



# Installation Manual

Replacement Roof Top  
HSC-205 / HSC-270

## **Golf Cart Models:**

- Club Car DS (2000 and up), Precedent
- E-Z-GO TXT & RXV
- Yamaha DRIVE
- Star Car
- Bad Boy Buggy

[www.helioschargers.com](http://www.helioschargers.com)

Congratulations on your new Solar Rooftop!!! The Helios Design Group thanks you for your purchase and your support of solar power. We trust you will be 100% satisfied with your purchase and you will enjoy free solar power for years to come. We are fully dedicated to the design and development of solar power and most of all your satisfaction.

### **Package / Panel Contents:**

- Solar Roof Top w/ Attached Vehicle Specific Brackets
- Power Cable / Harness
- Zip Ties & Mounting Bases
- Bolts / Nuts / Washers
- Watts-Up Meter ( optional power monitoring meter / logger )

### **Tools & Requirements for Install:**

- Wire Cutter / Stripper (14-18 gauge stranded)
- Wire Crimper ( or a Combo Stripper / Crimping Tool )
- Power Drill ( optional )
- 5/8" Bit and 7/8" Bit ( optional )
- Ratchet & 7/16" Socket and a 7/16" Wrench
- 7/8" Wrench (most common for battery terminal bolts)
- Two People **REQUIRED** for removing the roof and installing solar top
- Digital Multimeter (to measure DC – Direct Current Voltage )



## **Installation**

Warning: This installation should be conducted by a trained technician. It involves the handling of high voltage connections. The under surface of the solar roof assembly is covered by a thin white film, this film must remain free of stress, impact or deep scratches at all times or performance of the system may be permanently jeopardized. Please note that installation **REQUIRES** two people during the removal of the original cart roof and mounting of the solar roof top assembly.

### **Please read each step entirely before proceeding.**

- 1) Remove stock golf cart top. Keeping hardware will allow re-installment of the original top later, but is not necessary for the kit installation.
- 2) Route power cable on the driver side rear post. For most model cars the power cable can be routed through the 1-inch square post of the roof top supports.



- It is optional to install and drill for the wire strain relief for the power cable as pictured below behind your seat.

- You can route the power cable into your car without drilling but it is recommended to install the strain relief included as it will lock in the cable from it being pulled after install.

(liquid-tight tubing and connector pictured first are an optional installation accessory)



- 3) For Bad Boy Buggy you must cable tie the power cable to the roof support posts as they are sealed and continuous square bars.
- 4) DO NOT PLUG IN Power cable to the solar roof top panel until all installation and wiring has been completed. Failure to follow this step can result in a damaged panel or electric shock.

- 5) Open your battery compartment and locate the main battery terminals that provide the car with 48 or 36 volts DC – depending on your model. Most cars are 48v – please confirm location of your battery terminals as pictured.



- 6) Cable Tie the power cable to existing cables or use the provided mounting bases to secure your solar power cable to the battery compartment.

If you want to keep the extra cable in the battery compartment, coil the cable in a circle and cable tie it so it does not come loose from a mounting point – do not kink the power cable in a zig-zag pattern.



- 7) Install your new solar rooftop with two people and place the solar roof in-line with the original mounts of the car. The gauge will be towards the front of the car and the power cable plug will be at the rear of the car – driver side.

- 8) Install a washer on the bolt sides. The lock-nut should be installed on the inside of the car for safety and aesthetic purposes.



- 9) For EZ-GO TXT & Bad Boy Buggy – there are no angle brackets as pictured. Please use the four bolts with a washer through the rooftop support beams in the front and back.
  - a. Hand screw the bolts as to not strip the threaded mounts in the panel.
  - b. Do not use excessive force on tightening – please use a few drops of blue thread lock on the bolt to keep vibrations from loosening the roof from the mounts.
  - c. We recommend Blue Loctite 242 – Available at your local hardware store or mass-merchant stores.
  
- 10) For Club Car Precedent – Mount system directly on car.
  - a. Run power wire to battery compartment.
  - b. Using the screw originally provided for the rear posts, insert the rear post square inserts of the panel system into the precedent rear posts and secure.
  - c. Use the provided bolts to secure the front mounting brackets to the car frame.
  
- 11) Hand tighten all connect points – do not use excessive force. Please screw all nuts in by hand before using tools to tighten all connections to avoid stripping threads in the bolt or nut.

At this point your panel should be mounted securely to the roof posts. Please confirm once more your electrical connections have been made to your 48volt battery posts (36v for some cars).

The last step in this process will be to plug in your power cable to your new solar roof-top.

Make sure the installation area is well ventilated and free from any combustible vapors or substances.

As a precaution to the Step #11 below – you may experience a spark when you connect your power cable to the panel.

This spark is normal and is caused by the capacitors in the charge

controller of the solar panel.

- 11) Plug in your power cable to the solar roof-top.
- 12) The battery gauge at the front portion of the roof will now illuminate and show your battery capacity of your car.
- 13) You are now ready to begin solar charging with your new HSC-205 / HSC-270 solar roof top.

## **User Guide & FAQ's – Frequently Asked Questions:**

### **SenDec Battery Gauge:**

The installed SenDec Battery Meter is essentially a battery fuel gauge. The SenDEC Battery Fuel Gauge is specifically designed to accurately monitor the charge capacity of lead acid batteries – used in your electric car. Charge capacity is indicated using the 10 segment LED bar graph display from empty (left) to full (right).

SenDec has a built in LED Flash Alert. It will flash the 2nd LED from the left as a warning that the battery has discharged 70%. At 80% discharge, LED Flash Alert flashes the 2 Left LED's to indicate very low capacity is remaining.

The SenDec Battery Fuel Gauge calculates the amount of energy in reserve over a small period of time. It is normal to see the gauge fluctuate lower / less capacity after immediate driving. The gauge calculates and recalculates at an average of 6-10 minute increments for proper readings.

Gauge Reading Example: Your car is fully charged and you begin driving for 10, 20, 30 minutes and now you have ceased driving because your gauge may show 50-70% capacity remaining. Please Do NOT Be Alarmed!

It is normal for your gauge to not read a full 100% even though the car was just fully charged. There has been a considerable decrease in voltage as your car was in use and in motion driving but voltage restores after the car is no longer in motion / driving use. Please allow about 6-10 minutes of time



for your gauge to re-calculate the resting voltage of your batteries and properly display your battery capacity / amount of run time left.

**Cleaning:**

Your Solar Panel should be free of dust and debris at all times. Do not use strong detergents and abrasive chemicals to clean the your solar panel roof top. A wet towel with water should be used to clean the glass on the panel. It is fully water proof so you can drive in the rain without any problems. The surface of your system should be kept clean of dust and debris to provide 100% performance and charging output from the solar panel on the rooftop. We are committed to serving your solar transportation and portable battery charging needs. Feedback is always welcome on our products.

For technical help or sales please contact your local dealer or Helios Solar Chargers Inc. at 352.377.9554

Please visit [www.helioschargers.com](http://www.helioschargers.com) for additional support and to browse our continuous and expanding product line.

**DEALER INFO:**



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