

Your drill press must be capable of drilling into the center (if that's where you intend the waveguide to be) of the baffle.

The template to the right fits a 165mm (6.5 inch) section of 1.5 X 1.5 X 1/8 inch angle iron. Cut and use the entire rectangle. Fold lengthwise along the center line and apply to the metal with contact cement. Or use peel and stick label paper in your printer if you have it.

Center punch the 1/2 inch hole and drill 1/8 inch pilot hole to better center subsequent drilling with a 1/2 inch bit. Scribe the remaining cutout lines firmly with the tip of a razor knife to leave a good mark on the metal. You may leave the label on to make the cuts but the scribe line will come in handy if the label comes loose and for truing and honing the cutting edges later. Drill the half moon cutout with a 1/2 inch bit and follow up with the saber saw. Saber Saw the rest of the cuts to within a couple of millimeters of the guidelines. The top blue section is removed as well to better balance the bit.

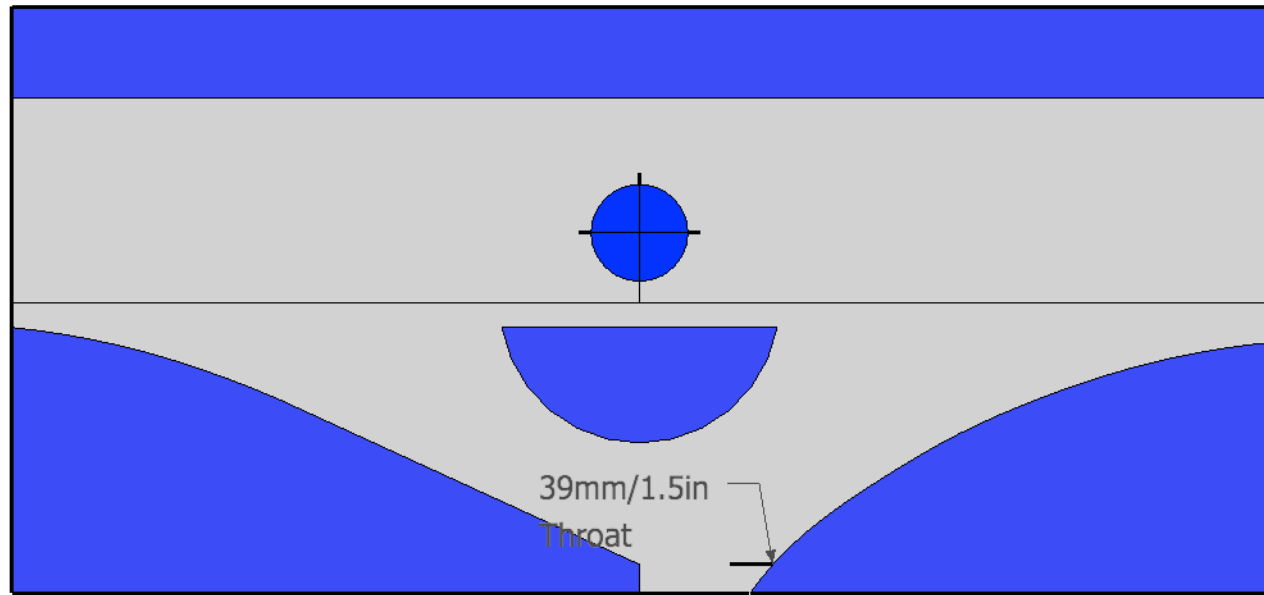
Use a bench grinder or, better, a half round bastard file to get the cutting edges true to the scribed line. This the only really critical part of the job. Bevel edges B and C no more than a couple of degrees. They'll wear better and be easier to hone. Don't worry about beveling edge A. Hone cutting edges with the small sanding drum of a Dremel. You can also hone them using the sharp straight edge of one of your carbide router bits.

Guide is a 5 inch length of a common 1/2 inch bolt. 2.5in/65mm minimum of thread is required. I had to go to a hardware store for an Allen head machine bolt since the regular bolts at Home Depot did not have sufficient length of thread. Cut head off so that 2.25in/55mm of unthreaded section remains. Plain threaded rod will work in a pinch, but threads at the guide end won't stay as steady in the wood.

Assemble with two 1/2 inch hex nuts and heavy washers. Very tight! If they come loose while in use there is no danger. The bit will simply stop and the guide bolt will spin. It's unlikely to come loose if nicely tightened.

****Level table. Use a square measure against a rod in the chuck****

Drill a 1/2 inch pilot hole in the project. Chuck the bit and insert the guide part way into the pilot hole. Clamp the work. Speed should be 750 RPM +/- 100. This bit is less rigid than is ideal so there's a technique in using it to prevent chattering on the wood. Apply pressure in pulses of no more than a few seconds and steadily maintain this action until the recess is finished. This produces a very accurate cut. Continue until you just begin to see a sharp line created at the circumference of your work created by the outer edge of the bit. That's about five minutes of patient cutting. That score line will sand right out. Lightly rehone the cutting edges following each completed WG recess.



If things line up correctly the inside of edge A will rest against the bolt. If there is a tiny gap, loosen the nuts and clamp the bit in a vise with edge B facing upward. Gently adjust (bend) the cutting "wing" a in the direction of the bolt using a hammer or a large vise-grips. Retighten the nuts and check again.

