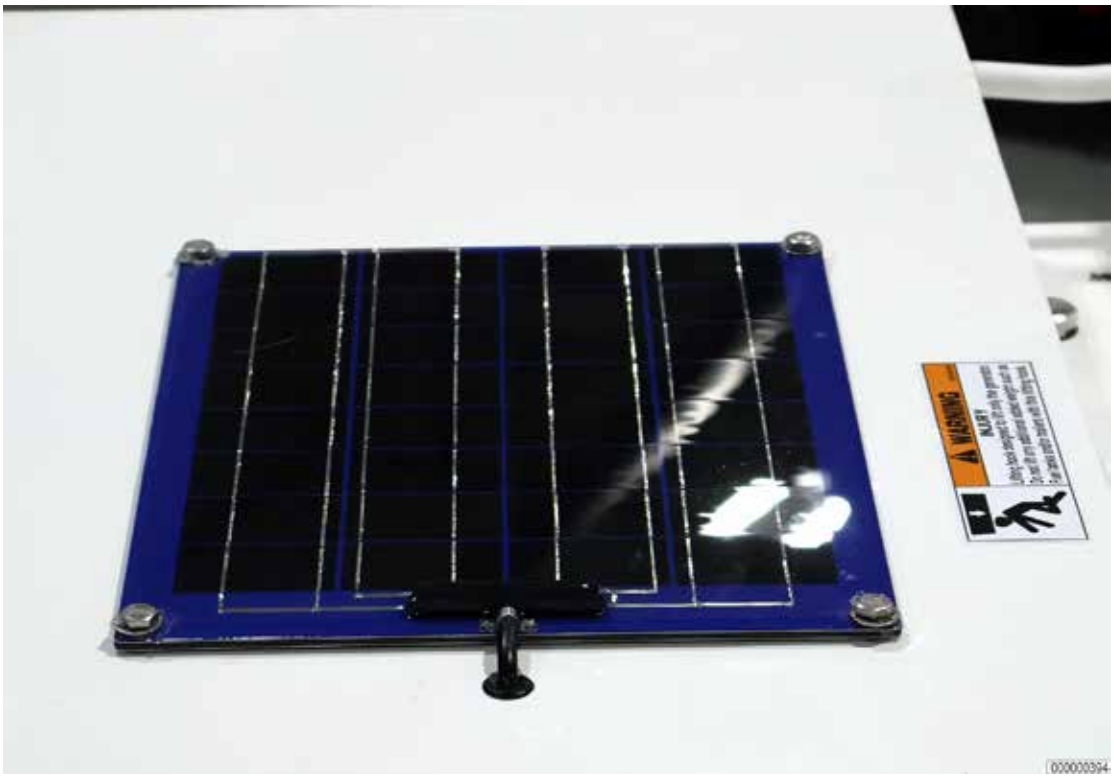
Installation Instructions

DGK45F\FU Solar Panel



 Part Number 99922238623 **Effective 02/27/26**

400 Oakwood Road, Lake Zurich IL 60047

Kit Contents:

- (1) 12v-12 Watt Solar Panel w\12v Pulse Charger

- (1) 1/4-20x1" stainless steel bolt
- (4) 1/4-20x3/4" stainless steel bolts
- (8) 1/4-20 stainless steel flat washers
- (4) 1/4-20 stainless steel lock nuts.
- (2) 8-32x3/4" stainless steel screws
- (2) 8-32 stainless steel flat washers
- (2) 8-32 stainless steel lock nuts
- (1) M8x1.25x20mm stainless steel bolt

- (1) 1/2"x 6" Black Heat Shrink Tubing
- (2) 18-22 ga Heat Shrink Butt Connectors
- (1) 1/8"x7/16" Grommet
- Black Cable Tie

- (1) DGK25F\FU Solar Panel Installation Template

Tools & Materials Required:

- Masking tape
- Electrical tape
- Measuring tape
- Scissors
- Safety knife
- Center punch
- Deburring tool
- 1/8" drill bit
- 3/16" drill bit
- 5/16" drill bit
- 13/64" drill bit
- Drill (electric or cordless)
- 11/32 socket & 1/4 drive
- 10 mm socket - 3/8 drive
- 17 mm socket - 3/8 drive
- 3/8 impact driver with 3" extension
- 13 mm combination ratchet wrench
- #2 Phillips screwdriver
- Needle Nose Pliers
- Wire cutter\stripper & crimper
- Heat Gun or equivalent
- Clear silicone sealant

NOTES

INSTALLATION INSTRUCTIONS

- **Step 1: Verify Kit Contents**
- **Step 2: Read through installation instructions before beginning the procedure.**
- **Step 3: Release the Right Enclosure rear door latch, then open both right enclosure doors. (Figure 1)**

Figure 1

- **Step 4: Remove nut and washer securing NEGATIVE battery cable to NEGATIVE terminal using a 13 mm wrench. (Figure 2)**


Figure 2

- **Step 5: Position the negative battery cable out of the way, then reinstall washer and nut to battery terminal. (Figure 3)**


Figure 3

- **Step 6: Prepare the Solar Panel Template (included with kit) for use by using scissors or safety knife; cut along dashed lines as indicated.**
- **Step 7: Place the Solar Panel Template on the Top Enclosure surface. Using the notes and arrows on template, align the Right Side Edge of the template with the Pocket Edge as shown, and the Bottom of the template with the Right Side Edge as shown. Secure in place with masking tape. (Figure 4)**
- **Step 8: Using center punch and hole location indicated on template, transfer hole center locations to the Top Enclosure surface.**

NOTE: All drilling is inteded to be done with template remaining taped in place.

- **Step 9: Drill a pilot hole in all five (5) hole locations using 1/8" drill bit and drill.**
- **Step 10: Enlarge all five (5) holes using 5/16" drill bit and drill.**
- **Step 11: Enlarge Grommet hole using 7/16" drill bit and drill.**
- **Step 12: Remove and discard the template.**
- **Step 13: Deburr all holes.**
- **Step 14: Install grommet into 7/16" grommet hole. Make certain the gommit edges sit flush with surface. (Figure 5)**

Figure 4

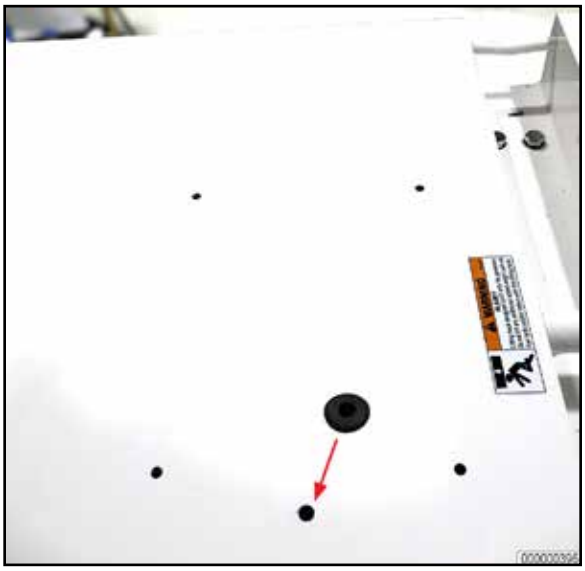


Figure 5

- **Step 15: Using scissors or utility knife, remove a 1" square portion of foam insulation from the under side of the Top Enclosure to access the the solar panel power cord. (Figure 8)**

Figure 6

- **Step 16: In preparation to attaching the solar panel to the Top Eclosure, select three (3) 1/4-20x3/4" bolts and the 1/4-2-x1" bolt. Place a pea size bead of silicone RTV sealant to the underside of each of the 1/4-20 bolt heads as shown. (Figure 9)**

Note: Only three (3) of the 1/4-20x3/4" bolts out of the supplied four (4) bolts is used in this application. The remaining bolt may be discarded.

Figure 7

- **Step 17: Remove Solar Panel from packaging; set panel on Top Eclosure.**
- **Step 18: Uncoil power cable and using measuring tape, measure out approximately 13 inches as shown. Cut power cable with wire cutters. DO NOT DISCARD remaining portion of power cable - it will be used later in the installation. (Figure 8)**

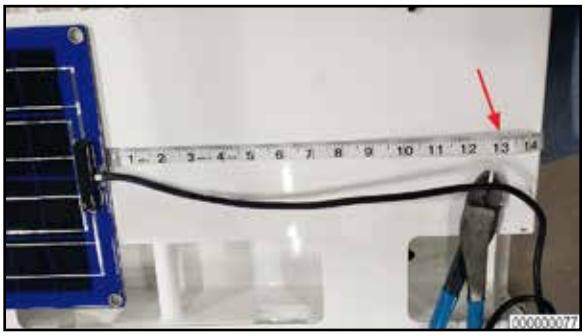


Figure 8

- **Step 19: Insert short end of cable (attached to solar panel) into the grommet, pushing the cable through till approximately an inch and a half (1-1/2") is remaining.**

NOTE: If the power cable is difficult to push through the grommet, use of a lubricant such as glass cleaner or alcohol on the cable can be used.

- **Step 20: Attach solar panel to Top Enclosure. Using three (3) 1/4-20x3/4"stainless steel bolts, one (1) 1/4-20x1" stainless steel bolt (as shown) along with four (4) 1/4-20 stainless steel flat washers on top of the solar panel mounting holes and four (4) 1/4-20 stainless steel flat washers under the solar panel mounting holes, and securing to the underside of top enclosure with four (4) stainless steel 1/4-20 locknuts. DO NOT OVERTIGHTEN - Snug the bolts and locknuts only. (Figure 9)**

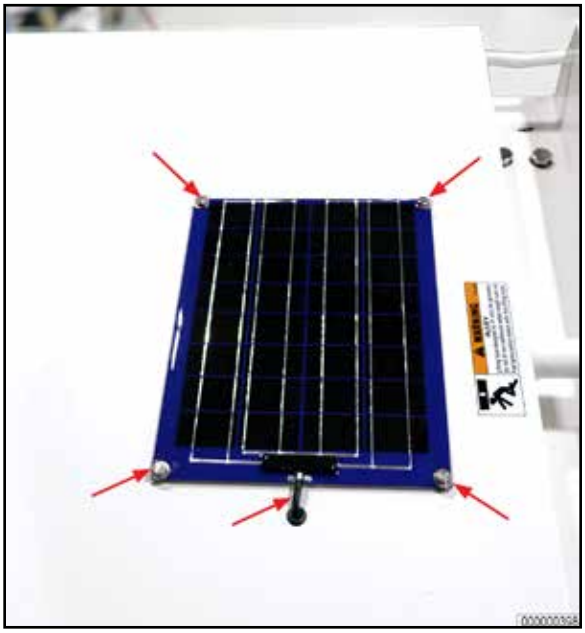


Figure 9

- **Step 21: Locate the DGK45F\FU Solar Pulse Charger Mounting Template; prepare it for use by cutting it out using scissors or safety knife.**
- **Step 22: Position the template on the lower rear corner of the Control Box Edge, sitting on the top of the Grommet Hole Edge as shown. Secure in place with masking tape. (Figure 10)**
- **Step 23: Using center punch, indicate hole locations.**
- **Step 24: Use 3/16" drill bit and drill to create solar pulse charge mounting holes through template. Remove and discard template.**
- **Step 25: Deburr mounting holes.**

Figure 10

- **Step 26: Attach Solar Pulse Charger to upper rear corner of Control Box using two (2) stainless steel 8-32x3/4" bolts,flat washers and locknuts using 11/32"socket and driver and #2 Phillips screwdriver. DO NOT OVERTIGHTEN - Snug bolts and nuts. (Figure 11)**

Figure 11

- **Step 27: Using the power cable previous cut in step 22, measure approximately 10 inches from the red plug end, and cut the cable once again. (Figure 12)**

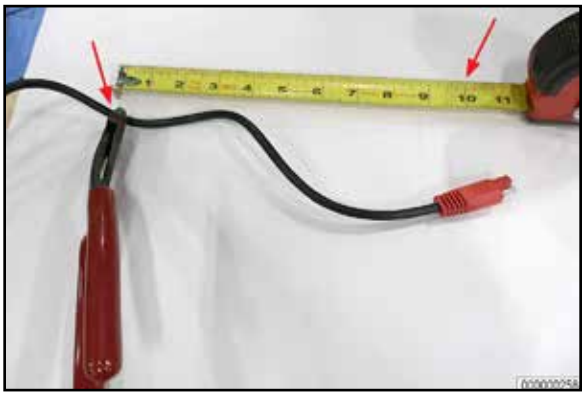


Figure 12

- **Step 28: Using wire strippers, remove approximately two (2) inches of outer sheathing from the solar panel power cable and from the red plug end cable from step 21, exposing the red and black wire within. Take care not to cut through into either of the wires. (Figure 13)**

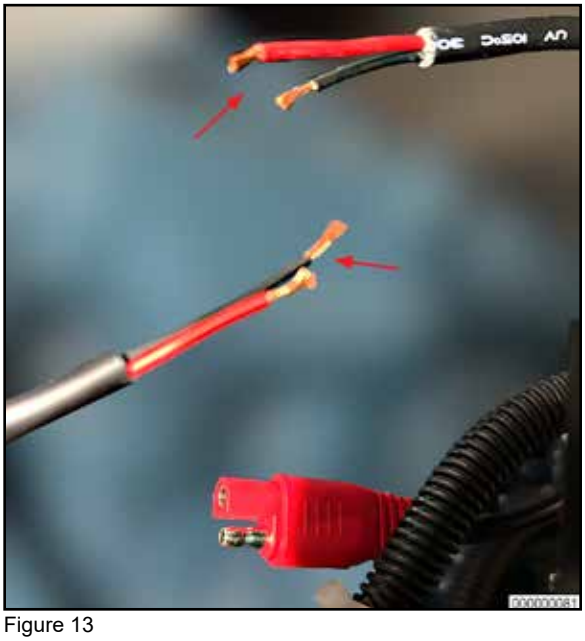


Figure 13

- **Step 29: Place a "Butt" connectors (supplied in kit) over the exposed ends of each wire and using a wire crimper, secure the butt connectors to each wire. (Figure 14)**

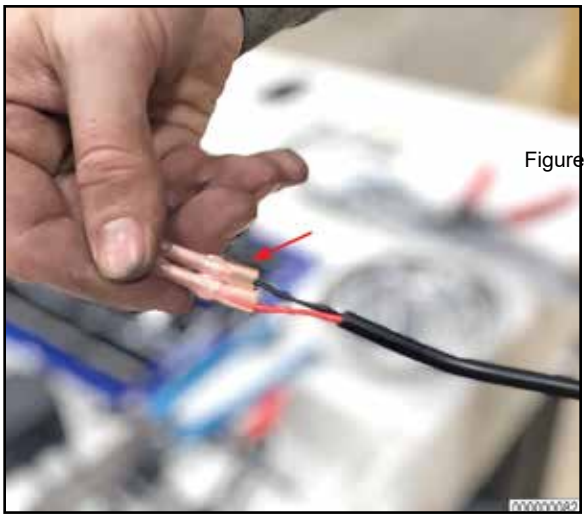


Figure 14

Figure 14

- **Step 30: Place a 1/2"x 6" piece heat shrink tube (supplied in kit) over plug end portion of cable, exposing the wire butt connection as shown. Use a heat gun to shrink\seal the butt connecters to the wires. (Figure 15)**

Figure 15

- **Step 31: Place ends of wires from solar panel cable into the butt connectors of the same color, securing each connection by crimping. (Figure 16)**
- **Step 32: Using heat gun or equivalent, shrink butt connectors to seal wires.**

Figure 16

- **Step 33: Slide the 1/2" x 6" heat shrink tube up over butt wire connections. Starting from the bottom, working upward using the heat gun, slowly shrink the tubing over the power cable, wires and butt connectors. (Figure 17)**

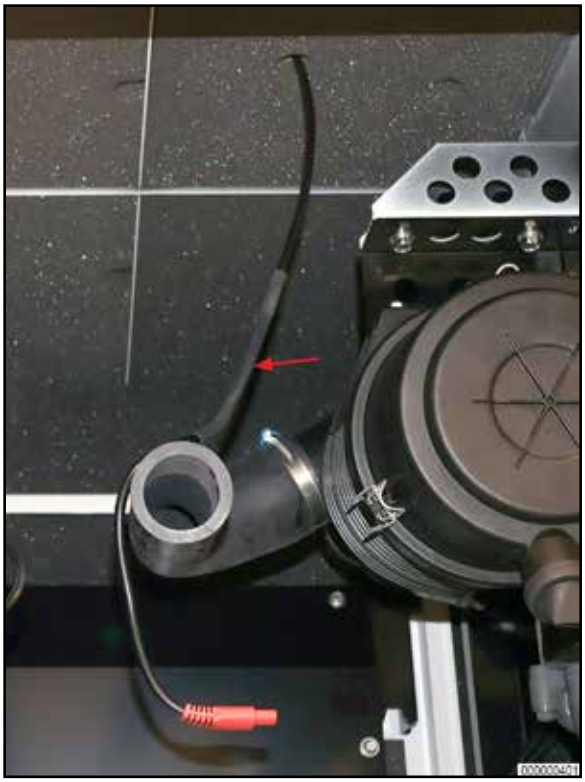


Figure 17

- **Step 34: Connect plug ends of solar panel to solar pulse charger. To prevent plugs from separating, secure with electrical tape (Figure 18)**

Figure 18

- **Step 35: Route the Solar Panel Power cable over towards back of the Control Cabinet box, securing the cable and excess cable in place to existing cables using cable ties as shown. Remove excess cable ties ends (Figure 19)**

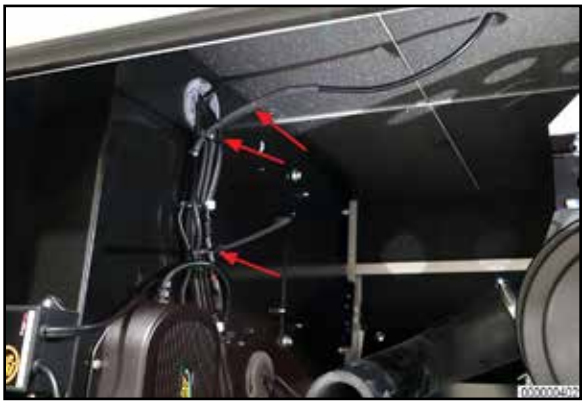


Figure 19

- **Step 36: Pull back the RED Positive Battery Terminal Cover to uncover the terminal; remove bolt securing cables to POSITIVE side of battery using a 1/2 inch ratchet wrench or equivalent. Discard bolt.**
- **Step 37: Locate Solar Pulse Charger to Battery Connector Cable in kit. (Figure 20)**

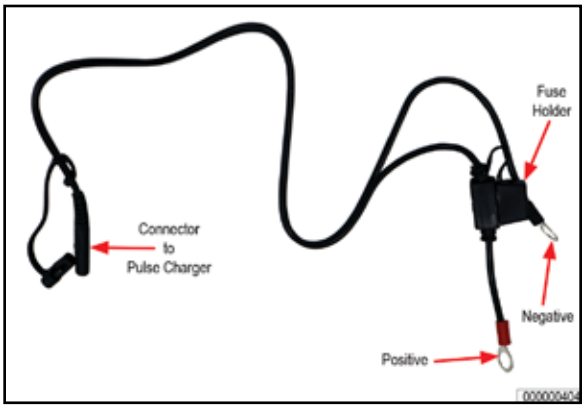


Figure 20

- **Step 38: Route the RED (Positive) wire lead from the solar pulse charger connector through the RED Positive Terminal cover and combine with Positive battery cable on terminal. Secure red wire lead from pulse charger with positive battery cable using new M8x1" bolt and a 13 mm ratchet wrench or equivalent. DO NOT OVERTIGHTEN - Snug bolt (Figure 21)**
- **Step 39: Return RED Postive terminal cover to it's original position.**

Figure 21

- **Step 40: Secure positive wire lead with fuse holder to existing cables with cable tie. Remove excess cable tie ends(Figure 22)**

Figure 22

- **Step 36: Connect plug ends (from solar charger and to the the battery). To prevent plugs from separating, secure with electrical tape. (Figure 23)**

Figure 23

- **Step 37: Secure power cables from both solar panel and solar charger to existing wire harness using a cable ties. Remove excell cable tie material (tails)(Figure 24)**

Figure 24

- **Step 38: Remove bolt and lockwasher from NEGATIVE battery terminal. Reposition and reattach NEGATIVE battery cable to NEGATIVE battery terminal, adding the new negative wire lead from Solar Pulse Charger to Negative battery cable alonge with any other Negative leads. Secure the bolt and washer using a 13 mm wrench. DO NOT OVERTIGHTEN bolt - Snug only. (Figure 25)**

Figure 25

- **Step 39: Close the Right Enclosure Rear Doors, making sure the latch completely engages. (Figure 26)**

The Solar Panel Installation in now complete

Figure 26