

Bevel Gear tester with parametric gears

M MeideC

VIEW IN BROWSER

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Summary

I needed a bevel gear system to another project, so I created this project where the gears can be parametrically changed

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I needed a bevel gear system to another project, and I tried to look for existing solutions, but I could only find ones where the files were provided as STLs, making them hard to modify.

So I decided to try my hands at designing my own gears, using this instructables: <https://www.instructables.com/How-To-3D-Printable-Bevel-Gears-Fusion-360/>.

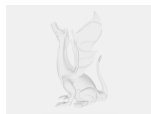
I tested the system with an Elecrow RPL13701K DC motor, which is also modelled into the design with its housing. The motor or its placement is actually not connected to the gears in the design, so when changing the gear parameters, the motor will not be correctly located anymore. I created some very crude parameters to manually move the motor in place after changing the gear settings (MotorHeightAdjustment & MotorDepthAdjustment).

Additionally, the Larger gear is designed to have a bearing inside. The bearing is also included in the design, so you can change its dimensions to match a bearing you will be using (or alternatively just fill this space to not use a bearing).

Parameters (some terms might be off, very newbie with mechanics):

- Module - same for both gears
- LargeGearTeethCount
- SmallGearTeethCount
- Backlash - this is frankly just my own non-scientific backlash, which tries to add just a little bit of margin of error when printing the gears.
- LargeGearPCD - derived Pitch Diameter from the above values
- SmallGearPCD - derived Pitch Diameter from the above values
- TeethDepth - how deep the teeth run from the pitch diameter towards the center of the circle

Model files



bevelgeartest.f3d



bevelgeartest.step

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