Prior to installation:

1. **Load Carrying Capacity**
   The maximum load includes the combined weight of the solar panels, dinghy, outboard motor, fuel tank, and all gear.
   - **MSD-370 Solar Arch and Davit Set**: 370 lbs total capacity (**185 lbs** max per arm).
   - **MSD-600 Solar Arch and Davit Set**: 600 lbs total capacity (**300 lbs** max per arm).
   - **MSD-850 Solar Arch and Davit Set**: 850 lbs total capacity (**425 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.

3. Rail Mounts (Upper Support)

- **Positioning:** Secure the rail mount to the **upper half** of the davit arm, above the uppermost 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 support.

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 on the inside of 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. The pitching and rolling in active seas will create 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. Bonding

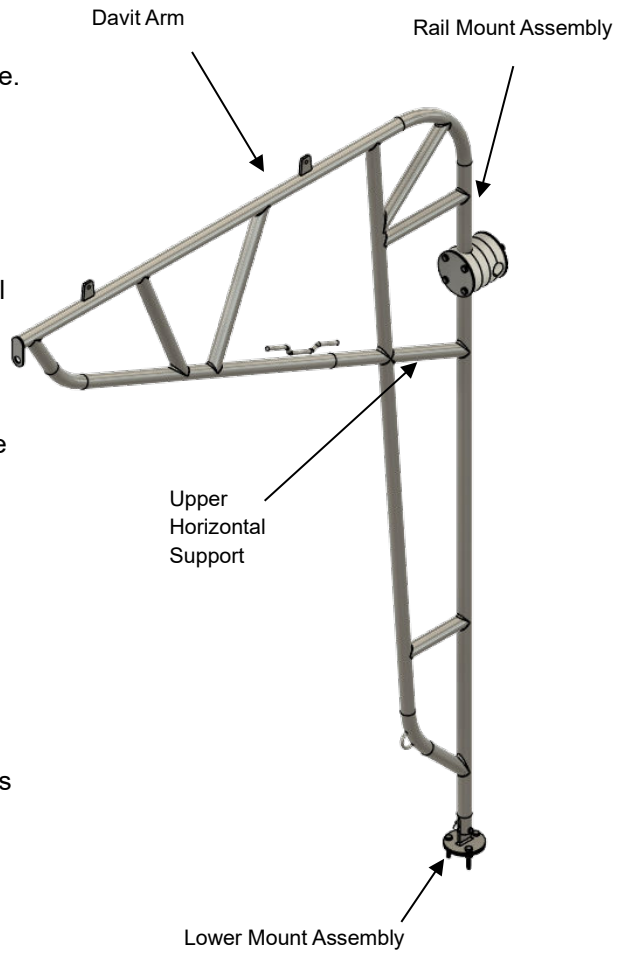
It is recommended that the davits be connected to the boat's bonding system.

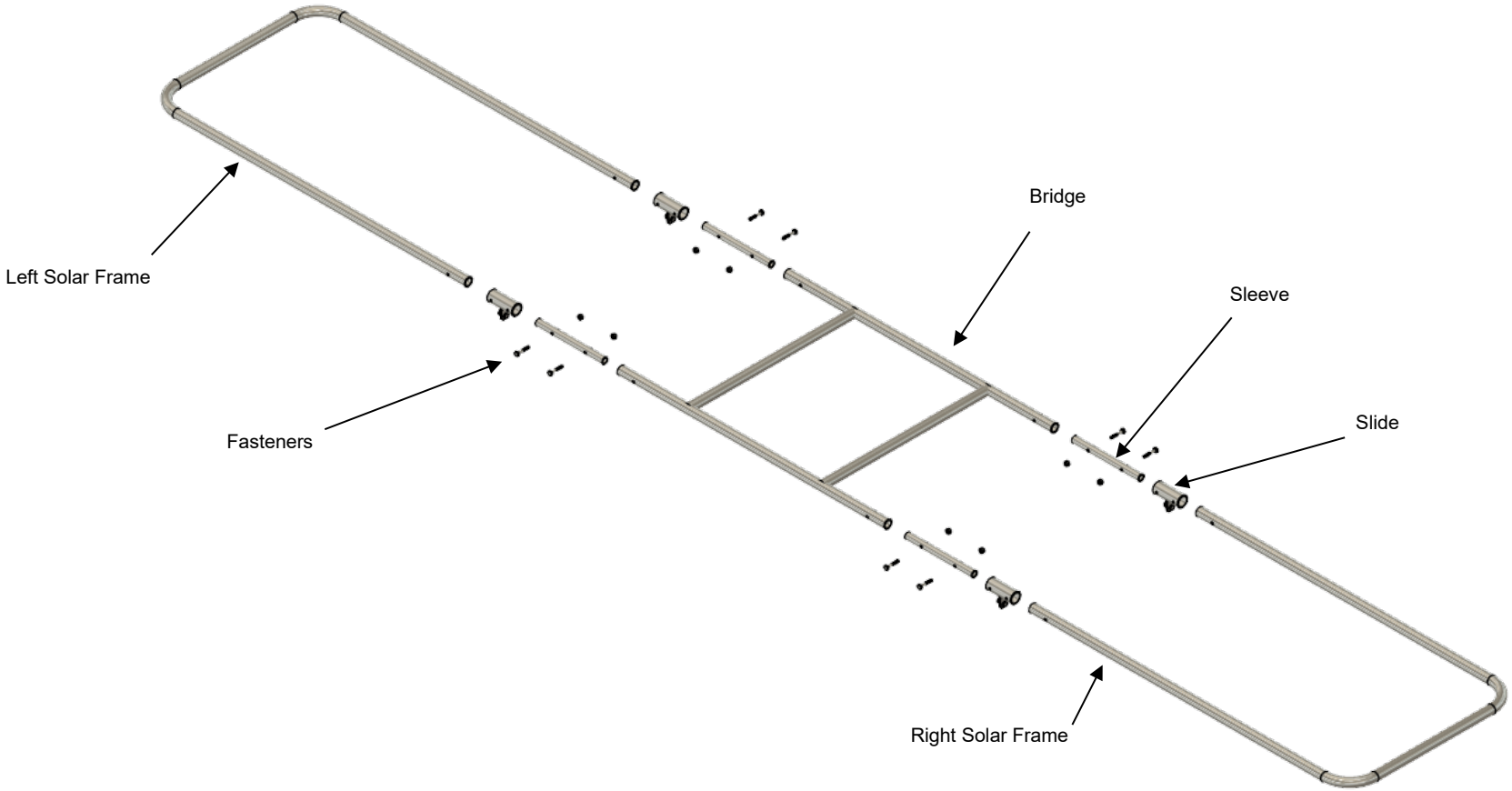
- Safety (Grounding): Reduces shock hazard by connecting metal parts, allowing breakers to trip during a fault.
- Lightning Protection: Offers a path for high-voltage lightning strikes to enter the water.

Installation:

Davit Arms

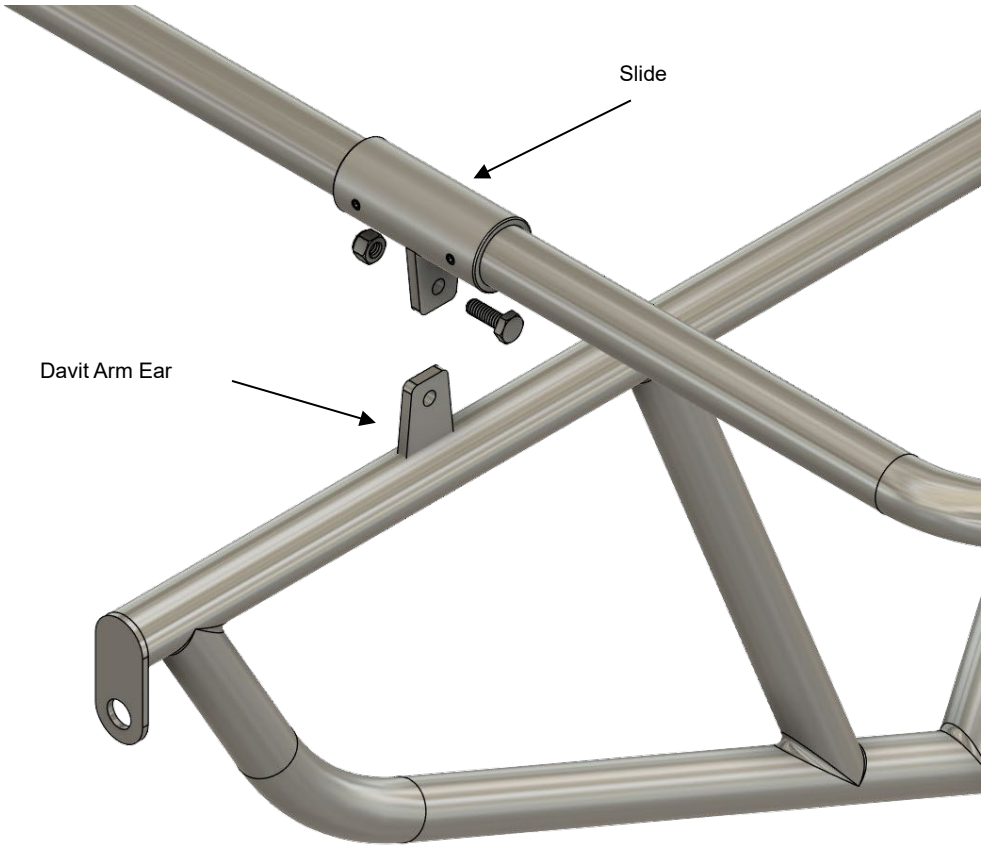
1. **Choose Mounting Locations**
   - Select a suitable spot for the Rail Mount Assembly on the stern rail and the Lower Mount Assembly on the cap rail, deck, or transom.
   - Check for clearance from stanchions and other obstructions.
2. **Prepare Lower Mount Assembly**
   - Temporarily secure the Lower Mount Assembly to the Davit Arm with masking tape.
   - Remove the backing plate and fasteners.
3. **Attach Rail Mount Assembly**
   - Position the Rail Mount Assembly above the upper horizontal support of the Davit Arm and secure it to the stern rail.
   - If installation below the upper brace is necessary, install a support arm to connect the upper portion of the Davit Arm to the stern rail or deck for added strength.
   - Keep the fasteners slightly loose to allow the Davit Arm to slide along the stern rail during alignment.
4. **Align the Davit Arm**
   - Adjust until the Davit Arm is vertical, fore, aft, and side to side.
5. **Mark Lower Mount Holes**
   - Where the Lower Mount base plate meets the cap rail, transom, or deck, cover the area with masking tape.
   - Mark the hole positions.
6. **Drill Mounting Holes**
   - Drill holes as perpendicular as possible for proper backing plate alignment.
   - Seal any exposed core to prevent water intrusion.
   - Test fit the base plate, backing plate, and fasteners to confirm alignment.
7. **Prepare Mounting Surfaces**
   - Remove masking tape from Lower Mount Assembly.
   - Prepare surfaces according to your marine sealant manufacturer's instructions.
8. **Bed and Install Lower Mount**
   - Apply sealant to the entire base plate surface so it squeezes slightly from all edges when tightened.
   - Install the backing plate and fasteners, then tighten securely.
   - Wipe away excess sealant for a clean, smooth joint.
9. **Insert the Davit Arms**
   - Slide both Davit Arms onto the Lower Mount Assemblies.
10. **Tighten the Rail Mounts**
    - Tighten the Rail Mount Assembly fasteners—do not over-tighten.





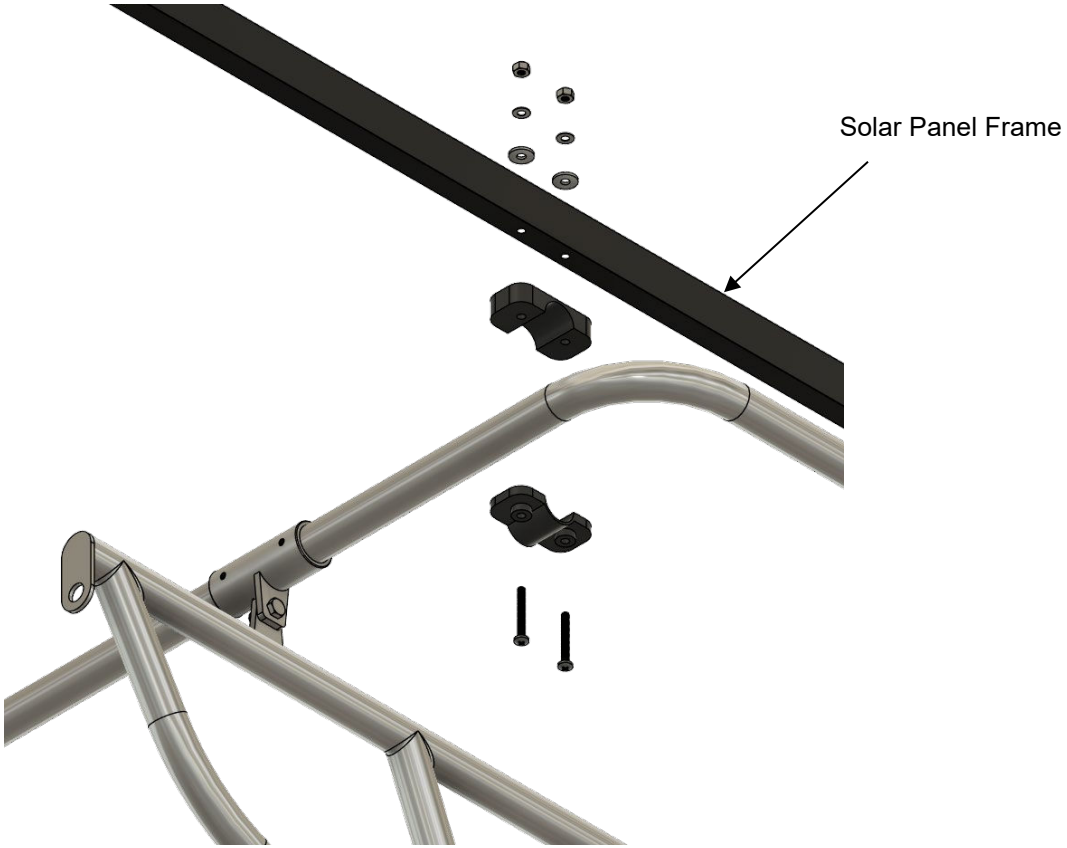
Solar Frame Assembly

1. **Attach Sleeves**
    a. Secure the Sleeves to the Bridge at four points using the provided fasteners.
2. **Insert Slides**
    a. Slide two Slides onto each Solar Frame. Leave the set screws loose for adjustment later.
3. **Connect the Solar Frames to the Bridge**
    a. Attach the left and right Solar Frames to the Bridge using the provided fasteners.



Mounting the Solar Frame to the Davit Arms

1. **Place the Solar Frame**
    a. Set the Solar Frame and Slides onto the Davit Arm Ears.
2. **Secure the Slides**
    a. At all four locations, attach each Slide to the Davit Arm Ear using the provided fasteners.
3. **Position and Tighten**
    a. Adjust the solar frame so it is evenly centered over the Davit Arms.
    b. Tighten all set screws securely.


Solar Panel Frame

Care and Maintenance

- With proper care, your davits will last and look new for a lifetime. Polished stainless steel will develop surface rust 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.

Solar Panel Installation

1. **Drill the Solar Panel Frame**
    - Drill holes in the solar panel frame according to the *Hole Pattern for Solar Panel Frame* drawing.
2. **Attach the Solar Panel**
    - Use four Solar Panel Rail Mounts per panel to secure the solar panel to the frame.
3. **Install Nylon Washers**
    - Place a nylon washer between the solar panel frame and each locknut.
    - This prevents corrosion between dissimilar metals.