Faroun Savonius Wind Turbine

by faroun on December 23, 2007

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intro: Faroun Savonius Wind Turbine

Alternative energy is a must in the future and all of us would like to challange the idea that we can not change and be efficeint.

so i am taking that chllange to create my own style of Savonius wind generator.

in this Instructable i will include the steps that will achieve my Faroun Savonius Wind Mill.

the size over all will be approx 6 feet high and 2.5 feet wide
split into 3 main steps and each main step will split into mini steps.

Note:: that the sound that you hear in the movie is the leaf blower that is producing air to turn the wind turbine.

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3 main steps are:

-Turbine assembly =TA
*blades
*discs
*shaft
*bearings
*assembly howto

-Cage assembly =CA
*top, bottom and sides frame
*wind deflection
*mount on a fixed roof or tower

-generator and battery assembly =GBA
*generator
*Rectifiers and battery connection
*testing

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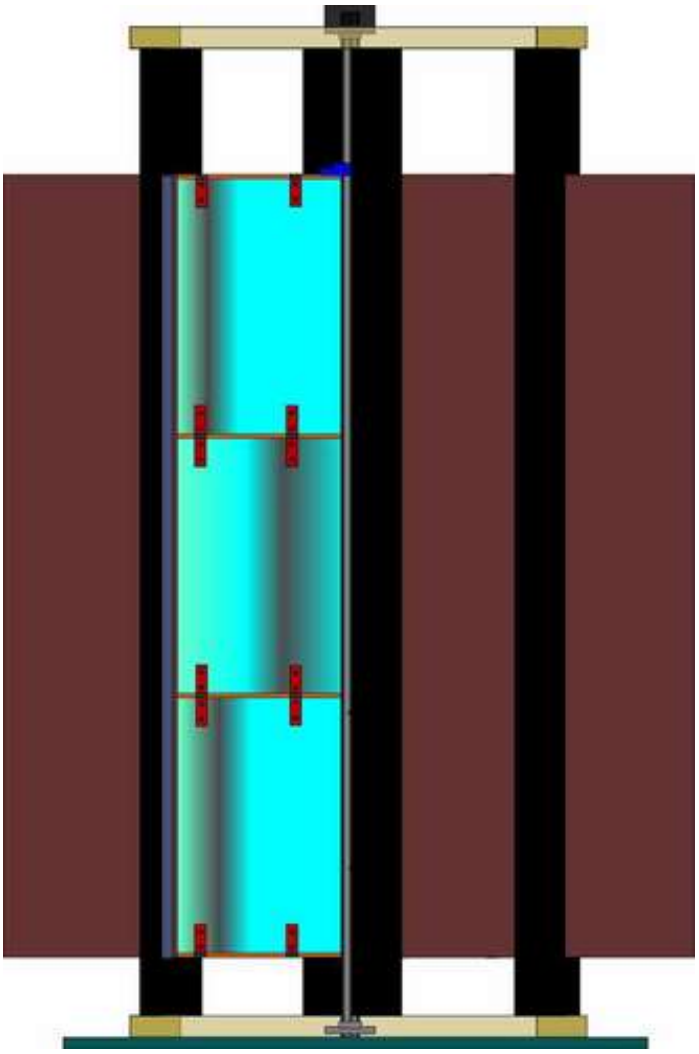
sure things may change a bit along the way but you will be the first to know.

bellow is the semi-final product for Faroun Savonius
so lets start.

Faroun



step 1: Turbine Assembly / Blades

here we will disscuss the blade:
material,Size,shape.

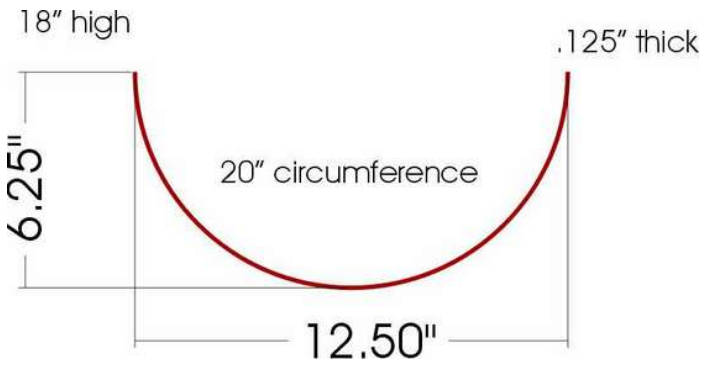
in my Project i decided to use Aluminum for Material but u can use steel, Puck Board, or even a simple 5gal pale cut into 2 or 45gal drum cut into 2, so many options you have for the blades.

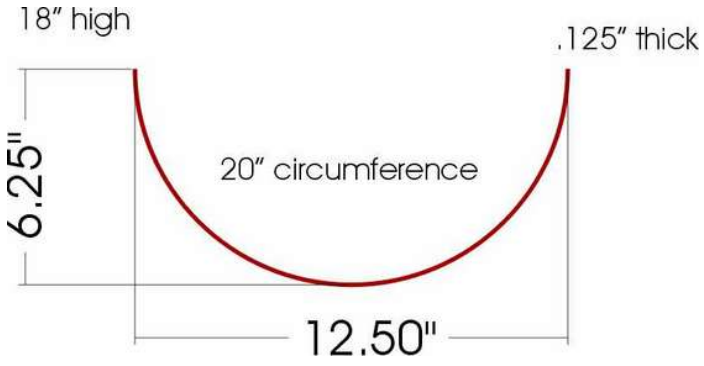
the size for my blade is 12.5 width, 6.25 depth, .125"thick, 20" circumference and 18" high.

i did not cut or roll the blades i bought them that way, yes i am lazy..lol... i was going to do it with 5gal pale cut into 2 but i figured i want to spend a bit of money just to see the max i can get.

so i have 9 blades, 3 in each section. each blade takes a third of the disc area. so each 3 blades sandwiched between 2 discs (discs are my step2).

faroun





step 2: Turbine Assembly / Discs

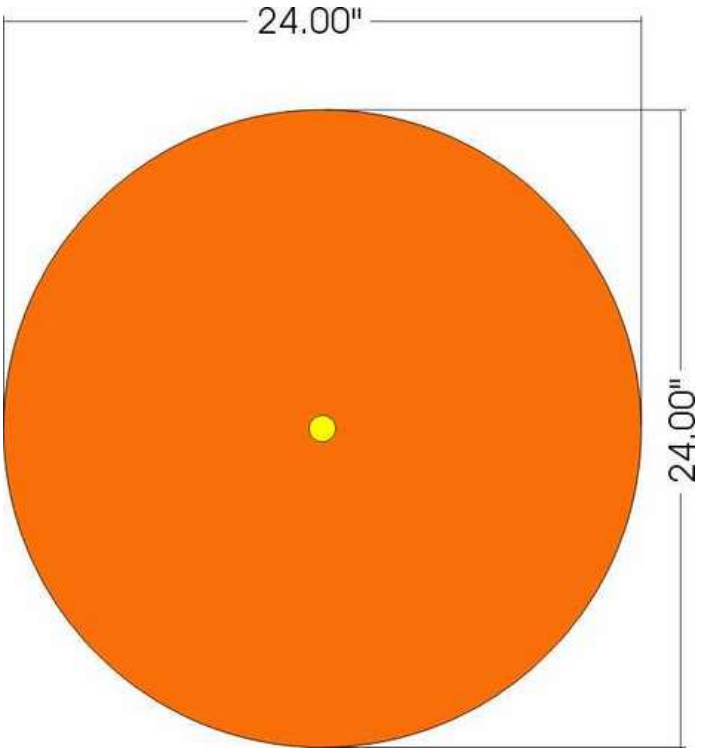
the disc is very simple.

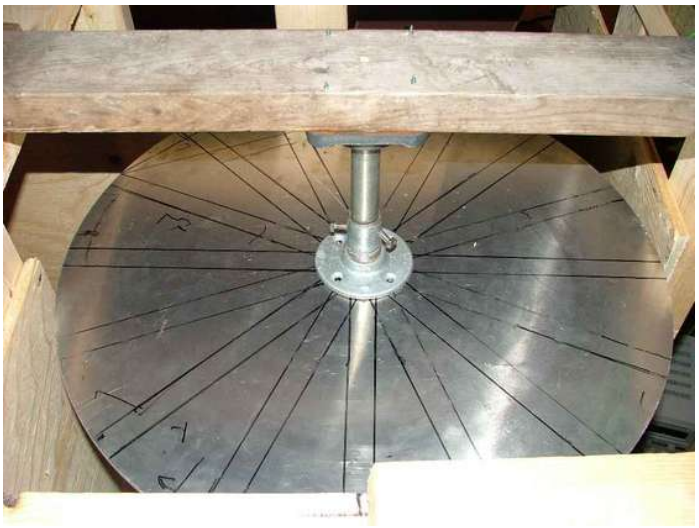
mine are made of Aluminum and you can use steel wood plexglass and all kinds of options, it all depends on what metarial are the blades so you can match to disc.

the size is 24" in dia. and .25" thick with 1 inch hole in the centre for the shaft (step3 will talk about shaft).

we need 4 discs nice and round with not to much "wabole" in them.

faroun





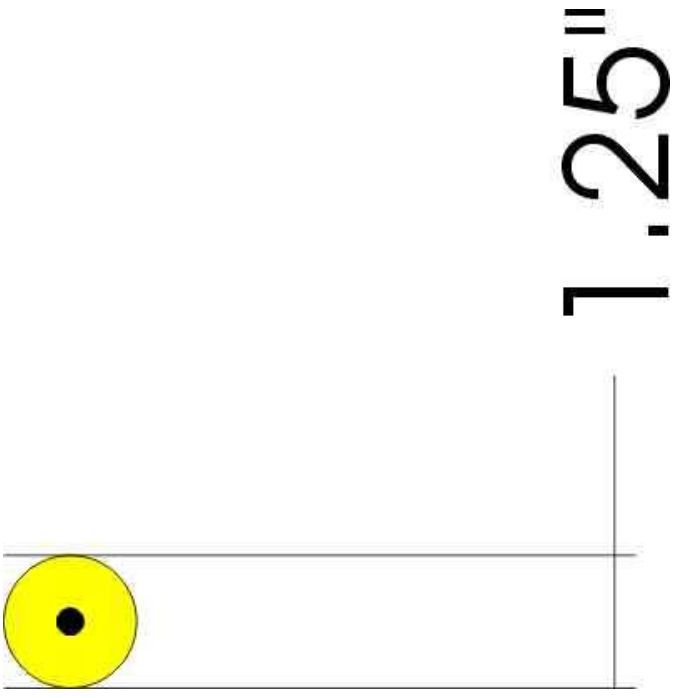
step 3: Turbine Assembly / shaft and bearings

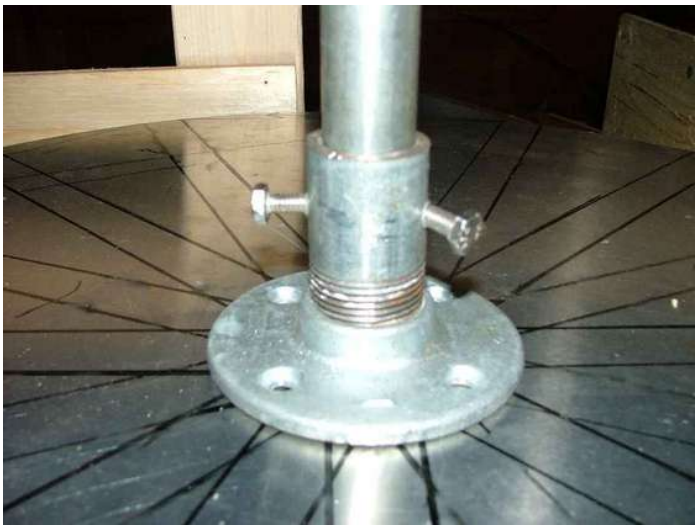
i am using 1" steel shaft 80" high mounted bettween 2 ballbearings and attched to the blades with 2 pluming flange.

for a shaft you can use other than solid steel, you can use plumung pipe, that you find any where, wood also but the the best choice and so on...

i hope so far i am clear with my instructions.

faroun





step 4: Turbine Assembly / howto put together

well this one goes like this:

i welded the blades insted of using angle brakets to hold them to disc, but you can use weld,steel brackets, wood brackets or grouve and glue them to disc and so on...

so after mounting the blades to discs into 3 sections and each section has 3 blades offset on top of each other by 60 degree, i then inserted the shaft into the center and adjusted for my setup distance, 4" away from bottom and the rest of the room left on top fpr my generator(later step).

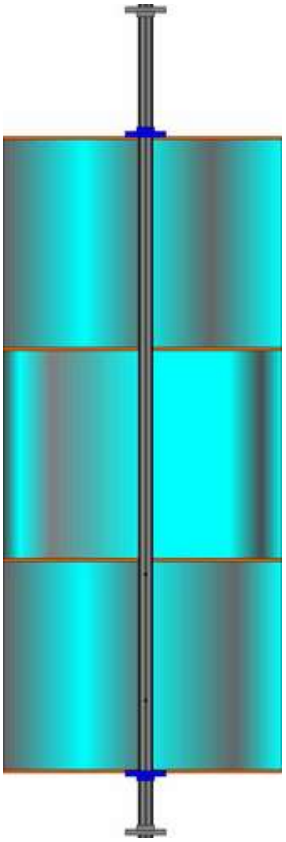
after the shaft is in the desired spot i then used the pluming flange to fix the shaft to the blades.

I then placed the Bearings at the end of each end and voila it is assembled.

you noticed that it is in the cage (we will talk about the cage in aNOTHER STEP)

i dont think i miised anything.

faroun



step 5: Cage Assembly/ Frame

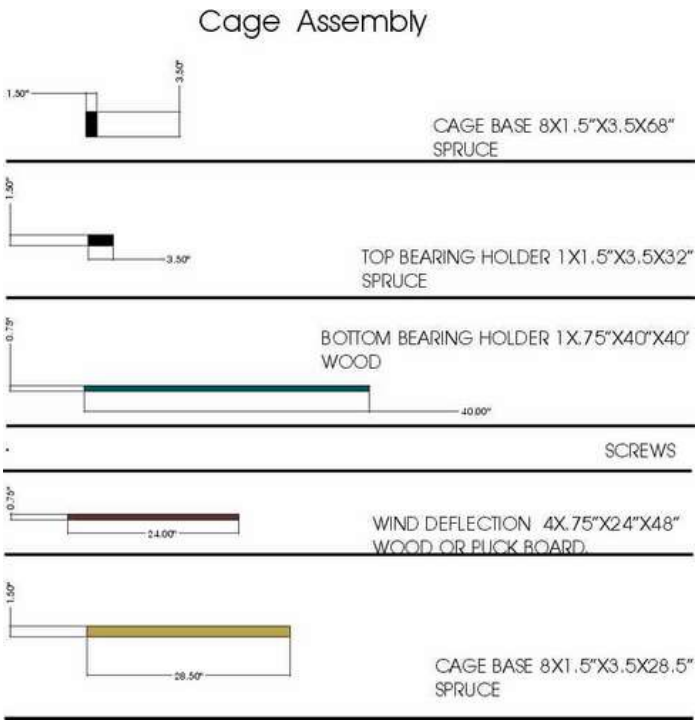
the frame is a box made of 2"x4"

bottom base is holding the bottom of shaft.
the top is holding the top of the shaft also in the future
it will hold the coils(in a later step)

the walls are assambled in a way that half of the turbine is showing
to mount the wind deflection(in next step).

the cage is simple, the trick is to keep it square and croocked.

faroun



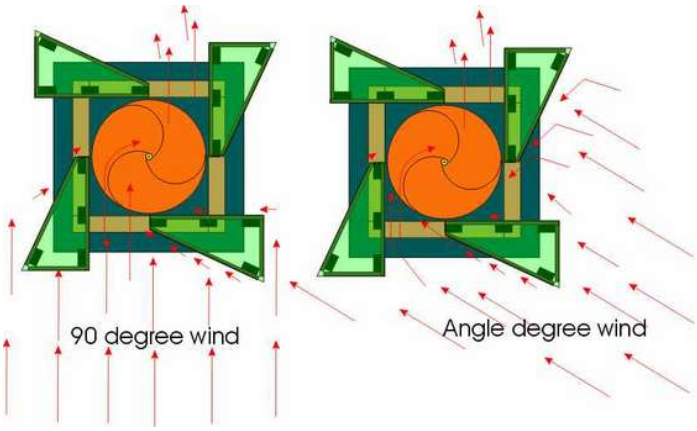
step 6: Cage Assembly/ Wind Deflection

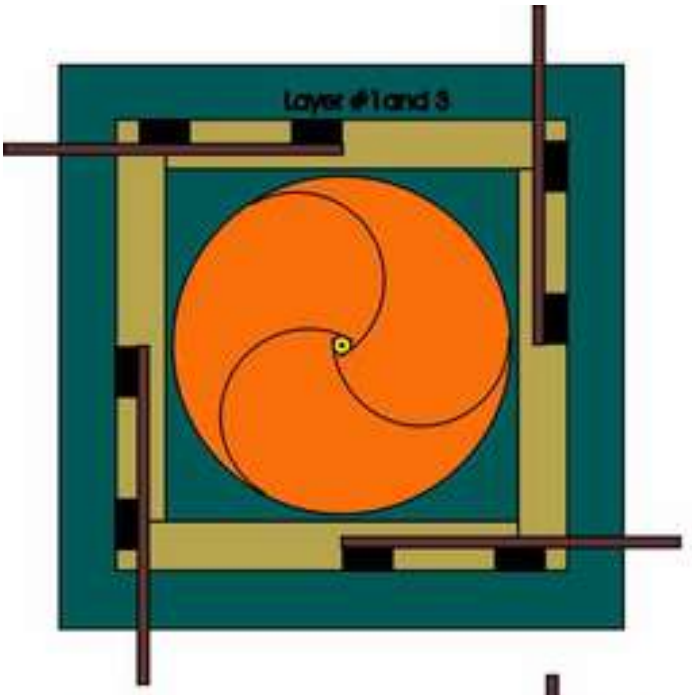
the wind deflection idea has been arround for ever but i did not see it with the Savonius so i dicided to be diffrent and combine my Faroun Savonius with the deflection method.

i simply biult the cage and then covered half the turbine where the blades are comming backwards, the reson to cover them is to eleminate the drage that the back of the blade create, also i am in the middle of adjusting the deflection method to be more productive in tunneling the wind twards the desiered area.

take a look at the rendering that i have created.

faroun


90 degree wind
Angle degree wind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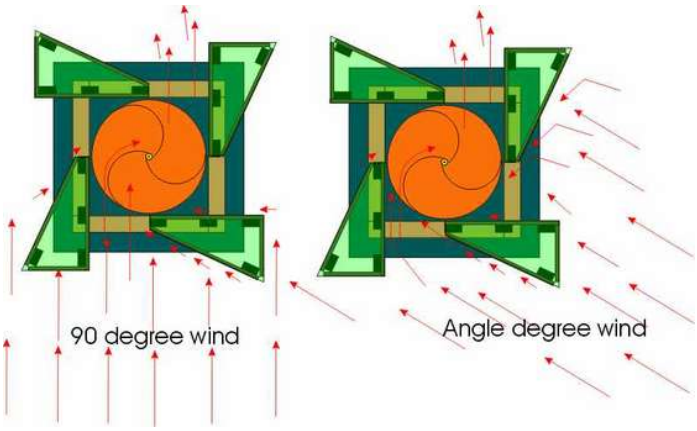
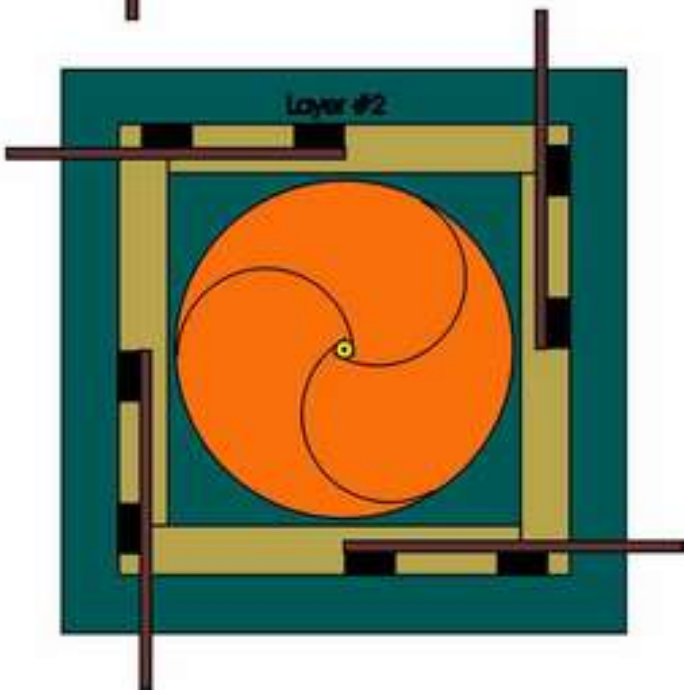

90 degree wind
Angle degree wind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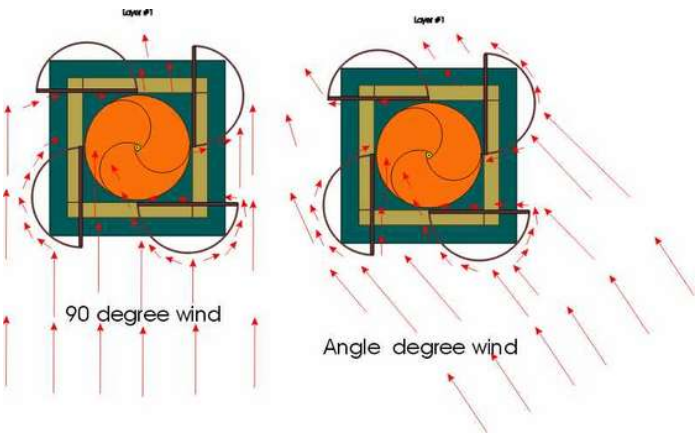

90 degree wind
Angle degree wind

step 7: Generator

this is the tricky part.

i have 3 ideas, one is to pully a pm alternator to shaft, 2nd is to mount the pm alternator to the disc diameter using v belt or timming belt, 3rd is to make my own generator using the top aluminum disc to hold the neo magnets and be the Rotor and place another disc on top facing the magnets and on it will be the Coils and that will be the Stator

step 8: Generator/ Alternator

i did not try the pull driven alternator yet.

i am trying the alternator using the disc itself,

i placed a timming belt to the diameter of disc using strong epoxy glue.

and then i mounted the pm alternator to the edge of the belt spring loaded to it. very simple no pully and it is 10 to 1 ratio.

it works but i need over 10MPH wind to make it worth while.
there are many other options for already made dc generator out there at this stage you can choose your generator and mount it and see what you get. otherwise you will have to move to the next step witch is custom PMG, it is in the testing stages and there is no one like it so i am going to waste few dollars figuring the coil out.

faroun

step 9: Generator/ Neo earth Magnets and coils

this is where you guys met me head to head, all i have for this step are the plans, i am in the mist of buying the Mag and Wire.

the plan is to place 24 n50 2"x1"x.5" magnets on the top disc and 21 20 AWG 150 winds coils on bottom of another disc that faces the magnets.

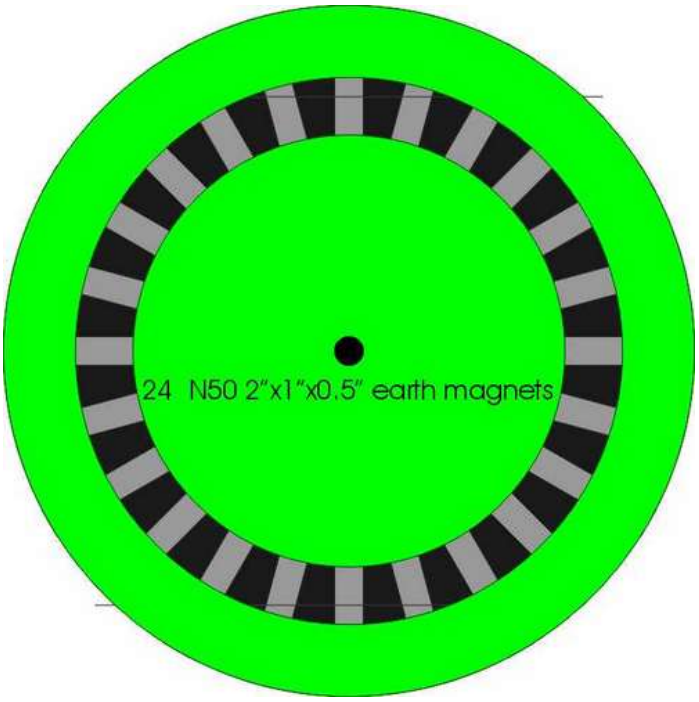
i am planing to sptill the coil output into 2 feeds, again it is in the testing mode and if you have anything to add now is the time to do it.

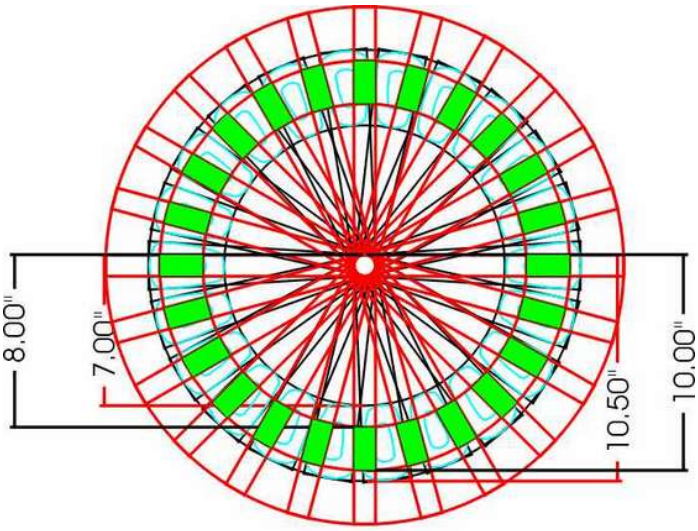
my hope that i can make 500 watts.

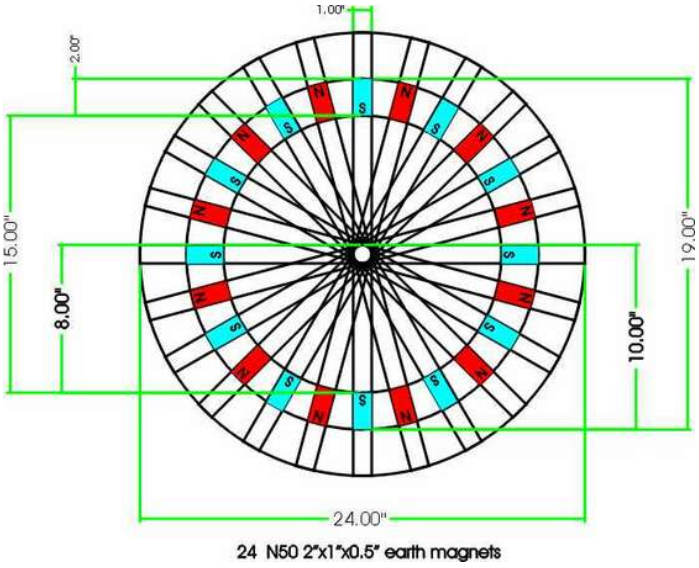
some said i will get more and others said less.

testing is fun.

faroun "revised:01-19-2008"





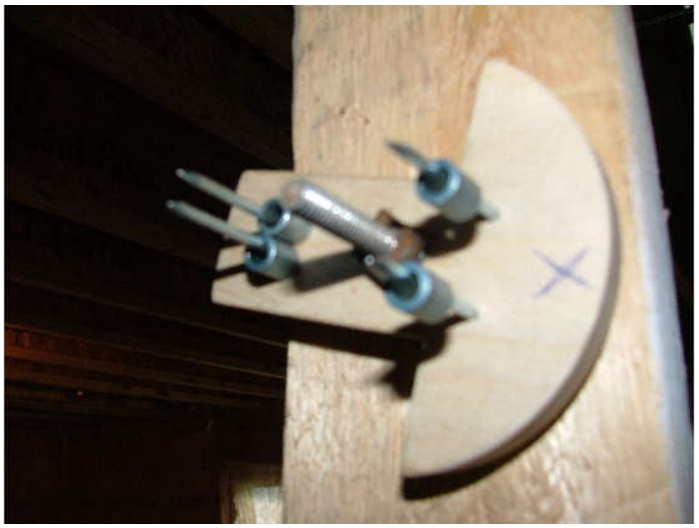


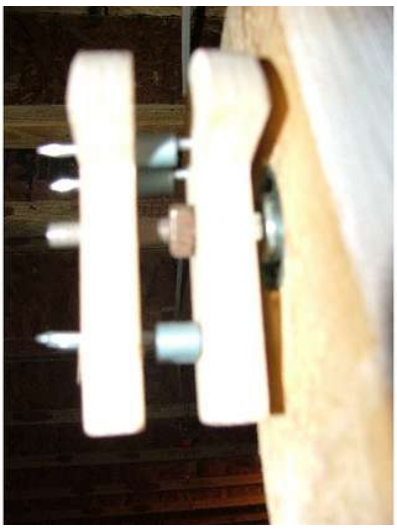
step 10: Coil Winding

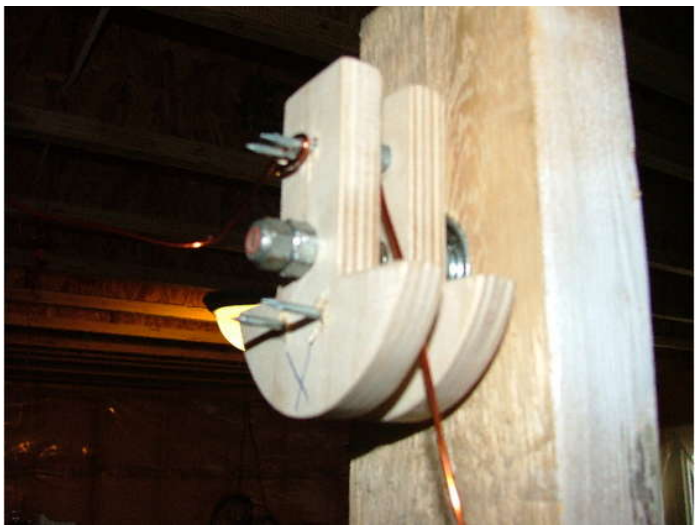
after a long research i decided to go with 150 winds.
-20AWG magnet wire
i made my coil winder from a simple plan, i included a video to show what it is.
it took a good 4 hours to wind 18 X 150 winds. it is a hard job but not as bad as the placment of magnets....wow..

3 phase connection as per the STAR connection diagram.

faroun "revised:01-26-2008"







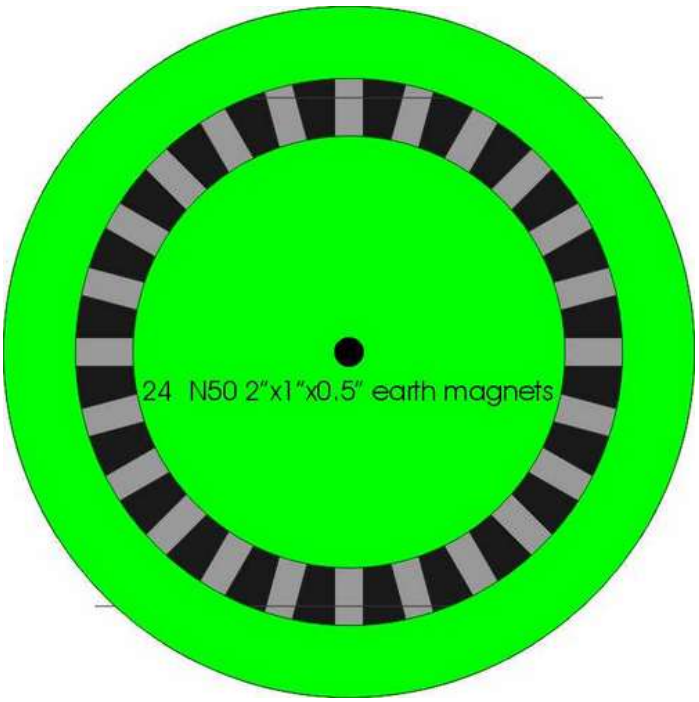
step 11: Magnet PLacement

Wooow...what a job!! ....that was the most tough thing to do.. with N50 mags...all i can say be carefull and patient.

it took me 2 days to place 24 mags on the disk, some said if it was steel disck it would have been esier.

anyway, i used GB weld to glue them down and then i put 2 part epoxy all arround for extra hold. and later in the project i will cover them HALF way in bostik or resin.

faroun



step 12: Faroun-3-phase-coil-test-20awg-150-winds

here you will see each phase tested resistance and voltage i do not have an amp meter.

thanks T for the help you are providing, i am a slow student.

Faroun

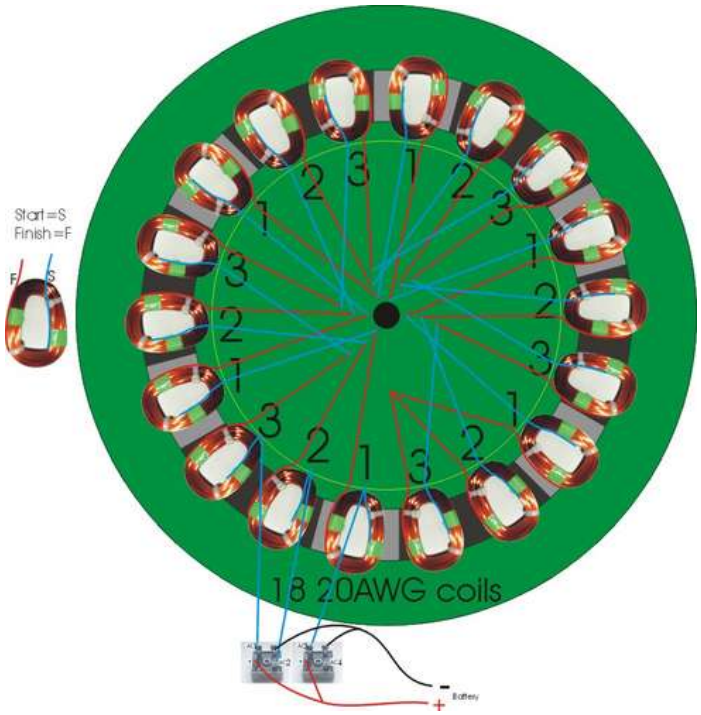
step 13: Faroun-3-phase-coil-test-20awg-150-winds-Final

after a very long few days i decided to lay the coils, all 3 Phases conected and rectified produced 30volts dc at 60RPM

-18 coils
-150winds per coil
-3 phase STAR configuration
-rectifed to dc using 2 bridge rectifires
-.3" gap in bettween the magnets an dthe coils.
-spining at 60RPM
-produced 30volts DC

i am happy, i am going to resien the suckers in, and place it outside in the real world. (outside will be in the next steps)

Faroun



step 14: Faroun-3-phase-coil-test-20awg-50-winds-Final

this step will show the 12 coils and 16 mags alternator testing

i decided to lay the coils, all 3 Phases conected and rectified produced 20volts dc at 60RPM 5mph wind

-12 coils
-16 N42mags 2 discs
-50winds per coil .125 thick very thin
-3 phase STAR configuration
-rectifed to dc using 2 bridge rectifires
-.2" gap in bettween the magnets an dthe coils.
-spining at 60RPM 5mph wind(using floor)
-produced 20volts DC

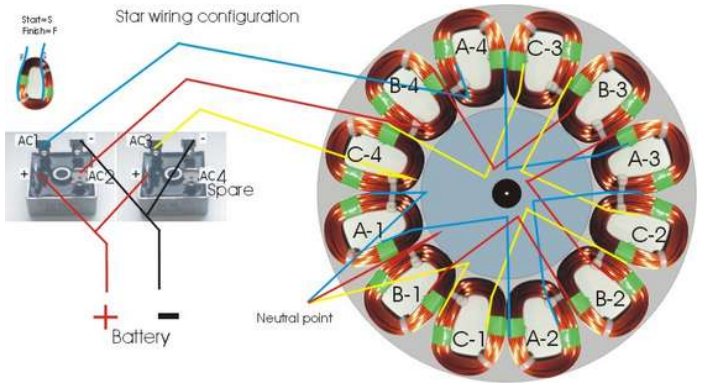
you are going to relize that my coils are very thin, but in order for me to get the mags close together i had to thin the coils to improove the flux passing through the coils,

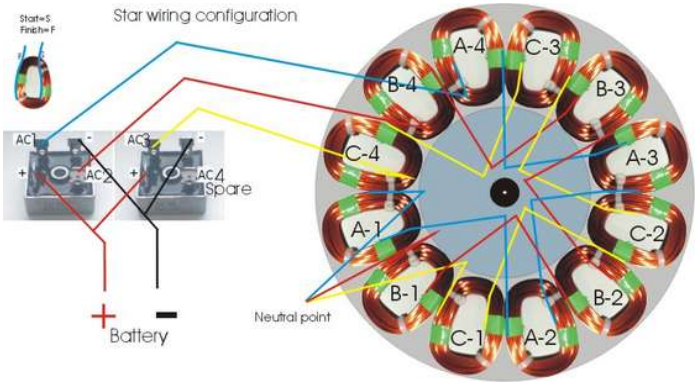
the mags are only .5" far from each other and between them the sitt the coils.
you will see in the movie that i am getting 50 watts at 100 rpm again i had to rev it up to get the power cause i have no wind where i have it, any way with all my calculation., i am confidet to say it can get 200watt at 20mph wind.
note:maybe my calculation are a bit low but my expectaions are also low.

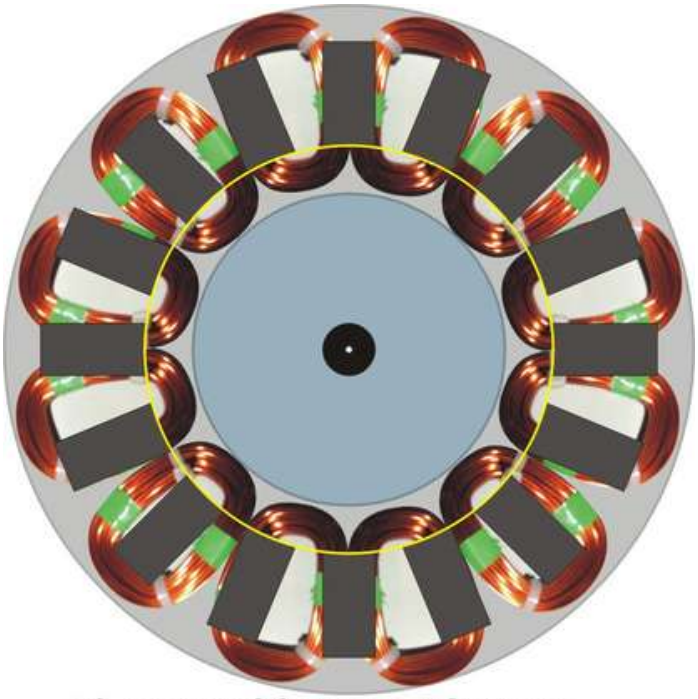
i am going to go back and use a treadmill dc motor because it did give me more power. I hope next step i will show the dc motor and who it works.

and place it outside in the real world. (outside will be in the next steps)

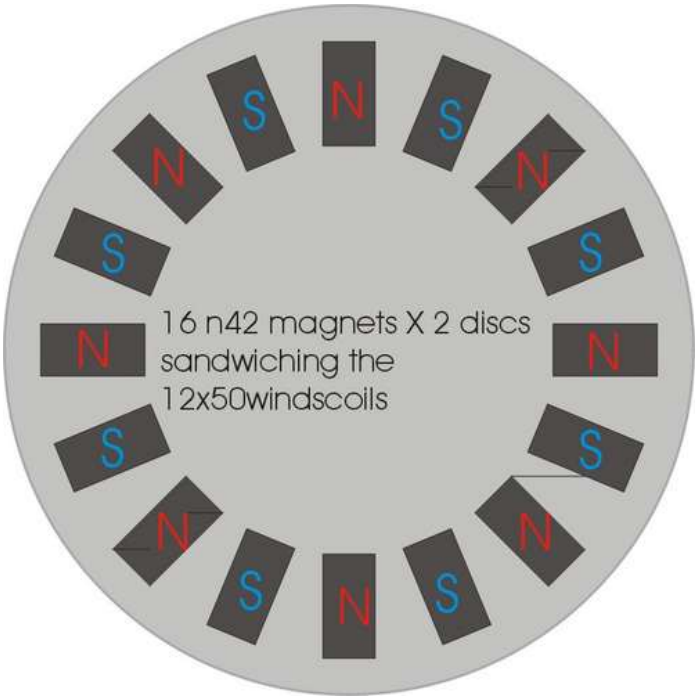
Faroun

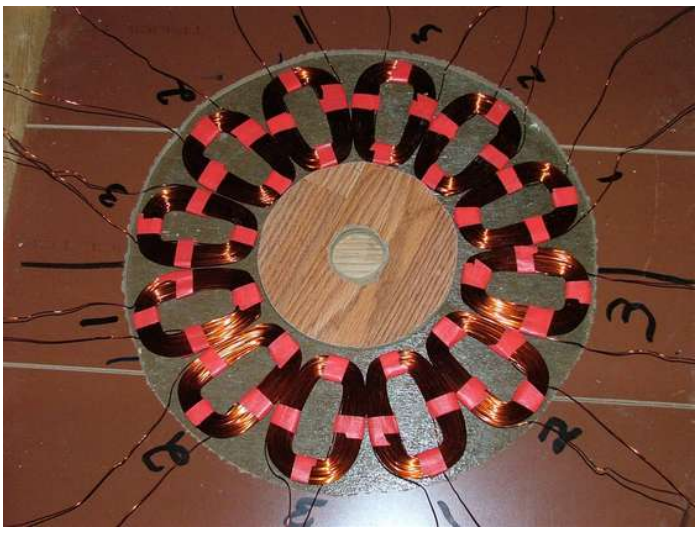






12 coils x 20awg x 50winds
16 n42 magnets X 2 discs
sandwiching the coils "attracted"





step 15: PM DC motor generator mount

in this step i was looking to show the diffrent ways to harnees the winds energy using pm dc motor,

i simplified 2 ways as you will see in the photos and the movie.

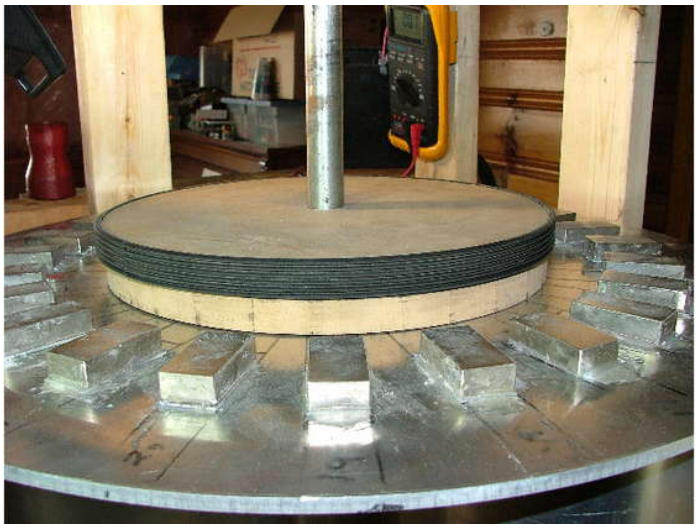
one way is to use a V belt with 5 to 1 pullies.

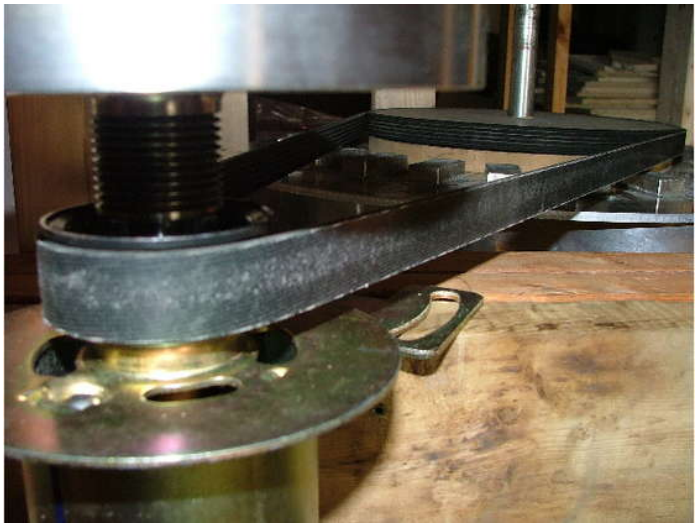
the other way is to get timming belt and a wooden disk 3/4" and place portion of the belt arround the cirunfrence glued on, place it on the turbine and the smaller pully that you can get at the junk yad too mount it to the dc motor, you will see in the pics and movie what i meam.

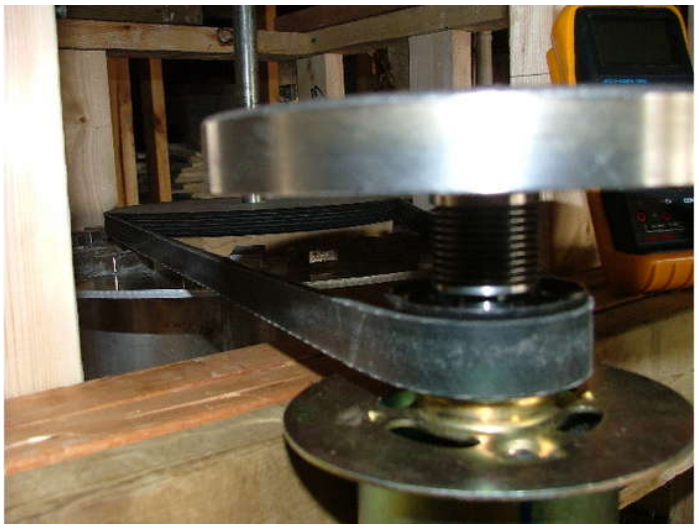
i liked the timming belt better it was less drag and qiuter.

they both produced about 12.25 volts at 80 rmp witch is i am assuming 10mph wind. i know i know soon i will be taking the beast outside, finally sring is here and the snow is gone i hope for few month...lol..

regards







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looking4 says: Mar 8, 2009. 5:11 AM REPLY
Thanx Faroun ! Do you have test result for this generator ? how Volt-Amp produced at how RPM ? How total power for this gen ?

faroun says: Mar 8, 2009. 7:34 AM REPLY
this gen on step 13 was too big for my turbine,
but on step 14 I made more successful gen that produced 19.5volts at 60 rpm free wheeling the amps comes in when the wind blows, the best result was at 20kmh wind and I produced 48watt, I know it is not much but I learned that my turbine blade area needs to be bigger. but since then I have not done much with it because I got stuck building other types of VAWT as you see in other Instructables.
in many posts I said that it is a bit of a challenge to find the balance between turbine VS gen. I know you will learn many things along the way.

good luck

dna11207 says: Feb 8, 2009. 2:01 PM REPLY
Hey Faroun, I was wondering if you could give me some helpful information. I am in the process of building a wind turbine alternator here but I seem to be running into some difficulty. I use 24 N45 2" x 1" x 1/2" on two rotor discs. I also have 18 coils, 6 connected in series for each phase. I made the first stator with #20 wire and used 80 turns for each coil. This produced some very high voltage but little in the way of current. Any load of more than 2 amps or so would make it almost impossible to turn but turns and produces voltage freely without load. Well, I figured way too many turns and too thin of a wire. So I made a second stator with #13 wire, 21 turns each. In delta, I was able to produce 10 amps into 12v batteries but still, it was extremly hard to turn, hard enough that wind would not be able to. Any Ideas what may be going on here? You can see some pictures of what I have done here Wind Turbine[

faroun says: Feb 8, 2009. 5:27 PM REPLY
dna, what you are experiencing is the eddy current and the cogging effect,
you must research these effects to understand them.
you can start here : http://www.fieldlines.com/story/2003/12/27/202634/91

I was able to achieve my goal because my VAWT mass "rotating" was able to sustain demand.

start reading, you will find alot of answers.

Mr Fahrenheit says: Jan 25, 2009. 2:09 PM REPLY
Cool. Thanks for the reply on both accounts.

Mr Fahrenheit says: Jan 25, 2009. 7:46 AM REPLY
Can you add a follow up page or comment on how performance has been?

faroun says: Jan 25, 2009. 10:01 AM REPLY
you are correct, I should do that, but I got busy with the V10 and V8 that I kinda neglected this Savonius, I will get back to it soon.

regards

Mr Fahrenheit says: Jan 25, 2009. 7:41 AM **REPLY**

You lower the units efficiency by adding these deflection pieces.

The wind does not just turn in with the shape of the wind. There is buffering. The air flow would be much cleaner, and you would get more power, if you were to remove these.

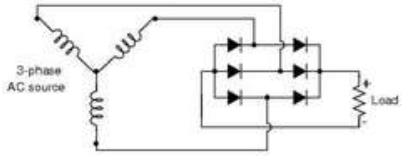
Very nice core system though.

faroun says: Jan 25, 2009. 9:59 AM **REPLY**

thanks, you could be correct, but with my testing using the rpm gauge i had a bit more rpm with deflectors.
regards

steve22 says: Jan 21, 2009. 11:31 PM **REPLY**

Faroun, I think your circuit would be improved with a 3 phase rectifier circuit.
I have used them before, and they are set up a bit different than what you used.
It involves using 6 diodes, and should improve your setup by at least 15 percent. There is a web site that shows it here...http://www.allaboutcircuits.com/vol_3/chpt_3/4.html Hope this helps, Steve



faroun says: Jan 22, 2009. 2:52 AM **REPLY**

OK, thanks I will check it out. every little bit helps.

regards

getstukn says: Dec 8, 2008. 6:26 PM **REPLY**

I have found this site to be very helpful and informative.For the past several years i have been a huge fan and undertaker of diy, especially when it comes to power as my wife and five kids live in the bush off the grid and have used diesel gene and slowly adding solar panels. 6 years ago i made a water ram that pumps our water from a spring nearly 300m directly below us(we live atop a raven).Of late decided to experiment with a savonius wind turbine using your diagrams,but on smaller scale and using a smartdrive gene for powersource.Which is still in the unfinished stage but hope also to design for water wheel as well....so thank you and others for your continued postings

faroun says: Dec 9, 2008. 3:41 AM **REPLY**

you welcome, I am looking forward to see you mini version, living off the grid is a challenge and I salute you for it....keep us posted with your progress.

best regards
faroun

baccus61 says: Sep 15, 2008. 6:19 AM **REPLY**

Good instructable and good diagrams. Have you visited Hugh Piggot's web site on wind turbines? He has a heap of info on these things and a lot of workshops around the world. One thing I have discovered is to stagger the magnets so they are not equal distances around the circumference. This stops the cogging effect and also reduces the noise like the proverbial card in the push bike spokes trick. There is more info on the Australian site on generators as well.
http://www.scoraigwind.com/ (hug's site)
http://www.thebackshed.com/Windmill/FORUM1/default.asp (aussie stuff)

All very interesting stuff.

faroun says: Sep 17, 2008. 4:51 PM **REPLY**

thanks for the information, i love this stuff. i am doing this for fun. i could simply build a HAWT but i cant stop building the VAWT. i live in a vally and the VAWT out preform the HAWT. i like to eleminate the cogging or at least reduce the effect a bit, if you have a dirrect link for that issue please post it for me and others to read it...thanks

faroun

njmalhq says: Sep 3, 2008. 9:48 AM **REPLY**

Are you sure the "deflectors" are a good idea? They seem to bias the design towards capturing wind from 4 specific arbitrary directions.

faroun says: Sep 4, 2008. 7:03 AM **REPLY**

well, i have tested it without the cage but the rpm droped by 15%, you must try it for yourself to see that in this design the cage works.
remember i am just no name guy testing and playing arround, i could be wrong.

regrads

njmalhq says: Sep 4, 2008. 11:11 AM **REPLY**

Average RPM with variable wind direction, or instantaneous RPM with fixed wind direction? If the wind is coming in perpendicular to the deflector surface, drag would be reduced for that particular wind and RPM would improve. On the other hand if the wind is coming in at 45 degrees to the same surface, I think you might notice a reduction in RPM. And I suspect the minimum starting wind speed will also go up. The 15% number is very interesting though. Just shows how much of a difference drag makes in non-lift type designs. Good stuff. Thanks!

faroun says: Sep 4, 2008. 2:49 PM **REPLY**

the rpm was based on constant air supply at 90 degrees.

I did not try it at 45, thanks for the vote of confidence.

regards

daggahead says: Aug 20, 2008. 8:27 AM **REPLY**

Can a Faroun-Savonius turbine be mounted horizontally and still be relatively efficient?

Thanks,

Scott

faroun says: Aug 20, 2008. 6:44 PM **REPLY**

the key word is "Relatively". because when standing vertical the wind is coming from 4 directions as turbulent wind, but when laying on horizontally the wind is only coming from 2 point, because the wind coming upward and downward is almost none-existent.

if that is all you have to work with then simply guide the wind down and up by placing a curved surface to channel the wind.

good luck.

faroun

sam dekok says: Jul 20, 2008. 6:19 AM **REPLY**

http://www.instructables.com/id/Build-your-own-Savonius-VAWT-Vertical-Axis-Wind-T/Nice VAWT. I made one in plastic you might be interested in.

http://www.instructables.com/id/Build-your-own-Savonius-VAWT-Vertical-Axis-Wind-T/

zaista says: Mar 30, 2008. 1:49 PM **REPLY**

Hi everyone! Because I did a Google search for this very reason - making electricity; I'm new to Instructables. I'm overwhelmed with this site and all it has to offer. Faroun, bhunter736 & mikejedw I've been reading and re-reading your projects with great zest. I have no training in this area but I'm learning so much from all of you. Believe it or not, I'm trying to plan a project of my own that is on a much smaller scale where I'm using bits of each of your projects. I hope this is okay with each of you.

Thanks so much for the inspiration!

Zaista

faroun says: Mar 30, 2008. 6:03 PM **REPLY**

Zaista, i am happy to hear that we can somehow inspire any one. Bhunter is great fellow in helping others with thier Projects.

when i decided to start this project i had no idea where to start, but with a bit of reading on few sites i was able to understand that the trick is in the balance between the alternator and size of the blades. i did a custom alternator because i want to know how it worked and after many coils winding and magnets placing i finally got it, but at the same time i read the same thing that explaned what i did but i had no clue what the heck the were talking about!, the point is I am a person that needs to make it from scratch to be able to understand it.

i hope you are able to read and get the balance better than I.

you are welcome to any info on my post, the only return is to post your findings for others to be inspired.

all the luck

note: i am still working on my project for the better.

Best Regards

Faroun

zaista says: May 24, 2008. 6:54 PM **REPLY**

Hi Faroun,

I bought some books on Electricity for beginners so I could hopefully get up to speed on what I need to know to get started on my project. Why I don't just duplicate your project, I don't know. I guess I'm a rebel. LOL. Anyway, I'm trying to use some points from a few of these wind turbines on Instructables and I've scaled down yours for the size to be easier for me to handle. I've searched the books and am still perplexed about how to figure out how many magnets (and what size and strength), what size wire (and how many winds), etc. I've read that the wire should be as thin as possible but I've also read that too thin wire can be "fried" if you send too much electricity through it. I've read that the magnets should be strong but too strong of a magnet can "drag" and require higher wind speeds to rotate. To make a long note much shorter, here's my question for you. Is there

some formula for how many magnets, coils, sizes, strengths for the size of the base of the unit or is it strictly a guessing game? Thanks in advance for your advice.

Confused,
Zaista

faroun says: May 25, 2008. 6:07 AM **REPLY**

Magnet formula, for 3 phase is 9coils to 12 magnets.

please think of the alternator vs blades as a Scale,

what i mean is, if the bladdes are too big it will over produce power there for it will fry your alternator and coils.
If your alternator is to big then the baldes will not spin unless maybe in a crazy storm wind.

so the two must balance.

so most designs start by understanding there blades output and for that there is a formula here: http://www.windstuffnow.com/main/wind.htm

after figuring the output of your blades then start on your coils and magnets.

first pick a wind speed range(from 5mph to 35mph)

here is some hints:
1-thin 24 guage low amps high volts.
2-at high speed RPM "1500rpm" PM magnets may create cauging, or more like rubbery feel to it and that is due to the lack of flux return because we have no metal inside the coils and are not connected metal wise.

so the size of the magnets dont matter much if you dont let it over spinn.

the gussing part is true because we all doing a custom build, and it is hard to find the sweet spot.

i will see about fining more info regqarding the formula for alternator VS blads.

regards

AAronvb says: Jun 13, 2008. 7:36 PM **REPLY**

Hello Faroun, nice work.

I am building a small 24"H x 14"W VAWT and it seems to size my PM alternator without a lot of trial and error I need to figure some things out.

Have you found any information for calculating blade output or (formula for alternator VS blades)
for a VAWT?

faroun says: Jun 14, 2008. 4:02 AM **REPLY**

here is the only thing i could find.
http://www.windstuffnow.com/main/wind.htm

in order to use the Centrifugal Force and Kinetic energy you must keep the RPM high and in order to do that you need to have your alternator kick in at high RPM for output therefor the size of it is small. always when building custom turbine you will run into the Balance problem. i am still looking for more info but please visit the link above.

regards

fenris says: May 4, 2008. 3:21 AM **REPLY**

Well, faroun, I don't know anything about your 'day job', but your boss must love you. I am not qualified to judge the thing you are making, but what a worker you are! I will be very interested to see further developments. I am convinced that this is the way we have to go, no way we can continue with carbon. And the idea of literally taking food out of the mouths of the earth's poorest people to make motor fuel is just absolutely criminal, so when we get the present gang out of the seats of power we must make sure to pump up the development of thinking just such as yours.
I know why so few comments. Those who read this are literally disabled with awe. Struck speechless.

faroun says: May 4, 2008. 6:22 AM **REPLY**

thanks for the great expressions and the motivation that makes what i am doing worth a while.

i just wanted to show that anyone can make energy, maybe not the most effecient but to be able to charge few battries from the wind does feel good when you do it on your own.

i have learned so much from my project, and still learing, i am hoping to upload a movie in the future that shows the wind powered generator at work at 10mph wind.

i am also working on a diffrent style of VAWT, a one that uses RPM and not Tork.

i am also thinking of opening a shop that provide HOWTO on a small scale where i live.

"If I can do it, Others can"

Best regards

faroun

ijsche2 says: Apr 17, 2008. 6:32 AM **REPLY**

I'm looking to build a wind turbine and you talked about a treadmill dc motor. Are these cheap and where can i look into purchasing them? Great design as well!

faroun says: Apr 17, 2008. 4:09 PM **REPLY**

the best pm dc motor is ametek google it and i think you can find them at ebay

regards

ijsche2 says: Apr 17, 2008. 6:32 AM **REPLY**

Also what equations do you use to come up with the output power, and what do the variables stand for?

faroun says: Apr 17, 2008. 4:08 PM **REPLY**

go here for the forumla "blade area vs alternator" http://www.windstuffnow.com/main/generator.htm

pherretaus says: Mar 25, 2008. 6:37 AM **REPLY**

Why did I come here.... I have now been bitten by the bug and I want to build one. Damned interesting stuff. I jave not been so enthused for a long time.

faroun says: Mar 28, 2008. 11:32 AM **REPLY**

you are like the rest of us, the need to do it yourself is great, you must try and make one it is fun and the knowldge only gets greater.

for every one that is witing for next step, i am still waiting for better weather to take it outside.

best of luck and regards

faroun

bhunter736 says: Feb 26, 2008. 3:30 PM **REPLY**

First Vertical windmills to use baffles for improved performance can be seen here. Farouns design is a much improved approach.

http://www.telosnet.com/wind/early.html

andytetmeyer says: Feb 8, 2008. 3:06 PM **REPLY**

does anyone know whether making the blades in a helix will increase efficiency? It should provide more steady propulsion since the wind will always be pushing on part of a blade, but is it any better? -Andy

bhunter736 says: Feb 26, 2008. 3:00 PM **REPLY**

Commercial units are available in a double helix. see http://www.windside.com/ they are not available in the US. I did not find any evidence that the helix is better for any reason. This is a perpetual game of give and take, adjust for more torque or higher RPM. I imagine the helix would offer more rpm and lower torque as the sail would slice the wind like a sailboat cutting the water.

bhunter736 says: Feb 26, 2008. 3:09 PM **REPLY**

One more to look at: http://www.inhabitat.com/2007/11/08/helix-wind-turbine-small-wind-gets-smart/

faroun says: Feb 9, 2008. 7:12 AM **REPLY**

i am not sure andy.
my understaning of the word Helix is: "A three-dimensional curve that lies on a cylinder or cone, so that its angle to a plane perpendicular to the axis is constant"
so does it increase efficiency?! the word efficiency depend on the mechanics that you put together and to what you calculate it to produce. in my design case the helix shape provides me tork and it sucks at lif or speed, so the efficincy comes when it produces the most tork and in my design i increased the effency by bloking the back of the bade to almost never see the wind and that made all kinds of diffrence to the rpm, it spins faster and gives higher tork because no drag by the wind.
note: my ansewrs are based on my self teaching through reading books based on these gadjets, so i could be wrong, but for now i belive in them.

regards

opticron says: Feb 19, 2008. 5:11 PM **REPLY**

I've looked into designs like this before and the helix doesn't make it more efficient, but it does reduce mechanical strain. With straight blades, the torque pulses in a sinusoidal fashion and generates a good bit of strain at maximum torque. With helical blades, the torque is nearly constant. A constant torque instead of pulsing torque can mean the difference between a couple of seconds of operation and a few days if the frame for the turbine is weak in any way. Then again, helical blades are quite a bit harder to design properly, so going with the straight blades makes for a simpler design in the rotor and is probably better for prototyping.

faroun says: Feb 20, 2008. 6:36 PM **REPLY**

nice information Opticron, i learn new things every day today,

regards

skipinder says: Feb 19, 2008. 3:32 PM **REPLY**

Great diagram faroun, that's my head sorted and I'm ready to go! You guys are my heros...

what a sad life I lead ;-)

faroun says: Feb 19, 2008. 4:43 PM **REPLY**

i am glad i helped a bit, by the way this coil layout is in the testing phase, the connection is a star configuration and it is correct, but i think i have too many coils, so the next layout will have less coils i am planing to update it on the week end.

regards

faroun

bhunter736 says: Feb 3, 2008. 7:23 PM **REPLY**

Excellent photo diagram for a very complicated thing to look at.

faroun says: Feb 5, 2008. 11:18 AM **REPLY**

bhunter, i am stuck on the level of output at this time, i am also waiting on some tools like an amp meter and a regulator... soon i will back at it.

regards

faroun

bhunter736 says: Feb 3, 2008. 7:18 PM **REPLY**

Just checking in on your progress. :)

bhunter736 says: Jan 13, 2008. 7:27 PM **REPLY**

All that repetition is a killer isnt it? This is looking really good. Much more than a weekend project. You have entered the realm of commercial quality I think. :) I also think you will get beyond that 500watts pretty easily. It will depend more on the wind than your machine.

Ill keep watching. Im surprised you have not had more comments already.

- Brad

faroun says: Jan 14, 2008. 2:10 PM **REPLY**

i like the way you response very positively inforced.
i am only manging so far because of you guys helping along. if i aim for low expection, i think i am safe of feeling the failure.

tonight i am going to try 50 winds and see if it makes any diffrence, i think it is the N50 that is making all the diffrence. my design if farely simple to put together untill i got to the magnets..lol..that was an ouuuzzy..

later

faroun

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