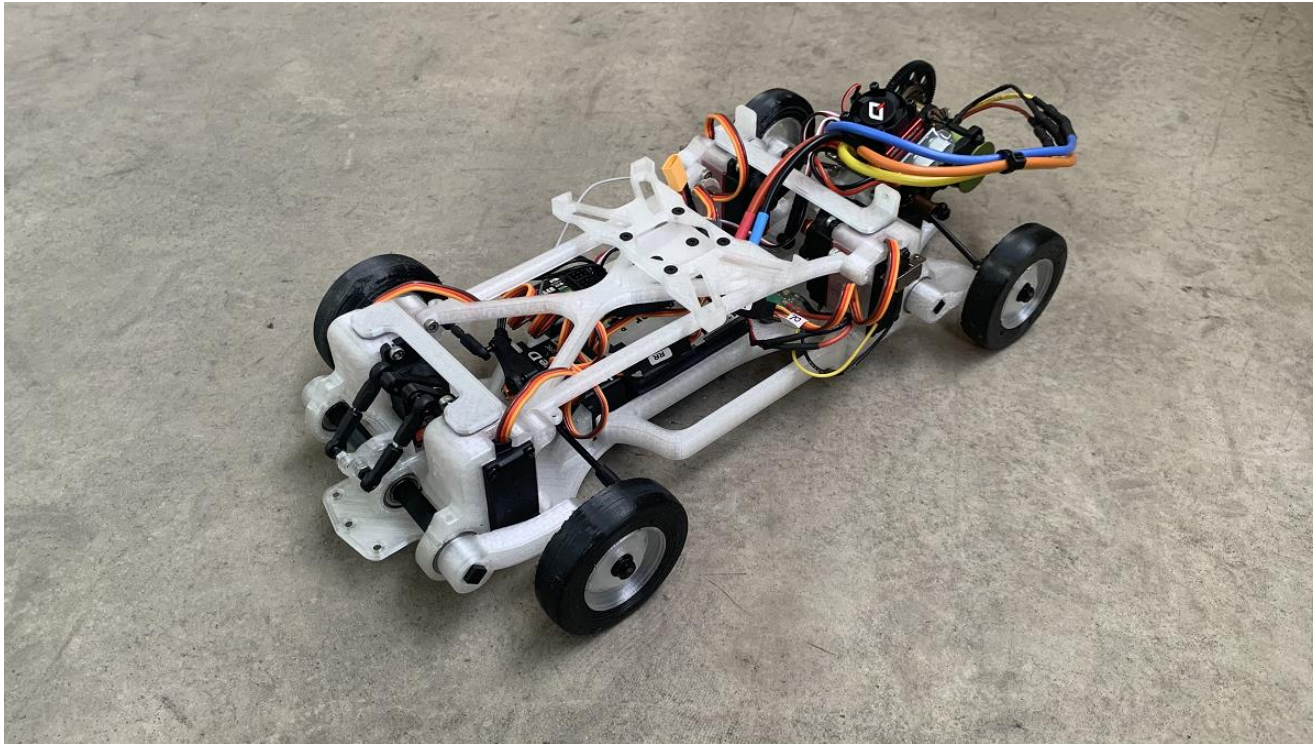
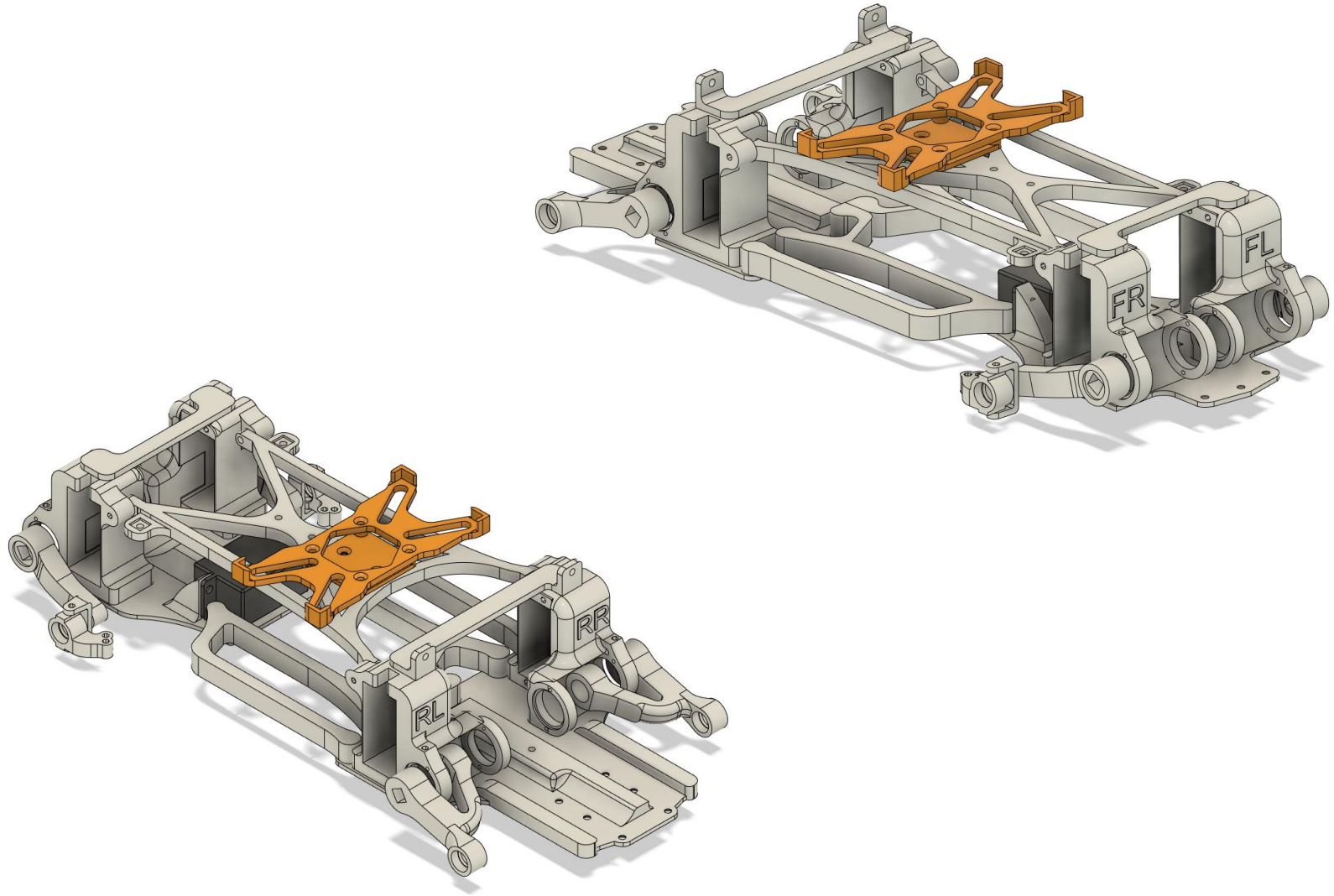


ActiveSuspension chassis kit for Tamiya M class



This kit is a chassis to effectively use the Superscale2020 active suspension unit. It features a compact package that combines torsion bars and active suspension in the size of the Tamiya M chassis (wheelbase 239mm)
STL data Realistic full functional model.







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Design and spec

This kit is a chassis to effectively use the Superscale2020 active suspension unit. It features a compact package that combines torsion bars and active suspension in the size of the Tamiya M chassis (wheelbase 239mm).

This model also uses gripped tires for a more realistic scale appearance.

To enjoy realistic behavior at very low speeds, we recommend using a DC motor for the crawler or a multi-pole brushless DC motor.

Drivetrain

The drivetrain of this kit is designed to maximize the use of Sakura D5 parts available to everyone. As a result, it is possible to use active suspension at a lower cost than collecting the necessary parts individually.

A steering gyro is not necessarily required, as the tires provide some grip.

Parts for print out with PLA or PETG

| partsNo | Partsname | slicer | nozzle | perimater | infill | material | brim/support | layerhight | Quantity | note |
|---------|-------------------------|--------|--------|-----------|--------|----------|--------------|------------|----------|--------------------------|
| 1 | battery_case_mount.stl | | 0.4 | 3 | 15 | PLA | no | 0.15 | 1 | |
| 2 | batteryholder.stl | | 0.4 | 3 | 15 | PLA | no | 0.15 | 1 | |
| 3 | brace.stl | | 0.4 | 3 | 20 | PLA | no | 0.15 | 1 | |
| 4 | chassisplate_Rear.stl | | 0.4 | 3 | 25 | PLA | no | 0.15 | 1 | |
| 5 | chassisprate_Front.stl | | 0.4 | 3 | 25 | PLA | no | 0.15 | 1 | |
| 6 | frameAL.stl | | 0.4 | 3 | 25 | PLA | no | 0.15 | 1 | |
| 7 | frameAR.stl | | 0.4 | 3 | 25 | PLA | no | 0.15 | 1 | |
| 8 | frontbrace.stl | | 0.4 | 3 | 25 | PLA | no | 0.15 | 1 | |
| 9 | frontknacle_clamp_L.stl | | 0.4 | 3 | 25 | PLA | no | 0.15 | 1 | |
| 10 | frontknacle_clamp_R.stl | | 0.4 | 3 | 25 | PLA | no | 0.15 | 1 | |
| 11 | frontknacle_L.stl | | 0.4 | 3 | 25 | PLA | yes | 0.15 | 1 | |
| 12 | frontknacle_R.stl | | 0.4 | 3 | 25 | PLA | yes | 0.15 | 1 | |
| 13 | frontpart_FL.stl | | 0.4 | 3 | 25 | PLA | yes | 0.15 | 1 | |
| 14 | frontpart_FR.stl | | 0.4 | 3 | 25 | PLA | yes | 0.15 | 1 | |
| 15 | frontsusarm_L.stl | | 0.4 | 3 | 25 | PLA | yes | 0.15 | 1 | |
| 16 | frontsusarm_R.stl | | 0.4 | 3 | 25 | PLA | yes | 0.15 | 1 | |
| 17 | Gearboxbrace.stl | | 0.4 | 3 | 25 | PLA | yes | 0.15 | 1 | |
| 18 | M_chassis_tire.stl | | 0.4 | 3 | 25 | TPU | no | 0.15 | 4 | |
| 19 | motorwasher.stl | | 0.4 | 4 | 25 | PLA | no | 0.15 | 1 | if necessary |
| 20 | reararm_L.stl | | 0.4 | 3 | 25 | PLA | yes | 0.15 | 1 | |
| 21 | reararm_R.stl | | 0.4 | 3 | 25 | PLA | yes | 0.15 | 1 | |
| 22 | rearbrace.stl | | 0.4 | 3 | 25 | PLA | no | 0.15 | 1 | |
| 23 | rearpart_RL.stl | | 0.4 | 3 | 25 | PLA | yes | 0.15 | 1 | |
| 24 | rearpart_RR.stl | | 0.4 | 3 | 25 | PLA | yes | 0.15 | 1 | |
| 25 | servohorn17mm.stl | | 0.4 | 3 | 25 | PETG | no | 0.15 | 4 | |
| 26 | springbar60mm.stl | | 0.4 | 3 | 0.5 | PETG | No | 0.15 | 4 | Top5/0.5mm bottom5/0.5mm |
| 27 | springlever.stl | | 0.4 | 3 | 25 | PLA | no | 0.15 | 2 | |
| 28 | springlever_R.stl | | 0.4 | 3 | 25 | PLA | no | 0.15 | 2 | |
| 29 | standoff25mm.stl | | 0.4 | 3 | 25 | PLA | no | 0.15 | 1 | |
| 30 | steeringhorn.stl | | 0.4 | 3 | 25 | PETG | no | 0.15 | 1 | |
| 31 | washer0.5mm.stl | | 0.4 | 3 | 25 | PLA | no | 0.15 | 4 | |
| 32 | wheel_Mchassis.stl | | 0.4 | 3 | 25 | PLA | yes | 0.15 | 4 | |
| 33 | zig.stl | | 0.4 | 3 | 25 | PLA | no | 0.15 | 1 | |

PLA recommend harder type

TPU

PETG recommend ColorfabBH

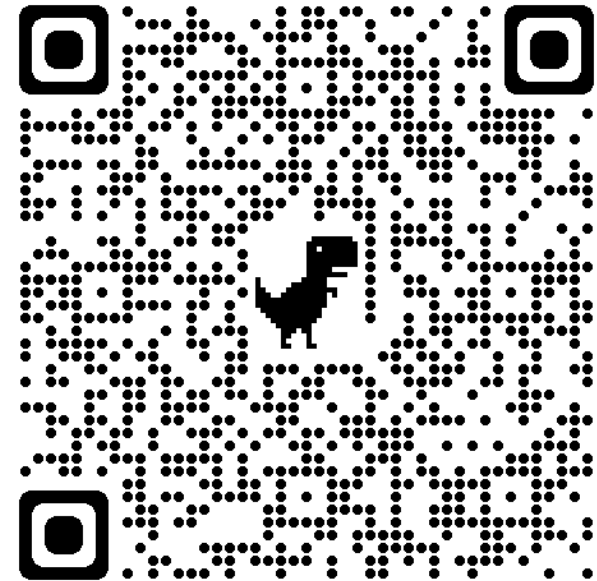
Parts list without this kit

| | | |
|-------------------------|----|--------------------------------|
| ball Bearing 9x17x5mm | 8 | amazon |
| HightorqueServo 25kg | 4 | amazon |
| Steeringservo | 1 | amazon |
| UBEC | 1 | amazon |
| Superscale2k20 unit | 1 | Superscale2k20 |
| Turnbuckle set | 1 | amazon |
| M3*6 counterthunk screw | 36 | amazon |
| M3*10 | 16 | amazon |
| M3*12 | 2 | amazon |
| 3M doublesideTape | 1 | amazon |

Transplant parts from doner sakuraD5 Junk or kit

| | |
|---------------------------|---|
| 10*15*4 Ballbearing | 8 |
| front axle | 2 |
| rear drive shaft | 2 |
| Transmission | 1 |
| M4 nylon locknut | 4 |
| Differential gear | 1 |
| turnbuckle/ end ball etc. | |
| body mount etc | |
| M3*12 flatscrew | 2 |
| M3*6 bottomscrew | |

The list with active links can be downloaded from Google drive.





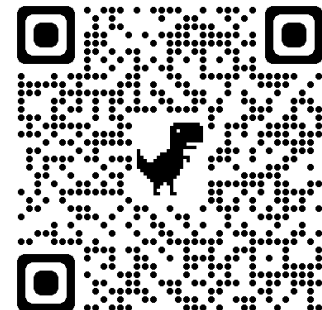
SuperScale 2020

RC SCALE SUSPENSION SIMULATION KIT

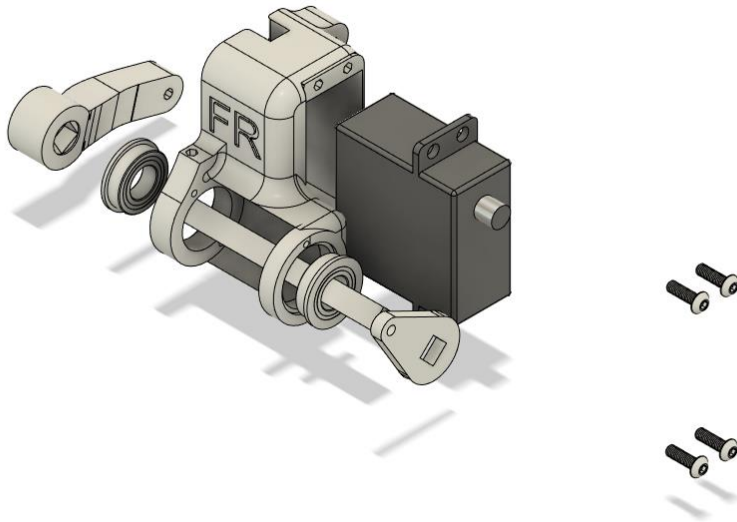
Add realism to your rc model by giving it true 1:1 suspension behavior. Simulate weight and adjust the suspension to your liking on the fly.

[LEARN MORE](#)

The Superscale2020 "SS" unit is a key component of this chassis and should be purchased [here](#).



1, Servo and torsion bar box assembly



Front. Install 9*17*5 ball bearings and secure servo with M3*10 screws. Do the same for the left side.

Torsionbar

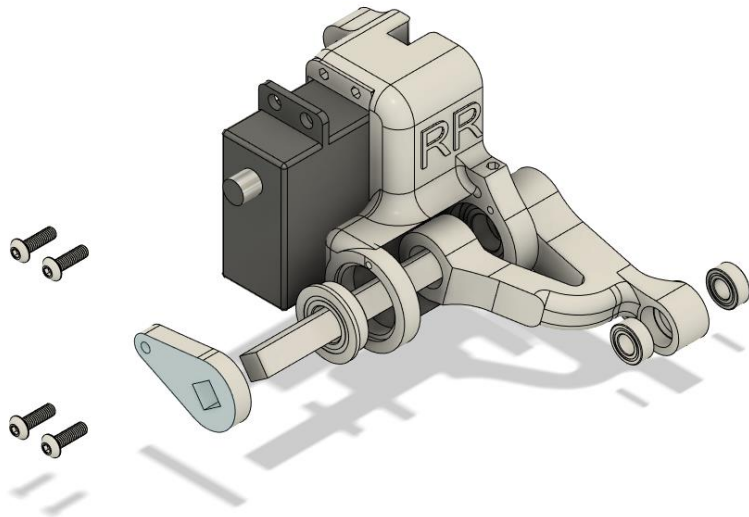
Torsion bars are printed with PETG. Please check the print settings.

Insert the torsion bar into the suspension arm.

Use a rubber hammer or similar tool to gently drive it in;

use a Zig to drive in the appropriate amount. Do not install the servo horn at this point.





Install 5*10*4 bearings on the sus arm.
fix the servo with M3*10 screw. Do the
same for the left side.

Install 9*17*5 bearings and spring bars
as for the front side. The spring lever is
different from the front side, so be sure
to check that it is springlever_R.stl and
that the installation orientation matches
the diagram.

2,Superscale2k20 "ss"unit Unit initialization

First, use arduinoIDE on your PC to connect to SS unit. Make sure you have the latest version of the firmware. The latest version is Ver1.22 (13 Sep 2022).

You can check the version on the serial monitor.

Then turn the potentiometer to adjust the offset value to 0,
and turn off the power once it is done.

3, Neutral position setting for all servos.

Due to the space limitations of this chassis, it is necessary to connect each servo and SS unit as follows in order to reverse the servo rotation direction.

- SSunitRL output>FrontRight servo
- SSunitRR output>FrontLeft servo
- SSunitFL output >RearRight servo
- SSunitFR output >RearLeft servo

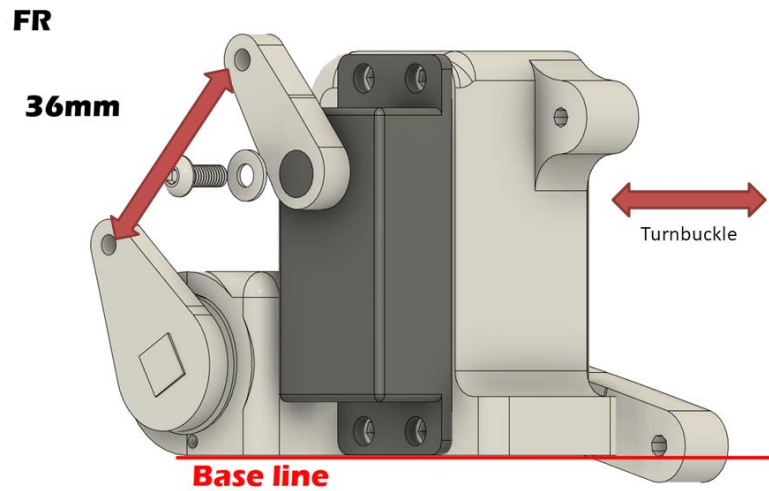


After connecting all servos, place the SSunit on a flat surface, turn on the power, and in a few seconds, all servos are in a neutral position and stable.

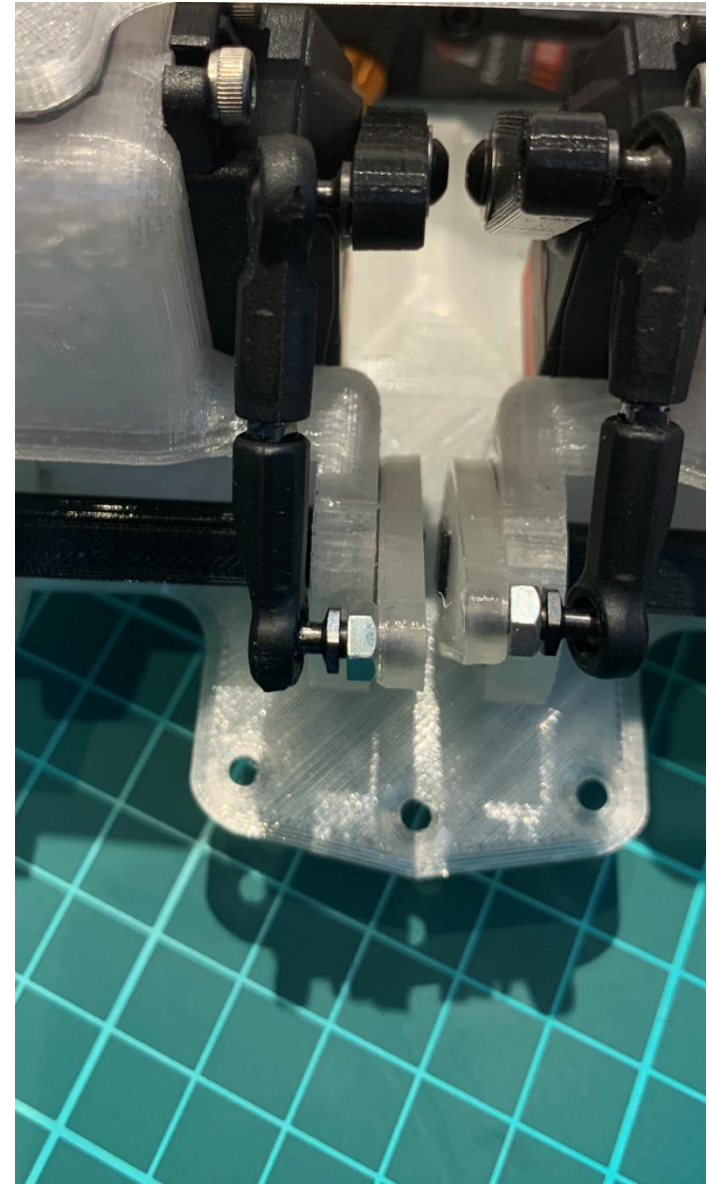
Turn down the power.

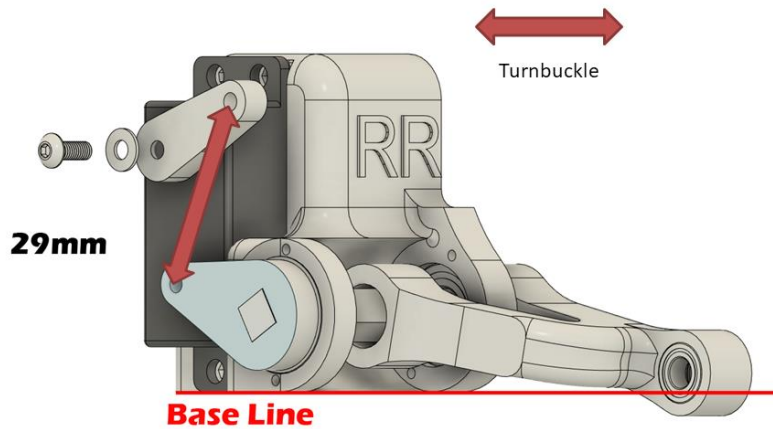
Adjust the neutral position and the axle position with reference to the figure.

The servo horn is tightly engaged with the servo output shaft when the screw is tightened.

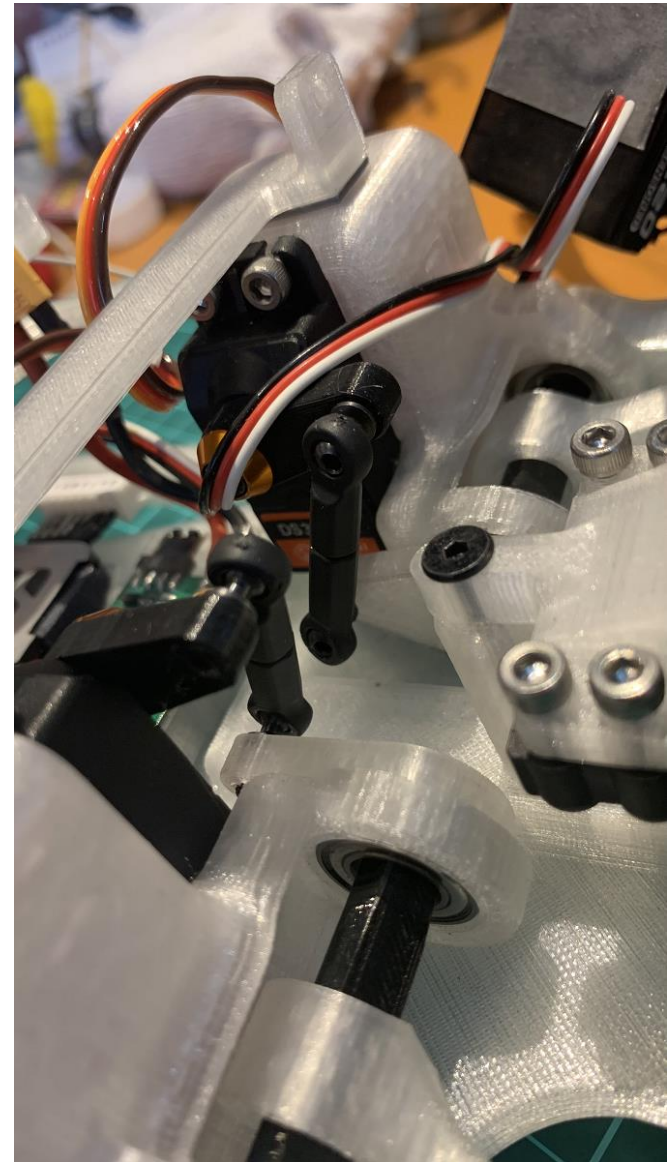


Set up the left side in the same way
Note the mounting orientation of the ball end!

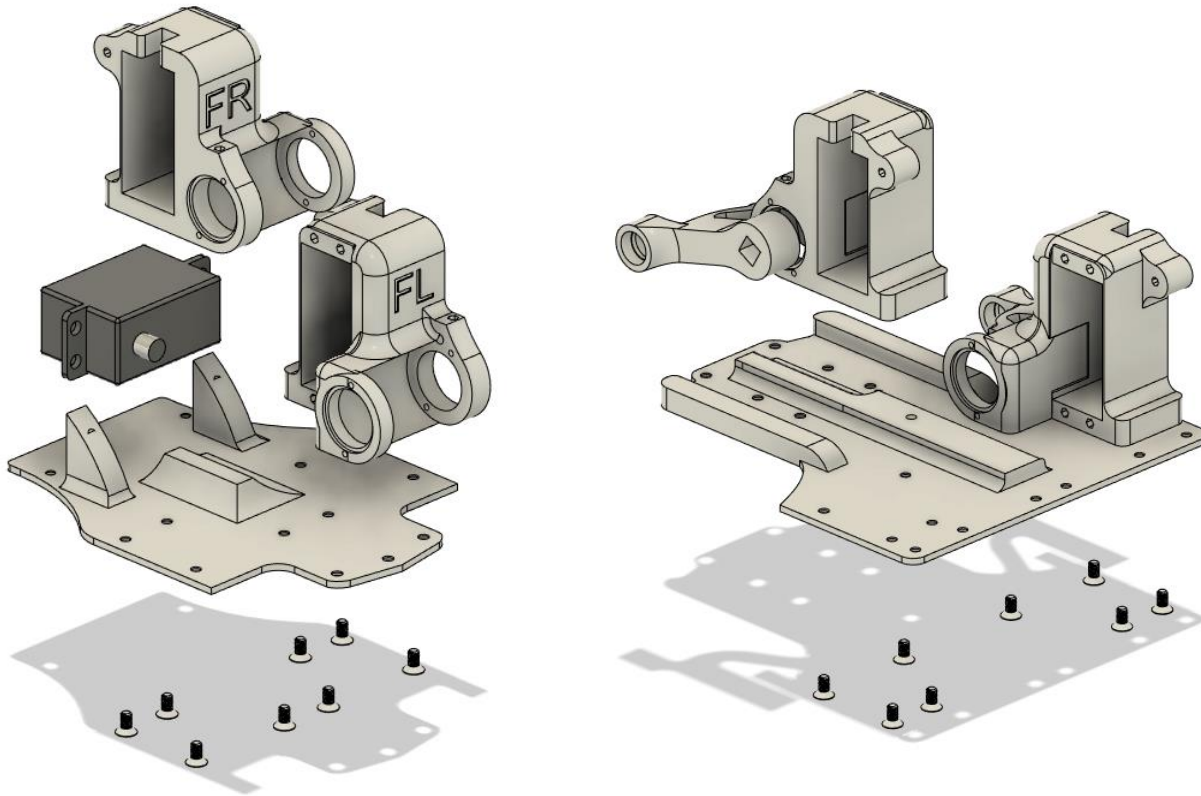




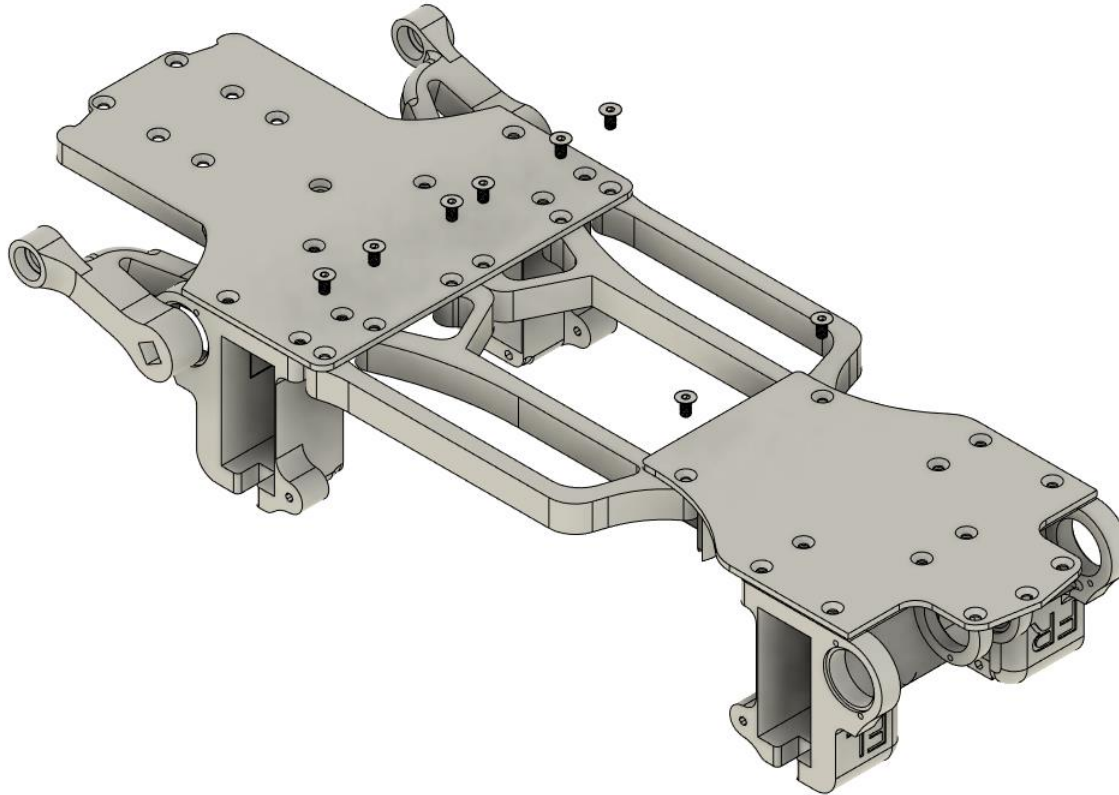
Set up the left side in the same way
Note the mounting orientation of the ball end!



4, Frame Assembly

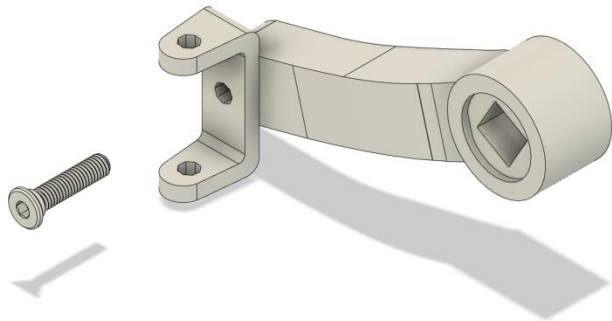


The steering servo is secured with double side tape.

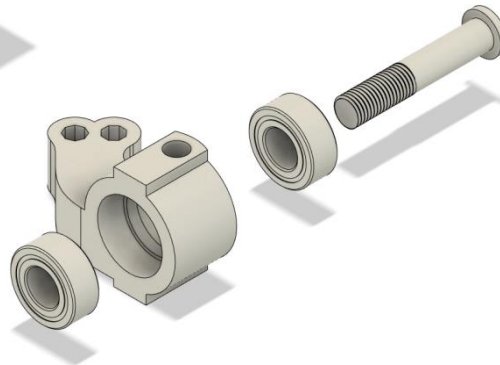


Then connect the front and rear frames.

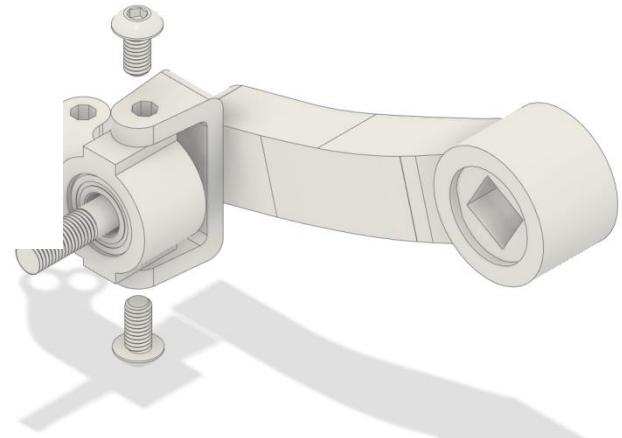
5, Front axle assembly



Fix the knuckle clamps to the suspension arms using Sakura D5 M3*12 flat screws.

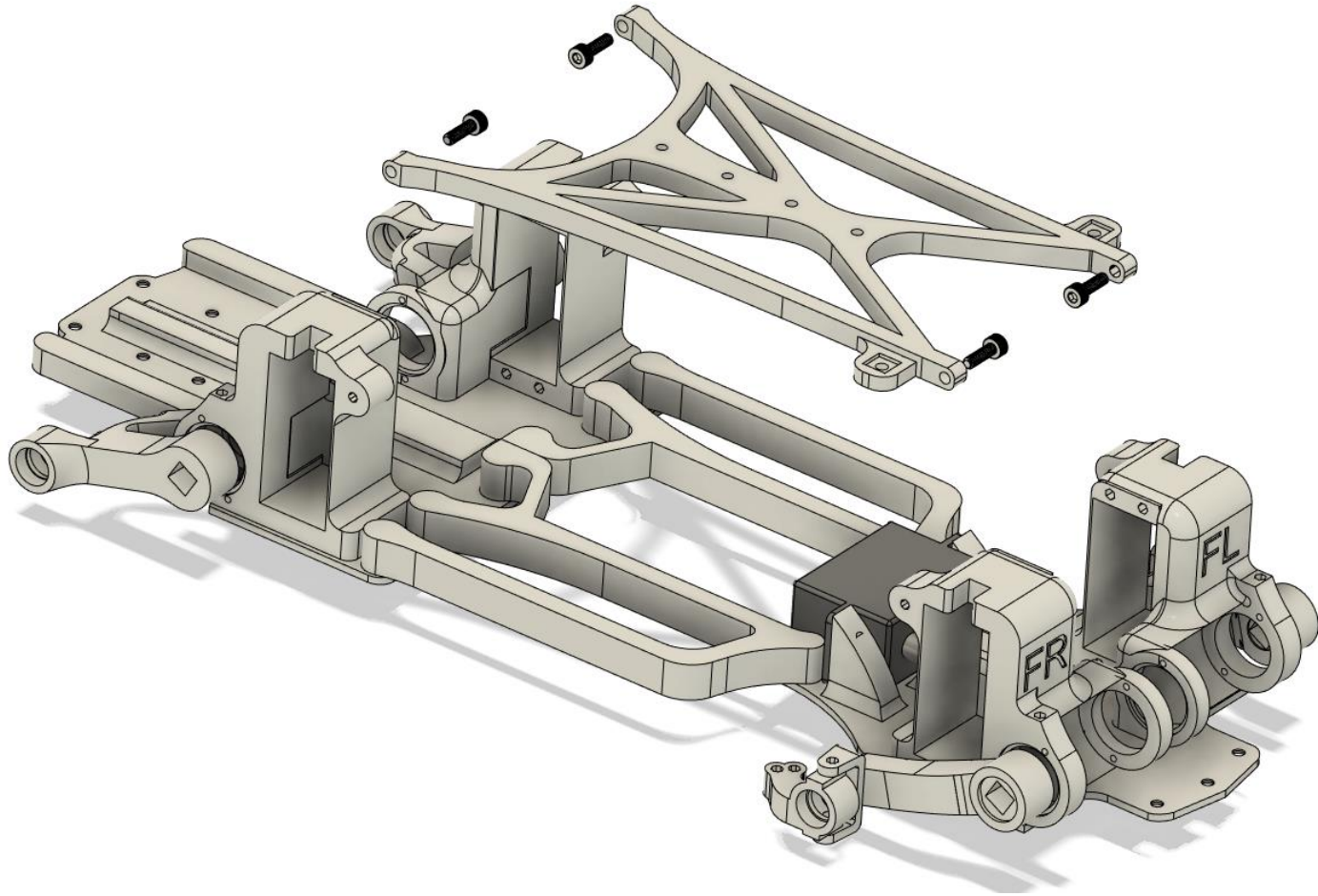


5*10*4 Ball bearing. axle bolt.

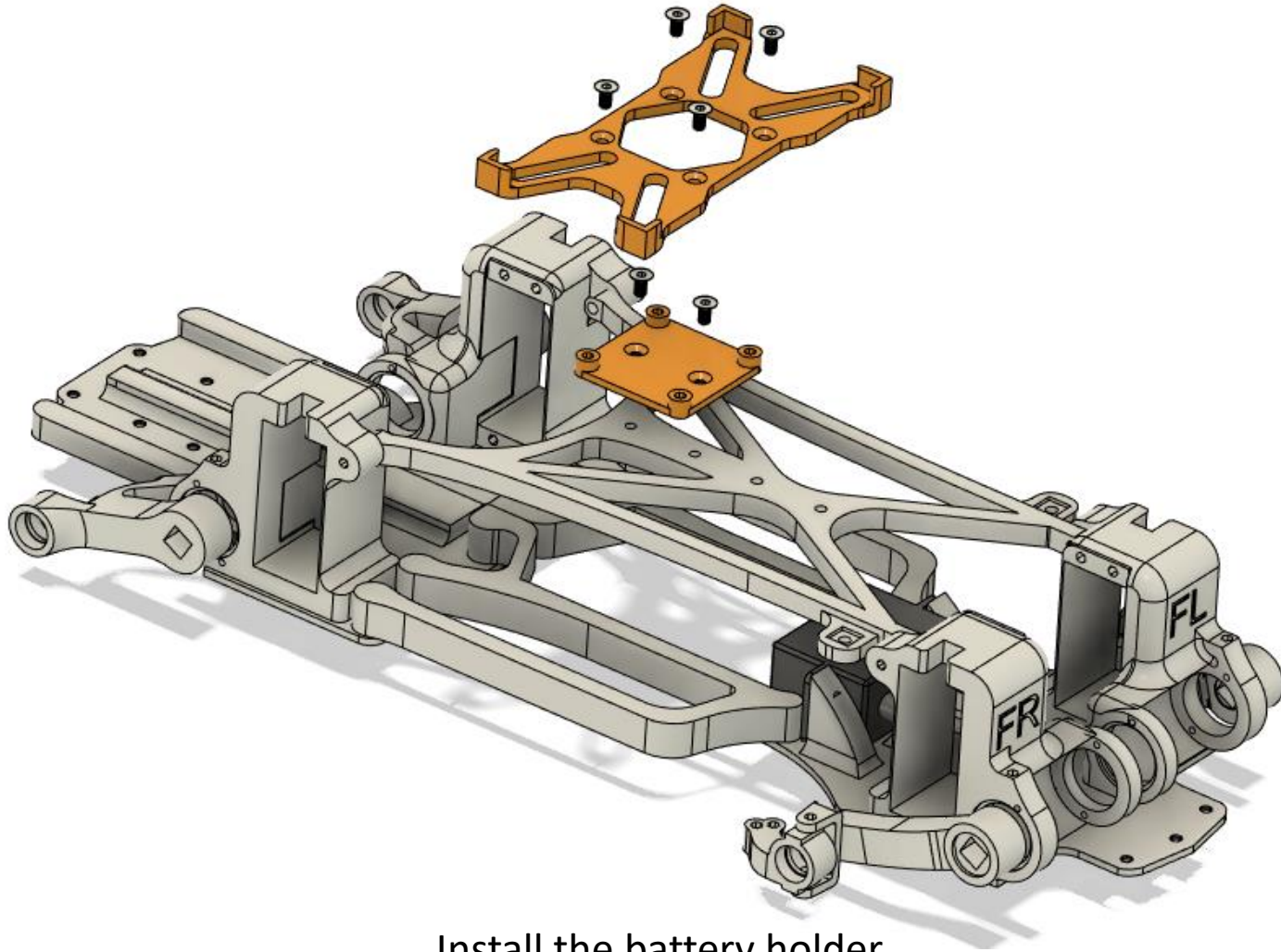


M3*6 button screw

6, Brace installation

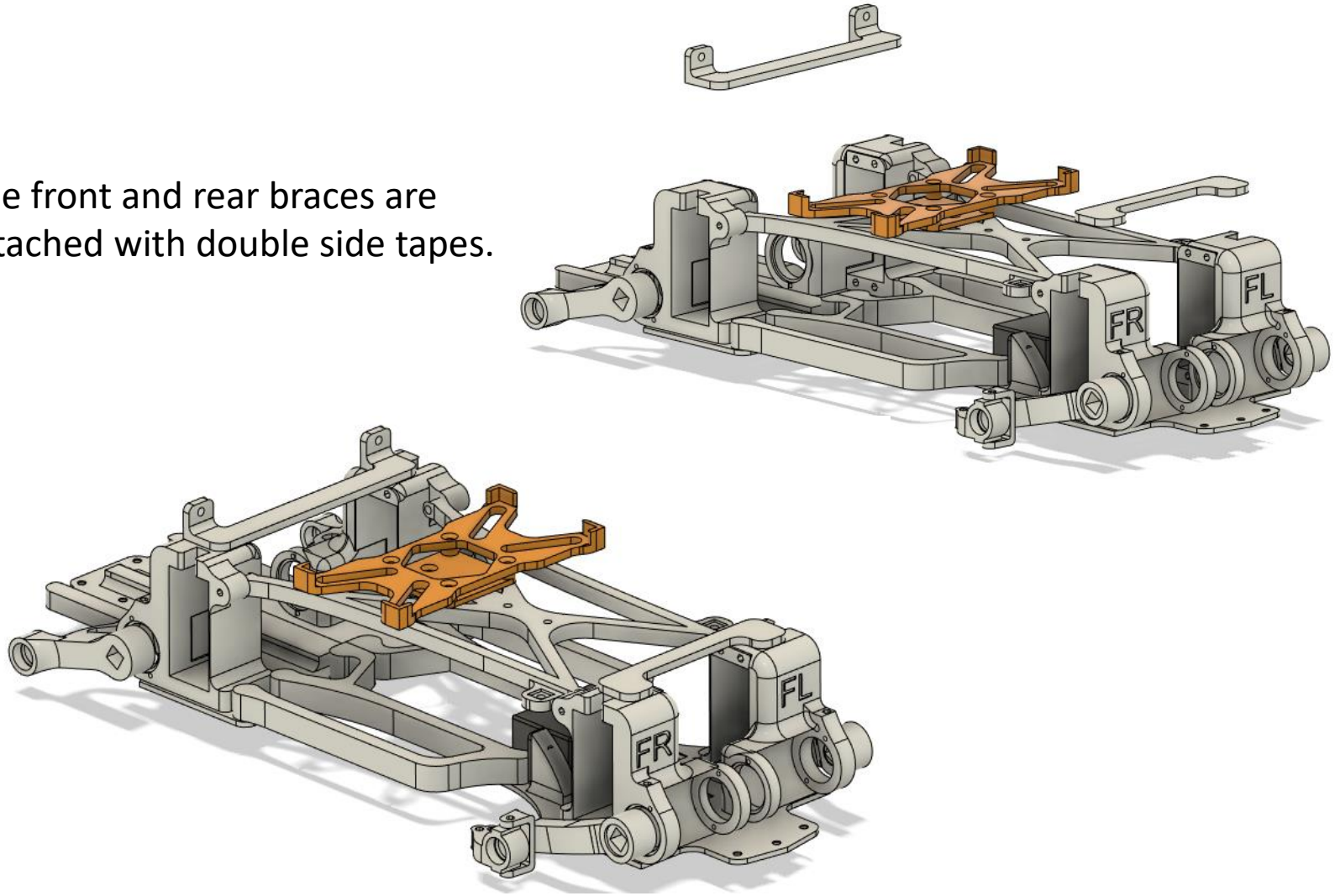


6, Brace installation

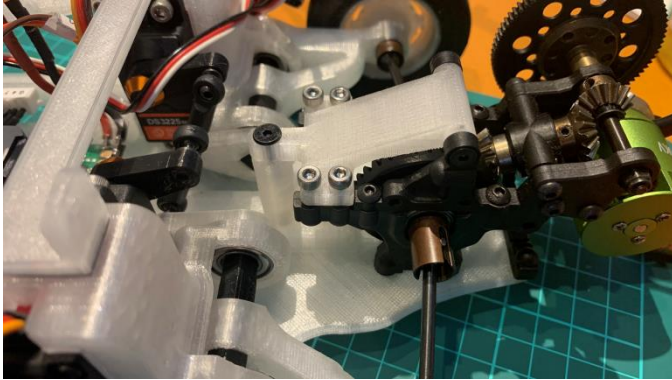


Install the battery holder.

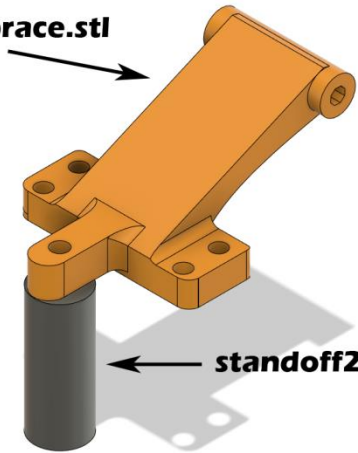
The front and rear braces are attached with double side tapes.



7, Drivetrain



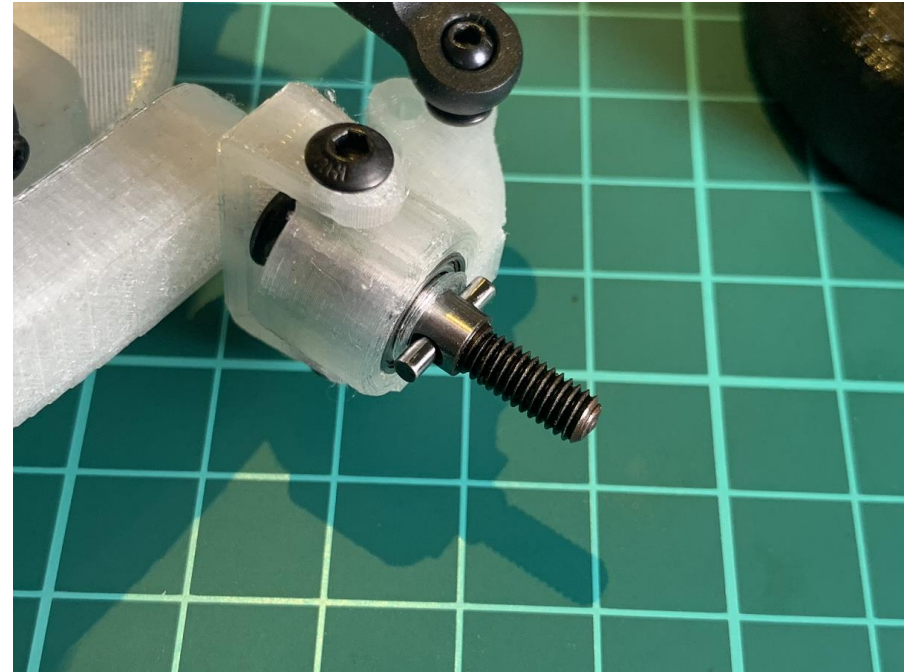
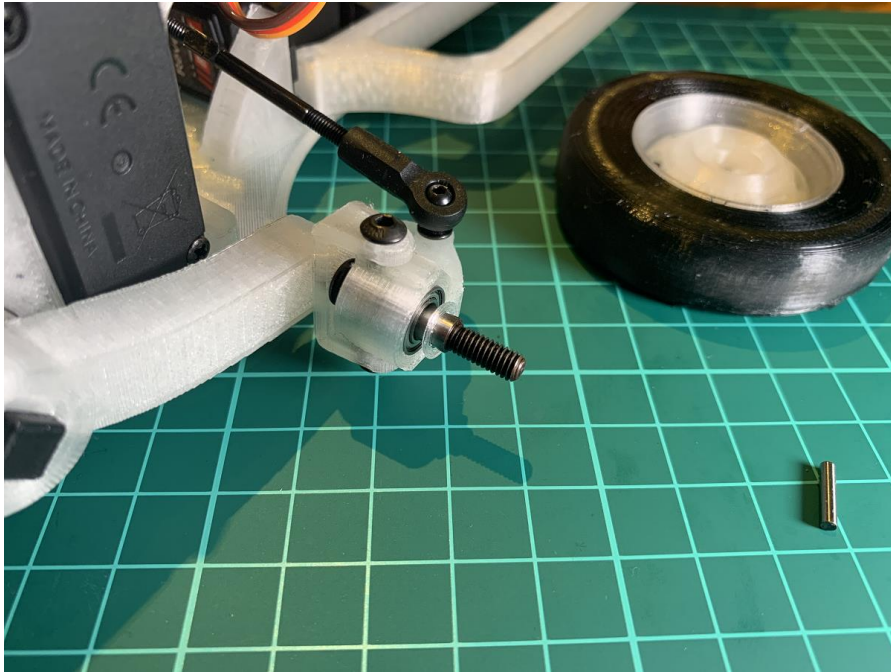
gearboxbrace.stl



standoff25mm.stl

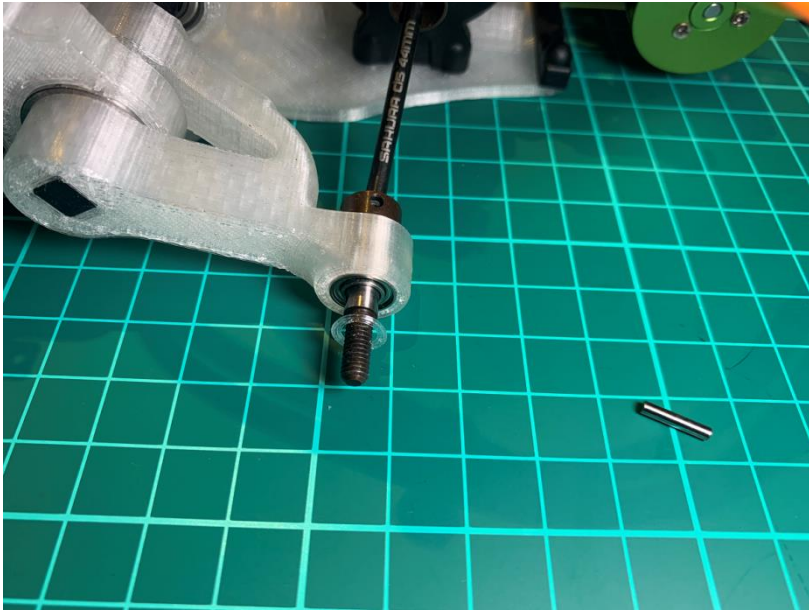
Use standoffs and gearbox braces to ensure frame plate rigidity. The gearbox brace is also used as an ESC mount.

8, axle and washer



Washer 0.5mm and axle front side

8, Axle and washer



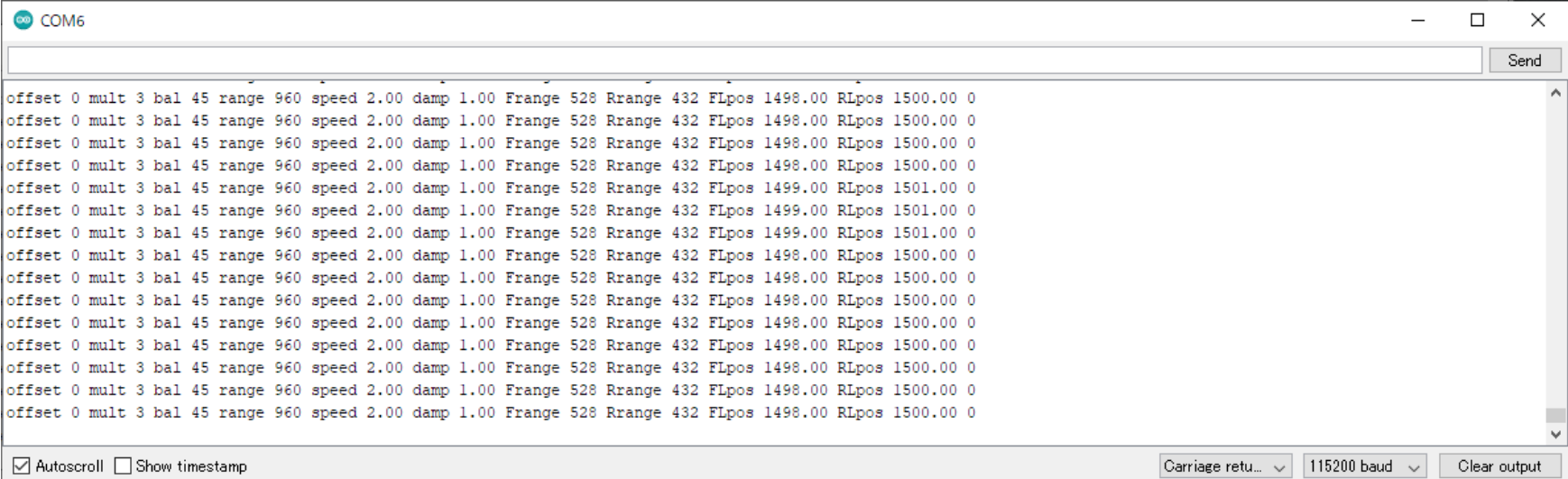
Washer 0.5mm and axle Rear side

8, Axle and washer



The wheel is mounted directly on the axle.

9, SSunit tuning

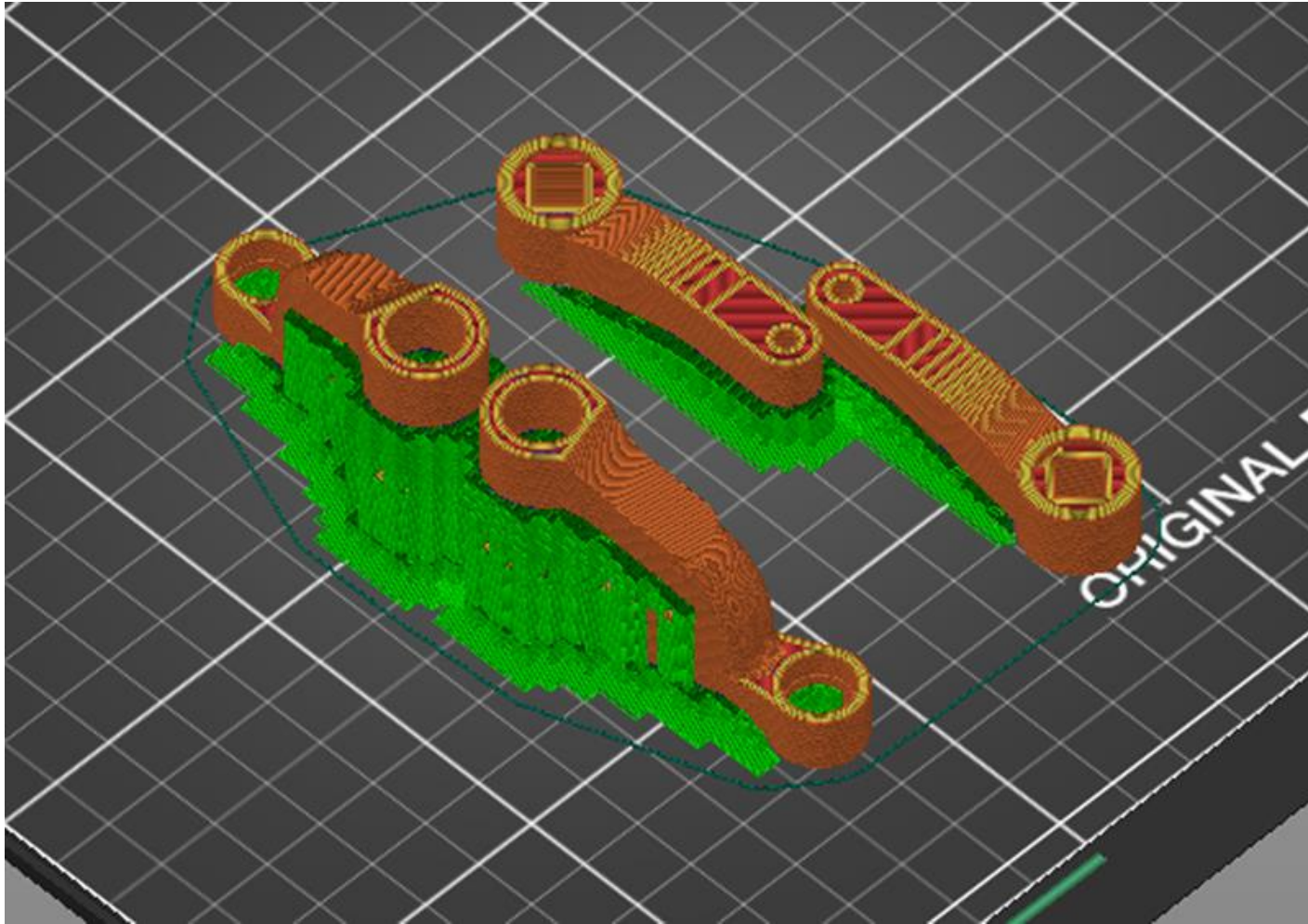


A screenshot of a terminal window titled "COM6". The window displays a series of 15 lines of text, each representing a set of SSunit tuning parameters. The parameters are: offset 0, mult 3, bal 45, range 960, speed 2.00, damp 1.00, Frange 528, Rrange 432, FLpos 1498.00, RLpos 1500.00, and 0. The window has a "Send" button in the top right corner and a status bar at the bottom with checkboxes for "Autoscroll" (checked) and "Show timestamp" (unchecked), along with dropdown menus for "Carriage retu..." and "115200 baud", and a "Clear output" button.

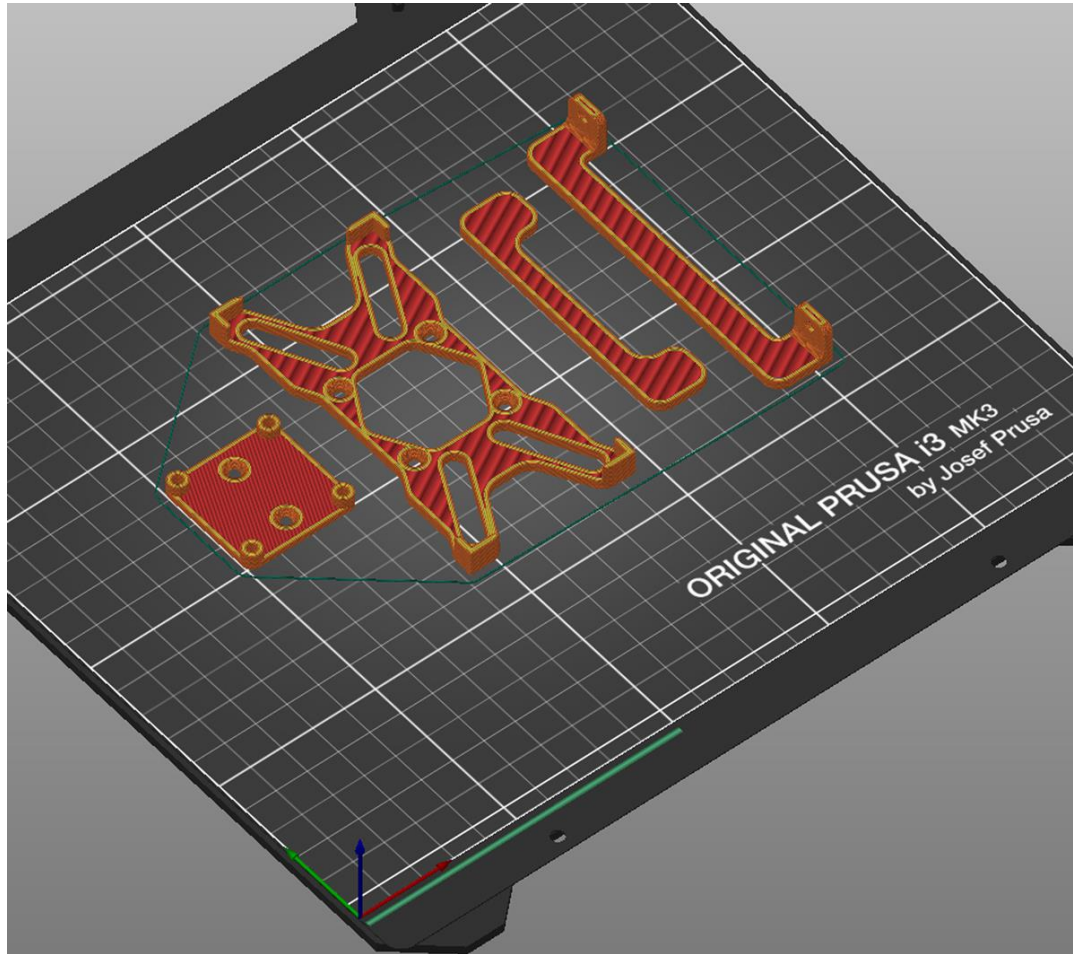
```
offset 0 mult 3 bal 45 range 960 speed 2.00 damp 1.00 Frange 528 Rrange 432 FLpos 1498.00 RLpos 1500.00 0
offset 0 mult 3 bal 45 range 960 speed 2.00 damp 1.00 Frange 528 Rrange 432 FLpos 1498.00 RLpos 1500.00 0
offset 0 mult 3 bal 45 range 960 speed 2.00 damp 1.00 Frange 528 Rrange 432 FLpos 1498.00 RLpos 1500.00 0
offset 0 mult 3 bal 45 range 960 speed 2.00 damp 1.00 Frange 528 Rrange 432 FLpos 1498.00 RLpos 1500.00 0
offset 0 mult 3 bal 45 range 960 speed 2.00 damp 1.00 Frange 528 Rrange 432 FLpos 1499.00 RLpos 1501.00 0
offset 0 mult 3 bal 45 range 960 speed 2.00 damp 1.00 Frange 528 Rrange 432 FLpos 1499.00 RLpos 1501.00 0
offset 0 mult 3 bal 45 range 960 speed 2.00 damp 1.00 Frange 528 Rrange 432 FLpos 1499.00 RLpos 1501.00 0
offset 0 mult 3 bal 45 range 960 speed 2.00 damp 1.00 Frange 528 Rrange 432 FLpos 1498.00 RLpos 1500.00 0
offset 0 mult 3 bal 45 range 960 speed 2.00 damp 1.00 Frange 528 Rrange 432 FLpos 1498.00 RLpos 1500.00 0
offset 0 mult 3 bal 45 range 960 speed 2.00 damp 1.00 Frange 528 Rrange 432 FLpos 1498.00 RLpos 1500.00 0
offset 0 mult 3 bal 45 range 960 speed 2.00 damp 1.00 Frange 528 Rrange 432 FLpos 1498.00 RLpos 1500.00 0
offset 0 mult 3 bal 45 range 960 speed 2.00 damp 1.00 Frange 528 Rrange 432 FLpos 1498.00 RLpos 1500.00 0
offset 0 mult 3 bal 45 range 960 speed 2.00 damp 1.00 Frange 528 Rrange 432 FLpos 1498.00 RLpos 1500.00 0
offset 0 mult 3 bal 45 range 960 speed 2.00 damp 1.00 Frange 528 Rrange 432 FLpos 1498.00 RLpos 1500.00 0
offset 0 mult 3 bal 45 range 960 speed 2.00 damp 1.00 Frange 528 Rrange 432 FLpos 1498.00 RLpos 1500.00 0
```

- offset 0
- multi 3
- Bal 45
- Range960
- Speed 2.0
- Damp1.0

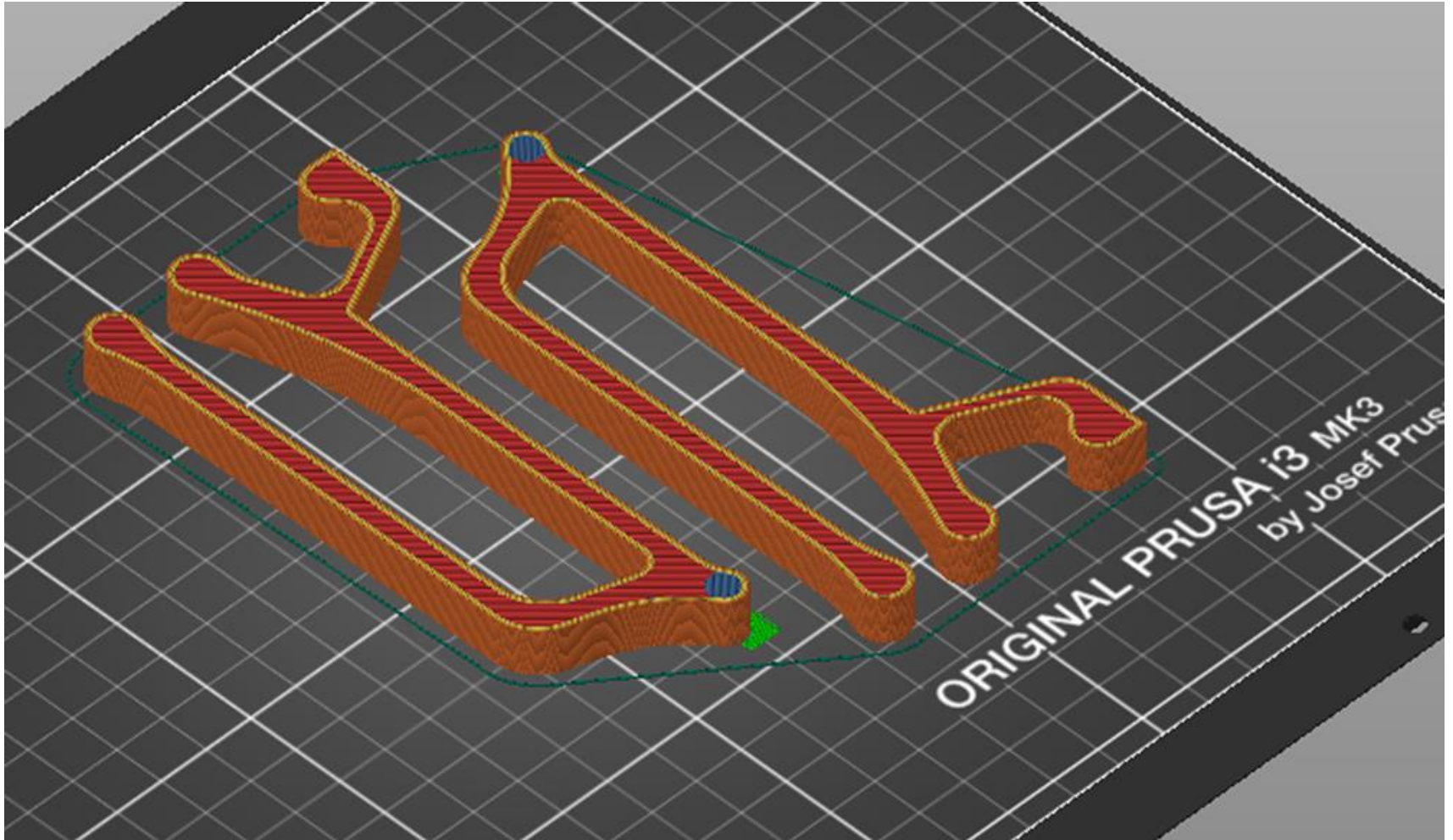
Slice



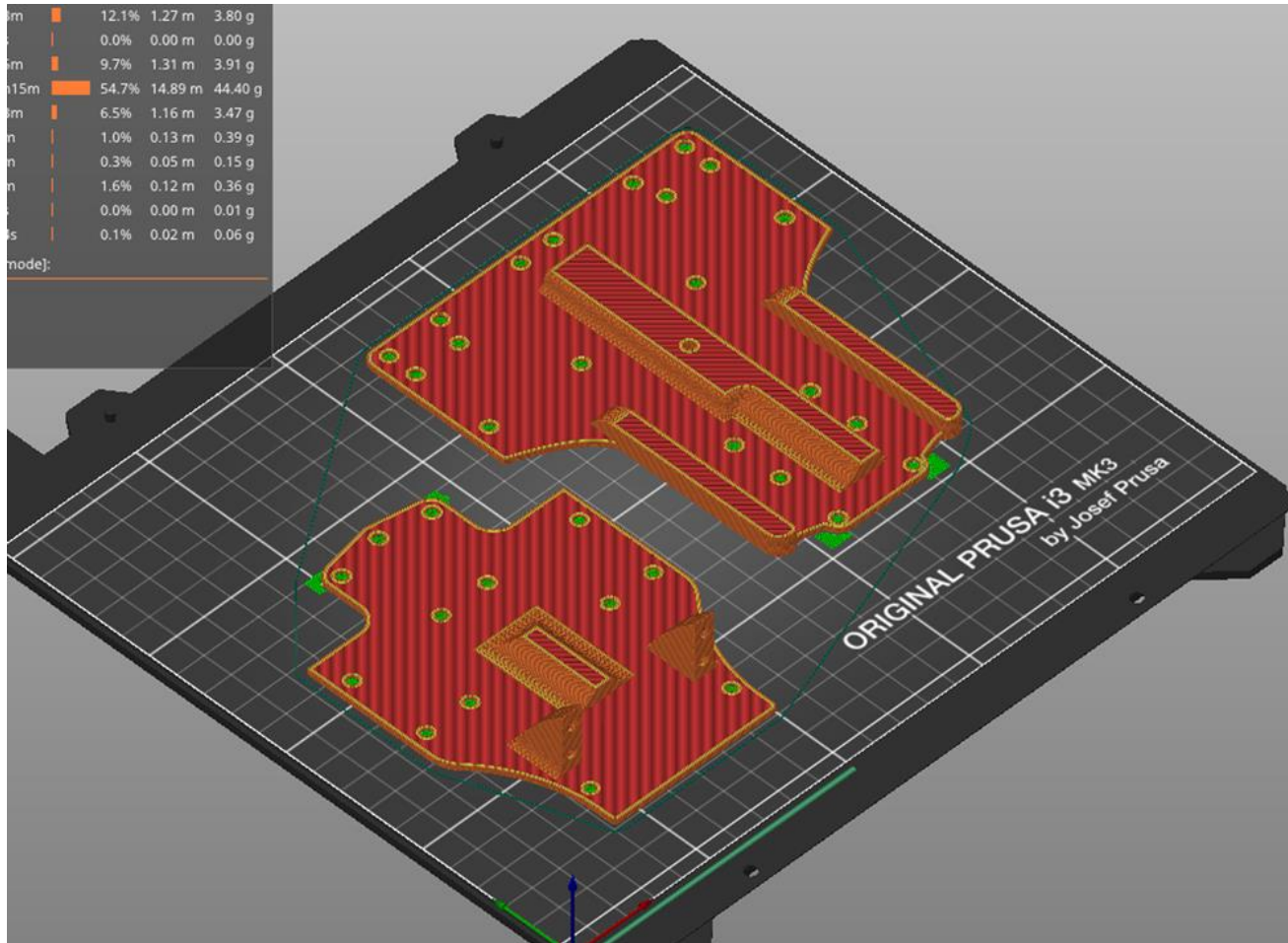
Slice



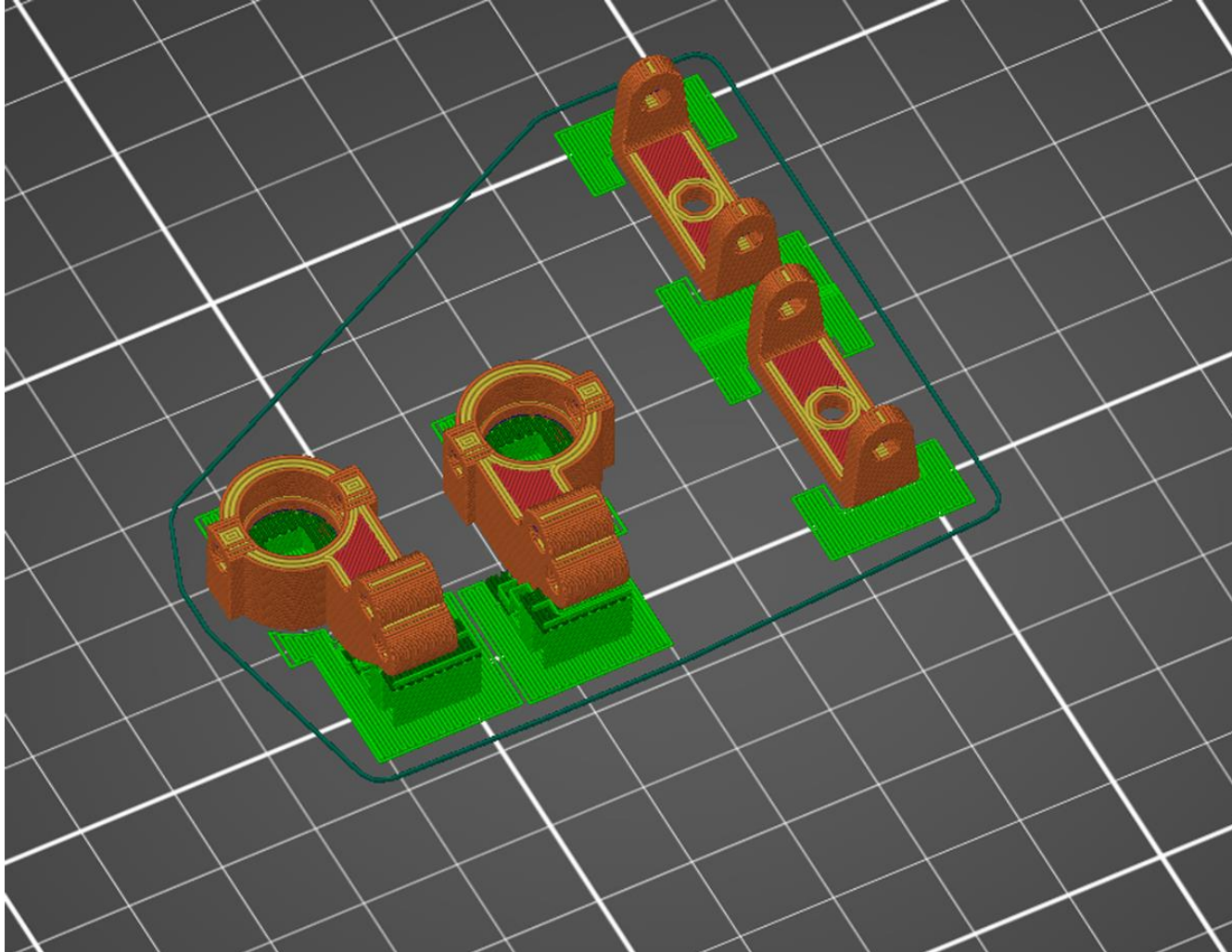
Slice



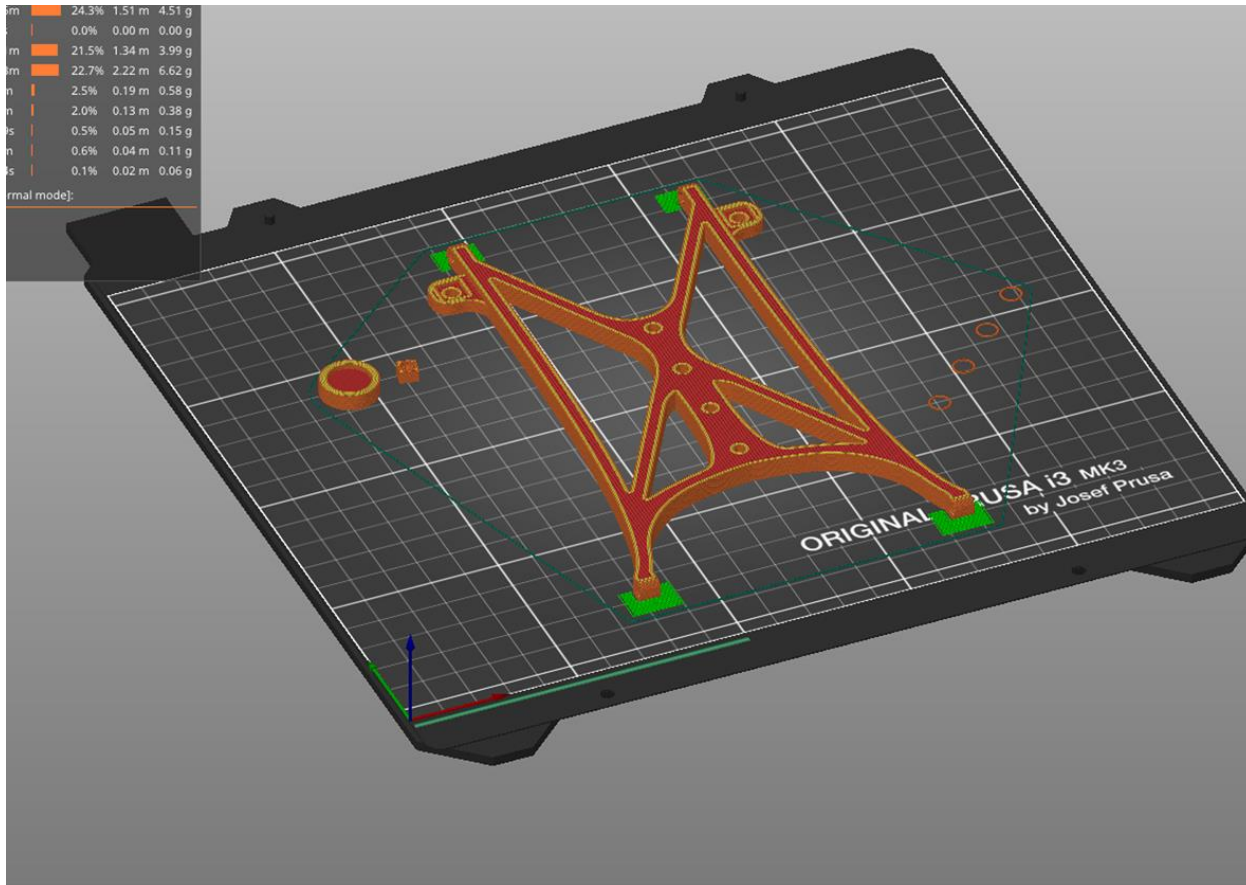
Slice



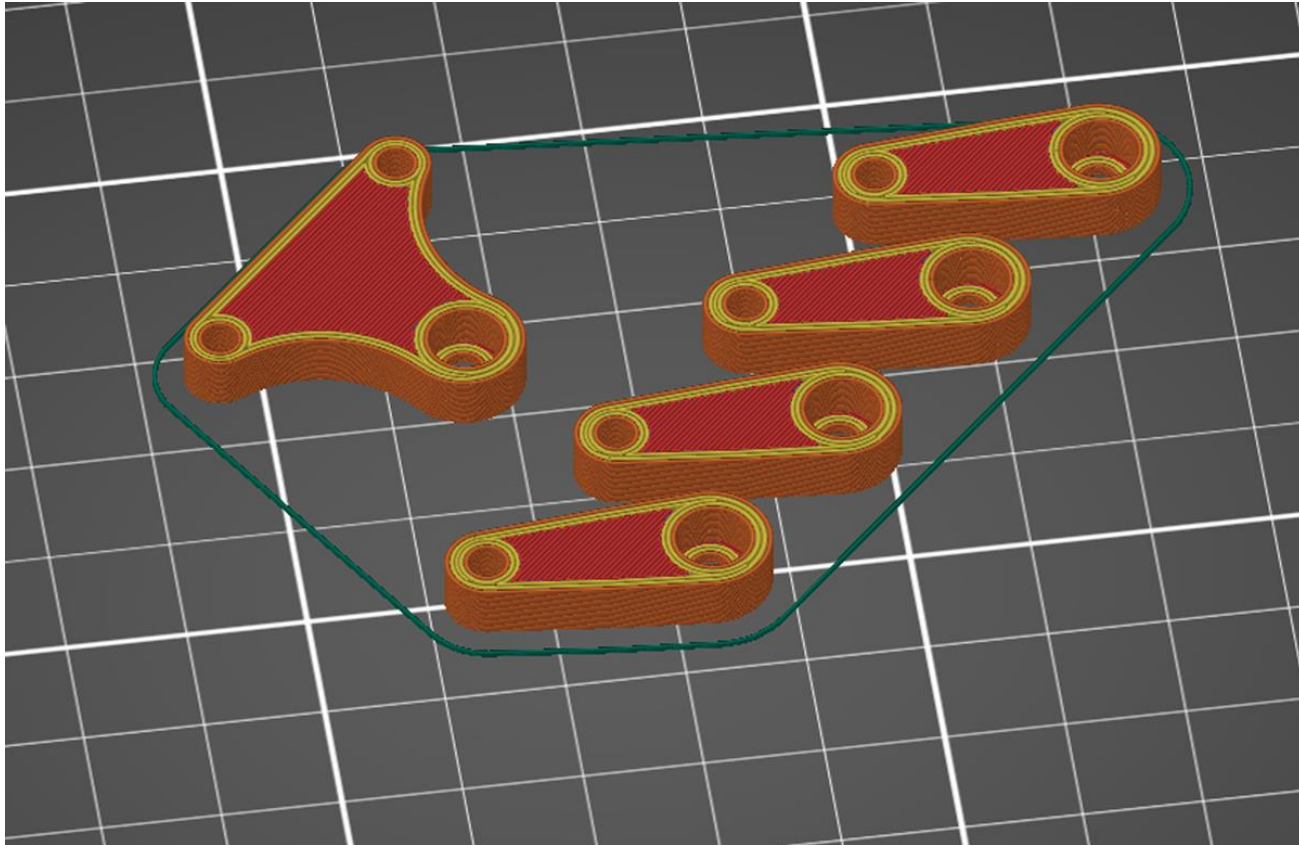
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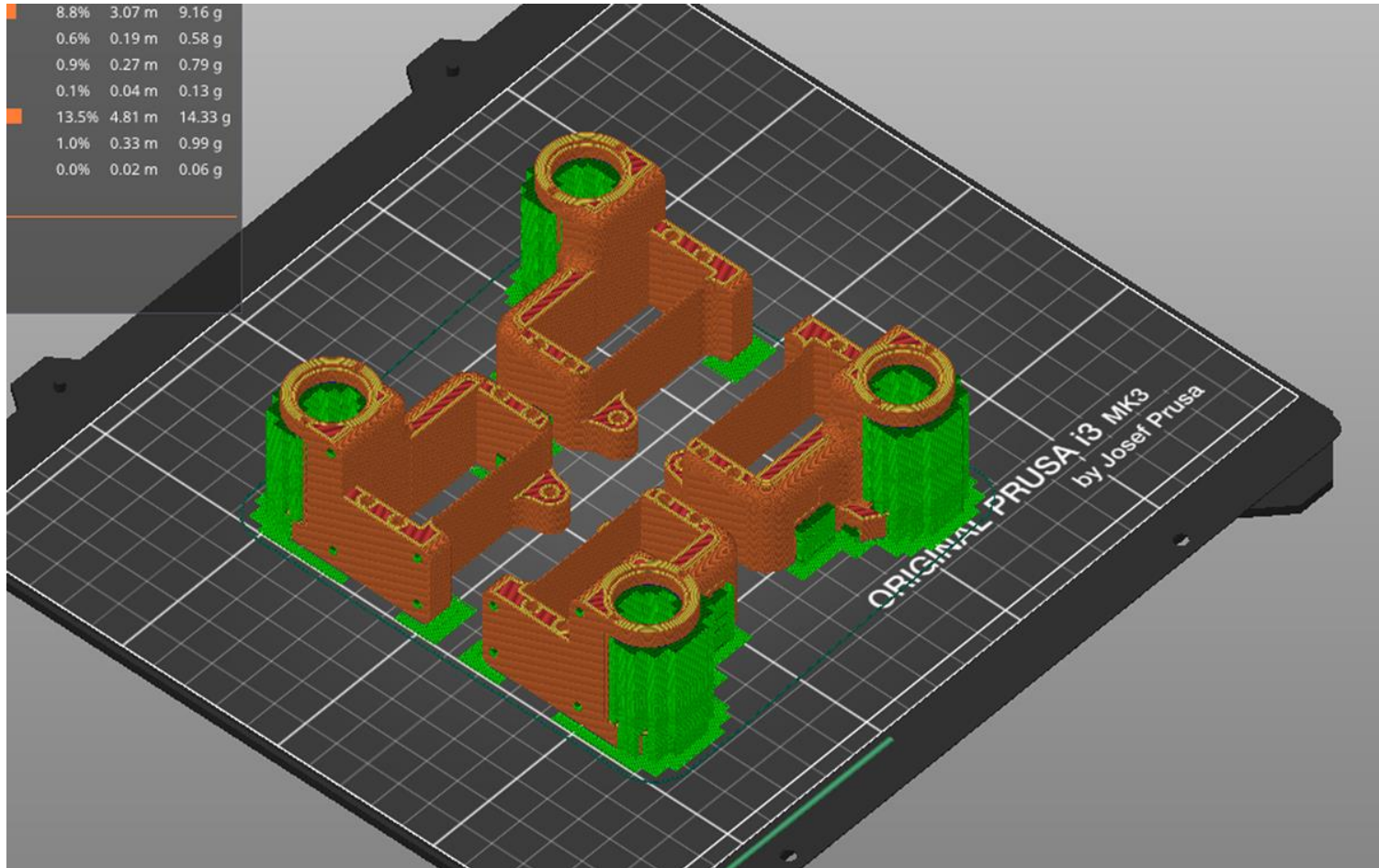
Slice



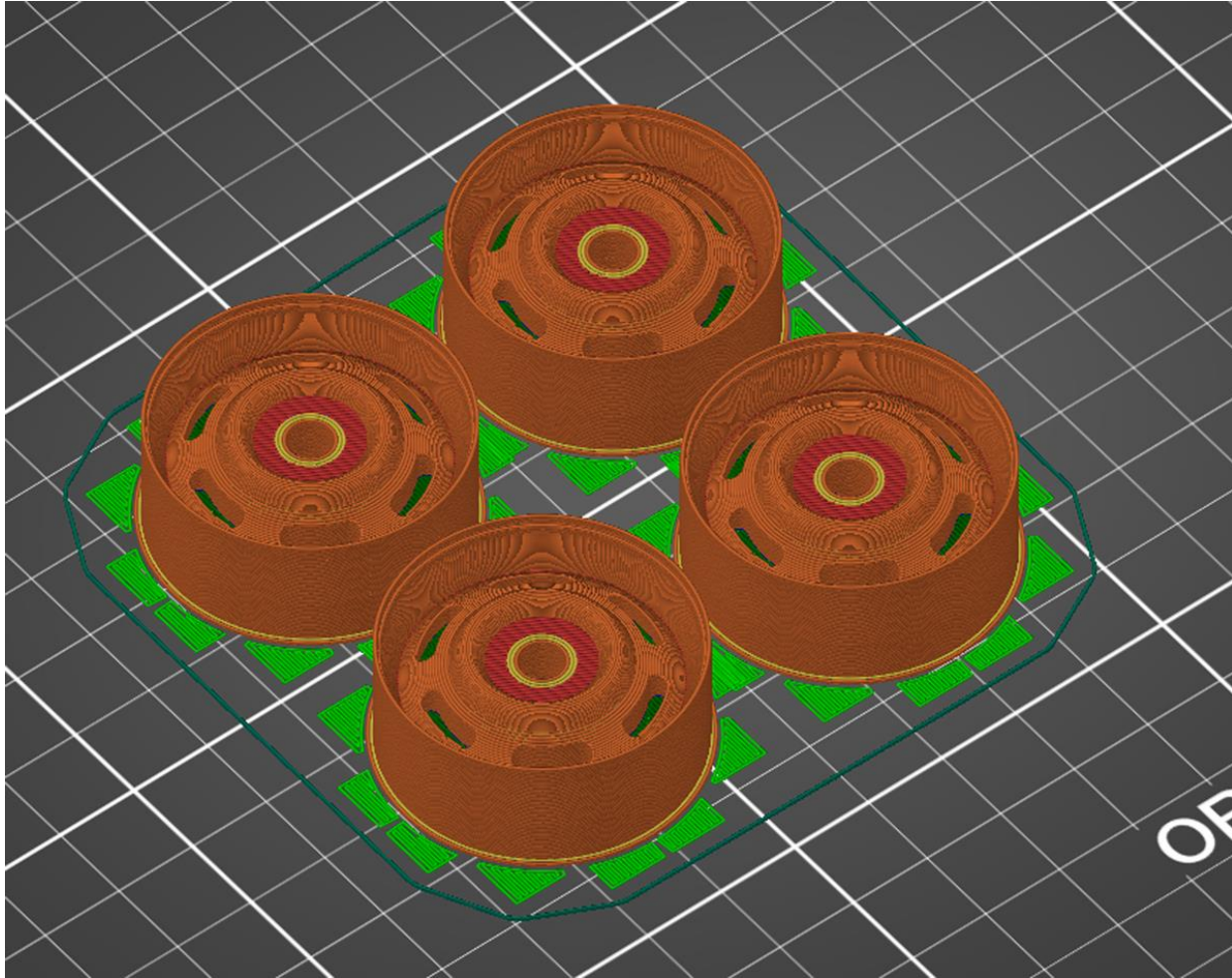
Slice



Slice



Slice



How to get the STL Data

You can Download this model`s Full STL data from crafthub.io

