PowerFilm SOLAR

ASSEMBLED IN THE USA

400W Kenworth T680 Fairing SuperFlex Solar Panel with Integrated Edge Seal Installation Instructions

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Required Materials

To complete the installation of the 400W Kenworth T680 Fairing Solar Panel Kit, you'll need the following tools and materials:

Cleaning Supplies:

- Isopropyl alcohol (90% or greater concentration)
- Lint-free shop rags or clean cloths

Measurement & Marking Tools:

- Tape measure
- Permanent marker

Unpacking Tools:

- Scissors, utility knife, or hook tool (for cutting stretch wrap carefully)

Installation Tools:

- 1–2 squeegees (for setting panels without air bubbles, included with the kit)
- Zip ties and mounting blocks (included with the kit)
- Screws for mounting the charge controller (included with the kit)
- Drill or screwdriver (for mounting the charge controller)

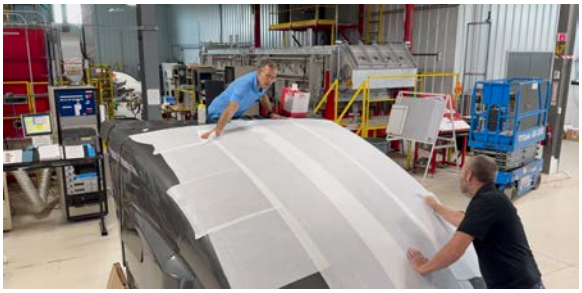
Electrical Testing Tools:

- Multimeter (for verifying battery voltage and polarity)
- DC current clamp (for measuring current from the panel)

Additional (Optional but Recommended):

- Ladder or platform (for easier roof access)
- Protective gloves (to avoid finger oil transfer and cuts)
  Extra zip ties for cable management if needed

Step 1: Clean the Truck Surface

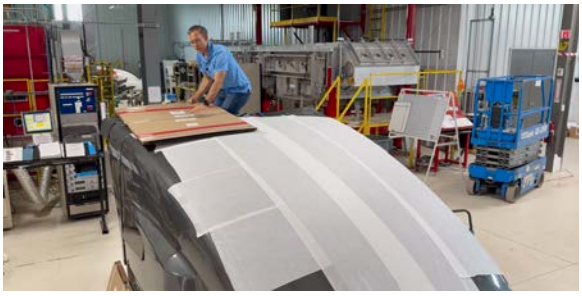


A clean surface ensures strong adhesion that lasts the life of the panel (10+ years).

1. Spray isopropyl alcohol onto both the truck surface and your rag.
2. Wipe the fairing down thoroughly to remove dirt, oil, and grease.
3. Wipe a second time to ensure nothing is left behind.
4. It's helpful to have one person working from the top and one from below.

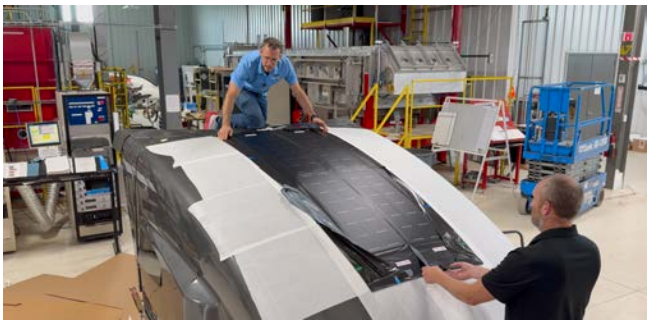
Step 2: Install the Center Panel

Panel Preparation



1. Confirm panel labeling: *“Center”* and *“This Side Up.”*
2. Lay the panel flat on the roof in the installation location with *“This Side Up”* showing.
3. Do **not** cut the red banding yet.
4. Cut and remove the three clear stretch bands (do not lift the panel, slide the cardboard out from the bottom side).
5. Remove the top and bottom cardboard.
6. Open the panel like a book (keeping the unsupported section of the panel always on the fairing, do not lift), allowing it to slide down the fairing.

Panel Alignment



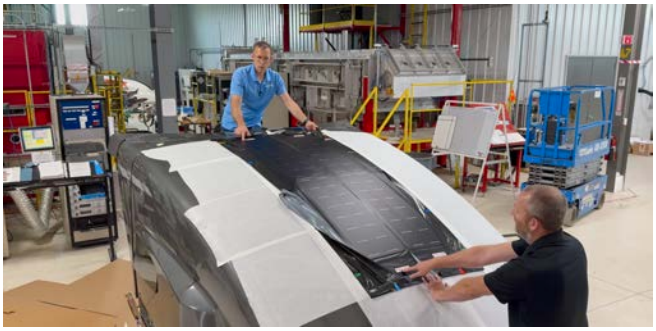
1. Align the panel using visual contours on the fairing.
2. To verify center position, measure the distance (width) between a distinct contour or feature (e.g., 76"), divide in half (e.g., 38") to find the center and mark.
3. Align the center panel with this mark and fairing contours.

Adhesion Process

Once the center panel is aligned and in position, adhere it to the fairing surface by working through its four designated adhesive sections, labeled “Pull First”, “Pull Second”, “Pull Third”, and “Pull Fourth”. Follow this sequence carefully for optimal fit and finish.

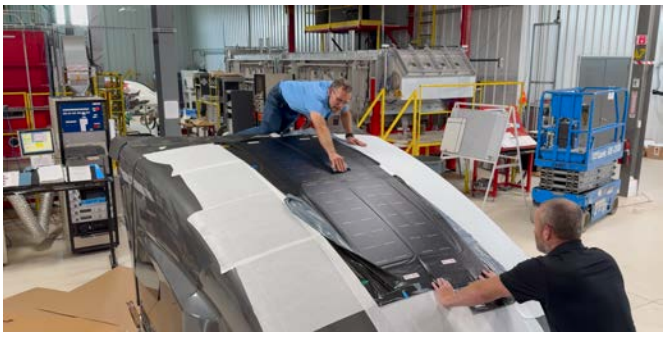
General Notes:

- Only expose a small amount of adhesive at a time (5–8 inches).
- Always begin adhesion from the centerline of the panel and sweep outward.
- Maintain panel alignment throughout the process.
- Avoid pressing directly on the solar cells with excessive force.
- **ONCE ADHESIVE IS ADHERED TO THE FAIRING, DO NOT TRY TO REMOVE OR PULL UP THE PANEL.**



Start with “Pull First”: Center-Top Section

- Remove the labeled plastic clips from the *“Pull First”* section.
- Fan out the release liner.
- Pull back 1–2" of the liner to expose the butyl adhesive.
- While an assistant ensures the panel remains flat, lightly tack the adhesive area to the fairing.
- Using a squeegee, press firmly from the center of the panel outward in smooth, upward strokes.
  Continue pulling 4–6" of liner at a time, squeegeeing in the same pattern to prevent bubbles and wrinkles from working up the panel.



Proceed to “Pull Second”: Center-Bottom Section

- Repeat the above process: remove clips, fan liner, and expose adhesive incrementally.
- Squeegee from the panel’s midline downward and outward.
- Avoid putting full hand or body pressure on the panel surface during this phase.

Continue with “Pull Third”: Lower Section

- Remove any remaining clips, pull the liner in small sections (5–6"), and begin adhesion.
- For the outer tape area, apply lighter pressure during the first pass.
- Return with a second pass, applying more firm pressure to secure the edges and seal the adhesive.
- Continue working down the panel.
- At the bottom of the panel, there are no solar cells; only flexible tape is used. When applying it, expose a small amount of adhesive at a time to prevent wrinkles.

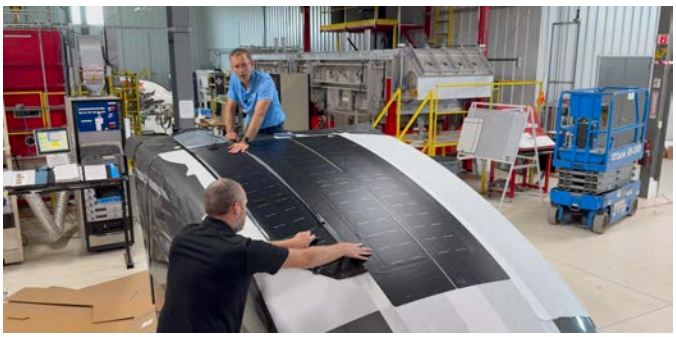
Finish with “Pull Fourth”: Bottom Flap

- Remove any remaining clips, pull the liner in small sections (5–6"), and begin adhesion.
- For the outer tape area, apply lighter pressure during the first pass.
- Return with a second pass applying more firm pressure to secure the edges and seal the adhesive.
- Continue working down the panel.
- At the bottom of the panel, there are no solar cells; only flexible tape is used. When applying it, expose a small amount of adhesive at a time to prevent wrinkles.

Quality Assurance:

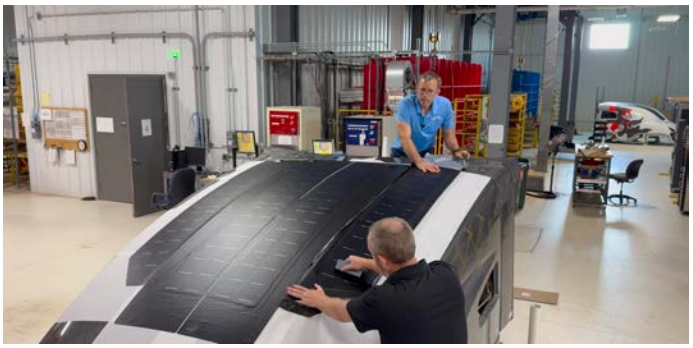
- After completing all four sections, visually inspect the panel for full contact.
- Re-squeegee any areas where air bubbles, lifting, or surface irregularities are detected.
- Remove all instructional stickers to avoid shading the panel.

Step 3: Install Passenger Side Panel



1. Confirm *“Passenger Side”* and *“This Side Up”* labels.
2. Place the panel in the installation location.
3. Remove the clear bands, then the top and the bottom cardboard.
4. Open and slide the panel down the roof, keeping the unsupported section of the panel on the roof.
5. Cut red bands and remove clips.
6. Fan out the release liner and align the panel to match the height and position of the center panel.
7. Tack adhesive beginning near the first double group of cells (bottom of the panel).
8. Proceed in 5–10" increments, tacking the center first, then sweeping to the edges (repeat working your way up the fairing).
9. The bottom features its own release liner for easy removal. Since this section is flexible and stretchy, pull and expose the adhesive in much smaller increments (1 inch) to avoid wrinkling.

Step 4: Install Driver Side Panel



1. Confirm *“Driver Side”* and *“This Side Up”* labels.

2. Place the panel in the installation location.
3. Remove the clear bands, then the top and bottom cardboard.
4. Open and slide the panel down the roof.
5. Cut red bands and remove clips.
6. Fan out the release liner and align the panel to match the height and position of the center panel.
7. Tack adhesive beginning near the first double group of cells.
8. Proceed in 5–10" increments, tacking the center first, then sweeping to the edges (repeat working your way up the cab).
9. The bottom features its own release liner for easy removal. Since this section is flexible and stretchy, pull and expose the adhesive in much smaller increments (1 inch) to avoid wrinkling.

Cable Routing and Electrical Connection

1. Connect the Y-connectors to the panels:
    - Blue connector to blue port
    - Black connector to black port
2. Join both Y-connectors into the charge controller cable.
3. Route the charge controller cable to the battery compartment.

Tip: Ensure all connectors are fully seated and protected from environmental exposure.

Step 7: Cable Routing and Battery Connection

SCAN THE QR CODE BELOW TO WATCH THE BATTERY CONNECTION VIDEO

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1. Route the cable from the panel to the charge controller using the included zip ties and mounting blocks.
    - **IMPORTANT:** Clean the areas where mounting blocks will be applied using >90% isopropyl alcohol.
2. Mount the charge controller securely to a mechanically sound surface (e.g., battery box or metal frame) using the included screws.
3. Remove the fuse from the wiring harness before connecting to the battery.
4. Connect the ring terminals:
    - **Red** to positive (+)
    - **Black** to negative (–)
5. Use a multimeter to measure the battery voltage and confirm:
    - 12V system
    - Correct polarity
6. Reinstall the fuse in the harness.
7. When the solar panel is exposed to sunlight, measure battery voltage again—it should be slightly higher based on sunlight intensity.
8. Use a DC current clamp around the wire with the fuse installed to measure current:
    - Current will vary between 0–7A
    - A 0 or low reading may indicate the battery is fully charged (above 14.2V) or deeply discharged (below 9.5V)

Final Inspection and Testing

- Visually inspect all panel edges for full adhesion.
- Squeegee the entire surface again to eliminate air bubbles or wrinkles.
  Clean off any remaining labels; do not leave them on the panels.
- Avoid placing weight (such as a knee or palm) directly on the panel during installation.
- Slight cell cracks will not significantly impact performance, but may reduce efficiency.

You've completed the installation of the 400W Kenworth T680 Fairing Solar Panel!