

The Jig Is Up . . .

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A Couple Hours Up Front Pays In The Long Run

A large part of the fun of beekeeping is the construction and assembly of the equipment. Since it is a hobby, I decided when I started that I would build the equipment if I could.

Well, that was a fantastic idea except that execution is not always in line with reality.

Subsequently a friend and I bought out another hobbyist and split the equipment. Again this was great until I found out that I was short of medium supers. After searching the internet and measuring the current supers I drew up the plans and made my first medium super.

The box was a **Disaster**.

I'm glad I decided to only build one on a trial basis.

The box was:

Not square – Despite all my good intentions

Dimensions – Although good, caused some problems on assembly.

Therefore subsequent boxes were not going to be compatible or interchangeable.

That brings us to the substance of the following article.

A finish carpenter I once knew related that you had to build a “Story Stick” if you wanted to repeat operations with exactness. Hence the **Super Jig** came into existence. Subsequently a jig for frames, the cutting of grab holes and the positioning of screw holes were created.

In making a jig a few concepts are important.

- 1) All fixed positioning alignment plates must be in an exact position (i.e. Square)
- 2) They must not move – ever-ever-ever
- 3) It must be easy to insert pieces and get then into position

With the following **Super Jig**, I am able to assemble large, medium or small supers in about ten minutes. Additionally I know they will be compatible with the rest of my equipment.

The **Super Jig** can be used to assemble:

1. Large, medium and small supers
2. Nuc boxes
3. Screened bottom boards

Part List

1. Drywall screws or wood screws 1¼ inch
2. Carpenters glue
3. 1¼ inch Brads for a nail gun

Tool List

These are the tools I used. They are here for a reference. I'm sure that the jig can be created without everything listed.

1. Framing square
2. ¾ inch or 1 inch wood drill bit.
3. Electric hand drill (reversible helps)
4. Brad gun

Assembly

These directions assume you are using a standard ¾ inch thick board for your supers and are building supers to the standard Langsworth dimensions.

Step #1 – Base Plate Assembly

Base Plate – This 22"x19" piece of ¾" plywood should be cut as square as possible. Exact squareness is not required but it allows you to visually double check for the correct placing of other parts.

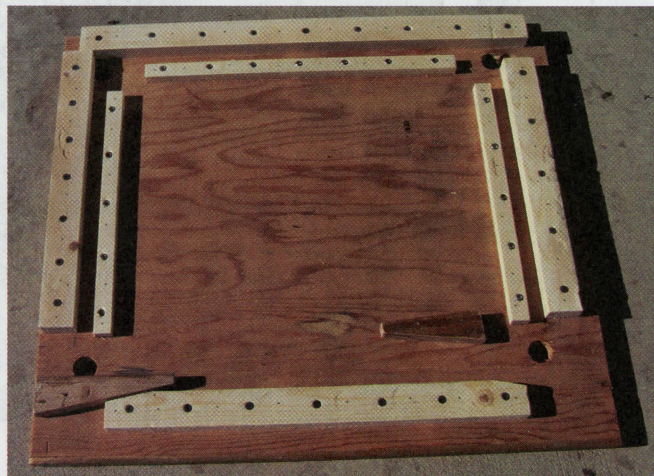
Use a framing square to draw two lines perpendicular to each other about 1¾ inches in from the edge of the base plate. This provides the starting point for all dimensions and the 90 degree reference for the rest of the jig. These lines will be two sides of the outside of the finished box

Using the square again mark the outside of the rest of the box. The box drawn should be **19-7/8** inches by **16¼** inches. Double check that the lines are square by measuring the diagonals. They should be the same. If they aren't, recheck the corners for 90 degrees.

Glue Relief Holes – With repeated use of the jig glue will build up at the corners of the base plate. These holes allow extra glue to drain out of the joints and not buildup on the jig. If they are not there you have to make sure extra glue does not build up on the corners and cause a skew to your box.

Mark the center of the holes by using a scrap piece of ¾ inch board to find the inner corners of the box. Then drill a 1 inch hole centered on the line and splitting the ¾ inch board dimension. (see drawing)

This jig has the capability of helping you to assemble Nucs since the only difference is the width of the box. To



The finished product.

help with this measure the width of the Nuc you want to build and use that measurement to position two more glue relief holes. An alternative to this is to align one of your Nucs on the outside lines and mark where the Nuc corners are. Be sure you use the first corner you drew as the alignment reference point. Drill these holes where the glue would run if you were assembling a Nuc. (see drawing)

Step #2 – Back and Side Positioning Plates

Back and Side Outside Positioning Plates – The back and side positioning plates (Parts B and C) are set along the outside of the first two lines you drew. It is extremely important that they are square with each other. Use carpenters glue and screws to insure the permanent placement of the parts. The two pieces may partially cover some of the glue relief hole.

Hint: I used small finish nails to keep the pieces in position while I screwed them in. This ensured that they were where I wanted them.

Back and Side Inside Positioning Plates – The back and side inside positioning plates (Parts G,H and I) are located by placing the side of an unassembled side of a super against the outside positioning plates and sliding the inside positioning plates against them. Then glue, tack and screw these into position. The inside plates should be snug so the sides of the super you are assembling stand up and do not move.

Step #3 – Side Positioning Plates

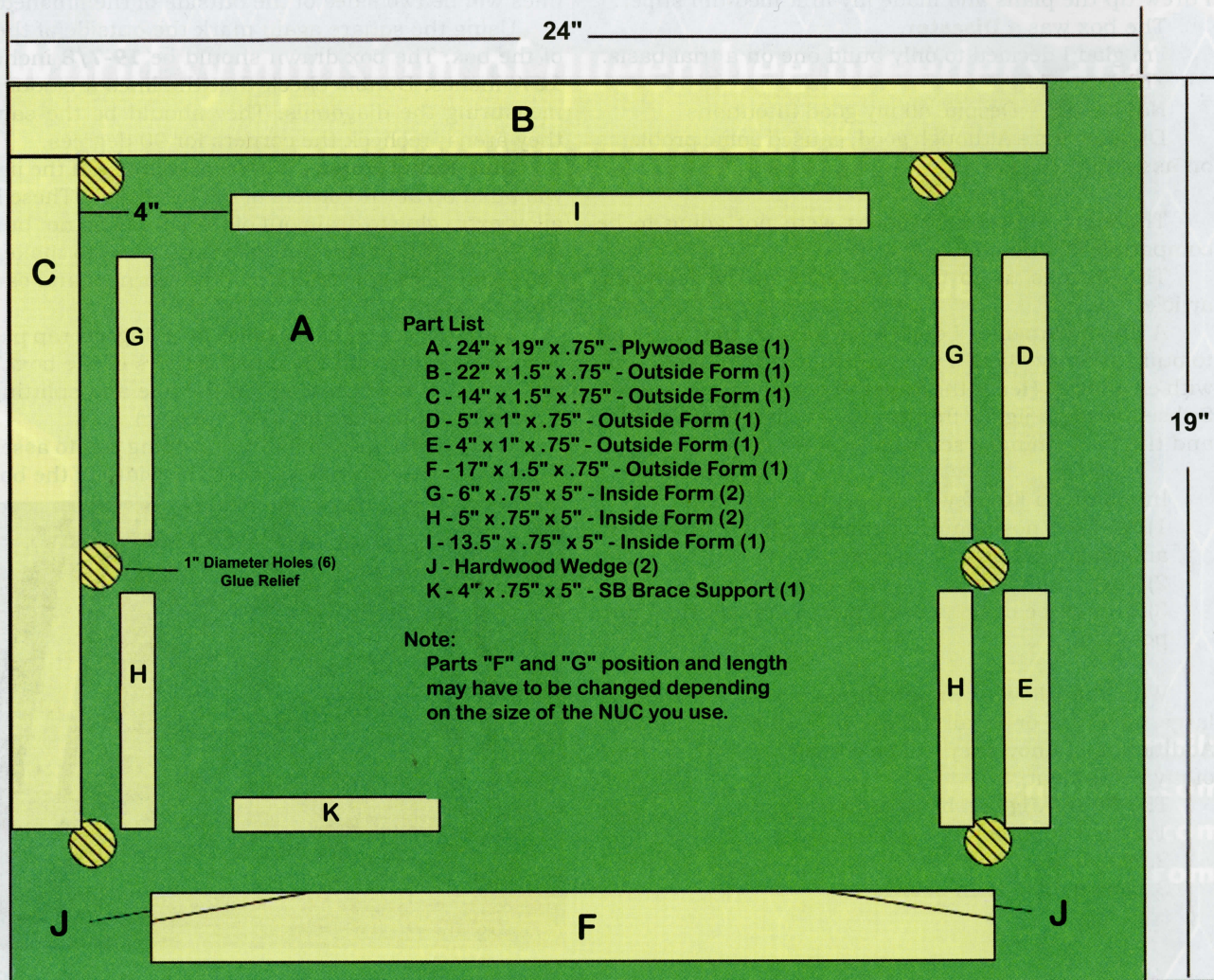
Outside Positioning Plate – The side positioning plate (Parts D and E) are set along the outside of the second set of lines you drew. Here again it is extremely important that it is square with positioning plate A. Please note that this piece does not contact piece “B”. The gap allows for some flexibility when placing the super’s side in the jig. Use carpenters glue and screws to insure the permanent placement of part “D” Here again the piece may partially cover some of the glue relief hole.

Inside Positioning Plates – The side inside positioning plates (Parts G and H) are glued, tacked and screwed into position.

Double check: At this time you should be able to see the jig’s relationship to your new supers. When placing a side and the front and back of an unassembled super into the jig they should be snug enough to stand upright and not be able to move without some effort on your part. Because the jig is so tight, I use a small hammer to position the super’s parts.

Step #4 – Front Positioning Plate

Front Positioning Plate – The front positioning plate (Part F) is set along the outside of the marks you made in the beginning. BUT!!! This plate is set $\frac{1}{2}$ to $\frac{3}{4}$ inches outside of the outside line. Make sure it is reasonably parallel to the outside marks. Wedges (Parts J) will be used to force the last side of the super into position with



the rest of the assembly. Make sure the angled portion of the plate is on the inside of the box. This plate does not have an inside component.

Step #5 – Screened Bottom Board Helper

Part “K” is unused when assembling a box. If you use the jig to assemble a screened bottom board, it helps hold the board in position. I recommend not installing this part (K) until you try to make a screened bottom board.

CONGRATULATIONS!

Allow the jig to dry overnight and be ready to try it in the morning.

Usage

Super Assembly

Any of the supers can be assembled extremely easily. Needless to say the more you assemble the easier it becomes.

The following instructions are for Butt Cut or dove tail cut corners.

Tools needed

1. Super Jig
2. Nails or screws at the box corners
3. Squaring Helper – This is a tool used by people who make picture frames. It is used to hold the top of the box in a square and rigid position while you are applying the screws.

1. Place the side box side in the slot between pieces “B” and “I”, making sure it is butted tight against Piece “C”.

Hint: for dove cut joints it may help to leave some wiggle room so you can insert the front easier.

2. Put glue on all the edges of the front of the super.
3. Slide the front into slot between pieces “C” and “G”. Position it tightly against the side piece.
4. Put glue on all the edges of the back of the super.
5. Slide the front into slot between pieces “G” and “D”. Position it tightly against side piece.
6. Take the second side and put it carefully against the

glued ends of the front and back

7. Using the 2 wedges, insert them into the wedge slots and hand tighten them.
 8. *Important!* Using a small hammer or a rubber mallet, Tap the pieces so they are tight against the positioning boards and aligned correctly. Then tap the top of the boards so they are seated correctly against the bottom of the jig.
 9. Using the hammer, tighten the wedges so they hold the sides in alignment.
 10. Place your squaring helper over the top of the new box and tighten it down.
 11. *Important!* The top and bottom edges need to be aligned. If they are not then use a pry bar, hammer or anything else available to align the edges before screwing them together.
 12. Screw or nail the edges of the new box together.
- Hint:** Use dry wall screws for a more secure joint. They are also easier to remove if you need to adjust something.
- Hint:** Add three brads on each side of the ends to reinforce the 3/8 inch flange.
 13. Use a wet cloth to remove the excess glue.
 14. Remove your squaring helper from the new super.
 15. Remove the new super from the jig. You may have to persuade the jig to let the new box loose. Remember – never force anything, just get a bigger hammer.
 16. Clean all the excess glue from the new super.
 17. Clean the glue from the Super Jig. Glue buildup can cause misalignment in the future.
 18. Clean the Glue from your squaring device.

Ten minutes from start to finish and you have a super that will be compatible with all your other supers.

Nuc Assembly

This is the same as a super assembly except:

1. You use the Nuc slot on the base and not the super slots for positioning
2. The wedges are not used – Consequently you have to be a little more careful to make sure the box is aligned correctly. **EC**

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