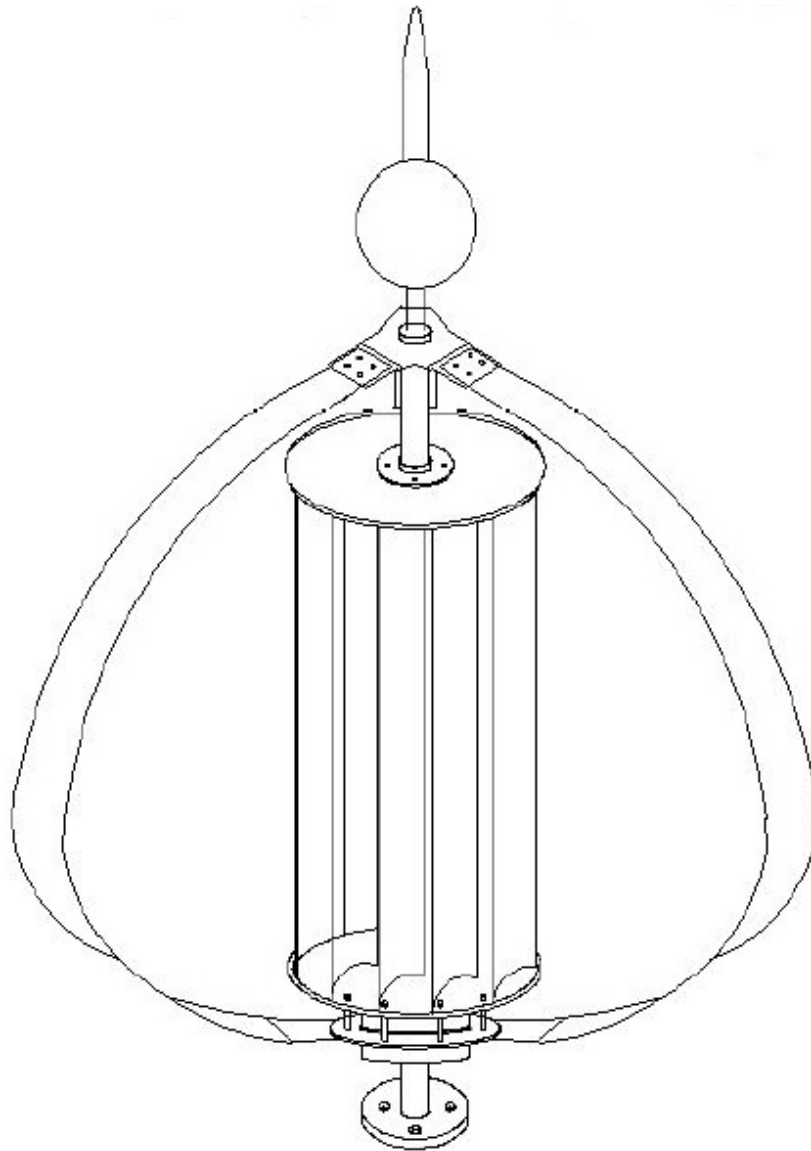


# USER MANUAL

## For Vertical Wind Generator



## **Distinguished Users:**

We are very glad that you choose our company's products and feel sure that you will find the convenience that our products bring to you and the joy of promoting the policy of “low carbon and environmental protection”.

Please do not forget to read the “User Installation Manual” before installing of the products.

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# **Part1. Safety Warning and the Attention**



## **Attention:**

**For correct installation and use of this equipment, please read carefully the safety warning and attention and strictly follow the instructions.**

## **Basic requirements:**

- Do not disassemble the equipment by you. Please contact the specified maintenance department when the equipment is out of order.
- Without authority, no company or individual are allowed to change the equipment structure, safety and performance design.
- please obey local laws and regulations when using this product.

## **Assembly Requirements:**

1. Before the assembly of the wind generator or in the process of maintenance, please be sure to read the user's manual first..
2. Please don't install the wind generators in rainy days or when the wind scale is at Level 3 or above.
3. After opening the package, it is advised to short circuit the three leads of the wind generators (the exposed copper parts should be screwed together).
4. Before the installation of the wind generator, lightning grounding must be prepared. You can arrange the facilities according to national standards, or you may arrange them according to the local environment and soil condition.

5. When assembling the wind generator, All the parts should be fastened with fasteners specified in table2

**Table 2**

Serial#	Fasteners	spec	quantity	tightening torque (N*M)	remarks	Executive standard
1	Flange bolts	M12*55	4		galvanized	
2	Plain washer	D12.2	8		galvanized	
3	Spring washer	D12.2	4		galvanized	
4	Lock nut	M12	4	≥58	one-time use	
5	Bolts for 3 outer blades	M6*40	18			
6	Lock nut for 3 outer blades	M6	18	≥13.6	one-time use	
7	Plain washer	D6.2	36	≥68	one-time use	
8	Spring washer	D6.2	18			

6. Before the connection between the wind generator flange and the tower flange, please connect the three leads of the wind generator to the three leads of the tower accordingly. When using the hinge method, every pair of wires should be no less than 30mm in length and be wrapped with Acetate cloth tape for three layers, then sheathed with spun glass paint tube. With this method, connect the three pairs of wires (attention: the joint of the wires can't bear the weight of the tower leads directly, so wires 100mm downward from the joint should be wrapped with adhesive tape and then stuffed into the steel pipe. After that, wind generator flange and tower flange can be connected.

7. Before hoisting the wind generators, the end (which should be connected with controller)of the tower lead should be cut away the insulating layer for 10mm or so. Then

screw the three exposed leads (short circuit) together.

8. During the installation, it is prohibited to revolve the rotor blades roughly (the ends of wind generator leads or the tower leads are short-circuited at this moment). Only after all the installation and the examination is finished and the security of the erection crew is guaranteed, it is allowed to dismantle short circuited leads and then connect with controller and battery before running.

### **Attention:**

**Battery should be connected with controller before wind generator connected with controller**

**If above stated instruction are not followed when assembling and installing the wind generators, we are sorry that any problem or failure resulted are not to be covered by warranty.**

## **Part2. Product Description**

1. Low start up speed; high wind energy utilization; beautiful appearance; low vibration
2. Human friendly design, easy installation, maintenance and repair.
3. Precise injection molding blades together with the optimized design of aerodynamic contour and structure, the blades have such advantages: high utilization of wind energy which contributes to the annual energy output.
4. The generators, adopting patented [permanent magnet rotor alternator](#), with a special kind of stator design, efficiently decrease resistance torque. Meanwhile, it makes the wind

generators match the generators quite well and increase its reliability.

**Technical data:**

Model	NE-100Q2	NE-200Q2
Rated power	100w	200w
Wheel diameter	1.12m	1.12m
Turbine height	1.1m	1.1m
Number of blades	15	15
Rated wind speed	10m/s	11.5m/s
Start-up wind turbine	2m/s	2m/s
Survival wind turbine	45m/s	45m/s
Output voltage	12/24V	12/24V
Net Weight	15kg	15kg
Blade material	Casting aluminum alloy	
Generator type	Three phase permanent magnet ac synchronous generator	
Control system	Electromagnet	
Speed regulation	Automatically adjust windward direction	
Lubrication way	Lubrication grease	
Working temperature	-40℃~80℃	

## **Part3.Tower and Accessories Production**

1. Its flange base is suggested to be installed on a iron barrel-type tower whose OD is 48mm and thickness is 4.5mm.
2. Iron pipe length is suggested to choose based on local wind scales and geographical environment.
- 3, tower accessories, including (1) the upper tower. (2) The cable group. (3) Tightening line device. (4) Anchor. (5) Line hook. (6) Tower base. (7) Anti-tarnish, anticorrosive, coating materials.

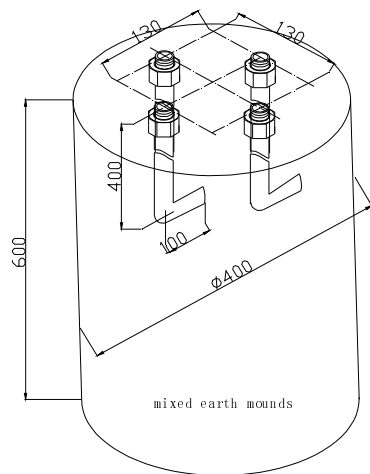


Figure1:manufacture of mixed earth mound

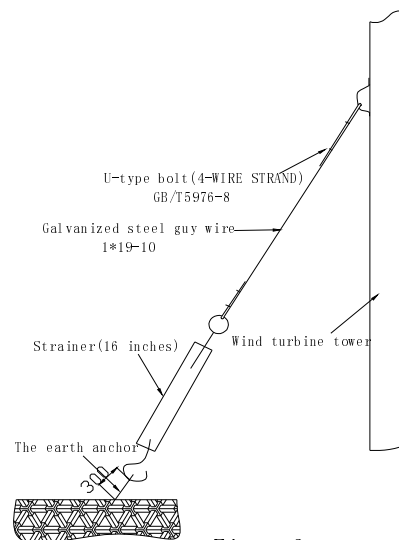


Figure3  
The manufacture of guy cable

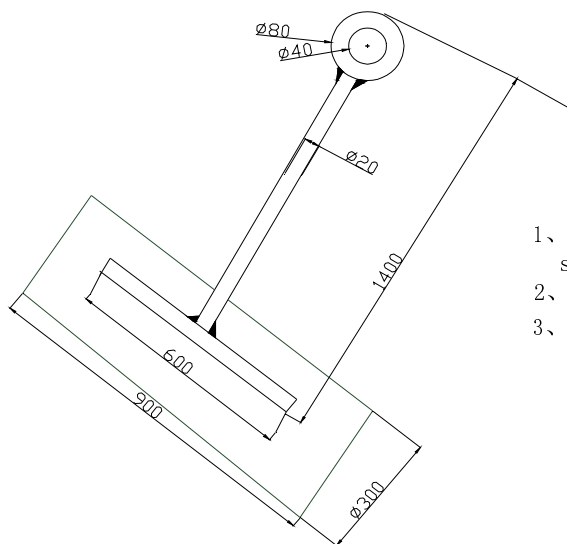


Figure2

The manufacture of earth anchor(3 sets)

### Technical requirement

- 1、 L-type bolts for four galvanized wire strands; screws should be 60 higher from the mixed earth surface.
- 2、 C25 motar can be used for mixed earth.
- 3、 The metal parts should be under the threatment of anticorrosion and rust proofing.


## **Figure 1 the fabrication of anchor, lasso and guy cable**





5. Please refer to the national standard, or the European standard, or American standard or figure 1 in this manual to arrange grounding device.
6. Tower and its accessories can be provided individually according to your requirements

## **Part4. The wind generator Installation Steps**

·  **It is prohibited to assemble and install wind generators in rainy days.**

1. The insulated current transmission wires: transmission lines are built in the iron pipe tower. The upper end is led out through the center bore of the wind generator flange, while the bottom end are led out from the pipe opening which is 30cm away from the ground.

The section from the opening to the point which is 60cm beneath ground should be protected by iron pipes who's O.D should be 17mm to 21mm. The underground paths of the transmission lines to the controller can make arrayed and covered with iron pipe or a plastic pipe.

2. The installation sequence of the wind generators can follow the steps as illustrated in **figure 3.**

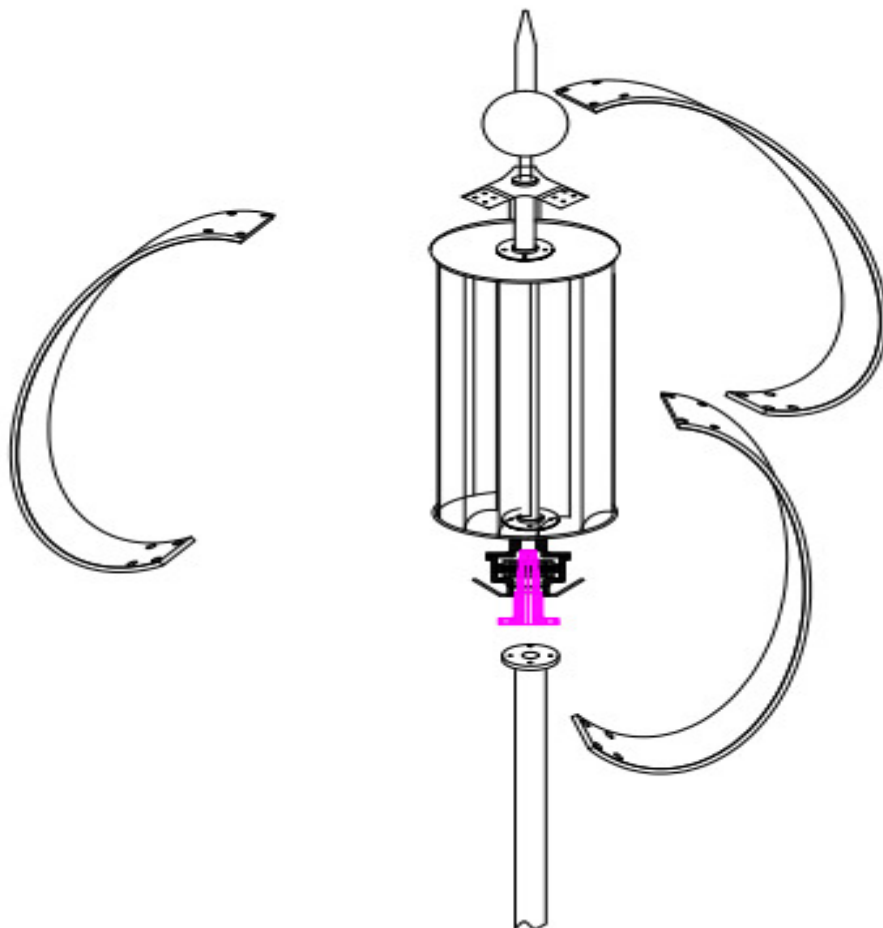
2-1. Place the steel bracket on the ground; block up the flange joint to 1.3m.

2-2. Align the wind generator flange to the tower flange. Cut away insulating layer of current transmission wire end (which are to be connected with controller) for 10mm, then short circuit the exposed copper wires (screwed together)

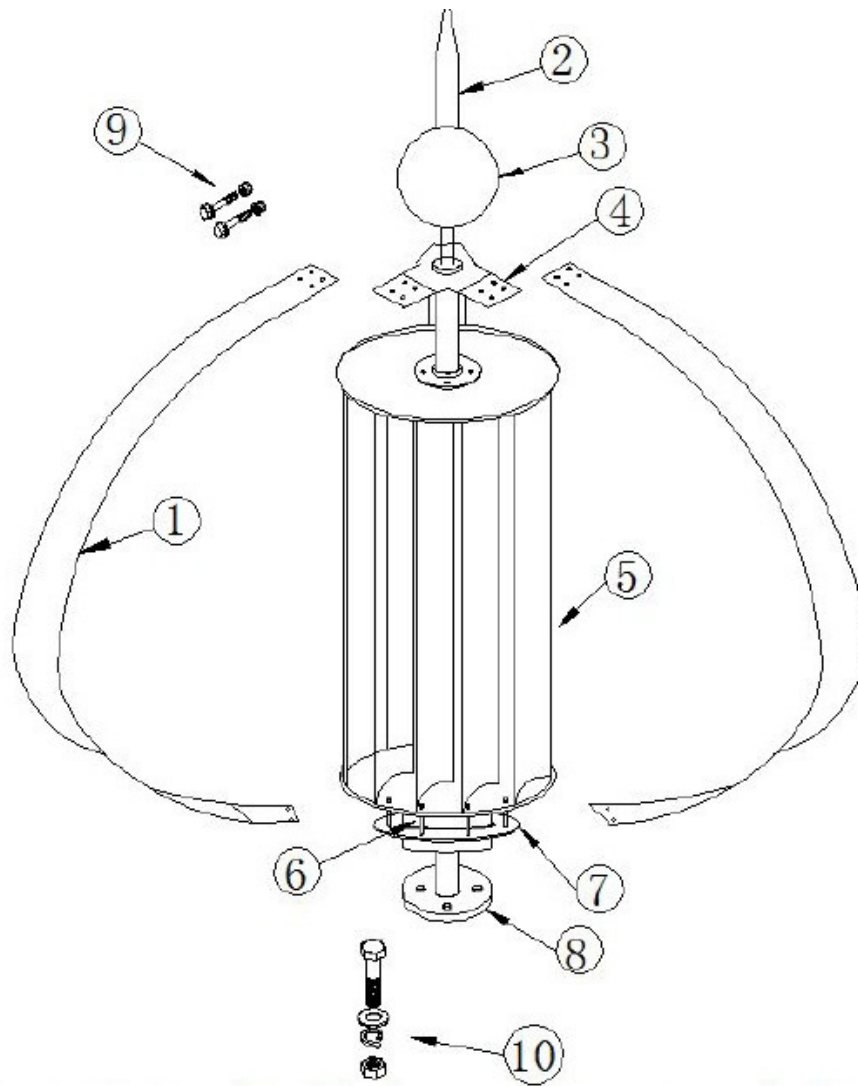
3. The lifting of the wind generators and tower should be proceeded with the presence of skilled slinger and the security should be guaranteed. The tower's stance should be executed on the basis of the relevant requirement of permanent construction.

4. After installation of tower and lightning protection is finished, use 500V meggar to measure insulating resistance between transmission lines and earth (earth wire can act as ground) in the case of not losing the short circuited leads of transmission lines, measurement should not be less than  $5M\Omega$ , otherwise, insulating layer may be crushed or damaged should be dealt with immediately.

### **Blades Assembly**



**Figure 3**



1. 3 outer blades 2. lightning conductor 3. stainless steel ball  
 4. Triangle plate for blades 5. inner blades 6. connecting plate  
 7. generator 8. flange plate 9. bolts and nuts for outer blades  
 10. bolts and nuts for flange plate

**Figure 4 wind generator decomposition**

## **Part5. The Transmission Line Connection With Controller**



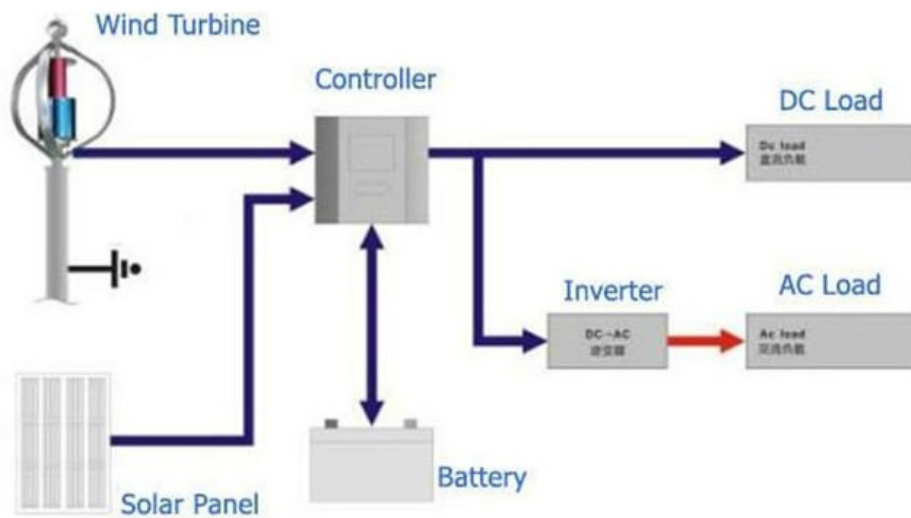
**Avoid heavy rain days for the first commissioning. Priority should be given to the days with gentle breeze or strong wind ( wind speed: 5~13m/s).**

1. Connect correctly the positive and negative pole of battery to the positive and negative pole of controller.
2. The load circuit connected to the socket on the back of control by way of fuses, switches, plugs.
3. Connect the three current transmission lines of wind generator to the three terminals on the back of controller. Please refer to controller manual for detailed instruction.
4. Battery selection generally lead-acid battery preferred, 100w-.300W wind generator 100AH -200AH battery optional, 300W-600W wind generator, 200 ~ 400AH battery optional.
5. The controller should be placed in dry, well ventilated place, moisture and dust-proofed. Inverter shell should be kept grounded and more than 1.5 meters away from the batteries to avoid acid gas pollution.
6. Battery should be put in the dry, ventilated place, cool in summer, warm in winter,in such environment , battery can be better maintained

### **Attention:**

- Battery should be connect with controller before wind generator connected with controller.
- Failure to follow these written instructions will void your product guarantee.

## Connection diagram of wind generator, solar panel & electrical appliance



## Part6. Maintenance and Precautions

1. Wind generators often work at poor environment, thus please make sure to check regularly with your sight and hearing; check whether the tower is swaying or whether the cable is loose (using a telescope is also a good idea).
2. Timely inspection should be made after a heavy storm. If there is any problem, please put down the tower slowly for maintenance. With regard to the wind generators for streetlights, there should be electrician climbing the pole to check if there is any problem when wind generator have been short circuited and security protection measures prepared.
3. The free maintenance batteries should be kept externally clear.
4. Do not disassemble the equipment by yourself. Please contact sales department when the equipment is out of order

## Part7. Packing List

Serial#	Item	Quantity	Remarks
1	Generator body	1	
2	Outer blades	3	
3	Bolts and nuts	1 bag	
13	L spanner	1	optional
14	hex wrench	1	optional
15	Controller / inverter	1	optional
16	tower	1	optional

## Part8. Quality Guarantee

1. The company guarantees customers that generator is of excellent quality, function is good, the body is complete, rigorously checked before delivery,
2. We provide **one** year's warranty for wind generator since the date of sale, damages occurred in the following situation: dismantle by yourself or seriously violate operation (not according to instructions use) are not covered by warranty.
3. The documents are as a product warranty certificate, please keep it properly.

### **User information table:**

Sales company:	Purchase company:
Purchase time:	Contact person:
SBBH:	Contact:
Model:	Zip code:

**Maintenance records:**

Date	Maintenance species	Summary	SMT rework