



Stackable Planetary Helical Gearbox for brushless 5010 motor



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Summary

Planetary gearbox with helical gears, 4 to 1 reduction per 'stage', designed for 5010 brushless motor.

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Tags: [brushlessmotor](#) [gearbox](#) [helicalgears](#) [planetarygears](#)

>> This is a bit of a theoretical model as i haven't been able to testdrive this version yet (waiting for delivery of bearings)! <<

This is my remake of Michael Rechtins stackable gearbox using helical gears instead (his uses spur gear). The outer shell is basically the same but i reworked the planet carrier and output hub to use 3 planetgears instead of Michaels 4.

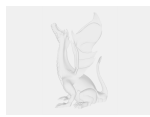
In doing this remodel with helical gears I've found much useful information about modeling helical gears in Fusion 360 from Antalz youtube videos about gears in Fusion (How to model Planetary Gears; Requirements, Gear Ratios, Helical/Herringbone (Gears pt 5/7)).

Most parts are printed in PETG with a standard mini 0.4 nozzle at 15% cubic infill with 0.25 layer height. Support is needed for most parts.

Included are my Fusion 360 model files and a assembly file for a 2-stage gearbox (16:1 reduction (two stages of 4:1)) with bearings placed but without nuts and bolts...

Be aware that the model can be very tight and that some sort of lubrication probably is needed for the gears!

Model files



5010_pvxl_helix_top.f3d



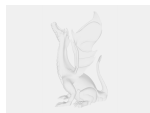
5010_pvxl_outputhub_tri.f3d



5010_pvxl_helix_motormount.f3d



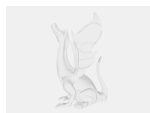
5010_pvxl_planetcarrier_tri_sun_20t_helix.f3d



5010_pvxl_helix_planetgear.f3d



5010_pvxl_helix_motor_sungear.f3d



5010_pvxl_ringgear_60t_helix.f3d



5010_pvxl_outputhub_tri.stl



5010_pvxl_helix_top.stl



5010_pvxl_ringgear_60t_helix.stl



5010_pvxl_helix_motormount.stl



5010_pvxl_planetcarrier_tri_sun_20t_helix.stl



5010_pvxl_helix_planetgear.stl



5010_pvxl_helix_motor_sungear.stl



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