Things you need to know to make the spiral cut

- **Linear distance the router needs to travel?**
  - **How much of a twist is in the spiral?**

And figure out

- **How many spirals can you have around the vase?**
  - **Size of the cable wheel to accomplish this?**

Linear distance the router needs travel

Measure the distance down the side of the vase where you want the spiral to be cut

Measure the path the router will take on the platform

(Do not measure the path of the bit around the vase)

How much of a twist is in the spiral?

Each spiral will go how far around the vase?

¼ of a turn? ½ of a turn? full turn?

How many spirals can you have around the vase?

circumference = 3.14 x smallest diameter

$$\text{\# of spirals} = \frac{\text{circumference of smallest diameter}}{\text{bit size + space between spirals}}$$

The size of the cable wheel

$$\text{cable wheel diameter} = \frac{\text{linear travel distance x Twist distance}}{3.14}$$

How many spirals can you have around the vase?

This is limited by the size of the bit used, the space between the spirals and

circumference of the smallest diameter of the vase

Divide the circumference by (bit size + distance between the spirals)

Example: If the smallest diameter is 1.75”

circumference = 3.14 x 1.75” diameter or 5.495”

5.495” / (.5” bit + .375” space between spirals) =

5.495” / .875” = 6.28

In this example the maximum spirals you can have around the vase is 6.

(As the diameter increases the distance between the spirals will also increase.)

The size of the cable wheel

If the distance of linear travel is 12” and

we want the spiral to travel 1/4 of the distance around the vase.

The diameter of the cable wheel will need to be

(12” x 4) / 3.14 = 15.28”