



OWNER'S MANUAL

XP500 MOTORCYCLE

 Read this manual carefully before operating this vehicle.

XP500
XP500A

2PW-28199-E1

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

	MITSUBISHI ELECTRIC CORPORATION HIMEJI WORKS
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DECLARATION of CONFORMITY
For

CE Product: Smart Keyless System
Model: SKEA7B-01 (Smart Unit)
Model: SKEA7B-02 (Hand Unit)

Supplied by MITSUBISHI ELECTRIC CORPORATION HIMEJI WORKS 840, Chiyoda-machi, Himeji, Hyogo 670-8677, Japan	Technical Construction File held by MITSUBISHI ELECTRIC CORPORATION HIMEJI WORKS 840, Chiyoda-machi, Himeji, Hyogo 670-8677, Japan
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Standard used for comply
EN 60955: 2002 + Amd.1: 2006 + Amd.11: 2008 + Amd.2:
2010 + Amd.12: 2011

R&TTE Directive (Article 3.1(a) Safety)	EN 301 489-1 V1.9.2: 2011
R&TTE Directive (Article 3.1(b) EMC)	EN 301 489-3 V1.6.1: 2013
R&TTE Directive (Article 3.2 Spectrum)	EN 300 310-1 V1.7.1: 2010 EN 300 310-2 V1.5.1: 2010 EN 300 220-2 V2.4.1: 2012 EN 300 220-2 V2.4.1: 2012

Means of Conformity

We declare under our sole responsibility that the Product (s) is conformity with the essential requirements and other relevant requirements of the Radio and Telecommunication Terminal Equipment (R&TTE) Directive (1999/5/EC).

Date of issue: March 3, 2014

Signature of Responsible Person:

Shinichi Furuta

Shinichi Furuta
Manager
Ignition Products Design Sect.2
Electronic Products Dept. A

Welcome to the Yamaha world of motorcycling!

As the owner of the XP500/XP500A, you are benefiting from Yamaha's vast experience and newest technology regarding the design and manufacture of high-quality products, which have earned Yamaha a reputation for dependability.

Please take the time to read this manual thoroughly, so as to enjoy all advantages of your XP500/XP500A. The Owner's Manual does not only instruct you in how to operate, inspect and maintain your scooter, but also in how to safeguard yourself and others from trouble and injury.

In addition, the many tips given in this manual will help keep your scooter in the best possible condition. If you have any further questions, do not hesitate to contact your Yamaha dealer.

The Yamaha team wishes you many safe and pleasant rides. So, remember to put safety first!

Yamaha continually seeks advancements in product design and quality. Therefore, while this manual contains the most current product information available at the time of printing, there may be minor discrepancies between your scooter and this manual. If there is any question concerning this manual, please consult a Yamaha dealer.



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

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.
	A WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.
	A NOTICE indicates special precautions that must be taken to avoid damage to the vehicle or other property.
	A TIP provides key information to make procedures easier or clearer.

*Product and specifications are subject to change without notice.

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**XP500/XP500A
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 scooter.

Scooters are single-track vehicles.

Their safe use and operation are dependent upon the use of proper riding techniques as well as the expertise of the operator. Every operator should know the following requirements before riding this scooter.

He or she should:

- Obtain thorough instructions from a competent source on all aspects of scooter operation.
- Observe the warnings and maintenance requirements in 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 scooter without proper training or instruction. Take a training course. Beginners should receive training from a certified instructor. Contact an authorized scooter 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 5-1

for a list of pre-operation checks.

- This scooter is designed to carry the operator and a passenger.
- The failure of motorists to detect and recognize scooters in traffic is the predominating cause of automobile/scooter accidents. Many accidents have been caused by an automobile driver who did not see the scooter. Making yourself conspicuous appears to be very effective in reducing the chance of this type of accident.

Therefore:

- Wear a brightly colored jacket.
- Use extra caution when you are approaching and passing through intersections, since intersections are the most likely places for scooter accidents to occur.
- Ride where other motorists can see you. Avoid riding in another motorist's blind spot.
- Never maintain a scooter without proper knowledge. Contact an authorized scooter dealer to inform you on basic scooter 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 scooter to other qualified operators.
 - Know your skills and limits. Staying within your limits may

Safety information

help you to avoid an accident.

- We recommend that you practice riding your scooter where there is no traffic until you have become thoroughly familiar with the scooter and all of its controls.
- Many accidents have been caused by error of the scooter operator. A typical error made by the operator is veering wide on a turn due to excessive speed or undercornering (insufficient lean angle for the speed).
 - Always obey the speed limit and never travel faster than warranted by road and traffic conditions.
 - Always signal before turning or changing lanes. Make sure that other motorists can see you.
- The posture of the operator and passenger is important for proper control.
 - The operator should keep both hands on the handlebar and both feet on the operator footrests during operation to maintain control of the scooter.
 - The passenger should always hold onto the operator, the seat strap or grab bar, if equipped, with both hands and keep both feet on the passenger footrests. Never carry a passenger unless he or she can firmly place both feet on the passenger footrests.
- Never ride under the influence of alcohol or other drugs.
- This scooter is designed for on-road use only. It is not suitable for off-road use.

Protective Apparel

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

- Always wear an approved helmet.
- Wear a face shield or goggles. Wind in your unprotected eyes could contribute to an impairment of vision 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 scooter can adversely affect stability and handling if the weight distribution of the scooter is changed. To avoid the possibility of an accident, use extreme caution when adding cargo or accessories to your scooter. Use extra care when riding a scooter that has added cargo or accessories. Here, along with the information about accessories below, are some general guidelines to follow if loading cargo to your scooter:

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:

193 kg (425 lb) (XP500A)
196 kg (432 lb) (XP500)

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

- Cargo and accessory weight should be kept as low and close to the scooter as possible. 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 scooter to minimize imbalance or instability.
- Shifting weights can create a sudden imbalance. Make sure that accessories and cargo are securely attached to the scooter before riding. Check accessory mounts and cargo restraints frequently.
 - 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 available 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

Safety information

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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 scooter. Carefully inspect the accessory before using it to make sure that it does not in any way reduce ground clearance or cornering clearance, limit suspension travel, steering travel or control operation, or obscure lights or reflectors.
- Accessories fitted to the handlebar or the front fork area can create instability due to improper weight distribution or aerody-

dynamic changes. If accessories are added to the handlebar or front fork area, they must be as lightweight as possible and should be kept to a minimum.

- Bulky or large accessories may seriously affect the stability of the scooter due to aerodynamic effects. Wind may attempt to lift the scooter, or the scooter may become unstable in cross winds. These accessories may also cause instability when passing or being passed by large vehicles.
- Certain accessories can displace the operator from his or her normal riding position. This improper position limits the freedom of movement of the operator and may limit control ability, therefore, such accessories are not recommended.
- Use caution when adding electrical accessories. If electrical accessories exceed the capacity of the scooter's electrical system, an electric failure could result, which could cause a dangerous loss of lights or engine power.

Aftermarket Tires and Rims

The tires and rims that came with your scooter 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 7-17 for tire specifications and more information on replacing your tires.

Transporting the Scooter

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

- Remove all loose items from the scooter.
- Point the front wheel straight ahead on the trailer or in the truck bed, and choke it in a rail to prevent movement.
- Secure the scooter with tie-downs or suitable straps that are attached to solid parts of the scooter, 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 scooter will not bounce excessively during transport.

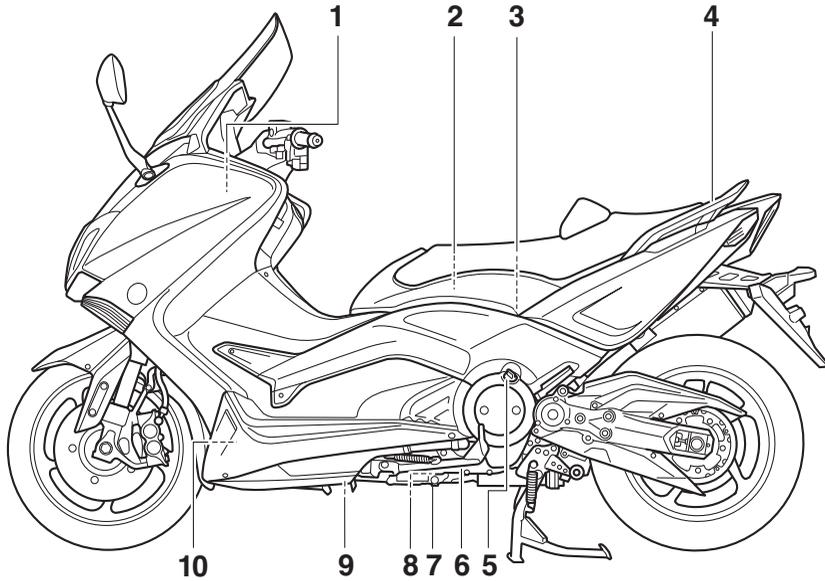
Further safe-riding points

- Be sure to signal clearly when making turns.
- Braking can be extremely difficult on a wet road. Avoid hard braking, because the scooter could slide. Apply the brakes slowly when stopping on a wet surface.
- Slow down as you approach a corner or turn. Once you have completed a turn, accelerate slowly.
- Be careful when passing parked cars. A driver might not see you and open a door in your path.
- Railroad crossings, streetcar rails, iron plates on road construction sites, and manhole covers become extremely slippery when wet. Slow down and cross them with caution. Keep the scooter upright, otherwise it could slide out from under you.
- The brake pads or linings could get wet when you wash the scooter. After washing the scooter, check the brakes before riding.
- Always wear a helmet, gloves, trousers (tapered around the cuff and ankle so they do not flap), and a brightly colored jacket.
- Do not carry too much luggage on the scooter. An overloaded scooter is unstable. Use a strong cord to secure any luggage to the carrier (if equipped). A loose load will affect the stability of the scooter and could divert your attention from the road. (See page 1-3.)

Description

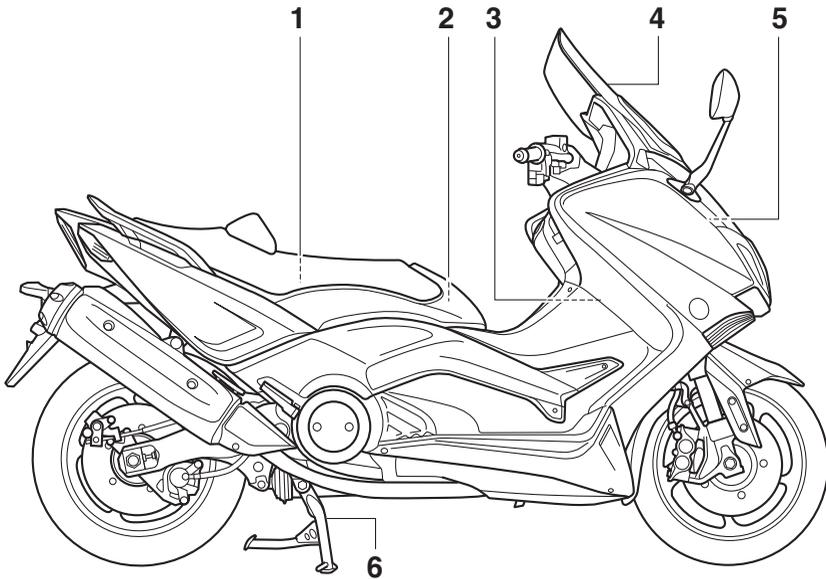
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Left view



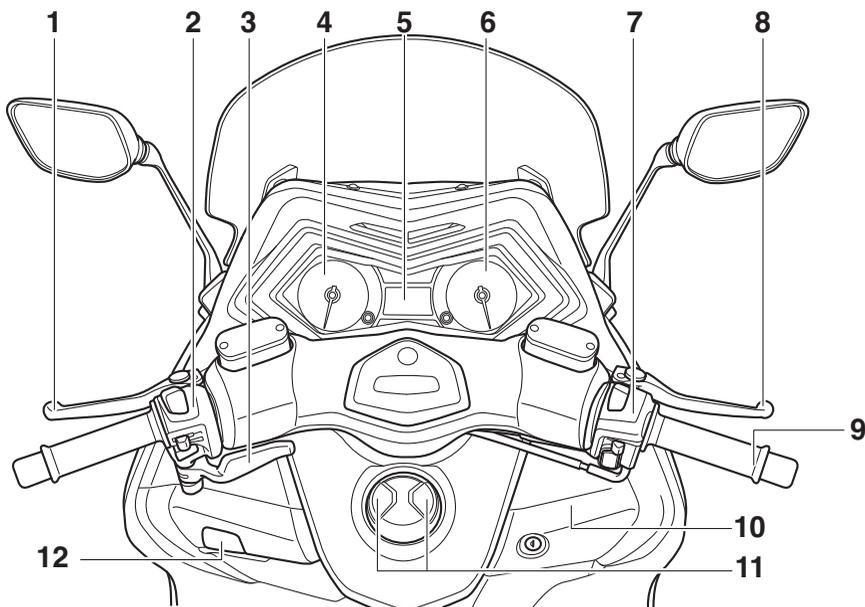
1. Battery (page 7-28)
2. Helmet holder (page 4-17)
3. Rear storage compartment (page 4-18)
4. Grab bar (page 6-3)
5. Engine oil filler cap (page 7-10)
6. Sidestand (page 4-22)
7. Engine oil drain bolt (page 7-10)
8. Engine oil level check window (page 7-10)
9. Oil filter cartridge (page 7-10)
10. Coolant level check window (page 7-13)

Right view



1. Owner's tool kit (page 7-2)
2. Fuel tank cap (page 4-14)
3. Air filter element (page 7-15)
4. Windshield (page 4-19)
5. Fuses (page 7-29)
6. Centerstand (page 7-26)

Controls and instruments



1. Rear brake lever (page 4-12)
2. Left handlebar switches (page 4-10)
3. Rear brake lock lever (page 4-12)
4. Speedometer (page 4-2)
5. Multi-function display (page 4-3)
6. Tachometer (page 4-3)
7. Right handlebar switches (page 4-10)
8. Front brake lever (page 4-11)
9. Throttle grip (page 7-16)
10. Front storage compartment (page 4-18)
11. Smart key system switches (page 3-1)
12. Auxiliary DC jack (page 4-24)

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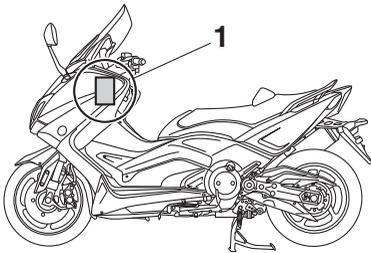
Smart key system

The smart key system enables the vehicle to be operated without using a mechanical key.

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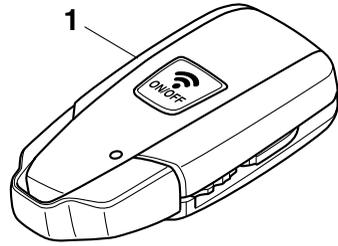
⚠ WARNING

- 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.

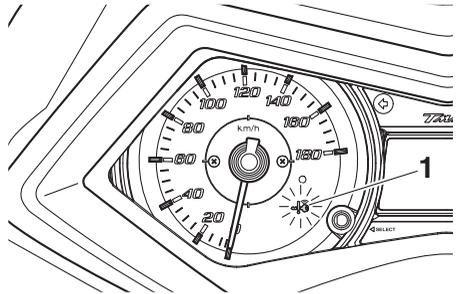


1. Vehicle mounted antenna

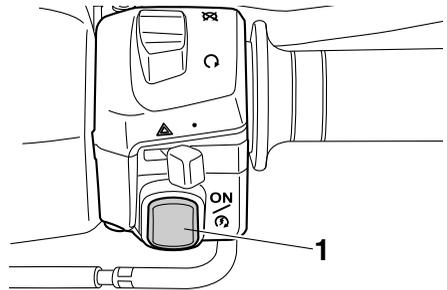
In addition to the vehicle mounted antenna, the smart key system consists of the smart key, smart key system indicator light, “ON/⊘” switch, and the “OFF/LOCK” and “SEAT OPEN/⊘” switches.



1. Smart key



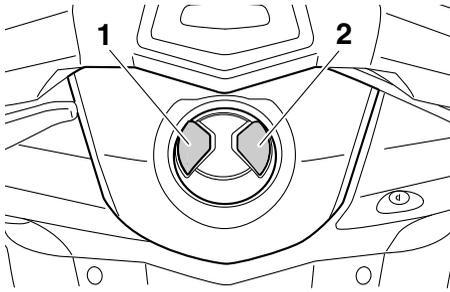
1. Smart key system indicator light “⊘”



1. “ON/⊘” switch

Smart key system

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1. "SEAT OPEN/p \leq " switch
2. "OFF/LOCK" switch

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NOTICE

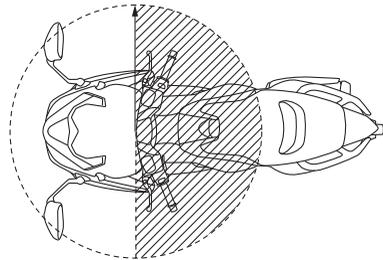
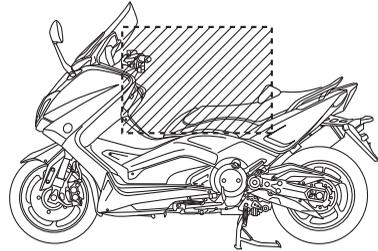
The smart key system uses weak radio waves. The smart key system may not work in the following situations.

- 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, use the mechanical key to carry out the operation in emergency mode (See page 7-38).

Operating range of the smart key system

The operating range of the smart key system is about 80 cm (31.5 in) from the center of the handlebars.



TIP

- As the smart key system uses weak radio waves, the operating range may be affected by the surrounding environment.
- When the battery of the smart key is discharged, the smart key may not work or its operating range become very small.
- If the smart key is turned off, the vehicle will not recognize the smart key even if it is within operating range.
- If the "ON/⊗" switch, "OFF/LOCK" switch, or "SEAT OPEN/p \leq " switch are repeatedly pressed when the smart key is out of range

or cannot communicate with the vehicle, all switches will be temporarily disabled.

- Placing the smart key in the front or rear storage compartment may block communication between the smart key and the vehicle. If the rear trunk is locked with the smart key inside, the smart key system may be disabled. The smart key should always be carried on your person.
- When leaving the vehicle, make sure you apply the steering lock and take the smart key with you. It is recommended that you turn the smart key off.

Handling of the smart key and mechanical key

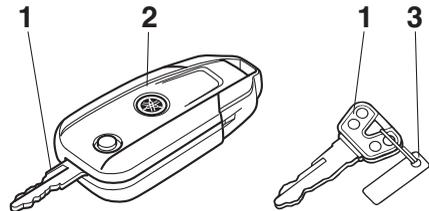
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WARNING

- **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 (with a built-in mechanical key) and one spare mechanical key with an identification tag. Keep the spare mechanical key and tag separate from the smart key. Should you lose or damage the smart key, or when its battery is discharged, the mechanical key will serve as a back up. The seat can be opened, the smart key system identification number can be manually input, and then the vehicle can be operated. (See page 7-38.) We recommend that you **note down the identification number in case of emergency.**



1. Mechanical key
2. Smart key
3. Identification number tag

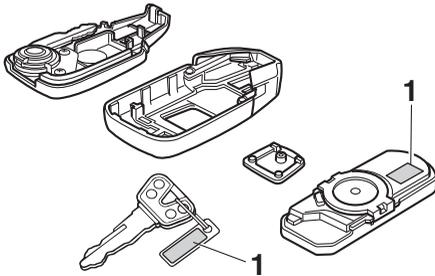
If the smart key and identification tag of

Smart key system

the mechanical key are both lost or damaged, and there is no record of the identification number, the entire smart key system will need to be replaced.

TIP

The identification number can also be found on the inside of the smart key itself.



1. Identification number

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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 mod-

ify 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

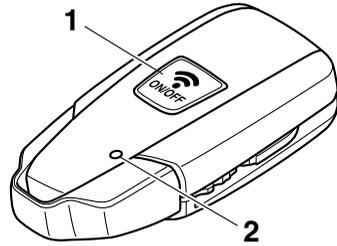
- The smart key battery life is approximately two years, but this may vary according to operating conditions.
- The smart key battery may become discharged even if it is away from the vehicle and not being used.
- If the smart key continually receives radio waves, the smart key battery will discharge quickly. (For example, when placed in the vicinity of electrical products such as televisions, radios, or computers.)

Replace the smart key battery when the smart key system indicator light flashes for about 20 seconds when the power of the vehicle is turned on or when the smart key indicator light does not come on when the "ON/OFF" switch is pushed. (See page 3-6.) After changing the smart key battery, if the smart key system still does not operate, have a Yamaha dealer check the vehicle.

TIP

You can register up to six smart keys for the same vehicle. See a Yamaha dealer regarding spare smart keys.

Smart key



1. "ON/OFF" switch
2. Smart key indicator light

When the smart key is turned on and brought within range, the smart key system allows you to operate the vehicle without inserting a mechanical key.

To turn the smart key on or off

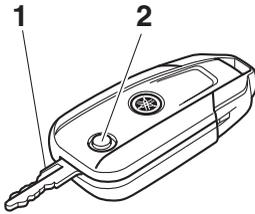
To turn the smart key on or off, press and hold the "ON/OFF" switch for approximately one second. When the smart key is turned off, the vehicle cannot be operated even if the smart key is brought within operating range of the vehicle. Turn the smart key on and bring it within range to operate the vehicle. (See page 3-2.)

TIP

To preserve battery power, the smart key will turn off automatically about a week after the vehicle is last used. Turn the smart key on before using the vehicle again.

Smart key system

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3

1. Mechanical key
2. Release button

To use the mechanical key

Press the release button on the smart key body to extend the mechanical key. When finished, simply fold the mechanical key back into place.

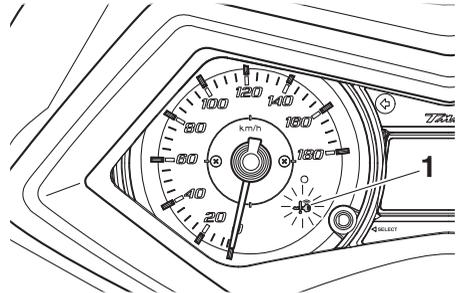
TIP

The mechanical key is used for the fuel tank cap, the front storage compartment, and the seat lock. (See page 4-14, 4-18, and 7-38.)

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.
- When the smart key indicator light does not come on when the "ON/OFF" switch is pushed.



1. Smart key system indicator light "⚡"

EWA14724

WARNING

- The battery and other removable parts may cause injury if swallowed. Keep the battery and other removable parts away from children.
- Do not expose the battery to direct sunlight or other heat sources.

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

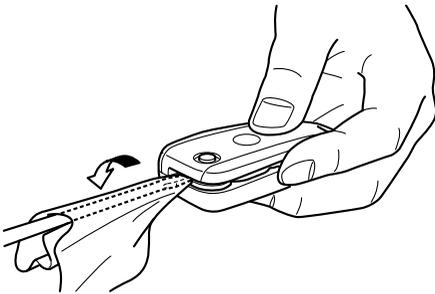
Smart key system

damaged or contaminated by dirt.

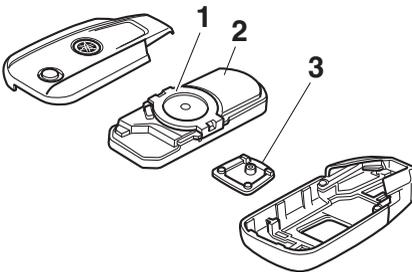
- Do not touch the internal circuits and terminals. This may cause malfunctions.
- Do not apply excessive force to the smart key when replacing the battery.
- Make sure the battery is installed correctly. Confirm the direction of the positive/“+” side of the battery.

To replace the smart key battery

1. Open the smart key case as shown.



2. Remove the switch plate and control unit from the smart key case.



1. Battery cover
2. Control unit
3. Switch plate

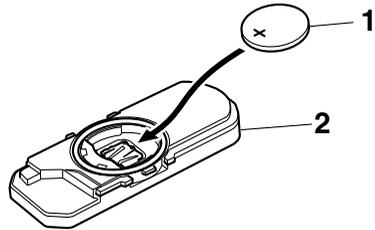
3. Remove the battery cover.
4. Remove the battery.

TIP _____

Dispose of the removed battery in accordance with local regulations.

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

Specified battery:
CR2025

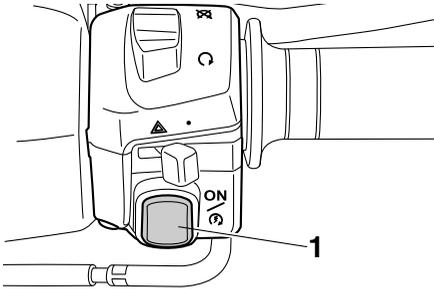


1. Battery
2. Control unit

6. Install the battery cover.
7. Install the switch plate and control unit into the smart key case.
8. Gently snap the smart key case closed.

Vehicle power on and steering lock release

1. With the smart key on and in operating range, press the “ON/⊗” switch for one second.



1. “ON/⊗” switch

2. Upon authentication of the smart key, the beeper will sound twice, the smart key system indicator light will come on momentarily and the steering lock (if applied) will release automatically.

TIP

- The smart key system indicator light will flash if the steering lock cannot automatically release itself. Try moving the handlebars gently to the left or right and then press the “ON/⊗” switch.
- If the steering continues to be locked and will not release, the smart key system indicator light will flash 16 times and the steering lock release operation will stop midway. Move the handlebar gently to the left and right to help release the steering lock and then press the “ON/⊗” switch again.

NOTICE

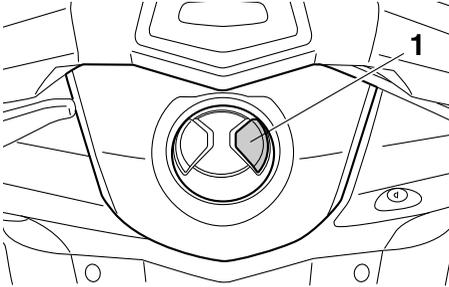
If the steering lock will not release and the smart key system indicator light is flashing, have a Yamaha dealer check the smart key system.

3. The power of the vehicle is turned on once the steering lock is completely released. The smart key system indicator light will go off and the multi-function meter display will come on.
4. The engine can now be started. (See page 6-2.)

EAU61693

Powering off the vehicle

To turn the vehicle power off (and stop the engine if it is running), with the smart key on and within operating range, press the “OFF/LOCK” switch.



1. “OFF/LOCK” switch

Upon authentication of the smart key, the beeper will sound once to confirm that the vehicle power has been successfully turned off.

If the smart key is not within operating range or cannot communicate with the vehicle when you press the “OFF/LOCK” switch, the vehicle will not be turned off and the beeper will sound for three seconds (the smart key system indicator light will also flash) to alert you that the power was not successfully turned off. Confirm the location and condition of the smart key and try powering off the vehicle again.

TIP

- The rider must turn off the power of the vehicle manually.
- The power of the vehicle will not turn off automatically even if the smart key is moved out of operating range of the smart key system.
- The power of the vehicle cannot be turned off via the “OFF/LOCK” switch when the vehicle is moving.

Be sure to stop the vehicle in a safe place when turning off the power.

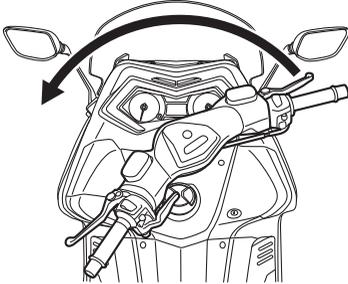
- Without the smart key, the vehicle power can be turned off by pressing the “OFF/LOCK” switch again while the smart key system indicator light is flashing.
- See page 7-38 for more information about emergency mode and how to turn the vehicle power on without the smart key.

Smart key system

EAU61612

How to lock the steering

After moving the vehicle to a safe parking place, turn off the power of the vehicle. Turn the handlebars fully to the left and then press the “OFF/LOCK” switch for at least one second.



3

TIP

- If the steering lock function locks correctly, the beeper will sound once.
- If the steering lock function does not lock correctly, the beeper will sound for three seconds and the smart key system indicator light will flash. Turn the handlebar fully to the left one more time and press the “OFF/LOCK” switch again for one second.

EWA14742

WARNING

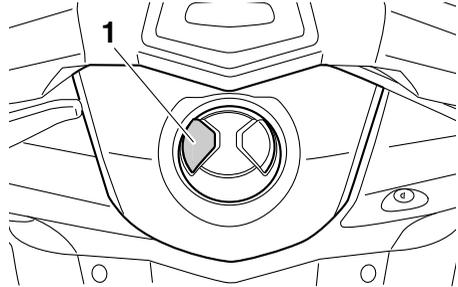
Do not operate the steering lock while the vehicle is moving.

EAU61683

Seat opening and closing

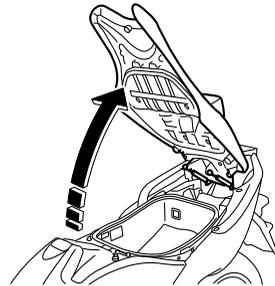
To open the seat

1. Place the vehicle on the center-stand.
2. With the smart key on and in operating range, press the “SEAT OPEN/p \leq ” switch.



1. “SEAT OPEN/p \leq ” switch

3. The seat lock will release upon authentication of the smart key.
4. Fold the seat up.



EWA17941

WARNING

Do not operate the “SEAT OPEN/p \leq ” switch while the vehicle is moving.

To close the seat

Fold the seat down, and then push it down to lock it in place.

TIP _____

- Make sure the seat is properly closed before starting off.
 - In case of an emergency, the seat can be opened with a mechanical key. (See page 7-38.)
-

Parking mode

The steering is locked, and the hazard lights and turn signal lights can be turned on, but all other electrical systems are off.

To enter parking mode

1. Lock the steering. (See page 3-10.)
2. Press and hold the “SEAT OPEN/p \leq ” switch for at least one second.
3. Upon authentication of the smart key, the beeper will sound twice and the smart key system will change to parking mode and the smart key system indicator light will come on.

TIP _____

The seat cannot be opened while in parking mode.

NOTICE _____

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

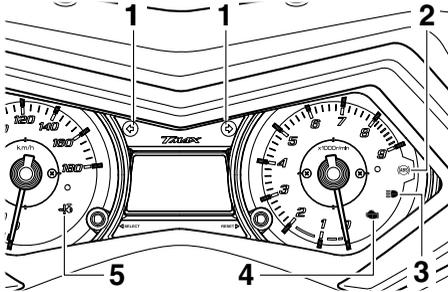
To exit parking mode

Press and hold the “SEAT OPEN/p \leq ” switch. Upon authentication of the smart key, the beeper will sound once and parking mode is cancelled and the smart key system indicator light will go off.

Instrument and control functions

Indicator lights and warning lights

EAU49398



1. Turn signal indicator lights “” and “”
2. Anti-lock Brake System (ABS) warning light “” (for ABS models)
3. High beam indicator light “”
4. Engine trouble warning light “”
5. Smart key system indicator light “”

Turn signal indicator lights “” and “”

EAU11032

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

High beam indicator light “”

EAU11081

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

Engine trouble warning light “”

EAU63521

This warning light comes on if an electrical circuit monitoring the engine is not working correctly. If this occurs, have a Yamaha dealer check the self-diagnosis system.

The electrical circuit of the warning light can be checked by turning the vehicle power on. The warning light should come on for a few seconds, and then go off.

If the warning light does not come on initially when the vehicle power is turned on, or if the warning light remains on, have a Yamaha dealer check the electrical circuit.

TIP

This warning light will come on when the vehicle power is on and the “ON/” switch is pushed, but this does not indicate a malfunction.

ABS warning light “” (for ABS models)

EAU63532

In normal operation, the ABS warning light comes on when the vehicle power is turned on and goes off after traveling at a speed of 10 km/h (6 mi/h) or higher. If the ABS warning light:

- does not come on when the vehicle power is turned on
- comes on or flashes while riding
- does not go off after traveling at a speed of 10 km/h (6 mi/h) or higher

The ABS may not work correctly. If any of the above occurs, have a Yamaha dealer check the system as soon as possible. (See page 4-13 for an explanation of the ABS.)

EWA16041

WARNING

If the ABS warning light does not go off after traveling at a speed of 10 km/h (6 mi/h) or higher, or if the warning light comes on or flashes while riding, the brake system reverts to conventional braking. If either of the above occurs, or if the warning light does not come on at all, use extra caution to avoid possible wheel lock during emergency braking. Have a Yamaha dealer

check the brake system and electrical circuits as soon as possible.

TIP

- If the start switch is pushed while the engine is running, the ABS warning light will come on, but this is not a malfunction.
- The ABS warning light may come on when revving the engine with the scooter on its centerstand, but this does not indicate a malfunction.

Smart key system indicator light

EAU61652

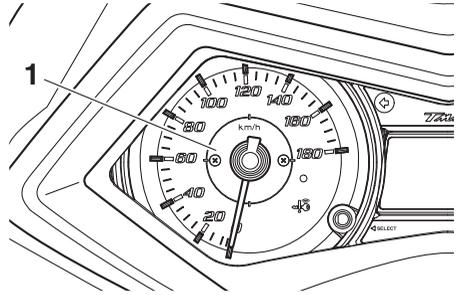
“”

This indicator light communicates the status of the smart key system. When the smart key system is operating normally, this indicator light will be off. If there is an error in the smart key system, the indicator light will flash. The indicator light will also flash when communication between the vehicle and smart key takes place and when certain smart key system operations are carried out. (See page 3-1.)

TIP

When the start switch is pushed, the indicator light will come on for about one second and then go off. If the indicator light does not come on or go off as normal, have a Yamaha dealer check the vehicle.

Speedometer



1. Speedometer

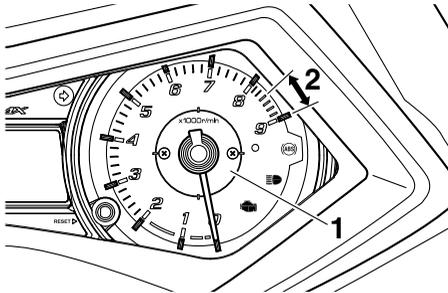
The speedometer shows the riding speed.

When the vehicle power is turned on, the speedometer needle will sweep once across the speed range and then return to zero in order to test the electrical circuit.

Instrument and control functions

Tachometer

EAU63551



1. Tachometer
2. Tachometer red zone

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

ECA10032

NOTICE

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

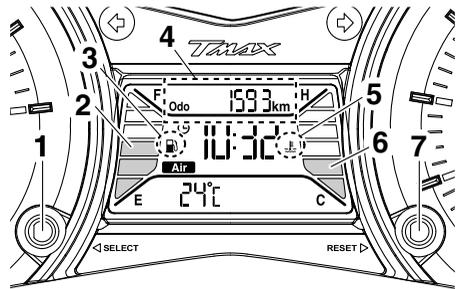
Multi-function display

EAU63564

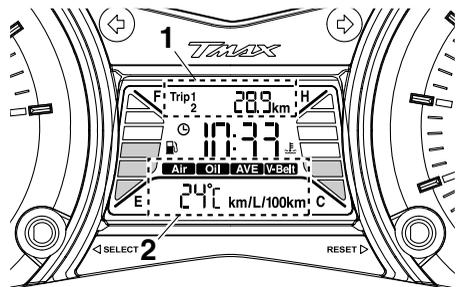
EWA12313

! WARNING

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

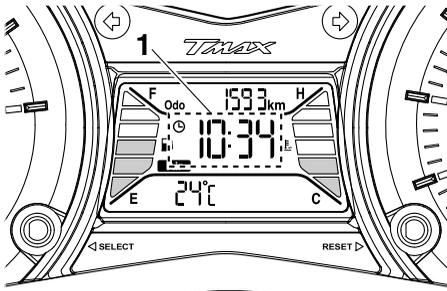


1. "SELECT" button
2. Fuel meter
3. Fuel level warning indicator "⛽"
4. Odometer
5. Coolant temperature warning indicator "⚡"
6. Coolant temperature meter
7. "RESET" button



1. Tripmeter/fuel reserve tripmeter
2. Ambient temperature/average fuel consumption/instantaneous fuel consumption

Instrument and control functions



1. Clock

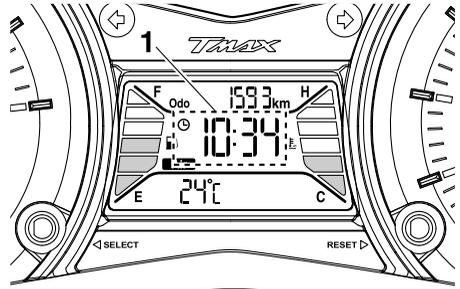
The multi-function display is equipped with the following:

- a fuel meter
- a coolant temperature meter
- an odometer
- two tripmeters
- a fuel reserve tripmeter
- a self-diagnosis device
- a clock
- an ambient temperature display
- a fuel consumption display
- an oil change tripmeter
- a V-belt replacement tripmeter

TIP

- Be sure to turn the vehicle power on before using the “SELECT” and “RESET” buttons.
- When the vehicle power is turned on, all of the display segments of the multi-function display will appear one after the other and then disappear, in order to test the electrical circuits.

Clock



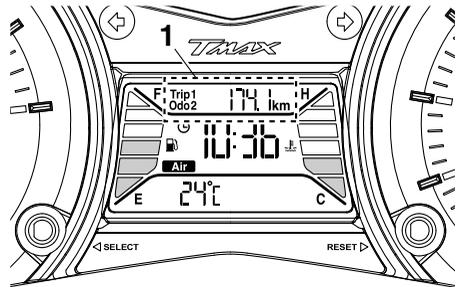
1. Clock

The clock uses a 24-hour time system. The clock displays when the key is turned to “ON”.

To set the clock:

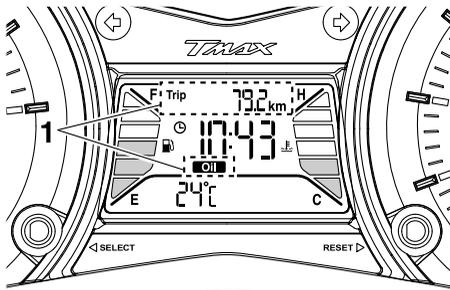
1. Push the “SELECT” and “RESET” buttons together for at least two seconds.
2. When the hour digits start flashing, push the “RESET” button to set the hours.
3. Push the “SELECT” button, and the minute digits will start flashing.
4. Push the “RESET” button to set the minutes.
5. Push the “SELECT” button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

Odometer and tripmeter modes

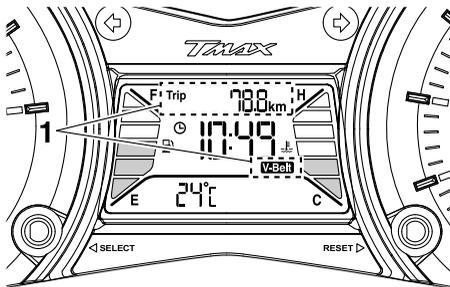


1. Odometer/tripmeters/fuel reserve tripmeter

Instrument and control functions



1. Oil change tripmeter



1. V-belt replacement tripmeter

The odometer shows the total distance traveled by the vehicle.

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

The fuel reserve tripmeter shows the distance traveled since the fuel level warning indicator came on.

The oil change tripmeter shows the distance traveled since the last engine oil change.

The V-belt replacement tripmeter shows the distance traveled since the last V-belt replacement.

TIP

- The odometer will lock at 999999.
- The tripmeters will reset and continue counting after 9999.9 is reached.

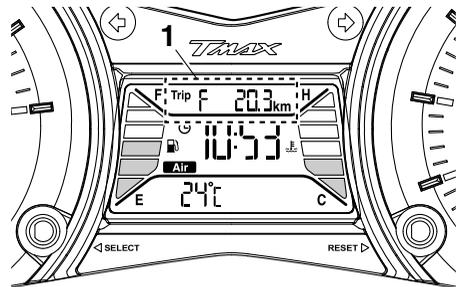
Pushing the “SELECT” button switches

the display between the odometer mode and the tripmeter modes in the following order:

Odo → Trip 1 → Trip 2 → V-Belt Trip → Oil Trip → Odo

When approximately 3.0 L (0.79 US gal, 0.66 Imp.gal) of fuel remains in the fuel tank, the display will automatically change to the fuel reserve tripmeter mode “Trip F” and start counting the distance traveled from that point. In that case, pushing the “SELECT” button switches the display between the various tripmeter and odometer modes in the following order:

Odo → Trip 1 → Trip 2 → Trip F → V-Belt Trip → Oil Trip → Odo



1. Fuel reserve tripmeter

To reset a tripmeter, select it by pushing the “SELECT” button until “Trip F”, “Trip 1” or “Trip 2” is displayed. While “Trip F”, “Trip 1” or “Trip 2” is displayed, push the “SELECT” button for at least one second. If you do not reset the fuel reserve tripmeter manually, it will reset itself automatically and the display will return to the prior mode after refueling and traveling 5 km (3 mi).

TIP

The display cannot be switched to “Trip F” after the fuel reserve tripmeter has

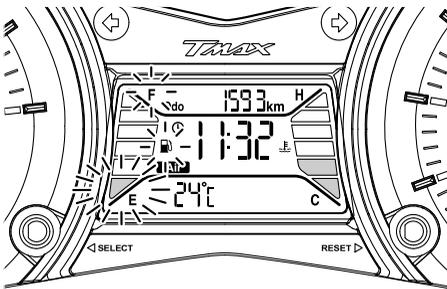
Instrument and control functions

ECA10022

been reset.

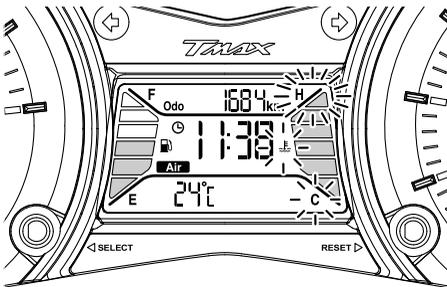
Fuel meter

The fuel meter indicates the amount of fuel in the fuel tank. The display segments of the fuel meter disappear towards “E” (Empty) as the fuel level decreases. When the fuel level reaches the bottom segment near “E”, the fuel level warning indicator, “F”, “E”, and the bottom segment will flash. Refuel as soon as possible.



Coolant temperature meter

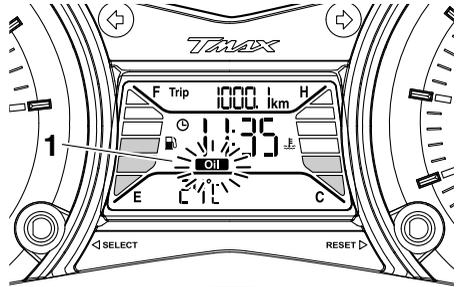
The coolant temperature meter indicates the temperature of the coolant. The coolant temperature varies with changes in the weather and engine load. If the top segment, “H”, “C”, and coolant temperature warning indicator flash, stop the vehicle and let the engine cool. (See page 7-37.)



NOTICE

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

Oil change indicator “Oil”



1. Oil change indicator “Oil”

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

After changing the engine oil, reset the oil change indicator. To reset the oil change indicator, select it by pushing the “SELECT” button until “Oil Trip” is displayed, and then push the “SELECT” button at least one second. When pushing the “SELECT” button, “Oil Trip” starts flashing. While “Oil Trip” is flashing, push the “SELECT” button again for at least three seconds.

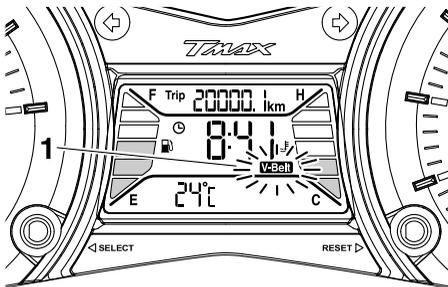
If the engine oil is changed before the oil change indicator “Oil” flashes (i.e. before the periodic oil change interval has been reached), the indicator “Oil” must be reset after the oil change for the next periodic oil change to be indicated at the correct time.

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

Instrument and control functions

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

V-belt replacement indicator “V-Belt”



1. V-belt replacement indicator “V-Belt”

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

After changing the V-belt, reset the V-belt replacement indicator. To reset the V-belt replacement indicator, select it by pushing the “SELECT” button until “V-Belt Trip” is displayed, and then push the “SELECT” button at least one second. When pushing the “SELECT” button, “V-Belt Trip” starts flashing. While “V-Belt Trip” is flashing, push the “SELECT” button for at least three seconds.

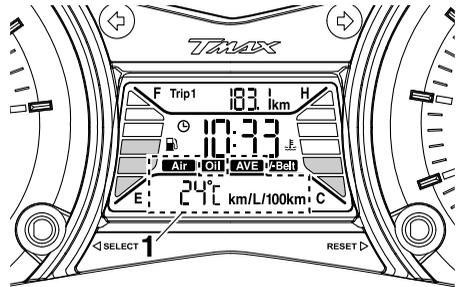
If the V-belt is changed before the V-belt replacement indicator “V-Belt” flashes (i.e. before the periodic V-belt change interval has been reached), the indicator “V-Belt” must be reset after

the V-belt change for the next periodic V-belt change to be indicated at the correct time.

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

1. Turn the vehicle on and make sure that the engine stop switch is set to “○”.
2. Check that the V-belt replacement indicator comes on for a few seconds and then goes off.
3. If the V-belt replacement indicator does not come on, have a Yamaha dealer check the electrical circuit.

Ambient temperature display, average fuel consumption, and instantaneous fuel consumption modes



1. Ambient temperature/average fuel consumption/instantaneous fuel consumption

Push the “RESET” button to switch the display between the ambient temperature display “Air”, the average fuel consumption mode “AVE_ _ _ km/L” or “AVE_ _ _ L/100 km”, and the instantaneous fuel consumption mode “km/L” or “L/100 km” in the following order:

Air → AVE_ _ _ km/L or AVE_ _ _ L/100 km → km/L or L/100 km → Air

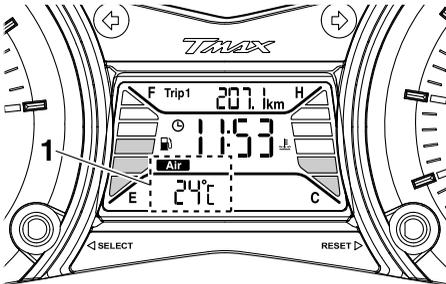
Instrument and control functions

For the UK:

Push the “RESET” button to switch the display between the ambient temperature display “Air”, the average fuel consumption mode “AVE_ _ _ MPG” and the instantaneous fuel consumption mode “MPG” in the following order:

Air → AVE_ _ _ MPG → MPG → Air

Ambient temperature display



1. Ambient temperature display

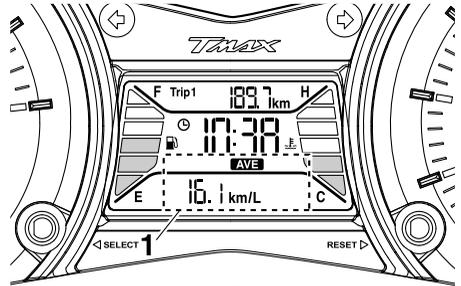
This display shows the ambient temperature from $-9\text{ }^{\circ}\text{C}$ to $40\text{ }^{\circ}\text{C}$ in $1\text{ }^{\circ}\text{C}$ increments.

For the UK:

$15\text{ }^{\circ}\text{F}$ to $104\text{ }^{\circ}\text{F}$ in $1\text{ }^{\circ}\text{F}$ increments.

The temperature displayed may vary from the ambient temperature. Pushing the “RESET” button switches the ambient temperature display to the average fuel consumption and instantaneous fuel consumption modes.

Average fuel consumption mode



1. Average fuel consumption display

Since it was last reset, this mode calculates the average fuel consumption rate of the vehicle.

For the UK:

The average fuel consumption is displayed “AVE_ _ _ MPG”.

- When the display is set to “AVE_ _ _ km/L”, the average distance that can be traveled on 1.0 L of fuel is shown.
- When the display is set to “AVE_ _ _ L/100 km”, the average amount of fuel necessary to travel 100 km is shown.
- For the UK: When the display is set to “AVE_ _ _ MPG”, the average distance that can be traveled on 1.0 Imp.gal of fuel is shown.

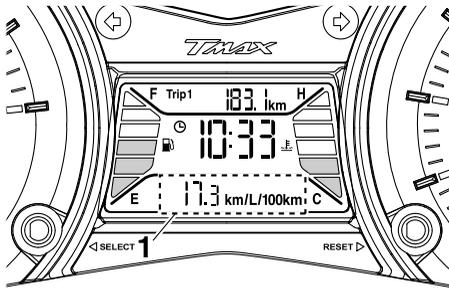
To reset the average fuel consumption mode, select it by pushing the “RESET” button, and then push the “RESET” button for at least one second.

TIP

After resetting an average fuel consumption mode, “_ _ .” is shown for that display until the vehicle has traveled 1 km (0.6 mi).

Instrument and control functions

Instantaneous fuel consumption mode



1. Instantaneous fuel consumption display

This mode calculates the current fuel consumption rate of the vehicle every few seconds.

For the UK:

The instantaneous fuel consumption is displayed “MPG”.

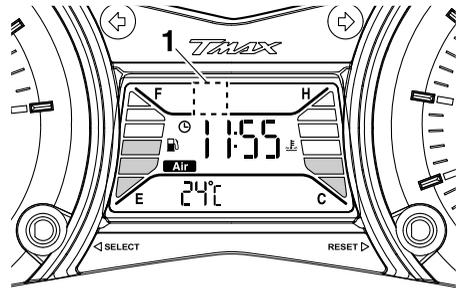
- When the display is set to “km/L”, the distance that can be traveled on 1.0 L of fuel under the current riding conditions is shown.
- When the display is set to “L/100 km”, the amount of fuel necessary to travel 100 km under the current riding conditions is shown.
- For the UK: The distance that can be traveled on 1.0 Imp.gal of fuel under the current riding conditions is shown.

To switch between the instantaneous fuel consumption displays, push the “RESET” button for one second when one of the displays is shown (except for the UK).

TIP

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

Self-diagnosis device



1. Error code display

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

If a problem is detected in any of those circuits, the engine trouble warning light comes on and the display indicates an error code.

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

ECA11591

NOTICE

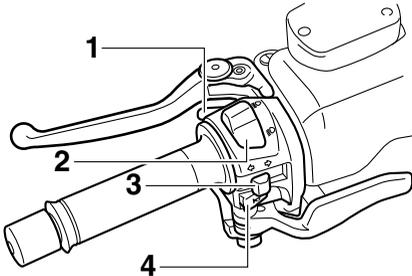
If the display indicates an error code, the vehicle should be checked as soon as possible in order to avoid engine damage.

Instrument and control functions

Handlebar switches

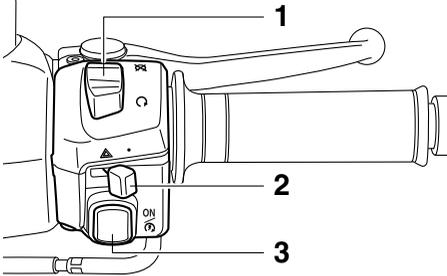
EAU1234H

Left



1. Pass switch “PASS”
2. Dimmer switch “ \equiv 0/ \equiv 0”
3. Turn signal switch “ \leftarrow / \rightarrow ”
4. Horn switch “ 🔊 ”

Right



1. Engine stop switch “ \bigcirc / \otimes ”
2. Hazard switch “ \triangle ”
3. “ON/ \otimes ” switch

Pass switch “PASS”

EAU12361

Press this switch to flash the headlight.

Dimmer switch “ \equiv 0/ \equiv 0”

EAU12401

Set this switch to “ \equiv 0” for the high beam and to “ \equiv 0” for the low beam.

Turn signal switch “ \leftarrow / \rightarrow ”

EAU12461

To signal a right-hand turn, push this switch to “ \rightarrow ”. To signal a left-hand

turn, push this switch to “ \leftarrow ”. When released, the switch returns to the center position. To cancel the turn signal lights, push the switch in after it has returned to the center position.

Horn switch “ 🔊 ”

EAU12501

Press this switch to sound the horn.

Engine stop switch “ \bigcirc / \otimes ”

EAU12661

Set this switch to “ \bigcirc ” before starting the engine. Set this switch to “ \otimes ” to stop the engine in case of an emergency, such as when the vehicle overturns or when the throttle cable is stuck.

“ON/ \otimes ” switch

EAU63631

With the smart key turned on and within range, press this switch to turn on the power to the vehicle. Then with the side-stand up and while applying the front or rear brake, push this switch to crank the engine with the starter. See page 6-2 for starting instructions prior to starting the engine.

The engine trouble warning light and ABS warning light may come on when the vehicle power is on and the “ON/ \otimes ” switch is pushed, but this does not indicate a malfunction.

Hazard switch “ \triangle ”

EAU63580

With the vehicle power is on, or when the smart key system is in parking mode, use this switch to turn on the hazard lights (simultaneous flashing of all turn signal lights).

The hazard lights are used in case of

Instrument and control functions

an emergency or to warn other drivers when your vehicle is stopped where it might be a traffic hazard.

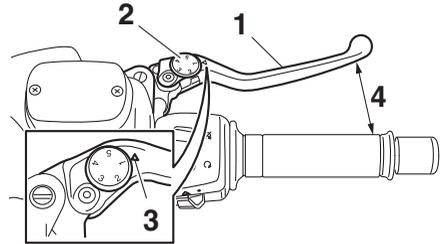
ECA10062

NOTICE

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

Front brake lever

EAU44912

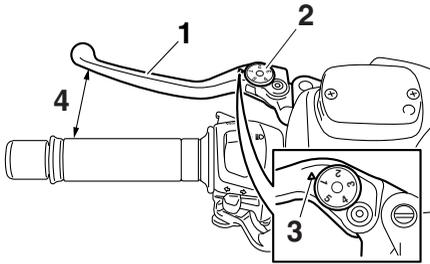


1. Front brake lever
2. Brake lever position adjusting dial
3. “△” mark
4. Distance between brake lever and handlebar grip

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.

The front brake lever is equipped with a position adjusting dial. To adjust the distance between the front brake lever and the throttle grip, turn the adjusting dial while holding the front brake lever pushed away from the throttle grip. Make sure that the appropriate setting on the adjusting dial is aligned with the “△” mark on the front brake lever.

Rear brake lever

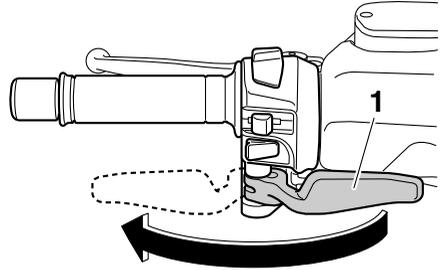


1. Rear brake lever
2. Brake lever position adjusting dial
3. “△” mark
4. Distance between brake lever and handlebar grip

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

The rear brake lever is equipped with a position adjusting dial. To adjust the distance between the rear brake lever and the handlebar grip, turn the adjusting dial while holding the rear brake lever pushed away from the handlebar grip. Make sure that the appropriate setting on the adjusting dial is aligned with the “△” mark on the rear brake lever.

Rear brake lock lever



1. Rear brake lock lever

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

To lock the rear wheel

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

To unlock the rear wheel

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

TIP

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

WARNING

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

Instrument and control functions

EAU63591

ABS (for ABS models)

The Yamaha ABS (Anti-lock Brake System) features a dual electronic control system, which acts on the front and rear brakes independently.

Operate the brakes with ABS as you would conventional brakes. If the ABS is activated, a pulsating sensation may be felt at the brake levers. In this situation, continue to apply the brakes and let the ABS work; do not “pump” the brakes as this will reduce braking effectiveness.

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.

The ABS is monitored by an ECU, which will revert the system to conventional braking if a malfunction occurs.

TIP

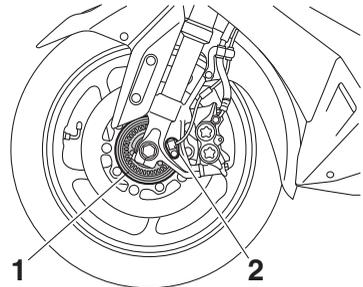
- The ABS performs a self-diagnosis test each time the vehicle is turned on and travels at a speed of 10 km/h (6 mi/h) or higher. During this test, a clicking noise can be heard and if either brake lever is even slightly applied, a vibration can be felt at the lever, but this does not indicate a malfunction.
- This ABS has a test mode which allows the owner to experience the pulsation at the brake levers when

the ABS is operating. However, special tools are required, so please consult your Yamaha dealer.

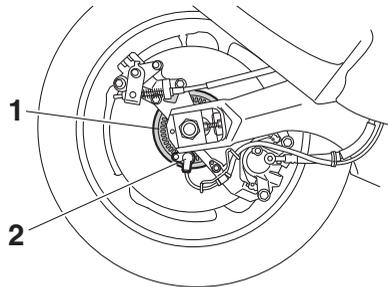
ECA20100

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



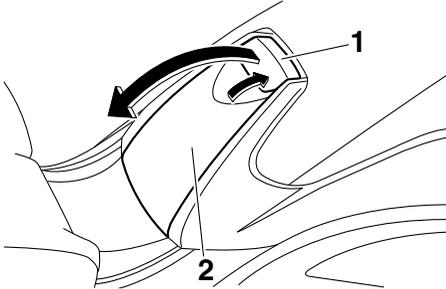
1. Rear wheel sensor rotor
2. Rear wheel sensor

EAU63691

Fuel tank cap

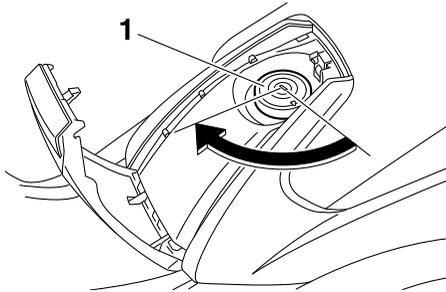
To remove the fuel tank cap

1. Open the lid by pulling the lever up.



1. Opening lever
2. Lid

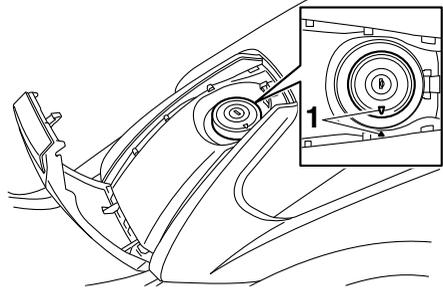
2. Insert the mechanical key into the lock and turn it clockwise. The lock will be released and the fuel tank cap can be removed.



1. Fuel tank cap

To install the fuel tank cap

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



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

EWA11263

WARNING

Make sure that the fuel tank cap is properly installed and locked in place before operating the vehicle. Leaking fuel is a fire hazard.

Instrument and control functions

Fuel

EAU13222

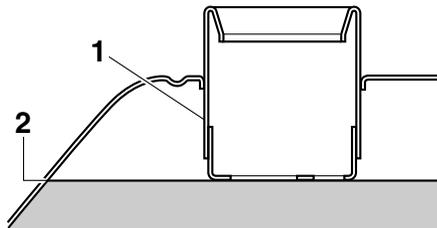
Make sure there is sufficient gasoline in the tank.

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. When refueling, be sure to insert the pump nozzle into the fuel tank filler hole. 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.

EAU49743

Recommended fuel:

Regular unleaded gasoline (Gasohol [E10] acceptable)

Fuel tank capacity:

15 L (4.0 US gal, 3.3 Imp.gal)

Fuel reserve amount:

3.0 L (0.79 US gal, 0.66 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.

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

Instrument and control functions

EAU13434

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.

Catalytic converter

This model is equipped with a catalytic converter in the exhaust system.

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.

ECA10702

NOTICE

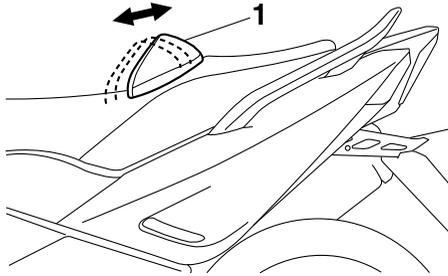
Use only unleaded gasoline. The use of leaded gasoline will cause unreparable damage to the catalytic converter.

Instrument and control functions

EAU63600

Adjusting the rider backrest

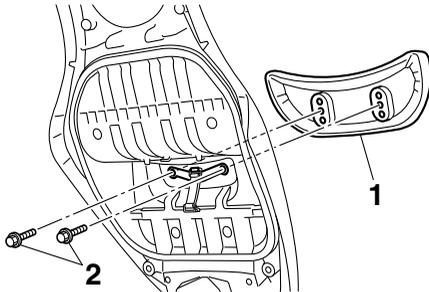
The rider backrest can be adjusted to the three different positions shown.



1. Rider backrest

Adjust the backrest as follows.

1. Open the seat. (See page 3-10.)
2. Remove the backrest bolts.

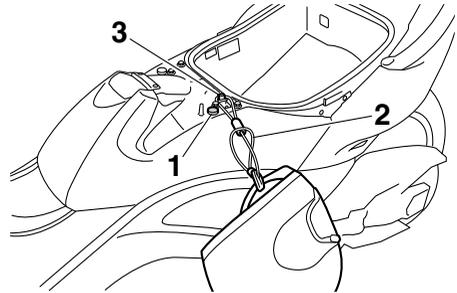


1. Rider backrest
2. Bolt

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

EAU63640

Helmet holder



1. Shaded projection
2. Helmet holding cable
3. Helmet holder

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

To secure a helmet to the helmet holder

1. Open the seat. (See page 3-10.)
2. Pass the helmet holding cable through the buckle on the helmet strap as shown, and then hook the cable loop over the helmet holder.
3. Make sure the helmet holding cable is not touching the shaded projection, and securely close the seat. **WARNING! Never ride with a helmet attached to the helmet holder, since the helmet may hit objects, causing loss of control and possibly an accident.**^[EWA10162]

To release the helmet from the helmet holder

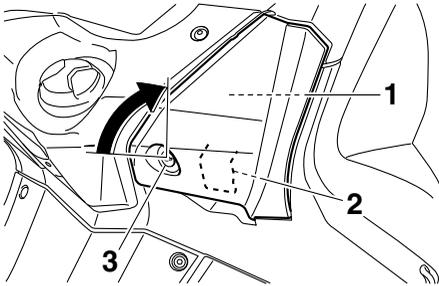
Open the seat, remove the helmet holding cable from the helmet holder and the helmet, and then close the seat.

EAU63510

Storage compartments

Front storage compartment

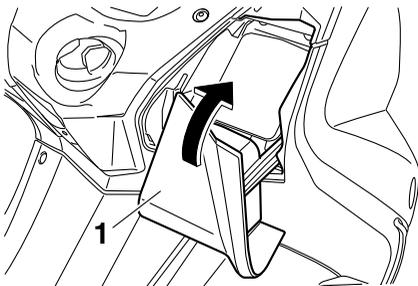
To open the storage compartment when it is locked, insert the mechanical key into the lock, turn it clockwise, and then pull the lever up and towards you to slide the storage compartment open. To open the storage compartment when it is unlocked, simply pull on the lever and slide the compartment open.



1. Front storage compartment
2. Storage compartment opening lever
3. Lock.

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

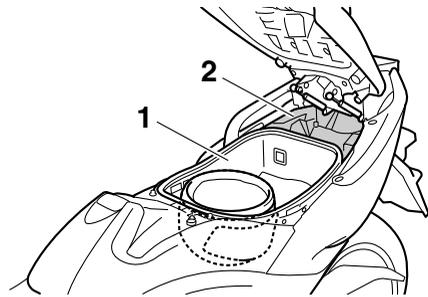
To lock the storage compartment, push the lid into the original position, insert the key into the lock, turn it counter-clockwise, and then remove the key.



1. Lid

Rear storage compartment

A helmet can be stored in the rear storage compartment under the seat. (See page 3-10 for seat opening and closing information.) To store a helmet in the rear storage compartment, place the helmet upside down with the front facing to the left side. **NOTICE: The shaded area is not a storage compartment. To prevent damaging the seat hinges, do not place any items in this area.**^[ECA16092]



1. Rear storage compartment
2. Shaded area

TIP

- Some helmets cannot be stored in the rear storage compartment because of their size or shape.
- Do not leave your scooter unattended with the seat open.
- The interior of the rear storage compartment lies outside the operating range of the smart key. If the rear storage compartment is locked with the smart key inside, the smart key system may be disabled. The smart key must be carried by the rider.
- Do not place the smart key, mechanical key, or identification number tag inside the rear storage compartment. They may get

Instrument and control functions

locked inside and the smart key system may not operate normally.

EAU52212

NOTICE

ECA15963

- Do not leave the seat open for an extended period of time, otherwise the light may cause the battery to discharge.
- Since the storage compartment may get wet while the scooter is being washed, wrap any articles stored in the compartment in a plastic bag.
- To avoid humidity from spreading through the storage compartment and to discourage possible mold growth, wrap wet articles in a plastic bag before storing them in the compartment.
- Do not keep anything valuable or breakable in the storage compartment.
- Since the storage compartment accumulates heat from the engine and from direct sunlight, do not store anything susceptible to heat, such as food or flammable items, inside the compartment.

⚠ WARNING

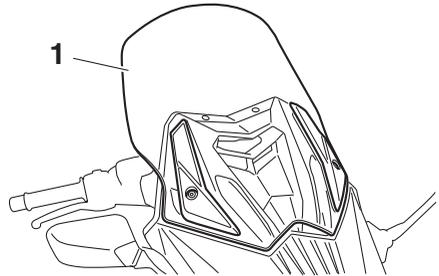
EWA15861

Do not exceed the following loading limits:

- Front storage compartment: 1 kg (2 lb)
- Rear storage compartment: 5 kg (11 lb)
- Maximum load for the vehicle: 193 kg (425 lb) (XP500A)
196 kg (432 lb) (XP500)

Windshield

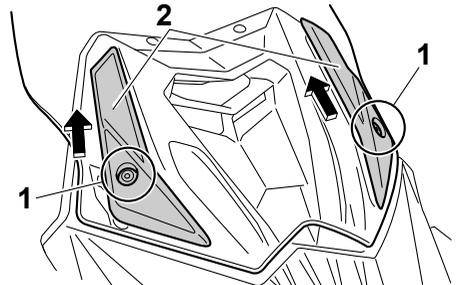
To suit the rider's preference, the windshield height can be changed to one of two positions.



1. Windshield

To adjust the windshield height

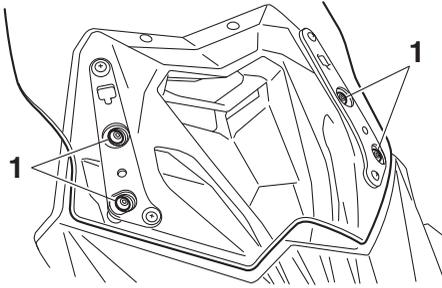
1. Remove the screw access covers by removing the quick fasteners.



1. Quick fastener
2. Screw access cover

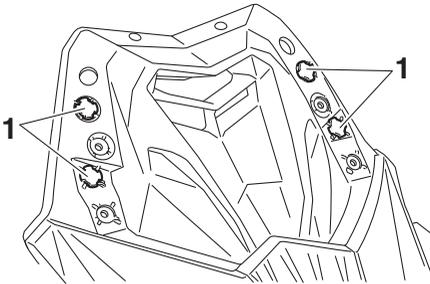
2. Remove the windshield by removing the screws.

Instrument and control functions



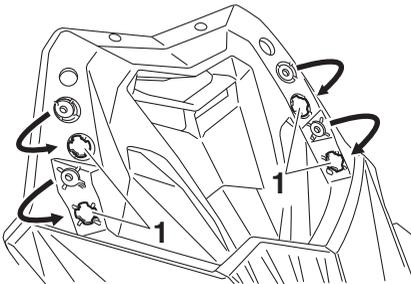
1. Screw

3. Remove the rubber caps.



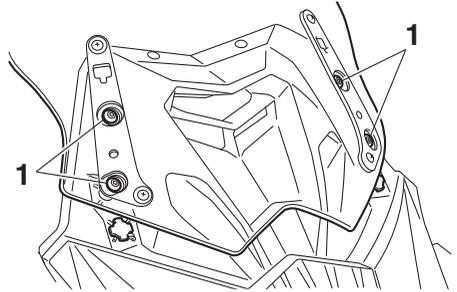
1. Rubber cap

4. Install the rubber caps in the desired position.



1. Rubber cap

5. Install the windshield to the desired position by installing the screws.



1. Screw

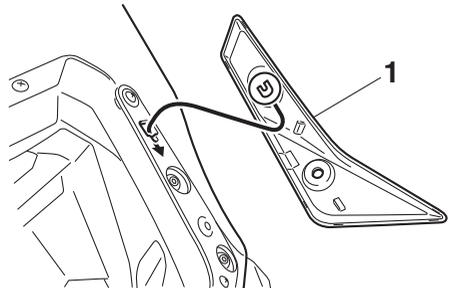
6. Tighten the screws to the specified torque. **WARNING! A loose windshield could cause an accident. Be sure to tighten the screws to the specified torque.**[EWA15511]

Tightening torque:

Windshield screw:

10 Nm (1.0 m·kgf, 7.2 ft·lbf)

7. Place the screw access covers, and then install the quick fasteners.



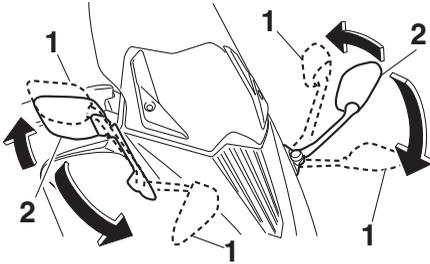
1. Screw access cover

Instrument and control functions

Rear view mirrors

EAU39672

The rear view mirrors of this vehicle can be folded forward or backward for parking in narrow spaces. Fold the mirrors back to their original position before riding.



1. Parking position
2. Riding position

⚠ WARNING

EWA14372

Be sure to fold the rear view mirrors back to their original position before riding.

Shock absorber assembly

EAU46023

EWA10222

⚠ WARNING

This shock absorber assembly contains highly pressurized nitrogen gas. Read and understand the following information before handling the shock absorber assembly.

- Do not tamper with or attempt to open the cylinder assembly.
- Do not subject the shock absorber assembly to an open flame or other high heat source. This may cause the unit to explode due to excessive gas pressure.
- Do not deform or damage the cylinder in any way. Cylinder damage will result in poor damping performance.
- Do not dispose of a damaged or worn-out shock absorber assembly yourself. Take the shock absorber assembly to a Yamaha dealer for any service.

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.

Ignition circuit cut-off system

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

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

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

Instrument and control functions

With the engine turned off:

1. Move the sidestand down.
2. Make sure that the engine stop switch is turned on.
3. Turn the vehicle power on.
4. Keep the front or rear brake applied.
5. Push the "ON/⊖" switch.

Does the engine start?

NO

YES



- **The vehicle must be placed on the centerstand during this inspection.**
- **If a malfunction is noted, have a Yamaha dealer check the system before riding.**

The sidestand switch may not be working correctly.

The scooter should not be ridden until checked by a Yamaha dealer.

With the engine still off:

6. Move the sidestand up.
7. Keep the front or rear brake applied.
8. Push the "ON/⊖" switch.

Does the engine start?

YES

NO

The brake switch may not be working correctly.

The scooter should not be ridden until checked by a Yamaha dealer.

With the engine still running:

9. Move the sidestand down.

Does the engine stall?

YES

NO

The sidestand switch may not be working correctly.

The scooter should not be ridden until checked by a Yamaha dealer.

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

Instrument and control functions

Auxiliary DC jack

EAU49453

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.

ECA15432

NOTICE

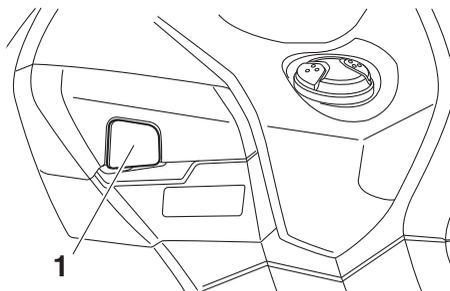
The accessory connected to the auxiliary DC jack should not be used with the engine turned off, and the load must never exceed 24 W (2 A), otherwise the fuse may blow or the battery may discharge.

This vehicle is equipped with an auxiliary DC jack.

A 12-V accessory connected to the auxiliary DC jack can be used when the key is in the “ON” position and should only be used when the engine is running.

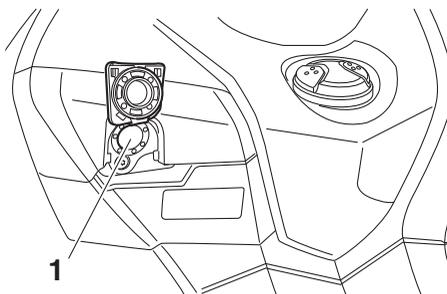
To use the auxiliary DC jack

1. Turn the key to “OFF”.
2. Remove the auxiliary DC jack cap.



1. Auxiliary DC jack cap

3. Turn the accessory off.
4. Insert the accessory plug into the auxiliary DC jack.



1. Auxiliary DC jack

5. Turn the key to “ON”, and then start the engine. (See page 6-2.)
6. Turn the accessory on.

For your safety – pre-operation checks

EAU63440

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	<ul style="list-style-type: none">• Check fuel level in fuel tank.• Refuel if necessary.• Check fuel line for leakage.• Check fuel tank breather hose and overflow hose for obstructions, cracks or damage, and check hose connections.	4-15
Engine oil	<ul style="list-style-type: none">• Check oil level in engine.• If necessary, add recommended oil to specified level.• Check vehicle for oil leakage.	7-10
Coolant	<ul style="list-style-type: none">• Check coolant level in reservoir.• If necessary, add recommended coolant to specified level.• Check cooling system for leakage.	7-13
Front brake	<ul style="list-style-type: none">• 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.	7-20, 7-22
Rear brake	<ul style="list-style-type: none">• 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.	7-20, 7-22
Throttle grip	<ul style="list-style-type: none">• 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.	7-16, 7-25

For your safety – pre-operation checks

ITEM	CHECKS	PAGE
Wheels and tires	<ul style="list-style-type: none">• Check for damage.• Check tire condition and tread depth.• Check air pressure.• Correct if necessary.	7-17, 7-19
Brake levers	<ul style="list-style-type: none">• Make sure that operation is smooth.• Lubricate lever pivoting points if necessary.	7-25
Centerstand, sidestand	<ul style="list-style-type: none">• Make sure that operation is smooth.• Lubricate pivots if necessary.	7-26
Chassis fasteners	<ul style="list-style-type: none">• Make sure that all nuts, bolts and screws are properly tightened.• Tighten if necessary.	—
Instruments, lights, signals and switches	<ul style="list-style-type: none">• Check operation.• Correct if necessary.	—
Sidestand switch	<ul style="list-style-type: none">• Check operation of ignition circuit cut-off system.• If system is not working correctly, have Yamaha dealer check vehicle.	4-22

Operation and important riding points

EAU15952

EAU63621

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.

TIP

This model is equipped with:

- a lean angle sensor to stop the engine in case of a turnover. In this case, the display will indicate error code 30, but this is not a malfunction. Turn the vehicle power off and then on to clear the error code. Failing to do so will prevent the engine from starting even though the engine will crank when pushing the start switch.
 - an engine auto-stop system. The engine stops automatically if left idling for 20 minutes. If the engine stops, simply push the start switch to restart the engine.
-

Operation and important riding points

Starting the engine

EAU61552

ECA21980

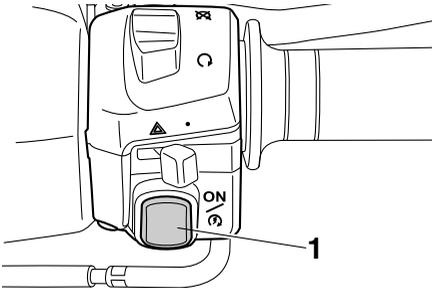
NOTICE

See page 6-5 for engine break-in instructions prior to operating the vehicle for the first time.

ECA10251

In order for the ignition circuit cut-off system to enable starting, the sidestand must be up. (See page 4-22.)

1. With the smart key turned on, approach the vehicle.
2. Push the "ON/⊗" switch.



1. "ON/⊗" switch

Upon authentication of the smart key, the beeper will sound twice, the smart key system indicator light will come on momentarily and the steering lock (if applied) will be released. The engine trouble warning light should come on for a few seconds and then go off.

For ABS models:

The ABS warning light should come on when the power of the vehicle is turned on, and go off once the vehicle reaches a traveling speed of 10 km/h (6 mi/h) or higher.

NOTICE

If the engine warning light or the ABS warning light (for ABS-equipped models) does not come on and then go off as explained above, see page 4-1 for the warning light circuit check.

3. Close the throttle completely.
4. Start the engine by pushing the "ON/⊗" switch while applying the front or rear brake.

If the engine does not start within 5 seconds of pressing the "ON/⊗" switch, wait 10 seconds before pressing the switch again to allow the battery voltage to restore.

ECA11043

NOTICE

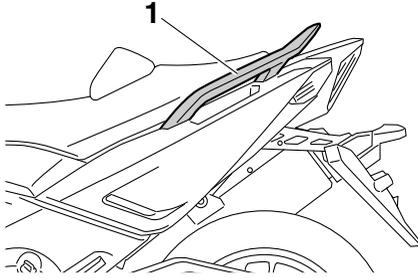
For maximum engine life, never accelerate hard when the engine is cold!

Operation and important riding points

EAU45093

Starting off

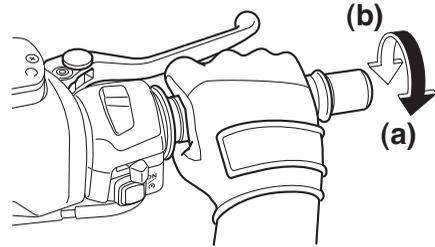
1. While pulling the rear brake lever with your left hand and holding the grab bar with your right hand, push the scooter off the centerstand.



1. Grab bar

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).

6

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

Operation and important riding points

Braking

EAU16794

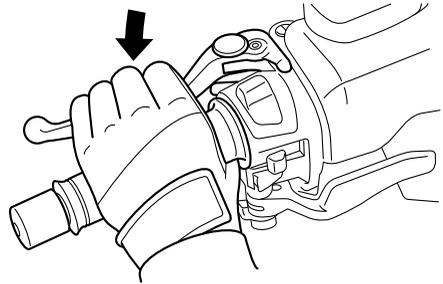
EWA10301

⚠ WARNING

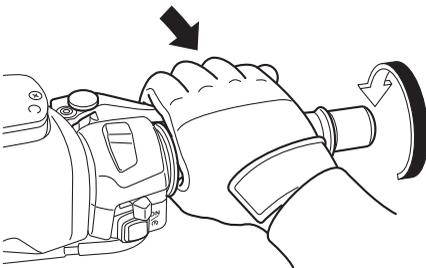
- Avoid braking hard or suddenly (especially when leaning over to one side), otherwise the scooter may skid or overturn.
- Railroad crossings, streetcar rails, iron plates on road construction sites, and manhole covers become extremely slippery when wet. Therefore, slow down when approaching such areas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

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

Rear



Front



Operation and important riding points

Tips for reducing fuel consumption

EAU16821

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).

Engine break-in

EAU16842

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.

EAU36532

0–1000 km (0–600 mi)

Avoid prolonged operation above 4100 r/min. **NOTICE: After 1000 km (600 mi) of operation, the engine oil must be changed, and the oil filter cartridge or element replaced.**^[ECA11283]

1000–1600 km (600–1000 mi)

Avoid prolonged operation above 5000 r/min.

1600 km (1000 mi) and beyond

The vehicle can now be operated normally.

ECA10311

NOTICE

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

Operation and important riding points

EAU63740

Parking

When parking, turn the vehicle power off, and then turn the smart key off.

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.

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 3-5.)



Periodic maintenance and adjustment

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.

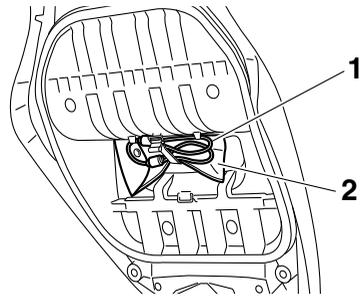
Periodic maintenance and adjustment

EAU17303

EAU17392

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.

Owner's tool kit



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

The owner's tool kit is located under the seat.

The service information included in this manual and the tools provided in the owner's tool kit are intended to assist you in the performance of preventive maintenance and minor repairs. However, additional tools such as a torque wrench may be necessary to perform certain maintenance work correctly.

TIP _____

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

Periodic maintenance and adjustment

EAU46862

TIP

- The annual checks must be performed every year, except if a kilometer-based maintenance, or for the UK, a mileage-based maintenance, is performed instead.
- From 50000 km (30000 mi), repeat the maintenance intervals starting from 10000 km (6000 mi).
- Items marked with an asterisk should be performed by a Yamaha dealer as they require special tools, data and technical skills.

EAU63321

Periodic maintenance chart for the emission control system

NO.	ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READINGS					ANNUAL CHECK		
			X 1000 km							
			1	10	20	30	40			
X 1000 mi					0.6	6	12	18	24	
1	* Fuel line	• Check fuel hoses for cracks or damage.		√	√	√	√	√		
2	* Spark plugs	• Check condition. • Clean and regap.		√		√				
		• Replace.			√		√			
3	* Valves	• Check valve clearance. • Adjust.	Every 40000 km (24000 mi)							
4	* Fuel injection	• Adjust engine idling speed and synchronization.	√	√	√	√	√	√		

Periodic maintenance and adjustment

EAU64031

General maintenance and lubrication chart

NO.	ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READINGS					ANNUAL CHECK			
			X 1000 km								
			1	10	20	30	40				
X 1000 mi					0.6	6	12	18	24		
1	Air filter element	<ul style="list-style-type: none"> Replace. 			√		√				
2	* V-belt case air filter elements	<ul style="list-style-type: none"> Clean. 		√		√					
		<ul style="list-style-type: none"> Replace. 			√		√				
3	* Front brake	<ul style="list-style-type: none"> Check operation, fluid level and vehicle for fluid leakage. 	√	√	√	√	√	√	√	√	
		<ul style="list-style-type: none"> Replace brake pads. 	Whenever worn to the limit								
4	* Rear brake	<ul style="list-style-type: none"> Check operation, fluid level and vehicle for fluid leakage. 	√	√	√	√	√	√	√	√	
		<ul style="list-style-type: none"> Replace brake pads. 	Whenever worn to the limit								
5	* Brake hoses	<ul style="list-style-type: none"> Check for cracks or damage. Check for correct routing and clamping. 		√	√	√	√	√	√	√	
		<ul style="list-style-type: none"> Replace. 	Every 4 years								
6	* Brake fluid	<ul style="list-style-type: none"> Change. 	Every 2 years								
7	Rear brake lock cable	<ul style="list-style-type: none"> Check cable length. Adjust if necessary. 	√	4000 km (2400 mi) after the initial 1000 km (600 mi) and every 5000 km (3000 mi) thereafter							
8	* Rear brake lock	<ul style="list-style-type: none"> Check operation. Check rubber boot. Check wear indicator. Adjust if necessary. 	√	√	√	√	√	√	√	√	
9	* Wheels	<ul style="list-style-type: none"> Check runout and for damage. 		√	√	√	√	√	√	√	
10	* Tires	<ul style="list-style-type: none"> Check tread depth and for damage. Replace if necessary. Check air pressure. Correct if necessary. 		√	√	√	√	√	√	√	
11	* Wheel bearings	<ul style="list-style-type: none"> Check bearings for looseness or damage. 		√	√	√	√	√	√	√	
12	* Drive belt	<ul style="list-style-type: none"> Check belt condition. Replace if damaged. Check belt tension. Adjust if necessary. 	√	Every 10000 km (6000 mi) until 40000 km (24000 mi), and every 5000 km (3000 mi) thereafter							

Periodic maintenance and adjustment

NO.	ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READINGS					ANNUAL CHECK		
			X 1000 km							
			1	10	20	30	40			
X 1000 mi					0.6	6	12	18	24	
13	* Drive pulley and drive axle	• Lubricate.			√		√			
14	* Steering bearings	• Check bearing play and steering for roughness.	√	√	√	√	√			
		• Lubricate with lithium-soap-based grease.	Every 20000 km (12000 mi)							
15	* Chassis fasteners	• Make sure that all nuts, bolts and screws are properly tightened.		√	√	√	√	√	√	
16	Front brake lever pivot shaft	• Lubricate with silicone grease.		√	√	√	√	√	√	
17	Rear brake lever pivot shaft	• Lubricate with silicone grease.		√	√	√	√	√	√	
18	Sidestand, centerstand	• Check operation. • Lubricate with lithium-soap-based grease.		√	√	√	√	√	√	
19	* Sidestand switch	• Check operation.	√	√	√	√	√	√	√	
20	* Front fork	• Check operation and for oil leakage.		√	√	√	√	√		
21	* Shock absorber assembly	• Check operation and shock absorber for oil leakage.		√	√	√	√	√		
22	Engine oil	• Change. (See pages 4-6 and 7-10.)	√	When the oil change indicator flashes						
		• Check oil level and vehicle for oil leakage.	Every 5000 km (3000 mi)					√		
23	Engine oil filter cartridge	• Replace.	√		√		√			
24	* Cooling system	• Check coolant level and vehicle for coolant leakage.		√	√	√	√	√	√	
		• Change coolant.	Every 3 years							
25	* V-belt	• Replace.	When the V-belt replacement indicator flashes [every 20000 km (12500 mi)]							
26	* Front and rear brake switches	• Check operation.	√	√	√	√	√	√	√	

Periodic maintenance and adjustment

NO.	ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READINGS					ANNUAL CHECK		
			X 1000 km							
			1	10	20	30	40			
X 1000 mi					0.6	6	12	18	24	
27	Moving parts and cables	<ul style="list-style-type: none"> Lubricate. 		√	√	√	√	√	√	√
28	* Throttle grip	<ul style="list-style-type: none"> Check operation. Check throttle grip free play, and adjust if necessary. Lubricate cable and grip housing. 		√	√	√	√	√	√	√
29	* Lights, signals and switches	<ul style="list-style-type: none"> Check operation. Adjust headlight beam. 	√	√	√	√	√	√	√	√

EAU38263

TIP

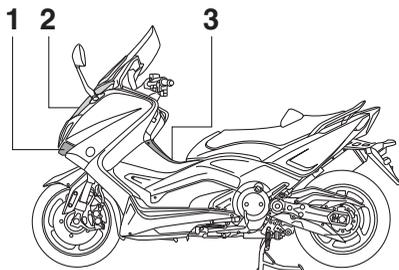
- Engine air filter and V-belt air filters
 - This model's engine air filter is equipped with a disposable oil-coated paper element, which must not be cleaned with compressed air to avoid damaging it.
 - The engine air filter element needs to be replaced and the V-belt air filter elements need to be 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.

Periodic maintenance and adjustment

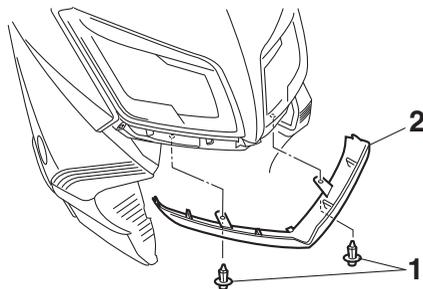
EAU18773

Removing and installing panels

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



1. Panel A
2. Panel B
3. Panel C



1. Quick fastener
2. Panel A

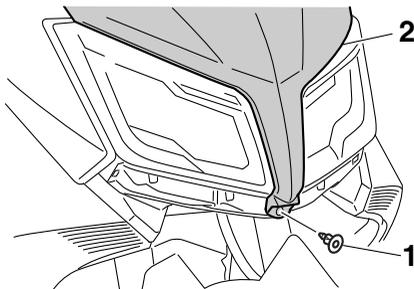
To install the panel

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

Panel B

To remove the panel

1. Remove the quick fastener.



1. Quick fastener
2. Panel B

2. Release the sides of the panel by pulling its upper left and right sides to unhook them as shown.

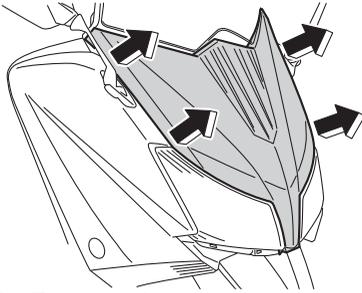
EAU63780

Panel A

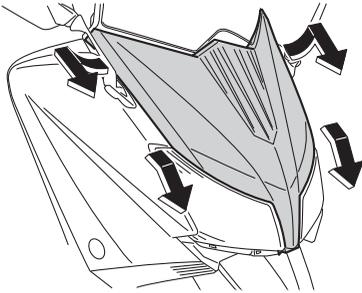
To remove the panel

1. Remove the quick fasteners.
2. Remove the panel by pulling it outward as shown.

Periodic maintenance and adjustment

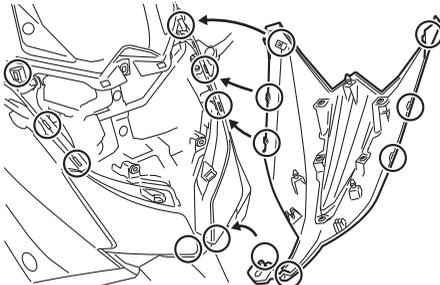


3. Remove the panel as shown.

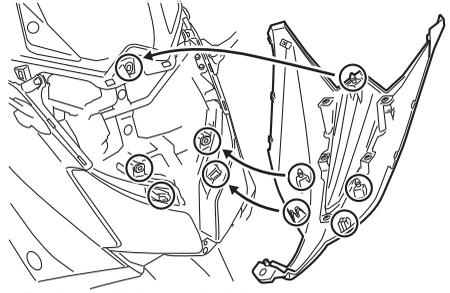


To install the panel

1. Insert the tabs on the upper left and right sides of the panel.



2. Align the center and lower projections and then push the panel into its original position.

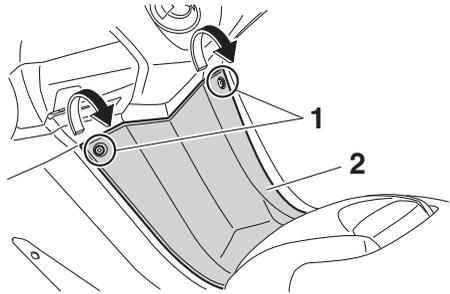


3. Install the quick fastener.

Panel C

To remove the panel

Remove the screws, and then pull the panel backward and upward.



1. Screw
2. Panel C

To install the panel

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

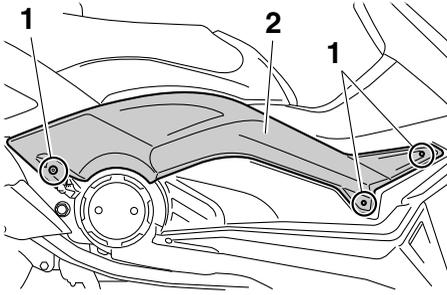
Panel D

To remove the panel

Remove the screws, and then pull the panel outward.

Periodic maintenance and adjustment

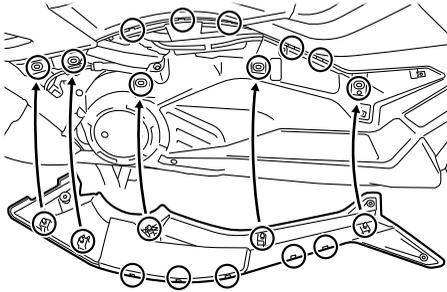
EAU19643



1. Screw
2. Panel D

To install the panel

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



7

Checking the spark plugs

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

The porcelain insulator around the center electrode of each spark plug should be a medium-to-light tan (the ideal color when the vehicle is ridden normally), and all spark plugs installed in the engine should have the same color. If any 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.

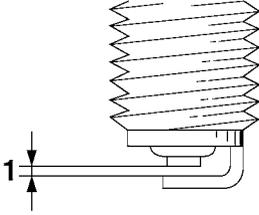
If a spark plug shows signs of electrode erosion and excessive carbon or other deposits, it should be replaced.

Specified spark plug:
NGK/CR7E

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

Periodic maintenance and adjustment

EAU1985E



1. Spark plug gap

Spark plug gap:

0.7–0.8 mm (0.028–0.031 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 Nm (1.3 m·kgf, 9.4 ft·lbf)

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.

Engine oil and oil filter cartridge

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

To check the engine oil level

1. Place the vehicle on the centerstand. A slight tilt to the side can result in a false reading.
2. Start the engine, warm it up for two minutes, and then turn it off.

ECA11291

NOTICE

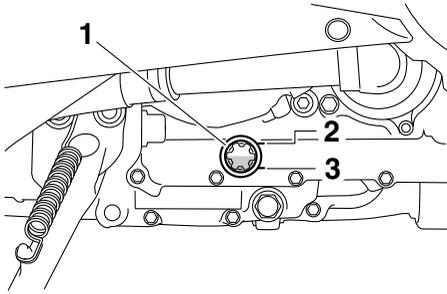
The engine must be cold before proceeding with the oil level check, otherwise the check will result in a false reading.

3. Wait two minutes until the oil settles, and then check the oil level through the check window located at the bottom-left side of the crankcase.

TIP

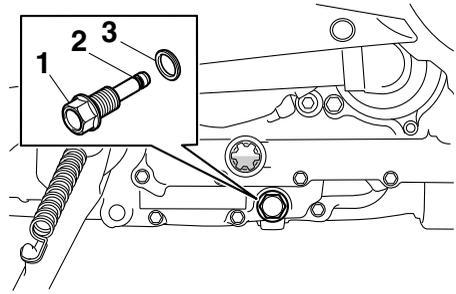
The engine oil should be between the minimum and maximum level marks.

Periodic maintenance and adjustment



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.

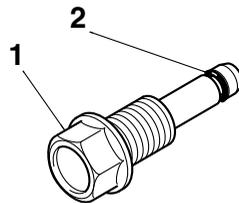


1. Engine oil drain bolt
2. O-ring
3. Gasket

5. Check the O-ring for damage and replace it if necessary.

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

1. Place the vehicle on a level surface.
2. Start the engine, warm it up for several minutes, and then turn it off.
3. Place an oil pan under the engine to collect the used oil.
4. Remove the engine oil filler cap, the engine oil drain bolt and its gasket to drain the oil from the crankcase.

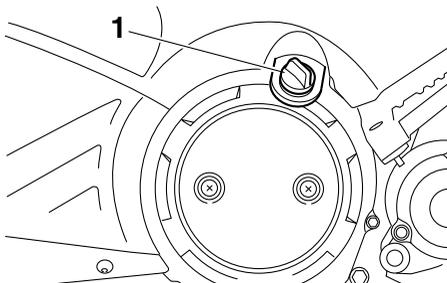


1. Engine oil drain bolt
2. O-ring

TIP

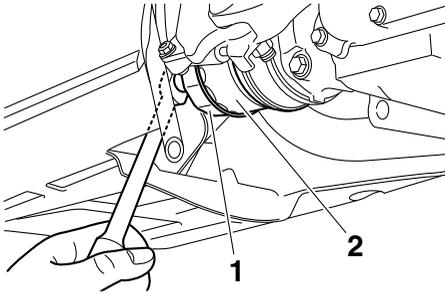
Skip steps 6–8 if the oil filter cartridge is not being replaced.

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



1. Engine oil filler cap

Periodic maintenance and adjustment

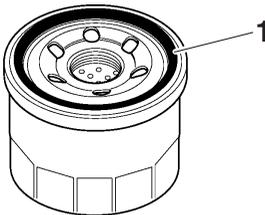


1. Oil filter wrench
2. Oil filter cartridge

TIP

An oil filter wrench is available at a Yamaha dealer.

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

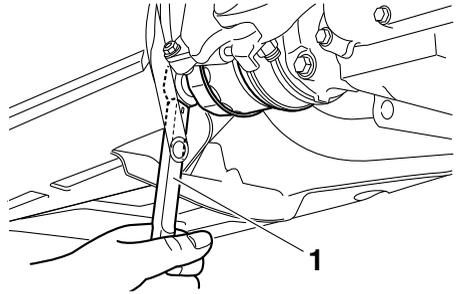


1. O-ring

TIP

Make sure that the O-ring is properly seated.

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



1. Torque wrench

Tightening torque:

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

9. 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:
43 Nm (4.3 m·kgf, 31 ft·lbf)

10. Refill with the specified amount of the recommended engine oil, and then install and tighten the oil filler cap.

Recommended engine oil:

See page 9-1.

Oil quantity:

Oil change:
2.70 L (2.85 US qt, 2.38 Imp.qt)
With oil filter removal:
2.90 L (3.07 US qt, 2.55 Imp.qt)

TIP

Be sure to wipe off spilled oil on any parts after the engine and exhaust system have cooled down.

ECA11621

NOTICE

- In order to prevent clutch slippage (since the engine oil also

Periodic maintenance and adjustment

lubricates the clutch), do not mix any chemical additives. Do not use oils with a diesel specification of “CD” or oils of a higher quality than specified. In addition, do not use oils labeled “ENERGY CONSERVING II” or higher.

- **Make sure that no foreign material enters the crankcase.**

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, and then check the oil level and correct it if necessary.
13. Reset the oil change indicator. (See page 4-6.)

TIP

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

EAU20071

Coolant

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

EAU52024

To check the coolant level

1. Place the vehicle on the center-stand.

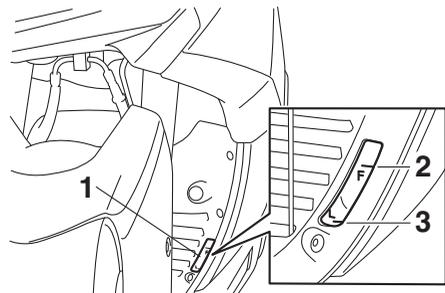
TIP

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

2. Check the coolant level through the check window.

TIP

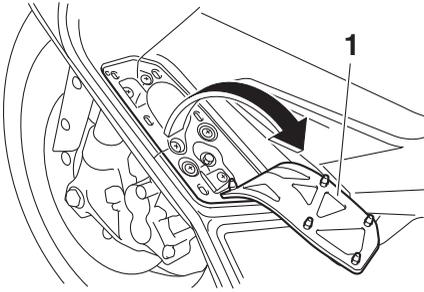
The coolant should be between the minimum and maximum level marks.



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

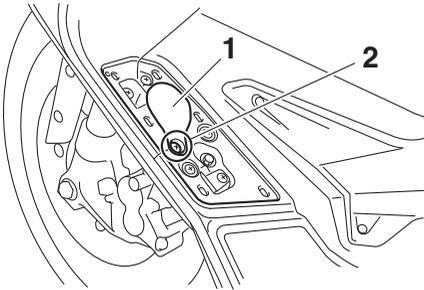
3. If the coolant is at or below the minimum level mark, remove the left floorboard mat by pulling it up.

Periodic maintenance and adjustment



1. Floorboard mat

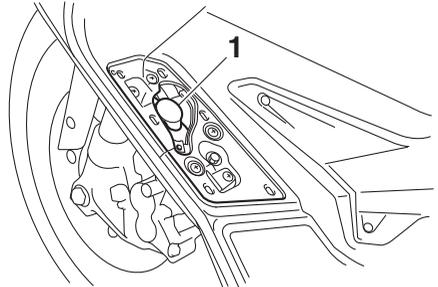
4. Remove the coolant reservoir cover by removing the screw.



1. Coolant reservoir cover
2. Screw

5. Remove the coolant reservoir cap, add coolant to the maximum level mark, and then install the reservoir cap. **WARNING! Remove only the coolant reservoir cap. Never attempt to remove the radiator cap when the engine is hot.**^[EWA15162] **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 anti-freeze content of the coolant as soon as possible, otherwise the effectiveness of the coolant will be reduced.^[ECA10473]



1. Coolant reservoir cap

Coolant reservoir capacity (up to the maximum level mark):

0.27 L (0.29 US qt, 0.24 Imp.qt)

6. Install the coolant reservoir cover by installing the screw.
7. Place the left floorboard mat in the original position and push it downward to secure it.

Periodic maintenance and adjustment

EAU52031

Replacing the air filter element

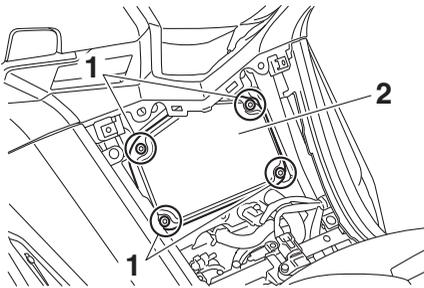
The air filter element should be replaced at the intervals specified in the periodic maintenance and lubrication chart. Replace the air filter element more frequently if you are riding in unusually wet or dusty areas.

element installed, otherwise the piston(s) and/or cylinder(s) may become excessively worn.^[ECA10482]

5. Install the air filter case cover by installing the screws.
6. Install the panel.

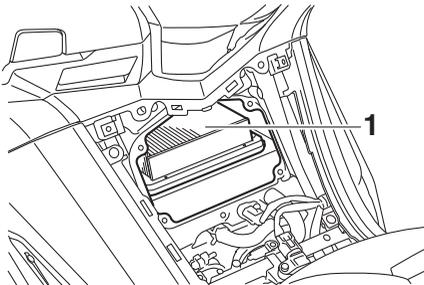
To replace the air filter element

1. Remove panel C. (See page 7-7.)
2. Remove the air filter case cover by removing the screws.



1. Screw
2. Air filter case cover

3. Pull the air filter element out.



1. Air filter element
4. 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**

Periodic maintenance and adjustment

EAU33483

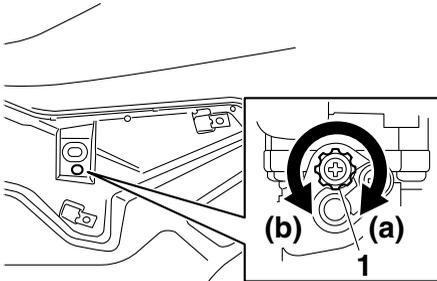
EAU21386

Adjusting the engine idling speed

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

The engine should be warm before making this adjustment.

1. Remove panel D. (See page 7-7.)
2. Check the engine idling speed and, if necessary, adjust it to specification by turning the idle adjusting screw. To increase the engine idling speed, turn the screw in direction (a). To decrease the engine idling speed, turn the screw in direction (b).



1. Idle adjusting screw

Engine idling speed:
1100–1300 r/min

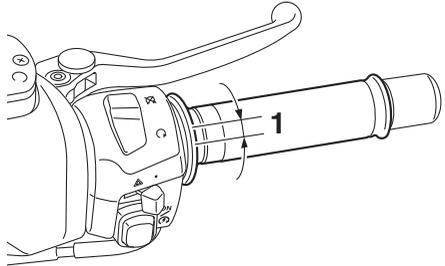
TIP

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

3. Install the panel.

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.

Periodic maintenance and adjustment

EAU21402

EAU65120

Valve clearance

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

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



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.**
-

Periodic maintenance and adjustment

Tire air pressure (measured on cold tires):

Up to 90 kg (198 lb) load:

Front:
225 kPa (2.25 kgf/cm², 33 psi)

Rear:
250 kPa (2.50 kgf/cm², 36 psi)

90 kg (198 lb) to maximum load:

Front:
225 kPa (2.25 kgf/cm², 33 psi)

Rear:
280 kPa (2.80 kgf/cm², 41 psi)

Maximum load*:

193 kg (425 lb) (XP500A)

196 kg (432 lb) (XP500)

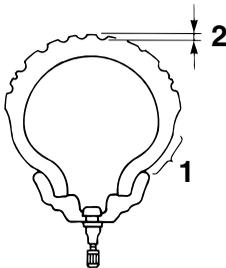
* Total weight of rider, passenger, cargo and accessories

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 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.

Periodic maintenance and adjustment

EWA16101

EAU51921

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.
- Always make sure that the valve caps are securely installed to prevent air pressure leakage.
- Use only the tire valves and valve cores listed below to avoid tire deflation during a ride.

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

Front tire:

Size:

120/70R15M/C 56H

Manufacturer/model:

DUNLOP/GPR-100F M

Tire air valve:

PVR59A

Valve core:

#9100 (original)

Rear tire:

Size:

160/60R15M/C 67H

Manufacturer/model:

DUNLOP/GPR-100 M

Tire air valve:

TR412

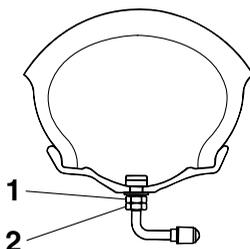
Valve core:

#9100 (original)

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, warp 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 wheel should be balanced whenever either the tire or wheel has been changed or replaced. An unbalanced wheel can result in poor performance, adverse handling characteristics, and a shortened tire life.
- After repairing or replacing the front tire, tighten the valve stem nut and locknut to the specified torques.



1. Valve stem nut
2. Valve stem locknut

Tightening torques:

Valve stem nut:

2.0 Nm (0.2 m·kgf, 1.4 ft·lbf)

Valve stem locknut:

3.0 Nm (0.3 m·kgf, 2.2 ft·lbf)

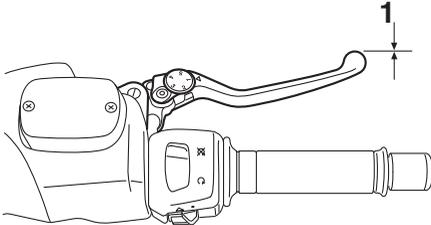
Periodic maintenance and adjustment

EAU50861

Checking the front and rear brake lever free play

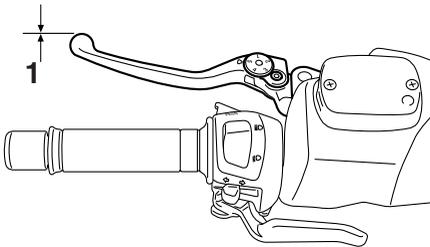
dent.

Front



1. No brake lever free play

Rear



1. No brake lever free play

There should be no free play at the brake lever ends. 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 acci-

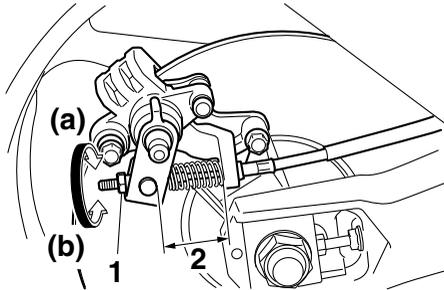
Periodic maintenance and adjustment

EAU53032

EAU52293

Adjusting the rear brake lock cable

Rear brake lock cable adjustment may be required if the rear brake lock lever does not hold properly. When the rear brake lock lever is not in use, the rear brake lock cable length should measure 43–45 mm (1.69–1.77 in) at the rear brake caliper.



1. Adjusting nut
2. Rear brake lock cable length

Periodically check the rear brake lock cable length and, if necessary, adjust it as follows.

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

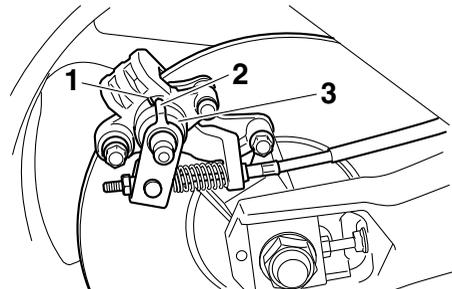
WARNING! If proper adjustment cannot be obtained as described, have a Yamaha dealer make this adjustment.^[EWA16151]

Check that the rear brake lock is released, and then make sure that the rear wheel could rotate smoothly.

Checking the rear brake lock

The rear brake lock must be checked at the intervals specified in the periodic maintenance and lubrication chart.

1. Adjust the rear brake lock cable.
2. Apply the rear brake lock, and then try to push the vehicle to confirm that the rear brake lock functions properly.
3. The rear brake lock caliper is provided with a wear indicator, which allows you to check the rear brake lock pads. To check the rear brake lock pads, check the position of the indicator when the rear brake lock lever is applied. If the indicator has passed the wear indicator groove, have a Yamaha dealer check the rear brake lock.
4. Make sure that there are no tears or cracks on the rubber boot.



1. Wear indicator groove
2. Wear indicator
3. Rubber boot

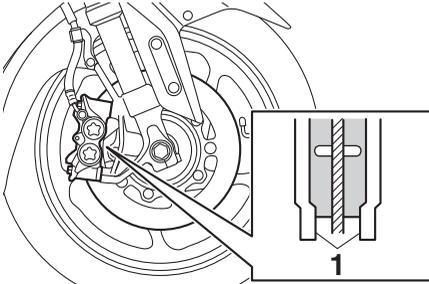
Periodic maintenance and adjustment

EAU22312

EAU22582

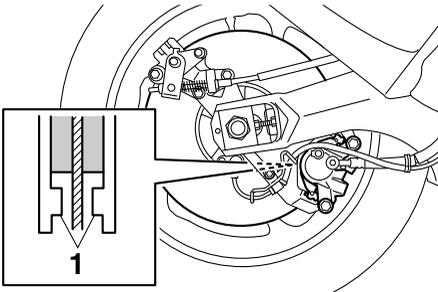
Checking the front and rear brake pads

Front brake



1. Brake pad wear indicator

Rear brake



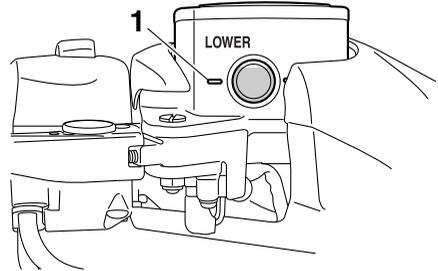
1. Brake pad wear indicator

The front and rear brake pads must be checked for wear at the intervals specified in the periodic maintenance and lubrication chart. Each brake pad is provided with a wear indicator, 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.

Checking the brake fluid level

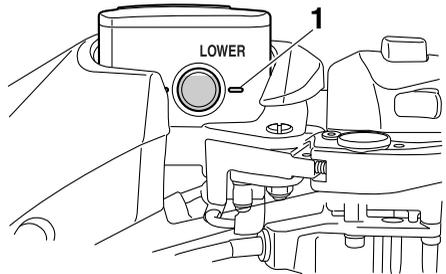
Before riding, check that the brake fluid is above the minimum level mark. Check the brake fluid level with the top of the reservoir level. Replenish the brake fluid if necessary.

Front brake



1. Minimum level mark

Rear brake



1. Minimum level mark

Specified brake fluid:
DOT 4

EWA15991

⚠ 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.**

Periodic maintenance and adjustment

EAU22733

- 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 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.

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.

Changing the brake fluid

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

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

Periodic maintenance and adjustment

Drive belt slack

EAU51991

The drive belt slack should be checked and adjusted by a Yamaha dealer at the intervals specified in the periodic maintenance and lubrication chart.

Checking and lubricating the cables

EAU23098

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

Periodic maintenance and adjustment

EAU23115

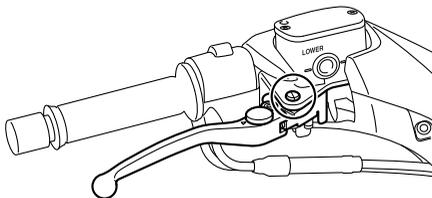
Checking and lubricating the throttle grip and cable

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. The throttle cable is equipped with a rubber cover. Make sure that the cover is securely installed. Even though the cover is installed correctly, it does not completely protect the cable from water entry. Therefore, use care not to pour water directly onto the cover or cable when washing the vehicle. If the cable or cover becomes dirty, wipe clean with a moist cloth.

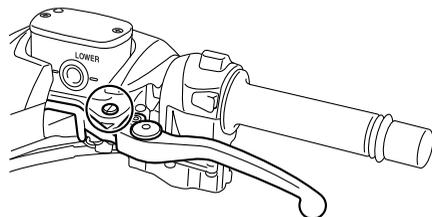
EAU23173

Lubricating the front and rear brake levers

Front brake lever



Rear brake lever



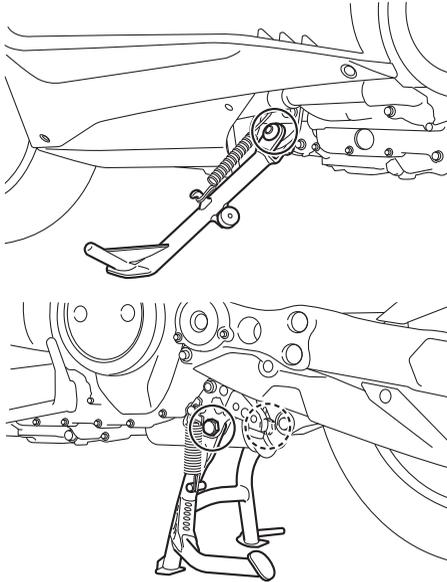
The pivoting points of the front and rear brake levers must be lubricated at the intervals specified in the periodic maintenance and lubrication chart.

Recommended lubricant:
Silicone grease

Periodic maintenance and adjustment

Checking and lubricating the centerstand and sidestand

EAU23215



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

Checking the front fork

EAU23273

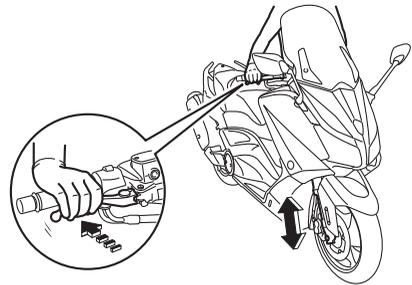
The condition and operation of the front fork must be checked as follows at the intervals specified in the periodic maintenance and lubrication chart.

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.

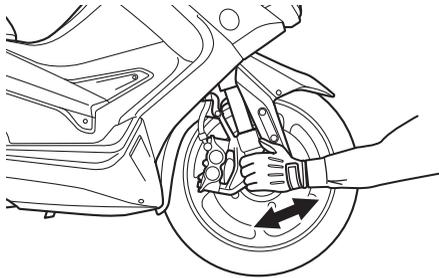
Periodic maintenance and adjustment

EAU45512

Checking the steering

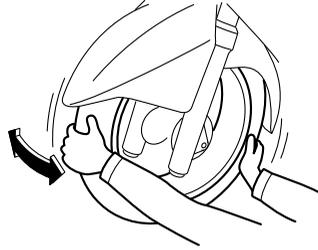
Worn or loose steering bearings may cause danger. Therefore, the operation of the steering must be checked as follows at the intervals specified in the periodic maintenance and lubrication chart.

1. Place the vehicle on the centerstand. **WARNING! To avoid injury, securely support the vehicle so there is no danger of it falling over.**^[EWA10752]
2. Hold the lower ends of the front fork legs and try to move them forward and backward. If any free play can be felt, have a Yamaha dealer check or repair the steering.



EAU23292

Checking the wheel bearings

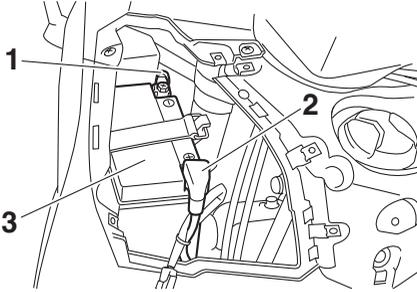


The front and rear wheel bearings must be checked at the intervals specified in the periodic maintenance and lubrication chart. If there is play in the wheel hub or if the wheel does not turn smoothly, have a Yamaha dealer check the wheel bearings.

Periodic maintenance and adjustment

EAU63751

Battery



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

The battery is located behind the auxiliary DC connector. (See page 4-24.) 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 hy-**

drogen 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 turn the vehicle power off, then disconnect the negative lead before disconnecting the positive lead.^[ECA21900]
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 install-

Periodic maintenance and adjustment

EAU54025

ing the battery, connect the positive lead before connecting the negative lead.^{_[ECA21910]}

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.

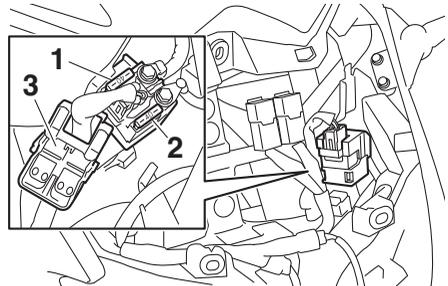
Replacing the fuses

The main fuse box and the fuse box, which contains the fuses for the individual circuits, are located under panel B. (See page 7-7.)

If a fuse is blown, replace it as follows.

1. Turn the vehicle power off.
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]}

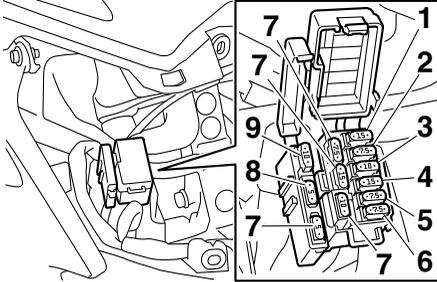
For XP500



1. Main fuse
2. Spare main fuse
3. Main fuse box cover

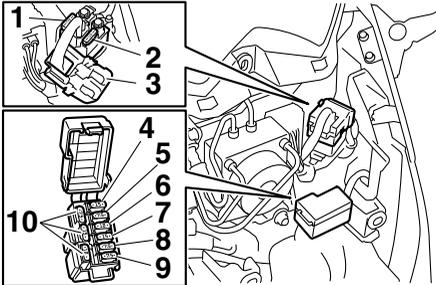
Periodic maintenance and adjustment

For XP500



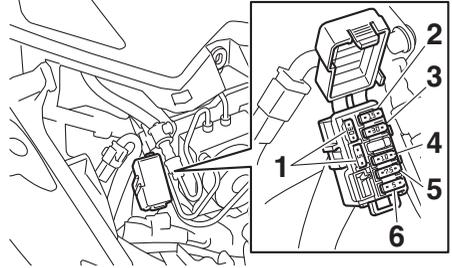
1. Signaling system fuse
2. Ignition fuse
3. Parking lighting fuse
4. Radiator fan motor fuse
5. Fuel injection system fuse
6. Backup fuse
7. Spare fuse
8. Auxiliary DC jack fuse
9. Headlight fuse

For XP500A



1. Main fuse
2. Spare main fuse
3. Main fuse box cover
4. Signaling system fuse
5. Ignition fuse
6. Parking lighting fuse
7. Radiator fan motor fuse
8. Fuel injection system fuse
9. Backup fuse
10. Spare fuse

For XP500A



1. Spare fuse
2. ABS solenoid fuse
3. ABS motor fuse
4. Headlight fuse
5. ABS control unit fuse
6. Auxiliary DC jack fuse

Specified fuses:

Main fuse:

40.0 A

Headlight fuse:

10.0 A

Signaling system fuse:

15.0 A

Ignition fuse:

7.5 A

Radiator fan motor fuse:

15.0 A

Fuel injection system fuse:

7.5 A

Parking lighting fuse:

10.0 A

ABS control unit fuse:

7.5 A (XP500A)

ABS motor fuse:

30.0 A (XP500A)

ABS solenoid fuse:

15.0 A (XP500A)

Backup fuse:

7.5 A

Auxiliary DC jack fuse:

5.0 A

3. Turn the vehicle power on and turn on the electrical circuit in question to check if the device operates.
4. If the fuse immediately blows

Periodic maintenance and adjustment

again, have a Yamaha dealer check the electrical system.

EAU64070

Headlights

This model is equipped with LED-type headlights.

If a headlight does not come on, have a Yamaha dealer check its electrical circuit.

ECA16581

NOTICE

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

Periodic maintenance and adjustment

EAU54502

EAU24182

Auxiliary lights

This model is equipped with LED-type auxiliary lights.

If an auxiliary light does not come on, have a Yamaha dealer check it.

Tail/brake light

This model is equipped with an LED-type tail/brake light.

If the tail/brake light does not come on, have a Yamaha dealer check it.

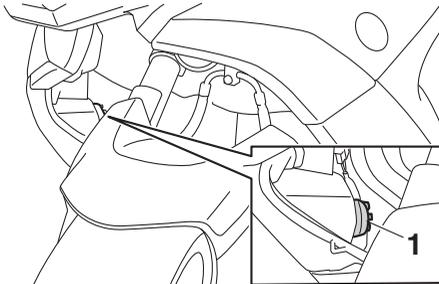
Periodic maintenance and adjustment

EAU52322

EAUT1331

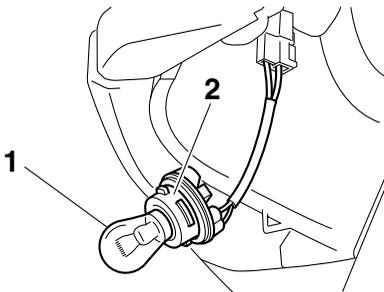
Replacing a front turn signal light bulb

1. Place the scooter on the center-stand.
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 pushing it in and turning it counterclockwise.



1. Turn signal light bulb
2. Turn signal light bulb socket

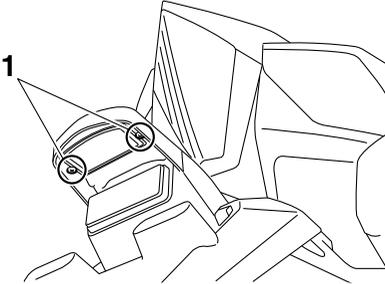
4. Insert a new bulb into the socket, push it in, and then turn it clockwise until it stops.
5. Install the socket (together with the bulb) by turning it clockwise.

Rear turn signal light bulb

If a rear turn signal light does not come on, have a Yamaha dealer check the electrical circuit or replace the bulb.

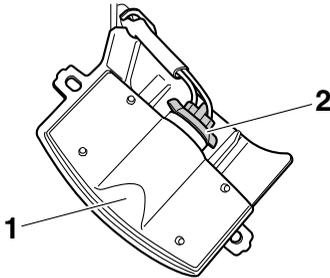
Replacing the license plate light bulb

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



1. Screw

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



1. License plate light unit
2. License plate 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 pushing it in.
6. Install the license plate light unit by installing the screws.

Troubleshooting

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

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

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

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.

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 3-5.)
- Is the smart key battery discharged? (See page 3-6.)
- Is the smart key battery installed

Periodic maintenance and adjustment

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 7-28.)

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

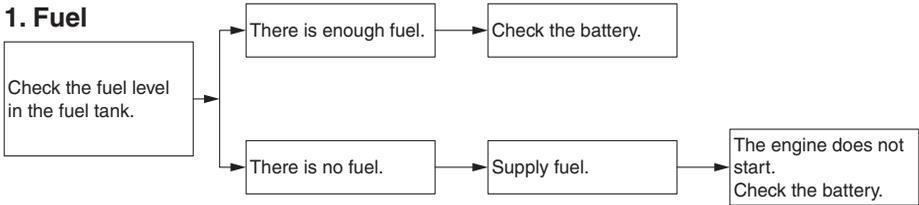
TIP

Refer to emergency mode on page 7-38 on how to start the engine without using the smart key.

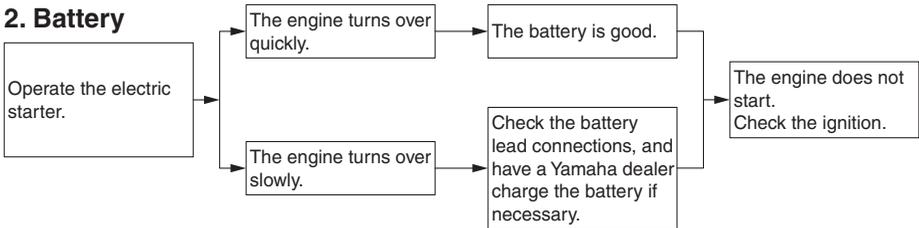
Troubleshooting charts

Starting problems or poor engine performance

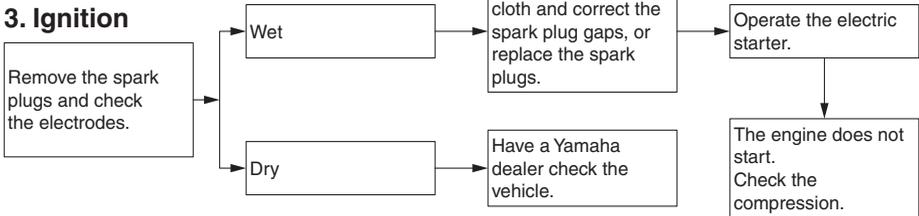
1. Fuel



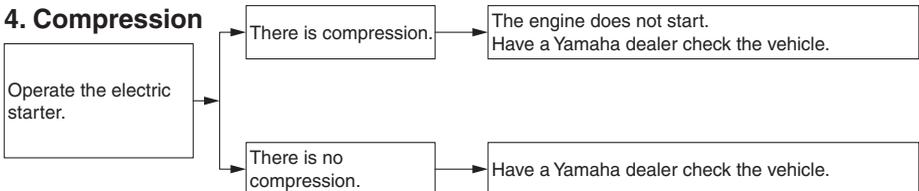
2. Battery



3. Ignition



4. Compression



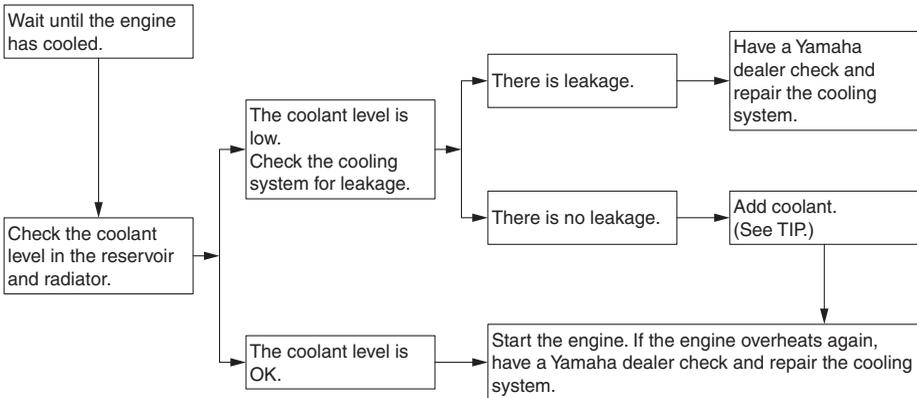
Periodic maintenance and adjustment

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.



7

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.

Periodic maintenance and adjustment

EAU61545

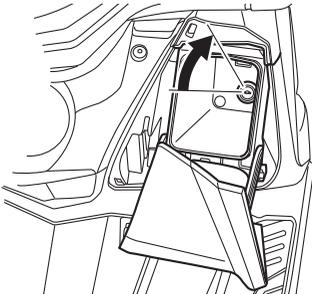
Emergency mode

When the smart key is lost, damaged, or its battery has discharged, the vehicle can still be turned on and the engine started. You will need a mechanical key and the smart key system identification number. (See page 3-3.) To operate the vehicle in emergency mode, carry out the following steps.

TIP

Emergency mode operation will be cancelled if the respective steps are not carried out within the time set for each operation or if the “OFF/LOCK” switch is pushed.

1. Stop the vehicle in a safe place.
2. Unlock the seat by inserting the mechanical key into the lock inside the front storage compartment and turn it clockwise.

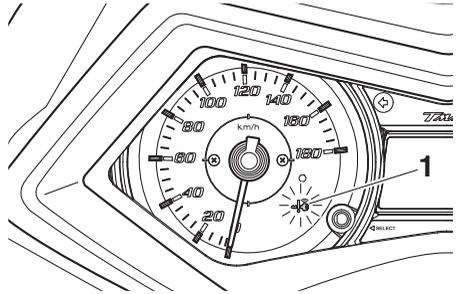


3. Open the seat and check that the trunk light comes on.
4. Push the “ON/⊗” switch once.
5. Without completely shutting the seat, raise and lower it three times within 10 seconds.

TIP

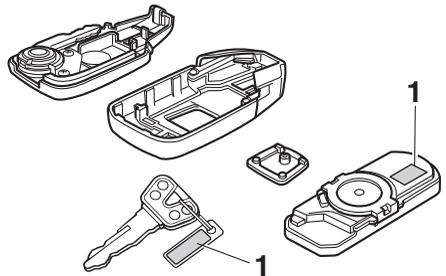
Use the rear storage compartment light as a guide when raising and lowering the seat.

The smart key system indicator light on the speedometer will come on for three seconds to indicate the transition to emergency mode.



1. Smart key system indicator light “⚡”

6. After the smart key system indicator light goes off, use the “SEAT OPEN/p\leq” switch to enter the identification number. Refer to the following procedure on how to input the identification number.



1. Identification number

7. 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:

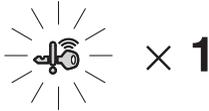
Push and hold the “SEAT OPEN/p\leq” switch.



The smart key system indicator

Periodic maintenance and adjustment

light will start to flash.



Release the “SEAT OPEN/” switch 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 “SEAT OPEN/” switch again.



Release the “SEAT OPEN/” switch 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.

10 seconds during the identification number input process.

- When the smart key system indicator light is allowed to flash 10 or more times.

8. Press the “ON/” switch while the smart key system indicator light is flashing to turn on the power to the vehicle. The engine can now be started.

TIP

- If the identification number is not correctly entered, the smart key system indicator light will flash rapidly for 3 seconds and emergency mode is terminated. In this case, start over again from step 4.
- To lock the handlebar after turning on the vehicle in emergency mode, turn the vehicle power off, wait 30 seconds, and then turn the handlebar to the left and press the “OFF/LOCK” switch.

7

TIP

Emergency mode will be terminated when either one of the following situations apply. In this case, start over again from step 4.

- When there are no “SEAT OPEN/” switch operations for

Matte color caution

EAU37834

EAU26106

NOTICE

ECA15193

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.

Care

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

Before cleaning

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

Cleaning

ECA10784

NOTICE

- **Avoid using strong acidic wheel cleaners, especially on spoked wheels. If such products are used on hard-to-remove dirt, do not leave the cleaner on the affected area any longer than in-**

Scooter care and storage

structed. Also, thoroughly rinse the area off with water, immediately dry it, and then apply a corrosion protection spray.

- Improper cleaning can damage plastic parts (such as cowlings, panels, windshields, headlight lenses, meter lenses, etc.) and the mufflers. Use only a soft, clean cloth or sponge with water to clean plastic. However, if the plastic parts cannot be thoroughly cleaned with water, diluted mild detergent with water may be used. Be sure to rinse off any detergent residue using plenty of water, as it is harmful to plastic parts.
- Do not use any harsh chemical products on plastic parts. Be sure to avoid using cloths or sponges which have been in contact with strong or abrasive cleaning products, solvent or thinner, fuel (gasoline), rust removers or inhibitors, brake fluid, antifreeze or electrolyte.
- Do not use high-pressure washers or steam-jet cleaners since they cause water seepage and deterioration in the following areas: seals (of wheel and swing-arm bearings, fork and brakes), electric components (couplers, connectors, instruments, switches and lights), breather hoses and vents.
- For scooters equipped with a windshield: Do not use strong cleaners or hard sponges as they will cause dulling or scratching. Some cleaning com-

pounds for plastic may leave scratches on the windshield. Test the product on a small hidden part of the windshield to make sure that it does not leave any marks. If the windshield is scratched, use a quality plastic polishing compound after washing.

After normal use

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

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

Since sea salt or salt sprayed on roads during winter are extremely corrosive in combination with water, carry out the following steps after each ride in the rain, near the sea or on salt-sprayed roads.

TIP

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

1. Clean the scooter with cold water and a mild detergent after the engine has cooled down. **NOTICE: Do not use warm water since it increases the corrosive action of the salt.**^[ECA10792]
2. Apply a corrosion protection spray on all metal, including chrome- and nickel-plated, surfaces to prevent corrosion.

Scooter care and storage

Cleaning the windshield

Avoid using any alkaline or strong acid cleaner, gasoline, brake fluid, or any other solvent. Clean the windshield with a cloth or sponge dampened with a mild detergent, and then wash it off thoroughly with water. For additional cleaning, use Yamaha Windshield Cleaner or another high-quality windshield cleaner. Some cleaning compounds for plastics may leave scratches on the windshield. Before using such cleaners, test an area of the windshield which does not affect your visibility and which cannot be easily recognized.

After cleaning

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

EWA10943

WARNING

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

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

ECA10801

NOTICE

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

TIP

- Consult a Yamaha dealer for advice on what products to use.
- Washing, rainy weather or humid climates can cause the headlight lens to fog. Turning the headlight on for a short period of time will help remove the moisture from the lens.

Scooter care and storage

EAU36554

Storage

Short-term

Always store your scooter in a cool, dry place and, if necessary, protect it against dust with a porous cover. Be sure the engine and the exhaust system are cool before covering the scooter.

ECA10821

NOTICE

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

head so that the electrodes are grounded. (This will limit sparking during the next step.)

- d. Turn the engine over several times with the starter. (This will coat the cylinder walls with oil.)
- e. Remove the spark plug caps from the spark plugs, and then install the spark plugs and the spark plug caps. **WARNING! To prevent damage or injury from sparking, make sure to ground the spark plug electrodes while turning the engine over.**^[EWA10952]

4. Lubricate all control cables and the pivoting points of all levers and pedals as well as of the sidestand/centerstand.
5. Check and, if necessary, correct the tire air pressure, and then lift the scooter so that both of its wheels are off the ground. Alternatively, turn the wheels a little every month in order to prevent the tires from becoming degraded in one spot.
6. Cover the muffler outlet with a plastic bag to prevent moisture from entering it.
7. Remove the battery and fully charge it. Store it in a cool, dry place and charge it once a month. Do not store the battery in an excessively cold or warm place [less than 0 °C (30 °F) or more than 30 °C (90 °F)]. For more information on storing the battery, see page 7-28.

TIP

Make any necessary repairs before

8

Long-term

Before storing your scooter for several months:

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

Scooter care and storage

storing the scooter.

Specifications

Dimensions:

- Overall length:
2200 mm (86.6 in)
- Overall width:
775 mm (30.5 in)
- Overall height:
1420/1475 mm (55.9/58.1 in)
- Seat height:
800 mm (31.5 in)
- Wheelbase:
1580 mm (62.2 in)
- Ground clearance:
125 mm (4.92 in)
- Minimum turning radius:
2.8 m (9.19 ft)

Weight:

- Curb weight:
219 kg (483 lb) (XP500)
222 kg (489 lb) (XP500A)

Engine:

- Combustion cycle:
4-stroke
- Cooling system:
Liquid cooled
- Valve train:
DOHC
- Cylinder arrangement:
Inline
- Number of cylinders:
2-cylinder
- Displacement:
530 cm³
- Bore × stroke:
68.0 × 73.0 mm (2.68 × 2.87 in)
- Compression ratio:
10.9 : 1
- Starting system:
Electric starter
- Lubrication system:
Dry sump

Engine oil:

- Recommended brand:
YAMALUBE
- SAE viscosity grades:
10W-40
- Recommended engine oil grade:
API service SG type or higher, JASO standard MA

Engine oil quantity:

- Oil change:
2.70 L (2.85 US qt, 2.38 Imp.qt)
- With oil filter removal:
2.90 L (3.07 US qt, 2.55 Imp.qt)

Coolant quantity:

- Coolant reservoir (up to the maximum level mark):
0.27 L (0.29 US qt, 0.24 Imp.qt)
- Radiator (including all routes):
1.50 L (1.59 US qt, 1.32 Imp.qt)

Air filter:

- Air filter element:
Oil-coated paper element

Fuel:

- Recommended fuel:
Regular unleaded gasoline (Gasohol [E10] acceptable)
- Fuel tank capacity:
15 L (4.0 US gal, 3.3 Imp.gal)
- Fuel reserve amount:
3.0 L (0.79 US gal, 0.66 Imp.gal)

Fuel injection:

- Throttle body:
ID mark:
59C1 00

Spark plug(s):

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

Clutch:

- Clutch type:
Wet, centrifugal, multiple-disc

Drivetrain:

- Primary reduction ratio:
1.000
- Final drive:
Belt
- Secondary reduction ratio:
6.034 (52/32 x 36/22 x 59/26)
- Transmission type:
V-belt automatic

Chassis:

- Frame type:
Diamond
- Caster angle:
25.0 °
- Trail:
92 mm (3.6 in)

Front tire:

Type:
Tubeless
Size:
120/70R15M/C 56H
Manufacturer/model:
DUNLOP/GPR-100F M

Rear tire:

Type:
Tubeless
Size:
160/60R15M/C 67H
Manufacturer/model:
DUNLOP/GPR-100 M

Loading:

Maximum load:
193 kg (425 lb) (XP500A)
196 kg (432 lb) (XP500)
* (Total weight of rider, passenger, cargo
and accessories)

Tire air pressure (measured on cold tires):

Up to 90 kg (198 lb) load:
Front:
225 kPa (2.25 kgf/cm², 33 psi)
Rear:
250 kPa (2.50 kgf/cm², 36 psi)
90 kg (198 lb) load - maximum load:
Front:
225 kPa (2.25 kgf/cm², 33 psi)
Rear:
280 kPa (2.80 kgf/cm², 41 psi)

Front wheel:

Wheel type:
Cast wheel
Rim size:
15M/C x MT3.50

Rear wheel:

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

Front brake:

Type:
Hydraulic dual disc brake
Specified brake fluid:
DOT 4

Rear brake:

Type:
Hydraulic single disc brake

Specified brake fluid:
DOT 4

Front suspension:

Type:
Telescopic fork
Spring:
Coil spring
Shock absorber:
Hydraulic damper
Wheel travel:
120 mm (4.7 in)

Rear suspension:

Type:
Swingarm
Spring:
Coil spring
Shock absorber:
Gas-hydraulic damper
Wheel travel:
116 mm (4.6 in)

Electrical system:

System voltage:
12 V
Ignition system:
TCI
Charging system:
AC magneto

Battery:

Model:
YTZ12S
Voltage, capacity:
12 V, 11.0 Ah (10 HR)

Bulb wattage × quantity:

Headlight:
LED
Brake/tail light:
LED
Front turn signal light:
21.0 W × 2
Rear turn signal light:
21.0 W × 2
Auxiliary light:
LED
License plate light:
5.0 W × 1
Meter lighting:
LED
High beam indicator light:
LED

Specifications

Turn signal indicator light:

LED

Engine trouble warning light:

LED

ABS warning light:

LED (XP500A)

Smart key system indicator light:

LED

Fuse(s):

Main fuse:

40.0 A

Headlight fuse:

10.0 A

Signaling system fuse:

15.0 A

Ignition fuse:

7.5 A

Parking lighting fuse:

10.0 A

Radiator fan motor fuse:

15.0 A

Fuel injection system fuse:

7.5 A

ABS control unit fuse:

7.5 A (XP500A)

ABS motor fuse:

30.0 A (XP500A)

ABS solenoid fuse:

15.0 A (XP500A)

Auxiliary DC jack fuse:

5.0 A

Backup fuse:

7.5 A

Consumer information

Identification numbers

EAU53562

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.

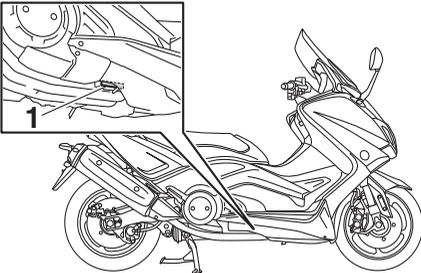
VEHICLE IDENTIFICATION NUMBER:

ENGINE SERIAL NUMBER:

MODEL LABEL INFORMATION:

Vehicle identification number

EAU26411



1. Vehicle identification number

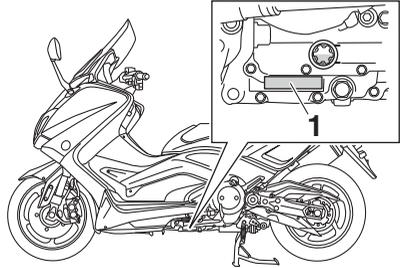
The vehicle identification number is stamped into the frame.

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.

Engine serial number

EAU26442



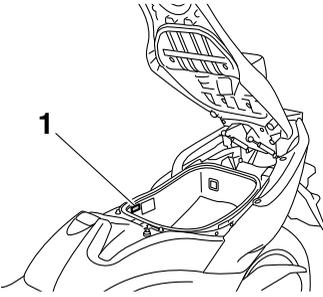
1. Engine serial number

The engine serial number is stamped into the crankcase.

Consumer information

EAU26501

Model label



1. Model label

The model label is affixed to the inside of the rear storage compartment. (See page 4-18.) Record the information on this label in the space provided. This information will be needed when ordering spare parts from a Yamaha dealer.

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