

Automatic Winding Machine V2.1



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Summary

This is an automatic winding machine for coiling up small cords, strings or wire. We needed a way to reliably coil up...

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Tags: [arduino](#) [arduino nano](#) [machine](#) [automatic](#) [winder](#)
[cord wrap](#) [coil winder](#) [coiler](#) [spooling](#) [wire coiler](#)

This is an automatic winding machine for coiling up small cords, strings or wire. We needed a way to reliably coil up specific lengths of cord for sale in a kit. This machine is the updated version of my original Automatic Winding Machine, making it more reliable, easier to use, and above all much, much quieter.

V1 => <https://www.thingiverse.com/thing:1852171>

The rotary encoder keeps track of the distance coiled with a closed loop system. This allows more fool proof operation, recovery if the spool hangs up or jams, and the ability to adjust the diameter of the coil without having to change the code.

This version features an LCD display with button controls, easy to edit firmware, more robust encoder guide system, integrated spool holder,

quiet belt driven platter, enclosed electronics, and a ton of other tiny tweaks and improvements.

Let me know if you have any questions or need build instructions. I'm happy to provide more detail but will need time to do the full instructional write up. I can also provide pre-built custom acrylic panels and aluminum plate on request for a small fee.

Happy building!

Print Settings

Resolution:

.3

Infill:

50

Filament: PLA or PETG

Notes:

Print the Encoder Wheel and Idler Wheel at high resolution, I used 0.1 mm layer height and 3 perimeters. These can also be printed in flexible filament for more grip if necessary.

Print the Plate Shaft Mount solid (100% infill) to ensure it is nice and rigid.

Bill of Materials

Hardware

2020 Misumi T-Slot:

16x 260mm

4x 450mm

Lots of Cast Aluminum Corner Brackets (or print some if you want plastic brackets)

Tubing and Shafts:

1x 8mm x 75mm Round Metal Rod

2x 16mm OD x 215mm Round Aluminum Tube

Bearings:

18x 623Z Flange Bearing

2x 608Z

Fasteners:

4x M8-1.25 x 16mm Button Head Hex Socket Cap Screws

A bunch of M4 screws, washers and t-slot nuts

Other:

M3 x 50mm Round Aluminum Standoff

1/4" x 12" Aluminum 5052 Plate Disk

2x 12"x12" White Acrylic Sheet

Electronics

Mechanical:

1x Signswise 600p/r Incremental Rotary Encoder Dc5-24v Wide Voltage
Power Supply 6mm Shaft

1x Greartisan DC 12V 200RPM Gear Motor High Torque

1x GT2 Pulley 20 Teeth 6mm Bore

1x GT2 Pulley 60 Teeth 8mm Bore

1x GT2 158mm Timing Belt Closed Loop

1x 10A 250V AC Inlet with Rocker Switch

1x Panel Mount USB Cable B to B

Control:

1x L298N Motor Drive

1x Arduino Nano

1x 16x2 LCD

2x 40mm Fan

1x 120v to 12v Power Supply (5-10 amp depending on your motor choice)

4x Arcade Buttons

Changelog

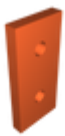
Version 2.1

Increased thickness of the cord guide mount.

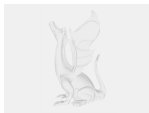
Created new bearing based cord guide to reduce friction.

Category: DIY

Model files



guideclampbearings.stl



electronicscover.dxf



cordguide.stl



plateholepattern.dxf



cordguidebearings.stl



automaticcoilerv2.skp



encoderwheel1_5mmcord.stl



bearingblock.stl



sidepanelacoutlet.stl



pcbmount.stl



sidepanelfan.stl



encoderhousing.stl



bearingtotubecoupler.stl



guidemount.stl



controlpanelleft.stl



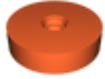
controlpanelright.stl



plateshaftmount.stl



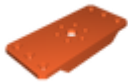
l298nmount.stl



idlerwheel.stl



sidepanel.stl



motormount.stl



usbpanel.stl



guideclamp.stl

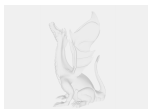


spoolholderslider.stl

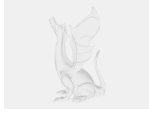
Other files



automaticcoilerwiring.pdf



automaticcoilerfirmware.ino



electronics_cover.svg

[Find source .stl files on Thingiverse.com](#)

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