

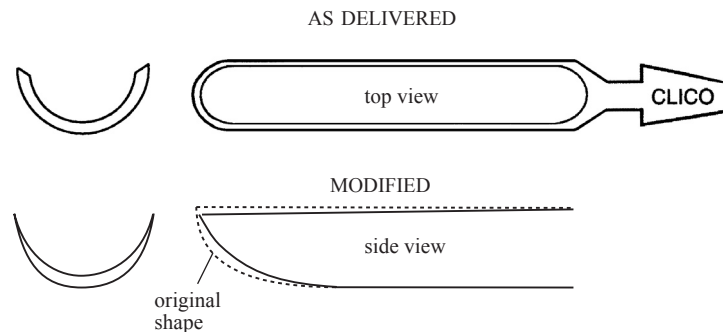


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MODIFYING CLIFTON SPOON BITS

These Clico (Clifton Company) spoon bits are decent tools as delivered, but with just a minor bit of work you can make them not just decent but excellent. The bits come with a chisel-like bevel ground along the inside edges. This presents a high cutting angle to the stock you're drilling, leaving a rougher surface than you might wish and maximizing the torque stress on the bit. Further, the nearly half-circle cross section of the bits' noses limits their efficiency more than need be.

The drawings below show how the bit can be reshaped to work optimally. In lengthwise cross section, a new bit is roughly a half-cylinder. To reshape the nose for a more effective entry angle, grind the top edges down $1/32''$ or so, and relieve some of the excess steel under the nose of the bit as well. These chores are easily accomplished on a bench grinder or belt sander. Note that this will make the nose (seen from above) more fingernail shaped rather than half round. Cutting edges all the way around the nose and partway along the sides should be ground to a knife edge. A fair-sized conical grinding stone (our catalog #00941) chucked in a Dremel-type tool, hand drill or drill press does the job quickly. Finally, sharpen those edges! If cutting edges don't feel dangerous to you, they're not going to make much of impression on wood, either. Polish the bit inside and out on a buffing wheel or with a power strop until the edges feel genuinely sharp.



In use, put the nose's cutting edge almost on the center point of the hole you want to drill. Rotate your brace about $1/4$ turn clockwise, then $1/4$ turn counterclockwise to set the edge. Rock back and forth in this way a few more times, broadening the arc until the nose is clearly seated in the wood; then begin drilling with full rotation. A 10" brace provides more than enough mechanical advantage to let you snap the neck of a bit right off if you bind it or hit an unsuspected knot. With practice, you'll be able to drill quite vigorously, but you should train yourself to work with a sensitive touch before really cutting loose.