



Side Serving Table

Materials:

- (4) 1 3/4" x 1 3/4" x 34 1/2" - Legs
- (4) 11" x 30" x 1" - Top & Shelves

Router Bits:

- 1" Barley Twist
- 1" V-grooving
- 1/2" Up-cut spiral

Techniques:

- 3 Start Barley Twist
- Indexing for joinery

Preparation: Cut the stock to size and mount the 4 index hubs to each of the 4 pieces that have been prepared for the table legs. Since you will be milling 4 legs that all look the same, we recommend that you mill each section on all four pieces. This will eliminate machine set up. It will be much faster and easier to release the tailstock and change out workpieces than to mill one complete leg at a time.

Machine Setup: Use the 3" gear pitch and a 1" barley twist bit. Set the stops at 3 3/4" on the right, and 9 3/4" on the left.

STEP ONE: With the split-nut open, plunge to the side of the stock, start your router and bring it to center using the y-axis handwheel while pushing the carrier tray against the right stop. Mill the cove (Fig A) around the circumference of the stock.

STEP TWO: With the router plunged to the side, lock the x-axis split-nut onto the linear drive screw. Set the carrier tray to the beginning stop and bring the router over the center of the stock (the bit should be rotating freely in the previously milled cove). As you rotate the stock the router will mill the first bead of the barley twist. When you get to the end of the milled section (the left stop set at 9 3/4") lift the router off of the stock, open the split nut and slide the carrier tray back 1" (the diameter of the bit) and lock it into place. Drive the router back to the beginning. As you do so, check to see that the bit is traveling above the unmilled section of the stock.

STEP THREE: Repeat the process to mill the second and third pass of the barley twist. When you get to the end, open the split-nut and mill the second cove (Fig B). Release the tailstock, remove the workpiece and insert the second leg into the mill. Repeat steps 1-3 for all 4 legs.

STEP FOUR: The second section to be milled is the 5 round beads. Use the same 1" barley twist bit. Stops will be set at 12 1/4" on the right, and 17 1/4" on the left. To mill the beads you will leave the split-nut open and rotate the stock one full rotation with the bit centered over the stock. The next cut is 1" (diameter of the bit) to the left of the previous cut, and so on.



1" Barley Twist Bit

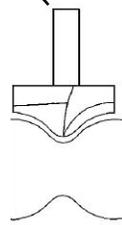


Figure A

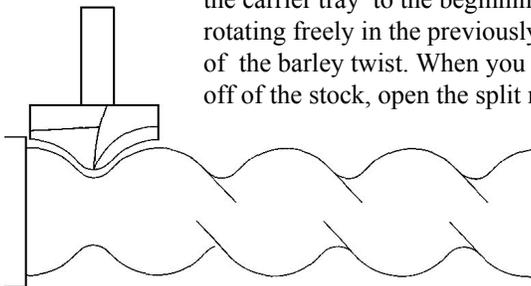
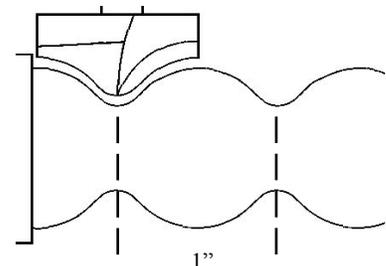


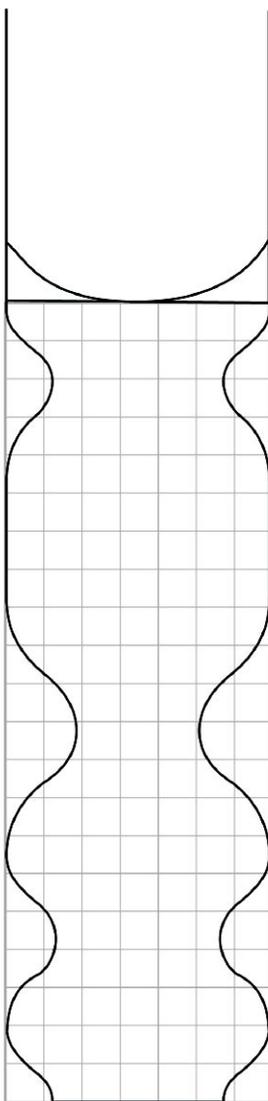
Figure B - Creating the second cove



Side Serving Table



Figure D -
 Foot section of leg -
 1/4" graph squares



STEP FIVE: The third section of the leg is milled the same as the first section of 3-start barley twist. The stops will be set at 19 3/4" and 25 3/4".

STEP SIX: The fourth section makes up the foot of the leg and is milled with the 1" barley twist bit. One cove is milled with a 2" barley twist to create a more interesting profile on the foot. You will essentially be milling 3 coves (Fig. D). The only difference is the placement of the coves. Mill the first cove centered at 29 3/4". Drop down 3 3/4" to mill the second cove. Center the bit over the end of the workpiece (34 1/2") and mill the half-cove on the end. The 2" barley twist bit is set so that the shoulder of the bit is level with the shoulder cut from the 1" bit. Center the bit at 32".

STEP SEVEN: Change to the 1" v-grooving bit to chamfer the edges of the corner blocks (Fig. E). The bit should be centered on the edge of the block and will take the corners off to a nicely milled profile. This block will serve as a mortising block for the three shelves below the tabletop.

Set the stops at 3 1/4" for the top block of the leg (tabletop block). The stops for the shelf blocks are set at 10 1/4" and 11 3/4" for the first block, 17 3/4" and 19 1/4" for the second block, and 26 1/4" and 29 1/4" for the final block.

STEP EIGHT: The final cuts on the legs will be to create the mortises for the table shelves. The shelves are made out of 3/4" material. To make the cuts you will use a 1/2" up cut spiral. Set the plunge depth of the router so that you will mill approximately half-way into the block (Fig. F). Set your stops on each side of the router so that you can mill 1/8" to both sides of center. Center of the corner block should be set at 11", 18 1/2" and 27". Before milling make sure that the flat side of the workpiece sits level. It will be helpful if you can set your index drive center so that your indexing plate will lock the workpiece level. (NOTE: You may have to remove the workpiece and take the index plate off. With the ball wrench, pop the index drive center loose and reset it so that the workpiece is level when the index plate is locked into position) With the 24 position plate you will be able to mill one side, rotate the stock 6 holes, and then mill the other side.

STEP NINE: After assembling the the table, we routed a piece of molding that attaches to the edges of the shelves and ties the corner blocks together. Create a table top with larger pieces of routed molding on the edges and you'll be ready to paint or stain the table.

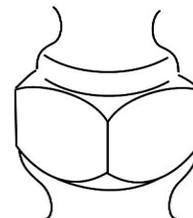


Figure E - Creating the corner block using a 1" v-grooving bit.

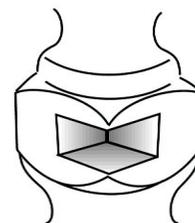


Figure F - Corner block with mortise.