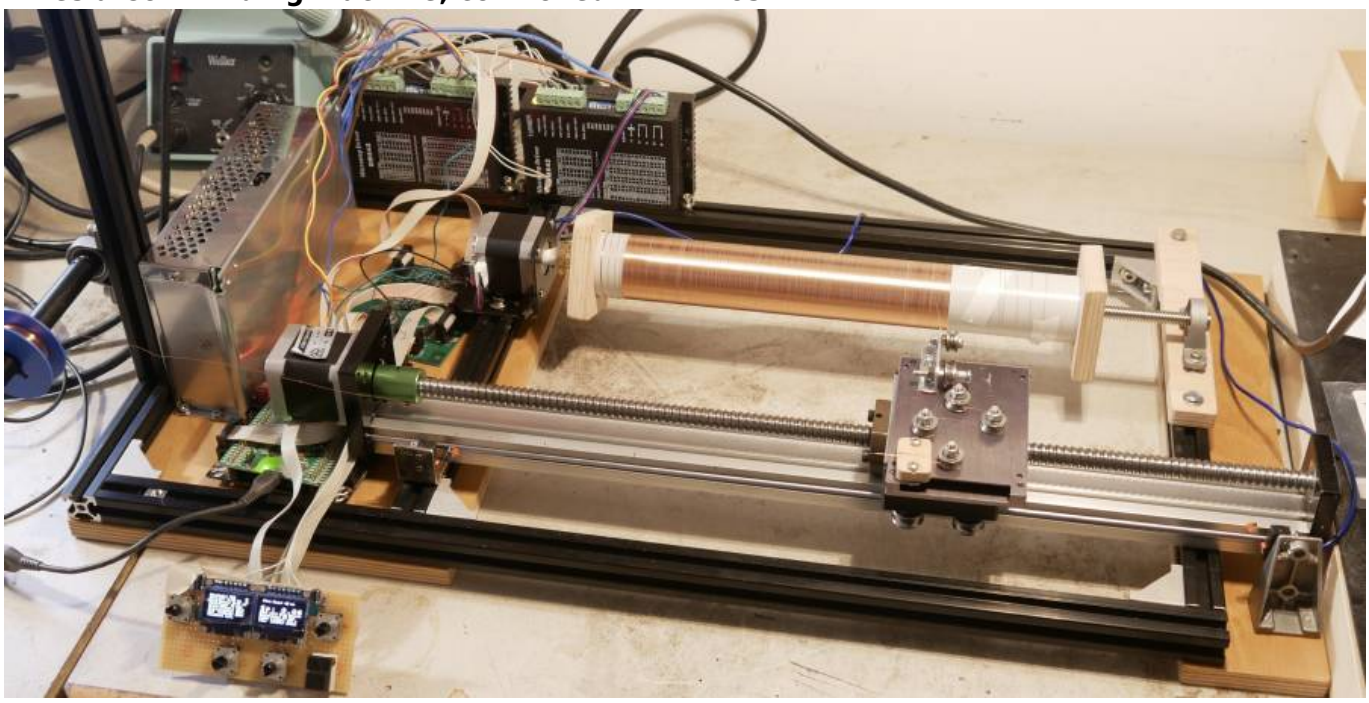
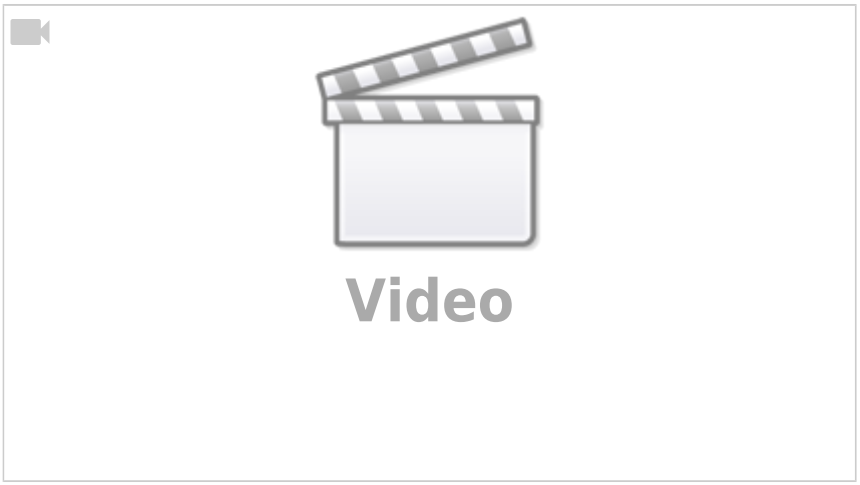
Coil Winder

A Tesla Coil winding machine, controlled with Mios:



Watch German Video about using it, and TimeLapse build (English will come in future...):



CODE, FIRMWARE

Install MIOS Studio, connect a Core-Stm32F4 via USB, and Start the STUDIO

1. Upload MIOS BOOTLOADER
2. (only needet for Virgin Machines) type following commands into the MIOS-TERMINAL:

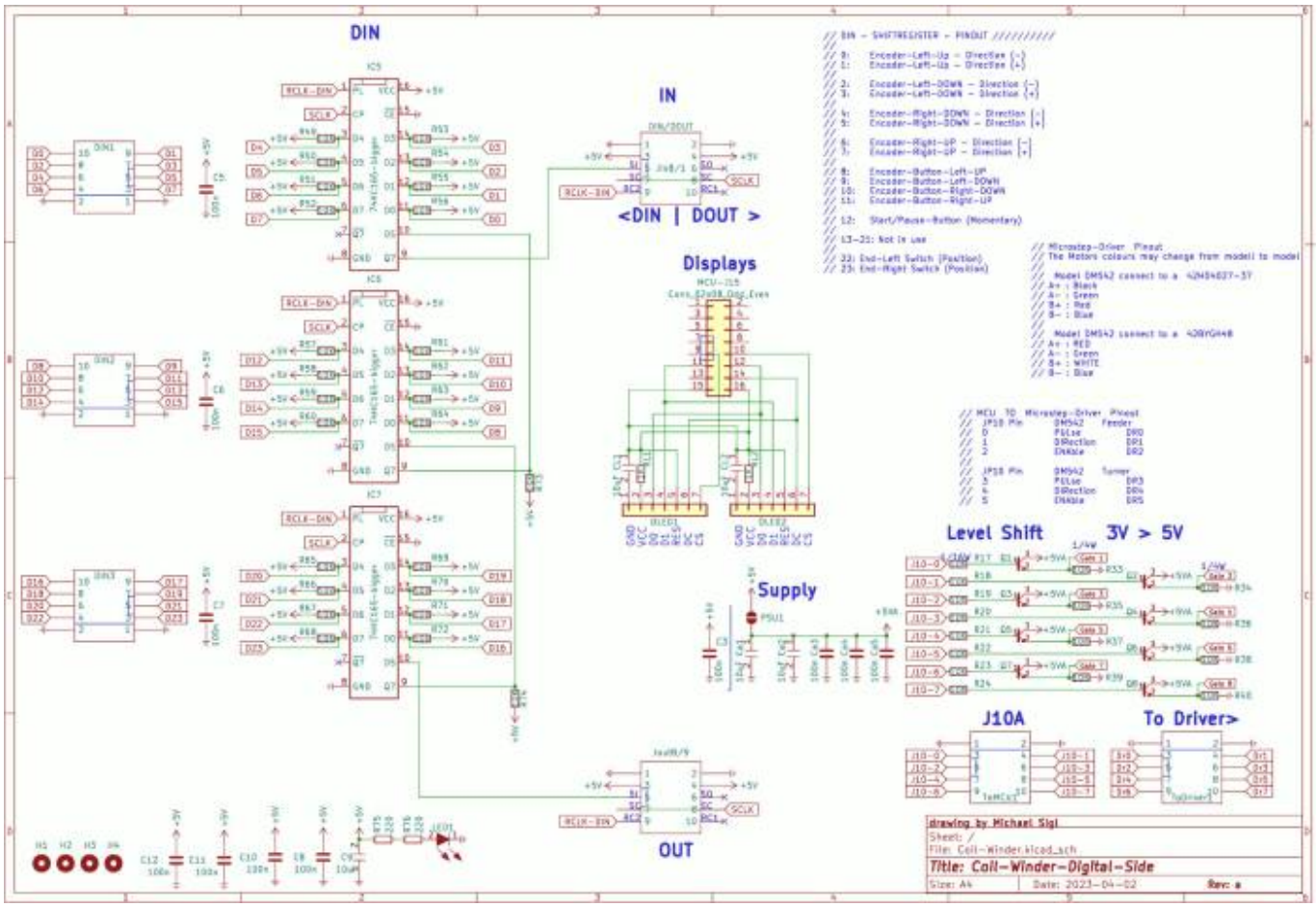
- set lcd_type GLCD_SSD1306_ROTATED
- set lcd_num_x 2
- set lcd_num_y 1

- set lcd_width 128
- set lcd_height 64
- store

3. Unzip the Firmware, and Upload the project.hex
4. Unconnect USB & Connect the USB again — finished.
5. If the Machine is not detected by mios studio, and you already checked the usb-connections, the device or the code is broken, for that you may search for “Bootload Switch”, please set it to “bLOAD”, now you can upload new & unbroken codes, dont forget to set it to “normal” back again - after upload new code - else the APP will not boot…

BUILD

Shemata



The Rest is stated in the youtube video, in TimeLapse
You can use any motor you like, the code is programmed for a Motor that takes 400 steps for a whole 360° turn… if you use other motors you need to adapt the code (which you can download a bit above…)

Main Parts

Midibox: Core STM32 based core (STM32F4)

DINX4 Module (only 3DINX are used)
Levelshifter circuit from 3to5Vs (J10A to Motor-Driver)
2x SSD1306 Screens with 64×128 Pixels - 7Pin Variant!!!
4x Encoders with inbuilt switches
1x Momentary Button for “Play/Pause”
1x Breathboard ca. 100x50mm
3 days time

There are a lot of wires, nuts and screw which i have not listed here, here are only the big and expensive parts:

Amazon/Ebay/Ali...
Turner Motor: Iverntech NEMA 17 Schrittmotor mit integrierter 400 mm T8-Leitspindel I dont think that is a good choice, the T8 Spindle bends to much... better you M10-M12 ones and 450mm or more Travel
Feeder Motor: Akozon Linearschiene - this hasent come in good condition, the first 5cm moove a bit woobly
Corner-Mounts: Justech 10x Winkelverbinder Aluprofil 20x20mm better order 2 sets...
20x20mm Profiles: CNCYEAH 4 Stück 800mm Aluminiumprofil20X20 T
Stepper Motor Driver: DM542 Schrittmotor Controller you need 2 off them!

PSU: Schaltnetzteil 24V 10A

Mounting Kit for the Turner-Motor: 42 mm Schrittmotor-Halterung not the stabelst one... mooves under Load...find better...

Microswitches: Mikroschalter Endschalter mit Rollenhebel 250V 5A SPDT 1NO 1NC you need 2 off them

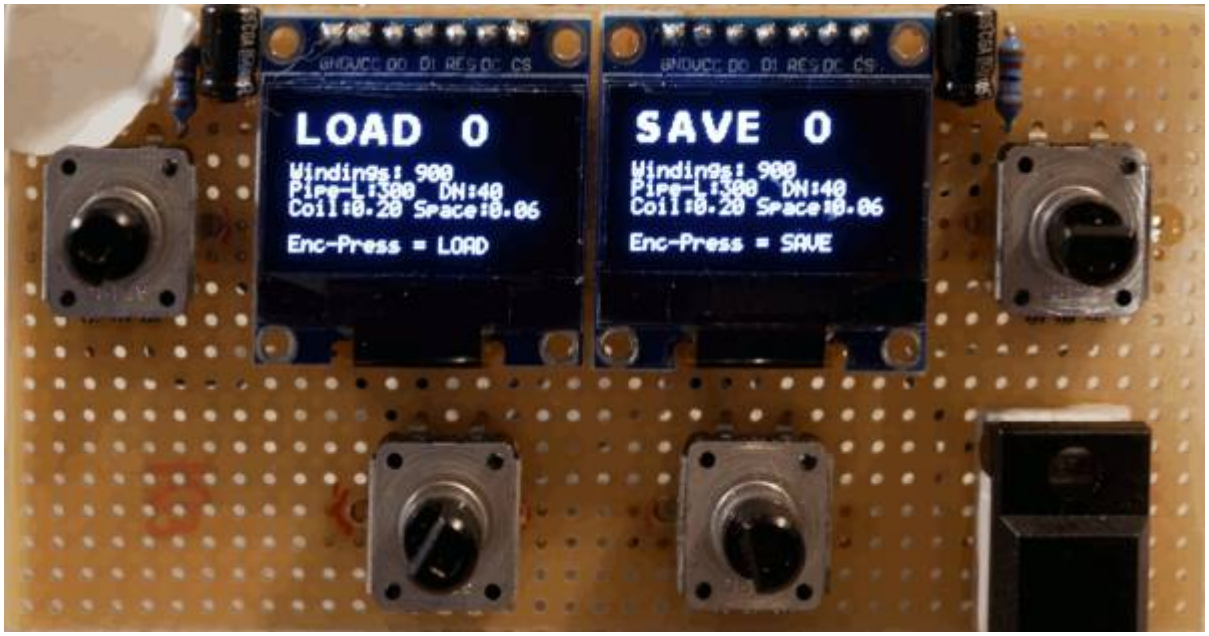
V-Rolls for Wires: V624ZZ Kugellager V Nut Rillenkugellager you will need 6 off them and special M4 Screws else they will not moove

T8 Nuts: T8 Mutter Gewindespindel Messing Mutter you need 3 off them, but you may find a better way to mount your pipe on the Spindle!

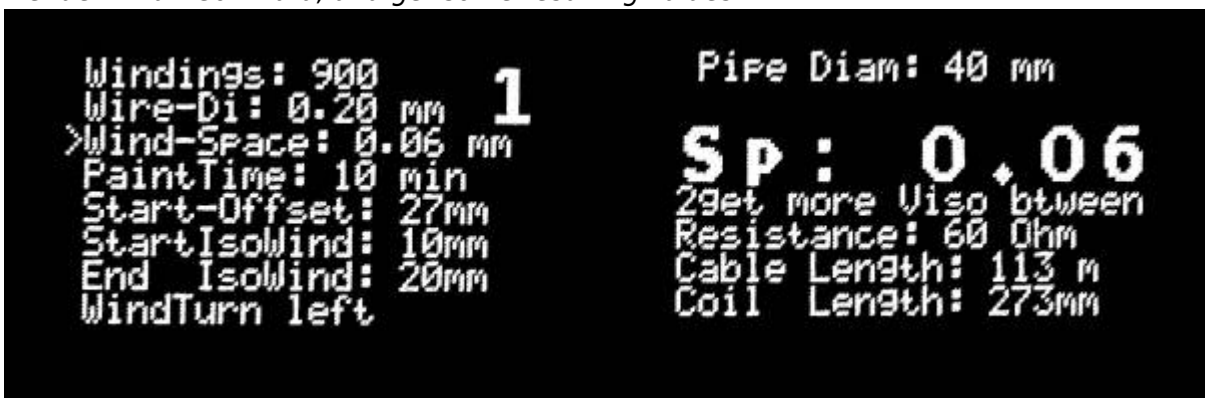
Flange Bearing: Flanschlager you need 2 off it...

Menue Structure

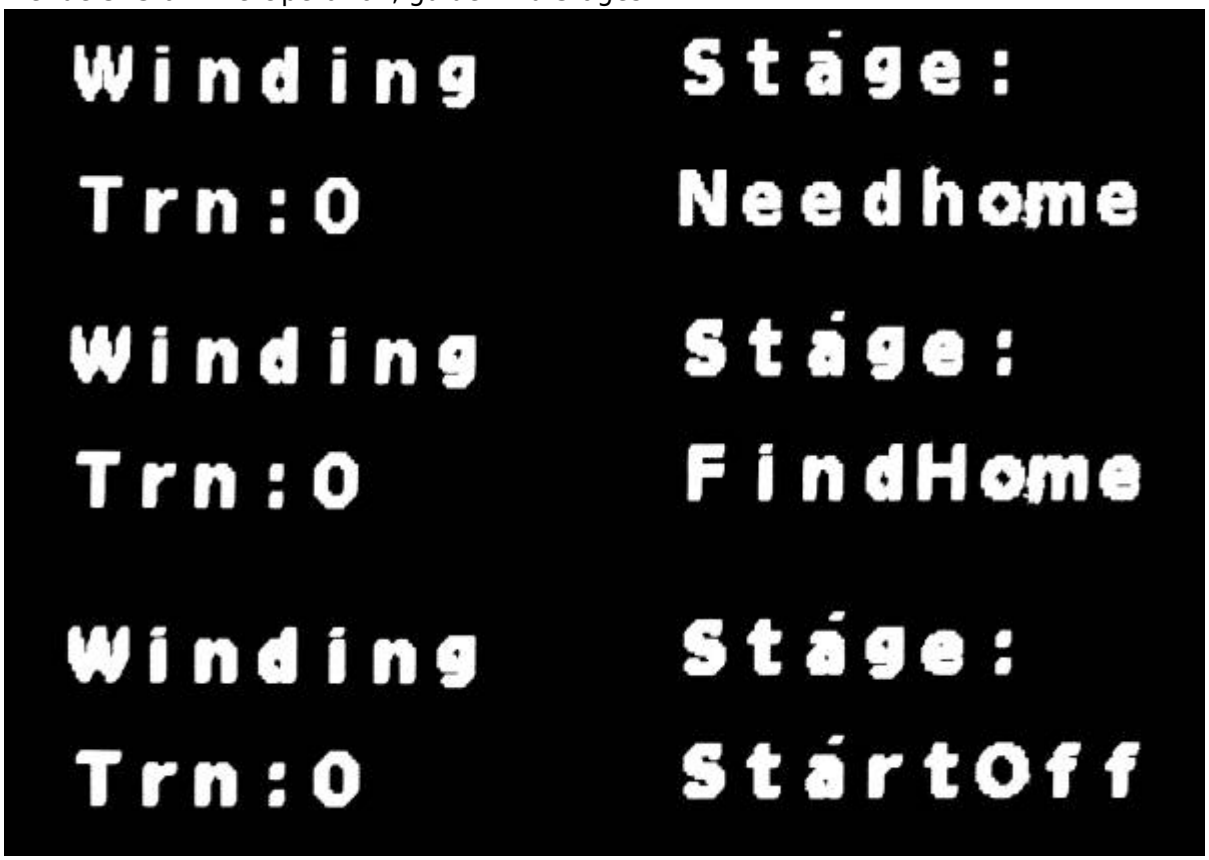
Menue 1: Load and Save Coil-Data

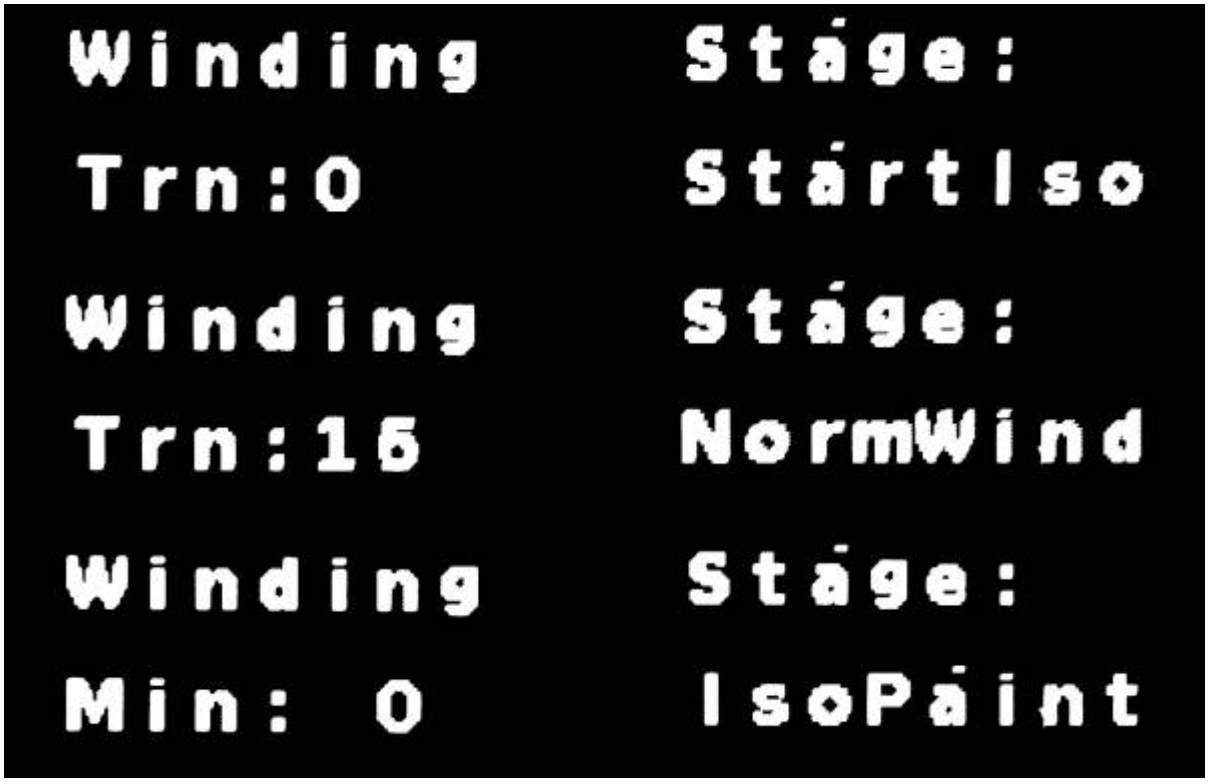


Menue 2: Edit Coil-Data, and get some resulting values



Menue 3: Start the Operation, guide thru Stages





Community users working on it

- **Phatline** = Programming, Documentation, Hardware-Prototype, Testing, Winding

Getting Involved ?

Just let a Private message on the forum to user already involved