

# Making a Woodburner Pen

By

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A.K.A “Lorbay”

This tutorial was downloaded from <http://www.penturners.org>

The International Association of Penturners



This little project is made from a Battery Charger (model#85-220) from NAPA Auto Parts (approx \$55.00) and a Variac auto transformer for a 15 amp outlet from a local electronics store (approx. \$85.00).



First, you need to get a piece of plastic pipe of 1/2" dia. I used schedule 20 water pipe. Cut it to 6" long and then turn 2 wooden plugs for each end of the pipe as seen in the picture below. You will also need to drill 2 holes 1/8" diameter in each plug on the center line 5/16" apart off the center. Make the plugs a friction fit to start with and once you have them fitted with the rods in and you are happy you can put a drop of CA on them to fasten in place. You will also need to drill a small circle of holes 1/8" diameter at each end of the pipe on opposite sides just at the end of where the plug stops (see pic below).

This will make the venting ports for the pen tube in case it gets a little warm while doing long periods of burning. For me this can be up to 4 hours or more depending on the project.



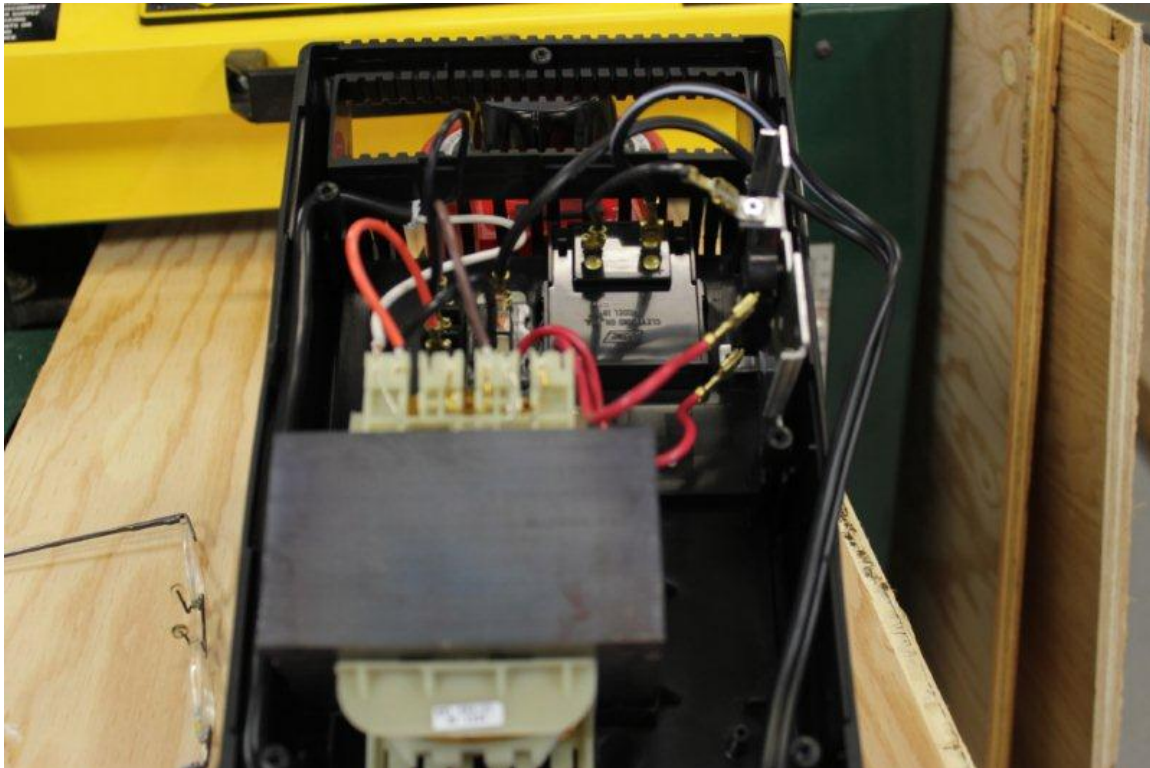


Now you will need to get some 1/8" welding rod, 2 pcs 9" long. Push the rods into one of the plugs protruding about 1" from the finished end of the plug; the rods should be quite tight as they are size for size in the holes. Once you have this done push the long ends of the rods through the pipe and then put the remaining plug in.

Once you have done this the rods should be quite tight.

Now you will need 4-2 screw wire connectors and again you can get these at your local electronics store. They need to be large enough to go over the 1/8" rods and also large enough to take #12 ga wire.

The wire that comes on the battery charger for the charging cables is not large enough to carry the heating load for the burner tip, so this will need to be replaced. All you are doing is replacing the wires used to clip on the battery terminals. See next two pictures





I used #12 ga speaker wire from Best Buy or your local electronics store, you will only need 4' to 5 ' of this cable so if they sell it by the foot that will be better for you. The speaker wire should be "tined" to get better contact at the pens

Now take the battery charger back off and replace the charging wires with the new 12 ga speaker wire, once this is done connect the other end to the burning tip rods (long end) with 2 of the 2 screw terminals.



Put the other 2 terminals that are left onto the rods at the other end of the burning tip.

Now you are ready to start making a burner tip from “nichrome” wire (nickel-chromium resistance wire). I use 16 ga and 18 ga for my tips and mostly use the 18 ga.





Here I am bending the wire to form the pattern I want for my project.



Once this has been done and all screws are tight it is time to take the power cord from the battery charger and plug it into the Variac. Now turn the dial down to minimum on the Variac and plug that power cord into a 15 amp wall plug.



Now you can turn the dial up on the Variac in small steps till you get the desired temp for your burner tip.





This is with the Variac at only 40 volts AC.



Here is a picture on some of the designs you can make with your new burner.



Here are some tips on what not to do with your new burning pen.

As the pen has some bare metal parts **DO NOT SET IT DOWN ON A METAL SURFACE** as it will spark and if left for 30 sec or so will trip the overload protection on the charger. As with any battery charger the ends will spark when touched together.

Yes, this particular battery charger has overload protection and once triped it takes approx 30 sec to reset.

There is 12 volts DC at the pen tip while the Variac is turned on, I dought you will feel it unless you are really sensative to small voltages.

DO NOT touch the end of the pen after extended use as it will be very hot as would be any other woodburning pen.

Feel free to send me a PM if you need any additional information.