SILICON SOLAR

Expandable Solar Power Kit

Sku: TruPower-Portable-90A

This solar add on kit, as the name implies, can be added to your existing **TruPower-Portable-500W** or any other 12V panel system on the market. With the solar add on kit you can expand your solar power kit to any size in a scalable fashion allowing complete flexibility and high performance needed to satisfy your needs.

Depending on the number of solar panels added, your solar power kit can be expanded to the below power output. The maximum power output our solar power kit can handle for a 12V battery system is completely dependent on your controller capacity. Our **TruPower-Portable-500W** comes with a 30 Amp max .

Number of add on kit	Power output of solar power kit (Watt)	Amount of electricity generate per day		Recommended battery (Min.)
		Charge into battery (Ah)	Solar power generated (KWH)	
0	85	19	340	12V /40Ah
1	170	38	680	12V /80Ah
2	255	57	1020	12V /100Ah
3	340	76	1360	12V /150Ah
4	425	94	1700	12V /200Ah
5	510	113	2040	12V /250Ah

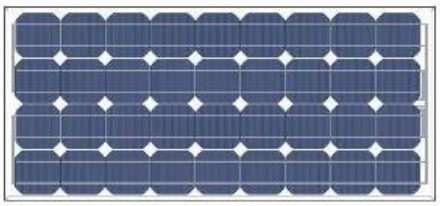
- The above data is the amount electricity the solar panel(s) can create within one day under ideal conditions and is based on the consumption that there are 4 hours of full sunshine (1000W/m^2). If the solar power is not being used daily, the battery capacity needs to be expanded accordingly.
- The solar system generates electricity in proportion to the amount of sunlight exposed to the solar panel(s). The peak generation of power is on a clear day when the sun is at a normal angle to the solar panel(s). Clouds, seasonal variation of solar angle, dust/dirt on solar panel, off-azimuth orientation, and any incidental shading could decrease the performance of solar panel.
- Power loss during transmission through lead wire and connector, efficiency of charge controller and inverter will also decrease the amount of electricity you are allowed to use.

Caution

- Before using, carefully read and understand the instruction user's manual.

- This product does not include a battery.
- Clean the surface of solar panel periodically with a soft cloth for its best performance.
- Do not reverse the polarity of the load, the solar panel, & the battery.
- Please do not touch any bare stripped lead wire to prevent electric shock.
- This appliance is not intended for use by young children or infirm person unless they are being adequately supervised by a responsible person to ensure that they can use the application safely.

Part List

Serial	Description of parts	Quantity
A1	Mono-crystalline solar panel Peak Power Output: 85–90Wp @18V (±5%) Anodized aluminum alloy frame with 7 feet connect wire. 	1 PC
A2	Mounting assembly 	2 PCs
A3	Mounting screws with nuts For securing solar panel and assembley 	10 PCs
A4	Extension wire 20 feet, Cross section: 0.09 inches 	1 PC
A5	Tinned wire 1 foot long, Cross section: 0.18 inches 	1 PC

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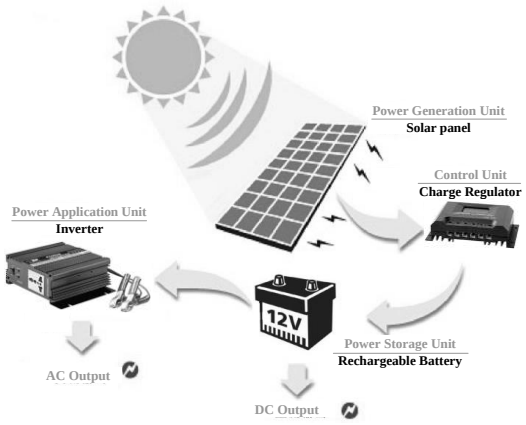
How do a solar power kit work?

Solar panel(s) converts sunlight into DC electricity, and electricity is then sent to the battery. The battery acts as a storage device, so that power is available even when there is no sunlight. And it also acts as a power stabilizer, since electricity from the solar panel varies according to the strength of the sunlight. The inverter draws power from the battery, and converts the electricity from 12VDC to 110VAC, so that use with AC household appliances is possible. Charge regulator is connected between solar panel(s) and battery, to control the charge and/or discharge process, so that the battery always works within a proper range.



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Operation

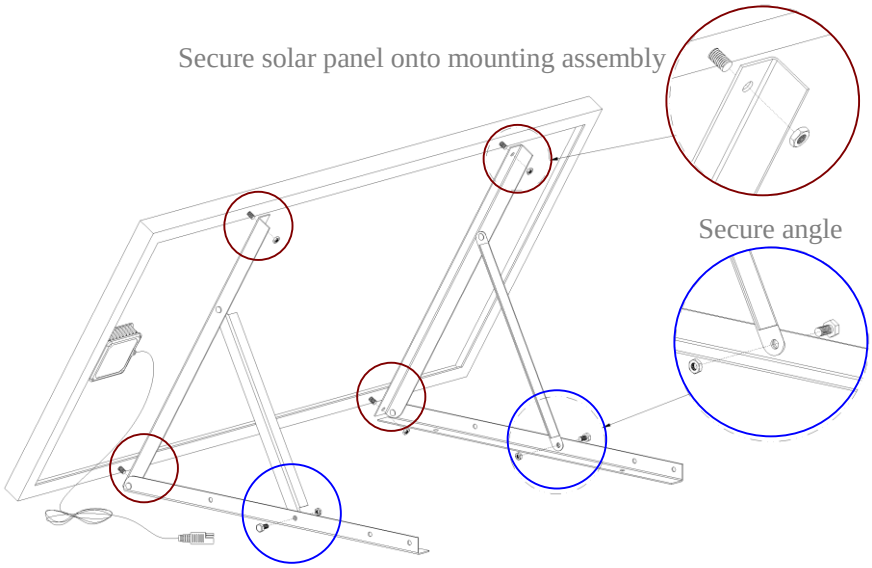
Solar panel

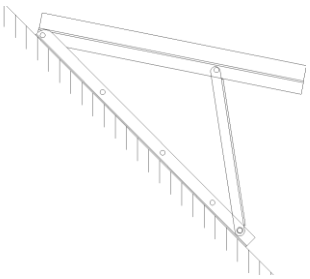
- The solar panel should be mounted at a position that can have direct contact with sunlight, by facing the solar panel to the sun. Make sure that no shadow is cast onto the solar panel to ensure better power output.
- The solar panel comes with 7 feet of lead wire; fit it with the tinned wire (No. 5 in the part list) which allows the solar panel to be connected to the charge regulator.
- Extension wire (No. 4 in the part list) is provided just in case the lead wire from solar panel is not long enough. Use the extension wire only when needed. Fit it in between the solar panel lead wire and the tinned wire.

Mounting assembly

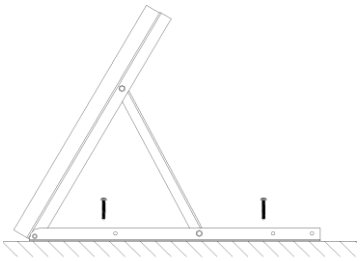
- Mounting assembly consist of two triangle mounts. Open the triangle mount, and adjust them to the desired angle. Use the recommend angle that close to your local latitude (Please refer to below chart for reference). Then secure the angle with the nuts and screws provided. Please refer to "Secure angle"
- Secure the two triangle mounts onto the solar panel. There are two install holes on each long frame of the solar panel, please secure the triangle mounts onto the solar panel to all four holes with screws and nuts provided. Please refer to "Secure solar panel onto mounting assembly".

- The mounting assembly can be secured to the ground or other surfaces through the two ground mount
  holes on each of the triangle mounts (long side).

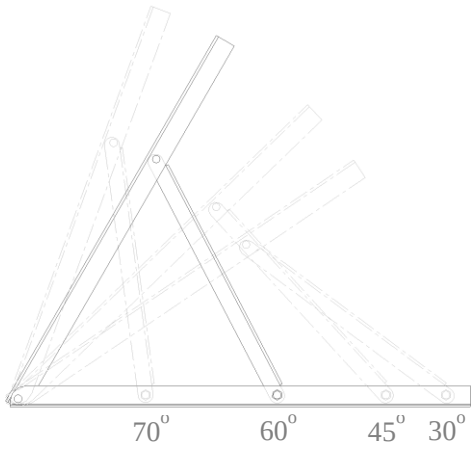




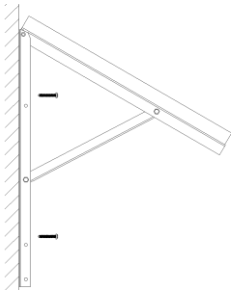
On the Roof



On the Ground



Angle	Applicable Area
30°	Southern USA (California) Australia, Southern Europe (Italy, Greece) Chile (Santiago)
45°	Northern USA (New York), Canada. Europe (France, Germany, Spain)



On the wall

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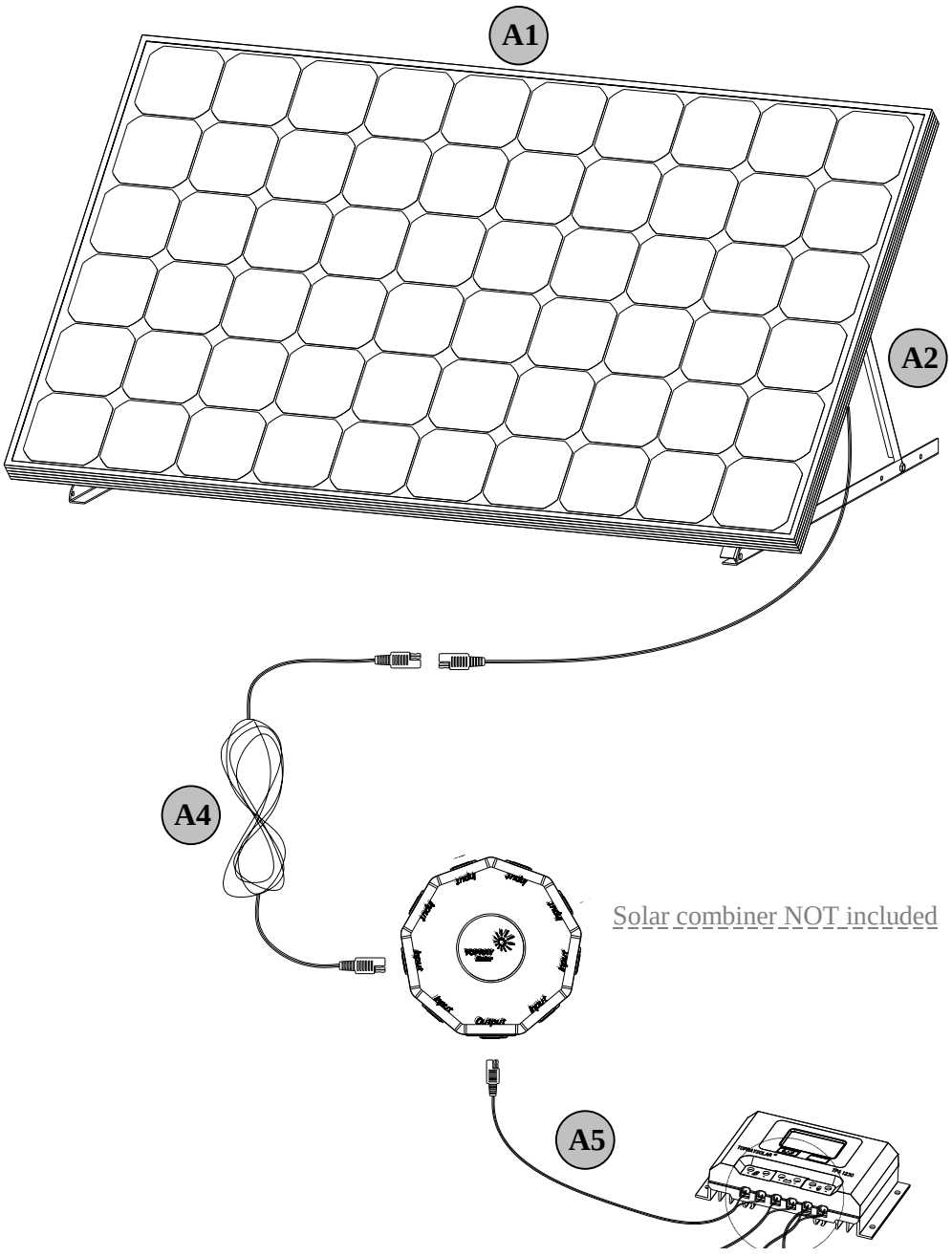
Solar Add On Kit connection diagram



How to expand your solar kit

- A TruPower-Portable-Extender is needed to expand your solar kit.
- Combine the solar starter kit and the solar add on kit(s), by plugging the lead wire coming from the solar panel (or the extension wire, if it is used) to one of the inputs of the solar combiner.
- Plug one end of the tinned wire to the output of the solar combiner, and the other end to the charge regulator
- You can add multiple units of Solar Add On Kit (TruPower-Portable-90A) onto the solar combiner. But make sure that the total power output of solar panels from all the Add on kits + starter kit do not exceeds 500Watts. Failure to do so will result in damage to the product.
- If multiple units of solar kits are combined, bigger battery capacity will be required to hold the increase amount of solar power. For minimum battery capacity requirement, please refer to the chart in page 1. You can either change to a bigger capacity 12V battery, or connect additional battery with the same capacity to the original one. There are two pieces of battery connecting wire included in the solar start kit, use the additional wire to join the two batteries.

Connection diagram