

Yangzhou Shenzhou Wind-driven Generator Co.,Ltd



USER'S MANUAL FOR E-series WIND GENERATOR

(Version no.: 1.1)

CE

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Warnings:

- Please excuse from specification alternations without notice;
- It is required to comply with the local law, regulations or the permission From local government before installing WTGS;。
- Only under no wind weather should carry out the installation, maintenance And dismantling of WTGS;。
- Please make sure the construction for WTGS mechanical and electronic facilities should be done by professionals;。
- Color or figuration of pictures might be varied against physical goods;。
- It is forbidden to leave the wind turbine generator working under unloaded state (such as without connecting with batteries)。
- The safety signs involving the manual are as followed;



Danger-Improper operation might lead to hurt people badly.。



Attention-Improper operation might lead to damage products or hurt People.。

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误！未定义书签。	
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误！未定义书签。	

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1 Abstract

The wind turbine generator system is the equipments which could produce electricity by the rotating of blades. The function of the controller is to rectify the output and protect the generator under severe environment. The E-series generator could be applied in the system of wind and solar hybrid, as the controller of it has a solar connector. (solar connection is option, contact with factory for details)

2 USAGE

This E-series generator could be both applied for home use and factory use, which is available for on-gird and off-grid, While on-gird by matching on-grid inverter and off-gird by matching batteries and off-grid inverter.

Not available for below:

1 No loading

2 Directly connecting with consumption

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3. Parameter

Model	E-1000	E-2000	E-3000	E-5000
Rated voltage(V)	24/48	48/120	48/120	240
Rated current(A)	41/20	41/16	62/25	20
Rated power(W)	1000	2000	3000	5000
Start-up wind speed(M/S)	2.5	2.5	2.5	2.5
Rated wind speed(M/S)	10	10	12	12
Generator mode	permanent magnet generator	permanent magnet generator	permanent magnet generator	permanent magnet generator
Control mode	PLC intelligent control	PLC intelligent control	PLC intelligent control	PLC intelligent control
Protection mode	Dump load	Dump load	Dump load	Dump load; Hydraulic brake
Rotation diameter(M)	2.7	3.2	3.7	6.2
Generator life time(Year)	15	15	15	15

4 Installation of wind generator

4.1 Site choosing

Wind turbine generator system should be installed at least 50m away

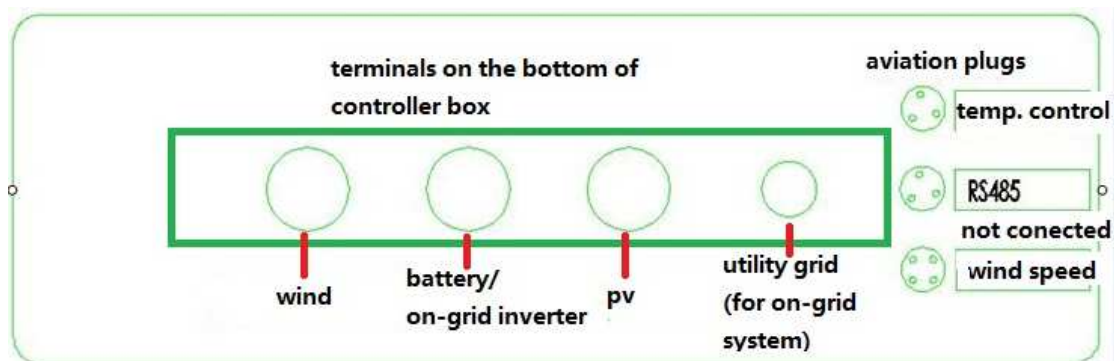
URL: www.f-n.cn

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from house or areas people gathering. It should be avoided to have trees or buildings nearby to affect the wind speed or wind direction. It is forbidden to install the wind turbine generator on soft lands, uneven ground or areas where the ground can be easily influenced by the climates. At the same time, the distance between generator and battery should be also considered, as the longer the distance, the less the wastage. And please use a thicker cable for long distance connection.

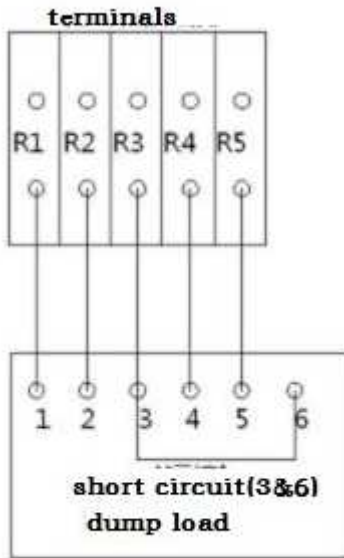
4.2 Assembly and connection

Note: Please, firstly connect the controller with battery, and then the generator
Instruction for connection above 5kw



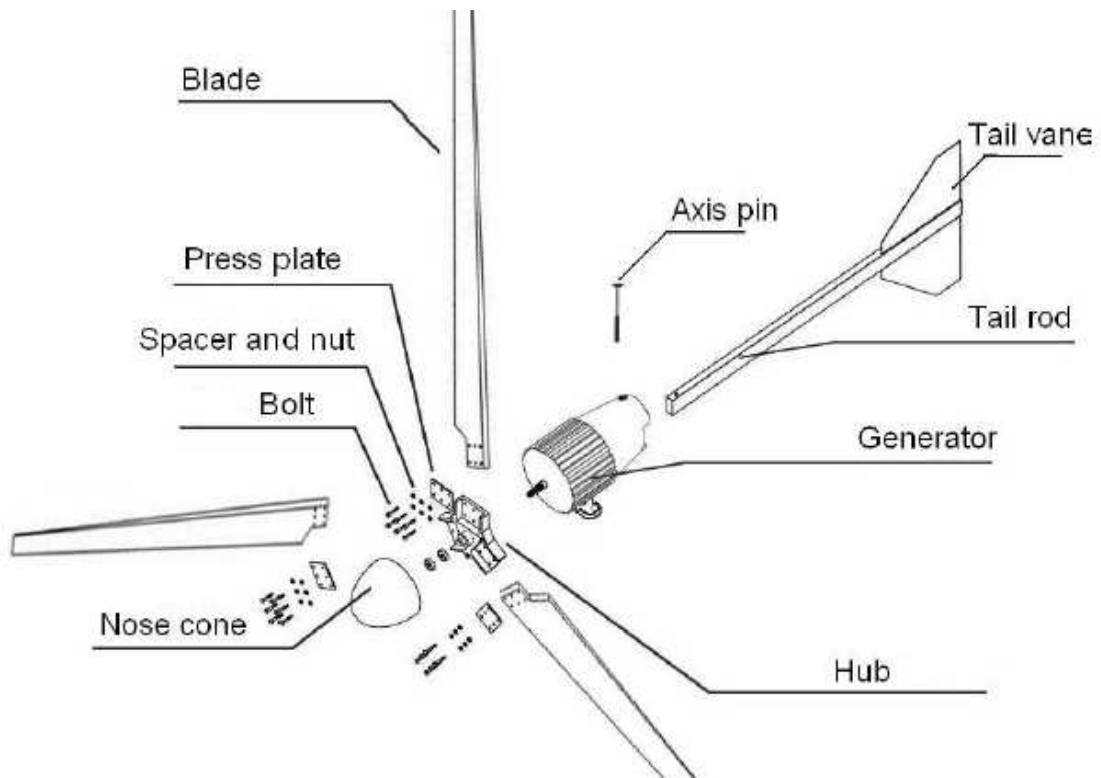
For 5kw :

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Note: From R1 to R5 is the connector of dump loader.

4.3 Diagram for generator



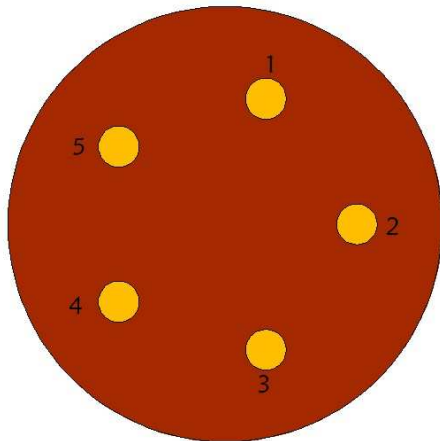
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4.4 Assembly generator

1. Connect the cable to the bottom of generator, and then make the cable go through the pole center.



For E1KW/E2KW/E3KW:

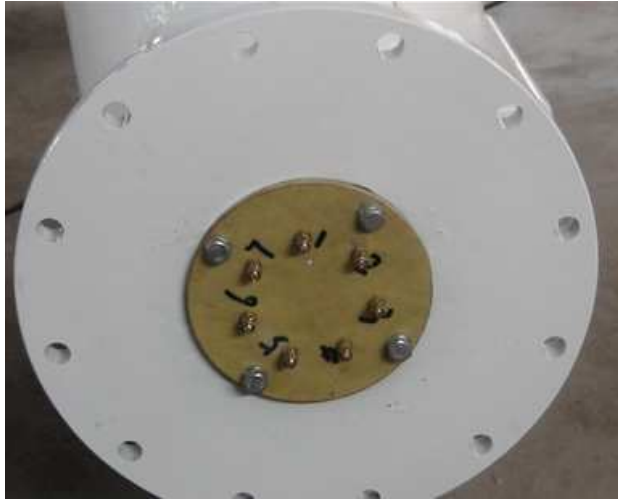


Terminal No.1 and No.2 connect with temperature;

Terminal No.3, No.4 and No.5 connect with wind generator power cable.

E5KW:

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NO.	1	2	3	4	5	6	7
Wire	Generat or lead wire (A)	Generat or lead wire (B)	Generat or lead wire (C)	Tempera ture control (+)	Tempera ture control (-)	Brake (+)	Brake (-)

2. Connect the generator with the pole by screw;

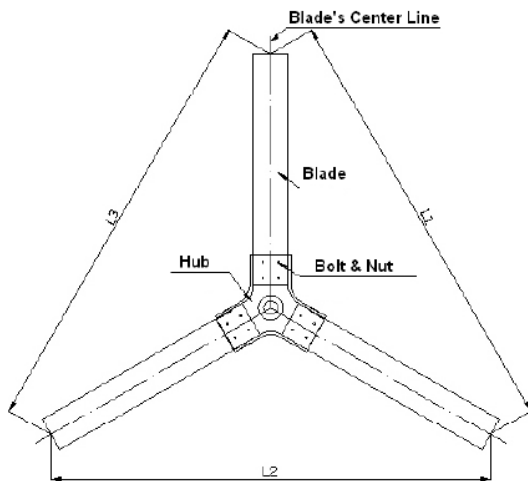


3. Blades

- (1) The flange has been assembled on the motor shaft before delivery
- (2) Please note the concave part of blades should face the wind, and tight the blade with flap by screw. Balance is very important, and do

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not tight the screw before assembling all blades. For finding balance, please make a same distance for every apex, and then tighten the screw. (as below)。



Note: $L1=L2=L3$ (with tolerance $\pm 5\text{mm}$)。

Tighten the screw after finding balance.

4. Assemble the nose cone by screw



5. Connect the tail with the generator with screw

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6. Please connect cable from the tower to the controller. Note, controller should be firstly connect with battery



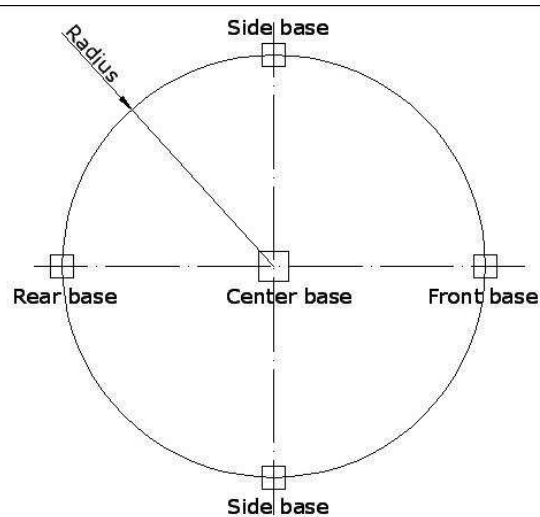
5. Installation of guy cable tower

5.1 Foundation sizing

Please install the generator only under no wind weather.

To make the foundation in an open area:

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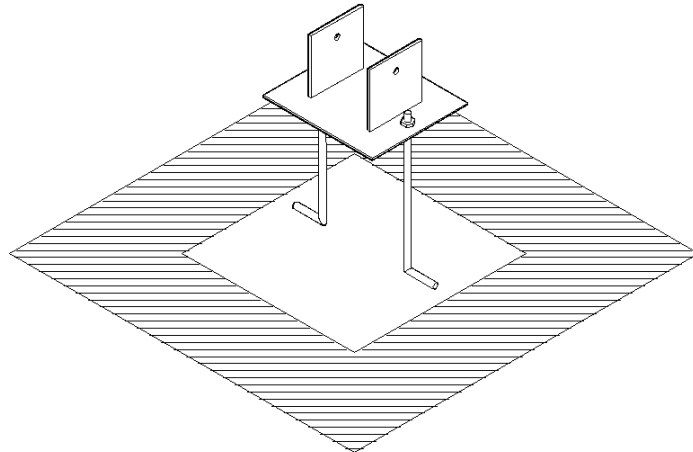
Model		1KW Guy cable tower	2KW Guy cable tower	3KW Guy cable tower	5KW Guy cable tower
Foundatio n	Radius(m)	3	4	4	6
	Center foundation(m)	0.6*0.6*0 .8	0.6*0.6*0.8	0.9*0.9*1.2	
	Edge foundation (m)	0.5*0.5*0 .7	0.6*0.6*0.7	0.8*0.8*0.9	

5.2 For making basement

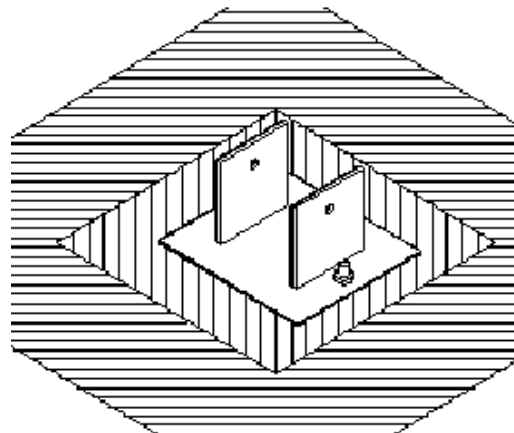
Dig the basement according to the designed size. Then put the anchor in the basement. Please assemble the plate as below. For generator below 2kw, there are two pins needed to fit in the edge foundation; For above

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3kw, there needs to be three screw tooth hole forwards to the front side.

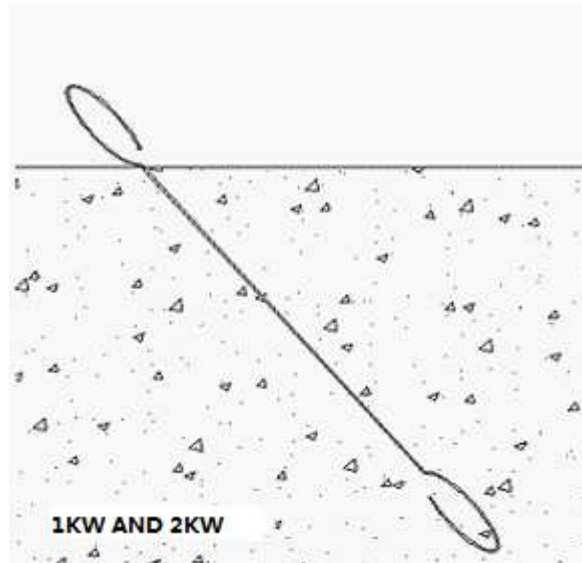


Placing the concrete after making the basement ready (C25), as below,

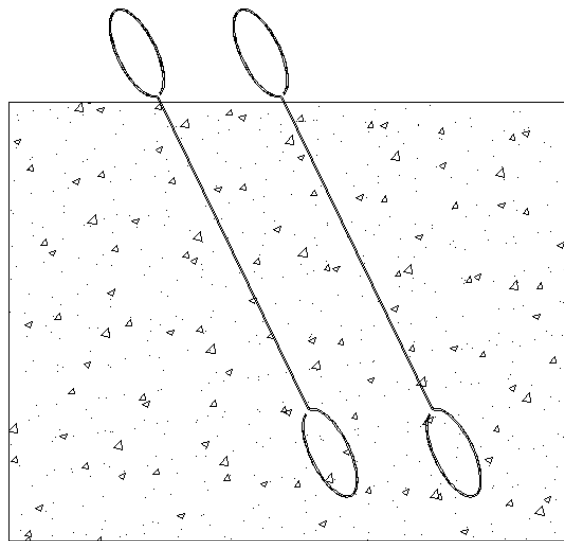


Put the edge anchor into the edge basement, and please check the distance between the hook of basement and the center, including the basic level of basement, and then placing concrete. Do as below,

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For the 3kw and 5kw, it would need two guy cables for installation, and the picture of edge basements is as below,



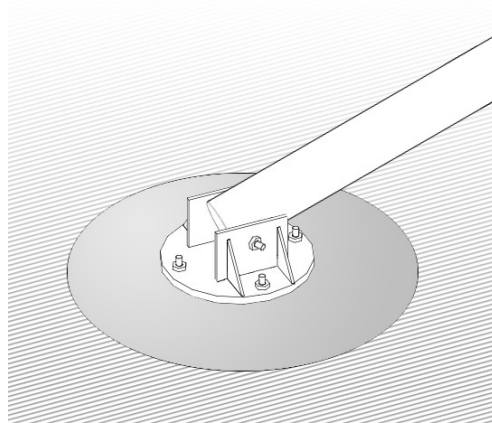
Notes:

To keep the balance of the tension between each cable, the height of the basement need to be same with the base of the tower. Otherwise, the unbalance would cause trouble for the tower.

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5.3 Assemble the tower

【2kw and below 2kw】 Put the tower into the base, and insert the pins in to the hole for it with screwing the pin shaft nut. As below,



【3KW to 5KW】 Connect the two section of subsidiary pole together, and insert it into the main tower, as below,



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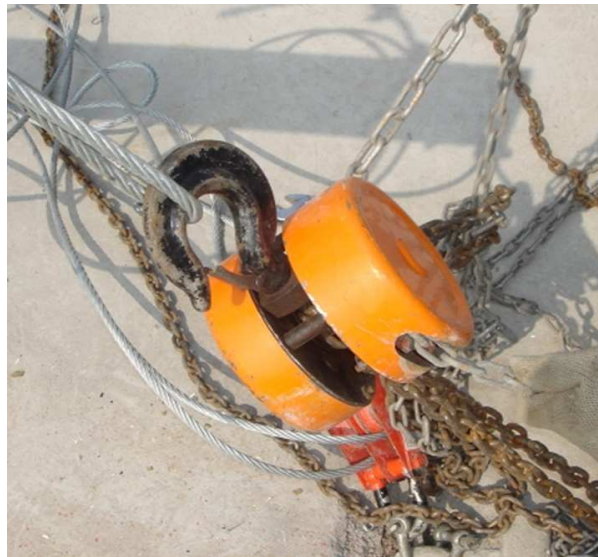
Connect 4 pieces of steel wire to the end of the subsidiary pole, and then connect the steel wire which corresponding to the edge basement with the U-shape spend orchid, as below,



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The steel which corresponding to the front basement need to connect with the chain block, as below,



Erect the subsidiary pole, and fix the steel wire to the edge basement, as below,

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Aim the pin hole of tower to the basement, and insert the pin with smearing grease, as below



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1. Connect each section of the pole by screw as below,

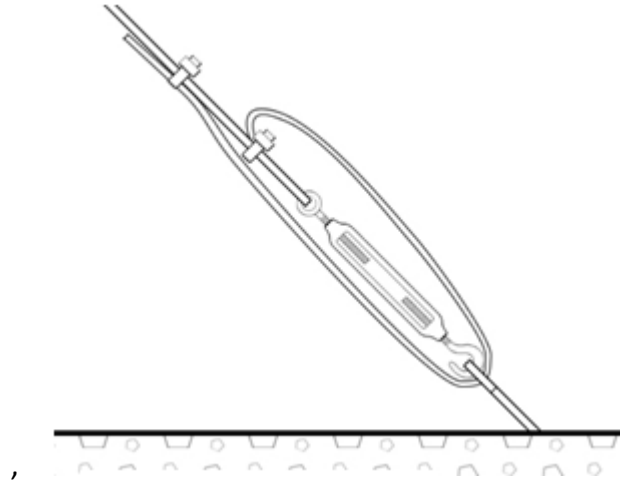


2. To connect the steel wire after connecting the tower as below picture.
For safety, you could twine the tower with the steel wire for a circle before fixing the wire with the fixture. There need to be two fixtures for each steel wire, and 10-20 cm need to be left in the end of the wire.



3. Besides aiming the steel wire for front basement, the ends of all other steel wire need to connect with the corresponding basement. And you could fix all wires after the installation of the tower as below:

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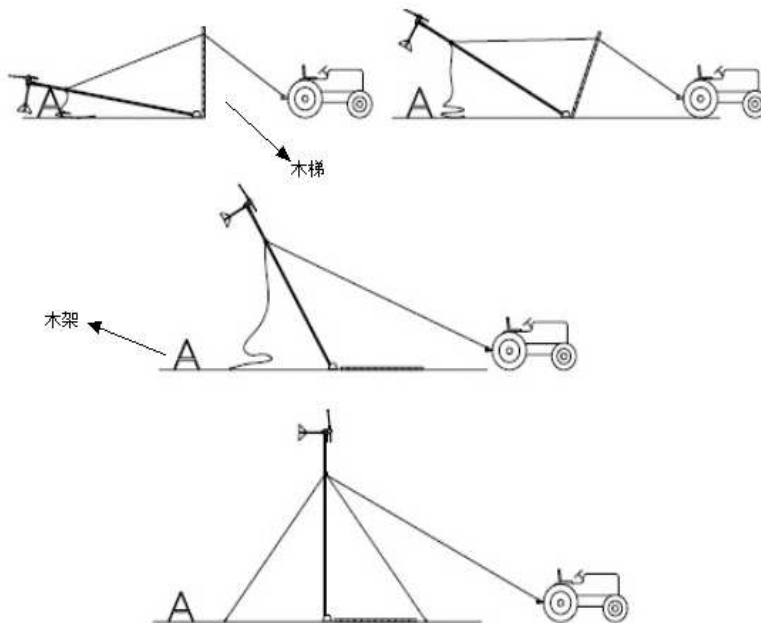


4. Put the tower on a wooden yoke, height of 1m to 1.5m, as below,



5. Generator installation (In the manual for generator part)
6. You could erect the tower with a winch, tractor and crane. Please note, when using a winch and tractor, there need to be a yoke for generator below 2kw, including 2kw. Pay attention to the tension of each steel wire in the process of erecting in case of any unbalance.

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7. 【3KW and above 3KW】Please installing the bolts to the three hole at the bottom of the tower after the erecting of the tower.
8. To check the length of 4 pieces of steel wire, and fix it with fixture.
Note, please leave a proper radian for the steel wire.
9. 【3KW and above3KW】 You need to take the subsidiary pole away and release the steel wire after installation.

5.4 Lay down the tower

For laying down the tower, a no wind weather is needed, as well as a yoke, which is the same when for installing.

Break the connection to stop the generator, which could be checked in the user's manual.

【If using a crane】 The harness should be tied to the generator by professional people. And then ,release the screw and steel wire to lay

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down the generator slowly to the yoke.

【If using a tractor or winch】First, release the steel wire of the basement, and then connect the steel wire to tractor or winch according to the installing manner by reversing it. Finally, lay down the tower on the yoke slowly.

6 Battery Configuration

Battery should be placed in a dry building with constant temperature and ventilation area. By calculating the output of generator, you could decide the number of the battery and the connection, series and parallel. Then please design a cage for placing the battery, controller and inverter. To avoid electromagnetic interference, after connect the battery, please smear the end of wire with grease or anti-corrosion material. The connecting wire between battery and controller should be no less than 3M. You could check the parameter for choosing the battery.

Series connecting is to connect the anode of one battery to the cathode of another battery as below,



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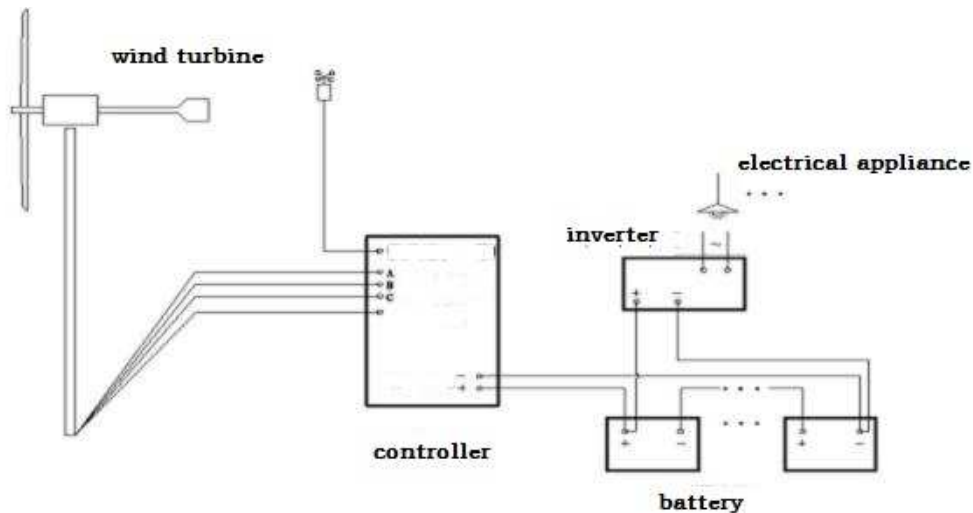
Parallel connecting is to connect the battery anode with anode, cathode with cathode as below,



※Please check the notification, using instruction and maintenance with BATTERY INSTRUCTION.

7 Wiring diagram

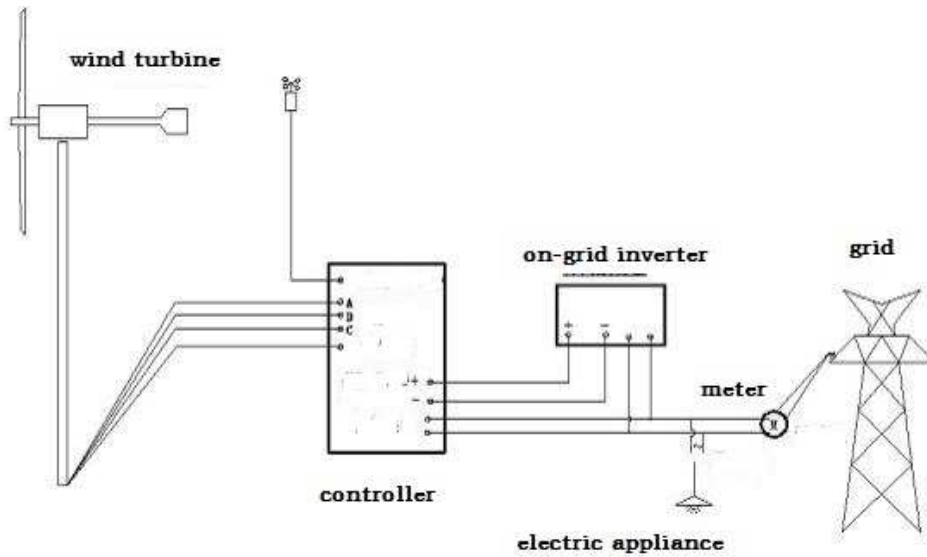
7.1 OFF GRID (Picture as below)



Please make sure that the output voltage, voltage of battery and the input voltage of battery should be same. Do not misconnect the end of battery, which would burn the generator, battery and inverter out.

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7.2 ON-GRID (Picture as below)



Every model of E-series could be applied for on-grid system with the permission of local government, and on-grid inverter and on-grid controller should be purchased by your own part.



Please turn off the main supply before connection

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8. Maintenance

Please check and maintain the generator at a certain time as the environment for generator might be very scurviness. Please lay down the tower before storm coming in case of any trouble.

Maintenance plan:

Serial Number	Item	After storm	Every Moth	Every Year	Every 5 year
1	Check blades: look for cracks or abnormal bends. If you locate any damage caused by storms or weather, replace the blades as using damaged or unbalanced blades will compromise the efficiency and lifetime of windmill.	√			√
2	Replace lubricant			√	
3	Check to see if nuts and bolts have remained tight on mill and tower	√			√
4	Check electric power cables for corrosion and damage. If you detect any abnormal corrosion, replace cables.	√		√	
5	Please repaint the tower if the painting failed by reason of climate.			√	
6	To check if every control system working well		√		
7	Please check the electrolyte level of the battery. And please add if not enough by following the instruction		√		

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9. Trouble shooting

(1) Why the Electrical equipment failure after connecting with the system?

○ Please check the remaining power the battery, and the electrical equipment would not work if the power is not enough. If the power is enough, please check if the connection between battery and inverter is correct.

(2) Why cannot charge the battery?

○ To check if the blades rotate, and the generator would not work if the wind speed is so low or so high. If the rotating of blade is Ok, please disconnect the battery and inverter from the generator, and then check the output of generator by voltmeter. If the output is OK, please check the battery follow the instruction to see if the battery damaged. If the voltmeter is zero, please check if it's the problem of generator's cable.

(3) Why the blade do not move or move slowly with normal wind speed ?

○ The rotating of blade would be abnormal if the output line is short-circuited. And please check the generator's cable with disconnecting the battery and inverter from the generator.

(4) If we could extend the using of electrical equipment by adding the capacity of battery ?

○ It would be a waste of battery and do harm to the battery, if add the

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capacity of battery without professional suggestion because it would put the battery always in the state of lacking power.

NOTES:

Please contact with our engineer by e-mail or mobile if you can 'not solve the problem.

*** Color may be different from physical products of picture.**

*** Please give a kind understanding if the manual has been modified without prior notification.**

*** Two years warranty would be offered from the date of purchasing (Non-artificial and Force majeure)**