



XV1600A
OWNER'S MANUAL



Welcome to the Yamaha world of motorcycling!

As the owner of a Yamaha Wild Star™, 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 Yamaha Wild Star'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 your 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:



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.

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



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

IMPORTANT MANUAL INFORMATION

XV1600A

OWNER'S MANUAL

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GIVE SAFETY THE RIGHT OF WAY

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GIVE SAFETY THE RIGHT OF WAY

Motorcycles are fascinating vehicles, which can give you an unsurpassed feeling of power and freedom. However, they also impose certain limits, which you must accept; even the best motorcycle does not ignore the laws of physics.

Regular care and maintenance are essential for preserving your motorcycle's value and operating condition. Moreover, what is true for the motorcycle is also true for the rider: good performance depends on being in good shape. Riding under the influence of medication, drugs and alcohol is, of course, out of the question. Motorcycle riders - more than car drivers - must always be at their mental and physical best. Under the influence of even small amounts of alcohol, there is a tendency to take dangerous risks.

Protective clothing is as essential for the motorcycle rider as seat belts are for car drivers and passengers. Always wear a complete motorcycle suit (whether made of leather or tear-resistant synthetic materials with protectors), sturdy boots, motorcycle gloves and a properly fitting helmet. Optimum protective wear, however, should not encourage carelessness. Though full-coverage helmets and suits, in particular, create an illusion of total safety and protection, motorcyclists will always be vulnerable. Riders who lack critical self-control run the risk of going too fast and are apt to take chances. This is even more dangerous in wet weather. The good motorcyclist rides safely, predictably and defensively - avoiding all dangers, including those caused by others.

Enjoy your ride!

Left view 2-1

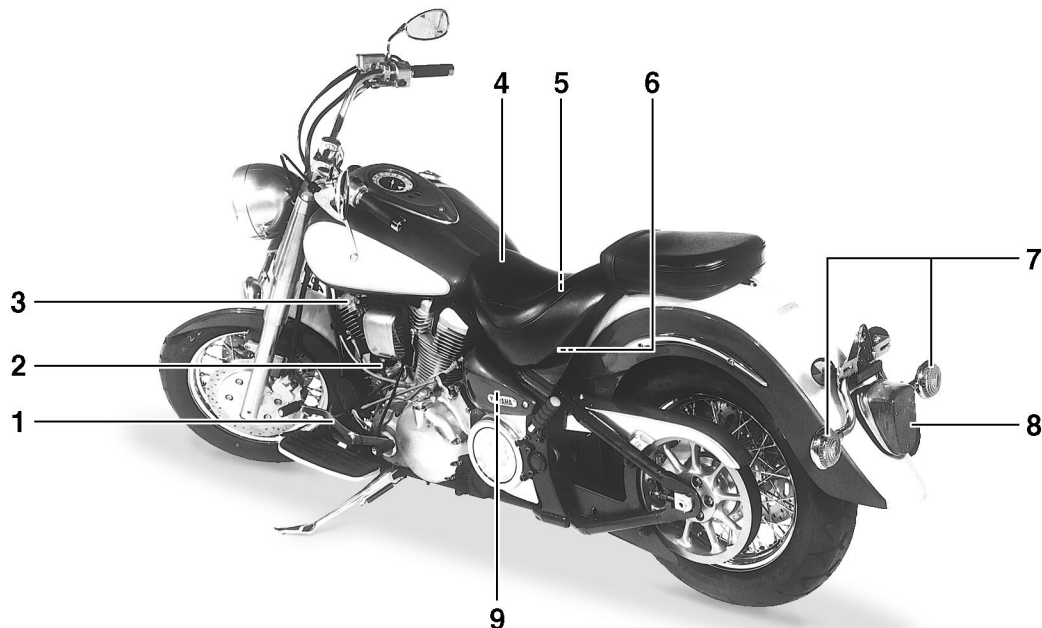
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DESCRIPTION

Left view

2



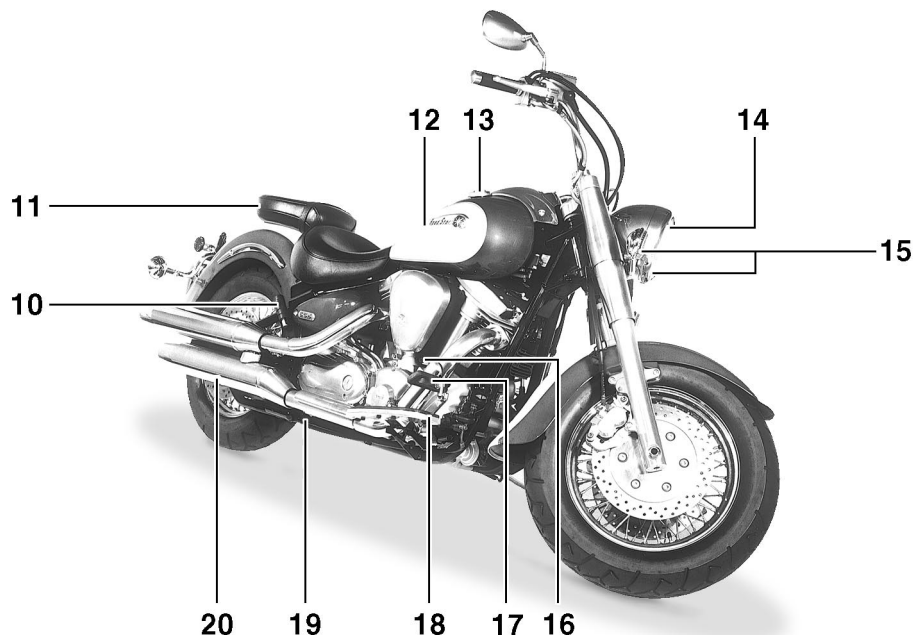
- 1. Shift pedal
- 2. Starter (choke) knob
- 3. Fuel cock
- 4. Rider seat
- 5. Tool kit

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- 6. Helmet holder
- 7. Rear turn signal lights
- 8. Tail/brake light
- 9. Fuses

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Right view



10. Passenger footrest

11. Passenger seat

12. Fuel tank

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16. Throttle stop screw

17. Rear brake pedal

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19. Rear shock absorber spring preload
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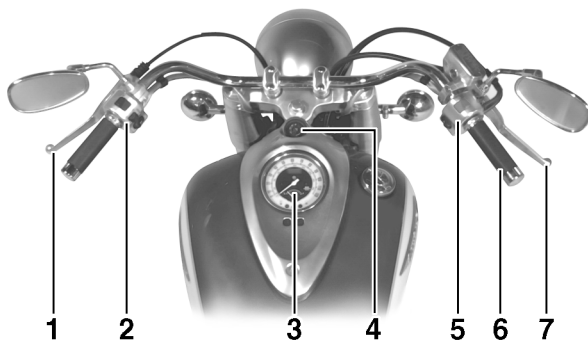
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DESCRIPTION

Controls/Instruments

2



- 1. Clutch lever
- 2. Left handlebar switches
- 3. Speedometer
- 4. Main switch/steering lock

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- 5. Right handlebar switches
- 6. Throttle grip
- 7. Front brake lever

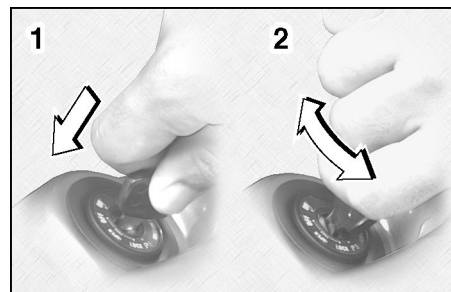
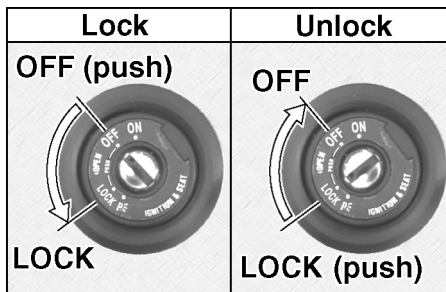
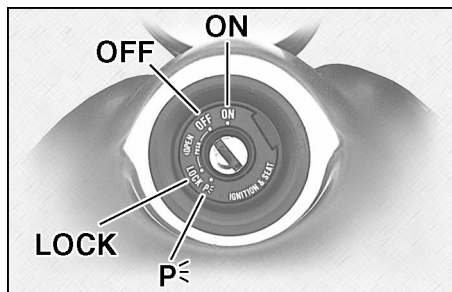
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INSTRUMENT AND CONTROL FUNCTIONS

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INSTRUMENT AND CONTROL FUNCTIONS



1. Push
2. Turn

Main switch/steering lock

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

ON

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

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.

! WARNING

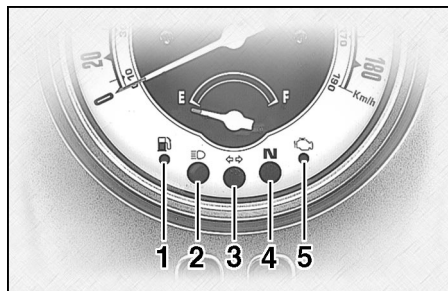
Never turn the key to "OFF" or "LOCK" when the motorcycle is moving. The electrical circuits will be switched off which may result in loss of control or an accident. Be sure the motorcycle is stopped before turning the key to "OFF" or "LOCK".

INSTRUMENT AND CONTROL FUNCTIONS

P \leq (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.

To use the parking position, first lock the steering, then turn the key to “P \leq ”. Do not use this position for an extended length of time as the battery may discharge.



Indicator lights

1. Fuel level indicator light “”

When the fuel level drops below approximately 3.5 L, this light will come on. When this light comes on, switch the fuel cock to “RES”. Then, fill the tank at the first opportunity.

2. High beam indicator light “”

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

3. Turn indicator light “ ”

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

4. Neutral indicator light “N”

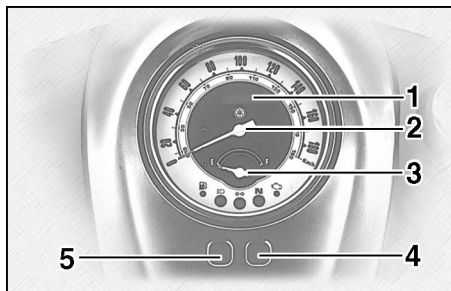
This indicator comes on when the transmission is in neutral.

5. Engine trouble indicator light “”

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.

INSTRUMENT AND CONTROL FUNCTIONS

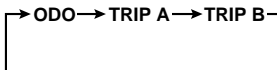
3



1. Odometer/tripmeter/clock
2. Speedometer
3. Fuel gauge
4. Set button
5. Mode button

Speedometer

This speedometer is equipped with an odometer and a twin trip meter. Pushing the mode button (left) will change the display from one mode to the other as follows.



In the odometer mode “ODO”, the motorcycle’s total mileage is displayed. In the trip meter modes “TRIP A” or “TRIP B”, the motorcycle’s mileage since the trip meter was last reset is displayed. Use the trip meter to estimate how far you can ride on a tank of fuel. This information will enable you to plan fuel stops in the future.



To reset the trip meter to 0, push the mode button (left) until “TRIP A” or “TRIP B” is displayed, then push the set button (right) and hold it down for at least one second.

NOTE: _____

This motorcycle does not have a tachometer. However, it is equipped with an engine revolution limiter, which prevents the engine revolution from exceeding approximately 4,400 r/min.

Fuel gauge

The fuel gauge indicates the quantity of the remaining gasoline in the tank. The gauge needle moves from “F” (Full) to “E” (Empty) as the fuel level decreases. When the needle moves to the “E” position, add fuel as soon as possible.

Diagnosis device

This model is equipped with a self-diagnosis device for the electrical circuits.

If some trouble should occur in a circuit, the engine trouble indicator light will come on or the fuel indicator light will start flashing.

To prevent engine damage, have your motorcycle serviced by a Yamaha dealer as soon as possible if either of these conditions occur.

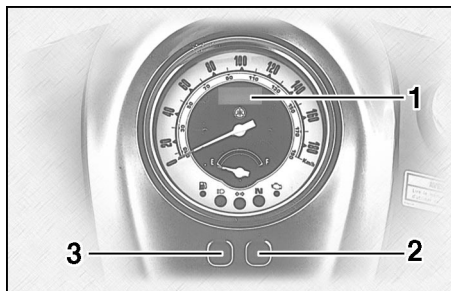
CAUTION:

To prevent engine damage, be sure to consult a Yamaha dealer as soon as possible if this occurs.

Antitheft alarm (optional)

An antitheft alarm can be equipped to this motorcycle. Consult your Yamaha dealer to obtain and install the alarm.

INSTRUMENT AND CONTROL FUNCTIONS



1. Clock
2. Set button
3. Mode button

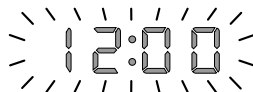
Digital clock

This digital clock always shows the time regardless of the main switch position.



Setting the clock

1. Turn the main switch to "ON".
2. Press both the set button (right) and the mode button (left) simultaneously until the hours and minutes flash.



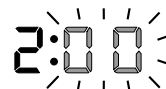
3. Push the left button and only the hour display will flash.



4. Push the right button to change the hours.



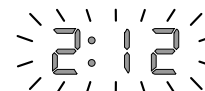
5. Push the left button and only the minute display will flash.



6. Push the right button to change the minutes.



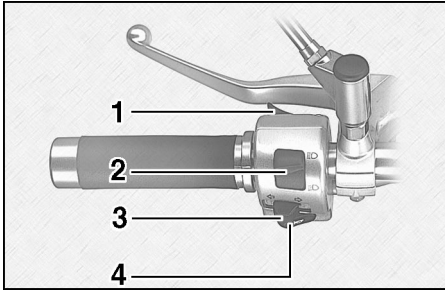
7. Push the left button and both the hours and minutes will flash.



8. Push the right button for two seconds to set the clock.



INSTRUMENT AND CONTROL FUNCTIONS



Handlebar switches

1. Pass switch “≡○”

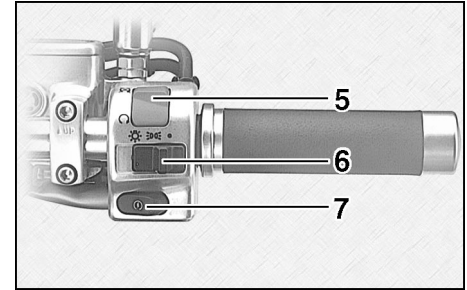
Press the switch to operate the passing light.

2. Dimmer switch

Turn the switch to “≡○” for the high beam and to “≡○” for the low beam.

3. Turn signal switch

To signal a right-hand turn, push the switch to “⇨”. To signal a left-hand turn, push the switch to “⇧”. 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.



4. Horn switch “📢”

Press the switch to sound the horn.

5. Engine stop switch

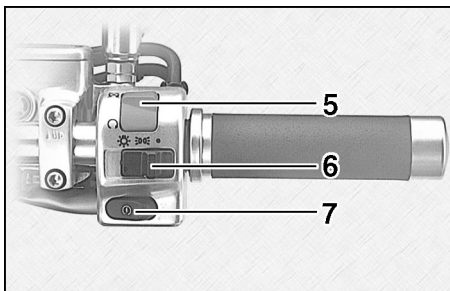
The engine stop switch is a safety device for use in an emergency such as when the motorcycle overturns or if trouble occurs in the throttle system. Turn the switch to “☀” to start the engine. In case of emergency, turn the switch to “☀” to stop the engine.

6. Lights switch

Turning the light switch to “≡D D≡”, turns on the auxiliary light, meter lights and taillight. Turning the light switch to “☀” turns the headlight on also.

INSTRUMENT AND CONTROL FUNCTIONS

3

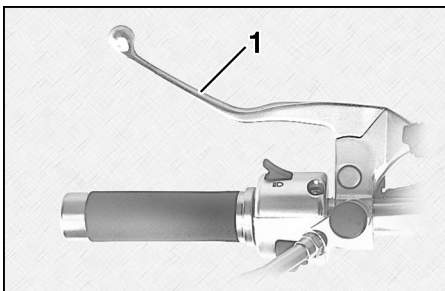


7. Start switch “(⊗)”

The starter motor cranks the engine when pushing the start switch.

CAUTION:

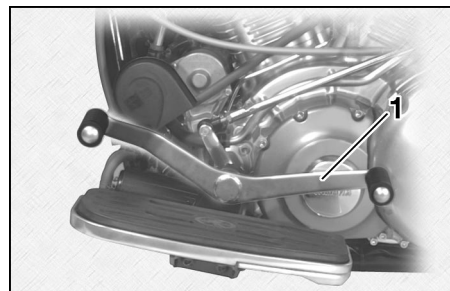
See starting instructions prior to starting the engine.



1. Clutch lever

Clutch lever

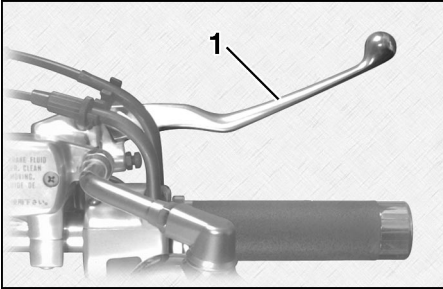
The clutch lever is located on the left handlebar, and the ignition circuit cut-off system is incorporated in the clutch lever holder. Pull the clutch lever to the handlebar to disengage the clutch, and release the lever to engage the clutch. The lever should be pulled rapidly and released slowly for smooth clutch operation. (Refer to the engine starting procedures for a description of the ignition circuit cut-off system.)



1. Shift pedal

Shift pedal

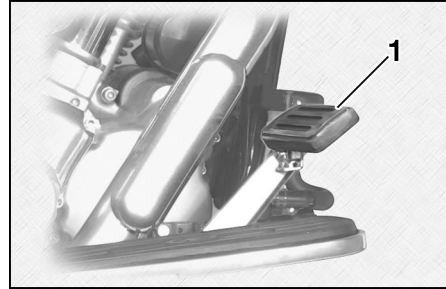
The shift pedal is located on the left side of the engine and is used in combination with the clutch when shifting. Use your toe or heel to shift up and your toe to shift down.



1. Front brake lever

Front brake lever

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



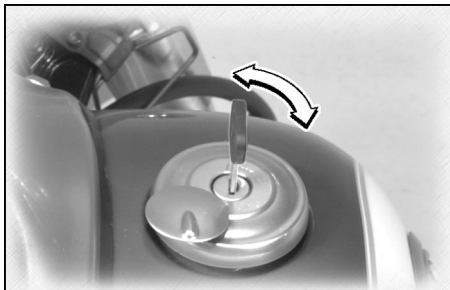
1. Rear brake pedal

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.

INSTRUMENT AND CONTROL FUNCTIONS

3



Fuel tank cap

To remove

Slide the lock cover open, insert the key and turn it 1/4 turn clockwise. The lock will be released and the cap can be removed.

To install

Make sure the arrow mark on the tank cap is facing forward, then push the tank cap into position. Turn the key counterclockwise to the original position and remove it. Close the lock cover.

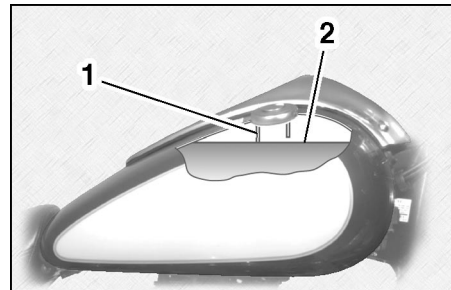
NOTE:

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

Make sure there is sufficient fuel in the tank. Fill the fuel tank to the bottom of the filler tube as shown in the illustration.



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 or it may overflow when the fuel heats up later and expands.

CAUTION:

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

Recommended fuel:

Regular unleaded gasoline with a research octane number of 91 or higher.

Fuel tank capacity:

Total:

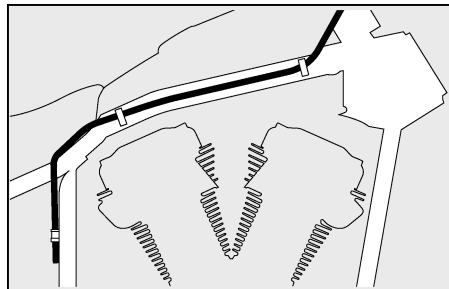
20 L

Reserve:

3.5 L

NOTE:

If knocking or pinging occurs, use a different brand of gasoline or higher octane grade.

**Fuel tank breather hose**

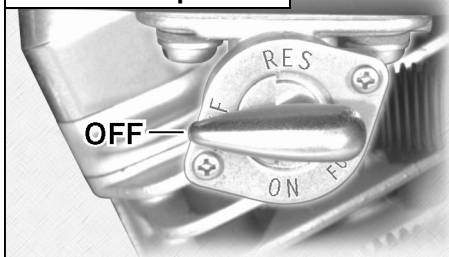
This model is equipped with a fuel tank breather hose.

Before using this motorcycle:

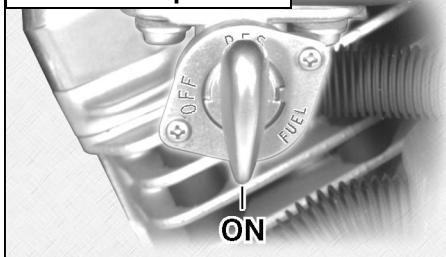
- Check the hose connection.
- Check the hose for cracks or damage and replace it if damaged.
- Make sure the end of the hose is not blocked and clean it if necessary.

INSTRUMENT AND CONTROL FUNCTIONS

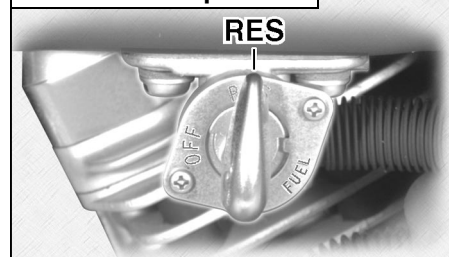
OFF: closed position



ON: normal position



RES : reserve position



Fuel cock

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

The fuel cock has three positions:

OFF

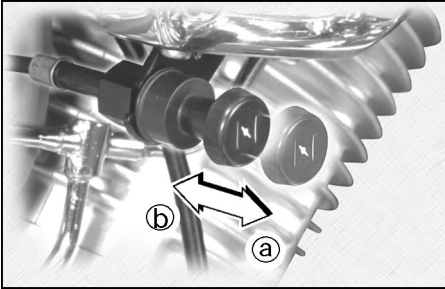
With the lever in this position, fuel will not flow. Always return the lever to this position when the engine is not running.

ON

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

RES

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

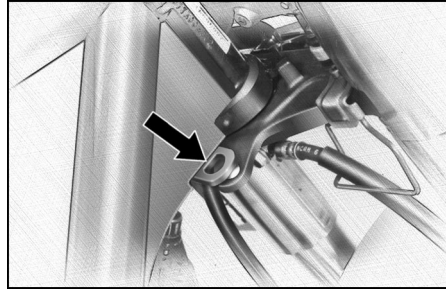


Starter (choke) knob

Starting a cold engine requires a richer air-fuel mixture, which is supplied by the starter (choke).

Move the knob in direction ① to turn on the starter (choke).

Move the knob in direction ② to turn off the starter (choke).

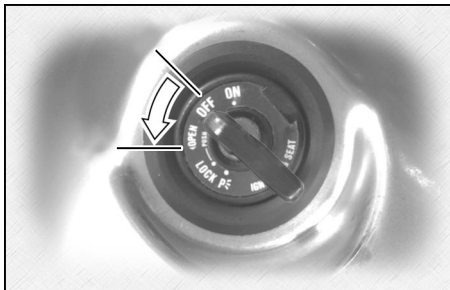


Steering lock

On the right side of the headpipe, there is a place to lock the steering with a padlock. Turn the handlebars to align the holes in the two brackets and lock the steering with a suitable padlock.

INSTRUMENT AND CONTROL FUNCTIONS

3

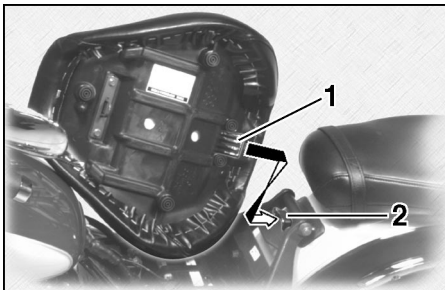


Rider seat

To remove

Insert the key into the main switch and turn it counterclockwise to the “OPEN” position. Then, remove the seat by pulling it upward.

NOTE: _____
Do not push inward when turning the key.

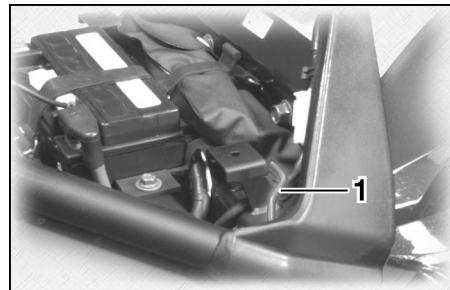


- 1. Projection
- 2. Seat holder

To install

Insert the projection on the rear of the seat into the holder, then push the front of the seat downward until it locks and remove the key from the main switch.

NOTE: _____
Make sure the seat is securely installed before riding the motorcycle.



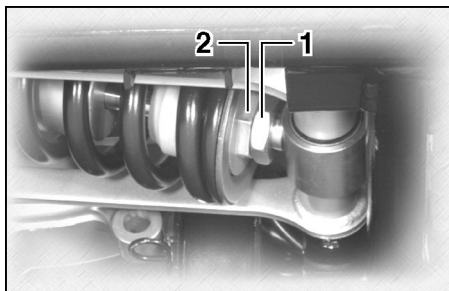
- 1. Helmet holder

Helmet holder

The helmet holder is located under the rider seat.

Remove the rider seat and hook the helmet on the helmet holder. Then, install the seat.

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

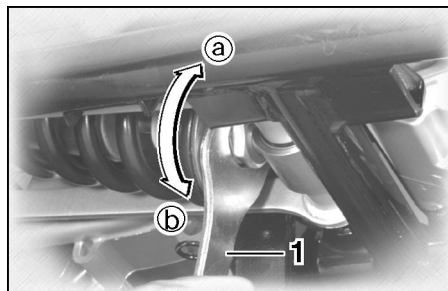


1. Locknut
2. Adjusting nut

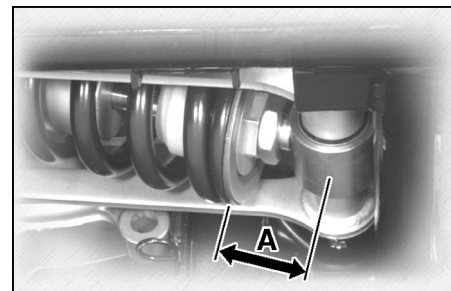
Adjusting rear shock absorber preload

This shock absorber is equipped with a spring preload adjusting nut. Use the special wrench located in the owner's tool kit to adjust the spring preload.

1. Loosen the locknut.



1. Special wrench
2. Turn the adjusting nut in direction ① to increase spring preload and in direction ② to decrease spring preload. The spring preload is determined by the spring set length. Shortening the spring set length increases spring preload, lengthening the spring set length decreases spring preload.



A. Distance "A"

Spring preload:

Minimum (soft):

Distance "A" = 42.5 mm

Standard:

Distance "A" = 42.5 mm

Maximum (hard):

Distance "A" = 51.5 mm

CAUTION:

Never attempt to turn an adjuster beyond the maximum or minimum setting.

INSTRUMENT AND CONTROL FUNCTIONS

3. Tighten the locknut to the specified torque.

Tightening torque:

Locknut:

35 Nm (3.5 m·kg)

CAUTION:

Always tighten the locknut against the spring adjusting nut and tighten the locknut to the specified torque.

⚠ 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.

- 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.
- Take your shock absorber to a Yamaha dealer for any service.

Sidestand

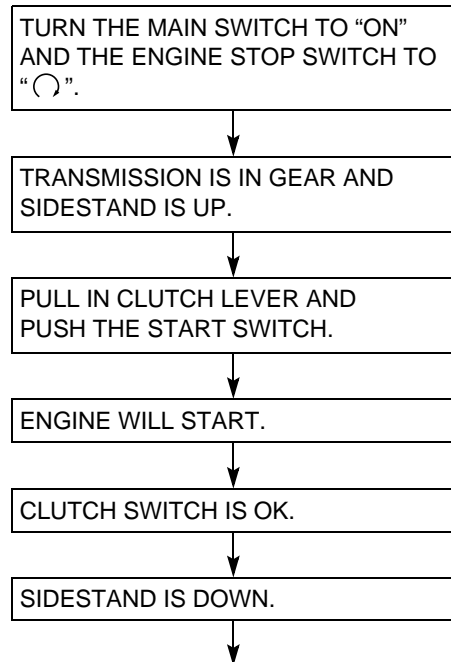
This model is equipped with an ignition circuit cut-off system. The motorcycle must not be ridden when the sidestand is down. The sidestand is located on the left side of the frame. (Refer to page 5-1 for an explanation of this system.)

⚠ 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 the 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.



ENGINE WILL STALL.



SIDESTAND SWITCH IS OK.

WARNING

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

Pre-operation check list..... 4-1

PRE-OPERATION CHECKS

Owners are personally responsible for their vehicle's condition. Your motorcycle's 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.

PRE-OPERATION CHECK LIST

ITEM	CHECKS	PAGE
Front brake	<ul style="list-style-type: none">• Check operation, fluid level and vehicle for fluid leakage.• Fill with DOT 4 brake fluid if necessary.	6-18 ~ 6-22
Rear brake	<ul style="list-style-type: none">• Check operation, fluid level and vehicle for fluid leakage.• Fill with DOT 4 brake fluid if necessary.	
Clutch	<ul style="list-style-type: none">• Check operation, condition and free play.• Adjust if necessary.	6-17 ~ 6-18
Throttle grip and housing	<ul style="list-style-type: none">• Check for smooth operation.• Lubricate if necessary.	6-14
Engine oil	<ul style="list-style-type: none">• Check oil level.• Fill with oil if necessary.	6-7 ~ 6-10
Wheels and tires	<ul style="list-style-type: none">• Check tire pressure, wear, damage and spoke tightness.• Tighten spokes necessary.	6-15 ~ 6-17
Brake and shift pedal shafts	<ul style="list-style-type: none">• Check for smooth operation.• Lubricate if necessary.	6-24
Brake and clutch lever pivots	<ul style="list-style-type: none">• Check for smooth operation.• Lubricate if necessary.	6-25
Sidestand pivot	<ul style="list-style-type: none">• Check for smooth operation.• Lubricate if necessary.	6-25
Chassis fasteners	<ul style="list-style-type: none">• Make sure that all nuts, bolts and screws are properly tightened.• Tighten if necessary.	—

PRE-OPERATION CHECKS

ITEM	CHECKS	PAGE
Fuel	<ul style="list-style-type: none">• Check fuel level.• Fill with fuel if necessary.	3-9 ~ 3-10
Lights, signals and switches	<ul style="list-style-type: none">• Check for proper operation.	6-29 ~ 6-31

NOTE: _____
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.

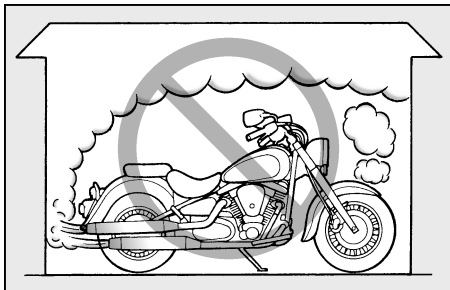
WARNING

If any item in the PRE-OPERATION CHECK is not working properly, have it inspected and repaired before operating the motorcycle.

OPERATION AND IMPORTANT RIDING POINTS

Starting the engine	5-1
Starting a warm engine	5-4
Shifting	5-4
Recommended shift points (for Switzerland only)	5-5
Tips for reducing fuel consumption	5-5
Engine break-in	5-5
Parking	5-6

OPERATION AND IMPORTANT RIDING POINTS



! 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.

- 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.

Starting the engine

NOTE:

This motorcycle is equipped with an ignition circuit cut-off system. The engine can be started only under one of the following conditions:

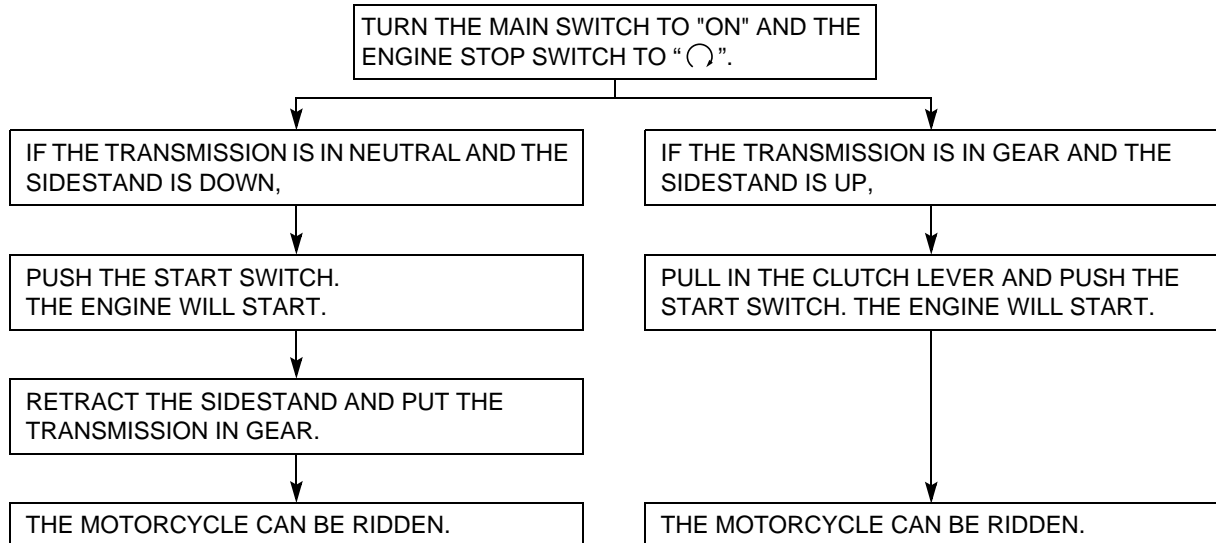
- The transmission is in neutral.
- The sidestand is up, the transmission is in gear and the clutch is disengaged.

The motorcycle must not be ridden when the sidestand is down.

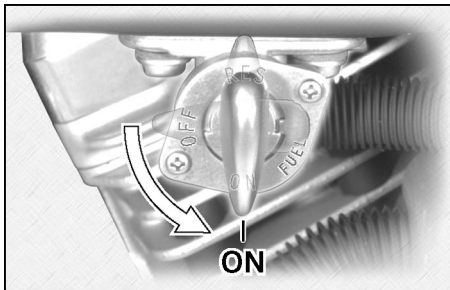
! WARNING

Before going through the following steps, check the function of the sidestand switch and clutch switch. (Refer to page 3-16.)

OPERATION AND IMPORTANT RIDING POINTS

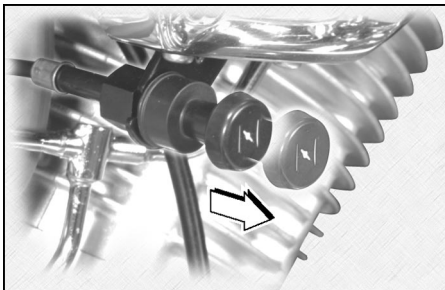


OPERATION AND IMPORTANT RIDING POINTS



1. Turn the fuel cock to "ON".
2. Turn the main switch to "ON" and the engine stop switch to "⊙".
3. Shift the transmission into neutral.

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 (choke) 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 (choke) to the halfway position.

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

7. After warming up the engine, turn off the starter (choke) completely.

NOTE: _____
The engine is warm when it responds normally to the throttle with the starter (choke) turned off.

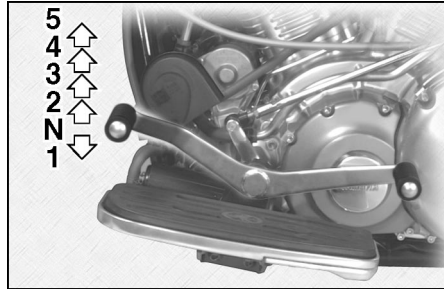
OPERATION AND IMPORTANT RIDING POINTS

Starting a warm engine

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

CAUTION:

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



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.

To shift into neutral, depress the shift pedal repeatedly until it reaches the end of its travel, then raise the pedal slightly.

CAUTION:

- 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.
- 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

Recommended shift points (for Switzerland only)

The recommended shift points are shown in the table below.

	Acceleration shift point (km/h)
1st → 2nd	23
2nd → 3rd	36
3rd → 4th	50
4th → 5th	60

NOTE:

When shifting two gears down from 4th to 2nd, bring your motorcycle to a speed of 35 km/h.

Tips for reducing fuel consumption

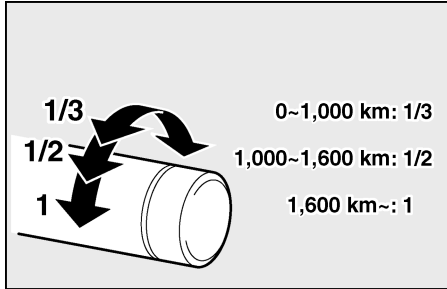
Your motorcycle's fuel consumption depends to a large extent on your riding style. The following tips can help reduce fuel consumption:

- Warm up the engine before riding.
- Turn off the starter (choke) as soon as possible.
- Shift up swiftly and avoid high engine speeds during acceleration.
- Do not double-clutch or rev the engine while shifting down and avoid high engine speeds with no load on the engine.
- 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.

OPERATION AND IMPORTANT RIDING POINTS



0 ~ 1,000 km

Avoid operation above 1/3 throttle.

1,000 ~ 1,600 km

Avoid cruising speeds in excess of 1/2 throttle.

CAUTION:

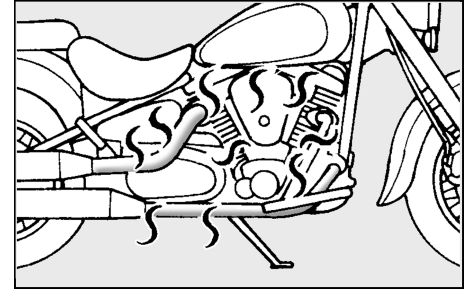
After 1,000 km of operation, be sure to replace the engine oil, oil filter and transfer case oil.

1,600 km and beyond

Proceed with normal riding.

CAUTION:

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



Parking

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

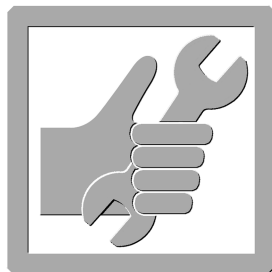
! WARNING

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.

PERIODIC MAINTENANCE AND MINOR REPAIR

Tool kit.....	6-1	Inspecting the brake fluid level	6-21
Periodic maintenance and lubrication	6-3	Brake fluid replacement	6-22
Spark plug inspection	6-6	Drive belt slack check	6-22
Engine oil	6-7	Drive belt slack adjustment	6-23
Transfer case oil.....	6-10	Brake and shift pedal lubrication	6-24
Air filter	6-11	Brake and clutch lever lubrication	6-25
Carburetor adjustment	6-13	Sidestand lubrication.....	6-25
Idle speed adjustment	6-13	Front fork inspection.....	6-26
Throttle cable free play inspection	6-14	Steering inspection	6-26
Valve clearance adjustment.....	6-14	Wheel bearings	6-27
Tires.....	6-15	Battery.....	6-27
Wheels.....	6-17	Fuse replacement	6-28
Clutch lever free play adjustment.....	6-17	Headlight bulb replacement	6-29
Front brake lever free play adjustment.....	6-18	Turn signal and tail/brake light bulb replacement	6-31
Rear brake pedal height adjustment.....	6-19	Troubleshooting	6-31
Brake light switch adjustment	6-19	Troubleshooting chart.....	6-32
Checking the front and rear brake pads.....	6-20		

PERIODIC MAINTENANCE AND MINOR REPAIR

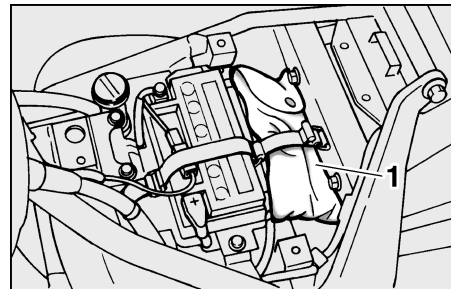


RONMENT. The most important points of motorcycle inspection, adjustment, and lubrication are explained in the following pages.

WARNING

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

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 THE ENVI-**



1. Tool kit

Tool kit

The tool kit is located under the rider seat. (See page 3-13 for rider seat removal and installation 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.

PERIODIC MAINTENANCE AND MINOR REPAIR

NOTE:

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

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 AND MINOR REPAIR

PERIODIC MAINTENANCE AND LUBRICATION

NO.	ITEM	CHECKS AND MAINTENANCE JOBS	INITIAL (1,000 km)	EVERY	
				6,000 km or 6 months (whichever comes first)	12,000 km or 12 months (whichever comes first)
1	* Fuel line	<ul style="list-style-type: none"> • Check fuel hoses for cracks or damage. • Replace if necessary. 		√	√
2	* Fuel filter	<ul style="list-style-type: none"> • Check condition. • Replace if necessary. 			√
3	Spark plugs	<ul style="list-style-type: none"> • Check condition. • Clean, regap or replace if necessary. 	√	√	√
4	* Valves	<ul style="list-style-type: none"> • Check valve clearance. • Adjust if necessary. 	Every 24,000 km or 24 months (whichever comes first)		
5	Air filter	<ul style="list-style-type: none"> • Clean or replace if necessary. 		√	√
6	Clutch	<ul style="list-style-type: none"> • Check operation. • Adjust or replace cable. 	√	√	√
7	* Front brake	<ul style="list-style-type: none"> • Check operation, fluid level and vehicle for fluid leakage. (See NOTE on page 6-5.) • Correct accordingly. • Replace brake pads if necessary. 	√	√	√
8	* Rear brake	<ul style="list-style-type: none"> • Check operation, fluid level and vehicle for fluid leakage. (See NOTE on page 6-5.) • Correct accordingly. • Replace brake pads if necessary. 	√	√	√
9	* Wheels	<ul style="list-style-type: none"> • Check balance, runout, spoke tightness and for damage. • Tighten spokes and rebalance, replace if necessary. 		√	√
10	* Tires	<ul style="list-style-type: none"> • Check tread depth and for damage. • Replace if necessary. • Check air pressure. • Correct if necessary. 		√	√

PERIODIC MAINTENANCE AND MINOR REPAIR

NO.	ITEM	CHECKS AND MAINTENANCE JOBS	INITIAL (1,000 km)	EVERY	
				6,000 km or 6 months (whichever comes first)	12,000 km or 12 months (whichever comes first)
11	* Wheel bearings	<ul style="list-style-type: none"> • Check bearing for looseness or damage. • Replace if necessary. 		√	√
12	* Swingarm	<ul style="list-style-type: none"> • Check swingarm pivoting point for play. • Correct if necessary. • Lubricate with molybdenum disulfide grease every 24,000 km or 24 months (whichever comes first). 		√	√
13	* Drive belt	<ul style="list-style-type: none"> • Check belt tension. • Adjust if necessary. Make sure that the rear wheel is properly aligned. 	√	Every 4,000 km	
14	* Steering bearings	<ul style="list-style-type: none"> • Check bearing play and steering for roughness. • Correct accordingly. • Lubricate with lithium soap base grease every 24,000 km or 24 months (whichever comes first). 		√	√
15	* Chassis fasteners	<ul style="list-style-type: none"> • Make sure that all nuts, bolts and screws are properly tightened. • Tighten if necessary. 		√	√
16	Sidestand	<ul style="list-style-type: none"> • Check operation. • Lubricate and repair if necessary. 		√	√
17	* Sidestand switch	<ul style="list-style-type: none"> • Check operation. • Replace if necessary. 	√	√	√
18	* Front fork	<ul style="list-style-type: none"> • Check operation and for oil leakage. • Correct accordingly. 		√	√
19	* Rear shock absorber assembly	<ul style="list-style-type: none"> • Check operation and shock absorber for oil leakage. • Replace shock absorber assembly if necessary. 		√	√
20	* Rear suspension relay arm and connecting arm pivoting points	<ul style="list-style-type: none"> • Check operation. • Lubricate with molybdenum disulfide grease every 24,000 km or 24 months (whichever comes first). 		√	√
21	* Carburetor	<ul style="list-style-type: none"> • Check engine idling speed and starter operation. • Adjust if necessary. 	√	√	√

PERIODIC MAINTENANCE AND MINOR REPAIR

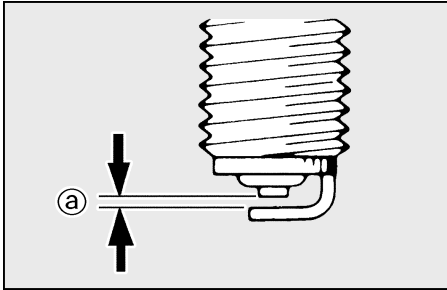
NO.	ITEM	CHECKS AND MAINTENANCE JOBS	INITIAL (1,000 km)	EVERY	
				6,000 km or 6 months (whichever comes first)	12,000 km or 12 months (whichever comes first)
22	Engine oil	<ul style="list-style-type: none"> • Check oil level and vehicle for oil leakage. • Correct if necessary. • Change. (Warm engine before draining.) 	√	√	√
23	Engine oil filter cartridge	<ul style="list-style-type: none"> • Replace. 	√		√
24	* Transfer case oil	<ul style="list-style-type: none"> • Check for leakage. • Replace oil at initial 1,000 km and thereafter every 24,000 km or 24 months (whichever comes first). 	√		√

* Since these items require special tools, data and technical skills, they should be serviced by a Yamaha dealer.

NOTE:

- The air filter needs more frequent service if you are riding in unusually wet or dusty areas.
- Hydraulic brake system
 - When disassembling the master cylinder or caliper, always replace the brake fluid. Check the brake fluid level regularly and fill as required.
 - Replace the oil seals on the inner parts of the master cylinder and caliper every two years.
 - Replace the brake hoses every four years or if cracked or damaged.

PERIODIC MAINTENANCE AND MINOR REPAIR



a. Spark plug gap

Spark plug inspection

The spark plug is an important engine component and should be inspected periodically, preferably by a Yamaha dealer. 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. The spark plugs should be periodically removed and inspected 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, the spark plug should be replaced with the specified plug.

Specified spark plug:
DPR7EA-9/NGK or
X22EPR-U9/DENSO

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

Spark plug gap:
0.8 ~ 0.9 mm

When installing a spark plug, the gasket surface should always be cleaned and a new gasket used. Any grime should be wiped off from the threads and the spark plug tightened to the specified torque.

Tightening torque:

Spark plug:
17.5 Nm (1.75 m·kg)

NOTE:

If a torque wrench is not available when installing a spark plug, a good estimate of the correct torque is 1/4 to 1/2 turn past finger tight. The spark plug should be tightened to the specified torque as soon as possible.

PERIODIC MAINTENANCE AND MINOR REPAIR

CAUTION:

Do not use any type of tools to remove or install the cap as the ignition coil coupler may get damaged. The spark plug cap may be difficult to remove because a rubber seal on the end of the cap is tightly fit into the cylinder bore. To remove the cap, simply twist it back and forth while pulling it upward; when installing the cap, twist it back and forth while pushing it downward.

Engine oil

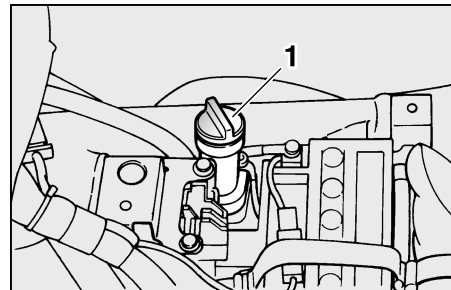
Oil level inspection

1. Place the motorcycle on a level surface.
2. Remove the rider seat. (See page 3-13 for rider seat removal and installation procedures.)
3. Start and run the engine for several minutes until the oil has reached a normal temperature of 60 °C.

NOTE:

To achieve the proper engine oil temperature for an accurate oil level reading, the engine must have first completely cooled down and then warmed up again for several minutes to normal operating temperature.

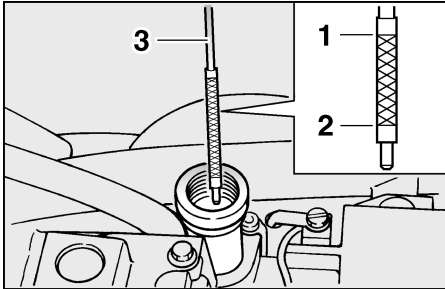
4. Place the motorcycle in an upright position and continue idling for 10 seconds, then stop the engine.



1. Oil filler cap

5. Remove the engine oil filler cap and wipe the oil off the dipstick. Insert the dipstick back into the engine oil filler hole, but do not screw on the oil filler cap, and then pull the dipstick out again. The oil level should be between the maximum and minimum level marks. If the level is low, add sufficient oil through the filler hole to reach the specified level.

PERIODIC MAINTENANCE AND MINOR REPAIR



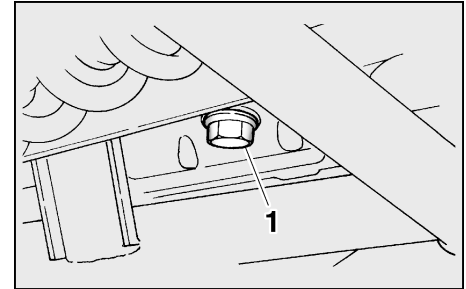
1. Maximum level
2. Minimum level
3. Dipstick

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.
 - When adding oil, be careful not to overfill the engine; the oil level rises faster starting from the half level portion on the dipstick.
6. Insert the dipstick into the oil filler hole and tighten the oil filler cap, then install the rider seat.

CAUTION:

Be sure the oil filler cap is securely tightened as the oil may seep out when the engine is running.



1. Engine oil drain bolt (oil tank)

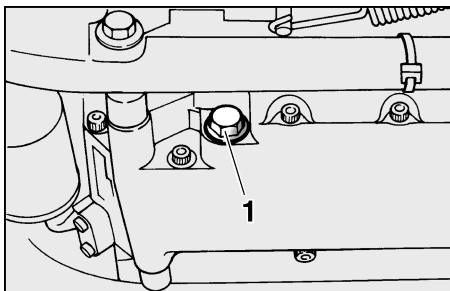
Engine oil and oil filter cartridge replacement

1. Warm up the engine for several minutes, and then stop the engine.
2. Place an oil pan under the engine oil drain bolts, and then remove the rider seat and oil filler cap.
3. Remove the engine oil drain bolts and drain the oil from the oil tank.
4. Remove the oil filter by using an oil filter wrench.

NOTE:

An oil filter wrench is available at a nearby Yamaha dealer.

PERIODIC MAINTENANCE AND MINOR REPAIR



1. Engine oil drain bolt (engine)

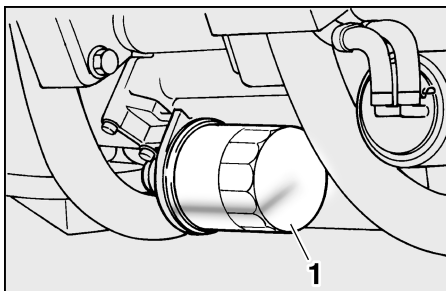
5. Install the drain bolts and tighten them to the specified torque.

Tightening torque:

Drain bolt (oil tank):
43 Nm (4.3 m·kg)
Drain bolt (engine):
43 Nm (4.3 m·kg)

6. Apply a light coat of engine oil to the O-ring of the new oil filter.

NOTE: _____
Make sure the O-ring is seated properly.



1. Engine oil filter cartridge

7. Install the oil filter and tighten it to the specified torque with an oil filter wrench.

Tightening torque:

Oil filter:
17 Nm (1.7 m·kg)

8. Pour only 2.5 L of oil into the oil filler hole, then install the oil filler cap and tighten it.
9. Start the engine and rev it several times.
10. Stop the engine and remove the oil filler cap.

11. Gradually fill the oil tank with the remainder of the recommended oil quantity while checking the level on the dipstick.

Recommended oil:

See page 8-1.

Oil quantity:

Total amount:

5.0 L

Periodic oil change:

3.7 L

With oil filter replacement:

4.1 L

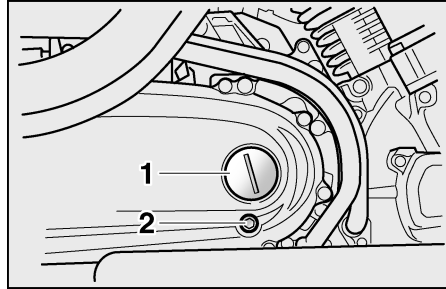
CAUTION:

- 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.

12. Install the oil filler cap.

PERIODIC MAINTENANCE AND MINOR REPAIR

13. Start the engine and warm it up for several minutes. While warming up, check for oil leakage. If oil leakage is found, stop the engine immediately and check for the cause.
14. Stop the engine and recheck the oil level.



1. Transfer oil filler cap
2. Transfer oil level check bolt

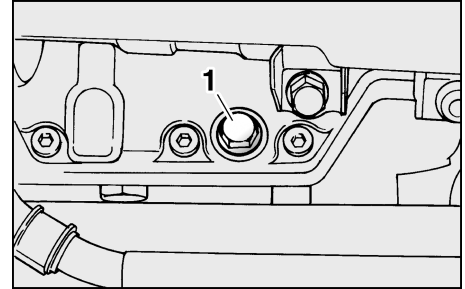
Transfer case oil

Oil level inspection

1. Position the motorcycle upright.
2. Remove the transfer case oil check bolt.
3. If the oil does not reach to the brim of the check hole, remove the oil filler cap and add sufficient oil through the oil filler hole.

NOTE:

- Install the oil level check bolt before adding oil.
- Install the oil filler cap after adding oil.



1. Transfer oil drain bolt

Oil replacement

1. Place the motorcycle on a level surface.
2. Place an oil pan under the transfer case.
3. Remove the transfer case oil drain and check bolts and drain the oil.
4. Install the drain bolt and the check bolt and tighten them to the specified torques.

Tightening torque:

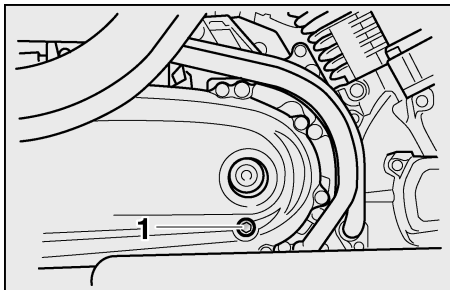
Drain bolt:

17.5 Nm (1.75 m·kg)

Check bolt:

7.5 Nm (0.75 m·kg)

PERIODIC MAINTENANCE AND MINOR REPAIR



1. Transfer oil level check hole

5. Remove the oil filler cap and fill the transfer case with sufficient oil.

Recommended oil:

See page 8-2.

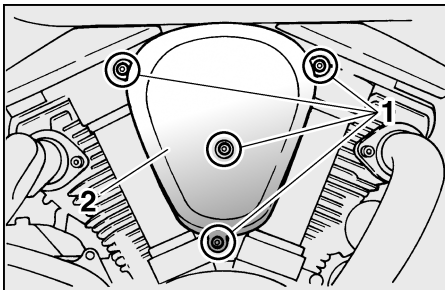
Oil quantity:

0.4 L

CAUTION:

Be sure no foreign material enters the transfer case.

6. Check the oil level.
7. Install the oil filler cap and tighten it.
8. Check for oil leakage. If oil leakage is found, check for the cause.



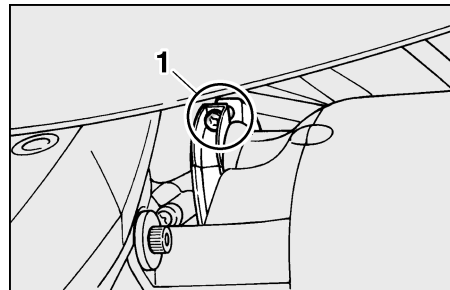
1. Bolt (× 4)
2. Air filter case cover

Air filter

The air filter should be cleaned at the specified intervals.

The air filter should be cleaned more frequently if you are riding in unusually wet or dusty areas.

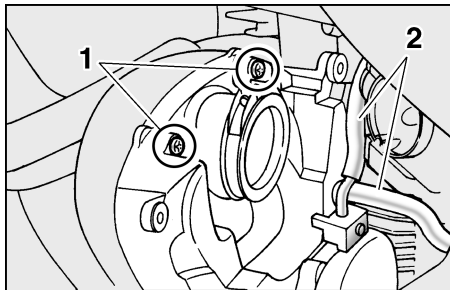
1. Remove the air filter case bolts.



1. Carburetor joint screw

2. Loosen the carburetor joint screw and slightly pull the air filter case outward.

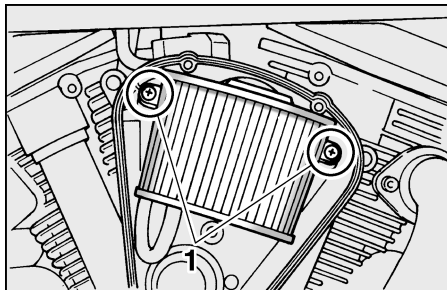
PERIODIC MAINTENANCE AND MINOR REPAIR



1. Screw (× 2)

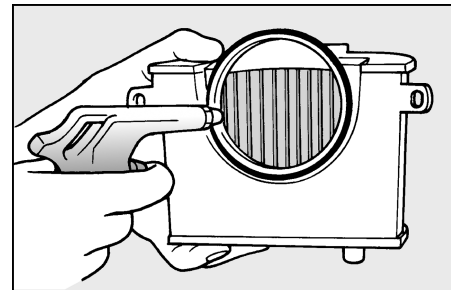
2. Hose (× 2)

3. Remove the air filter case cover by removing the screws.
4. Disconnect the hoses.



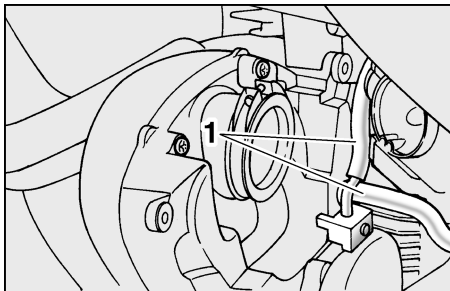
1. Screw (× 2)

5. Remove the air filter by removing the screws.



6. Tap the air filter lightly to remove most of the dust and dirt and blow out the remaining dirt with compressed air as shown. If the air filter is damaged, replace it.
7. Reassemble by reversing the removal procedure.

PERIODIC MAINTENANCE AND MINOR REPAIR



1. Hose (× 2)

NOTE:

Be sure to connect the hoses.

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.

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 may be serviced by the owner as part of routine maintenance.

CAUTION:

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

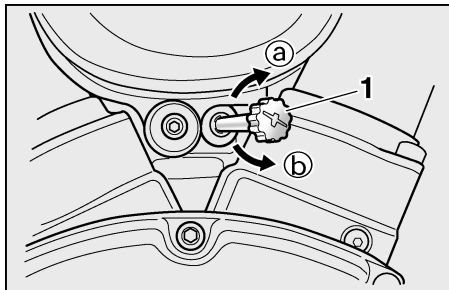
Idle speed adjustment

NOTE:

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 4,400 r/min. The engine is warm when it quickly responds to the throttle.

PERIODIC MAINTENANCE AND MINOR REPAIR



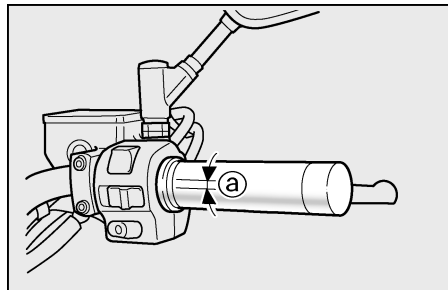
1. Throttle stop screw

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:
850 ~ 950 r/min

NOTE:

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



a. Free play

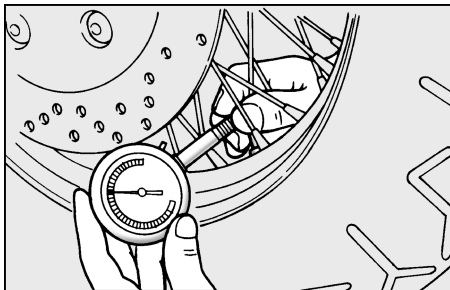
Throttle cable free play inspection

There should be a free play of 4 ~ 6 mm at the throttle grip. If the free play is incorrect, ask a Yamaha dealer to make this adjustment.

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.

PERIODIC MAINTENANCE AND MINOR REPAIR



Tires

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

Tire air pressure

Always check and adjust the tire pressure before operating the motorcycle.

⚠ 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 (windshield, saddlebags, etc. if approved for this model).

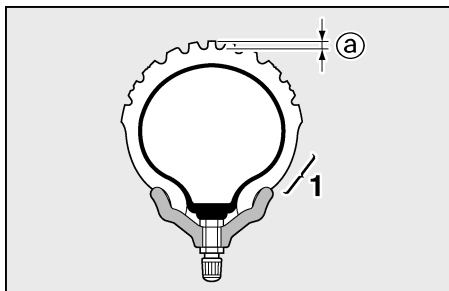
Maximum load*	XV1600A 196 kg	
Cold tire pressure	Front	Rear
Up to 90 kg load*	250 kPa (2.50 kg/cm ² , 2.50 bar)	250 kPa (2.50 kg/cm ² , 2.50 bar)
90 kg load ~ Maximum load*	250 kPa (2.50 kg/cm ² , 2.50 bar)	280 kPa (2.80 kg/cm ² , 2.80 bar)

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

⚠ 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 your 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 (windshield, 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.

PERIODIC MAINTENANCE AND MINOR REPAIR



1. Sidewall
a. Tread depth

Tire inspection

Always check the tires before operating the motorcycle. If center tread depth reaches the limit as shown, 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	Type
Dunlop	130/90-16 67H	D404FL
Bridgestone	130/90-16 67H	G703F

REAR

Manufacturer	Size	Type
Dunlop	150/80B-16 71H	D404
Bridgestone	150/80B-16 71H	G702

Minimum tire tread depth (front and rear)	1.6 mm
---	--------

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.

WARNING

- Operating the motorcycle with excessively worn tires decrease riding stability and can lead to loss of control. Have excessively worn tires replaced by a Yamaha dealer immediately. Brakes, tires, and related wheel parts replacement should be left to a Yamaha Service Technician.
- 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.

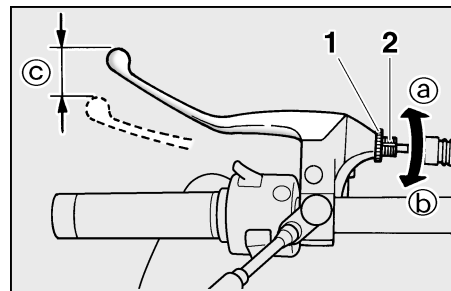
PERIODIC MAINTENANCE AND MINOR REPAIR

Wheels

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

- 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.
- 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.

- Ride at moderate speeds after changing a tire since the tire surface must first be broken in for it to develop its optimal characteristics.

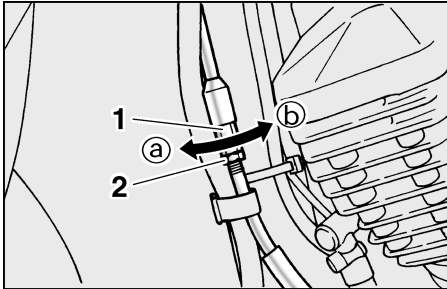


1. Locknut
2. Adjusting bolt
c. Free play

Clutch lever free play adjustment

The clutch lever free play should be adjusted to 10 ~ 15 mm.

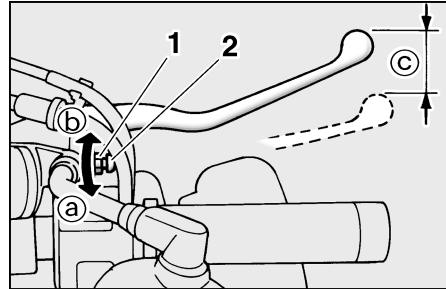
1. Loosen the locknut at the clutch lever.
2. Turn the adjusting bolt at the clutch lever in direction ① to increase free play or in direction ② to decrease free play.
3. Tighten the locknut at the clutch lever.



1. Adjusting nut
2. Locknut

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

4. Loosen the locknut at the clutch lever.
5. Turn the adjusting bolt at the clutch lever in direction ① to loosen the cable.
6. Loosen the locknut at the crankcase side.
7. Turn the adjusting nut at the crankcase in direction ② to increase free play or in direction ③ to decrease free play.
8. Tighten the locknut at the crankcase and the clutch lever.



1. Locknut
2. Adjusting bolt
- c. Free play

Front brake lever free play adjustment

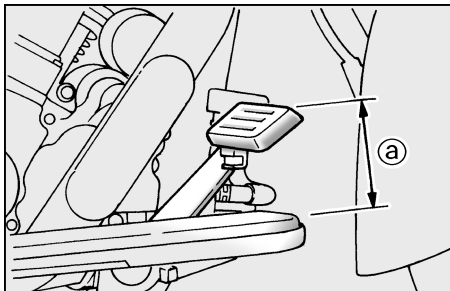
The free play at the front brake lever should be 2 ~ 5 mm.

1. Loosen the locknut.
2. Turn the adjusting bolt in direction ① to increase free play or in direction ② to decrease free play.
3. After adjusting, tighten the locknut.

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.

PERIODIC MAINTENANCE AND MINOR REPAIR



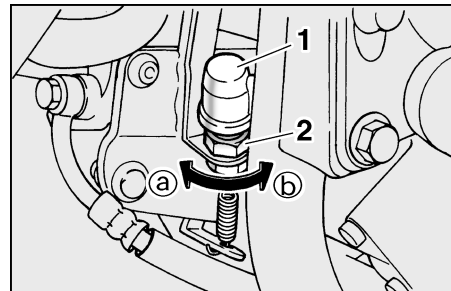
a. Brake pedal height

Rear brake pedal height adjustment

The top of the brake pedal should be positioned 100 mm above the top of the footrest. If not, ask a Yamaha dealer to adjust it.

WARNING

A soft or spongy feeling in the brake pedal 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.



1. Brake light switch
2. Adjusting nut

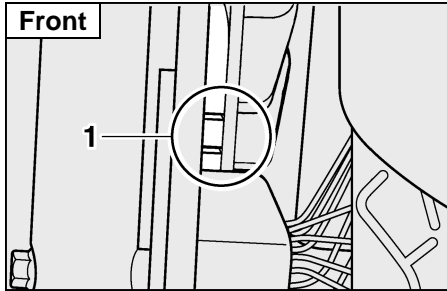
Brake light switch adjustment

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.

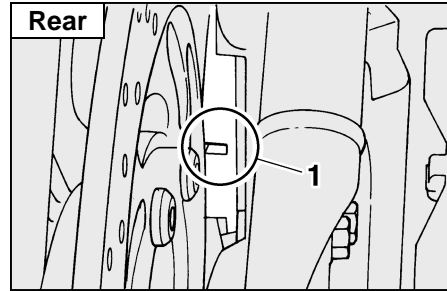
Turn the adjusting nut in direction **a** to make the brake light come on earlier.

Turn the adjusting nut in direction **b** to make the brake light come on later.

PERIODIC MAINTENANCE AND MINOR REPAIR



1. Wear indicator groove (× 2)



1. Wear indicator groove

Checking the front and rear brake pads

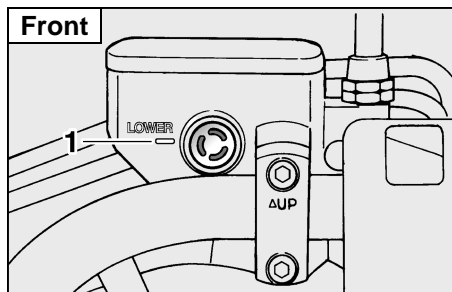
Front brake

Wear indicator grooves are provided on each brake pad. These indicators allow checking of brake pad wear without disassembling the brake. Inspect the grooves. If they have almost disappeared, ask a Yamaha dealer to replace the pads.

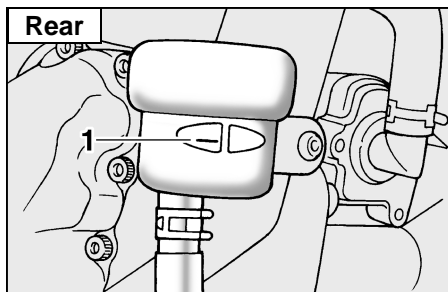
Rear brake

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.

PERIODIC MAINTENANCE AND MINOR REPAIR



1. Minimum level mark



1. Minimum level mark

- 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.

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:

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

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

Recommended brake fluid: DOT 4

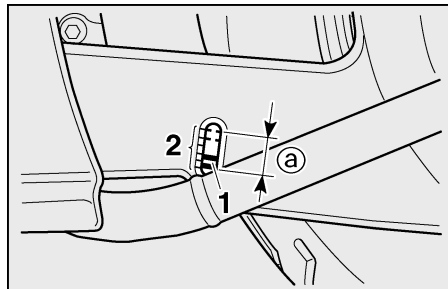
- Refill with the same type of brake fluid. Mixing fluids may result in a harmful chemical reaction and lead to poor brake performance.
- Be careful that water does not enter the master cylinder when refilling. Water will significantly lower the boiling point of the fluid and may result in vapor lock.

PERIODIC MAINTENANCE AND MINOR REPAIR

Brake fluid replacement

The brake fluid should be replaced only by trained Yamaha service personnel. Have the Yamaha dealer replace the following components during periodic maintenance or when they are damaged or leaking:

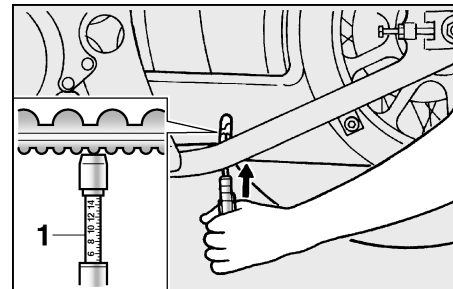
- oil seals (every two years)
- brake hoses (every four years)



1. Drive belt
2. Marks
- a. Slack

Drive belt slack check

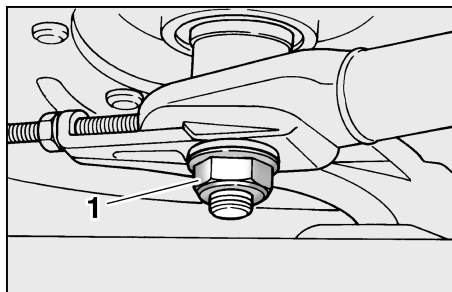
1. Put the motorcycle on the side-stand and make sure that both wheels are on the ground.
2. Using the reference marks at the side of the check window, which is located at the rear left side of the motorcycle, note the current position of the drive belt.



1. Belt tension gauge
3. Apply a force of 45 N (4.5 kg) with the belt tension gauge to the lower drive belt run as shown and re-check the drive belt position in the check window. The normal drive belt slack (i.e., the distance between the original belt position and its position with the force applied) is approximately 7.5 ~ 13 mm.
4. If the measured slack exceeds 13 mm, adjust the drive belt.

NOTE: _____
The reference marks at the side of the drive belt check window are 5 mm apart.

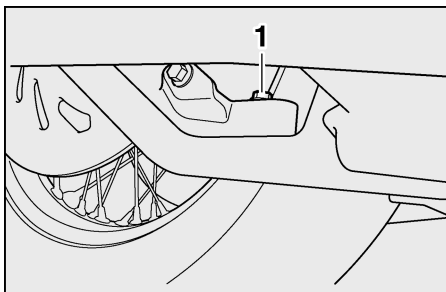
PERIODIC MAINTENANCE AND MINOR REPAIR



1. Wheel axle nut

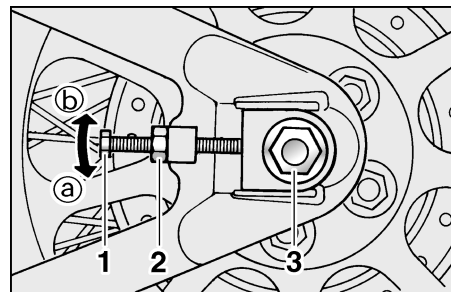
Drive belt slack adjustment

1. Loosen the axle nut and caliper bracket bolt.



1. Caliper bracket bolt

2. Loosen the locknuts on each side of the swingarm.
3. To tighten the drive belt, turn the adjusting bolts in direction (a). To loosen the drive belt, turn the adjusting bolts in direction (b) and push the wheel forward. Turn each adjusting bolt exactly the same amount to maintain correct axle alignment.
4. Tighten the locknuts.



1. Adjusting bolt (× 2)
2. Locknut (× 2)
3. Wheel axle

5. Tighten the axle nut and caliper bracket bolt to the specified torque.

Tightening torque:

Axle nut:

150 Nm (15 m·kg)

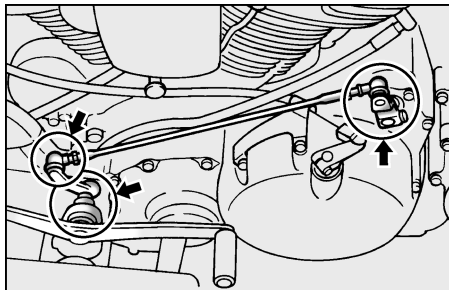
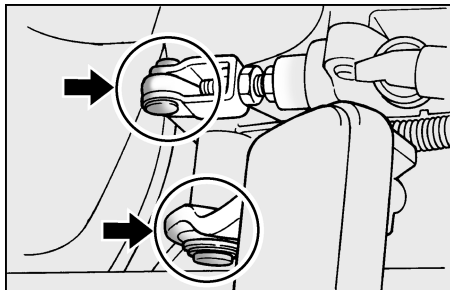
Caliper bracket bolt:

48 Nm (4.8 m·kg)

CAUTION:

Too little drive belt slack will overload the engine. Keep the drive belt slack within the specified range.

PERIODIC MAINTENANCE AND MINOR REPAIR

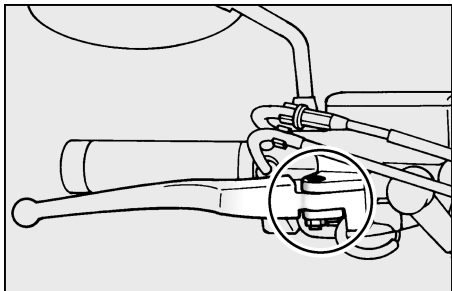


Brake and shift pedal lubrication

Lubricate the pivoting parts.

Recommended lubricant:
Engine oil

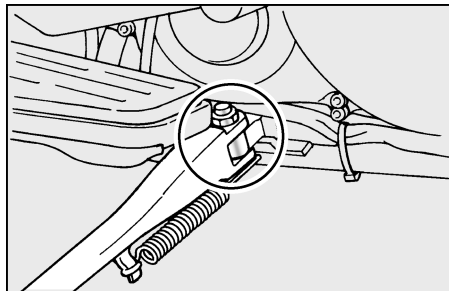
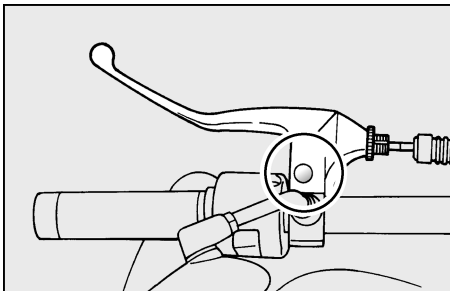
PERIODIC MAINTENANCE AND MINOR REPAIR



Brake and clutch lever lubrication

Lubricate the pivoting parts.

Recommended lubricant:
Engine oil



Sidestand lubrication

Lubricate the sidestand pivoting point and metal-to-metal contact surfaces. Check that the sidestand moves up and down smoothly.

Recommended lubricant:
Engine oil

WARNING

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

PERIODIC MAINTENANCE AND MINOR REPAIR

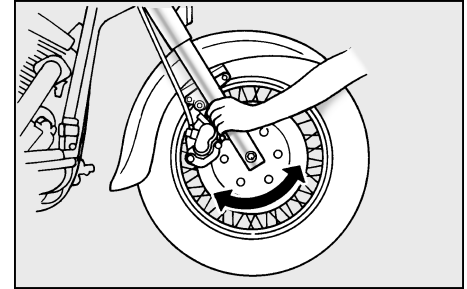
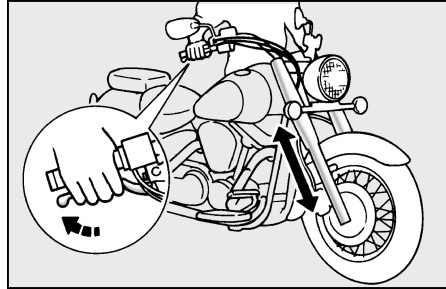
Front fork inspection

Visual check

WARNING

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

Check for scratches or damage on the inner tube and excessive oil leakage from the front fork.



Operation check

1. Place the motorcycle on a level place.
2. Hold the motorcycle in an upright position and apply the front brake.
3. 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.

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.

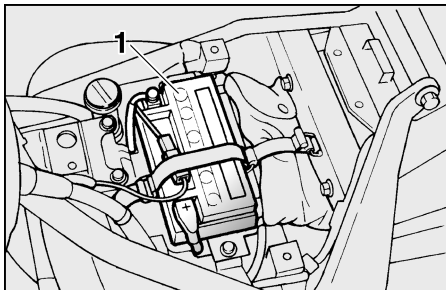
WARNING

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

PERIODIC MAINTENANCE AND MINOR REPAIR

Wheel bearings

If there is play in the front or rear wheel hub or if the wheel does not turn smoothly, have a Yamaha dealer inspect the wheel bearings.



1. Battery

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.

CAUTION:

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

⚠ 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.

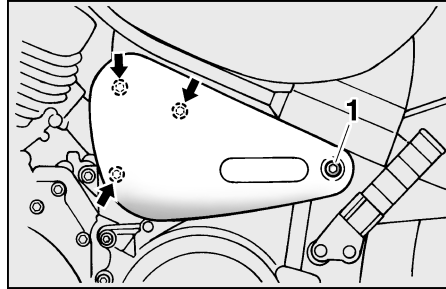
PERIODIC MAINTENANCE AND MINOR REPAIR

Battery 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.

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.

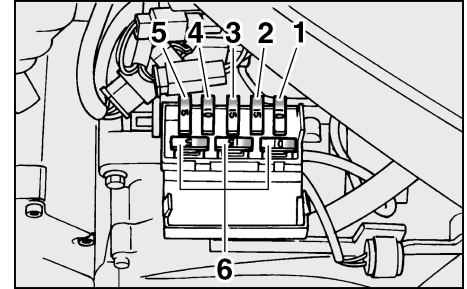


1. Bolt

Fuse replacement

The fuse boxes are located behind the left side cover. Remove the bolt and pull outward to remove the cover.

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.

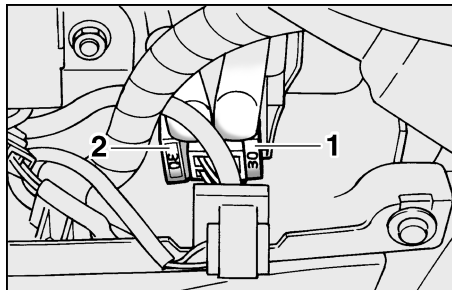


1. Signaling system fuse
2. Ignition fuse
3. Headlight fuse
4. Carburetor heater fuse
5. Odometer fuse
6. Spare fuse (× 3)

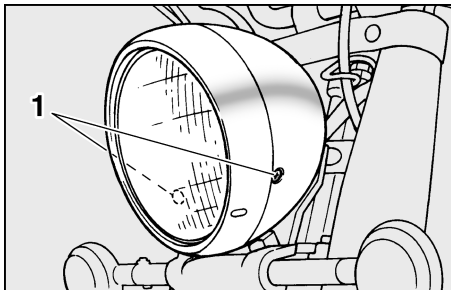
CAUTION:

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.

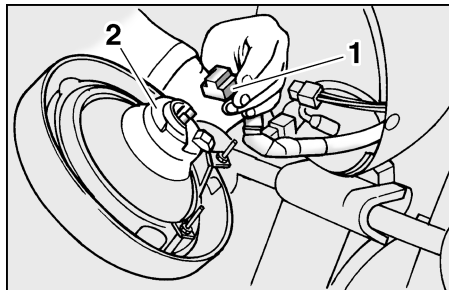
PERIODIC MAINTENANCE AND MINOR REPAIR



1. Main fuse
2. Spare fuse



1. Screw (× 2)



1. Connector
2. Bulb holder cover

2. Remove the headlight connector and the bulb cover.

Specified fuses:

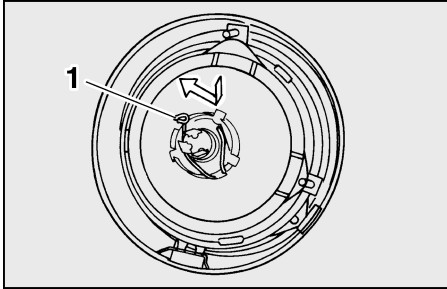
Main fuse:	30 A
Ignition fuse:	15 A
Signaling system fuse:	10 A
Headlight fuse:	15 A
Carburetor heater fuse:	10 A
Odometer fuse:	5 A

Headlight bulb replacement

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

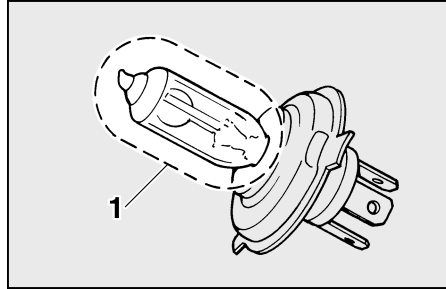
1. Remove the screws holding the headlight assembly.

PERIODIC MAINTENANCE AND MINOR REPAIR



1. Bulb holder

3. Unhook the bulb holder and remove the defective bulb.



1. Don't touch

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.

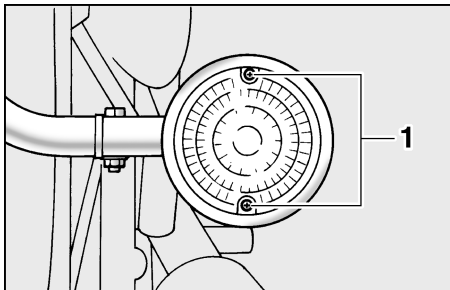
4. Put a new bulb into position and secure it in place with the bulb holder.

CAUTION:

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

5. Install the bulb cover and the headlight connector. If the headlight beam adjustment is necessary, ask a Yamaha dealer to make that adjustment.

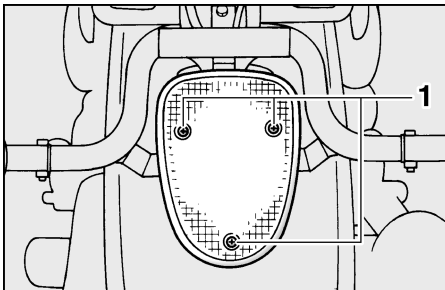
PERIODIC MAINTENANCE AND MINOR REPAIR



1. Screw (× 2)

Turn signal and tail/brake light bulb replacement

1. Remove the screws and the lens.
2. Push the bulb inward and turn it counterclockwise.



1. Screw (× 3)

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 lens and the screws.

CAUTION:

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

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 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.

PERIODIC MAINTENANCE AND MINOR REPAIR

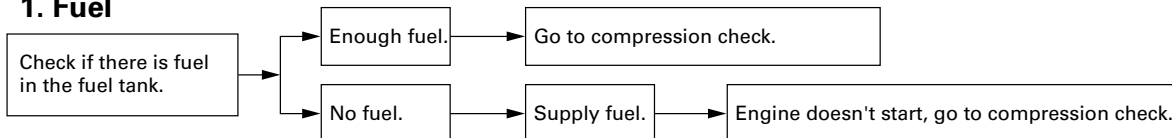
Troubleshooting chart



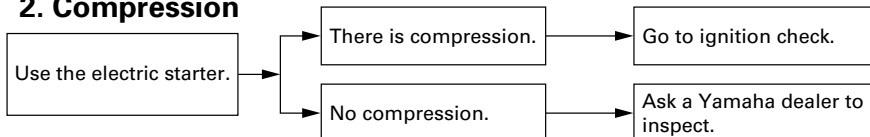
WARNING

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

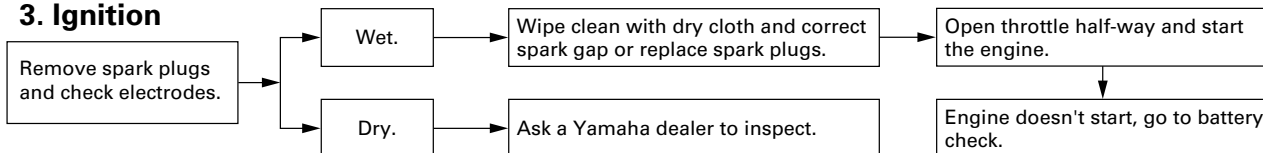
1. Fuel



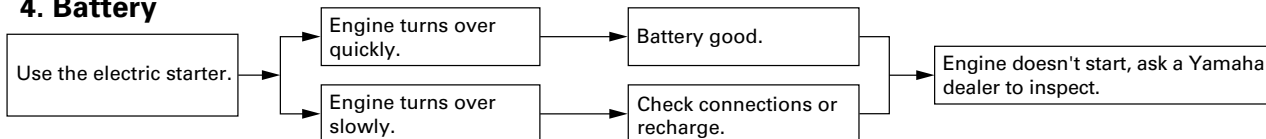
2. Compression



3. Ignition



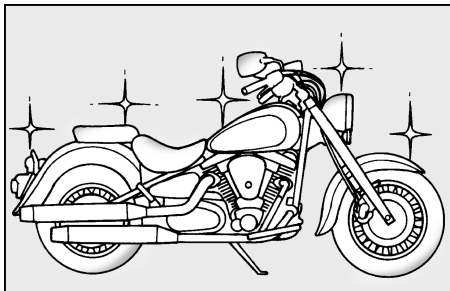
4. Battery



MOTORCYCLE CARE AND STORAGE

Care	7-1
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MOTORCYCLE CARE AND STORAGE



Care

The exposure of its technology makes a motorcycle charming but also vulnerable. Although high-quality components are used, they are not all rust-resistant. While a rusty exhaust pipe may remain unnoticed on a car, it does look unattractive on a motorcycle. Frequent and proper care, however, will keep your motorcycle looking good, extend its life and maintain its performance. Moreover, the warranty states that the vehicle must be properly taken care of. For all these reasons, it is recommended that you observe the following cleaning and storing precautions.

Before cleaning

1. Cover up the muffler outlets with plastic bags.
2. Make sure that all caps and covers as well as all electrical couplers and connectors, including the spark plug caps, are tightly installed.
3. Remove extremely stubborn dirt, like oil burnt onto the crankcase, with a degreasing agent and a brush, but never apply such products onto seals, gaskets, the drive belt and wheel axles. Always rinse the dirt and degreaser off with water.

Cleaning

After normal use

Remove dirt with warm water, a neutral detergent and a soft clean sponge, then rinse with plenty of clean water. Use a tooth or bottle brush for hard-to-reach parts. Tougher dirt and insects will come off more easily if the area is covered with a wet cloth for a few minutes before cleaning.

MOTORCYCLE CARE AND STORAGE

CAUTION:

- Avoid using strong acidic wheel cleaners, especially on spoked wheels. If you do use such products for hard-to-remove dirt, do not leave it on any longer than instructed, then thoroughly rinse it off with water, immediately dry the area and apply a corrosion protection spray.
- Improper cleaning can damage windshields, cowlings, panels and other plastic parts. Use only a soft, clean cloth or sponge with mild detergent and water to clean plastic.
- Do not use any harsh chemical products on plastic parts. Be sure to avoid using cloths or sponges which have been in contact with strong or abrasive cleaning products, solvent or thinner, fuel (gasoline), rust removers or inhibitors, brake fluid, antifreeze or electrolyte.
- Do not use high-pressure washers or steam-jet cleaners since they cause water seepage and deterioration in the following areas: seals (of wheel bearings, swingarm bearings, forks and brakes), electric components (couplers, connectors, instruments, switches and lights), breather hoses and vents.
- For motorcycles equipped with a windshield: Do not use strong cleaners or hard sponges as they will cause dulling or scratching. Some cleaning compounds for plastic may leave scratches on the windshield. Test the product on a small hidden part of the windshield to make sure they do not leave any marks. If the windshield is scratched, use a quality plastic polishing compound after washing.

MOTORCYCLE CARE AND STORAGE

After riding in the rain, near the sea or on salt-sprayed roads

Since sea salt or salt sprayed on the roads in the winter are extremely corrosive in combination with water, carry out the following steps after each ride in the rain, near the sea or on salt-sprayed roads. (Salt sprayed in the winter may remain on the roads well into spring.)

1. Clean your motorcycle with cold water and soap after the engine has cooled down.

CAUTION:

Do not use warm water since it increases the corrosive action of the salt.

2. Be sure to apply a corrosion protection spray on all (even chrome- and nickel-plated) metal surfaces to prevent corrosion.

After cleaning

1. Dry the motorcycle with a chamois or an absorbing cloth.
2. Use a chrome polish to shine chrome, aluminum and stainless-steel parts, including the exhaust system. (Even the thermally induced discoloring of stainless-steel exhaust systems can be removed through polishing.)
3. To prevent corrosion, it is recommended to apply a corrosion protection spray on all (even chrome- and nickel-plated) metal surfaces.
4. Use spray oil as a universal cleaner to remove any remaining dirt.
5. Touch up minor paint damage caused by stones, etc.
6. Wax all painted surfaces.
7. Let the motorcycle dry completely before storing it or covering it.

WARNING

Make sure that there is no oil or wax on the brakes and tires. If necessary, clean the brake discs and linings with a regular brake disc cleaner or acetone, and wash the tires with warm water and mild soap. Then, carefully test the motorcycle for its braking performance and cornering behavior.

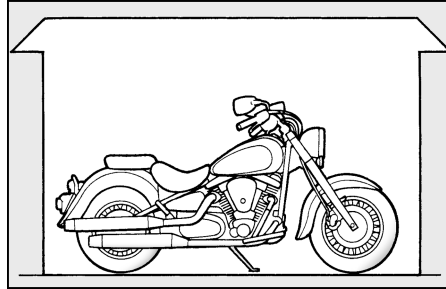
MOTORCYCLE CARE AND STORAGE

CAUTION:

- Apply spray oil and wax sparingly and wipe off any excess.
- Never apply oil or wax on the drive belt.
- Never apply oil or wax on rubber and plastic parts, but treat them with a suitable care product.
- Avoid using abrasive polishing compounds as they wear away the paint.

NOTE:

Consult a Yamaha dealer for advice on what products to use.



Storage

Short-term

Always store your motorcycle in a cool, dry place and, if necessary, protect it against dust with a porous cover.

CAUTION:

- Storing the motorcycle in a poorly ventilated room or covering it with a tarp while it is still wet will allow water and humidity to seep in and cause rust.
- To prevent corrosion, avoid damp cellars, stables (because of the presence of ammonia) and areas where strong chemicals are stored.

Long-term

Before storing your motorcycle for several months:

1. Follow all the instructions in the “Care” section of this chapter.
2. Drain the carburetor float chambers by loosening the drain bolts; this will prevent fuel deposits from building up. Pour the drained fuel into the fuel tank.
3. Only for motorcycles equipped with a fuel cock which has an “OFF” position: Turn the fuel cock to “OFF”.
4. Fill up the fuel tank and add fuel stabilizer (if available) to prevent the fuel tank from rusting and the fuel from deteriorating.
5. Perform the following steps to protect the cylinders, piston rings, etc. from corrosion.

MOTORCYCLE CARE AND STORAGE

- a. Remove the spark plug caps and spark plugs.
- b. Pour a teaspoonful of engine oil into each spark plug bore.
- c. Install the spark plug caps onto the spark plugs and place the spark plugs on the cylinder head so that the electrodes are grounded. (This will limit sparking during the next step.)
- d. Turn the engine over several times with the starter. (This will coat the cylinder walls with oil.)
- e. Remove the spark plug caps from the spark plugs, install the spark plugs and then the spark plug caps.
6. Lubricate all control cables and the pivoting points of all levers and pedals as well as of the sidestand/centerstand.
7. Check and, if necessary, correct the tire air pressure, then raise the motorcycle so that both of its wheels are off the ground. Alternatively, turn the wheels a little every month in order to prevent the tires from becoming degraded in one spot.
8. Cover up the muffler outlets with plastic bags to prevent moisture from entering.
9. Remove the battery and fully charge it. Store it in a cool, dry place and recharge it once a month. Do not store the battery in an excessively cold or warm place (less than 0 °C or more than 30 °C). For more information, see “Battery storage” in the chapter “PERIODIC MAINTENANCE AND MINOR REPAIRS”.

NOTE: _____
Make any necessary repairs before storing the motorcycle.

WARNING

When turning the engine over, be sure to ground the spark plug electrodes to prevent damage or injury from sparking.

Specifications 8-1

HOW TO USE THE CONVERSION TABLE 8-5

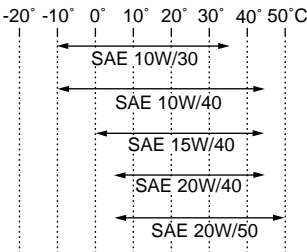
SPECIFICATIONS

Specifications

Model	XV1600A
Dimensions	
Overall length	2,500 mm
Overall width	980 mm
Overall height	1,140 mm
Seat height	710 mm
Wheelbase	1,685 mm
Ground clearance	145 mm
Minimum turning radius	3,200 mm
Basic weight (with oil and full fuel tank)	332 kg
Engine	
Engine type	Air-cooled 4-stroke, OHV
Cylinder arrangement	V-type 2-cylinder
Displacement	1,602 cm ³
Bore × Stroke	95 × 113 mm
Compression ratio	8.3:1
Starting system	Electric starter
Lubrication system	Dry sump

Engine oil

Type



Recommended engine oil classification
API Service SE, SF, SG type or higher

CAUTION: Be sure to use motor oils that do not contain anti-friction modifiers. Passenger car motor oils (often labeled “Energy Conserving”) contain anti-friction additives which will cause clutch and/or starter clutch slippage, resulting in reduced component life and poor engine performance.

Quantity

Periodic oil change	3.7 L
With oil filter replacement	4.1 L
Total amount	5.0 L

Transfer case oil

Type	SAE80API "GL-4" Hypoid Gear Oil
Quantity	0.4 L

Air filter

Dry type element

Fuel

Type	Regular unleaded gasoline
Fuel tank capacity	20 L
Reserve amount	3.5 L

Carburetor

Manufacturer	MIKUNI
Type × quantity	BSR40 × 1

Spark plug

Manufacturer/type	NGK / DPR7EA-9 or DENSO / X22EPR-U9
Gap	0.8 ~ 0.9 mm

Clutch type

Wet, multiple-disc

Transmission

Primary reduction system	Spur gear
Primary reduction ratio	1.532
Secondary reduction system	Belt
Secondary reduction ratio	2.320
Transmission type	Constant mesh 5-speed
Operation	Left foot operation

Gear ratio

1st	2.438
2nd	1.579
3rd	1.160
4th	0.906
5th	0.750

Chassis

Frame type	Double cradle
Caster angle	32°
Trail	142 mm

Tire

Front	
Type	With tube
Size	130/90-16 67H
Manufacturer/model	Dunlop / D404FL Bridgestone / G703F
Rear	
Type	With tube
Size	150/80B-16 71H
Manufacturer/model	Dunlop / D404 Bridgestone / G702

SPECIFICATIONS

Maximum load*	196 kg
Air pressure (cold tire)	
Up to 90 kg load*	
Front	250 kPa (2.50 kg/cm ² , 2.50 bar)
Rear	250 kPa (2.50 kg/cm ² , 2.50 bar)
90 kg load ~ maximum load*	
Front	250 kPa (2.50 kg/cm ² , 2.50 bar)
Rear	280 kPa (2.80 kg/cm ² , 2.80 bar)

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

Wheels

Front	
Type	Spoke
Size	16 × MT 3.00
Rear	
Type	Spoke
Size	16 × MT 3.50

Brakes

Front	
Type	Dual disc brake
Operation	Right hand operation
Fluid	DOT 4

Rear	
Type	Single disc brake
Operation	Right foot operation
Fluid	DOT 4

Suspension

Front	
Type	Telescopic fork
Rear	
Type	Swingarm (link suspension)

Shock absorber

Front	Coil spring/oil damper
Rear	Coil spring/gas-oil damper

Wheel travel

Front	140 mm
Rear	110 mm

Electrical

Ignition system	T.C.I. (digital)
Charging system	
Type	A.C. magneto
Standard output	14 V, 21 A @ 5,000 r/min
Battery	
Type	YTX20L-BS
Voltage, capacity	12 V, 18 AH

Headlight type Quartz bulb (halogen)

Bulb voltage, wattage × quantity

Headlight	12 V, 60/55 W × 1
Tail/brake light	12 V, 5/21 W × 1
Turn signal lights	12 V, 21 W × 4
Auxiliary light	12 V, 4 W × 1
Meter light	14 V, 0.6 W × 4
Neutral indicator light	12 V, 1 W × 1
High beam indicator light	12 V, 1 W × 1
Turn indicator light	12 V, 1 W × 1
Fuel level indicator light	LED × 1
Engine trouble indicator light	LED × 1

Fuses

Main fuse	30 A
Ignition fuse	15 A
Signaling system fuse	10 A
Headlight fuse	15 A
Carburetor heater fuse	10 A
Odometer fuse	5 A

SPECIFICATIONS

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	7.233	ft·lb
	m·kg	86.794	in·lb
	cm·kg	0.0723	ft·lb
	cm·kg	0.8679	in·lb
Weight	kg	2.205	lb
	g	0.03527	oz
Speed	km/hr	0.6214	mph
Distance	km	0.6214	mi
	m	3.281	ft
	m	1.094	yd
	cm	0.3937	in
	mm	0.03937	in
Volume / Capacity	cc (cm ³)	0.03527	oz (IMP liq.)
	cc (cm ³)	0.06102	cu·in
	lt (liter)	0.8799	qt (IMP liq.)
	lt (liter)	0.2199	gal (IMP liq.)
Misc.	kg/mm	55.997	lb/in
	kg/cm ²	14.2234	psi (lb/in ²)
	Centigrade (°C)	9/5 + 32	Fahrenheit (°F)

Identification number records.....	9-1
Key identification number	9-1
Vehicle identification number.....	9-1
Model label.....	9-2

CONSUMER INFORMATION

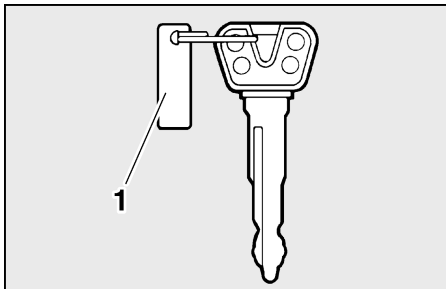
Identification number records

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.

1. KEY IDENTIFICATION NUMBER:

2. VEHICLE IDENTIFICATION NUMBER:

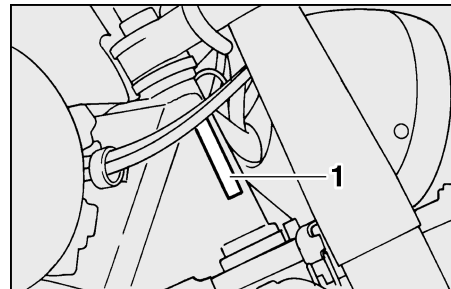
3. MODEL LABEL INFORMATION:



1. Key identification number

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.



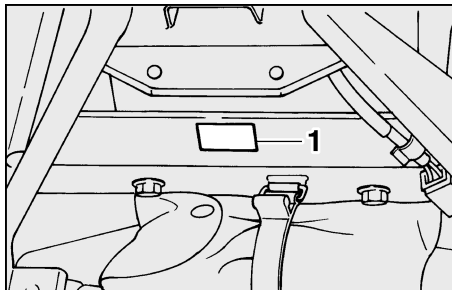
1. Vehicle identification number

Vehicle identification number

The vehicle identification number is stamped into the steering head pipe. Record this number in the space provided.

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 state.



1. Model label

Model label

The model label is affixed to the frame under the rider seat. (See page 3-13 for rider seat removal and installation procedures.)

Record the information on this label in the space provided. This information will be needed to order spare parts from your Yamaha dealer.

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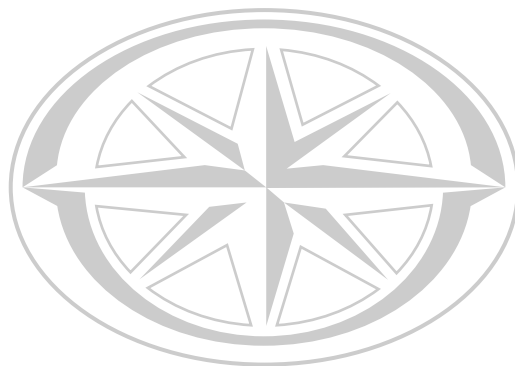
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