YAMAHA

OWNER'S MANUAL

⚠ Read this manual carefully before operating this vehicle.

TRICITY

MOTORCYCLE

MWD300 (Tricity 300)

BX9-F8199-E0

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⚠ Read this manual carefully before operating this vehicle. This manual should stay with this vehicle if it is sold.

EAU85650

For Europe

Declaration of Conformity:

Hereby, MITSUBISHI ELECTRIC CORPORATION, HIMEJI WORKS declares that the radio equipment type, Smart Keyless System, SKEA7E-01 (Smart Unit) and SKEA7E-02 (Hand Unit) is in compliance with Directive 2014/53/EU.
The full text of the EU declaration of conformity is available at the following internet address:
http://www.mitsubishielectric.com/bu/automotive/doc/re.html

REMOTE CONT. UNIT (Smart Unit)
Frequency band: 125 kHz
The maximum radio frequency power: 107 dBuV/m at 10 meters

XMTR COMP. (Hand Unit)
Frequency band: 433.92 MHz
The maximum radio frequency power: 10 mW

Manufacturer:
MITSUBISHI ELECTRIC CORPORATION, HIMEJI WORKS
840, Chiyoda-machi, Himeji, Hyogo 670-8677, Japan

Importer:
YAMAHA MOTOR EUROPE N.V.
Koolhovenlaan 101, 1119 NC Schiphol-Rijk, 1117 ZN, Schiphol, the Netherlands

For South Africa

EAU60580

Welcome to the Yamaha world of motorcycling!
As the owner of the MWD300, 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 MWD300. The Owner's Manual does not only instruct you in how to operate, inspect and maintain your vehicle, 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 vehicle 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!
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 vehicle and this manual. If there is any question concerning this manual, please consult a Yamaha dealer.

EWA17780

⚠ WARNING

Please read this manual carefully and completely before operating this vehicle.

Important manual information

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

⚠	**This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.**
⚠ WARNING	**A WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.**
NOTICE	**A NOTICE indicates special precautions that must be taken to avoid damage to the vehicle or other property.**
TIP	A TIP provides key information to make procedures easier or clearer.

*Product and specifications are subject to change without notice.

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MWD300
OWNER'S MANUAL

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Be a Responsible Owner

As the vehicle's owner, you are responsible for the safe and proper operation of your vehicle.

This is a leaning multi-wheel vehicle.

The safe use and operation of this vehicle is 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 vehicle.

He or she should:

- Obtain thorough instructions from a competent source on all aspects of this vehicle's operation.
- Observe the warnings and maintenance requirements in this Owner's Manual.
- Obtain qualified training in safe and proper riding techniques.
- Obtain professional technical service as indicated in this Owner's Manual and/or when made necessary by mechanical conditions.
- Never operate a vehicle without proper training or instruction. Take a training course. Beginners should receive training from a certified instructor. Contact a Yamaha dealer to find out about the training courses nearest you.

Safe Riding

Perform the pre-operation checks each time you use the vehicle to make sure it is in safe operating condition. Failure to inspect or maintain the vehicle properly increases the possibility of an accident or equipment damage. See page 6-1 for a list of pre-operation checks.

- This vehicle is designed to carry the operator and a passenger.
- The failure of motorists to detect and recognize scooters and motorcycles in traffic is the predominating cause of automobile and such smaller vehicle accidents. Many accidents have been caused by an automobile driver who did not see the smaller vehicle. 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 you are approaching and passing through intersections, since intersections are the most likely places for such smaller vehicle accidents to occur.
  - Ride where other motorists can see you. Avoid riding in another motorist's blind spot.
  - Never maintain a vehicle without proper knowledge. Contact a Yamaha dealer to inform you on basic vehicle maintenance. Certain maintenance can only be carried out by certified staff.
- 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 vehicle 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 vehicle where there is no traffic until you have become thoroughly familiar with the vehicle and all of its controls.

- Many accidents have been caused by error of the vehicle operator. A typical error made by the operator is veering wide on a turn due to excessive speed or undercornering (insufficient lean angle for the speed).
  - Always obey the speed limit and never travel faster than warranted by road and traffic conditions.
  - Always signal before turning or changing lanes. Make sure that other motorists can see you.
- The posture of the operator and passenger is important for proper control.
  - The operator should keep both hands on the handlebar and both feet on the operator footrests during operation to maintain control of the vehicle.
  - 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 vehicle is designed for on-road use only. It is not suitable for off-road use.

Protective Apparel

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

- Always wear an approved helmet.
- Wear a face shield or goggles. Wind in your unprotected eyes could contribute to an impairment of vision that 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.
- Always wear protective clothing that covers your legs, ankles, and feet. The engine or exhaust system become very hot during or after operation and can cause burns.
- A passenger should also observe the above precautions.

Avoid Carbon Monoxide Poisoning

All engine exhaust contains carbon monoxide, a deadly gas. Breathing carbon monoxide can cause headaches, dizziness, drowsiness, nausea, confusion, and eventually death.

Carbon Monoxide is a colorless, odorless, tasteless gas which may be present even if you do not see or smell any engine exhaust. Deadly levels of carbon monoxide can collect rapidly and you can quickly be overcome and unable to save yourself. Also, deadly levels of carbon monoxide can linger for hours or days in enclosed or poorly ventilated areas. If you experience any symptoms of carbon monoxide poisoning, leave the area immediately, get fresh air, and SEEK MEDICAL TREATMENT.

- Do not run engine indoors. Even if you try to ventilate engine exhaust with fans or open windows and doors, carbon monoxide can rapidly reach dangerous levels.
- Do not run engine in poorly ventilated or partially enclosed areas such as barns, garages, or carports.
- Do not run engine outdoors where engine exhaust can be drawn into a building through openings such as windows and doors.

Loading

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

The total weight of the operator, passenger, accessories and cargo must not exceed the maximum load limit. **Operation of an overloaded vehicle could cause an accident.**

Maximum load:
172 kg (379 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 vehicle as possible. Securely pack your heaviest items as close to the center of the vehicle as possible and make sure to distribute the weight as evenly as possible on both sides of the vehicle to minimize imbalance or instability.
- Shifting weights can create a sudden imbalance. Make sure that accessories and cargo are securely attached to the vehicle before riding. Check accessory mounts and cargo restraints frequently.
  - Properly adjust the suspension for your load (suspension-adjustable models only), and check the condition and pressure of your tires.
  - 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.
- **This vehicle is not designed to pull a trailer or to be attached to a sidecar.**

Genuine Yamaha Accessories

Choosing accessories for your vehicle is an important decision. Genuine Yamaha accessories, which are avail-

able only from a Yamaha dealer, have been designed, tested, and approved by Yamaha for use on your vehicle.
Many companies with no connection to Yamaha manufacture parts and accessories or offer other modifications for Yamaha vehicles. Yamaha is not in a position to test the products that these aftermarket companies produce. Therefore, Yamaha can neither endorse nor recommend the use of accessories not sold by Yamaha or modifications not specifically recommended by Yamaha, even if sold and installed by a Yamaha dealer.

Aftermarket Parts, Accessories, and Modifications

While you may find aftermarket products similar in design and quality to genuine Yamaha accessories, recognize that some aftermarket accessories or modifications are not suitable because of potential safety hazards to you or others. Installing aftermarket products or having other modifications performed to your vehicle that change any of the vehicle's design or operation characteristics can put you and others at greater risk of serious injury or death. You are responsible for injuries related to changes in the vehicle.
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 vehicle. 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 vehicle due to aerodynamic effects. Wind may attempt to lift the vehicle, or the vehicle 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 accessories exceed the capacity of the vehicle's electrical system, an electric failure could result, which could cause a dangerous loss of lights or engine power.

Aftermarket Tires and Rims

The tires and rims that came with your vehicle were designed to match the performance capabilities and to provide the best combination of handling, braking, and comfort. Other tires, rims, sizes, and combinations may not be

appropriate. Refer to page 8-22 for tire specifications and more information on replacing your tires.

Transporting the Vehicle

Be sure to observe the following instructions before transporting the vehicle in another vehicle.

- Remove all loose items from the vehicle.
- Point the front wheels straight ahead on the trailer or in the truck bed, and choke it in a rail to prevent movement.
- Secure the vehicle with tie-downs or suitable straps that are attached to solid parts of the vehicle, such as the frame or upper front fork triple clamp (and not, for example, to rubber-mounted handlebars or turn signals, or parts that could break). Choose the location for the straps carefully so the straps will not rub against painted surfaces during transport.
- The suspension should be compressed somewhat by the tie-downs, if possible, so that the vehicle will not bounce excessively during transport.

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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 vehicle 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 vehicle upright, otherwise it could slide out from under you.
- The brake pads or linings could get wet when you wash the vehicle. After washing the vehicle, check the brakes before riding.

- Always wear a helmet, gloves, trousers (tapered around the cuff and ankle so they do not flap), and a brightly colored jacket.
- Do not carry too much luggage on the vehicle. An overloaded vehicle is unstable. Use a strong cord to secure any luggage to the carrier (if equipped). A loose load will affect the stability of the vehicle and could divert your attention from the road. (See page 1-3.)

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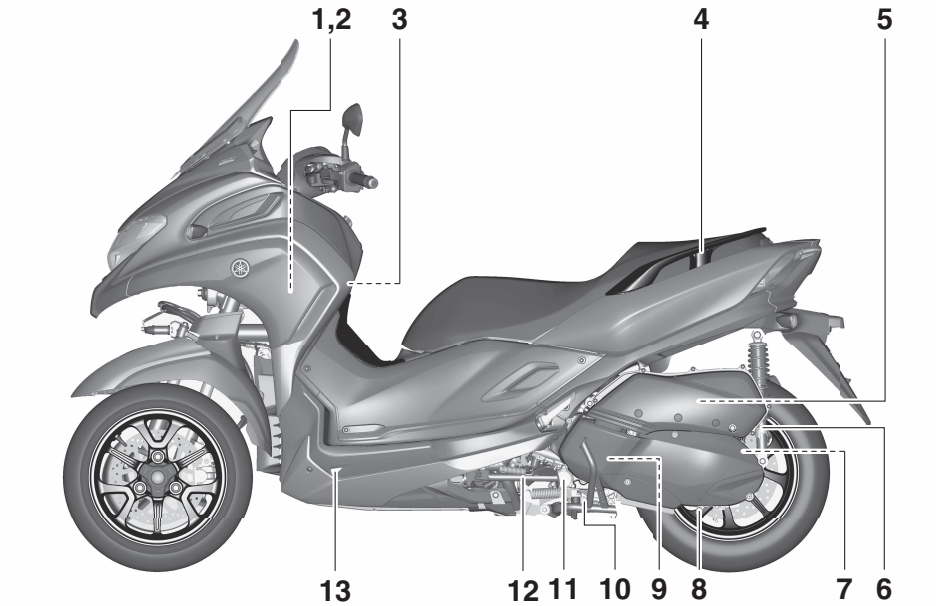
Left view



1. Battery (page 8-32)
2. Fuses (page 8-33)
3. Parking brake lever (page 5-12)
4. Grab bar (page 7-3)
5. Air filter element (page 8-17)
6. Spring preload adjusting ring (page 5-20)
7. Final transmission oil filler cap (page 8-14)
8. Final transmission oil drain bolt (page 8-14)
9. V-belt case air filter element (page 8-17)
10. Engine oil drain bolt (page 8-12)
11. Engine oil filter element (page 8-12)
12. Sidestand (page 5-21)
13. Coolant reservoir (page 8-15)

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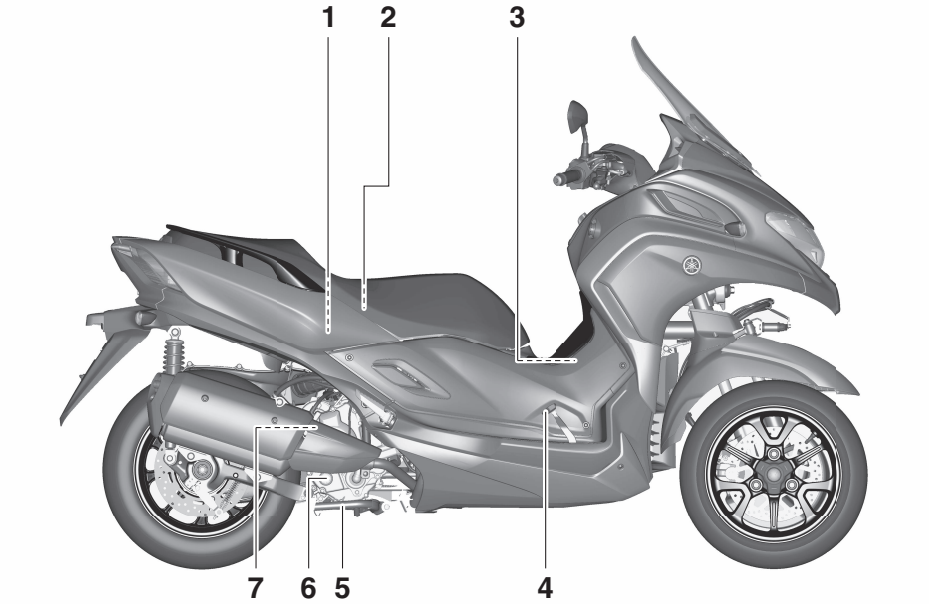
Right view



1. Storage compartment (page 5-18)
2. Tool kit (page 8-2)
3. Fuel tank cap (page 5-15)
4. Brake pedal (page 5-10)
5. Centerstand (page 8-29)
6. Engine oil level check window (page 8-12)
7. Engine oil filler cap (page 8-12)

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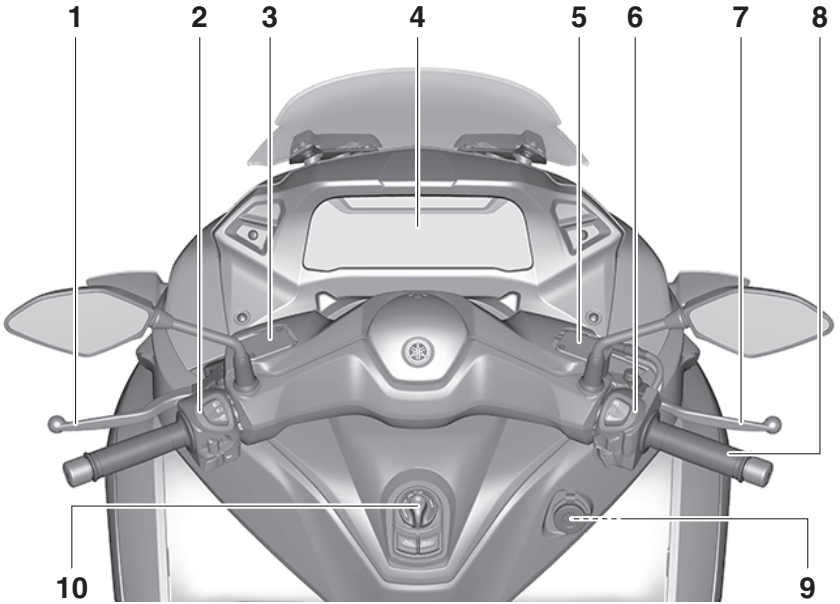
Controls and instruments



1. Rear brake lever (page 5-11)
2. Left handlebar switches (page 5-8)
3. Rear brake fluid reservoir (page 8-26)
4. Multi-function meter unit (page 5-3)
5. Front brake fluid reservoir (page 8-26)
6. Right handlebar switches (page 5-8)
7. Front brake lever (page 5-10)
8. Throttle grip (page 8-21)
9. Auxiliary DC jack (page 5-20)
10. Main switch (page 3-7)

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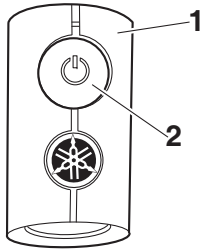
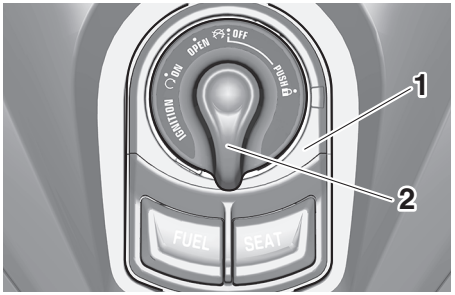
Smart key system

The smart key system enables you to operate the vehicle without using a mechanical key. In addition, there is an answer-back function to help you locate the vehicle in a parking lot. (See page 3-5.)



1. Smart key
2. Smart key button

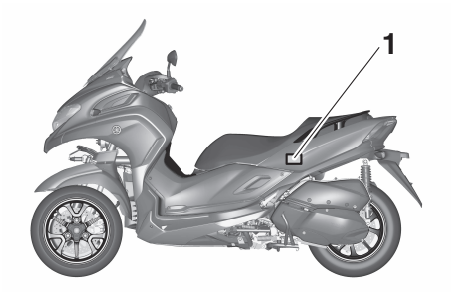


1. Main switch
2. Main switch knob

EWA14704

⚠ WARNING

- **Keep implanted pacemakers or cardiac defibrillators, as well as other electric medical devices away from the vehicle mounted antenna (see illustration).**
- **Radio waves transmitted by the antenna may affect the operation of such devices when close by.**
- **If you have an electric medical device, consult a doctor or the device manufacturer before using this vehicle.**



1. Vehicle mounted antenna

ECA24080

NOTICE

The smart key system uses weak radio waves. The smart key system may not work in the following situations.

- **The smart key is placed in a location exposed to strong radio waves or other electromagnetic noise**
- **There are facilities nearby that are emitting strong radio waves (TV or radio towers, power plants, broadcasting stations, airports, etc.)**

- **You are carrying or using communication equipment such as radios or mobile phones in close proximity of the smart key**
- **The smart key is in contact with or covered by a metallic object**
- **Other vehicles equipped with a smart key system are nearby**

In such situations, move the smart key to another location and perform the operation again. If it still does not work, operate the vehicle in emergency mode. (See page 8-40.)

TIP

To preserve vehicle battery power, the smart key system turns off approximately 9 days after the vehicle was last used (the answer-back function is disabled). In this situation, simply push the main switch knob to turn the smart key system back on.

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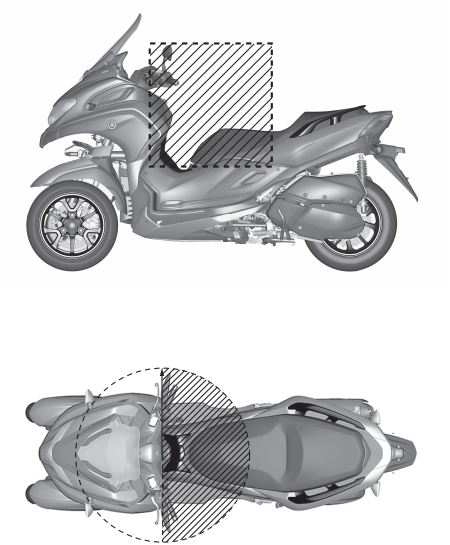
Operating range of the smart key system

The approximate operating range of the smart key system is shown below.



If the smart key is turned off, the vehicle will not recognize the smart key even if it is within operating range. If the smart key battery is discharged, the smart key system may not work or its operating range may become very small.

TIP

- Do not place the smart key in a storage compartment.
- Always carry the smart key with you.
- Turn the smart key off when leaving the vehicle.

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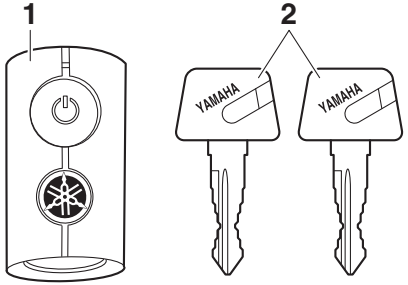
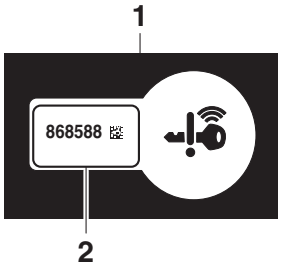
Handling of the smart key and mechanical keys



1. Smart key
2. Mechanical key



1. Identification number card
2. Identification number

EWA17952

⚠ WARNING

- **The smart key should be carried with you. Do not store it on the vehicle.**
- **When the smart key is within operating range, exercise due care because other people not carrying the smart key can start the engine and operate the vehicle.**

Included with the vehicle is one smart key, two mechanical keys, and one identification number card.

If the vehicle battery is discharged, the mechanical key can be used to open the seat. **Carry one mechanical key in addition to the smart key.**

If the smart key is lost or the smart key battery has discharged, the identification number can be used to operate the vehicle in emergency mode. (See page 8-40.) **Write down the identification number in case of emergency.**

If the smart key is lost and the smart key system identification number is unknown, the entire smart key system will need to be replaced at considerable cost. **Keep the identification number card in a safe place.**

ECA21573

NOTICE

The smart key has precision electronic components. Observe the following precautions to prevent possible malfunction or damage.

- **Do not place or store the smart key in a storage compartment. The smart key may be damaged from road vibrations or excessive heat.**
- **Do not drop, bend, or subject the smart key to strong impacts.**
- **Do not submerge the smart key in water or other liquids.**
- **Do not place heavy items or excessive stress on the smart key.**
- **Do not leave the smart key in a place exposed to direct sunlight, high temperature or high humidity.**
- **Do not grind or attempt to modify the smart key.**

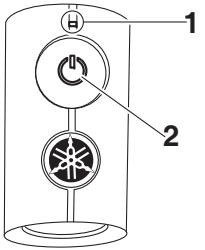
- **Keep the smart key away from strong magnetic fields and magnetic objects such as key holders, TVs, and computers.**
- **Keep the smart key away from electric medical equipment.**
- **Do not allow oils, polishing agents, fuel, or any strong chemicals to come in contact with the smart key. The smart key body may become discolored or cracked.**

TIP

- The smart key battery life is approximately two years, but this may vary according to operating conditions.
- Replace the smart key battery when the smart key system indicator light flashes for 20 seconds when the vehicle is turned on, or when the smart key indicator light does not come on when the smart key button is pushed. (See page 3-6.) After changing the smart key battery, if the smart key system still does not operate, check the vehicle battery and then have a Yamaha dealer check the vehicle.
- If the smart key continually receives radio waves, the smart key battery will discharge quickly. (For example, when placed in the vicinity of electrical products such as televisions, radios, or computers.)
- You can register up to six smart keys for the same vehicle. See a Yamaha dealer regarding spare smart keys.
- If a smart key is lost, contact a Yamaha dealer immediately to prevent the vehicle from being stolen.

EAU89110

Smart key



1. Smart key indicator light
2. Smart key button

EWA17952

⚠ WARNING

- **The smart key should be carried with you. Do not store it on the vehicle.**
- **When the smart key is within operating range, exercise due care because other people not carrying the smart key can start the engine and operate the vehicle.**

To turn the smart key on or off

Push the smart key button for approximately 1 second to turn the smart key on or off. When the smart key is turned off, the vehicle cannot be operated even if the smart key is within operating range. To operate the vehicle, turn the smart key on and bring it within operating range.

To check whether the smart key is turned on or off

Push the smart key button to confirm the current operating status of the smart key.

If the smart key indicator light:

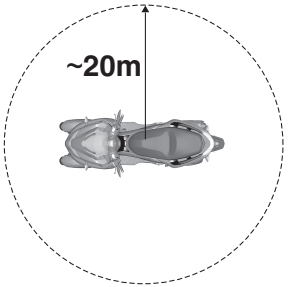
- Short flash (0.1 seconds): The smart key is turned on.
- Long flash (0.5 seconds): The smart key is turned off.

Remote answer-back function

Push the smart key button to operate the answer-back function remotely. The beeper will sound twice and all of the turn signal lights will flash twice. This feature is convenient for locating your vehicle in a parking lot and other areas.

Operating range of the answer-back function

The approximate operating range of the answer-back function is as shown.



As the smart key system uses weak radio waves, the operating range may be affected by the surrounding environment.

To turn the answer-back beeper on or off

The beeper, which sounds when the answer-back function is operated, can be turned on or off according to the following procedure.

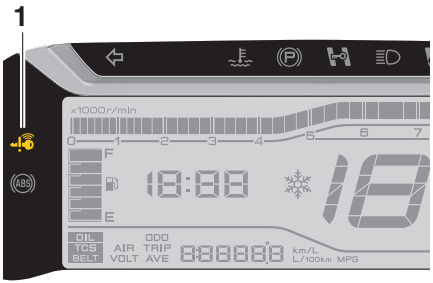
1. Turn the smart key on and bring it within operating range.
2. Turn the main switch to “OFF”, and then push the main switch knob once.
3. While the smart key system indicator light is on, push and hold the knob again for 5 seconds.
4. When the beeper sounds, the setting is complete.
   If the beeper:
   - Sounds twice: The beeper is turned off.
   - Sounds once: The beeper is turned on.

EAU76482

Replacing the smart key battery

Replace the battery in the following situations.

- The smart key system indicator light flashes for about 20 seconds when the power of the vehicle is turned on.
- The answer-back function does not operate when the smart key button is pushed.



1. Smart key system indicator light " "

EWA20630

WARNING

The smart key contains a button cell battery.

- **Keep new and used batteries away from children.**
- **If the battery compartment does not close securely, stop using the smart key and keep it away from children.**

Explosion Hazard - do not mishandle the battery.

- **Danger of explosion if battery is incorrectly replaced.**
- **Replace only with the same or equivalent type.**
- **Do not expose smart key to excessive heat, such as sunshine or fire.**

Chemical Burn Hazard - do not ingest the battery.

- **If the battery is swallowed, it can cause severe internal burns in just 2 hours and can lead to death.**
- **If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.**

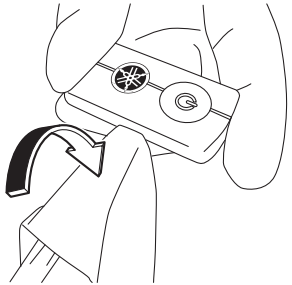
ECA15784

NOTICE

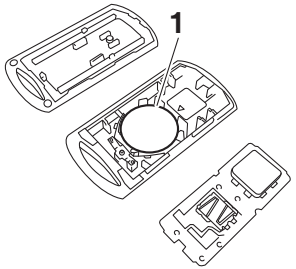
- **Use a cloth when opening the smart key case with a screwdriver. Direct contact with hard objects may damage or scratch the smart key.**
- **Take precautions to prevent the waterproof seal from being damaged or contaminated by dirt.**
- **Do not touch the internal circuits and terminals. This may cause malfunctions.**
- **Do not apply excessive force to the smart key when replacing the battery.**
- **Make sure the battery is installed correctly. Confirm the direction of the positive/"+" side of the battery.**

To replace the smart key battery

1. Open the smart key case as shown.



2. Remove the battery.



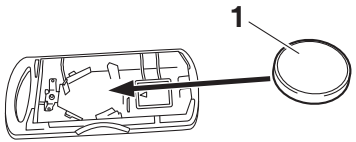
1. Battery

TIP

Dispose of the removed battery in accordance with local regulations.

3. Install a new battery as shown. Note the polarity of the battery.

Specified battery:
CR2032

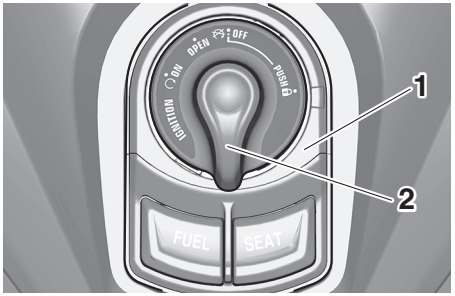


1. Battery

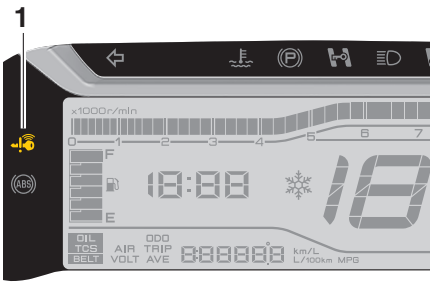
4. Gently snap the smart key case closed.

EAU89010

Main switch



1. Main switch
2. Main switch knob



1. Smart key system indicator light “ ”

The main switch is used to turn the vehicle power on and off, lock and unlock the steering, and open the seat and fuel tank cap lid. After pushing the

main switch knob and confirmation with the smart key has taken place, the main switch can be turned while the smart key system indicator light is on (approximately 4 seconds).

EWA18720

⚠ WARNING

Never turn the main switch to "OFF", "🔒", or "OPEN" while the vehicle is moving. Otherwise the electrical systems will be switched off, which may result in loss of control or an accident.

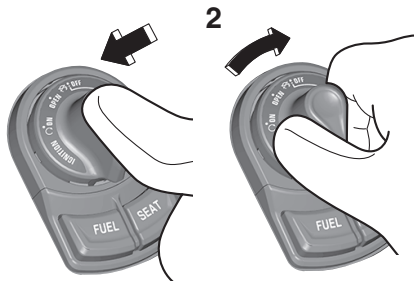
TIP

Do not push the main switch knob repeatedly or turn the main switch back and forth beyond normal use. Otherwise, to protect the main switch from damage, the smart key system will temporarily disable and the smart key system indicator light will flash. If this occurs, wait until the indicator light stops flashing before operating the main switch again.

The main switch positions are described below.

EAU76500

ON (on)



1. Push.
2. Turn.

All electrical circuits are supplied with the power, and the engine can be started.

To turn the vehicle power on

1. Turn the smart key on and bring it within operating range.
2. Push the main switch knob and the smart key indicator light will come on for approximately 4 seconds.
3. While the smart key system indicator light is on, turn the main switch to "ON". All of the turn signal lights flash twice and the vehicle power turns on.

TIP

- If the vehicle battery voltage is low, the turn signal lights will not flash.
- See "Emergency mode" on page 8-40 for information on turning the vehicle power on without the smart key.

EAU76510

OFF (off)

1. Turn.

All electrical systems are off.

To turn the vehicle power off

1. With the smart key turned on and within operating range, turn the main switch to “OFF”.
2. The turn signal lights flash once and the vehicle power turns off.

TIP

When the main switch is turned to “OFF” but the smart key cannot be confirmed (the smart key is either outside operation range or has been turned off), the beeper will sound for 3 seconds and the smart key system indicator light will flash for 30 seconds.

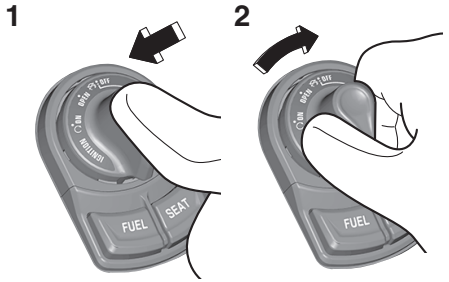
- During this 30 seconds, the main switch can be freely operated.
- After 30 seconds, the vehicle power will turn off automatically.
- To turn the vehicle power off immediately, push the main switch knob four times within 2 seconds.

EAU89021

OPEN (open)

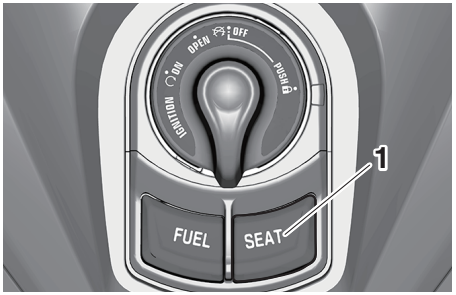
Power is supplied to the main switch. The seat and fuel tank cap lid can be opened.

To open the seat and fuel tank cap lid



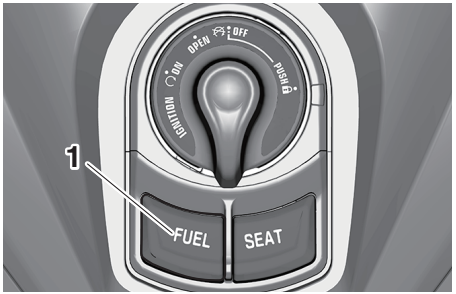
1. Push.
2. Turn.

1. With the smart key turned on and within operating range, push the main switch knob.
2. While the smart key system indicator light is on, turn the main switch to “OPEN”.
3. To open the seat, push the “SEAT” button, and then lift the rear of the seat.

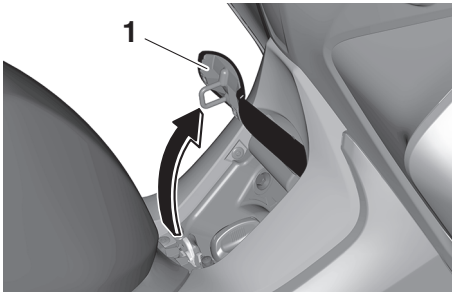


1. “SEAT” button

4. To open the fuel tank cap lid, push the “FUEL” button.



1. “FUEL” button



1. Fuel tank cap lid

TIP

Make sure that the seat and fuel tank cap lid are securely closed before starting off.

Open position reminder

To prevent you from accidentally leaving the vehicle unlocked by walking away with the main switch still in the “OPEN” position, the smart key system beeper will sound under the following conditions.

- When the main switch has been in the “OPEN” position for 3 minutes
- If the smart key is turned off while the main switch is in the “OPEN” position
- If you walk out of range of the smart key system with the main switch in the “OPEN” position

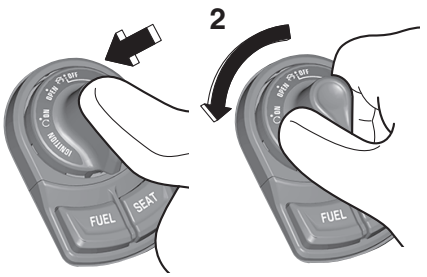
If the beeper sounds after 3 minutes, turn the main switch to “OFF” or “🔓”.
If the beeper sounds because the smart key was turned off or moved out of range, turn the smart key on and walk back into range.

TIP

- The beeper will turn off after 1 minute.
- The seat can also be opened with the mechanical key. (See page 5-18.)

EAU76521

“🔓” (lock)



1. Push.
2. Push and turn.

The steering is locked and all electrical systems are off.

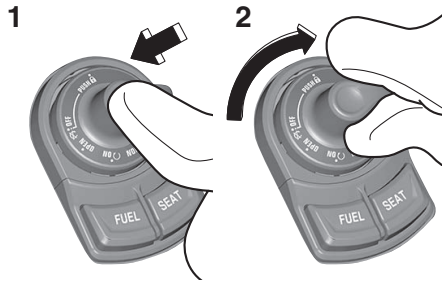
To lock the steering

1. Turn the handlebar all the way to the left.
2. With the smart key turned on and within operating range, push the main switch knob.
3. While the smart key system indicator light is on, push and turn the main switch to “🔓”.

TIP

If the steering will not lock, try turning the handlebar back to the right slightly.

To unlock the steering

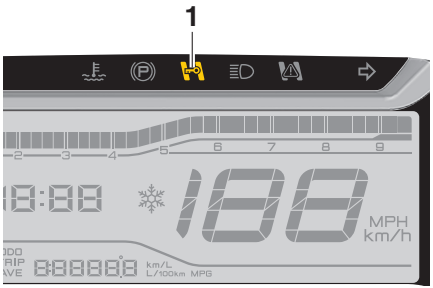


1. Push.
2. Push and turn.

1. With the smart key turned on and within operating range, push the main switch knob.
2. While the smart key system indicator light is on, push and turn the main switch to the desired position.

Standing assist

EAU89244



1. Standing assist indicator light " "

The standing assist helps the rider to keep the vehicle upright when stopped, or when parking. When you press the standing assist switch, the assist will be engaged to help you to keep the vehicle at its current tilt angle.

EWA20982

WARNING

- **When you push the vehicle, be sure to turn the vehicle power off. Otherwise unintended disengaging of the standing assist could result.**
- **Always disengage the standing assist under the following situations. Otherwise unintended loss of balance could result and lead to vehicle overturn.**
  - **When pass the roads with obstacles (e.g. road humps, sidewalk)**
  - **When the vehicle is on unpaved or rough ground.**
  - **When the vehicle is on a slope.**

Getting on and off

When getting on the vehicle, make sure the vehicle power is off, and apply the front or rear brake.

When getting off the vehicle, apply the parking brake and turn the vehicle power off.

EWA20992

WARNING

When the vehicle is stopped with the standing assist engaged, never step on one side of footrests, nor load the luggage unevenly on the vehicle. Otherwise unintended loss of balance may result, which could lead to vehicle overturn.

Standing assist operation

EWA21002

WARNING

The standing assist can be operated even the vehicle is leaning. Therefore, keep the following in mind:

- **Never engage the standing assist while moving. Otherwise the vehicle will be held at an unintended leaning angle, which may result in loss of control.**
- **Be sure to disengage the standing assist before starting off. Otherwise the standing assist will unintendedly disengage, and may cause loss of balance.**

Engaging the standing assist

1. Stop the vehicle and close the throttle completely. The standing assist indicator light starts flashing.
2. Press the standing assist switch once.

3. The standing assist indicator light comes on and the beeper sounds once. The assist is now engaged.

Engaging conditions of the standing assist

The standing assist can be engaged when the following conditions are met.

- Vehicle speed is 10 km/h (6 mi/h) or less with vehicle power on
- Engine speed is 2000 r/min or less
- Throttle grip is in fully closed position with engine running
- Standing assist warning light is off
- Standing assist switch is on

ECA26992

NOTICE

If the vehicle battery voltage is low, the standing assist may hold at its current position even the switch is operated. To prevent this from occurring, avoid improper use such as the followings:

- **Pushing the engine start switch and the standing assist switch at the same time.**
- **Operating the standing assist repeatedly when the engine is not running.**

Disengaging the standing assist

1. Stop the vehicle and hold it upright.
2. Press the standing assist switch twice.
3. The standing assist indicator light flashes, and the beeper sounds twice. The assist is now disengaged.

Automatic disengaging conditions of the standing assist

The standing assist disengages automatically when one of the following conditions is detected.

- Vehicle speed is over 10 km/h (6 mi/h) with vehicle power on
- Engine speed is over 2300 r/min
- Throttle grip is turned with engine running

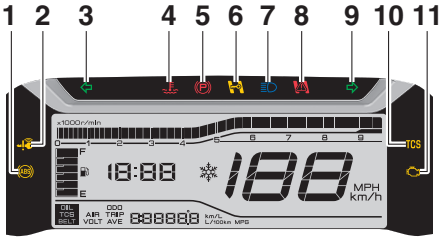
EWA21012

⚠ WARNING

- **Do not race the engine when stopped and the standing assist is engaged. Otherwise disengaging of the standing assist will occur and may cause loss of balance.**
- **Do not coast with the vehicle power off. Otherwise if you turn the vehicle power on when the vehicle is coasting, unintended disengaging of the standing assist may result, which could cause loss of balance.**

EAU4939M

Indicator lights and warning lights



1. ABS warning light “ ”
2. Smart key system indicator light “ ”
3. Left turn signal indicator light “ ”
4. Coolant temperature warning light “ ”
5. Parking brake indicator light “ ”
6. Standing assist indicator light “ ”
7. High beam indicator light “ ”
8. Standing assist warning light “ ”
9. Right turn signal indicator light “ ”
10. Traction control system indicator light “TCS”
11. Engine trouble warning light “ ”

EAU88900

Turn signal indicator lights “ ” and “ ”

Each indicator light will flash when its corresponding turn signal lights are flashing.

EAU88910

High beam indicator light “ ”

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

EAU89121

Parking brake indicator light “ ”

This indicator light comes on when the parking brake is applied.

EAU88880

Coolant temperature warning light “ ”

This warning light comes on when the engine is overheating. If this occurs, stop the engine immediately and allow the engine to cool. (See page 8-39.)
For vehicles with a radiator fan, the radiator fan(s) automatically switch on or off according to the coolant temperature.

TIP

When the vehicle is turned on, the light will come on for a few seconds, and then go off. If the light does not come on, or if the light remains on, have a Yamaha dealer check the vehicle.

ECA10022

NOTICE

Do not continue to operate the engine if it is overheating.

EAU88920

Engine trouble warning light “ ”

This warning light comes on if a problem is detected in the engine or other vehicle control system. If this occurs, have a Yamaha dealer check the onboard diagnostic system.

TIP

When the vehicle is turned on, this light should come on for a few seconds and then go off. Otherwise, have a Yamaha dealer check vehicle.

EAU88890

ABS warning light “ ”

This warning light comes on when the vehicle is first turned on, and goes off after starting riding. If the warning light comes on while riding, the anti-lock brake system may not work correctly.

EWA16043

WARNING

If the ABS warning light does not turn off after reaching 10 km/h (6 mi/h), or if the warning light comes on while riding:

- **Use extra caution to avoid possible wheel lock during emergency braking.**
- **Have a Yamaha dealer check the vehicle as soon as possible.**

TIP

The ABS warning light may come on while revving the engine with the vehicle on its centerstand, but this does not indicate a malfunction.

EAU88930

Traction control system indicator light “TCS”

This indicator light will flash when traction control has engaged.

If the traction control system is turned off, this indicator light will come on. (See page 5-13.)

TIP

When the vehicle is turned on, the light should come on for a few seconds and then go off. If the light does not come on, or if the light remains on, have a Yamaha dealer check vehicle.

EAU89252

Standing assist indicator light “ ”

This indicator light flashes when the standing assist can be used.

The indicator light comes on when the standing assist is engaged.

TIP

When the vehicle is turned on, the light will come on for a few seconds, and then go off. If the light does not come on, have a Yamaha dealer check the vehicle.

EAU89262

Standing assist warning light “ ”

This warning light comes on if a problem is detected in the standing assist. If this occurs, have a Yamaha dealer check the system.

TIP

- Depending on the problem, the engine speed may be limited and the vehicle cannot be driven normally.
- When the vehicle is turned on, the light will come on for a few seconds, and then go off. If the light does not come on, or if the light remains on, have a Yamaha dealer check the vehicle.

EAU78083

Smart key system indicator light “ ”

This indicator light will flash when communication between the vehicle and smart key takes place and when certain smart key system operations are carried out.

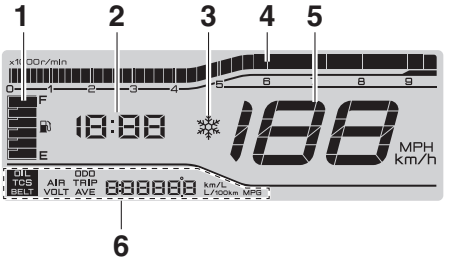
The indicator light may also flash when there is an error in the smart key system.

TIP

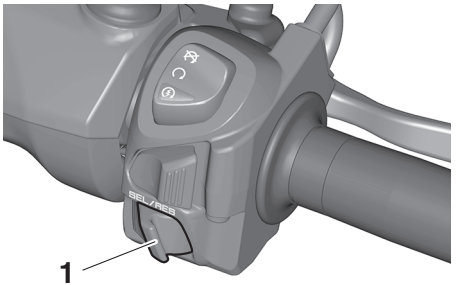
When the vehicle is turned on, the light should come on for a few seconds and then go off. If the light does not come on, or if the light remains on, have a Yamaha dealer check the vehicle.

EAU86811

Multi-function meter unit



1. Fuel meter
2. Clock
3. Icy road warning indicator "❄"
4. Tachometer
5. Speedometer
6. Multi-function display



1. "SEL/RES" switch

EWA12423

⚠ WARNING

Be sure to stop the vehicle before making any setting changes to the multi-function meter unit. Changing settings while riding can distract the operator and increase the risk of an accident.

EAU89230

Switching the display units

The display units can be switched between kilometers and miles.

To switch the display units

1. Turn the vehicle off.
2. While pushing the "SEL" switch, turn the vehicle on.
3. Continue to push the "SEL" switch for at least 5 seconds.

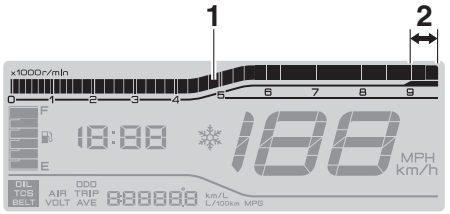
EAU86831

Speedometer

The speedometer shows the vehicle's traveling speed.

EAU87180

Tachometer



1. Tachometer
2. High-r/min zone

The tachometer allows the rider to monitor the engine speed and keep it within the ideal power range.

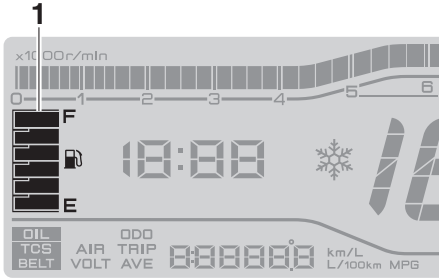
ECA23050

NOTICE

Do not operate the engine in the tachometer high-r/min zone.
High-r/min zone: 9000 r/min and above

EAU86841

Fuel meter



1. Fuel meter

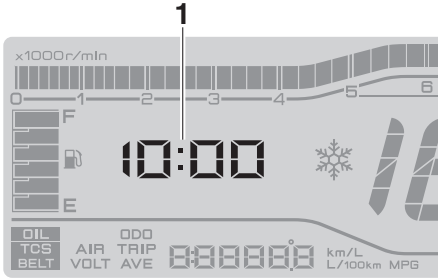
The fuel meter indicates the amount of fuel in the fuel tank. The display segments of the fuel meter disappear from "F" (full) towards "E" (empty) as the fuel level decreases. When approximately 2.4 L (0.63 US gal, 0.53 Imp.gal) of fuel remains, the last segment starts flashing. Refuel as soon as possible.

TIP

If a problem is detected in the electrical circuit, the fuel level segments will flash repeatedly. If this occurs, have a Yamaha dealer check the vehicle.

EAU89330

Clock



1. Clock

The clock uses a 12-hour time system.

To set the clock

1. With the display in the odometer, push the "SEL" switch until the hour digits start flashing.
2. Use the "RES" switch to set the hours.
3. Push the "SEL" switch and the minute digits start flashing.
4. Use the "RES" switch to set the minutes.
5. Push the "SEL" switch to confirm the settings.

5

EAU89130

Multi-function display

1. Multi-function display

The multi-function display is equipped with the following:

- an odometer (ODO)
- two tripmeters (TRIP 1 and TRIP 2)
- a fuel reserve tripmeter (TRIP F)
- an oil change tripmeter (OIL TRIP)
- an oil change indicator
- a V-belt replacement tripmeter (BELT TRIP)
- a V-belt replacement indicator
- an instantaneous fuel consumption display (km/L, L/100 km, or MPG)
- an average fuel consumption display (AVE_ _._ km/L, AVE_ _._ L/100 km, or AVE_ _ _._ MPG)
- a traction control system display (TCS)
- an air temperature display (AIR)
- a battery voltage display (VOLT)

Push the “RES” switch to change the display in the following order:

ODO → TRIP 1 → TRIP 2 → TRIP F → km/L, L/100 km or MPG → AVE_ _._ km/L, AVE_ _._ L/100 km or AVE_ _ _._ MPG → AIR → VOLT → TCS → OIL TRIP → BELT TRIP → ODO

TIP

- The fuel reserve tripmeter appears only when you are low on fuel.
- Push the “SEL” switch to change the display in the reverse order.

EAU86890

Odometer

The odometer shows the total distance traveled by the vehicle.

TIP

The odometer will lock at 999999 and cannot be reset.

EAU89140

Tripmeters

The tripmeters show the distance traveled since they were last reset.

To reset a tripmeter, change the display to the tripmeter you want to reset, and then push the “RES” switch until it is reset.

TIP

The tripmeters will reset and continue counting after 9999.9 is reached.

EAU89150

Fuel reserve tripmeter

If the last segment of the fuel meter starts flashing, the display automatically changes to the fuel reserve tripmeter “TRIP F” and starts counting the distance traveled from that point.

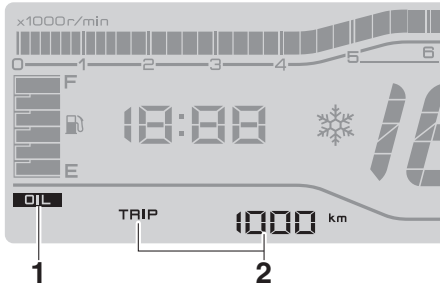
To reset the fuel reserve tripmeter, push the “RES” switch until it is reset.

TIP

If you do not reset the fuel reserve tripmeter manually, it will reset automatically and disappear from the display after refueling and traveling 5 km (3 mi).

EAU89161

Oil change tripmeter



1. Oil change indicator “OIL”
2. Oil change tripmeter

This tripmeter shows the distance traveled since the last engine oil change. The oil change indicator “OIL” will flash at the initial 1000 km (600 mi), the next 4000 km (2500 mi), and then every 5000 km (3000 mi) thereafter.
To reset the oil change tripmeter and oil change indicator, select the oil change tripmeter, and then push the “RES” switch until the tripmeter starts flashing. While the tripmeter is flashing, push the “RES” switch until the tripmeter is reset.

TIP

When the engine oil has been changed, the oil change tripmeter and the oil change indicator must be reset. Otherwise, the oil change indicator will not come on at the correct time.

EAU89172

V-belt replacement tripmeter

1. V-belt replacement indicator “BELT”
2. V-belt replacement tripmeter

This tripmeter shows the distance traveled since the V-belt was last replaced. The V-belt replacement indicator “BELT” will flash at every 20000 km (12500 mi) to indicate that the V-belt should be replaced.

To reset both the tripmeter and the indicator, select the V-belt replacement tripmeter, and then push the “RES” switch until the tripmeter starts flashing. While the tripmeter is flashing, push the “RES” switch until the tripmeter is reset.

TIP

When the V-belt is replaced, the tripmeter and indicator must be reset. Otherwise, the V-belt replacement indicator will not come on at the correct time.

EAU89180

Instantaneous fuel consumption display

1. Instantaneous fuel consumption display

5

This display shows the fuel consumption under the current riding conditions. It can be set to either “km/L” or “L/100 km”, or “MPG” when using miles. To switch the fuel consumption measurement units, push the “SEL” switch until the measurement units change.

- “km/L”: the distance that can be traveled on 1.0 L of fuel.
- “L/100 km”: the amount of fuel necessary to travel 100 km.
- “MPG”: the distance that can be traveled on 1.0 Imp.gal of fuel.

TIP

When traveling under 10 km/h (6 mi/h), “_ _._” is displayed.

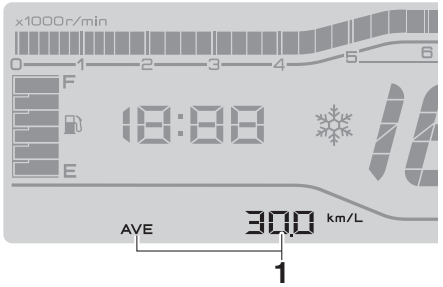
EAU87790

TIP

The instantaneous fuel consumption function should be used for general reference only. Do not use this figure to estimate the distance that can be traveled on the current tank of fuel.

EAU89190

Average fuel consumption display



1. Average fuel consumption display

This display shows the average fuel consumption since it was last reset. The average fuel consumption display can be set to either “AVE_ _._ km/L” or “AVE_ _._ L/100 km”, or “AVE_ _._ MPG” when using miles. To switch the fuel consumption measurement units, push the “SEL” switch until the measurement units change.

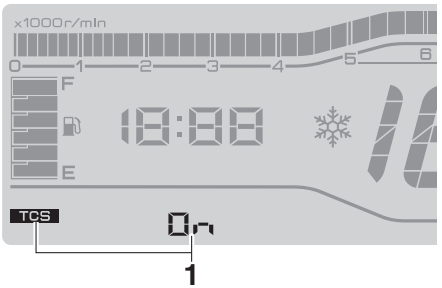
- “AVE_ _._ km/L”: the average distance that can be traveled on 1.0 L of fuel.
- “AVE_ _._ L/100 km”: the average amount of fuel necessary to travel 100 km.
- “AVE_ _._ MPG”: the average distance that can be traveled on 1.0 Imp.gal of fuel.

TIP

- To reset the display, push the “RES” switch until it resets.
- After resetting, “_ _._” is shown until the vehicle has traveled some distance.

EAU89201

Traction control system display



1. Traction control system display

This display shows the current status of the traction control system. (See page 5-13.)

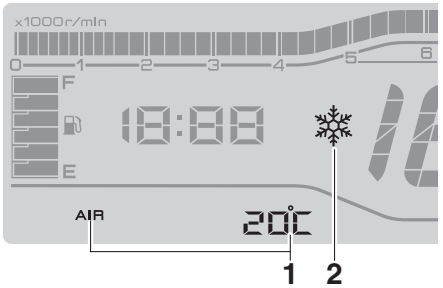
- “TCS On”: the system is on
- “TCS OFF”: the system is off

TIP

If only “TCS” is displayed, there is a communication error within the vehicle. Have a Yamaha dealer check the vehicle as soon as possible.

EAU89210

Air temperature display



1. Air temperature display
2. Icy road warning indicator “❄”

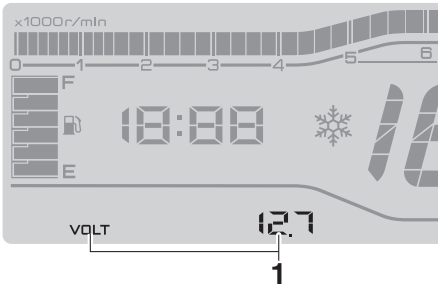
This display shows the air temperature from –10 °C to 40 °C in 1 °C increments. The temperature displayed may vary from the actual ambient temperature.
The icy road warning indicator “❄” will flash when the detected temperature is 3 °C or lower.

TIP

–10 °C will be displayed even if the ambient temperature is lower, and 40 °C will be displayed even if the ambient temperature is higher.

EAU89220

Battery voltage display



1. Battery voltage display

This display shows the current charge state of the battery.

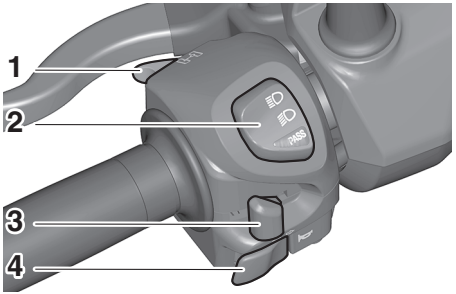
TIP

If the battery voltage is less than 9.0 V, “_ _._” is displayed.

EAU1234P

Handlebar switches

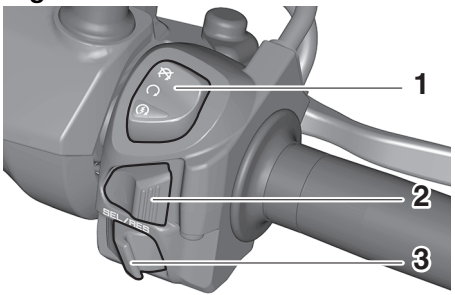
Left



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

5

Right



1. Stop/Run/Start switch "⊠/◯/(≋)"
2. Hazard switch "⚠"
3. "SEL/RES" switch

EAU89310

Dimmer/Pass switch "≣D/≋D/PASS"

Set this switch to "≣D" for the high beam and to "≋D" for the low beam.

To flash the high beam, press the switch down to "PASS" while the headlights are on low beam.

TIP

When the switch is set to low beam, the outer two headlights come on.

When the switch is set to high beam, all four headlights come on.

EAU12461

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.

EAU12501

Horn switch "📯"

Press this switch to sound the horn.

EAU89273

Standing assist switch "🚶"

To engage the standing assist, press the switch once when the standing assist indicator light is flashing.

To disengage the standing assist, press the switch twice.

EAU54213

Stop/Run/Start switch "⊠/◯/(≋)"

To crank the engine with the starter, set this switch to "◯", and then push the switch down towards "(≋)". See page 7-2 for starting instructions prior to 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.

EAU79500

Hazard switch "⚠"

With the main switch in the "ON" position, use this switch to turn on the hazard lights (simultaneous flashing of all turn signal lights).

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

ECA10062

NOTICE

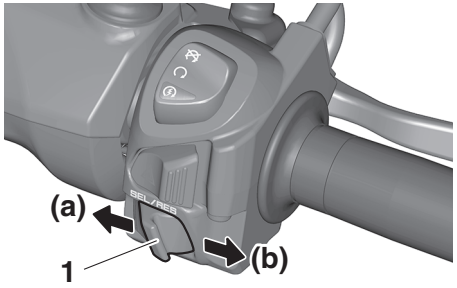
Do not use the hazard lights for an extended length of time with the engine not running, otherwise the battery may discharge.

EAU88941

"SEL/RES" switch

This switch is used to make setting and display changes in the multi-function meter unit. See page 5-3 for more information.

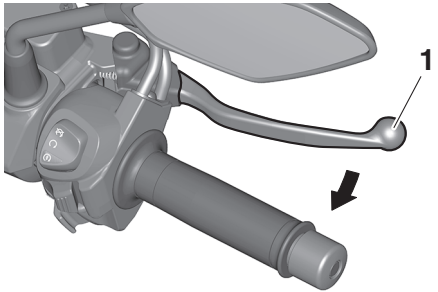
To use the “SEL” switch, move the “SEL/RES” switch in direction (a). To use the “RES” switch, move the “SEL/RES” switch in direction (b).



1. “SEL/RES” switch

EAU12902

Front brake lever

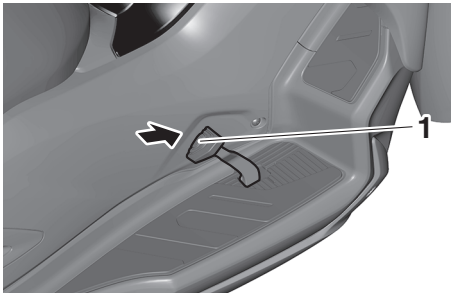


1. Front brake lever

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

EAU89031

Brake pedal



1. Brake pedal

The brake pedal is located on the right side of the vehicle. To apply the rear brake, press down on the brake pedal. This model is equipped with a unified brake system.

When the brake pedal is pressed down, the rear brake and a portion of the front brake are applied. For full braking performance, operate the front brake lever and brake pedal simultaneously.

TIP

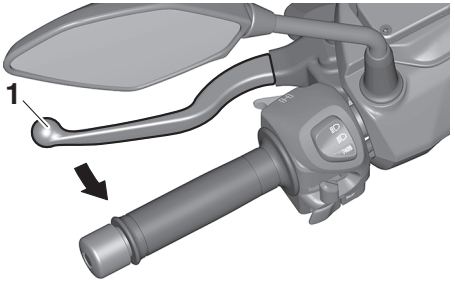
- Because the unified brake system is mechanical, additional free play can be felt in the front and rear

5

brake levers when the brake pedal is pressed down, but this does not indicate a malfunction.
- The unified brake system does not operate when the front brake lever is being pulled directly.

EAU89350

Rear brake lever



1. Rear brake lever

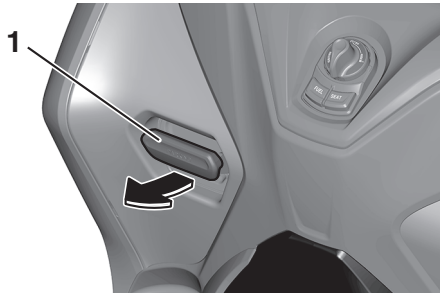
The rear brake lever is located on the left side of the handlebar. To apply the rear brake, pull the lever toward the handlebar grip.
This model is equipped with a unified brake system.
When pulling the rear brake lever, the rear brake and a portion of the front brake are applied. For full braking performance, apply both brake levers simultaneously.

TIP

- Because the unified brake system is mechanical, additional free play can be felt in the front brake lever and brake pedal when the rear brake lever is being pulled, but this does not indicate a malfunction.
- The unified brake system does not operate when the front brake lever is being pulled directly.

EAU89340

Parking brake lever



1. Parking brake lever

To apply the parking brake
Pull the parking brake lever upward firmly.

To release the parking brake
Pull slightly upward on the parking brake lever, and then put it back in the original position.

TIP
Be sure to check that the rear wheel does not move when the parking brake lever is applied.

EWA21030

WARNING

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

EAU84570

ABS

The anti-lock brake system (ABS) acts on the front and rear brakes independently.

EWA16051

WARNING

Always keep a sufficient distance from the vehicle ahead to match the riding speed even with ABS.

- **The ABS performs best with long braking distances.**
- **On certain surfaces, such as rough or gravel roads, the braking distance may be longer with the ABS than without.**

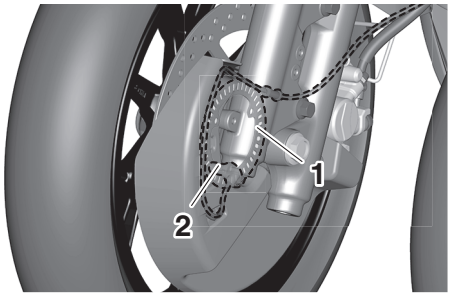
How to operate the brakes
Operate the brake lever and brake pedal the same as you would conventional brakes. If wheel slip is detected while braking, ABS will activate and a pulsating sensation may be felt at the brake lever or brake pedal. Continue to apply the brakes and let the ABS work. Do not pump the brakes as this will reduce braking effectiveness.

- The ABS performs a self-check when you first start off. During this time a clicking noise from the hydraulic unit may be audible, and if the brake lever or brake pedal is applied a vibration can be felt, but this is not a malfunction.
- The brake system will revert to a conventional brake system in case of ABS malfunction.

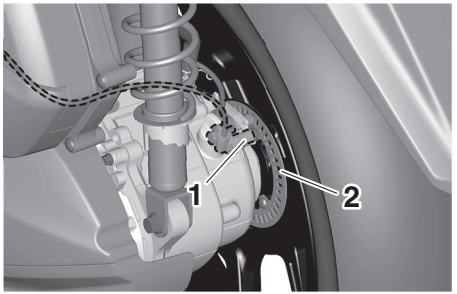
ECA20100

NOTICE

Be careful not to damage the wheel sensor or wheel sensor rotor; otherwise, improper performance of the ABS will result.



1. Front wheel sensor rotor
2. Front wheel sensor



1. Rear wheel sensor
2. Rear wheel sensor rotor

EAU89320

Traction control system

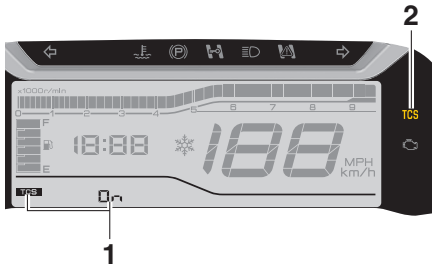
The traction control system (TCS) helps maintain traction when accelerating on slippery surfaces, such as unpaved or wet roads. If sensors detect that the rear wheel is starting to slip (uncontrolled spinning), the traction control system assists by regulating engine power until traction is restored. When traction control has engaged, the "TCS" indicator light will flash. You may notice changes in engine response or exhaust sound.

EWA18860

⚠ WARNING

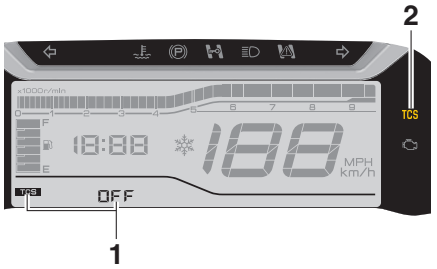
The traction control system is not a substitute for riding appropriately for the conditions. Traction control cannot prevent loss of traction due to excessive speed when entering turns, when accelerating hard at a sharp lean angle, or while braking, and cannot prevent front wheel slipping. As with any vehicle, approach surfaces that may be slippery with caution and avoid especially slippery surfaces.

Setting the traction control system



1. Traction control system display
2. Traction control system indicator light "TCS"

When the vehicle is turned on, traction control is automatically turned on.
To turn the traction control system off, use the "SEL" switch to change the multi-function display to the traction control system display. Then push the "RES" switch for three seconds. The display will show "TCS OFF", and the "TCS" indicator light will come on.



1. Traction control system display
2. Traction control system indicator light "TCS"

TIP

Turn the traction control system off to help free the rear wheel if the vehicle gets stuck in mud, sand, or other soft surfaces.

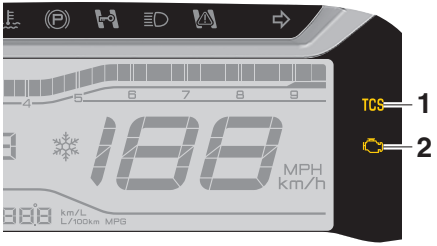
ECA16801

NOTICE

Use only the specified tires. (See page 8-22.) Using different sized tires will prevent the traction control system from controlling tire rotation accurately.

Resetting the traction control system

The traction control system will automatically disable under certain conditions; such as when a sensor fault is detected, or when only one wheel is allowed to rotate for more than a few seconds. Should this happen, the "TCS" indicator light will come on, and possibly the "" warning light, too.



1. Traction control system indicator light "TCS"
2. Engine trouble warning light ""

5

TIP

When the vehicle is on the centerstand, do not rev the engine for an extended period of time. Otherwise, the traction control system will automatically disable and need to be reset.

If the traction control system automatically disables, try resetting it as follows.

1. Stop the vehicle and turn it off completely.
2. Wait a few seconds and then turn the vehicle power on.
3. The "TCS" indicator light should turn off and the system be enabled.

TIP

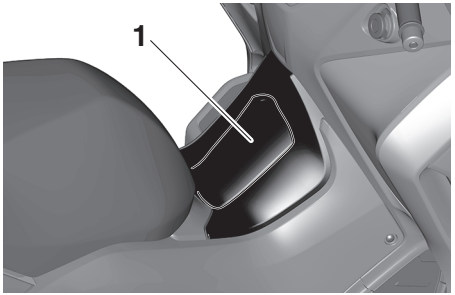
If the "TCS" indicator light remains on after resetting, the vehicle may still be ridden; however, have a Yamaha dealer check the vehicle as soon as possible.

4. Have a Yamaha dealer check the vehicle and turn off the "" warning light.

EAU89040

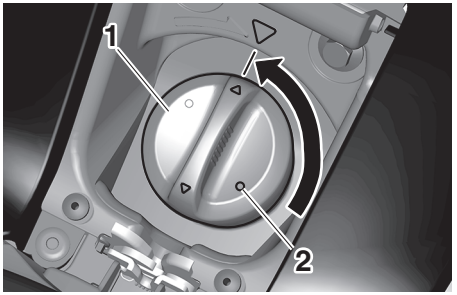
Fuel tank cap

To access the fuel tank, open the fuel tank cap lid. (See page 3-9.)



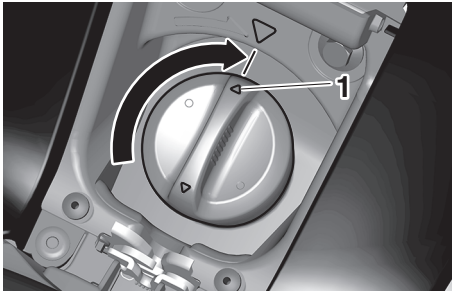
1. Fuel tank cap lid

To remove the fuel tank cap, turn the fuel tank cap counterclockwise until the release mark "o" aligns with "▽", and then pull the cap off.



1. Fuel tank cap
2. Release mark "o"

To install the fuel tank cap, insert the fuel tank cap onto the tank opening and turn it clockwise until the install mark "△" aligns with "▽".



1. Install mark "△"

EWA11092

⚠ WARNING

Make sure that the fuel tank cap is properly closed after filling fuel. Leaking fuel is a fire hazard.

EAU13213

Fuel

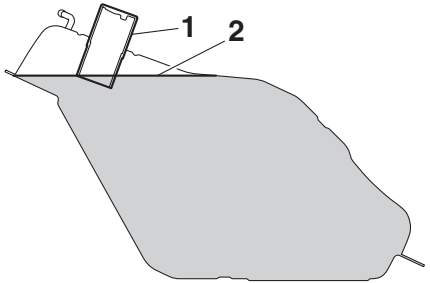
Make sure there is sufficient gasoline in the tank.

EWA10882

⚠ WARNING

Gasoline and gasoline vapors are extremely flammable. To avoid fires and explosions and to reduce the risk of injury when refueling, follow these instructions.

1. Before refueling, turn off the engine and be sure that no one is sitting on the vehicle. Never refuel while smoking, or while in the vicinity of sparks, open flames, or other sources of ignition such as the pilot lights of water heaters and clothes dryers.
2. Do not overfill the fuel tank. Stop filling when the fuel reaches the bottom of the filler tube. Because fuel expands when it heats up, heat from the engine or the sun can cause fuel to spill out of the fuel tank.



1. Fuel tank filler tube
2. Maximum fuel level

3. Wipe up any spilled fuel immediately. ***NOTICE:*** **Immediately wipe off spilled fuel with a clean, dry, soft cloth, since fuel may deteriorate painted surfaces or plastic parts.** [ECA10072]
4. Be sure to securely close the fuel tank cap.

EWA15152

⚠ WARNING

Gasoline is poisonous and can cause injury or death. Handle gasoline with care. Never siphon gasoline by mouth. If you should swallow some gasoline or inhale a lot of gasoline vapor, or get some gasoline in your eyes, see your doctor immediately. If

gasoline spills on your skin, wash with soap and water. If gasoline spills on your clothing, change your clothes.

EAU76861

Recommended fuel:
Regular unleaded gasoline (E10 acceptable)
Fuel tank capacity:
13 L (3.4 US gal, 2.9 Imp.gal)
Fuel reserve amount:
2.4 L (0.63 US gal, 0.53 Imp.gal)

ECA11401

NOTICE

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.

TIP

- This mark identifies the recommended fuel for this vehicle as specified by European regulation (EN228).
- Check that gasoline nozzle has the same identifier when fueling.

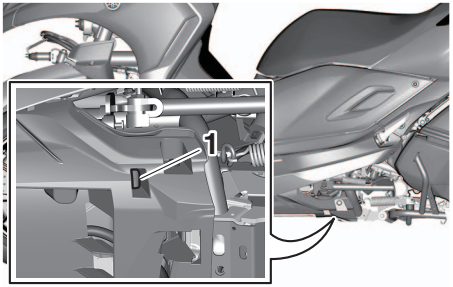
Your Yamaha engine has been designed to use regular unleaded gasoline with a research octane number of 95 or higher. If knocking (or pinging) occurs, use a gasoline of a different brand or premium unleaded fuel. Use of unleaded fuel will extend spark plug life and reduce maintenance costs.

Gasohol

There are two types of gasohol: gasohol containing ethanol and that containing methanol. Gasohol containing ethanol can be used if the ethanol content does not exceed 10% (E10). Gasohol containing methanol is not recommended by Yamaha because it can cause damage to the fuel system or vehicle performance problems.

EAU80200

Fuel tank overflow hose



1. Fuel tank overflow hose

Before operating the vehicle:

- Check the fuel tank overflow hose connection.
- Check the fuel tank overflow hose for cracks or damage, and replace it if necessary.
- Make sure that the end of the fuel tank overflow hose is not blocked, and clean it if necessary.
- Make sure that the end of the fuel tank overflow hose is positioned as shown.

TIP

See page 8-11 for canister information.

EAU13435

Catalytic converter

The exhaust system contains catalytic converter(s) to reduce harmful exhaust emissions.

EWA10863

WARNING

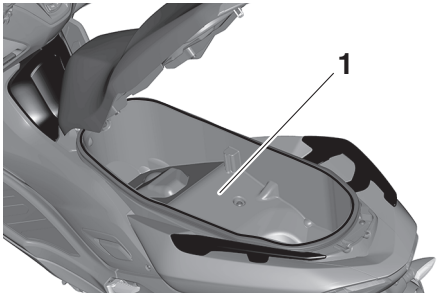
The exhaust system is hot after operation. To prevent a fire hazard or burns:

- **Do not park the vehicle near possible fire hazards such as grass or other materials that easily burn.**
- **Park the vehicle in a place where pedestrians or children are not likely to touch the hot exhaust system.**
- **Make sure that the exhaust system has cooled down before doing any maintenance work.**
- **Do not allow the engine to idle more than a few minutes. Long idling can cause a build-up of heat.**

EAU89051

Storage compartment

The storage compartment is located under the seat. (See page 3-9.)



1. Storage compartment

TIP

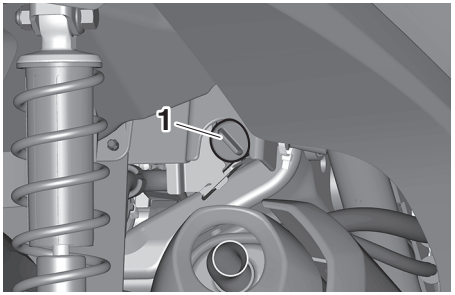
- The seat/storage compartment can be opened using the smart key system or the mechanical key.
- Some helmets cannot be stored in the storage compartment because of their size or shape.

To open the seat/storage compartment via the main switch

Turn the main switch to “OPEN”, and then push the “SEAT” button.

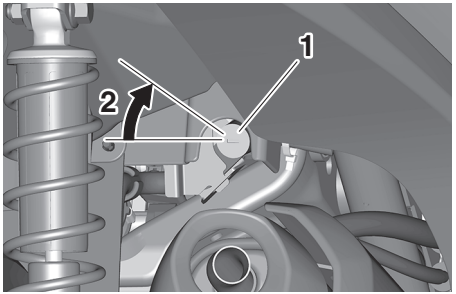
To open the seat/storage compartment with the mechanical key

1. Open the keyhole cover.



1. Keyhole cover

2. Insert the mechanical key into the seat lock, and then turn it clockwise.



1. Seat lock
2. Unlock.

TIP

Be sure to close the seat before starting off.

ECA24020

NOTICE

Make sure that the keyhole cover is installed when the mechanical key is not being used.

ECA21150

NOTICE

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

- **Since the storage compartment accumulates heat when exposed to the sun and/or the engine heat, do not store anything susceptible to heat, consumables or flammable items 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 vehicle 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.**

EWA20970

⚠ WARNING

- **Do not exceed the load limit of 5.0 kg (11 lb) for the storage compartment.**
- **Do not exceed the maximum load of 172 kg (379 lb) for the vehicle.**

EAU14895

Adjusting the shock absorber assemblies

EWA10211

⚠ WARNING

Always adjust both shock absorber assemblies equally, otherwise poor handling and loss of stability may result.

Each shock absorber assembly is equipped with a spring preload adjusting ring.

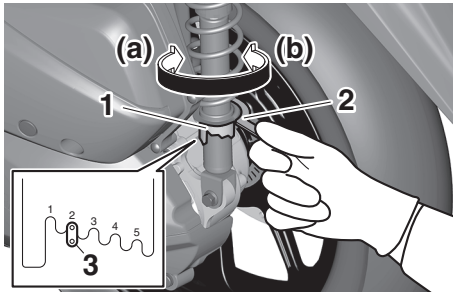
ECA10102

NOTICE

To avoid damaging the mechanism, do not attempt to turn beyond the maximum or minimum settings.

Adjust the spring preload as follows.
Turn the adjusting ring in direction (a) to increase the spring preload.
Turn the adjusting ring in direction (b) to decrease the spring preload.

- Align the appropriate notch in the adjusting ring with the position indicator on the shock absorber.
- Use the spring preload adjusting tool included in the tool kit to make this adjustment.

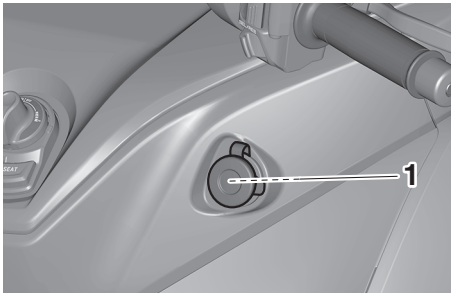


1. Spring preload adjusting ring
2. Special wrench
3. Position indicator

Spring preload setting:
Minimum (soft):
1
Standard:
2
Maximum (hard):
5

EAU49454

Auxiliary DC jack



1. Auxiliary DC jack

A 12-V accessory connected to the auxiliary DC jack can be used when the main switch is on.

ECA15432

NOTICE

The accessory connected to the auxiliary DC jack should not be used with the engine turned off, and the load must never exceed 12 W (1 A), otherwise the fuse may blow or the battery may discharge.

To use the auxiliary DC jack

1. Turn the main switch off.
2. Remove the auxiliary DC jack cap.
3. Turn the accessory off.

4. Insert the accessory plug into the auxiliary DC jack.
5. Turn the main switch on, and start the engine. (See page 7-2.)
6. Turn the accessory on.

EWA14361

⚠ WARNING

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

EAU15306

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.

TIP

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

EWA10242

⚠ 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 and have a Yamaha dealer repair it if it does not function properly.

EAU45055

Ignition circuit cut-off system

This system prevents engine starts unless the sidestand is up. Also, it will stop the running engine should the sidestand be lowered.
Periodically check the system via the following procedure.

TIP

- This check is most reliable if performed with a warmed-up engine.
- See pages 3-7 and 5-8 for switch operation information.

With the engine turned off:
1.Place vehicle on centerstand.
2.Move the sidestand down.
3.Set engine stop switch to run position.
4.Turn main switch to on position.
5.Apply the front or rear brake.
6.Push the start switch.
Does the engine start?

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

With the engine still off:
7. Move the sidestand up.
8. Apply the front or rear brake.
9. Push the start switch.
Does the engine start?

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

With the engine still running:
10. Move the sidestand down.
Does the engine stall?

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

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

⚠ WARNING

- **The vehicle must be placed on the centerstand during this inspection.**
- **If a malfunction is found, have the vehicle inspected before riding.**

EAU1559B

Inspect your vehicle each time you use it to make sure the vehicle is in safe operating condition. Always follow the inspection and maintenance procedures and schedules described in the Owner's Manual.

EWA11152

⚠ WARNING

Failure to inspect or maintain the vehicle properly increases the possibility of an accident or equipment damage. Do not operate the vehicle if you find any problem. If a problem cannot be corrected by the procedures provided in this manual, have the vehicle inspected by a Yamaha dealer.

Before using this vehicle, check the following points:

ITEM	CHECKS	PAGE
Fuel	• Check fuel level in fuel tank. • Refuel if necessary. • Check fuel line for leakage. • Check fuel tank overflow hose for obstructions, cracks or damage, and check hose connection.	5-16, 5-18
Engine oil	• Check oil level in engine. • If necessary, add recommended oil to specified level. • Check vehicle for oil leakage.	8-12
Final transmission oil	• Check vehicle for oil leakage.	8-14
Coolant	• Check coolant level in reservoir. • If necessary, add recommended coolant to specified level. • Check cooling system for leakage.	8-15
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 specified brake fluid to specified level. • Check hydraulic system for leakage.	8-25, 8-26

ITEM	CHECKS	PAGE
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 specified brake fluid to specified level. • Check hydraulic system for leakage.	8-25, 8-26
Throttle grip	• Make sure that operation is smooth. • Check throttle grip free play. • If necessary, have Yamaha dealer adjust throttle grip free play and lubricate cable and grip housing.	8-21, 8-28
Control cables	• Make sure that operation is smooth. • Lubricate if necessary.	8-28
Wheels and tires	• Check for damage. • Check tire condition and tread depth. • Check air pressure. • Correct if necessary.	8-22, 8-23
Brake pedal	• Make sure that operation is smooth. • Lubricate pedal pivoting point if necessary.	8-29
Brake levers	• Make sure that operation is smooth. • Lubricate lever pivoting points if necessary.	8-28
Centerstand, sidestand	• Make sure that operation is smooth. • Lubricate pivots if necessary.	8-29
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 not working correctly, have Yamaha dealer check vehicle.	5-21

EAU15952

Read the Owner's Manual carefully to become familiar with all controls. If there is a control or function you do not understand, ask your Yamaha dealer.

EWA10272

⚠ WARNING

Failure to familiarize yourself with the controls can lead to loss of control, which could cause an accident or injury.

EAU16842

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.

EAU88951

0–1000 km (0–600 mi)

Avoid prolonged operation above 4500 r/min. ***NOTICE:*** **After 1000 km (600 mi) of operation, be sure to replace the engine oil, final transmission oil and the oil filter element.** [ECA12932]

1000–1600 km (600–1000 mi)

Avoid prolonged operation above 5400 r/min.

1600 km (1000 mi) and beyond

The vehicle can now be operated normally.

ECA23060

NOTICE

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

7

EAU86720

Starting the engine

The ignition circuit cut-off system will enable starting when the sidestand is be up.

To start the engine

1. Turn the main switch on and set the engine stop switch to the run position.
2. Confirm the indicator and warning light(s) come on for a few seconds, and the go off. (See page 5-1.)

TIP

- Do not start the engine if the engine trouble warning light remains on.
- The ABS warning light should come on and stay on until the vehicle reaches a speed of 10 km/h (6 mi/h).

ECA24110

NOTICE

If a warning or indicator light does not work as described above, have a Yamaha dealer check the vehicle.

3. Close the throttle completely.
4. While applying the front or rear brake, push the start switch.
5. Release the start switch when the engine starts, or after 5 seconds. Wait 10 seconds before pressing the switch again to allow battery voltage to restore.

ECA11043

NOTICE

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

EAU78221

TIP

This model is equipped with a lean angle sensor to stop the engine in case of a turnover. In this case, the engine trouble warning light will come on but this is not a malfunction. Before restarting the engine, turn the main switch off and then back on to reset the engine trouble warning light. Failing to do so will prevent the engine from starting even though the engine will crank when pushing the start switch.

EAU74640

Starting off

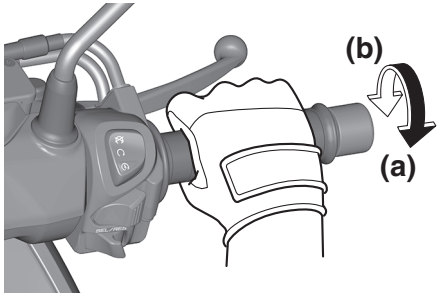
1. While pulling the rear brake lever with your left hand and holding the grab bar with your right hand, push the vehicle off the center-stand.

1. Grab bar

2. Sit astride the seat, and then adjust the rear view mirrors.
3. Confirm that the parking brake has been released. (See page 5-12.)
4. Switch the appropriate turn signal on.
5. Check for oncoming traffic, and then slowly turn the throttle grip (on the right) in order to take off.
6. Switch the turn signal off.

EAU16782

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).

EAU60650

Braking

EWA17790

⚠ WARNING

- **Avoid braking hard or suddenly (especially when leaning over to one side), otherwise the vehicle 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.**

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

EAU16821

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).

EAU89300

Parking

When parking, turn the vehicle power off and place it on the sidestand or centerstand. Apply the parking brake and then turn the smart key off.

EWA21020

⚠ WARNING

Before getting off the vehicle, be sure to turn the vehicle power off and apply the parking brake.

TIP

Even when the vehicle is parked in a location partitioned by a fence or the glass window of a shop, if the smart key is within operating range, other people will be able to start the engine and operate the vehicle. Please turn the smart key off when leaving the vehicle. (See page 3-4.)

If the sidestand is lowered when the engine is running, the engine will stop and the beeper will sound for approximately 1 minute. To stop the beeper, turn the vehicle power off or raise the sidestand.

TIP

- Before leaving the vehicle, be sure to turn the main switch to “OFF” or “🔒”. Otherwise, the battery may discharge.
- The sidestand alarm beeper can be set to not activate. Please contact your Yamaha dealer.

EWA10312

⚠ 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 and be burned.**
- **Do not park on a slope or on soft ground, otherwise the vehicle may overturn, increasing the risk of a fuel leak and fire.**
- **Do not park near grass or other flammable materials which might catch fire.**

EAU17246

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

The intervals given in the periodic maintenance charts 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.

EWA10322

⚠ WARNING

Failure to properly maintain the vehicle or performing maintenance activities incorrectly may increase your risk of injury or death during service or while using the vehicle. If you are not familiar with vehicle service, have a Yamaha dealer perform service.

EWA15123

⚠ WARNING

Turn off the engine when performing maintenance unless otherwise specified.

- **A running engine has moving parts that can catch on body parts or clothing and electrical parts that can cause shocks or fires.**
- **Running the engine while servicing can lead to eye injury, burns, fire, or carbon monoxide poisoning – possibly leading to death. See page 1-2 for more information about carbon monoxide.**

EWA15461

⚠ WARNING

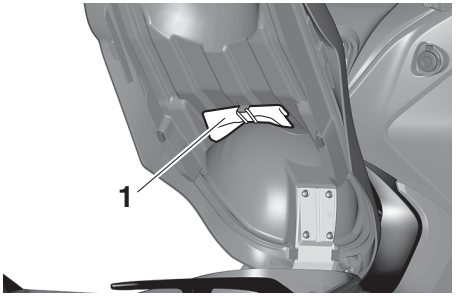
Brake discs, calipers, drums, and linings can become very hot during use. To avoid possible burns, let brake components cool before touching them.

EAU17303

Emission controls not only function to ensure cleaner air, but are also vital to proper engine operation and maximum performance. In the following periodic maintenance charts, the services related to emissions control are grouped separately. These services require specialized data, knowledge, and equipment. Maintenance, replacement, or repair of the emission control devices and systems may be performed by any repair establishment or individual that is certified (if applicable). Yamaha dealers are trained and equipped to perform these particular services.

EAU85230

Tool kit



1. Tool kit

The tool kit is in the location shown. The information included in this manual and the tools provided in the tool kit are intended to assist you in the performance of preventive maintenance and minor repairs. However, a torque wrench and other tools are necessary to perform certain maintenance work correctly.

TIP

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

EAU71033

Periodic maintenance charts

TIP

- Items marked with an asterisk should be performed by your Yamaha dealer because these items require special tools, data, and technical skills.
- From 50000 km (30000 mi), repeat the maintenance intervals starting from 10000 km (6000 mi).
- **The annual checks must be performed every year, except if a distance-based maintenance is performed instead.**

EAU71051

Periodic maintenance chart for the emission control system

NO.		ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING					ANNUAL CHECK
				1000 km (600 mi)	10000 km (6000 mi)	20000 km (12000 mi)	30000 km (18000 mi)	40000 km (24000 mi)	
1	*	**Fuel line**	• Check fuel hoses for cracks or damage. • Replace if necessary.		√	√	√	√	√
2	*	**Spark plug**	• Check condition. • Adjust gap and clean.		√		√		
			• Replace.			√		√	
3	*	**Valve clearance**	• Check and adjust.	Every 20000 km (12000 mi)					
4	*	**Fuel injection**	• Check engine idle speed.	√	√	√	√	√	√
5	*	**Exhaust system**	• Check for leakage. • Tighten if necessary. • Replace gasket if necessary.	√	√	√	√	√	
6	*	**Evaporative emission control system**	• Check control system for damage. • Replace if necessary.			√		√	

8

EAU71353

General maintenance and lubrication chart

NO.		ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING					ANNUAL CHECK
				1000 km (600 mi)	10000 km (6000 mi)	20000 km (12000 mi)	30000 km (18000 mi)	40000 km (24000 mi)	
1	*	**Diagnostic system check**	• Perform dynamic inspection using Yamaha diagnostic tool. • Check the error codes.	√	√	√	√	√	√
2	*	**Air filter element**	• Replace.			√		√	
3	*	**Pre air filter element**	• Clean.			√		√	
4	*	**Sub air filter element**	• Replace.			√		√	
5		**Air filter case check hose**	• Clean.	√	√	√	√	√	
6	*	**V-belt case air filter element**	• Clean. • Replace if necessary.		√	√	√	√	√
7	*	**Front brake**	• Check operation, fluid level, and for fluid leakage. • Replace brake pads if necessary.	√	√	√	√	√	√
8	*	**Rear brake**	• Check operation, fluid level, and for fluid leakage. • Replace brake pads if necessary.	√	√	√	√	√	√
9	*	**Brake hoses**	• Check for cracks or damage.		√	√	√	√	√
			• Replace.	Every 4 years					
10	*	**Brake fluid**	• Change.	Every 2 years					
11	*	**Parking brake**	• Check operation. • Check rubber boot. • Check cable length and adjust if necessary.	√	√	√	√	√	√

NO.		ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING					ANNUAL CHECK
				1000 km (600 mi)	10000 km (6000 mi)	20000 km (12000 mi)	30000 km (18000 mi)	40000 km (24000 mi)	
12	*	**Wheels**	• Check runout and for damage. • Replace if necessary.		√	√	√	√	
			• Balance the front wheels.	Whenever the tires or wheels have been changed or replaced.					
13	*	**Tires**	• Check tread depth and for damage. • Replace if necessary. • Check air pressure. • Correct if necessary.		√	√	√	√	√
14	*	**Wheel bearings**	• Check bearing for looseness or damage.		√	√	√	√	
15	*	**Steering system**	• Check bearing play and steering for roughness.	√	√		√		
			• Lubricate with lithium-soap-based grease.			√		√	
16	*	**Chassis fasteners**	• Make sure that all nuts, bolts and screws are properly tightened.		√	√	√	√	√
17		**Front and rear brake lever pivot shaft**	• Lubricate with silicone grease.		√	√	√	√	√
18		**Brake pedal pivot shaft**	• Lubricate with lithium-soap-based grease.		√	√	√	√	√

NO.		ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING					ANNUAL CHECK
				1000 km (600 mi)	10000 km (6000 mi)	20000 km (12000 mi)	30000 km (18000 mi)	40000 km (24000 mi)	
19	*	**Unified brake system**	• Check cable free play, and adjust if necessary. • Lubricate link pivots and moving parts with silicone grease. • Lubricate cable end with lithium-soap-based grease.	√	√	√	√	√	√
			• Lubricate link pivot of brake pedal with lithium-soap-based grease.		√	√	√	√	√
20		**Sidestand, centerstand**	• Check operation. • Lubricate with lithium-soap-based grease.		√	√	√	√	√
21	*	**Sidestand switch**	• Check operation and replace if necessary.	√	√	√	√	√	√
22	*	**Front fork**	• Check operation and for oil leakage. • Replace if necessary.		√	√	√	√	
23	*	**Shock absorber assemblies**	• Check operation and for oil leakage. • Replace if necessary.		√	√	√	√	
24		**Engine oil**	• Change (warm engine before draining). • Check oil level and vehicle for oil leakage.	At the initial interval and when the oil change indicator flashes or comes on.					√
25		**Engine oil filter element**	• Replace.	√		√		√	
26	*	**Final transmission oil**	• Check vehicle for oil leakage.	√	√	√	√	√	
			• Change.	√		√		√	

NO.		ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING					ANNUAL CHECK
				1000 km (600 mi)	10000 km (6000 mi)	20000 km (12000 mi)	30000 km (18000 mi)	40000 km (24000 mi)	
27	*	**Cooling system**	• Check coolant level and vehicle for coolant leakage.		√	√	√	√	√
			• Change.	Every 3 years					
28	*	**V-belt**	• Replace.	When the V-belt replacement indicator flashes [every 20000 km (12000 mi)]					
29	*	**Front and rear brake switches**	• Check operation.	√	√	√	√	√	√
30	*	**Moving parts and cables**	• Lubricate.		√	√	√	√	√
31	*	**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.		√	√	√	√	√
32	*	**Lights, signals and switches**	• Check operation. • Adjust headlight beam.	√	√	√	√	√	√

EAU79370

TIP

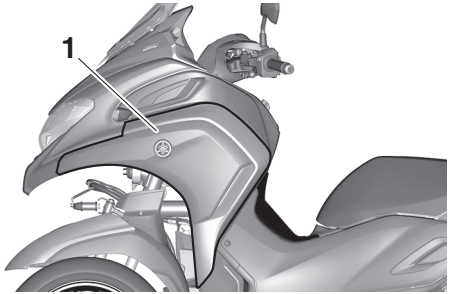
- Engine air filter and V-belt air filter
  - This model's engine air filter is equipped with a disposable oil-coated paper element, which must not be cleaned with compressed air to avoid damaging it.
  - The engine air filter element and sub air filter element need to be replaced and the V-belt air filter element needs to be serviced more frequently when riding in unusually wet or dusty areas.

- Hydraulic brake service
  - After disassembling the brake master cylinders and calipers, always change the fluid. Regularly check the brake fluid levels and fill the reservoirs as required.
  - 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.

EAU18752

Removing and installing the panel

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



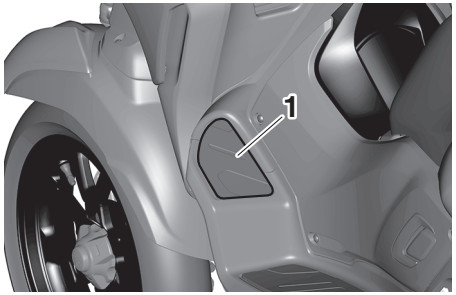
1. Panel A

EAU89370

Panel A

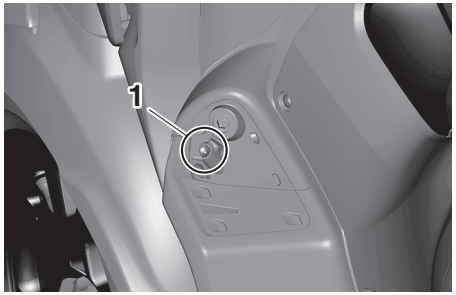
To remove the panel

1. Remove the floorboard mat by pulling it up.



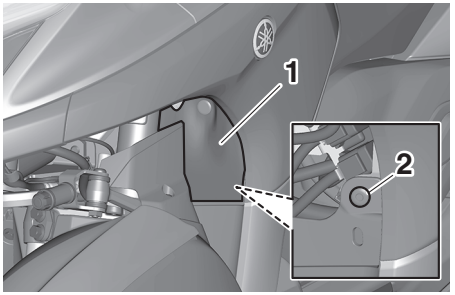
1. Floorboard mat

2. Remove the screw.



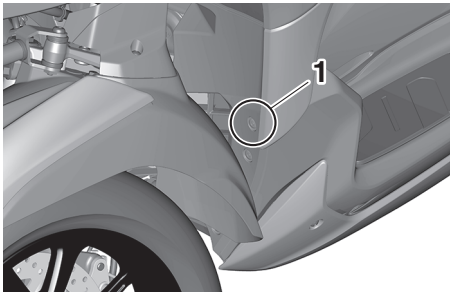
1. Screw

3. Pull up the inner cover, and remove the quick fastener.

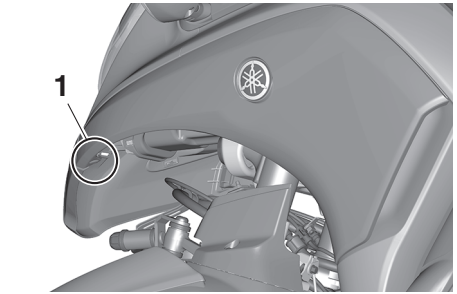


1. Inner cover
2. Quick fastener

4. Remove the quick fasteners.

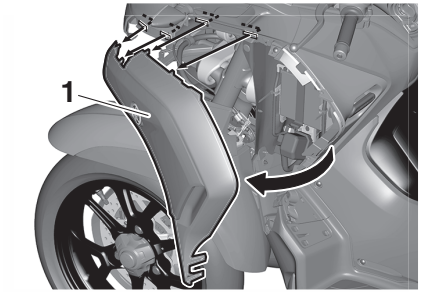


1. Quick fastener



1. Quick fastener

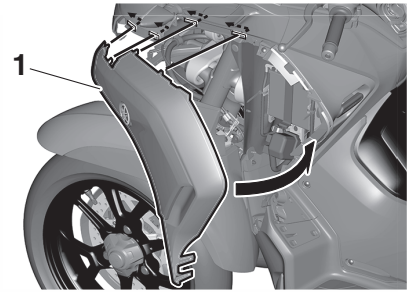
5. Pull the panel outward and slide it rearward as shown.



1. Panel A

To install the panel

1. Place the panel in the original position, and then install the quick fasteners and the Inner cover.



1. Panel A

2. Install the screw.
3. Install the floorboard mat.

EAU19623

Checking the spark plug

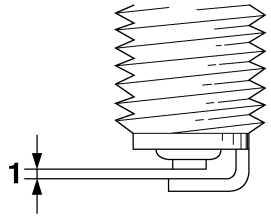
The spark plug is an important engine component, which should be checked periodically, preferably by a Yamaha dealer. Since heat and deposits will cause any spark plug to slowly erode, it should be removed and checked in accordance with the periodic maintenance and lubrication chart. In addition, the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

The porcelain insulator around the center electrode of the spark plug should be a medium-to-light tan (the ideal color when the vehicle is ridden normally). If the spark plug shows a distinctly different color, the engine could be operating improperly. Do not attempt to diagnose such problems yourself. Instead, have a Yamaha dealer check the vehicle.

If the spark plug shows signs of electrode erosion and excessive carbon or other deposits, it should be replaced.

Specified spark plug:
NGK/LMAR8A-9

Before installing a spark plug, the spark plug gap should be measured with a wire thickness gauge and, if necessary, adjusted to specification.



1. Spark plug gap

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

Clean the surface of the spark plug gasket and its mating surface, and then wipe off any grime from the spark plug threads.

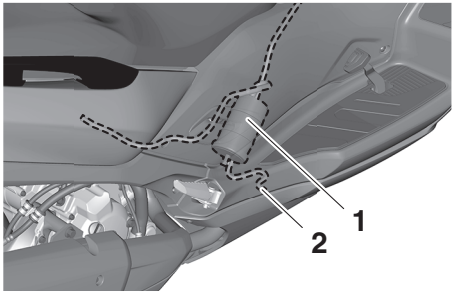
Tightening torque:
Spark plug:
13 N·m (1.3 kgf·m, 9.6 lb·ft)

TIP

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.

EAU36112

Canister



1. Canister
2. Canister breather hose

This model is equipped with a canister to prevent the discharging of fuel vapor into the atmosphere. Before operating this vehicle, make sure to check the following:

- Check each hose connection.
- Check each hose and canister for cracks or damage. Replace if damaged.
- Make sure that the canister breather is not blocked, and if necessary, clean it.

EAU89610

Engine oil and oil filter element

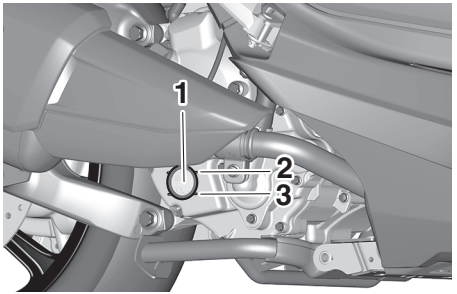
The engine oil level should be checked before each ride. In addition, the oil must be changed and the oil filter element replaced at the intervals specified in the periodic maintenance and lubrication chart.

To check the engine oil level

1. Place the vehicle on a level surface and hold it in an upright position. A slight tilt to the side can result in a false reading.
2. Start the engine, warm it up for several minutes, and then turn it off.
3. Wait a few minutes for the oil level to settle for an accurate reading, and then check the oil level through the check window located at the bottom-right side of the crankcase.

TIP

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

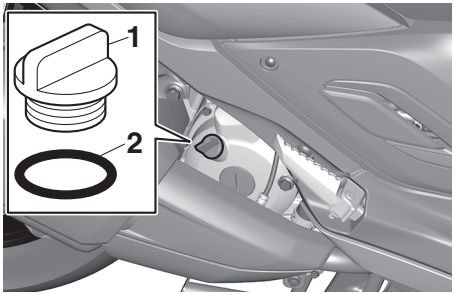


1. Engine oil level check window
2. Maximum level mark
3. Minimum level mark

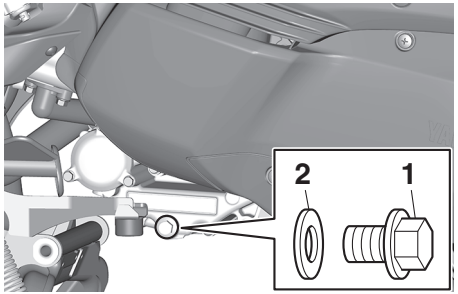
4. If the engine oil is below the minimum level mark, add sufficient oil of the recommended type to raise it to the correct level.

To change the engine oil (with or without oil filter element 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 its O-ring, and then remove the engine oil drain bolt and its gasket to drain the oil from the crankcase.
4. Check the O-ring for damage, and replace it if necessary.



1. Engine oil filler cap
2. O-ring

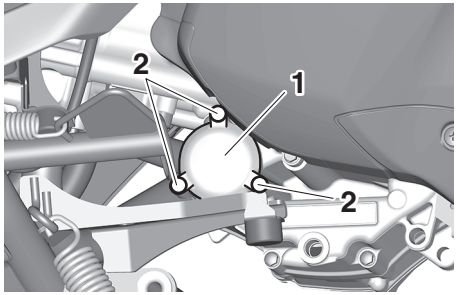


1. Engine oil drain bolt
2. Gasket

TIP

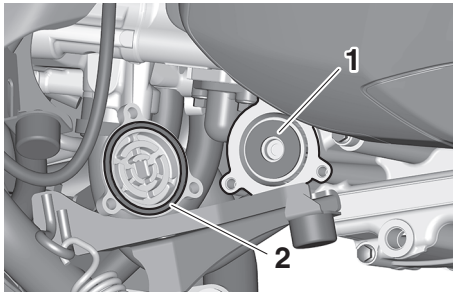
Skip steps 5–7 if the oil filter element is not being replaced.

5. Remove the oil filter element cover by removing the bolts.



1. Oil filter element cover
2. Bolt

6. Remove and replace the oil filter element and O-ring.



1. Oil filter element
2. O-ring

7. Install the oil filter element cover by installing the bolts, then tightening them to the specified torque.

Tightening torque:
Oil filter element cover bolt:
10 N·m (1.0 kgf·m, 7.4 lb·ft)

TIP

Make sure that the O-ring is properly seated.

8. Install the engine oil drain bolt and its new gasket, and then tighten the bolt to the specified torque.

Tightening torque:
Engine oil drain bolt:
20 N·m (2.0 kgf·m, 15 lb·ft)

9. Refill with the specified amount of the recommended engine oil.

Recommended engine oil:
10W-40, 0W-30
Oil quantity:
Oil change:
1.50 L (1.59 US qt, 1.32 Imp.qt)
With oil filter removal:
1.60 L (1.69 US qt, 1.41 Imp.qt)

TIP

- The use of 0W-30 is recommended in winter season.
- Be sure to wipe off spilled oil on any parts after the engine and exhaust system have cooled down.

ECA24060

NOTICE

Make sure that no foreign material enters the crankcase.

10. Install and tighten the oil filler cap and its O-ring.

11. 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.
12. Turn the engine off, wait a few minutes for the oil level to settle for an accurate reading, and then check the oil level and correct it if necessary.

EAU85450

Why Yamalube

YAMALUBE oil is a Genuine YAMAHA Part born of the engineers' passion and belief that engine oil is an important liquid engine component. We form teams of specialists in the fields of mechanical engineering, chemistry, electronics and track testing, and have them develop the engine together with the oil it will use. Yamalube oils take full advantage of the base oil's qualities and blend in the ideal balance of additives to make sure the final oil clears our performance standards. Thus, Yamalube mineral, semisynthetic and synthetic oils have their own distinct characters and value. Yamaha's experience gained over many years of research and development into oil since the 1960's helps make Yamalube the best choice for your Yamaha engine.

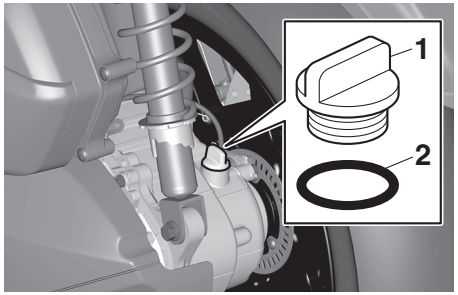
YAMALUBE®

EAU60660

Final transmission oil

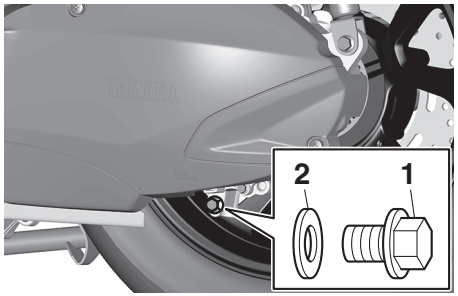
The final transmission case must be checked for oil leakage before each ride. If any leakage is found, have a Yamaha dealer check and repair the vehicle. In addition, the final transmission oil must be changed as follows at the intervals specified in the periodic maintenance and lubrication chart.

1. Start the engine, warm up the final transmission oil by riding the vehicle for several minutes, and then stop the engine.
2. Place the vehicle on the centerstand.
3. Place an oil pan under the final transmission case to collect the used oil.
4. Remove the final transmission oil filler cap and its O-ring from the final transmission case.



1. Final transmission oil filler cap
2. O-ring

5. Remove the final transmission oil drain bolt and its gasket to drain the oil from the final transmission case.



1. Final transmission oil drain bolt
2. Gasket

6. Install the final transmission oil drain bolt and its new gasket, and then tighten the bolt to the specified torque.

Tightening torque:
Final transmission oil drain bolt:
20 N·m (2.0 kgf·m, 15 lb·ft)

7. Refill with the specified amount of the recommended final transmission oil. **WARNING! Make sure that no foreign material enters the final transmission case. Make sure that no oil gets on the tire or wheel.** [EWA11312]

Recommended final transmission oil:
See page 10-1.
Oil quantity:
0.20 L (0.21 US qt, 0.18 Imp.qt)

8. Install the final transmission oil filler cap and its new O-ring, and then tighten the oil filler cap.
9. Check the final transmission case for oil leakage. If oil is leaking, check for the cause.

EAUS1203

Coolant

The coolant level should be checked regularly. In addition, the coolant must be changed at the intervals specified in the periodic maintenance chart.

Recommended coolant:
YAMALUBE coolant
Coolant quantity:
Coolant reservoir (max level mark):
0.18 L (0.19 US qt, 0.16 Imp.qt)
Radiator (including all routes):
1.10 L (1.16 US qt, 0.97 Imp.qt)

TIP

If genuine Yamaha coolant is not available, use an ethylene glycol antifreeze containing corrosion inhibitors for aluminum engines and mix with distilled water at a 1:1 ratio.

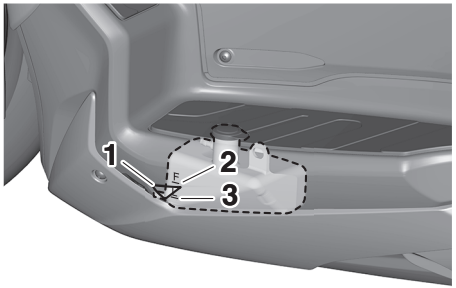
EAU88960

To check the coolant level

Since the coolant level varies with engine temperature, check when the engine is cold.

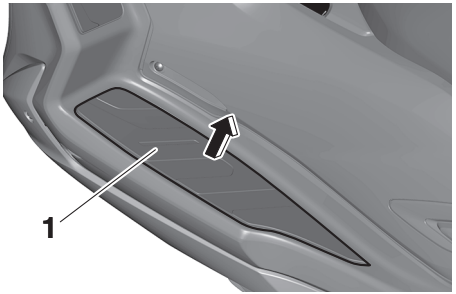
1. Park the vehicle on a level surface.
2. Hold the vehicle upright, or place it on the centerstand.

3. Look at the coolant level through the check window.



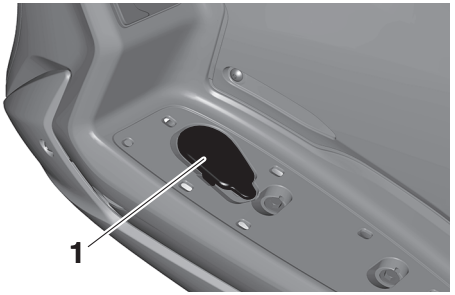
1. Coolant level check window
2. Maximum level mark
3. Minimum level mark

4. If the coolant is at or below the minimum level mark, remove the left floorboard mat by pulling it up.



1. Floorboard mat

5. Remove the coolant reservoir cover.



1. Coolant reservoir cover

6. Remove the coolant reservoir cap. **WARNING! Remove only the coolant reservoir cap. Never attempt to remove the radiator cap when the engine is hot.** [EWA15162]

1. Coolant reservoir cap

7. Add coolant to the maximum level mark. ***NOTICE:*** **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 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.** [ECA10473]

8. Install the coolant reservoir cap.
9. Install the coolant reservoir cover.
10. Install the floorboard mat.

EAU33032

Changing the coolant

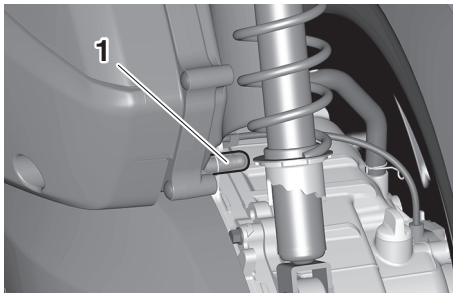
The coolant must be changed at the intervals specified in the periodic maintenance and lubrication chart. Have a Yamaha dealer change the coolant. **WARNING! Never attempt to remove the radiator cap when the engine is hot.** [EWA10382]

EAU78574

Air filter and V-belt case air filter elements

The air filter element and the sub air filter element should be replaced, and the pre air filter element and the V-belt case air filter element should be cleaned at the intervals specified in the periodic maintenance and lubrication chart. Service the air filter elements more frequently if you are riding in unusually wet or dusty areas. The air filter check hose must be frequently checked and cleaned if necessary.

Cleaning the air filter check hose



1. Air filter check hose

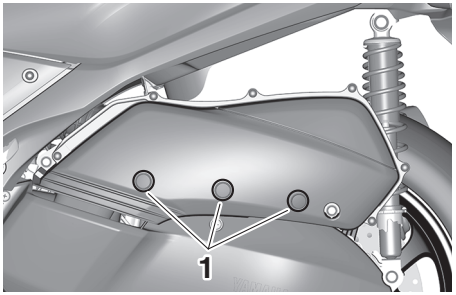
1. Check the hose on the rear side of the air filter case for accumulated dirt or water.
2. If dirt or water is visible, remove the hose from the clamp, clean it, and then install it.

TIP

If dirt or water was found in the check hose, be sure to check the air filter element for excessive dirt or damage and replace it if necessary.

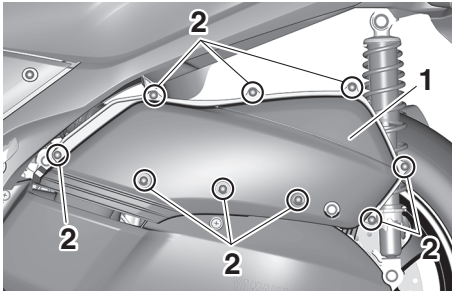
Replacing the air filter element and sub air filter element and cleaning the pre air filter element

1. Place the vehicle on the centerstand.
2. Remove the rubber plugs.



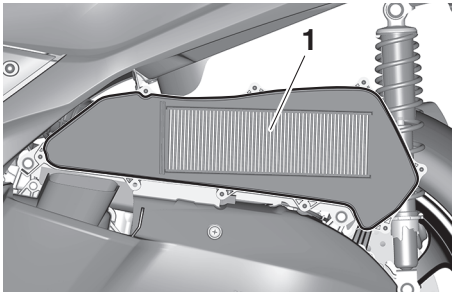
1. Rubber plug

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

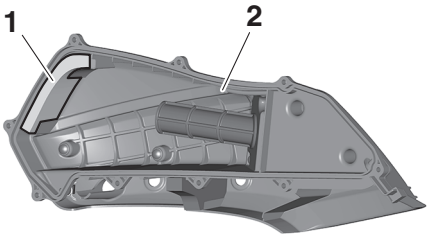


1. Air filter case cover
2. Screw

4. Pull the air filter element and sub air filter element out.



1. Air filter element

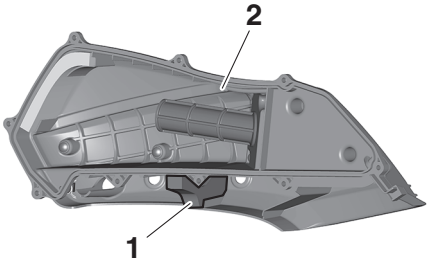


1. Sub air filter element
2. Air filter case cover

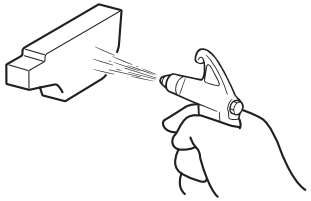
5. Insert a new sub air filter element into the air filter case cover.
6. Insert a new air filter element into the air filter case. ***NOTICE:*** **Make sure that the air filter element is properly seated in the air filter case. The engine should never be operated without the air filter element installed, otherwise the piston(s) and/or cylinder(s) may become excessively worn.**

[ECA10482]

7. Pull the pre air filter element out, and then blow out the dirt with compressed air as shown.



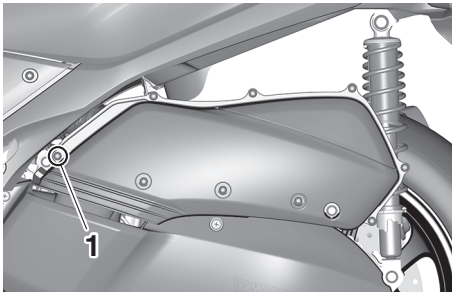
1. Pre air filter element
2. Air filter case cover



8. Check the pre air filter element for damage, and replace it if necessary.
9. Insert the pre air filter element into the air filter case cover.
10. Install the air filter case cover by installing the screws.

TIP

The long screw should be installed as shown.

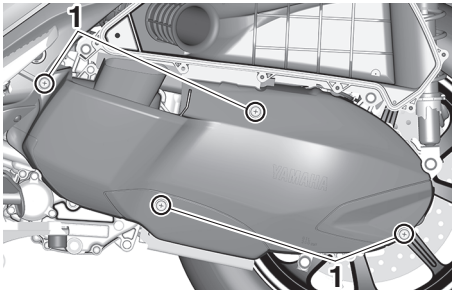


1. Long screw

11. Install the rubber plugs.

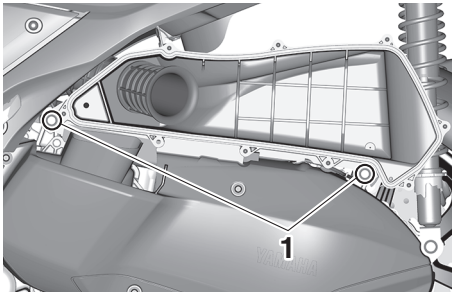
Cleaning the V-belt case air filter element

1. Place the vehicle on the centerstand.
2. Remove the air filter case cover. (See the previous section.)
3. Remove the V-belt case cover screws.



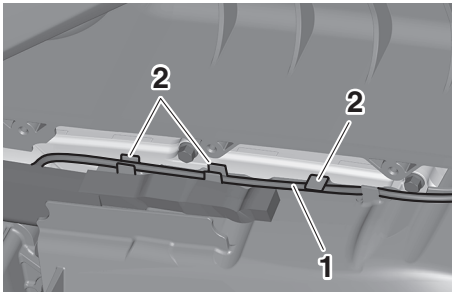
1. Screw

4. Remove the air filter case bolts.



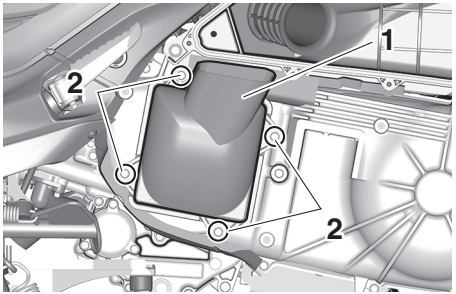
1. Bolt

5. Lift up the air filter case slightly, remove the rear wheel sensor lead from the holder, and then remove the V-belt case cover.



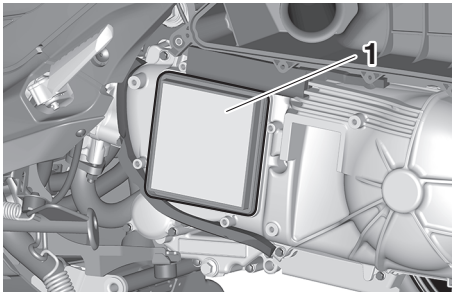
1. Rear wheel sensor lead
2. Lead holder

6. Remove the V-belt case air filter cover by removing the bolts.

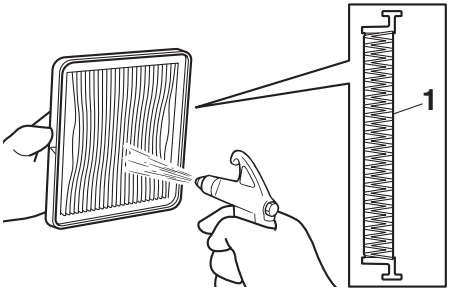


1. V-belt case air filter cover
2. Bolt

7. Remove the air filter element, and then blow out the dirt with compressed air from the clean side as shown.

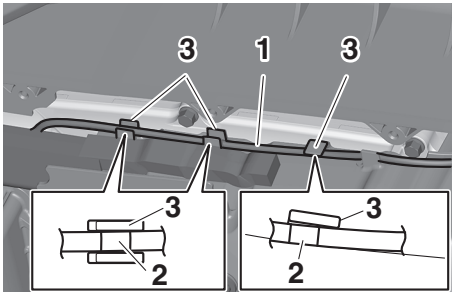


1. V-belt case air filter element



1. Clean side

8. Check the V-belt case air filter element for damage and replace it if necessary.
9. Insert the element into the V-belt case.
10. Install the V-belt case air filter cover by installing the bolts.
11. Install the rear wheel sensor lead into the holder at the white tape on the lead as shown.



1. Rear wheel sensor lead
2. White tape
3. Lead holder

12. Install the air filter case bolts, and then tighten the bolts to the specified torque.

Tightening torque:
Bolt:
10 N·m (1.0 kgf·m, 7.4 lb·ft)

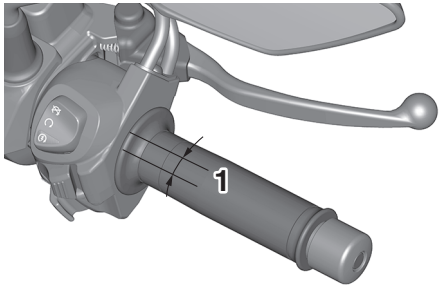
13. Install the V-belt case cover by installing the screws.

14. Install the air filter case cover by installing the screws.

EAU21386

Checking the throttle grip free play

Measure the throttle grip free play as shown.



1. Throttle grip free play

Throttle grip free play:
3.0–5.0 mm (0.12–0.20 in)

Periodically check the throttle grip free play and, if necessary, have a Yamaha dealer adjust it.

EAU21403

Valve clearance

The valves are an important engine component, and since valve clearance changes with use, they must be checked and adjusted at the intervals specified in the periodic maintenance chart. Unadjusted valves can result in improper air-fuel mixture, engine noise, and eventually engine damage. To prevent this from occurring, have your Yamaha dealer check and adjust the valve clearance at regular intervals.

TIP

This service must be performed when the engine is cold.

EAU69761

Tires

Tires are the only contact between the vehicle and the road. Safety in all conditions of riding depends on a relatively small area of road contact. Therefore, it is essential to maintain the tires in good condition at all times and replace them at the appropriate time with the specified tires.

Tire air pressure

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

EWA10504

8

⚠ WARNING

Operation of this vehicle with improper tire pressure may cause severe injury or death from loss of control.

- **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.**

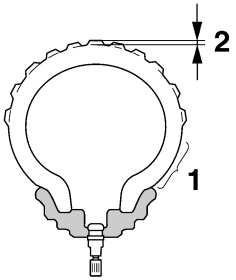
Cold tire air pressure:
1 person:
Front:
200 kPa (2.00 kgf/cm², 29 psi)
Rear:
225 kPa (2.25 kgf/cm², 33 psi)
2 persons:
Front:
200 kPa (2.00 kgf/cm², 29 psi)
Rear:
225 kPa (2.25 kgf/cm², 33 psi)
Maximum load:
Vehicle:
172 kg (379 lb)
The vehicle's maximum load is the combined weight of the rider, passenger, cargo, and any accessories.

EWA10512

⚠ WARNING

Never overload your vehicle. Operation of an overloaded vehicle could cause an accident.

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)

TIP

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

EWA10472

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

Tire information

This model is equipped with tubeless tires and rubber tire air valves.

Tires age, even if they have not been used or have only been used occasionally. Cracking of the tread and sidewall rubber, sometimes accompanied by carcass deformation, is an evidence of ageing. Old and aged tires shall be checked by tire specialists to ascertain their suitability for further use.

EWA10462

⚠ WARNING

The front and rear tires should be of the same make and design, otherwise the handling characteristics of the vehicle may be different, which could lead to an accident.

After extensive tests, only the tires listed below have been approved for this model by Yamaha.

Front tire:
Size:
120/70-14M/C 55P
Manufacturer/model:
BRIDGESTONE/BATTLAX SCF
Rear tire:
Size:
140/70-14M/C 62P
Manufacturer/model:
BRIDGESTONE/BATTLAX SCR

EAU61160

Cast wheels

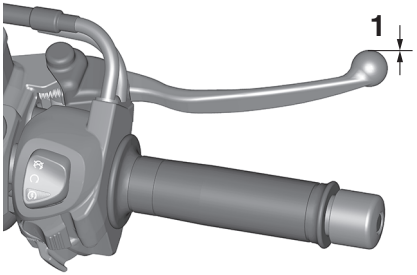
To maximize the performance, durability, and safe operation of your vehicle, note the following points regarding the specified wheels.

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

8

EAU49351

Checking the front brake lever free play



1. No brake lever free play

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

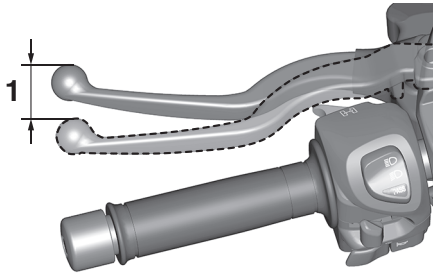
EWA14212

⚠ WARNING

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

EAU60760

Checking the rear brake lever free play



1. Rear brake lever free play

Measure the rear brake lever free play as shown. Periodically check the brake lever free play and, if the free play is 20 mm (0.79 in) or more, have a Yamaha dealer check and adjust the brake system.

EWA10642

⚠ WARNING

An incorrect brake lever free play indicates a hazardous condition in the brake system. Do not operate the vehicle until the brake system has been checked or repaired by a Yamaha dealer.

EAU89061

Checking the parking brake

The parking brake must be checked and adjusted at the intervals specified in the periodic maintenance and lubrication chart, or sooner if the parking brake does not properly hold the wheel.

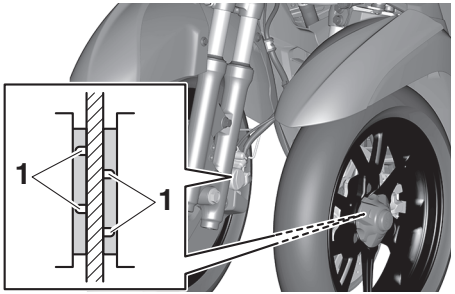
EAU22393

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.

EAU22433

Front brake pads

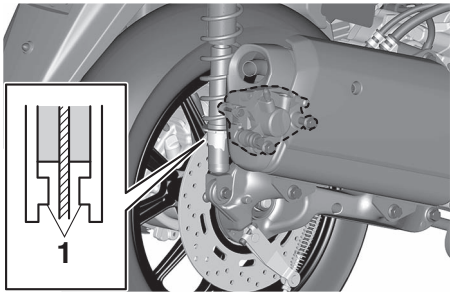


1. Brake pad wear indicator groove

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.

EAU22461

Rear brake pads

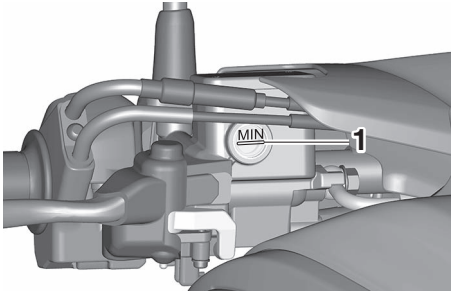


1. Brake pad wear indicator

Each rear brake pad is provided with a wear indicator, which allows you to check the brake pad wear without having to disassemble the brake. To check the brake pad wear, check the position of the wear indicator while applying the brake. If a brake pad has worn to the point that the wear indicator almost touches the brake disc, have a Yamaha dealer replace the brake pads as a set.

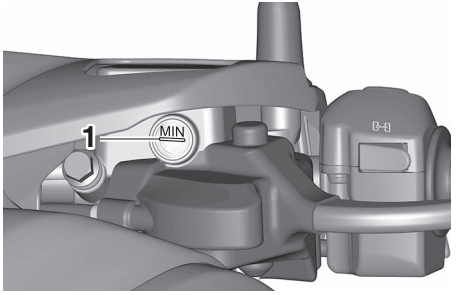
EAU40262
Checking the brake fluid level
Before riding, check that the brake fluid is above the minimum level mark. Check the brake fluid level with the top of the reservoir level. Replenish the brake fluid if necessary.

Front brake



1. Minimum level mark

Rear brake



1. Minimum level mark

Specified brake fluid:
DOT 4

EWA16011

⚠ WARNING

Improper maintenance can result in loss of braking ability. Observe these precautions:

- **Insufficient brake fluid may allow air to enter the brake system, reducing braking performance.**
- **Clean the filler cap before removing. Use only DOT 4 brake fluid from a sealed container.**
- **Use only the specified brake fluid; otherwise, the rubber seals may deteriorate, causing leakage.**
- **Refill with the same type of brake fluid. Adding a brake fluid other than DOT 4 may result in a harmful chemical reaction.**
- **Be careful that water or dust 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, and dirt may clog the ABS hydraulic unit valves.**

ECA17641

NOTICE

Brake fluid may damage 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. A low brake fluid level may indicate worn brake pads and/or brake system leakage; therefore, be sure to check the brake pads for wear and the brake system for leakage. If the brake

fluid level goes down suddenly, have a Yamaha dealer check the cause before further riding.

EAU22734

Changing the brake fluid

Have a Yamaha dealer change the brake fluid every 2 years. In addition, have the seals of the master cylinders and brake calipers, as well as the brake hoses replaced at the intervals listed below or sooner if they are damaged or leaking.

- Brake seals: every 2 years
- Brake hoses: every 4 years

EAUU0311

Checking the V-belt

The V-belt must be checked and replaced by a Yamaha dealer at the intervals specified in the periodic maintenance and lubrication chart.

EAU23098

Checking and lubricating the cables

The operation of all control cables and the condition of the cables should be checked before each ride, and the cables and cable ends should be lubricated if necessary. If a cable is damaged or does not move smoothly, have a Yamaha dealer check or replace it. **WARNING! Damage to the outer housing of cables may result in internal rusting and cause interference with cable movement. Replace damaged cables as soon as possible to prevent unsafe conditions.** [EWA10712]

Recommended lubricant:
Yamaha cable lubricant or other suitable cable lubricant

EAU49921

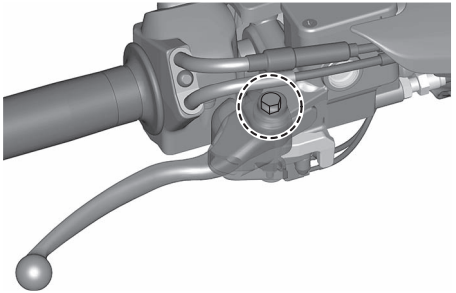
Checking and lubricating the throttle grip and cable

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

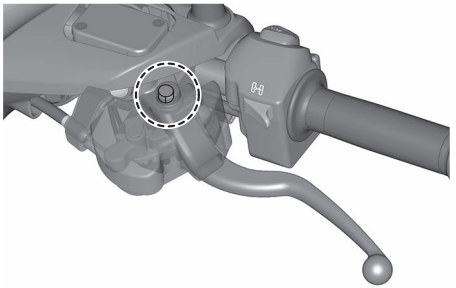
EAU23173

Lubricating the front and rear brake levers

Front brake lever



Rear brake lever



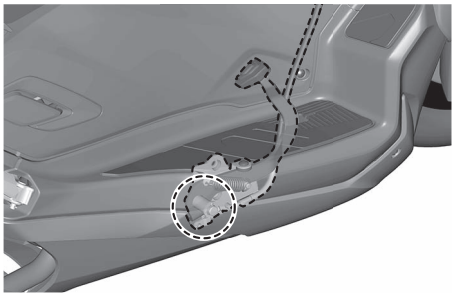
The pivoting points of the front and rear brake levers must be lubricated at the intervals specified in the periodic maintenance and lubrication chart.

Recommended lubricant:
Silicone grease

EAU23185

Checking and lubricating the brake pedal

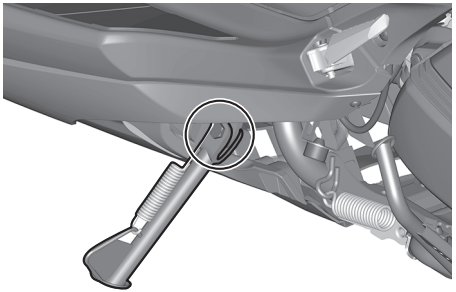
The operation of the brake pedal should be checked before each ride, and the pedal pivot should be lubricated if necessary.

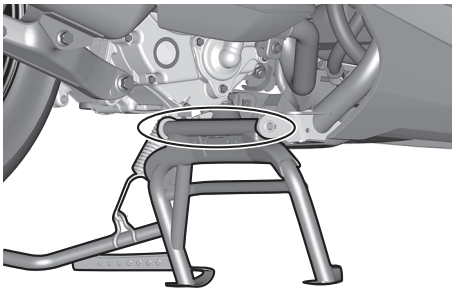


Recommended lubricant:
Lithium-soap-based grease

EAU23215

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.

EWA10742

⚠ WARNING

If the centerstand or sidestand does not move up and down smoothly, have a Yamaha dealer check or repair it. Otherwise, the centerstand or sidestand could contact the ground and distract the operator, resulting in a possible loss of control.

Recommended lubricant:
Lithium-soap-based grease

EAU23273

Checking the front fork

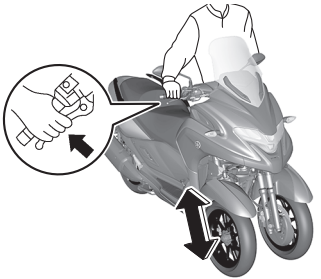
The condition and operation of the front fork must be checked as follows at the intervals specified in the periodic maintenance and lubrication chart.

To check the condition

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. **WARNING! To avoid injury, securely support the vehicle so there is no danger of it falling over.** [EWA10752]
2. While applying the front brake, push down hard on the handlebars several times to check if the front fork compresses and rebounds smoothly.



ECA10591

NOTICE

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

EAU84950

Checking the steering

Worn or loose steering bearings may cause danger. Therefore, the operation of the steering must be checked by a Yamaha dealer at the intervals specified in the periodic maintenance chart.

EAU89070

Lubricating the steering bearings

The steering bearings must be lubricated by a Yamaha dealer at the intervals specified in the periodic maintenance chart.

Recommended lubricant:
Lithium-soap-based grease

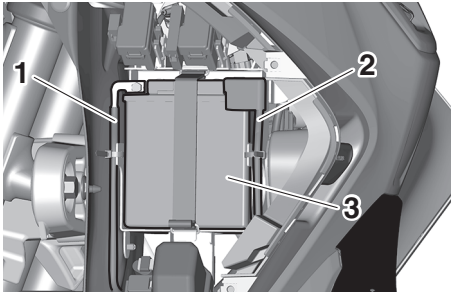
EAU84970

Checking the wheel bearings

The front and rear wheel bearings must be checked by a Yamaha dealer at the intervals specified in the periodic maintenance chart.

Battery

EAU60691



1. Negative battery lead (black)
2. Positive battery lead (red)
3. Battery

The battery is located behind panel A. (See page 8-9.)
This model is equipped with a VRLA (Valve Regulated Lead Acid) battery. There is no need to check the electrolyte or to add distilled water. However, the battery lead connections need to be checked and, if necessary, tightened.

EWA10761

⚠ WARNING

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

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

ECA16522

NOTICE

To charge a VRLA (Valve Regulated Lead Acid) battery, a special (constant-voltage) battery charger is required. Using a conventional battery charger will damage the battery.

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. ***NOTICE:*** **When removing the battery, be sure to turn the main switch off, then disconnect the negative lead before disconnecting the positive lead.** [ECA16304]
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. ***NOTICE:*** **When installing the battery, be sure to turn the main switch off, then**

connect the positive lead before connecting the negative lead.

[ECA16842]

4. After installation, make sure that the battery leads are properly connected to the battery terminals.

ECA16531

NOTICE

Always keep the battery charged. Storing a discharged battery can cause permanent battery damage.

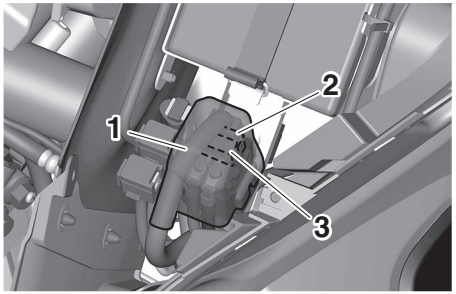
EAU89081

Replacing the fuses

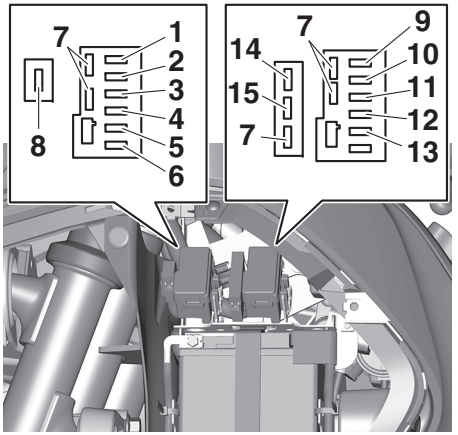
The main fuse and the fuse boxes, which contain the fuses for the individual circuits, are located behind panel A. (See page 8-9.)

TIP

To access the main fuse, remove the starter relay cover as shown.



1. Starter relay cover
2. Spare main fuse
3. Main fuse



1. Backup fuse
2. Radiator fan motor fuse
3. Ignition fuse
4. ABS control unit fuse
5. Signaling system fuse
6. Grip warmer fuse
7. Spare fuse
8. Headlight fuse
9. ABS motor fuse
10. ABS solenoid fuse
11. Hazard fuse
12. Auxiliary DC jack fuse
13. Answer back fuse
14. Standing assist battery fuse
15. Standing assist fuse

If a fuse is blown, replace it as follows.

1. Turn the main switch off and turn off the electrical circuit in question.
2. Remove the blown fuse, and then install a new fuse of the specified amperage. **WARNING! 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.** [EWA15132]

Specified fuses:

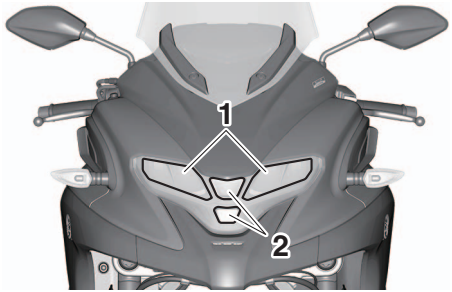
Main fuse:
20.0 A
Grip warmer fuse:
7.5 A
Headlight fuse:
7.5 A
Signaling system fuse:
10.0 A
Ignition fuse:
7.5 A
Radiator fan motor fuse:
7.5 A
Backup fuse:
7.5 A
Hazard fuse:
7.5 A
ABS control unit fuse:
7.5 A
ABS motor fuse:
30.0 A
ABS solenoid fuse:
20.0 A
Answer back fuse:
2.0 A
Auxiliary DC jack fuse:
2.0 A
Standing assist fuse:
7.5 A
Standing assist battery fuse:
20.0 A

3. Turn the main switch 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.

EAUN2261

Vehicle lights

This model is equipped with LED lights for headlights, auxiliary lights and brake/tail light. If a light does not come on, check the fuse and then have a Yamaha dealer check the vehicle.



1. Headlight
2. Auxiliary light

ECA16581

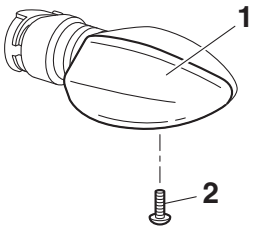
NOTICE

Do not affix any type of tinted film or stickers to the headlight lens.

EAU62590

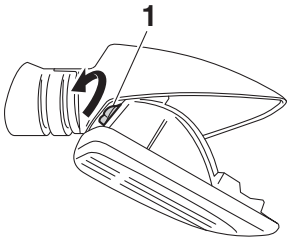
Replacing a turn signal light bulb

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



1. Turn signal light lens
2. Screw

2. Remove the turn signal light bulb socket (together with the bulb) by turning it counterclockwise.



1. Turn signal light bulb socket

3. Remove the burnt-out bulb by pulling it out.
4. Insert a new bulb into the socket.
5. Install the socket (together with the bulb) by turning it clockwise.
6. Install the turn signal light lens by installing the screw. ***NOTICE:*** **Do not overtighten the screw, otherwise the lens may break.**

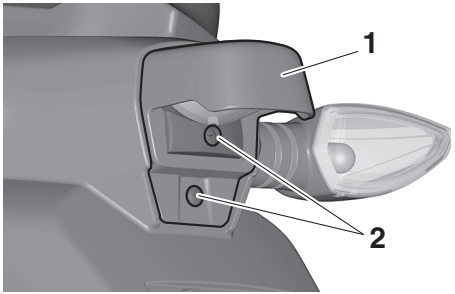
[ECA11192]

8

EAU89380

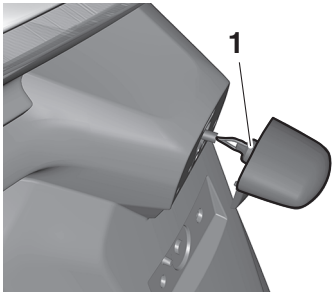
Replacing the license plate light bulb

1. Remove the license plate light cover by removing the screws.



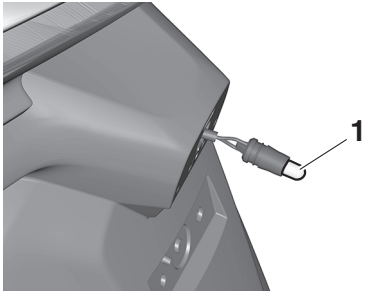
1. License plate light cover
2. Screw

2. Remove the license plate light bulb socket (together with the bulb) by pulling it out.



1. License plate light bulb socket

3. Remove the burnt-out bulb by pulling it out from the socket.



1. License plate light bulb

4. Insert a new bulb into the socket.
5. Install the socket (together with the bulb) by pushing it in.
6. Install the license plate light cover by installing the screws.

EAU60701

Troubleshooting

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

EWA15142

⚠ WARNING

When checking the fuel system, do not smoke, and make sure there are no open flames or sparks in the area, including pilot lights from water

heaters or furnaces. Gasoline or gasoline vapors can ignite or explode, causing severe injury or property damage.

EAU76551
Smart key system troubleshooting

Please check the following items when the smart key system does not work.

- Is the smart key turned on? (See page 3-4.)
- Is the smart key battery discharged? (See page 3-6.)
- Is the smart key battery installed correctly? (See page 3-6.)
- Is the smart key being used in a location with strong radio waves or other electromagnetic noise? (See page 3-1.)
- Are you using the smart key that is registered to the vehicle?
- Is the vehicle battery discharged? When the vehicle battery is discharged, the smart key system will not operate. Please have the vehicle battery charged or replaced. (See page 8-32.)

If the smart key system does not work after checking the above items, have a Yamaha dealer check the smart key system.

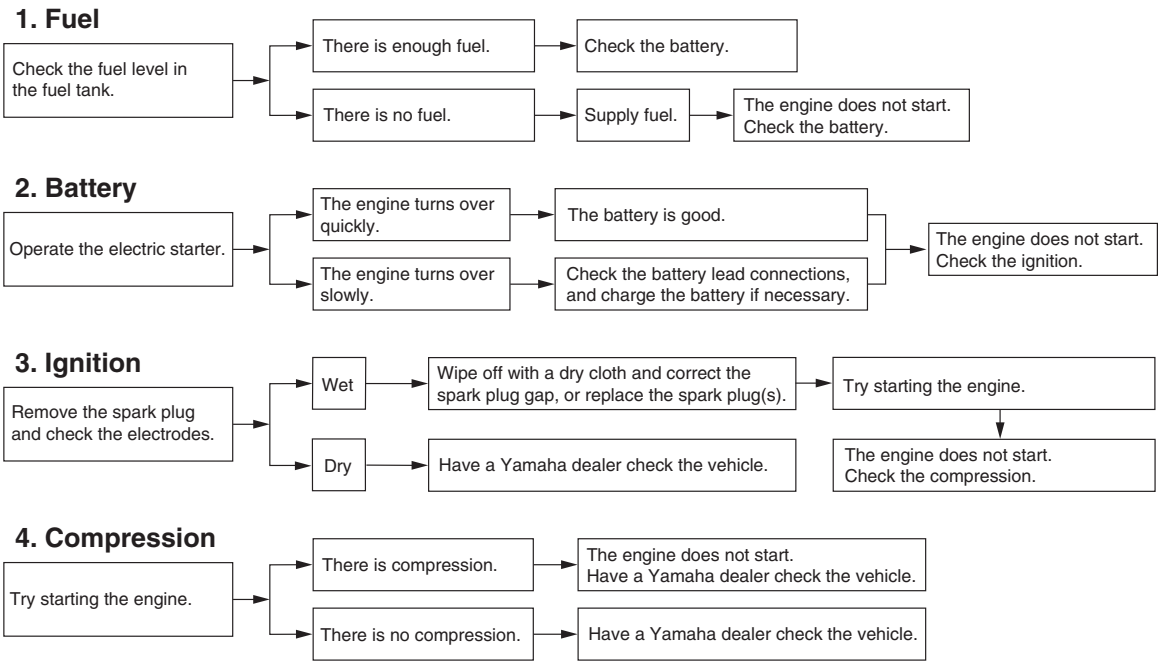
TIP

See Emergency mode on page 8-40 for information on starting the engine without the smart key.

8

EAU86350

Troubleshooting chart



8

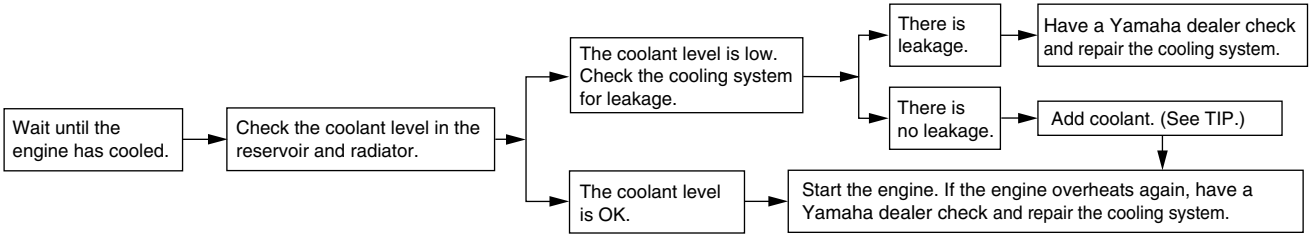
EAU86420

Engine overheating

EWAT1041

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.**
- **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.**



TIP

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.

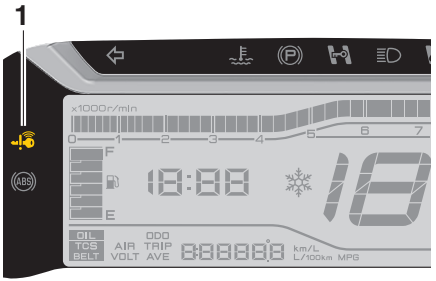
EAU76561

Emergency mode

When the smart key is lost or damaged, or its battery has discharged, the vehicle can still be turned on and the engine started. You will need the smart key system identification number.

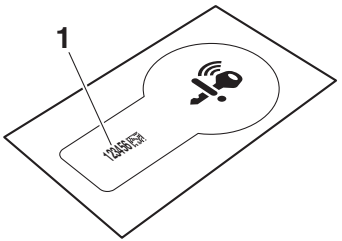
To operate the vehicle in emergency mode

1. Stop the vehicle in a safe place and turn the main switch to “OFF”.
2. Push the main switch knob for 5 seconds until the smart key system indicator light flashes once, then release it. Repeat two more times. The smart key system indicator light will come on for three seconds to indicate the transition to emergency mode.



1. Smart key system indicator light “ ”

3. After the smart key system indicator light goes off, input the identification number as follows.



1. Identification number

4. Inputting the identification number is done by counting the number of flashes of the smart key system indicator light.

For example, if the identification number is 123456:
Push and hold the knob.
↓
The smart key system indicator light will start to flash.
↓

Release the knob after the smart key system indicator light flashes once.
↓
The first digit of the identification number has been set as “1”.
↓
Push and hold the knob again.
↓

Release the knob after the smart key system indicator light flashes twice.
↓
The second digit has been set as "2".
↓
Repeat the above procedure until all digits of the identification number have been set. The smart key system indicator light will flash for 10 seconds if the correct identification number was entered.

TIP

When one of the following situations applies, emergency mode will be terminated and the smart key system indicator light will flash quickly for 3 seconds. In this case, start over again from step 2.

- When there are no knob operations for 10 seconds during the identification number input process.
- When the smart key system indicator light is allowed to flash nine or more times.
- The identification number is not entered correctly.

5. While the smart key system indicator light is on, push the knob once more to complete emergency mode access. The smart key indicator light will go off and then come back on for approximately 4 seconds.
6. While the smart key system indicator light is on, turn the main switch to "ON". The vehicle can now be operated normally.

EAU37834

Matte color caution

ECA15193

NOTICE

Some models are equipped with matte colored finished parts. Be sure to consult a Yamaha dealer for advice on what products to use before cleaning the vehicle. Using a brush, harsh chemical products or cleaning compounds when cleaning these parts will scratch or damage their surface. Wax also should not be applied to any matte colored finished parts.

EAU83443

Care

Frequent, thorough cleaning of the vehicle will not only enhance its appearance but also will improve its general performance and extend the useful life of many components. Washing, cleaning, and polishing will also give you a chance to inspect the condition of the vehicle more frequently. Be sure to wash the vehicle after riding in the rain or near the sea, because salt is corrosive to metals.

TIP

- The roads of heavy snowfall areas may be sprayed with salt as a deicing method. This salt can stay on the roads well into spring, so be sure to wash the underside and chassis parts after riding in such areas.
- Genuine Yamaha care and maintenance products are sold under the YAMALUBE brand in many markets worldwide.
- See your Yamaha dealer for additional cleaning tips.

ECA26280

NOTICE

Improper cleaning can cause cosmetic and mechanical damage. Do not use:

- **high-pressure washers or steam-jet cleaners. Excessive water pressure may cause water seepage and deterioration of wheel bearings, brakes, transmission seals and electrical devices. Avoid high-pressure detergent applications such as those available in coin-operated car washers.**
- **harsh chemicals, including strong acidic wheel cleaners, especially on spoke or magnesium wheels.**
- **harsh chemicals, abrasive cleaning compounds, or wax on matte-finished parts. Brushes can scratch and damage the matte-finish, use soft sponge or towel only.**
- **towels, sponges, or brushes contaminated with abrasive cleaning products or strong**

chemicals such as, solvents, gasoline, rust removers, brake fluid, or antifreeze, etc.

Before washing

1. Park the vehicle out of direct sunlight and allow it to cool. This will help avoid water spots.
2. Make sure all caps, covers, electrical couplers and connectors are tightly installed.
3. Cover the muffler end with a plastic bag and a strong rubber band.
4. Pre-soak stubborn stains like insects or bird droppings with a wet towel for a few minutes.
5. Remove road grime and oil stains with a quality degreasing agent and a plastic-bristle brush or sponge. ***NOTICE:*** **Do not use degreasing agent on areas requiring lubrication such as seals, gaskets, and wheel axles. Follow product instructions.** [ECA26290]

Washing

1. Rinse off any degreaser and spray down the vehicle with a garden hose. Use only enough pressure to do the job. Avoid spraying water directly into the muffler, instrument panel, air inlet, or other inner areas such as underseat storage compartments.
2. Wash the vehicle with a quality automotive-type detergent mixed with cool water and a soft, clean towel or sponge. Use an old toothbrush or plastic-bristle brush for hard-to-reach places. ***NOTICE:*** **Use cold water if the vehicle has been exposed to salt. Warm water will increase salt's corrosive properties.** [ECA26301]
3. For windshield-equipped vehicles: Clean the windshield with a soft towel or sponge dampened with water and a pH neutral detergent. If necessary, use a high-quality windshield cleaner or polish for motorcycles. ***NOTICE:*** **Never use any strong chemicals to clean the windshield. Additionally, some cleaning compounds for plastic may scratch the windshield, so be sure to test all cleaning products before general application.** [ECA26310]
4. Rinse off thoroughly with clean water. Be sure to remove all detergent residues, as they can be harmful to plastic parts.

After washing

1. Dry the vehicle with a chamois or absorbent towel, preferably microfiber terrycloth.
2. For drive chain-equipped models: Dry and then lubricate the drive chain to prevent rust.
3. Use a chrome polish to shine chrome, aluminum, and stainless steel parts. Often the thermally induced discoloring of stainless steel exhaust systems can be removed through polishing.
4. Apply a corrosion protection spray on all metal parts including chrome or nickel-plated surfaces. **WARNING! Do not apply silicone or oil spray to seats, hand grips, rubber foot pegs or tire treads. Otherwise these parts**

will become slippery, which could cause loss of control. Thoroughly clean the surfaces of these parts before operating the vehicle. [EWA20650]

5. Treat rubber, vinyl, and unpainted plastic parts with a suitable care product.
6. Touch up minor paint damage caused by stones, etc.
7. Wax all painted surfaces using a non-abrasive wax or use a detail spray for motorcycles.
8. When finished cleaning, start the engine and let it idle for several minutes to help dry any remaining moisture.
9. If the headlight lens has fogged up, start the engine and turn on the headlight to help remove the moisture.
10. Let the vehicle dry completely before storing or covering it.

ECA26320

NOTICE

- **Do not apply wax to rubber or unpainted plastic parts.**
- **Do not use abrasive polishing compounds as they will wear away the paint.**
- **Apply sprays and wax sparingly. Wipe off excess afterwards.**

EWA20660

⚠ WARNING

Contaminants left on the brakes or tires can cause loss of control.

- **Make sure there is no lubricant or wax on the brakes or tires.**
- **If necessary, wash the tires with warm water and a mild detergent.**
- **If necessary, clean the brake discs and pads with brake cleaner or acetone.**
- **Before riding at higher speeds, test the vehicle's braking performance and cornering behavior.**

EAU83472

Storage

Always store the vehicle in a cool, dry place. If necessary, protect it against dust with a porous cover. Be sure the engine and the exhaust system are cool before covering the vehicle. If the vehicle often sits for weeks at a time between uses, the use of a quality fuel stabilizer is recommended after each fill-up.

ECA21170

NOTICE

- **Storing the vehicle 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 storage

Before storing the vehicle long term (60 days or more):

1. Make all necessary repairs and perform any outstanding maintenance.
2. Follow all instructions in the Care section of this chapter.
3. Fill up the fuel tank, adding fuel stabilizer according to product instructions. Run the engine for 5 minutes to distribute treated fuel through the fuel system.
4. For vehicles equipped with a fuel cock: Turn the fuel cock lever to the off position.
5. For vehicles with a carburetor: To prevent fuel deposits from building up, drain the fuel in the carburetor float chamber into a clean container. Retighten the drain bolt and pour the fuel back into the fuel tank.
6. Use a quality engine fogging oil according to product instructions to protect internal engine components from corrosion. If engine fogging oil is not available, perform the following steps for each cylinder:
   a. Remove the spark plug cap and spark plug.
   b. Pour a teaspoonful of engine oil into the spark plug bore.
   c. Install the spark plug cap onto the spark plug, and then place the spark plug on the cylinder head so that the electrodes are grounded. (This will limit sparking during the next step.)
   d. Turn the engine over several times with the starter. (This will coat the cylinder wall with oil.) **WARNING! To prevent damage or injury from sparking, make sure to ground the spark plug electrodes while turning the engine over.** [EWA10952]
   e. Remove the spark plug cap from the spark plug, and then install the spark plug and the spark plug cap.
7. Lubricate all control cables, pivots, levers and pedals, as well as the sidestand and centerstand (if equipped).
8. Check and correct the tire air pressure, and then lift the vehicle so that all wheels are off the ground. Otherwise, turn the wheels a little once a month in order to prevent the tires from becoming degraded in one spot.
9. Cover the muffler outlet with a plastic bag to prevent moisture from entering it.
10. Remove the battery and fully charge it, or attach a maintenance charger to keep the battery optimally charged. ***NOTICE:*** **Confirm that the battery and its charger are compatible. Do not charge a VRLA battery with a conventional charger.** [ECA26330]

TIP

- If the battery will be removed, charge it once a month and store it in a temperate location between 0-30 °C (32-90 °F).
- See page 8-32 for more information on charging and storing the battery.

Specifications

Dimensions:
Overall length:
2250 mm (88.6 in)
Overall width:
815 mm (32.1 in)
Overall height:
1470 mm (57.9 in)
Seat height:
795 mm (31.3 in)
Wheelbase:
1595 mm (62.8 in)
Ground clearance:
130 mm (5.12 in)
Minimum turning radius:
3.2 m (10.50 ft)

Weight:
Curb weight:
239 kg (527 lb)

Engine:
Combustion cycle:
4-stroke
Cooling system:
Liquid cooled
Valve train:
SOHC
Number of cylinders:
Single cylinder
Displacement:
292 cm³
Bore × stroke:
70.0 × 75.9 mm (2.76 × 2.99 in)
Starting system:
Electric starter

Engine oil:
Recommended brand:
YAMALUBE®
SAE viscosity grades:
10W-40, 0W-30
Recommended engine oil grade:
API service SG type or higher, JASO standard MA or MB
Engine oil quantity:
Oil change:
1.50 L (1.59 US qt, 1.32 Imp.qt)
With oil filter removal:
1.60 L (1.69 US qt, 1.41 Imp.qt)

Final transmission oil:
Type:
Motor oil SAE 10W-30 type SE or higher or Gear oil SAE 85W GL-3
Quantity:
0.20 L (0.21 US qt, 0.18 Imp.qt)

Coolant quantity:
Coolant reservoir (up to the maximum level mark):
0.18 L (0.19 US qt, 0.16 Imp.qt)
Radiator (including all routes):
1.10 L (1.16 US qt, 0.97 Imp.qt)

Fuel:
Recommended fuel:
Unleaded gasoline (E10 acceptable)
Octane number (RON):
90
Fuel tank capacity:
13 L (3.4 US gal, 2.9 Imp.gal)
Fuel reserve amount:
2.4 L (0.63 US gal, 0.53 Imp.gal)

Fuel injection:
Throttle body:
ID mark:
B741 02

Chassis:
Track:
470 mm (18.5 in)

Front tire:
Type:
Tubeless
Size:
120/70-14M/C 55P
Manufacturer/model:
BRIDGESTONE/BATTLAX SCF

Rear tire:
Type:
Tubeless
Size:
140/70-14M/C 62P
Manufacturer/model:
BRIDGESTONE/BATTLAX SCR

Loading:
Maximum load:
172 kg (379 lb)
(Total weight of rider, passenger, cargo and accessories)

Unified brake system:
Operation:
Activated by rear brake

Front brake:
Type:
Hydraulic disc brake
Rear brake:
Type:
Hydraulic single disc brake
Front suspension:
Type:
Telescopic fork
Rear suspension:
Type:
Unit swing
Electrical system:
System voltage:
12 V
Battery:
Model:
YTZ8V
Voltage, capacity:
12 V, 7.0 Ah (10 HR)
Bulb wattage:
Headlight:
LED
Brake/tail light:
LED
Front turn signal light:
10.0 W
Rear turn signal light:
10.0 W
Auxiliary light:
LED
License plate light:
5.0 W

EAU53562

Identification numbers

Record the vehicle identification number, engine serial number, and the model label information in the spaces provided below. These identification numbers are needed when registering the vehicle with the authorities in your area and when ordering spare parts from a Yamaha dealer.

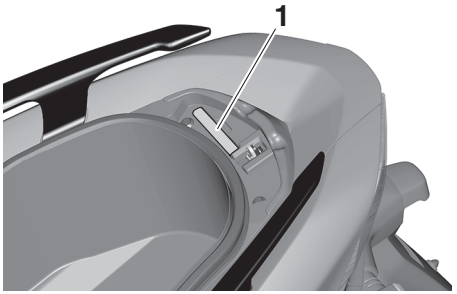
VEHICLE IDENTIFICATION NUMBER:

ENGINE SERIAL NUMBER:

MODEL LABEL INFORMATION:

EAU26411

Vehicle identification number



1. Vehicle identification number

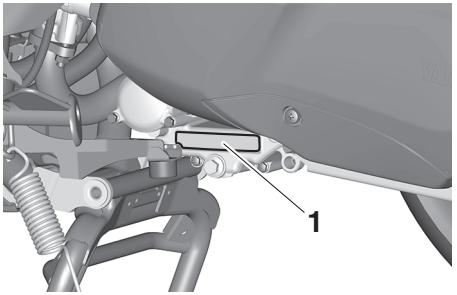
The vehicle identification number is stamped into the frame.

TIP

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

EAU26442

Engine serial number

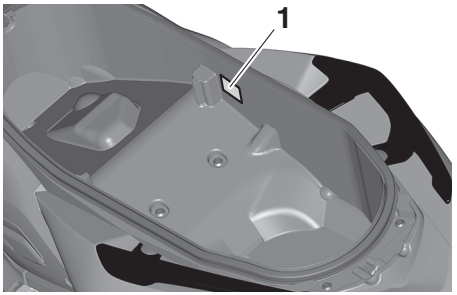


1. Engine serial number

The engine serial number is stamped into the crankcase.

EAUT1441

Model label

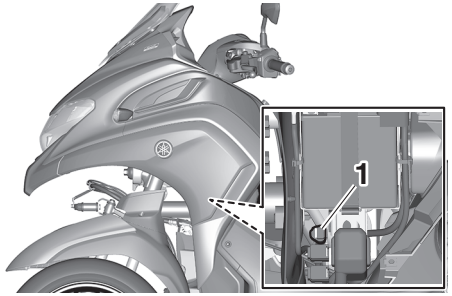


1. Model label

The model label is affixed to the inside of the storage compartment. (See page 5-18.) Record the information on this label in the space provided. This information will be needed when ordering spare parts from a Yamaha dealer.

EAU69910

Diagnostic connector



1. Diagnostic connector

The diagnostic connector is located as shown.

EAU85300

Vehicle data recording

This model's ECU stores certain vehicle data to assist in the diagnosis of malfunctions and for research, statistical analysis and development purposes.

Although the sensors and recorded data will vary by model, the main data points are:

- Vehicle status and engine performance data
- Fuel-injection and emission-related data

This data will be uploaded only when a special Yamaha diagnostic tool is attached to the vehicle, such as when maintenance checks or service procedures are performed.

Vehicle data uploaded will be handled appropriately according to the following Privacy Policy.

Privacy Policy

https://www.yamaha-motor.eu/eu/privacy/privacy-policy.aspx

Yamaha will not disclose this data to a third party except in the following cases. In addition, Yamaha may provide vehicle data to a contractor in order to outsource services related to the handling of vehicle data. Even in this case, Yamaha will require the contractor to properly handle the vehicle data we provided and Yamaha will appropriately manage the data.

- With the consent of the vehicle owner
- Where obligated by law
- For use by Yamaha in litigation
- When the data is not related to an individual vehicle nor owner

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