

# OPERATION AND SERVICE INFORMATION

Read all of manual to become familiar with this vehicle. Pay attention to all **NOTICES, CAUTIONS, WARNINGS and DANGERS.**

Before a new vehicle is put into operation, the items shown in the **INITIAL SERVICE CHART** must be performed (Ref. Fig. 4).

The vehicle batteries must be fully charged before initial use.

Check for correct tire inflation. See **GENERAL SPECIFICATIONS.**

Determine and record the braking distance required to stop the vehicle for future brake performance tests.

Remove the protective clear plastic from the seat bottom and back rest before placing the vehicle in service

ITEM	SERVICE OPERATION
Batteries	Charge batteries
Seats	Remove protective plastic covering
Brakes	Check operation
	Establish acceptable stopping distance
Tires	Check air pressure (see SPECIFICATIONS)
Portable Charger	Remove from vehicle and properly mount

Fig. 4 Initial Service Chart

## PORTABLE CHARGER

### PORTABLE CHARGER INSTALLATION

#### **WARNING**

Use charger **ONLY** on 48 volt battery systems. Other usage may cause personal injury and damage. Lead acid batteries may generate explosive hydrogen gas during normal operation. Keep sparks, flames, and smoking materials away from batteries. Provide adequate ventilation during charging. Never charge a frozen battery. Study all battery manufacturers' specific precautions such as recommended rates of charge and removing or not removing cell caps while charging.


#### **DANGER**

Risk of electric shock. Connect charger power cord to an outlet that has been properly installed and grounded in accordance with all local codes and ordinances. A grounded outlet is required to reduce risk of electric shock – do

*not use ground adapters or modify plug. Do not touch uninsulated portion of output connector or uninsulated battery terminal. Disconnect the DC supply before making or breaking the connections to the battery while charging. Do not open or disassemble charger. Do not operate charger if the AC supply cord is damaged or if the charger has received a sharp blow, been dropped, or otherwise damaged in any way – refer all repair work to qualified personnel. Not for use by children.*

Portable chargers are shipped with the vehicles. Prior to vehicle or charger operation, the charger **must** be removed and mounted on a platform or wall above the ground to permit maximum air flow around and underneath the charger. **A dedicated circuit is required for the charger.** Refer to the charger manual for appropriate circuit protection. For optimum performance and shortest charge times, place the charger in an area with adequate ventilation. The charger should also be placed in an area that will be relatively free of dirt, mud, or dust since accumulations within the fins of the charger will reduce their heat-dissipating qualities. Optimal cooling also occurs when the charger is placed on a horizontal surface with the fins vertical. More airflow from below the charger will help cool the fins, so placement above open areas or areas with cut-outs for airflow is desirable. If the charger is operated in an outdoor location, rain and sun protection must be provided. The charger may get hot during operation and must be placed such that risk of contact by people is reduced. The charger may be mounted on a wall or shelf using #10-M5 screws. The charger's status display must be visible to the user.



Keep cooling fins clean and free of dirt and debris  
 NEMA 15 - 5R Grounded AC Receptacle  
110 - 120 VAC. Dedicated 15 AMP Circuit

Locations outside the US and Canada: Reference appropriate local electrical code and charger manufacturer recommendations for AC power requirements

Fig. 5 Charger Installation

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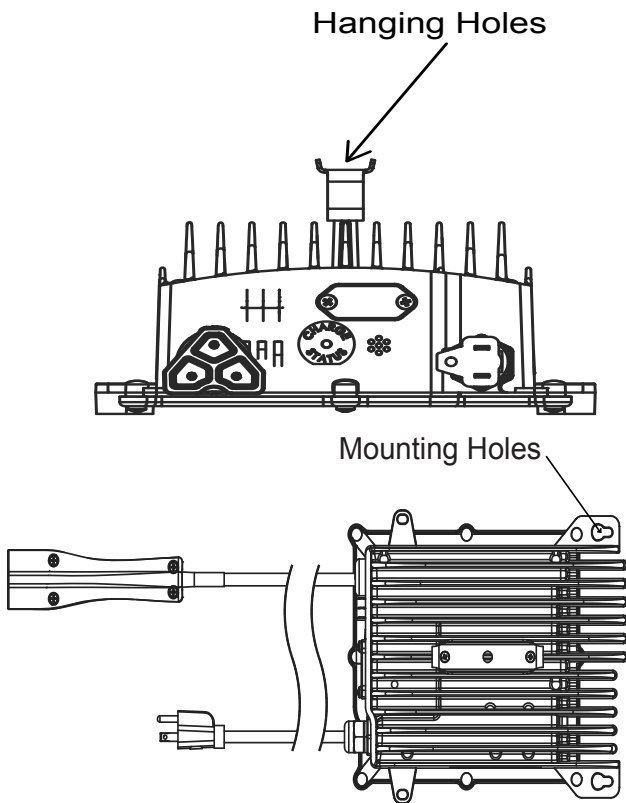


Fig. 6 Charger Mounting

## NOTICE

Looping the DC cord through the steering wheel when charging serves as a good reminder to store the cord out of the way when finished with charging. The DC plug can be damaged by driving over or catching the cord on the vehicle when driving away.

## WARNING

*An ungrounded electrical device may become a physical hazard that could result in an electrical shock or electrocution.*

### USING THE CHARGER

The charger may remain plugged into the AC outlet when not in use. To charge the vehicle refer to the instruction labels on the charger. Insert the polarized DC plug completely into the vehicle receptacle. The charger will automatically start a few seconds after the plug is in place. The charger will automatically stop when the batteries are fully charged and the DC plug can be removed to permit use of the vehicle.

## WARNING

*To prevent a physical hazard that could result in an electrical shock or electrocution, be sure that the charger plug is not damaged and is inserted into a grounded receptacle.*

*The power (AC) cord is equipped with a grounded plug. Do not attempt to pull out, cut or bend the ground post.*

The charging (DC) cord is equipped with a polarized connector that fits into a matching receptacle on the vehicle. The receptacle is located on the driver side of the vehicle just below the seat bottom.

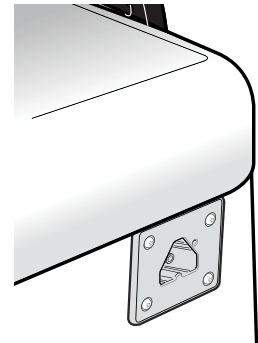


Fig. 7 Charger Receptacle

## NOTICE

If vehicle is to be charged with a non E-Z-GO charger, refer to the instructions supplied with the charger.

### UNDERSTANDING THE CHARGER

Plugging the charger into the vehicle's charger receptacle will lock the vehicle out of operation. When the charger is plugged into the vehicle's charger receptacle, the charger will automatically turn on and the charger's LED and the vehicle receptacle's LED will start flashing GREEN to indicate the batteries are charging.

Once a minimum battery voltage of 2 volts per cell (Vpc) is reached, the charger's output current will change from a full current charge to the trickle rated charging current. The length of charge time will vary by how depleted the batteries are, the input AC voltage, and/or charger ambient temperatures. The charger's LED will give a SHORT flash if the charge is less than 80% and a LONG flash if the charge is greater than 80%. If the charger's LED is a steady GREEN the batteries are fully charged and the charger may be unplugged, although not necessary. The charger may be left plugged in for long periods of time to maintain the batteries charge level.

If a fault occurred anytime during the charging the charger's LED will quickly flash RED. The specific fault is in-

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indicated by the number of RED flashes that occur, there will be a pause and then the flashes will repeat again. There are several possible conditions that will generate errors. Some errors will require human intervention to first resolve the problem and then reset the charger by unplugging the DC cord from the vehicle.

If the AC voltage is interrupted and restored, the charger will turn back on automatically.

## LED OPERATION CODES:

SHORT GREEN FLASH = less than 80% charged

LONG GREEN FLASH = more than 80% charged

SOLID GREEN = 100% charged

RED FLASH = fault code

## LED FAULT CODES:

RED FLASH: Light turns on briefly, but does not flash after that - check for valid AC voltage.

ONE RED FLASH: One flash, a pause and then again one flash and a pause - Charge Enable Fault: poor contact in the DC connector or dirty contacts or Battery Temperature Fault: battery temperature is greater than 122° F (50° C) or less than 14° F (-10° C).

TWO RED FLASHES: Two flashes, a pause and then again two flashes and a pause - Battery Voltage Fault: Battery pack is less than 36.0 Volts or more than 67.2 Volts. Battery pack is too discharged or over charged for the charger to work.

THREE RED FLASHES: Three flashes, a pause and then again three flashes and a pause - Battery Charge Time-out: Charge time exceeded 24 hours. This may indicate a problem with the battery pack or that the charger output current was severely reduced due to high ambient temperatures.

FOUR RED FLASHES: Four flashes, a pause and then again four flashes and a pause - Battery Fault: Charge time exceeded. This indicates a problem with the battery pack voltage not reaching the required nominal level within the maximum time allowed.

SIX RED FLASHES: Six flashes, a pause and then again six flashes and a pause - Charger Fault: An internal fault has been detected. If this fault is displayed again after unplugging the charger's DC power cord and plugging it back in, the charger must be taken to a qualified service center.

## MAINTENANCE INSTRUCTIONS

1. For flooded lead-acid batteries, regularly check the water levels of each battery cell after charging and add distilled water as required to the level specified by the battery manufacturer. Follow the safety instruc-

tions recommended by the battery manufacturer.

2. Make sure the charger connections to the battery terminals are tight and clean. Check for any deformations or cracks in the plastic parts. Check the charger harness for chaffing and rubbing. Inspect all wiring for fraying, loose terminals, chaffing, corrosion or deterioration of the insulation.
3. Keep the cooling fins free of dirt and debris, do not expose the charger to oil, dirt, mud or to direct heavy water spray when cleaning equipment.
4. Inspect the plug of the battery charger and the vehicle receptacle housing for dirt or debris. Clean the DC connector monthly or more often if needed.

## NOTICE

If vehicle is to be charged with a non E-Z-GO charger, refer to the instructions supplied with the charger.