

Templates, Cutting & Drilling: (click on the images below, for expanded views through your browser. If your Adobe Reader asks if this is a trusted site, click YES, and all other images will open when clicked) The table saw fence was removed for image clarity. Please follow all tool and workshop safety requirements.



1 -Cut out all patterns, and trace or spray glue onto 1/8" (3mm) hardboard for permanent templates. Cut out, sand the edges smooth, & label all pieces. Trace all templates onto the final stock, and cut each one out with a sabre, table, or band saw. Double check the dimensions from the sizing chart.

As shown in images 1a and 1b below, cut parts **L, M, N & O** to the dimensions listed above, then trace the template on one end. For parts **C, K & T**, cut to the dimensions above, trace the template on one end, then simply flip the template over and trace it on the opposite end as shown in images 1c and 1d. Join the horizontal lines and you have the 59 1/2" (151.1cm) template.



1a



1b



1c



1d

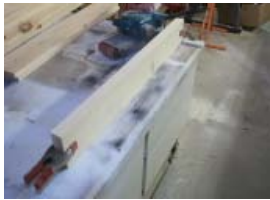




2 - A taper jig on the table saw, works best for the tapered back slats **P, Q, R & S**, and back supports **G & H**. A shop built sled is the quickest, easiest and safest taper jig. Use a scrap length of 9" (22.9cm) wide plywood fastening clamps at each end, leaving 36" (91.4cm) between the clamps for the longest part. Line up the pattern line to the edge of the jig, and run it through the blade. You can see I extended the pencil line of the part to align it with the edge of the sled. My sled is shown on-line at www.plansinwood.com/taper_jig.html



3 - For all tapered back slats, cut to the rough dimensions of part **P**, the longest slat. Then trace on template **P**, and taper the one side for all parts **P, Q, R & S**. The templates for **Q, R & S** can be traced onto the tapered stock, so all parts are the same width at the bottom. Only one template of each is necessary. Just flip each over for the opposite direction of the curve. When you have cut & planed or sanded all slats, assemble & clamp as shown, so you can sand the curve smooth and even.



4 - If you don't have a jointer to clean up the straight edges, use your belt sander, clamp the duplicate pieces together and sand clean. Using a 5/16" (8mm) bit, clamp the duplicated parts together, and drill the bolt holes for the legs and back supports. Be careful to drill the holes for the back supports **H** in the correct position according to the pattern.



5 - A drum sander on your drill press, is the easiest way to clean up the edges. Try to cut out the pieces to the outside of your pencil marks, then sand smooth to the pattern line. Or you can attach the template to the parts with 2 sided tape, and use your router table and straight bit with roller, to clean the edges.



6 - For parts **F**, be sure to trace the 5/8" (16mm) holes opposite on both pieces, to allow the dowels to be inserted correctly. Drill the holes 3/8" (10mm) deep with a forstner bit.

Assembly: (click on the images below, for expanded views. If your Adobe Reader asks if this is a trusted site, click YES, and all other images will open when clicked)



1 -Begin assembly by bolting the left outer panel **A** together as shown with **E** on the **outside** and **G** on the **inside**. Bolt the right side panel together the opposite way. Be sure that the front leg and back supports are perpendicular to the table as you tighten the nuts, as shown. The best way to ensure the front legs are square, is to tighten the top bolt first, square the leg, and tighten the lower bolt. There will always be a slight p lay in the bolt holes.



2 -Bolt the left inner panel **B** to parts **F** and **H** so they are on the inside. Do the same with the other inner panel, but with **F** and **H** on the opposite side. When assembled parts **F** and **H** will face each other.



3 - Assemble the end panels with one of the seat slats **U** as a temporary spacer between parts **E**. Using a pipe clamp, allow enough pressure to hold the parts together. Screw the bottom back support part **C**, into the slot in the sides of part **A**, flush with the outside edges. Use 2 screws on each side of part **C**, being sure to drill pilot holes into parts **A**, if not plugging the holes. Your counterbore bit will drill the pilot holes if adding plugs later.



4 - Next attach the front slat **D**, with 2 screws on each side, to the front edges of parts **A**, flush with the bottom edges. This will give you a carcass to work with. Double check for square by measuring corner to corner, both ways. You can now remove the clamps.



5 - Clamp the inner leg assemblies with 19 1/8" (48.6cm) between the legs and the side panel legs **E**. Be sure to use assembly squares to keep them vertical as shown. Using 2 screws in the front slat part **D**, fasten the inner leg assemblies in place. Checking for square, drill and add one screw into the top edges of the bottom back support parts **B**.



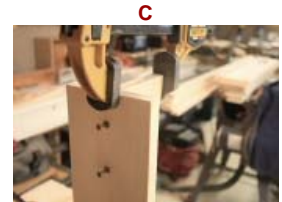
6 - Add the dowels parts **V**, by spreading the inner back supports **H** enough to get them in, gluing into the 3/8" deep holes.



7 - Align the top back support part **K** with the front edges of the end vertical back supports parts **G**. Be sure overhang evenly at both ends as well. Add 2 screws at each end, and one on the inner parts **H**, being sure they are square.



8 - With two screws, attach the arm supports **F**, centered flush with the top of the front legs **D**. If you have a pocket screw kit, you may want to follow the images below and the pocket screw kit instructions, to attach the arms from the underside, instead of from the top of the arms. Use shorter screws, practice on scraps, to be sure you don't screw through the top of the arms.



9 - Screw the arms **J** in place, as they rest evenly on the front leg supports. Double check to be sure the arms are parallel to the ground. If not using pocket holes, put 2 screws through the arms into front legs **E**, and 1 into supports **I**. Put 2 screws in from the inside of parts **G**, into the notch at the back of the arm. Check to be sure the arms are parallel to the work surface.



10 - Using scrap 1/4" hardboard or any thin plywood, cut three pieces to fit between the legs, then clamp them under the lower back support **C**, to support the back slats evenly as you assemble them.



11 - Next, add masking tape to the bottom of part **L**, the center back slat, mark the center point, and do the same to the board you clamped below. Measure the center point of the bench and mark it on the tape. Make sure the back slat is square to the frame top and bottom, align the marks and clamp in place. Add two screws in pilot holes to the bottom back support **C** and the top back support **K**.



12 -Using 1/4" spacers between slats **M, N & O**, clamp on either side of center slat **L** and add 2 screws at the top and bottom in line with the screws on slat **L**. They should all be square to the upper and lower supports.



13 - The tapered slats **P, Q, R & S**, can now be added and secured with 1 screw top and bottom using the 1/4" spacers. The outer slats **S**, should be overlapping about 1/2" to the ends of part **K**, the top back support. Test to be sure the back seat slat **T** will fit in place within the notched area.



14 - Using the 1/4" spacers, add all the seat slats **U** in place, then the back slat **T**. They should all fit, leaving about 3/8" to 1/2" between parts **T & C**. Double check for square and start adding one screw in a pilot hole to the ends of each slat.



15 - Once they are attached move the spacers to the inner legs supports and add one screw into each seat slat.



16 - If you are using plugs to hide the screws, be sure to add them **NOW**, to the bottom of the back slats, and sand smooth. Remove part **T** first, then re-install before plugging. I recommend a tapered plug cutter, like the Veritas Cutter from Lee Valley Tools. Glue the plugs in place with exterior waterproof glue, let dry, then cut off the excess with a chisel or Japanese saw and sanded smooth with a random orbital sander.

17 - If you are adding pocket screws to allow the removal of the complete back slat assembly, follow the images below.

A



B



C



The chair is now assembled, and ready for finishing. If you are painting the chair, it is best to prime all surfaces first before assembly, to ensure longer life against moisture. Use an oil based paint like Varathane Colors, for the final coat. You can either countersink and plug the screw holes before final painting, or use brass screws left exposed if staining.

Enjoy!!!

Phil Barley



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