

**55 WATT SOLAR 12-VOLT  
POWER GENERATOR KIT**

## FEATURES

### CHARGES 12-VOLT BATTERIES

Designed for rechargeable 12-volt batteries such as those used in boats, RVs or cottages. Also ideal for emergency back-up or remote power use when electricity is unavailable.

### FULLY WEATHERPROOF

Built for a variety of outdoor applications

### HIGHLY DURABLE

Solar panels are made with shatterproof tempered glass

### EFFICIENT AMORPHOUS SOLAR PANELS

Charges in all daylight conditions, even in cloudy environments.

## WARRANTY

The solar panels are covered by a five year limited warranty. Sunforce Products Inc. warrants to the original purchaser that this product is free from defects in materials and workmanship for a period of one year from date of purchase. Power output is warranted for five years from date of purchase.

The solar charge controller is covered by a one year limited warranty. Sunforce Products Inc. warrants to the original purchaser that this product is free from defects in materials and workmanship for a period of one year from date of purchase.

The power inverter is covered by a one year limited warranty. Sunforce Products Inc. warrants to the original purchaser that this product is free from defects in materials and workmanship for a period of one year from date of purchase.

## CLEANING AND MAINTENANCE

Cleaning of the solar panels may be performed with a clean, damp cloth. Any other maintenance to the unit should be performed by a qualified service professional.

## SPECIFICATIONS

<b>SIZE (L X W X H)</b>	38.0 x 30.0 x 22.0 in (96.5 x 76.2 x 55.9 cm)
<b>WEIGHT</b>	41.1 lbs (18.6 kg)
<b>WATTAGE</b>	55 W
<b>WORKING VOLTAGE</b>	15 V
<b>AMPERAGE</b>	3.7 amps

## SAFETY



**WARNING:** Never allow battery clamps to touch: doing so can cause electric shock.

- Avoid electrical hazards when installing, wiring, operating, and maintaining your solar panel. The solar panel included generates DC electricity when exposed to sunlight or other light sources.
- For use in 12-volt systems only (12-volt battery not included).
- Observe proper polarity throughout entire power cable wiring route.
- Work safely, do not wear jewellery when working with electrical or mechanical equipment. Use protective eyewear when working with batteries or drills. Use extreme caution when on a ladder or a roof.
- Follow all safety precautions of the battery manufacturer.
- Some batteries can release flammable hydrogen gas. Do not produce sparks when working in locations where flammable gases or vapours exist. Shield skin and eyes from battery acid. Wash thoroughly with water if skin or clothing comes into contact with acid or any corrosive matter, which may have accumulated on the battery.
- Keep the terminals and casing clean.
- Always use a charge controller for solar panels that are 15 watts and above.
- Always connect the charge controller to battery first.
- When disconnecting, always disconnect the battery last.
- Do not attempt to charge non-rechargeable or frozen batteries.

## PARTS LIST

### TOOLS REQUIRED (NOT INCLUDED):



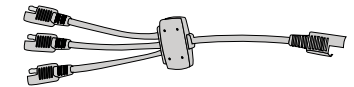
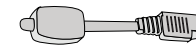
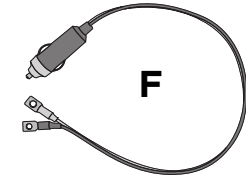
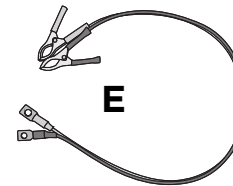
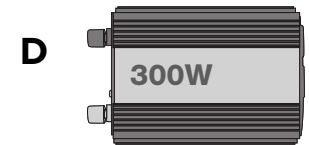
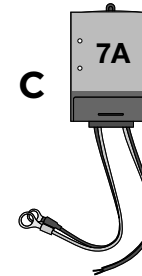
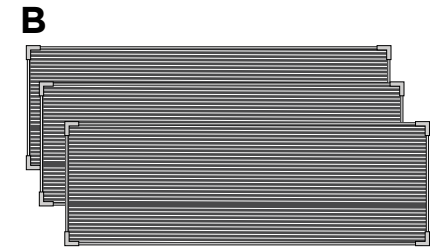
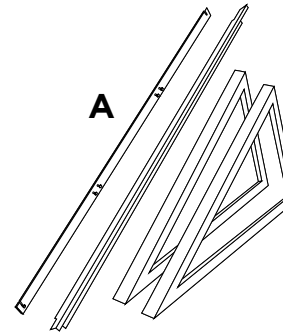
Gloves



Safety Goggles

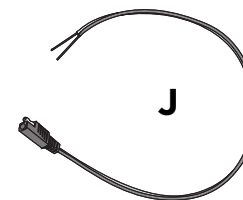
**IMPORTANT:** please ensure all components are present prior to installation.

<b>A</b>	4 Mounting stand components
<b>B</b>	3 Amorphous solar panels
<b>C</b>	7-amp charge controller
<b>D</b>	300-watt power inverter
<b>E</b>	Inverter connector cable with battery clamps
<b>F</b>	Inverter connector cable with 12V adapter
<b>G</b>	12 ft (3.6 m) extension cable
<b>H</b>	LED voltage tester
<b>I</b>	3-in-1 wire connector cable
<b>J</b>	Wire adapter
<b>K</b>	Wire nuts



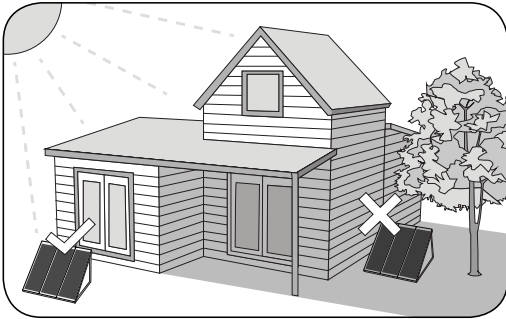
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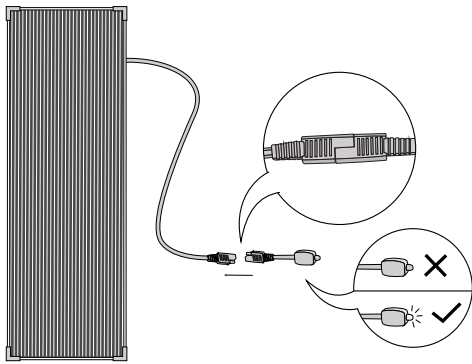
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## PRE-ASSEMBLY



### PLACING THE SOLAR PANEL

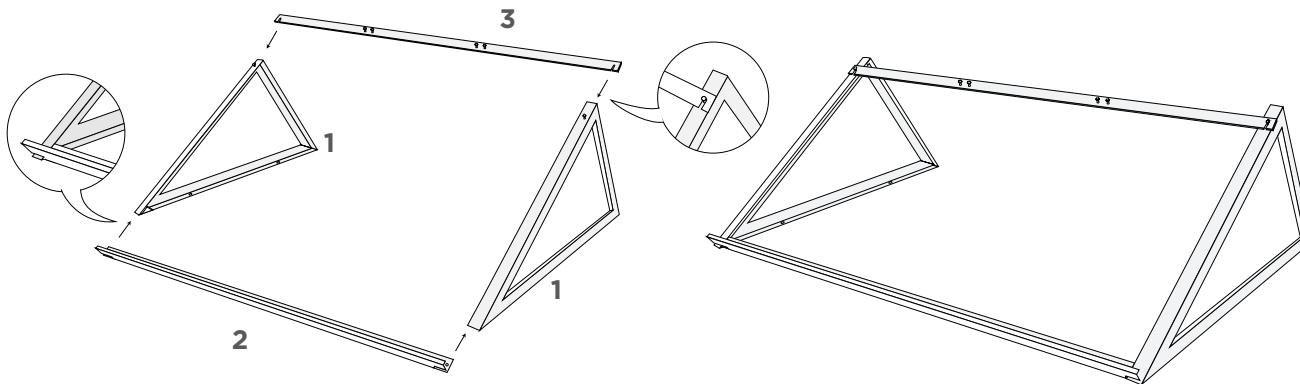
Ensure your solar panels are placed so that their exposure to the sun is optimized. Be aware of objects such as trees or property overhangs that may impede the panels' ability to generate a charge.



### TESTING SOLAR PANEL VOLTAGE

Connect the voltage tester to one panel at a time. If the LED light illuminates, the panel is producing power. Once all panels are tested, proceed with full installation.

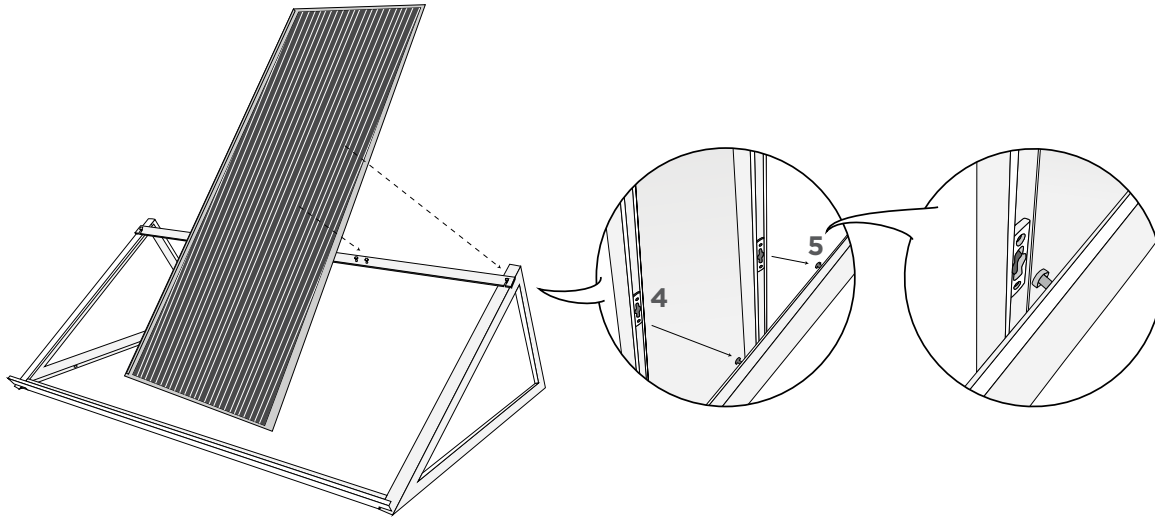
## FRAME ASSEMBLY



### ASSEMBLING THE FRAME

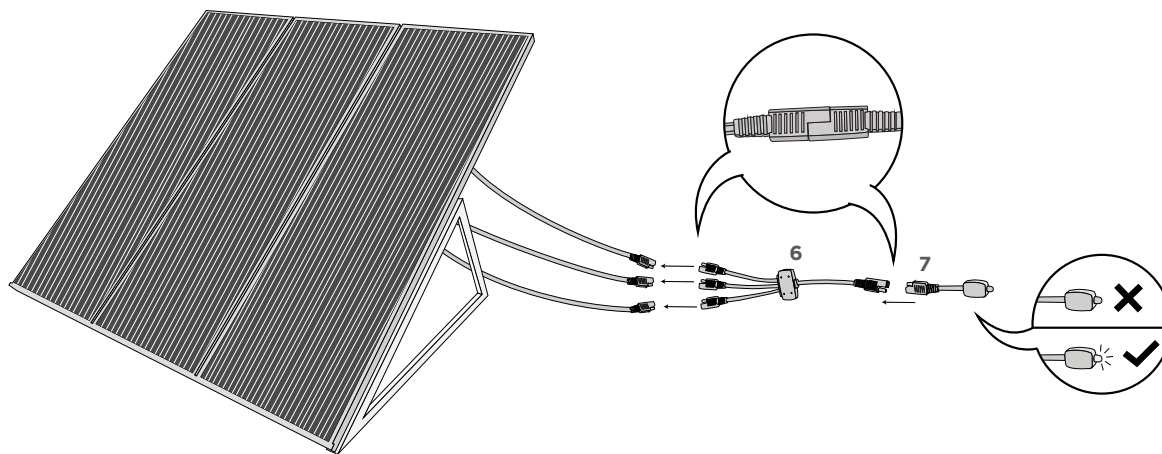
Stand the two triangular side supports (1) so the small studs are visible. Slide the base support bar (2) into the two side triangular supports. Insert the top support bar (3) onto the studs. Pull the top support bar (3) downwards to ensure a secure fit.

## INSTALLATION



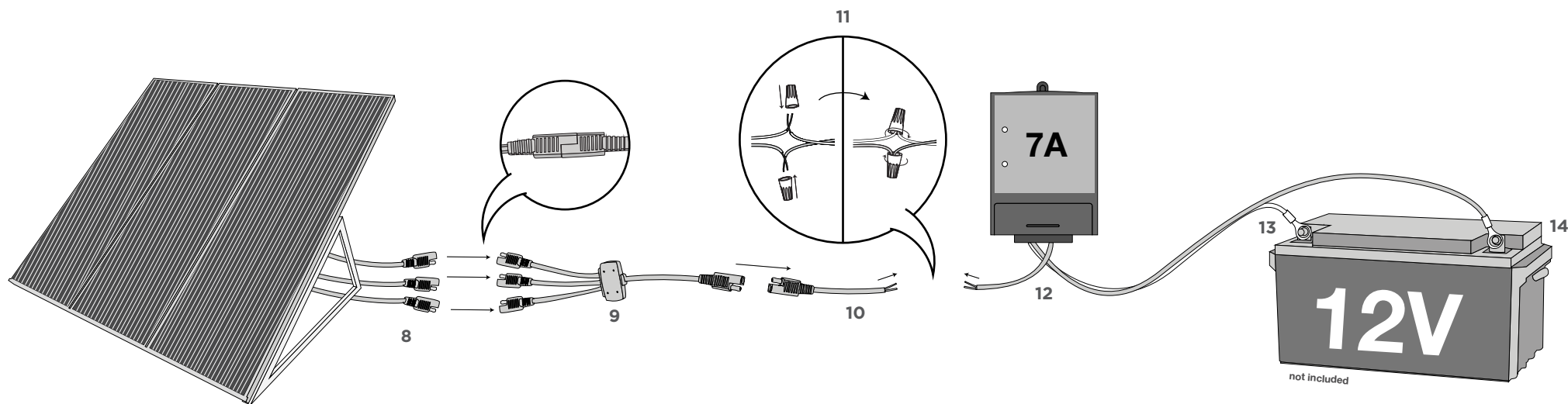
### MOUNTING THE SOLAR PANELS

Align the mounting holes (4) in the back of each panel with the mounting heads (5) on the frame. Place the panel onto the frame. Repeat this process for all 3 panels.



### TESTING SOLAR PANEL VOLTAGE

Connect the voltage tester (7) to the panels once they are installed on the mounting frame using the 3-in-1 connector cable (6). If the green LED illuminates, the panels are producing power. Proceed with full installation.



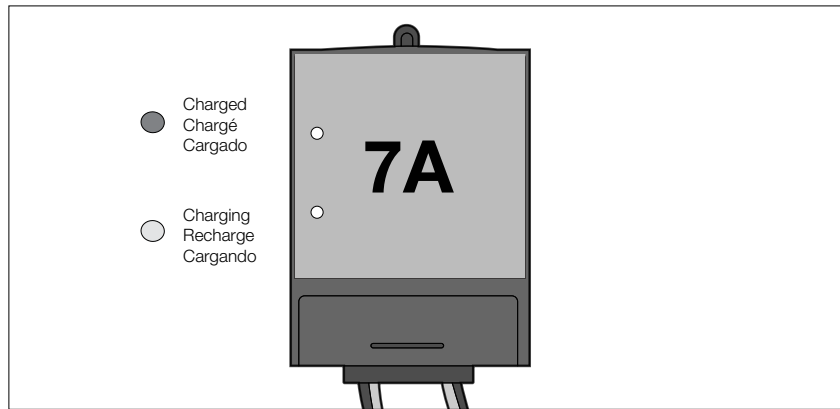
## CONNECTING KIT COMPONENTS

1. Connect the 3-in-1 connector cable (9) to the solar panels (8).
2. Connect the extension cable (if required).
3. Connect the wire adapter (10).
4. Twist the stripped wire ends of the wire adapter (10) and the charge controller (12) together using the included wire nuts (11) to secure the connection: be sure to identify and match the correct polarity (RED POSITIVE, BLACK NEGATIVE) of the wires before connecting them.
5. Connect the o-rings (13) of the charge controller to the battery terminals (14): it is important you do not extend this part of the wire. Identify the correct polarity (RED POSITIVE, BLACK NEGATIVE) of the o-rings before connecting them to their corresponding battery terminals.

Your solar kit is now charging the battery.

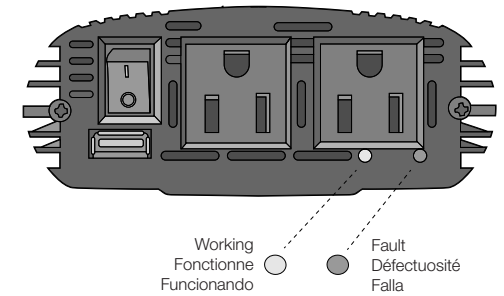
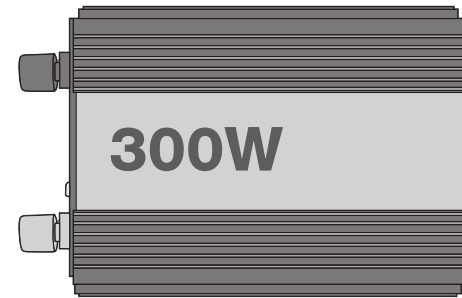
## OPERATION

**! WARNING:** The solar charge controller and power inverter must be used in a dry environment away from the elements.



### CHARGE CONTROLLER

- The green LED will illuminate at full charge status (14.2 volts)
- The amber LED will illuminate when the battery is charging
- Note: it is normal for both amber and green LEDs to flicker when the battery reaches full charge
- Do not attach your charge controller to a battery below 10 Volts DC.



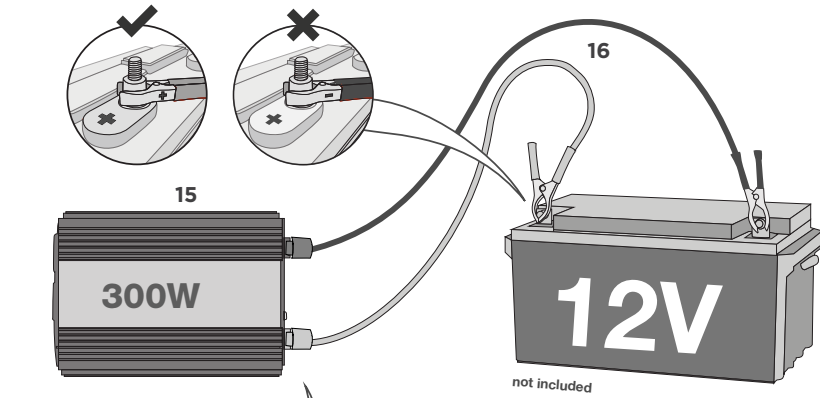
### POWER INVERTER

- Switches the 12 Volt DC stored in your battery to 110 Volt AC.
- Two AC (110 Volt) plugs on the inverter can be used to run household items that are under the rated wattage indicated on the inverter
- A loud alarm sounds to indicate that the item exceeds the rated wattage of the inverter: remove any connected device from the AC outlets immediately.
- Comes with a standard USB outlet to charge cellular phones, MP3 players, and other USB charged devices

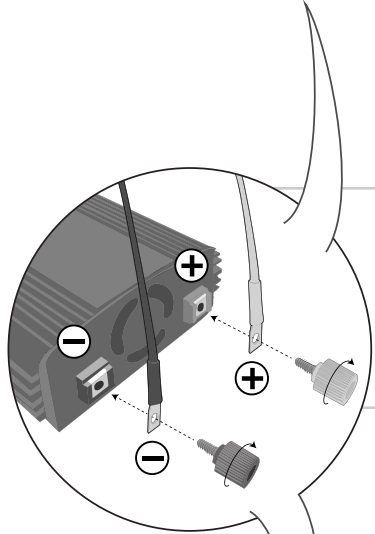
## CONNECTING THE INVERTER

### CONNECTING THE INVERTER TO A 12V BATTERY

Be sure to identify the correct polarity when securing the inverter connector cable (16) to the 12-volt battery. RED is Positive (+) BLACK is Negative (-). Only when the clamps are secure and the polarity is checked should the power inverter (15) be turned ON. Reversing the polarity (placing the negative clamp onto the positive of the battery) will result in damage to the inverter. This is not covered under warranty.



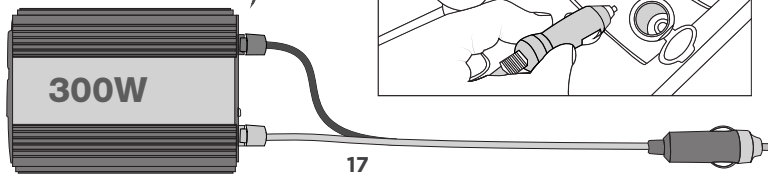
When connecting cables (16, 17) to the inverter, begin by unfastening the plastic terminal nuts from the inverter. Once having aligned the polarities of both the inverter and the cables, fasten the cables to their corresponding spots on the inverter by reinserting the plastic terminal nuts.



### CONNECTING THE INVERTER TO A 12V DC SOCKET (FOR NON-SOLAR APPLICATIONS)

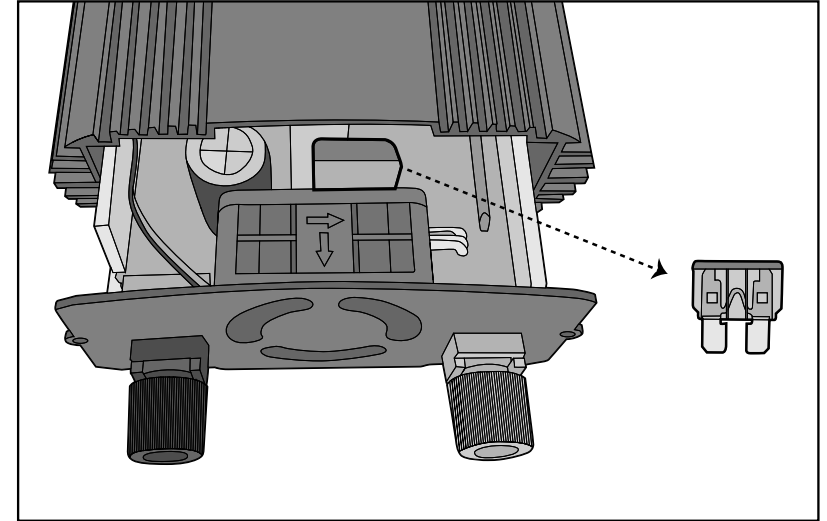
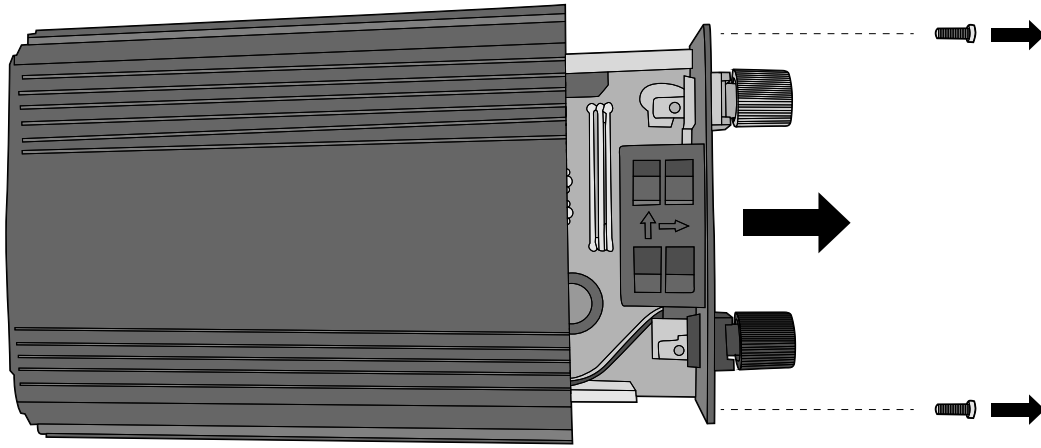
To connect the inverter, simply insert the 12V adapter (17) into a vehicle's 12V DC socket.

**⚠ WARNING:** When using the 12V DC adapter, the 300W inverter's maximum output capacity is 150 Watts.





## CHANGING THE FUSE



### CHANGING THE FUSE

The inverter comes with both a built-in fuse and a spare fuse fastened to the outside of the inverter. If the fuse breaks, it can be replaced with the included spare fuse. To replace the fuse, disconnect the inverter from the battery and any AC devices and wait for a period of two minutes.

Remove the two screws indicated in the image (on the DC side). Gently pull the interior of the inverter to reveal the fuse. Remove the fuse (pliers may be needed) and insert the spare fuse.

Replace the interior until all circuitry is concealed and replace the screws. Only at this point should you reconnect to a battery.

## FREQUENTLY ASKED QUESTIONS

Why isn't the LED light on the voltage tester illuminating?	Ensure the panel is in full sun and the connection is secure.
What can be done if the wires are too short?	Contact the manufacturer for a list of additional parts to purchase.
How do I know if the panel is producing voltage?	Use the included LED voltage tester or use a multimeter (not included) to accurately read the panel's voltage. Under full sun the multimeter should read 18-22 volts DC.
Does the solar panel drain the battery at night?	The solar panels have integrated blocking diodes to prevent any reverse charge at night.
Can my panel be left outdoors without a protective covering?	Yes, the solar panels have been weatherproofed and can be mounted outdoors without any additional protection.
Can the solar panel overcharge my battery?	Yes, there is a risk of overcharging your battery if a charge controller is not used, however, the 55 Watt Solar 12-Volt Power Generator kit includes a charge controller.
What kind of battery can I use?	See "Choosing Your Battery."

## CHOOSING YOUR BATTERY

### CHOOSING YOUR BATTERY

Choosing your battery involves some careful consideration. You can consult with a local battery supplier or follow these simple guidelines.

- Choose only rechargeable 12-volt batteries: SLA (Sealed Lead Acid), GEL, and AGM are all ideal choices.
- We do not advise Lithium Ion for these solar panels.