



Soprano Ukulele Concealed Worm Gear Tuners



Big.One

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Summary

Based on my previous headless gourd shape ukuleles, but instead of using off the shelf tuning pegs, I designed these...

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Based on my previous headless gourd shape ukuleles, but instead of using off the shelf tuning pegs, I designed these 3D printable tuning pegs that is completely concealed. This design allows the unit to stand upright on its base like a vase, and no tuning pegs that will scratch the right arm while you play.

The body and fretboard can be printed with a large FDM printer, while the worm gear tuning pegs should be printed with SLS nylon due to the high precision and strength requirements. Also instead of using my own printer, I use services like [TreatStock](#) and [3D Hubs](#) to print the unit in the photos.

If you decide to print this design, you will need a printer that can print 400mm in the Z-axis which is the length of the neck+body.

Like my previous design, a rectangular carbon fiber rod should be used. In this design it is inserted into the body all the way from the tail into the neck.

FYI I bought these rods from [Dragon Plate](#). You should get a 24" long piece and cut it down to about 390mm. If you don't use a rod, the neck will bow under string tension.

How I Designed This

I use [OnShape](#)'s scripting feature to code the logic to generate this parametric design.

Category: Music

Model files



wormpeg_-_shaft.stl



wormpeg_-_gear.stl



hex_key_-_buttonkey.stl



spw_-_body.stl



spw_-_fretbd.stl

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

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