



MODEL YEAR **2023**

## OWNER'S / OPERATOR'S MANUAL



**GOLF CAR**

 Read this manual carefully before operating this vehicle.

***DRIVE<sup>2</sup>***



***DR2 POWERTECH AC IRS***



**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](http://www.P65Warnings.ca.gov)

# INTRODUCTION

---

Congratulations on your purchase of a Yamaha golf car. This manual contains information you will need for proper operation, maintenance, and care of your golf car. 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 golf car, please consult a Yamaha dealer.

**Yamaha Golf-Car Company**

**DR2 POWERTECH AC IRS  
OWNER'S/OPERATOR'S MANUAL  
© 2023 by Yamaha Golf-Car Company  
1st edition, October 2022  
All rights reserved. Any reprinting  
or unauthorized use without the  
written permission of  
Yamaha Golf-Car Company  
is expressly prohibited.  
Printed in U.S.A.  
LIT-19626-A2-61**

# 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. |
|  <b>WARNING</b> | A <b>WARNING</b> indicates a hazardous situation which, if not avoided, could result in death or serious injury.                                                                   |
| <b>NOTICE</b>                                                                                    | A <b>NOTICE</b> indicates special precautions that must be taken to avoid damage to the vehicle or other property.                                                                 |
| <b>TIP</b>                                                                                       | A <b>TIP</b> 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 golf car 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 golf car. This manual should be considered a permanent part of your golf car and should remain with the car when resold.**

---

# CONTENTS

---

CONTENTS

WARRANTY

1

IMPORTANT LABELS

2

 SAFETY INFORMATION

3

CONTROLS

4

PRE-OPERATION CHECKS

5

OPERATION

6

MAINTENANCE AND ADJUSTMENT

7

STORAGE

8

SPECIFICATIONS

9

WIRING

10

©2022 Yamaha Golf-Car Company

# WARRANTY

## 4-YEAR LIMITED WARRANTY FOR DRIVE<sup>2</sup> FLEET GOLF CAR

Yamaha Golf-Car Company hereby warrants that any new Yamaha DRIVE<sup>2</sup> Gas or DRIVE<sup>2</sup> Electric Fleet golf car purchased from Yamaha, or an Authorized Dealer or Distributor in the United States will be free from defects in material and workmanship for FOUR 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                                                                                                                                |
|----------------------------------------|---------------------------------------------------------------------------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Frame                                  | Limited Lifetime to Original Owner                                        | Battery - Trojan T875 FLA     | 4 Years or 23,500 amp hours whichever comes first / <b>without</b> HydroLink Watering System                                                   |
| Transaxle / Transmission               | 4 Years                                                                   |                               | 4 Years or 25,000 amp hours whichever comes first / <b>with</b> HydroLink Watering System<br><i>*See Trojan Warranty Statement for details</i> |
| Steering / Suspension Components       | 4 Years                                                                   | Battery - Trojan T875 AGM     | 5 Years or 50,000 amp hours whichever comes first<br><i>*See Trojan Warranty Statement for details</i>                                         |
| Brakes (Excluding Shoes / Pads)        | 4 Years                                                                   |                               |                                                                                                                                                |
| Sun Top                                | 4 Years                                                                   | Battery Charger and Cord      | 4 Years                                                                                                                                        |
| Electrical Wires, Switches, and Relays | 3 Years                                                                   | Electric Motor and Controller | 4 Years                                                                                                                                        |
| Pedal Assy                             | 3 Years                                                                   | Charger Receptacle            | 4 Years                                                                                                                                        |
| Body Parts                             | 3 Years                                                                   | Throttle Position Sensor      | 2 Years                                                                                                                                        |
| Bumpers / Bag Carrier                  | 3 Years                                                                   | Gas Car Specific Parts        | Warranty Period                                                                                                                                |
| Seats                                  | 2 Years                                                                   | Gas Engine                    | 4 Years                                                                                                                                        |
| Scorecard Holder                       | 2 Years                                                                   | Starter Generator             | 4 Years                                                                                                                                        |
| Floor Mats                             | 2 Years                                                                   | Exhaust / Intake              | 4 Years                                                                                                                                        |
| Common Accessories                     | Warranty Period                                                           | Clutch (Excluding Drive Belt) | 4 Years                                                                                                                                        |
| Genuine Yamaha Fleet Accessories       | 3 years*<br><i>*Refer to the Accessory Warranty Statement for details</i> | Throttle / Control Cables     | 3 Years                                                                                                                                        |
|                                        |                                                                           | Starting Battery              | 1 Year                                                                                                                                         |
|                                        |                                                                           | 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
- Transport the car to and from an authorized dealer or distributor for warranty service.

**WARRANTY TRANSFER:** Any transfer of warranty must take place within the first three years of the original in-service date of the vehicle. The vehicle must be re-registered by an authorized Yamaha Golf Car dealer within 30 days of transfer. A fee may be charged for the transfer of the warranty.

**EMISSION CONTROL SYSTEM WARRANTY (USA only):**

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 gives you specific legal rights, and you may also have other rights, which vary from state to state.**

YAMAHA GOLF-CAR COMPANY, KENNESAW, GEORGIA 30144

EFFECTIVE DATE: 07/01/20

## 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:  $\text{Adjusted Discharge Time} = (\text{Discharge Minutes}) / (1 - (((80 - \text{TEMP}) / 100) \times 0.64))$ .
- 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 SUBJECT 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.

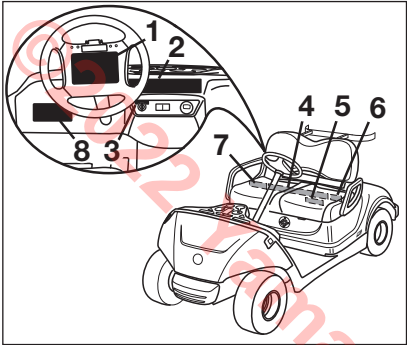
ALSO EXCLUDED FROM THIS LIMITED WARRANTY ARE ANY AND ALL INCIDENTAL OR CONSEQUENTIAL DAMAGES INCLUDING, BUT NOT LIMITED TO, LOSS OF USE OR REVENUE, LOSS OF TIME, INCONVENIENCE OR ANY OTHER ECONOMIC LOSS.

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 by state to state.

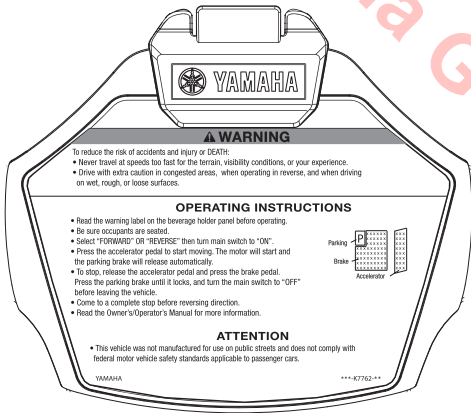
# IMPORTANT LABELS

## SAFETY AND INSTRUCTION LABELS

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



1



2

## ⚠ WARNING

To reduce the risk of accidents and injury or DEATH:

- Read the label located on the steering wheel before operation.
- Operate only when authorized and only in designated areas.
- Operate from driver's seat only.
- This vehicle is restricted to 2 occupants per bench seat.
- Do not start vehicle until all occupants are seated.
- Remain seated and hold on when in motion.
- Keep entire body inside vehicle.
- Drive slowly in turns.
- Drive straight up and down slopes.
- Set parking brake before leaving vehicle.
- Turn main switch to "OFF" and remove key when not in use.
- Do not operate or ride while distracted or under the influence of alcohol or drugs.

YAMAHA

\*\*\*-K7768-\*\*

2

3



4

|                                                          |                                                                |                      |                             |                      |                             |                      |                             |
|----------------------------------------------------------|----------------------------------------------------------------|----------------------|-----------------------------|----------------------|-----------------------------|----------------------|-----------------------------|
| <b>BATTERY INSTALLATION AND WIRE LEAD CONNECTION</b><br> | <b>INSTALLATION DES BATTERIES ET RACCORDEMENT DES FILS</b><br> | <b>⚠ WARNING</b><br> | <b>⚠ ADVERTISSEMENT</b><br> | <b>⚠ WARNING</b><br> | <b>⚠ ADVERTISSEMENT</b><br> | <b>⚠ WARNING</b><br> | <b>⚠ ADVERTISSEMENT</b><br> |
|----------------------------------------------------------|----------------------------------------------------------------|----------------------|-----------------------------|----------------------|-----------------------------|----------------------|-----------------------------|

5

## NOTICE

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.

## NOTIFICATION

Mettre l'interrupteur à 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 à long terme.
- Après avoir changé l'interrupteur de position "RUN" à position "TOW", attendre un minimum de 15 secondes avant de le remettre.

YAMAHA

\*\*\*-K8298-\*\*

# IMPORTANT LABELS

6

DATE OF CONSTRUCTION: \*\*\* \*\*\*\* MY\*\*\*\*  
YAMAHA MOTOR POWERED PRODUCTS CO., LTD  
200-1 SAKAGAWA, KAKEGAWA, JAPAN



MAX. BATTERY WEIGHT: \*\*\* kg  
NOMINAL SYSTEM VOLTAGE: \*\*V

MODEL: \*\*\*\*\*  
MAX.POWER: \*\* hp (\* kW)  
WEIGHT (NO BATT): \*\*\* kg

VEHICLE LOAD CAPACITY: \*\*\* kg PER SEAT, \*\* kg BAGWELL

\*\*\*-F4236-\*\*

7

CAN ICES-002/NMB-002

\*\*\*-H5377-\*\*

8

 **WARNING**

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

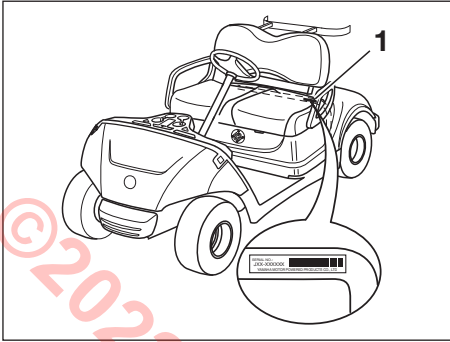
• Operating tire pressure: set with tires cold.

|                 | Recommended     |                   |
|-----------------|-----------------|-------------------|
| Tire size       | Front           | Rear              |
| 205/65-10, 4ply | 151 kPa, 22 psi | / 151 kPa, 22 psi |
| 18x8.50-8, 4ply | 137 kPa, 20 psi | / 137 kPa, 20 psi |

YAMAHA

\*\*\*-F1696-\*\*

# IMPORTANT LABELS



1. Vehicle serial number

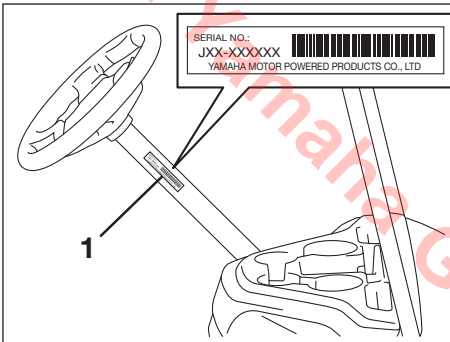
## SERIAL NUMBER

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 Golf-Car Company dealer.

2



1. Vehicle serial number

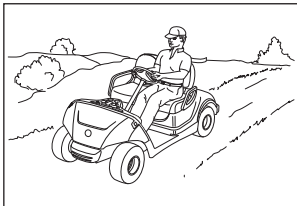
Serial number:

# SAFETY INFORMATION

Yamaha golf cars 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 GOLF CAR

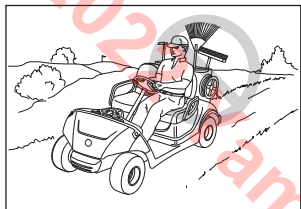
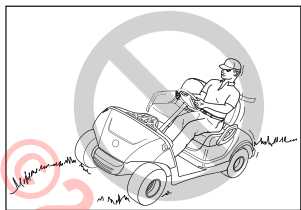
- Read this Owner's/Operator's manual and all safety and instruction labels on the golf car before operating.
- Perform the pre-operation checks found in Section 5 of this manual.
- Only authorized people should drive the golf car, from the driver's side only, and only in designated areas.
- Do not allow more than two occupants per seat. This golf car is restricted to two occupants unless equipped with a rear seat.
- Do not operate the golf car while under the influence of alcohol or drugs; their effect on vision and judgment make operating a golf car dangerous.
- Do not operate the golf car on public streets, roads or highways unless allowed by law or local regulating authority.



## WHILE OPERATING THE GOLF CAR

- Keep your entire body inside the golf car, remain seated, and hold on when the car is in motion.
- Do not start the golf car until all occupants are seated.
- Keep your hands on the steering wheel and your eyes on the path ahead.
- Use extra care in congested areas or when backing up. Always back up slowly, and watch carefully.
- Avoid starting or stopping abruptly.
- Vary the speed of the golf car to match the terrain of the course.

## SAFETY INFORMATION



- Avoid turning the steering wheel too sharply at higher speeds to avoid tipping or rolling the golf car.
- Always drive slowly straight up or straight down slopes – never at an angle to avoid tipping or rolling the golf car.

- 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.

## SAFETY INFORMATION

---

Like all machines, golf cars can cause injury if improperly used or maintained. This section contains broad safety practices required for safe golf car operation. Before golf cars are operated, golf course personnel should establish any additional safety practices that may be required for safe operation.

Experience has shown that golf cars are safe when operated in accordance with the safety warnings affixed to every golf car. This safe operation is enhanced when golf cars are used according to the safety rules and practices established to meet the terrain and conditions of the course they are used on.

The information contained here is intended for golf course personnel responsible for golf car safety. If you are responsible for the operation and maintenance of this golf car, we encourage you to implement this golf car safety program.

### DRIVER QUALIFICATIONS

Allow only authorized people to operate golf cars. It is recommended that only people who possess a valid motor vehicle driver's license be allowed to operate golf cars.

Place operation and safety instructions recommended by the golf car manufacturer, along with the golf course safety rules, in a conspicuous place near the golf car rental area or golf car pick-up area.

It is also recommended that the following warning be posted in a conspicuous location:

#### WARNING

**Do not operate golf cars when under the influence of alcohol or drugs. Death or serious personal injury can result from failing to comply with the safety and warning instructions affixed to the golf car.**

---

## GOLF COURSE SAFETY SURVEY

Perform safety surveys regularly to identify hazardous areas where golf cars should not be operated.

## GOLF COURSE HAZARD PREVENTION

The following golf course hazards must be made safe:

- **Steep Grades.** Where steep grades exist, restrict golf cars to designated golf car pathways where possible. In addition, identify steep grades with a suitable warning like:



### WARNING

**Descend steep grades slowly with foot on brake. Death or serious personal injury can result from failing to comply with the safety and warning instructions affixed to the golf car.**

- **Sharp Turns, Blind Corners, Bridge Approaches.** Chain or rope off these potentially hazardous areas or identify them with a suitable warning describing the nature of the hazard and the proper precautions to be taken to avoid the hazard.
- **Wet Areas.** Wet grass may cause a golf car to lose traction and may affect stability. Golf car operators should reduce speed in wet areas or during periods of inclement weather.
- **Loose Terrain.** Loose terrain may cause a golf car to lose traction and may affect stability. Repair loose terrain, chain or rope off these areas, or identify loose terrain with a suitable warning.
- **Golf Car and Pedestrian Interference.** Reroute golf car traffic or pedestrian traffic in congested areas wherever possible to prevent accidents. If it is impractical to reroute traffic, erect warning signs to warn pedestrians of golf car traffic, and to warn golf car operators to drive slowly, use caution, and watch for pedestrians.

## MAINTENANCE REQUIRED FOR GOLF CAR SAFETY

Practice the following to help ensure the safety of golf car operators:

- **Preventative Maintenance.** Perform all scheduled maintenance in accordance with manufacturer's recommendations to provide the golfing patron with a safe, properly operating golf car.
- **Personnel.** Allow only qualified, trained, and authorized personnel to inspect, adjust, and maintain golf cars.
- **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 also required to remove hydrogen gas from the car storage areas during the battery charging process.

For electric powered golf cars, 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, a minimum of 5 air changes per hour is recommended. Consult applicable fire and safety codes for the specific ventilation levels requirement, as well as requirements for the use of explosion proof electrical apparatus.

## 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:

## SAFETY INFORMATION

- Properly immobilize golf car before beginning any maintenance to avoid any unexpected vehicle movement.
- Properly block chassis before working underneath golf car to avoid any unexpected vehicle movement.
- When working on the fuel system or 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 golf car, disable the car's electrical system in accordance with the manufacturer's instructions to avoid electrical shock or damage to the electrical system.
- Use only properly insulated tools when working on electrically powered golf cars or around batteries to avoid electrical shock or damage to the electrical system.
- Maintain all safety devices including brakes, steering mechanisms, warning devices, and governors, in a safe operating condition. Do not modify these safety devices as supplied by the manufacturer.
- After each maintenance or repair, the car 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.
- Provide operator comment cards to assist in identifying non-periodic maintenance needs for specific golf cars.
- 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.



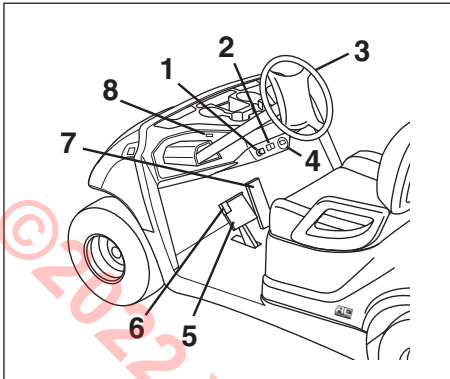
## SAFETY INFORMATION

---

### STORAGE AND BATTERY CHARGING

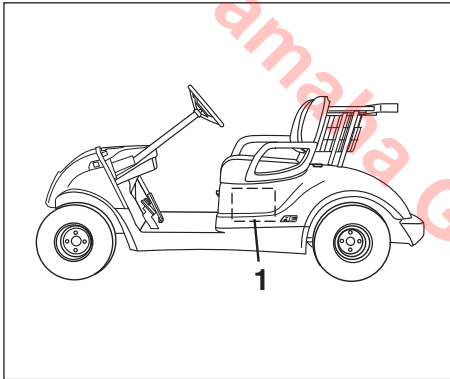
Take the following precautions to ensure maintenance worker safety:

- Only use battery 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.

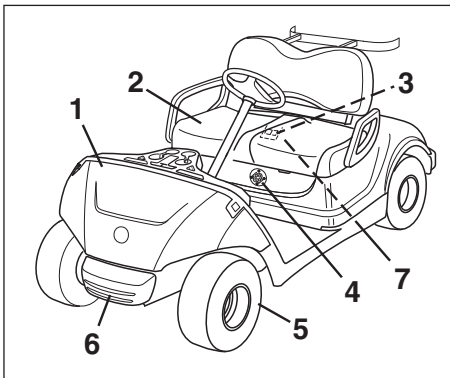


## FEATURES

1. Main switch
2. Drive select switch
3. Steering wheel
4. Battery gauge
5. Brake pedal
6. Parking brake pedal
7. Accelerator pedal
8. USB ports

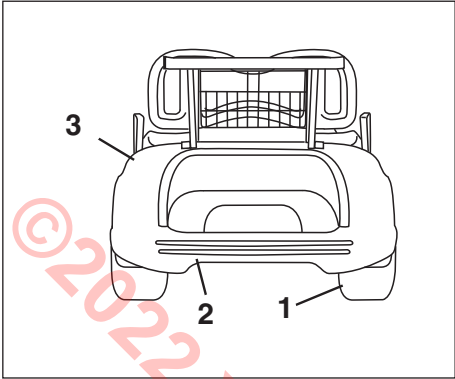


1. Batteries



1. Front body
2. Seat
3. Tow switch
4. DC charger receptacle
5. Front tire
6. Front bumper
7. Fuses

# CONTROLS



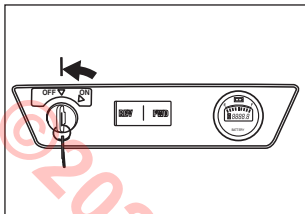
- 1. Rear tire
- 2. Rear bumper
- 3. Rear body

4

©2022 Yamaha Golf-Car Company

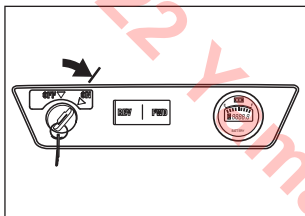
MAIN SWITCH

The main switch controls the following items:



“OFF”

All electrical control circuits are switched off (controller remains energized). The golf car cannot be operated. The key can be removed only in this position.



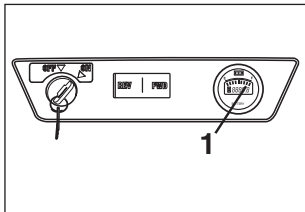
“ON”

Electrical circuits are switched on. The golf car can be driven.

4

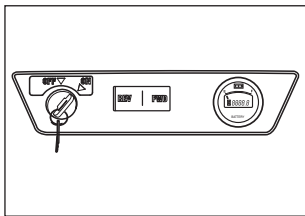
OPTIONAL BATTERY GAUGE

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



1. Battery gauge

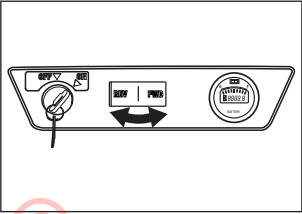
As the battery energy decreases, the LEDs will move to the left toward the “E.” When the LED light below the “E” is the only one lit, the batteries must be charged.



Use the table to determine the remaining battery capacity. For example, if 7 of the 9 LED lights are lit, batteries still have approximately 47.4 volts left. When the batteries fall to 43.4 volts or less, 1 LED will blink on and off, meaning the batteries should be charged immediately.

| BAR LEVEL | 9     | 8    | 7    | 6    | 5    | 4    | 3    | 2    | 1    | 1 BLINK |
|-----------|-------|------|------|------|------|------|------|------|------|---------|
| VOLT      | 48.95 | 47.8 | 47.4 | 46.9 | 46.4 | 46.0 | 44.8 | 44.0 | 43.5 | 43.4 >  |

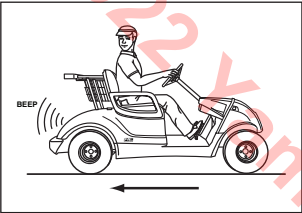
# CONTROLS



## DRIVE SELECT SWITCH

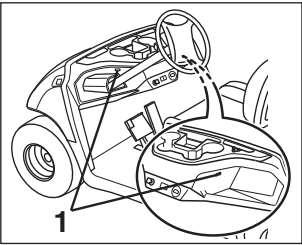
The drive select switch is used to shift the golf car into forward or reverse. After coming to a complete stop, move the lever to the desired position.

| Switch Position | Car Movement |
|-----------------|--------------|
| FWD             | FORWARD      |
| REV             | REVERSE      |



## TIP

The reverse alarm will sound when the drive select switch is turned to “REV.”

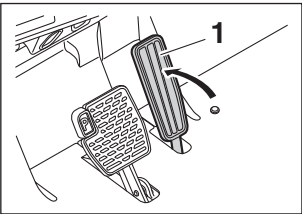


1. USB port

## USB PORTS

A USB port is located inside the dash on the driver side and passenger side. These can be used to power or charge USB devices or accessories.

The USB is only powered when the key is in the ON position.

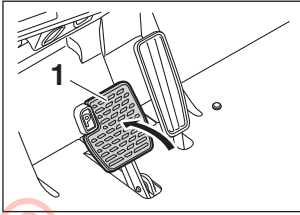


1. Accelerator pedal

## ACCELERATOR PEDAL

The accelerator pedal controls the golf car's speed.

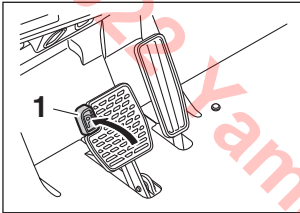
| Action        | Car Speed |
|---------------|-----------|
| Depress pedal | Increase  |
| Release pedal | Decrease  |



1. Brake pedal

## BRAKE PEDAL

Press down on the brake pedal to stop the golf car.



1. Parking brake pedal

## PARKING BRAKE PEDAL

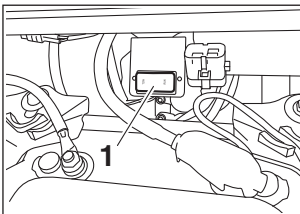
Press down on the parking brake pedal whenever parking the golf car.

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



1. Tow switch

## TOW SWITCH

Before operating the car, make sure the tow switch is in the "RUN" position.

### NOTICE

Ensure that the "Drive Select Switch" is in the "FWD" position and then move the "TOW Switch" to "TOW" before towing.

After moving switch from "RUN" to "TOW," wait 15 seconds minimum before switching again.

Failure to do so may lead to drive system damage while towing.

# PRE-OPERATION CHECKS

---

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

## **WARNING**

To keep car 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.

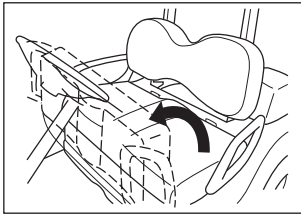
---

## PRE-OPERATION CHECKS

Refer to the Periodic Maintenance and adjustment charts on pages 24 and 26.

### SEAT

Lift up the seat for checking and servicing.



# PRE-OPERATION CHECKS

## BATTERIES

### For Flooded Batteries

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

### For AGM Batteries (Optional)

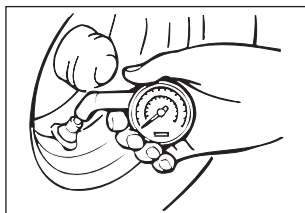
Check that the batteries are held securely in place to prevent them from being damaged from vibration or jarring.

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.**

5



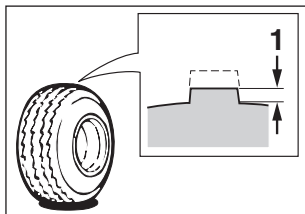
## TIRE CONDITION

### **Tire Air Pressure**

Check the tire air pressure before operating the golf car.

#### **Tire pressure:**

137 kPa (1.40 kgf/cm<sup>2</sup>, 20 psi)

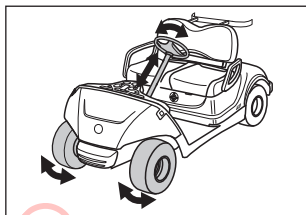


### **Tire Wear Limit**

Check the tire surface for damage, cracks or embedded objects. When tire tread wears down to 1 mm (0.04 in.), replace the tire.

1. Wear limit

# PRE-OPERATION CHECKS

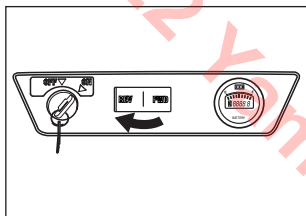


## STEERING SYSTEM

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.



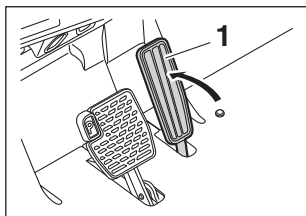
## REVERSE ALARM

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

## PEDAL OPERATION

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

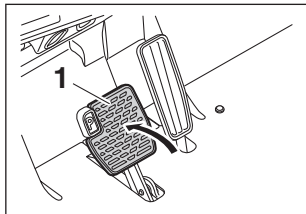
### Accelerator Pedal



1. Accelerator pedal

### WARNING

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

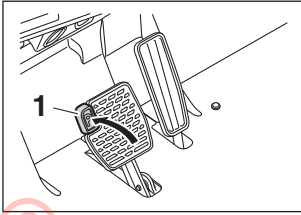


1. Brake pedal

### 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.

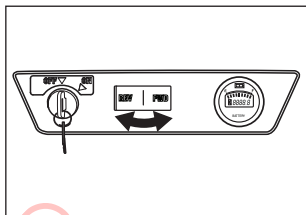
### TIP

Release the parking brake by depressing the accelerator pedal.

## BODY AND CHASSIS

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

# OPERATION

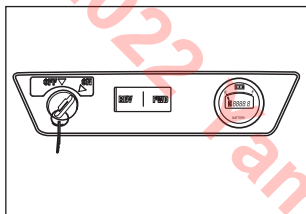


## STARTING

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 golf car is moving. Transmission damage can result.



2. Turn the main switch to "ON."

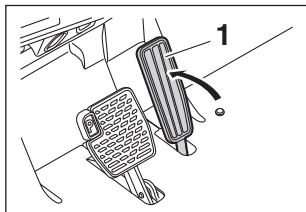
### WARNING

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

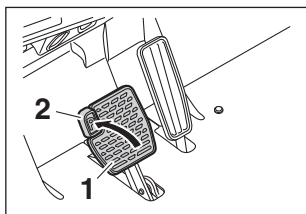
3. Check that your path is clear in the direction you plan to go, and slowly depress the accelerator pedal. The golf car will start to move.

### 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 golf car, gradually press down on the brake pedal.

### NOTICE

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

When the car has come to a stop, apply the parking brake pedal and turn the main switch to "OFF."

# MAINTENANCE AND ADJUSTMENT

## PERIODIC MAINTENANCE AND ADJUSTMENT CHARTS

Regular maintenance is required for the best performance and safe operation of your golf car.

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 | 40 rounds<br>20 hours<br>100 miles<br>160 kms<br>(Every Month) | 250 rounds<br>125 hrs<br>600 mls<br>1000 kms<br>(Every 6 months) | 500 rounds<br>250 hrs<br>1200 mls<br>2000 kms<br>(Every Year) | 1000 rounds<br>500 hrs<br>2500 mls<br>4000 kms<br>(Every 2 years) | 2000 rounds<br>1000 hrs<br>5000 mls<br>8000 kms<br>(Every 4 years) | Page    |
|---------------|---------------------------------------------------------------------------|---------------------|----------------------------------------------------------------|------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------|--------------------------------------------------------------------|---------|
| <b>PRE-OP</b> | Charge                                                                    | S                   | S                                                              | S                                                                | S                                                             | S                                                                 | S                                                                  | 13 / 30 |
|               | Clean battery tops, check for tightness of hold-down screws and terminals | S                   | S                                                              | S                                                                | S                                                             | S                                                                 | S                                                                  | 20 / 27 |
|               | Check brake pedal freeplay and adjust if necessary                        | CS                  | CA                                                             | CA                                                               | CA                                                            | CA                                                                | CA                                                                 | 21 / 49 |
|               | Check steering operation                                                  | CS                  | CS                                                             | CS                                                               | CS                                                            | CS                                                                | CS                                                                 | 21      |

\* 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.

\*\* Flooded Batteries only

\*\*\* 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<br>Pre-<br>Operation | 40 rounds<br>20 hours<br>100 miles<br>160 kms<br>(Every<br>Month) | 250 rounds<br>125 hrs<br>600 mls<br>1000 kms<br>(Every 6<br>months) | 500 rounds<br>250 hrs<br>1200 mls<br>2000 kms<br>(Every<br>Year) | 1000 rounds<br>500 hrs<br>2500 mls<br>4000 kms<br>(Every 2<br>years) | 2000 rounds<br>1000 hrs<br>5000 mls<br>8000 kms<br>(Every 4<br>years) | Page |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-------------------------------------------------------------------|---------------------------------------------------------------------|------------------------------------------------------------------|----------------------------------------------------------------------|-----------------------------------------------------------------------|------|
| <b>PRE-OP</b>         | Check tire pressure, tread depth, tire surface for damage                                                                                             | CS                         | CA                                                                | CA                                                                  | CA                                                               | CA                                                                   | CA                                                                    | 20   |
|                       | Check body and chassis for damage                                                                                                                     | CS                         | CS                                                                | CS                                                                  | CS                                                               | CS                                                                   | CS                                                                    | 22   |
|                       | 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                                                                    | 21   |
|                       | Check for the proper operation of pedal control area ***                                                                                              | CS                         | CS                                                                | CS                                                                  | CS                                                               | CS                                                                   | CS                                                                    | 21   |
| <b>EVERY MONTH</b>    | Check electrolyte level **                                                                                                                            |                            | CS                                                                | CS                                                                  | CS                                                               | CS                                                                   | CS                                                                    | 27   |
|                       | Check for loose or broken connections                                                                                                                 |                            | CS                                                                | CS                                                                  | CS                                                               | CS                                                                   | CS                                                                    | *    |
|                       | Clean/Lube pedal control area                                                                                                                         |                            | CL                                                                | CL                                                                  | CL                                                               | CL                                                                   | CL                                                                    | —    |
| <b>EVERY 6 MONTHS</b> | Check all wire insulation for cracks and/or worn spots                                                                                                |                            |                                                                   | CS                                                                  | CS                                                               | CS                                                                   | CS                                                                    | *    |
|                       | <ul style="list-style-type: none"> <li>• Check brake cable operation</li> <li>• Inspect for abrasions and damage, and replace if necessary</li> </ul> |                            |                                                                   | CS R                                                                | CS R                                                             | CS R                                                                 | CS R                                                                  | 49   |
|                       | Check shock absorbers for oil leaks and damaged springs                                                                                               |                            |                                                                   | CS                                                                  | 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.

\*\* Flooded Batteries only

\*\*\* 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-Operation | 40 rounds<br>20 hours<br>100 miles<br>160 kms<br>(Every Month) | 250 rounds<br>125 hrs<br>600 mls<br>1000 kms<br>(Every 6 months) | 500 rounds<br>250 hrs<br>1200 mls<br>2000 kms<br>(Every Year) | 1000 rounds<br>500 hrs<br>2500 mls<br>4000 kms<br>(Every 2 years) | 2000 rounds<br>1000 hrs<br>5000 mls<br>8000 kms<br>(Every 4 years) | Page |
|----------------------|------------------------------------------------------------------|---------------------|----------------------------------------------------------------|------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------|--------------------------------------------------------------------|------|
| <b>EVERY YEAR</b>    | Perform a discharge test                                         |                     |                                                                |                                                                  | S                                                             | S                                                                 | S                                                                  | *    |
|                      | Apply battery Terminal protectant                                |                     |                                                                |                                                                  | S                                                             | S                                                                 | S                                                                  | —    |
|                      | Check rear axle bearing play for roughness or freeplay           |                     |                                                                |                                                                  | CS                                                            | CS                                                                | CS                                                                 | *    |
|                      | Check steering knuckle bushing freeplay / Adjust wheel alignment |                     |                                                                |                                                                  | CA                                                            | CA                                                                | CA                                                                 | *    |
|                      | Check wheel nut tightness, front wheel bearing play              |                     |                                                                |                                                                  | CS                                                            | CS                                                                | CS                                                                 | *    |
|                      | Check transmission oil level and inspect for leakage             |                     |                                                                |                                                                  | CS                                                            | CS                                                                | CS                                                                 | 46   |
|                      | Adjust parking brake release                                     |                     |                                                                |                                                                  | CA                                                            | CA                                                                | CA                                                                 | 51   |
|                      | Inspect pedal components ***                                     |                     |                                                                |                                                                  | CS                                                            | CS                                                                | CS                                                                 | *    |
| <b>EVERY 4 YEARS</b> | Replace transmission oil                                         |                     |                                                                |                                                                  |                                                               |                                                                   | R                                                                  | *    |
|                      | Inspect brake shoes and adjust or replace if necessary           |                     |                                                                |                                                                  |                                                               |                                                                   | CA                                                                 | *    |

\* 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.

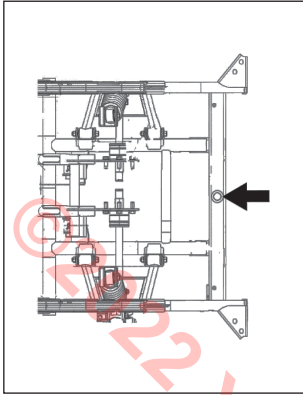
\*\* Flooded Batteries only

\*\*\* 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



## REAR LIFTING POINT

If the rear of the car needs to be lifted for a maintenance procedure, make sure it is lifted at the correct rear lifting point (see arrow).

## BATTERY CARE

### For Flooded Batteries

#### **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 enclosed space. Always shield eyes when working near batteries.

**KEEP OUT OF REACH OF CHILDREN.**

Six 8-volt deep cycle batteries provide power for your electric golf car and must be properly maintained and recharged for maximum performance and service life.

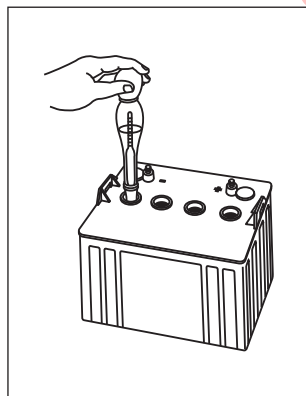
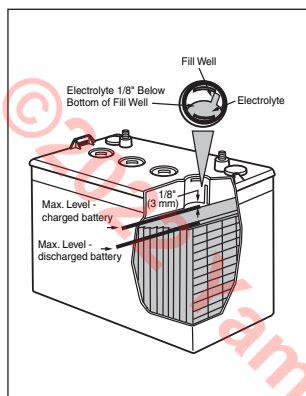
To maintain your batteries:

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

# MAINTENANCE AND ADJUSTMENT

## 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:** HydroLink water system is available. Water is required to be added after charging the car. See Trojan HydroLink Battery Watering System operation manual for instructions.
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                                       |

# MAINTENANCE AND ADJUSTMENT

---

## For AGM Batteries (Optional)



### **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 enclosed space. Always shield eyes when working near batteries.

**KEEP OUT OF REACH OF CHILDREN.**

Six 8-volt deep cycle AGM batteries provide power for your electric golf car and must be properly recharged for maximum performance and service life.

# MAINTENANCE AND ADJUSTMENT

## BATTERY CHARGING

### WARNING

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

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

1. Turn main switch key to "OFF" position.

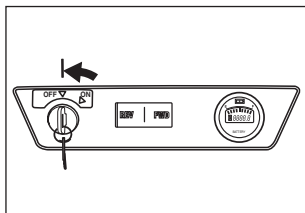
### NOTICE

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

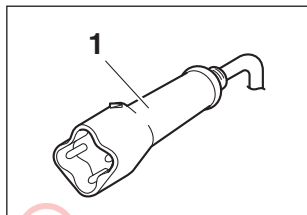
2. Lift up the seat and move the tow switch to the TOW position.

### NOTICE

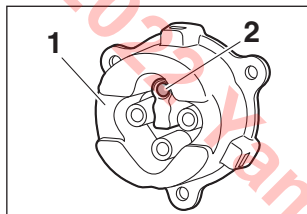
Use only battery chargers that are rated for use with 48-volt Yamaha Golf Cars. Serious battery damage can result. Thoroughly read and understand the user manual supplied with your 48-volt charger.



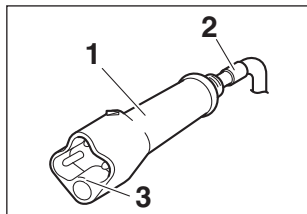
# MAINTENANCE AND ADJUSTMENT



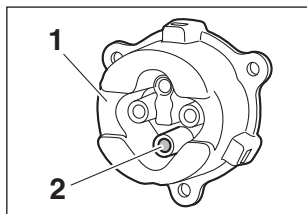
1. DC output plug for Flooded batteries



1. Receptacle for Flooded batteries
2. Dummy pin



1. DC output plug for AGM batteries (Optional)
2. Identification wrap (Red)
3. Rib



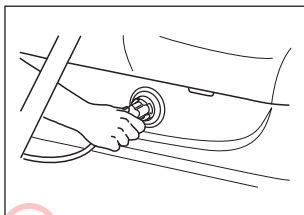
1. Receptacle for AGM batteries (Optional)
2. Dummy pin

3. Check the DC output code and plug for damage.

## TIP

The location of the dummy pin is different between the flood battery and the AGM battery (Optional).

## MAINTENANCE AND ADJUSTMENT



4. With the charger properly connected and grounded (see charger's owner's manual), insert the DC output 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.**

### **NOTICE**

**Do not insert the DC plug into receptacle of the wrong battery type. DC plug or receptacle damage can result. See the identification procedure on page 30.**

5. The charger will turn off automatically when the batteries reach full charge.
6. 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 an explosion or fire at the battery.

### For Flooded Batteries

1. Install the battery hold-down plates and torque to 7-9 N·m (0.7-0.9 kgf·m, 5.2-6.6 lb·ft) as shown.
2. Connect the wire leads and torque to 9-10 N·m (0.9-1.0 kgf·m, 6.6-7.4 lb·ft) as shown.

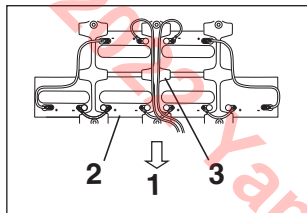
### WARNING

When installing batteries:

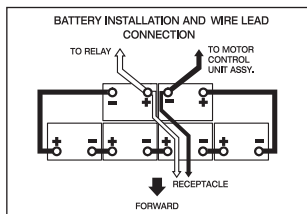
- Carefully place battery cables and hold-downs making sure that cables do not lay across vent caps.
- Always remove the negative (-) cable to the motor controller first, and install it last. A spark can occur causing an explosion or fire at the battery.

### NOTICE

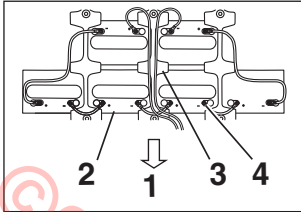
Do not over-tighten the battery hold-down nuts. Excessive force will damage the battery casing.



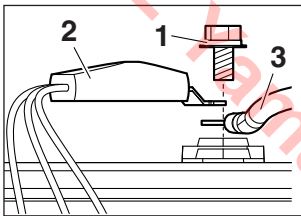
1. Forward
2. Battery
3. Battery hold-down plate



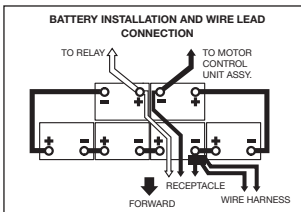
# MAINTENANCE AND ADJUSTMENT



1. Forward
2. Battery
3. Battery hold-down plate
4. Temperature sensor



1. Bolt
2. Temperature sensor
3. Battery cable



## For AGM Batteries (Optional)

1. Install the battery hold-down plates and torque to 7-9 N·m (0.7-0.9 kgf·m, 5.2-6.6 lb·ft) as shown.
2. Install the temperature sensor between the wire terminal and flat washer in correct place and then tighten the terminal connecting bolts to 9-10 N·m (0.9-1.0 kgf·m, 6.6-7.4 lb·ft) as shown.

## ! WARNING

### When installing batteries:

- Carefully place battery cables and hold-downs making sure that cables do not lay across vent caps.
- Always remove the negative (-) cable to the motor controller first, and install it last. A spark can occur causing an explosion or fire at the battery.

## NOTICE

**Do not over-tighten the battery hold-down nuts. 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 safety instructions in this manual.

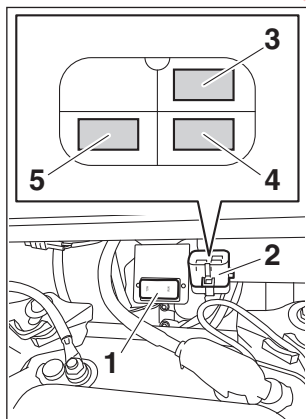
### NOTICE

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. (next to the tow switch)

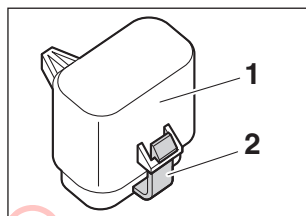
#### To access the fuse holder

1. Lift up the seat (see page 19).
2. Locate the fuse holder next to the tow switch.



1. Tow switch
2. Fuse holder
3. USB Mini fuse (1.0A 58V)
4. Main Mini fuse (5.0A 58V)
5. MCU Mini fuse (3.0A 58V)

# MAINTENANCE AND ADJUSTMENT



1. Fuse holder cover
2. Locking tab

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. Install the fuse holder cover.
6. Close the seat.

## 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.

# MAINTENANCE AND ADJUSTMENT

---

**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 refresh batteries in storage.

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

## 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**

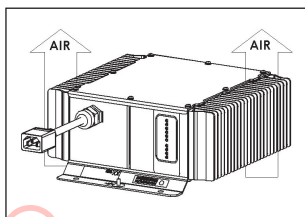
**RISK OF FIRE** - Use this charger only on circuits with a 15-amp or higher branch circuit protection (circuit breaker or fuse) in accordance with the national electrical code, ANSI/NFPA 70 and all applicable local codes and ordinances.

When using an extension cord, use only a grounded, 3-wire, 12-AWG cord no longer than 15 m (50 ft.). 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.

# MAINTENANCE AND ADJUSTMENT



## 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 golf car.**

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.

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.**

# MAINTENANCE AND ADJUSTMENT

---

## 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

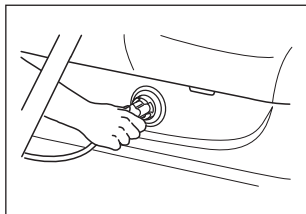
Whenever removing AC or DC cord set plugs from receptacles, pull from the plug body and not from their respective cords.

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

7

### 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

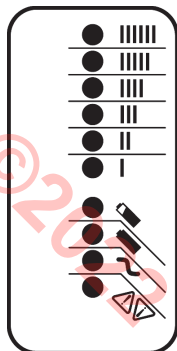


Connect charger's AC cord set to AC power. Then, connect the DC cord set plug to the vehicle charging receptacle by grasping the plug handle and pushing the plug straight into the DC charger receptacle. The charger will start automatically.

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:



|                               |                  |                                                                                            |
|-------------------------------|------------------|--------------------------------------------------------------------------------------------|
| <b>Ammeter</b><br>(Amber)     | <b>On:</b>       | Displays approximate scale of current output during Step 2.                                |
|                               | <b>Blinking:</b> | High internal charger temperature.<br>Current output reduced.                              |
| <b>80% Charge</b><br>(Amber)  | <b>On:</b>       | 80% charged, Step 2 complete. Begin Step 3.                                                |
|                               | <b>Blinking:</b> | With no battery connected, indicates algorithm # selected by number of flashes at startup. |
| <b>100% Charge</b><br>(Green) | <b>On:</b>       | Charging complete.<br>Charger in Storage Mode.                                             |
|                               | <b>Blinking:</b> | Step 3 complete.<br>Begin Step 4.                                                          |
| <b>AC On</b><br>(Amber)       | <b>On:</b>       | AC power good.                                                                             |
| <b>Fault</b><br>(Red)         | <b>Blinking:</b> | Charger error.<br>Refer to <b>Troubleshooting</b> 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**

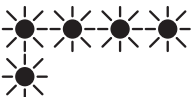
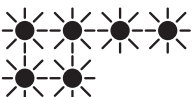
---

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.                                                                                    |
|                                                                                     | Check Temperature Sensor: Missing, defective, or damaged temperature sensor. (For AGM) | Check for loose temperature sensor connections. Check for damaged temperature sensor. Replace, if necessary. (For AGM) |
|  | 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.<br><br>Battery voltage less than 20 Volts. | Ensure polarity for wiring is correct from DC cord, charger receptacle and batteries.<br><br>Check battery pack voltage. |
| Charger runs longer than 20 hours.                                                                                          | Charger may be in “boosting” stage.                                                                                          | Confirm Green 100% LED is blinking. (This indicates boosting.)                                                           |

 **WARNING**

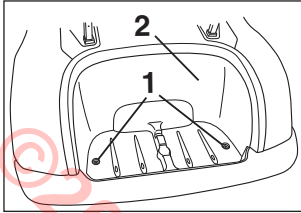
Have qualified service technician inspect if problems persist.

# MAINTENANCE AND ADJUSTMENT

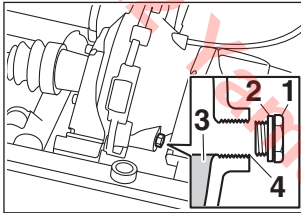
## TRANSMISSION OIL

**To check the transmission oil level:**

1. Place the golf car on a flat, level surface.
2. Remove two bolts and remove the rear floor cover.
3. Place an oil pan under the transmission case.
4. Clean the area around the transmission oil filler bolt, and then remove the bolt.



1. Bolt
2. Rear floor cover



1. Transmission oil filler bolt
2. O-ring
3. Transmission oil
4. Correct oil level

### NOTICE

**Do not allow foreign material to enter the transmission. Serious damage can result.**

5. The oil level should be up to the brim of the transmission oil filler hole.
6. If the level is low, add sufficient oil of the recommended type to raise it to the specified level.

**Recommended oil brand:**



**Available viscosity index:**

SAE 80W-90 or SAE 90

**Transmission oil change quantity:**

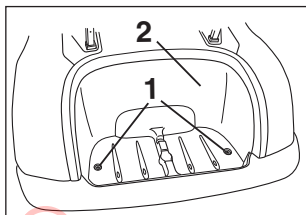
475 cc (475 mL, 0.50 US qt)

7. Allow excess transmission oil to flow out of the hole until it stops.
8. Check the O-rings for damage, and replace them if necessary.
9. Install the transmission filler bolt.

**Transmission oil filler bolt tightening torque:**

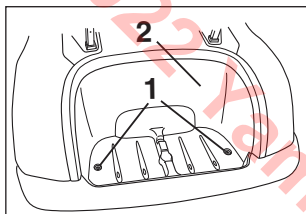
4.3 N·m (0.43 kgf·m, 3.1 lb·ft)

# MAINTENANCE AND ADJUSTMENT



1. Bolt
2. Rear floor cover

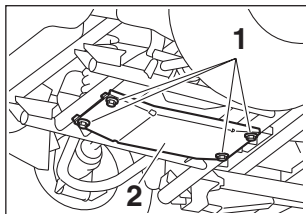
10. Install the rear floor cover and secure with two bolts.



1. Bolt
2. Rear floor cover

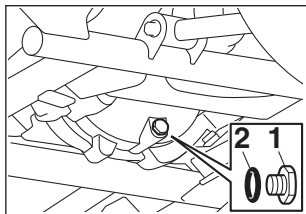
## To replace the transmission oil :

1. Place the golf car on a flat, level surface.
2. Remove two bolts and remove the rear floor cover.



1. Bolt
2. Transmission cover

3. Remove the four bolts and remove the transmission cover.
4. Place an oil pan under the transmission case to collect the used oil.



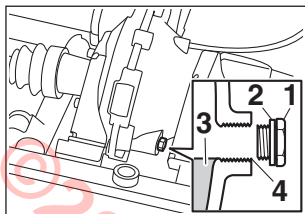
1. Transmission oil drain bolt
2. O-ring

5. Clean the area around the transmission oil filler bolt and transmission oil drain bolt. Remove the transmission oil filler bolt, the transmission oil drain bolt, and their O-rings to drain the oil.

## NOTICE

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

# MAINTENANCE AND ADJUSTMENT



1. Transmission oil filler bolt
2. O-ring
3. Transmission oil
4. Correct oil level

6. Check the O-rings for damage, and replace them if necessary.
7. Install the transmission oil drain bolt and its O-ring, and then tighten the bolt to the specified torque.

## Transmission oil drain bolt tightening torque:

4.3 N·m (0.43 kgf·m, 3.1 lb·ft)

8. Refill the transmission case with the recommended oil.  
Allow excess transmission oil to flow out of the hole until it stops.

## Recommended oil brand:



## Available viscosity index:

SAE 80W-90 or SAE 90

## Transmission oil change quantity:

475 cc (475 mL, 0.50 US qt)

9. Install the transmission oil filler bolt and its O-ring, and then tighten the bolt to the specified torque.

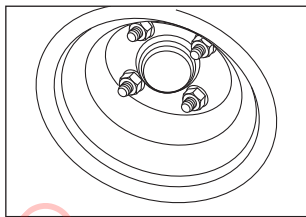
## Transmission oil filler bolt tightening torque:

4.3 N·m (0.43 kgf·m, 3.1 lb·ft)

10. Install the transmission cover and secure with four bolts, and then install the rear floor cover and secure with two bolts.

# 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 golf car:

1. With the wheels blocked to prevent the golf car from moving, loosen the wheel nuts.
2. Elevate the golf car 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 golf car are self-adjusting.

Before you operate the golf car, press down on the brake pedal several times to make sure the brakes are functioning properly.

### **WARNING**

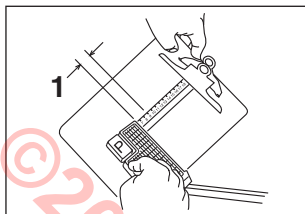
Consult your Yamaha dealer before using your golf car if you suspect brake problems. Brake failure could result in a serious accident.

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

# MAINTENANCE AND ADJUSTMENT

## 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.



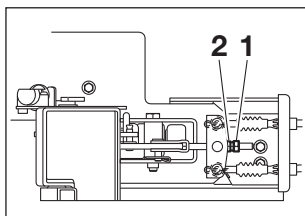
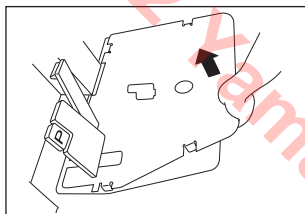
1. Brake pedal free play

### Brake pedal free play:

50-55 mm (1.97-2.17 in.)

To adjust the brake pedal free play:

1. Remove the floor mat and service lid from the floor of the golf car.



1. Locknut
2. Adjusting nut

2. If the free play distance needs adjusting, loosen the lock nut and turn the adjusting nut in or out until free play specification is met. Then tighten the lock nut in place.

### WARNING

**Do not over-tighten the brake cables. Over-tightening will increase brake wear and affect overall performance of golf car.**

**Premature brake wear can result.**

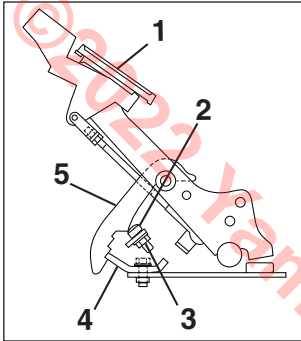
**Death or serious personal injury can result from failing to comply with the warning labels in this manual.**

# MAINTENANCE AND ADJUSTMENT

## 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  $\frac{1}{3}$  of a turn (120 degrees), then tighten locknut.

Perform the following preparations when storing your golf car for extended periods of time:

## **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.**

## **TIP**

Turn main switch key to "OFF" position, lift seat 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 137 kPa (1.40 kgf/cm<sup>2</sup>, 20 psi).
2. Clean exterior of the golf car and apply a rust inhibitor.
3. Cover the golf car with a breathable cover and store it in a dry, well-ventilated area.

## **BATTERY PREPARATION**

1. Have the batteries recharged every 60-90 days to keep them fully charged. The batteries must be kept fully charged to avoid damage.

## **NOTICE**

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

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

# SPECIFICATIONS

## GENERAL SPECIFICATIONS

| Items                                               | DR2 POWERTECH AC IRS   |
|-----------------------------------------------------|------------------------|
| <b>Dimensions:</b>                                  |                        |
| Overall length                                      | 2380 mm (93.7 in.)     |
| Overall width                                       | 1200 mm (47.2 in.)     |
| Overall height (steering height)                    | 1200 mm (47.2 in.)     |
| Overall height (Sun top height)                     | 1765 mm (69.5 in.)     |
| Height of floor                                     | 295 mm (11.6 in.)      |
| Wheelbase                                           | 1635 mm (64.4 in.)     |
| Tread:                                              |                        |
| Front                                               | 885 mm (34.8 in.)      |
| Rear                                                | 990 mm (39.0 in.)      |
| Ground clearance                                    | 110 mm (4.3 in.)       |
| <b>Weight:</b>                                      |                        |
| Curb weight<br>(With Flooded Battery)               | 423 kg (933 lb)        |
| Curb weight<br>(With Sun top, W/S, Flooded Battery) | 453 kg (999 lb)        |
| Curb weight<br>(With AGM Battery)                   | 461 kg (1016 lb)       |
| Curb weight<br>(With Sun top, W/S, AGM Battery)     | 491 kg (1082 lb)       |
| <b>Performance:</b>                                 |                        |
| Maximum speed                                       | 19.2 km/h (12.0 mph)   |
| Maximum reverse speed                               | 10.0 km/h (6.2 mph)    |
| Turning radius                                      | 2.8 m (9.2 ft)         |
| Seating capacity                                    | Two occupants per seat |
| Hill climbing capacity                              | 20°                    |

## BATTERIES

| Items                              | DR2 POWERTECH AC IRS                                 |
|------------------------------------|------------------------------------------------------|
| <b>Flooded battery:</b>            | Trojan - T-875 (6x8-volt)<br>RC: minimum 117 min     |
| <b>AGM battery:<br/>(Optional)</b> | Trojan - T-875 AGM (6x8-volt)<br>RC: minimum 118 min |

## CHASSIS

| Items                                                                    | DR2 POWERTECH AC IRS                                                    |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------|
| <b>Suspension:</b>                                                       |                                                                         |
| Front                                                                    | Independent (Coil-over strut type)                                      |
| Rear                                                                     | Independent (Coil-over strut type)                                      |
| <b>Steering system:</b>                                                  |                                                                         |
| Type                                                                     | Rack and Pinion                                                         |
| Steering angle (L.H.)                                                    | 1.85 turn                                                               |
| Steering angle (R.H.)                                                    | 1.85 turn                                                               |
| <b>Brakes:</b>                                                           |                                                                         |
| Brake system                                                             | Mechanical drum brake on each rear wheel with self-adjusters            |
| Type of brake                                                            | Dual internal expanding shoe<br>Leading/trailing shoes (self-adjusting) |
| Brake pedal freeplay linkage adjustment                                  | 50-55 mm (1.97-2.17 in.)                                                |
| <b>Parking brake</b>                                                     |                                                                         |
| Type                                                                     | Foot type; rear wheel parking brake with automatic release.             |
| <b>Wheel</b>                                                             |                                                                         |
| Tire size:<br>(Dia. [in]) × (Width [in]) - (Rim size [in]) / Ply rating) |                                                                         |
| Front                                                                    | 18 × 8.50-8 / 4 PR                                                      |
| Rear                                                                     | 18 × 8.50-8 / 4 PR                                                      |
| Rim size:<br>(Dia. [in]) × (Width [in]) (Offset [mm])                    | 8 × 7.0 ±0                                                              |
| Tire pressure:                                                           | 137 kPa (1.40 kgf/cm <sup>2</sup> , 20 psi)                             |

# SPECIFICATIONS

## TRANSMISSION

| Items                       | DR2 POWERTECH AC IRS                                                                                                                                                                                                         |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Differential/reduction gear | Secondary reduction system helical gear<br>Secondary reduction ratio:<br>Forward 12.44:1; Reverse 12.44:1<br>Differential type bevel gear<br>Lubricant/capacity SAE 80W-90 or SAE 90<br>gear oil/475 cc (475 mL, 0.50 US qt) |

# SPECIFICATIONS

## GENERAL SPECIFICATIONS (BATTERY CHARGER)

### DC Output – see Operating Instructions

|                   |                                    |
|-------------------|------------------------------------|
| 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

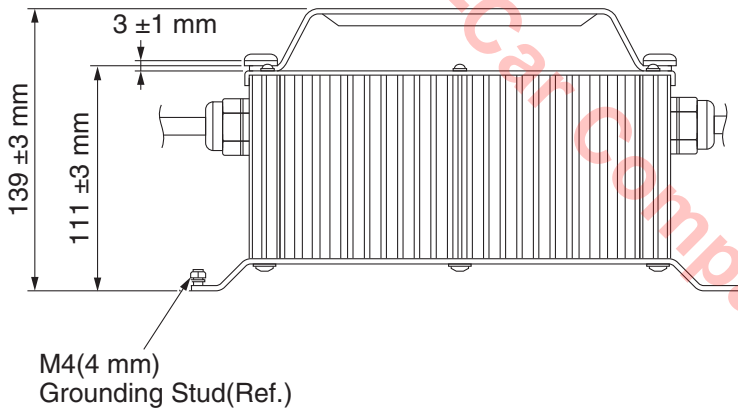
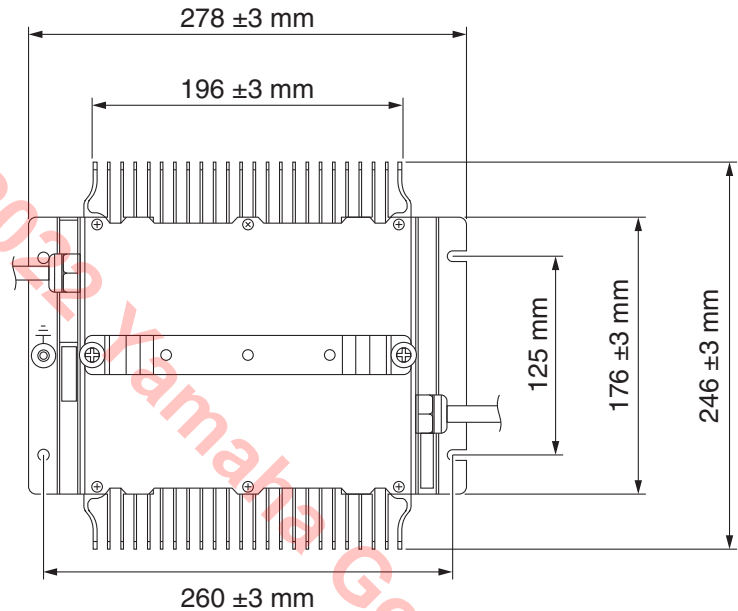
|                      |                                                                                                     |
|----------------------|-----------------------------------------------------------------------------------------------------|
| Voltage - max (Vrms) | 85-265               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

### Mechanical

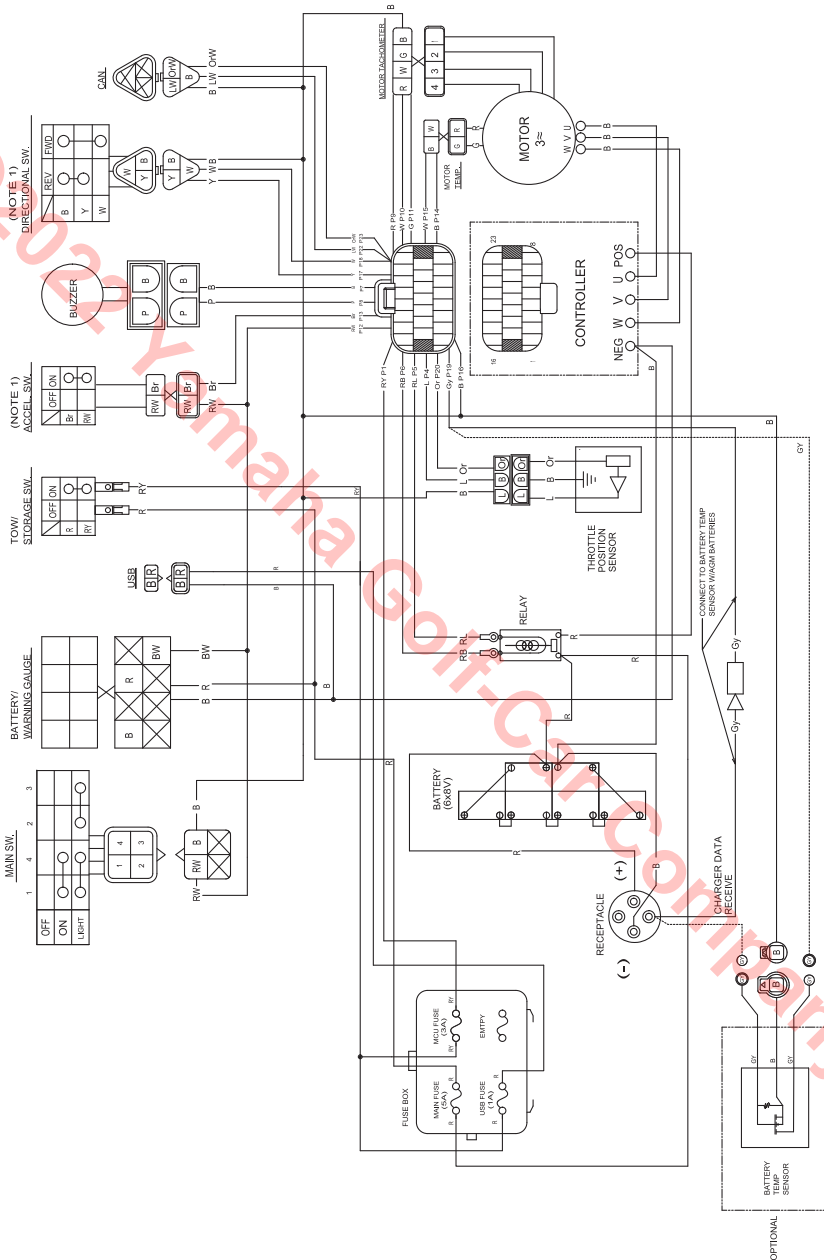
|                       |                                                                    |
|-----------------------|--------------------------------------------------------------------|
| Dimensions            | 28.0 × 24.5 × 14.0 cm (11 × 9.7 × 5.5 in.)                         |
| Weight       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

# SPECIFICATIONS

## MECHANICAL DRAWINGS (BATTERY CHARGER)



## DR2 POWERTECH AC IRS WIRING DIAGRAM



©2022 Yamaha Golf-Car Company

©2022 Yamaha Golf-Car Company

## CONTENTS

- 1 WARRANTY
- 2 IMPORTANT LABELS
- 3  SAFETY INFORMATION
- 4 CONTROLS
- 5 PRE-OPERATION CHECKS
- 6 OPERATION
- 7 MAINTENANCE AND ADJUSTMENT
- 8 STORAGE
- 9 SPECIFICATIONS
- 10 WIRING



PRINTED IN USA  
2022.12-0.3×1 CR  
(E)