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YTM200K

Service Manual

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**YTM200K
SERVICE MANUAL**

1st Edition - July 1982

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CYPRESS, CALIFORNIA 90630

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NOTICE

This manual was written by the Yamaha Motor Company primarily for use by Yamaha dealers and their qualified mechanics. It is not possible to put an entire mechanic's education into one manual, so it is assumed that persons using this book to perform maintenance and repairs on Yamaha machines have a basic understanding of the mechanical concepts and procedures inherent to machine repair technology. Without such knowledge, attempted repairs or service to this model may render it unfit to use and/or unsafe.

This model has been designed and manufactured to perform within certain specifications in regard to performance. Proper service with the correct tools is necessary to ensure that the machine will operate as designed. If there is any question about a service procedure, it is imperative that you contact a Yamaha dealer for any service information changes that apply to this model. This policy is intended to provide the customer with the most satisfaction from his machine and to conform with federal environmental quality objectives.

Yamaha Motor Company, Ltd. is continually striving to improve all models manufactured by Yamaha. Modifications and significant changes in specifications or procedures will be forwarded to all Authorized Yamaha dealers and will, where applicable, appear in future editions of this manual.

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

NOTE: A NOTE provides key information to make procedures easier or clearer.



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.

**SERVICE DEPT.
INTERNATIONAL DIVISION
YAMAHA MOTOR CO., LTD.**

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Being a Yamaha owner, you obviously prefer a quality product.

gēn·ū·īne

adj. 1. Real 2. Authentic,
not artificial 3. Yamaha.

GENUINE **YAMAHA** PARTS & ACCESSORIES

Don't compromise the quality and performance of your Yamaha with off-brand alternatives. You'll be getting exactly what you're paying for.

CHAPTER 1. GENERAL INFORMATION

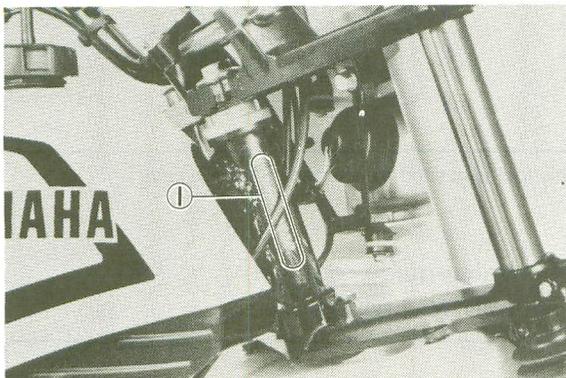
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CHAPTER 1. GENERAL INFORMATION

MACHINE IDENTIFICATION

Frame Serial Number

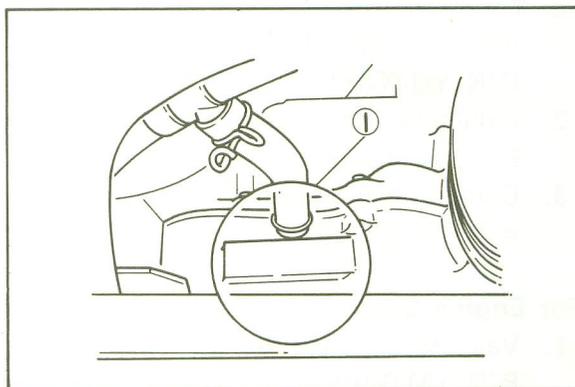
The frame serial number is stamped into the right-side of the steering head pipe.



1. Frame serial number

Engine Serial Number

The engine serial number is stamped into the elevated part of the right rear section of the engine.



1. Engine serial number

NOTE:

The first three digits of these numbers are for model identification; the remaining digits are the unit production number.

Starting Serial Number:

YTM200K21V-000101



SPECIAL TOOLS

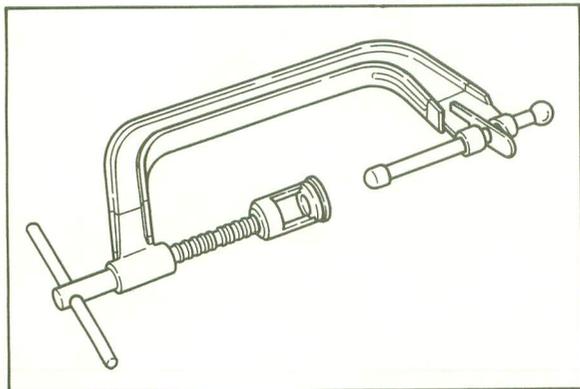
The proper special tools are necessary for complete and accurate tune-up and assembly. Using the correct special tool will help prevent damage caused by the use of improper tools or improvised techniques.

For Tune-up

1. Inductive timing light
P/N YU-08037
2. Inductive tachometer
P/N YU-08036
3. Compression gauge
P/N YU-33223

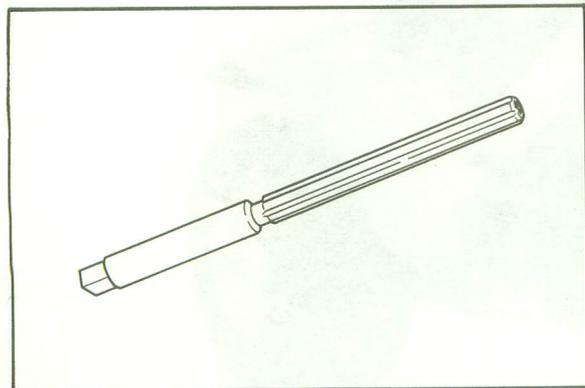
For Engine Service

1. Valve spring compressor
P/N YM-04019



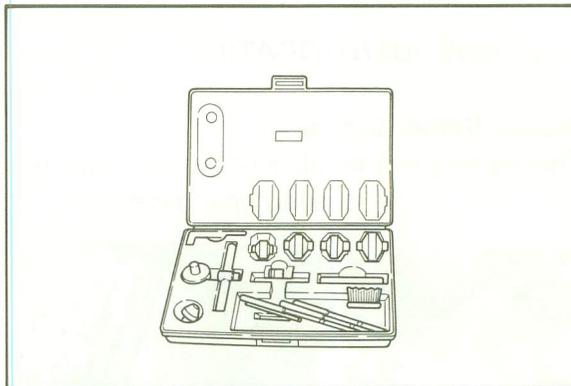
This tool must be used for removing and installing the valve assemblies.

2. Valve guide reamer
P/N YM-04066



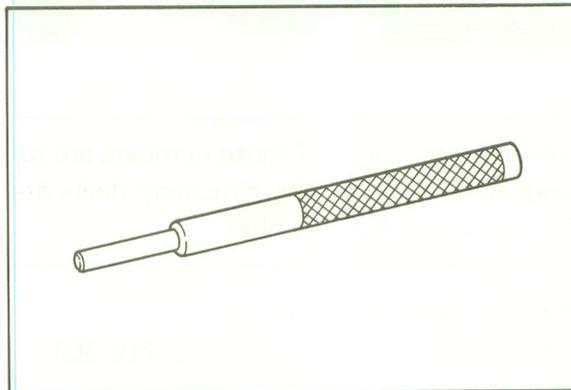
This must be used when replacing the valve guide.

3. Valve seat cutter
P/N YM-91043



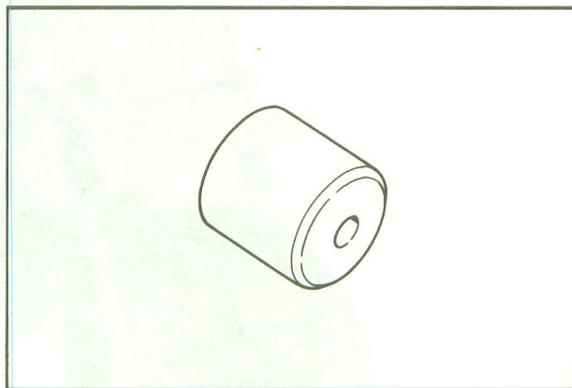
This tool is needed to resurface the valve seat.

4. Valve guide remover
P/N YM-04064



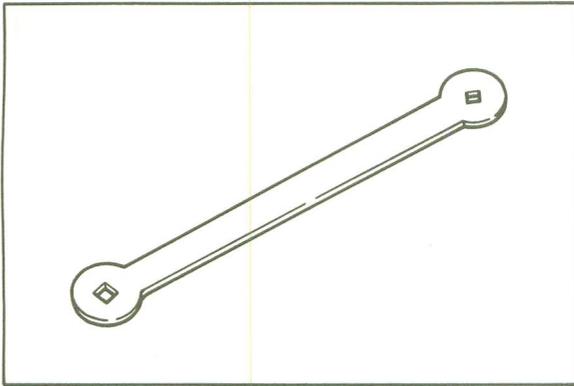
This must be used to remove the valve guides.

5. Valve guide installer
P/N YM-04065



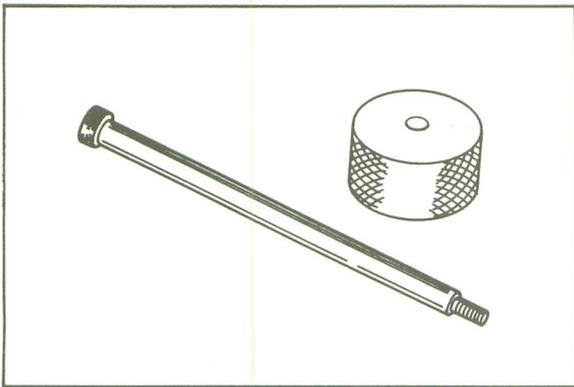
This tool is needed for proper installation of the valve guides.

6. Valve adjusting tool
P/N YM-08035



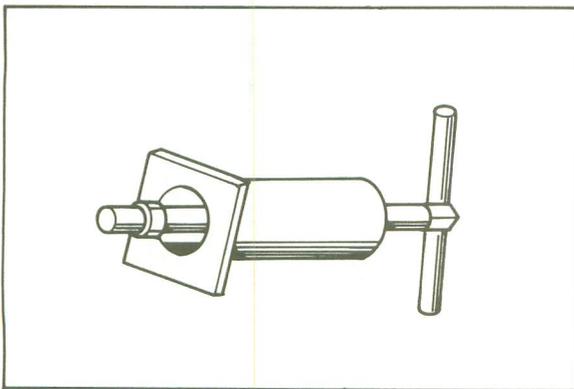
This tool is used when adjusting the valve clearance.

7. Slide hammer
P/N YU-01083



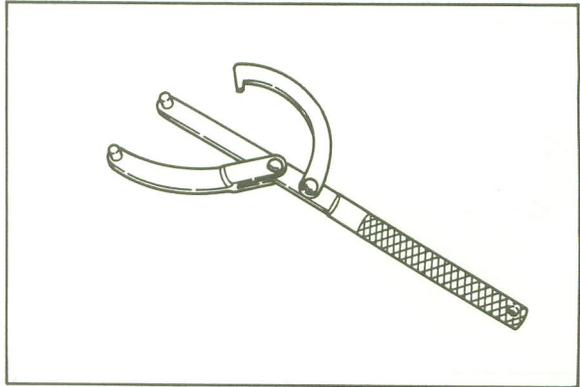
These tools are used when removing the rocker arm shaft.

8. Piston pin puller
P/N YU-01304



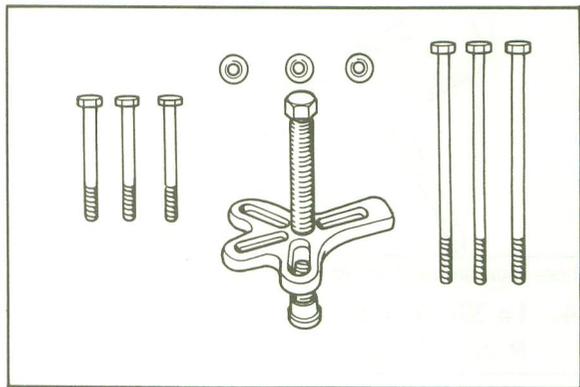
This tool is used when removing the piston pin.

9. Universal rotor holder
P/N YU-01235



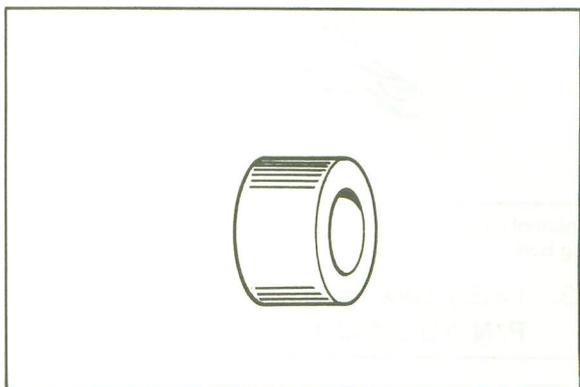
This tool is used to hold the clutch when removing or tightening the clutch boss securing nut, etc.

10. 3-way universal puller
P/N YU-33270



This tool is used for removing the flywheel.

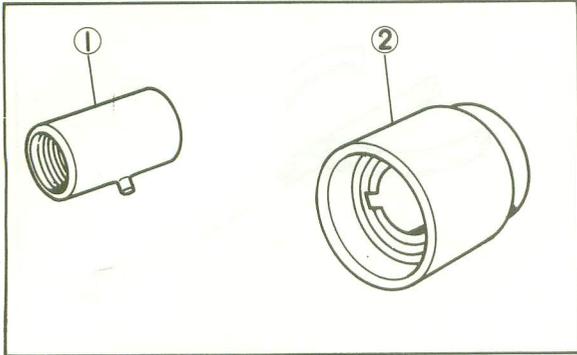
11. Flywheel puller attachment
P/N YM-33278



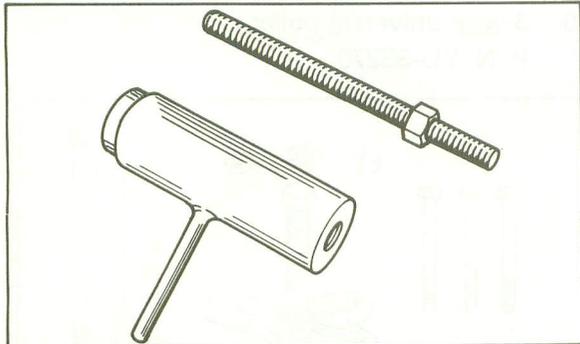
This tool is used to protect the end of the crankshaft when removing the flywheel.

12. Buffer boss installer

- ① P/N YM-33279 (Adapter #11)
- ② P/N YM-33280 (Pot extension)

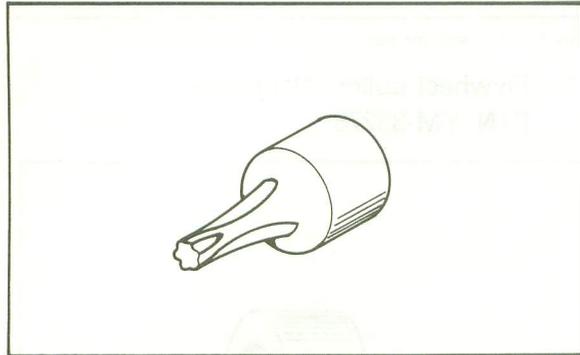


13. Crankshaft installer
P/N YU-90050



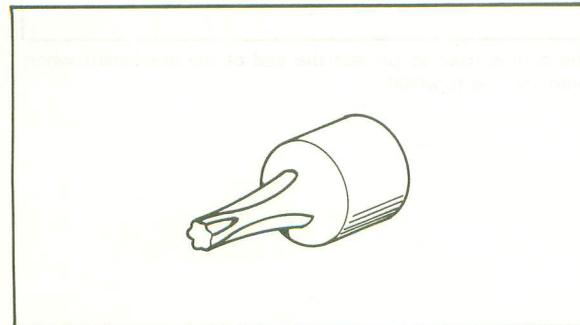
These tools are used to install the buffer boss.

14. (#30) Torx driver
P/N YU-29843-6



This tool is used to loosen or tighten the shift cam segment securing bolt.

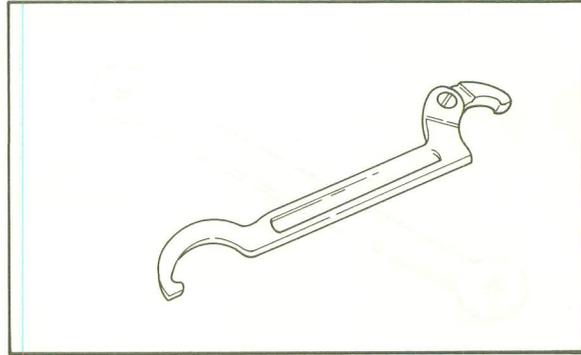
15. (#25) Torx driver
P/N YU-29843-4



This tool is used to loosen or tighten the bearing retainer securing bolt.

For Chassis Service

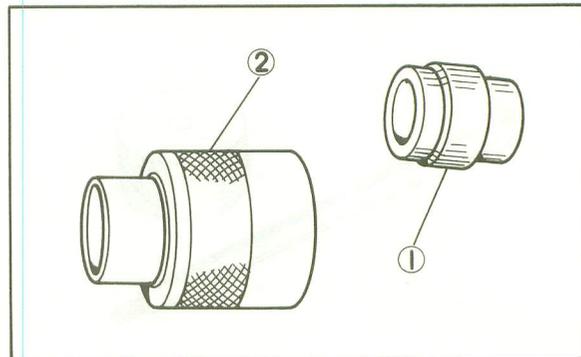
- 1. Ring nut wrench
P/N YU-01268



This tool is used to loosen and tighten the ring nut.

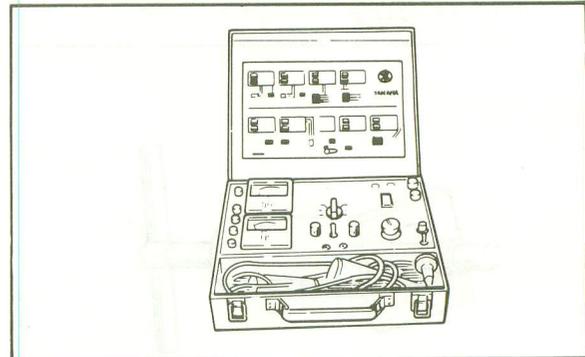
2. Fork seal installer

- ① P/N YM-33281 (collar)
- ② P/N YM-08010 (weight)

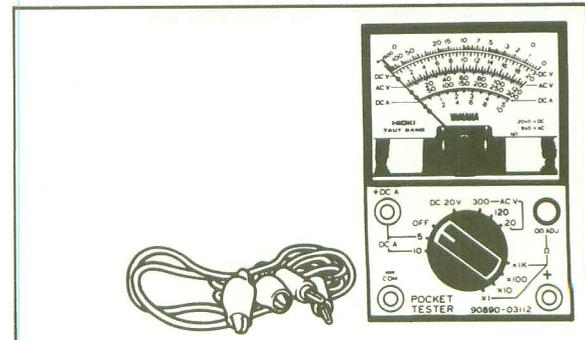


For Electrical Components

- 1. Electro tester
P/N YM-33263



- 2. Pocket tester
P/N YU-03112



CHAPTER 2. PERIODIC INSPECTIONS AND ADJUSTMENT

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CHAPTER 2. PERIODIC INSPECTIONS AND ADJUSTMENTS

INTRODUCTION

This chapter includes all information necessary to perform recommended inspections and adjustments. These preventive maintenance procedures, if followed, will ensure more reliable vehicle operation and a longer service life. The need for costly overhaul work will be greatly reduced. This information applies to vehicles already in service and to new vehicles that are being prepared for sale. All service technicians should be familiar with this entire chapter.

MAINTENANCE INTERVALS CHARTS

The following charts should be considered strictly as a guide to general maintenance and lubrication intervals. You must take into consideration that weather, terrain, geographical location, and a variety of individual uses. This time schedule should be altered to match individual owner's requirements. For example, if the machine 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 damage caused by water to metal parts.

PERIODIC MAINTENANCE

Item	Remarks	Initial			Thereafter every	
		1 Month	3 Months	6 Months	6 Months	1 Year
Cylinder head/ Exhaust system/ Spark arrester	Decarbonize		○	○	○	
*Cam chain	Check and adjust chain tension	○		○	○	
*Valve clearance	Check and adjust valve clearance when engine is cold	○		○	○	
*Spark plug	Inspect/ Cleaning or replace as required	○	○	○	○	
*Air filter	Wet type- Must be washed and damped with Foam-air-filter oil or SAE 10W30 type SE motor oil		○	○	○	
Carburetor	Check operation/ Fittings		○	○	○	
	Clean/ Refit/ Adjust					○
*Brake system (complete)	Check/ Adjust as required- Repair as required	○	○	○	3 Months	
Drive chain	Check/ Adjust as required/ Replace as required	○	○	○	1 Month	
*Wheels and tires	Check pressure/ Wear/ Balance/ Run out	○	○	○	○	
Fuel cock	Clean/ Flush tank as required	○	○	○	○	
*Lights	Check operation/ Replace as required	○	○	○	○	
*Fittings/ Fasteners	Tighten before each trip and/or...	○	○	○	○	

*Indicates pre-operation check items.

LUBRICATION INTERVALS

Item	Remarks	Type	Initial			Thereafter every	
			1 Month	3 Months	6 Months	6 Months	1 Year
*Engine oil	Replace/Warm engine before draining	Yamalube 4-cycle oil or SAE 20W40 type SE motor oil	○	Check	○	○	
*Oil filter/Oil strainer	Clean	—	○		○		○
*Throttle lever and housing	Apply lightly	Lithium base grease			○	○	
*Brake lever	Apply lightly	Lithium base grease		○	○	○	
Brake camshaft	Apply lightly	Lithium base grease		○	○	○	
*Drive chain	Lubricate chain thoroughly	Heavy-weight motor oil SAE 30 ~ 50	○	○	○	1 Month	
Front forks	Drain completely Check specifications	Yamaha fork oil 10wt or equivalent	○		○		○
Steering bearings	Inspect thoroughly/pack moderately	Medium-weight wheel bearing grease			Check		2 Years
Wheel bearings	Do not over-pack yearly or ...	Medium-weight wheel bearing grease					○

* Indicates pre-operation check items.

ENGINE

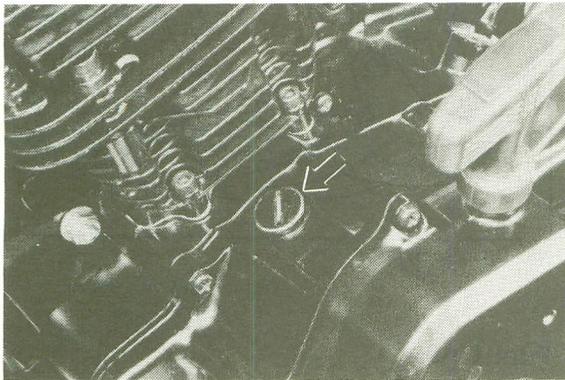
Valve Clearance

Adjust the valve clearance as follows:

NOTE: _____

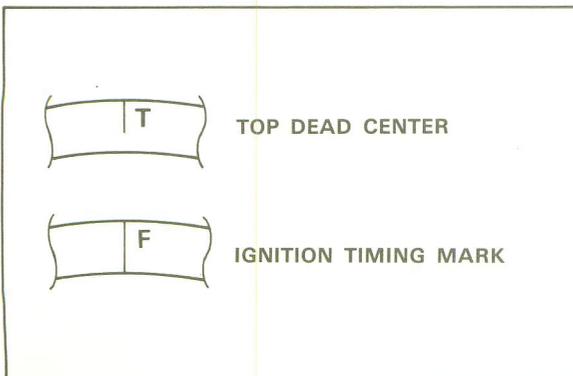
Valve clearance must be measured when the engine is cool to the touch.

1. Remove the seat/rear cowling assembly.
2. Remove the intake and exhaust valve covers.
3. Remove the timing window plug from the left-side crankcase cover.



4. Align the "T" mark on the flywheel with the stationary pointer on the crankcase cover by pulling the recoil starter knob. The pointer can be viewed through the timing window in the crankcase cover. When the "T" mark is aligned with the stationary pointer, the piston is at Top Dead Center (TDC). Valve clearance should be checked and adjusted when the piston is at TDC on the compression stroke. The piston is at TDC on compression when there is free play in both valve adjusters.

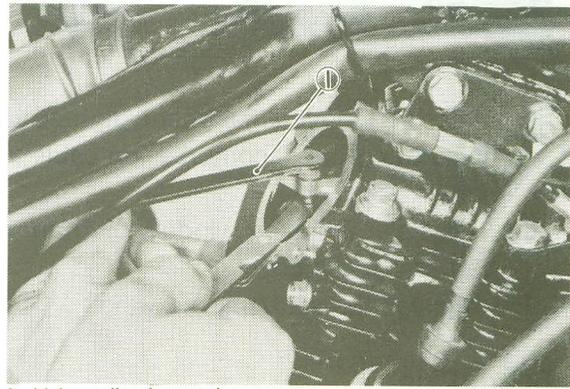
The flywheel is marked as follows:



5. Use a feeler gauge to determine the clearance.

Intake valve (cold):
0.05 ~ 0.09 mm (0.002 ~ 0.004 in)
Exhaust valve (cold):
0.11 ~ 0.15 mm (0.004 ~ 0.006 in)

6. Loosen the valve adjuster locknut. Turn the adjuster in or out to obtain the correct clearance. Hold the adjuster to prevent it from moving, and thoroughly tighten the locknut. Recheck the clearance after tightening.



1. Valve adjusting tool

7. Install the intake and exhaust valve covers, the crankshaft end cover, and the timing window.

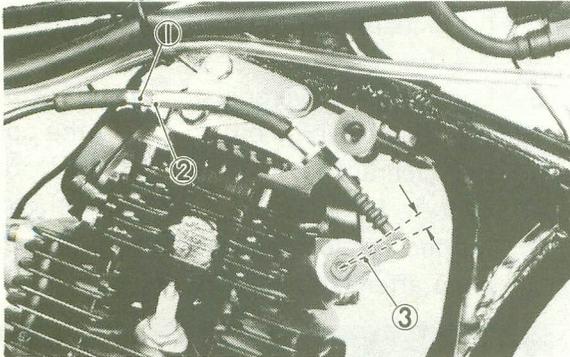
Decompression System

NOTE: _____

Decompression cable adjustment must follow the valve clearance adjustment.

1. Remove the seat/rear cowling assembly.
2. Remove the timing window plug from the left-side crankcase cover.
3. Align the "T" mark on the flywheel with the timing mark on the crankcase cover by pulling the recoil starter knob. This places the piston at Top Dead Center, and the decompression cable adjustment should be checked and adjusted with the piston at T.D.C. on the compression stroke.

- Loosen the locknut on the decompression cable adjuster. Then turn the adjuster so 2~3 mm (0.08~0.12 in) free play can be provided for the end of the decompression lever.



1. Adjuster 2. Locknut 3. Decompression lever

- After the above adjustment, tighten the locknut on the decompression cable adjuster.
- Reinstall the timing window plug on the left crankcase cover.
- Reinstall the seat/rear cowling.

Spark Plug

- Check electrode condition and wear, insulator color and electrode gap.
- Clean the spark plug with a spark plug cleaner if necessary.
Use a wire gauge to adjust the plug gap to the specification.
- If the electrodes become too worn, replace it.
- When installing the plug, always clean the gasket surface, wipe off any grime that might be present on the surface of the spark plug, and torque the spark plug properly.

Standard spark plug: D7EA (NGK) or X22ES-U (NIPPONDENSO)

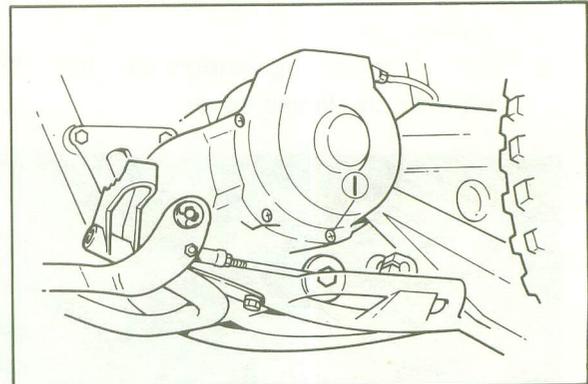
Spark plug gap:
0.6~0.7 mm (0.024~0.028 in)

Spark plug tightening torque:
20 Nm (2.0 m·kg, 14 ft·lb)

CAUTION:

After running in the water, be sure to drain the trapped water by removing the drain screw on the left bottom of the recoil starter.

Wash the machine with fresh water if driven in sea water.



1. Drain screw

Fuel Line

Check the fuel hose for cracks or damage; replace if necessary.

Exhaust System

- Tighten the exhaust pipe flange and muffler securing bolts.

TIGHTENING TORQUE:

Exhaust pipe flange bolt:
10 Nm (1.0 m·kg, 7.2 ft·lb)

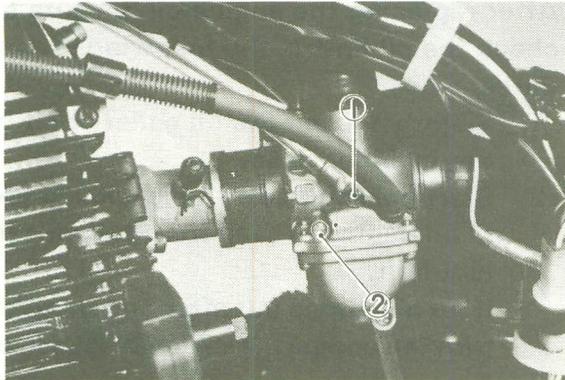
Muffler securing bolt:
27 Nm (2.7 m·kg, 19 ft·lb)

- Replace the exhaust pipe gasket if necessary.

Idle Speed

- Start the engine, and warm it up for a few minutes.

2. Set the engine idle speed to the specified level by adjusting the throttle stop screw on the carburetor. Turning the throttle stop screw in (clockwise) increases the engine speed; turning it out (counterclockwise) decreases the engine speed. Use a tachometer for checking and adjusting the engine speed.



1. Throttle stop screw 2. Pilot screw

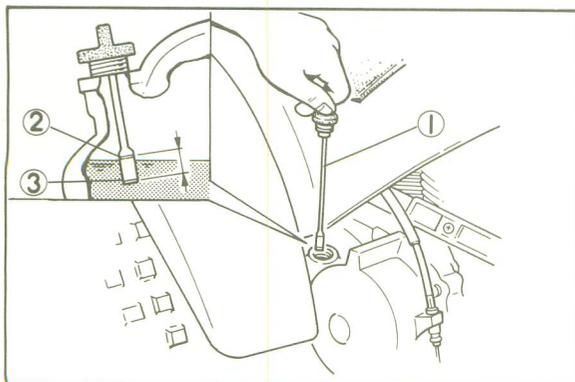
Engine idle: $1,400 \pm 50$ r/min
 Pilot screw (turns out): $2 \text{ and } 1/4 \pm 1/2$

Engine Oil

1. Oil level measurement
 - a. To check the level, warm the engine up for several minutes, screw the dipstick completely out and then just rest the stick in the hole.

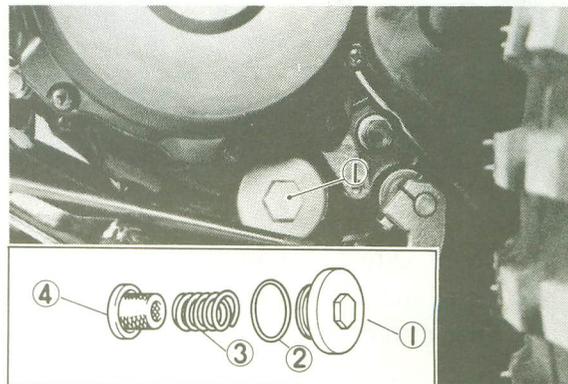
NOTE: _____

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

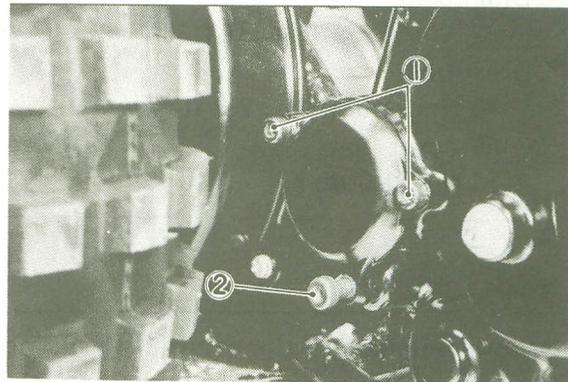


1. Dipstick 2. Maximum level 3. Minimum level

- b. The dipstick has a minimum and a maximum mark, and the oil level should be between the two. If the level is lower, then add sufficient oil to raise it to the proper level.
2. Engine oil replacement
 - a. Start the engine. After a few minutes of warm-up stop the engine.
 - b. Place a container under the engine.
 - c. Remove the dipstick, drain plug, and drain bolt attached to the oil filter cover.



1. Drain plug 3. Compression spring
 2. O-ring 4. Oil strainer



1. Filter cover bolt 2. Drain bolt

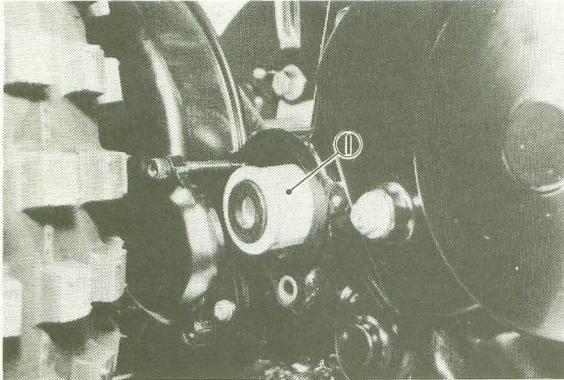
NOTE: _____

The oil filter cover is secured by two filter cover bolts and the drain bolt. The drain bolt should be loosened until the threaded portion comes out completely.

CAUTION: _____

When removing the drain plug, the compression spring, oil strainer, and O-ring will fall off. Take care not to lose these parts.

3. Oil filter removal
 - a. Remove the oil filter cover and filter element.
 - b. Clean the filter element with solvent. Replace it if damaged.



1. Oil filter element

- c. Check O-ring. If damaged, replace.
- d. Install the drain plug, filter element, and filter cover.

TIGHTENING TORQUE:

Drain plug:

43 Nm (4.3 m·kg, 31 ft·lb)

Drain bolt:

10 Nm (1.0 m·kg, 7.2 ft·lb)

Filter cover bolt:

10 Nm (1.0 m·kg, 7.2 ft·lb)

CAUTION:

Before reinstalling the drain plug, do not forget to fit the O-ring, compression spring and oil strainer.

- e. Add engine oil. Install the dipstick and tighten.

Oil capacity:

Total amount:

1.8 L (1.6 Imp qt, 1.9 US qt)

Periodic oil change:

1.5 L (1.3 Imp qt, 1.6 US qt)

Recommended oil:

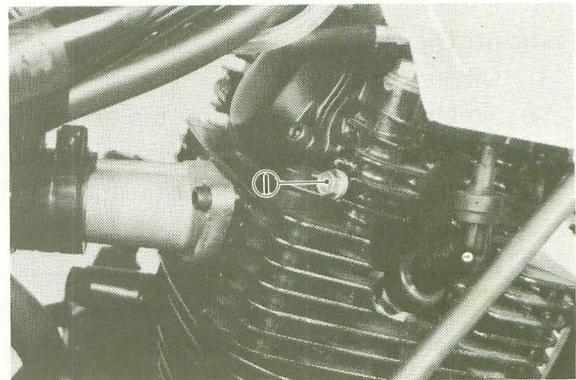
Yamalube 4 cycle oil or SAE
20W40 type SE motor oil

- f. Start the engine and allow a few minutes of warm-up. While warming up, check for oil leakage. If oil leaks, stop the engine immediately, and check for the cause.
- g. Stop the engine and check the oil level.

CAUTION:

After replacing the engine oil, be sure to check the oil flow in the following procedures:

1. Slightly loosen the oil gallery bolt in the cylinder head.
2. Start the engine and keep it idling until oil begins to seep from the oil gallery bolt. If no oil comes out after one minute, turn the engine off so it will not seize.
3. Restart the engine after solving the problem(s), and recheck the oil, pressure.
4. After checking, tighten the oil gallery bolt to specification.



1. Oil gallery bolt

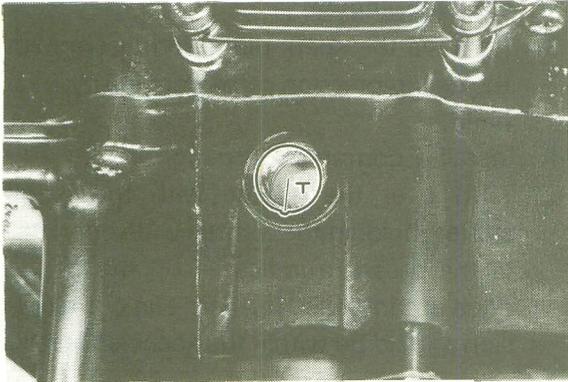
TIGHTENING TORQUE:

Oil gallery bolt:

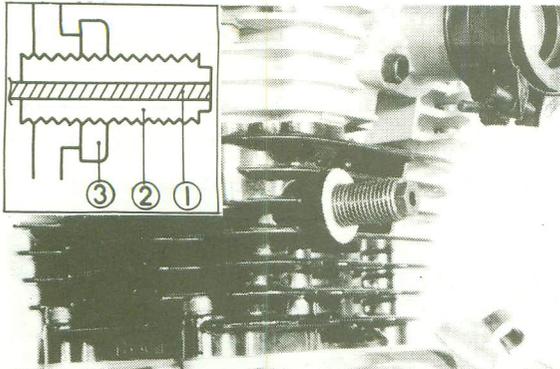
7 Nm (0.7 m·kg, 5.1 ft·lb)

Cam Chain Adjustment

1. Remove the timing window plug from the left-side crankcase cover.
2. Align the "T" mark on the flywheel with the timing mark on the crankcase by pulling the recoil starter knob.



3. Remove the adjuster cap.
4. Loosen the adjuster locknut.
5. Turn the adjuster in until the push rod (inside the adjuster) is flush with the end of the adjuster.



1. Push rod 2. Adjuster 3. Locknut

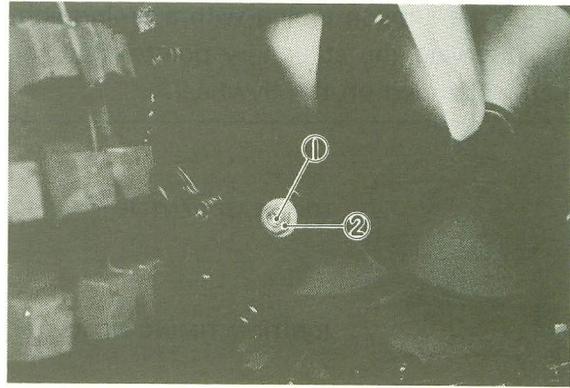
NOTE:

Start the engine. While keeping it idling, check the movement of the push rod. If it moves slightly, the adjustment is correct. If it does not move at all, the adjuster is too tight. Loosen the adjuster so the push rod moves slightly.

6. Tighten the adjuster locknut.
7. Install the adjuster cap and the left crankcase cover.

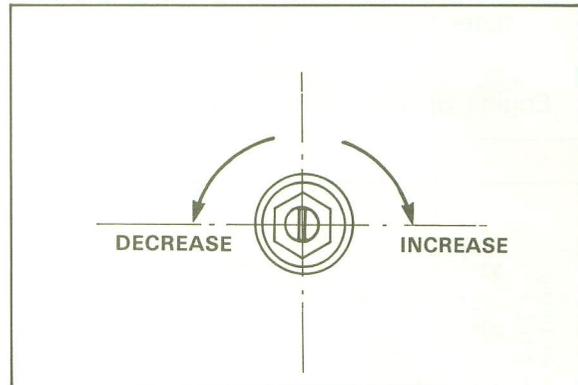
Adjuster locknut tightening torque:
30 Nm (3.0 m · kg, 22 ft · lb)
Adjuster cap tightening torque:
5 Nm (0.5 m · kg, 3.6 ft · lb)

Clutch Adjustment



1. Adjuster 2. Locknut

1. Slowly turn the adjuster **counterclockwise** until resistance is felt. This means that the play of the clutch lever is removed. Then, turn it 1/8 **clockwise**.



2. Tighten the adjuster locknut to specification.

TIGHTENING TORQUE:

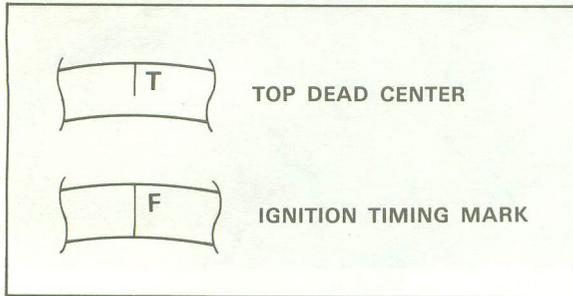
15 Nm (1.5 m · kg, 11 ft · lb)

NOTE:

Turn the adjuster counterclockwise to decrease the clutch lever free play and turn it clockwise to increase the free play.

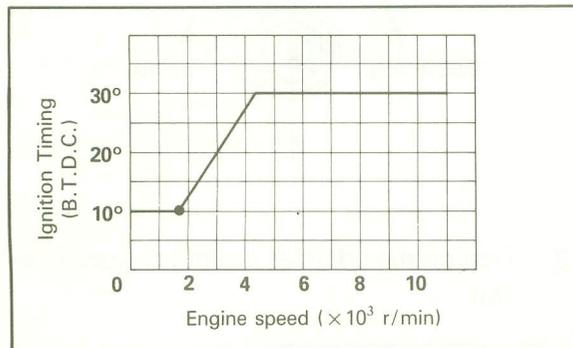
Checking Ignition Timing

Check the ignition timing with a timing light by observing the stationary pointer and the marks stamped on the flywheel.

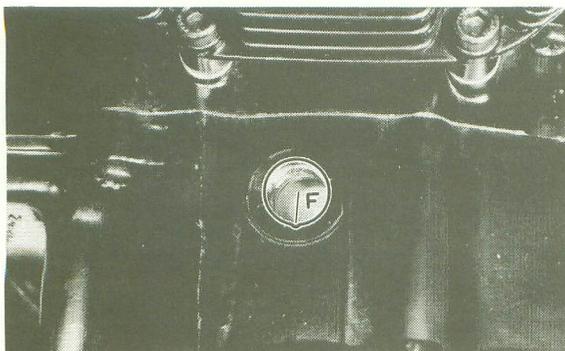


1. Remove the timing window plug.
2. Connect the timing light to the spark plug wire.
3. Start the engine, and keep the engine running at the specified speed. Use a tachometer to check the engine speed.

Engine Speed: $1,400 \pm 50$ r/min



4. The stationary pointer (in the timing window) should align with the ignition timing mark on the flywheel. If the pointer is not align with the ignition timing mark, check the flywheel and/or pickup coil assembly for tightness and damage. (See "Chapter 6: Electrical" for further information.)



5. Reinstall the timing window plug.

Compression Pressure Measurement

Insufficient compression pressure will result in performance loss and may indicate leaking valves or worn or damaged piston rings.

1. Make sure the valve clearance is correct.
2. Warm up the engine for 2~3 minutes; stop the engine.
3. Remove the spark plug, and disconnect the decompression cable from the cylinder head.
4. Install a compression gauge.
5. Turn over the engine with the recoil starter, holding the throttle wide open until the pressure indicated on the gauge does not increase further. The compression should be within the specified levels.

Compression pressure (at sea level):

Standard:

883 kPa (9 kg/cm², 128 psi)

Minimum:

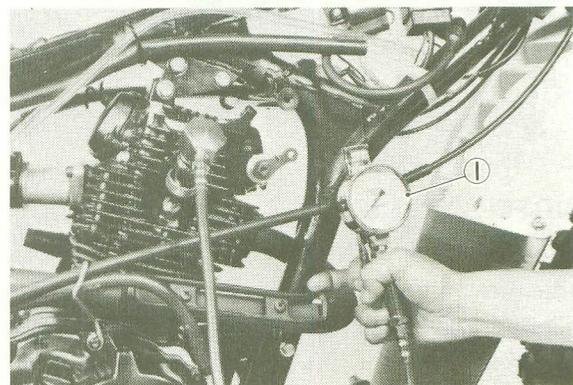
785 kPa (8 kg/cm², 114 psi)

Maximum:

1,030 kPa (10.5 kg/cm², 149 psi)

WARNING:

When cranking the engine, ground the spark plug wire to prevent sparking.



1. Compression gauge

6. If the pressure is too low, squirt a few drops of oil into the cylinder being measured. Measure compression again. If there is a higher reading than before (without oil), the piston rings may be worn or damaged. If the pressure remains the same after measuring with the oil, one or both rings and valves may be the source of the problem.

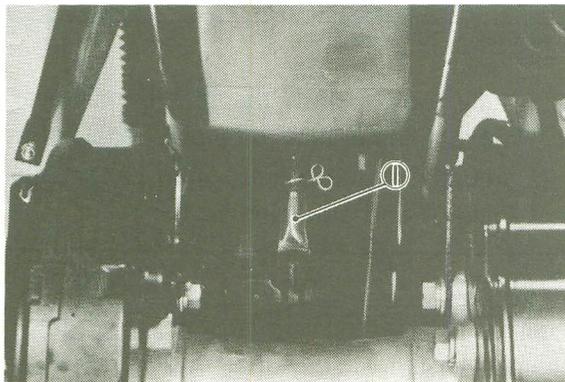
CHASSIS

Air Filter

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 elements which consists of foam rubber moistened with oil. When this filter element becomes dirty, it should be cleaned.

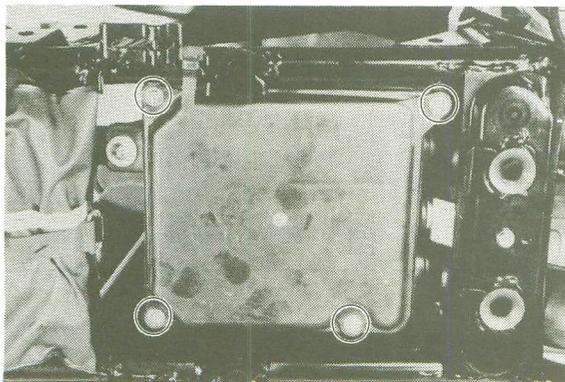
NOTE:

There is a check hose at the bottom of the air filter case. If dust and/or water collects in this hose, clean the air filter element and air filter case.

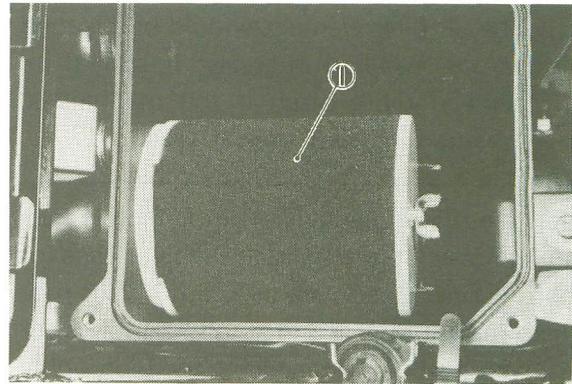


1. Check hose

1. Remove the seat/rear cowling assembly. Remove the filter case cover by removing the four screws.

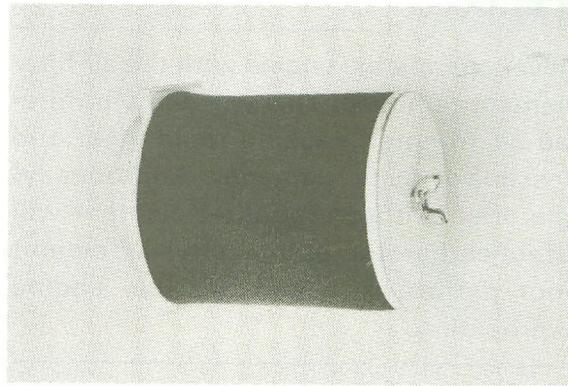


2. Pull out air filter element assembly from the case.

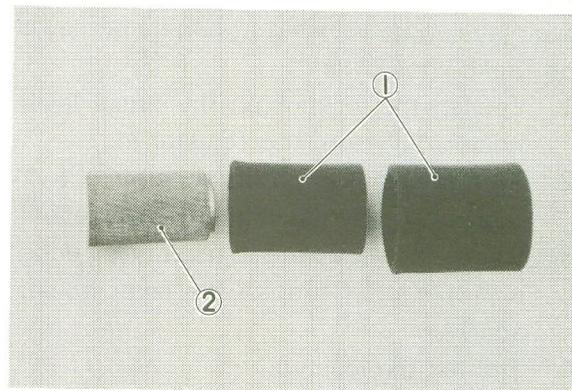


1. Air filter element

3. Remove the wing bolt, element plate, and elements from the element guide.



4. Clean the element with solvent. After cleaning, remove the remaining solvent by squeezing the elements.



1. Air filter element 2. Element guide

5. Then apply foam-air-filter oil or SAE 10W30 type SE motor oil to the entire surface and squeeze out the excess oil. Elements should be wet but not dripping.
6. When installing the air filter element assembly in its case, be sure its sealing surface matches perfectly the sealing surface of the case so there is not air leakage.

- The air filter element should be cleaned at the specified intervals. It should be cleaned more often if the machine is operated in dusty or wet areas.

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.

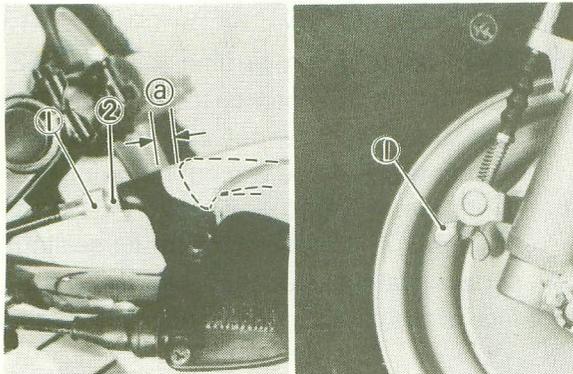
CAUTION:

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.

Front Brake Lever

Front brake cable free play can be adjusted to suit rider preference, but a minimum free play of 5~8 mm (0.2~0.3 in) should be maintained. Free play can be adjusted at handle bar lever and brake shoe plate.

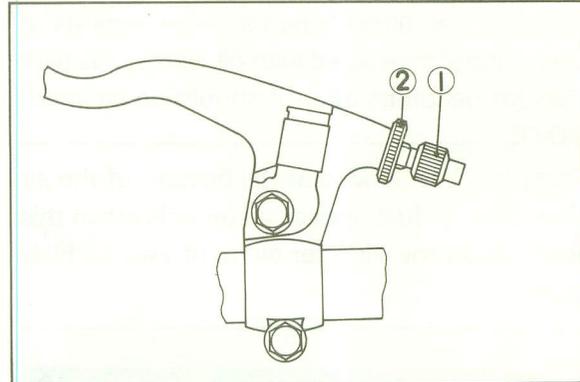
- Loosen the locknut on the brake lever holder, fully turn the adjuster in.
- Turn the adjuster on the shoe plate in or out until proper adjustment is achieved.
- Unless the shoe plate adjuster helps bring a proper play, turn to the lever holder adjuster.
- Tighten the locknut.



1. Adjuster a. 5~8 mm 1. Adjuster
2. Locknut (0.2~0.3 in)

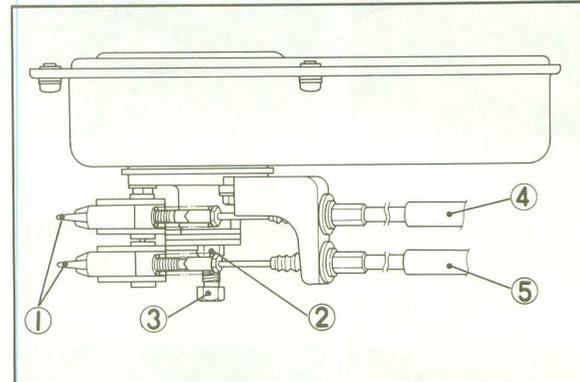
Brake Pedal and Rear Brake Lever Adjustment

- Pump the brake pedal 2 to 3 times before adjustment.
- Fully loosen the rear brake lever cable adjuster at the brake lever.



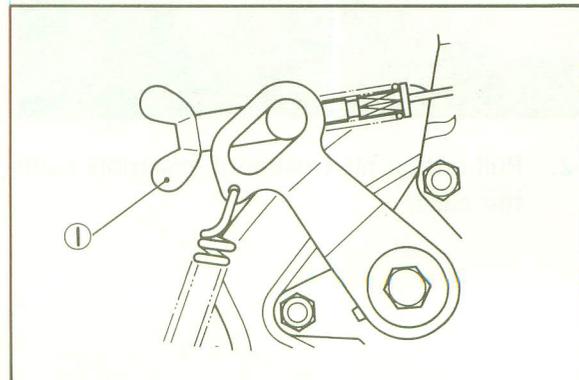
1. Adjuster 2. Locknut

- Fully loosen both the rear brake lever cable adjuster and the brake pedal cable adjuster at the caliper; then loosen the locknut and adjusting bolt.

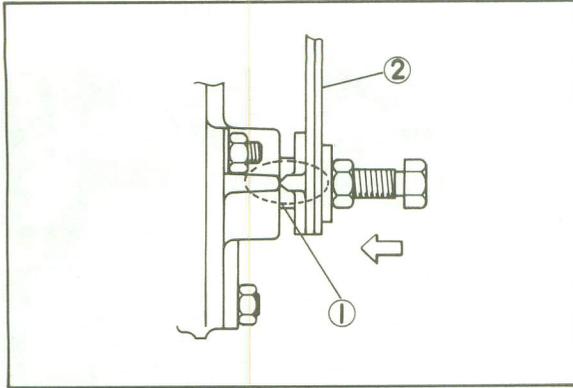


1. Adjuster 4. Brake pedal cable
2. Locknut 5. Rear brake lever cable
3. Adjusting bolt

- Screw in the rear brake lever cable adjuster so that the brake caliper lever can be set at the position as shown.

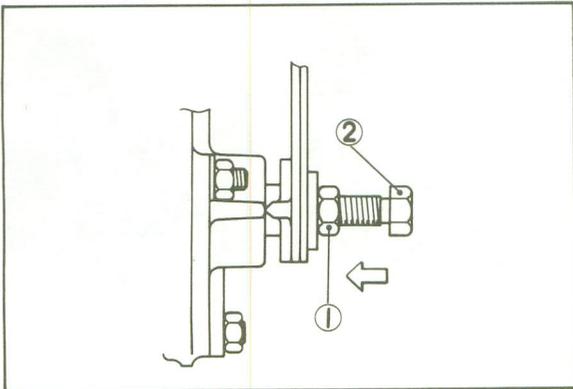


1. Adjuster



1. Set position 2. Brake caliper lever

5. Slowly screw in the adjusting bolt by hand until it feels tight and screw it out 1/4 turn. Then tighten the locknut.

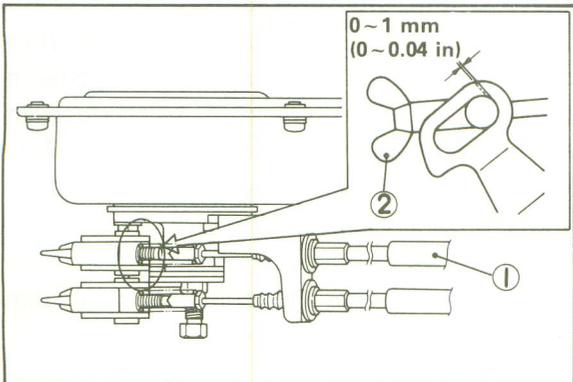


1. Locknut 2. Adjusting bolt

CAUTION:

When tightening the locknut, hold the adjusting bolt with a spanner so that the adjusting bolt is not turned together with the locknut.

6. Screw in the brake pedal cable adjuster to provide a gap of 0 to 1 mm (0~0.04 in) between the brake caliper lever and the pin.

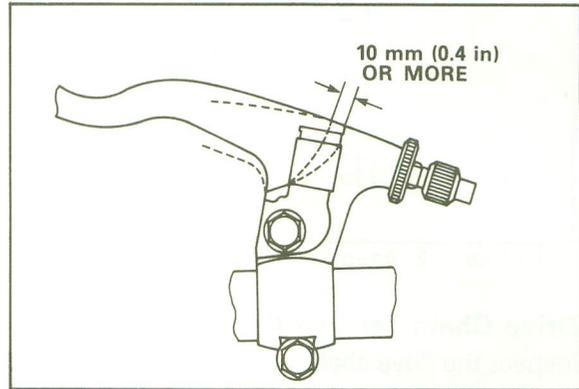
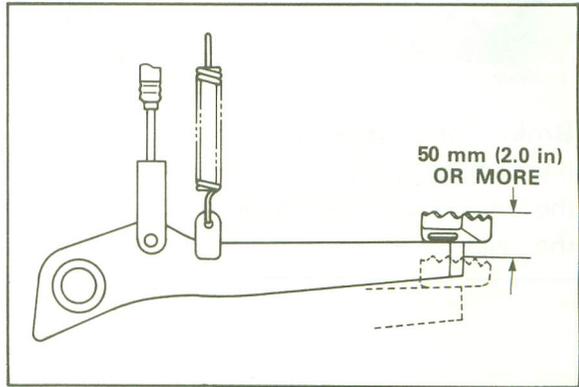


1. Brake pedal cable 2. Adjuster

WARNING:

After this adjustment is performed, block the rear of the machine off the ground, and spin the rear wheels to ensure there is no brake drag. If any brake drag is noticed, perform the above steps again.

7. Adjust the brake when the brake pedal play is over 50 mm (2.0 in) and/or when the rear brake lever play is over 10 mm (0.4 in).

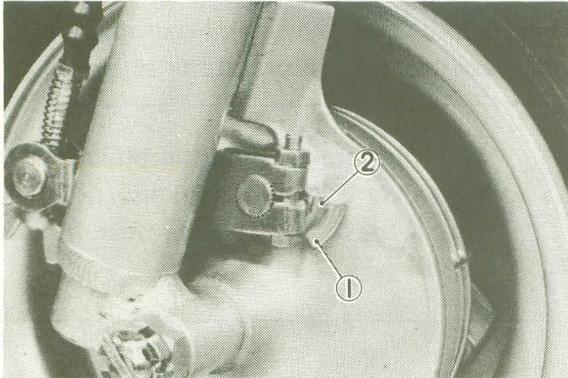


WARNING:

Always adjust both the brake pedal and the brake lever whenever adjusting the rear brake.

Brake Lining Inspection

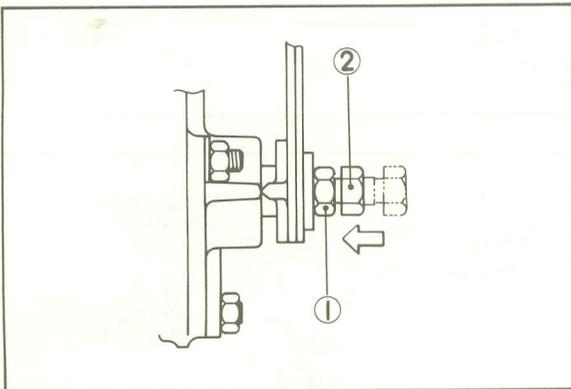
To check, see the wear indicator position while pulling the brake lever. If the indicator reaches to the wear limit line, replace the brake shoes.



1. Wear limit 2. Wear indicator

Brake Pads Inspection

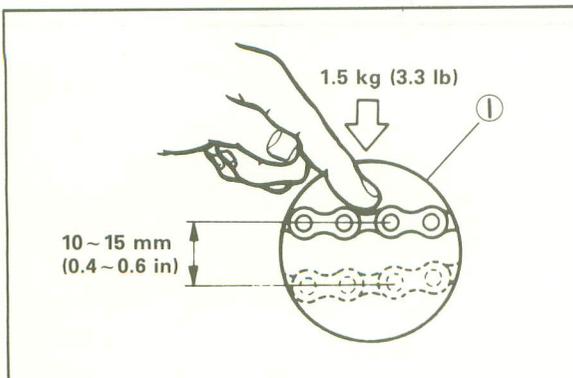
If the adjusting bolt has come so close to touch the locknut with use, replace the both pads in the caliper.



1. Locknut 2. Adjusting bolt

Drive Chain Tension Check

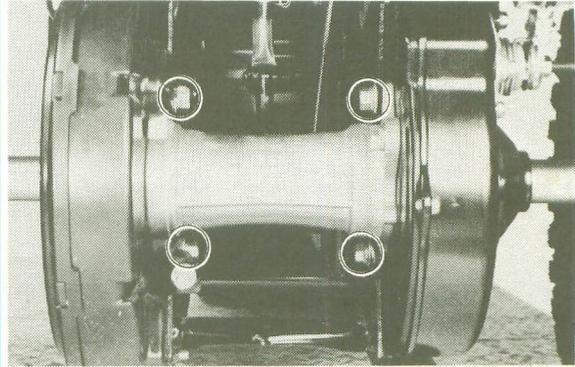
Inspect the drive chain with both tires touching the ground. Check the tension at the position shown in the illustration. The normal vertical deflection is approximately 10~15 mm (0.4~0.6 in). If the deflection exceeds 15 mm (0.6 in), adjust the chain tension.



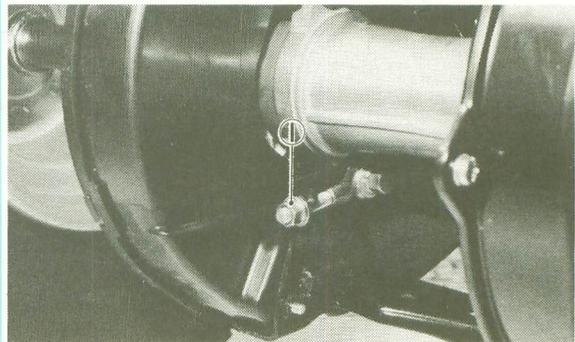
1. Inspection window

Drive Chain Tension Adjustment

1. Loosen the rear wheel hub bolts.

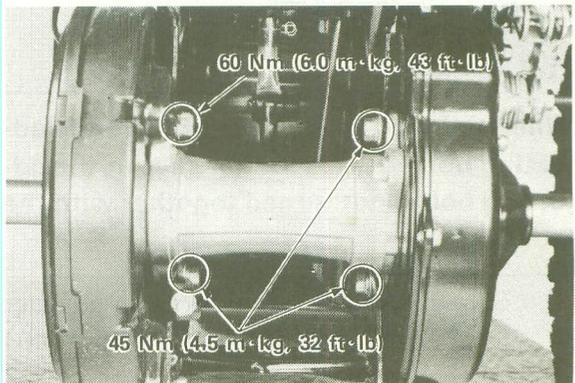


2. Next, adjust chain play to specification by turning the chain puller adjuster.



1. Adjuster

3. Tighten the rear wheel hub bolts.

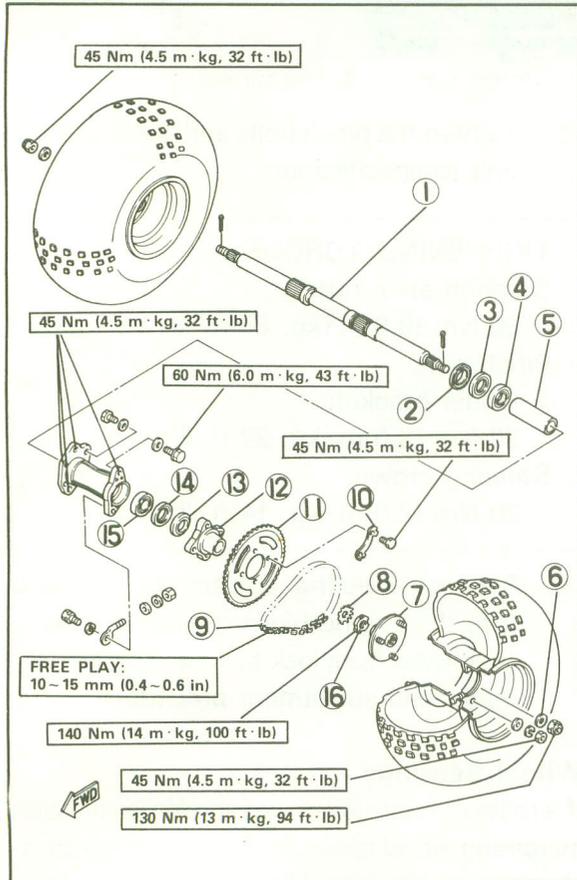


Drive Chain Cleaning and Lubrication

This machine has a drive chain with small rubber O-rings between the chain plates. Steam cleaning, high-pressure washes, and certain solvent can damage these O-rings. Use only kerosene to clean the drive chain. Wipe it dry, and thoroughly lubricate it with SAE 30~50 motor oil. Do not use any other lubricants on the drive chain. They may contain solvents that could damage the O-rings.

1. Raise the front end of the machine, and spin the wheel by hand. Touch the axle or front fender while spinning the wheel. If you feel any excessive vibration, the bearings are rough and should be replaced.

Rear wheel

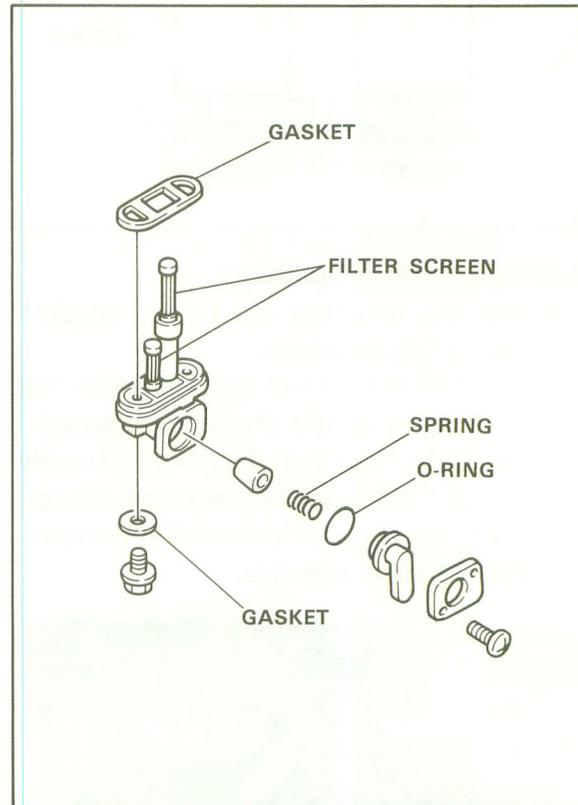


- | | |
|--------------------|---------------------------|
| 1. Rear axle | 9. Drive chain |
| 2. Dust seal | 104 links |
| 3. Oil seal | 10. Lock washer |
| 4. Bearing (B6008) | 11. Driven sprocket (42T) |
| 5. Spacer | 12. Flange |
| 6. Axle nut | 13. Dust seal |
| 7. Wheel flange | 14. Oil seal |
| 8. Lock washer | 15. Bearing |
| | 16. Ring nut |

1. Block the front tire and raise the rear of machine.
2. Spin the wheel by hand and touch the rear wheel hub while spinning the wheel. If you feel any excessive vibration, the bearings are rough and should be replaced.

Fuel Cock

If either fuel cock is leaking or is excessively contaminated, it should be removed from the fuel tank and inspected.



1. Disconnect the fuel pipe and drain the fuel completely from the fuel tank.
2. Remove the fuel cock and inspect the filter screen. Replace the filter if it is seriously contaminated.
3. Remove the screws on the front and rear of the fuel cock; remove the plate, gaskets, lever, and diaphragm.
4. Inspect all components, and replace any that are damaged. If the diaphragm is damaged in any way or if the fuel cock gasket surfaces are scratched or corroded, the fuel cock assembly must be replaced. If there is abrasive damage to any components, the fuel tank must be drained and flushed.
5. Reassemble the fuel cock, and install it on the fuel tank.
6. Connect the fuel pipe.

Tires

WARNING:

This model is equipped with low pressure tires. Pay attention to the following points:

Recommended tire pressure:

14.7 kPa (0.15 kg/cm², 2.2 psi)

Vehicle load limit: 100 kg (220 lb)

Tire size: 22 × 11-8

1. Excessive tire pressure (over 68.6 kPa (0.7 kg/cm², 10 psi)) may cause tire to burst. Inflate tires very slowly. Fast inflation could cause tire to burst.
2. Too low a pressure (below 11.8 kPa (0.12 kg/cm², 1.8 psi)) will cause the rim to dislodge from the tire.
3. Put the same pressure in both rear tires. Uneven tire pressure will severely affect the handling.
4. Set tire pressures cold.

How to measure tire pressure

Use an appropriate low-pressure tire gauge. Set tire pressures to the following specifications:

Reference tire pressure:

14.7 kPa (0.15 kg/cm², 2.2 psi)

Minimum tire pressure:

11.8 kPa (0.12 kg/cm², 1.8 psi)

CAUTION:

Never use a tire pressure below minimum specification. The tire could separate from the wheel under severe operating conditions.

If the appropriate low-pressure tire gauge is not available, use the following temporary procedure:

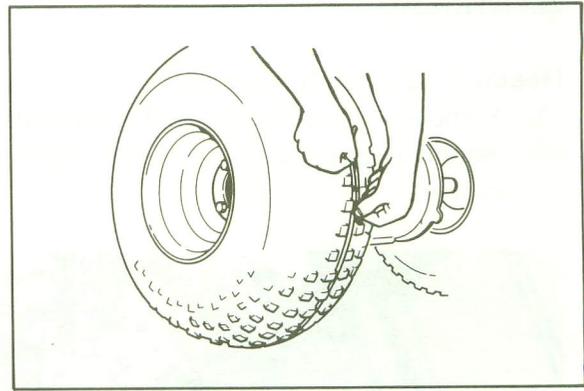
Measure the circumference of the tire using an inelastic but flexible strip. Do not measure the tire's circumference on top of the tread blocks.

Standard tire circumference:

1,735 mm (68.3 in)

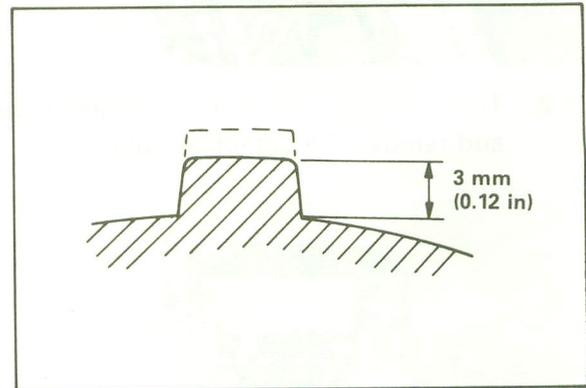
Minimum tire circumference:

1,725 mm (67.9 in)



Tire wear limit

When the tire groove decreases to 3 mm (0.12 in) due to wear, replace the tire.



Cable Inspection and Lubrication

1. Damage to the outer housing of the various cables may cause corrosion. Often free movement will be obstructed. An unsafe condition may result. Replace such cables as soon as possible.
2. If the inner cables do not operate smoothly, lubricate or replace them.

Recommended lubricant:

Yamaha Chain and Cable Lube or
10W30 motor oil

Brake and Change Pedals/Front and Rear Brake Levers

Lubricate the pivoting parts of each lever and pedal.

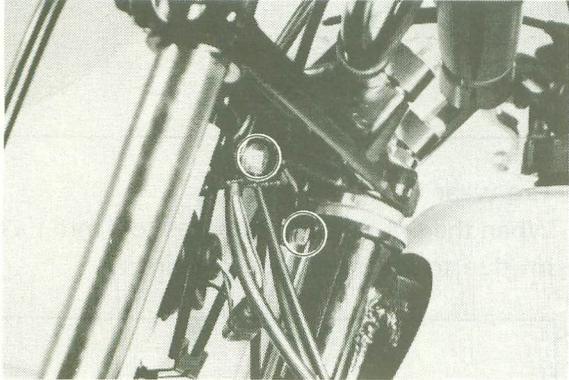
Recommended lubricant:

Yamaha Chain and Cable Lube or
10W30 motor oil

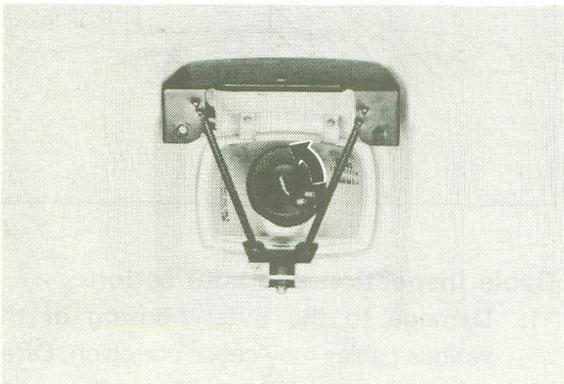
ELECTRICAL

Headlight Bulb Replacement

1. Remove the front panel/headlight unit assembly securing bolts from the steering crown.



2. Turn the bulb holder counterclockwise and remove the defective bulb.



3. Slip a new bulb into position and secure it with the bulb holder.
4. Reinstall the front panel/headlight unit assembly onto the steering crown. Torque the bolt to specification.

TIGHTENING TORQUE:
15 Nm (1.5 m·kg, 11 ft·lb)

5. Adjust the headlight unit if necessary.

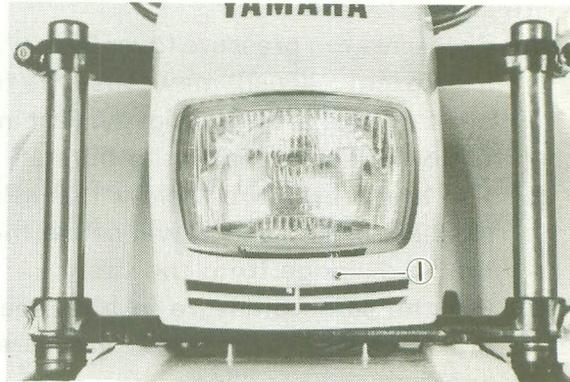
Headlight Beam Adjustment

When necessary, adjust the headlight beam as follows:

1. Vertical adjustment

To adjust the beam to the upper, turn the adjusting screw clockwise.

To adjust the beam to the lower, turn the adjusting screw counterclockwise.



1. Vertical adjusting screw

CHAPTER 3. ENGINE OVERHAUL

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CHAPTER 3. ENGINE OVERHAUL

ENGINE REMOVAL

NOTE:

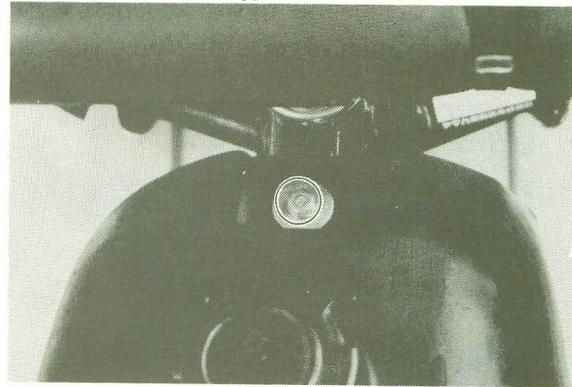
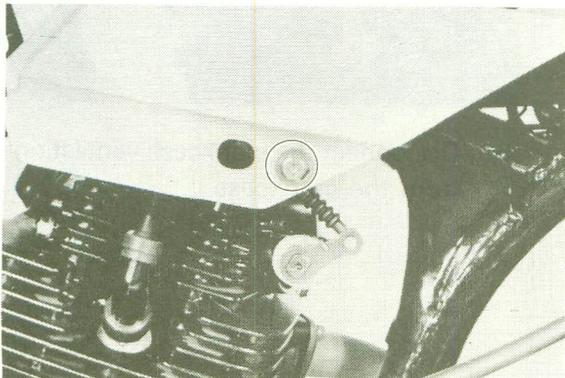
- It is not necessary to remove the engine in order to remove the cylinder and/or the flywheel magneto assembly.
- It is necessary to remove the right-side rear wheel in order to remove the clutch assembly.

Preparation for Removal

1. All dirt, mud, dust, and foreign material should be thoroughly removed from the exterior of the engine before removal and disassembly. This will prevent any harmful foreign material from entering the interior of the engine assembly.
2. Before engine removal and disassembly, be sure you have proper tools and cleaning equipment so you can perform a clean and efficient job.
3. During disassembly of the engine, clean and place all parts in trays in order of disassembly. This will ease and speed assembly time and insure correct reinstallation of all engine parts.
4. Start the engine and warm it for a few minutes; remove the drain plug, and drain the engine oil.

Seat and Fuel Tank

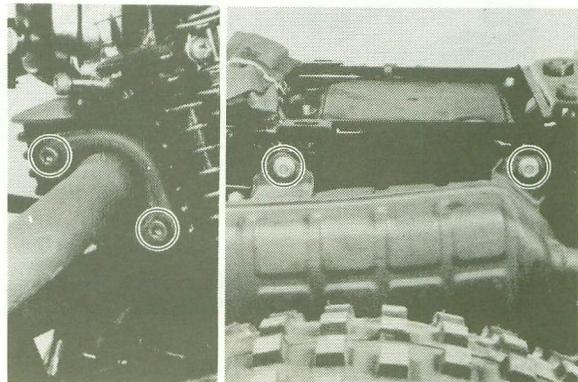
1. Remove the seat/rear cowling assembly, and remove the fuel tank cover, which is secured by the fuel tank cap and the bracket; see the photograph.



3. Turn the fuel cock to "OFF".
4. Disconnect the fuel lines at the fuel cock and fuel tank, disconnect the rubber retaining band, and remove the fuel tank.

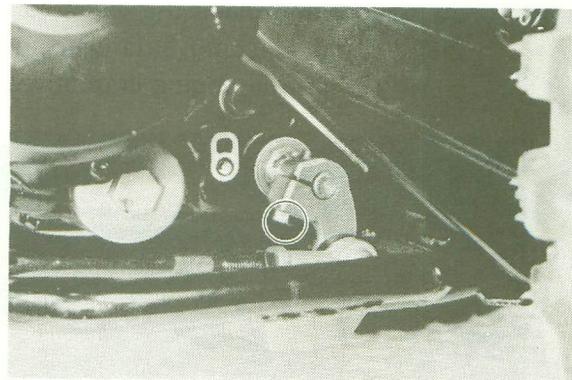
Muffler Assembly

1. Remove the exhaust pipe flange bolts.
2. Remove the muffler securing bolts and remove the muffler assembly.



Drive Chain and Shift Linkage

1. Remove the shift linkage at the shift shaft.



2. Loosen the drive chain tensioner so that the drive chain is completely slack.