

WINDWALKER WIND GENERATOR KIT

Assembly and Installation Instructions



Congratulations on your purchase of the new, redesigned Windwalker 250 HD

**This turbine was assembled and test run before boxing and shipping.
The output of this unit was verified during open voltage tests and
direct short amperage tests under controlled conditions.**

NOTES:

- We recommend 14 gauge wire for runs up to 50 feet. Use 12 gauge for longer runs.
- Includes blocking diode to prevent battery discharge when turbine is still.
- Turbine rotates clockwise (looking from the front).
- Break in (loosening the spin) takes a few days to a few weeks depending on wind speeds. Winds somewhat higher than 8 mph will be needed to generate electricity.
- After break-in period generator operates in winds from 8 to 40 mph.
- **Caution:** Excessive winds can possibly burn out the motor so use common sense. A few gusts above 40 mph should be okay, but not continuous.
- *We would appreciate any photos you would like to provide that we can post on our website in the "Happy Campers" section.*

Questions or comments? E-mail or call:

support@freespiritenergy.com

702.808.4806

Jack Wright, Co-owner

WINDWALKER FAQs

How does the Windwalker connect to the battery?

The generator motor is pre-wired with a 2-way molded connector (quick disconnect). You can simply hardwire the ends to your battery. Red to positive. Black to ground.

The in-line connector allows you to quickly separate the generator from the battery when taking it off the mast for storage.

Can my battery get overcharged?

No. Voltage does not overcharge. Too many amps coming in for too long will overcharge a battery. This is simply not possible with a micro turbine such as the Windwalker 250. Think of the Windwalker generator as a “trickle charger” for your battery or battery bank. No charge controller is necessary.

How long does it take to assemble the Windwalker?

The Windwalker 250 comes with a tail fin and 8 blades that need to be bolted onto the hub. This takes about 20 minutes and uses a 7/16" wrench.

Why isn't a mast included in the kit?

To save you excessive shipping costs. The mast is a standard Schedule 40 1" inside diameter galvanized steel threaded pipe that can be purchased at any hardware or home improvement store for about \$15. Suggested lengths are 30" and 36". The mast may be spray-painted according to personal aesthetics. Threaded pipe is necessary only for the mounting plate, but it can work for the ladder bracket as well. There is no extra charge for threaded pipe at home improvement stores.

How long does it take to install the Ladder Brackets?

The two female clamps on the ladder have to be measured and squared vertically. Time required is about 30 minutes using a 9/16" wrench which is necessary because the flanged, nylon-insert locking nuts cannot be turned by hand.

How high above the ground will the wind turbine be?

True height above ground will be determined by your rig plus the mast height. Average height using the ladder brackets with 36" mast is 14 feet.

What are the overall dimensions of the assembled wind generator?

The Windwalker 250 is approximately 24" long x 24" wide (diameter of blades).

What if I want to check the generator's output?

First disconnect any load (such as the battery). Then connect the +/- probes of a digital multimeter set to DC voltage directly to the output wires of the turbine. While it is spinning, you will get an accurate voltage reading.

When is a battery considered full?

When not being charged or used, a 12V battery is fully charged at about 12.6 to 12.7 volts.

Is the Windwalker 250 HD water resistant?

Yes, the housing is weather resistant but not totally waterproof. To make waterproof simply apply a silicon bead around the motor protrusion.

Can I paint the turbine components to match my rig?

Of course. It is a kit after all. Feel free to paint the hub, frame etc. to your liking.

LADDER BRACKET INSTALLATION INSTRUCTIONS

This Bracket Kit Includes:

- 2 mast clamps - male with 2½" pintle bolt and male with 3" pintle bolt
- 2 ladder rail clamps – female (receiver)
- 2 clear bushings for ladder rail clamps (dampens vibrations)
- 4 carriage bolts w/ 4 flanged, nylon-insert locking nuts **
- 2 rubber washers (stops any bracket rotation from wind pressure)
- 1 hex nut for the lower male pintle bolt (locks bracket into position)



Tools Needed: 9/16" wrench ** (required to turn locking nuts)

The clamps with the male pintle bolts go on the mast pipe. The female clamps go on your RV ladder.

The **Mast** is a standard Schedule 40 1" inside-diameter galvanized steel threaded pipe that can be purchased at any hardware or home improvement store for less than \$20. Suggested length is 36".
(For aesthetics, you may want to spray paint the pipe first.)

STEP 1 – ATTACH MAST CLAMPS

Slide each male clamp with bolt and nut onto the mast. They should be about 10-11" apart with the longer pintle bolt clamp around the lower threads of the mast. Turn nuts only until snug allowing for adjustment.

STEP 2 – ATTACH LADDER CLAMPS

Put a clear bushing below the topmost ladder step. Slide a female clamp over the bushing. Put carriage bolt through the clamp and screw on nut until snug (do not tighten yet).

Repeat for the other female clamp a few inches below the top curve of the ladder (10-11" above first clamp)

STEP 3 – ALIGNMENT OF CLAMPS

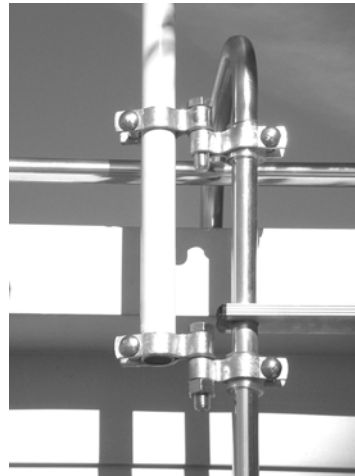
Put a red rubber washer on each pintle bolt.

Place the long male pintle (attached to bottom of mast) into the lower female clamp (attached below the step). Now, slide the upper male clamp until it can fit into the upper female clamp. You should now have the mast clamps loosely fitting into the ladder clamps.

STEP 4 – ADJUST AND TIGHTEN

Make sure that the mast is vertical to your rig. Make sure that all the clamps are horizontal from the mast and ladder rail. Now you can tighten the nuts on the clamps and while doing so adjust them. Do not fully tighten the top mast clamp until **YOU ARE SURE** it is in the right position.

Note: A large hex nut is provided so you can lock in the position of the mast and bracket. You can do this by hand. It does not take much pressure to snug it down and you may not need it at all.



Once the brackets are in place, you can quickly put up the wind generator and mast (with wires already threaded through the mast and quick-disconnector extending out the bottom).
Connect to the wires leading to your battery and enjoy the free energy!

CAUTION: DO NOT DRIVE YOUR VEHICLE WITH THE WIND GENERATOR UP

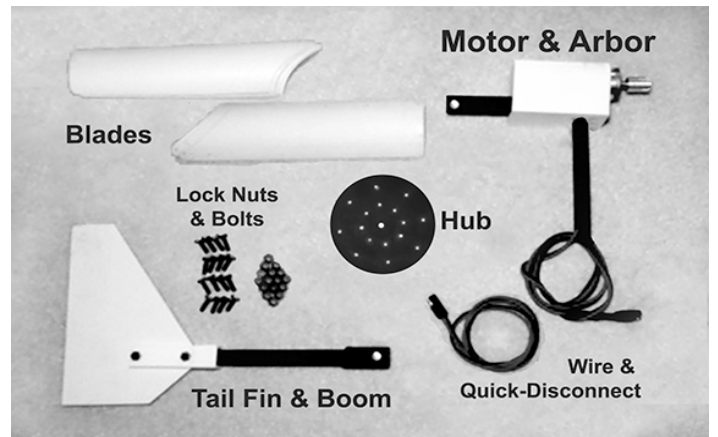
WINDWALKER WIND GENERATOR ASSEMBLY INSTRUCTIONS

Wind Generator Kit Includes:

- Housed Generator Motor with Down Tube (rests inside mast), and metal arbor w/ nut
- Pre-wired Quick-disconnect Pigtail
- Tail Boom and tailfin assembly
- PVC Prop Blades (8)
- Steel Hub Plate w/ Holes Pre-drilled
- 16 Locking Nuts, 16 Hex Head Bolts
- Shrink tubing – red and black

Tools Needed:

- At least one **7/16" wrench**



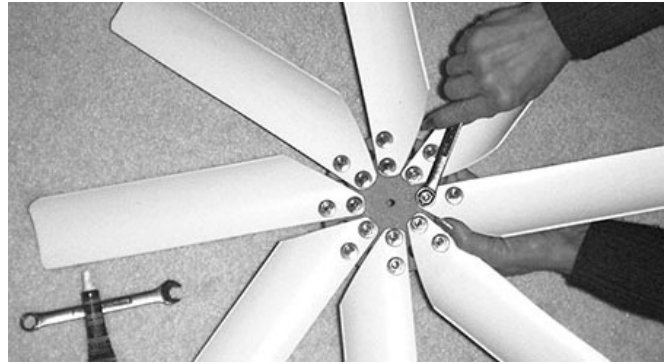
STEP 1 – ASSEMBLE BLADES ON HUB

Insert a bolt through each small hole in the hub. Place hub on flat surface with threads up. Position blades all around on the bolts and loosely screw on each nut.

*The rounded (convex) side of blade contacts the hub.
The open (concave) side faces the wind.*

Tighten until snug with a wrench, then 1/8 turn more.

Do not over-tighten.



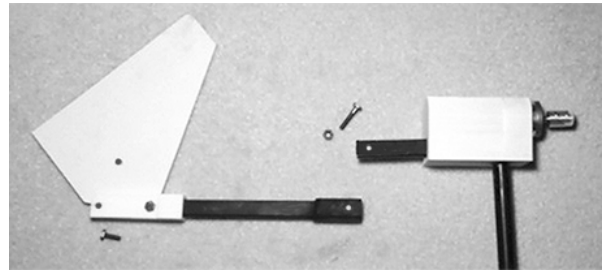
STEP 2 – ATTACH TAIL FIN TO BOOM

Remove the bolt from end of tail fin mount (not necessary to remove inner bolt) Slide in tailfin and secure with bolt.

STEP 3 – ATTACH TAIL BOOM TO MOTOR FRAME

Remove long bolt and locking nut from tail boom receiver. Slide over extension from motor housing. Align the holes and secure with the bolt and nut provided.

Do not over-tighten.



STEP 4 – ATTACH HUB TO MOTOR

Remove 1/4" bolt and 3 washers from arbor of motor shaft. Insert bolt through 1 washer and center hole of hub. Put 2 washers on back of hub and thread bolt into arbor until it "seats" then 1/8 turn more. **Do not over-tighten.**



STEP 5 – PUT GENERATOR ON MAST

Feed quick-disconnect and wire through mast and drop down tube of generator assembly into top of mast pipe. It will be a loose fit.

A little grease on top rim of mast will facilitate smooth motion in slight winds.

