

Application No. 43: Wind Power

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How to make a generator for a wind turbine

I wanted to build a power generator for my windmill. The windmill has a rotor with an impressive 3,72 meters diameter.

I placed 16 Q-40-20-10-N block magnets (www.supermagnete.de/eng/Q-40-20-10-N) on each of two round steel plates. The magnets were placed on the outer edge with the poles alternately positioned (north-south-north). The direction of the magnets on the first plate should mirror exactly the placement of the magnets on the other plate so that the magnets attract to each other.



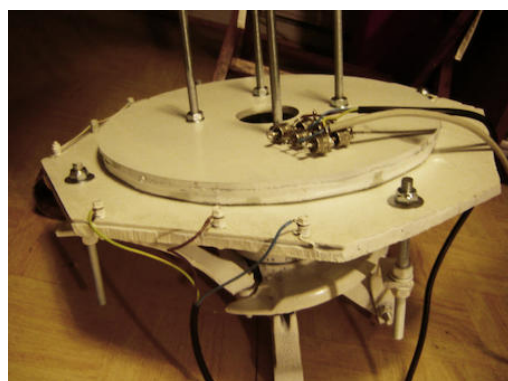
Then I wound 12 spools of copper wire and held them together with a strong tape.



The plates and the copper spools were then mounted in a housing which also holds the drive shaft.



The wind which causes the turning of the rotors also causes the magnet plates to move. The alternating current generated by this movement is transformed into direct current with the help of 6 rectifiers.



The generator produces a maximum of 900 watts when the generator and the windmill are turning at approximately 450 rotations per minute. With only 57 rotations per minute, the batteries begin recharging.



Tommi completed this project as part of his diploma thesis in electrical engineering. His thesis studied the possibilities and wind conditions required for the use of wind-powered generators in Finland. The generator should have minimal investment costs (maximum 1000 Euro). The current prototype delivers enough energy to power a hunting cabin in Kortemäki, Vieremä in Finland.

Articles used

32 x Q-40-20-10-N: Block magnet 40 x 20 x 10 mm (www.supermagnete.de/eng/Q-40-20-10-N)

Online since: 17/04/2008

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