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# **Homebrew Wind Power**





## Synopsis

Have you ever wondered how wind turbines work and why they look like they do? Are you interested in adding wind power to your off-grid electric system, but have been put off by the high cost of equipment and installation? Well, now you can build and install your own wind turbine! Harnessing the wind can be a tricky business, but in this groundbreaking book the authors provide step-by-step, illustrated instructions for building a wind generator in a home workshop. Even if you don't plan on building your own turbine, this book is packed with valuable information for anyone considering wind energy. It covers the basic physics of how the energy in moving air is turned into electricity, and most importantly, will give you a realistic idea of what wind energy can do for you--and what it can't.

### **Book Information**

Paperback: 320 pages Publisher: Buckville Publications LLC; First edition (November 21, 2008) Language: English ISBN-10: 0981920101 ISBN-13: 978-0981920108 Product Dimensions: 8 x 0.7 x 10 inches Shipping Weight: 1.8 pounds (View shipping rates and policies) Average Customer Review: 4.3 out of 5 stars Â See all reviews (31 customer reviews) Best Sellers Rank: #591,995 in Books (See Top 100 in Books) #29 in Books > Engineering & Transportation > Engineering > Energy Production & Extraction > Alternative & Renewable > Wind #372 in Books > Crafts, Hobbies & Home > Home Improvement & Design > How-to & Home Improvements > Electrical #1229 in Books > Crafts, Hobbies & Home > Sustainable Living

#### **Customer Reviews**

First I must say, the "don't go there" comment was written in the forward of the book, which was not written by the author(s). This book does a very good job of teaching the reader just about every aspect concerning Wind related RE subjects ( plus how to build a single design ). Chapter 1-6 explains the basics starting with an introduction to wind power, ending in shop safety. Chapters 7-8 cover the tools you will need to build from scratch. This basically is just the two types of molds, and a coil winder. Chapters 9-16 cover the parts you need to build( including fabricating your own parts, and buying a few ), and put together a complete 10' proven wind turbine. This is nothing you can not learn by reading their web pages. However, the book serves as a very good offline reference, and is

well organized (This is one thing Hugh could definitely learn from these two - Organization ). Chapters 17-18 cover towers, and raising respectively. Chapter 19 is experiences with failures, while chapter 20 is called scaling it up or down.Where it falls short is in the last chapter "scaling it up and down". This chapter I felt could have been much bigger, and covered more than what it actually did. I felt that the authors were in a rush, and were tired of writing the book at this point. How , and what to use when laminating the wood together for the 17' blades is a huge omission, and sorely missed. Also when talking about MPPT design controllers ( in another earlier chapter ), they briefly bring up the topic, and then nothing else. Sorry guys " Some people " does not convey the topic well at all, and could have been easily left out. A little research on MPPT was all that was required, and you could have informed your reader on the subject a bit more.

The DanB "heavy duty" 48V stator from his web site says "This stator is wound with #15 gage wire. It has 9 coils and each coil has 105 turns in it. [...] The coils are wired in 3 phase star configuration [...] In our tests we believe this stator will be about 50% efficient at 1000 Watts. Sustained output above about 1000 Watts may overheat this stator". There are easy ways to get generator and rectification efficiency up above 97%, so that almost all of the harvested wind power available from the prop ends up in the batteries. Burning more than half of it in the generator and rectification is simply poor engineering. The down side of 50% efficient as the author notes, is that this becomes an unsafe heater that violates NEC and UL standards in high winds ... creating a high fire risk ... and a risk that your insurance will not cover the damage or loss of life since the product is not UL rated.A good efficient UL listed design would never get warm. We need NEC/UL safe products for use in forest and wild land areas to keep from starting fires that place people at risk, or worse yet kill. Missing completely are accurate auditable specifications, performance data, and efficiency data to be able to calculate Return-On-Investment and production estimates. They need to specify critical prop data, like efficiency (Cp) and Tip Speed Ratios as a series of curves over various wind and load. They need to do the same for the generator designs. There is a lot of bashing of VAWT and micro-turbine HAWT designs based on performance claims, yet this product completely fails to accurately present it's auditable performance numbers for comparison.

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