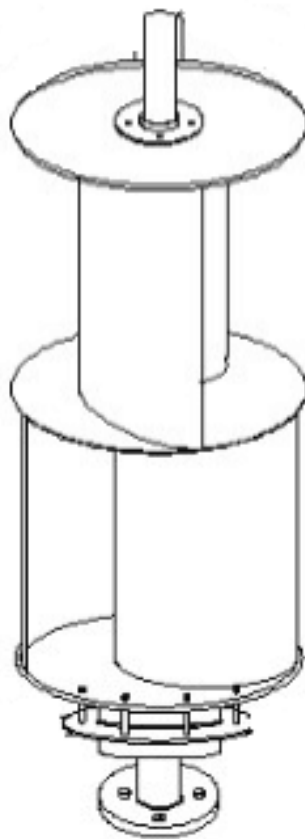


Solazone

USER MANUAL

For 300 – 600 watt Q4 Model
Vertical Wind Generators



Version 02. Updated 10 June 2017.

IMPORTANT NOTE:

Read this manual carefully and completely before attempting to install or use this device.

Incorrect installation could contribute to death, injury, or property damage, and will void the warranty.

Contents

Part 1. Important Safety Information	3
Part 2. Product Features	6
Part 3. Tower and Accessories	6
Part 4. Installation	9
Part 5. Connecting the Controller	12
Part 6. Maintenance and Precautions	16
Part 7. Packing List	15
Part 8. Warranty	15
Owner's Registration details	16

Part 1. Important Safety Information



For correct installation and use of this equipment, please carefully read and follow the safety warnings and instructions below.

Basic requirements:

- Do not disassemble the wind generator. Please contact the Solazone maintenance department for advice whenever the wind generator requires servicing.
- Do not modify or change the equipment structure, safety features and performance design.
- Obey all local laws and regulations when using this product.

Assembly Requirements:

1. Before assembling the wind generator, or performing maintenance, be sure to read the user's manual first.
2. Do not install the wind generator on rainy days, or when the wind scale is at or above Category 3.
3. After opening the package, immediately short circuit the three leads of the wind generator until installation. (the exposed copper wires should be screwed together).
4. Before the installing the wind generator, suitable lightning protection must be prepared. Refer to the appropriate Australian Standards, and make sure the earthing complies with local regulations.

5. When assembling the wind generator, all parts should be fastened with fasteners as specified in table 2.

Table 2

Serial#	Fasteners	spec	quantity	tightening torque (N*M)	remarks	Executive standard
1	Flange bolts	M12x55	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 optional outer blades	M6x40	18			
6	Lock nut for 3 optional 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 connecting the wind generator flange to the tower flange, connect the three leads of the wind generator to the three leads of the tower as follows: 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 generator, the ends of the output leads, which are to be connected to the charge controller, should be bared and then screwed together. (to short circuit them)

8. During installation, avoid rotating the rotor blades. (The ends of wind generator output leads must be short-circuited). Only after the installation is complete, and the final inspection is finished, can the short circuited leads be separated, and connected to the charge controller and battery, before testing.

IMPORTANT NOTE:

The charge controller must be connected to the battery first, before being connected to the wind generator. If this procedure is not strictly followed, any damage or subsequent failure due to this cause, is not covered by the warranty.

Part 2. Product Features

1. This wind generator has low start up speed; high wind energy utilization; beautiful appearance, and low vibration.
2. It features creative simple design, easy installation, maintenance and repair.
3. The blades are strong with an optimized aerodynamic contour and structure, the blades have high utilization of wind energy, which contributes to the high annual energy output.
4. The wind generator has a patented [permanent magnet rotor alternator](#), with a special kind of stator design that efficiently decreases resistance torque. It makes the wind generator speed match the generator quite well, and increase its reliability.

Part 3. Tower and Accessories

1. The wind generator flange base is suggested to be installed on a steel pole tower whose OD is 48mm and wall thickness is 4.5mm.
2. Select the pipe length based on local wind conditions and the geographical environment.
- 3, Available tower accessories include (1) the upper tower. (2) The guy wire set. (3) Guy wire tighteners. (4) Anchor bolts. (5) Line hooks. (6) Tower base. (7) Anti-tarnish, anticorrosive coating materials.

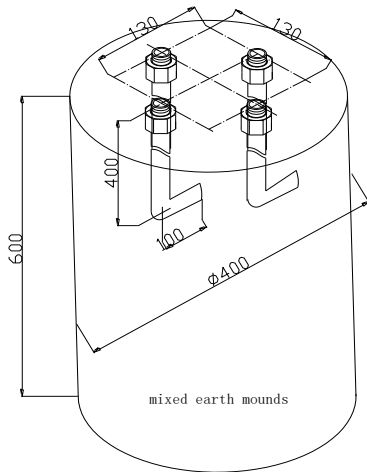


Figure1: manufacture of mixed earth mound

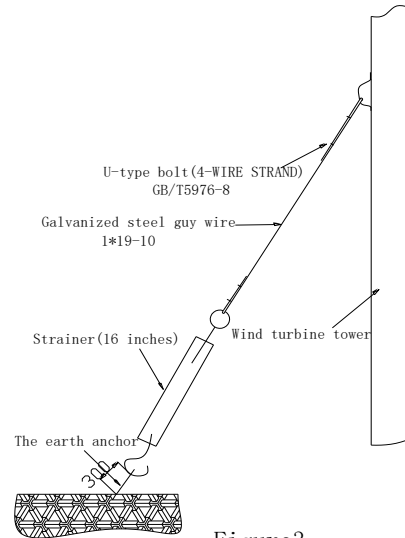


Figure3
The manufacture of guy cable

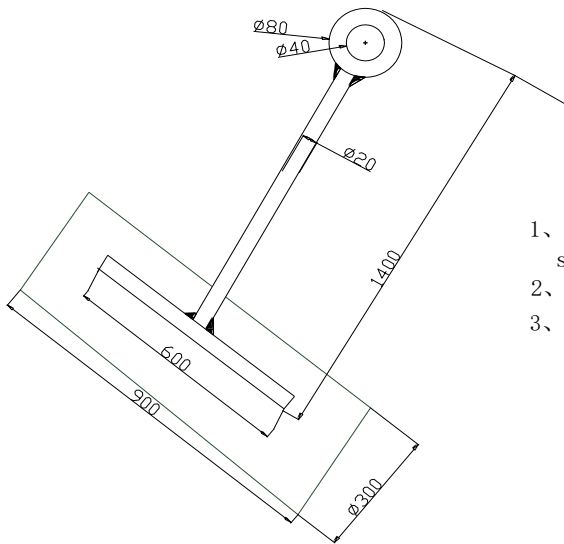


Figure2

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 Assembly of anchor, lasso and guy cables

4. The construction diagram, with sizes and dimensions of the upper tower base is shown in figure 2. It requires solid welding, no leaks at the weld zone; and an earth lug must be welded on at 20cm above the ground (clearly visible). It must be connected to the lightning grounding device. (Lightning rod).

Part 4. Installation

·  **Do not try to assemble and install the wind generator on rainy days.**

1. The three insulated power output transmission wires are installed inside the steel pole mounting tower. The upper ends come out through the center hole of the wind generator flange, while the bottom ends come out from a 12mm hole drilled about 30cm above the ground. The section of wire from the bottom opening to a point which is 60cm beneath ground should be protected by heavy duty conduit of diameter 17mm to 21mm.

All underground transmission lines to the controller must be correctly installed in heavy duty orange conduit, buried 600mm deep.

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.

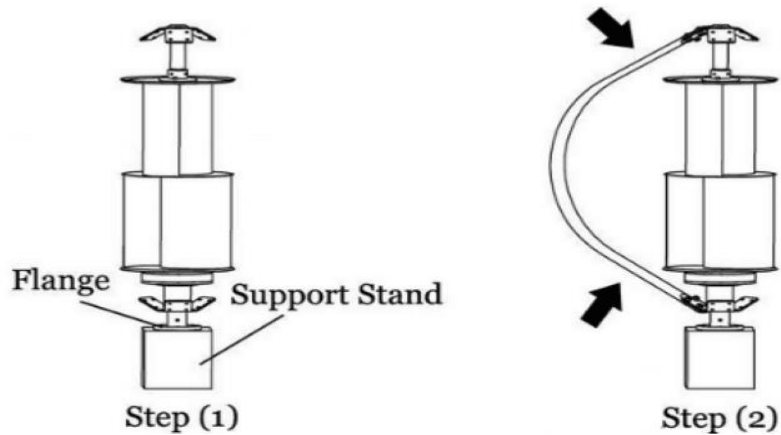
2-2. Align the wind generator flange with the tower flange. Cut away insulating layer of current transmission wire end (which are to be connected with controller) for 10mm, then short circuit the exposed copper wires (screw them together)

3. The lifting of the wind generator and tower should be undertaken by experienced personnel, with the presence of a skilled slinger, and all safety procedures being followed.

The tower's erection should be executed according to the requirements of permanent and stable construction techniques.

4. After completing the installation of the tower and lightning protection, use a 500V megga to measure the insulation resistance between transmission lines and earth. (earth wire can act as ground) In the case of not separating the short circuited leads of the transmission lines, measurement should not be less than $5M\Omega$, otherwise check whether the insulating layer may be crushed or damaged, and this should be dealt with immediately.

Optional Outer Blades Assembly



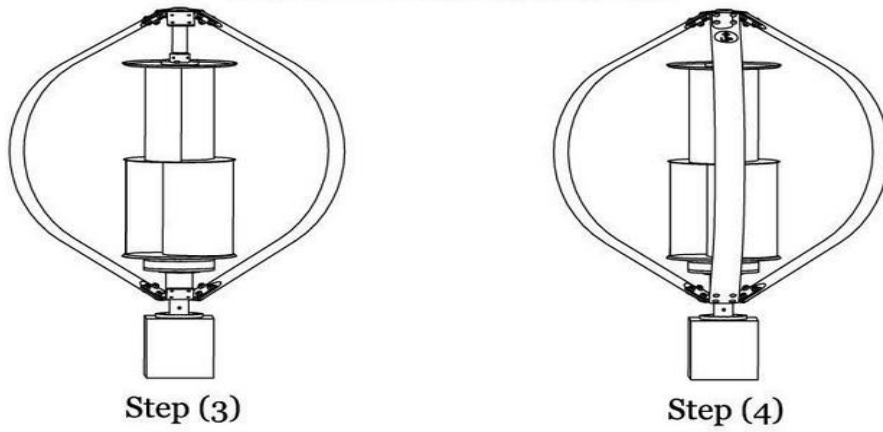


Figure 3

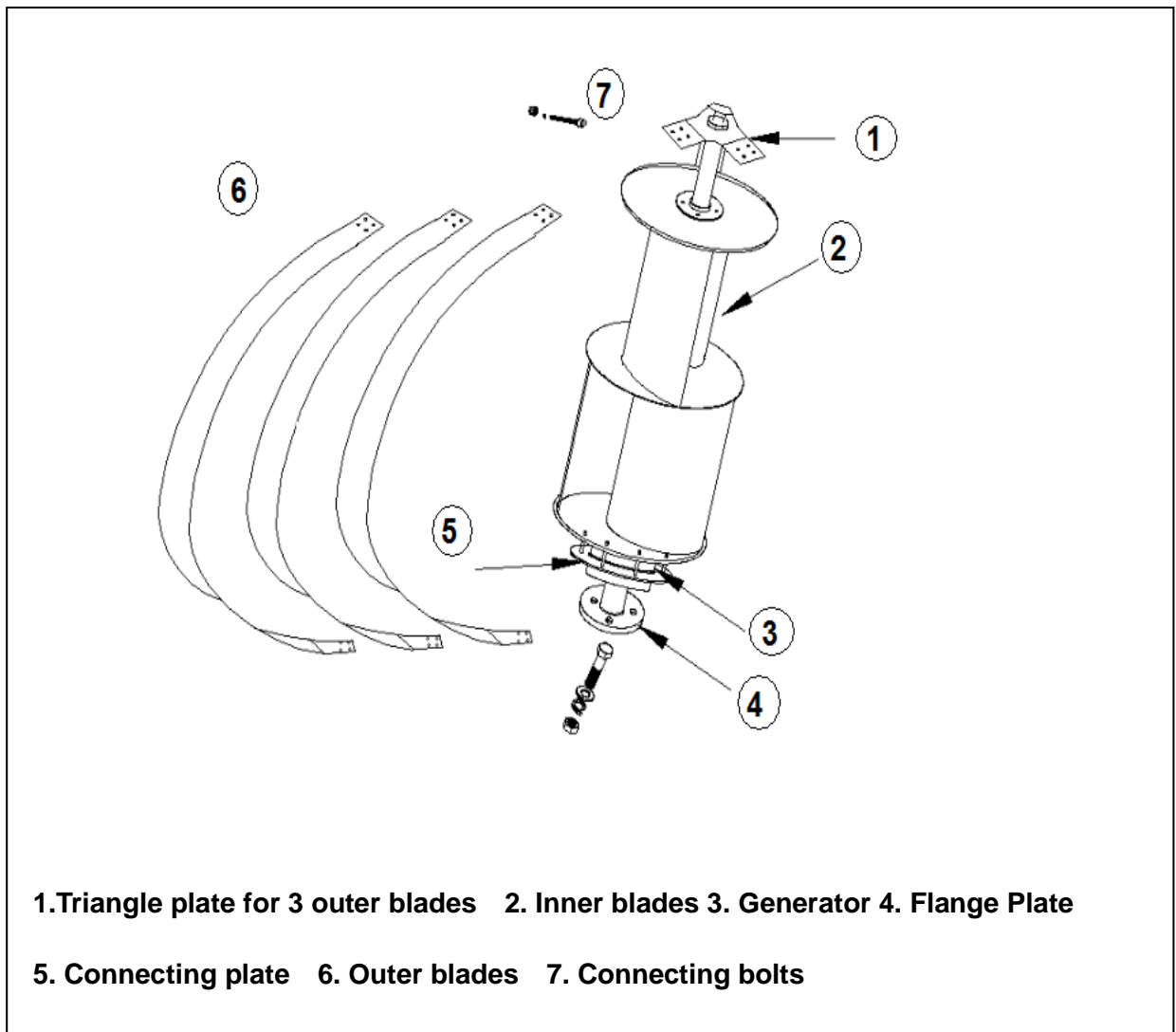


Figure 4 wind generator decomposition

Part 5. Connecting the Controller

.

Avoid heavy rain days for the first commissioning. Ideally, days with gentle breeze or a strong wind are best. (wind speed: 5~13m/s).

1. Carefully connect the positive and negative poles of the battery to the positive and negative poles of controller, observing the polarity.

2. Any load circuits connected to the load terminals on the controller should always be protected by fuses, switches, and plugs.

3. Finally, connect the three current transmission lines from wind generator to the three wind generator terminals on the controller, in any order. Refer to the controller manual for more detailed instructions.

4. Battery selection – We recommend using lead-acid, AGM or Gel batteries of the following sizes: 100 ~ 300 watt wind generators, use 100 ~ 200 Ah battery.

300 ~ 600 watt wind generators, use 200 ~ 400 Ah battery.

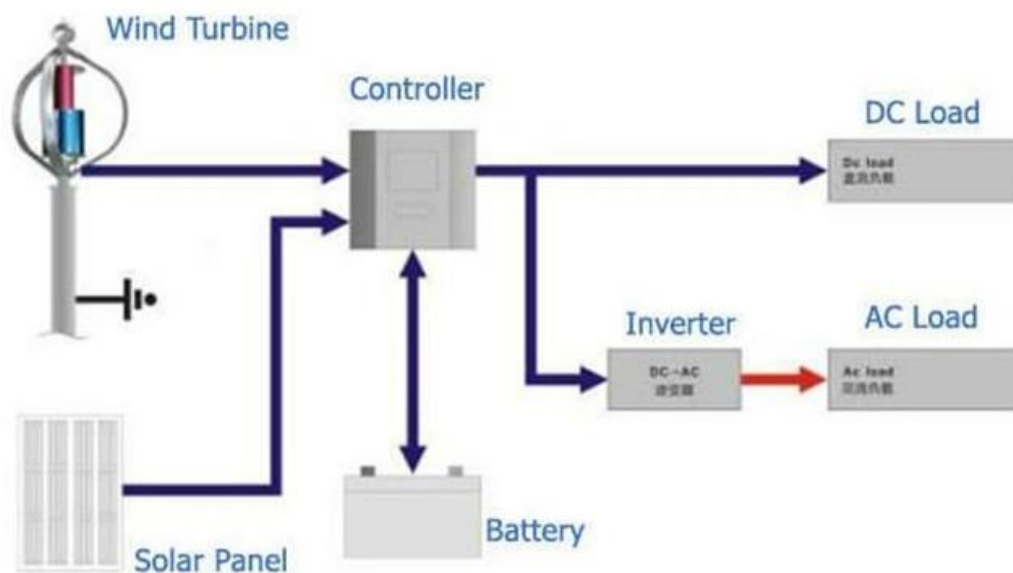
5. The controller should be mounted in a dry, well-ventilated place, moisture and dust-proofed. The inverter case should be kept grounded, and located at least 1.5 metres away from the batteries, to avoid acid gas pollution and fires.

6. The battery should be located in a dry, well-ventilated place, cool in summer, warm in winter. In such an environment, the battery can be expected to last longer. Protect all battery terminals from corrosion with covers, or petroleum grease.

Attention:

- Battery should be connected to the controller before the wind generator is connected to the controller.
- Failure to follow these important instructions will void your warranty.

Connection diagram of wind generator, battery & electrical appliances



Note:

Even though this diagram shows solar panels can be connected to the wind generator controller, we strongly recommend that solar panels be connected through their own separate solar regulator, unless using a very small solar array.

Part 6. Maintenance and Precautions

1. Wind generators often work in harsh environments, so check it regularly with your sight and hearing; check whether the tower is swaying or whether the cables may have become loose. (using a telescope is a good idea).
2. A timely inspection should be made after a heavy storm. If there is any problem, pull down the tower slowly for maintenance. With regard to wind generators used for streetlights, an electrician should climb the pole annually to check if there is any problem, or whether the wind generator has been short circuited, or if security protection measures should be prepared.
3. Flooded batteries should regularly be checked for fluid level, and even maintenance free batteries should be kept externally clean, and checked for corrosion on terminals, or other damage.
4. Do not disassemble the equipment by yourself. Please contact your supplier for advice when the equipment is out of order.

Part 7. Packing List

Serial#	Item	Quantity	Remarks
1	Wind Generator body	1	
2	Outer blades	3	optional
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

Part 8. Warranty

1. The company guarantees customers that the wind generator is of excellent quality, functions well, the body is complete, and rigorously checked before delivery,
2. We provide **one** year's warranty for the wind generator, from the date of sale, to the original purchaser, Damage due to accidents, unauthorized dismantling, or from seriously violent operation (not according to instructions of use), are not covered by this warranty.
3. Your sales receipt and these documents serve as the product warranty certificate.

Keep both these documents in a safe place.

User information table:

Sales company:	Owner:
Purchase date:	Address:
Invoice:	Postcode:
Model:	Phone:

Maintenance records:

Date	Maintenance species	Summary	SMT rework

Solazone Victoria
68 Highbury Road
Burwood, Vic., 3126
(03) 9808 7337

Solazone Queensland
5 / 6 Beech Street
Marcoola, Qld., 4564
(07) 5448 8304