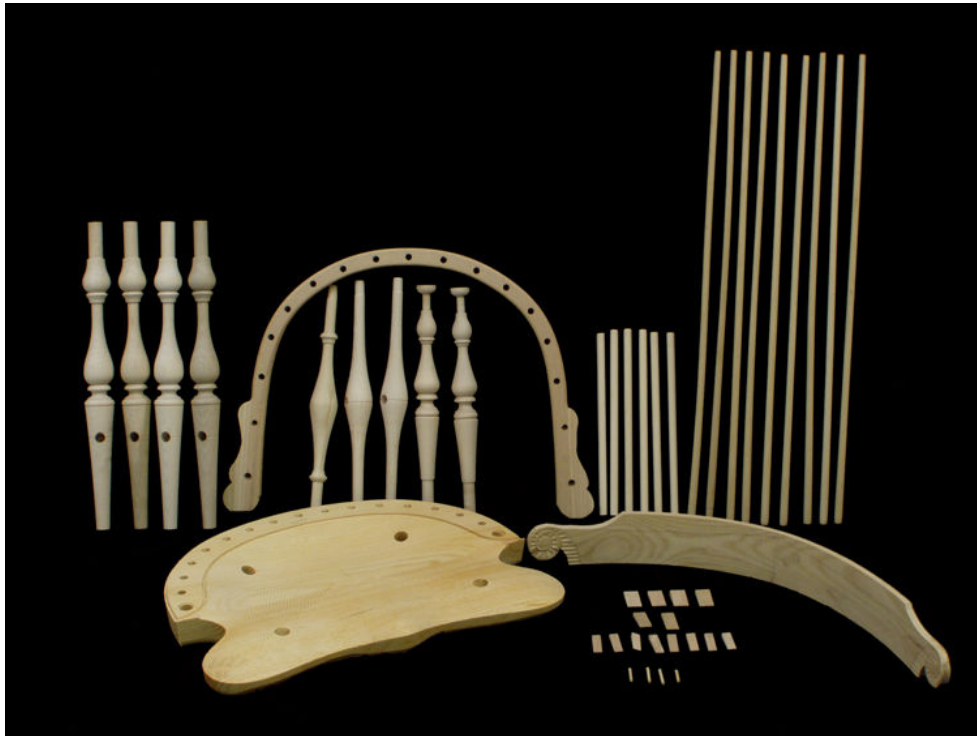




Windsor Chair Online



Assembly Instructions

Date: 1/4/2007

Other Chairs Offered



Philadelphia Arm Chair New England Comb Back Sackback'd Arm Chair



Bow Back Side Chair Fan Back Side Chair

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Tools Needed



- Rubber mallet
- Metal Hammer
- Set of Drill Bits
- Set of Wood Chisels
- Good Quality Yellow Wood Glue
- Sander (Orbital)
- Sand Paper (40 grit Thru 180 grit)
- Dovetail or Coping Saw
- 2 Foot Level
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Basing Up

Start by dry fitting the base stretcher system together. Insure that you have a narrow end and also a wide end as shown in the photo. If they are even turn one of the side stretchers around.



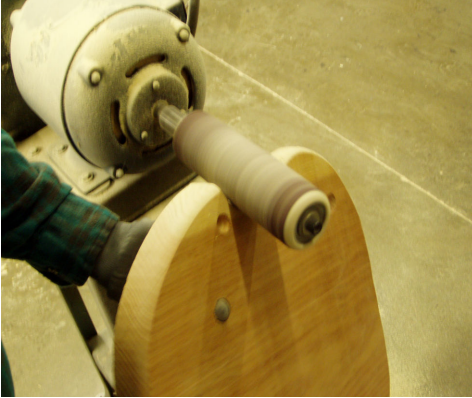
Remember which way you took apart the last stretchers. Glue the inside of the holes (A broken pencil or small dowel dipped in wood glue and spun in a circular motion inside the stretcher hole will ensure enough glue)

Use a rubber mallet to drive the side stretchers onto the center one.



Place the Stretcher system down on a flat bench. Rock the system back and forth ensuring that both side stretchers are touching the bench at the same time.

Basing up



Next, prepare the seat for assembly. The bottom of the seat needs to be sanded. (I prefer hand planing the bottom for authenticity). The edges also need to be sanded. Hand sanding or an orbital sander will work if you don't have a bagging sander. (shown)

Building a simple jig out of scrap lumber can help this process. (shown in picture below)

Time to glue the base together. Be sure to have the base parts ready before you begin. Glue the leg holes first, then glue the large seat holes. (Bottom of seat facing up)



Slide legs into already glued Seat. **(Only insert legs half way into seat hole. Leave them loose in the holes to allow for stretcher installation.)**

Now install the stretcher assembly into the leg holes. Be sure the wider openings between the two side stretchers are toward the front of the chair.

The process of gluing the base together should only take a couple of minutes (remember the glue is drying)

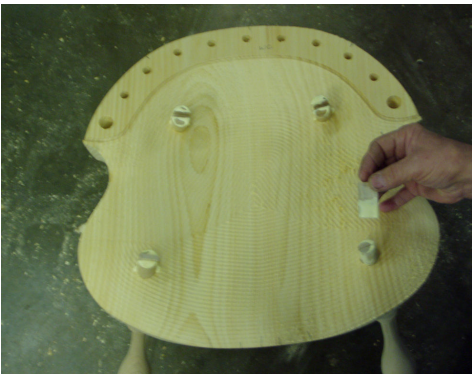


Basing Up and Wedging the seat



Use the rubber mallet to drive the legs onto the stretcher assembly. (Do this to all four legs, flipping the base as you drive the legs onto the stretchers).

Flip the chair upside down so the seat rests on a couple of thick pieces of wood. This insures the legs that are now sticking through the top of the seat do not touch the bench. Using the hammer, drive the legs into the seat until the shoulder of the leg bottoms out, or cannot be driven further. Do this firmly but be careful not to drive the legs too deep. (**this could split the seat**). Remember, the glue is drying—the entire base assembly should be completed in 3 to 5 minutes.



Right the chair, and place onto the floor. Take the 7/8 Wide wedges that are supplied with your kit. Dip them in glue one at a time.

With the hammer, drive the wedges into the pre split legs. (Complete each leg before you glue the next wedge). As your driving wedges, you want to listen for the change of tone. Once the tone changes stop. The wedge has gone as far as it will go.



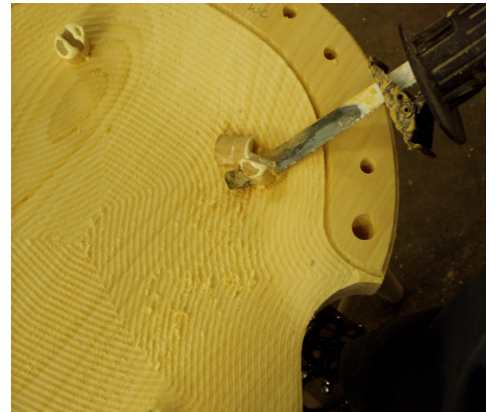
Wedging, Grinding and Sanding the seat



After the wedge is driven in as far as possible with the hammer, use the side of a chisel to drive the wedge down into the leg until it drives no farther and the tone changes.
(When the wedge stops don't force it).

Cut off what's left of the leg and wedge as close to the seat as possible.

Make sure the legs and stretchers have not shifted. Let the base dry thoroughly. (If they have moved use wood clamps to hold them until dry).



Next, finish grind and sand the scalloped part of the seat. Take your time, remembering the legs sticking though the top are a much harder wood. Work them down first.

Finish sand by hand or with a orbital sander



Leveling The Chair



Start by finding a level area on a bench or table saw top. Using a two foot level is easiest. Level the seat in one direction: across the seat. Use the small wedges provided for the back spindles to level the base.

Keep the level on the chair front to back and measure from the bench to the bottom of the level. The front of the seat height should be 18" from the floor after the legs are trimmed. The back of the seat should be 17 1/2" from the floor, to allow the chair to lay back.



Next, determine how much leg needs to be removed from the front legs to get the front of the seat height to 18". of the proper thickness to mark the cut on the front legs. For example, if the front of the seat was 18 3/4" leveled with the wedges under it and the pencil lead is an 1/8" off of the block of wood, you would need a block of wood 5/8" thick. Remember to take a 1/2" more off of the back legs.

After the legs are marked you will need to cut them off. A band saw works great for this but a hand saw will work well too. Sand the bottoms level to the line you marked.



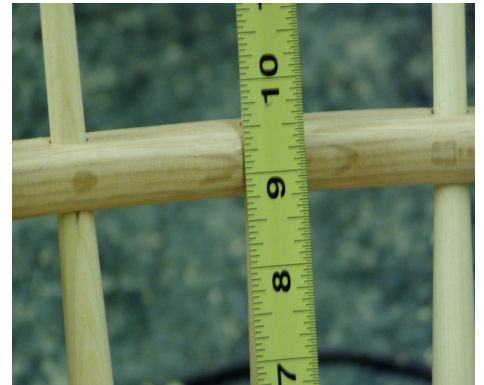
Installing an Arm on an Arm Chair



Finish sand and do any shaping and carving on the arm before you begin. Next, dry fit all your spindles and arm posts so you know where they go when you are gluing up. Glue the arm post holes. Insert your arm posts, and set them with your hammer. Then flip the chair over and wedge them. Glue and insert all the spindles. Slide the arm down over the spindles, lining the spindles into the proper holes on the way down. Before you slide the arm down on the arm posts, glue the arm post holes and the short spindle holes.

Then, measure from the middle back of the seat to the bottom of the arm in the very center of the arm. Insure that it is 8 3/4" from the back flat part of the seat to the bottom of the arm, as shown in this picture.

(The only exception to this is the Philadelphia Arm as it lays the same height of the arm post.)



Now that the arm is in position, peg it to keep it in place. Use the 1/8 drill bit and drill thru the arm and center spindle all the way though the back of the arm. (pins can vary in diameter, do a test hole on scrap wood to determine the correct drill bit size.

Using one of the supplied dowels dip it in glue and slide it though the arm and leave it to dry wile you work on the rest of the arm.



Installing an Arm & Bow on an Arm Chair



Next, wedge the arm posts and shorter spindles. Take a sharp chisel and hammer place the chisel blade on the end of the arm post perpendicular to the grain of the wood on the arm. Use the hammer to drive the chisel into the post and split the top of each post. Split both post and what ever short spindles you have.

Use the 1/2" wedges for the arm post and the 3/8" for the spindles. Dip them in glue and drive them into the split you have made on the post and spindles. (Insure that when you Split the arm post from the top and the bottom that you are perpendicular to the grain of the wood in the seat and the arm. If you drive the wedge with the grain there is a fear of splitting.)



Now, prepare the bow for installation. Sand the bow by hand to remove the burs that have accrued during the drilling process. Glue the holes in the bow.

Starting with the outside spindles first, install the bow. The outside spindles will be the first to start into their holes and then the second ones in. On the third spindles in, start sliding the bottom of the bow into the arm rail hole. (Do this one side at a time. This sometime can be a quite difficult step—every steamed and bent piece of wood is different. It could be bit of a strain to squeeze the bow into the holes on the arm rail)



Installing, Pegging, and Wedging the Bow



Once the bow is on you need to make sure it is at the proper height. It should be 22 1/2" off of the back, flat part of the seat. Do this by knocking the bow down with the rubber hammer. Also measure along the second spindle in on each side to check that they are equal. Adjust if necessary.

Drill though the arm rail and through the end of the bow with a 1/8" drill bit. Do this on both sides of the chair.



Dip one of the 1/8" dowels into wood glue and insert it into the holes just drilled, one at a time.

Cut off the top of the spindles about 3/8" to 1/2" above the bow.



Installing, Pegging, and Wedging the Bow



Using a chisel that is wider than the spindles, split the spindles perpendicularly to the grain of the wood in the bow.

Dip the end of the 3/8" wedge into some glue and drive the wedge into the splits just created until the wedges are seated in the bow. Allow adequate dry time.



At this point, the chair should be complete and ready for the finishing touches. Trim off all of the pegs, wedged spindles, and arm posts. Sand all the tops of the spindles and anything else that needs sanding, either by hand, or with an orbital sander.

Always remember: sanding is much easier to do before the assembly process has started.

Installing a Side Chair Bow



Sand the bow inside and out: this is much easier done before beginning assembly. Insert all of the spindles into the bow before the bow is put on the chair. Glue both the bow and the spindle holes on seat. Slide the bow into the outer holes of the chair seat. (As shown in the picture)

Gently slide the spindles down to the top of the holes in the seat, so the spindles are just above the holes in the seat. Using a glue brush, glue the spindles just above the bow. Then, drive them down into the seat with a hammer until they bottom out in the seat.



Next, measure from the back flat area of the seat to the highest center point of the bow, 22 1/2". Cut the spindles off approximately 3/8 above the top of the bow. Split the spindles with a chisel perpendicularly to the wood grain of the bow. Now dip the 3/8" wedges in glue, one at a time, and drive them into the spindles. Let the spindles dry while completing

Flip the chair upside down, and use a chisel to split the end of the bow underneath the seat. Make sure that to split the bow perpendicularly to the grain of the wood in the seat. Drive the 3/4" glued wedge into the end of the bow and use the side of a chisel to drive the wedge down until it is seated into the seat. Use a saw and cut what is left over flush to the bottom of the seat. Sand. Flip the chair back onto its legs and cut the spindles flush to the top of the bow. Finish Sand.



Installing a Comb Back



The comb is cut out, carved, and drilled before it is packaged. Sand the inside, backside, and top of the comb rounding the top cut edge. Sand thoroughly.

Glue and install the side post first, then flip the chair over and wedge the side post perpendicular to the wood grain in the seat. Right the chair and glue the spindles into the seat. (On a comb back arm chair this has already been done).



Flip the comb upside down and glue the holes. Slide the comb onto either one of the end spindles or side posts. Feed one spindle at a time until you have all of them in their proper hole. Use the rubber hammer to seat the fan down onto the spindles.



Measure from the seat to the bottom of the comb 18 1/2". Drill with 3/16" bit through the comb and center spindle, all the way through. Glue and insert a dowel. Repeat this on the outside post or spindles. After they dry, trim and finish sand.



The height from the seat to the bottom of the comb.

New England: 24 1/2"
Philadelphia: 28 3/8"

About Windsor Chair Online

Windsor Chair Online was started in Ohio in 2006 by Master Craftsman, Chris Benner. Chris began his career by training with one of the foremost cabinet and furniture makers in the country. He has specialized in building fine antique reproduction furniture since 1991.

Chris recognized a need in the market for high quality Windsor chair kits that were designed specifically for recreational or professional woodworkers.

We invite you to join the woodworkers of the past, and explore the remarkable world of Windsor chair building.

Our instruction manual can always be improved. Your questions and comments are always welcome please email any comments to

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