Read this manual carefully before operating this vehicle.
⚠️ Read this manual carefully before operating this vehicle. This manual should stay with this vehicle if it is sold.
Welcome to the Yamaha world of motorcycling!
As the owner of the YZF-R1Z, 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 YZF-R1Z. 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.

WARNING
Please read this manual carefully and completely before operating this motorcycle.
**IMPORTANT MANUAL INFORMATION**

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

<table>
<thead>
<tr>
<th>![Symbol]</th>
<th>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.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WARNING</strong></td>
<td>A WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.</td>
</tr>
<tr>
<td><strong>NOTICE</strong></td>
<td>A NOTICE indicates special precautions that must be taken to avoid damage to the vehicle or other property.</td>
</tr>
<tr>
<td><strong>TIP</strong></td>
<td>A TIP provides key information to make procedures easier or clearer.</td>
</tr>
</tbody>
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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.
LOCATION OF IMPORTANT LABELS

1. STATIONARY NOISE TEST INFORMATION
   TESTED 99 dB(A) AT 6250 r/min
   SILENCING SYSTEM: YAMAHA
   IDENTIFICATION: 14B-1
   14B-2

2. 
   • Before you operate this vehicle, read the owner's manual.
   • Prima di usare il veicolo, leggete il manuale d'ISTRUZIONI.
   • Lire le manuel du propriétaire avant d'utiliser ce véhicule.
   • Lesen Sie die Bedienungsanleitung bevor Sie dieses Fahrzeug fahren.
   • Antes de conducir este vehículo, lea el Manual del Propietario.

   • Use PREMIUM unleaded gasoline with min. 95 octane (RON).
   • Utiliser une essence SUPER sans plomb d'un indice d'octane (RON) de min. 95.
   • Nur Super Bleifrei mit Mindestdoktanzahl 95 (RON) tanken.
   • Utilizzare benzina PREMIUM super senza piombo con almeno 95 ottani (RON).
   • Utilice gasolina sin plomo que tenga como minimo 95 octanos (RON).

3. TIRE INFORMATION

   Cold tire normal pressure should be set as follows:
   • Up to 90 kg (198 lbs) load
   • 250 kPa, (2.50 kgf/cm²), 36 psi
   • 290 kPa, (2.90 kgf/cm²), 42 psi
   • 90kg (198 lbs) – maximum load
   • FRONT: 250 kPa, (2.50 kgf/cm²), 36 psi
   • REAR: 290 kPa, (2.90 kgf/cm²), 42 psi
SAFETY INFORMATION

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.

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.
- 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 under-cornering (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.
- 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.

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.
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- 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.
SAFETY INFORMATION

- 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:
189 kg (417 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. Refer to page 7-18 for tire specifications and more information on replacing your tires.
DESCRIPTION

Left view

1. Front fork compression damping force adjusting screw (page 4-27)
2. Front fork spring preload adjusting bolt (page 4-27)
3. Coolant reservoir (page 7-13)
4. Fuel injection system fuse (page 7-31)
5. Main fuse (page 7-31)
6. Fuse box (page 7-31)
7. Shock absorber assembly compression damping force adjusting bolt (for fast compression damping) (page 4-29)
8. Shock absorber assembly compression damping force adjusting bolt (for slow compression damping) (page 4-29)
9. Shock absorber assembly spring preload adjusting bolt (page 4-29)
10. Shock absorber assembly rebound damping force adjusting screw (page 4-29)
11. Engine oil drain bolt (page 7-11)
12. Coolant drain bolt (page 7-14)
13. Engine oil filter cartridge (page 7-11)
Right view

1. Storage compartment (page 4-26)
2. Luggage strap holder (page 4-31)
3. Helmet holder (page 4-25)
4. Passenger seat lock (page 4-24)
5. Battery (page 7-30)
6. Owner's tool kit (page 7-1)
7. Fuel tank cap (page 4-21)
8. Front fork rebound damping force adjusting screw (page 4-27)
9. Radiator cap (page 7-13)
10. Engine oil filler cap (page 7-11)
11. Engine oil level check window (page 7-11)
12. Rear brake light switch (page 7-21)
13. Rear brake fluid reservoir (page 7-22)
DESCRIPTION

Controls and instruments

1. Clutch lever (page 4-19)
2. Left handlebar switches (page 4-17)
3. Main switch/steering lock (page 4-3)
4. Multi-function meter unit (page 4-9)
5. Front brake fluid reservoir (page 7-22)
6. Right handlebar switches (page 4-17)
7. Throttle grip (page 7-17)
8. Brake lever (page 4-20)
D-mode (drive mode)
D-mode is an electronically controlled engine performance system with three mode selections ("STD", "A", and "B"). Push the drive mode switch “MODE” to switch between modes. (See page 4-18 for an explanation of the drive mode switch.)

Mode “STD”
Mode “STD” is suitable for various riding conditions. This mode allows the rider to enjoy smooth and sporty drivability from the low-speed range to the high-speed range.

Mode “A”
Mode “A” offers a sportier engine response in the low- to mid-speed range compared to mode “STD”.

Mode “B”
Mode “B” offers response that is somewhat less sharp compared to mode “STD” for riding situations that require especially sensitive throttle operation.

Immobilizer system
This vehicle is equipped with an immobilizer system to help prevent theft by re-registering codes in the standard keys. This system consists of the following:
- a code re-registering key (with a red bow)
- two standard keys (with a black bow) that can be re-registered with new codes
- a transponder (which is installed in the code re-registering key)
- an immobilizer unit
- an ECU

TIP
Before using D-mode, make sure you understand its operation along with the operation of the drive mode switch “MODE”.

1. Drive mode switch “MODE”
INSTRUMENT AND CONTROL FUNCTIONS

- an immobilizer system indicator light (See page 4-4.)

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

**NOTICE**

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

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

Main switch/steering lock

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

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

TIP
The headlights come on automatically when the engine is started and stay on until the key is turned to “OFF”, even if the engine stalls.

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

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

To lock the steering

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

TIP

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

WARNING

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

To unlock the steering

1. Push.
2. Turn.

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

\[ \text{\textbullet } \text{(Parking)} \]
The steering is locked, and the taillight, license plate light and auxiliary lights are on. The hazard lights and turn signal lights can be turned on, but all other electrical systems are off. The key can be removed.
The steering must be locked before the key can be turned to “\text{\textbullet } \text{”}.

\[ \text{\textbullet } \text{ NOTICE } \]
Do not use the parking position for an extended length of time, otherwise the battery may discharge.

Indicator and warning lights

1. Shift timing indicator light
2. Engine trouble warning light “\text{N}”
3. Oil level warning light “\text{N}”
4. Coolant temperature warning light “\text{N}”
5. Steering damper warning light “\text{N}”
6. Right turn signal indicator light “\text{N}”
7. High beam indicator light “\text{N}”
8. Neutral indicator light “\text{N}”
9. Fuel level warning light “\text{N}”
10. Left turn signal indicator light “\text{N}”
11. Immobilizer system indicator light

Turn signal indicator lights “\text{N}” and “\text{N}”
The corresponding indicator light flashes when the turn signal switch is pushed to the left or right.
Neutral indicator light “N”
This indicator light comes on when the transmission is in the neutral position.

High beam indicator light “H”
This indicator light comes on when the high beam of the headlight is switched on.

Oil level warning light “<”
This warning light comes on if the engine oil level is low. The electrical circuit of the warning light can be checked by turning the key to “ON”. 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.

TIP
- Even if the oil level is sufficient, the warning light may flicker when riding on a slope or during sudden acceleration or deceleration, but this is not a malfunction.

Fuel level warning light “<”
This warning light comes on when the fuel level drops below approximately 3.1 L (0.82 US gal, 0.68 Imp.gal). When this occurs, refuel as soon as possible. The electrical circuit of the warning light can be checked by turning the key to “ON”. The warning light should come on for a few seconds, and then go off. If the warning light does not come on initially when the key is turned to “ON”, or if the warning light remains on, have a Yamaha dealer check the electrical circuit.

TIP
- This model is also equipped with a self-diagnosis device for the oil level detection circuit. If a problem is detected in the oil level detection circuit, the following cycle will be repeated until the malfunction is corrected: The oil level warning light will flash ten times, then go off for 2.5 seconds. If this occurs, have a Yamaha dealer check the vehicle.

Coolant temperature warning light “℃”
This warning light comes on if the engine overheats. If this occurs, stop the engine immediately and allow the engine to cool. The electrical circuit of the warning light can be checked by turning the key to “ON”. The warning light should come on for a few seconds, and then go off. If the warning light does not come on initially when the key is turned to “ON”, or if the warning light remains on, have a Yamaha dealer check the electrical circuit.

TIP
- This model is also equipped with a self-diagnosis device for the fuel level detection circuit. If a problem is detected in the fuel level detection circuit, the following cycle will be repeated until the malfunction is corrected: The fuel level warning light will flash eight times, and then go off for 3.0 seconds. If this occurs, have a Yamaha dealer check the vehicle.
**NOTICE**

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

**TIP**

- For radiator-fan-equipped vehicles, the radiator fan(s) automatically switch on or off according to the coolant temperature in the radiator.
- If the engine overheats, see page 7-41 for further instructions.
## INSTRUMENT AND CONTROL FUNCTIONS

<table>
<thead>
<tr>
<th>Coolant Temperature</th>
<th>Display</th>
<th>Conditions</th>
<th>What to do</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 39 °C (Under 103 °F)</td>
<td>![Image]</td>
<td>Message “Lo” is displayed.</td>
<td>OK. Go ahead with riding.</td>
</tr>
<tr>
<td>40–116 °C (104–242 °F)</td>
<td>![Image]</td>
<td>Temperature is displayed.</td>
<td>OK. Go ahead with riding.</td>
</tr>
<tr>
<td>Above 117 °C (Above 243 °F)</td>
<td>![Image]</td>
<td>Temperature display flashes. Warning light comes on.</td>
<td>Stop the vehicle and allow it to idle until the coolant temperature goes down. If the temperature does not go down, stop the engine. (See page 7-41.)</td>
</tr>
</tbody>
</table>
INSTRUMENT AND CONTROL FUNCTIONS

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. (See page 4-14 for an explanation of the self-diagnosis device.)

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

Steering damper warning light “ ”
This warning light comes on and an error code is displayed if a problem is detected in the steering damper. If this occurs, have a Yamaha dealer check the self-diagnosis system. (See page 4-14 for an explanation of the self-diagnosis device.)

Shift timing indicator light
This indicator light can be set to come on and go off at the desired engine speeds and is used to inform the rider when it is time to shift to the next higher gear.

The electrical circuit of the indicator light can be checked by turning the key to “ON”. The indicator light should come on for a few seconds, and then go off. If the indicator light does not come on initially when the key is turned to “ON”, or if the indicator light remains on, have a Yamaha dealer check the electrical circuit. (See page 4-15 for a detailed explanation of the function of this indicator light and how to set it.)

Immobilezer system indicator light
The electrical circuit of the indicator light can be checked by turning the key to “ON”. The indicator light should come on for a few seconds, and then go off. If the indicator light does not come on initially when the key is turned to “ON”, or if the indicator light remains on, have a Yamaha dealer check the electrical circuit.

When the key is turned to “OFF” and 30 seconds have passed, the indicator light will start flashing indicating the immobilizer system is enabled. After 24 hours have passed, the indicator light will stop flashing, however the immobilizer system is still enabled. This model is also equipped with a self-diagnosis device for the immobilizer system. (See page 4-14 for an explanation of the self-diagnosis device.)
The multi-function meter unit is equipped with the following:

- a speedometer
- a tachometer
- an odometer
- two trip meters (which show the distance traveled since they were last set to zero)
- a fuel reserve trip meter (which shows the distance traveled since the fuel level warning light came on)
- a stopwatch
- a clock
- a coolant temperature display
- an air intake temperature display
- a transmission gear display
- a drive mode display (which shows the selected drive mode)
- a throttle opening position display
- a fuel consumption display (instantaneous and average consumption functions)
- a self-diagnosis device
- a display brightness, shift timing indicator light and throttle opening position display control mode

**WARNING**

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

**TIP**

Be sure to turn the key to “ON” before using the “SELECT” and “RESET” buttons.

**Tachometer**

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

**NOTICE**

Do not operate the engine in the tachometer red zone.

Red zone: 13750 r/min and above

### Clock and stopwatch modes

1. **Clock/stopwatch**

   To set the clock
   1. Push the “SELECT” button and “RESET” button together for at least two seconds.

   To display the stopwatch
   1. Push the “SELECT” button and “RESET” button together. To change the display back to the clock mode, push the “SELECT” button and “RESET” button together; however, this is not possible when the stopwatch is counting.

   **Standard measurement**
   1. Push the “RESET” button to start the stopwatch.
   2. Push the “SELECT” button to stop the stopwatch.
   3. Push the “SELECT” button again to reset the stopwatch.

   **Split time measurement**
   1. Push the “RESET” button to start the stopwatch.
   2. Push the start switch “$\phi$” or “RESET” button to measure split times. Split times are displayed on the odometer display for five seconds.
   3. Push the start switch “$\phi$” or “RESET” button to display the final split time or push the “SELECT” button to stop the stopwatch and display the total elapsed time.

   **Split time history**
   1. Coolant temperature display/air intake temperature display
   2. Stopwatch
The split time history displays up to 20 stored split times. The split time history can be displayed either in reverse chronological order or by speed.

1. Push the “SELECT” button for at least one second to select the reverse chronological order mode; “L-20” displays on the stopwatch. Push the “SELECT” button again to select the speed mode; “F-20” displays on the stopwatch.

2. Push the “RESET” button. Depending on the selected split time, “L20” or “F20” displays on the coolant temperature display/air intake temperature display, and its corresponding stored split time displays on the stopwatch.

3. Push the “SELECT” button to move down, and the “RESET” button to move up through the list.

TIP

- When displaying in the reverse chronological order, the split times are shown from the latest to earliest (i.e., L20, L19, L18, L17). When displaying in the speed order, the split times are shown from the fastest to slowest (i.e., F01, F02, F03, F04).
- Push the “RESET” button for at least one second to reset all the recorded times for the selected split time history.

4. Push the “SELECT” button for at least one second to cancel the split time history and return to the time measurement.

Odometer, tripmeter, instantaneous fuel consumption and average fuel consumption modes

Push the “SELECT” button to switch the display between the odometer mode “ODO”, the tripmeter modes “TRIP 1” and “TRIP 2”, the instantaneous fuel consumption mode “km/L” or “L/100 km”, and the average fuel consumption mode “AVE_ _._ km/L” or “AVE_ _._ L/100 km” in the following order:

ODO → TRIP 1 → TRIP 2 → km/L or L/100 km → AVE_ _._ km/L or AVE_ _._ L/100 km → ODO

If the fuel level warning light comes on (see page 4-4), the display automatically changes to the fuel reserve tripmeter mode “TRIP F” and starts counting the distance traveled from that point. In that case, push the “SELECT” button to switch the display between the various tripmeter, odometer, instantaneous fuel consumption and average fuel consumption modes in the following order:

TRIP F → km/L or L/100 km → AVE_ _._ km/L or AVE_ _._ L/100 km → ODO → TRIP 1 → TRIP 2 → TRIP F

1. Odometer/tripmeter/fuel reserve tripmeter/instantaneous fuel consumption/average fuel consumption
INSTRUMENT AND CONTROL FUNCTIONS

To reset a tripmeter, select it by pushing the “SELECT” button, and then push the “RESET” button for at least one second.

If you do not reset the fuel reserve tripmeter manually, it resets itself automatically and the display returns to the prior mode after refueling and traveling 5 km (3 mi).

1. Instantaneous fuel consumption

The instantaneous fuel consumption display can be set to either “km/L” or “L/100 km”.
- When the display is set to “km/L”, the distance that can be traveled on 1.0 L of fuel under the current riding conditions is shown.
- When the display is set to “L/100 km”, the amount of fuel necessary to travel 100 km under the current riding conditions is shown.

To switch between the instantaneous fuel consumption displays, push the “SELECT” button for one second when one of the displays is shown.

**TIP**

If traveling at speeds under 10 km/h (6.0 mi/h), “_ _.” is displayed.

1. Average fuel consumption

The average fuel consumption display can be set to either “AVE_ _._ km/L” or “AVE_ _._ L/100 km”.

To switch between the average fuel consumption displays, push the “SELECT” button for one second when one of the displays is shown.

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

**TIP**

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

Transmission gear display

The throttle opening position display shows how much the throttle is being opened. The number of segments increases as the throttle is being opened. Refer to “Display brightness and shift timing indicator light control mode” on page 4-15.

**TIP**
The segments are displayed when the engine is running.

Throttle opening position display

This display shows the selected gear. The neutral position is indicated by “N” and by the neutral indicator light.

Drive mode display

This display indicates which drive mode has been selected: “STD”, “A” or “B”. For more details on the modes and on how to select them, refer to pages 4-1 and 4-18.

Coolant temperature display

The coolant temperature display indicates the temperature of the coolant.

**TIP**
When the coolant temperature display is selected, “C” is displayed for one second, and then the coolant temperature is displayed.

**NOTICE**
Do not continue to operate the engine if it is overheating.
INSTRUMENT AND CONTROL FUNCTIONS

Air intake temperature display

The air intake temperature display indicates the temperature of the air drawn into the air filter case. Turn the key to "ON", and push the "RESET" button to switch the coolant temperature display to the air intake temperature display. Push the "RESET" button again to return to the coolant temperature display.

TIP
- Even if the air intake temperature is set to be displayed, the coolant temperature warning light comes on if the engine overheats.

Self-diagnosis device

This model is equipped with a self-diagnosis device for various electrical circuits. If a problem is detected in the steering damper circuit, the steering damper warning light comes on and the display indicates an error code.

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

1. Air intake temperature display

1. Error code display

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

2. If the engine starts, turn it off and try starting the engine with the standard keys.

If a problem is detected in the immobilizer system circuits, the immobilizer system indicator light flashes and the display indicates an error code. If a problem is detected in any other circuit, the engine trouble warning light comes on and the display indicates an error code.

TIP
- If the display indicates immobilizer system circuit error code 52, this could be caused by transponder interference. If this error code appears, try following the procedure below.

1. Use the code re-registering key to start the engine.
3. If one or both of the standard keys do not start the engine, take the vehicle, the code re-registering key and both standard keys to a Yamaha dealer and have the standard keys re-registered. If the display indicates any error codes, note the code number, and then have a Yamaha dealer check the vehicle.

**NOTICE**

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

**Display brightness, shift timing indicator light and throttle opening position display control mode**

4. Push the “SELECT” button to switch the functions in the order below.

   a. **Display brightness:**
      This function allows you to adjust the brightness of the displays and tachometer to suit the outside lighting conditions.

   b. **Shift timing indicator light activity:**
      This function allows you to choose whether or not the indicator light should be activated and whether it should flash or stay on when activated.

   c. **Shift timing indicator light activation:**
      This function allows you to select the engine speed at which the indicator light is activated.

   d. **Shift timing indicator light deactivation:**
      This function allows you to select the engine speed at which the indicator light is deactivated.

   e. **Shift timing indicator light brightness:**

1. Turn the key to “OFF”.
2. Push and hold the “SELECT” button.
3. Turn the key to “ON”, and then release the “SELECT” button after five seconds. The display brightness function is selected.
INSTRUMENT AND CONTROL FUNCTIONS

This function allows you to adjust the brightness of the indicator light to suit your preference.

f. Throttle opening position display:
   This function allows you to choose whether or not to show the throttle opening position display.

TIP
The display shows the current setting for each function, except the shift timing indicator light activity function.

To adjust the brightness of the multifunction meter displays and tachometer
1. Turn the key to “OFF”.
2. Push and hold the “SELECT” button.
3. Turn the key to “ON”, and then release the “SELECT” button after five seconds.
4. Push the “RESET” button to select the desired brightness level.

5. Push the “SELECT” button to confirm the selected brightness level. The control mode changes to the shift timing indicator light activity function.

To set the shift timing indicator light activity function
1. Push the “RESET” button to select one of the following indicator light activity settings:
   - The indicator light stays on when activated. (This setting is selected when the indicator light stays on.)
   - The indicator light flashes when activated. (This setting is selected when the indicator light flashes four times per second.)
   - The indicator light is deactivated; in other words, it does not come on or flash. (This setting is selected when the indicator light flashes once every two seconds.)

2. Push the “SELECT” button to confirm the selected indicator light activity. The control mode changes to the shift timing indicator light activation function.

To set the shift timing indicator light activation function

TIP
The shift timing indicator light activation function can be set between 7000 r/min and 15000 r/min. From 7000 r/min to 12000 r/min, the indicator light can be set in increments of 500 r/min. From 12000 r/min to 15000 r/min, the indicator light can be set in increments of 200 r/min.

1. Push the “RESET” button to select the desired engine speed for activating the indicator light.
2. Push the “SELECT” button to confirm the selected engine speed. The control mode changes to the shift timing indicator light deactivation function.
To set the shift timing indicator light deactivation function

**TIP**
- The shift timing indicator light deactivation function can be set between 7000 r/min and 15000 r/min. From 7000 r/min to 12000 r/min, the indicator light can be set in increments of 500 r/min. From 12000 r/min to 15000 r/min, the indicator light can be set in increments of 200 r/min.
- Be sure to set the deactivation function to a higher engine speed than for the activation function, otherwise the shift timing indicator light remains deactivated.

1. Push the “RESET” button to select the desired engine speed for deactivating the indicator light.
2. Push the “SELECT” button to confirm the selected engine speed. The control mode changes to the shift timing indicator light brightness function.

To adjust the shift timing indicator light brightness
1. Push the “RESET” button to select the desired indicator light brightness level.
2. Push the “SELECT” button to confirm the selected indicator light brightness level. The control mode changes to the throttle opening position display.

To set the throttle opening position display
1. Push the “RESET” button to select one of the following activity settings:
   - The throttle opening segments and “R1” are displayed.
   - “R1” is displayed only.
   - Neither throttle opening segments nor “R1” are displayed.
2. Push the “SELECT” button to confirm the selected throttle opening position display activity. The display returns to the odometer or tripmeter mode.

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Handlebar switches

**Left**

1. Pass switch “PASS”
2. Dimmer switch “/”
3. Turn signal switch “/”
4. Horn switch “”
5. Hazard switch “”
INSTRUMENT AND CONTROL FUNCTIONS

Right

1. Engine stop switch "\(\diamond/\mathcal{O}\)"
2. Drive mode switch "MODE"
3. Start switch "\(\mathcal{O}\)"

Pass switch "PASS"
Press this switch to flash the headlights.

Dimmer switch "\(\mathcal{D}/\mathcal{O}\)"
Set this switch to "\(\mathcal{D}\)" for the high beam and to "\(\mathcal{O}\)" for the low beam.

Turn signal switch "\(\leftarrow/\rightarrow\)"
To signal a right-hand turn, push this switch to "\(\rightarrow\)". To signal a left-hand turn, push this switch to "\(\leftarrow\)". When released, the switch returns to the center position. To cancel the turn signal lights, push the switch in after it has returned to the center position.

Horn switch "\(\rightarrow\)"
Press this switch to sound the horn.

Engine stop switch "\(\diamond/\mathcal{O}\)"
Set this switch to "\(\diamond\)" before starting the engine. Set this switch to "\(\mathcal{O}\)" to stop the engine in case of an emergency, such as when the vehicle overturns or when the throttle cable is stuck.

Start switch "\(\mathcal{O}\)"
Push this switch to crank the engine with the starter. See page 6-1 for starting instructions prior to starting the engine.

The engine trouble warning light will come on when the key is turned to "ON" and the start switch is pushed, but this does not indicate a malfunction.

Hazard switch "\(\Delta\)"
With the key in the "ON" or "PE" position, use this switch to turn on the hazard lights (simultaneous flashing of all turn signal lights). The hazard lights are used in case of an emergency or to warn other drivers when your vehicle is stopped where it might be a traffic hazard.

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

Drive mode switch "MODE"
Do not change the D-mode while the vehicle is moving.

WARNING
Using this switch changes the drive mode to "STD", "A", or "B" in the following order:
STD → A → B → STD
The throttle grip must be completely closed in order to change the drive mode. (See page 4-1 for an explanation of each drive mode.)

**TIP**

- The mode is set to “STD” by default. The “STD” mode resets when the key is turned to “OFF”.
- The selected mode is shown on the drive mode display. (See page 4-13.)

**Clutch lever**

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

The clutch lever is equipped with a clutch switch, which is part of the ignition circuit cut-off system. (See page 4-32.)

**Shift pedal**

The shift pedal is located on the left side of the engine and is used in combination with the clutch lever when shifting the gears of the 6-speed constant-mesh transmission equipped on this motorcycle.
INSTRUMENT AND CONTROL FUNCTIONS

Brake lever

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

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

The brake lever is equipped with a brake lever position adjusting knob. To adjust the distance between the brake lever and the handlebar grip, turn the adjusting knob while holding the lever pushed away from the handlebar grip.

When the desired position is obtained, be sure to set it by aligning a groove on the adjusting knob with the ”△” mark on the brake lever.

Brake pedal

1. Brake pedal

The brake pedal is on the right side of the motorcycle. To apply the rear brake, press down on the brake pedal.
INSTRUMENT AND CONTROL FUNCTIONS

Fuel tank cap

1. Fuel tank cap lock cover
2. Unlock.

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

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

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

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

Fuel
Make sure there is sufficient gasoline in the tank.

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

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

4. Be sure to securely close the fuel tank cap.

**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.

**NOTICE**

Use only unleaded gasoline. The use of leaded gasoline will cause severe damage to internal engine parts, such as the valves and piston rings, as well as to the exhaust system.

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

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**Recommended fuel:**

**PREMIUM UNLEADED GASOLINE ONLY**

**Fuel tank capacity:**

18.0 L (4.76 US gal, 3.96 Imp.gal)

**Fuel reserve amount (when the fuel level warning light comes on):**

3.1 L (0.82 US gal, 0.68 Imp.gal)
Fuel tank breather/overflow hose

Before operating the motorcycle:
- Check the fuel tank breather/overflow hose connection.
- Check the fuel tank breather/overflow hose for cracks or damage, and replace it if damaged.
- Make sure that the end of the fuel tank breather/overflow hose is not blocked, and clean it if necessary.
- Make sure that the end of the fuel tank breather/overflow hose is positioned outside of the cowling.

Catalytic converter

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

**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.

**NOTICE**
Use only unleaded gasoline. The use of leaded gasoline will cause unrepairable damage to the catalytic converter.
INSTRUMENT AND CONTROL FUNCTIONS

Seats

Passenger seat

To remove the passenger seat
1. Insert the key into the seat lock, and then turn it clockwise.
2. 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.

Rider seat

To remove the rider seat
1. Remove the passenger seat.
2. Pull up the corners on the rear of the rider seat as shown, remove the bolts with the hexagon wrench located on the bottom of the passenger seat, and then pull the seat off.

To install the rider seat
1. Insert the projections into the seat holders as shown, then place the seat in the original position.
2. Install the bolts with the hexagon wrench.
3. Insert the hexagon wrench back into its holder on the passenger seat.
4. Install the passenger seat.

**TIP**
Make sure that the seats are properly secured before riding.

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**Helmet holder**

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 4-24.)
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.**

**To release the helmet from the helmet holder**
Remove the passenger seat, remove the helmet from the helmet holder, and then install the seat.
INSTRUMENT AND CONTROL FUNCTIONS

Storage compartment

When washing the vehicle, be careful not to let any water enter the storage compartment.

The storage compartment is located under the passenger seat. (See page 4-24.)

**WARNING**

- Do not exceed the load limit of 1 kg (2 lb) for the storage compartment.
- Do not exceed the maximum load of 189 kg (417 lb) for the vehicle.

When storing the Owner’s Manual or other documents in the storage compartment, be sure to wrap them in a plastic bag so that they will not get wet.

Rider footrest position

The rider footrests can be adjusted to one of two positions to suit the rider’s preference. Have a Yamaha dealer adjust the position of the rider footrests.

Left side

Right side
INSTRUMENT AND CONTROL FUNCTIONS

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

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

**Adjusting the front fork**

**WARNING**
Always adjust the spring preload on both fork legs equally, otherwise poor handling and loss of stability may result.

Each front fork leg is equipped with a spring preload adjusting bolt, the right front fork leg is equipped with a rebound damping force adjusting screw and the left front fork leg with a compression damping force adjusting screw.

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

**Spring preload**

1. Spring preload adjusting bolt

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

Align the appropriate groove on the adjusting mechanism with the top of the front fork collar.
INSTRUMENT AND CONTROL FUNCTIONS

Rebound damping force

The rebound damping force is adjusted on the right front fork leg only. To increase the rebound damping force and thereby harden the rebound damping, turn the adjusting screw in direction (b). To decrease the rebound damping force and thereby soften the rebound damping, turn the adjusting screw in direction (b).

TIP

Be sure to perform this adjustment on the right front fork leg.

Compression damping force

The compression damping force is adjusted on the left front fork leg only. To increase the compression damping force and thereby harden the compression damping, turn the adjusting screw in direction (a). To decrease the com-
pression damping force and thereby soften the compression damping, turn the adjusting screw in direction (b).

**TIP**
Be sure to perform this adjustment on the left front fork leg.

**Compression damping setting:**
- Minimum (soft): 25 click(s) in direction (b)*
- Standard: 20 click(s) in direction (b)*
- Maximum (hard): 1 click(s) in direction (b)*

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

**TIP**
Although the total number of clicks of a damping force adjusting mechanism may not exactly match the above specifications due to small differences in production, the actual number of clicks always represents the entire adjusting range. To obtain a precise adjustment, it would be advisable to check the number of clicks of each damping force adjusting mechanism and to modify the specifications as necessary.

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**Adjusting the shock absorber assembly**

This shock absorber assembly is equipped with a spring preload adjusting bolt, a rebound damping force adjusting screw, a compression damping force adjusting bolt (for fast compression damping) and a compression damping force adjusting bolt (for slow compression damping).

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

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**Spring preload**

Adjust the spring preload by turning the spring preload adjusting bolt and aligning the match mark with the "△" mark on the shock absorber assembly.

To increase the spring preload and thereby harden the suspension, turn the adjusting bolt in direction (a). To decrease the spring preload and thereby soften the suspension, turn the adjusting bolt in direction (b).
INSTRUMENT AND CONTROL FUNCTIONS

Spring preload setting:
- Minimum (soft): 16 turn(s) in direction (b)*
- Standard: 8 turn(s) in direction (b)*
- Maximum (hard): 0 turn(s) in direction (b)*
* With the adjusting bolt fully turned in direction (a)

Rebound damping setting:
- Minimum (soft): 20 click(s) in direction (b)*
- Standard: 15 click(s) in direction (b)*
- Maximum (hard): 3 click(s) in direction (b)*
* With the adjusting screw fully turned in direction (a)

Compression damping setting (for fast compression damping):
- Minimum (soft): 4 turn(s) in direction (b)*
- Standard: 3 turn(s) in direction (b)*
- Maximum (hard): 0 turn(s) in direction (b)*
* With the adjusting bolt fully turned in direction (a)

To increase the rebound damping force and thereby harden the rebound damping, turn the adjusting screw in direction (a). To decrease the rebound damping force and thereby soften the rebound damping, turn the adjusting screw in direction (b).

Compression damping force setting (for slow compression damping):
To increase the compression damping force and thereby soften the compression damping, turn the adjusting bolt in direction (b).
INSTRUMENT AND CONTROL FUNCTIONS

**TIP**
To obtain a precise adjustment, it is advisable to check the actual total number of clicks or turns of each damping force adjusting mechanism. This adjustment range may not exactly match the specifications listed due to small differences in production.

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

- Do not tamper with or attempt to open the cylinder assembly.

**Compression damping setting (for slow compression damping):**
- Minimum (soft): 20 click(s) in direction (b)*
- Standard: 9 click(s) in direction (b)*
- Maximum (hard): 1 click(s) in direction (b)*

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

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

**Luggage strap holders**

There are four luggage strap holders on the bottom of the passenger seat. To use the strap holders, remove the passenger seat, unhook the straps from the hooks, and then install the seat with the straps hanging out from under the passenger seat. (See page 4-24.)
INSTRUMENT AND CONTROL FUNCTIONS

Sidestand
The sidestand is located on the left side of the frame. Raise the sidestand or lower it with your foot while holding the vehicle upright.

TIP
The built-in sidestand switch is part of the ignition circuit cut-off system, which cuts the ignition in certain situations. (See page 4-32 for an explanation of the ignition circuit cut-off system.)

WARNING
The vehicle must not be ridden with the sidestand down, or if the sidestand cannot be properly moved up (or does not stay up), otherwise the sidestand could contact the ground and distract the operator, resulting in a possible loss of control. Yamaha’s ignition circuit cut-off system has been designed to assist the operator in fulfilling the responsibility of raising the sidestand before starting off. Therefore, check this system regularly as described below and have a Yamaha dealer repair it if it does not function properly.

Ignition circuit cut-off system
The ignition circuit cut-off system (comprising the sidestand switch, clutch switch and neutral switch) has the following functions.

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

Periodically check the operation of the ignition circuit cut-off system according to the following procedure.
**INSTRUMENT AND CONTROL FUNCTIONS**

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

Does the engine start?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>

With the engine still running:
6. Move the sidestand up.
7. Keep the clutch lever pulled.
8. Shift the transmission into gear.
9. Move the sidestand down.

Does the engine stall?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>

After the engine has stalled:
10. Move the sidestand up.
11. Keep the clutch lever pulled.
12. Push the start switch.

Does the engine start?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>

The system is OK. The motorcycle can be ridden.

---

**WARNING**

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

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

---

The motorcycle should not be ridden until checked by a Yamaha dealer.
FOR YOUR SAFETY – PRE-OPERATION CHECKS

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.

**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:

<table>
<thead>
<tr>
<th>ITEM</th>
<th>CHECKS</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel</td>
<td>• Check fuel level in fuel tank.</td>
<td>4-21, 4-23</td>
</tr>
<tr>
<td></td>
<td>• Refuel if necessary.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Check fuel line for leakage.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Check the fuel tank breather/overflow hose for obstructions, cracks or damage, and check the hose connection.</td>
<td></td>
</tr>
<tr>
<td>Engine oil</td>
<td>• Check oil level in engine.</td>
<td>7-11</td>
</tr>
<tr>
<td></td>
<td>• If necessary, add recommended oil to specified level.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Check vehicle for oil leakage.</td>
<td></td>
</tr>
<tr>
<td>Coolant</td>
<td>• Check coolant level in reservoir.</td>
<td>7-13</td>
</tr>
<tr>
<td></td>
<td>• If necessary, add recommended coolant to specified level.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Check cooling system for leakage.</td>
<td></td>
</tr>
<tr>
<td>Front brake</td>
<td>• Check operation.</td>
<td>7-22, 7-22</td>
</tr>
<tr>
<td></td>
<td>• If soft or spongy, have Yamaha dealer bleed hydraulic system.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Check brake pads for wear.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Replace if necessary.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Check fluid level in reservoir.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• If necessary, add recommended brake fluid to specified level.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Check hydraulic system for leakage.</td>
<td></td>
</tr>
</tbody>
</table>
# FOR YOUR SAFETY – PRE-OPERATION CHECKS

<table>
<thead>
<tr>
<th>ITEM</th>
<th>CHECKS</th>
<th>PAGE</th>
</tr>
</thead>
</table>
| Rear brake       | • Check operation.  
                   • If soft or spongy, have Yamaha dealer bleed hydraulic system.  
                   • Check brake pads for wear.  
                   • Replace if necessary.  
                   • Check fluid level in reservoir.  
                   • If necessary, add recommended brake fluid to specified level.  
                   • Check hydraulic system for leakage. | 7-22, 7-22 |
| Clutch           | • Check operation.  
                   • Lubricate cable if necessary.  
                   • Check lever free play.  
                   • Adjust if necessary. | 7-20   |
| Throttle grip    | • Make sure that operation is smooth.  
                   • Check cable free play.  
                   • If necessary, have Yamaha dealer adjust cable free play and lubricate cable and grip housing. | 7-17, 7-26 |
| Control cables   | • Make sure that operation is smooth.  
                   • Lubricate if necessary. | 7-26   |
| Drive chain      | • Check chain slack.  
                   • Adjust if necessary.  
                   • Check chain condition.  
                   • Lubricate if necessary. | 7-24, 7-25 |
| Wheels and tires | • Check for damage.  
                   • Check tire condition and tread depth.  
                   • Check air pressure.  
                   • Correct if necessary. | 7-18, 7-20 |
| Brake and shift pedals | • Make sure that operation is smooth.  
                           • Lubricate pedal pivoting points if necessary. | 7-26   |
| Brake and clutch levers | • Make sure that operation is smooth.  
                            • Lubricate lever pivoting points if necessary. | 7-27   |
| Sidestand        | • Make sure that operation is smooth.  
                   • Lubricate pivot if necessary. | 7-28   |
### FOR YOUR SAFETY – PRE-OPERATION CHECKS

<table>
<thead>
<tr>
<th>ITEM</th>
<th>CHECKS</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chassis fasteners</td>
<td>• Make sure that all nuts, bolts and screws are properly tightened.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Tighten if necessary.</td>
<td></td>
</tr>
<tr>
<td>Instruments, lights, signals</td>
<td>• Check operation.</td>
<td></td>
</tr>
<tr>
<td>and switches</td>
<td>• Correct if necessary.</td>
<td></td>
</tr>
<tr>
<td>Sidestand switch</td>
<td>• Check operation of ignition circuit cut-off system.</td>
<td>4-32</td>
</tr>
<tr>
<td></td>
<td>• If system is not working correctly, have Yamaha dealer check vehicle.</td>
<td></td>
</tr>
</tbody>
</table>
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.

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

---

**TIP**
This model is equipped with:
- a lean angle sensor to stop the engine in case of a turnover. In this case, the multi-function meter unit indicates error code 30, but this is not a malfunction. Turn the key to "OFF" and then to "ON" to clear the error code. Failing to do so will prevent the engine from starting even though the engine will crank when pushing the start switch.
- an engine auto-stop system. The engine stops automatically if left idling for 20 minutes. In this case, the multi-function meter unit indicates error code 70, but this is not a malfunction. Push the start switch to clear the error code and to restart the engine.

---

**Starting the engine**
In order for the ignition circuit cut-off system to enable starting, one of the following conditions must be met:
- The transmission is in the neutral position.
- The transmission is in gear with the clutch lever pulled and the sidestand up.

See page 4-32 for more information.

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

The following warning lights and indicator lights should come on for a few seconds, then go off.
- Oil level warning light
- Fuel level warning light
- Coolant temperature warning light
- Shift timing indicator light
- Engine trouble warning light
- Steering damper warning light
- Immobilizer system indicator light
OPERATION AND IMPORTANT RIDING POINTS

**NOTICE**

If a warning or indicator light does not come on initially when the key is turned to "ON", or if a warning or indicator light remains on, see page 4-4 for the corresponding warning and indicator light circuit check.

2. Shift the transmission into the neutral position. (See page 6-2.) 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. **NOTICE:** For maximum engine life, never accelerate hard when the engine is cold!

   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.

**TIP**

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

**NOTICE**

- Even with the transmission in the neutral position, do not coast for long periods of time with the engine off, and do not tow the motorcycle for long distances. The transmission is properly lubricated only when the engine is running. Inadequate lubrication may damage the transmission.

- Always use the clutch while changing gears to avoid damaging the engine, transmission, and drive train, which are not designed to withstand the shock of forced shifting.
**Tips for reducing fuel consumption**

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

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

---

**Engine break-in**

There is never a more important period in the life of your engine than the period between 0 and 1600 km (1000 mi). For this reason, you should read the following material carefully. Since the engine is brand new, do not put an excessive load on it for the first 1600 km (1000 mi). The various parts in the engine wear and polish themselves to the correct operating clearances. During this period, prolonged full-throttle operation or any condition that might result in engine overheating must be avoided.

---

**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.

---

**TIP**

During and after the engine break-in period, the exhaust heat may cause discoloration of the exhaust pipe, but this is normal.

---

**0–1000 km (0–600 mi)**

Avoid prolonged operation above 6900 r/min. **NOTICE: After 1000 km (600 mi) of operation, the engine oil must be changed and the oil filter cartridge or element replaced.**

**1000–1600 km (600–1000 mi)**

Avoid prolonged operation above 8300 r/min.
OPERATION AND IMPORTANT RIDING POINTS

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

WARNING

- Since the engine and exhaust system can become very hot, park in a place where pedestrians or children are not likely to touch them and be burned.
- Do not park on a slope or on soft ground, otherwise the vehicle may overturn, increasing the risk of a fuel leak and fire.
- Do not park near grass or other flammable materials which might catch fire.
PERIODIC MAINTENANCE AND ADJUSTMENT

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

**WARNING**

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

**WARNING**

Turn off the engine when performing maintenance unless otherwise specified.

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

**TIP**

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

TIP

- The annual checks must be performed every year, except if a kilometer-based maintenance, or for the UK, a mileage-based maintenance, is performed instead.
- From 50,000 km (30,000 mi), repeat the maintenance intervals starting from 10,000 km (6,000 mi).
- Items marked with an asterisk should be performed by a Yamaha dealer as they require special tools, data and technical skills.

Periodic maintenance chart for the emission control system

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>CHECK OR MAINTENANCE JOB</th>
<th>ODOMETER READING</th>
<th>ANNUAL CHECK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fuel line</td>
<td>• Check fuel hoses for cracks or damage.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>2</td>
<td>Spark plugs</td>
<td>• Check condition.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Clean and regap.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Replace.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Valves</td>
<td>• Check valve clearance.</td>
<td></td>
<td>Every 40,000 km (24,000 mi)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Adjust.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Fuel injection system</td>
<td>• Adjust synchronization.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>5</td>
<td>Muffler and exhaust pipe</td>
<td>• Check the screw clamp(s) for looseness.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>6</td>
<td>Air induction system</td>
<td>• Check the air cut-off valve, reed valve, and hose for damage.</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Replace any damaged parts if necessary.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# General maintenance and lubrication chart

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>CHECK OR MAINTENANCE JOB</th>
<th>ODOMETER READING</th>
<th>ANNUAL CHECK</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1000 km</td>
<td>10000 km</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(600 mi)</td>
<td>(6000 mi)</td>
</tr>
<tr>
<td>1</td>
<td>Air filter element</td>
<td>• Replace.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>2</td>
<td>Clutch</td>
<td>• Check operation.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>3</td>
<td>Front brake</td>
<td>• Check operation, fluid level and vehicle for fluid leakage.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>4</td>
<td>Rear brake</td>
<td>• Check operation, fluid level and vehicle for fluid leakage.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>5</td>
<td>Brake hoses</td>
<td>• Check for cracks or damage.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Replace.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Wheels</td>
<td>• Check runout and for damage.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>7</td>
<td>Tires</td>
<td>• Check tread depth and for damage.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>8</td>
<td>Wheel bearings</td>
<td>• Check bearing for looseness or damage.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>9</td>
<td>Swingarm</td>
<td>• Check operation and for excessive play.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lubricate with lithium-soap-based grease.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Every 4 years**
- **Whenever worn to the limit**
- **Every 50000 km (30000 mi)**
## PERIODIC MAINTENANCE AND ADJUSTMENT

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>CHECK OR MAINTENANCE JOB</th>
<th>ODOMETER READING</th>
<th>ANNUAL CHECK</th>
</tr>
</thead>
</table>
| 10  | Drive chain           | • Check chain slack, alignment and condition.  
• Adjust and lubricate chain with a special O-ring chain lubricant thoroughly. | Every 800 km (500 mi) and after washing the motorcycle, riding in the rain or riding in wet areas |              |
| 11  | * Steering bearings   | • Check bearing play and steering for roughness.  
• Lubricate with lithium-soap-based grease. | √    |              |
| 12  | * Steering damper     | • Check operation and for oil leakage. | √    |              |
| 13  | * Chassis fasteners   | • Make sure that all nuts, bolts and screws are properly tightened. | √    |              |
| 14  | Brake lever pivot shaft | • Lubricate with silicone grease. | √    |              |
| 15  | Brake pedal pivot shaft | • Lubricate with lithium-soap-based grease. | √    |              |
| 16  | Clutch lever pivot shaft | • Lubricate with lithium-soap-based grease. | √    |              |
| 17  | Shift pedal pivot shaft | • Lubricate with lithium-soap-based grease. | √    |              |
| 18  | Sidestand             | • Check operation.  
• Lubricate. | √    |              |
| 19  | * Sidestand switch    | • Check operation. | √    |              |
| 20  | * Front fork          | • Check operation and for oil leakage. | √    |              |
## PERIODIC MAINTENANCE AND ADJUSTMENT

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>CHECK OR MAINTENANCE JOB</th>
<th>ODOMETER READING</th>
<th>ANNUAL CHECK</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1000 km (600 mi)</td>
<td>10000 km (6000 mi)</td>
</tr>
<tr>
<td>21</td>
<td>Shock absorber assembly</td>
<td>• Check operation and shock absorber for oil leakage.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>22</td>
<td>Rear suspension relay arm and connect-</td>
<td>• Check operation.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>ing arm pivoting points</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Engine oil</td>
<td>• Change.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Check oil level and vehicle for oil leakage.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Engine oil filter cartridge</td>
<td>• Replace.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>25</td>
<td>Cooling system</td>
<td>• Check coolant level and vehicle for coolant leakage.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Change.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Front and rear brake switches</td>
<td>• Check operation.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>27</td>
<td>Moving parts and cables</td>
<td>• Lubricate.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>28</td>
<td>Throttle grip housing and cable</td>
<td>• Check operation and free play.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Adjust the throttle cable free play if necessary.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lubricate the throttle grip housing and cable.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Lights, signals and switches</td>
<td>• Check operation.</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Adjust headlight beam.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Every 3 years
PERIODIC MAINTENANCE AND ADJUSTMENT

TIP

- **Air filter**
  - This model's air filter is equipped with a disposable oil-coated paper element, which must not be cleaned with compressed air to avoid damaging it.
  - The air filter element needs to be replaced more frequently when riding in unusually wet or dusty areas.

- **Hydraulic brake service**
  - Regularly check and, if necessary, correct the brake fluid level.
  - Every two years replace the internal components of the brake master cylinders and calipers, and change the brake fluid.
  - Replace the brake hoses every four years and if cracked or damaged.
Removing and installing cowlings and panels

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

1. Panel B
2. Cowling B
3. Cowling D

Cowlings A and B

To remove one of the cowlings
1. Remove the quick fastener screws and the quick fasteners, and then take the cowling off.

1. Quick fastener screw

1. Cowling A
2. Cowling B
3. Quick fastener

2. Disconnect the turn signal light lead coupler.
PERIODIC MAINTENANCE AND ADJUSTMENT

To install the cowling
1. Connect the turn signal light lead coupler.
2. Fit the projections on the cowling into the slots as shown.
3. Install the quick fasteners and the quick fastener screws.

Cowlings C and D

To remove one of the cowlings
1. Remove cowling A (if removing cowling C) or cowling B (if removing cowling D). (See page 7-7.)
2. Remove the quick fastener screws.
3. Slide the cowling forward to unhook its projection from the slot, and then pull the cowling off.
PERIODIC MAINTENANCE AND ADJUSTMENT

To install the cowling
1. Insert the projection into the slot, and then slide the cowling backward.
2. Place the cowling in its original position, and then install the quick fastener screws.
3. Install cowling A or B.

Panels A and B
To remove one of the panels
Remove the bolts, and then pull the panel off as shown.

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

1. Cowling C
2. Slot
3. Projection

1. Cowling D
2. Slot
3. Projection

1. Panel A
2. Bolt
PERIODIC MAINTENANCE AND ADJUSTMENT

Checking the spark plugs

The spark plugs are important engine components, which should be checked periodically, preferably by a Yamaha dealer. Since heat and deposits will cause any spark plug to slowly erode, they should be removed and checked in accordance with the periodic maintenance and lubrication chart. In addition, the condition of the spark plugs can reveal the condition of the engine. The porcelain insulator around the center electrode of each spark plug should be a medium-to-light tan (the ideal color when the vehicle is ridden normally), and all spark plugs installed in the engine should have the same color. If any spark plug shows a distinctly different color, the engine could be operating improperly. Do not attempt to diagnose such problems yourself. Instead, have a Yamaha dealer check the vehicle.

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

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

1. Spark plug gap

| Spark plug gap: | 0.6–0.7 mm (0.024–0.028 in) |
| Tightening torque: | Spark plug: 12.5 Nm (1.25 m·kgf, 9.0 ft·lbf) |

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

Specified spark plug: NGK/LMAR9E-J

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.

NOTICE

Do not use any tools to remove or install the spark plug cap, otherwise the ignition coil coupler may get damaged. The spark plug cap may be difficult to remove because the rubber seal on the end of the cap fits tightly. To remove the spark plug cap, simply twist it back and forth while pulling it out; to install it, twist it back and forth while pushing it in.
**Engine oil and oil filter cartridge**

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

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

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

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

**To change the engine oil (with or without oil filter cartridge replacement)**
1. Remove cowlings C and D. (See page 7-7.)
2. Start the engine, warm it up for several minutes, and then turn it off.
3. Place an oil pan under the engine to collect the used oil.

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

**TIP**
Skip steps 5–7 if the oil filter cartridge is not being replaced.
5. Remove the oil filter cartridge with an oil filter wrench.

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**PERIODIC MAINTENANCE AND ADJUSTMENT**

7-11
PERIODIC MAINTENANCE AND ADJUSTMENT

1. Engine oil filter cartridge
2. Oil filter wrench

TIP
An oil filter wrench is available at a Yamaha dealer.

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

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

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

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

Tightening torque:
Engine oil drain bolt: 43 Nm (4.3 m·kgf, 31 ft·lbf)

9. Refill with the specified amount of the recommended engine oil, and then install and tighten the oil filler cap.
PERIODIC MAINTENANCE AND ADJUSTMENT

Recommended engine oil:
See page 9-1.
Oil quantity:
Without oil filter cartridge replacement:
3.73 L (3.94 US qt, 3.28 Imp.qt)
With oil filter cartridge replacement:
3.93 L (4.15 US qt, 3.46 Imp.qt)

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

TIP
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.

NOTICE
If the oil level warning light flickers or remains on even if the oil level is correct, immediately turn the engine off and have a Yamaha dealer check the vehicle.

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

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

2. Check the coolant level in the coolant reservoir.

TIP
The coolant should be between the minimum and maximum level marks.
PERIODIC MAINTENANCE AND ADJUSTMENT

3. If the coolant is at or below the minimum level mark, remove the coolant reservoir cover by removing the bolts, remove the coolant reservoir cap, and then add coolant to the maximum level mark. **WARNING!** Remove only the coolant reservoir cap. Never attempt to remove the radiator cap when the engine is hot. **NOTICE:** If coolant is not available, use distilled water or soft tap water instead. Do not use hard water or salt water since it is harmful to the engine. If water has been used instead of coolant, replace it with coolant as soon as possible, otherwise the cooling system will not be protected against frost and corrosion. If water has been added to the coolant, have a Yamaha dealer check the anti-freeze content of the coolant as soon as possible, otherwise the effectiveness of the coolant will be reduced. **NOTICE:**

4. Install the reservoir cap, and then install the coolant reservoir cover by installing the bolts.

**Coolant reservoir capacity (up to the maximum level mark):**
0.25 L (0.26 US qt, 0.22 Imp.qt)

To change the coolant
1. Place the vehicle on a level surface and let the engine cool if necessary.
2. Remove cowlings B and C. (See page 7-7.)
3. Place a container under the engine to collect the used coolant.
4. Remove the radiator cap. 
   **WARNING! Never attempt to remove the radiator cap when the engine is hot.**

5. Remove the coolant drain bolt and its gasket to drain the cooling system.

6. Remove the coolant reservoir cover by removing the bolts, and then remove the coolant reservoir cap.

7. Remove the coolant reservoir by removing the bolts, and then turn the reservoir upside down to empty it.

8. After the coolant is completely drained, thoroughly flush the cooling system with clean tap water.

9. Install the coolant reservoir by installing the bolts.

10. Install the coolant drain bolt and its new gasket, and then tighten the bolt to the specified torque.

11. Pour the recommended coolant into the reservoir to the maximum level mark, and then install the coolant reservoir cap.

---

**Tightening torque:**

Coolant drain bolt: 7 Nm (0.7 m-kgf, 5.1 ft-lbf)
PERIODIC MAINTENANCE AND ADJUSTMENT

12. Pour the recommended coolant into the radiator until it is full.

13. Install the radiator cap, start the engine, let it idle for several minutes, and then turn it off.

14. Remove the radiator cap to check the coolant level in the radiator. If necessary, add sufficient coolant until it reaches the top of the radiator, and then install the radiator cap.

15. Start the engine, and then check the vehicle for coolant leakage. If coolant is leaking, have a Yamaha dealer check the cooling system.

16. Install the coolant reservoir cover by installing the bolts.

17. Install the cowlings.

**Air filter element**

The air filter element must be replaced at the intervals specified in the periodic maintenance and lubrication chart. Have a Yamaha dealer replace the air filter element.

**Antifreeze/water mixture ratio:** 1:1

**Recommended antifreeze:** High-quality ethylene glycol antifreeze containing corrosion inhibitors for aluminum engines

**Coolant quantity:**
- Radiator capacity (including all routes): 2.73 L (2.89 US qt, 2.40 Imp.qt)
- Coolant reservoir capacity (up to the maximum level mark): 0.25 L (0.26 US qt, 0.22 Imp.qt)
PERIODIC MAINTENANCE AND ADJUSTMENT

Checking the engine idling speed
Check the engine idling speed and, if necessary, have it corrected by a Yamaha dealer.

Engine idling speed:
1150–1250 r/min

Checking the throttle cable free play

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

1. Throttle cable free play
The throttle cable free play should measure 3.0–5.0 mm (0.12–0.20 in) at the throttle grip. Periodically check the throttle cable free play and, if necessary, have a Yamaha dealer adjust it.
Tires
To maximize the performance, durability, and safe operation of your motorcycle, note the following points regarding the specified tires.

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

**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.

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**Tire air pressure (measured on cold tires):**

<table>
<thead>
<tr>
<th>Weight Range</th>
<th>Pressure (Front)</th>
<th>Pressure (Rear)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–90 kg (0–198 lb)</td>
<td>250 kPa (2.50 kgf/cm², 36 psi)</td>
<td>290 kPa (2.90 kgf/cm², 42 psi)</td>
</tr>
<tr>
<td>90–189 kg (198–417 lb)</td>
<td>250 kPa (2.50 kgf/cm², 36 psi)</td>
<td>290 kPa (2.90 kgf/cm², 42 psi)</td>
</tr>
<tr>
<td>High-speed riding</td>
<td>250 kPa (2.50 kgf/cm², 36 psi)</td>
<td>290 kPa (2.90 kgf/cm², 42 psi)</td>
</tr>
</tbody>
</table>

**Maximum load**:
189 kg (417 lb)

* Total weight of rider, passenger, cargo and accessories

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

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**WARNING**
Have a Yamaha dealer replace excessively worn tires. Besides being illegal, operating the vehicle with excessively worn tires decreases riding stability and can lead to loss of control.
PERIODIC MAINTENANCE AND ADJUSTMENT

- 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.

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

Tire information
1. Tire air valve
2. Tire air valve core
3. Tire air valve cap with seal

This motorcycle is equipped with cast wheels and tubeless tires with valves.

WARNING
- The front and rear tires should be of the same make and design, otherwise the handling characteristics of the motorcycle may be different, which could lead to an accident.
- Always make sure that the valve caps are securely installed to prevent air pressure leakage.

Use only the tire valves and valve cores listed below to avoid tire deflation during a high-speed ride.

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

Front tire:
- Size: 120/70 ZR17M/C (58W)
- Manufacturer/model: DUNLOP/D210F

Rear tire:
- Size: 190/55 ZR17M/C (75W)
- Manufacturer/model: DUNLOP/D210

FRONT and REAR:
- Tire air valve: TR412
- Valve core: #9100 (original)

WARNING
This motorcycle is fitted with super-high-speed tires. Note the following points in order to make the most efficient use of these tires.
PERIODIC MAINTENANCE AND ADJUSTMENT

- Use only the specified replacement tires. Other tires may run the danger of bursting at super high speeds.
- Brand-new tires can have a relatively poor grip on certain road surfaces until they have been “broken in”. Therefore, it is advisable before doing any high-speed riding to ride conservatively for approximately 100 km (60 mi) after installing a new tire.
- The tires must be warmed up before a high-speed run.
- Always adjust the tire air pressure according to the operating conditions.

Cast wheels
To maximize the performance, durability, and safe operation of your vehicle, note the following points regarding the specified wheels.
- The wheel rims should be checked for cracks, bends or warpage before each ride. If any damage is found, have a Yamaha dealer replace the wheel. Do not attempt even the smallest repair to the wheel. A deformed or cracked wheel must be replaced.
- The wheel should be balanced whenever either the tire or wheel has been changed or replaced. An unbalanced wheel can result in poor performance, adverse handling characteristics, and a shortened tire life.
- Ride at moderate speeds after changing a tire since the tire surface must first be “broken in” for it to develop its optimal characteristics.

Adjusting the clutch lever free play

1. Clutch lever free play adjusting bolt
2. Clutch lever free play

The clutch lever free play should measure 10.0–15.0 mm (0.39–0.59 in) as shown. Periodically check the clutch lever free play and, if necessary, adjust it as follows.
To increase the clutch lever free play, turn the clutch lever free play adjusting bolt at the clutch lever 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 cannot be obtained as described above, proceed as follows.

1. Fully turn the adjusting bolt at the clutch lever in direction (a) to loosen the clutch cable.
2. Loosen the locknut at the crankcase.
3. 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).
4. Tighten the locknut.

Brake light switches

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

The brake light, which is activated by the brake pedal and brake lever, should come on just before braking takes effect. If necessary, adjust the rear brake light switch as follows, but the front brake light switch should be adjusted by a Yamaha dealer.

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).
PERIODIC MAINTENANCE AND ADJUSTMENT

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

Front brake pads
The front brake calipers are equipped with two sets of brake pads. Each front brake pad is provided with one or two wear indicator grooves, which allow you to check the brake pad wear without having to disassemble the brake. To check the brake pad wear, check the wear indicator grooves. If a brake pad has worn to the point that a wear indicator groove almost appears, have a Yamaha dealer replace the brake pads as a set.

Rear brake pads
Each rear brake pad is provided with wear indicator grooves, which allow you to check the brake pad wear without having to disassemble the brake. To check the brake pad wear, check the wear indicator grooves. If a brake pad has worn to the point that a wear indicator groove almost appears, have a Yamaha dealer replace the brake pads as a set.

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

Rear brake
Insufficient brake fluid may allow air to enter the brake system, possibly causing it to become ineffective.
Before riding, check that the brake fluid is above the minimum level mark and replenish if necessary. A low brake fluid level may indicate worn brake pads and/or brake system leakage. If the brake fluid level is low, be sure to check the brake pads for wear and the brake system for leakage.

Observe these precautions:

- When checking the fluid level, make sure that the top of the brake fluid reservoir is level.
- Use only the recommended quality brake fluid, otherwise the rubber seals may deteriorate, causing leakage and poor braking performance.
- Be careful that water does not enter the brake fluid reservoir when refilling. Water will significantly lower the boiling point of the fluid and may result in vapor lock.
- Brake fluid may deteriorate painted surfaces or plastic parts. Always clean up spilled fluid immediately.
- As the brake pads wear, it is normal for the brake fluid level to gradually go down. However, if the brake fluid level goes down suddenly, have a Yamaha dealer check the cause.

**Recommended brake fluid:**

DOT 4

- Refill with the same type of brake fluid. Mixing fluids may result in a harmful chemical reaction and lead to poor braking performance.

**Changing the brake fluid**

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

- Oil seals: Replace every two years.
- Brake hoses: Replace every four years.
PERIODIC MAINTENANCE AND ADJUSTMENT

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

To check the drive chain slack
1. Place the motorcycle on the side-stand.

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

2. Shift the transmission into the neutral position.
3. Move the rear wheel by pushing the motorcycle to locate the tight-est portion of the drive chain, and then measure the drive chain slack as shown.

Drive chain slack:
25.0–35.0 mm (0.98–1.38 in)

To adjust the drive chain slack
1. Loosen the axle nut and the lock-nut on each side of the swingarm.
2. To tighten the drive chain, turn the drive chain slack adjusting bolt on each side of the swingarm in direction (a). To loosen the drive chain, turn the adjusting bolt on each side of the swingarm in direction (b), and then push the rear wheel forward.

NOTICE: Improper drive chain slack will overload the engine as well as other vital parts of the motorcycle and can lead to chain slippage or breakage. To prevent this from occurring, keep the drive chain slack within the specified limits.

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.

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

3. Tighten the axle nut, then the lock-nuts to their specified torques.
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.

NOTICE

1. Clean the drive chain with kerosene and a small soft brush. **NOTICE**: To prevent damaging the O-rings, do not clean the drive chain with steam cleaners, high-pressure washers or inappropriate solvents.

2. Wipe the drive chain dry.

3. Thoroughly lubricate the drive chain with a special O-ring chain lubricant. **NOTICE**: Do not use engine oil or any other lubricants for the drive chain, as they may contain substances that could damage the O-rings.

Tightening torques:

<table>
<thead>
<tr>
<th>Torque</th>
<th>Unit 1</th>
<th>Unit 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Axle nut</td>
<td>150 Nm</td>
<td>(15.0 m-kgf, 110 ft-lbf)</td>
</tr>
<tr>
<td>Locknut</td>
<td>16 Nm</td>
<td>(1.6 m-kgf, 11 ft-lbf)</td>
</tr>
</tbody>
</table>
Checking and lubricating the cables
The operation of all control cables and the condition of the cables should be checked before each ride, and the cables and cable ends should be lubricated if necessary. If a cable is damaged or does not move smoothly, have a Yamaha dealer check or replace it.

**WARNING!** Damage to the outer sheath may interfere with proper cable operation and will cause the inner cable to rust. Replace a damaged cable as soon as possible to prevent unsafe conditions.

Recommended lubricant:
Engine oil

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

The operation of the brake and shift pedals should be checked before each ride, and the pedal pivots should be lubricated if necessary.
CHECKING AND LUBRICATING THE BRAKE AND CLUTCH LEVERS

**Brake lever**

Recommended lubricant: Lithium-soap-based grease

**Clutch lever**

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

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

Checking and lubricating the sidestand

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

**WARNING**

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

Recommended lubricant:
Lithium-soap-based grease

Lubricating the 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

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.**
2. While applying the front brake, push down hard on the handlebars several times to check if the front fork compresses and rebounds smoothly.
PERIODIC MAINTENANCE AND ADJUSTMENT

Checking the steering

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

1. Place a stand under the engine to raise the front wheel off the ground. (See page 7-35 for more information.)

WARNING! To avoid injury, securely support the vehicle so there is no danger of it falling over. [EWA10751]

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.

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.

NOTICE

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

Battery

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

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.

WARNING

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

To charge the battery

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

To store the battery

1. If the vehicle will not be used for more than one month, remove the battery, fully charge it, and then place it in a cool, dry place. NOTICE: When removing the battery, be sure the key is turned to “OFF”, then disconnect the negative lead before disconnecting the positive lead.
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.

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. If you do not have access to a constant-voltage battery charger, have a Yamaha dealer charge your battery.
4. After installation, make sure that the battery leads are properly connected to the battery terminals.

**NOTICE**

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

**Replacing the fuses**

The main fuse, the fuel injection system fuse, and the fuse boxes, which contain the fuses for the individual circuits, are located under the rider seat. (See page 4-24.)

1. Main fuse
2. Fuse box
3. Fuel injection system spare fuse
4. Fuel injection system fuse

If a fuse is blown, replace it as follows.

1. Turn the key to “OFF” and turn off the electrical circuit in question.
2. Remove the blown fuse, and then install a new fuse of the specified amperage. **WARNING! Do not use a fuse of a higher amperage rating than recommended to**
PERIODIC MAINTENANCE AND ADJUSTMENT

avoid causing extensive damage to the electrical system and possibly a fire. [EWA15131]

Specified fuses:
- Main fuse: 50.0 A
- Headlight fuse: 20.0 A
- Signaling system fuse: 7.5 A
- Ignition fuse: 15.0 A
- Radiator fan fuse: 15.0 A × 2
- Turn signal light fuse: 7.5 A
- Steering damper fuse: 7.5 A
- Fuel injection system fuse: 15.0 A
- Backup fuse: 7.5 A
- Electronic throttle valve fuse: 7.5 A

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

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

**NOTICE**
Take care not to damage the following parts:
- **Headlight bulb**
  Do not touch the glass part of the bulb to keep it free from oil; otherwise the transparency of the glass, the luminosity of the bulb, and the bulb life will be adversely affected. Thoroughly clean off any dirt and fingerprints on the headlight bulb. Do not use a headlight bulb of a wattage higher than specified.

- **Headlight lens**
  Do not affix any type of tinted film or stickers to the headlight lens. Do not use a headlight bulb of a wattage higher than specified.

1. Do not touch the glass part of the bulb.
1. Remove the headlight bulb cover by turning it counterclockwise.
2. Disconnect the headlight coupler.

1. Headlight bulb cover

1. Headlight bulb cover

1. Headlight bulb cover
PERIODIC MAINTENANCE AND ADJUSTMENT

3. Unhook the headlight bulb holder, and then remove the burnt-out bulb.

4. Place a new headlight bulb into position, and then secure it with the bulb holder.

5. Connect the headlight coupler.

6. Install the headlight bulb cover by turning it clockwise.

7. Have a Yamaha dealer adjust the headlight beam if necessary.

Tail/brake light

This model is equipped with an LED-type tail/brake light. If the tail/brake light does not come on, have a Yamaha dealer check it.
PERIODIC MAINTENANCE AND ADJUSTMENT

Replacing a turn signal light bulb
1. Remove the turn signal light lens by removing the screw.
2. Remove the burnt-out bulb by pushing it in and turning it counter-clockwise.
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.

Replacing the license plate light bulb
1. Remove the license plate light unit by removing the screws.
2. Remove the socket (together with the bulb) by pulling it out.
3. Remove the burnt-out bulb by pulling it out.
4. Insert a new bulb into the socket.
5. Install the socket (together with the bulb) by pushing it in.
6. Install the license plate light unit by installing the screws.
Replacing an auxiliary light bulb

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

1. Remove panel A (if replacing the left auxiliary light bulb) or panel B (if replacing the right auxiliary light bulb). (See page 7-7.)
2. Remove the auxiliary light bulb socket (together with the bulb) by pulling it out.
3. Remove the burnt-out bulb by pulling it out.
4. Insert a new bulb into the socket.
5. Install the auxiliary light bulb socket (together with the bulb) by pushing it in.
6. Install the panel.

Supporting the motorcycle

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

To service the front wheel

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

To service the rear wheel

Raise the rear wheel off the ground by using a motorcycle stand or, if a motorcycle stand is not available, by placing
a jack either under each side of the frame in front of the rear wheel or under each side of the swingarm.

**PERIODIC MAINTENANCE AND ADJUSTMENT**

**Front wheel**

To remove the front wheel

**WARNING**

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

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

2. Lift the front wheel off the ground according to the procedure on page 7-35.

3. Remove the brake hose holder and reflector on each side by removing the bolt and nut.

4. Remove the brake caliper on each side by removing the bolts.

5. Remove the axle bolt, push the wheel axle out from the left side, and then remove the wheel.

**NOTICE:** Do not apply the brake after the brake calipers have been removed, otherwise the brake pads will be forced shut.

1. Brake hose holder
2. Reflector
3. Bolt and nut
4. Brake caliper bolt
5. Brake caliper
6. Axle bolt
To install the front wheel
1. Lift the wheel up between the fork legs.
2. Insert the wheel axle.
3. Install the axle bolt, and then lower the front wheel so that it is on the ground, and then put the sidestand down.
4. Install the brake calipers by installing the bolts, and then tightening them to the specified torque.

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

5. Install the brake hose holders and reflectors by installing the bolts and nuts.
6. Tighten the axle bolt to the specified torque.

TIP
While tightening the axle bolt, hold the wheel axle with a 19-mm hexagon wrench to keep it from turning.

7. Tighten wheel axle pinch bolt B, then pinch bolt A to the specified torque.

8. Retighten pinch bolt B to the specified torque.

9. Tap the outer side of the right fork leg with a rubber mallet to align it with the end of the wheel axle.
10. Tighten wheel axle pinch bolt D, then pinch bolt C to the specified torque.
11. Retighten pinch bolt D to the specified torque.
PERIODIC MAINTENANCE AND ADJUSTMENT

Tightening torque:
Wheel axle pinch bolt:
21 Nm (2.1 m-kgf, 15 ft-lbf)

12. While applying the front brake, push down hard on the handlebar several times to check for proper fork operation.

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

1. Loosen the axle nut.
2. Lift the rear wheel off the ground according to the procedure on page 7-35.
3. Remove the axle nut.

4. Loosen the locknut on each side of the swingarm.
5. Turn the drive chain slack adjusting bolts fully in direction (a) and push the wheel forward.
6. Remove the drive chain from the rear sprocket.

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

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

NOTICE: Do not apply the brake after the wheel has been removed together with the brake disc, otherwise the brake pads will be forced shut.
To install the rear wheel

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

**TIP**
- Be sure to insert the retainer on the brake caliper bracket into the slot in the swingarm.
- Make sure that there is enough space between the brake pads before installing the wheel.

2. Install the drive chain onto the rear sprocket.
3. Install the axle nut, and then lower the rear wheel so that it is on the ground, and then put the sidestand down.
4. Adjust the drive chain slack. (See page 7-24.)
5. Tighten the axle nut, then the locknuts to their specified torques.

**Tightening torques:**
- Axle nut: 150 Nm (15.0 m·kgf, 110 ft·lbf)
- Locknut: 16 Nm (1.6 m·kgf, 11 ft·lbf)

---

**Troubleshooting**

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

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

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

**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.
Troubleshooting charts

Starting problems or poor engine performance

1. Fuel
   - Check the fuel level in the fuel tank.
     - There is enough fuel. → Check the compression.
     - There is no fuel. → Supply fuel. → The engine does not start. Check the compression.

2. Compression
   - Operate the electric starter.
     - There is compression. → Check the ignition.
     - There is no compression. → Have a Yamaha dealer check the vehicle.

3. Ignition
   - Wet: Wipe off with a dry cloth and correct the spark plug gaps, or replace the spark plugs.
   - Dry: Have a Yamaha dealer check the vehicle.

4. Battery
   - Operate the electric starter.
     - The engine turns over quickly. → The battery is good.
     - The engine turns over slowly. → Check the battery lead connections, and charge the battery if necessary.
   - The engine does not start. → Have a Yamaha dealer check the vehicle.
PERIODIC MAINTENANCE AND ADJUSTMENT

Engine overheating

**WARNING**
- Do not remove the radiator cap when the engine and radiator are hot. Scalding hot fluid and steam may be blown out under pressure, which could cause serious injury. Be sure to wait until the engine has cooled.
- Place a thick rag, like a towel, over the radiator cap, and then slowly rotate the cap counterclockwise to the detent to allow any residual pressure to escape. When the hissing sound has stopped, press down on the cap while turning it counterclockwise, and then remove the cap.

**TIP**
If coolant is not available, tap water can be temporarily used instead, provided that it is changed to the recommended coolant as soon as possible.
Matte color caution

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

Care

While the open design of a 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 outlets 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 caps, 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

Avoid using strong acidic wheel cleaners, especially on spoked wheels. If such products are used on hard-to-remove dirt, do not leave the cleaner on the affected area any longer than instructed. Also, thoroughly rinse the area off with water, immediately dry it, and then apply a corrosion protection spray.

Improper cleaning can damage plastic parts (such as cowlings, panels, windshields, headlight lenses, meter lenses, etc.) and the mufflers. Use only a soft, clean cloth or sponge with water to clean plastic. However, if the plastic parts cannot be thoroughly cleaned with water, diluted mild detergent with water may be used. Be sure to rinse
MOTORCYCLE CARE AND STORAGE

off any detergent residue using plenty of water, as it is harmful to plastic parts.

- Do not use any harsh chemical products on plastic parts or the mufflers. Be sure to avoid using cloths or sponges which have been in contact with strong or abrasive cleaning products, solvent or thinner, fuel (gasoline), rust removers or inhibitors, brake fluid, antifreeze or electrolyte.

- Do not use high-pressure washers or steam-jet cleaners since they cause water seepage and deterioration in the following areas: seals (of wheel and swing-arm bearings, fork and brakes), storage compartments, electric components (coupers, 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.

2. After drying the motorcycle, apply a corrosion protection spray on all metal, including chrome- and nickel-plated, surfaces (except the titanium mufflers) to prevent corrosion.

Cleaning the titanium mufflers
This model is equipped with titanium mufflers, which require the following special care.

- Use only a soft, clean cloth or sponge with mild detergent and water to clean the titanium mufflers. However, if the mufflers cannot be thoroughly cleaned with mild detergent, alkaline products and a soft brush may be used.
Never use compounds or other special treatments to clean the titanium mufflers, as they will remove the finish on the outer surface of the mufflers.

Even the smallest amounts of oil, such as from oily towels or fingerprints, will leave stains on the titanium mufflers, which can be removed with a mild detergent.

Note that the thermally induced discoloring of the portion of the exhaust pipe leading into the titanium mufflers is normal and cannot be removed.

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.
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.

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.

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.
MOTORCYCLE CARE AND STORAGE

Storage

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

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

TIP
Make any necessary repairs before storing the motorcycle.
## Specifications

### Dimensions:
- Overall length: 2070 mm (81.5 in)
- Overall width: 715 mm (28.1 in)
- Overall height: 1130 mm (44.5 in)
- Seat height: 835 mm (32.9 in)
- Wheelbase: 1415 mm (55.7 in)
- Ground clearance: 135 mm (5.31 in)
- Minimum turning radius: 3500 mm (137.8 in)

### Weight:
- With oil and fuel: 206.0 kg (454 lb)

### Engine:
- Engine type: Liquid cooled 4-stroke, DOHC
- Cylinder arrangement: Forward-inclined parallel 4-cylinder
- Displacement: 998 cm³
- Bore × stroke: 78.0 × 52.2 mm (3.07 × 2.06 in)
- Compression ratio: 12.70 : 1
- Starting system: Electric starter
- Lubrication system: Wet sump

### Engine Oil:
- Recommended brand: YAMALUBE
- Type: SAE 20W-40 or 20W-50
- Recommended engine oil grade:
  - API service SG type or higher, JASO standard MA
- Engine oil quantity:
  - Without oil filter cartridge replacement: 3.73 L (3.94 US qt, 3.28 Imp.qt)
  - With oil filter cartridge replacement: 3.93 L (4.15 US qt, 3.46 Imp.qt)

### Fuel:
- Recommended fuel: Premium unleaded gasoline only
- Fuel tank capacity: 18.0 L (4.76 US gal, 3.96 Imp.gal)
- Fuel reserve amount: 3.1 L (0.82 US gal, 0.68 Imp.gal)

### Spark Plug(s):
- Manufacturer/model: NGK/LMAR9E-J
- Spark plug gap: 0.6–0.7 mm (0.024–0.028 in)

### Clutch:
- Clutch type: Wet, multiple-disc

### Transmission:
- Primary reduction system: Spur gear
- Primary reduction ratio: 65/43 (1.512)
- Secondary reduction system: Chain drive
- Secondary reduction ratio: 47/17 (2.765)
- Transmission type: Constant mesh 6-speed
- Operation: Left foot operation
SPECIFICATIONS

Gear ratio:
- 1st: 38/15 (2.533)
- 2nd: 33/16 (2.063)
- 3rd: 37/21 (1.762)
- 4th: 35/23 (1.522)
- 5th: 30/22 (1.364)
- 6th: 33/26 (1.269)

Chassis:
- Frame type: Diamond
- Caster angle: 24.00 °
- Trail: 102.0 mm (4.02 in)

Front tire:
- Type: Tubeless
- Size: 120/70 ZR17 M/C (58W)
- Manufacturer/model: DUNLOP/D210F

Rear tire:
- Type: Tubeless
- Size: 190/55 ZR17 M/C (75W)
- Manufacturer/model: DUNLOP/D210

Loading:
- Maximum load: 189 kg (417 lb)
- (Total weight of rider, passenger, cargo and accessories)

Tire air pressure (measured on cold tires):
- Loading condition:
  - 0–90 kg (0–198 lb)
    - Front: 250 kPa (2.50 kgf/cm², 36 psi)
    - Rear: 290 kPa (2.90 kgf/cm², 42 psi)
  - 90–189 kg (198–417 lb)
    - Front: 250 kPa (2.50 kgf/cm², 36 psi)
    - Rear: 290 kPa (2.90 kgf/cm², 42 psi)

High-speed riding:
- Front: 250 kPa (2.50 kgf/cm², 36 psi)
- Rear: 290 kPa (2.90 kgf/cm², 42 psi)

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

Rear brake:
- Type: Single disc brake
- Operation: Right foot operation
- Recommended fluid: DOT 4

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

Rear suspension:
- Type: Swingarm (link suspension)
- Spring/shock absorber type: Coil spring/gas-oil damper
- Wheel travel: 120.0 mm (4.72 in)

Electrical system:
- Ignition system: TCI (digital)
- Charging system: AC magneto
SPECIFICATIONS

Battery:
Model: YTZ10S
Voltage, capacity: 12 V, 8.6 Ah

Headlight:
Bulb type: Halogen bulb

Bulb voltage, wattage × quantity:
Headlight: 12 V, 55 W × 2
Tail/brake light: LED
Front turn signal light: 12 V, 10.0 W × 2
Rear turn signal light: 12 V, 10.0 W × 2
Auxiliary light: 12 V, 5.0 W × 2
License plate light: 12 V, 5.0 W × 1
Meter lighting: LED
Neutral indicator light: LED
High beam indicator light: LED
Oil level warning light: LED
Turn signal indicator light: LED
Fuel level warning light: LED

Coolant temperature warning light: LED
Engine trouble warning light: LED
Steering damper warning light: LED
Immobilizer system indicator light: LED
Shift timing indicator light: LED

Fuses:
Main fuse: 50.0 A
Headlight fuse: 20.0 A
Signaling system fuse: 7.5 A
Ignition fuse: 15.0 A
Radiator fan fuse: 15.0 A × 2
Turn signal light fuse: 7.5 A
Fuel injection system fuse: 15.0 A
Steering damper fuse: 7.5 A
Backup fuse: 7.5 A
Electronic throttle valve fuse: 7.5 A
CONSUMER INFORMATION

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

VEHICLE IDENTIFICATION NUMBER:

MODEL LABEL INFORMATION:

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

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

Model label
The model label is affixed to the frame under the passenger seat. (See page 4-24.) Record the information on this label in the space provided. This information will be needed when ordering spare parts from a Yamaha dealer.
Motorcycle noise regulation
(for Australia)

TAMPERING WITH NOISE CONTROL SYSTEM PROHIBITED:
Owners are warned that the law may prohibit:

a. The removal or rendering inoperative by any person other than for purposes of maintenance, repair or replacement, of any device or element of design incorporated into any new vehicle for the purpose of noise control prior to its sale or delivery to the ultimate purchaser or while it is in use; and

b. The use of the vehicle after such device or element of design has been removed or rendered inoperative by any person.
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