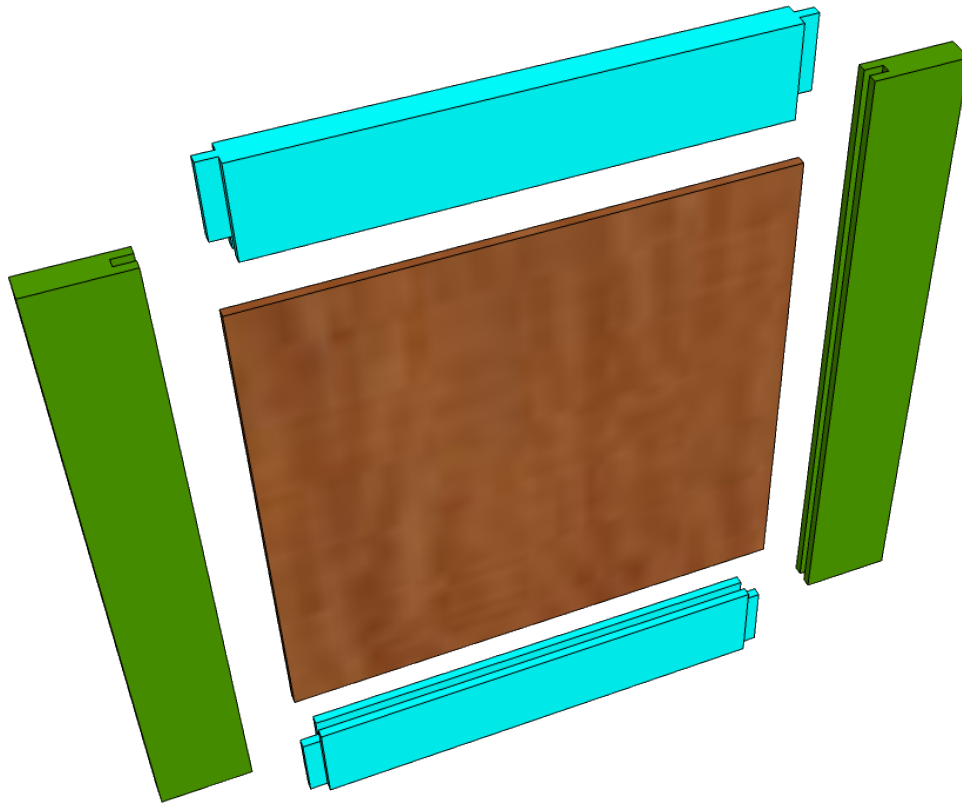


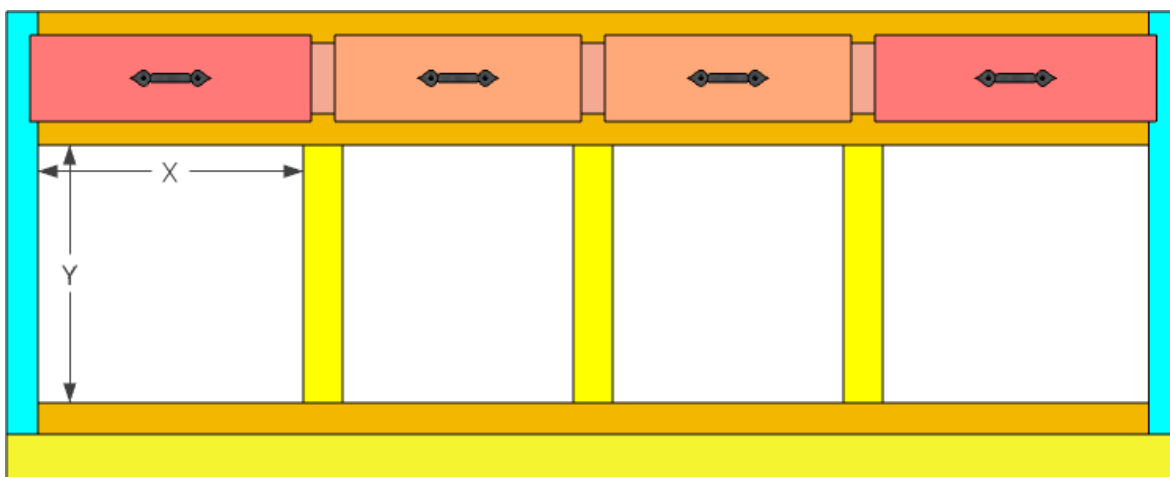
TONGUE & GROOVE CABINET DOORS

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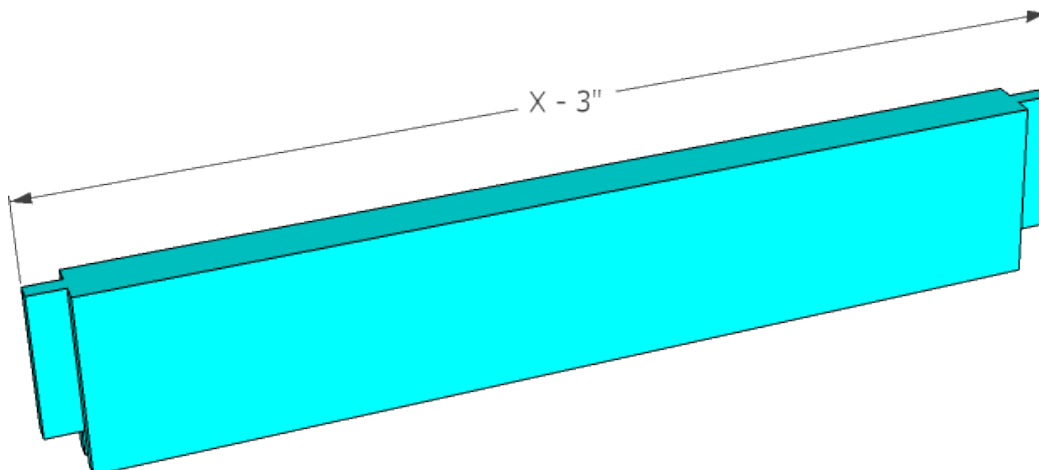
A tongue and groove cabinet door is made up of at least 5 pieces. Two horizontal rails (blue), two vertical styles (green), and one interior panel. The method I will be explaining here involves using the table saw to cut the joinery, 2-1/2" for the width of all of the rails and styles, and 1/2" for the depth of the groove and the length of the tongues.



I make my cabinet doors 1/2" larger in all directions than the actual opening on the cabinet. To give you a quick formula for the exact size pieces you will need I will refer to the vertical opening dimension as "Y" and the horizontal opening dimension as "X".

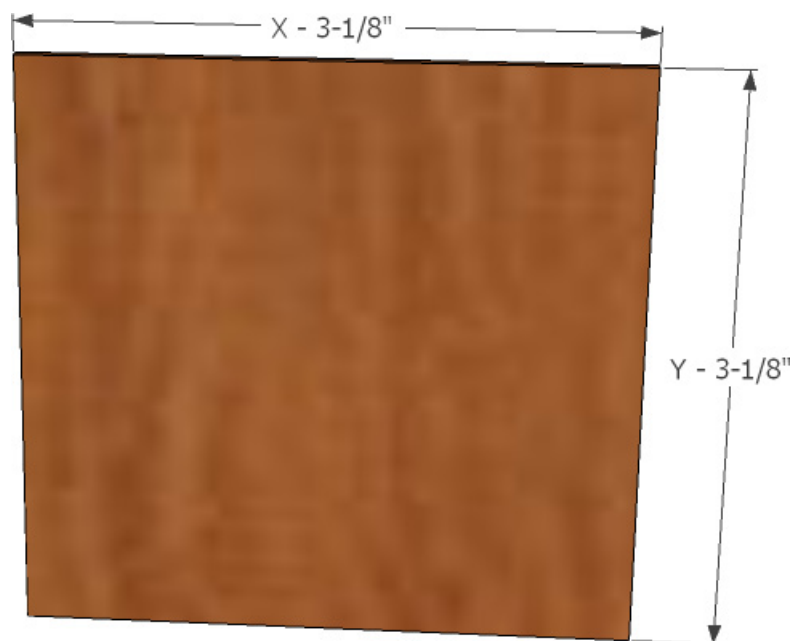
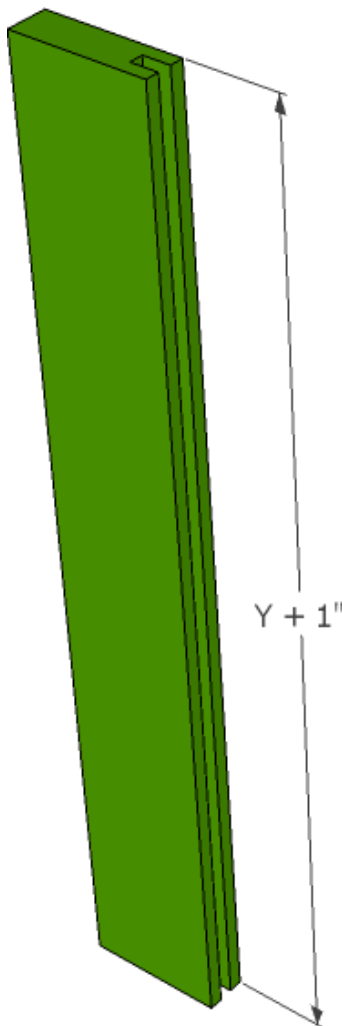


The length of the horizontal rails is determined by subtracting three inches from the horizontal length of the cabinet opening. For example, if the cabinet has a 20" wide opening the length of the rails would be 17".

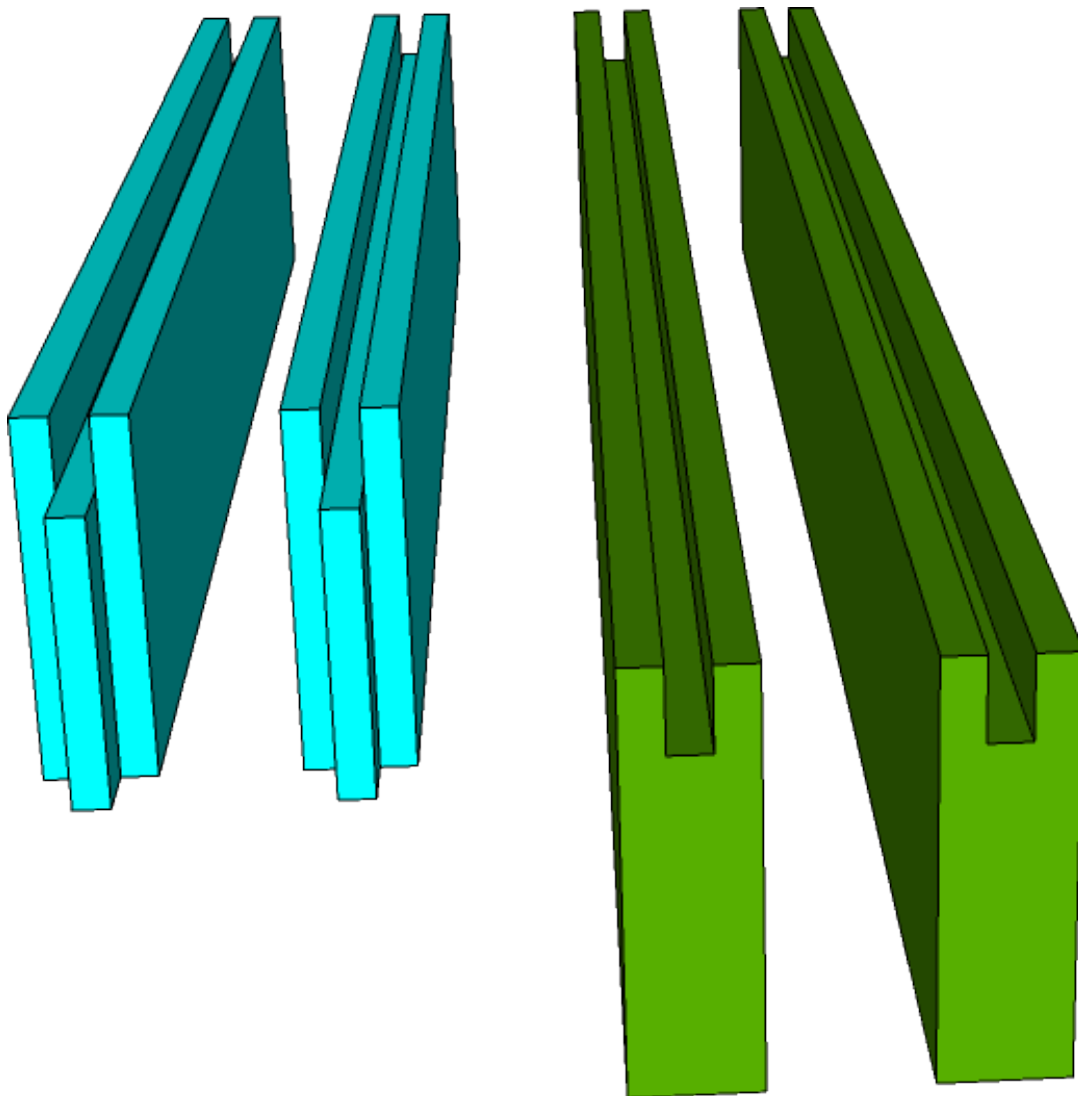


The length of the vertical styles is determined by adding one inch to the vertical distance of the cabinet opening.

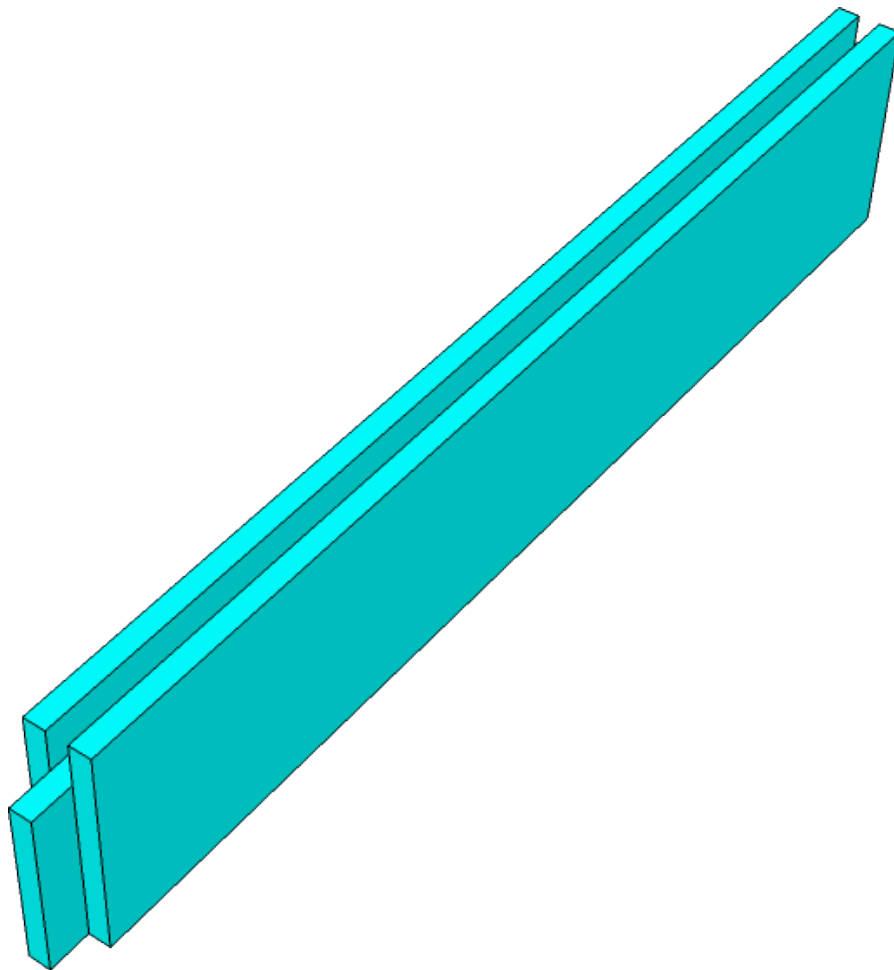
For example, if the cabinet opening has a height of 16-1/2" the styles would need to be 17-1/2" long. It is always best to size your panels after a dry fit of your rails and styles is complete but if everything is followed exactly as stated here the interior panel should be 3-1/8" less in both directions of the cabinet opening.

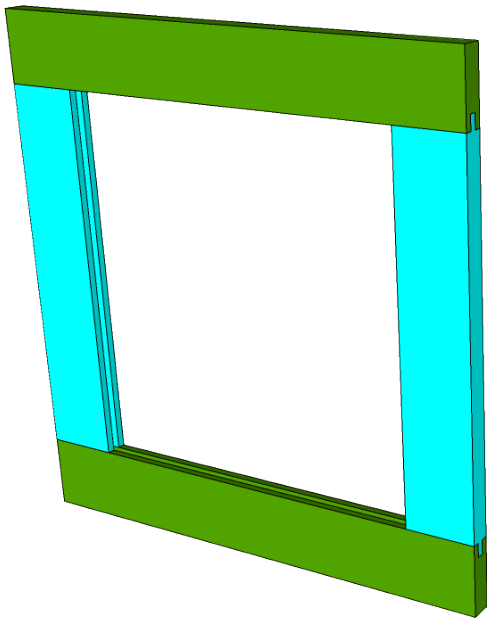


The tongues are only cut on the ends of the rails while the grooves are cut on one side of every rail and every style. It's best to pre-finish all of your panel material before cutting the groove so the panels are at their exact final thickness for sizing the groove. To cut the groove with a regular table saw blade position the fence so that the blade is close to center but offset slightly to one side of your work piece. Run the material through two times rotating the board 180 degrees between passes. This will create a perfectly centered groove on your work piece. If you are using a regular table saw blade this will probably not be wide enough with the first fence setup. Run all of your pieces as well as a couple scrap boards through with the first fence setup. Then slide the fence over slightly to increase the width of the groove. Make two passes with one of your test pieces and rotate 180 degrees between passes as you did previously. Adjust the width as needed to create a groove that is perfectly sized for the size panel you are using. Once the fence is set to the correct position run all of your pieces through again to cut the final width of the groove. The groove should be loose enough to easily slide the panel in place but tight enough so that the piece will hold itself up against gravity when holding onto the panel.



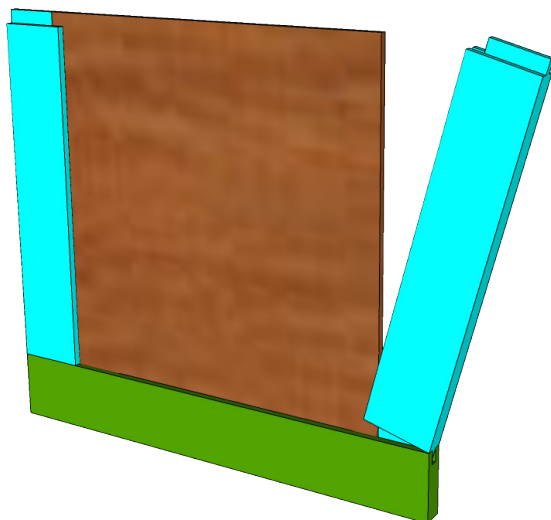
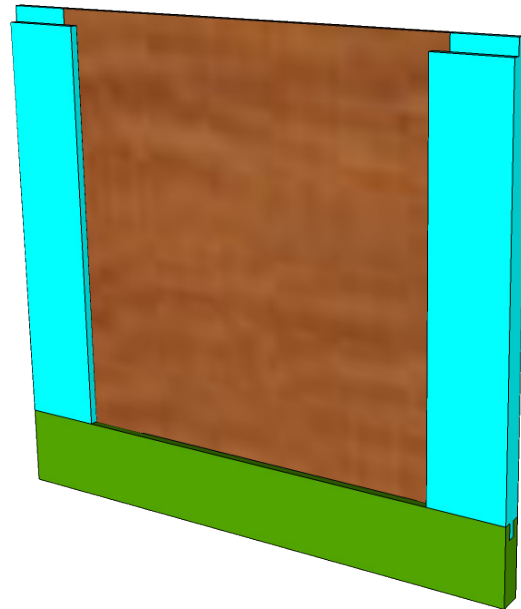
You can cut the tongues on the ends of the rails with a regular table saw blade but using a dado stack will greatly reduce the time it will take. Position the table saw fence so that the distance from the fence to the outside of whatever blade you are using is exactly or slightly less than 1/2". This will determine how long the tongue is. Too long and it will bottom out in the groove before the shoulders of the cut contact the styles. Too short and there will be a gap between the end of the tongue and the bottom of the groove. Adjust the height of the blade so that it is slightly less than what is necessary. Using a miter gauge at the table saw cut one end on a scrap board. Then flip the piece top to bottom and cut the other half of the tongue. Because the blade should be a little low the resulting tongue should be too thick to fit into the groove. Adjust the blade height and repeat the cut until the tongue fits into the groove. The tongue should easily slide into the groove but be tight enough to hold itself up against gravity. Once the desired fit is reached with a scrap piece cut the tongues on both ends of all of the rails.





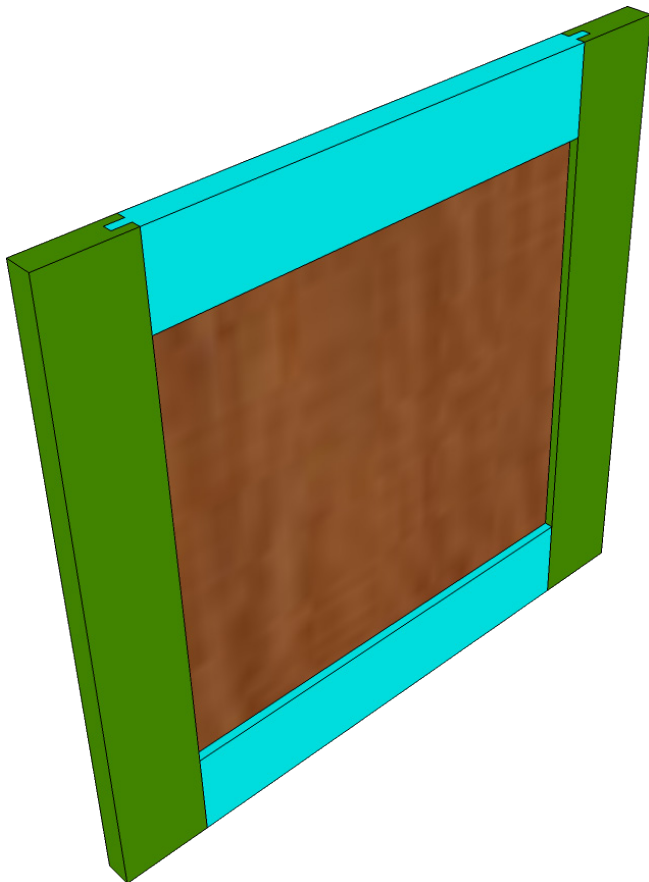
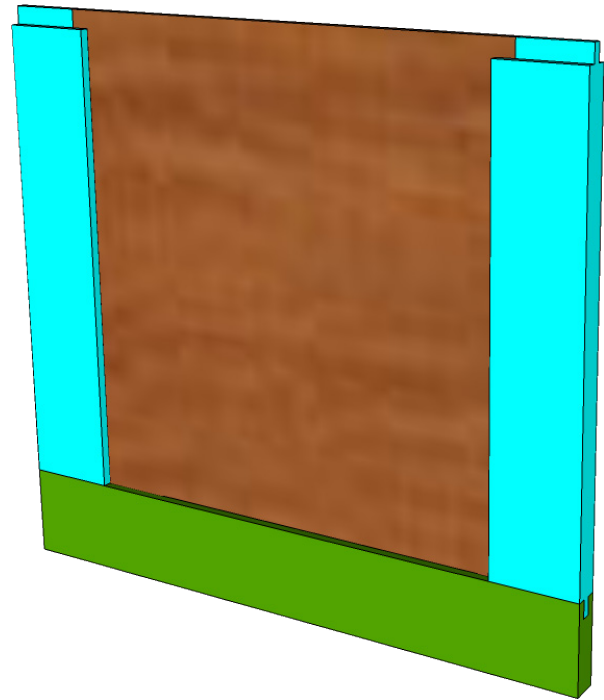
Before cutting the panels to their exact size do a dry assembly of the rails and styles to confirm that there will be no problems during assembly. Then cut your pre-finished panels to 1/8" less than the allowed area in both directions.

These doors are generally assembled on their side. Remove one style and slide the panel in place.



Remove the rails one at a time to apply glue to the tongues only. Then insert them back into place.

With both rails glued into one stile apply glue to the remaining exposed tongues. Then place the second stile in position. Use one clamp at each end of the cabinet door to hold the joints in place. If everything was cut square to this point you should have a perfectly square door. If the door isn't square you can skew the clamps one way or the other to pull the door into square.



After about a half hour to an hour in the clamps you can sand all of your joints perfectly smooth if needed and finish as you desire. Making tongue and groove joinery on the table saw could possibly sound intimidating at first but it's one of those things that once you get a little bit of experience you're a pro at it. If you've never made tongue and groove cabinet doors a shop cabinet would be a great place to experiment. Good luck!