

INTRODUCTION

FAA20501

Welcome to the Yamaha world of motorcycling!

As the owner of a XVS650, you are benefiting from Yamaha's vast experience in and newest technology for the design and the manufacture of high-quality products, which have earned Yamaha a reputation for dependability.

Please take the time to read this manual thoroughly, so as to enjoy all your XVS650's advantages. The owner's manual does not only instruct you in how to operate, inspect and maintain your motorcycle, but also in how to safeguard yourself and others from trouble and injury.

In addition, the many tips given in this manual will help to keep your motorcycle in the best possible condition. If you have any further questions, do not hesitate to contact vour Yamaha dealer.

The Yamaha team wishes you many safe and pleasant rides. So, remember to put safety first!

IMPORTANT MANUAL INFORMATION

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

EAA10603



The Safety Alert Symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



Failure to follow WARNING instructions could result in severe injury or death to the motorcycle operator, a bystander or a person inspecting or repairing the motorcycle.

CAUTION:

A CAUTION indicates special precautions that must be taken to avoid damage to the motorcycle

NOTE:

A NOTE provides key information to make procedures easier or clearer

EUU00001

NOTE:

- This manual should be considered a permanent part of this motorcycle and should remain with it even if the motorcycle is subsequently sold
- Yamaha continually seeks advancements in product design and quality. Therefore, while this
 manual contains the most current product information available at the time of printing, there may
 be minor discrepancies between your motorcycle and this manual. If there is any question concerning this manual, please consult your Yamaha dealer.

IMPORTANT MANUAL INFORMATION

EUU60100



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

EAA00100

XVS650J

OWNER'S MANUAL

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TWO-WHEELED MOTORCYCLES ARE SINGLE TRACK VEHICLES. THEIR SAFE USE AND OPERATION ARE DEPENDENT UPON THE USE OF PROPER RIDING TECHNIQUES AS WELL AS THE EXPERTISE OF THE OPERATOR. EVERY OPERATOR SHOULD KNOW THE FOLLOWING REQUIREMENTS BEFORE RIDING HE OR SHE SHOULD.

- 1 OBTAIN THOROUGH INSTRUCTIONS FROM A COMPETENT SOURCE ON ALL ASPECTS OF MOTORCYCLE OPERATION
- 2. OBSERVE THE WARNINGS AND MAINTENANCE REQUIREMENTS IN THE OWNER'S MANUAL
- 3. OBTAIN QUALIFIED TRAINING IN SAFE AND PROPER RIDING TECHNIQUES
- 4 OBTAIN PROFESSIONAL TECHNICAL SERVICE AS INDICATED BY THE OWNER'S MANUAL AND/OR WHEN MADE NECESSARY BY MECHANICAL CONDITIONS

Safe riding

- 1 Always make pre-operation checks Careful checks may help prevent an accident.
- 2. This motorcycle is designed to carry the operator and a passenger.
- 3 The failure of motorists to detect and recognize motorcycles in traffic is the predominating cause of automobile/motorcycle accidents. Many accidents have been caused by an automobile driver who did not see the motorcycle. Making yourself conspicuous appears to be very effective in reducing the chance of this type of accident.

Therefore:

- a Wear a brightly colored jacket
- b Use extra caution when you approach and pass through intersections, since intersections are the most likely places for motorcycle accidents
- c Ride where other motorists can see you. Avoid riding in another motorist's "blind spot".



- 4 Many accidents involve inexperienced operators. In fact, many operators who have been involved in accidents do not even have a current motorcycle license.
 - a. Make sure you are qualified Also, only lend your motorcycle to experienced operators.
 - b. Know your skills and limits. Staying within your limits may help you to avoid an accident
 - c. We recommend that you practice riding your motorcycle where there is no traffic until you have become thoroughly familiar with your motorcycle and all of its controls
- 5. Many motorcycle accidents have been caused by motorcycle operator errors. A typical error made by the operator is veering wide on a turn due to EXCESSIVE SPEED or undercornering (insufficient lean angle for the speed).
 - a. Always obey the speed limits and never travel faster than warranted by road and traffic conditions
 - b. Always signal before turning or changing lanes. Make sure other motorists see you
- 6 The operator's and passenger's posture are important for proper control
 - a The operator should keep both hands on the handlebars and both feet on the operator footrests during operation to maintain control of the motorcycle.
 - b. The passenger should always hold on to the operator, or the seat strap or grab bar if the motorcycle is so equipped, with both hands and keep both feet on the passenger footrests
 - c Never carry a passenger unless he or she can firmly place both feet on the passenger footrests.
- 7 Never ride under the influence of alcohol or drugs.
- 8. This motorcycle is designed for on-road use only. It is not suitable for off-road use.

Protective apparel

The majority of fatalities from motorcycle accidents are the result of head injuries. The use of a safety helmet is the single most critical factor in the prevention or reduction of head injuries.

- 1 Always wear an approved helmet
- 2 Wear a face shield or goggles Wind on your unprotected eyes could contribute to an impairment of vision which could delay seeing a hazard
- 3 The use of heavy boots, jacket, trousers, gloves, etc. is effective in preventing or reducing abrasions or lacerations.
- 4 Never wear loose fitting clothing. It could catch on the control levers, footrests, or wheels and cause injury or accident
- 5 Never touch the engine or exhaust system during or after operation. They become very hot and can cause burns. Always wear protective clothing that covers your legs, ankles, and feet
- 6 A passenger should also observe the above precautions.

Modification

Modifications made to the motorcycle not approved by Yamaha, or the removal of original equipment, may render your motorcycle unsafe for use and may cause severe personal injury. Modifications may also make your motorcycle illegal to use

Loading and accessories

Adding accessories or cargo to your motorcycle can adversely affect stability and handling if the weight distribution of the machine is changed. To avoid the possibility of an accident, extreme caution should be used if adding cargo or accessories to your motorcycle. Use extra care if riding a motorcycle which has added cargo or accessories. Here are some general guidelines to follow if loading cargo or adding accessories to your motorcycle.

Loading

The total weight of the operator, passenger, accessories and cargo must not exceed the maximum load limit of 180 kg

When loading within these weight limits, keep the following in mind

- Cargo and accessory weight should be kept as low and close to the motorcycle as possible. Be sure to
 distribute the weight as evenly as possible on both sides of the machine to minimize imbalance or instability
- 2 Shifting weights can create a sudden imbalance. Make sure that accessories and cargo are securely attached to the motorcycle before riding. Recheck accessory mounts and cargo restraints frequently.
- 3 Never attach any large or heavy items to the handlebars, front forks, or front fender. These items, including such cargo as sleeping bags, duffle bags, or tents, can create unstable handling or slow steering response.

Accessories

Genuine Yamaha accessories have been specifically designed for use on this motorcycle. Since Yamaha cannot test all other accessories which may be available, you must personally be responsible for the proper selection, installation and use of non-Yamaha accessories. You should use extreme caution when selecting and installing any accessories.

Keep in mind these guidelines for mounting accessories in addition to those provided under "LOADING".

Never install accessories or carry cargo that would impair the performance of your motorcycle. Carefully inspect the accessory before using it to make sure it does not in any way reduce ground clearance or cornering clearance, limit suspension travel, steering travel or control operation, or obscure lights or reflectors.



- a Accessories fitted to the handlebar or the front fork area can create instability due to improper weight distribution or aerodynamic changes. If accessories are added to the handlebar or front fork area, they must be as lightweight as possible and should be kept to a minimum.
- b Bulky or large accessories may seriously affect the stability of the motorcycle due to aerodynamic effects. Wind may attempt to lift the motorcycle, or the motorcycle may become unstable in cross winds. These accessories may also cause instability when being passed by or passing large vehicle.
- c. Certain accessories can displace the operator from his or her normal riding position. This improper position limits the freedom of movement of the operator and may limit control ability. Therefore such accessories are not recommended.
- 2 Caution must be used if adding electrical accessories. If these accessories exceed the capacity of the motorcycle's electrical system, an electric failure could result, which could cause a dangerous loss of lights or engine power.

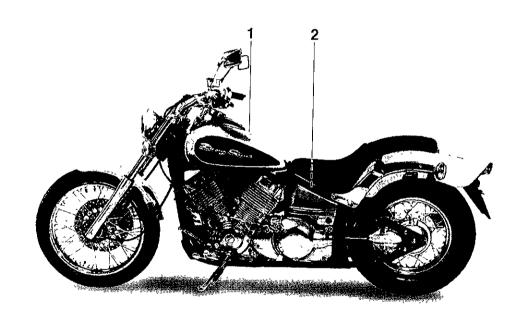
Gasoline and exhaust gas

- 1. GASOLINE IS HIGHLY FLAMMABLE
 - a Always turn off the engine when refueling.
 - b. Take care not to spill any gasoline on the engine or exhaust system when refueling.
 - c Never refuel while smoking or in the vicinity of an open flame.
- 2 Never start the engine or let it run for any length of time in a closed area. The exhaust fumes are poisonous and may cause loss of consciousness and death within a short time. Always operate your motorcycle in an area that has adequate ventilation.
- Always turn off the engine before leaving the motorcycle unattended and remove the ignition key. When parking the motorcycle, note the following.

- a The engine and exhaust system may be hot. Park the motorcycle in a place where pedestrians or children are not likely to touch these hot areas.
- b Do not park the motorcycle on a slope or soft ground, the motorcycle may fall over
- c Do not park the motorcycle near a flammable source, e.g. a kerosene heater, or near an open flame. The motorcycle could catch fire
- 4 When transporting the motorcycle in another vehicle, be sure it is kept upright and that the fuel cock is turned to "ON" or "RES" (for vacuum type)/"OFF" (for manual type). If it should lean over, gasoline may leak out of the carburetor or fuel tank.
- 5. If you should swallow any gasoline, inhale a lot of gasoline vapor, or allow gasoline to get in your eyes, see your doctor immediately. If any gasoline spills on your skin or clothing, immediately wash it off with soap and water and change your clothes

Location of the important labels

Please read the following labels carefully before operating this motorcycle



4

WARNING

Before you operate this vehicle, read the owner's manual

English

3HP-21568-00

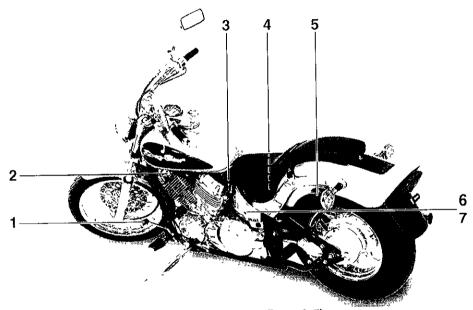


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DESCRIPTION

Left view	••••				 		. 2-1
Right view				**** **	 *****	 •••	2-2
Controls/Instrur	ments	•••	•••		 		. 2-3

Left view



- 1 Shift pedal
- 2 Fuel cock
- 3 Starter "|≺|"
- 4 Rear shock absorber spring preload adjusting ring
- 5 Helmet holder
- 6 Storage compartment
- 7 Tool kit

- (Page 3-5)
- (Page 3-8)
- (Page 3-9)
- (Page 3-10)
- (Page 3-11)
- (Page 6-1)

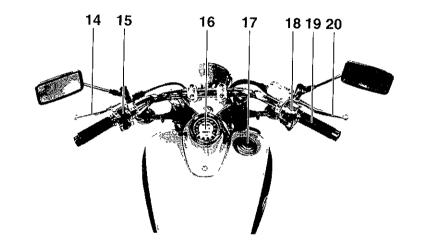
Right view



8 Oil filter

9. Battery (Page 6-22)
10. Fuses (Page 6-23)
11. Main switch (Page 3-1)
12. Air filter (Page 6-9)
13. Rear brake pedal (Page 3-6)

Controls/instruments



44.00	
14 Clutch lever	(Page 3-5)
15 Left handlebar switch	(Page 3-3)
16 Speedometer	(Page 3-5)
17. Tank cap	(Page 3-7)
10 Disable ham all also and a	`_ 3 ,

18 Right handlebar switch

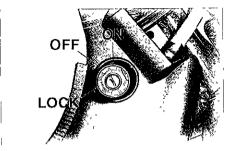
19 Throttle grip

20 Front brake lever

(Page 3-3)

(Page 3-6)

Main switch/Steering lock
Indicator lights
Handlebar switches 3-3
Speedometer 3-5
Clutch lever 3-5
Shift pedal
Front brake lever
Rear brake pedal
Fuel tank cap
Fuel 3-7
Fuel cock
Starter " \sigma "
Seats
Helmet holder
Storage compartment 3-11
Rear shock absorber 3-12
Rear shock absorber adjustment 3-12
Sidestand
Sidestand/clutch switch operation check



FAB05100

Main switch/Steering lock

The main switch controls the ignition and lighting systems Its operation is described below

EAB01300

ON

Electrical circuits are switched on, and the headlight, meter light, and taillight come on The engine can be started The key cannot be removed in this position

EAB00600

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

To lock the steering, turn the handlebars all the way to the left. While pushing the key into the main switch, turn it from "OFF" to "LOCK" and remove it. To release the lock, turn the key to "OFF" while pushing

EUU61400

FAR04900

MARNING

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

20 00 0 180 km/h yamaha

- 2 Turn indicator light " 🗘 🖒 "
- 3 Neutral indicator light "N"
- 4 Engine trouble indicator light " 📥 "

EAB10000

Indicator lights

EAR10100

1. Turn indicator light " ❖ ❖ "

This indicator flashes when the turn switch is moved to the left or right

EAB13100

2. Neutral indicator light "N"

This indicator comes on when the transmission is in neutral

EAB13200

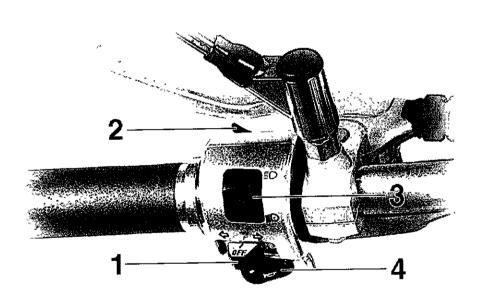
3. High beam indicator light ""

This indicator comes on when the headlight high beam is used.

EAB13800

4. Engine trouble indicator light "心"

This indicator light will come on or flash if trouble occurs in a monitoring circuit. In such a case, take the motorcycle to a Yamaha dealer to have the self-diagnostic systems checked



Handlebar switches

EAB60000

EAB63500

1. Turn signal switch

To signal a right-hand turn, push the switch to "\(\sigma\)" To signal a left-hand turn, push the switch to "\(\sigma\)" 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.

EAB63900

2. Pass switch " ≣⊜ "

Press the switch to operate the passing light

FAB63400

3. Dimmer switch

Turn the switch to " \equiv " for the high beam and to " \equiv " for the low beam

EAB63700

4. Horn switch " > "

Press the switch to sound the horn

EAB63800

1. Engine stop switch

The engine stop switch is a safety device for use in an emergency such as when the motorcycle overturns or if trouble occurs in the throttle system. Turn the switch to " ()" to start the engine. In case of emergency, turn the switch to " (X)" to stop the engine.

2. Start switch "(*)"

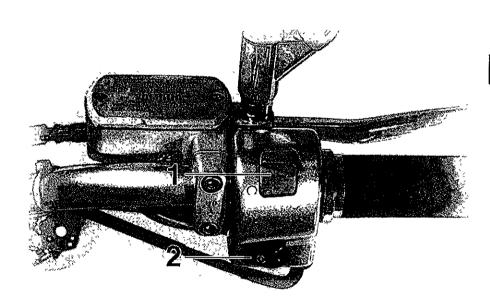
The starter motor cranks the engine when pushing the start switch

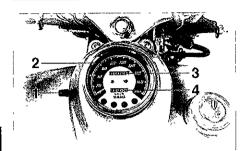
EUU30700

EAB64100

CAUTION:

See starting instructions prior to starting the engine.



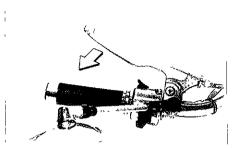


- Reset knob
 Odometer
- 2 Speedometer
- 4 Trip odometer

EAB40005

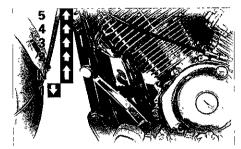
Speedometer

The speedometer shows riding speed This speedometer is equipped with an odometer and trip odometer. The trip odometer can be reset to "0" with the reset knob. Use the trip odometer to estimate how far you can ride on a tank of fuel. This information will enable you to plan fuel stops in the future.



Clutch lever

The clutch lever is located on the left handlebar, and the ignition circuit cutoff system 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 clutch operation. (Refer to the engine starting procedures for a description of the ignition circuit cut-off system.)

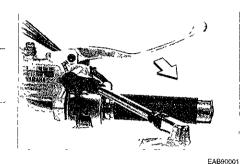


FAB80001

Shift pedal

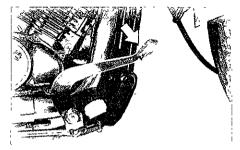
EAB70003

This motorcycle is equipped with a constant-mesh 5-speed transmission. The shift pedal is located on the left side of the engine and is used in combination with the clutch when shifting.



Front brake lever

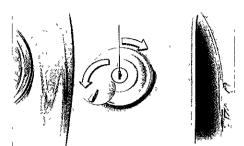
The front brake lever is located on the right handlebar. Pull it toward the handlebar to apply the front brake.



EA890101

Rear brake pedal

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



FAC00101

Fuel tank cap

TO OPEN

Insert the key and turn it 1/4 turn clockwise. The lock will be released and the cap can be opened.

TO CLOSE

Push the tank cap into position with the key inserted. To remove the key, turn it counterclockwise to the original position.

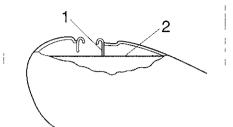
EUU01200

NOTE:_

This tank cap cannot be closed unless the key is in the lock. The key cannot be removed if the cap is not locked properly.

WARNING

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



1 Filler tube

2 Fuel level

Fuel

EUU61100

Make sure there is sufficient fuel in the tank

LUU61000

EAE80000

M 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.

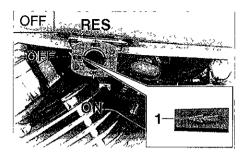
EUU39302

CAUTION:

Always wipe off spilled fuel immediately with a dry and clean soft cloth. Fuel may deteriorate painted surfaces or plastic parts.

EAE80900

Recommended fuel
Regular gasoline
For Australia:
Unleaded fuel only
Fuel tank capacity
Total
16 L
Reserve
3 L



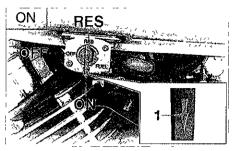
1 Arrow mark

Fuel cock

The fuel cock supplies fuel from the tank to the carburetors while filtering it also

The fuel cock has three positions, which should be set as shown in the illustrations

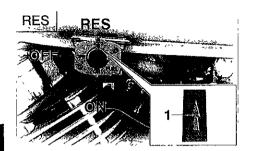
OFF. With the fuel cock in this position, fuel will not flow Always set the fuel cock to this position when the engine is not running



1 Arrow mark

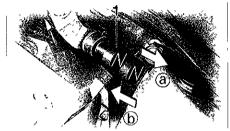
EAC10104

ON. With the fuel cock in this position, fuel flows to the carburetors. Set the fuel cock to this position when starting the engine and while riding



1 Arrow mark

RES. This indicates reserve. If you run out of fuel while riding, set the fuel cock to this position. Fill the tank at the first opportunity. Be sure to set the fuel cock back to "ON" after refueling!



1 Starter "|\times|

Starter "∣≺|"

Starting a cold engine requires a richer air-fuel mixture. A separate starter circuit supplies this mixture.

Move in direction (a) to turn on the starter

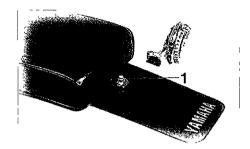
Move in direction (b) to turn off the starter

FUU49000

EAC20502

CAUTION:

Do not use the starter " $|\times|$ " for more than 3 minutes as the exhaust pipe may discolor from excessive heat.

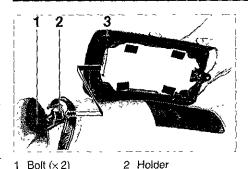


1 Nut

Seats

To remove the passenger seat, remove the nut and pull the seat upward To install the passenger seat, insert the projection on the front of the seat into the holder and install the nut

FAC45800



- Boft $(\times 2)$
- 3 Projection

To remove the rider seat, remove the passenger seat. Then remove the two bolts and pull the seat upward



1 Holder

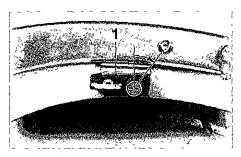
2 Projection

To install the rider seat, insert the projection on the front of the seat into the holder and install the bolts. Then install the passenger seat.

EUU01700

NOTE:

Make sure that the seat is securely fitted.



1. Heimet holder

Helmet holder

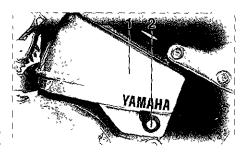
To open the helmet holder, insert the key in the lock and turn it as shown. To lock the helmet holder, replace the holder in its original position.

EUU72900

EAC\$0001

WARNING

Never ride with a helmet in the helmet holder. The helmet may hit objects, causing loss of control and possibly an accident.



1 Compartment cover

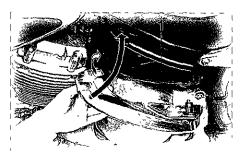
2 Lock

Storage compartment

The storage compartment is located on the left side of the motorcycle



To remove the compartment cover, insert the key in the lock and turn it clockwise. Then pull the cover out as shown



1 Storage compartment

To install the compartment cover, place it in the original position as shown. Then turn the key counter-clockwise and remove it.

EAI513A0

Rear shock absorber

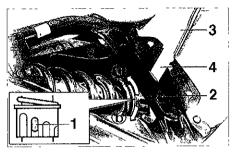
EAI51502

⚠ WARNING

EUU67301

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.
- Do not subject the shock absorber to an open flame or other high heat source. This may cause the unit to explode due to excessive gas pressure.
- Do not deform or damage the cylinder in any way. Cylinder damage will result in poor damping performance.
- 4. Take your shock absorber to a Yamaha dealer for any service.



- 1 Align stopper with preload position
- 2 Adjusting ring
 - 3 Extension bar
 - 4 Special wrench

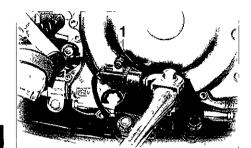
Rear shock absorber adjustment

This shock absorber is equipped with a spring preload adjuster. Adjust spring preload as follows.

1 Remove the passenger seat and rider seat (See page 3-9 for removal procedures) Use the special wrench and the extension bar in the owner's tool kit to turn the adjusting ring
 Turn the adjusting ring in direction
 (a) to increase spring preload and in direction (b) to decrease spring preload

	Sc	Soft Star		Hard			
Adjusting position	1	2	3	4	5	6	7

3. Install the seats



1 Sidestand switch

FAD30101

Sidestand

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 3-14 for an explanation of this system)

EUU68901

♠ WARNING

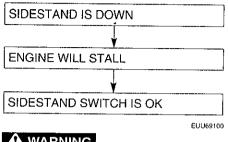
This motorcycle must not be operated with the sidestand in the down position. If the stand is not properly retracted, it could contact the ground and distract the operator, resulting in a possible loss of control. Yamaha has designed into this motorcycle a lockout system to assist the operator in fulfilling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

Sidestand/clutch switch operation check

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

EAD30802

TURN THE MAIN SWITCH TO "ON" AND THE ENGINE STOP SWITCH TO "()" TRANSMISSION IS IN GEAR AND SIDESTAND IS UP PULL IN CLUTCH LEVER AND PUSH THE START SWITCH **ENGINE WILL START** CLUTCH SWITCH IS OK



WARNING

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

PRE-OPERATION CHECKS

Pre-operation check list	 	4-
Pre-operation check list	 	4

Owners are personally responsible for their vehicle's condition. Your motorcycle vital functions can start to deteriorate quickly and unexpectedly, even if it remains unused (for instance, if it is exposed to the elements). Any damage, fluid leak or loss of tire pressure could have serious consequences. Therefore, it is very important that, in addition to a thorough visual inspection, you check the following points before each ride.

ITEM	ROUTINE	PAGE	
Front brake	Check operation, free play, fluid level and fluid leakage Fill with DOT 4 brake fluid if necessary	6-15 ~ 6-18	
Rear brake	Check operation and free play Adjust if necessary	6-15 ~ 6-18	
Clutch	Check operation and free play Adjust if necessary	6-19	
Throttle grip and housing	Check for smooth operation Lubricate if necessary	6-20	
Engine oil	Check oil level Fill with oil if necessary	6-6 ~ 6-7	
Final gear oil	Check for leakage	6-8	
Wheels and tires	Check tire pressure, wear, damage and spoke tightness Tighten spokes if necessary	6-13 ~ 6-14, 6-26 ~ 6-28	
Control and meter cable	Check for smooth operation Lubricate if necessary	6-19	
Brake and shift pedal shafts	Check for smooth operation Lubricate if necessary	6-20	
Brake and clutch lever pivots	Check for smooth operation Lubricate if necessary	6-20	
Sidestand pivot	Check for smooth operation Lubricate if necessary	6-21	
• Check the tightness of all chassis nuts, bolts and screws • Tighten if necessary		-	

PRE-OPERATION CHECKS

ITEM	ROUTINE	PAGE
Fuel tank	Check fuel level Fill with fuel if necessary	3-7 ~ 3-8
Lights, signals and switches		6-24 ~ 6-25

	_	_	_	
Ν	$\boldsymbol{\Gamma}$	П	₩.	٠

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

WARNING

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

5

OPERATION AND IMPORTANT RIDING POINTS

Starting the engine		5-1
Starting a warm engine .		5-4
Shifting		5-4
Tips for reducing fuel consump	otion	5-5
Engine break-in	***** ** ******* *****	5-5
Parking	****** ** * * * * * * * * * * * * * * *	5-6

OPERATION AND IMPORTANT RIDING POINTS

EUU67201

♠ WARNING

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

- 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.
- 3. 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.

EAF17006

Starting the engine

EUU07401

NOTE:_

This motorcycle is equipped with an ignition circuit cut-off system

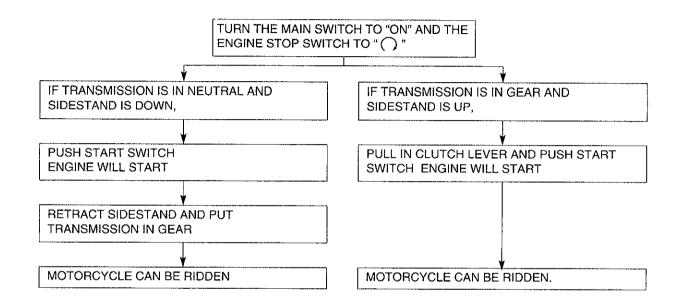
- 1 The engine can be started only under the following conditions.
- a The transmission is in neutral
- b The sidestand is up, the transmission is in gear and the clutch is disengaged
- 2 The motorcycle must not be ridden when the sidestand is down

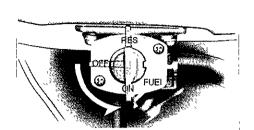
EUU69200

⚠ WARNING

Before going through the following steps, check the function of the sidestand switch and clutch switch. (Refer to page 3-13.)

OPERATION AND IMPORTANT RIDING POINTS





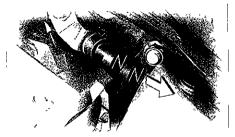
- 1 Turn the fuel cock to "ON"
- 2 Turn the main switch to "ON" and the engine stop switch to " ()"
- 3 Shift transmission into neutral

FUU0300

NOTE:

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

- 4 Turn on the starter "[⋉]" and completely close the throttle grip
- 5 Start the engine by pushing the start switch



NOTE:

If the engine fails to start, release the start 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

6 After starting the engine, move the starter "| \ | " to the halfway position

NOTE:

For maximum engine life, never accelerate hard with a cold engine!

EUU18700

7 After warming up the engine, turn off the starter "|\inksign" completely

NOTE:

EUU02501

The engine is warm when it responds $_$ normally to the throttle with the starter " $|\times|$ " turned off

EUU31501

OPERATION AND IMPORTANT RIDING POINTS

EAF10802

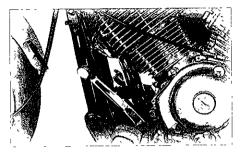
Starting a warm engine

The starter " $|\times|$ " is not required when the engine is warm.

EUU31401

CAUTION:

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



EAF20003

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 shift pedal is shown in the illustration (Page 3-5)

To shift into neutral, depress the shift pedal repeatedly until it reaches the end of its travel, then raise the pedal slightly 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
- tral, the transmission is only properly lubricated when the engine is running. Inadequate lubrication may damage the transmission.

 2. Always use the clutch when
- 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 using the clutch.

OPERATION AND IMPORTANT RIDING POINTS

EAF00100

Tips for reducing fuel consumption

Your motorcycle's fuel consumption depends to a large extent on your riding style. The following tips can help reduce fuel consumption

- 1 Warm up the engine before riding
- 2 Turn off the starter " | \ | " as soon as possible
- 3 Shift up swiftly and avoid high engine speeds during acceleration
- 4 Do not double-clutch or rev the engine while shifting down and avoid high engine speeds with no load on the engine
- 5 Turn off the engine instead of letting it idle for an extended length of time, i.e. in traffic jams, at traffic lights or railroad crossings

Engine break-in

There is never a more important period in the life of your motorcycle than the period between zero and 1,600 km. 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 1,600 km. 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.

EAF34000

1 0 ~ 1,000 km

Avoid operation above 1/3 throttle

2 1,000 ~ 1,600 km
Avoid cruising speeds in excess of 1/2 throttle

EUU31801

EAF33901

CAUTION:

After 1,000 km of operation, be sure to replace the engine oil, oil filter and final gear oil.

3 1,600 km and beyond Proceed with normal riding

EUU32200

CAUTION:

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

OPERATION AND IMPORTANT RIDING POINTS

EAF40101

Parking

When parking the motorcycle, stop the engine and remove the ignition key Turn the fuel cock to "OFF" whenever stopping the engine

EUU63001

WARNING

The exhaust system is 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.

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EUU67100

PERIODIC MAINTENANCE AND MINOR REPAIR

EAH00400

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 WEATH-ER, TERRAIN, GEOGRAPHICAL LO-CATIONS, AND A VARIETY OF INDIVIDUAL USES ALL TEND TO DEMAND THAT EACH OWNER AL-TER THIS TIME SCHEDULE TO SHORTER INTERVALS TO MATCH THE ENVIRONMENT The most important points of motorcycle inspection, adjustment, and lubrication are explained in the following pages

EUU63200

WARNING

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

Tool kit

The tool kit is located inside of the storage compartment (See page 3-11 for compartment opening procedures) The tools provided in the owner's tool kit are to assist you in the performance of periodic maintenance. However, some other tools such as a torque wrench are also necessary to perform the maintenance correctly.

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

NOTE:

If you do not have necessary tools required during a service operation, take your motorcycle to a Yamaha dealer for service

EAH10400

EUU18500

⚠ 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.

PERIODIC MAINTENANCE / LUBRICATION

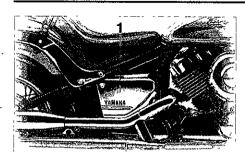
ITEM				EVERY	
		ROUTINE	BREAK-IN 1,000 km	6,000 km or 6 months	12,000 km or 12 months
*	Fuel line	Check fuel hoses for cracks or damage Replace if necessary		√	V
_	Spark plugs	Check condition Clean or replace if necessary	V	√ ·	√
>	Valves	Check valve clearance Adjust if necessary	V	√	√
	Air filter	Clean or replace if necessary			
×	Battery	Check loading condition Recharge if necessary		√ √	· /
	Clutch	Check operation Adjust or replace cable		√	1
-	Front brake	Check operation, fluid level and for fluid leakage (See NOTE on page 6-3) Correct, replace pads if necessary		V	V
	Rear brake	Check operation Adjust and/or replace shoes if necessary		V	√
	Wheels	Check balance, runout, spoke tightness and for damage Tighten spokes and rebalance, replace if necessary		√ /	√
	Tires	Check tread depth and for damage Replace if necessary		V	√
	Wheel bearings	Check bearing assembly for looseness or damage Replace if necessary		1	√
١	Swingarm	Check swingarm pivot for play Correct if necessary Grease with molybdenum sulfide grease every 24,000 km or 24 months			V
	Steering bearings	Check bearing play and steering for smooth operation Correct if necessary Grease with lithium soap base grease every 24,000 km or 24 months	√		√
	Chassis fasteners	Check all nuts, bolts and screws for tightness Tighten if necessary	1	V	√

ITEM		ROUTINE	BREAK-IN 1,000 km	EVERY	
				6,000 km or 6 months	12,000 km or 12 months
Sidestand		Check operation Repair if necessary Lubricate pivot with SAE10W30 motor oil	\'\	\ 	\'\
Sidestand swit	itch	Check operation Replace if necessary	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	·	
< Front fork		Check front fork operation and for oil leakage Repair if necessary			
× Rear shock ab	osorber unit	Check operation and shock absorber for oil leakage Replace the shock absorber unit if necessary			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
× Carburetors		Check idle speed, synchronization and starter operation Adjust if necessary	V	\\\\	V
Engine oil		Change (Warm engine before draining)		ļ_ ·	- V
Engine oil filte	er	Replace	\\'	 	
Final gear oil		Check oil level and final gear case for oil leakage Change oil at initial 1,000 km and every 24,000 km or 24 months thereafter	v.	V.	\

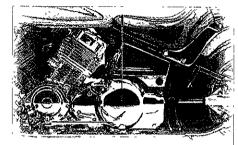
Items marked with an asterisk (*) require special tools, data and technical skills for servicing Take the motorcycle to a Yamaha dealer when servicing these items

NOTE:

- The air filter needs more frequent service if you are riding in unusually wet or dusty areas
- Brake fluid replacement
- 1 When disassembling the master cylinder or caliper cylinder, replace the brake fluid. Normally check the brake fluid level and add fluid as required.
- 2 Replace the oil seals every two years on the inner parts of the master cylinder and caliper cylinder
- 3 Replace the brake hoses every four years, or if cracked or damaged







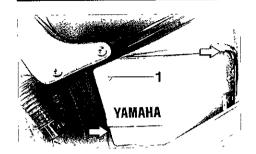
1 Panel B

EAH02400

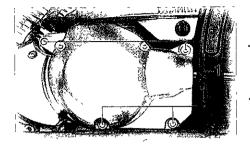
Panel removal and installation

The panel(s) indicated in the illustration need to be removed to perform some of the maintenance described in this chapter. Refer to this section each time a panel has to be removed or removed or removed.

EAH02000







1 Bolt

Panel A

To remove
Remove the bolt and pull outward on
the areas shown

To install

Place the panel in its original position and install the bolt

1 Bolt (× 4)

_ _

Panel B

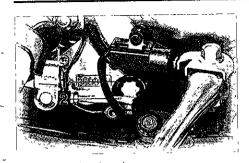
To remove

Remove the bolts

To install

Place the panel in its original position — and install the bolts

EAH02100



- 1 Maximum level mark
- 2 Minimum level mark

EAH55600

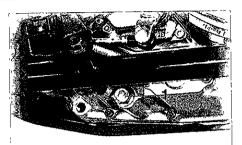
Engine oil

- 1 Oil level inspection
- a. Place the motorcycle on a level place and hold it in an upright position Warm up the engine for several minutes

EUU03901

NOTE:

Be sure the motorcycle is positioned straight up when checking the oil level A slight tilt toward the side can result in false readings



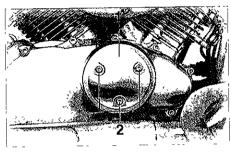
- 1 Drain plug
 - b With the engine stopped, check the oil level through the level window located at the lower part of the left side crankcase cover

EUU0400

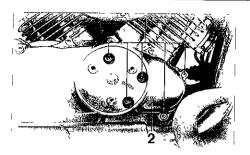
NOTE:____

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

c. The oil level should be between the maximum and minimum marks. If the level is low, fill the engine with sufficient oil to the specified level



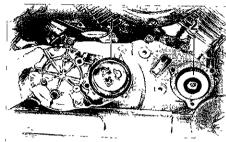
- 1 Chrome cover
- 2 Bolt (x 3)
- 2 Engine oil and oil filter element replacement
- a Warm up the engine for a few minutes
- b Stop the engine Place an oil pan under the engine and remove the oil filler cap
- c. Remove the drain plug and drain the oil.
- d Remove the chrome cover and the oil filter cover by removing the bolts



- 1 Bolt (x 5)
- 2 Oil filter cover
- Remove the oil filter and O-ring
- f Reinstall the drain plug and tighten it to the specified torque

Tightening torque Drain plug 43 Nm (4 3 m kg)

- g Install a new oil filter and O-ring
- h Install oil filter cover and chrome cover, then tighten the bolts
- I Fill the engine with oil Install the oil filler cap and tighten it



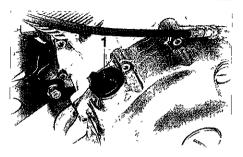
1 O-ring

2 Oil filter

Recommended oil See page 8-1 Oil quantity Total amount 32L

> Periodic oil change 261

With oil filter replacement 28L



1 Oil filler cap

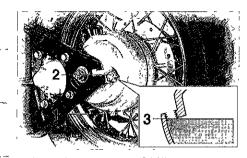
EUU32401

CAUTION:

- Do not put in any chemical additives. Engine oil also lubricates the clutch and additives could cause clutch slippage.
- Be sure no foreign material enters the crankcase.
 - Start the engine and warm it up for a few minutes. While warming up, check for oil leakage If oil leakage is found, stop the engine immediately and check for the cause

EUU02300

PERIODIC MAINTENANCE AND MINOR REPAIR



- 1 Drain plug3 Proper level
- 2 Oil filler bolt

Final gear oil

EAH45703

EUU63400

WARNING

Do not let foreign material enter the final gear case. Be sure oil does not get on the tire or wheel.

- 1 Oil level inspection
- a Place the motorcycle on a level place and hold it in an upright position. The engine should be cool at ambient temperature.
- b Remove the oil filler bolt and check the oil level. The oil level should be at the brim of the hole Fill with oil as necessary

2 Gear oil replacement

- a Place an oil pan under the final gear case
- b. Remove the oil filler bolt and the drain plug to drain the oil
- c Reinstall and tighten the drain plug to the specified torque

Tightening torque.
Drain plug
23 Nm (2 3 m⋅kg)

d. Fill the gear case to the brim of the hole with recommended oil

Oil capacity Final gear case 0 19 L

Recommended oil.

SAE 80 API GL-4 Hypoid gear oil If desired, an SAE 80W90 hypoid gear oil may be used for all conditions

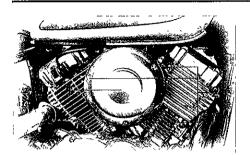
NOTE:

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

e. Reinstall and tighten the oil filler bolt to the specified torque

Tightening torque Oil filler bolt 23 Nm (2 3 m·kg)

f After replacement of the final gear oil, be sure to check for oil leaks.





2 Screw (× 3)

EAH610A0

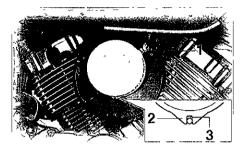
Air filter

The air filter should be cleaned at the specified intervals It should be cleaned more frequently if you are riding in unusually wet or dusty areas

- 1 Remove the air filter case cover by removing the screws
- 2 Remove the air filter

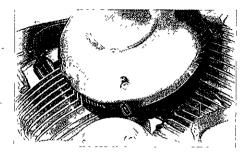


3 Tap the air filter lightly to remove most of the dust and dirt. Blow out the remaining dirt with compressed air as shown. If the air filter is damaged, replace it



1 Holder 3 Slot

- 2 Projection
- 4 Install the air filter on the air filter case as shown



- 1 Match marks
 - 5 Align the match marks and install the air filter case cover

EUU42403

CAUTION:

- Make sure the air filter is properly seated in the air filter case.
- The engine should never be run without the air filter installed.
 Excessive piston and/or cylinder wear may result.

EAH93100

Carburetor adjustment

The carburetors are important parts of the engine and require 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 may be serviced by the owner as part of routine maintenance.

EUU13700

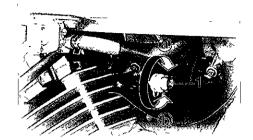
NOTE:_

A diagnostic tachometer must be used for this procedure.

EUU47100

CAUTION:

The carburetors were set at the Yamaha factory after many tests. If they are changed, poor engine performance and damage may result.



1 Adjusting screw

FAH92002

Idle speed adjustment

EUU13/00

NOTE:_____

NC

A diagnostic tachometer must be used for this procedure

1 Attach the tachometer Start the engine and warm it up for a few 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 direction (a) to increase engine speed and in direction (b) to decrease engine speed

Standard idle speed 1.150 ~ 1.250 r/min

NOTE:

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

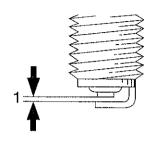
FUU04500

EAH90801

Valve clearance adjustment

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

6



Spark plug gap

EAH20102

Spark plug inspection

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

Normally, all spark plugs from the same engine should have the same color on the white 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 plugs 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 the specified plug.

Specified spark plug. DPR7EA-9 (NGK) X22EPR-U9 (DENSO)

Before installing any spark plug, measure the electrode gap with a wire thickness gauge. Adjust the gap to specification

Spark plug gap 0 8 ~ 0 9 mm

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

Tightening torque Spark plug
18 Nm (1 8 m kg)

FUU03802

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 turn past finger tight. Have the spark plug tightened to the specified torque as soon as possible

1 Tread depth

FAE97900

Tires

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

2 Side wall

1 Tire air pressure Always check and adjust the tire pressure before operating the motorcycle EUU6/500

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.

Maximum load*	180 kg		
Cold tire pressure	Front	Rear	
Up to 90 kg	200 kPa (2 00 kg/cm ² 2 00 bar)	225 kPa (2 25 kg/cm ² , 2 25 bar)	
90 kg load ~ Maximum load*	200 kPa (2 00 kg/cm ² , 2 00 bar)	250 kPa (2 50 kg/cm ² , 2 50 bar)	
High speed riding	200 kPa (2 00 kg/cm ² 2 00 bar)	250 kPa (2 50 kg/cm ² , 2 50 bar)	

Load is the total weight of cargo inder passenger and accessories

FUU6/701

WARNING

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

6

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 the tire replaced

FRONT

Manufacturer	Size	Туре
Bridgestone	100/90-19 578	L309
Dunlop	100/90-19 57S	F24

REAR

Manufacturer	Size	Туре
Bridgestone	170/80-15M/C 77S	G546
Duniop	170/80-15M/C 77S	K555

Minimum tire tread depth	
(front and rear)	1 0 <i>m</i> m

NOTE:

These limits may be different by regulation from country to country. If so, conform to the limits specified by the regulations of your own country

EUU68402

EUU12600

WARNING

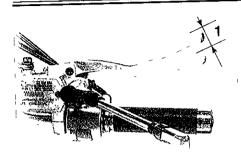
- It is dangerous to ride with a worn-out tire. When a tire tread begins to show lines, have a Yamaha dealer replace the tire immediately. Brakes, tires, and related wheel parts replacement should also be left to a Yamaha dealer.
- 2. Patching a punctured tube is not recommended. If it is absolutely necessary to do so, use great care and replace the tube as soon as possible with a good quality replacement.

Wheels

EAE93401

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 wheel. Be sure the spokes are tight and undamaged 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.
- 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 Ride at moderate speeds after changing a tire since the tire surface must first be broken in for it to develop its optimal characteristics



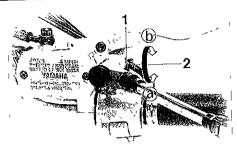
1 Free play

EAH80104

Front brake lever free play adjustment

The free play at the front brake lever should be 10 ~ 15 mm

- 1 Loosen the locknut
- Turn the adjusting bolt in direction
 to increase free play or in direction
 to decrease free play
- 3 After adjusting, tighten the locknut

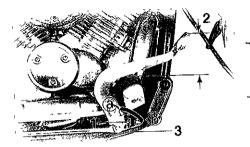


- 1 Locknut
- 2 Adjusting bolt

EUU81500

WARNING

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



- t Locknut
- 2 Pedal height
- Adjusting bolt

EAH822A0

Rear brake pedal height and — free play adjustment

LUU64301

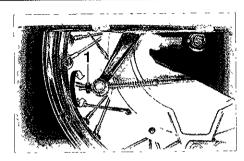
WARNING

It is advisable to have a Yamaha dealer make this adjustment.

The brake pedal height should be adjusted before adjusting the brake pedal free play

- 1 Pedal height The brake pedal should be positioned approximately 85 mm above the top of the footrest
- a Loosen the locknut

- b Turn the adjusting bolt in direction
 a to raise pedal height or in direction
 b to lower pedal height
- c Tighten the locknut



1 Adjusting nut

EUU64400

1 Main body

2 Adjusting nut

EAH83302

WARNING

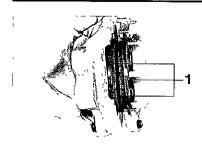
After adjusting the pedal height adjust brake pedal free play.

2. Free play

The brake pedal free play should be adjusted to 20 ~ 30 mm at the brake pedal end. Turn the adjusting nut on the brake rod in direction (a) to increase free play or in direction (b) to decrease free play

Brake light switch adjustment

The rear brake light switch is activated by the brake pedal and is properly adjusted when the brake light comes on just before braking takes effect. To adjust the rear brake light switch, hold the switch body so it does not rotate while turning the adjusting nut. Turn the adjusting nut in direction (a) to make the brake light come on earlier. Turn the adjusting nut in direction (b) to make the brake light come on later.



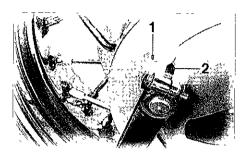
1 Grooves

Checking the front brake pads and rear brake shoes

EAH817A0

FRONT

A wear indicator groove is provided on each brake pad. This indicator allows checking of brake pad wear without disassembling the brake. Inspect the groove if the groove has almost disappeared, ask a Yamaha dealer to replace the pads.



1 Wear limit line

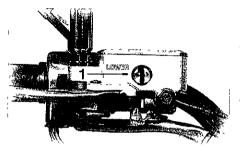
2 Wear indicator

EAH82601

REAR

Apply the brake and inspect the wear indicator

If the indicator reaches the wear limit line, ask a Yamaha dealer to replace the shoes



1 Minimum level mark

EAH88903

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 that the brake fluid is above the minimum level and replenish when necessary Observe—these precautions

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

9

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

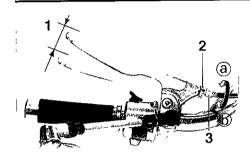
Recommended brake fluid DOT 4

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

EAH83501

Brake fluid replacement

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



2 Locknut

- 1 Free play
- 3 Adjusting bolt

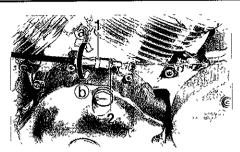
€AI00505

Clutch lever free play adjustment

The clutch lever free play should be adjusted to $10 \sim 15 \text{ mm}$

- 1 Loosen the locknut at the clutch lever
- 2 Turn the adjusting bolt at the clutch lever in direction (a) to increase free play or in direction (b) to decrease free play
- 3 Tighten the locknut at the clutch lever

If the specified free play cannot be obtained, proceed with the following steps



- 1 Adjusting nut
- 2 Locknut
- 4 Loosen the locknut at the clutch lever
- 5 Turn the adjusting bolt at the clutch lever in direction (a) to loosen the cable
- 6 Loosen the locknut at the crankcase side
- 7 Turn the adjusting nut at the crankcase in direction (a) to increase free play or in direction (b) to decrease free play
- 8 Tighten the locknut at the crankcase and the clutch lever

FAI10701

Cable inspection and lubrication

FUU64601

WARNING

Damage to the outer housing of cables may allow internal rusting and cause interference with cable movement. Replace damaged cables as soon as possible to prevent unsafe conditions.

Lubricate the inner cable and the cable end If it does not operate smoothly, ask a Yamaha dealer to replace them

Recommended lubricant SAE 10W30 motor oil

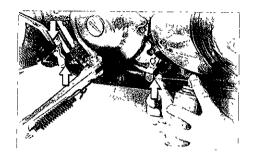
О

EAI30602

EAI10201

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 After removing the screws, hold the end of the cable up in the air and put in several drops of lubricant. With the throttle grip disassembled, coat the metal surface of the grip assembly with a suitable all-purpose grease.



Brake and shift pedal lubrication

Lubricate the pivoting parts

Recommended lubricant SAE 10W30 motor oil



EAI30701

Brake and clutch lever lubrication

Lubricate the pivoting parts

Recommended lubricant SAE 10W30 motor oil

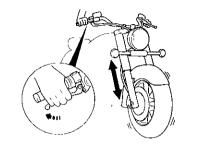
Recommended lubricant SAE 10W30 motor oil

EUU70401

EAI31104



If the sidestand does not move smoothly, consult a Yamaha dealer.



Front fork inspection

EUU65700

FAI20502

MARNING

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

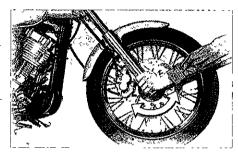
- Visual check Check for scratches or damage on the inner tube and excessive oil leakage from the front fork
- 2 Operation check Place the motorcycle on a level place
- a Hold the motorcycle in an upright position and apply the front brake
- b Push down hard on the handlebars several times and check if the fork rebounds smoothly

CAUTION:

If any damage or unsmooth movement is found with the front fork, consult a Yamaha dealer.

EUU65800

PERIODIC MAINTENANCE AND MINOR REPAIR



EAI60301

Steering inspection

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

EUU65700

WARNING

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

Battery

This motorcycle is equipped with a sealed-type battery. Therefore it is not necessary to check the electrolyte or fill the battery with distilled water.

- If the battery seems to have discharged, consult a Yamaha dealer
- If the motorcycle is equipped with optional electrical accessories, the battery tends to discharge more quickly, so be sure to recharge it periodically

EUU43402

CAUTION:

Never try to remove the sealing caps of the battery cells. The battery will be damaged.

EA184906

↑ 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 CHIL-DREN.

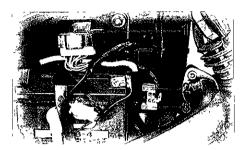
Storage

When the motorcycle is not used for a month or longer, remove the battery, fully charge it and store it in a cool, dry place

EUU43503

CAUTION:

- Completely recharge the battery before storing. Storing a discharged battery can cause permanent battery damage.
- Use a battery charger designed for a sealed-type (MF) battery.
 Using a conventional battery charger will cause battery damage. If you do not have a sealed-type battery charger, contact your Yamaha dealer.
- Always make sure the connections are correct when reinstalling the battery.



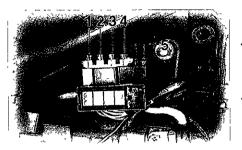
- Fuse block
 Spare fuse
- 2 Main fuse

EAI94400

Fuse replacement

The fuses are located behind panel A (See page 6-5 for panel removal procedures)

If a fuse is blown, turn off the main switch and the switch of 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 Ignition fuse
- 2 Signaling system fuse
- 3 Headlight fuse 4 Carburetor heater fuse
- 5 Spare fuse

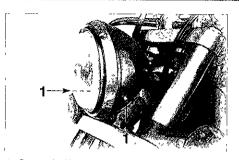
EUU34400

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.

Specified fuses.

Main fuse: 30 A
Ignition fuse. 10 A
Signaling system fuse: 10 A
Headlight fuse: 15 A
Carburetor heater fuse: 15 A





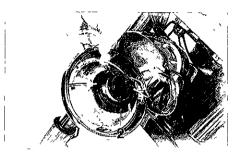


Headlight bulb replacement

This motorcycle is equipped with a quartz bulb headlight.

If the headlight bulb burns out, replace the bulb as follows

- Remove the screws holding the light unit assembly
- 2. Remove the connectors, the light unit assembly and then the bulb holder cover



1 Connector

2 Bulb holder cover

 Turn the bulb holder counterclockwise to remove it and remove the defective bulb

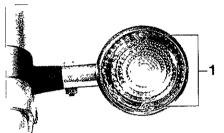
EUU66002

WARNING

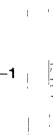
Keep flammable products and your hands away from a bulb while it is on, as it is hot. Do not touch a bulb until it cools down.

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

Install the bulb holder cover, connectors and the light unit assembly If the headlight beam adjustment is necessary, ask a Yamaha dealer to make that adjustment



1 Screw (x 2)



1 Screw (x 2)

EAJ40501

Turn signal and taillight bulb replacement

- 1 Remove the screws and the lense
- 2 Push the bulb inward and turn it counterclockwise
- 3 Place a new bulb in the socket Push the bulb inward and turn it clockwise until it engages into the socket
- 4 Install the lense and the screws

FUU48900

CAUTION:

Do not over-tighten the screws as the lense may break.

6

EAJ83700

Supporting the motorcycle

Since the Yamaha XVS650 has no centerstand, follow these precautions when removing the front and rear wheel or performing other maintenance requiring the motorcycle to stand upright.

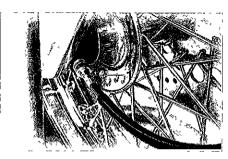
Front wheel service

To stabilize the rear of the motorcycle, either use a motorcycle stand or place a motorcycle jack under the frame in front of the rear wheel to prevent it from moving from side to side. Then use a motorcycle stand to elevate the front wheel off of the ground Rear wheel service:

Use a motorcycle stand or motorcycle

jack to elevate the motorcycle so the
rear wheel is off the ground. Alternatively, two jacks can be placed under
the frame or swingarm

Check that the motorcycle is in a stable and level position before starting any maintenance. A strong wooden box can be placed under the engine for added stability



1 Speedometer cable

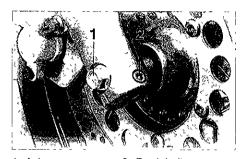
EAJ24404

Front wheel removal

EUU66202

M WARNING

- It is advisable to have a Yamaha dealer service the wheel.
- Securely support the motorcycle so there is no danger of it falling over.
- 1 Remove the speedometer cable from the front wheel side



1 Axle

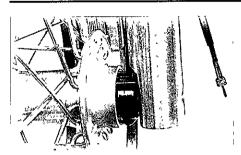
2 Pinch boit

- 2 Loosen the pinch bolt and wheel axle
- Elevate the front wheel by placing a suitable stand under the engine
- 4 Remove the wheel axle and the front wheel

NOTE:

EUU05401

Do not depress the brake lever when the disc and caliper are separated



1 Gear unit housing

EAJ83600

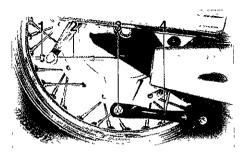
Front wheel installation

- 1 Install the speedometer gear unit housing into the wheel hub Make sure the slot in the speedometer gear unit housing fits over the stopper on the front fork outer tube
- 2 Lift up the wheel between the front fork legs and guide the brake disc between the brake pads
- 3 Install the wheel axle and tighten it to the specified torque

Tightening torque
Wheel axle
59 Nm(5 9 m-kg)

- 4 Push down hard on the handlebars several times to check for proper fork operation
- 5 Install the pinch bolt and tighten it to the specified torque

Tightening torque
Pinch bolt
20 Nm (2 0 m kg)



- Adjusting nut
- 2 Brake rod
- 3 Tension bar bolt
- 4 Tension bar

Rear wheel removal

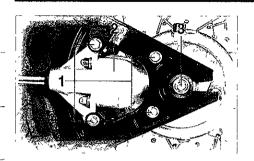
EAJ65700

EUU66202

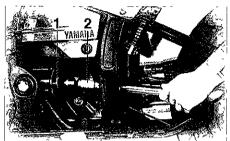
WARNING

- It is advisable to have a Yamaha dealer service the wheel.
- Securely support the motorcycle so there is no danger of it falling over.
- 1 Loosen the axle nut Do not remove it
- 2 Remove the tension bar bolt on the brake shoe plate side
- 3 Loosen the tension bar bolt on the swingarm side

PERIODIC MAINTENANCE AND MINOR REPAIR



- 1 Bolt (x 4)
- 3 Axle nut
- 2 Final gear case
- 4 Remove the brake pedal free play adjusting nut and then the brake rod from the brake cam lever
- 5 Remove panel "B" (See page 6-5 for removal procedures)
- 6 Remove the bolts that secure the final gear case to the swingarm
- 7 Elevate the rear wheel off of the ground
- 8 Pull the wheel backward while supporting the drive shaft to remove the wheel, axle, final gear case and drive shaft as an assembly



- 1 Middle drive shaft joint
- 2 Drive shaft

EAJ65800

Rear wheel installation

- Install the rear wheel, axle, final gear case and drive shaft as an assembly by pushing the wheel forward and guiding the drive shaft into the middle drive shaft Ujoint
- Install the bolts that secure the final gear case to the swingarm and tighten to the specified tightening torque.

Specified torque Final gear case bolts 90 Nm (9 0 m kg)

- 3 Insert the brake rod into the brake cam lever and install the brake pedal free play adjusting nut
- Install the tension bar bolt and tighten both bolts to the specified tightening torque.

Specified torque.
Tension bar bolts
20 Nm (2.0 m·kg)

- 5 Install panel "B"
- 6 Tighten the axle nut to the specified tightening torque.

Specified torque Axle nut. 92 Nm (9.2 m·kg)

7 Adjust the rear brake pedal free play (See page 6-15)

PERIODIC MAINTENANCE AND MINOR REPAIR

EAJ50002

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 loss of power The troubleshooting chart describes a quick, easy procedure for making checks If your motorcycle requires any repair, bring it to a Yamaha dealer. The skilled technicians at a Yamaha dealership have the tools, experience, and knowhow 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

PERIODIC MAINTENANCE AND MINOR REPAIR

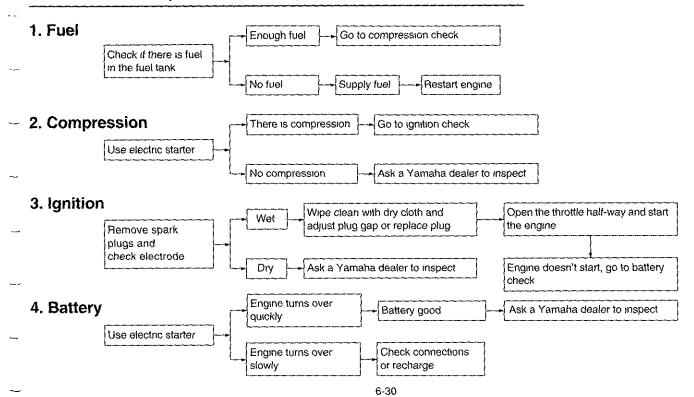
Troubleshooting chart

EUU66300

EAJ51600

WARNING

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



CLEANING AND STORAGE

Cleaning	•	٠.	 , .	 •••	 	. /-	. 1
Storage			 		 	7-	-2

CLEANING AND STORAGE

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 the exhaust pipes to prevent water entry, a plastic bag and strong rubber band may be used
- b Make sure the spark plugs 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 wheel axles
- 3 Rinse the dirt and degreaser off with a garden hose. Use only enough pressure to do the job

EAK02301

CAUTION:

electrical parts.

EUU34602

Excessive hose pressure may cause water seepage and deterioration of wheel bearings, front fork, brakes, transmission seals and

Many expensive repair bills have resulted from improper high pressure detergent applications such as those available in coin-operated car washers.

- 4 After riding on salted roads, wash the motorcycle with cold water immediately. Do not use warm water as it increases the chemical reaction of the salt.
- 5 Once the majority of the dirt has been hosed off, wash all surfaces with warm water and mild, detergent-type soap. An old toothbrush or bottle brush is handy for hardto-get-at places

134602

- 6 Rinse the motorcycle off immediately with clean water and dry all surfaces with a chamois, clean towel, or soft absorbent cloth
- 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 the paint or protective finish. When finished, start the engine and let it idle for several minutes.

7

EAK02404

B. STORAGE

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

- 1. Fill the fuel tank with fuel and add fuel stabilizer (if available)
- 2 Remove the spark plugs, pour about one tablespoon of SAE 10W30 or 20W40 motor oil in each spark plug hole and reinstall the spark plugs Turn the engine over several times (ground spark plug leads) to coat the cylinder walls with oil

EUU66400

WARNING

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

3 Lubricate all control cables

- 4 Block up the frame to raise both wheels off the ground
- 5 Tie a plastic bag over the exhaust pipe outlets to prevent moisture from entering
- 6 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
- 7 Remove the battery and fully charge it Store it in a cool, dry place and completely recharge it once a month Do not store the battery in an excessively warm or cold place (less than 0°C or more than 30°C) See page 6-23 for battery storage precautions

EUU05800

NOTE:

Make any necessary repairs before storing the motorcycle

	Specifications	 8-1
		

Specifications

Model	XVS650	Engine oil	
Dimensions		Туре	20/ 40 0 40 00/ 00/ 47-7-7
Overall length	2,340 mm		-20′ -10 0 10 ' 20′ 30° 40° 50 °C
Overall width	880 mm		SAE 10W/30
Overall height	1,065 mm		i i k k k i i i
Wheelbase	1,610 mm		SAE 10W/40
Ground clearance	140 mm		SAE 20W/40
Minimum turning radius	3,100 mm		SAE 20W/50
Basic weight (With oil and full fuel tank)	227 kg	Classification	API Service "SE", "SF" type or
Engine:			equivalent
Engine type	Air-cooled 4-stroke, SOHC		(e g "SF-SE", "SF-SE-CC", "SF-SE-SD" etc)
Cylinder arrangement	V type 2-cylinder	Capacity	3. 32 33 3.3 ,
Displacement	649 cm ³	Periodic oil change	26L
Bore × stroke	81 × 63 mm	With oil filter replacement	28L
Compression ratio	9 1	Total amount	32L
Starting system	Electric starter	Final gear oil:	022
Lubrication system	Wet sump	Туре	SAE80API "GL-4" Hypoid Gear Oil
		Capacity	0 19 L
		Air filter	Dry type element

			Gear ratio	1st	2 714
	Fuel.	Regular gasoline		2nd	1 900
	Туре	-		3rd	1 458
		Unleaded fuel only (For Australia)		4th	1 167
	Fuel tank capacity	16 L			
-	Reserve amount	3 L		5th	0 967
	Carburetor		Chassis		
	Type / quantity	BDS28/2	Frame type		Double cradle
	Manufacturer	MIKUNI	Caster angle		35°
	Spark plug.		Trail		153 mm
	·	DPR7EA-9/NGK or	Tire [.]		
	Type/Manufacturer	X22EPR-U9/DENSO	Type		Tube
	Spark plug gap	0 8 ~ 0 9 mm	Size		
	Clutch type	Wet, multiple-disc	Front		100/90-19 57S
	Transmission		Rear		170/80-15 M/C 77S
	Primary reduction system	Spur gear	Manufacture / model		
	Primary reduction ratio	1 789	Front		Bridgestone / L309
-	Secondary reduction system	Shaft drive			Dunlop / F24
	Secondary reduction ratio	3 071	Rear		Bridgestone / G546
	Transmission type	Constant mesh 5-speed			Dunlop / K555
~	Operation	Left foot operation	Maximum load*		180 kg

Air pre	essure (cold tire)		Rear		
up	to 90 kg load*			Type	Drum brake
	Front	200 kPa, 2 00 kg/cm ² , 2 00 bar		Operation	Right foot operation
	Rear	225 kPa, 2 25 kg/cm ² , 2 25 bar	Suspensio	n	riigii ioot operation
90 l load	kg load ~ Maxımum d*		Front	_	
	Front	200 kPa, 2 00 kg/cm ² , 2 00 bar		Туре	Telescopic fork
	Rear	250 kPa, 2 50 kg/cm ² , 2 50 bar		Inner tube outer diameter	41 mm
Higi	h speed riding		Rear		
	Front	200 kPa, 2 00 kg/cm ² , 2 00 bar		Туре	Swingarm
	Rear	250 kPa, 2 50 kg/cm ² , 2 50 bar	Shock abso	orber:	·
	d is total weight of carg	o, rider, passenger and accessories	Front		Coil spring / Oil damper
Wheels			Rear		Coil spring / Gas-oil damper,
Туре					spring preload adjustable
	Front	Spoke	Wheel trave	el	
	Rear	Spoke	Front		140 mm
Sıze			Rear		86 mm
	Front	19 × MT2 50	Electrical		
	Rear	15M/C × MT3 50	Ignition s	ystem	TCI (digital)
Brakes.			Charging	system	
Front				Туре	A C magneto
	Type	Single disc brake, 4-pot caliper		Standard output	14 V 20 A / 5,000 rpm
	Operation	Right hand operation			·
	Fluid	DOT 4			

	Battery	
_	Туре	GT12B-4
	Voltage, capacity	12 V 10 AH
	Headlight type	Quartz bulb (Halogen)
	Bulb voltage, wattage \times quantity	
	Headlight	12 V 60 W / 55 W × 1
	Tait / brake light	12 V 5 W / 21 W
	Turn signal light	12 V 21 W × 4
	Meter light	12 V 1 7 W × 1
	Neutral indicator light	12 V 3 W × 1
	High beam indicator light	12 V 1 7 W × 1
	Turn indicator light	12 V 3 W × 1
	Engine trouble indicator light	12 V 1 7 W × 1
_	Fuse.	
	Main fuse	30 A
	Ignition fuse	10 A
	Signaling system fuse	10 A
	Headlight fuse	15 A
	Carburetor heater fuse	15 A

CONSUMER INFORMATION

HOW TO USE THE CONVERSION TABLE	9-1
Identification numbers record	9-2
Identification numbers record	9-2
Key identification number	0.2
Vehicle identification number	9-2
Model label	9-3
Noise regulation (FOR Australia)	9-3
Noise requiation (non Australia)	

HOW TO USE THE CONVERSION TABLE

All specification data in this manual are listed in SI and METRIC UNITS

Use this table to convert METRIC unit data to IMPERIAL unit data

Ex

METRIC		MULTIPLIER		IMPERIAL
**mm	×	0 03937	=	**in
2 mm	×	0 03937	⊭	0 08 in

CONVERSION TABLE

METRIC TO IMPERIAL					
	Metric unit	Multiplier	Imperial unit		
Torque	m kg m kg cm kg cm kg	7 233 86 794 0 0723 0 8679	ft lb in lb ft lb in lb		
Weight	kg g	2 205 0 03527	lb oz		
Speed	km/hr	0 6214	mph		
Distance	km m m cm mm	0 6214 3 281 1 094 0 3937 0 03937	mi ft yd in		
Volume / Capacity	cc (cm ³) cc (cm ³) It (liter) It (liter)	0 03527 0 06102 0 8799 0 2199	oz (IMP liq) cu in qt (IMP liq) gal (IMP liq)		
Misc	kg/mm kg/cm ² Centigrade (°C)	55 997 14 2234 9/5 + 32	lb/in psi (lb/in²) Fahrenheit (°F)		

FALtinget

CONSUMER INFORMATION

FAARIR

Identification numbers record

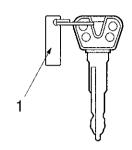
Record the key identification number, vehicle identification number and model label information in the spaces provided for assistance when ordering spare parts from a Yamaha dealer or for reference in case the vehicle is stolen

 KEY IDENTIFICATION NUMBER

2 VEHICLE IDENTIFICATION NUMBER

3 MODEL LABEL INFORMATION





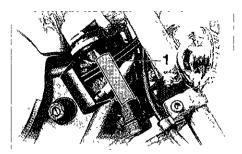
1 Key identification number

EAA61500

state

Key identification number

The key identification number is stamped on the key tag. Record this number in the space provided and use it for reference when obtaining a new key



1 Vehicle identification number

FAA80000

Vehicle identification number

The vehicle identification number is stamped into the steering head pipe

NOTE:

The vehicle identification number is used to identify your motorcycle and may be used to register your motorcycle with the licensing authority in your

CONSUMER INFORMATION



1 Model label

EAA61602

Model label

The model label is affixed to the location shown in the figure. Record the information on this label in the space provided. This information will be needed to order spare parts from your Yamaha dealer.

EAL00800

NOISE REGULATION (FOR Australia)

"TAMPERING WITH NOISE CONTROL SYSTEM PROHIBITED"

Owners are warned that the law may prohibit

- (a) The removal or rendering inoperative by any person other than for purposes of maintenance, repair or replacement, of any device or element of design incorporated into any new vehicle for the purpose of noise control prior to its sale or delivery to the ultimate purchaser or while it is in use, and
- (b) the use of the vehicle after such device or element of design has been removed or rendered inoperative by any person

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