



**Suntactics sTracker Solar Tracking System  
Owners Manual and Installation Guide**

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# Introduction

Thank you for purchasing the Suntactics sTracker solar tracking system. You will be pleased with the power output that a solar tracker can provide. Solar tracking increases solar output up to 40% over fixed installs.

The Suntactics solar tracker aims its solar panels at the sun all day long. It is robust and reliable using self lubricated bearings and standard, low power actuators, for longevity. One sTracker can produce over 10kWatt/hours a day in mid to southern latitudes spring to fall. This will really give your air conditioner a break for you folks living in hot climates. The panels are also very easy to reach for cleaning and removable for very high winds and hurricane preparedness.

Please read through all the instructions before attempting to install. There are many little items that should be completed in sequence.

Although, these instructions cover a lot of ground, there are items in which will require your own ingenuity and expertise.



## SAFETY INSTRUCTIONS



**FAILURE TO FOLLOW THESE WARNINGS MAY RESULT IN SERIOUS INJURY AND/OR PROPERTY DAMAGE.** Owners must insure there is adequate space and clearance for the solar tracker for safe operation and damage prevention.



### WARNING

FAILURE TO FOLLOW THESE WARNINGS MAY RESULT IN SERIOUS INJURY AND/OR PROPERTY DAMAGE.

Owners must insure there is adequate clearance for the tracking device.

Do not climb on the tracker.

When adjusting post level, be aware of hand injury.

When installing the solar tracking structure, be aware of head injury.

Do not allow children to play around or adjust the solar tracking system.

Do not leave any obstructions near the solar tracker (i.e. a ladder)

When interconnecting to the grid, consult with a local code inspector or professional electrician.



### SAFETY INSTRUCTIONS



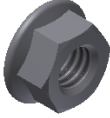

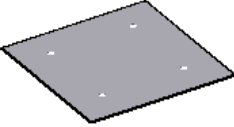







**FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN SERIOUS INJURY, PROPERTY DAMAGE AND WILL VOID WARRANTY.**

To ensure safety, do not attempt to assemble this system without following the instructions carefully. If in doubt, contact us immediately

- When using a ladder during assembly, use extreme caution.
- Two people are recommended for assembly when mounting solar panels.
- Before digging, contact your utility company to locate underground power cables, gas and water lines.
- Ensure there are no overhead lines within the area..
- Be aware of head injury during and after installation.
- When connecting to the grid, be cautious of electric shock from the service panel.
- If technical assistance is required, contact Suntactics directly
- Minimum ground clearance is 20'x 20 and 12' in height.
- Inverter output must connect to a 20 Amp breaker.

## Hardware Identifier Parts

Note: Some hardware parts may be pre-installed.

			
<b>(E) 1/4-20 Nut (4)</b>	<b>(F) 5/16-16 Nut (5)</b>	<b>(H) 1/4-20 Washer (4)</b>	<b>(I) 3/8-16 Washer (8)</b>
			
<b>(L) Wood Template (1)</b>	<b>(M) Cotter Key(4)</b>	<b>(N) Actuator pin (4)</b>	<b>(O) N/S hitch pin (1)</b>
		<b>UBolt not shown</b>	<b>Misc wire restraint items(tie wraps, sheeth, etc)</b>
<b>(P) E/W hitch Pin (2)</b>	<b>(Q) Lock Pin (3)</b>	<b>Square Ubolts(8)</b>	
			
<b>(T) Panel rail cap RT (4)</b>	<b>(U) Panel rail cap LFT (4)</b>		

## Post Installation

Perhaps the most important step of the installation is anchoring the vertical post. There are a few ways you can do this. One way is to build a pier with a hole which is illustrated here (fig 1). Another way to is to place the post on a cement pad. Recommend pad size is 6'x 6'x 6" with an additional 6" deep skirt around the perimeter. We have had customers just mount it to an existing thick driveway like pad using Anchor bolts.

With all projects like this, you may want to check with your local permitting department before proceeding. Regardless, constructing a pier that consists of a 3-4 foot deep hole filled in with concrete, reinforced rebar, and L-bolts should be sufficient.



### **WARNING**

**Before digging hole, check for buried power, gas, water, and telecommunication lines! Failure to do so could result in serious or fatal injury! Contact your local utility company if unsure.**

# Mounting the Post

Some items that are required to build the base

		
<b>3 foot (1/2") Rebar, 4 pcs</b>	<b>Concrete</b>	<b>Post Hole Digger</b>
		
<b>12" – 14", 5/8" L-bolt (4)</b>	<b>5/8-11 Nut (12) Galvanized</b>	<b>5/8-11 Washer (12) Galvanized</b>

The typical way to mount post is on a round concrete pier. 24" diameter and 4' deep.



Fig1

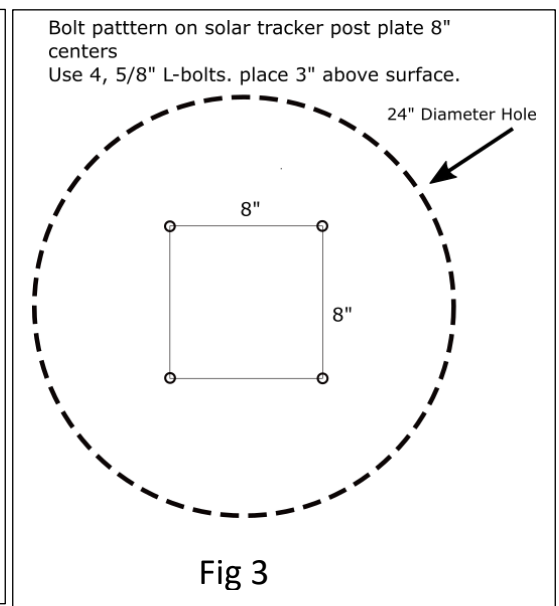
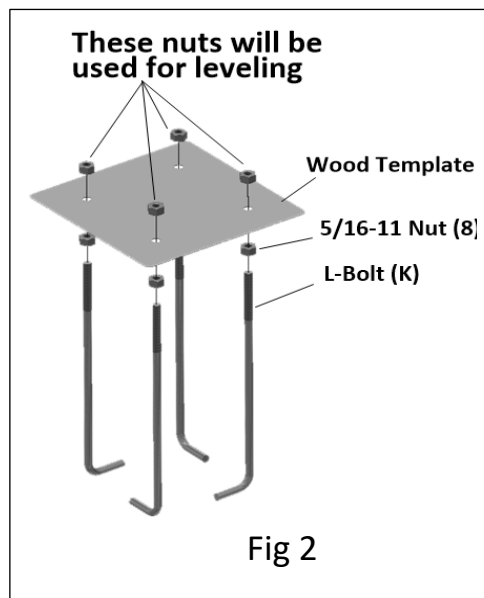
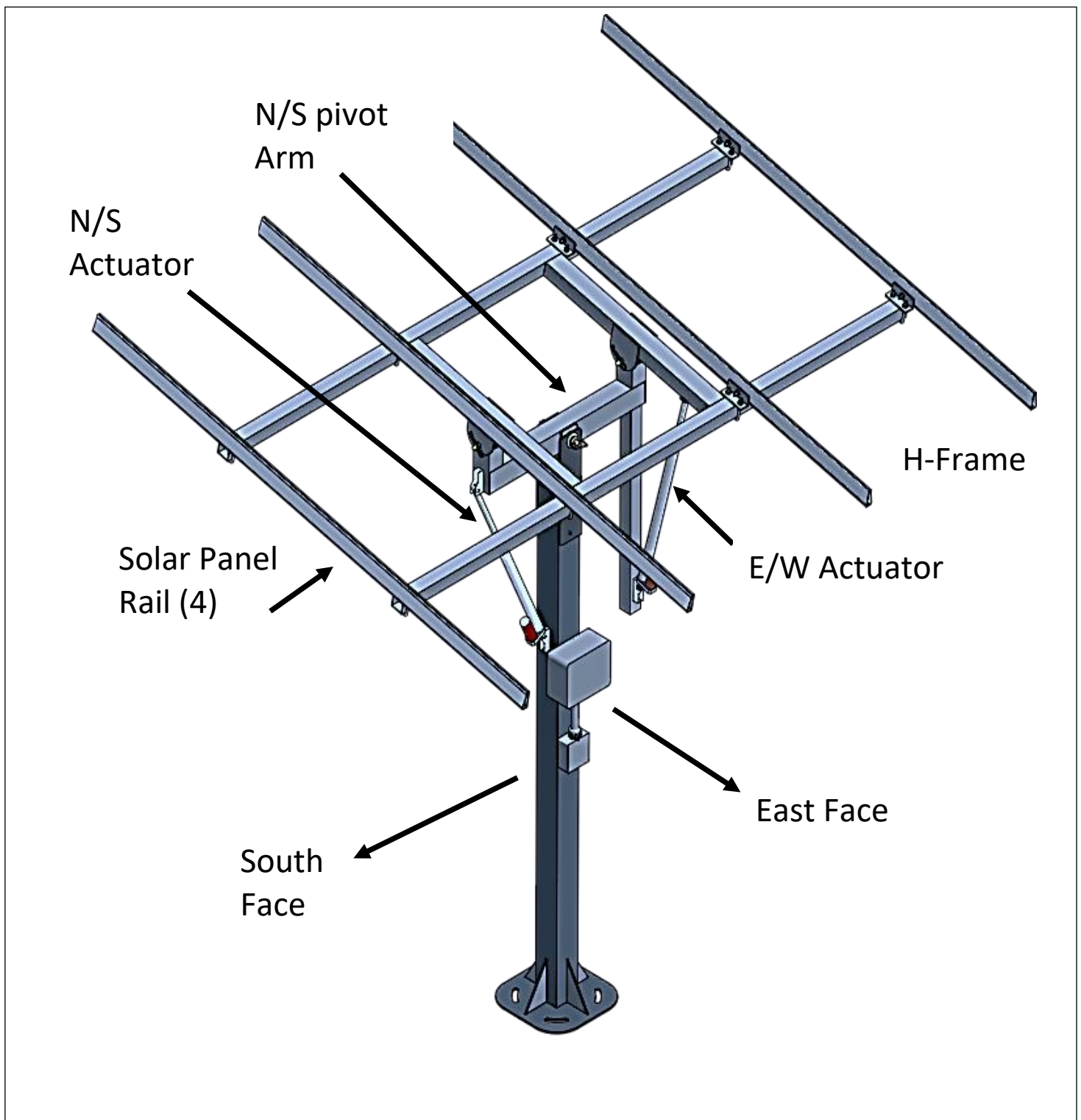


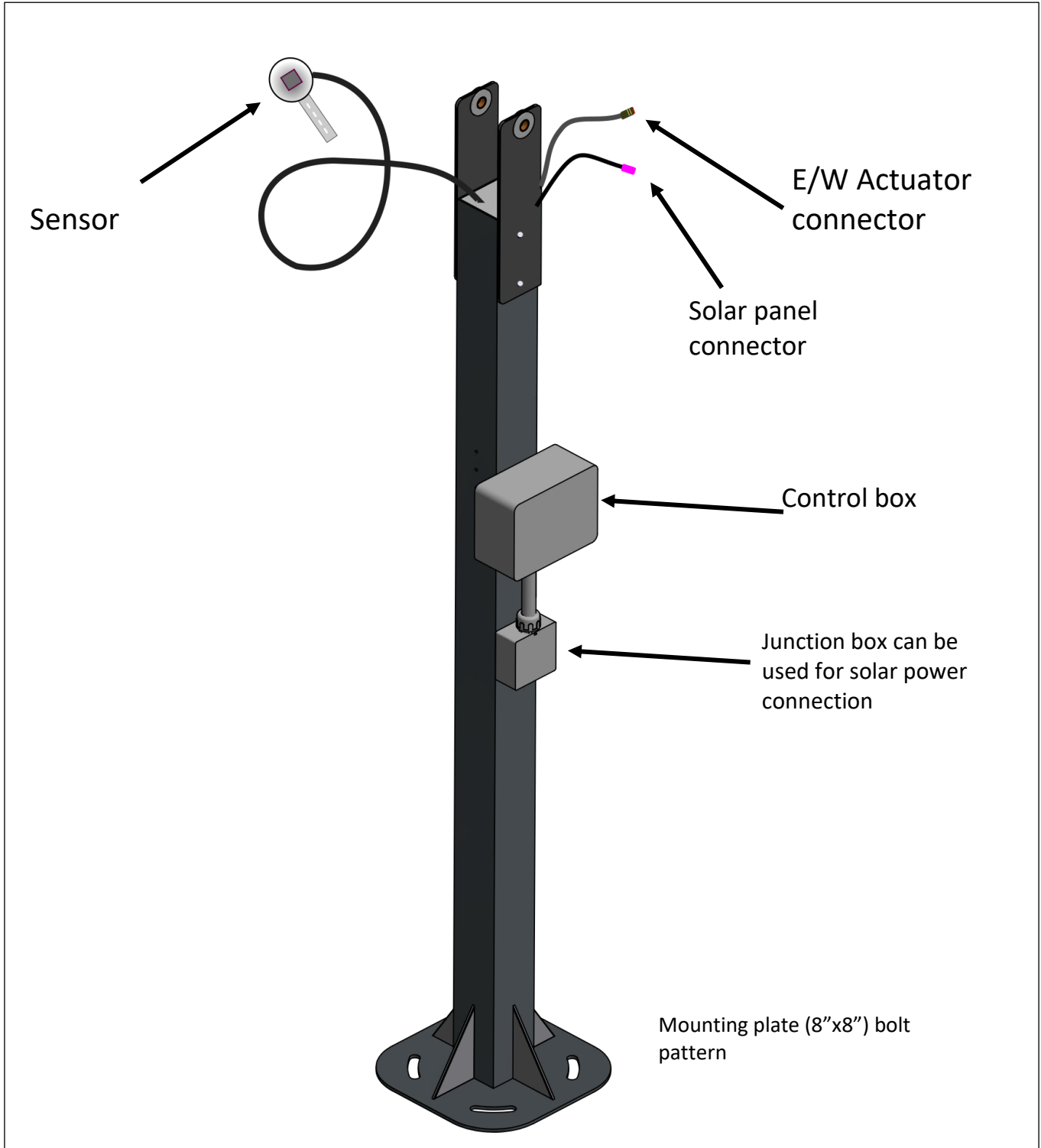
Fig 1 Shows the tracker post mounted to a round pier using a tube mold found in most hardware stores. The l-bolts are embedded into the concrete before it sets up.

## Solar Tracker Frame Components

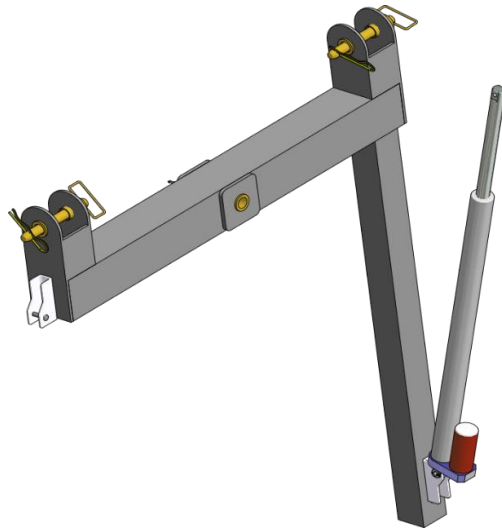




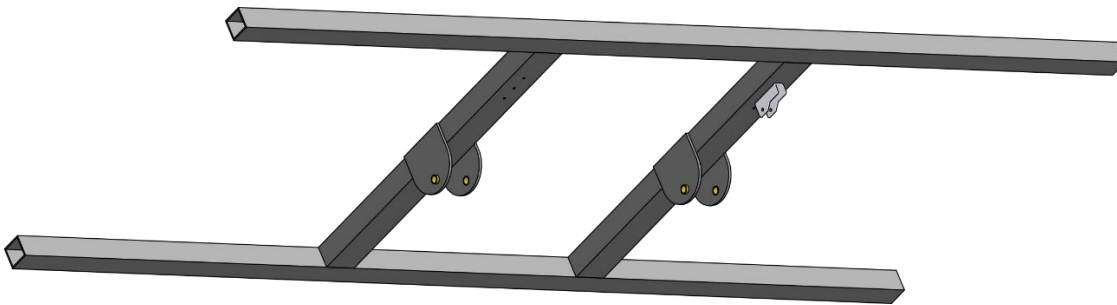
## Main Post



## North South Pivot Arm








## H-Frame



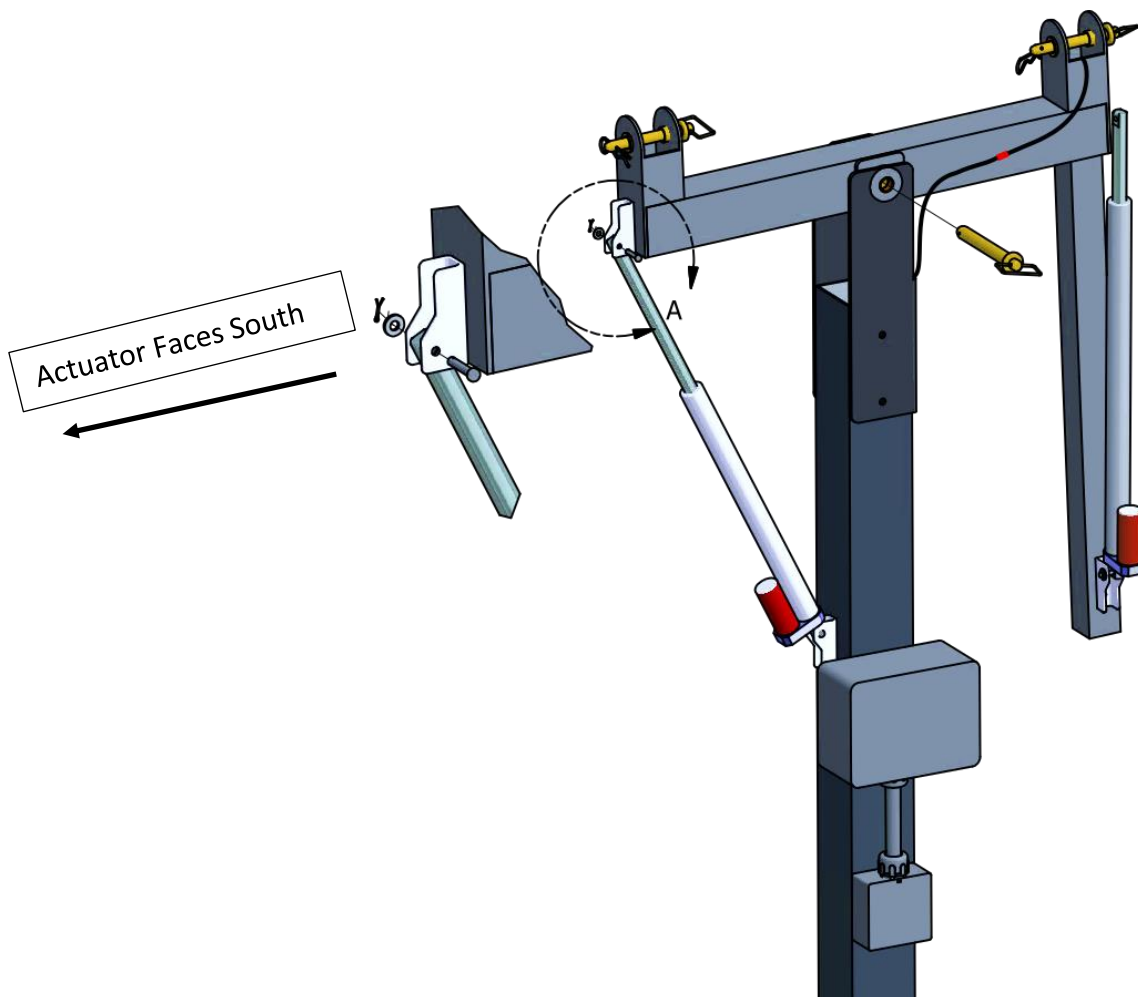
## Solar panel Rail (4)








## North South Pivot Installation

				
1/4" pin	1/4" washer	Cotter pin	Hitch pin 5/8" (2)	Hitch pin lock key

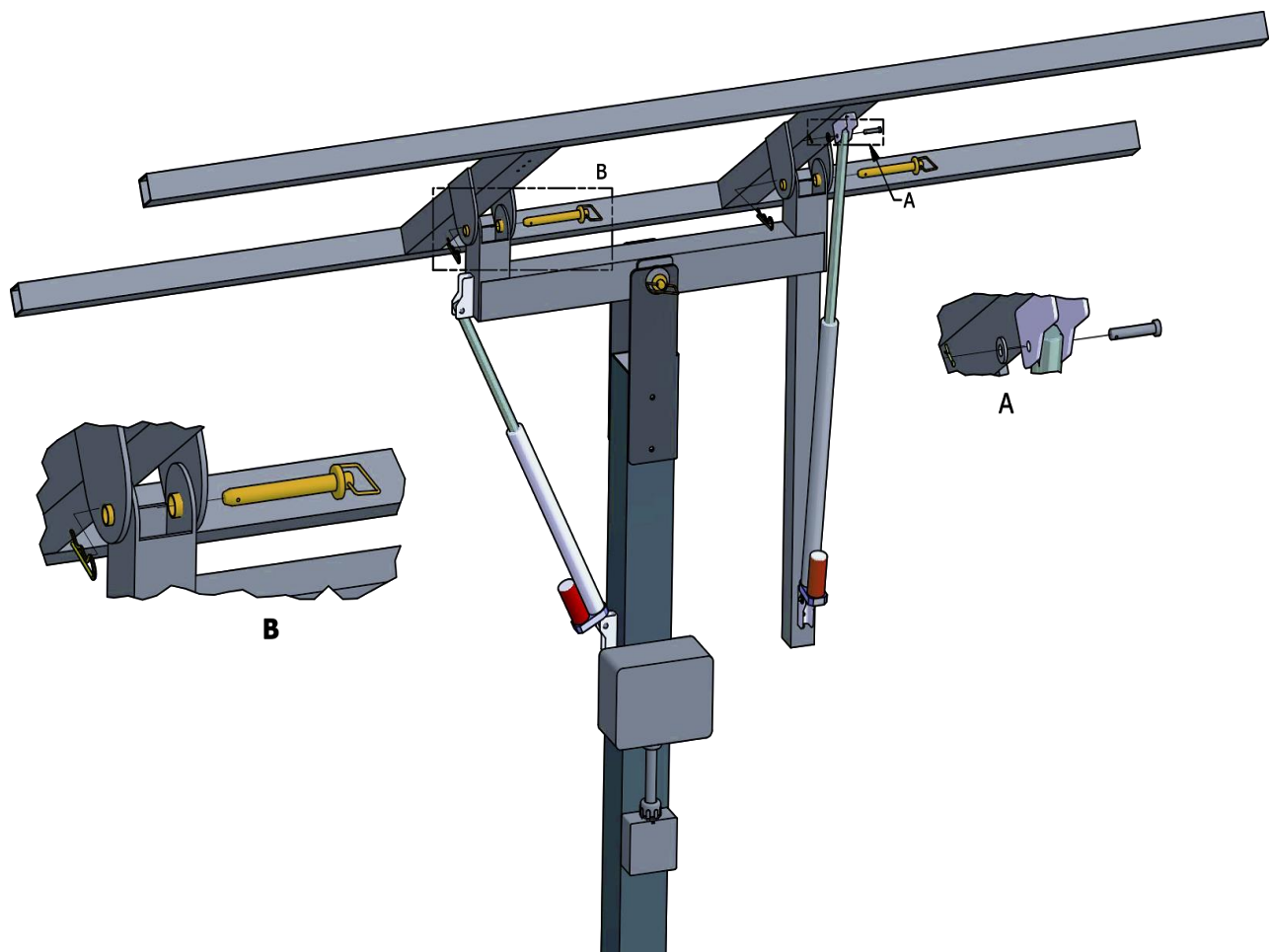
Lift Pivot arm to top post, align with bearings and install main pin. Connect actuator shaft with through hole pin, add washer and cotter pin. connect actuator motor cable.



## H-Frame Installation to North South Pivot Arm

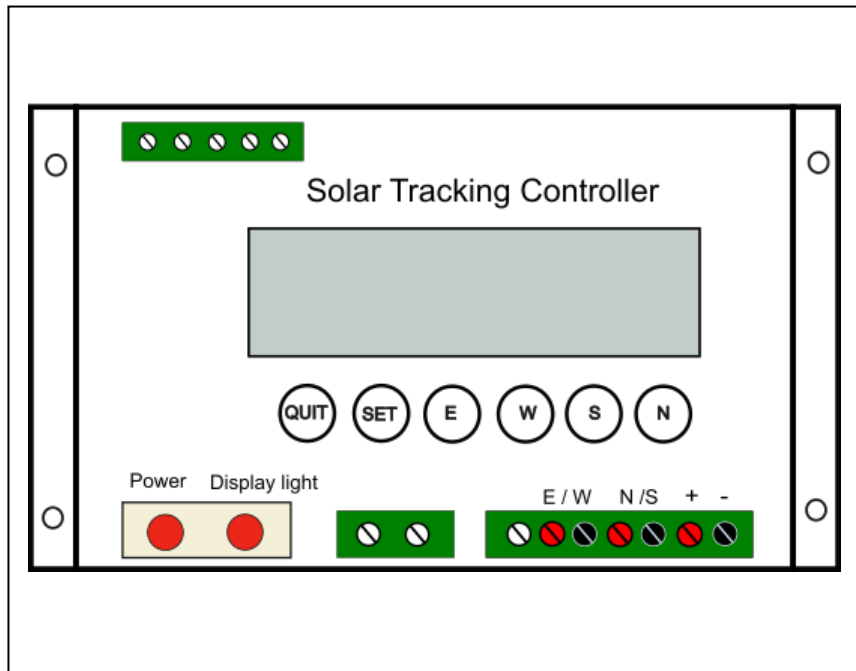
				
1/4" pin	1/4" washer	Cotter pin	Hitch pin 3/4"	Hitch pin lock key

Once the Pivot bar is in place, its time to mount the H-Frame. There are four thrust washers placed on each side of the upright pivot bar plates. Be careful not to drop them, they are attached in place with grease. Using two people, slowly maneuver the h-frame into position, insert the hitch pins and attach the lock pins. Once the h-frame is in place, attach the actuator shaft to the bracket with the pin included, washer, then cotter pin.

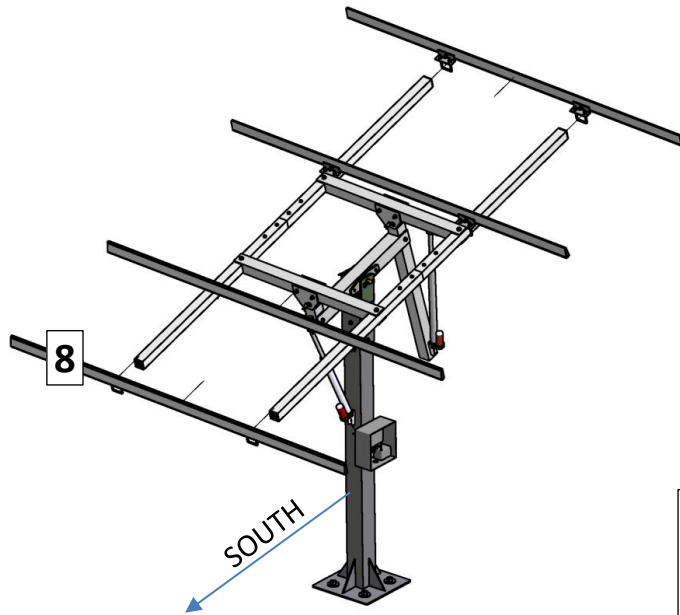


# Solar Controller Setup

Being able to move the actuators is necessary for the upcoming installation procedures. To do this, momentarily push the “Set” button. Use N, S, E, W buttons to move the tracker. Pushing the Quit button puts the controller into Auto mode. If the sensor is installed, the solar tracker will track.

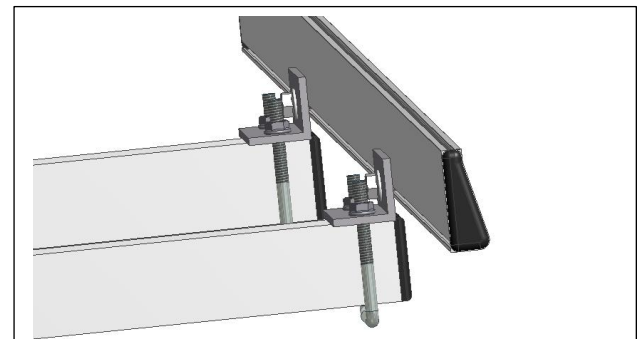


## Solar Panel Rail Installation

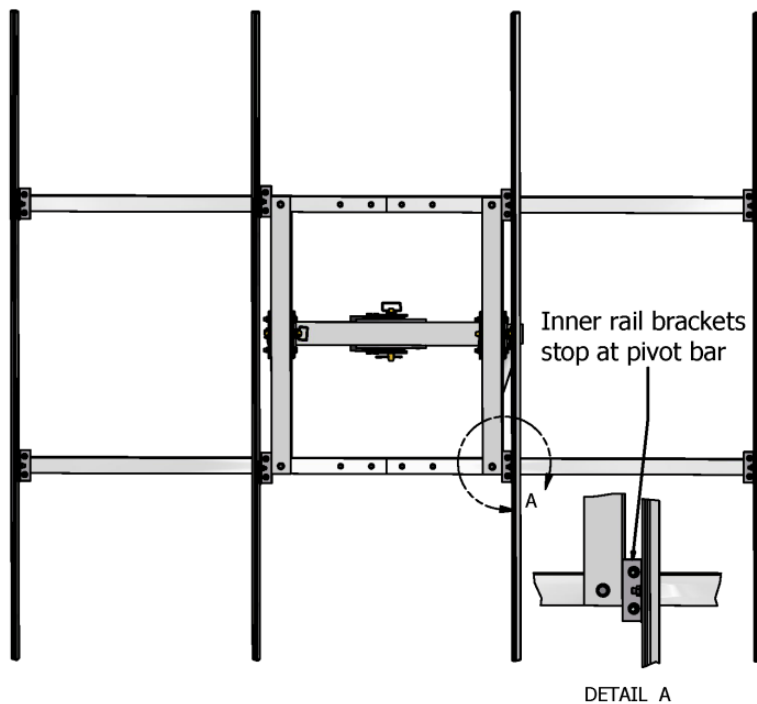


Slide panel rail Square-bolts onto panel beams. Loosen the “L” bracket nuts as needed to center rails to the beams. Evenly space the rails side to side.

Note: The rails mount the opposite direction on each side of post.



Mount outer I-brackets flush with end of square tube



# Solar Panel Installation


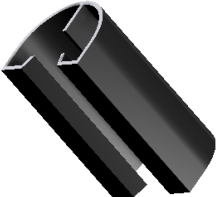
Two people are recommended to lift the panels onto the rails.

Adjust the tracking structure to a flat position and place all four panels on top. Or one at a time depending on your preference and the mounting clips you are using.

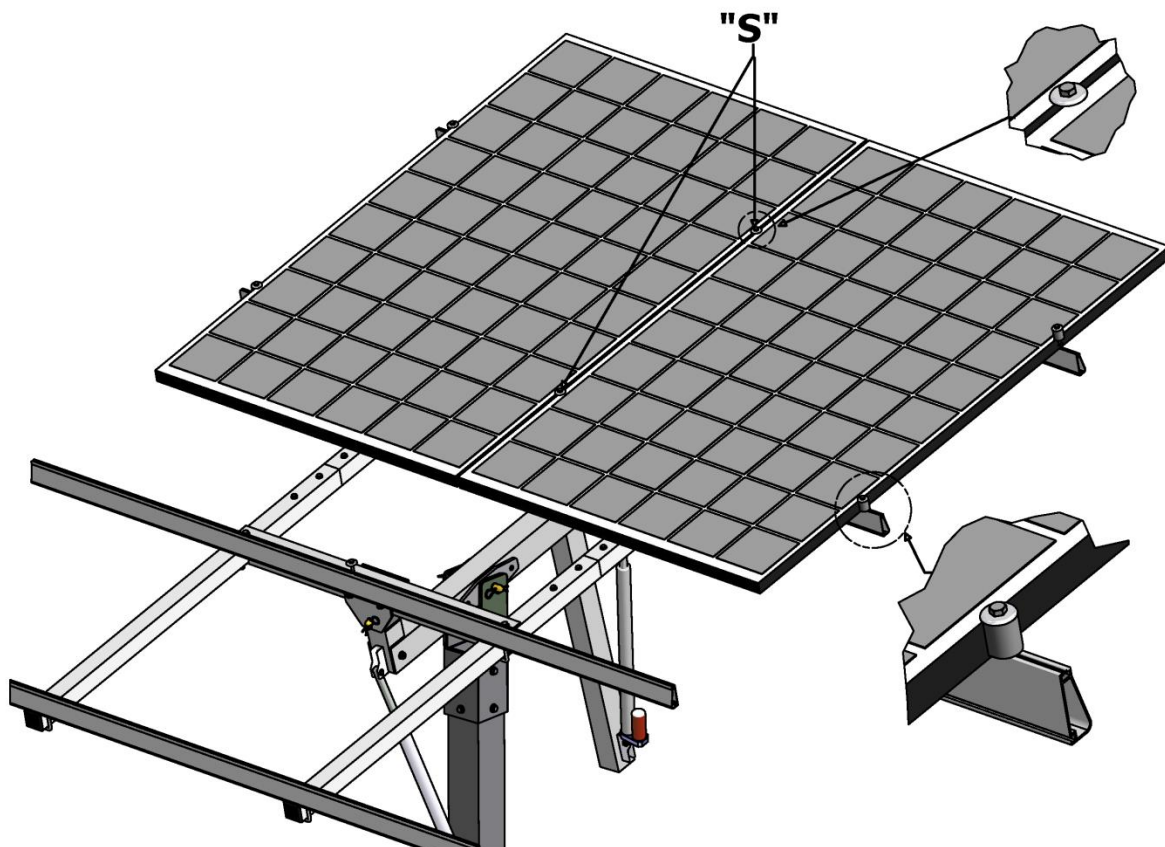
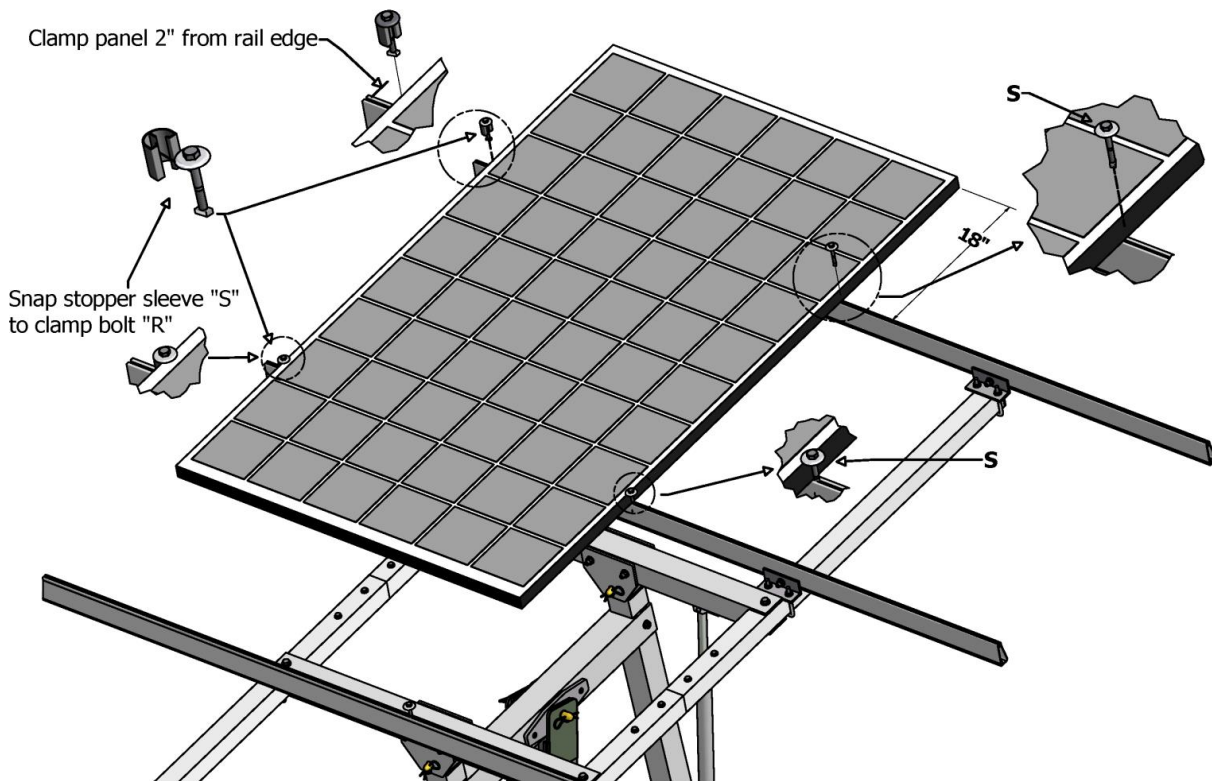
Once all four solar panels are placed on top of the solar tracker, they need to be moved around and centered. The center of the four solar panels joined should be close to the center of the post. Using a tape measure or long ruler, move the panels around until they are all centered on the structure. They should also be centered on the four panel rails with about a 2” clearance on each end.

If you purchased the full solar tracking system with panels, all the clamping fasteners are included. If you purchased the solar tracker alone, you may need to use Ironridge mounting hardware. The solar tracker frame includes Ironridge rails.



Typical solar mounting hardware for securing solar panels to solar tracker. These are not included with solar tracker “frame only” configuration. You will need to provide your own clamps depending on the solar panels you choose. These illustrations are Ironridge solar panel fasteners.

	
R - panel clamp (12)	S - Panel sleeve (8)

## Panel mounting illustrations/examples:

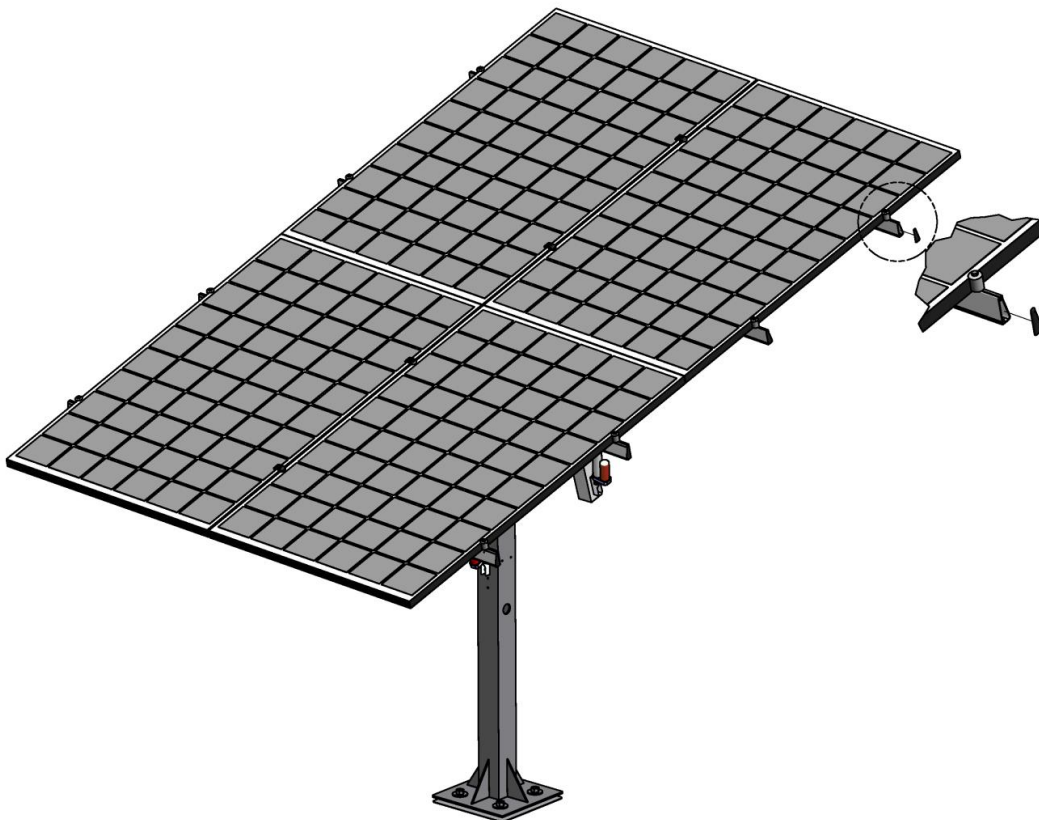




	
<b>T – (4)</b>	<b>U – (4)</b>

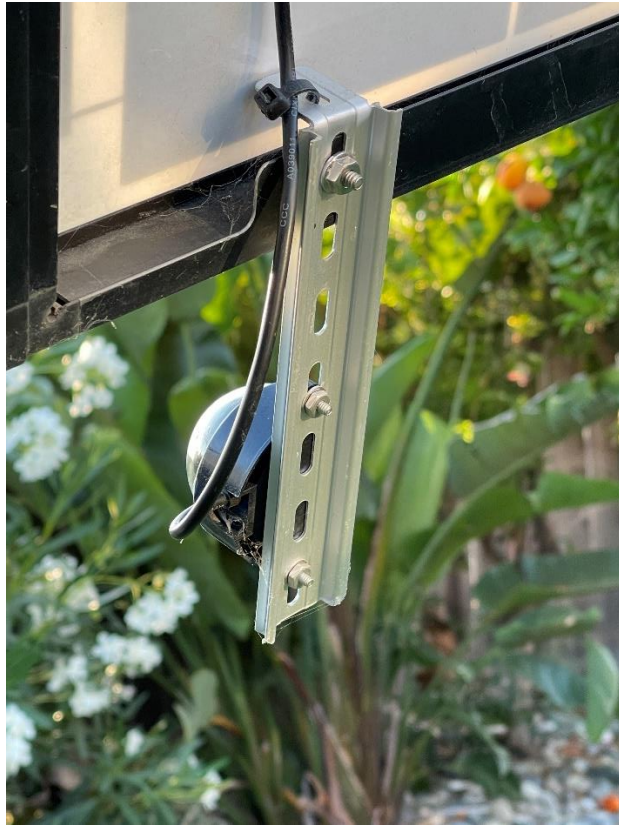
Once all panels are in place check all clamp bolts for snugness. Install the 8 plastic end caps. The solar tracker main assembly is now in place.

One panel is tapped to charge the tracking controller battery. The power needed from the one panel is minuscule for the electronics power needs. There are two y-connector harnesses that aid for the controller power hook up. Plug two y-connectors to inverter, then plug panel output to y-connectors. Refer to electrical diagram.



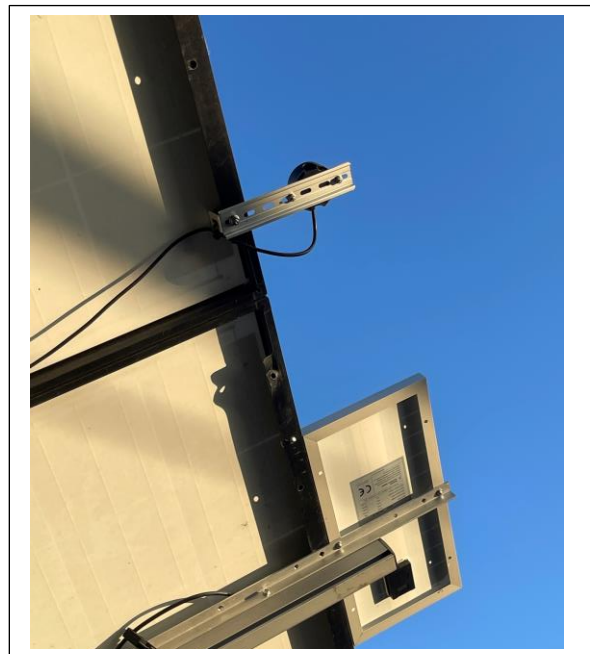
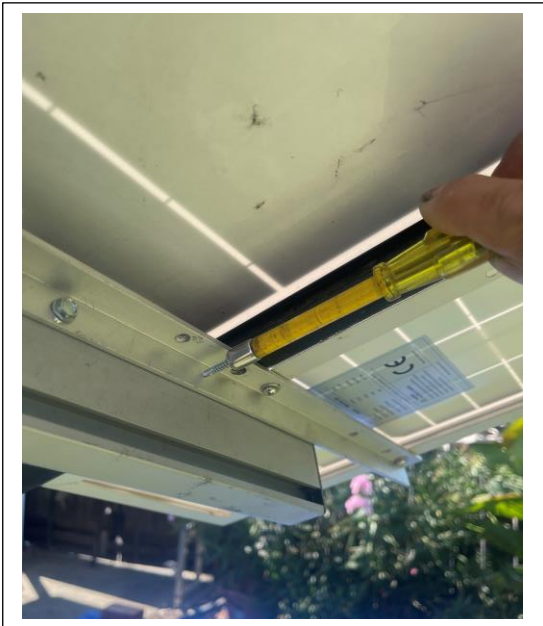
## Tracking Sensor Installation

Find a predrilled hole on the solar panel frame. Simply attach sensor bracket with the provided Bolt and Nut. Use zip ties to secure sensor wire to frame. Note If there is not a predrilled hole, you will need to drill one using a 3/16" drill bit.



## Mount Auxiliary Solar Panel

The solar panel comes with a small I-bracket. You will need to drill a couple holes in the bracket and ironridge solar rail. Mate the solar panel frames against each other (small panel to large panel). You can use double stick tape if you wish but it's not necessary.



# Solar Tracker Control Wiring Diagram

