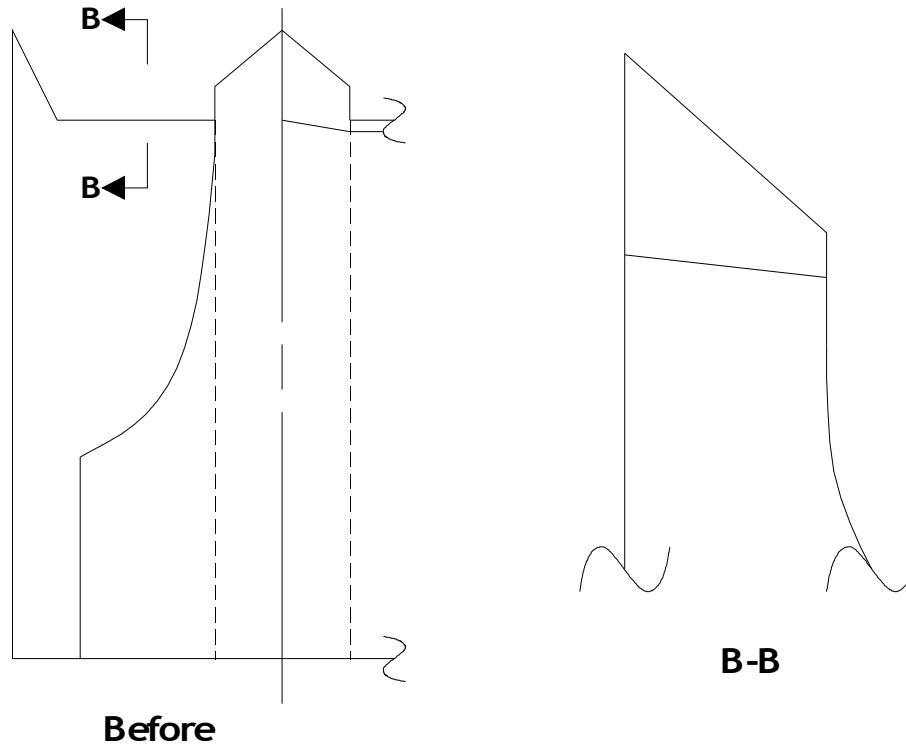


Regrinding the 0.625 spot-facing tool from Aircraft Spruce so it will cut aluminum. By Jeff Owen

Below is a view of one flute of the unmodified tool.



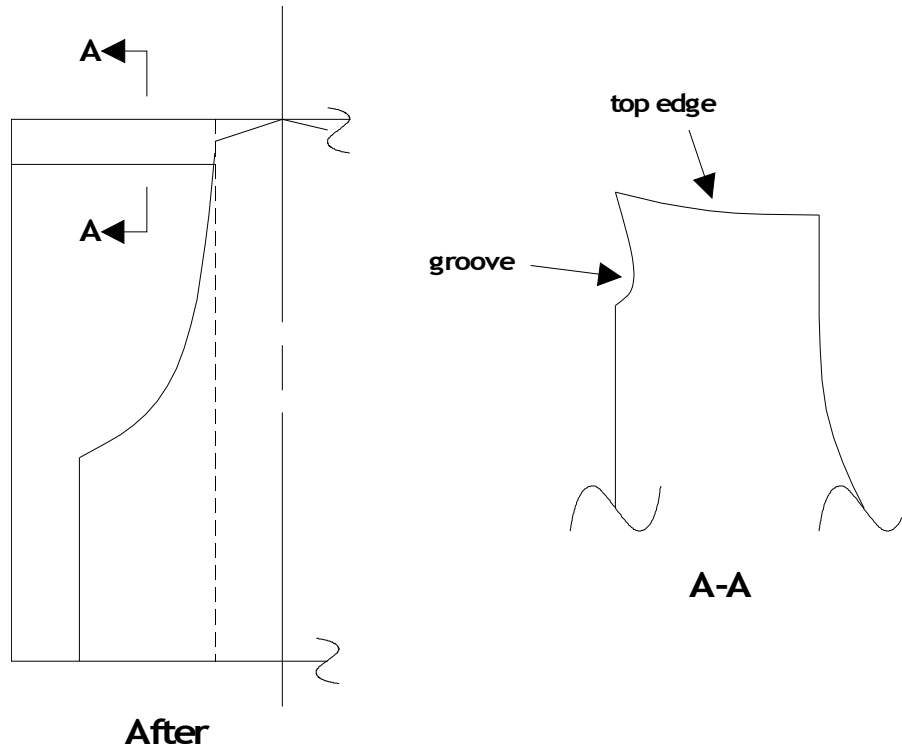
The tool as shipped seems to be made for cutting fiberglass or wood since it has a sharp point at the tip of each flute to prevent tearing or splintering of the fibers. This may be great for fiber materials but when this tool is used to cut aluminum the edges quickly dull and it will not cut at all. After fighting with this thing for hours (I'm embarrassed to say how many) I decided to regrind it to see if it could be made to cut.

The procedure for this is to get a Dremel Tool and use the very thin cut-off disk. You will need a vice or some other means to hold the spot-facing tool while you do the grinding. You will also want to have a hand rest of some sort also since this is a rather delicate procedure and a major slip will ruin the tool.

Start by removing the points at the end of each flute completely and lightly dress the entire top edge of the flute with the edge of the grinding disk. Go slowly and just remove the black oxide finish from the end of the flute so the length of the flute is not changed. This should leave about a 5 to 8 degree relief angle. Repeat for the remaining three flutes.

Now grind a shallow groove across the face of each flute. This groove only needs to be 10 to 15 thousandths of an inch deep and again, a shallow angle of 8 to 12 degrees works fine. Try to keep the groove straight and slowly work up to the cutting edge. Go slowly and try to stop at or just short of the cutting edge. This will keep all flutes the same length and allow them all to provide a cutting action. Don't worry if you miss a bit with the grinder the tool will still work many times better than before.

Below is a view of one flute of tool after regrinding.



This modification of the tool resulted in cutting the time to bore a hole from several hours to 10 minutes.

Below are before and after pictures of the tool:

