

Assembly: (click on the images and links below, for expanded views)



1 -If you are building a few chairs, you may want to begin assembly by using scrap boards to make an assembly box to clamp parts A, the side panels, to make it easier to attach part B & C, so the frame is square. It should be 4" (10.2cm) high by 18" (45.7cm) long.....the important dimension is the width of 12 1/4" (31.1cm). When you clamp parts A to each side, it will equal the 13 1/2" (34.3cm) width of parts B & C as well as all the seat slats.



2 -This is an alternative option using standard assembly squares and clamps. Clamp parts A to your assembly squares, being sure that the fronts are even and square. Raise the parts at the front with a board, to ease in screwing on part C.



3 - Begin assembly by screwing the bottom back support part B, to the slot in each part A, the side panels. Use two # 4 x 1" (2.54cm) screws on each side of part B, centered in the of the side panels. Be sure to drill recessed pilot holes into parts A, so the wood doesn't splinter. Pre-drill into the side panels prior to inserting the screws as well.



4 - Next attach the front slat C, 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 and assembly square.



5 - Using a square, screw one of the seats slats M above part C, so it is even with the upper edges of the pattern on parts A. This will leave a 3/16" (5mm) space. Do the same for the next slat. All slats are 13 1/2" x 1 1/8" x 1/2" (26.7cm x 1.98cm x 1.3cm), and templates are not required.



6 - The rest of the seat slats can now be assembled and attached using one screw on each side. Evenly space all slats M using strips of 3/16" (5mm) wood as spacers. Add part N, the back seat slat. The spacers should evenly space all slats back to part B. Be sure to double check the squareness when screwing in each slat. Also check to be sure the back slats will fit between Parts B & N.



7 - Next, bolt on the front legs D, on the OUTSIDE of parts A. Use washers on the insides and hand tighten for now, to allow some movement when attaching the rockers. Use the # 6 - 1/4" x 1 1/2" (3.8cm) machine screws.



8 - Bolt on the back supports E, on the INSIDE of side panels A, being sure they are flush to the mated bottoms of the side panels parts A. Check with a tape measure to be sure they are parallel to the front legs D. They should be 11 1/2" (29.2cm) apart at top and bottom.



9 - Screw on the upper back support H, centered on the tops of parts E, flush at the front with supports E. Measure and use a scrap spacer, as shown, to be sure the back supports are parallel to each other.



10 - With two # 6 x 1 1/4" (3.2cm) screws, attach the arm supports F, centered flush with the top of the front legs D. Be sure to drill pilot holes into the arm supports.



11 - Screw the arms G in place, as they overhang evenly on the front legs and supports. Double check to be sure the arms are parallel to the ground. Put 2 screws through the arms into front legs D, and 1 into supports F. They should overhang the back edge of the front legs by 1/8" (3mm), leaving about 12 3/8" (31.4cm) between the arms. Put 1 screw in from the inside of parts E, into the notch at the back of the arm. Check to be sure the arms are parallel to each other by checking the height from the work surface. They will not be parallel to the ground until the chair is on the rockers.



12 - Remove the back seat slat N. The back pieces can now be assembled, starting with the middle slat I, centered at the top on part H, and at the bottom, in the curve on part B. Overhang the slat by 1/4" (6mm) below part B. Mark the centers and pre-drill pilot holes through Part I and into Parts N & H. I find it easier to level the chair as shown. I use 1/4" (6mm) spacers at the top, and 3/16" (5mm) at the bottom to get the perfect spread.



13 - Lay out all the slats as shown, mark the center points aligned on B & H, and drill the appropriate pilot holes for the 1" (2.54cm) screws. You can now re-install Part N.



14 - Next you will need to construct the 2 rockers parts O, dependent upon your tools and stock. I used 1" (2.54cm) Home Depot cedar deck boards (nominal 5/4" x 6"), planed to 7/8" (2cm), working around the knots. You need four 7/8" (2cm) rockers to make the 2 parts O. I have a router table and 3" (7.6cm) straight bit with roller guide. In the last image I attached the template with two-sided tape on the rough cut stock, and used the router to clean to the template edges as shown.

At this point you can make the parts full height, or reduce the bottom edge to the dotted line, so you can add a 1/8" (3mm) hardwood runner to the bottom of each rocker. I used hobby board strips in poplar from Home Depot on the Adult Chair, but left the kids chairs at full height.



15 - Once all pieces of the rockers are cut and presanded, glue up the stock into two rockers. Mark the screw positions from the holes in the template on the inside of each rocker. Using waterproof glue, laminate the stock, clamp and screw together until set using the #6 x 1 1/4" (3.2cm) wood screws. Plug the screw holes and sand smooth. When sanding the tops of the rockers, note that the template is flat after the curves at each end. The inside curvature begins after the flat areas, where the legs attach. This makes it easier for you to make the mated leg parts and attach to the rockers. It also allows the rockers to angle in at the back, to center the legs, if desired.



16 - Once you are comfortable that both rockers are identical, place the chair on the rockers, [set out about 3 1/4" \(8.3cm\) from the front legs parts D](#). Using a square, adjust the positioning on the rockers to get the legs perpendicular to the work surface and flush to the rockers. You may need to sand the under side of the front legs and side panels to get a perfect fit. You can center the legs straight on the rockers, or angle the rockers in at the back like I have.



17 - Once the rockers are mated in the position you want, mark a pencil line around each [front leg part D](#) and the [back ends of parts A and E](#). This will give you a marking to drill pilot holes for the screws in the correct locations.



18 - Use a tapered scrap cut off, as a support when drilling the pilot holes completely through the rockers. Be careful not to drill on an angle, or the screws may penetrate the edges of the leg parts. An easy reference is pencil lines on the rocker that align with the legs.



19 - Turn the rockers over and drill for the plugs at both ends if you are not adding hard wood runners.



20 - Turn the chair over on it's arms, look under and line up the rockers with the pencil marks at both ends and clamp the rockers firmly to the legs, with the other end of the clamp on the seat slats. Drill through the existing holes in the rockers to slightly penetrate the legs at front and back.



21 - Use six # 6 x 1 1/2" (3.8cm) screws for the back legs and four # 6 x 2" (5.1cm) for the front legs. Test the rocker flow and fit, then remove the rockers, sand off all pencil marks and reinstall the rockers with waterproof glue on the underside of the legs. I found it easier to turn the chair over on the arms to install the rockers. Project the screws through the rockers enough that the [points fit into the holes in the legs](#), then clamp tight and screw in place. If you are not adding runners, plug the holes now and sand smooth. Remember to tighten the bolts on the front legs.



22 - If you are adding 1/8" (3mm) hardwood runners to the base of the rockers, trim the stock to the correct width, allowing for sanding the edges once attached. Using waterproof glue, clamp the runner at one end and add clamps as you continue to the other end. If you have a power stapler, it will hold better than nails. Otherwise, let the glue completely dry before removing the clamps. It may be beneficial to soak the runners first, and temporarily clamp them to the rockers, to help pre-form the shape. Once dry, trim off the ends and sand smooth.



23 - If the front legs are slightly off square like mine was, and the legs fit flush, you can add weight to the underside of the rockers as a counter balance. For the Adult Chair, I cut two 3" x 1/2" (7.6cm x 1.2cm) galvanized carriage bolts to 1 1/2" (3.8cm) long, and glued them in holes at the back ends of the rockers. The chairs balanced perfectly, and the curved bolt heads act as a safety stop, if the chair is rocked backwards too far.



24 - The chair is now assembled, and ready for finishing. I applied 2 coats of Varathane Diamond Wood Finish water based outdoor semi-gloss, after sanding between coats. I applied 2 extra coats on the bottom of the rockers.

Rock on !!!

