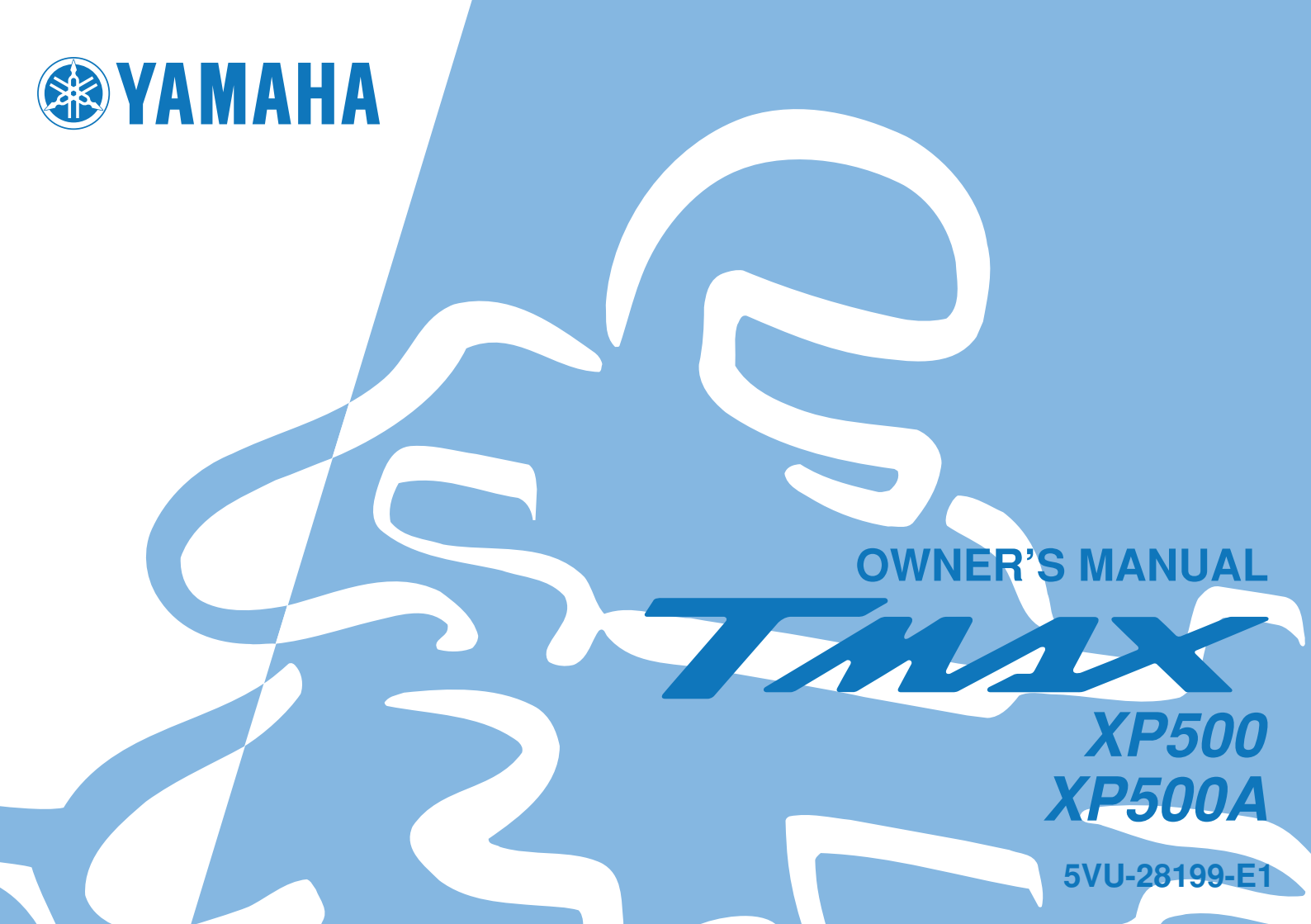
YAMAHA



OWNER'S MANUAL

TMAX

XP500
XP500A

5VU-28199-E1

DECLARATION of CONFORMITY

We

Company: MORIC CO., LTD.
Address: 1450-6 Mori Mori-Machi Shuchi-gun Shizuoka 437-0292 Japan

Hereby declare that the product:

Kind of equipment: IMMOBILIZER

Type-designation:
5SL-00, 5VS-00, 5VX-00, 3HT-00, 5UX-00, 5UX-10, 5KS-00 and 5KS-10

is in compliance with following norm(s) or documents:

R&TTE Directive(1999/5/EC)
EN300 330-2 v1.1.1(2001-6), EN60950(2000)
Two or Three-Wheel Motor Vehicles Directive(97/24/EC: Chapter 8, EMC)

Place of issue: Shizuoka, Japan

Date of issue: Aug. 1st 2002

Kazuji Kawai K. Kawai

representative name and signature

INTRODUCTION

EAU10110

Welcome to the Yamaha world of motorcycling!
As the owner of the XP500, 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 XP500. The owner's manual does not only instruct you in how to operate, inspect and maintain your scooter, 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 scooter 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

EAU34110

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 scooter operator, a bystander, or a person inspecting or repairing the scooter.**
CAUTION:	**A CAUTION indicates special precautions that must be taken to avoid damage to the scooter.**
NOTE:	A NOTE provides key information to make procedures easier or clearer.

NOTE:

- This manual should be considered a permanent part of this scooter and should remain with it even if the scooter 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 scooter and this manual. If you have any questions concerning this manual, please consult your Yamaha dealer.

EWA12410

⚠ WARNING

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

IMPORTANT MANUAL INFORMATION

EAU10200

XP500/XP500A
OWNER'S MANUAL

TABLE OF CONTENTS

⚠ SAFETY INFORMATION

EAU10260

SCOOTERS 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 SCOOTER.

HE OR SHE SHOULD:

- OBTAIN THOROUGH INSTRUCTIONS FROM A COMPETENT SOURCE ON ALL ASPECTS OF SCOOTER 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 scooter is designed to carry the operator and passenger.
- The failure of motorists to detect and recognize scooters in traffic is the predominating cause of automobile/scooter accidents. Many accidents have been caused by an automobile driver who did not see the scooter. 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 scooter accidents to occur.
  - Ride where other motorists can see you. Avoid riding in another motorist's blind spot.
- Many accidents involve inexperienced operators. In fact, many operators who have been involved in accidents do not even have a current driver's license.
  - Make sure that you are qualified and that you only lend your scooter 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 scooter where there is no traffic until you have become thoroughly familiar with the scooter and all of its controls.
- Many accidents have been caused by error of the scooter 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 footboard during operation to maintain control of the scooter.
  - The passenger should always hold onto the operator, the seat strap or grab bar, if equipped, with both hands and keep both feet on the passenger footrests.
  - 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 scooter is designed for on-road use only. It is not suitable for off-road use.

Protective apparel

The majority of fatalities from scooter 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, substantial shoes, 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 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 above precautions.

Modifications

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

Loading and accessories

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

Loading

The total weight of the operator, passenger, accessories and cargo must not exceed the maximum load limit of XP500 190 kg (419 lb) XP500A 185 kg (408 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 scooter as possible. Make sure to distribute the weight as evenly as possible on both sides of the scooter to minimize imbalance or instability.
- Shifting weights can create a sudden imbalance. Make sure that accessories and cargo are securely attached to the scooter before riding. Check accessory mounts and cargo restraints frequently.
- Never attach any large or heavy items to the handlebar, front fork, or front fender. Such items can create unstable handling or a slow steering response.

Accessories

Genuine Yamaha accessories have been specifically designed for use on this scooter. 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 scooter. 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 scooter due to aerodynamic effects. Wind may attempt to lift the scooter, or the scooter 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 operator and may limit control ability, therefore, such accessories are not recommended.
- Use caution when adding electrical accessories. If electrical acces-

sories exceed the capacity of the scooter'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 scooter in an area that has adequate ventilation.
- Always turn the engine off before leaving the scooter unattended and remove the key from the main switch. When parking the scooter, note the following:
  - The engine and exhaust system may be hot, therefore, park the scooter in a place where pedestrians or children are not likely to touch these hot areas.
  - Do not park the scooter on a slope or soft ground, otherwise it may fall over.
  - Do not park the scooter near a flammable source (e.g., a kerosene heater, or near an open flame), otherwise it could catch fire.
- 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.

EAU10371

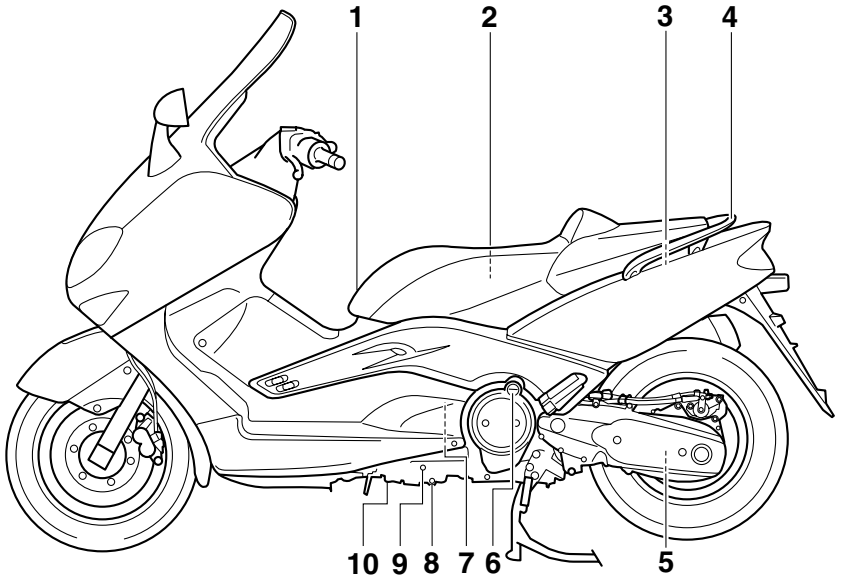
Further safe-riding points

- Be sure to signal clearly when making turns.
- Braking can be extremely difficult on a wet road. Avoid hard braking, because the scooter could slide. Apply the brakes slowly when stopping on a wet surface.
- Slow down as you approach a corner or turn. Once you have completed a turn, accelerate slowly.
- Be careful when passing parked cars. A driver might not see you and open a door in your path.
- Railroad crossings, streetcar rails, iron plates on road construction sites, and manhole covers become extremely slippery when wet. Slow down and cross them with caution. Keep the scooter upright, otherwise it could slide out from under you.
- The brake pads could get wet when you wash the scooter. After washing the scooter, check the brakes before riding.

- Always wear a helmet, gloves, trousers (tapered around the cuff and ankle so they do not flap), and a bright colored jacket.
- Do not carry too much luggage on the scooter. An overloaded scooter is unstable.

EAU10410

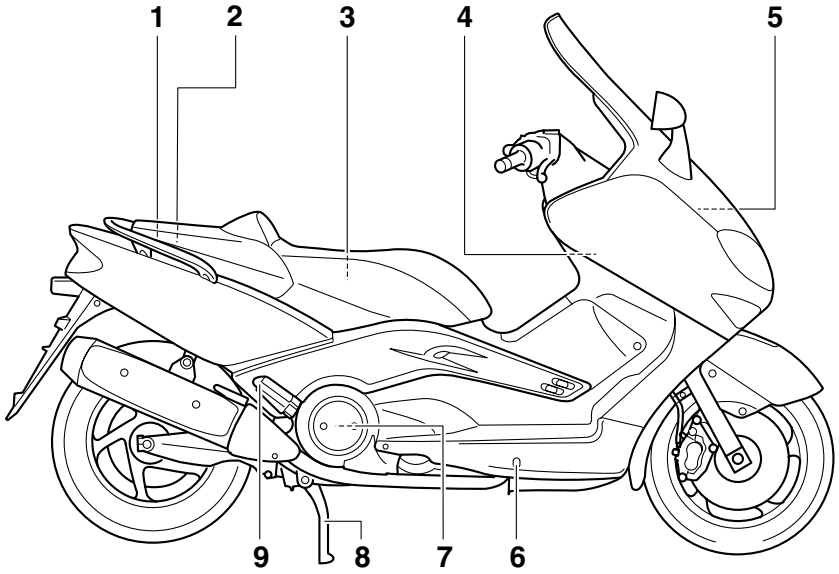
Left view



1. Fuel tank cap (page 3-13)
2. Rear storage compartment (page 3-17)
3. Helmet holder (page 3-16)
4. Grab bar (page 5-2)
5. Chain drive oil filler cap (page 6-13)
6. Engine oil filler cap (page 6-10)
7. V-belt air filter element (left)
8. Engine oil drain bolt (page 6-10)
9. Engine oil level check window (page 6-10)
10. Oil filter cartridge (page 6-10)

EAU10420

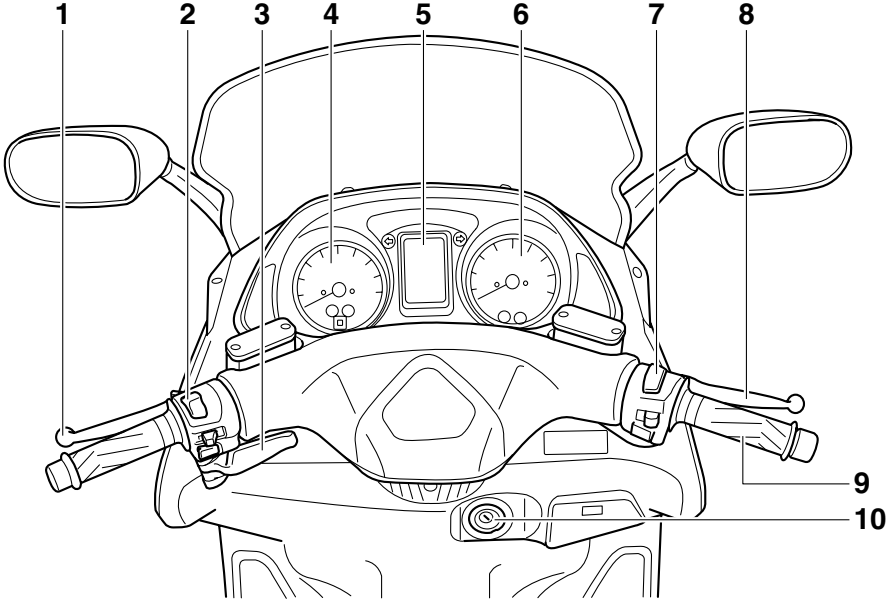
Right view



1. Battery (page 6-27)
2. Fuses (page 6-29)
3. Owner's tool kit (page 6-1)
4. Front storage compartment (page 3-17)
5. Air filter element (page 6-16)
6. Coolant level check window (page 6-15)
7. V-belt air filter element (right)
8. Centerstand (page 6-25)
9. Passenger footrest

EAU10430

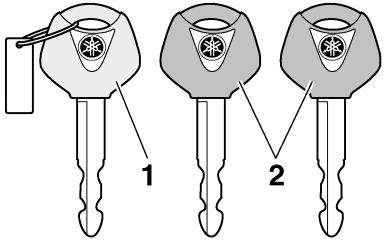
Controls and instruments



1. Rear brake lever (page 3-11)
2. Left handlebar switches (page 3-9)
3. Rear brake lock lever (page 3-11)
4. Speedometer (page 3-5)
5. Multi-function display (page 3-5)
6. Tachometer (page 3-5)
7. Right handlebar switches (page 3-9)
8. Front brake lever (page 3-11)
9. Throttle grip (page 6-18)
10. Main switch/steering lock (page 3-2)

EAU10972

Immobilizer system



1. Code re-registering key (red bow)
2. Standard keys (black bow)

This vehicle is equipped with an immobilizer system to help prevent theft by re-registering codes in the standard keys. This system consists of the following.

- a code re-registering key (with a red bow)
- two standard keys (with a black bow) that can be re-registered with new codes
- a transponder (which is installed in the code re-registering key)
- an immobilizer unit
- an ECU
- an immobilizer system indicator light (See page 3-3.)

The key with the red bow is used to register codes in each standard key. Since re-registering is a difficult process, take the vehicle along with all three keys to a Yamaha dealer to have them re-registered. Do not use the key with the red bow for driving. It should only be used for re-registering the standard keys. Always use a standard key for driving.

ECA11820

CAUTION:

- **DO NOT LOSE THE CODE RE-REGISTERING KEY! CONTACT YOUR DEALER IMMEDIATELY IF IT IS LOST! If the code re-registering key is lost, registering new codes in the standard keys is impossible. The standard keys can still be used to start the vehicle, however if code re-registering is required (i.e., if a new standard key is made or all keys are lost) the entire immobilizer system must be replaced. Therefore, it is highly recommended to use either standard key and keep the code re-registering key in a safe place.**
- **Do not submerse any key in water.**
- **Do not expose any key to excessively high temperatures.**
- **Do not place any key close to magnets (this includes, but not limited to, products such as speakers, etc.).**
- **Do not place heavy items on any key.**
- **Do not grind any key or alter its shape.**
- **Do not disassemble the plastic part of any key.**
- **Do not put two keys of any immobilizer system on the same key ring.**
- **Keep the standard keys as well as keys of other immobilizer systems away from this vehicle's code re-registering key.**
- **Keep other immobilizer system**

keys away from the main switch as they may cause signal interference.

Main switch/steering lock

EAU10471

The main switch/steering lock controls the ignition and lighting systems, and is used to lock the steering.

NOTE:

Be sure to use the standard key (black bow) for regular use of the vehicle. To minimize the risk of losing the code re-registering key (red bow), keep it in a safe place and only use it for code re-registering.

EAU34121

ON

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

NOTE:

The headlights come on automatically when the engine is started and stay on until the key is turned to “OFF” or the sidestand is moved down.

EAU10660

OFF

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

EAU10680

LOCK

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

To lock the steering

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

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

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".

EAU33491

P⋜ (Parking)

The steering is locked, and the taillights and auxiliary lights are on. The hazard light and turn signal lights can be turned on, but all other electrical systems are off. The key can be removed.
The steering must be locked before the key can be turned to "P⋜".

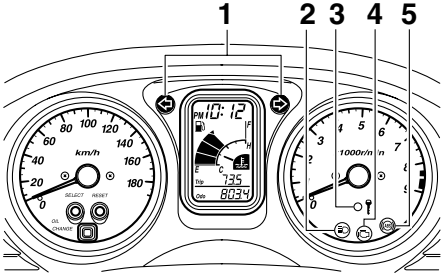
ECA11020

CAUTION:

Do not use the parking position for an extended length of time, otherwise the battery may discharge.

EAU11002

Indicator and warning lights



1. Turn signal indicator lights "⇦" and "⇨"
2. High beam indicator light "≣○"
3. Immobilizer system indicator light "🔑"
4. Engine trouble warning light "🔧"
5. Anti-lock Brake System (ABS) warning light "(ABS)" (for ABS models)

EAU11030

Turn signal indicator lights "⇦" and "⇨"

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

EAU11080

High beam indicator light "≣○"

This indicator light comes on when the

high beam of the headlight is switched on.

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.

EAU11551

ABS warning light “” (for ABS models)

ECA10830

CAUTION:

If the ABS warning light comes on or flashes while riding, the ABS may be defective. If this occurs, have a Yamaha dealer check the electrical circuit.

See page 3-12 for an explanation of the ABS.

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

EWA11350

WARNING

When the ABS warning light comes on or flashes while riding, the brake system reverts to conventional braking. Therefore, be careful not to cause the wheel to lock during emergency braking.

NOTE:

The ABS warning light may come on while pushing the start switch and while accelerating the engine with the scooter on its centerstand, but this does not indicate a malfunction.

EAU26872

Immobilizer system indicator light “ ”

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

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

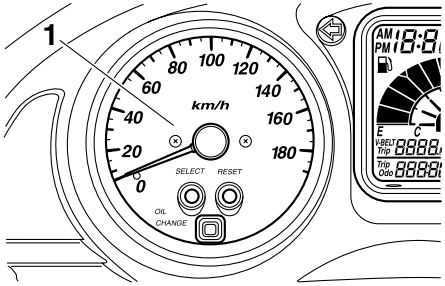
When the key is turned to “OFF” and 30 seconds have passed, the indicator light will start flashing indicating the immobilizer system is enabled. After 24 hours have passed, the indicator light will stop flashing, however the immobilizer system is still enabled.

NOTE:

This model is also equipped with a self-diagnosis device for the immobilizer system. If the immobilizer system is defective, the indicator will start flashing and the multi-function display will indicate an error code when the key is turned to “ON”. (See “Self-diagnosis device” on page 3-5 for details.)

EAU11601

Speedometer

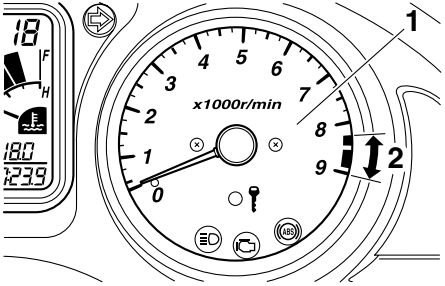


1. Speedometer

The speedometer shows the riding speed.
When the key is turned to “ON”, the speedometer needle will sweep once across the speed range and then return to zero in order to test the electrical circuit.

EAU11872

Tachometer



1. Tachometer
2. Tachometer red zone

The electric tachometer allows the rider to monitor the engine speed and keep it within the ideal power range.
When the key is turned to “ON”, the tachometer needle will sweep once across the r/min range and then return to zero r/min in order to test the electrical circuit.

ECA10031

CAUTION:

Do not operate the engine in the tachometer red zone.
Red zone: 8250 r/min and above

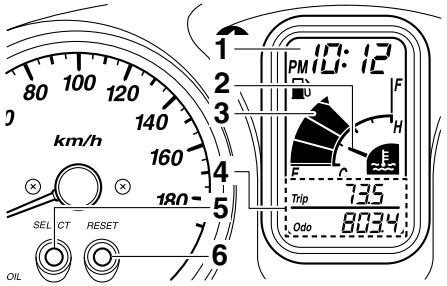
EAU33516

Multi-function display

EWA12311

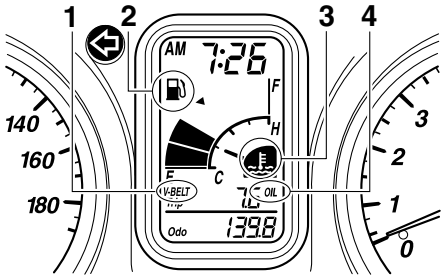
WARNING

Be sure to stop the vehicle before making any setting changes to the multi-function display.



1. Clock
2. Coolant temperature meter
3. Fuel meter
4. Odometer/tripmeters
5. “SELECT” button
6. “RESET” button

3



1. V-belt replacement indicator "V-BELT"
2. Fuel level warning indicator "⛽"
3. Coolant temperature warning indicator "🌡"
4. Oil change indicator "OIL"

The multi-function display is equipped with the following:

- a fuel meter
- a coolant temperature meter
- 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 since the bottom segment of the fuel meter and fuel level warning indicator started flashing)
- a self-diagnosis device
- a clock
- an oil change indicator
- a V-belt replacement indicator

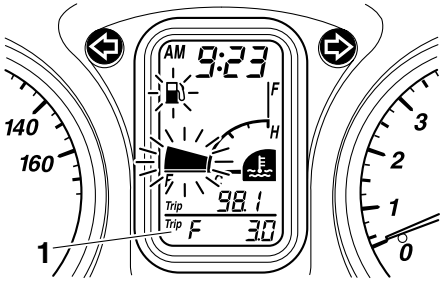
NOTE:

- Be sure to turn the key to "ON" before using the "SELECT" and "RESET" buttons.
- When the key is turned to "ON", all of the display segments of the multi-function display will appear one after the other and then disappear, in order to test the electrical circuit.

Odometer and tripmeter modes

Pushing the "SELECT" button switches the display between the odometer mode "ODO" and the tripmeter modes "TRIP" in the following order:
ODO → TRIP (top) → TRIP (bottom) → ODO

When approximately 2.8 L (0.74 US gal) (0.62 Imp.gal) of fuel remains in the fuel tank, the bottom segment of the fuel meter and fuel level warning indicator will start flashing, and the 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 (top) → TRIP (bottom) → ODO → TRIP F



1. Fuel reserve tripmeter

To reset a tripmeter, select it by pushing the "SELECT" button until "TRIP" or "TRIP F" begins flashing ("TRIP" or "TRIP F" will only flash for five seconds). While "TRIP" or "TRIP F" is

flashing, push the “RESET” button for at least one second. If you do not reset the fuel reserve tripmeter manually, it will reset itself automatically and the display will return to the prior mode after refueling and traveling 5 km (3 mi).

NOTE:

The display cannot be changed back to “TRIP F” after pushing the “RESET” button.

Fuel meter

With the key in the “ON” position, 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 fuel level reaches the bottom segment near “E”, the fuel level warning indicator and the bottom segment will flash. Refuel as soon as possible.

Coolant temperature meter

With the key in the “ON” position, the coolant temperature meter indicates the temperature of the coolant. The coolant temperature varies with changes in the weather and engine load. If the top segment and coolant temperature warning indicator flash, stop the vehicle and let the engine cool. (See page 6-33.)

ECA10020

CAUTION:

Do not operate the engine if it is overheated.

Oil change indicator “OIL”

This indicator flashes at the initial 1000 km (600 mi), then at 5000 km (3000 mi) and every 5000 km (3000 mi) thereafter to indicate that the engine oil should be changed.

After changing the engine oil, reset the oil change indicator. (See page 6-10.)

If the engine oil is changed before the oil change indicator comes on (i.e. before the periodic oil change interval has been reached), the indicator must be reset after the oil change for the next periodic oil change to be indicated at the correct time. (See page 6-10.)

The electrical circuit of the indicator can be checked according to the following procedure.

1. Set the engine stop switch to “ ” and turn the key to “ON”.
2. Check that the indicator comes on for a few seconds and then goes off.
3. If the indicator does not come on, have a Yamaha dealer check the electrical circuit.

NOTE:

The oil change indicator may flash when the engine is revved with the scooter on the centerstand, but this does not indicate a malfunction.

V-belt replacement indicator “V-BELT”

This indicator flashes every 20000 km (12500 mi) when the V-belt needs to be

replaced.
The electrical circuit of the indicator can be checked according to the following procedure.

1. Turn the key to "ON" and make sure that the engine stop switch is set to "○".
2. If the indicator does not come on, have a Yamaha dealer check the electrical circuit.

Self-diagnosis device
This model is equipped with a self-diagnosis device for various electrical circuits.
If any of those circuits are defective, the multi-function display will indicate a two-digit error code (e.g., 12, 13, 14).
If the multi-function display indicates such an error code, note the code number, and then have a Yamaha dealer check the vehicle.

ECA11790

CAUTION:

If the multi-function display indicates an error code, the vehicle should be checked as soon as possible in order to avoid engine damage.

This model is also equipped with a self-diagnosis device for the immobilizer system.
If any of the immobilizer system circuits are defective, the immobilizer system indicator light will flash, and then the multi-function display will indicate a two-digit error code (e.g., 51, 52, 53) when the key is turned to "ON".

NOTE:

If the multi-function display indicates error code 52, this could be caused by transponder interference. If this error appears, try the following.

1. Use the code re-registering key to start the engine.

NOTE:

Make sure there are no other immobilizer keys close to the main switch, and do not keep more than one immobilizer key on the same key ring! Immobilizer system keys may cause signal interference, which may prevent the engine from starting.

2. If the engine starts, turn it off, and try starting the engine with the standard keys.
3. If one or both of the standard keys do not start the engine, take the vehicle, the code re-registering key and both standard keys to a Yamaha dealer and have the standard keys re-registered.

If the multi-function display indicates any error codes, note the code number, and then have a Yamaha dealer check the vehicle.

Clock mode
To set the clock:

1. Push the "SELECT" button and "RESET" button together 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 and then release it to start the clock.

EAU12330

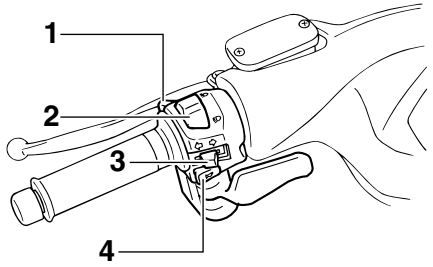
Anti-theft alarm (optional)

This model can be equipped with an optional anti-theft alarm by a Yamaha dealer. Contact a Yamaha dealer for more information.

EAU12343

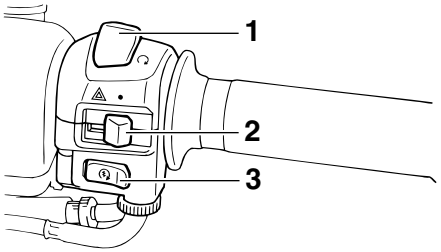
Handlebar switches

Left



1. Pass switch “ ”
2. Dimmer switch “ / ”
3. Turn signal switch “ / ”
4. Horn switch “ ”

Right



1. Engine stop switch "○/⊠"
2. Hazard switch "⚠"
3. Start switch "ⓢ"

EAU12360

Pass switch "PASS"

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.

EAU12720

Start switch "ⓢ"

With the sidestand up, push this switch while applying the front or rear brake to crank the engine with the starter.

ECA10050

CAUTION:

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

EAU12731

Hazard switch "⚠"

With the key in the "ON" or "P≷" position, use this switch to turn on the hazard light (simultaneous flashing of all turn signal lights).

The hazard light is used in case of an emergency or to warn other drivers when your vehicle is stopped where it might be a traffic hazard.

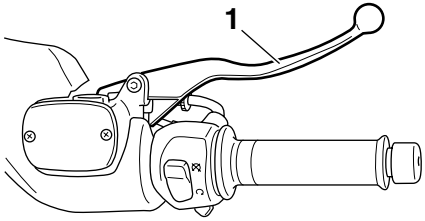
ECA10060

CAUTION:

Do not use the hazard light for an extended length of time, otherwise the battery may discharge.

EAU12900

Front brake lever

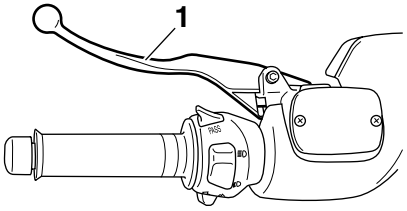


1. Front brake lever

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

EAU12950

Rear brake lever

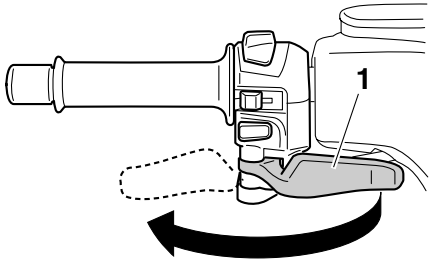


1. Rear brake lever

The rear brake lever is located on the left handlebar grip. To apply the rear brake, pull this lever toward the handlebar grip.

EAU12962

Rear brake lock lever



1. Rear brake lock lever

This vehicle is equipped with a rear brake lock lever to prevent the rear wheel from moving while stopped at traffic signals, railroad crossings, etc.

To lock the rear wheel

Push the rear brake lock lever to the left until it snaps into place.

To unlock the rear wheel

Push the rear brake lock lever back to the original position.

NOTE:

- Be sure to check that the rear wheel does not move when the rear brake lock lever is applied.
- To provide secure locking of the

3

rear wheel, apply the rear brake lever first before moving the rear brake lock lever to the left.

EWA12361

⚠ WARNING

Never move the rear brake lock lever to the left while the vehicle is moving, otherwise loss of control or an accident may result. Make sure that the vehicle is stopped before moving the rear brake lock lever to the left.

EAU12991

ABS (for ABS models)

The Yamaha ABS (Anti-lock Brake System) features a dual electronic control system, which acts on the front and rear brakes independently. The ABS securely controls wheel lockup during emergency braking on changing road surfaces and under various weather conditions, thereby maximizing tire adhesion and performance while providing a smooth braking action. The ABS is monitored by an ECU (Electronic Control Unit), which will have recourse to manual braking if a malfunction occurs.

EWA10090

⚠ WARNING

- **The ABS performs best on long braking distances.**
- **On certain (rough or gravel) roads, the braking distance may be longer with than without the ABS. Therefore, always keep a sufficient distance to the vehicle ahead to match the riding speed.**

NOTE:

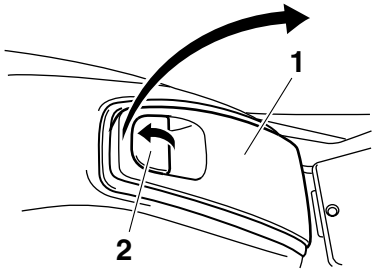
- When the ABS is activated, the brakes are operated in the usual way. A pulsating action may be felt at the brake levers, but this does not indicate a malfunction.
- This ABS has a test mode which allows the owner to experience the pulsating at the brake levers when the ABS is operating. However, special tools are required, so please consult your Yamaha dealer when performing this test.

EAU13173

Fuel tank cap

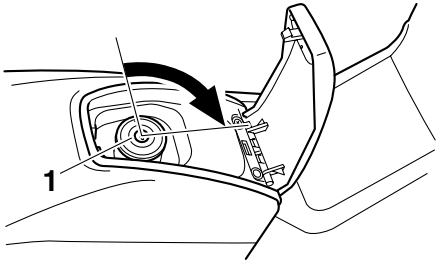
To remove the fuel tank cap

1. Open the lid by pulling the lever up.



1. Lid
2. Opening lever

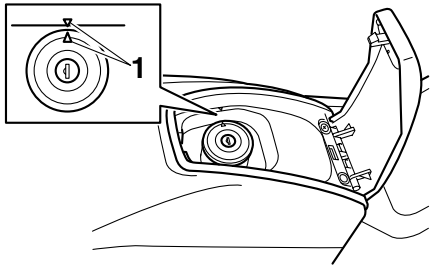
2. Insert the key into the lock and turn it clockwise. The lock will be released and the fuel tank cap can be removed.



1. Fuel tank cap

To install the fuel tank cap

1. Align the match marks, insert the fuel tank cap into the tank opening, and then push down on the cap.



1. Match marks

2. Turn the key counterclockwise to the original position, and then remove it.
3. Close the lid.

EWA11260

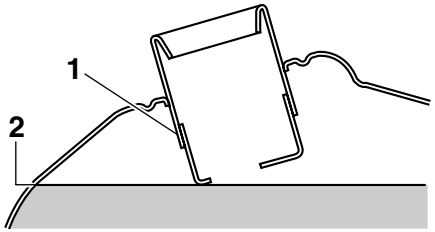
⚠ WARNING

Make sure that the fuel tank cap is properly installed and locked in place before riding the scooter.

3

Fuel

EAU13210



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.

EAU33520

Recommended fuel:
REGULAR UNLEADED GASOLINE ONLY
Fuel tank capacity:
14.0 L (3.70 US gal) (3.08 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.

EAU13440

Catalytic converter

This vehicle is equipped with a catalytic converter in the muffler.

EWA10860

⚠ WARNING

The exhaust system is hot after operation. Make sure that the exhaust system has cooled down before doing any maintenance work.

ECA10700

CAUTION:

The following precautions must be observed to prevent a fire hazard or other damages.

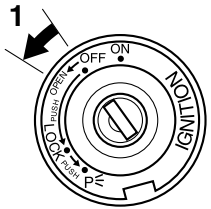
- **Use only unleaded gasoline. The use of leaded gasoline will cause unrepairable damage to the catalytic converter.**
- **Never park the vehicle near possible fire hazards such as grass or other materials that easily burn.**
- **Do not allow the engine to idle too long.**

EAU13931

Seat

To open the seat

1. Place the scooter on the center-stand.
2. Insert the key into the main switch, and then turn it counterclockwise.

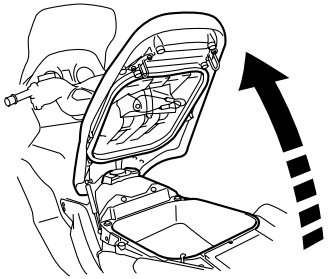


1. Open.

NOTE:

Do not push inward when turning the key.

3. Fold the seat up.



To close the seat

1. Fold the seat down, and then push it down to lock it in place.
2. Remove the key from the main switch if the scooter will be left unattended.

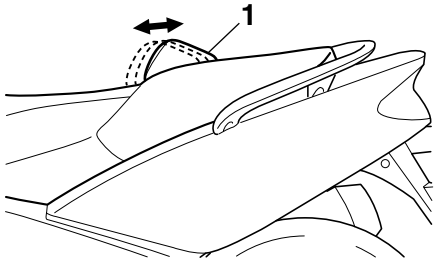
NOTE:

Make sure that the seat is properly secured before riding.

EAU14270

Adjusting the rider backrest

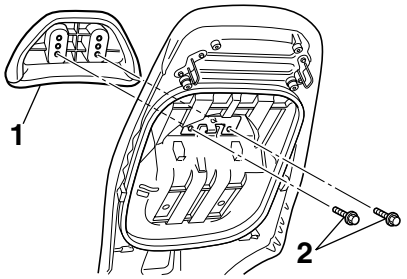
The rider backrest can be adjusted to the three different positions shown.



1. Rider backrest

Adjust the backrest as follows.

1. Open the seat. (See page 3-15.)
2. Remove the backrest bolts.

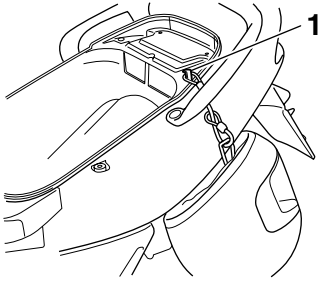


1. Rider backrest
2. Bolt

3. Slide the backrest forward or backward to the desired position.
4. Install and securely tighten the backrest bolts.
5. Close the seat.

EAU14340

Helmet holder



1. Helmet holder

The helmet holder is located under the seat. A helmet holding cable is provided beside the owner's tool kit to secure a helmet to the helmet holder.

To secure a helmet to the helmet holder

1. Open the seat. (See page 3-15.)
2. Pass the helmet holding cable through the buckle on the helmet strap as shown, and then hook the cable loop over the helmet holder.
3. Securely close the seat.

EWA10160

⚠ WARNING

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

To release the helmet from the helmet holder

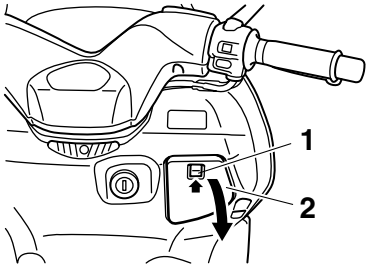
Open the seat, remove the helmet holding cable from the helmet holder and the helmet, and then close the seat.

EAU14502

Storage compartments

Front storage compartment

To open the front storage compartment, slide the lever up, and then pull on the lever.



1. Storage compartment opening lever
2. Lid

To close the front storage compartment, push the lid into the original position.

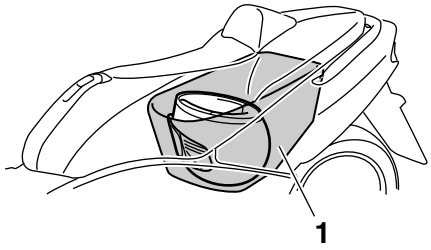
EWA11160

⚠ WARNING

Do not store heavy items in this compartment.

Rear storage compartment

A helmet can be stored in the rear storage compartment under the seat. (See page 3-15.) To store a helmet in the rear storage compartment, place the helmet upside-down with the front facing forward.



1. Rear storage compartment

NOTE:

- Some helmets cannot be stored in the rear storage compartment because of their size or shape.
- Do not leave your scooter unattended with the seat open.

ECA10080

CAUTION:

Keep the following points in mind when using the storage compartment.

- **Since the storage compartment accumulates heat when exposed to the sun, do not store anything susceptible to heat inside it.**
- **To avoid humidity from spreading through the storage compartment, wrap wet articles in a plastic bag before storing them in the compartment.**
- **Since the storage compartment may get wet while the scooter is being washed, wrap any articles stored in the compartment in a plastic bag.**
- **Do not keep anything valuable or breakable in the storage compartment.**

ECA11270

CAUTION:

Do not leave the seat open for an extended period of time, otherwise the light may cause the battery to discharge.

EWA11241

⚠ WARNING

- **Do not exceed the load limit of**

5 kg (11 lb) for the rear storage compartment.
- **Do not exceed the maximum load of XP500 190 kg (419 lb) XP500A 185 kg (408 lb) for the vehicle.**

EAU15090

Shock absorber

EWA10220

⚠ WARNING

This shock absorber contains highly pressurized nitrogen gas. For proper handling, read and understand the following information before handling the shock absorber. The manufacturer cannot be held responsible for property damage or personal injury that may result from improper handling.
- **Do not tamper with or attempt to open the gas cylinder.**
- **Do not subject the shock absorber to an open flame or other high heat sources, otherwise it may explode due to excessive gas pressure.**
- **Do not deform or damage the gas cylinder in any way, as this will result in poor damping performance.**
- **Always have a Yamaha dealer service the shock absorber.**

EAU15300

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.

EAU15371

Ignition circuit cut-off system

The ignition circuit cut-off system (comprising the sidestand switch and brake light switches) has the following functions.

- It prevents starting when the sidestand is up, but neither brake is applied.
- It prevents starting when either brake is applied, but the sidestand is still down.
- It cuts the running engine when the sidestand is moved down.

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

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. Keep the front or rear brake applied.
5. Push the start switch.

Does the engine start?

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

With the engine still off:
6. Move the sidestand up.
7. Keep the front or rear brake applied.
8. Push the start switch.

Does the engine start?

YES **NO** → The brake switch may be defective. **The scooter should not be ridden** until checked by a Yamaha dealer.

With the engine still running:
9. Move the sidestand down.

Does the engine stall?

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

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

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

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.

PRE-OPERATION CHECKS

EAU15603

Pre-operation check list

ITEM	CHECKS	PAGE
Fuel	• Check fuel level in fuel tank. • Refuel if necessary. • Check fuel line for leakage.	3-14
Engine oil	• Check oil level in engine. • If necessary, add recommended oil to specified level. • Check vehicle for oil leakage.	6-10
Chain drive 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.	6-15
Front 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.	6-22, 6-23
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.	6-22, 6-23
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, 6-24

ITEM	CHECKS	PAGE
Wheels and tires	• Check for damage. • Check tire condition and tread depth. • Check air pressure. • Correct if necessary.	6-19, 6-21
Brake levers	• Make sure that operation is smooth. • Lubricate lever pivoting points if necessary.	6-25
Centerstand, sidestand	• Make sure that operation is smooth. • Lubricate pivots if necessary.	6-25
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

EAU15970
EWA11250

⚠ 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.**
- **For safety, always start the engine with the centerstand down.**
- **When the centerstand is down and the engine is idling, keep your hands and feet away from the rear wheel.**

EAU36510

Starting the engine

ECA10250

CAUTION:

See page 5-4 for engine break-in instructions prior to operating the vehicle for the first time.

In order for the ignition circuit cut-off system to enable starting, the sidestand must be 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 key to "ON" and make sure that the engine stop switch is set to "○".

ECA15020

CAUTION:

The following warning lights, indicator light and indicators should come on for a few seconds, then go off.

- **Engine trouble warning light**
- **ABS warning light (for ABS models)**
- **Immobilizer system indicator light**
- **V-belt replacement indicator**
- **Oil change indicator**

If a warning light, indicator light or indicator does not go off, see page 3-3 or 3-5 for the corresponding warning light, indicator light or indicator circuit check.

2. Close the throttle completely.
3. Start the engine by pushing the start switch while applying the front or rear brake.

NOTE:

If the engine does not 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.

ECA11040

CAUTION:

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

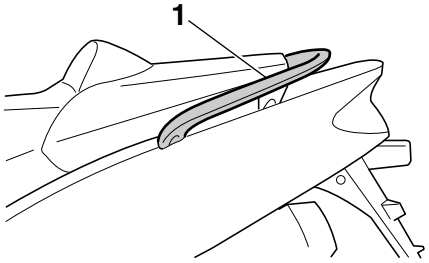
EAU16760

Starting off

NOTE:

Before starting off, allow the engine to warm up.

1. While pulling the rear brake lever with your left hand and holding the grab bar with your right hand, push the scooter off the centerstand.

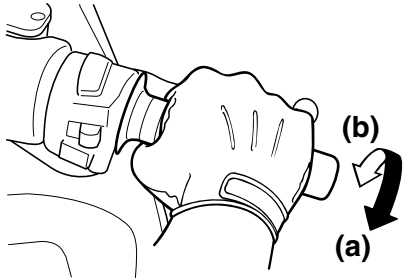


1. Grab bar

2. Sit astride the seat, and then adjust the rear view mirrors.
3. Switch the turn signal on.
4. Check for oncoming traffic, and then slowly turn the throttle grip (on the right) in order to take off.
5. Switch the turn signal off.

EAU16780

Acceleration and deceleration



The speed can be adjusted by opening and closing the throttle. To increase the speed, turn the throttle grip in direction (a). To reduce the speed, turn the throttle grip in direction (b).

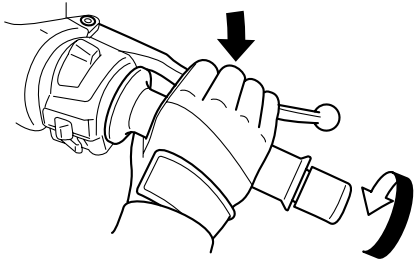
5

EAU16791

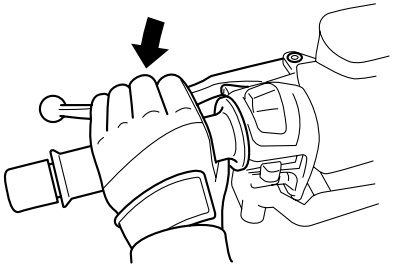
Braking

1. Close the throttle completely.
2. Apply both front and rear brakes simultaneously while gradually increasing the pressure.

Front



Rear



EWA10300

WARNING

- **Avoid braking hard or suddenly (especially when leaning over to one side), otherwise the scooter may skid or overturn.**
- **Railroad crossings, streetcar rails, iron plates on road construction sites, and manhole covers become extremely slippery when wet. Therefore, slow down when approaching such areas and cross them with caution.**
- **Keep in mind that braking on a wet road is much more difficult.**
- **Ride slowly down a hill, as braking downhill can be very difficult.**

EAU16820

Tips for reducing fuel consumption

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

- Avoid high engine speeds during acceleration.
- 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.

EAU36530

0–1000 km (0–600 mi)

Avoid prolonged operation above 4000 r/min.

1000–1600 km (600–1000 mi)

Avoid prolonged operation above 6000 r/min.

ECA11281

CAUTION:

After 1000 km (600 mi) of operation, the engine 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.

ECA10310

CAUTION:

- **Keep the engine speed out of the tachometer red zone.**
- **If any engine trouble should occur during the engine break-in period, immediately have a Yamaha dealer check the vehicle.**

EAU17212

Parking

When parking, stop the engine, and then remove the key from the main switch.

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.**

ECA10380

CAUTION:

Never park in an area where there are fire hazards such as grass or other flammable materials.

EAU17280

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.

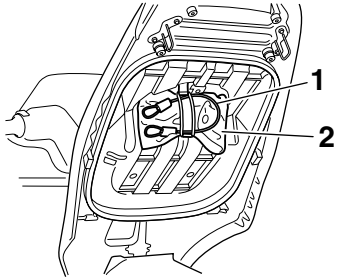
EWA10330

⚠ WARNING

This scooter is designed for use on paved roads only. If this scooter is operated in abnormally dusty, muddy or wet conditions, the air filter element should be cleaned or replaced more frequently, otherwise rapid engine wear may result. Consult a Yamaha dealer for proper maintenance intervals.

EAU17390

Owner's tool kit



1. Helmet holding cable
2. Owner's tool kit

The owner's tool kit is located under the seat. (See page 3-15.)

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	*	**V-belt case air filter elements**	• Clean.		√		√		
			• Replace.			√		√	
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					
9		**Rear brake lock**	• Check operation. • Adjust.	√	√	√	√	√	√

NO.		ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING (× 1000 km)					ANNUAL CHECK
				1	10	20	30	40	
10	*	**Brake hoses**	• Check for cracks or damage.		√	√	√	√	√
			• Replace.	Every 4 years					
11	*	**Wheels**	• Check runout and for damage.		√	√	√	√	
12	*	**Tires**	• Check tread depth and for damage. • Replace if necessary. • Check air pressure. • Correct if necessary.		√	√	√	√	√
13	*	**Wheel bearings**	• Check bearing for looseness or damage.		√	√	√	√	
14	*	**Steering bearings**	• Check bearing play and steering for roughness.	√	√	√	√	√	
			• Lubricate with lithium-soap-based grease.	Every 20000 km					
15	*	**Chassis fasteners**	• Make sure that all nuts, bolts and screws are properly tightened.		√	√	√	√	√
16		**Sidestand, centerstand**	• 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	*	**Electronic fuel injection**	• Adjust engine idling speed and synchronization.	√	√	√	√	√	√
21		**Engine oil**	• Change. (See pages 3-5 and 6-10.)	√	When the oil change indicator flashes (every 5000 km)				
			• Check oil level and vehicle for oil leakage.	Every 5000 km					√
22		**Engine oil filter cartridge**	• Replace.	√		√		√	
23	*	**Cooling system**	• Check coolant level and vehicle for coolant leakage.		√	√	√	√	√
			• Change.	Every 3 years					
24		**Chain drive oil**	• Check vehicle for oil leakage. • Change.		√	√	√	√	
25	*	**V-belt**	• Replace.	When the V-belt replacement indicator flashes (every 20000 km)					

NO.		ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING (× 1000 km)					ANNUAL CHECK
				1	10	20	30	40	
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	*	**Lights, signals and switches**	• Check operation. • Adjust headlight beam.	√	√	√	√	√	√

EAU18670

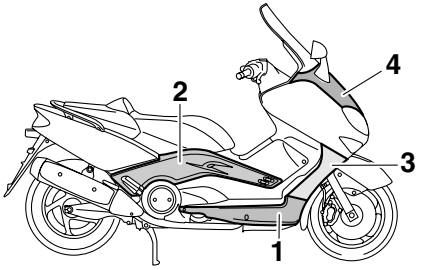
NOTE:

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

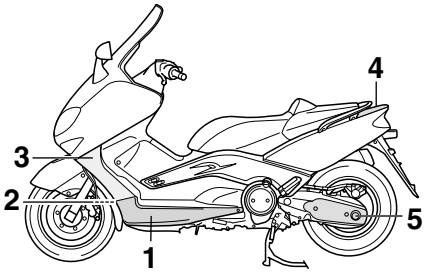
EAU18711

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. Panel A
2. Panel B
3. Panel C
4. Cowling A



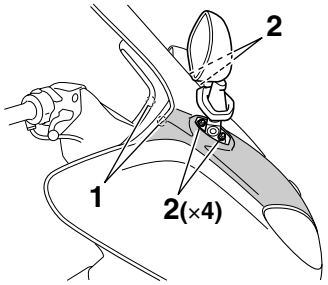
1. Panel D
2. Cowling B
3. Panel E
4. Cowling C
5. Panel F

EAU33422

Cowling A

To remove the cowling

1. Remove the rear view mirrors by removing the nuts.



1. Screw
2. Nut

2. Remove the cowling screws.

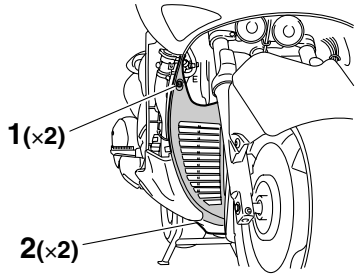
To install the cowling

1. Place the cowling in the original position, and then install the screws.
2. Install the rear view mirrors by installing the nuts.

Cowling B

To remove the cowling

1. Remove panels C and E. (See page 6-7.)

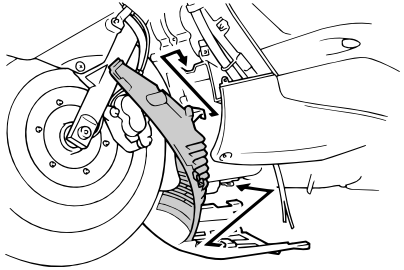


1. Bolt
2. Screw

2. Remove the cowling screws and bolts.
3. Unhook the cowling from the holder at the bottom.
4. Unhook the front of the cowling by pushing it up, and then pull the cowling out.

To install the cowling

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

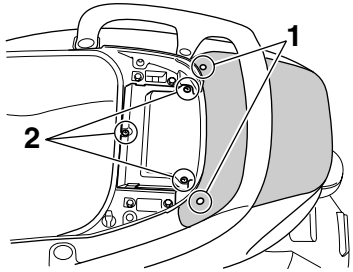


2. Install panels C and E.

Cowling C

To remove the cowling

1. Remove the battery cover by removing the screws.



1. Bolt
2. Screw

2. Remove the cowling bolts, and then pull the cowling off.

To install the cowling

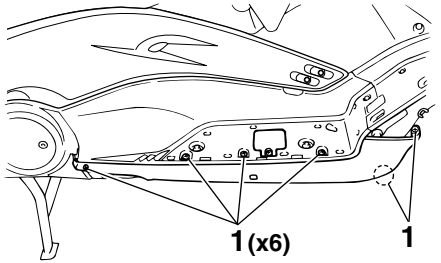
1. Place the cowling in the original position, and then install the bolts.
2. Install the battery cover by installing the screws.

EAU33431

Panels A and D

To remove one of the panels

1. Remove panel C (right side) or panel E (left side).



1. Screw

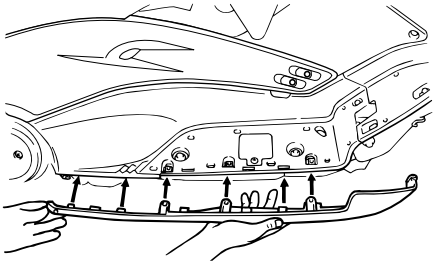
2. Remove the panel screws.
3. Pull outward on the front of the panel.

To install the panel

Place the panel in the original position,

6

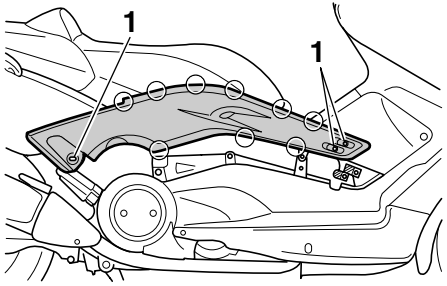
and then install the screws.



Panel B

To remove the panel

Remove the panel screws, and then pull outward on the areas shown.



1. Screw

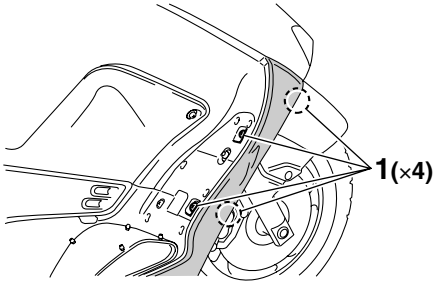
To install the panel

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

Panels C and E

To remove one of the panels

Pull the floorboard mat off, and then remove the panel screws.



1. Screw

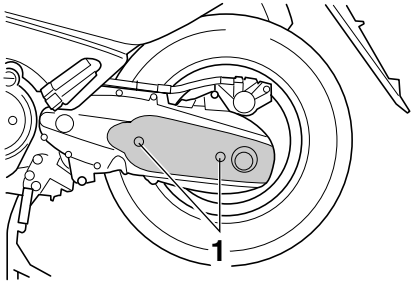
To install the panel

Place the panel in the original position, install the screws, and then place the floorboard mat back.

Panel F

To remove the panel

Remove the panel screws.



1. Screw

To install the panel

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

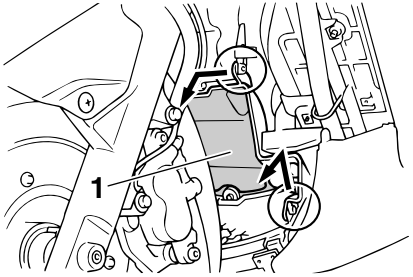
EAU19592

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.

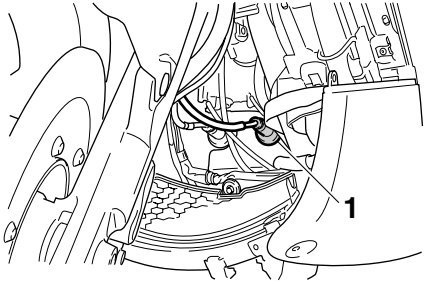
To remove a spark plug

1. Remove cowling B. (See page 6-6.)
2. Remove the spark plug cover by pulling it out as shown.



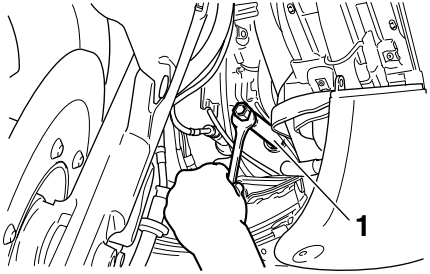
1. Spark plug cover

3. Remove the spark plug cap.



1. Spark plug cap

4. 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:

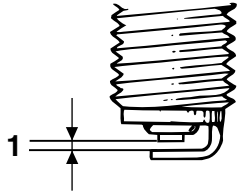
If any spark plug shows a distinctly different color, the engine could be defective. Do not attempt to diagnose such problems yourself. Instead, have a Yamaha dealer check the vehicle.

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

Specified spark plug:
NGK/CR7E

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

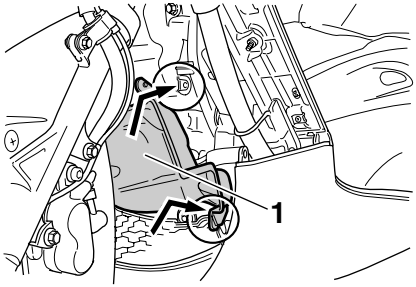
Spark plug gap:
0.7–0.8 mm (0.028–0.031 in)

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:
12.5 Nm (1.25 m·kgf, 9 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.
5. Place the spark plug cover in the original position as shown, and then install the cowling.



1. Spark plug cover

EAU19853

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 the centerstand.

ECA11290

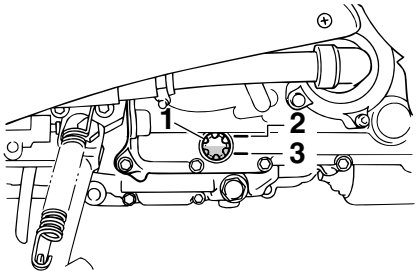
CAUTION:
The engine must be cold before proceeding with the oil level check, otherwise the check will result in a false reading.

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 two minutes, and then turn it off.
3. Wait two minutes until the oil set-

tles, and then check the oil level through the check window located at the bottom-left side of the crankcase.

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

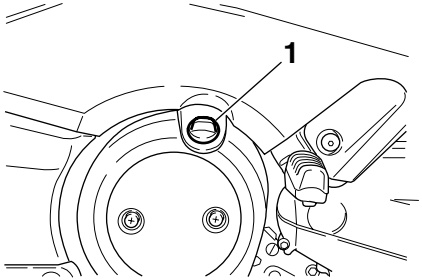


1. Engine oil level check window
2. Maximum level mark
3. Minimum level mark

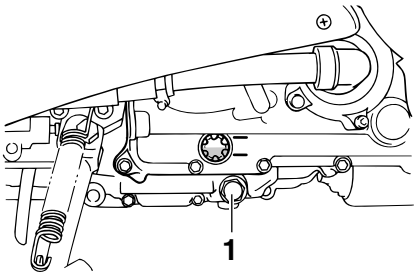
4. If the engine oil is below the minimum level mark, add sufficient oil of the recommended type to raise it to the correct level.

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

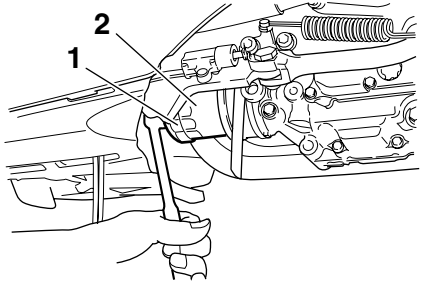


1. Engine oil drain bolt

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.

6



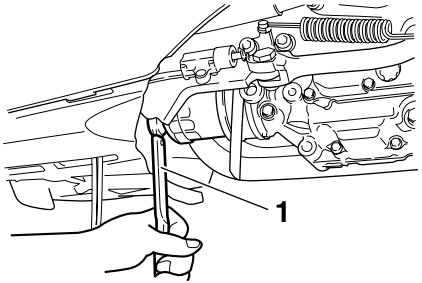
1. Oil filter wrench
2. Oil filter cartridge

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.

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

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



1. Torque wrench

Tightening torque:
Oil filter cartridge:
17 Nm (1.7 m·kgf, 12.3 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, 31.1 ft·lbf)

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

Recommended engine oil:
SAE 10W-30 or SAE 10W-40
(API SE, SF, SG or higher)
Oil quantity:
Without oil filter cartridge replacement:
2.80 L (2.96 US qt) (2.46 Imp.qt)
With oil filter cartridge replacement:
2.90 L (3.07 US qt) (2.55 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.**

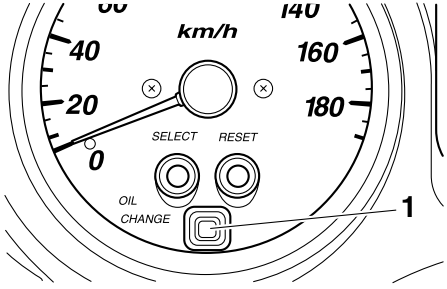
9. Start the engine, and then let it idle for several minutes while checking it for oil leakage. If oil is leaking, immediately turn the engine off and

check for the cause.

10. Turn the engine off, and then check the oil level and correct it if necessary.
11. Reset the oil change indicator according to the following procedure.

To reset the oil change indicator

1. Turn the key to "ON".
2. Hold the "OIL CHANGE" button pushed for two to eight seconds.



1. "OIL CHANGE" button

3. Release the "OIL CHANGE" button, and the oil change indicator will go off.

NOTE:

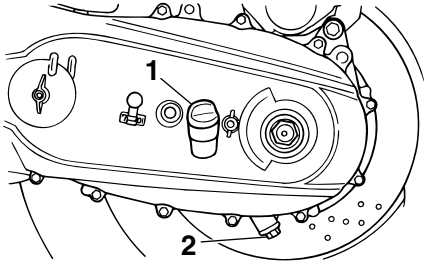
If the engine oil is changed before the oil change indicator comes on (i.e. before the periodic oil change interval has been reached), the indicator must be reset after the oil change for the next periodic oil change to be indicated at the correct time. To reset the oil change indicator before the periodic oil change interval has been reached, follow the above procedure, but note that the indicator will come on for 1.4 seconds after releasing the "OIL CHANGE" button, otherwise repeat the procedure.

EAU19993

Chain drive oil

The chain drive oil should be changed as follows at the intervals specified in the periodic maintenance and lubrication chart.

1. Remove panel F. (See page 6-6.)
2. Place an oil pan under the chain drive case to collect the used oil.
3. Remove the oil filler cap and drain bolt to drain the oil from the chain drive case.



1. Chain drive oil filler cap
2. Chain drive oil drain bolt

4. Install the chain drive oil drain bolt, and then tighten it to the specified torque.

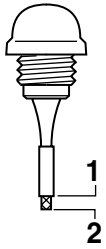
Tightening torque:
Chain drive oil drain bolt:
20 Nm (2.0 m·kgf, 14.5 ft·lbf)

5. Add the specified amount of the recommended oil.

Recommended chain drive oil:
See page 8-1.
Oil quantity:
0.70 L (0.74 US qt) (0.62 Imp.qt)

6. Wipe the dipstick clean, insert it into the oil filler hole (without screwing it in), and then remove it to check the oil level.

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



1. Maximum level mark
2. Minimum level mark

7. If the chain drive oil is below the minimum level mark, add sufficient oil of the recommended type to raise it to the correct level.
8. Insert the dipstick into the oil filler hole, and then tighten the oil filler cap.

ECA15010

CAUTION:

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

9. Check the chain drive case for oil leakage. If leakage is found, 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.

EAU20122

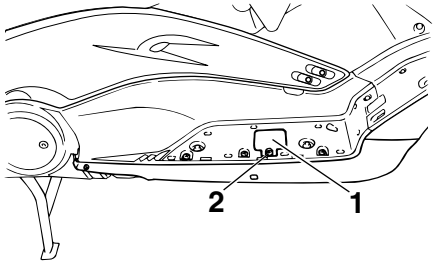
To check the coolant level

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

NOTE:

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

2. Remove the coolant reservoir cover by removing the screw.

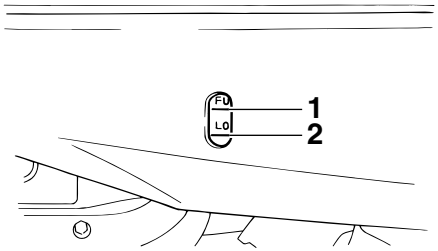


1. Coolant reservoir cover
2. Screw

3. Check the coolant level in the coolant reservoir.

NOTE:

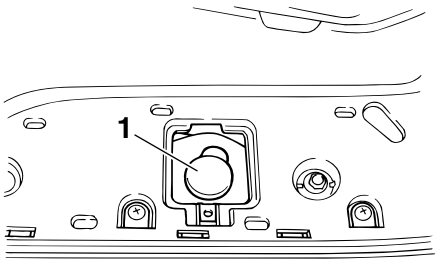
The coolant should be between the minimum and maximum level marks.



1. Maximum level mark
2. Minimum level mark

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

6



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 coolant reservoir cover by installing the screw.

NOTE:

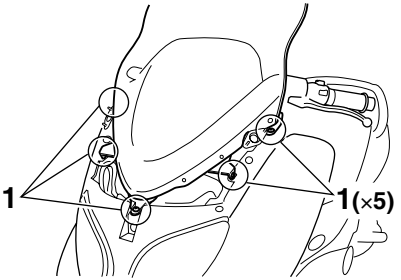
- The radiator fan is automatically switched on or off according to the coolant temperature in the radiator.
- If the engine overheats, see page 6-33 for further instructions.

EAU21120

Cleaning the air filter element

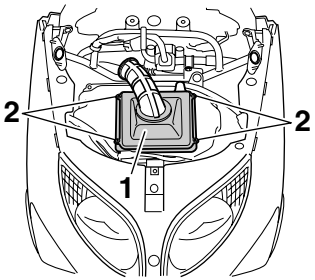
The air filter element should be cleaned at the intervals specified in the periodic maintenance and lubrication chart. Clean the air filter element more frequently if you are riding in unusually wet or dusty areas.

1. Remove cowling A. (See page 6-6.)
2. Remove the windshield by removing the screws.

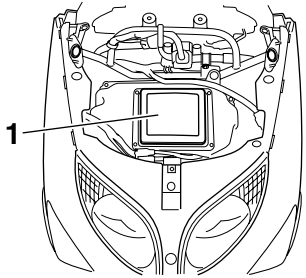


1. Screw

3. Remove the air filter case cover by removing the screws, and then pull the air filter element out.

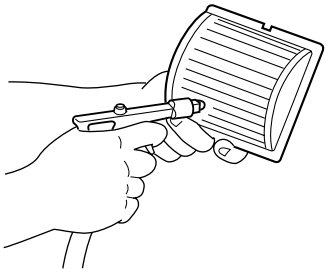


1. Air filter case cover
2. Screw



1. Air filter element

4. 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.



5. Insert the air filter element into the air filter case.

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.**

6. Install the air filter case cover by installing the screws.
7. Install the windshield and the cowling.

EAU33481

Adjusting the engine idling speed

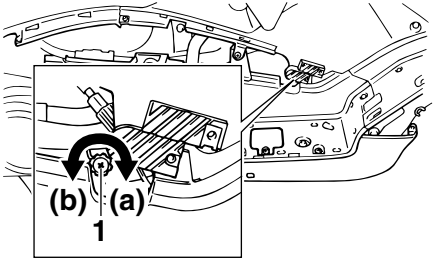
The engine idling speed must be checked and, if necessary, adjusted as follows at the intervals specified in the periodic maintenance and lubrication chart.

The engine should be warm before making this adjustment.

NOTE:

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

1. Remove panel B. (See page 6-6.)
2. Check the engine idling speed and, if necessary, adjust it to specification by turning the idle adjusting 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. Idle adjusting screw

Engine idling speed:
1100–1300 r/min

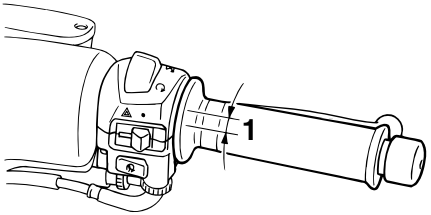
NOTE:

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

3. Install the panel.

EAU21381

Checking the throttle cable free play



1. Throttle cable free play

The throttle cable free play should measure 3.0–5.0 mm (0.12–0.20 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.

EAU33600

Tires

To maximize the performance, durability, and safe operation of your vehicle, 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:
225 kPa (33 psi) (2.25 kgf/cm^2)
Rear:
250 kPa (36 psi) (2.50 kgf/cm^2)

XP500 90–190 kg (198–419 lb)
XP500A 90–185 kg (198–408 lb) :

Front:
225 kPa (33 psi) (2.25 kgf/cm^2)
Rear:
280 kPa (41 psi) (2.80 kgf/cm^2)
Maximum load*:
XP500 190 kg (419 lb)
XP500A 185 kg (408 lb)

* Total weight of rider, passenger, cargo and accessories

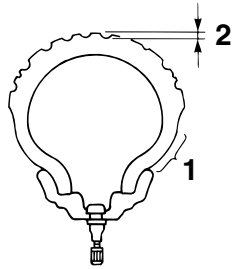
EWA11200

⚠ WARNING

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

- **NEVER OVERLOAD THE VEHICLE! Operation of an overloaded vehicle 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 vehicle and distribute the weight evenly on both sides.**
- **Adjust the 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 tread depth

The tires must be checked before each ride. If the center tread depth reaches the specified limit, if the tire has a nail or glass fragments in it, or if the sidewall is cracked, have a Yamaha dealer replace the tire immediately.

Minimum tire tread depth (front and rear):
1.6 mm (0.06 in)

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

Tire information

This model is equipped with tubeless tires.

Front tire:
Size:
120/70R14 M/C 55H
Manufacturer/model:
DUNLOP/D252F
BRIDGESTONE/TH01F
Rear tire:
Size:
160/60R15 M/C 67H
Manufacturer/model:
DUNLOP/D252
BRIDGESTONE/TH01R

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.**

EAU21960

Cast wheels

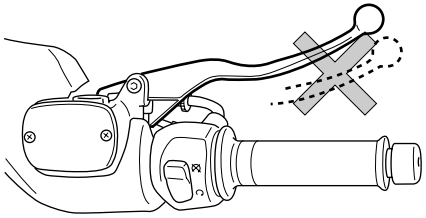
To maximize the performance, durability, and safe operation of your vehicle, note the following points regarding the specified wheels.

- The wheel rims should be checked for cracks, bends or warpage 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.

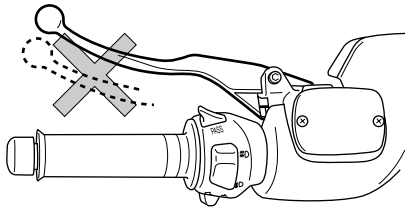
EAU33451

Front and rear brake lever free play

Front



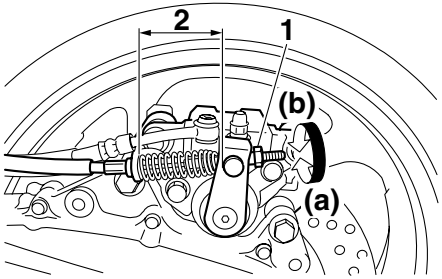
Rear



There should be no free play at the brake lever ends. If there is free play, have a Yamaha dealer inspect the brake system.

EAU33473

Adjusting the rear brake lock lever cable



1. Adjusting nut
2. Rear brake lock lever cable length

Rear brake lock lever cable adjustment may be required if the rear brake lock lever does not hold properly. When the rear brake lock lever is not in use, the rear brake lock lever cable length should measure 45 mm to 47 mm (1.77 in to 1.85 in) at the rear brake caliper. Periodically check the rear brake lock lever cable length and, if necessary, adjust it as follows. To increase the rear brake lock lever cable length, turn the adjusting nut at

the rear brake caliper in direction (a). To decrease the rear brake lock lever cable length, turn the adjusting nut in direction (b).

EWA10650

⚠ WARNING

If proper adjustment cannot be obtained as described, have a Yamaha dealer make this adjustment.

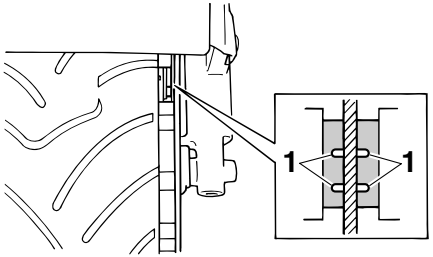
EAU22390

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



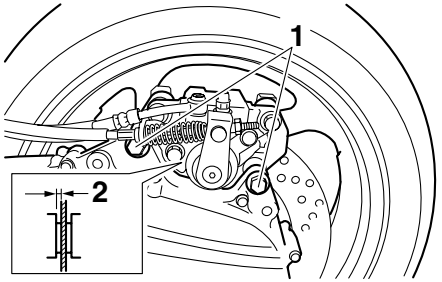
1. Brake pad wear indicator groove

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.

EAU22493

Rear brake pads

1. Remove the rear brake caliper by removing the bolts.



1. Bolt
2. Lining thickness

2. Check each rear brake pad for damage and measure the lining thickness. If a brake pad is damaged or if the lining thickness is less than 0.8 mm (0.03 in), have a Yamaha dealer replace the brake pads as a set.
3. Install the rear brake caliper by in-

stalling the bolts, then tightening them to the specified torque.

Tightening torque:
Brake caliper bolt:
40 Nm (4.0 m·kgf, 28.9 ft·lbf)

ECA12822

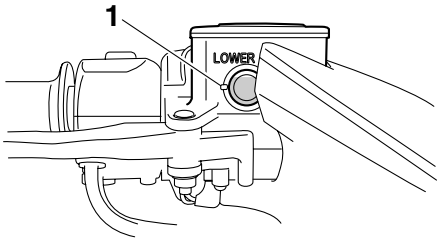
CAUTION:

Do not apply the rear brake or rear brake lock after the brake caliper has been removed, otherwise the brake caliper piston will be forced out.

EAU22580

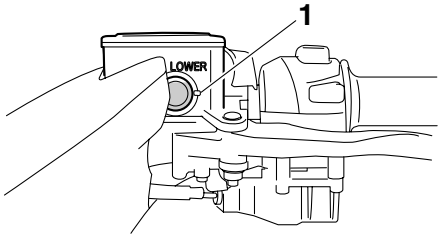
Checking the brake fluid level

Front brake



1. Minimum level mark

Rear brake



1. Minimum level mark

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

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

Observe these precautions:

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

Recommended brake fluid:
DOT 4

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

EAU22730

Changing the brake fluid

Have a Yamaha dealer change the brake fluid at the intervals specified in the NOTE after the periodic maintenance and lubrication chart. In addition, have the oil seals of the master cylinders and calipers as well as the brake hoses replaced at the intervals listed below or whenever they are damaged or leaking.
- Oil seals: Replace every two years.
- Brake hoses: Replace every four years.

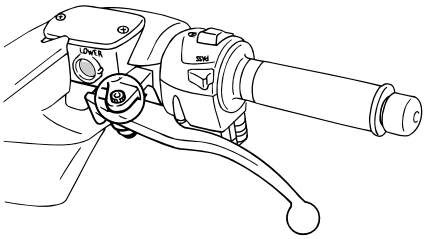
EAU23110

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 or replaced at the intervals specified in the periodic maintenance chart.

EAU23170

Lubricating the front and rear brake levers

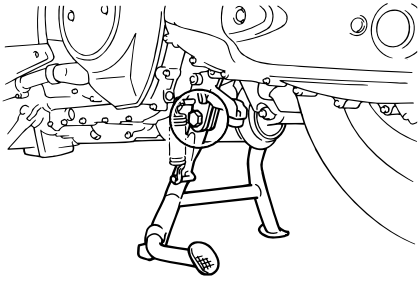


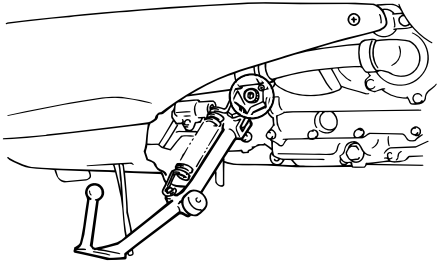
The pivoting points of the front and rear brake levers must be lubricated at the intervals specified in the periodic maintenance and lubrication chart.

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

EAU23210

Checking and lubricating the centerstand and sidestand





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

EWA10740

WARNING

If the centerstand or 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)

6

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

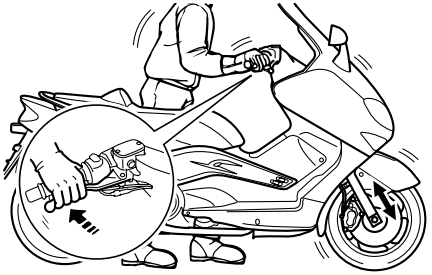
⚠ WARNING

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.



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.

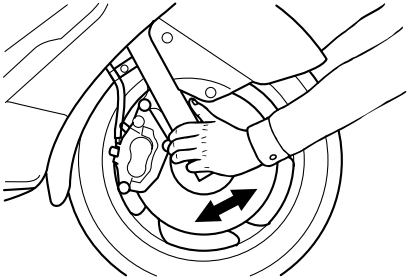
1. Place a stand under the engine to raise the front wheel off the ground.

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.

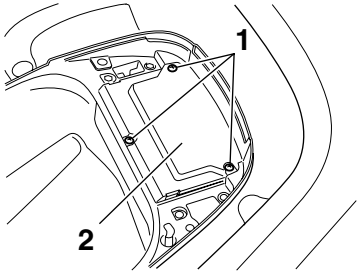
EAU23411

Battery

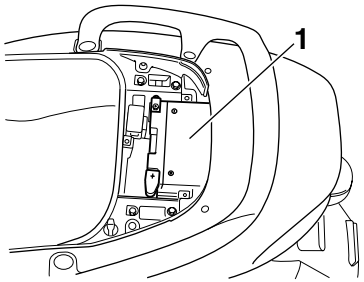
This model is equipped with a sealed-type (MF) battery, which does not require any maintenance. There is no need to check the electrolyte or to add distilled water.

To access the battery

1. Open the seat. (See page 3-15.)
2. Remove the battery cover by removing the screws.



1. Screw
2. Battery cover



1. Battery

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.

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 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.**

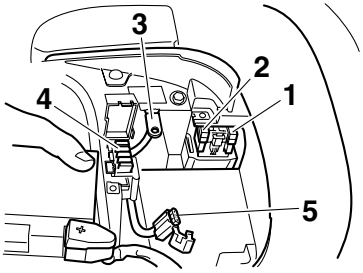
EAU36542

Replacing the fuses

The main fuse box is located beside the battery and can be accessed as follows:

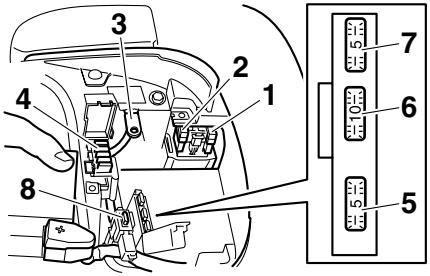
1. Open the seat. (See page 3-15.)
2. Remove the battery cover. (See page 6-27.)
3. Disconnect the negative battery lead, and then lift the battery as shown.

For non-ABS models



1. Main fuse
2. Spare main fuse
3. Negative battery lead
4. Fuse box
5. Parking lighting fuse

For ABS models

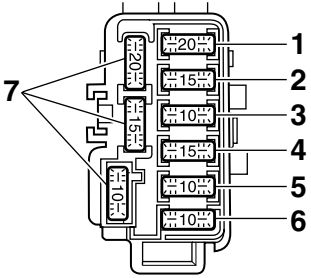


1. Main fuse
2. Spare main fuse
3. Negative battery lead
4. Fuse box
5. ABS control unit fuse (for ABS models)
6. Parking lighting fuse
7. Spare fuse
8. ABS motor fuse (for ABS models)

The fuse box, which contains the fuses for the individual circuits, is located under the battery cover and can be accessed as follows.

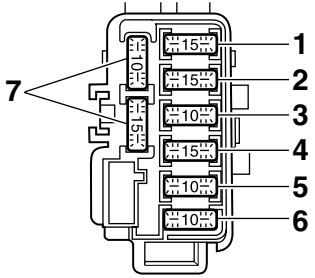
1. Open the seat. (See page 3-15.)
2. Remove the battery cover.

For non-ABS models



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

For ABS models



1. Signaling system fuse
2. Headlight fuse
3. Ignition fuse
4. Radiator fan fuse
5. Electronic fuel injection fuse
6. Backup fuse (for odometer and clock)
7. 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
Headlight fuse:
15.0 A
Signaling system fuse:
XP500 20.0 A
XP500A 15.0 A
Ignition fuse:
10.0 A
Parking lighting fuse:
10.0 A
Radiator fan fuse:
15.0 A
Electronic fuel injection fuse:
10.0 A
ABS control unit fuse:
XP500A 5.0 A
ABS motor fuse:
XP500A 30.0 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.

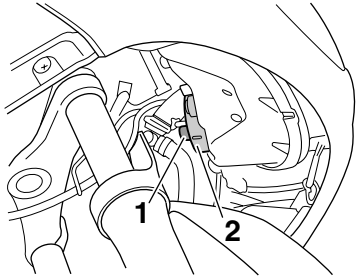
3. Turn the key to "ON" and turn on the electrical circuit in question to check if the device operates.
4. If the fuse immediately blows again, have a Yamaha dealer check the electrical system.

EAU23760

Replacing the headlight bulb

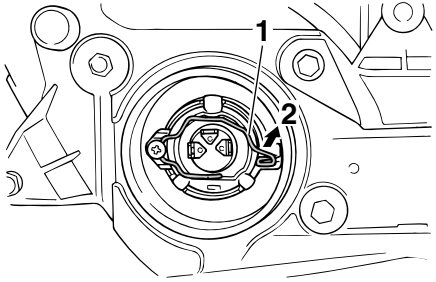
This model is equipped with a quartz bulb headlight. If the headlight bulb burns out, replace it as follows.

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



1. Headlight coupler
2. Headlight bulb cover

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



1. Headlight bulb holder
2. Unhook.

EWA10790

⚠ WARNING

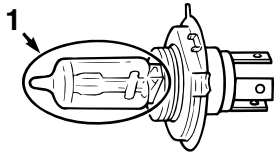
Headlight bulbs get very hot. Therefore, keep flammable products away from a lit headlight bulb, and do not touch the bulb until it has cooled down.

3. 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.

4. Install the headlight bulb cover, and then connect the coupler.
5. Have a Yamaha dealer adjust the headlight beam if necessary.

6

EAU25880

Troubleshooting

Although Yamaha scooters 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 scooter require any repair, take it to a Yamaha dealer, whose skilled technicians have the necessary tools, experience, and know-how to service the scooter 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

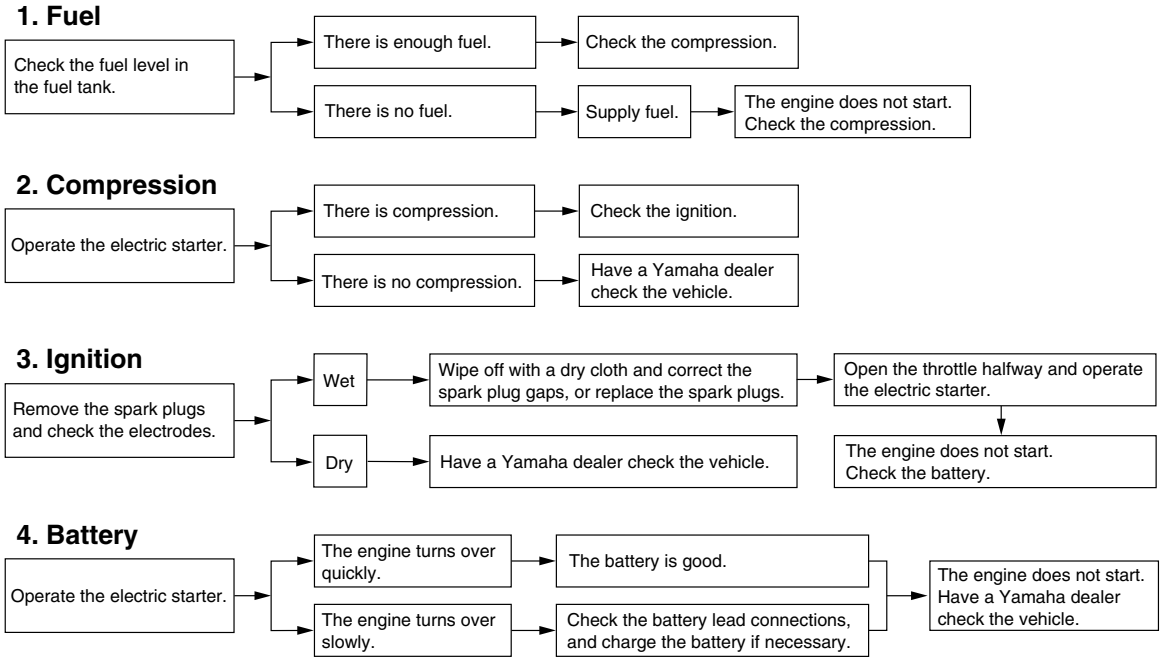
Troubleshooting charts

Starting problems or poor engine performance

EWA10840

⚠ WARNING

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

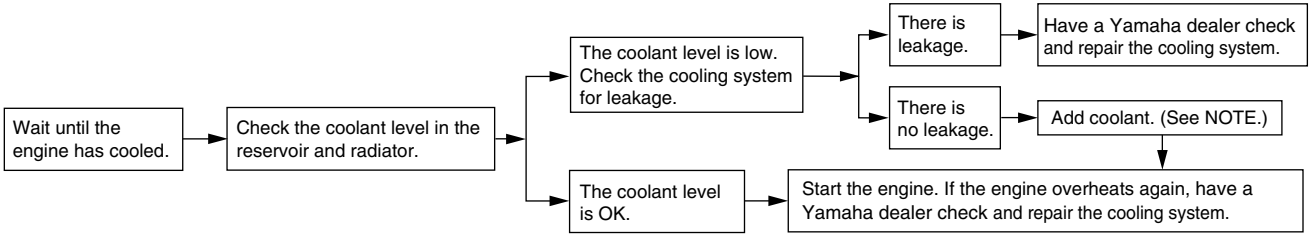


Engine overheating

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.

EAU26100

Care

While the open design of a scooter 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 scooter. Frequent and proper care does not only comply with the terms of the warranty, but it will also keep your scooter looking good, extend its life and optimize its performance.

Before cleaning

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

Cleaning

ECA10780

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

After cleaning

1. Dry the scooter 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 scooter dry completely before storing or covering it.

EWA10940

⚠ WARNING

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

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

NOTE:

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

EAU36550

Storage

Short-term

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

ECA10820

CAUTION:

- **Storing the scooter 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 scooter for several months:

1. Follow all the instructions in the "Care" section of this chapter.
2. Fill up the fuel tank and add fuel stabilizer (if available) to prevent the fuel tank from rusting and the fuel from deteriorating.
3. Perform the following steps to protect the cylinders, piston rings, etc. from corrosion.
   a. Remove the spark plug caps and the spark plugs.
   b. Pour a teaspoonful of engine oil into the spark plug bores.
   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.

4. Lubricate all control cables and the pivoting points of all levers and pedals as well as of the sidestand/ centerstand.
5. Check and, if necessary, correct the tire air pressure, and then lift the scooter 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.
6. Cover the muffler outlet with a plastic bag to prevent moisture from entering it.
7. 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 6-27.

NOTE:
Make any necessary repairs before storing the scooter.

EAU26338

Dimensions:

Overall length:
2235 mm (88.0 in)
Overall width:
775 mm (30.5 in)
Overall height:
1410 mm (55.5 in)
Seat height:
795 mm (31.3 in)
Wheelbase:
1575 mm (62.0 in)
Ground clearance:
130 mm (5.12 in)
Minimum turning radius:
2800 mm (110.2 in)

Weight:

With oil and fuel:
XP500 225.0 kg (496 lb)
XP500A 230.0 kg (507 lb)

Engine:

Engine type:
Liquid cooled 4-stroke, DOHC
Cylinder arrangement:
Forward-inclined parallel 2-cylinder
Displacement:
499.0 cm^3 (30.45 cu.in)
Bore × stroke:
66.0 × 73.0 mm (2.60 × 2.87 in)
Compression ratio:
11.00 :1
Starting system:
Electric starter
Lubrication system:
Dry sump

Engine oil:

Type:
SAE10W30 or SAE10W40
Recommended engine oil grade:
API service SE, SF, SG type or higher

Engine oil quantity:

Without oil filter cartridge replacement:
2.80 L (2.96 US qt) (2.46 Imp.qt)
With oil filter cartridge replacement:
2.90 L (3.07 US qt) (2.55 Imp.qt)

Chain drive oil:

Type:
SAE80 API GL-4 Hypoid gear oil
Quantity:
0.70 L (0.74 US qt) (0.62 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):
1.50 L (1.59 US qt) (1.32 Imp.qt)

Air filter:

Air filter element:
Dry element

Fuel:

Recommended fuel:
Regular unleaded gasoline only
Fuel tank capacity:
14.0 L (3.70 US gal) (3.08 Imp.gal)

Electronic fuel injection:

Manufacturer:
AISAN
Model:
1100-87B60/1100-87B70

Spark plug(s):

Manufacturer/model:
NGK/CR7E
Spark plug gap:
0.7–0.8 mm (0.028–0.031 in)

Clutch:

Clutch type:
Wet, multiple-disc automatic

Transmission:

Primary reduction system:
Spur gear/helical gear
Primary reduction ratio:
52/32 × 36/22 (2.659)
Secondary reduction system:
Chain drive
Secondary reduction ratio:
41/25 × 40/29 (2.262)
Transmission type:
V-belt automatic
Operation:
Centrifugal automatic type

Chassis:

Frame type:
Diamond
Caster angle:
28.00 °
Trail:
95.0 mm (3.74 in)

SPECIFICATIONS

Front tire:
Type:
Tubeless
Size:
120/70R14 M/C 55H
Manufacturer/model:
DUNLOP/D252F
Manufacturer/model:
BRIDGESTONE/TH01F

Rear tire:
Type:
Tubeless
Size:
160/60R15 M/C 67H
Manufacturer/model:
DUNLOP/D252
Manufacturer/model:
BRIDGESTONE/TH01R

Loading:
Maximum load:
XP500 190 kg (419 lb)
XP500A 185 kg (408 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:
225 kPa (33 psi) (2.25 kgf/cm^2)
Rear:
250 kPa (36 psi) (2.50 kgf/cm^2)
Loading condition:
XP500 90–190 kg (198–419 lb)
XP500A 90–185 kg (198–408 lb)
Front:
225 kPa (33 psi) (2.25 kgf/cm^2)
Rear:
280 kPa (41 psi) (2.80 kgf/cm^2)

Front wheel:
Wheel type:
Cast wheel
Rim size:
14M/C x MT3.50

Rear wheel:
Wheel type:
Cast wheel
Rim size:
15M/C x MT5.00

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

Rear brake:
Type:
Single disc brake
Operation:
Left hand operation
Recommended fluid:
DOT 4

Front suspension:
Type:
Telescopic fork
Spring/shock absorber type:
Coil spring/oil damper
Wheel travel:
120.0 mm (4.72 in)

Rear suspension:
Type:
Swingarm
Spring/shock absorber type:
Coil spring/gas-oil damper
Wheel travel:
117.0 mm (4.61 in)

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

Battery:
Model:
GT9B-4
Voltage, capacity:
12 V, 8.0 Ah

Headlight:
Bulb type:
Halogen bulb

Bulb voltage, wattage x quantity:
Headlight:
12 V, 60 W/55.0 W × 1
Headlight:
12 V, 55.0 W × 1

Tail/brake light:
12 V, 5.0 W/21.0 W × 2
Front turn signal/position light:
12 V, 21 W/5.0 W × 2
Rear turn signal light:
12 V, 21.0 W × 2
Auxiliary light:
12 V, 5.0 W × 2
Licence plate light:
12 V, 5.0 W × 1
Meter lighting:
14 V, 2.0 W × 3
High beam indicator light:
14 V, 1.4 W × 1
Turn signal indicator light:
14 V, 1.4 W × 2
Engine trouble warning light:
14 V, 1.4 W × 1
ABS warning light:
XP500A 14 V, 1.4 W × 1
Immobilizer system indicator light:
LED

Fuses:

Main fuse:
30.0 A
Headlight fuse:
15.0 A
Signaling system fuse:
XP500 20.0 A
XP500A 15.0 A
Ignition fuse:
10.0 A
Parking lighting fuse:
10.0 A
Radiator fan fuse:
15.0 A
Electronic fuel injection fuse:
10.0 A
ABS control unit fuse:
XP500A 5.0 A
ABS motor fuse:
XP500A 30.0 A
Backup fuse:
10.0 A

CONSUMER INFORMATION

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.

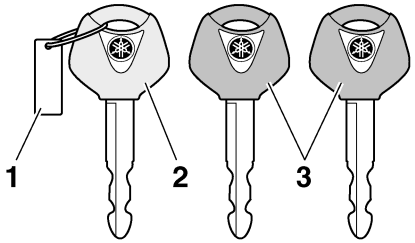
KEY IDENTIFICATION NUMBER:

VEHICLE IDENTIFICATION NUMBER:

MODEL LABEL INFORMATION:

EAU26381

Key identification number

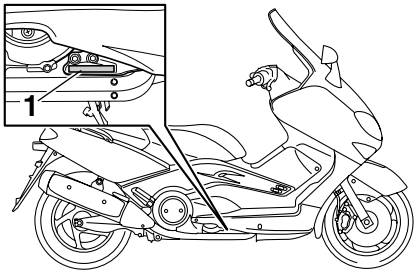


1. Key identification number
2. Code re-registering key (red bow)
3. Standard keys (black bow)

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.

EAU26410

Vehicle identification number



1. Vehicle identification number

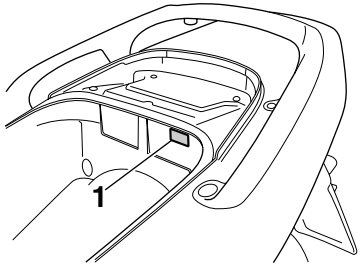
The vehicle identification number is stamped into the frame.

NOTE:

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

EAU26500

Model label



1. Model label

The model label is affixed to the inside of the rear storage compartment. (See page 3-17.) Record the information on this label in the space provided. This information will be needed when ordering spare parts from a Yamaha dealer.

INDEX

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PRINTED IN JAPAN
2004.8–0.3×1
(E)