YAMAHA

E

XJ600

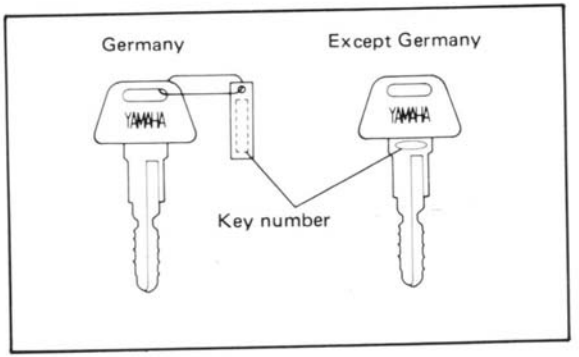
OWNER'S MANUAL

51J-28199-80

IDENTIFICATION NUMBERS RECORD

1. KEY NUMBER:

2. FRAME NUMBER AND ENGINE NUMBER:



Your key identification number is stamped on your key as shown in the following illustration.
Record this number in the space provided for reference if you need a new key.

Record your frame and engine number in the spaces provided to assist you in ordering spare parts from your Yamaha dealer or for reference in case your vehicle is stolen. (See page 2-1)

A-200

INTRODUCTION

E

Congratulations on your purchase of the Yamaha XJ600. This model is the result of Yamaha's vast experience in the production of fine sporting, touring, and pacesetting racing machines. It represents the high degree of craftsmanship and reliability that have made Yamaha a leader in these fields.

This manual will give you an understanding of the operation, inspection, and basic maintenance of this motorcycle. If you have any questions about the operation or maintenance of your motorcycle, please consult a Yamaha dealer.

U-001

NOTE:

Some data in this manual may become outdated due to future improvement on this model. If you have any questions about this manual or your motorcycle, please consult a Yamaha dealer.

TECHNICAL PUBLICATIONS
SERVICE DIVISION
MOTORCYCLE OPERATIONS
YAMAHA MOTOR CO., LTD.

A-101
U-601

WARNING:

PLEASE READ THIS MANUAL CAREFULLY AND COMPLETELY BEFORE OPERATING THIS MOTORCYCLE.

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

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

CAUTION:

A CAUTION indicates special procedures that must be followed to avoid damage to the motorcycle.

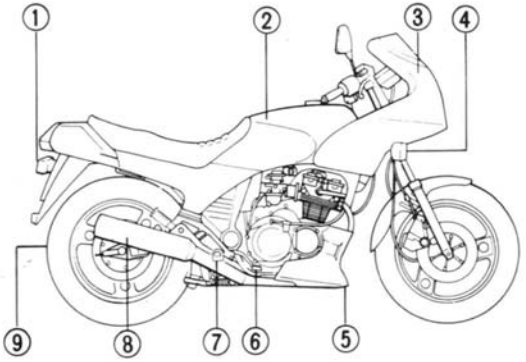
WARNING:

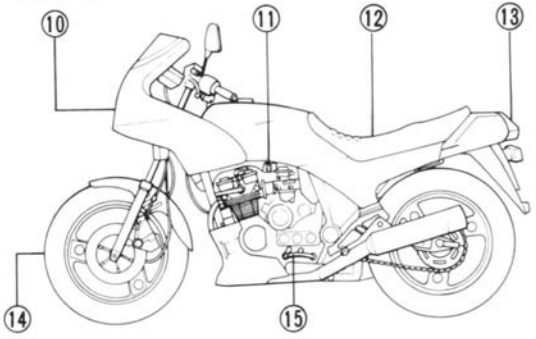
A WARNING indicates special procedures that must be followed to avoid injury to a motorcycle operator or person inspecting or repairing the motorcycle.

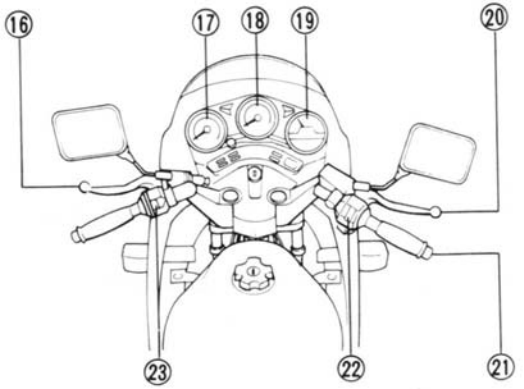
U-000

NOTE:
This manual should be considered a permanent part of this motorcycle and should remain with it even if the motorcycle is subsequently sold.

DESCRIPTION







1. Rear flasher light
2. Fuel tank
3. Cowling
4. Front flasher light
5. Lower cowl
6. Brake pedal
7. Footrest
8. Silencer
9. Rear wheel
10. Headlight
11. Fuel cock
12. Seat
13. Tail/Brake light
14. Front wheel
15. Change pedal
16. Clutch lever
17. Speedometer
18. Tachometer
19. Fuel meter
20. Brake lever
21. Throttle grip
22. Right handlebar switch
23. Left handlebar switch

U-002

NOTE:

The motorcycle you have purchased may differ slightly from those shown in the photographs.

A-600

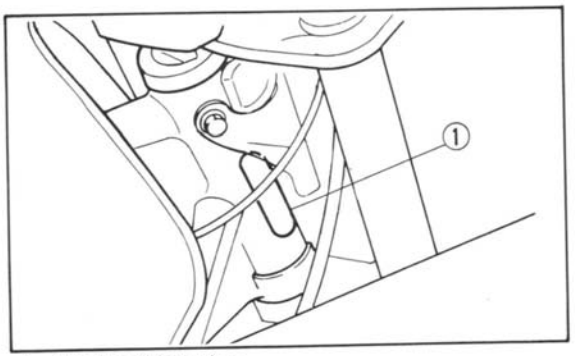
MOTORCYCLE IDENTIFICATION

E

A-602

Frame serial number

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

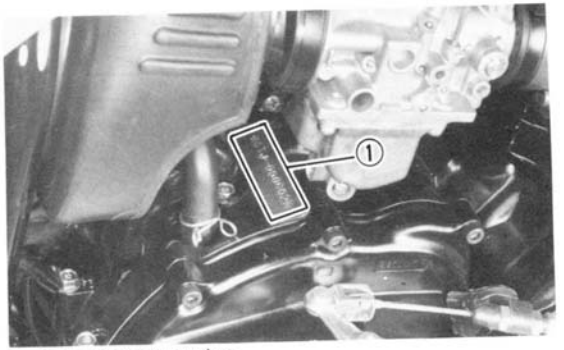


1. Frame serial number

A-701

Engine serial number

The engine serial number is stamped into the right side of the engine.



1. Engine serial number

U-003

NOTE:

The first three digits of these numbers are for model identification; the remaining digits are the unit production number. Keep a record of these numbers for reference when ordering parts from a Yamaha dealer.

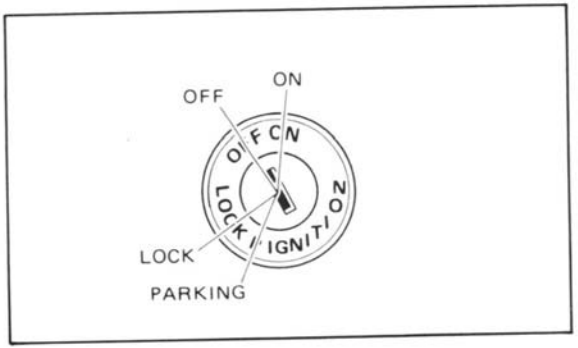
B-000

CONTROL FUNCTIONS

B-001

Main switch

The main switch controls the ignition and lighting systems; its operation is described below.



B-005

ON:

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

B-006

OFF:

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

B-007

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 3-10) for proper operation.

B-012

PARKING:

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

U-007

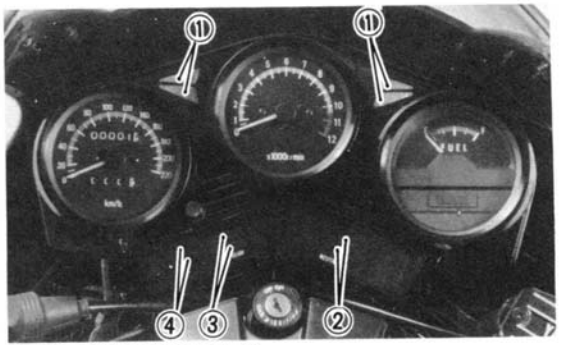
NOTE:

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

E

B-100

Indicator lights



1. "TURN" indicator light
2. "NEUTRAL" indicator light
3. "HIGH BEAM" indicator light
4. "OIL LEVEL" indicator light

B-101

"TURN" indicator light (orange):
This indicator flashes when the turn switch is "ON".

B-102

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

B-103

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

B-106

"OIL LEVEL" indicator light (red):
This indicator comes on when the oil level is low. This light circuit can be checked by the following procedure.

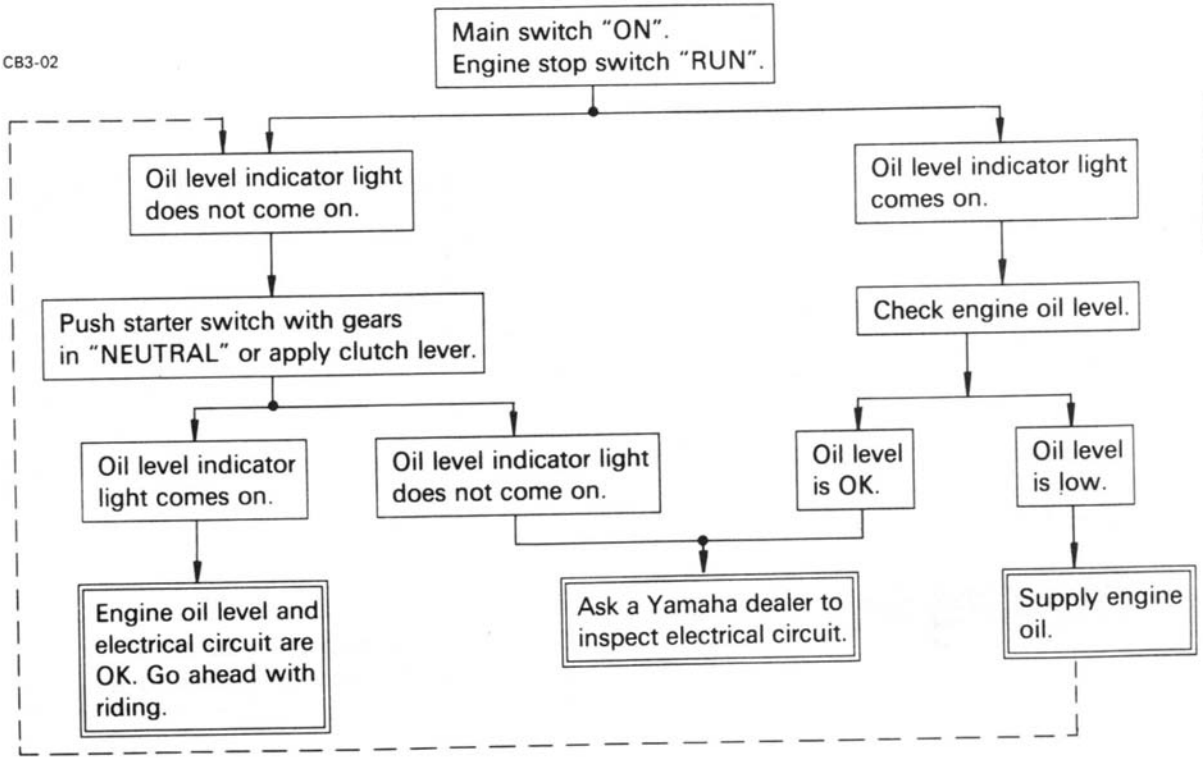
U-300

CAUTION:

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

Oil level indicator circuit check

CB3-02



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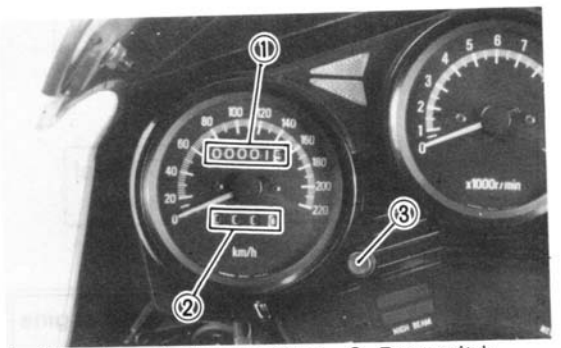
B-404

Speedometer

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

E

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



1. Odometer 2. Trip odometer 3. Reset switch

B-402

Tachometer

This model is equipped with an electric tachometer so the rider can monitor the engine speed and keep it within the ideal power range.

1. Red zone

U-304

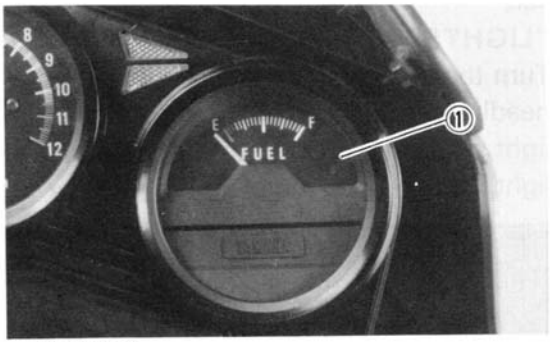
CAUTION:

Do not operate in the red zone
Red zone: 10,500 r/min and above

B-502

Fuel meter

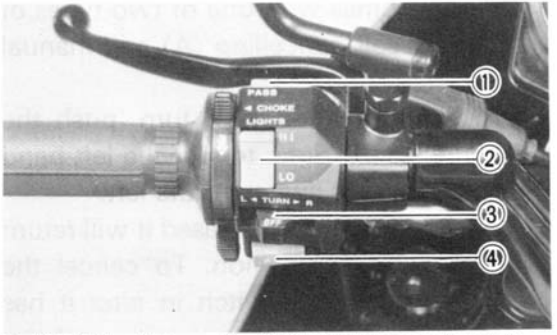
This model is equipped with an electric fuel meter so the rider can monitor the fuel level in the fuel tank. When the needle indicates "E" (Empty), about 3.8 L (0.8 Imp gal, 1.0 US gal) remain in the fuel tank.



1. Fuel meter

B-600

Handlebar switches:



1. "PASS" switch
2. "LIGHTS" (Dimmer) switch
3. "TURN" switch
4. "HORN" switch

B-610

"PASS" switch

When you are passing a vehicle ahead, the passing light switch should be depressed so that the headlight gives a signal to the rider.

B-601

"LIGHTS" (Dimmer) switch

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

E

B-604

"TURN" signal switch

This model comes with one of two types of turn signals: self-cancelling (A) and manual (B).

E

A. 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 for 10 seconds or 150 meters (490 feet) whichever is greater.
The self-cancelling mechanism only operates when the motorcycle is moving; thus the signal will not self-cancel while you are stopped at an intersection.

B. 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.

B-602

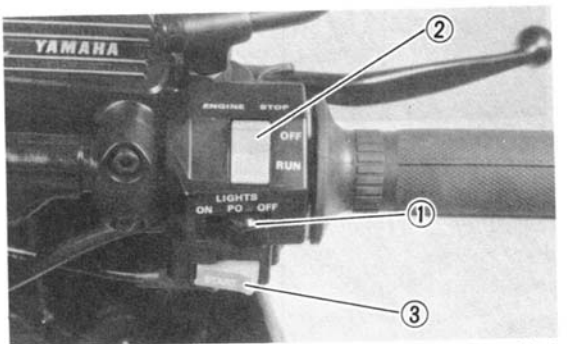
"HORN" switch

Press the switch to sound the horn.

B-612

"LIGHTS" switch

Turn the light switch to "ON" to turn on the headlight, taillight, and meter lights. Turn the light switch to "PO" to turn on the auxiliary light, taillight, and meter lights.



1. "LIGHTS" switch
2. "ENGINE STOP" switch
3. "START" switch

B-609

"ENGINE STOP" switch

The engine stop switch is a safety device for use in an emergency such as when the motorcycle overturns or when trouble occurs in the throttle system. The engine will not run when the engine stop switch is turned to "OFF." In case of emergency, turn the switch to "OFF."

B-607

"START" switch

To start the engine, push the starter.

U-307

CAUTION:

See starting instructions prior to starting engine.

B-700

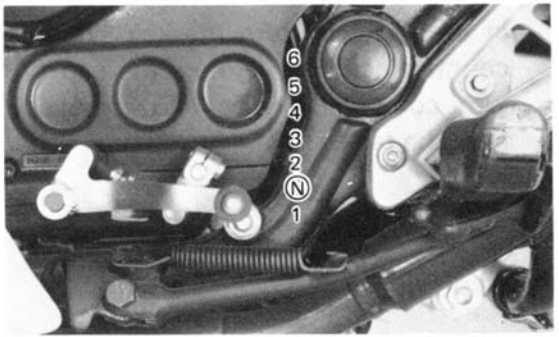
Clutch lever

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 a description of the starting circuit cut-off switch.)

B-800

Change pedal

The gear ratios of the constant-mesh 6-speed transmission are ideally spaced. The gears can be shifted by using the change pedal on the left side of the engine.



N. Neutral

E

B-900

Front brake lever

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

B-901

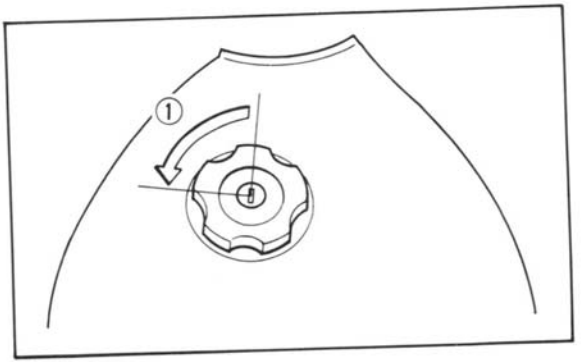
Rear brake pedal

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

C-003

Fuel tank cap

1. To remove the tank cap, insert the key in the lock and turn the key 1/4 turn counterclockwise. Rotate the cap 1/3 turn counterclockwise and remove it from the tank.



1. Open

U-013

NOTE:

The tank cap cannot be reinstalled unless it is unlocked. The key must remain in the cap until the cap is properly installed and locked onto the fuel tank.

2. To reinstall the tank cap, set the cap in the filler neck and rotate the cap 1/3 turn clockwise. Lock the cap by turning the key 1/4 turn clockwise, and remove the key.

U-611

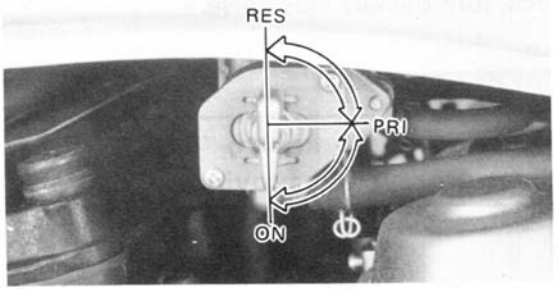
WARNING:

Be sure the cap is properly installed and locked in place before riding the motorcycle.

C-102

Fuel cock

The negative pressure fuel cock supplies fuel from the tank to the carburetors and also filters the fuel. The fuel cock 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", start the engine, then switch to "RES". FILL THE TANK AT THE FIRST OPPORTUNITY. BE SURE TO SET THE LEVER TO "ON" AFTER REFUELING.

U-014

NOTE:

The fuel cock operates on vacuum from the engine when set at "ON" or "RES." If the line connecting the cock to the carburetor intake manifold is not connected or has a leak, the cock 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 "ON" after starting the engine.

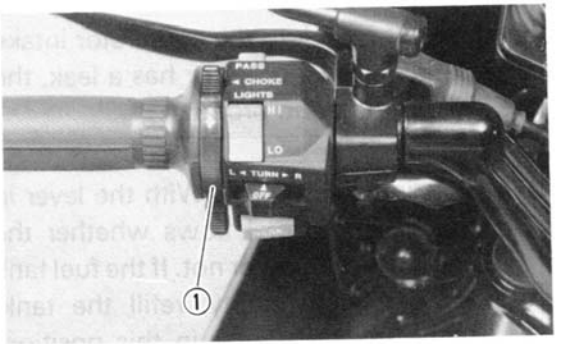
E

C-204

Starter lever (CHOKE)

When cold, the engine requires a richer air-fuel mixture for starting. A separate starter circuit supplies this mixture. The starter on this model is a 2-position type:

1. Turn the lever projection fully toward you.
   – When starting a cold engine.
2. Turn the lever projection half-way back.
   – When warming up the engine.



1. Starter lever

U-016

NOTE:

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

C-300

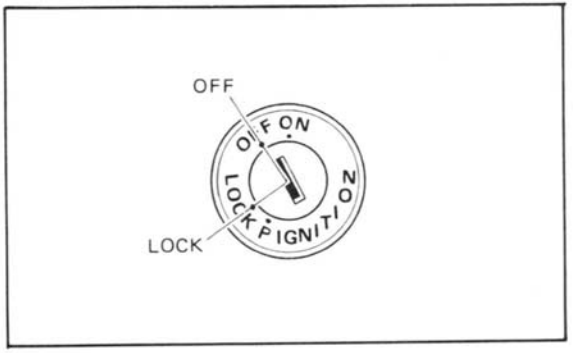
Steering lock

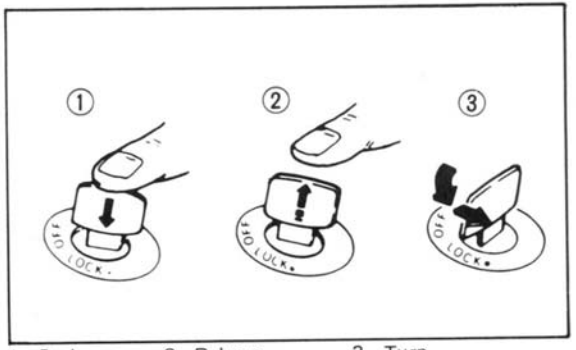
The steering is locked when the main switch is turned to "LOCK." To lock the steering, turn the handlebars all the way to the left or right. With the key at "OFF," push it into the main switch, turn the key counterclockwise to "LOCK," and remove the key. To release the lock, turn the key clockwise.

U-614

WARNING:

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

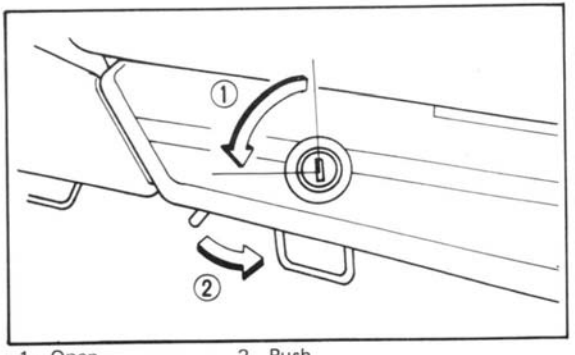




1. Push 2. Release 3. Turn

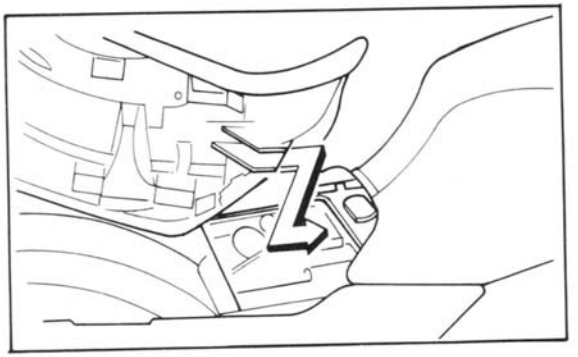
Seat lock

To open the seat lock, insert the key in the lock and turn it counterclockwise. Push down the levers on both sides. When reinstalling the seat, insert the lobes on the seat front into the receptacles on the frame, then push down the seat at the rear. After making sure the seat is securely fitted, turn the key clockwise to the center position.



1. Open 2. Push

E



C-500

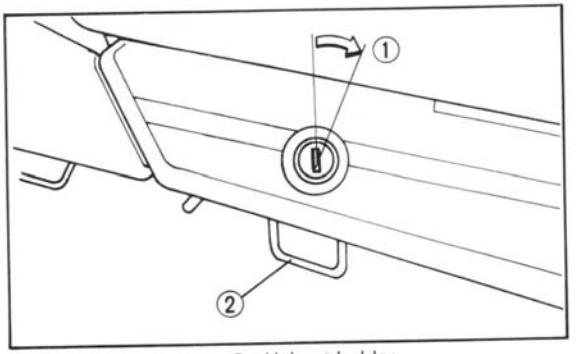
Helmet holder

To open the helmet holder, insert the key in the lock and turn it as shown. To lock the helmet holder, replace the holder in its original position.

U-615

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.

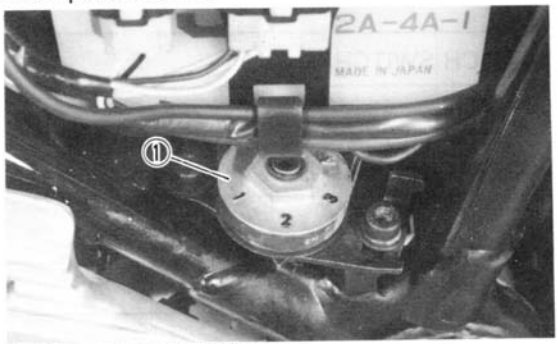


1. Open
2. Helmet holder

C-902

Rear shock absorber

The spring preload of the rear shock absorber can be adjusted to suit motorcycle's load (ex: optional accessories etc.) and riding conditions. Refer to page 6-28 for proper adjustment procedures.



1. Spring preload adjuster

D-301

Sidestand (for Austria, Denmark, Finland, Norway, England, Germany, Switzerland, Sweden)

This model is equipped with an ignition circuit cut-off system. The motorcycle must not be ridden when the sidestand is down. The sidestand is located on the left side of the frame. (Refer to page 5-1 for an explanation of this system.)

U-689

WARNING:

This motorcycle must not be operated with the sidestand in the down position. If the stand is not properly retracted, it could contact the ground and distract the operator resulting in a possible loss of control. Yamaha has designed into this motorcycle a lockout system to assist the operator in fulfilling his responsibility of retracting the sidestand. Please check carefully the operating instructions listed below and if there is any indication of a malfunction, you must return the motorcycle to a Yamaha dealer immediately for repair.

E

D-302

Sidestand/clutch switch operation check
(for Austria, Denmark, Finland, Norway, England, Germany, Switzerland, Sweden)

E

Check the operation of the sidestand switch and clutch switch against the information below.

U-690

WARNING:

Be sure to use the centerstand during this inspection.

CD3-01

TURN MAIN SWITCH TO "ON" AND ENGINE STOP SWITCH TO "RUN".

↓

TRANSMISSION IS IN GEAR AND SIDESTAND IS UP.

↓

PULL IN CLUTCH LEVER AND PUSH STARTER SWITCH.

↓

ENGINE WILL START.

↓

CLUTCH SWITCH IS OK.

↓

SIDESTAND IS DOWN.

↓

ENGINE WILL STALL.

↓

SIDESTAND SWITCH IS OK.

U-691

WARNING:

If improper operation is noted, consult a Yamaha dealer immediately.

PRE-OPERATION CHECKS

Before using this motorcycle, check the following points:

Item	Routine	Page
Front and rear brakes	Check operation, free play, fluid level, and fluid leakage. Top-up with DOT # 3 brake fluid if necessary.	4-3, 6-14 ~ 6-19
Clutch	Check operation, condition and free play. Adjust if necessary.	4-4, 6-19 ~ 6-20
Throttle grip/Housing	Check for smooth operation. Lubricate/Adjust if necessary.	4-4, 6-12 ~ 6-13, 6-23
Engine oil	Check oil level/add oil as required.	4-4, 6-7 ~ 6-9
Drive chain	Check chain slack and condition. Adjust if necessary.	4-5, 6-20 ~ 6-22
Wheels/Tires	Check tire pressure, wear, damage.	4-5 ~ 4-9, 6-35 ~ 6-39
Control/Meter cables	Check for smooth operation. Lubricate if necessary.	6-23
Brake and change pedal shafts	Check for smooth operation. Lubricate if necessary.	6-23
Brake and clutch lever pivots	Check for smooth operation. Lubricate if necessary.	6-24
Center and sidestand pivots	Check for smooth operation. Lubricate if necessary.	6-24
Fittings/fasterners	Check all chassis fittings and fasteners. Tighten/Adjust, if necessary.	4-9, 6-6

E

Item	Routine	Page
Fuel tank	Check fuel level/top-up as required.	4-10 ~ 4-11
Lights and signals	Check for proper operation.	4-9
Battery	Check fluid level, top-up with distilled water if necessary.	4-9, 6-29 ~ 6-31

E

NOTE:

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

WARNING:

If any item in the Pre-Operation Check is not working properly, have it inspected and repaired before operating the motorcycle.

E-103

Brakes (See page 6-14 for more detail)

1. Brake lever and brake pedal
   Check for correct free 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. If the free play is incorrect, adjust it.

U-619

WARNING:

A soft, spongy feeling in the brake lever (and/or brake pedal) indicates a failure in the brake system. Do not operate the motorcycle until the failure in the brake system is corrected. Ask a Yamaha dealer for immediate repairs. A soft, spongy feeling could indicate a hazardous condition in the brake system.

2. Brake fluid
   Check the brake fluid level.
   Add fluid if necessary.

Recommended brake fluid: DOT#3

3. Check the disc pads.
   Refer to page 6-17.

U-022

NOTE:

When this brake service is necessary, ask a Yamaha dealer.

E-107

Brake fluid leakage

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

U-625

WARNING:

If brake fluid leakage is found, ask a Yamaha dealer for immediate repairs. Such leakage could indicate a hazardous condition.

E

E-200

Clutch (See page 6-19 for more detail)

Check the free play in the clutch lever, and make sure the lever operates properly. If the free play is incorrect, adjust it.

E

E-301

Throttle grip (See page 6-12 for more detail)

Turn the throttle grip to see if it operates properly, and check the free play. Make sure the grip returns by spring force when released. Ask a Yamaha dealer to make any necessary adjustments.

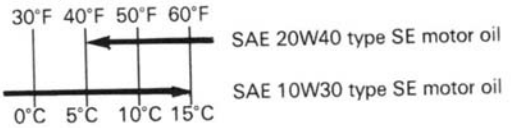
E-401

Engine oil (See page 6-7 for more detail)

Make sure the engine oil is at the specified level. Add oil as necessary.

CE4-02

Recommended oil:



Oil quantity:

Total amount:
3.0 L (2.6 Imp qt, 3.2 US qt)

Periodic oil change:
2.3 L (2.0 Imp qt, 2.4 US qt)

With oil filter replacement:
2.6 L (2.3 Imp qt, 2.7 US qt)

U-080

NOTE:

Recommended engine oil classification; API Service "SE", "SF" type or equivalent (e.g. "SF-SE", "SF-SE-CC", "SF-SE-SD" etc.).

E-500

Chain (See page 6-20 for more detail)

Check the general condition of the chain and check the chain slack before every ride. Lubricate and adjust the chain as necessary.

E-905

Tires

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

1. Tire air pressure
   Always check and adjust the tire pressure before operating the motorcycle.

U-675

WARNING:

Tire inflation pressure should be checked and adjusted when the temperature of the tire equals the ambient air temperature. Tire inflation pressure must be adjusted according to total weight of cargo, rider, passenger, and accessories (fairing, saddlebags, etc. if approved for this model), and vehicle speed.

CE9-03

Basic weight: With oil and full fuel tank	208 kg (459 lb)	
Maximum load*	188 kg (414 lb)	
Cold tire pressure	Front	Rear
Up to 90 kg (198 lb) load*	177 kPa (1.8 kg/cm^2, 26 psi)	196 kPa (2.0 kg/cm^2, 28 psi)
90 kg (198 lb) ~ Maximum load*	196 kPa (2.0 kg/cm^2, 28 psi)	226 kPa (2.3 kg/cm^2, 32 psi)
High speed riding	196 kPa (2.0 kg/cm^2, 28 psi)	226 kPa (2.3 kg/cm^2, 32 psi)

*Load is the total weight of cargo, rider, passenger, and accessories.

U-677

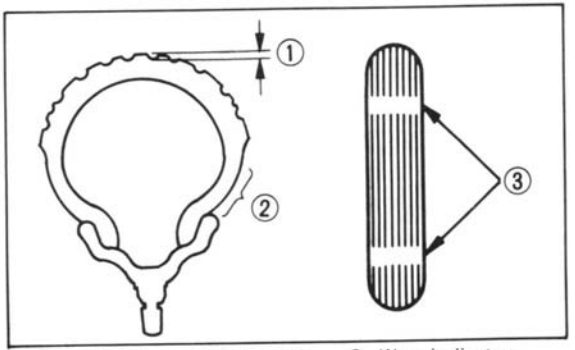
WARNING:

Proper loading of your motorcycle is important for the handling, braking, and other performance and safety characteristics of your motorcycle. Do not carry loosely packed items that can shift. Securely pack your heaviest items close to the center of the mo-

E

torcycle, and destribute the weight evenly from side to side. Properly adjust the suspension for your load, and check the condition and pressure of your tires. NEVER OVERLOAD YOUR MOTORCYCLE. Make sure the total weight of the cargo, rider, passenger, and accessories (fairing, saddlebags, etc. if approved for this model) does not exceed the maximum load of the motorcycle. Operation of an overloaded motorcycle could cause tire damage, an accident, or even injury.

2. Tire inspection
   Always check the tires before operating the motorcycle. If a tire tread shows crosswise lines (minimum tread depth), if the tire has a nail or glass fragments in it, or if the side wall is cracked, contact a Yamaha dealer immediately and have him replace the tire.



1. Tread depth 2. Side wall 3. Wear indicator

U-678

WARNING:

After extensive tests, the tires mentioned below have been approved by Yamaha motor Co., Ltd. for this model. No guarantee for handling characteristics can be given if tire combinations other than what is approved are used on this motorcycle.

The front and rear tires should be of the same manufacture and design.

CE9-02

FRONT:

Manufacture	Size	Type
Yokohama	90/90-18	F202
Michelin	90/90-18	A48TL

REAR:

Manufacture	Size	Type
Yokohama	110/90-18	R202
Michelin	110/90-18	M48TL

Minimum tire tread depth (front and rear)	1.0 mm (0.04 in)

U-679

WARNING:

It is dangerous to ride with a worn-out tire. When a tire tread begins to show lines. Have a Yamaha dealer replace the tire immediately. Brakes, tires, and related wheel parts replacement should be left to a Yamaha Service Technician.

E-940

Tubeless tires and cast wheels

This motorcycle is equipped with cast wheels designed for either tube or tubeless tires. Tubeless tires are installed as standard equipment.

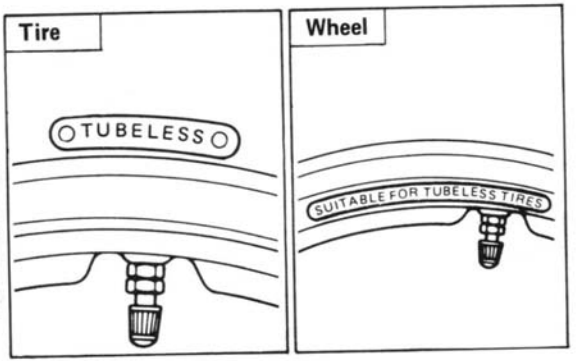
U-686

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

E



GERMANY AND AUSTRIA:
IT IS NOT ALLOWED TO USE TUBE-TYPE TIRES ON MOTORCYCLE ORIGINALLY EQUIPPED WITH TUBELESS TIRES.

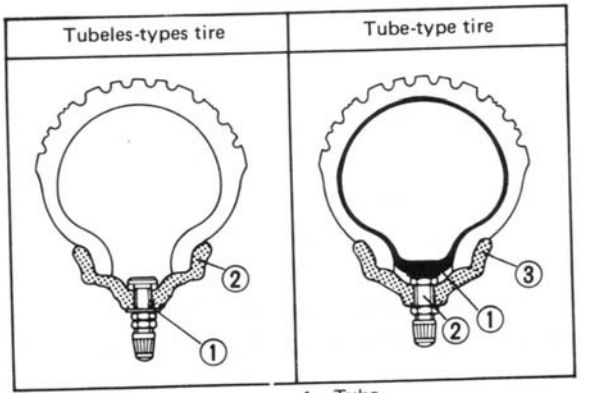
U-687

WARNING:

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

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

1. Always inspect the wheels before a ride. Check for cracks, bends, or warpage of the wheels. If any abnormal condition exists in a wheel, consult a Yamaha dealer. Do not attempt even small repairs to the wheel. If a wheel is deformed or cracked, it must be replaced.



1. Air valve
2. Cast wheel (Tubeless wheel)

1. Tube
2. Air valve
3. Cast wheel

2. Tires and wheels should be balanced whenever either one is changed or replaced. Failure to have a wheel balanced can result in poor performance, adverse handling characteristics, and shortened tire life.
3. 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 damage to the motorcycle and injury to the rider.
4. 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:
1.5 Nm (0.15 m·kg, 1.1 ft·lb)

E-850

Fittings/Fasteners

Always check the tightness of chassis fittings and fasteners before a ride. Use the chart on page 6-6 to find the correct torque.

E-700

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.

E-707

Switches

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

E-705

Battery (See page 6-29 for more detail)

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

E-800

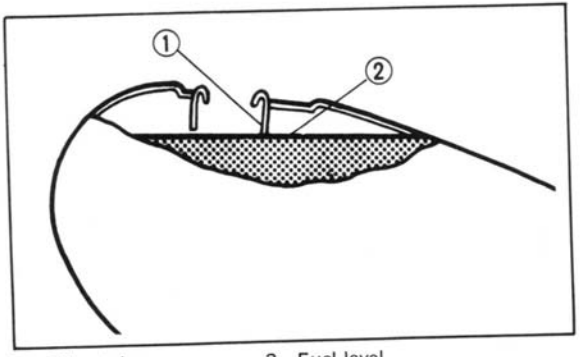
Fuel

Make sure there is sufficient fuel in the tank.

U-610

WARNING:

Do not overfill the fuel tank. Avoid spilling fuel on the hot engine. Do not fill the fuel tank above the bottom of the filler tube as shown in the illustration or it may overflow when the fuel heats up later and expands.



1. Filler tube 2. Fuel level

U-393

CAUTION:

Always wipe off the spilled fuel immediately with a dry and clean soft cloth etc. Fuel containing alcohol may erode painted surfaces or plastic parts.

For Germany only

U-400K

CAUTION:

This fuel tank is fitted with a non-vent tank cap. Always use the correct cap whenever replacements is necessary.

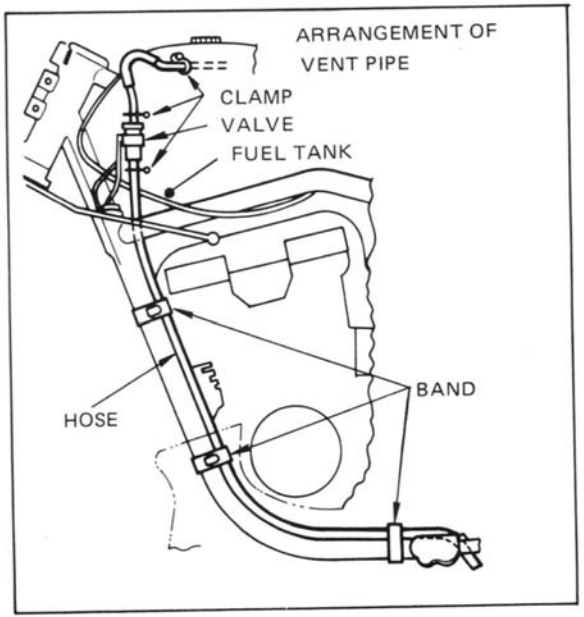
E-808K

Fuel tank breather hose (For Germany only)

This model is equipped with the fuel tank breather hose. Before using this motorcycle be sure to check the following:

1. Check hose connection.
2. Check hose for cracks or damage. Replace if damaged.

3. Make sure the bottom hose is not blocked. Clean it if necessary.



E-803

Recommended fuel: Regular gasoline
Fuel tank capacity:
Total:
19 L (4.18 Imp gal, 5.02 US gal)
Except for Germany
18.5 L (4.07 Imp gal, 4.89 US gal)
For Germany
Reserve:
2.5 L (0.55 Imp gal, 0.66 US gal)

E

F-000

OPERATION AND IMPORTANT RIDING POINTS

U-672

WARNING:

Before riding this motorcycle, become thoroughly familiar with all operating controls and their function. Consult a Yamaha dealer regarding any control or function that you do not thoroughly understand.

U-628

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 sidestand is up. Failure to retract the sidestand completely can result in a serious accident when you try to turn a corner.**

F-112

Starting and warming up a cold engine (for Austria, Denmark, Finland, Norway, England, Germany, Switzerland, Sweden)

U-028

NOTE:

This motorcycle is equipped with a starting and an ignition circuit cut-off switch.

1. The engine can be started only under the following conditions:
   a. The transmission is in neutral.
   b. The sidestand is up, the transmission is in gear, and the clutch is disengaged.
2. The motorcycle must not be ridden when the sidestand is down.

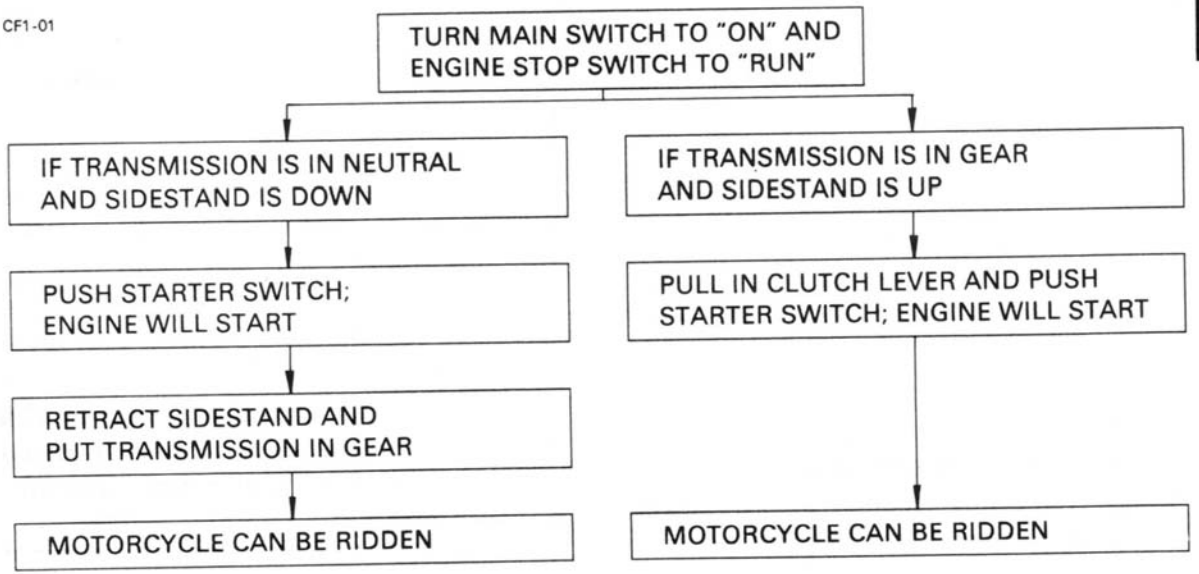
U-692

WARNING:

Before going through the following steps, check the function of the sidestand switch and clutch switch. (Refer to page 3-14.)

E

CF1-01



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

E

U-030

NOTE:

When the transmission is in neutral, the neutral indicator light (green) should be on. If the light does not come on, ask a Yamaha dealer to inspect it.

4. Turn the starter (CHOKE) lever fully toward you and completely close the throttle grip.
5. Start the engine by pushing the starter switch.

U-025

NOTE:

If the engine fails to start, release the starter switch, wait a few seconds, then try again. Each attempt should be as short as possible to preserve the battery. Do not crank the engine more than 10 seconds on any one attempt.

U-355

CAUTION:

The oil level indicator light should come on when the starter switch is pushed and should go off when the starter switch 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 switch, consult a Yamaha dealer.

6. After starting the engine, turn back the starter lever (CHOKE) to warming up position (about halfway).

U-026

NOTE:

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

7. After warming up the engine, turn off the starter lever by turning it back completely.

U-027

NOTE:

The engine is warm when it responds normally to the throttle with the starter turned off.

F-103

Starting and warming up a cold engine (except for Austria, Denmark, Finland, Norway, England, Germany, Switzerland, Sweden)

U-024

NOTE:

This model is equipped with a starting circuit cut-off switch. The engine can be started under 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 a Yamaha dealer to inspect it.
b. When the clutch is disengaged with the transmission in gear.

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

E

4. Turn the starter (CHOKE) lever fully toward you and completely close the throttle grip.
5. Start the engine by pushing the starter switch.

E

U-025

NOTE:

If the engine fails to start, release the starter switch, wait a few seconds, then try again. Each attempt should be as short as possible to preserve the battery. Do not crank the engine more than 10 seconds on any one attempt.

U-355

CAUTION:

The oil level indicator light should come on when the starter switch is pushed and should go off when the starter switch 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 switch, consult a Yamaha dealer.

6. After starting the engine, turn back the starter lever (CHOKE) to warming up position (about halfway).

U-026

NOTE:

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

7. After warming up the engine, turn off the starter lever by turning it back completely.

U-027

NOTE:

The engine is warm when it responds normally to the throttle with the starter turned off.

F-108

Starting a warm engine

The starter (CHOKE) is not required when the engine is warm.

U-314

CAUTION:

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

F-200

Shifting

The transmission lets you control the amount of power you have available at a given speed for starting, accelerating, climbing hills, etc. The use of the change pedal is shown in the illustration. (Page 3-7)

To shift into NEUTRAL, depress the change pedal repeatedly until it reaches the end of its travel (you will feel a stop when you are in first gear) then raise the pedal slightly.

U-315

CAUTION:

1. **Do not coast 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 of forced shifting and can be damaged by shifting without the clutch.**

E

F-207

Recommended shift point (For switzerland only)

The recommended shift points are shown in the table below.

E

CF2-04

	Acceleration shift point km/h (mi/h)
1st → 2nd	20 (12.5)
2nd → 3rd	30 (19)
3rd → 4th	40 (25)
4th → 5th	50 (31)
5th → 6th	60 (37)

U-079

NOTE:

When shifting two gears down from 5th to 3rd, bring your motorcycle to a speed of 35 km/h (21 mi/h).

F-300

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.

F-307

1. 0 ~ 150 km (0 ~ 90 mi):
   Avoid operation above 5,000 r/min. Stop the engine and let it cool for 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 6,000 r/min. Rev the motorcycle 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 7,000 r/min.

U-320

CAUTION:

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

4. 1,000 km (600 mi) and beyond:
   Full throttle can be used.

U-387

CAUTION:

Never let engine speeds enter the red zone.

U-322

CAUTION:

If any engine trouble should occur during the break-in period, consult a Yamaha dealer immediately.

E

F-400

Parking

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

U-630

WARNING:

The muffler and exhaust pipe are hot. Park the motorcycle in a place where pedestrians or children are not likely to touch the motorcycle.
Do not park the motorcycle on a slope or soft ground; the motorcycle may overturn.

H-000

PERIODIC MAINTENANCE AND MINOR REPAIR

E

H-004

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 maintenance and lubrication schedule chart should be considered strictly as a guide to general maintenance and lubrication intervals. YOU MUST TAKE INTO CONSIDERATION THAT WEATHER, TERRAIN, GEOGRAPHICAL LOCATIONS, AND A VARIETY OF INDIVIDUAL USES ALL TEND TO DEMAND THAT EACH OWNER ALTER THIS TIME SCHEDULE TO SHORTER INTERVALS TO MATCH HIS ENVIRONMENT. The most important points of motorcycle inspection, adjustment, and lubrication are explained in the following pages.

U-632

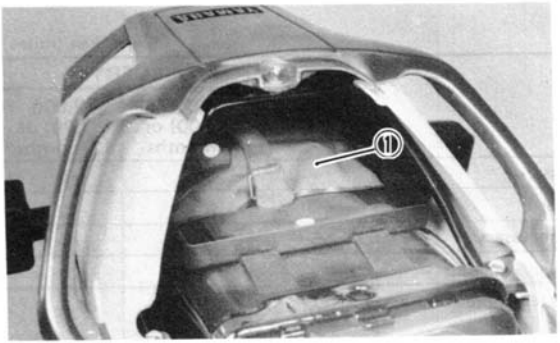
WARNING:

If you are not familiar with motorcycle service, this work should be done by a Yamaha dealer.

H-101

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; however a torque wrench is also necessary to properly tighten nuts and bolts.



1. Tool kit

U-060

NOTE:

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

U-671

WARNING:

Modifications to this motorcycle not approved by Yamaha may cause loss of performance, and render it unsafe for use. Consult a Yamaha dealer before attempting any changes.

E

PERIODIC MAINTENANCE/LUBRICATION

Unit: km (miles)

ITEM	REMARKS	BREAK-IN 1,000 (600)	EVERY 6,000 (4,000) or 6 months	EVERY 12,000 (8,000) or 12 months
Valve(s)*	Check valve clearance. Adjust if necessary.			○
Cam chain*	Check chain tension. Adjust if necessary.	○	○	○
Spark plug(s)	Check condition. Clean or replace if necessary.	○	○	○
Air filter	Clean. Replace if necessary.		○	○
Carburetor*	Check idle speed/synchronization/starter operation. Adjust if necessary.	○	○	○
Fuel line*	Check fuel hose and vacuum pipe for cracks or damage. Replace if necessary.		○	○
Fuel filter*	Check condition. Replace if necessary.			○
Engine oil	Replace (Warm engine before draining).	○	○	○
Engine oil filter	Replace.	○		○
Brake*	Check operation/fluid leakage/See NOTE. Correct if necessary.		○	○
Clutch	Check operation. Adjust if necessary.		○	○
Rear arm pivot*	Check rear arm assembly for looseness. Correct if necessary. Moderately repack every 24,000 (16,000) or 24 months.**			○
Rear suspension link pivots*	Check operation. Apply grease lightly every 24,000 (16,000) or 24 months.***			○
Wheels*	Check balance/damage/runout. Repair if necessary.		○	○
Wheel bearings*	Check bearings assembly for looseness/damage. Replace if damaged.		○	○

Unit: km (miles)

ITEM	REMARKS	BREAK-IN 1,000 (600)	EVERY 6,000 (4,000) or 6 months	EVERY 12,000 (8,000) or 12 months
Steering bearing*	Check bearings assembly for looseness. Correct if necessary. Moderately repack every 24,000 (16,000) or 24 months.**	○		○
Front forks*	Check operation/oil leakage. Repair if necessary.		○	○
Rear shock absorber*	Check operation/oil leakage. Repair if necessary.		○	○
Drive chain	Check chain slack/alignment. Adjust if necessary. Clean and lube.	Every 500 (300)		
Fittings/Fasteners*	Check all chassis fittings and fasterners. Correct if necessary.	○	○	○
Center and sidestand*	Check operation. Repair if necessary.	○	○	○
Sidestand switch*	Check operation. Clean or replace if necessary.	○	○	○
Battery*	Check specific gravity. Check breather pipe for proper operation. Correct if necessary.		○	○
A.C. Generator*	Replace generator brushes.			○

*: It is recommended that these items be serviced by a Yamaha dealer.
**: Medium weight wheel bearing grease.
***: Lighium soap base grease.

E

NOTE:

Brake fluid replacement:

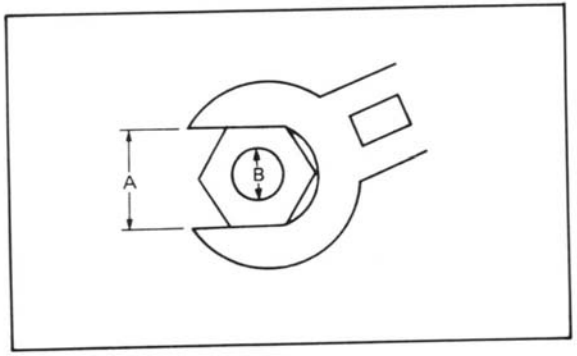
1. When disassembling the master cylinder or caliper cylinder replace the brake fluid. Normally check the brake fluid level and add the fluid as required.
2. On the inner parts of the master cylinder and caliper cylinder, replace the oil seals every two years.
3. Replace the brake hoses every four years, or if cracked or damaged.

E

Torque specifications

Use a torque wrench to tighten these items. It is recommended that these items 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		
		Nm	m·kg	ft·lb
10 mm	6 mm	6	0.6	4.3
12 mm	8 mm	15	1.5	11
14 mm	10 mm	30	3.0	22
17 mm	12 mm	55	5.5	40
19 mm	14 mm	85	8.5	61
22 mm	16 mm	130	13.0	94

E

Item	Torque		
	Nm	m·kg	ft·lb
Spark plug	17.5	1.75	12.5
Engine drain plug	43	4.3	31
Oil filter bolt	15	1.5	11
Handlebar installing bolt	70	7.0	50
Front fork cap bolt	23	2.3	17
Front fork pinch bolt	20	2.0	14
Front wheel axle	105	10.5	75
Front axle pinch bolt	20	2.0	14
Rear wheel axle	105	10.5	75
Caliper securing bolt	35	3.5	25

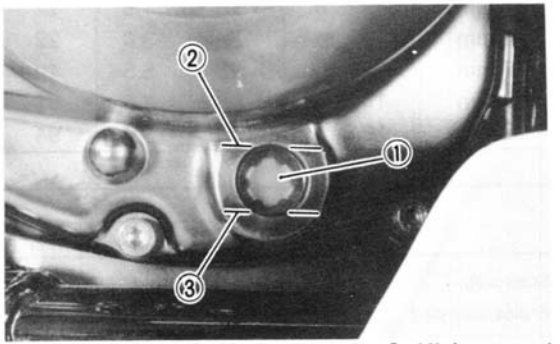
H-408

Engine oil

1. Oil level measurement

a. Place the motorcycle on the centerstand. Warm up the engine for several minutes.

E



1. Level window 2. Maximum mark 3. Minimum mark

U-039

NOTE:

Be sure the motorcycle is positioned straight up when checking the oil level; a slight tilt toward the side can produce false readings.

b. With the engine stopped, check the oil level through the level window located at the lower part of the right side crankcase cover.

U-040

NOTE:

Wait a few minutes until the oil level settles before checking.

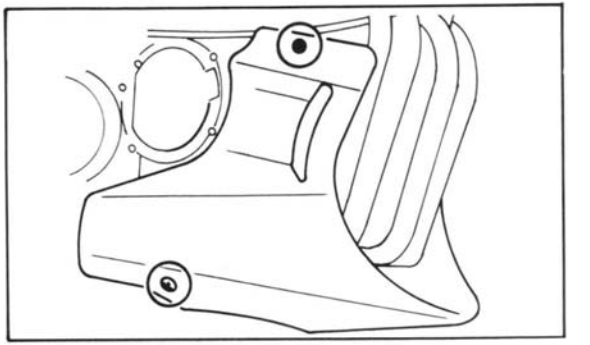
c. The oil level should be between maximum and minimum marks. If the level is low, add sufficient oil to raise it to the proper level.

2. Engine oil and oil filter replacement

a. Remove the lower cowl.

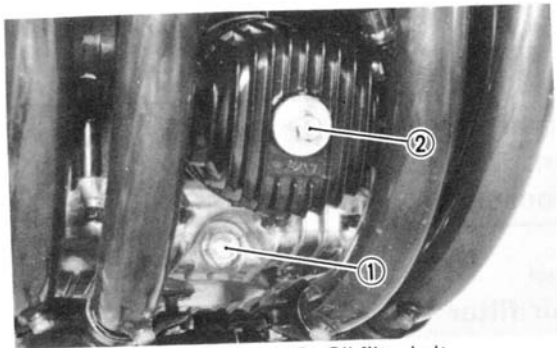
b. Warm-up the engine for a few minutes.

c. Stop the engine. Place an oil pan under the engine, and remove the oil filler cap.



d. Remove the drain plug and drain the oil.
e. Remove the oil filter bolt and filter element.
f. Reinstall the drain plug (make sure it is tight).

Drain plug torque:
43 Nm (4.3 m·kg, 31 ft·lb)



1. Oil filter drain screw 2. Oil filter bolt

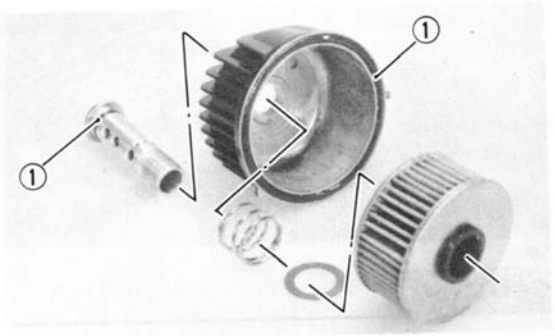
g. Install the new oil filter element, new O-ring, and the filter cover; tighten the oil filter bolt.

Oil filter bolt:
15 Nm (1.5 m·kg, 11 ft·lb)

U-041

NOTE:

Make sure the O-ring is positioned properly.

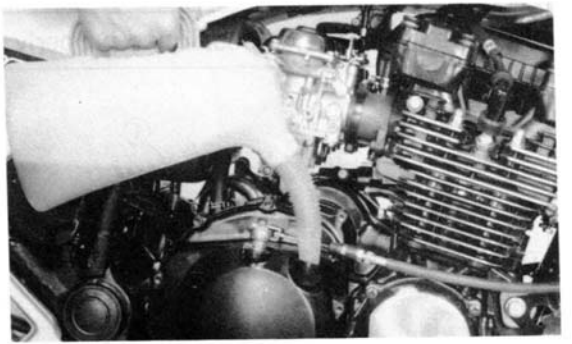


1. Proper O-ring position

E

h. Add oil through the oil filler hole.

Periodic oil change:
2.3 L (2.0 Imp qt, 2.4 US qt)
With oil filter replacement:
2.6 L (2.3 Imp qt, 2.7 US qt)
Recommended oil: See page 4-4.



U-323

CAUTION:

Do not add any chemical additives. Engine oil also lubricates the clutch and additives could cause clutch slippage.

U-324

CAUTION:

Be sure no foreign material enters the crankcase.

i. After replacement of engine oil and/or oil filter, be sure to check for oil leaks. The oil level indicator should go off after the oil is filled.

U-351

CAUTION:

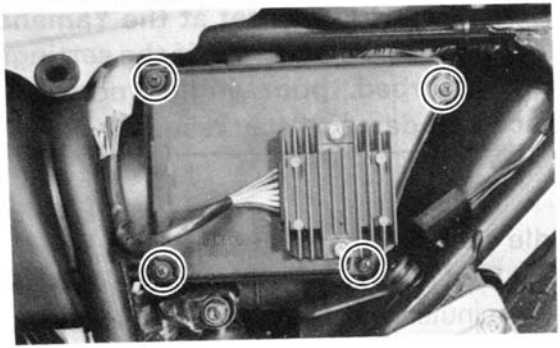
If the indicator light flickers or remains on, immediately stop the engine and consult a Yamaha dealer.

H-621

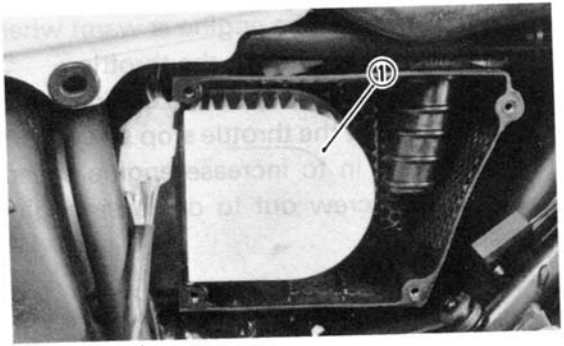
Air filter

1. Remove the left side cover.

2. Remove the air filter case fitting screws and the filter case cover.

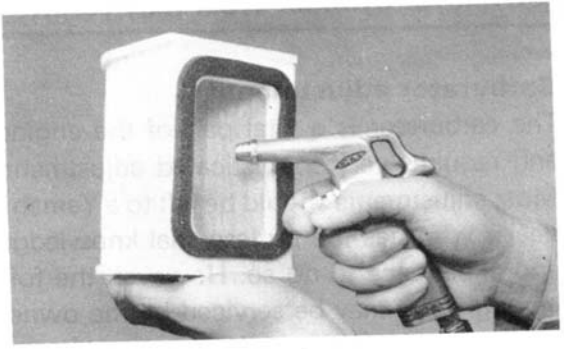


3. Pull out the element.



1 Air filter element

4. Tap the element lightly to remove most of the dust and dirt; blow out the remaining dirt with compressed air from the inner surface of the element. If the element is damaged, replace it.
5. Reassemble by reversing the removal procedure.



U-357

CAUTION:

Make sure the element edge fits into the corresponding filter case groove.

E

6. The air filter element should be cleaned at the specified intervals.

U-326

CAUTION:

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

H-900

Carburetor adjustment

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

U-330

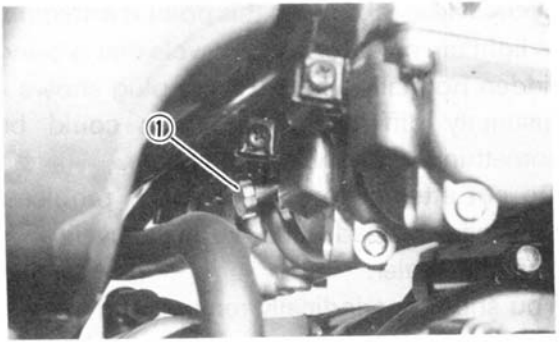
CAUTION:

The carburetor was set at the Yamaha factory after many tests. If the settings are disturbed, poor engine performance and damage may result.

H-901

Idle speed adjustment

1. Start the engine and warm it up for a few minutes (normally, 1 or 2 minutes) at approximately 1,000 to 2,000 r/min. Occasionally rev the engine to 4,000 to 5,000 r/min. The engine is warm when it quickly responds to the throttle.
2. Set the idle to the specified engine speed by adjusting the throttle stop screw; turn the screw in to increase engine speed, turn the screw out to decrease engine speed.



1. Throttle stop screw

Standard idle speed:
1,200 r/min

U-045

NOTE:

If the specified idle speed cannot be obtained by performing the above adjustment, consult a Yamaha dealer.

H-903

Throttle cable adjustment

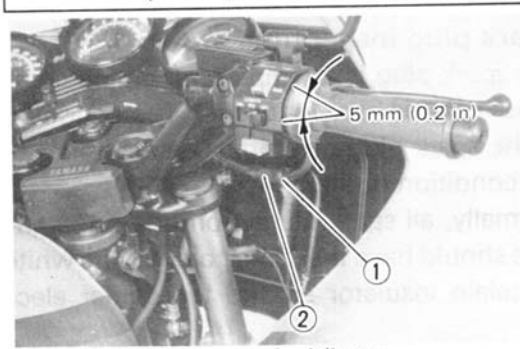
U-064

NOTE:

Before adjusting the throttle cable free play, the engine idling speed should be adjusted.

The throttle cable should have a specified free play in the turning direction at the grip flange. If the play is incorrect, take the following steps for adjustment.

Free play:
5 mm (0.2 in)



1. Lock nut 2. Adjuster

E

1. Loosen the lock nut.
2. Turn the adjuster in or out until the adjustment is suitable.
3. Tighten the lock nut.

E

H-908

Valve clearance adjustment

The valve clearance becomes larger with use, resulting in improper fuel/air supply and engine noise. To prevent this, the valve clearance must be adjusted regularly. This adjustment, however, should be left do a professional Yamaha service technician.

H-201

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.

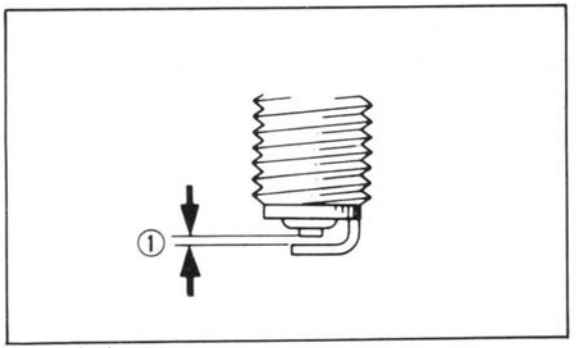
Normally, all spark plugs from the same engine should have the same color on the white porcelain insulator around the center electrode. The ideal color at this point is a medium to light tan color for a motorcycle that is being ridden normally. If one spark plug shows a distinctly different color, there could be something wrong with the engine.

Do not attempt to diagnose such problems yourself. Instead, take the motorcycle to a Yamaha dealer.

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

Standard spark plug:
DR8ES-L (NGK)

Before installing any spark plug, measure the electrode gap with a wire thickness gauge; adjust the gap to specification as necessary.



1. Spark plug gap

Spark plug gap:
0.6 ~ 0.7 mm (0.024 ~ 0.028 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:
17.5 Nm (1.75 m·kg, 12.5 ft·lb)

U-038

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.

H-801

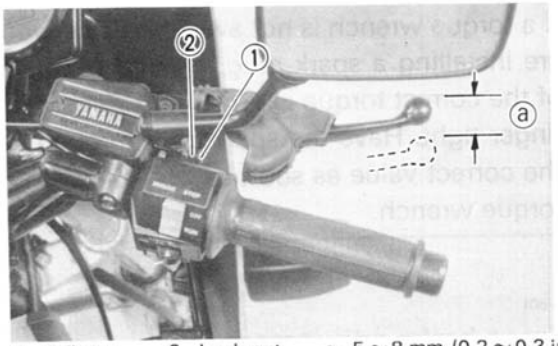
Front brake adjustment

The free play at the end of the front brake lever should be 5 ~ 8 mm (0.2 ~ 0.3 in).

1. Loosen the lock nut.

E

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.



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

3. After adjusting, tighten the lock nut.

J-636

WARNING:

Check the brake lever free play. Be sure the brake is working properly.

U-641

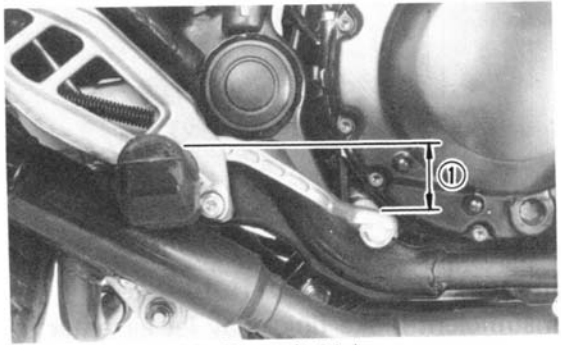
WARNING:

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 a Yamaha dealer inspect and bleed the system if necessary.

H-804

Rear brake adjustment

The brake pedal top end should be 30 mm (1.2 in) below the top of the footrest. If not, ask a Yamaha dealer.



1. Brake pedal height 30 mm (1.2 in)

U-688

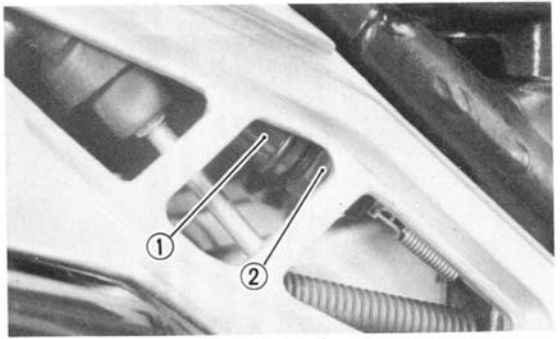
WARNING:

An incorrect free play indicates a hazardous condition in the brake system. Do not operate the motorcycle until the failure in the brake system is corrected. Ask a Yamaha dealer for immediate repairs.

H-833

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 your hand so it does not rotate and turn the adjusting nut. Proper adjustment is achieved when the brake light comes on just before the brake begins to take effect.



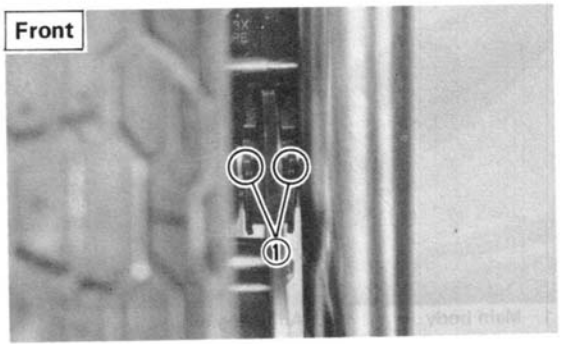
1. Main body 2. Adjusting nut

E

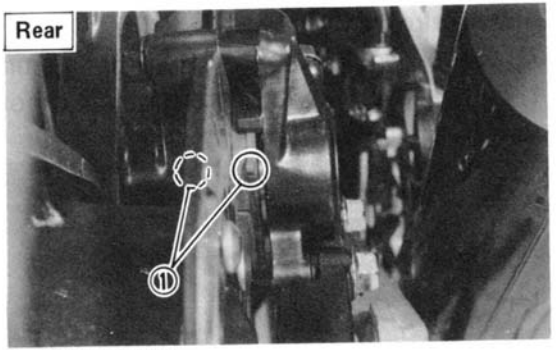
H-836

Checking the front and rear brake pads

A wear indicator is attached to each brake pad to facilitate disc brake pad checks. This indicator permits a visual check without disassembling the pads. To check, depress the brake and inspect the wear indicator. If the wear indicator is ALMOST in contact with the disc plate, ask a Yamaha dealer to replace the pads.



1. Wear indicator



1. Wear indicator

H-828

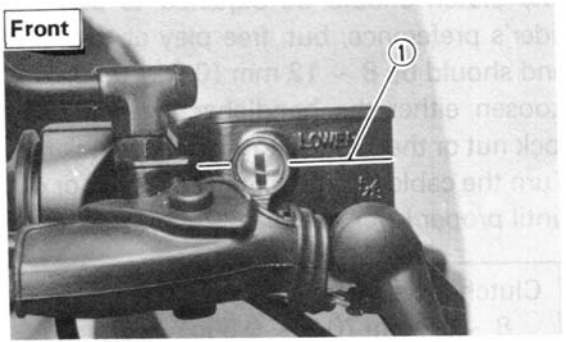
Inspecting the brake fluid level

Insufficient brake fluid may let air enter the brake system, possibly causing the brakes to become ineffective. Before riding, check the brake fluid level and replenish when necessary; observe these precautions:

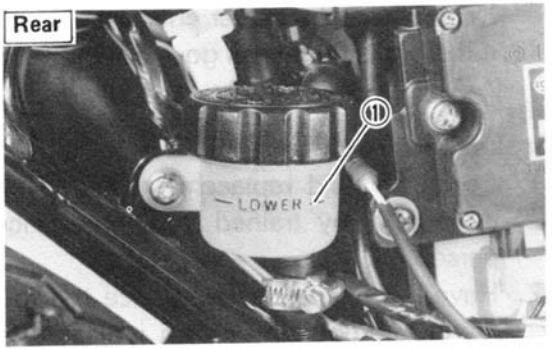
1. When checking the fluid level, make sure the master cylinder top is horizontal by turning the handlebars.

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

Recommended brake fluids:
DOT #3



1. Lower level



1. Lower level

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

E

6. Have a Yamaha dealer check the cause if the brake fluid level goes down.

H-835

Brake fluid replacement

E

1. Complete fluid replacement should be done only by trained Yamaha service personnel.
2. Have a Yamaha dealer replace the following components when indicated in the schedule or when they are damaged or leaking.
   a. Replace all rubber seals every two years.
   b. Replace all hoses every four years.

I-001

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.

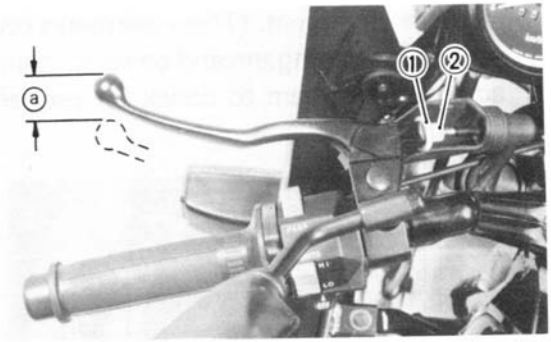
Normally, once the clutch cable length adjuster (crankcase) is properly set; the only adjustment required is maintenance of free play at the clutch cable length adjuster (handlebar lever).

I-010K

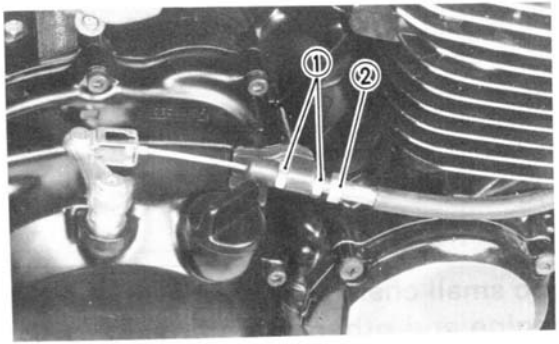
Free play adjustment

The clutch should be adjusted to suit the rider's preference; but, free play at the lever end should be 8 ~ 12 mm (0.3 ~ 0.5 in).
Loosen either the handlebar lever adjuster lock nut or the cable length adjuster lock nut. Turn the cable length adjuster either in or out until proper lever free play is achieved.

Clutch lever free play: 8 ~ 12 mm (0.3 ~ 0.5 in)



1. Lock nut 2. Adjuster a. 8 ~ 12 mm (0.3 ~ 0.5 in)



1. Lock nut 2. Adjuster

I-400

Drive chain slack check

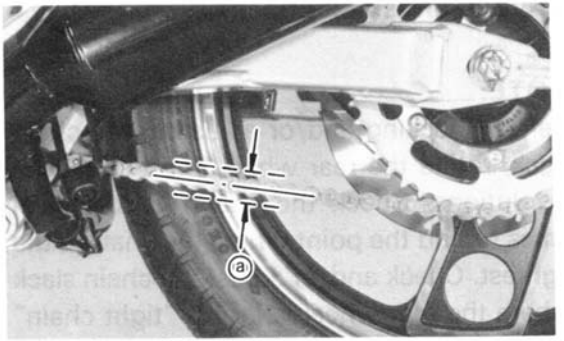
U-048

NOTE:

Before checking and/or adjusting the chain slack, rotate the rear wheel through several revolutions. Check the chain slack several times to find the point where the chain is the tightest. Check and/or adjust the chain slack where the rear wheel is in this "tight chain" position.

Inspect the drive chain when the motorcycle is on the centerstand. Check the slack at the position shown in the illustration. The normal vertical deflection is approximately 20 ~ 30 mm (0.8 ~ 1.2 in). If the deflection exceeds 30 mm (1.2 in), adjust the chain slack.

E

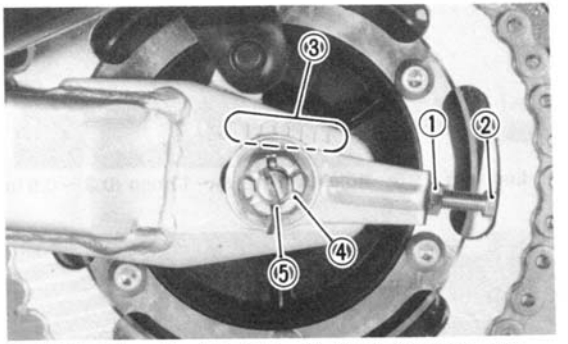


a. 20 ~ 30 mm (0.8 ~ 1.2 in)

I-409

Drive chain slack adjustment

1. Remove the cotter pin from the rear wheel axle nut.
2. Loosen the rear wheel axle nut.
3. Loosen the lock nuts on each side. To tighten the chain, turn the chain adjuster clockwise. To loosen the chain, turn the adjuster counterclockwise and push the wheel forward. Turn each adjuster exactly the same amount to maintain correct axle alignment. (There are marks on each side of swingarm and on each chain adjuster; use them to check for proper alignment.)



1. Lock nut
2. Adjuster
3. Marks for alignment
4. Axle nut
5. Cotter pin

U-333

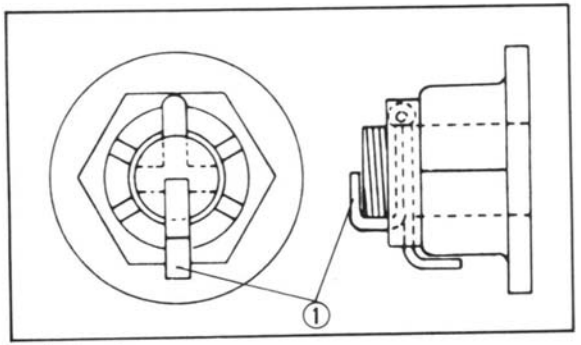
CAUTION:

Too small chain slack will overload the engine and other vital parts; keep the slack within the specified limits.

4. After adjusting, be sure to tighten the lock nuts and the axle nut.

Axle nut torque:
105 Nm (10.5 m·kg, 75 ft·lb)

5. Insert a new cotter pin into the rear wheel axle nut and bend the end of the cotter pin as shown in the illustration. (If the nut notch and the cotter pin hole do not match tighten the nut slightly to align them.)



1. Cotter pin

U-647

WARNING:

Always use a new cotter pin on the axle nut.

I-407

Drive chain lubrication

The chain consists of many parts which work against each other. If the chain is not maintained properly, it willl wear out rapidly, therefore, form the habit of periodically servicing the chain. This service is especially necessary when riding in dusty conditions. This motorcycle 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 ~ 50W motor oil. Do not use any other lubricants on the drive chain. They may contain solvents that could damage the O-rings.

E

I-107

Cable inspection and lubrication

U-646

WARNING:

Damage to the outer housing of the various cables may cause corrosion and interfere with the movement of the cable. An unsafe condition may result so replace such cables as soon as possible.

Lubricate the inner cable and the cable end. If they do not operate smoothly, ask a Yamaha dealer to replace them.

Recommended lubricant:
SAE 10W30 motor oil

I-102

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.

I-306

Brake and change pedals

Lubricate the pivoting parts.

Recommended lubricant:
SAE 10W30 motor oil

I-307

Brake and clutch levers

Lubricate the pivoting parts.

Recommended lubricant:
SAE 10W30 motor oil

I-308

Center and sidestand

Lubricate the pivoting parts. Check to see that the center and sidestand move up and down smoothly.

Recommended lubricant:
SAE 10W30 motor oil

U-693

WARNING:

If the center and/or sidestand movement are not smooth, consult a Yamaha dealer.

I-313

Rear suspension

Lubricate the pivoting parts.

Recommended lubricant:
Lithium soap base grease

E

I-521

Front fork oil change

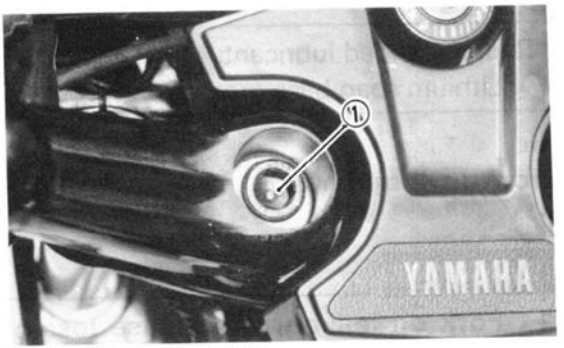
U-649

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. Elevate the front wheel by placing a suitable stand under the engine. Remove the handlebars.

2. Remove the cap from the top of each fork.



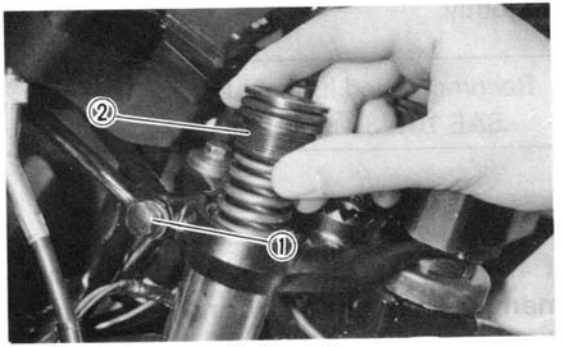
1. Handlebar installing bolt

3. Loosen the front fork pinch bolts and remove the cap bolts from the inner fork tubes.
4. Place an open container under each drain hole. Remove the drain screw from each outer tube.

U-650

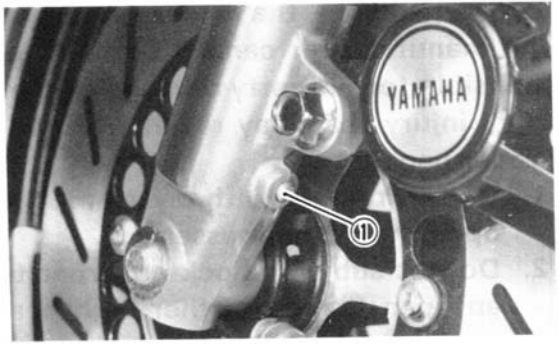
WARNING:

Do not let oil 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. Pinch bolt 2. Cap bolt

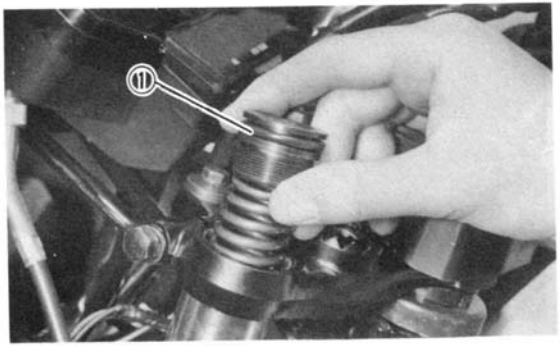
5. After most of the oil has been drained, slowly pump the forks up and down to remove any remaining oil.
6. Inspect the drain screw gasket. Replace if damaged. Reinstall the drain screws.
7. Pour the specified amount of oil into each fork inner tube.



1. Drain screw

Front fork oil capacity (each fork):
269 cm³ (9.47 Imp oz, 9.09 US oz)
Recommended oil:
Fork oil 10W or equivalent

8. After filling, slowly pump the forks up and down to distribute the oil.
9. Inspect the O-ring on the cap bolt. Replace if damaged.
10. Reinstall the cap bolt, cap, and tighten the pinch bolt.



1. Proper O-ring position

Tightening torque:
Cap bolt:
23 Nm (2.3 m·kg, 27 ft·lb)
Pinch bolt:
20 Nm (2.0 m·kg, 14 ft·lb)

E

11. Reinstall the handlebars.

Tightening torque:
Handlebar installation bolt:
70 Nm (7.0 m·kg, 50 ft·lb)

E

I-515

Rear shock (Monocross suspension "De Carbon" system)

U-673

WARNING:

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

1. **Do not tamper with or attempt to open the cylinder assembly.**
2. **Do not subject shock absorber to an open flame or other high heat source. This may cause the unit to explode due to excessive gas pressure.**
3. **Do not deform or damage the cylinder in any way. Cylinder damage will result in poor damping per-**

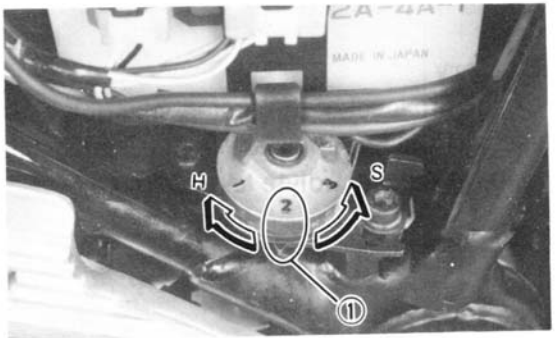
4. Bring your shock absorber to a Yamaha dealer for any service.

I-530

Adjustment

The spring preload of the rear shock absorber can be adjusted to suit rider's preference, weight, and the course conditions.

1. Remove right side cover.
2. To increase preload, adjuster is turned toward the "H". To decrease preload, adjuster is turned toward the "S".



1. STD position

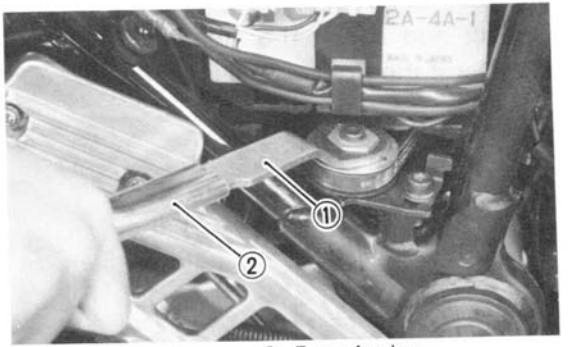
CI5-01

	Hard			STD	Soft
Adjusting position	5	4	3	2	1

U-075

NOTE:

When adjusting, use the special wrench and extension bar which are included in the owner's tool kit.



1. Special wrench 2. Extension bar

3. Install the right side cover.

E

I-603

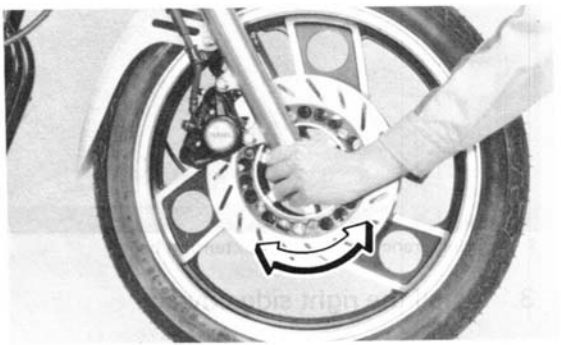
Steering inspection

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

E

Place a block under the engine to raise the front wheel off the ground.

Hold the lower end of the front forks and try to move them forward and backward. If any free play can be felt, ask a Yamaha dealer to inspect and adjust the steering. Inspection is easier if the front wheel is removed.



U-657

WARNING:

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

I-602

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 a Yamaha dealer inspect the wheel bearings. The wheel bearings should be inspected according to the Maintenance Schedule.

I-700

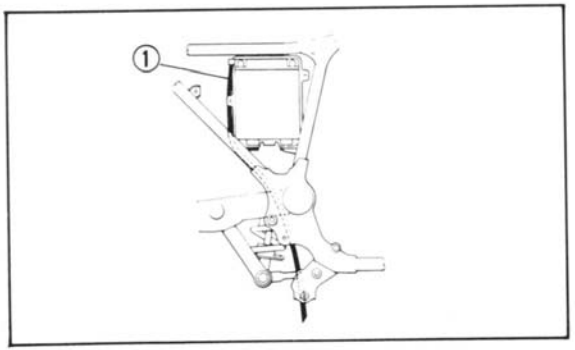
Battery

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

U-336

CAUTION:

When inspecting the battery, be sure the breather pipe is routed correctly. If the breather pipe 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.



1. Breather pipe

U-658

WARNING:

Battery electrolyte is poisonous and dangerous, causing severe burns, etc. It 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 a 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 an enclosed space. Always shield your eyes when working near batteries.
KEEP OUT OF REACH OF CHILDREN.

E

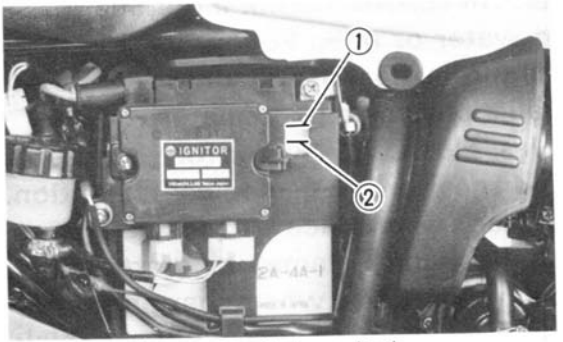
I-704

Replenishing the battery fluid

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

E

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



1. Upper level 2. Lower level

U-338

CAUTION:

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

U-659

WARNING:

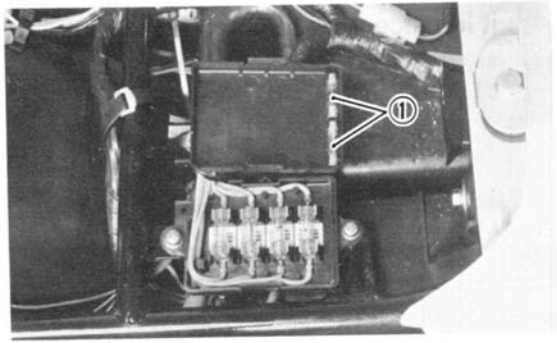
Battery fluid on the chain can cause premature failure and possibly an accident.

2. When the motorcycle will not 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 will 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.

I-903

Fuse replacement

1. The fuse block is located under the seat.
2. If any fuse is blown, turn off the ignition switch and the switch in the circuit in question. Install a new fuse of proper amperage.
   Turn on the switches, and see if the electrical device operates. If the fuse immediately blows again, consult a Yamaha dealer.



1. Spare fuse

U-344

CAUTION:

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

E

I-800

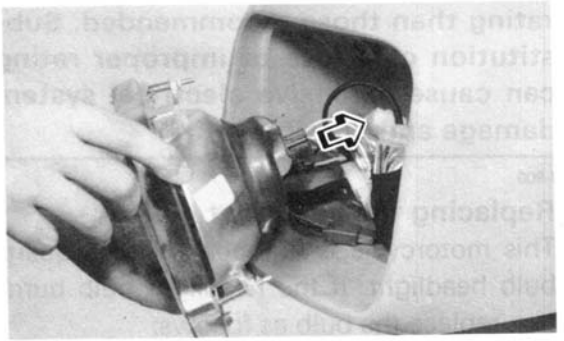
Replacing the headlight bulb

This motorcycle is equipped with a quartz bulb headlight. If the headlight bulb burns out, replace the bulb as follows:

1. Remove the 2 screws holding the light unit assembly.

E

2. Disconnect the lead wires, and remove the light unit assembly.

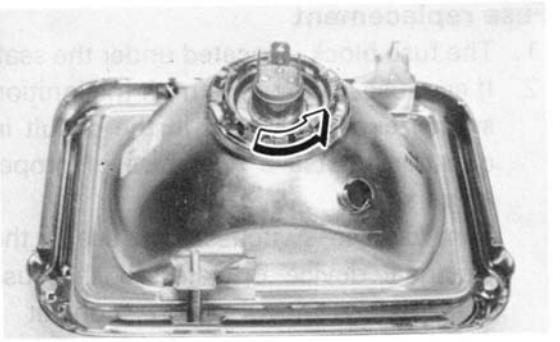


3. Turn the bulb holder counterclockwise and remove the defective bulb.

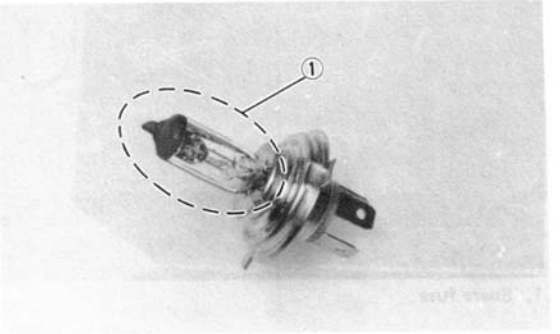
U-660

WARNING:

Keep flammable products or your hands away from the bulb while it is on, it will be hot. Do not touch the bulb until it cools down.



4. Slip a new bulb into position and secure it in place with the bulb holder.



1. Don't touch

U-341

CAUTION:

Avoid touching the glass part of the bulb. Keep it free from oil; otherwise, the transparency of the glass, life of the bulb, and illuminous flux will be adversely affected. If oil gets on the bulb, throughly clean it with a cloth moistened with alcohol or lacquer thinner.

5. Reinstall the light unit assembly. Adjust the headlight beam if necessary.

I-809

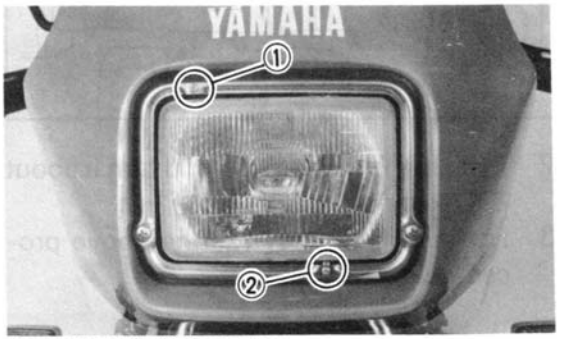
Headlight beam adjustment

U-343

CAUTION:

For the headlight beam adjustment, be sure to proceed as follows; (It is advisable to have a Yamaha dealer make this adjustment.)

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



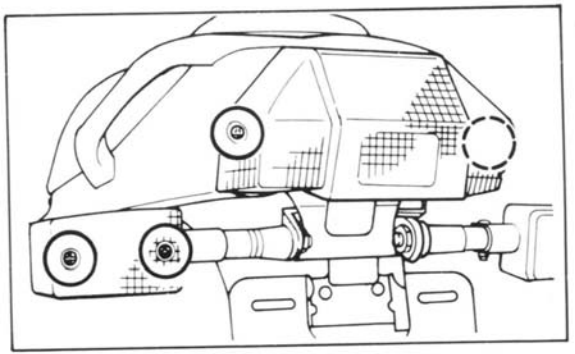
1. Horizontal adjusting screw
2. Vertical adjusting knob

E

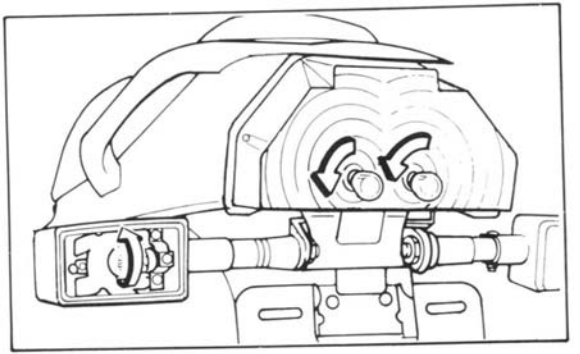
J-400

Replacing the flasher light bulb

1. Remove the two screws, and now the flasher lens can be removed. Replace the oil seal, if damaged.



2. Push in the flasher bulb and turn it about 30° to remove the bulb.
3. For installation, reverse the above procedure.



U-073

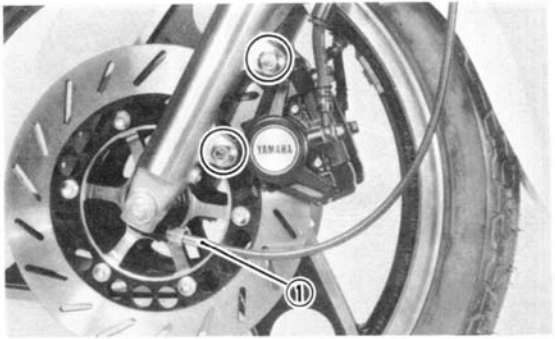
NOTE:

Make sure the oil seal is positioned properly.

J-229

Front wheel removal

1. Place the motorcycle on the centerstand.
2. Remove the speedometer cable at the speedometer gear hausing.
3. Remove the calipers.



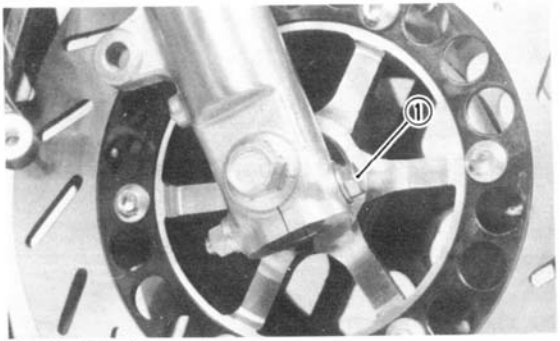
1. Speedometer cable

U-054

NOTE:

Do not depress the brake lever when the disc is off the caliper as the brake pads will be forced shut.

4. Loosen the pinch bolt.
5. Remove the axle. Make sure the motorcycle is properly supported.



1. Pinch bolt

J-230

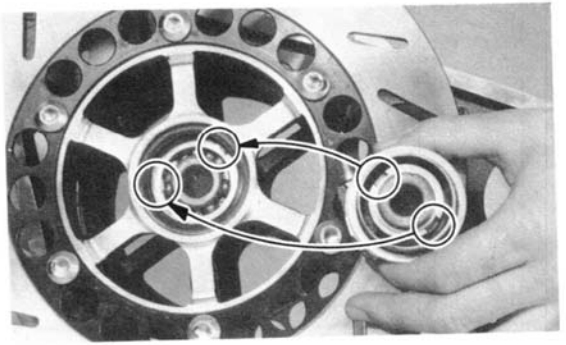
Front wheel installation

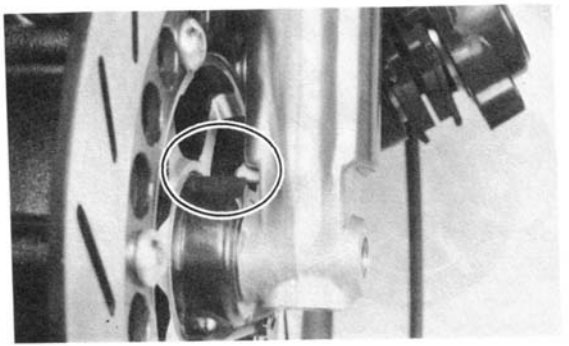
When installing the front wheel, reverse the removal procedure.

Pay attention to the following points:

1. Make sure the wheel hub and the speedometer clutch assembly are installed with the projections meshed into the slots.

E





2. Make sure the projecting portion (torque stopper) of the speedometer housing is positioned correctly.
3. Make sure the axle, axle pinch bolt and caliper securing bolts are properly torqued.

Tightening torque:
- Axle:
  105 Nm(10.5 m·kg, 75 ft·lb)
- Axle pinch bolt:
  20 Nm(2.0 m·kg, 14 ft·lb)
- Caliper securing bolt:
  35 Nm(3.5 m·kg, 25 ft·lb)

J-331

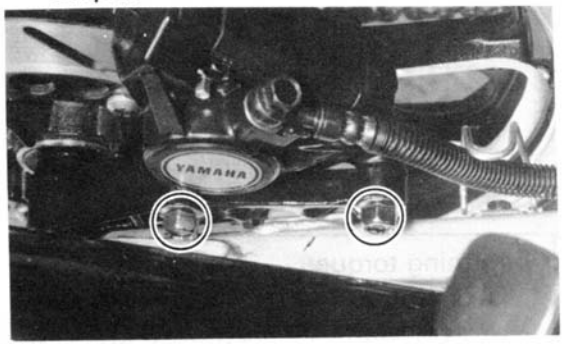
Rear wheel removal

U-662

WARNING:

It is advisable to have a Yamaha dealer service the rear wheel.

1. Place the motorcycle on the centerstand.
2. Remove the caliper installation bolts and caliper.

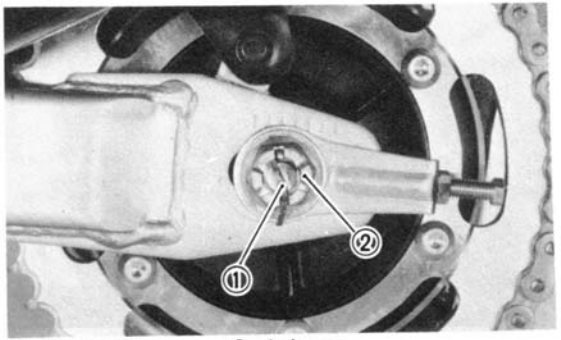


U-055

NOTE:

Do not depress the brake pedal when the disc is off the caliper as the brake pads will be forced shut.

3. Loosen the lock nuts of the right and left chain adjusters and loosen the adjusters.
4. Remove the axle nut cotter pin and the axle nut.
5. The rear wheel assembly, the collar, the chain puller(s), etc., can be removed from the motorcycle by pulling the wheel axle.



1. Cotter pin 2. Axle nut

U-056

NOTE:

You do not have to disassemble the chain in order to remove or install the rear wheel.

E

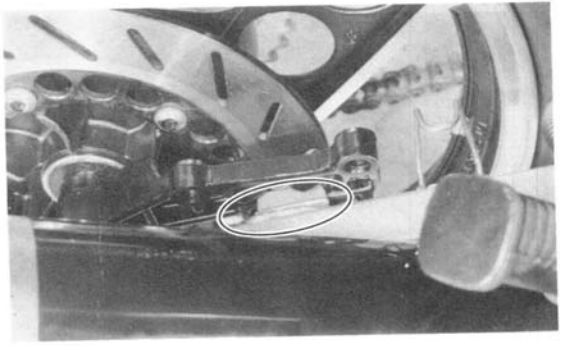
J-324

Rear wheel installation

When installing the rear wheel, reverse the removal procedure.

Pay attention to the following points:

1. Make sure the projection (torque stopper) is position correctly.
2. Adjust the drive chain.

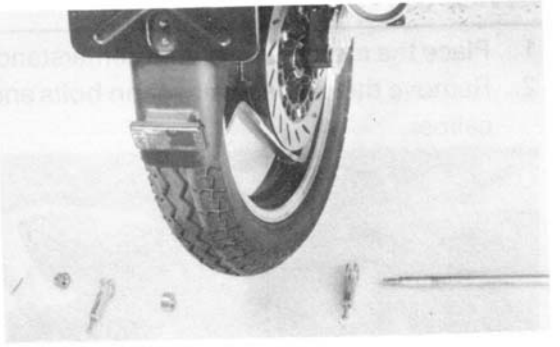


3. Make sure the axle nut and caliper are properly torqued, and a new cotter pin is installed.

U-647

WARNING:

Always use a new cotter pin on the axle nut.



Tightning torque:
- Axle nut:
  - 105 Nm (10.5 m·kg, 75 ft·lb)
- Caliper installation bolt:
  - 35 Nm (3.5 m·kg, 25 ft·lb)

Troubleshooting

Although Yamaha motorcycles receive a rigid inspection before shipment from the factory, trouble may occur during operation. Any problem in the fuel, compression, or ignition systems can cause poor starting and a loss of power. The troubleshooting chart describes a quick, easy procedure for checking these systems.

If your motorcycle requires any repair, bring it to a Yamaha dealer. The skilled technicians at a Yamaha dealer have the tools, experience, and know-how to properly service your motorcycle. Use only genuine Yamaha parts on your motorcycle. Imitation parts may look like Yamaha parts, but they are often inferior. Consequently, they have a shorter service life and can lead to expensive repair bills.

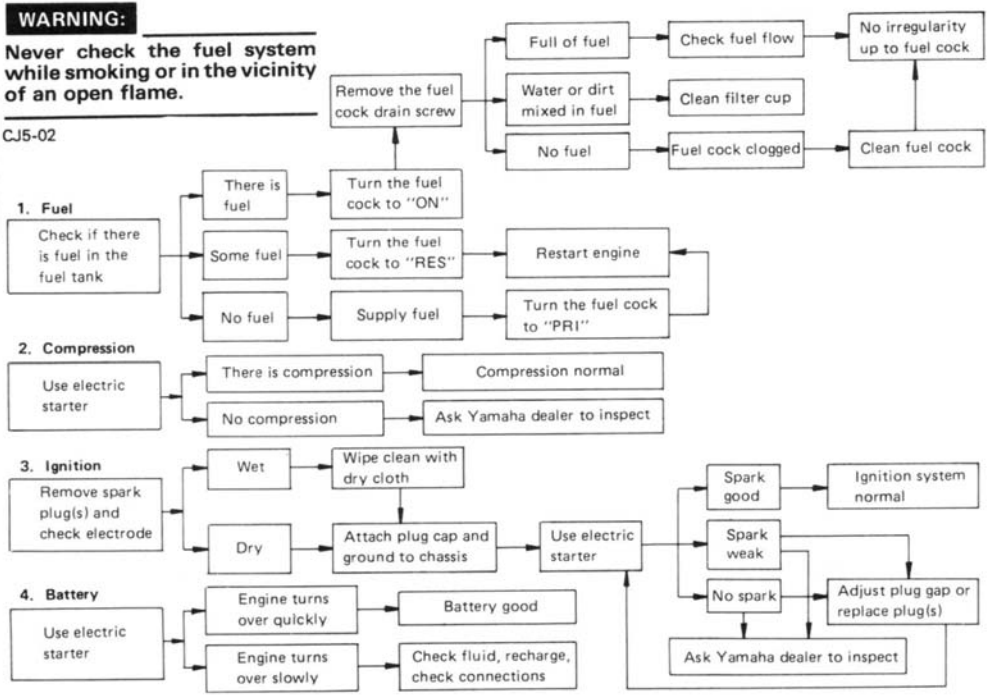
Troubleshooting chart

U-663

WARNING:

Never check the fuel system while smoking or in the vicinity of an open flame.

CJ5-02



K-000

CLEANING AND STORAGE

K-013

A. CLEANING

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

1. Before cleaning the motorcycle:
   a. Block off the end of exhaust pipe to prevent water entry; a plastic bag and strong rubber band may be used.
   b. Make sure the spark plug(s) and all filler caps are properly installed.
2. If the engine case is excessively greasy, apply degreaser with a paint brush. Do not apply degreaser to the chain, sprockets, or wheel axles.
3. Rinse the dirt and degreaser off with a garden hose, use only enough pressure to do the job.

U-346

CAUTION:

Excessive hose pressure may cause water seepage and contamination of wheel bearings, front forks, brakes and transmission seals. Many expensive repair bills have resulted from improper high pressure detergent applications such as those available in coin-operated car washers.

4. Once the majority of the dirt has been hosed off, wash all surfaces with warm water and mild, detergent-type soap. An old tooth brush or bottle brush is handy for hard-to-get-to places.
5. Rinse the motorcycle off immediately with clean water and dry all surfaces with a chamois, clean towel, or soft absorbent cloth.
6. Dry the chain and lubricate it to prevent rust.

E

7. Windscreen cleaning

U-374

CAUTION:

Avoid using any alkaline or strong acid cleaner, gasoline, brake fluid, or any other solvent.

Clean the windscreen with a cloth or sponge damped with a neutral detergent, and after cleaning, thoroughly wash out with water. Some cleaning compounds for plastics may leave scratches on surfaces of the windscreen. Before using, make a test by polishing an area which does not affect your visibility.

8. Clean the seat with a vinyl upholstery cleaner to keep the cover pliable and glossy.
9. Automotive-type wax may be applied to all painted and chrome-plated surfaces. Avoid combination cleaner-waxes. Many contain abrasives which may mar the paint or protective finish. When finished, start the engine and let it idle for several minutes.

K-012

B. STORAGE

Long term storage (60 days or more) of your motorcycle will require some preventive procedures to guard against deterioration. After thoroughtly cleaning the motorcycle, prepare for storage as follows:

1. Drain the fuel tank, fuel lines, and carburetor float bowl(s).
2. Remove empty fuel tank, pour a cup of SAE 10W30 or 20W40 motor oil in tank, shake the tank to coat the inner surfaces thoroughly and drain off the excess oil. Reinstall the tank.

3. Remove the spark plug, pour about one tablespoon of SAE 10W30 or 20W40 motor oil in the spark plug hole and reinstall the spark plug. Turn the engine over several times (ground spark plug lead wires) to coat the cylinder walls with oil.

U-664

WARNING:

When using the starter motor to crank the engine, remove the spark plug wires, and ground them to prevent sparking.

4. Remove the drive chain. Thoroughly clean the chain with kerosene and lubricate. Reinstall the chain or store it in a plastic bag (tied to frame for safe-keeping).
5. Lubricate all control cables.
6. Block up the frame to raise both wheels off the ground.
7. Tie a plastic bag over the exhaust pipe outlet to prevent moisture from entering.
8. If storing in a 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.
9. 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(30 °F) or more than 30 °C(90 °F)).

U-058

NOTE:

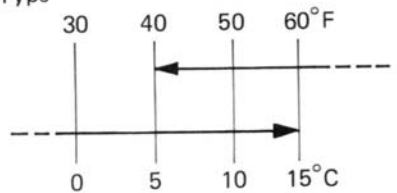
Make any necessary repairs before storing the motorcycle.

E

SPECIFICATIONS

(E): For England (G): For Germany (FI): For Finland

Model	XJ600
Dimension:	
Overall length	2,145 mm (84,4 in), 2,192 mm (86.3 in)(FI)
Overall width	745 mm (29.3 in)
Overall height	1,225 mm (48.2 in)
Seat height	790 mm (31.1 in)
Wheel base	1,430 mm (56.3 in)
Minimum ground clearance	140 mm (5.5 in)
Basic weight:	
With oil and fuil fuel tank	208 kg (459 lb)
Minimum turning radius:	2,800 mm (110.2 in)
Engine:	
Type	Air cooled 4-storke, gasoline, DOHC
Model	51J, 51H(G)
Cylinder arrangement	Parallel 4-cylinder, Forward inclined
Displacement	598 cm^3
Bore x Stroke	58.5 x 55,7 mm (2.303 x 2.193 in)
Compression ratio	10.0 : 1
Starting system	Electric starter
Lubrication system	Wet sump

Model	XJ600
Engine oil: Type  Capacity Periodic oil change With oil filter replacement Total amount	 SAE 20W40 type SE motor oil (If temperature does not go below 5°C/40°F), See page 4-4. SAE 10W30 type SE motor oil (If temperature deos not go above 15°C/60°F) 2.3 L (2.0 Imp qt, 2.4 US qt) 2.6 L (2.3 Imp qt, 2.7 US qt) 3.0 L (2.6 Imp qt, 3.2 US qt)
Air filter:	Dry type element
Fuel: Type Tank capacity Reserve amount	 Regular gasoline 19 L (4.18 Imp gal, 5.02 US gal) Except (G) 18.5 L (4.07 Imp gal, 4.89 US gal) (G) 2.5 L (0.55 Imp gal, 0.66 US gal)
Carburetor: Type/Manufacturer	 BS32/MIKUNI

E

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Model	XJ600
Spark plug:	
Type/manufacturer	DR8ES-L/NGK
Gap	0.6 ~ 0.7 mm (0.024 ~ 0.028 in)
Clutch type:	Wet, multi-disc
Transmission:	
Primary reduction system	HY-V0 chain + gear
Primary reduction ratio	22/21 x 65/28 (2.431)
Secondary reduction system	Chain drive
Secondary reduction ratio	44/16 (2.750)
Transmission type	Constant mesh 6-speed
Operation	Left foot operation
Gear ratio:	
1st	41/15 (2.733)
2nd	37/19 (1.947)
3rd	34/22 (1.545)
4th	31/25 (1.240)
5th	29/28 (1.035)
6th	27/30 (0.900)
Chassis:	
Frame type	Double cradle
Caster angle	26°
Trail	106 mm (4.17 in)

Model	XJ600
Tire: Type Size – Front Rear	 Tubeless 90/90-18 51H 110/90-18 61H
Brake: Front brake type Operation Rear brake type Operation	 Dual, Disk brake Right hand operation Single, Disk brake Right foot operation
Suspension: Front Rear	 Telescopic fork Swing arm (Monocross suspension)
Shock absorber: Front Rear	 Coil spring, Oil damper Gas, Coil spring, Oil damper
Wheel travel: Front Rear	 150 mm (5.9 in) 100 mm (3.9 in)
Electrical: Ignition system Generator system Battery type/capacity	 TCI AC generator 12N12A-4A/12V12AH

E

E

Model	XJ600
Headlight type:	Quarz bulb
Bulb wattage/quantity:	
Headlight	60W/55W
Tail/brake light	5W/21W x 2
Flasher light	21W x 4
Auxiliary light	4W x 1 Except (E) 3.4W x 1 (E)
Meter light	3.4W x 6
Indicator light wattage/quantity:	
"NEUTRAL"	3.4W
"HIGH BEAM"	3.4W
"OIL LEVEL"	3.4W
"TURN"	3.4W x 2