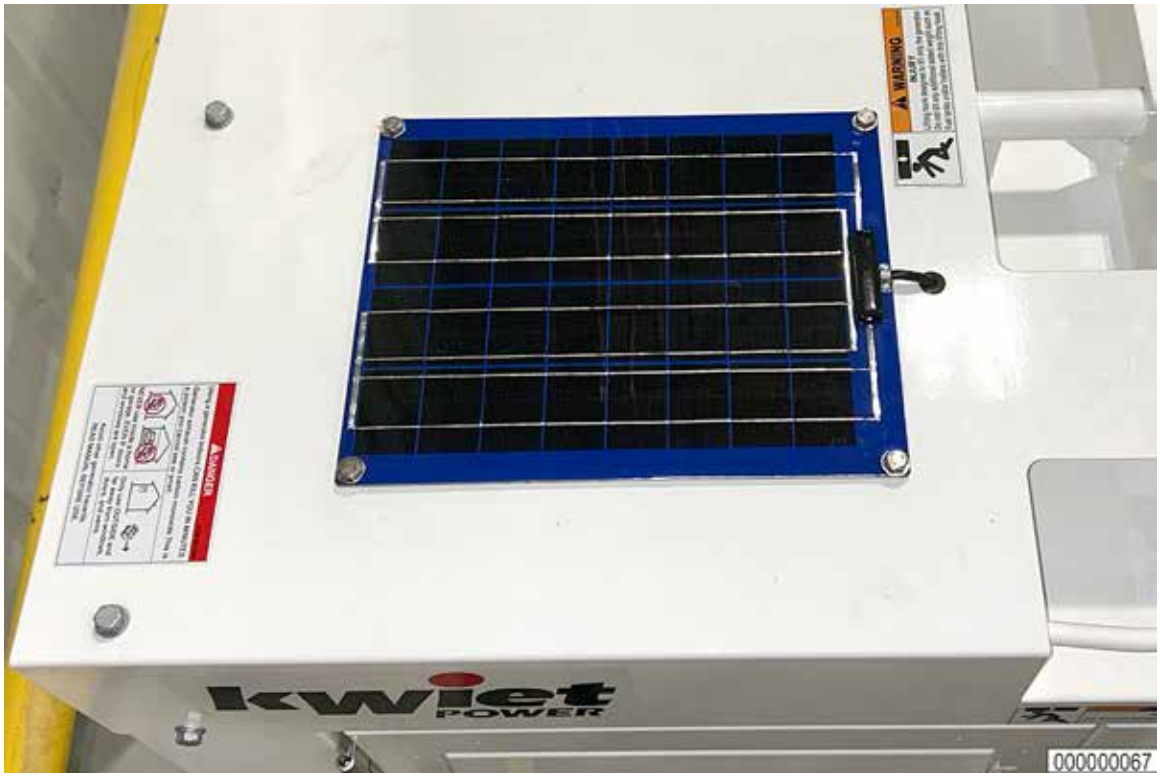
Installation Instructions

DGK15FL Solar Panel



 Part Number 99922238609 **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 Ties

- (1) DGK15FL 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. (Figure 1) and open both doors.**

Figure 1

- **Step 4: Using a 13 mm ratchet wrench, remove bolt and washer securing cables to the negative side of the battery. (Figure 2)**


Figure 2

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


Figure 3

- **Step 6: Using a 13 mm socket and impact driver, remove all fifteen (15) bolts securing the Top Enclosure in place. (Figure 4)**

Figure 4

- **Step 7: Using a 17 mm socket and driver, remove four (4) bolts located on the top of the enclosure near each of the tie-down locations. (Figure 5)**

Figure 5

- **Step 8: Cut cable tie securing Air Intake Hose to undeside of Top Enclosure. (Figure 6)**

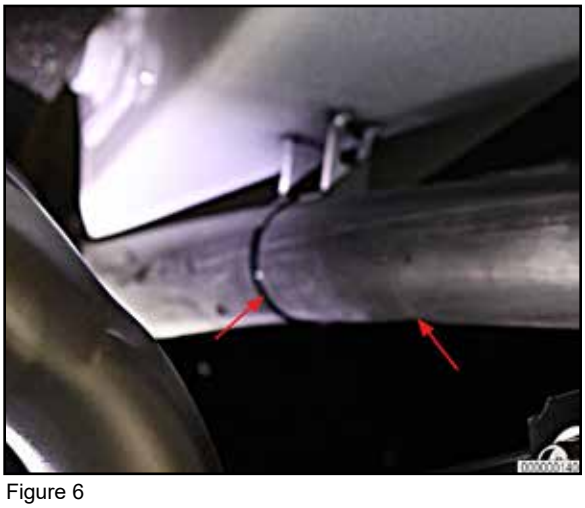


Figure 6

- **Step 7: Using a 13mm ratchet wrench, remove two (2) bolts securing Air Cleaner Housing to the underside of the Top Enclosure. (Figure 7)**

Figure 7

NOTE: The step 5 requires two people to safely perform.

- **Step 8: Remove Top Enclosure and place on a sturdy flat work surface.**
- **Step 9: Using a 10mm wrench or socket and driver, remove four (4) bolts in Top Enclosure. Discard removed bolts. (Figure 8) Fill holes with Clear Silicone RTV.**

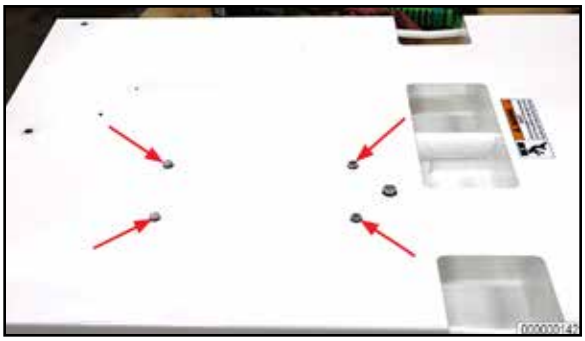


Figure 8

- **Step 10: Using a 13mm wrench, remove the bolt and nut from the Top Enclosure. Discard the Bolt & Nut. Do not remove the grommet. (Figure 9)**

Figure 9

- **Step 11: Prepare the Solar Panel Template (included with kit) for use by using scissors or safety knife; cut along dashed lines as indicated.**

- **Step 12: Place the Solar Panel Template on the top of the Top Enclosure surface. Using notes and arrows on template, align template to the "Tie Down" pocket edge, and the right side of the template with the edge of the Top Enclosure. Secure in place with masking tape. (Figure 10)**
- **Step 13: 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 14: Drill a pilot hole in all four (4) hole locations using 1/8" drill bit and drill.**
- **Step 15: Enlarge all four (4) holes using 5/16" drill bit and drill.**
- **Step 17: Deburr all holes.**

Figure 10

- **Step 18: Flip the Top Enclosure over so that the underside is rightside up.**
- **Step 19: Using scissors or utility knife, remove a 1" square portion of foam insulation from the under side of each hole in the Top Enclosure to access the mounting holes (for hardware) and for the solar panel power cord. (Figure 11) When finished, flip Top Enclosure back over.**

Figure 11

- **Step 20: In preparation to attaching the solar panel to the Top Eclosure, place a pea size bead of silicone RTV sealant to the underside of each of the 1/4-20 bolt heads supplied in the kit. (Figure 12)**

Note: The kit contains a single 1/4-20x1" bolt that is not used in this application.

Figure 12

- **Step 21: Remove Solar Panel from packaging; set panel on Top Eclosure.**
- **Step 22: 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 13)**
- **Step 23: 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.**

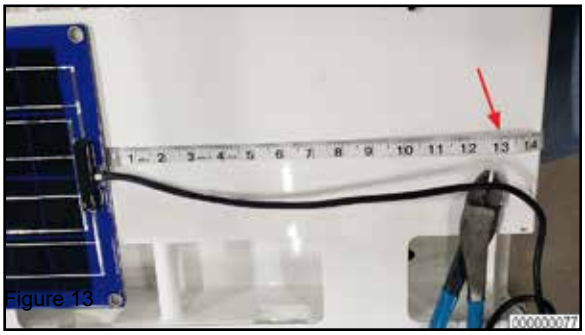


Figure 13

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 24: Attach solar panel to Top Enclosure. Using four (4) 1/4-20x3/4"stainless steel bolts and four (4) 1/4-20 stainless steel flat washers on top of the solar panel mounting holes, and securing to the underside of top enclosure with four (4) 1/4-20 stainless steel flat washers and four (4) stainless steel 1/4-20 locknuts. DO NOT OVERTIGHTEN - Snug the bolts and locknuts only. (Figure 14)**

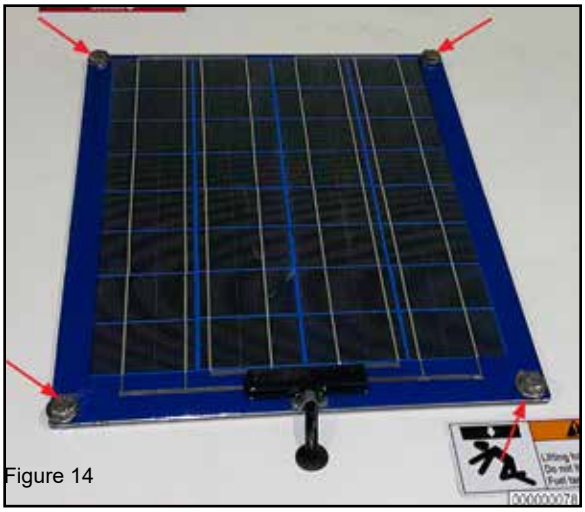


Figure 14

- **Step 25: Attach Solar Pulse Charger to upper rear corner of Control Box Support Panel using two (2) stainless steel 8-32x3/4" screws using a #2 Phillips screwdriver into existing mounting holes. DO NOT OVERTIGHTEN - Snug scews (Figure 15)**

Figure 15

- **Step 26: Reinstall the Top Enclosure, securing in place with fifteen (15) previously removed bolts (from step 4), using a 13 mm socket and impact driver.**
- **Step 27: Complete the Top Enclosure installation by reinstalling four (4) top bolts (previously removed in step 5), and securing in place using a 17 mm ratchet wrench.**
- **Step 28: Using a 13mm ratchet wrench, reinstall two (2) bolts (previously removed in step 7), securing the Air Cleaner Housing to the underside of the Top Enclosure.**
- **Step 29: Reattach the Air Intake Hose to undeside of Top Enclosure (previously removed in step 6) using a new cable tie.**
- **Step 30: Using the power cable previous cut in step 13, measure approximately 10 inches from the red plug end, and cut the cable once again.**
- **Step 25: Using wire strippers, remove approximately two (2) inches of outer sheathing from the power cable, exposing the red and black wire within. Take care not to cut through into either of the wires.**
- **Step 26: Using the wire strippers, remove approximately 1/2" inch of insulation from both the red and black wires. (Figure 16)**
- **Step 27: Repeat Steps 25 and 26 for the power cable coming from the solar panel.**


Figure 16

- **Step 27: 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 17)**

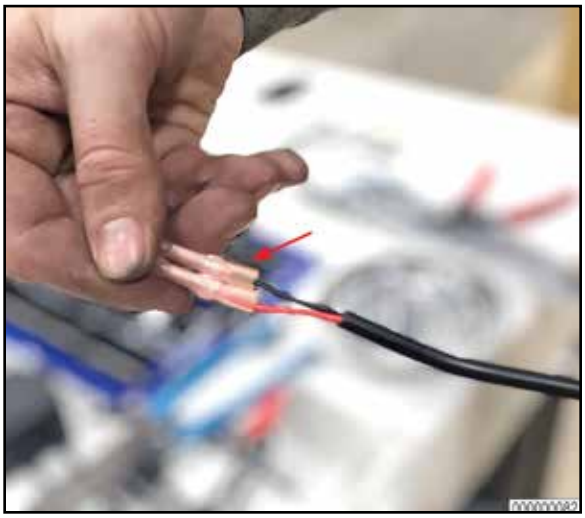


Figure 17

- **Step 28: 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 18)**

Figure 18

- **Step 29: Place ends of wires from solar panel cable into the butt connectors of the same color, securing each connection by crimping. (Figure 19)**
- **Step 30: Using heat gun, shrink butt connectors to seal wires.**

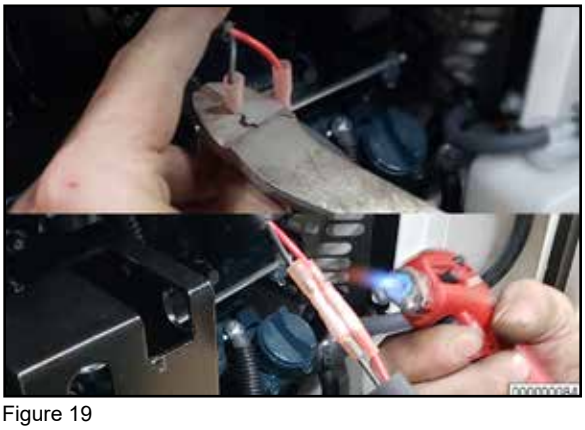


Figure 19

- **Step 31: 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 20)**

Figure 20

- **Step 32: Connect plug ends of solar panel to solar pulse charger. To prevent plugs from separating, secure with electrical tape (Figure 21)**

Figure 21

- **Step 33: Remove bolt securing cables to POSITIVE side of battery using a 13 mm ratchet wrench. Discard bolt.**
- **Step 34: Combine RED wire lead from solar charger connector with cable and reinstall to POSITIVE side of battery with new M8x1" bolt using 13 mm ratchet wrench. DO NOT OVERTIGHTEN - Snug bolt (Figure 22)**

Figure 22

- **Step 35: Secure positive wire lead with fuse holder to existing cables with cable tie. (Figure 23)**

Figure 23

- **Step 36: Connect plug ends (from solar charger and to the the battery). To prevent plugs from separating, secure with electrical tape. (Figure 24)**

Figure 24

- **Step 37: Secure power cables from both solar panel and solar charger to existing wire harness using a cable ties. (Figure 25)**

Figure 25

- **Step 38: Combine new negative wire lead from solar charger to Negative battery cable end using bolt and nut used to secure battery cable to battery as shown. (Figure 26) Secure negative wire lead to Negative battery cable with cable tie.Secure the battery clamp using a 10mm ratchet wrench.**

Figure 25

- **Step 39: Place both the Right Enclosure Rear Door back on their respective hinges. Close the doors and secure by closing the latch.**

The Solar Panel Installation in now complete