

Adding Spirals to Your Work

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For this spiraling demonstration, I will be using a hollow form which has a wall thickness of $\frac{3}{8}$ ". The depth of your spirals will dictate the wall thickness of your piece. Keep in mind that your wood must be dry in order to carve with most burs.

I use a simple handmade indexing wheel since my lathe does not have one.



With the indexing wheel on the spindle, the chuck must be screwed on to lock the wheel securely. The piece is mounted in the chuck. A wooden platform is used in place of a tool rest. It is curved to wrap around my hollow form or bowl.

To determine how many flutes I would like to have on the piece, several things must be considered including the size of the burs and the desired width and depth of each flute.

It is necessary that you have a close estimate of the diameter of the largest part of the hollow form. Multiply that diameter by Pi which is 3.14. This will give you the circumference of the hollow form. Now divide the circumference by the number of flutes you would like to have. That number will be the distance between the vertical lines, that I will draw, at the widest point.

Example: Dia. (6.00) X Pi (3.14) =18.84

Round to 18.875 (a common fraction)

Divide by the number of flutes desired

For 16 flutes 18.875 divided by 16 = 1.179 or $1 \frac{3}{16}$

Using the prime number chart, I determine what ring on the indexing wheel will match the number of flutes chosen. Using the platform, I pencil a ring on the foot and rim which will

designate where my flutes will begin and end. I will also draw a line at the center of the form. The number of horizontal rings I will draw is determined by the size of the hollow form.

To draw the vertical lines, I must refer to the indexing wheel and prime number chart. To begin, my pencil must be dead center of the lathe and on the platform. I draw a line from the horizontal line I drew at the foot to the horizontal line I drew at the rim. I refer to the prime number chart to determine how many spaces to count on the indexing wheel and where my next line should begin. I continue until I have marked each vertical line for each flute.

I now have a graph drawn on my piece. To draw the diagonal lines where my flutes will be, I start at the base of the hollow form and draw diagonally from corner to corner of each rectangle.



Once I have all my lines drawn, I have options as to how I wish to begin. I can use the rotary bur or handsaw to cut each diagonal line. I make the cuts to guide the Tapered Roughing Bur. Once I complete this step, I repeat the process with the Ball Nose Roughing Bur to get the desired depth and width of each flute. I continue with the Ball Nose Roughing Bur until my flutes are uniform in size, shape and dimensions.



Once I have completed this step, I begin sanding. Sanding drums of various sizes must be used depending on the size and depth of the flutes. Some drums are handmade as needed to get between the flutes. Once sanded, I remove the tenon and finish with oil.



<i>INDEX WHEEL PRIME NUMBERS</i>			
<u>120</u>	<u>96</u>	<u>72</u>	<u>48</u>
2-60	2-48	2-36	2-24
3-40	3-32	3-24	3-16
4-30	4-24	4-18	4-12
5-24	6-16	6-12	6-8
6-20	8-12	8-9	
8-15			
10-12			

