

**800W**

# Generic 12V 800W Vertical Wind Turbine Generator Instruction Manual

Model: 800W

[Instructions](#) [Installation](#) [Operation](#) [Product Overview](#) [Components](#) [Safety](#) [Maintenance](#) [Troubleshooting](#) [Specifications](#) [Applications](#) [Support](#)

## 1. PRODUCT OVERVIEW

This manual provides instructions for the Generic 12V 800W Lantern Type 5-Blade Vertical Pintle Wind Turbine Generator. This wind turbine is designed for efficient power generation, featuring reinforced nylon fiber blades and a three-phase permanent magnet synchronous generator. Its vertical design allows for effective energy capture even in turbulent airflow conditions.



Figure 1: Generic Vertical Wind Turbine, showcasing its compact design and vertical blades.

## 2. COMPONENTS AND PACKAGE CONTENTS

The wind turbine system includes the main generator unit, blades, and a controller. Refer to the exploded view below for a detailed

breakdown of components.

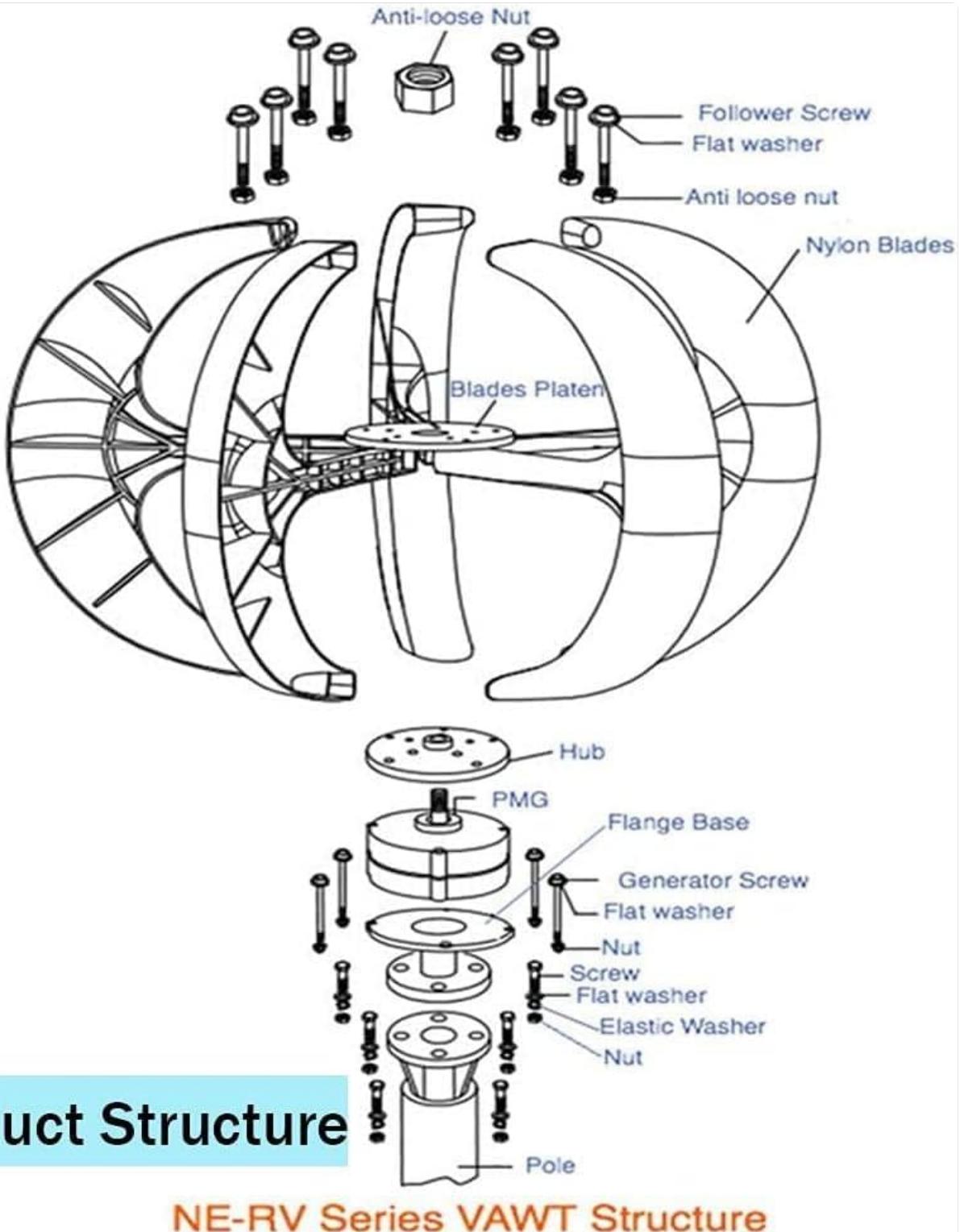


Figure 2: Exploded view of the wind turbine, showing individual parts such as anti-loose nuts, follower screws, flat washers, nylon blades, blade plates, hub, PMG (Permanent Magnet Generator), flange base, generator screws, and pole connection.

#### Package Contents:

- 1 x Wind Turbine Generator (with integrated controller)
- 1 x Stainless Steel U-Nut
- 1 x Blade Hub
- 1 x Stainless Steel Plate
- 4 x Flange Bolts
- 1 x Flange Plate

- 10 x Ligature Screws

### 3. SAFETY INSTRUCTIONS

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Read and understand all safety instructions before installing, operating, or maintaining the wind turbine. Failure to follow these instructions may result in serious injury, property damage, or electric shock.

- **Professional Installation:** Installation should ideally be performed by qualified personnel with experience in electrical systems and working at heights.
- **Electrical Safety:** Always disconnect power before working on electrical components. Ensure all wiring is correctly insulated and grounded.
- **Moving Parts:** Keep hands, clothing, and tools clear of rotating blades. The blades can rotate at high speeds and cause severe injury.
- **Working at Heights:** Use appropriate safety equipment (harness, fall protection) when working on the turbine tower.
- **Weather Conditions:** Do not install or perform maintenance during high winds, storms, or lightning.
- **Secure Mounting:** Ensure the turbine is securely mounted to a stable structure capable of withstanding wind loads.
- **Children and Pets:** Keep children and pets away from the wind turbine installation area.

### 4. INSTALLATION GUIDE

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The vertical wind turbine kit is designed for straightforward installation with an integrated controller. Follow these steps carefully. Refer to Figure 2 for component identification and Figure 3 for a visual guide.



Figure 3: Visual representation of the installation steps, including preparing accessories, attaching blades, connecting wires, and securing the generator.

- 1. Prepare Components:** Lay out all accessories and components as shown in Figure 2. Ensure all parts listed in the "Package Contents" section are present.
- 2. Assemble Blades:** Attach the 5 nylon blades to the blade hub. Ensure the blades are securely fastened using the provided screws and anti-loose nuts.
- 3. Mount Generator:** Connect the generator flange to the lower flange of the pole. Use the provided bolts and flat washers, ensuring they are tightened to prevent loosening.
- 4. Connect Wiring:** Connect the three output wires of the wind generator. Ensure proper insulation of all connections. The integrated controller simplifies this process.
- 5. Secure to Pole:** Mount the assembled turbine unit onto the pole. The hoop-type installation is designed for ease of use.
- 6. Connect to Battery/Load:** Connect the wind turbine lead wire to the controller's battery terminals. Ensure correct polarity.

*Note: For detailed wiring diagrams and specific pole mounting instructions, consult a qualified electrician or structural engineer.*

## 5. OPERATION

The wind turbine is designed for automatic operation once correctly installed and connected to a battery bank or load. It features a low start-up wind speed and a three-phase permanent magnet synchronous generator for efficient power conversion.

- **Automatic Power Generation:** The turbine will begin generating power when wind speeds reach the initial wind speed threshold (2m/s).
- **Integrated Controller:** The internal controller regulates the current and voltage, optimizing power output and protecting the battery from overcharging.
- **Low Vibration and Noise:** The design aims to minimize operational noise and vibration.



Figure 4: Example of the wind turbine installed, demonstrating its integration into an energy system, potentially alongside solar panels.

## 6. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your wind turbine. Always observe safety precautions during maintenance.

- **Visual Inspection (Monthly):** Check for any visible damage to the blades, tower, or wiring. Look for loose connections or signs of corrosion.
- **Blade Cleaning (Annually or as needed):** Clean the blades to remove dirt, dust, or debris that may affect aerodynamic efficiency. Use a soft cloth and mild detergent.
- **Fastener Check (Annually):** Verify that all bolts, nuts, and fasteners are tight, especially those securing the blades, hub, and mounting pole.
- **Electrical Connections (Annually):** Inspect all electrical connections for corrosion or wear. Ensure they are secure and properly insulated.
- **Bearing Check (Every 2-3 Years):** Listen for unusual noises from the generator or hub, which may indicate bearing wear. Consult a professional if issues are detected.

## 7. TROUBLESHOOTING

This section provides solutions to common issues you might encounter. For problems not listed here, contact customer support.

Problem	Possible Cause	Solution
No power output	Low wind speed; Loose electrical connections; Controller malfunction; Damaged wiring.	Check wind conditions; Inspect all wiring connections; Verify controller status; Test wiring continuity.
Turbine not rotating	Insufficient wind; Blades obstructed; Bearing issue; Brake engaged (if applicable).	Wait for adequate wind; Clear any obstructions; Inspect bearings for smooth rotation; Check controller for brake status.
Excessive noise or vibration	Loose blades or fasteners; Unbalanced blades; Worn bearings.	Tighten all fasteners; Inspect blades for damage or imbalance; Consult professional for bearing replacement.
Battery not charging	Controller issue; Incorrect battery connection; Faulty battery.	Check controller indicators; Verify battery connections and polarity; Test battery health.

## 8. TECHNICAL SPECIFICATIONS

Detailed specifications for the 12V 800W model of the wind turbine.

Feature	Specification
Model	800W
Blade Material	Reinforced Nylon Fiber
Maximum Power	800W
Voltage	12V
Initial Wind Speed	2 m/s (6.56 ft/s)
Rated Wind Speed	12 m/s (39 ft/s)
Survival Wind Speed	45 m/s (147 ft/s)
Wheel Diameter	90 cm (35.46 inches)
Number of Blades	5 pieces
Braking Method	Electromagnetic
Generator Type	Three-phase permanent magnet synchronous generator
Overall Height (approx.)	60 cm (23.64 inches) - <i>Turbine head only, excluding pole</i>

# Product Size Guide

**90cm/35.46in**



Figure 5: Product dimensions, showing a wheel diameter of 90cm and an approximate height of 60cm for the turbine head.

## 9. APPLICATIONS

The Generic Vertical Wind Turbine is suitable for a variety of off-grid and supplementary power applications due to its compact design and efficient power generation capabilities.

- Remote homes and cabins
- RV and marine applications
- Street lighting systems
- Telecommunication towers
- Agricultural and monitoring stations
- Supplementary power for commercial and industrial facilities

# APPLICATION



Figure 6: Examples of wind turbine applications, including use in remote areas, homes, parks, power plants, street lights, and for forest fire protection.

## 10. SUPPORT

For further assistance, technical inquiries, or troubleshooting not covered in this manual, please contact customer service.

**Customer Service:** Available 24 hours. Please refer to your purchase documentation for specific contact details.