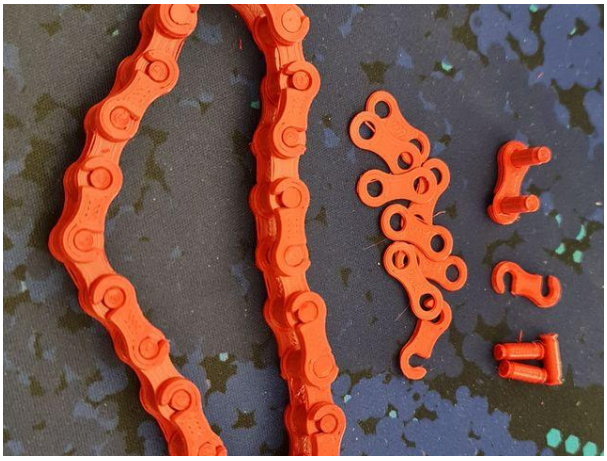

Chain Drive with Sprockets

Gökhan Karabulut

VIEW IN BROWSER

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Summary

This model contains a bunch of different parts to create modular chain drives specific to 3:2 aspect ratio.

0.25 hrs	1 pcs	0.16 mm	0.40 mm	PLA	2 g	Creality Ender 3 V2

Hobby & Makers > Mechanical Parts

Tags: chain modular drive scalable sprocket

This model contains a bunch of different parts to create modular chain drives specific to 3:2 aspect ratio. The original FreeCAD project file is included.

It's original scale (100%) results in chain rolls being 12mm apart and 8mm in diameter. For my Ender 3 V2 I've used 3 walls, 50% Infill, bed adhesion is not needed. no support needed when oriented well.

There are sprockets from 4 to 10 teeth ready to use, more sprockets and an some mounting shafts and adapters will come soon.

There are different ways to put the chain together, see the pictures for my recommendation.
For a whole Chain Link you need:
1x Bridge (plate with 2 pins baked on)
1x Lock (plate with 2 open pin hooks)
3x Links (flat thin pieces with 2 pin holes)
2x Rolls_3x (6mm high roll spacers)

No strength tests done yet with PLA results, it feels strong enough for demonstrations and small applications up to 10N of continuous and around 30N peak pulling force (first heads will start flying around).

But note:
Depending on used Material and Printer fine tuning, the result can vary. The 100% scale was a bit challenging to put together as the cylinder heads tend to break away. The best in size to performance seems to be a scale of 125%, resulting in 15x10 chain rolls which is fine for my application. A change of tolerance values in project file may also help to create better results.

Model files

chains.fcstd

FreeCAD project file

chains-b_chain_12l_8h_bridge.stl

chains-b_chain_12l_8h_lock.stl

chains-b_chain_12l_8h_link.stl

chains-b_chain_12l_8h_roll_1x.stl

chains-b_chain_12l_8h_roll_2x.stl

chains-b_chain_12l_8h_roll_3x.stl

chains-b_chain_12l_8h_roll_4x.stl

chains-b_chain_12l_8h_cylinder.stl

chains-b_sprocket_12l_8h_10t.stl

chains-b_sprocket_12l_8h_9t.stl

chains-b_sprocket_12l_8h_8t.stl

chains-b_sprocket_12l_8h_7t.stl

chains-b_sprocket_12l_8h_6t.stl

chains-b_sprocket_12l_8h_5t.stl

chains-b_sprocket_12l_8h_4t.stl

Print files

12l_8h_bridge_set_1x.gcode

PLA 0.40 mm 0.16 mm 0.25 hrs 2 g

RTM_100_1x_Cura_5_2_1

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