Magniwork

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DISCLAIMER

Please take care when working on any of the projects outlined within this manual. By reading this manual you agree to that you are responsible for your own actions. Magniwork will not be held accountable for any loss or injuries.

"All truth goes through three phases. First, it is ridiculed. Second, it is violently opposed. Third, it is accepted as being self evident." *Arthur Schopenhauer*

Introduction

Since the world is gradually slipping into a energy crisis, it is of utmost importance for us to reduce our dependency on the sources of energy which are non-renewable. Clean Renewable sources of energy are those sources which are recurring meaning when you produce energy you don't exhaust any resources. Several examples of renewable energy are solar energy, hydro or water energy, and wind energy.

These sources of energy are freely available in our environment, and are often overlooked and unused. We need to take advantage of these sources of energy, thus we will make a step towards energy independence.

Solar energy i.e the Energy from the sun is the most abundant energy available on our planet. We should take advantage of this energy. By implementing a system which uses the solar energy to power our homes, we will reduce

our power bills significantly and also contribute to a greener planet.

Water or Hydro Energy is an fairly effective source of clean renewable energy, and it is mostly produced on a large scale, meaning a lot of investment and time is put into building systems which will produce energy from water. The downside of hydro energy sources is that it is implausible for an average person to implement it in his home.

Wind Energy Sources have existed for more than 2000 years, they have been used for tasks such as pumping water in the past, as the world has been industrialized, wind has become a common source for generating energy. Wind Turbines can be easily made and implemented even in individual residences, and can help relieve the power bill, by powering the more conventional power sources.

In this book you will learn how to construct another alternative source of energy, which has not reached the

mainstream media yet. But with time this energy will be widely accepted and used.

1. How to Reduce Energy Consumption

Even right now without a generator, solar panel, or wind turbine you can conserve energy. Before you start using renewable energy here we present some tips that will help you conserve energy now, and produce more in the future.

- Change your regular light bulb with LED light bulbs (Light-emitting diode bulb - *figure 1)*. LED light bulb is 12 times as energy efficient as a tungsten bulb, and lasts for 100,000 hours. Also if you cannot find in your area LED light bulbs, you can use fluorescent light bulbs which are also more efficient compared to the regular light bulbs. Also don’t forget to turn of the light when it’s not needed.

Figure 1

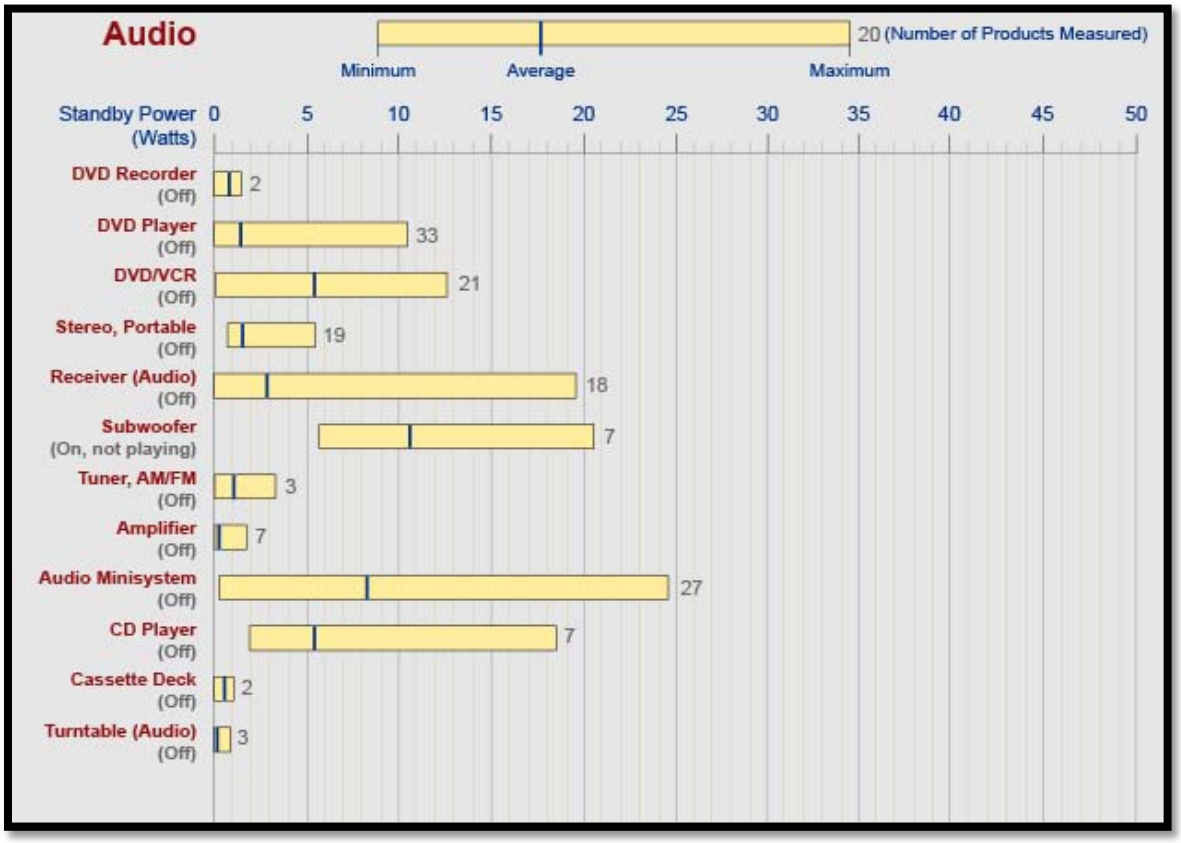
- When you turn off your TV, PC, or DVD, it still consumes energy. The standby mode does not mean it doesn't consume energy, as how much energy each appliance uses during standby mode, take look at the chart below. In order to eliminate the energy consumption you could either unplug the appliance or use a switchable power strip for clusters of computer or video products. That way you can switch everything to zero with one action. The magnitude of the standby power consumption should be taken very seriously, since it comprises from 10% to 15% of your power bill. Altogether,

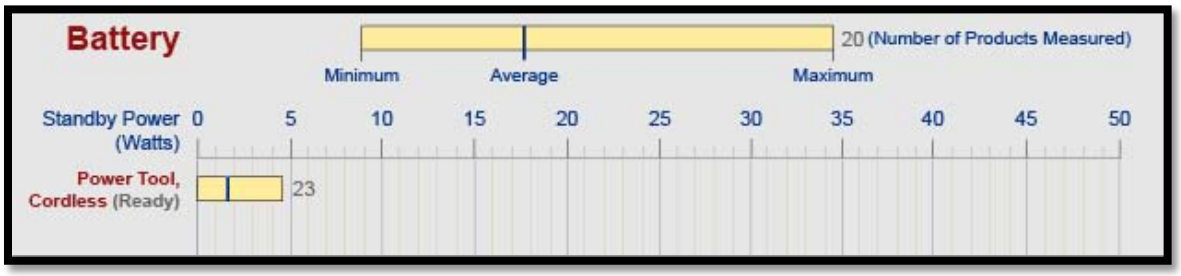
standby power use is roughly responsible for 1% of global CO2 emissions.

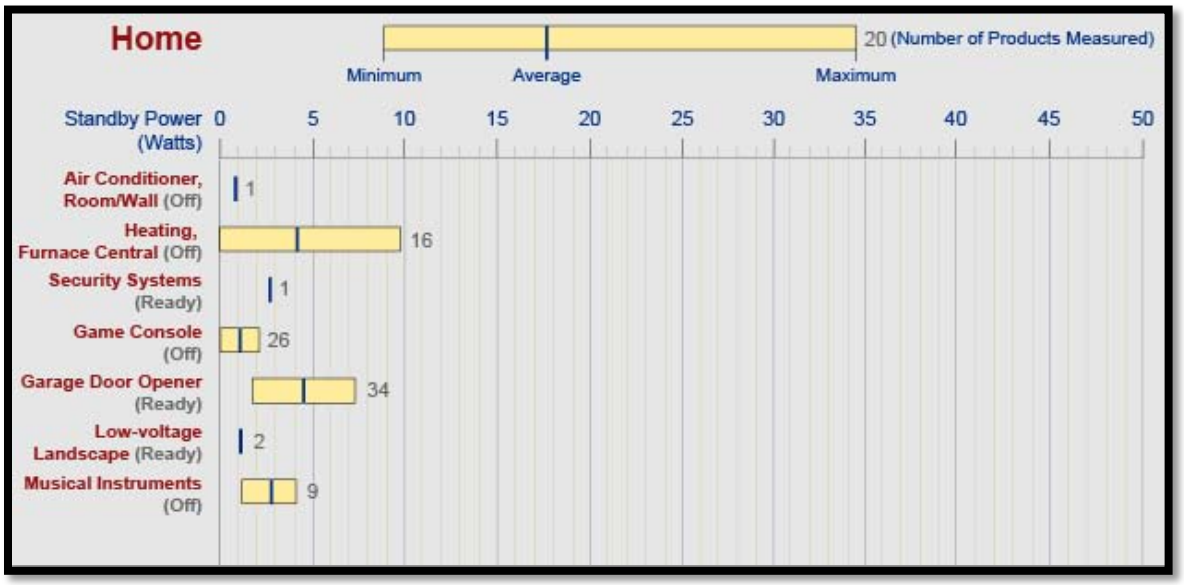
- Use your AC responsibly, the colder you want the inside to be the more energy you use, it's same when you want to use it for heating. Keep it at a comfortable level and don't overuse it. This way you will save at least 1,5Kw per hour if you have 3Kw AC. If the AC is used regularly in your home, it most likely comprises big chunk of your energy bill. Also make sure the windows and doors in your home are well sealed so no cold or warm air escapes or enters.

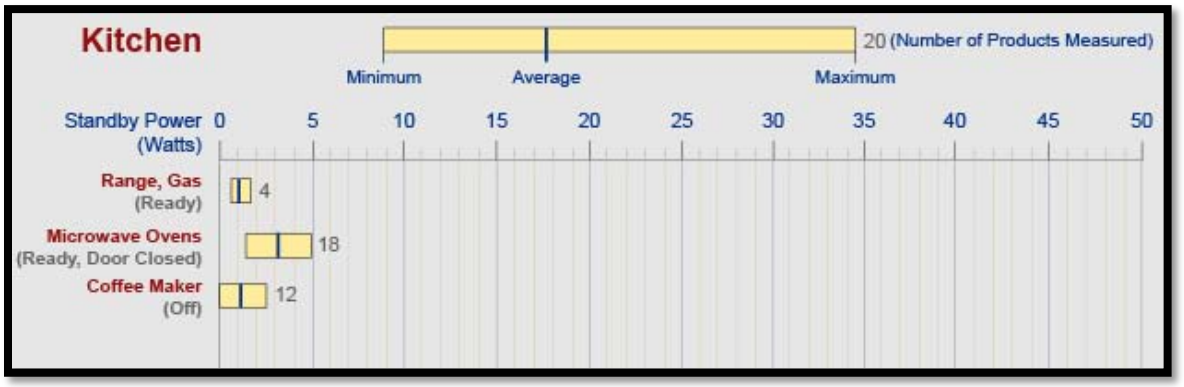
- Our last advice is that you air dry cloths as much as you can, since the dryer is "energy vampire", also use the dish and cloth washer once is fully loaded, this way you save energy and water.

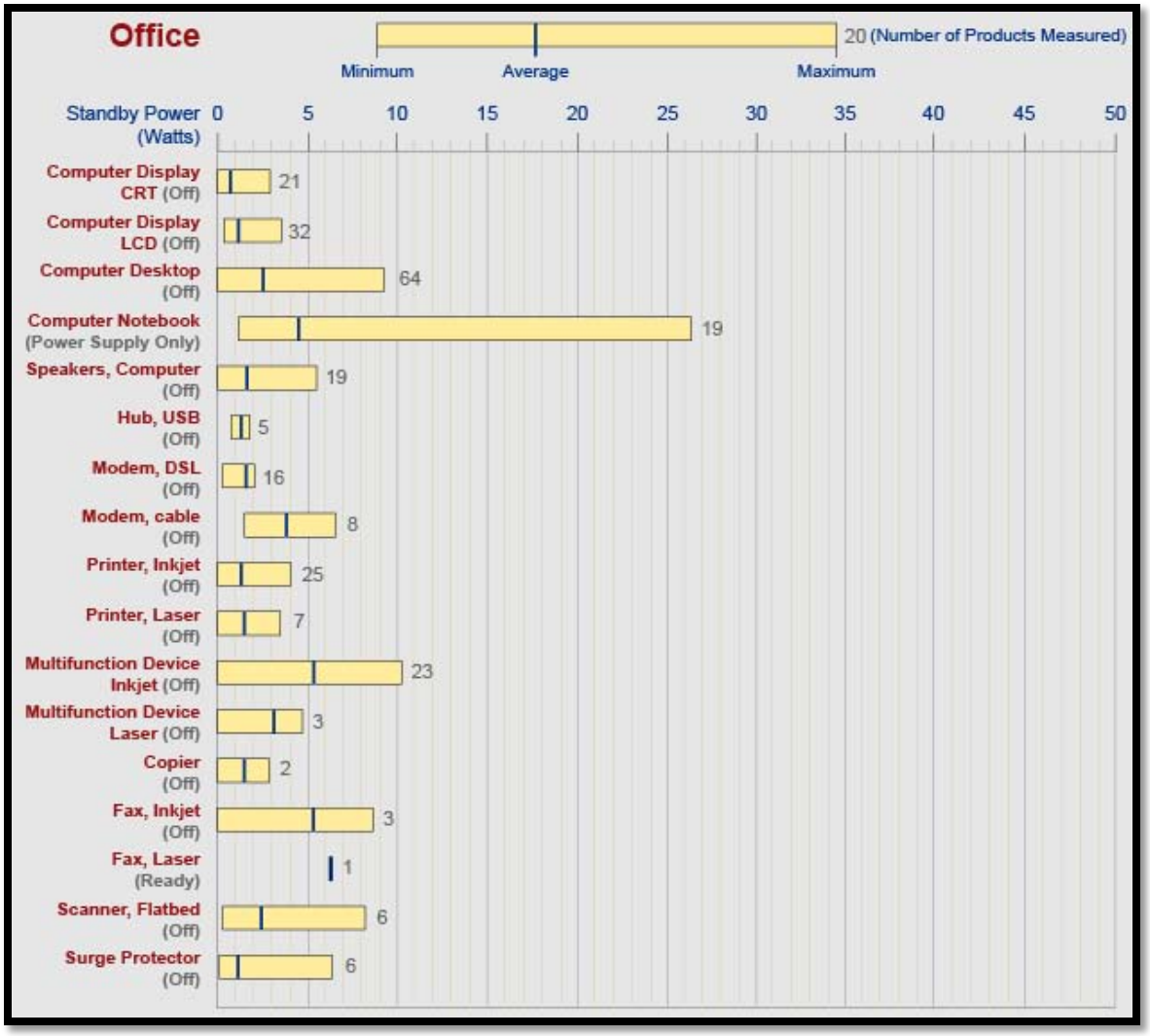
Stand By Energy Consumption Charts:

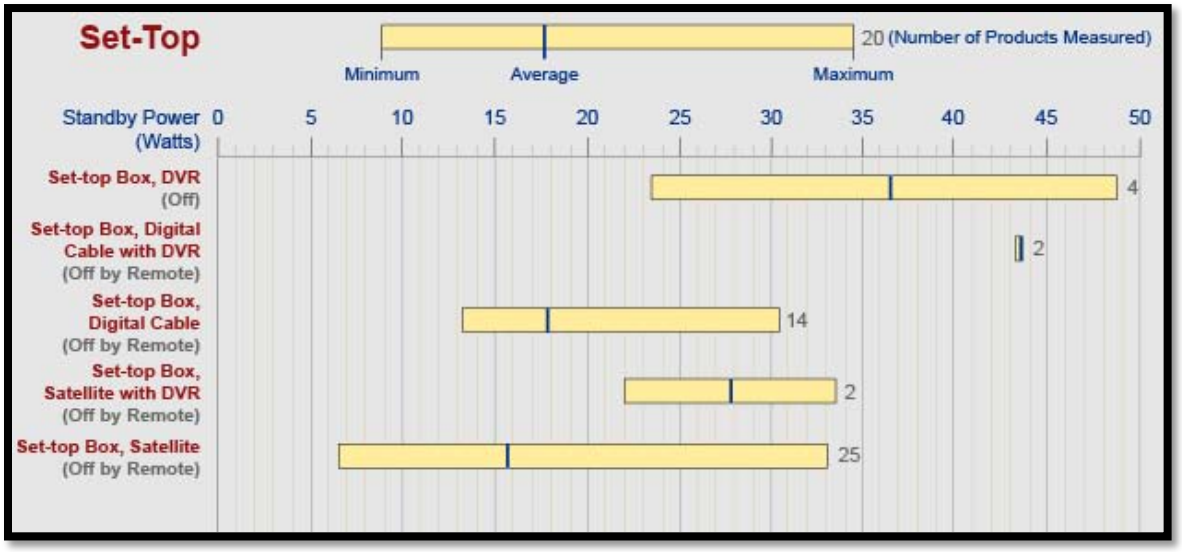


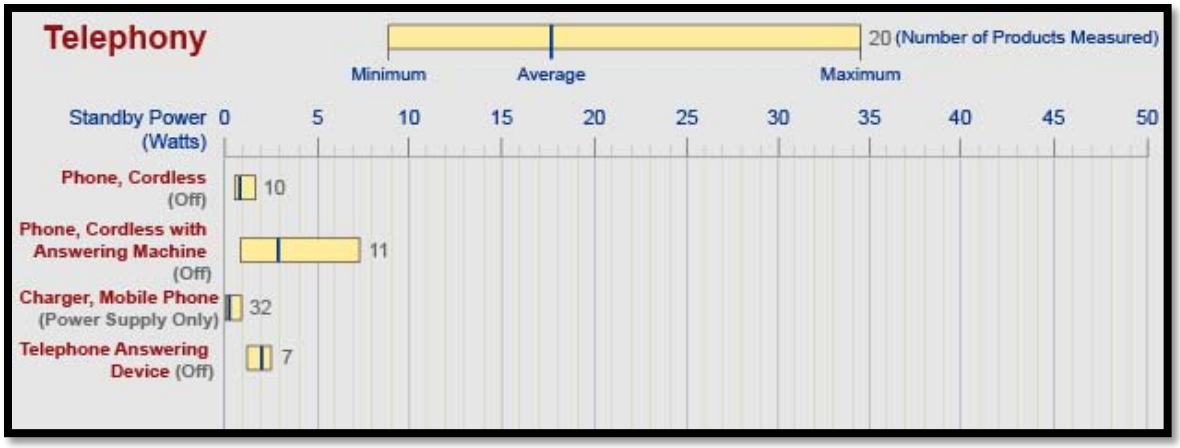


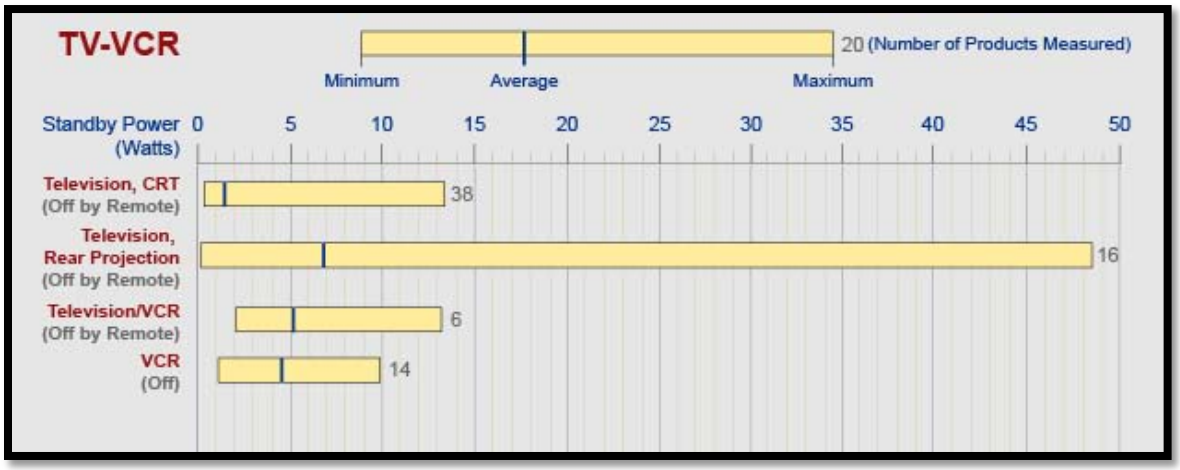

Home
20 (Number of Products Measured)
Minimum
Average
Maximum
Standby Power (Watts)
0 5 10 15 20 25 30 35 40 45 50
Air Conditioner, Room/Wall (Off)
1
Heating, Furnace Central (Off)
16
Security Systems (Ready)
1
Game Console (Off)
26
Garage Door Opener (Ready)
34
Low-voltage Landscape (Ready)
2
Musical Instruments (Off)
9


Kitchen
20 (Number of Products Measured)
Minimum
Average
Maximum
Standby Power (Watts)
0 5 10 15 20 25 30 35 40 45 50
Range, Gas (Ready)
4
Microwave Ovens (Ready, Door Closed)
18
Coffee Maker (Off)
12


Office
20 (Number of Products Measured)
Minimum
Average
Maximum
Standby Power (Watts)
0 5 10 15 20 25 30 35 40 45 50
Computer Display CRT (Off) 21
Computer Display LCD (Off) 32
Computer Desktop (Off) 64
Computer Notebook (Power Supply Only) 19
Speakers, Computer (Off) 19
Hub, USB (Off) 5
Modem, DSL (Off) 16
Modem, cable (Off) 8
Printer, Inkjet (Off) 25
Printer, Laser (Off) 7
Multifunction Device Inkjet (Off) 23
Multifunction Device Laser (Off) 3
Copier (Off) 2
Fax, Inkjet (Off) 3
Fax, Laser (Ready) 1
Scanner, Flatbed (Off) 6
Surge Protector (Off) 6


Set-Top
20 (Number of Products Measured)
Minimum
Average
Maximum
Standby Power (Watts)
0 5 10 15 20 25 30 35 40 45 50
Set-top Box, DVR (Off) 4
Set-top Box, Digital Cable with DVR (Off by Remote) 2
Set-top Box, Digital Cable (Off by Remote) 14
Set-top Box, Satellite with DVR (Off by Remote) 2
Set-top Box, Satellite (Off by Remote) 25





You should start implementing the advices we presented concerning the reduction of the consumption of energy, since there is no point of using renewable energy when your consumption is the same. This way if you produce 50% of the energy you use, you can eliminate the other 50% with the advices above and you can even start thinking about producing energy and get the power company to pay you instead of the other way around.

Besides the economical benefits of the said advice, don't forget that you are saving the environment also. The steps are easy to follow. Change the regular light bulbs with LED or Fluorescent light bulbs will lower the energy consumed for light as much as 12 times. Using the heating thermostat responsibly will save you as much as 50% of the energy spent on heating, and the same goes for the AC. Using the dish/cloth washer and dryer as advice will drastically lower you energy consumption. Finally eliminating the stand by energy consumption will reduce your power bill by at least 10%. Start saving now, even before you implement independent energy source, you can slash your power bill by as much as 50%.

2. How Does Grid Systems Work

The following systems represent how you connect the external power supply to your house or grid. In the diagrams we are refereeing to the energy source a bit vaguely because the same system that is presented could be used for variety of power sources. By power sources we mean Solar Panels, Wind Turbines, and Energy Generators.

Portable Power Source System

1. Power Source
2. Charge Controller
3. Battery
4. Inverter
5. Household

Grid-Intertied Power Source System

1. Power Source
2. Array DC disconnect
3. Inverter
4. AC Breaker panel
5. Household
6. Kilowatt per hour meter
7. Grid

Grid-intertied solar power system with battery backup

1. Power Source
2. Array DC disconnect
3. Charge Controller
4. Deep cycle battery
5. System meter
6. Main DC disconnect
7. Inverter
8. AC Breaker panel
9. Kilowatt per hour meter
10. Grid
11. Household

Off Grid Power System

1. Power Source
2. Array DC disconnect
3. Charge Controller
4. Deep cycle battery
5. System meter
6. Main DC disconnect
7. Inverter
8. Generator
9. AC Breaker panel
10. Household

The Units of the System

Array DC Disconnect:

DC Disconnect is used in the system, so you can shut of the system much safer and easier. The reason for shutting off the system would be mainly maintenance.

Deep Cycle Battery:

This is the battery you will use in your system once you build the full scale generator. If you cannot afford a brand

new battery, you can get on the cheap from old golf cart or forklift.

Main DC Disconnect:

The main DC disconnect is used for disconnecting the Inverter for maintenance or emergency situations.

Inverter:

The Inverter is used to invert the direct current or DC into alternating current or AC. This conversion is need since most appliances in the house use AC.

Gas Powered Generator:

If you are implementing complete off grid system, you should have Gas Powered Generator. There might be situation when you want to shut down your system for maintenance, during those situations you will use this generator.

AC Breaker Panel:

The AC Breaker panel is where all the electrical wiring is connected with your power provider. This panel is usually found in a utility room, garage, or outside the building.

Be aware each state and country has different standards for connecting alternative energy source to the AC panel. Also in most countries it is illegal to open this box by yourself, unless you are qualified electrician.

We recommend that you contact your power supply company concerning this issue and do not take matters in to your own hands before you do that.

If you do not want to connect your system to the breaker panel, you can run appliances just from the inverter which is much easier and cheaper option.

Grid:

The main power line that comes to your house that comes from the power company is called Grid. The term Off Grid refers that you are energy independent from the power supply company.

Household:

When we referred in the previous diagrams to the household, we meant the household loads. This consists of everything that is connected to the breaker panel.

3. From Where to Get the Materials

If you are based in ***UK*** or ***Europe*** we the following web sites:

Lead Acid Batteries:

http://shop.eurobatteries.com

Components:

http://www.maplin.co.uk/

http://www.radioshack.com/

Magnets:

http://e-magnetsuk.com/

If you are based in ***USA*** or ***Canada*** we recommend the following web sites:

Components:

http://www.allelectronics.com/

http://www.radioshack.com/

Magnets:

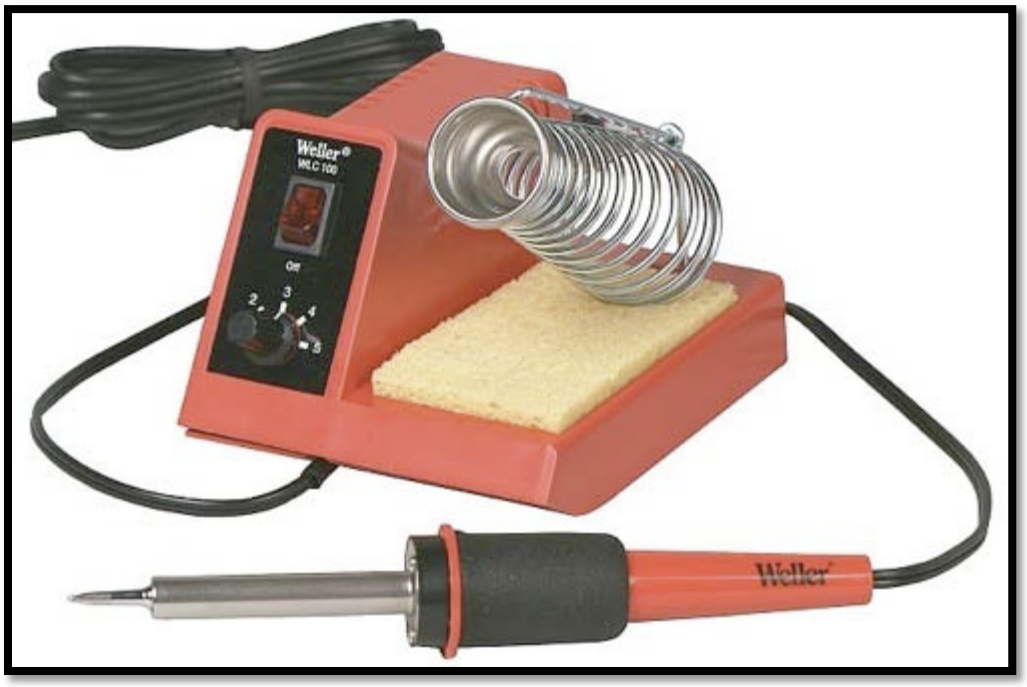
http://www.magnets4less.com/

4. Equipment

Multimeter:

Digital multimeter is ok but we should note that we are using pulse DC in the SSG so when you are measuring the amps, it is highly recommended to use an Analogue Amp Meter, which goes up to 1amp or more. You will also need the meter to measure your input amps as well your battery voltages.

Soldering Iron:



Soldering iron will be used to solder the circuit. The circuit will still operate if the connections aren't soldered, though once you are sure it is wired correctly, you should solder all the connections.

5. How the Generator Functions

The magnetic generator at first must be charged up by driving the main shaft at 2100 RPM for 42 seconds. This process will manifest itself as magnetic energy within the six coils of copper wire. This process is accomplished while the six coil connection wires, are making contact and are setting up their alternating magnetic poles. Since current is drawn from the six coils, this sets up magnetic poles which are a response between the rotor magnets and the coils. Alternatively this response causes the main shaft to be rotated by the 12 permanent magnets since they attract and build a release field. Then after this the crank is disconnected which should allow the unit to rotate while the load will be the activating force.

The circuitry allows this interchange of energy, this is a recycling of stabilized magnetic energy, and not an electromagnetic because the field of force is not a case of

electrical input. This is a buildup of magnetic energy which caused an energy thrust.

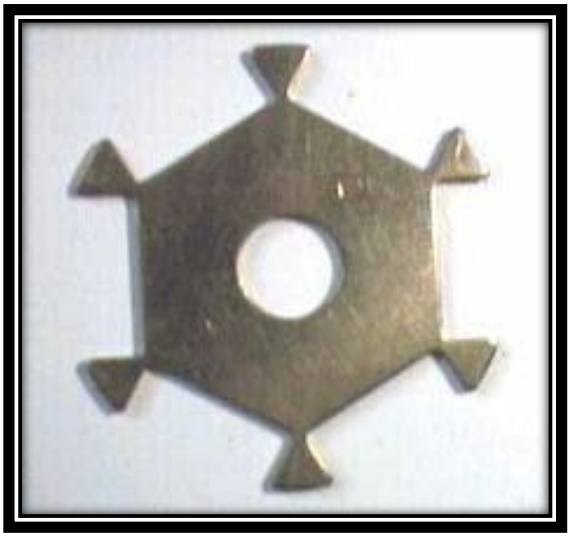
It is important to understand that electrical and magnetic energy work with similar attitudes, the manner in which they work sets-up a differing energy effect. One of these effects is that magnetic structures want to share their flow, compatible to the Universal Force, while electrical flow argues. Because of this fact the working responses within the unit take place, how they are needed, and when they are needed which results in a functioning unit. There is a continuous transmutation process taking place whereby magnetic energy continually generates an energy that manifests a measurable current.

This motor, which is driven totally by permanent magnet power, in no way, can be compared with perpetual notion in that the principle is not the same. When perpetual motion is discussed, it is mentioned in terms of unknown factors which produce an unknown force. Here the force of attract-attract to attract-release

within the magnetic structure can be observed, thereby producing the generating force to turn the rotor, which in turn produces the outflow of power. This power source is not predicated on a continuous flow of energy but predicated on the consistency of the transmutation process of the magnetic molecular structures within the Earth's pressure flow.

6. Construction

First you will an aluminum base plate which will balance out the structure which than equalizes the magnetic flow. As for the size of the aluminum plate you will adjust it based on the specifications presented below. After you find an aluminum base plate you will need a Sleeve Bearing which will be 1" long, and also should have 1/2" inside diameter, it is of high importance that this is oil impregnated brass. Further along you will need a 4″ long by ½” diameter Brass Shaft, and a Brass 2″ diameter Rotor, 1—3/4″ long.



You will need to fabricate Six rotor slots, each 1—3/4″ long by .260 deep by 23/32″ wide. These slots are spaced exactly 60 degrees apart and one slot cut in center of Brass Rotor, 360 degrees around, ¼” wide by 5/16″ deep. Than the 12 slots formed from the six slots as the 360 degree cut is made, each slot will be lined with .010” thick mica insulation.

You will also need a total of 228 pieces of U—shaped .040” thick copper coated steel wires. Each of the 12 slots will have 19 pieces of these wires fitted into the Mica, thus these wires do not contact the Brass rotor. The lead edge of these wires is flush with the rotor’s outer surface and the trail edge protrudes 1/8″ above the Rotor’s outer diameter. Then you will need to make 11 turns of .032” thick copper coated steel wire. These 11 turns or for lack of a better word wraps accumulate to 3/8” wide and the same pattern will be replicated around all 12 magnets. When place into the bent wires they will be snug fit and make a firm contact. After that you will ne 12 pieces of

.005” mylar insulation inserted into the cores of the wires described in the previous sentence.

Now you going to use the 12 permanent magnets, they should be insulated with the mylar, and should not be in contact with the wires with which you made 11 wraps. These magnets measure 3/4″ long, 5/8″ wide, 3/8″ thick and are made of a special composition and strength. Alnico 4, M—60; 12 AL, 28 Ni, 5 Co, bal Fe, Isotropic permanent magnet material cooled in magnetic field, Cast 9100 TS. 450 Brin, 2.2 Peak energy product. When inserted in the rotor the outer faces of these 12 magnets are not to be machined to a radius. The center of these magnets passes the center of the coils with 3/32″ clearance. The edges, where the wires are wrapped, pass 1/32″ away from the coils. This ‘changing magnet spacing’ aids in not only the release cycle but also contributes to rotational movement. It should be noted that the sharp magnet edges which are facing the coils should be sanded to a small smooth radius.

The 12 wire wraps are divided into two sections, upper and lower of six each. There are no connections between these sections. The magnetic flow direction between the upper 6 wraps and the lower 6 wraps is attained by the 'flow direction' as shown in Figure 5. Viewing Figure 6 shows the wires wrapped around the magnet starting at the top 'north' half and then after 11 complete turns the wire exits at the lower 'south' half. As this wire then goes to the next magnet it arrives at an attract wire which is its 'north' side. Thus all wires get interconnected from south to north magnet half or north to south magnet half. The actual connections should be crimped copper clips not solder with insulation tubing to prevent contact to the Rotor body.

Six slots are than cut at the top of a 0.30 thick copper tube which is 2" long by 2½" inside diameter. These slots are 5/8" wide by 1/32" deep spaced at 60 degrees apart. Then you repeat the same process just at the bottom but you should keep them in line with the upper slots.

Then you should fabricate an acrylic ring to hold the copper tube, the acrylic ring dimensions are 3—3/4″ O.D., 2¼” I.D., 3/8” and should be bolted directly on to the aluminum plate. This ring should have .030 wide groove cut ¼”deep so it could allow six copper tube mounting points to be inserted. After that you should place .002” thick plastic insulation paper around the inside and outside of the copper tube.

Further along six coils of insulated copper wire should be fabricated with each coil having 72 turns of .014 thick wire. Each coil is wound with two layers, the bottom layer to completely fill the 5/8″ wide slot with 45 turns and the top layer to span 5/16″ wide with 27 turns. To be sure each coil has the exact wire length or 72 turns, a sample length wire is wrapped then unwound to serve as a template for six lengths. A suggested coil winding method is to fill a small spool with one length then by holding the copper tube at the lower extension, then start at the plus wire and temporarily secure this wire to the outer surface

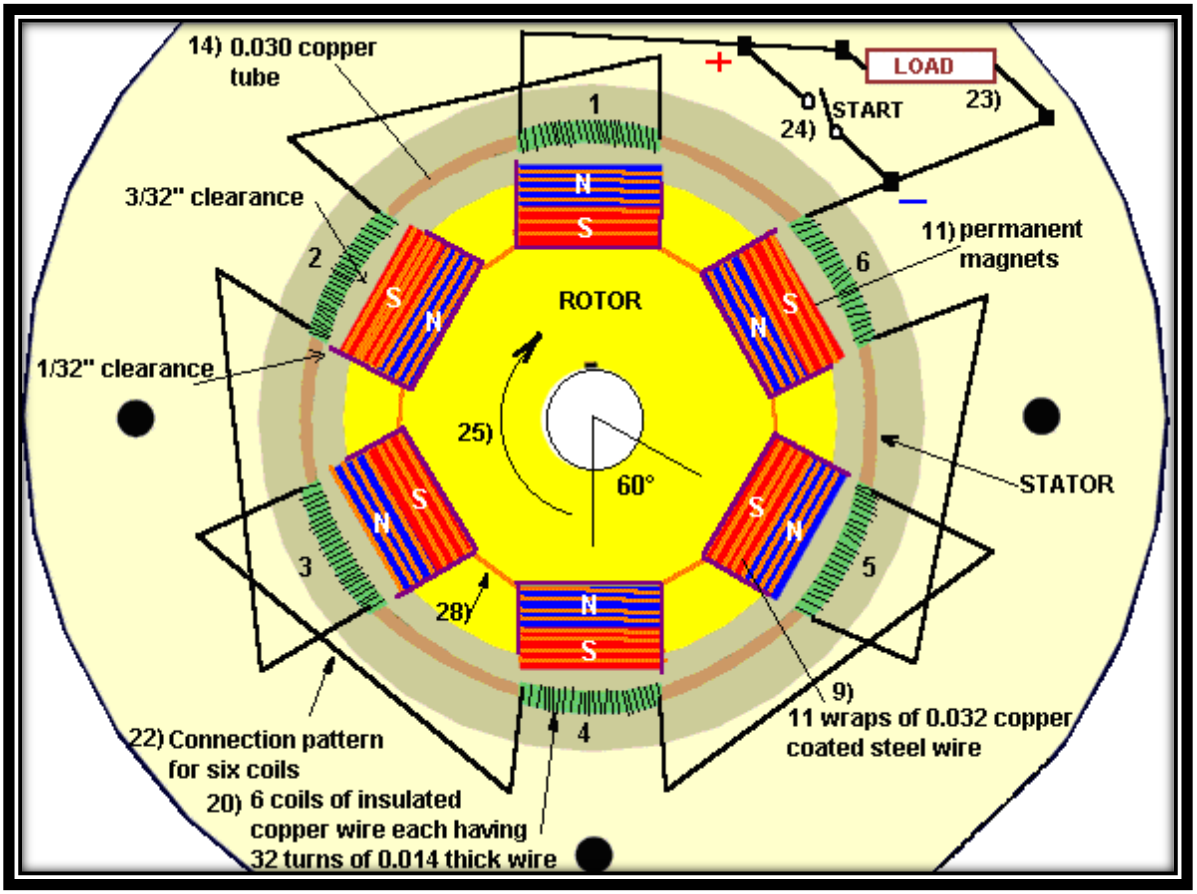
of the tube. Next, place the pre—measured spool of wire inside the tube, wrapping down and around the outside advancing clockwise until the 5/8″ slot is filled with 45 turns. Then, return this wire back across the top of the coil for 15/32″ and winding in the same direction again advance clock—wise placing the second layer spanned for 5/16″ with 27 turns. This method should have the second layer perfectly centered above the first layer. After winding this coil, repeat the process by again filling the small spool with another length of pre—measured wire. A very important magnetic response happens as all six coils have their second layers spaced as disclosed.

When the unit is driven at start—up (hand crank) for 42 seconds at 2100 RPM, all six jumper wires must be together which means the plus wire goes to the minus wire connected by the start switch. After 42 seconds the load is added to the circuit and the start switch is opened. To double check your connections between the coils, note that the finish wire of coil #1 goes to the finish wire of coil

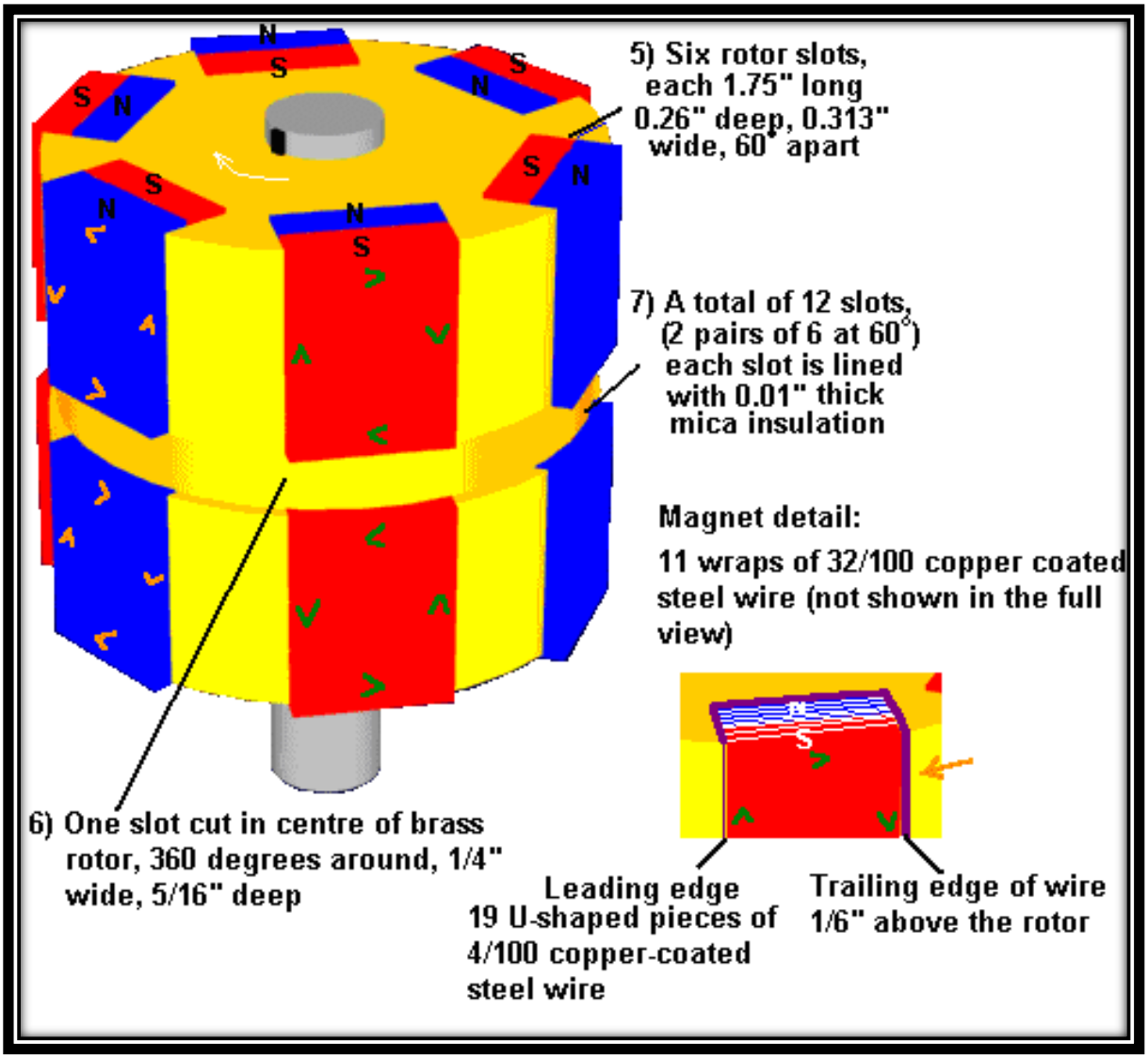
#2, which is top layer to top layer. This pattern then has start of coil 2 (bottom layer) going to start of coil 3 (also bottom layer). When the copper tube with the coils is placed around the rotor, the distance from any magnet to any coil must be identical. If it measures different, acrylic holding shapes can be bolted to the aluminum base, protruding upward, and thus push the copper tube in the direction needed to maintain the spacing as stated. The rotational direction is clock wise when viewing from top down. Then you should make Acrylic dome for protection against outside elements.

In the end you should add a coating of clear acrylic to solidify rotor. Do not use standard motor varnish. Pre-heat the rotor and then dip it into heated liquid acrylic. After removal from dip tank, hand rotate until the acrylic hardens, then balance rotor. For balancing procedure, either add brass weights or remove brass as needed by drilling small holes into rotor on its heavy side.

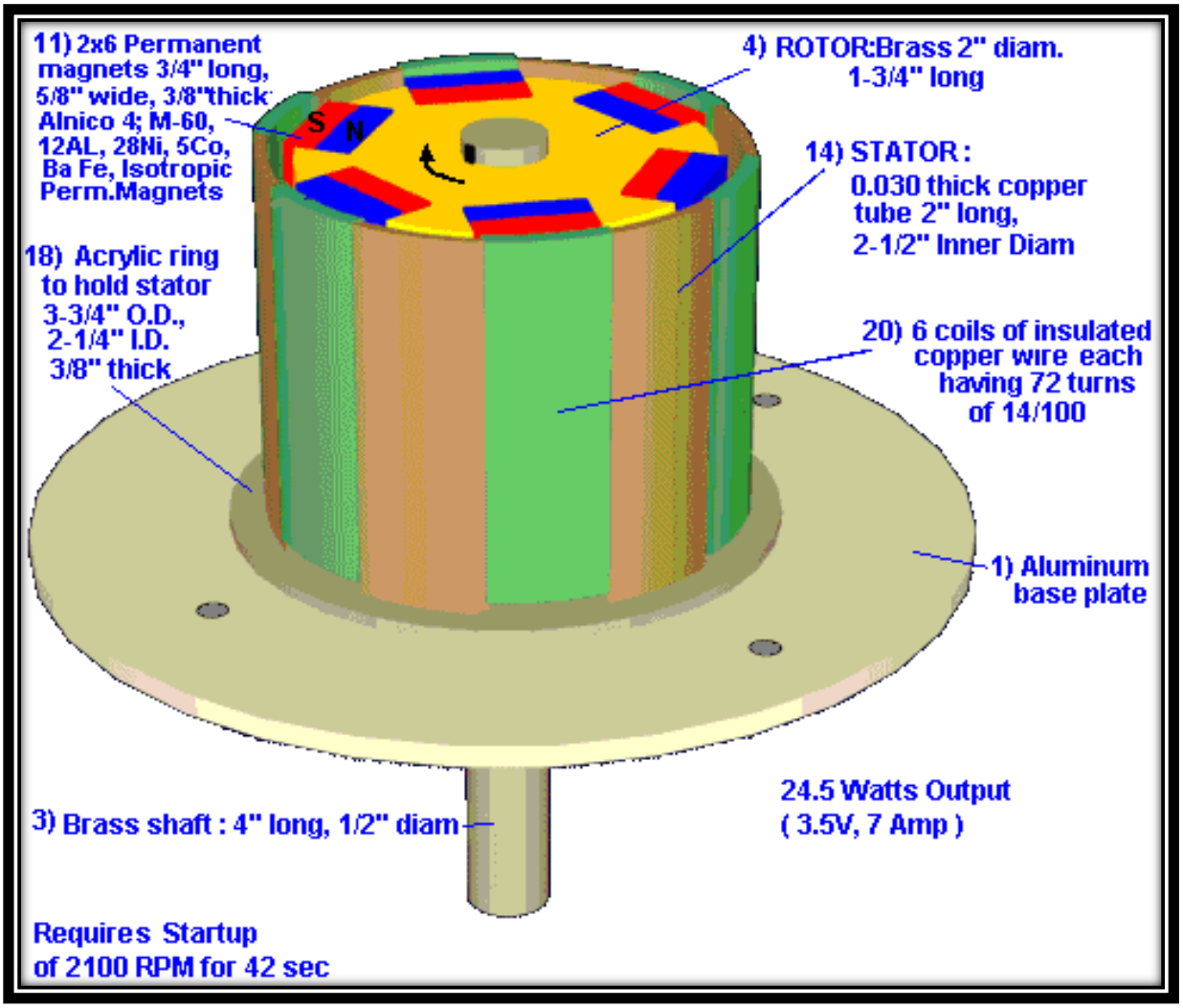
7. Gallery



Wiring Diagram


5) Six rotor slots, each 1.75" long 0.26" deep, 0.313" wide, 60° apart
7) A total of 12 slots, (2 pairs of 6 at 60°) each slot is lined with 0.01" thick mica insulation
Magnet detail:
11 wraps of 32/100 copper coated steel wire (not shown in the full view)
6) One slot cut in centre of brass rotor, 360 degrees around, 1/4" wide, 5/16" deep
Leading edge 19 U-shaped pieces of 4/100 copper-coated steel wire
Trailing edge of wire 1/6" above the rotor

Rotor View


11) 2x6 Permanent magnets 3/4" long, 5/8" wide, 3/8"thick Alnico 4; M-60, 12AL, 28Ni, 5Co, Ba Fe, Isotropic Perm.Magnets
S
N
4) ROTOR:Brass 2" diam. 1-3/4" long
14) STATOR : 0.030 thick copper tube 2" long, 2-1/2" Inner Diam
18) Acrylic ring to hold stator 3-3/4" O.D., 2-1/4" I.D. 3/8" thick
20) 6 coils of insulated copper wire each having 72 turns of 14/100
1) Aluminum base plate
24.5 Watts Output (3.5V, 7 Amp)
3) Brass shaft : 4" long, 1/2" diam
Requires Startup of 2100 RPM for 42 sec

8. Frequently Asked Questions (FAQ)

Q: What kind of material should be used for the brass rotor?

A: You can use copper, zinc, tin, or lead, we recommend using copper.

Q: Concerning the 12 magnets is the Alnico 4 material and it's charge at 2.2 peak energy of any significance?

A: The 22 peak can be considered critical even though the magnets can be considered weak. It is actually a much more difficult job to make magnets which are charged less than their energy potential. The teaching states "the release timing in magnets is dependent on their strength. "A magnetic current needs to be free to flow TO the rotor, then away from it, as the magnets charge and discharge their energy. The release timing is the key to this activity"

Q: Should I insulate the copper coated wires?

A: It is not necessary to insulate the wires

Q: Should the eleven turns of copper coated steel wire be connected to something?

A: Yes, if you look at the drawing that we have provided, you'll notice that the upper 6 magnets are connected in series, as well as the bottom ones, however the top and bottom magnets are not interconnected with each other.

Q: What's the main reason for using copper coated steel wires around the magnets?

A: When the spin mode occurs, the method for containing the magnetic power for each of the magnets is to wrap them as specified. While the rotor is spinning these wires are critical connective disturbers.

Q: What keeps the magnets from flying out?

A: They are wrapped snugly with wires. There isn't really a best way to mount them, just make sure they are fixated.

Q: Should the mica be bonded into the slots?

A: Yes, you probably know that Mica cracks when it's bent at room temperature. We first need to cut the mica to size then hit it with a standard iron. Next, the rotor should be pre-heated to about 200 degrees F, and the soft mica is placed onto a heated tool in the shape of the slot. Bonding agent is placed in the slot area to force the mica in place, allowing it to stay there until the bonding agent is set.

Q: Can something else be used for insulation instead of Mica?

A: The mica doesn't only just insulate, but it has an important magnetic function. The mica is very important

Q: What do you mean when saying that the rotor magnets change magnetic spacing?

A: It is meant that the face of the magnet which faces toward the stator coils, is a flat surface, while the coil has a rounded surface. When the lead and trail edge of the magnets pass any coil, the central part of the magnet will maintain a distance from a coil which is farther away. This action causes the various surfaces of the magnet to reach to coil, with changing sizes of flux lines.

Q: Can the generator run horizontally?

A: NO

Q: Is it going to run by itself if the starter isn't opened?

A: No, it won't.

Q: Can I use a copper coated steel wire with solder for wrapping the wires?

A: We haven't tried this, but we don't believe it will work.

Q: The coils that are wound with the stated turns do not add up to the specified sizes, why not?

A: We should've given coil sizes, only number of turns. We have found the coil sizes by measuring our coil after winding. Everything we did was hand wound and the human element might cause some fluctuations in the specified size. If it fits, it's the right size.

Q: Does the acrylic dome protect just from weather, or does it have any other purpose?

A: The acrylic dome keeps the air space contained, so that it can be magnetically charged. As the unit spins, the

waves of magnetic energy can be felt inches away from the stator.

Q: Are the points for mounting of the copper stator rivets that fit into the ring?

A: No, their purpose is to feed magnetic charge to the copper stator.

9. Minimizing Our Oil Dependency

Some of the bigger issues we encounter when we try to reduce the consumption of energy is to reduce and minimize the use of gas we use for our vehicles.

Oil is widely used for transportation, home heating, and energy generation.

There are several ways to tackle this problem. The automotive industry has already taken action, and is great cars with a very reasonable gas mileage. The Industry now must meet certain regulations, and the production of typical gas guzzling vehicles is reduced.

Most diesel power cars, with only a minimal conversion, are capable on running with leftover fryer fat. Meaning, you can simply go to McDonalds, and ask for the leftover oil of the fryer.

Although it sounds incredible, the vehicle will run without a problem this way, and it won't damage the engine or the fuel lines of the vehicle.

The downside of this is that the car will have a bad odor,

and smell like fried potatoes. This is what can be called a 'rough biodiesel'.

In order to create a better fuel, the waste frying oil/fat can be processed so that it gets refined. The refined product knows as biodiesel, and it shares almost the identical properties of the Diesel. The car will have the same performance as will regular diesel and behave the same.

In most conventional diesel vehicles, you can use a refined bio-diesel without applying any kind of conversion kit. Besides refining waste fat, Biodiesel can be produced from fat from pork, poultry, beef or oil from vegetables.

Another way to reduce oil dependency is with the use of electricity to power a car. Hybrid Electric Vehicles are getting more and more popular, and starting to take a significant share on the road. These vehicles combine a common car engine with a battery. They capture kinetic energy when breaking, this kinetic energy is used to recharge the battery.

The Hybrid Electric Vehicles can be considered eco-friendly, due to their low emission, and a good gas mileage. Common Examples of these vehicles are the Toyota Prius and Honda Insight.

A Step forward from the HEVs, are the fully electrical cars. It relies on the sole use of electric motors to propel the vehicle. These vehicles don't use an Internal Combustion Engine. The fully electric cars might be considered the vehicles of the future, but today, they're still in development, and have limited practicality.

Although they are able to run solely on electricity, they have a limited range. Recharging the vehicle is much cheaper than gas, but the main problem is that the batteries cannot store enough energy to propel the vehicle for longer ranges. This technology is very promising, and there have been several vehicles that are fully electrical that have went into production.

10. Free Energy Generators on a Larger Scale

Significant changes in energy generation aren't going to occur until the governments and large corporations start becoming involved and look into alternative sources of energy.

A Free Energy generator could well be the solution to these problems. It can be implemented in the following way:

- Each household has its own free energy device, they generate electricity independently from the power company.

OR

- The Energy Companies replace the current sources of generating energy like non-renewable sources of energy, and implement large-scale free energy generators, which would supply the grids with power. Since the energy will only require minimal resources for it to be produced, this would result in a

significantly lower price of energy.

However, the government and the big corporations aren't showing interest in such devices, they are the once that have the real funds necessary to really make this happen. Perhaps, the outcome of a world where electric energy is free isn't something the big corporations would like to see. This would mean they would lose trillions of dollars. It would mean the collapse of two of the biggest corporative industries. The Oil and the Energy Industry.

If the US Government spent only a small fraction of what they spend on the military to the development of free energy, it could totally revolutionize the world. We have already given you a small-scale free energy device THAT WORKS. That proves that this technology really works. All it needs to be done is for this technology to be used on a larger scale, and to become wide-spread. This will reduce the energy crisis.