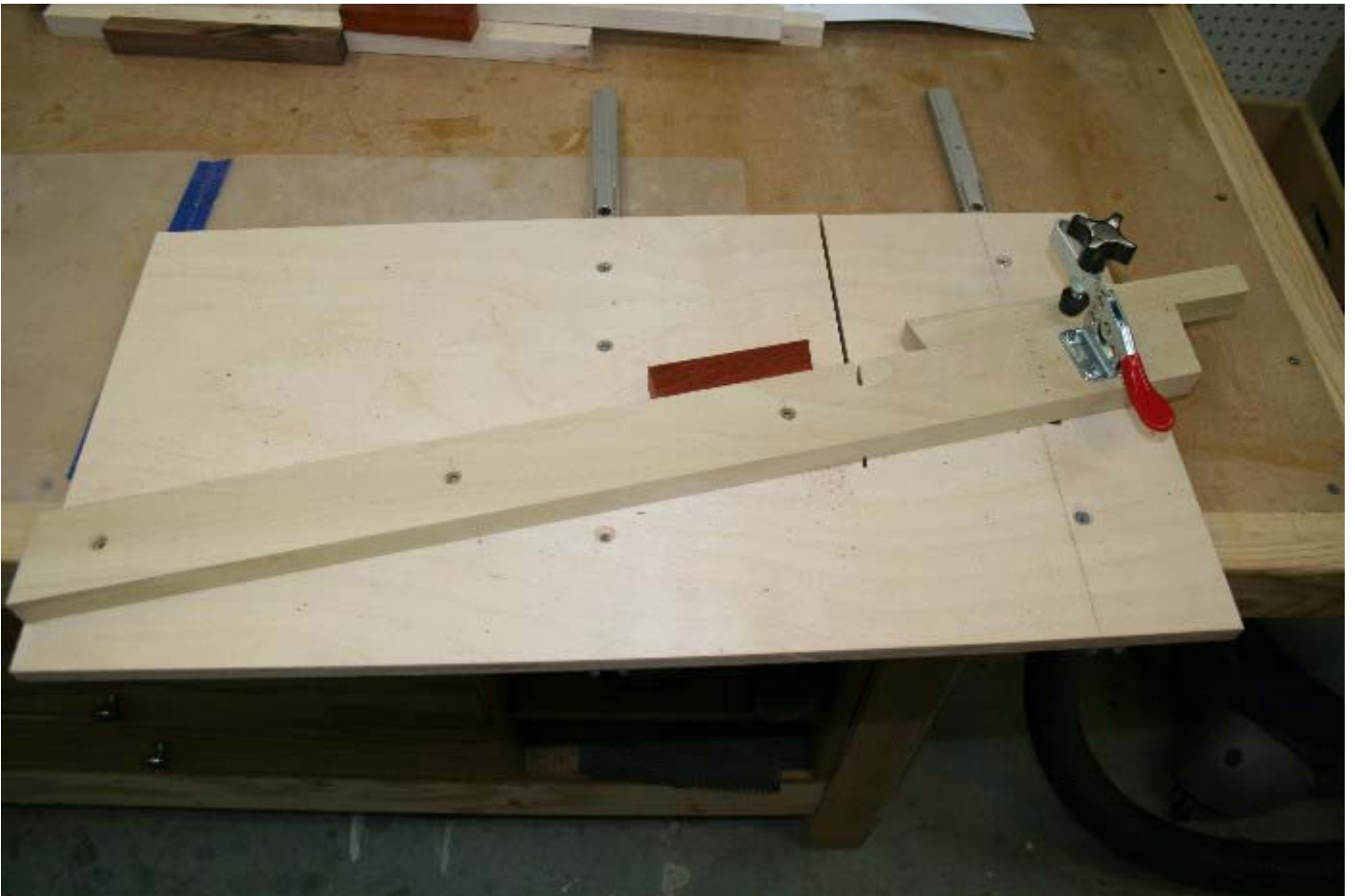


# 16 Segment Miter Sled

David Hamann



I do a lot of segment work using 16 segments per ring. I decided to build a sled just for 16 segments using what I had in the shop. Below is a list of what I used and sizes.

Part	Material	Qty	Thickness	Width	Length
Base	Baltic Birch Plywood	1	1/2"	12"	24"
Runners	Hardwood	2	3/8"	3/4"	14"
Fence	Hardwood	1	3/4"	2"	25"
Screws	#8 x 1 1/4"	4			
Screws	#6 x 3/4"	8			

1. I cut the base to size, making sure that it was square and the edges were parallel to each other.
2. Since I had miter slot runners already purchased from McFeely's, I used them. You could use hardwood or UHMW plastic for the runners, just cut to fit the size of your miter slots.
3. Place a runner in the right miter slot, 2" past the top of the table saw (figure 1).

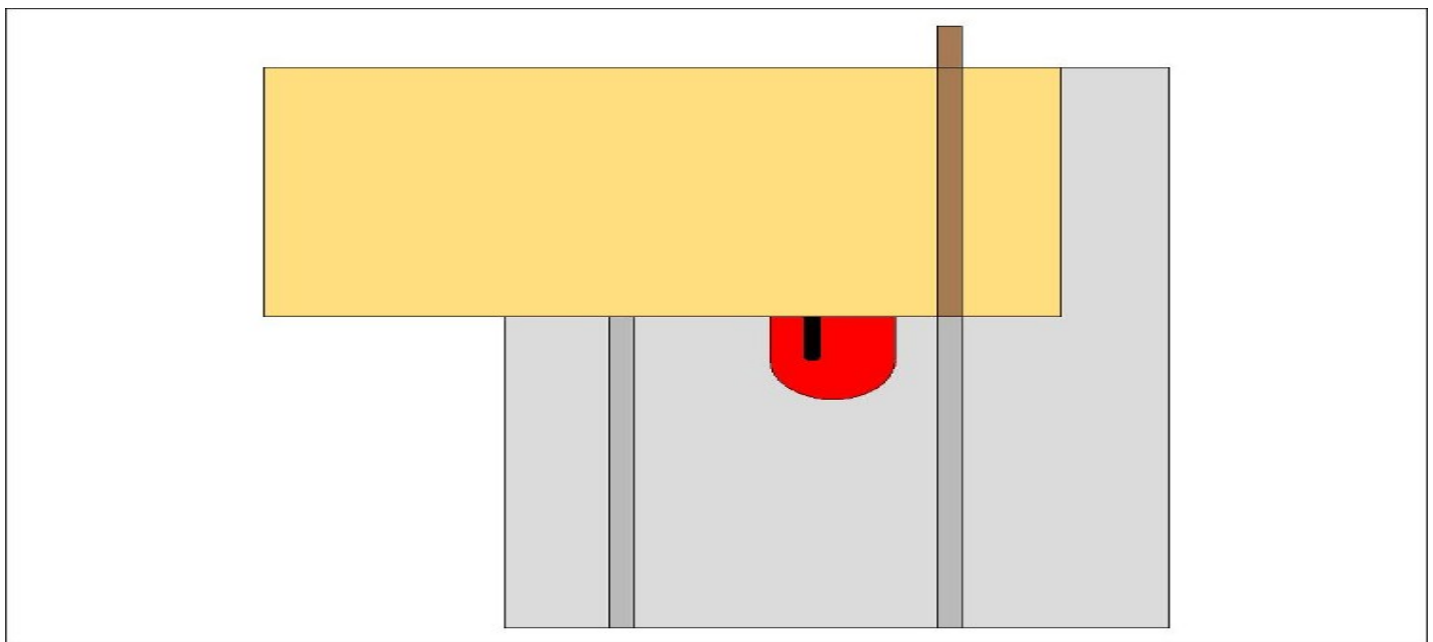


Figure 1 Sled base and right runner.

4. Place the base on the table saw, flush with the top edge of the table saw. I placed it such that the right edge was 3" from the right miter slot.
5. Fasten in place with #6x3/4" screws from the top of the sled base. I used 2 screw's from the top and 2 screws from the bottom through the runner.
6. Place the other runner in the left miter slot, 2" past the top of the table saw.
7. Place the sled base on the table saw, flush with the top edge of the table saw and with the right runner in the right miter slot.
8. Fasten the left runner in place as you did before with the right runner (figure 2).

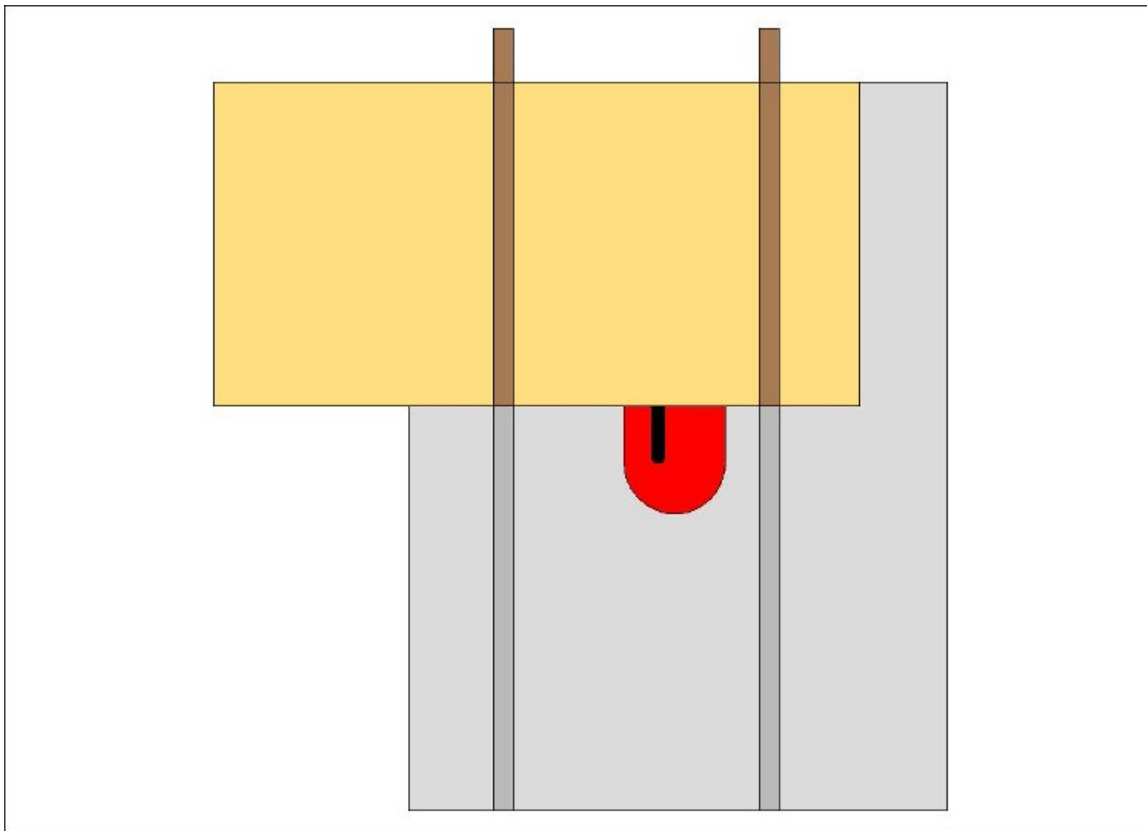


Figure 2 Right runner in place.

9. Time to put on the fence. Cut fence to rough length and 2" wide. Now, cut a 1/8"x1/8" relief along the front face of the fence at the bottom edge. This is for any sawdust or chips that might accumulate between the fence and the project wood. This is a good time to pre-drill the holes for the wood screws that will attach the fence to the sled base.

10. Measure up 1" from the bottom left corner of the sled base and place the fence such that the back face is on the mark and over hangs the left side by about 1/8" (figure 3).

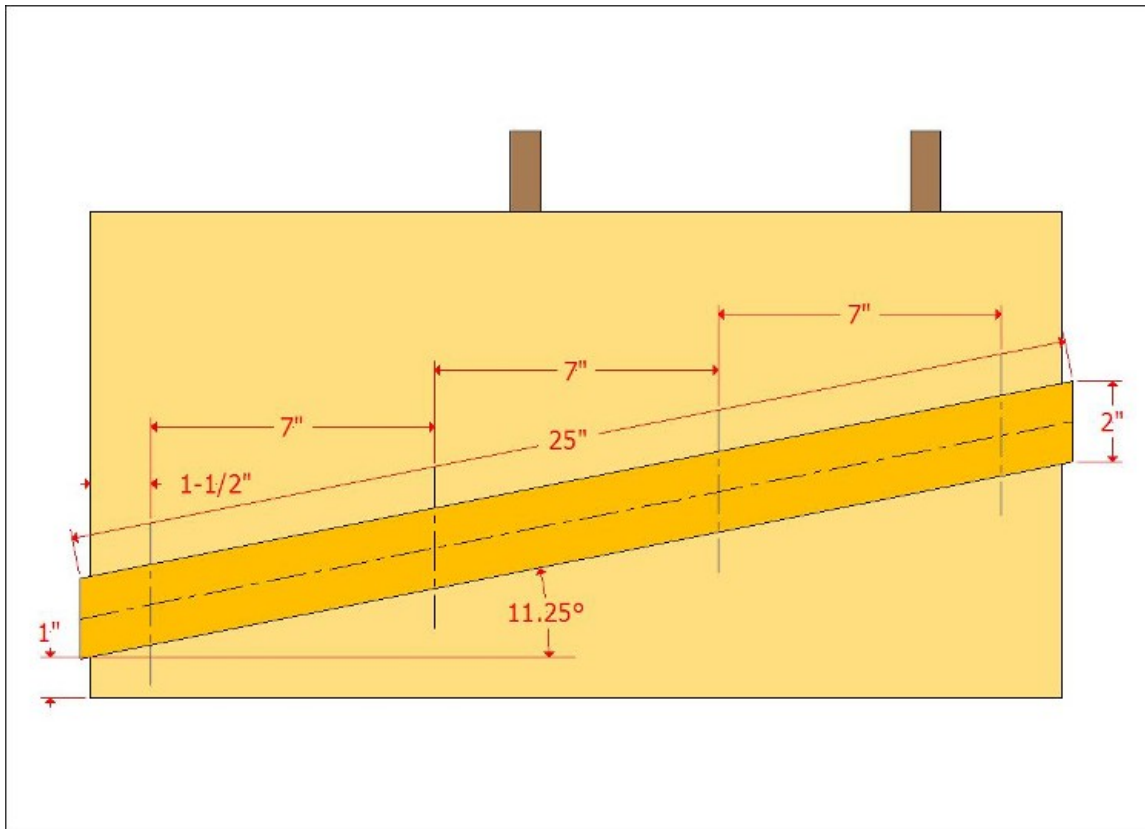


Figure 3 Fence position and screw hole layout.

11. Fasten in place with 1 #8 screw in the 1<sup>st</sup> screw hole.
12. Now comes the fun part, adjusting the fence so it is accurate.
13. If you have a Wixley digital angle gauge or a protractor, great. If not, that is ok too. Just measure down 2-3/16" from the right top corner and place the front edge of the fence on the mark. Skip to #16.
14. if you have a Wixley, place the sled base in a vise so that the top edge is up. Place the Wixley on the edge and zero it out. Now place the Wixley on the front face of the fence and adjust the fence until the Wixley reads 11.2°. Skip to #16.
15. If you are using a protractor, position the fence so that it is at an angle of 11.25° per figure 3.
16. Fasten the top right of the fence to the base with a nail. This is just temporary.

17. To "dial in" the fence, cut 8 segments of equal length. Tape or glue the segments together to make a half ring. Rest the ring on the top of the table saw (figure 4).

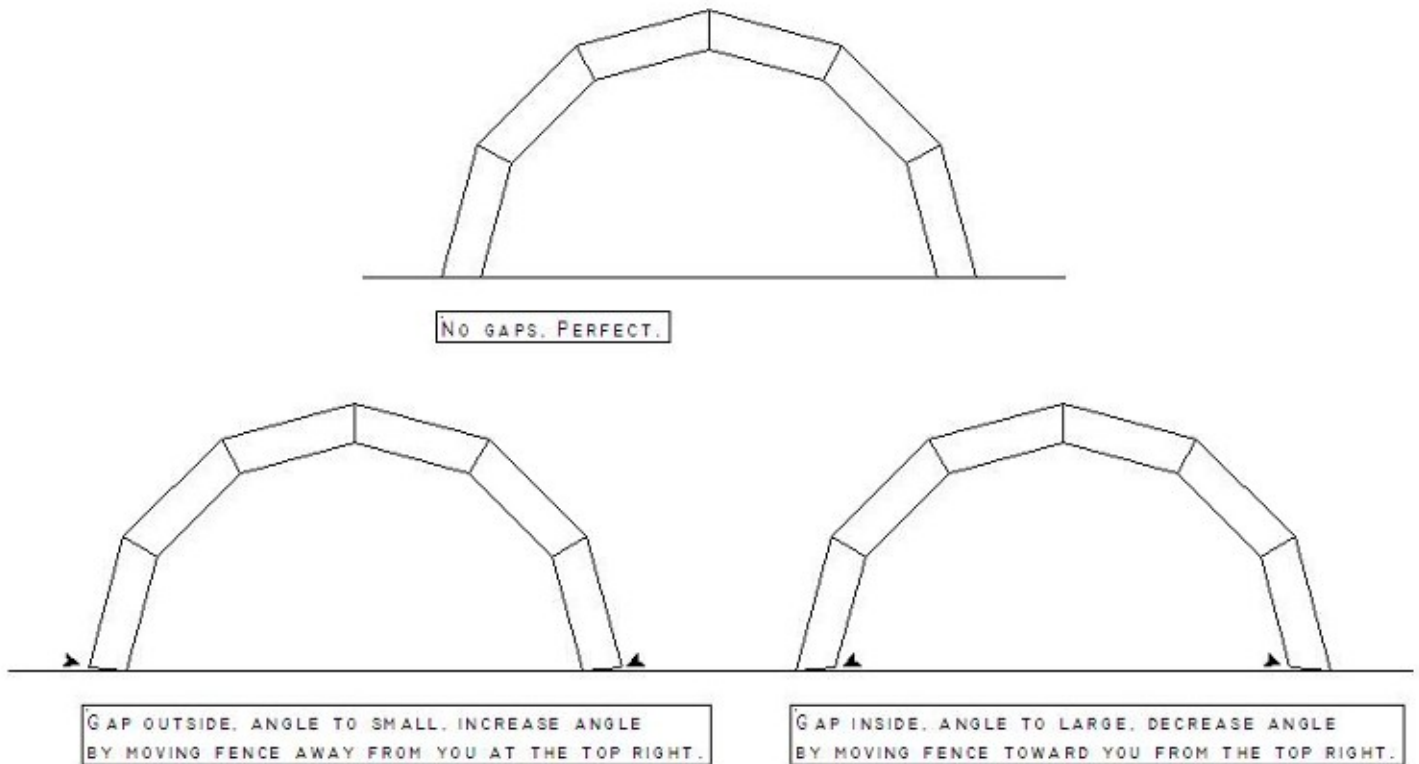


Figure 4 Error correction.

18. If there are gaps on the outside of the ring, remove the nail and push the top right of the fence away from you  $1/16''$ . Fasten it back in place with the nail in a new location and retest from #17.
19. If there are gaps on the inside on the ring, remove the nail and pull the top right of the fence toward you about  $1/16''$ . Fasten it back in place with the nail in a new location and retest from #17.
20. If there are no gaps, fasten the fence in place with the remaining 3 #8 screws. You can remove the nail after the screws are in place.
21. You are done.

Note: You may have noticed that I have a clamp on the fence to hold a stop block. If you put a clamp on like I did, make sure that the screws holding it in place go through the fence into the sled base, otherwise, the fence can be lifted up from the sled base by the clamp.