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Software Manual for the Coil Winding Arm Controller Software.

Version 1.2

14th July 2016.

This documentation applies for use of the software on the following machines:

- CNC 200mm Coil Winder MK2
- Mini Coil Winder MK2
- Custom Coil Winders

<http://www.ukcnc.net>

Table of Contents

Automated Coil Winding - Tab.....	3
Standard Script Engine – Tab	25
Manual Winding Mode – Tab.....	38
Settings/Diagnostics – Tab	40
Keyboard Mapping – Tab	44
Import Tools – Tab.....	44
Guitar Pickup Scatter Winding Beta – Tab.....	46

Automated Coil Winding - Tab.

This tab shows a simple wizard which only needs a few basic settings to be made and you will be up and winding your coil in the quickest time.

The screenshot shows the 'Automated Coil Winding' tab of the CNC Design Ltd CNC Coil Winder for ARM Controller V2.3 2016 software. The interface is divided into several sections:

- Bobbin Dimensions:** Includes a diagram of a bobbin with three input fields: (1) Enter Bobbin Width (10 mm), (2) Enter Total Windings (100), and (3) Enter Wire Size (1 mm). A 'Switch to Pickups' button is also present.
- Status and Calculations:** Displays calculated values: Calculated Winds Per Layer (10), Calculated Wire/Pitch Size (1), Calculated Total Layers (10), and Calculated Bobbin Width (10). It also shows the Bobbin Name Loaded (1) and Hardware Status (Un-Plugged).
- Controls:** Features a 'Disengage Motors' button, a large green 'Start' button, and buttons for 'STOP', 'Pause', and 'Home'. Below these are jog buttons for the bobbin motor (up/down) and feeder arm (left/right), along with a 'Manual Speed Override' checkbox.
- Load/Save Bobbin:** Allows loading or saving a bobbin configuration. It includes a dropdown for selecting a bobbin (currently 1), a 'Save' button, and a text area for notes.
- Bobbin Speed:** Includes a 'Desired Speed' (200 RPM) and 'Calculated Speed' (200 RPM) display, along with a 'Ramp each layer' checkbox.
- Status:** Shows 'Winds Completed' (00000.00) and 'Feeder Position' (000.0000) in large green digits, along with an 'RPM' display (0000).

For a quick start you only have to set four parameters in the **Automated Coil Winding** tab to wind a coil.

Set the **Bobbin Width**, Set the **Total Windings**, Set the **Wire Size** and Set the **Desired Speed**. Then simply click the Start Button.

The software will then Wind the coil back and forth until the coil is complete.

Below we will go through each option panel and detail what they are.

Bobbin Dimensions

(1) Enter Bobbin Width mm

(2) Enter Total Windings

(3) Enter Wire Size mm

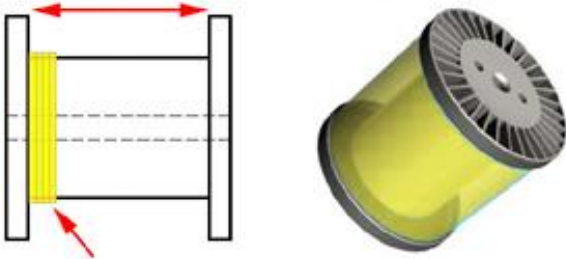
Closest awg value to mm awg

Switch to Pickups

TPL Calculator

Tension Calculator

Convert awg>mm



The **Convert awg>mm** will take the value entered in the box and convert from awg to millimetres. This is a handy tool for people used to dealing with awg wire sizes.

In the example above it has converted 22awg, which calculates to be 0.6438mm.

The **Switch to Pickups** button changes the screen from normal bobbins to the Guitar Pickup screen. This will be covered later on in the manual.

The **TPL Calculator** button will bring up a calculator panel on the screen. This will be covered later on in the manual.

The **Tension Calculator** button will bring up a calculator panel on the screen. This will be covered later on in the manual.

Next, with three simple steps you can setup the software to wind your desired coil.

- 1.) **Enter the width of your bobbin** is the actual length of the bobbin you wish to wind wire across.
- 2.) **Enter Total Windings** for the coil you wish to make.
- 3.) **Enter the wire Size** you wish to wind but also allow for the coating. Typically this can be 10%-15% of the size of the wire.

After you have set these parameters, then the software will auto calculate the nearest settings that are suitable for the machine you have connected and will display them in the **Status and Calculations** panel.

Status and Calculations			
Calculated Winds Per Layer	16	Calculated Wire/Pitch Size	0.645
Calculated Total Layers	31.25	Calculated Bobbin Width	10.32
Bobbin Name Loaded	1	Hardware Status	Un-Plugged

Based on the parameters entered in the **Bobbin Dimensions** panel, the actual working values that get sent to the Coil Winding Machine are displayed in the **Status and Calculations** panel. These calculations take into consideration the machine that is connected to your computer and also the resolution settings applied.

In the example above, it has taken the parameters and calculated that the 16 winds will be wound each layer and based on the width of wire, this would make the actual winding area of wire cover 10.32mm and not the 10mm specified.

On the back of these calculations, it has also calculated that 31.25 layers will be wound onto the bobbin. This is 16 winds to the right for the first layer and then 16 winds to the left for the second layer and so on until the total windings are complete.

Now if your bobbin width is 10mm maximum then you will need to reduce the bobbin size to reduce the windings per layer. The simple fact is that 10mm will not divide by the width of your wire $10\text{mm}/0.6438=15.53$ unless you are going to chop your wire in half at the end of each layer, which is not possible !

In the screenshot below, you can see by reducing the Bobbin Width to 9.99mm it has reduced the layers to 15 and also the bobbin width to 9.675mm. Not ideal as you may get spacing created between each winding, which leads to uneven windings as your layers build up.

The ideal bobbin would be the correct width to allow the exact number of windings you require using the wire you need to use. But this is not always possible.

Bobbin Dimensions

(1) Enter Bobbin Width

9.99

mm

(2) Enter Total Windings

500

(3) Enter Wire Size

0.6438

mm

Closest awg value to mm

22

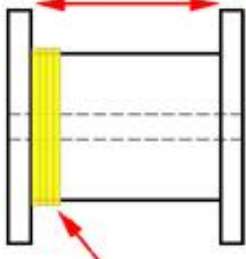

awg

Switch to Pickups

TPL Calculator

Tension Calculator

Convert awg>mm

Status and Calculations

Calculated Winds Per Layer

15

Calculated Wire/Pitch Size

0.645

Reply

-

Calculated Total Layers

33.33333

Calculated Bobbin Width

9.675

Bobbin Name Loaded

1

Hardware Status

Un-Plugged

We also have some status display objects in this panel.

Reply is the answer coming back from the Coil Winding Machine after each command is sent.

Hardware Status shows if the Coil Winding Machine is connected or not connected to the computer.

Bobbin Name Loaded is the name of the bobbin that has been chosen from the drop down box in the Load/Save Bobbin panel below.

As you can see all of the objects in this panel are for information purposes only and cannot be set by the person using the software.

Load/Save Bobbin

Bobbin number 1

Save Remove

Test Bobbin

Homing Configuration

Offset 10 mm ☐ Use Homing Offset on Start

Wire Direction

☒ Right ☐ Left

Bobbin Direction

☒ Forward ☐ Reverse

Ramping Configuration

Pause 10

Steps 50

☐ Ramp each layer ☐ Pause at end of each layer

Bobbin Speed

Desired Speed 600 RPM

Calculated Speed 600 RPM

☒ Disable Hover Help Tips

The **Load/Save Bobbin** panel not only allows you to save and remove bobbin parameters, but also lets you set other parameters that will affect the coil you are winding. These settings, along with other settings from other panels get saved to the computers registry, which can be backed up and reloaded in the future. This is usually due to either moving the software to a new machine and wanting to bring your saved bobbins across to it, or in case of a failure.

Starting from the top of the panel and working downwards we first have the drop down box. This will allow you to choose previously saved bobbin configurations.

When clicking the **Save** button it will ask for a name that you wish to call the bobbin and save all the parameters set for that bobbin to the registry. If you wish to remove the saved bobbin from the registry, then click the **Remove** button and it will delete that bobbin.

The yellow box below the drop down box is for any notes you wish to save against that bobbin. These notes will be saved along with other parameters and recalled when a bobbin is selected.

Homing Configuration group box.

Sets the offset distance that the feeder arm will move away from the limit switch when the **Home** button is clicked.

For example if it is set to 10mm then when the **Home** button is clicked the feeder arm will move to the left until it gets to the limit switch on the machine. It will then move to the right 10mm.

By ticking the **Use Homing Offset on Start** option will cause the machine to home when the Start button has been clicked. The machine will then home before the winding starts.

This option is only available for machines with the homing/limit switches installed.

Wire Direction group box.

Sets the direction for the feeder arm when winding starts.

Bobbin Direction group box.

Sets the direction for the bobbin when winding starts.

Ramping Configuration group box.

We use stepper motors on our machines then to get them to higher speeds we need to ramp up the motor speed gradually.

You have two variables you can set to get the desired curve as such.

The Steps variable is the divider of the target frequency that we want the bobbin motor to run at. So if the software calculated that the bobbin motor should run at 1000kHz and the steps box is set to 100 then we can see that the steps would be $1000/100 = 10$ Hz increments.

The Pause variable is the time between each increment and is set in milliseconds.

Ramping each layer checkbox.

If this box is left unchecked then the machine will ramp up at the beginning of the winding routine and at the end only. When the feeder gets to the end of the layer it will simply change direction. If the box is checked then the bobbin motor and feeder motor will ramp up at the start of each later and ramp down at the end of each layer.

Pause at the end each Layer checkbox.

Checking this box will pause the machine after each layer has been wound. This option can only be used if **Ramping each layer** is also checked.

Bobbin Speed group box.

Desired speed is the variable that will tell the machine what speed you want the bobbin motor to run at.

As the bobbin motor and feeder motor are interpolated, then most of the time the speed of the bobbin motor will be divided down to set the speed of the feeder arm motor to suit and keep that interpolation correct. But if you require the wire size or movement pitch to be a large number that requires the feeder arm motor to run faster than the bobbin motor, then the bobbin motor will automatically drop and the calculated speed will be displayed below.

Disable Hover Help Tips checkbox.

You can move the mouse over any object within the software and if left over that object for a certain amount of time a Hover Tip will appear giving you information on that object.

By checking this box then it will stop these hover tips appearing.



The **Status** panel has the following objects.

Padlock Icon

Clicking on this will ask you for a password and is used by the developers for diagnostics and troubleshooting if needed. You should never have to go into this area.

Winds Completed display.

Displays the amount of winding that have been wound.

Feeder Position display.

Displays the position of the feeder arm on the machine.

RPM display.

Displays the speed that the bobbin motor is running at.

Reset button.

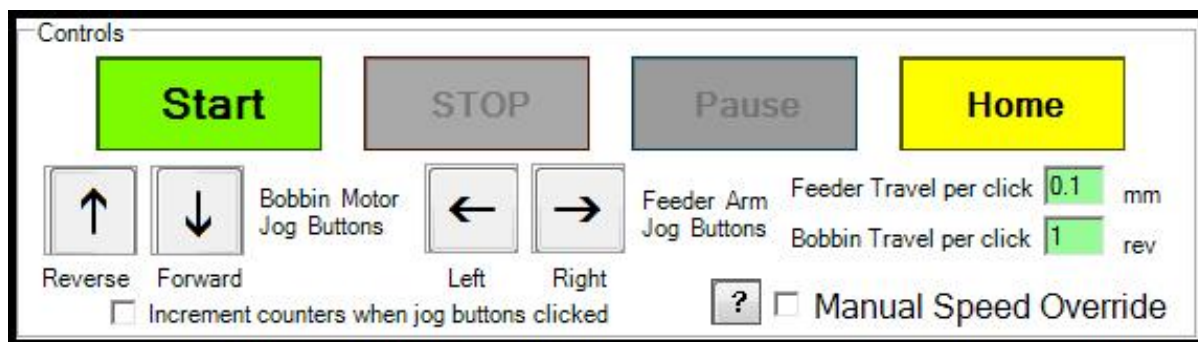
Pressing this button will reset the feeder position to zero.

Goto Zero button.

Pressing this button will tell the feeder arm to return to its zero position.

Return to Zero checkbox.

If this is checked then when the machine has finished its winding routine the feeder arm will automatically move back to the zero position.



The **Controls** panel has the following objects.

Manual Speed Override checkbox

If checked then when the **Start** button is clicked the software will pass control over to the manual speed controller that should be connected to your controller box.

The manual controller dial needs to be fully turned to the left before it will start to wind and the speed of the bobbin motor and feeder arm will increase or decrease depending on the position of the dial.

Ramping will be disabled for this mode as not needed and it will be down to control of the user to make sure the speed is controlled so no jamming of the motors will occur.

Start button.

Clicking this button starts the winding routine.

Stop button.

Clicking this button stops the winding routine.

Pause/Resume button.

While winding is in progress and you wanted to pause the machine, then click this button. It will then turn to a flashing Resume status and clicking it again will allow the machine to

carry on from where it was paused.

While paused you can cancel the winding routine by pressing the stop button.

Also while paused the Left and Right button can be used to jog the feeder arm to a new position. This will not increment the feeder position and can be used for adjustments needed without having to restart the whole winding routine from the beginning.

Home button.

This can only be used if there are limit/homing switches installed on the machine. Based on the variable set in the **Homing Configuration** will determine the distance that the feeder arm will travel away from the limit switch once it has been triggered.

Reverse button.

This is a manual jog for the bobbin motor and when clicked the bobbin motor will move in the reverse direction.

Forward button.

This is a manual jog for the bobbin motor and when clicked the bobbin motor will move in the forward direction.

Left button.

This is a manual jog for the feeder arm and when clicked the feeder arm will move to the left.

Right button.

This is a manual jog for the feeder arm and when clicked the feeder arm will move to the right.

Feeder Travel per click variable.

Sets the travel in millimetres that the feeder arm will move if either the **Left** or **Right** buttons are clicked.

Bobbin Travel per click variable.

Sets the amount of revolutions that the bobbin motor will move if either the **Forward** or **Reverse** buttons are clicked.

Bobbin Dimensions

(1) Enter Bobbin Width mm

(2) Enter Total Windings

(3) Enter Wire Size mm

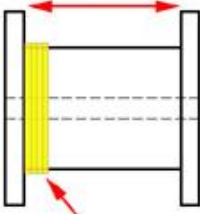

Closest awg value to mm awg

Switch to Pickups

TPL Calculator

Tension Calculator

Convert awg>mm

On the **Bobbin Dimensions** panel we have a **TPL Calculator** button.
When clicked this switches the appearance of the panel as can be seen below

TPL Calculator

Enter Required TPL:

Enter Bobbin Width:

Feeder Resolution:

Enter Total Layers:

Calculated Bobbin Width:

Calculated Wire Size:

Calculated Windings:

Enter your Required Turns Per Layer (TPL)
Then Click Calculate to get the result of what
the wire size should be.
Adjust the TPL till you get as close to the bobbin
width/height you require.

Calculate Populate Results Close

This will allow you to calculate the Turns Per Layer by simply entering the turns required for each layer, the bobbin width and the amount of layers you wish to wind.

Close button.

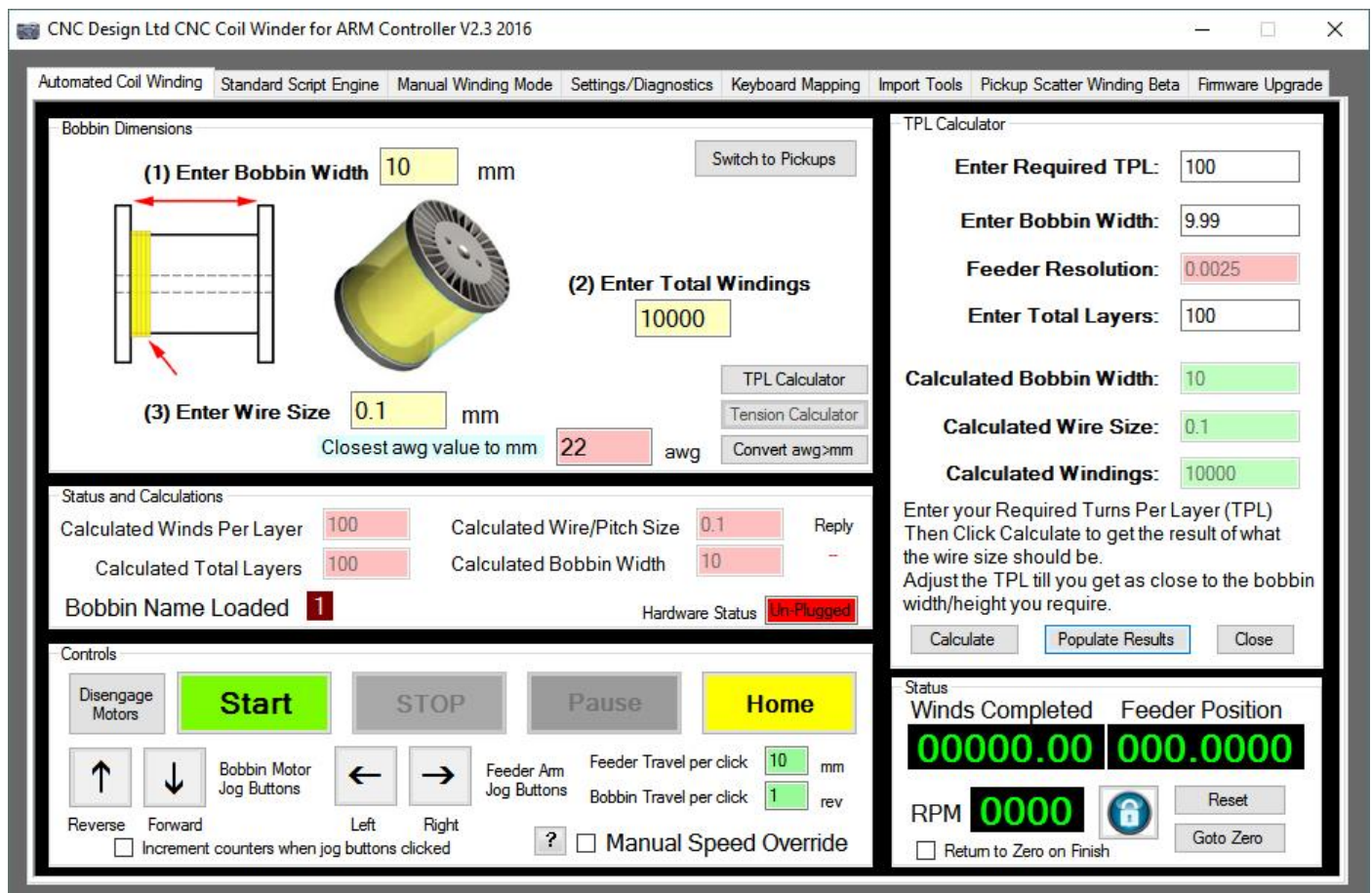
Closes the TPL panel.

Calculate button.

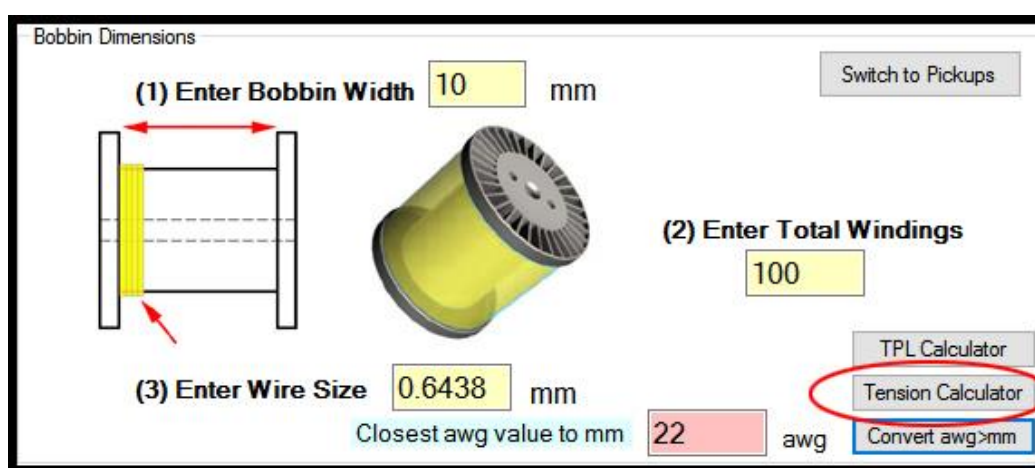
This will populate the result green boxes with the values that have been calculated, based on what you entered in the top boxes.

Populate Results button.

This will take the values that have just been calculated and populate the main bobbin dimensions screen.



Above after clicking the Populate Results button.



On the **Bobbin Dimensions** panel we have a **Tension Calculator** button.

When clicked this switches the appearance of the panel as can be seen below

Wire Tension Calculator

Enter Wire Diameter
(Without Insulation) mm

Calculated Tension grams

Calculated Tension Kg

Calculated Tension Lbs

Calculated Tension Ounces

Enter your wire diameter.
Then Click Calculate to get the result of what
tension should be set.

Please note this is just a guideline and you
may have to adjust the tension up or down
a little to suit your bobbin type.

Close button.

Closes the Tensioner panel.

Calculate button.

This will take the wire size entered in the top box and give the results in the green boxes.

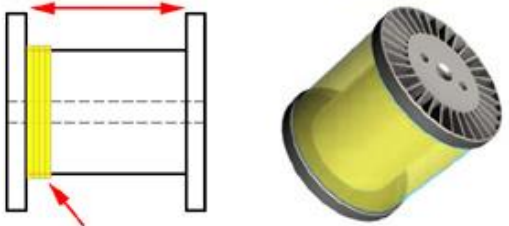
Bobbin Dimensions

(1) Enter Bobbin Width mm

(2) Enter Total Windings

(3) Enter Wire Size mm

Closest awg value to mm awg



On the **Bobbin Dimensions** panel we have a **Switch to Pickups** button.
When clicked this switches the appearance of the panel as can be seen below

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Automated Coil Winding | Standard Script Engine | Manual Winding Mode | Settings/Diagnostics | Keyboard Mapping | Import Tools | Pickup Scatter Winding Beta | Firmware Upgrade

Bobbin Dimensions

Interpretation of Guitar Bobbin Dimensions.

Length: 57.5 mm, Width: 4.8 mm, Height: 57.5 mm

(1) Enter Pickup Height: 10.8 mm

(2) Enter Total Windings: 8293

(3) Enter Wire Size: 0.0635 mm

Resistance: 6.33K, Closest awg value to mm: 22 awg

Status and Calculations

Calculated Winds Per Layer: 173, Calculated Wire/Pitch Size: 0.0625 mm, Reply: -

Calculated Total Layers: 47.93641, Calculated Pickup Height: 10.8125 mm

Bobbin Name Loaded: 1960 Strat, Hardware Status: Un-Plugged

Controls

Disengage Motors, Start, STOP, Pause, Home

Reverse, Forward, Left, Right, Feeder Arm Jog Buttons, Feeder Travel per click: 10 mm, Bobbin Travel per click: 1 rev

Load/Save Pickup

1960 Strat, Save, Remove, Populate Default Pickups

Homing Configuration

Offset: 10 mm, Use Homing Offset on Start: ☐

Wire Direction: ☒ Right, ☐ Left, Bobbin Direction: ☒ Forward, ☐ Reverse, Ramping Configuration: Pause: 10, Steps: 100

Bobbin Speed

Desired Speed: 600 RPM, Calculated Speed: 600 RPM

Disable Hover Help Tips: ☒ Help

Status

Winds Completed: 00000.00, Feeder Position: 000.0000

RPM: 0000, Reset, Goto Zero

We now have a guitar pickup picture displayed and also a few more options.

Bobbin Dimensions

Interpretation of Guitar Bobbin Dimensions.

Length: 57.5 mm, Width: 4.8 mm, Height: 57.5 mm

(1) Enter Pickup Height: 10.8 mm

(2) Enter Total Windings: 8293

(3) Enter Wire Size: 0.0635 mm

Resistance: 6.33K, Closest awg value to mm: 22 awg

Status and Calculations

Calculated Winds Per Layer: 173, Calculated Wire/Pitch Size: 0.0625 mm, Reply: -

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Load/Save Pickup

1960 Strat, Save, Remove, Populate Default Pickups

Homing Configuration

Offset: 10 mm, Use Homing Offset on Start: ☐

Wire Direction: ☒ Right, ☐ Left, Bobbin Direction: ☒ Forward, ☐ Reverse, Ramping Configuration: Pause: 10, Steps: 100

Bobbin Speed

Desired Speed: 600 RPM, Calculated Speed: 600 RPM

Disable Hover Help Tips: ☒ Help

Status

Winds Completed: 00000.00, Feeder Position: 000.0000

RPM: 0000, Reset, Goto Zero

The main thing that has changed is that we now have extra variables that can be set and saved against the bobbin.

These are shown in green and are for information only. They do not affect the way the pickup is wound.

Load/Save Pickup

Nothing Saved Yet

Save Remove Populate Default Pickups

Enter any notes in this box and click Save.
This will save as a note against the selected bobbin.

Homing Configuration

Offset mm ☐ Use Homing Offset on Start

Also you will notice that we now have a **Populate Default Pickups** button.

When you first run the software you will see that nothing has been saved yet.

But by click the **Populate Default Pickups** button it will populate the database with a set of common guitar pickups.

Any of these once loaded can be changed and saved back to suit your custom needs.

Load/Save Pickup

1950-1951 Tele Bridge

1950-1951 Tele Bridge

1950-1960 Tele Neck

1951-1964 Tele Bridge

1954 Strat

1955 Strat

1956 Strat

1957 Strat

1958 Strat

A new feature is the Mixed TPL Mode button.

Bobbin Dimensions

Interpretation of Guitar Bobbin Dimensions.

Length 57.5

Width 4.8

Height

Total Windings

Wire Size

Notice we use Height instead of width that we use on normal bobbin.

Resistance 6.33K

Closest awg value to mm

Mixed TPL Mode

Switch to Bobbins

(1) Enter Pickup Height

10.8 mm

(2) Enter Total Windings

8293

(3) Enter Wire Size

0.0635 mm

22 awg

Save Mixed TPL

TPL Calculator

Tension Calculator

Convert awg>mm

A lot of our customers that are winding Guitar Pickups are now using the Scripting Engine for creating some Mixed Turns Per Layer(TPL) to build up their coil shapes into various shapes and also to try and get close to a Scatter Wind effect.

We do have a Beta Scatter Winding tab in the software, but it is based on a different position per revolution, rather than allowing for mixed TPL setups, that can then be merged together.

A quick couple of paragraphs on Scatter Winding first.

What is scatter winding?

When wire is wound into coils on a pickup, the most basic definition of scatter-wound means “non-uniform.”

Imagine a spool of thread that doesn’t have thread on it yet that you’re going to wrap thread around.

If you were to wrap that thread in a uniform way, you would start the wrap on one side, with each consecutive wrap following the other until you reach the other side, then start wrapping in the other direction and crisscross until you were finished.

If you were to wrap the same thread in a non-uniform way where you wrap a few times on one side, then go straight to the other side and get a few wraps there, then to the middle and “fill” the spool in a non-uniform way, that’s a scatter-wind.

Does scatter winding have a “standard?”

No. Scatter-winding is particular to manufacturer. Seymour Duncan will scatter-wind differently than Lindy Fralin and differently than other pickup makers and so on. In addition, there are also pickup makers who scatter-wind by hand, and still others who will use a machine. There is no single “right way” to scatter-wind.

What pickup makers do is experiment with different scatter-wind techniques until they find one they think works well, and go with that.

One of the down sides of using the scripting is that for higher speeds, each command will need to be ramped up and ramped down. If not then the motors will just stall. Just like any CNC machine out there, that is using Stepper motors, they need to be ramped.

Now the big question or observation I get is that in the Automated Tab, you can setup all the parameters of the pickup you wish to wind, click on the start button and away the machine will go, without it having to ramp up and down each layer.

The main reason we can do this is because the feeder (with small wire) is never running faster than the bobbin motor and the speed it is running at 99% of the time means we can change direction of the feeder without ramping.

So we calculate total windings, along with the turns per layer and send this as one command to the firmware. You will still get a ramp at the beginning and also a ramp at the end of the winding. But no ramping in-between layers as the firmware simply changes direction of the feeder when it hits it desired TPL.

With the scripting we send one command for each layer.

So now to try and make winding a little bit smoother, we have added a new button on the Automated tab Pickup Screen. This is called Mixed TPL mode and allows you to save different combinations of winding sets and to execute them one after the other.

You will still need to ramp up and down for each set, but depending on how many windings are in a set and how many total winds you need to do, it will reduce the ramping per layer a lot.

Main rules to stick to are to make sure each winding set you create has at least two layers and that total layers are a whole number (Integer).

The reason for this is so you do not lose your zero point in-between the winding sets. If you try to send say 10 windings at a 1.0mm pitch for the first layer and then send 5 windings at 1.0mm for the next layer, then obviously the starting point for the next command is not at zero point and it would actually be 5.0mm.

In the scripting engine you could send a movement command to bring it back to zero, but for this feature under the Mixed TPL Mode, that will not be possible.

So a little bit of a trade off, but it should suit most people's needs.

Here are some screenshots with instructions on how it works.

CNC Design Ltd CNC Coil Winder for ARM Controller V1.8 2016

Automated Coil Winding | Standard Script Engine | Manual Winding Mode | Settings/Diagnostics | Keyboard Mapping | Import Tools | Pickup Scatter Winding Beta | Firmware Upgrade

Bobbin Dimensions

Interpretation of Guitar Bobbin Dimensions.

Notice we use Height instead of width that we use on normal bobbin.

Resistance 5.76K Closest awg value to mm 22 awg Convert awg>mm

Mixed TPL Mode Switch to Bobbins

(1) Enter Pickup Height 6.25 mm

(2) Enter Total Windings 1000 Save to Mixed TPL

(3) Enter Wire Size 0.0635 mm

Status and Calculations

Calculated Winds Per Layer 100 Calculated Wire/Pitch Size 0.0625 Reply

Calculated Total Layers 10 Calculated Pickup Height 6.25

Bobbin Name Loaded 1954 Strat Hardware Status Un-Plugged

Controls

Disengage Motors Start STOP Pause Home

Reverse Forward Bobbin Motor Jog Buttons Left Right Feeder Arm Jog Buttons Feeder Travel per click 0.1 mm Bobbin Travel per click 1 rev

☒ Increment counters when jog buttons clicked ☐ Manual Speed Override

Load/Save Pickup 1954 Strat Save Remove Populate Default Pickups

Homing Configuration Offset 10 mm ☐ Use Homing Offset on Start

Wire Direction ☒ Right ☐ Left Bobbin Direction ☒ Forward ☐ Reverse Ramping Configuration Pause 20 Steps 100

☐ Ramp each layer ☐ Pause at end of each layer

Bobbin Speed Desired Speed 600 RPM Calculated Speed 600 RPM

☒ Disable Hover Help Tips Help

Status Winds Completed 00000.00 Feeder Position 000.00000 RPM 0000 Reset Goto Zero

☐ Return to Zero on Finish

1 Set the Pickup Height, Windings and wire size, then click Save to Mixed TPL.

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Mixed TPL Mode Switch to Bobbins

(1) Enter Pickup Height 6.25 mm

(2) Enter Total Windings 1000 Save to Mixed TPL

(3) Enter Wire Size 0.0635 mm

Status and Calculations

Calculated Winds Per Layer 100 Calculated Wire/Pitch Size 0.0625 Reply

Calculated Total Layers 10 Calculated Pickup Height 6.25

Bobbin Name Loaded 1954 Strat Hardware Status Un-Plugged

Controls

Disengage Motors Start STOP Pause Home

Reverse Forward Bobbin Motor Jog Buttons Left Right Feeder Arm Jog Buttons Feeder Travel per click 0.1 mm Bobbin Travel per click 1 rev

☒ Increment counters when jog buttons clicked ☐ Manual Speed Override

Save To Mixed TPL List

Saved Mixed TPL combinations

Nothing Saved Yet Save Remove

Please Enter a name for this entry MTPL1

Please enter a name and click the Save button to add it to the drop down list.

This will allow you to save the settings of the pickup as a Mixed TPL combination..

Saved Mixed TPL combinations can only be used in the Mixed TPL Mode.

Click Close to return.

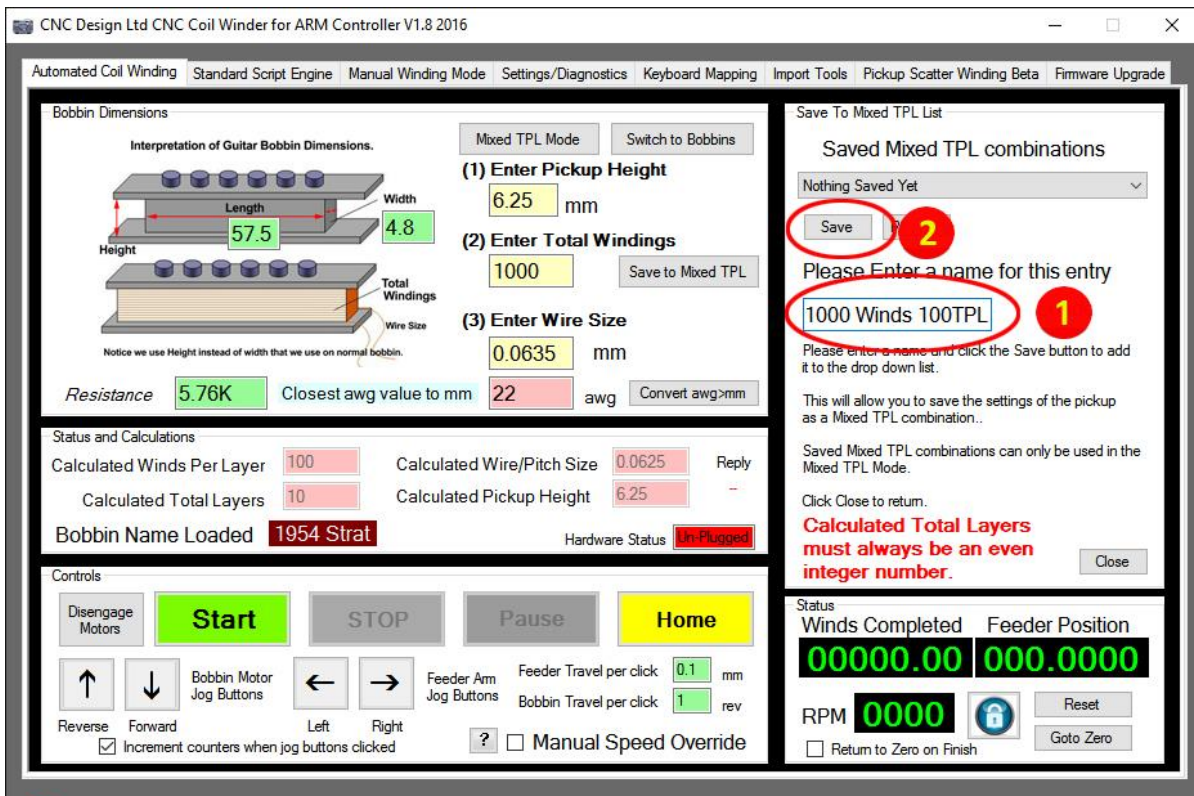
Calculated Total Layers must always be an even integer number. Close

Status Winds Completed 00000.00 Feeder Position 000.00000 RPM 0000 Reset Goto Zero

☐ Return to Zero on Finish

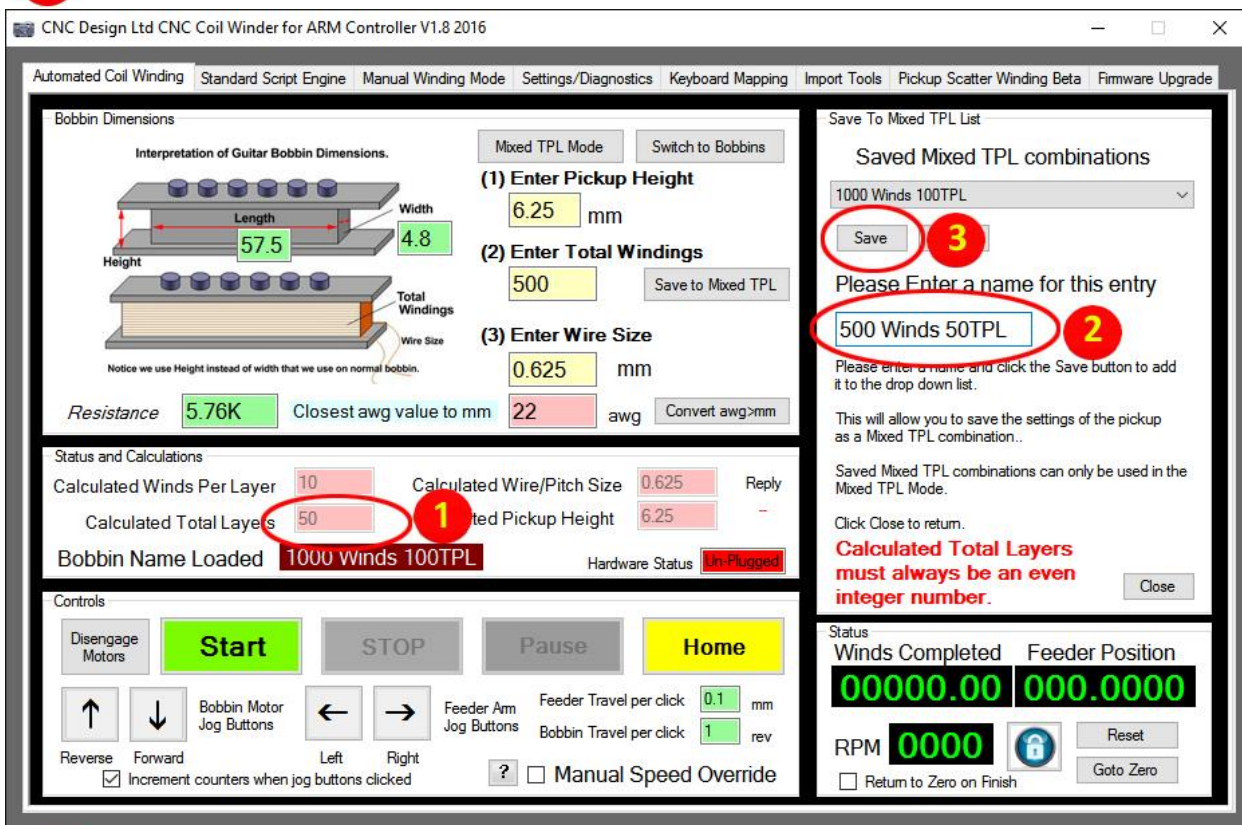
1 Check the Total Layers and make sure this is greater than 1 and also an even number.

2 Here is where you can specify a name for your winding setup before saving it to the Combination List.



1 So to save this, enter a Name

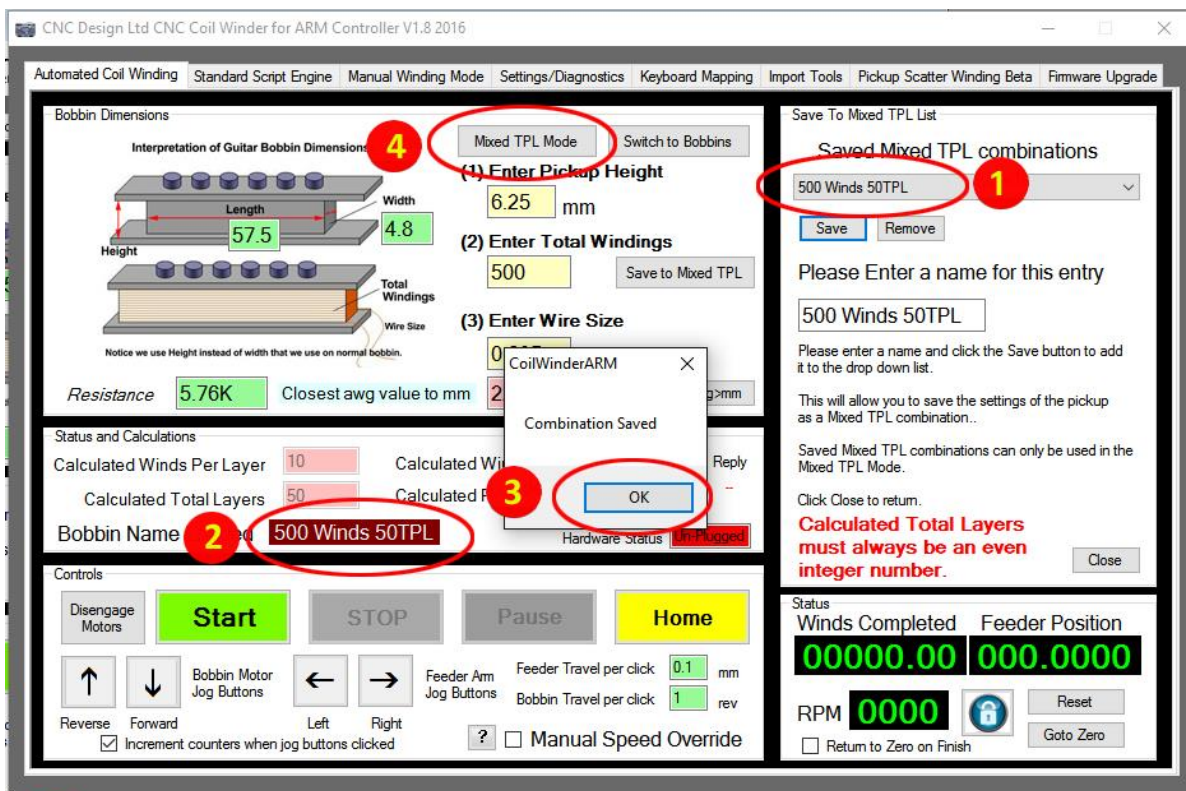
2 Click the Save button



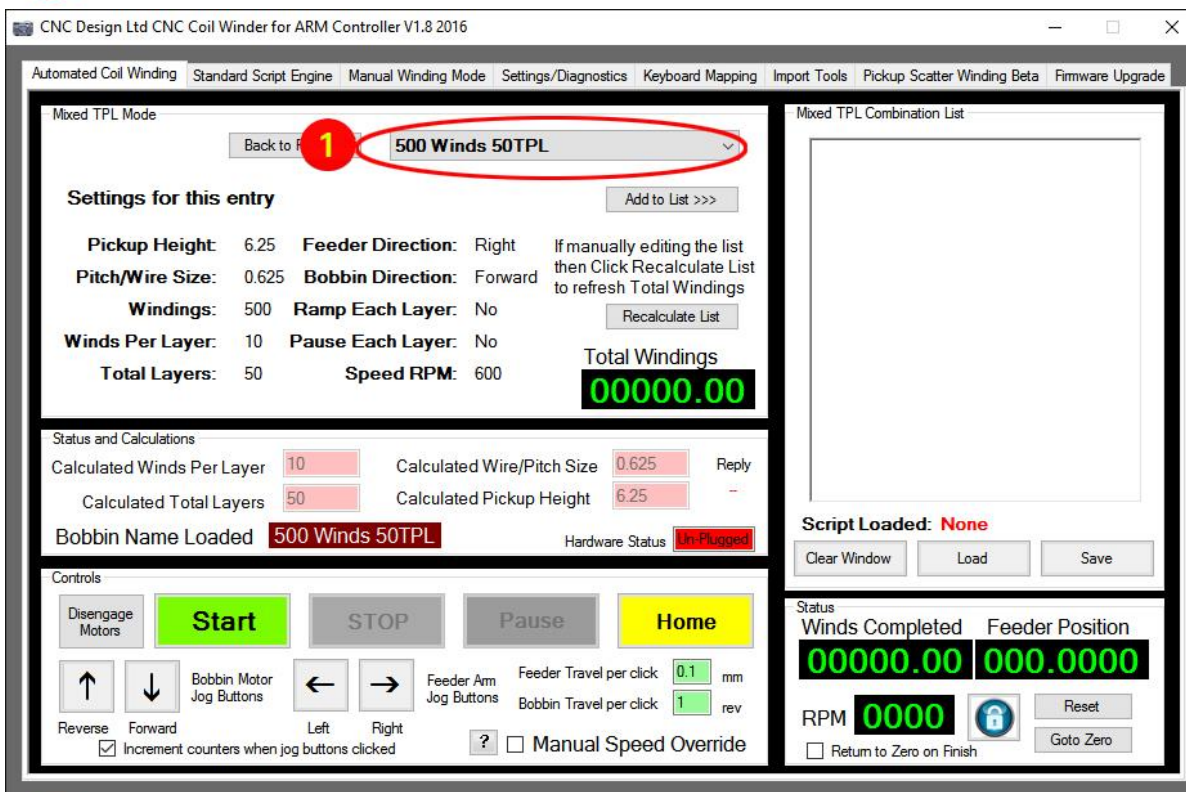
1 Next we setup another winding setup and check the Total Layers is an even number.

2 Choose a name

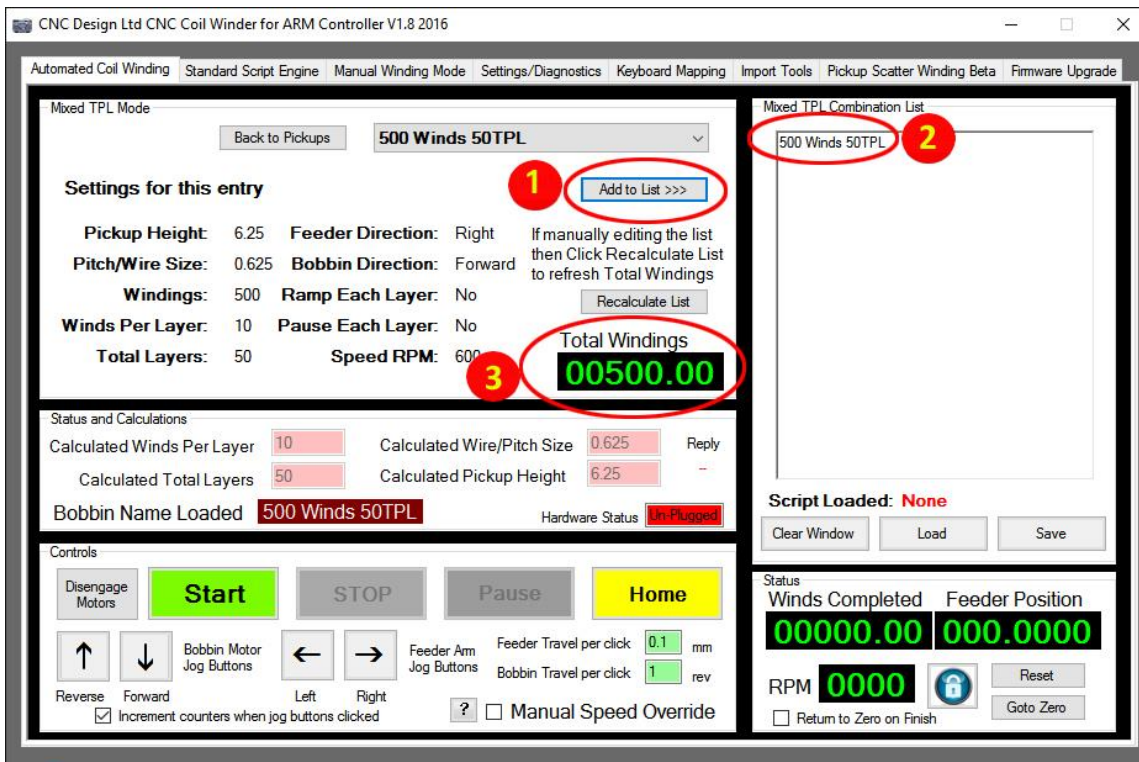
3 Click the Save button



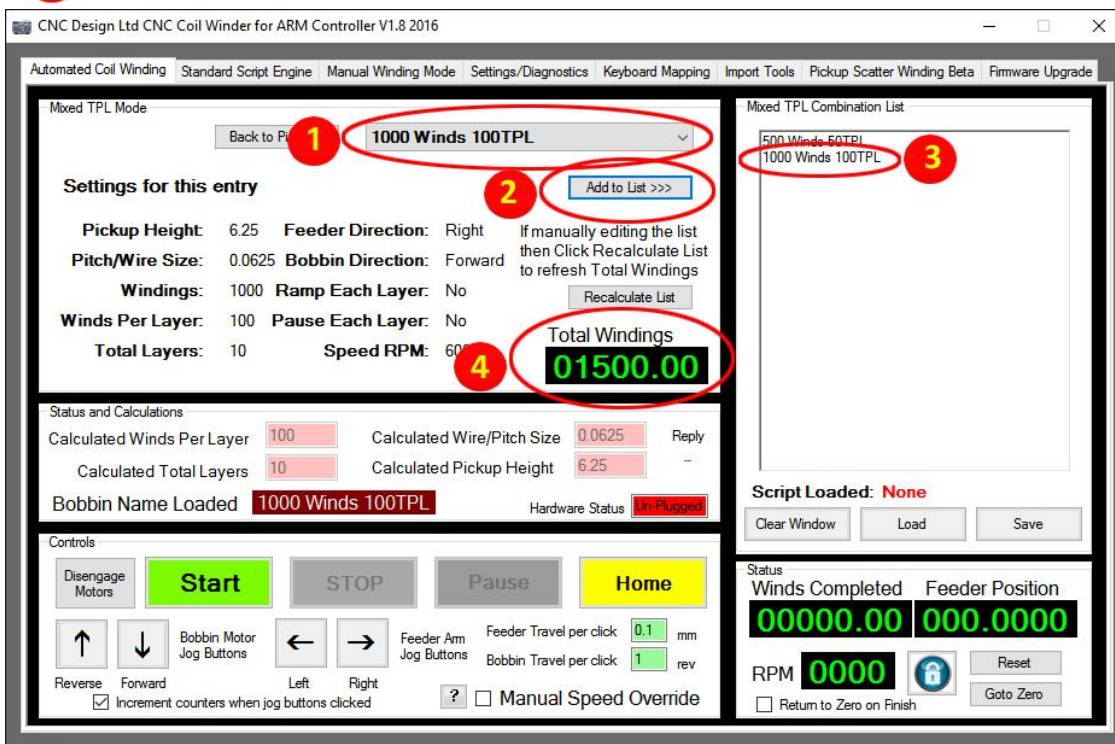
- 1 Once saved the winding setup should be now listed in the drop down box.
- 2 Also the Bobbin Name should update.
- 3 Click the OK button
- 4 Next to use the TPL combinations we have saved, we click the Mixed TPL Mode button.



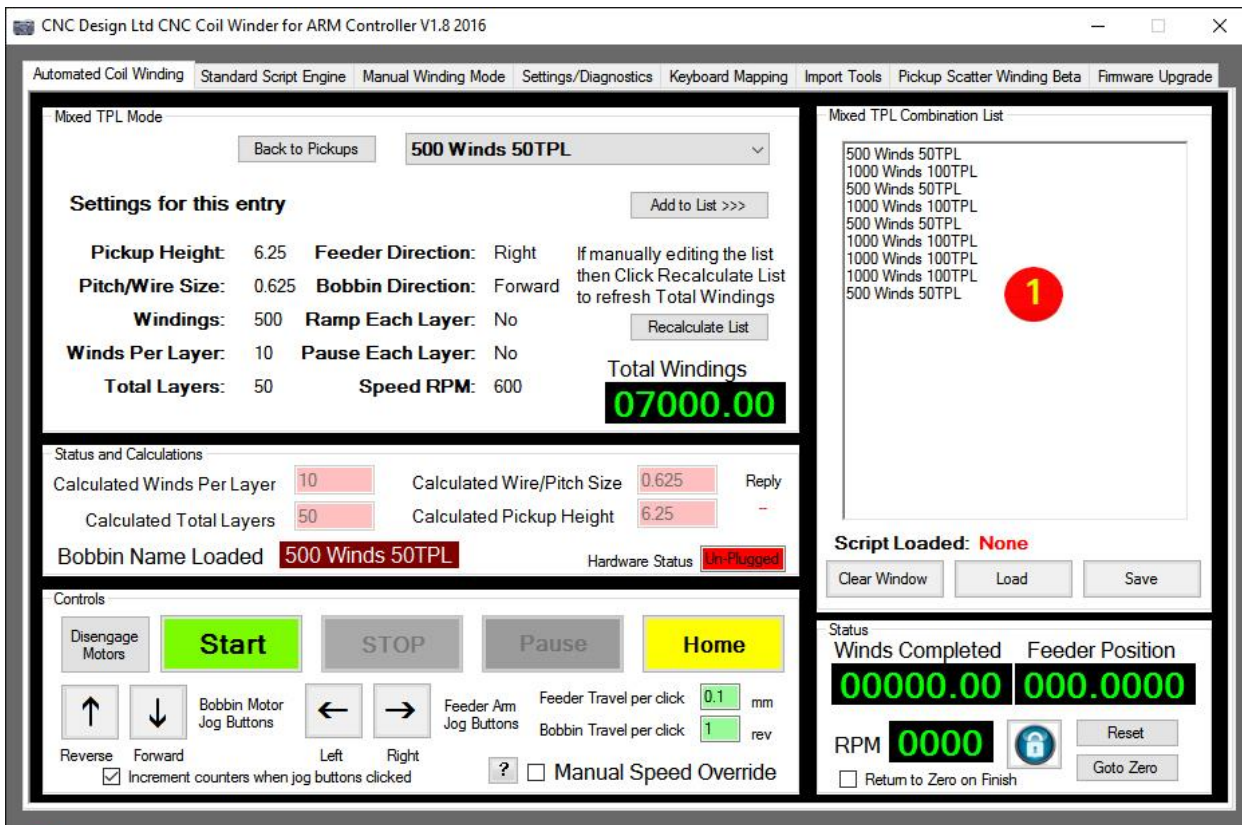
- 1 We can see our saved items are available from the drop down list. When selected all the various settings will be shown in the relevant boxes.



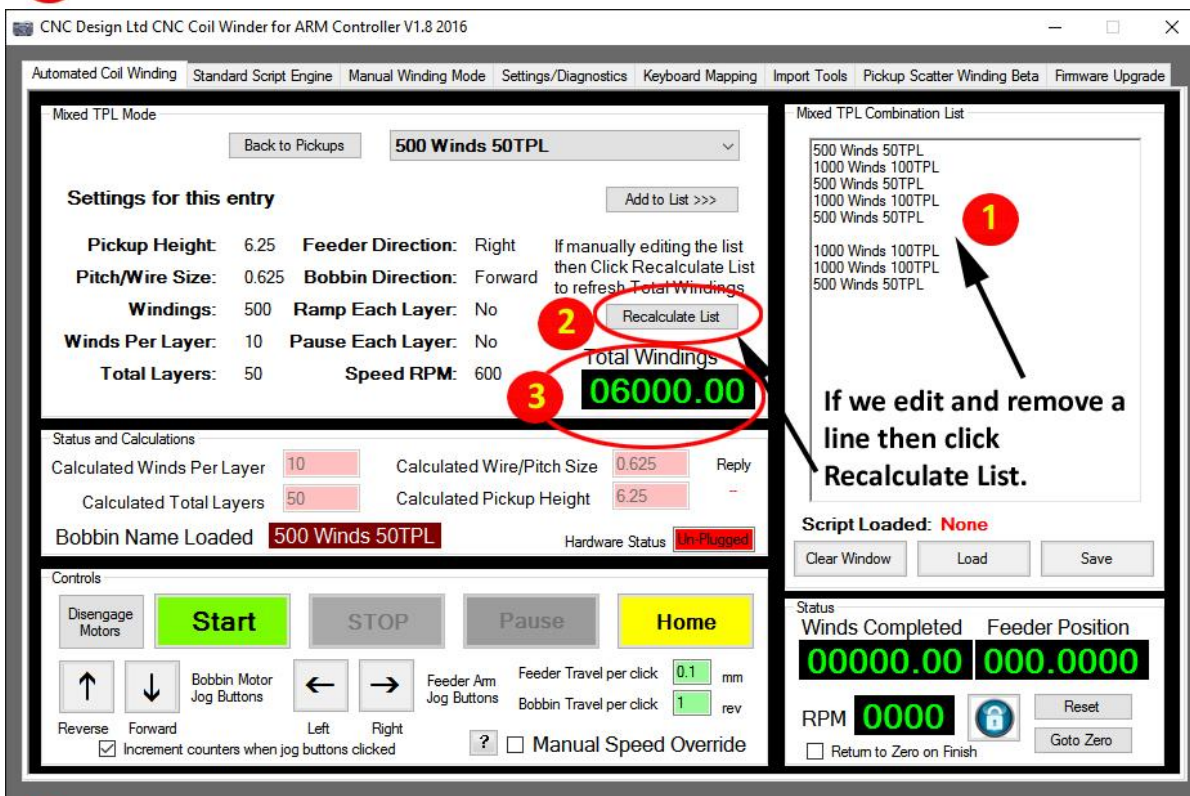
- 1 Click Add to List button
- 2 The item shown in the drop down box will now be added to the list on the right hand side.
- 3 The total Windings counter will be updated.



- 1 We now choose another item from the drop down list.
- 2 Click the Add to List button
- 3 The TPL Combination List should now be updated with the new item.
- 4 The total Windings counter will be updated adding the windings from each entry on the list.



1 Now we can add various combinations that we require to the List to build up our total windings.



1 You can manually edit the items in the list and remove as shown above.

2 After any manual editing make sure you click on the Recalculate List button

3 The total Windings counter will be updated.

CNC Design Ltd CNC Coil Winder for ARM Controller V1.8 2016

Automated Coil Winding | Standard Script Engine | Manual Winding Mode | Settings/Diagnostics | Keyboard Mapping | Import Tools | Pickup Scatter Winding Beta | Firmware Upgrade

Mixed TPL Mode

Back to Pickups 500 Winds 50TPL

Settings for this entry

Pickup Height: 6.25 Feeder Direction: Right If manually editing the list then Click Recalculate List to refresh Total Windings

Pitch/Wire Size: 0.625 Bobbin Direction: Forward

Windings: 500 Ramp Each Layer: No

Winds Per Layer: 10 Pause Each Layer: No

Total Layers: 50 Speed RPM: 600

Total Windings 06000.00

Status and Calculations

Calculated Winds Per Layer 10 Calculated Wire/Pitch Size 0.625 Reply

Calculated Total Layers 50 Calculated Pickup Height 6.25

Bobbin Name Loaded 500 Winds 50TPL Hardware Status Un-Plugged

Controls

Disengage Motors Start STOP Pause Home

Reverse Forward Left Right

Feeder Arm Jog Buttons Feeder Travel per click 0.1 mm Bobbin Travel per click 1 rev

Increment counters when jog buttons clicked Manual Speed Override

Mixed TPL Combination List

500 Winds 50TPL
1000 Winds 100TPL
500 Winds 50TPL
1000 Winds 100TPL
500 Winds 50TPL
1000 Winds 100TPL
1000 Winds 100TPL
500 Winds 50TPL

Script Loaded: None

Clear Window Load Save

Status

Winds Completed 00000.00 Feeder Position 000.0000

RPM 0000

Return to Zero on Finish

Reset Goto Zero

1

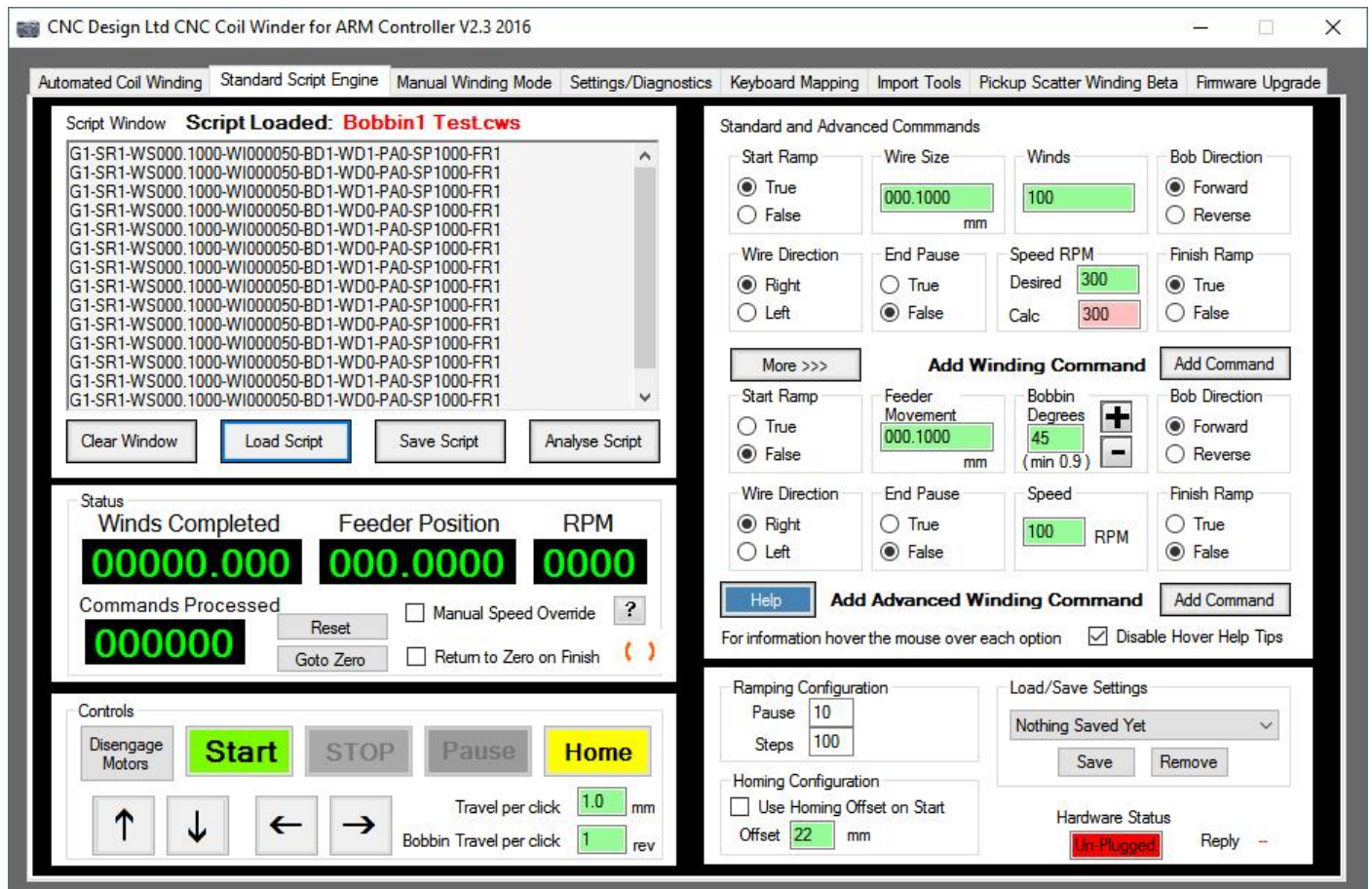
Make sure your machine is plugged in and then hit start !
It should now go through each entry in the list and execute the command.

Standard Script Engine – Tab

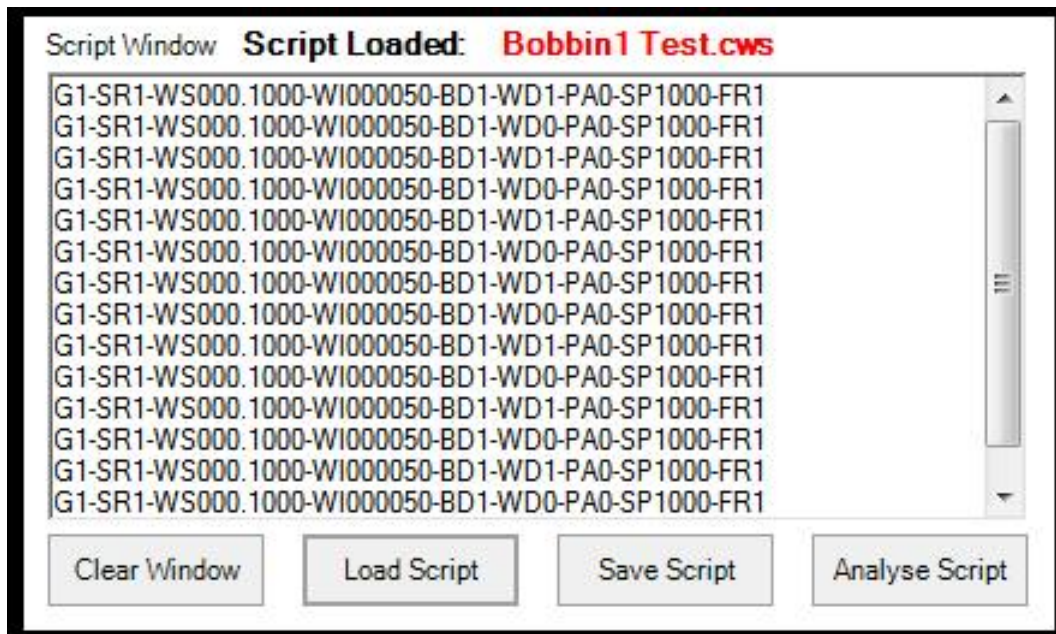
This tab allows us to have more control over the coil winding process by allowing us to create a series of commands to control bobbin windings and feeder movement.

These commands can be built up and saved as a script for later use.

Creating the commands is very simple by using the GUI interface to choose the options you want for each new command and press the **Add Command** button.



Below we will go through each option panel and detail what they are.



The **Script Window** panel has the following objects

The Script window itself is where each command is appended to and built up.

The command structure is very simple to understand and a quick breakdown is.

G1 – This lets the software know it is a Standard command.

SR1 – Sets the Start Ramp to on.

WS000.1000 – Sets the Wire Size or pitch to 0.1mm to move per wind.

WI000050 – Sets the amount of winds to be completed.

BD1- Sets the Bobbin Direction to forward

WD1 – Sets the Wire Direction to move to the right.

PA0 – Tells the software not to pause for each layer.

SP1000 – Sets the speed to 1000 RPM

FR1 – Sets the Finish Ramp to on.

This will again interpolate the bobbin and feeder motors so that they start and stop at the exact time across each wind.

If you just wanted the feeder arm to move and not the bobbin motor then simply set the windings to zero (**WI000000**). When this command is then executed it would move the feeder arm 0.1mm.

The same if you just wanted the bobbin motor to do 50 turns without the feeder moving. Set the wire size to zero (**WS000.0000**).

There are also another set of commands that can be added to your script.

***comment** - Anything with a * in front of it will be treated as a comment.

M1-message -Pauses the script and allows a message to be displayed.

M2-Start Loop10 – Start of loop command. Any commands inserted between the M2 and M3 commands will be repeated. In this example 10 times.

M3-End Loop – End of loop command.

M4-Zero Windings Counter – Zero the Total Windings counter

M5-Zero Feeder Position – Zero the Feeder Position.

Rather than manually adding commands, we would recommend using the GUI Add Command buttons to build the script as each command has to be in this exact format as shown above.

Clear Window button.

Clears the current window and deletes your script. If it has not been saved beforehand then you will not be able to recover it.

Load Script button.

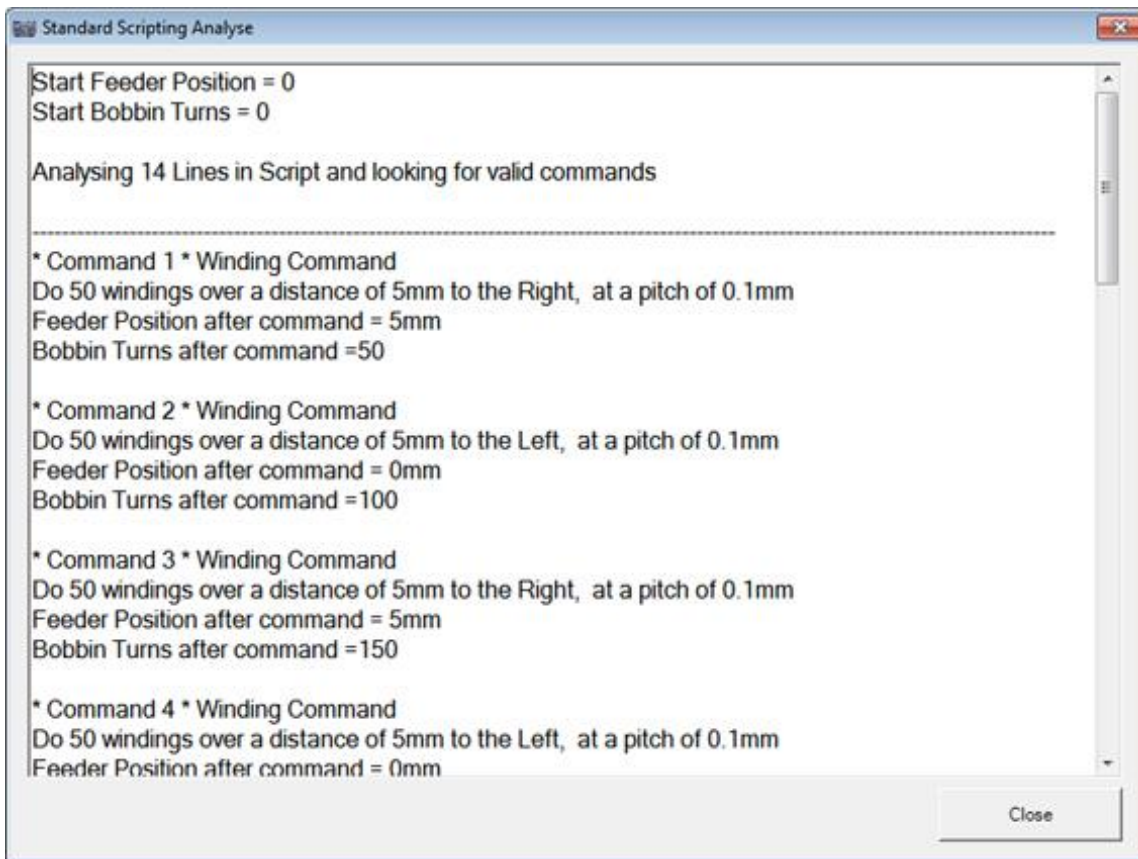
Loads a script from the computers file system into the script window.

Save Script button.

Saves the script in the Script Windows to the computers file system and allows you to choose where to save it and what filename to call it.

Analyse Script button.

This runs through your script and then opens up a separate window with the result of your script.



As you can see, our command1 of:

G1-SR1-WS000.1000-WI000050-BD1-WD1-PA0-SP1000-FR1

Instructs the machine to do 50 windings, with the feeder moving 0.1mm per wind.

Below we will look at the GUI interface for adding these commands.

Standard and Advanced Commands

Start Ramp

☒ True
☐ False

Wire Size

000.1000 mm

Winds

100

Bob Direction

☒ Forward
☐ Reverse

Wire Direction

☒ Right
☐ Left

End Pause

☐ True
☒ False

Speed RPM

Desired 300
Calc 300

Finish Ramp

☒ True
☐ False

More >>>

Add Winding Command

Add Command

Start Ramp

☐ True
☒ False

Feeder Movement

000.1000 mm

Bobbin Degrees

45
(min 0.9)

Bob Direction

☒ Forward
☐ Reverse

Wire Direction

☒ Right
☐ Left

End Pause

☐ True
☒ False

Speed

100 RPM

Finish Ramp

☐ True
☒ False

Help

Add Advanced Winding Command

Add Command

For information hover the mouse over each option
☒ Disable Hover Help Tips

Ramping Configuration

Pause 10
Steps 100

Load/Save Settings

Nothing Saved Yet
Save Remove

Homing Configuration

☐ Use Homing Offset on Start
Offset 22 mm

Hardware Status

Un-Plugged Reply --

The **Standard and Advanced Commands** panel is shown above.

All the settings above the first Add Command button are a standard command.

All the settings above the next Add Command button are advanced commands.

Add Standard Winding Command

Standard and Advanced Commands

Start Ramp <input checked="" type="radio"/> True <input type="radio"/> False	Wire Size 000.1000 mm	Winds 100	Bob Direction <input checked="" type="radio"/> Forward <input type="radio"/> Reverse
Wire Direction <input checked="" type="radio"/> Right <input type="radio"/> Left	End Pause <input type="radio"/> True <input checked="" type="radio"/> False	Speed RPM Desired 300 Calc 300	Finish Ramp <input checked="" type="radio"/> True <input type="radio"/> False

Add Winding Command Add Command

The objects for the standard command are as follows:

Start Ramp group box.

Sets whether the bobbin and feeder motors should ramp up on the beginning of the command.

Usually you would always set this to **True** unless using the servo motor option.

If setting it as **False** with stepper motors on the machine and running at speeds over 100RPM then you are going to jam the motor. So please be aware of this.

Wire Size group box.

This can be set for just moving the feeder arm or moving it per winding revolution.

If the **Winds** variable is set to greater than zero then the feeder arm will move the distance of the **Wire Size** variable each turn of the bobbin motor.

If the **Winds** variable is set to zero then the feeder arm will move the total distance of the millimetres set in the **Wire Size** variable.

Winds group box.

Sets the total winds for this command.

Bobbin Direction group box.

Sets the direction of the bobbin motor for this command.

Wire Direction group box.

Sets the direction of the feeder motor for this command.

End Pause group box.

Tells the software to pause after the command has completed.

The Pause button will change to Resume and will need to be clicked before the next command is executed.

Speed RPM group box.

Desired speed is the variable that will tell the machine what speed you want the bobbin motor to run at.

As the bobbin motor and feeder motor are interpolated, then most of the time the speed of the bobbin motor will be divided down to set the speed of the feeder arm motor to suit and keep that interpolation correct. But if you require the wire size or movement pitch to be a large number that requires the feeder arm motor to run faster than the bobbin motor, then the bobbin motor will automatically drop and the calculated speed will be displayed below.

Finish Ramp group box.

Sets whether the bobbin and feeder motors should ramp down at the end of the command. Usually you would always set this to **True** unless using the servo motor option.

Add Command button.

After setting all the other options above this button, you simply click this button to add the command to the script window.

Add Advanced Winding Command

Start Ramp <input type="radio"/> True <input checked="" type="radio"/> False	Feeder Movement <input type="text" value="000.1000"/> mm	Bobbin Degrees <input type="text" value="45"/> (min 0.9) + -	Bob Direction <input checked="" type="radio"/> Forward <input type="radio"/> Reverse
Wire Direction <input checked="" type="radio"/> Right <input type="radio"/> Left	End Pause <input type="radio"/> True <input checked="" type="radio"/> False	Speed <input type="text" value="100"/> RPM	Finish Ramp <input type="radio"/> True <input checked="" type="radio"/> False
Add Advanced Winding Command			Add Command

The objects for the advanced command are as follows:

Start Ramp group box.

Sets whether the bobbin and feeder motors should ramp up on the beginning of the command.

Wire Size group box.

This is the distance that the feeder arm will move per degree movement of the bobbin motor.

Bobbin Degrees group box.

Sets the movement in degrees of the bobbin motor for this command.

Bobbin Direction group box.

Sets the direction of the bobbin motor for this command.

Wire Direction group box.

Sets the direction of the feeder motor for this command.

End Pause group box.

Tells the software to pause after the command has completed.

The Pause button will change to Resume and will need to be clicked before the next command is executed.

Speed group box.

This variable that will tell the machine what speed you want the bobbin motor to run at.

Finish Ramp group box.

Sets whether the bobbin and feeder motors should ramp down at the end of the command.

Add Command button.

After setting all the other options above this button, you simply click this button to add the command to the script window.

More Commands

On the **Standard and Advanced Commands** panel there is also a More >>> button.

The screenshot shows the 'Standard and Advanced Commands' panel. It contains various settings for wire size, winds, speed, and direction. A red circle highlights the 'More >>>' button located in the middle-left section of the panel.

Standard and Advanced Commands

Start Ramp: ☒ True ☐ False

Wire Size: 000.1000 mm

Winds: 100

Bob Direction: ☒ Forward ☐ Reverse

Wire Direction: ☒ Right ☐ Left

End Pause: ☐ True ☒ False

Speed RPM: Desired 300, Calc 300

Finish Ramp: ☒ True ☐ False

More >>> **Add Winding Command** **Add Command**

Start Ramp: ☐ True ☒ False

Feeder Movement: 000.1000 mm

Bobbin Degrees: 45 (min 0.9)

Bob Direction: ☒ Forward ☐ Reverse

Wire Direction: ☒ Right ☐ Left

End Pause: ☐ True ☒ False

Speed: 100 RPM

Finish Ramp: ☐ True ☒ False

Help **Add Advanced Winding Command** **Add Command**

For information hover the mouse over each option ☒ Disable Hover Help Tips

When clicked it brings up a new panel with Extra commands that can be inserted into your script.

The screenshot shows the 'Extra Standard Commands' panel. It contains several checkboxes for adding commands to a script, such as 'Add Comment', 'Add Pause and Message', 'Reset Winds Counter to Zero', 'Reset Feeder Position to Zero', 'Add Start Loop with count', and 'Add Finish Loop'. The 'Add Finish Loop' checkbox is checked. Below the checkboxes, there is instructional text about looping commands and buttons for 'Less <<<<', 'Add Command', and 'Add Command'.

Extra Standard Commands

☐ Add Comment

Type your comment in here.

☐ Add Pause and Message

Type your Pause Message in here.

☐ Reset Winds Counter to Zero.

☐ Reset Feeder Position to Zero.

☐ Add Start Loop with count 10

☒ Add Finish Loop

If you want to loop a command then add a Start Loop command along with the count before the command.

Next add the winding or movement command.

Then finally add a Finish Loop command

Less <<<< **Add Command** **Add Command**

***comment** - Anything with a * in front of it will be treated as a comment.

M1-message -Pauses the script and allows a message to be displayed.

M2-Start Loop10 – Start of loop command. Any commands inserted between the M2 and M3 commands will be repeated. In this example 10 times.

M3-End Loop – End of loop command.

M4-Zero Windings Counter – Zero the Total Windings counter

M5-Zero Feeder Position – Zero the Feeder Position.

Less<<<< button.

This closes the pane;.

Add Command button.

After setting all the other options above this button, you simply click this button to add the command/commands to the script window.

For information hover the mouse over each option ☒ Disable Hover Help Tips

Ramping Configuration Pause <input type="text" value="10"/> Steps <input type="text" value="100"/>	Load/Save Settings <input type="text" value="Nothing Saved Yet"/> <input type="button" value="Save"/> <input type="button" value="Remove"/>
Homing Configuration <input type="checkbox"/> Use Homing Offset on Start Offset <input type="text" value="22"/> mm	Hardware Status <input type="text" value="Un-Plugged"/> Reply --

The objects for the other options on the panel are as follows:

Disable Hover Help Tips checkbox.

You can move the mouse over any object within the software and if left over that object for a certain amount of time a Hover Tip will appear giving you information on that object. By checking this box then it will stop these hover tips appearing.

Ramping Configuration group box.

We use stepper motors on our machines then to get them to higher speeds we need to ramp up the motor speed gradually.

You have two variables you can set to get the desired curve as such.

The Steps variable is the divider of the target frequency that we want the bobbin motor to run at. So if the software calculated that the bobbin motor should run at 1000kHz and the steps box is set to 100 then we can see that the steps would be $1000/100 = 10$ Hz increments.

The Pause variable is the time between each increment and is set in milliseconds.

Homing Configuration group box.

Sets the offset distance that the feeder arm will move away from the limit switch when the **Home** button is clicked.

For example if it is set to 10mm then when the **Home** button is clicked the feeder arm will move to the left until it gets to the limit switch on the machine. It will then move to the right 10mm.

By ticking the **Use Homing Offset on Start** option will cause the machine to home when the Start button has been clicked. The machine will then home before the winding starts.

This option is only available for machines with the homing/limit switches installed.

Reply is the answer coming back from the Coil Winding Machine after each command is sent.

Hardware Status shows of the Coil Winding Machine is connected or not connected to the computer.

The **Load/Save Settings** group box.

Allows you to save and remove scripting parameters.

When clicking the **Save** button it will ask for a name that you wish to call the set and save all the parameters to the registry. If you wish to remove the saved set from the registry, then click the **Remove** button and it will delete it.



The screenshot shows a 'Status' window with the following elements:

- Winds Completed:** A digital display showing '00000.000' in green on a black background.
- Feeder Position:** A digital display showing '000.0000' in green on a black background.
- RPM:** A digital display showing '0000' in green on a black background.
- Commands Processed:** A digital display showing '000000' in green on a black background.
- Reset:** A button located below the Commands Processed display.
- Goto Zero:** A button located below the Reset button.
- Return to Zero on Finish:** A checkbox with the label 'Return to Zero on Finish' to its right.

The **Status** panel has the following objects

Script Commands Processed display.

Displays the amount of commands that have been processed.

Winds Completed display.

Displays the amount of winding that have been wound.

Feeder Position display.

Displays the position of the feeder arm on the machine.

RPM display.

Displays the speed that the bobbin motor is running at.

Reset button.

Pressing this button will reset the feeder position to zero.

Goto Zero button.

Pressing this button will tell the feeder arm to return to its zero position.

Return to Zero checkbox.

If this is checked then when the machine has finished its winding routine the feeder arm will automatically move back to the zero position.



The **Control** panel has the following objects

Manual Speed Override checkbox.

If checked then when the **Start** button is clicked the software will pass control over to the manual speed controller that should be connected to your controller box.

The manual controller dial needs to be fully turned to the left before it will start to wind

and the speed of the bobbin motor and feeder arm will increase or decrease depending on the position of the dial.

Ramping will be disabled for this mode as not needed and it will be down to control of the user to make sure the speed is controlled so no jamming of the motors will occur.

Start button.

Clicking this button starts the winding routine starting with the first command in the script window.

Stop button.

Clicking this button stops the winding routine.

Pause/Resume button.

While winding is in progress and you wanted to pause the machine then click this button. It will then turn to a flashing Resume status and clicking it again will allow the machine to carry on from where it was paused.

While pause you can cancel the winding routine by pressing the stop button.

Also while paused the Left and Right button can be used to jog the feeder arm to a new position. This will not increment the feeder position and can be used for adjustments needed without having to restart the whole winding routine from the beginning.

Home button.

This can only be used if there are limit/homing switches installed on the machine. Based on the variable set in the **Homing Configuration** will determine the distance that the feeder arm will travel away from the limit switch once it has been triggered.

Left button.

This is a manual jog for the feeder arm and when clicked the feeder arm will move to the left.

Right button.

This is a manual jog for the feeder arm and when clicked the feeder arm will move to the right.

Feeder Travel per click variable.

Sets the travel in millimetres that the feeder arm will move if either the Left or Right button are clicked.

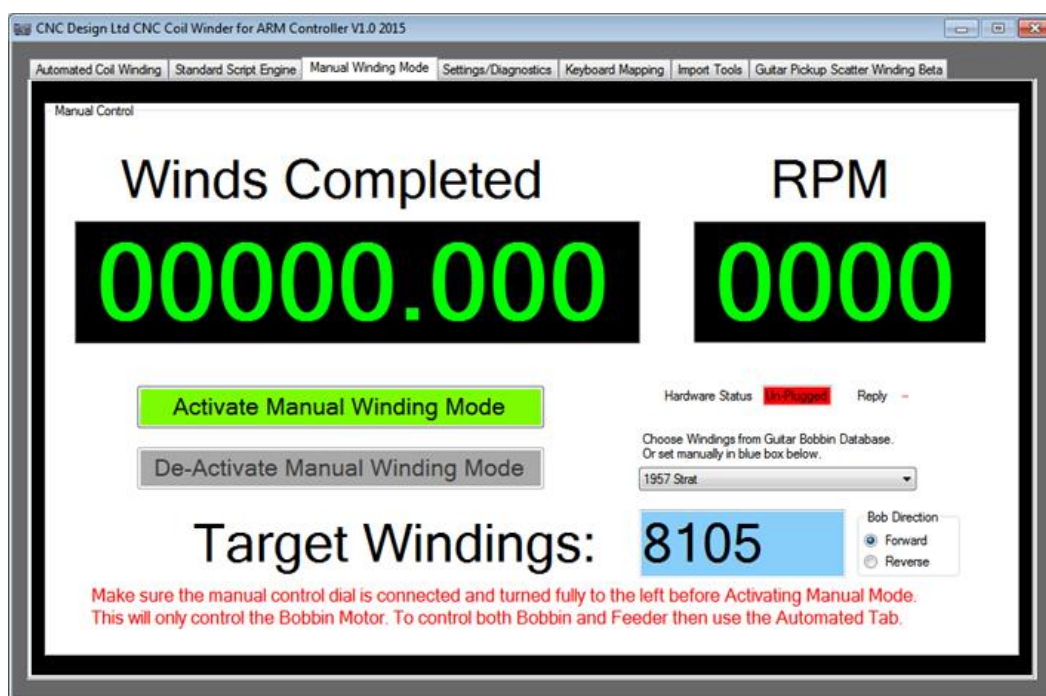
Manual Winding Mode – Tab

This mode is for people wishing to use their machine for semi-automatic winding of guitar pickups.

This will only turn the bobbin motor and control will be handed over to the manual controller, which must be connected to the controller box.

The manual controller dial needs to be fully turned to the left before it will start to wind and the speed of the bobbin motor and feeder arm will increase or decrease depending on the position of the dial.

Ramping will be disabled for this mode as not needed and it will be down to control of the user to make sure the speed is controlled so no jamming of the motors will occur.



Activate Manual Winding Mode button

This will start the winding routine.

DeActivate Manual Winding Mode button

This will stop the winding routine.

Target Windings variable.

This is the amount of windings you wish the machine to do.

It can be set manually by clicking on the blue input box and entering a number or using the drop down box and choosing from a previously saved pickup bobbin.

Bobbin Direction group box.

Sets the direction of the bobbin motor for this command.

Winds Completed display.

Displays the amount of winding that have been wound.

RPM display.

Displays the speed that the bobbin motor is running at.

Reply is the answer coming back from the Coil Winding Machine after each command is sent.

Hardware Status shows if the Coil Winding Machine is connected or not connected to the computer.

Settings/Diagnostics – Tab

CNC Design Ltd CNC Coil Winder for ARM Controller V2.3 2016

Automated Coil Winding Standard Script Engine Manual Winding Mode **Settings/Diagnostics** Keyboard Mapping Import Tools Pickup Scatter Winding Beta Firmware Upgrade

Please do not touch these settings unless you know what you are doing.

Settings

Current Config: **200mm Coil Winder**

200mm Coil Winder Mini Coil Winder Auto Detect Backup

Bobbin Motor

Frequency **26.666666656** Resolution **0.0025** SPBR **1600** SPFR **1600** BSP **4** Bobbin Jog Speed **80** RPM

Feeder Motor

Pause Boundary **1**

☒ Limit Switches Installed ☒ Emergency Stop Installed ☐ Reverse Bobbin Motor ☐ Reverse Feeder Motor

☒ Send True DDS 33 ☐ Send Raw DDS 50 ☐ Keep Alive

Set Default Startup **Automated Coil Winding Standard Bobbins** Save

Diagnostics - This has been included for support reasons and generally you do not have to worry or even need to know the outputs being displayed.

DB Out	Bobbin Motor Freq	FBD	Feeder Motor Freq	FFD
01100011	15999.9999936	159.99999936	249.9999999	2.499999999
DD Out	BFQ Raw LSB	BDFQ Raw LSB	FFQ Raw LSB	FDFQ Raw LSB
99	1599999	15999	24999	249
Raw RPM Feedback	BFQ Raw MSB	BDFQ Raw MSB	FFQ Raw MSB	FDFQ Raw MSB
Calculated RPM	BCP	Base Speed	FCP	
	13268800	15999.9999936	207325	

The ARM® Cortex® M4 processor

Fun Stuff

2 500

Firmware

Firmware Help

Change Colours

Background Foreground Border Reset to Default

Info

<http://www.ukcnc.net>

CNCDesign limited

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This tab has a mixture of settings and also diagnostics displays.

The diagnostic displays you do not have to really worry about and more there for trouble shooting if needed.

Below we will go through the settings that can be changed to suit your machine and any add-ons you use.

Settings

Current Config: **200mm Coil Winder**

200mm Coil Winder Mini Coil Winder Auto Detect Backup

Bobbin Motor

Frequency **26.666666656** Resolution **0.0025** SPBR **1600** SPFR **1600** BSP **4** Bobbin Jog Speed **80** RPM

Feeder Motor

Pause Boundary **1**

☒ Limit Switches Installed ☒ Emergency Stop Installed ☐ Reverse Bobbin Motor ☐ Reverse Feeder Motor

☒ Send True DDS 33 ☐ Send Raw DDS 50 ☐ Keep Alive

Set Default Startup **Automated Coil Winding Standard Bobbins** Save

Current Config display.

This displays what configuration has been detected when the machine is plugged into your computer or displays what has been manually set.

200mm Coil Winder button.

Sets the correct variables needed for the 200mm Coil Winding Machine.

Mini Coil Winder button.

Sets the correct variables needed for the Mini Coil Winding Machine.

Auto Detect button.

Automatically communicates with the Coil Winding Machine attached to the machine to detect what model it is and sets the correct variables needed.

Backup button.

This backs up all the bobbins and all the settings for all tabs within the software and allows you to save as a .REG file.

If you move the software onto a new machine then make sure you use this button to back up the settings and then copy the .REG file over to your new computer.

Next just double click the .REG file and follow the instructions on the screen.

When you launch the software on the new machine it should pick up all the settings.

Frequency display.

This value is automatically calculated on the value of the SPBR variable.

SPBR variable.

This variable sets the Steps Per Bobbin Revolution needed to suit the Coil Winding Machine attached to your computer.

Feeder Jog Speed variable.

Sets the speed of the feeder arm motor when using the Jog buttons. This is set in frequency, rather than RPM.

Bobbin Jog Speed variable.

Sets the speed of the bobbin motor when using the Jog buttons. This is set in RPM.

Resolution display.

Displays the resolution of the feeder arm.

This value is automatically calculated on the value of the SPFR variable and BSP variable.

SPBR variable.

This variable sets the Steps Per Feeder Revolution needed to suit the Coil Winding Machine attached to your computer.

BSP variable.

This variable sets the Ballscrew Set Pitch needed to suit the Coil Winding Machine attached to your computer.

Pause Boundary variable

If the pause button is used near the start of each layer and at the end of each layer then it can throw either the position read off or not complete the pause.

This is because when the Pause key is clicked when winding and there is not enough travel left in the winding for a ramp down and then a ramp up after pause.

By the default the Pause boundary is 1.0mm into the wind and the width of bobbin minus 1.0mm.

Set Default Startup variable

Sets which tab should display on start-up of the software.

Keep Alive checkbox

This is reserved for trouble shooting and with the new Arm Controller is unchecked by default.

Limit Switches installed checkbox

If you have installed the limit/homing and emergency stop kit onto your 200mm Coil Winder then you need to check this option to let the software know. It will then enable the homing features of the software.

Emergency Stop installed checkbox

If you have installed the limit/homing and emergency stop kit onto your 200mm Coil Winder then you need to check this option to let the software know. It will then enable the extra features of the software.

Reverse Bobbin Motor checkbox

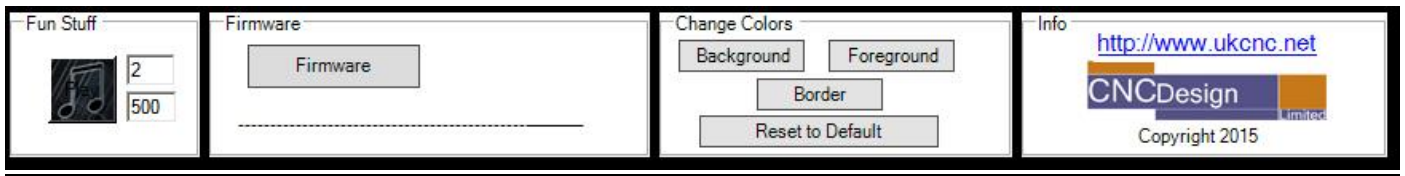
Will reverse the direction of the bobbin motor to suit motor attached to your machine.

Reverse Feeder Motor checkbox

Will reverse the direction of the feeder motor to suit motor attached to your machine.

Save button.

Saves the settings that have been set in all the variables above.



At the bottom of the tab we also have some other settings.

Music Icon button.

As the group box says, Fun Stuff. Did you know your stepper motors can play a tune? Click the button and see. The two boxes change the speed and the length of notes.

Firmware button.

When clicked it displays the current Firmware of the connected Coil Winding Machine.

Under the **Change Colours** group box we have:

Background button.

Changes the background colour of each tab.

Foreground button.

Changes the foreground colour of each tab.

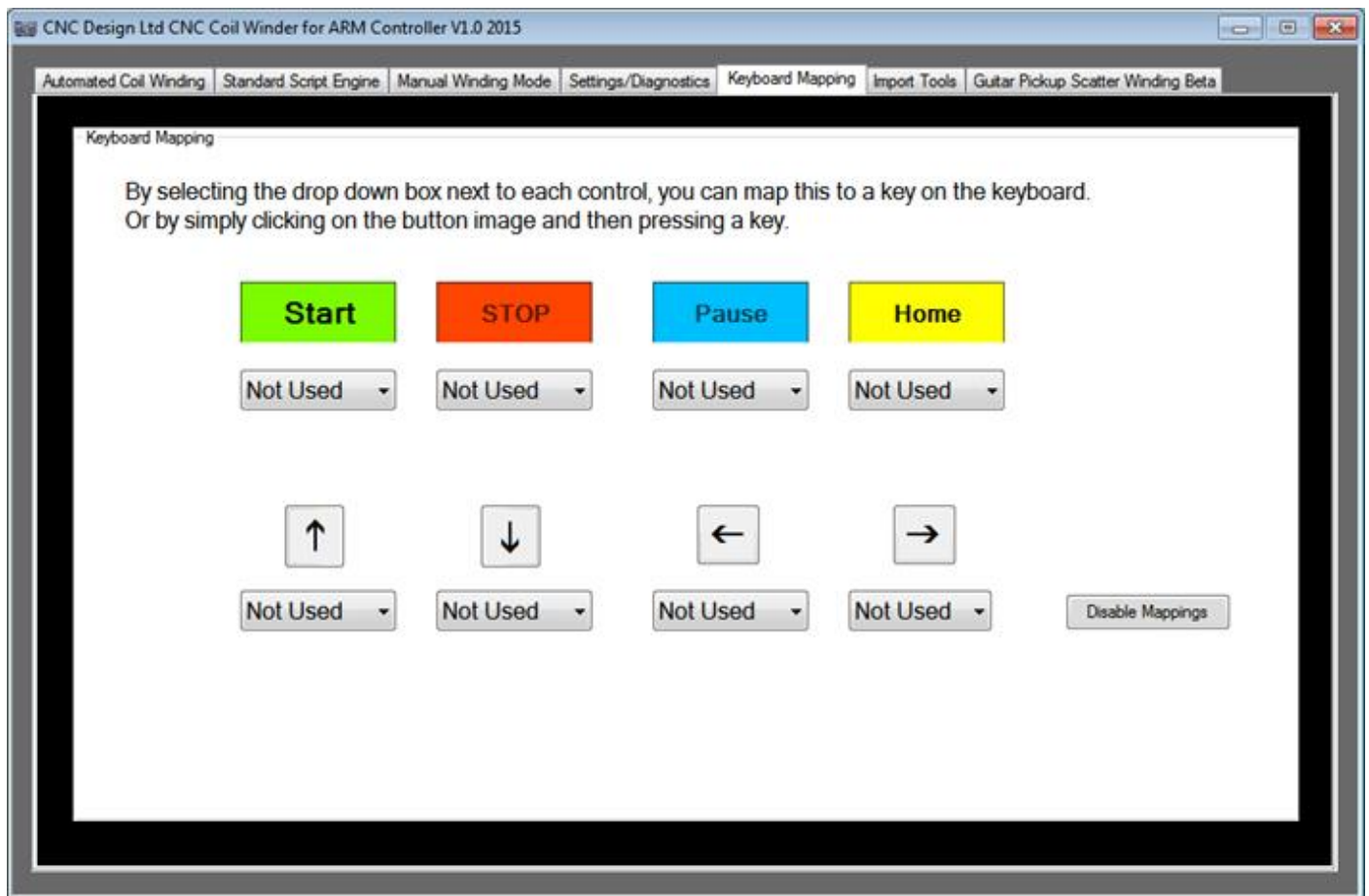
Border button.

Changes the border colour of each tab.

Reset to Default button.

Sets all colours back to the original style.

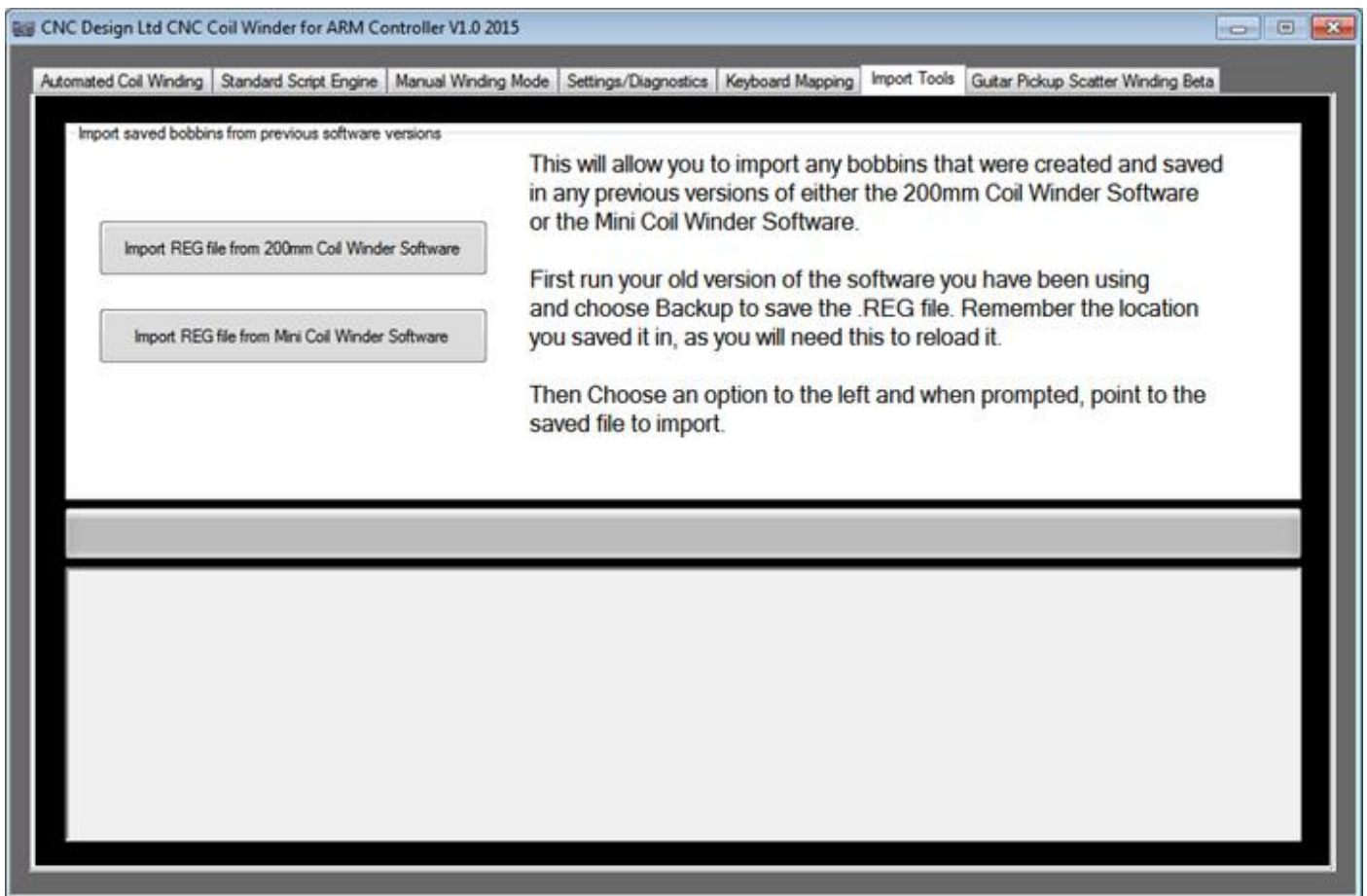
Keyboard Mapping – Tab



This tab lets you map keyboard keys to the buttons within the software.

By selecting the drop down box next to each control, you can map this to a key on the keyboard. Or by simply clicking on the button image and then pressing a key.

Import Tools – Tab



If you are upgrading from either the 200mm Coil Winder software or the Mini Coil Winder software and want to bring your saved settings and bobbins over, then you can use this tool to import these into the current software.

First within your old software, save your current settings out to a .REG file by choosing the backup option.

Next within the new software choose the button in the Import Tools tab that matches the machine you are importing from and follow the messages on screen.

Guitar Pickup Scatter Winding Beta – Tab

CNC Design Ltd CNC Coil Winder for ARM Controller V1.0 2015

Automated Coil Winding | Standard Script Engine | Manual Winding Mode | Settings/Diagnostics | Keyboard Mapping | Import Tools | Guitar Pickup Scatter Winding Beta

Pickup details

This still needs a lot of work and is very early BETA stage. So Work in Progress !

Pickup Height mm
Closest Pitch to use - +
Total Windings Calculate Layers

Calculated Winds Per Layer
Calculated Actual Pickup Height
Calculated Layers

☒ Chirping Mode
Pause
Steps

Layer calculations

Normal Layer Order ☐ Allow Duplicates

	Number	Bobbin Wind	Feeder Position
▶	1	1	0.05
	2	2	0.1
	3	3	0.15
	4	4	0.2

Random Layer Order

	Number	Bobbin Wind	Feeder Position
▶	1	61	3.05
	2	11	0.55
	3	30	1.5
	4	99	4.95

Script Control

☐ Use Normal Layer for each layer
☒ Use same Random Layer for each layer
☐ Create new Random Layer for each layer

Script Lines Created

1.3.05
2.0.55
3.1.5
4.4.95
5.2.7
6.0.3
7.2.55
8.0.45
9.0.1

Winds Completed **0000000**
Speed

Feeder Position **00.0000**
Goto Zero

Start
STOP
Pause

Clear Script Create Script Load Script Save Script

Jog Travel per click mm ← →

As this is a work in progress and for Beta testing only, please check the forums at <http://www.ukcnc.net> for more details.