



YAMAHA

YZ50G

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**OWNER'S
SERVICE MANUAL**

WARNING:

- **READ OWNER'S MANUAL CAREFULLY BEFORE OPERATING.**
- **USE MIXED GAS.**
- **OPERATOR ONLY. NO PASSENGERS. WEIGHT LIMIT 50 kg (110 lb)**
- **DO NOT TOUCH ANY MOVING OR HEATED AREAS.**
- **INSPECTION REQUIRED BEFORE RIDING. REFER TO PAGE 5.**
- **WEAR HELMET AND SUITABLE PROTECTIVE CLOTHING.**
- **ADULT SUPERVISION REQUIRED WHEN CHILDREN OPERATE THIS VEHICLE.**
- **COMPETITION USE ONLY.**

IMPORTANT NOTICE

This vehicle is designed and manufactured strictly for competition use only. It is illegal to operate this vehicle on street. Off-road use on public land may be illegal.

Suspension on this vehicle can be adjusted to accommodate differing rider weights and technique, check this manual.

SAFETY WARNINGS:

- 1. GASOLINE IS HIGHLY FLAMMABLE:**
 - * Always turn off the engine when refueling.
 - * Take care not to spill on the engine or exhaust pipe/muffler, when refueling.
 - * If any gasoline spills on the engine or exhaust pipe/muffler, wipe it off immediately.
 - * Never refuel while smoking or in the vicinity of an open flame.
- 2. If you should swallow some gasoline or inhale a lot of gasoline vapor, or allow some gasoline to get in your eye(s), see your doctor immediately. If any gasoline spills on your skin or clothing, immediately wash it with soap and water, and change your clothes.**
- 3. When parking the motorcycle, note the followings:**
 - * The engine and exhaust pipe/muffler are heated up. Park the motorcycle in a place where pedestrians or children are not likely to touch the motorcycle.
 - * Do not park the motorcycle on a slope or soft ground; the motorcycle can easily overturn.
- 4. When transporting the motorcycle in another vehicle, be sure it is kept upright and that the fuel petcock is turned to the "OFF" position. If it should lean over, gasoline may leak out of the carburetor or fuel tank.**
- 5. Never start your engine or let it run for any length of time in a closed area. The exhaust fumes are poisonous and can cause loss of consciousness and death within a short time. Always operate your motorcycle in an area with adequate ventilation.**
- 6. Always wear a helmet, gloves, boots, trousers, and jacket for motocross riding.**

Some data in this manual may become outdated due to improvements made to this model in the future. If there is any question you have regarding this manual or your machine, please consult your Yamaha dealer.

This Owner's Service Manual is included to provide basic information for operation and maintenance.

Additional information regarding major repairs, such as crankcase disassembly, can be found within the GT80E/GTMXE Service Manual (2F4-28197-10) and various other information and training manuals available from your Authorized Yamaha Dealer.

INTRODUCTION

Congratulations on your purchase of the Yamaha YZ50G. This model represents the product of many years of Yamaha experience in the production of fine sporting, touring, and pace-setting racing machines. You can now appreciate the high degrees of craftsmanship and reliability that have made Yamaha a leader in these fields.

PLEASE READ THIS MANUAL CAREFULLY AND COMPLETELY BEFORE OPERATING YOUR NEW MACHINE. This manual will provide you with a good basic understanding of the features, operation, and basic maintenance and inspection items of this vehicle. If you have any questions regarding the operation or maintenance of your machine, please consult your Yamaha dealer.

Particularly important information is distinguished in this manual by the following notations:

- NOTE:** A NOTE provides key information to make procedures easier or clearer.
- CAUTION:** A CAUTION indicates special procedures that must be followed to avoid damage to the machine.
- WARNING:** A WARNING indicates special procedures that must be followed to avoid injury to a machine operator or person inspecting or repairing the machine.

YZ50G OWNER'S SERVICE MANUAL
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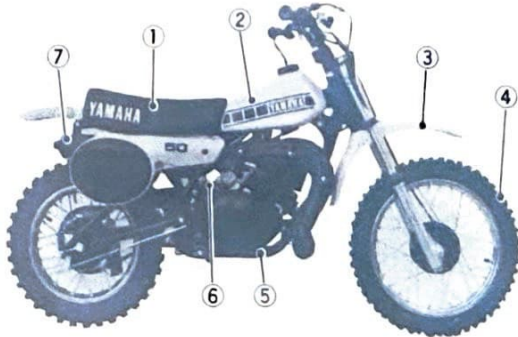
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GENERAL INFORMATION

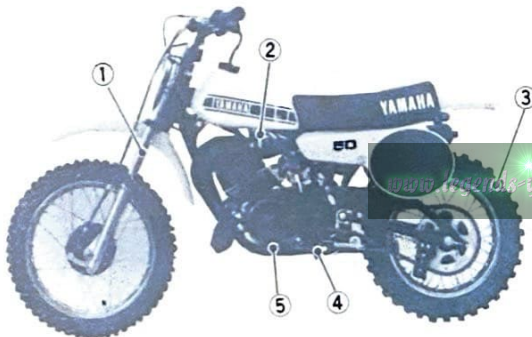
DESCRIPTION

RIGHT SIDE



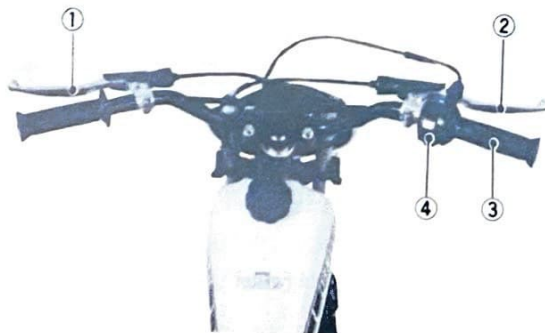
- | | |
|-----------------|----------------|
| 1. Seat | 5. Brake pedal |
| 2. Fuel tank | 6. Kick crank |
| 3. Front fender | 7. Muffler |
| 4. Front wheel | |

LEFT SIDE



- | | |
|-----------------|-----------------|
| 1. Front fork | 4. Footrest |
| 2. Fuel petcock | 5. Change pedal |
| 3. Rear wheel | |

INSTRUMENTS

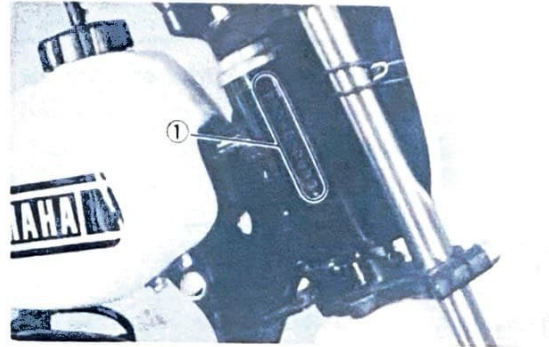


- | | |
|----------------------|-----------------------|
| 1. Clutch lever | 3. Throttle grip |
| 2. Front brake lever | 4. Engine stop switch |

MACHINE IDENTIFICATION

Frame serial number

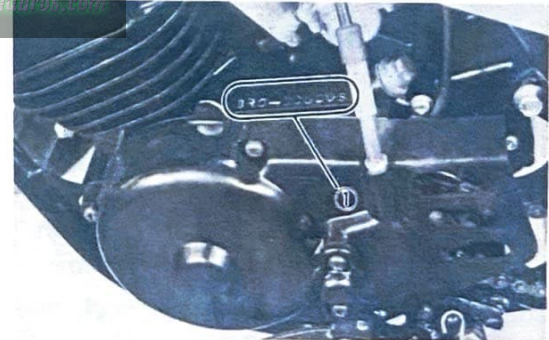
The frame serial number is stamped on the right side of the steering head pipe.



1. Frame serial number

Engine serial number

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



1. Engine serial number

NOTE:

The first three digits of these numbers are for model identifications; the remaining digits are the unit production number. These identification numbers are used to register your motorcycle with the licensing authority in your state as well as with the manufacturer. Keep a record of these numbers for reference when ordering parts from your Yamaha dealer. In case of theft, the authorities will need these numbers and your model name for identification.

CONTROL FUNCTIONS

WARNING:

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.

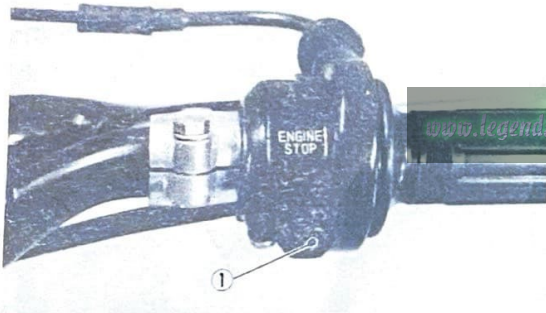
NOTICE:

This motorcycle is designed strictly for competition use only. It is not equipped with highway approved lighting. Off-road use on public land may be illegal.

Engine stop switch

The engine stop switch is located on the right handlebar.

Push and hold to stop engine.



1. Engine stop switch

Fuel petcock

The fuel petcock functions to supply fuel from the tank to the carburetor and also to filter the fuel.

The fuel petcock has the following two positions:

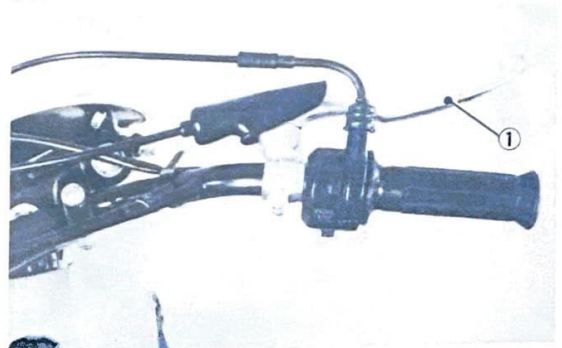
OFF: With the lever in this position fuel will not flow. Return the lever to this position when the engine is not running.

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



Front brake lever

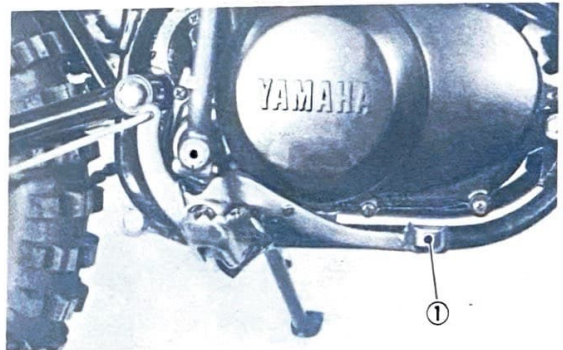
The front brake lever is located on the right handlebar. Pull it toward the handlebar to activate the front brake.



1. Front brake lever

Rear brake pedal

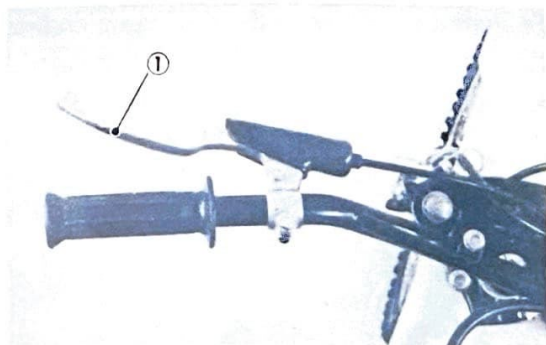
The rear brake pedal is on the right side of the motorcycle. Press down on the brake pedal to activate the rear brake.



1. Rear brake pedal

Clutch lever

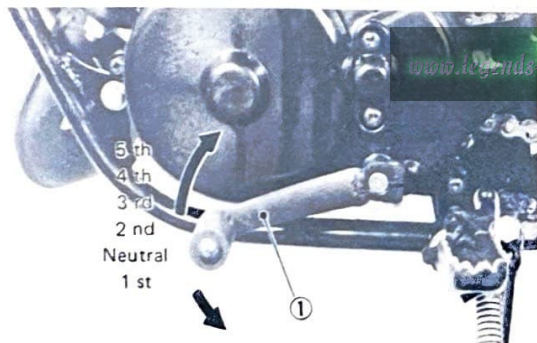
The clutch lever is located on the left handlebar and disengages or engages the clutch. Pull the clutch lever to the handlebar to disengage the clutch and release the lever to engage the clutch. The lever should be pulled rapidly and released slowly for smooth starts.



1. Clutch lever

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.

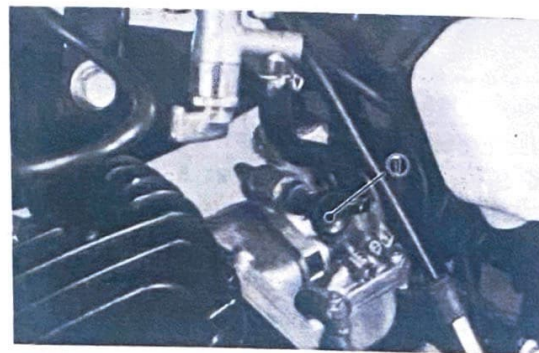


1. Change pedal

Starter knob (choke)

When cold, the engine requires a richer fuel mixture for starting. A separate starter circuit, which is controlled by the starter knob, supplies this mixture.

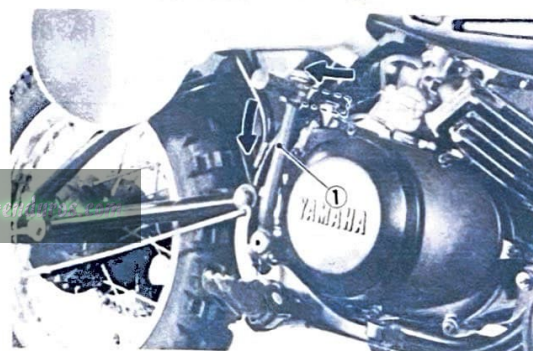
Pull the knob out to open the circuit (for starting) and push the knob in to close the circuit.



1. Starter knob

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.



1. Kick starter

Fuel tank cap

Remove the fuel tank breather pipe from fuel tank cap.

Then remove the fuel tank cap by turning counterclockwise.

WARNING:

Do not overfill the fuel tank. Avoid spilling fuel on the hot engine.

Do not fill the fuel tank all the way to the top or it may overflow when the fuel heats up later and expands.

FUEL AND OIL

Fuel

Use premium gasoline with an octane rating of 90+ mixed with oil at a gas/oil ratio specified below. Always use fresh, name-brand gasoline. Always mix a fresh batch of fuel the morning of the race and do not retain a mixed batch overnight.

Fuel tank capacity: 3.0 lit (0.8 US. gal)

Engine oil

We recommend that your first choice be Yamalube Racing 2-cycle oil.

If for any reason you should use another type, select from the following list.

- * Shell Super M (Vegetable base)
- * Castrol R 30 (Vegetable base)
- * 2-cycle engine oil labelled "BIA certified for service TC-W"

Mixing ratio: 20 : 1

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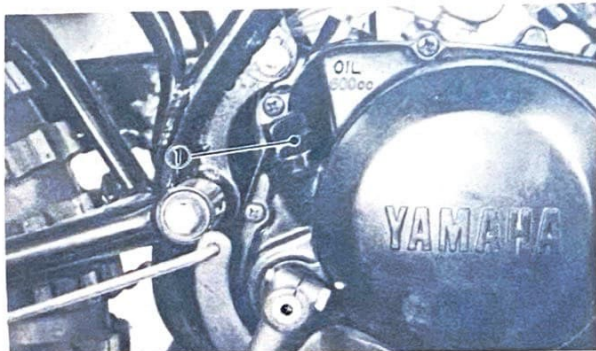
Transmission oil

Recommended oil:
Yamalube 4-cycle oil or
SAE 10W/30 "SE" motor oil

Oil level check

To check, warm up the engine for 2 ~ 3 minutes. Place the motor-cycle upright and remove the filler cap completely and just reset the dipstick in the hole.

If the level is lower, add sufficient oil to raise it to proper level.



1. Filler cap

Transmission oil capacity:

Periodic oil change:

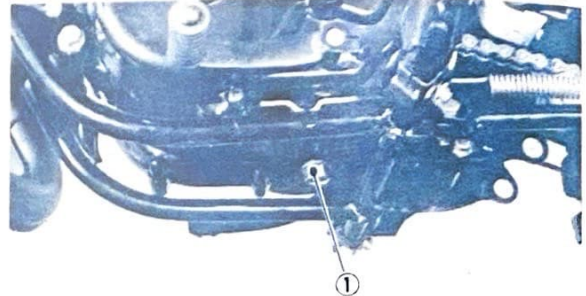
600 ~ 650 cc (0.63 ~ 0.69 US.qt)

Overhaul:

650 ~ 700 cc (0.69 ~ 0.74 US.qt)

Oil replacement

To drain the oil, warm the engine up and remove the drain plug and drain all transmission oil. Reinstall the drain plug (make sure it is secure). Add oil through the dipstick hole.



1. Drain plug

PRE-OPERATION CHECKS

Item	Routine	Page
Brake	Check operation/adjustment	5, 12
Clutch	Check operation/lever adjustment	5, 11
Transmission	Change oil as required	4
Drive chain	Check alignment/adjustment/lubrication	12, 13
Spark plug	Check color/condition	8
Throttle	Check for proper throttle cable operation	5, 10
Air filter	Foam type—must be clean and damp w/oil always	10
Wheels and tires	Check pressure/runout/spoke tightness/axle nuts	5, 28, 29
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.

Brake (Front and rear)

Check for correct play in the brake lever and pedal and make sure they are working properly. Check the brakes at low speed shortly after starting out. If the play is incorrect, make an adjustment.

Clutch

Check for correct play in the clutch lever and make sure the lever operates properly. If the play is incorrect, make an adjustment.

Tires

Check the tire pressure and check the tires for wear.

Tire pressure

Front	1.0 kg/cm ² (14 psi)
Rear	1.0 kg/cm ² (14 psi)

Throttle grip

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

Engine stop switch

Start the engine and make sure the engine stop switch functions properly.

STARTING AND OPERATION

CAUTION:

Prior to operating the machine, perform steps listed in pre-operation check list.

WARNING:

Never start your engine or let it run for any length of time in a closed area. The exhaust fumes are poisonous and can cause loss of consciousness and death within a short time. Always operate your motorcycle in an area with adequate ventilation.

Starting a cold engine

1. Turn the fuel petcock to "ON".
2. Operate the carburetor starter (choke) knob and completely close the throttle grip.
3. Kick the kick crank with full strength to start the engine.
4. After the engine starts, warm up for one or two minutes. Make sure the starter (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 (choke) knob should not be used. The throttle should be 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 (choke) turned off.

Engine break-in

1. Prior to starting, fill tank with a break-in gasoline/oil mixture of 20 : 1.
2. Allow engine to warm up. Check engine idling 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 top end and inspect. 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 an mixture specified under "GAS/OIL MIXING RATIO". 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 ADJUSTMENT

MAINTENANCE AND LUBRICATION SCHEDULE CHART

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 example, 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 in doubt as to how closely you can follow these time recommendations, check with the Yamaha dealer in your area.

Lubrication Intervals

Item	Remarks	Type	Initial (hour)				Thereafter every (hour)		
			10	20	40	80	40	80	160
Transmission oil change	Warm engine before draining	Yamalube 4-cycle oil or SAE 10W/30 type "SE" motor oil		○	○				○
Drive chain	Lube/Adjust as required Remove/Clean/Lube/Adjust	Yamalube Chain and Cable Lube or SAE 10W/30 motor oil	See service notes						
Control cables	All apply thoroughly	SAE 10W/30 motor oil			○	○			○
Throttle grip and housing	Apply lightly	Lithium base grease				○			○
Brake pedal shaft	Apply lightly	Lithium base grease			○				○
Stand shaft pivot	Apply lightly	Lithium base grease			○				○
Front forks	Drain completely	Yamaha fork oil or SAE 20W motor oil				○			○
Steering ball race	Inspect thoroughly/Pack moderately	Medium-weight wheel bearing grease				○			○
Point cam lubrication wick	Apply very lightly	Light-weight machine oil			○				○
Wheel bearings	Do not over-pack yearly or ...	Medium-weight wheel bearing grease				○	○	○	

Periodic maintenance intervals

Item	Remarks	Initial (hour)				Thereafter every (hour)		
		10	20	40	80	40	80	160
Brake system (complete)	Check/Adjust as required—repair as required		○	○		○		
Clutch	Check/Adjust as required		○	○		○		
Spark plug	Inspect/Clean or replace as required	○	○	○		○		
Wheels and tires	Pressure/Runout/Spoke—tension	○	○	○		○		
Fittings and fasteners	Tighten before each trip and/or	○	○	○		○		
Drive chain	Tension/Alignment (No. 1)	○	○	○		○		
Air filter	Wet type—clean/Replace as required (No. 2)		○	○	○	○		
Fuel petcock	Clean/Flush tank as required	○		○		○		
Ignition timing	Adjust/Clean or replace parts as required		○	○	○			○
Carburetor adjustment	Check operation/Timings		○	○	○			○
Carburetor overhaul	Clean/Repair as required/Refit/Adjust							○
Cylinder compression	Preventive maintenance check		○	○	○			○
Decarbonize engine	Includes exhaust system			○				○

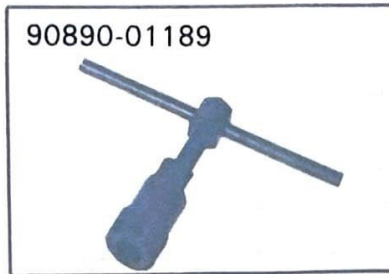
SERVICE NOTES:

- No. 1. **DRIVE CHAIN:** In addition to tension and alignment, chain must be lubricated every 0.5 ~ 1.0 hour. If unit is subjected to extremely hard usage and wet weather riding, chain must be checked constantly. See "Lubrication Intervals" for additional details.
- No. 2. **AIR FILTER:** Remove and clean filter every 20 ~ 40 hours.

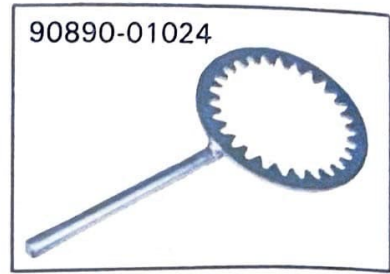
SPECIAL TOOLS



Flywheel holding tool



Flywheel puller



Clutch holding tool



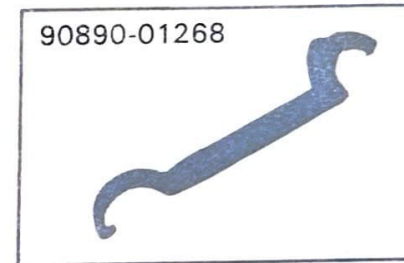
Dial gauge



Dial gauge stand



Dial gauge needle



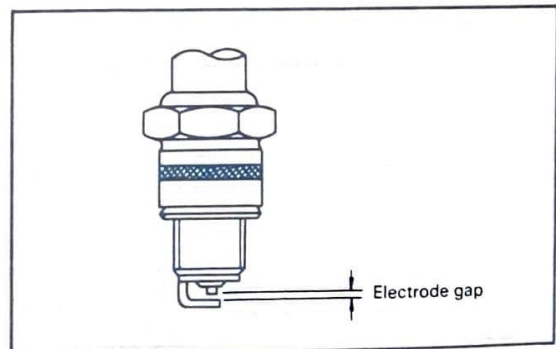
Exhaust ring and steering nut wrench

ADJUSTMENT

Spark plug

Standard spark plug:
B9ES (N.G.K.)

1. Measure the electrode gap with a wire thickness gauge.



Adjustment can be made by bending the side electrode.

Electrode gap:
0.6 ~ 0.8 mm (0.024 ~ 0.031 in)

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

Spark plug torque: 2.5 m-kg (18 ft-lb)

2. The insulator must be a medium-to-light tan color. If not, check carburetion, ignition timing and gas-oil mixing ratio. If the porcelain is a very dark brown or black color, then a plug with a hotter heat range may be required. This situation is quite common during the engine break-in period. However, use the standard plug. If the insulator tip shows a very light tan or white color or is actually pure white or if the electrodes show signs of melting, then a spark plug with a colder heat range is required.

NOTE:

If a torque wrench is not available when you are installing a spark plug, a good estimate of the correct torque is 1/4 to 1/2 turns past finger tight. Have the spark plug torqued to the correct value as soon as possible with a torque wrench.

Ignition timing

Ignition timing must be set with dial gauge and point checker.

Proceed as follows:

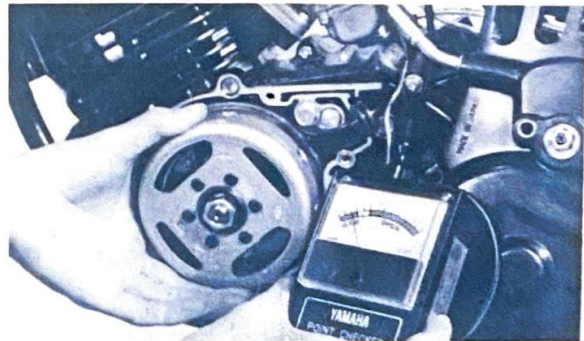
1. Remove spark plug. Screw Dial Gauge Stand in to spark plug hole.
2. Insert Dial Gauge into stand.
3. Remove left crankcase cover.
4. Switch on point checker and adjust. Disconnect magneto harness from main harness. Connect red lead of Point Checker to black wire in wire harness coming from magneto.
5. Connect black lead of Point Checker to unpainted surface of cylinder fin or unpainted crankcase bolt or screw.

NOTE:

If magneto back plate has been removed, loosen the mounting screws and rotate back-plate until screws are centered in slots.

6. Rotate magneto flywheel until piston is at top-dead-center (T.D.C.). Set the zero on dial gauge face to line up exactly with dial gauge needle. Tighten set screw on spark plug stand to secure dial gauge assembly. Rotate flywheel back and forth to be sure that indicator needle does not go past zero.
7. Starting at T.D.C., rotate flywheel clockwise until dial gauge reads approximately 3 needle turns before-top-dead-center (B.T.D.C.).
8. 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.

Ignition timing specifications:
B.T.D.C. 17° (STATIONARY)
1.8 ± 0.15 mm (0.071 ± 0.006 in)

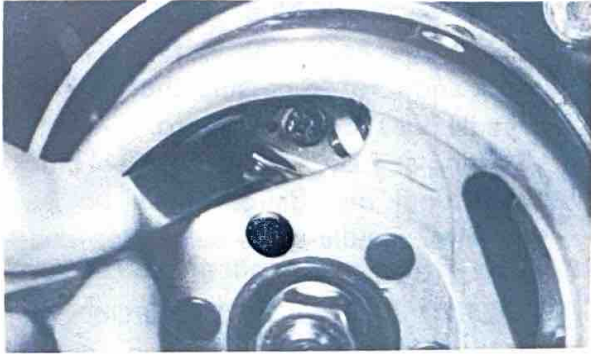


9. Repeat steps 7. and 8. to verify point opening position. If points do not open within specified tolerance, they must be adjusted.
10. Adjust ignition points by slightly loosening Phillips head screw and carefully rotating contact breaker assembly with a slotted screwdriver. Make small adjustment and retighten Phillips head screw before rechecking timing. Re-check timing by repeating steps 7. and 8.

11. After ignition timing has been set, check maximum point gap with thickness gauge.

Point gap:

Normal: 0.35 mm (0.014 in)
Minimum: 0.30 mm (0.012 in)
Maximum: 0.40 mm (0.016 in)



NOTE:

If the maximum point gap is over tolerance the contact breaker assembly should be replaced. Do not attempt to bend the fixed point breaker to decrease maximum point gap. This will only result in point misalignment, difficulty in setting timing and premature point failure.

12. Remove dial gauge assembly and stand. Disconnect point checker. Reconnect magneto wire harness. Replace crankcase cover.

Air filter cleaning

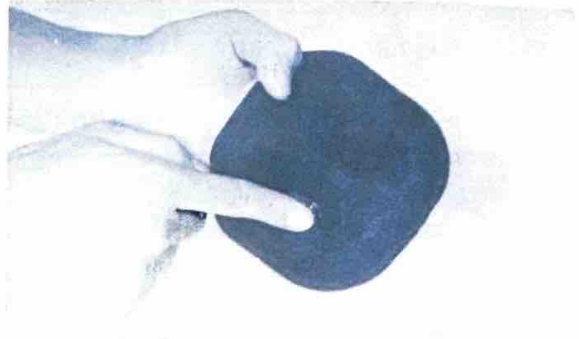
1. Wash the element gently, but thoroughly, in solvent.
2. Squeeze the excess solvent out of the element and let dry.
3. Pour a small quantity of air cooled 2-stroke engine oil onto the filter element and work thoroughly into the porous foam material.

NOTE:

In order to function properly, the element must be damp with oil at all times, but not dripping with oil.

4. Re-insert the filter element guide into the element.

5. Coat the sealing edges of the filter element with light grease. This will provide an air-tight seal between the filter case cover and filter seat.



6. Reinstall the element assembly and parts removed for access.

NOTE:

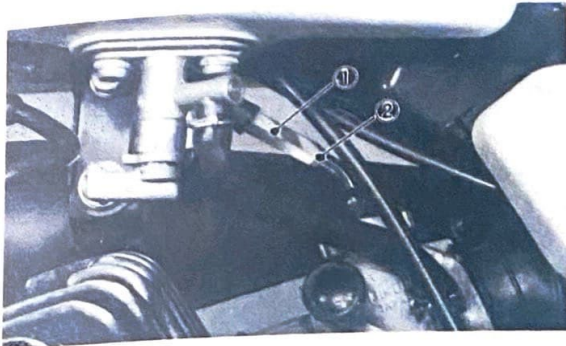
Each time filter element maintenance is performed, check the air inlet to the filter case for obstructions. Check the air cleaner joint rubber to the carburetor and manifold fittings for an air-tight seal. Tighten all fittings thoroughly to avoid the possibility of unfiltered air entering the engine.

CAUTION:

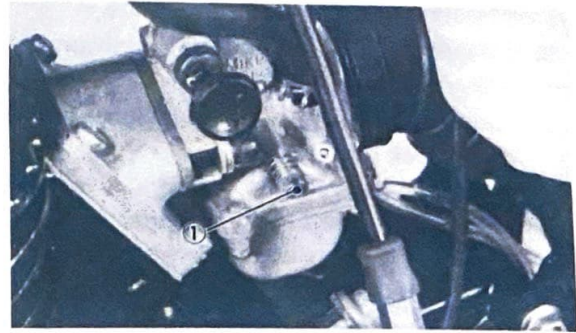
Never operate the engine with the air filter element removed. This will allow unfiltered air to enter, causing rapid wear and possible engine damage. Additionally, operation without the filter element will affect carburetor jetting with subsequent poor performance and possible engine overheating.

Throttle cable adjustment

Check play in turning direction of throttle grip. The play should be 3 ~ 5 mm (0.12 ~ 0.2 in) at grip flange, loosen the lock nut and turn the wire adjuster to make the necessary adjustment. Tighten the adjuster lock nut.



1 Adjuster 2. Lock nut

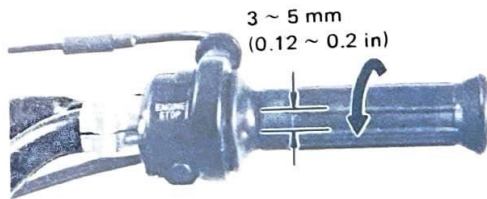


1. Throttle stop screw

If the engine, when warm, hesitates after adjusting as described, turn the idle air mixture screw in or out in 1/4 turn increments until the problem is eliminated.

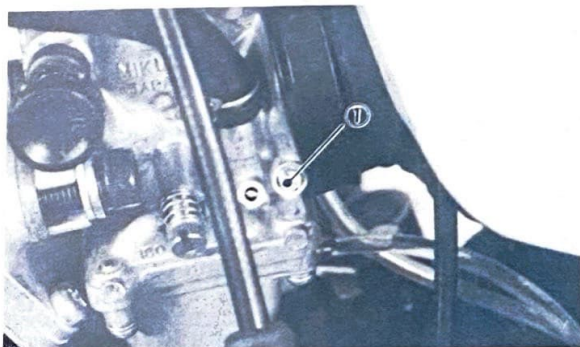
NOTE:

Pilot air and throttle stop screws should be adjusted so that engine response from idle position is rapid and without hesitation.



Idle speed adjustments

1. Turn pilot air screw in until lightly seated.
2. Back out 1-1/2 turns. Start the engine and warm it up.



1 Pilot air screw

Pilot air screw: Back out 1-1/2 turns.

3. Turn the throttle stop screw until idle is at desired r/min.
4. Turn the pilot air screw in or out until idle speed is at highest r/min.
5. Turn the throttle stop screw in or out until idle speed is at desired r/min.

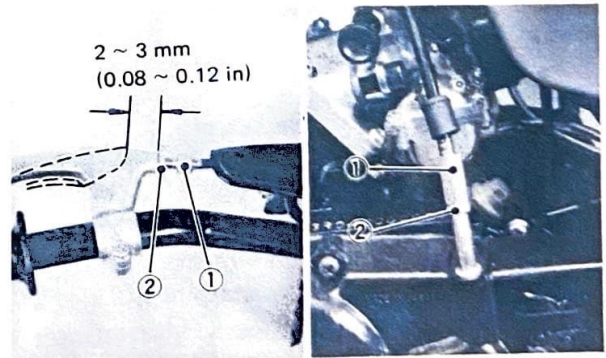
Idle speed: As desired

Clutch adjustment

This model has two clutch cable length adjusters and an internal mechanism adjuster. 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

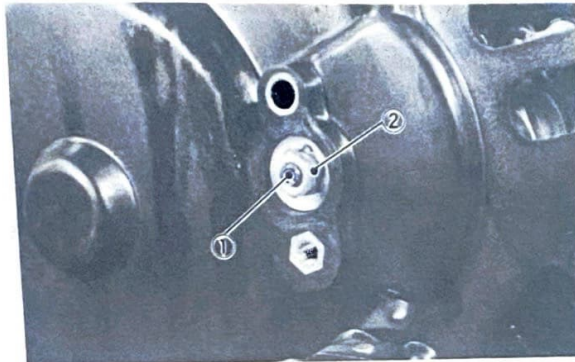
Loosen either the handle lever adjuster lock nut or the cable in-line length adjuster lock nut. Next, turn the length adjuster either in or out until proper lever free play is achieved.



1. Adjuster 2. Lock nut

2. Mechanism adjustment

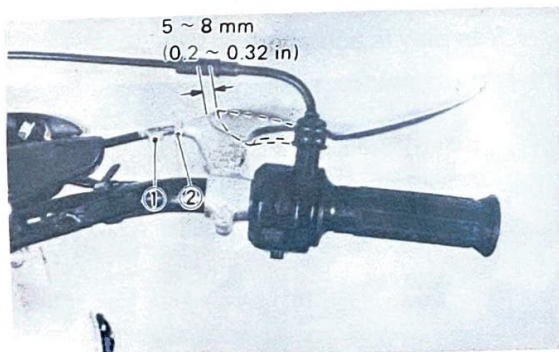
- a. Loosen the lock nut and fully tighten the adjuster.
- b. Remove left side cover and loosen adjuster lock nut.
- c. Slowly tighten the adjusting screw until resistance is felt. This means that the play of the push rod is removed. Then, back it off 1/4 turn. Tighten the lock nut.
- d. Adjust the lever free play.



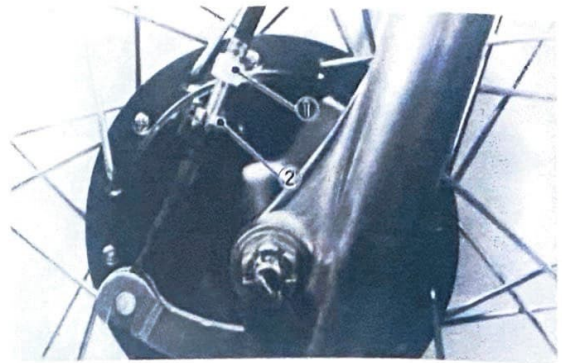
1. Adjuster 2. Lock nut

Front brake adjustment

The front brake can be adjusted in two ways: (1) using the adjusters at the front brake lever or (2) at the front brake shoe plate. Adjustment at the front brake lever is normally recommended. Loosen the lock nut and turn the adjuster 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 lock nut is tightened firmly.



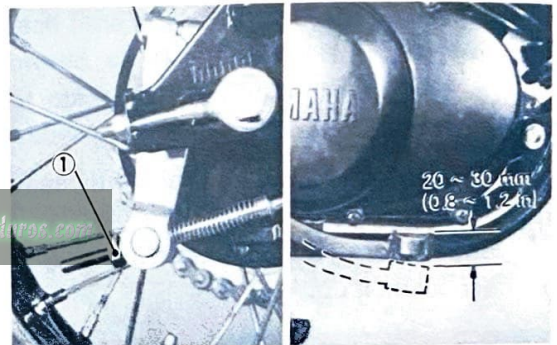
1. Adjuster 2. Lock nut



1. Adjuster 2. Lock nut

Rear brake adjustment

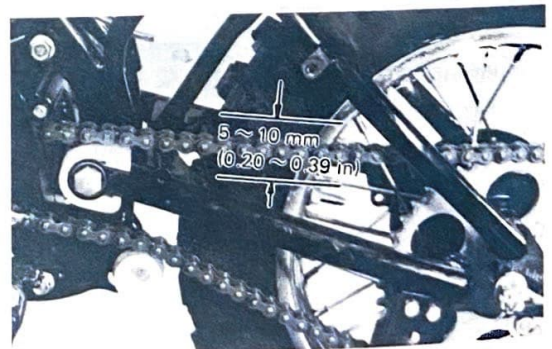
The rear brake should be adjusted so the end of the brake pedal moves 20 ~ 30 mm (0.8 ~ 1.2 in). To adjust, turn the adjuster on the brake rod clockwise to reduce play; turn the adjuster counterclockwise to increase play.



1. Adjuster

Checking the drive chain tension

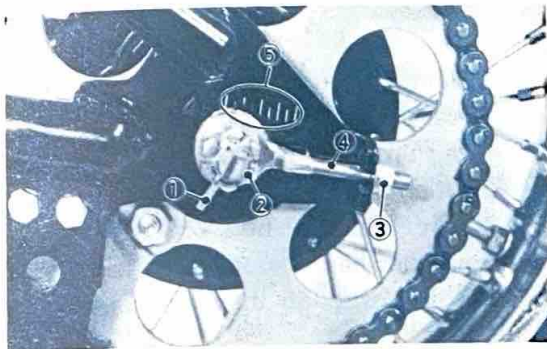
To check the chain play, the motorcycle must stand vertically with its both wheels on the ground and without passenger on it. Then measure the play at the bottom of the chain at a point midway between the drive and driven sprockets.



The normal vertical deflection is approximately 5 ~ 10 mm (0.20 ~ 0.39 in). If the chain deflection is not as specified, adjust the chain tension.

Drive chain tension adjustment

1. Loosen the rear brake rod adjuster.
2. Remove the cotter pin from the rear wheel axle nut with pliers.
3. Loosen the rear wheel axle nut.
4. To tighten chain, turn chain puller adjusting bolt clockwise. To loosen chain, turn adjusting bolts counterclockwise and push wheel forward. Turn each bolt exactly the same amount to maintain



- | | |
|------------------------|------------------------|
| 1. Cotter pin | 4. Adjusting bolt |
| 2. Rear wheel axle nut | 5. Marks for alignment |
| 3. Lock nut | |

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: _____

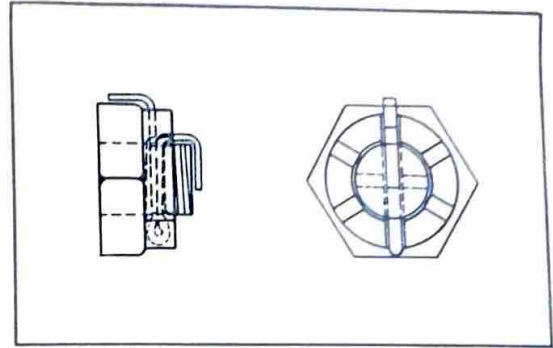
Before adjusting, rotate rear wheel through several revolutions and check tension several times to find the tightest point. Adjust chain tension with rear wheel in this "tight chain" position.

5. After adjusting, be sure to tighten the rear wheel axle nut.

Tightening torque:
4.0 m·kg (29 ft·lb)

6. Also tighten the adjuster bolts against the rear arm (about 1/4 turn each).
7. Insert the cotter pin into the rear wheel 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.

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

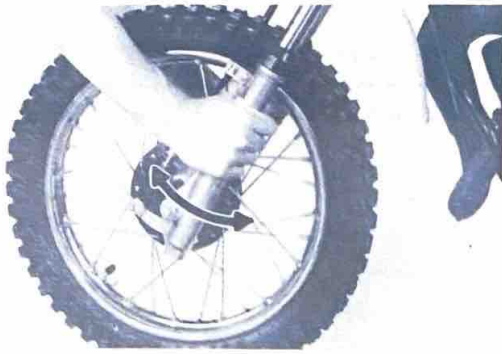
The chain consists of many parts which work against each other. If the chain is not maintained properly, it will wear out rapidly. Form the habit of periodically servicing the chain. This service is especially necessary when driving in dusty conditions.

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.

Steering inspection

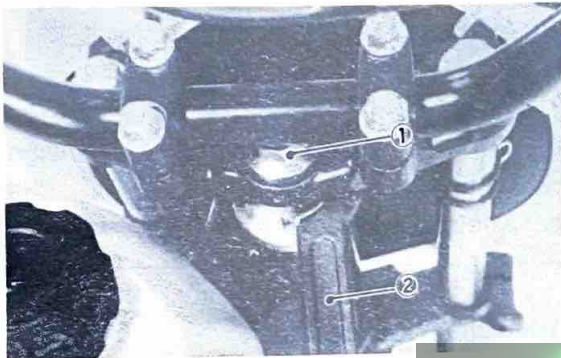
Periodically inspect the condition of the steering. Worn out or loose steering bearings may be dangerous.

Place a block under the engine to hold 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, loosen stem bolt.
2. Use ring nut wrench to tighten ring nut.



1. Stem bolt 2. Ring nut wrench

CAUTION:

Forks must swing from lock to lock without binding or catching.

3. Tighten stem bolt.

Tightening torque:
6.0 m·kg (43ft·lb)

NOTE:

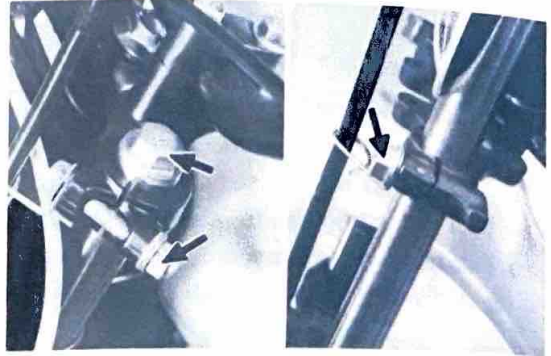
Steering head disassembly must be performed by your Yamaha dealer.

Front fork oil change

WARNING:

1. Fork oil leakage can cause loss of stability and safe handling. Have any problem corrected before operating the motorcycle.
2. Securely support the motorcycle so there is no danger of it falling over.

1. Remove cap bolts from inner fork tubes.
2. With the front wheel and front brake cable removed, the fork legs can be removed from the upper and lower brackets by loosening upper and lower pinch bolts.



3. Drain the oil from fork.
4. Installing the front forks on the frame. Bring up the front forks to the correct position and partially tighten the under-bracket mounting bolt. Pour specified amount of oil into the inner tube through the upper end opening.

Recommended oil:

SAE #20 motor oil
Quantity per leg: 75 cc (2.5 oz)

NOTE:

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

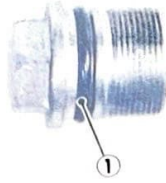
5. After filling, slowly pump the outer tubes up and down to distribute the oil.

NOTE:

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

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

Fork cap bolt torque:
2.0 m·kg (14.5 ft·lb)



1. O-ring

Rear shock absorber (monocross suspension "De Carbon" system)

WARNING:—READ CAREFULLY—

This shock absorber contains highly compressed nitrogen gas. Read and understand the following information before handling the shock absorber. The manufacturer cannot be held responsible for property damage or personal injury that may result from improper handling.

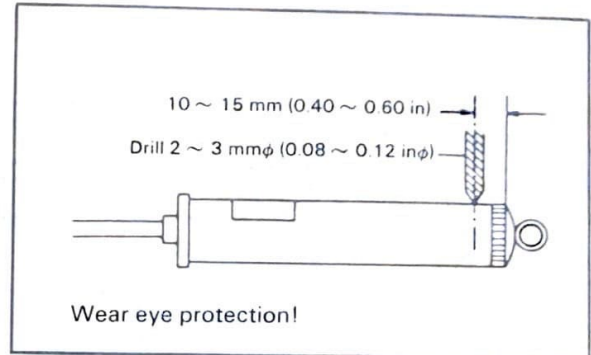
1. Do not tamper with or attempt to open the cylinder assembly. Injury may result.
2. Do not subject shock absorber to an open flame or other high heat. This may cause the unit to explode due to excessive gas pressure.
3. Do not deform or damage the cylinder in any way. Cylinder damage will result in poor damping performance.
4. Handle it with great care, for a score or scratch in the piston rod sliding portion will cause oil leakage.

Notes on disposal (Yamaha dealers only)

Gas pressure must be released before disposal of 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 (0.4 ~ 0.6 in) above the bottom of the cylinder.

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

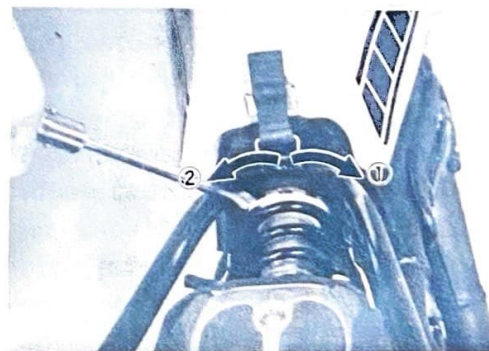
WARNING:
To dispose of a damage or worn out shock absorber, take the unit to your Yamaha dealer for this disposal procedure.



Adjustment

Using a screwdriver, make an adjustment of rear shock absorbers.


- When bottoming feels excessive and too soft:
 1. Increase the spring pre-load.
- When springing feels excessive and too hard:
 1. Decrease the spring pre-load.



1. Soft 2. Hard

Suspension settings

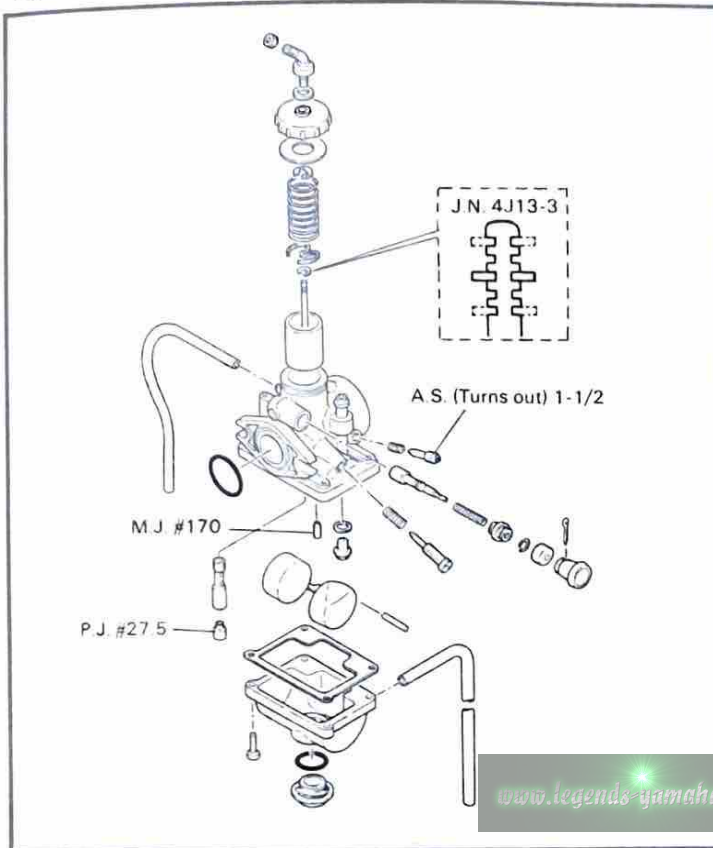
1. The front forks and rear shock absorber are designed, assuming that the rider's weight including his riding equipment is 50 kg (110 lb).
2. The rear suspension spring preload is capable of five-way adjustments. Please select the adjustment that can offer you the best riding conditions and comfort.
3. For suspension bottoming during a ride, the following types are available as option for front and rear use. Please use the type that best suits your riding.

	Type	Part No.	Mark
Front fork spring	Standard type	3R0-23141-00	—
	Hard duty type	3R0-23141-10	
Rear shock absorber spring	Standard type	3R0-22212-00	—
	Hard duty type	3R0-22212-10	Yellow painting

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MAINTENANCE AND MINOR REPAIRS

CARBURETOR ENGINE

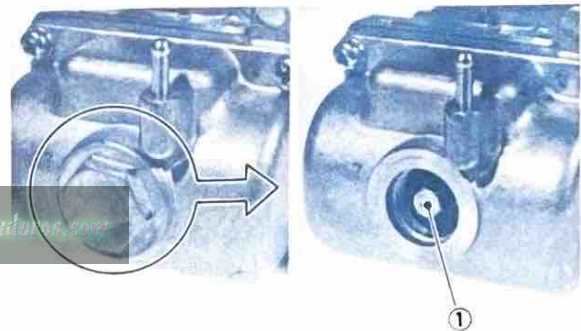


WARNING:

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 the machine after reassembly.

- Change as required. Reinstall cover bolt and reassemble, reversing steps "1" through "4".

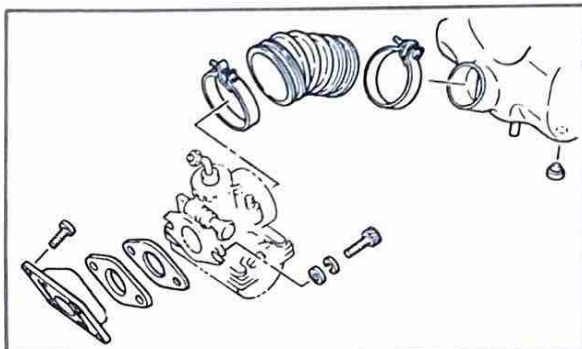
Standard main jet: #170



1. Main jet

Removal

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



1. Joint band

- Remove the bolts and carburetor.
- Remove main jet cover bolt (screw plug).

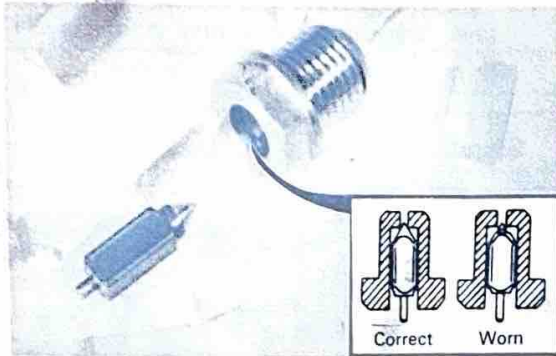
IMPORTANT:

The YZ50G 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 carburetor 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 you Yamaha dealer about any carburetor setting changes before actually going about them.

Inspection

1. Examine carburetor body and fuel passages. If contaminated, wash carburetor in petroleum based solvent. Do not use caustic carburetor cleaning solutions. Blow out all passages and jets with compressed air.
2. Examine condition of floats. If floats are leaking or damaged, they should be replaced.
3. Inspect inlet needle valve and seat for wear or contamination. Replace these components as a set.

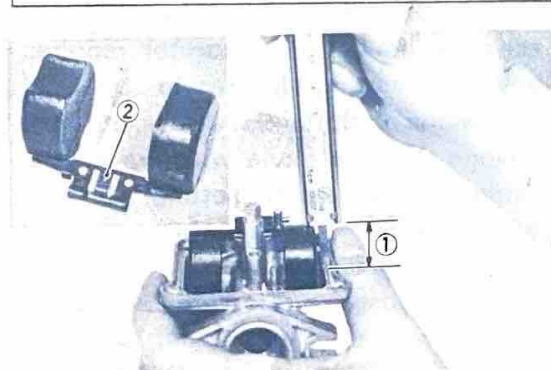


Adjustment

1. Float height
 - a. Checking

Hold the carburetor in an upside down position. While holding the float arm so the tang is just touching the float needle, measure the distance from the top of the float to the float bowl gasket surface. Both floats must be the same height.

Float height:
 $21.0 \pm 1 \text{ mm}$ ($0.83 \pm 0.039 \text{ in}$)
 Level with carburetor base



1. Float height 2. Tang

b. Adjustment

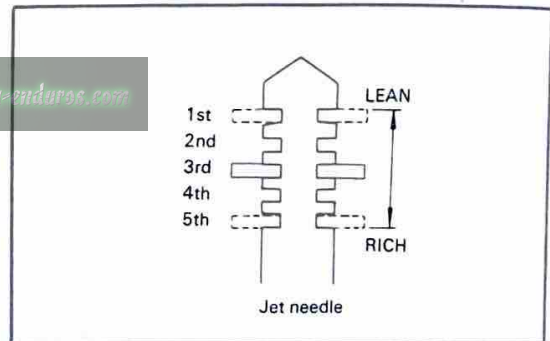
CAUTION:
 Check the needle valve and valve seat for wear before adjustment.

Make the adjustment by bending the tang on the float arm.

2. Jet needle

The mid-range air/fuel supply is affected by the position of the needle in the needle jet. If it is necessary to alter the mid-range air/fuel mixture characteristics of the machine, the jet needle position may be changed. Move the jet needle up for a leaner condition or toward the bottom position for a richer condition.

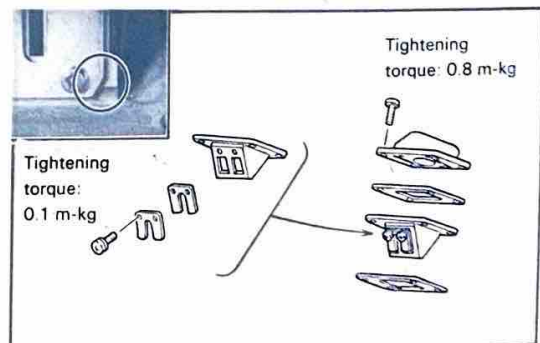
Jet needle type: 4J13
 Clip position: No. 3 Groove



REED VALVE

Removal

1. 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.

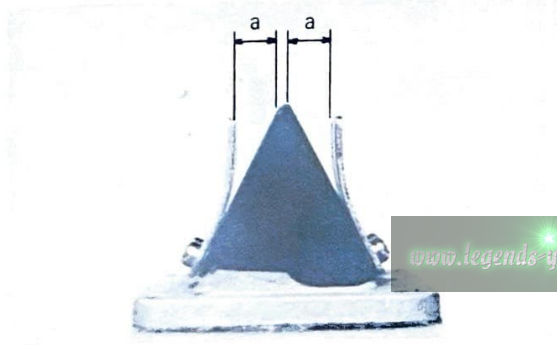


Inspection

1. Inspect rubber intake manifold for signs of weathering, checking or other deterioration.
2. Inspect reed petals for signs of fatigue and 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.
3. The valve stopper controls the movement of the valve. Check clearance "a".

Standard valve "a": 7 mm (0.28 in)

If it is 0.5 mm (0.02 in) more or less than specified, replace the valve stopper.



4. Check reed valve for bending. If beyond tolerance, replace reed valve.

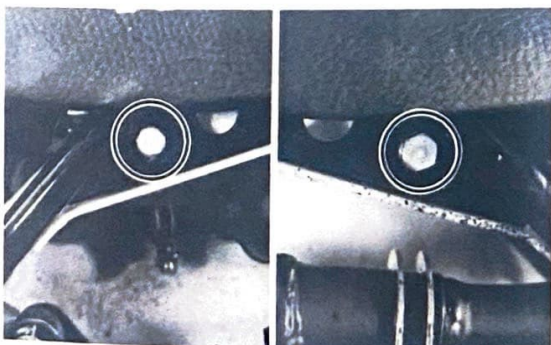
Reed valve bending limit:
0.3 mm (0.012 in) or less

MUFFLER

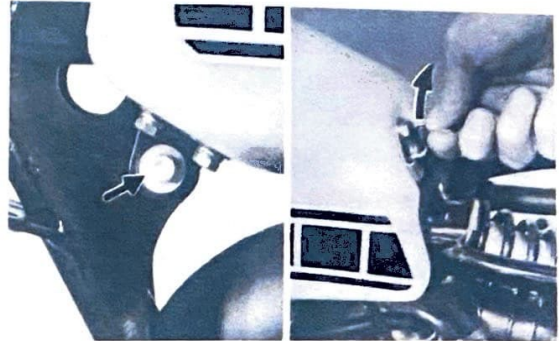
With the carburetor removed, proceed as follows:

Removal

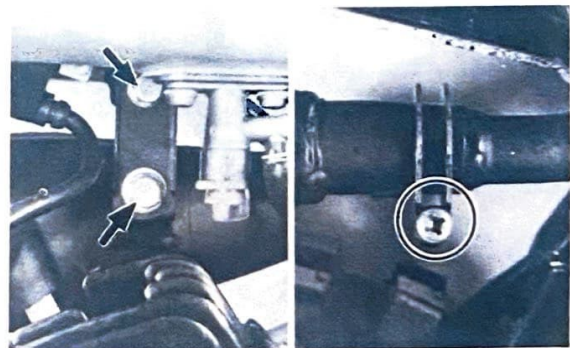
1. Remove the side cover (R.H.)
2. Remove the two bolts and remove seat.



3. Remove the securing bolt and holding band from fuel tank. Lift rear of the fuel tank up and pull back to clear frame mounts. Remove tank. (Fuel petcock must be placed in OFF.)



4. Remove the nuts holding muffler to cylinder and remove the muffler mounting bolts, and screw.



Maintenance

1. 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.
2. Carbon deposits within the silencer may be removed by lightly tapping the outer shell with a hammer and then blowing

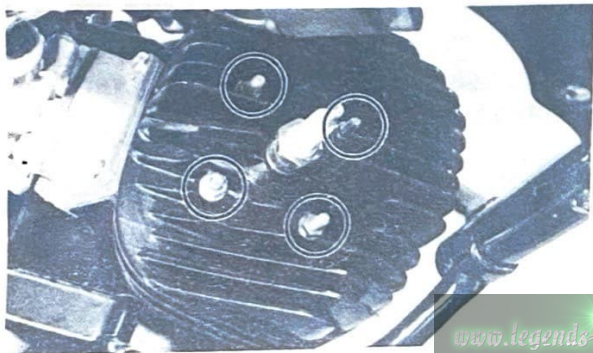
out with compressed air. Heavy wire, such as a coat hanger, may be inserted to break loose deposits. Use care.

TOP END

Removal

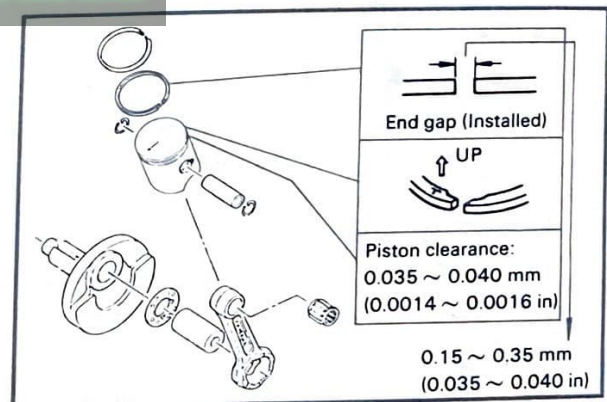
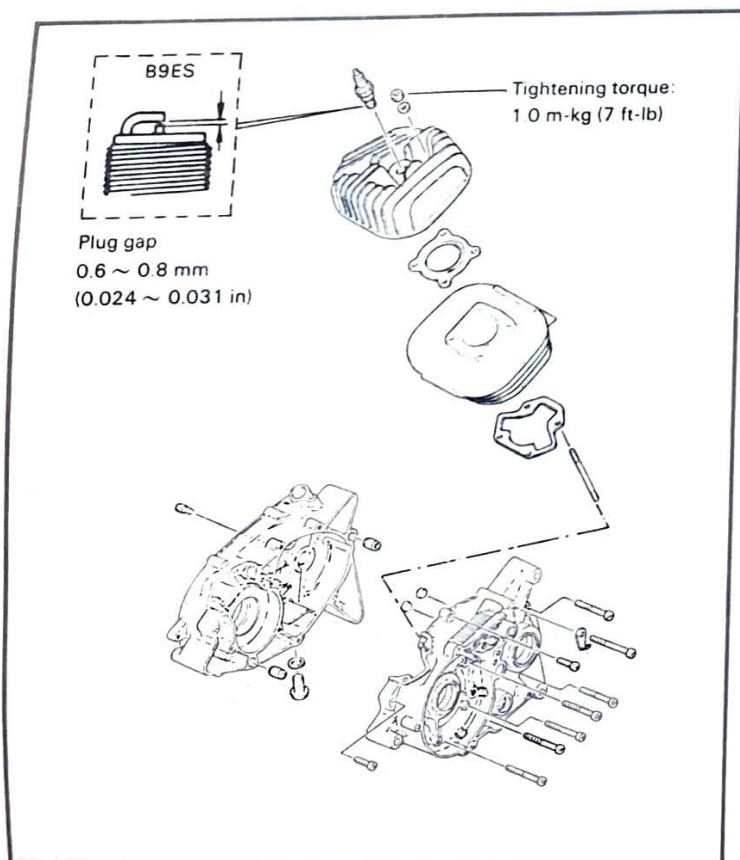
1. Remove spark plug lead wire. Loosen, but do not remove spark plug.
2. Remove nuts securing cylinder and head (4 nuts).
Remove cylinder head and gasket.

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



3. 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.
4. Remove the piston pin clip (1) from the piston. Push the piston pin out from opposite side. Remove the piston.

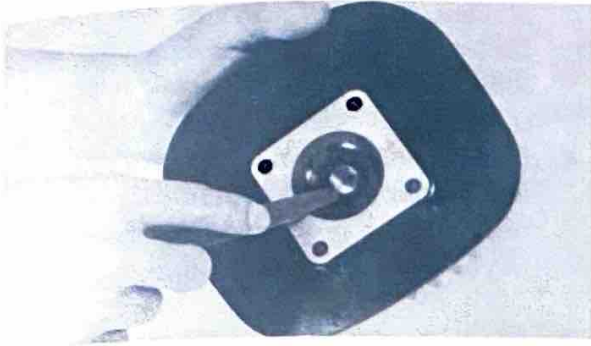
NOTE: If the pin hangs up, use a piston pin puller. Do not hammer on pin as damage to rod, piston and bearing will result.



Maintenance

Cylinder head

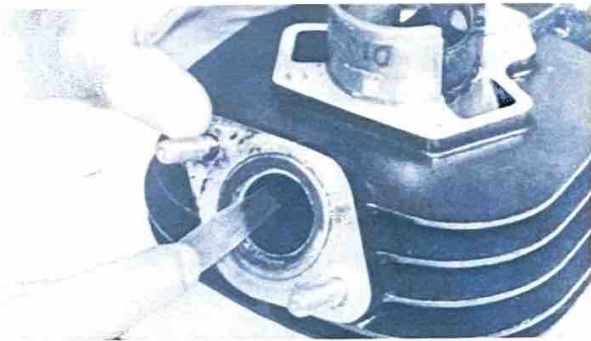
1. Remove spark plug.
2. Using a rounded scraper, remove carbon deposits from combustion chamber. Take care to avoid damaging the spark plug threads. Do not use a sharp instrument. Avoid scratching the metal surface.



- Place the head on a surface plate. There should be no warpage. Correct by re-surfacing. Place 400 ~ 600 grit wet emery sandpaper on surface plate and re-surface head using a figure-eight sanding pattern. Rotate head several times to avoid removing too much material from one side.
- Clean the spark plug gasket mating surface thoroughly.

Cylinder

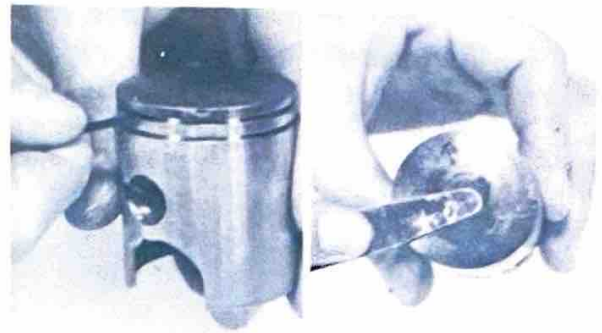
- Remove reed valve assembly.
- Using a rounded scraper, remove carbon deposits from exhaust port.



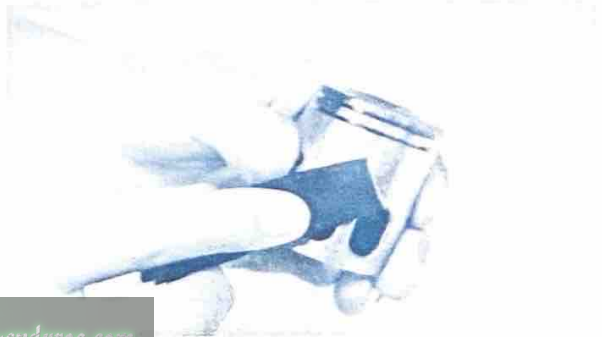
- Check cylinder bore. Using a cylinder hone, remove any scoring. Hone lightly, using smooth stones. Hone no more than required to avoid excess piston clearance.

Piston

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

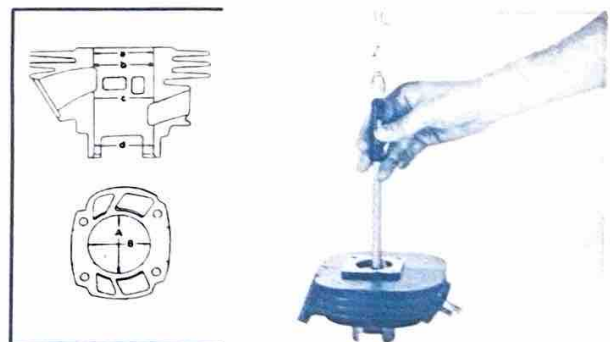


- Using 400 ~ 600 grit wet sandpaper, lightly sand score marks and lacquer deposits from sides of piston. Sand in cross-hatch pattern. Do not sand excessively.

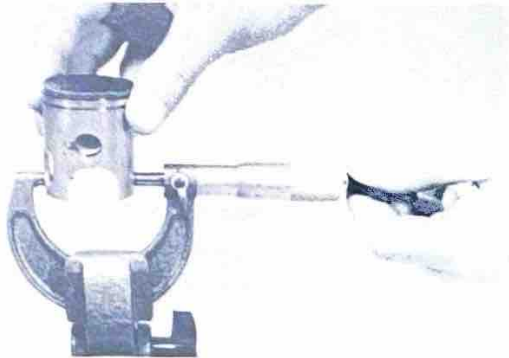


Piston clearance

- Cylinder bore measurement
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 oversize.



- Piston outside diameter measurement
Using an outside micrometer, measure piston diameter. The measuring point is at right-angles to the piston pin holes, about 5 mm (0.2 in) from the bottom of the piston skirts.



PISTON CLEARANCE

$$= \text{Minimum Cylinder Diameter} \\ - \text{Maximum Piston Diameter}$$

Example:

$$40.020 \text{ mm} - 39.985 \text{ mm} = 0.035 \text{ mm}$$

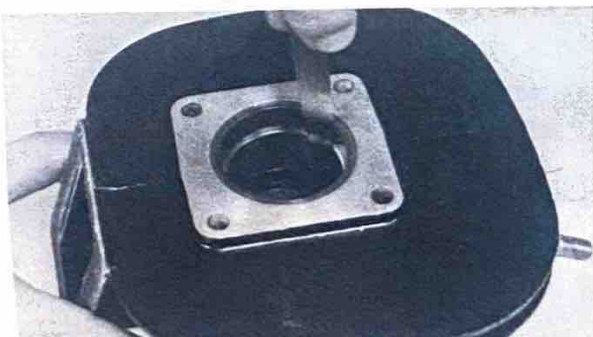
Nominal piston clearance:
0.035 mm ~ 0.040 mm
(0.014 in ~ 0.016 in)

If beyond tolerance replace piston or rebores cylinder as required.

Piston rings

- Remove ring from piston.
- Insert ring into cylinder. Push down approximately 20 mm (0.79 in) using piston crown to maintain right-angle to bore. Measure installed end gap. If beyond tolerance, replace.

Ring end gap installed (top and 2nd):
0.15 ~ 0.35 mm (0.035 ~ 0.040 in)



- Holding cylinder towards light, check for full seating of ring around bore. If not fully seated, check cylinder. If cylinder is not out-of-round, replace piston ring.
- 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.

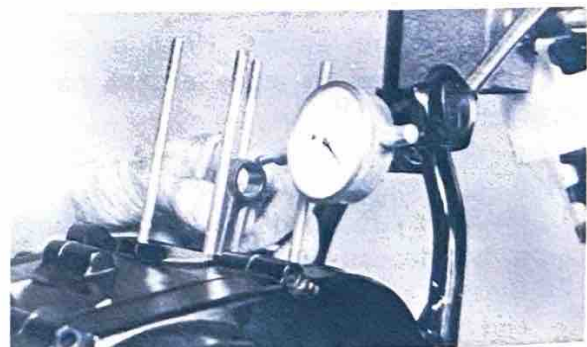
NOTE:

New rings require break-in. Follow first portion of new machine break-in procedure.

Piston pin bearing and connecting rod

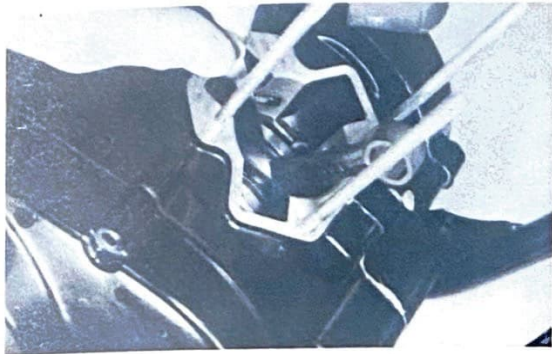
- Check the pin for signs of wear. If any wear is evident, replace pin and bearing.
- Check the pin and bearing for signs of heat discoloration. If excessive (heavily blued), replace both.
- Check the bearing cage for excessive wear. Check the rollers for signs of flat spots. If found, replace pin and 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.
- Mount the dial gauge at right angles to 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:
0.3 ~ 1.1 mm (0.01 ~ 0.04 in)

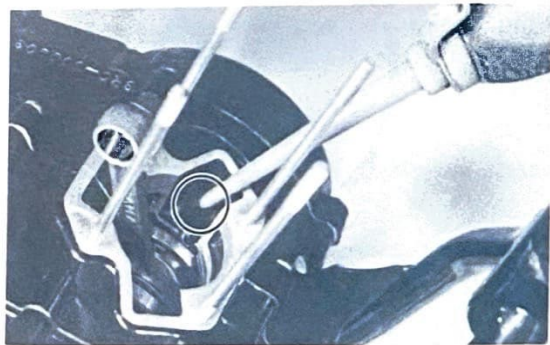


- Remove the dial gauge and slide the connecting rod to one side. Insert a feeler gauge between the side of the connecting rod big end and the crank wheel. Measure clearance.

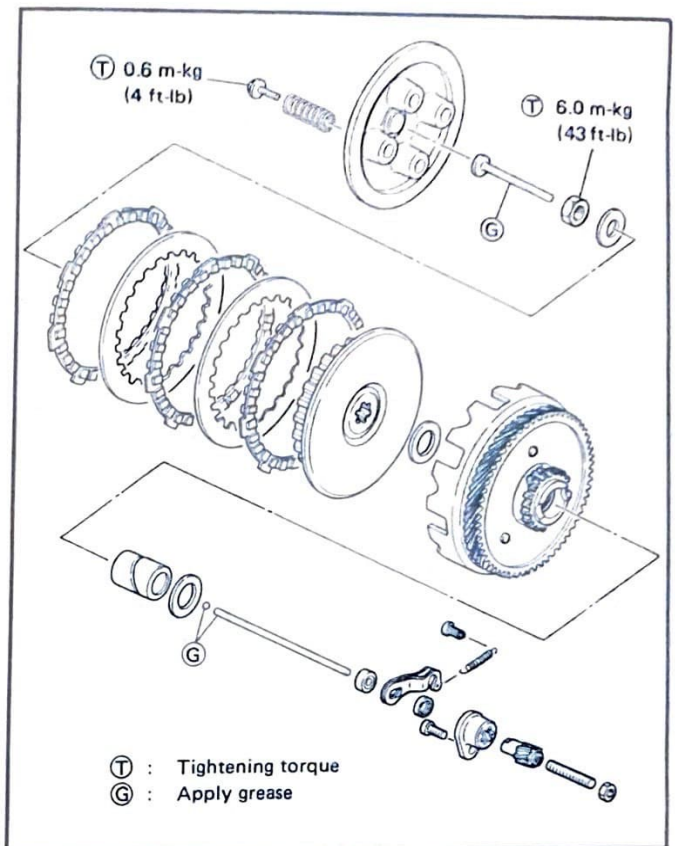
Connecting rod/crank side clearance:
0.2 ~ 0.7 mm (0.008 ~ 0.028 in)



- If any of the above measurements exceed tolerance, crankshaft repair is required. Take the machine to your authorized dealer.
- 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 bearings oil delivery hole.



CLUTCH

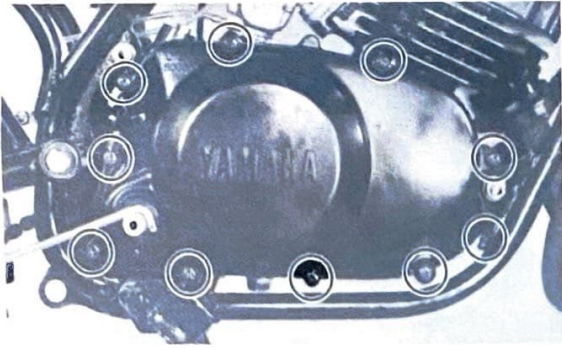


NOTE: Clutch adjustment is covered in Section "Mechanical adjustments".

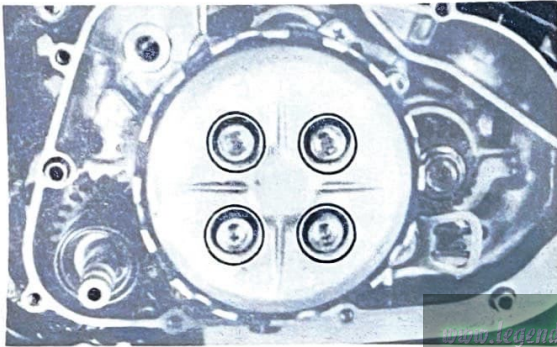
Removal

- Remove the kick starter lever.
- Remove the footrest.
- Remove the rear brake adjuster and brake pedal.
- 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.



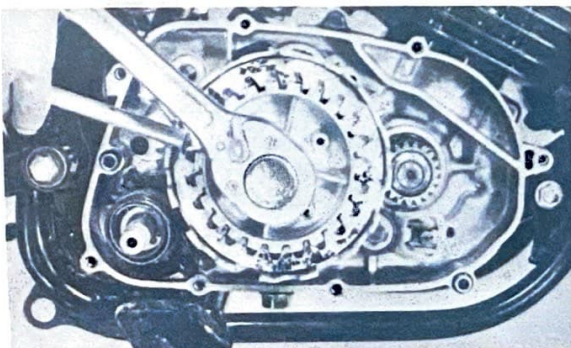
- Remove the Philips screw (4) holding the pressure plate. Remove the clutch springs (4), pressure plate and push rod. Remove the clutch plates and friction plates.



NOTE: _____

When removing Philips (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.

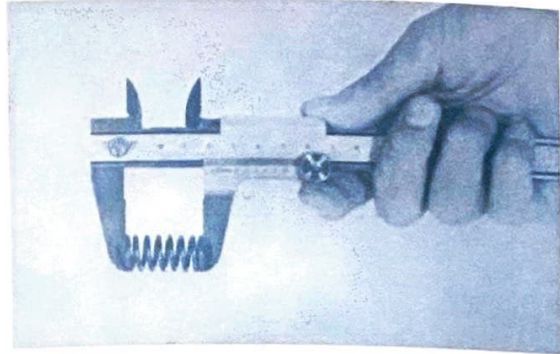
- Using the clutch holding tool, remove the clutch securing nut and lock washer. Remove the clutch boss and driven gear (clutch housing).



Inspection

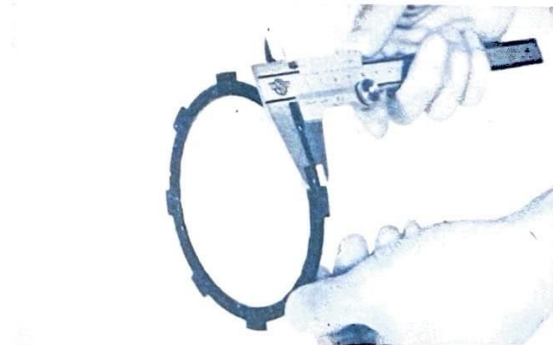
- Measure each clutch spring. If beyond tolerance, replace.

	New	Minimum
Clutch spring free length	31.5 mm (1.24 in)	30.5 mm (1.20 in)



- Check the plates for signs of warpage and heat damage, replace as required.
- Measure the friction plates at three or four points. If their minimum thickness exceeds tolerance, replace.

	New	Wear limit
Friction plate thickness	3.5 mm (0.14 in)	3.2 mm (0.13 in)



NOTE: _____

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

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

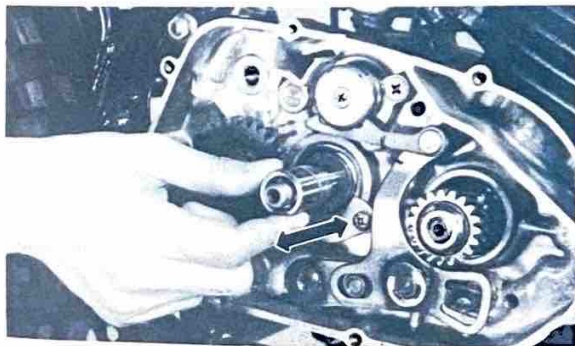
Clutch plate warp allowance:
0.05 mm (0.02 in) maximum



5. 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.



6. 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.

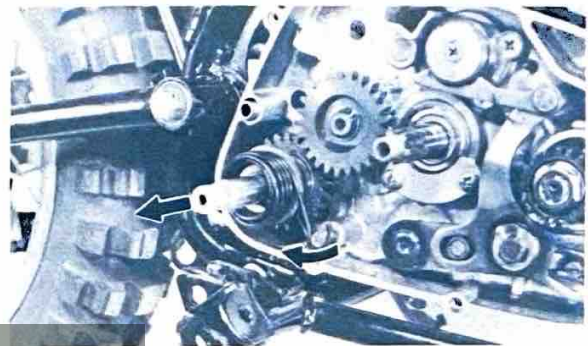


7. Checking the push rod
Remove the push rod and roll it over a surface plate. If the rod is bent, straighten or replace it.

Bending limit: 0.15 mm (0.006 in)

KICK STARTER

1. Unhook kick spring from its post in crankcase.
Allow it to relax. Then remove kick axle assembly by rotating the shaft counter-clockwise and then pulling out the entire assembly.



2. Check to see that the kick gear spirals freely on the worm shaft. Check the gear teeth for wear and breakage.
3. Install the kick starter assembly.
 - a. Set the kick gear clip in the groove of crankcase.
 - b. Rotate kick spring clockwise and hook it on kick spring stopper.

NOTE: _____
Make sure that the kick stopper is stopped at projection of crankcase.

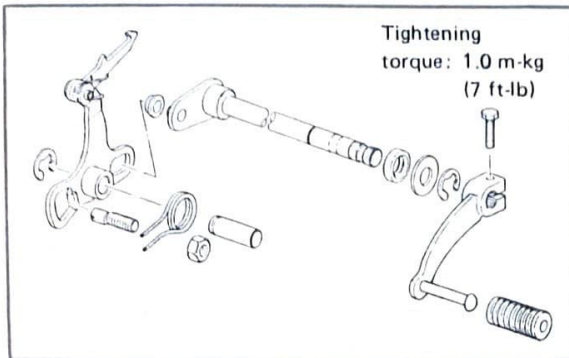
- c. Check whether the kick starter acts correctly and whether it returns to its home position.

SHIFTER

NOTE: _____
Shifter maintenance and adjustment should be performed with clutch assembly removed.

Removal

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



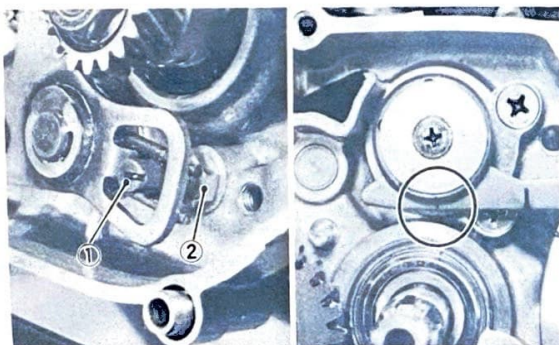
Inspection

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.

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 into second gear. In this case, the index mark on the change lever should align perfectly with the index mark on the shift drum.

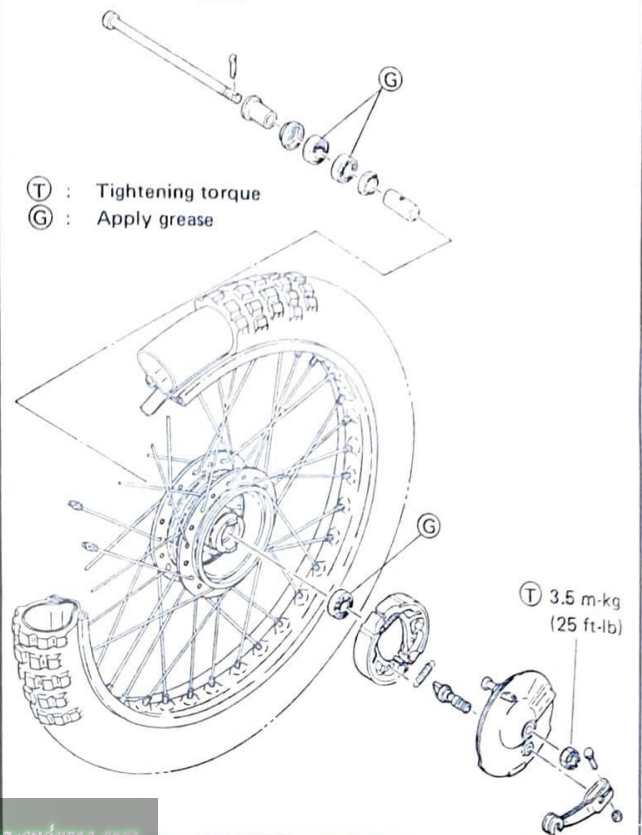
If the marks are not aligned, loosen the lock nut. Turn the adjuster screw (an eccentric screw) until the marks are aligned. Tighten the lock nut.



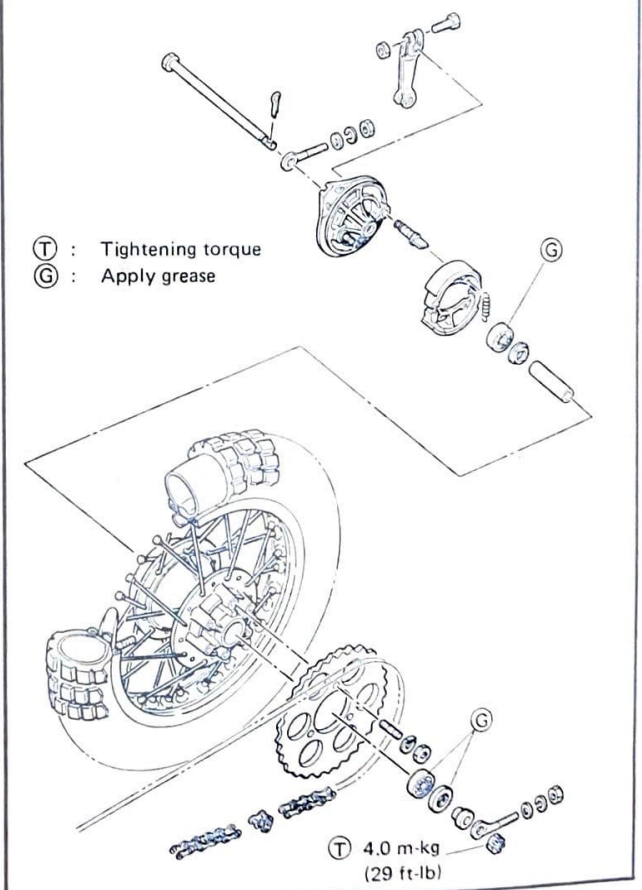
1. Adjusting screw
2. Lock nut

CHASSIS

FRONT WHEEL

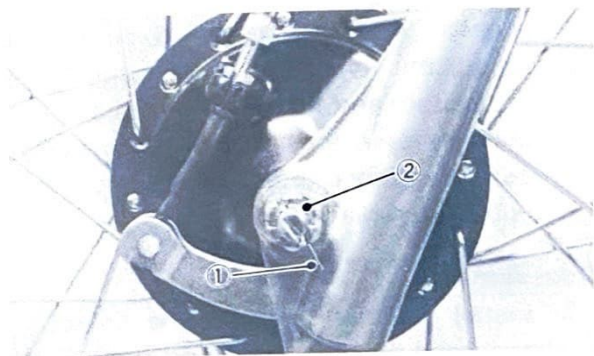


REAR WHEEL



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.



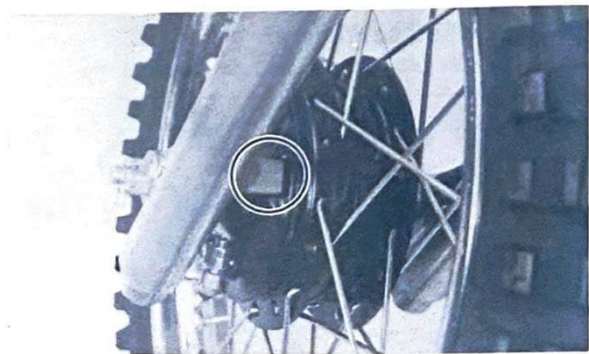
1. Cotter pin 2. Axle nut

4. Turn and pull out the front wheel axle; the wheel assembly can now be removed.

Front wheel installation

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

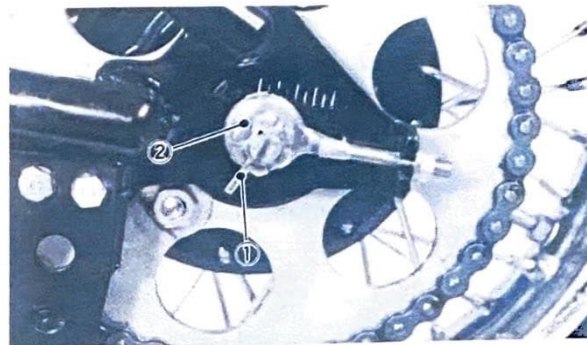
1. Check for proper engagement of the boss on the outer fork tube with the locating slot on the brake shoe plate.
2. Always use a new cotter pin. Old pin should be discarded.



Axle nut torque: 3.5 m·kg (25 ft·lb)

Rear wheel removal

1. The brake rod can be removed by removing the adjuster.
2. Loosen the lock nuts of the right and left chain pullers and loosen the adjuster 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.



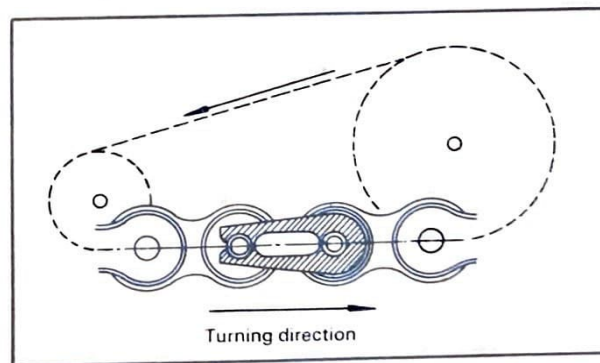
1. Cotter pin 2. Axle nut

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.



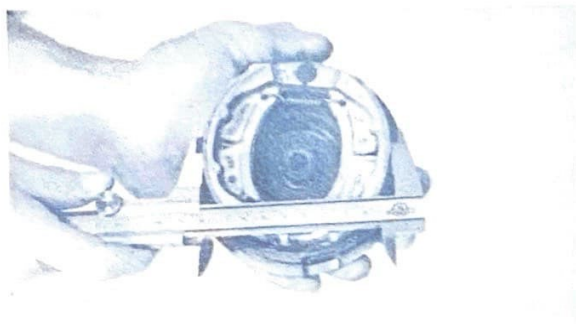
2. Be sure to adjust the tension of the chain. (Refer to "Drive chain tension adjustment".)
3. Always use a new cotter pin. Old pins should be discarded.

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	95 mm (3.74 in)	95 mm (3.74 in)
Replacement limit	92 mm (3.62 in)	92 mm (3.62 in)



Brake drum inspection

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 lock nut 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 3 kg/cm² (42 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.

Check the spokes

If they are loose or bent, tighten or replace them. The spokes should be checked before each use.

Replacing wheel bearings

If the bearings allow excessive play in the wheel or if it does not turn smoothly, have your dealer replace the wheel bearings.

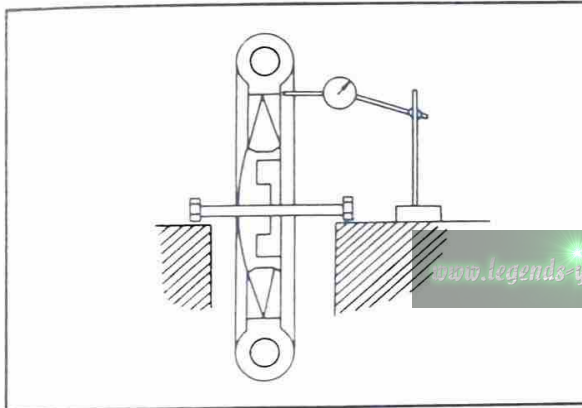
Checking rim

1. Check for cracks, bends or warpage of rim. If a rim is deformed or cracked, it must be replaced.
2. Check wheel run-out
If deflection exceeds tolerance, check wheel bearing or replace wheel as required.

Rim run-out limits:

Vertical — 2.0 mm (0.08 in)

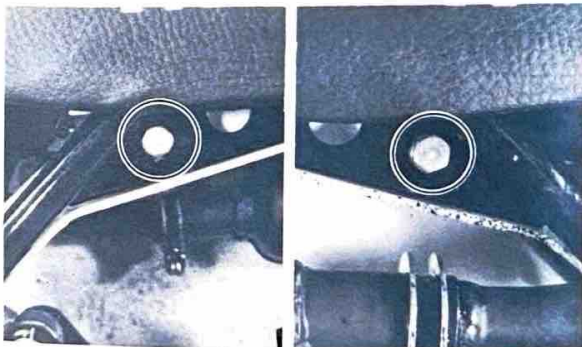
Lateral — 2.0 mm (0.08 in)



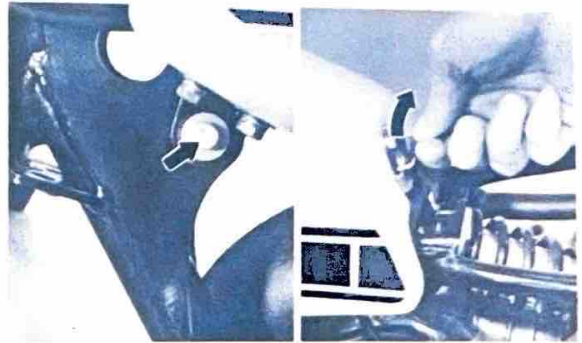
Rear shock absorber (Monocross suspension)

Removal

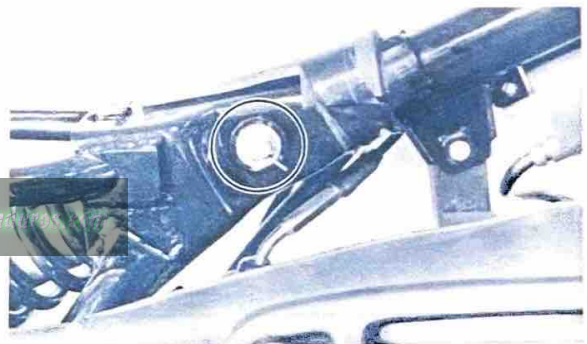
1. Remove the side cover (R.H.)
2. Remove the two bolts and remove seat.



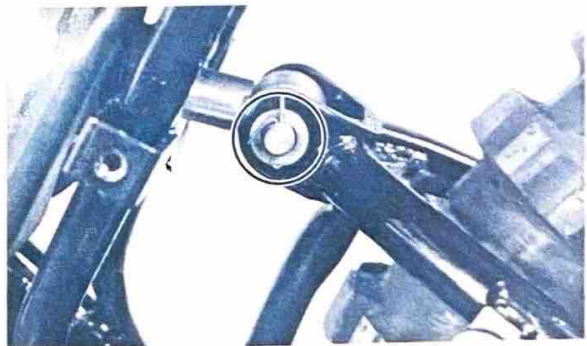
3. Remove the securing bolt and holding band from fuel tank. Lift rear of the fuel tank up and pull back to clear frame mounts. Remove tank.



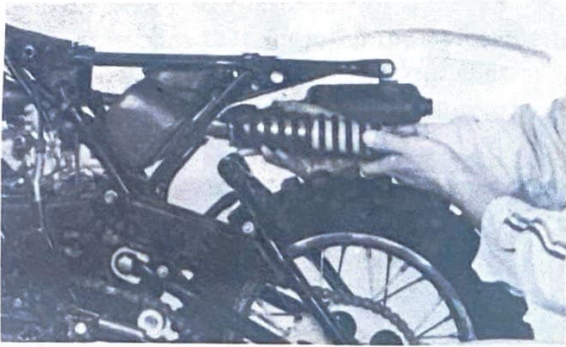
4. Elevate rear wheel by placing a suitable stand under the engine.
5. Remove the cotter pin. And remove the pin securing the upper bracket to frame.



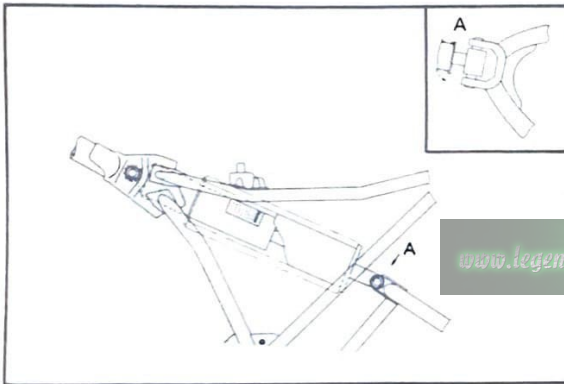
6. Remove the cotter pin and remove the pin from the lower bracket.



7. Remove the rear shock absorber from the frame. (To remove, pull the rear shock backward while lifting up the frame.)



8. When reassembling, reverse the removal procedure taking care of the following points:
- Always use new cotter pins.
 - Grease the pin and thrust cover lip.
 - Installation should be done as illustrated.



Swing arm inspection

- With shock absorber removed, grasp the ends of the arm and move from right to left to check for free play.

Swing arm free play: None

Cable inspection and lubrication

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

Recommended lubricant:

Yamaha Chain and Cable Lube or
SAE 10W/30 motor oil

Throttle cable and grip lubrication

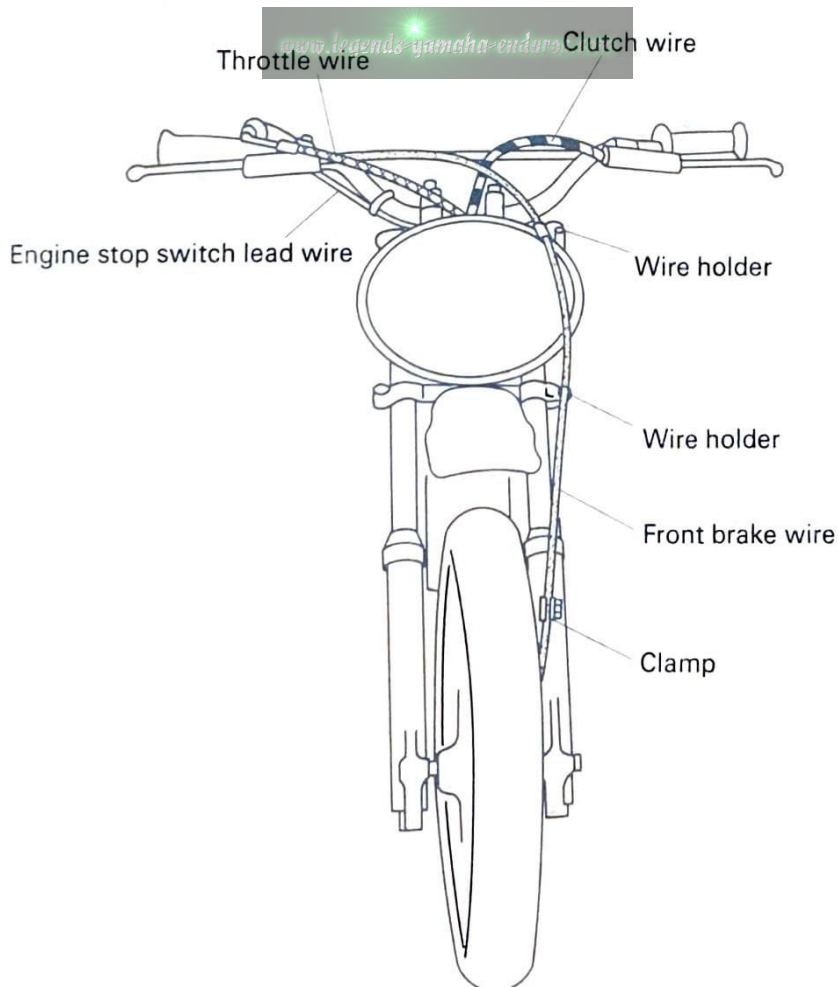
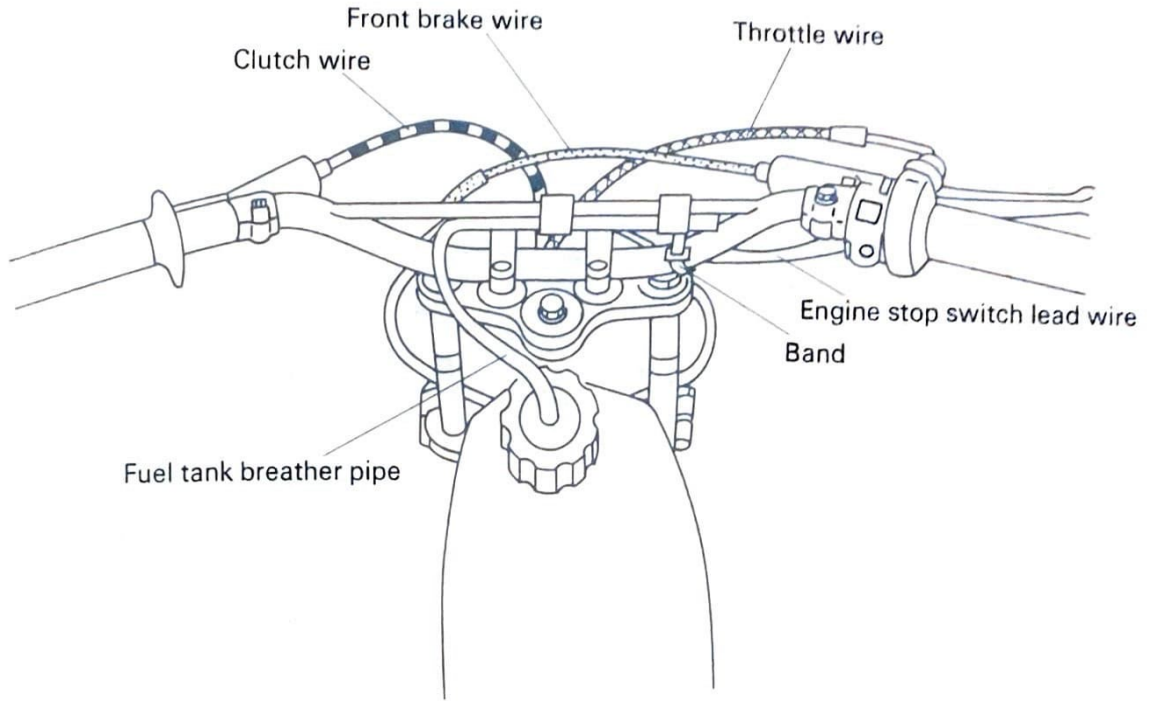
The throttle twist grip assembly should be greased at the time that the cable is lubricated, since the grip must be removed to get at the end of the throttle cable. Two screws clamp the throttle housing to the handlebar. Once these two are removed, the end of the cable can be held high to pour in several drops of lubricant. With the throttle grip disassembled, coat the metal surface of the grip assembly with a suitable all-purpose grease to cut down friction. (See lubrication chart.)

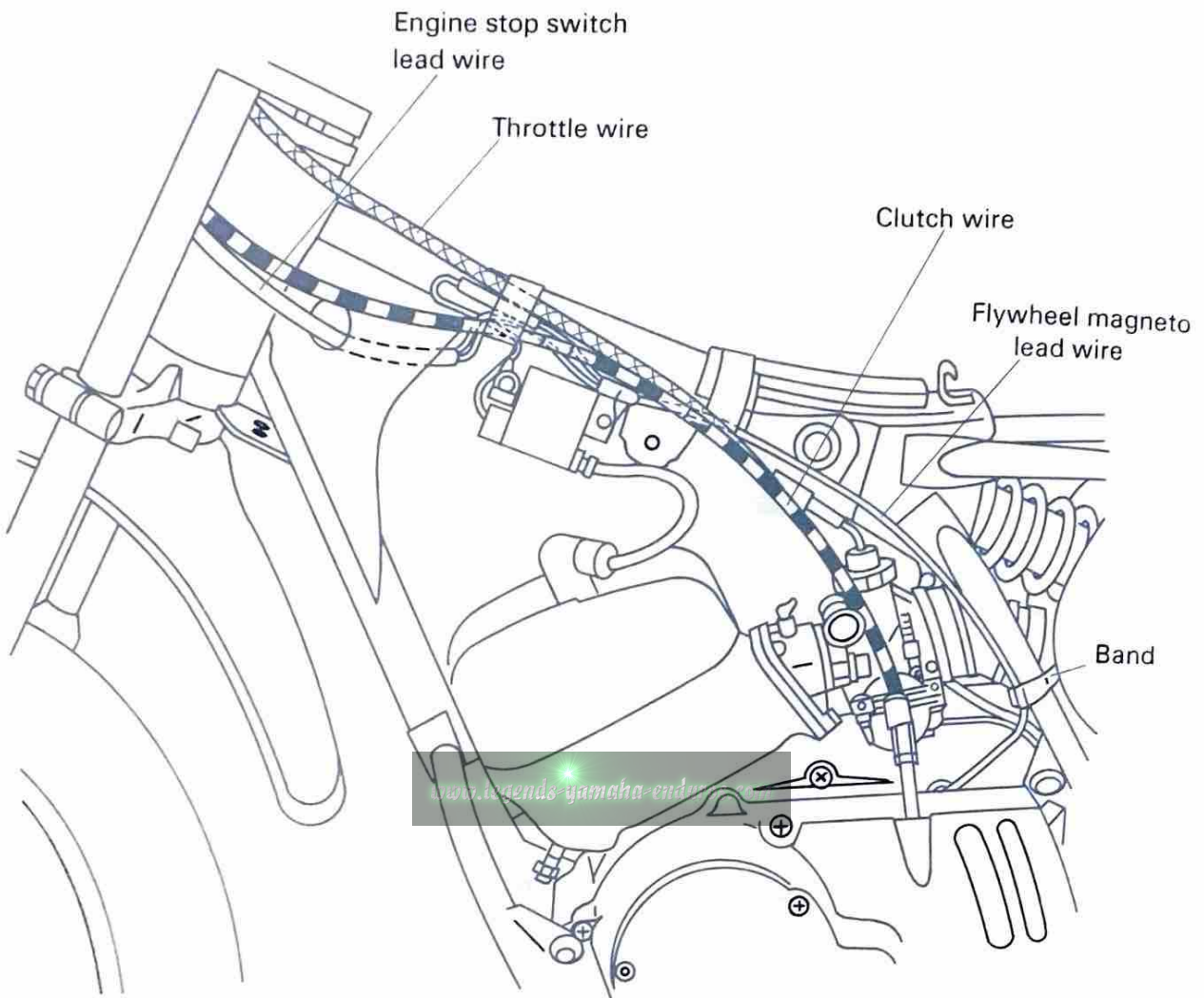
Lubrication of levers, pedals, etc.

- Lubricate the pivoting parts of the brake and clutch levers with Yamaha Chain and Cable Lube or SAE 10W/30 motor oil.
- Lubricate the shaft of the brake pedal with lithium base grease.

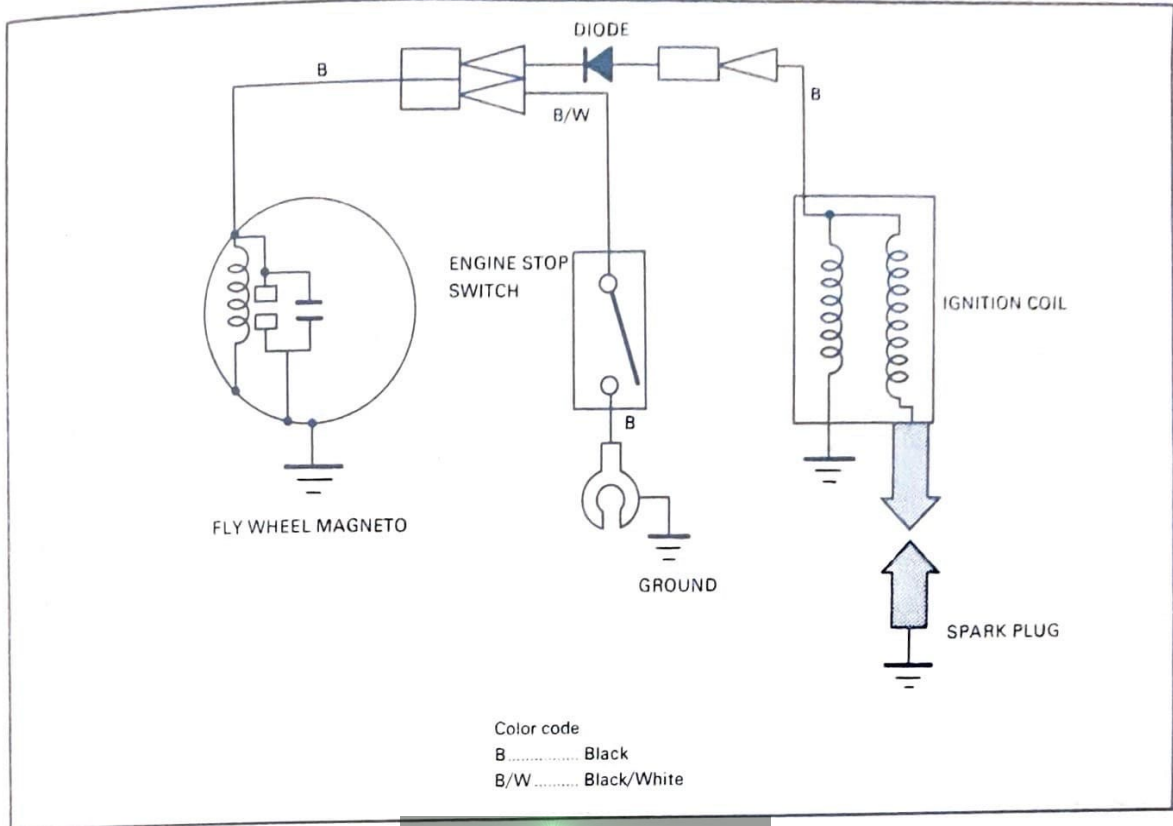
MISCELLANEOUS

CABLE ROUTING





WIRING DIAGRAM

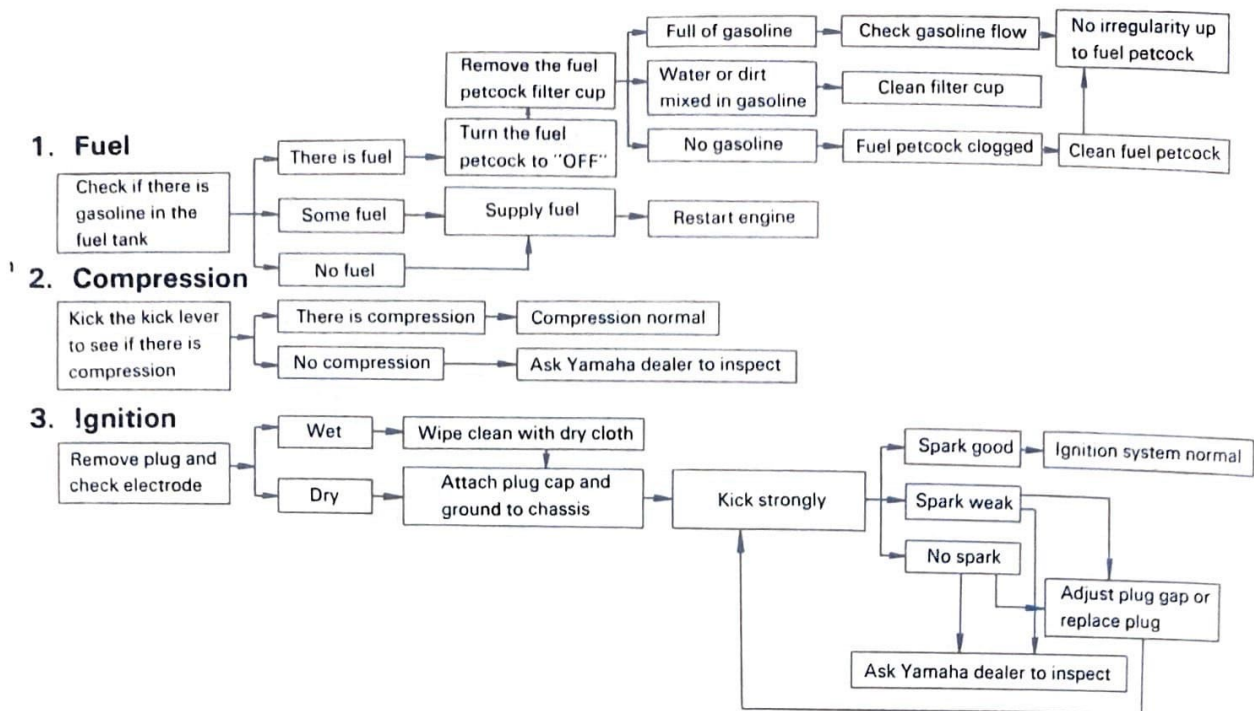


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TROUBLESHOOTING

Although Yamaha motorcycle 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. Imita-

tion 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

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, 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 contami-

nation 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 excess 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-plate surfaces. Avoid combination cleaner-waxes. Many contain abrasive 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.

NOTE: _____

Water may enter the air cleaner case during washing the machine. Be sure to remove the grommet attached to the lower left part of the case and drain the water, as required.

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.
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.

NOTE: _____

Make any necessary repairs before storing the motorcycle.

SPECIFICATIONS

General

Item	Model	YZ50G
Model (I.B.M. No.)		3R0
Frame I.D. & Starting Number		3R0-000101
Engine I.D. & Starting Number		3R0-000101
Dimensions:		
Overall length		1,510 mm (59.4 in)
Overall width (standard)		740 mm (29.1 in)
Overall height (standard)		845 mm (33.3 in)
Seat height		625 mm (24.6 in)
Wheelbase		1,025 mm (40.4 in)
Minimum ground clearance		195 mm (7.7 in)
Weight:		
Net weight		50 kg (110 lb)

Engine

Description:		
Engine type		Air cooled 2-stroke gasoline torque induction
Engine model		3R0
Displacement		49 cc (3.0 cu.in)
Bore x Stroke		40 x 39.7 mm (1.57 x 1.56 in)
Compression ratio		7.8 : 1
Starting system		Primary kick starter
Ignition system		Magneto
Lubrication system		Mixed gas (20 : 1) (YAMALUBE R)
Cylinder head:		
Combustion chamber volume		3.7 cc (0.23 cu.in)
Combustion chamber type		Dome + Squish
Head gasket thickness		0.3 mm (0.01 in)
Cylinder:		
Material		Cast iron sleeve with aluminium
Bore size		40 ⁺⁰ _{+0.02} mm (1.57 ⁺⁰ _{+0.0008} in)
Taper limit		0.05 mm (0.002 in)
Out of round limit		0.01 mm (0.004 in)
Piston:		
Piston skirt clearance		0.035 ~ 0.040 mm (0.0014 ~ 0.0016 in)
Piston over size		40.25, 40.50, 40.75, 41.00 mm (1.585, 1.594, 1.604, 1.614 in)
Piston pin outside diameter x Length		12 x 33 mm (0.47 x 1.30 in)
Piston rings:		
Piston ring design (Top/Second)		Plain ring
Ring end gap (Installed) (Top/Second)		0.15 ~ 0.35 mm (0.006 ~ 0.014 in)
Ring groove side clearance (Top)		0.04 ~ 0.08 mm (0.002 ~ 0.003 in)
Ring groove side clearance (Second)		0.03 ~ 0.07 mm (0.001 ~ 0.003 in)
Small end bearing: Type		Needle (12 x 15 x 16.4 mm)
Big end bearing: Type		Needle (18 x 24 x 11.6 mm)

<p>Crankshaft:</p> <p>Crankshaft assembly width (F)</p> <p>Crankshaft deflection (A)</p> <p>Connecting rod big end side clearance (C)</p> <p>Connecting rod small end deflection (S)</p> <p>Crank pin outside diameter x Length</p> <p>Crank pin type</p> <p>Crank bearing type (Left)</p> <p style="padding-left: 100px;">(Right)</p> <p>Crank oil seal type (Left)</p> <p style="padding-left: 100px;">(Right)</p>	<p>38 $\begin{matrix} -0.05 \\ -0.10 \end{matrix}$ mm (1.50 $\begin{matrix} -0.002 \\ -0.004 \end{matrix}$ in)</p> <p>0.03 mm (0.0012 in)</p> <p>0.2 ~ 0.7 mm (0.008 ~ 0.028 in)</p> <p>0.3 ~ 1.1 mm (0.01 ~ 0.04 in)</p> <p>18 x 37 mm (0.71 x 1.46 in)</p> <p>Hollow type</p> <p>6204</p> <p>6204</p> <p>SD20-35-7</p> <p>SD20-35-7</p>
<p>Clutch:</p> <p>Clutch type</p> <p>Clutch operating mechanism</p> <p>Primary reduction ratio & method</p> <p>Friction plate — Thickness/Quantity</p> <p style="padding-left: 20px;">— Wear limit</p> <p>Clutch — Thickness/Quantity</p> <p style="padding-left: 20px;">— Warp limit</p> <p>Clutch spring — Free length/Quantity</p> <p style="padding-left: 20px;">— Wear limit</p> <p>Clutch housing axial play (wear limit)</p> <p>Push rod bending limit</p>	<p>Wet, multiple disc type</p> <p>Inner push type, screw push</p> <p>68/19, 3.578 Helical gear</p> <p>3.5 mm (0.14 in) x 3 pcs.</p> <p>3.2 mm (0.13 in)</p> <p>1.6 mm (0.063 in) x 2 pcs.</p> <p>0.05 mm (0.002 in)</p> <p>31.5 mm (1.24 in) x 4 pcs.</p> <p>30.5 mm (1.20 in)</p> <p>0.06 ~ 0.16 mm (0.002 ~ 0.006 in)</p> <p>0.15 mm (0.006 in)</p>
<p>Transmission:</p> <p>Type</p> <p>Gear ratio 1st (Teeth) (Ratio)</p> <p style="padding-left: 20px;">2nd</p> <p style="padding-left: 20px;">3rd</p> <p style="padding-left: 20px;">4th</p> <p style="padding-left: 20px;">5th</p> <p>Transmission gear oil quantity & type</p> <p>Secondary reduction ratio & method</p>	<p>Constant mesh, 5-speed</p> <p>36/15 (2.400)</p> <p>33/18 (1.833)</p> <p>31/21 (1.476)</p> <p>28/23 (1.217)</p> <p>26/25 (1.040)</p> <p>Total = 650 ~ 700 cc (0.69 ~ 0.74 US qt)</p> <p>Exchange = 600 ~ 650 cc (0.63 ~ 0.69 US qt)</p> <p>YMALUBE 4-cycle oil or SAE 10W/30</p> <p>"SE" motor oil</p> <p>45/12, 3.750 Roller chain</p>
<p>Intake:</p> <p>Air cleaner — Type/Quantity</p> <p style="padding-left: 20px;">— Oil grade</p> <p>Induction system</p>	<p>Wet-foam rubber/1 pc.</p> <p>SAE 10W/30 "SE" motor oil</p> <p>Reed valve</p>
<p>Reed valve:</p> <p>Type</p> <p>Bending limit</p> <p>Valve lift</p>	<p>V type</p> <p>0.3 mm (0.012 in) or less</p> <p>7 mm (0.28 in)</p>
<p>Carburetor:</p> <p>Type & Manufacturer/Quantity</p> <p>I.D. mark</p> <p>Main jet (M.J.)</p> <p>Air jet (A.J.)</p> <p>Jet needle-clip position (J.N.)</p> <p>Needle jet (N.J.)</p> <p>Cutaway (C.A.)</p> <p>Pilot jet (P.J.)</p> <p>Air screw (turns out) (A.S.)</p> <p>Starter jet (G.S.)</p> <p>Fuel level (F.L.)</p>	<p>VM20SH, MIKUNI/1 pc.</p> <p>3R000</p> <p>#170</p> <p>2.5</p> <p>4J13-3</p> <p>N-8</p> <p>1.5</p> <p>#27.5</p> <p>1-1/2</p> <p>30</p> <p>26 ± 1 mm (1.02 ± 0.039 in)</p>

Brake: Front brake: Type Drum diameter (Limit) Shoe diameter x Width Shoe spring free length Lining thickness/Wear limit Rear brake: Type Drum diameter Shoe diameter x Width Shoe spring free length Lining thickness/Wear limit	Leading, trailing 95 mm (3.74 in) 95 x 20 mm (3.74 x 0.79 in) 32.7 mm (1.29 in) 3 mm/1.5 mm (0.12 in/0.06 in) Leading, trailing 95 mm (3.74 in) 95 x 20 mm (3.74 x 0.79 in) 32.7 mm (1.29 in) 3 mm/1.5 mm (0.12 in/0.06 in)
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Electrical

Ignition system: Type — flywheel magneto (Contact breaker point) Model/Manufacturer Voltage Source coil resistance Flywheel puller thread size	F001T10671/Mitsubishi (Rotor I.D. mark: F1T106) 6V $1.12\Omega \pm 10\%$ at 20°C (68°F) 27 mm (1.08 in)
Ignition timing:	17°/STATIONARY [1.8 ± 0.15 mm (0.071 ± 0.006 in)]
Ignition coil: Model/Manufacturer Spark gap Primary winding resistance Secondary winding resistance Diode Spark plug: Type/Manufacture Spark plug gap Contact breaker: Point gap Point spring pressure Condenser: Capacity Insulation resistance	F006T41674/Mitsubishi 10 mm (0.4 in) $1\Omega \pm 15\%$ at 20°C (68°F) $5.9k\Omega \pm 15\%$ at 20°C (68°F) Yes B9ES/NGK 0.6 ~ 0.8 mm (0.024 ~ 0.031 in) 0.30 ~ 0.40 mm (0.012 ~ 0.016 in) 600 ~ 800 g 0.25 μF 50MΩ

Tightening torque

	Tightening torque		
Engine:			
Cylinder head	M6	1.0 m-kg	(7 ft-lb)
Spark plug	M14	2.5 m-kg	(18 ft-lb)
Primary drive gear	M12	6.5 m-kg	(47 ft-lb)
Clutch boss	M12	6.0 m-kg	(43 ft-lb)
Clutch spring	M5	0.6 m-kg	(4 ft-lb)
Drive sprocket	M12	6.0 m-kg	(43 ft-lb)
Kick crank	M6	1.2 m-kg	(8.5 ft-lb)
Change pedal	M6	1.0 m-kg	(7 ft-lb)
Reed valve	M3	0.1 m-kg	(0.7 ft-lb)
Rotor	M12	5.0 m-kg	(36 ft-lb)
Stator	M5	0.35 m-kg	(2.5 ft-lb)
Exhaust pipe	M8	1.5 m-kg	(11 ft-lb)
Chassis:			
Front wheel axle	M10	3.5 m-kg	(25 ft-lb)
Inner tube—Under bracket	M10	3.5 m-kg	(25 ft-lb)
Handle crown—Steering shaft	M14	6.0 m-kg	(43 ft-lb)
—Handle holder	M8	1.5 m-kg	(11 ft-lb)
—Inner tube	M8	1.5 m-kg	(11 ft-lb)
Engine mounts—Front	M8	2.5 m-kg	(18 ft-lb)
—Rear upper	M8	2.5 m-kg	(18 ft-lb)
—Rear lower	M8	2.5 m-kg	(18 ft-lb)
Pivot shaft—Frame	M10	3.0 m-kg	(22 ft-lb)
Rear wheel axle	M12	4.0 m-kg	(29 ft-lb)
Sprocket wheel	M8	2.6 m-kg	(19 ft-lb)

WARRANTY INFORMATION

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/REPAIR.

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