

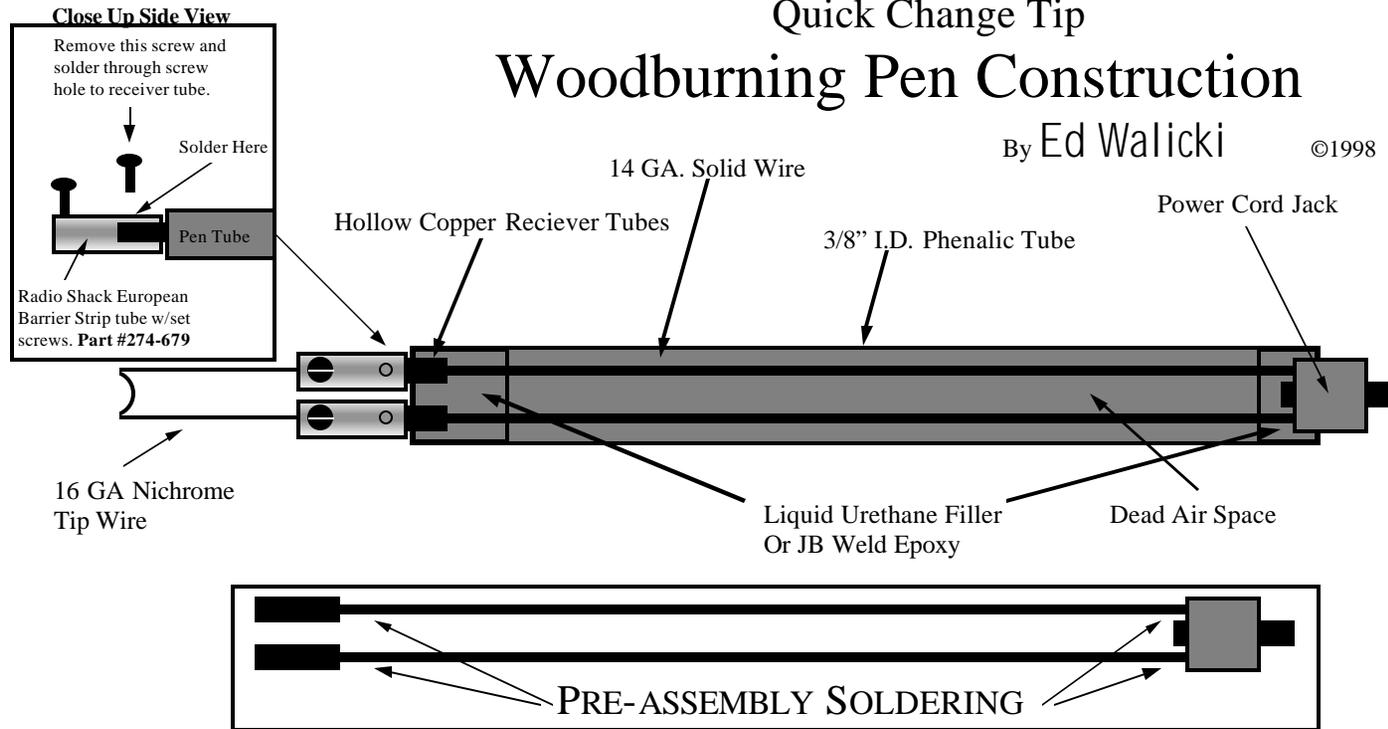


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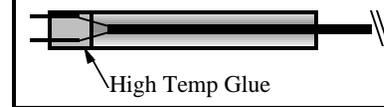
# Quick Change Tip Woodburning Pen Construction

By Ed Walicki

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**Option:** if your woodburner uses wired pens instead of detachable ones simply use multistrand 14 Ga lamp cord cut to 4' lengths. Solder the lamp cord to the receiver tubes and eliminate the solid wire and power cord jack as shown. Only the working end needs to be sealed in epoxy, the non-working end can be left open with the wire exiting to the burner unit. Radio shack has any type jack you will need to adapt the wire to your burner unit. Most use a 1/4" headphone jack or an RCA jack.



**Step 1-** Solder pen wires to the power cord jack terminals. Slide wire and jack assembly into the tube to measure wire length. Wires should be cut flush with the end of the phenolic tube, no wire should protrude from the end of the pen tube. Remove the wires and power jack and set aside.

**Step 2-** Cut two pieces of receiver tube approximately 3/4" long. Slide them halfway over the stripped ends of the pen wires from Step 1 and solder in place. Approximately 3/8" of receiver tube should extend from the pen tube. Be careful not to use too much solder or it will fill the entire receiver tube and leave no room to insert a wire tip later on.

**Step 3-** Apply a small amount of epoxy glue to the power cord jack threads. Any high temp glue will work. I prefer using liquid urethane or a two part epoxy called JB Weld. JB Weld can be purchased in most any hardware or auto parts store. It is slower curing than liquid urethane but seems to hold up better over time. Slide the pre-assembly into the phenolic pen and set aside until the glue used hardens

**Step 4-** Adjust receiver tubes so they are parallel to each other and in the proper position. Press a cotton ball into the pen tube around the receiver tubes below the solder joints. This will act as a plug to prevent the liquid urethane or JB Weld from draining into the lower chamber of the pen. After packing the cotton in place readjust the tubes if necessary. Pour a small amount of liquid urethane or JB Weld into the phenolic pen tube to fill the void around the receiver tubes flush with the end of the pen tube. Then set it aside to cure overnight in an upright position.

**Step 5—**Your pen is now ready to use by simply soldering a formed nichrome wire tip into the hollow end of the receiver tubes. Make sure the solder joint is secure or the poor electrical connection will generate heat at the weak joint faster than it will the tip, making the pen temperature near your fingers uncomfortable. For my own use I prefer to not solder the tip wires in place. Instead I buy a product called a "European barrier strip" sold at Radio Shack for \$2.59, **part # 274-679**. Loosen the tiny set screws in the barrier strip and heat the white plastic housing with a heat gun which will cause it to swell up and release the metal parts you need, which consist of several 1/2" long small diameter brass tubes, each with a set screw at either end. With the small set screws removed from the hollow barrier strip tubes, slide them half way over the receiver tubes of the just finished pen. Solder the half in contact with the receiver tube to the receiver tube, leaving the open end hollow to accept your preformed burning tips. After the solder has cooled insert the two set screws into the end of the barrier strip tube and simply insert a tip wire and tighten the screws to secure it for use. You wont need the set screws for the end you just soldered, save them for spares. Now you have one pen that can be used for hundreds of tips. Eliminating the need to make dozens of pens. You can also convert older commercial pens this way as well and just use them instead of making more pens.