

"A jig is a type of custom-made tool used to control the location and/or motion of parts or other tools."

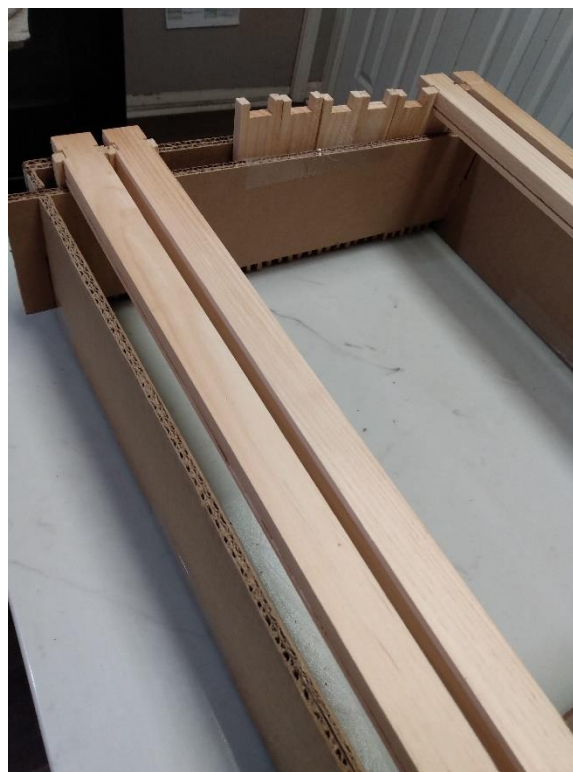
— Wikipedia

If you are like me, when you put your bees to bed for the winter last fall, you said something like, "Now that tasks in the bee yard are on hold for a while, I finally have time to get in my workshop and make all of that new woodenware that I'll need next spring, without having to rush." And if you are like me, you now are saying, "Hey! Bee Spring starts next month! I haven't done anything yet! Now is the time to rush!"

Or maybe you are a brand-new beekeeper-to-be, sans bees at the moment but eagerly awaiting your first sting. You've got a pile of woodenware to assemble but don't really know which end is up for a frame end bar.

You came to the right place. I'm going to show you how to make a handy-dandy frame assembly jig that will potentially shave hours off of one of our most tedious tasks. I haven't done any academic-quality time/motion studies to confirm this, but I conservatively estimate that use of an assembly jig similar to this one will cut the time it takes to put together 20 frames by 90%. That's the time it takes to glue and staple the top, bottom and end bars, not the entire task which includes installation of foundation. Note that the time savings for the complete process can be reduced by 100% by purchasing preassembled frames, but your wallet will be lighter and you won't have the satisfaction of having dried glue all over your hands and hammer-smashed fingers.

"Wait," I hear you say, "such a valuable widget must be incredibly expensive!" No so! Realizing that a universal trait of the vast majority of beekeepers is that they are cheapskates, my frame assembly jig is completely free, made from some of those discarded boxes from Amazon that are still laying around from Christmas. This makes it "green" (reduce/reuse/recycle!) as well as "saving green"!



A frame assembly jig holds end bars firmly in place so that top and bottom bars can be attached with glue and nails. It tremendously speeds up the tedious process of assembling frames. This one is not yet fully loaded.

All that are needed are some large, unwanted boxes, a sharp cutting instrument (a box cutter is terrific but good scissors will work), some appropriate packing tape (duct tape doesn't hold all that well on cardboard) and some sort of cutting-board-type underlayment so you don't destroy the dining room table.

We are making a box that is roughly the size of a super. End bars are inserted into two slots, one on either side. The slots hold the end bars upright. Glue is applied to the notches in the end bars that hold the top-bars. Top bars are inserted and then nailed in place. Don't forget the horizontal nail under the ear of the top bar! The whole apparatus is flipped over and the bottom bars are glued and nailed. You'll use ten nails per frame; they will hold everything together while your high-quality glue dries!

The jig holds the frames in place during assembly. Construction is particularly fast if you are using a pneumatic nailer.



A box cutter and a straight-edge make construction simple.

Use a frame as a reference to verify the necessary measurements as you go along. You want to end up with a good fit but it doesn't have to be snug.

The height of the jig logically depends on the height of the frames you are assembling (deeps, mediums or shallows). However, a jig made to accommodate shallow frames will work just fine for deep frames as well. Jig sides 4-1/2 inches tall are perfect for shallows.

The outside measurement of end-bar to end-bar on a frame (the length of a bottom bar) is 17-3/4 inches, so that must be the internal length of the box. I folded my cardboard in half to double it up, giving me 3/8th inch "boards". Therefore the length of the long sides must be 18-1/2 inches (17-3/4 inches plus 2 times 3/8th inch).

The width of the jig is totally up to you. A wider jig will hold more frames but may become unwieldy. Eight or ten frame capacity is a logical choice, depending on the capacity of your boxes. At my house, ten frames jammed side-by-side are 13-3/4 inches wide. Include at least 1/4 inch of slack, so make the interior



It is a good idea to use a frame to ensure that the dimensions are correct.

width equal to at least 14 inches (14-3/4 inches wide measured from the outside).

We'll need two slats to hold the end bars in place. These must be a couple or so inches longer than the width of the jig (one inch overhang on each side). Our sides are 14-3/4 inches so make the movable slats 16-3/4 inches long and 4 inches wide.

Cut two 3/8 inch wide slots 2 inches deep in each of the two "boards" that make up the long sides, spaced 16-3/4 inches apart from the outside to the outside. The distance between the outside of the slot and the end wall should be the width of a frame end bar.

Cut two 3/8 inch wide slots 2 inches deep in each of the movable slats. Space these so that they align with the 2-inch slots you just cut into the long boards. Leave an inch overlap on each end.

Tape the ends of the two long boards to the ends of the two short boards, with the slots you cut earlier facing in the same direction. Now we have a box, probably a little flimsy but that's okay. The slots should be facing up. Slide the two movable slats completely into their corresponding slots, creating a nice interlock.

Your jig is now complete and ready to use! Load end bars into the space created between the movable slats and the wall (mine holds ten on each side). Make sure the top bar end is pointed up. Then follow the steps I've already outlined above. Once the bottom bars are secured, with the top bars still facing down, pull

the box up off the frames while pushing down on the moveable slats. The box will come free, leaving the slats between the central space of the frames, where they can then be easily pulled out.

You can of course make one of these with wood so that it is sturdier and lasts longer. But the cardboard version works fine for the casual beekeeper with only a couple of hives, and it satisfies my tightwad tendencies.

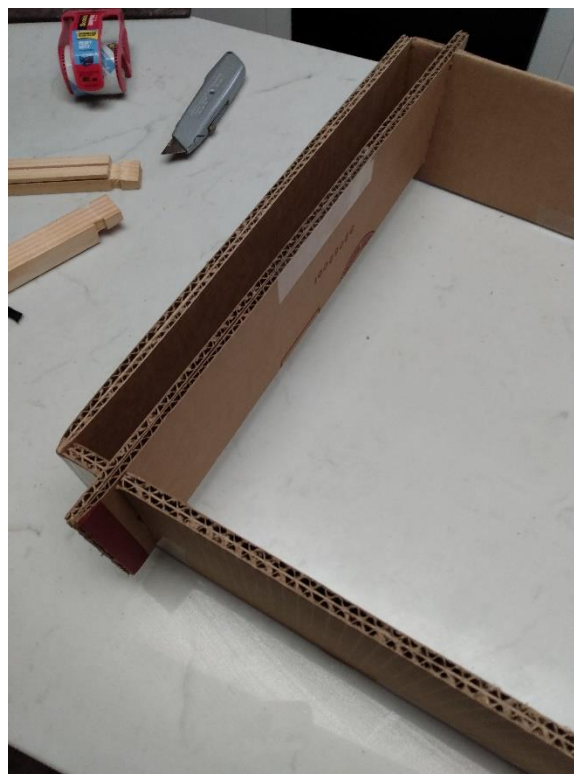
I realize this reads like a guide to creating a split ("Move box A from position X to position Y, then box B from position X to position Z, before returning it to position X after renaming it box C"... or something like that). A concise summary that may be helpful is:

1. Use cardboard that is 3/8th inch thick (or 3/16th inch folded in half) OR adjust your measurements accordingly
2. 2 long sides: 18-1/2 inches by 4-1/2 inches
3. 2 short sides: 14-3/4 inches by 4-1/2 inches
4. 2 moveable slats: 16-3/4 inches by 4 inches
5. Cut 2-inch slots into the long side, centered 16-3/4 inches from the outside to the outside, and cut two more in the corresponding position on the moveable slats
6. Tape the corners of the long and short sides to make a box

Look at the pictures, especially the end result, and that should help. Then try it. Measure twice, cut once. Use unassembled frame parts as a guide, and if I've messed up on a measurement, fix it yourself.

If you've never used a frame assembly jig before, I will pretty much guarantee that you'll never put one (or a hundred) frames together "by hand" again!

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Two moveable slats, one on each end, hold the end bars in place. The slats should slide somewhat freely in the interlocking 2-inch slots.