

## MATERIALS AND HARDWARE FOR J-POLE CONSTRUCTION

Copper wire, 12 gauge, solid  
Copper pipe, 12.7mm x 3m  
Copper 12.7mm tee  
Copper 12.7mm elbow, 90 degrees  
Copper 12.7mm end cap, 2 each  
SO-239 or N female connector (your choice), through-hole or 4-hole square mount, depending upon availability\*  
.8-1mm thickness brass or copper sheet, at least 35x105mm  
M3x20mm screws with hex nuts, 3 each (brass or stainless is recommended)  
\*If using a 4-hole square mount connector, add M3x6mm screws with matching hex nuts, 4 each  
Rosin core solder

## TOOLS

Bench vise  
Center punch  
3mm drill bit  
#44 drill bit  
6mm drill bit  
Electric drill or drill press  
File, flat, fine  
File, 6mm round (if large tapered reamer is not available)  
Hack saw  
Hammer  
Lineman's pliers, 150mm or 200mm  
Permanent marker, blue or black ink, ultra fine point  
Propane torch  
Ruler  
Screwdriver  
Soldering iron, 60-80 watt  
Tape measure, inch AND metric  
Tapered reamer, 10-25mm (if not available, use 6mm round file)  
Tin snips, offset blades (use hacksaw if tin snips are not available)  
Tubing cutter (if not available, use hacksaw)

## CONSTRUCTING THE COPPER J-POLE MAIN BODY

1. Using the tape measure, permanent marker, and tubing cutter, mark out and cut one of each length listed in the dimensions on page 1 from the 3-meter copper pipe. If using a hack saw instead of a tubing cutter, clamp the pipe firmly in the bench vise before cutting.
2. Attach the segments of pipe to the hardware as follows: base segment, copper tee, longest segment (dimension A): between the side hole of the copper tee and the copper elbow (dimension D in diagram), insert the smallest segment. On the upward-pointing hole in the elbow, insert segment B (see diagram). DO NOT attach the copper caps yet (the feedpoint assembly will need to be installed first). Place the assembled segments and hardware on a fireproof work surface such as a metal or tile (NOT wood, plastic, or concrete), make sure segments A and B are parallel and in plane, then heat and solder them together with the propane torch.