

# 4WAYSOLAR.COM

## INSTALLATION INSTRUCTIONS



### 4 Way Tilt Kit

# Preparing For Installation

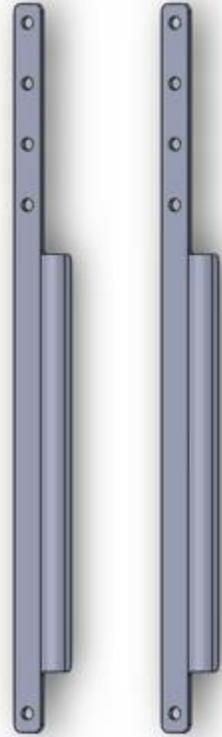
**Before you begin, you should assess your level of mechanical competence. If you are unsure of your competence or if any part of these instructions do not make sense, seek professional advice. If installed incorrectly, personal harm or damage to personal property could ensue. 4 Way Solar LLC will not be held liable for harm or damage caused by improper installation.**

**Never install this system on a surface that is not structurally sound, is rotten, soft, molded, or compromised in any way. If integrity concerns arise, contact an RVNIA Certified RV Inspector before moving forward with install.**

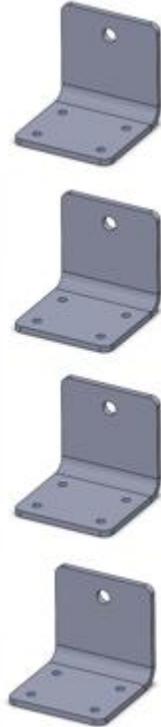
**Never drive with this system in its tilted state.**

**Always inspect all mechanical connections prior to departing.**

# WHATS IN THE BOX



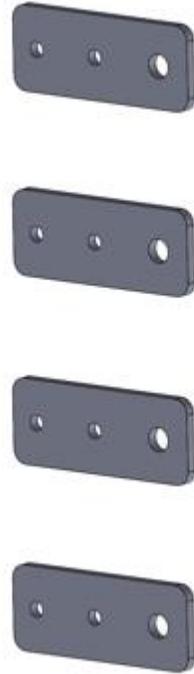
2X STILT



4X ROOF BRACKET



4X ANGLE BRACKET



4X PANEL BRACKET



10X HAND KNOB



8X 1/4" NUT



16X ROOF SCREW



4X DRILL TEMPLATE

# TOOLS NEEDED



MEDIUM STRENGTH  
LOCTITE



10MM WRENCH



10MM SOCKET  
5/16" SOCKET



Self Leveling  
Lap Sealant



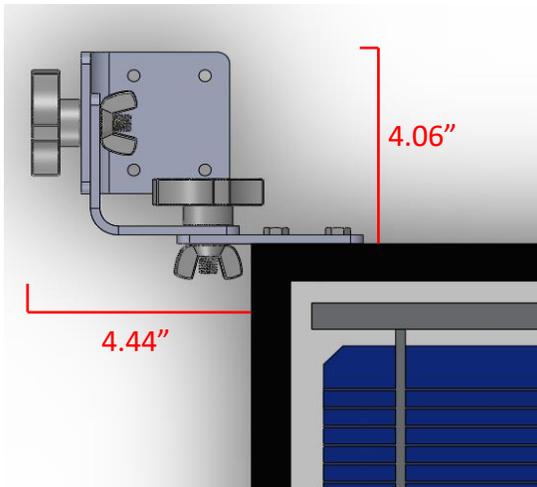
1/4" DRILLBIT



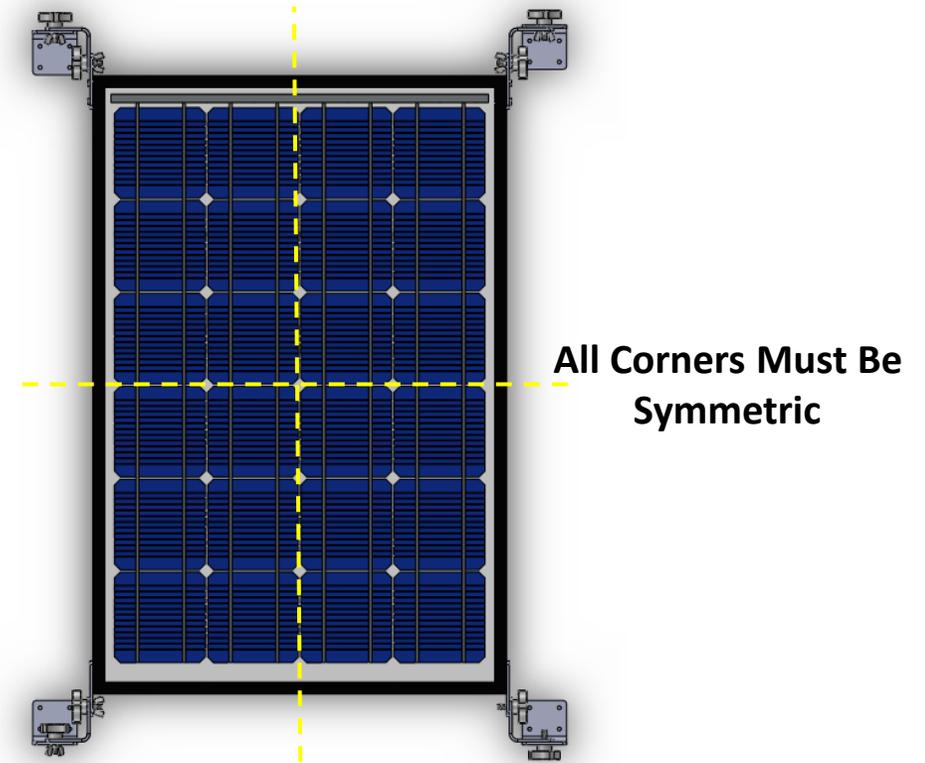
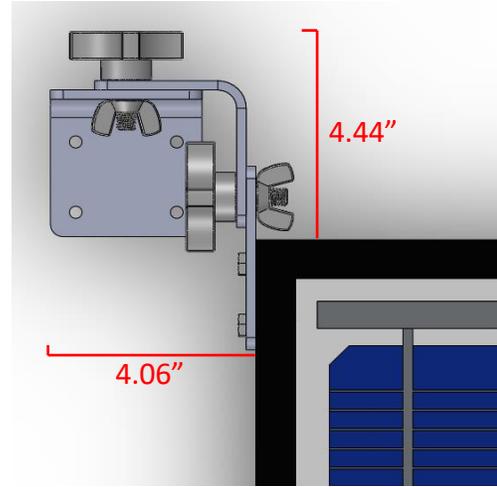
CORDLESS DRILL

# STEP 1: PANEL LAYOUT

a) Determine a layout that works best for your set up. The 4 Way Solar Kit can be mounted in two different orientations as shown below. It is imperative that all 4 corners be laid out in the same orientation; each corner should be fully symmetric to the other 3. Also consider the slight dimensional differences between the two options.



OR



\*If mounting in sets see end of this document

# STEP 1: PANEL LAYOUT

## b) Additional Layout considerations:

### 1. Clearance

- Make sure you don't place the panels too close to other roof mounted appliances.

### 2. Shadows & Spacing

- If you are mounting multiple panels nearby, consider mounting in sets to avoid casting shadows and to maximize your surface area. Otherwise, panels should be spaced a few feet apart.

### 3. Wiring

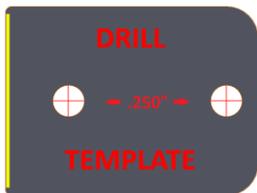
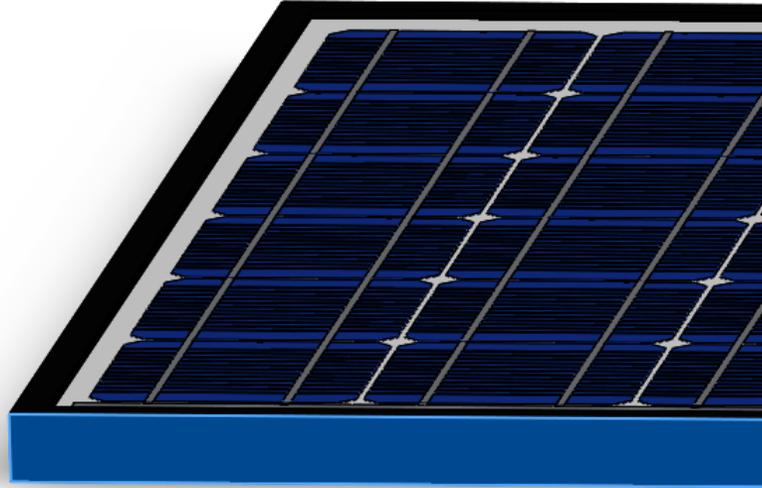
- Don't configure your wiring until step 5.

### 4. Curved Roofs

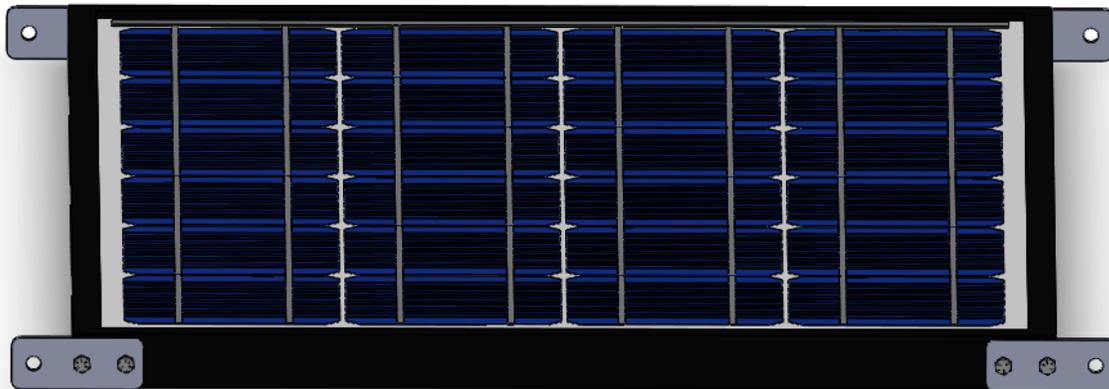
- Many RV roofs are curved; the 4WS tilt kit can accommodate moderate curves. The main concern is bottoming out in the center. This is more prevalent on sets of panels. If you're concerned about this, lay your panel on your roof in the desired orientation and measure the gap caused by the curve. If the gap is larger than 1.5", you may need to add a mounting rail or spacer plate to raise the mounting bracket.



# STEP 2: ATTACH PANEL BRACKETS

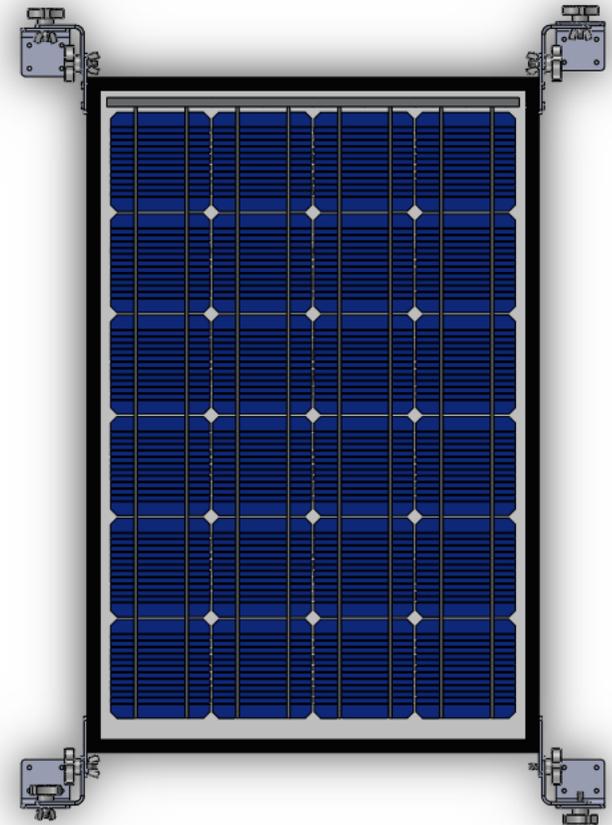
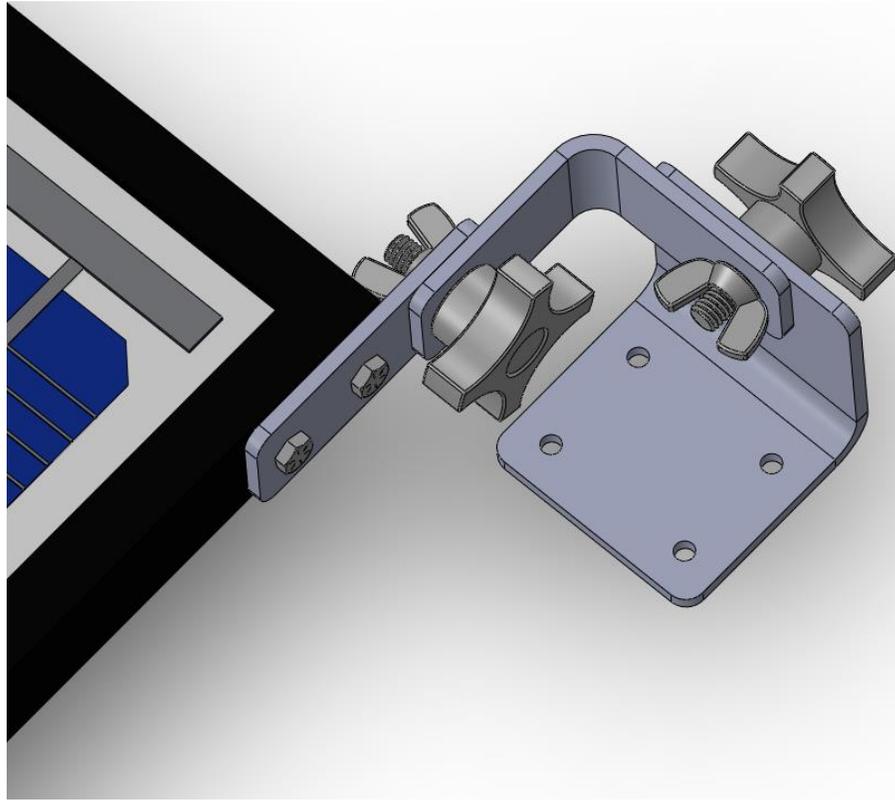


1. Align the yellow edge of the drill template with the corner of the solar panel. Align the bottom of the template with the bottom of the panel (the sticker is top-bottom symmetric, so don't worry if the wording is upside down).
2. Mark the center of the cross hairs with a small drill bit, punch, or pen.
3. Remove the template and drill the holes out to 1/4".
4. Attach the panel bracket with the nuts, bolts, & washers provided. Use Loctite on the threads before securing the nuts to prevent the bracket from coming loose.
5. Repeat for all 4 corners. All brackets should be parallel once installed correctly.



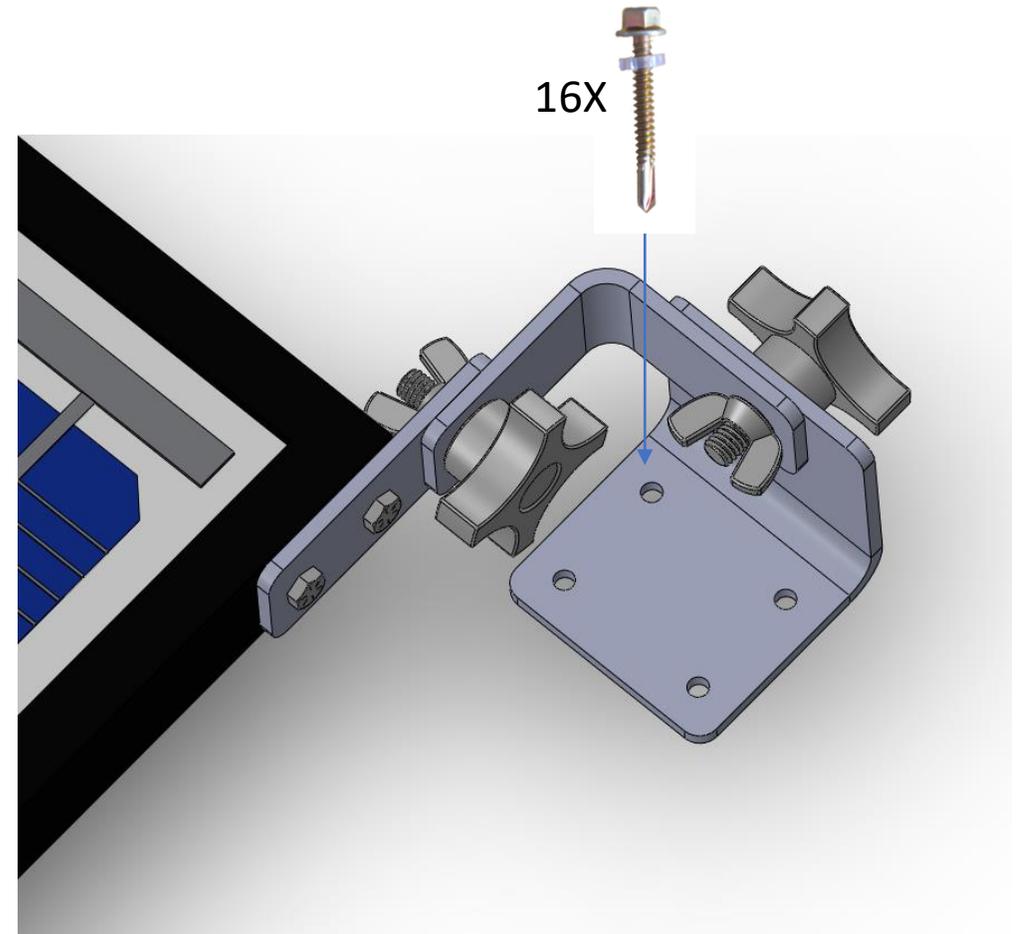
# STEP 3: ATTACH ANGLE & ROOF BRACKETS

Using the threaded knobs & wing nuts, attach the angle brackets & roof brackets as shown:



# STEP 4: SECURE SYSTEM TO ROOF

1. Lay the panel in the desired location and ensure the roof brackets are flush with the roof. Ensure all wing nut connections are tight.
1. Secure the roof brackets with the provided roof screws and the 5/16" socket. Don't over torque or strip out the screws, as soon as the neoprene washer begins to depress, stop tightening. If you need to remove one of the screw knobs to access the inner most roof screws, do this last, after you have secured at least 2 screws per bracket.
2. Use the self leveling lap sealant around the edges and on top of the screws to seal against water.



# STEP 5: CONFIGURE WIRES

You are almost done! The last step is to make sure that your wiring has enough movement to accommodate tilting in all directions. To do this, locate the wiring block on the back of your panel, it is usually offset from the center towards one end. Tilt this end of the panel to its highest position. From this tilted position, you can finish your wiring, and know that it will always have enough slack to reach the max tilted state.



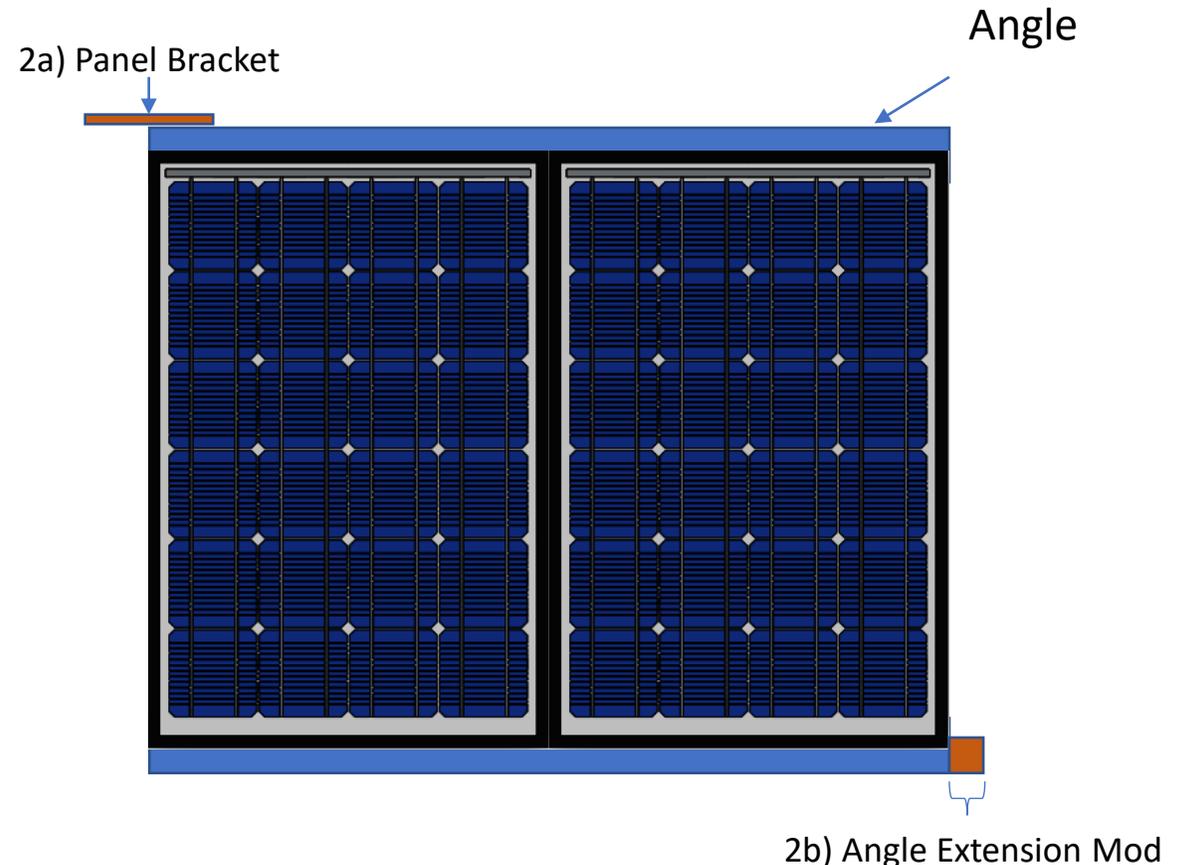
Tilt this end of the panel before finishing your wiring.

Wiring block

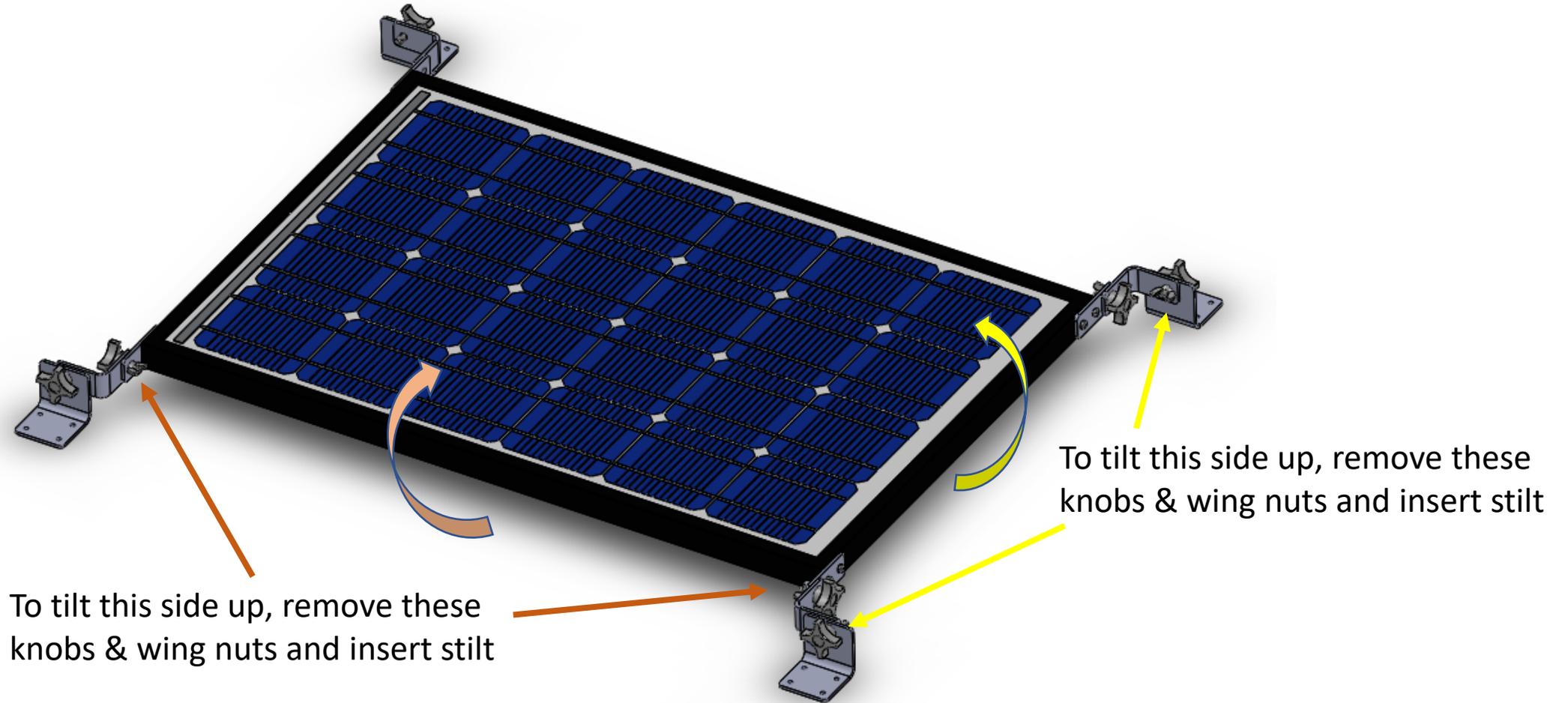
# Alternate Step 1: Mounting in Sets

Mounting your panels in sets can be a good option if you have limited surface area, want to limit the amount of time it takes to tilt your panels, or want to get the most value out of your 4 Way Solar tilt kit. This method will require a bit more customization, and you'll also need a few extra materials and tools. As noted in step 1b, on curved roofs you'll really need to watch out for bottoming out the center (1.5" gap rule still applies). If the gap caused by the curve of your roof is greater than 1.5", you'll need to add a mounting rail or spacer plate to raise the whole system.

1. Using 2 pieces of aluminum angle (I recommend 3/16" thk), rivet or bolt the panels together with the angle on the bottom side of the panels.
2. For the panel bracket you have 2 options:
  - a) Bolt the panel bracket on as described in previous steps, sandwiching the angle in place.
  - b) Extend the angle out 2" and drill a 7/16" hole to replace the panel bracket (You may need to trim away the lower flange for hand knob clearance).
3. For a more detailed video visit <https://www.4waysolar.com/learn>



# How to tilt your panels



# You're all set!

At this point, you should be ready to get started with 4 Way tilting! Be sure to periodically check your wing nut connections, especially after lowering them from being tilted. It's also a good idea to get in the habit of cleaning your panels periodically while you're up on the roof, as dirty panels can degrade your power output.

If you have any difficulty with installation, please feel free to reach out at any time. You can reach me at:

[Neil@4waysolar.com](mailto:Neil@4waysolar.com)

(520) 505-1225

Finally, let us know where this system takes you! Keep in touch with us on Facebook or Youtube and send us some shots of your epic camping spots. We would also greatly appreciate any feedback you can provide on the system or the installation, as there is always something to improve!

Happy Adventuring!