

CMPower Impact Resistant Walk-on Solar Panel Installation Guide for Marine Applications

This manual is intended to provide the information needed to properly install the CMPower impact resistant walk-on panel kit on boat decks.

Background:

As solar panels heat up in the sun, their performance is reduced because the solar cells become less efficient at higher temperatures. In fact, a solar panel will lose up to 10% of its rated output for every 30 degrees F above 75 degrees F.

The CMPower solar panel mounting system is designed to secure the solar panel to the boat deck or bimini and optimize panel performance by reducing the panel operating temperature. This is achieved by placing a sheet of twin-wall polycarbonate between the solar panel and the boat support structure (deck). Air flows under the panel cooling it. J channel mounting extrusions are used to secure the solar panel assembly to the deck.

Note: Using alternative installation techniques may void the warranty.

Components included in the kit:

1. CMPower high performance impact resistant walk-on solar panel.
2. CMPower twin wall polycarbonate underlayment sheet for strength and cooling.
3. "J" channel mounting extrusions to secure the panel and twin-wall polycarbonate to the deck.

Components not included in the kit:

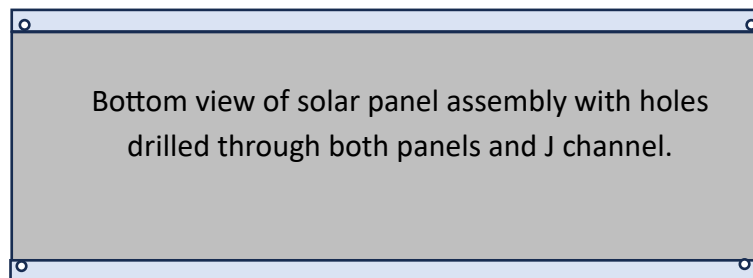
1. Outdoor Very High Bond (VHB) $\frac{3}{4}$ or 1-inch-wide double-sided tape. We suggest a tape comparable to 3M 5952 VHB double sided tape. It is available on-line and at some hardware stores. Each roll is 15.4 ft. One roll is required for panels 100 watts or smaller and a portion of a second roll will be required for panels larger than 100 watts. Here is a link to a tape supplier: <https://tinyurl.com/z8nrws7p>
2. Fasteners, are required if the mounting brackets are to be bolted to the deck. Fastener components include silicone sealant (optional), washers and screws. We have found that VHB tape only is often adequate to properly secure a solar panel to the boat deck if the surface is smooth (no nonskid).

Tools needed:

1. Measuring tape
2. Pencil or marking device
3. Electric drill if using fasteners for additional security.
4. Volt meter.

Preparation for installation:

1. **Test the polar panel** – Use a volt meter before beginning the installation to confirm the solar panel is operating properly. Expose the panel to the sun and place the meter probes on the positive and negative wires connected to the panel. If the panel is not producing electricity, contact your dealer or Custom Marine Products before proceeding.
2. **Pre-layout and hole preparation** - (If fasteners are to be used to fully secure the solar panel)
 - Assemble the CMPower solar panel kit by placing the solar panel over the polycarbonate and sliding on the J channels on each side. Position the assembly on the van rack. Check fit.
 - Drill a proper size hole to accommodate the fastener through the solar panel, the polycarbonate, the J channel and the van rack. If the solar panel has gromets in the corners use the gromet hole to position the drill so the bolt will go through the gromet. If the panel does not have gromets, drill the hole in the place marked on the panel or 9/16ths in from each edge of the panel. Install Rivnuts in the roof deck panel OR use T-nuts if holes align with the deck slots/crossbar channels.



3. **Pre-install VHB tape on J channels** - Apply 1" strips of VHB double sided tape to the back surface of the J channel that will be against the roof rack.
 - Clean the J channel back with alcohol or equivalent to ensure a strong bond.

- Pull off about a 4-inch section of the protective tape covering (release liner) and press the tape against the J channel. The tape should be even with the outside of the J channel and will extend past the J channel back a bit. Continue for the full length of the J channel. Repeat on the second J channel.

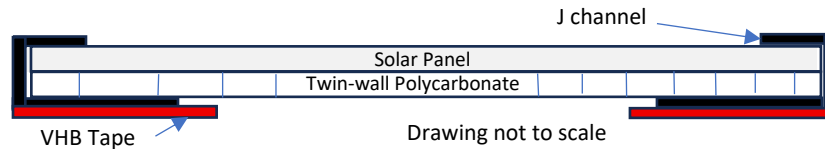


J channel with VHB Tape Applied

Installation Instructions:

1. Position the solar panel assembly on the boat.

Assemble the CMPower solar panel kit by placing the solar panel over the polycarbonate and sliding the J channels on each side. Position the assembly on the deck.



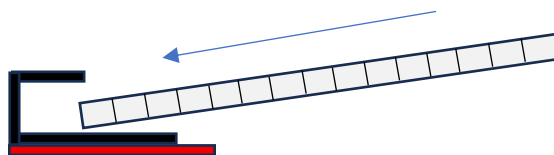
Solar Panel Kit Assembly Ready for Installation

2. Draw a line along the edges of the J channel and mark each end position.
3. Install the first J channel mount.

Clean the area on the deck where the tape will be applied using alcohol or equivalent solvent. Clean the areas for both J channels. Peel off the release liner from the VHB tape on one J channel and carefully position the J channel on the deck using the markings from step 2. Press firmly on the J channel to ensure a strong bond.

4. Slide the twin-wall polycarbonate panel into the J channel.

The polycarbonate panel will adhere to the protruding VHB tape on the J channel so carefully slide the panel in at an angle and then lower onto the deck.



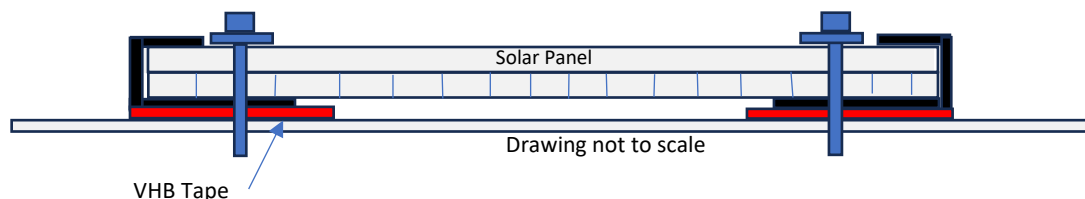
- Slide in the solar panel between the top of the J channel and the polycarbonate.
- Install the second J channel.

Peel back the release liner about 3 inches and fold so the liner is sticking out beyond the outside of the J channel. This will act as a pull tab. Slide the J channel onto the solar panel and polycarbonate. The VHB tape extending beyond the back of the J channel will make this a bit tricky so approach the panel with the J channel raised at an angle. Two people may be required for this step.

Important: Allow about 1/8th of an inch between the panel and the inside of the J channel to accommodate panel expansion.

With the J channel in place, pull the release liner tab carefully while holding the J channel in position. Once the release liner is fully removed, press hard on the J channel to secure the J channel to the deck.

- Apply pressure to all areas where the VHB tape is used to firmly adhere it to the panels to the vehicle roof rack.
- Optional: Install fasteners to each corner of the solar panel.
 - Drill a proper size hole to accommodate the fastener through the solar panel, the polycarbonate, the J channel and the deck. If the solar panel has gromets in the corners use the gromet hole to position the drill so the screw will go through the gromet. If the panel does not have gromets, drill the hole in the place marked on the panel or 9/16ths in from each edge of the panel.
 - If the panel does not have gromets, use an appropriate size washer with the fastener. Applying a silicone sealant around the fastener to assure proper sealing is optional but should be considered. Secure each fastener.



Complete Solar Panel Installation Using Fasteners

- Secure the solar panel wire tightly against the roof rack so that it will not vibrate in the wind at high speeds.

Important Notes:

VHB Application Tips:

- Clean surfaces with a 50:50 mix of isopropyl alcohol and water.
- Ensure surfaces are fully clean and dry.
- Apply tape, then press firmly with a roller or by hand. The bond will achieve 50% strength in 20 minutes, 90% after 24 hours, 100% after 72 hours.

Maintenance:

- Inspect all components regularly to ensure long-term safety and performance. Every 3–4 months, recheck the following:
- VHB Tape Bonds: Verify that all adhesive joints remain secure and fully bonded. Look for any peeling, lifting, or signs of separation, especially at the channel edges or where exposed to heat and UV.
- Fasteners: Confirm that all hardware is tight and torqued correctly. Retighten any loose fasteners.
- Panel Alignment: Ensure the solar panel and polycarbonate sheet remain flush and evenly supported within the J-channels.

Warranty Considerations:

- The CMPower 5 year prorated solar panel warranty is valid only if the panels are mounted as specified in this guide or mounted using another method pre-approved in writing by Custom Marine Products.
- The twin wall polycarbonate sheet may be discarded after consultation with Custom Marine Products. Smaller J channel mounts that will accommodate only the solar panel will be necessary. These are available by special order.

Disclaimer: By installing this product, the user assumes full responsibility for correct installation, maintenance, and use. Custom Marine Products expressly disclaims all liability for any damage, injury, or loss resulting from improper installation, misuse, inadequate surface preparation, insufficient adhesion, or failure to follow instructions. Use of this system constitutes acceptance of these terms and a waiver of all claims against Custom Marine Products, and their affiliates. It is the user's responsibility to ensure secure adhesion and fastener integrity.

Custom Marine Products CMPower Solar Panel Limited Warranty

CMPower solar panels are warranted for 5 years prorated at a sliding scale, 100% first year, 80% second year, 60% third year, 40% fourth year, 20% fifth year. Custom Marine Products (CMP) reserves the right to replace, refurbish, or provide a refund for a failed or defective solar panel.

The CMPower 5 year prorated solar panel warranty is valid only if the panels are mounted as specified in the CMPower Installation Guide or mounted using another method pre-approved in writing by Custom Marine Products. Improper solar panel mounting could void the warranty.

If solar panel replacement is appropriate, the limited warranty includes replacement of a failed or defective panel one time once the requested documentation is promptly received. CMP does not cover labor or any other associated costs for warranty replacements. Within the warranty period CMP will replace (at 100%, 80%, 60%, 40%, 20%) or repair the product and/or parts of the product if it is determined to be defective in material or workmanship.

This warranty applies to the original owner only.

Custom Marine Products (CMP) has no obligation under this Limited Warranty for products subjected to the following conditions (including but not limited to):

- Damage due to improper installation; loose or improper connections, under-sized cabling, incorrect series (maximum of 4 panels) or parallel connections (maximum of 6 panels), reverse polarity connections or insufficient space for airflow.
- Improper installation including an installation that does not comply with Custom Marine Products Installation Manual or any other instructions included with the PV Modules, and all national, state, and local laws, codes, ordinances, and regulations.
- Environmental damage such as inappropriate storage conditions as determined by CMP, exposure to extreme hot or cold temperatures, fire or freezing, or water damage, impact or collision.
- The solar panel was not stored in compliance with CMP instructions.
- Damage due to improper operation or maintenance such as lack of cleaning resulting in corroded terminal connections or build-up of dirt, debris, organic matter, fossil fuels or chemicals on the panel. Damage from persons, insects, animals, or chemical exposure.
- Product that has been modified (including but not limited to sewing, drilling) or tampered with or repair has been attempted.
- Product that was used for applications other than those which it was designed and intended for by CMP or product that is under-sized for the application. Damage due to significant impact, force or other events outside Custom Marine Products' control.
- Damage due to natural disasters such as, but not limited to, power surges, power outages, acts of war, tornados, hurricanes, lightning, flood, lava flow, ash or fire.