



## THUMPER 1:8 scale RC Car CJ7 Rock Crawler by BlackCrow (No supports!)



**BlackCrow (RockyTop)**

[VIEW IN BROWSER](#)

updated 7. 7. 2024 | published 7. 7. 2024

### Summary

Remote Control 1:8 scale Rock Crawler 4x4 off road CJ7



0.82 hrs



2 pcs



0.20 mm



0.40 mm



PLA



12 g



Prusa  
MK3/S/S+

[Hobby & Makers](#) > [RC & Robotics](#)

Tags: [rc](#) [rock](#) [car](#) [model](#) [scale](#) [truck](#) [control](#)  
[remote](#) [jeep](#) [rig](#) [crawler](#) [cj7](#) [buggy](#)

**Are you new to Black Crow models?** All the STL files are here free on Printables.com. A non printed parts list is below along with easy step by step assembly videos. Help is available, usually within 24hrs. You can contact me thru private message or comments on the makes and comments tab. File updates are always listed at the bottom of each description page. Ways you can help my efforts to provide free models to

everyone include, informing me of mistakes and subscribing to my YouTube channel. I need 1,000 subs.

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Now, I am proud to introduce **Thumper**. Thumper is a scaled CJ7 rock crawler. These crawlers are common in the western and south eastern USA. This model is very close in build to the real thing. Scale puts the 120mm tires at the standard 37" tall. The front axle has been moved forward about 10 inches and the back axle moved back about 9 inches. The seats have been moved back and mounted to the roll bars for safety. A race fuel cell has been added and raised above the frame for clearance. Without a trailer hitch the approach and departure angles are 90 degrees. The ramp over angle could be better. You can't have everything.

**When building a real rock crawler** you want the tires to be as big as you can swing while keeping the body and center of gravity as low as possible. You want lots of power while staying light and nimble. Cooling the engine is usually an issue and it has to practically run upside down without leaking fluids. To be honest the CJ7 is not the best choice for this and they are becoming too valuable to destroy. You could technically buy every part of a CJ7 without buying any actual AMC or Jeep parts using 100% catalog aftermarket parts. This model is a fully home built custom crawler.

This 3D printed build was designed to be strong and easy to work on. I appreciate the "fully 3D printed" models put out by others however I tend to be a bit more utilitarian. This model uses RC hobby standard metal axle gears and drive shafts. The transmissions use an amazingly strong belt system that is very quiet. The motor/transmission sets are easily removed and swapped without removing axle links or suspension. The battery module slides out the back for easy charging or swapping. This model has room for one or two 2S 7.4 volt shorty Lipo batteries.

**Before building please read carefully.** This model has options. In an attempt to keep things simple the motor/transmission build options and other options are in separate listings. Build this Jeep chassis, pick your motor/transmission setup. Then combined or swap out Motor/transmissions. You also have door and top options along with custom options in the Thumper aftermarket store. **The half top option requires a different rear tub** found in the Door and Top Shop. The Four Wheel Steer option also has a separate listing for it's custom parts. All the STL files you need are listed with links below. Parts are numbered in order of use. Parts files are in proper orientation to print. Assembly videos at the very bottom of this page.

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**Videos: Introduction here. \*\*Assembly videos at bottom of this page!!\*\***

**Introduction to Four Wheel Steer version. \*\*Assembly videos at bottom of this page!!\*\***

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Action Video below by independent Builder **Lasz** YouTube channel [here](#)

Top and doors in this video by MaSt52 [here](#)

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### **Links to Transmissions and options:**

**Metal Gear Motor/Transmissions - Coming very soon**

**Printer Gear Motor/Transmissions**

<https://www.printables.com/model/356820-thumpers-transmission-shop-for-18-scale-rock-crawl>

**Four Wheel Steer Option**

<https://www.printables.com/model/394110-thumper-4ws-rear-steer-mod-18-scale-rock-crawler-b>

**Optional doors and tops** <https://www.printables.com/model/629922-thumper-door-and-top-shop>

**Aftermarket Parts Shop**

<https://www.printables.com/model/356827-thumpers-after-market-shop>

**Requested and Retired parts**

<https://www.printables.com/model/396992-requested-and-retired-parts>

**Top Shop**

<https://www.printables.com/model/629922-thumper-door-and-top-shop>

**GoPro Mount**

<https://www.printables.com/model/372044-thumper-gopro-mount-by-black-crow>

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## Motor Transmission Options

You have a wide verity of options when it comes to motor transmission setups. First choose from printed gears or metal gears. Then see more options on Transmission pages.

**3D printed gear transmissions here:** <https://www.printables.com/model/356820-thumpers-and-morrigans-transmission-shop-for-18-sc>

The 3D printed gears work very well unless you stay in the throttle for an extended period of time or use high rpm motors.

**Metal gear transmissions here:** <https://www.printables.com/model/769045-thumper-and-morrigan-cheater-metal-gear-transmissi>

The metal gears are better for people that push the limits. This is the better choice for 540 motors. The Fusion SE 1,200kv is awesome! This is also better if experimenting with 3S batteries.

## Next you have the option of Four Wheel Steer

Parts marked Not 4WS will not be used on 4WS. Additional parts needed found in 4WS post

<https://www.printables.com/model/394110-thumper-4ws-rear-steer-mod-18-scale-rock-crawler-b>

This option is intended for the Crawlers. Keep in mind this option works best on rocks, dirt and slippery surfaces. It reduces the turning radius by about 70%. With locked axles it is not practical on carpet and other sticky surfaces. The good news is that you can turn it off. With just a flip of a switch you are back to front steering only. See more info on the 4WS Page listed above.

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**Wheel base** 12 3/4" (325mm)

**Wide** (Narrow tires) 10" (255mm) (Wide tires) 10 3/4" 274mm

**Long** 17 1/2" (445mm) without trailer hitch.

**Tall** 9" ( 229mm) 90mm shocks stiff for basher or 100mm sagging for crawling.

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## Supports:

No supports needed EVER! Supports are built into the Model.

(Because of the built in supports and fine detailed areas a 0.4 nozzle or Adaptive slicer must be used)

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### **Printer Settings:**

0.4 nozzle (no bigger because of built in supports)

.2 layer Hight (no bigger)

### **Infill:**

**Normal parts** - 15%

**Roll bars** - 25%

**Axles, links, hubs and wheels** -80% (100% can exaggerate over extrusion problems)

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### **Special settings for radiator:**

**Infill:** Rectilinear 30%

**Layers top** 0

**Layers bottom** 0

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### **Filament:**

Models are designed around the use of a strong PLA. For best results use Prusa PLA, Inland Plus, CC3D Max, ( Hatchbox PLA does not test well with my models)

Warping - Prusa printers with PLA plus - adjust bed temp to 65 degrees.

Creality printers with PLA plus - adjust bed to 60 - 65 degrees.

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### **Parts Needed:**

Links are US Amazon Affiliates

## **Axles :**

1. **AR44 gears-** “Ring and pinion” need two sets, one for the front and one for the back. ratio should be 8T-33T for all models except Basher build with parallel 2S batteries. Then go with ( 8T-24T) <https://amzn.to/3JgXBx2>
2. **Axle shafts, Front and back** - Compatible with Axial SCX 10 <https://amzn.to/3PXuBOA>
3. **Drive Shafts, Front and back** - 105-155mm (5mm) <https://amzn.to/3JgYBB6>

**Axle Bearings:** 4 bearings 7x14x3.5 ( 687) <https://amzn.to/3W1t3Xs>

2 bearings 10x15x4 (6700-2RS) <https://amzn.to/4cPEafx>

10 bearings 5x11x4 (MR115-2RS) <https://amzn.to/3VTBK68>

**Steering Servo:** <https://amzn.to/4cVPt2r>

**Battery- 2S Hard Case Shorty** <https://amzn.to/43ZbhpT>

## **Tires:**

1.9 inch center 120mm outer diameter.

Red Jeep has 43mm wide. <https://amzn.to/3PVOCF2>

Yellow jeep has 52mm wide. <https://amzn.to/4cRYoSu>

Note two size wheels. Narrow for 43mm and Wide for 52mm.

## **Shocks: Important!!! 90mm - 100mm only !!**

Shocks more than 100mm long will over extend the stock steering. Shocks under 90mm are too short to reach the axles.

**Rock Crawlers-** I suggest 100mm on Rock Crawlers. Just let the shocks sag and articulate.

100mm internal spring- <https://amzn.to/43XIEJz>

100mm Exterior spring- <https://amzn.to/4aThfLs>

**Bashers-** I suggest 90mm on bashers. 90mm lets you increase the spring tension without raising the center of gravity too high. Shocks more than 100mm long will over extend the stock steering. You can Use 100mm shocks on Bashers. It just raises the center of gravity and flips over more easily.

90mm internal spring- <https://amzn.to/3JdtPsW>

90mm Exterior spring- <https://amzn.to/49tllbW>

## **Acrylic**

0.4mm thick acrylic sheet for window glass

**My Favorite Radio TX for the money Spektrum DX5C 5** - <https://amzn.to/3xoIGOV>

**---Transmission Bearings and more parts needed. Go to Motor/Transmission page---**

<https://www.printables.com/model/356820-thumpers-and-morrigans-transmission-shop-for-18-sc>

## **Screws:**

M2 nuts 11

M2 x 4mm 48

M2 x 6mm 60

M2 x 8mm 42

M2 x 10mm 71

M2 x 12mm 5

M2 x 16mm 2

M2 x 20mm 5

M2 x 25mm 4

32 M2 screws optional lengths from 8mm to 12mm for wheels.

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M2.5 x4mm 3 socket head (for Flash hobby motors) or use new no screw option

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M3 eye bolts (optional) 2 <https://amzn.to/3TViAui>

M3 nuts 37

M3 Nylock nuts 8

M3 x 4mm 4

M3 x 6mm 2

M3 x 8mm 4

M3 x 10mm 35

M3 x 12mm 16

M3 x 14mm 30

M3 x 16mm 5

M3 x 20mm 10

M4 Nylock nuts 4 ( wheel axle nuts)

Thread Locker (Loctite)

**( Additional parts needed in transmission/Motor build.)**

**Printed gears transmission-** <https://www.printables.com/model/356820-thumpers-transmission-shop-for-18-scale-rock-crawl>

**Metal gear transmission-** <https://www.printables.com/model/769045-thumper-and-morrigan-cheater-metal-gear-transmissi>

\*All parts for this model were purchased on Amazon

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**Tools:** Drill with 2.5 bit, File, Vice or clamps, plyers, utility knife, screw drivers, wiring tools, soldering tools

**cutting:** Hack saw or Dremel ( cutting 5mm rods)

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### **More info:**

1. **Roll Bars** - I know I am going to get some resistance on the roll bars... Maybe hate is a better word? When I started designing the roll bars I actually planed on breaking them up into pieces. I just didn't want printability to dictate style. Then it became a fun challenge to print as one part. Then I realized how strong and awesome they are as one part. Then I though maybe you appreciate the design too? You can lift and carry the model around by the roll bars! I have flipped and rolled the red jeep at basher speeds on grass and carpet more times than I can count - Plus four times on concrete. All before the fist pictures or videos of the RED jeep ware taken. ... I know that I wasted



more material in the supports than I used in the actual bars but I think it is worth it.

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**Assembly Video 1**

**Assembly Video 2**

**Assembly Video 3**

**Assembly Video 4**

**Assembly Video 5**

**Rear Axle Assembly Video 6-A**

**Front Axle Assembly Video 6-B**

**4WS Axle Assembly Video 6-C**

**Assembly Video 7**

**Assembly Video 8**

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**Optional Four Wheel Steer Assembly Video**

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**Disclaimer** - Lipo Batteries can be dangerous. Build at your own risk.

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### **Before you build:**

1. ) **5mm rod.** The videos show stainless steel rods. 5mm Brass rods are easier to work with and is still plenty strong. If the rod does not fit in the bearings first make sure that the ends of the rod are not damaged. Second if needed reducing the diameter of the rod is actually very easy. Place the rod in a SMALL drill and spin the rod in a fold of 100 grit sand paper. Be very careful with powerful drills as they can catch your fingers in the sand paper and possibly injure you. Never do this with a lathe. Lathes can kill you!
2. **Fender Print Direction** The tops of the fenders push the angle limits of what most printers can do. Make sure the tops of the fenders are rotated to face the cooling fans.

**Update: Jan-25-2023** adjusted 30-60Amp ESC mount. **60amp ESC** sits on it's side with fan facing perforated radiator, ( see special radiator printer settings above) On Off switch goes to either side. Receiver mounts on top of steering servo with double sided tape.

**Update: Jan-31-2023** Added 3 part roll bar for Ender3.

**Update: Feb-10-2023** Improved rear frame- (048FrameRearLeft 049FrameRearRight)

**Update: Feb-14-2023** Improved roll bar supports

**Update: Feb-17-2023** 007Cowl fixed hole alignment issue

**Special thanks** to **Brace91** for catching many mistakes and beta testing the 4WS option.

**Update: Mar-23-2023** updated axles for tighter fit with axle nuts

**Update: Mar-23-2023** Added 4WS option

**Update: May- 29-2023** Much needed update to seat. Old seat mover to retired parts post

**Update Oct- 24 2023** 045FrameFrontLeft - Added option for servo reinforcement screws. (1x- M2 x 25mm, 1x- M2 x 15mm) These screws reinforce layer line weakness at servo mount.

**Update Nov-12 2023** Front Fenders -Added layer adhesion screw above shock mounts for greater strength.

**Update Dec-10-2023** Axles and axle videos have been updated to the heavy duty Morrigan style axles. ( I had to move a lot of things and update links. If I missed something tell me please.)

**Update Jan-12-2024** Added Top Shop [here](#)

**Update March-17-2024** Added Metal Gear Transmissions [here](#)

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**Builder Video** [LegoManiacman](#)

**Half Door That works with original Roll bars by MaSt52** [here](#)

**Support Black Crow With Merch** <https://blackcrowprints.printify.me/products/1?sort=price-asc>

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Prusa and Bambu printers usually print this model without any problems. Other printers might need to be dialed in. I picked this video because it explains all of the horizontal expansion settings. In most cases you will need to set to -0.1 to -0.3.

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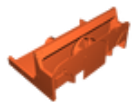
**License-** Some file sharing platforms are taking files off sites and placing them on their sites without the knowledge of the designer. I am not OK with that. These models are updated here with the feedback given here. I intend to keep the home of this model here. This is the reason for the strict license of this model. I am not concerned with hobbyists sharing and remixing this model, Enjoy

## Model files



### 00testblock.stl

📄 5x11x4 bearing- Ball Joints 0 standard, ( -0.1 , -0.2 links in Requested Parts)

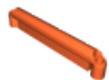


### 001tubfront.stl

📄 Updated- Oct 26 -2023 For possible future option- Original in retired parts listing



### 002dashindicators.stl



### 003grabbar.stl



### 004shiftertwinsticks.stl



### 005steeringcolumn.stl



**006steeringwheel.stl**

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**007cowl.stl**

☐ body color - Updated Feb/17/2023 fixed hole alignment issue

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**008fenderleftb.stl**

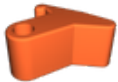
☐ Updated Nov 12- 2023 - Added layer adhesion screw

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**009hoodlatchleft.stl**

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**010hoodlatchb2x.stl**

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**011fenderrightb.stl**

☐ Updated Nov 12- 2023 - Added layer adhesion screw

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**012hoodlatchright.stl**

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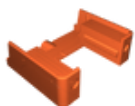
**013rocksliderleft.stl**

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**014rocksliderright.stl**

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**015tubrear.stl**

☐ Updated Nov 3 2023- adjusted for future options- Original in retired part post

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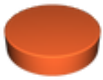
**0016rocksliderrearleft.stl**



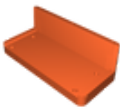
**0017rocksliderrearright.stl**



**018taillightbezel2x.stl**



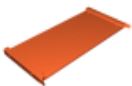
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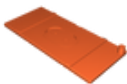
**020cooler.stl**



**021coolerlid.stl**



**022fakefloor.stl**



**023fuelcell.stl**

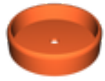


**024fuelcell-top.stl**



**025grill.stl**

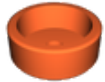
☐ body color



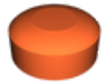
**026headlightbezel2x.stl**



**027headlight2x.stl**



**028blinkerbezelfront2x.stl**



**029blinkerfront2x.stl**



**030header.stl**



**031radiator.stl**



**032ecsmount30-60amp.stl**



**033ecsmount80amp.stl**

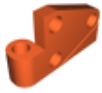


**034hoodlatch.stl**

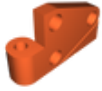


**035stockhood.stl**

☐ body color



### **036hoodhingep2x.stl**



### **037hoodhinget2x.stl**



### **038rollbars.stl**

☐ Updated Sept 23 2023 ( added deflection brace )



### **038rollbars3partm.stl**

☐ Ender3 Option Updated March-18-2023



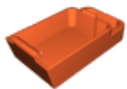
### **038rollbars3partl.stl**

☐ Ender3 Option Updated March-18-2023

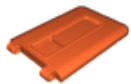


### **038rollbars3partr.stl**

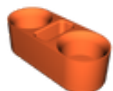
☐ Ender3 Option Updated March-18-2023



### **039centerconsolebase.stl**



### **040centerconsoletop.stl**



### **041centerconsolecupholder.stl**



### **042seat2x.stl**

☐ New seat - 5/27/2023 - old seat in retired parts post



**043framecenter.stl**



**044connectormale.stl**



**045framefrontleft.stl**

☐ Updated Oct 24 2023- Option for Servo reinforcement screws. M2 x25mm M2 x15mm



**046framefrontright.stl**



**047bumperfront.stl**



**048framerearleft.stl**

☐ Feb-23-2023



**049framerearright.stl**

☐ Feb-23-2023-2



**050shockhoopleft.stl**

☐ Not 4WS Mar-2-2023



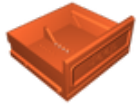
**051shockhoopright.stl**

☐ Not 4WS Mar-2-2023



**052framerear.stl**

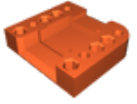




### 053tailgate.stl

☐ Not 4WS - body color

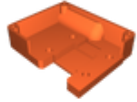
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### 054connectorf1.stl

☐ Feb-25-2023

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### 055connectorf2.stl

☐ Not 4WS

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### 056bumperrear1.stl



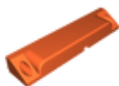
### 057backuplight2x.stl



### 058licenseplate.stl



### 059bumperrear2.stl



### 060pullhandle.stl



### 061singlebatteyholderx2.stl

☐ Not 4WS

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### 062fuelcap.stl



**063linktierod.stl**



**064linkupperfront.stl**



**065linklowerfront2x.stl**



**066linksidestable.stl**



**067linkupperrear2x.stl**

☐ Not 4WS



**068linklowerrear2x.stl**



**069linksteeringrod.stl**



**070awheeloutternarrow.stl**

☐ Option A



**070bwheelouterwide.stl**

☐ Option B



**071wheelring.stl**



**072wheelinner.stl**

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**073awheellockernarrow.stl**

☐ Option A

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**073bwheellockerwide.stl**

☐ Option B

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**074bellypan.stl**

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**075windowframeo.stl**

☐ Updated- Oct 24 -2023 For possible future option

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**076windowrubber.stl**

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**077windowhinge1.stl**

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**078windowhinge2.stl**

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**079windowhinge3.stl**

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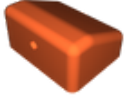


**080windowhinge4.stl**

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**081wiper2x.stl**



**082sidemirror2x.stl**



**083sidemirrorglass2x.stl**



**084sidemirrorpost2x.stl**



**200axlecenterrear.stl**

☐ Not 4WS - Updated Nov 5- 2023 - Easier fit



**201axlehousingrearright.stl**

☐ Not 4WS



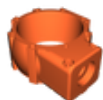
**202axleretainer2x.stl**

☐ Not 4WS



**203axlehousinggearleft.stl**

☐ Not 4WS



**204axlecenterfront.stl**

☐ Dec 10-2023 heavy duty



**205axlehousingfrontleft.stl**

☐ Dec 10 2023 heavy duty



### 206axlehousingfrontright.stl

📄 Dec 10-2023 heavy duty

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### 207axlespindlefrontleft.stl

📄 Dec 10-2023 heavy duty

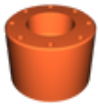
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### 208axlespindlefrontright.stl

📄 Dec 10-2023 heavy duty

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### 209hub4x.stl

## Print files



### 031radiator\_02mm\_pla\_mk3s\_21m.gcode

🌀 PLA 📏 0.40 mm 📏 0.20 mm ⌚ 0.35 hrs ⚖️ 6 g 🖨️ Prusa MK3/S/S+

📄 Prusa MK3S

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### 031radiator\_02mm\_pla\_ender3v2\_28m.gcode

🌀 PLA 📏 0.40 mm 📏 0.20 mm ⌚ 0.47 hrs ⚖️ 6 g 🖨️ Creality Ender 3

📄 Ender3

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