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Building A Wind Machine

Basics!

I have read a countless books, mails, how to guides and the rest on how to build a wind machine, in the end I ditched them all and did it my way!

The guides where OK but did not really get to the point, which was in simple terms what do I need to obtain to make one!

My chimney mounted wind machine!



As you can see from the picture above, my wind machine is in motion and it is almost all of the time, so long as there is a breeze it is making free power to supply my battery bank, all day and all night!

My wind machine specifications

- 6 x Carbon fibre reinforced plastic blades 3ft long
- 1 x Circular steel hub 3mm steel (Homemade) 150mm Diameter
- 1 x 10Ft standard steel scaffolding pole
- 1 x 4ft Angle Iron type steel for tail
- 1 x Custom mounting swivel bracket (Homemade)
- 12 x M6 roofing bolts, nuts and washers for blade mounting
- 1 x Brooke Crompton 90VDC 3000W permanent magnet DC motor
- 1 x Length of 16MM 2 core copper twin wire for power transfer
- 1 x 600MM x 300MM x 5MM Perspex clear Perspex for tail fin
- 1 x Lucas blocking Diode to prevent batteries spinning wind machine!

A down to earth explanation of how it works!

The reason I chose this particular motor is because when you spin a PMDC motor then it produces DC, DC is what charges SLA batteries so PMDC motors are the ideal solution for a Homebrew wind machine, these can be found world over in surplus shops, look out for them!

So if we spin up a PMDC motor then we produce a DC voltage, the faster you spin it the higher the voltage will get.

When you connect a PMDC motor to a battery then the motor spins, this is using power from the battery bank to produce motive force, now if you were to manually spin the motor at the same speed as it was trying to go connected to the battery then effectively the motor would be producing the same voltage the battery was supplying, so the battery would not be under any load i.e. 12V battery connected in parallel to a PMDC motor spinning at a rate to produce 12VDC produces an equal and opposite electric force.

However, once you begin to spin the motor faster than the battery bank voltage then you are effectively charging the battery bank i.e. 12VDC battery bank connected in parallel to a PMDC motor producing 13.5VDC is charging the bank or in simple terms putting power into your batteries!

Now we could go into overcharging, regulating, desulfating, trickle charging and more but for now we have the basics in place and we are producing power and storing it in a chemical form (Batteries) for later re use.

More information

Blocking Diode

Purpose is to allow the produced voltage to flow from the wind machine (PMDC Motor) into the batteries but not the other way, so in wind the batteries will charge but in no wind the wind machine will NOT rotate.

SLA Batteries

Purpose is to store electricity in a chemical form

PMDC Motor

Purpose is to effectively use it in reverse to induce a current flow into the motor windings from magnets and provide us with a useful charging current at the right voltage.

16MM Copper cable

Purpose is transport our voltage from the wind machine to the battery bank with the least amount of electrical resistance, copper is a good electrical conductor but of course it has a resistive value, the larger the cross sectional area of the copper conductor, the less resistance we have. Big really is better when it comes to your cabling!

For wiring details and more info see the diagrams and picture section, any further info please mail me on molesmail@gmail.com