



⚠ Read this manual carefully before operating this vehicle.

OWNER'S MANUAL

TENERÉ

XT660Z

XT660ZA

2BD-F8199-E1

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



YAMAHA MOTOR ELECTRONICS CO., LTD.
1450-6, Mori, Mori-machi, Shuchi-gun, Shizuoka-ken, 437-0292 Japan

DECLARATION of CONFORMITY

We

Company: YAMAHA MOTOR ELECTRONICS CO., LTD.
Address: 1450-6, Mori, Mori-Machi, Shuchi-gun, Shizuoka-Ken, 437-0292 Japan

Hereby declare that the product:

Kind of equipment: IMMOBILIZER
Type-designation: SSL-00

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

R&TTE Directive(1999/5/EC)
EN300 330-2 v1.3.1(2006-01), EN300 330-2 v1.5.1(2010-02)
EN60950-1:2006/A11:2009
Two or Three-Wheel Motor Vehicles Directive(97/24/EC: Chapter 8, EMC)

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July 8th 2010
General manager of quality assurance div.



Welcome to the Yamaha world of motorcycling!

As the owner of the XT660Z-XT660ZA, 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 XT660Z-XT660ZA. The Owner's Manual does not only instruct you in how to operate, inspect and maintain your motorcycle, but also in how to safeguard yourself and others from trouble and injury.

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

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

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





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

IMPORTANT MANUAL INFORMATION

EAU10134

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

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

*Product and specifications are subject to change without notice.

IMPORTANT MANUAL INFORMATION

EAUM1012

**XT660Z-XT660ZA
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 motorcycle.

Motorcycles are single-track vehicles. Their safe use and operation are dependent upon the use of proper riding techniques as well as the expertise of the operator. Every operator should know the following requirements before riding this motorcycle.

He or she should:

- Obtain thorough instructions from a competent source on all aspects of motorcycle operation.
- Observe the warnings and maintenance requirements in 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 motorcycle without proper training or instruction. Take a training course. Beginners should receive training from a certified instructor. Contact an authorized motorcycle 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 4-1 for a list of pre-operation checks.

- This motorcycle is designed to carry the operator and a passenger.
- The failure of motorists to detect and recognize motorcycles in traffic is the predominating cause of automobile/motorcycle accidents. Many accidents have been caused by an automobile driver who did not see the motorcycle. Making yourself conspicuous ap-

pears 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 motorcycle accidents to occur.
- Ride where other motorists can see you. Avoid riding in another motorist's blind spot.
- Never maintain a motorcycle without proper knowledge. Contact an authorized motorcycle dealer to inform you on basic motorcycle 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 motorcycle license.
 - Make sure that you are qualified and that you only lend your motorcycle to other qualified operators.
 - Know your skills and limits. Staying within your limits may help you to avoid an accident.
 - We recommend that you practice riding your motorcycle where there is no traffic until you have become thoroughly familiar with the motorcycle and all of its controls.
 - Many accidents have been caused by error of the motorcycle operator. A typical error made by the operator is veering wide on a turn due to excessive speed or undercornering (insufficient lean angle for the speed).
 - Always obey the speed limit and never travel faster than warranted by road and traffic conditions.
 - Always signal before turning or changing lanes. Make sure that other motorists can see you.
 - The posture of the operator and passenger is important for proper control.
 - The operator should keep both hands on the handlebar and both feet on the operator footrests during operation to maintain control of the motorcycle.
 - The passenger should always hold onto the operator, 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.
- Protective Apparel**
- The majority of fatalities from motorcycle accidents are the result of head injuries. The use of a safety helmet is the single most critical factor in the prevention or reduction of head injuries.
- Always wear an approved helmet.
- 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.
- 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, heavy boots, trousers, gloves, etc., is effective in preventing or reducing abrasions or lacerations.
 - Never wear loose-fitting clothes, otherwise they could catch on the control levers, footrests, or wheels and cause injury or an accident.
 - 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.

SAFETY INFORMATION

1

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

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:
190 kg (419 lb)

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

- Cargo and accessory weight should be kept as low and close to the motorcycle as possible. 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 motorcycle to minimize imbalance or instability.

- Shifting weights can create a sudden imbalance. Make sure that accessories and cargo are securely attached to the motorcycle before riding. Check accessory mounts and cargo restraints frequently.
- 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. These items, including such cargo as sleeping bags, duffel bags, or tents, 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 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 motorcycle. Carefully inspect the accessory before using it to make sure that it does not in any way reduce ground clearance or cornering clearance, limit suspension travel, steering travel or control operation, or obscure lights or reflectors.
- Accessories fitted to the handlebar or the front fork area can create instability due to improper weight distribution or aerodynamic changes. If accessories are added to the handlebar or

front fork area, they must be as lightweight as possible and should be kept to a minimum.

- Bulky or large accessories may seriously affect the stability of the motorcycle due to aerodynamic effects. Wind may attempt to lift the motorcycle, or the motorcycle may become unstable in cross winds. These accessories may also cause instability when passing or being passed by large vehicles.
- Certain accessories can displace the operator from his or her normal riding position. This improper position limits the freedom of movement of the 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 motorcycle's electrical system, an electric failure could result, which could cause a dangerous loss of lights or engine power.

SAFETY INFORMATION

1

Aftermarket Tires and Rims

The tires and rims that came with your motorcycle 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 6-17 for tire specifications and more information on replacing your tires.

Transporting the Motorcycle

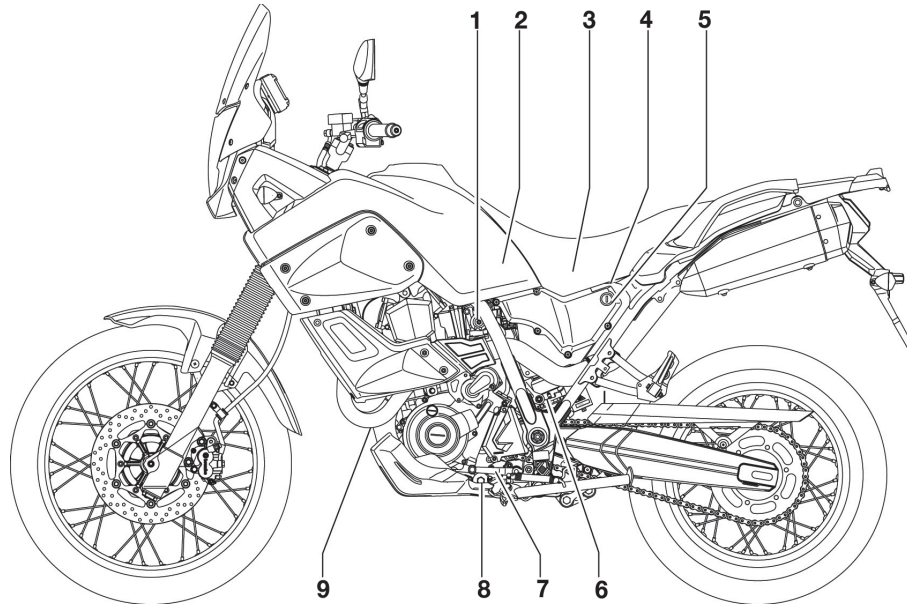
Be sure to observe following instructions before transporting the motorcycle in another vehicle.

- Remove all loose items from the motorcycle.
- Check that the fuel cock (if equipped) is in the “OFF” position and that there are no fuel leaks.
- Point the front wheel straight ahead on the trailer or in the truck bed, and choke it in a rail to prevent movement.
- Shift the transmission in gear (for models with a manual transmission).
- Secure the motorcycle with tie-downs or suitable straps that are attached to solid parts of the motorcycle, 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 motorcycle will not bounce excessively during transport.

Left view

XT660Z

2



1. Idle adjusting screw (page 6-16)

2. Owner's tool kit (page 6-2)

3. Air filter element (page 6-14)

4. Fuse box 1 (page 6-31)

5. Seat lock (page 3-16)

6. Shock absorber assembly spring preload adjusting ring (page 3-18)

7. Shift pedal (page 3-11)

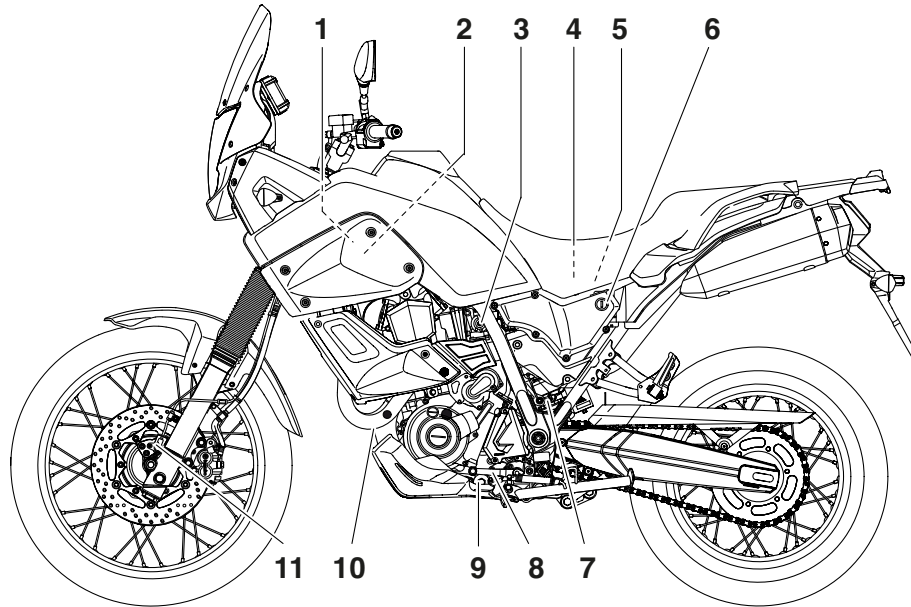
8. Engine oil drain bolt (crankcase) (page 6-10)

9. Engine oil drain bolt (oil tank) (page 6-10)

DESCRIPTION

XT660ZA

2



1. Main fuse (page 6-31)

2. Fuse box 1 (page 6-31)

3. Idle adjusting screw (page 6-16)

4. Fuse box 2 (page 6-31)

5. Fuse box 3 (page 6-31)

6. Seat lock (page 3-16)

7. Shock absorber assembly spring preload adjusting ring (page 3-18)

8. Shift pedal (page 3-11)

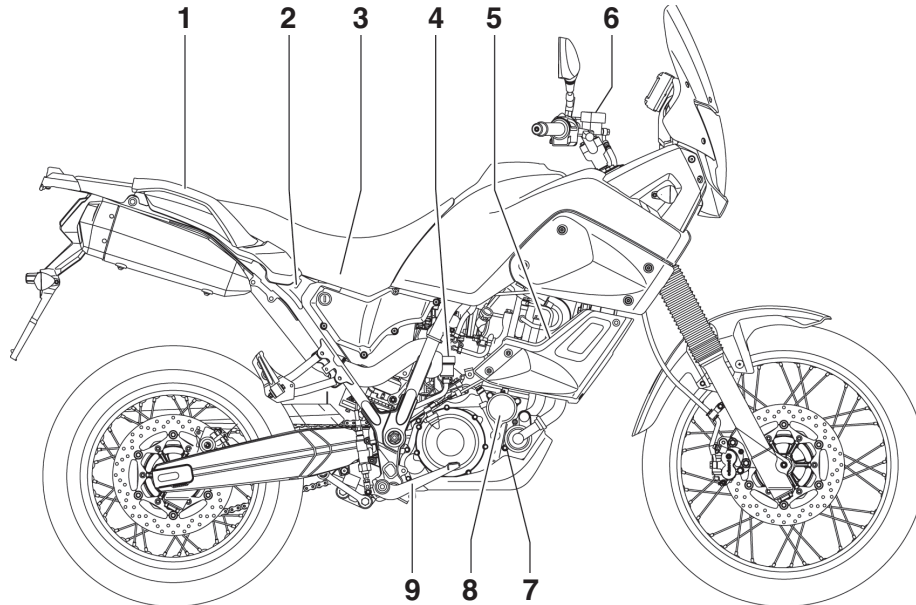
9. Engine oil drain bolt (crankcase) (page 6-10)

10.Engine oil drain bolt (oil tank) (page 6-10)

11.Front wheel hub

Right view

XT660Z



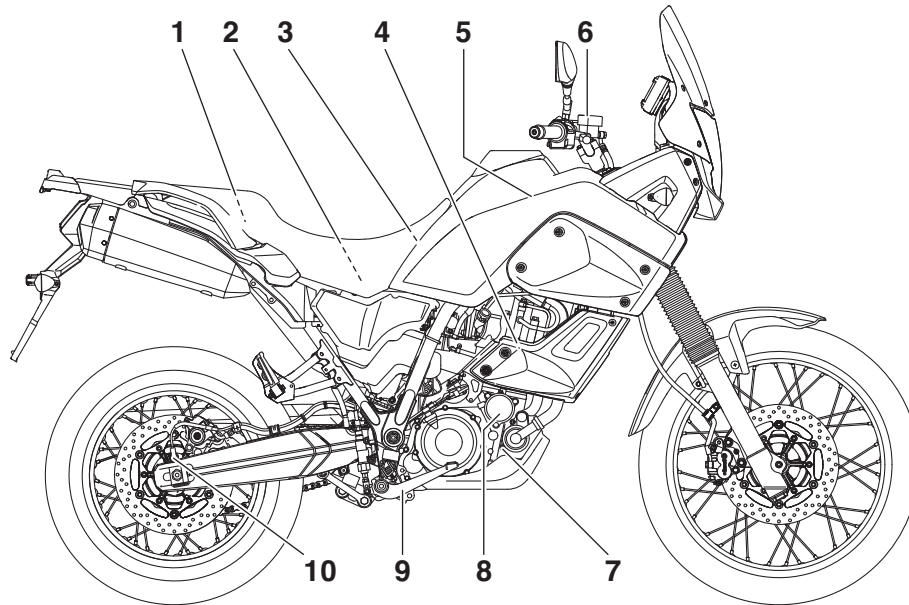
1. Grab bar
2. Main fuse (page 6-31)
3. Battery (page 6-29)
4. Rear brake fluid reservoir (page 6-21)
5. Coolant reservoir (page 6-13)
6. Front brake fluid reservoir (page 6-21)
7. Coolant drain bolt (page 6-14)

8. Engine oil filter element (page 6-10)
9. Brake pedal (page 3-11)

DESCRIPTION

XT660ZA

2



1. Rear brake fluid reservoir (page 6-21)

2. Fuse box 2 (page 6-31)

3. Owner's tool kit (page 6-2)

4. Coolant reservoir (page 6-13)

5. Battery (page 6-29)

6. Front brake fluid reservoir (page 6-21)

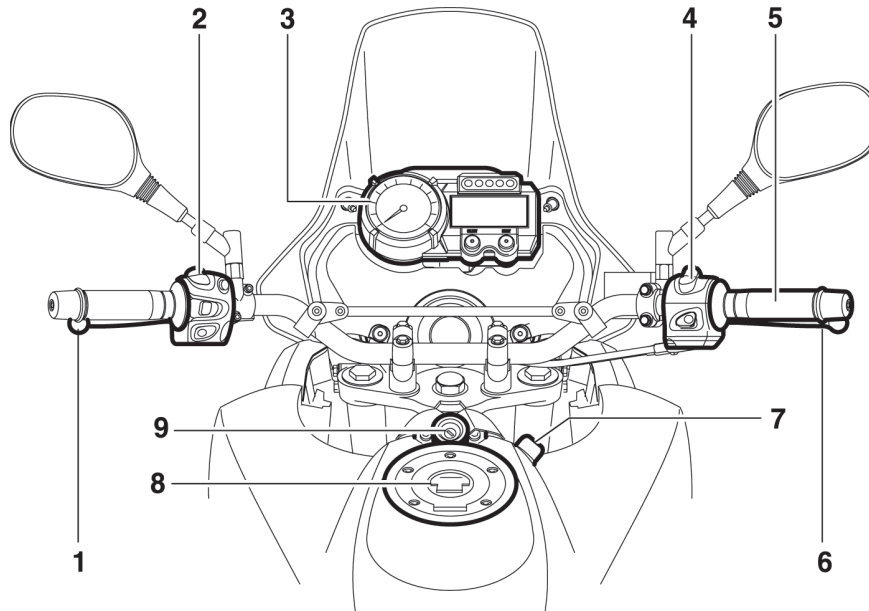
7. Coolant drain bolt (page 6-14)

8. Engine oil filter element (page 6-10)

9. Brake pedal (page 3-11)

10. Rear wheel hub

Controls and instruments



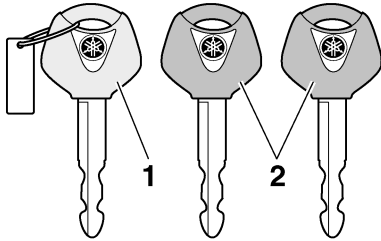
- 1. Clutch lever (page 3-10)
- 2. Left handlebar switches (page 3-9)
- 3. Multi-function display (page 3-6)
- 4. Right handlebar switches (page 3-9)
- 5. Throttle grip (page 6-16)
- 6. Brake lever (page 3-11)
- 7. Engine oil filler cap (page 6-10)
- 8. Fuel tank cap (page 3-13)

- 9. Main switch/steering lock (page 3-2)

INSTRUMENT AND CONTROL FUNCTIONS

Immobilizer system

EAU10978



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

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

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

- an immobilizer system indicator light (See page 3-5.)

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

ECA11822

NOTICE

- **DO NOT LOSE THE CODE RE-REGISTERING KEY! CONTACT YOUR DEALER IMMEDIATELY IF IT IS LOST!** If the code re-registering key is lost, registering new codes in the standard keys is impossible. The standard keys can still be used to start the vehicle, however if code re-registering is required (i.e., if a new standard key is made or all keys are lost) the entire immobilizer system must be replaced. Therefore, it is highly recom-

mended to use either standard key and keep the code re-registering key in a safe place.

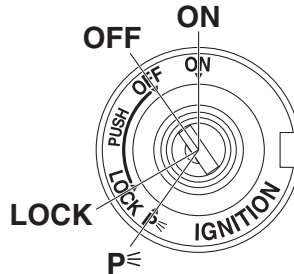
- Do not submerge any key in water.
- Do not expose any key to excessively high temperatures.
- Do not place any key close to magnets (this includes, but not limited to, products such as speakers, etc.).
- Do not place items that transmit electrical signals close to any key.
- Do not place heavy items on any key.
- Do not grind any key or alter its shape.
- Do not disassemble the plastic part of any key.
- Do not put two keys of any immobilizer system on the same key ring.
- Keep the standard keys as well as keys of other immobilizer systems away from this vehicle's code re-registering key.

INSTRUMENT AND CONTROL FUNCTIONS

- Keep other immobilizer system keys away from the main switch as they may cause signal interference.

Main switch/steering lock

EAU10474



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

TIP

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

ON

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

TIP

The headlight comes on automatically when the engine is started and stays on until the key is turned to “OFF”, even if the engine stalls.

OFF

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

WARNING

Never turn the key to “OFF” or “LOCK” while the vehicle is moving. Otherwise the electrical systems will be switched off, which may result in loss of control or an accident.

EAU36871

EAU10662

EWA10062

INSTRUMENT AND CONTROL FUNCTIONS

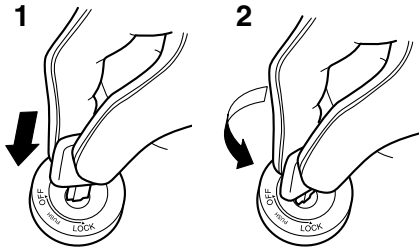
EAU10693

LOCK

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

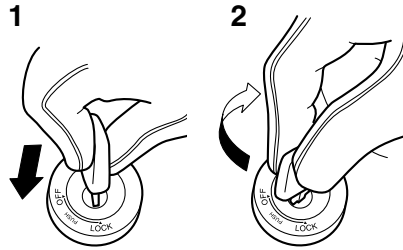
3

To lock the steering



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

To unlock the steering



1. Push.
2. Turn.

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

EAU10942

p (Parking)

The steering is locked, and the taillight, license plate light and auxiliary lights are on. The hazard lights and turn signal lights can be turned on, but all other electrical systems are off. The key can be removed.

The steering must be locked before the key can be turned to “p”.

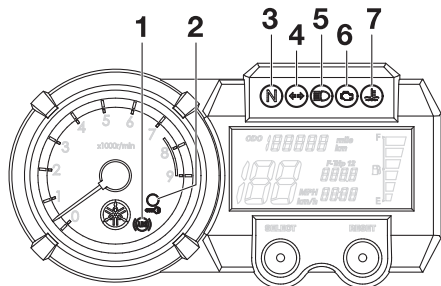
ECA11021



NOTICE

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

Indicator lights and warning lights

EAU49398



1. Anti-lock Brake System (ABS) warning light “ 

Turn signal indicator light “ EAUB1512

This indicator light flashes when a turn signal light is flashing.

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

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

Neutral indicator light “**N**”

EAUB1521

This indicator light comes on when the transmission is in the neutral position. The electrical circuit of the neutral indicator light can be checked by turning the key to “ON”.

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

High beam indicator light “ EAUB1531

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

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

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

Coolant temperature warning light “ EAU11447

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

The electrical circuit of the warning light can be checked by turning the key to “ON”. 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 key is turned to “ON”, or if the warning light remains on, have a Yamaha dealer check the electrical circuit.

NOTICE

ECA10022

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

TIP

- For radiator-fan-equipped vehicles, the radiator fan(s) automatically switch on or off according to the coolant temperature in the radiator.

INSTRUMENT AND CONTROL FUNCTIONS

- If the engine overheats, see page 6-41 for further instructions.

3

Engine trouble warning light “”

EAU11535

This warning light comes on or flashes if a problem is detected in the electrical circuit monitoring the engine. If this occurs, have a Yamaha dealer check the self-diagnosis system. (See page 3-8 for an explanation of the self-diagnosis device.)

The electrical circuit of the warning light can be checked by turning the key to “ON”. The warning light should come on for a few seconds, and then go off.

If the warning light does not come on initially when the key is turned to “ON”, or if the warning light remains on, have a Yamaha dealer check the electrical circuit.

ABS warning light “” (for ABS models)

EAU11546

If this warning light comes on or flashes while riding, the ABS may not work correctly. If this occurs, have a Yamaha dealer check the system as soon as

possible. (See page 3-12.)



WARNING

EWA10082

If the ABS warning light comes on or flashes while riding, the brake system reverts to conventional braking. Therefore, be careful not to cause the wheels to lock during emergency braking. If the warning light comes on or flashes while riding, have a Yamaha dealer check the brake system as soon as possible.

The electrical circuit of the warning light can be checked by turning the key to “ON”. The warning light should come on for a few seconds, and then go off.

If the warning light does not come on initially when the key is turned to “ON”, or if the warning light remains on, have a Yamaha dealer check the electrical circuit.

Immobilizer system indicator light “”

EAU26879

When the key is turned to “OFF” and 30 seconds have passed, the indicator light will start flashing indicating the im-

mobilizer system is enabled. After 24 hours have passed, the indicator light will stop flashing, however the immobilizer system is still enabled.

The electrical circuit of the indicator light can be checked by turning the key to “ON”. The indicator light should come on for a few seconds, and then go off.

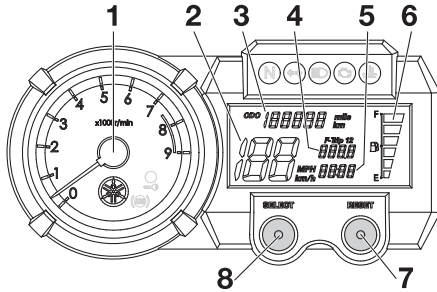
If the indicator light does not come on initially when the key is turned to “ON”, or if the indicator light remains on, have a Yamaha dealer check the electrical circuit.

The self-diagnosis device also detects problems in the immobilizer system circuits. (See page 3-8 for an explanation of the self-diagnosis device.)

INSTRUMENT AND CONTROL FUNCTIONS

Multi-function display

EUA51944



1. Tachometer
2. Speedometer
3. Odometer
4. Tripmeter/fuel reserve tripmeter
5. Clock
6. Fuel meter
7. “RESET” button
8. “SELECT” button

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.

EWA12313

The multi-function display is equipped with the following:

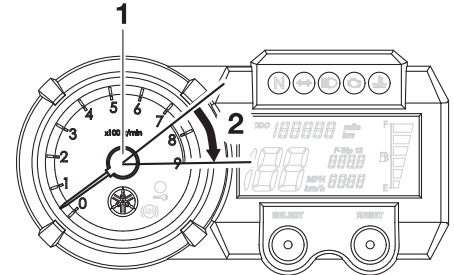
- a speedometer (which shows the riding speed)
- a digital tachometer (which shows engine r/min)
- an odometer (which shows the total distance traveled)
- two tripmeters (which show the distance traveled since they were last set to zero)
- a fuel reserve tripmeter (which shows the distance traveled since the bottom segment of the fuel meter started flashing)
- a clock
- a fuel meter
- a self-diagnosis device

TIP

- Be sure to turn the key to “ON” before using the “SELECT” and “RESET” buttons.
- For the U.K. only: To switch the speedometer and odometer/tripmeter displays between kilometers and miles, push the “SELECT” and “RESET” buttons together, then while holding the

buttons, turn the key to “ON”. When the digits start flashing, push the “SELECT” button to change between kilometers and miles.

Tachometer



1. Tachometer
2. Tachometer red zone

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

INSTRUMENT AND CONTROL FUNCTIONS

ECA10032

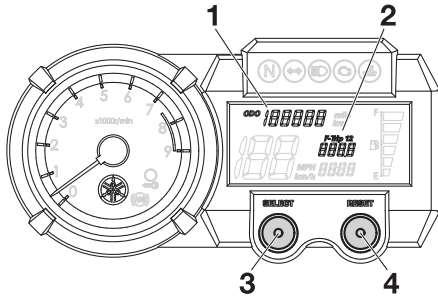
NOTICE

Do not operate the engine in the tachometer red zone.

Red zone: 7500 r/min and above

3

Tripmeter and tachometer modes



1. Odometer
2. Tripmeter/fuel reserve tripmeter
3. "SELECT" button
4. "RESET" button

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

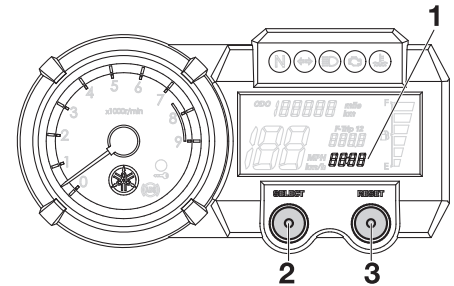
TRIP 1 → TRIP 2 → TRIP 1

When the fuel amount in the fuel tank decreases to XT660Z 6.7 L (1.77 US gal, 1.47 Imp.gal) - XT660ZA 5.8 L (1.53 US gal, 1.28 Imp.gal), the bottom segment of the fuel meter starts flashing, and the tripmeter display automatically changes to the fuel reserve tripmeter mode "F-TRIP" and starts counting the distance traveled from that point. In that case, pushing the "SELECT" button switches the display between the various tripmeter modes in the following order:

F-TRIP → TRIP 1 → TRIP 2 → F-TRIP

To reset a tripmeter, select it by pushing the "SELECT" button, and then push the "RESET" button for at least four seconds. If you do not reset the fuel reserve tripmeter manually, it resets itself automatically and the display returns to the prior mode after refueling and traveling 5 km (3 mi).

Clock mode



1. Clock
2. "SELECT" button
3. "RESET" button

TIP

The clock always shows the time regardless of the main switch position.

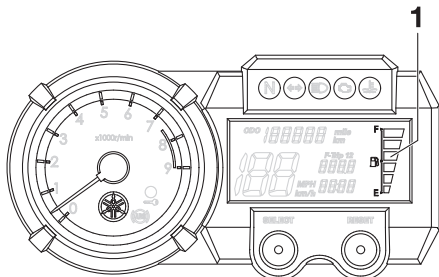
To set the clock:

1. Push the "SELECT" button for at least four 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 start flashing.
4. Push the "RESET" button to set the minutes.

INSTRUMENT AND CONTROL FUNCTIONS

5. Push the “SELECT” button and then release it to start the clock.

Fuel meter



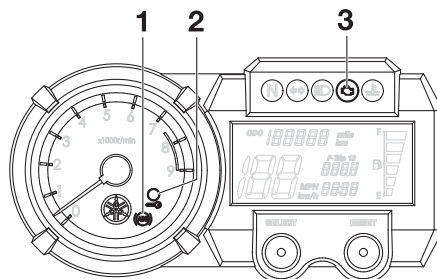
1. Fuel meter




With the key in the “ON” position, the fuel meter indicates the amount of fuel in the fuel tank. When the key is turned to “ON”, all of the display segments of the fuel meter appear one after the other and then disappear in order to test the electrical circuit. The display segments of the fuel meter disappear towards “E” (Empty) as the fuel level decreases. When only one segment is left near “E” (Empty), refuel as soon as possible.

TIP

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

Self-diagnosis devices



1. Anti-lock Brake System (ABS) warning light “” (for ABS models)
2. Immobilizer system indicator light “”
3. Engine trouble warning light “”

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

If any engine electrical circuits are defective, the engine trouble warning light starts flashing. If this occurs, have a Yamaha dealer check the vehicle.

(for ABS models)

If any of the ABS electrical circuits are defective, the ABS warning light will come on. If this occurs, have a Yamaha dealer check the vehicle.

This model is also equipped with a self-diagnosis device for the immobilizer system.

If any of the immobilizer system circuits are defective, the immobilizer system indicator light starts flashing. If this occurs, have a Yamaha dealer check the vehicle.

TIP

If the indicator light slowly flashes five times, and then quickly flashes two times repeatedly, this error could be caused by transponder interference. If this occurs, try the following.

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

INSTRUMENT AND CONTROL FUNCTIONS

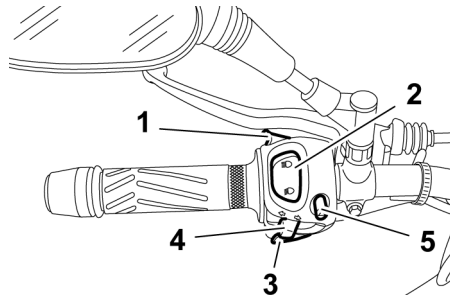
key and both standard keys to a Yamaha dealer and have the standard keys re-registered.








3

Handlebar switches

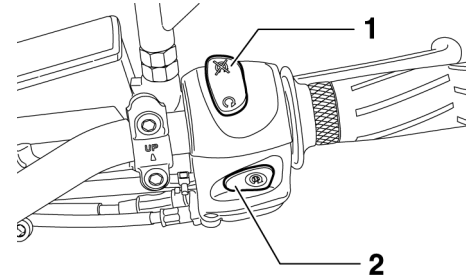
EAU1234H




Left



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

Right



1. Engine stop switch “ /  ”
2. Start switch “ ”



Pass switch “ ”

EAU12351

Press this switch to flash the headlight.



Dimmer switch “ / ”

EAU12401

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

Turn signal switch “ / ”

EAU12461

To signal a right-hand turn, push this switch to “ ”. To signal a left-hand turn, push this switch to “ ”. When released, the switch returns to the cen-

ter position. To cancel the turn signal lights, push the switch in after it has returned to the center position.



EAU12501

Horn switch “”

Press this switch to sound the horn.

EAU12661

Engine stop switch “”

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

EAU12713

Start switch “”


Push this switch to crank the engine with the starter. See page 5-1 for starting instructions prior to starting the engine.

EAU44712

The engine trouble warning light and ABS warning light (ABS model only) may come on when the key is turned to “ON” and the start switch is pushed, but this does not indicate a malfunction.

Hazard switch “”

EAU12735

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

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

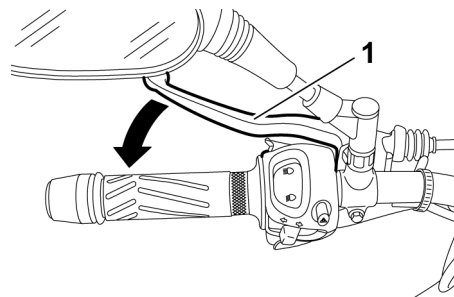
NOTICE

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

ECA10062

Clutch lever

EAU12821



1. Clutch lever

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

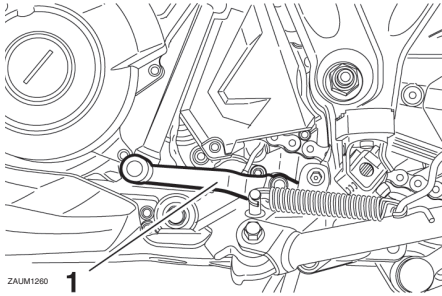
The clutch lever is equipped with a clutch switch, which is part of the ignition circuit cut-off system. (See page 3-19.)

INSTRUMENT AND CONTROL FUNCTIONS

3

Shift pedal

EAU12872

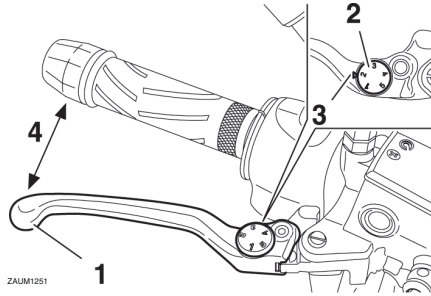


1. Shift pedal

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

Brake lever

EAU26825



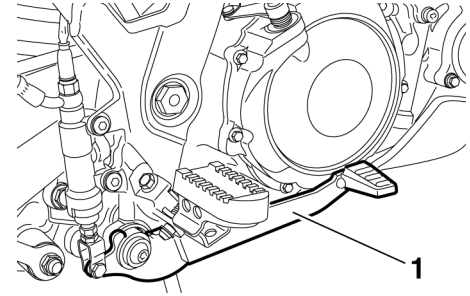
1. Brake lever
2. Position adjusting dial
3. Arrow mark
4. Distance between brake lever and handlebar grip

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

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

Brake pedal

EAU12944



1. Brake pedal

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

ABS (for ABS models)

EAU51802

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 lever or brake pedal. 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

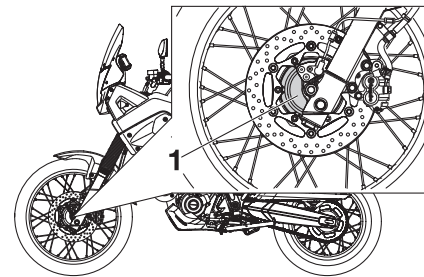
- The ABS performs a self-diagnosis test each time the vehicle first starts off after the key is turned to “ON” and the vehicle has traveled at a speed of 10 km/h (6 mi/h) or higher. During this test, a “clicking” noise can be heard from under the seat, and if the brake lever or brake pedal is even slightly applied, a vibration can be felt at the lever and pedal, but these do not indicate a malfunction.
- This ABS has a test mode which allows the owner to experience the pulsation at the brake lever or brake pedal when the ABS is operating. However, special tools are required, so please consult your Yamaha dealer.

ECA16121

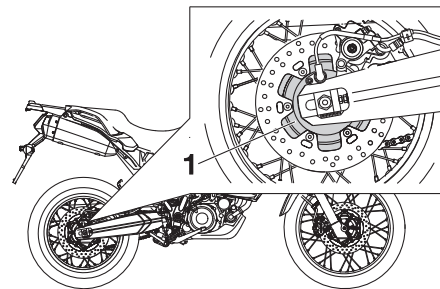
NOTICE

Keep any type of magnets (including magnetic pick-up tools, magnetic screwdrivers, etc.) away from the front and rear wheel hubs, otherwise the magnetic rotors equipped in the

wheel hubs may be damaged, resulting in improper performance of the ABS system.



1. Front wheel hub

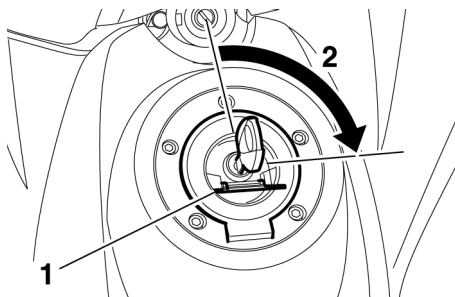


1. Rear wheel hub

INSTRUMENT AND CONTROL FUNCTIONS

Fuel tank cap

EAU13075



1. Lock cover
2. Open.

To open the fuel tank cap

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

To close the fuel tank cap

1. Push the fuel tank cap into position with the key inserted in the lock.
2. Turn the key counterclockwise to the original position, remove it, and then close the lock cover.

TIP

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

WARNING

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

EWA11092

Fuel

EAU13222

Make sure there is sufficient gasoline in the tank.

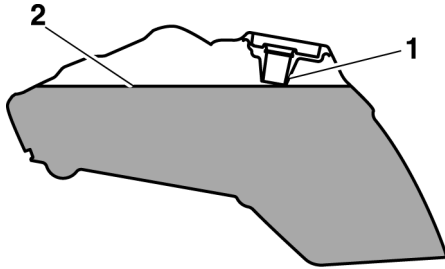
EWA10882

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.

INSTRUMENT AND CONTROL FUNCTIONS



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 immedi-

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

EAU49463

Recommended fuel:

Premium unleaded gasoline only

Fuel tank capacity:

23.0 L (6.07 US gal, 5.06 Imp.gal)

Fuel reserve amount:

XT660Z 6.7 L (1.77 US gal,
1.47 Imp.gal)

XT660ZA 5.8 L (1.53 US gal,
1.28 Imp.gal)

ECA11401

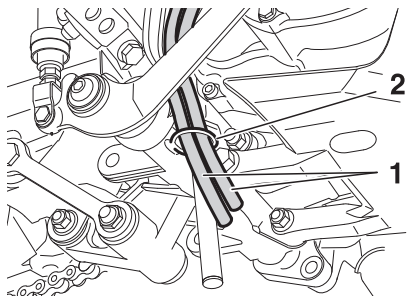
NOTICE

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 premium unleaded gasoline with a research octane number of 95 or higher. If knocking (or pinging) occurs, use a gasoline of a different

EAUB1302

Fuel tank breather/overflow hose



1. Fuel tank breather/overflow hose
2. Hose clamp

Before operating the motorcycle:

- Check the fuel tank breather/overflow hose connection.
- Check the fuel tank breather/overflow hose for cracks or damage, and replace it if necessary.
- Make sure that the end of the fuel tank breather/overflow hose is not blocked, and clean it if necessary.
- Make sure that the fuel tank breather/overflow hose is routed through the clamp.

EAU13434

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

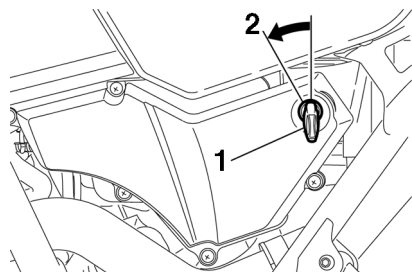
Use only unleaded gasoline. The use of leaded gasoline will cause unreparable damage to the catalytic converter.

Seat

EAU13862

To remove the seat

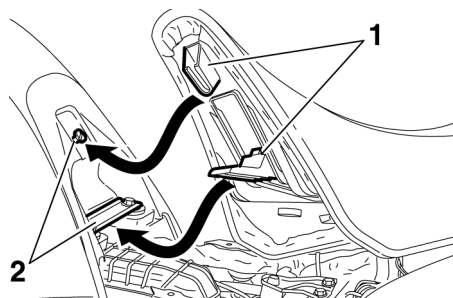
Insert the key into the seat lock, turn it counterclockwise, and then pull the seat off.



1. Seat lock
2. Unlock.

To install the seat

Insert the projections on the front of the seat into the seat holders, push the rear of the seat down to lock it in place, and then remove the key.



1. Projection
2. Seat holder

TIP

Make sure that the seat is properly secured before riding.

Adjusting the front fork

EAM3590

For XT660Z:

This front fork is equipped with spring preload adjusting bolts.

EWA10181

WARNING

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

Adjust the spring preload as follows.

To increase the spring preload and thereby harden the suspension, turn the adjusting bolt on each fork leg in direction (a). To decrease the spring preload and thereby soften the suspension, turn the adjusting bolt on each fork leg in direction (b).

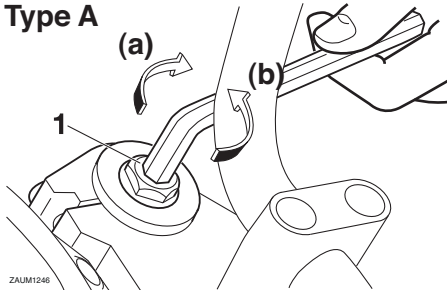
TIP

Use the 10 hexagon wrench or the 10 open wrench included in the owner's tool kit to turn the adjusting bolts (according to the type of spring preload adjusting bolt used on your motorcycle).

INSTRUMENT AND CONTROL FUNCTIONS

3

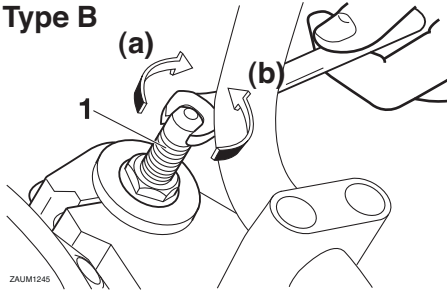
Type A



ZAUM1246

1. Spring preload adjusting bolt

Type B



ZAUM1245

1. Spring preload adjusting bolt

Type A

Spring preload setting:

Minimum (soft):

27 complete turn(s) in direction (b)*

Standard:

5 complete turn(s) in direction (b)*

Maximum (hard):

0 complete turn(s) in direction (b)*

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

Spring preload setting:

Minimum (soft):

10

Standard:

10

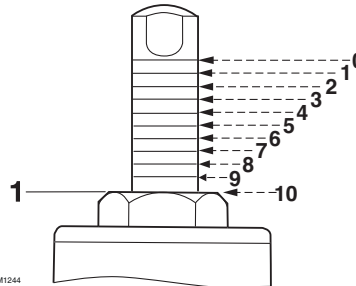
Maximum (hard):

0

For XT660ZA:

This front fork cannot be adjusted.

Type B



ZAUM1244

1. Current setting

TIP

Align the appropriate groove on the adjusting mechanism with the top of the front fork cap bolt.

Adjusting the shock absorber assembly

EAUB1463

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

ECA10102

NOTICE

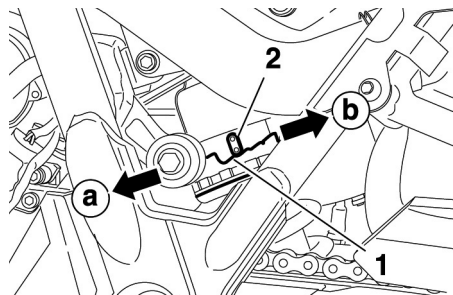
To avoid damaging the mechanism, do not attempt to turn beyond the maximum or minimum settings.

Adjust the spring preload as follows.

To increase the spring preload and thereby harden the suspension, turn the adjusting ring in direction (a). To decrease the spring preload and thereby soften the suspension, turn the adjusting ring in direction (b).

TIP

Align the appropriate notch in the adjusting ring with the position indicator on the shock absorber.



1. Spring preload adjusting ring
2. Position indicator

EWAB0021

WARNING

Never adjust the spring preload until the exhaust system has cooled down.

Spring preload setting:

Minimum (soft):

1

Standard:

2

Maximum (hard):

9

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.

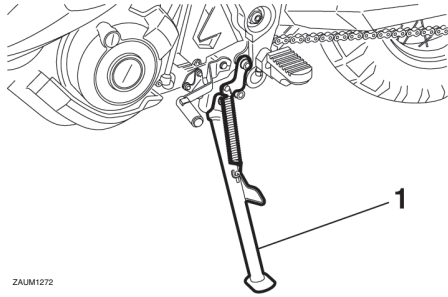
INSTRUMENT AND CONTROL FUNCTIONS

Sidestand

EAU15306

EWA10242

EAU15315



3

ZADUM1272

1. 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.)

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, clutch switch and neutral switch) has the following functions.

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

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

TIP

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

INSTRUMENT AND CONTROL FUNCTIONS

With the engine turned off:

1. Move the sidestand down.
2. Make sure that the engine stop switch is set to “O”.
3. Turn the key on.
4. Shift the transmission into the neutral position.
5. Push the start switch.

Does the engine start?

YES

NO

With the engine still running:

6. Move the sidestand up.
7. Keep the clutch lever pulled.
8. Shift the transmission into gear.
9. Move the sidestand down.

Does the engine stall?

YES

NO

After the engine has stalled:

10. Move the sidestand up.
11. Keep the clutch lever pulled.
12. Push the start switch.

Does the engine start?

YES

NO

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



WARNING

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

The neutral switch may not be working correctly.
The motorcycle should not be ridden until checked by a Yamaha dealer.

The sidestand switch may not be working correctly.
The motorcycle should not be ridden until checked by a Yamaha dealer.

The clutch switch may not be working correctly.
The motorcycle should not be ridden until checked by a Yamaha dealer.

FOR YOUR SAFETY – PRE-OPERATION CHECKS

EAU15599

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.

4

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.	3-13, 3-15
Engine oil	<ul style="list-style-type: none">• Check oil level in oil tank.• If necessary, add recommended oil to specified level.• Check vehicle for oil leakage.	6-10
Coolant	<ul style="list-style-type: none">• Check coolant level in reservoir.• If necessary, add recommended coolant to specified level.• Check cooling system for leakage.	6-13
Front brake	<ul style="list-style-type: none">• Check operation.• If soft or spongy, have Yamaha dealer bleed hydraulic system.• Check lever free play.• Adjust if necessary.• Check 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.	6-21, 6-21

FOR YOUR SAFETY – PRE-OPERATION CHECKS

ITEM	CHECKS	PAGE
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. 	6-21, 6-21
Clutch	<ul style="list-style-type: none"> • Check operation. • Lubricate cable if necessary. • Check lever free play. • Adjust if necessary. 	6-20
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. 	6-16, 6-25
Control cables	<ul style="list-style-type: none"> • Make sure that operation is smooth. • Lubricate if necessary. 	6-25
Drive chain	<ul style="list-style-type: none"> • Check chain slack. • Adjust if necessary. • Check chain condition. • Lubricate if necessary. 	6-23, 6-24
Wheels and tires	<ul style="list-style-type: none"> • Check for damage. • Check tire condition and tread depth. • Check air pressure. • Correct if necessary. 	6-17, 6-19
Brake pedal	<ul style="list-style-type: none"> • Make sure that operation is smooth. • Lubricate pedal pivoting point if necessary. 	6-26
Brake and clutch levers	<ul style="list-style-type: none"> • Make sure that operation is smooth. • Lubricate lever pivoting points if necessary. 	6-26
Sidestand	<ul style="list-style-type: none"> • Make sure that operation is smooth. • Lubricate pivot if necessary. 	6-27

FOR YOUR SAFETY – PRE-OPERATION CHECKS

ITEM	CHECKS	PAGE
Chassis fasteners	<ul style="list-style-type: none">• Make sure that all nuts, bolts and screws are properly tightened.• Tighten if necessary.	–
Instruments, lights, signals and switches	<ul style="list-style-type: none">• Check operation.• Correct if necessary.	–
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.	3-19

OPERATION AND IMPORTANT RIDING POINTS

EAU15952

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

EWA10272

WARNING

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

EAU48021

TIP

This model is equipped with a lean angle sensor to stop the engine in case of a turnover. In this case, the multi-function display indicates error code 30, but this is not a malfunction. Turn the key to "OFF" and then to "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.

EAUS1952

Starting the engine

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

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

EWA10291

WARNING

- **Before starting the engine, check the function of the ignition circuit cut-off system according to the procedure described on page 3-19.**
- **Never ride with the sidestand down.**

1. Turn the key to "ON" and make sure that the engine stop switch is set to "○".

ECAS0041

NOTICE

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

- Neutral indicator light
- Turn signal indicator light

OPERATION AND IMPORTANT RIDING POINTS

- High beam indicator light
- Engine trouble warning light
- Coolant temperature warning light
- Immobilizer system indicator light
- ABS warning light (for ABS model)

If a warning or indicator light does not go off, see page 3-4 for the corresponding warning and indicator light circuit check.

2. Shift the transmission into the neutral position.

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

3. Start the engine by pushing the start switch.

TIP _____
If the engine fails to start, release the start switch, wait a few seconds, and then try again. Each starting attempt should be as short as possible to pre-

serve the battery. Do not crank the engine more than 10 seconds on any one attempt.

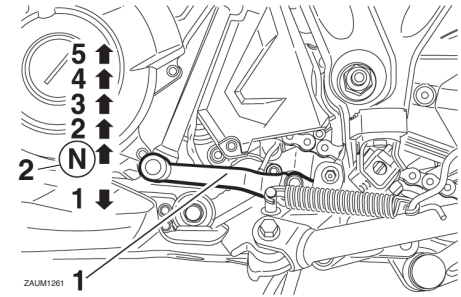
TIP _____
The engine is warm when it quickly responds to the throttle.

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

ECA11043

Shifting

EAU16673



1. Shift pedal
2. Neutral position

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

The gear positions are shown in the illustration.

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

NOTICE

ECA10261

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

Tips for reducing fuel consumption

EAU16811

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

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

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.

5

EAU17103

0–1000 km (0–600 mi)

Avoid prolonged operation above 4500 r/min. **NOTICE: After 1000 km (600 mi) of operation, the engine oil must be changed, and the oil filter element replaced.** [ECA11152]

1000–1600 km (600–1000 mi)

Avoid prolonged operation above 6000 r/min.

OPERATION AND IMPORTANT RIDING POINTS

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.
-

Parking

EAU17214

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

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.
-

PERIODIC MAINTENANCE AND ADJUSTMENT

EAU17245

EWA15123

EAU17303

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

EWA15461

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.

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.**

WARNING

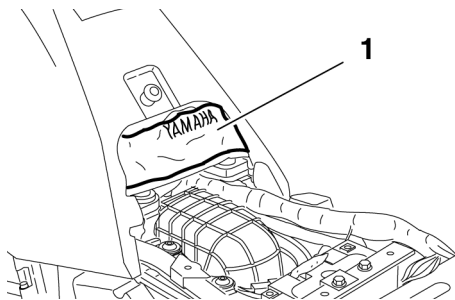
Brake discs, calipers, drums, and linings can become very hot during use. To avoid possible burns, let brake components cool before touching them.

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.

PERIODIC MAINTENANCE AND ADJUSTMENT

EAU17382

Owner's tool kit



1. Owner's tool kit

6

The owner's tool kit is located under the seat. (See page 3-16.)

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

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.

EAU46911

Periodic maintenance chart for the emission control system

NO.	ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING					ANNUAL CHECK
			1000 km (600 mi)	10000 km (6000 mi)	20000 km (12000 mi)	30000 km (18000 mi)	40000 km (24000 mi)	
1	* Fuel line	<ul style="list-style-type: none"> • Check fuel hoses for cracks or damage. 		√	√	√	√	√
2	Spark plug	<ul style="list-style-type: none"> • Check condition. • Clean and regap. 		√		√		
		<ul style="list-style-type: none"> • Replace. 			√		√	
3	* Valves	<ul style="list-style-type: none"> • Check valve clearance. • Adjust. 			√		√	
4	* Fuel injection	<ul style="list-style-type: none"> • Adjust engine idling speed. 	√	√	√	√	√	√
5	* Mufflers and exhaust pipes	<ul style="list-style-type: none"> • Check the screw clamps for looseness. 	√	√	√	√	√	
6	* Air induction system	<ul style="list-style-type: none"> • Check the air cut-off valve, reed valve, and hose for damage. • Replace any damaged parts if necessary. 		√	√	√	√	√

PERIODIC MAINTENANCE AND ADJUSTMENT

EAU1770M

General maintenance and lubrication chart

NO.	ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING					ANNUAL CHECK
			1000 km (600 mi)	10000 km (6000 mi)	20000 km (12000 mi)	30000 km (18000 mi)	40000 km (24000 mi)	
1	Air filter element	• Replace.			√		√	
2	Clutch	• Check operation. • Adjust.	√	√	√	√	√	
3	* Front brake	• Check operation, fluid level and vehicle for fluid leakage.	√	√	√	√	√	√
		• Replace brake pads.	Whenever worn to the limit					
4	* Rear brake	• Check operation, fluid level and vehicle for fluid leakage.	√	√	√	√	√	√
		• Replace brake pads.	Whenever worn to the limit					
5	* Brake hoses	• Check for cracks or damage. • Check for correct routing and clamping.		√	√	√	√	√
		• Replace.	Every 4 years					
6	* Wheels	• Check runout, spoke tightness and for damage. • Tighten spokes if necessary.	√	√	√	√	√	
7	* Tires	• Check tread depth and for damage. • Replace if necessary. • Check air pressure. • Correct if necessary.		√	√	√	√	√
8	* Wheel bearings	• Check bearings for looseness or damage.		√	√	√	√	

6

PERIODIC MAINTENANCE AND ADJUSTMENT

NO.	ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING					ANNUAL CHECK
			1000 km (600 mi)	10000 km (6000 mi)	20000 km (12000 mi)	30000 km (18000 mi)	40000 km (24000 mi)	
9	* Swingarm	• Check operation and for excessive play.		√	√	√	√	
		• Lubricate with lithium-soap-based grease.	Every 50000 km (30000 mi)					
10	Drive chain	<ul style="list-style-type: none"> • Check chain slack, alignment and condition. • Adjust and lubricate chain with a special O-ring chain lubricant thoroughly. 	Every 500 km (300 mi) and after washing the motorcycle, riding in the rain or riding in wet areas					
11	* Steering bearings	• Check bearing play and steering for roughness.	√	√	√	√	√	
		• Lubricate with lithium-soap-based grease.	Every 20000 km (12000 mi)					
12	* Chassis fasteners	• Make sure that all nuts, bolts and screws are properly tightened.		√	√	√	√	√
13	Brake lever pivot shaft	• Lubricate with silicone grease.		√	√	√	√	√
14	Brake pedal pivot shaft	• Lubricate with silicone grease.		√	√	√	√	√
15	Clutch lever pivot shaft	• Lubricate with lithium-soap-based grease.		√	√	√	√	√
16	Sidestand	<ul style="list-style-type: none"> • Check operation. • Lubricate with lithium-soap-based grease. 		√	√	√	√	√
17	* Sidestand switch	• Check operation.	√	√	√	√	√	√
18	* Front fork	• Check operation and for oil leakage.		√	√	√	√	

PERIODIC MAINTENANCE AND ADJUSTMENT

NO.	ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING					ANNUAL CHECK
			1000 km (600 mi)	10000 km (6000 mi)	20000 km (12000 mi)	30000 km (18000 mi)	40000 km (24000 mi)	
19	* Shock absorber assembly	<ul style="list-style-type: none"> • Check operation and shock absorber for oil leakage. 		√	√	√	√	
20	* Rear suspension relay arm and connecting arm pivoting points	<ul style="list-style-type: none"> • Check operation. 		√	√	√	√	
		<ul style="list-style-type: none"> • Lubricate with lithium-soap-based grease. 			√		√	
21	Engine oil	<ul style="list-style-type: none"> • Change. • Check oil level and vehicle for oil leakage. 	√	√	√	√	√	√
22	Engine oil filter element	<ul style="list-style-type: none"> • Replace. 	√		√		√	
23	* Cooling system	<ul style="list-style-type: none"> • Check coolant level and vehicle for coolant leakage. 		√	√	√	√	√
		<ul style="list-style-type: none"> • Change coolant. 	Every 3 years					
24	* Front and rear brake switches	<ul style="list-style-type: none"> • Check operation. 	√	√	√	√	√	√
25	Moving parts and cables	<ul style="list-style-type: none"> • Lubricate. 		√	√	√	√	√
26	* Throttle grip	<ul style="list-style-type: none"> • Check operation. • Check throttle grip free play, and adjust if necessary. • Lubricate cable and grip housing. 		√	√	√	√	√
27	* Lights, signals and switches	<ul style="list-style-type: none"> • Check operation. • Adjust headlight beam. 	√	√	√	√	√	√

PERIODIC MAINTENANCE AND ADJUSTMENT

EAUM1891

TIP

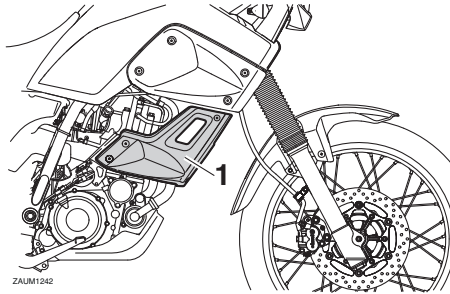
- Replace the air filter element more frequently if you are riding in unusually wet or dusty areas.
 - Hydraulic brake service
 - Regularly check and, if necessary, correct the brake fluid level.
 - Every two years replace the internal components of the brake master cylinder, and change the brake fluid.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

PERIODIC MAINTENANCE AND ADJUSTMENT

Removing and installing panels

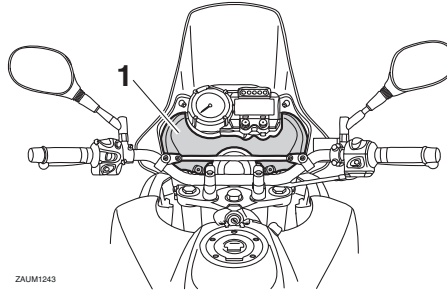
EAU18773

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.



ZAUM1242

1. Panel A



ZAUM1243

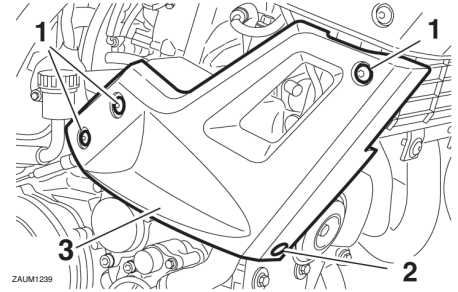
1. Panel B

EAUM3580

Panel A

To remove the panel

Remove the bolts and the quick fastener, and then take the panel off.



ZAUM1239

1. Panel mounting bolt
2. Quick fastener
3. Panel A

To install the panel

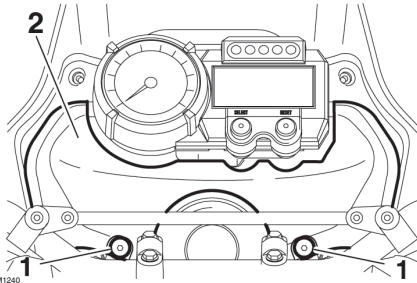
Place the panel in the original position, and then install the bolts and the quick fastener.

Panel B

To remove the panel

Remove the bolts, and then take the panel off.

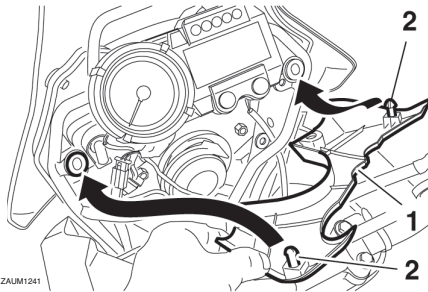
PERIODIC MAINTENANCE AND ADJUSTMENT



- 1. Bolt
- 2. Panel B

To install the panel

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



- 1. Panel B
- 2. Center pin

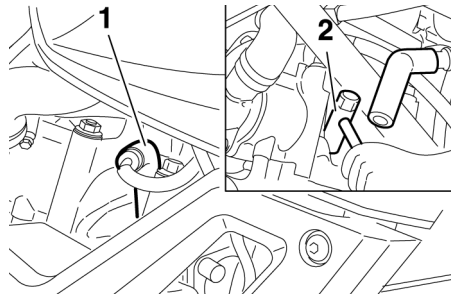
Checking the spark plug

EAU19605

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

To remove the spark plug

1. Remove the spark plug cap.



1. Spark plug cap
2. Spark plug wrench

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

To check the spark plug

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

TIP

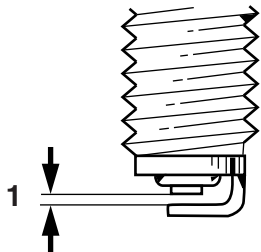
If the spark plug shows a distinctly different color, the engine could be operating improperly. Do not attempt to diagnose such problems yourself. Instead, have a Yamaha dealer check the vehicle.

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

Specified spark plug:
NGK/CR7E

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

PERIODIC MAINTENANCE AND ADJUSTMENT



ZALUM0037

1. Spark plug gap

Spark plug gap:

0.7–0.8 mm (0.028–0.031 in)

6

To install the spark plug

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

Tightening torque:

Spark plug:

12.5 Nm (1.25 m·kgf, 9.04 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.

3. Install the spark plug cap.

Engine oil and oil filter element

EAUB1567

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

To check the engine oil level

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

TIP _____

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

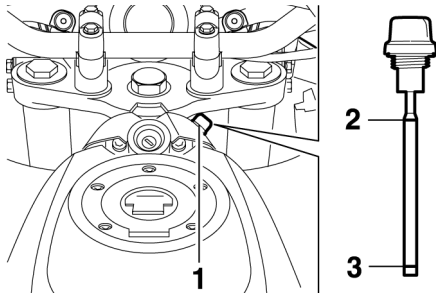
2. Start the engine, warm it up for 10–15 minutes, and then turn it off.
3. Remove the oil filler cap, wipe the dipstick clean, insert it back into the oil filler hole (without screwing it in), and then remove it again to check the oil level. **WARNING!** Never remove the engine oil filler cap after high-speed operation.

PERIODIC MAINTENANCE AND ADJUSTMENT

tion, otherwise hot engine oil could spout out and cause damage or injury. Always let the engine oil cool down sufficiently before removing the oil filler cap. [EWA17640]

TIP

- The engine oil tank is located inside of the frame.
- The engine oil should be between the minimum and maximum level marks.



1. Engine oil filler cap
2. Maximum level mark
3. Minimum level mark

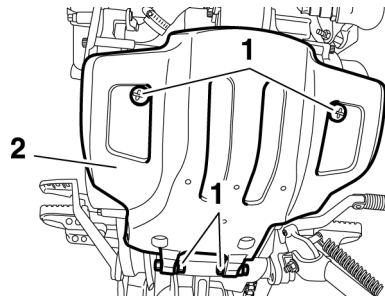
4. If the engine oil is below the minimum level mark, add sufficient oil of the recommended type to raise

it to the correct level. **NOTICE: Do not operate the vehicle until you know that the engine oil level is sufficient.** [ECA10012]

5. Install the oil filler cap.

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

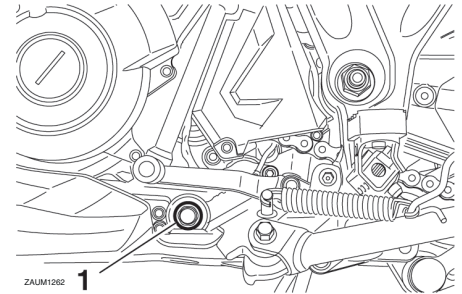
1. Start the engine, warm it up for several minutes, and then turn it off.
2. Remove the engine guard by removing the screws.



1. Screw
2. Engine guard

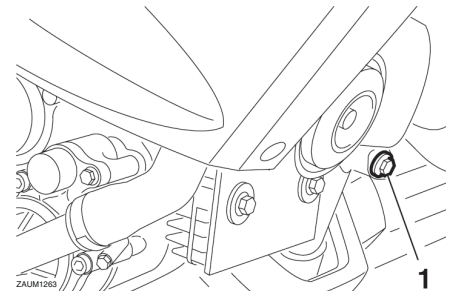
3. Place an oil pan under the engine to collect the used oil.

4. Remove the engine oil filler cap and the drain bolt to drain the oil from the crankcase.



1. Engine oil drain bolt (crankcase)

5. Remove the drain bolt to drain the oil from the oil tank.



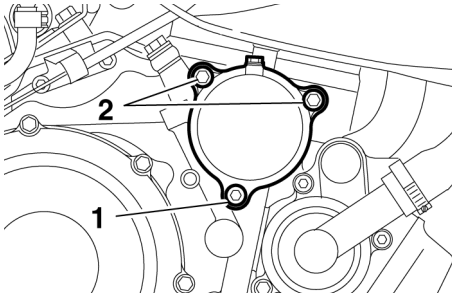
1. Engine oil drain bolt (oil tank)

PERIODIC MAINTENANCE AND ADJUSTMENT

6. Remove the oil filter element drain bolt to drain the oil from the oil filter element.

TIP _____
Skip steps 7–9 if the oil filter element is not being replaced.

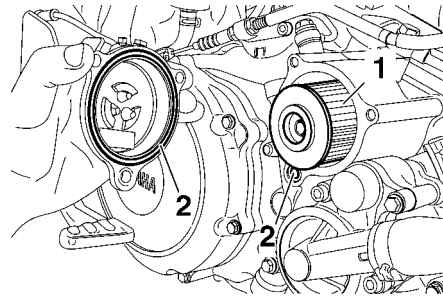
7. Remove the oil filter element cover by removing the bolts.



1. Oil filter element drain bolt
2. Oil filter element cover bolt

8. Remove and replace the oil filter element and O-rings.

TIP _____
Make sure that the O-rings are properly seated.



1. Oil filter element
2. O-ring

9. Install the oil filter element cover by installing the bolts.
10. Install the oil filter element drain bolt.
11. Tighten the oil filter element cover bolts and the oil filter element drain bolt to their specified torques.

Tightening torques:

- Oil filter element cover bolt:
10 Nm (1.0 m·kgf, 7.2 ft·lbf)
- Oil filter element drain bolt:
10 Nm (1.0 m·kgf, 7.2 ft·lbf)

12. Install the engine oil drain bolts, and then tighten them to their specified torques.

Tightening torques:

- Engine oil drain bolt (crankcase):
30 Nm
- Engine oil drain bolt (oil tank):
18 Nm

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

ECAM1063

NOTICE

The engine oil tank must be filled in 2 steps. First, fill the engine oil tank with 1.90 L (2.0 US qt, 1.67 Imp.qt) of the recommended engine oil. Then, start the engine, race it 5 or 6 times, turn it off, and then add the remainder of the engine oil.

Recommended engine oil:

See page 8-1.

Oil quantity:

- Without oil filter element replacement:
2.50 L (2.64 US qt, 2.20 Imp.qt)
- With oil filter element replacement:
2.60 L (2.75 US qt, 2.29 Imp.qt)

PERIODIC MAINTENANCE AND ADJUSTMENT

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 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.**

14. 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.
15. Turn the engine off, and then check the oil level and correct it if necessary.

16. Install the engine guard by installing the screws.

Coolant

EAU20071

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.

EAU20257

To check the coolant level

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

TIP _____

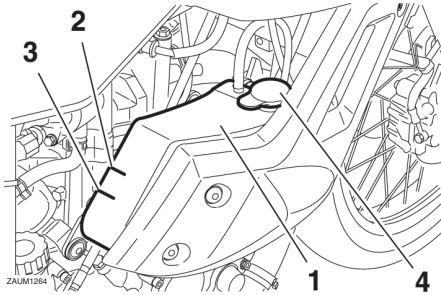
- The coolant level must be checked on a cold engine since the level varies with engine temperature.
- Make sure that the vehicle is positioned straight up when checking the coolant level. A slight tilt to the side can result in a false reading.

2. Check the coolant level in the coolant reservoir.

TIP _____

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

PERIODIC MAINTENANCE AND ADJUSTMENT



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

6

3. If the coolant is at or below the minimum level mark, remove panel A (See page 6-8.), remove the coolant reservoir cap, add coolant to the maximum level mark, and then install the reservoir cap and the panel. **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]

Coolant reservoir capacity (up to the maximum level mark):
0.50 L (0.53 US qt, 0.44 Imp.qt)

EAU33032

Changing the coolant

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

EAUB1483

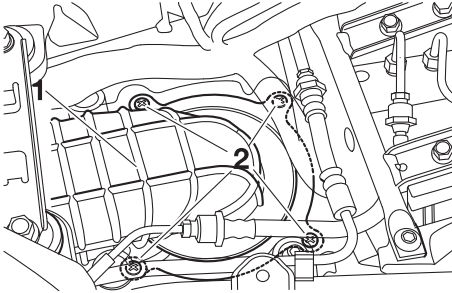
Replacing the air filter element and cleaning the check hose

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. In addition, the air filter check hose must be frequently checked and cleaned if necessary.

To replace the air filter element

1. Remove the seat. (See page 3-16.)
2. Remove the air filter case cover by removing the screws.

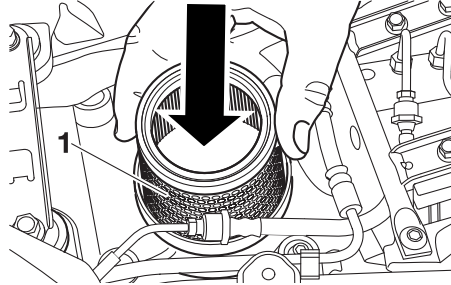
PERIODIC MAINTENANCE AND ADJUSTMENT



1. Air filter case cover
2. Screw

3. Pull the air filter element out.
4. Insert a new air filter element into the air filter case as shown.

NOTICE: Make sure that the air filter element is properly seated in the air filter case. The engine should never be operated without the air filter element installed, otherwise the piston(s) and/or cylinder(s) may become excessively worn. [ECA10482]

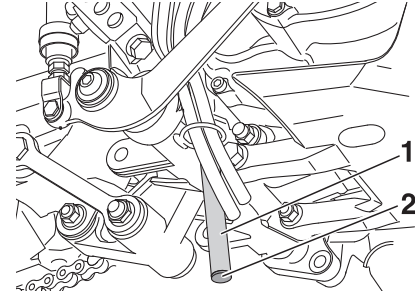


1. Air filter element

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

To clean the air filter check hose

1. Check the hose on the side of the air filter case for accumulated dirt or water.



1. Air filter check hose
2. Air filter check hose plug

2. If dirt or water is visible, remove the hose, clean it, and then install it.

PERIODIC MAINTENANCE AND ADJUSTMENT

Adjusting the engine idling speed

EAU21321

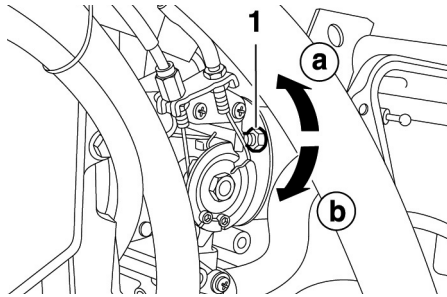
The engine idling speed must be checked and, if necessary, adjusted as follows at the intervals specified in the periodic maintenance and lubrication chart.

The engine should be warm before making this adjustment.

TIP

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

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



1. Idle adjusting screw

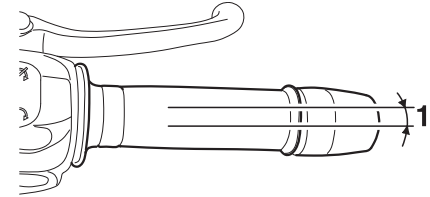
Engine idling speed:
1400–1600 r/min

TIP

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

Checking the throttle grip free play

EAU21385



1. Throttle grip free play

The throttle grip free play should measure 3.0–5.0 mm (0.12–0.20 in) at the inner edge of the throttle grip. Periodically check the throttle grip free play and, if necessary, have a Yamaha dealer adjust it.

PERIODIC MAINTENANCE AND ADJUSTMENT

Valve clearance

EAU21402

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

EAU21647

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.

weight of rider, passenger, cargo, and accessories approved for this model.

Tire air pressure

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

EWA10504

WARNING

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

- **The tire air pressure must be checked and adjusted on cold tires (i.e., when the temperature of the tires equals the ambient temperature).**
- **The tire air pressure must be adjusted in accordance with the riding speed and with the total**

PERIODIC MAINTENANCE AND ADJUSTMENT

Tire air pressure (measured on cold tires):

Up to 90 kg (198 lbs) load:

Front:

210 kPa (2.10 kgf/cm², 30 psi)

Rear:

230 kPa (2.30 kgf/cm², 33 psi)

90 kg (198 lbs) to maximum load:

Front:

XT660Z 210 kPa (2.10 kgf/cm², 30 psi)

XT660ZA 230 kPa (2.30 kgf/cm², 33 psi)

Rear:

XT660Z 230 kPa (2.30 kgf/cm², 33 psi)

XT660ZA 250 kPa (2.50 kgf/cm², 36 psi)

Off-road riding:

Front:

XT660Z 200 kPa (2.00 kgf/cm², 29 psi)

Rear:

XT660Z 200 kPa (2.00 kgf/cm², 29 psi)

High-speed riding:

Front:

210 kPa (2.10 kgf/cm², 30 psi)

Rear:

230 kPa (2.30 kgf/cm², 33 psi)

Maximum load*:

190 kg (419 lb)

* Total weight of rider, passenger, cargo and accessories

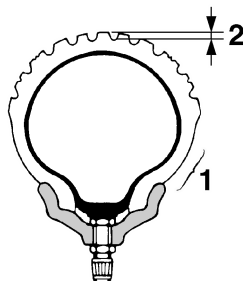
EWA10512



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.

Tire information

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

EWA10462



WARNING

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

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

PERIODIC MAINTENANCE AND ADJUSTMENT

EAU21944

EWA10611

Front tire:

Size:

XT660Z 90/90-21 M/C 54S(METZELER)-54T(MICHELIN)
XT660ZA 90/90-21 M/C
54S(PIRELLI)

Manufacturer/model:

XT660Z METZELER/TOURANCE
FRONT
XT660ZA PIRELLI/SCORPION
TRAIL
XT660Z MICHELIN/SIRAC

Rear tire:

Size:

XT660Z 130/80-17 M/C
65S(METZELER)-65T(MICHELIN)
XT660ZA 130/80-17 M/C
65S(PIRELLI)

Manufacturer/model:

XT660Z METZELER/TOURANCE
FRONT
XT660ZA PIRELLI/SCORPION
TRAIL
XT660Z MICHELIN/SIRAC

EWA10572

WARNING

- **Have a Yamaha dealer replace excessively worn tires. Besides being illegal, operating the mo-**

torcycle 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.**
- **It is not recommended to patch a punctured tube. If unavoidable, however, patch the tube very carefully and replace it as soon as possible with a high-quality product.**
- **Ride at moderate speeds after changing a tire since the tire surface must first be “broken in” for it to develop its optimal characteristics.**

Spoke wheels

WARNING

The wheels on this model are not designed for use with tubeless tires. Do not attempt to use tubeless tires on this model.

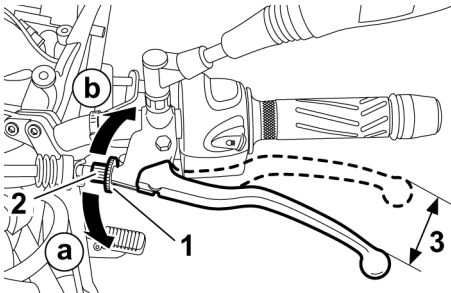
To maximize the performance, durability, and safe operation of your motorcycle, note the following points regarding the specified wheels.

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

PERIODIC MAINTENANCE AND ADJUSTMENT

Adjusting the clutch lever free play

EAU22045



1. Locknut (clutch lever)
2. Clutch lever free play adjusting bolt
3. Clutch lever free play

The clutch lever free play should measure 10.0–15.0 mm (0.39–0.59 in) as shown. Periodically check the clutch lever free play and, if necessary, adjust it as follows.

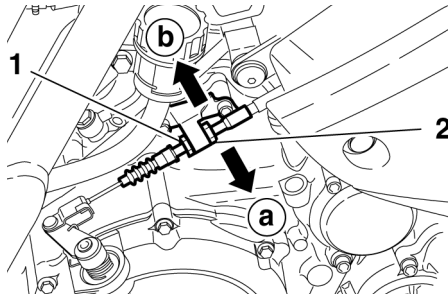
1. Slide the rubber cover back at the clutch lever.
2. Loosen the locknut.
3. To increase the clutch lever free play, turn the clutch lever free play adjusting bolt in direction (a). To

decrease the clutch lever free play, turn the adjusting bolt in direction (b).

TIP

If the specified clutch lever free play could be obtained as described above, skip steps 4–7.

4. Fully turn the adjusting bolt at the clutch lever in direction (a) to loosen the clutch cable.
5. Loosen the locknut at the crankcase.



1. Locknut (crankcase)
2. Clutch lever free play adjusting nut (crankcase)

6. To increase the clutch lever free play, turn the clutch lever free play adjusting nut in direction (a). To

decrease the clutch lever free play, turn the adjusting nut in direction (b).

7. Tighten the locknut at the crankcase.
8. Tighten the locknut at the clutch lever and then slide the rubber cover to its original position.

PERIODIC MAINTENANCE AND ADJUSTMENT

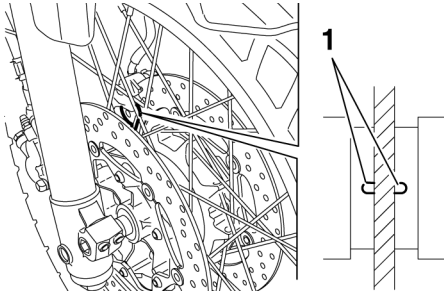
Checking the front and rear brake pads

EAU22393

The front and rear brake pads must be checked for wear at the intervals specified in the periodic maintenance and lubrication chart.

Front brake pads

EAU22421



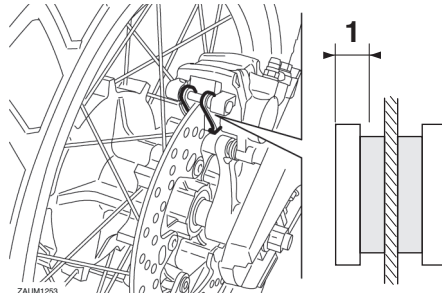
1. Wear indicator groove

Each front brake pad is provided with a wear indicator groove, which allows you to check the brake pad wear without having to disassemble the brake. To check the brake pad wear, check the wear indicator groove. If a brake pad has worn to the point that the wear

indicator groove has almost disappeared, have a Yamaha dealer replace the brake pads as a set.

Rear brake pads

EAU22501



1. Lining thickness

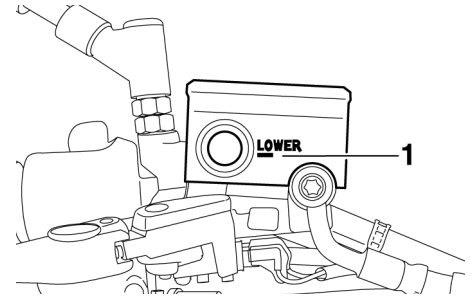
Check each rear brake pad for damage and measure the lining thickness. If a brake pad is damaged or if the lining thickness is less than 3.8 mm, have a Yamaha dealer replace the brake pads as a set.

Checking the brake fluid level

EAUM3570

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.

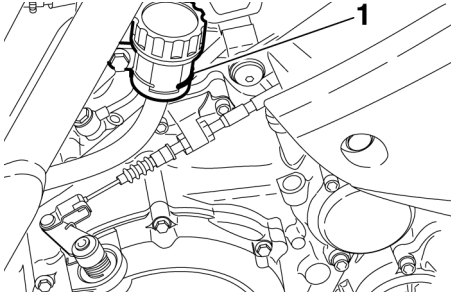
Front brake



1. Minimum level mark

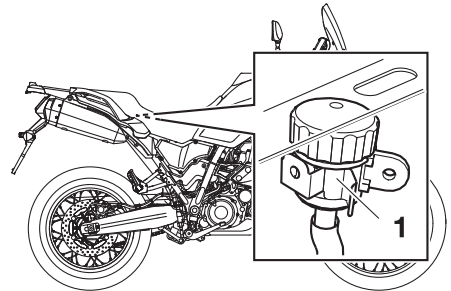
PERIODIC MAINTENANCE AND ADJUSTMENT

Rear brake (for XT660Z)



1. Minimum level mark

Rear brake (for XT660ZA)



1. Minimum level mark

TIP

The rear brake fluid reservoir is located under the seat. (See page 3-16.)

Specified brake fluid:
DOT 4

EWA16011

WARNING

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

- Insufficient brake fluid may allow air to enter the brake system, reducing braking performance.
- Clean the filler cap before removing. Use only DOT 4 brake fluid from a sealed container.
- Use only the specified brake fluid; otherwise, the rubber seals may deteriorate, causing leakage.
- Refill with the same type of brake fluid. Adding a brake fluid other than DOT 4 may result in a harmful chemical reaction.
- Be careful that water or dust does not enter the brake fluid reservoir when refilling. Water will significantly lower the boiling point of the fluid and may re-

sult in vapor lock, and dirt may clog the ABS hydraulic unit valves.

ECA17641

NOTICE

Brake fluid may damage painted surfaces or plastic parts. Always clean up spilled fluid immediately.

As the brake pads wear, it is normal for the brake fluid level to gradually go down. A low brake fluid level may indicate worn brake pads and/or brake system leakage; therefore, be sure to check the brake pads for wear and the brake system for leakage. If the brake fluid level goes down suddenly, have a Yamaha dealer check the cause before further riding.

PERIODIC MAINTENANCE AND ADJUSTMENT

Changing the brake fluid

EAU22733

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.

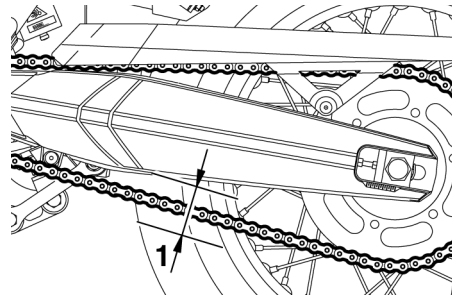
Drive chain slack

EAU22762

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

To check the drive chain slack

EAU22786



1. Drive chain slack

1. Place the motorcycle on the side-stand.

TIP

When checking and adjusting the drive chain slack, there should be no weight on the motorcycle.

2. Shift the transmission into the neutral position.
3. Measure the drive chain slack as shown.

Drive chain slack:

50.0–60.0 mm (1.97–2.36 in)

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

TIP

When checking the drive chain slack, the chain tensioner should not be touching the drive chain.

EAU34318

To adjust the drive chain slack

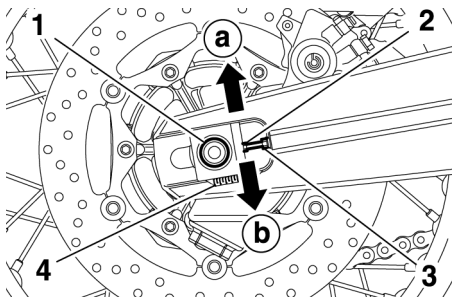
Consult a Yamaha dealer before adjusting the drive chain slack.

1. Loosen the axle nut and the lock-nut on each side of the swingarm.
2. To tighten the drive chain, turn the drive chain slack adjusting bolt on each side of the swingarm in direction (a). To loosen the drive chain, turn the adjusting bolt on each side of the swingarm in direction (b), and then push the rear wheel forward. **NOTICE: Improper drive chain slack will overload the engine as well as other vital parts of the motorcycle and can lead to chain slippage or breakage. To prevent this from**

PERIODIC MAINTENANCE AND ADJUSTMENT

occurring, keep the drive chain slack within the specified limits.

[ECA10572]



1. Axle nut
2. Drive chain slack adjusting bolt
3. Locknut
4. Alignment marks

TIP

Using the alignment marks on each side of the swingarm, make sure that both drive chain pullers are in the same position for proper wheel alignment.

3. Tighten the axle nut, then the locknuts to their specified torques.

Tightening torques:

- Axle nut:
104 Nm
- Locknut:
16 Nm

4. Make sure that the drive chain pullers are in the same position, the drive chain slack is correct, and the drive chain moves smoothly.

EAU23026

Cleaning and lubricating the drive chain

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

ECA10584

NOTICE

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

1. Clean the drive chain with kerosene and a small soft brush.
NOTICE: To prevent damaging the O-rings, do not clean the drive chain with steam cleaners, high-pressure washers or inappropriate solvents. [ECA11122]
2. Wipe the drive chain dry.
3. Thoroughly lubricate the drive chain with a special O-ring chain lubricant. **NOTICE: Do not use engine oil or any other lubricants for the drive chain, as they**

PERIODIC MAINTENANCE AND ADJUSTMENT

may contain substances that could damage the O-rings.

[ECA11112]

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

Checking and lubricating the throttle grip and cable

EAU49921

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.

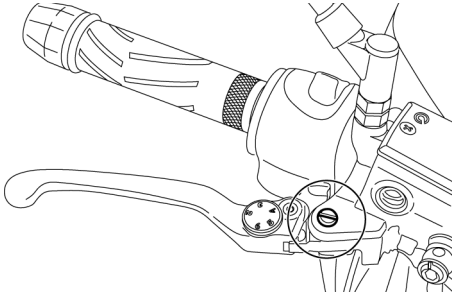
PERIODIC MAINTENANCE AND ADJUSTMENT

Checking and lubricating the brake and clutch levers

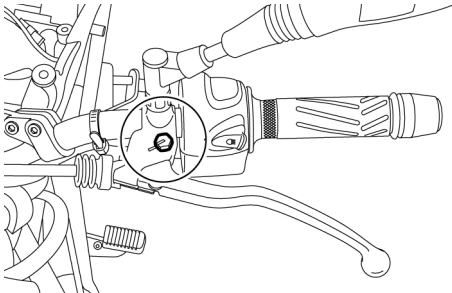
EAU23144

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

Brake lever



Clutch lever



Recommended lubricants:

Brake lever:

Silicone grease

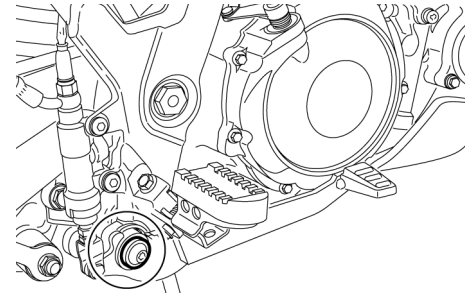
Clutch lever:

Lithium-soap-based grease

Checking and lubricating the brake pedal

EAU23185

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



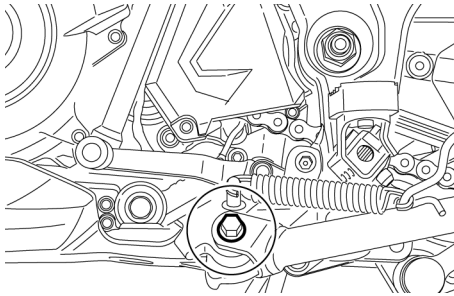
Recommended lubricant:

Lithium-soap-based grease

PERIODIC MAINTENANCE AND ADJUSTMENT

Checking and lubricating the sidestand

EAU23203



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

EWA10732

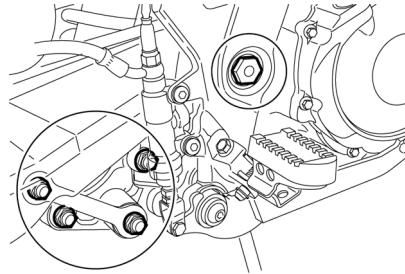
WARNING

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

Recommended lubricant:
Lithium-soap-based grease

Lubricating the rear suspension

EAU23252



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

Recommended lubricant:
Lithium-soap-based grease

Lubricating the swingarm pivots

EAUM1653

The swingarm pivots must be lubricated by a Yamaha dealer at the intervals specified in the periodic maintenance and lubrication chart.

Recommended lubricant:
Lithium-soap-based grease

PERIODIC MAINTENANCE AND ADJUSTMENT

EAU23273

Checking the front fork

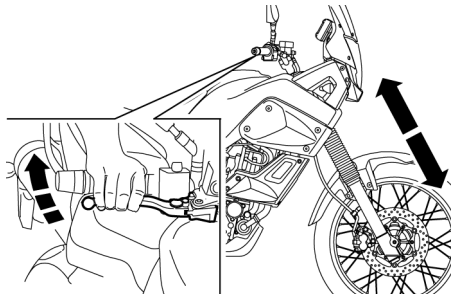
The condition and operation of the front fork must be checked as follows at the intervals specified in the periodic maintenance and lubrication chart.

To check the condition

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

To check the operation

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



ECA10591

NOTICE

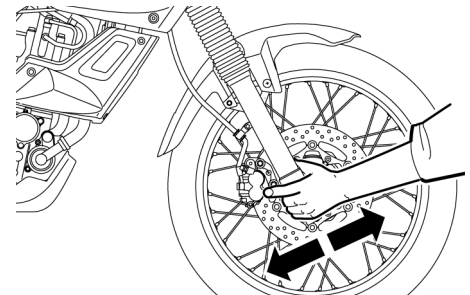
If any damage is found or the front fork does not operate smoothly, have a Yamaha dealer check or repair it.

EAU23285

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.

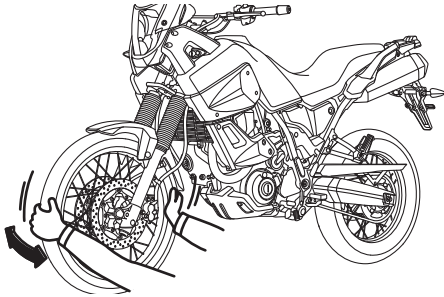
1. Raise the front wheel off the ground. (See page 6-35.) **WARNING! To avoid injury, securely support the vehicle so there is no danger of it falling over.** [EWA10752]
2. Hold the lower ends of the front fork legs and try to move them forward and backward. If any free play can be felt, have a Yamaha dealer check or repair the steering.



PERIODIC MAINTENANCE AND ADJUSTMENT

Checking the wheel bearings

EAU23292



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.

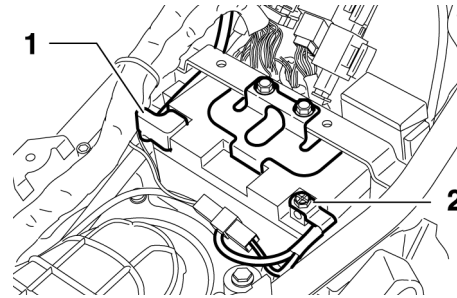
Battery

EAUS1913

To access the battery (XTZ660Z):

The battery is located under the seat. (See page 3-16.)

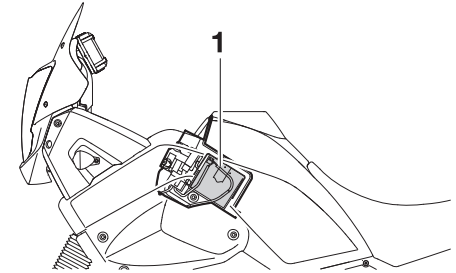
Remove the battery bracket by removing the bolts.



1. Positive battery terminal
2. Holder
3. Bolt
4. Negative battery terminal

Battery (XTZ660ZA):

The battery is located under the fuel tank.



1. Battery

Have a Yamaha dealer access the battery.

These models are 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.

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**

EWA10761

PERIODIC MAINTENANCE AND ADJUSTMENT

working near batteries. In case of contact, administer the following **FIRST AID**.

- **EXTERNAL:** Flush with plenty of water.
- **INTERNAL:** Drink large quantities of water or milk and immediately call a physician.
- **EYES:** Flush with water for 15 minutes and seek prompt medical attention.
- Batteries produce explosive hydrogen gas. Therefore, keep sparks, flames, cigarettes, etc., away from the battery and provide sufficient ventilation when charging it in an enclosed space.
- **KEEP THIS AND ALL BATTERIES OUT OF THE REACH OF CHILDREN.**

ECA10621

NOTICE

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

To charge the battery:

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

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 the key is turned to “OFF”, then disconnect the negative lead before disconnecting the positive lead.

[ECA16303]

2. If the battery will be stored for more than two months, check it at least once a month and fully charge it if necessary.
3. Fully charge the battery before installation. **NOTICE:** When installing the battery, be sure the key is turned to “OFF”, then connect the positive lead before connecting the negative lead. [ECA16841]
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.

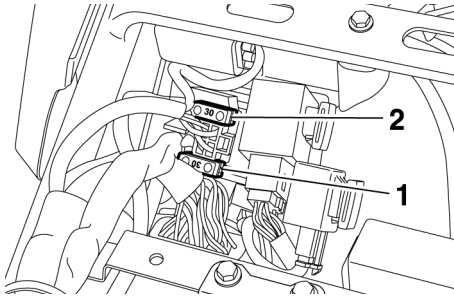
PERIODIC MAINTENANCE AND ADJUSTMENT

Replacing the fuses

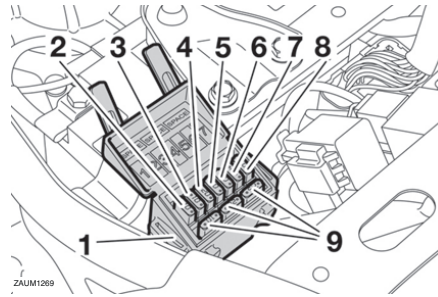
EAUS1934

To replace the fuses (XT660Z):

The main fuse and fuse box 1 (for individual circuits) are located under the seat. (See page 3-16.)



1. Main fuse
2. Spare main fuse



ZAUM1269

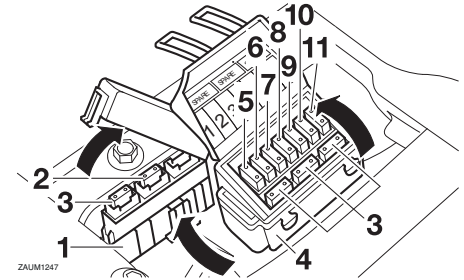
1. Fuse box 1
2. Parking lighting fuse
3. Signaling system fuse
4. Headlight fuse
5. Ignition fuse
6. ECU fuse
7. Radiator fan motor fuse
8. Backup fuse
9. Spare fuse

To replace the fuses (XT660ZA):

The main fuse and fuse box 1 (for ABS model only), which are in a different and hard-to-reach location, must be replaced by a Yamaha dealer.

Fuse box 2 (for ABS model only) and fuse box 3 (for individual circuits) are located under the seat. (See page 3-16.)

To access fuse box 2, pull it upward and then open it.



ZAUM1247

1. Fuse box 2
2. ABS control unit fuse
3. Spare fuse
4. Fuse box 3
5. Parking lighting fuse
6. Signaling system fuse
7. Headlight fuse
8. Ignition fuse
9. ECU fuse
10. Radiator fan motor fuse
11. Backup fuse

If a fuse is blown, replace it as follows.

1. Turn the key to "OFF" and turn off the electrical circuit in question.
2. Remove the blown fuse, and then install a new fuse of the specified amperage. **WARNING! Do not**

PERIODIC MAINTENANCE AND ADJUSTMENT

use a fuse of a higher amperage rating than recommended to avoid causing extensive damage to the electrical system and possibly a fire. [EWA15132]

Specified fuses:

Main fuse:

30.0 A

Parking lighting fuse:

10.0 A

Signaling system fuse:

10.0 A

Headlight fuse:

20.0 A

Ignition fuse:

10.0 A

Fuel injection system fuse:

10.0 A

Radiator fan motor fuse:

7.5 A

Backup fuse:

10.0 A

ABS motor fuse:

XT660ZA 30.0 A

ABS solenoid fuse:

XT660ZA 20.0 A

ABS control unit fuse:

XT660ZA 5.0 A

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

Replacing a headlight bulb

EAUB1583

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

ECA10651

NOTICE

Take care not to damage the following parts:

- **Headlight bulb**

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

- **Headlight lens**

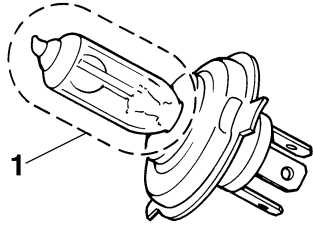
Do not affix any type of tinted film or stickers to the headlight lens.

Do not use a headlight bulb of a wattage higher than specified.

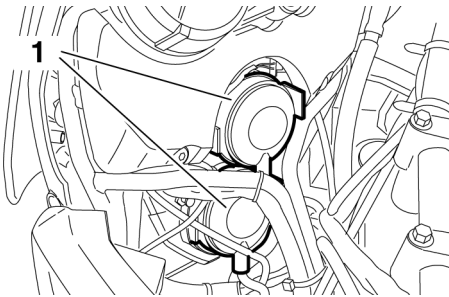
3. Turn the key to "ON" and turn on the electrical circuit in question to check if the device operates.

PERIODIC MAINTENANCE AND ADJUSTMENT

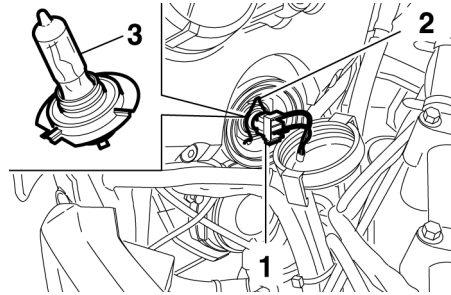
EWA10791



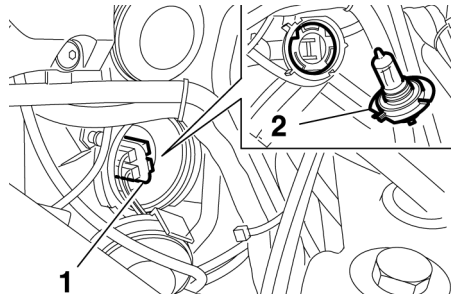
1. Do not touch the glass part of the bulb.
1. Remove the headlight bulb cover, and then disconnect the headlight coupler.



1. Headlight bulb cover



1. Headlight coupler
 2. Headlight bulb holder
 3. Headlight bulb
2. Unhook the headlight bulb holder, and then remove the defective bulb.



1. Headlight bulb holder
2. Headlight bulb

⚠ WARNING

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

3. Place a new headlight bulb into position, and then secure it with the bulb holder.
4. Connect the coupler, and then install the headlight bulb cover.
5. Have a Yamaha dealer adjust the headlight beam if necessary.

PERIODIC MAINTENANCE AND ADJUSTMENT

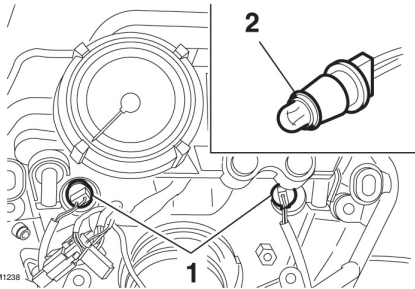
6

Replacing an auxiliary light bulb

EAU42653

This model is equipped with two auxiliary lights. If an auxiliary light bulb burns out, replace it as follows.

1. Remove panel B. (See page 6-8.)
2. Remove the auxiliary light socket (together with the bulb) by pulling it out.



1. Auxiliary light bulb socket
2. Auxiliary light bulb

3. Remove the burnt-out bulb by pulling it out.
4. Insert a new bulb into the socket.
5. Install the auxiliary light socket (together with the bulb) by pushing it in.
6. Install the panel.

Tail/brake light

EAU24182

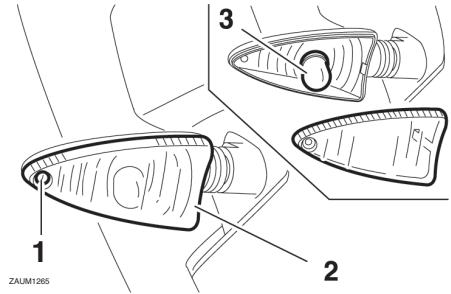
This model is equipped with an LED-type tail/brake light.

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

Replacing a turn signal light bulb

EAU24205

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



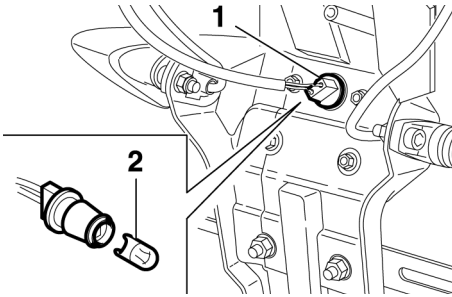
1. Screw
2. Turn signal light lens
3. Turn signal light bulb

2. Remove the burnt-out bulb by pushing it in and turning it counterclockwise.
3. Insert a new bulb into the socket, push it in, and then turn it clockwise until it stops.
4. Install the lens by installing the screw. **NOTICE: Do not over-tighten the screw, otherwise the lens may break.** [ECA11192]

Replacing the license plate light bulb

EAUJ2203

1. Remove the socket (together with the bulb) by pulling it out.



1. License plate light bulb socket
2. License plate light bulb

2. Remove the burnt-out bulb by pulling it out.
3. Insert a new bulb into the socket.
4. Install the socket (together with the bulb) by pushing it in.

Supporting the motorcycle

EAU24351

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

a jack either under each side of the frame in front of the rear wheel or under each side of the swingarm.

To service the front wheel

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

To service the rear wheel

Raise the rear wheel off the ground by using a motorcycle stand or, if a motorcycle stand is not available, by placing

PERIODIC MAINTENANCE AND ADJUSTMENT

Front wheel (for non-ABS models)

EAU44792

WARNING

EWA14841

For the ABS model, have a Yamaha dealer remove and install the wheel.

EAU56480

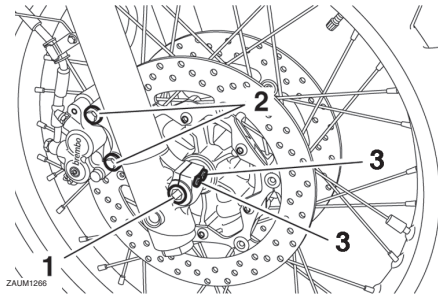
To remove the front wheel

EWA10822

WARNING

To avoid injury, securely support the vehicle so there is no danger of it falling over.

1. Loosen the front wheel axle pinch bolts, the wheel axle and the brake caliper bolts.



1. Wheel axle
2. Brake caliper bolt
3. Front wheel axle pinch bolt

2. Lift the front wheel off the ground according to the procedure in the previous section “Supporting the motorcycle”.
3. Remove the brake caliper on each side by removing the bolts.
NOTICE: Do not apply the brake after the brake calipers have been removed, otherwise the brake pads will be forced shut.

[ECA11052]

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

To install the front wheel

1. Lift the wheel up between the fork legs.
2. Insert the wheel axle.
3. Install the brake calipers by installing the bolts.

TIP

Make sure that there is enough space between the brake pads before installing the brake calipers onto the brake discs.

4. Lower the front wheel so that it is on the ground.
5. Tighten the wheel axle and the brake caliper bolts to the specified torques.

ECAB0062

NOTICE

Be sure the right brake disc is positioned exactly between the brake pads to prevent any brake drag. Tap the side of the right fork leg to position the disc correctly.

6. Tighten wheel axle pinch bolt A, and then pinch bolt B to their specified torque.

PERIODIC MAINTENANCE AND ADJUSTMENT

7. Retighten pinch bolt A to the specified torque.

Tightening torques:

- Wheel axle:
59 Nm
- Front wheel axle pinch bolt:
18 Nm
- Brake caliper bolt:
40 Nm

8. Apply the brake lever several times, and then while holding the brake lever in, push down hard on the handlebar several times to check for proper fork operation.

Rear wheel (for non-ABS models)

EAU44802

! WARNING

EWA14841

For the ABS model, have a Yamaha dealer remove and install the wheel.

EAU56711

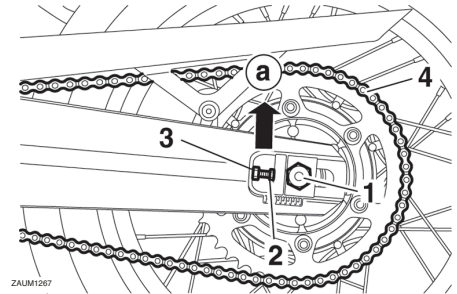
To remove the rear wheel

EWA10822

! WARNING

To avoid injury, securely support the vehicle so there is no danger of it falling over.

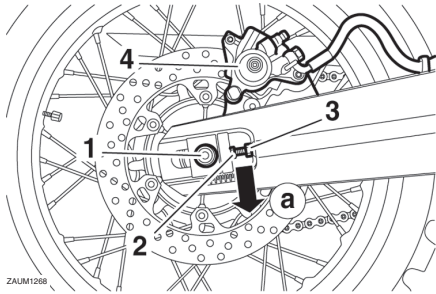
1. Loosen the axle nut.



1. Wheel axle nut
2. Drive chain slack adjusting bolt
3. Locknut
4. Drive chain

2. Lift the rear wheel off the ground according to the procedure on page 6-35.
3. Remove the axle nut.
4. Fully loosen the locknut on each side of the swingarm.
5. Turn the drive chain slack adjusting bolts fully in direction (a) and push the wheel forward.

PERIODIC MAINTENANCE AND ADJUSTMENT



1. Wheel axle
2. Drive chain slack adjusting bolt
3. Locknut
4. Brake caliper

6. Remove the drive chain from the rear sprocket.

TIP

- If the drive chain is difficult to remove, remove the wheel axle first, and then lift the wheel upward enough to remove the drive chain from the rear sprocket.
- The drive chain cannot be disassembled.

7. While supporting the brake caliper bracket, pull the wheel axle out, and then remove the wheel.

NOTICE: Do not apply the brake

after the wheel and brake disc have been removed, otherwise the brake pads will be forced shut. [ECA11073]

Tightening torque:

Axle nut:
104 Nm

To install the rear wheel

1. Install the wheel and the brake caliper bracket by inserting the wheel axle from the left-hand side.

TIP

- Make sure that the slot in the brake caliper bracket is fit over the retainer on the swingarm.
- Make sure that there is enough space between the brake pads before installing the wheel.

2. Install the drive chain onto the rear sprocket.
3. Install the axle nut, and then lower the rear wheel so that it is on the ground.
4. Adjust the drive chain slack. (See page 6-23.)
5. Apply the rear brake several times, and then tighten the axle nut to the specified torque.

PERIODIC MAINTENANCE AND ADJUSTMENT

EAU25872

Troubleshooting

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

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

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

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.

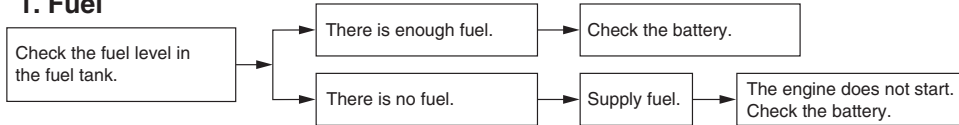
PERIODIC MAINTENANCE AND ADJUSTMENT

EAU42706

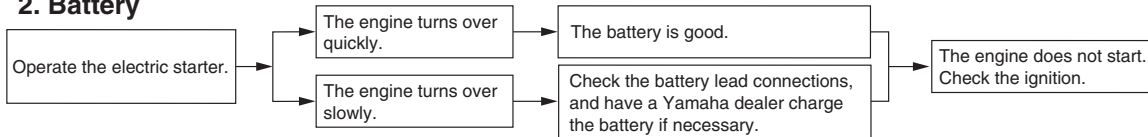
Troubleshooting charts

Starting problems or poor engine performance

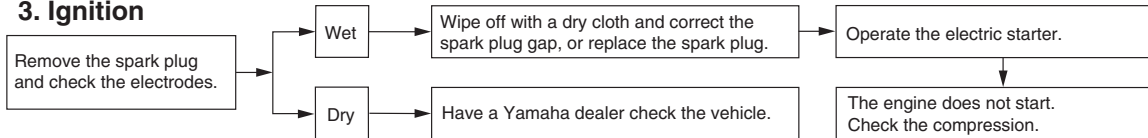
1. Fuel



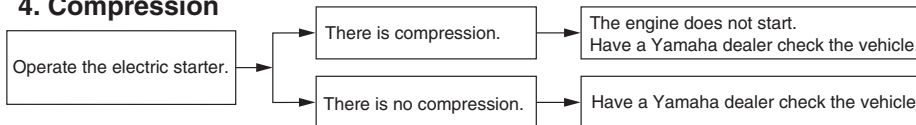
2. Battery



3. Ignition



4. Compression



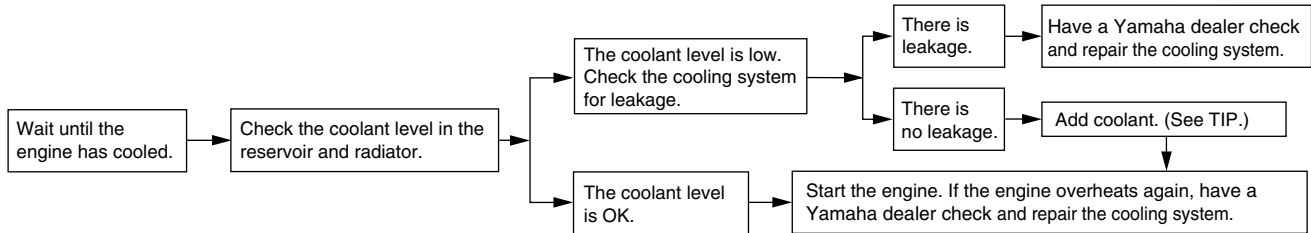
PERIODIC MAINTENANCE AND ADJUSTMENT

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.



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.

MOTORCYCLE CARE AND STORAGE

Matte color caution

EAU37834

ECA15193

NOTICE

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

Care

EAU26005

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

Before cleaning

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

ucts onto seals, gaskets, sprockets, the drive chain and wheel axles. Always rinse the dirt and degreaser off with water.

Cleaning

ECA10773

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 instructed. 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**

MOTORCYCLE CARE AND STORAGE

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 motorcycles equipped with a windshield: Do not use strong cleaners or hard sponges as they will cause dulling or scratching. Some cleaning compounds for plastic may leave scratches on the wind-

shield. 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 motorcycle 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.

After cleaning

1. Dry the motorcycle with a chamois or an absorbing cloth.
2. Immediately dry the drive chain and lubricate it to prevent it from rusting.
3. Use a chrome polish to shine chrome, aluminum and stainless-steel parts, including the exhaust system. (Even the thermally induced discoloring of stainless-steel exhaust systems can be removed through polishing.)

MOTORCYCLE CARE AND STORAGE

ECA10801

4. To prevent corrosion, it is recommended to apply a corrosion protection spray on all metal, including chrome- and nickel-plated, surfaces.
5. Use spray oil as a universal cleaner to remove any remaining dirt.
6. Touch up minor paint damage caused by stones, etc.
7. Wax all painted surfaces.
8. Let the motorcycle dry completely before storing or covering it.

EWA11132

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

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.
-

EAM1903

Storage

Short-term

Always store your motorcycle 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 motorcycle.

ECA10811

NOTICE

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

Long-term

Before storing your motorcycle for several months:

1. Follow all the instructions in the "Care" section of this chapter.

MOTORCYCLE CARE AND STORAGE

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 cylinder, piston rings, etc. from corrosion.
 - a. Remove the spark plug cap and spark plug.
 - b. Pour a teaspoonful of engine oil into the spark plug bore.
 - c. Install the spark plug cap onto the spark plug, and then place the spark plug on the cylinder head so that the electrodes are grounded. (This will limit sparking during the next step.)
 - d. Turn the engine over several times with the starter. (This will coat the cylinder wall with oil.)
 - e. Remove the spark plug cap from the spark plug, and then install the spark plug and the spark plug cap. **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 side-stand/centerstand.
 5. Check and, if necessary, correct the tire air pressure, and then lift the motorcycle so that both of its wheels are off the ground. Alternatively, turn the wheels a little every month in order to prevent the tires from becoming degraded in one spot.
 6. Cover the muffler outlets with plastic bags to prevent moisture from entering them.
 7. Remove the battery and fully charge it. Store it in a cool, dry place and charge it once a month. Do not store the battery in an excessively cold or warm place [less than 0 °C (30 °F) or more than 30 °C (90 °F)]. For more information on storing the battery, see page 6-29.
- TIP** _____
Make any necessary repairs before storing the motorcycle.

SPECIFICATIONS

Dimensions:

- Overall length:
2246 mm (88.4 in)
- Overall width:
896 mm (35.3 in)
- Overall height:
XT660Z 1477 mm (58.1 in)
XT660ZA 1450 mm (57.1 in)
- Seat height:
XT660Z 896 mm (35.3 in)
XT660ZA 865 mm (34.1 in)
- Wheelbase:
XT660Z 1500 mm (59.1 in)
XT660ZA 1505 mm (59.3 in)
- Ground clearance:
XT660Z 260 mm (10.24 in)
XT660ZA 205 mm (8.07 in)
- Minimum turning radius:
XT660Z 1958 mm (77.1 in)
XT660ZA 1980 mm (78.0 in)

Weight:

- Curb weight:
XT660Z 206 kg (454 lb)
XT660ZA 215 kg (474 lb)

Engine:

- Engine type:
Liquid cooled 4-stroke, SOHC
- Cylinder arrangement:
Single cylinder
- Displacement:
660 cm³
- Bore × stroke:
100.0 × 84.0 mm (3.94 × 3.31 in)

Compression ratio:

10.0 : 1

Starting system:

Electric starter

Lubrication system:

Dry sump

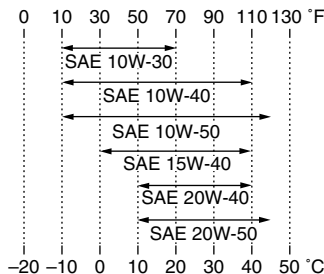
Engine oil:

Recommended brand:

YAMALUBE

Type:

SAE 10W-30, 10W-40, 15W-40, 20W-40 or
20W-50



Recommended engine oil grade:

API service SE type or higher, JASO
standard MA

Engine oil quantity:

- Without oil filter element replacement:
2.50 L (2.64 US qt, 2.20 Imp.qt)
- With oil filter element replacement:
2.60 L (2.75 US qt, 2.29 Imp.qt)

Coolant quantity:

Coolant reservoir (up to the maximum level mark):

0.50 L (0.53 US qt, 0.44 Imp.qt)

Radiator (including all routes):

1.70 L (1.80 US qt, 1.50 Imp.qt)

Air filter:

Air filter element:

Dry element

Fuel:

Recommended fuel:

Premium unleaded gasoline only

Fuel tank capacity:

23.0 L (6.07 US gal, 5.06 Imp.gal)

Fuel reserve amount:

- XT660Z 6.7 L (1.77 US gal, 1.47 Imp.gal)
- XT660ZA 5.8 L (1.53 US gal, 1.28 Imp.gal)

Fuel injection:

Throttle body:

ID mark:

5YK2 11

Spark plug(s):

Manufacturer/model:

NGK/CR7E

Spark plug gap:

0.7–0.8 mm (0.028–0.031 in)

Clutch:

Clutch type:

Wet, multiple-disc

Transmission:

Primary reduction ratio:

75/36 (2.083)

Final drive:

Chain

Secondary reduction ratio:
45/15 (3.000)
Transmission type:
Constant mesh 5-speed

Operation:
Left foot operation

Gear ratio:
1st:
30/12 (2.500)
2nd:
26/16 (1.625)
3rd:
23/20 (1.150)
4th:
20/22 (0.909)
5th:
20/26 (0.769)

Chassis:

Frame type:
Diamond
Caster angle:
28.00 °

Trail:
XT660Z 113 mm (4.4 in)
XT660ZA 120 mm (4.7 in)

Front tire:

Type:
With tube
Size:
XT660Z 90/90-21 M/C 54S(METZELER)-
54T(MICHELIN)
XT660ZA 90/90-21 M/C 54S(PIRELLI)

Manufacturer/model:
XT660Z METZELER/TOURANCE FRONT
XT660ZA PIRELLI/SCORPION TRAIL

Manufacturer/model:
XT660Z MICHELIN/SIRAC

Rear tire:

Type:
With tube
Size:
XT660Z 130/80-17 M/C 65S(METZELER)-
65T(MICHELIN)
XT660ZA 130/80-17 M/C 65S(PIRELLI)
Manufacturer/model:
XT660Z METZELER/TOURANCE FRONT
XT660ZA PIRELLI/SCORPION TRAIL
Manufacturer/model:
XT660Z MICHELIN/SIRAC

Loading:

Maximum load:
190 kg (419 lb)
(Total weight of rider, passenger, cargo
and accessories)

Tire air pressure (measured on cold tires):

Loading condition:
0–90 kg (0–198 lb)
Front:
210 kPa (2.10 kgf/cm², 30 psi)
Rear:
230 kPa (2.30 kgf/cm², 33 psi)
Loading condition:
90–190 kg (198–419 lb)

Front:
XT660Z 210 kPa (2.10 kgf/cm², 30 psi)
XT660ZA 230 kPa (2.30 kgf/cm², 33 psi)

Rear:
XT660Z 230 kPa (2.30 kgf/cm², 33 psi)
XT660ZA 250 kPa (2.50 kgf/cm², 36 psi)

Off-road riding:

Front:
XT660Z 200 kPa (2.00 kgf/cm², 29 psi)

Rear:
XT660Z 200 kPa (2.00 kgf/cm², 29 psi)

High-speed riding:

Front:
210 kPa (2.10 kgf/cm², 30 psi)

Rear:
230 kPa (2.30 kgf/cm², 33 psi)

Front wheel:

Wheel type:
Spoke wheel
Rim size:
21 x 1.85

Rear wheel:

Wheel type:
Spoke wheel
Rim size:
17 x 2.75

Front brake:

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

SPECIFICATIONS

Rear brake:

Type:

Single disc brake

Operation:

Right foot operation

Specified brake fluid:

DOT 4

Front suspension:

Type:

Telescopic fork

Spring/shock absorber type:

Coil spring/oil damper

Wheel travel:

XT660Z 210 mm (8.3 in)

XT660ZA 160 mm (6.3 in)

Rear suspension:

Type:

Swingarm (link suspension)

Spring/shock absorber type:

Coil spring/gas-oil damper

Wheel travel:

XT660Z 200 mm (7.9 in)

XT660ZA 145 mm (5.7 in)

Electrical system:

Ignition system:

TCI

Charging system:

AC magneto

Battery:

Model:

XT660Z GT9B-4

XT660ZA YTZ10S

Voltage, capacity:

XT660Z 12 V, 8.0 Ah

XT660ZA 12 V, 8.6 Ah

Headlight:

Bulb type:

Halogen bulb

Bulb voltage, wattage × quantity:

Headlight:

12 V, 55.0 W × 2

Tail/brake light:

LED

Front turn signal light:

12 V, 10.0 W × 2

Rear turn signal light:

12 V, 10.0 W × 2

Auxiliary light:

12 V, 3.0 W × 2

License plate light:

12 V, 5.0 W × 1

Meter lighting:

LED

Neutral indicator light:

LED

High beam indicator light:

LED

Turn signal indicator light:

LED

Coolant temperature warning light:

LED

Engine trouble warning light:

LED

ABS warning light:

XT660ZA LED

Immobilizer system indicator light:

LED

Fuses:

Main fuse:

30.0 A

Headlight fuse:

20.0 A

Signaling system fuse:

10.0 A

Ignition fuse:

10.0 A

Parking lighting fuse:

10.0 A

Radiator fan motor fuse:

7.5 A

Fuel injection system fuse:

10.0 A

ABS control unit fuse:

XT660ZA 5.0 A

ABS motor fuse:

XT660ZA 30.0 A

ABS solenoid fuse:

XT660ZA 20.0 A

Backup fuse:

10.0 A

Identification numbers

EAU40793

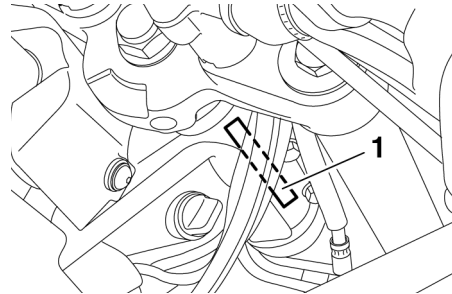
Record the vehicle identification number and model label information in the spaces provided below for assistance when ordering spare parts from a Yamaha dealer or for reference in case the vehicle is stolen.

VEHICLE IDENTIFICATION NUMBER:

MODEL LABEL INFORMATION:

Vehicle identification number

EAU26401



1. Vehicle identification number

The vehicle identification number is stamped into the steering head pipe. Record this number in the space provided.

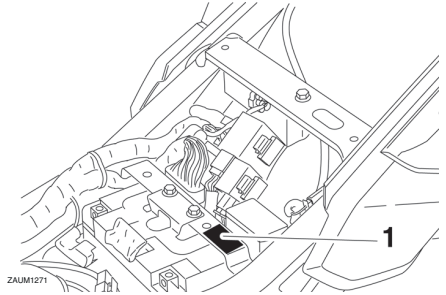
TIP

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

Model label

EAU26542

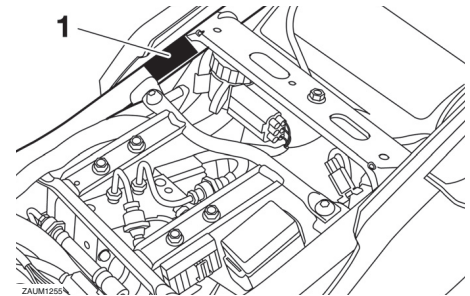
XT660Z



ZAUM1271

1. Model label

XT660ZA



ZALUM1255

1. Model label

The model label is affixed to the frame under the seat. (See page 3-16.) Record the information on this label in the

CONSUMER INFORMATION

space provided. This information will be needed when ordering spare parts from a Yamaha dealer.

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