

MSD Series Installation Instructions



Prior to Installation Notes and Critical Safety Warnings:

1. Load Carrying Capacity

The maximum load includes the combined weight of the solar panels, dinghy, outboard motor, fuel tank, and all gear.

- **MSD Solar Arch and Davit Set: 800 lbs.** total capacity (**400 lbs.** max per arm).

2. Davit Arm Placement

- **Alignment:** Mount davit arms within **6 inches** of the dinghy's bow and stern lift points.
- **Orientation:** Ensure arms are as close to **vertical** as possible in all directions (fore, aft, and side-to-side) to minimize horizontal stress.

- **Placement Guidelines:** The davit arm is designed for installation on **transverse (port-to-starboard)** stern rails. For **longitudinal (fore-and-aft, such as the sides of a stern rail seat)** rail installations, supplemental reinforcement is required. Please consult Martek for approved support solutions.

3. Rail Mounts (Upper Support)

- **Positioning:** Secure the rail mount to the **upper half** of the davit arm, above the middle horizontal support brace.
- **Tension:** Tighten only until the davit is held firmly against the stern rail. **Do not over-tighten**, as this can damage the rail blocks.
- **Stability:** If your stern rail flexes under the weight of the dinghy, you must install additional rail supports.

4. Lower Mounts (Base Support)

- **Versatility:** The base can be installed on horizontal, vertical, or angled surfaces (e.g., transom, deck, cap, or toe rail).
- **Access:** Before drilling, ensure you have clear access to the underside/backside of the mounting surface to install backing plates.

5. Backing Plates & Fasteners

- **Included Hardware:** Use only the provided backing plates, hex-head bolts, and nylon-insert locknuts.
- **⚠ CRITICAL SAFETY WARNING:** **Never use screws** in place of the provided bolts. Screws cannot support the load and **will lead to system failure**.

6. Dinghy Lifting Points

- **Critical Lifting Points:** Proper placement of lifting points is essential for the safety and structural integrity of your inflatable. All points must be positioned low and inside the boat.
- **STERN:** You have two rigging options. For a traditional sling setup, use the existing lift points or install new ones low on the transom's interior. Alternatively, you can use the Martek Davits Lifting Yoke to eliminate the need for slings and eyebolts; this is the recommended method.
- **BOW:** Lifting points must be located inside the boat, approximately 3 feet back from the bow where the tube begins to curve. You can use the Martek Davits Strongback as an alternative to a sling.
- **⚠ CRITICAL SAFETY WARNING:** Never lift the boat using removable floorboards or the exterior "D" rings.

7. ⚠ CRITICAL SAFETY WARNING: Restraining your Dinghy

The dinghy must not be allowed to move around while underway. The dinghy should be restrained so it cannot swing or move on its own. Excessive dinghy movement can cause excessive pressure at the attachment points, **leading to failure**.

- When lifted, the dinghy must contact both Davit Arms. The dinghy should be level.
- The dinghy must be restrained; it cannot be allowed to swing free.
 - **Use the lifting lines:**
 - Stern - Loop around the inflatable tube at the stern, pull tight, and secure it to a cleat. Do this several times to form a belt.
 - Bow – Run a loop through the towing ring on the outside of the hull, pull tight, and secure it to a cleat.
 - **Use ratcheting straps:**
 - Stern – Clip onto the eyebolt on the outside of the dinghy transom, and the other end clips onto the stern rail mount eye nut, tighten using the ratchet.
 - Bow – Clip to the towing ring on the outside of the hull, and the other end clips onto the stern rail mount eye nut, tighten using the ratchet.
- The stabilizer strut prevents the davit arms from rotating; it does not prevent the dinghy from swinging or moving.

8. ⚠ **CRITICAL SAFETY WARNING: When Crossing a Large Body of Water**

Before crossing open water in conditions exceeding calm seas (waves >0.5 ft), the dinghy and outboard motor must be removed from the davits and secured on deck or towed. Pitching and rolling in active seas will generate excessive dynamic loads that **can cause structural failure of the davit system or the vessel's transom**.

9. ⚠ **CRITICAL SAFETY WARNING: Remove the Drain Plug**

Remove the drain plug as soon as you lift the dinghy out of the water, always! Water weighs approximately 7 lbs. per gallon, and there are 7.5 gallons per cubic foot. A typical dinghy will hold approximately 26 cubic feet of water. That is an additional 1,345 lbs., **leading to failure**.

10. ⚠ **CRITICAL SAFETY WARNING: Prevent Longitudinal Movement**

The davit arm must be completely secured to prevent **longitudinal movement**. Failure to eliminate **fore-and-aft** movement can cause structural failure or unexpected load shifts during operation.

11. ⚠ **CRITICAL SAFETY WARNING, STRUCTURAL FAILURE HAZARD: Lower Mount Rod End Bolt**

Never use the lower mount rod end bolt for vertical height adjustment. Improper installation can cause bolt failure, leading to equipment collapse.

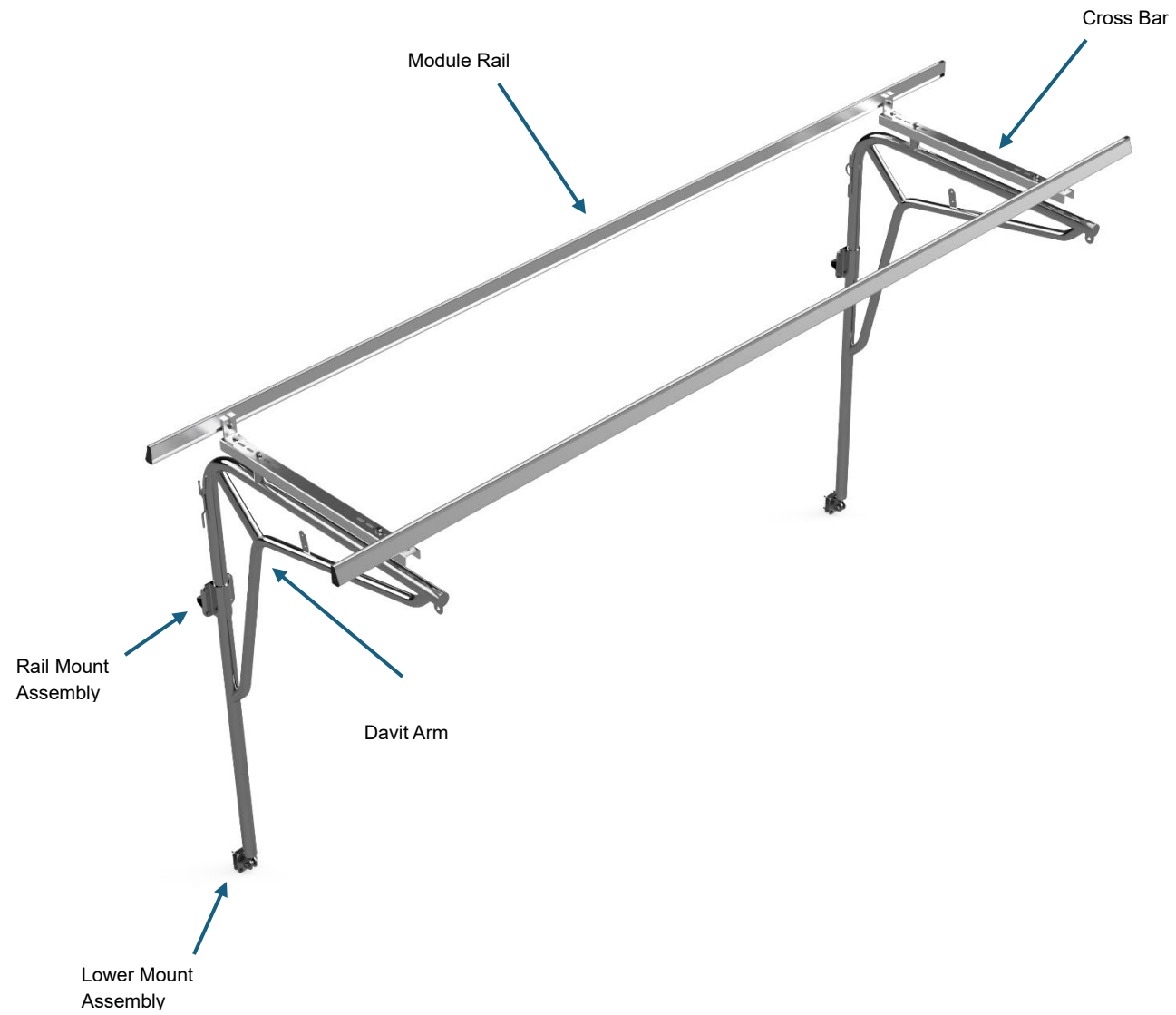
Required Installation Procedure

- **Insert Fully:** Thread the bolt into the davit arm as far as possible.
- **Secure Locknut:** Tighten the jam nut securely against the arm.
- **Thread Exposure:** Ensure a maximum of one to two threads are visible on the rod end bolt.

12. Bonding

It is recommended that the davits be connected to the boat's bonding system.

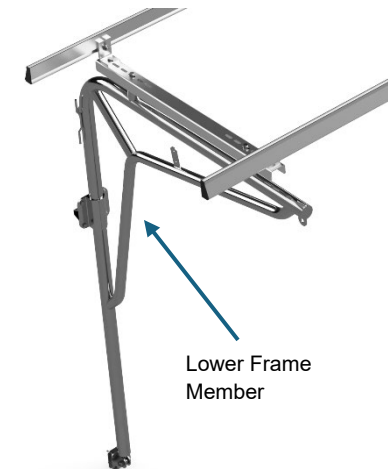
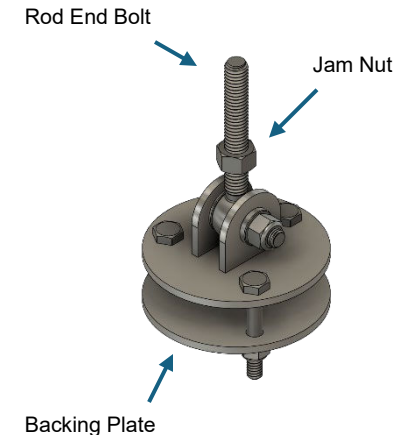
- Safety (Grounding): Reduces shock hazard by connecting metal parts, allowing breakers to trip during a fault.
- Lightning Protection: Offers a path for high-voltage lightning strikes to enter the water.

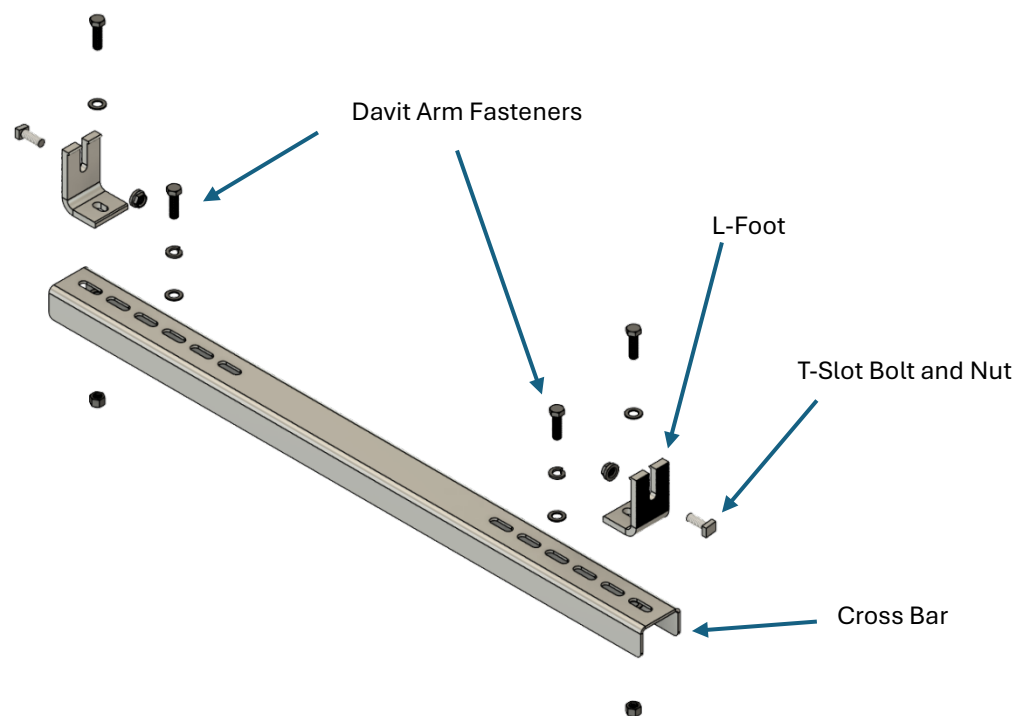


Installation:

Davit Arms

1. **Choose Mounting Locations**
 - a. Select a suitable spot for the Rail Mount Assembly on the stern rail and the Lower Mount Assembly on the cap rail, deck, or transom.
 - b. Check for clearance from stanchions and other obstructions.
2. **Install the Lower Mount Assembly**
 - a. Secure the lower mount assembly to the davit arm using the rod end bolt. Do not tighten the jam nut. **See Prior to Installation section 11. CRITICAL SAFETY WARNING.** Remove the backing plate and fasteners.
3. **Attach Rail Mount Assembly**
 - a. Align the Rail Mount Assembly above the mast's lower frame member connection. Secure the assembly to the stern rail using the provided hardware.
 - b. NOTICE: Mounting below the lower frame member connection requires supplemental reinforcement. Install a support arm connecting the upper Davit Arm mast to the stern rail or deck to distribute the load safely.
 - c. Keep the fasteners slightly loose to allow the Davit Arm to slide along the stern rail during alignment.
4. **Align the Davit Arm**
 - a. Adjust until the Davit Arm is vertical, fore, aft, and side to side.
5. **Mark Lower Mount Holes**
 - a. Where the Lower Mount base plate meets the cap rail, transom, or deck, cover the area with masking tape.
 - b. Mark the hole positions.
6. **Drill Mounting Holes**
 - a. Drill holes as perpendicular as possible for proper backing plate alignment.
 - b. Seal any exposed core to prevent water intrusion.
 - c. Test fit the base plate, backing plate, and fasteners to confirm alignment.
7. **Prepare Mounting Surfaces**
 - a. Remove masking tape from Lower Mount Assembly.
 - b. Prepare surfaces according to your marine sealant manufacturer's instructions.
8. **Bed and Install Lower Mount**
 - a. Apply sealant to the entire base plate surface so it squeezes slightly from all edges when tightened.
 - b. Install the backing plate and fasteners, then tighten securely.
 - c. Tighten the jam nut on the rod end bolt.
 - d. Wipe away excess sealant for a clean, smooth joint.
9. **Tighten the Rail Mounts**
 - a. Tighten the Rail Mount Assembly fasteners—do not over-tighten.





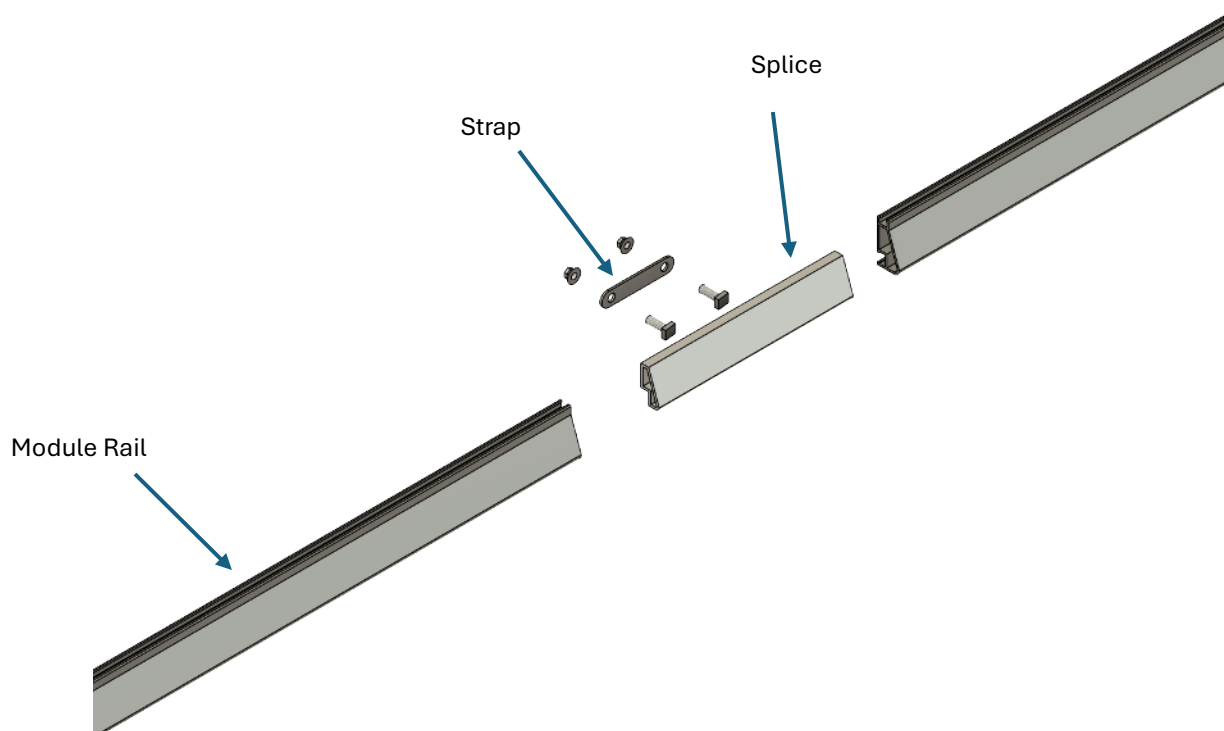
Cross Bar Assembly

1. Attach the Cross Bar to the Davit Arm

- Secure and align each Cross Bar to the Davit Arms at two points using the provided fasteners. Tighten to 250 in/lbs.

2. Attach the L-Foot to the Cross Bar

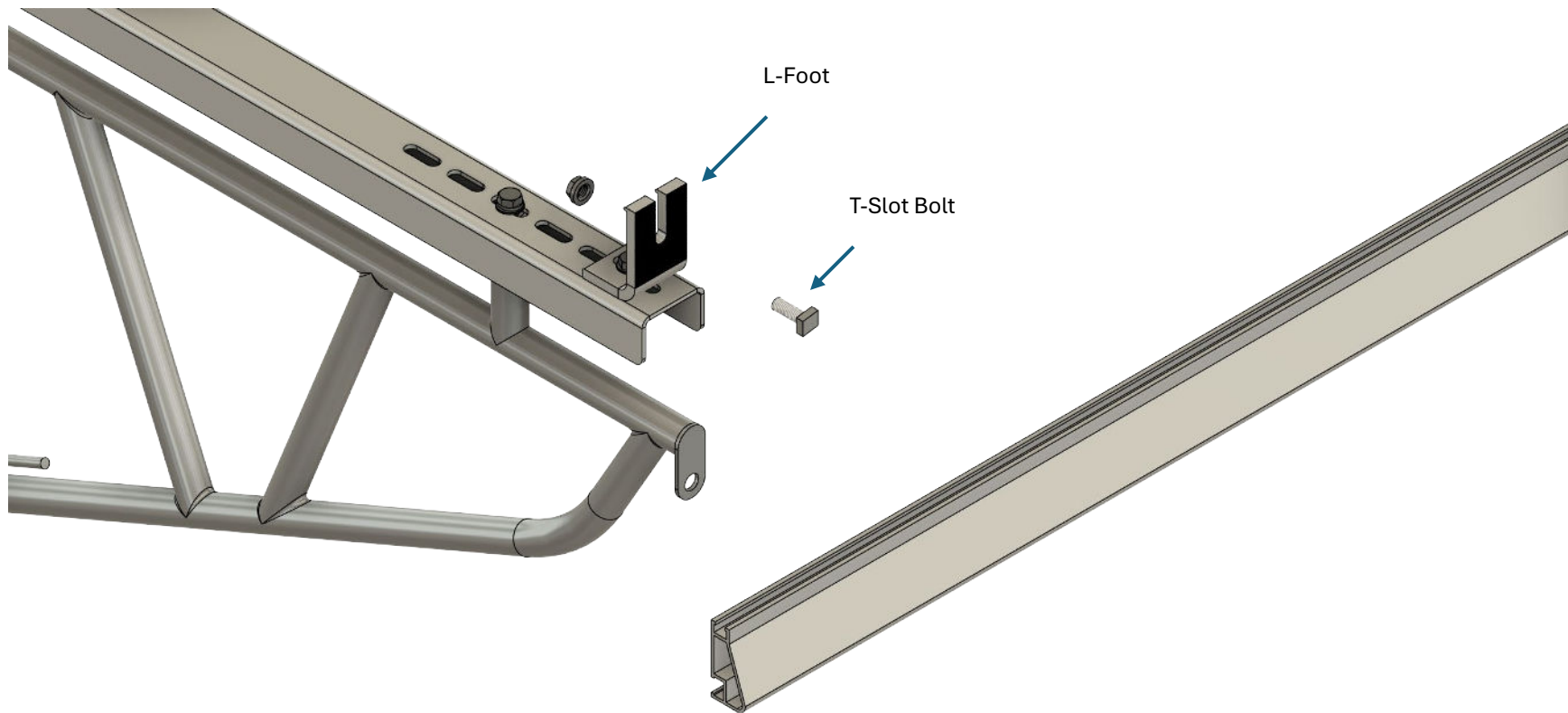
- Secure an L-foot to each end of both Cross Bars using the provided fasteners. Tighten to 250 in-lbs.



Module Rail Assembly

1. **Insert Splice:** Fully insert the splice into the end of the first rail until the central stop tab makes contact with the rail edge.
2. **Connect Second Rail:** Slide the second rail section onto the remaining half of the splice until it also hits the stop tab.
3. **Fasten Strap:** Place strap equal distance across joint and fasten. Torque nuts to 250-in/lbs.

Note: The rails should butt tightly against the tab, creating a minimal gap.



Secure the Module Rails to the Cross Bars

1. Loosely attach the module rails to the crossbars using the T-slot bolts and nuts.
2. Slide the rails to the desired position and torque the nuts to 250 in-lbs.



Module Installation

1. Install the hidden Camo Clamps at both ends of the array. Slide the Camo Clamp(s) into the rail channel far enough to clear the module frame.
2. Align the first module on the rails, ensuring it maintains the minimum 1-inch required setback from the rail ends.
3. Engage: Pull the Camo Clamp towards the rail end at a 45-degree angle until the bonding bolt contacts the module flange.
4. Lock: Rotate the handle upward until it snaps into the rail channel and the bonding pins are fully seated on the frame.
5. Slide the Bonding Module Clamp into the top rail slot and place it flush against the side of the first installed module.
6. Next Module: Slide the second module against the Bonding Module Clamp. Repeat for additional modules.
7. Secure: Ensure the circular clamp is hooked over the top of both module frames.
8. Torque: Tighten the hex nut to 80 in-lbs. using a 7/16" socket.
9. Insert a Grounding Lug T-Bolt into the top slot of each module rail at any point along the row. Tighten the hex nut to 80 in-lbs to ensure a solid bond.

Care and Maintenance

- With proper care, your solar arch and davits will last and look new for a lifetime. Polished stainless steel will develop surface stains if neglected, especially in a marine environment. Periodically clean with soap and water and dry with a soft cloth. After cleaning, polish with a product like Flitz Metal Polish to remove oxidation, rust, and water stains, and provide a protective film.
- Check lifting lines, blocks, slings, etc., for fraying and wear. Replace as necessary.
- Refer to solar panel documentation for care and maintenance.

Warranty and Installation

Martek provides a warranty covering parts only for a period of two (2) years from the date of purchase. Martek expressly disclaims any liability or warranty coverage for installations.

To validate and activate the 2-year parts warranty, the installer must capture and submit exactly three (3) photographs:

- Port view of the installation
- Starboard view of the installation
- Aft view of the installation

Email these photos to **admin@martekdavits.com** for evaluation. All photos must be received within ninety (90) days of the original purchase date. Failure to submit these views will void the warranty.

Warranty Claim Procedure

In the event of a defect in parts within the 2-year warranty period, you must submit a formal claim.

To initiate a claim, email **admin@martekdavits.com** with the following information:

- **Proof of purchase** showing the original purchase date
- **Detailed description** of the alleged defect
- **Clear photographs** documenting the specific issue

Martek will review the claim against the original installation photographs on file. Martek reserves the right to inspect the physical hardware before authorizing any repair or replacement.

Appendix A

