# SP Series Installation Tutorial

This manual describes the assembly of the unit as well as the precautions to be taken, please read this manual carefully before installation and operation. Save this manual for future reference.

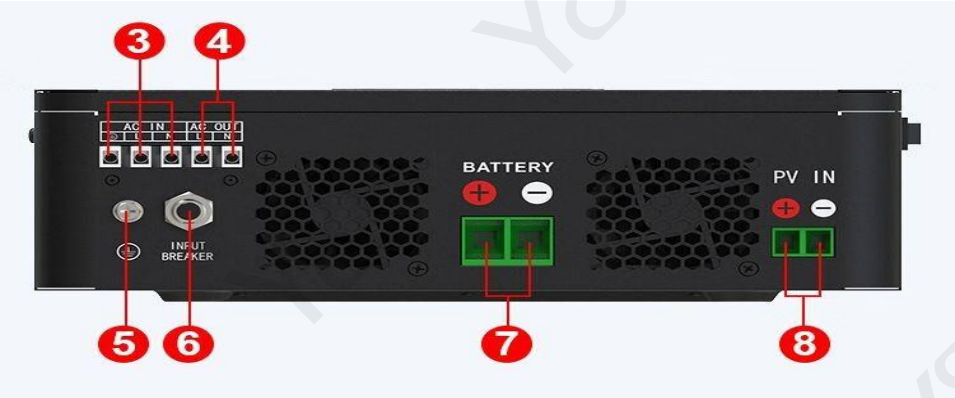
## I. Unpacking and checking:

1.Inverter*1

2.English manual *1

## II.Port Introduction:






1.RS-232 communication port

2.Power switch

3.AC input

4.AC Output

5.Safety grounding

6.Circuit breaker

7.Battery input

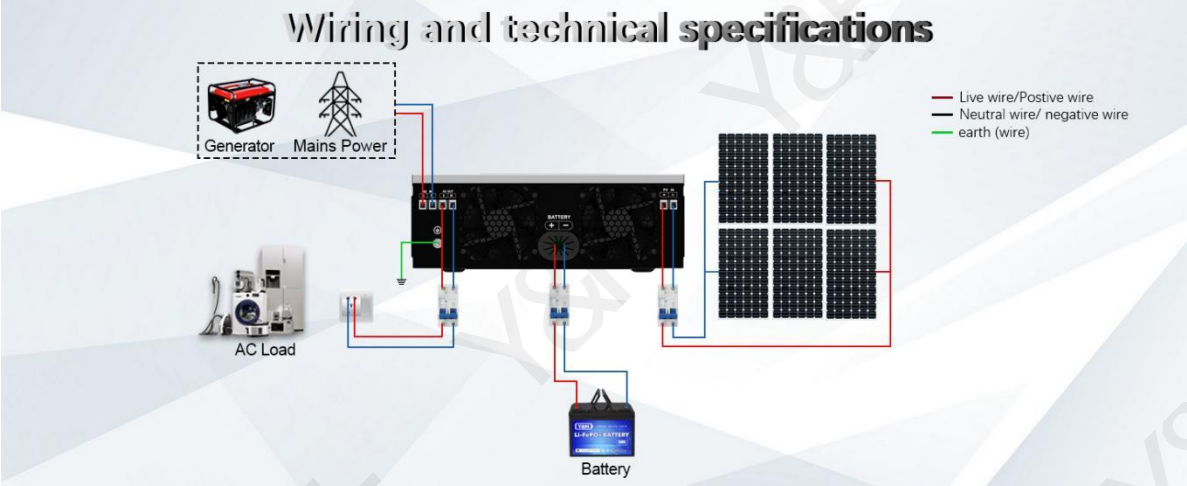
8.PV Input

## III. Use of parameters:

| model | SP-2200W | SP-3200W |
|---|---|---|
| Max. solar panel input power | 2000W | 3000W |
| Panel Voltage Range | 55V-450VDC | |
| Maximum PV input (Voc) | 450V | |

| | | |
|---|---|---|
| Start-up operating voltage (Vmp) | **>60V** | |
| Battery System Voltage | 12V | 24V |
| Recommended Panel Operating Voltage (Vmp) | 90V-240V | |
| Max. charging current | 80A | |

## IV. System connection for use:




Connection steps:

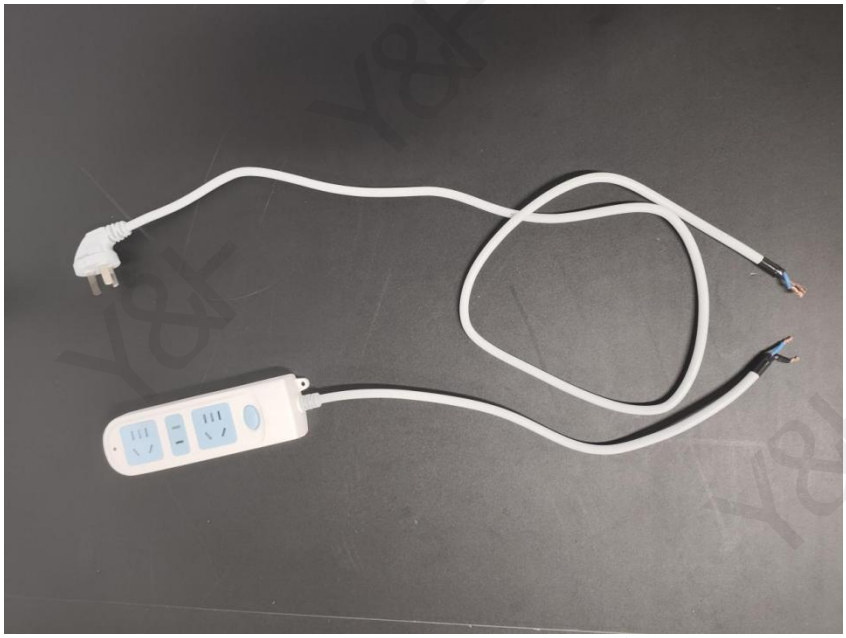
1. battery connection --->2. AC input/output connection--->3. solar panel connection--->4. turn on the inverter switch;

The circuit breaker must be off before wiring. After finishing, check again that all wiring is correctly connected to the positive and negative terminals, and then turn on the battery, AC input/output, and PV input in turn.

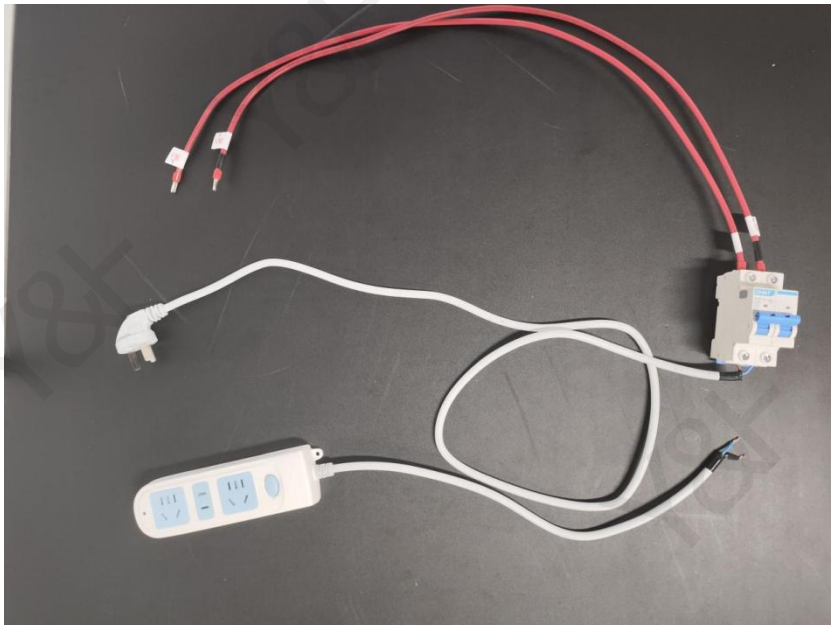
Note 1: Battery circuit breaker must be turned on first

Note 2:Support single phase/L+N=230V; not support AC110V output, not support 110v+110v=220v

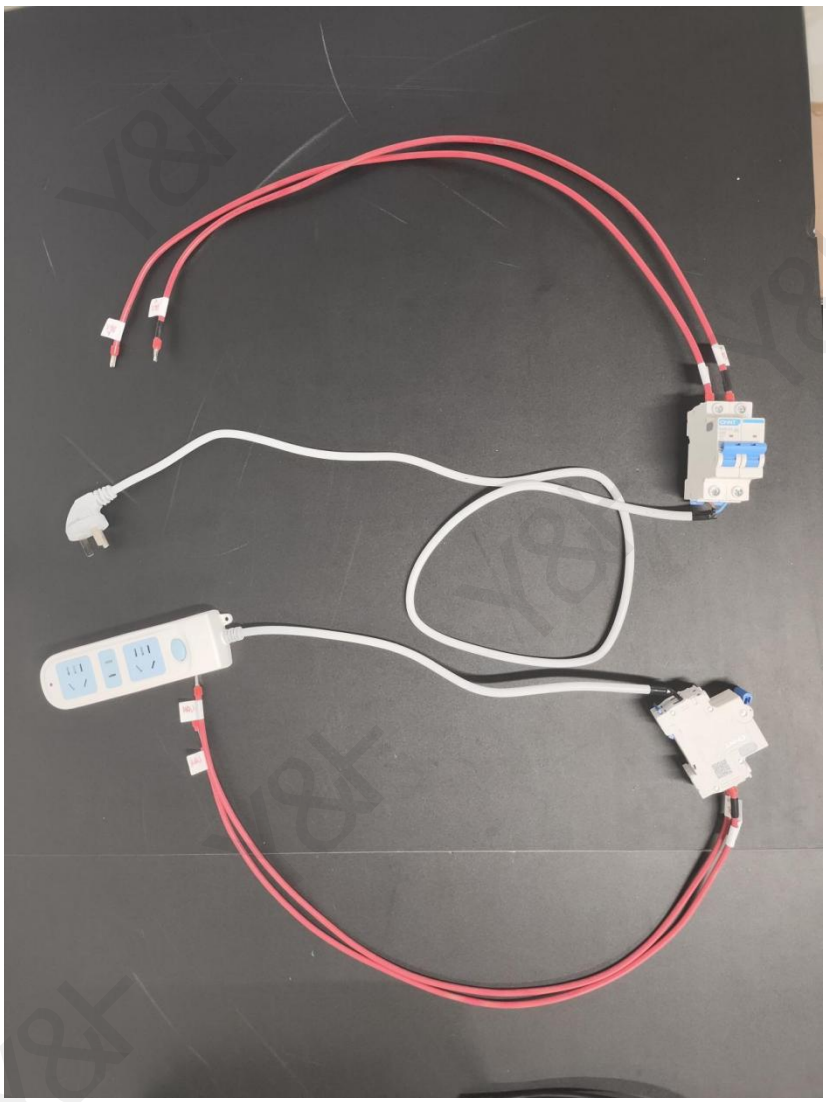
①Plugs cut (can be ungrounded)



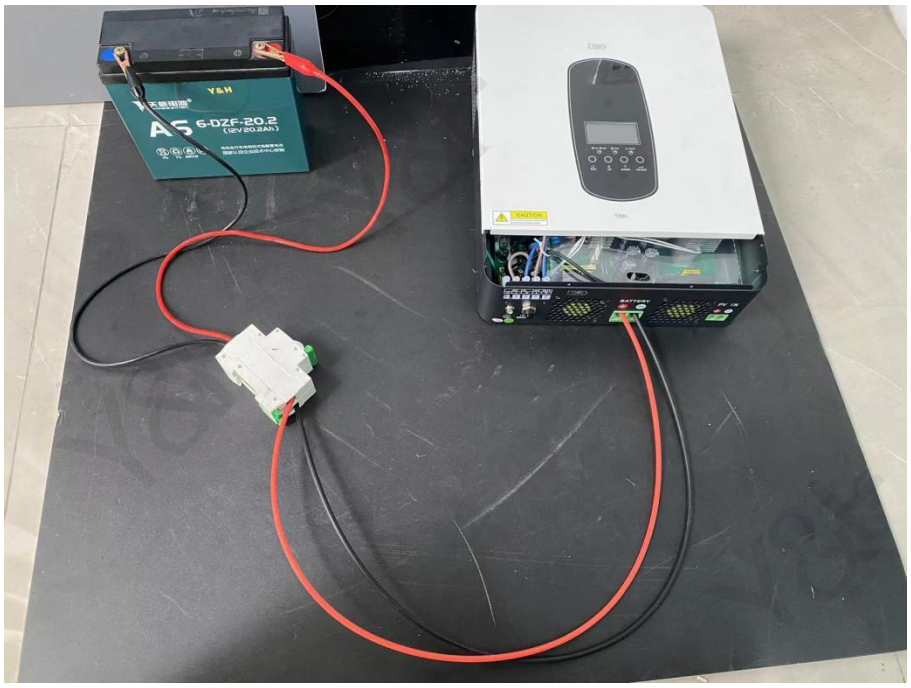
② One end of the plug is connected to the air switch for AC input connection.



③ One end of the row plug is connected into the air switch for AC output connection.



# Battery connection:




Batteries must be connected before the machine can be used, applicable battery type voltage:

SP-2200W-12V-M80A for 12V lead-acid(Seal,AGM,Gel,Flooded) and lithium batteries.

SP-3200W-24V-M80A for 24V lead-acid (Seal, AGM, Gel, Flooded) and lithium batteries.

## Battery Cable Size and Circuit Breaker

**SP-2200W-12V-M80A** wire size：4AWG；

**SP-3200W-24V-M80A** wire size：6AWG；

## AC Input/Output Cable Size & Circuit Breaker:

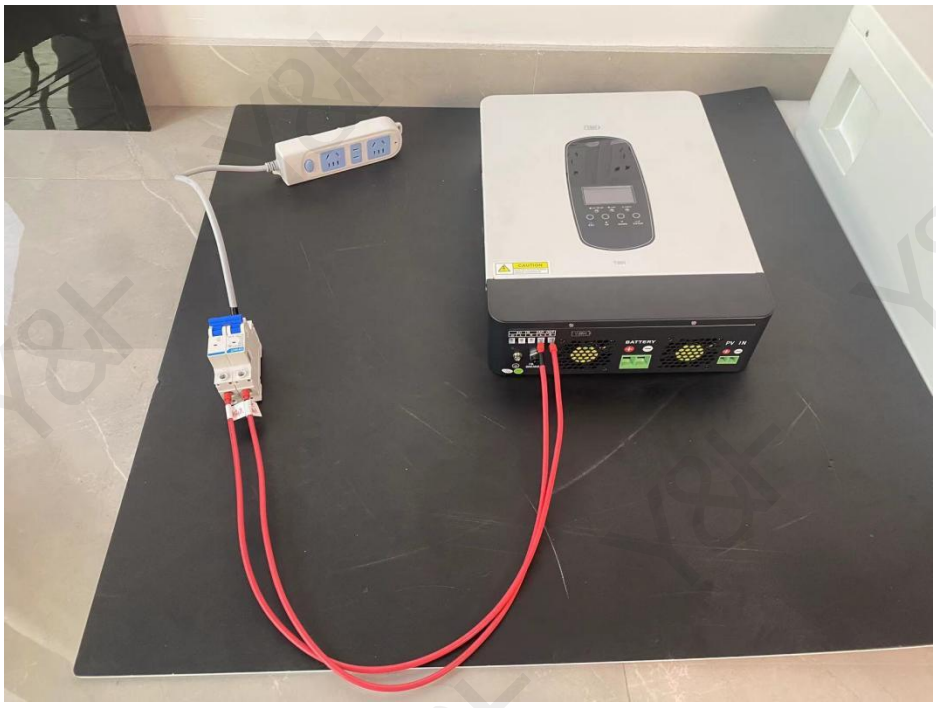
**SP-2200W-12V-M80A**： AC Cable Size：14AWG；Circuit Breaker：20A/2.2kva

**SP-3200W-24V-M80A**； AC Cable Size：12AWG；Circuit Breaker：32A/3.2kva

## 2.AC input connection:



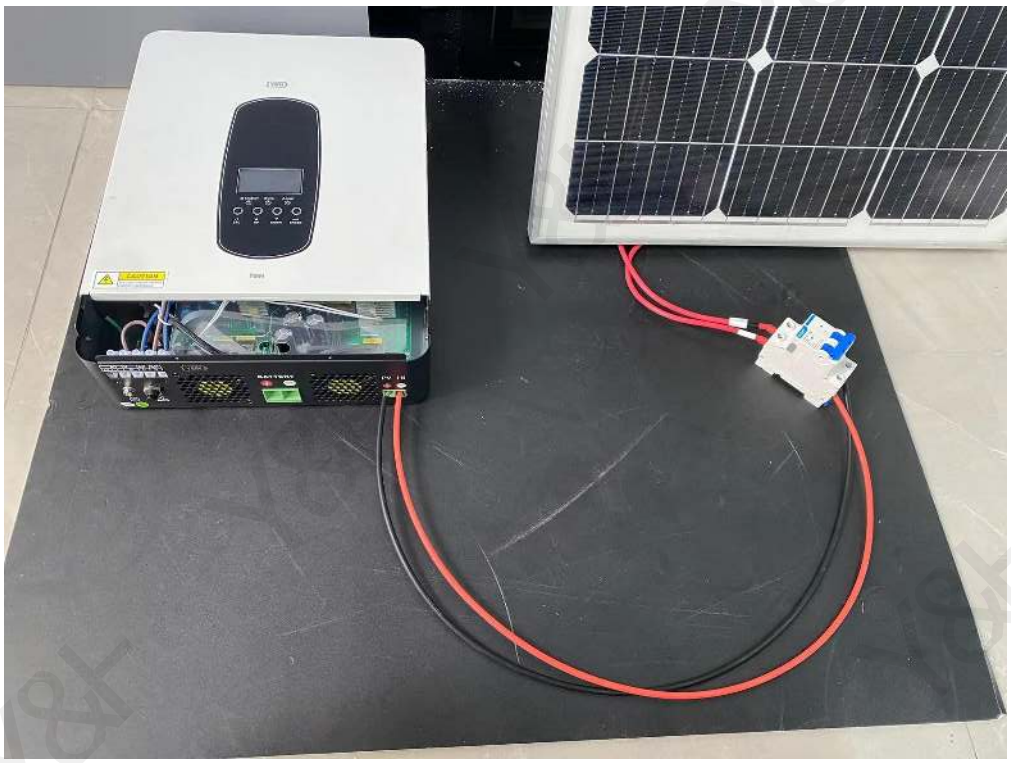
## 2-1. AC output connection:



Before connecting the AC input/output power, install a separate air switch between the inverter and the AC power supply. This will ensure that the inverter can be safely disconnected during maintenance and is fully protected from AC input overcurrents.

**NOTE:** Port L must be properly connected to the positive terminal of the air switch, port N must be properly connected to the negative terminal of the air switch, and the circuit breaker must be OFF when making AC input/output connections.

## 3. panel connections:



When connecting the solar panel, please connect the positive and negative terminals of the machine and the positive and negative terminals of the panel correctly, note that when the machine is connected to the solar panel, it is recommended to install a circuit breaker.

**PV cable size with circuit breaker recommendation:**

SP series recommended wire size 1*16AWG;

SP-2200W-12V-M80A: Solar panel power maximum 2000W, panel starting voltage should be >60V or more, recommended working voltage is 90V or more. The working voltage range is 55V-450VDC, the maximum working voltage is 450VDC.

SP-3200W-24V-M80A: The solar panel power is up to 3000W, the panel starting voltage should be >60V or more, the recommended working voltage is 90V or more. The working voltage range is 55V-450VDC, the maximum working voltage is 450VDC.

**Note 1:** It is recommended to connect in series, it can reduce the current and reduce the cost of cable.

**Note 2:**Using 60v/400v will not be the best input voltage, the panel voltage is unstable. The best voltage recommendation is between 90-250v.

**4. Turn on the power switch:**

Once the unit is properly installed and the batteries are well connected, press the on/off switch. The inverter starts.

## 5. About the load power:

Note: The inverter power must be 3-7 times of the load power. (For inductive loads, refrigerators, air conditioners, washing machines, water pumps. (Equipment with motor)

For example: air conditioner rated power 700W, 700W * 3 = 2100W, then you need to buy the power of 2400W above the machine.

For example: LED light is a rational load, the power is 50w. 1600W machine can use 32pcs.

# V. After-sales service

## 8. For inverter not working solution, please complete the following 3 steps:

**8-1:The inverter is not working, how to troubleshoot the inverter by myself?**

1. Disconnect all wiring in the system, wait 10 minutes, then connect only the battery to start and check if there is a fault code

2. Run the inverter with the current appliance to see if there is any fault code.

3. Run the inverter with a lower power appliance to test for fault codes.

4.Connect solar energy

5. Connect to utility power

6.If any of the above steps shows a fault code, please close the current step immediately. Refer to the manual for the solution to the fault code.

**8-2: When you want to contact Y& H customer support. In order to solve the problem faster, please give us the following information so the technician can analyze the problem**

1: How many watts of solar panels? How many panels do you have?

2: How many volts is the solar panel open circuit voltage? (Voc). How do you connect them in series and parallel? Or you can test how many volts is the solar panel input voltage?

3: What is the battery voltage? Inverter DC range is 55-450v. minimum starting voltage 60v. 90-250v recommended.

4: Take a picture of the LCD display. Provide barcode on the side of the inverter

5:Is it connected to the mains?

### 8-3:How do I record a video? So that the technician can analyze the problem

Video 1: Use a multimeter to test the battery voltage, then connect the battery to the inverter. And turn on the inverter switch. Take a picture of the inverter LCD display.

Video 2: Please connect a load and shoot the inverter LCD display.

Video 3: Use multimeter to test the panel voltage, then connect the panel input to the inverter and shoot the inverter LCD display. Video 4: Please connect the AC input and shoot the inverter LCD display

**Any error code in any of the above, please terminate immediately and shoot the video!!!!**

## 9:After-sales contact

Please feel free to contact us if you have any questions. In order to save time, we suggest you contact us directly through WhatsApp. We can contact you promptly with any new response. It is recommended to contact the customer service of the purchasing store first.

WhatsApp:+8613750091547

E-mail: barley@yonghuisolar.com