



OWNER'S MANUAL

LANZA *DT*

DT230(N)

4TP-28199-21

Congratulations on your purchase of the Yamaha DT230. This model is the result of Yamaha's vast experience in the production of fine sporting, touring, and pacesetting racing machines. It represents the high degree of craftsmanship and reliability that have made Yamaha a leader in these fields.

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

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.



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



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 you have any questions concerning this manual, please consult your Yamaha dealer.
-

IMPORTANT MANUAL INFORMATION

EW000002

⚠️ WARNING

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

EAU03337

DT230 (N)

OWNER'S MANUAL

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SAFETY INFORMATION

MOTORCYCLES ARE SINGLE TRACK VEHICLES. THEIR SAFE USE AND OPERATION ARE DEPENDENT UPON THE USE OF PROPER RIDING TECHNIQUES AS WELL AS THE EXPERIENCE OF THE OPERATOR. EVERY OPERATOR SHOULD KNOW THE FOLLOWING REQUIREMENTS BEFORE RIDING THIS MOTORCYCLE.

HE OR SHE SHOULD:

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

Safe riding

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

Therefore:

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



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



SAFETY INFORMATION

1

Protective apparel

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

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

Modifications

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

Loading and accessories

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



Loading

The total weight of the operator, passenger, accessories and cargo must not exceed the maximum load limit of 180 kg. When loading within this weight limit, keep the following in mind:

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

Accessories

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

Keep the following guidelines in mind, as well as those provided under “Loading” when mounting accessories.



SAFETY INFORMATION

1

1. Never install accessories or carry cargo that would impair the performance of your motorcycle. Carefully inspect the accessory before using it to make sure that it does not in any way reduce ground clearance or cornering clearance, limit suspension travel, steering travel or control operation, or obscure lights or reflectors.
 - a. Accessories fitted to the handlebar or the front fork area can create instability due to improper weight distribution or aerodynamic changes. If accessories are added to the handlebar or front fork area, they must be as lightweight as possible and should be kept to a minimum.
 - b. Bulky or large accessories may seriously affect the stability of the motorcycle due to aerodynamic effects. Wind may attempt to lift the motorcycle, or the motorcycle may become unstable in cross winds. These accessories may also cause instability when passing or being passed by large vehicles.
 - c. Certain accessories can displace the operator from his or her normal riding position. This improper position limits the freedom of movement of the operator and may limit control ability, therefore, such accessories are not recommended.
2. Use caution when adding electrical accessories. If electrical accessories exceed the capacity of the motorcycle's electrical system an electric failure could result, which could cause a dangerous loss of lights or engine power.

Gasoline and exhaust gas

1. GASOLINE IS HIGHLY FLAMMABLE:
 - a. Always turn the engine off when refueling.
 - b. Take care not to spill any gasoline on the engine or exhaust system when refueling.
 - c. Never refuel while smoking or in the vicinity of an open flame.



SAFETY INFORMATION

2. Never start the engine or let it run for any length of time in a closed area. The exhaust fumes are poisonous and may cause loss of consciousness and death within a short time. Always operate your motorcycle in an area that has adequate ventilation.
3. Always turn the engine off before leaving the motorcycle unattended and remove the key from the main switch. When parking the motorcycle, note the following:
 - a. The engine and exhaust system may be hot, therefore, park the motorcycle in a place where pedestrians or children are not likely to touch these hot areas.
 - b. Do not park the motorcycle on a slope or soft ground, otherwise it may fall over.
 - c. Do not park the motorcycle near a flammable source (e.g., a kerosene heater, or near an open flame), otherwise it could catch fire.
4. When transporting the motorcycle in another vehicle, make sure that it is kept upright and that the fuel cock(s) are turned to “ON” or “RES” (for vacuum type)/”OFF” (for manual type). If the motorcycle should lean over, gasoline may leak out of the carburetor or fuel tank.
5. If you should swallow any gasoline, inhale a lot of gasoline vapor, or allow gasoline to get into your eyes, see your doctor immediately. If any gasoline spills on your skin or clothing, immediately wash the affected area with soap and water and change your clothes.

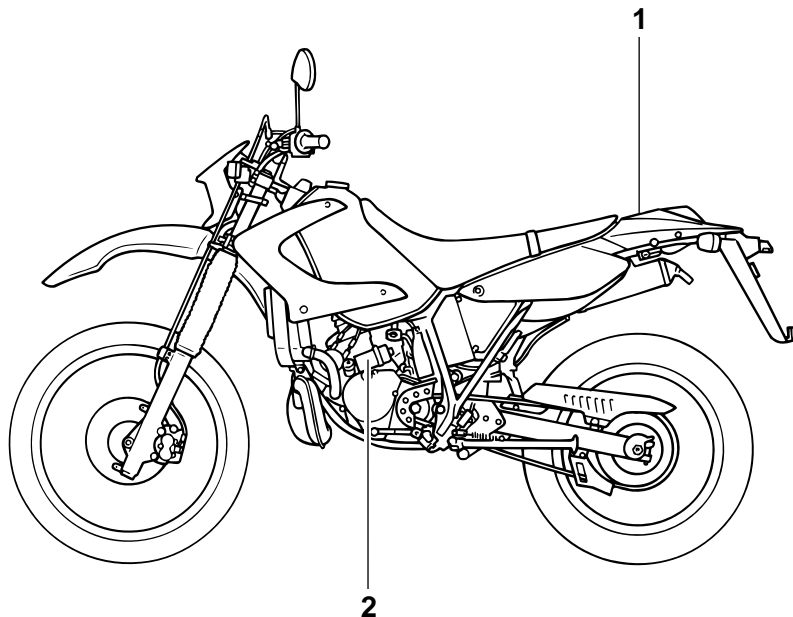
SAFETY INFORMATION

EAU02977

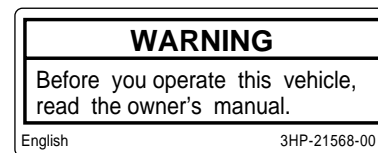
Location of important labels

Please read the following important labels carefully before operating this motorcycle.

1



1

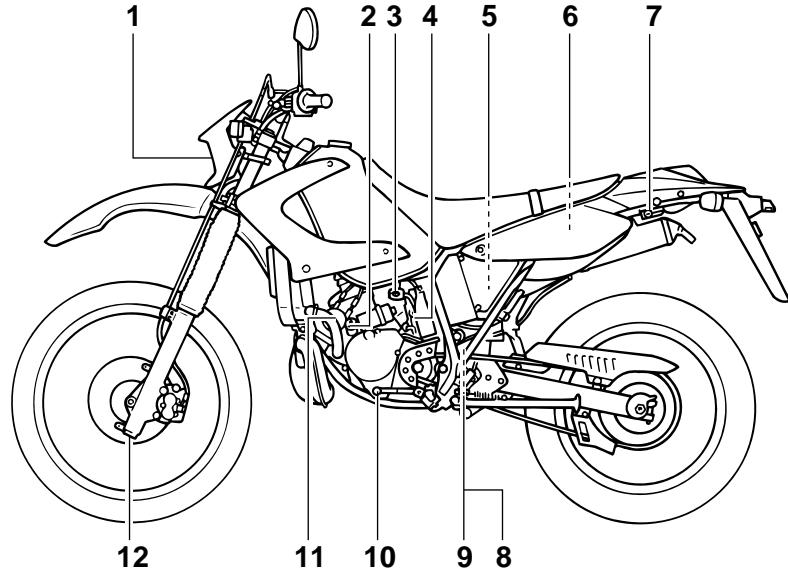


2



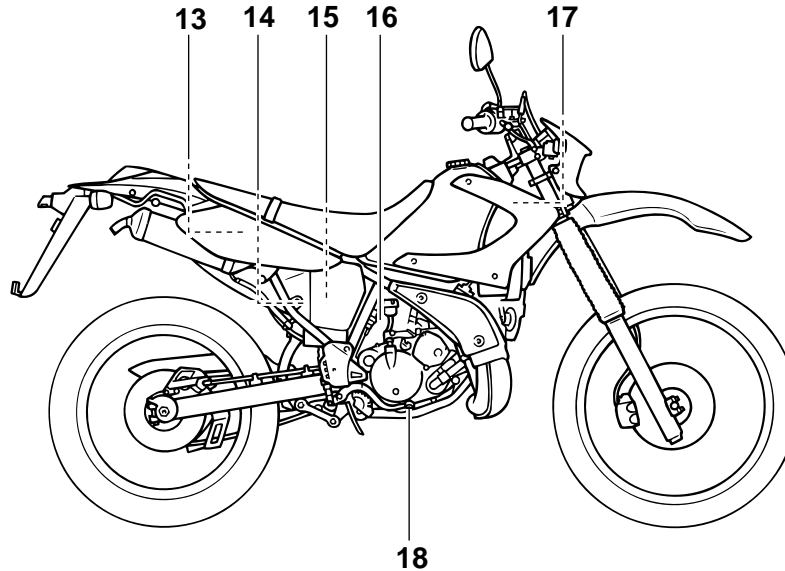
DESCRIPTION

Left view



- | | | | |
|--|-------------|--|-------------|
| 1. Headlight | (page 6-34) | 8. Rear shock absorber spring preload
adjusting nut | (page 3-13) |
| 2. Rear shock absorber compression
damping adjusting knob | (page 3-14) | 9. Rear shock absorber rebound damping
adjusting dial | (page 3-14) |
| 3. Fuel cock | (page 3-9) | 10. Shift pedal | (page 3-6) |
| 4. Starter (choke) lever “ ↘ ” | (page 3-10) | 11. YPVS | (page 3-15) |
| 5. Air filter element | (page 6-14) | 12. Front fork compression damping
adjusting screw | (page 3-12) |
| 6. 2-stroke engine oil tank | (page 3-8) | | |
| 7. Helmet holder | (page 3-11) | | |

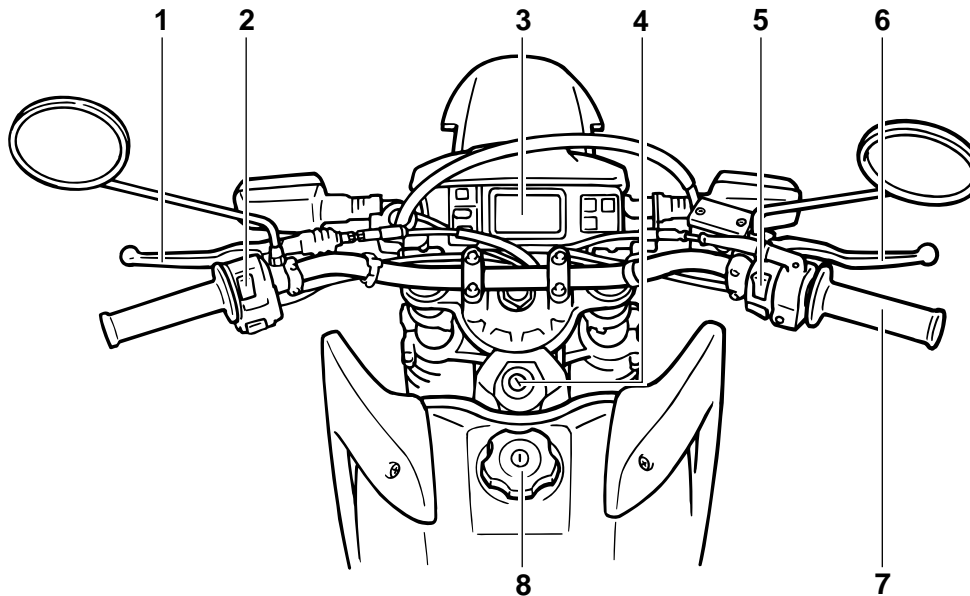
Right view



- | | |
|-----------------------|------------------|
| 13. Coolant reservoir | (page 6-11) |
| 14. Owner's tool kit | (page 6-1) |
| 15. Battery | (page 6-32) |
| 16. Fuse | (page 6-33) |
| 17. Radiator cap | (page 6-12) |
| 18. Brake pedal | (page 3-7, 6-22) |

DESCRIPTION

Controls and instruments



1. Clutch lever

2. Left handlebar switches

3. Speedometer unit

4. Main switch/steering lock

5. Right handlebar switches

(page 3-6, 6-20)

(page 3-5)

(page 3-3)

(page 3-1)

(page 3-5)

6. Brake lever

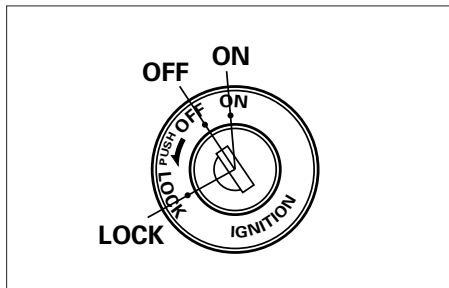
7. Throttle grip

8. Fuel tank cap

(page 3-6, 6-21)

(page 6-16, 6-28)

(page 3-7)



EAU00029

Main switch/steering lock

The main switch/steering lock controls the ignition and lighting systems, and is used to lock the steering. The various positions are described below.

EAU00031

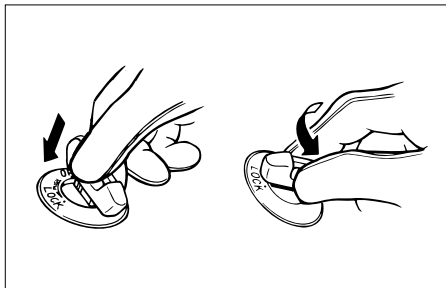
ON

All electrical systems are supplied with power, and the headlight, meter lighting, taillight and license plate light come on, and the engine can be started. The key cannot be removed.

EAU00038

OFF

All electrical systems are off. The key can be removed.



EAU00040

LOCK

The steering is locked, and all electrical systems are off. The key can be removed.

To lock the steering

1. Turn the handlebars all the way to the left.
2. Push the key in from the "OFF" position, and then turn it to "LOCK" while still pushing it.
3. Remove the key.

To unlock the steering

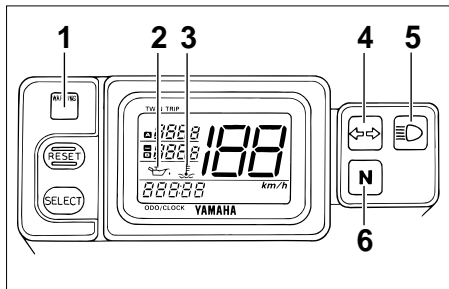
Push the key in, and then turn it to "OFF" while still pushing it.

EW000016

WARNING

Never turn the key to "OFF" or "LOCK" while the motorcycle is moving, otherwise the electrical systems will be switched off, which may result in loss of control or an accident. Make sure that the motorcycle is stopped before turning the key to "OFF" or "LOCK".

INSTRUMENT AND CONTROL FUNCTIONS



1. Oil level/coolant temperature warning light “WARNING”
2. Oil level symbol “”
3. Coolant temperature symbol “”
4. Turn signal indicator light “”
5. High beam indicator light “”
6. Neutral indicator light “N”

EAU03034

Indicator and warning lights

EAU03587

Oil level/coolant temperature warning light “WARNING”

This warning light has the following three functions.

- When the engine oil level is low, the warning light comes on and symbol “” flashes. If this occurs, stop the engine immediately and add engine oil to the specified level.

- When the coolant temperature is too high, the warning light comes on and symbol “” flashes. Stop the motorcycle and allow it to idle until the coolant temperature goes down. If the temperature does not go down, stop the engine. (See the “Engine overheating” section on page 6-44 for further instructions.)
- When the engine oil level is low and the coolant temperature is too high, the warning light flashes and symbols “” and “” come on.

To check that the warning light is working properly:

- Put the transmission in neutral or apply the clutch lever.
- Turn the engine stop switch to “” and the key to “ON”.
- The light will come on and symbol “” will appear in the display.

If the warning light does not come on, have a Yamaha dealer inspect the electrical circuit.

EC000118

CAUTION:

- Do not operate the motorcycle until you know that the engine oil level is sufficient.
- Do not operate the engine if it is overheated.

NOTE:

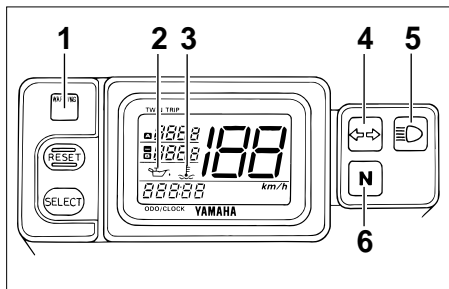
Even if the oil is filled to the specified level, the indicator light may flicker when riding on a slope or during sudden acceleration or deceleration, but this is normal.

EAU00057

Turn signal indicator light “”

This indicator light flashes when the turn signal switch is pushed to the left or right.

INSTRUMENT AND CONTROL FUNCTIONS



1. Oil level/coolant temperature warning light "WARNING"
2. Oil level symbol "🛢️"
3. Coolant temperature symbol "🌡️"
4. Turn signal indicator light "↔️"
5. High beam indicator light "≡▷"
6. Neutral indicator light "N"

EAU00063

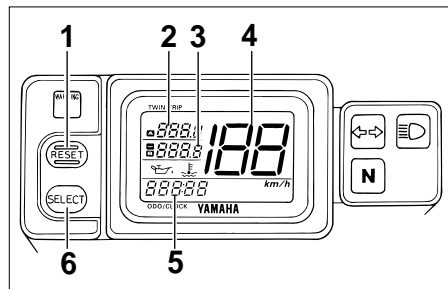
High beam indicator light "≡▷"

This indicator light comes on when the high beam of the headlight is switched on.

EAU00061

Neutral indicator light "N"

This indicator light comes on when the transmission is in the neutral position.



1. Reset button "RESET"
2. Upper trip odometer
3. Lower trip odometer
4. Digital speedometer
5. Odometer/Clock "ODO/CLOCK"
6. Mode select button "SELECT"

EAU00100

Speedometer unit

The speedometer unit is equipped with a digital speedometer, an odometer, two tripmeters and a clock. The speedometer shows riding speed. The odometer shows the total distance traveled. The tripmeter shows the distance traveled since it was last set to zero.

The mode select button is used to switch between modes "A" and "B".

When in mode "A":

- The upper tripmeter can be reset to zero.
- The display can be switched between the clock and the odometer.
- The clock can be set.

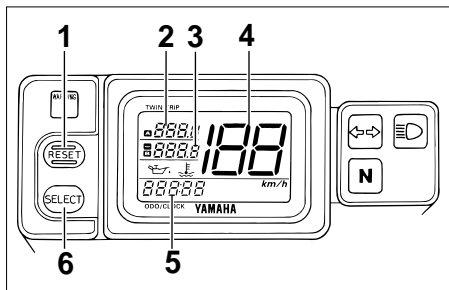
When in mode "B":

- The lower tripmeter can be reset.
- The lower tripmeter can be switched between forward count and reverse count.

Select the modes as follows:

1. Turn the key to "ON".

INSTRUMENT AND CONTROL FUNCTIONS



1. Reset button "RESET"
2. Upper trip odometer
3. Lower trip odometer
4. Digital speedometer
5. Odometer/Clock "ODO/CLOCK"
6. Mode select button "SELECT"

NOTE:

When the key is turned to "ON", the speedometer displays "188 km/h" for a few seconds, during which time the electrical circuit is being checked.

2. Push the mode select button to display a mode.

Mode "A"

To set the upper tripmeter to zero, push the reset button for at least one second.

To display the clock or odometer reading, push the mode select button for one to three seconds.

To set the clock:

1. Push the mode select button until the hour digits flash.
2. Push the reset button to change the hour digits.
3. Push the mode select button, and the minute digits will flash.
4. Push the reset button to change the minute digits.
5. Push the mode select button again to set the clock.

Mode "B"

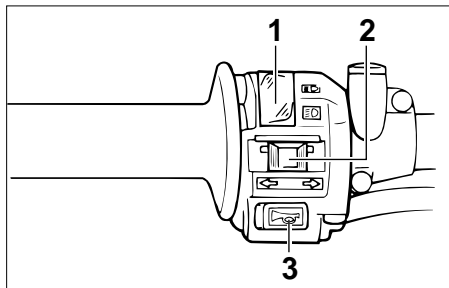
To set the lower tripmeter to zero, push the reset button for at least one second.


To switch the tripmeter between forward count and reverse count, push the mode select button for one to three seconds. A minus sign **—** will appear when in the reverse count mode.

To set the reverse count distance:

1. Push the mode select button until the digit for the hundreds flashes.
2. Push the reset button to change the hundreds.
3. Repeat this procedure to change the tens and ones.
4. Push the mode select button again to set the tripmeter.

INSTRUMENT AND CONTROL FUNCTIONS





1. Dimmer switch
2. Turn signal switch
3. Horn switch “”

EAU00118

Handlebar switches



EAU00121

Dimmer switch

Set this switch to “” for the high beam and to “” for the low beam.

EAU00127

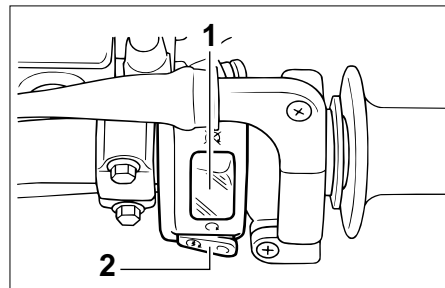
Turn signal switch


To signal a right-hand turn, push this switch to “”. To signal a left-hand turn, push this switch to “”. When released, the switch returns to the center position. To cancel the turn signal lights, push the switch in after it has returned to the center position.

Horn switch “”

Press this switch to sound the horn.


EAU00129



1. Engine stop switch
2. Start switch “”

EAU00138

Engine stop switch

Set this switch to “” to stop the engine in case of an emergency, such as when the motorcycle overturns or when the throttle cable is stuck.

EAU00143

Start switch “”

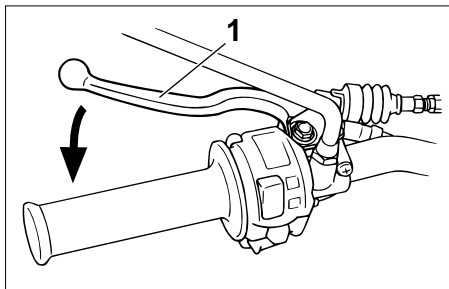
Push this switch to crank the engine with the starter.

EC000005

CAUTION:

See page 5-1 for starting instructions prior to starting the engine.

INSTRUMENT AND CONTROL FUNCTIONS



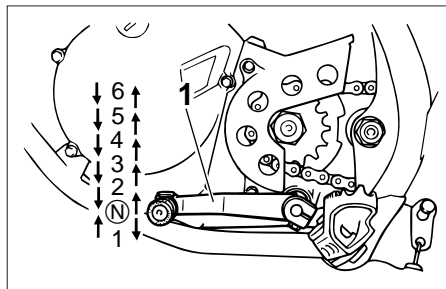
1. Clutch lever

EAU00152

Clutch lever

The clutch lever is located at the left handlebar grip. To disengage the clutch, pull the lever toward the handlebar grip. To engage the clutch, release the lever. The lever should be pulled rapidly and released slowly for smooth clutch operation.

The clutch lever is equipped with a clutch switch, which is part of the ignition circuit cut-off system. (See page 3-16 for an explanation of the ignition circuit cut-off system.)

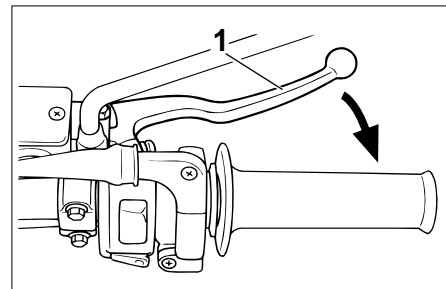


1. Shift pedal
N. Neutral

EAU00157

Shift pedal

The shift pedal is located on the left side of the engine and is used in combination with the clutch lever when shifting the gears of the 6-speed constant-mesh transmission equipped on this motorcycle.

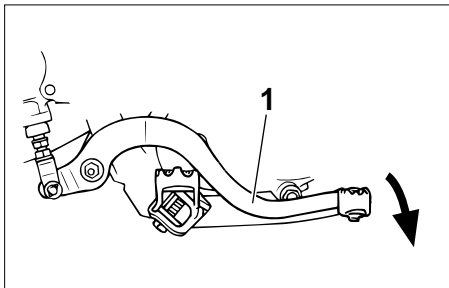


1. Brake lever

EAU00158

Brake lever

The brake lever is located at the right handlebar grip. To apply the front brake, pull the lever toward the handlebar grip.

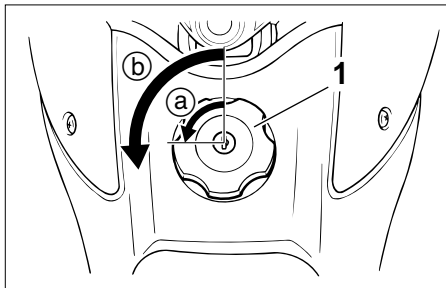


1. Brake pedal

EAU00162

Brake pedal

The brake pedal is on the right side of the motorcycle. To apply the rear brake, press down on the brake pedal.



1. Fuel tank cap

- a. Unlock
- b. Open

EAU00177

Fuel tank cap

To remove the fuel tank cap

1. Insert the key into the lock and turn it 1/4 turn counterclockwise.
2. Turn the fuel tank cap 1/3 turn counterclockwise and pull it off.

To install the fuel tank cap

1. Insert the fuel tank cap into the tank opening with the key inserted in the lock, and then turn the cap 1/3 turn clockwise.
2. Turn the key 1/4 turn clockwise, and then remove it.

NOTE:

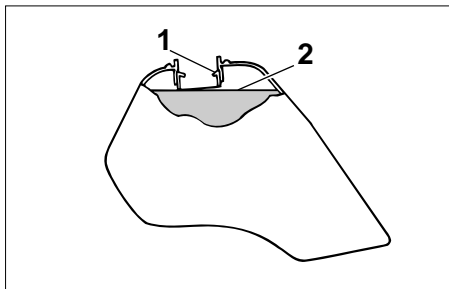
The fuel tank cap cannot be installed unless the key is in the lock. In addition, the key cannot be removed if the cap is not properly installed and locked.

EW000023

WARNING

Make sure that the fuel tank cap is properly closed and locked before riding.

INSTRUMENT AND CONTROL FUNCTIONS



1. Filler tube
2. Fuel level

EAU001183

Fuel

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

EW000130

⚠ WARNING

- Do not overfill the fuel tank, otherwise it may overflow when the fuel warms up and expands.
- Avoid spilling fuel on the hot engine.

EAU00185

CAUTION:

Immediately wipe off spilled fuel with a clean, dry, soft cloth, since fuel may deteriorate painted surfaces or plastic parts.

EAU00192

Recommended fuel:

Regular gasoline

For Australia:

Unleaded fuel only

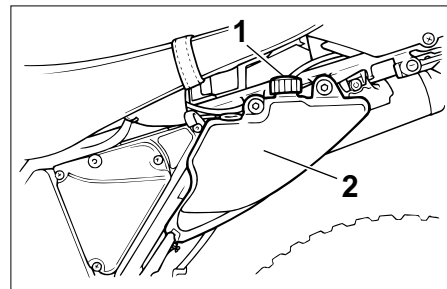
Fuel tank capacity:

Total amount:

11.0 L

Reserve amount:

2.0 L



1. 2-stroke engine oil tank cap
2. 2-stroke engine oil tank

EAU01413

2-stroke engine oil

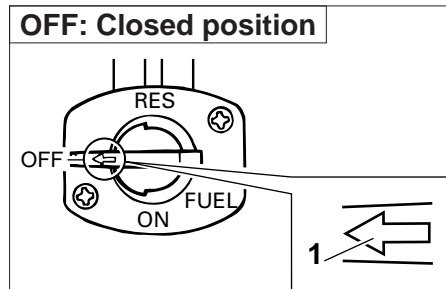
Make sure that there is sufficient oil in the 2-stroke engine oil tank. If necessary, add oil as follows.

1. Remove panel A. (See page 6-6 for panel removal and installation procedures.)
2. Remove the 2-stroke engine oil tank cap and add the recommended oil.
3. Install the 2-stroke engine oil tank cap and the panel.

INSTRUMENT AND CONTROL FUNCTIONS

NOTE: _____
Make sure that the 2-stroke engine oil tank cap is properly closed.

Recommended oil:
Yamalube 2 or equivalent
2-stroke engine oil (JASO
grade "FC")
Oil quantity:
1.3 L



1. Arrow mark positioned over "OFF"

EAU03050

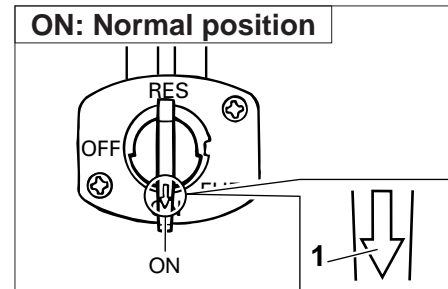
Fuel cock

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.



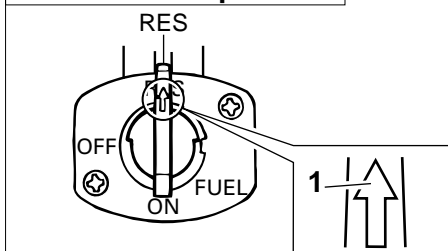
1. Arrow mark positioned over "ON"

ON

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

INSTRUMENT AND CONTROL FUNCTIONS

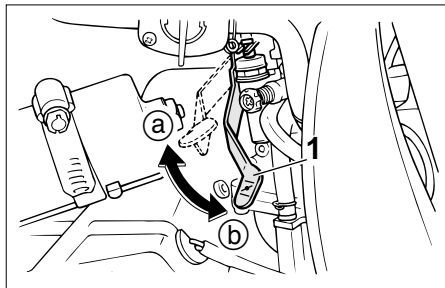
RES: Reserve position



1. Arrow mark positioned over "RES"

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!



1. Starter (choke) lever "1"

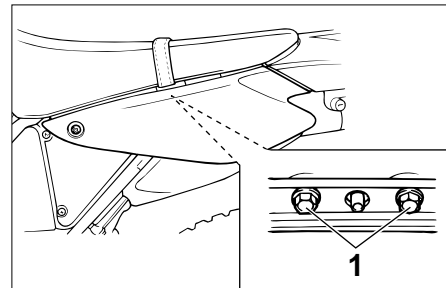
EAU02976

Starter (choke) lever "1"

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

Move the lever in direction (a) to turn on the starter (choke).

Move the lever in direction (b) to turn off the starter (choke).



1. Bolt (x2)

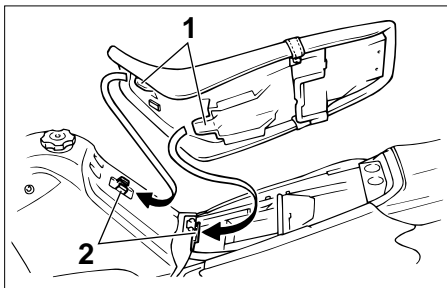
EAU00240

Seat

To remove the seat

Remove the bolts, and then pull the seat off.

INSTRUMENT AND CONTROL FUNCTIONS



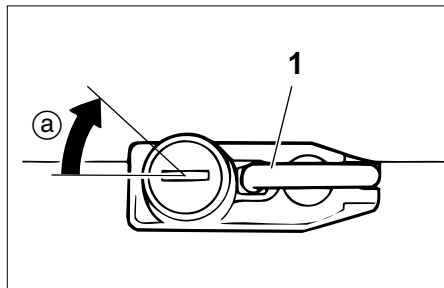
1. Projection (x2)
2. Seat holder (x2)

To install the seat

1. Insert the projections on the front of the seat into the seat holders as shown.
2. Place the seat in the original position, and then tighten the bolts.

NOTE:

Make sure that the seat is properly secured before riding.



1. Helmet holder
- a. Open

Helmet holder

EAU00260

To open the helmet holder, insert the key into the lock, and then turn the key as shown.

To lock the helmet holder, place it in the original position, and then remove the key.

EW000030

WARNING

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

EAU03589

Adjusting the front fork

This front fork is equipped with damping force adjusting screws.

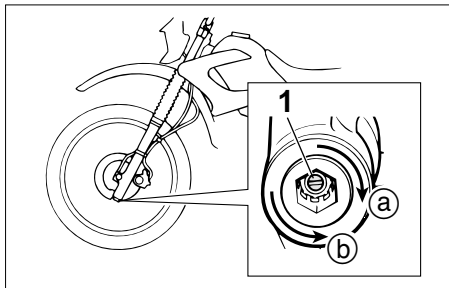
EW000035

WARNING

Always adjust both fork legs equally, otherwise poor handling and loss of stability may result.

INSTRUMENT AND CONTROL FUNCTIONS

EAU03672



1. Compression damping adjusting screw

Adjust the damping force as follows.

1. Remove the rubber cap from the bottom of each fork leg.
2. To increase the damping force and thereby harden the suspension, turn the adjusting screw in direction (a). To decrease the damping force and thereby soften the suspension, turn the adjusting screw in direction (b).

NOTE: _____

To determine the maximum damping force setting, push the adjusting screw up, turn it in direction (a) until it stops, and then one click in direction (b).

Minimum (soft)	17 clicks in direction (b)*
Standard	14 clicks in direction (b)*
Maximum (hard)	1 click in direction (b)*

* With the adjusting screw fully turned in direction (a)

3. Install the rubber caps.

ECA00034

CAUTION: _____

Be sure to install the rubber caps to prevent dust, etc. from entering the fork legs.

Adjusting the shock absorber assembly

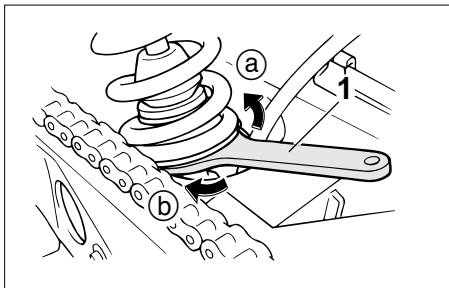
This shock absorber assembly is equipped with a spring preload adjusting nut, a rebound damping force adjusting dial and a compression damping force adjusting knob.

EC000015

CAUTION: _____

Never attempt to turn an adjusting mechanism beyond the maximum or minimum settings.

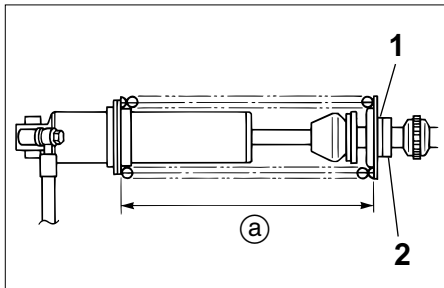
INSTRUMENT AND CONTROL FUNCTIONS



1. Special wrench

Spring preload

1. Loosen the locknut.
2. To increase the spring preload and thereby harden the suspension, turn the adjusting nut in direction (a). To decrease the spring preload and thereby soften the suspension, turn the adjusting nut in direction (b).



1. Adjusting nut
2. Locknut
- a. Distance "A"

NOTE:

- Use the special wrench included in the owner's tool kit to make the adjustment.
- The spring preload setting is determined by measuring distance A, shown in the illustration. The shorter distance A is, the higher the spring preload; the longer distance A is, the lower the spring preload.

Spring preload:

Minimum (soft):

Distance A = 252 mm

Standard:

Distance A = 244 mm

Maximum (hard):

Distance A = 234 mm

3. Tighten the locknut to the specified torque.

Tightening torque:

Locknut:

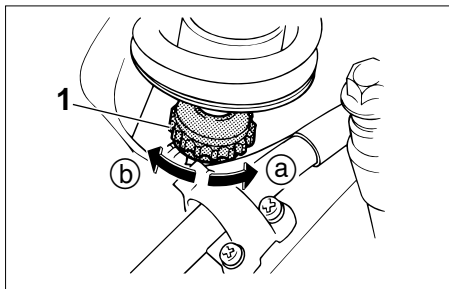
41 Nm (4.1 m·kg)

ECA00076

CAUTION:

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

INSTRUMENT AND CONTROL FUNCTIONS



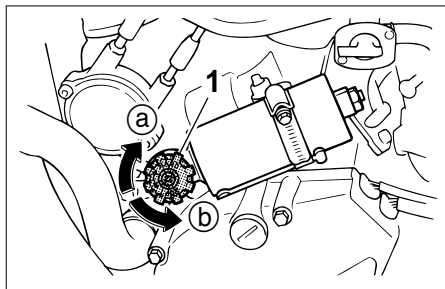
1. Adjusting dial

Rebound damping force

To increase the rebound damping force and thereby harden the rebound damping, turn the adjusting dial in direction (a). To decrease the rebound damping force and thereby soften the rebound damping, turn the adjusting dial in direction (b).

Minimum (soft)	16 clicks in direction (b)*
Standard	9 clicks in direction (b)*
Maximum (hard)	1 click in direction (b)*

* With the adjusting dial fully turned in direction (a)



1. Adjusting knob

Compression damping force

To increase the compression damping force and thereby harden the compression damping, turn the adjusting knob in direction (a). To decrease the compression damping force and thereby soften the compression damping, turn the adjusting knob in direction (b).

Minimum (soft)	5 clicks in direction (a)*
Standard	8 clicks in direction (a)*
Maximum (hard)	22 clicks in direction (a)*

* With the adjusting knob fully turned in direction (b)

NOTE:

Although the total number of clicks of a damping force adjusting mechanism may not exactly match the above specifications due to small differences in production, the actual number of clicks always represents the entire adjusting range. To obtain a precise adjustment, it would be advisable to check the number of clicks of each damping force adjusting mechanism and to modify the specifications as necessary.

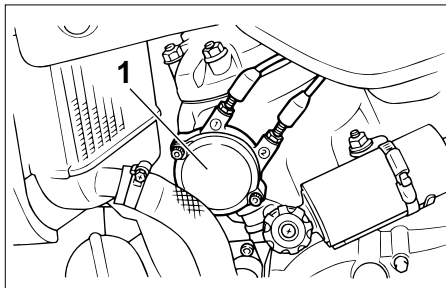
INSTRUMENT AND CONTROL FUNCTIONS

⚠ WARNING

EW000041

This shock absorber contains highly pressurized nitrogen gas. For proper handling, 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 gas cylinder.
- Do not subject the shock absorber to an open flame or other high heat sources, otherwise it may explode due to excessive gas pressure.
- Do not deform or damage the gas cylinder in any way, as this will result in poor damping performance.
- Always have a Yamaha dealer service the shock absorber.



1. YPVS

EAU00326

YPVS

This model is equipped with the YPVS (Yamaha Power Valve System). This system boosts engine performance and efficiency by means of a variable valve in the exhaust port. The YPVS valve is constantly adjusted in accordance with the engine speed by a computer-controlled servomotor.

Since the YPVS is an important part of the engine and requires very sophisticated adjustment, have a Yamaha dealer, who has the necessary professional knowledge and experience, make this adjustment.

EC000023

CAUTION:

The YPVS has been set and extensively tested at the Yamaha factory. Changing these settings without sufficient technical knowledge may result in poor performance of or damage to the engine.

YPVS operation noises can be heard in the following instances:

- When the key is turned to “ON” and the engine is started.
- When the engine stalls with the key in the “ON” position.

EC000024

CAUTION:

If the YPVS does not operate, have a Yamaha dealer check it.

Sidestand

EAU00330

The sidestand is located on the left side of the frame. Raise the sidestand or lower it with your foot while holding the motorcycle upright.

NOTE:

The built-in sidestand switch is part of the ignition circuit cut-off system, which cuts the ignition in certain situations. (See further down for an explanation of the ignition circuit cut-off system.)

EW000044

⚠ WARNING

The motorcycle must not be ridden with the sidestand down, or if the sidestand cannot be properly moved up (or does not stay up), otherwise the sidestand could contact the ground and distract the operator, resulting in a possible loss of control. Yamaha's ignition circuit cut-off system has been designed to assist the operator in fulfilling the responsibility of raising the sidestand before starting off. Therefore, check this system regularly as described below and have a Yamaha dealer repair it if it does not function properly.

EAU00331

Ignition circuit cut-off system

The ignition circuit cut-off system (comprising the sidestand switch, clutch switch and neutral switch) has the following functions.

- It prevents starting when the transmission is in gear and the sidestand is up, but the clutch lever is not pulled.
- It prevents starting when the transmission is in gear and the clutch lever is pulled, but the sidestand is still down.
- It cuts the running engine when the sidestand is moved down.

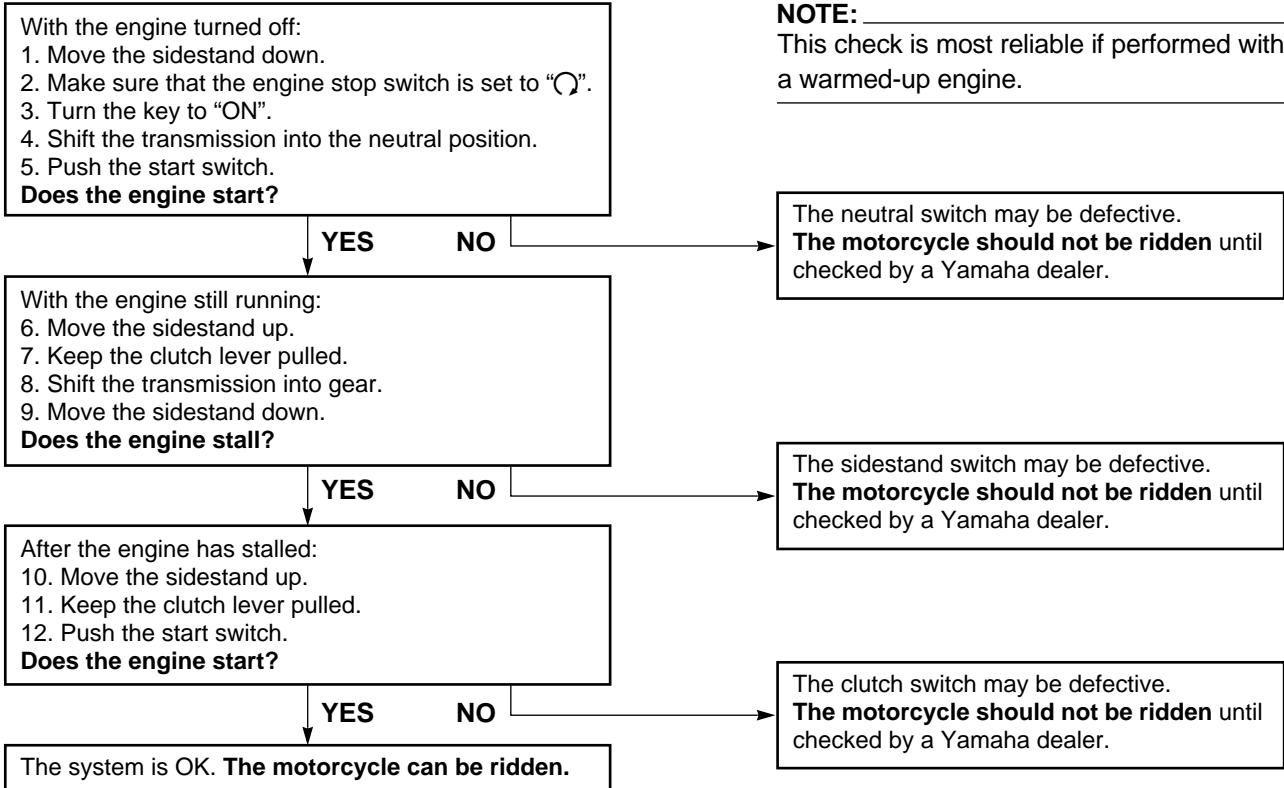
Periodically check the operation of the ignition circuit cut-off system according to the following procedure.

EW000045

⚠ WARNING

If a malfunction is noted, have a Yamaha dealer check the system before riding.

INSTRUMENT AND CONTROL FUNCTIONS



PRE-OPERATION CHECKS

The condition of a vehicle is the owner's responsibility. Vital components can start to deteriorate quickly and unexpectedly, even if the vehicle remains unused (for example, as a result of exposure to the elements). Any damage, fluid leakage or loss of tire air pressure could have serious consequences. Therefore, it is very important, in addition to a thorough visual inspection, to check the following points before each ride.

Pre-operation check list

ITEM	CHECKS	PAGE
Fuel	<ul style="list-style-type: none"> • Check fuel level in fuel tank. • Refuel if necessary. • Check fuel line for leakage. 	3-7-3-8
Two-stroke engine oil	<ul style="list-style-type: none"> • Check oil level in oil tank. • If necessary, add recommended oil to specified level. • Check vehicle for oil leakage. 	3-8-3-9
Transmission oil	<ul style="list-style-type: none"> • Check oil level in transmission case. • If necessary, add recommended oil to specified level. 	6-9-6-10
Coolant	<ul style="list-style-type: none"> • Check coolant level in reservoir. • If necessary, add recommended coolant to specified level. • Check cooling system for leakage. 	6-10-6-13
Front brake	<ul style="list-style-type: none"> • Check operation. • If soft or spongy, have Yamaha dealer bleed hydraulic system. • Check lever free play. • Adjust if necessary. • Check fluid level in reservoir. • If necessary, add recommended brake fluid to specified level. • Check hydraulic system for leakage. 	3-6, 6-21-6-25
Rear brake	<ul style="list-style-type: none"> • Check operation. • If soft or spongy, have Yamaha dealer bleed hydraulic system. • Check fluid level in reservoir. • If necessary, add recommended brake fluid to specified level. • Check hydraulic system for leakage. 	3-7, 6-22-6-25

PRE-OPERATION CHECKS

ITEM	CHECKS	PAGE
Clutch	<ul style="list-style-type: none">• Check operation.• Lubricate cable if necessary.• Check lever free play.• Adjust if necessary.	3-6, 6-20–6-21
Throttle grip	<ul style="list-style-type: none">• Make sure that operation is smooth.• Lubricate throttle grip, housing and cable if necessary.• Check free play.• Adjust if necessary.	6-16–6-17, 6-28
Control cables	<ul style="list-style-type: none">• Make sure that operation is smooth.• Lubricate if necessary.	6-27
Drive chain	<ul style="list-style-type: none">• Check chain slack.• Adjust if necessary.• Check chain condition.• Lubricate if necessary.	6-25–6-27
Wheels and tires	<ul style="list-style-type: none">• Check for damage.• Check tire condition and tread depth.• Check air pressure.• Correct if necessary.	6-17–6-20
Brake and shift pedals	<ul style="list-style-type: none">• Make sure that operation is smooth.• Lubricate pedal pivoting points if necessary.	6-29
Brake and clutch levers	<ul style="list-style-type: none">• Make sure that operation is smooth.• Lubricate lever pivoting points if necessary.	6-29
Sidestand	<ul style="list-style-type: none">• Make sure that operation is smooth.• Lubricate pivot if necessary.	6-29

PRE-OPERATION CHECKS

ITEM	CHECKS	PAGE
Chassis fasteners	<ul style="list-style-type: none">• Make sure that all nuts, bolts and screws are properly tightened.• Tighten if necessary.	—
Instruments, lights, signals and switches	<ul style="list-style-type: none">• Check operation.• Correct if necessary.	3-5, 6-34–6-38
Sidestand switch	<ul style="list-style-type: none">• Check operation of ignition circuit cut-off system.• If system is defective, have Yamaha dealer check vehicle.	3-16–3-17

NOTE:

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

EWA00033

⚠ WARNING

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

⚠ WARNING

EAU00373

- **Become thoroughly familiar with all operating controls and their functions before riding. Consult a Yamaha dealer regarding any control or function that you do not thoroughly understand.**
- **Never start the engine or operate it in a closed area for any length of time. Exhaust fumes are poisonous, and inhaling them can cause loss of consciousness and death within a short time. Always make sure that there is adequate ventilation.**
- **Before starting out, make sure that the sidestand is up. If the sidestand is not raised completely, it could contact the ground and distract the operator, resulting in a possible loss of control.**

EAU01860

Starting and warming up a cold engine

In order for the ignition circuit cut-off system to enable starting, one of the following conditions must be met:

- The transmission is in the neutral position.
- The transmission is in gear with the clutch lever pulled and the sidestand up.

EW000054

⚠ WARNING

- **Before starting the engine, check the function of the ignition circuit cut-off system according to the procedure described on page 3-17.**
- **Never ride with the sidestand down.**

1. Turn the fuel cock lever to "ON".
2. Turn the key to "ON" and make sure that the engine stop switch is set to "O".
3. Shift the transmission into the neutral position.

NOTE:

When the transmission is in the neutral position, the neutral indicator light should be on, otherwise have a Yamaha dealer check the electrical circuit.

4. Turn the starter (choke) on and completely close the throttle. (See page 3-10 for starter (choke) operation.)
5. Start the engine by pushing the start switch.

OPERATION AND IMPORTANT RIDING POINTS

NOTE: _____

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

- 5
6. After starting the engine, move the starter (choke) knob/lever back halfway.

ECA00045

CAUTION: _____

For maximum engine life, never accelerate hard when the engine is cold!

7. When the engine is warm, turn the starter (choke) off.

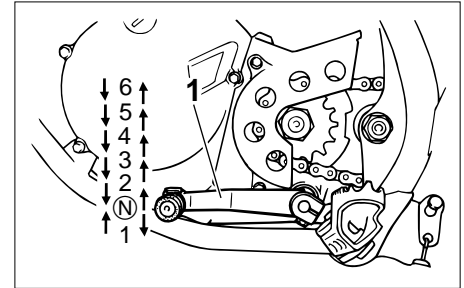
NOTE: _____

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

EAU01258

Starting a warm engine

Follow the same procedure as for starting a cold engine with the exception that the starter (choke) is not required when the engine is warm.



1. Shift pedal
- N. Neutral

EAU00423

Shifting

Shifting gears lets you control the amount of engine power available for starting off, accelerating, climbing hills, etc.

The gear positions are shown in the illustration.

NOTE: _____

To shift the transmission into the neutral position, press the shift pedal down repeatedly until it reaches the end of its travel, and then slightly raise it.

EC000048

CAUTION:

- **Even with the transmission in the neutral position, do not coast for long periods of time with the engine off, and do not tow the motorcycle for long distances. The transmission is properly lubricated only when the engine is running. Inadequate lubrication may damage the transmission.**
- **Always use the clutch while changing gears to avoid damaging the engine, transmission, and drive train, which are not designed to withstand the shock of forced shifting.**

EAU00424

Tips for reducing fuel consumption

Fuel consumption depends largely on your riding style. Consider the following tips to reduce fuel consumption:

- Thoroughly warm up the engine.
- Turn the starter (choke) off as soon as possible.
- Shift up swiftly, and avoid high engine speeds during acceleration.
- Do not rev the engine while shifting down, and avoid high engine speeds with no load on the engine.
- Turn the engine off instead of letting it idle for an extended length of time (e.g., in traffic jams, at traffic lights or at railroad crossings).

EAU00436

Engine break-in

There is never a more important period in the life of your engine than the period between 0 and 1,000 km. For this reason, you should read the following material carefully.

Since the engine is brand new, do not put an excessive load on it for the first 1,000 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 that might result in engine overheating must be avoided.

OPERATION AND IMPORTANT RIDING POINTS

0–150 km

EAU00455

- Avoid prolonged operation above 1/3 throttle.
- After every hour of operation, stop the engine, and then let it cool for five to ten minutes.
- Vary the engine speed from time to time. Do not operate the engine at one set throttle position.

150–500 km

- Avoid prolonged operation above 1/2 throttle.
- Rev the engine freely through the gears, but do not use full throttle at any time.

500–1,000 km

Avoid prolonged operation above 3/4 throttle.

EC000060

CAUTION: _____

After 1,000 km of operation, the transmission oil must be changed.

1,000 km and beyond

Avoid prolonged full-throttle operation. Vary the engine speed occasionally.

EC000049

CAUTION: _____

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

EAU00457

Parking

When parking, stop the engine, remove the key from the main switch, and then turn the fuel cock lever to “OFF”.

EW000058

⚠ WARNING _____

- Since the engine and exhaust system can become very hot, park in a place where pedestrians or children are not likely to touch them.
 - Do not park on a slope or on soft ground, otherwise the motorcycle may overturn.
-

PERIODIC MAINTENANCE AND MINOR REPAIR

EAU00464

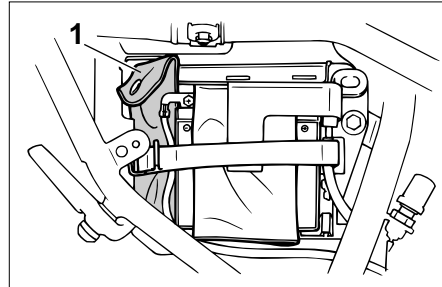
Safety is an obligation of the owner. Periodic inspection, adjustment and lubrication will keep your vehicle in the safest and most efficient condition possible. The most important points of inspection, adjustment, and lubrication are explained on the following pages.

The intervals given in the periodic maintenance and lubrication chart should be simply considered as a general guide under normal riding conditions. However, **DEPENDING ON THE WEATHER, TERRAIN, GEOGRAPHICAL LOCATION, AND INDIVIDUAL USE, THE MAINTENANCE INTERVALS MAY NEED TO BE SHORTENED.**

EW000060

⚠WARNING

If you are not familiar with motorcycle maintenance work, have a Yamaha dealer do it for you.



1. Owner's tool kit

EAU01175

Owner's tool kit

The owner's tool kit is located behind panel B. (See page 6-7 for panel removal and installation procedures.) The service information included in this manual and the tools provided in the owner's tool kit are intended to assist you in the performance of preventive maintenance and minor repairs. However, additional tools such as a torque wrench may be necessary to perform certain maintenance work correctly.

NOTE:

If you do not have the tools or experience required for a particular job, have a Yamaha dealer perform it for you.

EW000063

⚠WARNING

Modifications not approved by Yamaha may cause loss of performance and render the vehicle unsafe for use. Consult a Yamaha dealer before attempting any changes.

PERIODIC MAINTENANCE AND MINOR REPAIR

EAU03540

Periodic maintenance and lubrication chart

NOTE:

- The annual checks must be performed every year, except if a kilometer-based maintenance is performed instead.
- From 30,000 km, repeat the maintenance intervals starting from 6,000 km.
- Items marked with an asterisk should be performed by a Yamaha dealer as they require special tools, data and technical skills.

NO.	ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING (×1,000 km)					ANNUAL CHECK
			1	6	12	18	24	
1	* Fuel line	• Check fuel hoses for cracks or damage.		√	√	√	√	√
2	Spark plug	• Replace.		√	√	√	√	√
3	Air filter element	• Clean.		√		√		
		• Replace.			√		√	
4	Clutch	• Check operation. • Adjust.	√	√	√	√	√	
5	* Front brake	• Check operation, fluid level and vehicle for fluid leakage. (See NOTE on page 6-4.)	√	√	√	√	√	√
		• Replace brake pads.	Whenever worn to the limit					
6	* Rear brake	• Check operation, fluid level and vehicle for fluid leakage. (See NOTE on page 6-4.)	√	√	√	√	√	√
		• Replace brake pads.	Whenever worn to the limit					
7	* Brake hoses	• Check for cracks or damage.		√	√	√	√	√
		• Replace. (See NOTE on page 6-4.)	Every 4 years					
8	* Wheels	• Check runout, spoke tightness and for damage. • Tighten spokes if necessary.		√	√	√	√	

PERIODIC MAINTENANCE AND MINOR REPAIR

NO.	ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING (×1,000 km)					ANNUAL CHECK
			1	6	12	18	24	
9	* Tires	<ul style="list-style-type: none"> • Check tread depth and for damage. • Replace if necessary. • Check air pressure. • Correct if necessary. 		√	√	√	√	
10	* Wheel bearings	<ul style="list-style-type: none"> • Check bearing for looseness or damage. 		√	√	√	√	
11	* Swingarm	<ul style="list-style-type: none"> • Check operation and for excessive play. 		√	√	√	√	
12	Drive chain	<ul style="list-style-type: none"> • Check chain slack. • Make sure that the rear wheel is properly aligned. • Clean and lubricate. 	Every 500 km and after washing the motorcycle or riding in the rain.					
13	* Steering bearings	<ul style="list-style-type: none"> • Check bearing play and steering for roughness. • Lubricate with lithium-soap-based grease 	√	√	√	√	√	
14	* Chassis fasteners	<ul style="list-style-type: none"> • Make sure that all nuts, bolts and screws are properly tightened. 		√	√	√	√	√
15	Sidestand	<ul style="list-style-type: none"> • Check operation. • Lubricate. 		√	√	√	√	√
16	* Sidestand switch	<ul style="list-style-type: none"> • Check operation. 	√	√	√	√	√	√
17	* Front fork	<ul style="list-style-type: none"> • Check operation and for oil leakage. 		√	√	√	√	
18	* Rear shock absorber assembly	<ul style="list-style-type: none"> • Check operation and shock absorber for oil leakage. 		√	√	√	√	
19	* Rear suspension relay arm and connecting arm pivoting points	<ul style="list-style-type: none"> • Check operation. 		√	√	√	√	
		<ul style="list-style-type: none"> • Lubricate with molybdenum disulfide grease. 			√		√	
20	* Carburetor	<ul style="list-style-type: none"> • Check starter (choke) operation. • Adjust engine idling speed. 	√	√	√	√	√	√
21	* Autolube pump	<ul style="list-style-type: none"> • Check operation. • Bleed if necessary. 	√		√		√	√

PERIODIC MAINTENANCE AND MINOR REPAIR

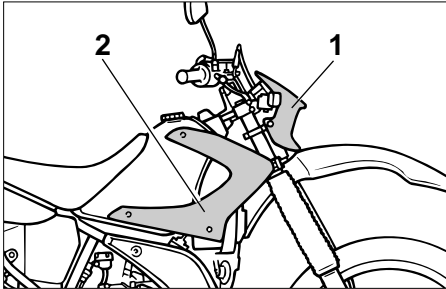
NO.	ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING (×1,000 km)					ANNUAL CHECK
			1	6	12	18	24	
22	Transmission oil	• Check oil level and vehicle for leakage.	√	√	√	√	√	√
		• Change.	√				√	
23 *	Cooling system	• Check coolant level and vehicle for coolant leakage.		√	√	√	√	√
		• Change.	Every 3 years					
24 *	Front and rear brake switches	• Check operation.	√	√	√	√	√	√
25	Moving parts and cables	• Lubricate.		√	√	√	√	√
26 *	Lights, signals and switches	• Check operation. • Adjust headlight beam.	√	√	√	√	√	√

EAU03541

NOTE:

- The air filter needs more frequent service if you are riding in unusually wet or dusty areas.
- Hydraulic brake service
 - Regularly check and, if necessary, correct the brake fluid level.
 - Every two years replace the internal components of the brake master cylinder and caliper, and change the brake fluid.
 - Replace the brake hoses every four years and if cracked or damaged.

PERIODIC MAINTENANCE AND MINOR REPAIR

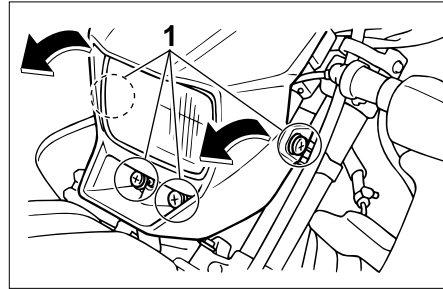


1. Cowling A
2. Cowling B

EAU01065

Removing and installing cowlings

The cowlings shown above need to be removed to perform some of the maintenance jobs described in this chapter. Refer to this section each time a cowling needs to be removed and installed.



1. Screw (x4)

EAU00484

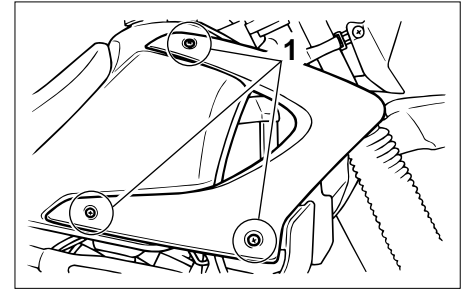
Cowling A

To remove the cowling

Remove the cowling screws, and then pull the cowling off as shown.

To install the cowling

Place the cowling in the original position, and then install the screws.



1. Screw (x3)

EAU00482

Cowling B

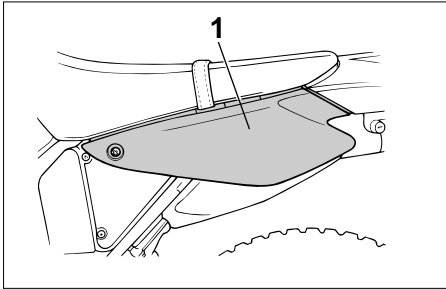
To remove the cowling

Remove the screws, and then take the cowling off.

To install the cowling

Place the cowling in the original position, and then install the screws.

PERIODIC MAINTENANCE AND MINOR REPAIR

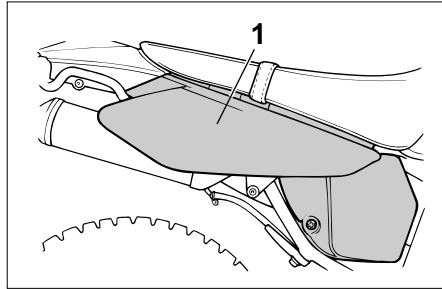


1. Panel A

EAU01122

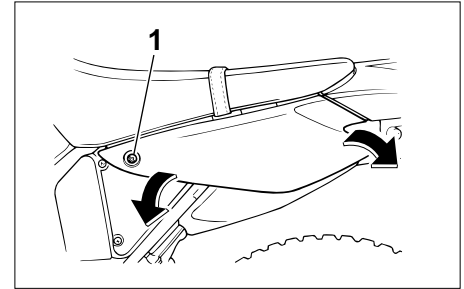
Removing and installing panels

The panels shown above need to be removed to perform some of the maintenance jobs described in this chapter.



1. Panel B

Refer to this section each time a panel needs to be removed and installed.



1. Screw

EAU00488

Panel A

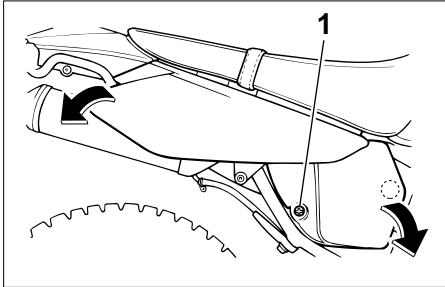
To remove the panel

Remove the screw, and then pull the panel off as shown.

To install the panel

Place the panel in the original position, and then install the screw.

PERIODIC MAINTENANCE AND MINOR REPAIR



1. Screw

EAU00488

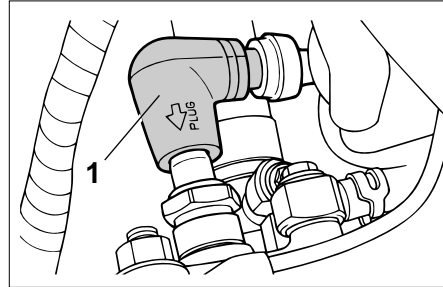
Panel B

To remove the panel

Remove the screw, and then pull the panel off as shown.

To install the panel

Place the panel in the original position, and then install the screw.



1. Spark plug cap

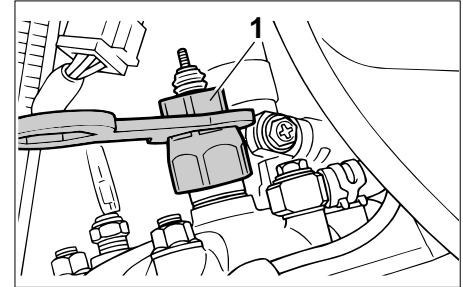
EAU01833

Checking the spark plug

The spark plug is an important engine component, which is easy to check. Since heat and deposits will cause any spark plug to slowly erode, the spark plug should be removed and checked in accordance with the periodic maintenance and lubrication chart. In addition, the condition of the spark plug can reveal the condition of the engine.

To remove the spark plug

1. Remove the spark plug cap.



1. Spark plug wrench

2. Remove the spark plug as shown, with the spark plug wrench included in the owner's tool kit.

PERIODIC MAINTENANCE AND MINOR REPAIR

To check the spark plug

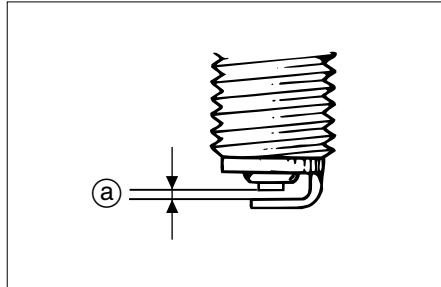
1. Check that the porcelain insulator around the center electrode of the spark plug is a medium-to-light tan (the ideal color when the motorcycle is ridden normally).

NOTE:

If the spark plug shows a distinctly different color, the engine could be defective. Do not attempt to diagnose such problems yourself. Instead, have a Yamaha dealer check the motorcycle.

2. Check the spark plug for electrode erosion and excessive carbon or other deposits, and replace it if necessary.

Specified spark plug:
BR9ES (NGK)



a. Spark plug gap

To install the spark plug

1. Measure the spark plug gap with a wire thickness gauge and, if necessary, adjust the gap to specification.

Spark plug gap:
0.7–0.8 mm

2. Clean the surface of the spark plug gasket and its mating surface, and then wipe off any grime from the spark plug threads.
3. Install the spark plug with the spark plug wrench, and then tighten it to the specified torque.

Tightening torque:

Spark plug:
20 Nm (2.0 m·kg)

NOTE:

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

4. Install the spark plug cap.

PERIODIC MAINTENANCE AND MINOR REPAIR

EAU03109

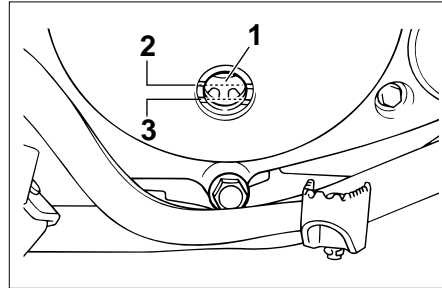
Transmission oil

Oil level inspection

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

NOTE:

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



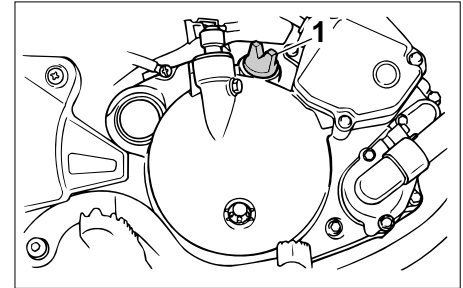
1. Oil level window
2. Maximum level
3. Minimum level

2. With the engine stopped, check the oil level through the level window located at the right side crankcase cover.

NOTE:

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

3. The oil level should be between the maximum and minimum level on the level window. If the level is low, add sufficient oil to raise it to the specified level.



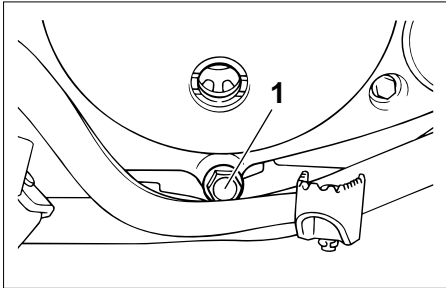
1. Oil filler cap

Transmission oil replacement

1. Warm up the engine for several minutes.
2. Stop the engine. Place an oil pan under the engine to catch the oil and remove the oil filler cap.

PERIODIC MAINTENANCE AND MINOR REPAIR

EAU01808



1. Drain bolt
3. Remove the drain bolt and drain the oil.
4. Install the drain bolt and tighten it to the specified torque.

Tightening torque:
Drain bolt:
15 Nm (1.5 m·kg)

5. Fill the engine with sufficient oil to reach the specified level. Install the oil filler cap and tighten it.

Recommended oil:
See page 8-1.
Oil quantity:
Total amount: 0.85 L
Periodic oil change: 0.8 L

EC000079

CAUTION:

In order to prevent clutch slippage (since the transmission oil also lubricates the clutch), do not mix any chemical additives with the oil.

6. Start the engine and warm up for a few minutes. While warming up, check for oil leakage. If oil leakage is found, stop the engine immediately and check for cause.

Coolant

To check the coolant level

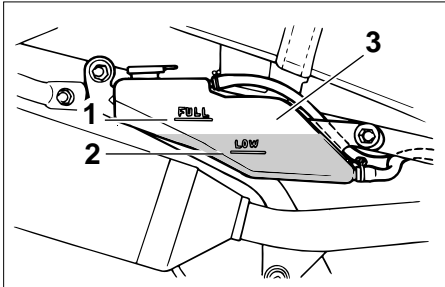
1. Place the motorcycle on a level surface and hold it in an upright position.

NOTE:

- The coolant level must be checked on a cold engine since the level varies with engine temperature.
- Make sure that the motorcycle is positioned straight up when checking the coolant level. A slight tilt to the side can result in a false reading.

PERIODIC MAINTENANCE AND MINOR REPAIR

EW000067



1. Maximum level mark
2. Minimum level mark
3. Coolant reservoir

2. Remove panel B. (See page 6-7 for panel removal and installation procedures.)
3. Check the coolant level in the coolant reservoir.

NOTE: _____

The coolant should be between the minimum and maximum level marks.

4. If the coolant is at or below the minimum level mark, open the reservoir cap, add coolant to the maximum level mark, and then close the reservoir cap.

Coolant reservoir capacity:
0.36 L

EC000080

CAUTION: _____

- If coolant is not available, use distilled water or soft tap water instead. Do not use hard water or salt water since it is harmful to the engine.
- If water has been used instead of coolant, replace it with coolant as soon as possible, otherwise the engine may not be sufficiently cooled and the cooling system will not be protected against frost and corrosion.
- If water has been added to the coolant, have a Yamaha dealer check the antifreeze content of the coolant as soon as possible, otherwise the effectiveness of the coolant will be reduced.

WARNING _____

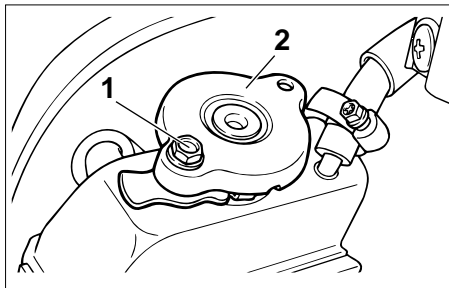
Never attempt to remove the radiator cap when the engine is hot.

5. Install the panel.

NOTE: _____

If the engine overheats, see page 6-44 for further instructions.

PERIODIC MAINTENANCE AND MINOR REPAIR

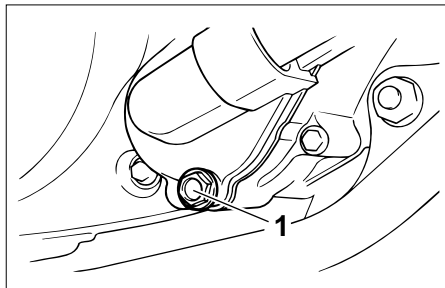


1. Radiator cap stopper bolt
2. Radiator cap

EAU03101

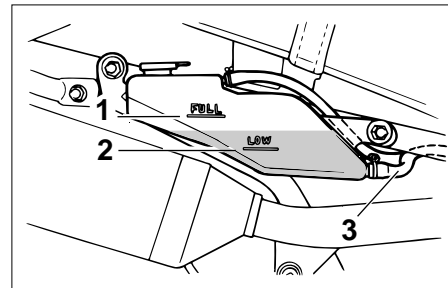
Changing the coolant

1. Put the motorcycle on a level place.
2. Remove cowling B and panel B. (See pages 6-5 and 6-7 for cowl-ing and panel removal and instal-lation procedures.)
3. Remove the radiator cap stopper bolt and the radiator cap.



1. Coolant drain bolt

4. Place a container under the engine and remove the coolant drain bolt.



1. Maximum level mark
2. Minimum level mark
3. Reservoir tank hose
5. Disconnect the reservoir tank hose on the reservoir tank side and drain the coolant from the reservoir tank.
6. After draining the coolant, thor-oughly flush the cooling system with clean tap water.
7. Replace the coolant drain bolt washer if it is damaged and tight-en the coolant drain bolt to the specified torque.

Tightening torque:

Coolant drain bolt:

10 Nm (1.0 m·kg)

PERIODIC MAINTENANCE AND MINOR REPAIR

8. Install the reservoir tank hose.
9. Pour the recommended coolant into the radiator until it is full.

Recommended antifreeze:

High quality ethylene glycol antifreeze containing corrosion inhibitors for aluminum engines.

Antifreeze and water mixing ratio:

1:1

Total amount:

1.26 L

Reservoir tank capacity:

0.36 L

EC000080

CAUTION: _____

- **If coolant is not available, use distilled water or soft tap water instead. Do not use hard water or salt water since it is harmful to the engine.**
- **If water has been used instead of coolant, replace it with coolant as soon as possible, otherwise the engine may not be sufficiently cooled and the cooling system will not be protected against frost and corrosion.**
- **If water has been added to the coolant, have a Yamaha dealer check the antifreeze content of the coolant as soon as possible, otherwise the effectiveness of the coolant will be reduced.**

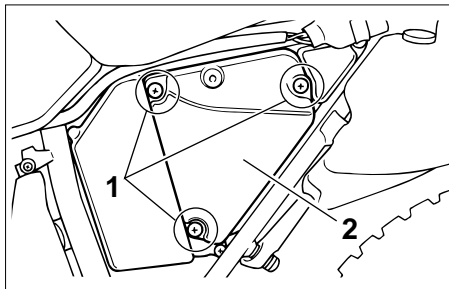
10. Install the radiator cap.
11. Run the engine several minutes. Stop the engine and recheck the coolant level in the radiator. If it is low, add more coolant until it reaches the top of the radiator.
12. Install the radiator cap stopper bolt.
13. Fill the reservoir tank with coolant up to maximum level.
14. Install the reservoir tank cap and check for coolant leakage.

NOTE: _____

If any leakage is found, ask a Yamaha dealer to inspect the cooling system.

15. Install the cowling and the panel.

PERIODIC MAINTENANCE AND MINOR REPAIR



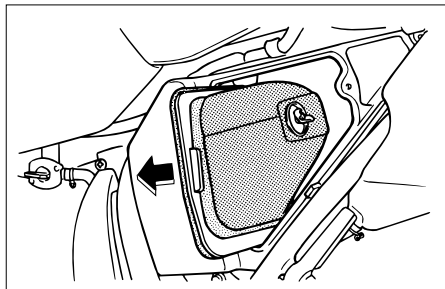
1. Screw (x3)
2. Air filter case cover

EAU03671

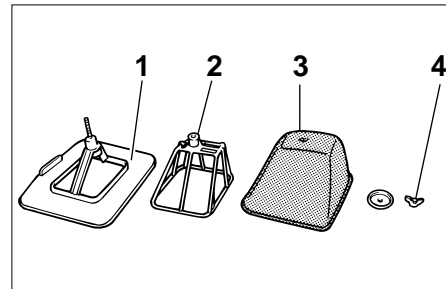
Cleaning the air filter element

The air filter element should be cleaned at the intervals specified in the periodic maintenance and lubrication chart. Clean the air filter element more frequently if you are riding in unusually wet or dusty areas.

1. Remove panel A. (See page 6-6 for removal and installation procedures.)
2. Remove the air filter case cover by removing the screws.

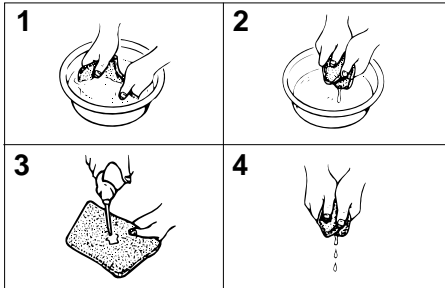


3. Pull the air filter element out from the air filter case.



1. Air filter element guide
 2. Air filter element frame
 3. Sponge material
 4. Wing nut
4. Remove the wing nut , and then pull the air filter element off of the guide.
 5. Remove the sponge material from the air filter element frame.

PERIODIC MAINTENANCE AND MINOR REPAIR



6. Clean the sponge material with solvent, and then squeeze the remaining solvent out.
7. Apply oil of the recommended type to the entire surface of the sponge material, and then squeeze the excess oil out.

NOTE: _____
The sponge material should be wet but not dripping.

Recommended oil:
2-stroke engine oil

8. Install the sponge material onto the frame, place the air filter element in the original position on the guide, and then tighten the wing nut.
9. Insert the air filter element into the air filter case.

EC000082

CAUTION: _____

- **Make sure that the air filter element is properly seated in the air filter case.**
- **The engine should never be operated without the air filter element installed, otherwise the piston(s) and/or cylinder(s) may become excessively worn.**

10. Install the air filter case cover by installing the screws.
11. Install the panel.

EAU00629

Adjusting the carburetor

The carburetor is an important part of the engine and requires very sophisticated adjustment. Therefore, most carburetor adjustments should be left to a Yamaha dealer, who has the necessary professional knowledge and experience. The adjustment described in the following section, however, may be serviced by the owner as part of routine maintenance.

EC000094

CAUTION: _____

The carburetor has been set and extensively tested at the Yamaha factory. Changing these settings without sufficient technical knowledge may result in poor performance of or damage to the engine.

PERIODIC MAINTENANCE AND MINOR REPAIR

EAU01168

Adjusting the engine idling speed

The engine idling speed must be checked and, if necessary, adjusted as follows at the intervals specified in the periodic maintenance and lubrication chart.

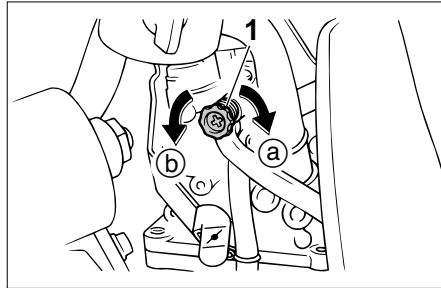
NOTE:

A diagnostic tachometer is needed to make this adjustment.

1. Attach the tachometer to the spark plug lead.
2. Start the engine and warm it up for several minutes at 1,000–2,000 r/min while occasionally revving it to 4,000–5,000 r/min.

NOTE:

The engine is warm when it quickly responds to the throttle.



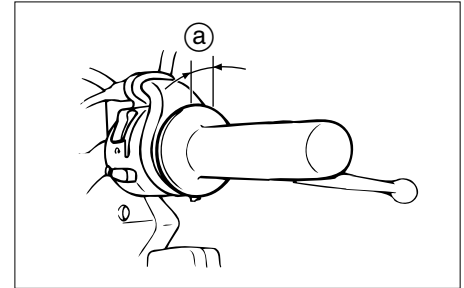
1. Throttle stop screw

3. Check the engine idling speed and, if necessary, adjust it to specification by turning the throttle stop screw. To increase the engine idling speed, turn the screw in direction (a). To decrease the engine idling speed, turn the screw in direction (b).

Engine idling speed:
1,300–1,400 r/min

NOTE:

If the specified idling speed cannot be obtained as described above, have a Yamaha dealer make the adjustment.



a. Throttle cable free play

EAU00634

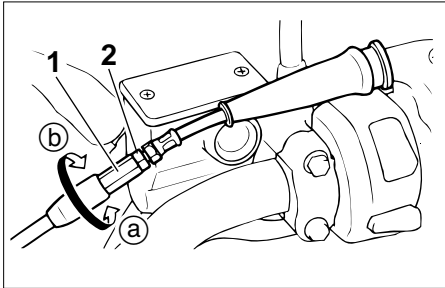
Adjusting the throttle cable free play

The throttle cable free play should measure 3–5 mm at the throttle grip. Periodically check the throttle cable free play and, if necessary, adjust it as follows.

NOTE:

The engine idling speed must be correctly adjusted before checking and adjusting the throttle cable free play.

PERIODIC MAINTENANCE AND MINOR REPAIR



1. Adjusting nut
2. Locknut

1. Loosen the locknut.
2. To increase the throttle cable free play, turn the adjusting nut in direction (a). To decrease the throttle cable free play, turn the adjusting nut in direction (b).
3. Tighten the locknut.

EAU03593

Tires

To maximize the performance, durability, and safe operation of your motorcycle, note the following points regarding the specified tires.

Tire air pressure

The tire air pressure should be checked and, if necessary, adjusted before each ride.

EW000082

⚠ WARNING

- The tire air pressure must be checked and adjusted on cold tires (i.e., when the temperature of the tires equals the ambient temperature).
- The tire air pressure must be adjusted in accordance with the riding speed and with the total weight of rider, passenger, cargo, and accessories approved for this model.

Tire air pressure (measured on cold tires)

Load*	Front	Rear
Up to 88 kg	125 kPa 1.25 kg/cm ² 1.25 bar	150 kPa 1.50 kg/cm ² 1.50 bar
88 kg– maximum	150 kPa 1.50 kg/cm ² 1.50 bar	175 kPa 1.75 kg/cm ² 1.75 bar

Maximum load*	180 kg
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* Total weight of rider, passenger, cargo and accessories

PERIODIC MAINTENANCE AND MINOR REPAIR

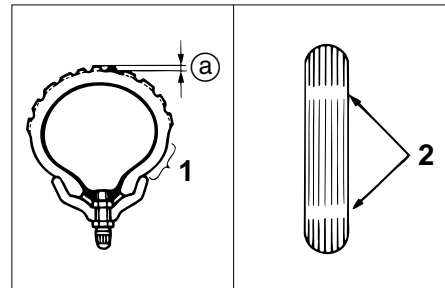
⚠ WARNING

EWA00012

Because loading has an enormous impact on the handling, braking, performance and safety characteristics of your motorcycle, you should keep the following precautions in mind.

- **NEVER OVERLOAD THE MOTORCYCLE!** Operation of an overloaded motorcycle may result in tire damage, loss of control, or severe injury. Make sure that the total weight of rider, passenger, cargo, and accessories does not exceed the specified maximum load for the vehicle.
- Do not carry along loosely packed items, which can shift during a ride.
- Securely pack the heaviest items close to the center of the motorcycle and distribute the weight evenly on both sides.

- Adjust the suspension and tire air pressure with regard to the load.
- Check the tire condition and air pressure before each ride.



1. Side wall
 2. Wear indicator
- a. Tread depth

Tire inspection

The tires must be checked before each ride. If the tire shows crosswise lines (minimum tread depth), if the tire has a nail or glass fragments in it, or if the sidewall is cracked, have a Yamaha dealer replace the tire immediately.

Minimum tire tread depth (front and rear)	1.0 mm
--	--------

NOTE:

The tire tread depth limits may differ from country to country. Always comply with the local regulations.

PERIODIC MAINTENANCE AND MINOR REPAIR

⚠ WARNING

EW000079

- Have a Yamaha dealer replace excessively worn tires. Besides being illegal, operating the motorcycle with excessively worn tires decreases riding stability and can lead to loss of control.
- The replacement of all wheel- and brake-related parts, including the tires, should be left to a Yamaha dealer, who has the necessary professional knowledge and experience.

Tire information

This motorcycle is equipped with tube tires.

⚠ WARNING

EW000078

- The front and rear tires should be of the same make and design, otherwise the handling characteristics of the motorcycle cannot be guaranteed.
- After extensive tests, only the tires listed below have been approved for this model by Yamaha Motor Co., Ltd.

FRONT

Manufacturer	Size	Type
INOUE	3.00-21 51P	GP-21F
CHENG SHIN	3.00-21 51P	M-6033

REAR

Manufacturer	Size	Type
INOUE	4.60-18 63P	GP-22R
CHENG SHIN	4.60-18 63P	M-6034

⚠ WARNING

EAU00680

- It is dangerous to ride with a worn-out tire. When a tire tread begins to show cross-wise lines, have a Yamaha dealer replace the tire immediately.
- The replacement of all wheel- and brake-related parts, including the tires, should be left to a Yamaha dealer, who has the necessary professional knowledge and experience.
- It is not recommended to patch a punctured tube. If unavoidable, however, patch the tube very carefully and replace it as soon as possible with a high-quality product.

PERIODIC MAINTENANCE AND MINOR REPAIR

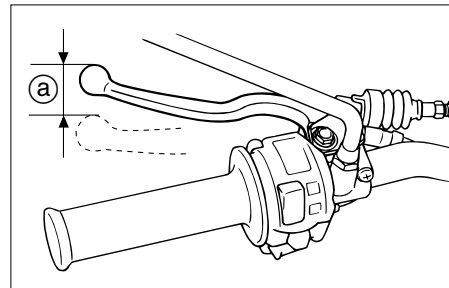
EAU00685

Spoke wheels

To maximize the performance, durability, and safe operation of your motorcycle, note the following points regarding the specified wheels.

- The wheel rims should be checked for cracks, bends or warpage, and the spokes for looseness or damage before each ride. If any damage is found, have a Yamaha dealer replace the wheel. Do not attempt even the smallest repair to the wheel. A deformed or cracked wheel must be replaced.
- The wheel should be balanced whenever either the tire or wheel has been changed or replaced. An unbalanced wheel can result in poor performance, adverse handling characteristics, and a 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.



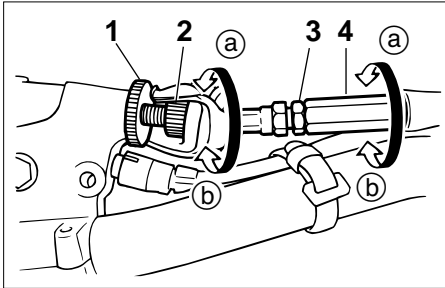
a. Clutch lever free play

EAU02996

Adjusting the clutch lever free play

The clutch lever free play should measure 10–15 mm as shown. Periodically check the clutch lever free play and, if necessary, adjust it as follows.

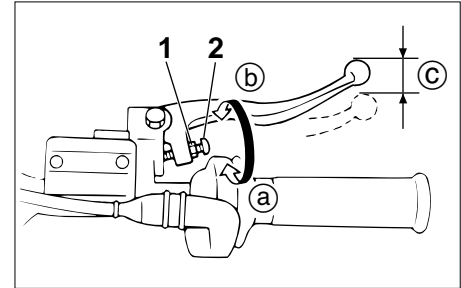
PERIODIC MAINTENANCE AND MINOR REPAIR



1. Locknut (Clutch lever)
2. Adjusting bolt
3. Locknut (Clutch cable)
4. Adjusting nut

1. Loosen the locknut at the clutch lever.
2. To increase the clutch lever free play, turn the adjusting bolt in direction (a). To decrease the clutch lever free play, turn the adjusting bolt in direction (b).
3. If the specified clutch lever free play could be obtained as described above, tighten the locknut and skip the rest of the procedure, otherwise proceed as follows.

4. Fully turn the adjusting bolt in direction (a) to loosen the clutch cable.
5. Loosen the locknut further down the clutch cable.
6. To increase the clutch lever free play, turn the adjusting nut in direction (a). To decrease the clutch lever free play, turn the adjusting nut in direction (b).
7. Tighten both locknuts.



1. Locknut
2. Adjusting bolt
- c. Brake lever free play

Adjusting the brake lever free play

EAU00696

The brake lever free play should measure 2–5 mm as shown. Periodically check the brake lever free play and, if necessary, adjust it as follows.

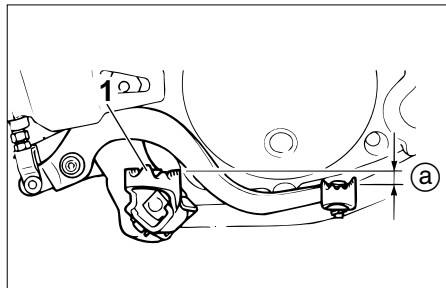
1. Loosen the locknut at the brake lever.
2. To increase the brake lever free play, turn the adjusting bolt in direction (a). To decrease the brake lever free play, turn the adjusting bolt in direction (b).
3. Tighten the locknut.

PERIODIC MAINTENANCE AND MINOR REPAIR

⚠ WARNING

EW000099

- After adjusting the brake lever free play, check the free play and make sure that the brake is working properly.
- A soft or spongy feeling in the brake lever can indicate the presence of air in the hydraulic system. If there is air in the hydraulic system, have a Yamaha dealer bleed the system before operating the motorcycle. Air in the hydraulic system will diminish the braking performance, which may result in loss of control and an accident.



1. Footrest
- a. Brake pedal position

EAU00712

Adjusting the brake pedal position

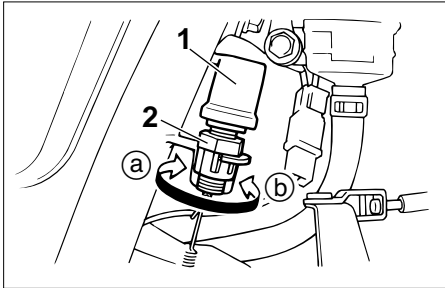
The top of the brake pedal should be positioned approximately 15 mm below the top of the footrest as shown. Periodically check the brake pedal position and, if necessary, have a Yamaha dealer adjust it.

⚠ WARNING

EW000109

A soft or spongy feeling in the brake pedal can indicate the presence of air in the hydraulic system. If there is air in the hydraulic system, have a Yamaha dealer bleed the system before operating the motorcycle. Air in the hydraulic system will diminish the braking performance, which may result in loss of control and an accident.

PERIODIC MAINTENANCE AND MINOR REPAIR



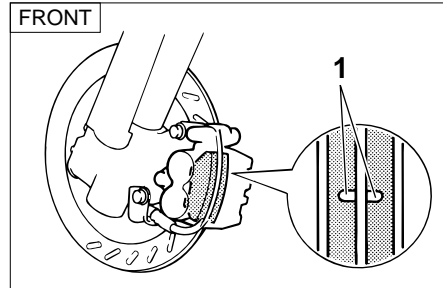
1. Brake light switch
2. Adjusting nut

EAU00713

Adjusting the rear brake light switch

The rear brake light switch, which is activated by the brake pedal, is properly adjusted when the brake light comes on just before braking takes effect. If necessary, adjust the brake light switch as follows.

Turn the adjusting nut while holding the rear brake light switch in place. To make the brake light come on earlier, turn the adjusting nut in direction (a). To make the brake light come on later, turn the adjusting nut in direction (b).

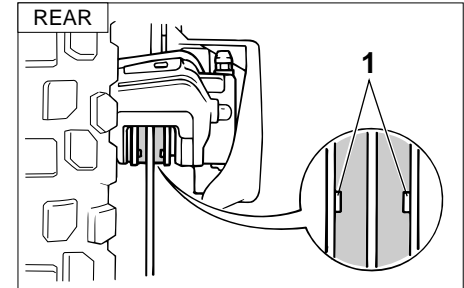


1. Indicator groove

EAU01314

Checking the front and rear brake pads

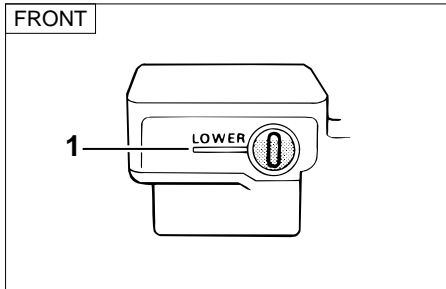
The front and rear brake pads must be checked for wear at the intervals specified in the periodic maintenance and lubrication chart. Each brake pad is provided with a wear indicator groove, which allows you to check the brake pad wear without having to disassemble the brake.



1. Indicator groove

To check the brake pad wear, check the wear indicator grooves. If a brake pad has worn to the point that the wear indicator groove has almost disappeared, have a Yamaha dealer replace the brake pads as a set.

PERIODIC MAINTENANCE AND MINOR REPAIR



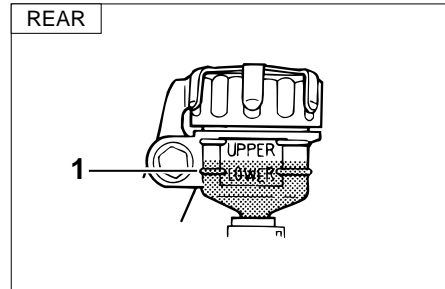
1. Minimum level mark

EAU03196

Checking the brake fluid level

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

Before riding, check that the brake fluid is above the minimum level mark and replenish if necessary. A low brake fluid level may indicate worn brake pads and/or brake system leakage. If the brake level is low, be sure to check the brake pads for wear and the brake system for leakage.



1. Minimum level mark

Observe these precautions:

- When checking the fluid level, make sure that the top of the master cylinder or brake fluid reservoir is level.
- Use only the recommended quality brake fluid, otherwise the rubber seals may deteriorate, causing leakage and poor braking 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 braking 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.
- Brake fluid may deteriorate painted surfaces or plastic parts. Always clean up spilled fluid immediately.
- As the brake pads wear, it is normal for the brake fluid level to gradually go down. However, if the brake fluid level goes down suddenly, have a Yamaha dealer check the cause.

PERIODIC MAINTENANCE AND MINOR REPAIR

EAU03073

Changing the brake fluid

Have a Yamaha dealer change the brake fluid at the intervals specified in the periodic maintenance and lubrication chart. In addition, have the oil seals of the master cylinder and caliper as well as the brake hoses replaced at the intervals listed below or whenever they are damaged or leaking.

- Oil seals: Replace every two years.
- Brake hoses: Replace every four years.

EAU00744

Drive chain slack

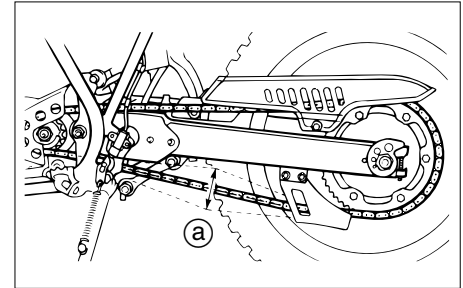
The drive chain slack should be checked before each ride and adjusted if necessary.

To check the drive chain slack

1. Place the motorcycle on a level surface and hold it in an upright position.

NOTE: _____
When checking and adjusting the drive chain slack, the motorcycle should be positioned straight up and there should be no weight on it.

2. Shift the transmission into the neutral position.



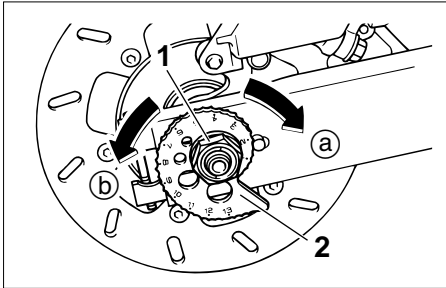
a. Drive chain slack

3. Move the rear wheel by pushing the motorcycle to locate the tightest portion of the drive chain, and then measure the drive chain slack as shown.

Drive chain slack:
40–60 mm

4. If the drive chain slack is incorrect, adjust it as follows.

PERIODIC MAINTENANCE AND MINOR REPAIR



1. Axle nut
2. Chain adjusting plate

EAU03594

To adjust the drive chain slack

1. Loosen the axle nut.
2. To tighten the drive chain, turn the adjusting plate on each side of the swingarm in direction (a). To loosen the drive chain, turn the adjusting plate on each side of the swingarm in direction (b), and then push the rear wheel forward.

NOTE:

Make sure that both adjusting plates are in the same position for proper wheel alignment.

EC000096

CAUTION:

Improper drive chain slack will overload the engine as well as other vital parts of the motorcycle and can lead to chain slippage or breakage. To prevent this from occurring, keep the drive chain slack within the specified limits.

3. Tighten the axle nut to the specified torque.

Tightening torque:

Axle nut:

104 Nm (10.4 m·kg)

EAU03006

Lubricating the drive chain

The drive chain must be cleaned and lubricated at the intervals specified in the periodic maintenance and lubrication chart, otherwise it will quickly wear out, especially when riding in dusty or wet areas. Service the drive chain as follows.

EC000097

CAUTION:

The drive chain must be lubricated after washing the motorcycle or riding in the rain.

1. Clean the drive chain with kerosene and a small soft brush.

ECA00053

CAUTION:

To prevent damaging the O-rings, do not clean the drive chain with steam cleaners, high-pressure washers or inappropriate solvents.

2. Wipe the drive chain dry.

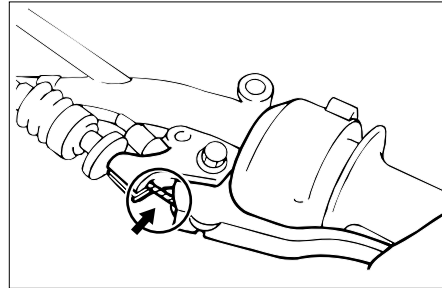
PERIODIC MAINTENANCE AND MINOR REPAIR

3. Thoroughly lubricate the drive chain with a special O-ring chain lubricant.

ECA00052

CAUTION:

Do not use engine oil or any other lubricants for the drive chain, as they may contain substances that could damage the O-rings.



EAU02962

Checking and lubricating the cables

The operation of all control cables and the condition of the cables should be checked before each ride, and the cables and cable ends should be lubricated if necessary. If a cable is damaged or does not move smoothly, have a Yamaha dealer check or replace it.

Recommended lubricant:
Engine oil

EW000112

WARNING

Damage to the outer sheath may interfere with proper cable operation and will cause the inner cable to rust. Replace a damaged cable as soon as possible to prevent unsafe conditions.

PERIODIC MAINTENANCE AND MINOR REPAIR

EAU03209

Checking and lubricating the throttle grip and cable

The operation of the throttle grip and the condition of the throttle cable should be checked before each ride, and the cable should be lubricated or replaced if necessary.

NOTE:

Since the throttle grip must be removed to access the throttle cable end, the throttle grip and the cable should always be lubricated at the same time.

1. Remove the throttle grip by removing the screws.
2. Disconnect the throttle cable, hold it up, and then apply several drops of oil to the cable end, allowing it to trickle into the sheath.
3. Connect the throttle cable, and then grease the inside of the throttle grip housing.

4. Grease the metal-to-metal contact surface of the throttle grip, and then install the grip by installing the screws.

Recommended lubricant:

Throttle cable:

Engine oil

Throttle grip housing and grip:

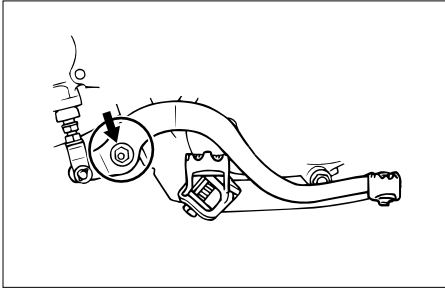
Lithium-soap-based grease
(all-purpose grease)

EAU00774

Adjusting the Autolube pump

The Autolube pump is a vital and sophisticated component of the engine, which must be adjusted by a Yamaha dealer at the intervals specified in the periodic maintenance and lubrication chart.

PERIODIC MAINTENANCE AND MINOR REPAIR

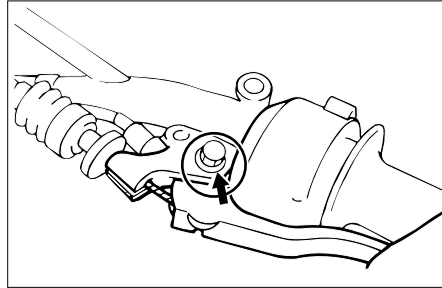


EAU03370

Checking and lubricating the brake and shift pedals

The operation of the brake and shift pedals should be checked before each ride, and the pedal pivots should be lubricated if necessary.

Recommended lubricant:
Lithium-soap-based grease
(all-purpose grease)

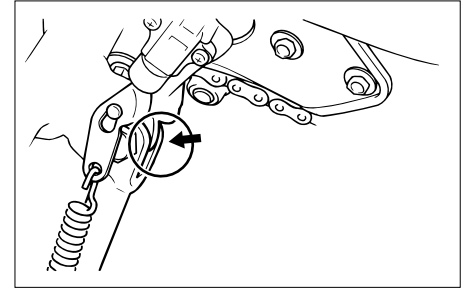


EAU03164

Checking and lubricating the brake and clutch levers

The operation of the brake and clutch levers should be checked before each ride, and the lever pivots should be lubricated if necessary.

Recommended lubricant:
Lithium-soap-based grease
(all-purpose grease)



EAU03165

Checking and lubricating the sidestand

The operation of the sidestand should be checked before each ride, and the sidestand pivot and metal-to-metal contact surfaces should be lubricated if necessary.

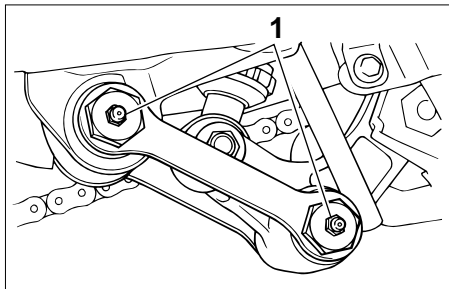
⚠ WARNING

If the sidestand does not move up and down smoothly, have a Yamaha dealer check or repair it.

EW000113

Recommended lubricant:
Lithium-soap-based grease
(all-purpose grease)

PERIODIC MAINTENANCE AND MINOR REPAIR



1. Grease nipple (x2)

EAU00790

Lubricating the rear suspension

The pivoting points of the rear suspension must be lubricated at the intervals specified in the periodic maintenance and lubrication chart.

Recommended lubricant:
Molybdenum disulfide grease

EAU02939

Checking the front fork

The condition and operation of the front fork must be checked as follows at the intervals specified in the periodic maintenance and lubrication chart.

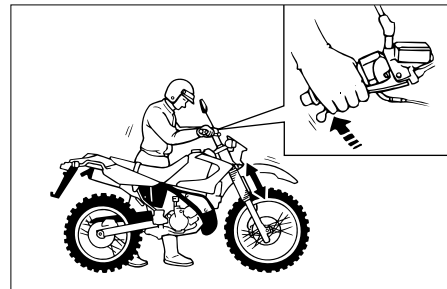
To check the condition

EW000115

⚠WARNING

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

Check the inner tubes for scratches, damage and excessive oil leakage.



To check the operation

1. Place the motorcycle on a level surface and hold it in an upright position.
2. While applying the front brake, push down hard on the handlebars several times to check if the front fork compresses and rebounds smoothly.

EC000098

CAUTION:

If any damage is found or the front fork does not operate smoothly, have a Yamaha dealer check or repair it.

PERIODIC MAINTENANCE AND MINOR REPAIR

Checking the steering

EAU00794

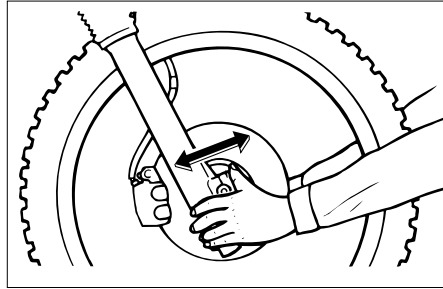
Worn or loose steering bearings may cause danger. Therefore, the operation of the steering must be checked as follows at the intervals specified in the periodic maintenance and lubrication chart.

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

EW000115

⚠WARNING

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



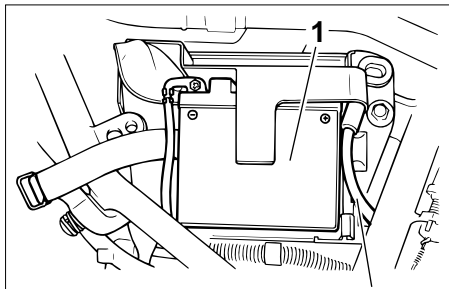
2. Hold the lower ends of the front fork legs and try to move them forward and backward. If any free play can be felt, have a Yamaha dealer check or repair the steering.

EAU01144

Checking the wheel bearings

The front and rear wheel bearings must be checked at the intervals specified in the periodic maintenance and lubrication chart. If there is play in the wheel hub or if the wheel does not turn smoothly, have a Yamaha dealer check the wheel bearings.

PERIODIC MAINTENANCE AND MINOR REPAIR



1. Battery

EAU00800

Battery

This motorcycle is equipped with a sealed-type (MF) battery, which does not require any maintenance. There is no need to check the electrolyte or to add distilled water.

EC000101

CAUTION:

Never attempt to remove the battery cell seals, as this would permanently damage the battery.

EW000116

WARNING

- Electrolyte is poisonous and dangerous since it contains sulfuric acid, which causes severe burns. Avoid any contact with skin, eyes or clothing and always shield your eyes when working near batteries. In case of contact, administer the following FIRST AID.
 - EXTERNAL: Flush with plenty of water.
 - INTERNAL: Drink large quantities of water or milk and immediately call a physician.
 - EYES: Flush with water for 15 minutes and seek prompt medical attention.
- Batteries produce explosive hydrogen gas. Therefore, keep sparks, flames, cigarettes, etc., away from the battery and provide sufficient ventilation when charging it in an enclosed space.

- KEEP THIS AND ALL BATTERIES OUT OF THE REACH OF CHILDREN.

To charge the battery

Have a Yamaha dealer charge the battery as soon as possible if it seems to have discharged. Keep in mind that the battery tends to discharge more quickly if the motorcycle is equipped with optional electrical accessories.

PERIODIC MAINTENANCE AND MINOR REPAIR

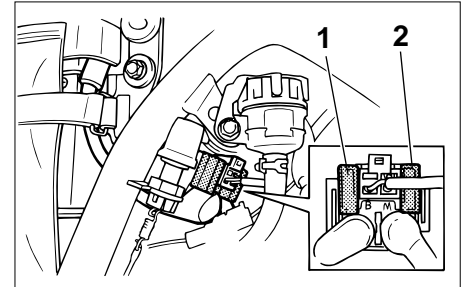
To store the battery

1. If the motorcycle will not be used for more than one month, remove the battery, fully charge it, and then place it in a cool, dry place.
2. If the battery will be stored for more than two months, check it at least once a month and fully charge it if necessary.
3. Fully charge the battery before installation.
4. After installation, make sure that the battery leads are properly connected to the battery terminals.

EC000102

CAUTION:

- Always keep the battery charged. Storing a discharged battery can cause permanent battery damage.
- To charge a sealed-type (MF) battery, a special (constant-voltage) battery charger is required. Using a conventional battery charger will damage the battery. If you do not have access to a sealed-type (MF) battery charger, have a Yamaha dealer charge your battery.



1. Fuse
2. Spare fuse

EAU00804

Replacing the fuse

If the fuse is blown, replace it as follows.

1. Turn the key to "OFF" and turn off all electrical circuits.
2. Remove the blown fuse, and then install a new fuse of the specified amperage.

Specified fuse:
30A

PERIODIC MAINTENANCE AND MINOR REPAIR

EC000103

CAUTION:

Do not use a fuse of a higher amperage rating than recommended to avoid causing extensive damage to the electrical system and possibly a fire.

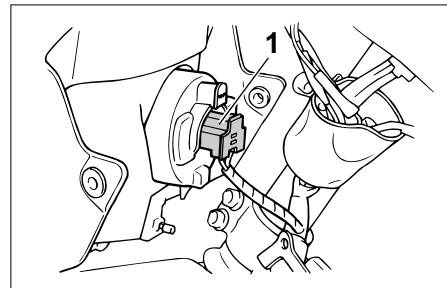
3. Turn the key to "ON" and turn on the electrical circuits to check if the devices operate.
4. If the fuse immediately blows again, have a Yamaha dealer check the electrical system.

EAU03592

Replacing the headlight bulb

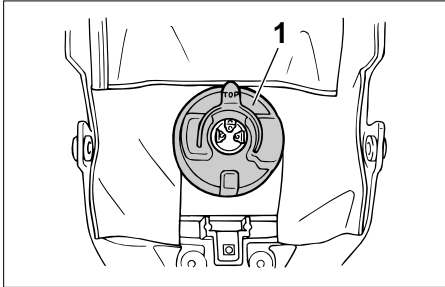
This motorcycle is equipped with a quartz bulb headlight. If the headlight bulb burns out, replace it as follows:

1. Remove cowling A together with the headlight unit. (See page 6-5 for cowling removal and installation procedures.)

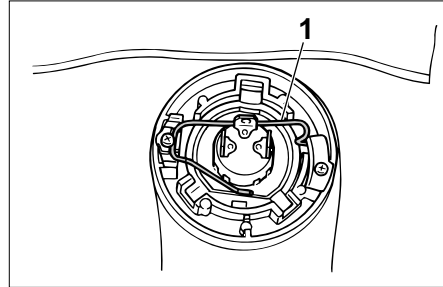


1. Headlight coupler
2. Disconnect the headlight coupler, and then remove the headlight bulb cover.

PERIODIC MAINTENANCE AND MINOR REPAIR



1. Headlight bulb cover



1. Headlight bulb holder

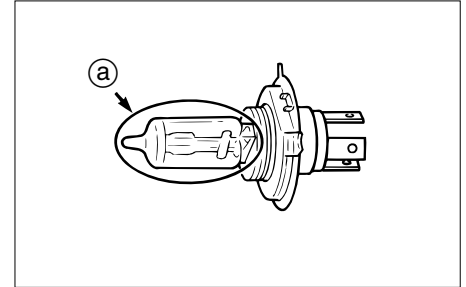
3. Unhook the headlight bulb holder, and then remove the defective bulb.

WARNING

EW000119

Headlight bulbs get very hot. Therefore, keep flammable products away from a lit headlight bulb, and do not touch the bulb until it has cooled down.

4. Put a new bulb into position, and then secure it with the bulb holder.



a. Do not touch this area

EC000106

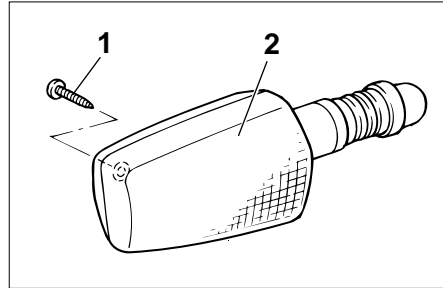
CAUTION:

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

5. Install the bulb cover, and then connect the coupler.

PERIODIC MAINTENANCE AND MINOR REPAIR

6. Install the cowling together with the headlight unit.
7. Have a Yamaha dealer adjust the headlight beam if necessary.

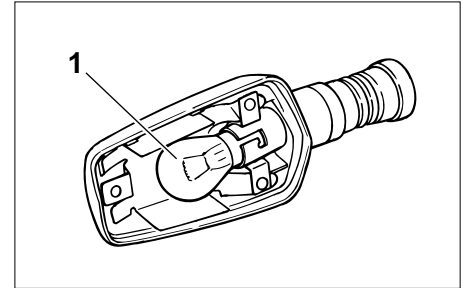


1. Screw
2. Lens

EAU03497

Replacing a turn signal light bulb

1. Remove the turn signal light lens by removing the screw.



1. Bulb

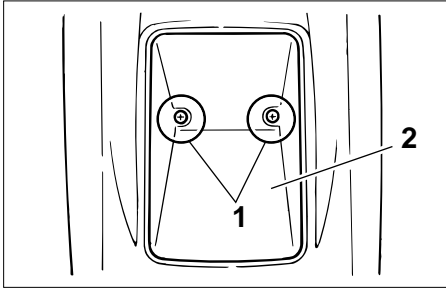
2. Remove the defective bulb by pushing it in and turning it counterclockwise.
3. Insert a new bulb into the socket, push it in, and then turn it clockwise until it stops.
4. Install the lens by installing the screw.

ECA00065

CAUTION:

Do not overtighten the screw, otherwise the lens may break.

PERIODIC MAINTENANCE AND MINOR REPAIR

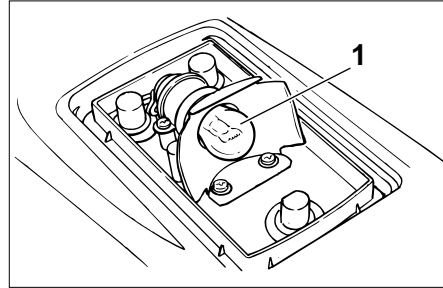


1. Screw (x2)
2. Lens

EAU01623

Replacing the tail/brake light bulb

1. Remove the tail/brake light lens by removing the screws.

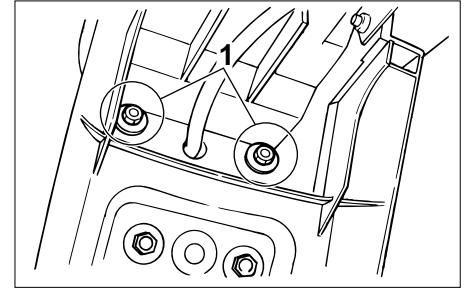


1. Bulb
2. Remove the defective bulb by pushing it in and turning it counterclockwise.
3. Insert a new bulb into the socket, push it in, and then turn it clockwise until it stops.
4. Install the lens by installing the screws.

EC000108

CAUTION:

Do not overtighten the screws, otherwise the lens may break.



1. Nut (x2)

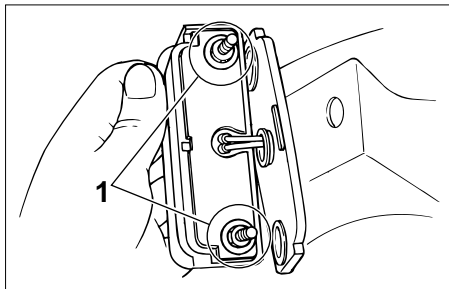
EAU01624

Replacing the license plate light bulb

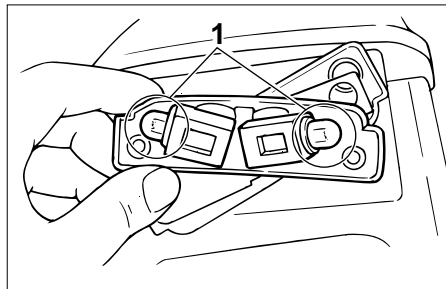
1. Remove the license plate light by removing the nuts.

PERIODIC MAINTENANCE AND MINOR REPAIR

EAU01579



1. Nut (x2)
2. Remove the license plate light lens by removing the nuts.



1. Bulb (x2)
3. Remove the defective bulb by pulling it out.
4. Insert a new bulb into the socket.
5. Install the lens by installing the nuts.
6. Install the license plate light by installing the nuts.

Supporting the motorcycle

Since this model is not equipped with a centerstand, follow these precautions when removing the front and rear wheel or performing other maintenance requiring the motorcycle to stand upright. Check that the motorcycle is in a stable and level position before starting any maintenance. A strong wooden box can be placed under the engine for added stability.

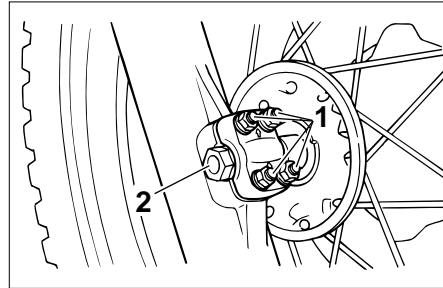
To service the front wheel

1. Stabilize the rear of the motorcycle by using a motorcycle stand or, if an additional motorcycle stand is not available, by placing a jack under the frame in front of the rear wheel.
2. Raise the front wheel off the ground by using a motorcycle stand.

PERIODIC MAINTENANCE AND MINOR REPAIR

To service the rear wheel

Raise the rear wheel off the ground by using a motorcycle stand or, if a motorcycle stand is not available, by placing a jack either under each side of the frame in front of the rear wheel or under each side of the swingarm.



1. Axle holder nut (×4)
2. Wheel axle

EAU00879

Front wheel

To remove the front wheel

EW000122

⚠ WARNING

- It is advisable to have a Yamaha dealer service the wheel.
- Securely support the motorcycle so that there is no danger of it falling over.

1. Loosen the wheel axle holder nuts, then the wheel axle.
2. Lift the front wheel off the ground according to the procedure on page 6-38.

3. Pull the wheel axle out, and then remove the wheel.

ECA00048

CAUTION:

Do not apply the brake after the wheel has been removed together with the brake disc, otherwise the brake pads will be forced shut.

PERIODIC MAINTENANCE AND MINOR REPAIR

EAU03678

To install the front wheel

1. Lift the wheel up between the fork legs and guide the brake disc between the brake pads.

NOTE:

Make sure that there is enough space between the brake pads before inserting the brake disc.

2. Insert the wheel axle.
3. Lower the front wheel so that it is on the ground.
4. Tighten the wheel axle to the specified torque.

Tightening torque:
Wheel axle:
58 Nm (5.8 m·kg)

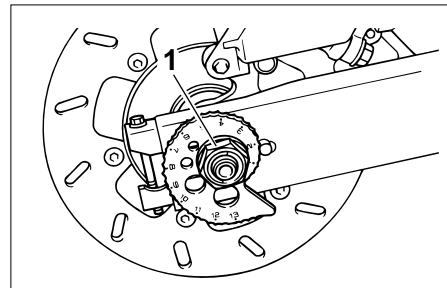
5. Tighten the axle holder nuts to the specified torque.

NOTE:

Tighten the upper nuts first, and then the lower ones. When the nuts are tightened in this sequence, there should be a gap at the bottom of the axle holder.

Tightening torque:
Axle holder nut:
10 Nm (1.0 m·kg)

5. Push down hard on the handlebar several times to check for proper fork operation.



1. Axle nut

EAU03588

Rear wheel

To remove the rear wheel

EW000122

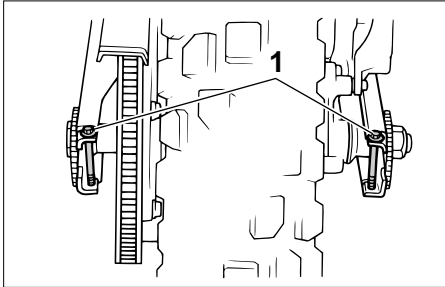
⚠ WARNING

- It is advisable to have a Yamaha dealer service the wheel.
- Securely support the motorcycle so that there is no danger of it falling over.

1. Loosen the axle nut.
2. Lift the rear wheel off the ground according to the procedure on page 6-38.

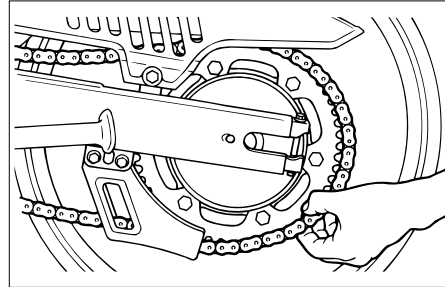
PERIODIC MAINTENANCE AND MINOR REPAIR

EAU01806



1. Swingarm end bolt (x2)

3. Remove the swingarm end bolt from each end of the swingarm.



4. Push the wheel forward, and then remove the drive chain from the rear sprocket.

NOTE: _____

The drive chain does not need to be disassembled in order to remove and install the rear wheel.

5. Remove the wheel.

ECA00048

CAUTION: _____

Do not apply the brake after the wheel has been removed together with the brake disc, otherwise the brake pads will be forced shut.

To install the rear wheel

1. Install the drive chain onto the rear sprocket, and then insert the wheel axle from the left side.

NOTE: _____

Make sure that there is enough space between the brake pads before inserting the brake disc between the pads.

2. Install the swingarm end bolts, and then lower the rear wheel so that it is on the ground.
3. Adjust the drive chain slack. (See page 6-26 for drive chain slack adjustment procedures.)
4. Tighten the axle nut and swingarm end bolts to the specified torques.

Tightening torque:

Axle nut:

103 Nm (10.3 m·kg)

Swingarm end bolts:

3 Nm (0.3 m·kg)

PERIODIC MAINTENANCE AND MINOR REPAIR

EAU03087

Troubleshooting

Although Yamaha motorcycles receive a thorough inspection before shipment from the factory, trouble may occur during operation. Any problem in the fuel, compression, or ignition systems, for example, can cause poor starting and loss of power.

The following troubleshooting charts represent quick and easy procedures for checking these vital systems yourself. However, should your motorcycle require any repair, take it to a Yamaha dealer, whose skilled technicians have the necessary tools, experience, and know-how to service the motorcycle properly.

Use only genuine Yamaha replacement parts. Imitation parts may look like Yamaha parts, but they are often inferior, have a shorter service life and can lead to expensive repair bills.

PERIODIC MAINTENANCE AND MINOR REPAIR

EAU01581

Troubleshooting charts

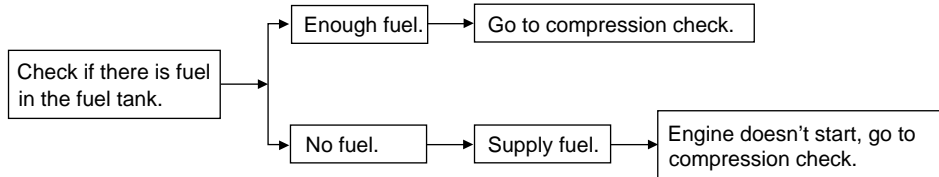
Starting problems or poor engine performance

EW000125

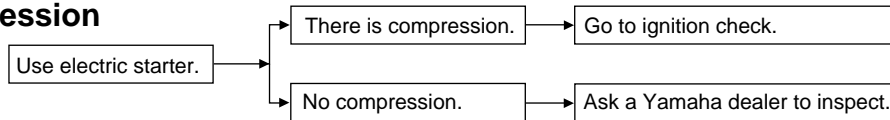
⚠ WARNING

Keep away open flames and do not smoke while checking or working on the fuel system.

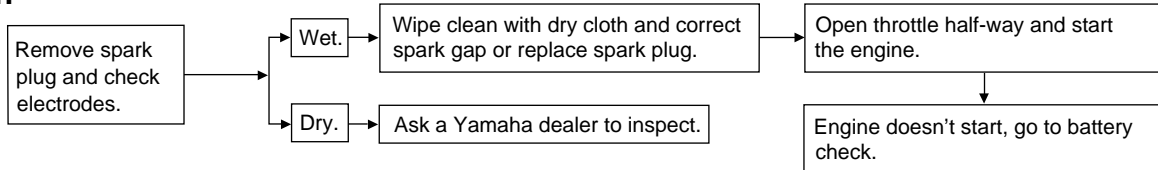
1. Fuel



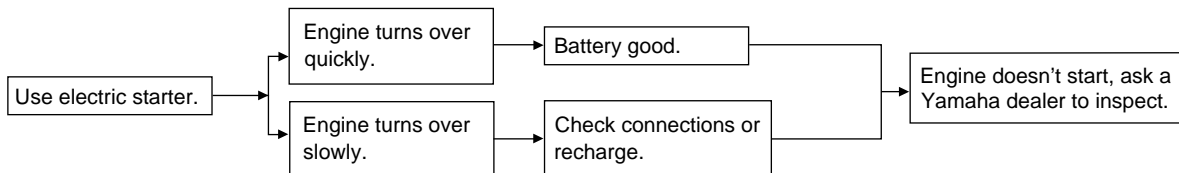
2. Compression



3. Ignition



4. Battery



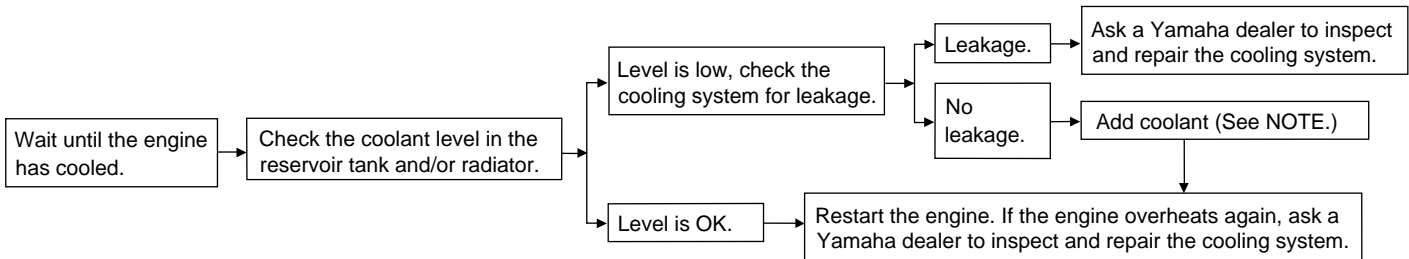
PERIODIC MAINTENANCE AND MINOR REPAIR

Engine overheating

EW000070

⚠ WARNING

- Do not remove the radiator cap when the engine and radiator are hot. Scalding hot fluid and steam may be blown out under pressure, which could cause serious injury. Be sure to wait until the engine has cooled.
 - After removing the radiator cap retaining bolt, place a thick rag, like a towel, over the radiator cap, and then slowly rotate the cap counterclockwise to the detent to allow any residual pressure to escape. When the hissing sound has stopped, press down on the cap while turning it counterclockwise, and then remove the cap.
-



NOTE:

If coolant is not available, tap water can be temporarily used instead, provided that it is changed to the recommended coolant as soon as possible.

Care

While the open design of a motorcycle reveals the attractiveness of the technology, it also makes it more vulnerable. Rust and corrosion can develop even if high-quality components are used. A rusty exhaust pipe may go unnoticed on a car, however, it detracts from the overall appearance of a motorcycle. Frequent and proper care does not only comply with the terms of the warranty, but it will also keep your motorcycle looking good, extend its life and optimize its performance.

Before cleaning

1. Cover the muffler outlet with a plastic bag after the engine has cooled down.
2. Make sure that all caps and covers as well as all electrical couplers and connectors, including the spark plug cap, 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, sprockets, the drive chain and wheel axles. Always rinse the dirt and degreaser off with water.

Cleaning

ECA00010

CAUTION:

- **Avoid using strong acidic wheel cleaners, especially on spoked wheels. If such products are used on hard-to-remove dirt, do not leave the cleaner on the affected area any longer than instructed. Also, thoroughly rinse the area off with water, immediately dry it, and then 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.**

MOTORCYCLE CARE AND STORAGE

- 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 and swingarm bearings, fork 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 that it does not leave any marks. If the windshield is scratched, use a quality plastic polishing compound after washing.

After normal use

Remove dirt with warm water, a mild detergent, and a soft, clean sponge, and then rinse thoroughly with clean water. Use a toothbrush or bottlebrush for hard-to-reach areas. Stubborn dirt and insects will come off more easily if the area is covered with a wet cloth for a few minutes before cleaning.

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

Since sea salt or salt sprayed on roads during 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.

NOTE: _____

Salt sprayed on roads in the winter may remain well into spring.

1. Clean the motorcycle with cold water and a mild detergent, after the engine has cooled down.

ECA00012

CAUTION: _____

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

2. Apply a corrosion protection spray on all metal, including chrome- and nickel-plated, surfaces to prevent corrosion.

MOTORCYCLE CARE AND STORAGE

ECA00013

After cleaning

1. Dry the motorcycle with a chamois or an absorbing cloth.
2. Immediately dry the drive chain and lubricate it to prevent it from rusting.
3. 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.)
4. To prevent corrosion, it is recommended to apply a corrosion protection spray on all metal, including chrome- and nickel-plated, surfaces.
5. Use spray oil as a universal cleaner to remove any remaining dirt.
6. Touch up minor paint damage caused by stones, etc.
7. Wax all painted surfaces.

8. Let the motorcycle dry completely before storing or covering it.

EWA00001

⚠ WARNING

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

CAUTION:

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

NOTE:

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

MOTORCYCLE CARE AND STORAGE

Storage

Short-term

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

ECA00014

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. For motorcycles equipped with a fuel cock that has an “OFF” position: Turn the fuel cock lever to “OFF”.
3. Drain the carburetor float chamber by loosening the drain bolt; this will prevent fuel deposits from building up. Pour the drained fuel into the fuel tank.
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 cylinder, piston rings, etc. from corrosion.
 - a. Remove the spark plug cap and spark plug.
 - b. Pour a teaspoonful of engine oil into the spark plug bore.

- c. Install the spark plug cap onto the spark plug, and then place the spark plug 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 wall with oil.)
- e. Remove the spark plug cap from the spark plug, and then install the spark plug and the spark plug cap.

EWA00003

⚠ WARNING

To prevent damage or injury from sparking, make sure to ground the spark plug electrodes while turning the engine over.

MOTORCYCLE CARE AND STORAGE

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, and then lift 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 the muffler outlet with a plastic bag to prevent moisture from entering it.
9. Remove the battery and fully charge it. Store it in a cool, dry place and charge 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 on storing the battery, see page 6-33.

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

SPECIFICATIONS

Specifications

Model	DT230(N)
Dimensions	
Overall length	2,225 mm
Overall width	800 mm
Overall height	1,200 mm
Seat height	865 mm
Wheel base	1,410 mm
Ground clearance	300 mm
Minimum turning radius	2,100 mm
Basic weight (with oil and full fuel tank)	133 kg
Engine	
Engine type	Liquid cooled 2-stroke
Cylinder arrangement	Forward inclined single cylinder
Displacement	224 cm ³
Bore × Stroke	66.8 × 64.0 mm
Compression ratio	6.5:1
Starting system	Electric starter
Lubrication system	Separate lubrication (Yamaha autolube)

Engine oil	
Type	2-stroke engine oil
Capacity	
Total amount	1.3 L
Transmission oil	
Type	SAE 10W30 type SE motor oil
Capacity	
Periodic oil change	0.8 L
Total amount	0.85 L
Cooling system capacity (total amount)	1.26 L
Air filter	Wet type element
Fuel	
Type	Regular gasoline (except for Australia) Unleaded fuel only (for Australia)
Fuel tank capacity	11 L
Reserve amount	2 L
Carburetor	
Manufacturer	MIKUNI
Model×quantity	TM30×1

SPECIFICATIONS

Spark plug

Manufacturer/model	NGK/BR9ES
Gap	0.7–0.8 mm

Clutch type

Wet, multiple-disc

Transmission

Primary reduction system	Helical gear
Primary reduction ratio	54/21 (2.571)
Secondary reduction system	Chain drive
Secondary reduction ratio	3.437
Number of drive chain sprocket teeth (rear/front)	55/16
Transmission type	Constant mesh 6-speed
Operation	Left foot
Gear ratio	1st 2.750
	2nd 1.875
	3rd 1.411
	4th 1.142
	5th 0.956
	6th 0.818

Chassis

Frame type	Semi double cradle
Caster angle	27°
Trail	114 mm

Tires

Type	With tube
Front	
Size	3.00-21 51P
Manufacturer/model	INOUE/GP-21F CHENG SHIN/M-6033
Rear	
Size	4.60-18 63P
Manufacturer/model	INOUE/GP-22R CHENG SHIN/M-6034
Maximum load*	180 kg
Air pressure (cold tire)	
up to 88 kg load*	
Front	125 kPa (1.25 kg/cm ² , 1.25 bar)
Rear	150 kPa (1.50 kg/cm ² , 1.50 bar)
88 kg load–Maximum load*	
Front	150 kPa (1.50 kg/cm ² , 1.50 bar)
Rear	175 kPa (1.75 kg/cm ² , 1.75 bar)

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

SPECIFICATIONS

Wheels

Front

Type	Spoke wheel
Size	1.60 × 21

Rear

Type	Spoke wheel
Size	2.15 × 18

Brakes

Front

Type	Single disc brake
Operation	Right hand
Fluid	DOT 4

Rear

Type	Single disc brake
Operation	Right foot
Fluid	DOT 4

Suspension

Front

Telescopic fork

Rear

Swingarm
(new monocross)

Spring/shock absorber

Front

Coil spring/oil damper

Rear

Coil-gas spring/oil damper

Wheel travel

Front

250 mm

Rear

240 mm

Electrical system

Ignition system

C.D.I.

Charging system

Type

C.D.I. magneto

Standard output

14 V, 12 A @5,000 r/min

Battery

Type

GT6B-3

Voltage, capacity

12 V, 6 AH

Headlight type

Halogen bulb

Bulb voltage, wattage × quantity

Headlight

12 V, 60/55W × 1

Tail/brake light

12 V, 5/21W × 1

Front turn signal light

12 V, 21W × 2

Rear turn signal light

12 V, 21W × 2

Licence plate light

12 V, 5W × 2

Neutral indicator light	12 V, 3W × 1
High beam indicator light	12 V, 3W × 1
Turn signal indicator light	12 V, 3W × 1
Oil level/coolant temperature warning light	LED
Fuse	30A

SPECIFICATIONS

EAU01064

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
	L (liter)	0.8799	qt (IMP liq.)
	L (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 numbers

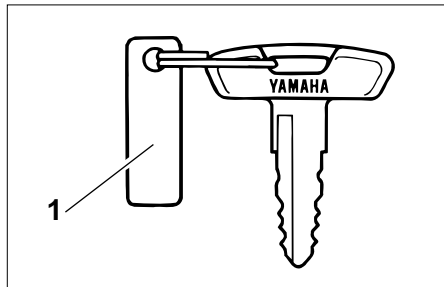
Record the key identification number, vehicle identification number and model label information in the spaces provided below for assistance when ordering spare parts from a Yamaha dealer or for reference in case the vehicle is stolen.

1. KEY IDENTIFICATION NUMBER:

2. VEHICLE IDENTIFICATION NUMBER:

3. MODEL LABEL INFORMATION:

EAU02944



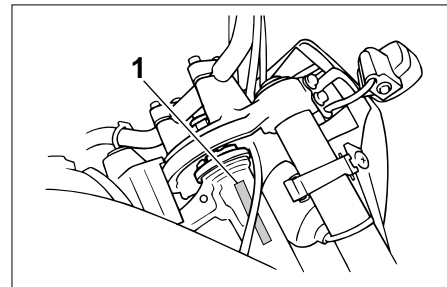
1. Key identification number

EAU01041

Key identification number

The key identification number is stamped into the key tag.

Record this number in the space provided and use it for reference when ordering a new key.



1. Vehicle identification number

EAU01043

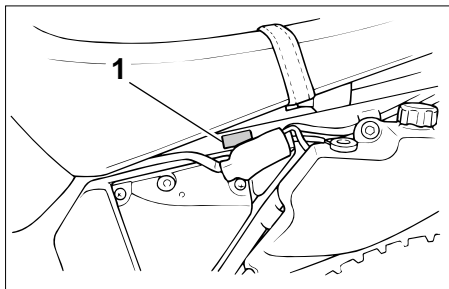
Vehicle identification number

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 area.

CONSUMER INFORMATION



1. Model label

EAU01049

Model label

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

EAU01388

Motorcycle noise regulation (for Australia)

TAMPERING WITH NOISE CONTROL SYSTEM PROHIBITED:

Owners are warned that the law may prohibit:

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



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