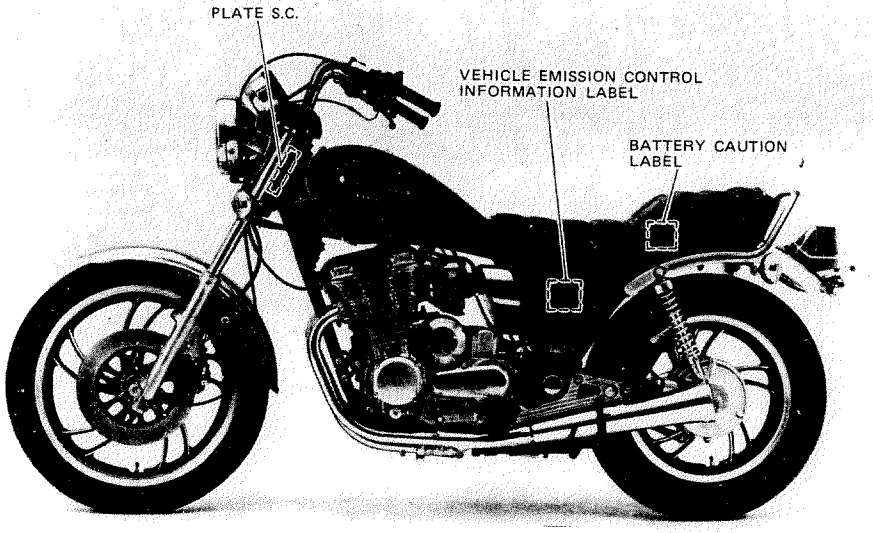
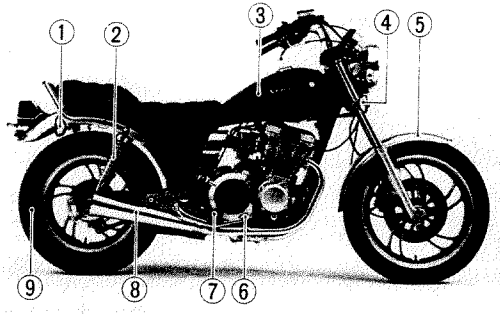
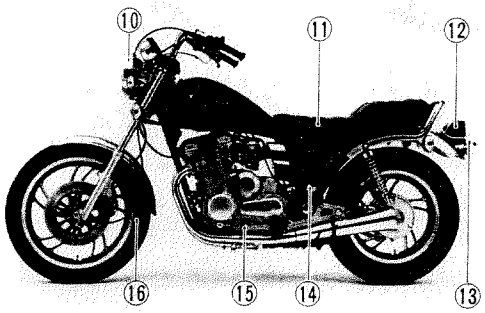
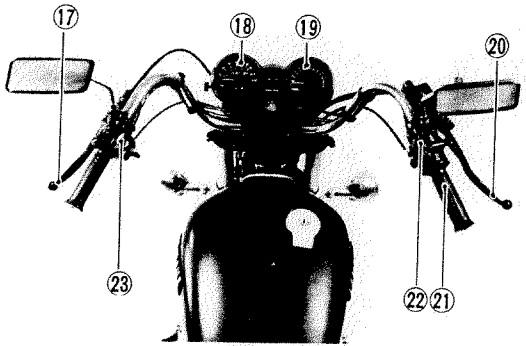
LOCATION OF THE "CAUTION AND SPECIFICATION LABELS"



DESCRIPTION





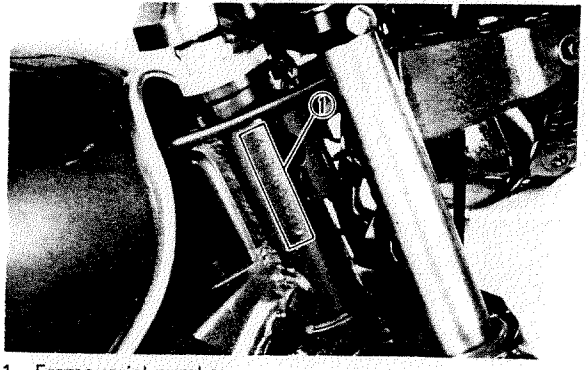


1. Rear flasher light
2. Rear shock absorber
3. Fuel tank
4. Front flasher light
5. Front fender
6. Brake pedal
7. Footrest
8. Silencer
9. Rear wheel
10. Headlight
11. Seat
12. Tail/brake light
13. License light
14. Theft protection chain
15. Change pedal
16. Front wheel
17. Clutch lever
18. Speedometer
19. Tachometer
20. Brake lever
21. Throttle grip
22. Right handlebar switch
23. Left handlebar switch

MACHINE IDENTIFICATION

Frame serial number

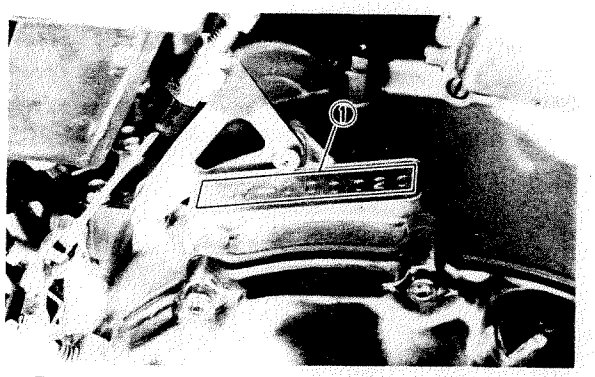
The frame serial number is stamped into the right side of the steering head pipe.



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. 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

Main switch

Functions of the respective switch positions are as follows:

ON:

Electrical circuits are switched on. The engine can be started. The key cannot be removed in this position. The taillight comes on.

NOTE:

When the engine is started, the headlight and meter lights come on automatically and, the lights stay on until the main switch is turned to "OFF" even if the engine stalls.

OFF:

All electrical circuits are switched off. The key can be removed in this position.

LOCK:

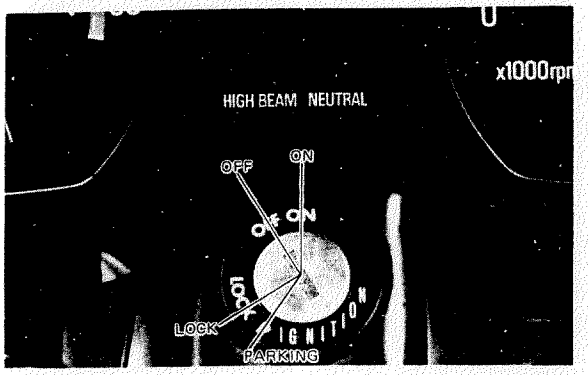
The steering is locked in this position, and all electrical circuits are switched off. The key can be removed in this position. Refer to "Steering lock" (Page 11) for proper operation.

PARKING:

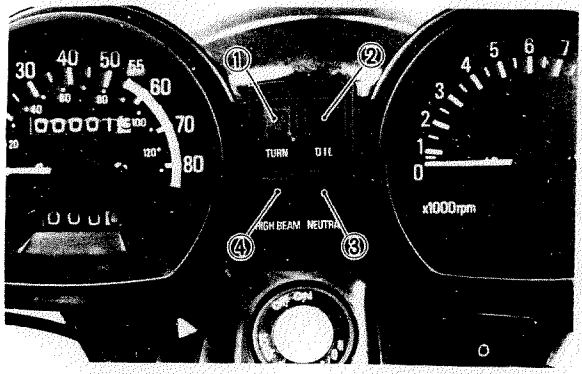
The steering is locked in this position, and the taillight comes on but all other circuits are off. The key can be removed in this position.

NOTE:

Always turn the main switch to "OFF" or "LOCK" position and remove the key when motorcycle is unattended.



Indicator lights



1. Turn indicator light
2. Oil level indicator light
3. Neutral indicator light
4. High beam indicator light

Turn indicator light "TURN" (orange):

This indicator flashes when the turn signal is "ON".

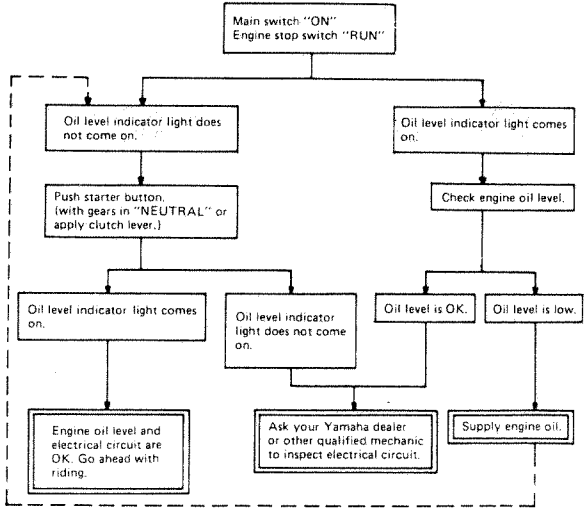
Oil level indicator light "OIL LEVEL" (red):

This indicator light comes on when the oil level is low, thus warning the rider. This light circuit can be checked by the following check up chart.

CAUTION:

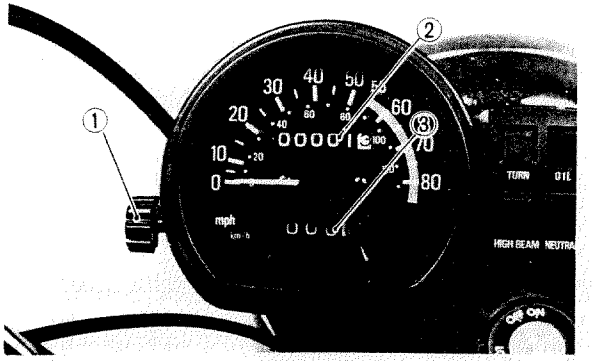
Do not run the motorcycle until you know the motorcycle has enough engine oil.

Oil level indicator circuit check up



Neutral indicator light "NEUTRAL" (green):
This indicator lights when the transmission is in neutral.

High beam indicator light "HIGH BEAM" (blue):
This indicator lights when the headlight high beam is used.



1. Reset knob
2. Odometer
3. Trip odometer

Speedometer

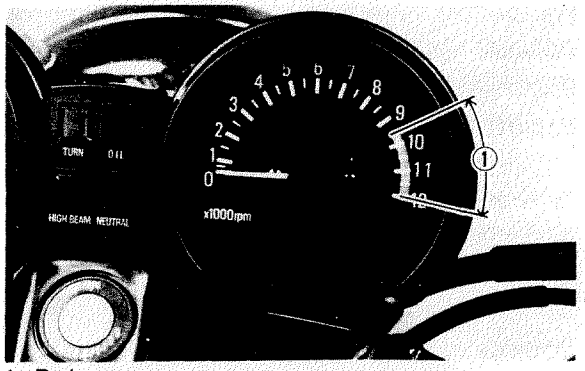
The odometer and trip odometer are built into the speedometer. The trip odometer can be reset to "0" with the reset knob.

Use the odometer to estimate how far you can ride on a tank of fuel before going to "RESERVE". This information will enable you to plan fuel stops in the future.

Tachometer

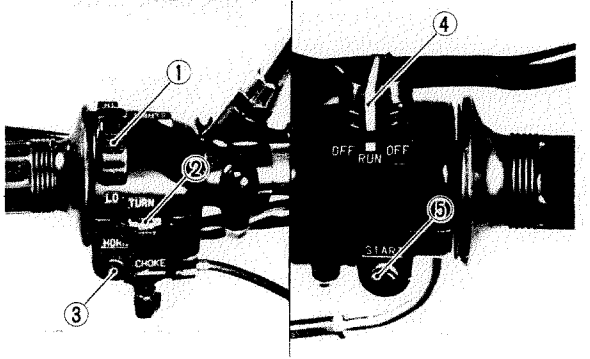
The tachometer is provided so the rider can keep engine revolutions within the ideal power range.

Do not operate in the red zone.
Red zone: 9,500 r/min and above



1. Red zone

Handlebar switches:



1. "LIGHTS" (Dimmer) switch
2. "TURN" switch
3. "HORN" switch
4. "ENGINE STOP" switch
5. "START" switch

"LIGHTS" (Dimmer) switch

Turn to the "HI" position for the high beam and to the "LO" position for the low beam.

"TURN" switch

This model is equipped with a turn indicator system that is self-cancelling. To signal a right-hand turn, push the switch to the right. To signal a left-hand turn, push the switch to the left. Once the switch is released it will return to the center position. To cancel the signal push the switch "in" after it has returned to the center position. If the switch is not cancelled by hand it will self-cancel after the motorcycle has travelled about 10 seconds or approximately 150 meters (490 feet) whichever is greater.

"HORN" switch

Press the button to sound the horn.

"ENGINE STOP" switch

Make sure that the engine stop switch is on "RUN". The engine stop switch has been installed to ensure safety in an emergency such as when the motorcycle is upset. The engine will not start or run when the engine switch is turned to "OFF".

"START" switch

To start the engine, push the starter button.

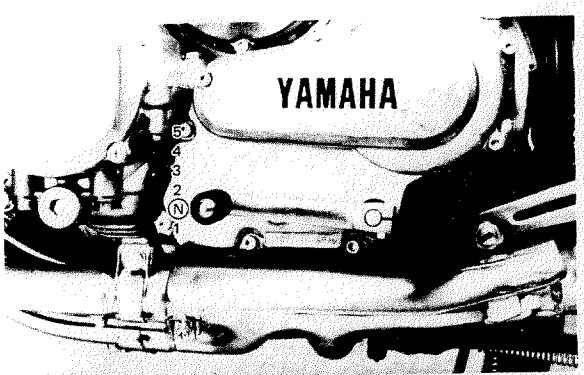
> **CAUTION:**
> **See starting instructions prior to starting engine.**

Clutch lever

The clutch lever is located on the left handlebar and the starting circuit cut off switch is incorporated in the clutch lever holder. 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. (Refer to the engine starting procedures for the starting circuit cut off switch functions.)

Change pedal

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.



N. Neutral

Front brake lever

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

Rear brake pedal

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

Fuel tank cap

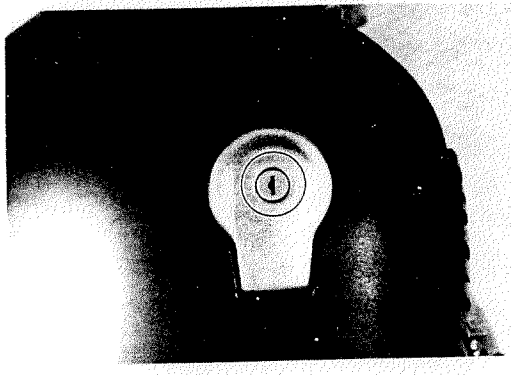
Insert the key and push down and turn it clockwise about 1/4 turn. The lock will be released and the fuel tank cap can be opened. The cap can be locked by pushing it into position.

NOTE:

Make sure that the fuel tank cap is securely locked.

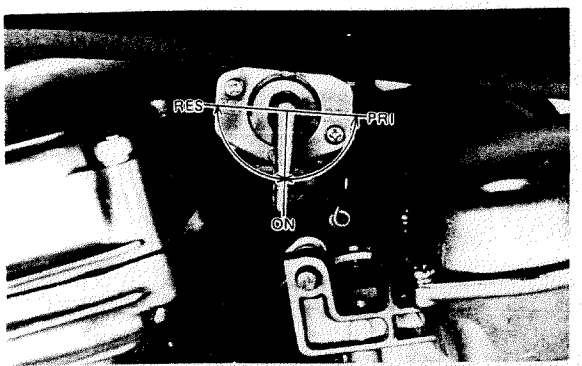
WARNING:

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 petcock

The negative pressure fuel petcock supplies fuel from the tank to the carburetors and also filters the fuel. The fuel petcock has the following three positions:



ON: With the lever in this position fuel flows if the engine is running but stops if the engine is not running.

RES: This indicates "RESERVE". If you run out of fuel while riding, move the lever to "PRI", and switch to "RES" position after starting the engine. Then, fill the tank at the first opportunity.
BE SURE TO SET THE LEVER TO THE "ON" POSITION AFTER REFUELING.

NOTE:
In the "ON" and "RES" positions the petcock works on pressure from the engine turning over. If the line connecting the petcock to the carburetor intake manifold is not connected or has a leak, the petcock will not function properly.

PRI: This indicates "PRIME". With the lever in this position fuel flows whether the engine is running or not. If the fuel tank is completely empty, refill the tank, prime the carburetor in this position, and then switch to the "ON" position after starting the engine.

Starter lever (CHOKE)

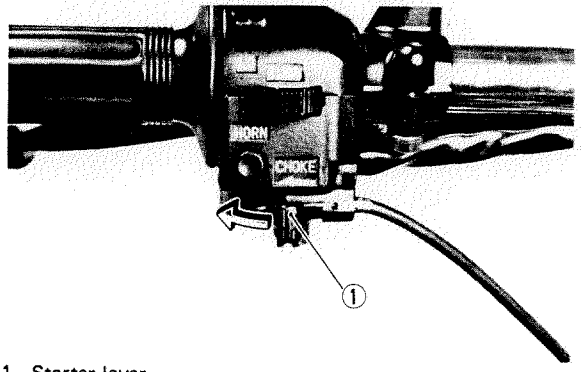
The starter lever is located on the left handlebar.

Starting a cold engine requires a richer fuel mixture. In such a case, turn the starter lever in the left direction.

After the engine is warm, turn the lever to its original position.

NOTE:

Refer to "Starting and warming up a cold engine" for proper operation.



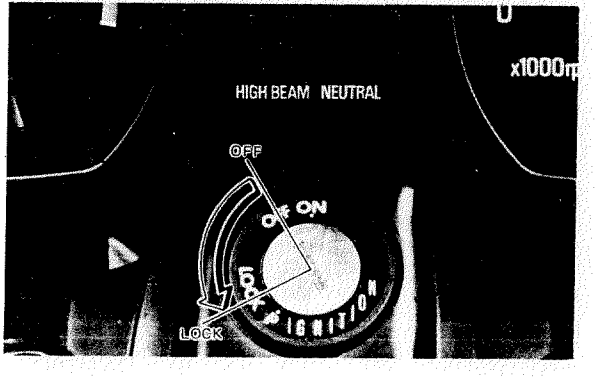
1. Starter lever

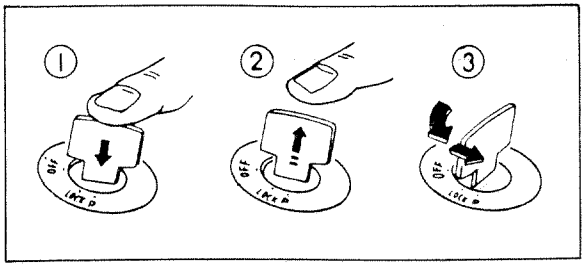
Steering lock

The steering is locked when the main switch is in the "LOCK" position. To lock the steering, turn the handlebars fully to the right or left. Give one push to the key at the "OFF" position; then turn it counterclockwise to the "LOCK" position and remove the key. To release the lock, turn the key clockwise.

WARNING:

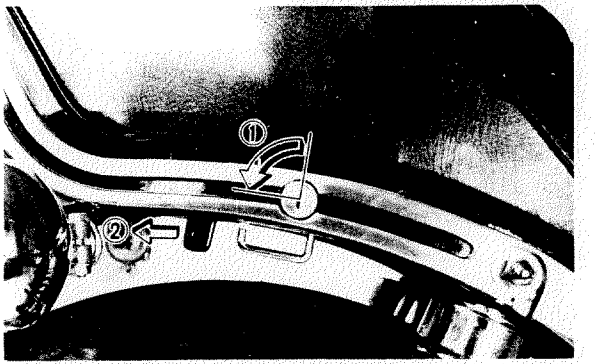
Never turn the key to "LOCK" when the motorcycle is moving.





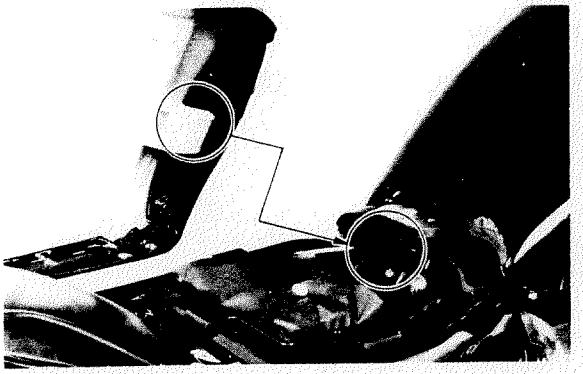
Seat lock

To open the seat lock, insert the key in the lock and turn it counterclockwise and pull the lever backwards.



1. Open 2. Pull

In reinstalling the seat, insert the lobe on the seat front into the receptacle on the frame, then pull the lever backwards and push down the seat at the end. Push the lever forwards so that the seat is securely hooked in place, then turn the key clockwise to the original position to lock.



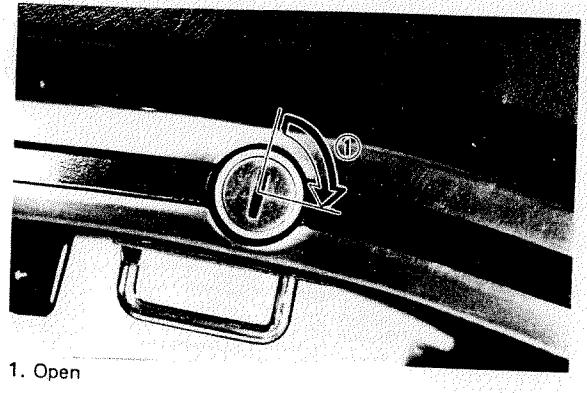
Helmet holder

To open the helmet holder, insert the key in the lock and turn it clockwise.

To lock the helmet holder, replace the holder in the original position.

WARNING:

Never ride with a helmet in the helmet holder. It could interfere with rear wheel movement, causing loss of control and possibly an accident.



1. Open

Front forks

An optional heavy duty front fork spring is available for this model.

*Heavy duty front fork spring:
P/No. 4H7-23141-A0

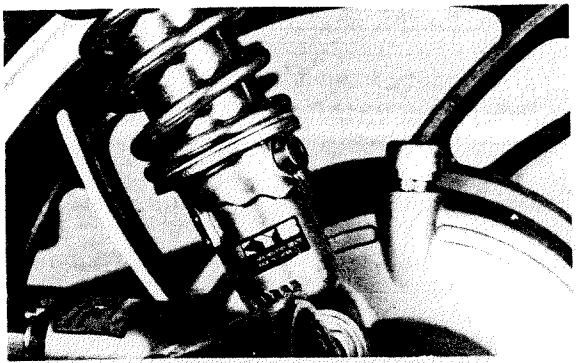
Please ask your nearby Yamaha dealer for further details.

Rear shock absorber

The spring preload of the rear shock absorbers can be adjusted to suit machine load (ex: optional accessories etc.) and riding conditions. Refer to page 51 for proper adjustment procedures.

WARNING:

Always adjust the shock absorbers on each side to the same position. Uneven adjustment can cause poor handling and loss of stability.



An optional heavy duty rear shock absorber assembly is available for this model.

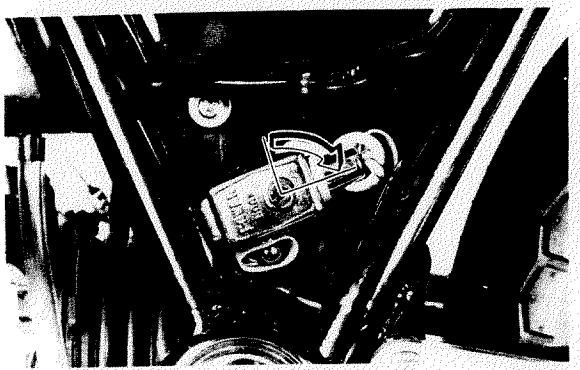
P/No.	Left	: 4H7-22210-A0
	Right	: 4H7-22210-E0

Please ask your nearby Yamaha dealer for further details.

Theft protection chain

This chain is designed for theft protection of your motorcycle and is placed under the left-hand side cover. Take out and use the chain as follows:

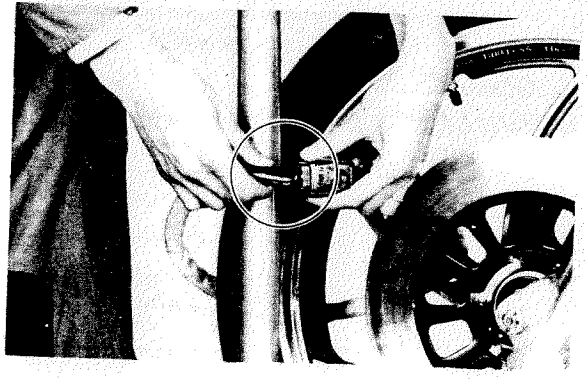
1. To remove the chain from the frame projection, insert the main switch key in the lock and turn it clockwise.

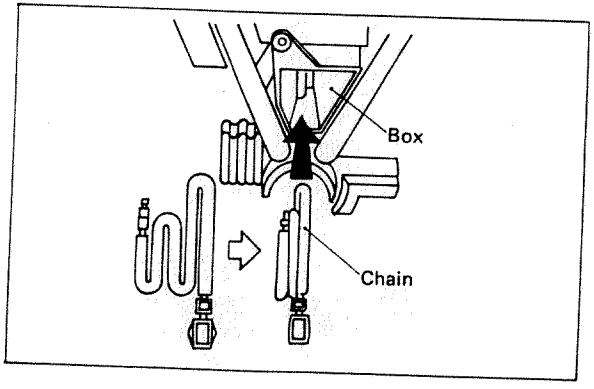


2. Fasten the chain to an suitable fixed object.

CAUTION:

To lock the chain, insert one end into the other. The chain automatically locks.
To unfasten the chain, insert the main switch key in the lock and turn it clockwise.





NOTE:

To replace the chain, make sure that the chain lock is securely fitted over the frame projection.

WARNING:

Before starting, make sure that your motorcycle is unlocked.

PRE-OPERATION CHECKS (DAILY)

Before using this motorcycle check the following points:

No.	Item	Routine	Page
1.	Brakes (Front and Rear)	Front: Check operation, free play and fluid level. Top-up with DOT. #3 brake fluid if necessary. Rear: Check operation and free play. Adjust if necessary.	18, 43~47
2.	Clutch	Check operation, condition and free play. Adjust if necessary.	18, 47~48
3.	Engine Oil	Check engine oil level, add oil if necessary.	19, 38~40
4.	Final Gear Oil	Check for leakage visually.	19, 40~42
5.	Throttle	Check for smooth operation. Adjust if necessary.	19, 49
6.	Battery	Check fluid level, top-up with distilled water if necessary.	23, 53~54
7.	Lights/Signals	Check operation.	23, 55
8.	Wheels/Tires	Check tire pressure, wear and damage.	19~23, 56~60
9.	Fittings/Fasteners	Check all chassis fittings and fasteners. Adjust, if necessary.	37

NOTE:

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

WARNING:

1. **The engine, exhaust pipe(s), and muffler(s) will be very hot after the engine has been run. Be careful not to touch them or allow any clothing item to contact them during inspection or repair.**
2. **If any item in the PRE-OPERATION CHECK is not working properly, have it inspected and repaired before operating the motorcycle.**

Brakes (See page 43 for more detail)

1. Brake lever and brake pedal
   Check for correct play in the front brake lever and rear brake pedal. Make sure they are working properly. Check the brakes at low speed shortly after starting out.

WARNING:

A soft, spongy feeling in the brake lever indicates a failure in the brake system. Do not operate the motorcycle until the failure in the brake system is corrected. Ask your Yamaha dealer or other qualified mechanic for immediate repairs. Such a soft, spongy feeling could indicate a hazardous condition in the brake system.

2. Brake fluid (Front)
   Check the brake fluid level.
   Add fluid if necessary

Recommended brake fluid: DOT #3

3. Checking the front brake disc pads.
   Refer to page 45.
4. Checking the rear brake shoe.
   Refer to page 45.

NOTE:

When this brake service is necessary, have your Yamaha dealer or other qualified mechanic replace the pads.

Brake fluid leakage (Front)

Apply the brake for a few minutes. Check to see if any brake fluid leaks out from pipe joints or the master cylinder.

WARNING:

If brake fluid leakage is found, ask your Yamaha dealer or other qualified mechanic for immediate repairs. Such leakage could indicate a hazardous condition in the brake system.

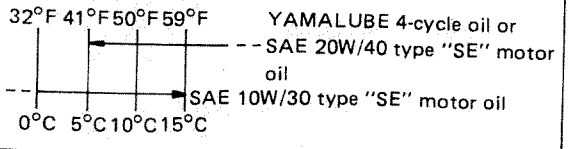
Clutch (See page 47 for more detail)

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

Throttle grip (See page 49 for more detail)
Turn the throttle grip to see if it operates properly and if the play is normal. Make certain the throttle springs close when released.

Engine oil (See page 38 for more detail)
Make sure the engine oil is at the specified level. Add oil as necessary.

Recommended oil:



Final gear oil (See page 40 for more detail)
Make sure the final gear oil is at the specified level. Add oil as necessary.

Recommended oil:
SAE 80 API "GL-4"
Hypoid gear oil

NOTE:
"GL-4" is a quality and additive rating. 5" or "GL-6" rated hypoid gear oils may also be used.

Tires
Check the tire pressure and check the tires for wear.

	FRONT	REAR
XJ650G BASIC WEIGHT with oil and full fuel tank	102 kg (225 lb)	115 kg (254 lb)
Standard tire	Bridgestone 3.25H19-4PR Tubeless tire	Bridgestone 130/90-16 67H Tubeless tire
Maximum load limit*	166 kg (366 lb)	300 kg (662 lb)
Cold tire pressure		
Up to 90 kg (198 lb) load**	1.8 kg/cm² (26 psi)	2.0 kg/cm² (28 psi)
90 kg (198 lb) load ~ 160 kg (353 lb) load**	2.0 kg/cm² (28 psi)	2.3 kg/cm² (32 psi)
160 kg (353 lb) load ~ 230 kg (507 lb) load** (Maximum load)	2.0 kg/cm² (28 psi)	2.8 kg/cm² (40 psi)
High speed riding	2.3 kg/cm² (32 psi)	2.5 kg/cm² (36 psi)
Minimum tire tread depth	0.8 mm (0.03 in)	0.8 mm (0.03 in)

* Total weight of motorcycle with accessories, etc.
** Total weight of accessories, etc. excepting motorcycle.

TUBELESS TIRES AND ALUMINUM WHEELS

This motorcycle is equipped with aluminum wheels designed to be compatible with either tube or tubeless tires.

Tubeless tires are installed as standard equipment.

WARNING:

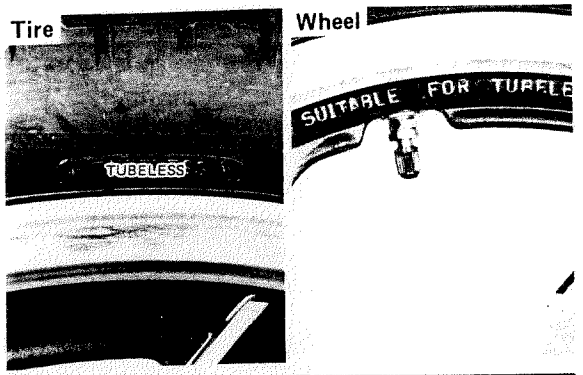
Do not attempt to use tubeless tires on a wheel designed for use only with tube-type tires. Tire failure and personal injury may result from sudden deflation.

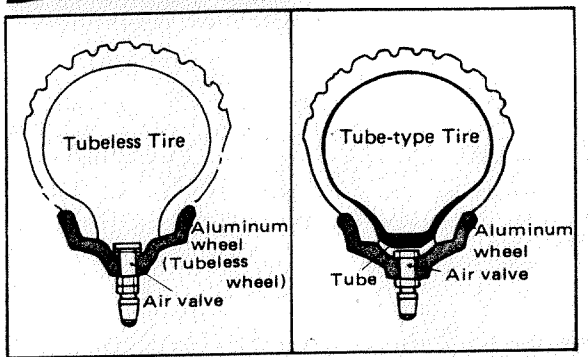
Tube-type Wheel → Tube-type Tires Only

Tubeless-type Wheel → Tube-type or Tubeless tires

WARNING:

When using tube-type tires, be sure to install the proper tube also.





To insure maximum performance, long service, and safe operation, note the following precautions:

1. Always maintain proper tire pressure as described in the Chart on page 19.
2. Check tire pressure daily, before riding, and adjust as necessary.
3. Before operation, always check the tire surfaces for wear and/or damage; for example, cracks, glass, nails, metal fragments, stones, etc. Correct any such hazard before riding.
4. Always inspect the aluminum wheels before a ride. Place the motorcycle on the center stand and check for cracks, bends or warpage of the wheels. If any abnormal condition exists in a wheel, consult your Yamaha dealer or other qualified mechanic. Do not attempt even small repairs to the wheel. If a wheel is deformed or cracked, it must be replaced.
5. Tires and wheels should be balanced whenever either one is changed or replaced. Failure to have a wheel assembly balanced can result in poor performance, adverse handling characteristics, and shortened tire life.
6. After installing a tire, ride conservatively to allow the tire to seat itself on the rim properly. Failure to allow proper seating may cause tire failure resulting in serious injury to the motorcycle and rider.
7. After repairing or replacing a tire, check to be sure the valve stem lock nut is securely fastened. If not, torque it as specified.

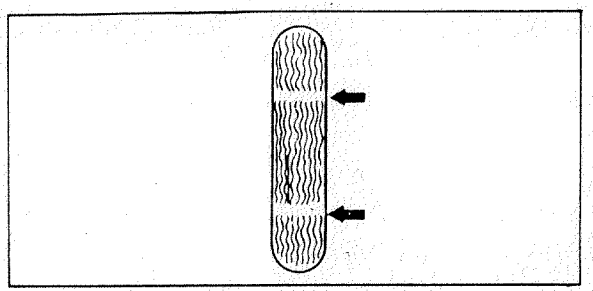
Tightening torque: 0.15 m-kg (1.1 ft-lb)

The standard equipment tires originally fitted to the XJ650G are suited to normal riding and touring. They are not suited for sustained high speed running or racing and must not be used for such purposes. Consider your riding skill, road and weather conditions, and correct weight distribution when loading your motorcycle. Securely pack your heaviest items close to the center of the motorcycle.

WARNING:

1. This motorcycle is not designed to pull a trailer or to be attached to a sidecar. The accessories you choose for your motorcycle should be designed specifically for it and should be securely mounted in such a fashion as to maintain the inherent stability of the original design as much as possible. Yamaha has a full line of sport and touring accessories designed specifically for this motorcycle. Please consider them before making a purchase. Use of non-approved accessories may cause loss of handling stability and riding safety. Consult your Yamaha dealer or other qualified mechanic regarding the consequences of using such items.
2. Proper loading of your motorcycle is important for the handling, braking, and other performance and safety characteristics of your motorcycle. NEVER OVERLOAD YOUR MOTORCYCLE. Make sure the total weight of the accessories, and etc., does not exceed the maximum load limits. Operation of an overloaded motorcycle could cause tire damage, an accident, and injury.

If a tire tread shows crosswise lines, it means that the tire is worn to its limit. Replace the tire.



WARNING:

It is dangerous to ride with a worn-out tire. When a tire tread begins to show lines have your Yamaha dealer or other qualified mechanic replace the tire immediately. Brake pad replacement, tire, and related wheel parts replacement should be left to a Yamaha Service Technician or other qualified mechanic. If you must change your own tire, be sure to use proper tools and procedures as described in the Tubeless Tire and Wheel Manual available from your Yamaha dealer.

Fittings/Fasteners

Always check the tightness of chassis fittings and fasteners before a ride. Use the chart on page 37 to find the correct torque.

Lights and signals

Check the headlight, flasher lights, taillight, brake light, meter lights and all the indicator lights to make sure they are in working condition.

Switches

Check the operation of the headlight switch, turn switch, brake light switch, horn button, main switch, etc.

Battery (See page 53 for more detail)

Check fluid level and top-up if necessary.
Use only distilled water if refilling is necessary.

Fuel

Make sure there is sufficient fuel in the tank.

Recommended gasoline:
Regular gasoline
Fuel tank capacity:
Total : 13 liter (3.4 US gal)
Reserve : 3.4 liter (0.9 US gal)

OPERATION AND IMPORTANT RIDING POINTS

CAUTION:

1. Before riding this motorcycle, become thoroughly familiar with all operating controls and their function. Consult your Yamaha dealer or other qualified mechanic regarding any control or function you do not thoroughly understand.
2. Be careful where you store personal items on the motorcycle. Avoid blocking the air cleaner intake or performance will suffer.
3. Be careful not to put anything near the battery and its terminals. Electrical failure and acid corrosion may result.

WARNING:

1. 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.
2. Before starting out, always be sure the side stand is up. Failure to retract the side stand completely can result in a serious accident when you try to turn a corner.

Starting and warming up a cold engine

1. Turn the fuel petcock to "ON".
2. Turn the ignition key to the "ON" position and the engine stop switch to "RUN".
3. Shift transmission into neutral.

NOTE:

A starting circuit cut off switch has been provided on this model.
The engine can be started by the following conditions:

a. When the transmission is in neutral. At this time the neutral indicator light (green) should be on.
   If the light does not come on ask your Yamaha dealer or other qualified mechanic to inspect.
b. When the clutch is disenaged with the transmission in any gear.

4. Move the starter lever (CHOKE) fully to the left and completely close the throttle grip.
5. Start the engine by pushing the starter button.

NOTE:

If the engine fails to start, release the starter button, then push the starter button again. Pause a few seconds before the next attempt. Each cranking should be as short as possible to preserve battery energy. Do not crank the engine more than 10 seconds on each attempt.

CAUTION:

The oil level indicator light should come on when the starter button is pushed and should go off when the starter button is released. If the indicator light flickers or remains on, immediately stop the engine and check for the engine oil level and for oil leakage. If necessary, replenish oil and check to see that the oil level indicator light goes off. If the light does not go off even with sufficient oil in the crankcase or the light does not come on when pushing the starter button, consult your Yamaha dealer or other qualified mechanic.

6. After starting the engine, move the starter lever back. The starter operation periods differ with the ambient temperature, so refer to the following notes.

NOTE:

To see whether or not the engine is warm, see if engine responds normally to throttle with the starter moved back completely. To avoid the possibility of excessive exhaust emissions, never leave the starter circuit on longer than necessary.

The length of time the starter is used to start a cold engine depends upon the ambient temperature:

Warm ambient temperatures (above 10°C — 50°F) require about 25 seconds of starter use.

Cold ambient temperatures (below 10°C — 50°F) require about 35 seconds with the starter fully open, then about 2.5 minutes with the starter in the half-open position.

To get maximum engine life, always "warm-up" the engine before starting off. Never accelerate hard with a cold engine!

Starting a warm engine

To start a warm engine, the starter lever (CHOKE) is not required.

CAUTION:

See "Break-in section" prior to operating engine for the first time.

Shifting and acceleration

This model has a 5-speed transmission. The transmission allows you to control the amount of power you have available at a given speed or while accelerating, climbing hills, etc. The use of the change pedal is shown in the illustration. (Page 8)

To shift into NEUTRAL, repeatedly depress the change pedal to the end of its travel (you

will feel a stop when you are in first gear), then raise it slightly.

To start out and accelerate:

1. Pull the clutch lever to disengage the clutch.
2. Shift into FIRST gear. The green neutral indicator light should go out.
3. Open the throttle gradually, and at the same time, release the clutch lever slowly.
4. At the recommended shift point speed in the table below, close the throttle, and at the same time, pull in the clutch lever quickly.
5. Shift into SECOND gear. (Be careful not to shift into neutral.)
6. Open the throttle part way and gradually release the clutch lever.
7. To accelerate use the same procedure to shift into the next higher gear according to the Recommended Shift Point Chart below.

To decelerate:

1. Apply front and/or rear brakes to slow the motorcycle.
2. When the motorcycle reaches 20 km/h (12.5 mi/h), shift to first gear.
   Any time the engine appears about to stall or runs very roughly, pull in the clutch and use the brakes to stop.
3. When motorcycle is almost completely stopped, shift into neutral.
   The green neutral indicator light should come on.

Recommended shift point

	Acceleration shift point km/h (mi/h)	Deceleration shift point km/h (mi/h)
1st → 2nd	23 (14)	20 (12.5)
2nd → 3rd	36 (22)	20 (12.5)
3rd → 4th	50 (31)	20 (12.5)
4th → 5th	60 (37)	20 (12.5)

CAUTION:

1. **Do not glide for long periods with the engine off, and do not tow the motorcycle a long distance. Even with gears in neutral, the transmission is only properly lubricated when the engine is running. Inadequate lubrication may damage the transmission.**
2. **Always use the clutch when changing gears. The engine, transmission, and driveline are not designed to withstand the shock load of forced shifting and can be damaged by shifting without the clutch.**

Engine break-in

There is never a more important period, in the life of your motorcycle, than the period between zero and 1,000 km (600 mi). For this reason we ask that you carefully read the following material. Because the engine is brand new, you must not put an excessive load on it for the first 1,000 km (600 mi). The various parts in the engine wear and polish themselves to the correct operating clearances. During this period prolonged full throttle operation, or any condition which might result in excessive heating of the engine, must be avoided.

1. 0 ~ 150 km (0 ~ 90 mi):
   Avoid operation above 4,000 r/min.
   Allow a cooling off period of 5 to 10 minutes after every hour of operation. Vary the speed of the motorcycle from time to time. Do not operate it at one, set throttle position.
2. 150 ~ 500 km (90 ~ 300 mi):
   Avoid prolonged operation above 5,000 r/min. Allow the motorcycle to rev freely through the gears but do not use full throttle at any time.
3. 500 ~ 1,000 km (300 ~ 600 mi):
   Avoid prolonged full throttle operation.

Avoid cruising speeds in excess of 6,000 r/min.

4. 1,000 km (600 mi) and beyond:
   Avoid prolonged full throttle operation. Avoid engine speeds in excess of 7,000 r/min. Vary speeds occasionally.

CAUTION:

If any engine trouble should occur during the break-in period, consult your Yamaha dealer immediately or other qualified mechanic.

After 1,000 km (600 mi) of operation, be sure to replace the engine oil, oil filter element and final gear oil.

Parking

When parking, stop the engine and remove the ignition key.

NOTE:

Select a parking place where the motorcycle is not apt to fall.

PERIODIC MAINTENANCE AND MINOR REPAIR

Periodic inspection, adjustment, and lubrication will keep your motorcycle in the safest and most efficient condition possible. Safety is an obligation of the motorcycle owner.

The most important points of motorcycle inspection, adjustment, and lubrication are explained in the following pages.

"Maintenance, replacement, or repair of the emission control devices and systems may be performed by any repair establishment or individual using any part which is certified (if applicable)."

CAUTION:

If the owner is not familiar with motorcycle service, this work should be done by a Yamaha dealer or other qualified mechanic.

PERIODIC MAINTENANCE

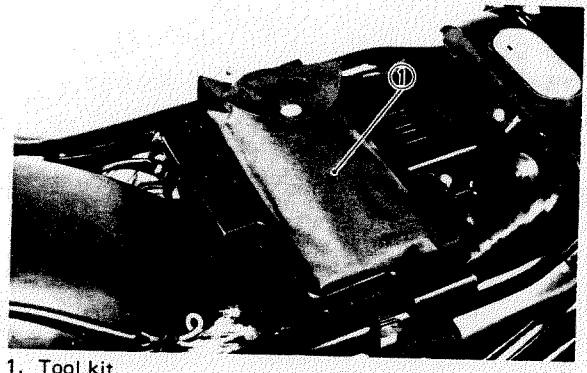
PROPER PERIODIC MAINTENANCE OF YOUR MOTORCYCLE IS IMPORTANT TO ITS GIVING YOU LONG, PLEASURABLE SERVICE. ESPECIALLY IMPORTANT ARE THE MAINTENANCE SERVICES RELATED TO EMISSIONS CONTROL. THESE CONTROLS NOT ONLY FUNCTION TO ENSURE CLEANER AIR BUT ARE ALSO VITAL TO PROPER ENGINE OPERATION AND MAXIMUM PERFORMANCE. IN THE FOLLOWING TABLES OF PERIODIC MAINTENANCE, THE SERVICES RELATED TO EMISSIONS CONTROL ARE GROUPED SEPARATELY. THESE SERVICES REQUIRE SPECIALIZED DATA, KNOWLEDGE, AND EQUIPMENT. YAMAHA DEALERS ARE TRAINED AND EQUIPPED TO PERFORM THESE PARTICULAR SERVICES.

Tool kit

The service information included in this manual is intended to provide you, the owner, with the necessary information for completing some of your own preventive maintenance and minor repairs. The tools provided in the owner's tool kit are sufficient for most of these purposes. A torque wrench is necessary to properly tighten nuts and bolts.

NOTE:

If you do not have a torque wrench available during a service operation requiring one, take your motorcycle to a Yamaha dealer or other qualified mechanic to check the torque settings and adjust them as necessary.



1. Tool kit

PERIODIC MAINTENANCE EMISSION CONTROL SYSTEM

No.	Item	Remarks	Initial break-in		Thereafter every	
			1,000 km (600 mi) or 1 month	5,000 km (3,000 mi) or 7 months	4,000 km (2,500 mi) or 6 months	8,000 km (5,000 mi) or 12 months
1*	Cam chain	Adjust chain tension.	○	○		○
2*	Valve clearance	Check and adjust valve clearance when engine is cold.		○		○
3*	Spark plugs	Check condition. Adjust gap/Clean. Replace after initial 13,000 km (8,000 mi) or 18 months and thereafter every 12,000 km (7,500 mi) or 18 months.		○	○	Replace every 12,000 km (7,500 mi) or 18 months
4*	Crankcase ventilation system	Check ventilation hose for cracks or damage. Replace if necessary.		○		○
5*	Fuel line	Check fuel hose for cracks or damage. Replace if necessary.		○		○
6*	Exhaust system	Check for leakage. Retighten as necessary. Replace gasket(s) if necessary.		○	○	
7*	Carburetor synchronization	Adjust synchronization of carburetors.		○	○	
8*	Idle speed	Check and adjust engine idle speed. Adjust cable free play if necessary.		○	○	

* It is recommended that these items be serviced by your Yamaha dealer or other qualified mechanic.

Spark plug inspection

The spark plug is an important engine component and is easy to inspect. The condition of the spark plug can indicate something of the condition of the engine.

Normally, all spark plugs from the same engine should have the same coloration on the white porcelain insulator around the center electrode. The ideal coloration at this point is a medium to light tan color for a motorcycle that is being ridden normally. If one spark plug shows a distinctly different color, there could be something wrong with the engine. For example, a very ... e center electrode porcelain color cou... ndicate an intake tract air leak or carburetion problem for that cylinder. Do not attempt to diagnose such problems yourself. Instead, take the motorcycle to your Yamaha dealer or other qualified mechanic.

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

Standard spark plug:
BP7ES (NGK) or W22EP (ND)

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

Spark plug gap:
0.7 ~ 0.8 mm (0.028 ~ 0.032 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:
2.0 m-kg (14.5 ft-lb)

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.

GENERAL MAINTENANCE/LUBRICATION

No.	Item	Remarks	Type	Initial break-in		Thereafter every		
				1,000 km (600 mi) or 1 month	5,000 km (3,000 mi) or 7 months	4,000 km (2,500 mi) or 6 months	8,000 km (5,000 mi) or 12 months	16,000 km (10,000 mi) or 24 months
1	Engine oil	Warm-up engine before draining.	Refer to page 38.	○	○	○		
2	Oil filter	Replace.	—	○	○		○	
3	Final gear oil	Replace.	Refer to page 40.	○			○	
4	Air filter	Clean with compressed air.	—		○		○	
5*	Brake system	Adjust free play. Front: Replace pads if necessary. Rear: Replace shoes if necessary.	—	○	○	○		
6*	Clutch	Adjust free play.	—	○	○	○		
7*	Control and meter cable	Apply chain lube thoroughly.	Yamaha chain and cable lube or 10W/30 motor oil	○	○	○		
8*	Rear arm pivot bearings	Check bearing assembly for looseness. Moderately repack every 16,000 km (10,000 mi).	Medium weight wheel bearing grease					Repack
9*	A.C. generator	Replace generator brushes. Replace at initial 13,000 km (8,000 mi) and thereafter every 16,000 km (10,000 mi).	—					Replace

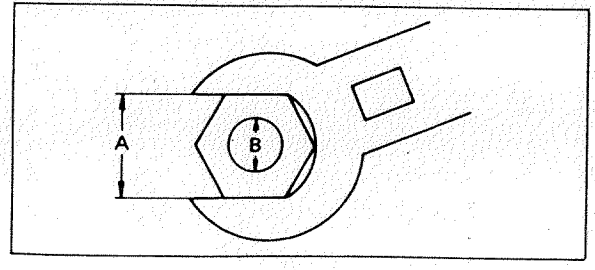
No.	Item	Remarks	Type	Initial break-in		Thereafter every		
				1,000 km (600 mi) or 1 month	5,000 km (3,000 mi) or 7 months	4,000 km (2,500 mi) or 6 months	8,000 km (5,000 mi) or 12 months	16,000 km (10,000 mi) or 24 months
10	Brake/clutch lever pivot shaft	Apply lightly.	Yamaha chain and cable lube or 10W/30 motor oil		○	○		
11	Change/Brake pedal shaft pivot	Apply lightly.	Yamaha chain and cable lube or 10W/30 motor oil		○	○		
12	Center and side stand pivots	Apply lightly.	Yamaha chain and cable lube or 10W/30 motor oil		○	○		
13*	Front fork oil	Drain completely. Refill to specification.	Yamaha fork oil 10Wt or equivalent					○
14*	Steering Ball Bearing and races	Check bearings assembly for looseness. Moderately repack every 16,000 km (10,000 mi).	Medium weight wheel bearing grease		○	○		Repack
15*	Wheel bearings	Check bearings for smooth rotation. Replace if necessary.	—		○	○		
16	Battery	Check specific gravity. Check breather pipe for proper operation.	—		○	○		

* It is recommended that these items be serviced by your Yamaha dealer or other qualified mechanic.

Torque specifications

(For a more complete list, refer to the Service Manual for this model.)

Use a torque wrench to tighten these items. It is recommended that these items should be checked occasionally, especially before a long trip. Always check the tightness of these items whenever they are loosened for any reason.



A (Nut)	B (Bolt)	General torque specifications	
		m-kg	ft-lb
10 mm	6 mm	0.6	4.5
12 mm	8 mm	1.5	11
14 mm	10 mm	3.0	22
17 mm	12 mm	5.5	40
19 mm	14 mm	8.5	61
22 mm	16 mm	13.0	94

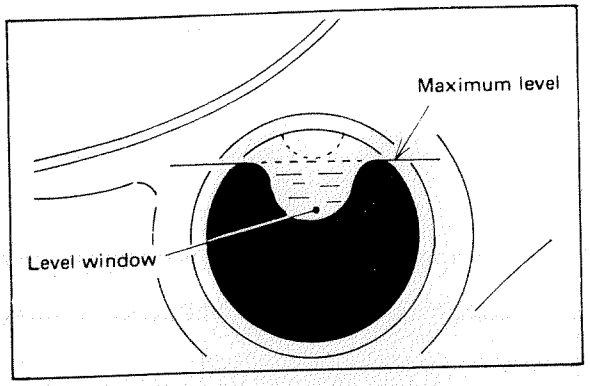
Item	Torque
Spark plug	2.0 m-kg (14.5 ft-lb)
Engine drain plug	4.3 m-kg (31.0 ft-lb)
Middle gear drain plug	1.5 m-kg (11.0 ft-lb)
Oil filter bolt	1.5 m-kg (11.0 ft-lb)
Change pedal	1.0 m-kg (7.2 ft-lb)
Front engine mount bolts (upper)	4.2 m-kg (30.5 ft-lb)
Front engine mount bolts (under)	4.2 m-kg (30.5 ft-lb)
Rear engine mount bolts	7.0 m-kg (50.5 ft-lb)
Steering pinch bolts (8 mm stud)	2.0 m-kg (14.5 ft-lb)
Shock absorber (top)	3.0 m-kg (21.5 ft-lb)
Shock absorber (bottom)	3.0 m-kg (21.5 ft-lb)
Front wheel axle	10.5 m-kg (76.0 ft-lb)
Front axle pinch bolt	2.0 m-kg (14.5 ft-lb)
Rear wheel axle	10.5 m-kg (76.0 ft-lb)
Rear axle pinch bolt	0.6 m-kg (4.5 ft-lb)
Final gear drain plug	2.3 m-kg (16.5 ft-lb)

Engine oil

1. Engine oil level checking

   On this model, the oil level window does not show the minimum oil level, however, the oil level indicator in the pilot light box will indicate when the minimum oil level is reached.

   If the oil level indicator light flickers during operation, the oil level is near the minimum level. If this should happen, refill with the recommended oil up to the maximum level on the level window immediately. The oil amount is approximately 0.8 ℓ (0.7 IMP. qt).

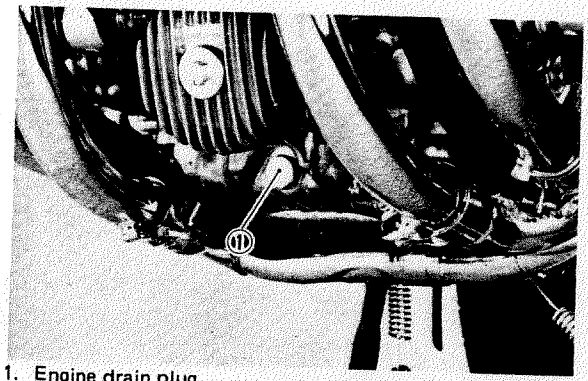


2. Engine oil and oil filter replacement

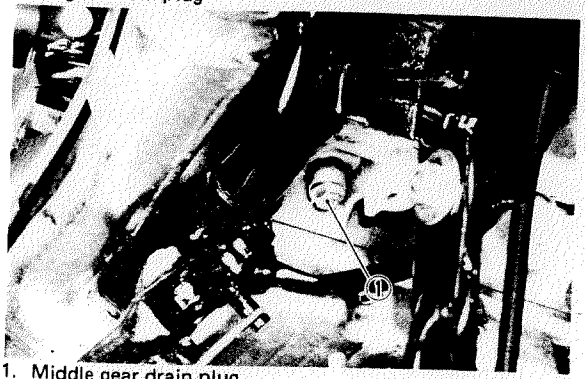
   a. Start the engine and stop it after a few minutes of warm-up.

   b. Place an oil pan under the engine and remove the oil filler cap.

   c. Remove the engine and middle gear drain plugs, and drain the oil.

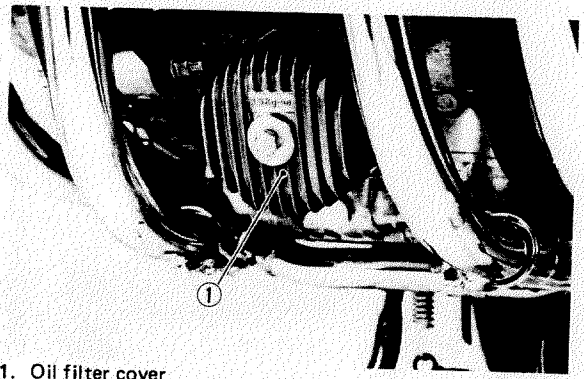


1. Engine drain plug



1. Middle gear drain plug

d. Remove the oil filter bolt and filter element.



1. Oil filter cover

e. Re-install the drain plugs (make sure they are tight).

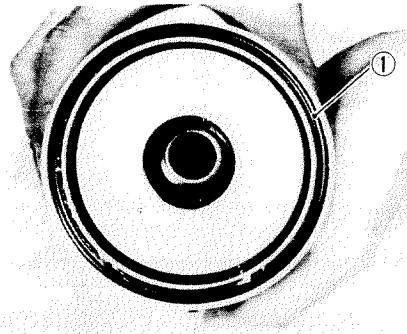
Drain plug torque:	
Engine	4.3 m-kg (31.0 ft-lb)
Middle gear	1.5 m-kg (11.0 ft-lb)

f. Install the new oil filter element, new "O" ring and filter cover, tighten the oil filter bolt.

Oil filter bolt: 1.5 m-kg (11.0 ft-lb)

NOTE:

Make sure the "O" ring positioned properly.

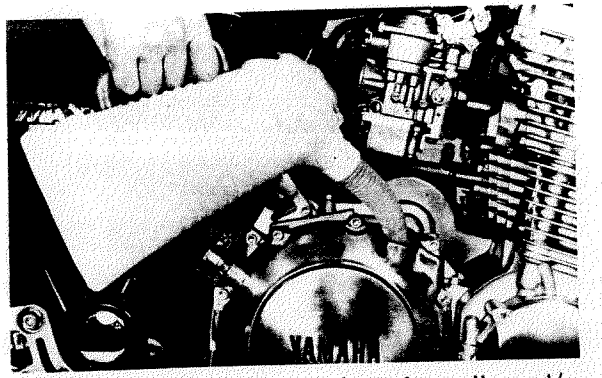


1. Proper O-ring position

g. Add oil through the oil filler hole.

Periodic oil change:
2.35 lit (2.5 US qt)
With oil filter replacement:
2.65 lit (2.8 US qt)
Recommended oil: See page 19.

CAUTION:
Take care not to allow foreign material to enter the crankcase.



h. After replacement of engine oil, and/or oil filter, be sure to check for oil leakage. The oil level indicator light should go off after the engine has started.

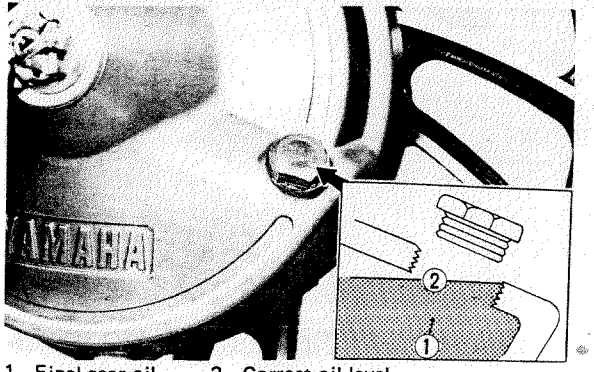
CAUTION:
If the indicator light flickers or remains on, consult your Yamaha dealer or other qualified mechanic.

Final gear oil

1. Oil level measurement

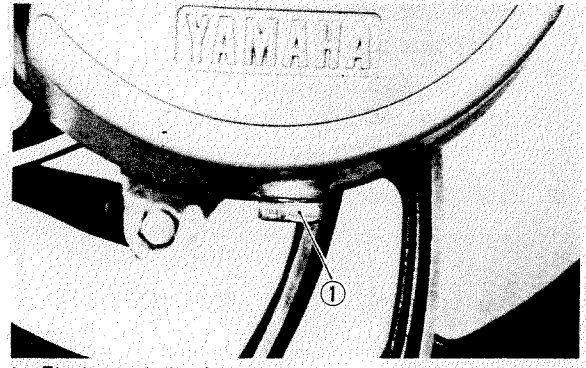
a. Place the motorcycle on a level place and place it on the center stand. The engine should be cool (at atmospheric temperature).
b. Remove the oil filler cap and check the oil level whether it is to the hole brim. If it is not up to this level, replenish oil.

CAUTION:
Take care not to allow foreign material to enter the final gear case.



1. Final gear oil 2. Correct oil level

2. Gear oil replacement
a. Place an oil pan under the final gear case.
b. Remove the final gear oil filler cap and the drain plug, and drain the oil.



1. Final gear drain plug

WARNING:
When draining or filling, take care not to allow foreign material to enter the final gear case. Do not allow the gear oil to contact the tire and wheel.

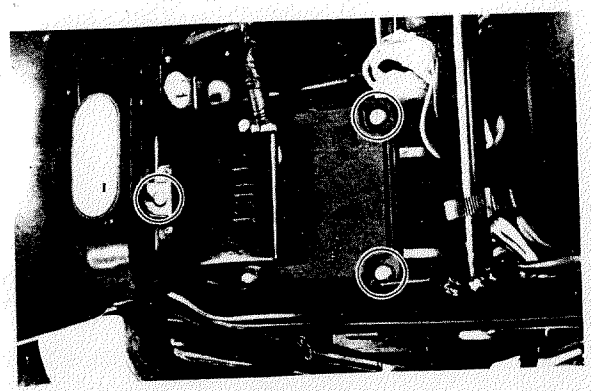
c. Reinstall and tighten the final drain plug. (See page 37 for torque specifications.)
d. Fill the gear case to the specified level.

Oil capacity: Final gear case: 0.2 lit (0.21 US qt) Recommended oil: See page 19.

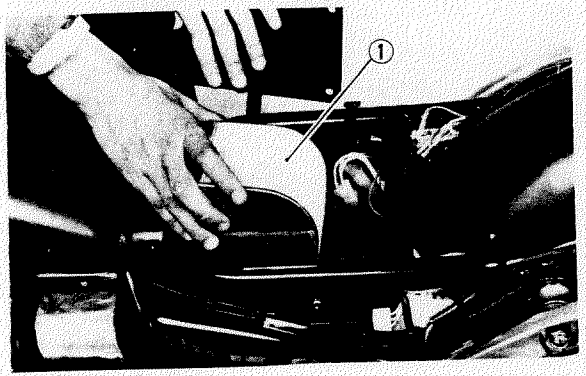
e. Reinstall the filler cap securely.

Air filter

1. Removal
a. Remove the seat.
b. Remove the tray.
c. Remove the air filter case cover by removing the three screws.

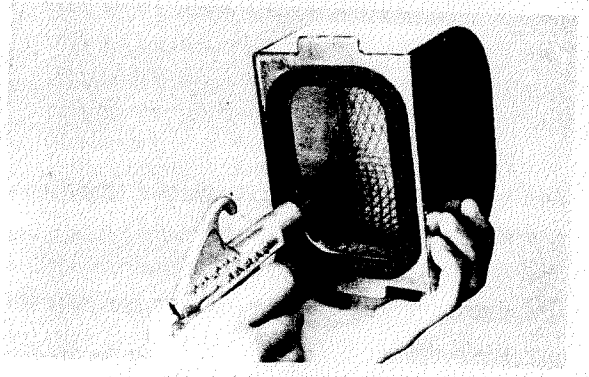


d. Pull out the element.



1. Air filter element

2. Cleaning method
   Tap the element lightly to remove most of the dust and dirt; then blow out the remaining dirt with compressed air from the inner surface of the element. If element is damaged, replace it.

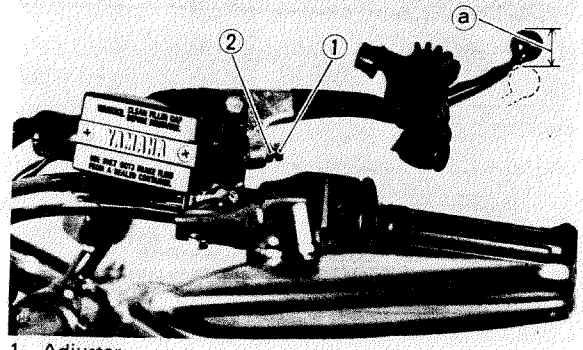


3. Reassemble by reversing the removal procedure. Check whether the element is seated completely against the case.
4. The air filter element should be cleaned at the specified intervals.

CAUTION:
The engine should never be run without the air cleaner element installed; excessive piston and/or cylinder wear may result.

Front brake adjustment

The front brake lever should be so adjusted that it has a free play of 5 ~ 8 mm (0.2 ~ 0.3 in) at the lever end.



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

1. Loosen the lock nut on the brake lever.
2. Turn the adjuster so that the brake lever movement at the lever end is 5 ~ 8 mm (0.2 ~ 0.3 in) before the adjuster contacts the master cylinder piston.
3. After adjusting, tighten the lock nut.

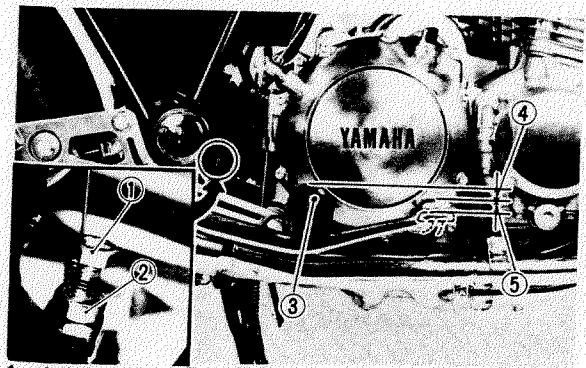
NOTE:
Check for correct play and make sure it is working properly.

WARNING:
A soft or spongy feeling in the brake lever can indicate the presence of air in the brake system. This air must be removed by bleeding the brake system before the motorcycle is operated. Air in the system will cause greatly diminished braking capability and can result in loss of control and an accident. Have your Yamaha dealer or other qualified mechanic inspect and bleed the system if necessary.

Rear brake adjustment

CAUTION:
For the brake pedal position adjustment, be sure to proceed as follows; (It is advisable to have your Yamaha dealer or other qualified mechanic make this adjustment.)

1. Pedal height
   a. Loosen the adjuster lock nut (for pedal height).
   b. By turning the adjuster bolt clockwise or counterclockwise, adjust the brake pedal position so that its top end is approx. 20 mm (0.8 in) below the footrest top end.
   c. Secure the adjuster lock nut.



1. Adjuster bolt (for pedal height)
2. Lock nut
3. Footrest
4. Pedal height 20 mm (0.8 in)
5. Free play 20 ~ 30 mm (0.8 ~ 1.2 in)

WARNING:

After adjusting the pedal height, the brake pedal free play should be adjusted.

2. Free play

   Turn the adjuster on the brake rod clockwise or counterclockwise to provide the brake pedal end with a free play of 20 ~ 30 mm (0.8 ~ 1.2 in).

NOTE:

Check to see whether or not the brake light operates correctly after adjusting.

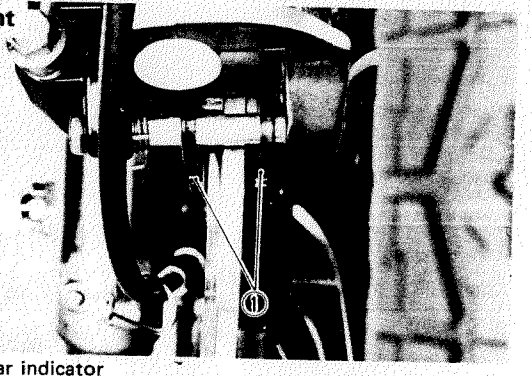
Checking the front brake pads and rear brake shoes

A wear indicator is attached to each brake to facilitate brake pad and shoe check. This indicator permits a visual check without disassembling the brake.

FRONT:

To check, look at the pad in front. If any pad is worn to the wear limit, ask a Yamaha dealer or other qualified mechanic to replace the pads.

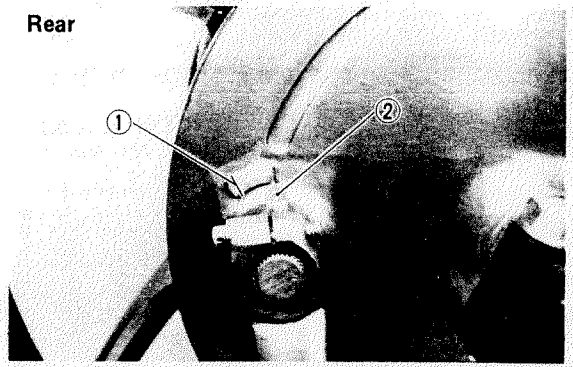
Front



1. Wear indicator

REAR:

To check, see the wear indicator position while depressing the brake pedal. If the indicator reaches to the wear limit line, ask your Yamaha dealer or other qualified mechanic to replace the shoes.



1. Wear limit 2. Wear indicator

Inspecting the brake fluid level

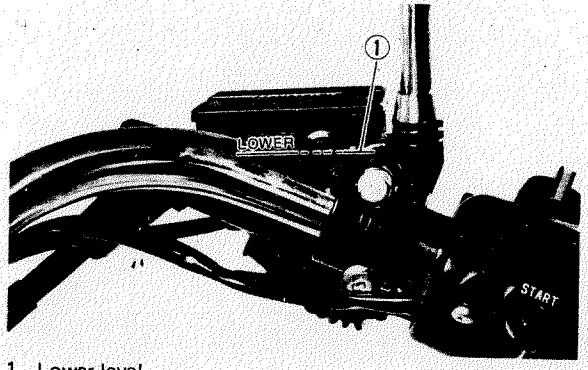
Insufficient brake fluid may allow air to enter the brake system, possibly causing the brakes to become ineffective.

Before riding, check the brake fluid level and replenish when necessary, and observe these precautions:

1. Use only the designated quality brake fluid; otherwise, the rubber seals may deteriorate, causing leakage and poor brake performance.

Recommended brake fluid:
DOT #3

2. Refill with the same type of brake fluid; mixing fluids may result in a harmful chemical reaction and lead to poor performance.
3. Be careful that water does not enter the master cylinder when refilling. Water will significantly lower the boiling point and may result in vapor lock.
4. Brake fluid may erode painted surfaces or plastic parts. Always clean up spilled fluid immediately.
5. Have a Yamaha dealer or other qualified mechanic check the cause if the brake fluid level goes down.



1. Lower level

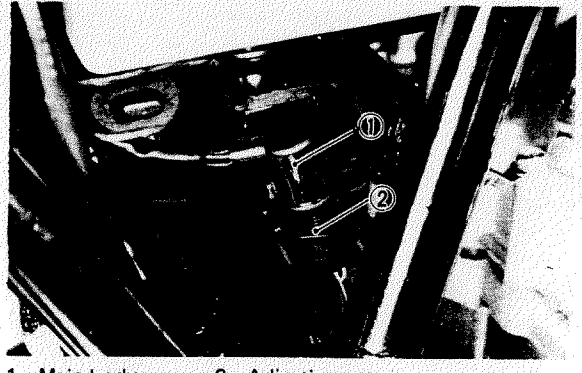
Brake fluid replacement

1. Complete fluid replacement should be done only by trained Yamaha service personnel or other qualified mechanic.
2. Complete fluid replacement should be done whenever the caliper cylinder or master cylinder is disassembled, or the fluid becomes seriously contaminated.
3. Replace the following components whenever damaged or leaking. Also:

a. Replace all brake seals every two years.
b. Replace all brake hoses every four years.

Brake light switch adjustment

The brake light switch is operated by movement of the brake pedal. To adjust, hold the main body of the switch with the hand so it does not rotate and turn the adjusting nut. Proper adjustment is achieved when the brake light comes on slightly before the brake begins to take effect.



1. Main body 2. Adjusting nut

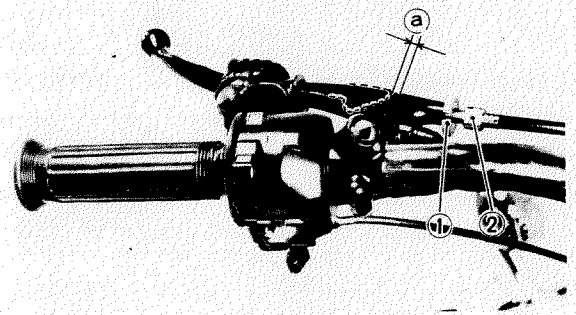
Clutch adjustment

This model has two clutch cable length adjusters. The cable length adjusters are used

to take up slack from cable stretch and to provide sufficient free play for proper clutch operation under various operating conditions.

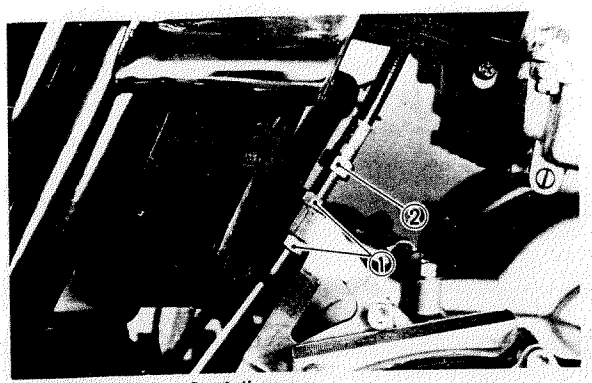
1. Free play adjustment
   Loosen either the handlebar lever adjuster lock nut or the cable length adjuster lock nut. Next, turn the cable length adjuster either in or out until proper lever free play is achieved.

Clutch lever free play:
2 ~ 3 mm (0.08 ~ 0.12 in)



1. Lock nut
2. Adjuster

a. 2 ~ 3 mm (0.08 ~ 0.12 in)



1. Lock nut
2. Adjuster

Cable inspection and lubrication

WARNING:
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 such cables as soon as possible.

1. If the inner cables do not operate smoothly, lubricate or 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.

Rear arm pivot bearings

The swing arm must pivot freely on its bearings, but not have any excess play. Have your Yamaha dealer or other qualified mechanic check rear arm pivot bearing operation according to the General Maintenance Schedule.

Lubrication of handlebar levers and foot pedals

1. Lubricate the pivoting parts of the brake and clutch lever.
2. Lubricate the shaft of the brake pedal.
3. Lubricate the shaft of the change pedal.

Recommended lubricant:
Yamaha chain and cable lube or
SAE 10W/30 motor oil

Center and side stand pivots

Lubricate the center and side stands at their pivot points.

Recommended lubricants:
Yamaha chain and cable lube or
SAE 10W/30 motor oil

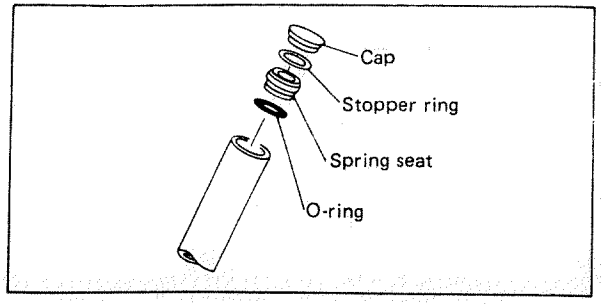
Front fork oil change

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.

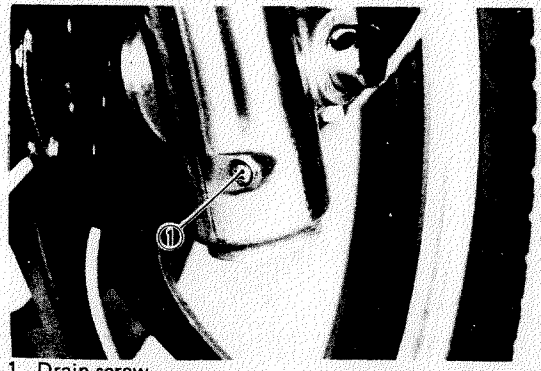
1. Raise the motorcycle or remove the front wheel so that there is no weight on the front end of the motorcycle.
2. Remove the rubber cap from the top of each fork.
3. The spring seat and springs are retained by a stopper ring (spring wire circlip). It is necessary to depress the spring seat and fork spring to remove the stopper ring. Remove the stopper ring by carefully prying out one end with a small screwdriver.



4. Place an open container under each drain hole. Remove the drain screw from each outer tube.

WARNING:

Do not allow oil to contact the disc brake components. If any oil should contact the brake components, it must be removed before the motorcycle is operated. Oil will cause diminished braking capacity and will damage the rubber components of the brake assembly.



1. Drain screw

5. When most of the oil has drained, slowly raise and lower the outer tubes to pump out the remaining oil.
6. Inspect the drain screw gasket. Replace if damaged. Reinstall the drain screw.
7. Pour specified amount of oil into fork inner tube.

Front fork oil capacity (each fork):
262 cc (9.24 oz)
Recommended oil:
Yamaha Fork Oil 10 Wt or equivalent

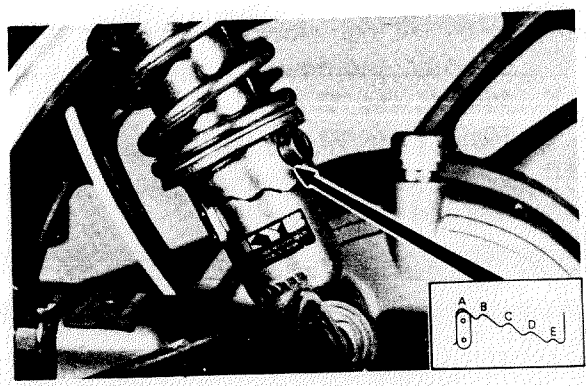
8. After filling, slowly pump the outer tubes up and down to distribute the oil.
9. Inspect the "O-ring" on the spring seat. Replace the "O-ring", if damaged.
10. Reinstall the O-ring, spring seat, stopper ring and rubber cap.

CAUTION:
Always use a new stopper ring (wire circlip).

Rear shock absorber adjustment

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

Standard position – A
A. position – Softest
E. position – Stiffest



WARNING:
Always adjust both the right and left shock absorbers to the same position.

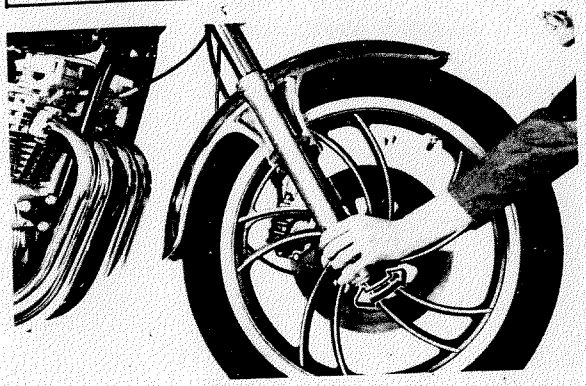
Steering inspection

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

Place a block under the engine to raise the front wheel of the motorcycle off the ground: then hold the lower end of the front fork and try to move it forward and backward. If any free play can be felt, ask a Yamaha dealer or other qualified mechanic to inspect and adjust the steering assembly.

Inspection is easier if the front wheel is removed.

WARNING:
Securely support the motorcycle so there is no danger of it falling over.



Wheel bearings

If the wheel bearings in the front or rear wheel allow play in the wheel hub, or if the wheel does not turn smoothly, have your Yamaha dealer or a qualified mechanic inspect the wheel bearings. The wheel bearings should be inspected according to the General Maintenance Schedule.

Battery

Check the level of the battery fluid and see if the terminals are tight. Add distilled water if the fluid level is low.

CAUTION:

When inspecting the battery, be sure the breather pipe is routed correctly. If the vent tube touches the frame or exits in such a way as to cause battery electrolyte or gas to exit onto the frame, structural and cosmetic damage to the motorcycle can occur.

WARNING:

Battery electrolyte is poisonous and dangerous, causing severe burns, etc. Contains sulfuric acid. Avoid contact with skin, eyes or clothing.

Antidote: EXTERNAL-Flush with water. INTERNAL-Drink large quantities of water or milk. Follow with milk of magnesia, beaten egg, or vegetable oil. Call physician immediately.

Eyes: Flush with water for 15 minutes and get prompt medical attention. Batteries produce explosive gases. Keep sparks, flame, cigarettes, etc. away, ventilate when charging or using in enclosed space. Always shield eyes when working near batteries.

KEEP OUT OF REACH OF CHILDREN.

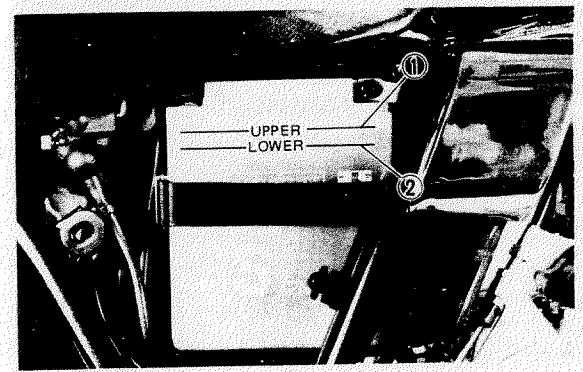
Replenishing the battery fluid

A poorly maintained battery will deteriorate quickly. The battery fluid should be checked at least once a month.

1. The level should be between the upper and lower level marks. Use only distilled water if refilling is necessary.

WARNING:

Battery fluid on the chain can cause premature failure and a possible accident.



1. Upper level 2. Lower level

CAUTION:

Normal tap water contains minerals which are harmful to a battery; therefore, refill only with distilled water.

2. When the motorcycle is not to be used for a month or longer, remove the battery and store it in a cool, dark place. Completely recharge the battery before reusing.
3. If the battery is to be stored for a longer period than the above, check the specific gravity of the fluid at least once a month and recharge the battery when it is too low.
4. Always make sure the connections are correct when putting the battery back in the motorcycle.
   Make sure the breather pipe is properly connected and is not damaged or obstructed.

Replacing the headlight bulb

This motorcycle is equipped with a sealed beam headlight. If the headlight burns out, ask your Yamaha dealer or other qualified mechanic to replace and adjust the unit.

Headlight beam adjustment

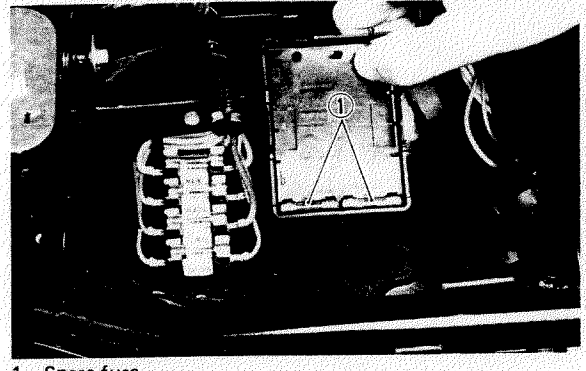
1. Horizontal adjustment:
   To adjust the beam to the right, turn the adjusting screw clockwise.
   To adjust the beam to the left, turn the screw counterclockwise.

a. Horizontal adjusting screw b. Vertical adjusting screw

2. Vertical adjustment:
   Vertical adjustment is made at the screw beneath the headlight body.
   To adjust, loosen the screw and tilt the headlight body up or down by pushing it with your hands. Tighten the screw securely after the adjustment is completed.

Fuse replacement

1. The fuse block is located under the seat.



1. Spare fuse

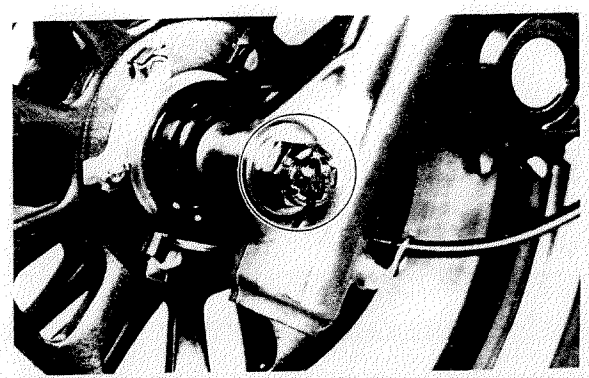
2. If any fuse is blown, turn off the ignition switch and the switch in the circuit in question and install a new fuse of proper amperage.
   Then turn on the switches, and see if the electrical device operates. If the fuse immediately blows again, consult your Yamaha dealer or other qualified mechanic.

WARNING

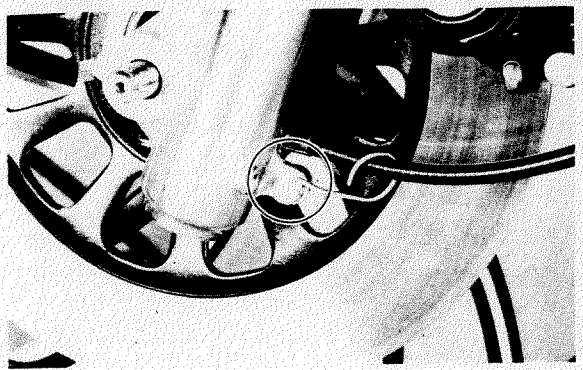
Do not use fuses of a higher amperage rating than those recommended. Substitution of a fuse of improper rating can cause extensive electrical system damage and possible fire.

Front wheel removal

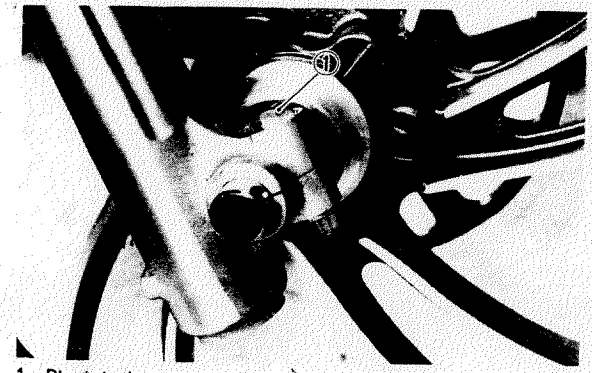
1. Place the motorcycle on the center stand.
2. Remove the cotter pin and wheel axle nut.



3. Remove the speedometer cable holder securing bolt.



4. Loosen the pinch bolt securing the axle.

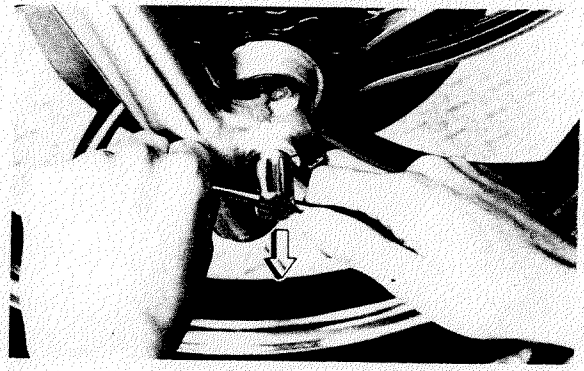


1. Pinch bolt

5. Remove the axle shaft and the front wheel. In this case, make sure the motorcycle is properly supported.

NOTE:

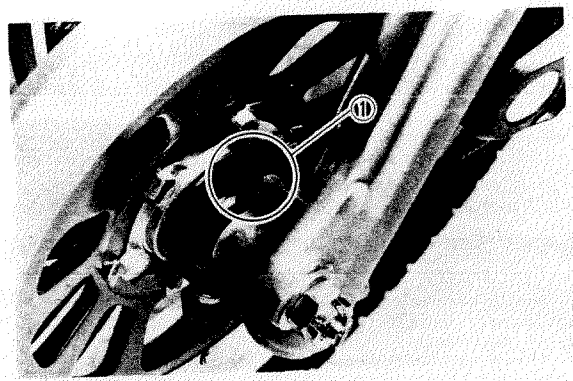
Do not depress the brake lever when the wheel is off the motorcycle as the brake pads will be forced to shut.



6. For reassembly, follow the procedure below with care:

a. Install the speedometer cable holder securing bolt.

b. Make sure the projecting portion (torque stopper) of the speedometer housing is positioned correctly.



1. Torque stopper

c. Tighten the axle nut and install a new cotter pin.

Axle nut torque: 10.5 m-kg (76.0 ft-lb)

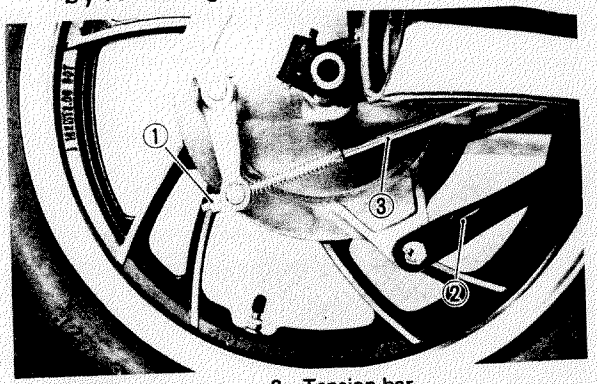
d. Before tightening the pinch bolt, compress the front forks several times to make sure of proper fork operation.

e. Tighten the axle pinch bolt.

Axle pinch bolt torque: 2.0 m-kg (14.5 ft-lb)

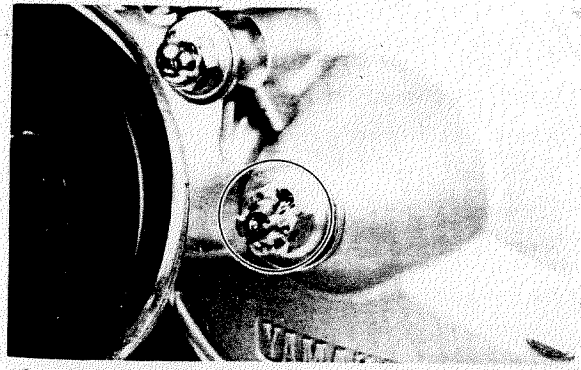
Rear wheel removal

1. Place the motorcycle on the center stand.
2. Remove the tension bar and the brake rod from the brake shoe plate. The tension bar can be removed by removing the cotter pin and nut from the tension bar bolt. The brake rod can be removed by removing the adjuster.

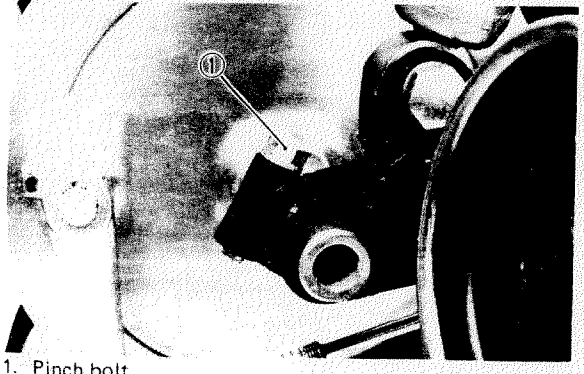


1. Adjuster
2. Brake rod
3. Tension bar

3. Remove the axle nut cotter pin and axle nut.

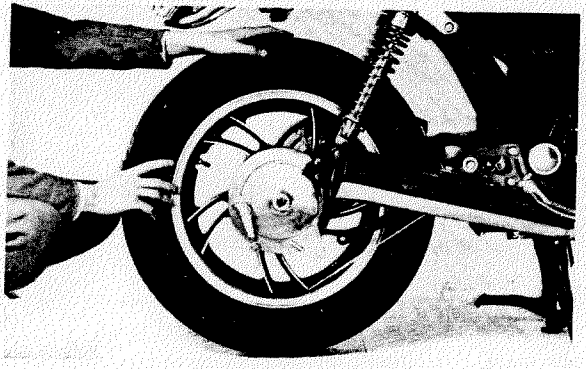


4. Loosen the rear axle pinch bolt and pull out the rear axle.



1. Pinch bolt

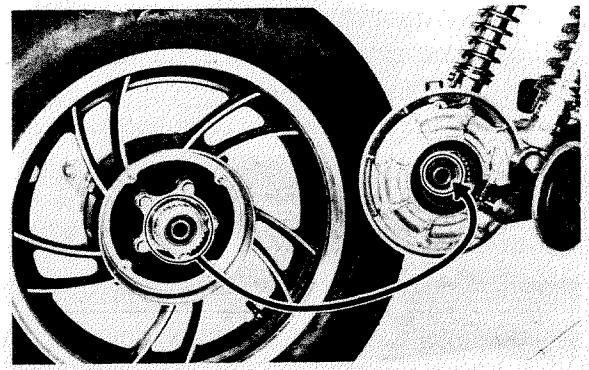
5. Move the wheel to the right side to separate it from the final gear cases and remove the rear wheel.



6. To install the rear wheel, reverse the removal procedure.

NOTE:

Before installing the rear wheel, apply a light coating of lithium base grease to the final gear case splines. When installing the rear wheel, be sure the splines on the wheel hub fit into the final gear case.



Tightening torque:
Axle nut: 10.5 m-kg (76.0 ft-lb)
Axle pinch bolt: 0.6 m-kg (4.5 ft-lb)

CAUTION:
Always use a new cotter pin on the rear axle nut.

7. Adjust the rear brake.

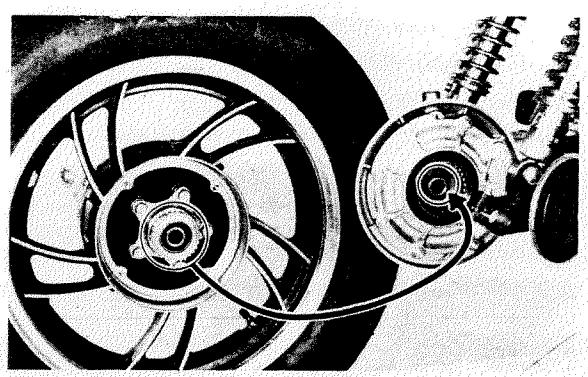
Carburetor adjustment:
The carburetor is a vital part of the engine and its emission control system. Adjusting should be left to a Yamaha dealer or other qualified mechanic with the professional knowledge, specialized data and, equipment to do so properly.

Troubleshooting

Although Yamaha motorcycles are given a rigid inspection before shipment from the factory, trouble may occur during operation. If this happens check the motorcycle in accordance with the procedures given in the following chart. If repair is necessary, ask a qualified mechanic such as your Yamaha dealer for assistance. The skilled technicians at your Yamaha dealer are trained and equipped to perform the necessary maintenance and repair work. For replacement parts,

Yamaha recommends you use Genuine Yamaha Parts, or parts you know are equivalent in quality.

Any problem in the fuel, compression, or ignition system can cause poor starting, excessive emissions, engine damage, or loss of power while riding. The troubleshooting chart describes a quick and easy series of system checks to locate the problem.



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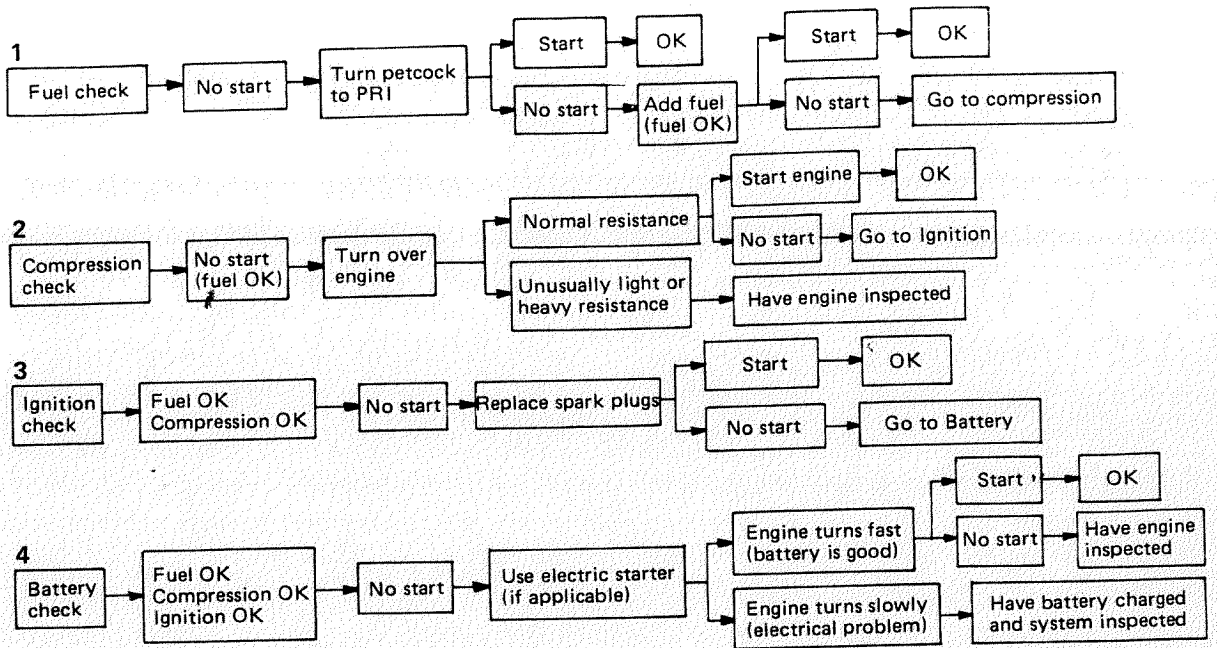
Troubleshooting chart



CLEANING AND STORAGE

A. CLEANING

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

1. Before cleaning the motorcycle:
   a. Block off end of exhaust pipe to prevent water entry; a plastic bag and strong rubber band may be use.
   b. Make sure spark plug and gas cap are properly installed.
2. If engine case is excessively greasy, apply degreaser with a paint brush. Do not apply degreaser to wheel axles.
3. Rinse dirt and degreaser off with a garden hose, using only enough hose pressure to do the job. Excessive hose pressure may cause water seepage and contamination of wheel bearings, front forks, brake calipers, and transmission seals. Many expensive repair bills have resulted from improper use of high pressure detergent applications such as those available in coin-operated car washes.
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 motorcycle off immediately with clean water and dry all surfaces with a chamois, clean towel, or soft absorbent cloth.
6. Chrome-plated parts such as handlebars, fenders, forks, etc., may be further cleaned with automotive chrome cleaner.
7. Clean the seat with a vinyl upholstery cleaner to keep the cover pliable and glossy.

8. Automotive-type wax may be applied to all painted and chrome-plated surfaces. Avoid combination cleaner-waxes. Many contain abrasives which may mar paint or protective finish on the fuel tank and side covers.
9. After finishing, start the engine immediately and allow to idle for several minutes.

B. STORAGE

Long term storage (60 days or more) of your motorcycle will require some preventive procedures to insure against deterioration.

After cleaning the motorcycle thoroughly, prepare for storage as follows:

1. Drain fuel tank, fuel lines, and carburetor float bowl.
2. Remove empty fuel tank, pour a cup of 10W/30 or 20W/40 motor oil in tank, shake the tank to coat the inner surfaces thoroughly and drain off excess the oil. Reinstall the tank.
3. Remove the spark plugs. Pour about one tablespoon of 10W/30 or 20W/40 motor oil in each spark plug hole and reinstall the spark plugs. Crank the engine over several times (with the ignition off) to coat the cylinder walls with oil.
4. Lubricate all control cables.
5. Block up the frame to raise both wheels off the ground.
6. Tie a plastic bag over the exhaust pipe outlet to prevent moisture entering.
7. If storing in humid or salt-air atmosphere, coat all exposed metal surfaces with a light film of oil. Do not apply oil to any rubber parts or the seat cover.
8. Remove the battery and charge it. Store it in a dry place and recharge it once a month. Do not store the battery in an excessively warm or cold place (less than 0° C (32° F) or more than 32° C (90° F)).

MISCELLANEOUS

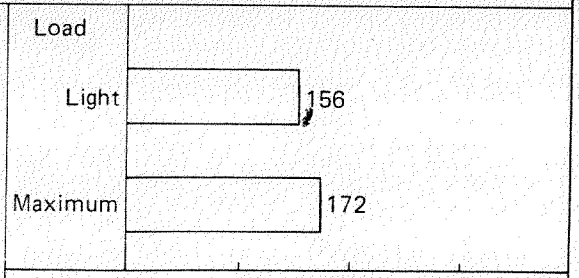
Consumer information

STOPPING DISTANCE

These figures indicate braking performance that can be met or exceeded by the vehicles to which they apply, without locking the wheels, under different conditions of loading and with partial failures of the braking system. The information presented represents results obtainable by skilled drivers under controlled road and vehicle conditions and the information may not be correct under other conditions.

Description of vehicles to which this table applies.: Yamaha motorcycle XJ650G

A. Fully Operational Service Brake



Stopping distance in feet from 60 mi/h

NOTE:
The statement above is required by U.S. Federal law. "Partial failures" of the braking system do not apply to this chart.

ACCELERATION AND PASSING ABILITY

These figures indicate passing times and distances that can be met or exceeded by the vehicles to which they apply, in the situations diagrammed below.

The low-speed pass assumes an initial speed of 20 mi/h and a limiting speed of 35 mi/h. The high-speed pass assumes an initial speed of 50 mi/h and a limiting speed of 80 mi/h.

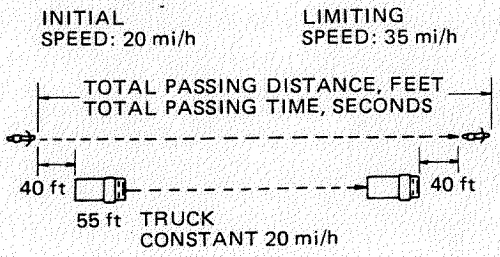
NOTICE: The information presented represents results obtainable by skilled drivers under controlled road and vehicle conditions, and the information may not be correct under other conditions.

Description of vehicles to which this table applies: Yamaha motorcycle XJ650G

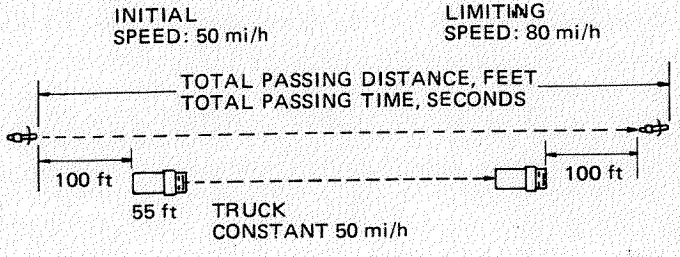
Summary table

Low-speed pass	353.0 feet: 7.15 seconds
High-speed pass	883.4 feet: 8.4 seconds

LOW-SPEED



HIGH-SPEED



SPECIFICATIONS

MODEL	XJ650G
Dimension:	
Overall length	2,165 mm (85.2 in)
Overall width	860 mm (33.9 in)
Overall height	1,180 mm (46.5 in)
Wheelbase	1,445 mm (56.9 in)
Minimum road clearance	150 mm (5.9 in)
Weight:	
Net*	203 kg (447 lb)
Performance:	
Minimum turning radius	2,700 mm (106.3 in)
Climbing capacity	30°
Engine	
Type	4 stroke, gasoline, air-cooled, DOHC
Engine model	4H7
Cylinder	4-cylinder in-line, Forward inclined
Displacement	653 cc (39.85 cu.in)
Bore x stroke	63.0 x 52.4 mm (2.480 x 2.063 in)
Compression ratio	9.2 : 1
Starting system	Electric starter

MODEL	XJ650G
Ignition system	Battery ignition (Full transistor ignition)
Fuel tank capacity	13 lit (3.4 US gal)
Engine oil quantity	Total amount: 3.2 lit (3.4 US qt) With oil filter replacement: 2.65 lit (2.8 US qt) Periodic oil change: 2.35 lit (2.5 US qt)
Lubricating system	Wet sump
Battery type/capacity	12N12A-4A/12V, 12AH
Generator	A.C. generator
Spark plug	BP7ES (NGK) or W22EP (ND)
Carburetor	HSC32
Air cleaner	Dry type element
Clutch type	Wet, multiple-disc
Transmission:	
Primary reduction system	Gear
Primary reduction ratio	97/58 (1.672)
Secondary reduction system	Shaft drive
Secondary reduction ratio	49/36 x 19/18 x 32/11 = 4.180
Gear box type	Constant mesh, 5-speed forward
Operation system	Left foot operation
Gear ratio: First	35/16 (2.187)
Second	30/20 (1.500)
Third	30/26 (1.153)
Fourth	28/30 (0.933)
Fifth	26/32 (0.812)

MODEL		XJ650G
Chassis:		
Frame type		Tubular, double-cradle
Steering:	Caster	29°
	Trail	124 mm (4.88 in)
Tire size:	Front	3.25H19-4PR Tubeless
	Rear	130/90-16 67H Tubeless
Braking system:	Front	Disc brake/Right hand operation
	Rear	Drum brake/Right foot operation
Suspension:	Front	Telescopic fork
	Rear	Swing arm
Shock absorber:	Front	Coil spring, oil damper
	Rear	Coil spring, oil damper
Electrical:		
Headlight		12V, 50W/40W
Tail/brake light		12V, 3CP/32CP (8W/27W)
Flasher light		12V, 32CP (27W) x 4
Pilot lights:	TURN	12V, 3.4W
	OIL	12V, 3.4W
	NEUTRAL	12V, 3.4W
	HIGH BEAM	12V, 3.4W
Meter light		12V, 3.4W x 2
License light		12V, 3CP (8W)

WARRANTY INFORMATION

Please refer to your copy of the Yamaha Owner's Warranty Guide* for details of the warranty offered on your new Yamaha.

The Warranty Guide contains the warranty policy, and explanation of the warranty, and other important information. Becoming familiar with these policies will be to your advantage in making the best use of Yamaha's warranty programs.

There are certain requirements which you must meet in order to qualify for warranty coverage. FIRST, your new Yamaha must be operated and maintained properly, as explained in this manual. If you have any questions about any procedure in this manual, please consult your dealer. ABUSE AND NEGLECTED MAINTENANCE MAY LEAD TO MECHANICAL FAILURES WHICH CANNOT BE COVERED UNDER WARRANTY.

SECOND, IF ANY PROBLEMS OCCUR WHICH YOU FEEL SHOULD BE COVERED UNDER WARRANTY, NOTIFY YOUR DEALER IMMEDIATELY. Don't delay, as small problems left unrepaired can become large problems which may not be covered under warranty.

We recommend that the Warranty Guide be used as a folder in which you may keep your registration and other important documents related to your new Yamaha.

* The Yamaha Owner's Warranty Guide is to be supplied by your Yamaha dealer at the time of purchase. If you did not receive one, or have lost yours, you may obtain extra copies upon request from your Yamaha dealer or by writing to:

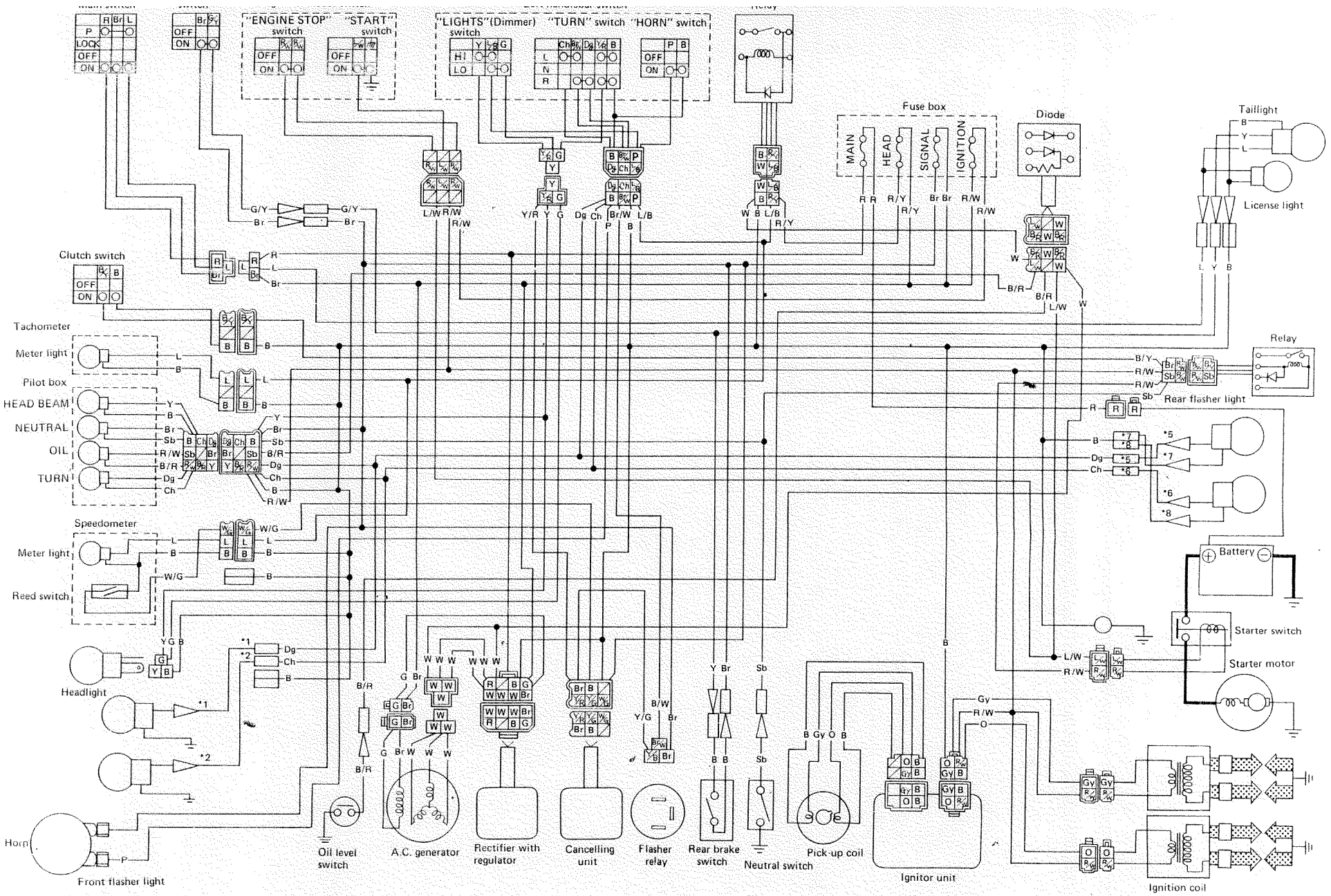
YAMAHA MOTOR CORPORATION, U.S.A.
6555 KATELLA AVE.
P.O. Box 6555
CYPRESS, CALIFORNIA 90630
ATTN: WARRANTY DEPARTMENT

MAINTENANCE RECORD

Copies of work orders and/or receipts for parts you purchase and install will be required to document maintenance done in accordance with the emission warranty. The chart below is printed only as a reminder to you that the maintenance work is required. It is not acceptable proof of maintenance work.

MAINTENANCE INTERVAL	DATE OF SERVICE	MILEAGE	SERVICING DEALER NAME AND ADDRESS	SERVICING DEALER SIGNATURE
1,000 km or 600 mi or 1 mo.				
5,000 km or 3,000 mi or 7 mo.				
9,000 km or 5,600 mi or 13 mo.				
13,000 km or 8,100 mi or 19 mo.				
17,000 km or 10,600 mi or 25 mo.				

MAINTENANCE INTERVAL	DATE OF SERVICE	MILEAGE	SERVICING DEALER NAME AND ADDRESS	SERVICING DEALER SIGNATURE
21,000 km or 13,000 mi or 31 mo.				
25,000 km or 15,500 mi or 37 mo.				
29,000 km or 18,000 mi or 43 mo.				
33,000 km or 20,500 mi or 49 mo.				
37,000 km or 23,000 mi or 55 mo.				
41,000 km or 25,500 mi or 61 mo.				



COLOR CODE

Dg :	Dark green	Br :	Brown	L/W :	Blue/White
Ch :	Chocolate	O :	Orange	Br/W :	Brown/White
B :	Black	L :	Blue	Y/G :	Yellow/Green
Y :	Yellow	P :	Pink	B/W :	Black/White
Lg :	Light green	L/B :	Blue/Black	W/G :	White/Green
G :	Green	R/W :	Red/White	W/R :	White/Red
W :	White	R/Y :	Red/Yellow	G/Y :	Green/Yellow
Sb :	Sky blue	L/Y :	Blue/Yellow	Y/R :	Yellow/Red
R :	Red	L/G :	Blue/Green	Y/B :	Yellow/Black