

# **CMT**

## **ORANGE TOOLS®**



### **CMT Locking Miter Bit**

**How to accurately set this bit up**

**C.M.T. UTENSILI S.p.A.**

Via della meccanica

61122 Pesaro - Fraz. chiusa di Ginestreto- Italy

Tel. #39 0721 48571

Fax. #39 0721 481021

e-mail [info@cmtutensili.com](mailto:info@cmtutensili.com)

[www.cmtutensili.com](http://www.cmtutensili.com)

I have written about the Locking Miter Bit on several different occasions. Early on, I developed a way to set bit height that would give absolute perfect joints.

What I never did, was to figure out a way to set fence depth. Fact of the matter is, I was lucky to have set the fence “more or less” right. But “more-or-less” really doesn’t cut it when you want absolutely right angle corners.

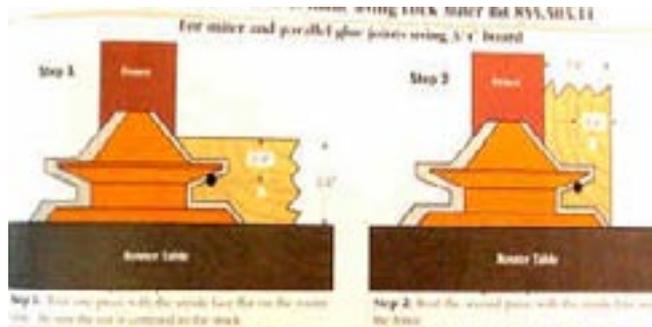
So I have now figured out how to set both bit height and fence depth in a few minutes with perfect corners. This setup procedure takes 5 minutes—time well spent.



First, be sure to have a locking miter bit that can handle the stock thickness you want to join. In my case I am using CMT bits and the “baby locking miter” bit handles wood from 3/8” to 3/4”. The regular size locking miter bit is for thicknesses of 5/8” to 1 1/8”.



Let me start at the beginning. The instructions say that one side is routed flat on the table and the other is held vertical against the fence. Here is the illustration from the CMT catalog.



Since one member would be routed vertically against the fence, I decided the standard fence either needed a taller front piece or a new fence was in order. I opted for the latter. It seems to me that if this joint is a serious option, I would like to have a fence dedicated to this use.



If you try to make perfect adjustments to bit height and fence depth right from the start, it can be confusing. What I do now as standard practice is work on router bit height first, and when that is perfect, I adjust the fence depth.

So, the first thing is to have 2 boards that are the same exact thickness as the final piece. What I do, is use the final boards but do not trim them to the final length. I mark one "A" and the other "B".



A couple of weeks ago, I made this jig with an adjustable holder. It locks the board in between two other straight pieces and allows for a very smooth and safe pass over the router.

I make a first cut with the "A" piece facing up and a second cut with the "B" piece facing down.



With both pieces cut, I mate them end-to-end. If the router height is exact, the seam between the two will be smooth. If "B" is low, raise the bit.



The first attempt is rarely right on, so I cut the first attempts off both boards, adjust the router bit height and re-do the test.

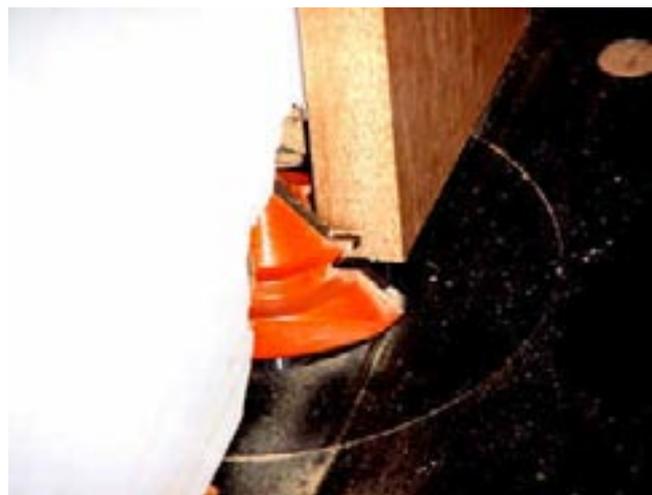
I won't bore you with showing each of the repeats, but I will tell you that 2-3 times is about par for me. It takes less than 1" of stock and another minute to run each test—so I continue until the "A" and "B" pieces are exactly in line.



Now for the setting of the fence. At the very beginning, I set the fence so that the stock is even with the front of the bit.



Here is what I am looking at. It is almost impossible to set the board to exactly where it should be...nor do you need to. Lock the fence to where you think the bit will cut the stock, and then use the "A" - "B" method to make the adjustments.



This time I will run the pieces vertically over the cutter. The "A" side will be cut towards me and the "B" side will be towards the fence.

By the way, I finally figured out that I could cut both pieces in one pass—next to each other...just remember the A and B orientations.



As before, you mate the pieces. This time the "B" side is quite a bit high, so I want to bring the fence towards me about one-half the distance.

I trim the ends and repeat the test until the fence is absolutely right. Again, it took me three times to get it perfect.



The resulting corner is as tight a 90o joint that you could ever want. What's more, you can make this joint on any thickness stock – within the range capability of your locking miter bit, of course.

Some bit manufacturers include “setup blocks” to go with their bits. That's is a great idea, but only if you have that exact same thickness to cut. With this method, you can have exact setup of router bit height and fence depth in minutes for the thickness of your stock.



For this set up, I made three test cuts for the router bit height and another three for setting the fence. This photo shows how much stock I used to make these cuts (5” total). Not a bad price to pay for a perfect joint.

I find that now that I know of this locking miter joint, I look to cabinet construction quite differently. It is a nice joint to add to the list of joints that are available to me.

