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Alternative Product Options

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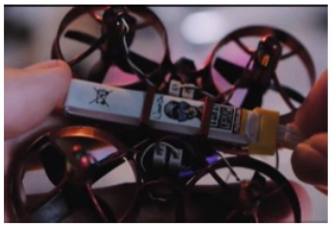
Product Options

Quadcopter- The Product that we chose

	Quadcopter	CrankLightKit	EVERLightTwist
			
Assembly	Hand	Hand	Ready
Assembly Equipment	Soldering Iron	Nuts and Bolts	None
Production	Rather complex	Rather complex	Easy
Possibilities	3D print of frame, artificial obstacles and storage box	3D print of frame and gearwheels	3D print of crown for personalisation
Purchasing Parts	Yes	Yes	Yes
Manufacturing Parts	Many	Many	Only one
Characterization	High end tool	Rather inexpensive, but difficult to assemble	Almost purely purchased product
Cost	Approx. 90 EUR	Approx. 30 EUR, if purchased as mounting kit	Approx. 18 EUR

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Parts Lists of Initial Product Options

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Parts List

Nr.	Part	Description	Quantity
1	Motors	BETAFPV 6x17mm 25000KV Brushed Motors (Clockwise)	2
2	Motors	BETAFPV 6x17mm 25000KV Brushed Motors (Counterclockwise)	2
3	Flight Controller	BETAFPV FC F3 Brushed Flight Controller SPI Flysky	1
4	Camera with antenna	crazepony-uk Tiny Whoop FPV AIO Camera 5,8 g	1
5	Holder Camera	crazepony-uk Tiny Whoop FPV AIO Camera 5,8 g holder	1
6	Propeller	BETAFPV 31mm 4-Blade Tiny Whoop Propellers (Clockwise)	2
7	Propeller	BETAFPV 31mm 4-Blade Tiny Whoop Propellers (Counterclockwise)	2
8	Buffer Elements	Anti-vibration ruber dampers	4
9	Screws	M1.4x5mm screws	4
10	Frame	Dynamic CAD file "whoop_dyn"	1

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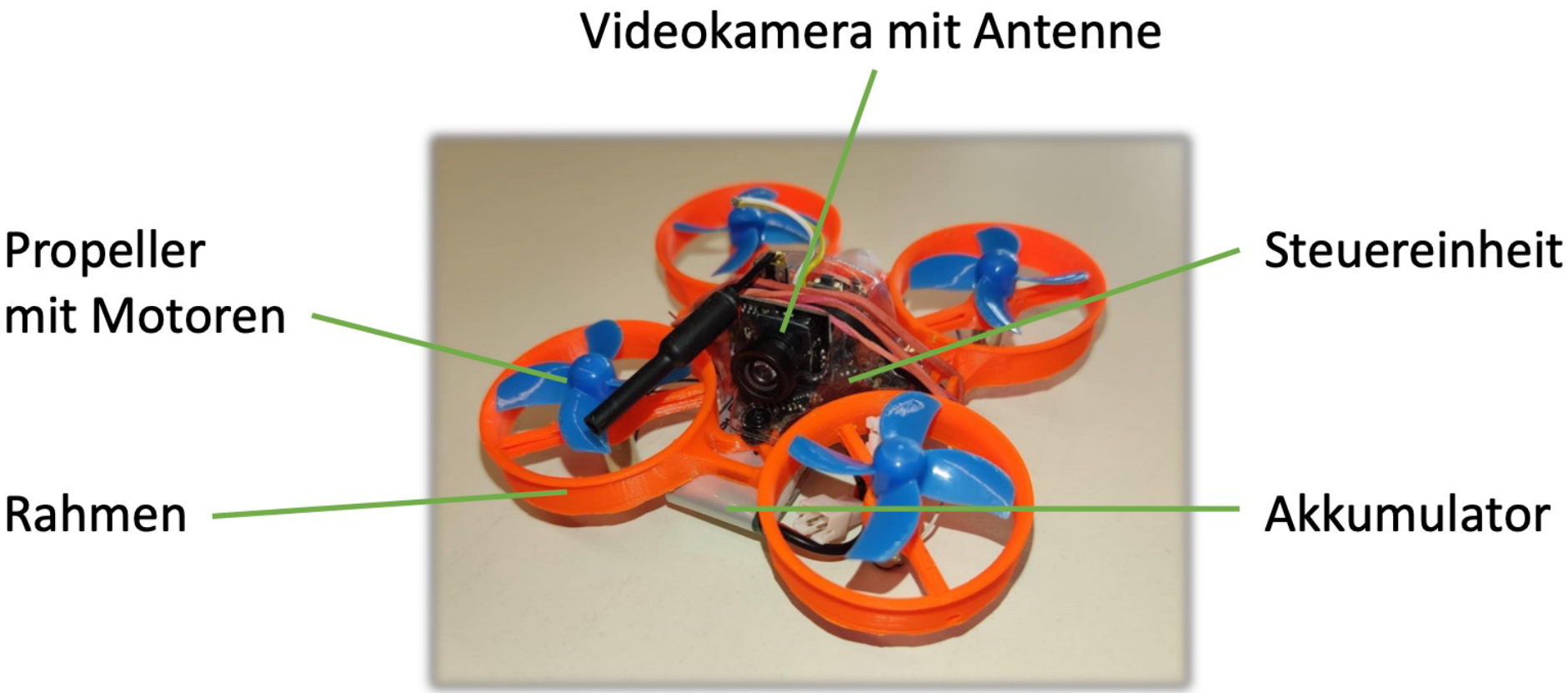
Baugruppe Quadcopter



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Parts List – Crank Light

16	1	Motor mit LED		Zukauf
15	1	Reduzierhülse		3D-Druck sinnvoll?
14	1	Gewindestange, kurz		Zukauf
13	1	Gewindestange, lang		Zukauf
12	2	Schrauben, kurz	Sechskantkopf	Zukauf
11	4	Schrauben, lang	Sechskantkopf	Zukauf
10	1	Rahmenelement	für Motoraufnahme	3D-Druck
9	1	Rahmenelement, lang		3D-Druck
8	1	Rahmenelement	für Kurbel	3D-Druck
7	4	Abstandshülsen	Kunststoff, schwarz	3D-Druck sinnvoll?
6	2	Zahnräder, klein		3D-Druck
5	2	Zahnräder, groß		3D-Druck
4	2	Unterlegscheiben	EN ISO	Zukauf
3	9	Muttern, normal	EN ISO	Zukauf
2	2	Muttern, selbstsichernd	EN ISO	Zukauf
1	1	Muttern, schmal	EN ISO	Zukauf
Pos.-No.	**Quantity / Unity**	**Designation**	**Material/Norms**	**Comment**
Pos.-Nr.	**Menge/ Einheit**	**Benennung**	**Werkstoff/Normkurzbezeichnung**	**Bemerkung**

Crank Light

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Mounting Plan 1 – Crank Light

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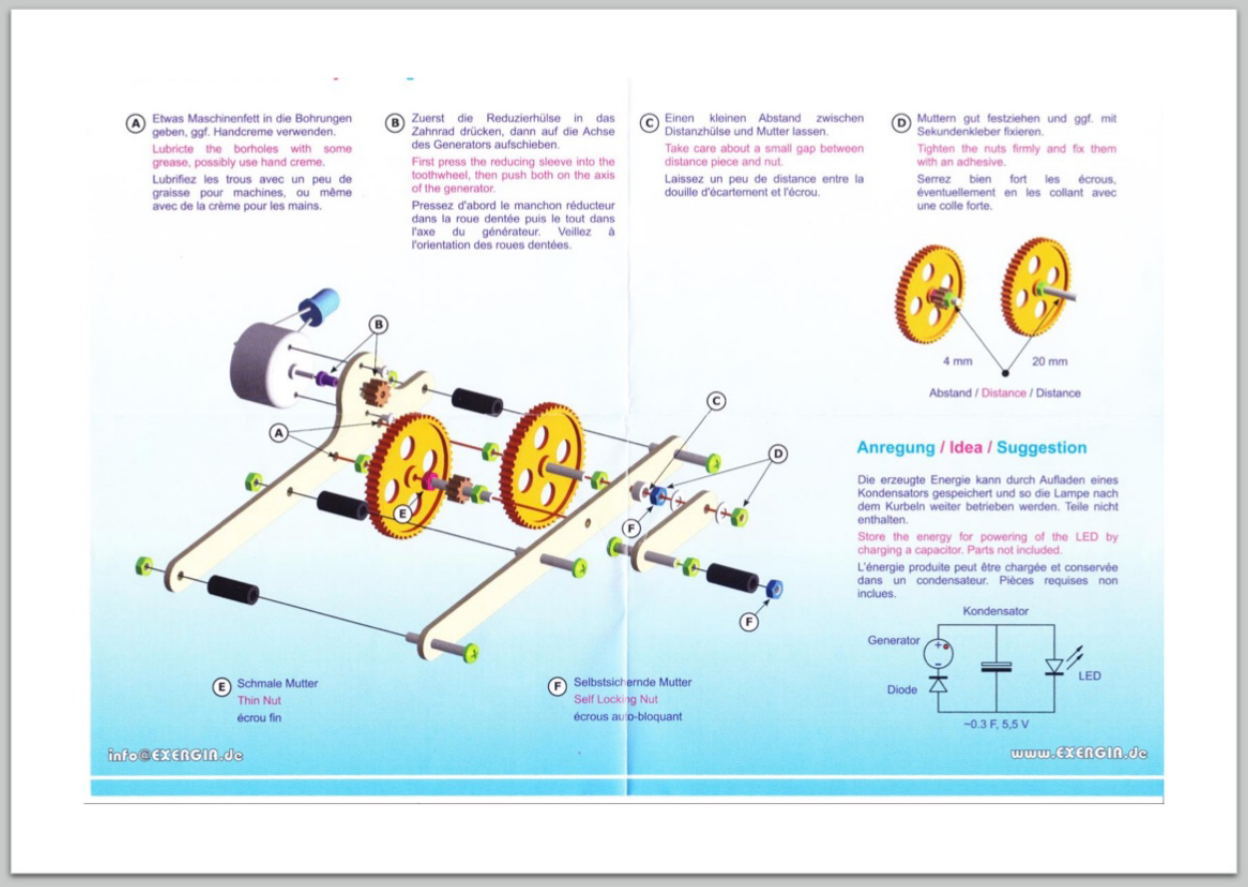
Mounting Plan 2 – Crank Light



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INTENT 4.0

Parts List – EVERLightTwist

2	1	Aufschraubkrone	individuell gestaltbar	3D-Druck
1	1	EVERLightTwist	Taschenlampe	Zukauf
Pos.-No.	**Quantity / Unity**	**Designation**	**Material/Norms**	**Comment**
Pos.-Nr.	**Menge/ Einheit**	**Benennung**	**Werkstoff/Normkurzbezeichnung**	**Bemerkung**

EverLightTwist

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Other Alternative Options

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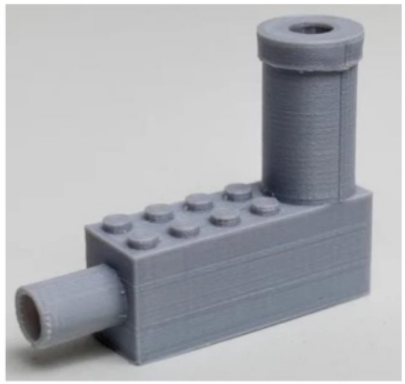
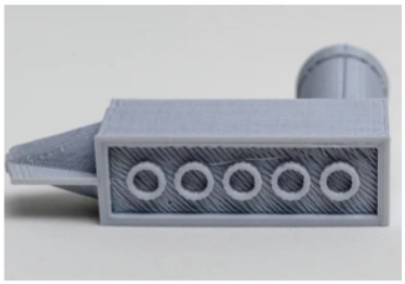
Balloon Engine for Interlocking Toy Brick System

Lego Customizing

3D print





Function

Assembled 3D print

https://www.thingiverse.com/thing:3060612

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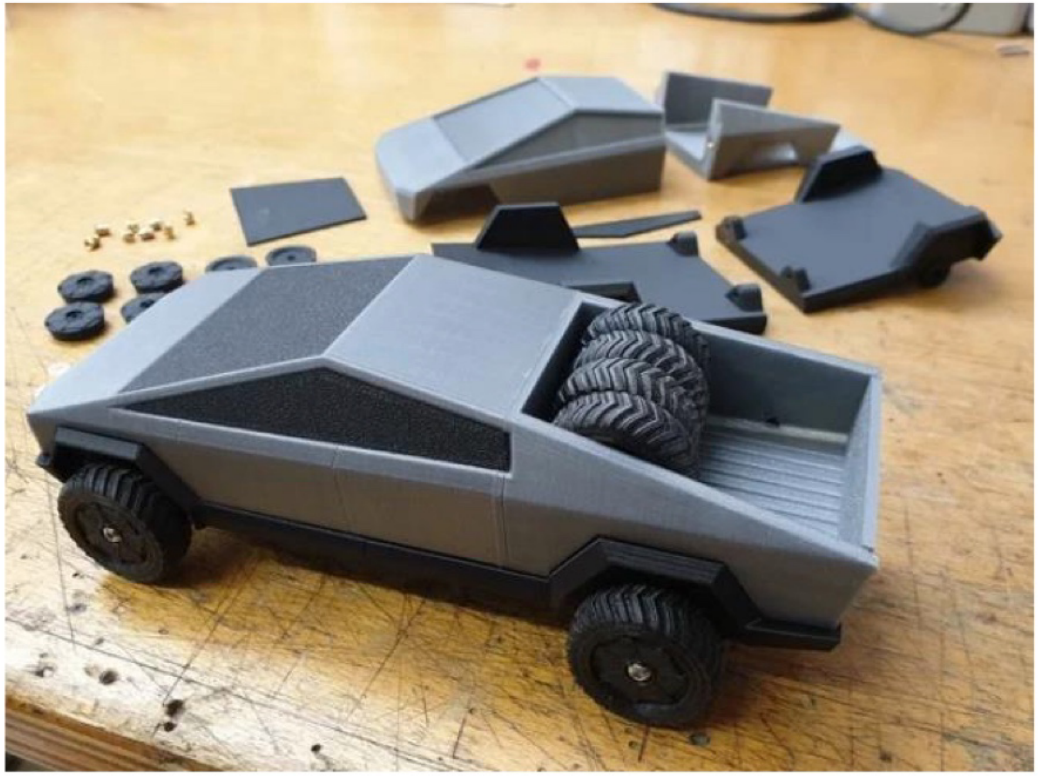
Tesla CyberTruck



https://www.thingiverse.com/thing:4063298

Summary

- 3D print your favourite electric truck
- All parts are printed without support.
- Wheels are spinning if below parts are used
- Tyres are printed from TPU,
- all other parts PLA

Overall length: 196 mm
Scale: 1:30

Parts

8x brass insert M3 ruthex
4x M3x6 (chassis and body)
4x M3x14 (wheels)
4x polyamide washer (wheels)
superglue (for windows)
loctite (wheel screws)

This is a remix from Greg Bejtlich's 3D model on grabcad.com

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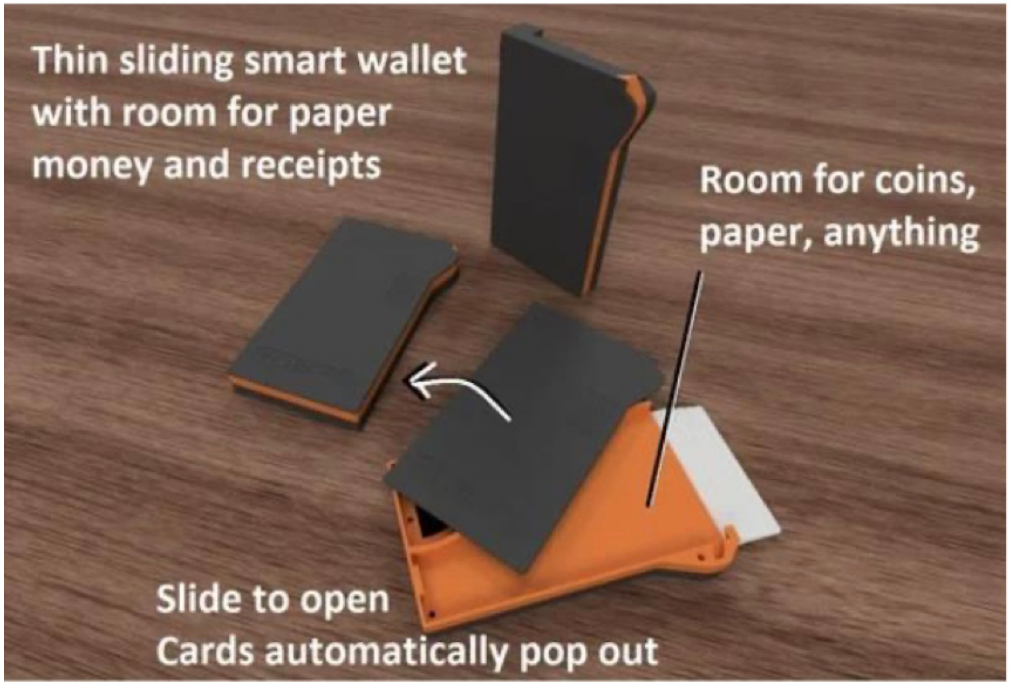
Smart Wallet - Sliding 3D printed wallet



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Cable Organizer

https://www.thingiverse.com/thing:3396905

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Individualize assemblies of the workshops of your school

An easy way to get a customized product is to use an existing assembly from workshops and replace a component with a 3D printed part. This 3D printed part can then be customized and printed.

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References

- Slide 3:
  - Image derived from the video:https://www.youtube.com/watch?v=rAMe1HkNxC0&t=181s, 08.03.2022.
- Slide 2 and 4:
  - Quadcopter picture is excerpt from the video: https://www.youtube.com/watch?v=rAMe1HkNxC0&t=181s, 08.03.2022.
- Slide 14, 15, 16, 17:

  Compilation of thingiverse:

  www.thingiverse.com, 08.03.2022.

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