Thor

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OpenSource 3D printable Robotic Arm

AngelLM

Step 1

Print it!

3D printer: I have used one with 300x220mm of printing area and 0.4mm nozzle.
Material: I printed every part with PLA.
Printing Profile: I recommend to slow down the outer shell speed at least to 50% of its normal printing speed in order to get accurate results on holes, gears, etc. For some pieces supports are needed.

Step 2

Prepare materials!

If you want to include the home sensors, you will need to make the PCBs and weld the components.
It's also recommended to weld a wire extension to the steppers wires, specially for the last three ones.

Step 3

Make the electronics!

Make the Control PCB and weld the components!

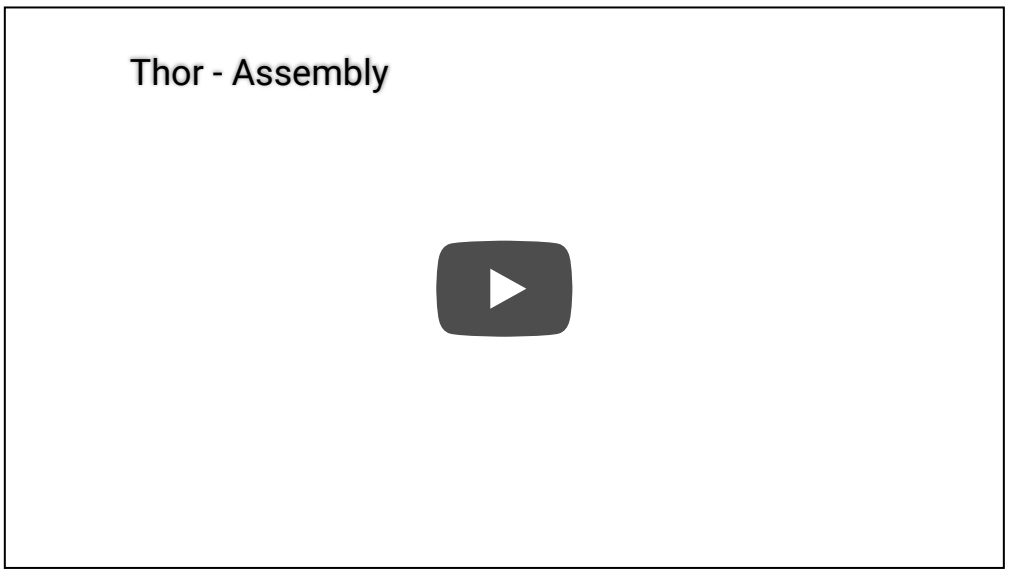
Step 4

Program the board!

You can upload this GRBL modification I made for the purpose of controling 7 steppers.

Step 5

Assembly it!



To be able to watch in detail the assembly on FreeCAD follow this steps:

1. Go to the ExplodedAssembly Workbench GitHub Repo.
2. Follow the instructions to install it in your system.
3. Start FreeCAD.
4. Open an Assembly file (located on *Thor>freecad-src>animation*).
5. Select the Exploded Assembly Workbench from the workbench pull-down list.
6. Click on the "Expand all trajectories" button.

7. Click on the "Reverse play" button.

Step 6

Enjoy it! Hack it! Share It!

This project is not completely finished, a lot of things can be improved yet. I made this project using only Open Source tools and I shared the project using the Creative Commons Attribution-ShareAlike 4.0 International License to make sure that anyone interested could study, modify and share the project.
If you want to share your modifications, do not hesitate to fork the Github Repository and send Pull Request to the original repo ;)

DISCUSSIONS

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David Zebrovski wrote 08/30/2018 at 19:14

nice (^; ^);; great work

Jack-Tribiani wrote 05/05/2017 at 07:04

Hi, I am so interested in this project, I have built the structure, and I would like to control it as a mulit -xis CNC machine, from your instructions, I know it can read the GCode, you mentioned a software called "Universal GCode Sender software", and I have download it from GItHub, but I found there are only there axis (X\Y\Z)shown, I want to know how about the another coordinate of the axis(A\B\C\D), in order to facilitate observation, how can I make them shown on the screen?