



YOUIMAGINE

Cycloidal Disk Electro Mechanical Timer.

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Located at: <http://www.youmagine.com/designs/cycloidal-disk-electro-mechanical-timer>

Short description:

An electro mechanical timer for my automaton designs.

Description:

<https://youtu.be/D3N7bA7T2Gw> Cycloidal Disk Electro Mechanical Timer is a mechanism I designed to control the start and stop of some of my automaton designs. When the user presses the start button, the automaton will start, cycle through the presentation, then stop automatically using this mechanism. I wrote a Python script for the Autodesk Fusion 360 "Add-Ins" menu in order to generate a hypocycloidal "sketch" curve based on pin count and pin diameter. From this curve I can easily create a cycloidal disk and plate. Thus the Python script allows me to easily adjust the input to output ratio and size of the cycloidal mechanism in order to synchronize the running time of an automaton with its presentation, all within a much smaller space than before. For this mechanism, I designed the cycloidal disk and plate for a ten to one input to output ratio, meaning the large gear will turn ten times before the cycloidal disk turns one time, then the mechanism stops. Note there is aliasing in the video such that the gears do not appear to be rotating as designed. As usual I probably forgot a file or two or who knows what else, so if you have any questions, please do not hesitate to ask as I do make plenty of mistakes. Designed using Autodesk Fusion 360, sliced using Cura 4.7.0, and 3D printed in PLA on an Ultimaker 3 Extended and Ultimaker S5s.

If you can, please use the online documentation found at <http://www.youmagine.com/designs/cycloidal-disk-electro-mechanical-timer> because those may have been updated. Also, there you can interact and provide praise and/or feedback.