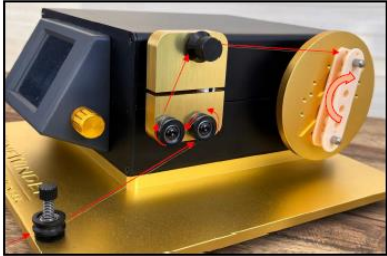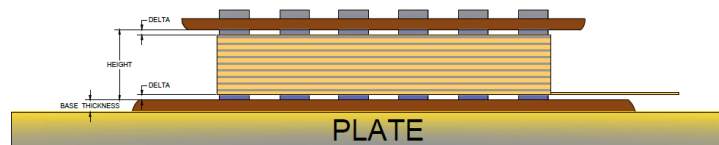## WINDING YOUR FIRST BOBBIN:

Making the first bobbins needs a small learning process, and first bobbins shouldn't be made in "unattended mode" but checking often how it is going and making appropriate corrections. First of all, you have to take into account next points:

- ➢ It's highly recommended to have a caliper in order to measure correctly.
- ➢ The bobbin measures must be taken carefully, and big irregularities in the base bobbin or wings should be corrected when possible. before to start a run. Be sure your bobbin is symmetric. Otherwise, it is impossible Tonewinder to correct these faults.
- ➢ Correctly set the wire gauge that you are using. All calculus that Tonewinder makes are based on the wire gauge, so if it is not set correctly can lead to undesirable shape bobbin. You can download a quick guide for this purpose HERE.
- ➢ Once the right settings are chosen, all the consecutive units are extremely precise.

When you are winding your first bobbin you have to pay attention in these aspects before you complete the bobbin:

- • **Verify the "Zero position":** Tonewinder comes adjusted from factory, but you should check this position. See chapter "**6.4.1 Verifying Zero position**", in page 36.

- • **Set up the wire in the correct path:** See chapter "**6.4.2 Setting up the wire"**, in page 37, or in this VIDEO.

- • **Adjust the tension of wire before start the bobbin:** You can see how to adjust the tension of the wire before start the bobbin in the VIDEO. Be careful with set tension in a high value, because can lead a break of wire, deformations in the wings or little shortcuts among layers. You can see what is the maximum value for each gauge of the wire HERE.
- • **Check the dimensions of the bobbin and wire:** Check the dimensions of the bobbin with a caliper so that you can input the correct values in the software. Pay attention that Tonewinder use **micrometer as length unit** (1µm = 1,000 mm). You can adjust the "Delta" parameter in the "Basic Parameters screen", but a good point to start is 100 µm. This parameter is used for avoiding deformations in the wings of the bobbins.
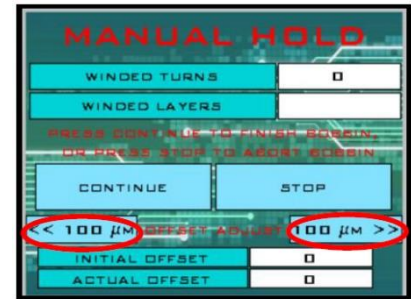

- • **Place the bobbin in the plate:** Place the bobbin in the plate using the screws designed for this purpose. You need to be sure that the base plate of the bobbin is touching the plate along it.
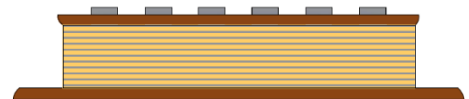
- **Start the bobbin:** When you press start, Tonewinder will wind the "initial turns", and then you are able to start the bobbin.

- **Check the position of the wire in the bobbin:** After few layers, you can hold the winding, and check how is placed the wire into the bobbin. If you see differences with the previous scheme, you need to adjust the "offset" in this screen.

  If the wire is placed near base plate, you need add more offset. If the wire is placed near top plate, you need to down the offset. This new offset will be saved for further bobbins. When you restart the bobbin, after a couple of winds you can check again the position, repeating the process.

  You can do that as many times as you want, in order to ensure a correct shape of the bobbin. Normally this process is done making the first bobbins. Once all is set correctly you can work under "unattended mode".
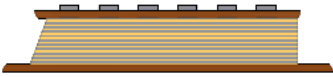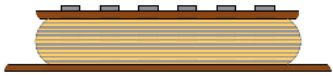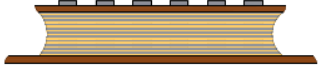
- **Complete the bobbin:** If you have followed all this steps, your bobbin should finish successfully, and the shape should be similar to this scheme:

  If your bobbin didn't complete correctly, you should review all these steps, and check if all parameters are set correctly.

  In case you got an odd shape in the bobbin, here you have a quick guide to identify where is the main issue:

SHAPE	PROBLEM	SOLUTION
Trapezoidal shape	- Offset too big (zero position). - Base height too small. - Incorrect wire diameter.	- Check Zero Position. - Check offset. - Check base height. - Check wire diameter.
Inverted trapezoidal shape	- Offset too small. - Base thickness too big. - Incorrect wire diameter.	- Check Zero Position. - Check offset. - Check base thickness.

Asymmetric shape	- Bobbin is not fully seated in the plate. -Bobbin plates aren't parallel. - Plate is deformed or damaged.	- Verify bobbin is fully seated in the plate. - Check the eccentricity of the plate. - Check the shape of the bobbin
Rounded shape	- Delta too high. - Height coil too low.	- Verify "Delta parameter". - Verify height coil.
Inverted rounded shape	- Delta set in 0 um. - Height coil too high.	- Verify "Delta parameter". - Verify height coil.

NOTE: Of course, all these shapes may be the results of the sum of problems, not only one.