

Component Diagrams for Mission Side Chair

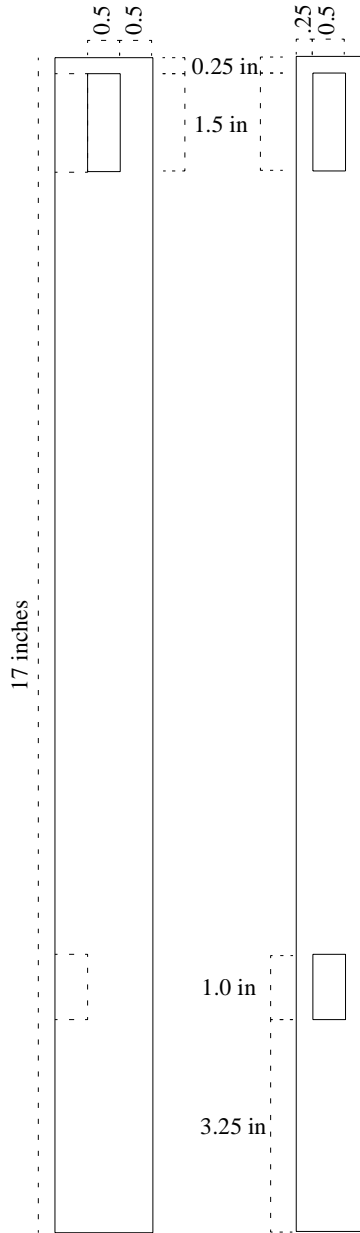
Walt Akers - 1998

AKERS

Design Chart for the Mission Side Chair

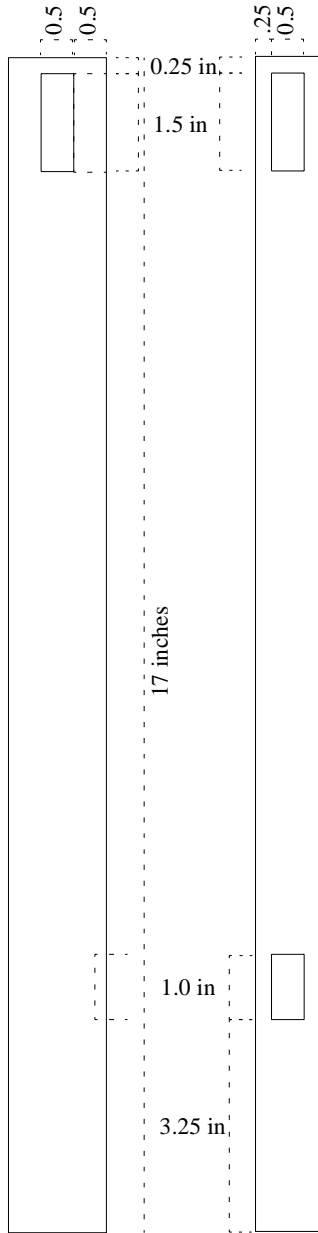
Cut Chart:

2	1" x 1 1/2" x 17"	Front Legs	
2	1" x 1 1/2" x 40"	Rear Legs	
1	3/4" x 2" x 16 7/8"	Front Stretcher	
2	3/4" x 2" x 18 1/2"	Top Side Stretchers	
1	3/4" x 2" x 14"	Seat Stretcher	<i>(Begins 1 21/32" from the back of the side stretcher)</i>
2	3/4" x 1 1/2" x 18 1/2"	Lower Side Stretchers	
1	3/4" x 1 1/2" x 13 11/16"	Lower Back Stretcher	
1	3/4" x 1 1/2" x 16"	Lower Front Brace	<i>(Begins 4" from the front of the side stretcher)</i>
1	3/4" x 1 7/16 x 14"	Lower Back Receiver	<i>(Begins 1 27/32" from the back of the side stretcher)</i>
1	3/4" x 3" x 12 11/16"	Upper Back Receiver	
6	5/8" x 5/8" x 33 1/8"	Back Spindles	
8	5/8" x 5/8" x 11 1/4"	Side Spindles	



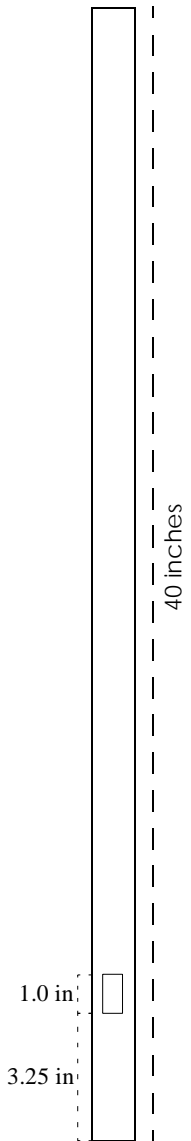
Cutting the left leg.

1. Create the blank by cutting a board to 1" x 1 1/2" x 17".
2. Cut 1/2 inch mortises in the leg as shown.



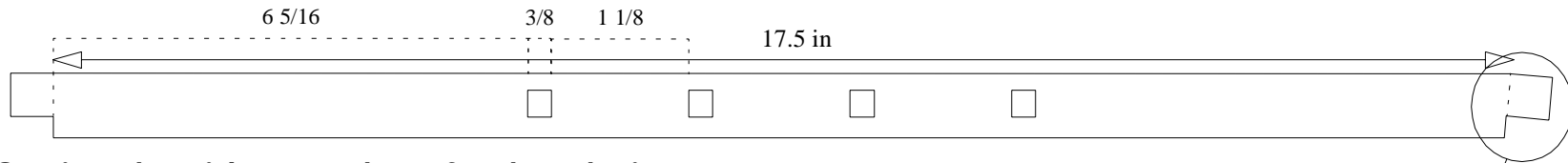
Cutting the right leg.

1. Create the blank by cutting a board to 1" x 1 1/2" x 17".
2. Cut 1/2 inch mortises in the leg as shown.



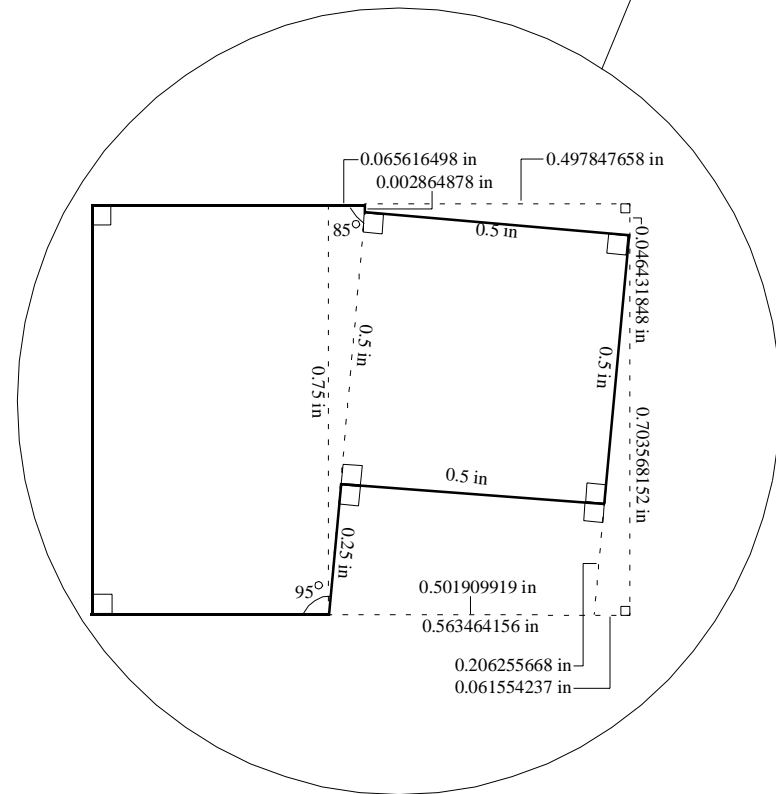
Cutting the rear legs.

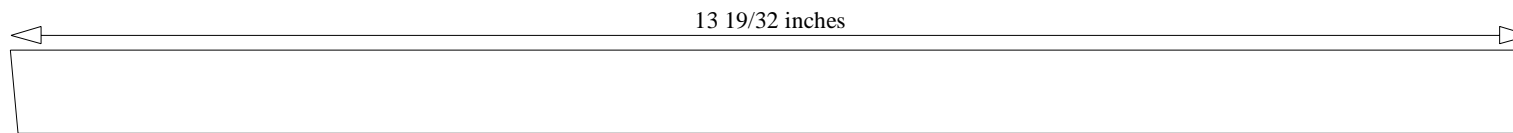
1. Create the blank by cutting a board to 1" x 1 1/2" x 40".
2. Cut a 1/4 inch x 45 degree chamfer around the top of the leg.
3. Cut 1/2 inch mortises in the leg as shown.



Cutting the side stretchers for the chair.

1. Create the blank by cutting an oak board to $3/4" \times 2" \times 18 \frac{1}{2}"$.
2. Insert a $1/2"$ stacked dado into the table saw.
3. Set the depth of cut (right side) to $1/4$ inches.
4. Set the angle of the blade to 5 degrees.
5. Position the fence to the right of the blade at $18 \frac{5}{16}$ inches (*this includes the $3/8$ inch additional blade depth*).
6. Place the two inch side of the board against the table and cut a dado in one side of one end of the blank.
7. Set the depth of cut (right side) to $2/32$ inches.
8. Position the fence to the left side of the blade at 18 inches.
9. Place the uncut two inch side of the board against the table and cut a dado in the same end of the blank.
10. Use the miter saw to cut the end of the tenon to 5 degrees on the modified end of the blank - to produce a $1/2" \times 1/2" \times 2"$ tenon extending at 5 degrees.
11. Return the blade to 0 degrees.
12. Set the depth of cut to $1/4$ inches.
13. Attach a sacrificial strip to the table saw fence and place the fence as close as possible to the dado blade on the left side.
14. Place the 2 inch side of the board against the table and cut a dado in the unmodified end of the board - this cut should be in the same side that has the $1/4$ inch angled cut.
15. Cut a $1/4$ inch dado in each $3/4$ inch edge of this end of the board to produce a $1/2" \times 1/2" \times 1 \frac{1}{2}"$ tenon.
16. Set the miter to 5 degrees (left then right) and cut dados in the corresponding edges of the board with the angled tenon - holding the blank tightly against the fence.

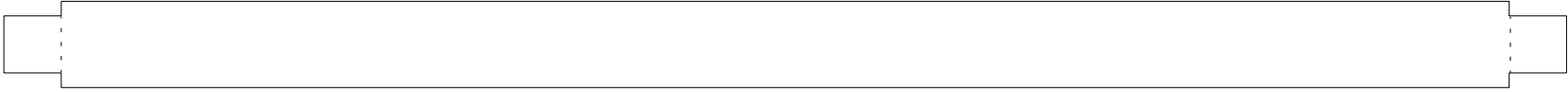




Cutting the seat stretcher for the chair.

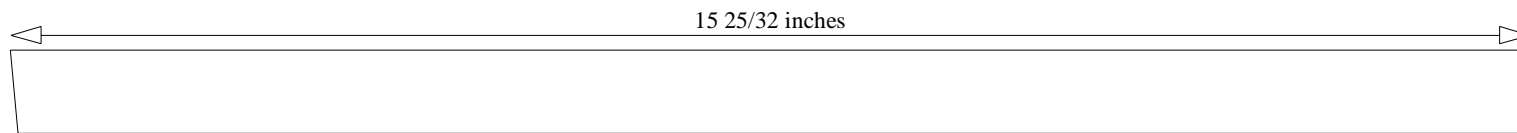
1. Create the blank by cutting an oak board to $3/4$ " x 2" x 14" .
2. Insert a hollow ground blade in the table saw.
3. Position the fence to the right of the blade at $13 \frac{7}{8}$ inches.
4. Set the miter to 0 degrees.
5. Placing the 2" side of the blank against the table, cut an one end of the board to 5 degrees.
6. Position the fence to right of the blade at $13 \frac{15}{32}$ inches.
7. Cut the same side of the other end of the blank to five degrees.
8. This board will be attached to the side stretchers using $3/8$ inch dowels.

12 11/16 inches



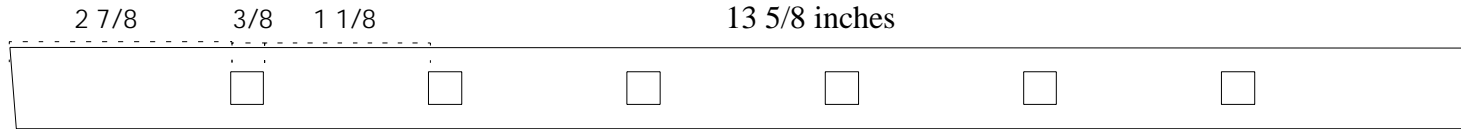
Cutting the lower back stretcher.

1. Create the blank by cutting a board to 3/4" x 1 1/2" x 13 11/16".
2. Insert a 1/2 inch stacked dado blade in the table saw.
3. Set the blade height to 1/8 inch.
4. Attach a sacrificial strip to the table saw fence, and adjust the fence as close as possible to the dado blade.
5. Cut a 1/8 inch dado on all four sides of each end of the blank.
6. The resulting tenons will accommodate a 1/2" x 1/2" x 1 1/4" mortises.



Cutting the lower front brace for the chair.

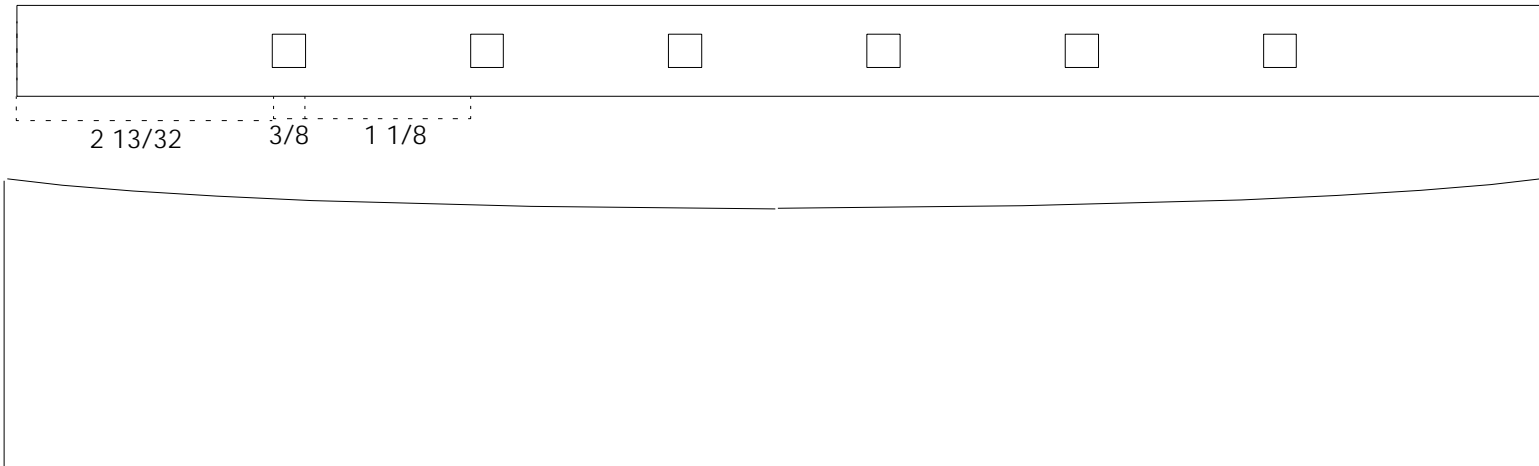
1. Create the blank by cutting an oak board to $3/4"$ x $1.5"$ x $16"$.
2. Insert a hollow ground blade in the table saw.
3. Position the fence to the right of the blade at $15 7/8$ inches.
4. Set the miter to 0 degrees.
5. Placing the $1.5"$ side of the blank against the table, cut one end of the board to 5 degrees.
6. Position the fence to right of the blade at $15 21/32$ inches.
7. Cut the same side of the other end of the blank to five degrees.
8. This board will be attached to the lower side stretchers using $3/8$ inch dowels.



Cutting the lower back receiver.

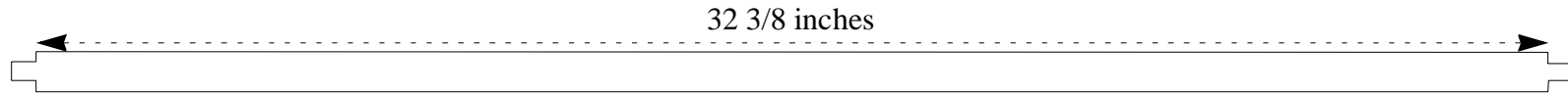
1. Create the blank by cutting a board to 3/4" x 1 7/16" x 14".
2. Insert a hollow ground blade in the table saw.
3. Set the blade angle to 5 degrees.
4. Set the miter to 1/2 degree left and position it on the right side of the blade.
5. Position the fence to the right of the blade at 13 7/8 inches.
6. Placing the 1 7/16" side of the board against the table, trim one end of the board to match this profile.
7. Move the miter guage to the left side of the blade.
8. Position the fence to the left side of the blade at 13 5/8 inches.
9. Flip the board so that the mitered end is facing up and to the left.
10. Holding the cut end of the board against the fence, cut a matching miter in the other end of the board.
11. Drill 1/4 inch square mortises (1/2 inch deep) at the specified locations on the flat edge of the blank.

12 11/16 inches



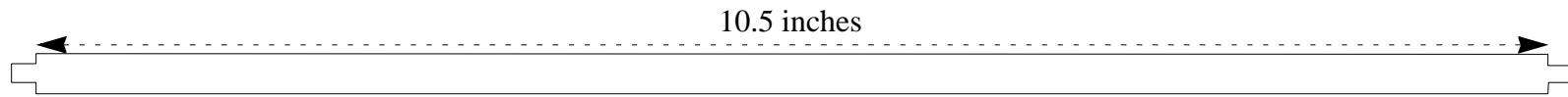
Cutting the upper back receiver.

1. Create the blank by cutting a board to 3/4" x 3" x 12 11/16".
2. Use the bandsaw to cut a 3/4" ellipse in the top of the blank.
3. Drill 3/8 inch square mortises (1/2 inch deep) at the specified locations on the flat edge of the blank.
4. The resulting tenons will accommodate a 1/2" x 1/2" x 1 1/2" mortises.



Cutting the back square spindles.

1. Create the blank by cutting a board to $5/8'' \times 5/8'' \times 32 \frac{1}{8}''$.
2. Insert a $3/8$ inch stacked dado blade in the table saw.
3. Set the blade height to $1/8$ inch.
4. Attach a sacrificial strip to the table saw fence, and adjust the fence as close as possible to the dado blade.
5. Cut a $1/8$ inch dado on all four sides of each end of the blank.
6. The resulting tenons will accommodate a $3/8'' \times 3/8'' \times 3/8''$ mortise.



Cutting the side square spindles.

1. Create the blank by cutting a board to $5/8'' \times 5/8'' \times 11\ 1/4''$.
2. Insert a $3/8$ inch stacked dado blade in the table saw.
3. Set the blade height to $1/8$ inch.
4. Attach a sacrificial strip to the table saw fence, and adjust the fence as close as possible to the dato blade.
5. Cut a $1/8$ inch dado on all four sides of each end of the blank.
6. The resulting tenons will accomodate a $3/8'' \times 3/8'' \times 3/8''$ mortise.