# Rod Kirby's Miter Slot (Fence)
# For the Ryobi BT3000

Hey Guys, this is not a difficult thing to make – but it takes a lot of words to describe how to do it. Use the photos with all this text, and I'm sure you'll find it very straight forward.

If some of the sizes look "funny", it's because here in Australia we work in millimetres and I have converted for you. I really feel sorry for you – it's soooooo much easier than using inches.

You know the drill, folks – read ALL of these instructions first.

Approach: I wanted something which I could adjust precisely, lock securely, and be easy to attach and take off. The adjustments took the most "think" time, but ended up being quite simple.

**Hardware:**

| Qty | Item | | Purpose |
|---|---|---|---|
| 2 | 6" long x 2-3/8" x 1/8" | Aluminum angle | Brackets |
| 4 | ¾x No. 8 | self tapper screws | Attach brackets to fence |
| 6 | 1" x No. 8 | Countersunk screws | Alignment screws |
| 1 | 5/16" Knob + flat "nut" | From Ryobi User kit | Attach bracket to back of Front rail |
| 3 | 5/16" mudguard washers | | Spacers for front knob |
| 2 | ¼" x ½ square head bolts | From Ryobi User kit | Attach bracket to back of Rear rail |
| 2 | ¼" knobs & washers | | Hold the rear bracket |
| 1 | 31-¼" TrueFit miter track | | From woodhaven.com |

Material: I used a piece of 1-¼" MDF, laminated on one side, because this is how it came from the "counter top" store – as an offcut. I don't like using anything that is only laminated on one side, but the (very) slight bow was pulled out (and kept straight) by the miter track. Whatever you pick, make sure it will stay flat.

Overall dimensions:
Length 37-¼": I wanted the front to extend out as far as the SMT base. This length gives me 15-½ from the miter fence to the saw blade. The overhang at the back was determined by the width of the bracket.

Width 7-7/8" : I wanted it wide enough to allow for a "T" attachment to the rails – two bolts at the back, and one at the front. This is 200mm for me and sort of looked right. Maybe it doesn't need to be this wide?

Thickness 1- ¼" - because this is the size I got from the "counter top" people! The table height above the rails (on my saw) is almost 1-5/32". I wanted the thickness to be slightly less, so I could use adjusting screws to position precisely. Because of this, you will notice that I had to cut a slight dado above each rail - if you go for around an inch thick, you wont need to do this.

Slot location: I centered mine – put it where you want it.

Adjustments:
Height: Two screws above each rail.
Saw alignment (swing): A screw at each end, on the left hand side of the fence.

**Procedure:**

1. Cut the fence to your dimensions and rout the miter bar/track slot. Cut/ round the corners. Mount the miter track if you use one.

2. Cut the angle brackets, round the corners, and mark/drill the holes for the mounting screws. The bolt holes come later.

3. Lay the fence on the rails, hard up against the right hand side of the saw table. Decide on the location (front & rear) and clamp the fence to the rails. On the underside, carefully mark where the brackets will

go – run a pencil along the rail. At the same time, on the side of the fence, mark where you want the height adjusting screws to go – centered above the rails.

4. Remove the fence and align the brackets with the marks you have made, and carefully mark/drill the screw holes. Then enlarge the screw holes in the brackets by 2 sizes – this should give you enough "play" for adjustment. Drill the holes for the height adjusting screws.

5. Attach the brackets (not too tightly – they will be on and off a few times). Insert the height adjusting screws.

6. Lay the fence on the rails, and move the auxiliary table up against fence. Adjust the height screws so that you have alignment across the saw table + miter slot + auxiliary fence. Don't worry if you can't get everything "perfect" – I know the tables aren't exactly level with each other. In my experience, they are not "off" enough to pose a practical problem.

7. Remove the auxiliary table and (lightly) clamp the miter fence to the rails. Now for the only tricky part: Mark the (horizontal) location of the 5/16" bolt on the front bracket. Then mark the (horizontal) location for the two ¼" bolts on the rear bracket. I used a small try square against the rails to help.

8. Remove the brackets and drill the bolt holes. Because the fence is "dropped" onto the rails, you need to cut slots in the rear bracket, to slide over the bolts. This is not a problem with the front bracket, because the flat "nut" slides behind the bracket.

9. Re-attach the brackets, and test-fit the bolts. If you "missed" the alignment, enlarge/file the holes until they fit OK. Nothing should "jam" – in fact, you should have a little "slop", to allow for final alignment.

10. Remove the fence and drill the countersunk holes for the two "swing" alignment screws, on the left hand edge of the fence. I put them 1" in, from each end of the saw table. Insert the screws.

11. Alignment with the saw: At this point, your brackets should be "loose", and the bolts holding the brackets lightly attached. Adjusting the two screws on the edge (and then pressing the fence against the saw table), align the slot with the saw. See the photo for how I did this.

12. Once you're happy with the alignment, insert the auxiliary table, slide it up against the fence and lock it. Tighten the 3 knobs, making sure that the brackets snug up against the rails. (If they don't, you will have to enlarge the mounting holes in the brackets). Then, from underneath, tighten the 4 screws holding the brackets to the fence. Re-check alignment and run some test cuts to confirm.

Notes: Over the last 7 years, I've come up with a setup for the BT3K which suits me 99.9% of the time: SMT on the left, rails as far to the right as possible. For this reason, I did not make any allowance for mounting the miter slot on the left of the saw. Mounting it on the right allows (relatively) easy access to the knobs. I also don't believe it needs to move along the rails ("normal" slots aren't movable!). Although it's early days, because all the action is fore & aft, I don't think it will need constant adjustment.

If you need any help, please contact me…

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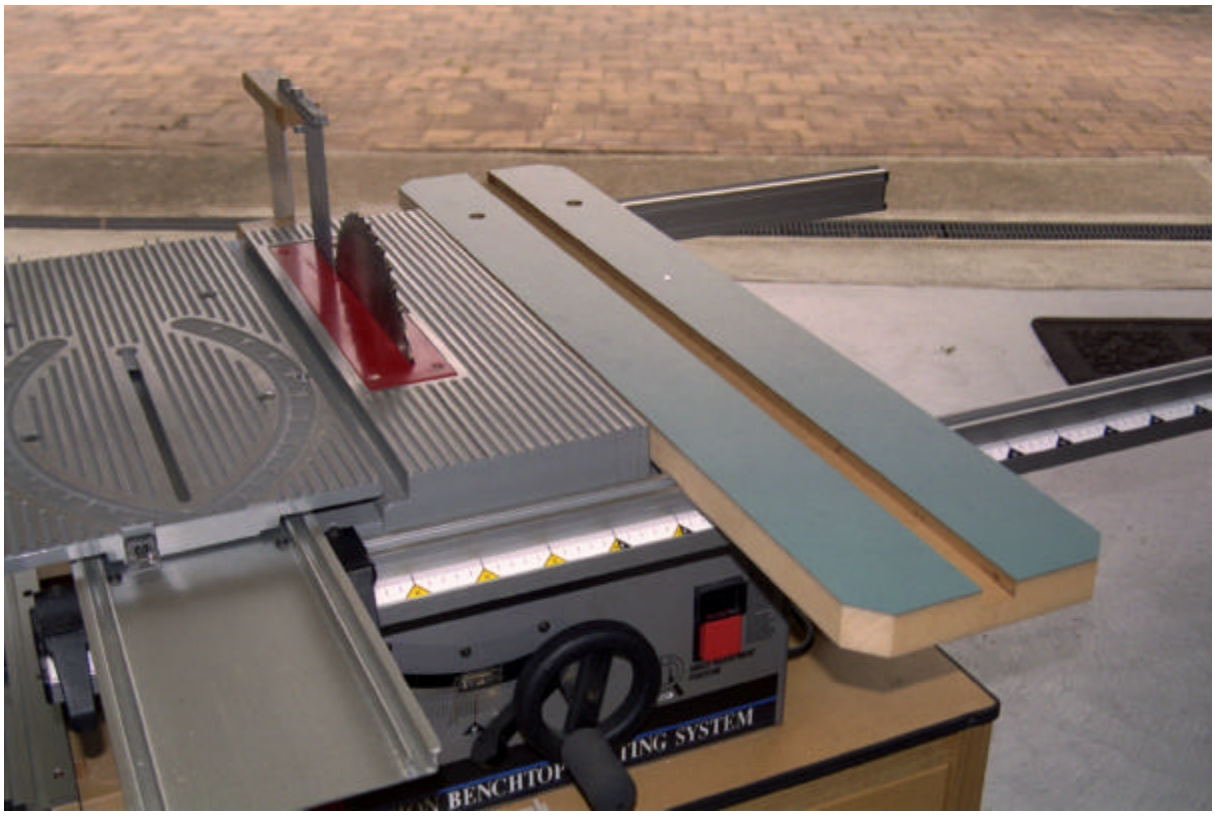
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