



MODEL YEAR **2023**

OWNER'S / OPERATOR'S MANUAL



UTILITY VEHICLE

⚠ Read this manual carefully before operating this vehicle.

UMAX | **RALLY²⁺²** 
UMAX RALLY 2+2

YUM2E UMAX RALLY 2+2



WARNING: This product can expose you to chemicals including phthalates and lead which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

INTRODUCTION

Congratulations on your purchase of a Yamaha utility vehicle. This manual contains information you will need for proper operation, maintenance, and care of your utility vehicle. A thorough understanding of these simple instructions will help you to obtain maximum enjoyment from your new Yamaha.

If you have any questions about the operation or maintenance of your utility vehicle, please consult a Yamaha dealer.

Yamaha Golf-Car Company

**YUM2E UMAX RALLY 2+2
OWNER'S / OPERATOR'S MANUAL
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IMPORTANT MANUAL INFORMATION

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

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

TIP

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 utility vehicle and this manual. If you have any questions concerning this manual, please consult your Yamaha dealer.

WARNING

Read and understand this manual completely before operating your utility vehicle. This manual should be considered a permanent part of your utility vehicle and should remain with the vehicle when resold.

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WARRANTY

2-YEAR LIMITED WARRANTY FOR TRANSPORTATION AND UTILITY VEHICLES

Yamaha Golf-Car Company hereby warrants that any new Yamaha utility vehicle or any multi passenger cars or specialty vehicles purchased from Yamaha, or an Authorized Dealer or Distributor in the United States will be free from defects in material and workmanship for TWO years from date of purchase, subject to the stated limitations. DURING THE PERIOD OF WARRANTY, any authorized Yamaha golf car service technician, dealer, or distributor will, free of charge, repair or replace, at Yamaha's option, any part adjudged defective by Yamaha due to faulty workmanship or material from the factory. Parts used in warranty repairs will be warranted for the balance of the vehicle's warranty period. All parts replaced under warranty become property of Yamaha Golf-Car Company.

Car Components	Warranty Period	Electric Car Specific Parts	Warranty Period
Brake System (Excluding Shoes / Drums)	2 Years	Battery - Trojan T105 FLA	4 Years or 20,000 amp hours whichever comes first / without HydroLink Watering System
Body Parts	2 Years		4 Years or 21,500 amp hours whichever comes first / with HydroLink Watering System
Bumpers / Rear Floor Cover (Bag Well)	2 Years		<i>*See Trojan Warranty Statement for details</i>
Electrical Wires, Switches, and Relays	2 Years	Battery - Trojan T875 AGM	5 Years or 50,000 amp hours whichever comes first
Frame Assy	2 Years		<i>*See Trojan Warranty Statement for details</i>
Floor Mats	2 Years	Battery Charger and DC Cord	2 Years
Pedal Assy	2 Years	Electric Motor and MCU	2 Years
Scorecard Holder	2 Years	Charger Receptacle	2 Years
Seats	2 Years	Throttle Sensor Assy	2 Years
Steering / Suspension Components	2 Years	Gas Car Specific Parts	Warranty Period
Transaxle / Transmission	2 Years	Clutch (Excluding Drive Belt)	2 Years
Common Accessories	Warranty Period	Intake and/or Exhaust System	2 Years
Windshield	3 years	Gas Engine	2 Years
Sun Top	2 Years	Starter Generator	2 Years
Tail Light	2 Years	Starting Battery	1 Year
		Throttle / Control Cables	2 Years
		All Remaining Parts	1 Year

EXCLUSIONS from this Warranty shall include any failures caused by:

- Abnormal strain, neglect, or abuse, including lack of proper maintenance, and use contrary to the Owner's/Operator's Manual instructions.
- Accident or collision damage.
- Installation of parts or accessories that are not original equipment.
- Fading, rust, or deterioration due to exposure or ordinary wear and tear.
- Modifications or alterations that affect the car's condition, operation, performance, or durability.
- Damage due to improper transportation.
- Acts of God, e.g. lightning, hail damage, flooding, fire, etc.

This Limited Warranty does not cover any parts replaced due to normal wear or routine maintenance, including oil and air filter elements, brake shoes, tire wear, spark plugs, starter and clutch drive belts. Any charges incurred in transporting a golf car or charger to and from an authorized Yamaha golf car dealer for service or in performing field service are also excluded from this warranty. Gasoline-powered golf car starting batteries on vehicles equipped with a golf course GPS device, or any other device with a parasitic current draw, unless the vehicle is equipped from the factory with an optional deep cycle starting battery, are also excluded from this warranty.

The Customer's Responsibility under this warranty shall be to:

- Operate and Maintain the golf car, personal transportation vehicle (PTV), or commercial (Utility) vehicle as specified in the appropriate Owner's/Operator's manual, and
- Give notice to an authorized Yamaha Golf car dealer/distributor of all apparent defects within ten (10) days of discovery, and make the car available at that time for inspection and repairs at the dealer's/distributor's place of business, and
- Transporting the car to and from an authorized dealer or distributor for warranty service.

WARRANTY TRANSFER: This warranty is to the original purchaser and is not transferable.

EMISSION CONTROL SYSTEM WARRANTY:

Yamaha Golf-Car Company also warrants to the ultimate purchaser of each gas-powered golf car covered by this warranty that the product is designed, built, and equipped so as to conform at the time of sale with all U.S. emission standards applicable at the time of manufacture and that it is free from defects in materials and workmanship which would cause it not to meet these standards within the same time period described in THE PERIOD OF WARRANTY above, or a minimum of two years, whichever is longer. Failures other than those resulting from defects in material or workmanship which arise solely as a result of owner abuse and/or lack of proper maintenance are not covered by this warranty.

Yamaha Golf-Car Company makes no other warranty of any kind, expressed or implied. All implied warranties of merchantability and fitness of merchantability and fitness for a particular purpose which exceed the obligations and time limits stated in this warranty are hereby disclaimed by Yamaha Golf-Car Company and excluded from this Warranty.

Some states do not allow limitations on how long implied warranty lasts, so the above limitation may not apply to you. Also excluded from this Warranty is any incidental or consequential damages including loss of use. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you. This Warranty give you specific legal rights, and you may also have other rights, which vary from state to state.

4-YEAR LIMITED WARRANTY FOR TROJAN® BRAND BATTERIES WHEN CHARGED WITH A YAMAHA PROVIDED 48-VOLT CHARGER

Yamaha Golf-Car Company (herein referred to as "YGC") hereby warrants to the Original Retail Purchaser or Lessee of a Yamaha Drive2 Golf car, PTV, Multi passenger, or Utility car purchased from Yamaha, or an Authorized Dealer or Distributor in the United States, that the Trojan® brand batteries charged with a Yamaha provided battery charger will be free from defects in materials and workmanship, and will provide "36-hole performance" as follows:

- 4-years or 20,000 amp-hours with T-105 FLA
- 4-years or 21,500 amp-hours with T-105 FLA batteries & the addition of a factory-installed Trojan HydroLink Battery Watering System.
- 4-years or 23,500 amp-hours with T-875 FLA
- 4-years or 25,000 amp-hours with T-875 FLA batteries & the addition of a factory-installed Trojan HydroLink Battery Watering System.
- 5-years or 50,000 amp-hours with T-875 AGM

WARRANTY LIMITATIONS

Yamaha Golf-Car Company's and Trojan Battery Company's limit of liability shall be to replace a defective battery. Replacement shall mean furnishing a new battery or used battery with sufficient life to complete the remainder of the warranty term, at no cost to the purchaser during the limited warranty period, except for labor or transportation expenses. The following conditions apply:

- Amp-hours will be determined either through the PC Genius controller or through other means necessary in the event of a controller failure or replacement.
- This warranty only applies to factory installed Trojan battery sets charged with a Yamaha provided battery charger.
- The customer must perform (or have a contracted Yamaha Dealer perform) all periodic maintenance and discharge testing as specified in the Yamaha Service Manual Maintenance Schedule. No labor or transportation expenses are included in this limited warranty. Maintenance records must be kept.
- YGC supplied or approved replacement batteries may be of a different brand or capacity, but are warranted to provide 36-hole performance for the remainder of the original warranty term.
- "36-hole performance" is defined as 60-minutes discharge time as tested and recorded using a Lester model #17770 discharge machine at an ambient temperature of between 60 and 100 degrees F (16 and 38 degrees C). Ambient temperatures between 60 and 80 degrees F (16 and 27 degrees C) must be corrected using the formula: Adjusted Discharge Time = (Discharge Minutes) / (1-(((80-TEMP)/100) x 0.64)).
- The customer must notify the Dealer within 10 days that a vehicle has failed to make 36 holes per day. YGC reserves the right to test and recharge any battery in question.

ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL BE VOID AND EXCLUDED SUBSEQUENT TO ONE YEAR FROM THE DATE OF PURCHASE. THE REPLACEMENT OF THE BATTERY IS THE EXCLUSIVE REMEDY UNDER THIS WRITTEN WARRANTY OR ANY IMPLIED WARRANTY. YAMAHA MAKES NO OTHER REPRESENTATION OR WARRANTY OF ANY KIND, AND NO REPRESENTATIVE, EMPLOYEE, DISTRIBUTOR OR DEALER OF YAMAHA HAS THE AUTHORITY TO MAKE OR IMPLY ANY REPRESENTATION, PROMISE OR AGREEMENT WHICH IN ANY WAY VARIES THE TERMS OF THIS WARRANTY.

LIMITED WARRANTY EXCLUSIONS:

Without limiting the generality of the foregoing in any way, and as part of its limited warranty exclusion, YGC does not warrant that its battery is suitable for use in any application other than in a golf car or utility vehicle. As in the use of any battery, a prudent owner will read and study the charger owner's manual, the vehicle owner's manual, the operator's instructions, and the battery warning labels; and will exercise due care in working on or around batteries.

THE PROVISIONS OF THIS LIMITED WARRANTY SHALL NOT APPLY IF BATTERIES ARE SUBJECTED TO ANY OF THE FOLLOWING CONDITIONS:

- Abuse or neglect such as improper fluid levels, loose wiring, rusted or corroded hardware.
- Lack of proper maintenance as outlined in the electric vehicle Owner's / Operator's Manual. For example, lack of regular battery watering or adding water to battery before charging.
- Damage caused by improper installation of the battery.
- Neglect, breakage, freezing, fire, explosion, wreckage, the addition of any chemical, or the operation of the battery in an uncharged condition (below half-charge – 1.200 specific gravity).
- Battery charged by systems other than the original equipment type battery charger.
- On fleet golf cars, the use of any non-YAMAHA supplied electrical devices that consume more than one amp-hour per round or two amp-hours per day of battery energy. Examples of these devices include, but are not limited to: heating or cooling systems; GPS (global position system) devices; information gathering devices; lights; radios or stereos; or yardage measuring devices.
- Less than one charger per car or inadequate facility electrical power to power all chargers. Examples include more than one charger on a single circuit, circuit rating of less than 15 amps, or not enough circuits for the number of cars.
- In fleet applications, less than one battery charger per vehicle. For example, using only 10 battery chargers to charge a 15 car fleet.
- The use of any system that does not allow the battery chargers to shut off automatically. For example, timer systems that are designed to switch battery charger AC power on and off during peak demand hours.
- Damage not resulting from a defect in materials or workmanship or which occurs due to abuse or neglect (including failure to provide reasonable and necessary maintenance), accident, alteration or acts of God is excluded from this limited warranty.

THIS BATTERY IS INTENDED TO BE USED BY PERSONS WITH TRAINING AND EXPERIENCE WITH BATTERIES AND ONLY IN YAMAHA ELECTRIC VEHICLES. ANY OTHER USE RENDERS THE LIMITED WARRANTIES EXPRESSED HEREIN AND ALL IMPLIED WARRANTIES NULL AND VOID AND SAME ARE HEREBY EXCLUDED.

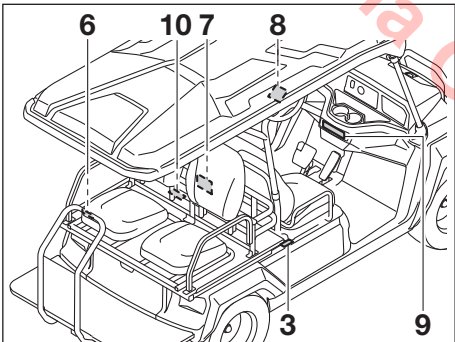
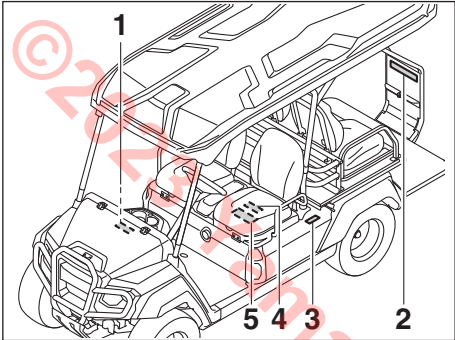
ALSO EXCLUDED FROM THIS LIMITED WARRANTY ARE ANY AND ALL INCIDENTAL OR CONSEQUENTIAL DAMAGES INCLUDING, BUT NOT LIMITED TO, LOSS OF USE OR REVENUE, LOSS OF TIME, INCONVENIENCE OR ANY OTHER ECONOMIC LOSS.

Some states do not allow limitation on the duration of an implied warranty, exclusions or limitations of incidental or consequential damages. Therefore, the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights, which vary state to state.

IMPORTANT LABELS

SAFETY AND INSTRUCTION LABELS

Read the following labels carefully before operating your utility vehicle. If any of these labels are damaged or missing, contact a Yamaha dealer for replacements.



IMPORTANT LABELS

1

**WARNING**

- Do not sit or stand in storage area.
- Fuel vapors can be a fire or explosion hazard. To avoid injury or death, never store fuel or flammable liquids in this storage compartment.
- Storage should not exceed 22lb (10kg)

YAMAHA***-F151F-**

2

**WARNING**

To reduce the risk of accidents and injury or DEATH:

CARRYING PASSENGERS

- Do not allow more than 1 passenger per seat.
- Maximum combined load: 181 kg (400 lb)
- Keep entire body inside vehicle.

CARRYING CARGO

- When seat is flipped down, do not carry passengers in cargo area.
- Maximum load in cargo area: 113 kg (250 lb)
- When loaded with cargo:
 - Reduce speed and allow more room to stop.
 - Turn gradually and go slowly.
 - Avoid hills and rough terrain.

YAMAHA

Static electricity sparks can ignite fuel vapor causing FIRE or EXPLOSION.

- Do not fill portable fuel container (gas can) in vehicle.
- Set fuel container on the ground and touch fuel nozzle to the unopened container before removing cap.
- Keep the fuel nozzle in contact with the container while fueling.
- Tighten cap before putting fuel container in vehicle.

Improper tire pressure or overloading can cause loss of control. To reduce the risk of accidents and injury or DEATH:

- Operating tire pressure: set with tires cold.

23x10.5-12, 4-ply rated tire

Recommended	Front: 137 kPa, 20 psi Rear: 137 kPa, 20 psi
Minimum	Front: 124 kPa, 18 psi Rear: 124 kPa, 18 psi

Keep hands, body, other persons, away from pinch points on surface below when flipping the seat.

***-K7766-**



3

**WARNING**



- Keep hands, body, other persons, away from pinch points when lowering bed.
- Do not operate the vehicle with bed up.

YAMAHA***-K7764-**

4

NOTICE / NOTIFICATION

Move switch to the "TOW" position before towing or storage. Failure to do so may lead to:

- Drive system damage when towing.
- Complete battery discharge and battery damage when storing long term.
- After moving switch from "RUN" to "TOW", wait 15 seconds minimum before switching again.

YAMAHA

Mettre l'interrupteur a position "TOW" avant de remorquer ou avant l'entreposage. Non-observation pourrait:

- Dommages de système d'entraînement en remorquant.
- Causer une décharge totale de la batterie et endommager la batterie pendant l'entreposage a long terme.
- Après avoir change l'interrupteur de position "RUN" a position "TOW", attendre un minimum de 15 seconds avant de le remettre.

***-K8298-**

5

**WARNING**



Explosive gases are released when batteries are charged or discharged.

- Keep well ventilated.
- Shield eyes when working near batteries.

**WARNING**



Sulfuric acid in batteries will burn skin, eyes, and clothing.

- Do not tip batteries.
- Keep vent caps tight and level.
- In the event of injury, flush with water and call physician immediately.

**WARNING**



Electrical shorts can result in burns.

- Do not make connection between positive and negative battery terminals.

***-K8297-**

IMPORTANT LABELS

6



⚠ WARNING
PINCH POINT

YAMAHA

***-K7763-**

7

2

YEAR OF CONSTRUCTION: **** MY****
YAMAHA MOTOR POWERED PRODUCTS CO., LTD
200-1 SAKAGAWA, KAKEGAWA, JAPAN
MODEL: *****
MAX. POWER: *** hp (*** kW)
NOMINAL BATTERY VOLTAGE: **V
BATTERY WEIGHT MAX.: *** kg, MIN.: **** kg

G.V.W.R.: **** kg (**** lb)
VEHICLE WEIGHT: ***kg (**** lb)
LOAD CAP.: **** kg (**** lb)

This vehicle complies to SAE-J-2258 2016

8

⚠ WARNING

To reduce the risk of accidents and injury or DEATH:
• This vehicle is recommended only for operators 16 and older with valid motor vehicle license. Adults must supervise use by minors. Check state laws for minimum age requirements.
• Drive slowly in curves. Never travel at speeds too fast for the terrain, visibility conditions, or your experience.
• Drive with extra caution in congested areas, when operating in reverse, and when driving on wet, rough, or loose surfaces.
• Drive straight up and down hills- driving across the side of hill increases the risk of overturn.
• Passenger and cargo can affect vehicle handling.

OPERATING INSTRUCTIONS

- Read the warning label on the beverage holder panel before operating.
- Be sure occupants are seated.
- Select "FORWARD" OR "REVERSE" then turn main switch to "ON".
- Press the accelerator pedal to start moving. The motor will start and the parking brake will release automatically.
- To stop, release the accelerator pedal and press the brake pedal. Press the parking brake until it locks, and turn the main switch to "OFF" before leaving the vehicle.
- Come to a complete stop before reversing direction.
- Read the Owner's/Operator's Manual for more information.

ATTENTION

- This vehicle was not manufactured for use on public streets and does not comply with federal motor vehicle safety standards applicable to passenger cars.



YAMAHA

*** -K7762- **

9

⚠ WARNING

To reduce the risk of accidents and injury or DEATH:

- Vehicle capacity: 1 occupant per seat.
- Operate only when authorized and only in designated areas.
- Operate from driver's seat only.
- Do not start vehicle until all occupants are seated.
- Remain seated and hold on while in motion.
- Keep entire body inside vehicle.
- Vehicle rated capacity (driver, passenger, cargo, trailer, and load) 1000 lbs (454 kg) on level surface.
- Do not operate or ride the vehicle while distracted or under the influence of alcohol or drugs.
- Locate and read Owner's Manual. Follow all instructions and warnings.



YAMAHA

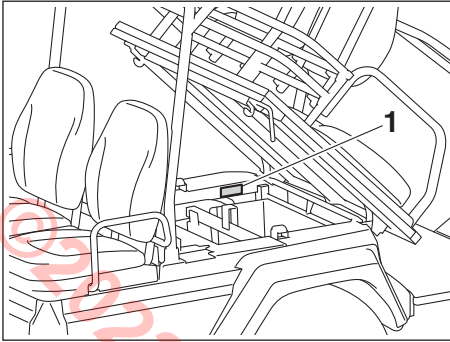
*** -K7760- **

10

CAN ICES-002/NMB-002

***-H5377-**

IMPORTANT LABELS



1. Vehicle serial number

SERIAL NUMBER

The serial number is identified in the location shown.

TIP

The first three digits of the serial number are for model identification; the remaining digits are the unit production number. Keep a record of these numbers for reference when ordering parts from a Yamaha dealer.

2

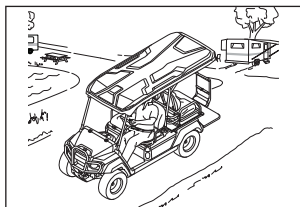
Serial number:

SAFETY INFORMATION

Yamaha utility vehicles are designed to be simple to operate. However, be sure to observe the following to reduce the risk of serious injury or death due to loss of control and other hazards:

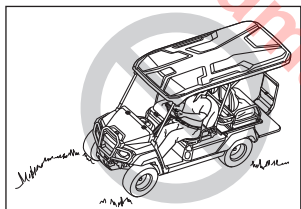
BEFORE OPERATING THE UTILITY VEHICLE

- Read this Owner's / Operator's manual and all safety and instruction labels on the utility vehicle before operating.
- Perform the pre-operation checks found in Section 5 of this manual.
- This vehicle is recommended only for operators 16 and older with a valid motor vehicle license. Adults must supervise use by minors. Check state laws for minimum age requirements.
- Do not allow more than one occupant per seat. This utility vehicle is restricted to four occupants.
- Never give a ride to a passenger who is unable to put both feet firmly on the floorboard while seated with his or her back against the backrest.
- Never carry passengers in the cargo area.
- Do not operate the utility vehicle while under the influence of alcohol or drugs; their effect on vision and judgment make operating a utility vehicle dangerous.
- This vehicle was not manufactured for use on public streets and does not comply with federal motor vehicle safety standards applicable to passenger cars.
- Do not operate the utility vehicle on public streets, roads or highways unless allowed by law or the local regulating authority.
- This vehicle may go faster than the intended speed for campground pathways. Do not use on such pathways without specific permission from campground management.
- Do not make any modification or addition which affects capacity or safe operation, or make any changes not in accordance with the Owner's / Operator's manual.



WHILE OPERATING THE UTILITY VEHICLE

- Keep your entire body inside the utility vehicle, remain seated and hold on when the vehicle is in motion.
- Do not start the utility vehicle until all occupants are seated.
- Always keep both hands on the steering wheel when driving. Always go at a speed that is proper for the terrain, visibility, and operating conditions, and your experience. Go slowly and be extra careful when operating on unfamiliar terrain. Always be alert to changing terrain conditions when driving the vehicle.
- Never operate on excessively rough, slippery, or loose terrain.
- Use extra care in congested areas or when backing up. Always back up slowly, and watch carefully. Avoid starting or stopping abruptly.
- Avoid turning the steering wheel too sharply at higher speeds to avoid tipping or rolling the vehicle.
- Never attempt jumps or other stunts.
- Always drive slowly straight up or straight down slopes – never at an angle to avoid tipping or rolling the vehicle. Never operate the vehicle on slopes that are too steep for it or for your abilities.
- Never operate on slopes that are slippery or ones where you will not be able to see far enough ahead of you. Never go over the top of a slope at speed if you cannot see what is on the other side.
- Always check terrain carefully before going down slopes. Go as slowly as possible. Never go down a slope at high speed.
- Always check for obstacles before operating in a new area.
- Never operate the vehicle in fast flowing water or water deeper than 10 cm (4 in.). Remember that wet brakes may have reduced stopping ability. Test your brakes after leaving water. If necessary, apply them several times to let friction dry out the linings.



CARRYING PASSENGERS

- This vehicle is designed to carry the driver and up to three passengers. When the rear seat cushion area is flipped rearward, do not carry passengers in the cargo area.
- Passengers must remain fully seated and hold on to the hand holds when in motion.
- Do not allow children to ride unsupervised.

ACCESSORIES AND LOADING

Accessories

Accessories can affect the handling and control of your vehicle. Keep the following in mind when considering an accessory or operating a utility vehicle which has accessories.

- Choose only accessories designed for your utility vehicle. Your Yamaha dealer has a variety of genuine Yamaha accessories. Other accessories may also be available on the market. However, it is not possible for Yamaha to test all non-Yamaha accessories, nor have any control over the quality or suitability of them. Choose a genuine Yamaha accessory, or one that is equivalent in design and quality.
- Accessories should be rigidly and securely mounted. An accessory which can shift position or come off while you are operating could affect your ability to control the utility vehicle.
- Do not mount an accessory where it could interfere with your ability to control the utility vehicle. Examples include (but are not limited to) an object that limits your ability to turn the steering wheel or one that limits your view.
- Use extra caution when driving a utility vehicle with accessories. The utility vehicle may handle differently than it does without accessories.

Loading

Cargo can change the stability and handling of a utility vehicle. You must use common sense and good judgment when carrying cargo. Keep the following points in mind:

- Never exceed the weight limits shown on page 54. An overloaded utility vehicle can be unstable.
- Cargo should be as far forward in the cargo area as possible, and distributed evenly from side to side. Be sure cargo is secured so that it cannot move around during operation.
- Make sure the load does not interfere with controls or your ability to see where you are going.
- Drive more slowly than you would without a load. The more weight you carry, the slower you should go. Although conditions vary, it is good practice not to exceed low range whenever you are carrying heavier loads.
- Allow more braking distance. A heavier vehicle takes longer to stop. Do not brake abruptly when carrying loads in the cargo area.
- Avoid making sharp turns unless at very slow speeds to avoid tipping or rolling the vehicle.
- Avoid hills and rough terrain. Choose terrain carefully. Added weight affects the stability and handling of the utility vehicle.

MAINTENANCE REQUIRED FOR UTILITY VEHICLE SAFETY

Practice the following to help ensure the safety of utility vehicle operators:

- **Preventative Maintenance.** Perform all scheduled maintenance in accordance with manufacturer's recommendations to provide a safe, properly operating utility vehicle.
- **Personnel.** Allow only qualified, trained, and authorized personnel to inspect, adjust and maintain utility vehicles.
- **Parts and Materials.** Use only replacement parts and materials recommended by the manufacturer.
- **Ventilation.** Properly ventilate all maintenance and storage areas in accordance with applicable fire codes and ordinances to avoid fire hazards. Ventilation is required to remove hydrogen gas from electric powered car storage areas during the charging process.

For electric powered utility vehicles, the amount of hydrogen gas emitted during charging depends on a number of factors, such as the condition of the batteries, the output rate of the battery charger and the amount of time the batteries are on charge. Because of the highly volatile nature of hydrogen gas and its propensity to rise and accumulate at the ceiling in pockets, minimum of five air changes per hour is recommended. Consult applicable fire and safety codes for the specific ventilation level requirements, as well as requirements for the use of explosion proof electrical devices.

SAFETY PRECAUTIONS DURING MAINTENANCE

When performing maintenance, follow all safety instructions contained in the manufacturer's operation and service manuals, as well as the following safety procedures:

- Properly immobilize utility vehicle before beginning any maintenance to avoid any unexpected vehicle movement.
- Properly block chassis before working underneath utility vehicle to avoid any unexpected vehicle movement.
- When working on the battery, do not smoke, or allow any sparks or open flames near the vehicle, to avoid any fires or explosions.
- Before working on an electric utility vehicle, disable the car's electrical system by placing the tow switch in the "TOW" position to avoid electrical shock or damage to the electrical system.
- Use only properly insulated tools when working on electrically powered utility vehicles or around batteries to avoid electrical shock or damage to the electrical system.
- Maintain all safety devices, including brakes, steering mechanisms, warning devices, in a safe operating condition. Do not modify these safety devices as supplied by the manufacturer.

SAFETY INFORMATION

- After each maintenance or repair, the vehicle must be driven by a qualified, trained and authorized person – in an area free of pedestrian traffic – to ensure proper operation and adjustment.
- Record all maintenance performed in a maintenance record log by date, name of person performing maintenance and type of maintenance. Periodically inspect maintenance log to ensure accurate and complete entries.
- Maintain in a legible condition all nameplates, warnings, and instructions provided by the manufacturer.
- If new nameplates, warnings or instructions are needed, contact your Yamaha dealer.

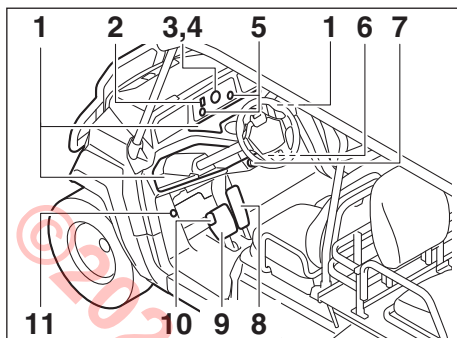
3

STORAGE AND BATTERY CHARGING

Take the following precautions to ensure maintenance worker safety:

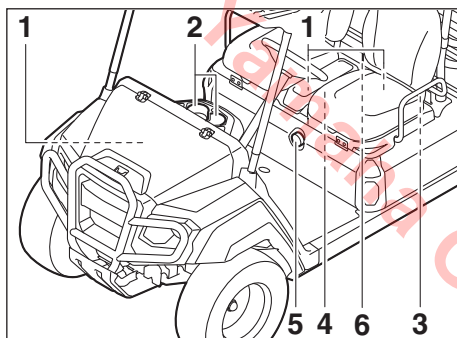
- Only use battery changing and charging facilities and procedures that are in accordance with applicable ordinances and regulations to avoid explosions, electrical shock or damage to the electrical system.
- Periodically inspect charging facilities and procedures to be certain that applicable safety codes, regulations and procedures are being followed to avoid any fires or explosions.

CONTROLS

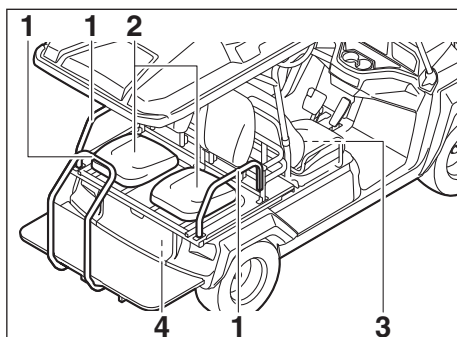


FEATURES

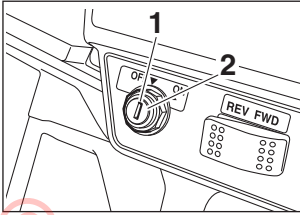
1. Storage compartment
2. Light switch
3. Low battery level warning light
4. Battery gauge
5. USB port
6. Drive select switch
7. Main switch
8. Accelerator pedal
9. Brake pedal
10. Parking brake pedal
11. Horn switch



1. Storage compartment
2. Cup holder
3. Tow switch
4. Batteries
5. DC charger receptacle
6. Fuses



1. Hand hold
2. Rear seat
3. Storage compartment
4. Transaxle oil level plug



1. OFF
2. ON

MAIN SWITCH

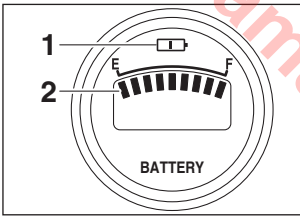
The main switch positions are described below.

“OFF”

All electrical circuits are switched off (motor controller unit remains energized). The utility vehicle cannot be operated. The key can be removed only in this position.

“ON”

Electrical circuits are switched on. The vehicle can be driven.



1. Low battery level warning light
2. Battery gauge

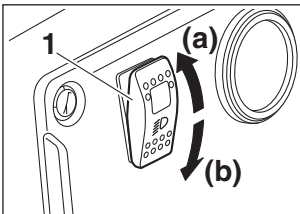
BATTERY GAUGE

The battery gauge displays how much charge is left in the batteries. When the batteries are at full charge, all the segments will be lit.

As the battery energy decreases, the segments will move to the left toward the “E”. When the segment below the “E” is the only one lit, the batteries must be charged.

TIP

If the remaining battery charge is low, the low battery level warning light comes on.



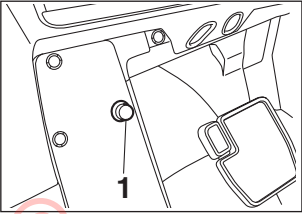
1. Light switch

LIGHT SWITCH “”

Push the upper side (a) of the light switch to turn on the headlights and meter lighting.

Push the lower side (b) of the light switch to turn off the headlights and meter lighting.

CONTROLS



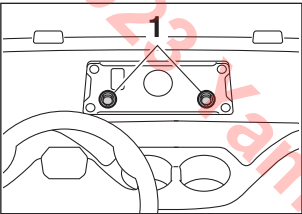
1. Horn switch

HORN SWITCH

The horn switch is located adjacent to the brake pedal, and is activated by depressing with your foot.

TIP

It is advisable to sound the horn when approaching blind corners.

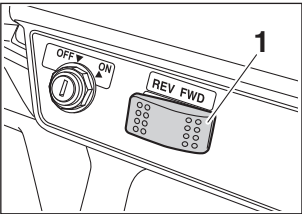


1. USB port

USB PORTS

The USB ports are in the locations shown.

The USB ports can be used to power or charge USB devices or accessories. The USB ports are powered only when the main switch is in the on position.

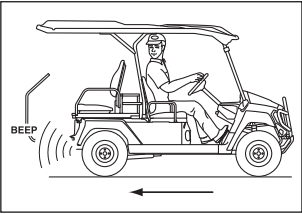


1. Drive select switch

DRIVE SELECT SWITCH

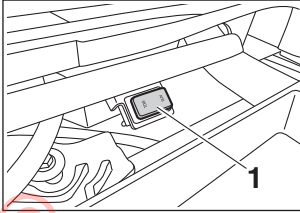
The drive select switch is used to shift the utility vehicle into forward or reverse. After coming to a complete stop, set the switch to the desired position.

Switch Position	Vehicle Movement
FWD	Forward
REV	Reverse



TIP

The reverse alarm will sound when the drive select switch is set to "REV".



1. Tow switch

TOW SWITCH

Before operating the vehicle, make sure the tow switch is in the “RUN” position.

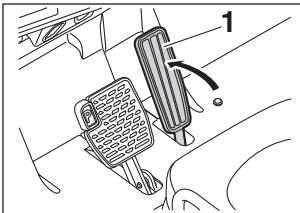
NOTICE

Make sure that the drive select switch is in the “FWD” position, and then move the tow switch to the “TOW” position before towing. After moving the switch from the “RUN” position to the “TOW” position, wait at least 15 seconds before moving the switch again. Failure to do so may lead to drive system damage while towing.

TIP

- To access the tow switch, remove the driver seat cushion.
- If the vehicle is towed with the tow switch in the “RUN” position, the buzzer will sound. Move the switch to the “TOW” position before towing.

4

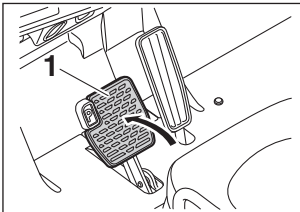


1. Accelerator pedal

ACCELERATOR PEDAL

The accelerator pedal controls the vehicle’s speed.

Action	Vehicle Speed
Depress pedal	Increase
Release pedal	Decrease

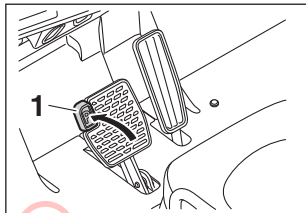


1. Brake pedal

BRAKE PEDAL

Press down on the brake pedal to stop the utility vehicle.

CONTROLS



1. Parking brake pedal

PARKING BRAKE PEDAL

Press down on the parking brake pedal whenever parking the utility vehicle.

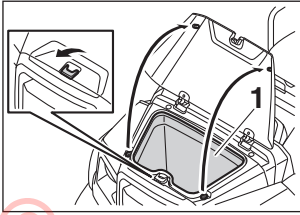
TIP

Release the parking brake by depressing the accelerator pedal.

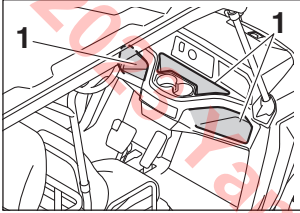
WARNING

The parking brake will automatically release when the accelerator pedal is depressed. If the main switch is in the “ON” position, depressing the accelerator may suddenly cause the utility vehicle to move.

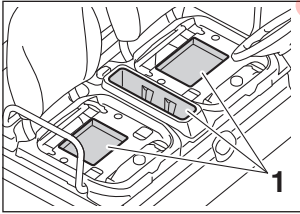
Death or serious personal injury can result from failing to comply with the safety instructions in this manual.



1. Storage compartment



1. Storage compartment



1. Storage compartment

STORAGE COMPARTMENTS

This model is equipped with storage compartments in the locations shown.

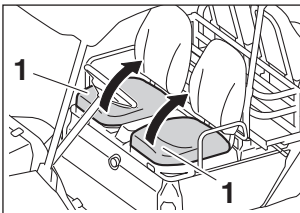
Maximum load limit:

Under-hood storage compartment:
10 kg (22 lb)

FRONT SEAT

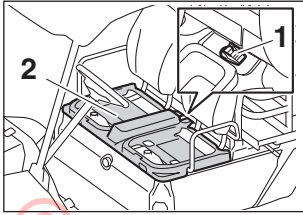
To remove

1. Lift the front of the seat cushion, and then pull the cushion off.

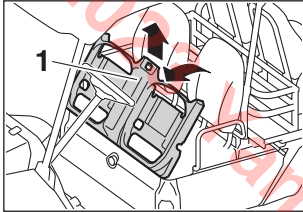


1. Seat cushion

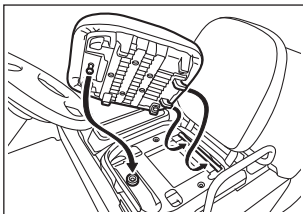
CONTROLS



1. Tab
2. Under-seat panel



1. Under-seat panel

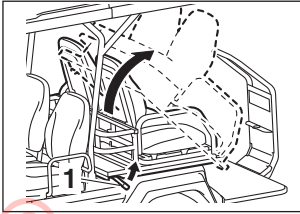


2. Pull the tab on the under-seat panel lock up, and then turn the lock 1/4 turn clockwise.

3. Remove the under-seat panel as shown.

To install

1. Place the under-seat panel in the original position.
2. Turn the lock 1/4 turn counterclockwise, and then push the tab on the lock down.
3. Insert the projections on the rear of the seat cushion under the seat frame, and then insert the projection on the front of the cushion into the grommet while pushing the cushion downward.



1. Rear seating area release lever

LIFTING AND LOWERING THE REAR SEATING AREA

To lift

Pull up the rear seating area release lever, and then slowly lift up the seating area until it stops.

To lower

With hands and fingers clear of pinch points, lower the rear seating area slowly to its original position and be sure it is locked into place.

WARNING

Crush Hazard

- Keep hands and fingers away from rear seating area.
- Have others back away from vehicle before lowering the rear seating area.
- Do not allow passengers to sit on the seats when lowering the rear seating area.

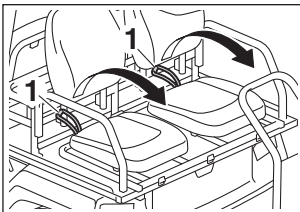
Death or serious personal injury can result from failing to comply with the safety instructions in this manual.

CARGO AREA

To use the cargo area, flip the rear seat cushion area rearward.

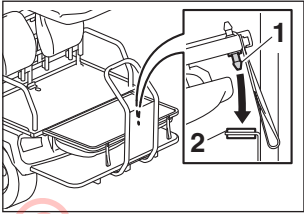
To use the cargo area

1. Pull the straps to lift up the rear seat cushion area, and then flip the cushion area rearward.



1. Strap

CONTROLS



1. Projection
2. Grommet

2. Fit the projection on the rear seat cushion area into the grommet to secure the cushion area.

Always make sure your cargo is secure when using the cargo area. Tie the load down with cords or straps where needed.

WARNING

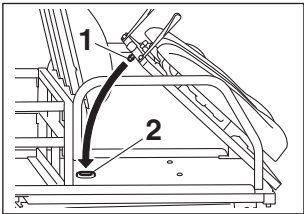
- There are several pinch points for the rear seat cushion area when flipping it rearward. Use care when flipping the cushion area rearward so nothing is in the area of these pinch points.
- Never allow passengers to ride on the cargo area when the rear seat cushion area is flipped rearward. There is no seating and passengers can easily fall off.

Death or serious personal injury can result from failing to comply with the safety instructions in this manual.

Maximum load limit:

Cargo area:

113 kg (250 lb)



1. Projection
2. Grommet

To use the rear seats

Lift up the rear seat cushion area, flip the cushion area forward, and then fit the projection on the bottom of the cushion area into the grommet to secure the cushion area.

PRE-OPERATION CHECKS

Pre-operation checks should be made each time you use your utility vehicle. Get in the habit of performing the following checks in the same way so that they become second nature.

WARNING

To keep vehicle from moving while performing pre-operation checks:

- Remove main switch key.
- Apply parking brake.

Death or serious personal injury can result from failing to comply with the safety instructions in this manual.

PRE-OPERATION CHECKS

Refer to the Periodic Maintenance and adjustment charts on page 30.

BATTERY

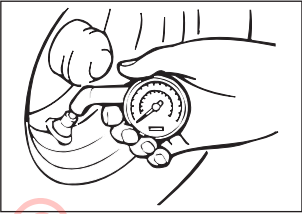
Charge batteries before each use. Refer to the battery charging instructions on page 35.

Check that the batteries are held securely in place to prevent the batteries from being damaged from vibration or jarring. Also check that no battery caps are missing to prevent battery acid from spilling from the battery. Check the battery terminals for corrosion and tightness.

WARNING

Battery electrolyte is poisonous and dangerous, causing severe burns, etc. It contains sulfuric acid. Avoid contact with skin, eyes or clothing. Ventilate when charging or using in enclosed space. Always shield eyes when working near batteries. KEEP OUT OF REACH OF CHILDREN.

PRE-OPERATION CHECKS

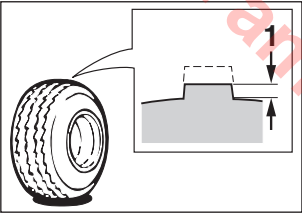


TIRE CONDITION

Tire Air Pressure

Check the tire air pressure before operating the utility vehicle.

Tire pressure	
Recommended:	
Front:	137 kPa (1.40 kgf/cm ² , 20 psi)
Rear:	137 kPa (1.40 kgf/cm ² , 20 psi)
Minimum:	
Front:	124 kPa (1.26 kgf/cm ² , 18 psi)
Rear:	124 kPa (1.26 kgf/cm ² , 18 psi)

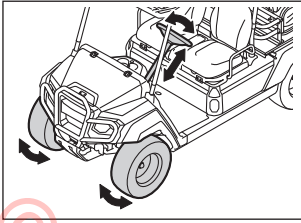


Tire Wear Limit

Check the tire surface for damage, cracks or embedded objects. When tire tread wears down to 3 mm (0.12 in.), replace the tire.

1. Wear limit

PRE-OPERATION CHECKS

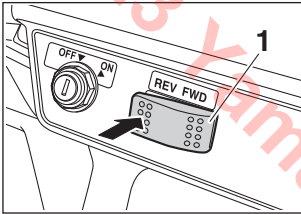


STEERING SYSTEM

Check the steering system for excessive free play by:

- moving the steering wheel up and down, and back and forth.
- turning the steering wheel slightly to the right and left.

If you feel excessive free play, or hear rattling sounds which may indicate loose steering components, consult a Yamaha dealer.



1. Drive select switch

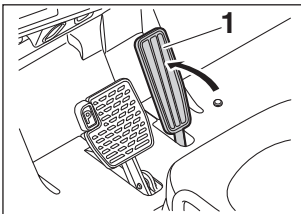
REVERSE ALARM

Check the reverse alarm by moving the drive select switch to "REV" for reverse. The alarm should sound.

5

PEDAL OPERATION

Check the following pedal controls for proper operation. If a pedal does not work properly, consult a Yamaha dealer.

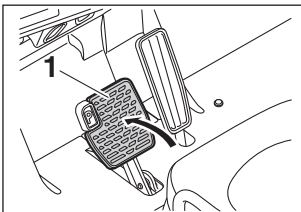


1. Accelerator pedal

Accelerator Pedal

! WARNING

With the main switch in the "OFF" position, make sure the accelerator pedal operates smoothly.

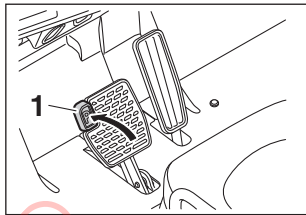


1. Brake pedal

Brake Pedal

Make sure the brake pedal feels firm when pressed and returns to its original position when released.

PRE-OPERATION CHECKS



1. Parking brake pedal

Parking Brake Pedal

Make sure the parking brake pedal locks in place with a positive click, and releases when the accelerator pedal is pressed.

TIP

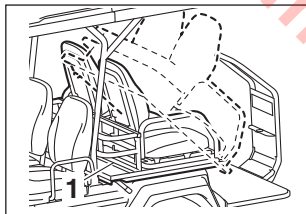
Release the parking brake by depressing the accelerator pedal.

BODY AND CHASSIS

Before each use, visually inspect the utility vehicle body and chassis for damage and/or missing parts.

REAR SEATING AREA

Make sure the rear seating area is lowered completely and is latched in the down position.



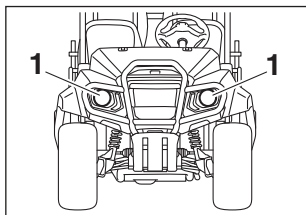
1. Rear seating area

HEADLIGHTS

Ensure the headlights are operational.

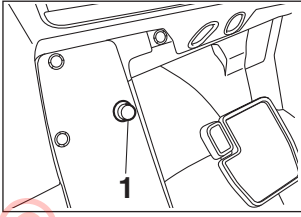
WARNING

Never operate the utility vehicle at night or during inclement weather without properly working headlights. Death or serious personal injury can result from failing to comply with the safety instructions in this manual.



1. Headlight

PRE-OPERATION CHECKS

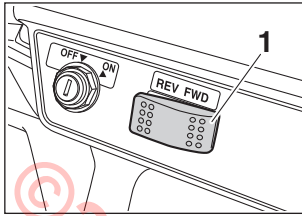


HORN SWITCH

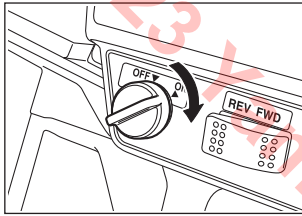
Make sure the horn operates correctly.

1. Horn switch

OPERATION



1. Drive select switch



STARTING

1. With the parking brake applied, turn the drive select switch to “FWD” for forward, or “REV” for reverse.

NOTICE

Do not shift from “FWD” forward to “REV” reverse while the utility vehicle is moving. Transmission damage can result.

2. Turn the main switch to “ON.”

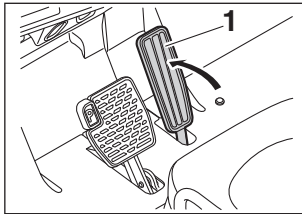
WARNING

Do not depress the accelerator pedal when turning on the main switch or the vehicle may start moving unexpectedly. Death or serious personal injury can result from failing to comply with the safety instructions in this manual.

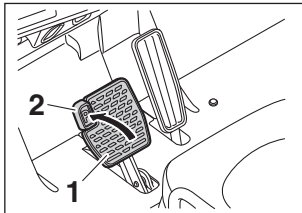
3. Check that your path is clear in the direction you plan to go, and slowly depress the accelerator pedal. The vehicle will start to move.

TIP

The parking brake automatically releases when the accelerator pedal is depressed.



1. Accelerator pedal



1. Brake pedal
2. Parking brake pedal

STOPPING

To stop the utility vehicle, gradually press down on the brake pedal.

When the vehicle has come to a stop, apply the parking brake pedal and turn the main switch to “OFF.”

NOTICE

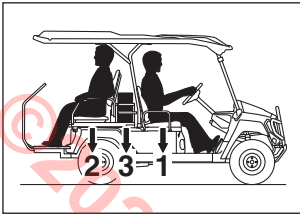
Do not hold the utility vehicle on an incline with the accelerator – use the brake. Transmission damage can result.

LOADING

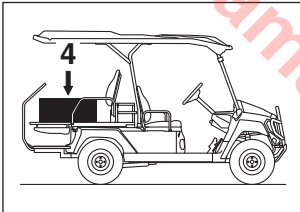
Cargo can change the stability and handling of a vehicle.

You must use common sense and good judgment when carrying cargo. Keep the following points in mind:

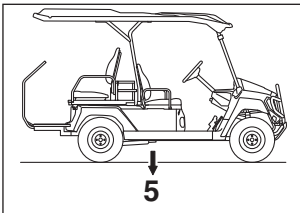
- Never exceed the weight limits shown. An overloaded vehicle can be unstable.



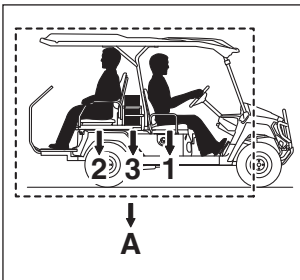
1. Occupant Capacity
2. Occupant Capacity
3. Maximum Cargo Area Capacity



4. Maximum Cargo Area Capacity



5. Vehicle Weight



- A. Vehicle Rated Capacity
- B. Maximum Gross Vehicle Weight Rating (5+A)

1	181 kg (400 lb)
2	181 kg (400 lb)
3	91 kg (200 lb)
4	113 kg (250 lb)
5	779 kg (1717 lb)
A	454 kg (1000 lb)
B	1233 kg (2717 lb)

- Load cargo in the cargo area as close to the center of the vehicle as possible to avoid tipping the vehicle.
- Cargo should be as far forward in the cargo area as possible, and distributed evenly from side to side. Be sure cargo is secured so that it cannot move around during operation.
- Make sure the load does not interfere with controls or your ability to see where you are going.
- Drive more slowly than you would without a load. The more weight you carry, the slower you should go.
- Allow more braking distance. A heavier vehicle takes longer to stop.
- Avoid making sharp turns unless at very slow speeds to avoid tipping or rolling the vehicle.
- Avoid hills and rough terrain. Choose terrain carefully. Added weight affects the stability and handling of the vehicle.

WARNING

Uncontrolled Movement Hazard

- Never exceed the stated load capacity for this vehicle.
- Distribute the load evenly.
- Secure cargo in cargo area.
- Reduce speed and allow greater distances for braking.

WARNING

Fall and Thrown Object Hazard

- Do not carry passengers in the cargo area.

WARNING

Fire or Explosion Hazard

- Do not fill fuel containers in the cargo area.
- Set fuel container on the ground.
- Keep fuel nozzle in contact with can inlet while filling.
- Tighten cap before setting fuel container in cargo area.

MAINTENANCE AND ADJUSTMENT

PERIODIC MAINTENANCE AND ADJUSTMENT CHARTS

Regular maintenance is required for the best performance and safe operation of your utility vehicle.

Even if the vehicle isn't driven for the stated mileage or engine hours, the month maintenance intervals should still be followed. Items marked with an asterisk should be performed by a Yamaha dealer as they require special tools, data and technical skills.

⚠ WARNING

Be sure to turn off the main switch and apply the parking brake when you perform maintenance, unless otherwise specified. If the owner is not familiar with servicing the machine, death or serious personal injury can result. When in doubt the work should be done by a Yamaha dealer or other qualified mechanic.

NOTICE

Yamaha Golf-Car Company does not approve the use of high-pressure washers to clean the products they manufacture. Doing so may damage the finish on the body or result in doing other damage not covered by warranty.

CS - CHECK CA - CHECK AND ADJUST R - REPLACE S - SERVICE CL - CLEAN AND LUBRICATE L - LUBRICATE

	Remarks	Daily Pre- Operation	20 hours 100 mi 160 km (Every Month)	125 hrs 600 mi 1000 km (Every 6 months)	250 hrs 1200 mi 2000 km (Every Year)	500 hrs 2500 mi 4000 km (Every 2 years)	1000 hrs 5000 mi 8000 km (Every 4 years)	Page
PRE-OP	Charge	S	S	S	S	S	S	35
	Clean battery tops, and check tightness of hold-down plate bolts and terminals	S	S	S	S	S	S	22, 33
	Check brake pedal free play and adjust if necessary	CS	CA	CA	CA	CA	CA	50
	Check steering operation	CS	CS	CS	CS	CS	CS	24
	Check tire pressure, tread depth, tire surface for damage	CS	CA	CA	CA	CA	CA	23

* Items without a page number reference should be serviced by a Yamaha dealer or other qualified mechanic. This manual does not contain these procedures. They are contained in the Service Manual.

** Do no operate vehicle if discrepancy is found.

MAINTENANCE AND ADJUSTMENT

CS - CHECK CA - CHECK AND ADJUST R - REPLACE S - SERVICE CL - CLEAN AND LUBRICATE L - LUBRICATE

	Remarks	Daily Pre-Operation	20 hours 100 mi 160 km (Every Month)	125 hrs 600 mi 1000 km (Every 6 months)	250 hrs 1200 mi 2000 km (Every Year)	500 hrs 2500 mi 4000 km (Every 2 years)	1000 hrs 5000 mi 8000 km (Every 4 years)	Page
PRE-OP	Check body and chassis for damage	CS	CS	CS	CS	CS	CS	25
	Check tightness of all bolts, nuts, screws and rivets	CS	CS	CS	CS	CS	CS	*
	Check reverse alarm operation	CS	CS	CS	CS	CS	CS	24
	Check for the proper operation of pedal control area**	CS	CS	CS	CS	CS	CS	24
EVERY MONTH	Check electrolyte level		CS	CS	CS	CS	CS	33
	Check for loose or broken connections		CS	CS	CS	CS	CS	*
	Clean / Lube pedal control area		CL	CL	CL	CL	CL	*
EVERY 6 MONTHS	Check all wire insulation for cracks and worn spots			CS	CS	CS	CS	*
	- Check brake cable operation - Inspect for abrasions and damage, and replace if necessary			CS R	CS R	CS R	CS R	49
	Check shock absorbers for oil leaks and damaged springs			CS	CS	CS	CS	*
EVERY YEAR	Perform a discharge test				S	S	S	*
	Apply battery terminal protectant				S	S	S	-
	Check rear axle bearing play for roughness or free play				CS	CS	CS	*

* Items without a page number reference should be serviced by a Yamaha dealer or other qualified mechanic. This manual does not contain these procedures. They are contained in the Service Manual.

** Do not operate vehicle if discrepancy is found.

MAINTENANCE AND ADJUSTMENT

CS - CHECK CA - CHECK AND ADJUST R - REPLACE S - SERVICE CL - CLEAN AND LUBRICATE L - LUBRICATE

	Remarks	Daily Pre- Opera- tion	20 hours 100 mi 160 km (Every Month)	125 hrs 600 mi 1000 km (Every 6 months)	250 hrs 1200 mi 2000 km (Every Year)	500 hrs 2500 mi 4000 km (Every 2 years)	1000 hrs 5000 mi 8000 km (Every 4 years)	Page
EVERY YEAR	Check steering knuckle bushing free play / Adjust wheel alignment				CA	CA	CA	*
	Check wheel nut tightness, front wheel bearing play				CS	CS	CS	*
	Check transaxle oil level and inspect for leakage				CS	CS	CS	48
	Adjust parking brake release				CA	CA	CA	51
	Inspect pedal components**				CS	CS	CS	*
EVERY 4 YEARS	Replace transaxle oil						CS R	*
	Inspect brake shoes and adjust or replace if necessary						CS R	*

* Items without a page number reference should be serviced by a Yamaha dealer or other qualified mechanic. This manual does not contain these procedures. They are contained in the Service Manual.

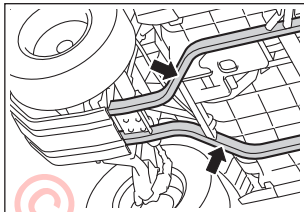
** Do not operate vehicle if discrepancy is found.

TIP

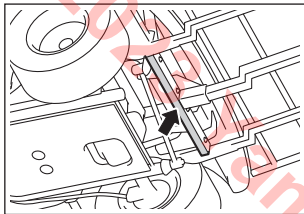
Some maintenance items need more frequent service if you drive in unusually wet, dusty, sandy, or muddy areas.

MAINTENANCE AND ADJUSTMENT

Front



Rear



RECOMMENDED JACKING POINTS

Jack up the vehicle at the indicated jacking points.

BATTERY CARE

WARNING

Battery electrolyte is poisonous and dangerous, causing severe burns, etc. It contains sulfuric acid. Avoid contact with skin, eyes or clothing.

Antidote:

EXTERNAL: Flush with water.

INTERNAL: Drink large quantities of water or milk. Follow with milk of magnesia, beaten egg or vegetable oil. Call physician immediately.

EYES: Flush with water for 15 minutes and get prompt medical attention.

Batteries produce explosive gases. Keep sparks, flame, cigarettes, etc., away.

Ventilate when charging or using in an enclosed space. Always shield eyes when working near batteries.

KEEP OUT OF REACH OF CHILDREN.

Eight 6-volt deep cycle batteries provide power for your electric utility vehicle and must be properly maintained and recharged for maximum performance and service life.

MAINTENANCE AND ADJUSTMENT

To maintain your batteries:

1. Clean the tops of the batteries with a solution of baking soda and water, as necessary, to remove corrosion.

NOTICE

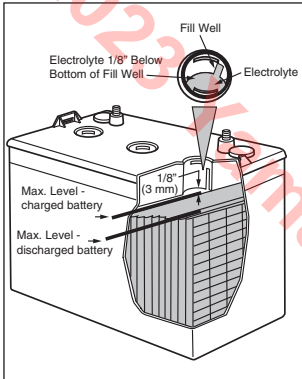
Do not allow cleaning solution to enter battery cells. Serious battery damage can result.

2. Check the fluid level before and after charging.

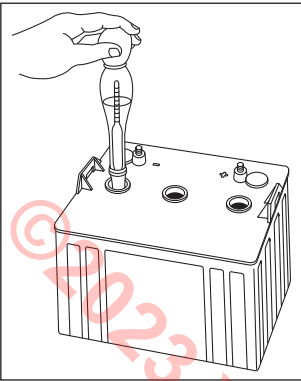
- **Before charging:** only add distilled water if fluid is below the top of the plates, and then add just enough to cover plates.
- **After charging:** open the vent caps and look inside the fill wells. Add distilled water until the electrolyte level is 3 mm (1/8") below the bottom of the fill well. A piece of rubber can be used safely as a dipstick to help determine this level. Clean, install, and tighten all vent caps.

NOTICE

Normal tap water contains minerals which are harmful to a battery; therefore, refill only with distilled water.

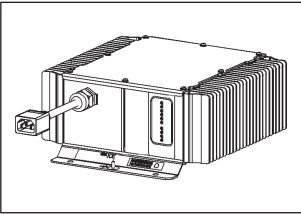


MAINTENANCE AND ADJUSTMENT



3. Using a hydrometer, check the specific gravity of the battery fluid in each cell against the readings on the chart below. Consult a Yamaha dealer if any low readings are found, or if readings vary more than one point between cells.

Temperature		Satisfactory Uncorrected Hydrometer Reading
°C	°F	
48.9	120	1.244
43.3	110	1.248
37.8	100	1.252
32.2	90	1.256
26.7	80	1.260
21.1	70	1.264
15.6	60	1.268
10.0	50	1.272
4.4	40	1.276
-1.1	30	1.280



BATTERY CHARGING

WARNING

Read and understand the owner's manual provided with your utility vehicle's battery charger before charging batteries. Death or serious personal injury can result from failing to comply with the instructions and warnings in this manual.

WARNING

Explosive hydrogen gas is produced while batteries are being charged. Only charge batteries in well-ventilated areas (a minimum of five air changes per hour is recommended). Death or serious personal injury can result from failing to comply with the instructions and warnings in this manual.

MAINTENANCE AND ADJUSTMENT

To charge the batteries in your utility vehicle, follow the instructions contained in your battery charger's owner's manual. The following is a summary of the charging steps.

NOTICE

Do not attempt to recharge your utility vehicle's batteries without thoroughly reading and understanding the owner's manual provided with your charger.

1. Turn the main switch to "OFF".

NOTICE

Always put the tow switch in the "TOW" position before charging the batteries or damage to the electrical system may result.

2. Remove the driver seat cushion, and then move the tow switch to the "TOW" position.

NOTICE

Use only battery chargers that are rated for use with 48-volt Yamaha utility vehicles. Otherwise, serious battery damage can result.

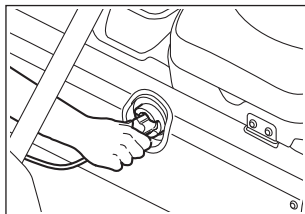
Thoroughly read and understand the user manual supplied with your 48-volt charger.

3. With the charger properly connected and grounded (see charger's owner's manual), insert the DC output plug into the DC charger receptacle.

⚠ WARNING

Do not disconnect the DC output cord from the DC charger receptacle when the charger is on or an arc could occur that may cause an explosion.

4. The charger will turn off automatically when the batteries reach full charge.
5. After the charger has turned off, disconnect the DC output plug from the DC charger receptacle by grasping the plug body and pulling the plug straight out of the receptacle.

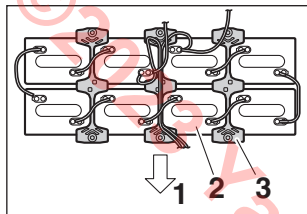


MAINTENANCE AND ADJUSTMENT

BATTERY INSTALLATION

WARNING

When working with batteries, do not put wrenches or other metal objects across the battery terminals. An arc can occur causing explosion of the battery.



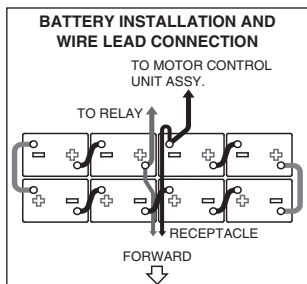
1. Forward
2. Battery
3. Battery hold-down plate

1. Install the battery hold-down plates by installing the bolts, and then tighten the bolts to the following torque:

Battery hold-down plate bolt torque:
6 N·m (0.6 kgf·m, 4.4 lb·ft)

2. Connect the wire leads, and then tighten the nuts to the following torque:

Nut torque:
10 N·m (1.0 kgf·m, 7.4 lb·ft)



WARNING

When installing batteries:

- Carefully place battery cables and hold-down plates making sure that cables do not lay across vent caps.
- Always remove the negative (-) cable to the motor controller first and install it last.

NOTICE

Do not over-tighten the battery hold-down plate bolts. Excessive force will damage the battery casing.

MAINTENANCE AND ADJUSTMENT

FUSE REPLACEMENT

WARNING

Be sure to use the specified fuse. Using a wrong fuse can cause electrical system damage and create a fire hazard. Death or serious personal injury can result from failing to comply with the warning labels in this manual.

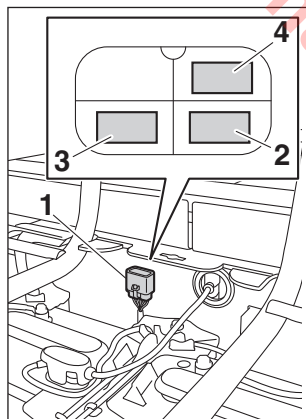
NOTICE

When replacing a fuse, be sure the main switch is turned off to prevent accidental short-circuiting and electrical system damage. Put tow switch in the tow position.

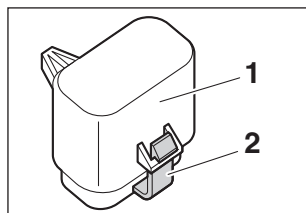
The fuse holder is located under the seat panel.

To access the fuse holder

1. Remove the seat and the under-seat panel. (See page 18.)
2. Locate the fuse holder on the main wire harness adjacent to the battery as shown.
3. Depress the locking tab of the fuse holder, and then remove the fuse holder cover.
4. Pull the fuse out and inspect it. Replace the fuse if necessary.
5. To install the seat and the under-seat panel, reverse the above steps.



1. Fuse holder
2. Main Mini fuse (10 A, 58V)
3. MCU Mini fuse (3.0 A, 58V)
4. USB Mini fuse (5.0 A, 32V)



1. Fuse holder cover
2. Locking tab

MAINTENANCE AND ADJUSTMENT

BATTERY CHARGER

Prepare for Emergencies

Be prepared for possible injury or fire.

Keep the following items handy:

- First aid kit
- Fire extinguisher
- Emergency phone numbers

Read the text located on the case of the charger before operating or using the charger.

Features

Switch-Mode Design: High-efficiency operation with smooth, ripple-free DC output.

10-LED Display: Displays state of charge and charge error conditions.

Charge Protection: Protects from improper connection, overload and excessive temperatures.

Programmed safety features include charge time monitoring and over temperature protection.

Charge Algorithm: Designed for maximum battery life of Trojan 48V batteries.

Pre-Test: Performs several diagnostic tests before charging begins.

Multi-Charge Steps: Ensures a consistent and repeatable charge.

Step 1: Pre-test: Tests several conditions before charging begins. If a problem is detected, charging is terminated.

Step 2: Constant Current Step: Battery is charged with full rated output current, restoring up to 80% of charge.

Step 3: Constant Voltage Step: Regulated voltage “equalizes” individual battery cells, resulting in full charge delivered to the battery.

Step 4: Topping Off Step: Battery pack is brought slowly to full charge without excess gassing.

Step 5: Storage: Every 14th day and if voltage becomes less than 48V, charger restarts cycle to re-fresh batteries in storage.

Automatic Battery Equalization (Boosting): Automatically boosts battery pack when individual cell-voltages are not balanced and restores pack capacity.

MAINTENANCE AND ADJUSTMENT

INSTALLATION

The AC line connected to the charger must be capable of supplying 12 amperes to the charger. **AVOID** connecting a charger and another device to a single 15A/20A circuit or the circuit may become overloaded. Also, maximum ampere varies depending on AC voltage. Please refer to “AC Input” in General Specifications.

WARNING

RISK OF FIRE - Use this charger only on circuits with a 15-amp or higher branch circuit protection (circuit breaker or fuse) in accordance with the national electrical code, ANSI/NFPA 70 and all applicable local codes and ordinances.

When using an extension cord, use only a grounded, 3-wire, 12-AWG cord no longer than 15 m (50'). The use of an improper extension cord could result in a risk of a fire or electric shock.

WARNING

The output of chargers with greater than 48 volts may pose an energy and/or shock hazard under normal use.

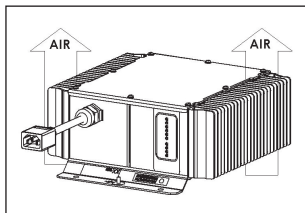
7

MOUNTING

WARNING

This charger is not designed for on-board use. Improper mounting or installation could result in a risk of fire or damage to the vehicle.

Mount the charger on a shelf or on the wall with adequate ventilation. Ideally it will be mounted horizontally with airflow from below. If it will be mounted vertically, it is recommended that the AC-input cord be at the lower end of the charger.



Keep the charger free of oil, dirt, mud or dust to keep the cooling fins operating as efficiently as possible.

MAINTENANCE AND ADJUSTMENT

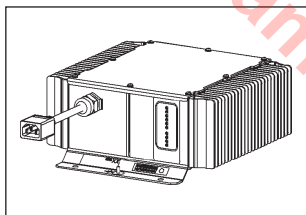
Mount the charger by the mounting plate using appropriate fasteners.

TIP

The charger's AC plug must be located at least 46 cm (18 in.) above the ground and the display visible to the user.

⚠ WARNING

Chargers can ignite flammable materials and vapors. Do not use near fuels, grain dust, solvents or other flammables.



GROUNDING

The battery charger must be grounded to reduce the risk of electric shock. The charger is equipped with a 3-prong AC cord set. The AC cord set must be connected to an appropriate receptacle that is properly installed and grounded in accordance with the National Electrical Code and all local codes and ordinances.

⚠ WARNING

Improper connection of the equipment-grounding conductor can result in a risk of an electric shock.

The conductor with insulation that has an outer surface that is green, with or without yellow stripe(s), is the equipment-grounding conductor. If repair or replacement of the charger's AC cord set is necessary, do not connect the equipment-grounding connector to a live terminal.

MAINTENANCE AND ADJUSTMENT

CHARGING

WARNING

To reduce the risk of an electric shock, connect only to a properly grounded, single-phase (3-wire) outlet. Also, refer to grounding instructions.

WARNING

Risk of electric shock! Do not touch any uninsulated parts of the charger output plug, DC charger receptacle or battery terminals.

WARNING

Surfaces may be hot. To avoid risk of burns, do not touch.

NOTICE

Charge only 48-volt battery systems manufactured by Trojan Battery Company. Damage to the charger and batteries may result if this charger is used on the wrong battery type.

WARNING

Visually and manually inspect to verify that the DC output cord, plug and battery charging receptacle are in good working condition before each and every use. Do not use the charger under any of the following conditions:

- The DC charging receptacle does not grip the DC cord set plug tightly, is loose or does not make a good electrical connection.
- The DC cord set plug or charging receptacle feels hotter than normal.
- The DC cord set plug or charging receptacle contacts are bent, corroded, or are dark or bluish in appearance.
- The DC cord set plug, cords, receptacle or equipment-charging wiring are cut, worn, broken or have any exposed conductors.
- The DC cord plug, cords, charger or receptacles are damaged or distressed in any way.

MAINTENANCE AND ADJUSTMENT

Using the charger with any of the above symptoms could result in a fire, property damage or personal injury.

WARNING

Do not disconnect the DC cord set plug from the DC charger receptacle when the charger is on. If the charger must be stopped, first disconnect the AC power supply cord from its AC outlet, and then disconnect the charger DC cord set plug from the DC charger receptacle.

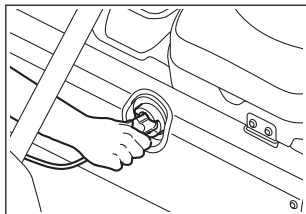
WARNING

Whenever removing AC or DC cord set plugs from receptacles, pull from the plug body and not from their respective cords.

The instructions printed on the charger (shown below) are for daily reference. The charger is factory preset for use with Trojan 48-volt vehicle batteries.

OPERATING INSTRUCTIONS

1. PLUG AC CORD INTO A GROUNDED RECEPTACLE
2. PLUG DC CORD INTO DC CHARGER RECEPTACLE
3. CHARGE CYCLE WILL BEGIN AFTER A FEW SECONDS AND AMMETER WILL TURN ON
4. CHARGER SHUTS OFF AUTOMATICALLY WHEN BATTERIES ARE CHARGED

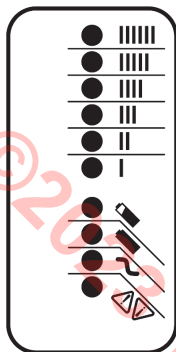


Connect charger's AC cord set to AC power. Then, connect the DC cord set plug to the vehicle charging receptacle by grasping the plug handle and pushing the plug straight into the DC charger receptacle. The charger will start automatically.

Upon connection to AC power source, the lower four LEDs come on as a Power-On Self-Test, then the AC power LED turns on. Upon connection to battery pack, output indicators turn on to indicate charging is active.

MAINTENANCE AND ADJUSTMENT

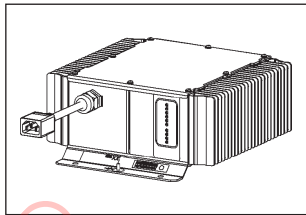
Under normal charge circumstances, the LEDs operate as follows:



Ammeter (Amber)	On:	Displays approximate scale of current output during Step 2.
	Blinking:	High internal charger temperature. Current output reduced.
80% Charge (Amber)	On:	80% charged, Step 2 complete. Begin Step 3.
	Blinking:	With no battery connected, indicates algorithm # selected by number of flashes at startup.
100% Charge (Green)	On:	Charging complete. Charger in storage mode.
	Blinking:	Step 3 complete. Begin Step 4.
AC On (Amber)	On:	AC power good.
Fault (Red)	Blinking:	Charger error. Refer to Troubleshooting on next page.

To reset charger after 100% charge (green LED), disconnect the DC plug from battery for more than 30 seconds. Then, reconnect DC plug.

MAINTENANCE AND ADJUSTMENT



TROUBLESHOOTING

1. LED error codes (for battery condition)

WARNING

Incorrect reassembly may result in a risk of electric shock or fire. The following procedures are intended only to determine if a malfunction may exist in the charger.

WARNING

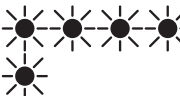
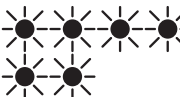
To reduce the risk of electric shock, always disconnect the charger's AC cord set plug from AC power and its DC cord set plug from batteries before attempting any maintenance or cleaning.

WARNING

Do not operate the charger if it is malfunctioning. Personal injury or property damage could result.

MAINTENANCE AND ADJUSTMENT

If a fault occurs, count the number of red flashes between pauses and refer to the table below:

Red Flashes	Cause	Solution
	Battery High Voltage	Check battery size and condition and reset charger (interrupt DC connection for 15 seconds).
	Battery Low Voltage	Check battery size and condition and reset charger (interrupt DC connection for 15 seconds).
	Charge Timeout caused by battery pack not reaching required voltage.	Check connections.
	Charger output was reduced due to high temperatures.	Operate charger at a lower ambient temperature.
	Check Battery: Battery could not be trickle charged up to minimum voltage.	Check for shorted or damaged cells.
	Over-Temperature: Charger shut down due to high internal temperature.	Ensure sufficient cooling air flow and reset charger (interrupt DC connection for 15 seconds).
	Charger Internal Fault	Reset charger (interrupt AC power for 15 seconds). Return to qualified service depot if fault persists.

WARNING

Have qualified service technician inspect if problems persist.

MAINTENANCE AND ADJUSTMENT

2. Hardware system faults

Problem Description	Cause	Remedy
Charger does not start. No LEDs illuminate or blink when AC cord is connected.	No AC power to charger.	Ensure correct voltage at AC outlet. Check AC cord connections. Replace AC cord if damaged.
Charger does not start charging when DC cord set is plugged into charger receptacle and the amber AC On LED is illuminated.	Incorrect wiring or disconnection from DC cord, charger receptacle and batteries. Battery voltage less than 20 volts.	Ensure polarity for wiring is correct from DC cord, charger receptacle and batteries. Check battery pack voltage.
Charger runs longer than 20 hours.	Charger may be in “boosting” stage.	Confirm green 100% Charge LED is blinking. (This indicates boosting.)

7

 WARNING

Have qualified service technician inspect if problems persist.

MAINTENANCE AND ADJUSTMENT

TRANSAXLE OIL

To check transaxle oil level:

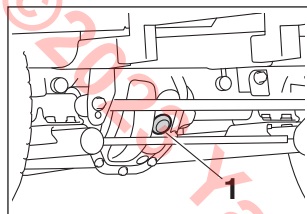
TIP

For information on the jacking points, see page 33.

1. Place the utility vehicle on a flat, level surface.
2. Place an oil pan under the transaxle case.
3. Clean the area around the oil level plug and then remove the plug.

NOTICE

Do not allow foreign material to enter transaxle. Serious transaxle damage can result.



1. Oil level plug

4. The oil level should be up to the brim of the transaxle oil level hole.
5. If needed, add gear oil until it starts to flow from the oil level plug hole.

Recommended oil brand:



Available viscosity index:

SAE 80W-90 or SAE 90

Transaxle oil change quantity:

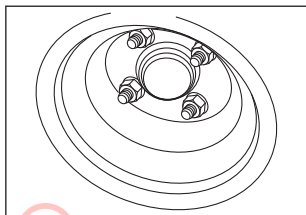
355 cc (355 mL, 0.38 US qt)

6. Allow excess gear oil to flow out of the hole until it stops.
7. Install the oil level plug.

TIP

For transaxle oil replacement, consult a Yamaha dealer or other qualified mechanic.

MAINTENANCE AND ADJUSTMENT



WHEEL REPLACEMENT

WARNING

Before performing wheel or brake maintenance, verify that the main switch is in the “OFF” position. Accidental starting of the vehicle could cause the vehicle to move, causing death or serious personal injury.

To remove and install a wheel on your utility vehicle:

1. With the wheels blocked to prevent the utility vehicle from moving, loosen the wheel nuts.
2. Elevate the utility vehicle with a suitable jack and remove the wheel nuts and the wheel.
3. Reverse the removal steps when installing the wheel.

Wheel nut tightening torque:

100 N·m (10 kgf·m, 74 lb·ft)

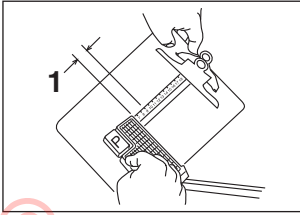
BRAKE ADJUSTMENT

The brakes on your utility vehicle are self-adjusting. Before you operate the vehicle, press down on the brake pedal several times to make sure the brakes are functioning properly.

WARNING

Consult your Yamaha dealer before using your utility vehicle if you suspect brake problems. Death or serious personal injury can result from failing to comply with the safety instructions in this manual.

MAINTENANCE AND ADJUSTMENT



1. Brake pedal free play

BRAKE PEDAL FREE PLAY ADJUSTMENT

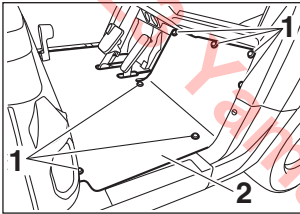
Check the brake pedal free play by pressing against the pedal with two fingers (using light force) and measuring the distance the pedal travels before resistance is felt.

Brake pedal free play:

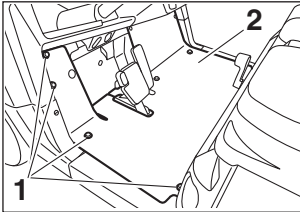
50-55 mm (1.97-2.17 in.)

To adjust the brake pedal free play:

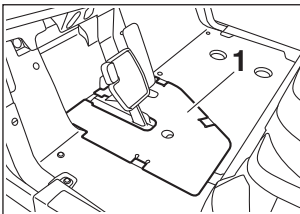
1. Remove the floor mat by removing the quick fasteners.



1. Quick fastener
2. Floor mat



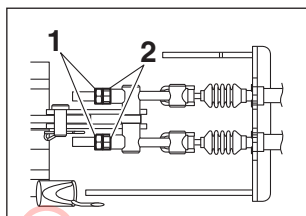
1. Quick fastener
2. Floor mat



1. Service lid

2. Remove the service lid.

MAINTENANCE AND ADJUSTMENT



1. Locknut
2. Adjusting nut

3. If the free play distance needs adjusting, loosen the locknuts and turn the adjusting nuts in or out until the free play specification is met. Then tighten the locknuts in place.

WARNING

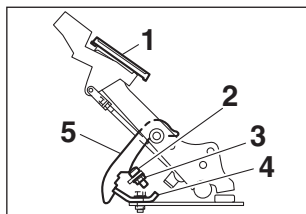
Do not over-tighten the brake cables. Over-tightening will increase brake wear and affect the overall performance of the vehicle. Premature brake wear can result. Death or serious personal injury can result from failing to comply with the warning labels in this manual.

4. Install the service lid.
5. Install the floor mat by installing the quick fasteners.

PARKING BRAKE RELEASE ADJUSTMENT

NOTICE

Before performing parking brake release adjustment, adjust brake pedal free play.



1. Parking brake pedal
2. Bolt
3. Locknut
4. Brake nail
5. Sector

1. Apply pressure to the parking brake pedal until the brake nail catches the first latch position on the sector.
2. Loosen the locknut and turn the bolt counter-clockwise until it contacts the sector.
3. Turn the bolt clockwise 1/3 of a turn (120 degrees), then tighten locknut.

HEADLIGHTS

This model is equipped with LED-type headlights.

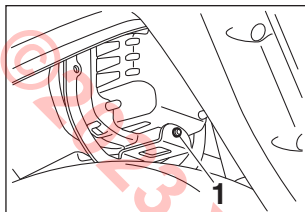
If a headlight does not come on, check the fuses and then have a Yamaha dealer check the vehicle.

MAINTENANCE AND ADJUSTMENT

ADJUSTING A HEADLIGHT

NOTICE

It is recommended to have the headlight adjustment performed by a Yamaha dealer.



1. Adjusting screw

Using a Phillips head screwdriver, turn the adjusting screw. Turning the screw clockwise will lower the beam and turning the screw counterclockwise will raise the beam.

STORAGE

Perform the following preparations when storing your utility vehicle for extended periods of time:

TIP

Turn main switch key to “OFF” position, remove the driver seat cushion and put the tow switch in the “TOW” position. Remove key from main key switch, and store key in a safe place.

CHASSIS PREPARATION

1. Verify the tire pressure is set to:
 - Front: 137 kPa (1.40 kgf/cm², 20 psi)
 - Rear: 137 kPa (1.40 kgf/cm², 20 psi)
2. Clean exterior of the utility vehicle and apply a rust inhibitor.
3. Cover the utility vehicle with a breathable cover and store it in a dry, well-ventilated area.

BATTERY PREPARATION

1. Recharge the batteries and check the fluid levels at least once a month.

NOTICE

Do not allow cleaning solution to enter battery cells. Serious battery damage can result.

2. Clean the tops of the batteries with a solution of baking soda and water, as necessary, to remove corrosion.

GENERAL SPECIFICATIONS

Items	YUM2E UMAX RALLY 2+2
Dimensions:	
Overall length	3415 mm (134.4 in.)
Overall width	1360 mm (53.5 in.)
Overall height (sun top height)	1960 mm (77.2 in.)
Height of floor	385 mm (15.2 in.)
Wheelbase	1965 mm (77.4 in.)
Tread:	
Front	1050 mm (41.3 in.)
Rear	1050 mm (41.3 in.)
Ground clearance	150 mm (5.9 in.)
Weight:	
Curb weight (With Sun top, W/S, Flooded Battery)	779 kg (1717 lb)
Performance:	
Maximum speed	24.1 km/h (15.0 mph)
Maximum reverse speed	10.0 km/h (6.2 mph)
Minimum turning radius	4.0 m (13.1 ft)
Hill climbing capacity	15°
Seating capacity	One occupant per seat, four occupants maximum
Occupant capacity (front)	181 kg (400 lb)
Occupant capacity (rear)	181 kg (400 lb)
Maximum cargo area capacity	113 kg (250 lb)
Vehicle rated capacity	454 kg (1000 lb)
Gross vehicle weight rating	1233 kg (2717 lb)

SPECIFICATIONS

TRANSMISSION

Items	YUM2E UMAX RALLY 2+2
Differential/reduction gear	Secondary reduction system helical gear Secondary reduction ratio: 15.31:1 Differential type bevel gear Lubricant/capacity SAE 80W-90 or SAE 90 gear oil/355 cc (355 mL, 0.38 US qt)

BATTERIES

Items	YUM2E UMAX RALLY 2+2
Battery	Trojan - T-105 (8×6volt) RC: minimum 115 min @ 75 Amps

CHASSIS

Items	YUM2E UMAX RALLY 2+2
Suspension:	
Front	Independent (Coil-over strut type)
Rear	Pivoted trailing arm (mono-link)
Lighting:	
Headlight	LED
Steering system:	
Type	Rack and Pinion
Steering angle (L.H.)	1.85 turn
Steering angle (R.H.)	1.85 turn
Brakes:	
Brake system	Mechanical drum brake on each wheel with self-adjusters
Type of brake	Dual internal expanding shoe Leading/trailing shoes (self-adjusting)
Brake pedal free play linkage adjustment	50–55 mm (1.97–2.17 in.)

SPECIFICATIONS

Items	YUM2E UMAX RALLY 2+2
Parking brake:	
Type	Foot type; parking brake with automatic release.
Wheel:	
Tire size: (Dia. [in]) × (Width [in]) - (Rim size [in]) / Ply rating)	
Front	23 × 10.50-12 / 4 PR
Rear	23 × 10.50-12 / 4 PR
Rim size: (Dia. [in]) × (Width [in]) (Offset [mm])	12 × 7.0 +25
Tire pressure:	
Recommended:	
Front	137 kPa (1.40 kgf/cm ² , 20 psi)
Rear	137 kPa (1.40 kgf/cm ² , 20 psi)
Minimum:	
Front	124 kPa (1.26 kgf/cm ² , 18 psi)
Rear	124 kPa (1.26 kgf/cm ² , 18 psi)

SPECIFICATIONS

GENERAL SPECIFICATIONS (BATTERY CHARGER)

DC Output – see Operating Instructions

Items	YUM2E UMAX RALLY 2+2
Voltage - nom (V)	48
Voltage - max (V)	67.2
Current - max (A)	18
Battery Type	Specific to selected algorithm
Reverse Polarity	Electronic protection – auto-reset
Short Circuit	Electronic current limit

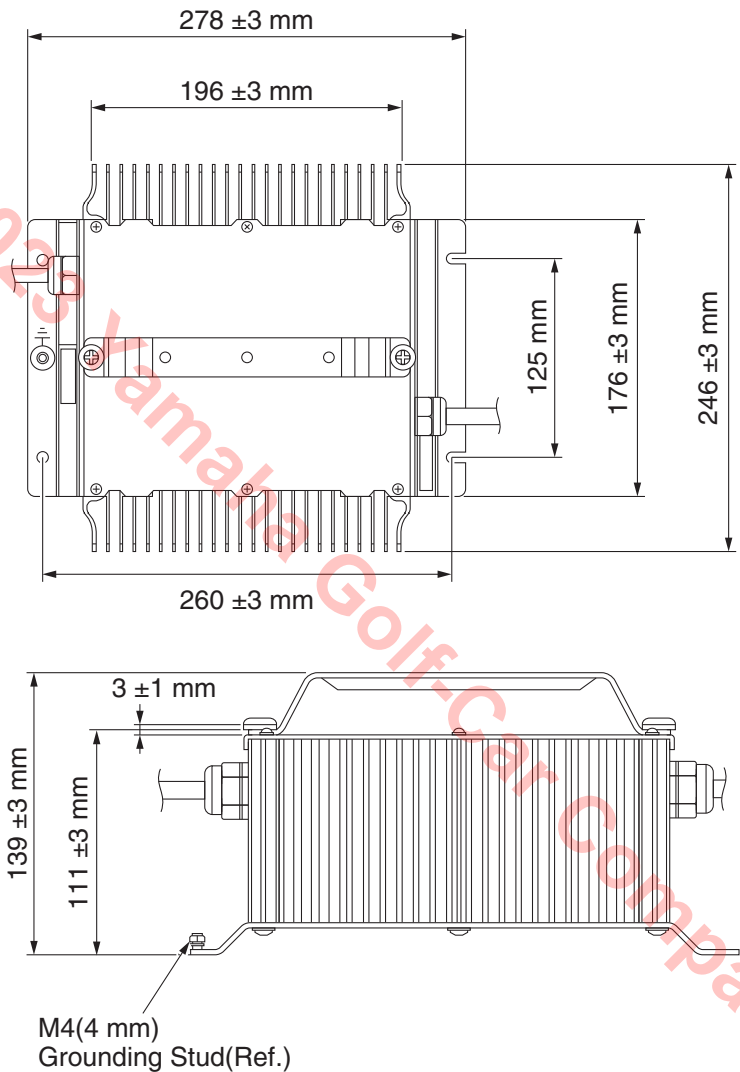
AC Input

Items	YUM2E UMAX RALLY 2+2
Voltage - max (Vrms)	85-265
Frequency (Hz)	45-65
Current - max (Arms)	12A @ 100VAC / 11.5A @ 110VAC / 6.1A @ 200VAC / 5.6A @ 220VAC / 5.4A @ 230VAC / 5.1A @ 240VAC
Current - nom (Arms)	10A @ 120VAC / 6A @ 200VAC / 5.5A @ 220VAC
AC Power Factor	0.98 at nominal input current

Mechanical

Items	YUM2E UMAX RALLY 2+2
Dimensions	28.0 × 24.5 × 14.0 cm (11 × 9.7 × 5.5 in.)
Weight	5 kg (12 lb)
Environmental	Enclosure: IP20
Operating Temperature	-30°C to +50°C (-22°F to 122°F), derated above 30°C, below 0°C
Storage Temperature	-40°C to +70°C (-40°F to 158°F)
AC Input Connector	IEC320/C14 (require ≥ 1.8 m localized cord)
DC output connector	OEM specific w/12AWG wire

MECHANICAL DRAWINGS



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