CUTTING EDGE POWER

"Innovative Renewable Energy Solutions"

MICRO WIND TURBINE

USER MANUAL

CAUTION

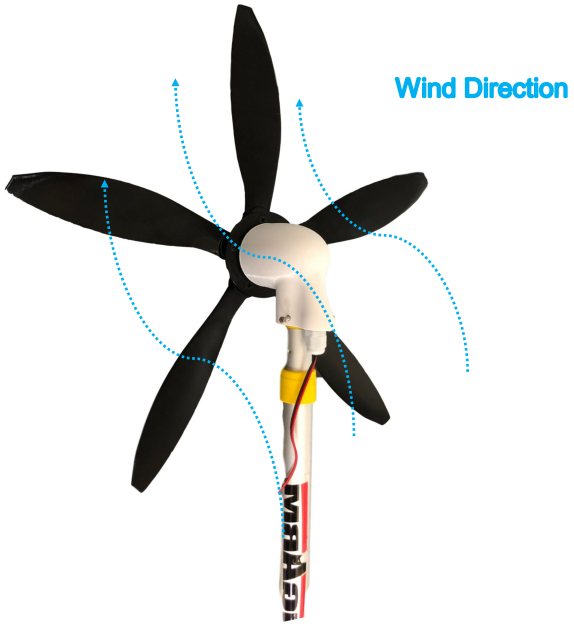
THINK SAFETY FIRST

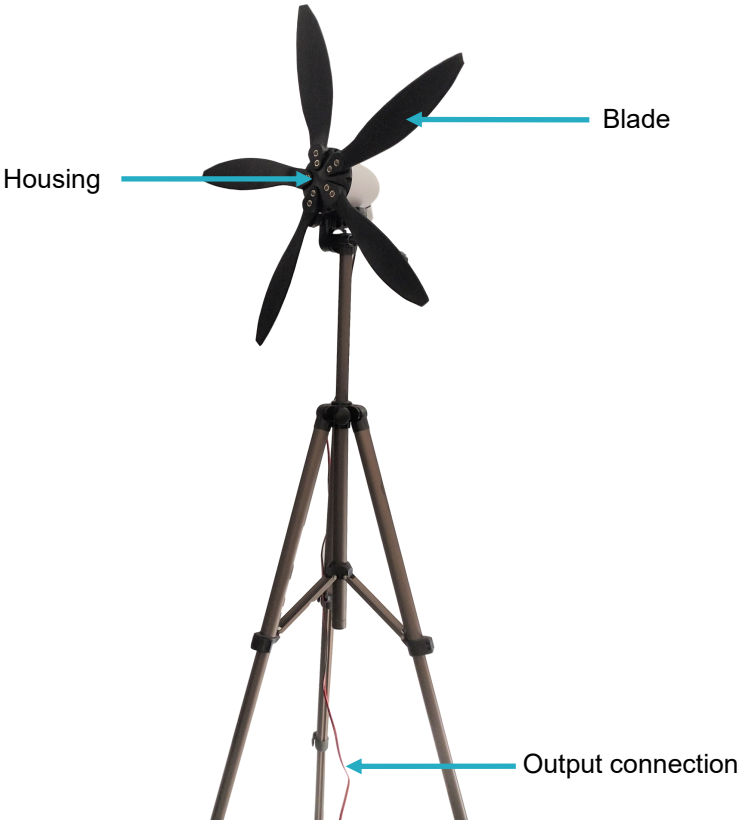
The warnings, precautions, and instructions discussed in this instruction sheet cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator. 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 judgement and never try to modify or disassemble this product.

Introducing our new MICRO Wind Turbine Generator!

An innovative micro wind turbine that generates up to 15 Volts output to charge your devices while you are at home or backpacking to your favorite place. This power generator is highly reliable and keeps you powered up on the go. With this device, you can charge your LED lights, camera, phone, personal electronics and batteries even in off-grid areas!

The portable micro wind turbine can generate a maximum output of 15 watts, depending on the wind speed. The device has a 12V DC power output and a USB output, which makes it highly convenient to charge your devices. It can directly connect to any 12V DC battery without any charge controller.





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!

N O T E

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

SPECIFICATIONS

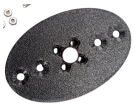
Mount Hole Diameter and Suggested Mount Tube	• **Pipe/tube mount:** Mounts to a PVC or similar 3/4" pipe (Turbine mount hole inside diameter is 1.050"). • **Perpendicular pipe/tube mount:** Mounts on a 1" to 1.25" diameter tube. (Some examples would be on a bicycle, gardening poles, etc.) Includes special grooves to mount on 1/2", 3/4" or 1" square or rectangular tubing. (Some examples would be on an apartment balcony, sign post, etc.) • **Twister Mount:** Includes the Micro Wind Turbine designed to thread onto any standard construction extension pole. Includes one Twist lock telescoping pole. Includes one Guy wire ring, (3) Guy wires (high visibility reflective safety rope) and (3) stakes to stabilize the pole.
Power Output	• 14.0 VDC ± 0.5 V output, regulated for charging 12VDC devices. • 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.
Generator type	12 Volt
Maximum generator power output	15 watts
Voltage output	0-30V (Variable based on wind speed)
Cut in Wind Speed	2 Blade: Approximately 7 mph* 5 Blade: Approximately 5 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 span	18" swept diameter
Survival Wind Speed	45 mph
Operating Temperature	-40°F to 120°F
Turbine Weight	1 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.
- Secure the blades by tighten the hub assembly with the black nuts supplied, to prevent them from getting thrown out.
- 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 Wind 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.

COMPONENTS

Micro Turbine Housing with flange attached to generator



2-Blade magnetic hub

5-Blade magnetic hub

(4) #4-40 Nuts to secure hub to flange

3d printed 3/16 socket to secure #4-40 nuts

(5) Blades

(10) 10-32 bolts to secure blades to hub

USB output with LED attached

12V output

Carry bag

- Twister kit

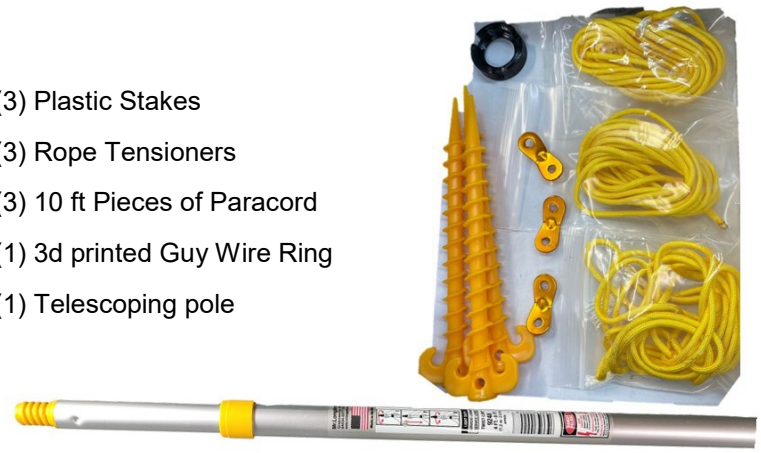
(3) Plastic Stakes

(3) Rope Tensioners

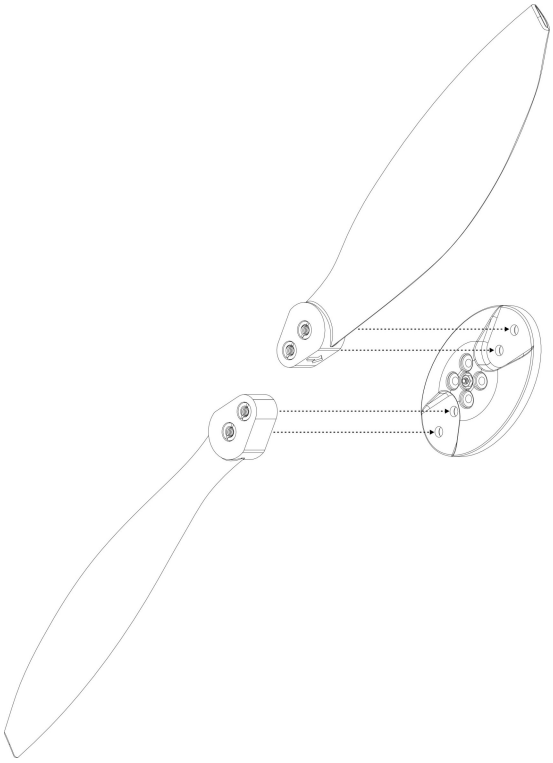
(3) 10 ft Pieces of Paracord

(1) 3d printed Guy Wire Ring

(1) Telescoping pole

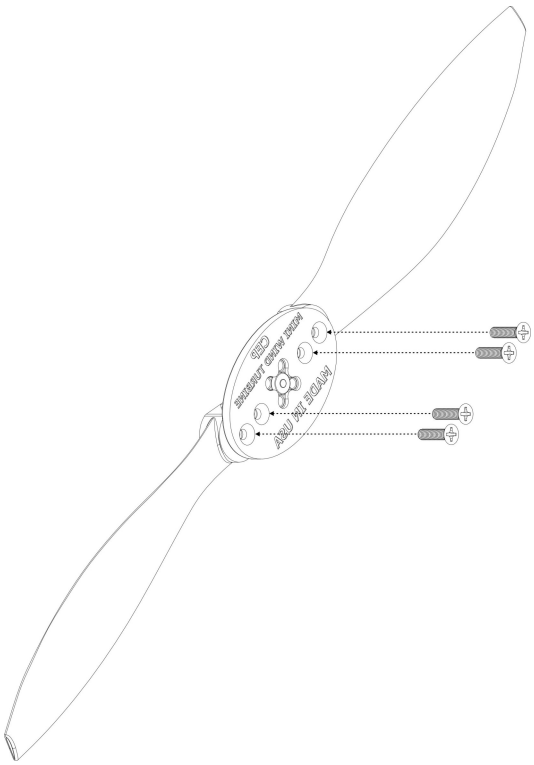


INSTALLATION



1

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

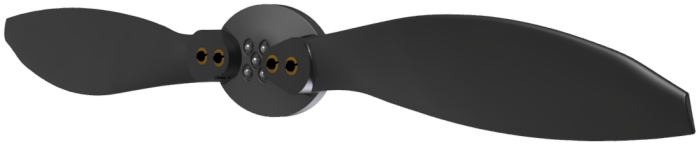


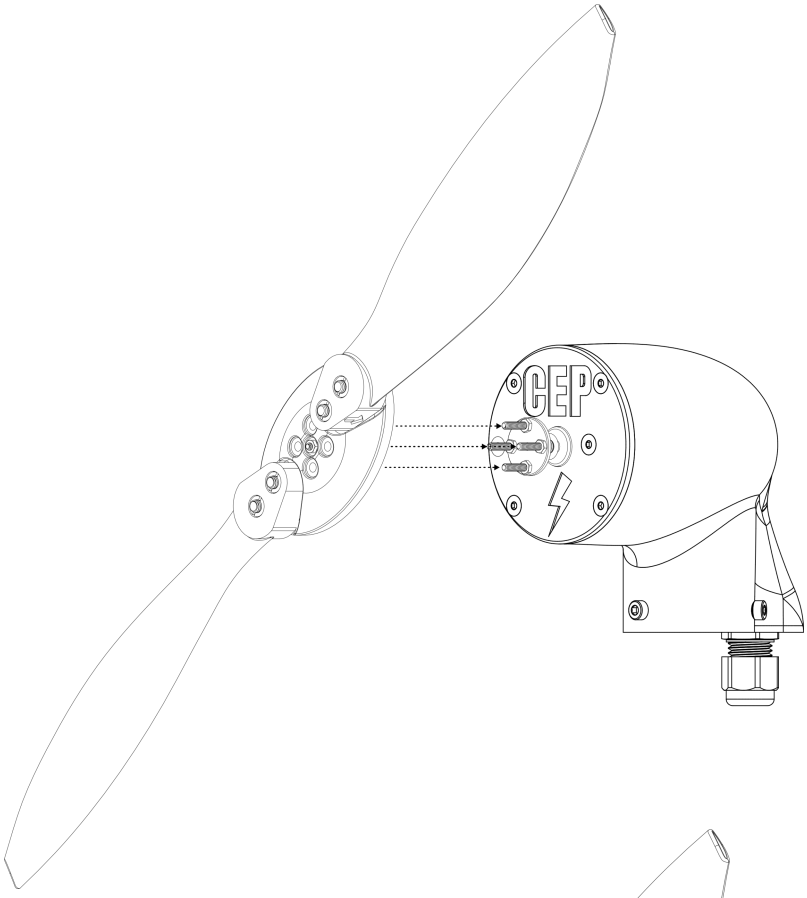
2

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.)

N O T E

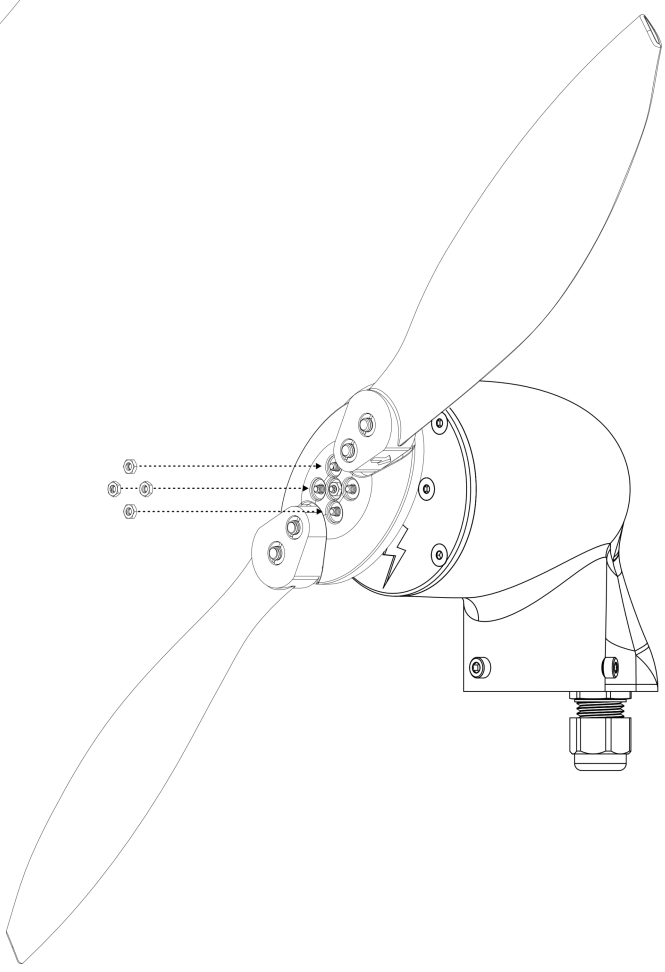
If you follow these steps you will get something like this image





3

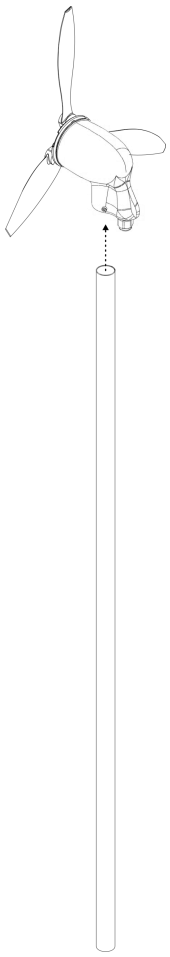
3. Place the blade assembly on the magnetic hub.



4

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

Caution: Tighten the nuts just enough for the nylon part to fit. Do not overtighten.



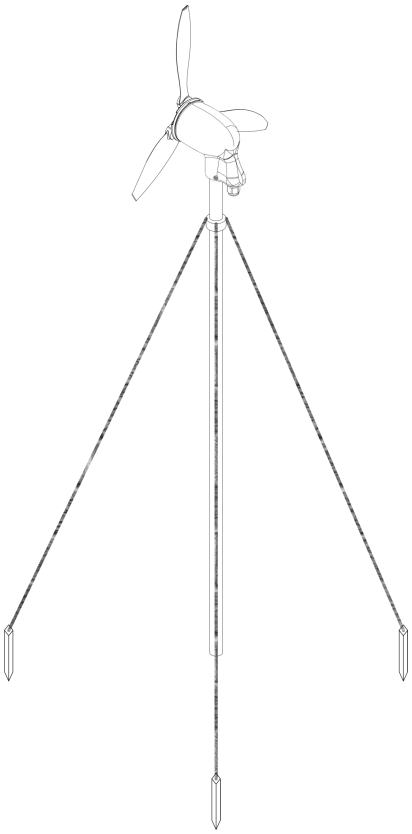
5

5. Install the Micro Wind Turbine Pole: See “Suggested Mount Tube” in specifications

We recommend at least 10 ft tall. Make a good basement for your turbine. Secure the bottom of the pipe well, as the vibration and overturning forces can be more than expected.

N O T E

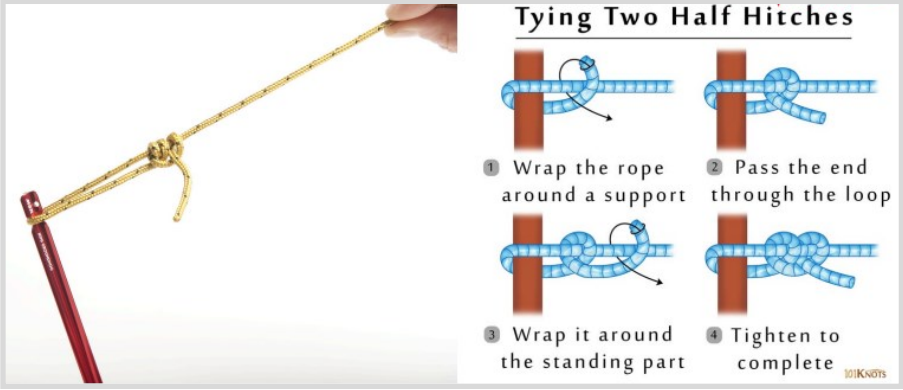
Follow this only if it is a micro wind twister turbine.

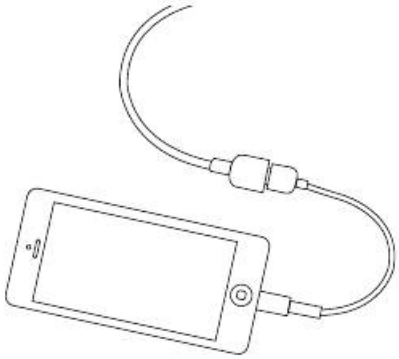


6

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

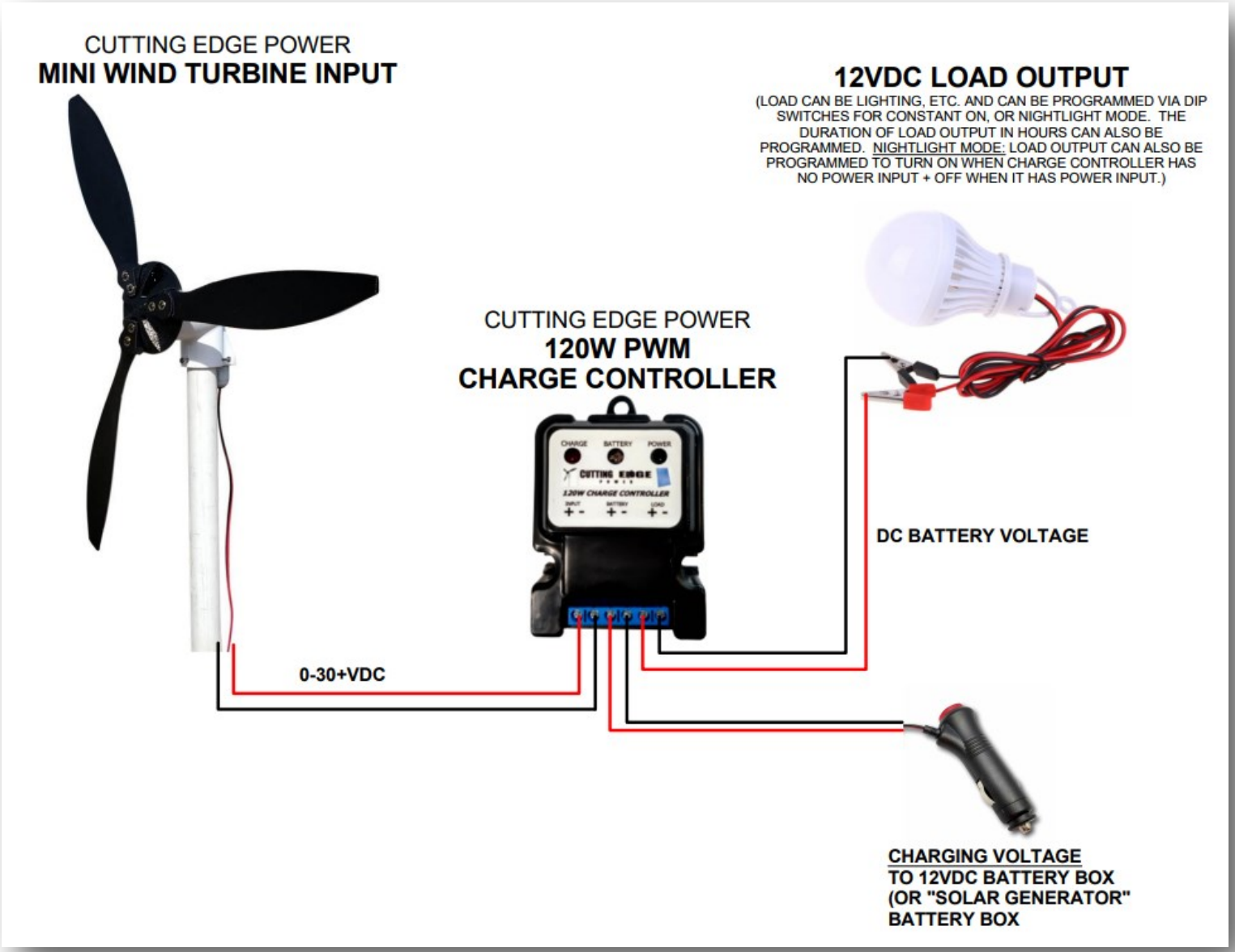




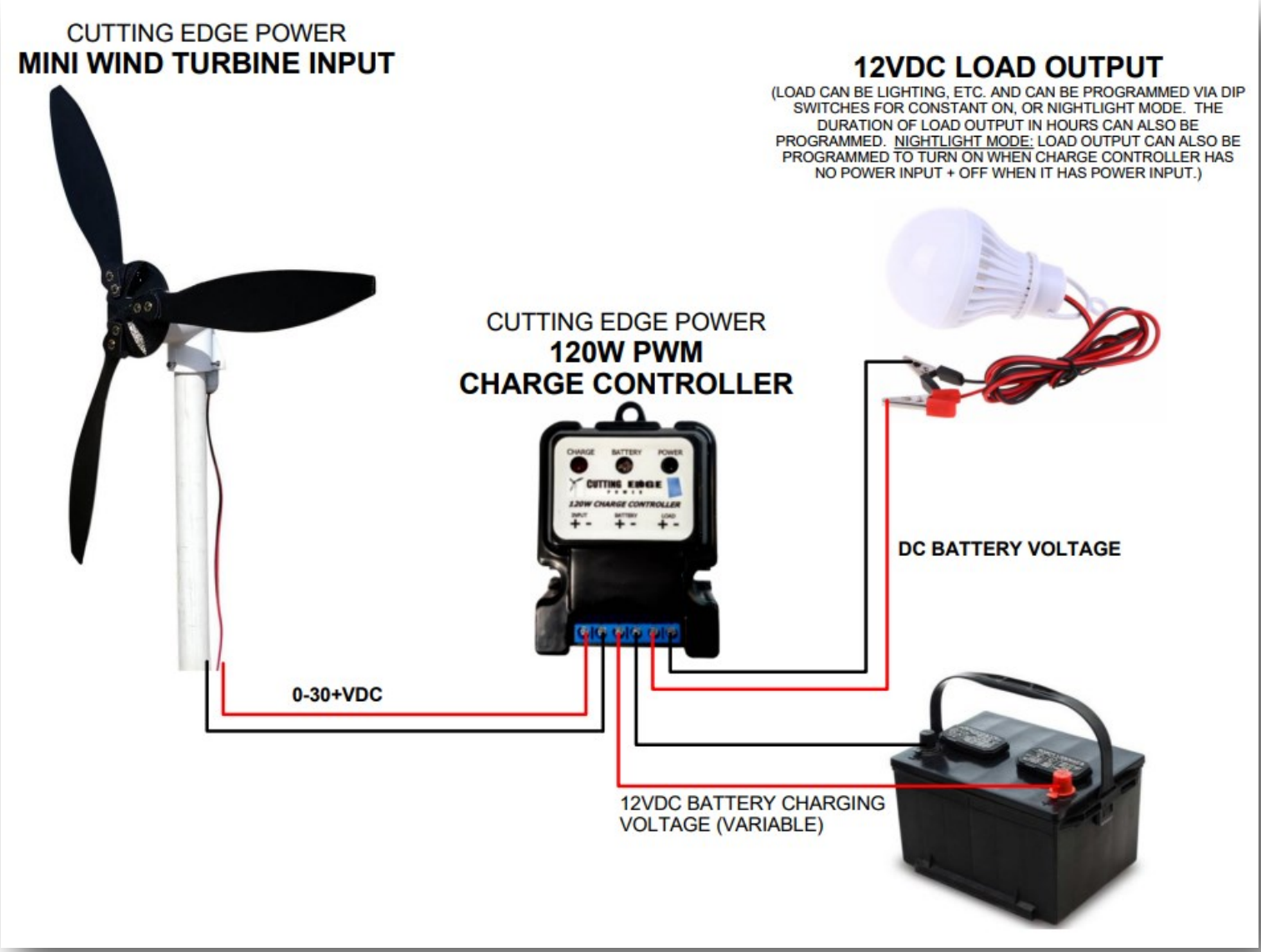
7

The Micro 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.

WIRING DIAGRAM



WIRING DIAGRAM



With the microturbine you will get a useful product for the transformation of clean and ecological energy. The microturbine has variants that will allow you to take it wherever you want. Good design, portable, easy to use, you have a microturbine with which you will be impressed.

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. • Need more blades. • Worn slip ring.	• Raise your Smart Wind Turbine. • Upgrade to 5 blade assembly at the Cutting Edge Power website. • 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

Cutting Edge Power
8570 Sienna Springs Boulevard, Suite C
Missouri City, TX 77459

(972) 292-7154

sales@cuttingedgepower.com

CuttingEdgePower.com

CUTTING EDGE POWER

"Innovative Renewable Energy Solutions"