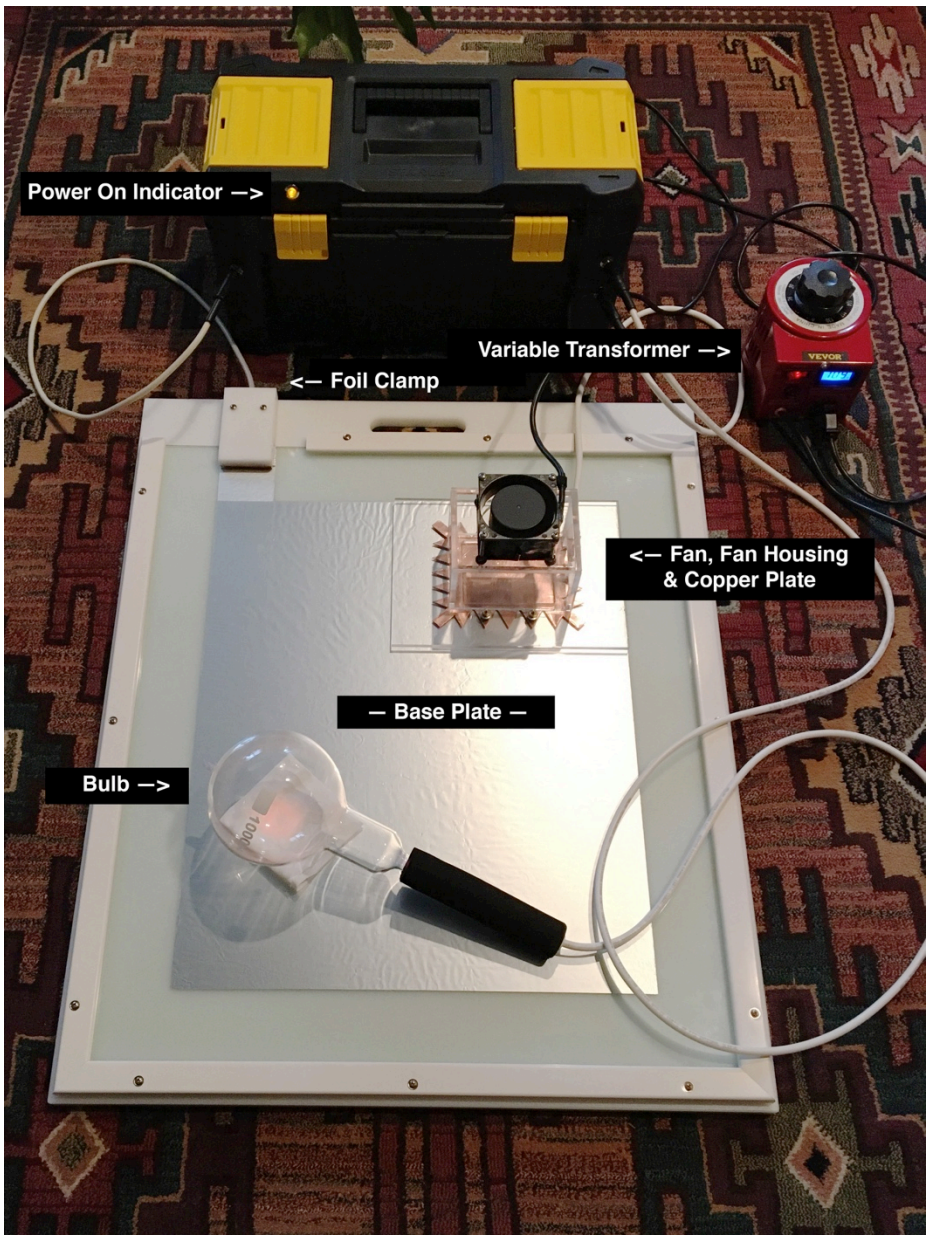
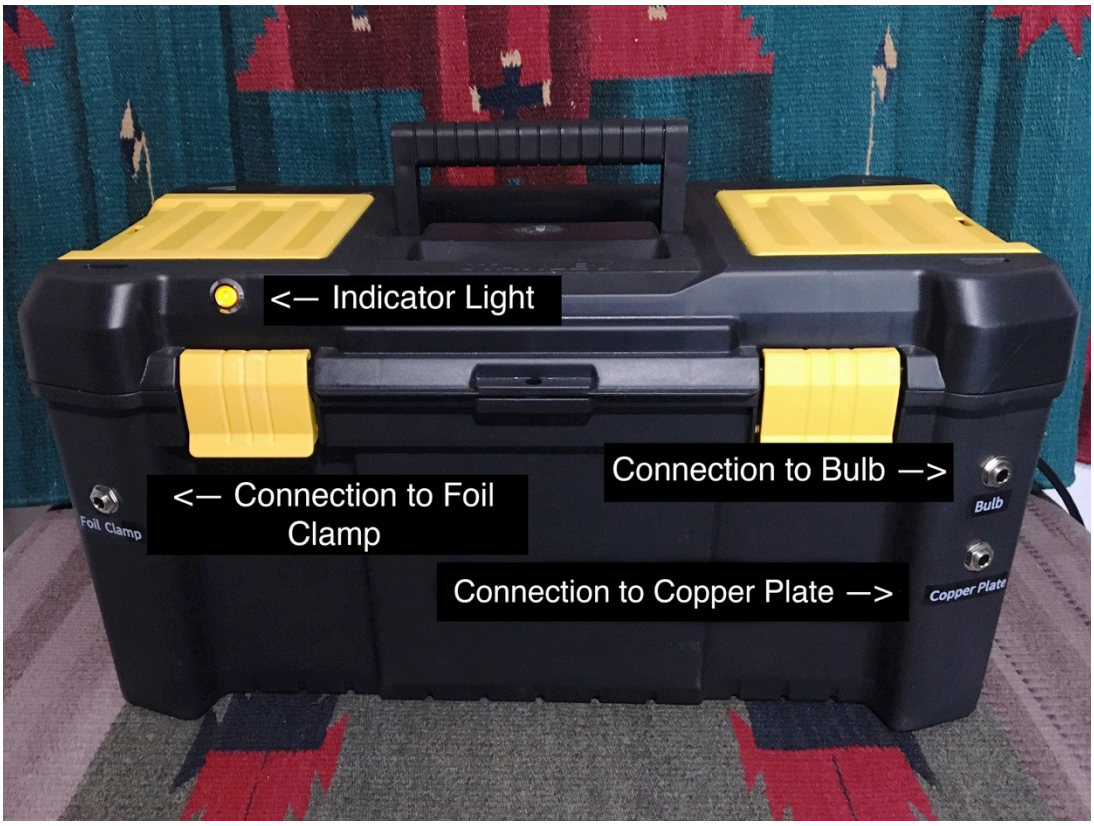
The CellGen
Operation, Safety and Maintenance

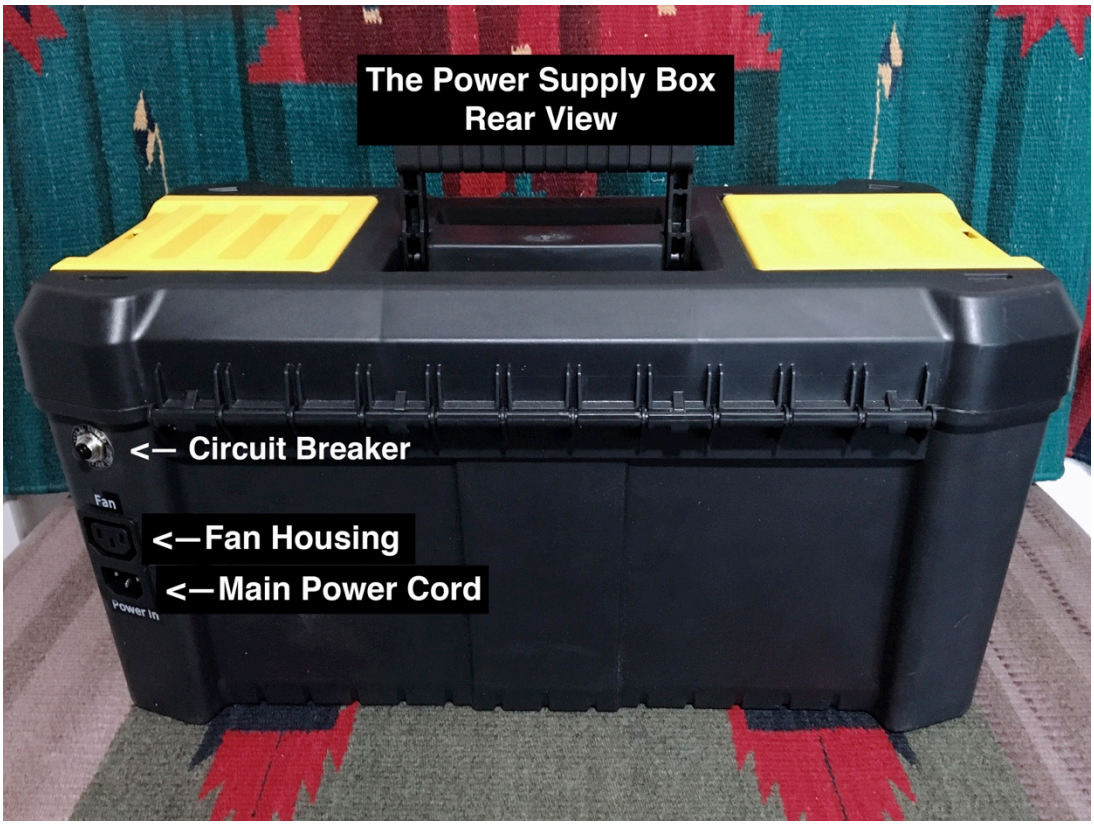
To download these instructions including active links,
key in the following URL on your web browser:

https://twotowers.com/documents/books/cellgen_instructions.pdf

THE POWER SUPPLY BOX
AND CONNECTIONS




<— Indicator Light
Connection to Bulb —>
<— Connection to Foil Clamp
Foil Clamp
Bulb
Copper Plate
Connection to Copper Plate —>


The Power Supply Box
Rear View
<— Circuit Breaker
Fan
<—Fan Housing
<—Main Power Cord
Power In

PROPER LAYOUT

For safety reasons the layout is very important! Please follow these guidelines precisely.

06/13/22 IMPORTANT Bulb Placement Update: We recently accidentally broke a bulb. A bath robe caught the GTO cable while reaching for a wall thermostat. It fell from it's pedestal right on the glass foot plate and shattered. For some miraculous reason, the glass of the foot plate did not break. So our new word of caution and recommendation, is to stow the bulb as low to the ground as possible. One can even use the supplied shipping box if desired. These bulbs are expensive and difficult to replace, so please treat it like priceless china!

- **The power strip or variable autotransformer should be far enough away from the chair so that one must first stow the bulb and then stand up and walk over to it to turn the CellGen on or off.** Failure to follow this simple guideline can lead to a mild electrical shock when switching the CellGen off.

- Please watch the following two instruction videos prior to using the CellGen.

An Excellent Short CellGen Instruction Video created by a company that is no longer in business: https://youtu.be/1uR_tfn-AB8

Comprehensive 2005 Video Created by CellGen / Molecular Enhancer Inventor Dan Dial: It includes instructions for high frequency massage and for treating young children https://youtu.be/COJOO0iCoB0

CELLGEN ASSEMBLY

Please use the photographs from the first two pages of this manual to assist in properly connecting the cables.

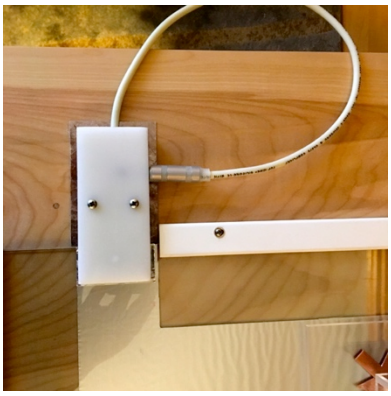
NOTE: The CellGen operates using 120V. In countries where 220-240V is used, a grounded 220V -> 110V/120V voltage converter is needed to run the CellGen. These are relatively inexpensive and can be purchased from Amazon, eBay and other online resources. For power requirements, please review the Specifications section below.

- **IMPORTANT: Never attempt to turn the CellGen on or off while holding the bulb, or with feet on the base plate. See proper start order below.**

- Place a wooden or plastic chair in front of the baseplate. Adjust the chair's position so that your feet can easily rest on the glass, while keeping them on your side of the black line. If you do not see a black line taped to the glass, please review instructions below for the proper placement of the safety line. The line designates the safety zone for foot placement on the glass base plate.

- Place the power supply box about 5cm (2 in) from the top end of the base plate.

The CellGen will arrive with the jack for the foil clamp plugged into its side. This is the travel position and prevents the jack from flopping around while being transported. To remove, simply pull it out. In most cases, upon receipt of the machine, the foil clamp will need to be screwed into place with the provided screws. Be sure to only tighten the foil clamp to the point where it makes good contact. A tight connection is not necessary in this location. Over tightening the screws may cause the glass to crack. This applies to the side rails as well should they ever need to be removed.



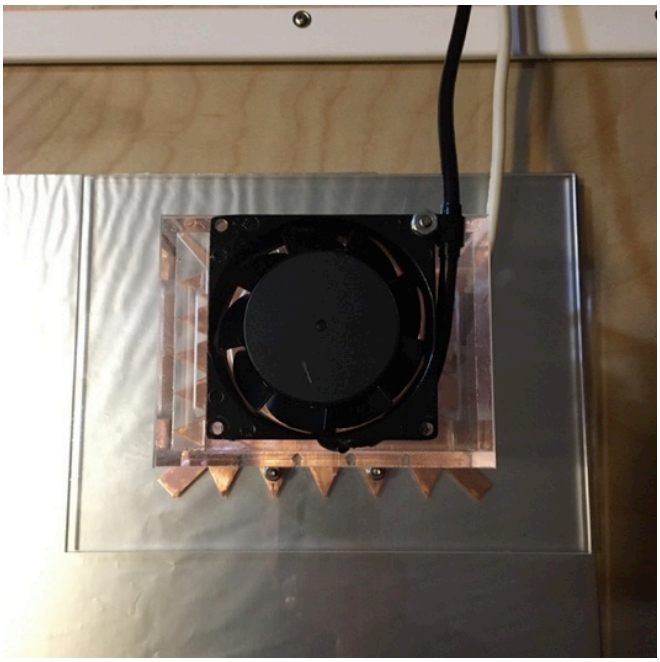
- Plug the jack for foil clamp into the single port on the left side power supply box.

- Plug the jack for the bulb into the top port on the right side of the power supply box.

- Plug the jack attached to the copper plate into the bottom port on the right side of the power supply box.

- Plug the cord for the fan onto the top IEC connector on the back of the power supply box.

- Align the edge of the acrylic fan housing to the top right corner of the aluminum foil. See photo below.



- Plug one end of the main power cord into the lower IEC connector on the back of the power supply box. Plug the other end of the cord into the power strip or variable transformer. Not supplied with all units, the variable transformer allows the user to lower the input voltage to the CellGen's power supply, thereby reducing the output at the bulb. A high setting is not necessary for the CellGen to be effective. Never set the variable transformer higher than 120V! Doing so can permanently damage the high voltage transformer that powers the CellGen.

CHECKLIST TO INSURE PROPER CONNECTIONS

1. A cords and high voltage cables are connected to their corresponding ports on the power supply box.

2. The plastic or wooden chair is in its proper position.

3. While sitting in the chair, the power strip or variable transformer is out of arm's reach. In other words one has to first stow the bulb, then get up and walk to the power switch. This is clearly shown in the first demonstration video.

4. The indicator LED on the power supply box IS NOT ILLUMINATED and that power strip, or variable transformer is in the off position before plugging it into a wall outlet.

OPERATING INSTRUCTIONS

Improper handling of the high voltage power transformer while it's in operation can cause injury or even death.

NOTE: *For safety reasons, the switch on the power strip or the variable transformer serves as the switch to turn CellGen on and off. If you wish to change the setting on the transformer, it's best to remove feet from the base plate, put the bulb down and then stand up and step away from the baseplate. Then switch the CellGen Off at the transformer. One can adjust the dial on the transformer with the machine running, as long as one is not connected to the base plate or the bulb. Stating it one last time, be sure the power strip or the variable autotransformer are out of arm's reach while using the CellGen.*

- Plug power strip or variable autotransformer into a wall outlet.

- Turn the device on using the switch on the power strip or the variable transformer. If your CellGen came with a variable transformer, turn the dial until the display reads 105V. If you are new to the CellGen, this is a good starting point. One can increase the voltage later if desired. The LED indicator light should now be illuminated on the left side of the power supply box letting you know that system is electrified. <u>When the power box is electrified, extreme caution must be observed. When the device is running, never touch any of the cable connections on the power supply box or on the fan housing. The cable connection at the bulb is safe! If you need to shift cables around, first turn CellGen off at the power strip or the variable transformer and then unplug the power strip or the transformer from the wall outlet</u>.

- To begin session sit on the chair with your feet off to either side of the base plate. In other words your feet are not resting on the glass.

- Reach for the bulb with one and then hold the globe with both hands in front of you. When doing long sessions, you may want to put a pillow on your lap to rest the bulb on.

  As soon as one touches the bulb, one may notice a sensation in the hands and the hair on one's legs and arms. This is normal.

- Place both feet (or one at a time) onto the footplate.

- If the sensation in the hands is too strong, or if one wishes to work on areas with sensitive skin, try tilting one or both feet on edge. This will reduce contact with the glass and make the bulb more comfortable to hold. One can also accomplish this by moving ones feet to the outer edge of the footplate where there isn't any foil under the glass. This is my preferred way of softening the sensation at the bulb. Only slight movement with the feet towards or away from the aluminum foil will greatly alter the sensation at the bulb (see photo below). Of coarse one can always dial the transformer down as well.

NOTE: Observing the photo above, apply a piece of electrical (safety) tape across the width of the glass, about 2 inches from the edge of the acrylic fan housing. Keep feet on your side of the tape! One can also use a permanent marker.

ENDING A CELLGEN SESSION

To end a session with the CellGen, follow the reverse order. Remove feet from glass, stow bulb in the box, switch off CellGen at the power strip or transformer.

ABOUT THE BULB

The Bulb is made of borosilicate glass and is resilient to breakage, but it will most likely break if dropped on a hard surface. If located on the stem, the vacuum nipple is protected by a silicone cap, which is glued on with hot melt glue. With normal usage the nipple will never break. One must however exercise caution and protect it from impact against hard objects otherwise it can break. If the vacuum nipple cracks or breaks the bulb must be repaired or replaced. Should this happen to you, search out a neon sign repair shop in your area, they will be able to determine if the bulb is repairable or not. If you need to buy a new bulb, please contact us. Wait time for a new bulb can be up to 2 months. The latest bulb models will have the fill tip in a different location that is less fragile.

CARE AND MAINTENANCE

Clean the bulb and the foot (base) plate after every use. Every now and then remember to wipe down the glass under the fan housing. One can also take the opportunity to wipe of any visible green oxidation from the bottom of the copper plate. After cleaning the glass plate and the bulb, make sure that the glass surfaces are completely dry before using the CellGen.

If green oxide has built up to such a degree that one can't simply wipe it off with a paper towel and glass cleaner, it will need to unbolted from the fan housing and scrubbed under running water using a tooth brush sized, brass wire brush. These are available at most auto parts stores.

Tools required for removing the copper plate:

- Medium sized Phillips screwdriver
- Medium sized flat screwdriver
- Small crescent wrench or a 5/16 inch nut driver.

To wire brush the copper plate, disconnect the fan housing from the power supply box, remove the screw, nut and washer that attaches the connection cable to the copper plate and unthread the four nuts that hold the copper plate to the bottom of the fan housing. At this point the copper plate will separate from the bottom of the fan housing. Any black discoloration of the copper is of no concern. Once the green oxide has been removed, dry and reattach the copper plate to the fan housing using the same neoprene padded washers. Do not over-tighten the mounting screws. Be careful not to drop the copper plate as this can bend or warp the copper so that it no longer rests flat on the surface of the glass. If the copper plate gets bent, it will need to be gently pounded flat using a hammer on a flat, hard surface. The copper plate will last up to 5 years depending on use.

Before reattaching the copper plate to the fan housing, be sure to wipe down the inside of the fan housing with a paper towel and glass cleaner. This will remove accumulated dust that can build up on the inside surface and eventually cause a short circuit to the fan.

IMPORTANT NOTE: Never use rubbing alcohol to clean acrylic!!! A paper towel with weak dish detergent solution is recommended. Rubbing alcohol will destroy even ¼ inch thick acrylic plastic. Be sure it's completely dry before reassembly. Do not get the fan motor wet.

TROUBLESHOOTING

There is little that can go wrong with the CellGen that hasn't already been addressed. If the red indicator light on the power supply box is illuminated, but all of a sudden the device seems to quit working, the most likely cause of the symptom is what's called burn-through. Burn-through is where a pinhole is formed in the top layer of plate glass, below the copper plate. This can happen if someone is drawing large amounts of energy from the system for too long a period of time. It can also happen when ambient humidity is very high, or both. To find out if your CellGen is experiencing burn-through, please watch Dan Dial's video on how to fix burn-through by clicking on the link below. Fortunately the cooling fan prevents burn-though in all but the most extreme conditions.

Repairing burn-through video: https://youtu.be/qMypxzKQjdE

Other possibilities that can cause device failure:

The repairs listed below require the skills of a qualified high voltage technician

1.) One possible cause of failure could be a high voltage short inside the power supply box. Open the box and perform a visual inspection of the wires and connections. Also give it a sniff. If you smell burnt electrical smell, look for signs of discoloration on connection cables. If things look good and there's no burnt electrical smell, then the wiring is most likely in tact.

2.) Some transformers are equipped with a Ground Fault Circuit Interrupter (GFI). In rare occasions the GFI can go bad and will falsely disable the transformer. If a bad GFI is suspected it will need to be removed and bypassed.

3.) Lastly, if the glass isn't burned through and all of the wiring inside of the power supply box appears to be in good shape and bypassing the GFI didn't solve the issue, then it's possible that power transformer itself has burned out internally (generally on one side). Again If for some reason you are not able to troubleshoot

a problem with your CellGen, then please bring the power supply box to a neon sign shop and ask a technician to test the transformer and go over all electrical connections. Neon sign transformers are very dangerous if not handled properly. Only a qualified technician should attempt the to troubleshoot the NST and make repairs. If the transformer is bad then the whole power supply box will need to be serviced or replaced and a new transformer installed.

REPLACEMENT PARTS

- Bulb — $450
- Copper Plate — USD $100 plus shipping
- Power Supply Box USD $1100 plus shipping
- Fan Housing — USD $250
- Fan — $50

SPECIFICATIONS

Transformer Input Voltage: 120V
Transformer Output Voltage: 7500V X 2 (15000V Total)
Transformer Amps: 2A
Transformer Watts: 243W
High Voltage Cables: 14 gauge, 15000V silicone GTO
Audio Connectors and Jacks: ¼ inch mono
Double Strength Glass Dimensions: 24 X 28 X 1/8 inches
Heavy Duty Aluminum Foil Dimensions: L 25 3/8 inches W 18 inches
Fan: 120V, 80X80X38mm, 3100 RPM, air flow 32 CFM

WARRANTY

All workmanship, electrical components (not including the new 15KV Ventech neon sign transformer), internal wiring and connection cables are guaranteed to be free of defects for a period of one year. Since the CellGen is an experimental device and the power transformer is being used in ways it wasn't designed for, we can't offer a warranty for that component. That said, the transformers we use seem to work well and last for many years! The bulb and foot plate are guaranteed to be free of defects up to the point the CellGen has been assembled and tested. For obvious reasons we can't be responsible for the glassware beyond that point. If any of the boxes arrive damaged, please take sharp photos prior to opening and unpacking. If one notices any damage while unpacking, please take descriptive photos of the damage and contact us right away.
https://www.twotowers.com/contact.html

DISCLAIMER

The CellGen, also known as the Molecular Enhancer is meant for experimental research only & not meant to diagnose, treat or cure any disease or condition. Please consult your doctor if you are ill or in poor health. We assume no responsibility for any loss of property, electric shock, physical or psychological harm, or death as a result of operating the CellGen.

For more Information about the CellGen please visit us at:
https://www.twotowers.com

Make Your Own Replacement Copper Plate

Use the supplied pattern to cut out a new copper plate with a set of tin snips. The task can be accomplished by just using straight cutting tin snips. The process requires some skill and a fair amount of hand strength.

Begin by printing the pattern onto a sheet of paper. Cut the pattern out along the straight lines of the image boarder. Then using spray contact cement, glue the pattern onto a 5.5 inch by 7 inch, 18 gauge copper plate. At this point use a center punch to mark the 5 holes to be drilled. For this next step it's best to what protective gloves. Using the tin snips cut the pattern out as carefully as possible. After the pattern is cut out of the copper plate, use a heat gun to gently heat the copper plate just enough so that one can easily peal the paper pattern off of the copper. Next clean the copper surface with a rag and mineral spirits. Be careful of sharp edges on the copper plate. After the pattern has been cut out of the copper and the plate has been cleaned, it must be made perfectly flat. One can accomplish this by gently hammering the copper over a hard flat surface, like a piece of flat steel. Remove any burrs and sharp edges with a small file and sand paper. Drill the 5 holes using the appropriate drill bits. The four holes at the sides of the plate need to be counter sunk on the surface that faces the glass. This allows the beveled 6/32 screw heads to sit flush with the surface of the copper. This is best accomplished by using a countersink bit and a drill press. Lastly, bend the connection tab found on one end of the copper plate 90º at the dotted line. Premark the copper before pealing off the pattern. If your work was precise, the tapered screw holes along the two sides should perfectly match up with the screw holes in the acrylic base. Using the original screws, attach the copper plate in the same manor as the original. So one doesn't crack the acrylic, be careful not to over tighten the mounting screws. That should be it.