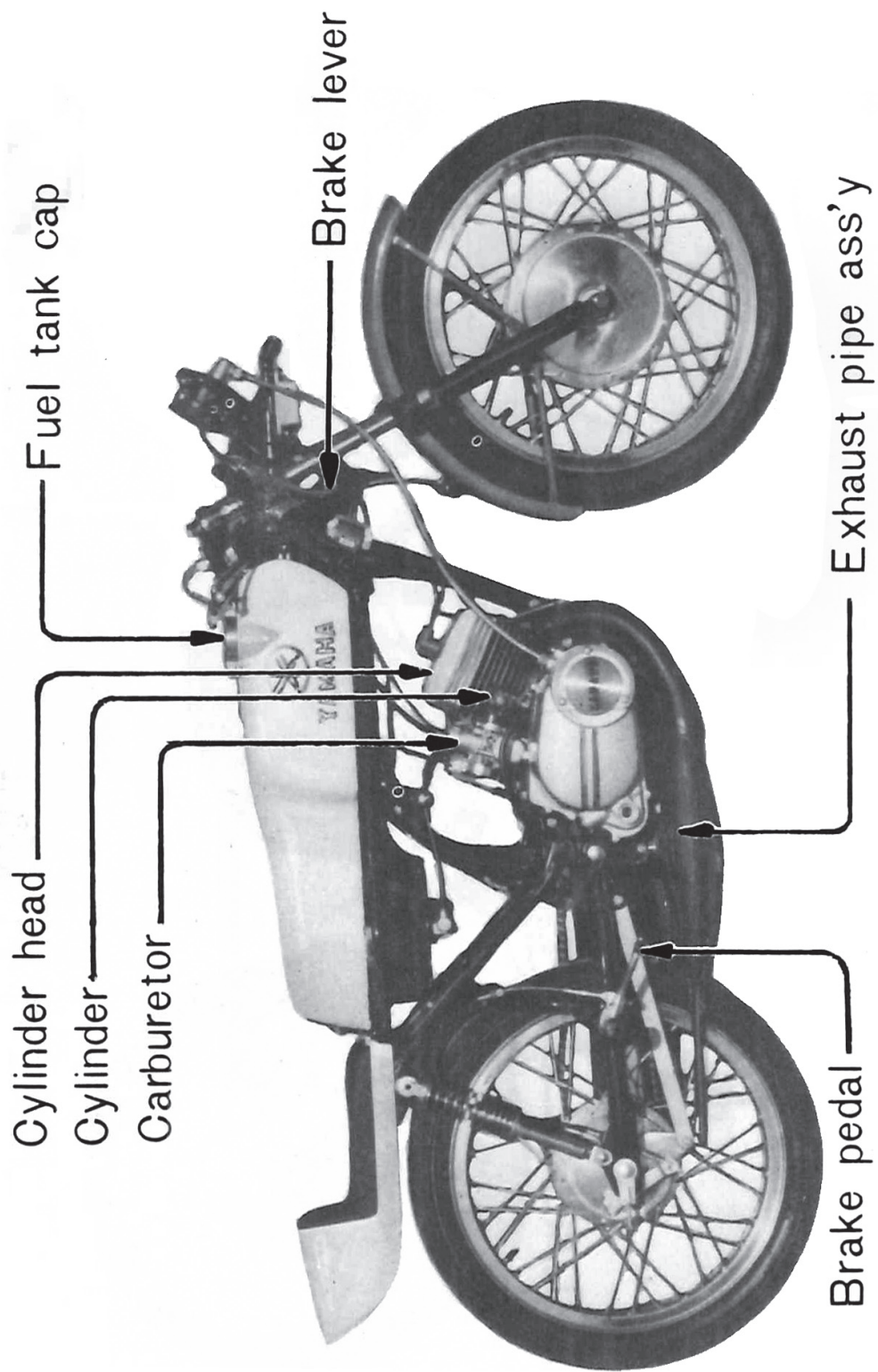
Nomenclature



LEFT SIDE PROFILE



RIGHT SIDE PROFILE



I. BASIC INSTRUCTIONS

A. Gasoline and oil

The fuel and oil must meet the following requirements.

1. Gasoline: The fuel tank must be filled with a mixture of gasoline and oil as follows:

- a. Gasoline: High octane rating (more than 100)
- b. Oil: Shell Super M or similar quality oil such as Castrol "R" 30 wt.
- c. Gas/oil mixing ratio

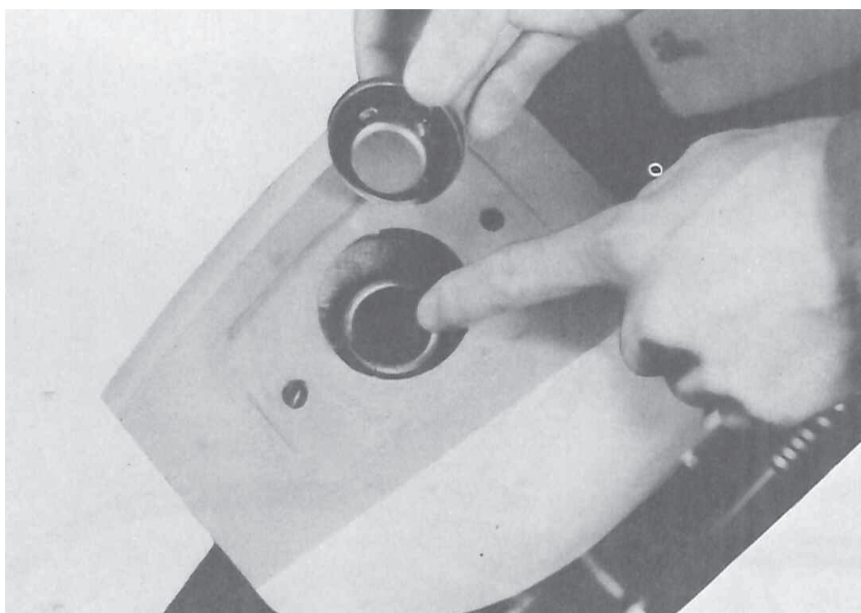
When pump is in use: 30 : 1

When pump is disconnected: 15 : 1

Note: The gasoline mixed with Shell Super M or Castrol R-30 will be denatured after 12 hours storage. Never reuse such a mixture. After 12 hours of down-time, the fuel should be drained from the gasoline tank, fuel pet cock, and carburetor float chamber.

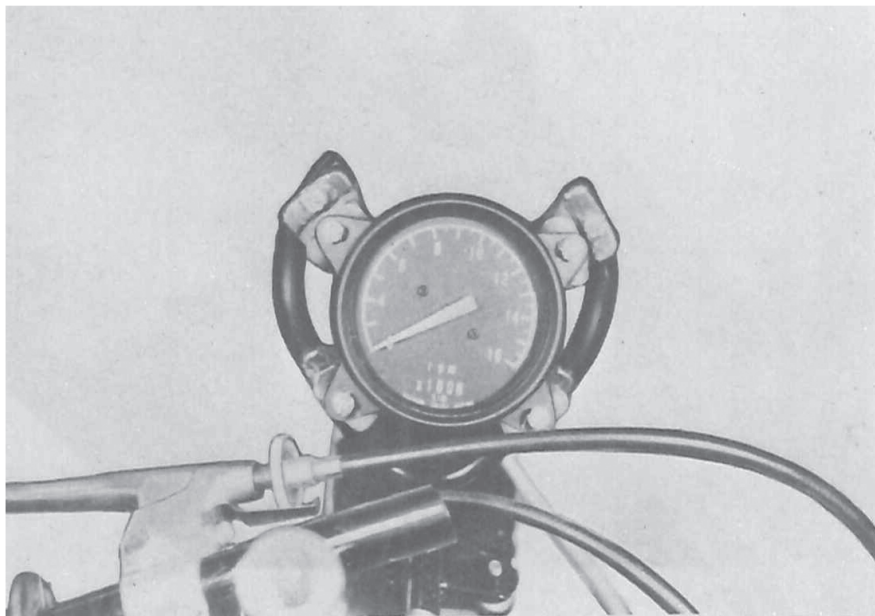
B. Oil tank

The Yamaha TA 125 engine is lubricated by oil from the oil pump in addition to the gas/oil mixture. It is advisable, therefore, that the oil tank be filled with Shell Super M or a similar quality oil.



II. WHAT SHOULD BE DONE BEFORE RACING

- A. The rider must be well versed in the function of each component of the machine, and the machine must be fully inspected and serviced before racing.
- B. If any irregularity is felt during a trial run, the machine must be given a thorough inspection.
- C. Before the race, the rider must make a full study of the course, paying particular attention to the length of the straight away, angle of each curve, conditions of the road surface, and gradient. In determining the carburetor setting (particularly the main jet), secondary reduction ratio, tire pressure, and spark plugs, the rider must take into account the weather, temperature and his own riding skill. All these factors must be determined during trial runs on the race course.
- D. The engine is designed to develop its maximum output at 9,000-10,000 r.p.m. Accordingly, the rider must keep a sharp eye on the tachometer while racing—he must maintain engine speed within this rpm range. The selection of gear ratios is most essential in this sense. Running the engine at more than 13,000 rpm for sustained periods will shorten the life of the engine. Therefore, the rider must try not to exceed 13,000 rpm.



- E. The rider must bend his body forward and crouch as low as possible behind the cowling so that the air resistance against the body will be greatly reduced. This is one of the best measures to obtain full use of engine power.
- F. A good start is a dominant factor in winning the race.
Practice push until proficient with each type.
- G. The rider must be in good physical condition for racing. Before riding his machine, he should warm up his body by taking light exercise.
- H. As the machine increases in speed, the road shock will become greater, and all bolts, nuts and screws tend to come loose. Before the race, retighten all these fasteners and make sure that safety wire locks are in place.

III. DRIVING INSTRUCTIONS

A. Your new Yamaha motorcycle is, of course, subject to strict inspections and tests at the factory before shipment. It is advisable, however, that you study the foregoing thoroughly before racing. In addition, the machine should be checked for the following points:

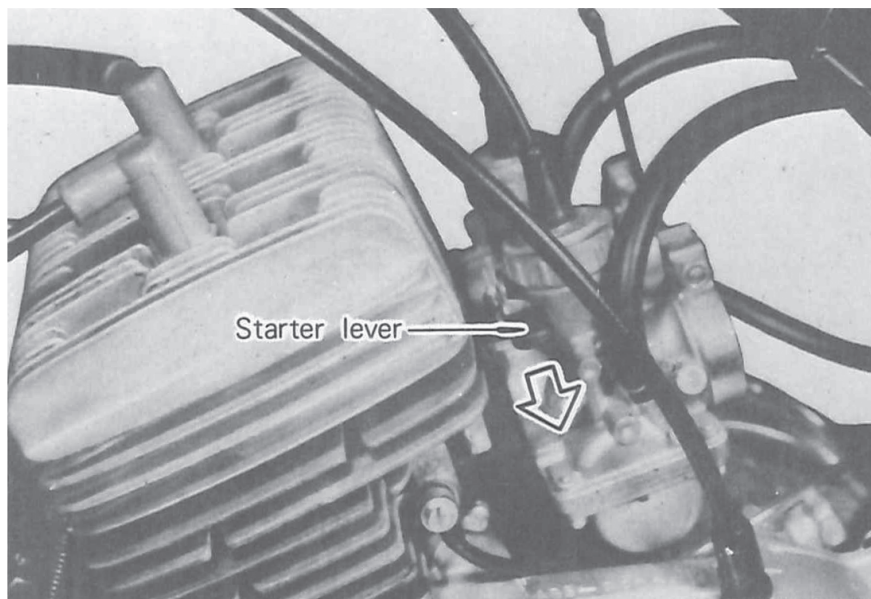
1. Check the bolts, nuts, and screws for looseness, and make sure that wire locks are in place.
2. Check for proper tire pressure.
3. Check for the correct gas/oil mixing ratio.
4. Make sure that the Autolube pump tank is filled with oil.
5. Check the transmission oil level.

B. How to Start the Engine Quickly

1. The TA 125 is equipped with a starter jet, which produces a rich fuel mixture required for starting the engine in cold weather.

a. Cold engine starts:

1. Pull down the starter lever.
2. Fully close the throttle grip, and give a strong push to start the engine.
3. Immediately after starting the engine, open the throttle grip and keep the engine running.
4. Return the starter lever to the original position.



b. Warm engine starts:

1. Do not use the starter lever.
2. Slightly open the throttle grip (giving 1/4 to 1/3 turn), and give a strong push.

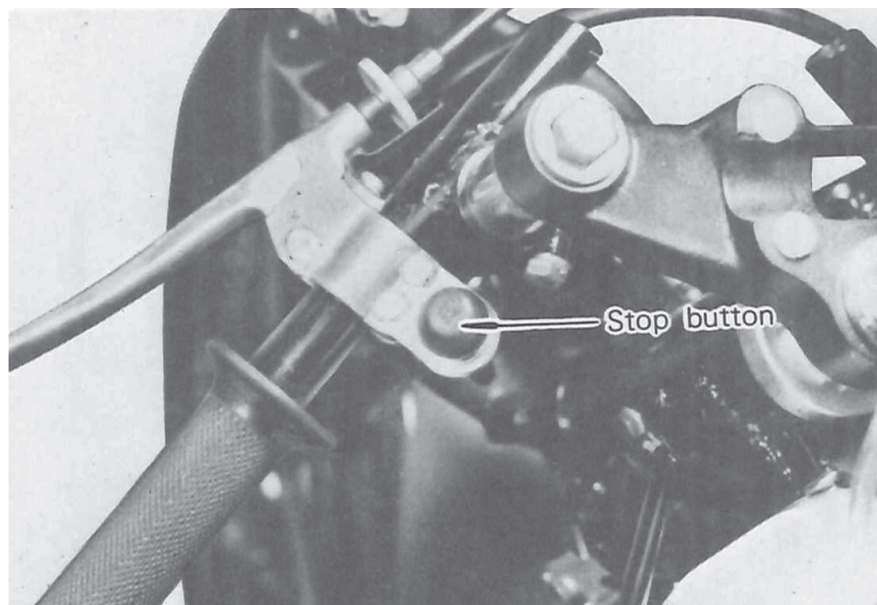
2 Warming up the Engine

With a hotter than normal spark plug (NGK B-7E or B-8EN), run the engine at varying speeds below 5,000 rpm for 3-4 minutes. Next, run the engine at varying speeds of less than 6,000 rpm for 2-3 minutes. After the engine is fully warmed up, rev it several times, being careful not to exceed 8,000 rpm. Next shift to 1st gear, and run the machine over a short distance, raising the engine speed to 8,000 rpm under load, in first. Fully close the throttle valve, and at the same time, disengage the clutch. This prevents excessive gasoline from entering the crankcase, thus facilitating the next starting.

3. Break-in:

After warming up the engine, replace the spark plug with a racing type (NGK B-10EN), and run the machine 30-40 miles (50-60 km) at 6,000-7,500 rpm maximum.

4. Engine stop button



After stop the engine, turn off the cock the moment.

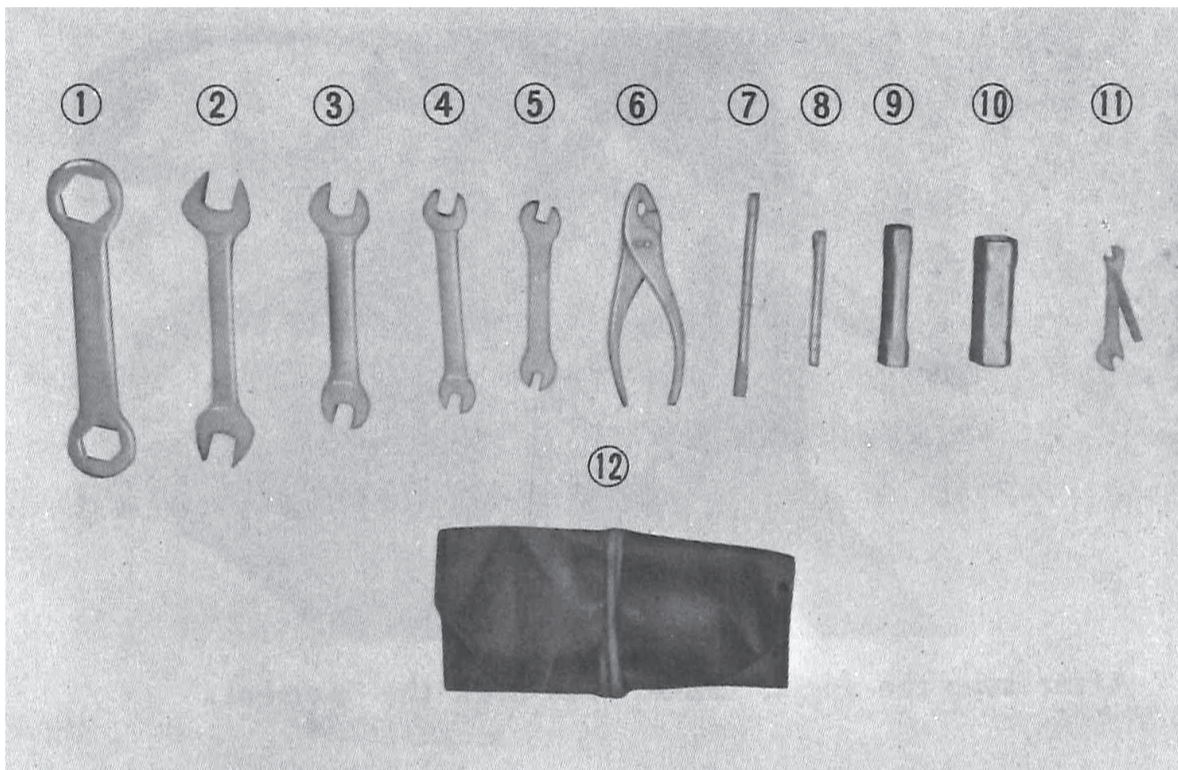
Inspection and Adjustment

The following points should be checked or serviced by the owner himself or his service dealer, before and after each race.

I. Inspection and adjustment to be done by the owner himself:

a. Service Tools

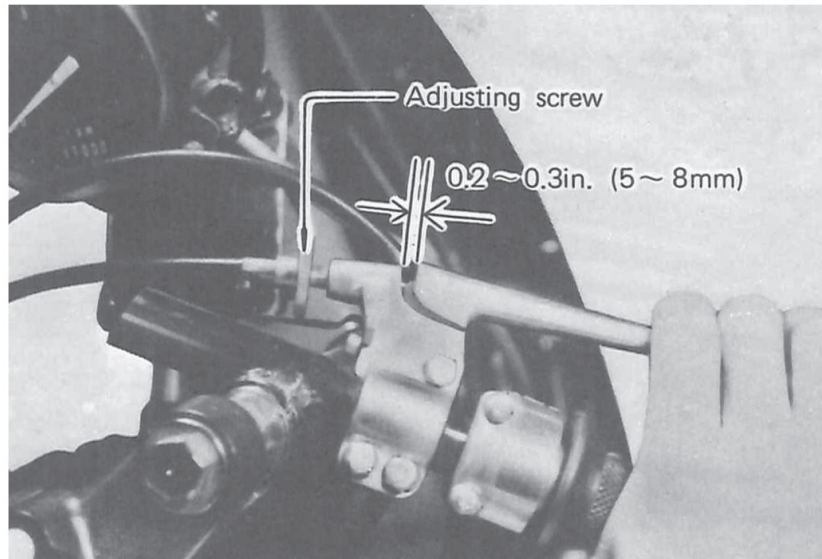
1. Special wrench 22×29
2. Wrench 19×22
3. Wrench 13×17
4. Wrench 10×12
5. Wrench 8×10
6. Pliers
7. Combination slotted & Phillips type screw drivers
8. Phillips type screw driver
9. Screw driver handle
10. Box wrench 17×21
11. Point wrench 5.5×7
12. Tool bag



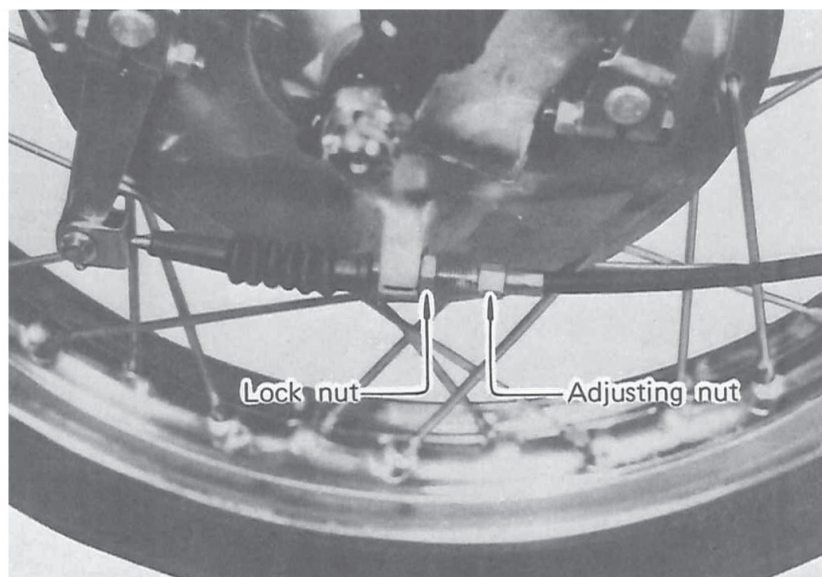
2. Brake Adjustment

Front Brake:

The front brake is double leading shoe type. To ensure powerful braking, the brake lever must have a play of 0.2-0.3 in the following manner.

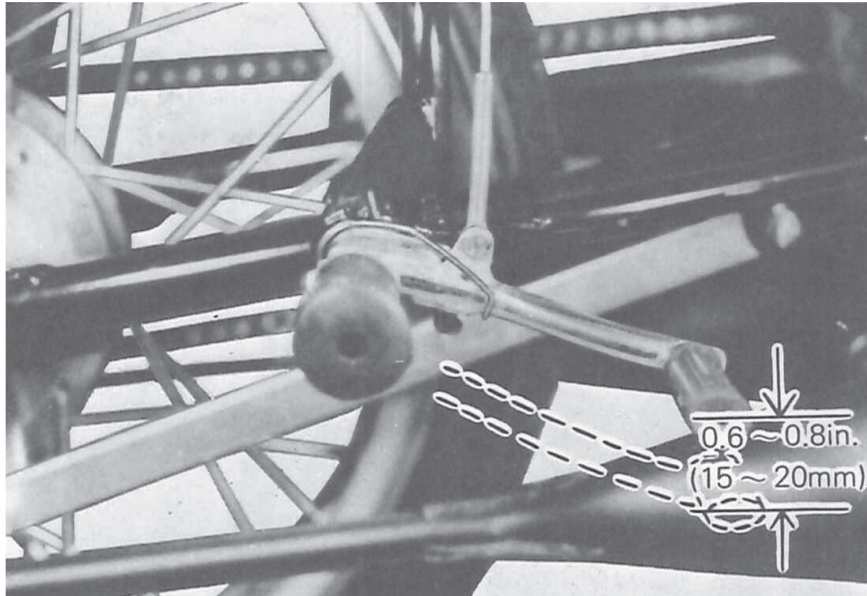


- a. Fully tighten the adjusting screw on the lever holder end.
- b. Next, loosen the lock nut, and turn the adjusting nut, and adjust the play of the lever to 0.2-0.3 inches (5-8 mm), and tighten the locknut. This adjustment should be made on the adjusting screw and adjusting nut.



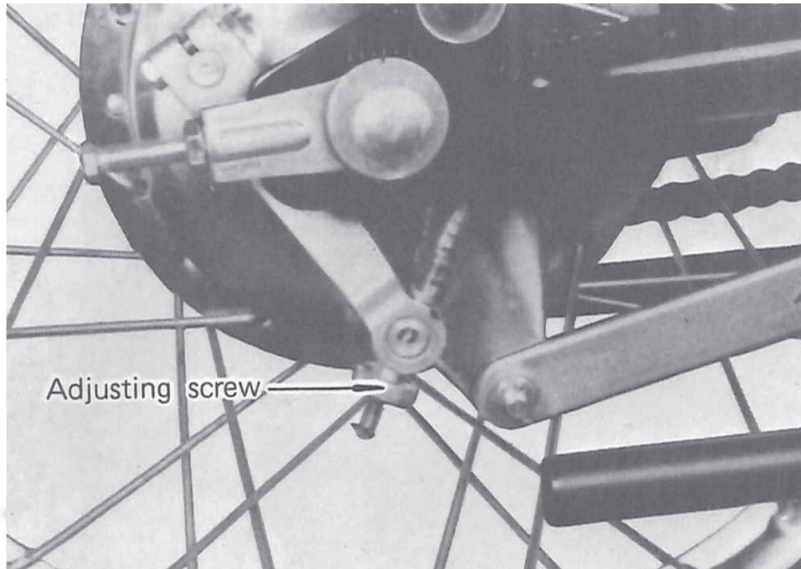
Rear Brake

The rear brake pedal must have a play of 0.6 - 0.8 inches (15-20 mm). Adjustment should be done in the following manner.



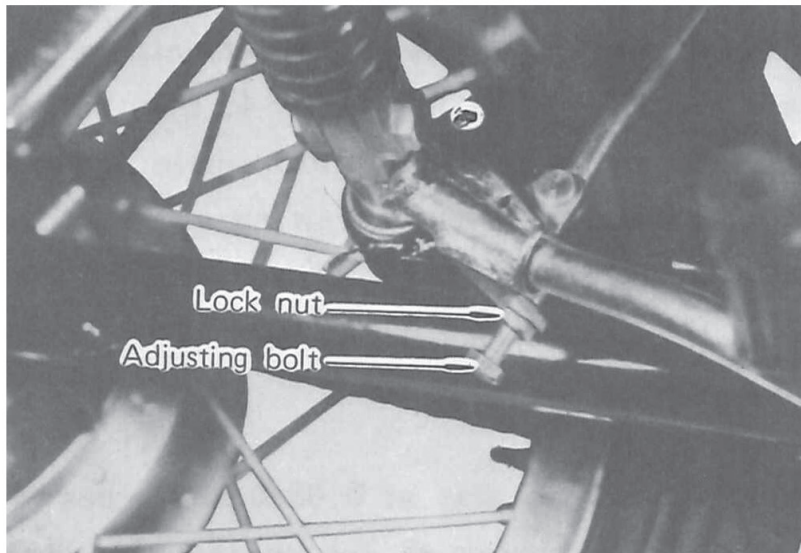
1. Adjusting Rear Brake Play

The play of the rear brake can be adjusted by turning the adjusting screw on the brake cable end. Tightening the adjusting screw reduces the play, and vice versa.



2. Adjusting the Brake Pedal Position

The brake pedal position may be adjusted at the rider's choice by turning the adjusting bolt on the brake pedal side.



3. Checking the Chain Tension

Check the chain rollers for rust, wear, seizing-up, etc. If any roller is faulty, replace it. Wash away the dust and dirt from the chain with gasoline, and apply motor oil to the chain.

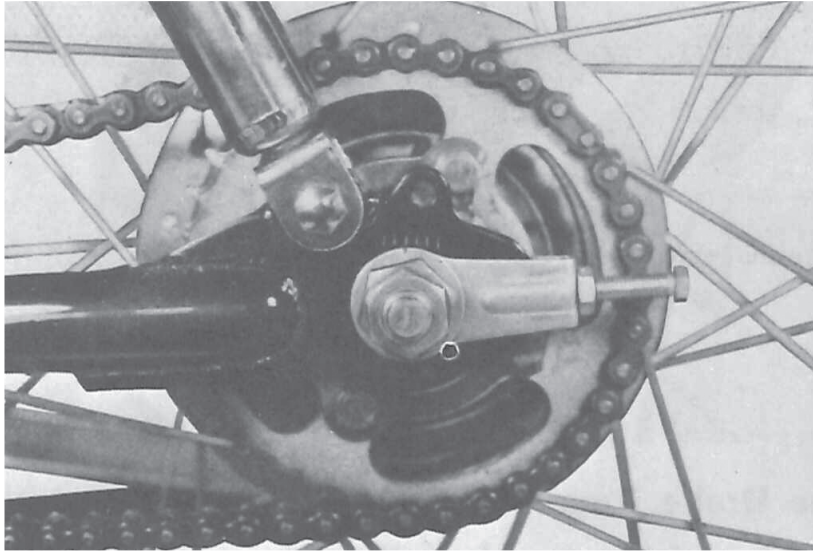
Adjusting the Chain Tension:

Chain tension can be checked in the following manner:

- a. With the rider on the machine and both wheels on the ground, raise the chain. At the mid-point there should be 3/8-1/2" slack.

The chain should be replaced every 300 miles of running.

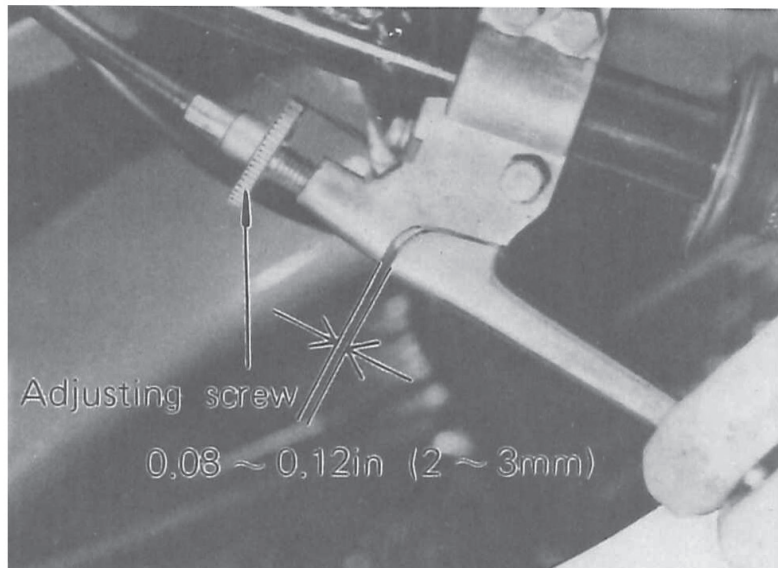
Adjustment should be performed as follows:



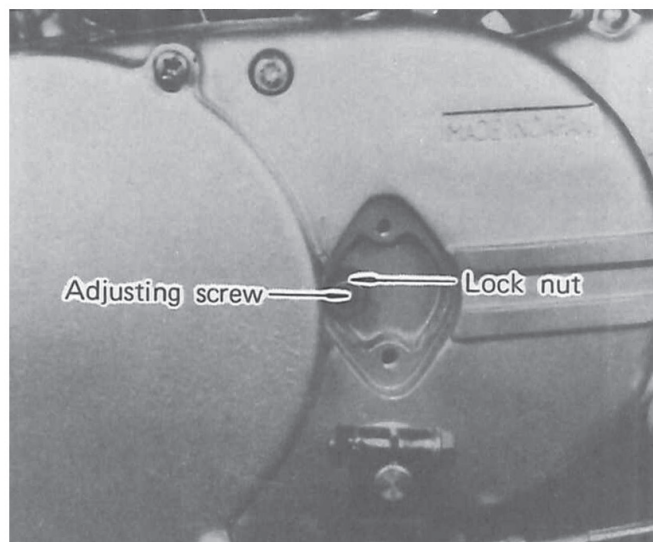
- a. Loosen the sprocket wheel nut 1 .
- b. Loosen the rear wheel shaft nut 2 .
- c. Loosed the chain puller lock nut 3 respectively on the right and left sides, and turn the adjusting screw 4, then pulling the rear wheel shaft evenly on both sides. (Both chain pullers should be positioned in the same scale on the swing arm.)
- d. After the adjustment, tighten the rear wheel shaft nut 2, the lock nut 3, and the sprocket nut 1, in this order. Finially, tighten the tension bar set bolt.

4. Clutch Adjustment

The clutch lever must have a play of 0.08-0.12 inches (2-3 mm) in order to enable the clutch spring to act on the clutch facing with full pressure. If the play is excessive, the clutch action will be ineffective. On the other hand, if the play is insufficient, the clutch may slip. Adjustment should be made in the following manner:

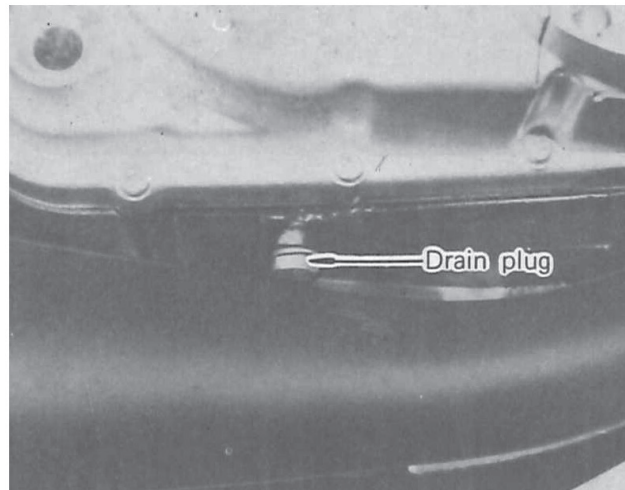


- a. Tighten the adjusting screw on the clutch lever holder side.
- b. Remove the clutch adjusting cover on the left hand side of the crankcase.
- c. Loosen the lock nut, and loosen the clutch adjusting screw. Then slowly tighten the screw until it just touches bottom.
- d. Back off the adjusting screw 1/4 turn from the lightly seated position.
- e. Adjust the play with the adjusting screw attached to the lever holder.

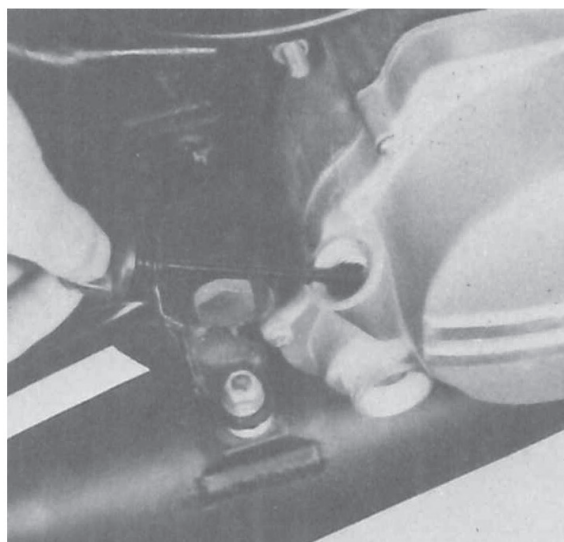


5. Replacing the Gear Oil

- a. The oil should be replaced for each race.
 1. Remove the drain plugs on the crankcase bottom and drain the oil.



- b. After draining the oil, replace the drain plugs. In accordance with the regulations of racing, the drain plugs should be locked with safety wire. The oil should be fed through the oil hole in the right crankcase cover. Do not exceed the specified amount.
Oil.....Motor Oil #10W/30, 750cc (0.8 US qts.)



6. Spark Plug

The specified plug is NGK B-10EN. Set the carburetor and secondary reduction ratio or adjust the gasoline/air mixing ratio so that the B-10EN spark plug may be used, irrespective of weather conditions. The spark plug should be checked after running at, or near, full throttle on a straight course. If the spark plug insulator shows a light tan color, mixture is correct. If the machine is forced to run at lower speeds, run in a lower gear (3rd or 4th) and disengage the clutch before the pit-in, so that the spark plug can be checked in the dry state.

- a. Best.....When the porcelain is in the dry state, and the electrodes show a light tan or grey color.
- b. If the porcelain is burned white and shiny, the spark plug is overheated. A colder type spark plug or a richer gas/air mixture should be used.
- c. If the spark plug porcelain is black and somewhat oily, replace it with a hotter type or lean out the gas/air mixture.
- d. Generally, both spark plugs will show the same color. In the event of differing readings, right to left, the following items should be checked:
 1. Ignition timing is incorrect.
 2. The carburetor float is faulty.
 3. The main jet is clogged with dust and dirt.
 4. The fuel pipe is twisted.
 5. The gas leaked through a faulty cylinder gasket.
 6. The gas leaked due to a faulty crankshaft oil seal.
 7. The throttle valve openings are not synchronized.

Spark Plug	Application	Heat Range
B-77EC		
B-8EN	Warming up	Hot type
B-9EN	↕	↕
B-10EN		
T-544C	Racing	Cold type
B-11EN		

7. Carburetor Setting

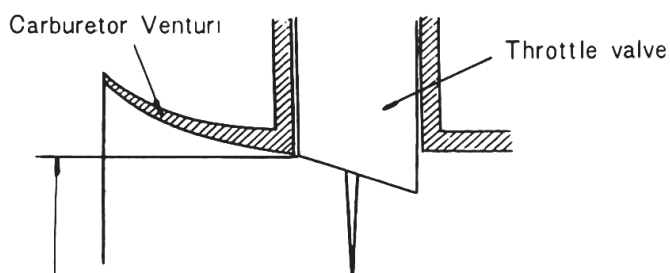
The carburetor was set at the factory after a strict test, and therefore, it seldom requires resetting. If the carburetor is improperly reset, poor engine performance may result. If the carburetor requires adjustment depending on weather, racing course, or other factors, carburetor setting should be made with special care. In particular, the carburetor is greatly affected by seasonal conditions or altitude. Accordingly, for setting the carburetor, consult your Yamaha service shop.

Carburetor Setting Standards:

Type	VM 26SC
Stamped mark	307 M 2
Main jet	# 200
Jet needle.....	5 F 15-2
Needle jet.....	N-0
Throttle valve cutaway...	1.0
Pilot jet	#40
Air screw setting	2 ½

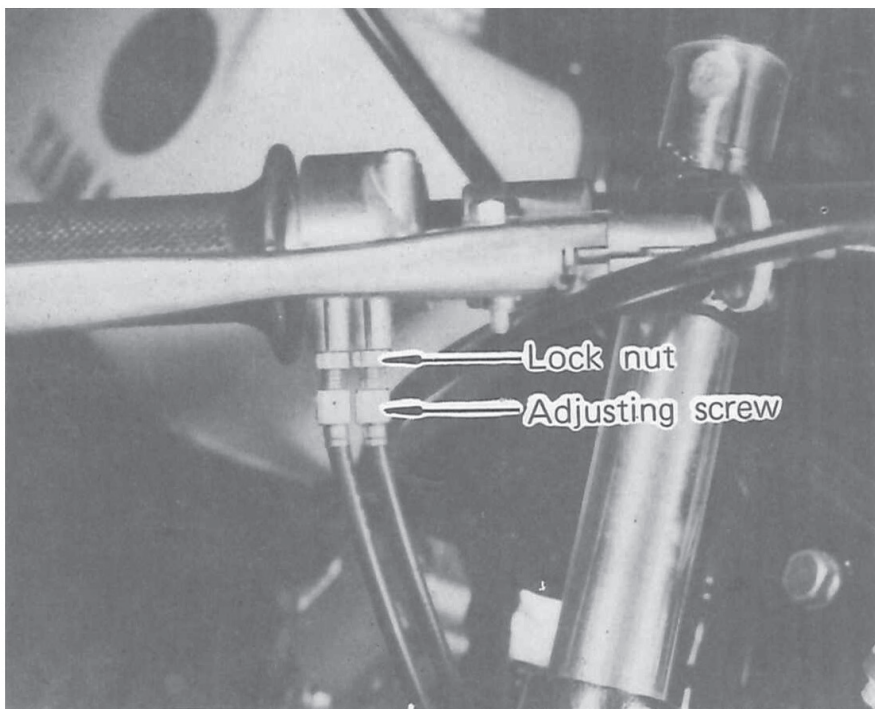
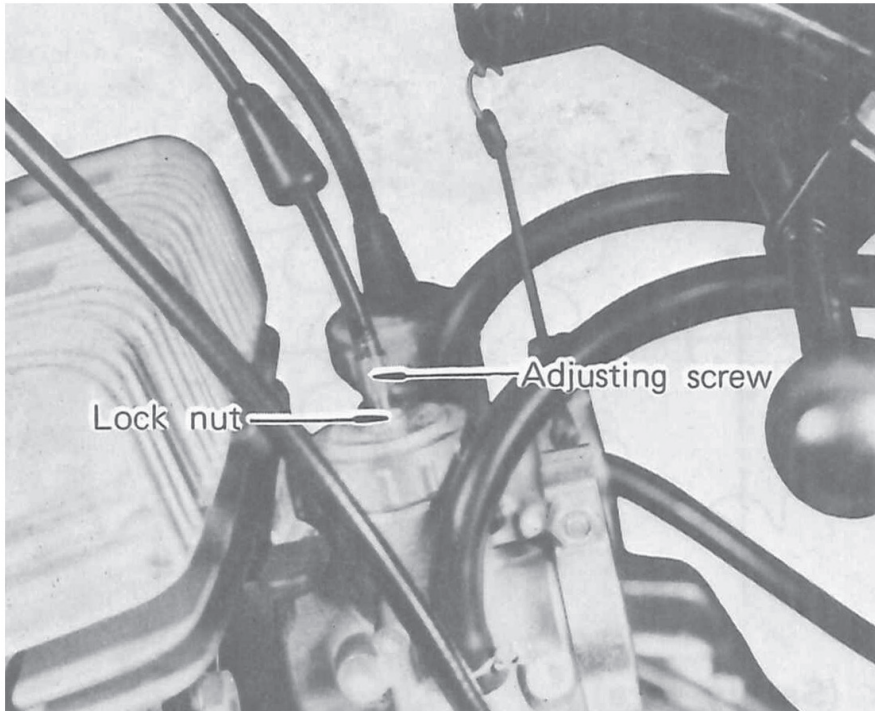
8. Throttle Valve Opening Adjustment

- Make sure that both carburetors fully open and close.
- Check the positions of both the throttle valve cut-aways just before they disappear at the top of the carburetor venturi bore. If they are not on a level with each other, the throttle cable should be adjusted by turning the adjusting screw on the carburetor cap or by turning the adjusting screw on the handle side.



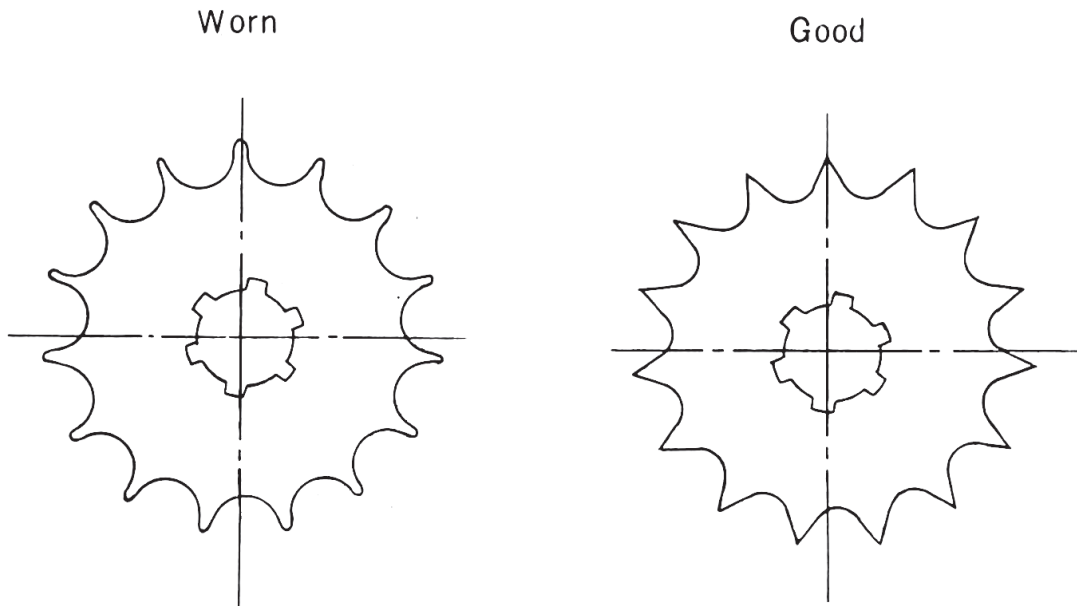
Open the throttle valve, and synchronize the throttle cables just before the cutaways disappear.

c. The adjustment can be made by the lock nut and adjusting screw .
Tightening the adjusting screw raises the throttle valve, and
vice versa.



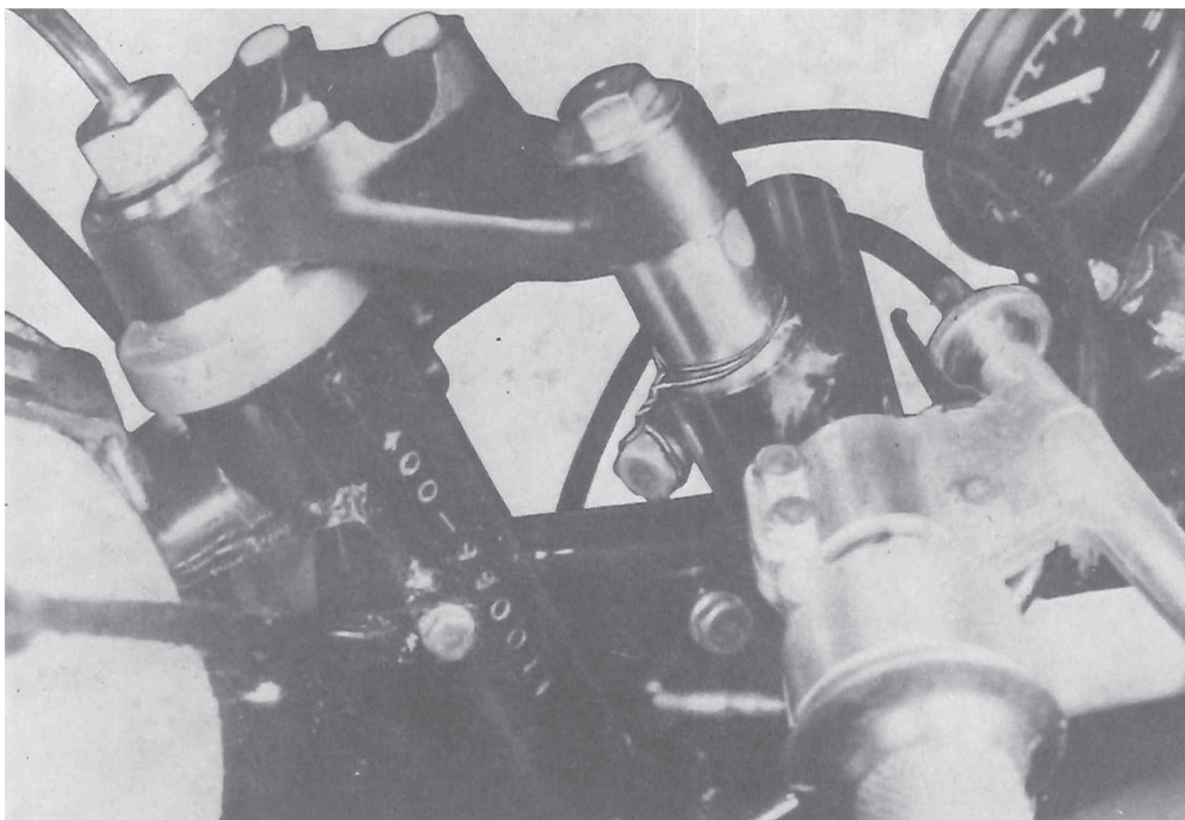
9. Checking the drive sprocket and the sprocket wheel.

A worn sprocket results in loss in the driving power and shorter service life of the chain. Check the teeth for wear. If worn, replace the sprocket.

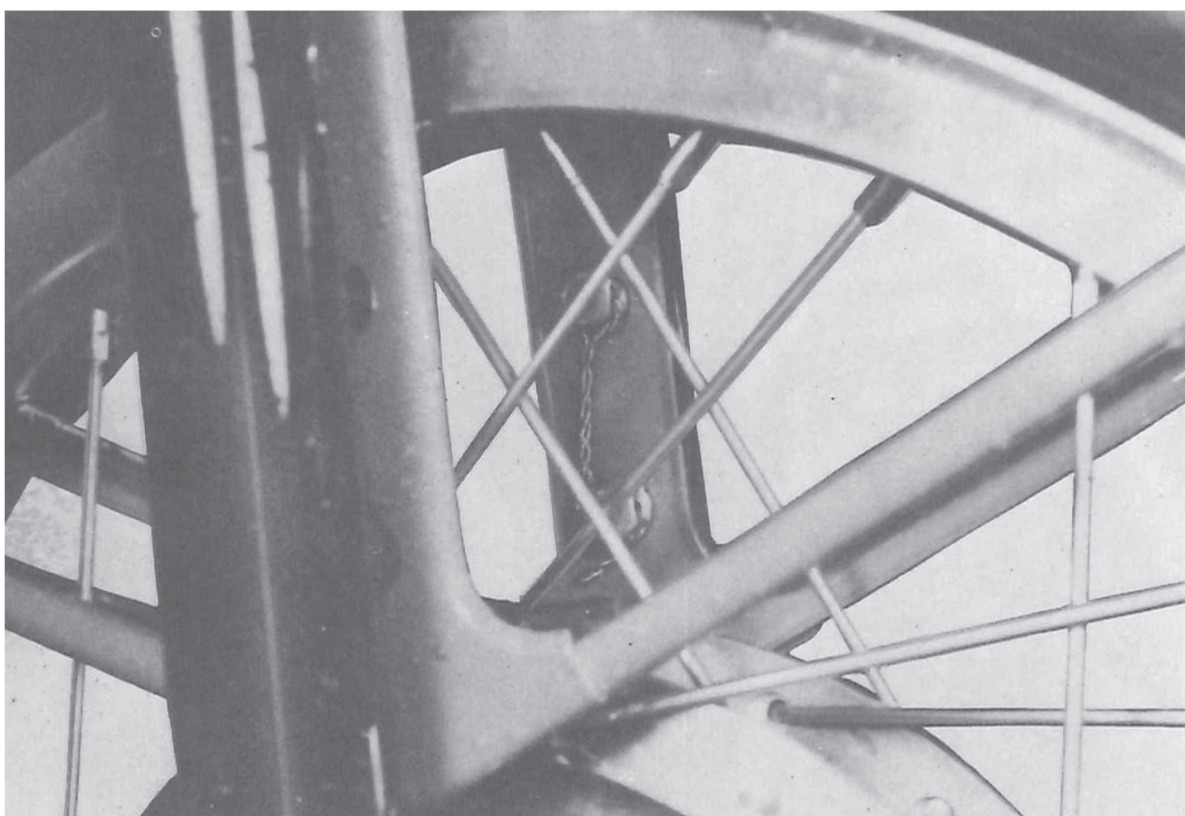


10. Wire lock (Safety wire)

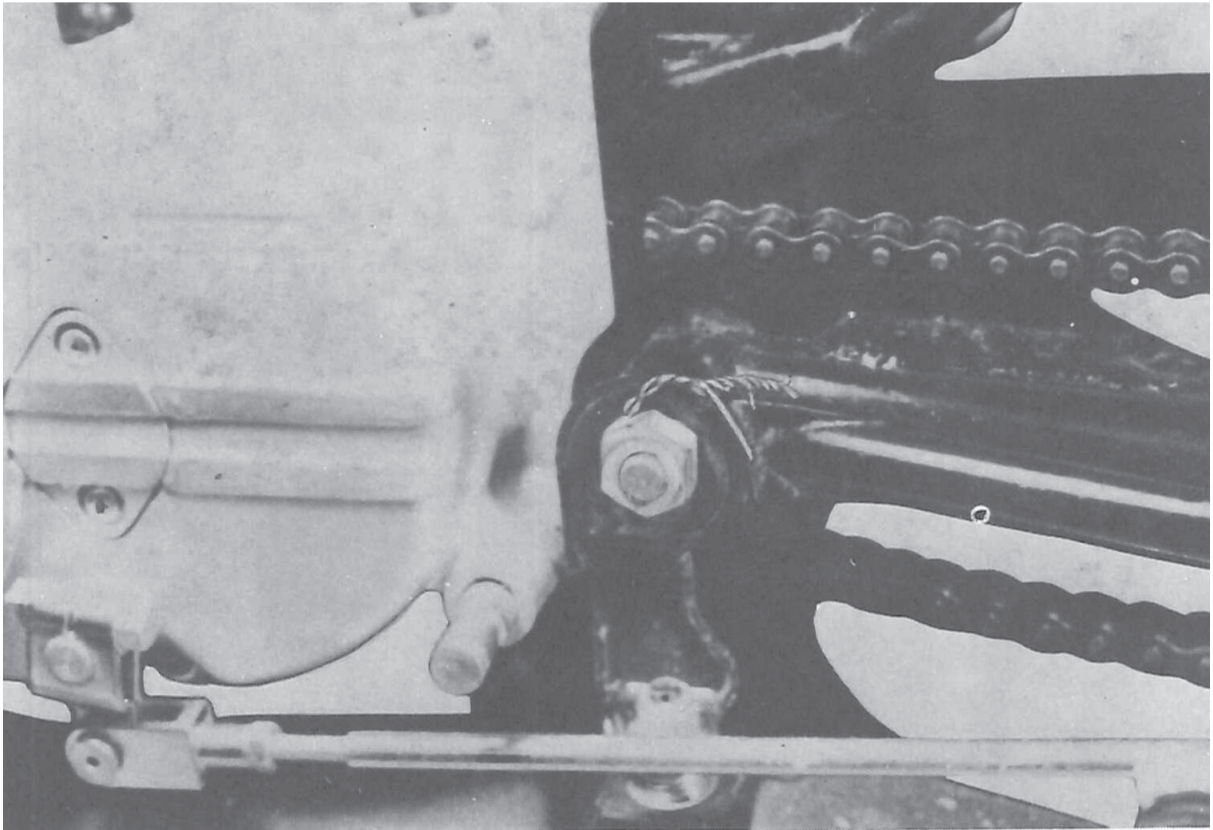
When the machine runs at high speeds, bolts, nuts and screws tend to become loose, thereby causing a grave accident. It is advisable that the following fasteners be locked with safety wire.



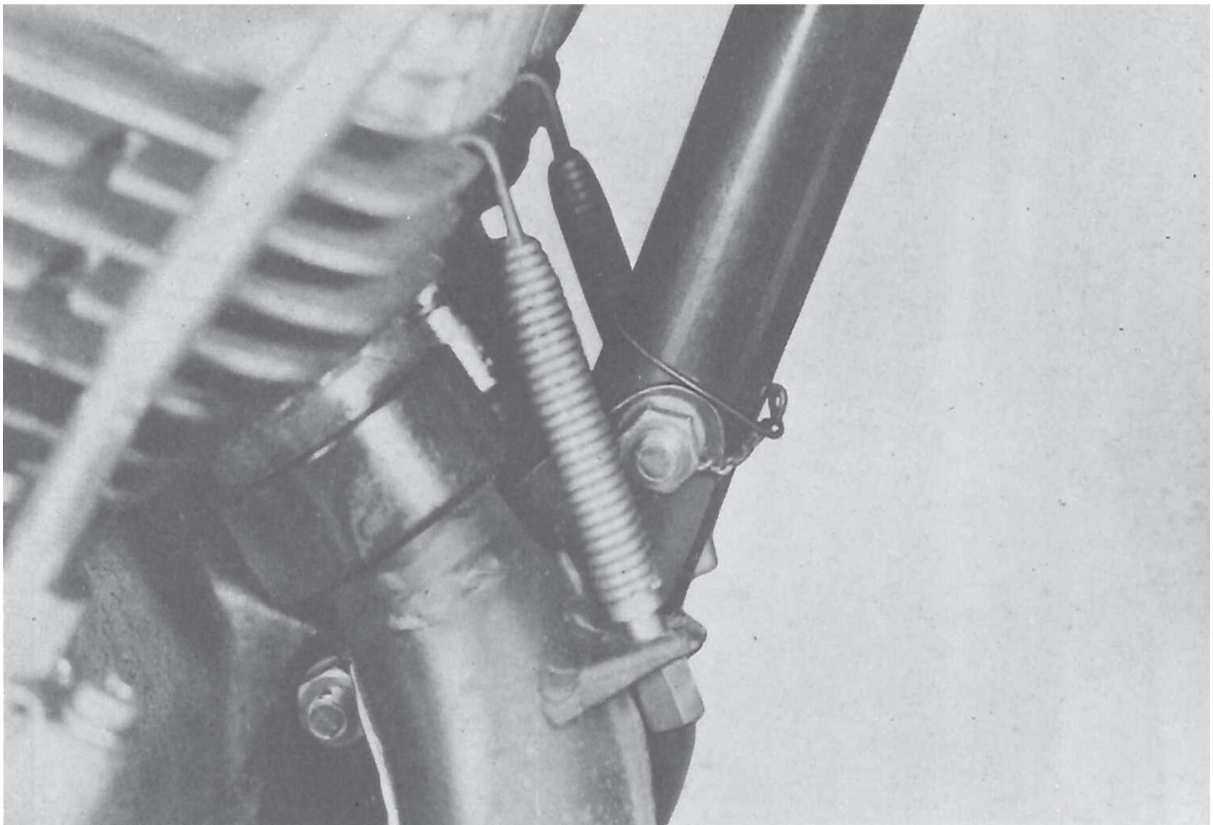
Handlebar set bolt



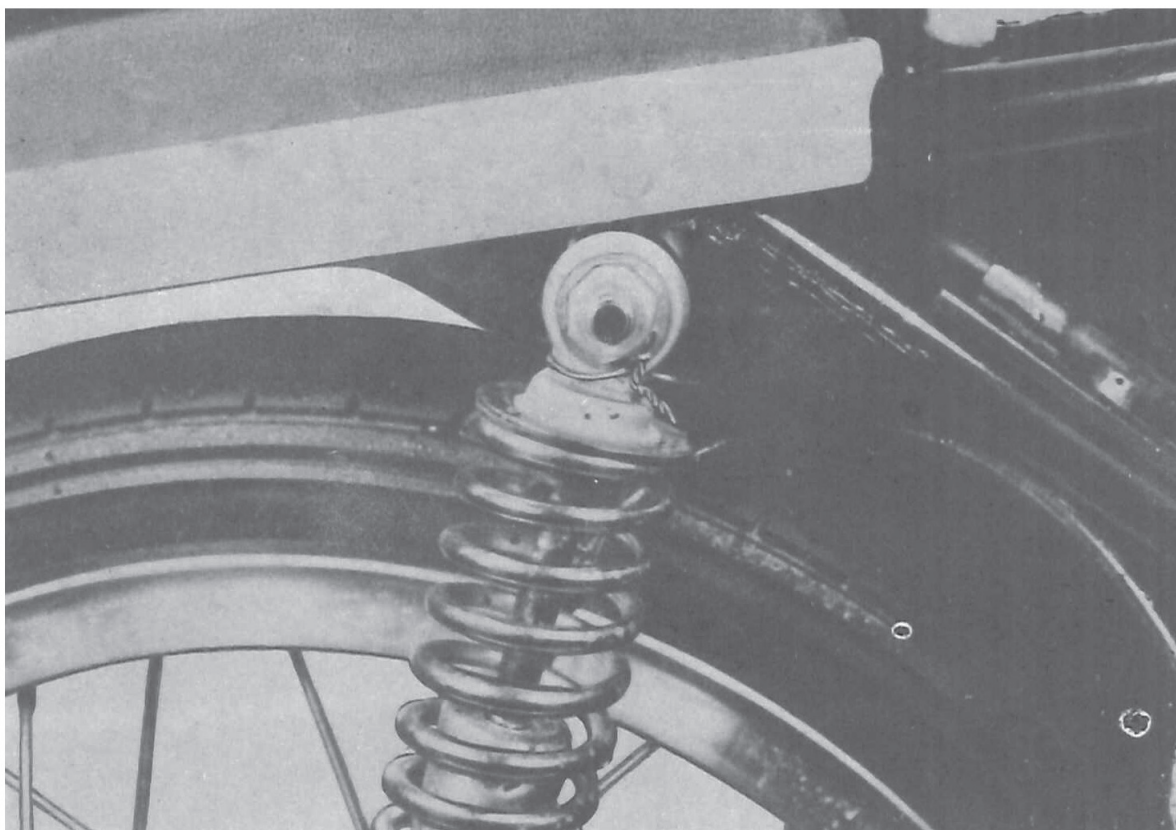
Front tension bar set bolt



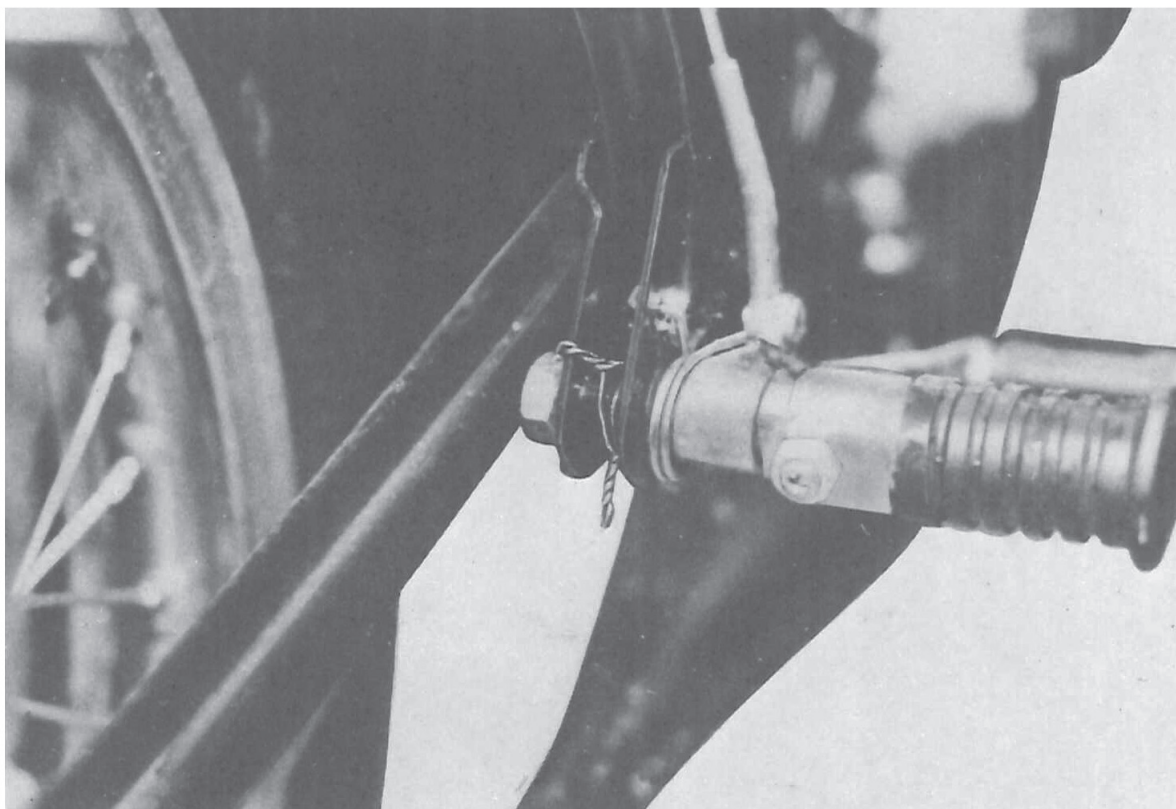
Swing arm set bolt



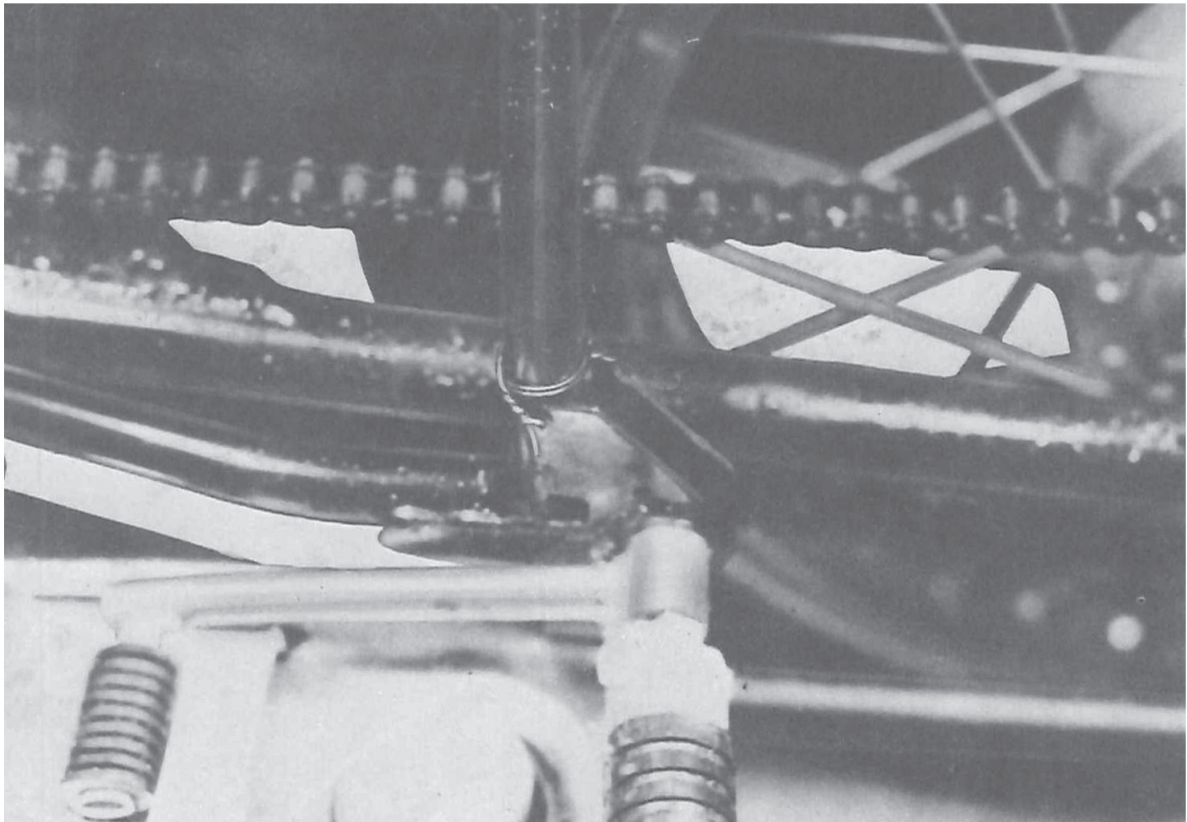
Engine mounting nuts



Rear cushion set bolt



Brake pedal & Footrest set bolt



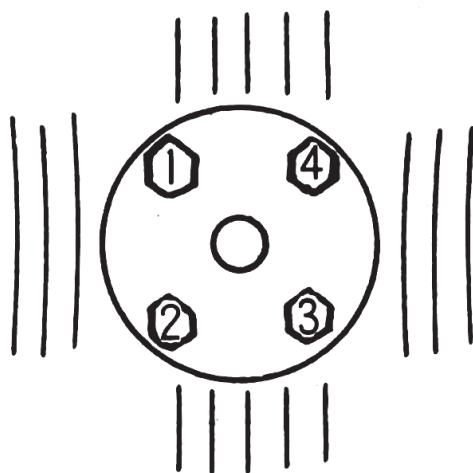
Change leber & Footrest set bolt

2. Dealer Maintenance

A. Inspection and Service to Be Done by Service Shop:

In addition to the inspection and service to be done by the owner himself, the following points should be performed by the Yamaha dealer.

- a. The cylinder inner wall is plated with hard chrome. Check the edge of each port and upper area of the cylinder bore for peeling-off of chrome. If the chrome peeling is a negligible amount, the cylinder may be used. But if in large amounts, the cylinder should be replaced.
- b. If the cylinder wall has a large amount of scuffing, check the piston ring for defects, and replace it if necessary.
- c. Check the combustion chamber for cracks and fusing, particularly cracks around the spark plug and fusing on the combustion chamber wall.
- d. If any gas leaks through the sealing surfaces between the cylinder head and the cylinder, smooth out the surfaces with 600-800 grit sandpaper placed on a surface plate. The cylinder gasket should be replaced with a new one.
- e. The cylinder head bolts should be tightened by a torque wrench. Proper torque is 170 lbs./in. (200 kg/cm). The bolts should be tightened in order of 1, 3, 4, and 2, and with a torque of 43 lbs/in (50 kg/cm), 86 lb/in (100 kg/cm) 130 lbs/in (150 kg/cm) and 170 lbs/in (200 kg/cm), in this order.

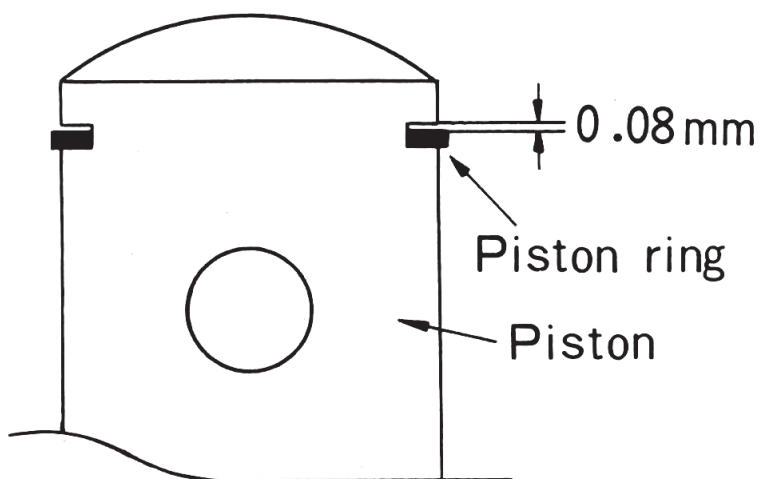


- f. The cylinder must be replaced after 600 miles (1,000 km) of racing.

B. Piston and Piston Rings

Inspection

1. Check the piston skirt and recessed edges, piston pin holes, and rims for cracks. If the piston is cracked, even slightly, it should be replaced.
2. If the ring land locating pin is found excessively worn, or if the ring land clearance is more than 0.08 mm, the piston should be replaced.

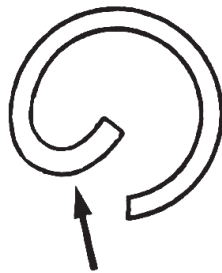


3. If any part of the piston gives particular resistance to the cylinder wall, it should be smoothed down with an oil stone or wet sandpaper (#600-800). Lightly wet sand the high spot on the piston with a cross-hatch pattern.
4. The piston ring should be replaced after about 300 miles (500 km) of racing. If the ring end gap is more than the specified, replace the ring.
 - a. Ring end gap should be 0.15~0.35 mm, when it is placed in the cylinder parallel to the cylinder bottom edge.
 - b. The specified ring gap, when the ring is fitted in the land, is 0.23 inches (5.5mm). If the gap is less than 0.2 inches, (5.1mm) replace the ring.

5. Check the piston ring for scratches caused by any cylinder port. If the ring has a scratch longer than one-third of the width of the ring, it should be replaced. In particular, check the exhaust port side.
6. The clearance between the piston and the cylinder wall should be 0.040-0.045 mm (0.0012"-0.0018").
7. When fitting the ring in the piston, avoid pulling the ring ends apart more than 0.8 inches (20 mm), as the ring may be deformed
8. Check the fixing pin for the piston ring.
Replace the piston if a gap is found.

C. **Piston Pin and Piston Pin Circlip**

1. Make sure that the piston pin can be snugly fitted in the piston hole (the pin can be inserted into the hole by lightly pushing it with your finger). If the piston pin hole has burrs, they should be removed with a reamer. If the piston pin is discolored due to heat or has steps worn in it, it should be replaced.
2. Check the piston pin circlip. If the bent portion is worn or deformed by the piston pin, or if it is loose when fitted in the piston pin hole, it should be replaced. If possible, the circlips should be replaced for each race.

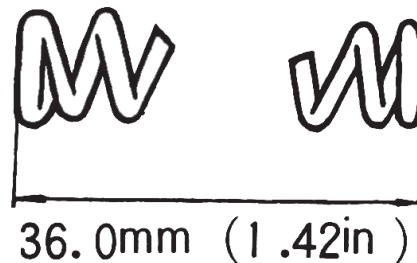


D. **Connecting Rod and Crankshaft**

Check the connecting rod small and large ends for discoloring. If discolored, check the crankshaft bearing for breakage. Rebuild or replace the crankshaft, if the bearing is found broken. The discoloring of the connecting rod ends sometimes is caused by oxidized oil stains. If so, just wipe off the discolored area. The crankshaft should be rebuilt after 600-700 miles of racing, even if no defects are found.

E. Check the clutch plates, friction plates and clutch springs.

Replace any worn friction plates or any burnt clutch plates. Check the clutch springs for fatigue. If the free length is .04" (1 mm) smaller than standard valve the spring should be replaced.



F. Gears

Check the transmission gears for wear, and check the gear dogs for proper meshing. If wear, discoloring or pitting is found, replacement is required. If any shim or circlip is found excessively worn, it should be replaced.

G. Bearings and Oil Seals

If any bearing or oil seal is found worn or scratched, it should be replaced.

H. Gaskets

Replace any broken or excessively worn crankcase cover gasket due to repeated use. It is advisable to apply a bond to the cover. It prevents breakage or slipping out of the gasket.

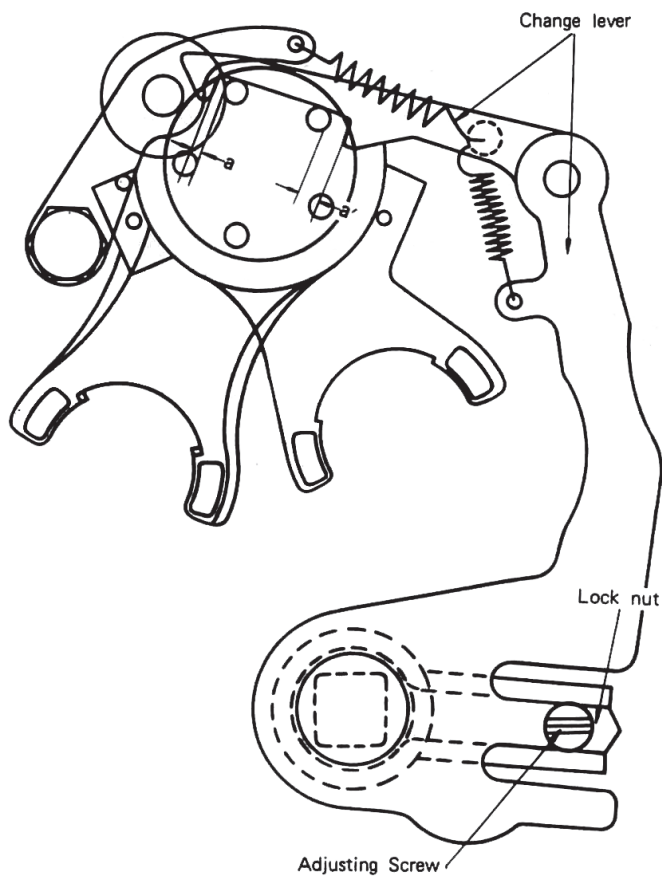
I. Adjusting the Gear Shifting

If gear shifting is difficult—hard or slipping, the following points should be checked.

J. Push rod

Apply grease and oil on the push rod in fitting it.

K. Gear shift arm



Check to see that distance **a** is the same as **a'** in the figure at the left, showing the relationship between change lever and the shift drum pin.

For adjustment, loosen the lock nut, and change the gear shift arm position by turning the eccentric adjusting screw so that **a** becomes equal to **a'**. Then fully tighten the lock nut.

L. Oil Pump

The oil pump plunger is designed to move in and out at full stroke, and the delivery volume is controlled by engine speed (crankshaft rpm) alone. Accordingly, adjustment is not required, but the following points should be checked.

1. Check the pump and crankcase joint for oil leakage. If oil leakage is excessive, the gasket should be replaced.
2. Check for air in the delivery pipe. If air is found, it should be expelled in the conventional manner, by bleeding the pump chamber. At the same time, the banjo bolts (on the pump and cylinder sides) should be retightened. Do not tighten excessively. This can crush the delivery lines.

M Engine Mounting

The engine mounting bolts should be tightened by use of a torque wrench.

Tightening torque:

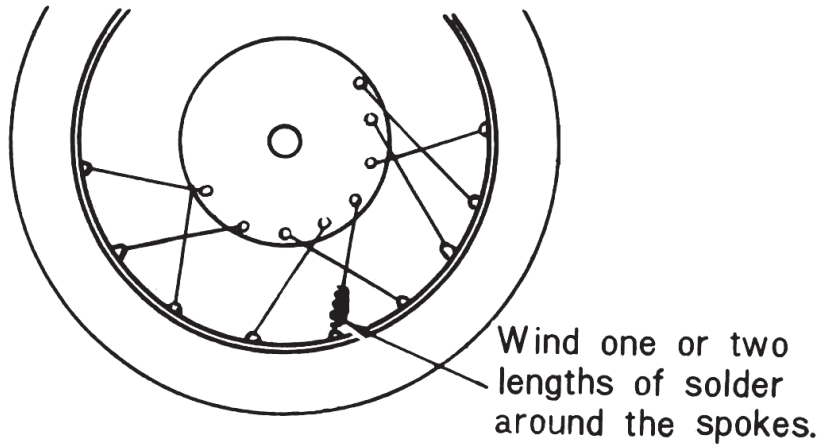
10 mm bolt.....260-350 in-lb (300-400 kg-cm)

8 mm bolt.....140-180 in-lb (150-200 kg-cm)

IV. CHASSIS

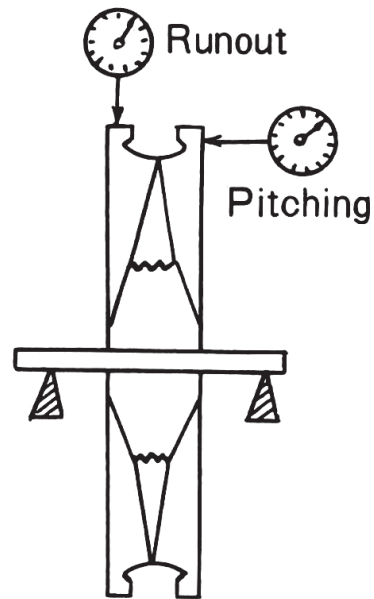
A. Wheel Assembly

1. After replacing a tire, be sure to balance the tire with one or two balance weights (solder having a diameter of 2 or 3 mm can be used).



2. Wheel Rim

- Runout 1 mm or less
 Pitch 1.5 mm or less
 Spoke tightening torque
 20-40 kg-cm (18-35 in-lb)



3. Tire Pressure

Tire pressure may need adjustment depending on the conditions of the racing course and weather.

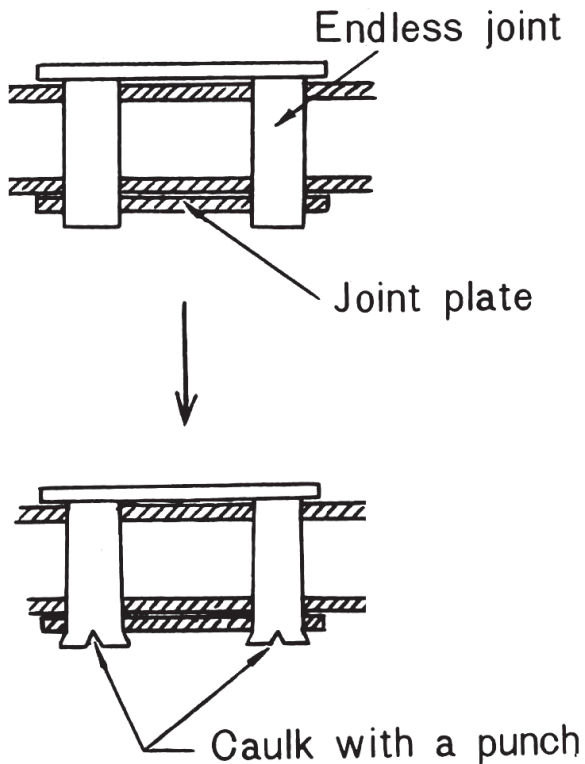
Generally, tire pressure should be adjusted as follows:

	Track Dry	Track Wet
Front	25.6 lbs/in ² (1.8 kg/cm ²)	24.2 lbs/in ² (1.7 kg/cm ²)
Rear	28.5 lbs/in ² (2.0 kg/cm ²)	27.0 lbs/in ² (1.9 kg/cm ²)

B. Chain

The chain of a tourist model is joined with a master link clip, but that of the TA 125 is with an endless joint, so that it cannot be easily disconnected. The chain size is DK 428 T.

The TA 125 chain should be linked in the following way:



Insert the endless joint and joint plate in the chain, and caulk the endless joint end with a punch.

The chain should be replaced every 300 miles (500 km) of racing, or sooner if necessary.

C. Front Fork

The front fork has built-in springs which are superior in shock absorbing efficiency.

- a. Oil4.6 fl. oz. (137cc.)
- b. Brand.....SAE #10h / 30 Motor Oil

D. Selecting the secondary gear ratio:

The TA125 secondary gear ratio is 36/16 (standard) but may need changing depending on the conditions of the course and weather.

In connection with this, the following parts are available.

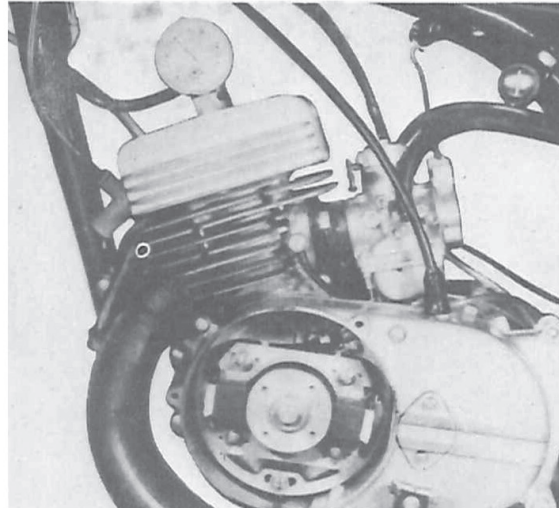
They are also usable for the TA 125.

- Drive sprocket..... 14T, 15 T, 16 T, and 17T
Sprocket wheel36 T, 37 T, and 38T.

V. ELECTRICAL EQUIPMENT

A. Adjusting Ignition Timing

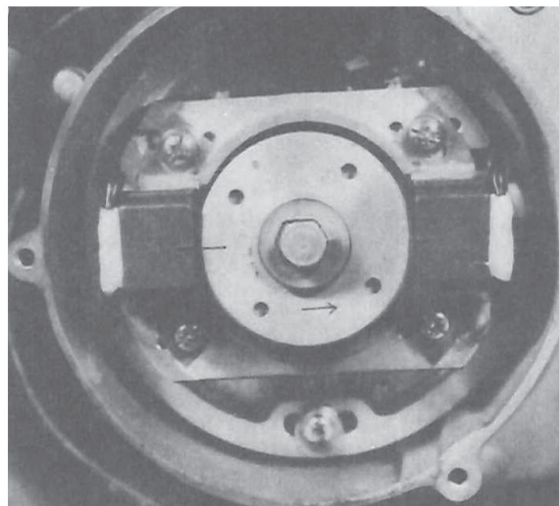
1. Install the dial gauge and dial gauge adapter in the plug hole of the cylinder head.
2. Turn the rotor to bring the piston to top dead center, and set the dial gauge to zero.



3. Turn the rotor in the opposite direction counterclockwise to the engine rotation, and set the ignition timing at 2.0mm (BTDC). This adjustment can be done by turning the pulser or the stator.

Pulser:

Adjust the adjusting plate so that alignment mark on the rotar is aligned with timing mark on the pulser.



Stator:

Loosen the stator set bolt and turn the stator to the left, and the ignition timing will be retarded. To advance the ignition timing, the stator should be turned to the right.

Note

The difference in the ignition timing between the two cylinders should be zero.

memo

memo



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