

DrivetechTM **AXA**
...driven by quality

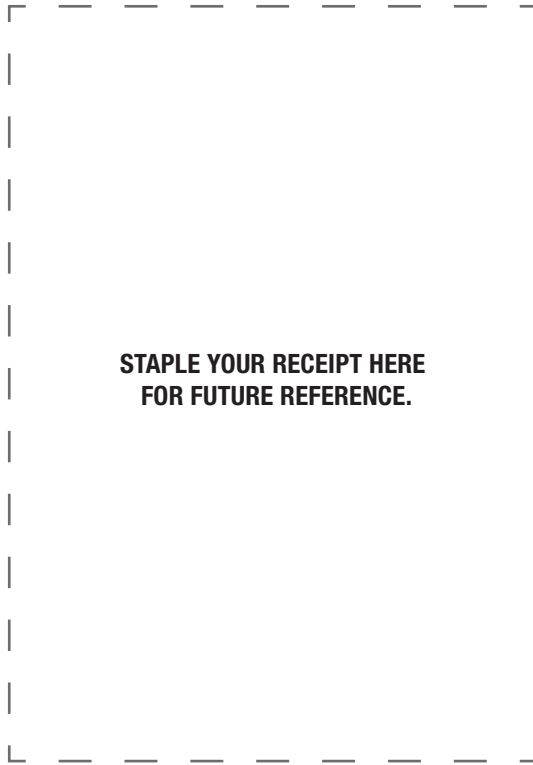
200W WIND GENERATOR

INSTRUCTION MANUAL
DT-WG200



Please read this manual carefully before using and retain for future reference.

200W WIND GENERATOR



Thank you for purchasing Drivotech's wind turbine. We are proud to offer a cost-effective renewable energy technology as well as abundant resource. Please read this manual carefully before installing and use the wind turbine. Always save this owner's manual.

NOTICE

Failure to follow Safety Precautions will void the wind turbine warranty and may result in death, personal injury, or property damage.

*Please tighten the main shaft nut until you can't move the nut, or the hub will loosen.

1. This information is believed to be reliable; however, Drivotech assumes no responsibility for inaccuracies or omissions.
2. All specifications are subject to update without notice.
3. Wind generators must be installed following the guidelines established by state and local regulations.
4. Please write the serial number of your wind turbine on the front of this manual for your convenience and protection. You will need this information in the event of a warranty claim. It also helps the customer service department at Drivotech when you have questions about your turbine. Thank you.

1. SAFETY PRECAUTIONS

NOTE: Safety must be the primary concern as you plan the location, installation and operation of the turbine. Please be aware of electrical, mechanical and rotor blade hazards.

1.1 MECHANICAL HAZARDS

Always connect the controller to the battery before you connect it to the wind turbine.

Only install the wind generator when the connections of the wind turbine system are disconnected and bypassed or the blades are tied to make sure you won't get hurt by the rotating blades.

Pay attention that system checks are best carried out in calm weather conditions. Avoid any unnecessary installation and/or maintenance during windy weather or rainy days. Beware that internal voltages may cause damage.

Rotating blades present the most serious mechanical hazard. The blades of the turbines are made of very strong thermoplastic. At the tip, the blades may be moving at velocities over 200 Km/hour. At this speed, the tip of a blade is nearly invisible and can cause serious injury or death. Never touch the rotating blades. Never try to stop it with your hands.

Check the tower condition regularly, if there are any loose bolts, it should be tightened immediately, so as to prevent the failing of the wind turbine.

When vibration or strange noise is found during operation, please stop the wind turbine and check the possible reasons.

Keep the rotor balanced to eliminate vibration

When the blades lose balance caused by external damage it creates a strong vibration, the wind turbine must be stopped and checked, until the problem is eliminated.

Gases are generated from the charging and discharging process, so the batteries need to be located in a well-ventilated area away from fire or any other heat source.

Note: Please install the turbine only at locations where nobody has the possibility to touch it easily.

Caution: DO NOT INSTALL THE TURBINE WHERE ANYONE CAN APPROACH THE PATH OF THE BLADES.

1.2 ELECTRICAL HAZARDS

Please be careful when connecting this and other electrical devices. Use proper handling and methods. Consult a qualified professional technician if you are not sure.

Pay attention to the heat that may be generated in the wiring harness. Excessive heat can be generated by too much current flowing through undersized cable or through a faulty connection. If you extend the cable to your wind generator system, ensure that you do not use cable that is smaller than 10AWG (8 B&S) when the length is shorter than 2M. 8 AWG (6B&S) cable is recommended distance between 2M and 4M in length.

TIP: The smaller the AWG number or the B&S number, the larger the cable is and the more current it can carry. For example 8 AWG (6B&S) can carry a higher current level than 10 AWG (8B&S).

CAUTION: SELECT THE CORRECT WIRE SIZE TO HELP AVOID THE RISK OF AN ELECTRICAL FIRE.

Please use the brake harness (ie: short circuit) to stop the wind turbine turning for safety during installation.

When disconnecting the electric cables of the wind generator, the three turbine cables must be firstly disconnected from the controller, then disconnect the negative and positive wires from the battery from the controller.

An open wire is very dangerous! Run the wires securely in order to protect wires from mechanical damages.

Batteries can deliver a dangerous amount of current. A short-circuit of the battery cables and/or power lines can result in a fire. Please install a properly sized fuse or circuit breaker to the cable and as near as possible to the battery.

CAUTION: FUSE ALL CONNECTIONS. SELECT THE CORRECT FUSE SIZE TO MINIMIZE THE RISK OF FIRE AND/OR AN ELECTRICAL FAILURE.

1.3 SYSTEM GROUNDING:

Ground the system from the power control unit to avoid current leakage damage.

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1. ASSEMBLY REQUIREMENTS

1. Before the assembly of the wind generator or in the process of maintenance, please be sure to read the manual first.
2. Please don't install the wind turbines on rainy days or when the wind scale is at Level 4 or above.
3. After dismantling the package, you should short the three leads of the wind turbines using the braking harness provided.
4. When assembling the Wind turbine, all the parts should be fixed according to the parameters in table 1.

FASTENERS NAME	THREAD TYPE	QUANTITY	NUTS TIGHTENING TORQUE (COW. METERS)
STAINLESS STEEL AGAINST NYLOC NUTS	M6*30	6	Not less than 13.6Nm
HUB NUT	M16	1	Not less than 68Nm
WIND GENERATOR MOUNTING HUB:	M6	4	Not Less than 7-9Nm

5. Assemble the 4 x 1 meter extension poles with the inner rods and pins provided. It is advised to construct the poles on the ground then lift into position, ensure the pole is placed on solid level ground.
6. During the installation, it is prohibited to revolve the rotor blades (the ends of wind turbine lead 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 remove the brake harness (short circuit) and be connected with the charger and battery to test the function.

***If you don't follow the above instruction when assembling and installing the wind turbines, any problem or failure being generated here will not be covered by warranty.**

BEAUFORT NUMBER	WIND SPEED (MILES/HOUR)	WIND SPEED (KM PER HOUR)
0	< 1	< 1
1	1-3	1-5
2	4-7	6-11
3	8-12	12-19
4	13-18	20-28
5	15-24	29-38
6	25-31	39-49
7	32-38	50-61
8	39-46	62-74
9	47-54	75-88
10	55-63	89-102
11	64-72	103-117
12	> 72	> 117

2. PRODUCT DESCRIPTION

Our generators are fitted with a patented permanent magnet rotor alternator, with a unique kind of stator design that efficiently decreases resistance torque of the generator. The wind turbines match the generators and increases the reliability of their operation.

200W HORIZONTAL WIND TURBINE	
PART NUMBER	DT-WG200
RATED POWER	200W
MAXIMUM POWER	230W
NOMINAL VOLTAGE	12/24V
START-UP WIND SPEED	2.5m/s
RATED WIND SPEED	11m/s
WORKING SPEED	2.5-25m/s
SAFE SPEED	45m/s
WEIGHT	5.9Kg
BLADE DIAMETER	1.2m
BLADE NUMBER	3
BLADE MATERIAL	Nylon fiber
GENERATOR	Permanent magnet synchronous generator with three-phase alternating current
CONTROLLER SYSTEM	Electromagnetic
SPEED WAY	Automatic adjustment of wind angle
WORKING TEMPERATURE	-40°C~80°C
TOWER TYPE	Guyed tower

WIND CONTROLLER	
RATED BATTERY VOLTAGE	12/24V
MAXIMUM WIND TURBINE INPUT POWER	300/600W
WIND TURBINE CHARGE SHUT OFF VOLTAGE	14.4/28.8V
WIND TURBINE CHARGE RECOVERY VOLTAGE	13.2/26.4V
IP PROTECTION LEVEL	IP67

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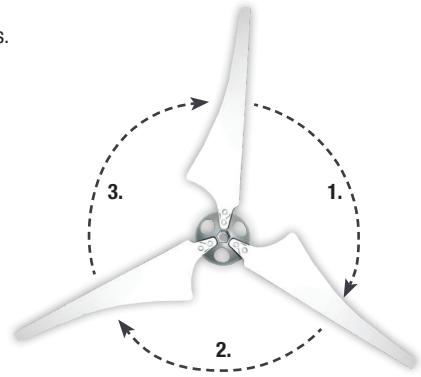
3. TOWER AND ACCESSORIES

Tower accessories include (1) 1 x 200W Wind generator with 3 blades (2) 3 guy ropes (3) 4 x 1M mounting poles (4) Anchor plate (5) Storage bag (6) Regulator (7) Mounting Pins (8) Retaining pegs (9) Wiring Harness (10) Braking Harness.

4. THE WIND TURBINE INSTALLATION STEPS

It is prohibited to assemble and install wind turbines on rainy days.

1. The installation of the wind wheel blades: Install the wind wheel blades (6) onto the groove of the wind wheel hub (5) and ensure they are lined up correctly. Insert the stainless flange bolts (13) into the hole from the front, then tighten up the anti-slack nut (14). The operation on the other blades is similar. Ensure these are tightened as per table 1.



2. The installation of the fan hub: First put the nut in the hexagonal hole of the wind wheel hub and then put it into the thread spindle of the wind turbine. Press on the nut with your left hand while twisting the wind wheel clockwise with your right hand. When the nut tightens, use the extended hex wrench (supplied) to lock the nut together with the wind wheel blades. Ensure these are tightened as per table 1.



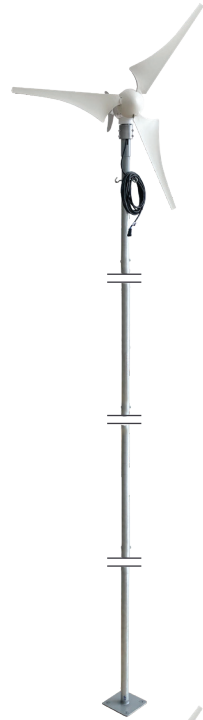
3. The installation of the fairing: The fit between the fairing (8) and the wind wheel hub (5) is via the clasp. The three gaps of the fairing are for the three blades, thus use your hands to clap the fairing pyramid so as to help them get into the seams of the wind wheel hub, you will feel this click and lock in place.



4. Assembly of the main pole: The wiring harness can be led out through the slot in the flange joint, which is found in the top extension pipe, at this point connect the braking harness plug. Connect the wind turbine to the top Pole sleeve and tighten the hub bolts as per table 1, insert the inner rods at the bottom of the pole to connect the other poles together. Slide pins into place.



5. Place the steel top pole on the ground; block up the top pole so no damage is caused to the motor assembly.



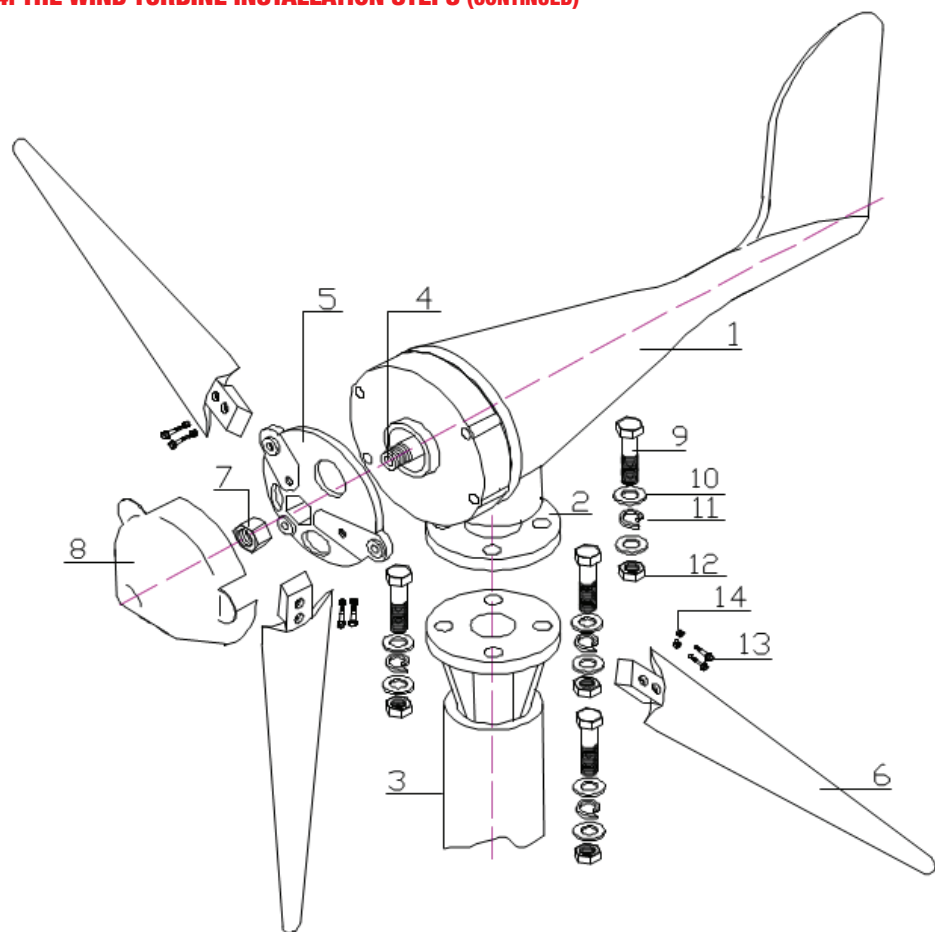
6. Now that your wind generator and top pole are complete, you may repeat the steps to add the 3 extra 1M extension poles. After completing the assembly of the wind generator, lifting of the wind turbines and tower should be done with care to ensure safety is your 1st priority. Secure the guy ropes and base pegs and check all connections before removing the braking harness.



7. Once you have checked the installation, connect the regulator to the positive and negative battery terminals, remove the wind generator braking harness and then plug in the regulator plug. You are now ready to go. (Ensure you have read the wiring connections before proceeding).

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4. THE WIND TURBINE INSTALLATION STEPS (CONTINUED)

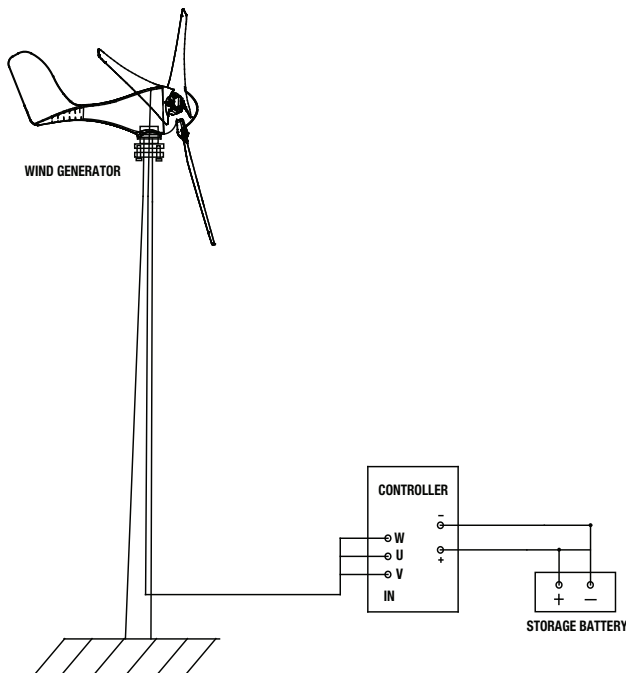


- | | |
|--------------------------|---------------------------|
| 1. Body frame | 8. Fairing |
| 2. Flange Base | 9. Bolt |
| 3. Steel Bracket (tower) | 10. Flat Washer |
| 4. Axis | 11. Elastic Washer |
| 5. Hub | 12. Nut |
| 6. Blade | 13. Stainless Steel Screw |
| 7. Anti-Slack Nut | 14. Anti-Slack |

5. WIRING CONNECTIONS

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

1. Connect the positive and negative wires of the storage battery to the black and red wires on the regulator/controller (exclusive for wind turbines).
2. After the wind turbine is erected remove the brake harness.
3. Connect the 3 blue cables from the wind turbine to the 3 green wires on the regulator/controller (with the wiring harness provided).
4. The regulator/convertor should be put in dry place away from humid air and dust. Please make sure that the regulator/convertor is connected no more than 1.5m away from the storage battery.
5. In order to maintain its charge and discharge capacity as well as the life expectancy, the storage battery should be installed in such places where they are dry, cool and ventilated in summer and warm in winter.
6. If you are stopping the wind generator using the brake harness, ensure you disconnect the wind generator from the controller before connecting the brake harness.



6. MAINTENANCE AND PRECAUTIONS

1. Wind generators often work in difficult environments, thus please make sure you take time to check them with your sight and hearing; check whether the tower is swaying or whether the guy ropes are loose.
2. Timely inspection should be made after a heavy storm. If there is any problem, please put down the tower slowly for maintenance.

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7. PACKAGING LIST

Our generators are fitted with a patented permanent magnet rotor alternator, with a unique kind of stator design that efficiently decreases resistance torque of the generator. The wind turbines match the generators and increases the reliability of their operation.

NUMBER	NAME	QUANTITY	NOTE
1	Motor	1	
2	Hub cover	1	
3	Blades	3	
7	Stainless steel blades bolts (M6*30)	8	6 for the blades and 2 spares
8	Nyloc nuts M6, flat and spring washers	8	6 for the blades and 2 spares
9	Regulator/Controller	1	
10	1M Middle Poles	2	
11	1M Top Pole (Including guy rope loops)	1	
12	1M Bottom Pole (Including 200 x 200mm base plate)	1	
13	Inner Connector Rods	3	
14	Storage Bag	1	
15	7M Wiring Harness	1	
16	Braking Harness Plug	1	
17	180 mm Pegs	7	
18	4mm x 8M Green Guy Ropes	3	
19	Inner Rod Pins	6	
20	5mm & 8mm CRV Hex Keys	1	One of each
21	Instruction booklet	1	

8. QUALITY GUARANTEE

1. To ensure quality, products will go through strict examination before leaving the factory.
2. Products have a 12 Months warranty from date of purchase. In regard to the failure of the product because of tampering or failure to maintain the product as per instructions voids this warranty.
3. Proof of purchase is needed for any warranty claim.

USER INFORMATION TABLE:

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

MAINTENANCE RECORDS:

DATE	MAINTENANCE SPECIES	SUMMARY	SMT REWORK

WARRANTY STATEMENT

GPC Asia Pacific products may include a warranty against defects for the period stated on the product, in addition to other rights you have at law. Return any defective product and proof of purchase to your local branch for assessment, repair or replacement. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

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