


# Interview With A Lamp Wire

To explore your uniqueness,
try making your own whimsical copper lamp.

**Materials:**

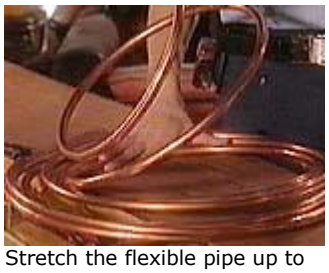
- Flexible copper tubing - ½" for smaller lamps, ¾" for taller lamps (Tip: Buy several diameters for more variety in your design)
- Copper wire
- Emery paper
- Hose clamp
- 2 copper washers that will fit snugly on your tubing
- Lamp socket with harp
- Flux
- Solder
- 10' lamp cord (sometimes called 'zip' cord)
- 3-in-1 oil
- Replacement plug

**Tools**

- Drill and bits
- Pipe cutter tool
- Compression punch (or hammer and a nail)
- Needle nose pliers
- Wire cutters
- Screwdriver
- Soldering torch
- Safety glasses
- Magnet
- Utility knife
- Wire stripper pliers
- String

**Steps:**


Flexible copper pipe comes in many sizes


Stretch the flexible pipe up to the desired height while leaving enough for a sturdy base


Cut the pipe off with a pipe cutter


Twist the smaller tube around the main one and cut it off with a pipe cutter rasp to distress the corners and edges creating a worn look

Stretch different diameters of flexible copper tubing into a sinuous, vine-like assembly. Use a pipe cutter to cut the tubes to the same height.


Some smaller copper pipes will fit snugly inside larger ones


Compression punch


Drill holes in the larger pipe and insert smaller pipes as branches


Select a drill bit the same size as the smaller pipe for a snug fit

Drill holes in the main trunk, and attach smaller tubing to look like branches. Use a punch (or hammer and nail) to make a dimple in the metal before you drill. This will prevent the bit from skating.


Mark the pipe that will carry the electrical wire so as not to drill into it


Drill holes in the larger pipe to help attach the smaller ones


Insert the smaller pipe in the drilled hole and give it a sharp bend to hold it in place

Drilling into the tubing leaves sharp burrs on the inside edge of the tubing. Burrs can cut into lamp cord, leading to electric shock.
Therefore you'll need to leave one piece of tubing completely free of holes so it can safely carry the electric cord.

Flag it with a piece of tape so you remember NOT to drill into it.


Use needle nose pliers to bend light gauge wires


Use two screws to make a jig for bending heavy gauge wires

Using needle nose pliers, curl lengths of copper wire into tendrils. Use the tendrils to bundle the copper 'stems' together. This stabilizes the vertical trunk of the lamp.


Use emery paper to remove oxidation prior to soldering


Install a hose clamp about one half inch down from the top


Apply flux to the washers and the pipe

**Flux 'Em**
Sand and then apply flux to the top half inch of the flagged tube. Tighten a hose clamp around the tube at the half-inch mark (this is a temporary jig to hold the harp and washers in place until they're soldered).

Place a fluxed copper washer over the hose clamp, then the harp base and another copper washer

Always heat the pipe from one side and apply the solder from the other side

Place a sanded and fluxed copper washer on top of the hose clamp. Place the base of the harp on top of the first washer, then add the second sanded and fluxed washer.

Solder the washers in place with plumbing solder and torch. Heat the washers from one side and apply the solder to the other side. This guarantees that the solder will flow into the entire joint.

After the tube has cooled, remove and discard the hose clamp.

Tie a nail to the end of a string and drag the nail through the pipe with a strong magnet

Tape the wire to the end of the string and pull the wire through the pipe

Feed the wire in at the top and pull it through with the string

**Wire We Here**

To fish the cord through the tube, squirt lightweight oil into the tube to reduce friction. Then tie a nail to a string and coax the nail through the tube using a strong magnet. Tape the lamp cord to the tail end of the string and fish the cord through the tube.


Slide the socket base over the end of the wire and the pipe


Tighten the set screw on the socket base


Strip the wires back three quarters of an inch


Tie an Underwriter's knot to fit in the base of the socket

**Socket to 'Em**

Feed the lamp cord up through the socket base at the top of the lamp. Split the top 2 ½" of lamp cord by slicing down the center membrane with a utility knife.

Strip each of the two wires back about three quarters of an inch. Give exposed wires a clockwise twist to stop them from splaying. Tie an underwriter's knot and pull the knot down into the base of the socket.


Attach the wires to the screw terminals


Install the harp

Lamp cord has ribbing (sometimes only one raised rib) along one side and is smooth on the other. Attach the side with the ribbing to the socket's silver screw terminal. The smooth side goes to the brass screw.

Install the harp. It squeezes together like a Thigh Master and then two locking sleeves drop over to hold it in place. Screw a bulb into the socket.


Slide the housing on first


Squeeze the plug ends together puncturing the cord and making the connection


Mag with finished lamp

**Plug 'Em**

Slip the plug housing onto the end of the cord. Then feed the ribbed wire into the hole that will be pierced by the contacts from the flared silver prong. Slide the smooth wire into the other hole (connecting it with the narrower brass prong). Squeeze the two prongs together, puncturing the insulation to make contact with the metal wires inside.

Slide the housing down over the assembly until it clicks into place. Secure the cord where it exits at the bottom of the lamp by sealing it with silicone. This will prevent it from ever getting cut on the edges of the tube.

Plug in your lamp and then ponder the appropriate lampshade.