YAMAHA

OWNER'S MANUAL

TT-R230V

1C6-F8199-21

INTRODUCTION

Congratulations on your purchase of the Yamaha TTR230V. This model is the result of Yamaha's vast experience in the production of fine sporting, touring, and pacesetting racing machines. It represents the high degree of craftsmanship and reliability that have made Yamaha a leader in these fields.

This manual will give you an understanding of the operation, inspection, and basic maintenance of this motorcycle. If you have any questions concerning the operation or maintenance of your motorcycle, please consult a Yamaha dealer.

IMPORTANT MANUAL INFORMATION

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

⚠	**The Safety Alert Symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**
⚠ WARNING	**Failure to follow WARNING instructions could result in severe injury or death to the motorcycle operator, a bystander or a person inspecting or repairing the motorcycle.**
CAUTION:	**A CAUTION indicates special precautions that must be taken to avoid damage to the motorcycle.**
NOTE:	A NOTE provides key information to make procedures easier or clearer.

NOTE:

- This manual should be considered a permanent part of this motorcycle and should remain with it even if the motorcycle is subsequently sold.
- 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 you have any questions concerning this manual, please consult your Yamaha dealer.

IMPORTANT MANUAL INFORMATION

⚠ WARNING

PLEASE READ THIS MANUAL AND THE "YOU AND YOUR MOTORCYCLE: RIDING TIPS" BOOKLET CAREFULLY AND COMPLETELY BEFORE OPERATING THIS MACHINE. DO NOT ATTEMPT TO OPERATE THIS MOTORCYCLE UNTIL YOU HAVE ATTAINED ADEQUATE KNOWLEDGE OF ITS CONTROLS AND OPERATING FEATURES AND UNTIL YOU HAVE BEEN TRAINED IN SAFE AND PROPER RIDING TECHNIQUES. REGULAR INSPECTIONS AND CAREFUL MAINTENANCE, ALONG WITH GOOD RIDING SKILLS, WILL ENSURE THAT YOU SAFELY ENJOY THE CAPABILITIES AND THE RELIABILITY OF THIS MOTORCYCLE.

⚠ WARNING

THIS MACHINE IS DESIGNED AND MANUFACTURED FOR OFF-ROAD USE ONLY. IT IS ILLEGAL TO OPERATE THIS MACHINE ON ANY PUBLIC STREET, ROAD OR HIGHWAY. SUCH USE IS PROHIBITED BY LAW. THIS MACHINE COMPLIES WITH ALMOST ALL STATE OFF-HIGHWAY NOISE LEVEL AND SPARK ARRESTER LAWS AND REGULATIONS. PLEASE CHECK YOUR LOCAL RIDING LAWS AND REGULATIONS BEFORE OPERATING THIS MACHINE.

IMPORTANT MANUAL INFORMATION

TTR230V
OWNER'S MANUAL

1st edition, May 2005

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MACHINES 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 MACHINE.
HE OR SHE SHOULD:

- OBTAIN THOROUGH INSTRUCTIONS FROM A COMPETENT SOURCE ON ALL ASPECTS OF MACHINE OPERATION.
- OBSERVE THE WARNINGS AND MAINTENANCE REQUIREMENTS IN THE OWNER'S MANUAL.
- OBTAIN QUALIFIED TRAINING IN SAFE AND PROPER RIDING TECHNIQUES.
- OBTAIN PROFESSIONAL TECHNICAL SERVICE AS INDICATED BY THE OWNER'S MANUAL AND/OR WHEN MADE NECESSARY BY MECHANICAL CONDITIONS.

Safe riding

- Always make pre-operation checks. Careful checks may help prevent an accident.
- This machine is designed for off-road use only, therefore, it is illegal to operate it on public streets, roads, or highways. Off-road use on public lands may be illegal. Please check local regulations before riding.
- This machine is designed to carry the operator only. No passengers.
- Many accidents involve inexperienced operators.
  - Make sure that you are qualified and that you only lend your machine to other qualified operators.
  - Know your skills and limits. Staying within your limits may help you to avoid an accident.
- Many accidents have been caused by error of the machine operator. A typical error made by the operator is veering wide on a turn due to EXCESSIVE SPEED or undercornering (insufficient lean angle for the speed). Never travel faster than warranted by conditions.
- Ride cautiously in unfamiliar areas. You may encounter hidden obstacles that could cause an accident.
- The posture of the operator 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 machine.
- Never ride under the influence of alcohol or other drugs.

Protective apparel

The majority of fatalities from machine 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.
- Never touch the engine or exhaust system during or after operation. They become very hot and can cause burns. Always wear protective clothing that covers your legs, ankles, and feet.

Modifications

Modifications made to this machine not approved by Yamaha, or the removal of original equipment, may render the machine unsafe for use and may cause severe personal injury. Modifications may also make your machine illegal to use.

Loading and accessories

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

Loading

The total weight of the operator, accessories and cargo must not exceed the maximum load limit of 90 kg (198 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 machine as possible. Make sure to distribute the weight as evenly as possible on both sides of the machine to minimize imbalance or instability.
- Shifting weights can create a sudden imbalance. Make sure that accessories and cargo are securely attached to the machine before riding. Check accessory mounts and cargo restraints frequently.
- 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.

Accessories

Genuine Yamaha accessories have been specifically designed for use on this machine. Since Yamaha cannot test all other accessories that may be available, you must personally be responsible for the proper selection, installation and use of non-Yamaha accessories. Use extreme caution when selecting and installing any accessories. Keep these guidelines in mind for mounting accessories in addition to those provided under “Loading”.
- Never install accessories or carry cargo that would impair the performance of your machine. 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 machine due to aerodynamic effects. Wind may attempt to lift the machine, or the machine may become unstable in cross winds.
- 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 machine's electrical system an electric failure could result, which could cause a dangerous loss of lights or engine power.

Gasoline and exhaust gas

● GASOLINE IS HIGHLY FLAMMABLE:
  - Always turn the engine off when refueling.
  - Take care not to spill any gasoline on the engine or exhaust pipe(s)/muffler(s) when refueling.
  - Never refuel while smoking or in the vicinity of an open flame.

● Never start the engine or let it run for any length of time in a closed area. The exhaust fumes are poisonous and may cause loss of consciousness and death within a short time. Always operate your machine in an area that has adequate ventilation.

● Always turn the engine off before leaving the machine unattended and remove the key from the main switch. When parking the machine, note the following:
  - The engine and exhaust pipe(s)/muffler(s) may be hot, therefore, park the machine in a place where pedestrians or children are not likely to touch these hot areas.
  - Do not park the machine on a slope or soft ground, otherwise it may fall over.
  - Do not park the machine near a flammable source (e.g., a kerosene heater, or near an open flame), otherwise it could catch fire.

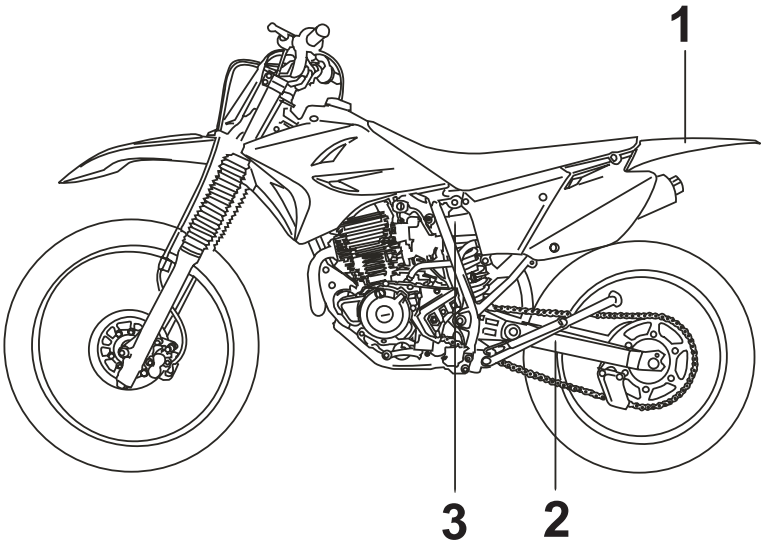
● When transporting the machine in another vehicle, make sure that it is kept upright and that the fuel cock(s) are turned to "ON" or "RES" (for vacuum type)/"OFF" (for manual type). If the machine should lean over, gasoline may leak out of the carburetor or fuel tank.

● If you should swallow any gasoline, inhale a lot of gasoline vapor, or allow gasoline to get into your eyes,

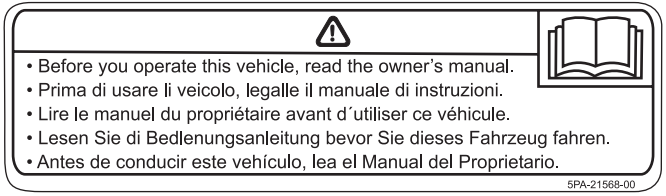
see your doctor immediately. If any gasoline spills on your skin or clothing, immediately wash the affected area with soap and water and change your clothes.

Location of important labels

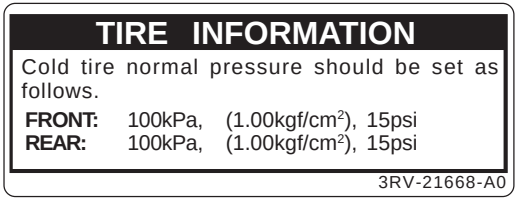
Please read the following important labels carefully before operating this vehicle.



1


• Before you operate this vehicle, read the owner's manual.
• Prima di usare li veicolo, legalle il manuale di instruzioni.
• Lire le manuel du propriétaire avant d´utiliser ce véhicule.
• Lesen Sie di Bedlenungsanleitung bevor Sie dieses Fahrzeug fahren.
• Antes de conducir este vehículo, lea el Manual del Proprietario.
5PA-21568-00

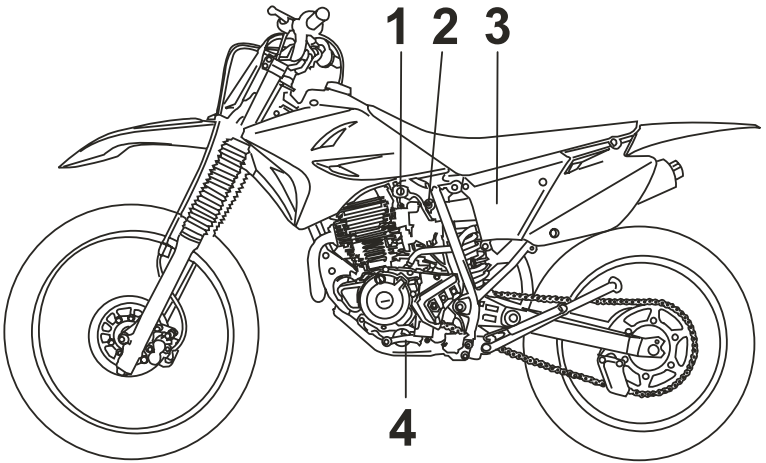
2


TIRE INFORMATION
Cold tire normal pressure should be set as follows.
FRONT: 100kPa, (1.00kgf/cm²), 15psi
REAR: 100kPa, (1.00kgf/cm²), 15psi
3RV-21668-A0

3

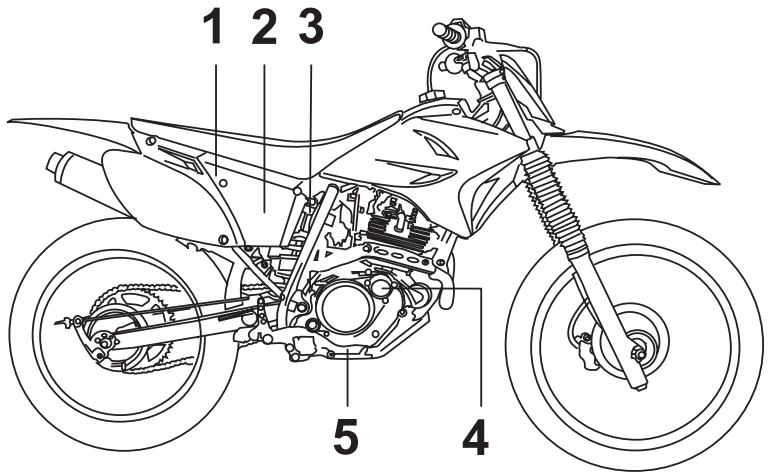

4AA-2259-40

Left view



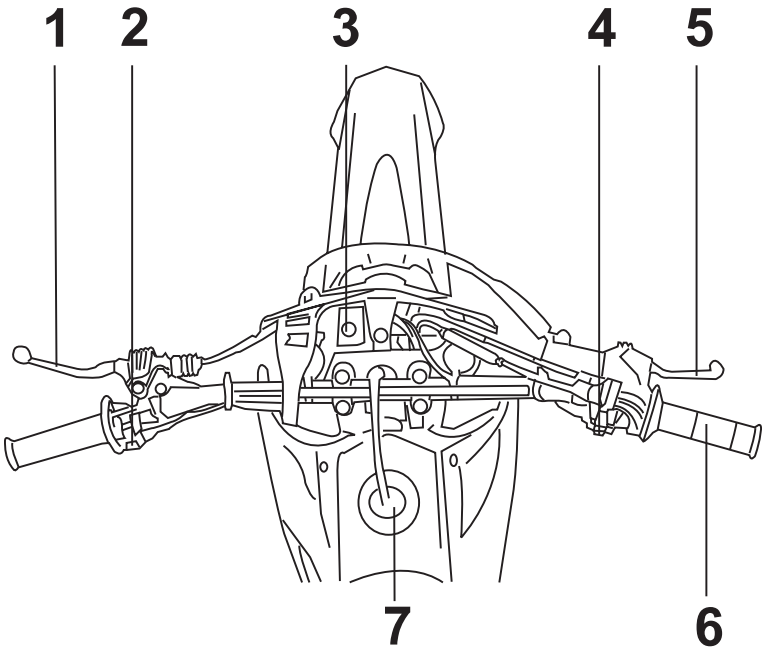
1. Fuel cock (page 3-5)
2. Starter (choke) knob (page 3-6)
3. Air filter element (page 6-11)
4. Shift pedal (page 3-2)

Right view



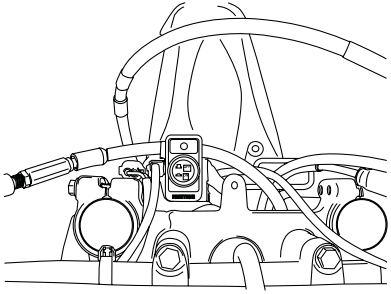
1. Fuse (page 6-26)
2. Battery (page 6-24)
3. Shock absorver assembly spring preload adjusting nut (page 3-7)
4. Engine oil filter element (page 6-8)
5. Brake pedal (page 3-3)

Controls and instruments



1. Clutch lever (page 3-2)
2. Engine stop switch (page 3-1)
3. Main switch (page 3-1)
4. Start switch (page 3-1)
5. Brake lever (page 3-2)
6. Throttle grip (page 6-13)
7. Fuel tank cap (page 3-3)

Main switch



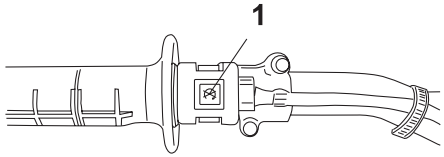
The main switch controls the ignition systems. The various main switch positions are described below.

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

OFF
All electrical systems are off.

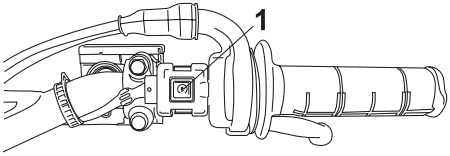
Handlebar switches

Left



1. Engine stop switch "⊘"

Right



1. Start switch "≋"

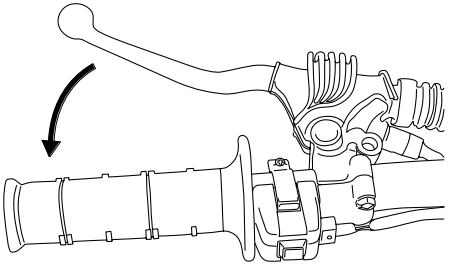
Engine stop switch "⊘"
Push this switch to stop the engine in case of an emergency, such as when the motorcycle overturns or when the throttle cable is stuck.

Start switch "≋"
Push this switch to crank the engine with the starter.

CAUTION:

See page 5-1 for starting instructions prior to starting the engine.

Clutch lever

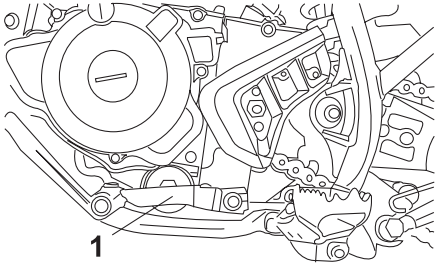


1. Clutch lever

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

The clutch lever is equipped with a clutch switch, which is part of the starting circuit cut-off system. (See page 3-8.)

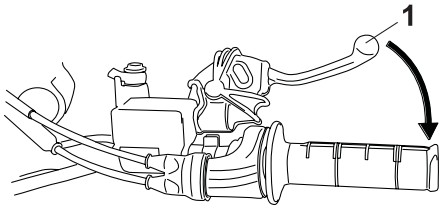
Shift pedal



1. 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.

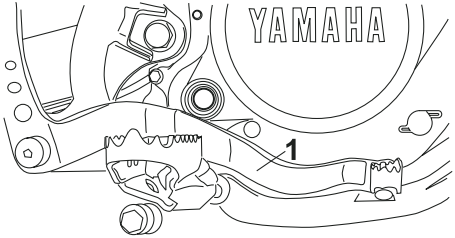
Brake lever



1. Brake lever

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

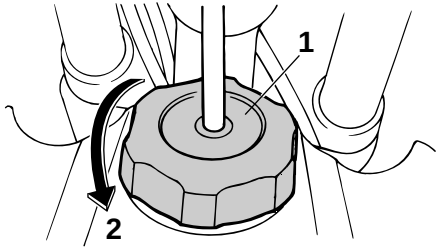
Brake pedal



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.

Fuel tank cap



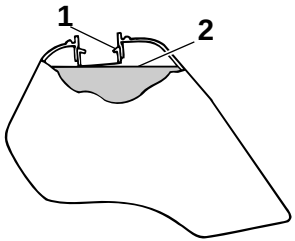
1. Fuel tank cap
2. Remove

To remove the fuel tank cap, turn it counterclockwise, and then pull it off. To install the fuel tank cap, insert it into the tank opening, and then turn it clockwise.

⚠ WARNING

Make sure that the fuel tank cap is properly closed before riding.

Fuel



1. Fuel tank filter tube
2. Fuel lever

Make sure that there is sufficient fuel in the tank. Fill the fuel tank to the bottom of the filler tube as shown.

⚠ WARNING

- **Do not overfill the fuel tank, otherwise it may overflow when the fuel warms up and expands.**
- **Avoid spilling fuel on the hot engine.**

CAUTION:

Immediately wipe off spilled fuel with a clean, dry, soft cloth, since fuel may deteriorate painted surfaces or plastic parts.

Recommended fuel:
UNLEADED GASOLINE ONLY
Fuel tank capacity:
8.0 L (2.11 us.gal) (1.76 imp.gal)
Fuel reserve amount:
1.8 L (0.48 us.gal) (0.40 imp.gal)

CAUTION:

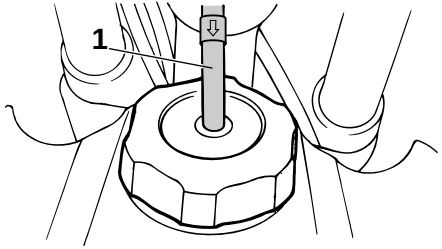
Use only unleaded gasoline. The use of leaded gasoline will cause severe damage to internal engine parts, such as the valves and piston rings, as well as to the exhaust system.

Your Yamaha engine has been designed to use regular unleaded gasoline with a pump octane number [(R+M)/2] of 86 or higher, or a research octane number of 91 or higher. If knocking (or pinging) occurs, use a gasoline of a different brand or premium unleaded fuel. Use of unleaded fuel will extend spark plug life and reduce maintenance costs.

Gasohol

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

Fuel tank breather hose



1. Fuel tank breather hose

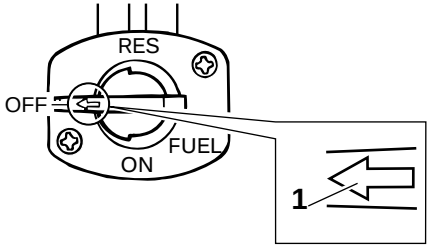
Before operating the motorcycle:

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

Fuel cock

The fuel cock supplies fuel from the tank to the carburetor while filtering it also. The fuel cock has three positions:

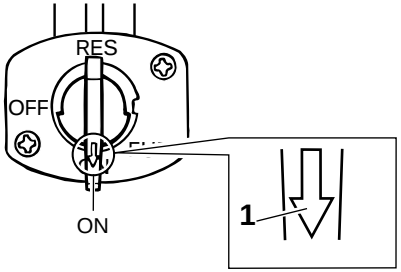
OFF



1. Arrow mark positioned over “OFF”

With the lever in this position, fuel will not flow. Always return the lever to this position when the engine is not running.

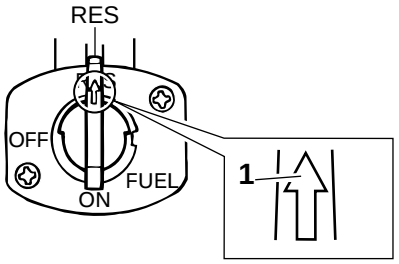
ON



1. Arrow mark positioned over “ON”

With the lever in this position, fuel flows to the carburetor. Normal riding is done with the lever in this position.

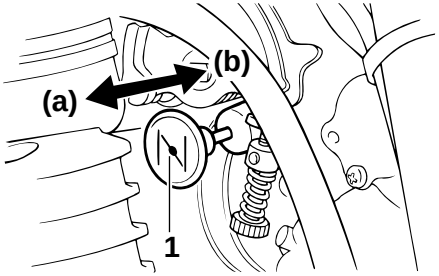
RES



1. Arrow mark positioned over “RES”

This indicates reserve. If you run out of fuel while riding, move the lever to this position. Fill the tank at the first opportunity. Be sure to set the lever back to “ON” after refueling!

Starter (choke) knob “ ”



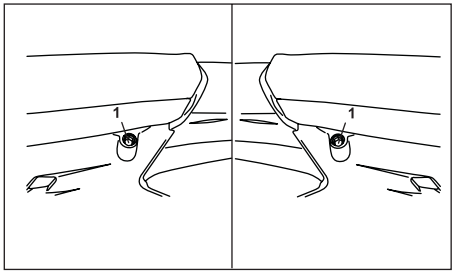
1. Starter (choke) knob “ ”

Starting a cold engine requires a richer air-fuel mixture, which is supplied by the starter (choke).
Move the knob in direction (a) to turn on the starter (choke).
Move the knob in direction (b) to turn off the starter (choke).

Seat

To remove the seat

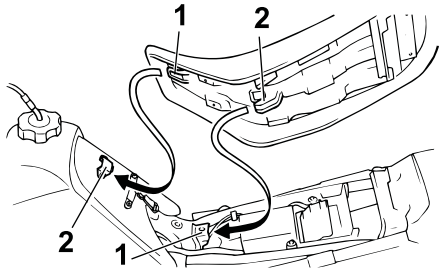
Remove the bolts, and then pull the seat off.



1. Bold

To install the seat

1. Insert the projections on the front of the seat into the seat holders as shown.



1. Projection
2. Seat Holder

2. Place the seat in the original position, and then tighten the bolts.

NOTE:

Make sure that the seat is properly secured before riding.

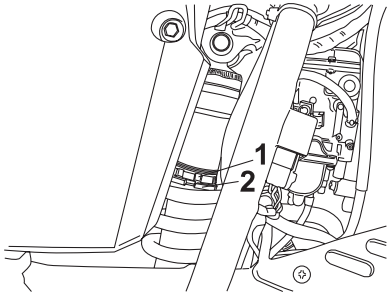
Adjusting the shock absorber assembly

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

CAUTION:

Never attempt to turn an adjusting mechanism beyond the maximum or minimum settings.

Spring preload

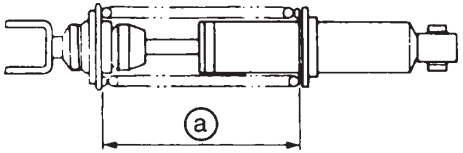


1. Locknut
2. Adjusting nut

1. Loosen the locknut.
2. To increase the spring preload and thereby harden the suspension, turn the adjusting nut in direction (a). To decrease the spring preload and thereby soften the suspension, turn the adjusting nut in direction (b).

NOTE:

- A special wrench is needed to make this adjustment and it can be obtained at a Yamaha dealer.
- The spring preload setting is determined by measuring distance A, shown in the illustration. The shorter the distance A is, the higher the spring preload; the longer distance A is, the lower the spring preload.



Spring preload:
Minimum (soft):
Distance A = 194 mm (7.6 in)
Standard:
Distance A = 204 mm (8.0 in)
Maximum (hard):
Distance A = 206 mm (8.1 in)

3. Tighten the locknut to the specified torque.

Tightening torque:
Locknut:
70 Nm (7.0 m.kgf, 51 ft.lbf)

CAUTION:

Always tighten the locknut against the adjusting nut, and then tighten the locknut to the specified torque.

⚠ WARNING

This shock absorber contains highly pressurized nitrogen gas. For proper handling, read and understand the following information before handling the shock absorber. The manufacturer cannot be held responsible for property damage or personal injury that may result from improper handling.

- **Do not tamper with or attempt to open the gas cylinder.**
- **Do not subject the shock absorber to an open flame or other high heat sources, otherwise it may explode due to excessive gas pressure.**
- **Do not deform or damage the gas cylinder in any way, as this will result in poor damping performance.**
- **Always have a Yamaha dealer service the shock absorber.**

Starting circuit cut-off system

The starting circuit cut-off system (comprising the clutch switch and the neutral switch) prevents starting when the transmission is in gear and the clutch lever is not pulled.
Periodically check the operation of the starting circuit cut-off system according to the following procedure.

⚠ WARNING

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

With the engine turned off:
1. Make sure that the engine stop switch is not set to“ ⊗ “ .
2. Push the main switch to “**ON**”.
3. Shift the transmission into the neutral position.
4. Push the start switch.

Does the engine start?

YES **NO** → The neutral switch may be defective. **The motorcycle should not be ridden** until checked by a Yamaha dealer.

5. Turn the engine off.
6. Shift the transmission into gear.
7. Keep the clutch lever pulled.
8. Push the start switch.

Does the engine start?

YES **NO** → The clutch switch may be defective. **The motorcycle should not be ridden** until checked by a Yamaha dealer.

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

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

PRE-OPERATION CHECKS

The condition of a vehicle is the owner's responsibility. Vital components can start to deteriorate quickly and unexpectedly, even if the vehicle remains unused (for example, as a result of exposure to the elements). Any damage, fluid leakage or loss of tire air pressure could have serious consequences. Therefore, it is very important, in addition to a thorough visual inspection, to check the following points before each ride.

Pre-operation check list

ITEM	CHECKS	PAGE
Fuel	• Check fuel level in fuel tank. • Refuel if necessary. • Check fuel line for leakage.	3-3
Engine oil	• Check oil level in engine. • If necessary, add recommended oil to specified level. • Check vehicle for oil leakage.	6-8
Front brake	• Check operation. • If soft or spongy, have Yamaha dealer bleed hydraulic system. • Check lever free play. • Adjust if necessary. • Check brake pads for wear. • Replace if necessary. • Check fluid level in reservoir. • If necessary, add recommended brake fluid to specified level. • Check hydraulic system for leakage.	6-18 ~ 6-19
Rear brake	• Check operation. • Check pedal free play • Adjust if necessary	6-17 ~ 6-18
Clutch	• Check operation. • Lubricate cable if necessary. • Check lever free play. • Adjust if necessary.	6-16

ITEM	CHECKS	PAGE
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.	6-13 6-21
Control cables	• Make sure that operation is smooth. • Lubricate if necessary.	6-21
Drive chain	• Check chain slack. • Adjust if necessary. • Check chain condition. • Lubricate if necessary.	6-19 ~ 6-20
Wheels and tires	• Check for damage. • Check tire condition and tread depth. • Check air pressure. • Correct if necessary.	6-14 ~ 6-16
Brake and shift pedals	• Make sure that operation is smooth. • Lubricate pedal pivoting points if necessary.	6-22
Brake and clutch levers	• Make sure that operation is smooth. • Lubricate lever pivoting points if necessary.	6-22
Sidestand	• Make sure that operation is smooth. • Lubricate pivot if necessary.	6-22
Chassis fasteners	• Make sure that all nuts, bolts and screws are properly tightened. • Tighten if necessary.	–
Switches	• Check operation. • Correct if necessary.	–
Engine stop switch	• Check operation.	3-1

PRE-OPERATION CHECKS

NOTE:

Pre-operation checks should be made each time the vehicle is used. Such an inspection can be accomplished in a very short time; and the added safety it assures is more than worth the time involved.

⚠ WARNING

If any item in the Pre-operation check list is not working properly, have it inspected and repaired before operating the vehicle.

⚠ WARNING

- **This model is designed for off-road use only. In most instances, it is illegal to ride this model (either day or night) on any public street or highway.**
- **Never start the engine or operate it in a closed area for any length of time. Exhaust fumes are poisonous, and inhaling them can cause loss of consciousness and death within a short time. Always make sure that there is adequate ventilation.**
- **Before starting out, make sure that the sidestand is up. If the sidestand is not raised completely, it could contact the ground and distract the operator, resulting in a possible loss of control.**

Starting and warming up a cold engine

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

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

⚠ WARNING

- **Before starting the engine, check the function of the starting circuit cut-off system according to the procedure described on page 3-8.**
- **Never ride with the sidestand down.**

1. Turn the fuel cock lever to “ON”.
2. Push the main switch to “ON”.
3. Shift the transmission into the neutral position.
4. Turn the starter (choke) on and completely close the throttle. (See page 3-6.)
5. Start the engine by pushing the start switch.

NOTE:

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.

6. After starting the engine, move the starter (choke) back halfway.

CAUTION:

For maximum engine life, always warm the engine up before starting off. Never accelerate hard when the engine is cold!

7. When the engine is warm, turn the starter (choke) off.

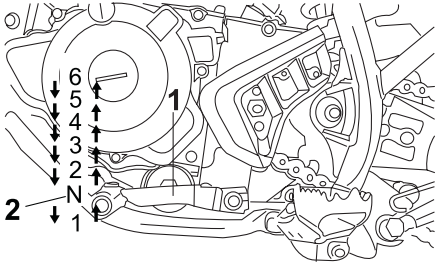
NOTE:

The engine is warm when it responds normally to the throttle with the starter (choke) turned off.

Starting a warm engine

Follow the same procedure as for starting a cold engine with the exception that the starter (choke) is not required when the engine is warm.

Shifting



1. Shift pedal
2. Neutral position

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

The gear positions are shown in the illustration.

NOTE:

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.

CAUTION:

- **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.**

Engine break-in

There is never a more important period in the life of your engine than the first 20 hours of riding. 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 20 hours of operation. 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. However, momentary full-throttle operation under load (i.e., two to three seconds maximum) does not harm the engine. Each full-throttle acceleration should be followed with a substantial rest period for the engine. To allow the engine to cool down from the temporary buildup of heat, cruise at a lower engine speed.

0-10 hours

- Avoid prolonged operation above 1/2 throttle.
- After every hour of operation, stop the engine, and then let it cool for five to ten minutes.
- Vary the engine speed from time to time. Do not operate the engine at one set throttle position.

10-20 hours

- Avoid prolonged operation above 3/4 throttle.
- Rev the engine freely through the gears, but do not use full throttle at any time.

After break-in

Avoid prolonged full-throttle operation. Vary the engine speed occasionally.

CAUTION:

If any engine trouble should occur during the engine break-in period, immediately have a Yamaha dealer check the vehicle.

Parking

When parking, stop the engine, push the main switch to “OFF”, and then turn the fuel cock lever to “OFF”.

⚠ 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.**
- **Do not park on a slope or on soft ground, otherwise the vehicle may overturn.**

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

⚠ WARNING

If you are not familiar with maintenance work, have a Yamaha dealer do it for you.

⚠ WARNING

Modifications not approved by Yamaha may cause loss of performance, excessive emissions, and render the vehicle unsafe for use. Consult a Yamaha dealer before attempting any changes.

⚠ WARNING

- **Caution for high pressured water using.**
  - **Water comes in exhaust silencer port, and going to inside of the engine if no protection. From air intake port of side cover also water going to inside of the engine.**
- **Technique for cover assembly/ disassembly**
  - **There is a few disadvantge for service-ability to give priority for outside appearance.**
  - **At the first time for disassembly/assembly. there are possibility to broken at fitting portion due to nom experience.**

Periodic maintenance chart for the emission control system

NOTE:

- From 7000 km (4200 mi) or 9 months, repeat the maintenance intervals starting from 3000 km (1800 mi) or 3 months.
- Items marked with an asterisk should be performed by a Yamaha dealer as they require special tools, data and technical skills.

No.		ITEM	CHECKS AND MAITENANCE JOBS	INITIAL	EVERY	
				1000 km (600 mi) or 1 month	3000 km (1800 mi) or 3 months	5000 km (3000 mi) or 6 months
1	*	**Fuel line**	• Check fuel hoses for cracks or damage. • Replace if necessary.	O	O	O
2		**Spark plug**	• Check condition. • Adjust gap and clean.	O	O	O
3	*	**Valve clearance**	• Check and adjust valve clearance when engine is cold	O	O	O
4	*	**Air filter element**	• Clean with solvent. • Replace if necessary.	O	O	O
5	*	**Crankcase breather system**	• Check ventilation hose for cracks or damage and drain any deposits. • Repalce if necessary	O	O	O
6	*	**Carburetor**	• Check engine idling speed and starter operation. • Adjust if necessary.	O	O	O
7		**Exhaust system**	• Check for leakage. • Tighten if necessary. • Replace gasket(s) if necessary	O	O	O
8		**Engine oil**	• Change (warm engine before draining.)	O	O	O
9		**Engine oil filter elements**	• Clean	O	O	O

General maintenance and lubrication chart

No.		ITEM	CHECKS AND MAITENANCE JOBS	INITIAL	EVERY	
				1000 km (600 mi) or 1 month	3000 km (1800 mi) or 3 months	5000 km (3000 mi) or 6 months
1		Clutch	• Check operation. • Adjust or replace cable.	O	O	O
2	*	Front brake	• Check operation, fluid level, and for fluid leakage. • Replace brake pads if necessary.	O	O	O
3	*	Rear brake	• Check operation. • Replace brake shoes if necessary.	O	O	O
4	*	Brake hoses	• Check for craks or damage.	O	O	O
			• Replace.	Every 4 years		
5	*	Wheels	• Check runout, spoke tightness and for damage. • Tighten spokes if necessary.	O	O	O
6	*	Tires	• Check tread depth and for damage. • Replace if necessary. • Check air pressure. • Correct if necessary.	O	O	O
7	*	Wheel bearings	• Check bearing for smooth operation. • Replace if necessary.	O	O	O
8	*	Swingarm pivot bearings	• Check bearing assemblies for looseness. • Moderately repack with lithium-soap-based grease.	O	O	O
9		Drive chain	• Check chain slack/alignment and condition. • Adjust and lubricate chain with a special O-ring chain lubricant thoroughly.	Every ride		

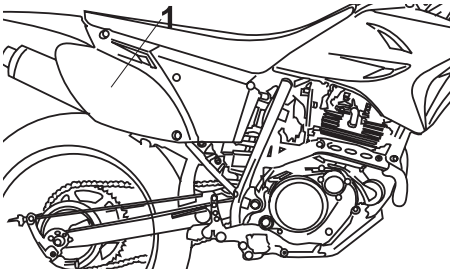
No.		ITEM	CHECKS AND MAITENANCE JOBS	INITIAL	EVERY	
				1000 km (600 mi) or 1 month	3000 km (1800 mi) or 3 months	5000 km (3000 mi) or 6 months
10	*	**Steering bearing**	• Check bearing assemblies for looseness. • Moderately repack with lithium-soap-based grease every 1200 mi (2000 km) or 12 months (whichever comes first)	O	O	O
11	*	**Chassis fasteners**	• Check all chassis fitting and fasteners. • Correct if necessary.	O	O	O
12		**Brake and clutch lever pivot shafts**	• Apply lithium-soap-based grease (all-purpose grease) lightly.	O	O	O
13		**Brake and shift pedal pivot shafts**	• Apply lithium-soap-based grease (all-purpose grease) lightly.	O	O	O
14		**Sidestand pivot**	• Check operation. • Apply lithium-soap-based grease (all-purpose grease) lightly.	O	O	O
15	*	**Front fork**	• Ckeck operation and for oil leakage. • Replace if necessary.		O	O
16	*	**Shock absorber assembly**	• Ckeck operation and for oil leakage. • Replace if necessary.		O	O
17	*	**Rear suspension link pivots**	• Apply molybdenum disulfide grease lightly.		O	O

No.		ITEM	CHECKS AND MAITENANCE JOBS	INITIAL	EVERY	
				1000 km (600 mi) or 1 month	3000 km (1800 mi) or 3 months	5000 km (3000 mi) or 6 months
18	*	**Control cables**	• Apply Yamaha chain and cable lube or engine oil 10W-30 thoroughly.	O	O	O
19	*	**Throttle grip housing and cable**	• Check operation and free play. • Adjust the throttle cable free play if necessary. • Lubricate the throttle grip housing and cable.	O	O	O

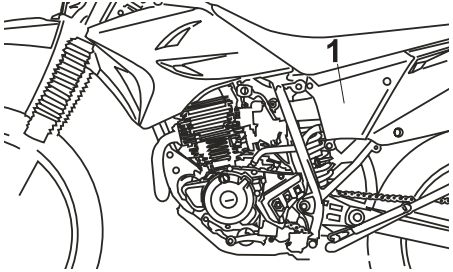
NOTE:

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

Removing and installing the panels



1. Panel A



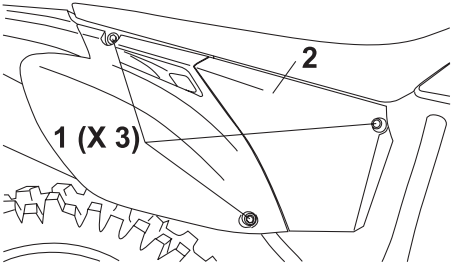
1. Panel B

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

Panel A

To remove the panel

Remove the screw.



1. Screw
2. Painel A

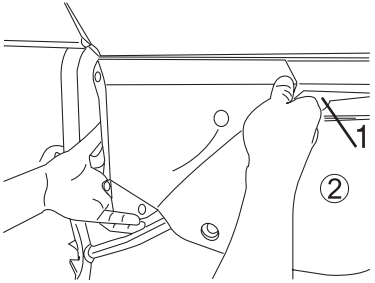
To install the panel

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

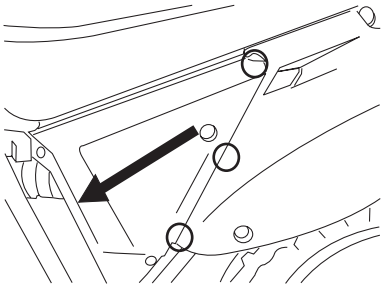
Panel B

To remove the panel

1. Remove the screw.
2. Pull the panel B to your direction. To make it easier, use the opening ① of the cover ②.

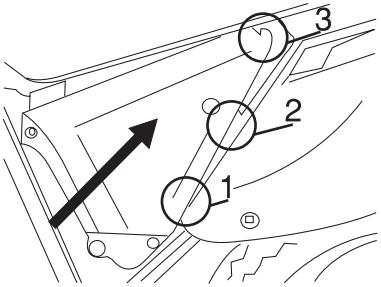


3. Pull the panel B in the arrow direction.

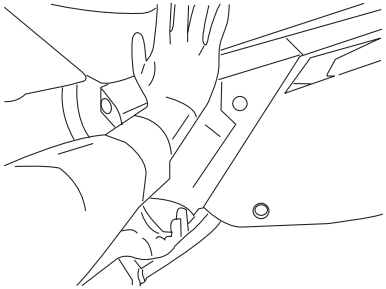


To install de panel

1. Install the panel B under the seat.
2. To install the panel B, follow the sequence below (1,2,3)



3. Check if panel B is securely installed, other wise dirty can enter in the air filter an engine damage may occur



Checking the spark plug

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

To remove the spark plug

1. Remove the spark plug cap.
2. Remove the spark plug.

To check the spark plug

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

NOTE:

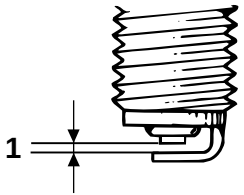
If the spark plug shows a distinctly different color, the engine could be defective. Do not attempt to diagnose such problems yourself. Instead, have a Yamaha dealer check the vehicle.

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

Specified spark plug:
NGK/DR8EA

To install the spark plug

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



1. Spark plug gap:

Spark plug gap:
0,6~0,7 mm (0,024~0,028 in)

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

Tightening torque:
Spark plug:
18 Nm (1.8 m.kgf, 13 ft.lbf)

NOTE:

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.

4. Install the spark plug cap.

Engine oil and oil filter element

The engine oil level should be checked before each ride. In addition, the oil must be changed and the oil filter element cleaned at the intervals specified in the General 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.

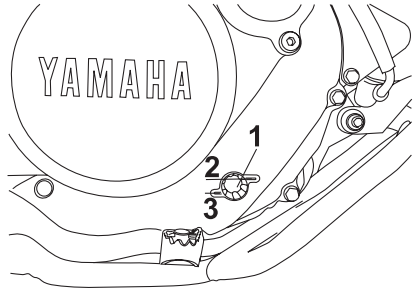
NOTE:

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

2. Start the engine, warm it up for 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 lower part of the right side of the crankcase.

NOTE:

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

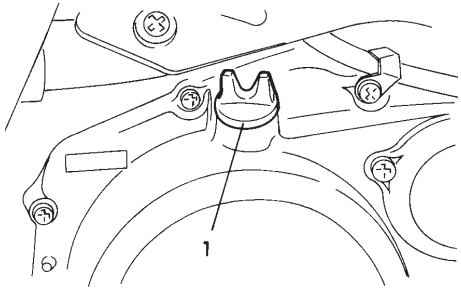


1. Engine oil level check window
2. Maximum level mark
3. Minimum level mark

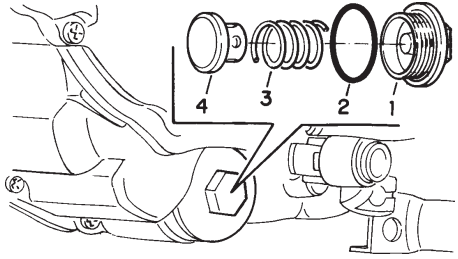
4. If the engine oil is below the minimum level mark, add sufficient oil of the recommended type to raise it to the correct level.

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

1. Start the engine, warm it up for several minutes, and then turn it off.
2. Place an oil pan under the engine to collect the used oil.
3. Remove the engine oil filler bolt and drain bolt to drain the oil from the crankcase.



1. Engine oil filter bolt

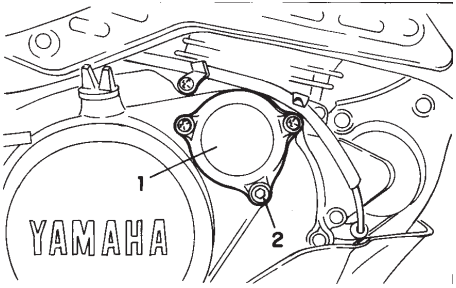


1. Drain plug
2. O-ring
3. Compression spring
4. Oil strainer

CAUTION:

When removing the oil drain plug, the o-ring, compression spring and oil strainer will fall out. Take care not to lose these parts.

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



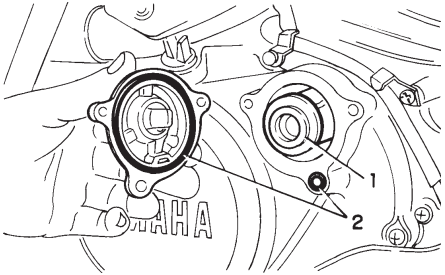
1. Oil filter element cover
2. Oil filter element drain bolt

NOTE:

Skip steps 5 - 9 if the oil filter element is not being cleaned.

6

5. Remove the oil filter element cover by removing the bolts.
6. Remove the oil filter element and O-rings.



1. Oil filter element
2. O-ring (x2)

7. Check the O-rings for damage and replace them if necessary.
8. Clean the oil filter element with solvent, and then install it.

NOTE:

Check the oil filter element for damage and replace it if necessary.

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

Tightening torque:
Oil filter element cover bolt:
7 Nm (0.7 m.kgf, 5.1 ft.lbf)

NOTE:

Make sure that the O-rings are properly seated.

10. Install the engine oil drain bolt, and then tighten it to the specified torque.
11. Install the engine oil filter element drain bolt, and then tighten it to the specified torque.

Tightening torques:
Engine oil drain bolt:
43 Nm (4.3 m.kgf, 3.1 ft.lbf)
Oil filter element drain bolt:
10 Nm (1.0 m.kgf, 7.2 ft.lbf)

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

Recommended oil:
See page 8-1.
Oil quantity:
Without oil filter element replacement:
1.0 L (1.06 us.qt) (0.91 imp.qt)
With oil filter element replacement:
1.10 L (1.16 us.qt) (0.97 imp.qt)

CAUTION:

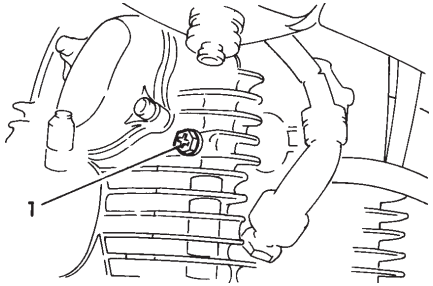
In order to prevent clutch slippage (since the engine oil also lubricates the clutch), do not mix any chemical additives with the oil.
Make sure that no foreign material enters the crankcase.

13. Start the engine, and then let it idle for several minutes while checking it for oil leakage. If oil is leaking, immediately turn the engine off and check for the cause.
14. Turn the engine off, and then check the oil level and correct it if necessary.

CAUTION:

After replacing the engine oil, make sure to check the oil pressure as described below.

- **Remove the bleed bolt in the cylinder head.**
- **Start the engine and keep it idling until oil flows out. If no oil comes out after one minute, turn the engine off immediately so it will not seize. If this occurs, have a Yamaha dealer repair the vehicle.**
- **After checking the oil pressure, tighten the bleed bolt to the specified torque.**



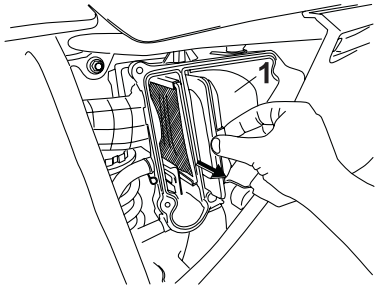
1. Bleed bolt

Tightening torque:
Bleed bolt:
7Nm (0,7m.kgf, 5,0 ft.lbf)

Cleaning the air filter element

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

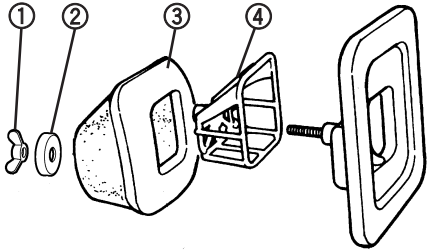
1. Remove panel B. (See page 6-6.)
2. Pull the air filter element out of the air filter case.



1. Air filter element

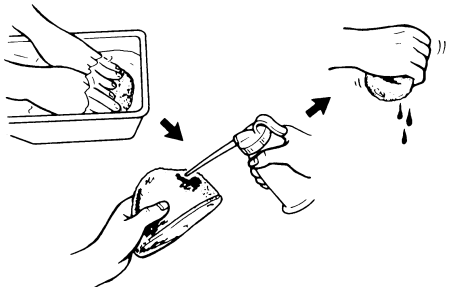
6

3. Remove the wing nut, washer, air filter element, air filter guide from the air filter element frame.



1. Wingnut
2. Washer
3. Air filter element
4. Air filter guide

4. Clean the air filter element with solvent, and then squeeze the remaining solvent out.



5. Apply oil of the recommended type to the entire surface of the air filter element, and then squeeze the excess oil out.

NOTE:

The air filter element should be wet but not dripping.

Recommended oil:
Yamaha foam air filter oil or other quality air filter oil

6. Install the air filter guide, air filter element, washer, wing nut onto the frame, insert into the air filter case.

CAUTION:

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

7. Install the panel.

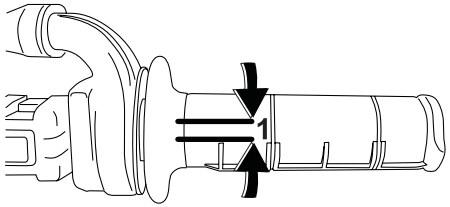
Adjusting the carburetor

The carburetor is an important part of the engine and requires very sophisticated adjustment. Therefore, most carburetor adjustments should be left to a Yamaha dealer, who has the necessary professional knowledge and experience. However, the following may be serviced by the owner as part of routine maintenance.

CAUTION:

The carburetor has been set and extensively tested at the Yamaha factory. Changing these settings without sufficient technical knowledge may result in poor performance of or damage to the engine.

Adjusting the throttle cable free play



1.Throttle cable free play

The throttle cable free play should measure 3 ~ 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.

Adjusting the valve clearance

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

Tires

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

- **The tire air pressure must bechecked 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, cargo, and accessories approved for this model.**

Off-road riding:

Front:
100 kPa (15 psi)
(1.00 kgf/cm²)
Rear:
100 kPa (15 psi)
(1.00 kgf/cm²)
Maximum load*:
90.0 kg (198 lb)

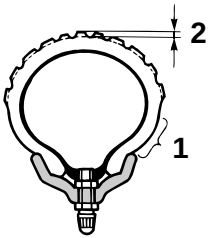
* Total weight of rider, cargo and accessories

⚠ WARNING

Because loading has an enormous impact on the handling, braking, performance and safety characteristics of your vehicle, you should keep the following precautions in mind.

- **NEVER OVERLOAD THE VEHICLE! Operation of an overloaded vehicle may result in tire damage, loss of control, or severe injury. Make sure that the total weight of rider, cargo, and accessories does not exceed the specified maximum load for the vehicle.**
- **Do not carry along loosely packed items, which can shift during a ride.**
- **Securely pack the heaviest items close to the center of the vehicle and distribute the weight evenly on both sides.**
- **Adjust the suspension and tire air pressure with regard to the load.**
- **Check the tire condition and air pressure before each ride.**

Tire inspection



1. Tire sidewall
2. Tire tread depth

The tires must be checked before each ride. If a tire tread depth reaches the specified limit, if the tire has a nail or glass fragments in it, or if the sidewall is cracked, have a Yamaha dealer replace the tire immediately.

Minimum tire tread depth
(front and rear):
4.0 mm (0.16 in)

Tire information
This motorcycle is equipped with spoke wheels and tube tires.

⚠ WARNING

- **The front and rear tires should be of the same make and design, otherwise the handling characteristics of the vehicle cannot be guaranteed.**
- **After extensive tests, only the tires listed below have been approved for this model by Yamaha Motor da Amazônia Ltda.**

Front tire:
Size:
80/100-21 NHS
Manufacturer/model:
PIRELLI MT 320 H
Rear tire:
Size:
100/100-18 NHS
Manufacturer/model:
PIRELLI MT 320

⚠ WARNING

- **Have a Yamaha dealer replace excessively worn tires. Besides being illegal, operating the machine with excessively worn tires decreases riding stability and can lead to loss of control.**
- **The replacement of all wheeland brake-related parts, including the tires, should be left to a Yamaha dealer, who has the necessary professional knowledge and experience.**
- **It is not recommended to patch a punctured tube. If unavoidable, however, patch the tube very carefully and replace it as soon as possible with a high-quality product.**

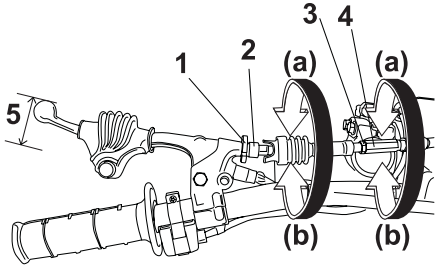
6

Spoke wheels

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

- The wheel rims should be checked for cracks, bends or warpage, and the spokes for looseness or damage before each ride. If any damage is found, have a Yamaha dealer replace the wheel. Do not attempt even the smallest repair to the wheel. A deformed or cracked wheel must be replaced.
- The wheel should be balanced whenever either the tire or wheel has been changed or replaced. An unbalanced wheel can result in poor performance, adverse handling characteristics, and a shortened tire life.
- 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. Locknut (clutch lever)
2. Adjusting bolt
3. Locknut (clutch cable)
4. Adjusting nut
5. Clutch lever free play

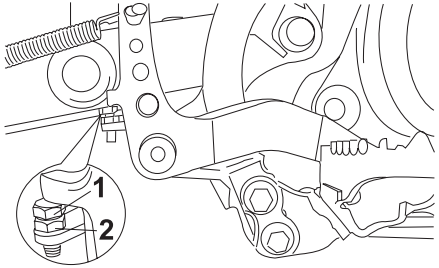
The clutch lever free play should measure 10 ~ 15 mm (0,39 ~ 0,59 in) as shown. Periodically check the clutch lever free play and, if necessary, adjust it as follows.

1. Loosen the locknut at the clutch lever.
2. To increase the clutch lever free play, turn the adjusting bolt in direction (a). To decrease the clutch lever free play, turn the adjusting bolt in direction (b).
3. If the specified clutch lever free play could be obtained as described above, tighten the locknut and skip the rest of the procedure, otherwise proceed as follows.
4. Fully turn the adjusting bolt in direction (a) to loosen the clutch cable.
5. Loosen the locknut further down the clutch cable.
6. To increase the clutch lever free play, turn the adjusting nut in direction (a). To decrease the clutch lever free play, turn the adjusting nut in direction (b).
7. Tighten both locknuts.

Adjusting the brake pedal position

⚠ WARNING

For brake pedal adjustment, be sure to proceed as follows (it is advisable to have a Yamaha dealer make this adjustment.)



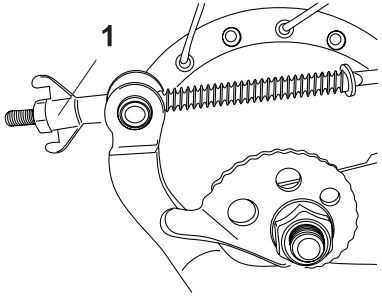
1. Adjuster
2. Locknut

1. Pedal height.
a. Loosen the locknut.
b. By turning the adjuster clockwise or counterclockwise adjust the brake pedal position so that its top end is 3 mm (0.12 in) below the top of footrest.
c. Tighten the locknut.

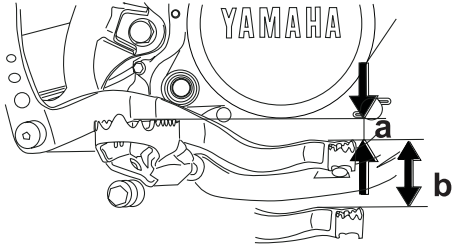
⚠ WARNING

After adjusting the pedal height adjust brake pedal free play.

2. Free play
The rear brake pedal free play should be adjusted to 20 ~ 30 mm (0.8 ~ 1.2 in) at the brake pedal end. Turn the adjuster on the brake rod clockwise to reduce play or counterclockwise to increase play.



1. Adjuster



a. Pedal height
b. Free play

⚠ WARNING

- **Brake pedal free play should be checked whenever the chain is adjusted or the rear wheel is removed and then reisntalled.**
- **If it is impossible to make proper adjustment, consult a Yamaha dealer.**

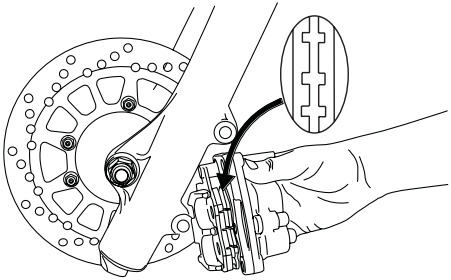
6

Checking the front brake pads and rear brake shoes

The front brake pads and rear brake shoes must be checked for wear at the intervals specified in the periodic maintenance and lubrication chart. Each brake pad/ shoes are provided with a wear indicator groove, which allows you to check the brake pad/ shoes wear without having to disassemble the brake. To check the brake pad/ shoes wear, check the wear indicator grooves. If a brake pad/ shoes have worn to the point that the wear indicator groove have almost disappeared, have a Yamaha dealer replace the brake pads/ shoes as a set.

Front brake

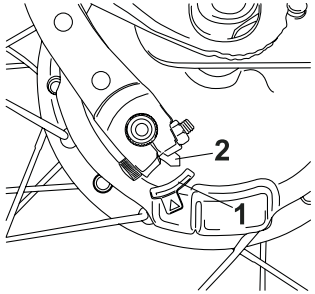
Apply the brake and inspect the wear indicator. If the wear indicator is almost in contact with the disc plate ask a Yamaha dealer to replace the pads.



1. Wear indicator groove

Rear brake

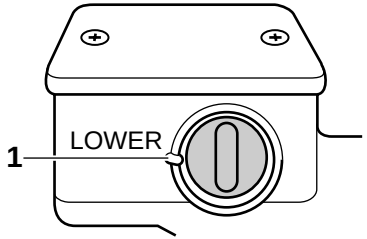
Apply the brake and inspect the wear indicator. If the indicator reaches the wear limit line, ask a Yamaha dealer to replace the shoes.



1. Wear limit
2. Wear indicator

Checking the brake fluid level

Front brake



1. Lower level

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.

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.
- 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.

Changing the brake fluid

Have a Yamaha dealer change the brake fluid at the intervals specified in the NOTE 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.

Drive chain slack

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

To check the drive chain slack

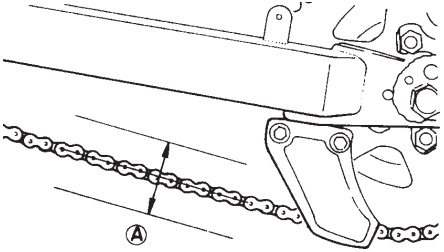
1. Place the motorcycle on a level surface and hold it in an upright position.

NOTE:

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

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

Drive chain slack:
45 ~ 60 mm (1.77 ~ 2.36 in)



A. Drive chain slack

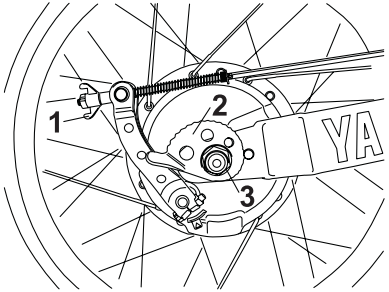
4. If the drive chain slack is incorrect, adjust it as follows.

To adjust the drive chain slack

1. Loosen the rear brake adjuster and the axlenut.
2. To tighten the drive chain, turn the adjusting plate on each side of the swingarm in direction (a). To loosen the drive chain, turn the adjusting plate on each side of the swingarm in direction (b), and then push the rear wheel forward.

NOTE:

Make sure that both adjusting plates are in the same position for proper wheel alignment.



1. Adjuster
2. Adjusting plate
3. Axle nut

CAUTION:

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.

3. Tighten the axle nut to the specified torque.

Tightening torque:
Axle nut:
80 Nm (8.0 m.kgf, 58 ft.lbf)

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.

CAUTION:

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

1. Clean the drive chain with kerosene and a small soft brush.

CAUTION:

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.

CAUTION:

Do not use engine oil or any other lubricants for the drive chain, as they may contain substances that could damage the O-rings.

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.

Recommended lubricant:
Yamaha Chain and Cable Lube or engine oil SAE 10W-30 (API SE)

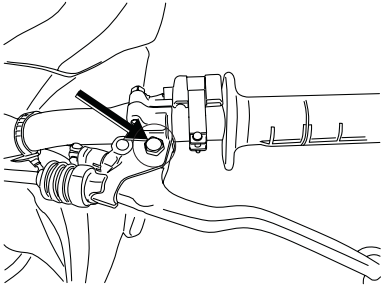
⚠ WARNING

Damage to the outer housing of cables may result in internal rusting and cause interference with cable movement. Replace damaged cables as soon as possible to prevent unsafe conditions.

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 or replaced at the intervals specified in the periodic maintenance chart.

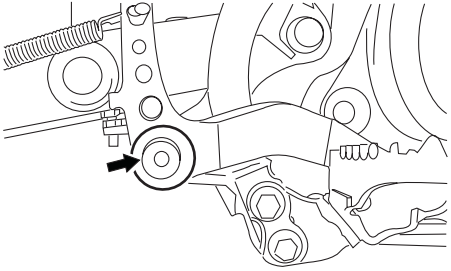
Checking and lubricating the brake and clutch levers



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

Recommended lubricant:
Lithium-soap-based grease (all-purpose grease)

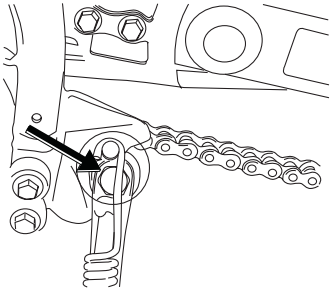
Lubricating the brake pedal



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

Recommended lubricant:
Lithium-soap-based grease (all-purpose grease)

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.

Recommended lubricant:
Lithium-soap-based grease (all-purpose 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

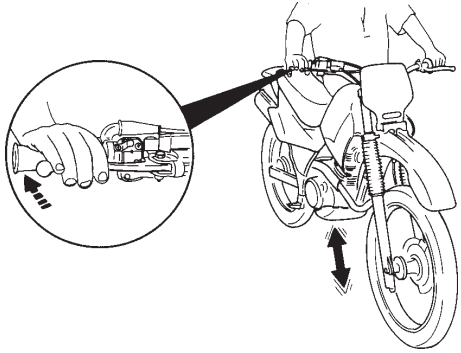
⚠ WARNING

Securely support the motorcycle so that there is no danger of it falling over.

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

To check the operation

1. Place the motorcycle on a level surface and hold it in an upright position.
2. While applying the front brake, push down hard on the handlebars several times to check if the front fork compresses and rebounds smoothly.



CAUTION:

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

Checking the steering

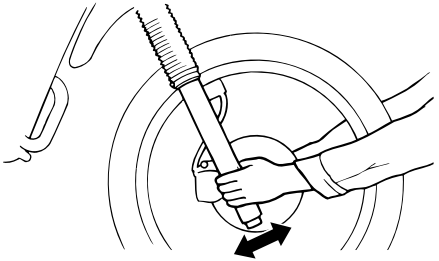
Worn or loose steering bearings may cause danger. Therefore, the operation of the steering must be checked as follows at the intervals specified in the periodic maintenance and lubrication chart.

1. Place a stand under the engine to raise the front wheel off the ground.

⚠ WARNING

Securely support the motorcycle so that there is no danger of it falling over.

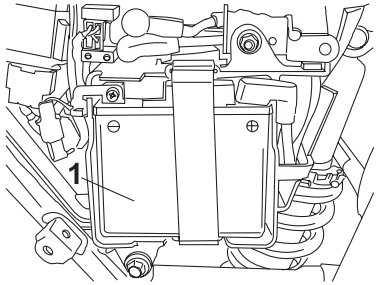
2. Hold the lower ends of the front fork legs and try to move them forward and backward. If any free play can be felt, have a Yamaha dealer check or repair the steering.



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.

Battery



1. Battery

The battery is located behind panel A. (See page 6-6.)
This model is equipped with a sealed-type (MF) battery, which does not require any maintenance. There is no need to check the electrolyte or to add distilled water.

CAUTION:

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

⚠ 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

1. 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.

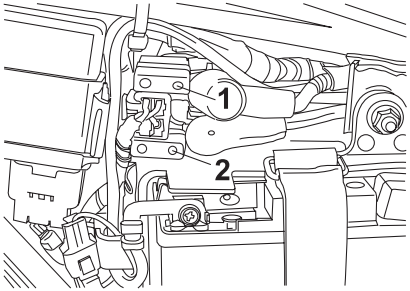
To store the battery

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

CAUTION:

- **Always keep the battery charged. Storing a discharged battery can cause permanent battery damage.**
- **To charge a sealed-type (MF) 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 sealed-type (MF) battery charger, have a Yamaha dealer charge your battery.**

Replacing the fuse



1. Fuse
2. Spare fuse

The fuse holder is located behind panel A. (See page 6-6.)
If the fuse is blown, replace it as follows.

1. Push the main switch to “OFF” and turn off all electrical circuits.
2. Remove the blown fuse, and then install a new fuse of the specified amperage.

Specified fuse:
10 A

CAUTION:

Do not use a fuse of a higher amperage rating than recommended to avoid causing extensive damage to the electrical system and possibly a fire.

3. Push the main swith to “ON” and turn on the electrical circuits to check if the devices operate.
4. If the fuse immediately blows again, have a Yamaha dealer check the electrical system.

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.

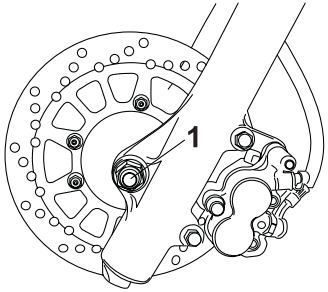
Front wheel

To remove the front wheel

⚠ WARNING

- **It is advisable to have a Yamaha dealer service the wheel.**
- **Securely support the motorcycle so that there is no danger of it falling over.**

1. Loosen the wheel axle.
2. Lift the front wheel off the ground according to the procedure on page 6-26.



1. Axle nut

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

CAUTION:

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 front wheel

1. Insert the wheel axle, and then tighten it to the specified torque.

Tightening torque:
Wheel axle:
80 Nm (8.0 m.kgf, 58 ft.lbf)

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

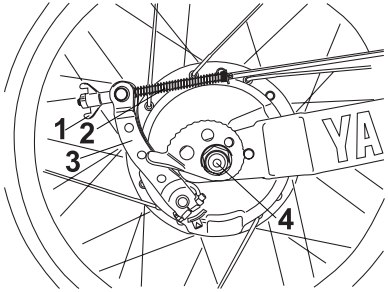
Rear wheel

To remove the rear wheel

⚠ WARNING

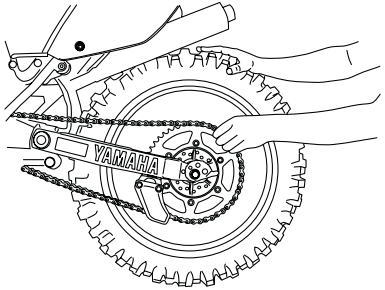
- **It is advisable to have a Yamaha dealer service the wheel.**
- **Securely support the motorcycle so that there is no danger of it falling over.**

1. Remove the brake adjuster.
2. Remove the brake rod from the brake cam lever
3. Loosen the axle nut



1. Adjuster
2. Brake rod
3. Brake cam lever
4. Axle nut

4. Lift the rear wheel off the ground according to the procedure on page 6-26.
5. Remove the axle nut.
6. Push the wheel forward, and then remove the drive chain from the rear sprocket.



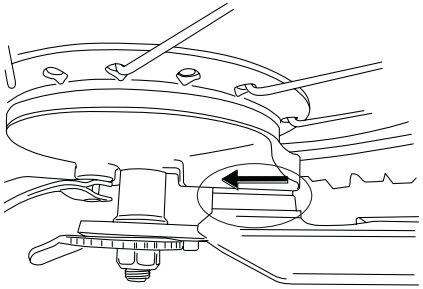
NOTE:

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

7. Remove the wheel.

To install the rear wheel

1. Install the wheel.
2. Install the drive chain onto the rear sprocket.
3. Be sure the slot in the brake shoe plate is fit over the stopper on the rear arm.



4. Make sure the rear wheer axle is inserted from the left-hand side and that the chain, pullers are installed with the punched side outward.
5. Adjust the drive chain slack. (See page 6-19.)
6. Tighten the axle nut to the specified torque.

Tightening torque:
Axle nut:
80 Nm (8.0 m.kgf, 58 ft.lbf)

7. Adjust the rear brake (see pag 6-17)

Troubleshooting

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

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

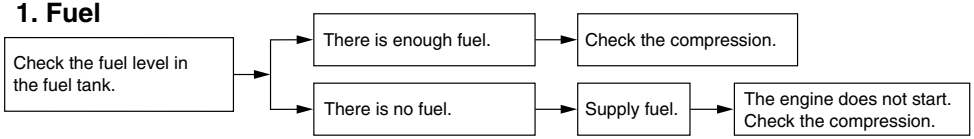
Use only genuine Yamaha replacement parts. Imitation parts may look like Yamaha parts, but they are often inferior, have a shorter service life and can lead to expensive repair bills.

Troubleshooting chart

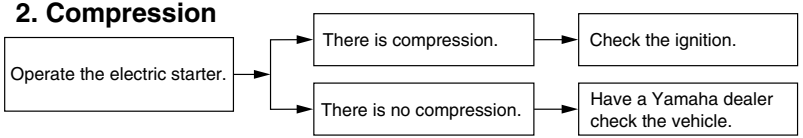
⚠ WARNING

Keep away open flames and do not smoke while checking or working on the fuel system.

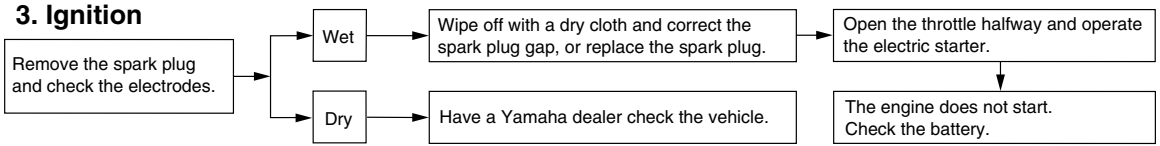
1. Fuel



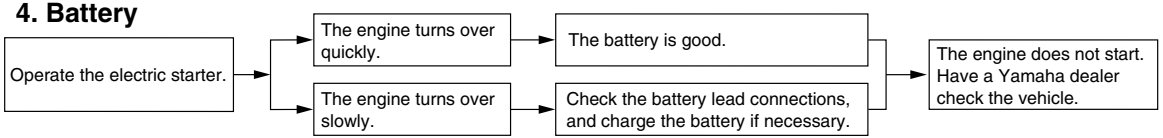
2. Compression



3. Ignition



4. Battery



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. When washing the motorcycle with high pressured water, cover the parts following.
   a. Silencer exhaust port.
   b. Side cover air intake port.
2. Close the air intake port for the water protection at each port, right and left of side covers while washing by high pressured water.
3. Cover the muffler outlet with a plastic bag after the engine has cooled down.
4. Make sure that all caps and covers as well as all electrical couplers and connectors, including the spark plug cap, are tightly installed.
5. 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

CAUTION:

- **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 windshields, cowlings, panels and other plastic parts. Use only a soft, clean cloth or sponge with mild detergent and water to clean plastic.**
- **Do not use any harsh chemical products on plastic parts. Be sure to avoid using cloths or sponges which have been in contact with strong or abrasive cleaning products, solvent or thinner, fuel (gasoline), rust removers or inhibitors, brake fluid, antifreeze or electrolyte.**
- **Do not use high-pressure washers or steam-jet cleaners since they cause water seepage and deterioration in the following areas: seals (of wheel and swingarm bearings, fork and brakes), electric components (couplers, connectors, instruments, switches and lights), breather hoses and vents.**
- **For motorcycles equipped with a windshield: Do not use strong cleaners or hard sponges as they will cause dulling or scratching. Some cleaning compounds for plastic may leave scratches on the windshield. Test the product on a small hidden part of the windshield to make sure that it does not leave any marks. If the**

windshield is scratched, use a quality plastic polishing compound after washing.

After normal use

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

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

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

NOTE:

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.

CAUTION:

Do not use warm water since it increases the corrosive action of the salt.

2. Apply a corrosion protection spray on all metal, including chrome- and nickel-plated, surfaces to prevent corrosion.

After cleaning

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

⚠ WARNING

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

CAUTION:

- **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.**

NOTE:

Consult a Yamaha dealer for advice on what products to use.

Storage

Short-term

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

CAUTION:

- **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. For motorcycles equipped with a fuel cock that has an "OFF" position: Turn the fuel cock lever to "OFF".
3. Drain the carburetor float chamber by loosening the drain bolt; this will prevent fuel deposits from building up. Pour the drained fuel into the fuel tank.
4. Fill up the fuel tank and add fuel stabilizer (if available) to prevent the fuel tank from rusting and the fuel from deteriorating.
5. Perform the following steps to protect the cylinder, piston rings, etc. from corrosion.

a. Remove the spark plug cap and spark plug.
b. Pour a teaspoonful of engine oil into the spark plug bore.
c. Install the spark plug cap onto the spark plug, and then place the spark plug on the cylinder head so that the electrodes are grounded. (This will limit sparking during the next step.)
d. Turn the engine over several times with the starter. (This will coat the cylinder wall with oil.)
e. Remove the spark plug cap from the spark plug, and then install the spark plug and the spark plug cap.

⚠ WARNING

To prevent damage or injury from sparking, make sure to ground the spark plug electrodes while turning the engine over.

6. Lubricate all control cables and the pivoting points of all levers and pedals as well as of the sidestand/ centerstand.
7. 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.
8. Cover the muffler outlet with a plastic bag to prevent moisture from entering it.
9. Remove the battery and fully charge it. Store it in a cool, dry place and charge it once a month. Do not store the battery in an excessively cold or warm place [less than 0° C (30°F) or more than 30°C (90°F)]. For more information on storing the battery, see page 6-24.

NOTE:

Make any necessary repairs before storing the motorcycle.

Dimensions:

Overall length:
2065 mm (81.3 in)

Overall width:
800 mm (31.5 in)

Overall height:
1180 mm (46.5 in)

Seat height:
870 mm (34.2 in)

Wheelbase:
1385 mm (54.5 in)

Ground clearance:
295 mm (11.6 in)

Minimum turning radius:
2100 mm (82.7 in)

Weight:

With oil and fuel:
116.0 kg (256 lb)

Engine:

Engine type:
Air cooled 4-stroke, SOHC

Cylinder arrangement:
Forward inclined single cylinder

Displacement:
223 cm3

(13.61 cu.in)

Bore X stroke:
70.0 X 58.0 mm (2.76 X 2.28 in)

Compression ratio:
9.50 : 1

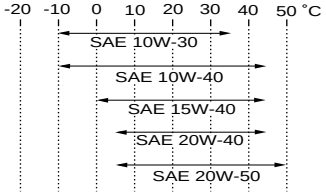
Starting system:
Electric starter

Lubrication system:
Wet sump

Engine oil:

Type:
SAE 10W30 or SAE 10W40 or

SAE20W40 or SAE 20W50



Recommended engine oil glade:
API service SE, SF, SG type or higher

Engine oil quantity:

Without oil filter element replacement:
1.0 L (1.1 us.qt) (0.90 Imp.qt)

With oil filter element replacement:
1.1 L (1.2 us.qt) (1.0 Imp.qt)

Air filter:

Air filter element:
Wet element

Fuel:

Recommended fuel:
Unleaded gasoline only

Fuel tank capacity:
8.0 L (2.11 us.gal) (1.76 imp.gal)

Fuel reserve amount:
1.8 L (0.48 us.gal) (0.4 imp.gal)

Carburetor:

Manufacturer:
TEIKEI

Type x quantity:
Y26P x 1

Spark plug(s):

Manufacturer/model:
NGK/DR8EA

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:
73/22 (3.318)

Secondary reduction system:
Chain drive

Secondary reduction ratio:
49/13 (3.769)

Transmission type:
Constant mesh 6-speed

Operation:
Left foot operation

Gear ratio:

1st:
38/13 (2.923)

2nd:
34/18 (1.889)

3rd:
30/21 (1.428)

4th:
27/24 (1.125)

5th:
25/27 (0.925)

6th:
23/29 (0.793)

Chassis:

Frame type:
Diamond

Caster angle:
27.0 °

Trail:
111.0 mm (4.4 in)

Front tire:

Type:
With tube

Size:
80/100-21 NHS

Manufacturer/model:
PIRELLI/MT320H

Rear tire:

Type:
With tube

Size:
100/100-18 NHS

Manufacturer/model:
PIRELLI/MT320

Maximum load:
90.0 kg (198 lb)

(Total weight of rider, passenger, cargo and accessories)

Tire air pressure (measured on cold tires):

Off-road riding:

Front:
100 kPa (15 psi) (1.00 kgf/cm^2)

Rear:
100 kPa (15 psi) (1.00 kgf/cm^2)

Front wheel:

Wheel type:
Spoke wheel

Rim size:
21x1.60

Rear wheel:

Wheel type:
Spoke wheel

Rim size:
18x1.85

Front brake:

Type:
Single disc brake

Operation:
Right hand operation

Recommended fluid:
Dot 4

Rear brake:

Type:
Drum brake

Operation:
Right foot operation

Front suspension:

Type:
Telescopic fork

Spring/shock absorber type:
Coil spring/oil damper

Wheel travel:
240.0 mm (9.45 in)

Rear suspension:

Type:
Swingarm (link suspension)

Spring/shock absorber type:
Coil-gas spring/oil damper

Wheel travel:
220.0 mm (8.66 in)

Electrical system:

Ignition system:
DC. C.D.I.

Charging system:
A.C. magneto

Battery:

Model:
YTX5L-BS

Voltage, capacity:
12 V, 4.0 Ah

Fuse:

Fuse:
10.0 A

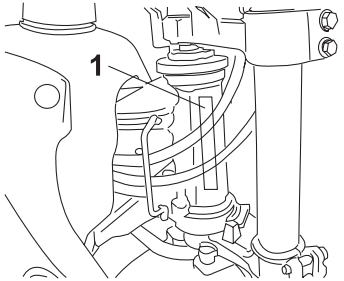
Identification numbers

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



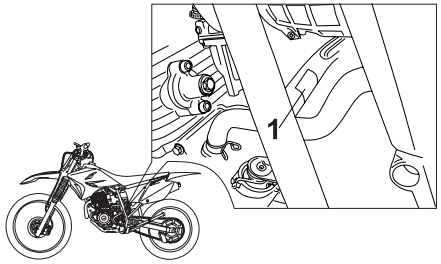
1. Vehicle identification number

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

NOTE:

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



1. Model label

The model label is affixed to the frame. Record the information on this label in the space provided. This information will be needed when ordering spare parts from a Yamaha dealer.

Maintenance record

Have a Yamaha dealer complete this record when the motorcycle is serviced.

Maintenance interval	Date of service	Mileage	Servicing dealer name and address	Remarks

YAMAHA

YAMAHA MOTOR DA AMAZÔNIA LTDA.

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