YAMAHA

⚠ Read this manual carefully before operating this vehicle.

OWNER'S MANUAL

FZ-S

FZN150D

2GS-F8199-EC

EAU46094

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

EAU10103

Welcome to the Yamaha world of motorcycling!
As the owner of the FZ-S (FZN150D), 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 FZ-S (FZN150D). 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.

EWA10032

⚠ WARNING

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.

EAUE0011

FZ-S (FZN150D)
OWNER'S MANUAL
©2018 by India Yamaha Motor Pvt. Ltd.
1st edition, February 2018
All rights reserved.
Any reprinting or unauthorized use without the written permission of India Yamaha Motor Pvt. Ltd. is expressly prohibited.
Printed in India.

Table of contents

Location of important labels 1-1

Safety information 2-1

Description 3-1
- Left view 3-1
- Right view 3-2
- Controls and instruments 3-3

Instrument and control functions ... 4-1
- Main switch/steering lock 4-1
- Indicator lights and warning light ... 4-2
- Multi-function display 4-3
- Handlebar switches 4-5
- Clutch lever 4-6
- Shift pedal 4-6
- Brake lever 4-6
- Brake pedal 4-7
- Fuel tank cap 4-7
- Fuel 4-8
- Catalytic converter 4-9
- Seats 4-9
- Helmet holder 4-11
- Sidestand 4-11
- Starting circuit cut-off system 4-12

For your safety – pre-operation checks 5-1

Operation and important riding points 6-1
- Starting the engine 6-1
- Shifting 6-2
- Tips for reducing fuel consumption 6-2
- Engine break-in 6-3
- Parking 6-3

Periodic maintenance and adjustment 7-1
- Owner's tool kit 7-1
- Periodic maintenance chart for the emission control system 7-2
- General maintenance and lubrication chart 7-3
- Removing and installing panels 7-7
- Checking the spark plug 7-8
- Canister 7-9
- Engine oil and oil filter element 7-9
- Cleaning the air filter element 7-12
- Adjusting the engine idling speed 7-13
- Adjusting the throttle grip free play 7-14
- Valve clearance 7-14
- Tires 7-15
- Cast wheels 7-16
- Adjusting the clutch lever free play 7-17
- Adjusting the brake pedal free play 7-18
- Brake light switches 7-18
- Checking the front brake pads and rear brake shoes 7-19
- Checking the brake fluid level 7-20
- Changing the brake fluid 7-21
- Drive chain slack 7-21
- Cleaning and lubricating the drive chain 7-23
- Checking and lubricating the cables 7-23
- Checking and lubricating the throttle grip and cable end 7-24
- Checking and lubricating the brake and shift pedals 7-24
- Checking and lubricating the brake and clutch levers 7-25
- Checking and lubricating the centerstand and sidestand 7-25
- Lubricating the swingarm pivots 7-26
- Checking the front fork 7-26
- Checking the steering 7-27
- Checking the wheel bearings 7-27
- Battery 7-28
- Replacing the fuse 7-29
- Replacing a headlight bulb 7-30
- Auxiliary light bulb 7-30

Replacing the tail/brake light bulb 7-31
Replacing a turn signal light bulb 7-31
Front wheel 7-32
Rear wheel 7-34
Troubleshooting 7-36
Troubleshooting chart 7-37

Motorcycle care and storage 8-1
Matte color caution 8-1
Care 8-1
Storage 8-3

Specifications 9-1

Consumer information 10-1
Identification numbers 10-1

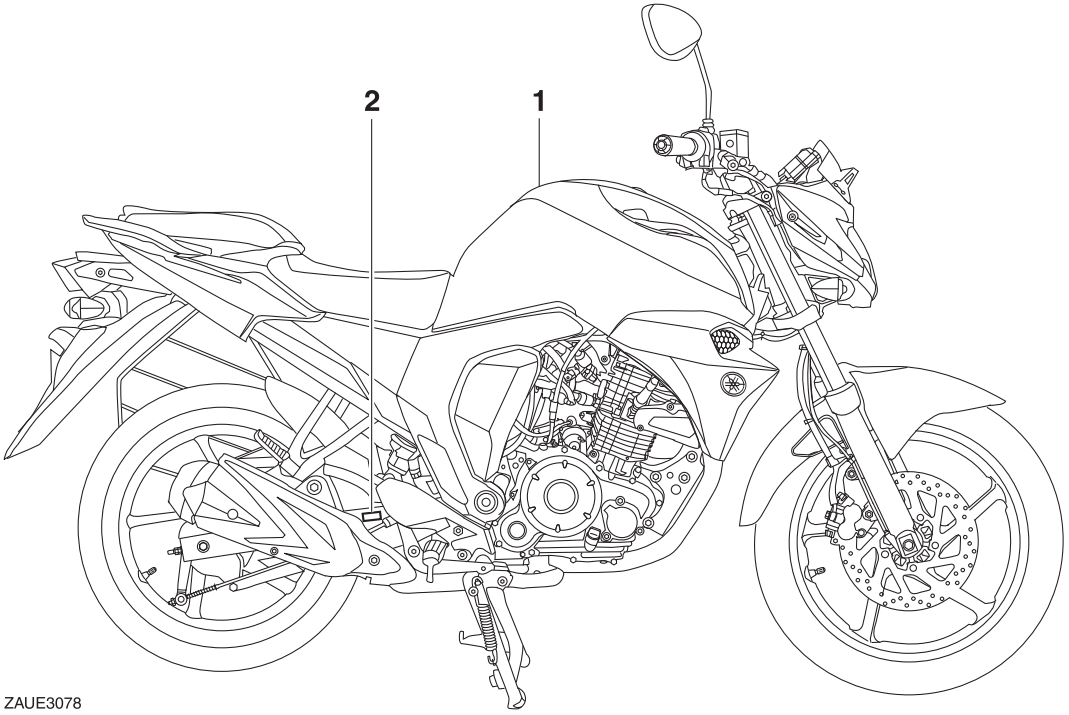
Index 11-1

Location of important labels

EAU10385

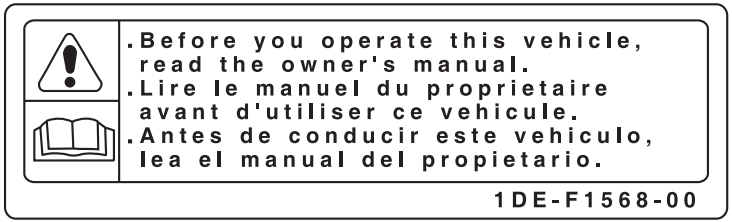
1

Read and understand all of the labels on your vehicle. They contain important information for safe and proper operation of your vehicle. Never remove any labels from your vehicle. If a label becomes difficult to read or comes off, a replacement label is available from your Yamaha dealer.

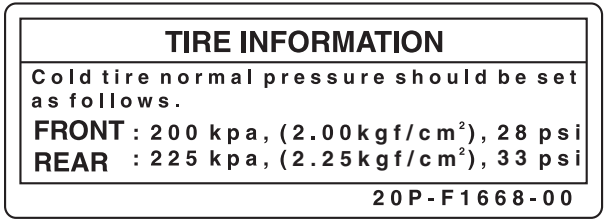


ZAUE3078

1


.Before you operate this vehicle,
read the owner's manual.
.Lire le manuel du proprietaire
avant d'utiliser ce vehicule.
.Antes de conducir este vehiculo,
lea el manual del propietario.
1DE-F1568-00

2


TIRE INFORMATION
Cold tire normal pressure should be set as follows.
FRONT : 200 kpa, (2.00kgf/cm2), 28 psi
REAR : 225 kpa, (2.25kgf/cm2), 33 psi
20P-F1668-00

ZAUE3012

EAU1028C

2

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 5-1 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 appears to be very effective in reducing the chance of this type of accident.

Therefore:

- Wear a brightly colored jacket.
- Use extra caution when you are approaching and passing through intersections, since intersections are the most likely places for 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.
- This motorcycle is designed for on-road use only. It is not suitable for off-road use.

Protective Apparel

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

- Always wear an approved helmet.
- Wear a face shield or goggles. Wind in your unprotected eyes could contribute to an impairment of vision 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.

Avoid Carbon Monoxide Poisoning

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

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

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

Loading

Adding accessories or cargo to your 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:
198 kg (437 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.

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. See page 7-15 for tire specifications and for information on servicing and replacing your tires.

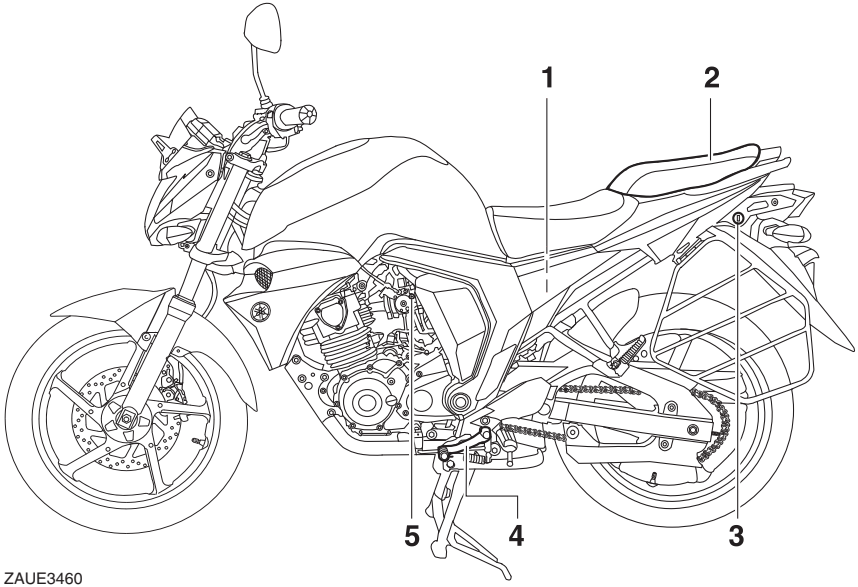
Transporting the Motorcycle

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.
- Shift the transmission into 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.

EAU10411

Left view

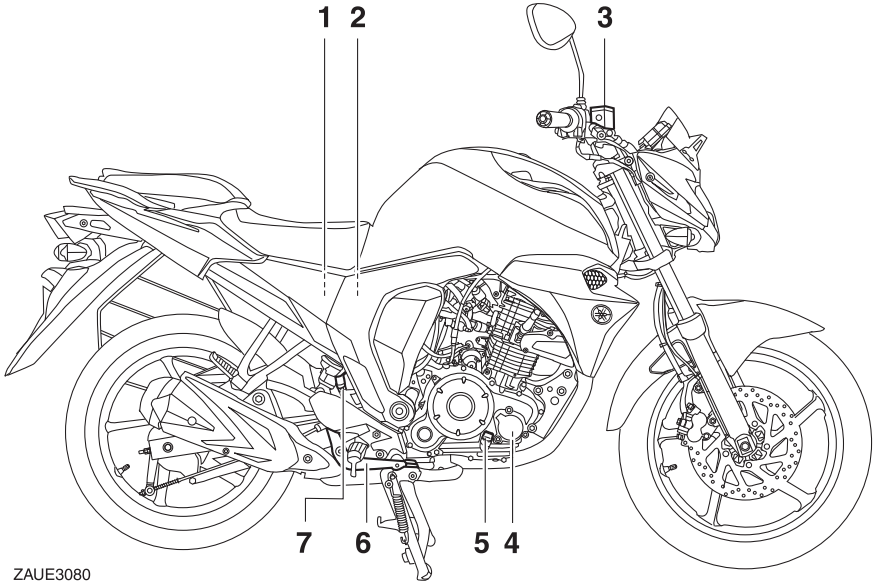


ZAUE3460

1. Air filter element (page 7-12)
2. Owner's tool kit (page 7-1)
3. Seat lock (page 4-9)
4. Shift pedal (page 4-6)
5. Idle adjusting screw (page 7-13)

EAU10421

Right view

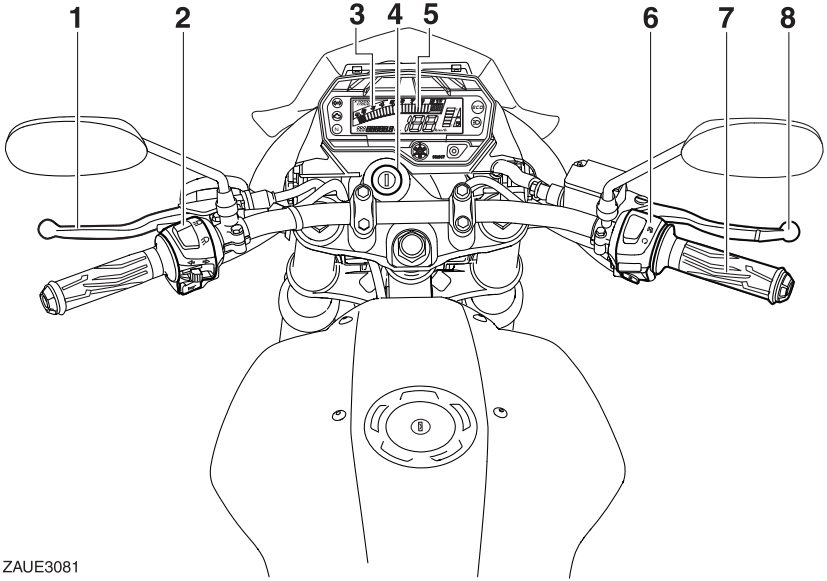


ZAUE3080

1. Battery (page 7-28)
2. Fuse (page 7-29)
3. Brake fluid reservoir (page 7-20)
4. Engine oil filter element (page 7-9)
5. Engine oil dipstick (page 7-9)
6. Brake pedal (page 4-7)
7. Rear brake light switch (page 7-18)

EAU10431

Controls and instruments

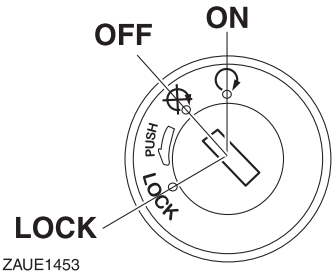


ZAUE3081

1. Clutch lever (page 4-6)
2. Left handlebar switches (page 4-5)
3. Multi-function display (page 4-3)
4. Main switch/steering lock (page 4-1)
5. Tachometer
6. Right handlebar switches (page 4-5)
7. Throttle grip (page 7-14)
8. Brake lever (page 4-6)

Main switch/steering lock

EAU10462



ZAUE1453

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

EAUE3560

∩ (on)

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

TIP

The headlight, meter lighting, taillight and auxiliary light stays on even if engine stop switch turn to "⊠". The headlight, meter lighting, taillight and auxiliary light will turn off when the key is turned to "⊠".

EAU54301

⊠ (off)

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

EWA16371

⚠ WARNING

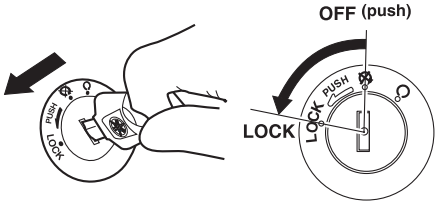
Never turn the key to "⊠" or "LOCK" while the vehicle is moving. Otherwise the electrical systems will be switched off, which may result in loss of control or an accident.

EAU79610

LOCK

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

To lock the steering



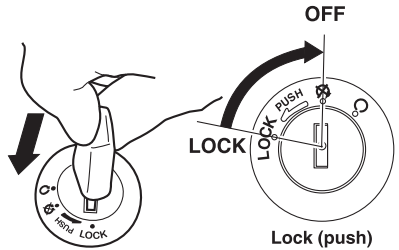
ZAUE2876

1. Turn the handlebars all the way to the left or right.
2. With the key in the "⊠" position, push the key in and turn it to "LOCK".
3. Remove the key.

TIP

If the steering will not lock, try turning the handlebars slightly left or right.

To unlock the steering

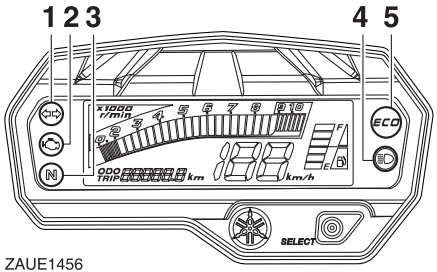


ZAUE2877

From the “LOCK” position, push the key and turn it to “⊗”.

EAU1100E

Indicator lights and warning light



ZAUE1456

1. Turn signal indicator light “⇦ ⇨”
2. Engine trouble warning light “”
3. Neutral indicator light “ **N** ”
4. High beam indicator light “≣D”
5. Eco indicator light “ECO”

EAU11022

Turn signal indicator light “⇦ ⇨”

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

EAU11061

Neutral indicator light “ N ”

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

EAU11081

High beam indicator light “≣D”

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

EAUE0261

Engine trouble warning light “”

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.

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.

4

EAUE2572

Eco indicator light "ECO"

This indicator light comes on when the vehicle is being operated in an environmentally friendly, fuel-efficient manner. The indicator light goes off when the vehicle is stopped.

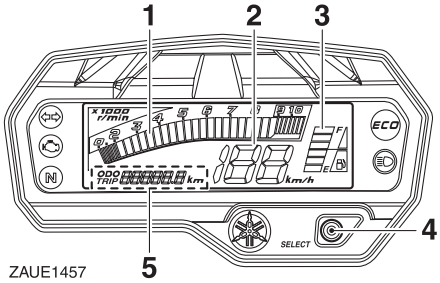
TIP

Consider the following tips to reduce fuel consumption:

- Avoid high engine speeds during acceleration.
- Travel at a constant speed.
- Select the transmission gear that is appropriate for the vehicle speed.

EAUE2474

Multi-function display



ZAUE1457

1. Tachometer
2. Speedometer
3. Fuel meter
4. Selection button "SELECT"
5. Odometer/tripmeters

EWA12313

⚠ WARNING

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

The multi-function display is equipped with the following:

- a speedometer
- a tachometer
- an odometer
- a tripmeter
- a fuel meter

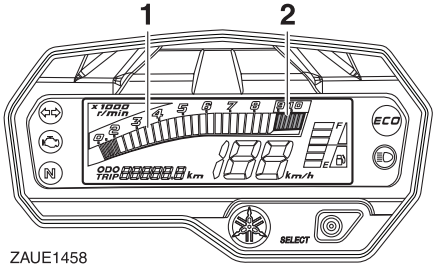
TIP

Be sure to turn the key to "ON" before using the "SELECT" button.

Speedometer

The speedometer shows the vehicle's traveling speed in kilometers per hour (km/h).

Tachometer



ZAUE1458

1. Tachometer
2. Tachometer red zone

The tachometer shows the engine speed in revolutions per minute (rpm) x 1000. The tachometer is used to monitor the engine speed and keep it within the ideal power range.
When the key is turned to "ON", all the tachometer segments will come on and then go off in order to test the electrical circuit.

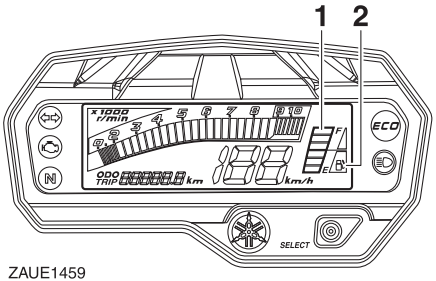
ECA10032

NOTICE

Do not operate the engine in the tachometer red zone.
Red zone: 9000 r/min and above

Odometer and tripmeter modes
A brief push (less than one second) on the "SELECT" button alternately switches the display between the odometer mode "ODO" and tripmeter mode "TRIP".
While the display is set to tripmeter mode, a long push (more than three seconds) on the "SELECT" button will reset the tripmeter.

Fuel meter



ZAUE1459
1. Fuel meter
2. Fuel level warning indicator "⛽"

The fuel meter indicates the amount of fuel in the fuel tank. The display segments of the fuel meter disappear towards "E" (Empty) as the fuel level decreases. When approximately 2.4 L (0.63 US gal, 0.53 Imp.gal) of fuel remains in the fuel tank, the last segment of the fuel meter and the fuel level warning indicator "⛽" will start flashing. When this occurs, refuel as soon as possible.

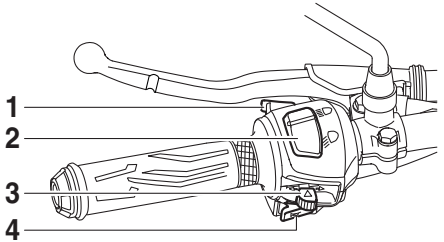
TIP

- If the last segment of fuel meter is flashing, refuel as soon as possible. If flashing continues after fueling, have a Yamaha dealer check the electrical system.
- This fuel meter is equipped with a self-diagnosis system. If a problem is detected in the electrical circuit, all segments will start flashing. If this occurs have a Yamaha dealer check the electrical system.

EAU1234M

Handlebar switches

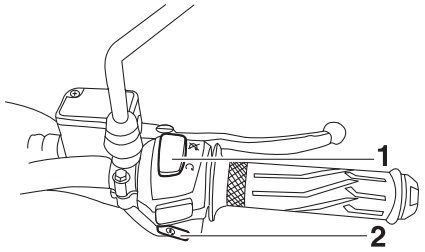
Left



ZAUE1460

1. Pass switch “PASS”
2. Dimmer switch “≣D/≣D”
3. Turn signal switch “⇦/⇨”
4. Horn switch “ ”

Right



ZAUE3016

1. Engine stop switch “◯/⊗”
2. Start switch “⊜”

EAU12362

Pass switch “PASS”

Press this switch to flash the headlight.

TIP

When the dimmer switch is set to “≣D”, the passing switch has no effect.

EAU12401

Dimmer switch “≣D/≣D”

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

EAU12461

Turn signal switch “⇦/⇨”

To signal a right-hand turn, push this switch to “⇨”. To signal a left-hand turn, push this switch to “⇦”. When released, the switch returns to the center position. To cancel the turn signal lights, push the switch in after it has returned to the center position.

EAU12501

Horn switch “ ”

Press this switch to sound the horn.

EAU12663

Engine stop switch “◯/⊗”

Set this switch to “◯” (run) before starting the engine. Set this switch to “⊗” (stop) to stop the engine in case of an emergency, such as in the event of an overturn or if the throttle is stuck.

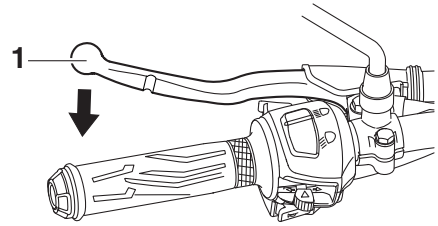
EAU12713

Start switch “⊜”

Push this switch to crank the engine with the starter. See page 6-1 for starting instructions prior to starting the engine.

EAU31642

Clutch lever



ZAUE1462

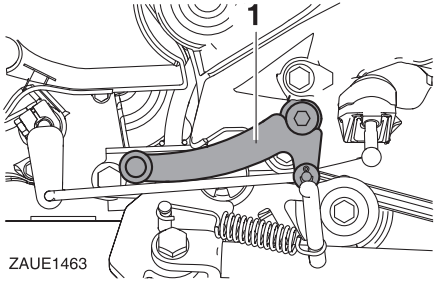
1. Clutch lever

The clutch lever is located on the left side of the handlebar. 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 starting circuit cut-off system. (See page 4-12.)

EAU12875

Shift pedal



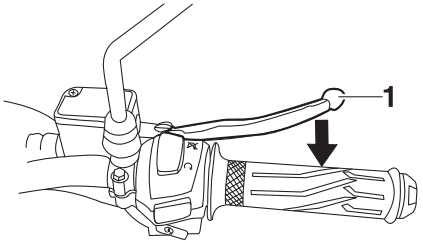
ZAUE1463

1. Shift pedal

The shift pedal is located on the left side of the motorcycle. To shift the transmission to a higher gear, move the shift pedal up. To shift to the transmission to a lower gear, move the shift pedal down. (See page 6-2.)

EAU12892

Brake lever



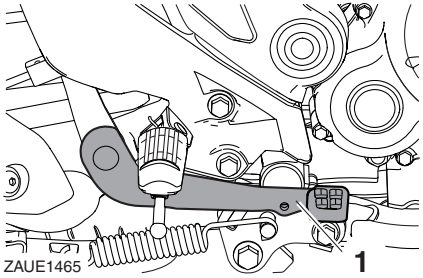
ZAUE3017

1. Brake lever

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

EAU12944

Brake pedal

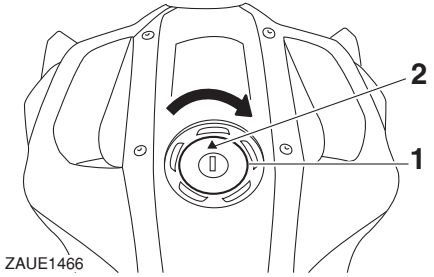


1. Brake pedal

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

EAUE0041

Fuel tank cap



1. Fuel tank cap
2. Arrow mark

To remove the fuel tank cap

Insert the key into the lock and turn it 1/4 turn clockwise. The lock will be released and the fuel tank cap can be removed.

To install the fuel tank cap

1. Push the fuel tank cap into position with the key inserted in the lock.

TIP

The mark on the fuel tank cap must be pointing forward.

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

TIP

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

EWA11142

⚠ WARNING

Make sure that the fuel tank cap is properly installed before riding. Leaking fuel is a fire hazard.

EAU13213

Fuel

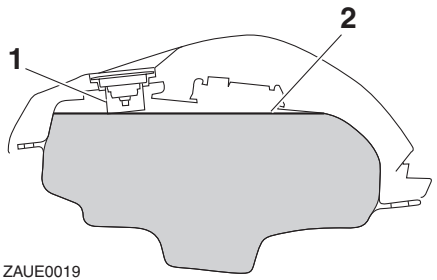
Make sure there is sufficient gasoline in the tank.

EWA10882

⚠ WARNING

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

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



ZAUE0019

1. Fuel tank filler tube
2. Maximum fuel level

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

EWA15152

⚠ WARNING

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

EAU37883

Recommended fuel:
Regular unleaded gasoline only
Fuel tank capacity:
12.0 L (3.17 US gal, 2.64 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.

4

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 unrepairable damage to the catalytic converter.

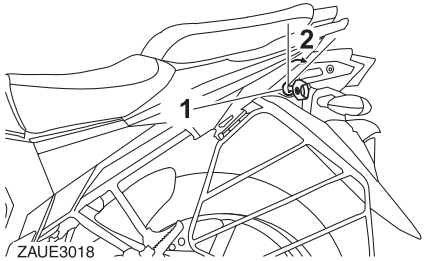
EAUE2483

Seats

Passenger seat

To remove the passenger seat

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

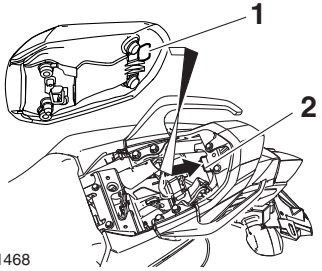


1. Passenger seat lock
2. Unlock.

2. While holding the key in the unlock position, lift the front of the passenger seat and pull it forward.

To install the passenger seat

1. Insert the projection on the rear of the passenger seat into the seat holder as shown, and then push the front of the seat down to lock it in place.



ZAUE1468

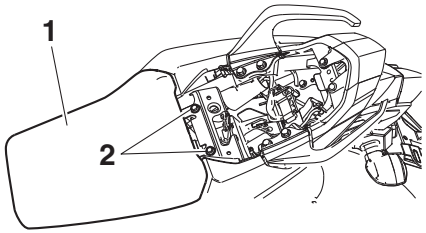
1. Projection
2. Seat holder

2. Remove the key.

Rider seat

To remove the rider seat

1. Remove the passenger seat. (See page 4-9.)
2. Remove the rider seat bolts, then lift the rear of the seat and pull it backward.

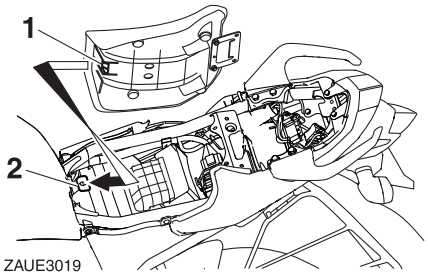


ZAUE1469

1. Rider seat
2. Bolt

To install the rider seat

1. Insert the projection on the front of the rider seat into the seat holder as shown, and then place the seat in the original position.



ZAUE3019

1. Projection
2. Seat holder

2. Install the two rider seat bolts, and then tighten the bolts to the specified torque.

Tightening torque:
Bolt:
16 N·m (1.6 kgf·m, 12 lb·ft)

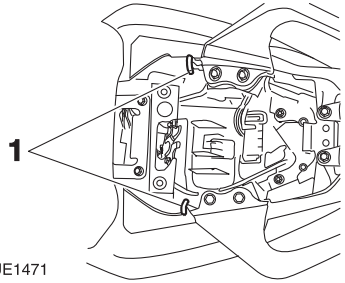
3. Install the passenger seat.

TIP

Make sure that the seats are properly secured before riding.

EAUE1311

Helmet holder



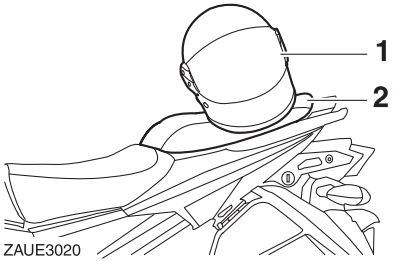
ZAUE1471

1. Helmet holder

The helmet holder is located on the bottom of the passenger seat.

To secure a helmet to the helmet holder

1. Remove the passenger seat. (See page 4-9.)
2. Attach the helmet to the helmet holder, and then securely install the passenger seat. **WARNING! Never ride with a helmet attached to the helmet holder, since the helmet may hit objects, causing loss of control and possibly an accident.** [EWA10162]



ZAUE3020

1. Helmet
2. Passenger seat

To release the helmet from the helmet holder

Remove the passenger seat, remove the helmet from the helmet holder, and then install the seat.

EAU37491

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.

EWA14191

⚠ 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.

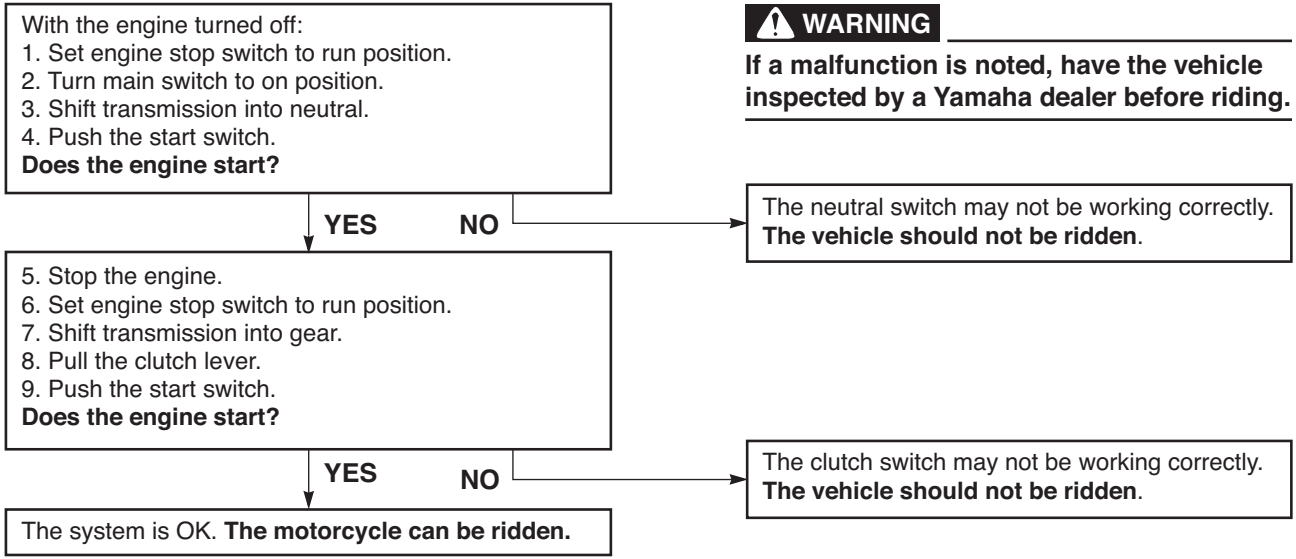
EAU15396

Starting circuit cut-off system

This system prevents in-gear engine starts unless the clutch lever is pulled. Periodically check the system via the following procedure.

TIP

- This check is most reliable if performed with a warmed-up engine.
- See pages 4-1 and 4-5 for switch operation information.



WARNING

If a malfunction is noted, have the vehicle inspected by a Yamaha dealer before riding.

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.

Before using this vehicle, check the following points:

ITEM	CHECKS	PAGE
Fuel	• Check fuel level in fuel tank. • Refuel if necessary. • Check fuel line for leakage.	4-8
Engine oil	• Check oil level in engine. • If necessary, add recommended oil to specified level. • Check vehicle for oil leakage.	7-9
Front brake	• Check operation. • If soft or spongy, have Yamaha dealer bleed hydraulic system. • Check brake pads for wear. • Replace if necessary. • Check fluid level in reservoir. • If necessary, add specified brake fluid to specified level. • Check hydraulic system for leakage.	7-19, 7-20
Rear brake	• Check operation. • Check pedal free play. • Adjust if necessary. • Check brake shoe wear. • Replace if necessary.	7-18, 7-19

For your safety – pre-operation checks

ITEM	CHECKS	PAGE
Clutch	• Check operation. • Lubricate cable end if necessary. • Check lever free play. • Adjust if necessary.	7-17
Throttle grip	• Make sure that operation is smooth. • Check throttle grip free play. • If necessary, have Yamaha dealer adjust throttle grip free play and lubricate cable end and grip housing.	7-14, 7-24
Control cables	• Make sure that operation is smooth. • Lubricate cable ends if necessary.	7-23
Drive chain	• Check chain slack. • Adjust if necessary. • Check chain condition. • Lubricate if necessary.	7-21, 7-23
Wheels and tires	• Check for damage. • Check tire condition and tread depth. • Check air pressure. • Correct if necessary.	7-15, 7-16
Brake and shift pedals	• Make sure that operation is smooth. • Lubricate pedal pivoting points if necessary.	7-24
Brake and clutch levers	• Make sure that operation is smooth. • Lubricate lever pivoting points if necessary.	7-25
Centerstand, sidestand	• Make sure that operation is smooth. • Lubricate pivots if necessary.	7-25
Chassis fasteners	• Make sure that all nuts, bolts and screws are properly tightened. • Tighten if necessary.	—
Instruments, lights, signals and switches	• Check operation. • Correct if necessary.	—

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.

EAU54461

Starting the engine

In order for the starting 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.
  See page 4-12 for more information.

1. Turn the key to "○" and make sure that the engine stop switch is set to "○".
   The engine trouble warning light should come on for a few seconds, then go off. ***NOTICE:*** **If the warning light does not go off, have a Yamaha dealer check its electrical circuit.** [ECAT1121]
2. Shift the transmission into the neutral position. The neutral indicator light should come on. If not, ask a Yamaha dealer to check the electrical circuit.
3. Start the engine by pushing the start switch.
   If the engine fails to start, release the start switch, wait a few seconds, and then try again. Each starting attempt should be as short as possible to preserve the battery. Do not crank the engine more than 10 seconds on any one attempt.

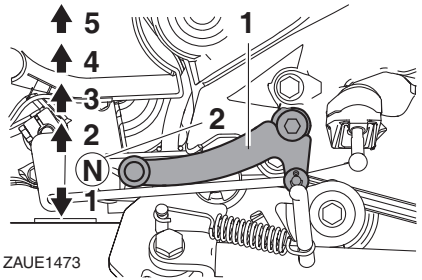
ECA11043

NOTICE

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

EAU16674

Shifting



1. Shift pedal
2. Neutral position

Shifting gears lets you control the amount of engine power available for starting off, accelerating, climbing hills, etc.
The gear positions are shown in the illustration.

TIP

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

ECA10261

NOTICE

- **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.**

EAU16811

Tips for reducing fuel consumption

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).

EAU16831

Engine break-in

There is never a more important period in the life of your engine than the period between 0 and 1000 km (600 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 1000 km (600 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.

EAU16983

0–500 km (0–300 mi)

Avoid prolonged operation above 4500 r/min.

After every hour of operation, stop the engine, and then let it cool for five to ten minutes.

Vary the engine speed from time to time. Do not operate the engine at one set throttle position.

500–1000 km (300–600 mi)

Avoid prolonged operation above 6000 r/min.

Rev the engine freely through the gears, but do not use full throttle at any time. ***NOTICE:*** **After 1000 km (600 mi) of operation, the engine oil must be changed, the oil filter cartridge or element replaced, and the oil strainer cleaned.** [ECA10322]

1000 km (600 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.**

EAU17214

Parking

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.**

EAU17246

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

The intervals given in the periodic maintenance charts should be simply considered as a general guide under normal riding conditions. However, depending on the weather, terrain, geographical location, and individual use, the maintenance intervals may need to be shortened.

EWA10322

⚠ WARNING

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

EWA15123

⚠ WARNING

Turn off the engine when performing maintenance unless otherwise specified.

- **A running engine has moving parts that can catch on body parts or clothing and electrical parts that can cause shocks or fires.**
- **Running the engine while servicing can lead to eye injury, burns, fire, or carbon monoxide poisoning – possibly leading to death. See page 2-3 for more information about carbon monoxide.**

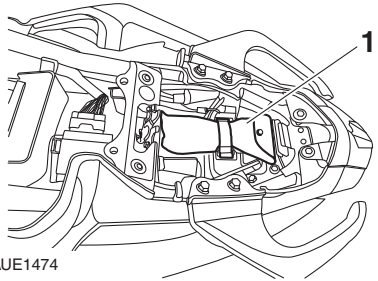
EWA15461

⚠ WARNING

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

EAUE1321

Owner's tool kit



ZAUE1474

1. Owner's tool kit

The owner's tool kit is located under the passenger seat. (See page 4-9.)

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.

EAUE0173

TIP

- From 18000 km (11000 mi), repeat the maintenance intervals starting from 3000 km (1900 mi).
- Items marked with an asterisk should be performed by a Yamaha dealer as they require special tools, data and technical skills.

EAUE0222

Periodic maintenance chart for the emission control system

NO.		ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING					
				1000 km (600 mi)	3000 km (1900 mi)	6000 km (3700 mi)	9000 km (5600 mi)	12000 km (7500 mi)	15000 km (9300 mi)
1	*	**Fuel line**	• Check fuel hoses for cracks or damage.	√	√	√	√	√	√
2		**Spark plug**	• Check condition. • Clean and regap.	√	√	√	√		√
			• Replace.					√	
3	*	**Valves**	• Check valve clearance. Adjust if necessary.	√	√	√	√	√	√
4	*	**Fuel injection**	• Adjust engine idling speed.	√	√	√	√	√	√
5	*	**Exhaust system**	• Check for leakage. • Tighten if necessary. • Replace gasket(s) if necessary.		√	√	√	√	√
6	*	**Evaporative emission control system**	• Check control system for damage. • Replace if necessary.				√		√

EAUE0885

General maintenance and lubrication chart

NO.		ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING					
				1000 km (600 mi)	3000 km (1900 mi)	6000 km (3700 mi)	9000 km (5600 mi)	12000 km (7500 mi)	15000 km (9300 mi)
1		Air filter element	• Clean.	√	√	√	√	√	√
			• Replace.	Every 12000 km (7500 mi)					
2	*	Battery	• Check voltage. • Charge if necessary.	√	√	√	√	√	√
3		Clutch	• Check operation. • Adjust.	√	√	√	√	√	√
4	*	Front brake	• Check operation, fluid level and vehicle for fluid leakage.	√	√	√	√	√	√
			• Replace brake pads.	Whenever worn to the limit					
5	*	Rear brake	• Check operation and adjust brake pedal free play.	√	√	√	√	√	√
			• Replace brake shoes.	Whenever worn to the limit					
6	*	Brake hose	• Check for cracks or damage. • Check for correct routing and clamping.	√	√	√	√	√	√
			• Replace.	Every 4 years					
7	*	Brake fluid	• Change.	Every 2 years					
8	*	Wheels	• Check runout and for damage.	√	√	√	√	√	√
9	*	Tires	• Check tread depth and for damage. • Replace if necessary. • Check air pressure. • Correct if necessary.	√	√	√	√	√	√

NO.		ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING					
				1000 km (600 mi)	3000 km (1900 mi)	6000 km (3700 mi)	9000 km (5600 mi)	12000 km (7500 mi)	15000 km (9300 mi)
10	*	**Wheel bearings**	• Check bearing for looseness or damage. Replace if necessary.	√	√	√	√	√	√
			• Lubricate with lithium-soap-based grease.	Every 10000 km (6000 mi)					
11	*	**Swingarm**	• Check operation and for excessive play.	√	√	√	√	√	√
			• Lubricate with lithium-soap-based grease.	Every 12000 km (7500 mi)					
12		**Drive chain**	• 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					
13	*	**Steering bearings**	• Check bearing play and steering for roughness.	√	√	√	√	√	√
			• Lubricate with lithium-soap-based grease.	Every 12000 km (7500 mi)					
14	*	**Chassis fasteners**	• Make sure that all nuts, bolts and screws are properly tightened.	√	√	√	√	√	√
15		**Brake lever pivot shaft**	• Lubricate with silicone grease.	√	√	√	√	√	√
16		**Brake pedal pivot shaft**	• Lubricate with lithium-soap-based grease.	√	√	√	√	√	√
17		**Clutch lever pivot shaft**	• Lubricate with lithium-soap-based grease.	√	√	√	√	√	√
18		**Shift pedal pivot shaft**	• Lubricate with lithium-soap-based grease.	√	√	√	√	√	√

NO.		ITEM	CHECK OR MAINTENANCE JOB	ODOMETER READING					
				1000 km (600 mi)	3000 km (1900 mi)	6000 km (3700 mi)	9000 km (5600 mi)	12000 km (7500 mi)	15000 km (9300 mi)
19		**Sidestand, centerstand**	• Check operation. • Lubricate with lithium-soap-based grease.	√	√	√	√	√	√
20	*	**Front fork**	• Check operation and for oil leakage. Repair if necessary.	√	√	√	√	√	√
			• Replace oil.	Every 10000 km (6000 mi)					
21	*	**Shock absorber assembly**	• Check operation and shock absorber for oil leakage.	√	√	√	√	√	√
22		**Engine oil**	• Change. (See page 7-9.)	√	√	√	√	√	√
			• Check vehicle for oil leakage.	Every 3000 km (1800 mi)					√
23		**Engine oil filter element**	• Replace.	√	√	√	√	√	√
24		**Engine oil strainer**	• Clean.	√	Every 12000 km (7500 mi)				
25	*	**Front and rear brake switches**	• Check operation.	√	√	√	√	√	√
26		**Moving parts and cable ends**	• Lubricate.	√	√	√	√	√	√
27	*	**Throttle grip**	• Check operation. • Check throttle grip free play, and adjust if necessary. • Lubricate cable end and grip housing.	√	√	√	√	√	√
28	*	**Lights, signals and switches**	• Check operation. • Adjust headlight beam.	√	√	√	√	√	√

EAUE3580

TIP

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

EAU18773

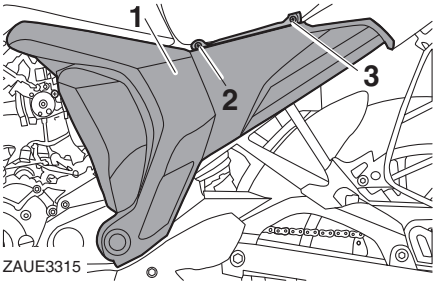
Removing and installing panels

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

EAUE3400

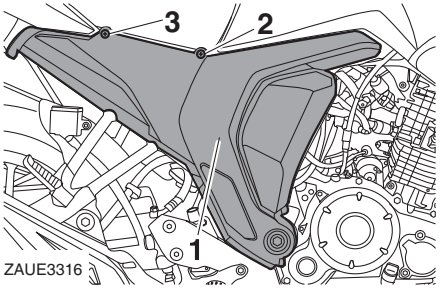
Panel A and B

To remove a panel



ZAUE3315

1. Panel A
2. Screw with washer
3. Screw

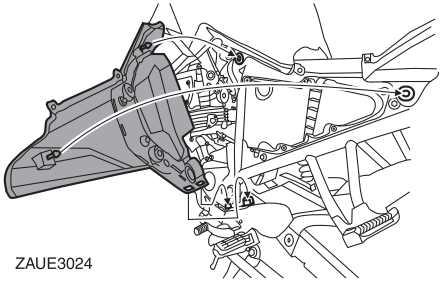


ZAUE3316

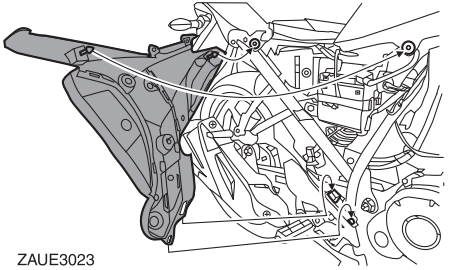
1. Panel B
2. Screw with washer
3. Screw

1. Remove the rider seat. (See page 4-9.)
2. Remove the screws and washer from the panel.
3. To remove the panel, pull the top side outward and lift up.

To install a panel



ZAUE3024



ZAUE3023

1. Place the panel in the original position, and then install the screws and washer.
2. Install the seats.

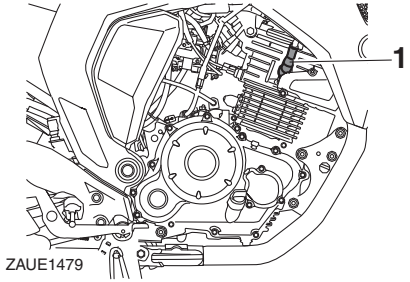
EAU19607

Checking the spark plug

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

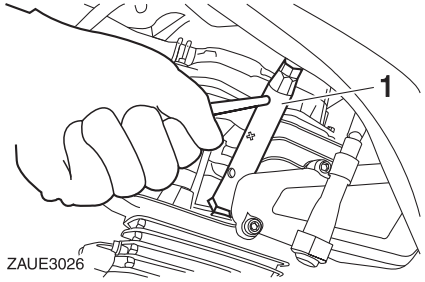
1. Remove the spark plug cap.



ZAUE1479

1. Spark plug cap

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



ZAUE3026

1. Spark plug wrench

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).

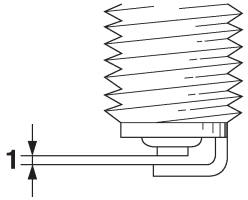
TIP

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/CPR8EA-9

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



ZAUE0032

1. Spark plug gap

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

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:
13 N·m (1.3 kgf·m, 9.6 lb·ft)

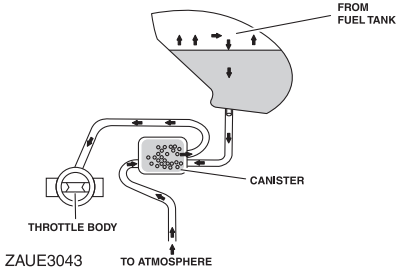
TIP

If a torque wrench is not available when installing a spark plug, a good estimate of the correct torque is 1/4–1/2 turn past finger tight. However, the spark plug should be tightened to the specified torque as soon as possible.

3. Install the spark plug cap.

EAU36112

Canister



ZAUE3043

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

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

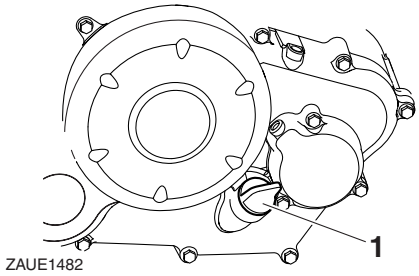
EAUE0118

Engine oil and oil filter element

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

To check the engine oil level

1. Place the vehicle on the centerstand. A slight tilt to the side can result in a false reading.
2. Start the engine, warm it up for several minutes, and then turn it off.
3. Wait a few minutes until the oil settles, remove the engine 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.
   NOTICE: **Do not operate the vehicle until you know that the engine oil level is sufficient.** [ECA10012]

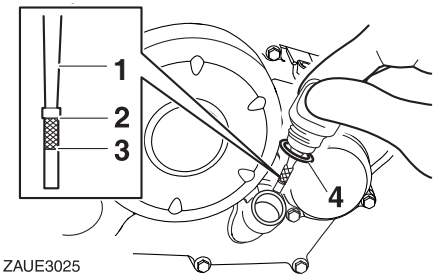


ZAUE1482

1. Engine oil filler cap

TIP

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



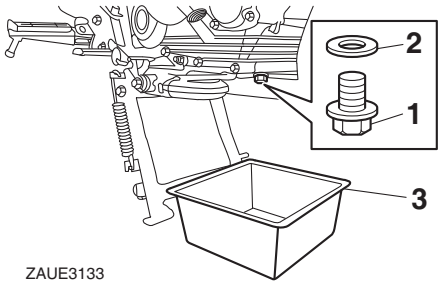
ZAUE3025

1. Dipstick
2. Maximum level mark
3. Minimum level mark
4. O-ring

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.
5. Check the O-ring for damage, and replace it if necessary.
6. Install and tighten engine 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. Place an oil pan under the engine to collect the used oil.
3. Remove the engine oil filler cap with the O-ring, then the engine oil drain bolt and its gasket to drain the oil from the crankcase.



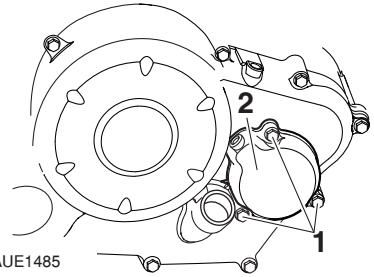
ZAUE3133

1. Engine oil drain bolt
2. Gasket
3. Oil pan

TIP

Skip steps 4–6 if the oil filter element is not being replaced.

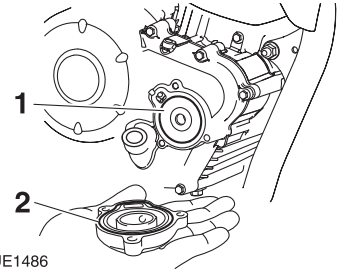
4. Remove the oil filter element cover by removing the bolts.



ZAUE1485

1. Bolt
2. Oil filter element cover

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



ZAUE1486

1. Oil filter element
2. O-ring

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

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

TIP

Make sure that the O-ring is properly seated.

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

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

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

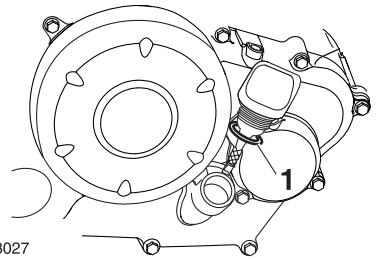
Recommended engine oil:
See page 9-1.
Oil quantity:
Without oil filter element replacement:
1.00 L (1.06 US qt, 0.88 Imp.qt)
With oil filter element replacement:
1.10 L (1.16 US qt, 0.97 Imp.qt)

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.**

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



1. O-ring

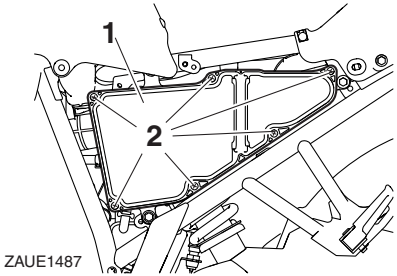
10. Install and tighten the engine oil filler cap.
11. Start the engine, and then let it idle for several minutes while checking it for oil leakage. If oil is leaking, immediately turn the engine off and check for the cause.
12. Turn the engine off, wait for a few minutes until the oil settles, and then check the oil level and correct it if necessary.

EAUE2523

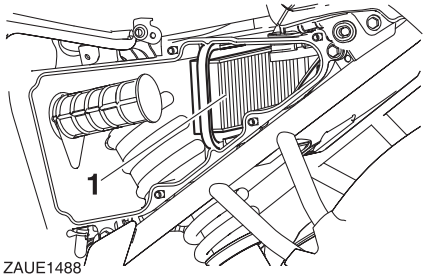
Cleaning the air filter element

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

1. Remove the rider seat. (See page 4-9.)
2. Remove panel A. (See page 7-7.)
3. Remove the air filter case cover by removing the screws, and then pull the air filter element out.

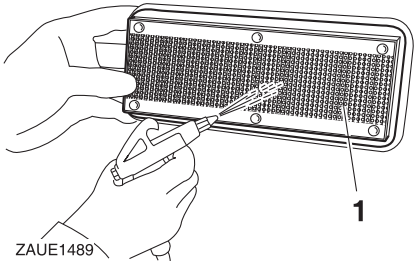


1. Air filter case cover
2. Screw



1. Air filter element

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



1. Air filter element

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

[ECA10482]

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

TIP

If dust or water collects in the air filter check hose, remove the clamp from the hose, and then remove the hose and drain it.

7. Install the panel and seats.

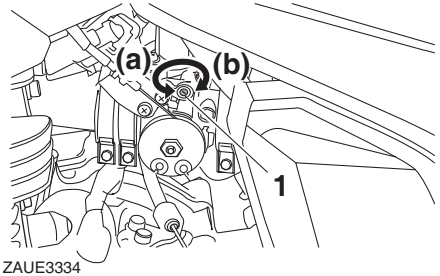
EAU34302

Adjusting the engine idling speed

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

The engine should be warm before making this adjustment.

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



ZAUE3334

1. Idle adjusting screw

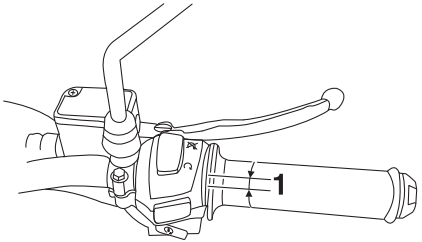
Engine idling speed:
1300–1500 r/min

TIP

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

EAUE1572

Adjusting the throttle grip free play



ZAUE3028

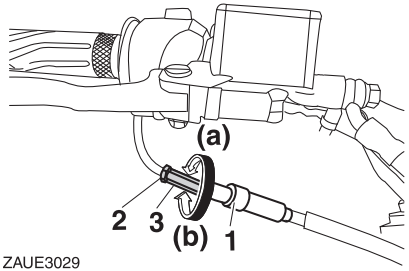
1. Throttle grip free play

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, adjust it as follows.

TIP

The engine idling speed must be correctly adjusted before checking and adjusting the throttle grip free play.

1. Slide the rubber cover at the throttle cable.
2. Loosen the locknut.
3. To increase the throttle grip free play, turn the throttle grip free play adjusting nut in direction (a). To decrease the throttle grip free play, turn the adjusting nut in direction (b).



ZAUE3029

1. Rubber cover
2. Locknut
3. Adjusting nut

4. Tighten the locknut.
5. Slide the rubber cover back to its original position.

EAU21403

Valve clearance

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

TIP

This service must be performed when the engine is cold.

7

EAUE2380

Tires

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

Tire air pressure

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

EWA10504

⚠ WARNING

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

- **The tire air pressure must be checked and adjusted on cold tires (i.e., when the temperature of the tires equals the ambient temperature).**
- **The tire air pressure must be adjusted in accordance with the riding speed and with the total weight of rider, passenger, cargo, and accessories approved for this model.**

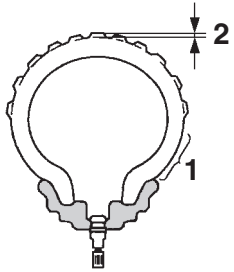
Tire air pressure (measured on cold tires):
Front:
200 kPa (2.00 kgf/cm², 29 psi)
Rear:
225 kPa (2.25 kgf/cm², 33 psi)
Maximum load*:
198 kg (437 lb)
* Total weight of rider, passenger, cargo and accessories

EWA10512

⚠ WARNING

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

Tire inspection



ZAUE0044

1. Tire sidewall
2. Tire tread depth

The tires must be checked before each ride. If the tire tread shows crosswise lines (minimum tread depth), if the tire has a nail or glass fragments in it, or if the sidewall is cracked, have a Yamaha dealer replace the tire immediately.

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

EWA10472

⚠ WARNING

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

cle with excessively worn tires decreases riding stability and can lead to loss of control.
- **The replacement of all wheel and brake-related parts, including the tires, should be left to a Yamaha dealer, who has the necessary professional knowledge and experience to do so.**
- **Ride at moderate speeds after changing a tire since the tire surface must first be "broken in" for it to develop its optimal characteristics.**

Tire information

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

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

EWA10462

⚠ WARNING

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

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

Front tire:
Size:
100/80-17M/C 52P
Manufacturer/model:
MRF/NYLOGRIP ZAPPER-FX1
CEAT/ZOOM PLUS F TL

Rear tire:
Size:
140/60-R17M/C 63P
Manufacturer/model:
MRF/revz-Y
CEAT/ZOOM RAD TL

EAU21963

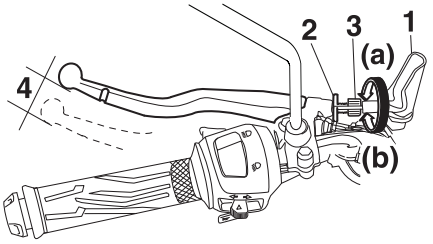
Cast wheels

To maximize the performance, durability, and safe operation of your vehicle, note the following points regarding the specified wheels.
- The wheel rims should be checked for cracks, bends, warpage or other damage before each ride. If any damage is found, have a Yamaha dealer replace the wheel. Do not attempt even the smallest repair to the wheel. A deformed or cracked wheel must be replaced.
- The 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.

EAU22038

Adjusting the clutch lever free play

Measure the clutch lever free play as shown.



ZAUE3030

1. Rubber cover
2. Locknut
3. Clutch lever free play adjusting bolt
4. Clutch lever free play

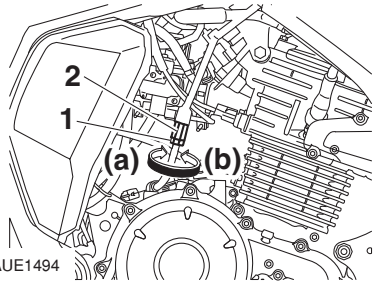
Clutch lever free play:
10.0–15.0 mm (0.39–0.59 in)

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 4–8.



ZAUE1494

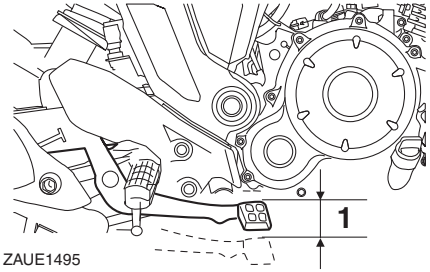
1. Locknut
2. Clutch lever free play adjusting nut

4. Fully turn the adjusting bolt in direction (a) to loosen the clutch cable.
5. Slide the rubber cover back at the clutch cable.
6. Loosen the locknut further down the clutch cable.
7. 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).
8. Tighten the locknut at the clutch cable, and then slide the rubber cover to its original position.
9. Tighten the locknut at the clutch lever, and then slide the rubber cover to its original position.

EAU39815

Adjusting the brake pedal free play

Measure the brake pedal free play at the brake pedal end as shown.

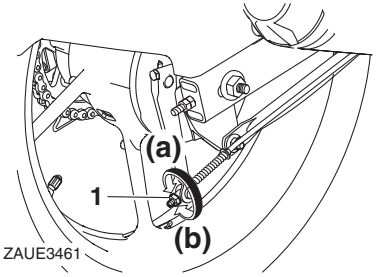


1. Brake pedal free play

Brake pedal free play:
15.0–20.0 mm (0.59–0.79 in)

Periodically check the brake pedal free play and, if necessary, adjust it as follows.

To increase the brake pedal free play, turn the brake pedal free play adjusting nut at the brake rod in direction (a). To decrease the brake pedal free play, turn the adjusting nut in direction (b).



1. Brake pedal free play adjusting nut

EWA10681

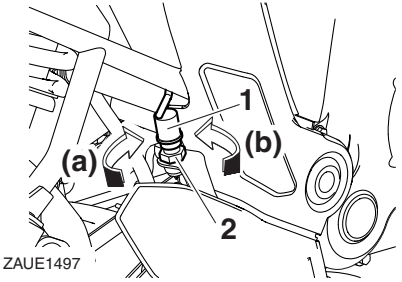
⚠ WARNING

- **After adjusting the drive chain slack or removing and installing the rear wheel, always check the brake pedal free play.**
- **If proper adjustment cannot be obtained as described, have a Yamaha dealer make this adjustment.**
- **After adjusting the brake pedal free play, check the operation of the brake light.**

EAU22275

Brake light switches

The brake light is activated by switches connected to the brake lever and brake pedal. Check that the brake light comes on just before braking takes effect. If necessary, adjust the rear brake light switch as follows.



1. Rear brake light switch
2. Rear brake light switch adjusting nut

Turn the rear brake light switch adjusting nut while holding the rear brake light switch in place. To make the brake light come on earlier, turn the adjusting nut in direction (a). To make the brake light come on later, turn the adjusting nut in direction (b).

TIP

The front brake light switch should be serviced by a Yamaha dealer.

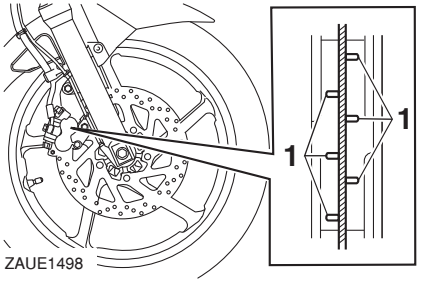
EAU22382

Checking the front brake pads and rear brake shoes

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

EAU22421

Front brake pads

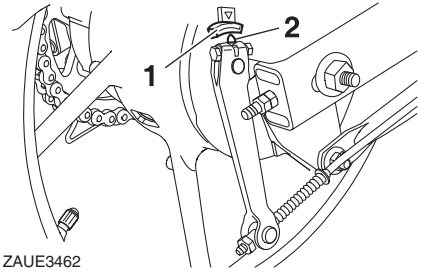


1. Brake pad wear indicator groove

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.

EAU22541

Rear brake shoes



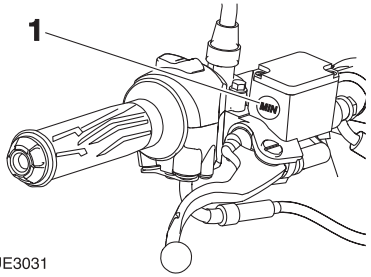
1. Brake shoe wear limit line
2. Brake shoe wear indicator

The rear brake is provided with a wear indicator, which allows you to check the brake shoe wear without having to disassemble the brake. To check the brake shoe wear, check the position of the wear indicator while applying the brake. If a brake shoe has worn to the point that the wear indicator reaches the wear limit line, have a Yamaha dealer replace the brake shoes as a set.

EAU32346

Checking the brake fluid level

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



ZAUE3031

1. Minimum level mark

Specified brake fluid:
DOT 4

EWA15991

⚠ WARNING

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

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

ECA17641

NOTICE

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

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

EAU22724

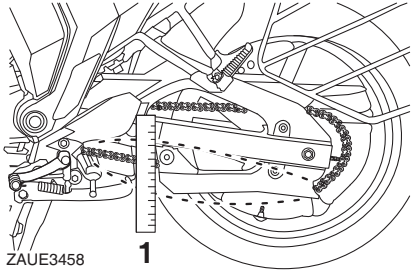
Changing the brake fluid

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

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

EAU22762

Drive chain slack



1. Drive chain slack

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

EAU22799

To check the drive chain slack

1. Place the motorcycle on the centerstand.
2. Shift the transmission into the neutral position.
3. Measure the drive chain slack as shown.

Drive chain slack:
30.0–40.0 mm (1.18–1.57 in)

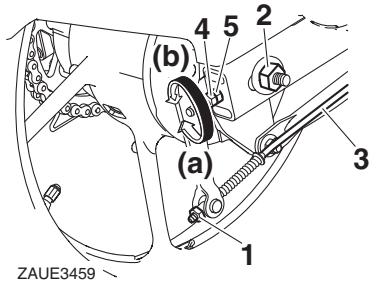
4. If the drive chain slack is incorrect, adjust it as follows. ***NOTICE:*** **Improper drive chain slack will overload the engine as well as other vital parts of the motorcycle and can lead to chain slippage or breakage. To prevent this from occurring, keep the drive chain slack within the specified limits.** [ECA10572]

EAUE3590

To adjust the drive chain slack

Consult a Yamaha dealer before adjusting the drive chain slack.

1. Loosen the brake pedal free play adjusting nut.



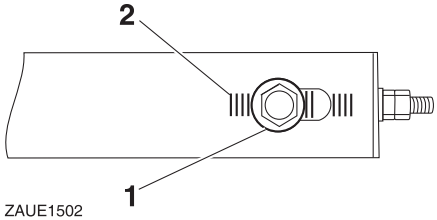
ZAUE3459

1. Brake pedal free play adjusting nut
2. Axle nut
3. Brake rod
4. Drive chain puller locknut
5. Drive chain slack adjusting nut

2. Loosen the axle nut.
3. Loosen the drive chain puller locknut at each end of the swingarm.
4. To tighten the drive chain, turn the drive chain slack adjusting nut at each end of the swingarm in direction (a). To loosen the drive chain, turn the adjusting nut at each end 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 occurring, keep the drive chain slack within the specified limits.** [ECA10572]

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.



ZAUE1502

1. Washer
2. Alignment marks

5. Tighten the locknuts, and then tighten the axle nut to the specified torques.

Tightening torques:
Drive chain puller locknut:
14 N·m (1.4 kgf·m, 10 lb·ft)
Axle nut:
59 N·m (5.9 kgf·m, 44 lb·ft)

6. Adjust the brake pedal free play. (See page 7-18.)

EWA10661

⚠ WARNING

After adjusting the brake pedal free play, check the operation of the brake light.

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

7

EAUE0141

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 soap water to remove the accumulated dust & mud and then dry off.
2. Apply the cleaning spray on all the links and plates of chain, then wipe the chain. ***NOTICE:*** **To prevent damaging the O-rings, do not clean the drive chain with steam cleaners, high-pressure washers or inappropriate solvents.** [ECA11122]
3. Thoroughly lubricate the drive chain with a special O-ring chain lubricant.

EAUE1151

Checking and lubricating the cables

The operation of all control cables and the condition of the cables should be checked before each ride, and the 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:
Lithium-soap-based grease

EAUE1191

Checking and lubricating the throttle grip and cable end

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

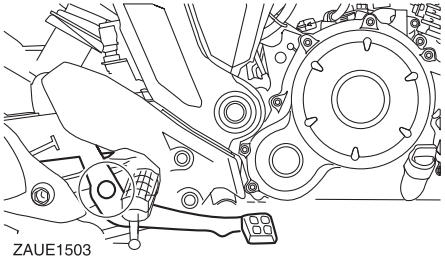
The throttle cable is equipped with a rubber cover. Make sure that the cover is securely installed. Even though the cover is installed correctly, it does not completely protect the cable from water entry. Therefore, use care not to pour water directly onto the cover or cable when washing the vehicle.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

EAU44276

Checking and lubricating the brake and shift pedals

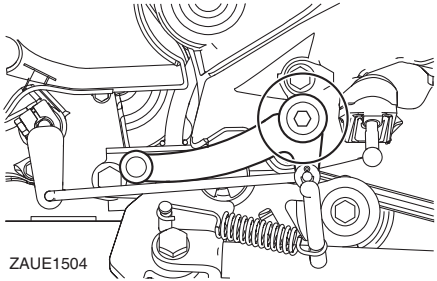
The operation of the brake and shift pedals should be checked before each ride, and the pedal pivots should be lubricated if necessary.

Brake pedal



ZAUE1503

Shift pedal



ZAUE1504

Recommended lubricant:
Lithium-soap-based grease

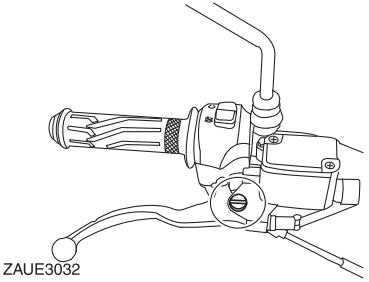
7

EAU23144

Checking and lubricating the brake and clutch levers

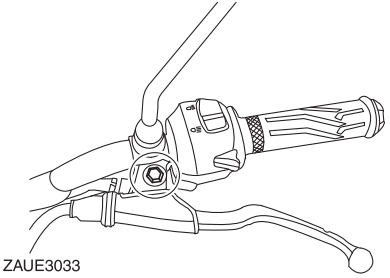
The operation of the brake and clutch levers should be checked before each ride, and the lever pivots should be lubricated if necessary.

Brake lever



ZAUE3032

Clutch lever

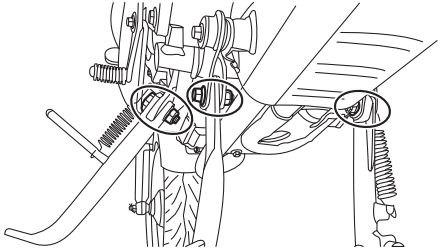


ZAUE3033

Recommended lubricants:
Brake lever:
Silicone grease
Clutch lever:
Lithium-soap-based grease

EAU23215

Checking and lubricating the centerstand and sidestand



ZAUE1507

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

EWA10742

⚠ WARNING

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

Recommended lubricant:
Lithium-soap-based grease

EAUM1653

Lubricating the swingarm pivots

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

EAU23273

Checking the front fork

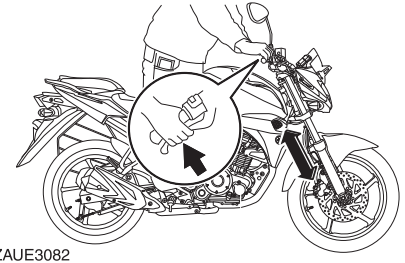
The condition and operation of the front fork must be checked as follows at the intervals specified in the periodic maintenance and lubrication chart.

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.



ZAUE3082

ECA10591

NOTICE

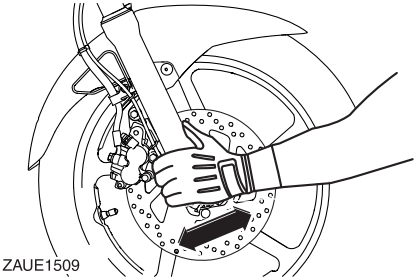
If any damage is found or the front fork does not operate smoothly, have a Yamaha dealer check or repair it.

EAU45512

Checking the steering

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

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



ZAUE1509

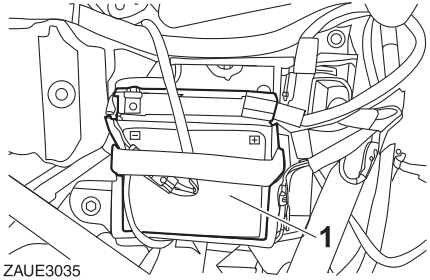
EAU23292

Checking the wheel bearings

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

Battery

EAU68380



1. Battery

The battery is located behind panel B. (See page 7-7.)
This model is equipped with a VRLA (Valve Regulated Lead Acid) battery. There is no need to check the electrolyte or to add distilled water. However, the battery lead connections need to be checked and, if necessary, tightened.

EWA10761

⚠ WARNING

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

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 "⊠", then disconnect the negative lead before disconnecting the positive lead.** [ECA17712]
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 "⊠", then connect the positive lead before connecting the negative lead.** [ECA17722]
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.

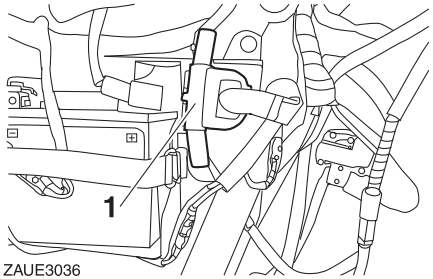
EAUE2534

Replacing the fuse

The fuse holder is located behind panel B. (See page 7-7.)

If the fuse is blown, replace it as follows.

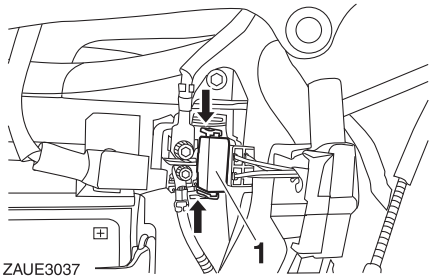
1. Turn the key to "OFF" and turn off all electrical circuits.
2. Remove the rider seat. (See page 4-9.)
3. Remove the panel B. (See page 7-7.)
4. Slide the rubber cover at the wire harness.



ZAUE3036

1. Rubber cover

5. Unlock the starter relay coupler by pressing from both side and remove it.

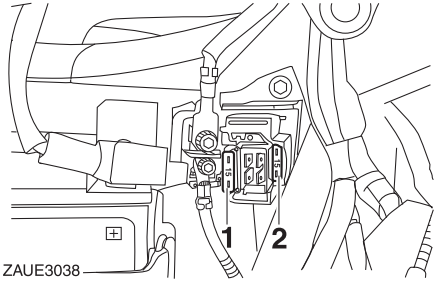


ZAUE3037

1. Starter relay coupler

6. Remove the blown fuse, and then install a new fuse of the specified amperage. **WARNING! Do not use a fuse of a higher amperage rating than recommended to avoid causing extensive damage to the electrical system and possibly a fire.** [EWA15132]

Specified fuse:
15.0 A



1. Main fuse
2. Spare fuse

7. Install the starter relay coupler properly .
8. Slide the rubber cover back to its original position.
9. Install the panel.
10. Install the seats.
11. Turn the key to “ON” and turn on the electrical circuits to check if the devices operate.
12. If the fuse immediately blows again, have a Yamaha dealer check the electrical system.

EAU34242

Replacing a headlight bulb

This model is equipped with halogen bulb headlights. If a headlight bulb burns out, have a Yamaha dealer replace it and, if necessary, adjust the headlight beam.

EAU39021

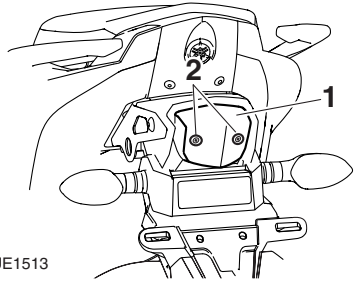
Auxiliary light bulb

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

EAU24135

Replacing the tail/brake light bulb

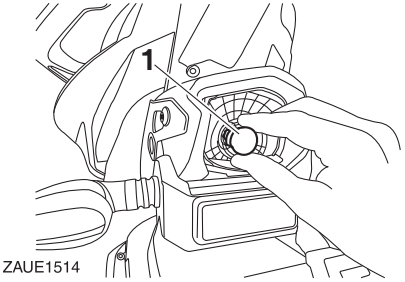
1. Remove the tail/brake light lens by removing the screws.



ZAUE1513

1. Tail/brake light lens
2. Screw

2. Remove the burnt-out bulb by pushing it in and turning it counterclockwise.



ZAUE1514

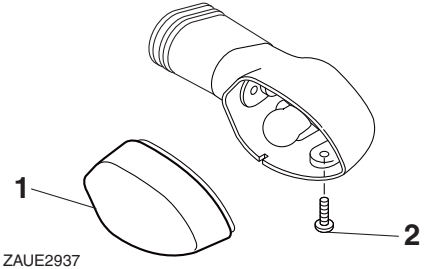
1. Bulb

3. Insert a new bulb into the socket, push it in, and then turn it clockwise until it stops.
4. Install the lens by installing the screws. ***NOTICE:*** **Do not overtighten the screws, otherwise the lens may break.** [ECA10682]

EAU24205

Replacing a turn signal light bulb

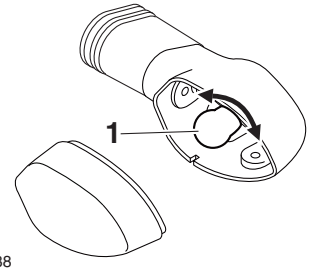
1. Remove the turn signal light lens by removing the screw.



ZAUE2937

1. Turn signal light lens
2. Screw

2. Remove the burnt-out bulb by pushing it in and turning it counterclockwise.



ZAUE2938

1. Bulb

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 overtighten the screw, otherwise the lens may break.** [ECA11192]

Front wheel

EAU24361

EAUE3410

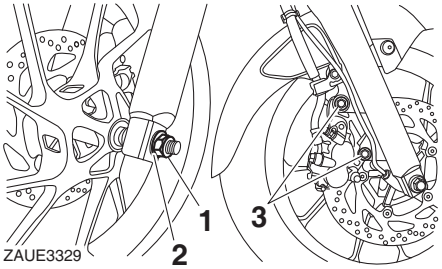
To remove the front wheel

EWA10822

⚠ WARNING

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

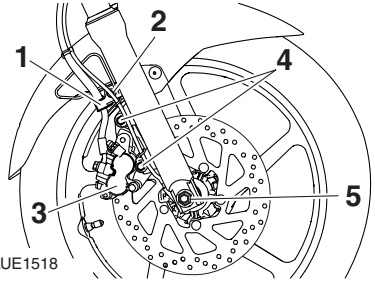
1. Loosen the front wheel axle nut and the brake caliper bolts.



ZAUE3329

1. Axle nut
2. Washer
3. Brake caliper bolt

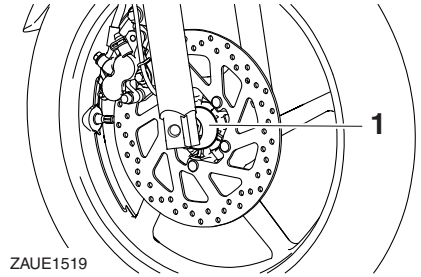
2. Place the motorcycle on the centerstand.
3. Remove the brake hose holder by removing the bolt.



ZAUE1518

1. Brake hose holder
2. Bolt
3. Brake caliper
4. Brake caliper bolt
5. Wheel axle

4. Remove the brake caliper along with speed sensor lead holder by removing the bolts.
5. Remove the axle nut and washer.
6. Pull the wheel axle out, and then remove the wheel along with the speed sensor. ***NOTICE:*** **Do not apply the brake after the wheel and brake disc have been removed, otherwise the brake pads will be forced shut.** [ECA11073]



1. Speed sensor

To install the front wheel

1. Lift the wheel up between the fork legs.
2. Install the speed sensor at the wheel hub.

TIP

Make sure that the projections on the speed sensor rotor are aligned with the notches in the wheel hub and that the slot in the speed sensor fits over the retainer on the fork leg.

3. Insert the wheel axle from the right side.
4. Install the washer and the axle nut.
5. Lower the front wheel so that it is on the ground.
6. Install the brake caliper along with speed sensor lead holder by installing the bolts.

TIP

Make sure that there is enough space between the brake pads before installing the brake caliper onto the brake disc.

7. Install the brake hose holder by installing the bolt.
8. Take the motorcycle off the centerstand so that the front wheel is on the ground, and then put the sidestand down.
9. Tighten the wheel axle nut, brake caliper bolts and brake hose holder bolt to the specified torques.

Tightening torques:
Wheel axle nut:
38 N·m (3.8 kgf·m, 28 lb·ft)
Brake caliper bolt:
35 N·m (3.5 kgf·m, 26 lb·ft)
Brake hose holder bolt:
7 N·m (0.7 kgf·m, 5.2 lb·ft)

TIP

When tightening the axle nut, hold the wheel axle with a wrench to keep it from turning.

10. Push down hard on the handlebar several times to check for proper front fork operation.

EAU25081

Rear wheel

EAUE3570

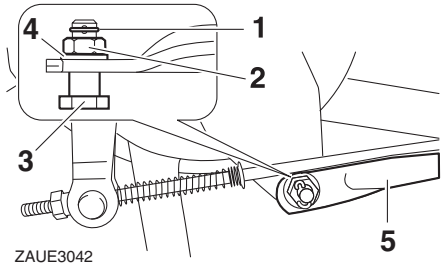
To remove the rear wheel

EWA10822

⚠ WARNING

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

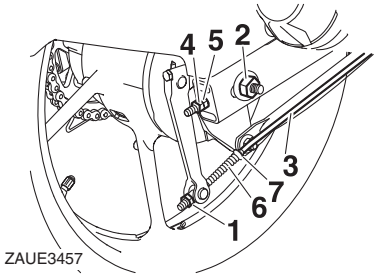
1. Place the motorcycle on the centerstand.
2. Disconnect the brake torque rod from the brake shoe plate by removing the cotter pin, the nut, the washer and the bolt.



ZAUE3042

1. Cotter pin
2. Nut
3. Bolt
4. Washer
5. Brake torque rod

3. Remove the brake pedal free play adjusting nut, disconnect the brake rod from the brake camshaft lever, and remove the spring from the brake rod.

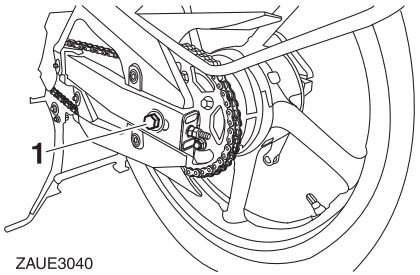


ZAUE3457

1. Brake pedal free play adjusting nut
2. Axle nut
3. Brake rod
4. Drive chain puller locknut
5. Drive chain slack adjusting nut
6. Spring
7. Washer

4. Loosen the drive chain puller locknut and the drive chain slack adjusting nut on both ends of the swingarm.
5. Remove the axle nut and washer, and then pull the wheel axle and collars out.

7



ZAUE3040

1. Wheel axle

TIP

A rubber mallet may be useful to tap the wheel axle out.

6. Push the wheel forward, and then remove the drive chain from the rear sprocket.

TIP

The drive chain does not need to be disassembled in order to remove and install the wheel.

7. Remove the wheel.

To install the rear wheel

1. Install the drive chain onto the rear sprocket.
2. Install the wheel by inserting the collars and wheel axle from the left side.
3. Install the washer and the axle nut.
4. Install the spring onto the brake rod, connect the brake rod to the brake camshaft lever, and then install the brake pedal free play adjusting nut onto the brake rod.
5. Connect the brake torque rod to the brake shoe plate by installing the bolt, washer and nut.
6. Adjust the drive chain slack. (See page 7-21.)
7. Tighten the axle nut, and then the brake torque rod nut to the specified torques.

Tightening torques:
Axle nut:
59 N·m (5.9 kgf·m, 44 lb·ft)
Brake torque rod nut:
19 N·m (1.9 kgf·m, 14 lb·ft)

8. Insert a new cotter pin into the brake torque rod bolt, and then bend the ends of cotter pin. **WARNING! Always use new cotter pin.** [EWAE0030]
9. Adjust the brake pedal free play. (See page 7-18.)

EWA10661

⚠ WARNING

After adjusting the brake pedal free play, check the operation of the brake light.

EAU25853

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 chart represents a quick and easy procedure 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.

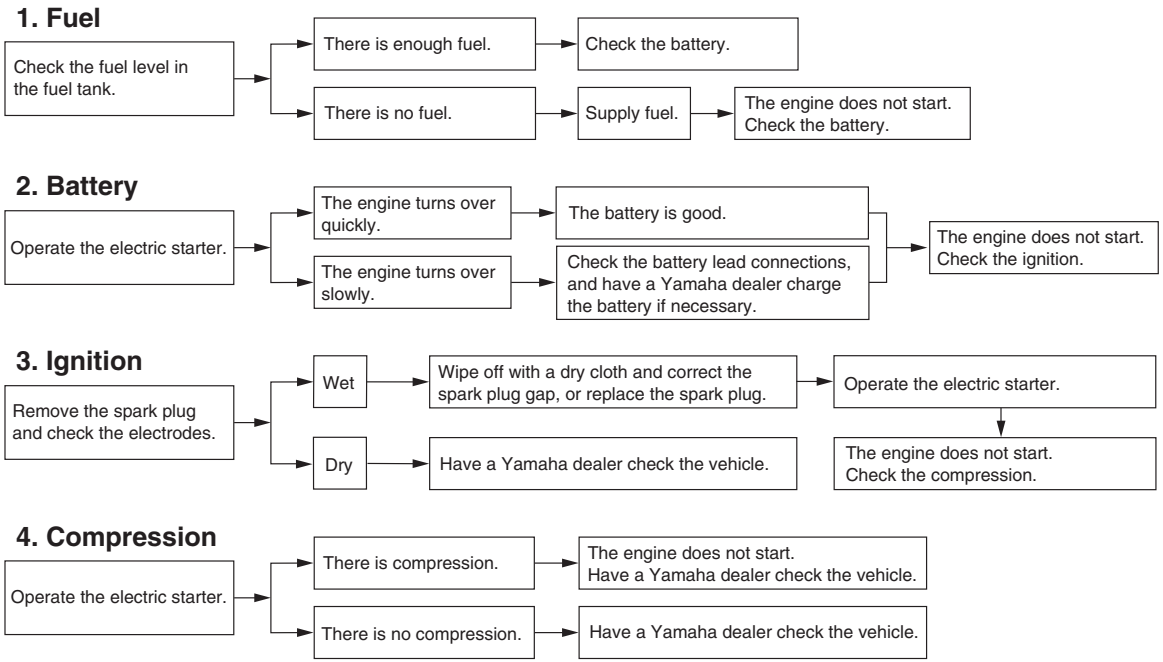
EWA15142

⚠ 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.

EAUT1985

Troubleshooting chart



7

EAU37834

Matte color caution

ECA15193

NOTICE

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

EAU26005

Care

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

Before cleaning

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

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 swingarm bearings, fork and brakes), electric components (couplers, connectors, instruments, switches and lights), breather hoses and vents.**
- **For motorcycles equipped with a windshield: Do not use strong cleaners or hard sponges as they will cause dulling or scratching. Some cleaning compounds for plastic may leave scratches on the windshield. Test the product on a small hidden part of the windshield to make sure that it does not leave any marks. If the windshield is scratched, use a quality plastic polishing compound after washing.**

After normal use

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

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

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

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.)

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.**

ECA10801

NOTICE

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

TIP

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

EAUE2560

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.

2. Fill up the fuel tank and add fuel stabilizer (if available) to prevent the fuel tank from rusting and the fuel from deteriorating.
3. Perform the following steps to protect the cylinders, piston rings, etc. from corrosion.
   a. Remove the spark plug caps and spark plugs.
   b. Pour a teaspoonful of engine oil into each spark plug bore.
   c. Install the spark plug caps onto the spark plugs, and then place the spark plugs on the cylinder head so that the electrodes are grounded. (This will limit sparking during the next step.)
   d. Turn the engine over several times with the starter. (This will coat the cylinder walls with oil.)
   WARNING! To prevent damage or injury from sparking, make sure to ground the spark plug electrodes while turning the engine over.
   [EWA10952]
   e. Remove the spark plug caps from the spark plugs, and then install the spark plugs and the spark plug caps.
4. Lubricate all control cable ends and the pivoting points of all levers and pedals as well as of the sidestand/centerstand.
5. Check and, if necessary, correct the tire air pressure, and then lift the 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 outlet with a plastic bag to prevent moisture from entering it.
7. Remove the battery and fully charge it. Store it in a cool, dry place and charge it once a month. Do not store the battery in an excessively cold or warm place [less than 0 °C (30 °F) or more than 30 °C (90 °F)]. For more information on storing the battery, see page 7-28.

TIP

Make any necessary repairs before storing the motorcycle.

Dimensions:
Overall length:
2073 mm (81.6 in)
Overall width:
770 mm (30.3 in)
Overall height:
1050 mm (41.3 in)
Seat height:
790 mm (31.1 in)
Wheelbase:
1330 mm (52.4 in)
Ground clearance:
160 mm (6.30 in)
Minimum turning radius:
2600 mm (102.4 in)

Weight:
Curb weight:
132 kg (291 lb)

Engine:
Engine type:
Air cooled 4-stroke, SOHC
Cylinder arrangement:
Single cylinder
Displacement:
149 cm^3
Bore × stroke:
57.3 × 57.9 mm (2.26 × 2.28 in)
Compression ratio:
9.5 : 1
Starting system:
Electric starter
Lubrication system:
Wet sump

Engine oil:
Recommended brand:
YAMALUBE
Type:
SAE 10W-40
Recommended engine oil grade:
API service SL type, JASO standard MA
Engine oil quantity:
Without oil filter element replacement:
1.00 L (1.06 US qt, 0.88 Imp.qt)
With oil filter element replacement:
1.10 L (1.16 US qt, 0.97 Imp.qt)

Air filter:
Air filter element:
Dry element

Fuel:
Recommended fuel:
Regular unleaded gasoline only
Fuel tank capacity:
12.0 L (3.17 US gal, 2.64 Imp.gal)
Fuel reserve amount:
2.4 L (0.63 US gal, 0.53 Imp.gal)

Fuel injection:
Throttle body:
ID mark:
2GS1 00

Spark plug(s):
Manufacturer/model:
NGK/CPR8EA-9
Spark plug gap:
0.8–0.9 mm (0.031–0.035 in)

Clutch:
Clutch type:
Wet, multiple-disc

Transmission:
Primary reduction ratio:
3.409 (75/22)
Final drive:
Chain
Secondary reduction ratio:
2.929 (41/14)
Transmission type:
Constant mesh 5-speed
Gear ratio:
1st:
2.714 (38/14)
2nd:
1.789 (34/19)
3rd:
1.318 (29/22)
4th:
1.045 (23/22)
5th:
0.875 (21/24)

Chassis:
Frame type:
Diamond
Caster angle:
25.0 °
Trail:
101 mm (4.0 in)

Front tire:
Type:
Tubeless
Size:
100/80-17M/C 52P
Manufacturer/model:
MRF/NYLOGRIP ZAPPER-FX1

Manufacturer/model:
CEAT/ZOOM PLUS F TL

Rear tire:
Type:
Tubeless
Size:
140/60-R17M/C 63P
Manufacturer/model:
MRF/revz-Y
Manufacturer/model:
CEAT/ZOOM RAD TL

Loading:
Maximum load:
198 kg (437 lb)
(Total weight of rider, passenger, cargo and accessories)

Tire air pressure (measured on cold tires):
Front:
200 kPa (2.00 kgf/cm², 29 psi)
Rear:
225 kPa (2.25 kgf/cm², 33 psi)

Front wheel:
Wheel type:
Cast wheel
Rim size:
17M/C x MT2.50

Rear wheel:
Wheel type:
Cast wheel
Rim size:
17M/C x MT3.50

Front brake:
Type:
Single disc brake
Specified brake fluid:
DOT 4

Rear brake:
Type:
Drum brake

Front suspension:
Type:
Telescopic fork
Spring/shock absorber type:
Coil spring/oil damper
Wheel travel:
130 mm (5.1 in)

Rear suspension:
Type:
Swingarm
Spring/shock absorber type:
Coil spring/oil damper
Wheel travel:
120 mm (4.7 in)

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

Battery:
Model:
ETZ-5
Voltage, capacity:
12 V, 4.0 Ah

Headlight:
Bulb type:
Halogen bulb

Bulb voltage, wattage × quantity:
Headlight:
12 V, 35.0 W/35.0 W × 1
Tail/brake light:
12 V, 5.0 W/21.0 W × 1
Front turn signal light:
12 V, 10.0 W × 2
Rear turn signal light:
12 V, 10.0 W × 2
Auxiliary light:
12 V, 5.0 W × 1
Meter lighting:
LED
Neutral indicator light:
LED
High beam indicator light:
LED
Turn signal indicator light:
LED
Engine trouble warning light:
LED

Fuse(s):
Fuse:
15.0 A

EAU26365

Identification numbers

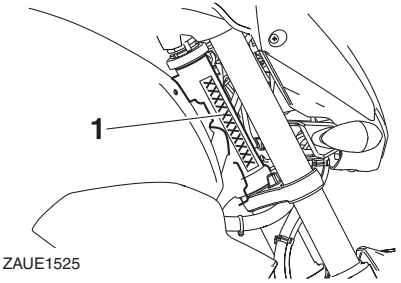
Record the vehicle identification number and the engine serial number in the spaces provided below for assistance when ordering spare parts from a Yamaha dealer or for reference in case the vehicle is stolen.

VEHICLE IDENTIFICATION NUMBER:

ENGINE SERIAL NUMBER:

EAU26401

Vehicle identification number



ZAUE1525

1. Vehicle identification number

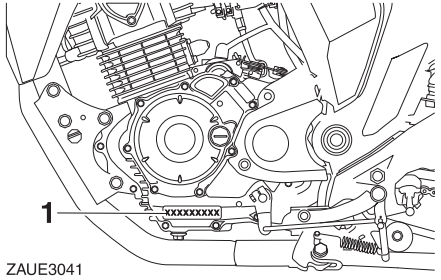
The vehicle identification number is stamped into the steering head pipe. Record this number in the space provided.

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.

EAU26442

Engine serial number



ZAUE3041

1. Engine serial number

The engine serial number is stamped into the crankcase.

Index

A
Air filter element, cleaning 7-12
Auxiliary light bulb 7-30

B
Battery 7-28
Brake and clutch levers, checking and lubricating 7-25
Brake and shift pedals, checking and lubricating 7-24
Brake fluid, changing 7-21
Brake fluid level, checking 7-20
Brake lever 4-6
Brake light switches 7-18
Brake pads and shoes, checking 7-19
Brake pedal 4-7
Brake pedal free play, adjusting 7-18

C
Cables, checking and lubricating 7-23
Canister 7-9
Care 8-1
Catalytic converter 4-9
Centerstand and sidestand, checking and lubricating 7-25
Clutch lever 4-6
Clutch lever free play, adjusting 7-17

D
Dimmer switch 4-5
Drive chain, cleaning and lubricating 7-23
Drive chain slack 7-21

E
Eco indicator light 4-3
Engine break-in 6-3
Engine idling speed 7-13
Engine oil and oil filter element 7-9
Engine serial number 10-1
Engine stop switch 4-5
Engine trouble warning light 4-2

F
Front fork, checking 7-26
Fuel 4-8
Fuel consumption, tips for reducing 6-2
Fuel tank cap 4-7
Fuse, replacing 7-29

H
Handlebar switches 4-5
Headlight bulb, replacing 7-30
Helmet holder 4-11
High beam indicator light 4-2
Horn switch 4-5

I
Identification numbers 10-1
Indicator lights and warning light 4-2

L
Labels, location 1-1

M
Main switch/steering lock 4-1
Maintenance and lubrication, periodic 7-3
Maintenance, emission control system 7-2
Matte color, caution 8-1
Multi-function display 4-3

N
Neutral indicator light 4-2

P
Panels, removing and installing 7-7
Parking 6-3
Part locations 3-1
Pass switch 4-5

S
Safety information 2-1
Seats 4-9
Shifting 6-2
Shift pedal 4-6
Sidestand 4-11
Spark plug, checking 7-8
Specifications 9-1
Starting circuit cut-off system 4-12
Starting the engine 6-1
Start switch 4-5
Steering, checking 7-27
Storage 8-3
Swingarm pivots, lubricating 7-26

T
Tail/brake light bulb, replacing 7-31
Throttle grip and cable, checking and lubricating 7-24
Throttle grip free play, adjusting 7-14
Tires 7-15
Tool kit 7-1
Troubleshooting 7-36
Troubleshooting chart 7-37
Turn signal indicator light 4-2
Turn signal light bulb, replacing 7-31
Turn signal switch 4-5

V
Valve clearance 7-14
Vehicle identification number 10-1

W
Wheel bearings, checking 7-27
Wheel (front) 7-32
Wheel (rear) 7-34
Wheels 7-16

2GS-F8199-EC

PRINTED IN INDIA

1Y175(OM-01)1272-07-18-E