



**YAMAHA**

**YZ 80D**

**OWNER'S SERVICE MANUAL**

[www.legends-yamaha-enduros.com](http://www.legends-yamaha-enduros.com)

LIT-11626-00-42

# INTRODUCTION

Thank you for buying the Yamaha YZ80D.

This model is the product of many years of Yamaha experience and strict Yamaha quality control. The resultant ease of handling, high performance and reliability promise you full pride of ownership.

This model is a completely new design for rigorous motocross racing.

The assembly and inspection of each unit is performed in accordance with strict standards.

In this owner's service manual you will find information concerning basic handling, maintenance and minor repairs. Before operating the vehicle, please read this manual completely and carefully for a good understanding

of proper usage and safety.

**NOTICE:** \_\_\_\_\_  
**Some data in this manual may become outdated due to improvements made to the machine in the future. If there is any question concerning this manual, consult your nearby Yamaha dealer.**

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## YZ80D OWNER'S SERVICE MANUAL

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BUENA PARK, CALIFORNIA 90620

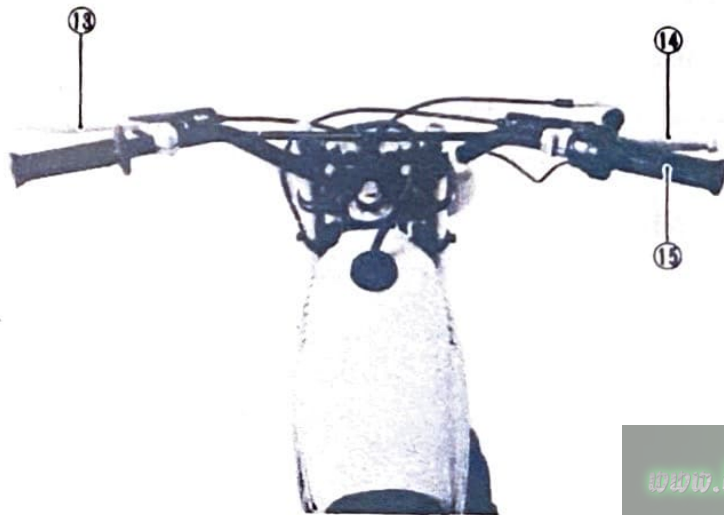
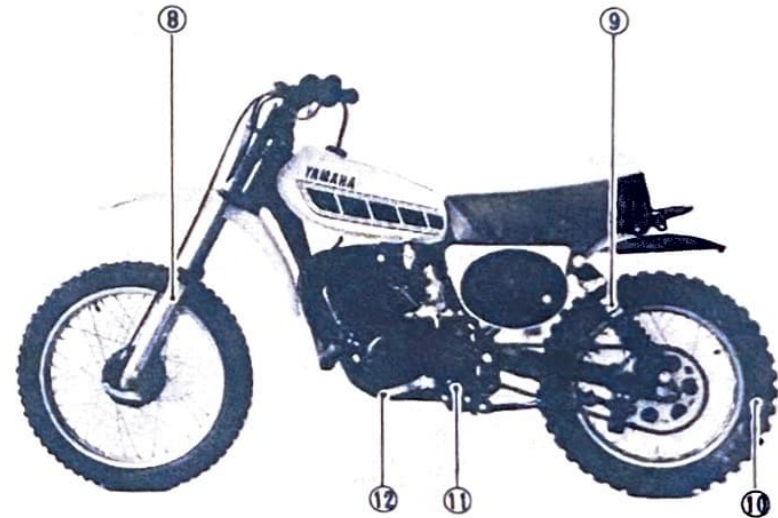
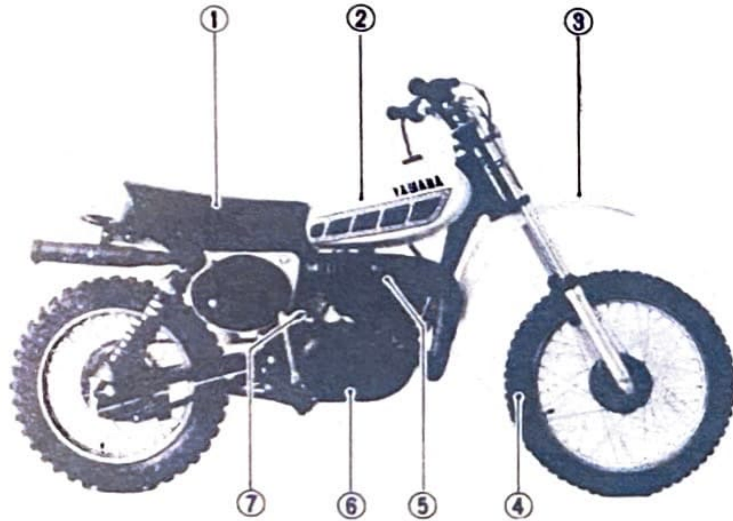
**LIT-11626-00-42**



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# NOMENCLATURE



1. Seat
2. Fuel tank
3. Front fender
4. Front wheel
5. Muffler
6. Rear brake pedal
7. Kick crank
8. Front fork
9. Rear shock absorber

10. Rear wheel
11. Footrest
12. Change pedal
13. Clutch lever
14. Front brake lever
15. Throttle grip

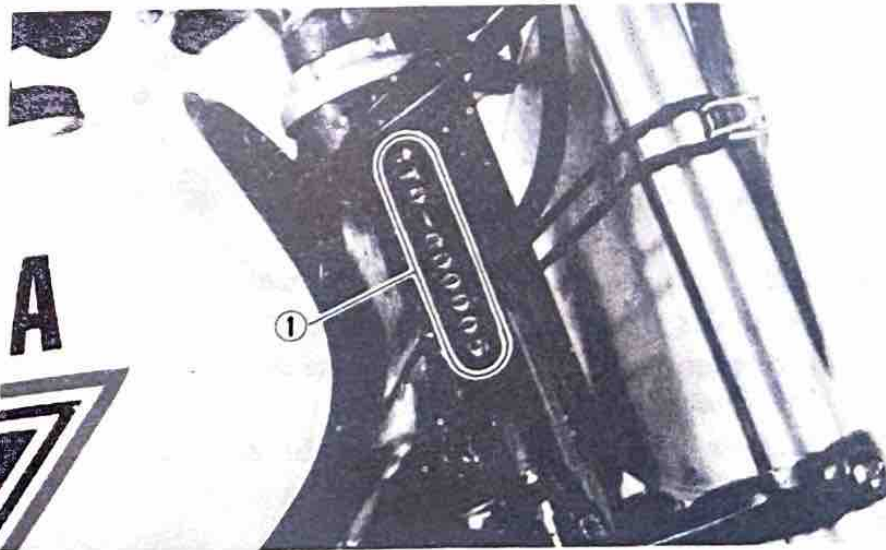
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# MACHINE IDENTIFICATION

## Frame number

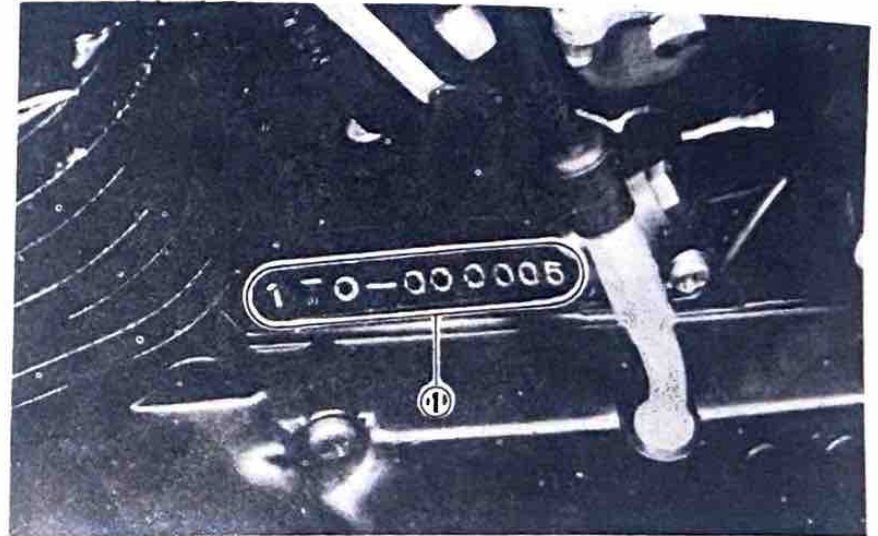
The frame number is stamped on the right side of the steering head stock.



1. Frame number

## Engine number

The engine serial number is stamped into the left side of the engine on top of the crankcase.



1. Engine number

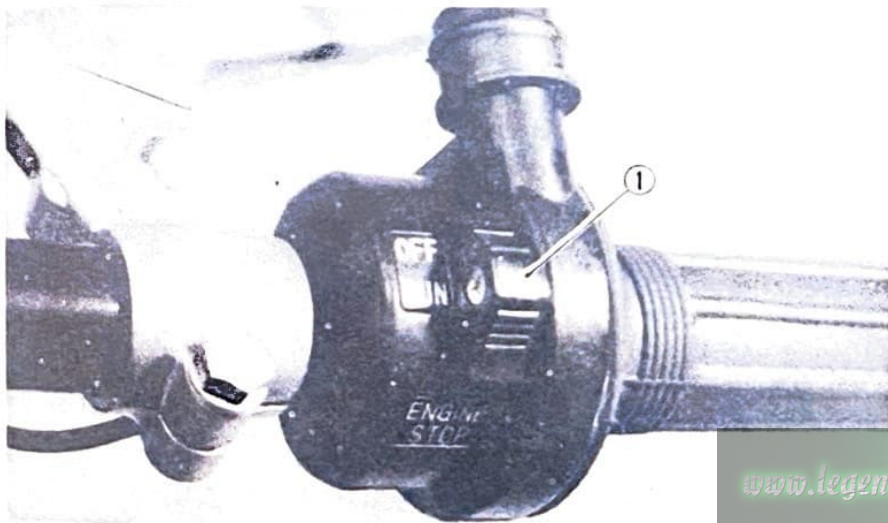
## NOTE:

The first three digits of these numbers are for model identifications; the remaining digits are the unit production number. The engine and frame serial numbers are usually identical but they may sometimes be 2 or 3 numbers apart.

# CONTROL FUNCTIONS

## “ENGINE STOP” switch

Make sure that the engine stop switch is positioned to “RUN” position. The engine switch has been equipped to ensure safety in an emergency such as when the motorcycle is upset or trouble takes place in the throttle system. The engine will not start or run when the engine stop switch is turned to “OFF”.



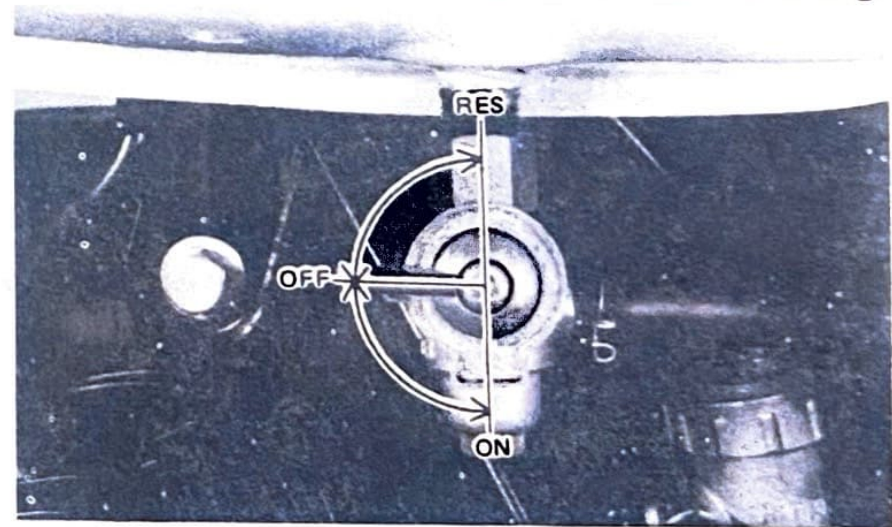
1. Engine stop switch

## Fuel petcock

The fuel petcocks function to supply fuel from the tank to the carburetor and also to filter the fuel.

The fuel petcocks have the following three positions:

**OFF:** With the lever in this position fuel will not flow. Return the lever to this position when the engine is not running.



**ON:** With the lever in this position fuel flows to the carburetor. Normal riding is done with the lever in this position.

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**RES:** This indicates "RESERVE". If you run out of fuel while riding, move the lever to this position. Then, fill the tank at the first opportunity.

### Front brake lever

The front brake lever is located on the right handlebar, pull it toward the handlebar to activate the front brake.

### Rear brake pedal

The rear brake pedal is on the right side of the motorcycle. Press down on the brake pedal to activate the rear brake.

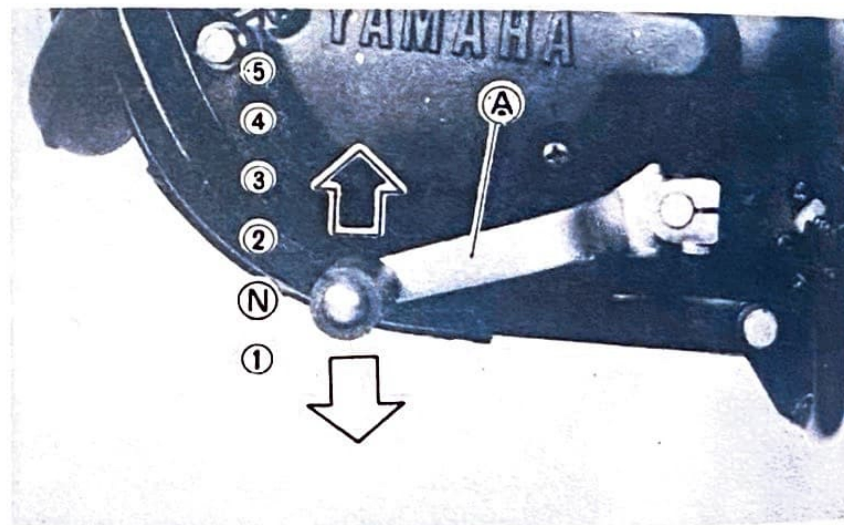
### Clutch lever

The clutch lever is located on the left handlebar and disengages or engages the clutch. Pull the clutch lever to the handlebar to disengage the clutch and release the lever to engage the clutch. The lever should be

pulled rapidly and released slowly for smooth starts.

### Gear shifting

The gear ratios of the constant mesh 5-speed transmission are ideally spaced. The gears can be shifted by using the change pedal on the left side of the engine.



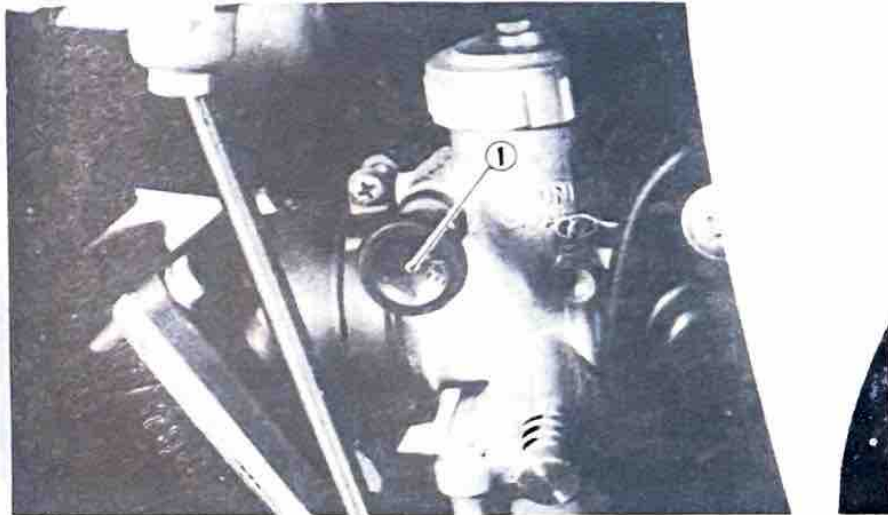
A. Change pedal N. Neutral

### Starter jet knob (choke knob)

When cold, the engine requires a richer fuel

mixture for starting. A separate starter circuit, which is controlled by the starter jet knob, supplies this mixture.

Pull the knob out to open the circuit (for starting) and push the knob in to close the circuit.



1. Starter jet knob

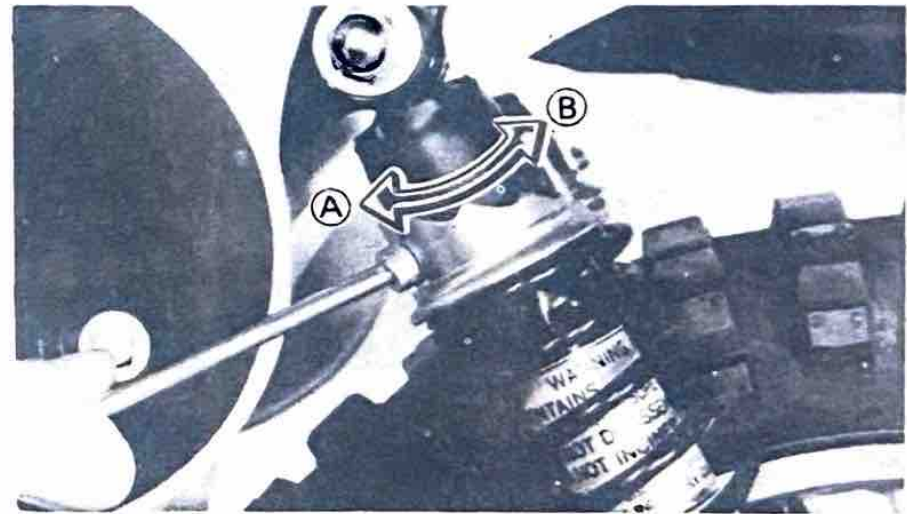
### Rear shock absorber

The spring preload of the rear shock absorber can be adjusted to suit rider preference and riding conditions.

If the spring seat is raised, the spring becomes softer and if lowered the spring

becomes stiffer.

**NOTE:** \_\_\_\_\_  
Adjust both the right and left sides to the same position.  
\_\_\_\_\_



A. Softer B. Stiffer

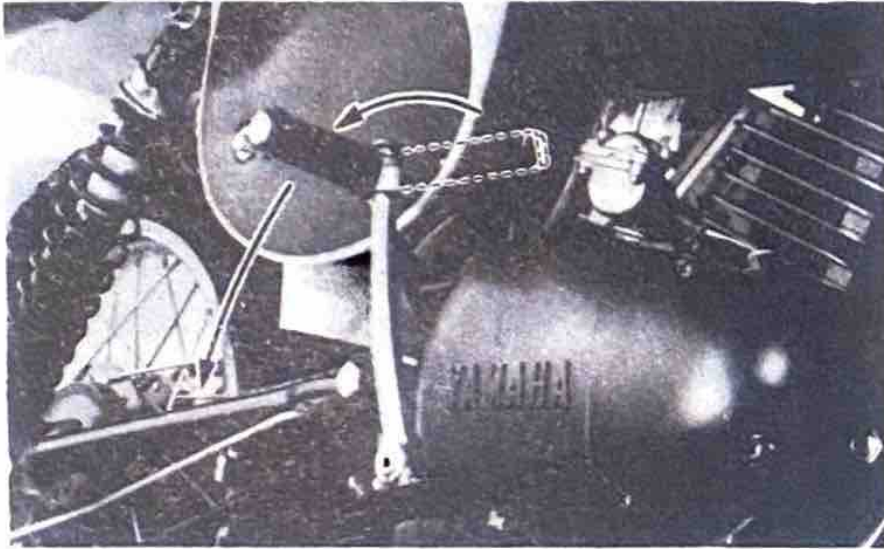
### Kick starter

To start the engine, rotate the kick crank, push down lightly with foot until gears engage, and then kick with full strength. This

model has the primary kick starter so the engine can be started in any gear if the clutch



is disengaged. As normal practice, however, shift to neutral before starting.



# PRE-OPERATION CHECKS

Item	Routine	Page
Brakes	Check operation/adjustment	28
Clutch	Check operation/lever adjustment	27
Transmission	Change oil as required	19
Drive chain	Check alignment/adjustment/lubrication	29
Spark plug(s)	Check color/condition	20
Throttle	Check for proper throttle cable operation	8
Air filter	Foam type — must be clean and damp w/oil always	22
Wheels and tires	Check pressure/runout/spoke tightness/axle nuts	8
Fittings/fasteners	Check all — tighten as necessary	—

**NOTE:** 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.



## Fuel

Always mix a fresh batch of fuel the morning of the race and do not retain a mixed batch overnight.

### Recommended fuel:

Premium gasoline (95 octane) mixed with recommended oil

Gasoline/oil mixing ratio: 20 : 1

Fuel tank capacity: 4.3 lit (1.1 US.gal)

### Recommended oil: \_\_\_\_\_

We recommended that your first choice be **Yamalube "R"** (2-cycle racing oil). If for any reason you should use another type, the oil should meet or exceed BIA certification "TC-W". Check the container top or label for service specification and mixing ratios.

## Tires

Check the tire pressure and check the tires for wear.

### Tire pressure

Front	1.0 kg/cm <sup>2</sup> (14 psi)
Rear	1.0 kg/cm <sup>2</sup> (14 psi)

### Throttle grip

Turn the throttle grip to see if it operates properly and if the play is normal. Make certain the throttle springs are closed when released.

# OPERATION

## CAUTION: \_\_\_\_\_

Before riding this motorcycle, become thoroughly familiar with all operating controls and their function.

Consult your Yamaha dealer regarding any control or function you do not thoroughly understand.

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## WARNING: \_\_\_\_\_

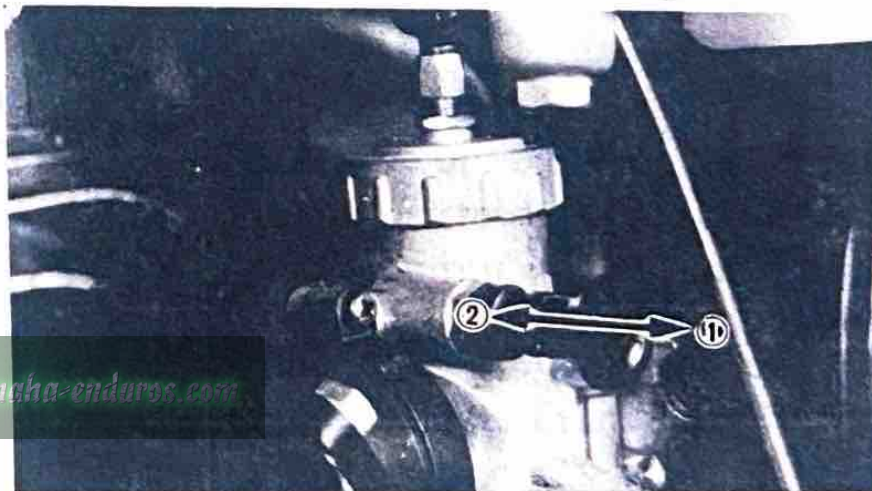
This model is not equipped with highway approved lighting. This model is designed solely for competition use and should not be used on a street or highway at any time. In most instances, it is illegal to drive this model on any public street or highway.

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## Starting a cold engine

1. Turn the fuel petcock to "ON".
2. Turn the engine stop switch to the "RUN" position.
3. Operate the carburetor starter jet (choke) knob and completely close the throttle grip.
4. Kick the kick crank with full strength to start the engine.
5. After the engine starts, warm up for one or two minutes. Make sure the starter jet (choke) knob is returned to the original position before riding.





## Starting a warm engine

To start a warm engine, refer to the "Starting a cold engine" section; the starter jet (choke) knob should not be used, but with the throttle opened slightly.

**CAUTION:** \_\_\_\_\_  
See "Break-in Section" prior to operating engine for the first time.

---

## Warming up

To get maximum engine life, always "warm-up" the engine 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 with the starter jet (choke) turned off.

## Engine break-in

1. Prior to starting, fill tank with a break-in

gasoline/oil mixture of 15 : 1.

2. Allow engine to warm up. Check engine idle speed. Check operating controls and engine stop switch operation.
3. Operate machine in lower gears at moderate throttle setting for 3 ~ 5 minutes. Check spark plug condition.
4. Allow engine to cool. Repeat procedure, running for 5 minutes. Very briefly, shift to higher gears (4th or 5th) and check full throttle response. Check spark plug condition.
5. Allow engine to cool. Repeat procedure, running for 5 minutes. Full throttle and higher gears may be used, but avoid sustained full throttle operation. Check spark plug condition.
6. Allow engine to cool. Remove "high" spots on piston with No. 600 grit, wet sandpaper. Clean, and carefully reassemble.



7. Remove break-in fuel/oil mixture from tank. Refill with 20 : 1 operation fuel/oil mixture. Check entire unit for loose or mis-adjusted fittings/controls/fasteners.
8. Re-start engine and check through entire operating range thoroughly. Stop. Check spark plug condition. Re-start. After 10 ~ 15 minutes operation, machine is ready to race.

## **PERIODIC MAINTENANCE AND MINOR REPAIR**

**CAUTION:** \_\_\_\_\_

**The following sections provide information for the disassembly, troubleshooting and maintenance of various components of the motorcycle. If you do not have the necessary tools and an understanding of the mechanical principles involved, please refrain from attempting repairs. The use of improper tools and/or procedures can cause major damage to the unit with resultant additional repair costs.**

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### **Special tool**

The maintenance procedures outlined within this manual require special tools and in-

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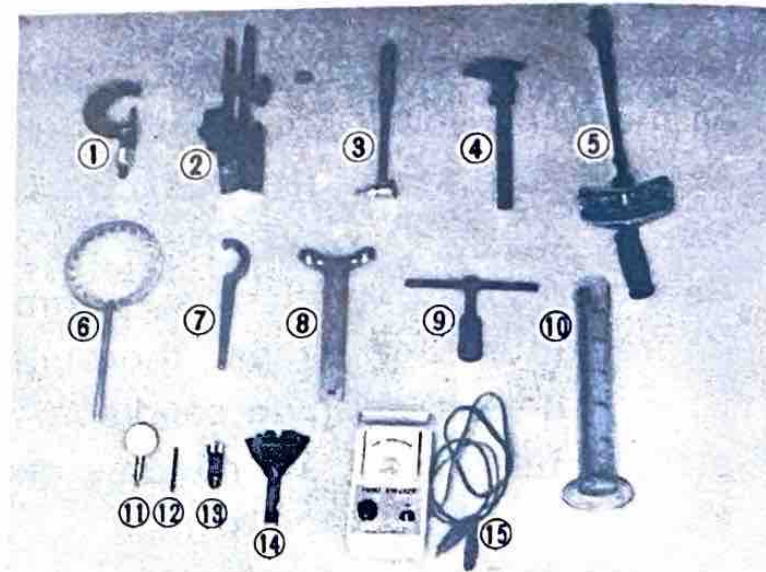
struments. A comprehensive list of the special tools is given below.

1. Outside micrometer (25 ~ 50 mm)
2. Magnetic base
3. Cylinder gauge (35 ~ 60 mm)
4. Vernier caliper (0 ~ 150 mm)
5. Torque wrench (0 ~ 10 m-kg)
- \*6. Clutch holding tool
- \*7. Steering nut wrench
- \*8. Flywheel holding tool
- \*9. Flywheel puller
10. Measuring cylinder (0 ~ 250 cc)
- \*11. Dial gauge
- \*12. Needle (56 mm)
- \*13. Dial gauge stand
14. Thickness gauge
- \*15. Point checker

**NOTE:** \_\_\_\_\_

These items marked with an asterisk(\*) available from Yamaha.

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## PERIODIC MAINTENANCE

The maintenance and lubrication schedule chart should be considered strictly as a guide to general maintenance and lubrication intervals. You must take into consideration that weather, terrain, geographical locations, and a variety of individual uses all tend to demand that each owner alter this time schedule to match his environment. For ex-

ample, 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 rust and damage. If you are to how closely you can follow these time recommendations, check with the Yamaha dealer in your area.



## MAINTENANCE AND LUBRICATION SCHEDULE CHART

Item	Recommended lubricant type	Race/Meet Interval					
		Every meet	Every second	Every third	Every heat (moto)	Every 6 months of racing	As required
<b>PISTON</b> ● Inspect ● Clean ● Replace		x					x
<b>PISTON RINGS</b> ● Replace			x				
<b>CYLINDER</b> ● Inspect (Compression Check) ● Clean ● Replace ● Check head bolt torque		x					x
<b>CLUTCH</b> ● Adjust ● Replace (Plates)		x					x
<b>TRANSMISSION</b> ● Change oil ● Inspect gears ● Replace bearing ● Inspect shift forks	No. 1		x			x x x	

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Item	Recommended lubricant type	Race/Meet Interval					
		Every meet	Every second	Every third	Every heat (moto)	Every 6 months of racing	As required
<b>ENGINE MAIN BEARINGS</b> ● Replace						x	
<b>CONNECTING ROD</b> ● Check bearings ● Replace big end bearing ● Replace small end bearing		x				x	( x ) x
<b>CARBURETOR</b> ● Check/Adjust/Tighten ● Clean and Inspect					x x		
<b>PISTON PIN</b> ● Inspect ● Replace		x					x
<b>EXHAUST SYSTEM</b> ● Inspect					x		
<b>FLYWHEEL NUT</b> ● Torque		x					
<b>KICK STARTER</b> ● Inspect idler gear ● Replace						x	x
<b>FRAME</b> ● Clean and Inspect		x					

Item	Recommended lubricant type	Race/Meet Interval					
		Every meet	Every second	Every third	Every heat (moto)	Every 6 months of racing	As required
<b>SWING ARM</b> ● Check					x		
<b>CONTROLS AND CABLES</b> ● Check and Adjust ● Lubricate	No. 2	x			x		
<b>BRAKES</b> ● Clean/Check/Adjust ● Replace		x			x		x
<b>WHEELS AND TIRES</b> ● Check pressure ● Check runout ● Check spoke tension ● Check bearings ● Replace bearings		x			x		x
<b>STEERING HEAD</b> ● Check ● Clean and repack	No. 3			x	x		
<b>IGNITION WIRING</b> ● Check connections		x					
<b>AIR FILTER</b> ● Clean and oil ● Replace	No. 5	x					x



Item	Recommended lubricant type	Race/Meet Interval					
		Every meet	Every second	Every third	Every heat (moto)	Every 6 months of racing	As required
SPARK PLUG ● Replace							×
DRIVE CHAIN ● Clean and lubricate ● Check tension and alignment ● Replace	No. 2				×		×
FITTINGS AND FASTENERS ● Tighten					×		
FUEL TANK ● Clean/Flush ● Clean petcock filter		×	×				
FRONT FORKS ● Drain and refill ● Replace seals	No. 6			×			×
CLUTCH AND BRAKE PIVOTS ● Lubricate	No. 7	×					
FOOT PEG AND KICK CRANK ● Lubricate	No. 2	×					
POINT CAM LUBRICATOR ● Lubricate	No. 4					×	
THROTTLE GRIP/HOUSING ● Lubricate	No. 7				×		(×)

## RECOMMENDED LUBRICANT

- No. 1 Use Yamalube 4-cycle oil or SAE 10W/30 "SE" motor oil.
- No. 2
  1. Use YAMAHA CHAIN/CABLE LUBE.
  2. Use SAE 10W/30 "SE" motor oil. (If desired, specialty type lubricants of quality manufacture may be used.)
- No. 3 Medium-weight wheel bearing grease of quality manufacture-preferably water proof.
- No. 4 Light weight machine oil.
- No. 5 Air filters-foam element air filters must be damp with oil at all times to function properly. Clean and lube every meet. If hard usage, clean and lube every heat (MOTO). Do not over oil. Use SAE 10W/30 "SE" motor oil.
- No. 6 Use Yamaha Fork Oil 20Wt.
- No. 7 Use lithium base grease.

## Transmission oil

The oil filler cap is located right above the kick starter.

### Recommended oil:

Yamalube 4-cycle oil or SAE 10W/30 motor oil, type "SE"

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.

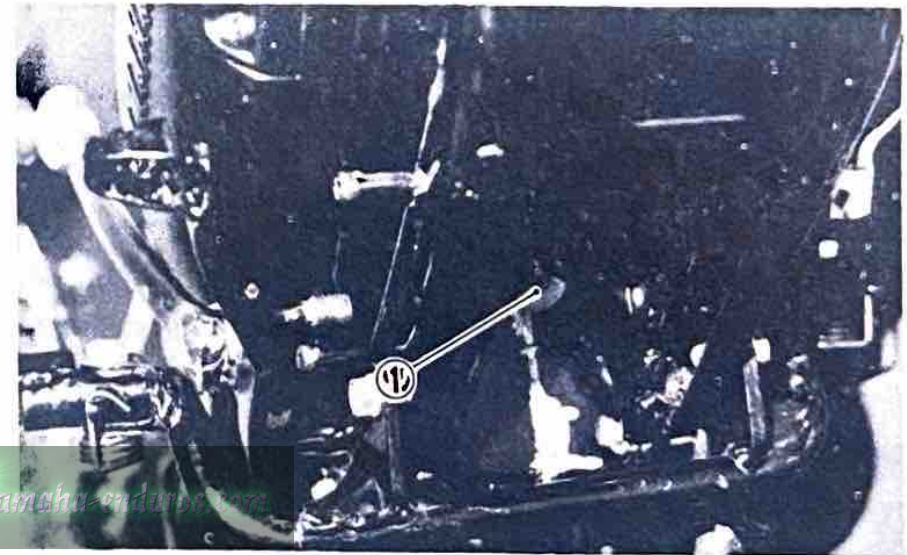
### Transmission oil capacity:

#### Oil change:

500 ~ 550 cc (0.53 ~ 0.58 u.s. qt)

#### Total:

550 ~ 600 cc (0.58 ~ 0.63 u.s. qt)



1. Drain plug



The transmission should be drained and refilled every second race meet.

**NOTE:** \_\_\_\_\_

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

---

### **Spark plug inspection**

The spark plug is an important engine component and is easy to inspect. The condition of the spark plug can indicate something of the condition of the engine. Normally, all spark plugs from the same engine should have the same coloration on the white porcelain insulator around the center electrode. The ideal coloration at this point is a medium to light tan color for a machine that is being ridden normally. If one spark plug shows a distinctly different color,

there could be something wrong with the engine.

For example, a very white center electrode porcelain color could indicate an intake air leak or carburetion problem for that cylinder. Do not attempt to diagnose such problems yourself. Instead, take the machine to your Yamaha dealer.

You should periodically remove and inspect the spark plug because heat and deposits will cause any spark plug to slowly break down and erode. If electrode erosion becomes excessive, or if carbon and other deposits are excessive, you should replace the spark plug with one of the proper types.

Standard spark plug:

N-2 (CHAMPION) or B-8ES (NGK)

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Spark plugs are produced in several different thread lengths. The thread length (reach) is the distance from the spark plug gasket seat to the end of the threaded portion. If the reach is too long, overheating and engine damage may result.

If the reach is too short, spark plug fouling and poor performance may result: also, carbon will form on the exposed threads resulting in combustion chamber hot spots and thread damage. Always use a spark plug with the proper reach.

Spark plug reach: 19 mm (0.7 in)

Before installing any spark plug, measure the electrode gap with a wire thickness gauge and adjust to specifications.

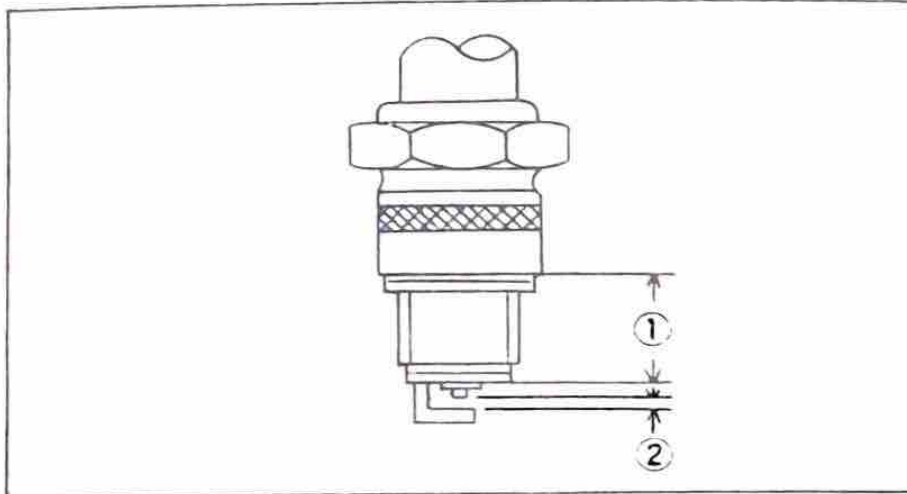
Spark plug gap:

0.5 ~ 0.6 mm  
(0.02 ~ 0.024 in)

When installing the plug, always clean the gasket seat surface and use a new gasket. Wipe off any grime from the threads and torque the spark plug properly.

Spark plug torque:

2.5 ~ 3.0 m-kg  
(18 ~ 22 ft-lb)



1. Spark plug reach    2. Spark plug gap

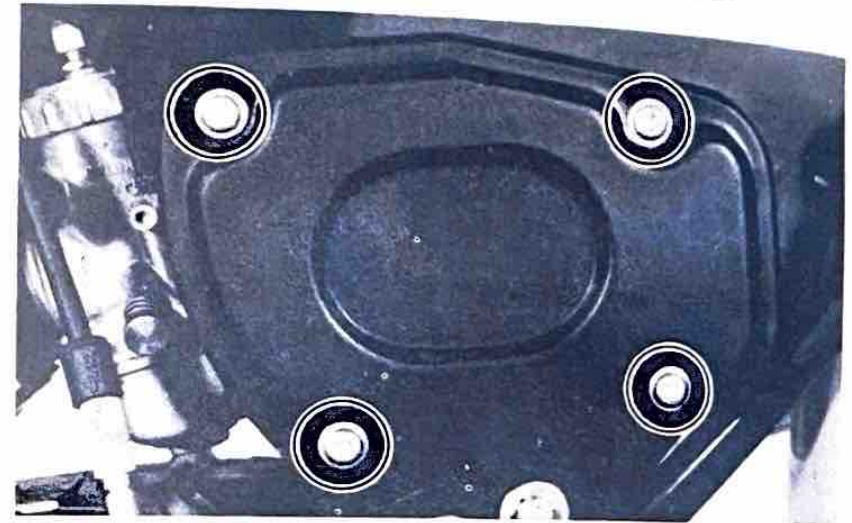
### Cleaning the air filter element

The air filter protects the engine from dirt which can enter with the intake air and cause rapid engine wear. This dirt is filtered from the air by the air filter element. This model uses a cartridge type air filter element which consists of foam rubber moistened with oil. When this filter element becomes dirty it should be cleaned with solvent and reoiled.

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### Cleaning method

1. Remove the side cover (L.H.), and remove the air filter case cap by removing the pan head screws.



2. Remove the air filter element from its case, remove element from core and clean with solvent. After cleaning, remove the remaining solvent by squeezing the foam rubber.

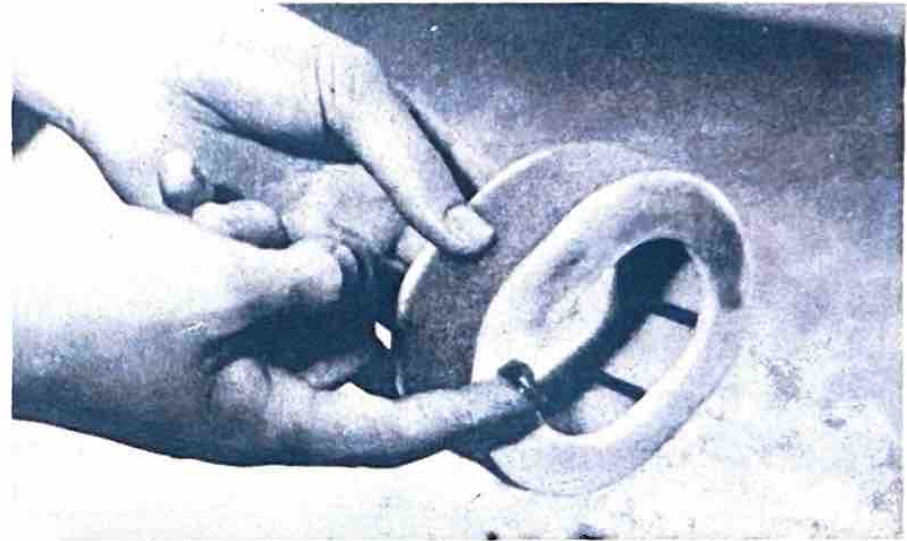


3. Then apply SAE 30W motor oil to the entire surface and squeeze out the excess oil. Foam should be wet but not dripping. Then coat the sealing edges of the filter element with lithium base grease.
4. When installing the air filter element in its case, be sure its sealing surface matches perfectly the sealing surface of the case so there is not air leakage.

**CAUTION:** \_\_\_\_\_

The engine should never be run without the air cleaner element installed; overheating and piston damage may result.

\_\_\_\_\_



### **Carburetor adjustment**

The carburetor is a vital part of the engine and requires very sophisticated adjustment. Most adjustments should be left to a Yamaha dealer who has the professional knowledge and experience to do so. However, the following three points may be serviced by the owner as part of his usual maintenance routine.

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1. Idle mixture adjustment

2. Idling speed adjustment
3. Throttle cable play adjustment

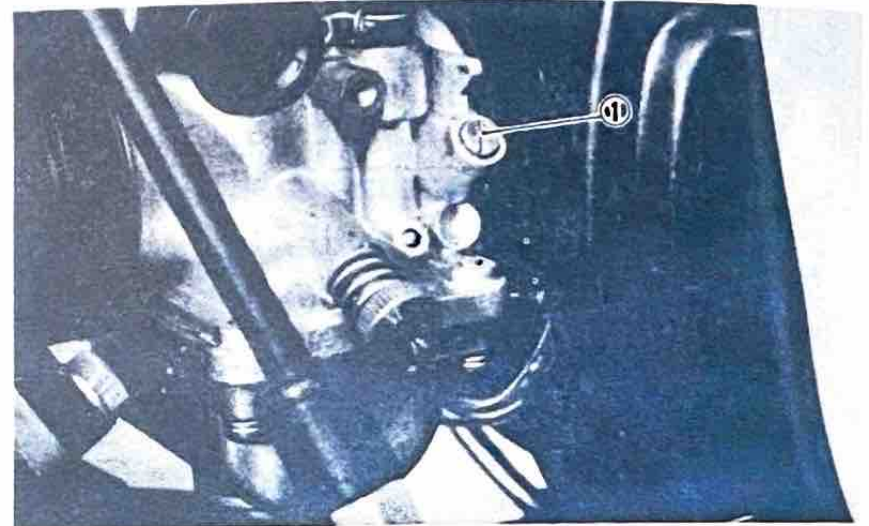
**CAUTION:** \_\_\_\_\_

The carburetor was set at the Yamaha factory after many tests. If the settings are disturbed without having technical knowledge, poor engine performance and damage may result.

\_\_\_\_\_

### Idle mixture adjustment

The idle mixture adjustment controls the amount of mixture to the engine at low rpm. The idle mixture also insures smooth transition to the main circuit with no power loss or misfire; so it does affect mid-range performance.



1. Pilot air screw

Make this adjustment as described below: Tighten the pilot air screw until it lightly touches the seat; then back the screw out as specified (see illustration). This should be done with the engine stopped.

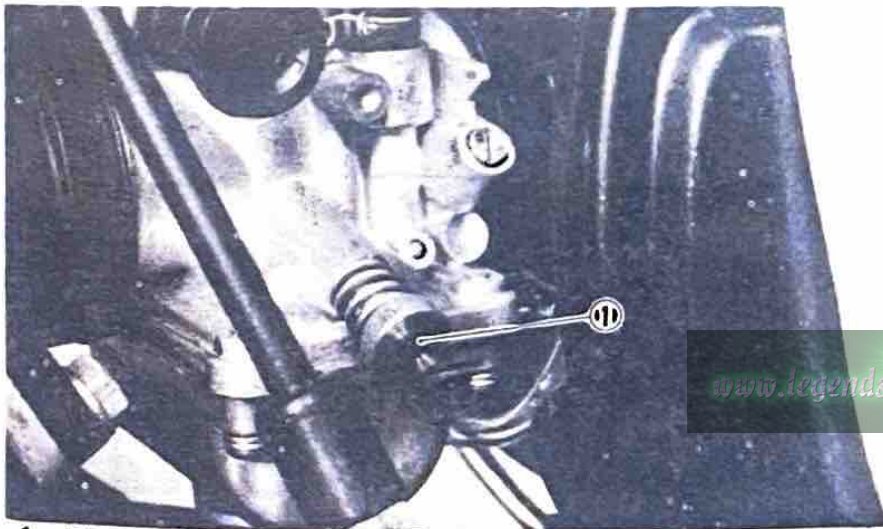
Standard pilot air screw setting  
(number of turns out): 1-1/2



## Idling rpm adjustment

Start the engine and warm it up for a few minutes. The warm up is complete when the engine responds quickly without dying. Normally 1 to 2 minutes is required; 2 to 3 minutes in cold weather. Turning the throttle stop screw counterclockwise lowers the engine speed. One clockwise turn from the engine stall position is considered to be the specified idling position.

Idling rpm: As desired



1. Throttle stop screw

## Carburetor inspection

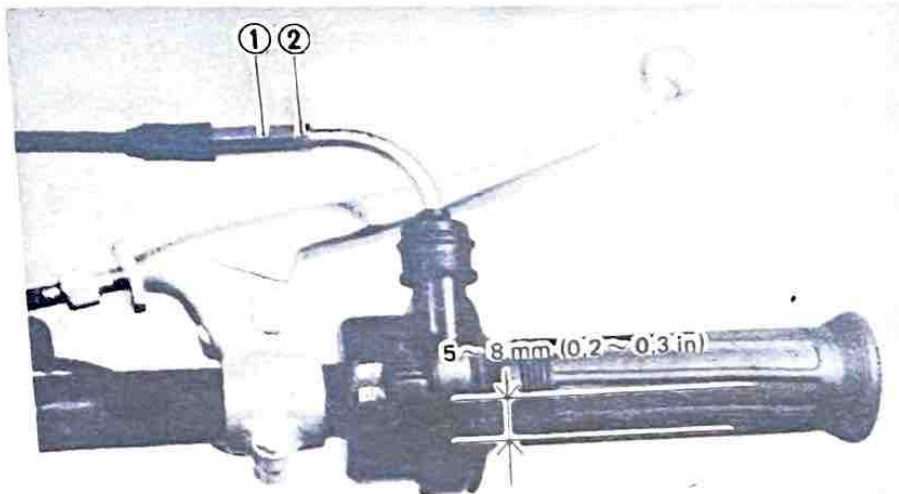
In addition to the above adjustment, check the following periodically:

1. Are the carburetor holding bolts tight ?
2. Is the cleaner joint secure ?
3. Is the overflow pipe or air vent pipe in place ?
4. Is the mixing chamber top tight ?

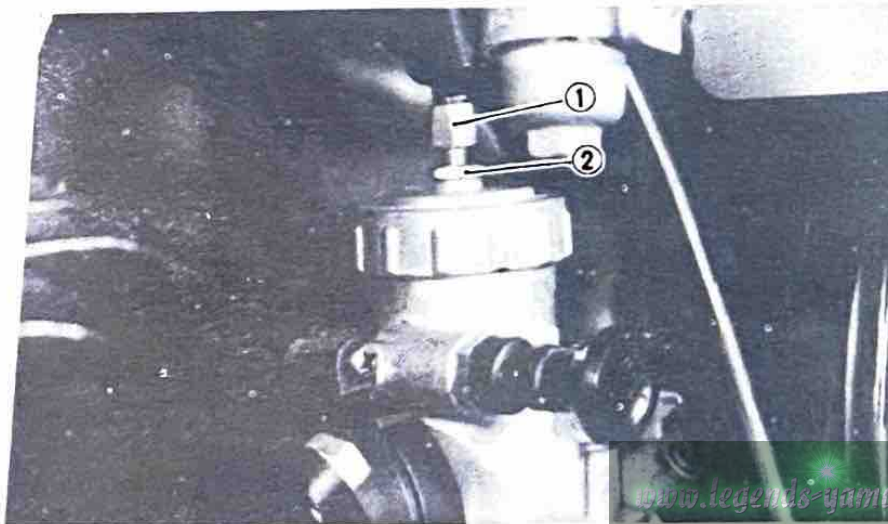
## Throttle cable play adjustment

1. Slide the rubber cover off the top of the carburetor.
2. Check play in turning direction of throttle grip. The play should be 5 ~ 8 mm (0.2 ~ 0.3 in) at grip flange, loosen the locknut and turn the adjustor to make the necessary adjustment. After adjusting, be sure to tighten the locknut properly.
3. Reinstall the rubber cover.





1. Adjustor 2. Locknut



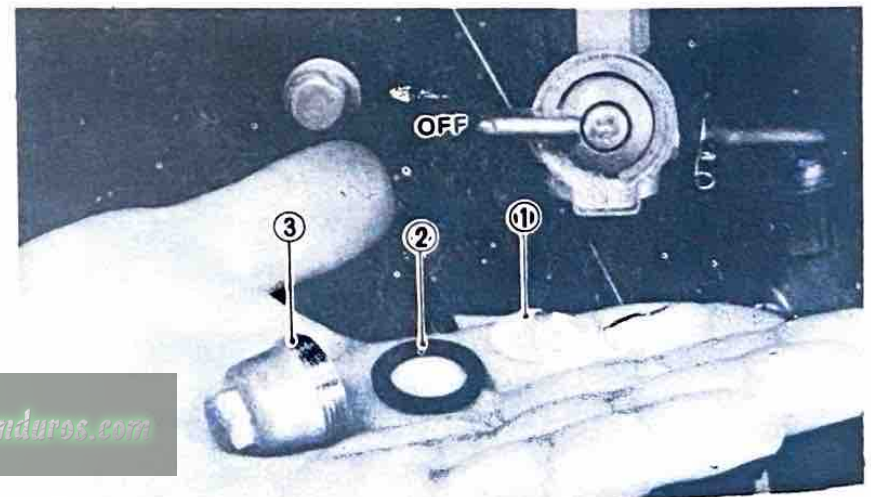
1. Adjustor 2. Locknut

## Fuel petcock inspection and cleaning

The fuel petcock has a built-in filter to remove any particles before they reach the carburetor. If the filter becomes blocked, the fuel cannot enter the carburetor. To prevent this, inspection and cleaning should be done at recommended intervals.

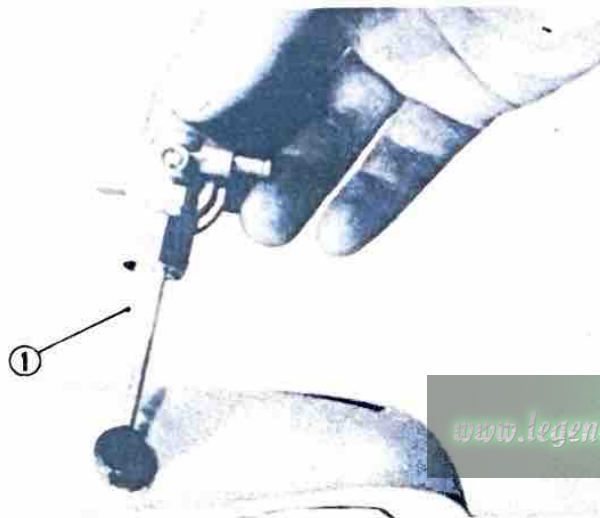
### 1. Filter screen

- a. First, turn the petcock lever to the "OFF" position; then remove the filter cup and clean the bottom of the cup with solvent.



1. Filter screen 2. Filter gasket 3. Filter cup

- b. After removing the filter cup, remove and clean the filter screen. At the same time, you should examine the condition of the filter gasket. Replace if damaged.
  - c. When reassembling, be careful not to clamp the filter cup too tightly as this may cause the filter gasket to become unseated, resulting in fuel leakage.
2. Sub strainer
    - a. Drain the fuel into the fuel tank.
    - b. Remove the fuel petcock assembly.
    - c. Clean the sub strainer.



1. Sub strainer

## Clutch adjustment

This model has two clutch cable length adjusters and a clutch mechanism adjuster. Cable length adjusters are used to take up slack from cable stretch and to provide sufficient free play for proper clutch operation under various operating conditions. The clutch mechanism adjuster is used to provide the correct amount of clutch "throw" for proper disengagement. Normally, once the mechanism is properly adjusted, the only adjustment required is maintenance of free play at the clutch handle lever.

### 1. Free play adjustment

Loosen either the handle lever adjuster locknut or the cable in-line length adjuster locknut. Next, turn the length adjuster either in or out until proper lever free play is achieved.

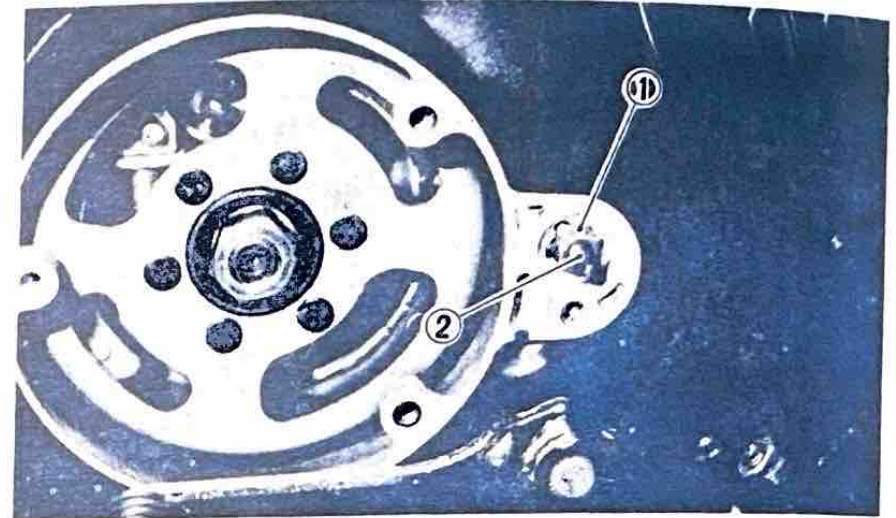
### 2. Mechanism adjustment

- a. Remove left side crankcase cover and



loosen the locknut.

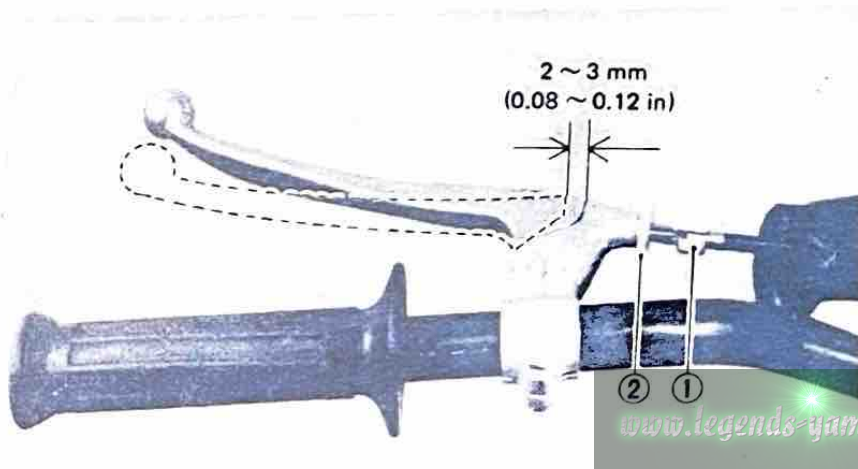
- b. Turn the adjusting screw in until lightly seated.
- c. Push the push lever toward the front with your finger until it stops. With the push lever in this position, back out the adjusting screw and as illustrated, align the mark on the end of the push lever with the mark (protuberance) on the crankcase.
- d. Tighten the locknut and install the left side crankcase cover.



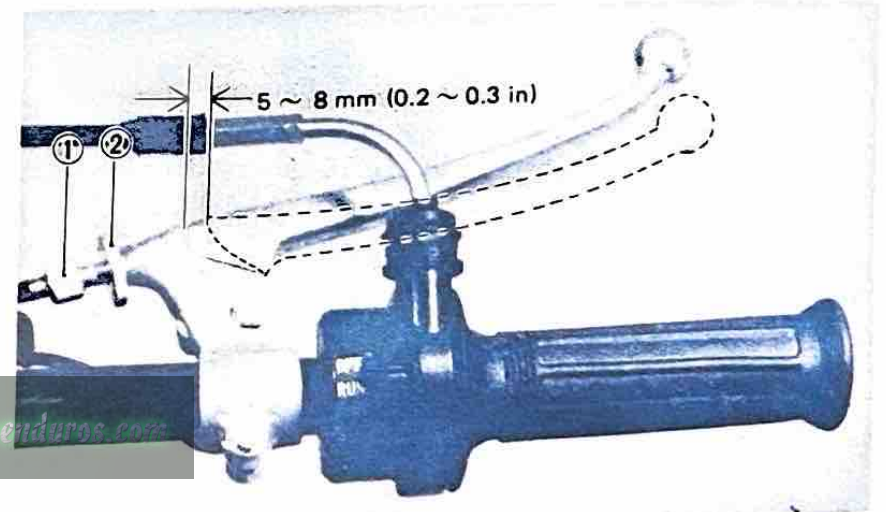
1. Locknut 2. Adjusting screw

### Front brake adjustment

The front brake can be adjusted in two ways;



1. Adjustor 2. Locknut

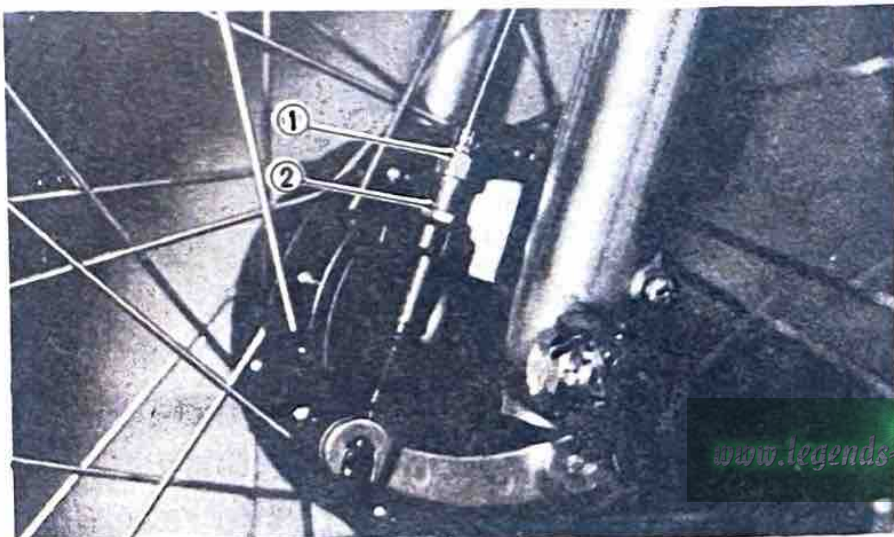


1. Adjustor 2. Locknut



(1) using the adjust screws at the front brake lever or (2) at the front brake shoe plate. Adjustment at the front brake lever is normally recommended. Loosen the locknut and turn the adjustor to adjust the brake lever. As shown in the illustration, the clearance between the brake lever and the brake lever holder should be 5 ~ 8 mm (0.2 ~ 0.3 in).

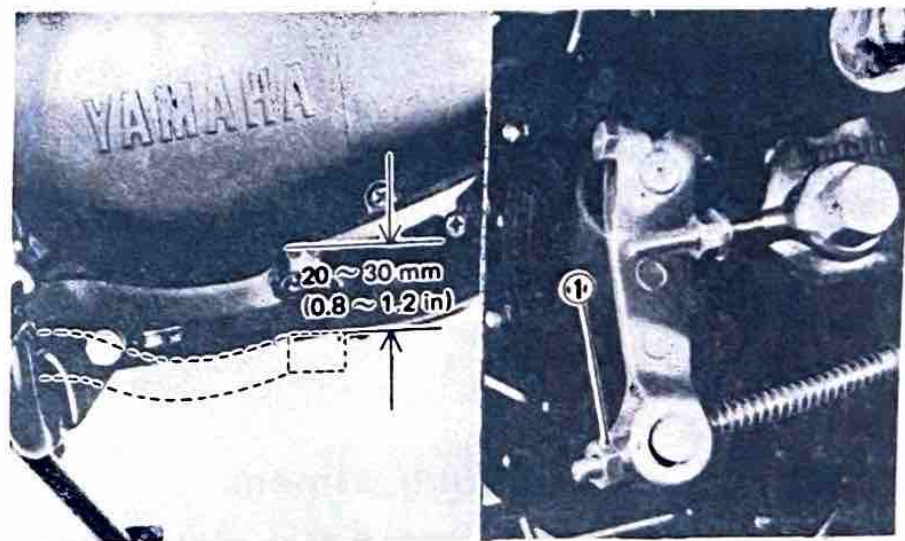
After adjusting, be sure the locknut is tightened firmly.



1. Adjustor 2. Locknut

## Rear brake adjustment

The rear brake should be adjusted so the end of the brake pedal moves 20 ~ 30 mm (0.8 ~ 1.1 in). To adjust, turn the adjustor on the brake rod clockwise to reduce play; turn the adjustor counterclockwise to increase play.



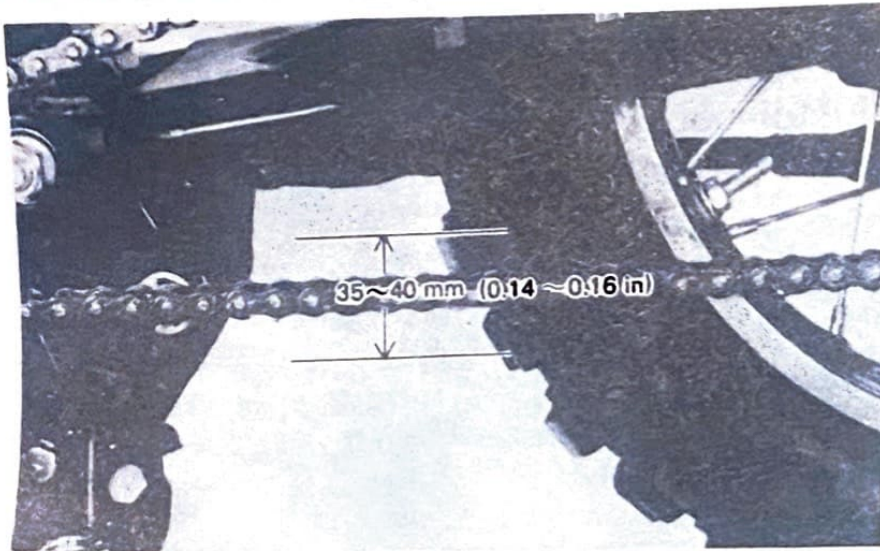
1. Adjustor

## Drive chain tension check

Inspect the drive chain with both tires touching the ground. Check the tension at the position shown in the illustration. The normal vertical deflection is approximately



35 ~ 40 mm (0.14 ~ 0.16 in). If the deflection exceeds 40 mm (0.16 in) adjust the chain tension.



### Drive chain tension adjustment

1. Loosen the rear brake rod adjuster.
2. Remove the cotter pin of the rear wheel axle nut with pliers.
3. Loosen the rear wheel axle nut.
4. To tighten chain turn chain puller adjuster nuts clockwise. To loosen
5. After adjusting, be sure to tighten the rear wheel axle nut.
6. Also tighten the adjuster nuts against the rear arm (about 1/4 turn each).
7. Insert the cotter pin into the rear wheel

chain turn adjuster nuts counterclockwise and push wheel forward. Turn each nut exactly the same amount to maintain correct axle alignment. (There are marks on each side of rear arm and on each chain puller; use them to check for proper alignment.)

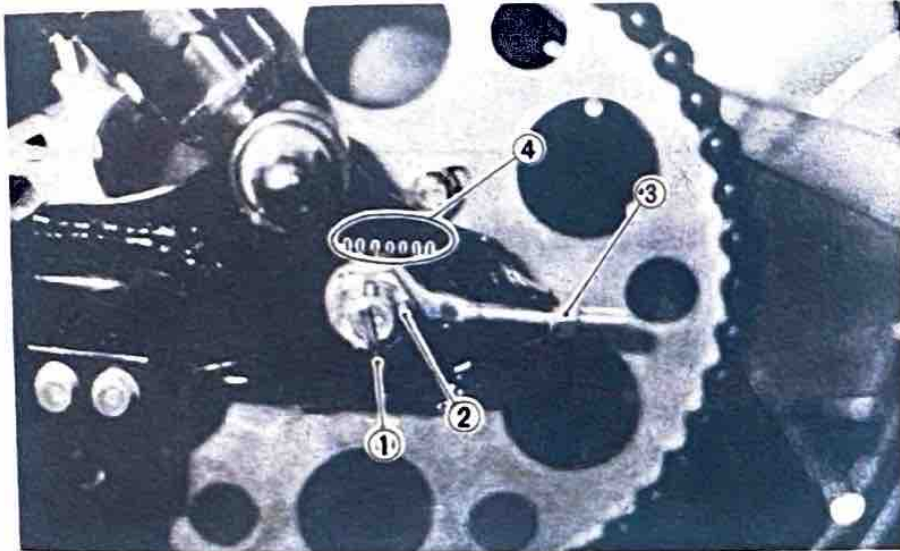
### NOTE: \_\_\_\_\_

Before adjusting, rotate rear wheel through several revolutions and check tension several times to find the tightest point. Adjust chain tension with rear wheel in this "tight chain" position.

\_\_\_\_\_

axle nut and bend the cotter pin end as shown in the illustration (if the nut notch and the cotter pin hole do not match, tighten the nut slightly to match).

8. In the final step, adjust the play in the brake pedal.

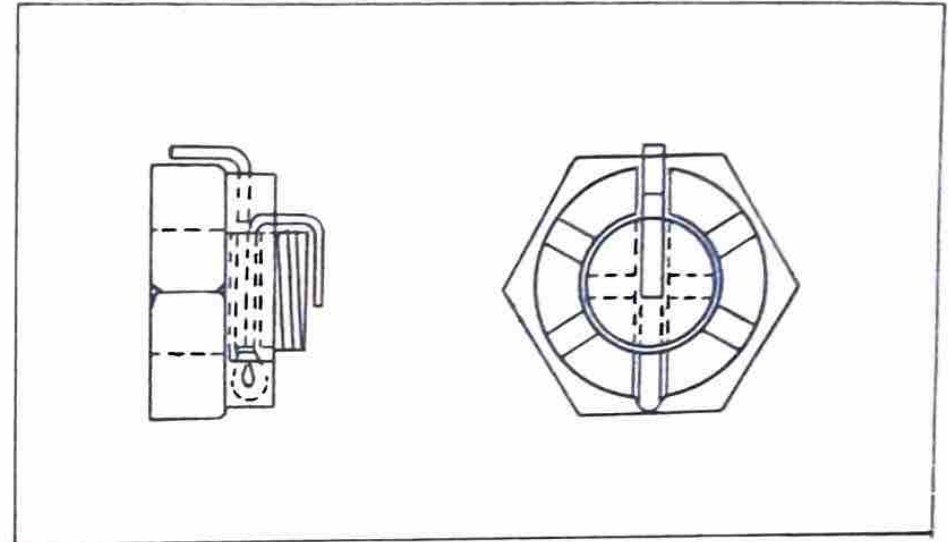


- |                        |                        |
|------------------------|------------------------|
| 1. Cotter pin          | 3. Adjustor nut        |
| 2. Rear wheel axle nut | 4. Marks for alignment |

**NOTE:**

Excessive chain tension will overload the engine and other vital parts; keep the tension

within the specified limits. Also, replace the rear axle cotter pin with a new one.



**Drive chain lubrication**

The chain consists of many parts which work against each other. If the chain is not maintained properly, it will wear out rapidly. This service is especially necessary when driving in dusty conditions.



1. Use any of the many brands of spray type chain lubricant. First, remove dirt and mud from the chain with a brush or cloth and then spray the lubricant between both rows of side plates and on all center rollers.
2. To clean the entire chain, first remove the chain from the motorcycle, dip it in solvent and clean out as much dirt as possible. Then take the chain out of the solvent and dry it. After drying, lubricate the chain to prevent the formation of rust.

#### **Cable inspection and lubrication**

1. Damage to the outer housing of the various cables, may cause corrosion and often free movement will be obstructed. An unsafe condition may result so replace as soon as possible.

2. If the inner cables do not operate smoothly, lubricate or ask your Yamaha dealer to replace them.

Recommended lubricant:  
YAMAHA CHAIN/CABLE LUBE  
or SAE 10W/30 type "SE"  
motor oil

#### **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 housing to the handlebar. Once these two are removed, the end of the cable can be held high to pour in several drops of lubricant. With the throttle grip disassembled, coat the metal surfaces of the grip assembly with a suitable all-purpose

grease to cut down friction. (See lubrication chart.)

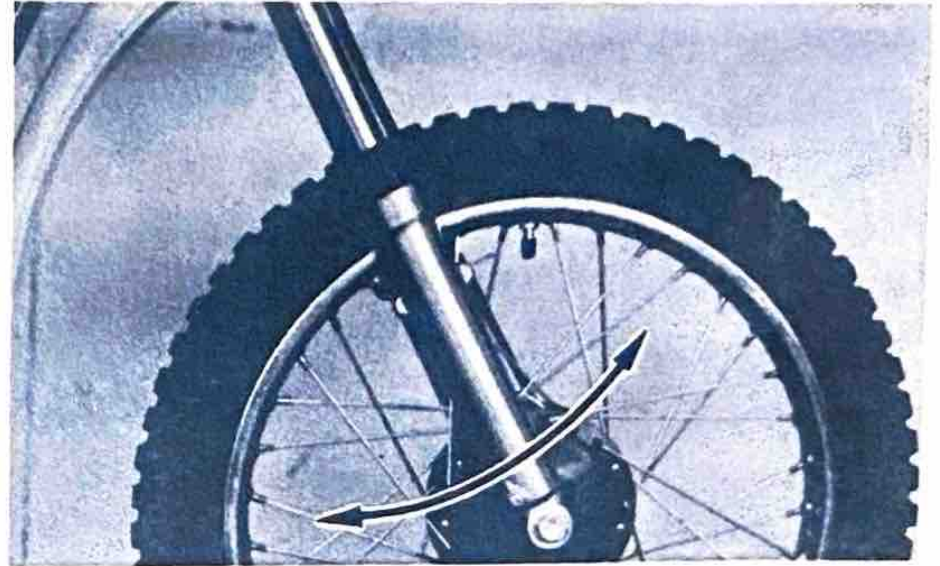
### Lubrication of levers, pedals, etc.

1. Lubricate the pivoting parts of the brake and clutch levers with motor oil SAE 10W/30.
2. Lubricate the shaft of the brake pedal with lithium base grease.

### Steering inspection

Periodically inspect the condition of the steering. Worn out or loose steering bearings may be dangerous.

Place a block under the engine to raise the front wheel of the motorcycle off the ground; then hold the lower end of the front fork and try to move forward and backward.

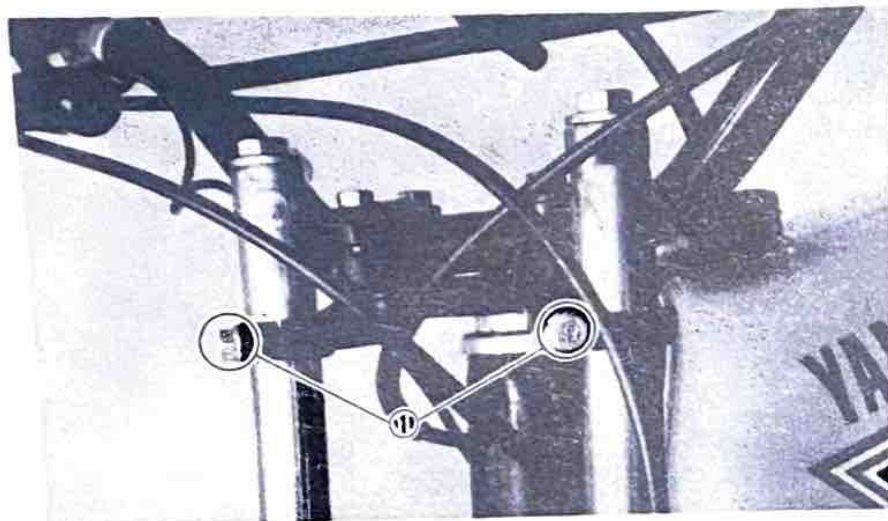


### Steering adjustment

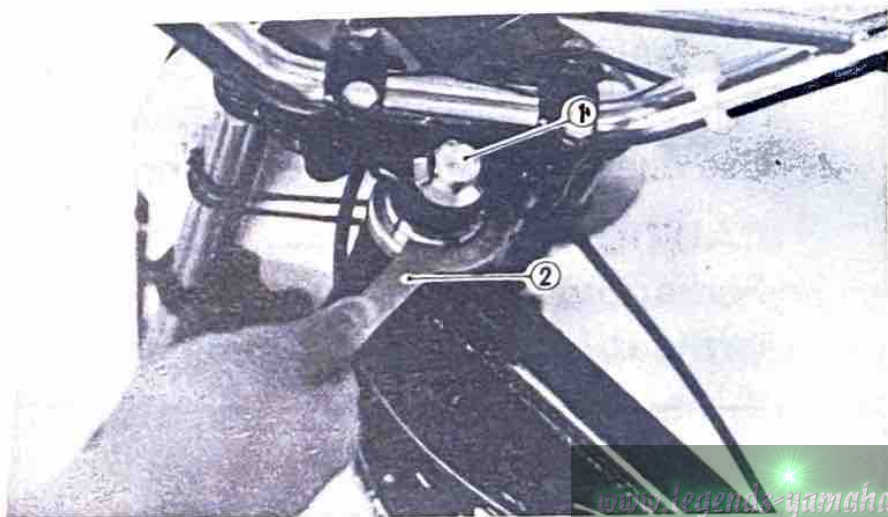
1. To adjust, first loosen upper stem pinch bolt. Then loosen stem bolt.
2. Use ring nut wrench to tighten ring nut.

**CAUTION:** \_\_\_\_\_  
Forks must swing from lock to lock without binding or catching.





1. Stem pinch bolt



1. Stem bolt 2. Ring nut wrench

3. Tighten stem pinch bolt and stem bolt.

Tightening torque:

Stem pinch bolt:

2.2 ~ 3.0 m-kg  
(15.9 ~ 21.7 ft-lb)

Stem bolt:

5.0 ~ 8.0 m-kg  
(36.2 ~ 57.9 ft-lb)

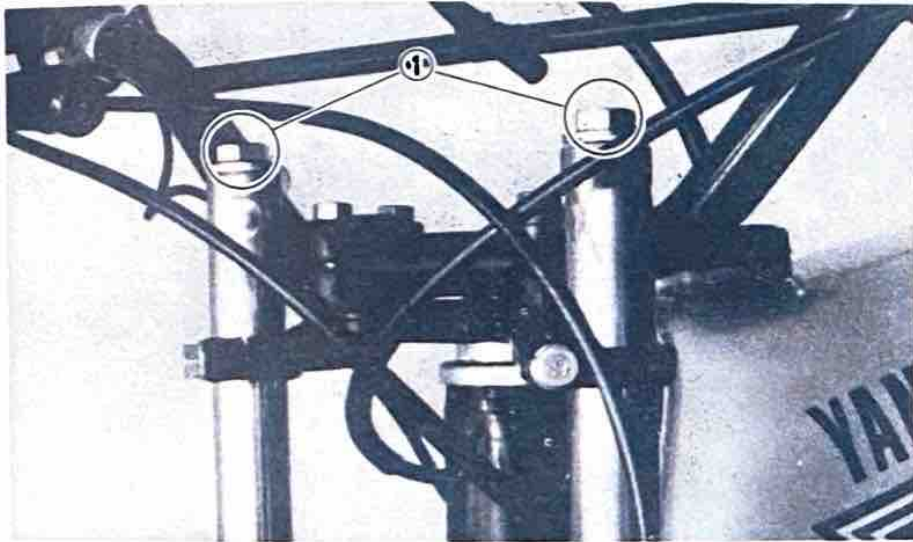
**NOTE:**

Steering head disassembly must be performed by your Yamaha dealer.

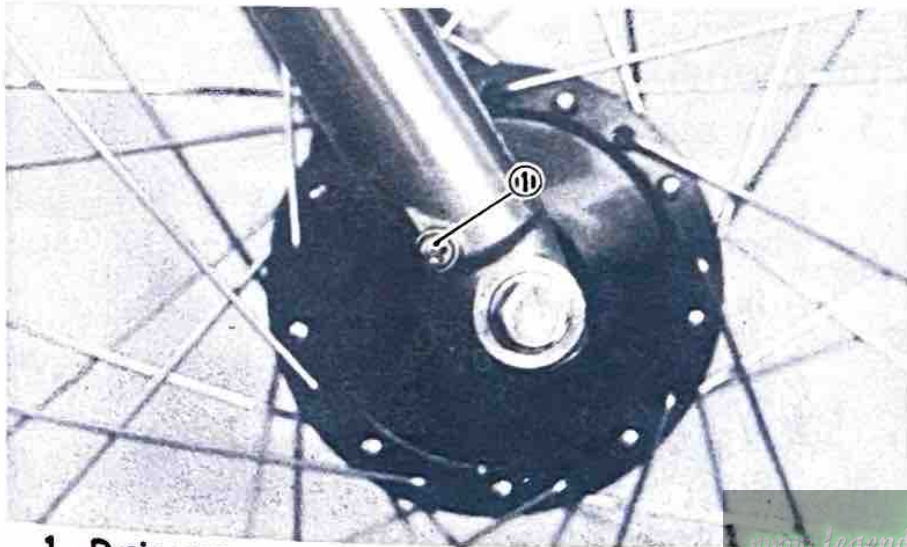
**Front fork oil change**

1. Elevate front wheel by placing a suitable stand under the engine.
2. Remove cap bolts from inner fork tubes.
3. Remove drain screw from each outer tube with open container under each drain hole.





1. Cap bolt



1. Drain screw

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4. After most of oil has drained, slowly raise and lower outer tubes to pump out remaining oil.
5. Replace drain screws.

**NOTE:** \_\_\_\_\_  
Check gasket, replace if damaged.  
\_\_\_\_\_

6. Measure correct amount of oil and pour into each leg.

Recommended oil:  
Yamaha fork oil 20Wt.

Quantity per leg:  
118.5cc (4.0 oz)

**NOTE:** \_\_\_\_\_

Select the weight oil that suits local conditions and your preference (lighter for less damping; heavier for more damping).

---

7. After filling, slowly pump the outer tubes up and down to distribute the oil.

**NOTE:** \_\_\_\_\_

Adjust the oil levels in both right and left front forks so they are even.

---

8. Inspect O-ring on fork cap bolts and replace if damaged.
9. Install the fork cap bolts and torque to specification.

Fork cap bolt torque:  
1.5 ~ 2.5 m·kg  
(10.9 ~ 18.1 ft·lb)

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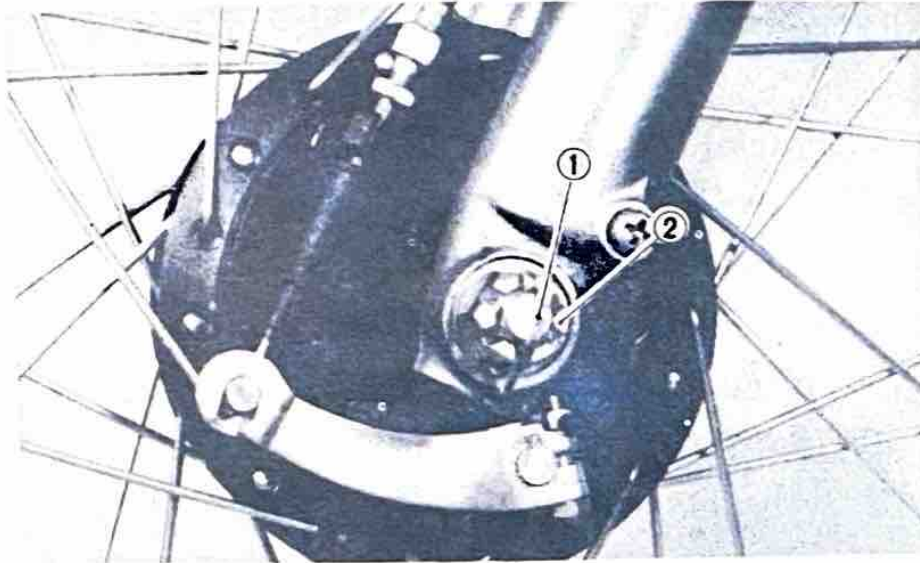


### Front wheel removal

1. Elevate the front wheel by placing a suitable stand under the engine.
2. Remove brake cable: Loosen all cable adjuster screws and remove cable from handle lever holder. Then remove cable from cam lever at front brake shoe plate.
3. Remove cotter pin from front wheel axle and remove axle nut.
4. Turn and pull out the front wheel axle;



the wheel assembly can now be removed.



1. Cotter pin 2. Axle nut

### Front wheel installation

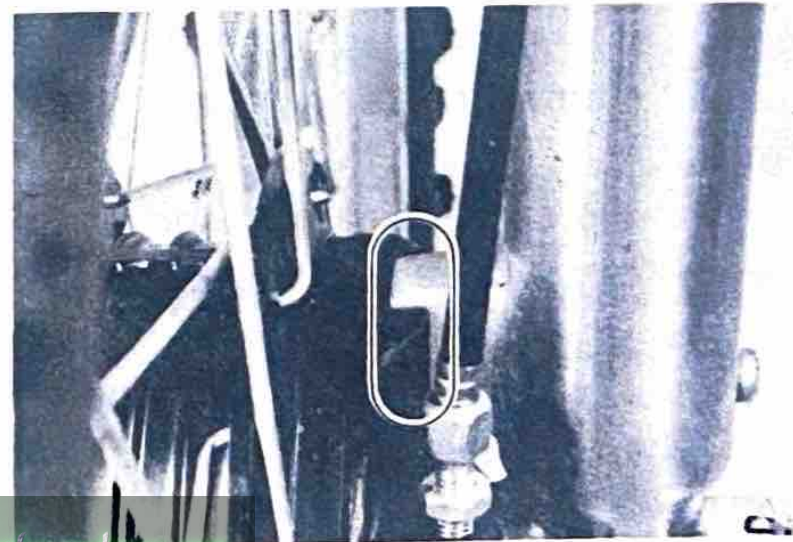
When installing front wheel, reverse the removal procedure taking the following steps:

1. Check for proper engagement of the boss on the outer fork tube with the locating slot on the brake shoe plate.
2. Always secure the front wheel axle as

follows:

- a. Tighten the front axle with an open-end wrench.
- b. Torque the front axle nut.

Axle nut torque:  
5.0 ~ 7.0 m-kg  
(36 ~ 51 ft-lb)





## Rear wheel removal

1. Remove the tension bar and the brake rod from the brake shoe plate. The tension bar can be removed by removing the cotter pin and nut from the tension bar bolt. The brake rod can be removed by removing the adjustor.
2. Loosen the locknuts of the right and left chain pullers and loosen the adjustor bolts.
3. Remove the master link clip and master link and remove the chain from the rear sprocket.
4. Remove the cotter pin from the wheel axle and remove the rear wheel axle nut.
5. The rear wheel assembly, the collar, the chain puller(s), etc., can be removed from the motorcycle by pulling the wheel axle.

## Rear wheel installation

The rear wheel can be installed by reversing the removal procedure. Take the following steps.

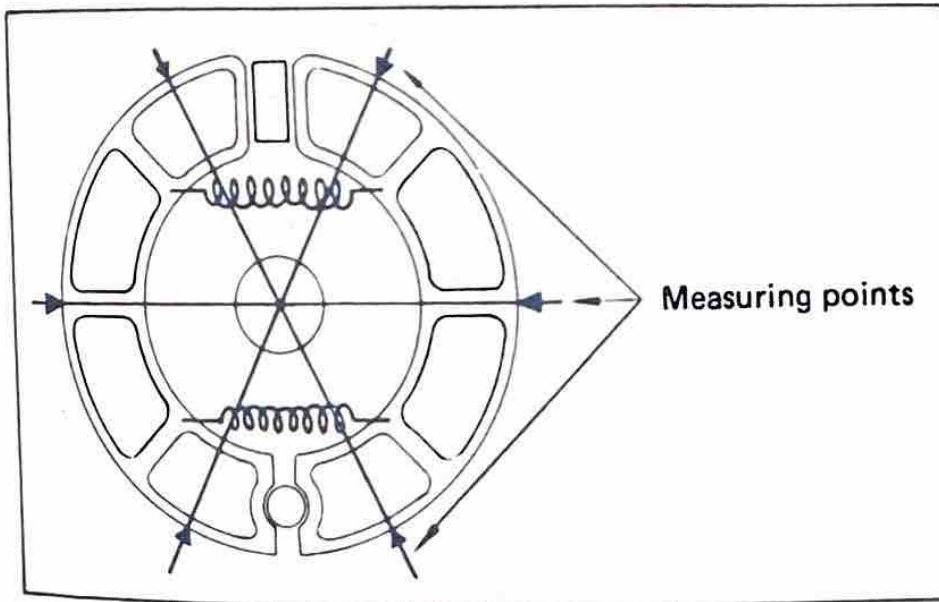
1. When connecting the chain, make certain closed end of master link clip is facing, direction of rotation.
2. Be sure to adjust the tension of the chain. (Refer to "Drive chain tension adjustment".)
3. Always use a new cotter pin. Old pins should be discarded.

## Brake shoe inspection

Measure the outside diameter of the brake shoe set with slide calipers.

If they measure less than replacement limit, replace them. Smooth out any rough spots on shoe surface with sandpaper.

	Front	Rear
Brake shoe diameter	89 mm (3.5 in)	102 mm (4.0 in)
Replacement limit	86 mm (3.4 in)	98 mm (3.9 in)



### Brake drum inspection

The friction between the inner surface of the brake drum and the brake lining provides the energy to stop the motorcycle. If these

become damaged or if oil contacts the drum, noise may occur and brake performance will suffer. Check the inner surface of the brake drum and remove any scratches with emery cloth. Remove any oil with a cloth dipped in solvent. If damage is more extensive, have a Yamaha dealer replace the wheel hub.

### Tire removal and tire repair

1. Remove the wheel from the motorcycle.
2. Remove locknut from valve stem and release as much air as possible from the tire.
3. Push both tire beads away from the edges of the rim.
4. Starting opposite the valve stem on one side, use two round-ended tire irons to work the bead off the rim.

**NOTE:** \_\_\_\_\_  
Use a tire removal lubricant and be careful not to pinch the tube with the tire



irons.

---

5. Remove the valve stem from its hole and remove the tube.
6. If the tire is to be changed, remove the second bead from the rim using the tire irons and tire lubricant.

### Inspection

1. Use a cloth to check for nails or other sharp objects in the tire.

**CAUTION:** \_\_\_\_\_

**Always use a cloth to avoid cutting your hand.**

---

2. Check for faults in the side wall. If there is any fault, the tire should be replaced as a damaged tire may burst at high speeds, which is extremely dangerous.
3. Inflate the tube with air and check the

valve stem and the tube for damage and leakage replace as required. Some leaks can be patched in an emergency, but it is best to replace tube.

### Reassembly

1. Install one tire bead on the rim using tire irons and lubricant and then install the tube.
2. Inflate tube with air to about one-third the specified pressure. Hit the outer circumference of the tire with a soft hammer to make certain the tube is not caught between tire and rim. Release air from tube.
3. Inspect rim band and replace if damaged.
4. Install second tire bead starting opposite the valve stem using tire irons and tire mounting lubricant.
5. Inflate tire to approximately 2.0 kg/cm<sup>2</sup>



(30 psi) and then reduce pressure to specified setting.

**NOTE:** \_\_\_\_\_

Check the valve stem; it must be pointing directly at center of wheel hub. If angled in any direction, release air and adjust tube position.

---

### **Tire air pressure**

Improper tire pressure affects the smoothness of the tire, traction, handling and the life of the tires. Always maintain the correct tire pressure.

### **Rim and spokes**

There are 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 of 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 (1/8 in) 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 (1/16 in) total. Any greater fluctuation means that you should have your

dealer remove this rim warpage by properly adjusting the spokes.

### Replacing wheel bearings

If the bearings allow excessive play in the wheel or if it does not turn smoothly, replace the bearing as follows:

1. First clean the outside of the wheel hub.
2. Insert the bent end of the special tool into the hole located in the center of the bearing spacer, and drive the center of the bearing spacer, and drive the spacer out from the hub by tapping the other end of the special tool with a hammer. (Both bearing spacer and space flange can easily be removed.)
3. Push out the bearing on the other side.
4. To install the wheel bearing, reverse the above sequence. Be sure to grease the bearing before installation.
5. Check the lips of the seals for damage or

warpage. Replace if necessary.

### Rear shock absorber (DE CARBON TYPE)

#### WARNING:

This shock absorber contains highly pressurized nitrogen gas.

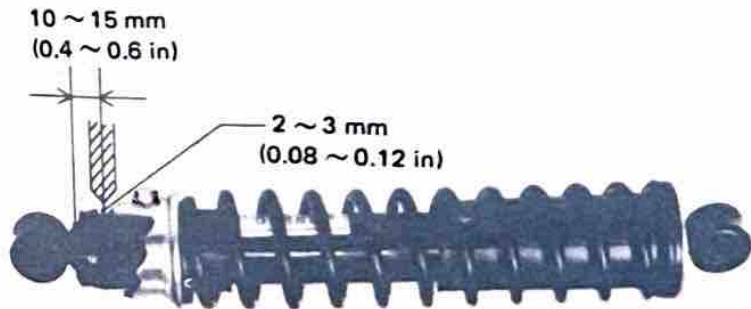
Read and understand the following information before handling the shock absorber. The manufacturer cannot be held responsible for properly damage or personal injury that may result from improper handling.

1. Do not subject shock absorber to an open flame or other high heat. This may cause the unit to explode due to excessive gas pressure.
2. Do not deform or damage the cylinder in any way. Cylinder damage will result in poor damping performance.
3. Gas pressure must be released before disposing of the shock absorber. To do



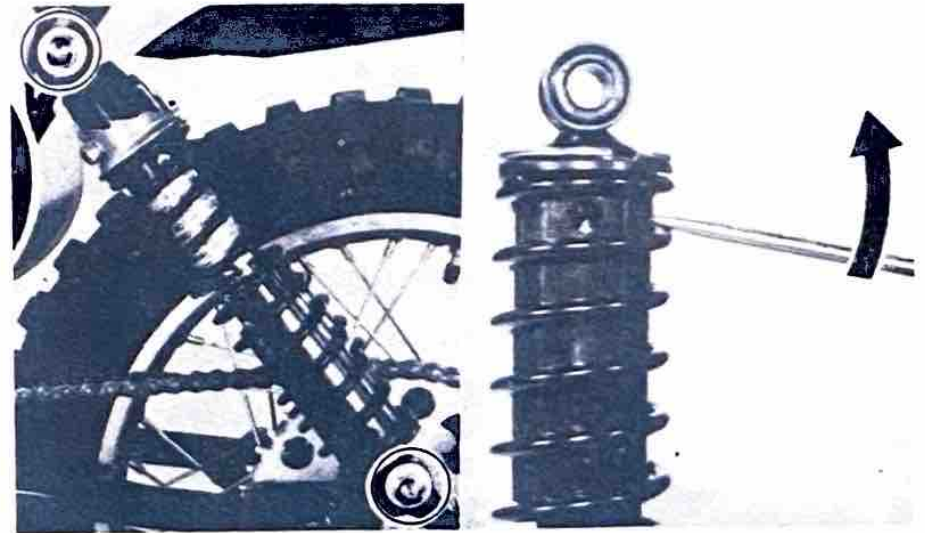
so, drill a 2 ~ 3 mm (0.08 ~ 0.12 in) hole through the cylinder wall at a point 10 ~ 15 mm (0.39 ~ 0.59 in) above the bottom of the cylinder.

4. Wear eye protection to prevent eye damage from escaping gas and/or metal chips.



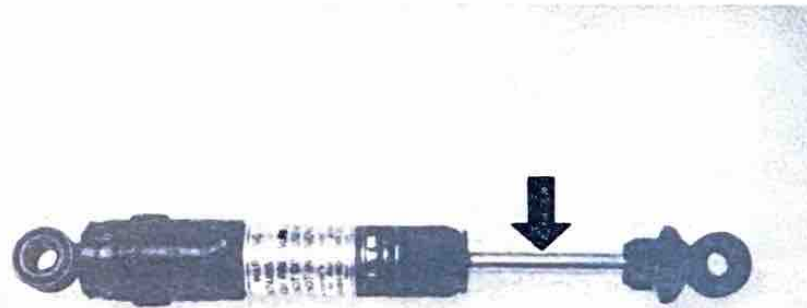
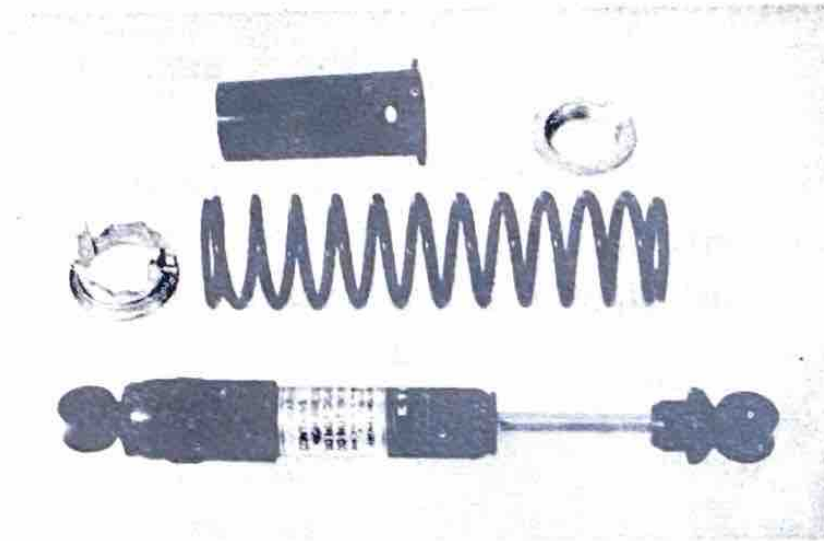
## Inspection

1. Remove the rear shock absorber from the machine.
2. Insert a screwdriver into the hole in the upper part of the plastic cover, and push the damper rubber slightly downward.



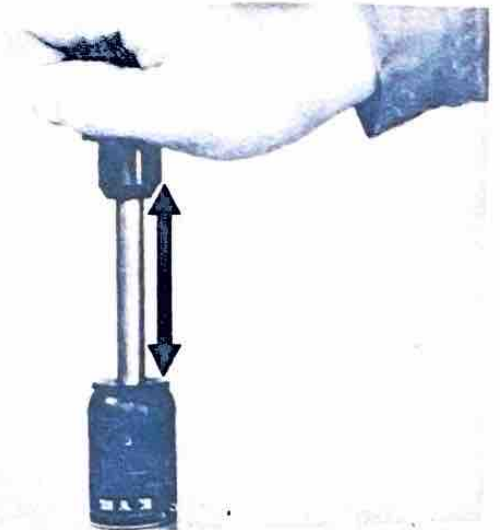
3. Push down the spring, remove the spring retainer, and remove the spring.
4. Check the rod, and if it is bent or damaged, replace the shock absorber.





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5. By moving the rod, check to see if it has a proper damping effect. Slight resistance should be felt on the compression (down) stroke and considerable resistance should be felt on the return (up) stroke.

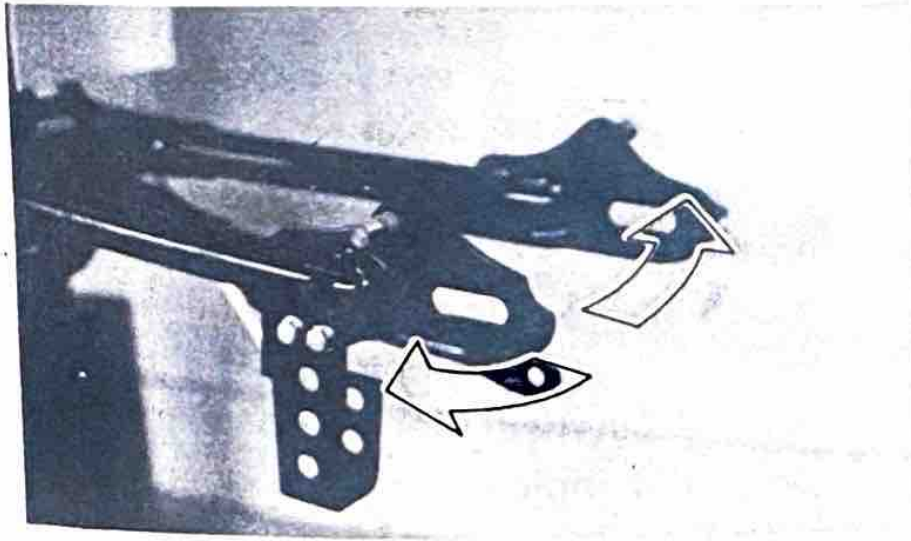


6. Install the spring, and install the shock absorber on the machine.

## Swing arm inspection

1. With rear wheel and shock absorbers removed, grasp the ends of the arm and move from right to left to check for free play.

Swing arm freeplay: None



2. If freeplay is excessive, remove swing arm and replace swing arm bushing.

## Ignition system

1. Location of components

The system consists of a flywheel magneto and a ignition coil. The magneto is located behind the case on the left side of the engine. The ignition coil is mounted on the frame under the fuel tank.

A engines stop switch is located on the right handlebar to stop the engine.

2. Ignition timing

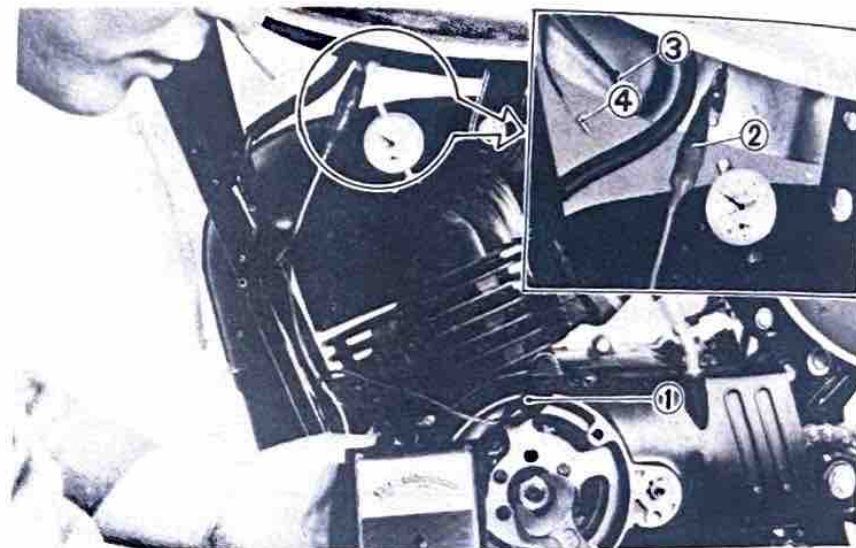
Ignition timing must be set with a dial gauge (to determine piston position) and a point checker (to determine exactly when contact breaker points begin to open). Proceed as follows:

- a. Remove spark plug and screw Dial Gauge Stand into spark plug hole.
- b. Insert Dial Gauge Assembly into stand.



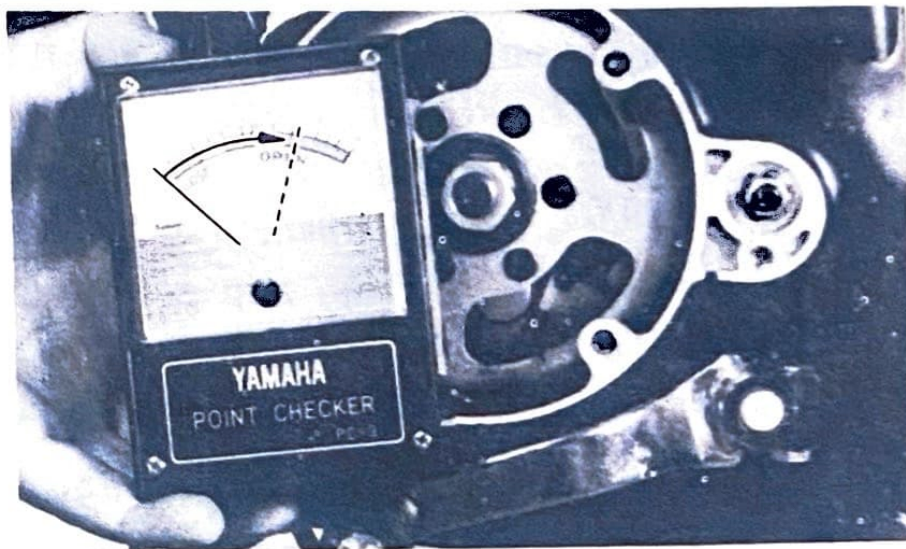
**NOTE:** \_\_\_\_\_  
Install the 56 mm (2.2 in) needle on the dial gauge.  
\_\_\_\_\_

- c. Remove left engine crankcase cover.
- d. Check point checker for full scale deflection. Connect red lead of Point Checker to black wire in wire harness coming from magneto.
- e. Connect black lead of Point Checker to unpainted surface of cylinder fin or unpainted crankcase bolt or screw.



- 1. Black lead wire
  - 2. Red lead wire
  - 3. Engine stop switch lead wire
  - 4. Ignition coil lead wire
- f. Rotate magneto flywheel until piston is at top-dead-center. Tighten set screw on dial gauge stand to secure dial gauge assembly. Set the zero on dial indicator face to line up exactly with dial needle. Rotate flywheel back and forth to be sure that indicator needle does not go past zero.
  - g. Starting at T.D.C. rotate flywheel clockwise until dial indicator reads ap-

- proximately 4 needle revolutions.
- h. Slowly turn flywheel counterclockwise until dial gauge reads ignition advance setting listed in Specifications Table. At this time, the point checker needle should swing from "CLOSED" to "OPEN" position, indicating the contact breaker (ignition points) have just begun to open.
  - i. Repeat steps "g" and "h" to verify point opening position. If points do not open within specified tolerance, they must be adjusted.
  - j. Adjust ignition points by barely loosening pan head screw and carefully rotating contact breaker assembly with a slotted screwdriver. Make minor adjustment and retighten pan head screw before rechecking timing. Recheck timing by repeating steps "g" and "h".



- k. When correct ignition timing has been accomplished, check maximum point gap by turning flywheel until maximum point opening occurs. Measure point gap with thickness gauge. See Specification Table.

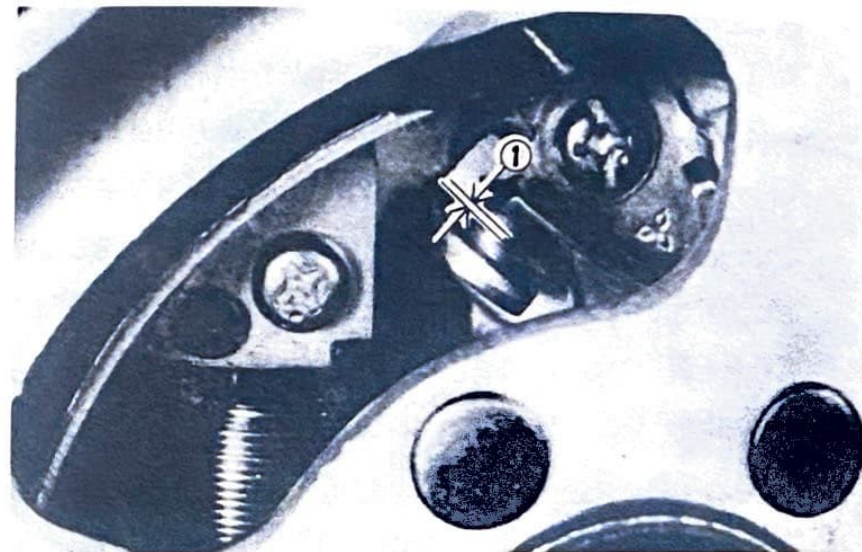
**NOTE:** \_\_\_\_\_  
If the maximum point gap is over tolerance the point rubbing block is probably worn and the contact breaker



assembly should be replaced. Do not attempt to bend fixed point bracket to decrease maximum point gap. This will only result in point misalignment, difficulty in setting timing and premature point failure.

IGNITION TIMING SPECIFICATIONS			
Point gap			Timing (B.T.D.C.)
Nominal	Minimum	Maximum	
0.35 mm (0.014 in)	0.30 mm (0.012 in)	0.40 mm (0.016 in)	2.0 mm (0.08 in)

- l. Remove dial gauge assembly and gauge stand, replace spark plug.
- m. Disconnect point checker.
- n. Replace crankcase cover.



1. Point gap

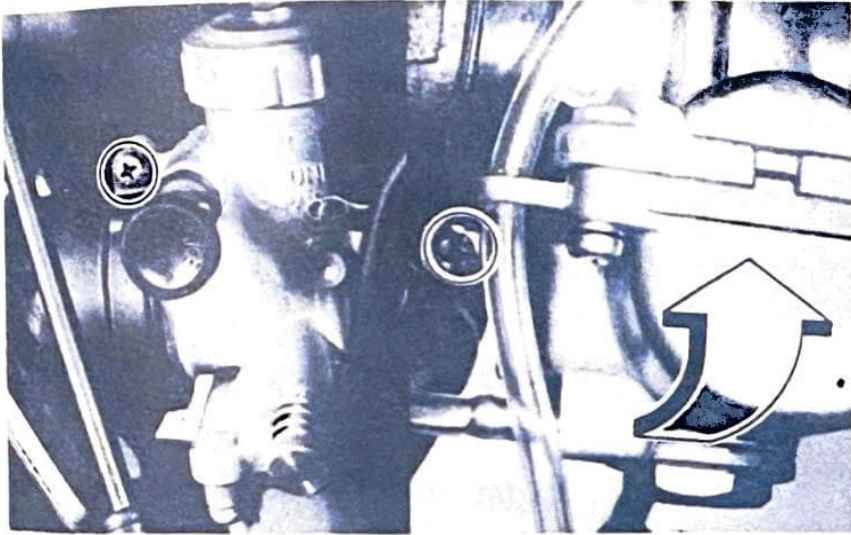
### Carburetor

- 1. Carburetor removal
  - a. Turn the fuel petcock to the "OFF" position.
  - b. Remove the gasoline tank fuel line from the fitting at the carburetor.
  - c. Loosen the manifold and inlet joint bands.

*www.legends-yamaha-enduro* **NOTE:** \_\_\_\_\_  
 For carburetor main jet replacement on-

ly, follow steps "a" through "c" then:

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- 1) Rotate carburetor, exposing main jet cover bolt (screw plug).
- 2) Remove main jet cover bolt.

**WARNING:** \_\_\_\_\_

Removing the main jet cover bolt will allow the fuel in the float bowl to drain. Do not remove if engine is hot. Place a rag under

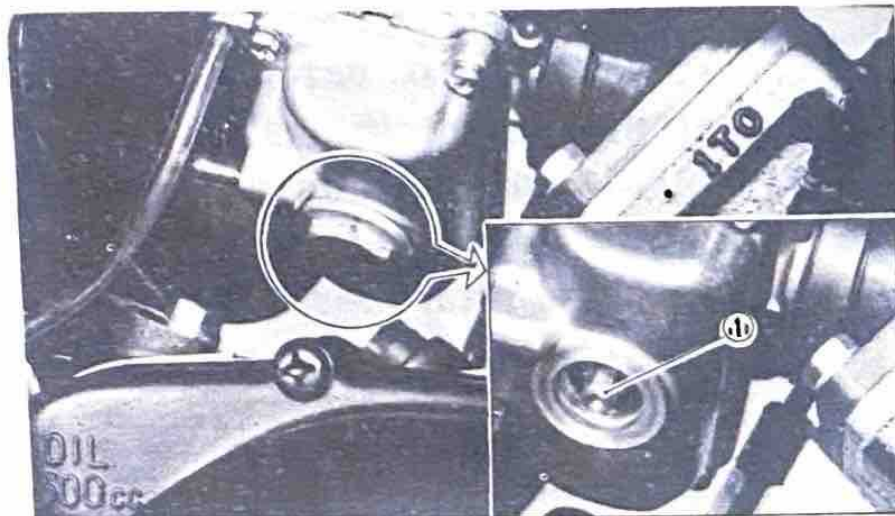
carburetor to catch overflow. Remove bolt in well-ventilated area. Do not remove near open flame. Always clean and dry machine after reassembly.

---

- 3) Using a open-end wrench (6 mm), remove the main main jet. Change as required. Reinstall cover bolt and reassemble, reversing steps 1 through 3.

Main jet: #180





1. Main jet

**IMPORTANT:** \_\_\_\_\_

The YZ80D Carburetor has been set for normal sea level conditions. The standard setting is the result of extensive testing and does not usually require changing. However, under conditions of high atmospheric pressure or heavy load (deep sand or mud) the standard main jet should be replaced with another main jet. If the car-

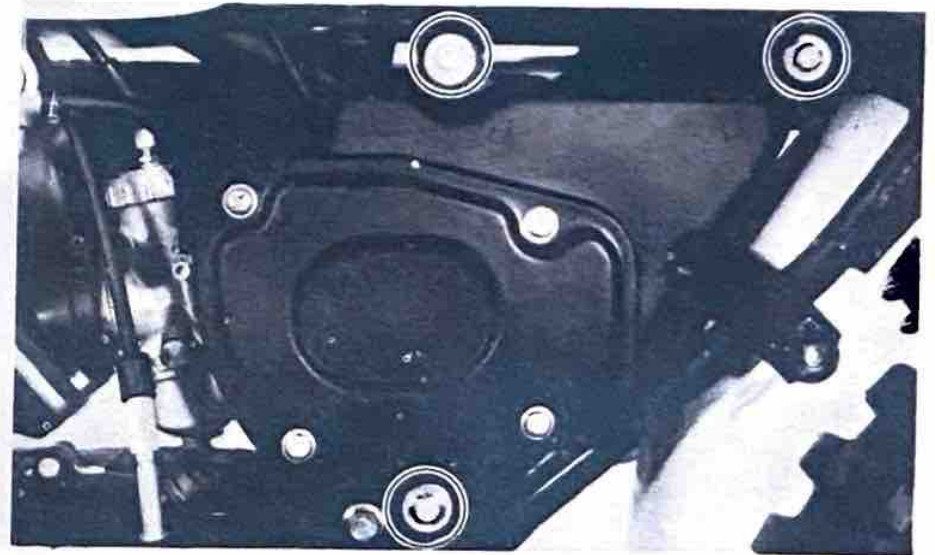
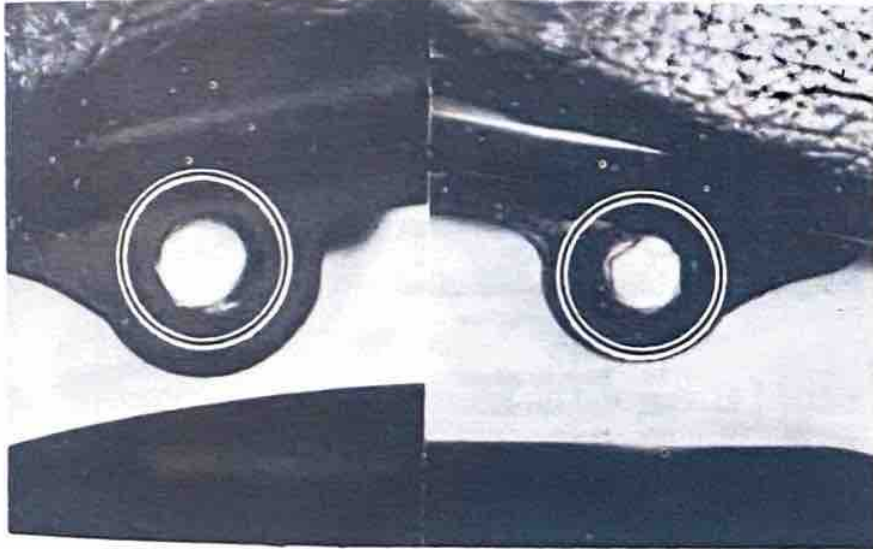
buretor requires any other setting changes to suit local conditions of altitude, weather, etc., the change must be made with great care. Improper carburetor setting changes will cause poor engine performance and possible engine damage.

Please consult your Yamaha dealer about any carburetor setting changes before actually going about them.

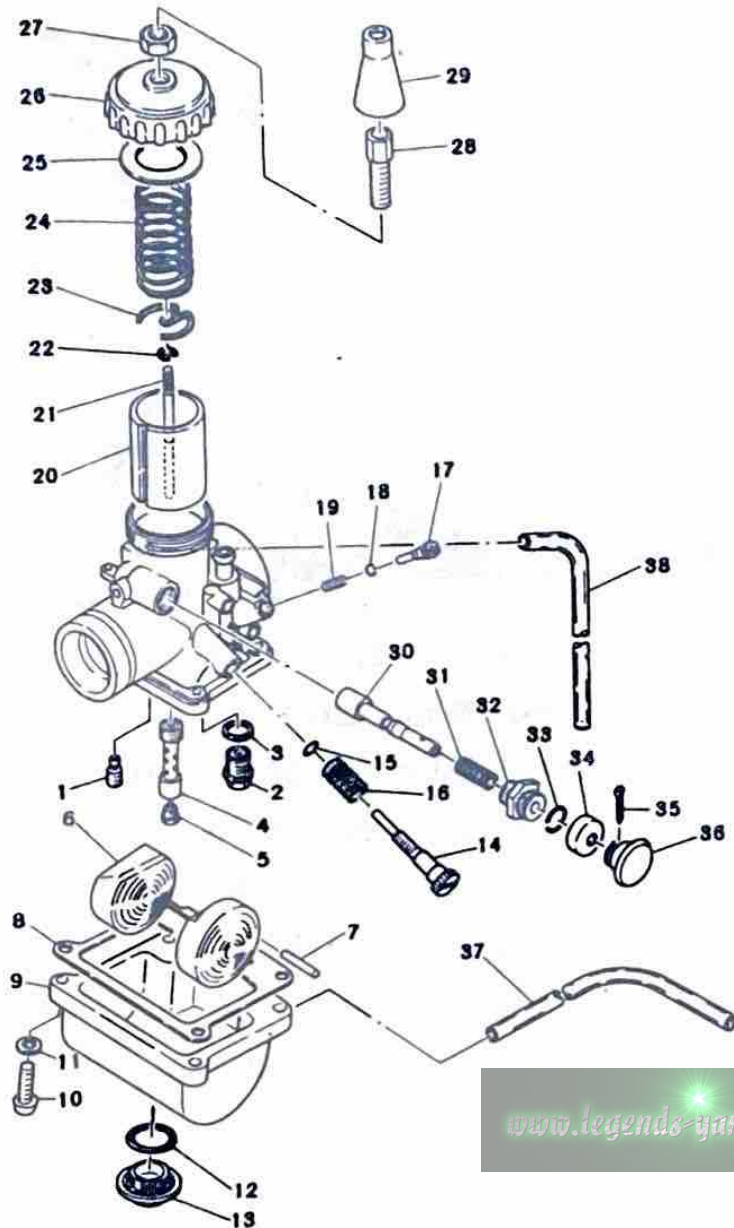
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- d. Remove the side cover (L.H.).
- e. Remove the two bolts and seat.
- f. Remove the air filter case fitting bolts. Push the air filter joint off the carburetor inlet and remove the air filter assembly.
- g. Rotating the carburetor body, work it off the cylinder manifold joint.

h. Noting the presence, location and routing of air vent and overflow pipes, pull the carburetor toward you.







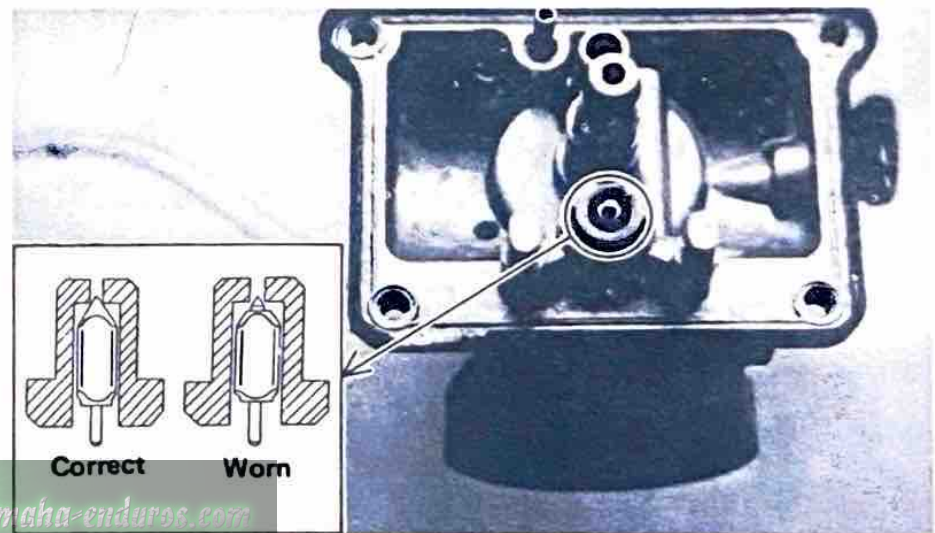
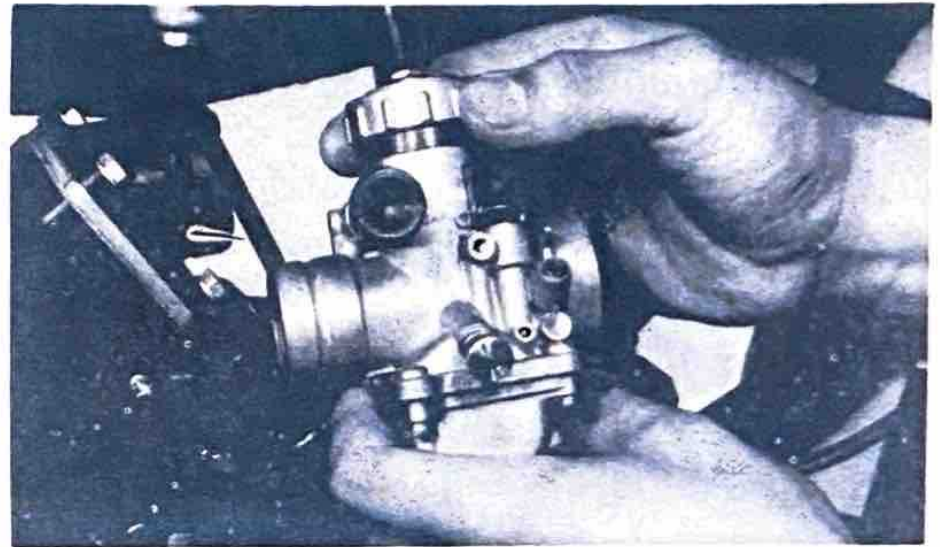
## CARBURETOR

1. Pilot jet
2. Valve seat
3. Valve seat washer
4. Main nozzle
5. Main jet
6. Float
7. Float pin
8. Float chamber gasket
9. Float chamber body
10. Pan head screw
11. Spring washer
12. O-ring
13. Screw plug
14. Throttle stop screw
15. O-ring
16. Throttle stop spring
17. Pilot air screw
18. O-ring
19. Pilot air screw
20. Throttle valve
21. Needle
22. Clip
23. Spring seat
24. Throttle spring
25. Packing
26. Mixing chamber top
27. Locknut
28. Wire adjusting screw
29. Cap
30. Starter plunger
31. Plunger spring
32. Plunger cap
33. Clip
34. Cap
35. Cotter pin
36. Holder
37. Over flow pipe
38. Air vent pipe

## 2. Carburetor disassembly and cleaning

Remove, in order, the following components:

- a. Unscrew the mixing chamber top. Remove the throttle valve and needle assembly.
- b. Remove the Phillips screws (4) holding float bowl to body. Remove float bowl.
- c. On the carburetor body, remove the pin securing the float arm.
- d. Remove float assembly. If a pin is loose or missing, or if the float is damaged in any fashion, replace them.
- e. Remove the inlet needle directly. Inspect the needle and seat for signs of excessive wear or attached foreign particles. Replace as required. Replace inlet needle and inlet valve seat as an assembly.



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f. Remove, in order, the following components.

- 1) Pilot jet
- 2) Main nozzle
- 3) Throttle stop screw (idle speed screw)
- 4) Pilot air screw (idle mixture screw)

g. Actuate the starter jet control to open the circuit.

h. Wash the carburetor in mild solvent. Wash all associated parts.

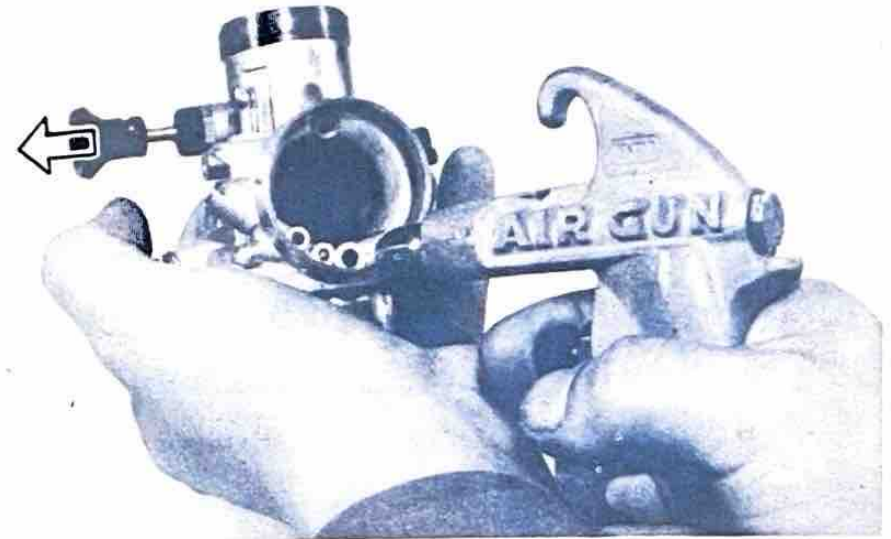
**NOTE:** \_\_\_\_\_

It is rarely necessary to "boil" the carburetor in a warm or hot carburetor bath. If deposits warrant this procedure, remove the starter jet assembly to avoid damaging the jet's neoprene valve seat.

\_\_\_\_\_

i. Using high pressure air, blow out all

passages and jets.



j. Reinstall all components, with the exception of the float bowl.

3. Float level adjustment

- a. Float level is set according to the design of the carburetor and float bowl chamber. Under no circumstances should float level be altered in an attempt to correct a performance problem. Look for the problem in

related components or carburetor circuits.

- b. Using a vernier caliper, measure distance of the float from the top of the float chamber gasket seat (gasket removed) to the float.

Float level

$24 \pm 2.5 \text{ mm}$  ( $0.95 \pm 0.1 \text{ in}$ )

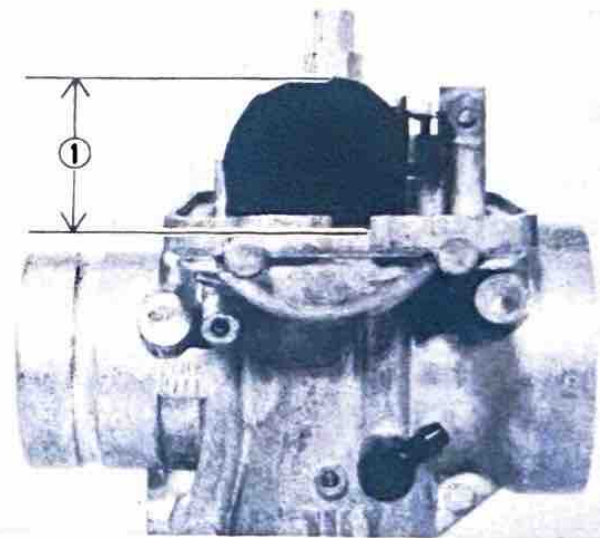
**NOTE:** \_\_\_\_\_

The float should be just resting on, but not depressing, the spring loaded inlet needle.

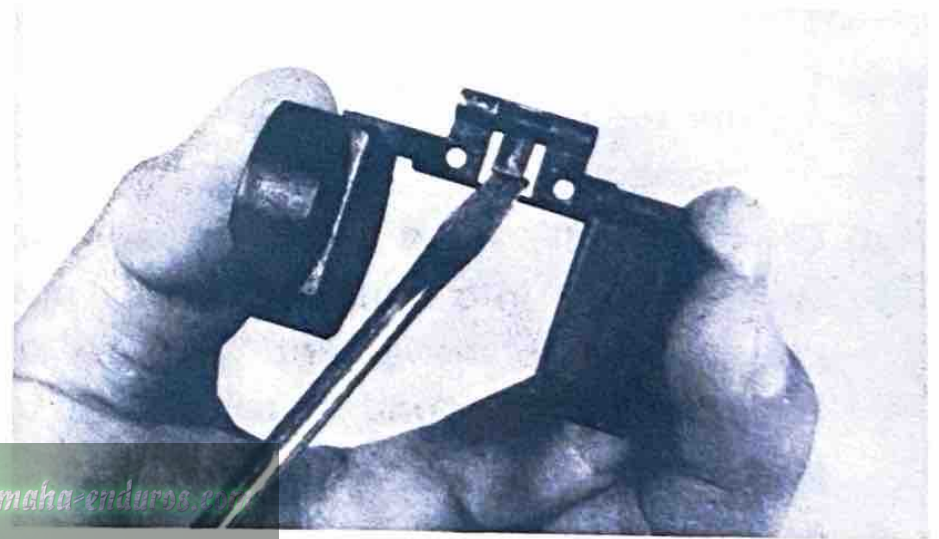
\_\_\_\_\_

- c. To correct float level, remove the float and bend the tang slight amount as required. Both the right and left sides of the float should measure identically.

Correct as required.



1. Float level





#### 4. Carburetor assembly

- a. Install the float bowl.
- b. Remove throttle valve from throttle wire and remove the needle from the throttle valve (slide). Inspect for bending or scratches. Replace as required.
- c. Check needle clip position. Clip position is counted starting with the first clip groove at the top of the needle. Replace clip if loose.

Jet needle type: 4J13

Clip position: No 2 groove

- d. Check throttle valve (slide) for signs of wear. Insert into carburetor body and check for free movement. If slide, or body, is out of round causing slide to stick, replace as required.
- e. Install throttle valve and needle

assembly in carburetor. Tighten mixing chamber top as tight as possible by hand.

- f. Install the all overflow and vent tubes. Reinstall carburetor. Check tightness of all fittings.

**NOTE:** \_\_\_\_\_

After installation, check throttle cable adjustment and check to ensure that slide is freeplay by turning and releasing throttle.

\_\_\_\_\_

#### 5. Troubleshooting

A motocross machine requires immediate, predictable throttle response over a wide operating range. Cylinder porting, combustion chamber compression, ignition timing, muffler design, and carburetor size and component selection are all balanced to achieve this

goal. However, variations in temperature, humidity and altitude, to name a few, will affect carburetion and consequently, engine performance.

The following list gives each of the major components of the carburetor that can be readily changed in order to modify performance if required. If you are unfamiliar with carburetor theory, we suggest you refrain from making changes. Quite often, a performance problem is caused by another related component, such as the exhaust system, ignition timing or combustion chamber compression.

**NOTE:** \_\_\_\_\_

See **MECHANICAL ADJUSTMENTS** for additional carburetor adjustments.

\_\_\_\_\_

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**PILOT AIR SCREW:**

Controls the ratio of air-to-fuel in the idle circuit. Turning the screw in decreases the air supply giving a richer mixture.

Operating range most affected by this adjustment:

Zero to 1/8 throttle

**PILOT JET:**

Controls the ratio of fuel-to-air in the idle circuit. Changing the jet to one with a higher number supplies more fuel to the circuit giving a richer mixture.

Operating range most affected by the pilot jet:

Zero to 1/8 throttle



## THROTTLE VALVE (Slide):

The throttle valve (slide) has a portion of the base cut away to control air flowing over the main nozzle. A wider angle (more "cutaway") will create a leaner mixture. Throttle valves are numbered according to the angle of the cutaway. The higher the number, the more cutaway, the leaner the mixture.

Operating range most affected by the throttle valve:  
1/8 to 1/4 (+) throttle

## JET NEEDLE:

The jet needle is fitted within the throttle valve. The tapered end of the needle fits into the main nozzle outlet. Raising the needle allows more fuel to flow out of the nozzle outlet giving it a richer mixture. There are

five circlip grooves at the top of the needle. Moving the needle clip from the first, or top groove, through the fifth, or bottom groove, will give a correspondingly richer mixture.

Operating range most affected by the jet needle:  
1/4 to 3/4 (+) throttle

## MAIN JET:

The main jet controls overall fuel flow through the main nozzle. Changing the jet to a one step higher number supplies more fuel to the main nozzle giving a richer mixture.

Operating range most affected by the main jet:  
3/4 to full throttle

**NOTE:** \_\_\_\_\_  
Excessive changes in main jet size can affect performance at all throttle positions.

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**CAUTION:** \_\_\_\_\_  
The fuel/air mixture ratio is a governing factor upon engine operating temperature. Any carburetor changes, whatsoever, must be followed by a thorough spark plug test.

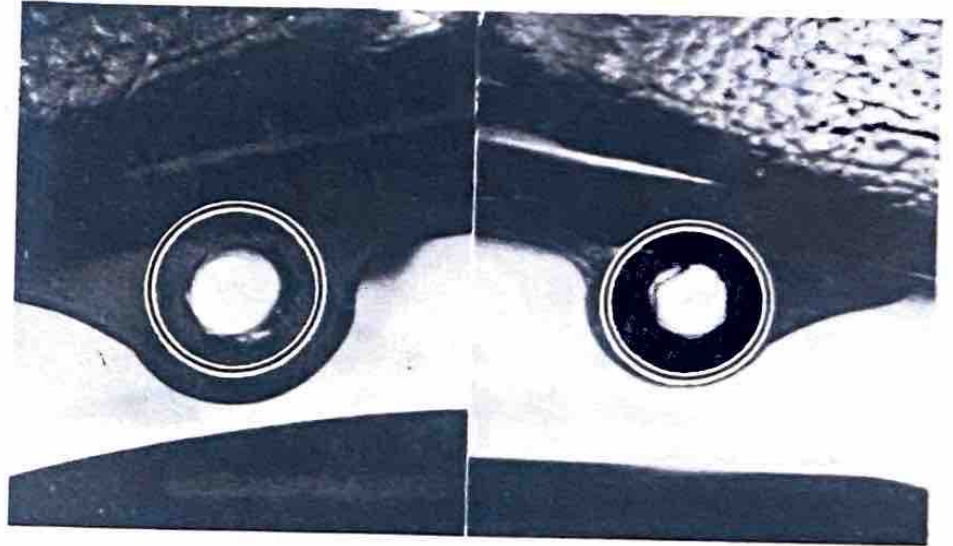
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### Top end and muffler

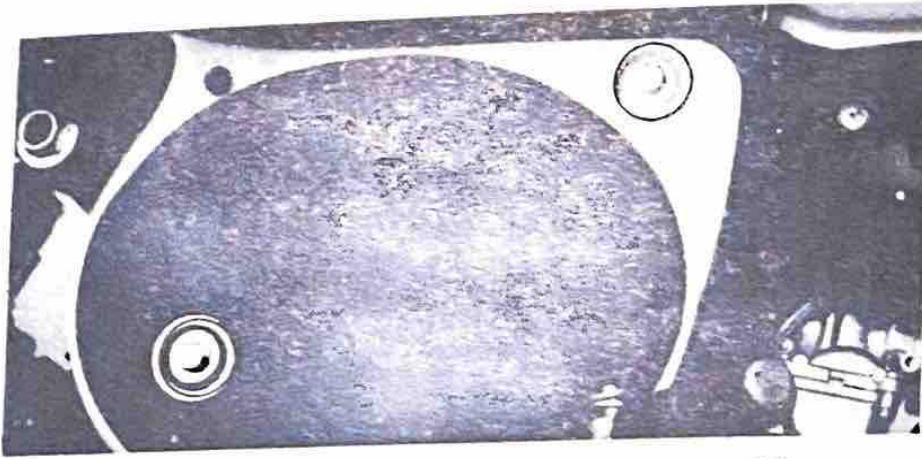
With the carburetor removed, proceed as follows:

1. Muffler and cylinder head removal
  - a. Remove the two bolts and remove seat.
  - b. Remove the securing bolt from fuel tank.
  - c. Lift rear of fuel tank up and pull back to

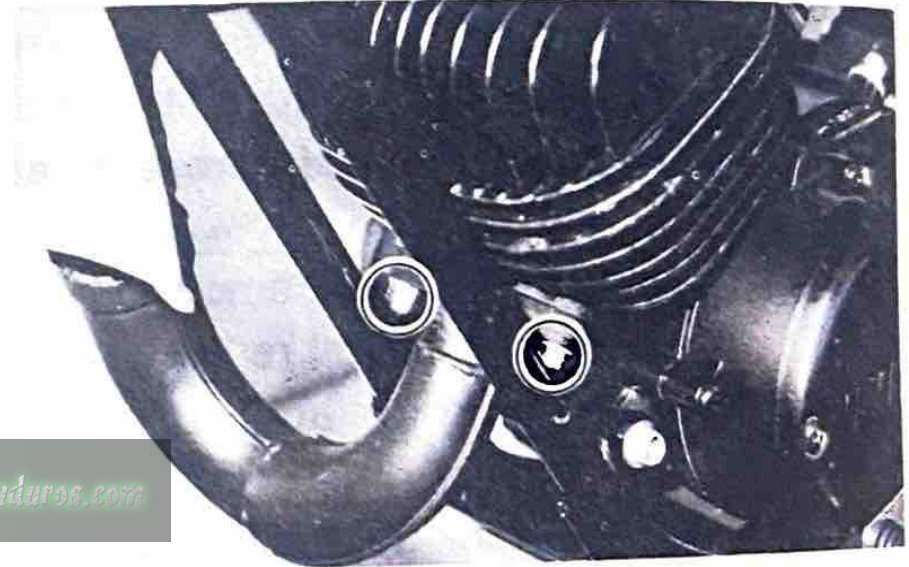
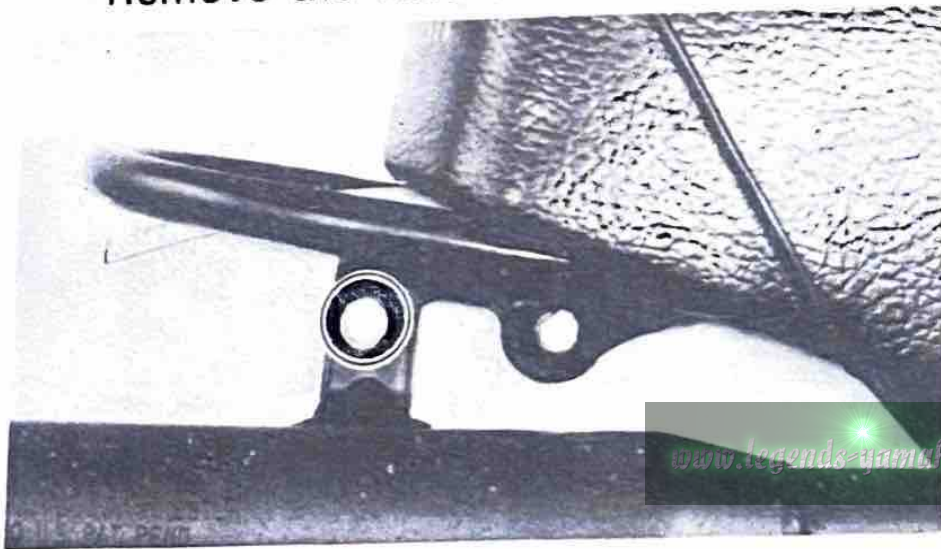
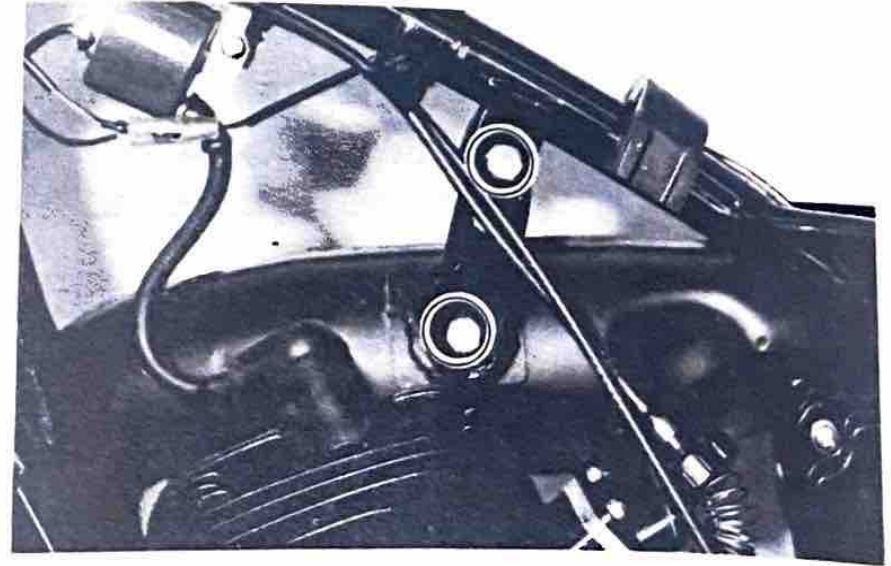
clear frame mounts. Remove tank.  
d. Remove the side cover (R.H.).







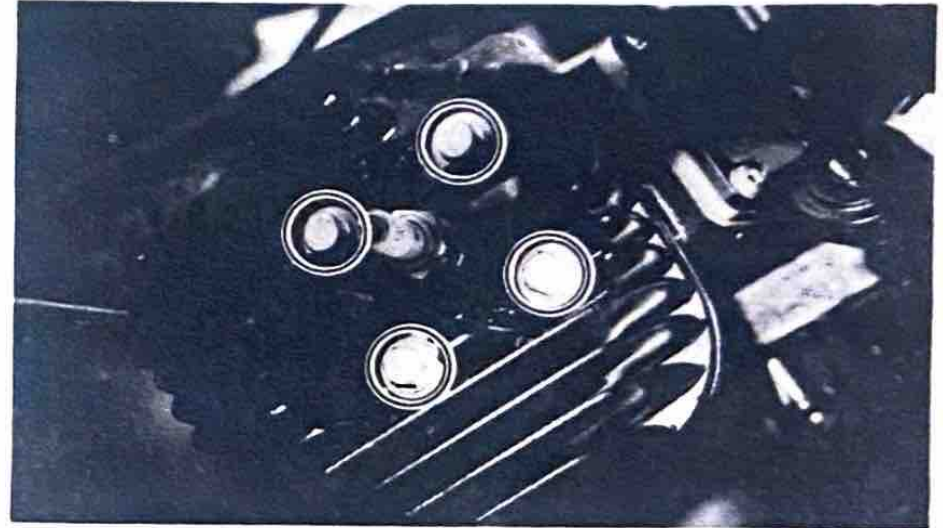
e. Remove the nuts holding muffler to cylinder and remove the muffler mounting bolts.  
Remove the muffler



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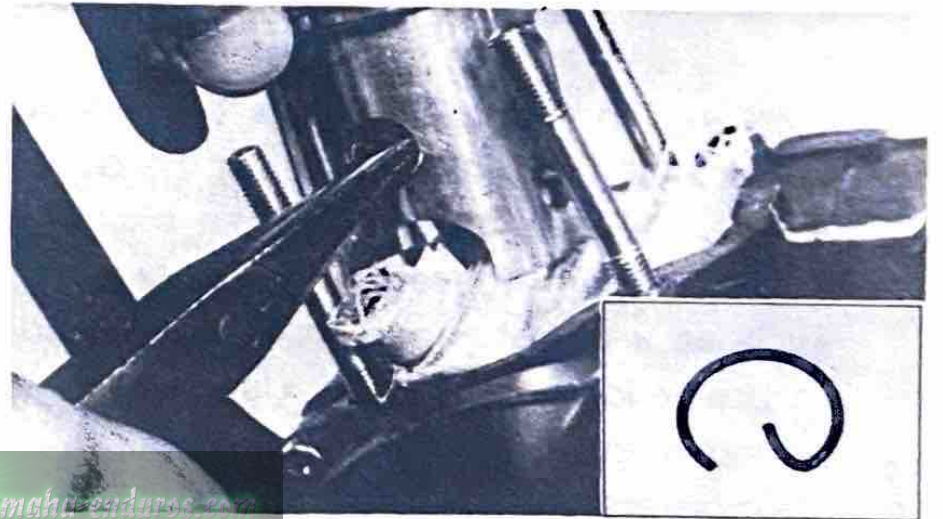
- f. Remove spark plug lead wire. Loosen, but do not remove spark plug.
- g. Remove nuts securing cylinder and head (4 nuts).  
Remove cylinder head and gasket.

**NOTE:** \_\_\_\_\_  
Break each nut loose (1/4 turn) prior to removing.  
\_\_\_\_\_



## 2. Cylinder removal

- a. With the piston at top dead center, rise the cylinder until the cylinder skirts clear crankcase. Stuff a clean shop rag into crankcase cavity, around rod, to prevent dirt and other foreign particles from entering. Remove cylinder.
- b. Remove the piston pin clip (1) from the piston. Push the piston pin out from opposite side. Remove the piston.



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**NOTE:**

If the pin hangs up, use a piston pin puller. Do not hammer on pin as damage to rod, piston and bearing will result.

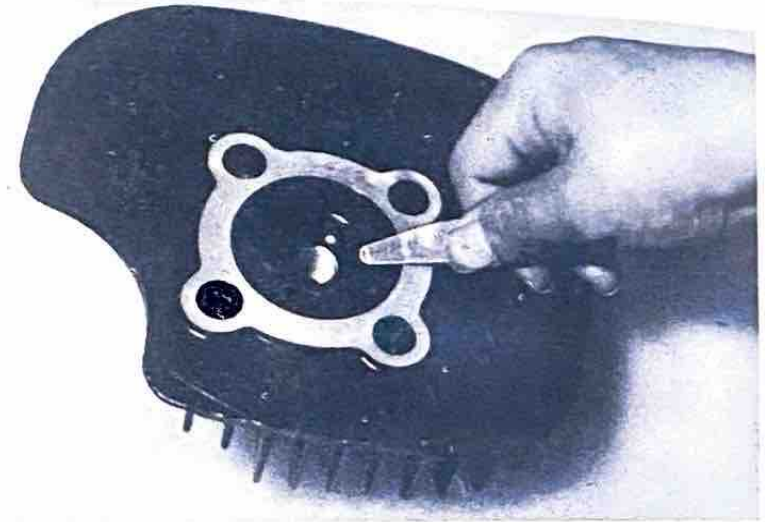
3. Exhaust pipe maintenance

- a. Using a rounded scraper, remove excess carbon deposits from manifold area of exhaust pipe. Check muffler gasket condition. The gasket seat is located around the cylinder exhaust port.
- b. Carbon deposits within the silencer may be removed by lightly tapping the outer shell with a hammer and then blowing out with compressed air. Heavy wire, such as a coat hanger, may be inserted to break loose deposits. Use care.
- c. Reinstall muffler.

4. Maintenance — Cylinder head

- a. Remove spark plug.

- b. Using a rounded scraper, remove carbon deposits from combustion chamber. Take care to avoid damaging the spark plug threads. Do not use a sharp instrument. Avoid scratching the metal surface.



- c. Place the head on a surface plate. There should be no warpage. Correct by resurfacing. Place 400 ~ 600 grit wet emery sandpaper on surface plate and re-surface head using a figure-eight san-

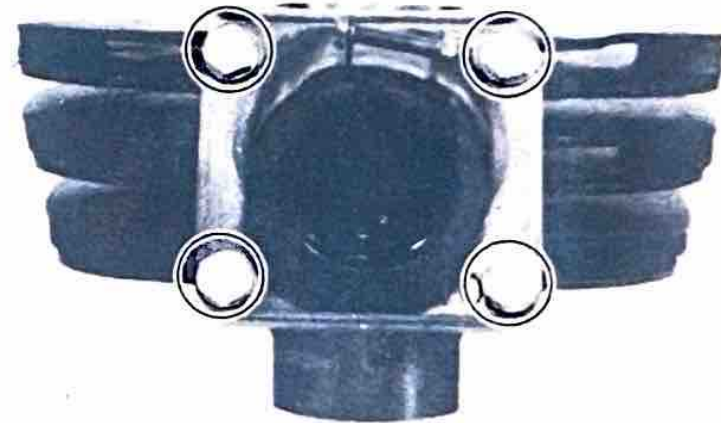
ding pattern. Rotate head several times to avoid removing too much material from one side.

- d. Clean the spark plug gasket mating surface thoroughly.
- e. Wash the head in solvent and wipe dry.
- f. Install new cylinder head gasket during reassembly.

Cylinder head nut torque:  
1.2 ~ 1.5 m-kg  
(9 ~ 11 ft-lb)

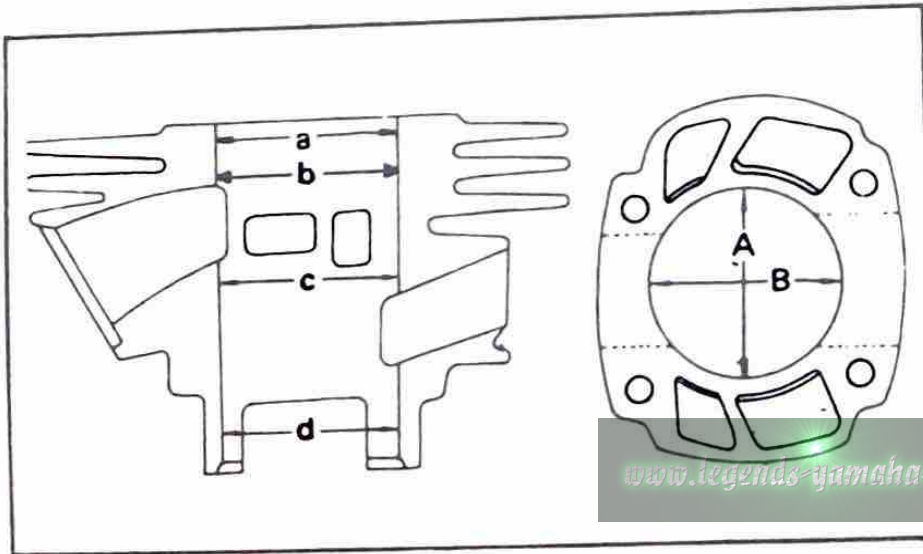
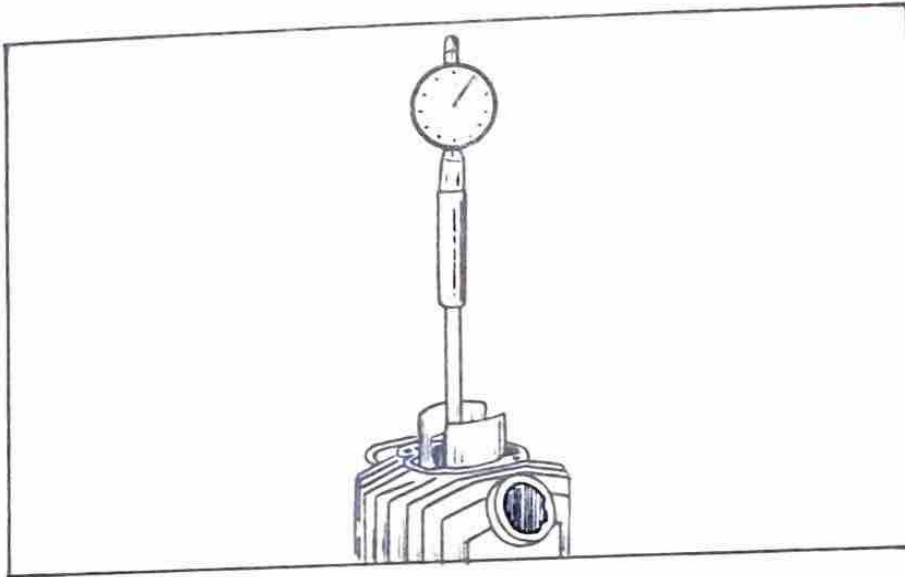
#### 5. Maintenance — Cylinder

- a. Remove reed valve assembly.
- b. Using a rounded scraper, remove carbon deposits from exhaust port.



- c. Remove cylinder base gasket and clean gasket seat on cylinder and crankcase thoroughly.
- d. Check cylinder bore. Using a cylinder hone, remove any scoring. Hone lightly, using smooth stones. Hone no more than required to avoid excess piston clearance.
- e. Using a cylinder gauge set to standard bore size, measure the cylinder.





Measure front-to-rear and side-to-side at top, center and bottom just above exhaust port. Compare minimum and maximum measurements. If over tolerance and not correctable by honing, rebore to next over-size.

Standard bore:  
49 mm (1.929 in)

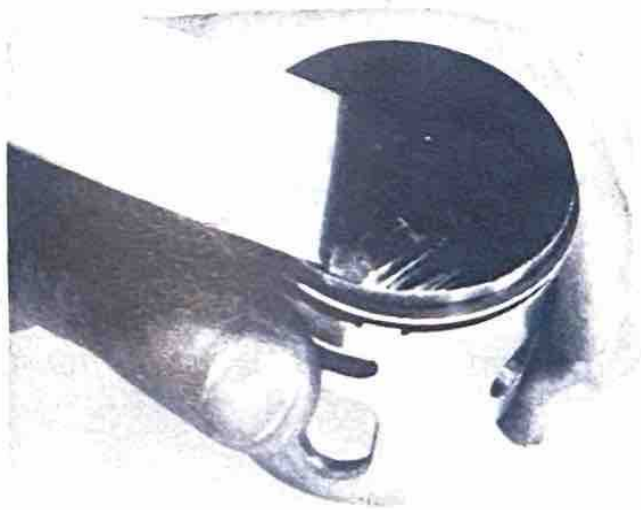
Max. allowable taper:  
0.05 mm (0.0002 in)

Max. allowable out-of-round:  
0.01 mm (0.0004 in)

- f. Clean cylinder in solvent, then wash with hot soapy water. Dry. Coat walls with light oil film.
- g. During re-assembly, always use a new cylinder base gasket.

## 6. Maintenance — Piston

- a. Using a rounded scraper, remove carbon deposits from piston crown.



- b. Break a used piston ring in two. File end square. De-burr edges to avoid scratching ring groove and clean carbon deposits from ring grooves.

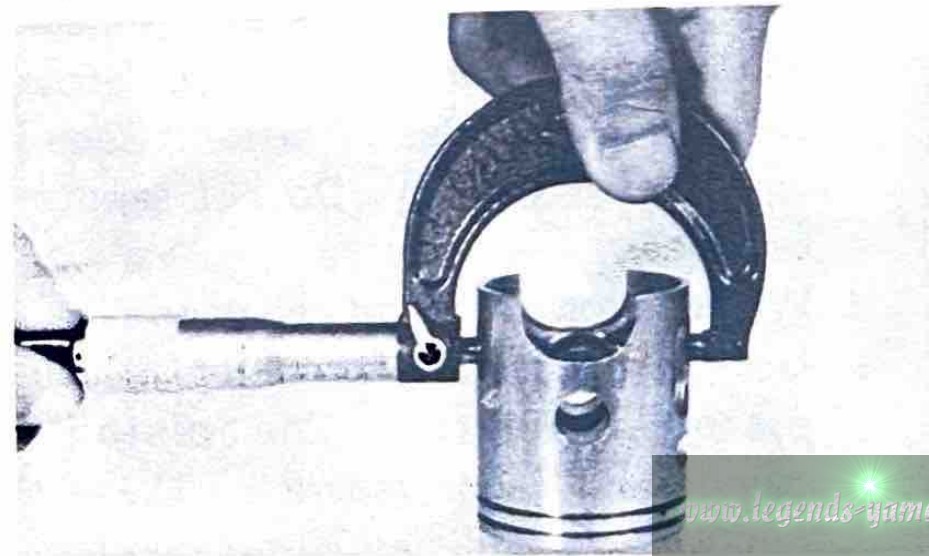
- c. Using 400 ~ 600 grit wet sandpaper, lightly sand score marks and lacquer deposits from sides of piston. Sand in cross-hatch pattern. Do not sand excessively.
- d. Wash piston in solvent and wipe dry.
- e. Using an outside micrometer, measure piston diameter. The piston is camground and tapered. The only measuring point is at right-angles to the





piston pin holes about 10 mm (0.5 in) bottom of the piston skirt. Compare piston diameter to cylinder bore measurements (bottom two measurements at right angles to piston pin line).

Piston maximum diameter subtracted from minimum cylinder diameter gives piston clearance. If beyond tolerance replace piston or bore cylinder as required.



Nominal piston clearance:

0.035 ~ 0.040 mm

(0.0014 ~ 0.0016 in)

Maximum wear limit:

0.1 mm (0.0039 in)

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During re-assembly, coat the piston skirt areas liberally with two-stroke oil.

- g. Install new piston pin circlips and make sure they are fully seated within their grooves.
- h. Take care during installation to avoid damaging the piston skirts against the crankcase as the cylinder is installed. Note the arrow mark on piston dome must face forward.
- i. Make sure the rings are properly seated as the cylinder is installed.

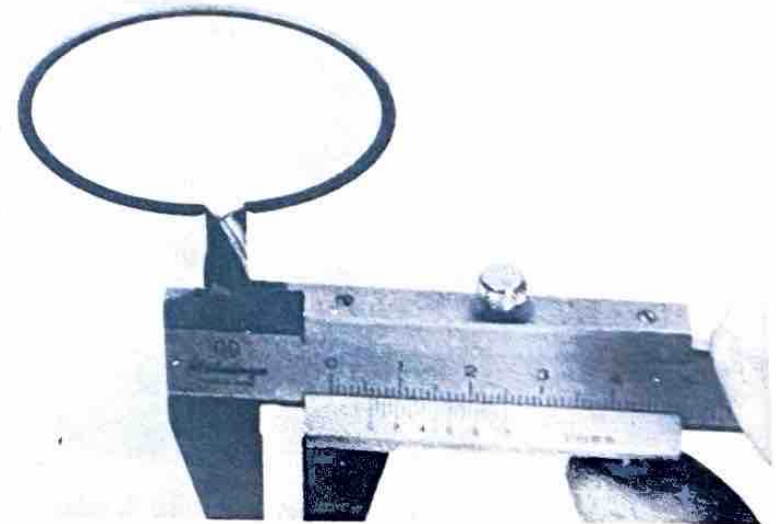
7. Maintenance — Piston rings

- a. Remove ring from piston.



- b. Measure ring end gap in free position. If beyond tolerance, replace.

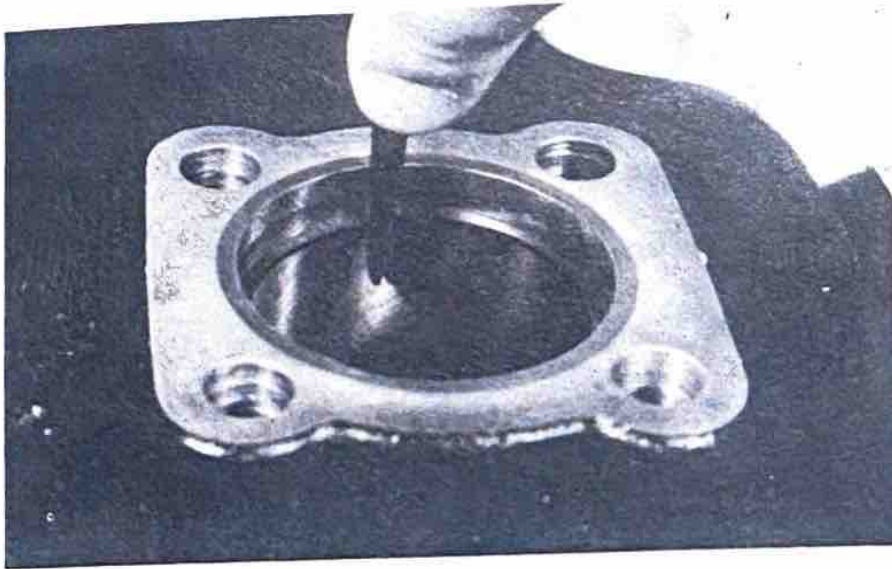
Ring end gap (top and 2nd), free:  
5.5 mm (0.22 in)



- c. Insert ring into cylinder. Push down approximately 20 mm using piston crown to maintain right-angle to bore. Measure installed end gap. If beyond tolerance, replace.



Ring end gap installed (top and 2nd):  
0.4 ~ 0.5 mm  
(0.016 ~ 0.020 in)



- d. Holding cylinder towards light, check for full seating of ring around bore. If not fully seated, check cylinder. If cylinder not out-of-round, replace piston ring.
- e. During installation, make sure ring ends are properly fitted around ring locating

pin in piston groove. Apply liberal coating of two-stroke oil to ring.

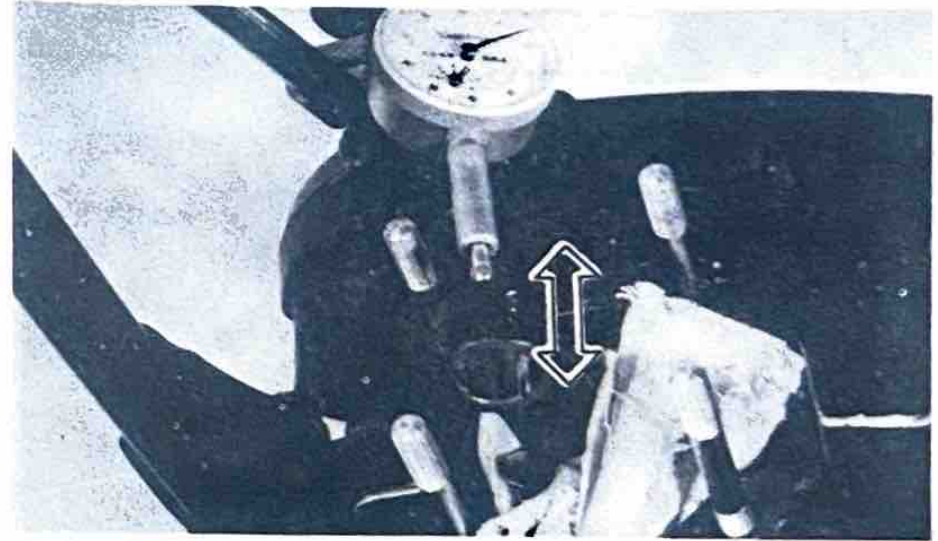
**NOTE:** \_\_\_\_\_  
New ring requires break-in. Follow first portion of new machine break-in procedure.

\_\_\_\_\_

8. Maintenance — Piston pin, bearing and connecting rod
- Check the pin for signs of wear. If any wear is evident, replace pin and bearing.
  - Check the pin and bearing for signs of heat discoloration. If excessive (heavily blued), replace both.
  - Check the bearing cage for excessive wear. Check the rollers for signs of flat spots. If found, replace pin and bearing.
  - Apply a light film of oil to pin and bearing surfaces. Install in connecting rod small end. Check for play. There

should be no noticeable vertical play. If play exists, check connecting rod small end diameter for wear. Replace pin and bearing or all as required.

- e. Mount the dial gauge at right angles to the connecting rod small end holding the bottom of rod toward the dial indicator, rock top of rod and measure axial play.



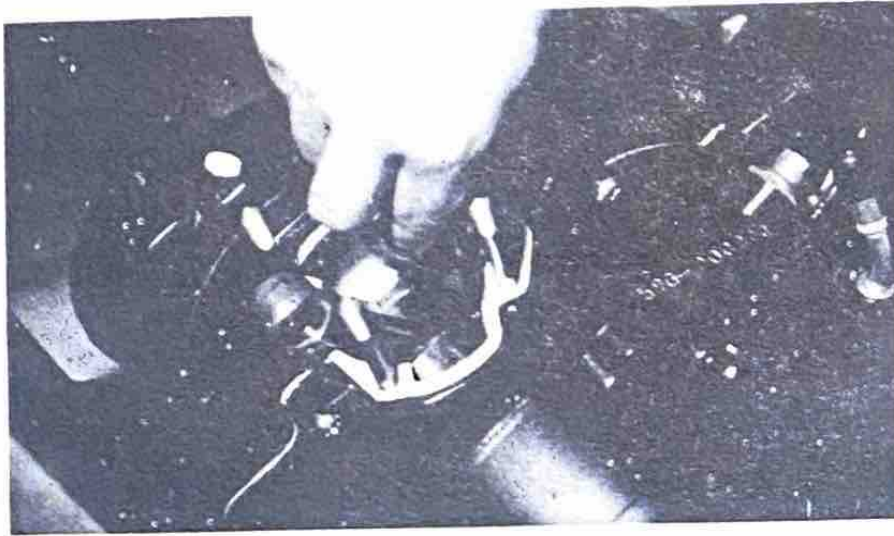
Connecting rod axial play:  
0.8 ~ 2.0 mm  
(0.031 ~ 0.079 in)

- f. Remove the dial gauge and slide the connecting rod to one side. Insert a feeler gauge between the side of the connecting rod big end and the crank wheel. Measure clearance.

Connecting rod/crank side  
clearance:  
0.2 ~ 0.7 mm  
(0.008 ~ 0.027 in)

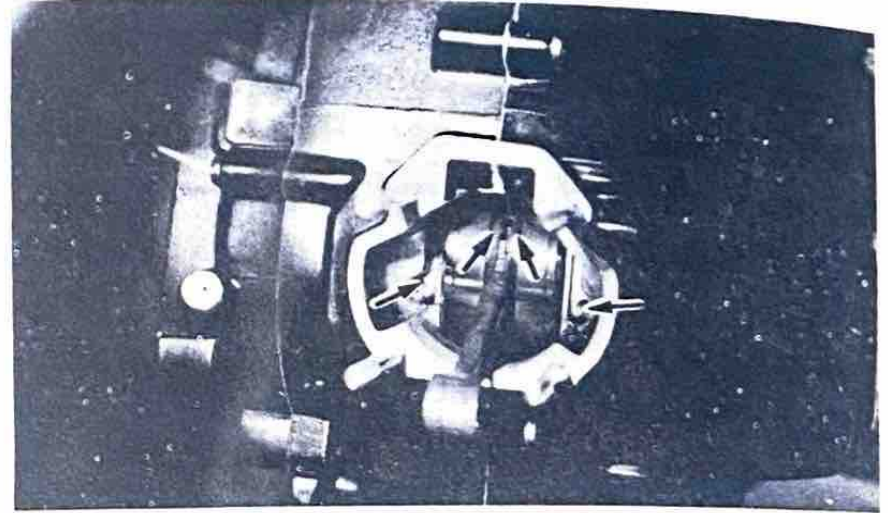
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- g. If any of the above measurements exceed tolerance, crankshaft repair is required. Take the machine to your authorized dealer.
- h. During reassembly, apply a liberal coating of two-stroke oil to the piston pin and bearing. Apply several drops of oil to the connecting rod big end. Apply several drops of oil into each crankshaft bearing oil delivery hole.

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## 9. Reed valve

- a. With carburetor, top end, and muffler removed, remove the four (4) bolts holding the intake manifold and reed valve assembly to the cylinder. Remove the assembly.
- b. Inspect reed petals for signs of fatigue cracks. Reed petals should fit flush or nearly flush against neoprene seats. If in doubt as to sealing ability, apply suction to carburetor side of assembly.

Leakage should be slight to moderate.

c. If disassembly of the reed valve assembly is required, proceed as follows:

- 1) Remove Philips screws (2) securing stopper plate and reed to reed block. Handle reed carefully. Avoid scratches and do not bend. Note from which side of the reed block the reed and stopper plate were removed. Reinstall on same side.
- 2) During reassembly, clean reed block, reed, and stopper plate thoroughly. Apply a holding agent, such as "Loc-Tite", to threads of Philips screws. Tighten each screw gradually to avoid warping. Tighten the screws thoroughly.

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**CAUTION:** \_\_\_\_\_  
**Do not over-tighten securing screws. Stopper plates may warp.**

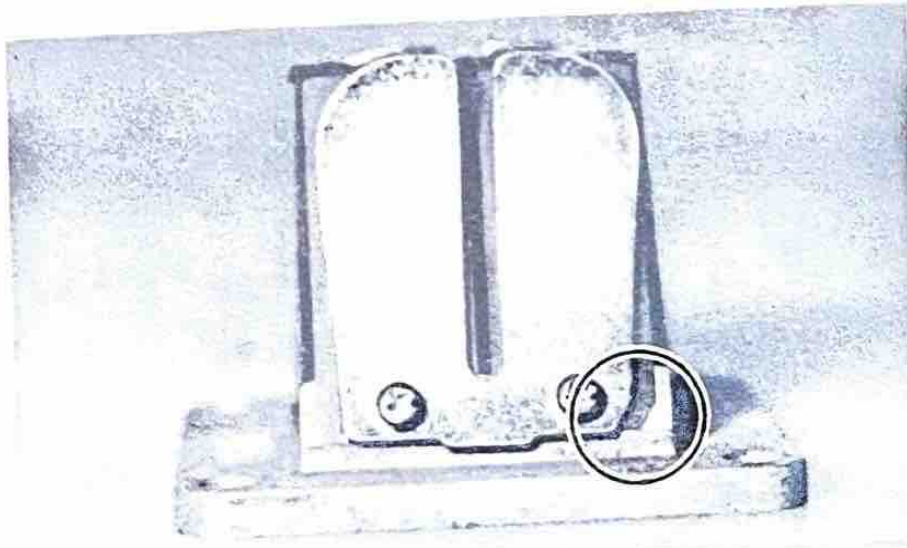
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Securing screw torque:  
8.0 cm-kg (6.9 in-lb)

**NOTE:** \_\_\_\_\_  
During reassembly, observe the cut in the lower corner of the reed and stopper plate. Use as aid to direction of reed installation.

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- d. During reassembly of the reed valve assembly and manifold, install new gaskets and torque the securing bolts gradually and in pattern.

### Clutch, shifter and kick starter

#### NOTE:

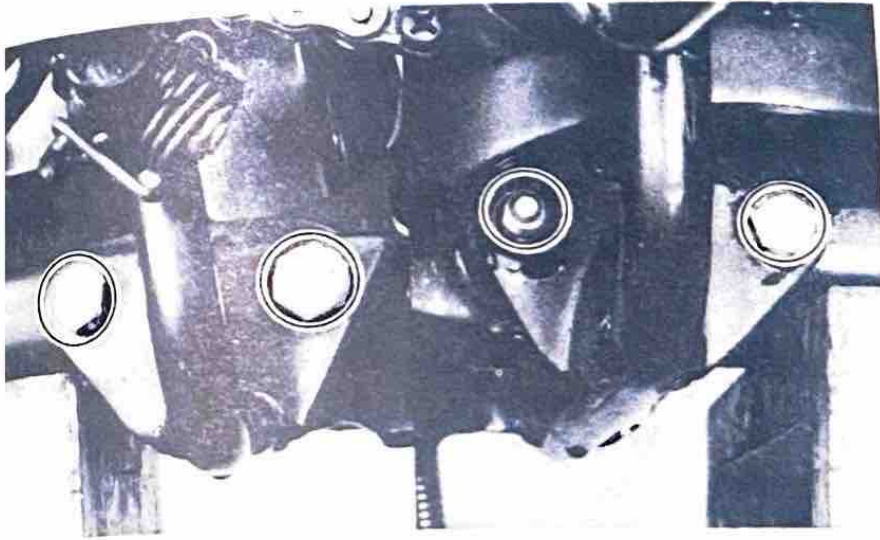
Clutch adjustment is covered in Section "Mechanical adjustments".

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1. Clutch removal
  - a. Remove the kick starter lever.
  - b. Remove the right crank case cover 1.



- c. Loosen the rear brake adjuster.
- d. Remove the foot rest retaining bolt and remove the foot rest.



**NOTE:** \_\_\_\_\_

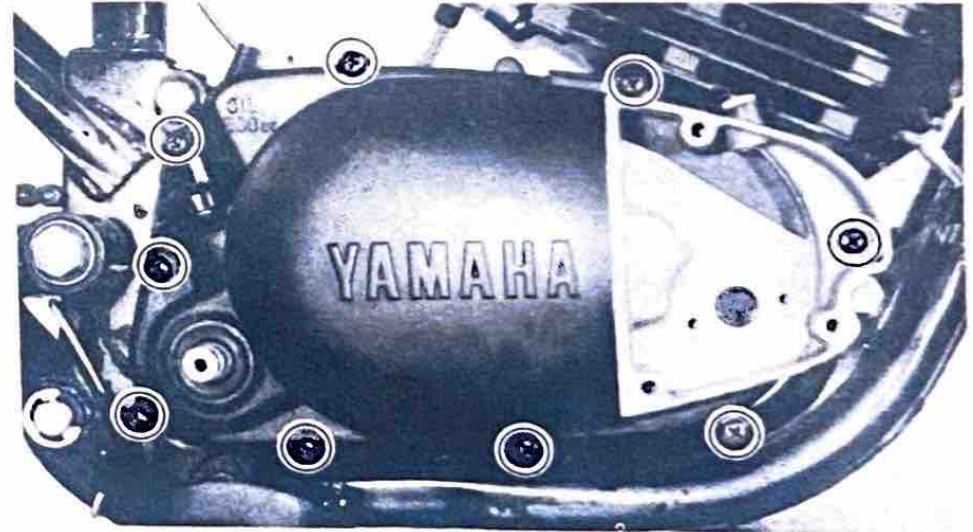
Before removing the foot rest, place a suitable stand under the engine, so that the machine does not fall over.

\_\_\_\_\_

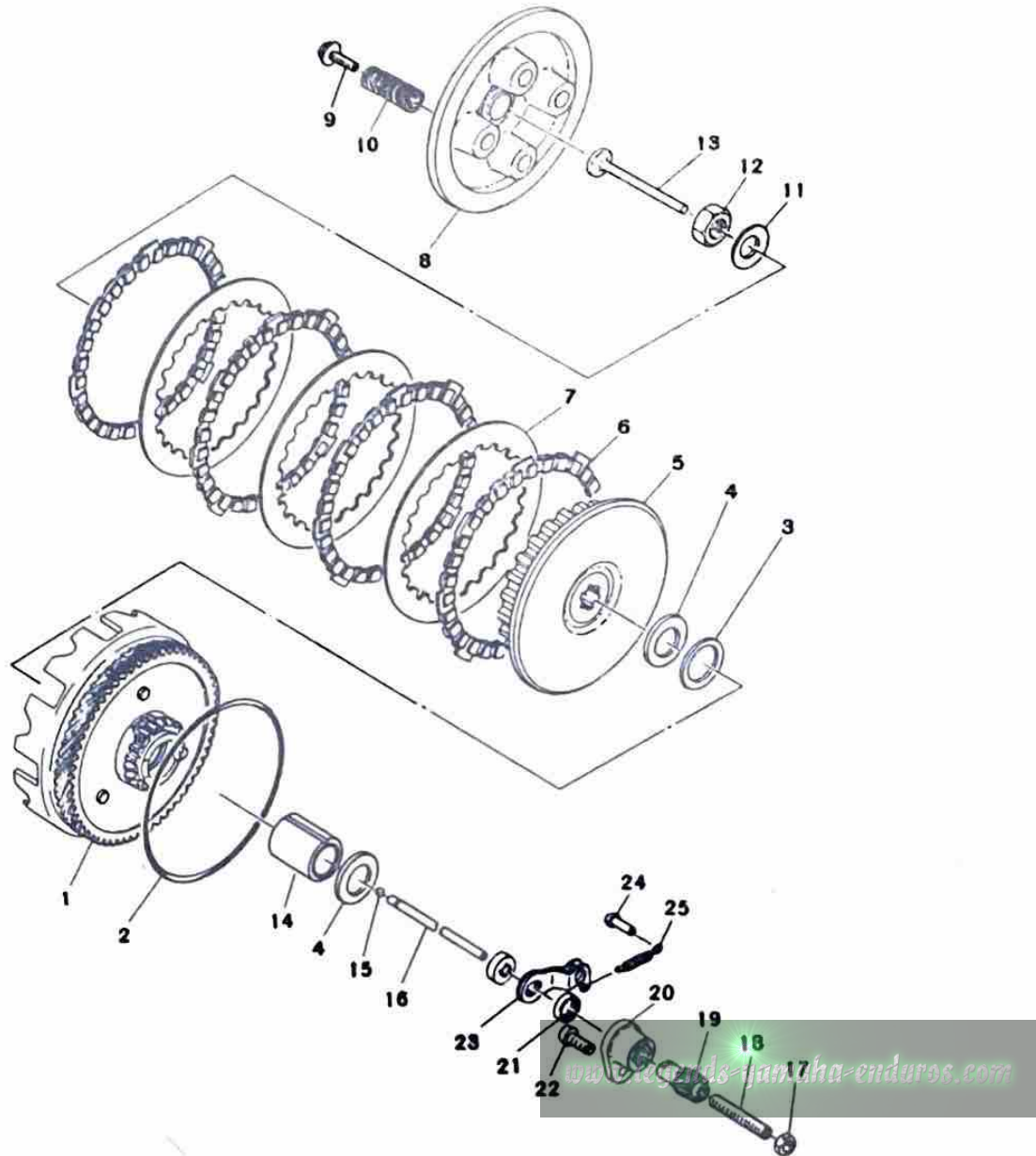
- e. Remove the pan head screws holding the case cover in place and remove the cover. Note the position of the dowel pins.

**NOTE:** \_\_\_\_\_  
Drain transmission oil before removing cover.

\_\_\_\_\_







# CLUTCH

- 1. - Driven gear comp.
- 2. O-ring
- 3. Plate washer
- 4. Thrust plate
- 5. Clutch boss
- 6. Friction plate
- 7. Clutch plate
- 8. Pressure plate
- 9. Bolt
- 10. Clutch spring
- 11. Clutch boss washer
- 12. Clutch boss nut
- 13. Push rod 1
- 14. Spacer
- 15. Ball
- 16. Push rod 2
- 17. Nut
- 18. Adjusting screw
- 19. Push screw
- 20. Push screw housing
- 21. Oil seal
- 22. Pan head screw
- 23. Push lever
- 24. Spring hook
- 25. Lever return spring

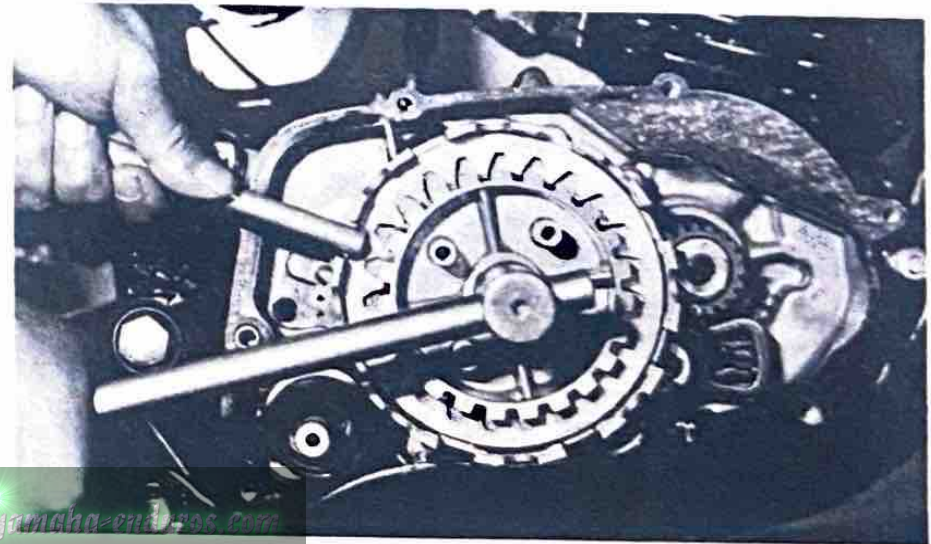
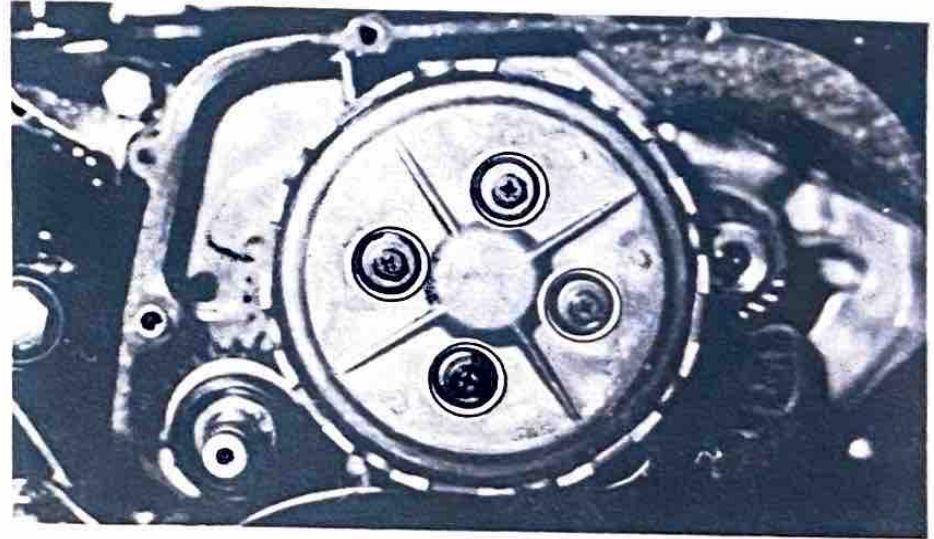
- f. Remove the Phillips (hexagon) screws (4) holding the pressure plate. Remove the clutch springs (4) pressure plate and push rod. Remove the clutch plates and friction plates.

**NOTE:** \_\_\_\_\_

When removing Phillips (hexagon) spring screws, loosen each screw in several stages working in a cross-hatch pattern to avoid any unnecessary warpage. Note the condition of each piece as it is removed and its location with the assembly.

\_\_\_\_\_

- g. Using the clutch holding tool, remove the clutch securing nut and lockwasher. Remove the clutch boss and driven gear (clutch housing).



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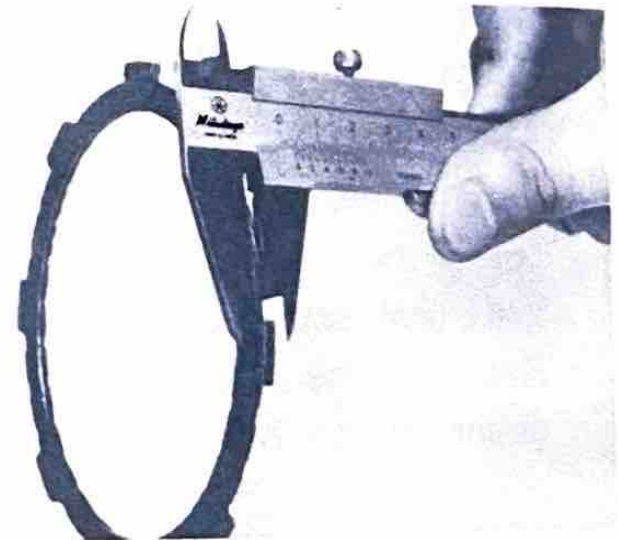
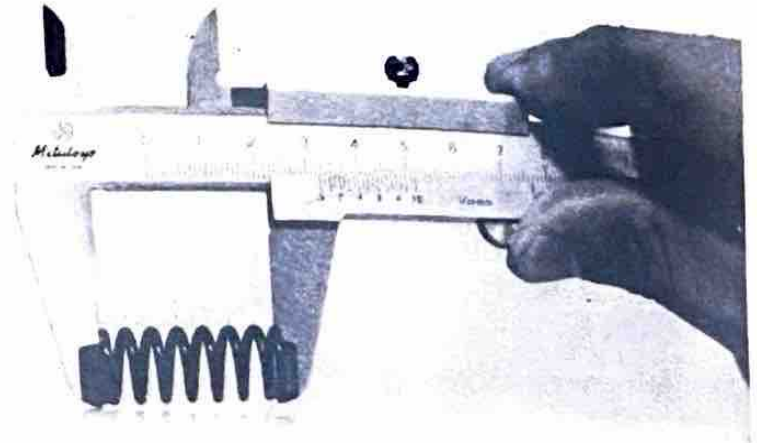


2. Troubleshooting — Clutch assembly
- a. Measure each clutch spring. If beyond tolerance, replace.

	New	Minimum
Clutch spring free length	34.0 mm (1.34 in)	33.0 mm (1.30 in)

- b. Measure the friction plates at three or four points. If their minimum thickness exceeds tolerance, replace.

	New	Wear limit
Friction plate thickness	3.0 mm (0.118 in)	2.7 mm (0.106 in)



- c. Check the plates for signs of warpage and heat damage, replace as required.

**NOTE:** \_\_\_\_\_

For optimum performance, if any plate requires replacement, it is advisable to replace the entire set.

\_\_\_\_\_

- d. Check each clutch plate for signs of heat damage and warpage. Place on surface plate (plate glass is acceptable) and use feeler gauge.

Clutch plate warp allowance:  
0.05 mm (0.02 in) maximum

- e. Clutch housing assembly (integrated with the primary driven gear). There is a rubber friction ring place on the outside of the clutch between the primary driven gear and the clutch housing in order to

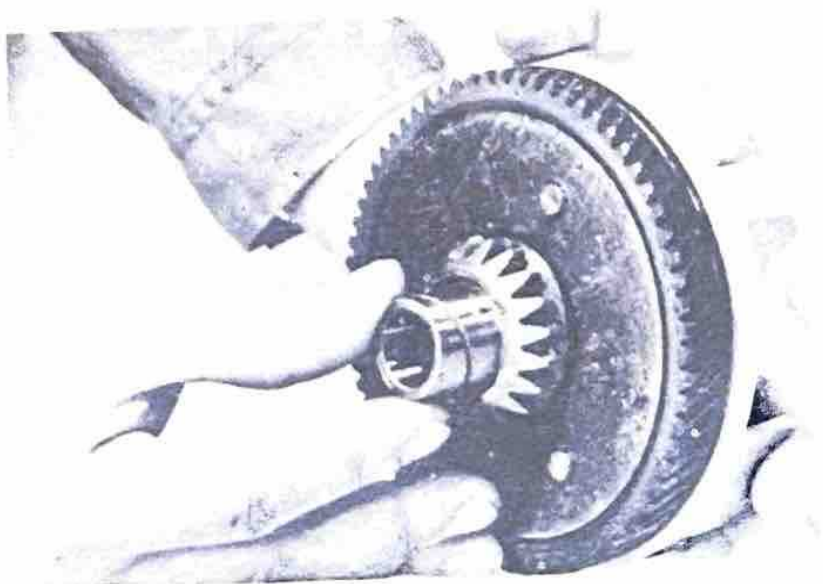
reduce gear noise at low engine speeds.



**Inspection:**

Insert the primary gear retaining collar (spacer) in the primary driven gear boss and check it for radial play. If the play is excessive, replace the gear retaining collar because it will cause excessive noise. If any scratches are found, replace the spacer to avoid impaired clutch action.



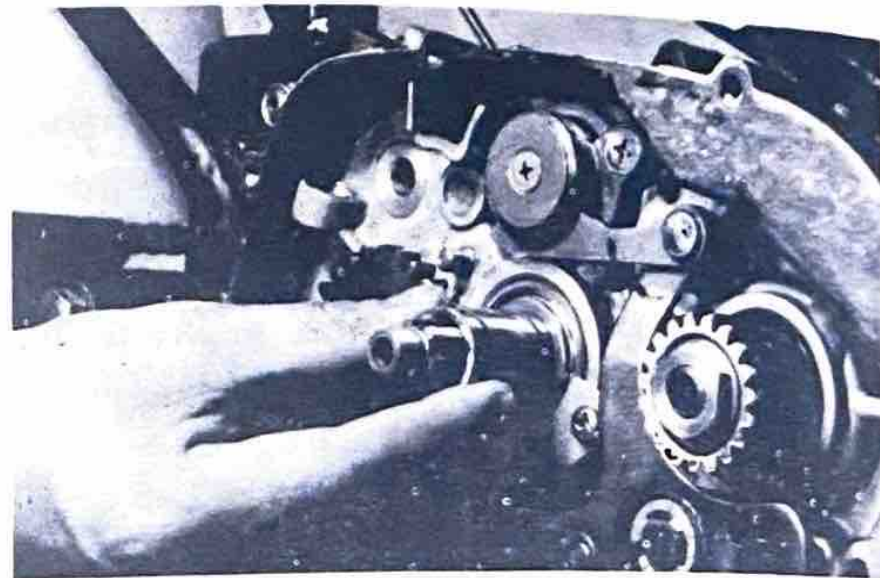


f. Checking the primary gear retaining collar (spacer).

Place the primary gear retaining collar around the main axle and again check it for radial play. If play exists, replace the gear retaining collar.

Replace any collar with step-wear on its outer surface.

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g. Checking the push rod

Remove the push rod and roll it over a surface plate. If the rod is bent, straighten or replace it.



h. Caution on re-assembling the clutch

\* On both ends of the primary driven gear spaces are plate washer and thrust plates. If these washer and plates are incorrectly installed, the clutch boss will rub directly on the driven gear, impairing clutch action.

\* The thrust plate fits on the primary retaining collar, but it may slip out of place when installing clutch boss. Therefore, apply grease to both surfaces of the plate to make it stick to the gear retaining collar.

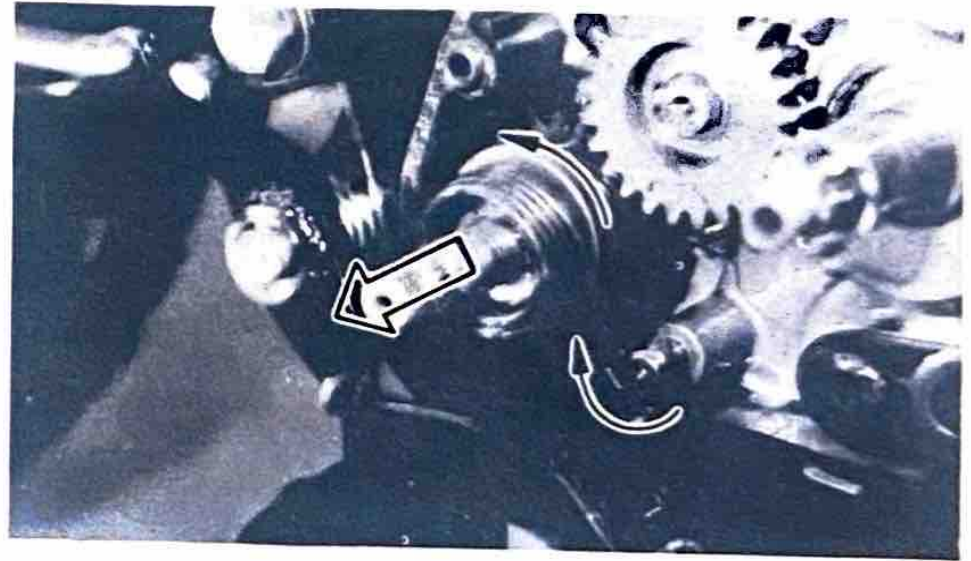
\* Before installing the clutch plate, friction plate, etc., install the clutch boss on the main axle.

3. Kick starter removal

a. Unhook kick spring from its post in crankcase.

Allow it to relax. Then remove kick axle assembly by rotating the shaft

counterclockwise and then pulling out the entire assembly.



b. Check to see that the kick gear spirals freely on the worm shaft. Check the gear teeth for wear and breakage.

c. Install the kick starter assembly.

1) Set the kick gear clip in the groove of crankcase.

2) Rotate kick spring clockwise and hook it on kick spring stopper.



**NOTE:** \_\_\_\_\_

Make sure that the kick starter is stopped at projection of crankcase.

\_\_\_\_\_

- 3) Check whether the kick starter acts correctly and whether it returns to its home position.

4. Shift mechanism

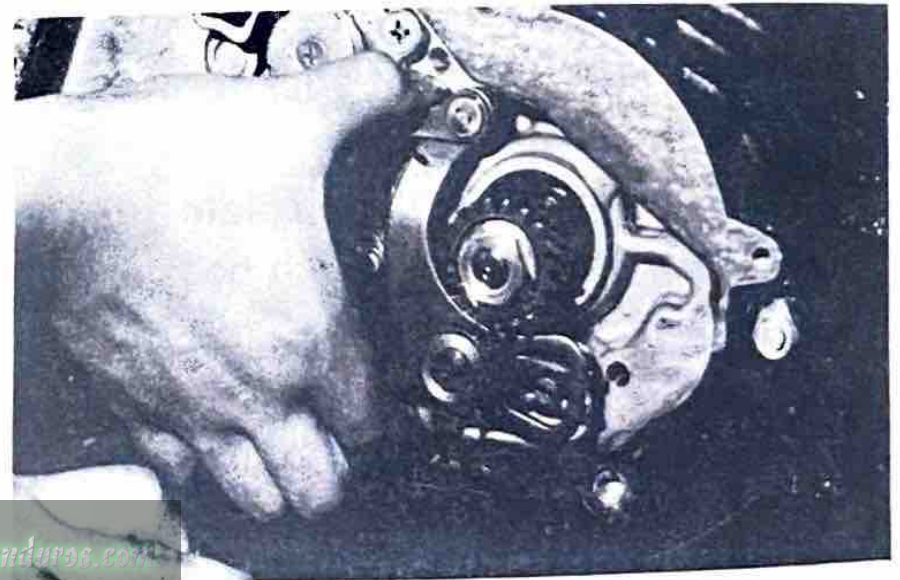
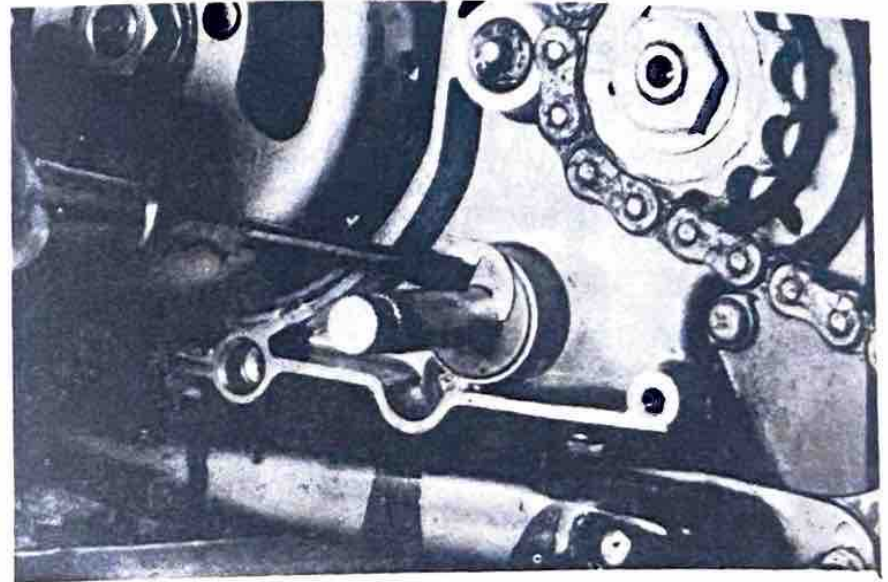
**NOTE:** \_\_\_\_\_

Shifter maintenance and adjustment should be performance with clutch assembly removed.

\_\_\_\_\_

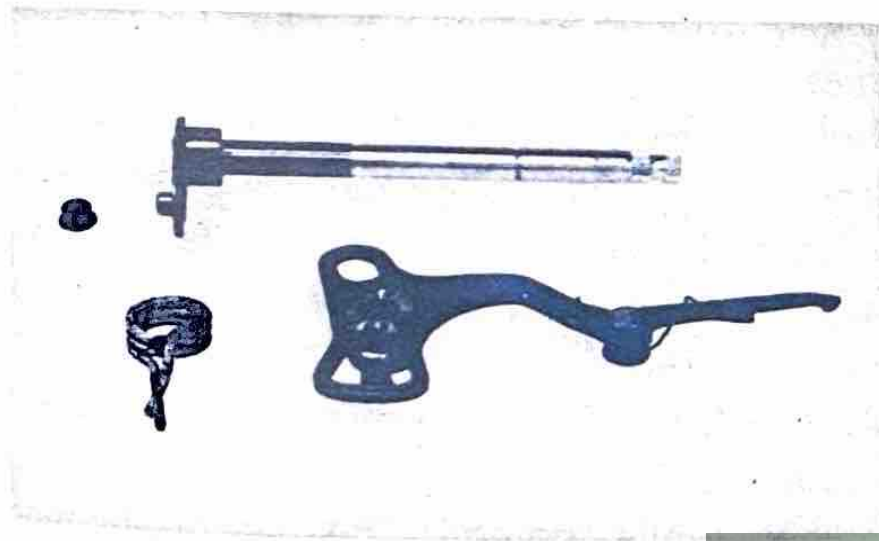
a. Removing the change shaft assembly.

- 1) Remove the circlip and washer from the change axle (left side crankcase).
- 2) On the otherside of the machine, pull out the change shaft assembly.



**b. Checking the change shaft assembly**

- 1) Inspect shift return spring. A broken or worn spring will impair the return action of the shifting mechanism.
- 2) Inspect change shaft assembly for bending of shaft, worn or bent splines and broken or worn shift arm spring.

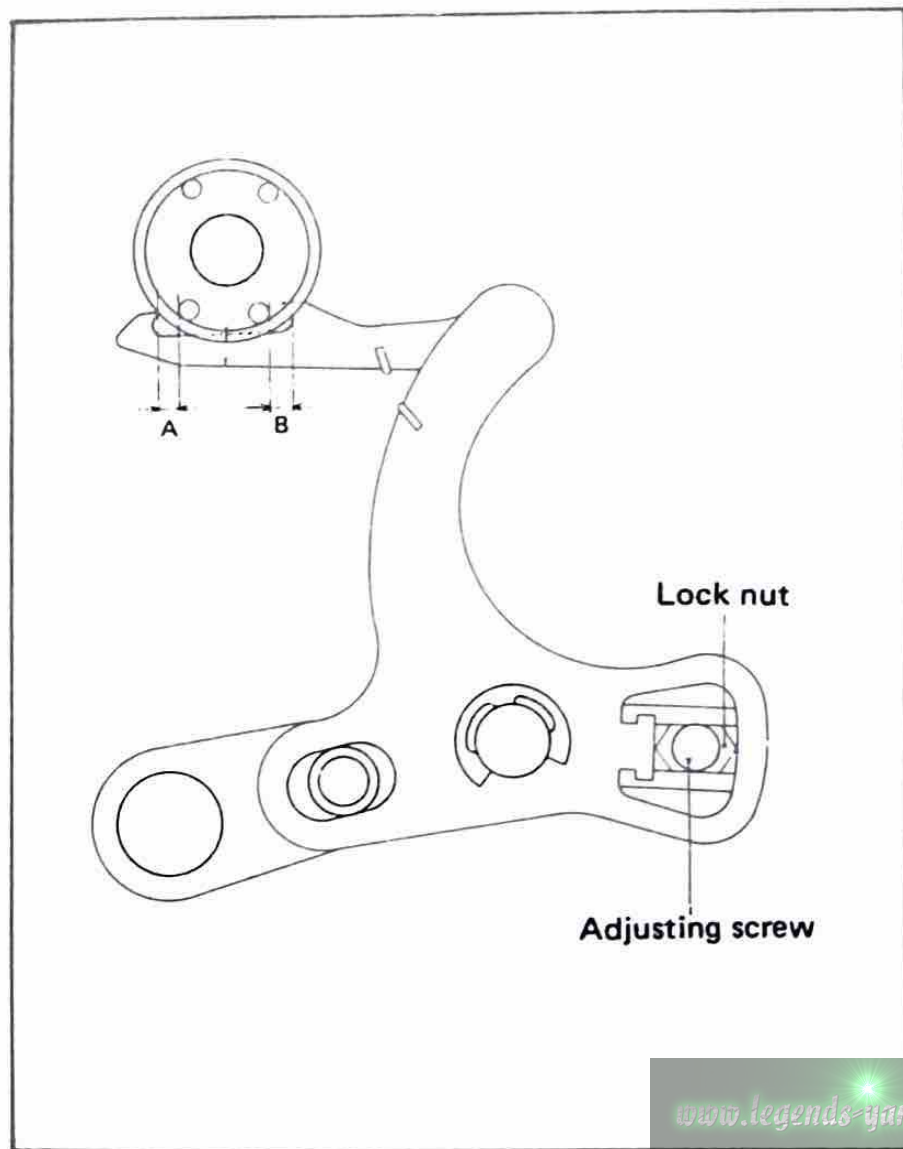


**c. Adjustment**

If over-shifting (excessive turning of shift cam) or short-shifting (insufficient turning of shift cam) occurs, make adjustment of the gear shift arms by turning the stop screw (eccentric bolt) at the gear shift arm return spring. Shift the gear to second, then make adjustment so that "A" becomes identical to "B".

Make sure to tighten locknut upon completion of adjustment.



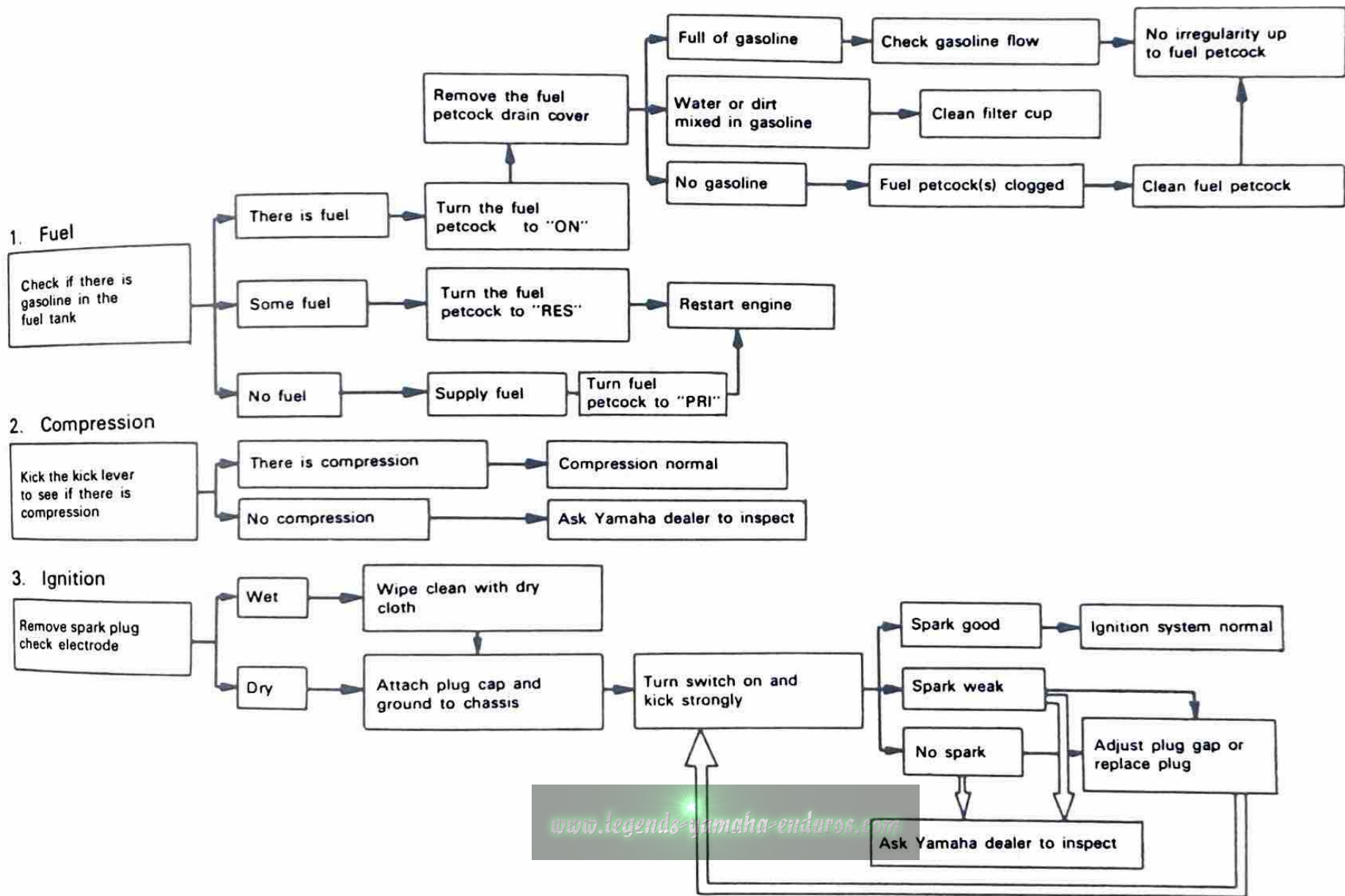


## Troubleshooting

Although Yamaha motorcycles are given a rigid inspection before shipment from the factory, trouble may occur in operation. If this happens check the motorcycle in accordance with the procedures given in the troubleshooting chart below. If repair is necessary, ask your Yamaha dealer.

The skilled technicians at your Yamaha dealer provide excellent service. For replacement parts, use only genuine Yamaha parts. Imitation parts are similar in shape but often inferior in quality of materials and workmanship; consequently, service life is shorter and more expensive repairs may be necessitated.

Any fault in the fuel, compression or ignition system can cause poor starting or loss of power while riding. The troubleshooting chart describes quick and easy procedures for checking these systems.





# CLEANING AND STORAGE

## A. CLEANING

Frequent thorough cleaning of your motorcycle will not only enhance its appearance but will improve general performance and extend the useful life of many components.

1. Before cleaning the machine:
  - a. Block off end of exhaust pipe to prevent water entry; a plastic bag and strong rubber band may be used.
  - b. Remove air cleaner or protect it from water with plastic covering.
  - c. Make sure spark plug(s), fuel tank cap, oil tank cap, transmission oil filler cap are properly installed.
2. If engine case is excessively greasy, apply degreaser with a paint brush. Do not apply degreaser to chain, sprockets, or wheel axles.
3. Rinse dirt and degreaser off with garden hose, using only enough hose pressure to do the job. Excessive hose pressure may cause water seepage and contamination of wheel bearings, front forks, brake drums, and transmission seals. Many expensive repair bills have resulted from improper high pressure detergent applications such as those available in coin-operated car washers.
4. Once the majority of the dirt has been hosed off, wash all surfaces with warm water and mild, detergent-type soap. An old tooth brush or bottle brush is handy to reach hard-to-get-to places.
5. Rinse machine off immediately with clean water and dry all surfaces with a chamois, clean towel, or soft absorbent cloth.
6. Immediately after washing, remove ex-

cess moisture from chain and lubricate to prevent rust.

7. Chrome-plated parts such as handlebars, rims, spokes, forks, etc., may be further cleaned with automotive chrome cleaner.
8. Clean the seat with a vinyl upholstery cleaner to keep the cover pliable and glossy.
9. Automotive-type wax may be applied to all painted and chrome-plated surfaces. Avoid combination cleaner-waxes. Many contain abrasives which may mar paint or protective finish on fuel and oil tanks.
10. After finishing, start the engine immediately and allow to idle for several minutes.

## **B. STORAGE**

Long term storage (30 days or more) of your

motorcycle will require some preventive procedures to insure against deterioration. After cleaning machine thoroughly, prepare for storage as follows:

1. Drain fuel tank, fuel lines, and carburetor float bowl(s).
2. Remove empty fuel tank, pour a cup of SAE 10W/30 oil in tank, shake tank to coat inner surfaces thoroughly and drain off excess oil. Re-install tank.
3. Remove spark plug(s), pour about one tablespoon of SAE 10W/30 oil in spark plug hole(s) and re-install spark plugs. Kick engine over several times (with ignition off) to coat cylinder walls with oil.
4. Remove drive chain. Clean thoroughly with solvent and lubricate. Re-install chain or store in a plastic bag (tie to frame for safe-keeping).
5. Lubricate all control cables.
6. Block up frame to raise both wheels off



ground. (Main stands can be used on machine.)

7. Tie a plastic bag over exhaust pipe outlet(s) to prevent moisture from entering.
8. If storing in humid or salt-air atmosphere, coat all exposed metal surfaces with a light film of oil. Do not apply oil to rubber parts or seat cover.

Remove battery and charge. Store in a dry place and re-charge once a month. Do not store battery in an excessively warm or cold place less than 0°C (32°F) or more than 32°C (90°F).

**NOTE:** \_\_\_\_\_

Make any necessary repairs before storing the motorcycle.

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# MISCELLANEOUS

## General specifications

These specifications are for general use. For a more complete list, refer to Maintenance Specifications.

<b>DIMENSIONS/WEIGHT</b> Overall length Overall width Overall height Wheel base Minimum ground clearance Seat height (unloaded) Net weight	1,705 mm (67.1 in) 785 mm (30.9 in) 955 mm (37.6 in) 1,170 mm (46.1 in) 190 mm ( 7.9 in) 695 mm (27.4 in) 64.7 kg (143 lb)
<b>ENGINE</b> Type Bore / stroke Displacement Compression ratio Starting system Lubrication system	Air cooled, 2-stroke, Single, Torque induction 49 x 42 mm (1.929 x 1.654 in) 79 cc (4.82 cu.in) 7.3 : 1 Primary kick starter Mixed gas. 20 : 1
<b>CARBURETION</b> Manufacturer / type	MIKUNI / VM26SS 26 mm (1.02 in)



<p>Effective venturi size</p> <p>Main jet</p> <p>Needle jet</p> <p>Jet needle</p> <p>Pilot jet</p> <p>Air screw (turns out)</p> <p>Cut away</p> <p>Air cleaner type</p>	<p>#180</p> <p>O - O</p> <p>4J13-2</p> <p>#35</p> <p>1-1/2</p> <p>1.5</p> <p>Oiled foam rubber</p>
<p><b>CLUTCH</b></p> <p>Type</p> <p>Primary reduction system</p> <p>Primary reduction ratio</p>	<p>Wet multiple disc</p> <p>Helical gear</p> <p>68/19 (3.579)</p>
<p><b>TRANSMISSION</b></p> <p>Type</p> <p>Reduction ratio 1st</p> <p>2nd</p> <p>3rd</p> <p>4th</p> <p>5th</p> <p>Secondary reduction system</p> <p>Secondary reduction ratio</p>	<p>Constant mesh 5-speed</p> <p>39/12 (3.250)</p> <p>34/17 (2.000)</p> <p>30/21 (1.429)</p> <p>27/24 (1.125)</p> <p>25/26 (0.961)</p> <p>Chain</p> <p>48/13 (3.692)</p>
<p><b>ELECTRICAL</b></p> <p>Ignition system</p>	<p><a href="http://www.legends-yamaha-enduros.com">www.legends-yamaha-enduros.com</a></p> <p>Magneto</p>

<p>Ignition coil resistance (Primary)  Ignition coil resistance (Secondary)  Ignition timing  Spark plug  Normal  Spark plug gap</p>	<p><math>1.0\Omega \pm 15\%/20^{\circ}\text{C}</math>  <math>5.9\text{K}\Omega \pm 15\%/20^{\circ}\text{C}</math>  B.T.D.C. 2.0 mm (0.08 in)   B8ES (NGK) or N-2 (CHAMPION)  0.5 - 0.6 mm (0.020 - 0.024 in)</p>
<p><b>CHASSIS</b>  Frame type  Front suspension / cushion stroke  Rear suspension / cushion stroke  Caster / tail  Front tire size / type  Rear tire size / type  Nominal pressure Front  Rear  Front brake type  Actuating method  Rear brake type  Actuating method (rear)</p>	<p>Double cradle  Telescopic fork / 132 mm (5.20 in)  Swing arm/ 85 mm (3.35 in)  62.5° / 80mm (3.15 in)  2.50-16-4PR / Knobby  3.60-14-4PR / Knobby  1.0 kg/cm (14 psi)  1.0 kg/cm (14 psi)  Drum  Cable  Drum  Link lod</p>
<p><b>VOLUMES / TYPE FLUID</b>  Gasoline tank / type (ratio)  Transmission Total  Exchange  Type   Front fork (each) / type</p>	<p>4.3 lit (1.1 u.s. gal) / Mixed gasoline (20 :1)  550 - 600 cc (0.58 - 0.63 U.S. qt.)  500 - 550 cc (0.53 - 0.58 U.S. qt.)  Yamalube 4-cycle oil or SAE 10W/30  "SE" motor oil  118.5 cc (4.0 oz) / Yamaha fork oil 20 wt.</p>

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**NOTE:**

The Research and Engineering Departments of Yamaha are continually striving to further perfect all models. Improvements and modifications are therefore inevitable. In light of this fact, the foregoing specifications are subject to change without notice to the owner. Information regarding changes is forwarded to all Authorized Yamaha dealers as soon as available. If a discrepancy is noted, please consult your dealer.

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## Maintenance specifications

<b>ENGINE TOP END</b> Piston clearance Piston wear limit Ring end gap (free) Ring end gap (installed) Connecting rod / crank side clearance	0.035 - 0.040 mm (0.0014 - 0.0016 in) 0.1 mm (0.004 in) 5.5 mm (0.22 in) 0.4 - 0.5 mm (0.016 - 0.020 in) 0.2 - 0.7 mm (0.008 - 0.028 in)
<b>ENGINE CLUTCH</b> Friction plate thickness Clutch spring free length Clutch plate warp allowance	3.0 mm (0.118 in) 34 mm (1.34 in) 0.05 mm (0.002 in)
<b>CHASSIS</b> Front brake shoe diameter Front brake shoe replacement limit Rear brake shoe diameter Rear brake shoe replacement limit Wheel run-out limit (VERTICAL) Wheel run-out limit (LATERAL) Front fork spring free length	89 mm (3.5 in) 86 mm (3.4 in) 102 mm (4.0 in) 98 mm (3.9 in) 2 mm (0.008 in) 2 mm (0.008 in) 490.6 mm (19.3 in)
<b>TORQUE VALUES</b> Cylinder head holding nut Flywheel securing nut	7 mm 1.2 - 1.5 m·kg (8.8 - 10.8 ft·lb) 12 mm 5.0 - 7.0 m·kg (36.2 - 50.6 ft·lb)



Primary drive gear securing nut

Spark plug

Drive sprocket securing nut

Clutch boss securing nut

Front wheel shaft securing nut

Under bracket securing bolt

Handle crown pinch bolt

Steering shaft stem bolt

Handle bar securing bolt

Engine mounting nut (Front)

Engine mounting nut (Rear Upper)

Engine mounting nut (Rear Under)

Foot rest securing bolt

Pivot shaft securing nut

Rear wheel shaft securing nut

Tension bar and brake plate

Tension bar and rear arm

Rear shock absorber securing nut (Upper)

Rear shock absorber securing nut (Lower)

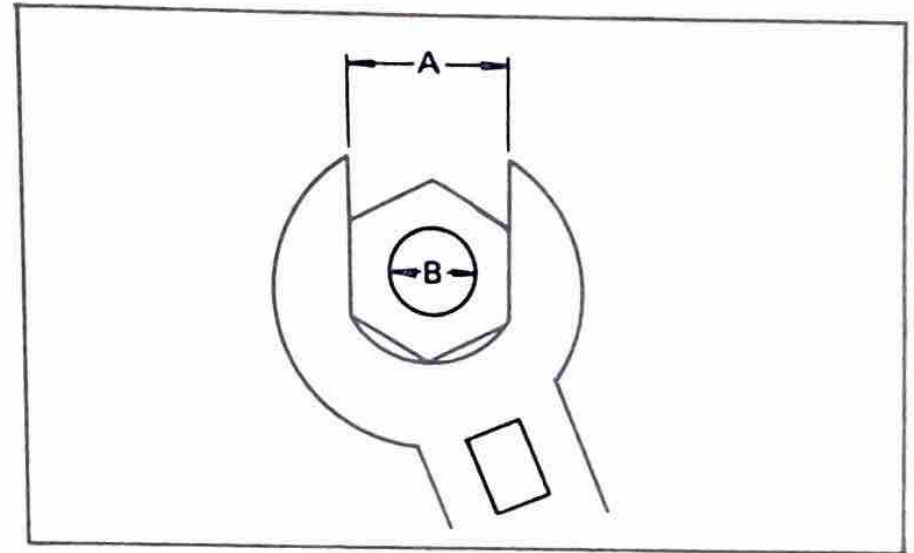
Driven sprocket securing bolt

12 mm	5.0 - 8.0 m-kG	(36.2 - 57.9 ft-lb)
14 mm	2.5 - 3.0 m-kG	(18.0 - 21.7 ft-lb)
12 mm	5.0 - 7.0 m-kG	(36.2 - 50.6 ft-lb)
12 mm	5.0 - 7.0 m-kG	(36.2 - 50.6 ft-lb)
12 mm	5.0 - 7.0 m-kG	(36.2 - 50.6 ft-lb)
10 mm	2.5 - 4.0 m-kG	(18.1 - 28.9 ft-lb)
8 mm	2.2 - 3.0 m-kG	(15.9 - 21.7 ft-lb)
14 mm	5.0 - 8.0 m-kG	(36.2 - 57.9 ft-lb)
8 mm	1.5 - 2.5 m-kG	(10.8 - 18.1 ft-lb)
8 mm	2.2 - 3.0 m-kG	(15.9 - 21.7 ft-lb)
8 mm	2.2 - 3.0 m-kG	(15.9 - 21.7 ft-lb)
8 mm	3.0 - 4.0 m-kG	(21.7 - 28.9 ft-lb)
8 mm	1.4 - 2.2 m-kG	(10.1 - 15.9 ft-lb)
12 mm	3.5 - 5.0 m-kG	(25.3 - 36.2 ft-lb)
12 mm	5.0 - 7.0 m-kG	(36.2 - 50.6 ft-lb)
8 mm	1.4 - 2.2 m-kG	(10.1 - 15.9 ft-lb)
8 mm	1.4 - 2.2 m-kG	(10.1 - 15.9 ft-lb)
10 mm	2.3 - 3.7 m-kG	(16.1 - 26.8 ft-lb)
10 mm	2.3 - 3.7 m-kG	(16.6 - 26.8 ft-lb)
8 mm	1.7 - 2.2 m-kG	(12.3 - 15.9 ft-lb)

## TORQUE CHART

The following torque specifications must be adhered to on every machine. Components with several studs should be tightened in gradual stages and in a pattern that will avoid warpage to the item being secured.

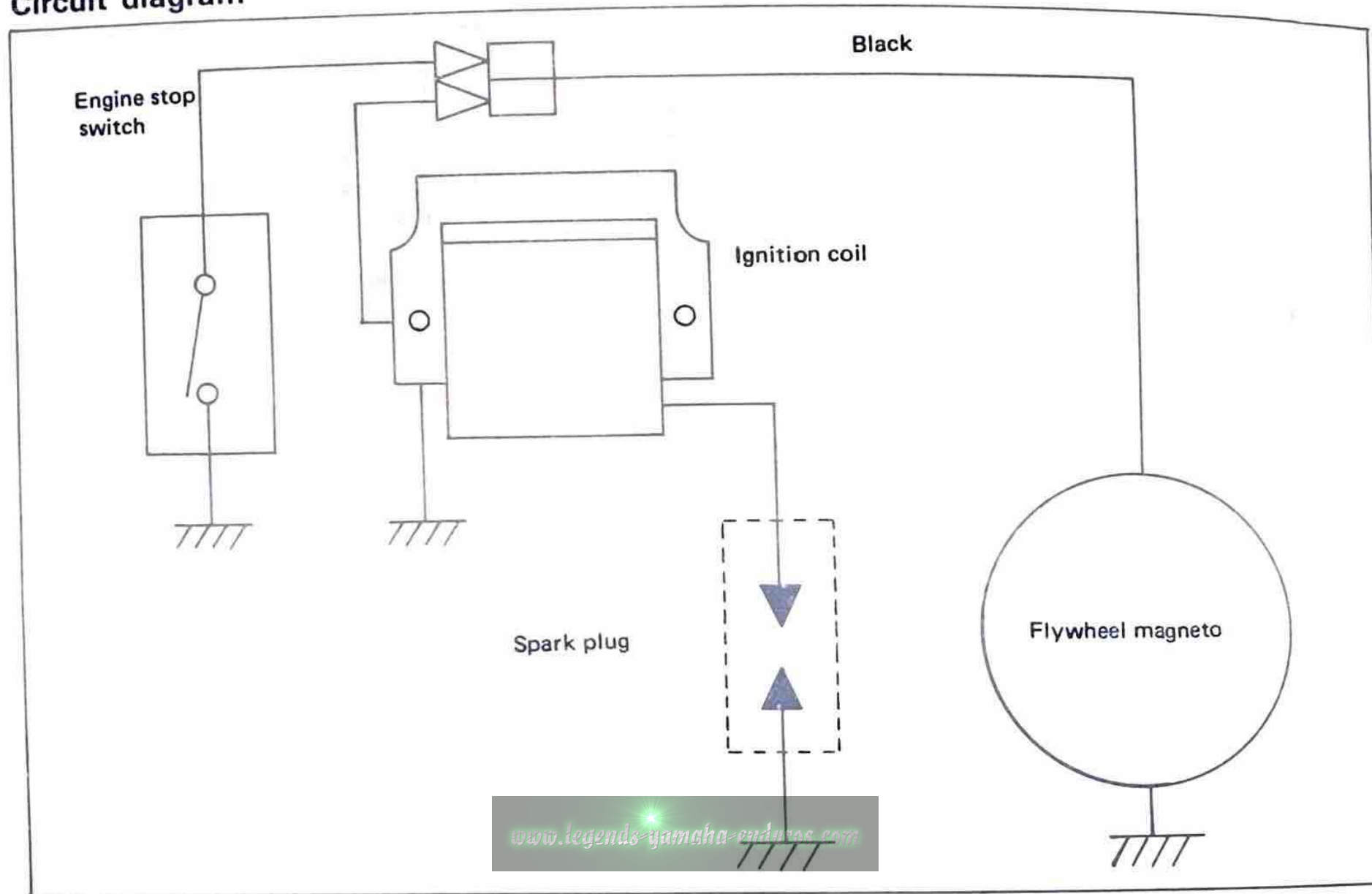
Torque settings are for dry, clean threads. Torquing should always be done to the nut, never the bolt head.



A (Nut)	B (Bolt)	Torque Specifications		
		m-kg	ft-lb	in-lb
10 mm	6 mm	1.0	7.2	85
12 mm	8 mm	2.0	15	175
14 mm	10 mm	3.5 ~ 4.0	25 ~ 29	300 ~ 350
17 mm	12 mm	4.0 ~ 4.5	29 ~ 33	350 ~ 400
19 mm	14 mm	4.5 ~ 5.0	33 ~ 36	400 ~ 440
22 mm	16 mm	5.6 ~ 6.5	41 ~ 49	480 ~ 570
24 mm	18 mm	5.8 ~ 7.0	42 ~ 50	504 ~ 600
27 mm	20 mm	7.0 ~ 8.3	50 ~ 60	600 ~ 700



# Circuit diagram



## STATEMENT OF PURCHASER'S RESPONSIBILITY

This (model) Yamaha motorcycle is sold AS IS, WITHOUT ANY WARRANTIES EXPRESSED OR IMPLIED, REGARDLESS OF THE INTENDED USE.

THE PURCHASER OF THIS MOTORCYCLE, which is intended for competition purposes, IS RESPONSIBLE FOR ALL COSTS OF SERVICE AND/OR REPAIR.



MEMO

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