YAMAHA

OWNER'S MANUAL

XVZ13CTV

2C4-28199-21

INTRODUCTION

EAU10100

Welcome to the Yamaha world of motorcycling!
As the owner of the Royal Star™ Tour Deluxe™, you are benefiting from Yamaha's vast experience and newest technology regarding the design and manufacture of high-quality products, which have earned Yamaha a reputation for dependability.
Please take the time to read this manual thoroughly, so as to enjoy all advantages of your Royal Star™ Tour Deluxe™. The owner's manual does not only instruct you in how to operate, inspect and maintain your motorcycle, but also in how to safeguard yourself and others from trouble and injury.
In addition, the many tips given in this manual will help keep your motorcycle in the best possible condition. If you have any further questions, do not hesitate to contact your Yamaha dealer.
The Yamaha team wishes you many safe and pleasant rides. So, remember to put safety first!

IMPORTANT MANUAL INFORMATION

EAU10150

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

⚠	**The Safety Alert Symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**
⚠ WARNING	**Failure to follow WARNING instructions could result in severe injury or death to the motorcycle operator, a bystander, or a person inspecting or repairing the motorcycle.**
CAUTION:	**A CAUTION indicates special precautions that must be taken to avoid damage to the motorcycle.**
NOTE:	A NOTE provides key information to make procedures easier or clearer.

NOTE:

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

EWA10030

⚠ WARNING

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

IMPORTANT MANUAL INFORMATION

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XVZ13CTV
OWNER'S MANUAL

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⚠ SAFETY INFORMATION

EAU10251

1

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

HE OR SHE SHOULD:

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

Safe riding

- Always make pre-operation checks. Careful checks may help prevent an accident.
- This motorcycle is designed to carry the operator and a passenger.
- 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:
  - Wear a brightly colored jacket.
  - Use extra caution when approaching and passing through intersections, since intersections are the most likely places for motorcycle accidents to occur.
  - Ride where other motorists can see you. Avoid riding in another motorist's blind spot.
- Many motorcycle accidents involve inexperienced operators. In fact, many operators who have been involved in accidents do not even have a current motorcycle license.
  - Make sure that you are qualified and that you only lend your motorcycle to other qualified operators.
  - Know your skills and limits. Staying within your limits may help you to avoid an accident.
  - 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.
- Many motorcycle 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).
  - Always obey the speed limit and never travel faster than warranted by road and traffic conditions.
  - Always signal before turning or changing lanes. Make sure that other motorists can see you.
- The posture of the operator and passenger is important for proper control.
  - The operator should keep both hands on the handlebar and both feet on the operator footrests during operation to maintain control of the motorcycle.
  - The passenger should always hold onto the operator, seat strap, or grab bar, if equipped, with both hands and keep both feet on the passenger footrests.
  - Never carry a passenger unless he or she can firmly place both feet on the passenger footrests.
- Never ride under the influence of alcohol or other drugs.
- This motorcycle is designed for on-road use only, therefore, it is not suitable for off-road use.

Protective apparel

The majority of fatalities from motorcycle accidents are the result of head injuries. The use of a safety helmet is the single most critical factor in the prevention or reduction of head injuries.
- Always wear an approved helmet.
- Wear a face shield or goggles. Wind in your unprotected eyes could contribute to an impairment of vision which could delay seeing a hazard.
- The use of a jacket, heavy boots, trousers, gloves, etc., is effective in preventing or reducing abrasions or lacerations.
- Never wear loose-fitting clothes, otherwise they could catch on the control levers, footrests, or wheels and cause injury or an accident.
- 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.
- 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.

Maximum load:
201 kg (443 lb)

When loading within this weight limit, keep the following in mind:

- 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.
- 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.
- 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 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.

- 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.
- 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.
- 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.
- Certain accessories can displace the operator from his or her normal riding position. This improper position limits the freedom of movement of the opera-

tor and may limit control ability, therefore, such accessories are not recommended.

- 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

- GASOLINE IS HIGHLY FLAMMABLE:
  - Always turn the engine off when refueling.
  - Take care not to spill any gasoline on the engine or exhaust system when refueling.
  - Never refuel while smoking or in the vicinity of an open flame.
- Never start the engine or let it run for any length of time in a closed area. The exhaust fumes are poisonous and may cause loss of consciousness and death within a short time. Always operate your motorcycle in an area that has adequate ventilation.
- Always turn the engine off before leaving the motorcycle unattended and remove the key from the main switch. When parking the motorcycle, note the following:
  - 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.
  - Do not park the motorcycle on a slope or soft ground, otherwise it may fall over.
  - Do not park the motorcycle near a flammable source (e.g. a kerosene heater, or near an open flame), otherwise it could catch fire.
- When transporting the motorcycle in another vehicle, make sure that it is kept upright and that the fuel cock is turned to "ON" or "RES" (for vacuum type) / "OFF" (for manual type). If it should lean over, gasoline may leak out of the carburetor or fuel tank.
- 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.

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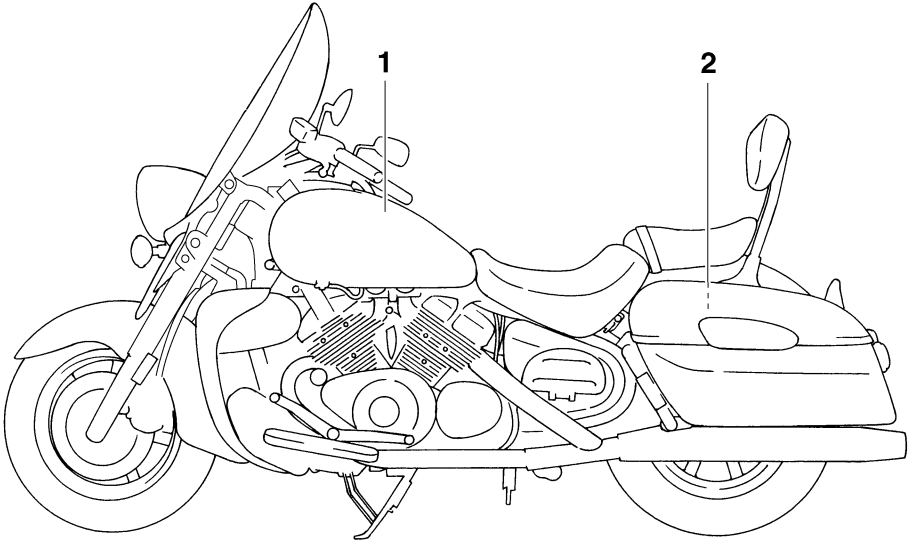
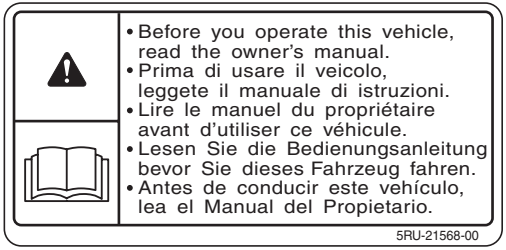
Location of important labels

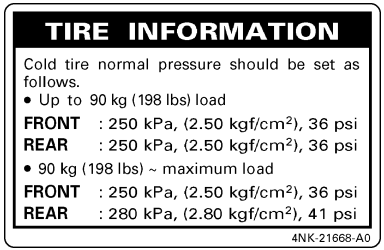
Please read the following important labels carefully before operating this vehicle.



1

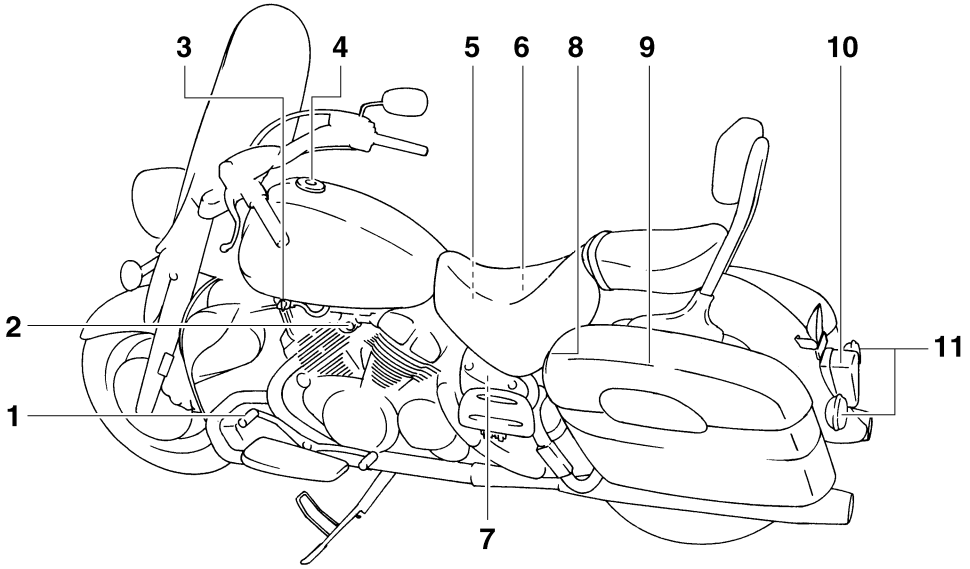

• Before you operate this vehicle, read the owner's manual.
• Prima di usare il veicolo, leggete il manuale di istruzioni.
• Lire le manuel du propriétaire avant d'utiliser ce véhicule.
• Lesen Sie die Bedienungsanleitung bevor Sie dieses Fahrzeug fahren.
• Antes de conducir este vehículo, lea el Manual del Propietario.
5RU-21568-00

2


TIRE INFORMATION
Cold tire normal pressure should be set as follows.
• Up to 90 kg (198 lbs) load
FRONT : 250 kPa, (2.50 kgf/cm2), 36 psi
REAR : 250 kPa, (2.50 kgf/cm2), 36 psi
• 90 kg (198 lbs) ~ maximum load
FRONT : 250 kPa, (2.50 kgf/cm2), 36 psi
REAR : 280 kPa, (2.80 kgf/cm2), 41 psi
4NK-21668-A0

EAU10410

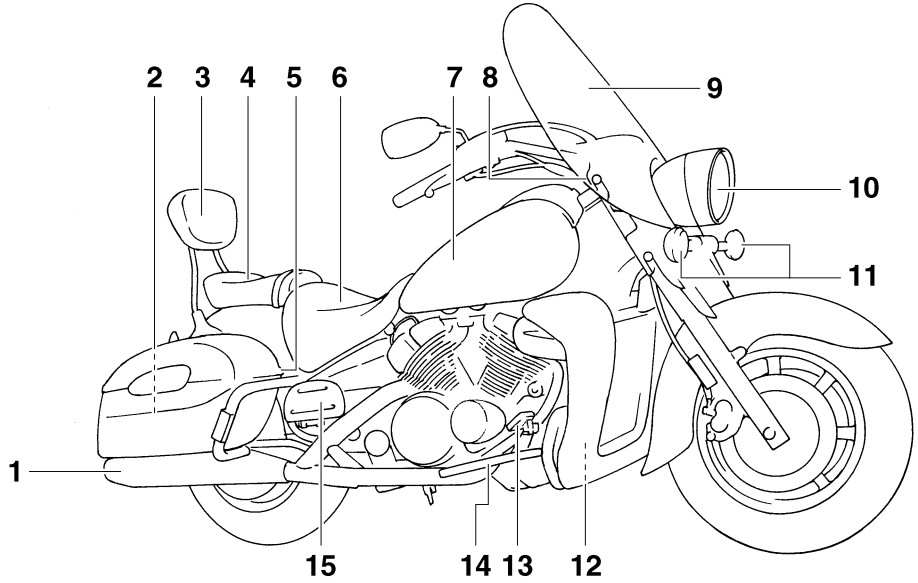
Left view



1. Shift pedal (page 3-8)
2. Starter (choke) knob (page 3-11)
3. Fuel cock (page 3-10)
4. Fuel tank cap (page 3-9)
5. Battery (page 6-29)
6. Coolant reservoir (page 6-14)
7. Fuse box 2 (page 6-30)
8. Helmet holder (page 3-14)
9. Sidecase (page 3-16)
10. Tail/brake light (page 6-33)
11. Rear turn signal light (page 6-33)

EAU10420

Right view



1. Muffler
2. Owner's tool kit (page 6-1)
3. Passenger backrest (page 3-13)
4. Passenger seat
5. Shock absorber assembly air valve (page 3-17)
6. Rider seat (page 3-12)
7. Fuel tank (page 3-9)
8. Front fork air valve (page 3-17)
9. Windshield (page 3-15)
10. Headlight (page 6-32)
11. Front turn signal light (page 6-33)
12. Fuse box 1 (page 6-30)
13. Brake pedal (page 3-8)
14. Rider footrest
15. Passenger footrest

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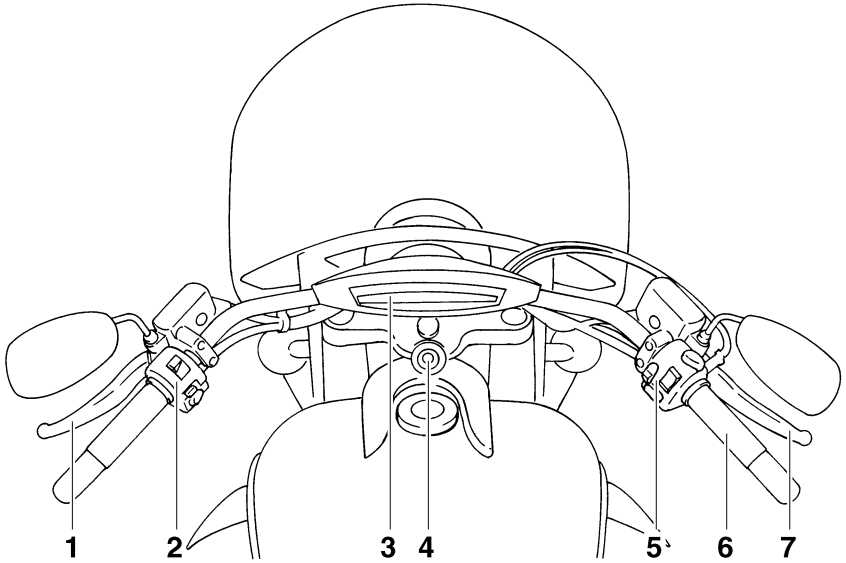
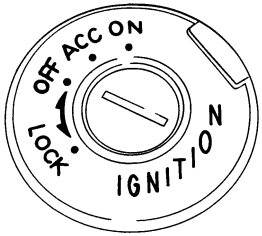
Controls and instruments



1. Clutch lever (page 3-7)
2. Left handlebar switches (page 3-6)
3. Speedometer unit (page 3-3)
4. Main switch/steering lock (page 3-1)
5. Right handlebar switches (page 3-6)
6. Throttle grip (page 6-18)
7. Brake lever (page 3-8)

EAU10460

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.

EAU10650

ON

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

EAU10660

OFF

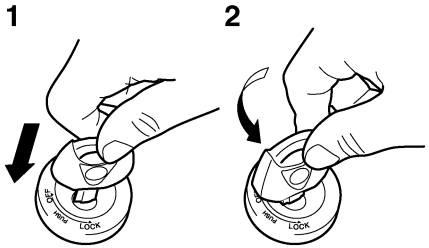
All electrical systems are off. The key can be removed.

EAU10690

LOCK

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

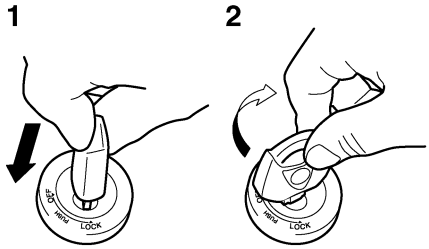
To lock the steering



1. Push.
2. Turn.

1. Turn the handlebars all the way to the left or right.
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



1. Push.
2. Turn.

Push the key into the main switch, and then turn it to “OFF” while still pushing it.

EWA10060

⚠ WARNING

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

3

EAU35141

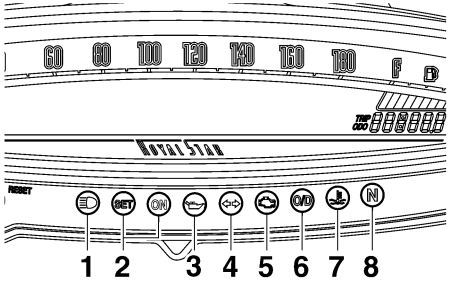
ACC (Accessory)

The auxiliary DC connector can be used in this position. Do not use the accessory position for an extended period of time, otherwise the battery may discharge.

The key cannot be removed.

EAU11003

Indicator and warning lights



1. High beam indicator light “ ≣D ”
2. Cruise control indicator lights
3. Oil level warning light “ ”
4. Turn signal indicator light “ ⇦ ⇨ ”
5. Engine trouble warning light “ ”
6. Overdrive indicator light “O/D”
7. Coolant temperature warning light “ ”
8. Neutral indicator light “ **N** ”

EAU11020

Turn signal indicator light “ ⇦ ⇨ ”

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

EAU11060

Neutral indicator light “ N ”

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

EAU11080

High beam indicator light “ ≣D ”

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

EAU11120

Oil level warning light “ ”

This warning light comes on when the engine oil level is low.

The electrical circuit of the warning light can be checked by turning the key to “ON”.

If the warning light does not come on for a few seconds, then go off, have a Yamaha dealer check the electrical circuit.

NOTE:

Even if the oil level is sufficient, the warning light may flicker when riding on a slope or during sudden acceleration or deceleration, but this is not a malfunction.

EAU11380

Cruise control indicator lights

See page 3-5 for an explanation of these indicator lights.

EAU11440

Coolant temperature warning light “ ”

This warning light comes on when the engine overheats. When this occurs, stop the engine immediately and allow the engine to cool.

The electrical circuit of the warning light can be checked by turning the key to “ON”.

If the warning light does not come on for a few seconds, then go off, have a Yamaha dealer check the electrical circuit.

ECA10020

CAUTION:

Do not operate the engine if it is overheated.

EAU11450

Overdrive indicator light “O/D”

This indicator light comes on when the transmission is in overdrive (5th gear).

EAU11480

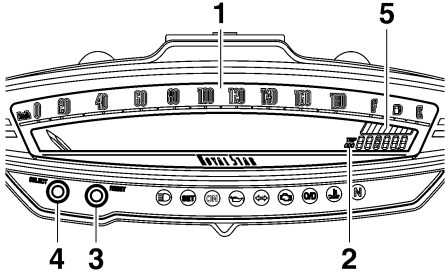
Engine trouble warning light “ ”

This warning light comes on when an electrical circuit monitoring the engine is defective. When this occurs, have a Yamaha dealer check the self-diagnosis system.

The electrical circuit of the warning light can be checked by turning the key to “ON”. If the warning light does not come on for a few seconds, then go off, have a Yamaha dealer check the electrical circuit.

EAU35151

Speedometer unit



1. Speedometer
2. Odometer/tripmeter/fuel reserve tripmeter/clock
3. “RESET” button
4. “SELECT” button
5. Fuel meter

The speedometer unit is equipped with the following:

- a digital speedometer (which shows riding speed)
- an odometer (which shows the total distance traveled)
- two tripmeters (which show the distance traveled since they were last set to zero)
- a fuel reserve tripmeter (which shows the distance traveled on the fuel reserve)

- a clock
- a fuel meter

Odometer and tripmeter modes

Pushing the "SELECT" button switches the display between the odometer mode "ODO" and the tripmeter modes "TRIP 1" and "TRIP 2" in the following order:

ODO → TRIP 1 → TRIP 2 → ODO

If the fuel level warning light comes on (see page 3-2), the odometer display will automatically change to the fuel reserve tripmeter mode "TRIP F" and start counting the distance traveled from that point. In that case, pushing the "SELECT" button switches the display between the various tripmeter and odometer modes in the following order:

TRIP F → TRIP 1 → TRIP 2 → ODO → TRIP F

To reset a tripmeter, select it by pushing the "SELECT" button, and then push the "RESET" button. If you do not reset the fuel reserve tripmeter manually, it will reset itself automatically and the display will return to "TRIP 1" after refueling and traveling 5 km (3 mi).

NOTE:

After resetting the fuel reserve tripmeter, the display will return to the prior mode.

Clock mode

To change the display to the clock mode, push the "SELECT" button for at least two seconds.

To change the display back to the odometer and tripmeter modes, push the "SELECT" button.

To set the clock:

1. Push both the "SELECT" and "RESET" buttons for at least two seconds.
2. When the hour digits start flashing, push the "RESET" button to set the hours.
3. Push the "SELECT" button, and the minute digits will start flashing.
4. Push the "RESET" button to set the minutes.
5. Push the "SELECT" button to start the clock.

NOTE:

After setting the clock, be sure to push the "SELECT" button before turning the key to "OFF", otherwise the clock will not be set.

Fuel meter

The fuel meter indicates the amount of fuel in the fuel tank. The display segments of the fuel meter disappear towards "E" (Empty) as the fuel level decreases. When the last segment on the right starts flashing, refuel as soon as possible. When the key is turned to "ON", all of the display segments of the fuel meter will appear one after the other and then disappear in order to test the electrical circuit.

NOTE:

This fuel meter is equipped with a self-diagnosis system. If the electrical circuit is defective, all the display segments will start flashing. If this occurs, have a Yamaha dealer check the electrical circuit.

EAU35161

Cruise control system

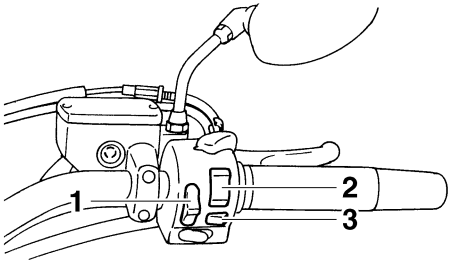
This model is equipped with a cruise control system designed to maintain a set traveling speed.

Activating and setting the cruise control system

The cruise control system can only be activated when riding in 4th or 5th gear at speeds between 50 km/h (30 mi/h) and 130 km/h (80 mi/h).

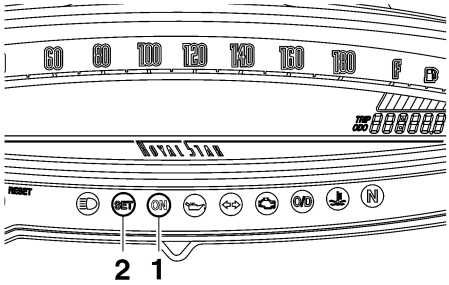
To activate and set the cruise control system:

1. Push the “CRUISE” switch to the “ACT” (activate) position and then release the switch. The “ON” indicator light will come on.



1. “CRUISE” switch
2. Cruise control switch
3. “CANCEL” switch

2. Press the “SET/DEC” (set/decelerate) side of the cruise control switch to activate the cruise control system. The “SET” indicator light comes on.
3. Set the desired traveling speed as follows. Press the “RES/ACC” (resume/accelerate) side of the cruise control switch to increase the set speed or the “SET/DEC” side to decrease the speed.



1. “ON” indicator light
2. “SET” indicator light

NOTE:

Pressing the cruise control switch once will change the speed in increments of 1.6 km/h (1 mi/h). Holding the cruise control switch down will increase or decrease the speed continuously until the switch is released.

The traveling speed can be set to a maximum of 130 km/h (80 mi/h) and a minimum of 50 km/h (30 mi/h).

When the cruise control system is activated and the throttle grip is turned to increase the speed by up to 8 km/h (5 mi/h), the cruise control system will return to the set speed after the throttle grip is released. However, if the speed

is increased by more than 8 km/h (5 mi/h), the cruise control system will be deactivated until the traveling speed is within 8 km/h (5 mi/h) of the set speed.

Deactivating the cruise control system

Applying the front or rear brake or disengaging the clutch will automatically deactivate the cruise control system.

Push the "CANCEL" switch to manually deactivate the cruise control system. The "SET" indicator light will go off.

NOTE:

Traveling speed decreases as soon as the cruise control system is deactivated; unless the throttle grip is turned.

Push the "RES/ACC" side of the cruise control switch to reactivate the system. The traveling speed will return to the previously set speed. Once the cruise control system is reactivated, the "SET" indicator light will come on.

Push the "CRUISE" switch to the "OFF" position to completely cancel the cruise control system. The "ON" indicator light will go off until the cruise control system is activated again.

NOTE:

Even if the "CRUISE" switch is in the "ON" position, turning the main switch to "OFF" when the vehicle is stopped will also completely cancel the cruise control system.

EWA12550

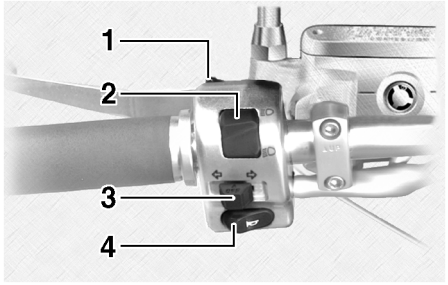
⚠ WARNING

If the cruise control system is defective, the "SET" indicator light will flash. If this occurs, turn the cruise control system off and have a Yamaha dealer check the electrical system.

EAU12343

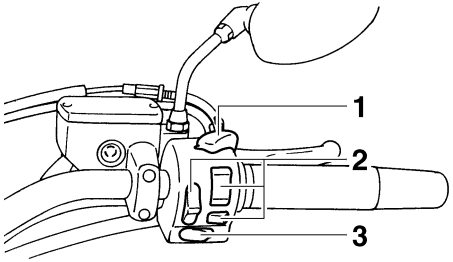
Handlebar switches

Left



1. Pass switch "≣D"
2. Dimmer switch "≣D/≣D"
3. Turn signal switch "⇦/⇨"
4. Horn switch "📯"

Right



1. Engine stop switch "○/⊗"
2. Cruise control switches
3. Start switch "Ⓢ"

EAU12350

Pass switch "≡○"
Press this switch to flash the headlight.

EAU12400

Dimmer switch "≡○/≡○"
Set this switch to "≡○" for the high beam and to "≡○" for the low beam.

EAU12460

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.

EAU12500

Horn switch "🔊"
Press this switch to sound the horn.

EAU12660

Engine stop switch "○/⊗"
Set this switch to "○" before starting the engine. Set this switch to "⊗" to stop the engine in case of an emergency, such as when the vehicle overturns or when the throttle cable is stuck.

EAU12710

Start switch "Ⓢ"
Push this switch to crank the engine with the starter.

ECA10050

CAUTION:

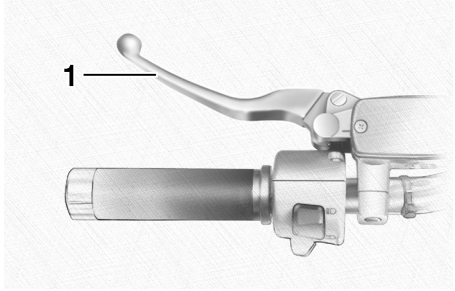
See page 5-1 for starting instructions prior to starting the engine.

EAU12780

Cruise control switches
See page 3-5 for an explanation of the cruise control system.

EAU12820

Clutch lever

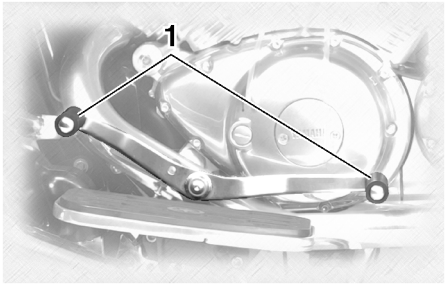


1. Clutch lever

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 3-19.)

EAU12880

Shift pedal



1. Shift pedal

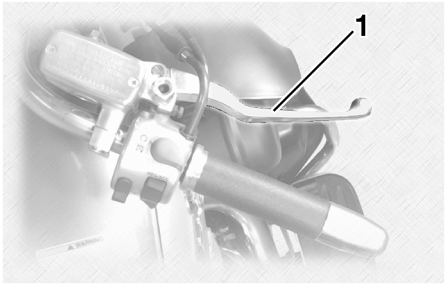
The shift pedal is located on the left side of the engine and is used in combination with the clutch lever when shifting the gears of the 5-speed constant-mesh transmission equipped on this motorcycle.

NOTE:

Use your toes or heel to shift up and your toes to shift down.

EAU12890

Brake lever

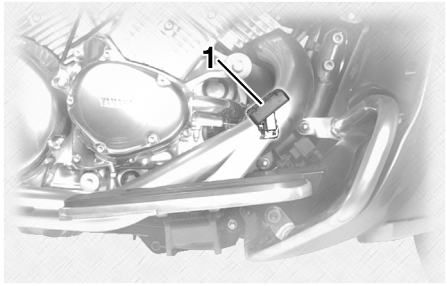


1. Brake lever

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

EAU12941

Brake pedal

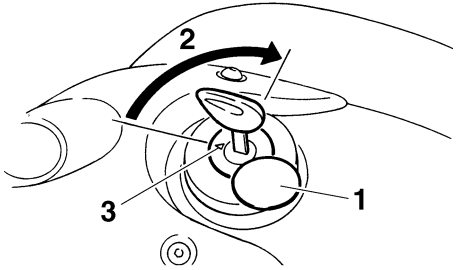


1. Brake pedal

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

EAU13120

Fuel tank cap



1. Fuel tank cap lock cover
2. Unlock.
3. "△" mark

To remove the fuel tank cap

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

To install the fuel tank cap

1. Insert the fuel tank cap into the tank opening with the key inserted in the lock and with the "△" mark facing forward.
2. Turn the key counterclockwise to the original position, remove it, and then close the lock cover.

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.

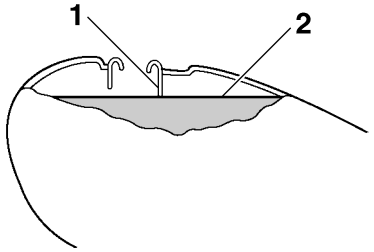
EWA10130

⚠ WARNING

Make sure that the fuel tank cap is properly installed before riding.

EAU13210

Fuel



1. Fuel tank filler tube
2. Fuel level

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

EWA10880

⚠ 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.**

ECA10070

CAUTION:

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

EAU13330

Recommended fuel:
UNLEADED GASOLINE ONLY
Fuel tank capacity:
20.0 L (5.28 US gal) (4.40 Imp.gal)
Fuel reserve amount:
3.9 L (1.03 US gal) (0.86 Imp.gal)

ECA11400

CAUTION:

Use only unleaded gasoline. The use of leaded gasoline will cause severe damage to internal engine parts, such as the valves and piston rings, as well as to the exhaust system.

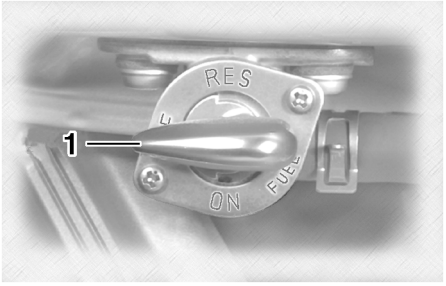
Your Yamaha engine has been designed to use regular unleaded gasoline with a research octane number of 91 or higher. If knocking (or pinging) occurs, use a gasoline of a different brand or premium unleaded fuel. Use of unleaded fuel will extend spark plug life and reduce maintenance costs.

EAU13550

Fuel cock

The fuel cock supplies fuel from the tank to the carburetors while also filtering it.
The fuel cock lever positions are explained as follows and shown in the illustrations.

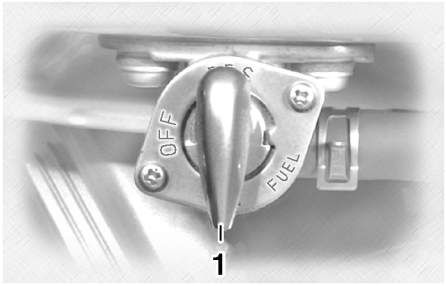
OFF



1. Pointed end positioned over “OFF”

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

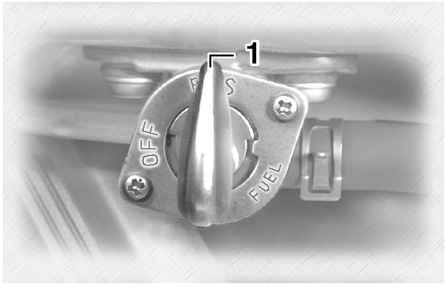
ON



1. Pointed end positioned over “ON”

With the fuel cock lever in this position, fuel flows to the carburetors. Turn the fuel cock lever to this position when starting the engine and riding.

RES

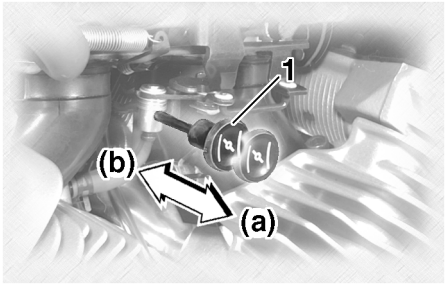


1. Pointed end positioned over “RES”

This indicates reserve. With the fuel cock lever in this position, the fuel reserve is made available. Turn the fuel cock lever to this position if you run out of fuel while riding. When this occurs, refuel as soon as possible and be sure to turn the fuel cock lever back to “ON”!

EAU13600

Starter (choke) knob “ ”



1. Starter (choke) knob “ ”

Starting a cold engine requires a richer air-fuel mixture, which is supplied by the starter (choke).
Move the knob in direction (a) to turn on the starter (choke).
Move the knob in direction (b) to turn off the starter (choke).

3

EAU13780

Locking the steering with a padlock

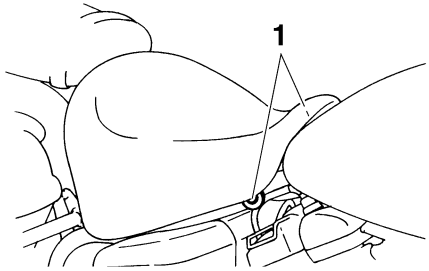
In addition to the main switch/steering lock, there are brackets on the right side of the steering head pipe for locking the steering with a padlock. To do so, turn the handlebar until the holes in the two brackets are aligned, and then lock the steering with a suitable padlock.

EAU35170

Rider seat

To remove the rider seat

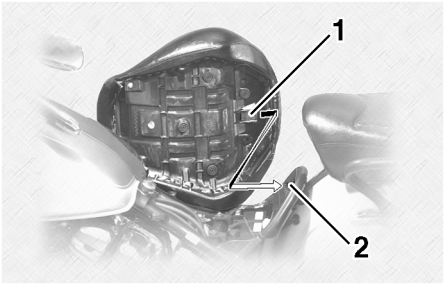
Remove the bolts, and then pull the rider seat up.



1. Bolt

To install the rider seat

Insert the projection on the rear of the rider seat into the seat holder as shown, place the seat in the original position, and then tighten the bolts.



1. Projection
2. Seat holder

NOTE:

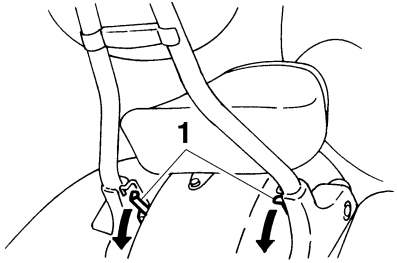
Make sure that the rider seat is properly secured before riding.

EAU35791

Passenger backrest

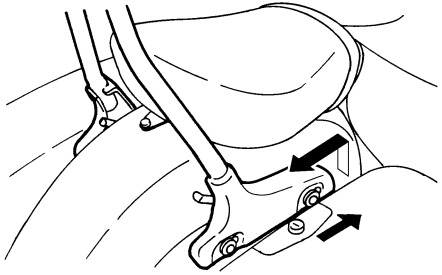
To remove the backrest

1. Push the lever on each side of the backrest downward.



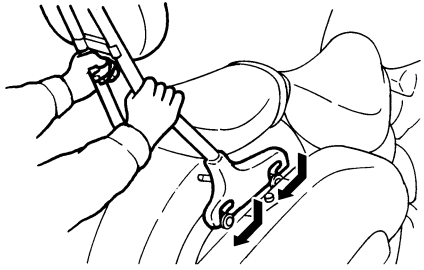
1. Backrest lever

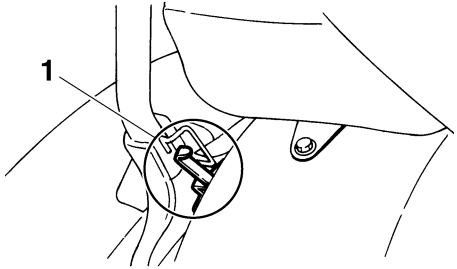
2. Push the backrest forward until it stops, then lift it upward and remove it by pulling it to the rear as shown.



To install the backrest

Place the backrest in the original position, then pull it backward until it stops and the levers snap locking it into place.





1. Locked position

EWA12561

WARNING

A loose backrest could cause an accident.
After installing the backrest, check that both levers are fully locked into place.

3

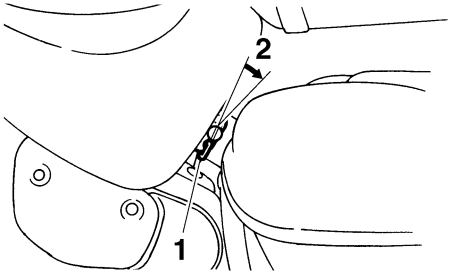
EAU35180

Helmet holder

A helmet holding cable is provided in the left sidecase to secure a helmet to the helmet holder.

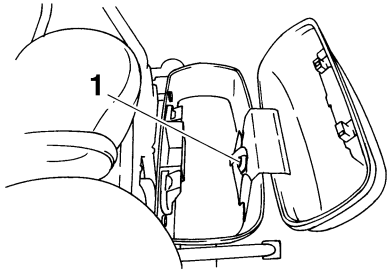
To secure a helmet to the helmet holder

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



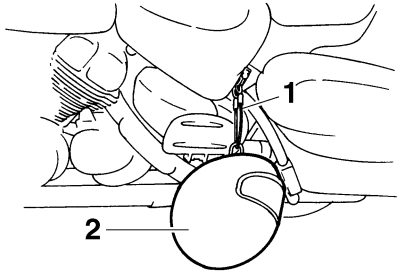
1. Helmet holder
2. Unlock.

2. Remove the helmet holding cable from the left sidecase. (See page 3-16.)



1. Helmet holding cable

3. Pass the helmet holding cable through the buckle on the helmet strap, and then hook the cable loops over the helmet holder.
4. Place the helmet holder in the original position, and then remove the key.



1. Helmet holding cable
2. Helmet

EWA11040

⚠ WARNING

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

To release the helmet from the helmet holder

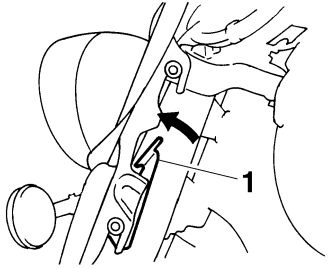
1. Open the helmet holder, remove the helmet holding cable from the helmet holder and the helmet, and then close the helmet holder.
2. Place the helmet holding cable in the left sidecase.

EAU35221

Windshield

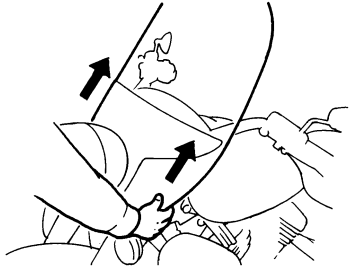
To remove the windshield

1. Push the lever on each side of the windshield forward.



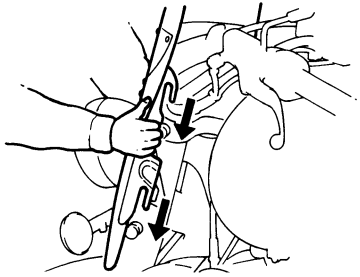
1. Windshield lever

2. To remove the windshield, pull it upward as shown.

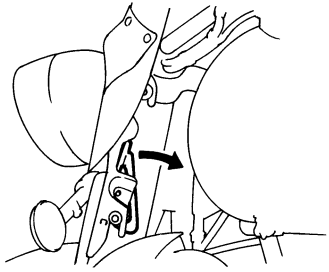


To install the windshield

1. Place the windshield in the original position as shown.



2. Push the lever on each side of the windshield backward onto its fastener to lock it into place.



EWA12541

⚠ WARNING

A loose windshield could cause an accident.

- **Be sure the slot in each lever is securely fitted onto its fastener.**
- **Be sure to pull both levers fully backward to lock the windshield into place.**

3

Sidecases

EAU35210

EWA12520

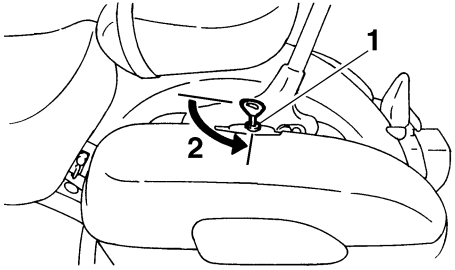
⚠ WARNING

Improper loading or overloading can cause loss of control and possibly an accident or personal injury. See pages 1-5 and 6-19 for important loading and tire pressure information.

- **Always securely close the sidecases before riding.**
- **Distribute weight evenly on each side of the motorcycle.**
- **Do not exceed the load limit of 9 kg (20 lb) for each sidecase.**
- **Do not exceed the maximum load of 201 kg (443 lb) for the vehicle.**
- **Do not exceed 120 km/h (80 mi/h) when riding with luggage in the sidecases, otherwise handling could be affected. Improper loading, poor tire or overall motorcycle conditions, poor road surfaces or adverse weather conditions may make it necessary to further reduce the riding speed.**

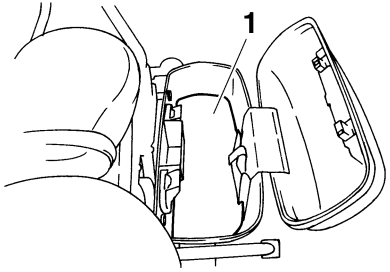
To open a sidecase

1. Insert the key into the lock, turn it counterclockwise, and then push it in.



1. Sidecase lock
2. Unlock.

2. Fold the sidecase lid up.



1. Storage compartment

To close a sidecase

1. Fold the sidecase lid down.
2. Turn the key clockwise, and then remove it.

NOTE:

Push both sides of the lid down so that both latches snap into place.

ECA13090

CAUTION:

To avoid locking the key in, never lock either sidecase and remove the key from the lock before closing the lid.

EAU14651

Adjusting the front fork

This front fork is equipped with air valves for adjusting the spring rate.

EWA10180

⚠ WARNING

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

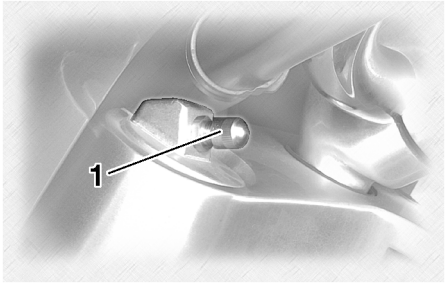
Adjust the spring rate as follows.

1. Place the vehicle on the sidestand.

NOTE:

When checking and adjusting the air pressure, there should be no weight on the vehicle.

2. Remove the air valve cap from each fork leg.



1. Front fork air valve cap

3. Check the air pressure in each fork leg using a low-pressure air gauge. A low-pressure air gauge is available at a Yamaha dealer.
4. To increase the spring rate and thereby harden the suspension, increase the air pressure with an air pump. To decrease the spring rate and thereby soften the suspension, decrease the air pressure by pushing each valve stem down.

Spring rate:
Minimum (soft):
Air pressure = 0 kPa (0 psi) (0 kgf/cm²)
Standard:
Air pressure = 0 kPa (0 psi) (0 kgf/cm²)
Maximum (hard):
Air pressure = 50 kPa (7.1 psi) (0.5 kgf/cm²)

ECA10090

CAUTION:

Never exceed the maximum air pressure, otherwise the front fork oil seals may become damaged.

5. Securely install the air valve caps.

EAU14800

Adjusting the shock absorber assembly

This shock absorber assembly is equipped with an air valve for adjusting the spring rate.

ECA10100

CAUTION:

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

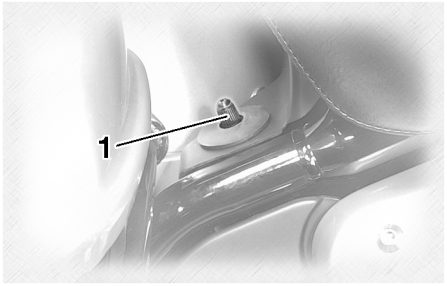
Adjust the spring rate as follows.

1. Place the vehicle on the sidestand.

NOTE:

When checking and adjusting the air pressure, there should be no weight on the vehicle.

2. Remove the air valve cap.



1. Shock absorber assembly air valve cap

3. Check the air pressure with the air pressure gauge included in the owner's tool kit.
4. To increase the spring rate and thereby harden the suspension, increase the air pressure with an air pump. To decrease the spring rate and thereby soften the suspension, decrease the air pressure by pushing the valve stem down.

Spring rate:
Minimum (soft):
Air pressure = 0 kPa (0 psi) (0 kgf/cm²)
Standard:
Air pressure = 0 kPa (0 psi) (0 kgf/cm²)
Maximum (hard):
Air pressure = 400 kPa (57 psi) (4.0 kgf/cm²)

ECA11090

CAUTION:

Never exceed the maximum air pressure, otherwise the oil seal may become damaged.

5. Securely install the air valve cap.

EAU15301

Sidestand

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

EWA10240

⚠ WARNING

The vehicle 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.

EAU15311

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 transmission is in gear and the sidestand is moved down.

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

EWA10250

⚠ WARNING

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

With the engine turned off:
1. Move the sidestand down.
2. Make sure that the engine stop switch is turned on.
3. Turn the key on.
4. Shift the transmission into the neutral position.
5. Push the start switch.

Does the engine start?

YES

NO → The neutral switch may be defective. **The motorcycle should not be ridden** until checked by a Yamaha dealer.

With the engine still running:
6. Move the sidestand up.
7. Keep the clutch lever pulled.
8. Shift the transmission into gear.
9. Move the sidestand down.

Does the engine stall?

YES

NO → The sidestand switch may be defective. **The motorcycle should not be ridden** until checked by a Yamaha dealer.

After the engine has stalled:
10. Move the sidestand up.
11. Keep the clutch lever pulled.
12. Push the start switch.

Does the engine start?

YES

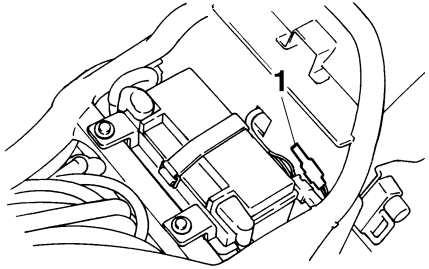
NO → The clutch switch may be defective. **The motorcycle should not be ridden** until checked by a Yamaha dealer.

The system is OK. **The motorcycle can be ridden.**

NOTE:
This check is most reliable if performed with a warmed-up engine.

EAU35201

Auxiliary DC connector



1. Auxiliary DC connector

A 12-V accessory connected to the auxiliary DC connector under the rider seat can be used when the key is in the "ACC" or "ON" position.

ECA13101

CAUTION:

The accessory connected to the auxiliary DC connector should not be used with the engine turned off, and the load must never exceed 5 A or 60 W, otherwise the battery may discharge.

EWA12531

⚠ WARNING

To prevent electrical shock or short-circuiting, make sure that the cap is installed when the auxiliary DC connector is not being used.

PRE-OPERATION CHECKS

EAU15591

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.

NOTE:

Pre-operation checks should be made each time the vehicle 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.

EWA11150

⚠ WARNING

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

EAU15603

Pre-operation check list

ITEM	CHECKS	PAGE
Fuel	• Check fuel level in fuel tank. • Refuel if necessary. • Check fuel line for leakage.	3-9
Engine oil	• Check oil level in engine. • If necessary, add recommended oil to specified level. • Check vehicle for oil leakage.	6-10
Final gear oil	• Check vehicle for oil leakage.	6-13
Coolant	• Check coolant level in reservoir. • If necessary, add recommended coolant to specified level. • Check cooling system for leakage.	6-14
Front brake	• Check operation. • If soft or spongy, have Yamaha dealer bleed hydraulic system. • Check lever free play. • Adjust if necessary. • Check brake pads for wear. • Replace if necessary. • Check fluid level in reservoir. • If necessary, add recommended brake fluid to specified level. • Check hydraulic system for leakage.	6-22, 6-23, 6-24
Rear brake	• Check operation. • If soft or spongy, have Yamaha dealer bleed hydraulic system. • Check brake pads for wear. • Replace if necessary. • Check fluid level in reservoir. • If necessary, add recommended brake fluid to specified level. • Check hydraulic system for leakage.	6-23, 6-24

PRE-OPERATION CHECKS

ITEM	CHECKS	PAGE
Clutch	• Check operation. • If soft or spongy, have Yamaha dealer bleed hydraulic system. • Check fluid level in reservoir. • If necessary, add recommended fluid to specified level. • Check hydraulic system for leakage.	6-22, 6-24
Throttle grip	• Make sure that operation is smooth. • Check cable free play. • If necessary, have Yamaha dealer adjust cable free play and lubricate cable and grip housing.	6-18, 6-26
Control cables	• Make sure that operation is smooth. • Lubricate if necessary.	6-25
Wheels and tires	• Check for damage. • Check tire condition and tread depth. • Check air pressure. • Correct if necessary.	6-19, 6-21
Brake and shift pedals	• Make sure that operation is smooth. • Lubricate pedal pivoting points if necessary.	6-26
Brake and clutch levers	• Make sure that operation is smooth. • Lubricate lever pivoting points if necessary.	6-27
Sidestand	• Make sure that operation is smooth. • Lubricate pivot if necessary.	6-27
Chassis fasteners	• Make sure that all nuts, bolts and screws are properly tightened. • Tighten if necessary.	—
Instruments, lights, signals and switches	• Check operation. • Correct if necessary.	—
Sidestand switch	• Check operation of ignition circuit cut-off system. • If system is defective, have Yamaha dealer check vehicle.	3-18

EAU15950

EWA10270

⚠ WARNING

- **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.**

EAU38020

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.

EWA10290

⚠ WARNING

- **Before starting the engine, check the function of the ignition circuit cut-off system according to the procedure described on page 3-19.**
- **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 “ ”.
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 3-11.)
5. Start the engine by pushing the start switch.

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.

ECA15240

CAUTION:

- **The oil level warning light should come on when the key is turned to “ON”, and then go off after two to three seconds. If the oil level warning light flickers or remains on after starting, imme-**

diately stop the engine, and then check the engine oil level and the vehicle for oil leakage. If necessary, add engine oil, and then check the warning light again. If the warning light does not come on when turning the key to "ON", or if it does not go off after starting the engine with sufficient engine oil, have a Yamaha dealer check the electrical circuit.

- **The coolant temperature warning light should come on when the key is turned to "ON", and then go off after two to three seconds. If the coolant temperature warning light flickers or remains on after starting, immediately stop the engine and have a Yamaha dealer check the electrical circuit.**
- **The engine trouble warning light should also come on when the key is turned to "ON". If the warning light does not come on when the key is turned to "ON", flashes or remains on after starting the engine, have a Yamaha dealer check the electrical circuit.**

6. After starting the engine, move the starter (choke) back halfway.

ECA11130

CAUTION:

For maximum engine life, always warm the engine up before starting off. 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.

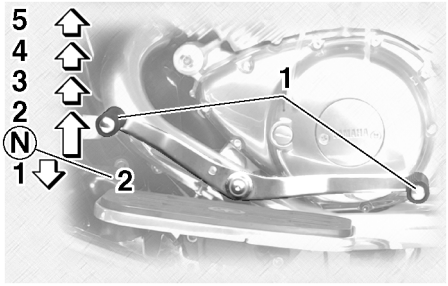
EAU16640

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.

EAU16671

Shifting



1. Shift pedal
2. Neutral position

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.

ECA10260

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.**

EAU16800

Tips for reducing fuel consumption

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

- 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).

EAU16841

Engine break-in

There is never a more important period in the life of your engine than the period between 0 and 1600 km (1000 mi). 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 1600 km (1000 mi). The various parts in the engine wear and polish themselves to the correct operating clearances. During this period, prolonged full-throttle operation or any condition that might result in engine overheating must be avoided.

EAU17041

0–1000 km (0–600 mi)

Avoid prolonged operation above 1/3 throttle.

1000–1600 km (600–1000 mi)

Avoid prolonged operation above 1/2 throttle.

ECA10331

CAUTION:

After 1000 km (600 mi) of operation, the engine oil and final gear oil must be changed, and the oil filter cartridge or element replaced.

1600 km (1000 mi) and beyond

The vehicle can now be operated normally.

ECA10270

CAUTION:

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

EAU17170

Parking

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

EWA10310

⚠ 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 vehicle may overturn.**

EAU17240

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.

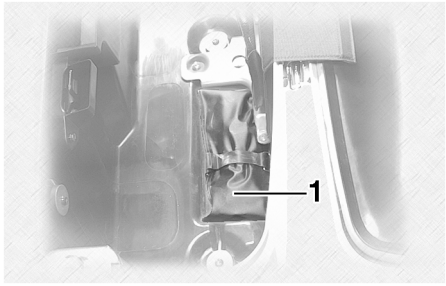
EWA10320

⚠ WARNING

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

EAU35870

Owner's tool kit



1. Owner's tool kit

The owner's tool kit is located inside the right sidecase. (See page 3-16.)
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.

EWA10350

⚠ 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.

EAU17705

Periodic maintenance and lubrication chart

NOTE:

- **The annual checks must be performed every year, except if a kilometer-based maintenance is performed instead.**
- From 50000 km, repeat the maintenance intervals starting from 10000 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 (× 1000 km)					ANNUAL CHECK
				1	10	20	30	40	
1	*	**Fuel line**	• Check fuel hoses for cracks or damage.		√	√	√	√	√
2	*	**Fuel filter**	• Check condition.			√		√	
3		**Spark plugs**	• Check condition. • Clean and regap.		√		√		
			• Replace.			√		√	
4	*	**Valves**	• Check valve clearance. • Adjust.	Every 40000 km					
5		**Air filter element**	• Clean.		√		√		
			• Replace.			√		√	
6	*	**Clutch**	• Check operation, fluid level and vehicle for fluid leakage.	√	√	√	√	√	
7	*	**Front brake**	• Check operation, fluid level and vehicle for fluid leakage.	√	√	√	√	√	√
			• Replace brake pads.	Whenever worn to the limit					
8	*	**Rear brake**	• Check operation, fluid level and vehicle for fluid leakage.	√	√	√	√	√	√
			• Replace brake pads.	Whenever worn to the limit					

NO.		ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING (× 1000 km)					ANNUAL CHECK
				1	10	20	30	40	
9	*	**Brake hoses**	• Check for cracks or damage.		√	√	√	√	√
			• Replace.	Every 4 years					
10	*	**Wheels**	• Check runout and for damage.		√	√	√	√	
11	*	**Tires**	• Check tread depth and for damage. • Replace if necessary. • Check air pressure. • Correct if necessary.		√	√	√	√	√
12	*	**Wheel bearings**	• Check bearing for looseness or damage.		√	√	√	√	
13	*	**Swingarm**	• Check operation and for excessive play.		√	√	√	√	
			• Lubricate with lithium-soap-based grease.	Every 50000 km					
14	*	**Steering bearings**	• Check bearing play and steering for roughness.	√	√	√	√	√	
			• Lubricate with lithium-soap-based grease.	Every 50000 km					
15	*	**Chassis fasteners**	• Make sure that all nuts, bolts and screws are properly tightened.		√	√	√	√	√
16		**Sidestand**	• Check operation. • Lubricate.		√	√	√	√	√
17	*	**Sidestand switch**	• Check operation.	√	√	√	√	√	√
18	*	**Front fork**	• Check operation and for oil leakage.		√	√	√	√	
19	*	**Shock absorber assembly**	• Check operation and shock absorber for oil leakage.		√	√	√	√	
20	*	**Rear suspension relay arm and connecting arm pivoting points**	• Check operation.		√	√	√	√	
			• Lubricate with lithium-soap-based grease.			√		√	
21	*	**Carburetors**	• Check starter (choke) operation. • Adjust engine idling speed and synchronization.	√	√	√	√	√	√

NO.		ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING (× 1000 km)					ANNUAL CHECK
				1	10	20	30	40	
22		**Engine oil**	• Change. • Check oil level and vehicle for oil leakage.	√	√	√	√	√	√
23		**Engine oil filter cartridge**	• Replace.	√		√		√	
24	*	**Cooling system**	• Check coolant level and vehicle for coolant leakage.		√	√	√	√	√
			• Change.	Every 3 years					
25		**Final gear oil**	• Check oil level and vehicle for oil leakage.	√	√		√		
			• Change.	√		√		√	
26	*	**Front and rear brake switches**	• Check operation.	√	√	√	√	√	√
27		**Moving parts and cables**	• Lubricate.		√	√	√	√	√
28	*	**Throttle grip housing and cable**	• Check operation and free play. • Adjust the throttle cable free play if necessary. • Lubricate the throttle grip housing and cable.		√	√	√	√	√
29	*	**Mufflers and exhaust pipes**	• Check the screw clamps for looseness.	√	√	√	√	√	√
30	*	**Lights, signals and switches**	• Check operation. • Adjust headlight beam.	√	√	√	√	√	√

EAU17670

NOTE:

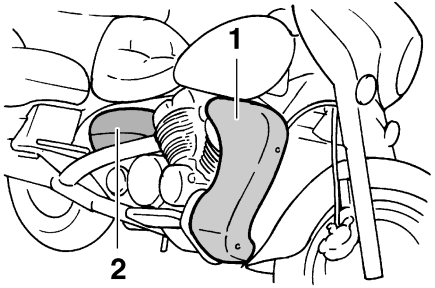
- The air filter needs more frequent service if you are riding in unusually wet or dusty areas.
- Hydraulic brake and clutch service
  - Regularly check and, if necessary, correct the brake and clutch fluid levels.

- Every two years replace the internal components of the brake master cylinders and calipers as well as clutch master and release cylinders, and change the brake and clutch fluids.
- Replace the brake and clutch hoses every four years and if cracked or damaged.

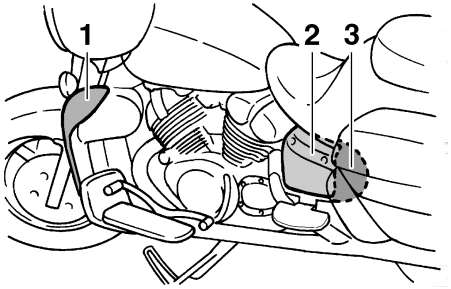
EAU18712

Removing and installing cowlings and panels

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



1. Cowling A
2. Panel A



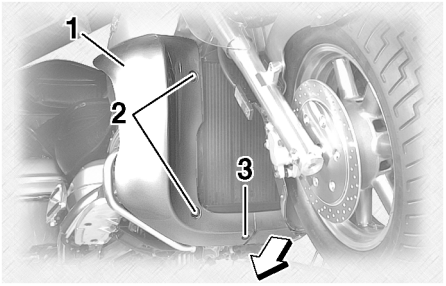
1. Cowling B
2. Panel B
3. Panel C

EAU35841

Cowling A

To remove the cowling

1. Remove the bolts.
2. Remove the quick fastener screw by turning it 1/4 turn counterclockwise, and then take the cowling off.

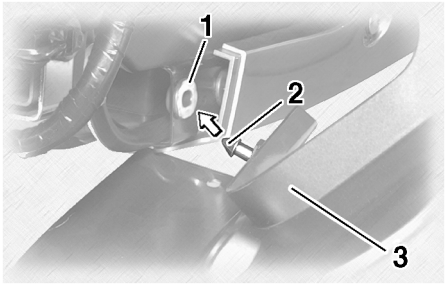


1. Cowling A
2. Bolt
3. Quick fastener screw

1. Bolt

To install the cowling

Place the cowling in the original position, and then install the quick fastener screw and the bolts.



1. Grommet
2. Projection
3. Cowling A

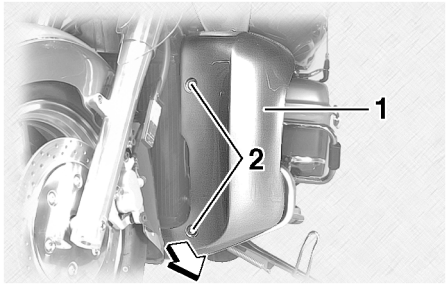
NOTE:
Make sure that the projection fits into the grommet.

EAU35850

Cowling B

To remove the cowling

1. Remove cowling A.
2. Remove the bolts, and then pull the cowling off as shown.



1. Cowling B
2. Bolt

1. Bolt

To install the cowling

1. Place the cowling in the original position, and then install the bolts.

NOTE:
Make sure that the projection fits into the grommet.

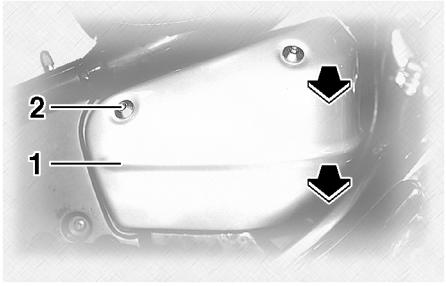
2. Install cowling A.

EAU35860

Panels A and B

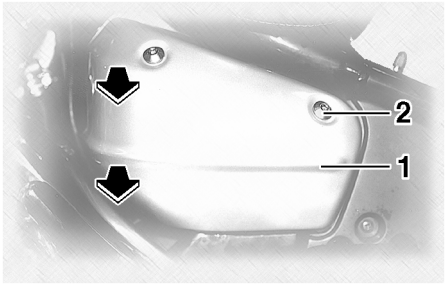
To remove one of the panels

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



1. Panel A
2. Bolt

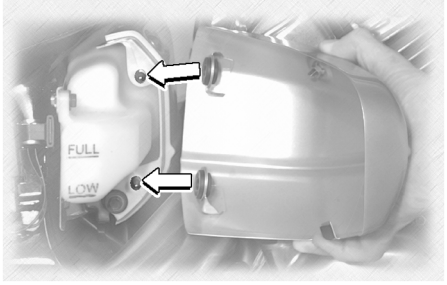
6

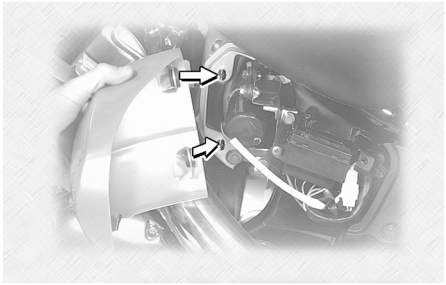


1. Panel B
2. Bolt

To install the panel

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



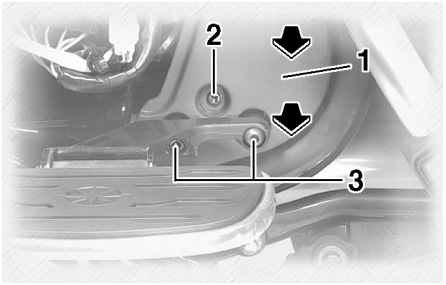


EAU19332

Panel C

To remove the panel

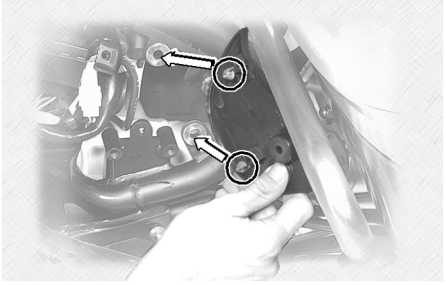
1. Remove the left passenger footrest by removing the bolts.
2. Remove the screw, and then pull the panel off as shown.



1. Panel C
2. Screw
3. Bolt

To install the panel

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



2. Install the passenger footrest by installing the bolts.

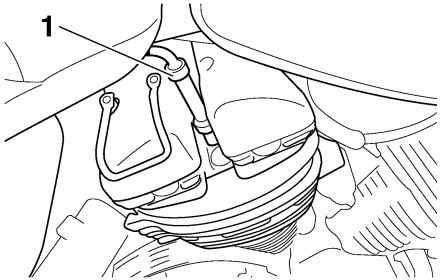
EAU19543

Checking the spark plugs

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

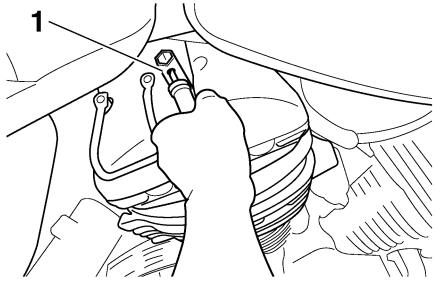
To remove a spark plug

1. Remove the spark plug cap.



1. Spark plug cap

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



1. Spark plug wrench

To check the spark plugs

1. Check that the porcelain insulator around the center electrode on each spark plug is a medium-to-light tan (the ideal color when the vehicle is ridden normally).
2. Check that all spark plugs installed in the engine have the same color.

NOTE:

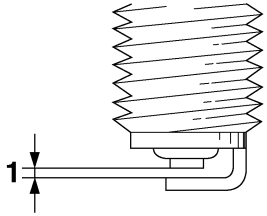
If any spark plug shows a distinctly different color, the engine could be defective. Do not attempt to diagnose such problems yourself. Instead, have a Yamaha dealer check the vehicle.

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

Specified spark plug:
NGK/DPR8EA-9
DENSO/X24EPR-U9

To install a spark plug

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



1. Spark plug gap

Spark plug gap:
0.8–0.9 mm (0.031–0.035 in)

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:
17.5 Nm (1.75 m·kgf, 12.7 ft·lbf)

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.

EAU19902

Engine oil and oil filter cartridge

The engine oil level should be checked before each ride. In addition, the oil must be changed and the oil filter cartridge replaced at the intervals specified in the periodic maintenance and lubrication chart.

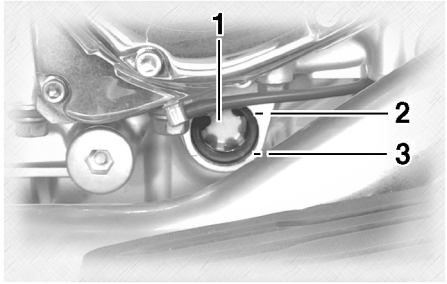
To check the engine oil level

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

NOTE:
Make sure that the vehicle is positioned straight up when checking the oil level. A slight tilt to the side can result in a false reading.

2. Start the engine, warm it up for several minutes, and then turn it off.
3. Wait a few minutes until the oil settles, and then check the oil level through the check window located at the bottom-right side of the crankcase.

NOTE:
The engine oil should be between the minimum and maximum level marks.



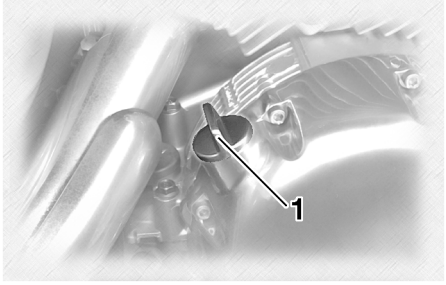
1. Engine oil level check window
2. Maximum level mark
3. Minimum level mark

4. If the engine oil is below the minimum level mark, add sufficient oil of the recommended type to raise it to the correct level.

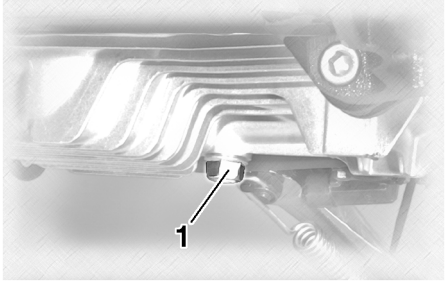
To change the engine oil (with or without oil filter cartridge replacement)

1. Start the engine, warm it up for several minutes, and then turn it off.

2. Place an oil pan under the engine to collect the used oil.
3. Remove the engine oil filler cap and drain bolt to drain the oil from the crankcase.



1. Engine oil filler cap



1. Engine oil drain bolt

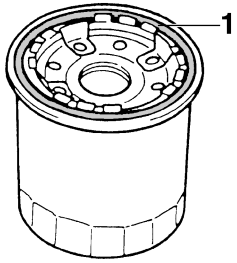
NOTE:
Skip steps 4–6 if the oil filter cartridge is not being replaced.

4. Remove the oil filter cartridge with an oil filter wrench.

1. Oil filter wrench

NOTE:
An oil filter wrench is available at a Yamaha dealer.

5. Apply a thin coat of engine oil to the O-ring of the new oil filter cartridge.

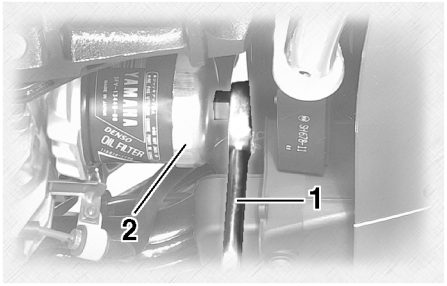


1. O-ring

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

6. Install the new oil filter cartridge with an oil filter wrench, and then tighten it to the specified torque with a torque wrench.

6



1. Torque wrench
2. Oil filter wrench

Tightening torque:
Oil filter cartridge:
17 Nm (1.7 m·kgf, 12 ft·lbf)

7. Install the engine oil drain bolt, and then tighten it to the specified torque.

Tightening torque:
Engine oil drain bolt:
43 Nm (4.3 m·kgf, 31 ft·lbf)

8. Add the specified amount of the recommended engine oil, and then install and tighten the oil filler cap.

Recommended engine oil:
See page 8-1.
Oil quantity:
Without oil filter cartridge replacement:
3.50 L (3.70 US qt) (3.08 Imp.qt)
With oil filter cartridge replacement:
3.70 L (3.91 US qt) (3.26 Imp.qt)

ECA11620

CAUTION:

- **In order to prevent clutch slippage (since the engine oil also lubricates the clutch), do not mix any chemical additives. Do not use oils with a diesel specification of "CD" or oils of a higher quality than specified. In addition, do not use oils labeled "ENERGY CONSERVING II" or higher.**
- **Make sure that no foreign material enters the crankcase.**

9. Start the engine, and then let it idle for several minutes while checking it for oil leakage. If oil is leaking, immediately turn the engine off and check for the cause.

NOTE:
After the engine is started, the engine oil level warning light should go off if the oil level is sufficient.

ECA10400

CAUTION:

If the oil level warning light flickers or remains on, immediately turn the engine off and have a Yamaha dealer check the vehicle.

10. Turn the engine off, and then check the oil level and correct it if necessary.

EAU20022

Final gear oil

The final gear case must be checked for oil leakage before each ride. If any leakage is found, have a Yamaha dealer check and repair the vehicle. In addition, the final gear oil level must be checked and the oil changed as follows at the intervals specified in the periodic maintenance and lubrication chart.

EWA10370

⚠ WARNING

- **Make sure that no foreign material enters the final gear case.**
- **Make sure that no oil gets on the tire or wheel.**

To check the final gear oil level

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

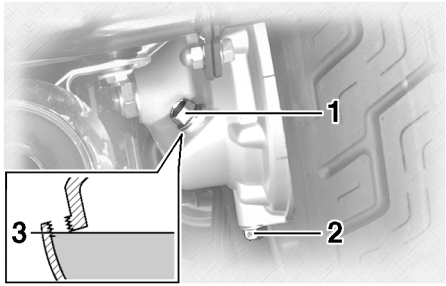
NOTE:

- The final gear oil level must be checked on a cold engine.
- Make sure that the vehicle is positioned straight up when checking the oil level. A slight tilt to the side can result in a false reading.

2. Remove the oil filler bolt, and then check the oil level in the final gear case.

NOTE:

The oil level should be at the brim of the filler hole.



1. Final gear oil filler bolt
2. Final gear oil drain bolt
3. Correct oil level

3. If the oil is below the brim of the filler hole, add sufficient oil of the recommended type to raise it to the correct level.

To change the final gear oil

1. Place an oil pan under the final gear case to collect the used oil.
2. Remove the oil filler bolt and drain bolt to drain the oil from the final gear case.
3. Install the final gear oil drain bolt, and then tighten it to the specified torque.

Tightening torque:
Final gear oil drain bolt:
23 Nm (2.3 m·kgf, 17 ft·lbf)

4. Add the recommended final gear oil to the brim of the filler hole.

Recommended final gear oil:
SAE80 API GL-4 Hypoid gear oil
Oil quantity:
0.20 L (0.21 US qt) (0.18 Imp.qt)

NOTE:

GL4 is a quality rating. Hypoid gear oils rated GL5 or GL6 may also be used.

5. Install the oil filler bolt, and then tighten it to the specified torque.

Tightening torque:
Final gear oil filler bolt:
23 Nm (2.3 m·kgf, 17 ft·lbf)

6

6. Check the final gear case for oil leakage. If oil is leaking, check for the cause.

EAU20070

Coolant

The coolant level should be checked before each ride. In addition, the coolant must be changed at the intervals specified in the periodic maintenance and lubrication chart.

EAU20211

To check the coolant level

1. Place the vehicle on a level surface and hold it in an upright position.
2. Remove panel A. (See page 6-6.)

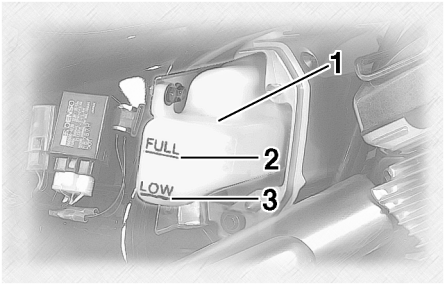
NOTE:

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

3. Check the coolant level in the coolant reservoir.

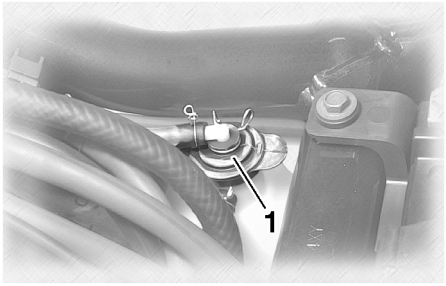
NOTE:

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



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

4. If the coolant is at or below the minimum level mark, remove the rider seat (See page 3-12.), open the reservoir cap, add coolant to the maximum level mark, and then close the reservoir cap and install the rider seat.



1. Coolant reservoir cap

Coolant reservoir capacity (up to the maximum level mark):
0.35 L (0.37 US qt) (0.31 Imp.qt)

ECA10470

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.**

EWA10380

WARNING

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

5. Install the panel.

NOTE:

- The radiator fan is automatically switched on or off according to the coolant temperature in the radiator.
- If the engine overheats, see page 6-36 for further instructions.

EAU33030

Changing the coolant

The coolant must be changed at the intervals specified in the periodic maintenance and lubrication chart. Have a Yamaha dealer change the coolant.

EWA10380

WARNING

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

EAU35193

Cleaning the air filter elements

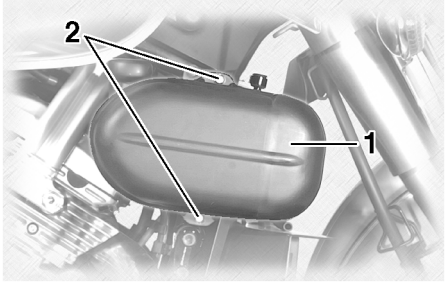
The air filter elements should be cleaned at the intervals specified in the periodic maintenance and lubrication chart. Clean the air filter elements more frequently if you are riding in unusually wet or dusty areas.

1. Remove cowlings A and B. (See page 6-6.)

NOTE:

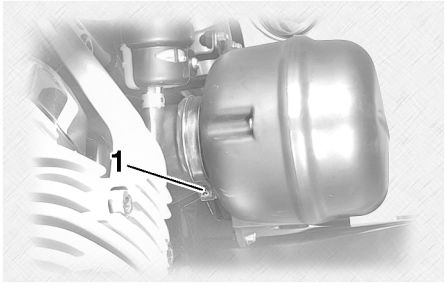
Continue as follows for each air filter element.

2. Remove the air filter case bolts.



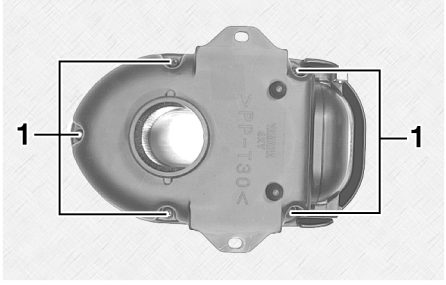
1. Air filter case
2. Bolt

3. Loosen the air filter case joint clamp screw, and then pull the air filter case off.



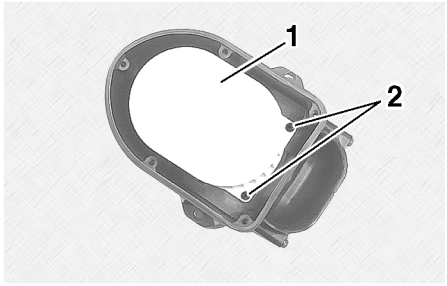
1. Air filter joint clamp screw

4. Remove the air filter case cover by removing the screws.



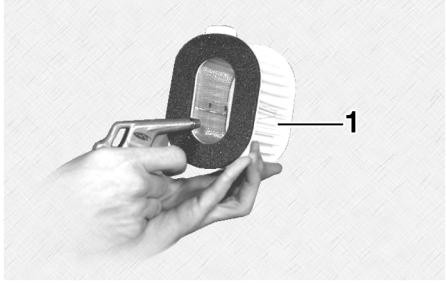
1. Screw

5. Remove the air filter element by removing the screws.



1. Air filter element
2. Screw

6. Lightly tap the air filter element to remove most of the dust and dirt, and then blow the remaining dirt out with compressed air as shown. If the air filter element is damaged, replace it.



1. Air filter element

7. Install the air filter element by fitting the projection on the air filter element into the holder in the air filter case, then tightening the screws.

ECA10480

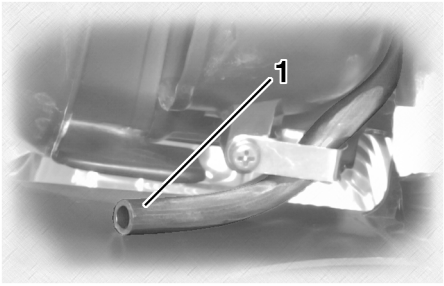
CAUTION:

- **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.**

8. Install the air filter case cover by installing the screws.
9. Push the air filter case onto the air filter case joint, and then tighten the clamp screw.
10. Install the air filter case bolts.
11. Install the cowlings.

NOTE:

Make sure that the carburetor air vent hose is routed as shown.



1. Carburetor air vent hose

EAU21290

Adjusting the carburetors

The carburetors are important parts of the engine and require 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.

ECA10560

CAUTION:

The carburetors have 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.

EAU21340

Adjusting the engine idling speed

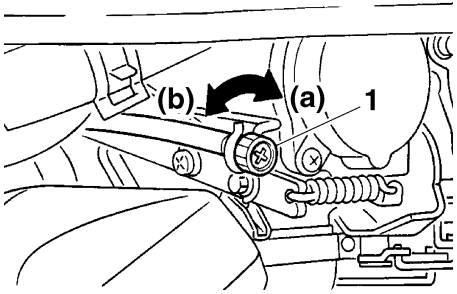
The engine idling speed must be checked and, if necessary, adjusted as follows at the intervals specified in the periodic maintenance and lubrication chart.

The engine should be warm before making this adjustment.

NOTE:

- The engine is warm when it quickly responds to the throttle.
- A diagnostic tachometer is needed to make this adjustment.

1. Attach the tachometer to the spark plug lead.
2. 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).



1. Throttle stop screw

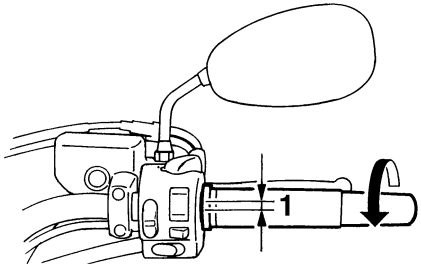
Engine idling speed:
950–1050 r/min

NOTE:

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

EAU21381

Checking the throttle cable free play



1. Throttle cable free play

The throttle cable free play should measure 4.0–6.0 mm (0.16–0.24 in) at the throttle grip. Periodically check the throttle cable free play and, if necessary, have a Yamaha dealer adjust it.

EAU21401

Valve clearance

The valve clearance changes with use, resulting in improper air-fuel mixture and/or engine noise. To prevent this from occurring, the valve clearance must be adjusted by a Yamaha dealer at the intervals specified in the periodic maintenance and lubrication chart.

EAU32652

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.

EWA10500

⚠ 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):

0–90 kg (0–198 lb):

Front:
250 kPa (36 psi) (2.50 kgf/cm²)

Rear:
250 kPa (36 psi) (2.50 kgf/cm²)

90–201 kg (198–443 lb):

Front:
250 kPa (36 psi) (2.50 kgf/cm²)

Rear:
280 kPa (41 psi) (2.80 kgf/cm²)

Maximum load*:

201 kg (443 lb)

* Total weight of rider, passenger, cargo and accessories

EWA11020

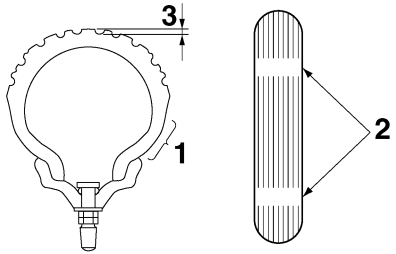
⚠ WARNING

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.**

Tire inspection



1. Tire sidewall
2. Tire wear indicator
3. Tire tread depth

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

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

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

EWA10470

⚠ WARNING
- **Have a Yamaha dealer replace excessively worn tires. Besides being illegal, operating the vehicle 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 cast wheels and tubeless tires.

EWA10460

⚠ WARNING

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

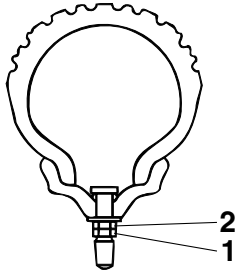
Front tire:
Size:
150/80-16M/C 71H
Manufacturer/model:
BRIDGESTONE/G705G
Rear tire:
Size:
150/90B15M/C 74H
Manufacturer/model:
BRIDGESTONE/G702G

EAU21991

Cast 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, warpage 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.
- After repairing or replacing the rear tire, tighten the valve stem nut and locknut to the specified torques.



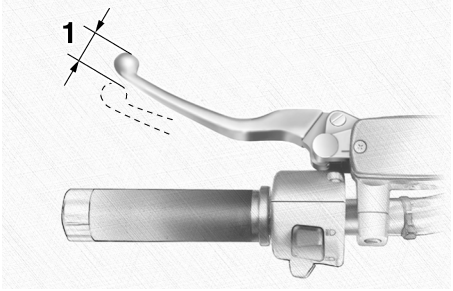
1. Valve stem locknut
2. Valve stem nut

Tightening torques:
Valve stem nut:
1.6 Nm (0.16 m·kgf, 1.16 ft·lbf)
Valve stem locknut:
1.6 Nm (0.16 m·kgf, 1.16 ft·lbf)

6

EAU22072

Clutch lever

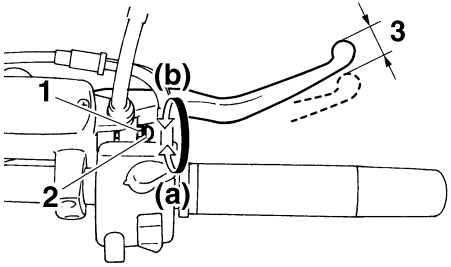


1. Clutch lever free play

Since this model is equipped with a hydraulic clutch, adjusting the clutch lever free play is not needed. However, it is necessary to check the clutch fluid level and check the hydraulic system for leakage before each ride. If the clutch lever free play does become excessive, and shifting becomes rough or clutch slippage occurs, causing poor acceleration, there may be air in the clutch system. If there is air in the hydraulic system, have a Yamaha dealer bleed the system before operating the motorcycle.

EAU22092

Adjusting the brake lever free play



1. Locknut
2. Brake lever free play adjusting screw
3. Brake lever free play

The brake lever free play should measure 2.0–5.0 mm (0.08–0.20 in) 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 screw in direction (a). To decrease the brake lever free play, turn the adjusting screw in direction (b).
3. Tighten the locknut.

EWA10630

⚠ WARNING

- **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.**

EAU22280

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. Since the brake light switch is a component of the cruise control system, it must be adjusted by a Yamaha dealer, who has the necessary professional knowledge and experience.

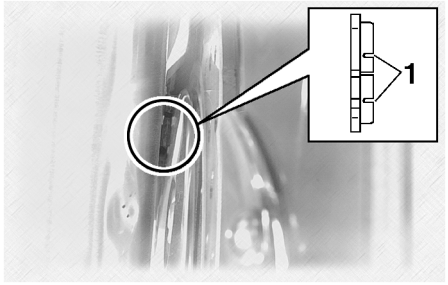
EAU22390

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.

EAU22430

Front brake pads

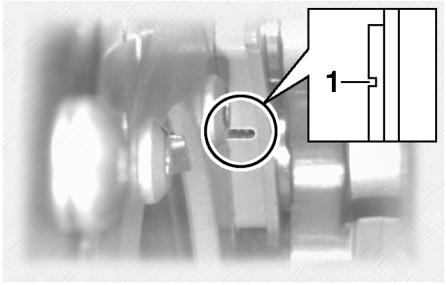


1. Brake pad wear indicator groove

Each front brake pad is provided with wear indicator grooves, which allow you to check the brake pad wear without having to disassemble the brake. To check the brake pad wear, check the wear indicator grooves. If a brake pad has worn to the point that the wear indicator grooves have almost disappeared, have a Yamaha dealer replace the brake pads as a set.

EAU22470

Rear brake pads



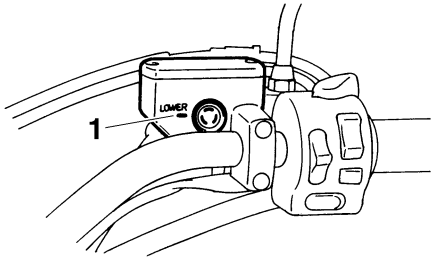
1. Brake pad wear indicator groove

Each rear brake pad is provided with a wear indicator groove, which allows you to check the brake pad wear without having to disassemble the brake. To check the brake pad wear, check the wear indicator groove. 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.

EAU22660

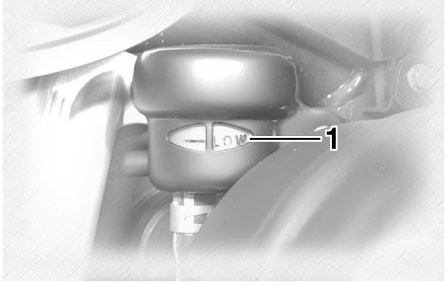
Checking the brake and clutch fluid levels

Front brake



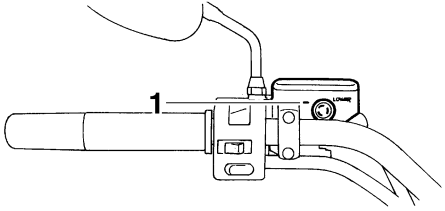
1. Minimum level mark

Rear brake



1. Minimum level mark

Clutch



1. Minimum level mark

Insufficient brake or clutch fluid may allow air to enter the brake or clutch systems, possibly causing them to become ineffective.
Before riding, check that the brake and clutch fluids are above the minimum level marks and replenish if necessary. A low brake or clutch fluid level may indicate brake or clutch system leakage and/or worn brake pads. If the brake or clutch levels are low, be sure to check the brake or clutch systems for leakage and the brake pads for wear.
Observe these precautions:

- When checking the brake and clutch fluid levels, make sure that the top of each reservoir is level.
- Use only the recommended quality brake fluid, otherwise the rubber seals may deteriorate, causing leakage and poor braking or clutch performance.

Recommended brake and clutch fluid:
DOT 4 brake fluid

- Refill with the same type of brake fluid. Mixing fluids may result in a harmful chemical reaction and lead to poor braking or clutch performance.
- Be careful that water does not enter the brake or clutch fluid reservoir 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.

EAU22750

Changing the brake and clutch fluids

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

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

EAU23100

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

EWA10720

⚠ 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.

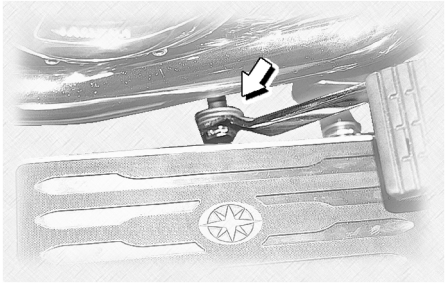
EAU23111

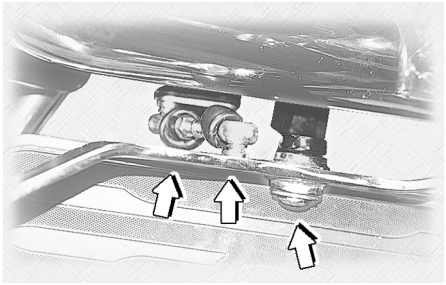
Checking and lubricating the throttle grip and cable

The operation of the throttle grip should be checked before each ride. In addition, the cable should be lubricated at the intervals specified in the periodic maintenance chart.

EAU23131

Checking and lubricating the brake and shift pedals



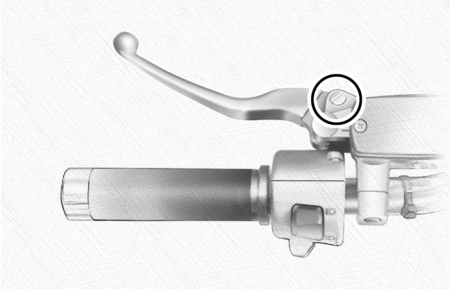


The operation of the brake and shift pedals should be checked before each ride, and the pedal pivots should be lubricated if necessary.

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

EAU23140

Checking and lubricating the brake and clutch levers

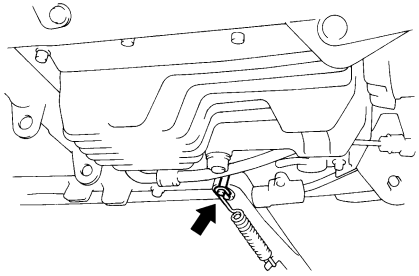


The operation of the brake and clutch levers should be checked before each ride, and the lever pivots should be lubricated if necessary.

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

EAU23200

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.

EWA10730

⚠ WARNING

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

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

EAU23271

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

EWA10750

⚠ WARNING

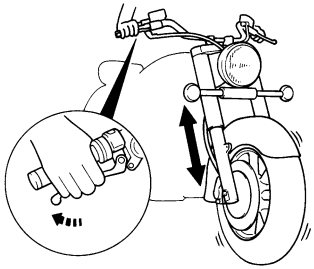
Securely support the vehicle so that there is no danger of it falling over.

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

To check the operation

1. Place the vehicle 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.

6



ECA10590

CAUTION:

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

EAU23280

Checking the steering

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.

EWA10750

⚠ WARNING

Securely support the vehicle 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.

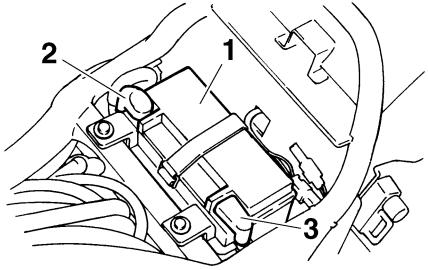
EAU23290

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.

EAU23370

Battery



1. Battery
2. Negative battery terminal
3. Positive battery terminal

This model 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.

ECA10620

CAUTION:

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

EWA10760

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 vehicle is equipped with optional electrical accessories.

To store the battery

1. If the vehicle 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.

ECA10630

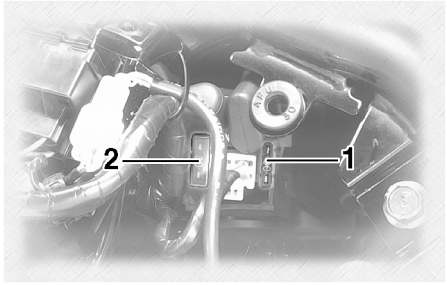
CAUTION:

- **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.**

EAU23663

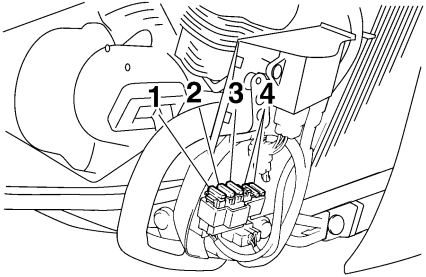
Replacing the fuses

The main fuse is located behind panel C. (See page 6-6.)



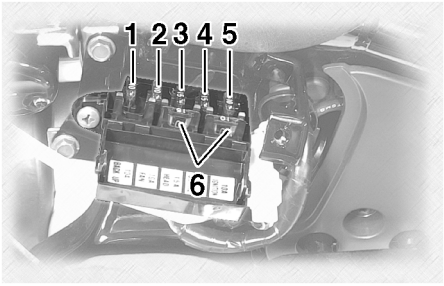
1. Main fuse
2. Spare main fuse

Fuse box 1 is located behind cowling A. (See page 6-6.)



1. Cruise control fuse
2. Carburetor heater fuse
3. Auxiliary DC connector fuse
4. Spare fuse

Fuse box 2 is located behind panel B. (See page 6-6.)



1. Backup fuse (for odometer and clock)
2. Radiator fan fuse
3. Headlight fuse
4. Signaling system fuse
5. Ignition fuse
6. Spare fuse

If a fuse is blown, replace it as follows.

1. Turn the key to “OFF” and turn off the electrical circuit in question.
2. Remove the blown fuse, and then install a new fuse of the specified amperage.

Specified fuses:
Main fuse:
30.0 A
Cruise control fuse:
10.0 A
Carburetor heater fuse:
15.0 A
Auxiliary DC connector fuse:
5.0 A
Ignition fuse:
10.0 A
Signaling system fuse:
15.0 A
Headlight fuse:
15.0 A
Radiator fan fuse:
10.0 A
Backup fuse:
10.0 A

ECA10640

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 circuit in question to check if the device operates.

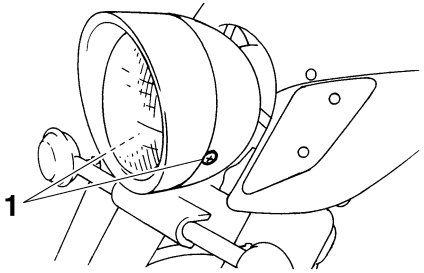
4. If the fuse immediately blows again, have a Yamaha dealer check the electrical system.

EAU23792

Replacing the headlight bulb

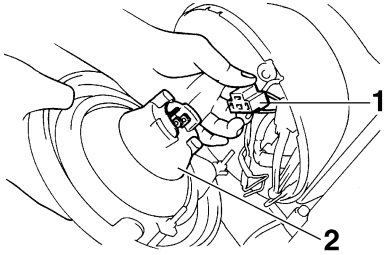
This model is equipped with a quartz bulb headlight. If the headlight bulb burns out, replace it as follows.

1. Remove the headlight unit by removing the screws.



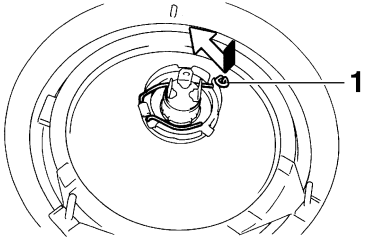
1. Screw

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



1. Headlight coupler
2. Headlight bulb cover

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



1. Headlight bulb holder

EWA10790

⚠ WARNING

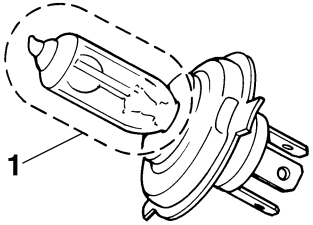
Headlight bulbs get very hot. Therefore, keep flammable products away from a lit headlight bulb, and do not touch the bulb until it has cooled down.

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

ECA10660

CAUTION:

Do not touch the glass part of the headlight bulb to keep it free from oil, otherwise the transparency of the glass, the luminosity of the bulb, and the bulb life will be adversely affected. Thoroughly clean off any dirt and fingerprints on the headlight bulb using a cloth moistened with alcohol or thinner.



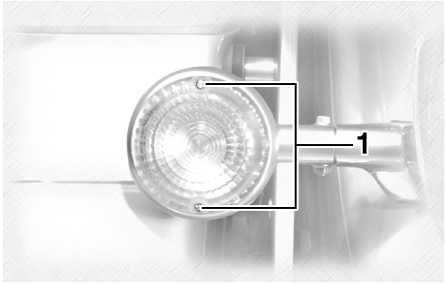
1. Do not touch the glass part of the bulb.

5. Install the headlight bulb cover, and then connect the coupler.
6. Install the headlight unit by installing the screws.
7. Have a Yamaha dealer adjust the headlight beam if necessary.

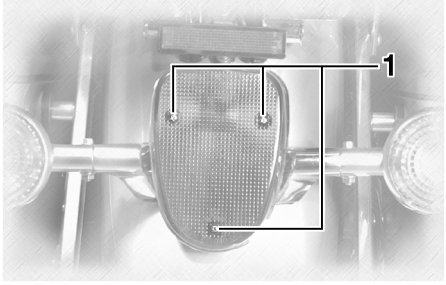
EAU24281

Replacing a turn signal light bulb or the tail/brake light bulb

1. Remove the lens by removing the screws.



1. Screw



1. Screw

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.

ECA10680

CAUTION:

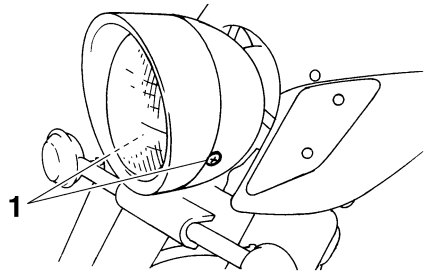
Do not overtighten the screws, otherwise the lens may break.

EAU33411

Replacing the auxiliary light bulb

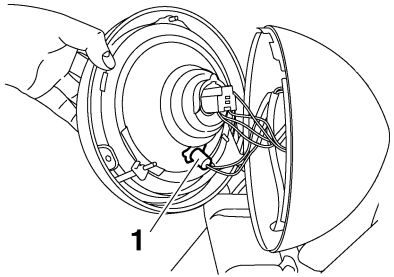
If the auxiliary light bulb burns out, replace it as follows.

1. Remove the headlight unit by removing the screws.



1. Screw

2. Remove the socket (together with the bulb) by pushing it in and turning it counterclockwise.



1. Auxiliary light bulb socket

3. Remove the defective bulb by pushing it in and turning it counterclockwise.
4. Insert a new bulb into the socket, push it in, and then turn it clockwise until it stops.
5. Install the socket (together with the bulb) by pushing it in and turning it clockwise until it stops.
6. Install the headlight unit by installing the screws.

EAU24350

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.

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.

EAU25870

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.

EAU25911

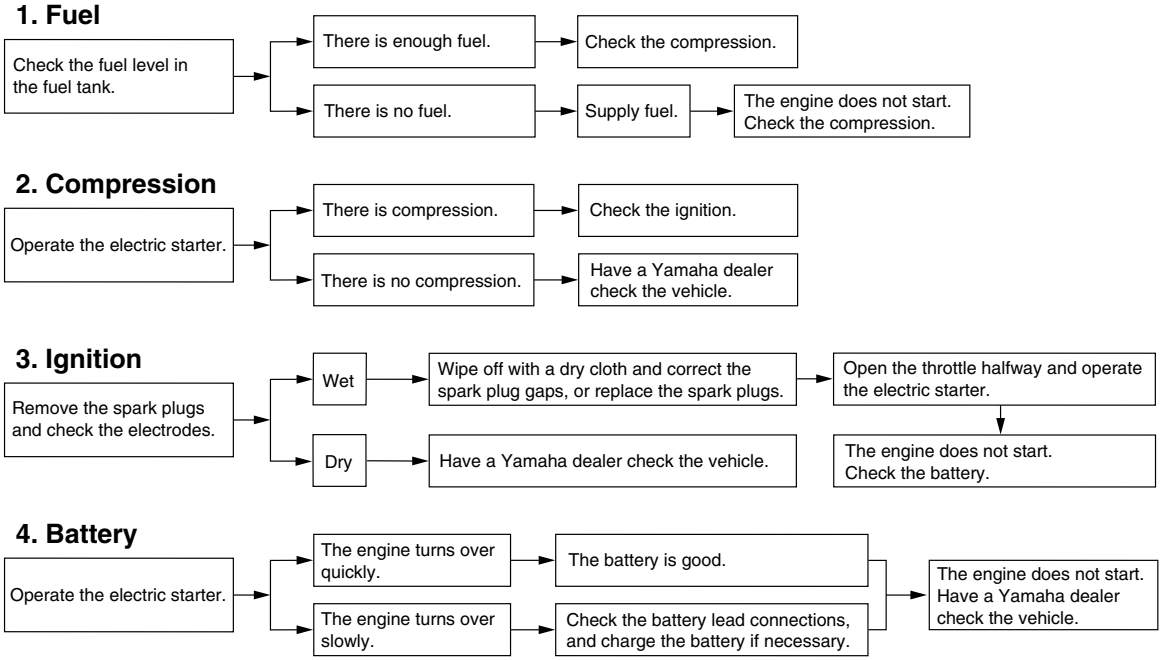
Troubleshooting charts

Starting problems or poor engine performance

EWA10840

WARNING

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

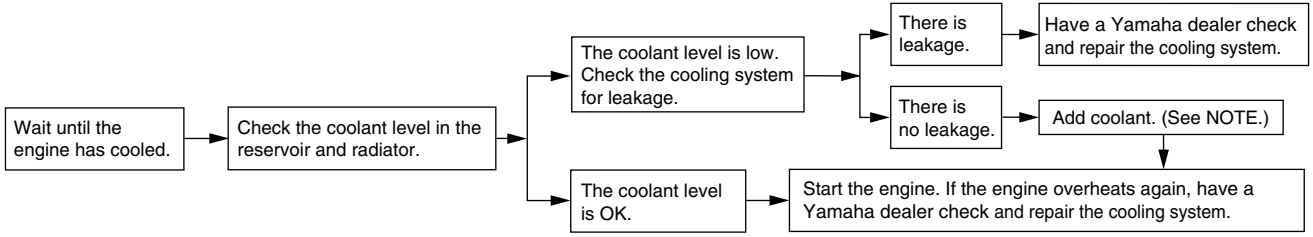


Engine overheating

EWA10400

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.

MOTORCYCLE CARE AND STORAGE

EAU26060

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 outlets with plastic bags 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 caps, are tightly installed.
3. Remove extremely stubborn dirt, like oil burnt onto the crankcase, with a degreasing agent and a brush, but never apply such products onto seals, gaskets and wheel axles. Always rinse the dirt and degreaser off with water.

Cleaning

ECA10770

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.**
- **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.

ECA10790

CAUTION:

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

2. After drying the motorcycle, apply a corrosion protection spray on all metal, including chrome- and nickel-plated, surfaces to prevent corrosion.

After cleaning

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

EWA11130

⚠ 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 riding at higher speeds, test the motorcycle's braking performance and cornering behavior.**

ECA10800

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.**

7

- **Avoid using abrasive polishing compounds as they will wear away the paint.**

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

EAU26250

Storage

Short-term

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

ECA10810

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 cylinders, piston rings, etc. from corrosion.
   a. Remove the spark plug caps and spark plugs.
   b. Pour a teaspoonful of engine oil into each spark plug bore.
   c. Install the spark plug caps onto the spark plugs, and then place the spark plugs on the cylinder head so that the electrodes are grounded. (This will limit sparking during the next step.)
   d. Turn the engine over several times with the starter. (This will coat the cylinder walls with oil.)
   e. Remove the spark plug caps from the spark plugs, and then install the spark plugs and the spark plug caps.

EWA10950

⚠ WARNING

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

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 outlets with plastic bags to prevent moisture from entering them.
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 (30 °F) or more than 30 °C (90 °F)]. For more information on storing the battery, see page 6-29.

NOTE:

Make any necessary repairs before storing the motorcycle.

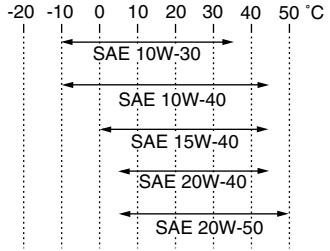
SPECIFICATIONS

Dimensions:
Overall length:
2505 mm (98.6 in)
Overall width:
995 mm (39.2 in)
Overall height:
1525 mm (60.0 in)
Seat height:
740 mm (29.1 in)
Wheelbase:
1715 mm (67.5 in)
Ground clearance:
150 mm (5.91 in)
Minimum turning radius:
3500 mm (137.8 in)

Weight:
With oil and fuel:
383.0 kg (844 lb)

Engine:
Engine type:
Liquid cooled 4-stroke, DOHC
Cylinder arrangement:
V-type 4-cylinder
Displacement:
1294.0 cm³ (78.96 cu.in)
Bore × stroke:
79.0 × 66.0 mm (3.11 × 2.60 in)
Compression ratio:
10.00 :1
Starting system:
Electric starter
Lubrication system:
Wet sump

Engine oil:
Type:
SAE10W30 or SAE10W40 or SAE15W40 or SAE20W40 or SAE20W50



Recommended engine oil grade:
API service SE, SF, SG type or higher
Engine oil quantity:
Without oil filter cartridge replacement:
3.50 L (3.70 US qt) (3.08 Imp.qt)
With oil filter cartridge replacement:
3.70 L (3.91 US qt) (3.26 Imp.qt)

Final gear oil:
Type:
SAE80 API GL-4 Hypoid gear oil
Quantity:
0.20 L (0.21 US qt) (0.18 Imp.qt)

Cooling system:
Coolant reservoir capacity (up to the maximum level mark):
0.35 L (0.37 US qt) (0.31 Imp.qt)
Radiator capacity (including all routes):
3.50 L (3.70 US qt) (3.08 Imp.qt)

Air filter:
Air filter element:
Dry element

Fuel:
Recommended fuel:
Unleaded gasoline only
Fuel tank capacity:
20.0 L (5.28 US gal) (4.40 Imp.gal)
Fuel reserve amount:
3.9 L (1.03 US gal) (0.86 Imp.gal)

Carburetor:
Manufacturer:
MIKUNI
Type × quantity:
BDSR32 x 4

Spark plug (s):
Manufacturer/model:
NGK/DPR8EA-9
Manufacturer/model:
DENSO/X24EPR-U9
Spark plug gap:
0.8–0.9 mm (0.031–0.035 in)

Clutch:
Clutch type:
Wet, multiple-disc

Transmission:
Primary reduction system:
Spur gear
Primary reduction ratio:
87/49 (1.776)
Secondary reduction system:
Shaft drive
Secondary reduction ratio:
21/27 × 33/10 (2.567)

Transmission type:
Constant mesh 5-speed
Operation:
Left foot operation
Gear ratio:
1st:
43/17 (2.529)
2nd:
31/19 (1.632)
3rd:
30/25 (1.200)
4th:
24/25 (0.960)
5th:
22/28 (0.786)

Chassis:
Frame type:
Double cradle
Caster angle:
28.83 °
Trail:
131.0 mm (5.16 in)

Front tire:
Type:
Tubeless
Size:
150/80-16M/C 71H
Manufacturer/model:
BRIDGESTONE/G705G

Rear tire:
Type:
Tubeless
Size:
150/90B15M/C 74H
Manufacturer/model:
BRIDGESTONE/G702G

Loading:
Maximum load:
201 kg (443 lb)
(Total weight of rider, passenger, cargo and accessories)

Tire air pressure (measured on cold tires):
Loading condition:
0–90 kg (0–198 lb)
Front:
250 kPa (36 psi) (2.50 kgf/cm²)
Rear:
250 kPa (36 psi) (2.50 kgf/cm²)
Loading condition:
90–201 kg (198–443 lb)
Front:
250 kPa (36 psi) (2.50 kgf/cm²)
Rear:
280 kPa (41 psi) (2.80 kgf/cm²)

Front wheel:
Wheel type:
Cast wheel
Rim size:
16M/C x MT3.50

Rear wheel:
Wheel type:
Cast wheel
Rim size:
15M/C x MT4.00

Front brake:
Type:
Dual disc brake
Operation:
Right hand operation
Recommended fluid:
DOT 4

Rear brake:
Type:
Single disc brake
Operation:
Right foot operation
Recommended fluid:
DOT 4

Front suspension:
Type:
Telescopic fork
Spring/shock absorber type:
Coil-air spring/oil damper
Wheel travel:
140.0 mm (5.51 in)

Rear suspension:
Type:
Swingarm (link suspension)
Spring/shock absorber type:
Coil-air spring/oil damper
Wheel travel:
105.0 mm (4.13 in)

Electrical system:
Ignition system:
Transistorized coil ignition (digital)
Charging system:
AC magneto

Battery:
Model:
YTX20L-BS

Voltage, capacity:
12 V, 18.0 Ah

Headlight:
Bulb type:
Halogen bulb

Bulb voltage, wattage × quantity:
Headlight:
12 V, 60 W/55.0 W × 1
Tail/brake light:
12 V, 5.0 W/21.0 W × 1
Front turn signal light:
12 V, 21.0 W × 2
Rear turn signal light:
12 V, 21.0 W × 2
Auxiliary light:
12 V, 4.0 W × 1
Meter lighting:
LED
Neutral indicator light:
LED
High beam indicator light:
LED
Oil level warning light:
LED
Turn signal indicator light:
LED
Coolant temperature warning light:
LED
Engine trouble warning light:
LED
Overdrive indicator light:
LED
Cruise control “SET” indicator light:
LED
Cruise control “ON” indicator light:
LED

Fuses:
Main fuse:
30.0 A
Headlight fuse:
15.0 A
Signaling system fuse:
15.0 A
Ignition fuse:
10.0 A
Radiator fan fuse:
10.0 A
Carburetor heater fuse:
15.0 A
Cruise control fuse:
10.0 A
Auxiliary DC connector fuse:
5.0 A
Backup fuse:
10.0 A

EAU26351

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.

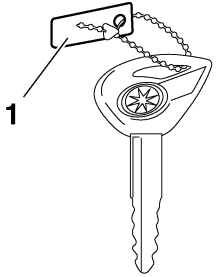
KEY IDENTIFICATION NUMBER:

VEHICLE IDENTIFICATION NUMBER:

MODEL LABEL INFORMATION:

EAU26381

Key identification number

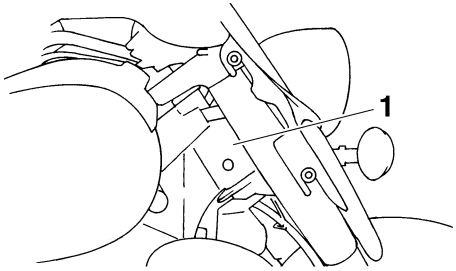


1. Key identification number

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.

EAU26400

Vehicle identification number



1. 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.

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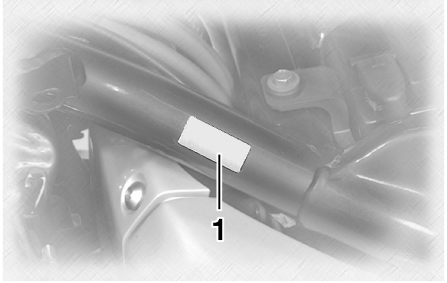
EAU26470

Model label



1. Model label

The model label is affixed to the frame under the rider seat. (See page 3-12.) Record the information on this label in the space provided. This information will be needed when ordering spare parts from a Yamaha dealer.

EAU26570

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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YAMAHA MOTOR CO., LTD.

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