

CUTTING EDGE P O W E R

"Innovative Renewable Energy Solutions"

CYCLONE USER MANUAL



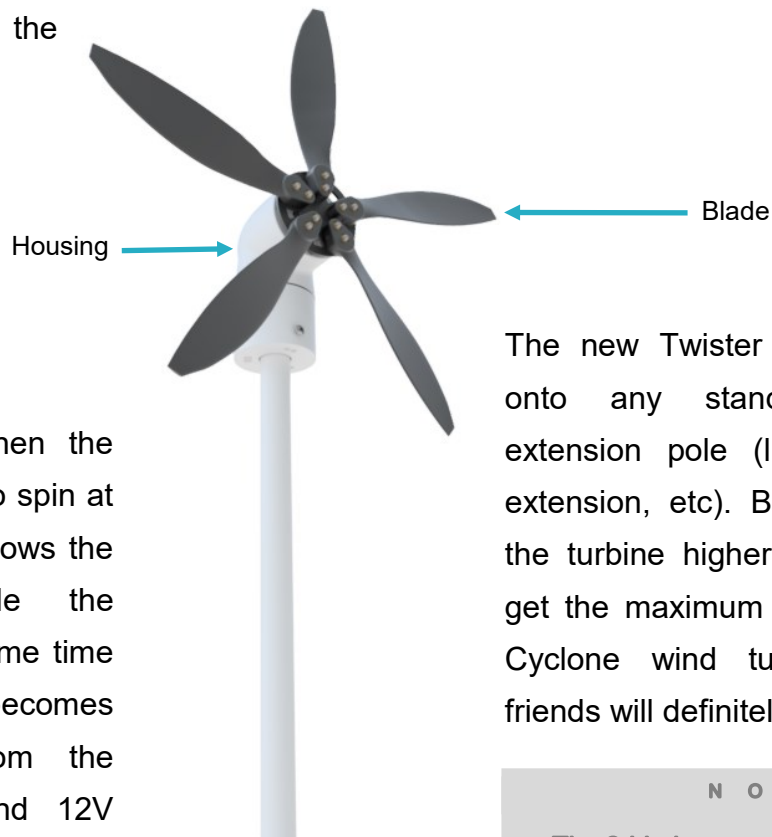
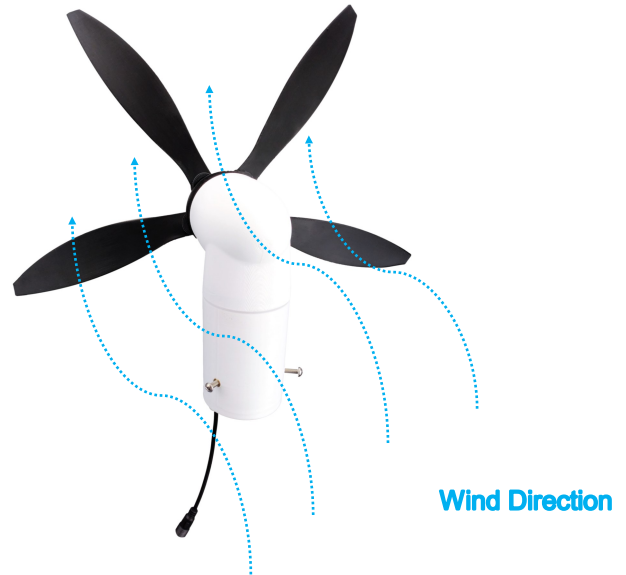
CAUTION

THINK SAFETY FIRST

The warnings, precautions, and instructions discussed in this instruction sheet cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator. **While Cutting Edge Power is proud to be an American company dedicated to producing a high quality product, we are not responsible for any property or personal damage to you or your device due to use/misuse of this product. Always use good judgment and never try to modify or disassemble this product.**

The Twister Cyclone Turbine is designed to be ultra-portable and can collapse down to fit in the back seat of a car. When deployed, the turbine can be easily raised up to 12 feet tall in a matter of minutes. A simple and quick to assemble wind generator is extremely useful in all kinds of applications – from camping to tailgating, to natural disaster relief. It's available with a USB output to charge any phone, tablet, etc.

This is a downwind turbine design; it does not need a tail to be pointed in the right direction. You can think of it as a “backwards” arrangement compared to the typical upwind turbine. It is designed for the wind to touch the white cover first and then the blades.



HOW IT WORKS

All the magic happens when the wind generates the blades to spin at a continuous speed. This allows the generator (located inside the Housing) to rotate at the same time as the blades. Wind then, becomes power, and it flows from the generator to the USB and 12V output. Clean energy for you to use!

The new Twister is able to thread onto any standard construction extension pole (like a paint roller extension, etc). Being able to raise the turbine higher up allows you to get the maximum power out of your Cyclone wind turbine. Your tech friends will definitely be impressed.

NOTE

The 2-blade assembly works better in strong winds. While the 5-blade assembly works better when the winds are weaker.

SPECIFICATIONS

Rotor Type	Horizontal axis
Yaw Axis	360 degrees
Wind Configuration	Downwind
Suggested Mount Tube	• 3/4" PVC pipe (1.050" Actual outside diameter) schedule 40 or 80 • 3/4" steel pipe (1.050" Actual outside diameter) schedule 40
Power Output	• 0 - 30DVC open - circuit voltage • USB, standard 5VDC 3A for USB charging phones, tablets, etc. Using the latest USB identification circuit, the USB output is perfectly compatible with iPhones, Android phones, iPads, etc.
Maximum Generator Output	33 watts
Cut in Wind Speed	• 5 Blade: Approximately 6 mph* • 2 Blade: Approximately 9 mph* *Charging data determined by actual test results in an engineering wind tunnel. Your results may vary depending on wind velocity, wind direction and other factors.
Blade Diameter	18" Swept diameter
Survival Wind Speed	45 mph
Operating Temperature	-40°F to 120°F
Turbine Weight	3 lb

SAFETY INFORMATION

- Be aware that the blades will spin too rapid for the human eye to register. Please set it up in a safe area, where nobody gets hit by these blades accidentally.
- Make a strong foundation for the turbine, and use a strong pole, it should not bend at any time.
- Important, secure the blades by tightening the hub assembly with the black nuts supplied.
- This product is designed to be used while monitoring the voltage of the battery. If the turbine is to be left unattended, we highly recommend using a wind charge controller to avoid overcharging when using batteries.
- Do not use the Cyclone Turbine if the wind speed is over 45mph.
- Do not allow the turbine to work if it has missing cover spots or the wires are exposed.
- Always lower your turbine for maintenance. Never try to climb or use a ladder.
- Use as intended only.
- Use a suitable knot to tie the pole to the stakes. we recommend the Double half hitch knot.
(See the illustration of the knot on page 8)

COMPONENTS

You can order the twister kit containing the pole or simply order your turbine only.

- Turbine only

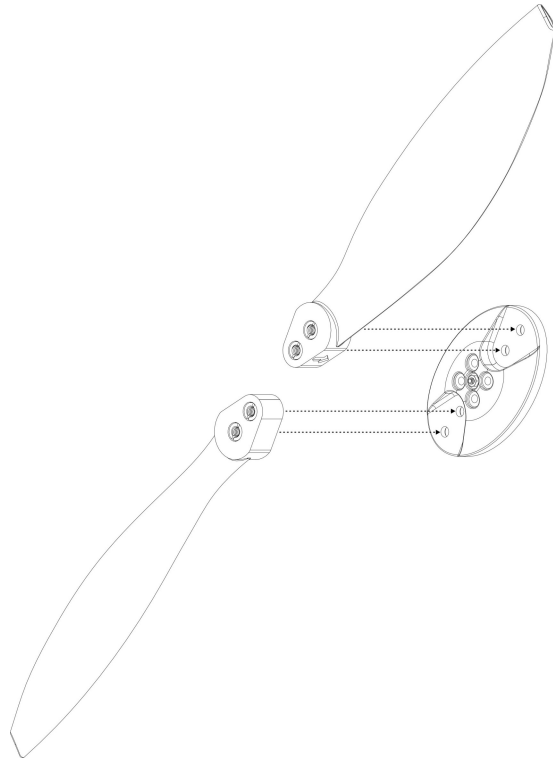


- Twister Pole option

- (3) Plastic Stakes
- (3) Rope Tensioners
- (3) 10 ft Pieces of Paracord
- (1) 3d printed Guy Wire Ring
- (1) Telescoping pole

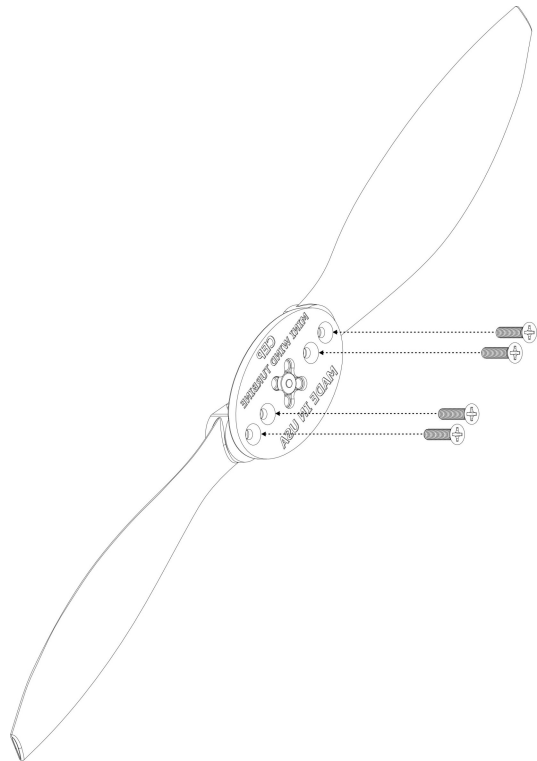


INSTALLATION



1

Pay attention to the direction of the arrows on the blades: All the blades need to be oriented in the same direction.

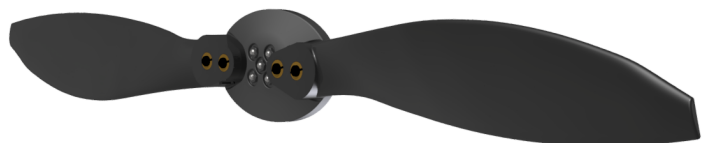


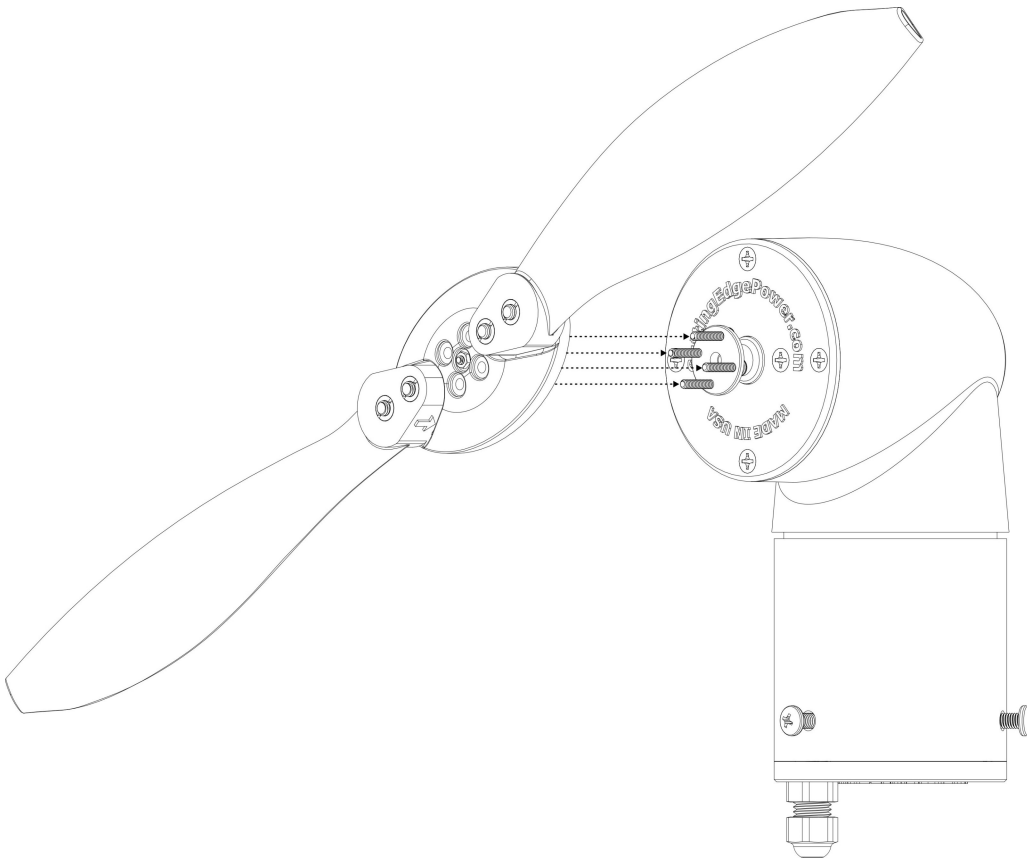
2

Use the 10-32 bolts to secure the blades to the hub, be careful not to over tighten the 10-32 bolts as the hub may crack, but be sure to tighten them firmly so they do not loosen. NOTE: Torque specification for the 10-32 screws is 10 in-lbs. (0.83 Ft-lbs.)

NOTE

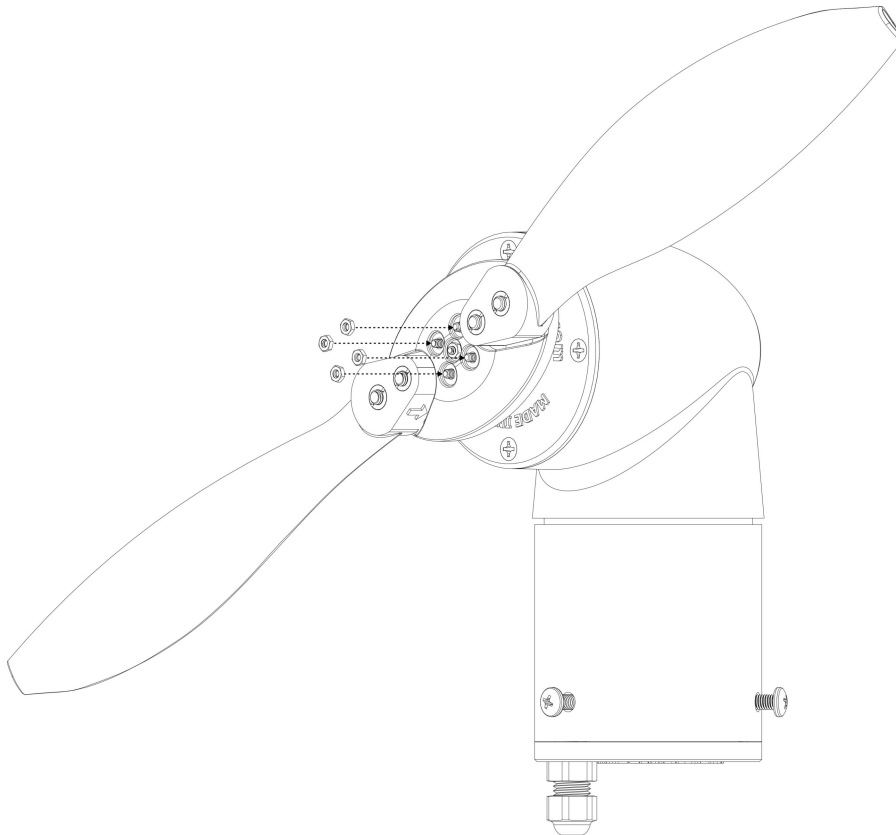
If you follow these steps you will get something like this image





3

3. Place the blade assembly on the magnetic hub.



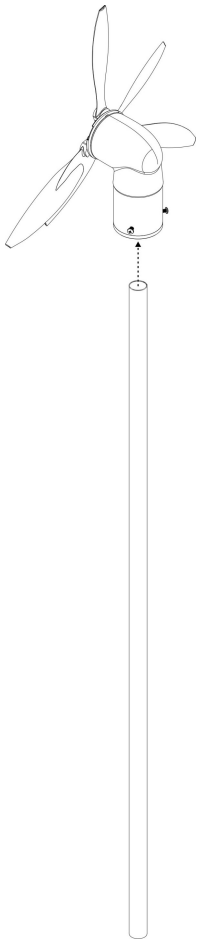
4

4. Use the 4 black nuts to secure the assembly.

NOTE

If you follow these steps you will get something like this image





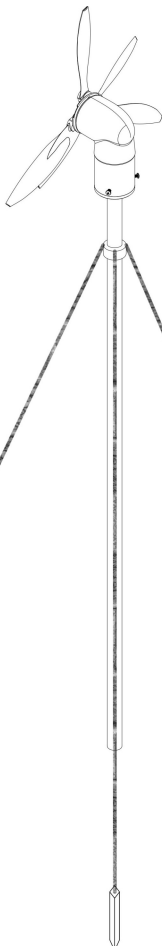
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5. Install the Cyclone Wind Turbine Pole:

This wind turbine is designed to mount on a 3/4" PVC or steel pipe (1.050" Actual outside diameter) schedule 40 or 80.

N O T E

Follow this only if it is a standard Cyclone turbine



6

6. Make a good base for your turbine. Secure the bottom of the pipe well, as the vibration and overturning forces can be more than expected. To anchor your turbine to the stakes you must keep in mind to use a knot that allows a good fixation. We recommend the Double Half Hitch Knot

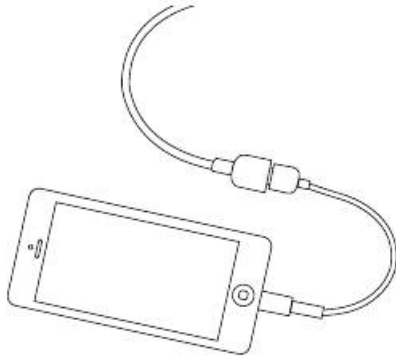
The Double Half Hitch Knot



Tying Two Half Hitches

- 1 Wrap the rope around a support
- 2 Pass the end through the loop
- 3 Wrap it around the standing part
- 4 Tighten to complete

7



The Cyclone Wind Turbine is ready to power devices via the USB output. If you need to use the 12V output instead; we recommend 18 AWG or larger wire for up to 8 ft. We recommend 90°C or higher rated wire.

CHARGE CONTROLLER WIRING DIAGRAM

CYCLONE TURBINE INPUT



14VDC $\pm 0.5V$ REGULATED

120W PWM CHARGE CONTROLLER



12VDC LOAD OUTPUT

(LOAD CAN BE LIGHTING, ETC. AND CAN BE PROGRAMMED VIA DIP SWITCHES FOR CONSTANT ON, OR NIGHTLIGHT MODE. THE DURATION OF LOAD OUTPUT IN HOURS CAN ALSO BE PROGRAMMED. NIGHTLIGHT MODE: LOAD OUTPUT CAN ALSO BE PROGRAMMED TO TURN ON WHEN CHARGE CONTROLLER HAS NO POWER INPUT + OFF WHEN IT HAS POWER INPUT.)



DC BATTERY VOLTAGE

12VDC BATTERY CHARGING
VOLTAGE (VARIABLE)



TROUBLESHOOT AND REPAIR

FEATURE	POSSIBLE CAUSE	RECOMMENDED ACTION
Wind turbine doesn't turn, or turns too slow.	Blades are facing the wrong direction.	Flip the blades. The arrow should be pointing toward the wind.
Blades are spinning, but there is no power output	• Not enough wind. • Worn slip ring.	• Raise your Cyclone Wind Turbine. • Replace slip ring, available at the Cutting Edge Power website.
Blades are stationary, even in high winds.	• “Dirty wind” as a result of buildings or structures near the turbine that can cause turbulence (wind going around in circles instead of straight through the turbine) • Worn yaw bearing.	• Trim back nearby trees, re-evaluate location of turbine. • Raise turbine height. • Replace yaw bearing, available at the Cutting Edge Power website.
Generator and tower vibrate or shake excessively at all or some wind speeds.	• Tower not secured enough. • Blades damaged. • Loose parts	• Attach more guy wires to pipe. • Inspect turbine for damaged blades or loose parts. • Note: some vibration and/or noise is expected.
In high wind speed condition for a long period of time, but the battery is still in a low charge condition.	Bad battery or wiring	Inspect wiring or replace battery if it can't hold a charge.

CONTACT INFORMATION

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CuttingEdgePower.com



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