SMT Aluminium extension for the BT3000 See also V1.1 for a useful modification By Rod Kirby

This is a follow on from my Miter slot fence (see previous posts). At the time I set up the slot, I made a new miter fence to use with the slot. The new fence is the same height as the one I attached to the original Ryobi fence and uses the same "T" track. This means that I could use all the sliding jigs I already had, for the new fence. I wanted to have something I could attach to the SMT that would let me use the new fence (and maybe others). Looking at Jim Frye's pics (on Sam's site), I figured that this was the way to go – with thanks to Jim, this is the result. I trust the photos let you see how easy it is to make.

It adds an additional 5-1/2 to the gap between the saw and the fence, but (for me) the big advantage is that the fence is removable, so it means that making other (special purpose) fences, will be a breeze. I believe that Jigs/fences have to be "easy on - easy off" to be useful.

The miter fence is 24" long (the length of the "T" track), and gives me a cross cut length of 23" with my stop mounted. With my (existing) stop extension, this goes out to 39". See photos.

Materials:

1/4" Aluminum angle: Two pieces 9-13/16" (250mm) long, one 2-3/8" (60mm), one 1"; (25mm).

I bought this from a speciality Aluminum shop – cut to length, it cost about US\$5. WARNING: Take a small try square with you, the spec for this angle (in Australia) says "+ or – 2 degrees". The large size angle was out of square by about 1/8"! I took it back and was able to find a length that was "spot-on".

4 @ ³/₄ x #8 countersunk screws (to attach the Aluminum angles to the MDF)

2 @ $\frac{1}{4}$ -20 x $\frac{3}{4}$ set screws (adjusting – extend to clear the SMT locking tab (about 1/8") and then use to align) I like how these look, but ordinary bolts will do just as well.

2 @ 1/4" nuts (for locking)

2 @ 3/16" washers (they fit better than 1/4")

1 @ 5/16" x 1-1/2 Hex head bolt, with fender washer.

MDF – ½ thick (For me, no thicker, because I had to leave room for my miter fence mounting bolts).

Handle: See previous posts for how to make the handle.

Construction tip: Drill the countersunk holes, and screw both pieces of angle to the MDF. Then lay it on the SMT (centered L-R), and you can mark (in pencil), the location of the adjustment screws, location of cutouts to clear the SMT, and (from underneath), the location of the 5/16" mounting bolt.

On the subject of "Aluminum in the WW Shop", maybe the following notes will be useful for you...

Over the last 40 years of woodworking, I have carefully avoided working with "metal". It's dirty, totally unforgiving, and with few notable exceptions (this being one of them), I can usually find a way to 'do it with wood'. However, I find Aluminum fairly comfortable to work with – it's (relatively) clean, drills, sands and cuts (?) easily, and DOES NOT RUST. With a (very) little work, it even looks nice...

- 1. Expect to work slowly. Any kind of power tool will generate heat slow it down. Faster is not better.
- 2. Initial preparation: Wherever you can, get it cut to length at the store I find using a hacksaw very tedious, and although I'm told my table saw will cut it, I'm not about to try it with my Woodworker II blade! You can however, use your disk sander very effectively (see photo). Just be patient, very tiny touches, the Aluminum heats very quickly. I use 320 grit for very smooth ends.
- 3. Drilling: ALWAYS center punch even if you plan to use a drill press. No matter what the finished size of the hole, I always start with a 1/8" bit and then get progressively larger. I prefer to use a cordless drill at about 600rpm you have to push a little to get the bit to "bite", but if you go for "high" speed, the bit just spins instead of cutting. Stop frequently to clear the chips. Keep a separate set of drill bits for using on Aluminum even "high speed" drill bits get the edge taken off them.
- 4. Always countersink slightly after drilling it adds a nice finish. If you plan to "tap" a hole (2 for this project); before you "tap", countersink about 1/16" deep. This makes starting the "tap" much easier. Use an

engineering countersink (see photo). In fact, it's the only kind of countersink I use with wood. They're easier to keep centered, and they cut like a chisel – no chattering.

- 5. Cleanup as you go. Drill chips can do nasty things to the surface of your wood. If possible place a trash can under where you are drilling saves the cleanup!
- 6. If you are joining Aluminum to wood, always drill the Aluminum first. The hole provides an ideal guide for marking the wood the old trick of REVERSE drilling, using the bit you used for the hole gives a perfectly centered "dimple" in the wood.
- 7. Final preparation: I use 320 grit sandpaper, followed by "OOO" steel wool, and finally a coat of metal polish. See photos for the results.
- 8. Wash your hands! Fine Aluminum dust leaves dirty marks on wood that is very difficult to remove.

Question, comments?

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