

Rifling Mandrill

The rifling mandrills are made using Autodesk Inventor. Parametric features of Inventor are used to make the process semi-automated.

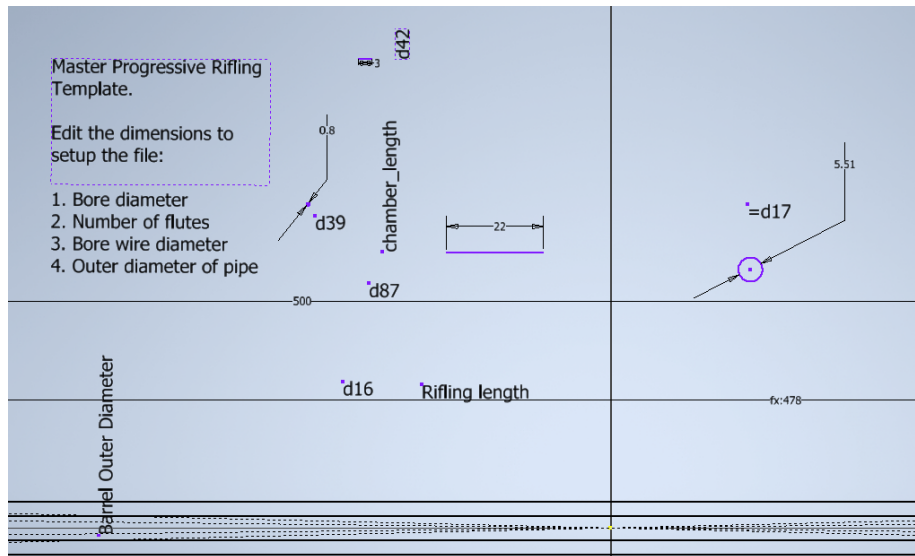


Figure 1: img_11.png

Due to the differences in geometry between different calibers only one master mandrill per caliber can be made.

This is due to the way the slicer operates. Small changes in geometry make the mandrill un-usable. These defects may be things such as too small/large cavities for the electrode or the landings being too small or too large.

As you can see from the image above, the slicer has made the right-hand mandrill un-usable. The mandrill had to be redrawn from scratch to accommodate the way the slicer operates. Due to the small size of this mandrill (.22 caliber) there is not much room for the print head to move. The mandrill on the left is sufficient and effectively locks in the electrode wire.

The mandrill is a progressive twist design for the entire length of the mandrill. See below for the progression of the twist:

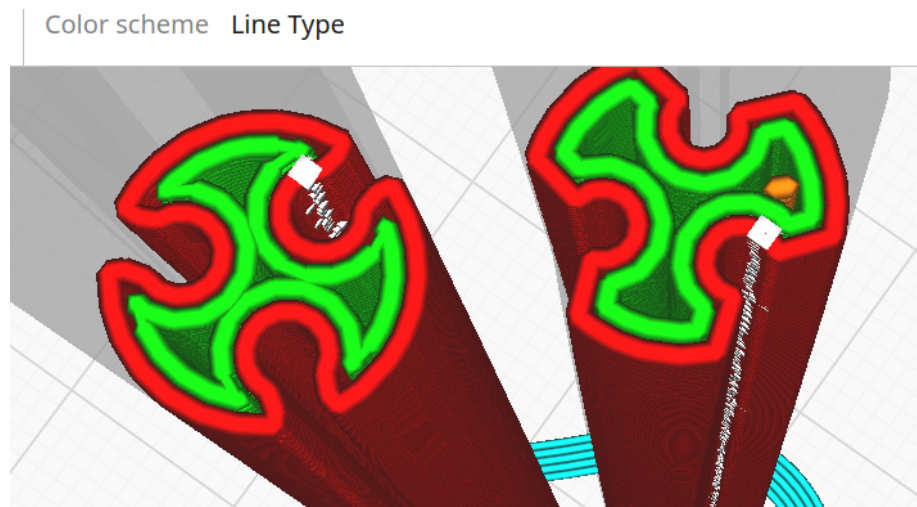


Figure 2: img_12.png

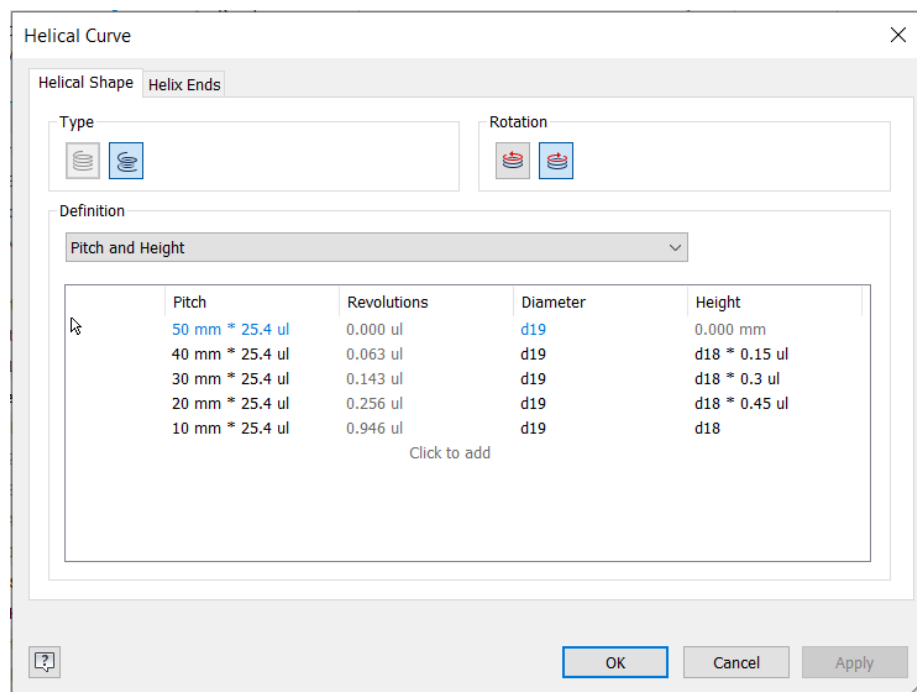


Figure 3: img_10.png