



MODEL YEAR **2021**

OWNER'S / OPERATOR'S MANUAL



PERSONAL TRANSPORT VEHICLE

 Read this manual carefully before operating this vehicle.

DRIVE²



**DR2 PTV
POWERTECH AC IRS**

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INTRODUCTION

Congratulations on your purchase of a Yamaha Personal Transport Vehicle (PTV). This manual contains information you will need for proper operation, maintenance, and care of your PTV. 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 PTV, please consult a Yamaha dealer.

Yamaha Golf-Car Company

**DR2 PTV POWERTECH AC IRS
OWNER'S/OPERATOR'S MANUAL
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1st edition**

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LIT-19626-A0-80**

IMPORTANT MANUAL INFORMATION

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

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

TIP

Yamaha continually seeks advancements in product design and quality; therefore, while this manual contains the most current product information available at the time of printing, there may be minor discrepancies between your PTV 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 PTV. This manual should be considered a permanent part of your PTV and should remain with the PTV when resold.

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WARRANTY

LIMITED 4-YEAR WARRANTY FOR DRIVE², PERSONAL TRANSPORTATION VEHICLES

Yamaha Golf-Car Company hereby warrants that any new Yamaha DRIVE² Gas or DRIVE² Electric Personal Transportation Vehicle (PTV) 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.

Common Parts		Electric Car Specific	
Frame	3 Years	Battery - Trojan ' T875 ' without HydroLink Watering System	4 Years or 23,500 amp-hours whichever comes first *Detailed condition on the next page
Transmission	4 Years	Electric Motor	4 Years
Pedals	3 Years	Motor Controller	4 Years
Brakes (excluding shoes / pads)	4 Years	Charger	4 Years
Electrical wires, switches, and relays	3 Years	Charger Cord	4 Years
Suspension / Steering components	4 Years	Charger Receptacle	4 Years
Seats	2 Years	Throttle Position Sensor	2 Years
Sun Top	4 Years	GAS Car specific	
Bumpers / Body Parts	3 Years	Exhaust / Intake / Generator	4 Years
Floor Mats	2 Years	Gas Engine	4 Years
Scorecard Holders	2 Years	Throttle Cables / Controls	2 Years
Bag Carrier	3 Years	Battery	1 Year
Common Accessories		Clutch (excluding drive belt)	4 Years
Windshield	3 Years	All Remaining Parts	1 Year
Head Light	2 Years		
Tail Light	2 Years		

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 Customers 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 manual, and
- Give notice to an authorized Yamaha Golf car dealer/distributor of all apparent defects within ten (10) days of discovery, and make the car available at that time for inspection and repairs at the dealer's/distributor's place of business, and
- Transporting the car to and from an authorized dealer or distributor for warranty service.

WARRANTY TRANSFER: 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.

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

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

YAMAHA GOLF-CAR COMPANY, KENNESAW, GEORGIA 30144

EFFECTIVE DATE: 6/1/19

YAMAHA FOUR-YEAR LIMITED WARRANTY FOR TROJAN BRAND ELECTRIC GOLF CAR AND UTILITY VEHICLE BATTERIES WHEN CHARGED WITH A YAMAHA SUPPLIED 48-VOLT CHARGER

Yamaha Golf-Car Company (herein referred to as "YGC") hereby warrants to the Original Retail Purchaser or Lessee of a YAMAHA The Drive golf car or PTV, Adventurer utility vehicle, or YAMAHA Concierge transportation or specialty car purchased from Yamaha, or an Authorized Dealer or Distributor in the United States, that the Trojan batteries charged with a YAMAHA battery charger will be free from defects in materials and workmanship, and will provide "36-hole performance" as follows:

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

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

ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL BE VOID AND EXCLUDED SUBSEQUENT TO ONE YEAR FROM THE DATE OF PURCHASE.

THE REPLACEMENT OF THE BATTERY IS THE EXCLUSIVE REMEDY UNDER THIS WRITTEN WARRANTY OR ANY IMPLIED WARRANTY. YAMAHA MAKES NO OTHER REPRESENTATION OR WARRANTY OF ANY KIND, AND NO REPRESENTATIVE, EMPLOYEE, DISTRIBUTOR OR DEALER OF YAMAHA HAS THE AUTHORITY TO MAKE OR IMPLY ANY REPRESENTATION, PROMISE OR AGREEMENT WHICH IN ANY WAY VARIES THE TERMS OF THIS LIMITED WARRANTY.

LIMITED WARRANTY EXCLUSIONS

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

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

- Abuse or neglect such as improper fluid levels, loose wiring, rusted or corroded hardware.
- Lack of proper maintenance as outlined in the electric vehicle Owner's/Operator's Manual. For example, lack of regular battery watering or adding water to the 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 from state to state.

For further information or to submit a warranty claim, contact your local Yamaha Golf-Car Dealer or Yamaha's customer relations.

1270 Chastain Road
Kennesaw, Georgia 30144
EFFECTIVE DATE: 06/01/19

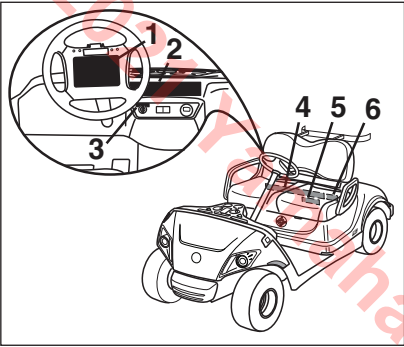
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IMPORTANT LABELS

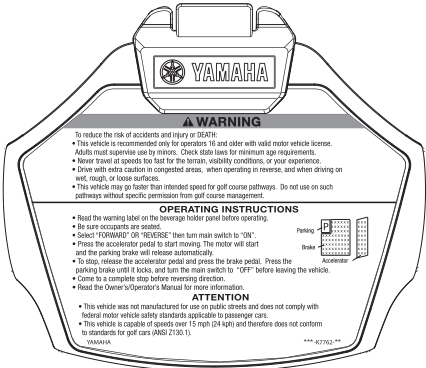
SAFETY AND INSTRUCTION LABELS

WARNING

Please read the following labels carefully before operating your PTV, and promptly replace any labels which become damaged or removed. Death or serious personal injury can result from failing to read and comply with the safety instruction labels.



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

BATTERY INSTALLATION AND WIRE LEAD CONNECTION 	INSTALLATION DES BATTERIES ET RACCORDEMENT DES FILS 	⚠ WARNING Explosive gases are released when batteries are charged or discharged. • Keep well ventilated. • Avoid flames or sparks and cigarette lighters. • Do not smoke. • Do not use open flames. • Do not use any welding. • Do not use any heat.	⚠ AVERTISSEMENT Les gaz explosifs se dégagent lors de la charge ou de la décharge des batteries. • Évitez les étincelles. • Évitez les flammes. • Évitez les étincelles. • Évitez les étincelles. • Évitez les étincelles. • Évitez les étincelles. • Évitez les étincelles. • Évitez les étincelles.	⚠ WARNING Sufficient acid in batteries will drain the system, and damage. • Do not tip batteries. • Do not use open flames. • Do not use any welding. • Do not use any heat.	⚠ AVERTISSEMENT Une faible acidité dans les batteries peut épuiser le système et endommager. • Ne pas renverser les batteries. • Ne pas utiliser de flamme ouverte. • Ne pas utiliser de soudure. • Ne pas utiliser de chaleur.	⚠ WARNING Electrical shorts can result in fires. • Do not make connections between positive and negative battery terminals.	⚠ AVERTISSEMENT Les courts-circuits électriques peuvent causer des incendies. • Ne pas relier le borne positive au fil négatif des bornes.	
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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

2

DATE OF CONSTRUCTION: *** **** MY****

YAMAHA MOTOR POWERED PRODUCTS CO., LTD

200-1 SAKAGAWA, KAKEGAWA, JAPAN

MAX. BATTERY WEIGHT: *** kg

NOMINAL SYSTEM VOLTAGE: **V

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

MODEL: *****

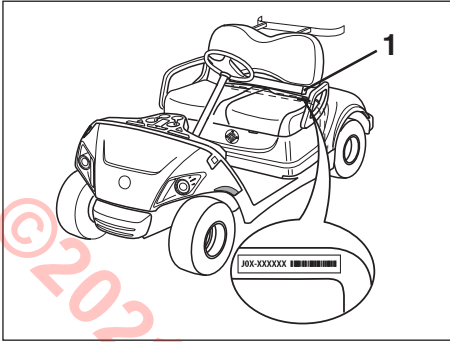
MAX. POWER: *** hp (*** kW)

WEIGHT: *** kg

CE

***-F4236-**

IMPORTANT LABELS



1. PTV serial number

PTV SERIAL NUMBER

The PTV serial number is identified in the location shown.

TIP

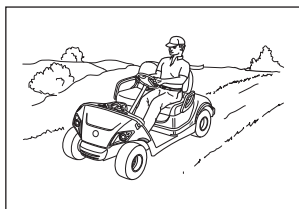
The first three digits of the serial number are for model identification; the remaining digits are the unit production number. Keep a record of these numbers for reference when ordering parts from a Yamaha Golf-Car Company dealer.

SAFETY INFORMATION

Yamaha PTVs 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 PTV

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



WHILE OPERATING THE PTV

- Keep your entire body inside the PTV, remain seated, and hold on when the car is in motion.
- Do not start the PTV 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 PTV to match the terrain.
- Avoid turning the steering wheel too sharply at higher speeds to avoid tipping or rolling the vehicle.

SAFETY INFORMATION



- Always drive slowly straight up or straight down slopes – never at an angle to avoid tipping or rolling the vehicle.
- 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, PTVs can cause injury if improperly used or maintained.

Experience has shown that PTVs are safe when operated in accordance with the safety warnings affixed to every PTV.

DRIVER QUALIFICATIONS

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

WARNING

Do not operate PTVs when under the influence of alcohol or drugs. Death or serious personal injury can result from failing to comply with the warning instructions in this manual.

HAZARD PREVENTION

Drivers should be mindful of road hazards, and avoid dangerous situations that may include the following:

- **Steep Grades** – Where steep grades exist, restrict PTV to designated roadway or path, and descend slowly with foot on the brake.

WARNING

Descend steep grades slowly with foot on brake. Death or serious personal injury can result from failing to comply with the warning instructions in this manual.

- **Sharp Turns, Blind Corners and Bridge Approaches** – Adhere to all warning signs and take proper precautions to avoid the hazard.
- **Wet Areas** – Wet grass may cause a PTV to lose traction and may affect stability. Vehicle operators should reduce speed in wet areas or during periods of inclement weather.

- **Loose Terrain** – Avoid areas of loose terrain which may cause a PTV to lose traction and affect stability. Take notice of conditions and reduce speed when driving on uneven or loose terrain.
- **Pedestrian Areas** – Avoid areas with pedestrian traffic or congested areas whenever possible to prevent accidents. If it is impractical to avoid these areas, always remember that pedestrians have the right of way. When approaching pedestrian or congested area always reduce speed, drive slowly, use caution and watch for pedestrians.

MAINTENANCE REQUIRED FOR PTV SAFETY

Practice the following to help ensure the safety of PTV occupants:

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

For electric powered PTVs, 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 five 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:

- Properly immobilize PTV before beginning any maintenance to avoid any unexpected vehicle movement.
- Properly block chassis before working underneath PTV to avoid any unexpected vehicle movement.
- When working on the battery, do not smoke, or allow any sparks or open flames near the vehicle, to avoid any fires or explosions.
- Before working on an electric PTV, 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 PTVs 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.

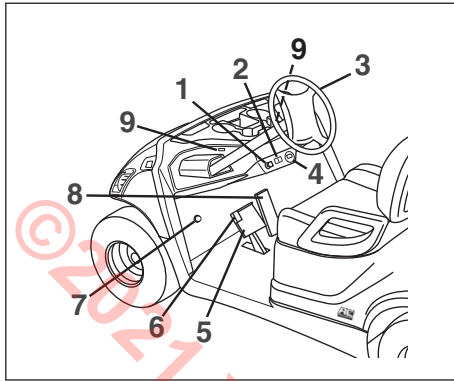
- After each maintenance or repair, the car must be driven by a qualified, trained and authorized person – in an area free of pedestrian traffic – to ensure proper operation and adjustment.
- Record all maintenance performed in a maintenance record log by date, name of person performing maintenance and 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 PTVs.
- 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.

STORAGE AND BATTERY CHARGING

Take the following precautions to ensure maintenance worker safety:

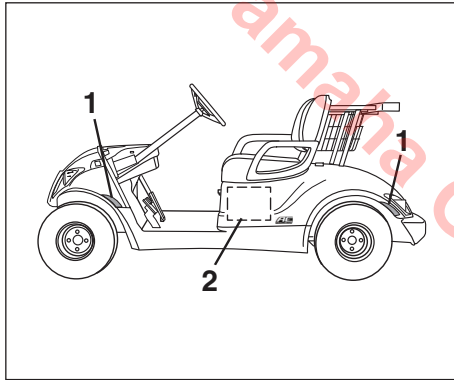
- Only use battery changing and charging facilities and procedures that are in accordance with applicable ordinances and regulations to avoid explosions, electrical shock or damage to the electrical system.
- Periodically inspect charging facilities and procedures to be certain that applicable safety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

CONTROLS

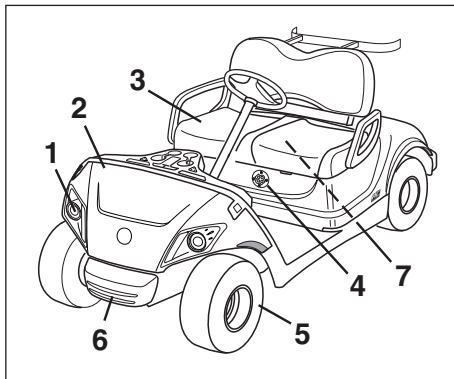


FEATURES

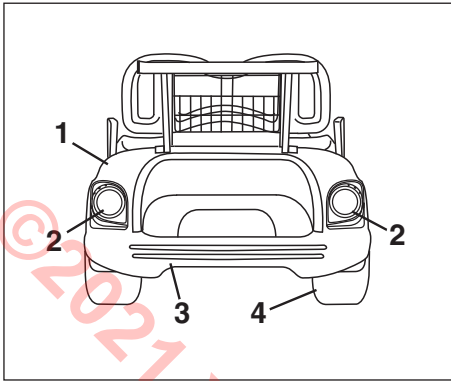
1. Main/light switch
2. Drive select switch
3. Steering wheel
4. Battery gauge
5. Brake pedal
6. Parking brake pedal
7. Horn switch
8. Accelerator pedal
9. USB ports



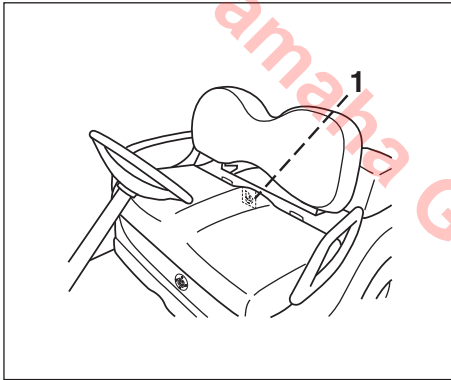
1. Reflector
2. Batteries



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



1. Rear body
2. Taillights
3. Rear bumper
4. Rear tire

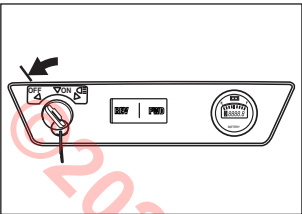


1. Tow switch

CONTROLS

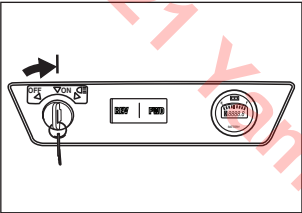
MAIN SWITCH

The main switch controls the following items:



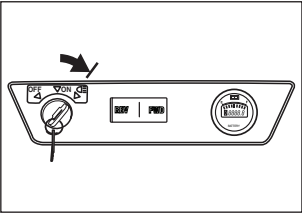
“OFF”

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



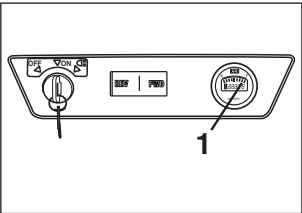
“ON”

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



“ON” WITH LIGHTS

The functions for this position are the same as for the ON position; however, this position will activate the headlights and taillights.

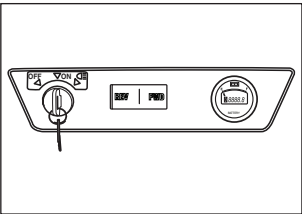


BATTERY GAUGE

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.

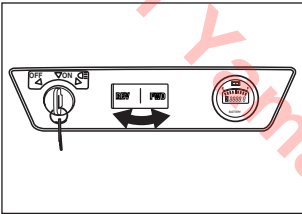
1. Battery gauge



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.

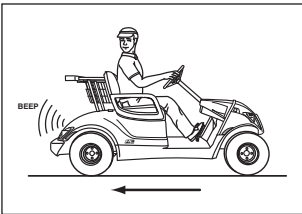
BAR LEVEL	9	8	7	6	5	4	3	2	1	1 BLINK
VOLT	48.95	47.8	47.4	46.9	46.4	46.0	44.8	44.0	43.5	43.4 >



DRIVE SELECT SWITCH

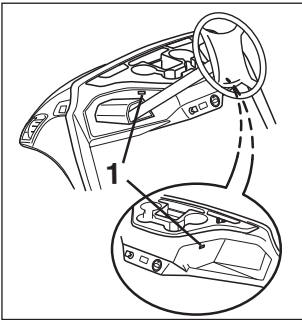
The drive select switch is used to shift the PTV into forward or reverse. After coming to a complete stop, move the switch to the desired position.

Switch Position	Car Movement
FWD	FORWARD
REV	REVERSE



TIP

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

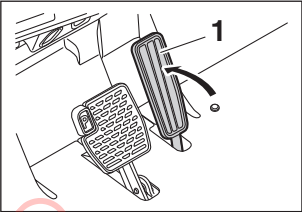


USB PORTS

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. USB port

CONTROLS

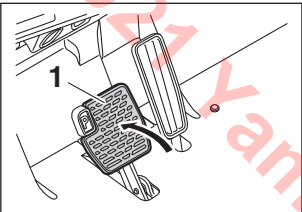


1. Accelerator pedal

ACCELERATOR PEDAL

The accelerator pedal controls the PTV's speed.

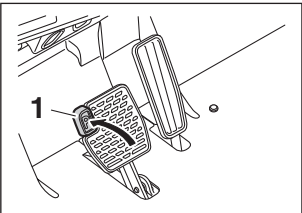
Action	Car Speed
Depress pedal	Increase
Release pedal	Decrease



1. Brake pedal

BRAKE PEDAL

Press down on the brake pedal to stop the PTV.



1. Parking brake pedal

PARKING BRAKE PEDAL

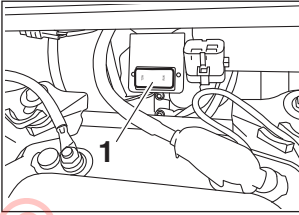
Press down on the parking brake pedal whenever parking the PTV.

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 PTV to move.



1. Tow switch

TOW SWITCH

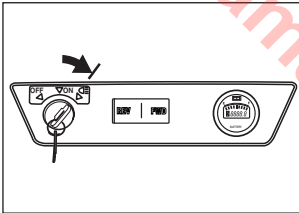
Before operating the car, make sure the tow switch is in the “RUN” position.

NOTICE

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

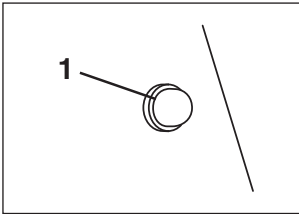
After moving switch from “RUN” to “TOW,” wait 15 seconds minimum before switching again.

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



HEADLIGHT/TAILLIGHT ON POSITION

Turn the main switch all the way to the right to the second ON position. This will activate the headlights and taillights.



1. Horn Switch

HORN SWITCH

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

TIP

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

PRE-OPERATION CHECKS

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

WARNING

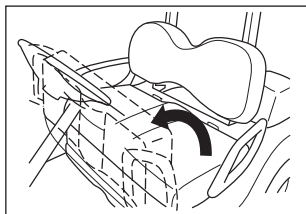
To keep car from moving while performing pre-operation checks:

- Remove main switch key.
- Apply parking brake.

PRE-OPERATION CHECKS

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

5



SEAT

Lift up the seat for checking and servicing.

BATTERY

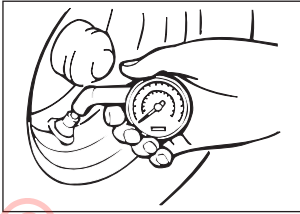
Charge batteries before each use. See charging steps in Chapter 7, *Maintenance and adjustment*.

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

WARNING

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

PRE-OPERATION CHECKS



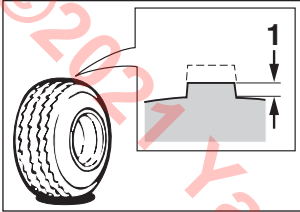
TIRE CONDITION

Tire Air Pressure

Check the tire air pressure before operating the PTV.

Tire pressure:

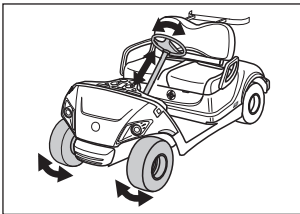
152 kPa, 1.5 kgf/cm² (22 psi)



1. Wear limit

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.

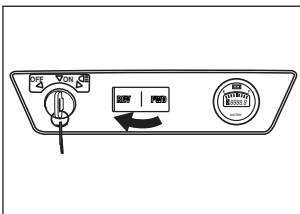


STEERING SYSTEM

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.

PRE-OPERATION CHECKS

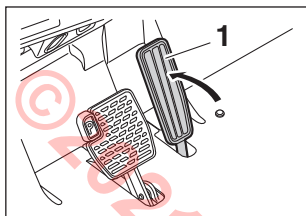
PEDAL OPERATION

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

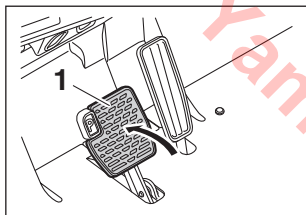
Accelerator Pedal

WARNING

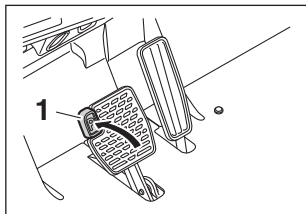
With the main switch in the “OFF” position, make sure the accelerator pedal operates smoothly.



1. Accelerator pedal



1. Brake pedal



1. Parking brake pedal

Brake Pedal

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

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

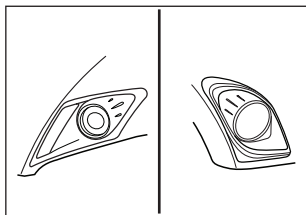
Release the parking brake by depressing the accelerator pedal.

HEADLIGHTS/TAILLIGHTS

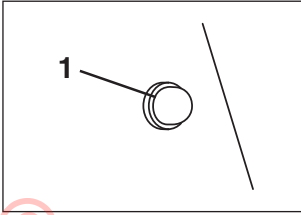
Ensure the headlights and taillights are operational.

WARNING

Never operate the PTV at night or during inclement weather without properly working headlights/taillights.



PRE-OPERATION CHECKS



HORN SWITCH

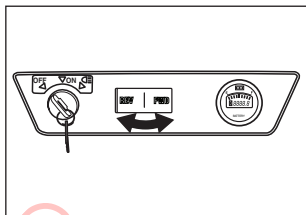
Make sure the horn operates correctly.

1. Horn Switch

BODY AND CHASSIS

Before each use, visually inspect the PTV body and chassis for damaged 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 PTV is moving. Transmission damage can result.

2. Turn the main switch to “ON.”

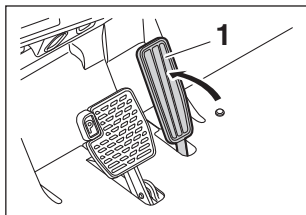
WARNING

Do not depress the accelerator pedal when turning on the main switch or the PTV may suddenly start moving.

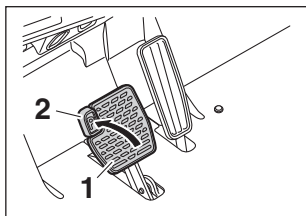
3. Check that your path is clear in the direction you plan to go, and slowly depress the accelerator pedal. The PTV will start to move.

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 PTV, gradually press down on the brake pedal.

NOTICE

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

When the PTV 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 PTV.

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 20 hours 100 miles 160 kms (Every Month)	250 rounds 125 hrs 600 mls 1000 kms (Every 6 months)	500 rounds 250 hrs 1200 mls 2000 kms (Every Year)	1000 rounds 500 hrs 2500 mls 4000 kms (Every 2 years)	2000 rounds 1000 hrs 5000 mls 8000 kms (Every 4 years)	Page
PRE-OP	Charge	S	S	S	S	S	S	12 / 29
	Clean battery tops, check for tightness of hold-down screws and terminals	S	S	S	S	S	S	19 / 27
	Check brake pedal freeplay and adjust if necessary	CS	CA	CA	CA	CA	CA	21 / 45
	Check steering operation	CS	CS	CS	CS	CS	CS	20
	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	*

* 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.

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 20 hours 100 miles 160 kms (Every Month)	250 rounds 125 hrs 600 mls 1000 kms (Every 6 months)	500 rounds 250 hrs 1200 mls 2000 kms (Every Year)	1000 rounds 500 hrs 2500 mls 4000 kms (Every 2 years)	2000 rounds 1000 hrs 5000 mls 8000 kms (Every 4 years)	Page
PRE-OP	Check reverse alarm operation	CS	CS	CS	CS	CS	CS	20
EVERY MONTH	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	—
EVERY 6 MONTHS	Check all wire insulation for cracks and/or worn spots			CS	CS	CS	CS	*
	- Check brake cable operation - Inspect for abrasions and damage, and replace if necessary			CS R	CS R	CS R	CS R	45
	Check shock absorbers for oil leaks and damaged springs			CS	CS	CS	CS	*
EVERY YEAR	Perform a discharge test				S	S	S	*
	Apply 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	42

* 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.

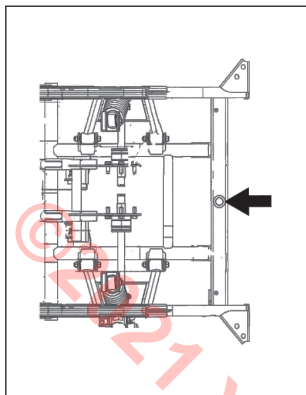
MAINTENANCE AND ADJUSTMENT

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

	Remarks	Daily Pre- Operation	40 rounds 20 hours 100 miles 160 kms (Every Month)	250 rounds 125 hrs 600 mls 1000 kms (Every 6 months)	500 rounds 250 hrs 1200 mls 2000 kms (Every Year)	1000 rounds 500 hrs 2500 mls 4000 kms (Every 2 years)	2000 rounds 1000 hrs 5000 mls 8000 kms (Every 4 years)	Page
EVERY YEAR	Adjust parking brake release				CA	CA	CA	47
EVERY 4 YEARS	Replace transmis- sion oil						R	*
	Inspect brake shoes and adjust or replace if nec- essary						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.

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

WARNING

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

Antidote:

EXTERNAL: Flush with water.

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

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

Batteries produce explosive gases.

Keep sparks, flame, cigarettes, etc., away.

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

KEEP OUT OF REACH OF CHILDREN.

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

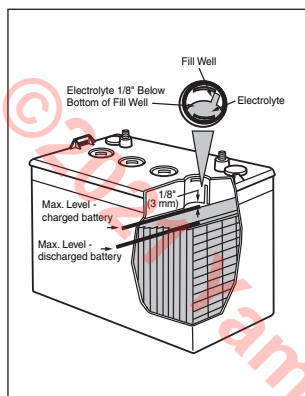
To maintain your batteries:

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.

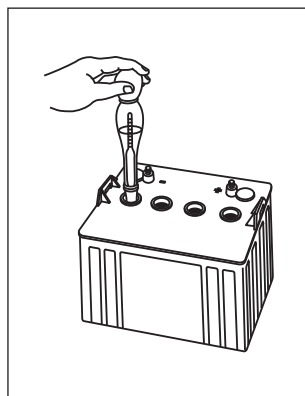


2. Check the fluid level before and after charging.

- **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:** open the vent caps and look inside the fill wells. Add distilled water until the electrolyte level is 3 mm (1/8") below the bottom of the fill well. A piece of rubber can be used safely as a dipstick to help determine this level. Clean, replace and tighten all vent caps.

NOTICE

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



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

BATTERY CHARGING

WARNING

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

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

NOTICE

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

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

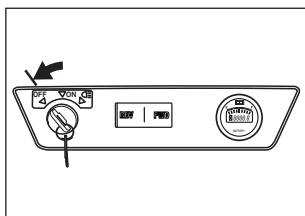
NOTICE

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

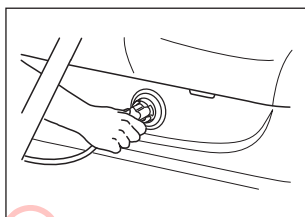
2. Lift up the seat and move the tow switch to the TOW position.

NOTICE

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



MAINTENANCE AND ADJUSTMENT



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

⚠ WARNING

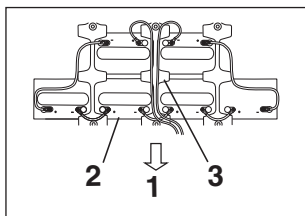
Do not disconnect the DC output cord from the DC charger receptacle when the charger is on or an arc could occur that may cause an explosion.

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

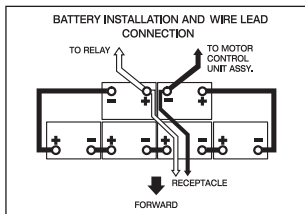
BATTERY INSTALLATION

⚠ WARNING

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



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



1. Install the battery hold-down plates 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.

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.

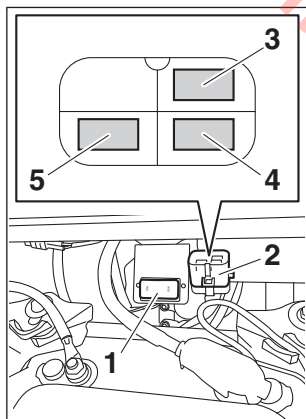
NOTICE

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

The fuse holder is located under the seat. (next to the tow switch)

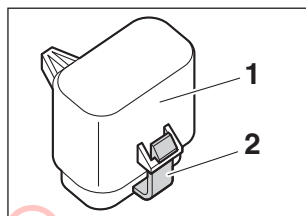
To access the fuse holder

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 (5.0A 32V)
4. Main Mini fuse (10.0A 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: I-E-I - constant current/constant voltage/constant current charge profile.

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

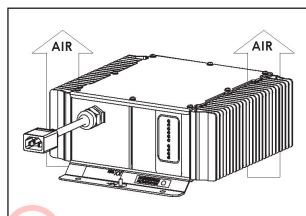
RISK OF FIRE - Use this charger only on circuits with a 15-amp or higher branch circuit protection (circuit breaker or fuse) in accordance with the national electrical code, ANSI/NFPA 70 and all applicable local codes and ordinances.

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

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.

MAINTENANCE AND ADJUSTMENT

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.

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

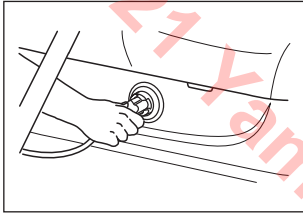
Whenever removing AC or DC cord set plugs from receptacles, pull from the plug body and not from their respective cords.

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.

MAINTENANCE AND ADJUSTMENT

OPERATING INSTRUCTIONS

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

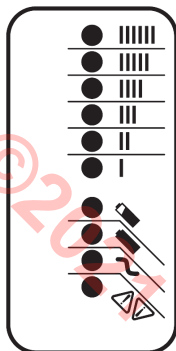


Connect charger's AC cord set to AC power. Then, connect the DC cord set plug to the vehicle charging receptacle by grasping the plug handle and pushing the plug straight into the DC charger receptacle. The charger will start automatically.

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

MAINTENANCE AND ADJUSTMENT

Under normal charge circumstances, the LEDs operate as follows:



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

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

MAINTENANCE AND ADJUSTMENT

TROUBLESHOOTING

1. LED Error Codes (For Battery Condition)

WARNING

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

WARNING

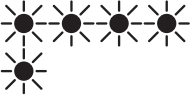
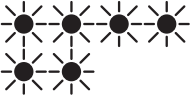
To reduce the risk of electric shock, always disconnect the charger's AC cord set plug from AC power and its DC cord set plug from batteries before attempting any maintenance or cleaning.

WARNING

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

MAINTENANCE AND ADJUSTMENT

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

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

WARNING

Have qualified service technician inspect if problems persist.

MAINTENANCE AND ADJUSTMENT

2. Hardware System Faults

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

 WARNING

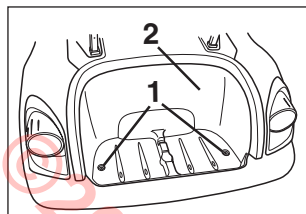
Have qualified service technician inspect if problems persist.

MAINTENANCE AND ADJUSTMENT

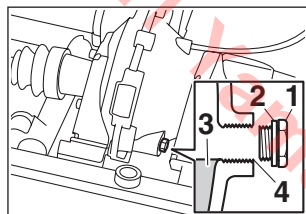
TRANSMISSION OIL

To check the transmission oil level:

1. Place the PTV 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.

- The oil level should be up to the brim of the transmission oil filler hole.
5. 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:

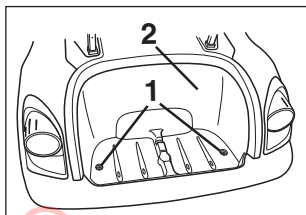
475 cc (475 mL, 0.5 US qt)

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

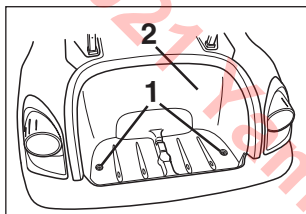
Transmission oil filler bolt tightening torque:

4.3 N·m (0.43 kgf·m, 3.1 lb·ft)

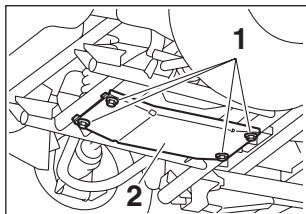
MAINTENANCE AND ADJUSTMENT



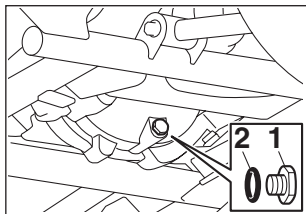
1. Bolt
2. Rear floor cover



1. Bolt
2. Rear floor cover



1. Bolt
2. Transmission cover



1. Transmission oil drain bolt
2. O-ring

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

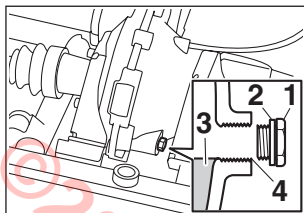
To replace the transmission oil:

1. Place the PTV on a flat, level surface.
2. Remove two bolts and remove the rear floor 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.
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, 0.5 US qt)

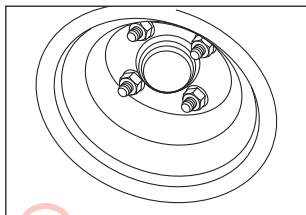
9. Install the transmission oil filler bolt and its O-ring, and then tighten the bolt to the specified torque.

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 PTV:

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

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

WARNING

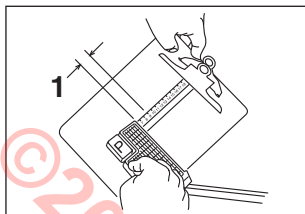
Consult your Yamaha dealer before using your PTV if you suspect brake problems. Brake failure could result in a serious accident.

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



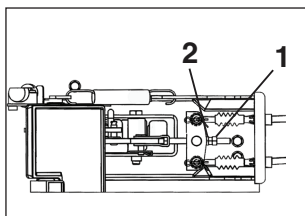
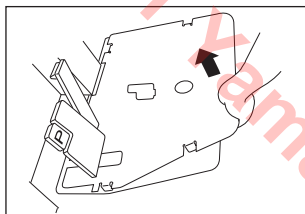
1. Brake pedal free play

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 PTV.



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 the 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 PTV.

Premature brake wear can result.

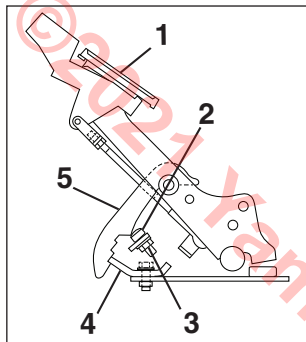
Death or serious personal injury can result from failing to comply with the warning labels in this manual.

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

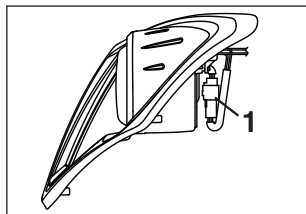
1. Apply pressure to the parking brake pedal until the brake nail catches the first latch position on the sector.
2. Loosen the locknut and turn the bolt counter-clockwise until it contacts the sector.
3. Turn the bolt clockwise $\frac{3}{8}$ (120 degrees), then tighten locknut.

REPLACING A HEADLIGHT UNIT

This model is equipped with LED-type headlights.

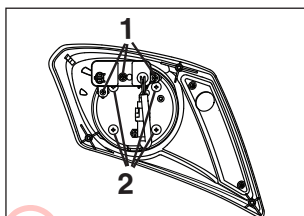
If a headlight does not come on, replace it as follows:

1. Disconnect the wire connector from the headlight assembly.

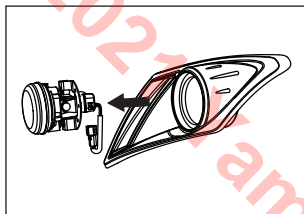


1. Wire connector

MAINTENANCE AND ADJUSTMENT



1. Screws (three)
2. Screws (four)



2. Remove the three screws and remove the light control unit.
3. Remove the four screws to remove the headlight assembly from the holder.
4. Remove the headlight assembly from the holder.
5. Install new headlight assembly into holder and secure with the four screws.
6. Install the light control unit and fasten with three screws.
7. Connect the wire connector to the headlight assembly.

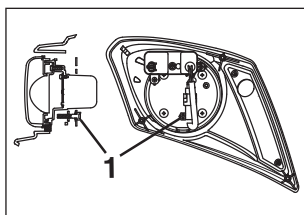
ADJUSTING A HEADLIGHT

NOTICE

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

TIP

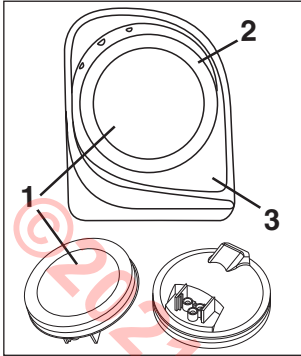
The screw can be accessed from under the fender.



1. Adjusting screw

1. Using a Phillips head screwdriver, turn the adjusting screw.
2. Turning the screw clockwise will lower the beam and turning the screw counter-clockwise will raise the beam.

MAINTENANCE AND ADJUSTMENT



REPLACING A TAILLIGHT UNIT

1. If a taillight does not come on, replace the taillight unit removing the rubber grommet from the bezel assembly.
2. Remove the wire connector, replace the taillight unit, and reinstall by fitting the rubber grommet over the taillight unit and bezel.

1. Bulb assembly
2. Rubber grommet
3. Bezel assembly

Perform the following preparations when storing your PTV 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 152 kPa, 1.5 kgf/cm² (max 22 psi).
2. Clean exterior of the PTV and apply a rust inhibitor.
3. Cover the PTV with a breathable cover and store it in a dry, well-ventilated area.

BATTERY PREPARATION

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

NOTICE

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

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

SPECIFICATIONS

GENERAL SPECIFICATIONS

Items	DR2 PTV POWERTECH AC IRS
Dimensions:	
Overall length	2380 mm (93.7 in.)
Overall width	1200 mm (47.2 in.)
Overall height (steering height)	1230 mm (48.4 in.)
Overall height (Sun top height)	1795 mm (70.7 in.)
Height of floor	325 mm (12.8 in.)
Wheelbase	1635 mm (64.4 in.)
Tread:	
Front	885 mm (34.8 in.)
Rear	990 mm (39.0 in.)
Min. ground clearance	140 mm (5.5 in.)
Weight:	
Curb weight (With sun top, battery)	482 kg (1063 lb)
Performance:	
Factory speed setting	31.4 km/h (20 mph)
Maximum speed	31.4 km/h (20 mph)
Minimum turning radius	2.9 m (9.5 ft)
Seating capacity	2 occupants per seat
Hill climbing capacity	15°

TRANSMISSION

Items	DR2 PTV POWERTECH AC IRS
Differential/reduction gear	Secondary reduction system helical gear Secondary reduction ratio: Forward/Reverse 12.44:1 Differential type bevel gear Lubricant/capacity SAE 80W-90 or SAE 90 gear oil/475 cc (475 mL, 0.5 US qt)

BATTERIES

Items	DR2 PTV POWERTECH AC IRS
Battery:	Trojan - Golf Car Type T-875 (6x8-volt) RC: minimum 117 min

CHASSIS

Items	DR2 PTV POWERTECH AC IRS
Steering system:	
Type	Rack and Pinion
Steering angle (L.H.)	1.85 turn
Steering angle (R.H.)	1.85 turn
Brakes:	
Brake system	Mechanical drum brake on each rear wheel with self-adjusters
Type of brake	Dual internal expanding shoe Leading/trailing shoes (self-adjusting)
Brake pedal freeplay linkage adjustment	50-55 mm (1.97-2.17 in.)
(Brake cable end play)	0.004-0.02 in. (0.1-0.5 mm)
Parking brake	
Type	Foot type; parking brake with automatic release.
Wheel	
Tire size:	
Front	20.5 × 8.0-10 4P
Rear	20.5 × 8.0-10 4P
Rim size:	9.00-1-10.00
Tire pressure:	152 kPa, 1.5 kgf/cm ² (max 22 psi)
Lights:	
Bulb voltage, wattage x quantity:	
Headlight	12 V, 35 W × 2
Taillight	12 V / 2.1 amp and .48 amp × 2

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

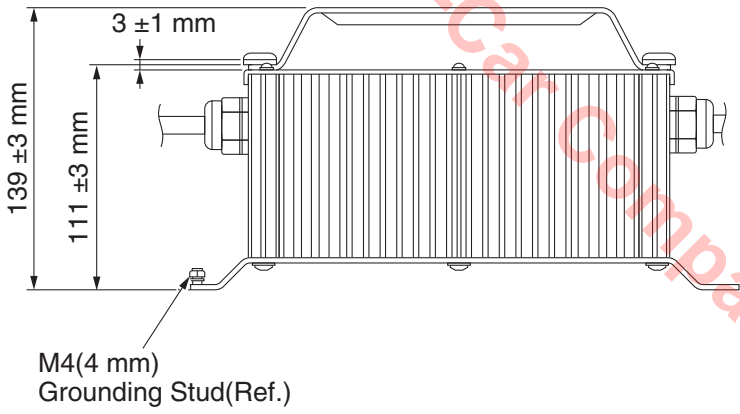
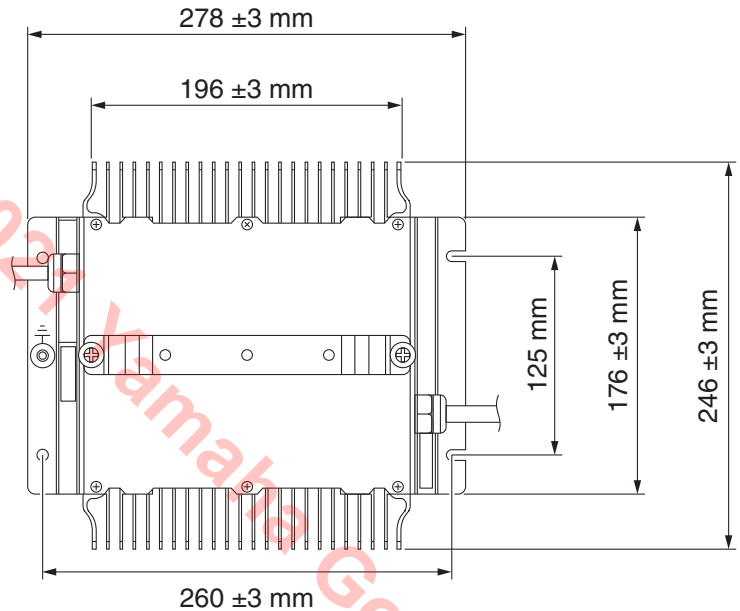
AC Input

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

Mechanical

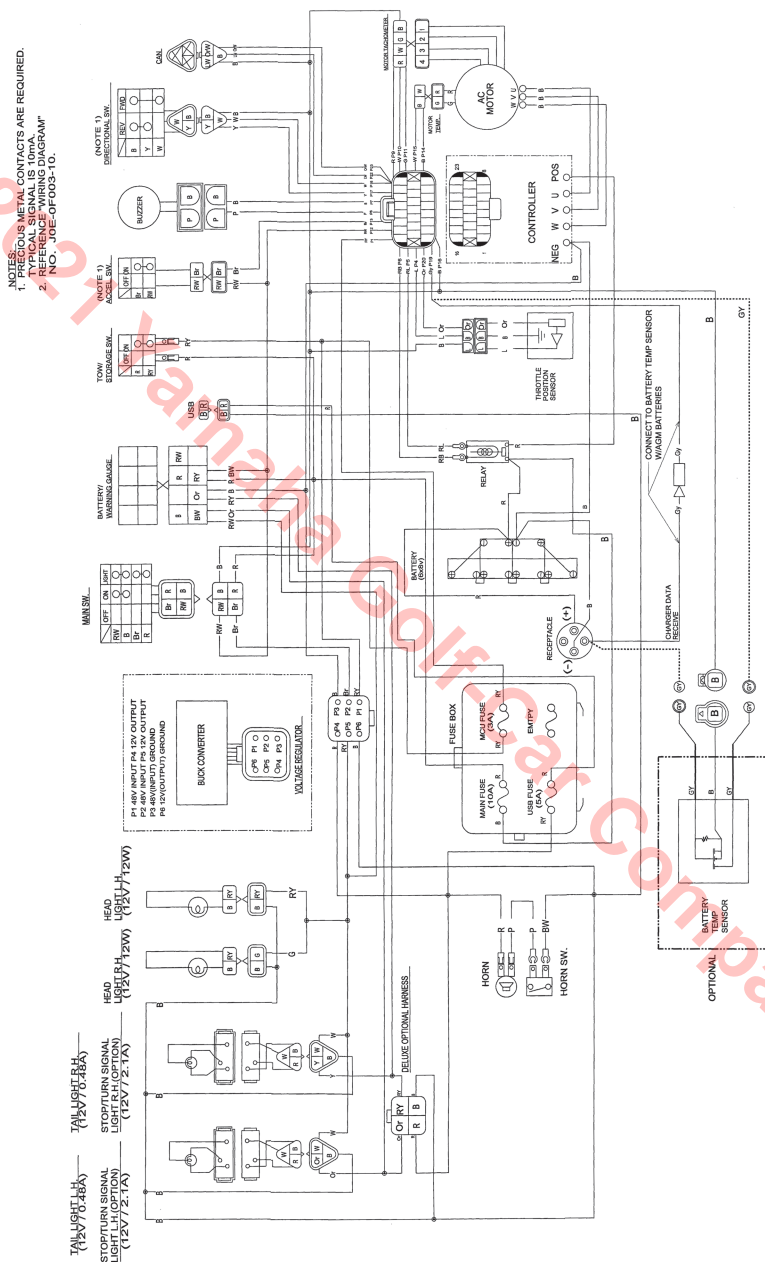
Dimensions	28.0 × 24.5 × 14.0 cm (11 × 9.7 × 5.5")
Weight	<5 kg (12 lbs)
Environmental	Enclosure: IP20
Operating Temperature	-30°C to +50°C (-22°F to 122°F), derated above 30°C, below 0°C
Storage Temperature	-40°C to +70°C (-40°F to 158°F)
AC Input Connector	IEC320/C14 (require ≥ 1.8 m localized cord)
Safety Timeout	20.5 hours (24.5 hours when boosting)

MECHANICAL DRAWINGS (BATTERY CHARGER)



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YAMAHA